

## 37. FOOTBRIDGE 1931

### INTRODUCTION

The 1931 Pedestrian Bridge, (see Photo 324), was constructed under the auspices of the Works Progress Administration and built in 1931. The engineers for the project were A. Burton Cohen, Construction Engineers (1 Madison Avenue, NYC). The engineer for the Essex County Parks Commission was A.W. Reynolds Jr. The bridge was constructed to connect pedestrian pathways in Belleville Park with paths on the other side of Branch Brook Park and Tiffany Boulevard. The bridge crosses over Branch Brook Drive, the Second River and two asphalt paved pedestrian pathways.

The 1931 Pedestrian Bridge is a steel-reinforced concrete, multi-arched bridge that rests on five separate concrete footings. Each footing is surmounted by two separate concrete piers, reinforced with buttresses, which carry the bridge's weight and the thrust of the arches. (See Photo 325). This bridge is one of two pedestrian bridges that span the Second River; the other is considerably smaller. The bridge's concrete is scored to simulate stonework. (See Photo 326). The bridge has five separate arches or spans, the two largest (51' – 6" in length) span either Branch Brook Drive or the Second River. The remaining three arches/spans (24' – 0" in length) span either one of the two pathways or the slope on the bridge's south end. The bridge is approximately 9' – 3" wide and 272' – 0" long. Foot and bicycle traffic crosses over the bridge and automobile, bicycle and pedestrian traffic moves underneath. Parapet walls on each side of the walkway range in height from approximately 3' – 0" to 4' – 8" and are punctuated in ten locations by the piers. Each pier is capped by a decorative lantern base. Unfortunately, none of the original lanterns

remain. (See Photos 330, 339, 340). The tops of the piers and lantern bases are approximately 6' – 0" in height above the bridge's deck. Each side of the bridge displays significant spalling and cracking concrete. Spalling on the underside of the bridge and its arches has exposed large amounts of the steel reinforcing. The parapet walls, copings and concrete lantern bases on top of the bridge display severe cracking, spalling and areas of significant deterioration and missing material. (See Photo 327). None of the original luminaries on top of the lantern bases remain, although some steel conduit and wiring is visible. The bridge has suffered greatly from vandalism and a lack of maintenance. Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the 1931 Footbridge.

### DESCRIPTION/CONDITIONS

#### SITE

The bridge connects pedestrian pathways in Belleville Park with pathways on the other side of Branch Brook Drive. (See Photo 328). A non-original asphalt pathway over the bridge runs roughly north/south and is at a diagonal axis to the road, river and paths underneath. Under the bridge, the site is relatively flat and encompasses Branch Brook Drive, an asphalt paved two-lane road, the Second River and two asphalt paved pedestrian pathways. (See Photo 329). An asphalt paved pedestrian pathway crosses over the bridge. (See Photo 330). Steep slopes overgrown with large trees, bushes, weeds, and strewn with garbage and building debris characterize the site at each end of the bridge. Asphalt paved pathways lead from each end of the bridge to other park areas. A paved path leads from the bridge's north side to the path along Second River. (See Photo 331). On the south side, a

paved path leads to other park areas and Tiffany Boulevard. Under the bridge's south side, the site slopes down towards Branch Brook Drive. (See Photos 332, 333). This slope is covered with a significant amount of debris, including all types of garbage, fallen trees, branches and even parts of the bridge. (See Photo 334). Under the bridge between Branch Brook Drive and Second River is a paved pedestrian pathway. (See Photos 324, 335). Running parallel next to this pathway is the Second River. The river is enclosed within concrete retaining walls. Granite blocks pave its entire length within Branch Brook Park. On the other side of the river is another paved pedestrian pathway. Directly north of this pathway the site grade slopes steeply upwards towards Belleville Park.

#### CONCRETE

The 1931 Pedestrian Bridge is constructed entirely from steel-reinforced concrete. Piers that support the weight and thrust of the walkway and arches surmount massive footings. (See Photos 325, 336). The bridge's cheek walls, parapet walls and lantern bases are all in poor condition. The support piers are in fair condition. The cheek walls, parapet walls, walkway and lantern bases display signs of severe cracking, spalling and areas of exposed rusting steel reinforcing. Organic growth including, moss, lichen and weeds cover parts of these areas. The support piers display areas of cracking, spalling and organic growth though not as severe. Eighty percent of bridge surfaces are weathered, worn and soiled. Original concrete details remaining on the bridge include: buttresses that brace the piers, decorative stringcourses extending the bridge's length along the exterior of each parapet wall, concrete copings and the original lanterns bases. (See Photos 337, 338).

The concrete copings, spandrel walls and lantern bases are in poor condition. Each contains severe cracking, spalling and exposed reinforcing. The base of each lantern was constructed from pre-cast concrete. Currently, only one lantern base is in good condition although its surface is severely weathered and covered with organic growth or graffiti. (See Photo 339). The remaining nine lantern bases are in various stages of deterioration. (See Photo 340). Cracking and spalling of concrete on these bases suggest water penetration and the adverse effects of freeze-thaw cycles.

The approximate original height from the bridge's deck to the top of the spandrel walls and copings is 4' – 8". Extensive loss of coping and spandrel material has reduced the height to as little as 3' – 0". Areas of spalling, cracking and missing concrete in the walls and copings range in length from about 1' – 0" to 20' – 0" or more. (See Photos 327, 330, 341). These areas of severe cracking and spalling are due to the adverse effects of water penetration and freeze-thaw cycles. Wear and weathering have exposed large aggregate on these surfaces, making the tops of the copings and sides of the spandrel walls rough and uneven. (See Photos 330, 340, 341). The top sections of steel reinforcing are visible in most areas of each spandrel wall. (See Photo 342). Remedial patching of these areas is evident, including bricks and thin coatings of mortar or concrete, both of which have failed. (See Photo 343). Along the base of each spandrel wall, the gutter is clogged with dirt and weeds resulting in poor drainage of the bridge's deck. Water is forced to migrate through the concrete causing spalling, cracking and eroding concrete surfaces below the bridge's deck. Water migration through the concrete has allowed de-icing and other soluble salts and mineral deposits to leech down from the bridge's deck and form thick mineral encrustations on bridge surfaces.

The bridge's deck is even with the decorative stringcourse that runs along each exterior vertical face of the bridge. This stringcourse divides the spandrel wall from the cheek wall. Approximately 75% of this stringcourse is cracked, spalled or covered with organic growth. To the south of the bridge's north end, the bottoms of the first and third arches each have two areas of severe spalling and cracking. On the first arch these areas have exposed steel reinforcing and are covered with mineral deposits. (See Photos 344, 345). The third arch has continuous cracking and spalling extending from the west to the east spandrel wall, including underneath both arches and the bridge's deck. (See Photos 346). This cracking and spalling covers an area of approximately 30' – 0" in length. The piers and footings are in good condition with some cracking and spalling, graffiti and organic growth. A triangular foundation cap surmounts each footing. Areas of the footings/piers have been painted to cover graffiti.

## WORK PLAN

### STRUCTURAL INVESTIGATION

Examine the underside of the pedestrian bridge, paying particular attention to the third arch. Inspect the cracking and spalling of this concrete arch and the underside of the walkway to determine its structural integrity. Probe the tops of all arches, exposing some concealed areas to determine their structural integrity.

#### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).

- 1.3 Provide shoring and bracing as required for all work.
- 1.6 Selectively remove in accordance with SHPO approved plans:
  - 1.4.1 The existing walkway between the concrete parapet and cheek walls.

#### DIVISION 2: SITE WORK – WITHIN 10' OF BRIDGE

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove trees and large plants within 5' of bridge based on consultation with a landscape architect.
- 2.3 Remove non-original asphalt paving between the concrete parapet and spandrel walls. Reconstruction work to be based on research and analysis of historical documents, site investigations and current paving conditions of walkway. Work to include the removal of all plants and roots from paving area and provisions of appropriate base materials. Plans to be approved by SHPO.
- 2.4 Provide planting on bridge embankments based on historic planting plans, including additional soil to restore the grade to historic levels and stabilize the embankments adjacent to the wing walls.
- 2.9 Provide grading and drainage of bridge embankments to prevent erosion and manage storm water.

#### DIVISION 3: CONCRETE

- 3.1 Remove all deteriorated concrete and replace in-kind based on scientific analysis of original concrete.
- 3.2 Patch all damaged historic concrete with new concrete patching to match existing historic concrete in color, texture composition and finish.
- 3.3 Retain and repair the existing parapet wall, copings and lantern bases with new concrete patching.

- 3.4 Use existing historic copings and historic drawings to manufacture molds to replicate and reproduce current historic copings, including surface finishes.
- 3.11 Use existing historic lantern bases and historic drawings to manufacture molds to replicate and reproduce current historic lantern bases.
- 3.12 Prepare and coat all exposed areas of structural steel reinforcing prior to concrete repairs.
- 3.13 Clean all concrete surfaces including the removal of all graffiti, mineral deposits and organic growth.

#### DIVISION 7 THERMAL AND MOISTURE PROTECTION

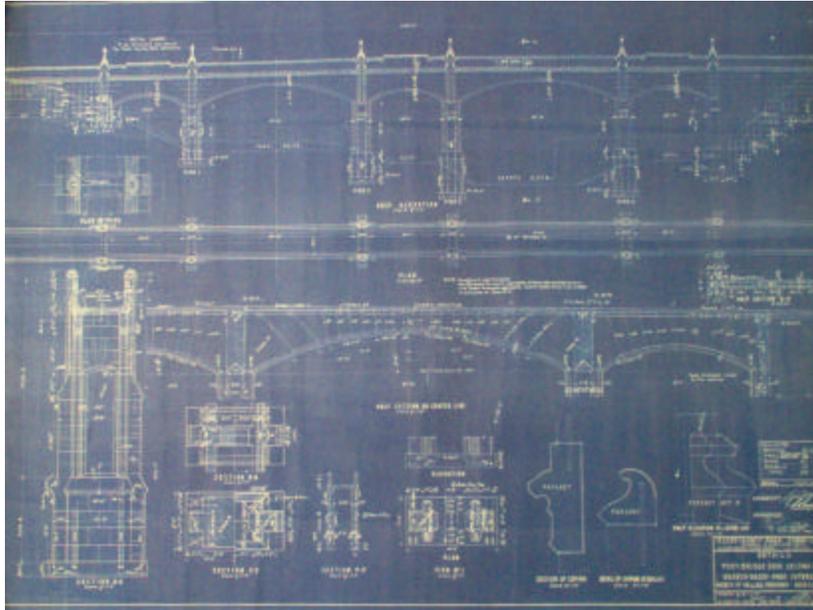
- 7.1 Repair or replace the cheek wall, expansion joint fill material.

#### DIVISION 9 FINISHES

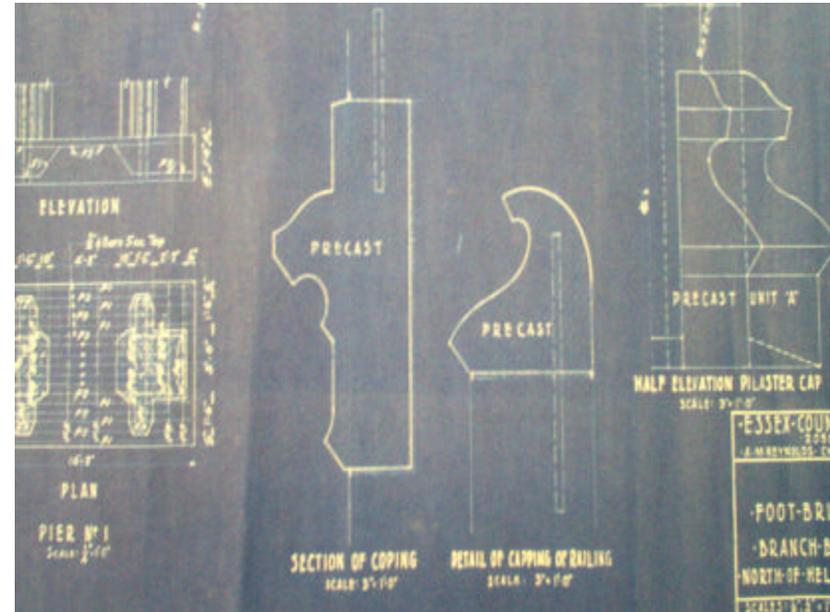
- 9.1 Remove existing paint on all bridge surfaces. New coatings to be provided based on performance analysis and SHPO approval.
- 9.2 Provide new mineral, silicate coatings – color to match original based on scientific analysis of existing concrete. Coatings are to provide protection against continued erosion, water penetration and subsequent rusting of steel reinforcing. New coatings to be provided based on performance analysis and SHPO approval.

#### DIVISION 16 LIGHTING

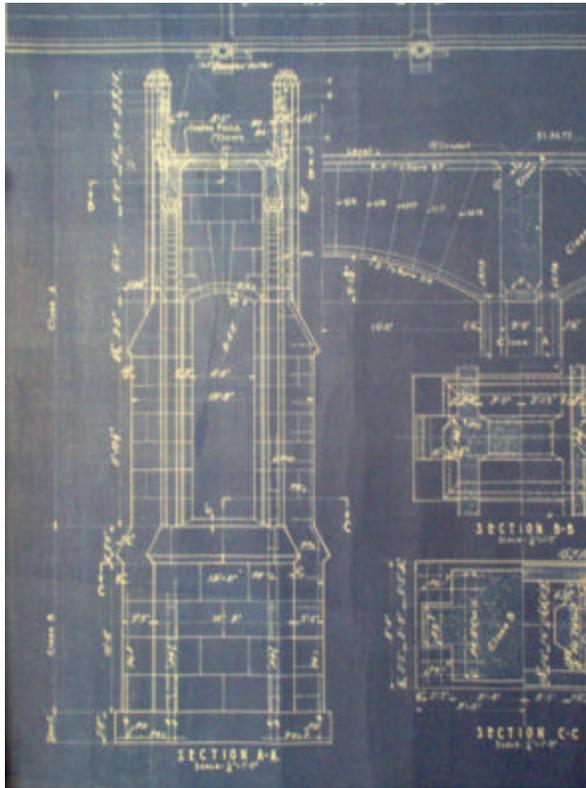
- 16.1 Replace, where missing, all ornamental light fixtures on top of piers. New fixtures to match existing original historic luminaires based on research and analysis of historical documents.



Original Drawing 27  
This blueprint from an original drawing displays the bridge in section, elevation and plan.



Original Drawing 28  
This blueprint shows details of the pre-cast coping and rail caps.



Original Drawing 29  
Section of pier, displaying scoring of concrete and dimensions.



Photo 324  
View west towards the pedestrian bridge; note the two visible spans crossing the path and Second River.



Photo 325  
The massive foundation caps and footings supporting the twin piers; note the graffiti and organic growth on the surfaces.



Photo 326  
The bridge's scored concrete surfaces simulating stonework; note that this section of the bridge is in fair condition.



Photo 327  
The spalling and cracking parapet walls, copings, and pier caps;  
note the weeds in the gutter along the base of the wall.



Photo 326  
View east towards the bridge; note the difference in the size of the  
arches and the overall condition of the parapet wall.



Photo 328  
View west from the bridge's deck; note that the site slopes gently towards the Second River.



Photo 329  
The paved asphalt pathway over the bridge; note the extremely poor condition of the parapet walls, copings, pier caps and lantern bases. Also note that weeds and organic debris clog the gutters on both sides of the bridge.



Photo 330  
The asphalt path leading from the north end of the bridge towards the path that runs under the bridge along the Second River.



Photo 331  
The asphalt path leading from the south end of the bridge towards Tiffany Boulevard.



Photo 332  
View towards the south end of the bridge; note the severe erosion to the right of the photo evidencing damage by water runoff.



Photo 333  
Significant amount of debris including: fallen trees, branches, limbs, vines and roots.



Photo 334  
View west from the bridge's deck; note that from this perspective Branch Brook Drive and one of the pathways is visible.



Photo 335  
Piers surmounting the foundations support the bridge; note that each pier is braced by a buttress.



Photo 336  
An original piece of coping on top of the parapet wall; note the detailed design.



Photo 337  
The finished end of an original piece of coping; note that years of weathering have eroded the surface, exposing the aggregate.



Photo 338  
One of the original lantern bases that surmounts a pier cap; note the weathered surface and areas of organic growth and graffiti.



Photo 339  
The top of this pier has severely spalled; note the top of the wall has been patched with a thin layer of mortar.



Photo 340  
Significant spalling of the concrete coping caused by water absorption and the adverse effects of freeze-thaw cycles.



Photo 341  
Severe cracking and spalling around a piece of exposed, rusting steel reinforcing.



Photo 342  
Detail looking down at the top of a parapet wall, showing remedial patching by replacement bricks.



Photo 343  
An area of extreme spalling and cracking; note the exposed steel reinforcing, de-icing and other soluble salts and mineral deposits.



Photo 344  
Rusting steel reinforcing exposed by severe spalling underneath the concrete arch.



Photo 345  
This spalling and cracking extends underneath the entire bridge; note the areas of soiling, staining and exposed steel reinforcing.



Photo 346  
Spalling and cracking on the side of the bridge. The severe spalling continues from the underside of the bridge through the cheek wall and along the stringcourse.

## 38. NORTH BRANCH BROOK DRIVE BRIDGE

### INTRODUCTION

The North Branch Brook Drive Bridge, (see Photo 347), was constructed in 1930. The engineers for the project were A. Burton Cohen, Construction Engineers (1 Madison Avenue, NYC). The engineer for the Essex County Parks Commission was A.W. Reynolds Jr. When originally constructed this bridge was known as Bridge No. 5, it is unclear when the name changed.

The North Branch Brook Drive Bridge is a steel reinforced concrete arch bridge that rests on a concrete foundation. This bridge is one of six over the Second River in Branch Brook Park and the only one with a staircase leading to the river. (See Photo 347). The staircase follows the arc of the wing wall on the southeast side of the bridge. Arched openings on each side of the bridge support cheek walls, sidewalks and the roadway. The bridge's span is 66' – 0" and its overall length, including the wing walls, is 168' – 8". The bridge's wing walls arc out from the cheek walls and follow the road's curve. (See Photo 348). Both wing and cheek walls are surmounted by a crenellated parapet wall. (See Photo 349). The parapet wall is terminated on each end by decorative concrete posts. (See Photo 350). Two buttresses capped by decorative concrete lantern bases stand astride the arch on each side of the bridge. Automobile, bicycle and pedestrian traffic crosses over the bridge, and foot and bicycle traffic moves underneath. Parapet walls on each side of the bridge are approximately 3' – 6" in height and are punctuated in four locations by the decorative lantern bases on top of the buttresses. None of the original luminaries on top of the lantern bases remain, although some steel conduit and wiring is

visible. (See Photo 351). Significant spalling has occurred on some of the lantern bases and posts and on the ends of the parapet walls. Many of the original battlements that cap the parapet wall have been replaced with newer, less ornate concrete versions. Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the North Branch Brook Drive Bridge.

### DESCRIPTION/CONDITIONS

#### SITE

The North Branch Brook Drive Bridge crosses over the Second River in the Branch Brook Park Extension. (See Photo 347). Steep slopes extend from the road down to the river's retaining walls. Branch Brook Drive crosses the bridge at a diagonal axis to the river. The Second River and two pathways go underneath the bridge. The pathway on the north side of the river is asphalt-paved, and there is a steel railing between the path and river. (See Photo 347). The pathway on the south side of the river is dirt, and there is a steel railing between the path and river. The bridge carries an asphalt-paved two-lane road with asphalt paved sidewalks on each side. The road is approximately 40' – 0" in width and the overall width, including both sidewalks, is about 58' – 8". The staircase is adjacent to the bridge on the southeast side of the site. Large, displaced sections of concrete are located under the bridge in the river. (See Photo 353). It is unclear where this concrete has come from. The bridge's embankments are covered with dirt, grass, large trees, bushes, branches and weeds. There is a significant amount of vegetation and garbage around the site. Within 10' – 0" of the bridge along both sides of the river, there

is a considerable amount of plant growth and garbage including, bottles, cans and plastic bags that need to be removed.

#### MASONRY AND CONCRETE

The North Branch Brook Drive Bridge is a steel reinforced concrete arched bridge. Arched openings on each side of the bridge support cheek and parapet walls, the road and sidewalks. The vertical faces of the cheek and wing walls originally had a bush-hammered finish. This finish has eroded and the concrete surface is now covered with exposed aggregate. Originally, most other surfaces had a smooth concrete surface. (See Photo 349). The concrete copings and parapet walls on top of the bridge extend the length of the bridge's span and approaches. (See Photos 347, 350). The copings are similar to battlements or merlons. All of the original copings were pre-cast concrete; currently, the bed joints on 30% of these are open and exposed. Some of these copings also display signs of severe spalling. (See Photo 354). Approximately 60% of these copings have been replaced over time with less ornate, differently detailed, and newer copings. (See Photo 355). Sixty percent of the lantern bases and posts that surmount the bridge display spalling. Decorative stringcourses extend the length of the bridge along the exterior base of each parapet wall. The surfaces of each parapet wall, copings, posts, and lantern bases facing the road have been painted. The bridge's parapet walls are in good condition overall; however, there is cracking in four locations where a cold joint separates sections of the bridge's span. (See Photo 356). The cracking has caused expansion and spalling of concrete around the joint. This has been exacerbated by moisture penetrating the joints and the adverse effects of freeze-thaw cycles. Cracking continues from the parapet wall through the cheek wall and along the arch's curve towards the buttresses. On the north end of the east arch there is an area of spalling and cracking 6'

– 0" in length. (See Photo 357). De-icing and other soluble salts and mineral deposits leeching down from the roadway have formed a thick coating on this part of the bridge. (See Photo 358). Cracking and spalling in this area has exposed a section of the steel reinforcing. This reinforcing is now rusting because of exposure to water and soluble salts. On the south end of the east parapet wall, the cracking continues through the asphalt paved sidewalk. (See Photo 360). Cracking and spalling along this joint on the south end of the west parapet wall has widened the joint to about 1". (See Photo 360). This open and exposed joint is now extremely susceptible to water penetration and the adverse effects of freeze-thaw cycles. Surface cracking, soiling and water staining are visible on the arch's surface from the paths under the bridge. (See Photo 361). The concrete walls along both paths have been painted white and are now covered with graffiti. Large sections of each wing wall are covered with graffiti. (See Photos 362, 363).

#### WORK PLAN

##### STRUCTURAL INVESTIGATION

Examine the underside of the bridge structure, paying particular attention to the concrete arch to determine its structural integrity. Probe the top of the arch, exposing some concealed areas to determine its structural integrity.

##### 2. REHABILITATION PLAN

###### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain

- approval from the NJ State Historic Preservation Office (SHPO).
- 1.3 Provide shoring and bracing as needed for all removals and as required for all work.
  - 1.4 Selectively remove for reinstallation in accordance with SHPO approved plans:
    - 1.4.1. Original concrete battlements/copings as required for concrete repairs.
  - 1.5 Selectively remove for replacement by new materials:
    - 1.5.1 Severely spalled and cracked lantern bases.

#### DIVISION 2: SITE WORK – WITHIN 10’ OF BRIDGE

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove trees and large plants within 5’ of bridge based on consultation with a landscape architect.
- 2.3 Provide site planting, based on historic planting plans, including additional soil to restore the grade to historic levels; stabilize the earthen banks adjacent to the wing walls in a manner consistent with the historic design.
- 2.4 Provide grading and drainage to the site to prevent erosion and aid storm water management.
- 2.5 Replace the old metal railing along the path with a new railing compatible with other railings in the park.

#### DIVISION 3: CONCRETE

- 3.1 Use existing historic lantern bases and historic drawings to manufacture patterns to replicate and reproduce current historic lantern bases and battlement/copings.
- 3.2 Replace all deteriorated concrete features (lantern bases and battlement/copings) with pre-cast concrete to match original in color, texture, dimension and detail.

- 3.3 Patch all minor damaged historic concrete with new concrete patching mortar to match existing historic concrete in color, texture and finish.
- 3.4 Remove all significantly damaged concrete and replace in-kind based on scientific analysis.
- 3.5 Prepare and coat all exposed areas of steel reinforcing prior to concrete repairs.
- 3.6 Remove all accumulations of mineral/salt deposits.
- 3.7 Clean all concrete surfaces including the removal of all graffiti, mineral deposits and organic growth.

#### DIVISION 7: THERMAL AND MOISTURE PROTECTION

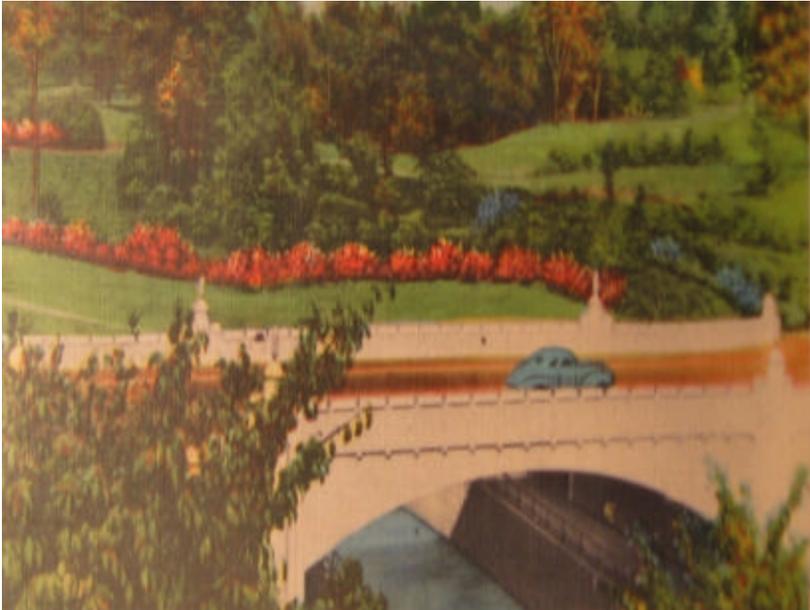
- 7.1 Repair or replace the cheek wall, expansion joint fill material.

#### DIVISION 9 FINISHES

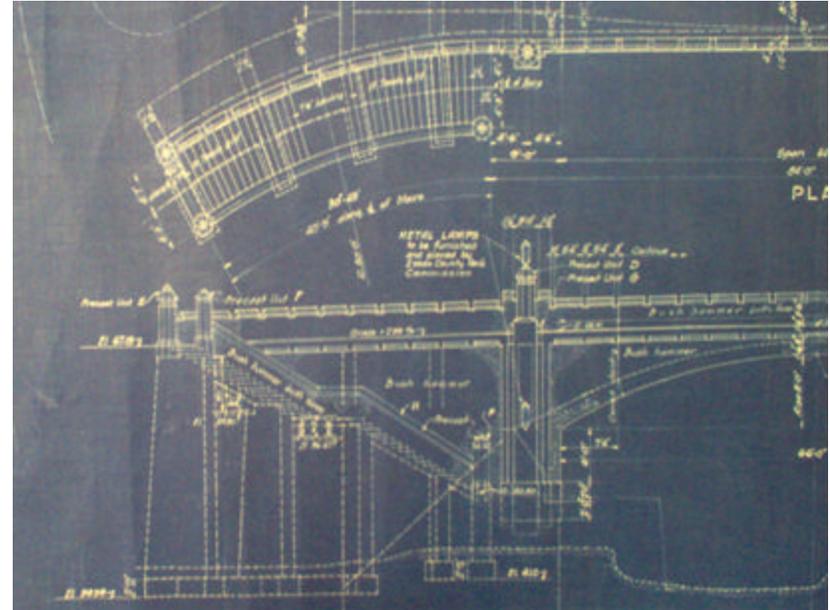
- 9.1 Remove existing paint on all bridge surfaces. New coatings to be provided based on performance analysis and SHPO approval.
- 9.2 Provide new mineral, silicate coatings – color to match original based on scientific analysis of existing concrete. Coatings are to provide protection against continued erosion, water penetration and subsequent rusting of steel reinforcing. New coatings to be provided based on performance analysis and SHPO approval.

#### DIVISION 16 LIGHTING

- 16.1 Replace, where missing, all ornamental light fixtures on top of piers. New fixtures to match existing original historic luminaries based on research and analysis of historical documents. Provide non-breakable lenses. Confirm condition and adequacy of existing wiring/conduit.



Historic Image 6  
A color post card from the 1930's, illustrating a bird's eye view of the bridge.



Original Drawing 30  
A blueprint of the staircase and south end of the bridge.





Photo 348  
The staircase leading from a path along the Second River to the top of the bridge; note the graffiti on the wall.



Photo 349  
From the path that goes under the bridge, the arc of the wing wall is visible on the north side of the bridge; note that the buttress dividing the cheek and wing wall.



Photo 350  
The wing and parapet wall on the north side of the bridge; note that the top of the post has severely spalled and many of the battlements surmounting the parapet walls have been replaced.



Photo 351  
One of the posts that terminate the parapet wall; note that this post is in good condition and has been painted along with the wall.



Photo 352  
A lantern base that surmounts one of the buttresses; note the severe spalling.



Photo 353  
Large sections of concrete in the river below the bridge; note the significant amount of graffiti covering both walls.



Photo 354  
Severely spalled surface of an original coping.



Photo 355  
Two new battlements on top of the parapet wall; note that the quality of workmanship and attention to detail is inferior in the newer battlements.



Photo 356  
Cracking along the cold joint in the parapet wall continues through the cheek wall; note the differences in the concrete finishes between the wall and the buttress.



Photo 357  
Cracking and spalling where the arch meets the vertical face of the west cheek wall; note the exposed and rusting steel reinforcing.



Photo 358  
Mineral deposits formed by de-icing and other soluble salts carried by water migration from the road and sidewalk surfaces.



Photo 359  
This crack continues from the parapet wall to the sidewalk.



Photo 360  
This crack is directly across the street in the same location.



Photo 361  
Cracking on the surface of the arch; note the soiling and water staining.



Photo 362  
A painted wall covered with graffiti on the south side of the bridge.



Photo 363  
The north wing wall on the east side of the bridge is covered with graffiti.



Photo 364  
The parapet and wing wall adjacent to the staircase are covered with graffiti.

## 39. MT. PROSPECT AVENUE BRIDGE

### INTRODUCTION

The Mt. Prospect Avenue Bridge, (see Photo 365), is owned by the City of Newark. The architect and date of construction are unknown.

The Mt. Prospect Avenue Bridge is a reinforced concrete arched bridge that rests on a concrete foundation. This bridge is one of six over the Second River in Branch Brook Park. The arched openings on each side of the bridge support cheek walls, two sidewalks and the roadway. The bridge's overall width is approximately 50' – 0". Each cheek wall is constructed from reinforced concrete. Both walls are in fair condition with spalling and cracking concrete as well as exposed and rusting steel reinforcing. There is soiling organic growth. (See Photo 366). Two wing walls extend from each of the bridge's cheek walls, four in total. Reinforced concrete parapet railings surmount each cheek wall. The parapet railings are in fair condition overall including some areas of significant spalling and cracking as well as organic growth. (See Photos 367, 368). Mt. Prospect Avenue, an asphalt-paved, two-lane road, crosses over the bridge. On each end of the bridge, the soil and rock fill embankments slope steeply toward the Second River. All embankments are eroded and covered with fallen tree branches, bushes, weeds and garbage. (See Photo 369). Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the Summer Avenue Bridge.

### DESCRIPTION/CONDITIONS

### SITE

The Mt. Prospect Avenue Bridge crosses over the Second River in the Branch Brook Park Extension. (See Photo 371). The bridge and its adjacent site are located on a small hill that slopes up from Mill Street towards the south. (See Photo 373). Mill Street runs parallel to the Second River for most of its course through the park. A grassy area of the park approximately 200' – 0" feet wide lies between Mill Street and the river. Directly north of the river's bank, a dirt path runs parallel to the river and Mill Street. Steeply sloped embankments on all sides of the bridge are located between the cheek walls and the concrete retaining walls of the Second River. A steel pipe railing surmounts the retaining wall on the south west side of the bridge. Directly east of the bridge, a large pipe spans across the Second River supported on brownstone piers. The direction of the asphalt road over the bridge is north/south and the bridge is at a roughly perpendicular axis to the river. Two concrete sidewalks are located between Mt. Prospect Avenue and the parapet railing on each side of the bridge. Concrete curbs are placed between Mt. Prospect Avenue and the bridge's adjacent site. Small chain link fences extend north from the parapet railings. The bridge's embankments are eroded and covered with large trees, bushes, exposed roots, branches and weeds. There is a significant amount of vegetation and garbage around the site. Within 10' – 0" of the bridge along both sides of the river there is a considerable amount of plant growth and garbage.

### CONCRETE

The Mt. Prospect Avenue Bridge is a steel-reinforced concrete arched bridge. The bridge's arch supports cheek walls, two sidewalks and the roadway. The concrete surface has cracked and spalled significantly in some areas, and much of the surface is covered lightly with organic growth. Over time, sections of the parapet railing have been patched

with mortars of varying colors, textures and compositions; several campaigns are apparent. (See Photo 370). Visible, remedial patching of the concrete consists primarily of mortar and concrete.

The two parapet railings on each side of the bridge are constructed from steel reinforced concrete. Each railing has exposed aggregate at the surface, caused by wear and weathering over time. The curb at the base of each railing is 1' – 10" in width and 6" in height. Each curb is in fair condition and displays some cracking and spalling. There is a significant amount of plant growth at the base of the east curb. There are nine oval openings in the parapet railing between each post. (See Photo 371). The distance between each post is approximately 10' – 5" and the overall height of the railings is 4' – 3". The top of each railing is approximately 12" wide. This concrete coping has cracked and spalled severely in some locations. (See Photos 372, 373). Typically, the east parapet railing displays more damage than the west railing. The sidewalks on each side of the bridge are approximately 8' – 0" in width. Each sidewalk is in fair condition with some minor cracking, spalling and plant growth in cracks. The asphalt-paved roadway over the bridge is approximately 30' – 0" in width and in good condition

The west cheek and wing walls are in fair condition. (See Photo 365). Concrete surfaces display cracking, spalling, organic growth and soiling. Severe spalling occurs on the southwest wing wall. Approximately 80% of the top of this wall has spalled off. (See Photo 376). The vertical face of the cheek wall and the northwest wing wall display some spalling, organic growth and soiling. (See Photo 375). Exposed and rusting steel reinforcing is visible in most locations where significant spalling has occurred.

The east cheek and wing walls are in fair condition. (See Photo 376). Concrete surfaces display cracking, spalling, organic growth, graffiti and soiling. Severe spalling occurs on the southeast wing wall. Areas of spalling in this wall vary from approximately 1' – 0" to 10' – 0". (See Photo 366). The vertical face of the cheek wall and the northeast wing wall display spalling, organic growth, graffiti and soiling. Where spalling has occurred in most locations, exposed and rusting steel reinforcing is visible. (See Photo 377).

The bridge's archway displays significant cracking and spalling. (See Photo 378). Significant amounts of organic growth, efflorescence and graffiti are visible from the banks of the Second River. (See Photo 377). Severe damage to all concrete surfaces has been caused by water migrating through open and exposed cracks in the concrete. The adverse effects of freeze-thaw cycles has exacerbated the water damage causing severe cracking and spalling on both sides of the bridge. Sections of the bridge have been painted various colors over time, (See Photo 378), and most of that paint has cracked and peeled off while some painted areas are still visible.

#### STEEL FENCES

The chain link steel fence that extends from the ends of each parapet railing is in good condition.

#### CONCRETE SIDEWALK

The concrete sidewalk and curb on each side of the bridge is approximately 8' – 0" wide and in good condition.

#### ASPHALT ROADWAY

The asphalt roadway over the bridge is approximately 30' – 0" wide and in good condition.

## WORK PLAN

### STRUCTURAL INVESTIGATION

Examine the underside of the bridge structure, paying particular attention to the reinforced concrete arch to determine its structural integrity. Probe the top of the arch, exposing some concealed areas to determine its structural integrity.

#### 1. REHABILITATION PLAN

##### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).
- 1.3 Provide shoring and bracing as needed for all removals and as required for all work.

##### DIVISION 2: SITE WORK – WITHIN 10' OF BRIDGE

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove trees and large plants within 5' of bridge based on consultation with a landscape architect.
- 2.3 Provide site planting, based on historic planting plans, including additional soil to restore the grade to historic levels and stabilize the earthen banks adjacent to the wing walls and above the river's concrete retaining walls.

- 2.4 Provide grading and drainage to the site to prevent erosion and aid water runoff.
- 2.5 Remove all plant and grass growth from the roadway.
- 2.6 Provide expansion joint and sealant at sidewalks.

##### DIVISION 3: CONCRETE

- 3.1 Patch all minor damaged historic concrete with new concrete patching mortar to match existing historic concrete in color, texture, composition and finish.
- 3.2 Remove all significantly damaged concrete and replace in-kind based on scientific analysis.
- 3.3 Prepare and coat all exposed areas of structural steel reinforcing prior to concrete repairs.
- 3.4 Clean all concrete surfaces including the removal of all graffiti, mineral deposits and organic growth.

##### DIVISION 7 THERMAL AND MOISTURE PROTECTION

- 7.1 Replace the cheek wall and expansion joint fill material.

##### DIVISION 9 FINISHES

- 9.1 Remove existing paint on all bridge surfaces. New coatings to be provided based on performance analysis and SHPO approval.
- 9.2 Provide new mineral, silicate coatings – color to match original based on scientific analysis of existing concrete. Coatings are to provide protection against continued erosion, water penetration and subsequent rusting of steel reinforcing. New coatings to be provided based on performance analysis and SHPO approval.



Photo 365  
View of the west cheek and wing wall; note the retaining wall, drain pipe and steel pipe railing.



Photo 366  
Severe spalling on the southeast wing wall.



Photo 367  
The east parapet railing; note that it is in good condition overall but does have some areas of severe spalling and cracking.



Photo 368  
The west parapet railing; note that it is in good condition overall but it has suffered weathering, which has exposed the concrete aggregate.



Photo 369  
Embankments on the northwest side of the bridge; note the weeds and debris that are typical on all sides of the bridge.



Photo 370  
An area of remedial concrete patching at the base of an oval opening on the east side of the bridge.



Photo 371  
Oval openings on the east side of the bridge showing the weathered surface; note the organic growth directly below the top of the railing.



Photo 372  
View looking down at cracking and spalling concrete on top of the railing; note that the cracks have absorbed a significant amount of moisture.



Photo 373  
An area of severe spalling and missing concrete on top of the east railing; note the grass and weeds growing from cracks in the sidewalk.



Photo 374  
Severe spalling on the southwest wing wall; note the erosion around the site and the steel barrels at the bottom of the photo.



Photo 375  
The west cheek and wing walls are in good condition overall; note that there are areas of spalling and organic growth.



Photo 376  
The east cheek and wing walls are in good condition overall; note the pipe crossing the Second River directly east of the bridge.



Photo 377  
An area of spalling and cracking on the northwest wing wall; note the exposed and rusting steel reinforcing.



Photo 378  
View of the bridge's archway; note the soiling, graffiti and organic growth



Photo 379  
View of the bridge's west vertical face and archway; note the soiling, graffiti and organic growth.



Photo 380  
Chain link fence on the northeast side of the bridge; note the green paint on the fence and wing wall.

## 40. SUMMER AVENUE BRIDGE

### INTRODUCTION

The Summer Avenue Bridge, (see Photo 381), is owned by the City of Newark. The architect and date of construction are unknown.

The Summer Avenue Bridge is a brownstone arched bridge that rests on a concrete foundation. This bridge is one of six over the Second River in Branch Brook Park and the only arched bridge constructed entirely from brownstone. The arch and arched openings on each side of the bridge support cheek walls, one sidewalk and the roadway. Each cheek wall is constructed from tooled and stippled, coursed, ashlar brownstone. Both walls are in extremely poor condition with open and exposed mortar joints, spalling brownstone and significant organic growth. (See Photo 382). Two wing walls extend from each of the bridge's cheek walls, four in total. Parapet walls, copingstones and modern steel fences surmount each cheek wall. Parapet walls and copingstones are in poor condition, including open and exposed mortar joints, graffiti and organic growth. (See Photo 383). Summer Avenue, an asphalt-paved, two-lane road, crosses over the bridge. On each end of the bridge, the soil and rock fill embankments slope steeply toward the Second River. All embankments are covered with fallen tree branches, bushes, weeds garbage and displaced brownstone from the bridge. (See Photo 384). Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the Summer Avenue Bridge.

### DESCRIPTION/CONDITIONS

### SITE

The Summer Avenue Bridge crosses over the Second River in the Branch Brook Park Extension. (See Photo 383). The bridge and its adjacent site are located on a small hill that slopes up from Mill Street towards the south. (See Photo 385). Mill Street runs parallel to the Second River for most of its course through the park. A grassy area of the park approximately 200' – 0" feet wide lies between Mill Street and the river. Directly north of the river's bank, a dirt path runs parallel to the river and Mill Street. Steeply sloped embankments on all sides of the bridge are located between the cheek walls and the concrete retaining walls of the Second River. The direction of the asphalt road over the bridge is north/south, and the bridge is at a roughly perpendicular axis to the river. A concrete sidewalk is located between Summer Avenue and the east side of the bridge. The west side of the bridge has no sidewalk. Concrete curbs are placed between Summer Avenue and the bridge's adjacent site. The bridge's embankments are eroded and covered with large trees, bushes, fallen tree limbs, branches, weeds, bottles, cans and rocks. There is a significant amount of vegetation and garbage around the site. Within 10' – 0" of the bridge along both sides of the river, there is a considerable amount of plant growth and garbage.

### MASONRY AND CONCRETE

The Summer Avenue Bridge is a tooled and stippled, coursed ashlar, brownstone arched bridge. Arched openings on each side of the bridge support cheek walls and a sidewalk to the roadway; they lead to the brownstone archway under the bridge. (See Photos 381, 382). Original brownstone blocks comprising the bridge are approximately 1' – 0" in height and 3' – 8" in length. Their tooled brownstone surfaces have eroded and spalled considerably and are covered with organic growth. Vegetation including vines, plants and one large tree,

which is growing at the northwest, are severely damaging the brownstone masonry by weakening mortar joints and cracking brownstone. (See Photo 386). Over time the bridge has been completely repointed with mortars of varying colors, textures and compositions; several campaigns are apparent. This repointing appears to have changed the width of the original mortar joints, widening them with each consecutive repointing. (See Photo 387). One hundred percent of the brownstone masonry has open and exposed joints and needs to be repointed. Visible, remedial patching of the masonry includes bricks, mortar, concrete, concrete blocks and slate.

Two courses of brownstone block masonry comprise parapet walls that cap cheek walls on each side of the bridge. (See Photo 388). Surmounting each parapet wall are rectangular, beveled copingstones. The copingstones vary greatly in length from 1' – 4" to 7' – 10". Each copingstone is approximately 7" in height and 2' – 0" in width. These brownstone block parapet walls and copingstones are in poor condition. (See Photo 389). All mortar joints are open and exposed or display signs of hairline cracking. Various attempts at repointing are visible. A significant amount of brownstone has been replaced with concrete at the south end of the west parapet wall. (See Photo 390). Bluestone has been used instead of brownstone to replace copings surmounting the south end of the west wing wall. (See Photo 391). Brownstone surfaces on approximately 85% of both walls display signs of cracking, spalling, scaling and delaminating. Both parapet walls are covered with plants, organic growth and graffiti. A modern steel fence, in good condition, has been placed on top of each wall. Its posts are anchored into the stone coping.

The west cheek and wing walls are in poor condition. Brownstone and mortar surfaces have cracked, spalled, eroded and delaminated. One

hundred percent of the mortar joints are open and exposed or covered with hairline cracks and organic growth. (See Photo 392). Below the copingstones an area approximately 12' – 0" in length and 5' – 0" in height displays remedial patching with bricks covered with mortar. (See Photo 393). This area of patching has failed, as cracking and spalling of the mortar has exposed bricks underneath. (See Photo 396). Water runoff from the top of the bridge's deck and parapet wall has eroded the mortar, visibly staining the brownstone. A large tree is severely damaging brownstone and mortar joints on the bridge's northwest wing wall. (See Photo 395). The tree has displaced brownstone and cracked the wall. (See Photo 398). Remedial patching with brick and mortar is visible above the tree. A large iron water pipe pierces the wall directly below the tree. (See Photo 397). Water runs from an opening in the pipe's bottom. The pipe does not seem to be damaging the wall. Almost all brownstone and mortar surfaces on the west cheek and wing walls are covered with organic growth, plants and graffiti.

The east cheek and wing walls are in poor condition. (See Photo 381). Brownstone and mortar surfaces have cracked, spalled, eroded and delaminated. One hundred percent of the mortar joints are open and exposed or covered with hairline cracks and organic growth. Approximately 30% of the brownstone has severely spalled. (See Photo 398). Entire surfaces of brownstone blocks have detached. (See Photo 399). Delaminating brownstone is visible along the bedding plane of many blocks. (See Photo 400). Severe erosion and weathering is visible on approximately 60% of the blocks. Efflorescence and organic growth are apparent on many surfaces.

The bridge's arch and archway display significant cracking and spalling. Significant amounts of organic growth and efflorescence is visible from the banks of the Second River. (See Photos 401, 403).

Severe damage to the east and west cheek and wing walls has been caused by water migrating through open and exposed mortar joints and brownstone in the parapet walls and copingstones. The adverse effects of freeze-thaw cycles have exacerbated water damage, causing severe cracking and spalling on both side of the bridge.

### STEEL FENCES

The steel fence on top of the parapet walls and copingstones is in good condition with minor rusting and peeling paint. Site investigations have revealed that this is not the original fence. Damage caused by older steel fence anchors is visible in the copingstones. The chain link steel fence that extends from the ends of each wing wall is in good condition, but downgrades the overall appearance of the structure.

### CONCRETE SIDEWALK

The concrete sidewalk and curb on the east side of the bridge is approximately 6' – 0" wide and in good condition.

### ASPHALT ROADWAY

The asphalt roadway over the bridge is approximately 31' – 0" wide and in good condition. There is a concrete curb.

## WORK PLAN

### STRUCTURAL INVESTIGATION

Examine the underside of the bridge structure, paying particular attention to the brownstone arch to determine its structural integrity.

Probe the top of the arch, exposing some concealed areas to determine its structural integrity.

### 3. REHABILITATION PLAN

#### DIVISION 1: GENERAL REQUIREMENTS

- 1.7 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.8 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).
- 1.9 Provide shoring and bracing as needed for all removals and as required for all work.
- 1.10 Selectively remove for reinstallation in accordance with SHPO approved plans:
  - 1.10.1 Brownstone masonry as required for masonry repairs.
  - 1.10.2 Steel fence on top of copingstones as required for masonry repairs.
- 1.11 Selectively remove for replacement by new materials:
  - 1.11.1 Remedial concrete patching on the south side of the west parapet wall.
  - 1.11.2 Bluestone coping on top of the west wing wall.
  - 1.11.3 Remedial brick and concrete block patching on the west cheek wall.

#### DIVISION 2: SITE WORK – WITHIN 10' OF BRIDGE

- 2.10 Remove and legally dispose of all debris from the site, including: clearing away plant overgrowth and removal of all garbage.
- 2.11 Remove trees and large plants within 5' of bridge based on consultation with a landscape architect.

- 2.12 Provide site planting, based on historic planting plans including additional soil to restore the grade to historic levels and stabilize the earthen banks adjacent to the wing walls and above the river's concrete retaining walls.
- 2.13 Provide grading and drainage to the site to prevent erosion and to manage storm water.

#### DIVISION 4: MASONRY

- 4.1 Stone
  - 4.1.1 Replace all severely deteriorated brownstone with new brownstone to match existing historic in size, color and texture.
  - 4.1.2 Patch selected damaged historic brownstone with restoration mortar to match existing historic brownstone in color and texture.
  - 4.1.3 Remove incompatible brownstone patches and patch with restoration mortar to match historic brownstone in color and texture.
  - 4.1.4 Rake and repoint all brownstone mortar joints, except at copingstones with mortar to match original in color and texture based on scientific sampling.
  - 4.1.5 Retool selected brownstone surfaces, restoring them to a facsimile of their original condition based on historic images and documentation.
  - 4.1.6 Clean all brownstone masonry and mortar joints including removing all plant growth, moss and lichen as well as all graffiti.
  - 4.1.7 Replace bluestone units with brownstone that matches the historic brownstone in color, finish and size.
  - 4.1.8 Provide biocide to remove and limit future organic growth.

#### DIVISION 7: THERMAL AND MOISTURE PROTECTION

- 7.1 Provide backer rods and sealant at the tops and sides of all copingstones. Sealant should match the original mortar color.



Photo 381  
View looking west towards the Summer Avenue Bridge; note the spalled and deteriorated surface of the brownstone.



Photo 382  
View looking east towards the Summer Avenue Bridge; note the significant amount of plant growth and the area of brick patching covered with white mortar.



Photo 383  
The parapet wall and metal fence atop the cheek wall; note the poor condition of the brownstone and the section of concrete patching.



Photo 384  
View southeast towards the bridge; note the significant amount of plant growth, including a tree growing from the wing wall.



Photo 385  
View south along Summer Avenue as it slopes up from Mill Street.



Photo 386  
Plants and green organic growth covering brownstone surfaces on the west side of the bridge; note the open and exposed horizontal mortar joints.



Photo 387  
Substantially widened mortar joints caused by remedial patching of masonry on the west cheek wall.



Photo 389  
The north end of the east parapet wall; note the change in grade from left to right. Also note the severely spalled brownstone surfaces and graffiti.



Photo 389  
Remedial patching of copingstones with concrete; note that organic growth has discolored the stone surface, turning it green.



Photo 390  
A large section of the parapet wall patched with concrete.



Photo 391  
Bluestone is being used instead of brownstone as material for coping on top of the south end of the west wing wall.



Photo 392  
Looking down from the river bank towards the northeast wing wall, retaining wall and the river; note the open and exposed joints.



Photo 393  
A section of the west cheek wall patched with bricks, concrete blocks and covered with mortar; note the vines covering the surfaces.



Photo 395  
A detail of the remedial patching of the west cheek wall with bricks, concrete blocks and mortar.



Photo 395  
A tree growing out of the south west wing wall; note the pipe piercing the wall below the tree and the significant amounts of vegetation and organic growth.



Photo 396  
The tree and its roots have caused significant damage to the wall; note the cracked and displaced masonry and the remedial brick patching.



Photo 397  
The iron pipe in the wall; note the water coming out the bottom of the pipe.



Photo 398  
The east cheek and parapet wall; note the fence on top of the copingstones.



Photo 399  
Severely spalling and delaminating brownstone; note that the once well-dressed surface is now weathered and worn.



Photo 400  
Brownstone delaminating along the bedding plane; note that the mortar has completely eroded from the joints.



Photo 401  
View of the archway; note the organic growth and efflorescence covering the surfaces.



Photo 403  
Visible staining and soiling of the archway caused by organic growth and efflorescence from water penetration.



Photo 403

View looking down at the top surface of the copingstones; note the two round holes left from when an older fence was removed.

## 41. FOOTBRIDGE

### INTRODUCTION

This footbridge was constructed in 1938. The engineers for the project were A. Burton Cohen, Construction Engineers (1 Madison Avenue, NYC). The bridge was constructed as a pedestrian crossing over the Second River. (See Photo 404).

Original drawings and blueprints of the existing bridge are located at the Essex County Department of Parks, Recreation and Cultural Affairs (Newark, NJ). They include sections, plans and elevations. (See Original Drawing & Historic Image 33). These drawings provide configurations and overall dimensions.

The footbridge is a steel, concrete-encased, flat-span bridge that rests on steel-reinforced concrete footings. On the north side of the bridge, a small staircase leads up to the deck. (See Photo 40). On each side of this staircase are two concrete railings. The south side of the bridge is level with the asphalt walking path which continues to the south. Two small, concrete parapet walls function as railing bases on each side of the bridge. These walls are surmounted by steel pipe railings spanning the length of the bridge. There are four concrete posts, two at each end of the bridge. The overall length of the bridge is approximately 48' – 0". The overall width, including both railings, is about 8' – 10". The bridge's concrete deck is approximately 7' – 2" in width. (See Photo 405). There are sections of concrete on the bridge that display spalling and cracking. Spalling on the underside of the bridge has exposed the steel. (See Photo 406). Open joints occur on the bridge between the stair rails and the two posts on the north side of the bridge. Annotated photographs provide visual images with

detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the footbridge.

### DESCRIPTION/CONDITIONS

#### SITE

The footbridge crosses over the Second River in the Branch Brook Park Extension. (See Photo 404). The bridge and its adjacent site are located in a relatively flat area between the intersection of Mill and Dow Streets and Sylvan Avenue. Mill Street runs parallel to the Second River for most of its course through the park. A grassy area of the park lies between Mill Street and the river. Directly north of the river's bank, a paved concrete sidewalk runs parallel to the river and Mill Street and leads to the bridge's steps. In this section of the park the Second River is bounded by concrete retaining walls. The direction of the bridge is north/south and the bridge is at a roughly perpendicular axis to the river. (See Photo 407). The site around the bridge is covered with large trees, bushes, exposed roots, branches and weeds. There is a significant amount of vegetation and garbage around the site. Within 10' – 0" of the bridge along both sides of the river there is a considerable amount of plant growth and garbage.

#### CONCRETE

The footbridge is a steel, concrete-encased, flat-span bridge that rests on steel-reinforced concrete footings. The bridge's span supports parapet walls, steel-pipe railings and the concrete deck. The concrete surface has cracked and spalled significantly in some areas, and much of the surface is covered with organic growth. (See Photo 408). The two parapet walls on each side of the bridge are constructed from

steel-reinforced concrete. Each wall has exposed aggregate at the surface caused by wear and weathering over time. The parapet walls are approximately 10" in width and 2' – 0" in height. There are six recessed panels on each side of the parapet wall. These are framed by five vertical concrete members and the posts on each end of the bridge. Vertical sections of the steel pipe railing surmount each of these members and are bolted into their tops. The underside and deck of the bridge display the most significant cracking and spalling. (See Photo 409). Exposed and rusting steel is visible underneath the bridge and on the vertical surfaces of the parapet walls. (See Photo 409, 410). The bridge's deck displays severe spalling and is covered with dirt and organic debris. (See Photo 398). The staircase leading up to the bridge is in good condition overall with minor chipping. (See Photo 404). There are open joints between the posts and staircase on the south side of the bridge. Most of the joint material in these locations is missing. (See Photo 412).

Significant amounts of organic growth and efflorescence are visible from the banks of the Second River. Severe damage to all concrete surfaces has been caused by water migrating through open and exposed cracks in the concrete. The adverse effects of freeze-thaw cycles have exacerbated the water damage, causing severe cracking and spalling on both side of the bridge.

#### STEEL PIPE RAILING

The steel-pipe railing is in good condition overall with some rusting and cracked, peeling paint. The railing is covered with many coats of paint.

#### WORK PLAN

#### STRUCTURAL INVESTIGATION

Examine the bridge structures paying particular attention to the exposed steel and adjacent concrete surfaces to determine their structural integrity. Probe the top of the bridge, exposing some concealed areas to determine their structural integrity.

#### 1. REHABILITATION PLAN

##### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).
- 1.3 Provide shoring and bracing as needed for all removals and as required for all work.

##### DIVISION 2: SITE WORK – WITHIN 10' OF BRIDGE

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove large plants within 5' of bridge based on consultation with a landscape architect.
- 2.3 Provide site planting, based on historic planting plans and including additional soil, to restore the grade to historic levels and stabilize the earthen banks adjacent to the wing walls, stair and above the river's concrete retaining walls.
- 2.4 Provide grading and drainage to the site to prevent erosion and aid water runoff.

##### DIVISION 3: CONCRETE

- 3.1 Patch all minor damaged historic concrete with new concrete patching to match existing historic concrete in color, texture, composition and finish.
- 3.2 Remove all significantly damaged concrete and replace in-kind based on scientific analysis.
- 3.3 Prepare and coat all exposed areas of structural steel reinforcing prior to concrete repairs.
- 3.4 Clean all concrete surfaces, including the removal of all graffiti, mineral deposits and organic growth.

#### DIVISION 6: METAL

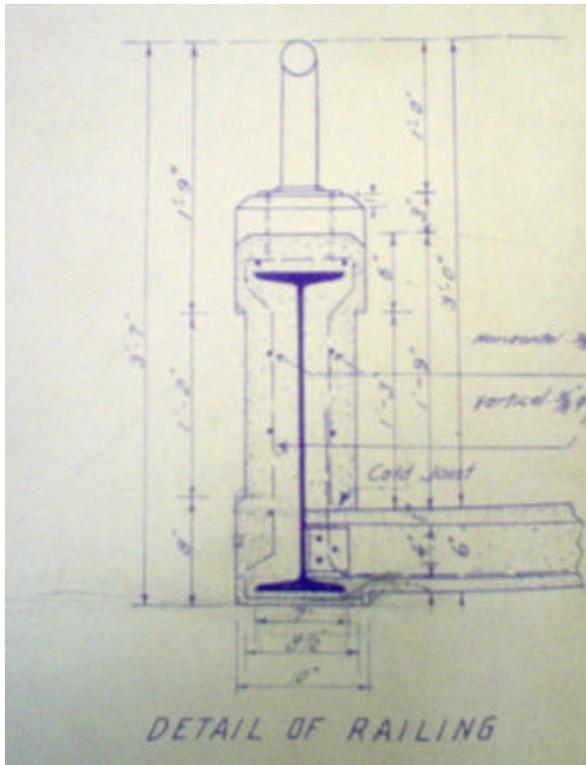
- 6.1 Prepare and paint existing historic steel-pipe railing.

#### DIVISION 7 THERMAL AND MOISTURE PROTECTION

- 7.1 Provide new expansion joint fill material in all areas of the bridge.

#### DIVISION 9 FINISHES

- 9.1 Provide new mineral, silicate coatings, matching the color to the original based on scientific analysis of the existing concrete. Coatings are to provide protection against continued erosion, water penetration and subsequent rusting of steel. New coatings to be provided based on performance analysis and SHPO approval.



Original Drawing 33  
This blueprint from an original drawing illustrates a rail detail.



Photo 404  
View south towards the footbridge; note the bare dirt around the site.



Photo 405  
View of the recessed panels on the parapet wall; note the steel-pipe railing on top of the bridge.



Photo 406  
An area of spalling on the base of the bridge.



Photo 407  
View southwest over the footbridge; note the organic growth and staining on the surface of the bridge.



Photo 408  
View north towards Mill and Dow Streets, looking over the bridge's deck and railing; note the dirt, leaves and organic growth covering the bridge surfaces.



Photo 409  
Spalling and organic growth at the base of the bridge's deck directly below the post at the north end of the bridge.



Photo 410  
A detail of the spalling and organic growth at the north end of the bridge.



Photo 411  
View looking up at the bottom of the bridge; note the areas of rust and water staining.



Photo 412  
Leaves and mud covering the bridge's deck; note that this debris covers a large area of spalling concrete.



Photo 413  
Open and exposed joints at the north end of the bridge.

## 42. BELLEVILLE SENIOR CITIZENS CENTER FIELD HOUSE

### INTRODUCTION

The Belleville Park field house was designed by John and Wilson Ely Architects (Newark, N.J.) in 1921. Alterations, the exact scope of which cannot be established, were made to the building in 1971. The building was altered and expanded again in 1979 by Armon V. Magliaro, P.E. The building currently functions as the Belleville senior citizens center. (See Photo 414).

Original architect's drawings from the 1979 alteration are located at the Essex County Department of Parks, Recreation and Cultural Affairs (Newark, NJ) and include plans, and sections. (See Original Architect's Drawings 34, 35). The original drawings provide configurations and overall dimensions.

The senior citizens center is 70' – 8" from east/west and 58' – 0" north/south. The original building was a rectangle in plan with a large wing extending from the south side added in 1979. The original building has a hip roof, while the addition has a gable roof. The building is a concrete-block structure with a rough stucco finish that is painted yellow. There is cracking in the stucco, some severe, and sections display signs of remedial patching. (See Photo 415). The senior citizens center originally had wooden rafters that extended beyond the building's face and terminated as decorative eave supports. These have been replaced by the current plywood eaves and soffits and are in fair condition except for areas of rotting wood and peeling paint. (See Photo 416). Original drawings also illustrate that the building had a slate roof and copper gutters. Sections of the

current aluminum gutters are in poor condition and missing downspouts. (See Photo 417). The roofing is asphalt shingle and in good condition overall. There are approximately five steel pipe penetrations in the roof and one brick chimney. All of the existing steel sash windows have been covered with heavy steel screens. (See Photo 418). Ten of the original windows have been filled in with concrete block and finished with stucco. (See Photo 414). Six of these windows face Belleville Avenue on the north side of the building. Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the Belleville senior citizens center.

### DESCRIPTION/CONDITIONS

#### SITE

The senior citizens center is located in Belleville Park at its northern end, between Belleville Avenue and the Belleville Park ball fields. (See Photo 419). Directly west of the building is a parking lot. East of the building, the ground slopes down towards the Belleville Park Bathrooms. An asphalt-paved path directly south of the building leads to the parking lot and other park areas. Much of the asphalt paving around the site is cracked and buckled. This has been caused by tree roots, water penetration and the adverse effects of freeze-thaw cycles. (See Photo 420). There are areas of erosion and bare dirt around the site. Sections of the concrete-block walls around the site display severe damage. (See Photo 421).

#### CONCRETE MASONRY

The senior citizens center's walls are constructed from 8" concrete block covered with a rough stucco finish that is painted yellow. Typically, the concrete block walls are in fair condition with cracking and spalling of the stucco, evidencing water penetration or possibly settlement of the masonry. Ten of the original windows have been filled in with concrete block and covered with stucco, six on the north facade and two each on the east and west facades. On the north side of the building, a hole in the wall has been patched with plywood. (See Photo 422). At the base of this wall, a section of the concrete foundation has been exposed. (See Photo 422). There are vertical and horizontal cracks in all of the walls, the cracks ranging in length from approximately 12" to 6' - 0". Although some remain open, most of the cracks have been patched and painted. (See Photo 425).

#### PLYWOOD EAVES AND SOFFITS

The plywood eaves and soffits are in fair condition; however, there are areas of rotted, cracked wood and peeling paint. (See Photo 426). Areas of the soffits display signs of rotting and remedial patching. (See Photos 427, 428).

#### ALUMINUM GUTTERS AND DOWNSPOUTS

The gutters and downspouts are in poor condition. (See Photos 417, 422). The building is missing four of its downspouts, and debris clogging the gutters has led to water damaging the eaves. (See Photo 416).

#### ASPHALT SHINGLE ROOF

In certain areas of the roof there are asphalt shingles which overhang the edge, are damaged and obstruct the gutters. (See Photo 428). Overall, the roof is in good condition.

#### CONCRETE BLOCK SCREEN WALL

The concrete-block, decorative screen wall is in poor condition, and many blocks are either damaged or completely missing. (See Photos 420, 421). This wall should be rebuilt or replaced.

#### DOORS AND WINDOWS

The steel doors and door frames are in good condition and have recently been painted. The stucco around the doors is chipping and the paint is peeling. The building retains its original steel windows. The window sashes are constructed from flat steel bars. (See Photos 418, 429). All the windows are covered with heavy, steel-framed screens. The larger window openings are approximately 6' - 0" in width and 2' - 11" in height. Three 3-over-3, double-hung windows are fitted into each of these openings. The smaller window openings are approximately 4' - 0" in width and 2' - 11" in height. Two 3-over-3, double-hung windows are fitted into each of these openings. The seals around the windows have failed, and all of the steel is beginning to rust.

#### WORK PLAN

##### 1. REHABILITATION PLAN

###### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).

**DIVISION 2: SITE WORK – WITHIN 10’ OF BUILDING FACE**

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove trees and large plants within 5’ – 0” of building, paths, sidewalks, driveways, parking lots and curbs based on consultation with a landscape architect.
- 2.3 Recreate historical site paving (including removal of existing asphalt paving as required), based on detailed research of historical documents and analysis of current site paving. Work to include the removal of all roots from paving area and provisions of appropriate base materials. Plans to be approved by SHPO.
- 2.4 Provide site planting, based on historic planting plans including additional soil to restore the grade to historic levels and stabilize and prevent current and future site erosion.

**DIVISION 4: MASONRY**

- 3.1 Remove existing damaged concrete-block screen wall and provide new historically appropriate wall/fences.

**DIVISION 6: CARPENTRY**

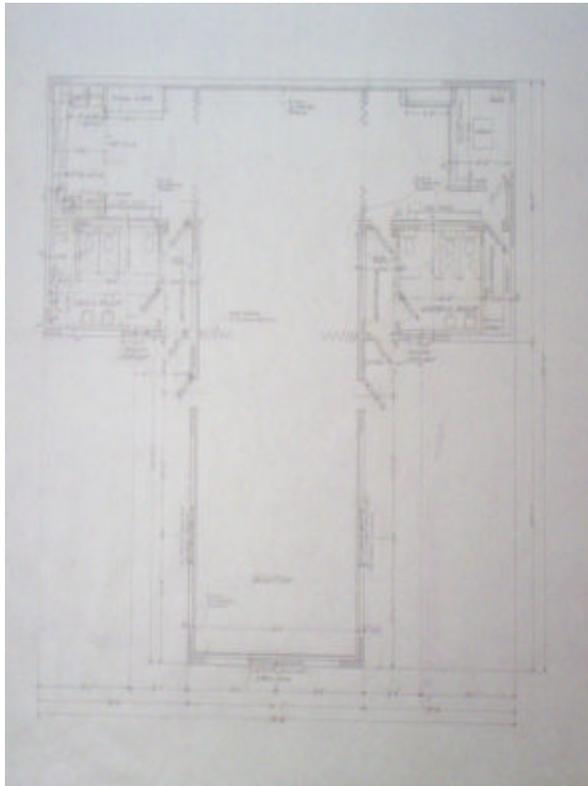
- 6.1 Repair or replace plywood eaves and soffits. Provide selected, new material (laminated wood or synthetic material) for cornice to replace missing and severely deteriorated pieces.

**DIVISION 7: THERMAL AND MOISTURE PROTECTION**

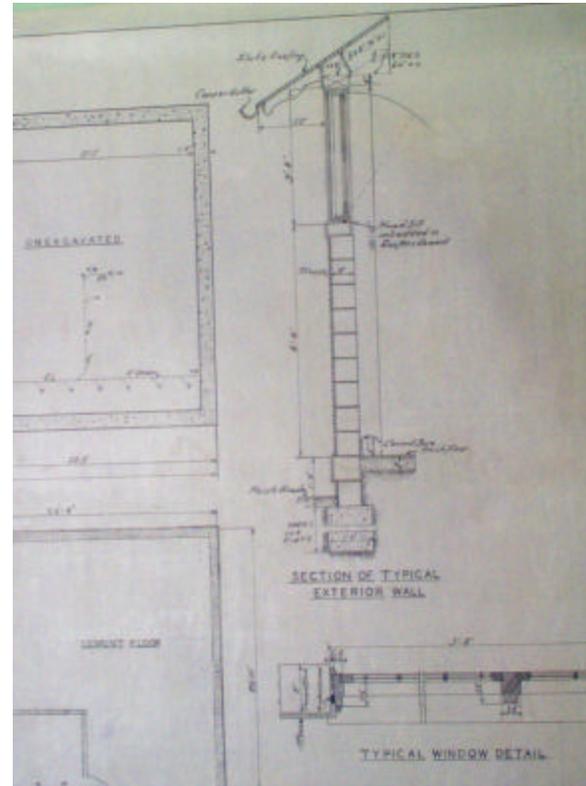
- 7.1 Replace selected damaged or missing asphalt shingles on roof with new asphalt shingles to match existing.
- 7.2 Remove deteriorated sealant from around all steel window perimeters.
- 7.3 Provide flexible sealant around steel window frames at the intersection with masonry.

**DIVISION 9: FINISHES**

- 9.1 Patch stucco at selected areas to match historic stucco finish.
- 9.2 Prepare and paint existing historic steel windows.
- 9.3 Prepare and paint stucco to match historic paint colors based on scientific sampling.



Original Drawing 34  
This plan shows the building after the addition was added in 1979.



Original Drawing 35  
This drawing illustrates a section of the original wall from 1921.



Photo 414  
Overall view of the senior citizens center; note that all the windows on this façade have been infilled.



Photo 415  
Cracked stucco on the southwest wall; note that the crack has been patched and painted.



Photo 416  
Rotting and cracked plywood soffit caused by water damage because of debris collecting in the gutter.



Photo 417  
Cracked and peeling paint on the rake and soffits of the roof; note that the gutter's downspout is missing.



Photo 418  
One of the locked steel screens that covers a steel window.



Photo 419  
View northeast over the baseball field towards the senior citizens center; note that the site is flat.



Photo 420  
View north towards Belleville Avenue; note the buckled and cracked asphalt paving.



Photo 421  
Area of the damaged concrete block wall west of the building.



Photo 422  
Plywood covering a hole in the wall below one of the original windows.



Photo 423  
A section of the exposed foundation on the building's north side; note the eroded soil.



Photo 424  
Cracking on the north wall that has been poorly patched and painted.



Photo 425  
Cracked and peeling paint along the rake of the roof and eaves.



Photo 426  
Rotted wood and peeling paint on the eaves; note that a section of the soffit has been patched with plywood.



Photo 427  
Rotted wood and peeling paint on the soffit; note that the water damage on the soffits of this building usually occurs at the corners.



Photo 428  
Some missing asphalt shingles on the west side of the building; note that the shingles hang down into the gutter.

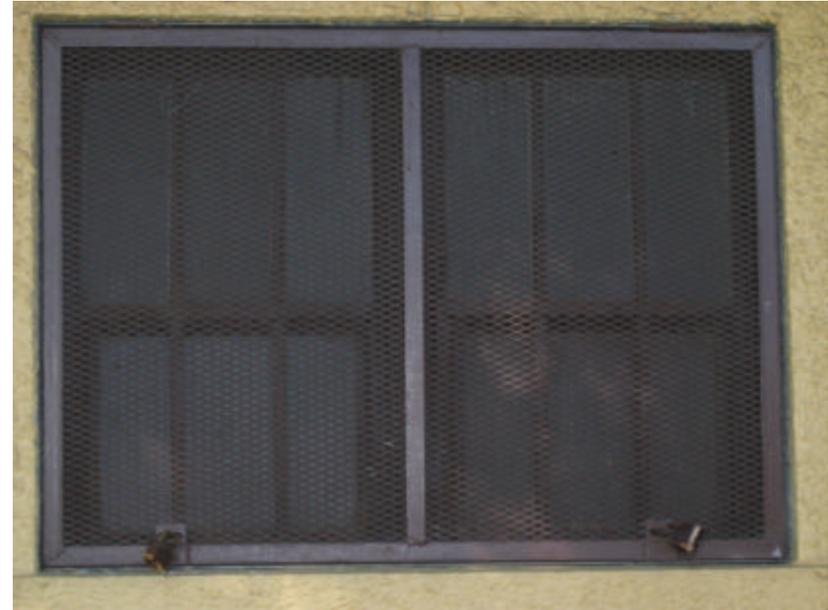


Photo 429  
One of the smaller steel windows; note that the stucco around this window is in good condition.

### 43. BELLEVILLE PARK BATHROOMS / CHILDREN'S SHELTER AND TOOL HOUSE

#### INTRODUCTION

Although no documentary information about the architect exists, the Belleville Park bathrooms were probably designed by John and Wilson Ely Architects (Newark, N.J.) in 1921. (See Photo 430). This assessment is based on similar buildings in the park designed by these architects, specifically the original Belleville Park field house. The building originally functioned as a restroom, children's shelter and tool house. Alterations were made to the building in 1948 by the Essex County Department of Parks; however, it is unclear what specific changes were made. The 1948 drawings are the only dated drawings that exist of this structure.

Original architect's drawings (from the 1948 alternations) are located at the Essex County Department of Parks, Recreation and Cultural Affairs (Newark, NJ). They include plans. (See Original Drawing 36). The original drawings provide configurations and overall dimensions.

The Belleville Park bathroom is approximately 39' – 8" from east/west and 68' – 0" north/south including the covered veranda. An asphalt shingled hip roof covers the building, and a slightly sloped roof covers the veranda. The building is a concrete block structure with a rough stucco finish. Eight square columns surmounted by wood beams and rafters support the covered veranda. (See Photo 432). These columns are reflected by four engaged columns on the building's front façade. There is some cracking in the building's stucco, and sections display

signs of remedial patching. Wood rafters extend beyond the building's face and terminate as decorative eave supports. The building retains its original beaded board wood sheathing as well as two original wood gutters. (See Photo 432). The original covered veranda remains and is in fair condition. The wood features display signs of cracking and rotting in some locations. (See Photo 433). The stucco on some of the eight square columns is cracked. The hopper windows retain their original wood sash. (See Photo 434). The window openings have been covered with steel wire mesh. The original sand courts, directly east and west of the covered veranda, have been covered with asphalt. Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work of the Belleville senior citizens center.

#### DESCRIPTION/CONDITIONS

##### SITE

The Belleville Park bathrooms are located in Belleville Park at its northern end, between Belleville Avenue and the Belleville Park ball fields. Directly west of the building is an asphalt-paved driveway and small parking area. The paving in this area is cracked and in poor condition. (See Photo 436). Directly east of the building the ground is covered with a significant amount of moss and other organic growth. Asphalt paved paths directly south and west of the building lead to other park areas. Much of the asphalt paving around the site is cracked and buckled, evidencing damage by tree roots, water penetration and the adverse effects of freeze-thaw cycles.

### CONCRETE MASONRY

The bathrooms' walls are constructed from 8" concrete block covered with a rough stucco finish that is painted yellow. Typically, the concrete block walls are in good condition, with some cracking and spalling of the stucco evidencing water penetration. (See Photo 436). Most cracking occurs below or perpendicular to the windowsills suggesting water penetration along those joints. (See Photo 437). Organic growth covers sections of the walls, especially along the building's base. (See Photo 438). Eight square columns approximately 1' – 4" by 1' – 4" support the veranda's roof and display evidence of remedial patching and some spalling. (See Photo 439).

### WOOD ROOF STRUCTURE

The wood roof structure is in fair condition overall; however, there are areas of rotted, cracked wood and peeling paint. The veranda's roof is slightly sloped to the east and west and covered with twigs and branches. Beams, approximately 8"x11" at the perimeter and two center columns support the veranda's wooden roof. (See Photos 440, 441). Rafters, approximately 4"x6" @ 16" on center, frame into these beams. Beaded wood board sheathing covers the rafters. The center beam has decorated ends and displays some signs of rotting and cracking. (See Photo 433). Most damage occurs where the roof of the veranda intersects with the roof of the building. (See Photo 432). In these locations, wood is severely rotted in the rafters, beams and gutters. (See Photo 438). Two original wood gutters are located at the east and west sides of the veranda. Severe rotting has occurred in each gutter; however, they are in fair condition considering their function. (See Photo 439). Damage also occurs at the corners of the roof. (See Photo 441)

### WOOD GUTTERS AND DOWNSPOUTS

The gutters and downspouts are missing or were never installed on the building, except for the two wood gutters on the veranda. There is no evidence to suggest that gutters and downspouts were installed, and they do not appear on the plans. The two wood gutters still function but have no downspouts.

### ASPHALT SHINGLE ROOF

The asphalt shingle roof is in good condition overall. (See Photo 441). It has 12 pipe (vent) penetrations and one concrete chimney with copper flashing. The roof over the veranda is covered with branches. This slightly sloped roof needs to be examined to assess its condition.

### CONCRETE AND ASPHALT PAVING

The asphalt paving in the driveway and the small parking area is in poor condition. (See Photo 431). The concrete apron in front of the garage door is severely cracked, evidencing water penetration and the adverse effects of freeze-thaw cycles. (See Photo 442). Each original sand court has been covered with asphalt that is now cracked and buckled. (See Photo 443). The veranda's concrete paving is in fair condition and displays signs of cracking and settlement.

### DOORS AND WINDOWS

The building's main door is metal-covered wood in poor condition. The metal is dented and scratched, and the doorframe is covered with cracked and peeling paint. (See Photo 436). A wood garage door is located at the rear of the building. (See Photo 442). The door is in fair condition and displays some cracking and buckling on the surface. The building retains its original wood frame hopper windows. The

smaller windows are 2' – 7" in width and 3' – 7" in height. The larger windows are 7' – 7" in width and 3' – 7" in height and constructed from three smaller windows. (See Photo 430). Screens built from wood and steel wire mesh cover all windows. (See Photo 444). The window glazing is in fair condition overall but is extremely dirty. About 10% of the glass has been broken or replaced with plywood. (See Photo 446). The paint on all the window frames is cracked and peeling. The sealant around the windows and frames has failed or is missing.

## WORK PLAN

### 1. REHABILITATION PLAN

#### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).
- 1.3 Provide shoring and bracing as needed for all removals and as required for all work.
- 1.4. Selectively remove for replacement by new materials:
  - 1.4.1 Rotted wood gutters as required for gutter repairs.
  - 1.4.2 Rotted wood rafters as required for roofing repairs.
  - 1.4.3 Rotted beaded board wood sheathing as required for roofing repairs.
  - 1.4.4 Cracked concrete apron in front of garage door.
  - 1.4.5 Cracked and buckled asphalt driveway and parking area.

- 1.4.6 Non-original asphalt over sand courts.

#### DIVISION 2: SITE WORK – WITHIN 10' OF BUILDING FACE

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove trees and large plants within 5' – 0" of building, paths, sidewalks, driveways, parking lots and curbs based on consultation with a landscape architect.
- 2.3 Recreate historical site paving, based on detailed research of historical documents and analysis of current site paving. Re-establish sand courts. Work to include the removal of all roots from paving area and provisions of appropriate base materials. Plans to be approved by SHPO.
- 2.4 Provide site planting, based on historic planting plans including additional soil to restore the grade to historic levels and stabilize and prevent current and future site erosion.

#### DIVISION 3: CONCRETE

- 3.1 Patch selected cracks in concrete paving under the veranda.
- 3.2 Remove and replace existing concrete apron in front of garage door.

#### DIVISION 6: CARPENTRY

- 6.1 Repair roof rafters. Provide epoxy repairs and "Dutchman" if necessary.
- 6.2 Repair or replace, historic beaded wood board sheathing that has rotted and cracked with new synthetic material.
- 6.3 Provide selected, new wood, rafters to replace severely deteriorated rafters. New rafters to be constructed of heavy-timber or laminated wood.

#### DIVISION 7: THERMAL AND MOISTURE PROTECTION

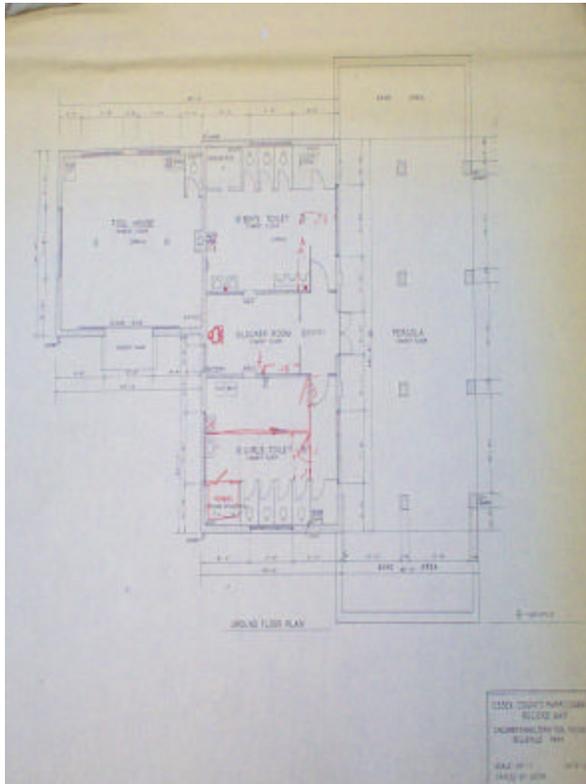
- 7.1 Examine roof over veranda. Based on examination, make recommendations for roofing repairs or, more likely, full replacement.
- 7.2 Replace damaged or missing gutters, downspouts at veranda. Provide downspout boots to match originals based on historic documentation and provide storm drainage system.
- 7.3 Remove deteriorated sealant from around all wood door and window perimeters.
- 7.4 Provide flexible sealant around wood door and window frames at the intersection with masonry.
- 7.5 Patch hole in roof around pipe penetration.

#### DIVISION 8: DOORS AND WINDOWS

- 8.1 Selectively repair, prepare and paint current existing historic wood windows.
- 8.2 Replace broken glazing in windows.
- 8.3 Replace existing damaged front door with new historically appropriate door, based on historic documentation or period prototypes.
- 8.4 Prepare and paint current existing garage door.
- 8.5 Remove wire-mesh guards and provide steel-framed guard with "non-visible" mesh.

#### DIVISION 9: FINISHES

- 9.1 Patch existing historic stucco with restoration mortar to match historic conditions.
- 9.1 Provide new paint over stucco to match historic paint colors, based on scientific sampling and archival research.
- 9.2 Provide stain to match existing on all existing and new exposed wood members.
- 9.3 Clean all stucco, including the removal of all organic growth.



Original Drawing 36

This plan was prepared by the Essex County Parks Commission and is dated from 1948.



Photo 430

Overall view of the Belleville Park bathroom building; note that the site is well shaded.



Photo 431  
The covered veranda extending from the building's front façade; note the square columns.



Photo 432  
One of the severely rotted wood gutters on the east side of the veranda; note the water damage to the sheathing.



Photo 433  
A beam spanning between two of the square columns in the center of the veranda; note that a section of the beam is cracked and rotted.



Photo 434  
Three of the original wood sash hopper windows; note that they are covered by a metal screen.



Photo 435  
An area of paving in front of the garage door; note that this section is cracked, buckled and covered with grass and weeds.



Photo 436  
A large vertical crack below one of the windows.



Photo 437  
A crack that runs parallel to a window; note the staining on the stucco's surface.



Photo 438  
Organic growth and debris at the base of a wall; note that the site has poor drainage in many locations.



Photo 439  
An area of remedial patching on a column.



Photo 440  
The wood framing of the veranda's roof; note that the columns are in good condition overall.



Photo 441  
The rafters and beaded board sheathing; note that the beam is rotted above the right column.



Photo 442  
Rotted wood gutter, eaves, sheathing and rafters caused by severe water penetration and lack of maintenance.



Photo 443  
An original wood gutter is visible above the left column; note the staining on the perimeter beam and the damage to the capital.



Photo 444  
Rotted rafters and sheathing on the west side of the building; note the staining on the wood.



Photo 445  
The asphalt-shingled hip roof; note all the steel pipe penetration and the masonry chimney.



Photo 446  
The wood garage door at the rear of the building; note that the concrete apron is severely cracked.



Photo 447  
One of the original sand courts that has been covered with asphalt; note that the paving is now cracked and buckled.



Photo 448  
One of the original hopper windows in the open position; note the heavy metal screen covering the window opening.



Photo 4 49

Plywood replaces the glass in this section of the window; note that the other windows have broken glass as well.

## 44. OCTAGON FIELD HOUSE

### INTRODUCTION

This Octagon Field House was designed by Rossiter and Wright and constructed around 1920 to replace a temporary shelter structure. The Field House (originally called the Octagon Shelter) was originally used as support for the small children's wading pool. It is built into the embankment of Lake Street to its east and is located toward the southern end of the Middle Division playfields. (See Photo 450). The Field House and the Octagon Shelter are the only similarly shaped structures in the Park. There are no drawings of this site.

The Octagon Field House is an eight-sided, 1-story structure with 2 rectangular wings projecting to the north and south. The octagon is about 30' x 30' and the wings are each 12' x 14'-6". There are 2 protected entry doors. The Field House houses a men's room and a women's room. Annotated photographs provide visual images with detailed condition descriptions. The following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work.

### DESCRIPTION/CONDITIONS

#### SITE

There are two restrooms within the Field House. The site is located on the sloped embankment between the Middle Playfields and Lake Street. It is approached by a wide 7-riser concrete stairway from the playfields on its west. (See Photo 451). The rear, east, Lake Street side is built into the slope, and only ½ of its height is exposed. A stone

wall retains earth to the south and flanks a badly cracked and deteriorated concrete walk. (See Photo 452). The walk accessed a now-closed door opening.

#### BRICK AND STONE MASONRY

The Octagon Field House is constructed from concrete block covered by a rough "pebble dashed finish." (See Photo 454). All surfaces are now painted. There is modest cracking, typically near grade. There is evidence of significant crack patching. Original doors and windows have been removed and filled in with finishes to match the original.

A granite-paved gutter provides for drainage from the east and south. There has been substantial erosion on all sides of the Field House, which has left the immediate surrounding area dirt-covered and devoid of grass and plantings.

#### DOORS

A non-original rolling shutter door covers the 2 hollow metal entry doors. The doors and frames are in poor condition.

#### ROOF

Non-original, bituminous roll roofing clads the 8 sides, Octagon roof and the wings gable roofs. They are in poor condition and have been patched. There is no roof drainage system, which contributes significantly to site erosion. The roof drainage system, was likely integrated with the cornice as an internal gutter and covered during roofing medications.

#### INTERIOR

The interior's block and board walls and concrete floor are painted and are in fair condition. The Field House is currently used for toilet facilities.

### WOOD CORNICE

A wood cornice and fascia, with a 2' bracketed eave, surround the top of the Field House. The eave is faced with tongue-and-groove boards. The cornice has been covered with non-original plywood. (See Photo 452). There are areas along the eave where the wood is cracked and the paint cover is failing. In many cases, the cracking and splitting of the wood goes past the cornice and all the way through the wall. It is likely that this has caused significant rot and water damage on the other side of the cornice and wall. We were unable to get inside the building to verify this, since they are locked and currently used for storage.

### WORK PLAN

#### 1. REHABILITATION PLAN

##### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities, and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).
- 1.3 Evaluate potential for providing upgraded restroom facilities within the structures.
- 1.4 Provide shoring and bracing as needed for all removals and as required for all work.

- 1.5 Selectively Remove in accordance with SHPO approved plans:
  - 1.5.1 All roll roofing.
  - 1.5.2 All damaged roof sheathing.
  - 1.5.3 All plywood cornice covering.

##### DIVISION 2: SITE WORK – WITHIN 10' OF BUILDING FACE

- 2.1 Remove and legally dispose of all debris from site; store all building fabric – for re-use or as model for recreated historic features.
- 2.2 Provide site rehabilitation, based on Treatment Plans, as approved by SHPO.
- 2.3 Provide site planting, including additional soil, based on historic planting plan and in accordance with Treatment Plans.
- 2.4 Provide grading and drainage to the site to prevent erosion and manage storm water.

##### DIVISION 6: CARPENTRY

- 6.1 Provide selected, new (synthetic) material for cornice and sheathing to replace missing and severely deteriorated elements.

##### DIVISION 7: WATER PROTECTION

- 7.1 Replace all bituminous roll roofing material and asphalt shingles to match those being used in Cerone and New Press Box construction.
- 7.2 Provide roof drainage system. Investigate, with historic archival resources and intrusive inspections the original configurations. Provide concealed gutter and downspouts.

##### DIVISION 8: DOORS AND WINDOWS

- 8.1 Remove deteriorated entry doors and provide new metal and historically appropriate doors, based on existing and historical precedents. Temporary replacement doors are scheduled as part of the Middle Division Ballfields restoration.
- 8.2 Remove non-original, obtrusive rolling shutter door. Provide new internally mounted security door or other non-obtrusive security method.

DIVISION 9: FINISHES

- 9.1 Patch stucco, where required, to match existing color and texture.
- 9.2 Paint stucco to match historic paint colors.



Photo 450  
View of The Octagon Field House from Lake Street; note that the east field house walls retain the earth at this highest elevation.



Photo 451  
Detail of the west entry elevation as approached from the Middle Division ballfields; note the extensive erosion.



Photo 452  
Detail of stone retaining wall, granite-paved gutter and poor-condition concrete paving.



Photo 453  
Detail showing Field House painted, "pebble dash" cement plaster and typical eave brackets.



Photo 454  
Detail of Octagon Field House from the southwest showing non-original roll roofing and non-original plywood cladding on cornice.

## 45. SOUTH BRANCH BROOK DRIVE BRIDGE

### INTRODUCTION

The South Branch Brook Drive Bridge, (see Photo 455), was constructed in 1971.

The South Branch Brook Drive Bridge is a steel-reinforced concrete arch bridge that rests on a concrete foundation. This bridge is one of six over the Second River in Branch Brook Park. It is the newest of the six and it replaces an earlier bridge. Large and elliptical arched openings on each side of the bridge support concrete cheek walls, an asphalt, sidewalk and the roadway. Both wing and cheek walls are surmounted by a simple concrete parapet, (see Photo 456), which serves as a guardrail. The parapet wall is terminated on each end by heavy timber rails attached to steel, wide flange posts. Annotated photographs provide visual images with detailed condition descriptions. Following are detailed descriptions, including conditions assessments and a work plan for proposed remedial work of the South Branch Brook Drive Bridge.

### DESCRIPTION/CONDITIONS

#### SITE

The South Branch Brook Drive Bridge crosses over the Second River at the southern end of the Park, north of the Lower Pool and south of Branch Brook Lake. Steep slopes extend from the road down to the river. Branch Brook Drive crosses the bridge perpendicular to the river. The bridge carries an asphalt paved two-lane road with asphalt

paved sidewalk on the north side. The road is approximately 40' – 0" in width with concrete curbs and the overall width including the sidewalk is about 55' – 8". The asphalt-paved walkway surface is in only fair condition with about 8 transverse cracks. The bridge's embankments are covered primarily with bushes and weeds. The southwest embankment has a 10' wide mulch-covered strip. The site is clean with very little debris around the site. The banks at the water's edge are stabilized with concrete grids. Within 10' – 0" of the bridge along both sides of the river, there is a considerable amount of plant growth, except at the southwest embankment.

#### CONCRETE

The North Branch Brook Drive Bridge is a steel-reinforced concrete arched bridge. Arched openings on each side of the bridge support cheek and parapet walls, the road and the sidewalk. The concrete has a smooth finish. The parapet is 3'-8" above the bridge deck. The original exposed concrete is now painted gray. The paint cover is in good condition with modest peeling. The concrete is in good condition with selective areas of wear. There are 2 major vertical expansion joints on each face of the bridge. The expansion joint material is gone.

#### WORK PLAN

##### 1. REHABILITATION PLAN

###### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities, and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain

approval from the NJ State Historic Preservation Office (SHPO).

**DIVISION 2: SITE WORK – WITHIN 10’ OF BRIDGE**

- 2.1 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth and removal of all garbage.
- 2.2 Remove trees and large plants within 5’ of bridge based on consultation with a landscape architect.
- 2.3 Provide site planting, based on historic planting plans and including additional soil to restore the grade to historic levels and stabilize the earthen banks adjacent to the wing walls in a manner consistent with the historic design.
- 2.4 Provide grading and drainage to the site to prevent erosion and to aid storm water management.
- 2.5 Replace cracked asphalt sidewalk with new asphalt paving.

**DIVISION 3: CONCRETE**

- 3.1 Patch all damaged historic concrete with new concrete patching mortar to match existing historic concrete in color, texture and finish.

**DIVISION 7: THERMAL AND MOISTURE PROTECTION**

- 7.1 Replace the cheek wall and expansion joint fill material.

**DIVISION 9 FINISHES**

- 9.1 Repaint all areas of repaired concrete.



Photo 455  
View of South Branch Brook Drive Bridge from the south; note the heavy vegetation growth on the embankment.



Photo 456  
View of South Branch Brook Drive Bridge roadway from the east; note the concrete curbs and the single asphalt-paved sidewalk.



Photo 457  
View of South Branch Brook Drive Bridge from the south.

## 46. PRUDENTIAL LION SCULPTURES

### INTRODUCTION

The 2 Prudential Lion Sculptures are not part of the original park design. They were donated to the Park by the Prudential Insurance Company. Sculpted by Karl Bitte, they "stood guard for 55 years over the main entrance to the Prudential Insurance Co." The following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work.

### DESCRIPTION/CONDITIONS

#### SITE

The 2 Prudential Lions flank the north and south ends of the Music Court boat landing at the ending of the concrete, lakefront balustrade. (See Photo 458). The asphalt Court paving surrounds the sculptures' bases. The surrounding areas are clean but worn.

#### STONE MASONRY

The Lions are painted, the paint cover is in good condition, and we therefore could not determine the exact material. The 6' tall lions rest on 3'-0" octagonal, painted bases on 3'-4" X 4'-0" painted plinths. All elements are painted. The paint cover is sound. There are no apparent missing features nor visible signs of patching. There is no visible graffiti. (See Photos 459, 460).

#### WORK PLAN

### 1. REHABILITATION PLAN

#### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities, and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).

#### DIVISION 4: MASONRY

- 4.1 Remove all paint based on approved in-site samples and mock-ups.
- 4.2 Clean all surfaces based on approved in-site samples and mock-ups.
- 4.3 Patch as (if) required with restoration patching mortars to match existing material in color, texture and performance characteristics.
- 4.4 Apply anti-graffiti protective coating to all surfaces.



Photo 458  
View of the Prudential Lion Sculptures, which flank the boat landing at the Music Court.



Photo 459  
Detail of the northern Prudential Lion showing sound paint cover.



Photo 460  
Detail of the southern Prudential showing sound paint cover; note that there are no discernable signs of patching.

## 47. PUMP HOUSE

### INTRODUCTION

Located immediately south of the Bloomfield Avenue Bridge and east of the Park Drive the exact date of the Pump House is not known. It was constructed as a pump house and converted into toilet facilities. Its physical features are similar to other Park buildings ca. 1920 and later. It is a 13'-6" x 17'-6" painted, stucco-finished toilet facility which is reported to be inoperable. (See Photo 461). Annotated photographs provide visual images with detailed conditions descriptions. The following are detailed descriptions, including conditions assessments and a work plan for proposed remedial work.

### DESCRIPTION/CONDITIONS

#### SITE

The Pump House is surrounded by grassy lawns and some nearby trees which grow on the embankment up to the Bloomfield Avenue Bridge. There is erosion on the slope to the northeast. There is a concrete pad at the building's 2 entry doors. Weeds grow adjacent to the building.

#### BRICK MASONRY

The Pump House is constructed from concrete block and is covered with a "pebble textured finish". All surfaces are painted. There is peeling paint adjacent to grade.

#### DOORS

There are 2 metal-clad, wood entry doors and frames. They are in poor condition with rusted bottoms and significant impact damage.

#### ROOF

The roof is hipped and is constructed with 2" x 6" roof rafter at 21" o.c. which project beyond the faces of the building and support the eaves. There is a 6" fascia at the building and 1" x 4" board sheathing. The roof is in very poor condition. It has 2 layers of shingles; the top shingles are failing and the underlying shingles are exposed. Paint cover is fair. There is no roof drainage system. The Pump House has a hip, asphalt shingle roof.

#### WORK PLAN

##### 1. REHABILITATION PLAN

###### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities, and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).
- 1.3 Evaluate potential for providing upgraded restroom facilities within the structures.
- 1.4 Selectively remove in accordance with SHPO approved plans:
  - 1.4.1 All asphalt-shingle roofing.
  - 1.4.2 All damaged sheathing.

###### DIVISION 2: SITE WORK – WITHIN 10' OF BUILDING

- 2.1 Provide site rehabilitation, based on Treatment Plans, as approved by SHPO.
- 2.2 Provide site planting, including additional soil based on historic planting plan and in accordance with treatment plan.

**DIVISION 6: CARPENTRY**

- 6.1 Replace damaged sheathing with sheathing that matches the existing.

**DIVISION 7: WATER PROTECTION**

- 7.1 Replace all asphalt shingles. Provide new asphalt shingles to match those being used in Cerone and New Press Box construction.

**DIVISION 8: DOORS AND WINDOWS**

- 8.1 Remove deteriorated entry doors. Provide new metal, historically appropriate doors based on existing and historical precedents.

**DIVISION 9: FINISHES**

- 9.1 Patch stucco, where required, to match the existing.
- 9.2 Paint stucco to match historic paint colors.



Photo 461  
View of the Pump House from the southeast showing hip roof and over-hanging eaves.



Photo 462  
Detail of the south entry elevation showing painted pebble-texture finish; note the poor condition of door and shingles.

## 48. ROCK STRUCTURE

### INTRODUCTION

Situated at the southeast embankment of the Park Avenue Bridge on the east side of Branch Brook Lake and accessible from the east walking path, The Rock Structure is a basically circular site with 3 stone structures. (See Photo 463). The stone structures have removable grates, which provide access to the sewer system that flows below them. The date of construction is not known. Annotated photographs provide visual images with detailed conditions descriptions. The following are detailed descriptions, including conditions assessment and a work plan for proposed remedial work.

### DESCRIPTION/CONDITIONS

#### SITE

The Rock Structure site is at the southeast embankment of the Park Avenue Bridge. A fieldstone wall with mortar cap encircles the approximately 30' in diameter site. Its eastern section cuts into and retains the embankment. There are no weep holes in the retaining wall. The retaining wall mortar joints are in fair condition with some failure. There is significant moss growth and some plant growth on the walls. The site is paved with granite blocks set in mortar. Mortar joints are fair but are failing in a number of locations. At areas of patching non-matching pavers were used. Joints are open and grass grows. (See Photo 464). Grass and plants grow at the intersection of the paving area with all vertical elements. The site perimeter terrain is eroded and covered with trees with exposed roots and plant growth.

#### STONE MASONRY

The 3 stone structures are circular and constructed from the granite (paving) blocks. The southern, (see Photo 465), and northern, (see Photo 466), structures are each 4 courses high and covered with a cement-mortar wash on top. The center structure is 3 tiers high; each tier has 4 courses and a cement-mortar wash top. The mortar caps are cracking and failing at the structure perimeter. Heavy stones have created low points on some caps. Mortar joints are in fair condition with some significant open joints. There is plant growth from many open joints. This exacerbates the masonry deterioration. We did not enter the structures to observe conditions and materials of the top horizontal plane, or the interior walls.

#### CAST IRON CRATES

Each structure has a cast-iron grate, with chains and hasps which secured them. The chains and hasps are broken and all grates can be removed. One is displaced. The depth of the pipes below is significant.

#### WORK PLAN

*NOTE: The absence of securing devices on the grates poses a significant hazard that should be addressed immediately.*

#### 1. REHABILITATION PLAN

##### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities, and security during restoration.

- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the U.S. Secretary of the Interior. Obtain approval from the NJ State Historic Preservation Office (SHPO).

#### DIVISION 2: SITE WORK – WITHIN 10' OF BUILDING

- 2.1 Provide site rehabilitation, based on Treatment Plans, as approved by SHPO.
- 2.2 Provide site planting, including additional soil based on historic planting plan and in accordance with treatment plan.
- 2.3 Provide grading and drainage to the site to prevent erosion and manage storm water.
- 2.4 Rake and repoint selected site retaining wall and site paving mortar joints with mortar joints to match existing in size, color, configuration, texture and performance.
- 2.5 Remove all moss plants and organic growth from stone.
- 2.6 Remove non-matching site pavers and replace with granite blocks to match original.
- 2.7 Secure all cast-iron grates.

#### DIVISION 4: CARPENTRY

- 4.1 Rake and repoint selected stone structure mortar joints with mortar joints to match original in size, color configuration texture and performance.
- 4.2 Remove mortar cap and provide new mortar cap, design and detailing based on evaluation of substrate conditions.
- 4.3 Remove all moss plants and organic growth from stone.



Photo 463  
View of the Rock Structure from the east Branch Brook Lake walking path, showing the 3 stone structures which provide access to the sewer system.



Photo 464  
Detail of the center, 3-tiered structure showing some open and failed joints; note the poorly installed, non-matching pavers at patched area. The fieldstone retaining wall rises beyond and encircles the site.



Photo 465  
Detail of the southern structure showing the granite-block walls and the cement mortar cap; note the field stone site retaining wall and eroded terrain beyond.



Photo 466  
Detail of the northern structure showing displaced grate; note the extensive plant growth.

## 49. THE WALLS ALONG THE SECOND RIVER

### INTRODUCTION

The Walls Along the Second River are the major man-made structure in the Branch Brook Park Extension. It contains the Second River as it enters Branch Brook Park from the west and travels eastward about a mile toward the Passaic River. The idea was presented in 1915 as part of the "Report of Olmsted Brothers on a Proposed Parkway System for Essex County." Land for the Extension was acquired in the 1920s, but construction of the walls did not commence until 1935. Today, although many of the embankments are overgrown, the paths are free of debris, and a walk along the River is tranquil and filled with natural experiences.

Numerous drawings, including original vellums and blueprint copies, are located at the Essex County Department of Parks, Recreation and Cultural Affairs (Newark, NJ). These include unattributed drawings, dated 15 March 1930, for the "Second River Revetment Walls"; "Details of Walls and Arch Ring Bridge No 5 over The Second River North of Heller Parkway", dated 19 May 1930 which list A. Burton Cohen, NY, NY, as construction engineer; and a "Profile of Second River Channel Showing Proposed Granite Block Paving", unattributed and dated September 1938.

Annotated photographs of the walls provide visual images with detailed descriptions. The following are detailed descriptions, including conditions assessments, and a work plan for proposed remedial work.

### DESCRIPTIONS/CONDITIONS

#### SITE

The Second River walls run east-west and line the course of the Second River, where they enter the Branch Brook Park Extension at Franklin Avenue, (see Photo 469), before terminating at Washington Street. (See Photo 491). Generally, the narrow Park Extension lands slope steeply toward the River Channel. From Franklin Street east to Mt. Prospect Avenue the River Channel is bounded primarily by roadways and landscaped park land which opens to lawns and fields as well as into Bellville Park. (See Photos 472 and 473). However, the embankments immediately adjacent to the channel, particularly along its north side from Franklin Avenue to the North Branch Brook Drive Bridge, (see Photo 470), and then up to the Mt. Prospect Avenue Bridge, are heavily overgrown. (See Photos 478, 481 and 482). The south side embankments are heavily overgrown from the 1931 Footbridge east to the Summer Avenue Bridge. (See Photos 477 and 481). All of the embankments have eroded significantly. The south side of the channel, east from the Tiffany Plant, is adjacent to the rear yards of neighboring houses and has severely eroded. Steel pipe rails surmount the channel walls as they go under most bridges. The north side of the channel between Mt. Prospect Avenue and Washington Avenue is a grassy strip along Mill Street in Belleville with a walking path and benches. (See Photos 488, 489 and 492). The steeply sloped south side terminates east of Summer Avenue, where massive concrete retaining walls support a commercial facility and parking lot. (See Photos 489 and 490).

#### CONCRETE AND STONE

The River Channel is enclosed on each side by large concrete revetment walls. They are vertical along their river sides and battered (sloped) along the embankment sides. Early discussions envisioned the use of stone to create "a more rustic character;" concrete with significant stone aggregate was used instead, most likely as a lost savings strategy. Generally, the walls are 8' – 10' high and were poured in 30' sections. Concrete footings are exposed in a number of locations east of the Mt. Prospect Avenue Bridge. (See Photos 485-488). The exposed wall surfaces are in surprisingly good condition. Although the channel walls are worn, with exposed aggregate, (see Photo 450), and have extensive moss growth, (see Photos 474 and 478), there is limited spalling. This occurs primarily at the revetment wall tops, (see Photo 475), at railing post anchors and at cold joints between revetment wall sections. The large concrete wall which supports the commercial building immediately west of Washington Street is in poor condition with significant spalling. (See Photo 491). Footings for this massive 25' high wall are exposed. This section of wall was probably constructed independently and not as part of the channel project.

The River Channel bed was also engineered as the concrete revetment walls were constructed. From the west, eastward to Mt. Prospect Avenue, the bed was lined with granite blocks. (See Photos 472 and 479). The blocks are about 6" x 6" x 12" long with wire placed on a concrete base and embedded with concrete joints. One dislodged section, (see Photo 480), reveals an approximate 6" base and 2" –3" of concrete joints surrounding the granite blocks. The bed appears in sound condition but there are a few areas of major bed failure. The largest area occurs east of the Franklin Avenue Bridge before the falls where about 200' of bed paving is gone. The water deepens at this location; we assume the natural bed has eroded as well. The second area occurs west of the North Branch Brook Drive Bridge, where

about 150' (but not the complete channel width) of paved bed has failed and more is in the process of failing. (See Photo 472). Most of the channel bed is clear. However, there are areas of silt and debris accumulations along the paved river course.

The River Channel has a natural but engineered stone bed east of Mt. Prospect Avenue. (See Photos 484, 486 and 487). There is 1 waterfall, constructed of concrete, in this area. (See Photo 486). There is clear evidence of natural erosion including fractured and dislodged stones and areas of stone accumulations. (See Photos 486 and 487). There are significant silt and natural debris accumulations along the south embankment at the commercial building retaining walls east of Washington Street. This includes large trees and boulders. (See Photos 490-493). Debris is jammed against the Washington Street Bridge, which obstructs flow and causes or exacerbates the debris build-up along the commercial site walls immediately to the west. (See Photo 492).

## WORK PLAN

Undertake detailed conditions evaluation of the Second River wall features to ascertain their efficacy.

### 1. REHABILITATION PLAN

#### DIVISION 1: GENERAL REQUIREMENTS

- 1.1 General Conditions including supervision, temporary facilities and temporary utilities, and security during restoration.
- 1.2 Perform all work consistent with the "Guidelines for Restoration" of the US Secretary of the Interior. Obtain

approval from the NJ State Historic Preservation Office (SHPO).

#### DIVISION 2: SITE WORK – WITHIN 10' OF CHANNEL

- 2.1 Remove debris, including the significant debris at and immediately east of the Washington Street Bridge, from channel bed to return the river course to its full flow.
- 2.2 Remove and legally dispose of all debris from site, including: clearing away plant overgrowth.
- 2.3 Remove trees and large plants within 5' of channel walls based on consultations with a landscape architect.
- 2.4 Remove site planting, based on historic planting plans including additional soil to restore the grade to historic levels and stabilize the earthen banks in a manner consistent with the historic design.
- 2.5 Provide grading and drainage to the site to prevent erosion and aid storm water management.

#### DIVISION 3: CONCRETE/MASONRY

- 3.1 Patch all minor damaged historic concrete with new concrete patching mortar to match existing historic concrete in color, texture and finish.
- 3.2 Remove all significantly damaged concrete and repair with new concrete to match existing in color and characteristics of existing historic concrete.
- 3.3 Replace or repair damaged/missing concrete and stone channel bed with concrete and stones to match existing in size, color and characteristics.
- 3.4 Prepare and coat all exposed areas of steel reinforcing prior to concrete repairs.



Photo 466  
View of the River Channel at its western terminus east of Franklin Avenue.



Photo 467  
View looking west toward the small, concrete pedestrian bridge west of Franklin Avenue.



Photo 468  
Detail of the stone wall at the culvert opening near Hendricks Field Golf Course on the north side of the channel; note that it is the only stone structure (other than bridges) than along the channel.



Photo 469  
Detail of exposed aggregate on the vertical faces of the revetment wall.



Photo 470  
Detail of full-height, thru-wall crack at the south revetment east of Franklin Avenue.



Photo 471  
View west of The Erie Railroad Bridge, looking to the south revetment wall and with North Branch Brook Drive beyond, showing continuous and massive moss growth on channel walls; note the pattern at the channel bed created by the granite pavers.



Photo 472  
View east of the Franklin Avenue Bridge showing the murky water where the paved channel bed was destroyed.



Photo 473  
Detail of the channel bed west of the North Branch Brook Drive Bridge showing destroyed sections and the failure of the adjacent downstream bed (to the east).



Photo 474  
Detail of the top corner of the channel wall showing erosion that is typical at many locations.



Photo 475  
Detail of South revetment and stone-paved channel bed immediately west of the North Branch Brook Drive Bridge; note the moss growth, erosion and the modest spalling of concrete walls.



Photo 476  
View looking west toward North Branch Brook Drive Bridge; note the dense plant and tree growth on the south embankment that is typical eastward.



Photo 477  
View looking east of North Branch Brook Park Drive Bridge showing steep south embankment and heavy tree and plant growth on both sides.



Photo 478  
Detail of typical channel stone paving.



Photo 479  
Detail of cross section of dislodged channel paving showing concrete base with embedded brownstone from the river channel bed and granite pavers embedded in concrete mortar.



Photo 480  
View of south embankment immediately west of the Mt. Prospect Avenue Bridge showing built-up debris in the paved channel; note that this section of wall is the only one at which salt deposits penetrate the wall construction.



Photo 481  
View looking west showing dense growth on steep embankments at both sides of the channel.



Photo 482  
Detail looking east from Mt. Prospect Avenue Bridge showing erosion of the natural stone river bed.



Photo 483  
View looking east toward Summer Avenue Bridge showing accumulations of eroded stone; note the dense growth on the south embankment and the grassy sitting area on the north.



Photo 484  
View of the Summer Avenue Bridge; note that the trees along the north embankment are planted away from the channel wall, whereas those along the south embankment have grown naturally.



Photo 485  
Detail of the natural stone channel bed and the concrete waterfall east of the Summer Avenue Bridge.



Photo 486  
Detail of the south embankment east of the Summer Avenue Bridge; note that the concrete footing is exposed in this area.



Photo 487  
View looking west showing the grassy, north embankment walkway and densely-treed south embankment.



Photo 488  
View looking west toward the Summer Avenue Bridge, where the typical south revetment vertical wall is interrupted by the large, battered retaining wall.



Photo 489  
Detail of the south revetment retaining wall showing spalled concrete and significant natural debris accumulation.



Photo 490  
View looking east showing the grassy park area to the north and the large concrete retaining wall to the south.



Photo 491  
Detail of the massive debris pile at the west side of the Washington Street Bridge, which obstructs water flow and causes additional debris accumulation.



Photo 492  
Debris build-up along the commercial site walls immediately to the west.



Photo 493  
View looking west from the Washington Street Bridge.