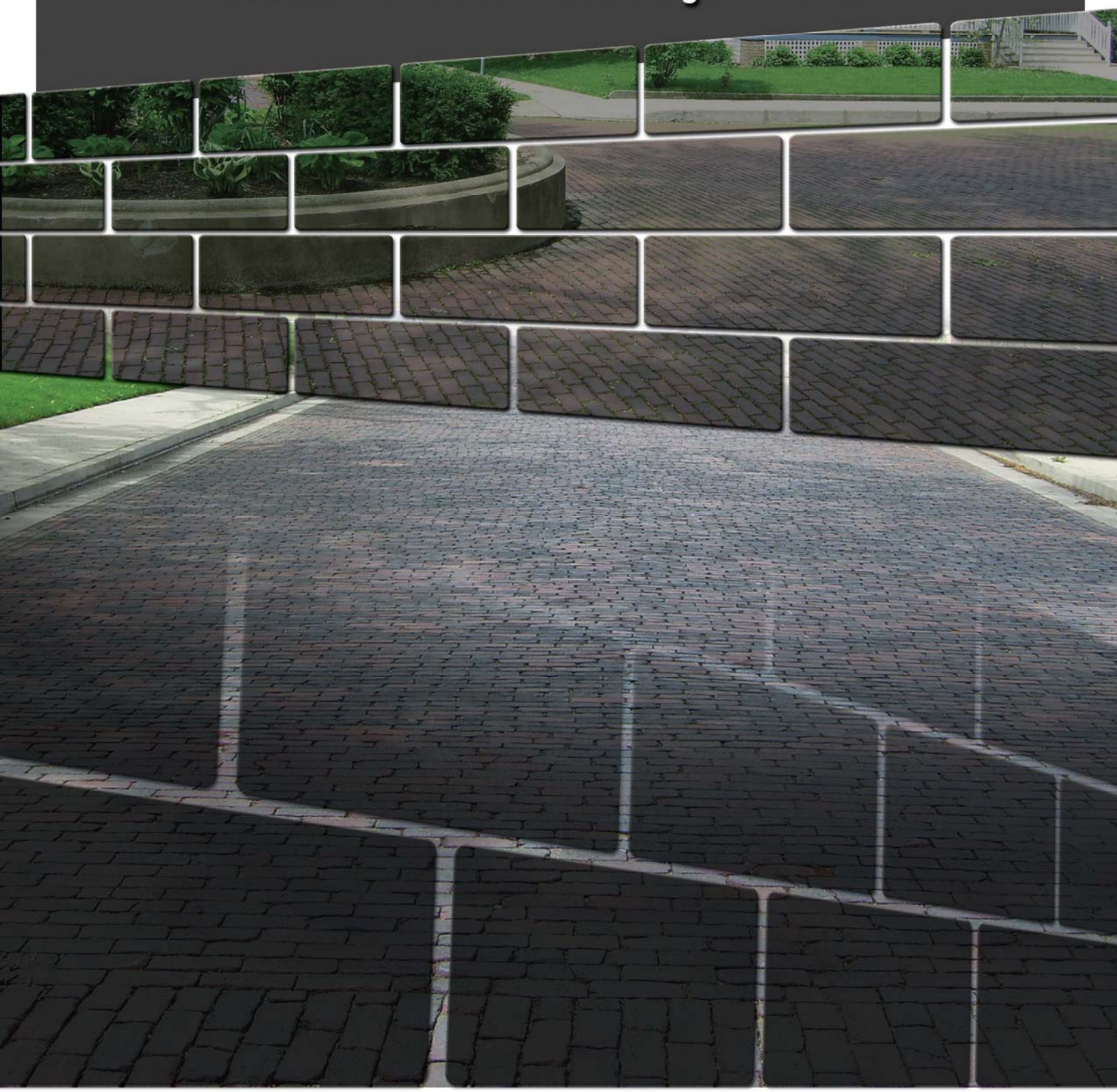
Brick Streets Strategic Plan



CITY OF BLOOMINGTON | PUBLIC WORKS DEPARTMENT

PROVIDING GOOD STEWARDSHIP OF THE PUBLIC INFRASTRUCTURE AND EQUIPMENT SAFELY
THROUGH COMPETITIVE SERVICES AND EXCELLENT CUSTOMER RELATIONS

CITY OF BLOOMINGTON

Sept. 17, 2009 Draft

TABLE OF CONTENTS

Executive Summary

The Brick Streets Strategic Plan has been created for the purpose of maintaining and preserving Bloomington's brick streets. It is not intended to be binding on decisions of funding for reconstruction. There are 3.5 miles of brick streets out of 320 miles of streets in the city, which is 1.1% of all streets. Brick streets are a diminishing asset to the community and provide a sense of nostalgia in a residential neighborhood. The longevity of Bloomington's remaining brick streets attest to their durability and economic value. Though costly to install and patch properly, these streets last for generations and add significant beauty and history to the area.

Before this strategic plan, no regular maintenance plan was in place for any brick streets. Maintenance and repair was decided on a case by case basis. The intent of this plan is to establish levels of maintenance and repair for all of the remaining brick streets in the City of Bloomington, Illinois. In February 2000, a survey was conducted of 25 Illinois and Iowa communities. The survey found that those cities that were proactively repairing brick streets (Champaign, Davenport and Galesburg) had dedicated funds in their street repair budgets for brick street restoration and maintenance (reference: Rock Island Brick Street Plan). It will be the goal of the Public Works Department to coordinate efforts with the Bloomington City Council to find a long term sustainable source to restore brick pavements designated as category one.

The Brick Streets Strategic Plan was outlined by the City of Bloomington Public Works Department Engineering Division. There were four public meetings held to gather input from Bloomington citizens. Two of the public meetings were held through the Bloomington Historic Preservation Commission on August 20, 2009 and September 17, 2009. The plan was formally adopted by the Bloomington City Council on *[Month Date]*, 2009. The Brick Streets Strategic Plan was provided to create a policy and procedure on preserving Bloomington's brick streets by placing them into the categories of restoring, repairing or reconstructing. In addition, the plan also creates a procedure for brick street reconstruction and discusses the cost-sharing procedure between the adjacent property owners and the city. Ten streets were recommended to be placed in category one (restore). Twenty one streets are in category two (repair), which merit preservation. Eight streets are in category three (reconstruct) with no preservation restriction.

Category one and two streets will have the brick surface preserved and/or replaced in instances of excavation. Along with minor street repairs, there will be provisions for long term brick street maintenance as well. A budget item will be included for the repair of brick streets.

History of Brick Streets

BLOOMINGTON'S BRICK STREETS

By 1900 the city of Bloomington was nationally famous for its brick streets. The "Bloomington System" of street paving was standard material in technical manuals and it was discussed nationally in Century Magazine in 1893. Twenty years later, a popular local myth had grown up that Bloomington had built the first block of brick pavement in the United States and later a small monument was erected with what were incorrectly believed to be some of the first brick pavers. Excesses of local enthusiasm aside, brick streets were important in the history of the city. From 1880 until the late 1930s most paved streets in Bloomington were surfaced with brick. The city spent a great deal of time and money on laying brick streets which became the object of great civic pride.

Brick pavement had existed since roman times. In areas like the Netherlands, which had little natural stone, brick had long been the standard street paving material. Philadelphia had brick "pavements" by 1700, although it is not clear if these were streets or only sidewalks and what were called "street crossings." In 1868, the first patent for brick pavement in the United States (No.77, 208) was issued to John T. Perkins of Washington D.C. In 1873 the first full block of brick paving in the country was laid on Summers Street between Virginia and Kanawha, in Charleston, West Virginia. It was put down by Mordecai Levi with financial backing from Dr. Nathan B. Hale. These men were later given a patent on their paving system, which was essentially the same as that later used in Bloomington. Both systems used double layers of common building brick.

The first paving in Bloomington was put down on Grove Street in order to link downtown Bloomington with the Illinois Central Railroad. It was macadam, layers of crushed rock put down in such a way that traffic compacted it into a smooth surface. The city followed with several streets paved in Nicholson blocks, creosote soaked wood with a tar binder. With no natural building stone, Bloomington citizens looked for alternatives to keep their feet out of the mud.

In the spring of 1875, a colorful local brickmaker, Napoleon Bonaparte Heafer, persuaded the City Council to permit him to lay a ten by twelve test patch of brick pavement at the corner of Washington and Center. (Heafer had been born and had done his apprenticeship, in Charleston. This area would later become West Virginia, but it is not known if Heafer was aware of Levi's paving efforts.) Heafer's pavement consisted of a layer of sand topped by bricks laid flat; then more sand and an upper layer of bricks set on edge. At the end of September 1875 dirt was cleared away from the top of the pavement and the upper bricks were examined. The results seemed generally good. Many local officials did not think brick was a good option and two years of debate followed. A city council sub-committee initially recommended re-laying wooden Nicholson blocks over the site of the experiment and on the other streets on the square.

In 1877 Heafer and his partner John McGregor finally persuaded the council to let them pave a full block of Center Street west of the courthouse with their locally manufactured bricks. The pavement gave good service; the upper paving layers were removed when the

street was re-paved in 1892. The pavement was again dug up and replaced in 1922. For the next two decades Bloomington paved many streets with brick using a system that was almost exactly the same as original experimental section. Many miles of brick followed. For a time three local brick makers all guaranteed they would deliver brick at the same price and were each awarded one third of local contracts. Until 1896 almost all brick used in city streets was locally manufactured, laid by local people, and was identical to brick used in downtown buildings. In 1889 a visiting engineer tested samples of Heafer's bricks and asked about their manufacture. He found they were made of glacial clay from a few feet below surface, hand-molded, dried outdoors, and fired in clamps for 96 to 100 hours with a mixture of coal and wood. In short, they had been made exactly as they would have been three-hundred years before. By 1895 Bloomington had nine miles of brick paved streets, about a mile of asphalt streets, and 800 feet of streets paved in "rubble stone."

Eventually technology caught up with local brickmakers. For some time other cities had been producing machine formed, repressed brick, made mainly from ground shale which was greatly superior to Bloomington brick. In 1896 the first contract was issued to an outside contractor John Cherry, of Jacksonville, Illinois. Cherry used special paving brick brought in from other parts of Illinois, was able to lay improved streets for about the same cost as earlier pavements. At first, Bloomington brick was used for the sub-surface layer of horizontal bricks, but this practice soon faded. In the first years of the 1900s a few streets continued to be entirely paved with local bricks, but they were soon replaced with imported bricks. Shortly after this, all local brickworks shut down. The remains of their clay pits, where material was taken for the manufacture of bricks and tile, still can be seen as ponds on the south side of Bloomington.

A great deal of brick paving was put down in the first two decades of the twentieth century. Street surfaces were covered with vitrified paving bricks. These were mainly formed from ground shale, re-pressed with great force and fired to the point where individual particles could not be distinguished. Such bricks were very resistant to crushing, absorbed very little water, were denser than earlier bricks and were extremely hard: a good paving brick will scratch quartz. None were manufactured in McLean County. These vitrified bricks were laid side to side and usually separated from each other by quarter inch spacing lugs formed into the corners of the bricks. When the bricks were put down asphalt was placed into the spaces between the bricks.

The foundation under the pavers evolved slowly. At first a lower course of bricks continued to be used for the foundation, as had been done in earlier streets. Gradually Portland cement came to be favored for the sub-surface of brick paved streets in Bloomington. Starting around 1900, concrete paving was first used for sidewalks, and by 1920 was fairly common as the primary paving material for streets. However, in this era, brick streets still dominated the city. In 1926 Bloomington had over forty-five miles of brick streets, just under seven miles of asphalt streets, and about six miles of concrete streets. As late as 1935, three-quarters of all Bloomington streets were paved in brick. In the 1920s more concrete streets were built than brick, but brick streets were still being made. Brick paving received a great stimulus in the late 1930s when many miles of Bloomington streets were rebuilt by the Works Progress Administration. Often when

local streets were overlaid, earlier paving bricks were left in place and many miles of local concrete and asphalt are simply surface layers resting on earlier brick pavement.

FURTHER READING

A good introduction to traditional brick-making is found in Harley J. McKee, Introduction to Early American Masonry, 1973, and a more complete account is given in Heinrich Ries and Henry Leighton, History of Clay-Working in the United States, 1910. Sidney Poitier's "The Last Brickmaker in America," which was first broadcast in 2001; is highly recommended and is currently available from several video outlets. Brick Making machines are covered in Carroll Pursell, "Parallelograms of Perfect Order", Smithsonian Journal of History (3) (1968), 19-27. Two illustrated articles by William D. Walters, Jr. deal with local brick and tile manufacturing: "Abandoned Nineteenth Century Brick and Tile Works in Central Illinois," Industrial Archaeology Review 4:1 (Winter 1979-80) 70-80 and "Nineteenth Century Midwestern Brick," Pioneer America, 14:3 (1982) 125-134; copies of both are available at the McLean County History Center. The full text of many turn of the century Paving manuals are now online; a few of the many that mention Bloomington are Edward Gurley Love, Pavements and Roads, 1890, which includes an analysis of Heafer's bricks on pages 173 and 174; H. A. Wheeler, Vitrified Paving Brick, 1910; and George Wilson Tilson, A Textbook on Brick Paving, 1917. Brick street Restoration is discussed in William D. Walters, Jr. and Royce Baier "Brick Streets in Illinois," Illinois Preservation Series 12 (1991). Local research into brick pavement should begin with the Engineer's Report and the Paving ordinances contained in the many published volumes of the Bloomington City Council Minutes available in Withers Library and at the McLean County History Center.

Methodology

Bloomington's Public Works Engineering Division staff created a methodology to study brick streets in Bloomington and establish priorities for their preservation. The Public Works Department gathered input from various stakeholders including the City Council, neighborhood groups and the general public. In addition, a survey was completed on how other communities dealt with their brick street infrastructure. All of this information and input was compiled to create the City of Bloomington Brick Streets Strategic Plan. The following is a summary of the brick streets categorization process:

1. Existing exposed brick streets were identified.
2. These streets were analyzed in terms of the condition of the street and given a PASER rating (Pavement Surface Evaluation and Rating). Additional information about the PASER rating methodology can be found in the PASER rating subsection below.
3. The numbers of concrete or asphalt patches were determined for each brick street section, along with the square footage of the patch and total square footage of the section.
4. The percent of the street patched was calculated.
5. Each street was photographed and the historical status of the neighborhood was determined.
6. All of this information for the brick streets was entered into the City of Bloomington's GIS (Geographic Information System) database.
7. After factoring in these variables the brick streets were split into three categories, with separate preservation recommendations for each. These recommendations range from restoration to reconstruction.

Assumptions

In forming the plan methodology and recommendations, the following assumptions were made regarding the preservation of Bloomington's brick streets.

Assumption 1: Streets with few patches are stronger candidates for preservation.

Assumption 2: Streets with poor structural condition are poor candidates for preservation.

Assumption 3: Many utilities beneath a street make it a poor preservation candidate.

Assumption 4: Streets where the curb and gutter is in a poor condition will not be independently prioritized separate from the brick street.

Assumption 5: Streets with a larger percentage of patches but of good riding quality shall be placed in a category 2.

Assumption 6: It is not a feasible option to mill streets currently overlaid with asphalt and make them brick streets again.

Assumption 7: Intersections will be dealt with independently from the remainder of the street because of drainage and possible connection issues to the rest of the street.

PASER rating

The brick streets in Bloomington have been evaluated using the "Paser Brick & Block Manual." The PASER system of rating the condition of various pavement surfaces was developed by the Transportation Information Center at the University of Wisconsin, Madison, in the 1980's. This center is partnered with the Federal Highway Administration. The PASER system is widely used in Wisconsin and has been adopted by cities in other states, as well. The University of Wisconsin website for PASER publications and information is http://tic.engr.wisc.edu/ .

Condition of Brick Streets

The structural condition of each brick street was analyzed. Specifically, each street's base, crown, drainage, and ride-ability were investigated. Then a PASER rating was given. More on the PASER rating system can be found in the "Methodology" section of the report.

A poor base condition indicates repair will be needed in the near future and would be costly.

A brick street with drainage problems is not an optimal candidate for restoring for two reasons:

(1) Moisture on the street, whether in the form of water or ice, causes brick streets to become slippery and hazardous. Poor drainage means this moisture stays on the street for a longer period of time.

(2) Moisture that is trapped on the street due to poor drainage tends to seep into the street's base, where the freeze/thaw cycle will cause the street's base to deteriorate at an accelerated rate.

A poor crown is indicative of drainage problems because the water is not able to drain properly away from the center of the street.

The Bloomington Public Works Engineering Division reviewed the structural condition of the existing brick streets. Their analysis produced the following lists and chart.

Streets with Few Structural Problems

Davis Ave, Jefferson St to Washington St
Division St, Main St to East St
East St, Division St to Kelsey St
East St, Kelsey St to Emerson St
East St, Locust St to Mulberry St
Scott St, Center St to Main St
University Ave, Clinton Blvd to White Pl
White Pl, Emerson St to University Ave
White Pl, University Ave to Empire St

Streets with Some Structural Problems

Allin St, Oakland Ave to Macarthur Ave
Chestnut St, Oak St to Lee St
East St, Chestnut St to Locust St
East St, Emerson St to Beecher St
East St, University Ave to Graham St
Elm St, Madison St to Center St
Evans St, Graham St to Empire St
Evans St, University Ave to Graham St
Evans St, Walnut St to Chestnut St
Jefferson St, Clinton St to Robinson St
Jefferson St, Colton Ave to Towanda Av
Jefferson St, Davis Ave to Colton Ave
Jefferson St, Robinson St and Davis Ave
Monroe St, Clinton St to Robinson St
Scott St, Madison St to Center St
Summit St, Macarthur Ave to Wood St
Taylor St, Willard Ave to Kreitzer Ave
Thompson Ave, Center St to Main St

Streets with Many Structural Problems

Allin St, Macarthur Ave to Wood St
Chestnut St, Eugene St to Colton Ave
Chestnut St, Linden St to Eugene St
Chestnut St, Mason St to Oak St
East St, Graham St to Empire St
Evans St, Chestnut St to Locust St
Evans St, Empire St to Walnut St
Monroe St, Clayton St to Clinton St
Monroe St, Evans St to Clayton St
Monroe St, McLean St to Evans St
Taylor St, Moore St to Mercer Ave
Walnut St, Center St to Main St

Condition of Brick Streets					
Brick Street Section	**Crown Condition**	**Drainage Problems**	**Base Condition**	**Ride-ability**	**PASER**
Allin St., Macarthur Ave. to Wood St.	FAIR	FEW	AVERAGE / POOR	AVERAGE/ POOR	3
Allin St., Oakland Ave. to Macarthur Ave.	FAIR	FEW	AVERAGE	AVERAGE	4
Chestnut St., Eugene St. to Colton Ave.	FLAT	FEW	AVERAGE / POOR	POOR	2
Chestnut St., Linden St. to Eugene St.	FAIR / FLAT	FEW	POOR	AVERAGE/ POOR	2
Chestnut St., Mason St. to Oak St.	FLAT	MANY	AVERAGE / POOR	AVERAGE/ POOR	2
Chestnut St., Oak St. to Lee St.	FAIR	FEW	AVERAGE	AVERAGE	5
Davis Ave., Jefferson St. to Washington St.	GOOD	NONE	GOOD	GOOD	10
Division St., Main St. to East St.	GOOD	FEW	GOOD	GOOD	8
East St., Chestnut St. to Locust St.	FAIR	FEW	AVERAGE	AVERAGE	4
East St., Division St. to Kelsey St.	GOOD	NONE	GOOD / AVERAGE	AVERAGE	7
East St., Emerson St. to Beecher St.	FAIR	FEW	AVERAGE	AVERAGE	4
East St., Graham St. to Empire St.	FAIR	FEW	AVERAGE / POOR	POOR	2
East St., Kelsey St. to Emerson St.	GOOD	NONE	GOOD / AVERAGE	AVERAGE	7
East St., Locust St. to Mulberry St.	GOOD	NONE	GOOD / AVERAGE	GOOD	7
East St., University Ave. to Graham St.	FAIR	FEW	AVERAGE	AVERAGE	5
Elm St., Madison St. to Center St.	FAIR	FEW	AVERAGE	AVERAGE	5
Evans St., Chestnut St. to Locust St.	FAIR	FEW	AVERAGE / POOR	POOR	3
Evans St., Empire St. to Walnut St.	FAIR	MANY	POOR	POOR	3
Evans St., Graham St. to Empire St.	FAIR	FEW	AVERAGE	AVERAGE	5
Evans St., University Ave. to Graham St.	FAIR	FEW	AVERAGE / POOR	POOR	3
Evans St., Walnut St. to Chestnut St.	GOOD	FEW	GOOD / AVERAGE	AVERAGE	6

Brick Street Section	Crown Condition	Drainage Problems	Base Condition	Ride-ability	PASER
Jefferson St., Clinton St. to Robinson St.	FAIR	FEW	AVERAGE	AVERAGE	5
Jefferson St., Colton Ave. to Towanda Ave.	GOOD	FEW	AVERAGE	AVERAGE/ POOR	5
Jefferson St., Davis Ave. to Colton Ave.	FAIR	FEW	AVERAGE	AVERAGE	5
Jefferson St, Robinson St. to Davis Ave.	GOOD	NONE	GOOD / AVERAGE	GOOD	6
Monroe St., Clayton St. to Clinton St.	GOOD	FEW	AVERAGE / POOR	POOR	3
Monroe St., Clinton St. to Robinson St.	FAIR	MANY	AVERAGE	AVERAGE	4
Monroe St., Evans St. to Clayton St.	FAIR	MANY	AVERAGE / POOR	POOR	2
Monroe St., McLean St. to Evans St.	FAIR	MANY	POOR	POOR	2
Scott St., Center St. to Main St.	FAIR	NONE	AVERAGE	AVERAGE	7
Scott St., Madison St. to Center St.	FAIR	FEW	AVERAGE	AVERAGE	6
Summit St., Macarthur Ave. to Wood St.	FAIR	FEW	GOOD / AVERAGE	AVERAGE	6
Taylor St., Moore St. to Mercer Ave.	FLAT	EXCESSIVE	POOR	POOR	1
Taylor St., Willard Ave. to Kreitzer Ave.	FAIR	FEW	AVERAGE / POOR	AVERAGE	4
Thompson Ave., Center St. to Main St.	FAIR	FEW	AVERAGE	AVERAGE	6
University Ave., Clinton Blvd. to White Pl.	FLAT	NONE	GOOD / AVERAGE	GOOD	7
Walnut St., Center St. to Main St.	FAIR	MANY	POOR	POOR	2
White Pl., Emerson St. to University Ave.	FAIR	FEW	AVERAGE	AVERAGE	7
White Pl., University Ave. to Empire St.	GOOD	FEW	AVERAGE	AVERAGE	7

In addition to structural conditions, surface conditions were also analyzed. Concrete or asphalt patching can impact the ride-ability as well as the visual appearance of the street. Most of Bloomington's brick streets are only one to twelve percent patched.

Brick Street Patching Percentages		
Brick Street Section	**Area of Patch (Sq. Ft.)**	**Percent of Street Patched (%)**
Allin St., Macarthur Ave. to Wood St.	633.1	4.1
Allin St., Oakland Ave. to Macarthur Ave.	112.7	1.6
Chestnut St., Eugene St. to Colton Ave.	587.7	5.4
Chestnut St., Linden St. to Eugene St.	555.6	4.8
Chestnut St., Mason St. to Oak St.	376.8	2.9
Chestnut St., Oak St. to Lee St.	558.4	6.3
Davis Ave., Jefferson St. to Washington St.	0.0	0.0
Division St., Main St. to East St.	43.3	1.1
East St., Chestnut St. to Locust St.	375.9	3.7
East St., Division St. to Kelsey St.	324.3	3.1
East St., Emerson St. to Beecher St.	612.6	7.1
East St., Graham St. to Empire St.	1175.0	12.5
East St., Kelsey St. to Emerson St.	85.2	1.4
East St., Locust St. to Mulberry St.	506.8	6.9
East St., University Ave. to Graham St.	541.8	6.9
Elm St., Madison St. to Center St.	0.0	0.0
Evans St., Chestnut St. to Locust St.	188.8	2.2
Evans St., Empire St. to Walnut St.	277.4	2.6
Evans St., Graham St. to Empire St.	111.8	1.5
Evans St., University Ave. to Graham St.	261.3	3.0
Evans St., Walnut St. to Chestnut St.	179.9	2.1
Elm St., Madison St. to Center St.	0.0	0.0
Jefferson St., Clinton St. to Robinson St.	474.3	2.5
Jefferson St., Colton Ave. to Towanda Ave.	1449.0	7.3

Brick Street Section	Area of Patch (Sq. Ft.)	Percent of Street Patched
Jefferson St., Davis Ave. to Colton Ave.	359.0	1.6
Jefferson St., Robinson St. to Davis Ave.	11.9	0.1
Monroe St., Clayton St. to Clinton St.	611.9	8.0
Monroe St., Clinton St. to Robinson St.	653.2	4.0
Monroe St., Evans St. to Clayton St.	200.5	2.6
Monroe St., McLean St. to Evans St.	433.9	4.8
Scott St., Center St. to Main St.	0.0	0.0
Scott St., Madison St. to Center St.	0.0	0.0
Summit St., Macarthur Ave. to Wood St.	223.8	1.8
Taylor St., Moore St. to Mercer Ave.	26.3	0.2
Taylor St., Willard Ave. to Kreitzer Ave.	170.8	2.7
Thompson Ave., Center St. to Main St.	0.0	0.0
University Ave., Clinton Blvd. to White Pl.	0.0	0.0
Walnut St., Center St. to Main St.	59.7	1.2
White Pl., Emerson St. to University Ave.	0.0	0.0
White Pl., University Ave. to Empire St.	0.0	0.0

Historic Distinction

Brick Street Section	Neighborhood	Historical District
Allin St., Macarthur Ave. to Wood St.		
Allin St., Oakland Ave. to Macarthur Ave.		
Chestnut St., Eugene St. to Colton Ave.		
Chestnut St., Linden St. to Eugene St.		
Chestnut St., Mason St. to Oak St.	Northwest Union Neighborhood	
Chestnut St., Oak St. to Lee St.	Northwest Union Neighborhood	
Davis Ave., Jefferson St. to Washington St.	Davis-Jefferson Historical	Davis-Jefferson Historical District
Division St., Main St. to East St.		
East St., Chestnut St. to Locust St.		
East St., Division St. to Kelsey St.		
East St., Emerson St. to Beecher St.		
East St., Graham St. to Empire St.		
East St., Kelsey St. to Emerson St.		
East St., Locust St. to Mulberry St.	Downtown Bloomington	
East St., University Ave. to Graham St.		
Elm St., Madison St. to Center St.	South Hill Neighborhood	
Evans St., Chestnut St. to Locust St.		Greenlee, Robert, House - NHD
Evans St., Empire St. to Walnut St.		
Evans St, Graham St to Empire St		

Brick Street Section	Neighborhood	Historical District
Evans St., University Ave. to Graham St.		
Evans St., Walnut St. to Chestnut St.		
Jefferson St., Clinton St. to Robinson St.	Near East Side Neighborhood	
Jefferson St., Colton Ave. to Towanda Ave.	Davis-Jefferson Historical	Davis-Jefferson Historical District
Jefferson St., Davis Ave. to Colton Ave.	Davis-Jefferson Historical	Davis-Jefferson Historical District
Jefferson St., Robinson St. to Davis Ave.	Davis-Jefferson Historical	Davis-Jefferson Historical District
Monroe St., Clayton St. to Clinton St.	Near East Side Neighborhood	
Monroe St., Clinton St. to Robinson St.	Near East Side Neighborhood	
Monroe St., Evans St. to Clayton St.	Near East Side Neighborhood	
Monroe St., McLean St. to Evans St.	Near East Side Neighborhood	
Scott St., Center St. to Main St.	Northwest Union Neighborhood	
Scott St., Madison St. to Center St.	Northwest Union Neighborhood	
Summit St., Macarthur Ave. to Wood St.		
Taylor St., Moore St. to Mercer Ave.	Founders Grove	
Taylor St., Willard Ave. to Kreitzer Ave.	Founders Grove	
Thompson Ave., Center St. to Main St.	Northwest Union Neighborhood	
University Ave., Clinton Blvd. to White Pl.	White Place Neighborhood	White Place – NHD
Walnut St., Center St. to Main St.	Northwest Union Neighborhood	
White Pl., Emerson St. to University Ave.	White Place Neighborhood	White Place – NHD
White Pl., University Ave. to Empire St.	White Place Neighborhood	White Place – NHD

Brick Streets Prioritization List

The Prioritization List is the handy, short-form of the Brick Streets Strategic Plan. This list includes all of Bloomington's brick streets, their prioritization for preservation in categories one through three, and some short explanations about the extent of preservation for each category.

Category 1 [RESTORE]: These brick streets sections should be repaired, restored and reconstructed to their original appearance. These bricks should be replaced and the disturbed areas restored to their former appearance. Additional efforts should be made to actually restore these brick streets when funds are available.

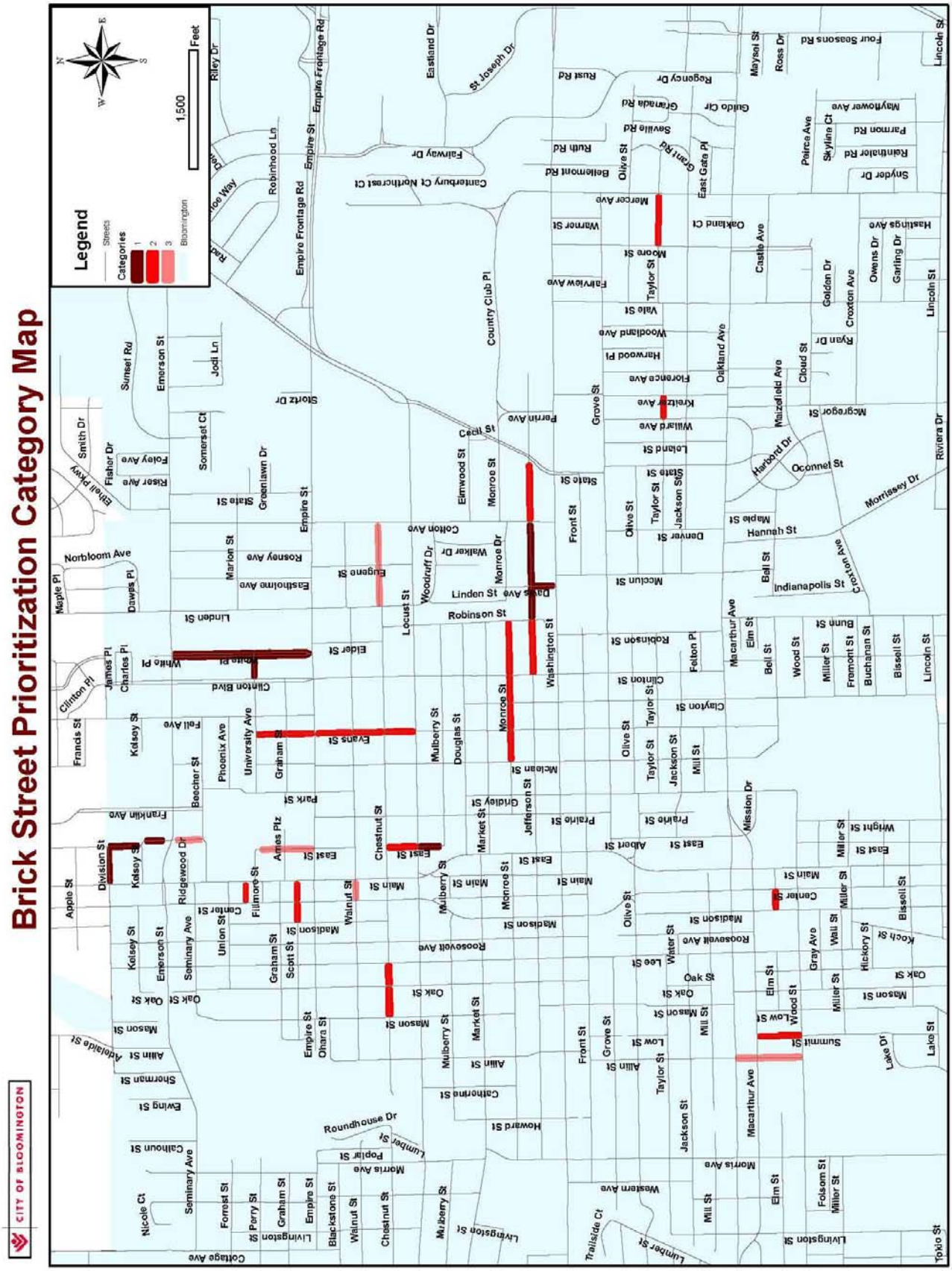
Davis Ave, Jefferson St to Washington St
Division St, Main St to East St
East St, Division St to Kelsey St
East St, Kelsey St to Emerson St
East St, Locust St to Mulberry St
Jefferson St, Davis Ave to Colton Ave
Jefferson St, Robinson St to Davis Ave
University Ave, Clinton Blvd to White Pl
White Pl, Emerson St to University Ave
White Pl, University Ave to Empire St

Category 2 [REPAIR]: These streets are important enough to merit preservation, but not so important as to merit restoration. If any existing brick areas are disturbed, they shall be restored to their original appearance using the standard in this policy. All existing pavement patches on category two brick streets will not be restored unless disturbed areas are adjacent to existing pavement patches.

Chestnut St, Mason St to Oak St
Chestnut St, Oak St to Lee St
East St, Chestnut St to Locust St
Elm St, Madison St to Center St
Evans St, Chestnut St to Locust St
Evans St, Empire St to Walnut St
Evans St, Graham St to Empire St
Evans St, University Ave to Graham St
Evans St, Walnut St to Chestnut St
Jefferson St, Clinton St to Robinson St
Jefferson St, Colton Ave to Towanda Ave
Monroe St, Clayton St to Clinton St
Monroe St, Clinton St to Robinson St
Monroe St, Evans St to Clayton St
Monroe St, McLean St to Evans St
Scott St, Center St to Main St
Scott St, Madison St to Center St
Summit St, Macarthur Ave to Wood St
Taylor St, Moore St to Mercer Ave
Taylor St, Willard Ave to Kreitzer Ave
Thompson Ave, Center St to Main St

Category 3 [RECONSTRUCT]: Resurfacing and patching with materials other than brick are allowed on these streets. These brick streets do not meet the standards required for repair or restoration. The Public Works Department can patch, resurface or reconstruct as budget and conditions dictate.

Allin St, Macarthur Ave to Wood St
Allin St, Oakland Ave to Macarthur Ave
Chestnut St, Eugene St to Colton Ave
Chestnut St, Linden St to Eugene St
East St, Emerson St to Beecher St
East St, Graham St to Empire St
East St, University Ave to Graham St
Walnut St, Center St to Main St


Brick Street Prioritization Category Map
CITY OF BLOOMINGTON
Legend
Streets
Categories
1
2
3
Bloomington
1,500
Feet
N
S
W
E

Utilities and Brick Street Patching

The Brick Streets Strategic Plan ensures the preservation of the surface of category one and category two brick streets. This plan requires that all surfaces disturbed by utility cuts for these category one and two streets be replaced in brick. If existing utility patches are re-excavated on category one and category two streets, they must be replaced with brick if some portion of the newest excavation touches brick.

Though streets with utilities running beneath them are less than optimal candidates for preservation, there are no brick streets in the city that are free of utilities. Nearly all of the brick streets have at least one water main and one sewer line running beneath them.

The Public Works Department shall have the discretion to not replace the brick on Category 1 & 2 streets should a patch be of substantial size beyond the capability of the Operations Division of Public Works or affordability of the Public Works Department to be determined by the Director of Public Works.

Salvaging Bricks

The Public Works Department Operations Division actively salvages bricks just for repair purposes. In an effort to have spare bricks for repair work done by city crews, the City of Bloomington asks that utility companies and excavation companies provide the city with any bricks from category three streets or any streets with bricks under the existing surface and deliver them to our city yards located at the southeast corner of East Street and Jackson Street. If contractors are not able to deliver the brick to the above city location, contractors can contact the Public Works Department at (309)434-2225 and provide notice when a stockpile of clean viable bricks can be picked up. Upon approval of this Brick Streets Strategic Plan, the Public Works Department will send out a letter to the local contractors informing them of this option. In addition, future city contracts will be modified so that the salvation of bricks is included in the contract.

Utility Cuts

Utility cuts are the most common surface disturbance in local streets. Brick patches in category 1 [restore] and category 2 [repair] are handled differently depending on the reason for the patch. The following are the different possibilities for the existing brick streets to be disturbed and the process for patching them:

1. Utility Companies - patches that are made by utility cuts are covered under each utility's franchise agreement.

2. Private Contractor - Street cuts made by private contractors require at a minimum a permit from the Public Works Department and are normally done as a paid service for residents who live along the brick street. Patching the utility cut is accomplished by city contracted crews, with the person who caused the utility cut reimbursing the city for the cost of the surface restoration. The resurfacing material (concrete, asphalt or brick) and cost are determined by the City's Public Works Department through standards referenced in the Brick Streets Strategic Plan.

3. City Maintenance – Street cuts made by the City of Bloomington during the course of maintaining the public utilities shall be placed back according to the standards referenced in the Brick Streets Strategic Plan using City funds.

Restoration of brick pavement costs three to four times as much as patching utility cuts with concrete or asphalt. Further, the difference between the cost of brick patching and asphalt patching becomes greater as the size of the job increases. This is due to the fact that brick replacement, which is labor intensive with relatively fixed per unit costs, cannot compete with the advantage of mechanization and efficiencies of scale allowed through asphalt or concrete patching.

The Public Works Department has estimated, in 2009 dollars, the costs per square yard for different types of patches on brick streets. Here is an estimate of costs:

Patching Material	Cost Installed
Brick	**$ 250 /sq.yd.**
Asphalt	**$ 60 /sq.yd.**
Concrete	**$ 60 /sq.yd.**

Brick Street Restoration Policy

Restoration for category 1 and category 2 streets is clear: If the surface is disturbed, it is to be re-laid with brick meeting the standards laid out in this policy. Any restoration work completed on categories 1 or 2 streets shall be paid for using city funds.

Restoration for category 3 streets is different from categories 1 and 2 in that when the street needs to be restored either partially or completely, the city has the right to place whatever material best suits the needs of the city to maintain public safety. Category 3 streets also differ in that residents will have the ability to choose whether they would like to continue to have a brick street and share some of the cost to restore it to a category 1 brick street.

Being a category 3 street does not automatically place the street in the resurfacing pool. Placement in the resurfacing pool is either determined by the Public Works Department or by a petition of at least 80% of the property owners along the category 3 brick street. The Public Works Department will only place the category 3 brick street in the resurfacing pool if the street is in such condition that it has become a safety hazard and is beyond minor repairs.

At the time adjoining residents or the city determine that a residential brick street is in need of total reconstruction, the residents will be informed by mail of the placement of the street in the pool of citywide streets for evaluation in the street resurfacing program. At the time of this notification, residents will have one year to implement one of the following options:

1. File a petition to have the street remain brick. If the Public Works Department receives a petition from 80% of the adjacent property owners that they wish to keep the street brick, then the Public Works Department will allow the street to remain brick assuming that there are not any major safety issues that exist which cannot be easily addressed. Filing this petition does not guarantee that the brick street will remain a brick street.

2. Coordinate with the City Council to determine if there should be a special service area implemented. Filing of this petition does not guarantee a specific council response. The City Council's response is dependent upon finances and the general direction of the council. This special service area procedure allows for a cost-sharing of the street reconstruction between the city and the adjacent property owners. It will allow adjacent property owners to have a special assessment be placed on their property tax bill so that the street can be upgraded from a resurface project to a brick street restoration project. The adjacent property owners will be responsible for the difference between the estimated resurfacing cost and the actual cost to reconstruct the street using bricks. Once completed, the street would become a category 1 brick street. In order to begin this process, a petition must be filed with the City of Bloomington Public Works Department.

After the year deadline has passed, the City can move forward with the resurfacing or reconstructing of the street as funding priorities and objective resurfacing criteria allow.

Brick Street Patching Standard and Details

This standard pertains to brick streets that will be repaired to their original brick surface appearance because they are in category one or two.

Prior to removal of any of the brick street surface a representative of the Public Works Department will mark the limits for the brick street replacement. During removal of the existing brick street surface, due care shall be exercised to prevent damage to adjacent bricks. No additional measurements will be made for increases in area due to additional removal required for machine curb and gutter, carelessness during removal, or leaving edges of brick pavement or patches exposed to traffic. No additional measurement for payment will be made after the work is completed.

Upon excavation to the depth required for placement of the concrete base course, the existing sub-base shall be re-compacted. If the sub-base is still unstable as determined by a representative of the Public Works Department it shall be over excavated to a depth of 6" and Sub-base Granular Material Type B shall be placed and compacted below the concrete base course. Little over excavation and placement of sub-base granular material is anticipated. However, if required the cost for this work shall be included in the contract unit price per square yard.

All repair areas will require placement of a 6" PCC base course. The cost of the 6" PCC base course shall be included in the bid price.

An uncompacted leveling base of FA-2, Class A, non-plastic, clean sand shall be screeded over the concrete base course to a thickness of 1" to 1½". The leveling base shall not exceed 1½". The bricks are expected to settle ¼" to ½" after compaction.

Bricks shall be laid to follow the adjacent brick pattern with generally the same spacing between bricks as the adjacent bricks. As the bricks are laid they shall be moved back and forth to solidly bed them into the sand leveling base.

When necessary to cut bricks, cutting shall be performed to leave a clean edge to the traffic surface. Bricks shall be cut with either a block splitter or a masonry saw.

Once the bricks are in place, sand shall be placed over the area and worked into the joints between the bricks with a broom, leaving a thin sand layer 1/8" to 1/4" thick over the patch area. A pass shall be made with a vibratory plate compactor over the brick surface. The compactor shall be a plate type soil compactor capable of 3500 to 5000 lb centrifugal compaction force. This equipment shall be similar to Model P-22 as manufactured by Koehring, Master Division, Dayton, Ohio.

Additional passes shall be made over the area with the vibratory plate compactor while simultaneously brushing additional FA-2 sand into the joints. The patch shall then be watered while adding additional FA-2 sand to the area and brooming the sand into the joints. A thin layer (1/4" maximum) of sand shall be left over the patch. All other excess sand shall be removed from the site.

30 days after sand is broomed and watered into the joints, the Contractor shall again broom and water FA-2 sand into the brick joints as directed by the Engineer. Excess sand shall be removed from the site.

This work will be paid for at the bid price per square yard for Brick Patching, which price shall include furnishing all work required to complete the excavation, sub grade improvement if needed, 6" PCC base course, and reconstruction of the brick pavement.

EXISTING ASPHALT OVER BRICK TO BE REMOVED
BRICK
SAND
CONCRETE BASE
NOTES:
1. EXACT DEPTHS ARE UNKNOWN
2. REMOVE ASPHALT TO TOP OF BRICK AS SPECIFIED AND AS APPROVED BY THE ENGINEER
DETAIL OF EXISTING ASPHALT OVER BRICK AREA TO BE REMOVED

BRICK
SAND
CONCRETE BASE
PROPOSED BRICK REPLACEMENT
PROPOSED SAND CUSHION (1" TO 1½")
PROPOSED 6" CONCRETE BASE
NOTES:
1. BRICKS ARE EXPECTED TO SETTLE ¼" TO ½"
2. PROVIDE POSITIVE DRAINAGE
3. AFTER COMPACTION SAND SHALL BE BROOMED, COMPACTED AND WATERED INTO JOINTS, SEE SPECIAL PROVISIONS.
BRICK PAVEMENT REPLACEMENT DETAIL

CONCRETE OR ASPHALT PATCH
BRICK
SAND
CONCRETE BASE
FULL DEPTH SAW CUTS
NOTES:
1. EXACT DEPTHS ARE UNKNOWN
2. SAWCUT AND REMOVE FULL DEPTH AS SPECIFIED AND AS APPROVED BY THE ENGINEER
DETAIL OF EXISTING CONCRETE OR ASPHALT PATCH TO BE REMOVED

BRICKS TO BE REMOVED
BRICK
SAND
CONCRETE BASE
FULL DEPTH SAW CUTS
NOTES:
1. EXACT DEPTHS ARE UNKNOWN
2. SAWCUT AND REMOVE FULL DEPTH AS SPECIFIED AND AS APPROVED BY THE ENGINEER
DETAIL OF EXISTING BRICK AREAS TO BE REMOVED