BLACKWELL HOUSE

FEASIBILITY STUDY

May 27, 1988



Prepared for:

THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF FINANCIAL MANAGEMENT, PLANNING AND GENERAL SERVICES
BUREAU OF CAPITAL IMPROVEMENTS

PARHAM-ZINK

714 So. Clinton Avenue • Trenton, New Jersey 08611 (609) 396-1818 1129 Summit Avenue • Jersey City, New Jersey 07307 (201) 653-2030

TABLE OF CONTENTS

Acknowledgements	Page	2
SECTION 1		
1.1 Introduction		3
1.2 <u>Historical Development</u>		4
1.3 Period of Significance	,	5
1.4 Renovation Feasibility	(6
SECTION 11		
2.1 Deterioration Problems & Recommendations	,	7
2.2 Cost Estimate for Recommended Repairs	12	2
SECTION 111		
3.1 <u>Illustrations</u>	13	3
SECTION IV		
4.1 Measured Drawings	25	

<u>Acknowledgements</u>

The following persons have provided information or assistance which has contributed to the preparation of this report: Gary Stone, Paul Taylor, and Jim Wiles at the N.J. Department of Environmental Protection; and Karl Niederer at the N.J. State Archives.

This feasibility study was commissioned by the N.J. Department of Environmental Protection. Parham-Zink staff who have worked on this study are: Leon Parham, Clifford Zink, Ralph Muldrow, and Peggy Berger.

BLACKWELL HOUSE
Washington Crossing State Park
Hopewell Township, N.J.

Restoration Feasibility Study
Preliminary Report
May 27, 1988

SECTION 1

1.1 Introduction

The purpose of this study is to determine the feasibility of renovating the exterior of the Blackwell House. The house today represents three construction periods from the eighteenth and nineteenth centuries. It has undergone several alterations in the twentieth century and in recent years it has suffered exterior deterioration. The overall building, however, remains structurally sound, and an appropriate renovation is quite feasible at this time. This report summarizes the building's historic development and significance, itemizes deterioration problems, and recommends repairs and restoration.

The Blackwell House is on the State and National Registers of Historic Places as part of the Washington Crossing Historic District. Since the house appears to date from after the revolution, it is not linked with the Park's period of major historical significance, but rather contributes to the historic character of the Park area as it developed over time. Any proposed renovations fall under the jurisdiction of the Office of N.J. Heritage and the Historic Sites Council, and should follow the Secretary of the Interior's Standards for Historic Rehabilitation.

The building, which has been owned by the State since 1913, has never had an Historic Structure Report. The planning for the exterior renovations in this current scope of work has been somewhat hindered by the lack of historic research and architectural analysis of both the interior and exterior. We have had to include some basic research and interior analysis in order to recommend exterior renovation work. Because of this limited information, we have only been able to postulate on the building's development and on the time period of various elements. To be able to provide optimum and historically appropriate recommendations for this scope of work or for any future work that DEP may consider, we recommend that an Historic Structure Report be undertaken for the Blackwell House.

In terms of use, a DEP planning memorandum from 1970 for Washington Crossing State Park identified the Blackwell House and its immediate environs as a service area for the park. The house is currently divided into three apartments. The eastern apartment (A) is vacant; the central apartment (B) is used periodically for meetings by DEP staff, although it has limited use because there are no large rooms; and the western apartment (C) serves as a residence for the chief park ranger. Some of the property's former outbuildings serve as maintenance sheds. No changes in these uses are currently being contemplated, although occupancy of Apartment A should contribute to the building's overall maintenance.

1.2 <u>Historical Development</u>

Because no historical research was included in the scope of work, the following chronology was developed through some information in DEP files and the State Archives, and through inspection of the building's construction. Deed research would contibute to the accuracy of the chronology.

The Blackwell House was built in stone in three sections, all of which followed vernacular forms typical to the middle Delaware Valley with some stylistic details. The central portion was erected in the late eighteenth century as a two story house, one room deep and two rooms wide, with a large cooking hearth on the east side. Its moldings, windows, and doors exhibit simple detailing in the Federal style. The eastern portion appears to have been built as an addition in the early nineteenth century, although its hand hewn second floor joists could indicate an earlier date if they are original. Extensive alterations have hidden or destroyed other evidence of its original construction. Patches visible in the stucco indicate that the roof on this section was subsequently raised to match that of the central section. (A brief historical evaluation is contained in a DEP memorandum prepared by Charles Tichy, June 1, 1972.)

The large two-story western portion was erected in the 1850's to 1860's period, with some Greek Revival and early Victorian details. The double doors on the facade and the floor plans indicate that this section was originally designed as two residences, more similar to the semi-attached houses one would expect to find in places like Lambertville or Trenton, rather than the telescopic type of generational development typical of farmhouses in the rural areas. Historical research could help identify whether the double residence served portions of the same family, or whether it housed separate families.

The earliest known photograph, c. 1915 (Plate 1), shows shutters on all three sections and Victorian porches on the central and western sections. In the twentieth century the porches were renovated with some Colonial Revival details (pl. 2), and small shed additions were added on the rear to the first floor of the eastern section and the second floor of the western section.

The western section appears to have always been stuccoed, as the exposed stone masonry in areas where water damage has occurred is of rubble construction. The stucco visible in these areas, which appears to be original, is a sandy mixture with some horse hair bonding. None of the masonry in the earlier sections is visible, and there could be more than one layer. There is also evidence of twnetieth century patching in several locations. The score lines in the stucco on the south, west, and portions of the east and north sides mimic the appearance of ashlar stone masonry. Similar score lines could appear on an earlier layer on the central section, although as a simple farmhouse it more likely was plain.

1.3 Period of Significance

While a full statement of the building's significance would require an Historic Structure Report, a preliminary assessment can be made at this time based on available analyses. Since the house appears to postdate the Revolutionary War, it stands apart from the major historical significance of the Park. The State appears to have acquired the Blackwell property primarily to provide additional open space in the Park.

The house contributes to the Washington Crossing Historic District as the residential portion of the Blackwell Farm, exemplifying the generational development of a farmstead from the late eighteenth through the nineteenth centuries. Besides the house, there is a stone root cellar, stone smoke house, stone pump house, and a frame barn on a stone foundation, all dating from this period. Twentieth century buildings and alterations primarily relate to State ownership as part of the Park.

The primary architectural significance of the Blackwell House dates to the 1850's-1860's period when it was built to its full size. While the late eighteenth century portion is typical of the period, the nineteenth century urban-type addition is somewhat unique in its rural setting. With the exception of the missing shutters, changes to the front porches, and the addition of the small sheds on the rear, the exterior appearance of the Blackwell House remains largely intact from that period. Most of the windows and doors appear to be original to each section's construction. The building is therefore significant as a fairly intact and somewhat unique example of farmhouse development in the middle Delaware Valley. Any renovations should be sensitive to this significance.

1.4 Renovation Feasibility

Except for some ongoing damage caused by water penetration in several areas, the Blackwell House appears to be structurally sound. The building's stone masonry and framing appear to be in generally good condition, capable of providing many decades of useful service if properly repaired and maintained.

Based on its condition, usuability, and historical significance, the renovation of the Blackwell House exterior is quite feasible at this time. Accordingly, the renovation should be designed and undertaken with the following criteria:

- The building's original fabric and historic significance should be preserved;
- Ongoing damage in several areas should be repaired/restored as soon as possible to prevent serious structural damage which will eventually require large expenditures;
- Repairs and new work should have long-term servicability and require minimal maintenance;
- 4) A periodic program for required maintenance should be established to promote longevity of the building's fabric with minimum expenditures over the long term.

Eighteenth and nineteenth fabric should be restored. Existing twentieth century fabric should be left if it is structurally sound and contibutes to the current use of the building, such as the second floor shed roof bathroom additions. Twentieth century replacement fabric that has deteriorated should be removed and the original design should be restored where evidence of its appearance is known. Where the original appearance is unknown, replacement elements should be consistant with the design of the period of significance.

SECTION II

2.1 <u>Deterioration Problems and Recommended Repairs</u>

1. PORCHES

Condition- The eastern porch (Pl. 3) appears to have the same roof visible in the 1915 photograph (Pl 1). The cornice moldings (Pl. 4) and floor structure indicate that it was probably constructed in the late nineteenth century. The columns, which are placed in groups of three at each corner as typical in Colonial Revival design, appear to have been installed in the twentieth century. The bases of the columns and portions of the floor structure and decking are severly rotted (Pl. 5), with the result that the porch roof could collapse. A leak in the roof appears to have deteriorated a portion of the porch cornice.

The western porch roof, columns, decking, and steps (P1. 6) appear to have been built in the twentieth century. The floor structure, however, may date to the earlier gable roof porch visible in the 1915 photograph (P1. 1). The column bases and portions of the decking and steps (P1s. 7 & 8) are severly rotted like those on the eastern porch, and this porch roof could also collapse. Leaks in the roof have caused some rot around the soffit of the cornice (P1. 9).

Recommendation—Because of their deterioration, major portions of the columns, decking, and steps will have to be replaced. As nearly all of these elements are modern replacements, they have little historical value and should not be replicated in their current design. Instead, the extensive renovations that are now required present the opportunity for appropriate historical treatment of these prominant details, which are on the front of the building and are visible from Pennington-Washington Crossing Road.

The porches should be restored to the building's period of historical significance. The design that is visible in the 1915 photograph (P1. 1) appears to date from this period. The photograph provides much of the architectural evidence needed for restoration, particularly for the western porch. Details, such as molding profiles and dimensions of members, could be obtained from surviving examples of this design and from pattern books of the period.

2. STUCCO

Condition— The original stucco, visible on the facade of the western section above the rotted window lintel (Pls. 10, 11, 12, 13), appears to be a sandy material in color and texture with horsehair as a binder. The stucco in patched areas is harder and grayer, indicating a high proportion of portland cement. The stucco on the south facade, west side, and portions of the north and east sides was struck with lines to imitate the coarsing of ashlar stone masonry. Whether or not earlier stucco on the central and eastern sections was struck with coarsing lines would have to be determined by exposing a sampling from these sections. With the exception of the areas where penetrating water has caused damage, most of the stucco appears to be intact.

Recommendation— The sections in good condition, which constitute the majority of the building, should remain since they are providing good protection for the stone masonry beneath. Where the stucco has failed and needs to be patched, it should be analyzed to determine the original composition. Replacement stucco should replicate the original in texture and hardness, using a bonding agent to promote adhesion. Coarsing lines should be struck to continue the current pattern over the patched areas.

3. WINDOWS-

Condition— On the western section of the south facade, the leaking gutter has caused extensive deterioration to the first floor window east of the porch (Pls. 10 & 12). Most of the window sash and frames are original to each construction period and are in fair to good condition. Typical deterioration includes missing, cracked, or loose glazing, peeling paint, and some cracks in sills or along masonry joints which allow water penetration (Pls. 21 & 22).

Recommendations— The missing lintel facia and rotted lintel on the first floor window should be replicated and installed to ensure durability and structural support. The sash should be reglazed where necessary, with care taken to preserve the original glass. Sills and frames should be caulked and sealed where necessary to prevent moisture damage.

4. STORM WINDOWS

<u>Condition</u>— Some of the windows, particularly on the north side, have wooden storm windows which are in good condition but need painting.

Recommendation—While storm windows generally detract from the appearance of historic houses, they are reversible intrusions which cause diminimous damage to original fabric. As long as the Blackwell House serves as a residence and meeting facility, rather than a museum, the insulation value provided by storm windows should offset any visible detraction. The existing wooden storms should remain in place as long as they are serviceable.

There are two options for storm sash for the remaining windows:

1) exterior aluminum triple track windows; and 2) interior windows with aluminum, plastic, or wood frames. The first type would include screens for fresh air, while the second type would have to be removed in the summer and replaced with screens where the windows should be operable. Interior storm sash would be preferable to maintain the exterior appearance. Aluminum storm window frames should be painted at the factory to match the color of the window frames, whether on the interior or exterior.

5. STORM DOORS-

Condition- The aluminum storm doors on the house are in fair condition.

Recommendation- The aluminum doors on the south facade (P1. 6), detract from the historic appearance of the house. They should be removed and replaced with full-glass storm doors, painted to match the wood trim.

6. SHUTTERS

Condition- The house previously had shutters, as visible in the 1915 photograph (P1. 1), which contributed significantly to its overall appearance. The ground floor appears to have had panel shutters, while the second floor had louver shutters. They are all missing, although shutter hardware remains on several windows.

Recommendations- To provide the proper historic appearance, new shutters should be made to replicate the original designs and they should be installed with appropriate hardware on the east, south, and west sides. Their design should be based on research to determine the appearance of shutters on area houses with construction periods similar to each section.

7. PAINT-

Condition- The 1915 photograph (PL. 1) shows a polychrome paint scheme on the shutters and wood trim. The current paint colors on the wood trim are inappropriate for the building's historical significance. The entire building currently needs to be repainted.

Recommendation— The entire building should be properly prepared, primed and caulked where necessary, and painted with paint appropriate for each material. Paint samples should be taken by a qualified paint analyst from selected areas of eighteenth and nineteenth century woodwork and masonry on each section to establish a paint chronology. Paint colors selected for repainting should be based on the building's appearance c. 1850's to 1860's.

8. ASPHALT ROOFING

Condition— The asphalt shingle roofs are beginning to show signs of deterioration (P1. 14), and patches have been made in several areas. One leak was evident in those areas of the attic that were inspected, and many shingles have broken off on the southern portion of the roof. There appears to be a leak on the one-story rear addition to the western section (P1. 15), which is causing plaster and paint failure in Apartment C.

Recommendation— While the service life of the existing roofs could be extended through patching, the best solution would be to replace them. This will facilitate needed repairs to the gutters and flashing, and avoid the need for repeated repairs. In keeping with the house's historic character, the new roofing material should be cedar shingles.

9. TIN ROOFING & GUTTERS

Condition— The tin roofing on the front porches and the second story shed roof (western section), and the tin lining on the box gutters for the most part appear to be structurally sound. Deteriorated paint and accumulated leaves have allowed some of the surface to rust, and some small areas of the porch roofs and boxed gutters have rusted to the point of allowing water to penetrate the cornices (Pls. 7 & 19). Previous patches in these areas have failed.

Recommendation- Overall, the tin roofing and gutters have not deteriorated to the point of requiring replacement at this time. They should be properly repaired, painted with rust inhibitive paint, and periodically maintained to prevent additional damage. An alternative would be to replace the tin gutter linings with copper when the roof is replaced. While costing more up-front, copper will not require periodic painting. Screens should be provided in the scupper holes and periodically maintained.

10. HANGING GUTTERS

Condition- The hanging gutters are generally clogged with debris. About half the gutter along the first story of the north side of the western section is missing (P1. 15).

Recommendation- The rotted hanging gutter on the north side should be replaced and the gutters on the eastern and central sections should be repaired and maintained as required. An alternative would be to replace the hanging gutters in copper, which would require no painting and last longer than galvanized gutters. Screens should be provided in the scupper holes and periodically maintained.

11. LEADERS

Condition— Several leaders are not adaquately draining water away from the building. On the east side, both leaders are discharging water too close to the foundation, causing paint and stucco failure (pls. 16 &17). On the north side, the leaders from the upper roof of the western section are discharging water onto the shed roof to the point of deteriorating the shingles and allowing the water to enter the basement, where heavy accumulation is evident after rain (Pl. 15). The discharge from a heavy rainfall also probably runs over the gutter along the eave of the shed roof, causing damage to the wall by the rear entrances. The leader is missing altogether in the northeast corner of the first story shed addition on the western section (Pl. 13).

Recommendations- Missing leaders should be replaced and directed away from the foundation. Extensions should be added where necessary to direct water away from the foundation. Second story leaders on the western section need to be redirected, extended along the north wall and down to the ground on the east and west sides of the north addition. An alternative would be to replace these in copper, which will require no painting and will last longer.

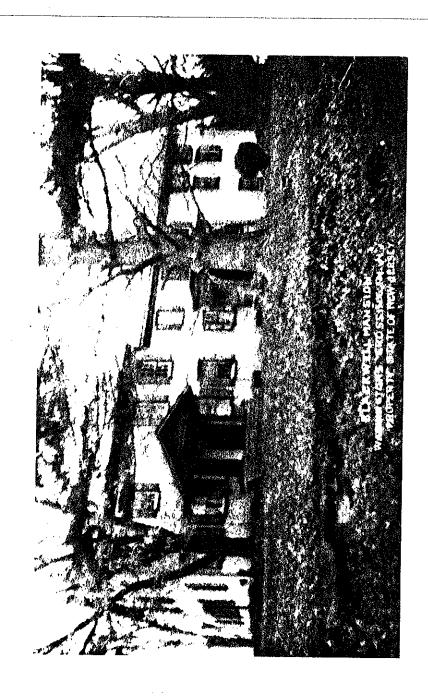
12. CHIMNIES

Condition- The stuccoed chimnies on the western section appear to be in generally good condition (Pls. 18 & 19), with the exception that some of the flashing needs repair or replacement as water has caused some paint deterioration. The brick chimney caps on the central and eastern section have been rebuilt, probably when clay flue liners were installed. Some of the pointing is missing and portions of the flashing need repair (Pl. 14). The eastern chimney, which is not being used to vent heating equipment, is allowing moisture to enter the stone masonry on the eastern gable, causing paint failure (Pl. 20).

Recommendations— The flashing on all the chimnies should be repaired or replaced as necessary when the roof is replaced. Replacement with copper would require minimal maintenance in the future. The brick chimney caps should be repointed with mortar that replicates the original mortar in color, hardness, and tooling. The eastern chimney should be capped to prevent moisture from entering the walls.

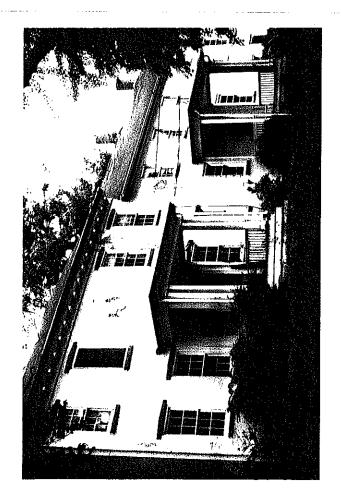
2.2 Cost Estimate for Recommended Repairs

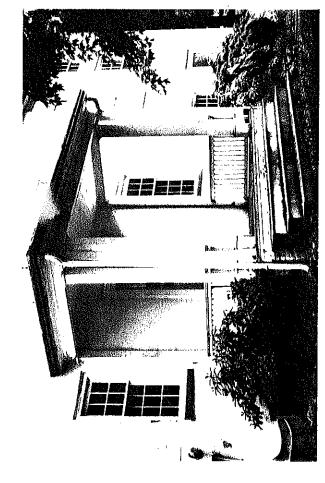
Ite	em.	Work	Item cost	Total cost (alternate)
1.	PORCHES	Restore eastern porch Restore western porch		\$20,000
2.	STUCCO	Stucco analysis Restore damaged secti	ons	1,000 3,000
3.	WINDOWS	Replace lintle Reglaze, caulk: \$100	1,000 x 51 5,100	6,100
4.	STORM WIND	OWS \$100/window x 51		5,100
5.	STORM DOOR	S \$450/each x 4		1,800
6.	SHUTTERS	\$500/window x 30: sou	th, east, west	15,500
7.	PAINTING	Paint Analysis Prepare, prime & pain	t	1,500 14,000
8.	ROOFING	Remove asphalt, insta	11 cedar	16,000
9.	TIN ROOF &	GUTTERS Repair leaking areas Replace with copper		1,000 (5,000)
10.	HANGING GUT	ITERS Rehang & replace Replace with copper		1,500 (3,000)
11.	LEADERS	Repair, replace, & ext Replace & extend w/co		1,000 (2,500)
12.	CHIMNIES	Repoint, reflash, cap	\$1000 x 4 Total- Total w/alternates-	4,000 \$91,500 (\$98,500)



BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

postcard of the period. From a "Blackwell Mansion" circa 1915. Plate 1





Production (Control)

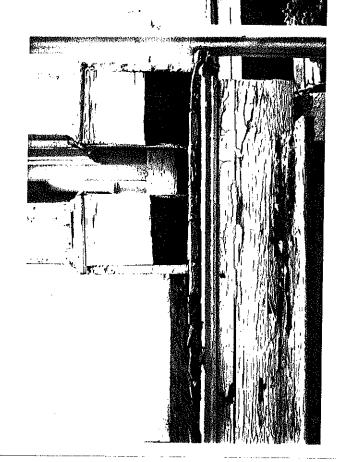
BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 2 - South facade.

Plate 3 - South facade, eastern porch.



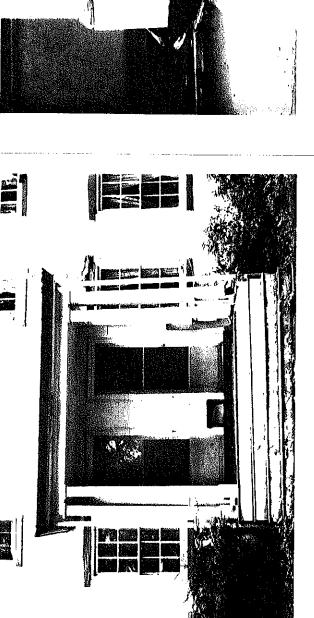
Alexander (A)

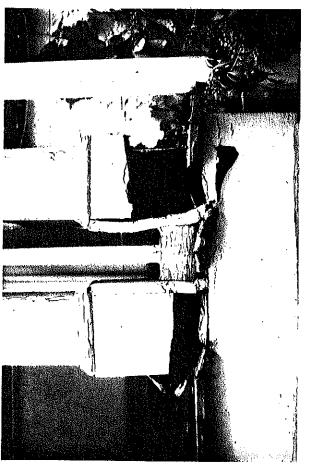


BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 4 - South facade, eastern porch cornice and columns.

Plate 5 - South facade, eastern porch, east column bases.





BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 6 - South facade, western porch.

Plate 7 - South facade, western porch east column bases.





BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 8 - South facade, western porch, steps.

Plate 9 - South facade, western porch, cornice.

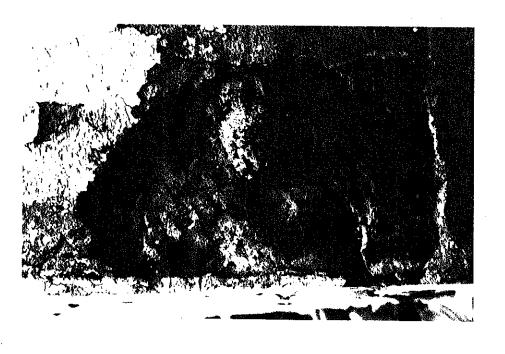




BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 10 - South facade, western section, stucco and lintel.

Plate 11 - South facade, western section, second story stucco and cornice.



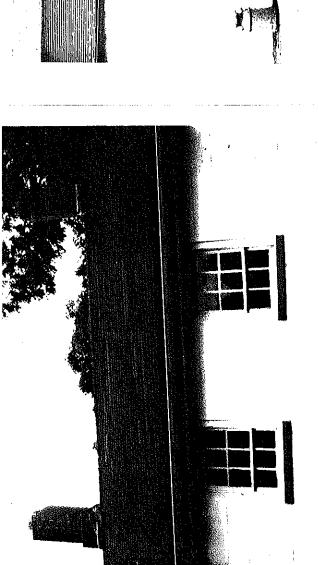


BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 12 - South facade, western section, window lintel.

Plate 13 - North facade, western section, eastern corner, stucco and

stone masonry.





A Principal of the Party of the

I management

Section 1

derive colonial (

City manuscript

BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 14 - South facade, eastern section, roof and chimneys.

late 15 - North side, western section
leaders, gutters, and
roofing.





BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

Plate 16 - Eastern section, east side, north leaders.

Plate 17 - Eastern section, east side, south leaders.

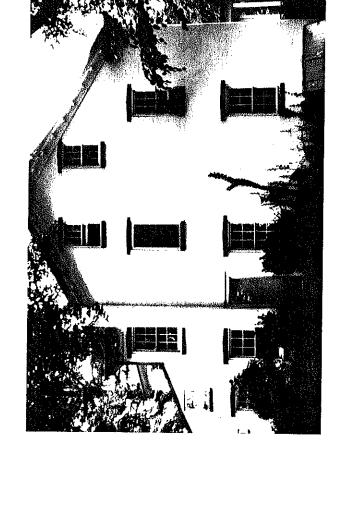




Plate 18 - Western section, east side, chimney.

Plate 19 - Western section, west side window.

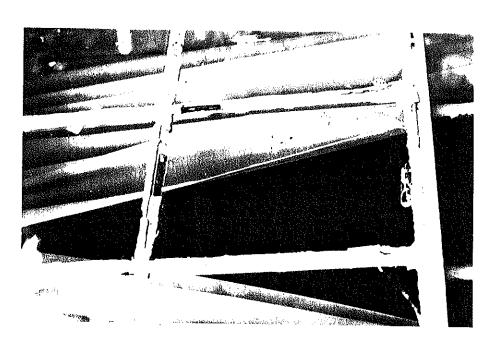




Plate 20 - Eastern side, east section.

Plate 21 - South facade, western section, first floor window east of porch.

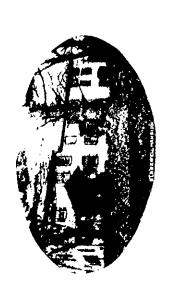


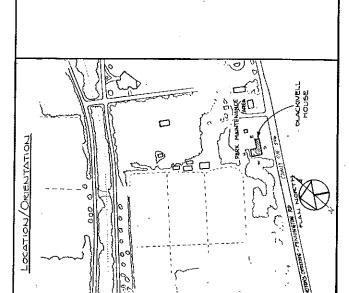
BLACKWELL HOUSE Washington Crossing State Park Titusville, N.J.

- East side, western section, first-floor window sill. Plate 22

BLACKWELL HOUSE

Washington's Crossing State Park





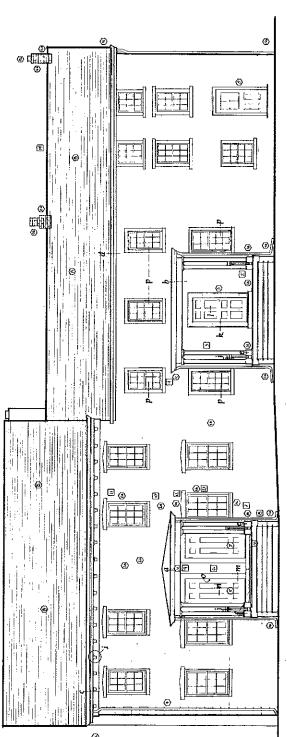


-

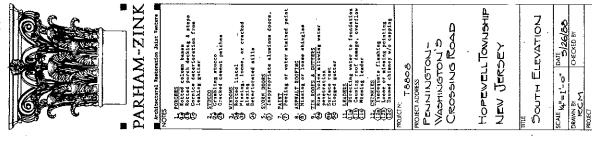
ORON SAISEON	HOPEWELL TOWNSHIP	TITLE PAGE/LOCATION MAPS	HOWN DATE 5/26/58	DLACKWELL HOUSE	FEASIBILITY STUDY
999)	TOPE.	1111E	T	MOJECT DLACK	FEASIB

c. 6987	 ary.	ž Lije
	 c - 6937	

MASHINGTON CROSSING STATE PARK, NEW JERSEY



South Elevation



SOUTH ELEVATION

WHE W.=1'-0" S/26/65

WANNEY

CHECKED BY

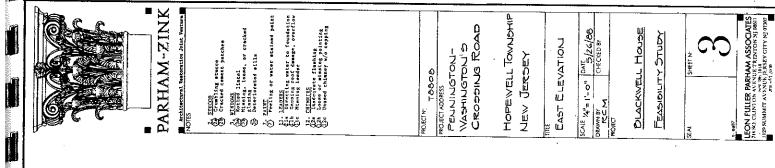
ONC

DLACKWELL HOUSE

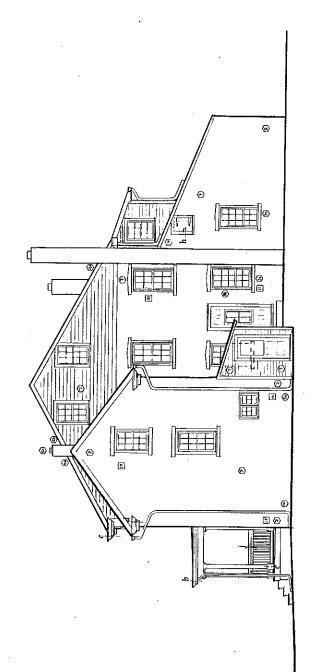
FEASIBILITY STUDY

Sheet F

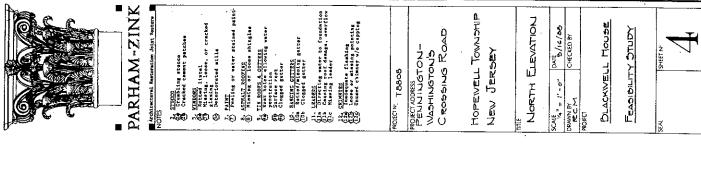
LEON FULLER PARHAM ASSOCIATES 714 SO. CLINTON AVENUE TRENTON NJ (881) 1129 SUMMIT AVENUE JERSEY CITY NJ 07307 291 855 3888

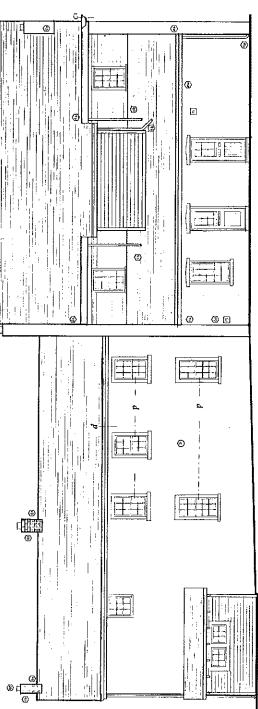


.



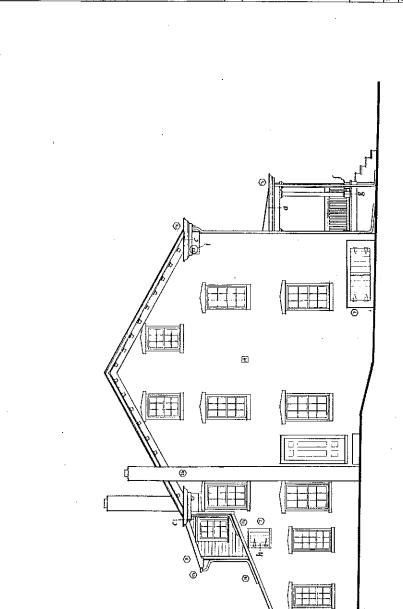
East Elevation





North Elevation

LEON FULLER PARHAM ASSOCIATES
74 SO, CLINTON AVENUE, REDITON NJ 9861:
1179 SUMMIT AVENUE, RESEX CITY NJ 97303
701 NY 2020



West Elevation

