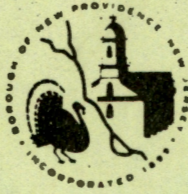


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Borough of New Providence, N. J.



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Topics Report

Traffic Operations Program to Increase Capacity and Safety

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Date: November 1972

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ADDRESS: BOROUGH HALL, NEW PROVIDENCE, NEW JERSEY

Borough of New Providence, N. J.



Topics Report

Traffic Operations Program to Increase Capacity and Safety

Date: November 1972

ADDRESS: BOROUGH HALL, NEW PROVIDENCE, NEW JERSEY

FOREWARD

The Borough of New Providence's TOPICS Study was prepared by members of the Borough of New Providence's Engineering Department with the assistance of the Union County Traffic Engineer, Mr. Walter W. Gardiner.

Assistance in the compilation of data used in the Study was provided by the New Providence Police Department.

The final report is a result of the Borough's Engineering Department and the Union County Traffic Engineering Division working together in analyzing the data and arriving at the conclusions set forth in this report.

PROJECT ENGINEER

Walter W. Gardiner, Traffic Engineer

Union County Planning Board

BOROUGH OF NEW PROVIDENCE ENGINEERING DEPARTMENT

John T. McCann, Borough Engineer

William W. Fitter, Assistant Borough Engineer

Roy N. Fletcher, Junior Assistant to Engineer

Dorrit Stagg, Secretary to Borough Engineer

BOROUGH OF NEW PROVIDENCE TRAFFIC OPERATIONS

PROGRAM TO INCREASE CAPACITY AND SAFETY

Preparation of this report was financially aided through the Federal Highway Administration of the Department of Transportation under TOPICS funds. Program authorized by section 10 of the Federal Aid Highway Act of 1968 and the New Jersey Department of Transportation through TOPICS Assistance Funds made available by the Commissioner of Transportation.

Borough of New Providence

Engineering Department

December 1971

Revised November 1972

PHYSICAL DESCRIPTION OF TRAFFIC & TRANSPORTATION

New Providence is basically a residential community with a small industrial-research section located west of South Street between Central Avenue and the railroad, and a central business district located at the intersection of Passaic-South Streets and Springfield Avenue. The remainder of the community is of a residential character except for an area of office and research buildings on Mountain Avenue, between South Street and Union Avenue.

Non-automotive commuter transportation is provided by the Erie Lackawanna Railroad which has stations at the east end of the Borough near Division Avenue and a centrally located station at the Circle west of South Street. Commuter parking lots are available at both stations.

Bus transportation is supplied by the Watchung Bus Service which provides service to Summit and also travels from Summit through New Providence to Berkeley Heights. The busses travel Springfield Avenue and pick up passengers on demand.

In order to provide a basis of study for traffic, the map entitled "Topics Study System" was prepared, this map, in the opinion of the study group, included those streets which (1) carried the highest concentrations of traffic, (2) provided the most direct routes for both inter and intra-municipal traffic and (3) those streets most often and most logically used by traffic to avoid congestion in the central business district.

The geographic position of the Borough subjects it to large volumes of inter-municipal traffic passing through the Topics systems and sub-systems at peak hours. New Providence's traffic systems provided access to and from Route 22, the Murray Hill Bell Telephone Laboratories and Route 24 in Summit.

The central business district's location also receives intra-municipal traffic, while traffic utilizing the C. B. D. for shopping is generally during off peak hours, congestion does occur due primarily to the lack of adequate off-street parking facilities, current parking regulations, driveway locations and most important its location on Springfield Avenue, the major East-West County artery, and Passaic and South Streets, the major North-South County artery, (Passaic Street is one of two north-south arteries with a bridge over the Passaic River).

In order to analyze the traffic within the Borough, studies were undertaken to determine present volume, speed delays at peak hours, tabulate accident counts on these streets, tabulate stop streets and traffic signals within the Borough, review the Borough's parking regulations and an overall study of the Central Business District. From these studies, maps were prepared and the study streets were divided into systems and sub-systems.

Finally, each system and sub-system was analyzed with a view toward increasing its safety characteristics and its capacity.

MAP NO. 1

Topics Study System:

This map was prepared initially to indicate those streets in the study. Traffic signals and one way streets were also shown as an aid in the study of traffic safety and traffic flow.

The map serves as the basic study plan from which all the other maps were prepared.

MAP NO. 2

24 Hour Volume Count:

Utilizing traffic counts provided by the Union County Traffic Engineer, a map was prepared indicating the traffic volumes on the streets included in the Topics Study.

This map provides an indication of traffic flow within the Borough. Based on the information shown on this map, it is possible to isolate the most heavily travelled portions of the study system as well as the streets within the study which both contribute and relieve the volume within the system.

Those streets travelling in a direct north-south or east-west direction were found to carry the highest volume of traffic and could readily be isolated into individual systems.

It should be noted that these counts were taken prior to several significant improvements which were made to streets within the Topics Study, these were:

1. The improvement of Springfield Avenue for its entire length.
2. Completion of the realignment of the Central Avenue and Springfield Avenue intersection and installation of the traffic light.

3. The improvement of Livingston Avenue from the bridge near Marion Avenue to Grant Avenue - this section of roadway had physically deteriorated to such a degree that it served to impede effective use of Livingston Avenue.

MAP NO. 3

Overall Speeds at Peak Hours:

In order to determine the effectiveness of traffic flows during the peak hours, speed delay runs were conducted by Borough Engineering personnel on the streets in the Topics Study.

As a result of this study, areas which indicated delays on the various streets could be isolated and analyzed as to probable causes.

It became evident that the Central Business District is one of the major points of traffic congestion in the Borough. It was also observed that some traffic is using other systems to avoid this area of confusion.

MAP NO. 4.

Traffic Accidents:

The traffic accident map was prepared in order to ascertain the number of accidents reported at intersections of streets within the Topics Study.

The New Providence Police Department made available to the group, copies of accident reports for the past three years.

During the preparation of the Traffic Accident maps, it became apparent that a high proportion of accidents were occurring in the Central Business District, outside of the intersection of South-Passaic Streets and Springfield Avenue. It was determined that for the purposes of further study that these be included on the map.

Not including intersections, the safety problem in the Central Business District falls into three categories:

1. Parking Regulations.
2. Ingress and egress of many separate driveways.
3. Street lighting.

The new model Traffic Ordinance will aid in alleviating the first two problems, and a survey of street lighting has been undertaken by the Building Inspector and personnel of the Jersey Central Power and Light Co.

MAP NO. 5

Stop Streets:

As a part of the study of regulatory signs affecting traffic in the Topics Study, an inventory of stop signs were made throughout the Borough. The inventory was expanded to include all stop signs, including those outside the Topics System.

The first step in the preparation of the map was the compilation and review of all available ordinances concerning regulatory signs and through streets. All stop signs, covered by ordinance or not, were added to the map. An additional benefit of the field inspection was that an inventory of signs could be made. The inventory considered the physical condition of the sign, the visibility of the sign due to overhanging branches, proximity of other signs, trees or other physical features which would reduce the effectiveness of the sign. This inventory provides the basis for a program of sign replacement and removal of obstructions to vision.

As a further result of this study, The Model Traffic Ordinance will cover all stop streets in the Borough.

MAP NO. 6

Parking Regulations:

To further study the factors affecting the safe flow of traffic in the Topics Study, a map was prepared indicating the parking regulations within the Borough.

This map, again, was expanded to include all the streets in the Borough.

Preparation of this map was accomplished by first compiling all the existing ordinances which regulate parking in the Borough. The ordinances were then reviewed and plotted on the map.

A field inspection of signing was then made and the results of the inspection were added to the map.

The information gained through the preparation of this map was used as the basis of the proposed Model Traffic Ordinance which will serve to eliminate the duplicate or outdated ordinances and provide for regulation of areas previously not covered by ordinance.

MAP No. 7

Systems and Sub-systems:

On the basis of the information gained from the preceding maps, the Topics System was broken down into a series of systems, these systems were further broken down into sub-systems where specific problems were shown to exist.

MAP NO. 8

Central Business District Sub-system:

The Central Business District falls into the category of a sub-system which

is the hub of the Topics Study. Two main systems go through the Central Business District; one in an east-west direction, the second in a north-south direction, the intersection of which is centrally located in the Central Business District.

The map indicates the buildings, dividing lines between properties, private and municipal parking lots and access ways, pavement widths and existing parking regulations within the Central Business District.

CONCLUSION OF TOPICS STUDY

The Topics Study indicated to the study group that the Central Business District was the prime problem in both inter and intra-municipal traffic flow.

From the Central Business District, systems and sub-systems radiate outward and interconnect with the other systems and sub-systems, each system and its sub-system having its effect on the Central Business District, and in turn, being affected by the traffic problems of the Central Business District.

As an aid to alleviate traffic problems in the Central Business District, the present parking ordinances of the Borough are being incorporated into a model traffic ordinance and modernization of the existing traffic signal is being studied.

To facilitate the flow of traffic entering and leaving the Central Business District, it was decided that the systems and sub-systems closest to the Central Business District be examined for solutions to problems in the systems or sub-systems. From this study, a list of projects and their priorities has been developed and is included in this report.

INDEX OF SYSTEMS & SUB-SYSTEMS

- System 1.** South Street - Passaic Street (Mountain Avenue to Passaic River).
Sub-system A - Central Business District (Intersection of South Street - Passaic Street and Springfield Avenue).
Sub-system B - South Street Underpass at Erie-Lackawanna Railroad.
Sub-system C - Passaic River Bridge (Passaic Street crossing of the Passaic River).
- System 2.** Maple Street (Mountain Avenue to Springfield Avenue).
- System 3.** Springfield Avenue (Summit line to Berkeley Heights line).
- System 4.** Mountain Avenue (All of Mountain Avenue passing through the Borough from the Summit line to the most westerly dividing line between New Providence and Berkeley Heights).
Sub-system D - Right hand turn lane - Diamond Hill Road at Mountain Avenue.
- System 5.** Union Avenue (Mountain Avenue to Springfield Avenue).
- System 6.** Division Avenue (Mountain Avenue to Old Springfield Avenue).

TOPICS STUDY PROJECT PRIORITY LIST

As a result of the study, the primary needs of the Borough to increase safety and relieve congestion have been determined to be essentially as follows:

1. Central Business District - Sub-system A.

In order to facilitate the smoother flow of traffic through the Central Business District, the following recommendations are made by the study group:

(1) Parking regulations

The Model Traffic Ordinance should include the following restrictions:

- (a) No stopping or standing at anytime, east side of South Street from Gales Drive to a point 50 feet † north of the Shopping Center driveway.
- (b) No stopping or standing 4:00 P.M. to 6:00 P.M. east side of South Street from Springfield Avenue to a point 50 feet † north of the Shopping Center driveway.
- (c) No stopping or standing west side of South Street, 50 feet north and south of the extension of the sidelines of the Shopping Center driveway.
- (d) No stopping or standing 7:00 A.M. to 9:00 A.M. west side of Passaic Street, Springfield Avenue to Charnwood Rd.
- (e) No stopping or standing 7:00 A.M. to 9:00 A.M., 4:00 P.M. to 6:00 P.M. north side of Springfield Avenue, Academy Street to Passaic Street.

(2) Lane Striping

Lane striping should be provided at the following locations:

- (a) Two northbound lanes on South Street between Gales Drive and Springfield Avenue.
- (b) Two southbound lanes on Passaic Street between Charnwood Road and Springfield Avenue.
- (3) It is recommended by Mr. Gardiner that the easterly corner of Passaic Street and Springfield Avenue be realigned to coincide with the easterly sideline of South Street.
- (4) Another factor which would aid in reducing the congestion in the Central Business District would be the elimination of the many driveways exiting on to South Street, however, due to the number of individual property owners involved, the problem must be considered outside the Topics program.

2. Replacement of the South Street Railroad Underpass - Sub-system B.

The main north - south artery in New Providence is South Street (called Passaic Street north of Springfield Avenue,) which runs from the Passaic River, the northern boundary of the Community, to Mountain Avenue. From Mountain Avenue, it extends approximately 500 feet to the southern boundary of the Borough and continues on in the Township of Berkeley Heights as Glenside Avenue.

From Mountain Avenue, South Street runs down hill at fairly steep grades to the Erie-Lackawanna Railroad, after which it flattens out. The underpass itself has a horizontal clearance of 17' 10" between curbs (20' between abutments) and there is no sidewalk on either side. The vertical clearance is approximately 12 feet.

The underpass is a hazardous bottle neck. South Street is a County road

which is paved to a forty-foot width between curbs both north and south of the railroad. The present width barely accommodates two moving lanes of traffic and timid drivers tend to slow down to a snails pace if they are approaching cars under the bridge.

Over the years, many trucks have become stuck or have sheared off their roofs when they have attempted to drive through the underpass. Many large trucks approach the underpass and then have to back up the hill in order to take a bypass route. Needless to say, this causes serious traffic jams.

Several times the bridge has actually been shifted on its abutments as a result of being hit by trucks. The possibility of the tracks being shifted when a train is passing over the bridge is a frightening thought.

While a large portion of the total traffic is essentially local in nature, there is also a large portion which is represented by through traffic with origin and destination outside the limits of the Community. It can only be assumed that when Route 78 is completed, the amount of traffic will be greatly increased.

The bypass route for the underpass, which is used by most trucks, is a grade crossing west of the bridge at the Murray Hill Railroad Station, bordering the industrial section of the Borough. The grade crossing is paved to a width of approximately 24 feet and is not only used by commuters, who park in lots on both sides of the crossing, but is also utilized by school children as well.

The grade crossing is especially heavily congested during the morning hours by; trucks bypassing the underpass, commuter traffic to the railroad station parking lots, commuters to the industrial section, pedestrian

commuters and school children.

The need to replace the present underpass with an adequate bridge is urgent.

3. Passaic Street River Bridge - Sub-system C.

The Passaic Street river crossing is a narrow, poorly aligned bridge, which has deteriorated to a condition requiring a load limit of only 8 tons.

This bridge is one of two river crossings in the Borough and during the floods following the Hurricane of August 1971, it was the only crossing reportedly open for 12 miles along the Passaic River.

The Passaic Street River Bridge is also the most direct route for traffic entering or leaving the Borough, since Passaic Street is part of the north-south system which passes through the Central Business District.

The new bridge is reportedly scheduled for early construction as a joint Federal Aid, Morris-Union County project.

4. Passaic Street - System No. 1

Passaic Street is a narrow two lane County road connecting the Passaic River Bridge and Springfield Avenue, a distance of 0.52 miles. The roadway varies in width and in many areas is void of shoulders. Passaic Street is the continuation of South Street and, as such, is part of the major north-south system in the Borough.

The narrow road lacks the capacity to provide for the safe flow of traffic both automotive and pedestrian.

Upon implementation of plans to construct the new bridge over the Passaic River, it is recommended that Passaic Street be improved, with curbs, to a minimum of 46 feet wide from Springfield Avenue to Elkwood Avenue and a minimum of 40 feet from Elkwood Avenue to the Bridge.

5. Passaic-South Streets - Springfield Avenue Traffic Light modernization

Sub-system A.

The existing signal at this location is an approved traffic light which should be modernized to provide for safer and more efficient flow of traffic. At present, the signal is controlled by a timer which operates during normal traffic flow. However, during night time traffic periods, the signal is in a flashing mode of operation.

Of the 17 accidents reported at this intersection since January 1, 1971 eight occurred during daylight hours and were apparently relatively minor with one bodily injury. The remaining nine accidents occurred at night when the light was in a flashing mode. Of the nine accidents, six resulted in injuries being suffered by thirteen individuals.

Modernization of this signal should include at the minimum, the installation of vehicular detection loops and pedestrian push buttons.

The installation of vehicle detector loops will undoubtedly improve the safe flow of traffic through the Central Business District and permit the operation of this light on a 24 hour basis as aid in reducing the number of severe night time accidents.

6. Maple Street - System 2

Maple Street runs between Springfield Avenue and Mountain Avenue. There is a satisfactory railroad bridge and the portion between Central Avenue and Springfield Avenue has been improved to a width of 40 feet between curbs with the exception of a portion approximately 500 feet in length that has poor sight distance on a vertical curve, fair to poor pavement condition, and is less than 40 feet in width with no curb on the east side.

It is recommended that the grade of this section be improved to provide the

necessary minimum sight distance and that the road be improved to a 40 foot width between curbs.

The portion of Maple Street between Central Avenue and Mountain Avenue is an average of approximately 26 feet in width, mostly without shoulders, and the pavement is in poor condition.

It is recommended that this section be improved to a 40 foot pavement width, with curbs.

7. Mountain Avenue - Berkeley Heights line (west of Oakwood Drive to the City of Summit line on Division Avsnuue) System 4.

This portion of Mountain Avenue is a narrow two lane County road, which in many areas is void of shoulders and has generally poor sight distance on curves.

It is recommended that this section be improved to a width of forty feet between curbs.

8. Union Avenue-Diamond Hill Road-Right Turn Lane. Sub-system D.

The intersection of Union Avenue - Diamond Hill Road with Mountain Avenue was the subject of an independent study by the Union County Traffic Engineer, Walter Gardiner. Mr. Gardiner recommended that a right turn lane from Diamond Hill Road to Mountain Avenue be installed.

9. Union Avenue - System 5.

Union Avenue is a 30' paved and curbed roadway connecting Springfield Avenue and Mountain Avenue. It is a major north-south system in that it provides a direct connection to U.S. Route 22 via Diamond Hill Road (Union Avenue south of Mountain Avenue).

In addition to a grade crossing and almost unrestricted parking, the road has steep grades, (on the order of 10% and in the northerly portion has several curves with relatively poor sight distance.

It is recommended that in addition to the present minimal parking restrictions, parking be further restricted to one side of the street only, at all times.

The Union County Planning Board in its "Interim Land Use Plan" adopted on November 14, 1969 has recommended the following:

- (a) Union Avenue be made a County Road.
- (b) Provide a direct route to Morris County by extending Union Avenue north of Springfield Avenue to the existing bridge over the Passaic River at Central Avenue.
- (c) Definite consideration be given to construction of a road on a new alignment north of Kline Boulevard to the Passaic River.

The Mayor and Council, by formal resolution, has requested the County of Union to accept Union Avenue as a County Road.

In addition to concurring with the County Planning Board's recommendations, A and C, it is further recommended that Union Avenue be a minimum of 40 feet wide with curb both in the proposed new alignment areas and the existing alignment area south of Kline Boulevard which will remain.

The scope of the realignment and widening of Union Avenue is such that it will require considerable time for implementation. It has been recommended by the Union County Traffic Engineer that Union Avenue be widened between Mountain Avenue and Martins Lane to provide for two lanes of south bound traffic, as a means of improving flow through the Mountain Avenue - Union Avenue intersection.

10. Livingston Avenue - Springfield to Central Avenues

Livingston Avenue is not listed as a system in this report, but does serve to

connect Central Avenue and Springfield Avenue and does, to some extent, provide a bypass for traffic wishing to avoid the Central Business District.

There is a diagonal railroad grade crossing at the intersection of Livingston Avenue and Central Avenue, from this crossing to Marion Avenue the road is improved to a 40 foot width with curbs.

From Marion Avenue to Springfield Avenue the road is semi-improved with partial curbing, varying pavement widths and fair to poor pavement condition.

It is recommended that this portion of Livingston Avenue be improved to a 40 foot width with curbs.

11. Division Avenue - Old Springfield Avenue to Mountain Avenue - System 6.

Division Avenue runs between Mountain Avenue and Old Springfield Avenue, which in turn intersects with Springfield Avenue. Division Avenue is the boundary line between the Borough and the City of Summit.

Any proposed improvement beyond a 30 foot pavement width would undoubtedly require the reconstruction of at least one County bridge on the road.

This bridge acts as a check dam for approximately one square mile of contributing drainage area from the City of Summit. The Borough would prefer that this bridge not be reconstructed until such time as adequate drainage facilities are installed to accommodate the stream runoff.

For the present, it is recommended that the existing pavement be resurfaced to provide a reasonable riding surface, and that the shoulders of the road be improved within present allowable limits.

12. Elkwood Avenue - Summit line to improved section.

While it would appear obvious that Elkwood Avenue could be improved to its full 40 foot pavement width to the Summit line, it is the Borough's understanding that the City is reluctant to open their portion of the road to through traffic as it runs past transfer station and through their municipal dump site.

13. Central Avenue - Division Avenue to improved section.

The easterly end of Central Avenue exists as a paper street for approximately 1100 feet.

While it might also appear obvious that Central Avenue should be improved to its full 40 foot pavement width to Division Avenue, this would not appear to be practical at this time as a result of both the limitations of Division Avenue and intersecting City of Summit local streets.

The study group did not include in its study any recommendations concerning railroad transportation in the Borough since, in the opinion of the group, the problems of the railroad are of an area wide level and should be treated as such. As a direct result of this TOPIC'S study, several proposed recommendations are presently in the process of being implemented.

- A. A parking regulation map has been prepared which is being utilized to prepare a new "model" parking ordinance which incorporates all existing parking regulations as well as adding new regulations which it is anticipated will aid in relieving congestion and reduce accidents in the Central Business District.
- B. New accident report forms are being prepared which will provide more information so that each accident can be analyzed for possible needed corrective measures.
- C. Stop signs have been installed at locations where they had apparently been overlooked.
- D. It has been proposed to the local merchants association that the entire Central Business District be reviewed with them with a view toward a cooperative approach in obtaining better

use of available off street parking facilities, possible
elimination of several troublesome driveways, and generally
improved traffic conditions.

PROPOSED TOPICS PROJECTS

Improvement projects recommended at this time are the following:

1. **South Street Railroad underpass***
\$448,000.00.
2. **Passaic - South Streets - Springfield Avenue Traffic Light Modernization; and Passaic Street (Springfield Avenue to Elkwood Avenue Improvement)**
\$45,400.00.
3. **Maple Street (Hump Section).**
\$41,500.00.
4. **Maple Street (Central Avenue to Mountain Avenue)**
\$126,400.00.
5. **Passaic Street (Elkwood Avenue to Passaic River Bridge)****
\$102,000.00.
6. **Mountain Avenue - Diamond Hill Road - Union Avenue inter-section improvements (2 stages)**.**
Stage 1 - Diamond Hill Road Right Turn Lane and Upgraded Traffic Light - \$31,300.00.
Stage 2 - Union Avenue Traffic Lane
\$11,500.00.

***Immediate implementation project, previously submitted by the Borough for Topics funding.**

****Includes an allowance for right-of-way acquisition costs.**

These estimates are based on 1972 - 73 costs.

PASSAIC - SOUTH STREET - SPRINGFIELD AVENUE

TRAFFIC LIGHT MODERNIZATION

Problems:

1. The present traffic signal is equipped with a fixed time controller.
2. During night time traffic periods the signal is in a flashing mode of operation.
3. There are no pedestrian push button lights at this intersection, which is in the C. B. D.
4. Overall poor visibility of signals.

Recommendations:

1. The present time controller should be replaced with a new controller with loop detectors on South St., and Passaic St. Also, new traffic lights and stanchions should be installed to increase visibility of signals.
2. Pedestrian push buttons should be installed for pedestrian safety.
3. Lane striping to be included.
4. No parking within 200' of intersection.
5. Traffic signal installation should be upgraded to conform with the proposed standards of the 1971 Manual on Uniform Traffic Control Devices.

Benefits:

1. Improved intersection operation.
2. Improved pedestrian safety.
3. Elimination of the need for the signal to be kept in a flashing mode of operation during night time traffic periods.
4. Increase in overall safety characteristics of the intersection both for automotive and pedestrian traffic.

PASSAIC STREET IMPROVEMENT (System 1)
(Springfield Avenue to Elkwood Avenue)

Problems:

1. Insufficient pavement width and lacks shoulders.
2. The extension of Passaic Street is South Street with a road width varying from 46' to 40' wide.

Recommendation:

1. Widen pavement to 46' with curb from Springfield Avenue to Elkwood Avenue.

Benefits:

1. Improvement of carrying capacity of System No. 1.
2. Increased traffic and pedestrian safety.

MAPLE STREET IMPROVEMENT (System 2)

(Hump Section)

Problems:

1. Insufficient sight distance in either direction.
2. Insufficient pavement width for capacity and safety.
3. Potential increase in traffic from Route #78.

Recommendations:

1. Widen the road pavement to 40' with curb.
2. Excavate roadway to improve sight distance.
3. Install retaining wall on east side of roadway.

Benefits:

1. Improvement of carrying capacity of System No. 2.
2. Improvement of sight distance and increased safety for vehicles and pedestrians.
3. Relieve the traffic loading of System No. 1 and congestion in the C. B. D.

MAPLE STREET IMPROVEMENT (System 2)

(Central Avenue to Mountain Avenue)

Problems:

1. Insufficient pavement width and lacks shoulders.
2. Existing pavement uneven, out of shape and in poor condition.
3. Potential increase in traffic from Route #78.

Recommendations:

1. Widen the road pavement to 40' with curb.
2. Improve horizontal sight distance on curves.
3. Improvement of storm drainage.

Benefits:

1. Improvement of carrying capacity of System No. 2.
2. Improvement of sight distance and increased safety for vehicles and pedestrians.
3. Relieve the traffic loading of System No. 1 and congestion in the C. B. D.

PASSAIC STREET IMPROVEMENT (System 1)
(Elkwood Avenue to New River Bridge Approach)

Problems;

1. Insufficient pavement width and lacks shoulders.
2. New bridge over Passaic River will have a 46' pavement which will abruptly change to a 24' pavement.
3. The extension of Passaic Street is South Street with a road width varying from 46' to 40' wide.

Recommendations:

1. Widen pavement to 40' with curb.

Benefits:

1. Improvement of carrying capacity of System No. 1.
2. Increased traffic and pedestrian safety.

**MOUNTAIN AVENUE DIAMOND HILL ROAD UNION AVENUE
TRAFFIC LIGHT MODERNIZATION & INTERSECTION IMPROVEMENT**

Problems:

1. Heavy right hand turn movements from Diamond Hill Road onto Mountain Avenue during peak traffic periods.
2. Traffic congestion on Union Avenue during peak traffic periods.

Recommendations:

1. Right hand turn lane from Diamond Hill Road onto Mountain Avenue.
2. Install additional traffic lane on the west side of Union Avenue from Martins Lane to Mountain Avenue.
3. The present controller should be upgraded and loop detectors installed on Union Avenue and Diamond Hill Road.
4. Lane striping to be included.

Benefits:

1. Improve intersection operations during peak hours.
2. Right hand turn lane will move traffic onto Mountain Avenue with a decreased green time required for Diamond Hill Road and Union Avenue.
3. The extra lane on Union Avenue will serve as a storage lane.

SYSTEM MAINTENANCE

The present operation and maintenance of all traffic control devices in the Borough is supervised by the New Providence Police Traffic Officer. Physical repairs to the facilities are made by the Borough's Road Department, while electrical repairs are provided by a private electrical contractor on contractual basis.

The improvements to traffic signals recommended in this report are concerned with the upgrading of existing facilities and should not effect the existing maintenance program to any great degree.

Maintenance and repair of County roads is performed by the Union County Road Department. Passaic Street and Diamond Hill Road are the only County roads recommended for improvement under the Topics program at the present time. The widening, curbing and resurfacing of Passaic Street should serve to reduce maintenance costs incurred by Union County.

All non-county roads are maintained by the Borough Road Department. The improvement of Maple Street will reduce maintenance costs. The additional lanes on Union Avenue would appear to offer no significant increase in maintenance costs.

ESTIMATE OF COSTS - TOPICS

Maple Street (Hump Section)

Engineering	\$ 3,770.00
Right-of-Way	N. A.
Construction	<u>37,700.00</u>
	<u>\$41,470.00</u>
Say	\$41,500.00

**Passaic-South Streets-Springfield Avenue Traffic Light Modernization and
Passaic Street (Springfield Avenue to Elkwood Avenue Improvement).**

Engineering	\$ 4,100.00
Right-of-Way	5,000.00
Construction	<u>36,300.00</u>
	<u>\$45,400.00</u>

Maple Street (Central Avenue to Mountain)

Engineering	\$ 11,490.00
Right-of-way	N. A.
Construction	<u>114,900.00</u>
	<u>\$126,390.00</u>
Say	\$126,400.00

Estimate of costs - Topics con't.

Mountain Avenue - Diamond Hill Road - Union Avenue Traffic Light Modernization

State 1. Mountain Avenue - Diamond Hill Right turn lane and upgraded traffic light

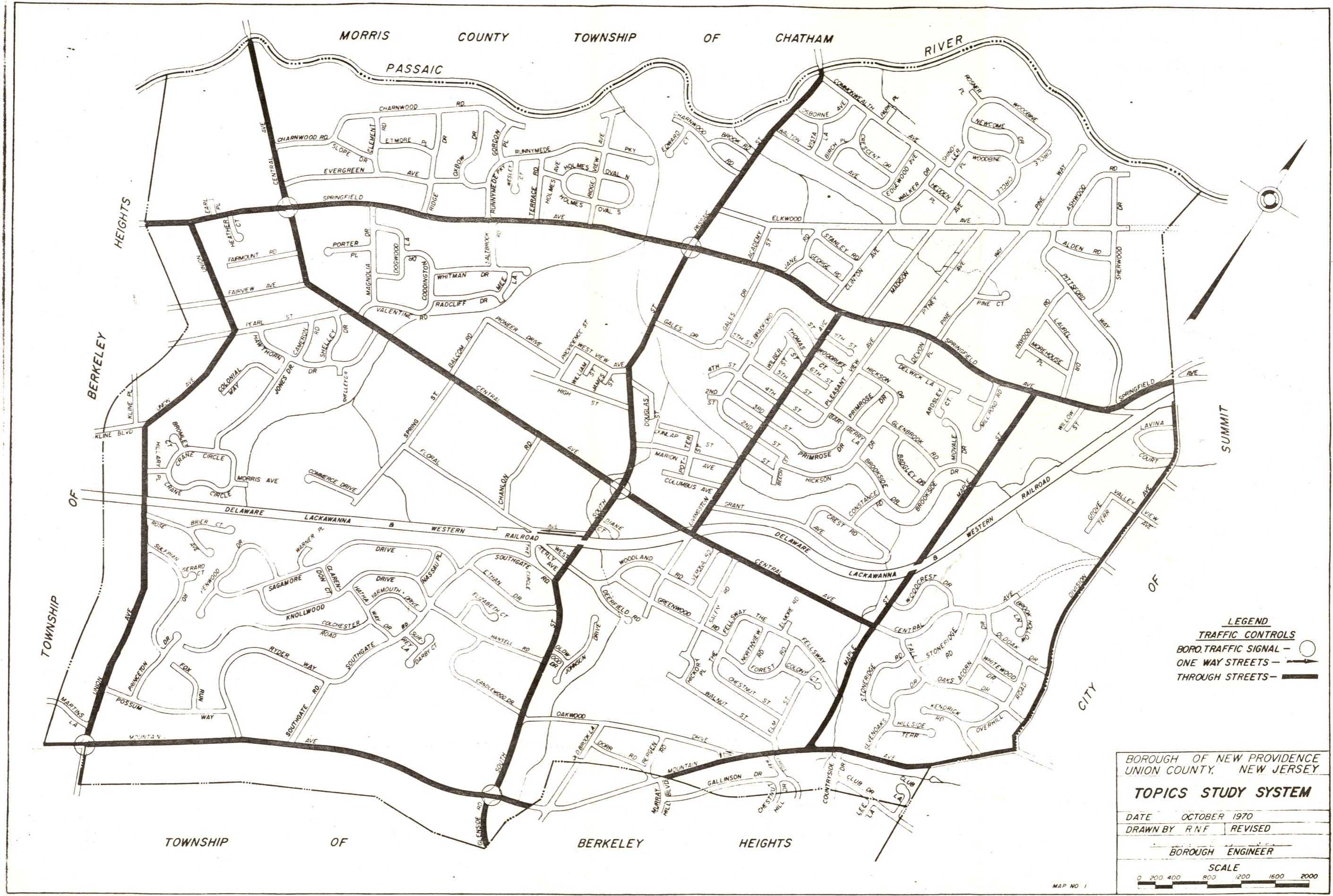
Engineering	\$ 2,870.00
Right-of-Way	10,700.00
Construction	<u>17,700.00</u>
	<u>\$31,270.00</u>
Say	\$31,300.00

State 2. Mountain Avenue - Union Avenue Traffic Lane

Engineering	\$ 630.00
Right-of-Way	4,400.00
Construction	<u>6,300.00</u>
	<u>\$11,330.00</u>
Say	\$11,500.00

Passaic Street Improvement (Elkwood Avenue to Passaic River Bridge).

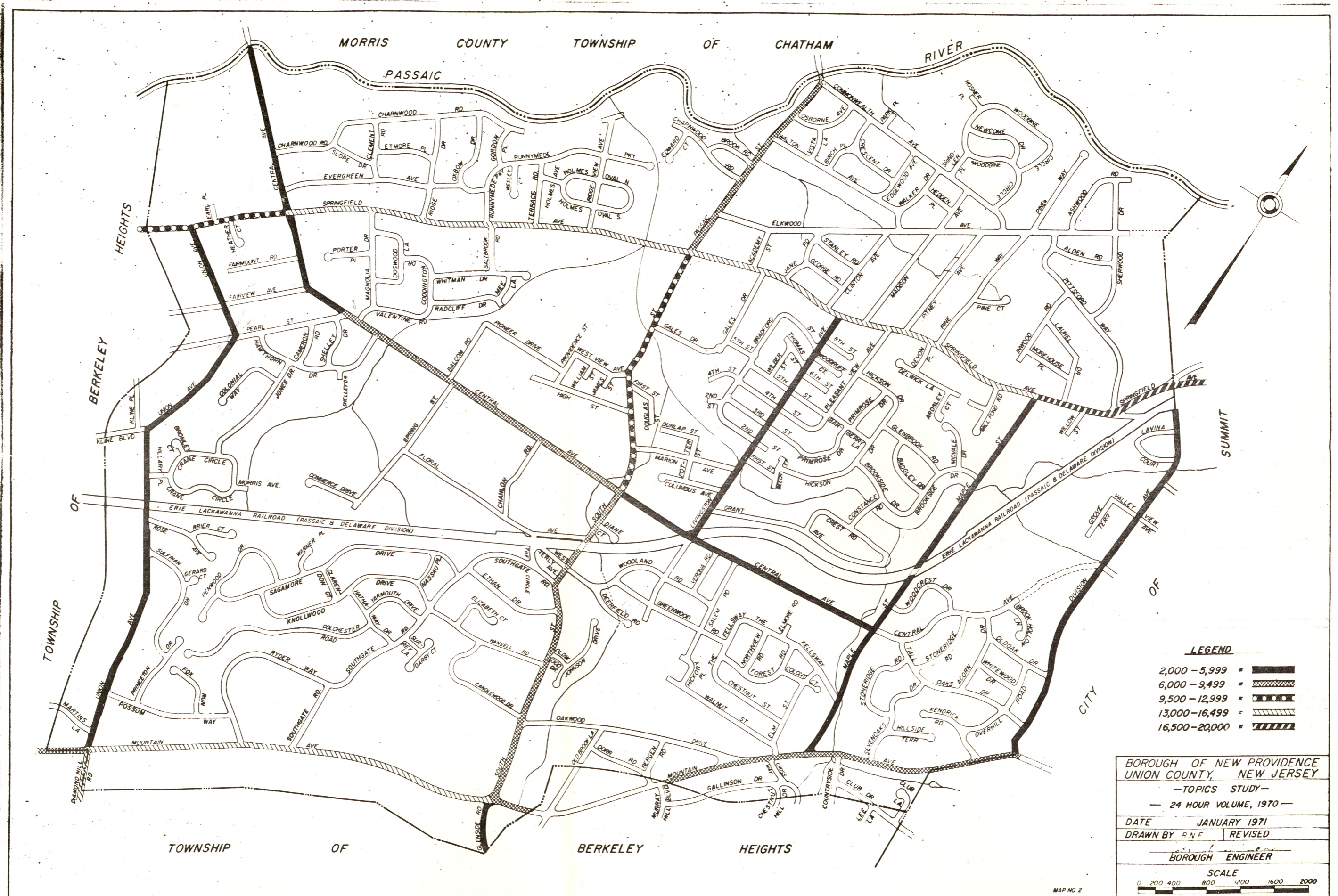
Engineering	\$ 7,750.00
Right-of-Way	16,000.00
Construction	<u>77,500.00</u>
	<u>\$102,000.00</u>
Say	\$102,000.00



LEGEND
TRAFFIC CONTROLS
 BORO. TRAFFIC SIGNAL - 
 ONE WAY STREETS - 
 THROUGH STREETS - 

BOROUGH OF NEW PROVIDENCE
 UNION COUNTY, NEW JERSEY
TOPICS STUDY SYSTEM
 DATE OCTOBER 1970
 DRAWN BY RNF | REVISED

 BOROUGH ENGINEER
 SCALE
 0 200 400 800 1200 1600 2000
 MAP NO 1



LEGEND

2,000 - 5,999	▬
6,000 - 9,499	▨
9,500 - 12,999	▩
13,000 - 16,499	▧
16,500 - 20,000	▦

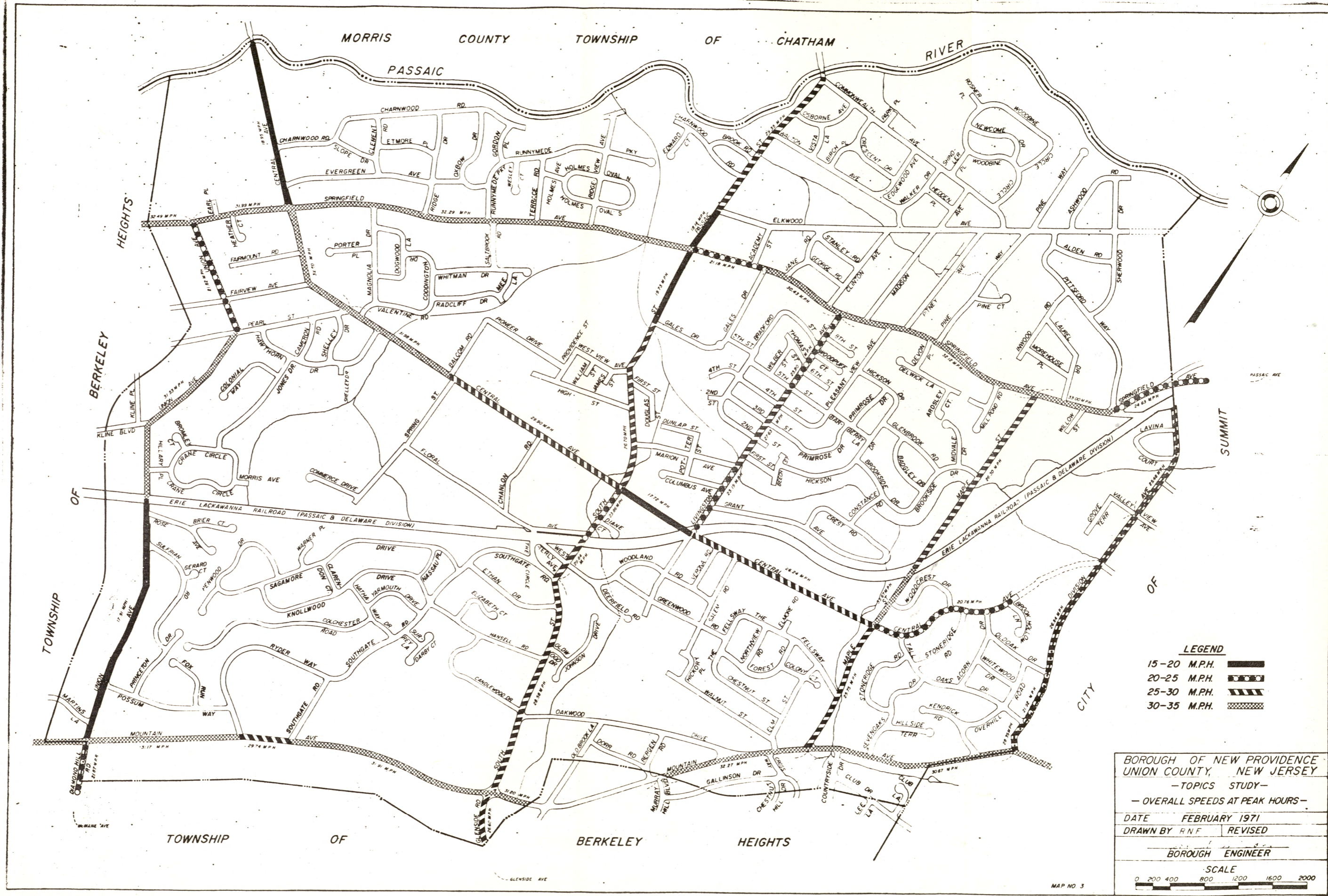
BOROUGH OF NEW PROVIDENCE
 UNION COUNTY, NEW JERSEY
 — TOPICS STUDY —
 — 24 HOUR VOLUME, 1970 —

DATE JANUARY 1971
 DRAWN BY RNF REVISED

BOROUGH ENGINEER

SCALE
 0 200 400 800 1200 1600 2000

MAP NO. 2



LEGEND

15-20 M.P.H. [Solid Black Box]

20-25 M.P.H. [Dotted Box]

25-30 M.P.H. [Diagonal Lines Box]

30-35 M.P.H. [Cross-hatched Box]

**BOROUGH OF NEW PROVIDENCE
UNION COUNTY, NEW JERSEY**

— TOPICS STUDY —

— OVERALL SPEEDS AT PEAK HOURS —

DATE FEBRUARY 1971

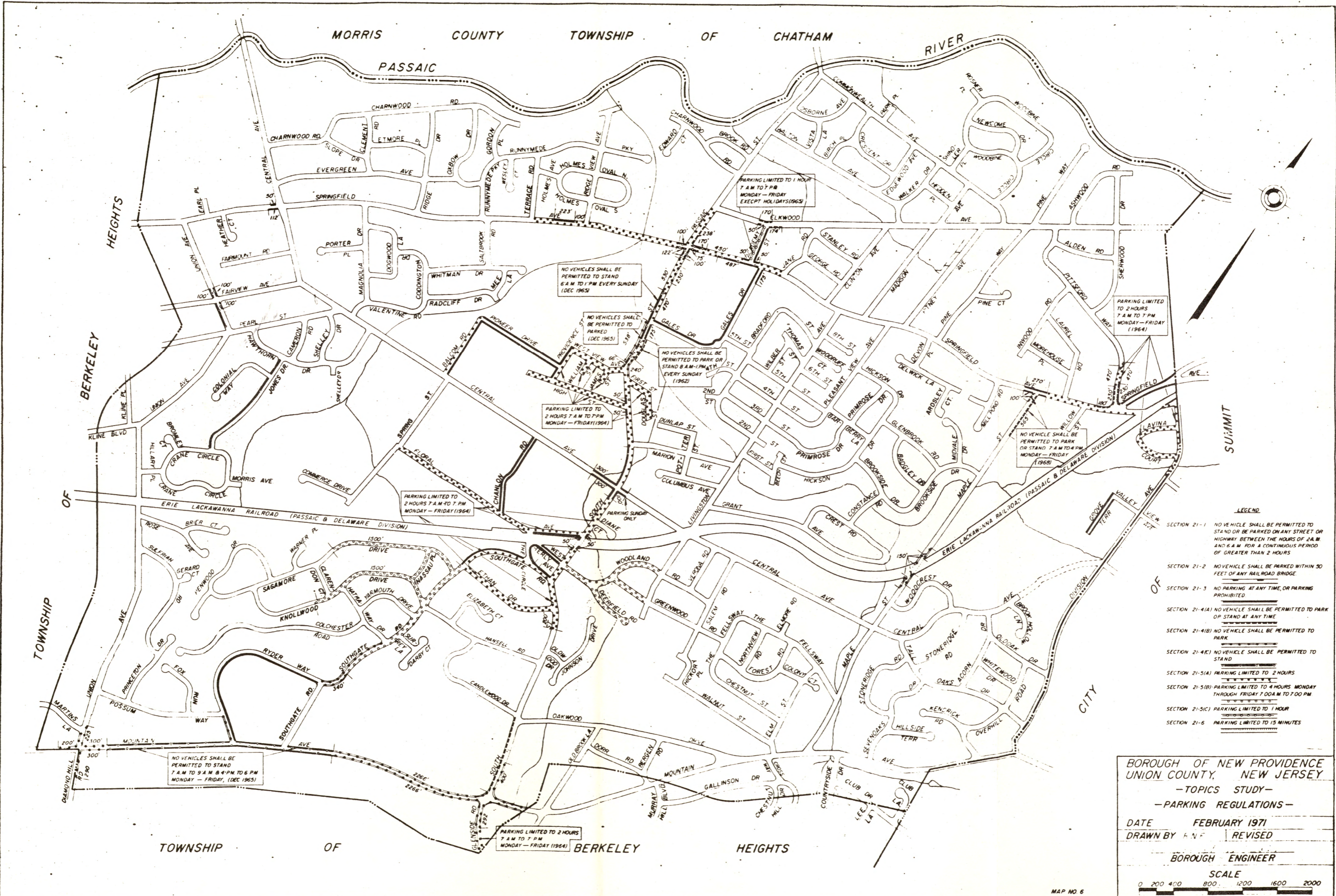
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BOROUGH ENGINEER

SCALE

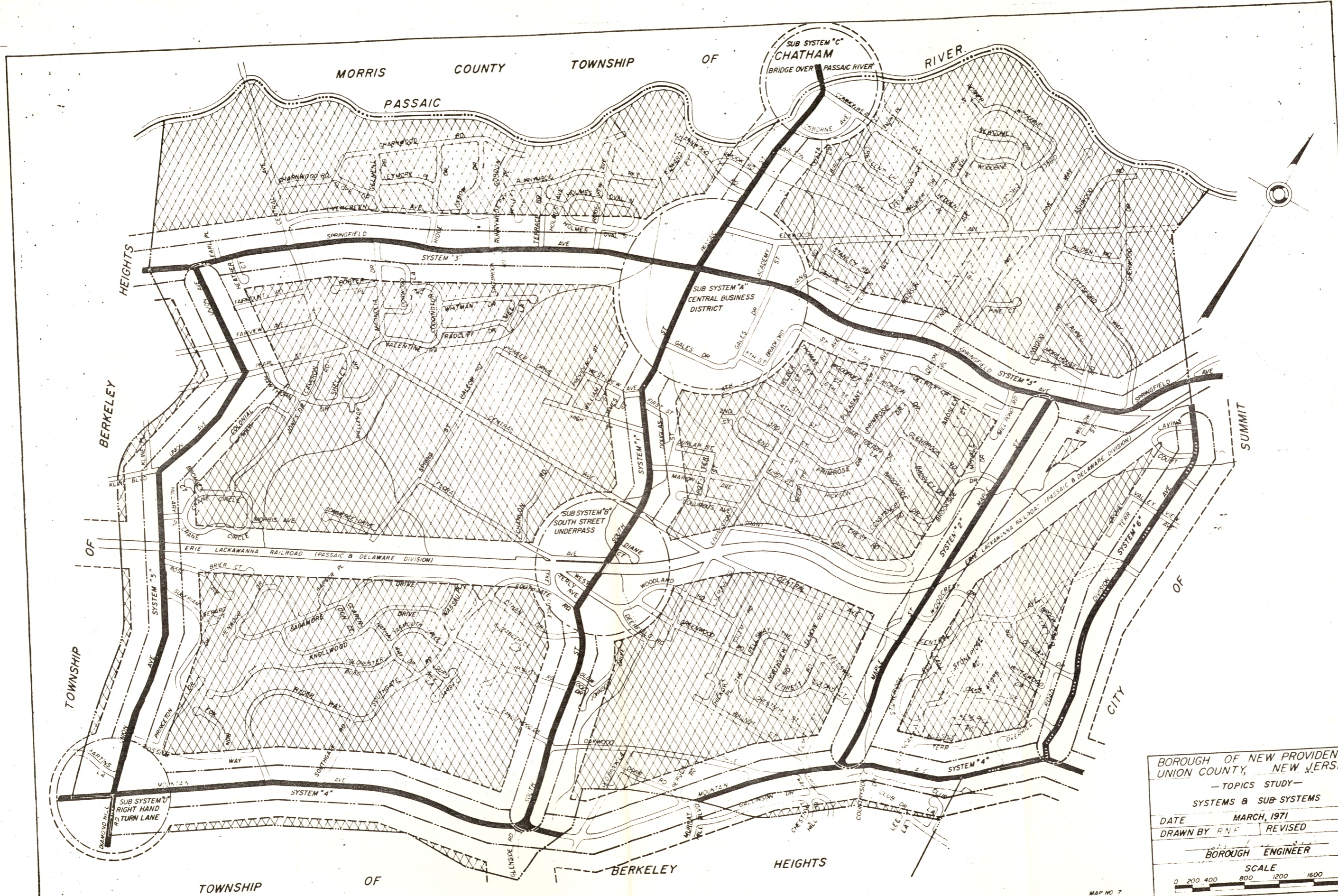
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MAP NO 3



- LEGEND**
- SECTION 21-1 NO VEHICLE SHALL BE PERMITTED TO STAND OR BE PARKED ON ANY STREET OR HIGHWAY BETWEEN THE HOURS OF 2 A.M. AND 6 A.M. FOR A CONTINUOUS PERIOD OF GREATER THAN 2 HOURS
 - SECTION 21-2 NO VEHICLE SHALL BE PARKED WITHIN 50 FEET OF ANY RAILROAD BRIDGE
 - SECTION 21-3 NO PARKING AT ANY TIME, OR PARKING PROHIBITED
 - SECTION 21-4(A) NO VEHICLE SHALL BE PERMITTED TO PARK OR STAND AT ANY TIME
 - SECTION 21-4(B) NO VEHICLE SHALL BE PERMITTED TO PARK
 - SECTION 21-4(C) NO VEHICLE SHALL BE PERMITTED TO STAND
 - SECTION 21-5(A) PARKING LIMITED TO 2 HOURS
 - SECTION 21-5(B) PARKING LIMITED TO 4 HOURS MONDAY THROUGH FRIDAY 7:00 A.M. TO 7:00 P.M.
 - SECTION 21-5(C) PARKING LIMITED TO 1 HOUR
 - SECTION 21-6 PARKING LIMITED TO 15 MINUTES

**BOROUGH OF NEW PROVIDENCE
UNION COUNTY, NEW JERSEY**
 -TOPICS STUDY-
 -PARKING REGULATIONS-
 DATE FEBRUARY 1971
 DRAWN BY A.N.F. REVISED
 BOROUGH ENGINEER
 SCALE
 0 200 400 800 1200 1600 2000
 MAP NO 6



BOROUGH OF NEW PROVIDENCE
 UNION COUNTY, NEW JERSEY
 — TOPICS STUDY —
 SYSTEMS & SUB-SYSTEMS
 DATE MARCH, 1971
 DRAWN BY RNF REVISED
 BOROUGH ENGINEER
 SCALE
 0 200 400 800 1200 1600 2000

MAP NO. 7



PARKING LIMITED TO 1 HOUR
7 AM TO 7 PM MONDAY-FRIDAY
EXCEPT HOLIDAYS

NO VEHICLES SHALL BE PERMITTED TO
STAND 6 AM TO 1 PM
EVERY SUNDAY

NO VEHICLES SHALL BE
PERMITTED TO PARK

NO VEHICLES SHALL BE PERMITTED
TO PARK OR STAND 8 AM TO 1 PM
EVERY SUNDAY

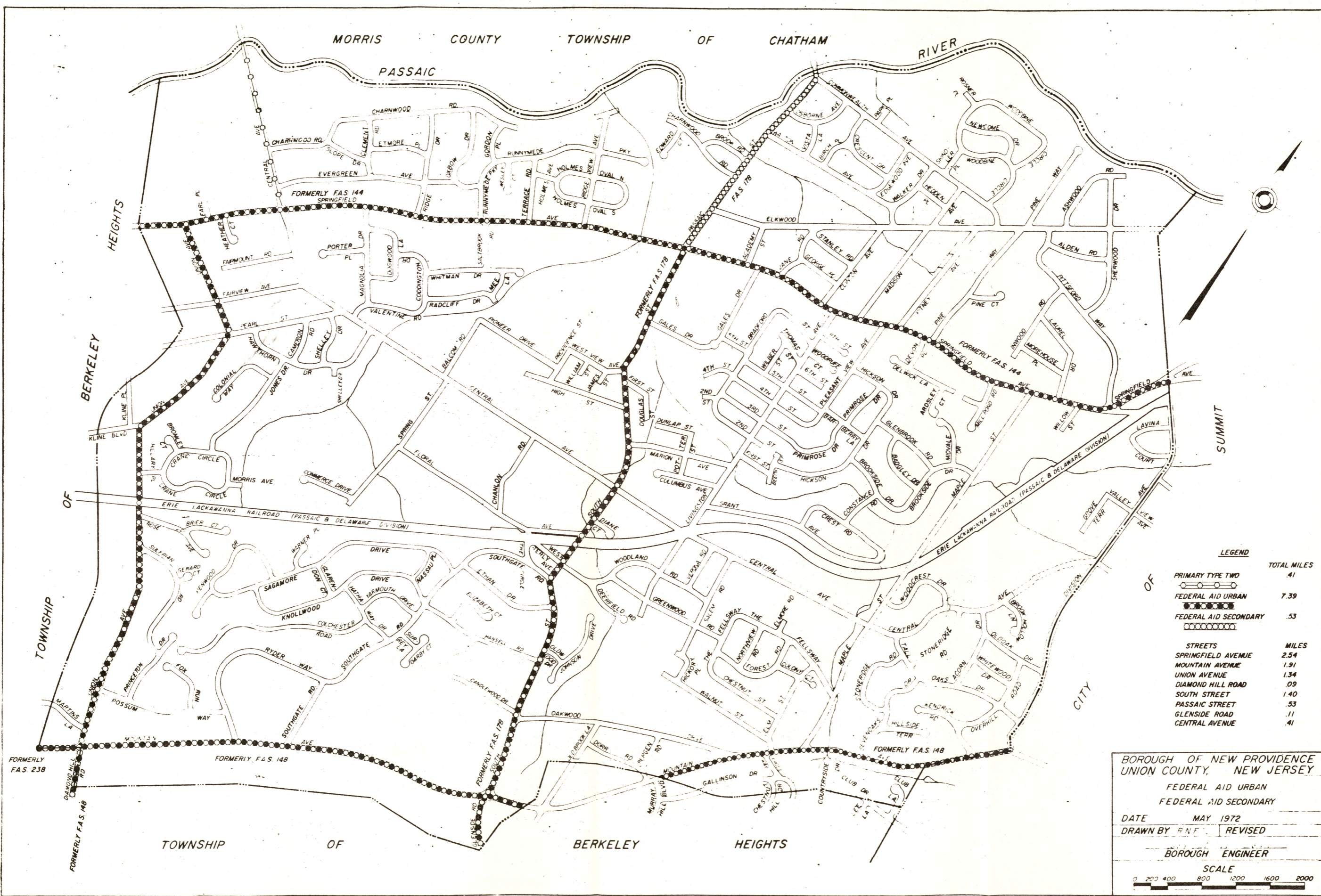
- LEGEND**
- SECTION 21-1 NO VEHICLE SHALL BE PERMITTED TO STAND OR BE PARKED ON ANY STREET OR HIGHWAY BETWEEN THE HOURS OF 24 M AND 6 A M FOR A CONTINUOUS PERIOD OF GREATER THAN 2 HOURS
 - SECTION 21-3 NO PARKING AT ANY TIME, OR PARKING PROHIBITED
 - SECTION 21-4(A) NO VEHICLE SHALL BE PERMITTED TO PARK OR STAND AT ANY TIME
 - SECTION 21-4(B) NO VEHICLE SHALL BE PERMITTED TO PARK
 - SECTION 21-4(C) NO VEHICLE SHALL BE PERMITTED TO STAND
 - SECTION 21-5(A) PARKING LIMITED TO 2 HOURS
 - SECTION 21-5(C) PARKING LIMITED TO 1 HOUR
 - PRIVATELY OWNED PARKING LOTS
 - BOROUGH OWNED PARKING LOT

BOROUGH OF NEW PROVIDENCE
UNION COUNTY, NEW JERSEY
— TOPICS STUDY —
— CENTRAL BUSINESS DISTRICT —
— SUB SYSTEM

DATE MARCH 1971
DRAWN BY R.N.F. REVISED

BOROUGH ENGINEER

SCALE
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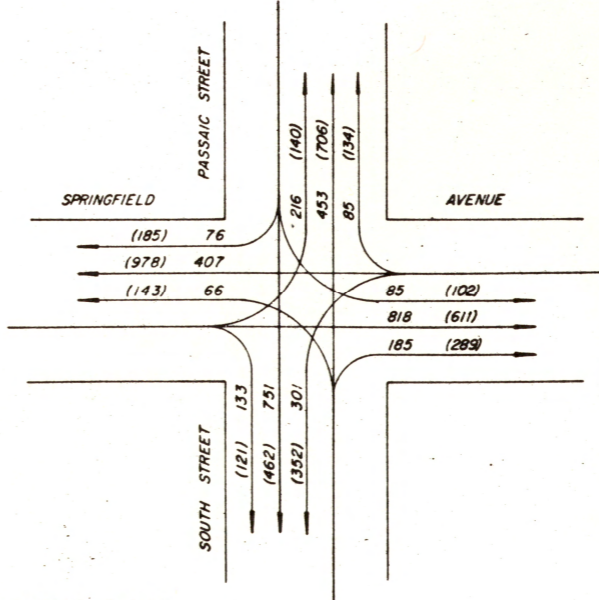
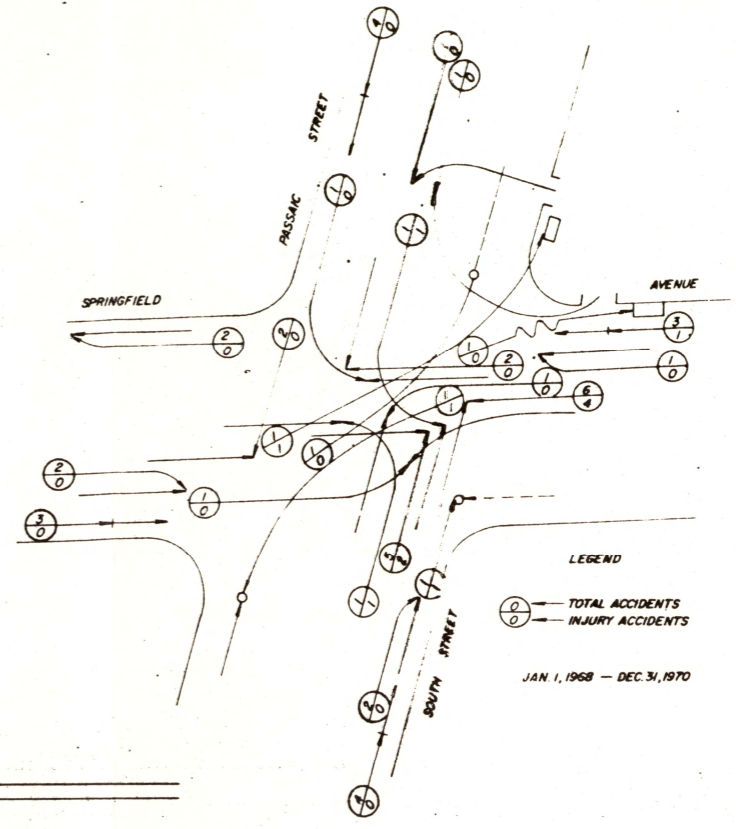
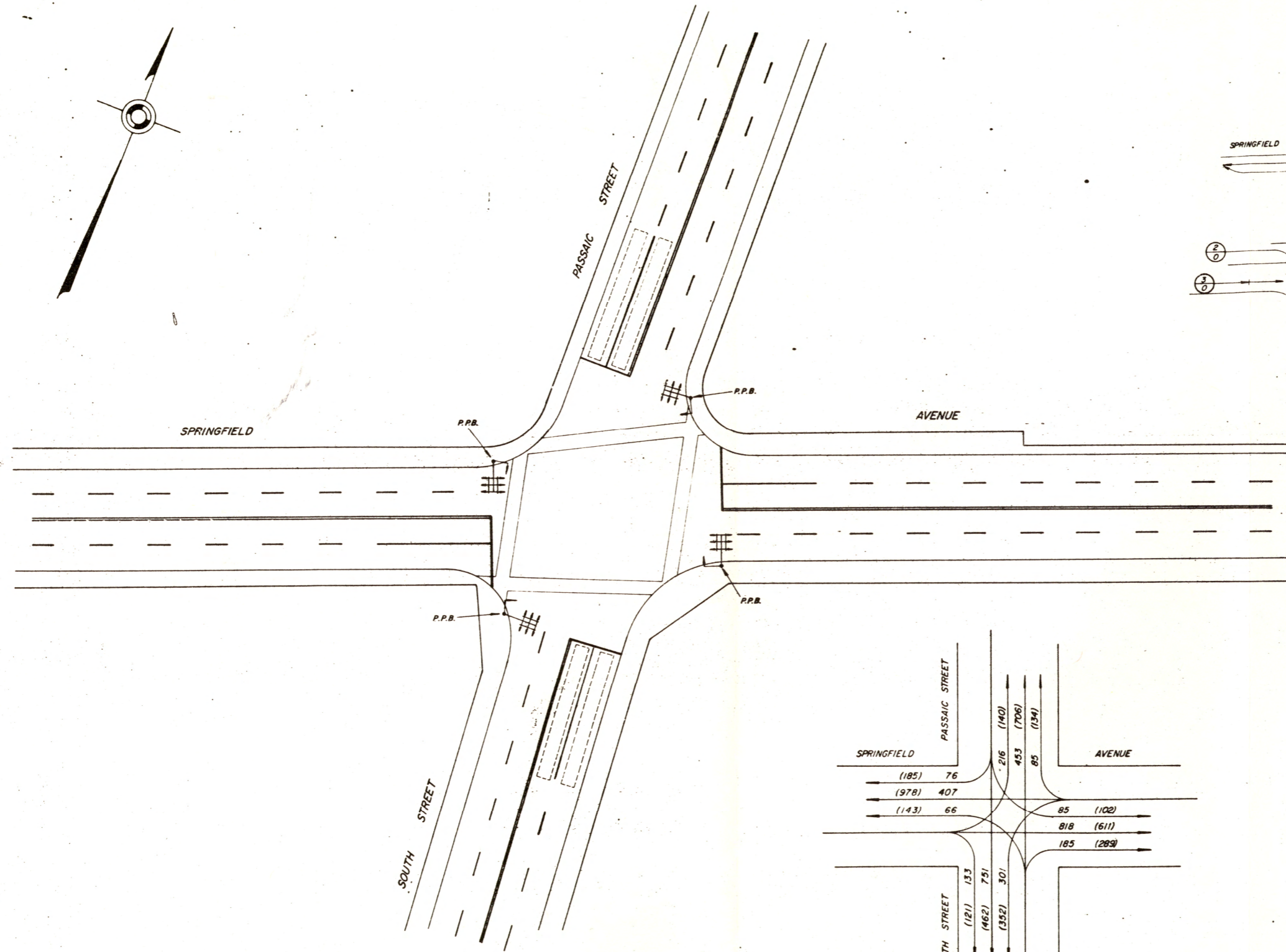
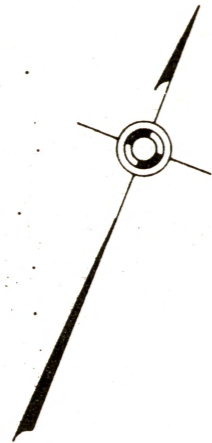


LEGEND

	TOTAL MILES
PRIMARY TYPE TWO	.41
FEDERAL AID URBAN	7.39
FEDERAL AID SECONDARY	.53

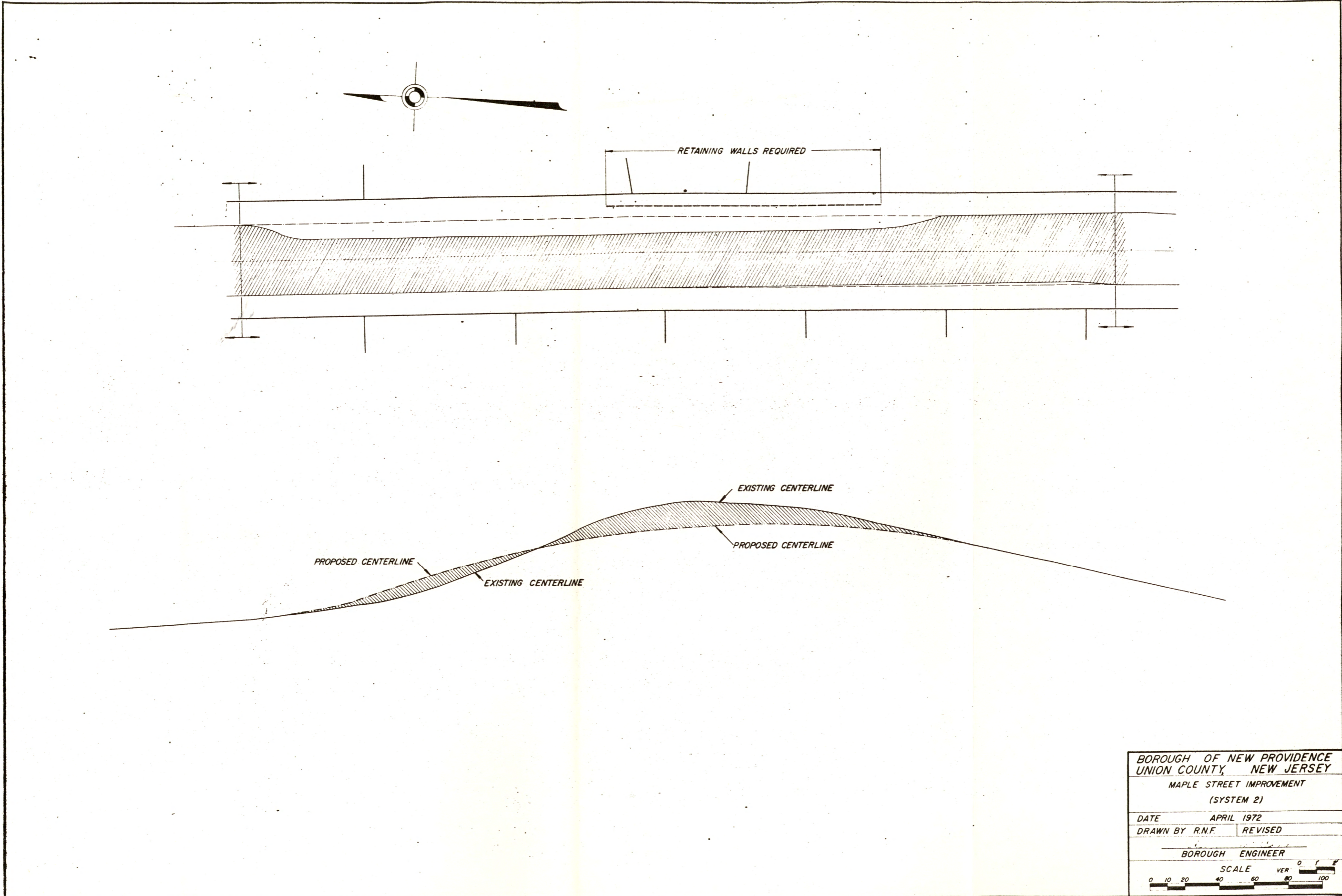
STREETS	MILES
SPRINGFIELD AVENUE	2.54
MOUNTAIN AVENUE	1.91
UNION AVENUE	1.34
DIAMOND HILL ROAD	.09
SOUTH STREET	1.40
PASSAIC STREET	.53
GLENSIDE ROAD	.11
CENTRAL AVENUE	.41

BOROUGH OF NEW PROVIDENCE
 UNION COUNTY, NEW JERSEY
 FEDERAL AID URBAN
 FEDERAL AID SECONDARY
 DATE MAY 1972
 DRAWN BY R.N.E. REVISED
 BOROUGH ENGINEER
 SCALE
 0 200 400 800 1200 1600 2000

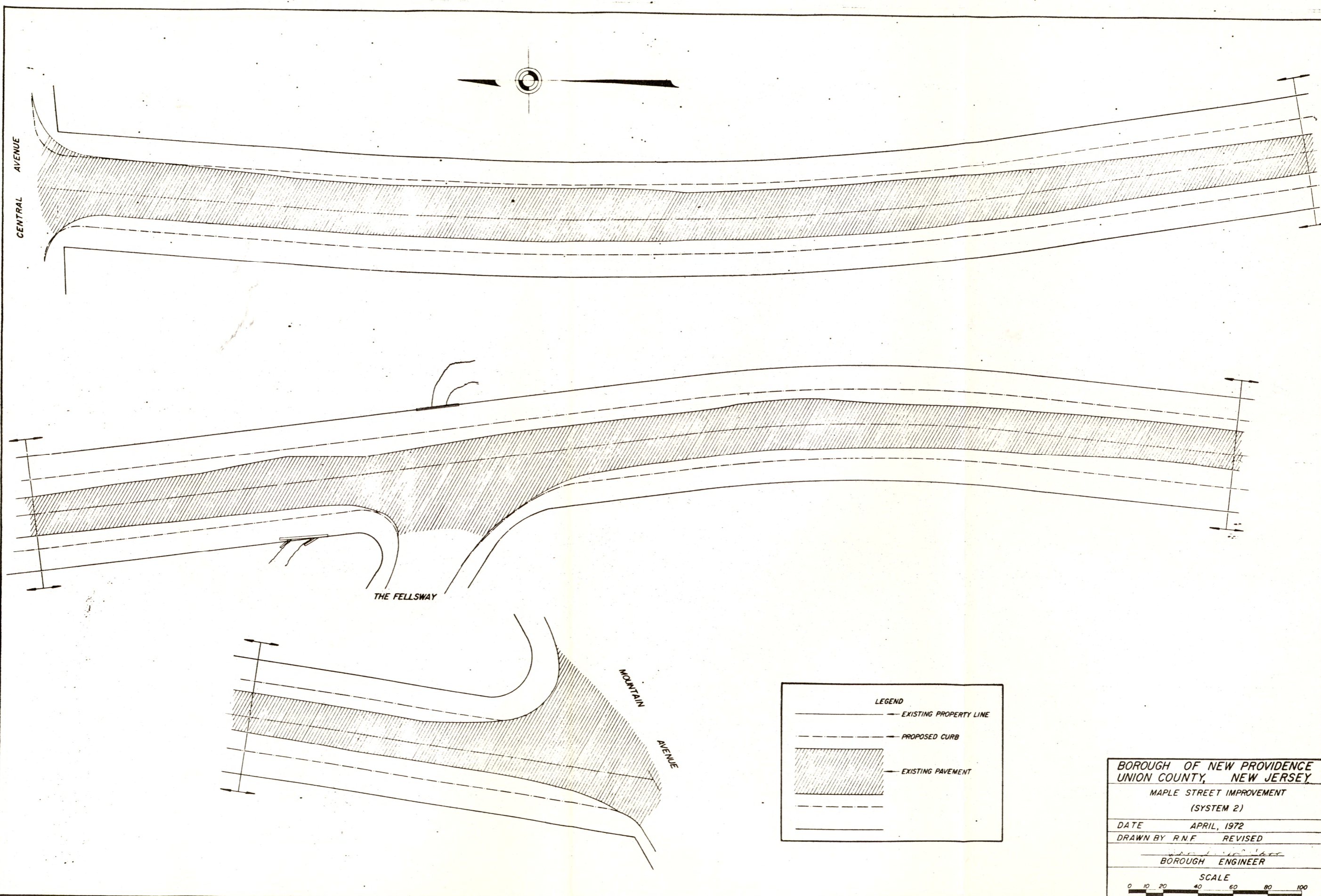


NOTE
 THE SIGNAL AT THIS INTERSECTION MEETS THE REQUIREMENTS FOR WARRANTS 1 & 2, AS CALLED FOR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" DATED 06/1/1971

BOROUGH OF NEW PROVIDENCE
 UNION COUNTY, NEW JERSEY
 PASSAIC-SOUTH STREETS-SPRINGFIELD
 AVENUE TRAFFIC LIGHT MODERNIZATION
 DATE APRIL 1972
 DRAWN BY R.N.F. REVISED
 BOROUGH ENGINEER
 SCALE
 0 10 20 40 60 80 100



BOROUGH OF NEW PROVIDENCE UNION COUNTY, NEW JERSEY	
MAPLE STREET IMPROVEMENT (SYSTEM 2)	
DATE	APRIL 1972
DRAWN BY	R.N.F. REVISED
BOROUGH ENGINEER	
SCALE	



LEGEND

- EXISTING PROPERTY LINE
- - - PROPOSED CURB
- ▨ EXISTING PAVEMENT

BOROUGH OF NEW PROVIDENCE
 UNION COUNTY, NEW JERSEY

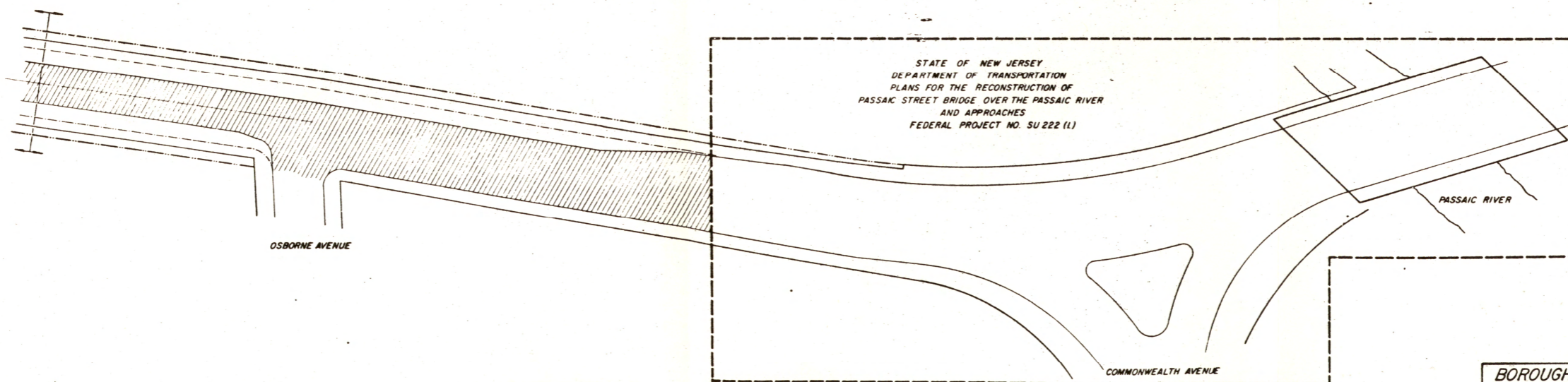
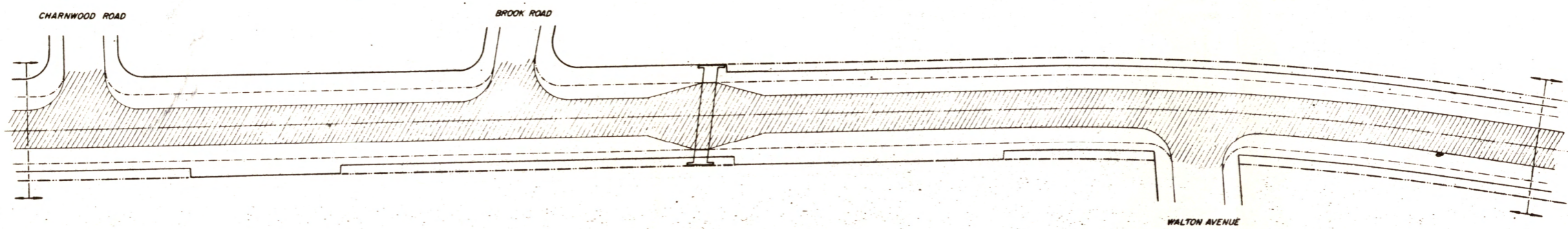
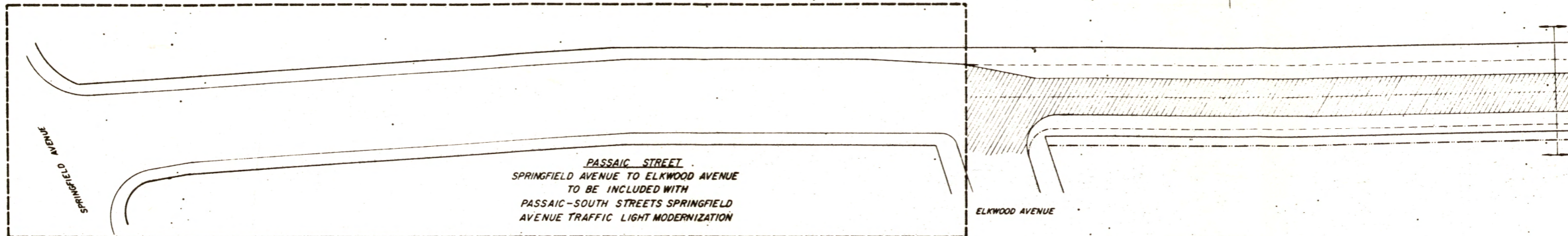
MAPLE STREET IMPROVEMENT
 (SYSTEM 2)

DATE APRIL, 1972

DRAWN BY R.N.F. REVISED

 BOROUGH ENGINEER

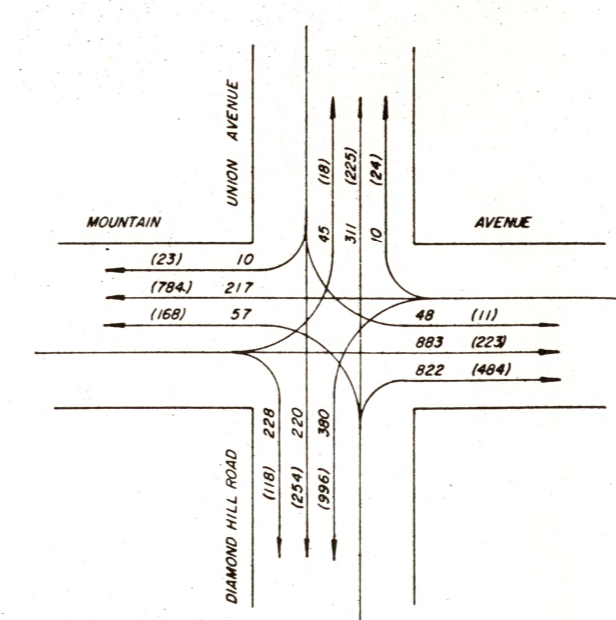
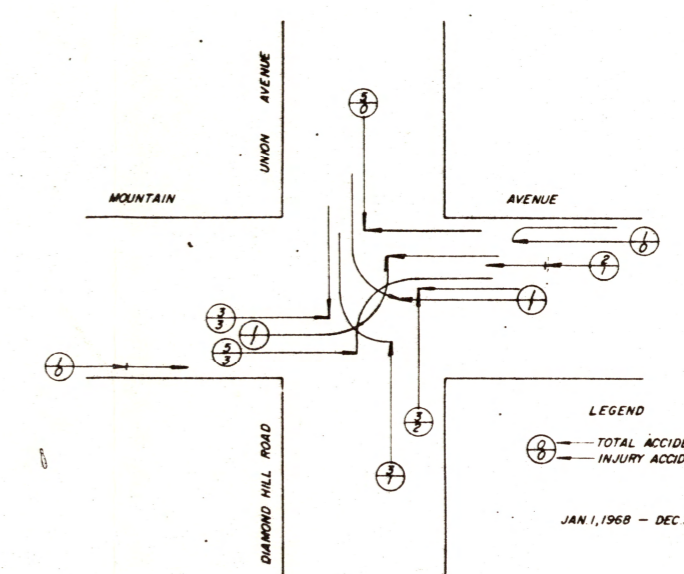
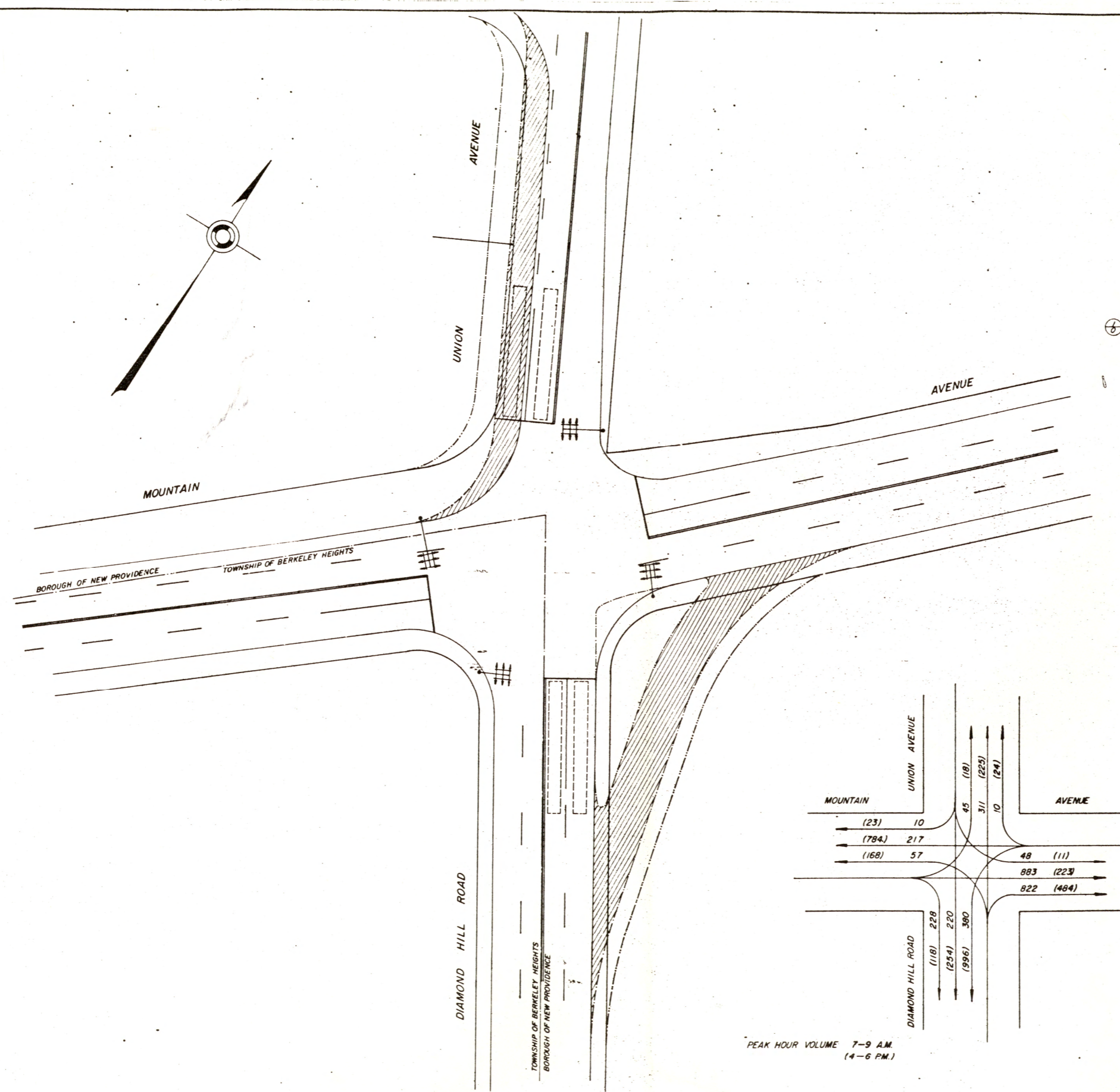
SCALE
 0 10 20 40 60 80 100



LEGEND

	PROPOSED PROPERTY LINE
	PROPOSED CURB
	EXISTING PAVEMENT
	EXISTING PROPERTY LINE

BOROUGH OF NEW PROVIDENCE UNION COUNTY, NEW JERSEY	
PASSAIC STREET IMPROVEMENT (SYSTEM 1)	
DATE	APRIL 1972
DRAWN BY	R.N.F. REVISED
BOROUGH ENGINEER	
SCALE	
0 20 40 80 120	



NOTE
 THE SIGNAL AT THIS INTERSECTION MEETS THE REQUIREMENTS FOR WARRANTS 182, AS CALLED FOR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" DATED 06/1/1971

BOROUGH OF NEW PROVIDENCE
UNION COUNTY, NEW JERSEY
 MOUNTAIN AVE, DIAMOND HILL RD, UNION AVE
 TRAFFIC LIGHT MODERNIZATION

DATE MAY 1972
 DRAWN BY R.N.F. REVISED

BOROUGH ENGINEER

SCALE
 0 10 20 40 60 80 100

