



F4 FREEWAY MAYS HILL - PROSPECT

WORKING PAPER 3 - PROSPECT ARTERIAL

PREPARED FOR :

THE DEPARTMENT MAIN ROADS

BY :

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1. INTRODUCTION

This working paper reviews the various points, questions and additional work raised with regard to the earlier working papers on the F4 (Mays Hill - Prospect).

Particular attention is paid to the traffic effects of the Prospect Arterial and desirability of an F4 interchange on Greystanes Road.

The modelling work for future traffic prediction has been carried out by the Strategic Planning section of the Department of Main Roads following discussions with the Consultants as to the various assumptions involved.

It is considered that the forecast flows are the best estimate of future traffic volumes that can currently be made, however it should be recognised that forecasting does entail a degree of uncertainty. This paper should be read in that light.

2. TRAVEL SPEEDS

To estimate travel speeds on the Great Western Highway, the Traffic Section of the Department of Main Roads conducted four surveys for different periods of the day in July 1985, November 1985 (two) and April 1986. A total of 118 runs was made during these surveys between Woodville Road and Parramatta and the F4 at Prospect and visa versa. Most of these runs (80) were done in April 1986 in order to get a more reliable indication of the travel speeds on shorter sections of the highway than in previous surveys.

A summary of the data collected during the surveys is shown in Tables 2.1 and 2.2, which represent the traffic under peak traffic flow conditions, i.e. : eastbound in the morning period and westbound in the evening peak period. It can be seen that the overall travel speeds per survey are within reasonable range limits. For eastbound traffic in the morning peak period they vary from 34 km/h to 47 km/h, with an average of 37 km/h. The minimum and maximum overall travel speeds observed in any of the surveys during this period were 31 km/h and 56 km/h respectively. Per section, the travel speeds of eastbound traffic in the morning peak period varied from 12 km/h between Church Street and Woodville Road at Parramatta to 93 km/h between the F4 and Blacktown Road at Prospect. This is a wide range, which indicates strong fluctuations in travel speeds, due to traffic flows and signal coordination.

In the evening peak period, the overall travel speeds for westbound traffic are somewhat higher. They vary from 40 km/h to 54 km/h in the April 1986 and the second November 1985 surveys respectively. The average overall travel speed is calculated at 42 km/h, with a minimum and maximum of 30 km/h and 59 km/h respectively. Per section the evening peak period travel speeds fluctuate from 8 km/h between Greystanes and Toongabbie Roads to 89 km/h between Blacktown and Reservoir Roads.

During the presentation of Working Paper 1 and 2 some doubt was expressed regarding the validity of the evening peak travel speeds, which were considered to be too high. The consultants carried out an additional survey on Tuesday, 8th July 1986 to check to results of previous surveys. This survey is summarised in column 6 of Table 2.2. It can be seen that this survey does show a somewhat lower overall travel speed, but this difference is not considered significant as the survey sample is rather small compared to the large fluctuations of the travel speeds.

It is considered that the doubt expressed in the presentation may be based on individual local driving perception. Low perceptions at travel speed may be produced by an individuals experience of congested conditions during a non average day. Low levels of service (or travel speeds) may be experienced on sections such as Church Street to the F4 Onload or Greystanes to Toongabbie Roads. The effects of these low travel speeds are generally perceived much more strongly than they are in reality, (for example in journey to work and modal split models, the value of waiting time is often twice the value of the actual travel time).

TABLE 2.1
 TRAVEL SPEEDS ON GREAT WESTERN HIGHWAY
 - EASTBOUND, MORNING PEAK PERIOD -

Cross Street	Average Travel Speeds per Survey Period (km/hr)				Min meas- ured	Max meas- ured	Overall average
	July 85	Nov 85.1*	Nov. 85.2*	Apr 86			
Sample Size	5	5	5	10			
F4 - Prospect	67	46	31	22	18	93	31
to Reservoir Rd	67	46	31	69	22	93	51
to Blacktown Rd	28	21	22	52	15	71	30
to Toongabbie Rd	28	21	22	18	15	55	21
to Greystanes Rd	63	53	45	30	16	74	40
to Ettalong Rd	63	53	45	27	15	74	38
to Berith Rd	63	53	45	44	31	82	49
to Centenary Rd	53	62	65	55	34	74	58
to F4 On Load	30	20	-	24	17	39	24
to Church St	-	33	-	19	12	52	22
to Woodville Rd							
Overall	47	35	36	34	31	56	37

* Two independent surveys, which were conducted in the same week 85.1 represents data collected for a survey along Parramatta Road and the Great Western Highway. 85.2 represents data collected for a survey along the F4 Freeway, with missing links along the Highway and Parramatta Road.

TABLE 2.2
 TRAVEL SPEEDS ON GREAT WESTERN HIGHWAY
 - WESTBOUND, EVENING PEAK PERIOD -

Cross Street	Average Travel Speeds per Survey Period (km/hr)					Min meas- ured	Max meas- ured	Overall aver- age
	July 85	Nov 85.1*	Nov. 85.2*	Apr 86	July 86			
Sample Size	5	5	5	17	4			
Woodville Rd to	-	36	-	43	29	20	61	39
Church St to	31	27	-	25	22	16	50	26
F4 On Load to	63	49	28	38	49	21	77	40
Toongabbie Rd to	44	45	51	48	52	34	70	48
Berith Rd to	44	45	51	28	28	18	64	34
Ettalong Rd to	44	45	51	57	63	34	70	53
Greystanes Rd to	42	41	40	23	17	8	50	27
Toongabbie Rd to	42	41	40	41	58	25	71	42
Blacktown Rd to	37	69	73	64	44	23	89	57
Reservoir Rd to	37	69	73	48	57	23	87	51
F4 - Prospect								
Overall	41	43	54	40	36	30	59	42

* Two independent surveys, which were conducted in the same week 85.1 represents data collected for a survey along Parramatta Road and the Great Western Highway. 85.2 represents data collected for a survey along the F4 Freeway, with missing links along the Highway and Parramatta Road.

3. GREYSTANES ROAD

3.1 Introduction

This section reviews the desirability of an intersection or overpass between Greystanes Road and the F4 Freeway.

3.2 Road Functions

The construction of a full intersection between Greystanes Road and the F4 Freeway would have the effect of reinforcing the traffic carrying function of Greystanes Road and would lead to longer distance regional traffic movements on a road designated as a sub-arterial in Traffic Authority and WSROC short and long term road hierarchies. The intersection would thus have the effect of creating a de facto arterial route.

With the construction of the Prospect Arterial, there would be a situation with three north-south arterial routes (Prospect, Greystanes and Jersey Road) within a distance of 4.7 km. It is considered that this is too close an arterial spacing within this semi-urban area and would not allow the development of a proper hierarchy of lower order roads within individual arterial 'boxes'.

The production of a Greystanes Arterial route would tend to reinforce use of Blacktown Road and Toongabbie Road and reinforce the volume and regional nature of traffic using these routes. Again the effect would be to force arterial functions on designated sub-arterial (and local) roads.

The creation of a Greystanes Arterial route would reduce the longer term need for the Prospect Arterial as employment and population would tend to locate to make use of the Greystanes Road.

Greystanes Road has not been designed as an arterial route. It has frequent intersections with local roads, residential frontage access, no medians etc. etc. Without considerable works to reduce the potential conflicts and enhance the capacity of Greystanes Road it would prove unsuitable for an arterial function and would be likely to have a high accident rate.

3.3 Environment

The additional traffic use of Greystanes and other feeder roads generated by construction of an intersection would have an effect upon the environment of those roads. Noise, pollution, vibration, accidents, visual intrusion etc. would all be worsened along Greystanes and other influenced roads. In addition the intersection itself would have an impact upon the environment of the local residential area.

Although in the shorter term the incremental environmental degradation may be difficult to perceive the longer term summation would produce significant environmental impact especially along Greystanes Road. As Greystanes Road has residential frontages it would be extremely difficult to introduce any measures to mitigate harmful environmental effects.

3.4 Traffic Effects

The construction of an F4 intersection on Greystanes is likely to have minor short term traffic effects on Greystanes Roads. However, in the longer term, if the Prospect Arterial is not constructed. It is estimated that the following flows would result on Greystanes Road during the morning peak period in 2011.

	Greystanes Road Flows (vehs/hour)
With F4 interchange (2B) and Prospect Arterial	1555
With F4 crossover (2A) and Prospect Arterial	1305
With F4 interchange (2B) and no Prospect Arterial	2755
With F4 crossover (2A) and Prospect Arterial	2095

(See Figures 3 - 14)

It may be observed that construction of an interchange increases likely flows by several hundred vehicles per hour.

Non-construction of Prospect Arterial has a greater effect increasing likely flows by 700 - 1000 vehicles per hour on Greystanes Road.

3.5 Physical Design

Although an F4 intersection on Greystanes Road can physically be constructed it would require land purchase and the loss of some local housing.

3.6 Timing

In the shorter term (the next few years) Jersey Road will supply some minor relief to Greystanes Road and Horsely Drive will act as a feeder to Jersey Road in approximately five years. However if the Prospect Arterial is not constructed for some time then traffic volumes will grow significantly on Greystanes Road. This growth being reinforced by the construction of an F4 intersection.

3.7 Conclusions

It is generally concluded that a full F4 intersection should not be constructed on Greystanes Road. Such an intersection would enforce an arterial role on Greystanes Road and thus produce functional, environmental and physical problems. Such an intersection would also delay the need for the Prospect Arterial and thus require capacity/safety improvements within Greystanes Road. As it is very unusual/unlikely that intersection ramps be demolished once installed it is considered that temporary construction of an intersection is not feasible.

4. PROSPECT ARTERIAL

The preferred freeway option is the parallel route; scenario 2A describes a crossover between the F4 and Greystanes Road, scenario 2B includes a full intersection between the freeway and Greystanes Road.

Scenarios 2A and 2B were modelled with and without the Prospect arterial, with the aid of the DMR's TRANPLAN traffic assignment model, in order to gauge its effects on both networks. In particular the effects on the north-south routes and interchanges are described.

4.1 Effects on North-South Routes

The exclusion of the Prospect arterial tends to increase expected 2011 traffic volumes on the following north-south roads:

- (i) Wallgrove;
- (ii) Horsley;
- (iii) Blacktown Road (between Church Lane and the Great Western Highway);
- (vi) Jersey; and
- (vii) Centenary.

and tends to decrease expected 2011 traffic volumes on Church Lane.

Figures 1 and 2 show the model predicted 2011 AM-peak hourly flows for scenarios 2A and 2B with and without the Prospect arterial.

The model predicted 2011 AM-peak 2 way volumes expected on these north-south roads are shown in Table 4.1.1 below. The percentage of Prospect arterial traffic diverted to these roads is also indicated in brackets.

TABLE 4.1.1 MODEL PREDICTED VOLUMES ON N-S ROUTES

Road	Model Predicted 2011 AM-Peak Volumes (2 way) for Scenario			
	2A with Prospect Arterial	2A without Prospect Arterial	2B with Prospect Arterial	2B without Prospect Arterial
Wallgrove Rd	3245	4070 (24%)	3245	4070 (24%)
Horsley Rd	1650	2145 (15%)	1595	2145 (16%)
Church Lane	4400	2695	4345	2585
Blacktown Rd	770	1045	880	1210
Greystanes Rd	1320	2145 (24%)	1265	2090 (24%)
Ettalong Rd	825	990 (5%)	880	880
Jersey Rd	3025	3630 (18%)	3025	3575 (16%)
Centenary Rd	1210	1540 (10%)	1265	1540 (8%)
Prospect arterial	3410	-	3465	-

Note: Values in brackets represent the percentage of Prospect arterial traffic diverted to other north-south roads south of the Great Western Highway.

The above table illustrates the adverse effects which would occur on other north-south roads, particularly Greystanes, Jersey and Wallgrove Roads. It is evident that the Prospect arterial is an important north-south link which would alleviate the expected traffic increases on these other north-south connections, thereby benefiting the community in terms of distance saving, noise pollution and air pollution control.

The number of lanes required, on these north-south roads, to provide a peak hour level of service C are shown in Table 4.1.2 below:

TABLE 4.1.2 NUMBER OF LANES REQUIRED ON N-S ROUTES

Road	No. of Lanes (2 way) Required for Scenario			
	2A with Prospect Arterial	2A without Prospect Arterial	2B with Prospect Arterial	2B without Prospect Arterial
Wallgrove Rd	4	6	4	6
Horsley Rd	2	4	2	4
Church Lane	6	4	6	4
Blacktown Rd	2	4*	2	4
Greystanes Rd	2	4	2	4
Ettalong Rd	2	2	2	2
Jersey Rd	4	6*	4	6*
Centenary Rd	2	2	2	2
Prospect arterial	6*	-	6*	-

Based on a level of service C and lane capacities provided by DMR - Strategic Planning Section.

* Note predicted flows just exceed level of service 'C' capacity.

If the Prospect arterial is not built, traffic will be diverted to other north-south roads as shown in Table 4.1.1. Consequently, the following roads will require additional upgrading above that required in the preferred scheme:

- (i) Wallgrove;
- (ii) Horsley;
- (iii) Blacktown (between Church Lane and the Great Western Highway);
- (iv) Greystanes; and
- (v) Jersey.

As a result, arterial functions will be forced on Greystanes and Blacktown Roads, which are designated sub-arterial roads in the Traffic Authority and WSROC short and long term road hierarchies.

4.2 Effect on Interchanges

The model predicted 2011 turning volumes were adjusted, based on professional judgment, in light of the surveyed 1986 turning volumes (conducted by the Consultants in April) along the Great Western Highway adjacent to the missing F4 freeway link. The adjusted turning volumes, predicted for the year 2011, are shown in Figures 3 to 14 inclusive.

The following table shows the figures which correspond to each scenario investigated.

SCENARIO	FIG. NO's
2A WITH PROSPECT ARTERIAL	3 to 5 incl.
2A WITHOUT PROSPECT ARTERIAL	6 to 8 incl.
2B WITH PROSPECT ARTERIAL	9 to 11 incl.
2B WITHOUT PROSPECT ARTERIAL	12 to 14 incl.

It should be noted that the general magnitude of turning volumes reflects the model predictions for the year 2011. These magnitudes may be reached earlier or later than expected as population/employment grows and the assumed distribution may also vary. These volumes thus reflect the best current estimate of 2011 flows but road design with considerable flexibility is desirable to facilitate future unforeseen changes in traffic patterns.

The exclusion of the Prospect arterial link affects the interchange ramp volumes as indicated in Tables 4.2.1 and 4.2.2 below:

TABLE 4.2.1:

Interchange	Ramp	Predicted 2011 Interchange AM-Peak Ramp Volumes for Scenario 2A	
		With Prospect Arterial	Without Prospect Arterial
CHURCH LANE	Eastbound on-ramp	990	1210 (+22%)
	Eastbound off-ramp	565	375 (-34%)
	Westbound on-ramp	610	570 (- 7%)
	Westbound off-ramp	660	715 (+ 8%)
JERSEY ROAD	Eastbound on-ramp	880	890 (+ 1%)
	Eastbound off-ramp	660	660
	Westbound on-ramp	660	850 (+29%)
	Westbound off-ramp	1155	1370 (+19%)

Note: The values in brackets represent the percentage increase/decrease in traffic expected if the Prospect arterial is not built.

TABLE 4.2.2:

Interchange	Ramp	Predicted 2011 Interchange AM-Peak Ramp Volumes for Scenario 2B	
		With Prospect Arterial	Without Prospect Arterial
CHURCH LANE	Eastbound on-ramp	850	1210 (+42%)
	Eastbound off-ramp	400	375 (- 6%)
	Westbound on-ramp	600	570 (- 5%)
	Westbound off-ramp	730	1125 (+54%)
GREYSTANES ROAD	Eastbound on-ramp	250	365 (+46%)
	Eastbound off-ramp	565	520 (- 8%)
	Westbound on-ramp	165	315 (+91%)
	Westbound off-ramp	325	530 (+63%)
JERSEY ROAD	Eastbound on-ramp	700	870 (+24%)
	Eastbound off-ramp	465	350 (-25%)
	Westbound on-ramp	710	720 (+ 1%)
	Westbound off-ramp	1000	1045 (+ 5%)

Note: The values in brackets represent the percentage increase/decrease in traffic expected if the Prospect arterial is not built.

The above tables illustrate the effect that the Prospect arterial has on the predicted 2011 AM peak ramp volumes. In general, the ramp volumes tend to increase if the Prospect arterial is not built.

The Prospect arterial has a greater effect on the north-south routes than on the interchange ramps as indicated in Section 4.1. The magnitude of this effect on other north-south routes reflects the need for the Prospect arterial. The Prospect arterial is considered an important component of the preferred scheme.

5. MODELLING ASSUMPTIONS

5.1 Introduction

In order to produce forecasts of traffic flows the Strategic Planning section of the DMR made use of the TRANPLAN model for Sydney following discussion with the Consultants as to the parameters involved. This section reviews the main modelling assumptions used.

5.2 The Network

The future network used was the year 2000 network with local changes for inclusion/exclusion of the F4 between Mays-Hill and Prospect and the Prospect Arterial.

The overall network included the following major new roads. A full list of roads and details of exact network descriptions are available from the strategic planning section of the DMR.

Major New Roads Included in Network

- Gore Hill Freeway
- Castlereagh Freeway (Old Windsor Rd - Pittwater Rd)
- Newcastle Freeway (Berowra to Pearces Corner)
- South Western Freeway
- Eastern Distributor
- Silverwater Arterial
- Johnston Creek Route
- Liverpool Arterial
- Horsley Drive
- Parramatta Ring Road.

5.3 Population/Employment Distribution

The population/employment distribution shown in the following table was prepared by the Department of Environment and Planning. The table suggests major growth in local centres particularly Baulkham Hills, Liverpool, Campbelltown and Blacktown. Parramatta is predicted to have a nett reduction in population but continued growth in employment.

It is considered that the population/employment distribution used is the best available basis for future traffic modelling and is that used by the DMR for year 2000 strategic network planning.

LOCAL GOVERNMENT AREA	POPULATION				EMPLOYMENT			
	1981	2011	CHANGE	%	1981	2011	CHANGE	%
1 SYDNEY	51875	53686	1811	3.4	256259	256825	566	0.2
2 NORTH SYDNEY	48500	48392	-108	-0.2	44725	49489	4764	9.6
3 SOUTH SYDNEY	30776	31902	1126	3.5	48591	30343	-18248	-60.1
4 WOOLAHRA	51659	48730	-2929	-6.0	14720	14259	-461	-3.2
5 WAVERLEY	61575	54682	-6893	-12.6	8304	17270	8966	51.9
6 RANDWICK	116202	104211	-11991	-11.5	24691	33613	8922	26.5
7 BOTANY	35565	29652	-5913	-19.9	31326	32320	994	3.1
8 MARRICKVILLE	83448	71145	-12303	-17.3	26367	20787	-5580	-26.8
9 LEICHHARDT	57293	51784	-5509	-10.6	22611	11480	-11131	-97.0
10 DRUMMOYNE	30961	29640	-1321	-4.5	6851	6637	-214	-3.2
11 ASHFIELD	41253	37012	-4241	-11.5	7365	8207	842	10.3
12 BURWOOD	28896	32508	3612	11.1	9631	15183	5552	36.6
13 CONCORD	23926	25654	1728	6.7	13545	12928	-617	-4.8
14 STRATHFIELD	25882	30462	4580	15.0	16893	14028	-2865	-20.4
15 CANTERBURY	126741	107836	-18905	-17.5	24994	24609	-385	-1.6
16 ROCKDALE	82857	76503	-6354	-8.3	18145	16961	-1184	-7.0
17 KOGARAH	46322	51545	5223	10.1	10893	13023	2130	16.4
18 HURSTVILLE	64910	64633	-277	-0.4	14466	22768	8302	36.5
19 SUTHERLAND	165336	205062	39726	19.4	34881	65331	30450	46.6
20 BANKSTOWN	152636	144674	-7962	-5.5	60841	59461	-1380	-2.3
21 AUBURN	46622	50229	3607	7.2	34280	33779	-501	-1.5
22 HOLROYD	80116	81495	1379	1.7	24715	33740	9025	26.7
23 FAIRFIELD	129557	161921	32364	20.0	25909	42781	16872	39.4
24 LIVERPOOL	92715	268663	175948	65.5	26941	92931	65990	71.0
25 CAMDEN	17096	149973	132877	88.6	5435	36012	30577	84.9
26 CAMPBELLTOWN	91525	176136	84611	48.0	14192	79797	65605	82.2
27 PENRITH	108720	216360	107640	49.8	26300	81487	55187	67.7
28 WINDSOR	20870	50525	29655	58.7	9323	15165	5842	38.5
29 BLACKTOWN	181139	374193	193054	51.6	35124	120118	84994	70.8
30 PARRAMATTA	130943	129387	-1556	-1.2	62266	103033	40767	39.6
31 BAULKHAM HILLS	93084	212815	119731	56.3	16884	59212	42328	71.5
32 HORNSBY	111081	127480	16399	12.9	24612	47330	22718	48.0
33 RYDE	88948	85126	-3822	-4.5	32074	34928	2854	8.2
34 HUNTERS HILL	12537	11465	-1072	-9.4	3253	2541	-712	-28.0
35 LANE COVE	29113	28467	-646	-2.3	9335	10240	905	8.8
36 WILLOUGHBY	52120	52570	450	0.9	34211	51348	17137	33.4
37 KU-RING-GAI	101051	102637	1586	1.5	16922	27957	11035	39.5
38 WARRINGAH	172653	209823	37170	17.7	38827	67015	28188	42.1
39 MANLY	37080	33269	-3791	-11.4	8118	13123	5005	38.1
40 MOSMAN	26200	27549	1349	4.9	5210	5995	785	13.1
41 WOLLONDILLY	5029	178984	173955	97.2	1224	43555	42331	97.2
TOTAL	2954812	4028800	1073988	26.7	1151254	1727609	576355	33.4

6. PREFERRED OPTION

The preferred option is the full duplication of the Great Western Highway with interchanges at Church Lane and Jersey Road and overpasses at Greystanes, Ettalong and Centenary Roads. Use is made of the existing F4 freeway connection at Prospect and Mays Hill to provide an eastbound off-ramp and eastbound on-ramp respectively.

The preferred option is that scheme identified in Working Paper 2 (i.e. scenario 2A) with one modification - the exclusion of the westbound on ramp in the vicinity of Dog Kennel Road, Prospect.

The need for this on ramp is questionable as freeway access is suitably proposed at Church Lane and Wallgrove Road interchanges. It is assumed that the predicted 2011 AM-peak hourly volume using this on-ramp (i.e. approx. 280 vehicles) would continue westbound along the Great Western Highway and gain access to the freeway at the Wallgrove Road interchange.

6.1 Description of the Preferred Option

The preferred option is illustrated in Figure 15 and incorporates the following:

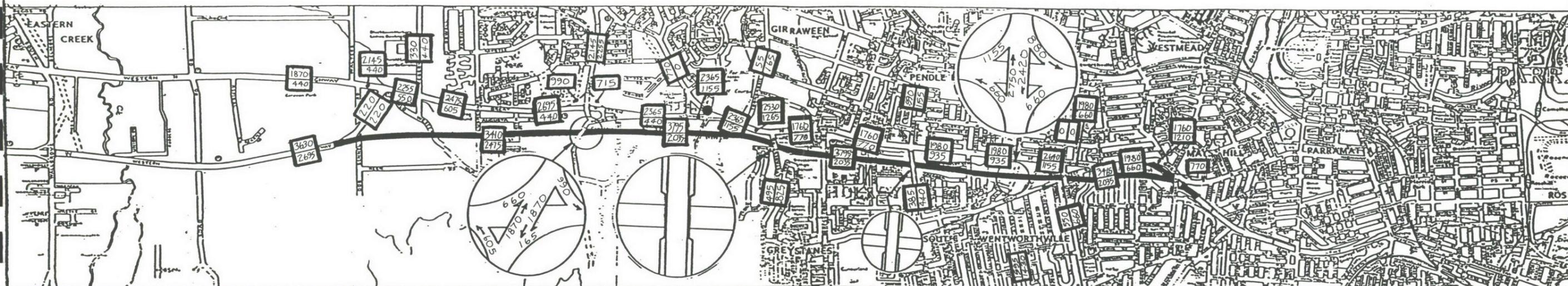
- (i) A six lane freeway along the alignment as shown in Figure 15 between Prospect and Mays Hill. Six lanes are required in order to provide a level of service C during peak hour periods for the 2011 forecast flows. Staged construction (four lanes with provision for six) may be appropriate for the Freeway.
- (ii) Interchanges at Church Lane and Jersey Road. The number of ramp lanes required to provide a peak hour level of service C are as follows:

Interchange	Ramp	No. of Lanes Required
CHURCH LANE	Eastbound on-ramp	2
	Eastbound off-ramp	1
	Westbound on-ramp	1
	Westbound off-ramp	2
JERSEY ROAD	Eastbound on-ramp	1
	Eastbound off-ramp	2
	Westbound on-ramp	2
	Westbound off-ramp	1

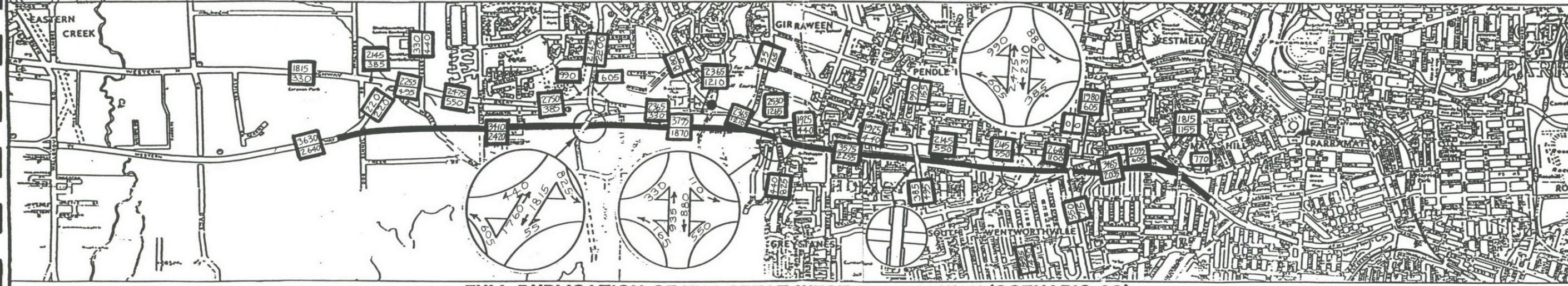
(iii) Partial retainment of the existing freeway connections with the Great Western Highway at both ends of the proposed freeway link. At both ends, it is recommended that the eastbound lanes be retained. The existing roadway will therefore provide a freeway off-ramp at the western end and an on-ramp at the eastern end. The number of lanes required to provide a peak hour level of service C are as follows:

Ramp	Required No. of Lanes
Off-Ramp	1*
On-Ramp	2

* At present, two lanes are provided. It is therefore recommended that both are retained.



FULL DUPLICATION OF THE GREAT WESTERN HIGHWAY (SCENARIO 2A)



FULL DUPLICATION OF THE GREAT WESTERN HIGHWAY (SCENARIO 2B)

LEGEND



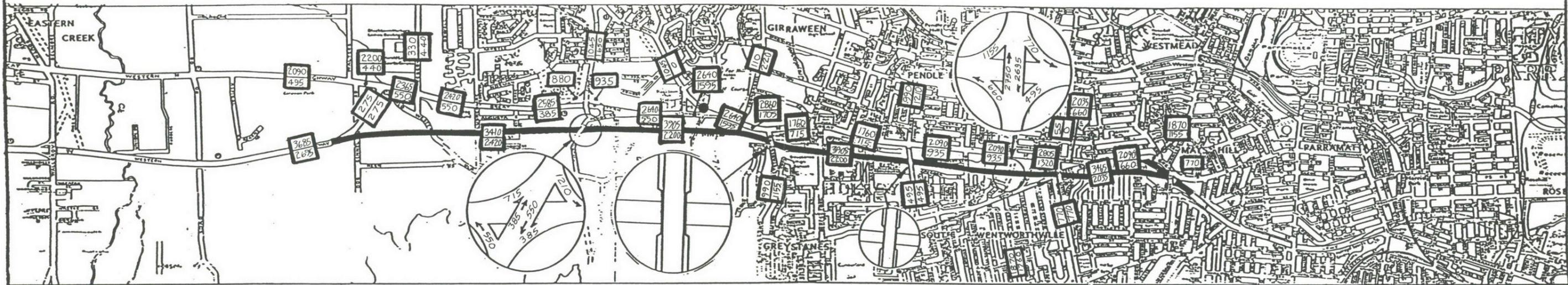
FORECAST INTERCHANGE
LINK VOLUMES



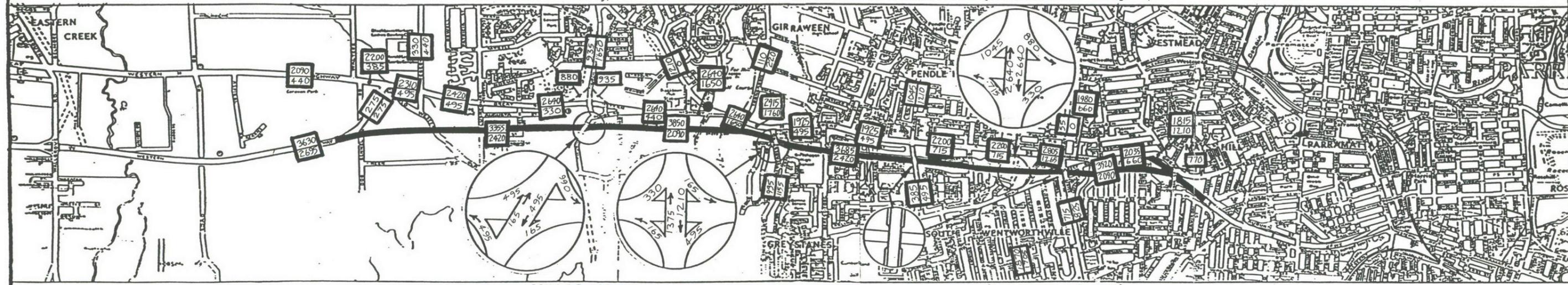
FORECAST EASTBOUND AND
WESTBOUND LINK VOLUMES

- PROPOSED CLOSURE
BLACKTOWN RD
(EASTERN LEG)
- PROPOSED F4
FREEWAY

**MODEL FORECAST 2011 AM-PEAK
HOURLY TRAFFIC VOLUMES
(WITH PROSPECT ARTERIAL)**



FULL DUPLICATION OF THE GREAT WESTERN HIGHWAY (SCENARIO 2A)



FULL DUPLICATION OF THE GREAT WESTERN HIGHWAY (SCENARIO 2B)

LEGEND



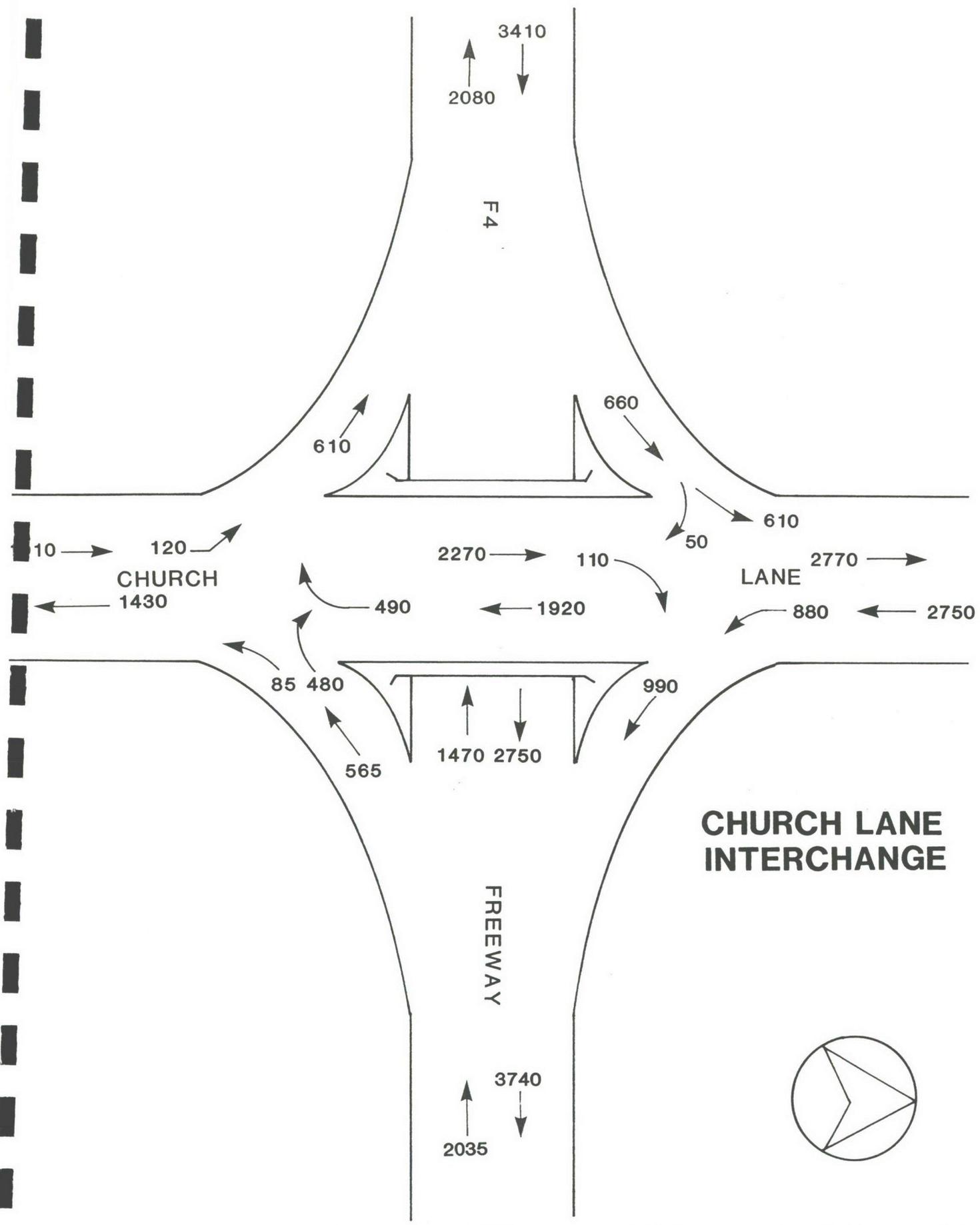
FORECAST INTERCHANGE
LINK VOLUMES



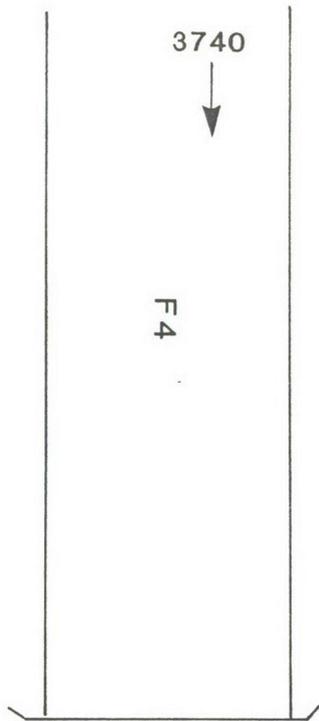
FORECAST EASTBOUND AND
WESTBOUND LINK VOLUMES

- PROPOSED CLOSURE
BLACKTOWN RD
(EASTERN LEG)
- PROPOSED F4
FREEWAY

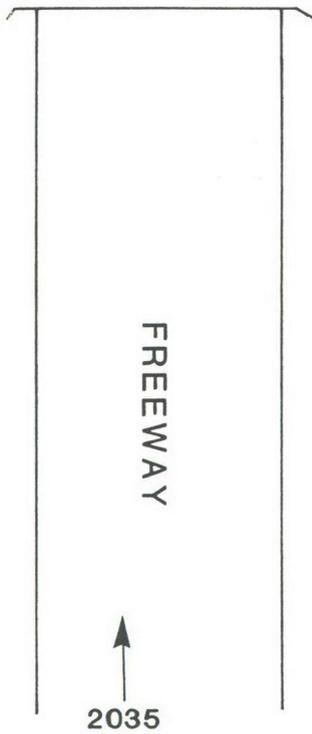
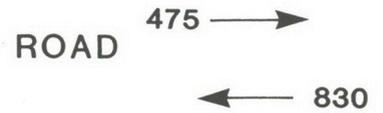
**MODEL FORECAST 2011 AM-PEAK
HOURLY TRAFFIC VOLUMES
(WITHOUT PROSPECT ARTERIAL)**



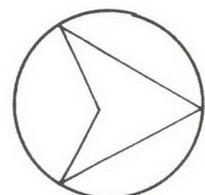
PREDICTED 2011 HOURLY VOLUMES FOR SCENARIO 2A WITH PROSPECT ARTERIAL



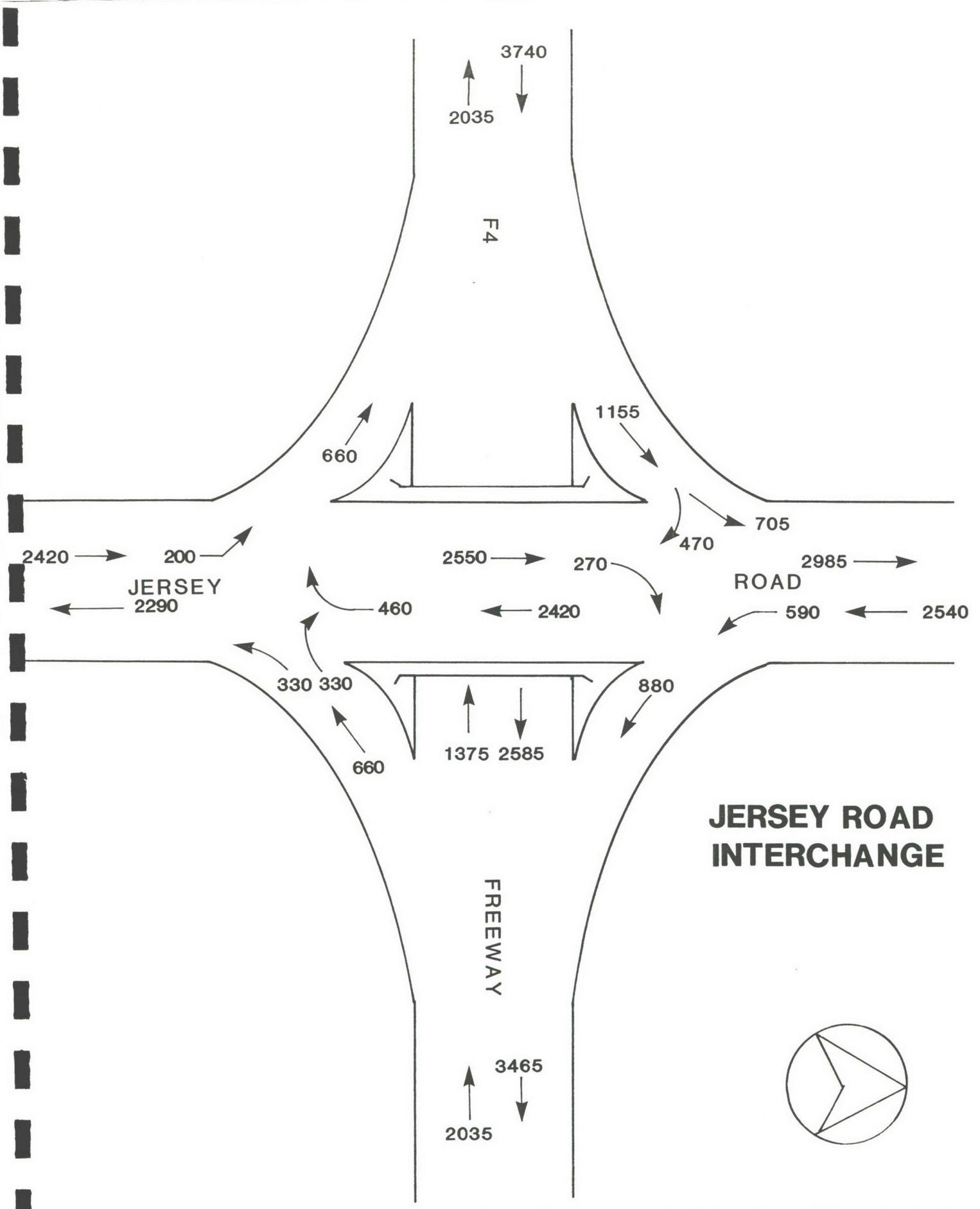
GREYSTANES



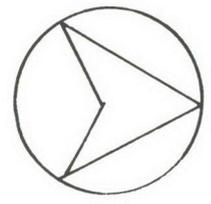
GREYSTANES ROAD OVERPASS



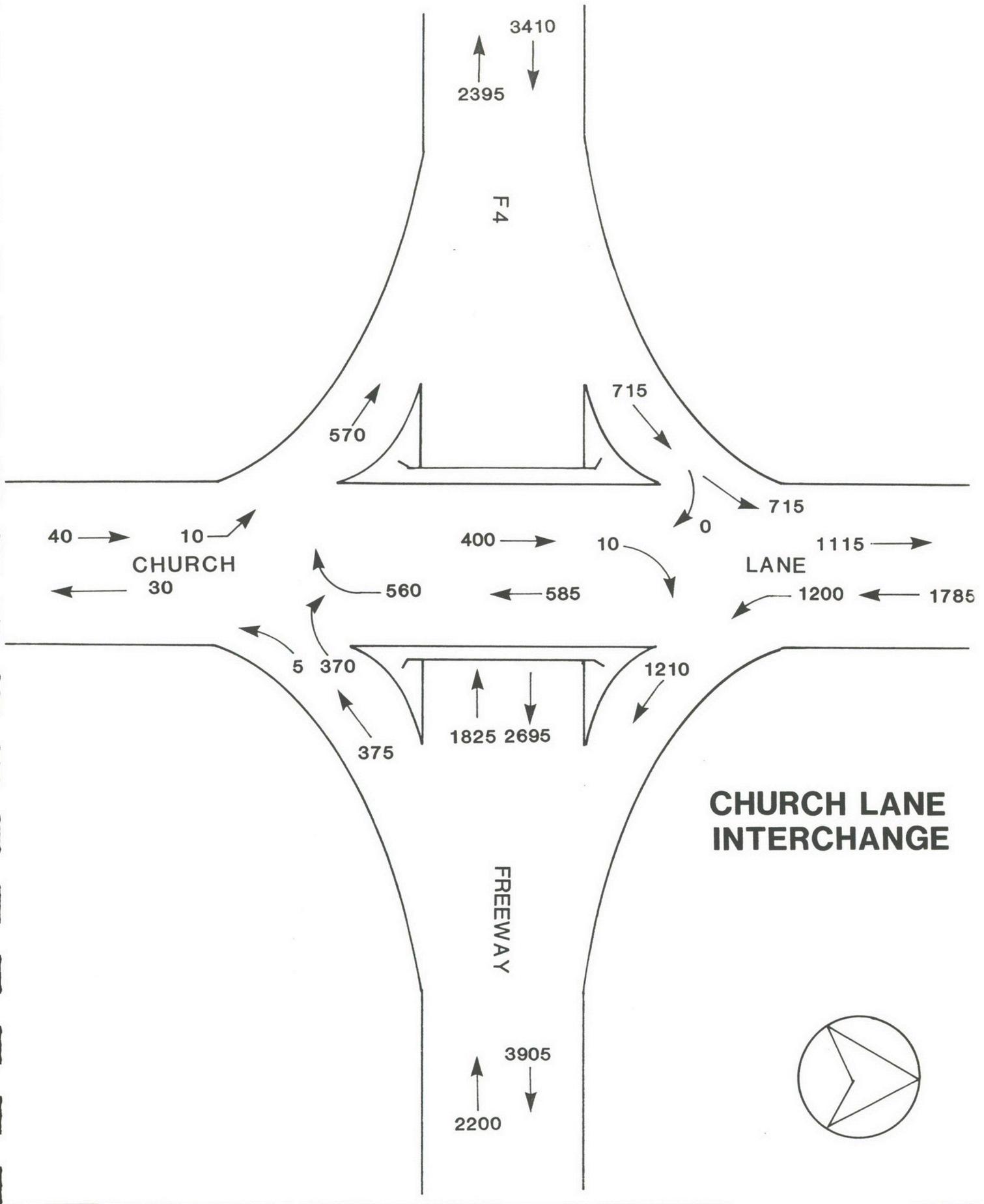
PREDICTED 2011 HOURLY VOLUMES FOR SCENARIO 2A WITH PROSPECT ARTERIAL



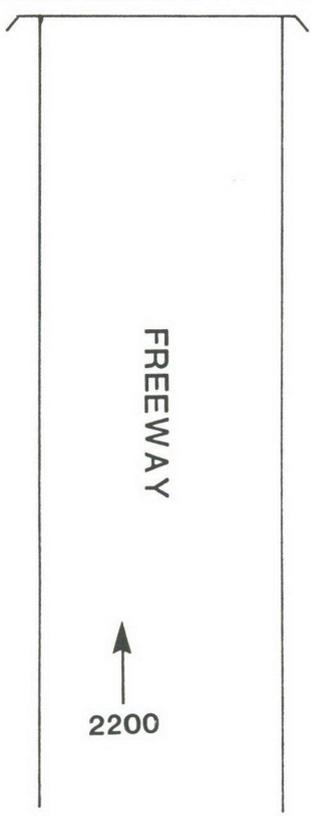
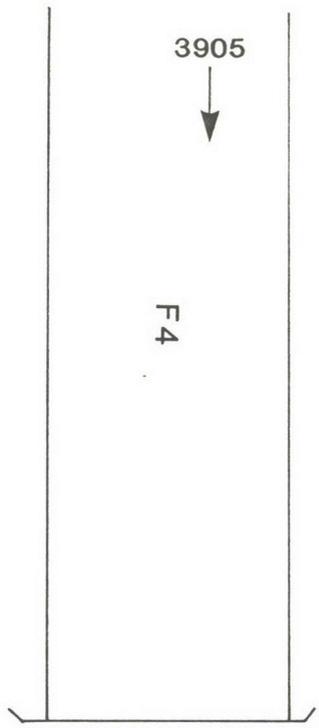
JERSEY ROAD INTERCHANGE



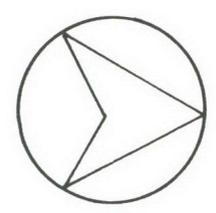
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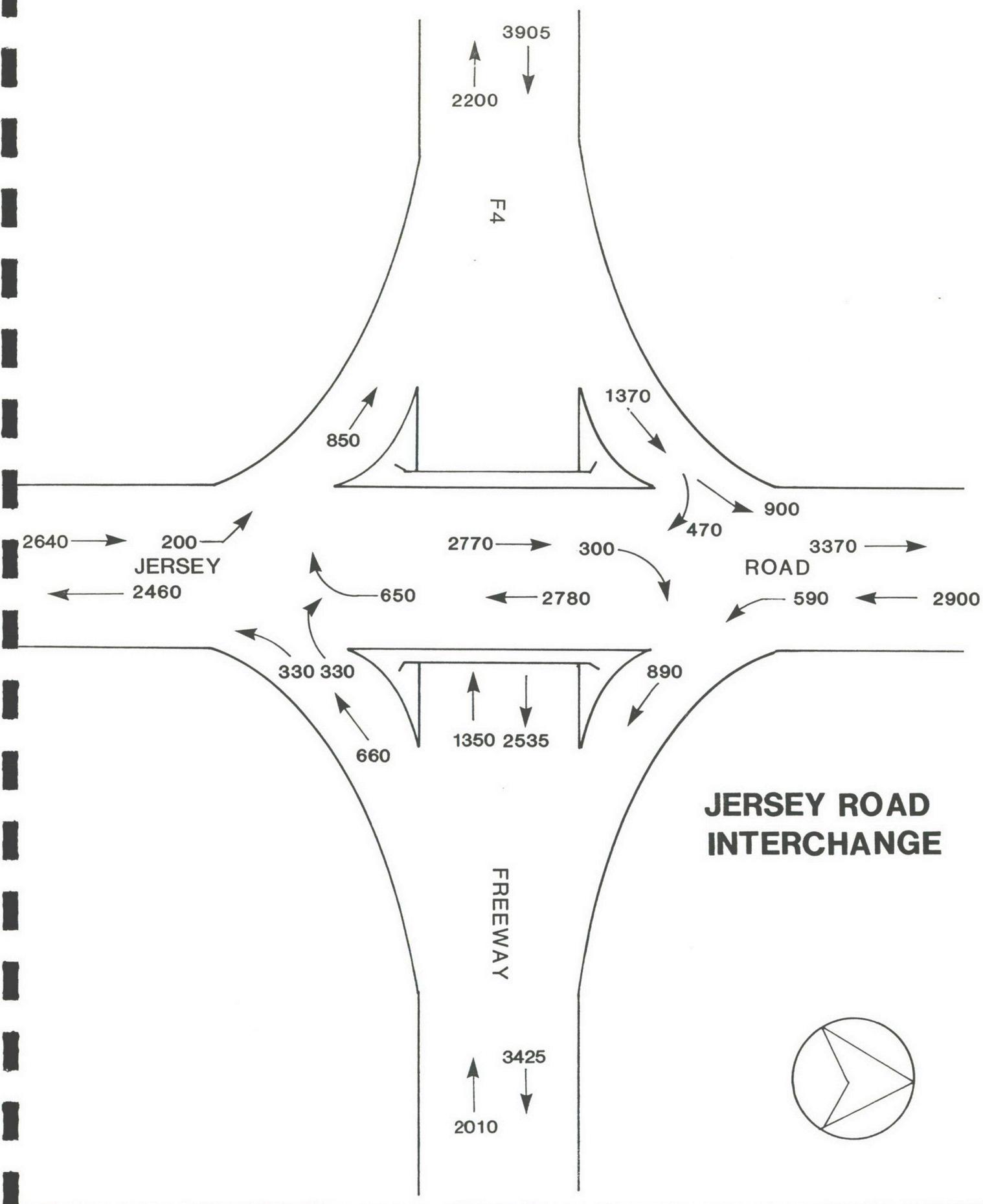
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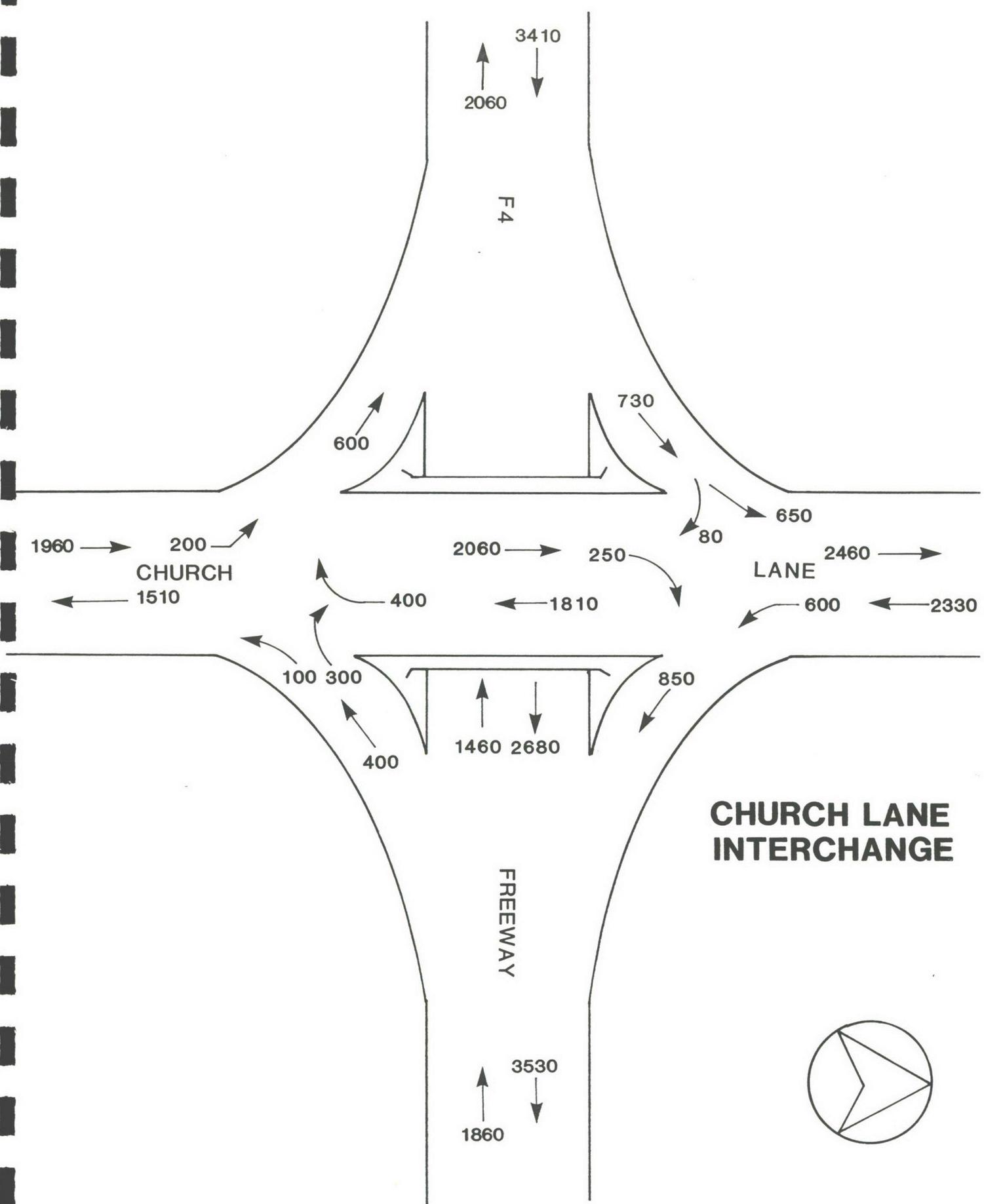
GREYSTANES ROAD OVERPASS



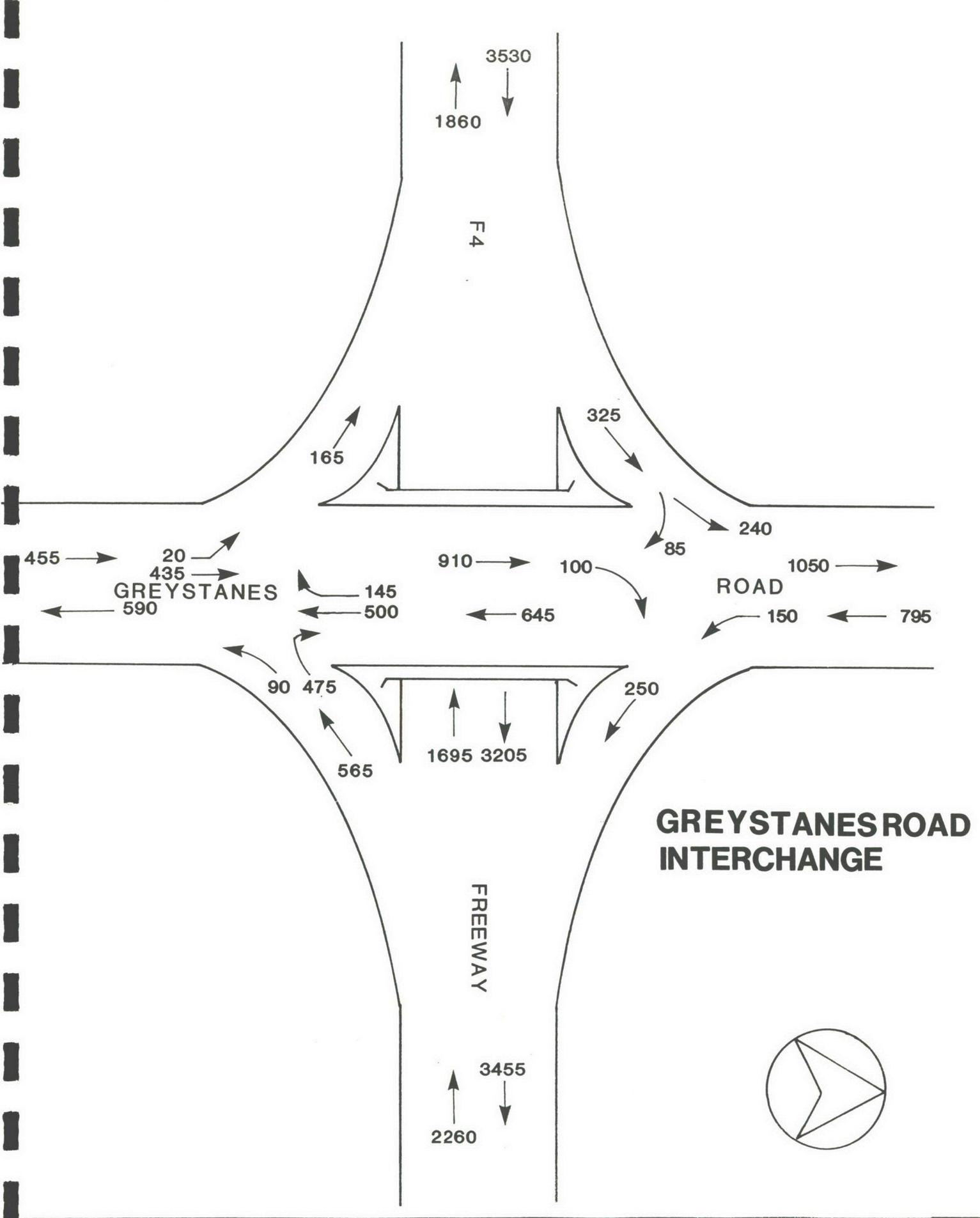
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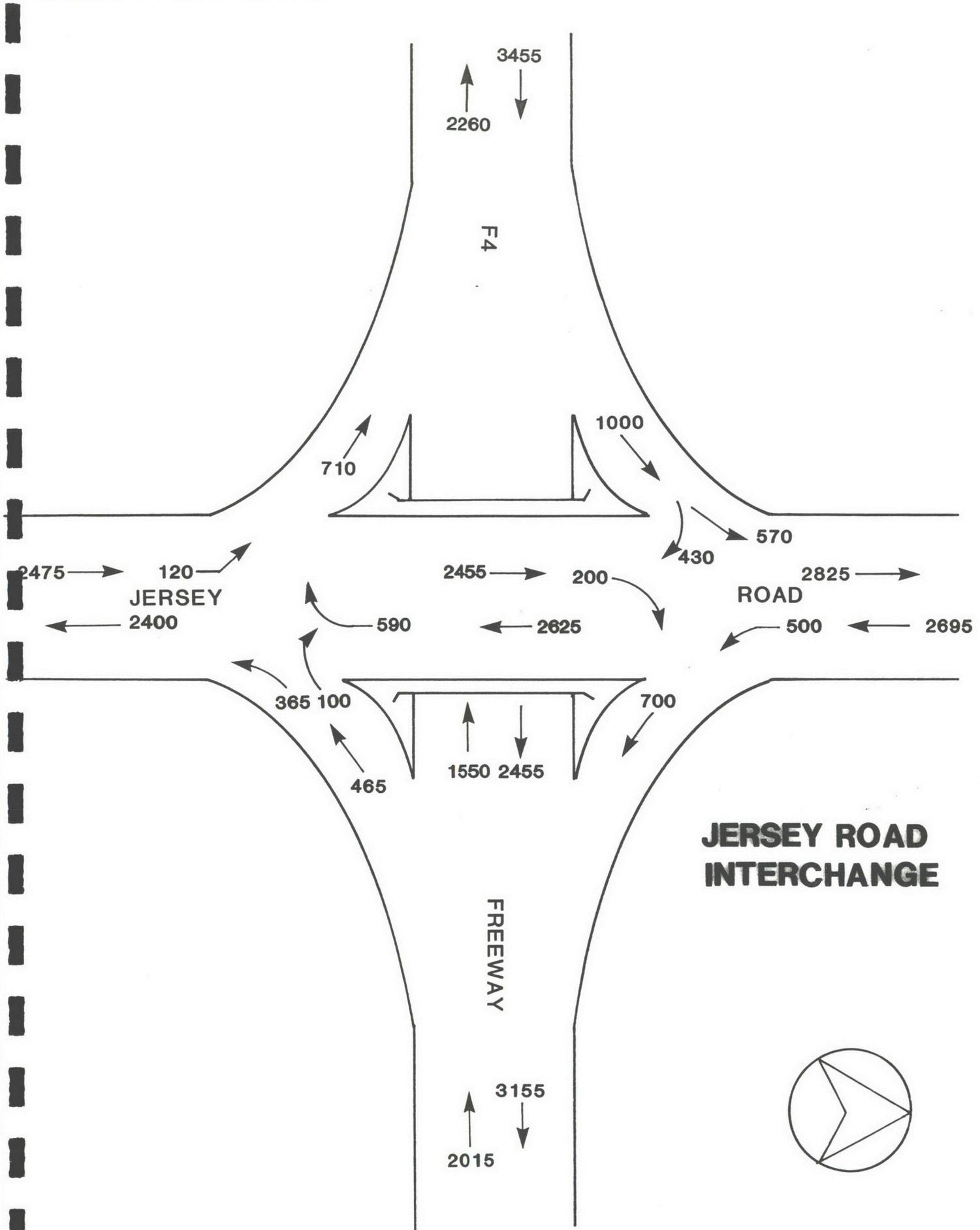
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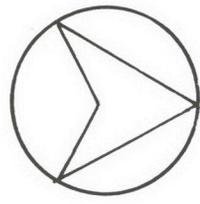
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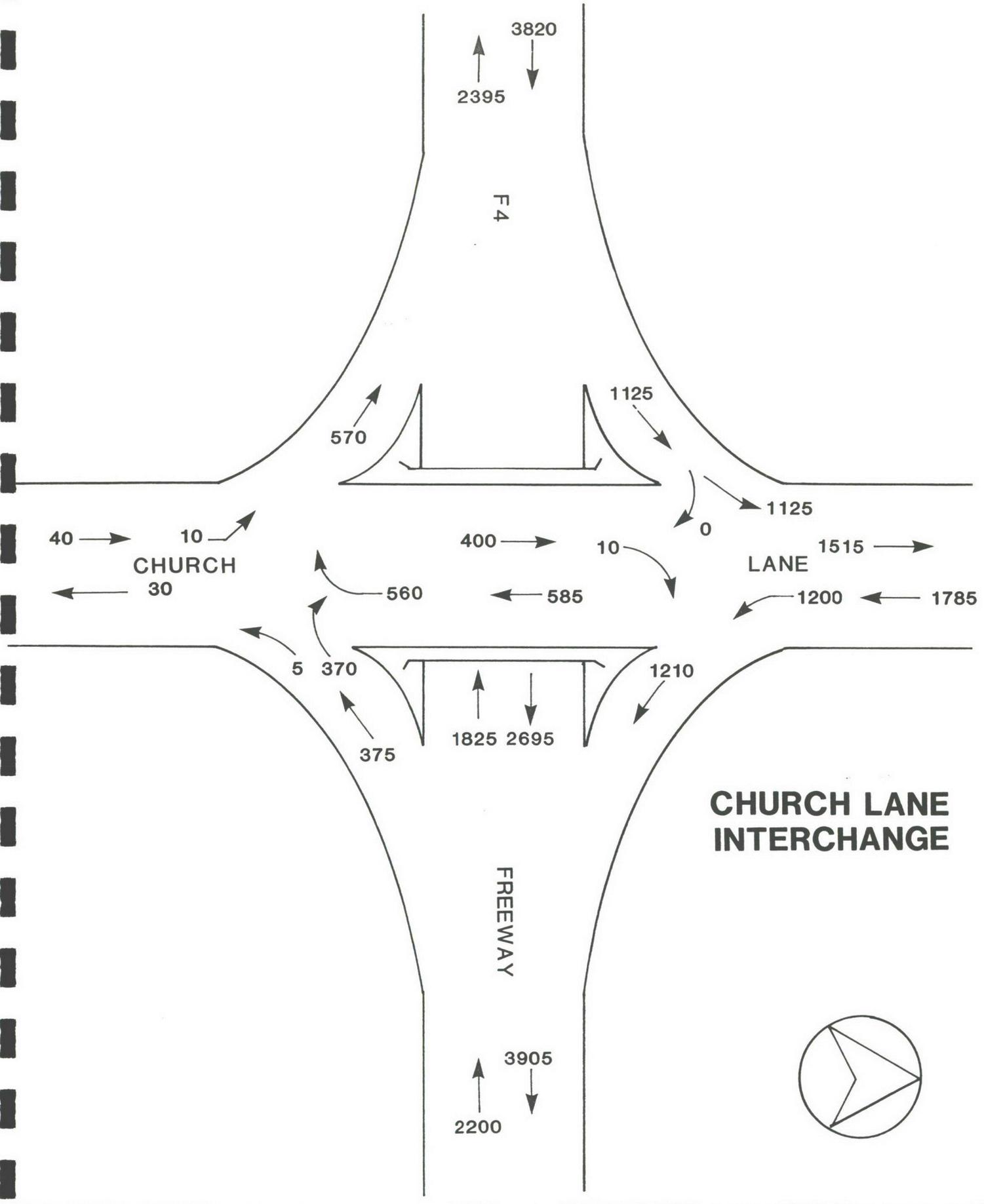
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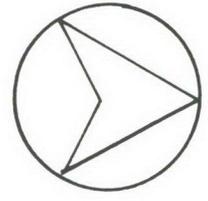
JERSEY ROAD INTERCHANGE



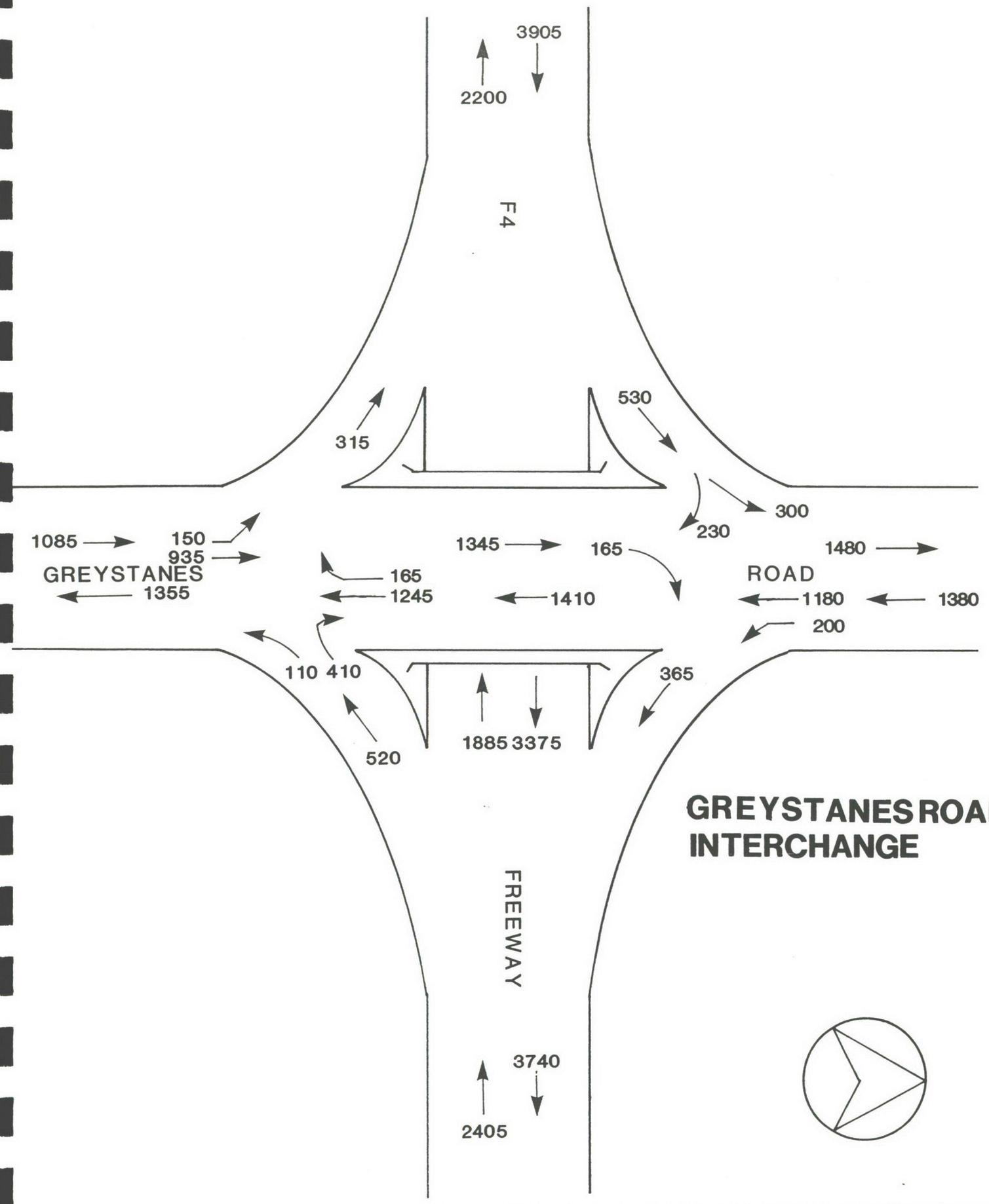
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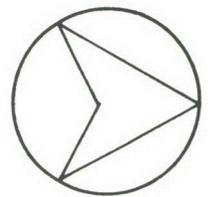
CHURCH LANE INTERCHANGE



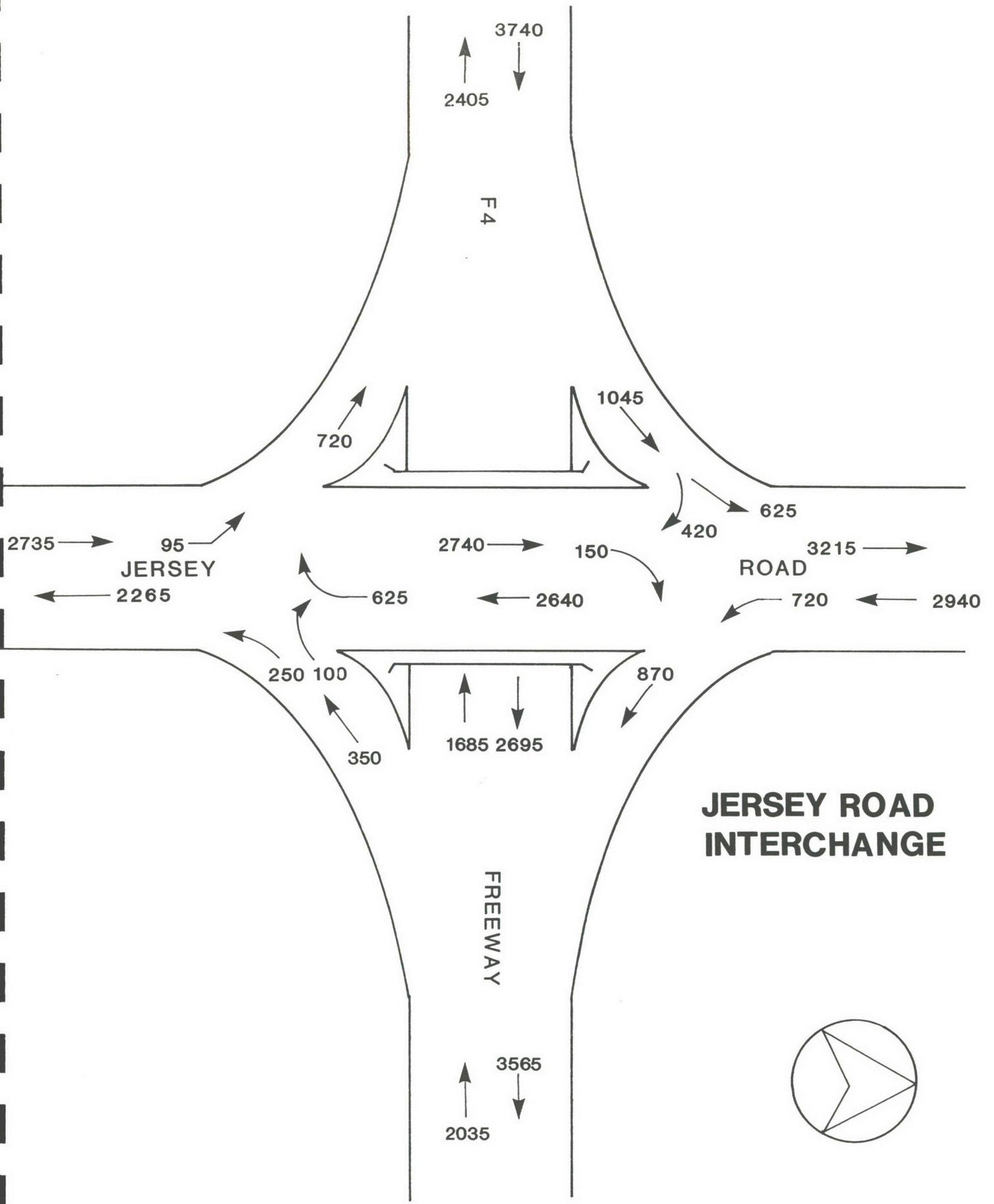
PREDICTED 2011 HOURLY VOLUMES FOR SCENARIO 2B WITHOUT PROSPECT ARTERIAL



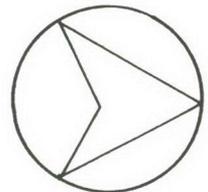
GREYSTANES ROAD INTERCHANGE



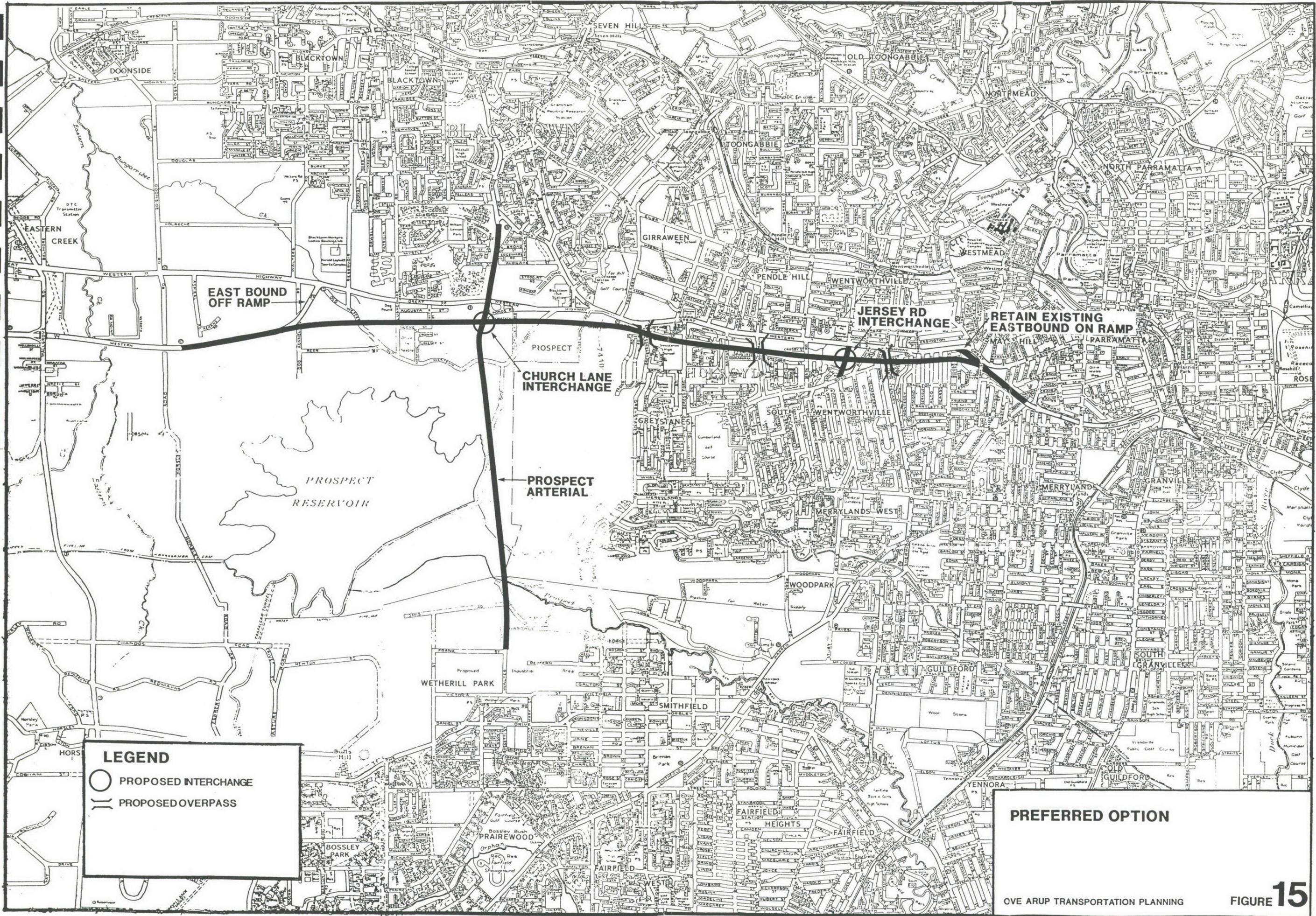
PREDICTED 2011 HOURLY VOLUMES FOR SCENARIO 2B WITHOUT PROSPECT ARTERIAL



JERSEY ROAD INTERCHANGE



PREDICTED 2011 HOURLY VOLUMES FOR SCENARIO 2B WITHOUT PROSPECT ARTERIAL



LEGEND

- PROPOSED INTERCHANGE
- || PROPOSED OVERPASS

PREFERRED OPTION

OVE ARUP TRANSPORTATION PLANNING

FIGURE 15