AN APPROACH TO ANALYZE THE APPLICABILITY OF PRIVATIZATION TO URBAN TRANSPORTATION: CASE OF DENIZLI

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MIHRIBAN MENGU SOGUTLUGIL

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Prof.Dr. Tayfur Öztürk

Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science

Prof. Dr. Fuat Erbatur

Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science

Prof. Dr.Özdemir Akyılmaz

Supervisor

Examining Committee Members

Prof. Dr. Ayhan İnal

Prof. Dr. Özdemir Akyılmaz

Assist. Prof. Dr. Hikmet Bayırtepe

Inst. Dr. Osman Acar

Inst. Dr. Engin Erant

ABSTRACT

AN APPROACH TO ANALYZE THE APPLICABILITY OF PRIVATIZATION TO URBAN TRANSPORTATION: CASE OF DENIZLI

Söğütlügil, Mengü Mihriban

M.S., Department of Civil Engineering

Supervisor: Prof. Dr. Özdemir Akyılmaz

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The main purpose of this study is to analyze the privatization of some or all of the bus routes in Denizli with a recommended approach.

Urban bus transportation operations are usually in deficit in Türkiye. Municipalities are generally subsidized by the government because of this deficit. This study is performed to find out a way to make privatization profitable both for the Municipality and the private company. The suitability for privatization is simply sought by operating the service in one route in a profitable position.

In this thesis the cost for the Municipality for one route per day is used for the analysis. This cost is estimated according to the total distance

traveled for that route per day from the data gathered from the Municipality.

The incomes including the fares as well as the licencing fees are compared with the costs analyzed for each route. This comparison is the sole basis to decide on the privatization for each route.

Once the decision for privatization is made, recommendations both for the Municipality and the private companies are given.

Consequently, the approach recommended is found out to be suitable to make a decision to determine the routes to be privatized.

Key words :Urban Bus Transportation, privatization, transportation costs.

ÖZ

ŞEHİRİÇİ ULAŞIMI ÖZELLEŞTİRMESİ UYGULANABİLİRLİĞİNİN ANALİZİNE BİR YAKLAŞIM: DENİZLİ ÜZERİNE BİR ÇALIŞMA

Söğütlügil, Mengü Mihriban

Yüksek Lisans, İnşaat Mühendisliği Bölümü

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Bu tezin başlıca amacı Denizli' de otobüs hatlarının bazılarının ya da tümünün özelleştirilmesinin öngörülen yaklaşımla incelenmesidir.

Türkiye' de, şehiriçi otobüs ulaşımı genellikle ekonomik açıdan açık vermektedir. Bu çalışma özelleştirmeyi hem Belediye hem de özel şirket açısından karlı yapabilmek için bir yol bulmak amacıyla gerçekleştirilmiştir. Özelleştirmeye uygunluk basit anlamda bir hattaki servisi karlı bir şekilde işletmeyi baz alarak incelenmiştir.

Bu çalışmada analiz için Belediye' nin bir hat için günlük gideri kullanılmıştır. Bu gider o hatta günlük katedilen mesafeye göre hesaplanmıştır.

Her hat için analiz edilen ve bilet ve lisans ücretlerinden oluşan gelirler, giderlerle karşılaştırılmıştır. Bu karşılaştırma her bir hattın özelleştirilmesine karar vermek için temeldir.

Özelleştirmeye karar verildiği durumlarda hem Belediye hem de özel şirketler için öneriler verilmiştir.

Sonuç olarak, öngörülen yaklaşım özelleştirilecek hatlara karar verilmesi için uygundur.

Anahtar sözcükler: Şehiriçi Otobüs Ulaşımı, Özelleştirme, Ulaşım Giderleri

Dedicated to my husband, Ertuğrul

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LIST OF SYMBOLS

Route no B: Numeric name given to the municipality buses operating on a route.

T_B : Daily number of trips performed by the municipality buses in a route.

l_i : Length of a municipality bus route. (km)

D_B: Daily demand for the municipality buses in one route. (passengers/day)

Route no M: Numeric name given to the minibuses operating on a route.

D_M: Daily demand for the minibuses in one route. (passengers/day)

F: Daily fuel expense (TL)

D: Daily driver expense (TL)

M: Daily maintenance and repair expense (TL)

I: Daily insurance expense (TL)

S: Daily staff expense (TL)

p: Percentage

L_i : Daily distance traveled in a route. (km)

ΣL_i : Daily distance traveled in all the routes. (km)

C_d^*: Total daily cost of the municipality. (TL)

C_{di} : Daily cost for a municipality bus route. (TL)

Im: Income from minibuses to the Municipality. (TL)

N_M: Number of minibuses operating on a route. (TL)

n: number of years of contract

Cm: Operation cost when minibuses are converted to private buses. (TL)

Cb: Operation cost when municipality buses are converted to private buses. (TL)

DepM: Depreciation cost when minibuses are converted to private buses. (TL)

DepB: Depreciation cost when municipality buses are converted to private buses. (TL)

Pm: Number of private buses needed when minibuses are converted to private buses. (TL)

Pb: Number of private buses needed when municipality buses are converted to private buses. (TL)

TC: Total cost (TL)

TI: Total income (TL)

It: Income needed from the fares. (TL)

B: Ticket fare (TL)

CHAPTER I

INTRODUCTION

The increasing population and the migration from the villages to the city centers make the urban transportation more important day by day. As it is the most extensive type of transportation suitable for small scale cities, the need for this type of transportation is increasing significantly. The finance of urban bus transportation and performing a good quality service come out to be a problem.

The purpose of this study is to find out the applicability of privatization to Denizli Urban Public Transportation.

Privatization of public services is simply reducing the effect of the Government on a service and increasing the effect of the private sector. The first step of privatization is reducing the governmental subsidy, that is, making the service to be sustained by the private sector. This is the basis of the privatization philosophy since who benefits from the service sustains the service, as the private sector is the community itself. (Ref. 11)

If a public transportation system is to be privatized, it is subject to some criteria. These criteria are provided by the private company that is contracted by the Municipality. The most important criterion is that all the buses after privatization should be converted to new buses; carrying at most 50 passengers in one trip. This guarantees a certain level of service. The ownership of the buses and the operation of the service are the responsibilities of the private company.

All the data used in this study is gathered from the Denizli Municipality Transportation Department Members who are planning to change the present old municipality buses with the new ones. Therefore, as privatization is to be performed with new buses which belong to the private sector, this study is useful to reduce the governmental subsidy needed for this plan.

Analysis of transportation systems is essentially a systematic approach in which system outputs are predicted through a set of precieved inputs within the complex interaction of transportation systems with their environments. (Ref. 1)

The major steps involved in this process are:

- Identification of system inputs,
- Designing alternative strategies,
- Prediction of the outputs, and
- Evaluation of alternative strategies and selection of the best option.

Privatization analysis is a type of analysis of transportation systems in which the method is the cost analysis. The reason is that the input is the cost of the private company. The alternative strategies are

estimated according to the conversion of the municipality buses and/or the minibuses. The output is predicted as the operation which is performed by the private company. The output is gathered by fees, which are the collected fares. Fare level and ticket price are used synonymously in this study. (Ref. 1)

The applicability of privatization is searched according to the strategies generated and comparison made among them. Even though the strategies are different from each other the process is the simplest economic search where the fares are the criteria. It is searched whether the current fare is enough to operate a private bus service in each route for the different strategies.

The type of transportation analysis performed in this study is based on 'accounting approach'. This is an ideal case because the costs to perform the analysis are available from the Municipality. This type of approach can be used in price setting such as determining the level of fares. The essence of price setting is to determine the proper share of the costs to be borne by the consumers receiving the service. The pricing of a service is a measure of the total cost and the total demand. (Ref. 1)

Total daily cost of a bus route is estimated according to the proportion of the distance traveled in that municipality bus route to the total distance traveled in all the municipality bus routes in a day. The reason is that number of trips and distance traveled in one trip differs from one route to another, thus, only one of them can not be a criterion.

It should not be forgotten that to choose the routes to be privatized is a rough process. However, it can be recognized that it is a good way to decide on the routes where at least one kind of transportation service is completely converted. *Complete conversion of one route* is a new approach studied in this study.

Turkiye is a developing country and privatization is a matter that seems to accelerate economic development. There are many succesful and unsuccesful examples all over the world. Alternative solutions of privatization should be developed in order to decrease the governmental subsidy in all the services performed by the Government and the Municipalities.

CHAPTER II

BACKGROUND

Privatization is an approach, which is applied in various ways and in various fields. In this section the literature about the privatization generally and specifically on urban bus transportation is reviewed. The methods mentioned below are helpful to illustrate privatization in the world roughly.

2.1.Privatization

Privatization has a meaning ' making private, especially taking the control and ownership of a work or an industry from public administration and bringing to private sector'. The word 'public' is confusing. It is used for three different meanings; 'Governmental ownership, extensive ownership and extensive attainment'. These confusing meanings are good teachers, because they inform that the ownership of government with the control of the government is not obligatory for the attainment of public needs. Consequently, privatization is the deregulation

of ownership and work relations for the benefit of the society among different groups.

Privatization is a strategic approach that aims to increase the productivity of governmental associations and to give people what is in return of their money. (Ref. 5)

The Father of Privatization is Adam Smith (1723-1790), who was a merchant. He claimed: 'Economical freedom is the basic way of freedom. If we let people to be economically free in a society, even though the first result will be the accumulation of private money, in the future the poverty will decrease for every member in the community.' (Ref. 7)

The factors that play a role in the productivity of privatization are competition, cost of manpower, elasticity of the administration and scale.

Competition:

It is clear that the firms in competition try to make their cost minimum. By the result of this phenomena the same service can be provided cheaper.

Cost of manpower:

When a public company becomes large in capacity, number of people working for the same amount of work increases. The reason is that larger companies need larger administrative staff and the people who are at the same qualification become administrators. As a result, administrative staff increases in number. As the number of people working

in a company becomes excessive, the efficiency of each worker decreases resulting in an increase in the cost of manpower.

Elasticity of Administration:

In private small firms the administration is elastic enough to have part-time workers, small vehicles, etc. These firms can make decisions in a faster way, can rule people and manage money in a more elastic way. They have less administrative staff and do not have to care about the statesmen and the politicians who would interrupt decisions about wages or time-schedules of the workers. The laws and regulations with the public workers are not important. Fewer workers are employed in a more effective manner. A private company can maintain the services it needs from other companies without discussing new regulations and rules.

Scale:

Small-scale companies are observed to be more effective than the larger scale ones. When a company gets smaller all the factors making privatization beneficial explained above are observed. (Ref. 5)

2.1.1. Privatization Methods

The rights of financing, ownership or management of a good or a service can be given to the private companies.

2.1.1.1. Sale Method

There are two applications of the sale method:

One is directly selling to a company or a group of companies by negotiating. This is a method used for smaller services and small public companies. In this method, the company exposed to privatization should be strong economically, but should not have a large budget, i.e. should not be large scale. This sale method is good in speed point of view because it does not have many formalities.

The other type is applied by dividing the public company into vouchers and selling in the stock exchange. The vouchers are sold at constant or increasing price basis. Selling at constant price base is a classical method and is used commonly, because it is simpler than selling at increasing price basis.

2.1.1.2. Joint-venture Method

This method is making large investments, with companies having public and private sector associates, the associates having determined shares. If the shares of the public sector companies are less, the system is closer to privatization. This method also includes the transfer of the existing productions or services to the private sector. These companies should be free in economical and managerial aspects, and the government should interfere the companies at minimum.

2.1.1.3. Leasing Method

Leasing is renting the companies, which are not productive in order to make them productive and profitable. As this method does not require the transfer of ownership it can not be regarded as full privatization. It strengthens the economic structure of the public companies. In Türkiye, the public companies can be rent both to Turkish and foreign companies.

2.1.1.4. Management Contract Method

In Management Contract Method, the administration of the public company is transferred to private sector. The management of the public company can be bought by the private company later if it is cited in the contract. If there is a transfer of ownership, the revenue shares, the rules of transferring these shares and the transfer calendar should be mentioned as well. The ownership is ensured with funds obtained at the end of the contract, so the private capital is used at minimum level. This method is broadly applied by experienced companies in European Countries.

2.1.1.5. Competitive Contracting Method

The ownership transfer is not required in this method as well. This method is broadly used in privatization of Municipality Services. It is observed that choosing the private companies, that the services would be transferred, by competitive contracting, increases the productivity and the quality.

In Turkish cities and towns the services like construction, maintenance and repair of roads, streets, avenues are performed by the

natural monopoly occurs are transferred to private sector with an agreement. In the franchising period, the most important point is the negotiation period. The right should be given to the company, which will produce the goods or the services with the lowest price.

2.1.1.7. Deregulation Method

This method abandons the restrictions of the government on the private sector; the control of the prices is ended, i.e. public monopoly ends. As well as the controls and the restrictions, the governmental subsidy ends, too. The purpose of this method is to increase the efficiency of the economy. (Ref. 17 & Ref. 18)

2.2 Privatization of Urban Bus Transportation

The urban bus transportation is provided by the Municipalities in Türkiye. Urban transportation systems, like any other systems, are suitable for privatization because they are paid by fares, since it is easy to equalize the cost to the income by changing the fare levels. The only income are the fares collected.

An urban bus transportation system, just like the other transportation systems, can benefit from privatization subjected to the followings:

- Reduced operating expenses to the initial users of the facility and also to those who continue to use the existing facilities.
- Lower maintenance costs.
- Fewer accidents and less damage to goods.
- Savings in time for the passengers.
- Increased comfort, convenience and reliability.
- Better economic development. (Ref. 1)

An urban bus transportation should use market economic rules in order to benefit in the above areas mentioned. The enterprise is, quite simply, productively transporting people from one point to another. The philosophy which holds that public transportation is a social service to be provided by the government is being superseded by a philosophy of benefit based financing of transit: Those who benefit should pay. The list of beneficiaries of public transit service is being expanded to reflect this new philosophy which identifies not only riders beneficiaries but also the public at large; the employers, the retail businesses, and the private developers. Public transit agencies should examine opportunities to involve private sector in all types of construction, maintenance, operation and ownership of transit services and facilities. These can provide significant cost savings and reduced financial risk to public agencies.

The suitable method of privatization for urban bus transportation is competitive contracting where the enterprise is not large scale and is a service which has constant fare. (Ref. 5)

2.3. Competitive contracting

Competition in urban transportation is provided through:

- Price competition
- Service competition

The passengers can usually make choices between varying price and varying quality of service. (Ref. 4)

Monopolistic prices result from a single seller's ability to charge higher prices (monopolistic prices) since there is no competition. Sometimes a firm becomes too large and diseconomies-of-scale will set in, meaning that average cost of the services increases.

Efficiency criteria, as considered by private firms, assumes that an efficient firm maximizes profits, which is the difference between revenues and costs. In a service like urban bus transportation service efficiency is an aspect to be considered. (Ref. 11)

Revenue from competitive contracting can occur as cost savings and by cost stabilization through multi-year, fixed-fee contracts. The amount of money saved depends upon the amount of service being contracted and relative cost of privately provided service vs. publicly provided service. (Ref. 14)

2.4. Examples

There are countless numbers of privatization examples in the World. However it is better to perform a search about transportation services which are usually performed by the governments or the municipalities i.e., the services which are subsidized by the government These are some illustrative examples:

- Transit in Ontario, Canada
- Metropolitan Transit Agency in New York, USA
- Urban Mass Transit in New Jersey,USA
- Busway concession to private sector in Sao Paulo, Mexico
- London Urban Bus Transportation, UK
- Manchester Metrolink, UK,
- Deutsche Bahn, Germany

The transportation services mentioned above are privatized by different methods such as voucher agreements, contracting, or just withdrawal of the Government from specific responsibilities.

Competition among companies, freedom from procedural constraints, and flexibility in hiring and firing practices create pressures for efficiency and cost savings that can not be achieved in the public sector.

As an example "Deutche Bahn", the Inter-Rail Company of Germany, which is famous for its best railroads, and the cheapest service in Europe was privatized by selling by vouchers. Even though East Germany Railroads were old fashioned and were not profiting, they were all

regenerated and "Deutsche Bahn" made profit from this privatization process. Now it is still the cheapest in Europe and more on time. (From an interview at Regensburg Transportation Department in Germany)

The British Government began privitization with the Thatcher Government in 1980' s in many industries like Telecom, energy, electricity, transportation, etc. The urban transportation was privatized as well. The urban bus transportation in London was privatized by competitive contracting in the routes up to 90 % but still governmental subsidy is needed to operate the services. The reason is that in some routes the contracted company did not make profitand lost money, and to maintain the services with the fixed fare, subsidy was needed. Different fares for different routes came into question but this was not accepted by the public.

Good privatization is a result of good economic development. Developing countries like Turkiye should be careful about privatization in order to be succesful. It is advised that these countries be very careful especially about competition. They should control the competition. Too many companies may cause destructive competition, i.e., competition so severe that the entire industry is damaged. Very few companies are in the tendancy of forming 'Private Governments' when the Govrernment gets smaller, i.e., private monopoly occurs.

CHAPTER III

URBAN PUBLIC TRANSPORTATION IN DENIZLI

3.1. Municipality Buses and Minibuses in Denizli

Denizli is a city with a population 204118 in the city center according to 1990 values. The urban transportation is performed by the municipality buses and minibuses. They have passenger sharings, such that, municipality buses 29 % and minibuses 71 %.

When the yearly income per individual is considered, Denizli is the fourth richest city in Turkiye according to the 1996 values. However, the municipality bus and minibus ticket prices are both 10.000 TL.

The following are the data and their definitions:

Route no B is the numeric name given to the municipality buses in one route.

T_B is the daily number of trips performed by the municipality buses in one route. (trips/day)

route daily. (passengers/day)

The notations for the daily fuel expense is F, the daily driver expense is D, the daily maintenance and repair expense is M, the daily insurance expense is I, and the daily staff expense is S. These costs are all in Turkish Liras and 1996 figures and gathered from the Transportation Department of the Denizli Municipality.

The income from the tickets and cards is the data of April'1996.

The costs and incomes are shown in Table 3.1, which are evaluated from yearly and monthly totals respectively.

Number of passengers in one private (new) bus for one trip is assumed to be 50.

The present municipality bus routes, their daily number of trips and daily number of passengers are illustrated according to the 1996 figures in Table 3.2.

The minibus routes, number of vehicles in the corresponding route and the daily number of passengers are illustrated in Table 3.3.

Table 3.1.

PRESENT COST AND INCOME

COST (TL)

ITEM	YEARLY	WEEKLY	DAILY	
FUEL (F)	*37,4 billion*	*719,230,769.20*	*102,500,000.00*	
DRIVER (D)	*40,156 billion*	*772,230,769.20*	*110,300,000.00*	
MAINTENANCE (M)	*15,10 billion*	*290,384,615.40*	*41,500,000.00*	
INSURANCE (I)	*284 million*	*5,461,538.46*	*780,200.00*	
STAFF (S)	*6,3 billion*	*121,153,846.20*	*17,300,000.00*	
		TOTAL:	*272,380,200.00*	TL

INCOME (TL)

ITEM:	MONTHLY	WEEKLY	DAILY	
NORMAL TICKET	*3,207,000,000.00*	*801,750,000.00*	*114,535,714.29*	
STUDENT TICKET	*2,045,500,000.00*	*511,375,000.00*	*73,053,571.43*	
NORMAL CARD	*327,000,000.00*	*81,750,000.00*	*11,678,571.43*	
STUDENT CARD	*436,800,000.00*	*109,200,000.00*	*15,600,000.00*	
		TOTAL:	*214,867,857.14*	TL

INCOME FROM THE MINIBUSES (TL)

LICENCING FEE	*350,000,000.00*	TL
ANNUAL LICENCING FEE	*8,000,000.00*	TL

Table 3.2

MUNICIPALITY BUSES		
ROUTE NO B	DAILY NUMBER OF TRIPS	DAILY NUMBER OF PASSENGERS
1	21	1293
2	21	978
3	19	1494
4	20	788
5	19	1528
6	20	1009
7	19	1699
8	19	2143
9	19	1323
10	20	734
11	20	2381
12	20	1868
13	20	2146
14	14	2069
16	19	1380
17	20	1631
18/1	14	2284
18/2	17	1764
19	14	1800
20	14	1383
22	19	1290
23	14	1128
24	19	1148
26	19	2166
28	19	1467
	TOTAL:	38894

Table 3.3

MINIBUSES		
ROUTE N0 M:	NUMBER OF VEHICLES	DAILY NUMBER OF PASSENGERS
1	43	6880
2	50	8000
3	48	5376
4	42	7056
5	24	5376
6	34	5712
7	24	5760
8	21	5670
9	28	7168
10	72	12960
11	22	3696
12	16	2688
13	21	3528
14	38	7980
15	46	9016
16	18	3024
	TOTAL:	99890

The municipality buses are operated 15 hours per day; from 6:30 AM to 9:30 PM.

The income of the Municipality from a minibus operating on a route is 350.000.000 TL which is the licencing fee paid by the minibus owner as he enters the market and 8.000.000 TL which is the annual licencing fee in 1996 figures.

The incomes from the minibuses are illustrated in Table 3.1. as well.

It is observed that the Municipality itself can not make profit from the operation. This is subsidized by the income from the minibuses, however, this subsidy is not enough to close the gap between the cost and the income.

The municipality bus routes and the minibus routes are illustrated in Appendix A. The municipality bus routes, the minibus routes and the routes which coincide are illustrated in appendices A.1, A.2 and A.3 respectively.

The value of a new private bus is assumed as 12.000.000.000 TL in 1996.

All the data are in 1996 figures.

3.2. Assumptions and Interpretations

The following assumptions and interpretations are used in the process of analysis:

- In order to estimate the daily cost of one municipality bus route to the Municipality, the yearly costs are used. In

order to estimate the daily costs the followings are used since ticket fare is constant whole year:

1 year = 52 weeks.

1 week = 7 days.

- In order to estimate the present daily income to the Municipality by tickets and cards, monthly ticket and card incomes are used. These income is what is sold in the ticket offices. The daily incomes are estimated with conversions such that:

1 month = 4 weeks

1 week = 7 days.

- The inflation is not taken into account. All the days in the year are assumed to have the same cost.

- The peak hours are not taken into consideration since this is an economic approach. The consideration of peak hours would make slight changes in the analysis since it would change the trip schedule but not the total number of trips roughly.

- The number of buses or the staff are not taken into consideration since costs and incomes are estimated according to the proportion of distance traveled in the corresponding route daily to the total distance traveled daily.

- The week and day consideration is chosen to assimilate the effect of Sunday, which can not be eliminated from the data.

- The study for income is performed for April' 96.

- Depreciation cost for the municipality buses is not taken into consideration since there is no such study at the Denizli Municipality. The cost gathered from the Municipality is only the operation cost.

3.3. Estimation of the parameters

The parameters are the percentage, and the costs and the incomes of the Municipality for each route. The percentage is used to find out these costs, which are the basis for the costs that will be calculated to perform the conversion to private bus process.

3.3.1. The percentage (p)

The percentage of one route is estimated in order to distribute the cost and the income which takes place in the data gathered from the Municipality.

The best way to distribute is distance-wise (traveled daily) because the number of trips and the distance traveled are different for each route. Therefore, the percentage (p) is:

$p = L_i / \Sigma L_i$ where

L_i is the total distance traveled in one route daily in km and is the multiplication of number of trips performed by the length of the route. It is :

$L_i = T_B \times l_i$ where

T_B is the number of trips daily for one route. (trips/day)

l_i is the length of one municipality bus route in km.

ΣL_i is the total distance traveled by the municipality buses in all the routes daily in km.

The percentages (p) are illustrated in Table 3.4 where the input for the percentages are the number of trips daily (T_B) and the length of the route (l_i).

If municipality bus route no. 1 is taken as an example the percentage can be estimated as:

T_B is 21 trips/day, l_i is 4.2 km.

$L_i = 21 \times 4.2 = 88.2$ km

As ΣL_i is 2715.2 km and $p = L_i / \Sigma L_i$; p comes out to be 0.032 as shown in Table 3.4.

3.3.2. Cost of the Municipality for the buses operated

The total daily operation cost of the Municipality is the sum of daily fuel expense, driver expense, maintenance and repair expense insurance expense, and the staff expense that is:

$$C_d^* = F + D + M + I + S$$

The operation cost for one municipality bus route is C_{di} and is the product of total daily operation cost by the percentage that is:

$$C_{di} = C_d^* \times p$$

Table 3.4.

PERCENTAGES				
municipality bus ROUTES	NUMBER OF TRIPS (1/day)	ROUTE DISTANCE (km)	DISTANCE TRAVELLED (DAILY) (km/day)	PERCENTAGE (p)
1	21	4.2	88.2	0.03
2	21	5.8	121.8	0.04
3	19	4.1	77.9	0.03
4	20	3.0	60	0.02
5	19	8.1	153.9	0.06
6	20	3.2	64	0.02
7	19	8.3	157.7	0.06
8	19	8.3	157.7	0.06
9	19	4.2	79.8	0.03
10	20	6.0	120	0.04
11	20	8.1	162	0.06
12	20	8.1	162	0.06
13	20	3.0	60	0.02
14	14	6.0	84	0.03
16	19	8.3	157.7	0.06
17	20	3.0	60	0.02
18/1	14	8.1	113.4	0.04
18/2	17	6.0	102	0.04
19	14	6.0	84	0.03
21	14	6.3	88.2	0.03
22	19	5.1	96.9	0.04
23	14	4.1	57.4	0.02
24	19	5	95	0.03
26	19	8.3	157.7	0.06
28	19	8.1	153.9	0.06
		TOTAL	2715.2	1.00

3.3.3. Income of the Municipality from the buses operated

The daily income is distributed to each route proportional to the daily number of passengers on that route.

The percentages, daily costs and the incomes are illustrated in Table 3.5.

If route no 1 is taken as an example the ratio is 1293/38894 when the daily number of passsengers is considered. Therefore, the daily income is:

(1293/38894) x 214.867.857,14 = 6.446.035,71 TL as shown in the Table 3.5.

Table 3.5

COSTS AND INCOMES FOR EACH ROUTE			
municipality bus ROUTES	PERCENTAGE (p)	DAILY COST FOR EACH ROUTE (TL)	DAILY INCOME FOR EACH ROUTE (TL)
1	0.03	8,847,942.56	6,446,035.71
2	0.04	12,218,587.35	6,446,035.71
3	0.03	7,814,679.43	8,594,714.29
4	0.02	6,019,008.54	4,297,357.14
5	0.06	15,438,756.92	8,594,714.29
6	0.02	6,420,275.78	6,446,035.71
7	0.06	15,819,960.79	8,594,714.29
8	0.06	15,819,960.79	12,892,071.43
9	0.03	8,005,281.36	6,446,035.71
10	0.04	12,038,017.09	4,297,357.14
11	0.06	16,251,323.07	12,892,071.43
12	0.06	16,251,323.07	10,743,392.86
13	0.02	6,019,008.54	12,892,071.43
14	0.03	8,426,611.96	10,743,392.86
16	0.06	15,819,960.79	8,594,714.29
17	0.02	6,019,008.54	8,594,714.29
18/1	0.04	11,375,926.15	12,892,071.43
18/2	0.04	10,232,314.53	10,743,392.86
19	0.03	8,426,611.96	10,743,392.86
21	0.03	8,847,942.56	8,594,714.29
22	0.04	9,720,698.80	6,446,035.71
23	0.02	5,758,184.84	6,446,035.71
24	0.03	9,530,096.86	6,446,035.71
26	0.06	15,819,960.79	12,892,071.43
28	0.06	15,438,756.92	8,594,714.29

CHAPTER IV

DEVELOPMENT OF POSSIBLE STRATEGIES

4.1. Definitions of the strategies

The strategies are the possible scenarios, which can be applied to the present municipality bus and minibus operations as alternatives to their present situations. There are two kinds of public transportation in Denizli; therefore the strategies are defined according to the conversion of each, then both of them. The strategies are tested later economically for suitability for conversion to private buses. The strategies are:

- Existing Minibuses + Municipality Buses Converted to Private Buses.

The minibuses are operated as they were and the service performed by the Municipality in that route is converted to private sector, both the operation and the ownership of the buses.

- Existing Municipality Buses + Minibuses Converted to Private Buses.

The municipality buses continue their operations on the routes as the minibuses are converted to private buses with larger fleet size. This will reduce the traffic problems caused by the minibuses. The new private buses have time schedules and stop only at the bus stops.

- Both Municipality Buses and Minibuses Converted to Private Buses.

New private buses carry all the demand for the routes where municipality bus and minibus routes coincide.

The strategies are defined assuming that the buses are owned and the operations are performed by the private company/companies. The strategies are analyzed route by route considering the economics of private companies.

4.2. Definitions of the Cost Items

The ownership of the new buses and the operation are the duties of the private company, thus, except a special cost there are two different cost items which are the operation cost and the depreciation cost for the private company.

4.2.1 Income from Minibuses (Im)

The income from minibuses to the Municipality before conversion to private buses is the special cost of the private company. Income from minibuses to the Municipality is a cost for the private

company when the minibuses are converted to private buses because the Municipality should pay this amount back to the minibus operators. Therefore the private company should pay this amount to the Municipality not to cause loss of extra money after conversion of the minibuses. Income from the minibuses is defined as follows:

$$I_m = (350 \times 10^6 / n + 8 \times 10^6) \times (N_M / (52 \times 7)) \quad \text{where}$$

The amount of money paid by the minibus operator to the Municipality to take a right to operate on one of the routes is 350×10^6 TL in 1996.

The yearly amount of money paid by the minibus operator to the Municipality is 8×10^6 TL in 1996 for the operation.

The number of years of contract is designated by n and the number of minibuses operating on that route is designated by N_M.

The daily income of one route is found out by dividing the amount by (52x7), where 52 is the number of weeks in a year and 7 is the number of days in a week.

For example if a two-years-of- contract is to be performed for a route and the minibuses are converted as well, $350 \times 10^6 / 2$ TL is the yearly amount that should be paid back to the minibus owner. In addition the Municipality will not have any yearly income from the minibus operation, therefore 8×10^6 TL should be paid to the Municipality by the private firm so that the Municipality will not lose its yearly income from the minibuses.

The income from the minibuses, Im, changes as number of years of contract changes as illustrated in Figure 4.1.

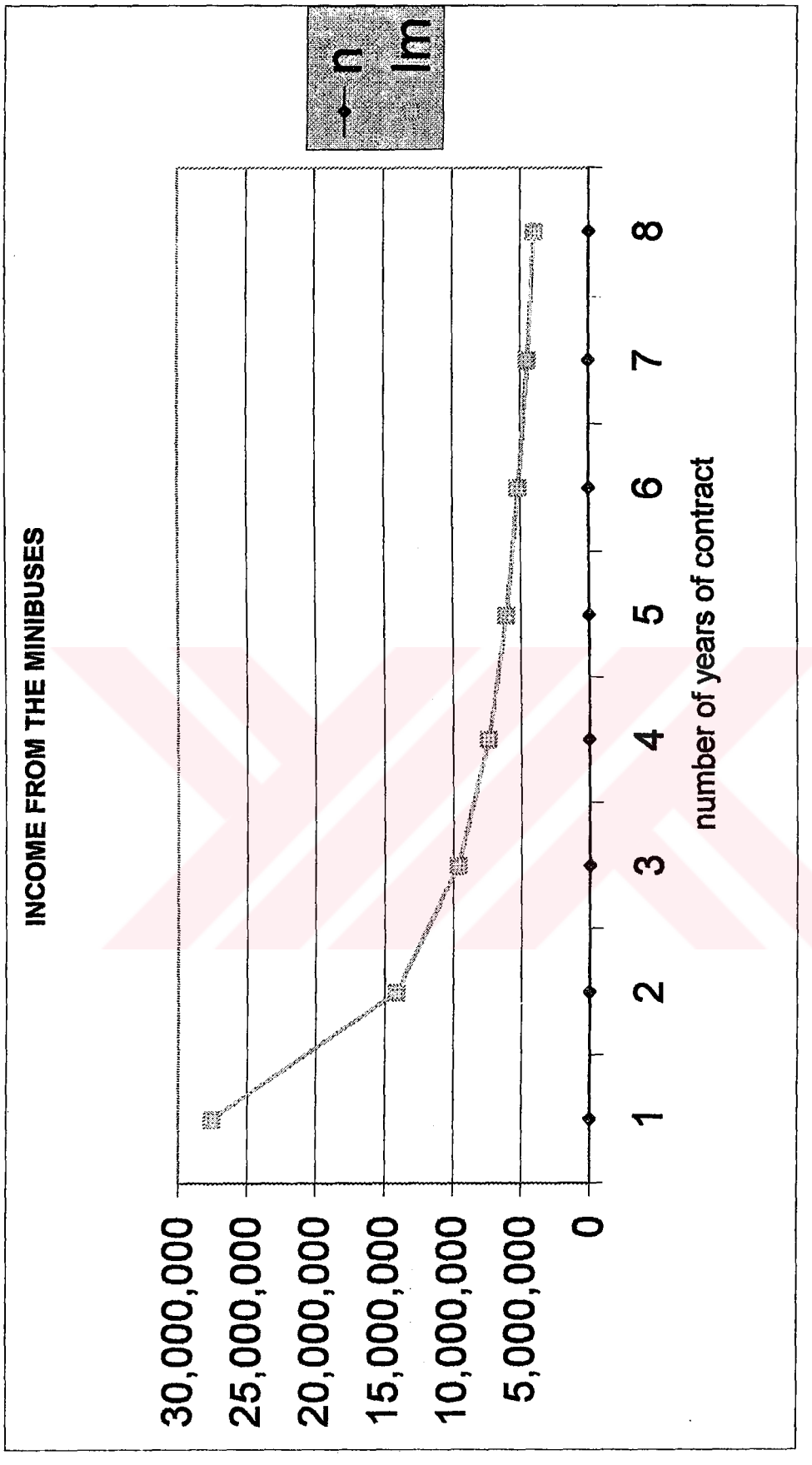

INCOME FROM THE MINIBUSES
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
1
2
3
4
5
6
7
8
number of years of contract
lm
n

Figure 4.1

It can be observed that the rate of decrease in income from the minibuses reduces as the number of years of contract increases.

4.2.2 The Operation Costs

The operation costs are estimated from the present data. In the previous chapter the operation cost of the Municipality for the operation of a certain route with certain number of trips and a certain route length is evaluated. Assuming that the operation cost for one private bus for one trip in a route is the same as the operation cost for one municipality bus trip in the same route, the equations are estimated.

There are two kinds of Operation Costs, one is when the minibuses are converted to private buses and the other is when municipality buses are converted to private buses.

- Operation cost when minibuses are converted to private buses, Cm:

$$Cm = (C_d / T_B) \times (D_M / 50)$$ where

C_d is the daily operation cost of one municipality bus route in TL.

T_B is the daily number of trips performed by the Municipality in that route. (trips/day)

D_M is the daily minibus demand for that route.(passengers/day)

The number of passengers that can be carried in one trip of the private bus is assumed to be 50.

- Operation cost when municipality buses are converted to private buses, Cb:

$$Cb = (C_d / T_B) \times (D_B / 50) \quad \text{where}$$

D_B is the daily municipality bus demand for that route. (passengers/day)

The product of the cost of one trip and the number of trips is the daily operartion cost of the new private buses operating on the corresponding municipality bus route.

4.2.3. The Depreciation Costs

The private company/companies own the buses so the depreciation cost should be considered by the private company.

The depreciation of one new bus is estimated regarding that the new bus is 12.000.000.000 TL, has a useful life of 12 years and has a salvage value of %40 of its present value. The estimation is illustrated in Figure 4.2.

The depreciation cost of a new bus for one year comes out to be 600.000.000 TL

There are two kinds of depreciation costs; one is when the minibuses are converted to private buses and the other is when the municipality buses are converted to private buses.

- The depreciation cost when minibuses are converted to private buses, DepM:

1996Bus price = 12 billion

Salvage Value = 0,4*12 billion=4,8 billion

used for 12 years.

year	Value
0	1.2000E+10
1	1.1400E+10
2	1.0800E+10
3	1.0200E+10
4	9.6000E+09
5	9.0000E+09
6	8.4000E+09
7	7.8000E+09
8	7.2000E+09
9	6.6000E+09
10	6.0000E+09
11	5.4000E+09
12	4.8000E+09

Depreciation for one year is 600 million TL.

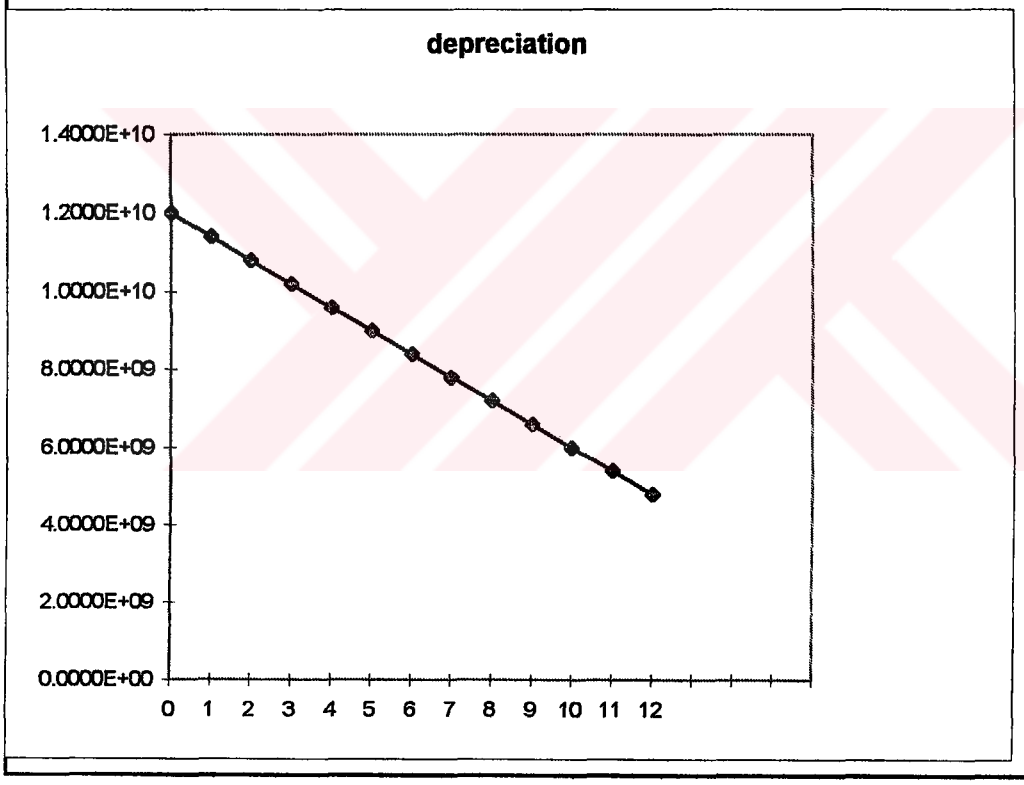


Figure 4.2

DepM = ((600.000.000/(52 x 7)) x Pm where

Pm is the number of new private buses necessary for the operation on that route when the minibuses are converted to private buses.

- The depreciation cost when municipality buses are converted to private buses, DepB:

DepB = ((600.000.000/(52 x 7)) x Pb where

Pb is the number of new private buses necessary for the operation on that route when the municipality buses are converted to private buses.

The yearly depreciation cost of one bus is $600x10^6$ TL.

The period in minutes that the private buses are in service is 15x60, which is assumed to be the same as the period that municipality buses are in service. (min)

The average period, when one bus finishes its one tour and is ready to start another trip, is 40 min including the rest period.

The number of trips that can be performed by one new bus in 15 hours, i.e., in one day is (15x60)/40. (trips/day)

Therefore number of private buses necessary is:

P = [(D/50) / (15x60/40)] where

D, in the above equation, is the demand for the municipality buses or the minibuses in the above equation.

The brackets indicate integer numbers in the above equation.

4.3. Definition of the Income

The bus operation is a service that is customed to fares. All the income is gathered from the fares. The cards and student tickets are not applied for the private buses and the passengers who use the buses with no fares should pay for the private bus service as well.

4.4. Estimation of the Total Costs of the Proposed Strategies

4.4.1. Strategy 1: Existing Minibuses + Municipality Buses Converted to Private Buses

When minibuses are not converted to private buses, the Municipality does not have to pay the income from the minibuses back and the private firm does not have to pay the Municipality the yearly income from the minibuses. As a result, Im is not a cost for the private company. Since the only demand comes out to be the demand for the municipality buses the total cost is:

$$TC = Cb + DepB$$

4.4.2. Strategy 2: Existing Municipality Buses + Minibuses Converted to Private Buses

The income from minibuses to the Municipality should be paid by the private firm since the minibuses are converted to private buses. Since the only demand comes out to be the demand for the minibuses the total cost is:

$$TC = Cm + DepM + Im$$

However this strategy can only be applied to the minibuseses which use nearly the same route with municipality buses, because to estimate the cost for the private buses, the daily costs of the municipality buses at present are the basis.

4.4.3. Strategy 3: Both Municipality Buses and Minibuses Converted to Private Buses:

The income from the minibuses to the Municipality is a cost for the private company for Strategy 3 as well. The other costs are coming out from the demand of both the municipality buses and the minibuses. The total cost is:

$$TC = Cm + Cb + DepM + DepB + Im$$

This strategy is applied to the minibus and municipality bus routes, which nearly coincide.

4.5. Equlibrating the Total Cost and the Income

The analysis is simply equating the input and the output. The input is the cost and output is the service maintained as mentioned. The service is paid by the fares. Therefore the input is equated to the output by equating the income from the tickets to the total cost and the profit of the private company.

All the cost of one route should be satisfied by the fares. That is:

$TI = TC$

$It = TC$ where

It is the total income needed from the fares.(TL)

The strategies can be generated as follows:

Strategy 1: Existing Minibuses + Municipality Buses Converted to Private Buses:

$It = Cb + DepB$

Strategy 2: Existing Municipality Buses + Minibuses Converted to Private Buses:

$It = Cm + DepM + Im$

Strategy 3: Both Municipality Buses and Minibuses Converted to Private Buses:

$It = Cm + Cb + DepM + DepB + Im$

For all the strategies;

$It = D \times B$ where

The demand, D, is the number of passengers that should be carried by the private buses when conversion is performed. Therefore it is only the demand for the municipality buses (Db) for strategy no.1, only the demand for the minibuses (Dm) for strategy no.2 and the demand both for the municipality buses and minibuses (Db + Dm) for strategy no. 3.

The fare is B, which is the criterion used in the decision of a route to be contracted to a private company. A route is said to be suitable for privatization if the fare level found, after equalizing costs to incomes for

the strategies, is less or equal to 10.000 TL which is the current fare. The routes are chosen by considering the fare level, because the public would not tend to use the private buses if the fares of the private buses are more expensive than the fares of the municipality buses and/or the minibuses.

CHAPTER V

ANALYSIS OF THE STRATEGIES

5.1. The Evaluation of the Costs

The costs are evaluated for two different conditions. First is the case where only the municipality buses are taken into consideration and the minibuses are not taken into consideration. These costs are only applicable to strategy 1.

Second is the case where the municipality bus and minibus routes are coinciding upon each other. In this case the municipality bus and minibus routes which do not coincide on each other are not taken into consideration. This coincidence is not 100%, but those routes are close enough to each other to create a new route, which will satisfy the demands of both. These costs are applicable to strategy 2 and 3. The income from the minibuses, Im, is evaluated for 1 to 8 years of contract.

5.2. Evaluation of the Income Needed from the fares (It)

Strategy1: Existing Minibuses + Municipality Buses Converted to Private Buses

$$It = Cb + DepB$$

Income needed from the fares is the same for any number of years of contract since income from the minibuses is not a cost for this strategy, which is the variable cost with the number of years of contract.

The incomes needed from the fares for strategy 1 are illustrated in Table 5.1.

Strategy2: Existing Municipality Buses + Minibuses Converted to Private Buses:

$$It = Cm + DepM + Im$$

It is evaluated for 1, 4, 7 years of contract as it changes with the number of years of contract. The reason is that the income from the minibuses, Im, is a cost for this strategy and it is variable with the number of years of contract.

The incomes needed from the fares for strategy 2 are illustrated in Tables 5.2.1, 5.2.2, and 5.2.3.

Strategy3: Both Municipality Buses and Minibuses Converted to Private Buses:

$$It = Cb + Cm + DepM + DepB + Im$$

It is evaluated for 1, 4, 7 years of contract.

The incomes needed from the fares for strategy 3 are illustrated in Tables 5.3.1, 5.3.2, and 5.3.3.

Table 5.1

INCOME FROM FARES FOR STRATEGY 1 **STRATEGY 1:** EXISTING MINIBUSES + MUNICIPALITY BUSES CONVERTED TO PRIVATE BUSES **It = Cb + DepB**	
BUS ROUTE NO:	**It (TL)**
1	14,192,312.57
2	13,029,093.01
3	15,586,314.95
4	6,140,960.84
5	28,128,724.96
6	8,126,409.91
7	31,589,454.23
8	38,983,204.32
9	14,445,110.92
10	10,484,256.19
11.12	75,645,278.31
13	16,213,495.63
14	28,203,360.65
16	26,277,277.92
17	13,113,706.23
18/1	40,414,725.20
18/2	29,082,135.92
19	24,965,134.05
20	20,777,709.81
22	21,210,562.52
23	8,485,438.49
24	17,277,710.50
26	39,366,213.90
28	27,137,394.25

Table 5.2.1.

INCOME FROM FARES FOR STRATEGY 2

STRATEGY 2: EXISTING MUNICIPALITY BUSES + MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + DepM + Im

n=1

MINIBUS ROUTE NO:	It
1	*95,531,051.53*
2	*153,808,284.58*
3	*99,103,663.69*
4	*167,515,489.44*
5	*64,204,343.75*
9	*158,442,690.39*
10	*246,606,108.02*
12	*41,683,699.99*
14	*159,728,054.69*
15	*204,950,500.23*

Table 5.2.2.

STRATEGY 2: EXISTING MUNICIPALITY BUSES + MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + DepM + Im

n=4

MINIBUS ROUTE NO:	It
1	*64,521,436.15*
2	*117,750,592.73*
3	*64,488,279.07*
4	*137,227,027.90*
5	*46,896,651.21*
9	*138,250,383.16*
10	*194,683,031.32*
12	*30,145,238.45*
14	*132,324,208.54*
15	*171,777,423.12*

Table 5.2.3.

STRATEGY 2: EXISTING MUNICIPALITY BUSES + MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + DepM + Im

n=7

MINIBUS ROUTE NO:	It
1	*60,091,491.09*
2	*112,599,493.83*
3	*59,543,224.54*
4	*132,900,104.82*
5	*44,424,123.73*
9	*135,365,767.77*
10	*187,265,448.90*
12	*28,496,886.80*
14	*128,409,373.37*
15	*167,038,412.13*

Table 5.3.1.

INCOME FROM FARES FOR STRATEGY 3

STRATEGY 3: BOTH MUNICIPALITY BUSES AND MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + Cb + DepM + DepB + Im

n=1

BUS ROUTE NO:	MINIBUS ROUTE NO:	It
1	12	55,876,012.56
2	2	166,837,378.05
9	3	113,548,774.72
11.12	15	280,595,777.76
14	10	274,809,468.89
17	5	77,318,049.44
18/1	4	207,930,214.34
22	14	180,938,616.91
23	1	104,016,490.02
26	9	197,808,904.45

Table 5.3.2.

STRATEGY 3: BOTH MUNICIPALITY BUSES AND MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + Cb + DepM + DepB + Im

n=4

BUS ROUTE NO:	MINIBUS ROUTE NO:	It
1	12	44,337,550.52
2	2	130,779,684.87
9	3	78,933,389.51
11.12	15	247,422,700.52
14	10	205,885,301.08
17	5	60,010,356.84
18/1	4	177,641,752.03
22	14	163,534,770.54
23	1	73,006,819.23
26	9	177,616,596.91

Table 5.3.3.

STRATEGY 3: BOTH MUNICIPALITY BUSES AND MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + Cb + DepM + DepB + Im

n=7

BUS ROUTE NO:	MINIBUS ROUTE NO:	It
1	12	42,689,198.52
2	2	125,628,584.87
9	3	73,988,334.51
11.12	15	245,980,392.60
14	10	215,468,809.08
17	5	57,537,828.84
18/1	4	173,314,829.03
22	14	146,323,232.08
23	1	68,576,929.23
26	9	174,731,980.91

5.3. Evaluation of the Fares (B)

The fares are evaluated from the equation;

$It = D \times B$ where

The fare is defined as B and the demand is defined as D.

For strategy 1, D is the demand for the municipality buses, i.e., $D = Db$

For strategy 2, D is the demand for the minibuses, i.e., $D = Dm$

For strategy 3, D is the demand for the municipality buses and minibuses, i.e., $D = Dm + Db$

The fares for strategy 1 are illustrated in Table 5.4.

The fares for strategy 2 are illustrated in Tables 5.5.1, 5.5.2, and 5.5.3.

The fares for strategy 3 are illustrated in Tables 5.6.1, 5.6.2, and 5.6.3.

5.4. Results

The fares are estimated for strategies 1, 2 and 3, and for one, four and seven years of contract.

The fares of a route are the same for strategy 1 for different number of years of contract, since income from the minibuses is the only item which is variable for different years of contract and is not a cost considered for startegy 1.

Table 5.4

FARES FOR STRATEGY 1 **STRATEGY 1:** EXISTING MINIBUSES + MUNICIPALITY BUSES CONVERTED TO PRIVATE BUSES		
It = Cb + DepB		
		B
BUS ROUTE NO:	**It (TL)**	**fares (TL)**
1	14,192,312.57	10,976.27
2	13,029,093.01	13,322.18
3	15,586,314.95	10,432.61
4	6,140,960.84	7,793.10
5	28,128,724.96	18,408.85
6	8,126,409.91	8,053.92
7	31,589,454.23	18,592.97
8	38,983,204.32	18,190.95
9	14,445,110.92	10,918.45
10	10,484,256.19	14,283.73
11.12	75,645,278.31	17,803.08
13	16,213,495.63	7,555.22
14	28,203,360.65	13,631.40
16	26,277,277.92	19,041.51
17	13,113,706.23	8,040.29
18/1	40,414,725.20	17,694.71
18/2	29,082,135.92	16,486.47
19	24,965,134.05	13,869.52
20	20,777,709.81	15,023.65
22	21,210,562.52	16,442.30
23	8,485,438.49	7,522.55
24	17,277,710.50	15,050.27
26	39,366,213.90	18,174.61
28	27,137,394.25	18,498.56

Table 5.5.1.

FARES FOR STRATEGY 2

STRATEGY 2: EXISTING MUNICIPALITY BUSES + MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + DepM + Im

n=1 **B**

MINIBUS ROUTE NO:	It	fares (TL)
1	95,531,051.53	13,885.33
2	153,808,284.58	19,226.04
3	99,103,663.69	18,434.46
4	167,515,489.44	23,740.86
5	64,204,343.75	11,942.77
9	158,442,690.39	22,104.17
10	246,606,108.02	19,028.25
12	41,683,699.99	15,507.33
14	159,728,054.69	20,016.05
15	204,950,500.23	22,731.87

Table 5.5.2.

STRATEGY 2: EXISTING MUNICIPALITY BUSES + MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + DepM + Im

n=4 **B**

MINIBUS ROUTE NO:	It	fares (TL)
1	64,521,436.15	9,378.12
2	117,750,592.73	14,718.82
3	64,488,279.07	11,995.59
4	137,227,027.90	19,448.27
5	46,896,651.21	8,723.34
9	138,250,383.16	19,287.16
10	194,683,031.32	15,021.84
12	30,145,238.45	11,214.75
14	132,324,208.54	16,581.98
15	171,777,423.12	19,052.51

Table 5.5.3.

STRATEGY 2: EXISTING MUNICIPALITY BUSES + MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + DepM + Im

n=7 **B**

MINIBUS ROUTE NO:	It	fares (TL)
1	60,091,491.09	8,734.23
2	112,599,493.83	14,074.94
3	59,543,224.54	11,075.75
4	132,900,104.82	18,835.05
5	44,424,123.73	8,263.42
9	135,365,767.77	18,884.73
10	187,265,448.90	14,449.49
12	28,496,886.80	10,601.52
14	128,409,373.37	16,091.40
15	167,036,412.13	18,526.89

Table 5.6.1.

FARES FOR STRATEGY 3

STRATEGY 3: BOTH MUNICIPALITY BUSES AND MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + Cb + DepM + DepB + Im

n=1 B

BUS ROUTE NO:	MINIBUS ROUTE NO:	It	ticket prices (TL)
1	12	55,876,012.56	14,035.67
2	2	166,837,378.05	18,582.91
9	3	113,548,774.72	16,950.11
11.12	15	280,595,777.76	21,153.09
14	10	274,809,468.89	18,285.28
17	5	77,318,049.44	11,034.40
18/1	4	207,930,214.34	22,262.34
22	14	180,938,616.91	19,518.73
23	1	104,016,490.02	12,989.07
26	9	197,808,904.45	21,192.30

Table 5.6.2.

STRATEGY 3: BOTH MUNICIPALITY BUSES AND MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + Cb + DepM + DepB + Im

n=4 B

BUS ROUTE NO:	MINIBUS ROUTE NO:	It	ticket prices (TL)
1	12	44,337,550.52	11,137.29
2	2	130,779,684.87	14,566.68
9	3	78,933,389.51	11,782.86
11.12	15	247,422,700.52	18,652.30
14	10	205,885,301.08	13,699.20
17	5	60,010,356.84	8,564.34
18/1	4	177,641,752.03	19,019.46
22	14	163,534,770.54	17,641.29
23	1	73,006,819.23	9,116.74
26	9	177,616,596.91	19,028.99

Table 5.6.3.

STRATEGY 3: BOTH MUNICIPALITY BUSES AND MINIBUSES CONVERTED TO PRIVATE BUSES:

It = Cm + Cb + DepM + DepB + Im

n=7 B

BUS ROUTE NO:	MINIBUS ROUTE NO:	It	ticket prices (TL)
1	12	42,689,198.52	10,723.23
2	2	125,628,584.87	13,992.94
9	3	73,988,334.51	11,044.68
11.12	15	245,980,392.60	18,543.57
14	10	215,468,809.08	14,336.87
17	5	57,537,828.84	8,211.48
18/1	4	173,314,829.03	18,556.19
22	14	146,323,232.08	15,784.60
23	1	68,576,929.23	8,563.55
26	9	174,731,980.91	18,719.95

The fares change as number of years of contract change for strategies 2 and 3 because income from the minibuses is a cost for these strategies.

Examples for the changes in the fare levels are illustrated in Figures 6.1 and 6.2 for strategy 2 and 3 repectively for the combination of the municipality bus route no. 1 and the minibus route no. 12. It is observed that the fares drop proportional to the drop of the income from the minibuses, Im.

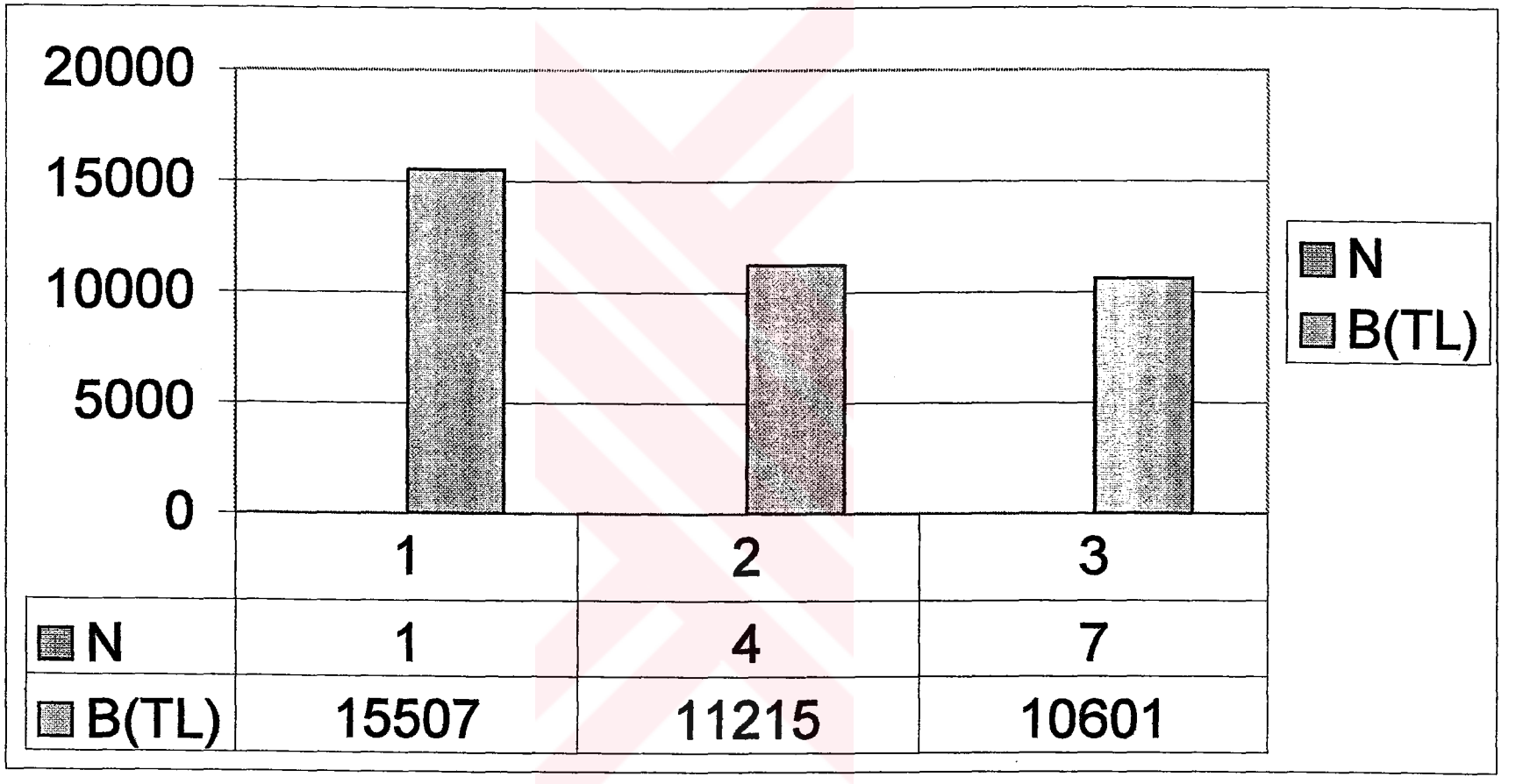
The evaluated fares are the criteria used to choose the routes to be converted. The suitable fare is thought to be less or equal to 10.000 TL which is the current fare for the tickets of the municipality buses and the minibuses, assuming that no student ticket or card application is in question.

The municipality bus routes no. 4, 6, 13, 17,and 23 are suitable to be converted by strategy 1 to private buses where ticket fare is evaluated to be less than 10.000 TL.

When the ticket fares for n = 7 are considered, minibus route no. 1 and 5 are suitable to be converted by strategy 2. On the other hand for n = 7, the combination of municipality bus route no. 17 and minibus route no. 5, and municipality bus route 23 and minibus route 1 are suitable to be converted by strategy 3.

It is observed that there is a slight difference between the ticket fares of the minibus routes in strategy 2 and the corresponding combination of municipality bus and minibus routes in strategy 3, where the minibus routes are the same. The costs Cm, Cb, DepM, and DepB are directly proportional to the demands of the strategies 2 and 3 where these demands are divisors to find the ticket prices. The slight difference is

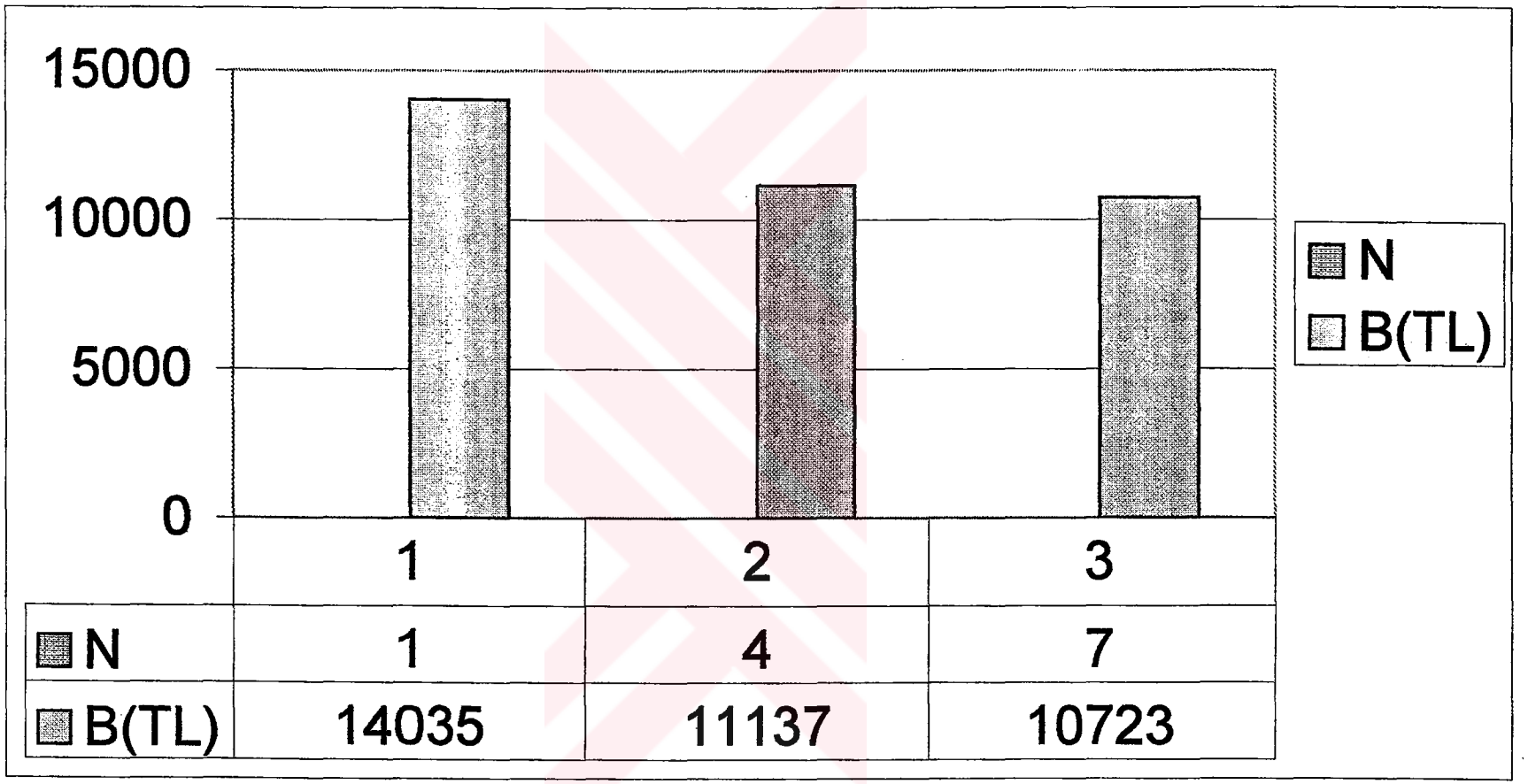
FARE LEVELS FOR ST. 2



	1	2	3
N	1	4	7
B(TL)	15507	11215	10601

Figure 6.1

FARE LEVELS FOR ST. 3



	1	2	3
N	1	4	7
B(TL)	14035	11137	10723

Figure 6.2

because of Im, which is independent from the demand and for the same number of years of contract.

The total costs of each route before privitization and the total costs after privatization for strategy 1, 2 and 3 are illustrated in Table 5.7. It should be mentioned that the costs before privatization are not engineering costs but are accounting costs obtained from the Municipality. The costs before privitization do not include depreciation costs while these costs are used in the strategies.

Table 5.7

COMPARISON OF THE TOTAL COSTS BEFORE AND AFTER PRIVATIZATION					
MUNICIPALITY			TOTAL COSTS WHEN N=7		
BUS	MINIBUS	BEFORE			
ROUTE NO	ROUTE NO	PRIVATIZATION	STRATEGY 1	STRATEGY 2	STRATEGY 3
1	12	8,847,942.56	14,192,312.57	28,496,886.80	42,689,198.52
2	2	12,218,587.35	13,029,093.01	112,599,493.83	125,628,584.87
3		7,814,679.43	15,586,314.95		
4		6,019,008.54	6,140,960.84		
5		15,438,756.92	28,128,724.96		
6		6,420,275.78	8,126,409.91		
7		15,819,960.79	31,589,454.23		
8		15,819,960.79	38,983,204.32		
9	3	8,005,281.36	14,445,110.92	59,543,224.54	73,988,334.51
10		12,038,017.09	10,484,256.19		
11	15	16,251,323.07	37,822,639.16	167,038,412.13	245,980,392.60
12		16,251,323.07	37,822,639.16		
13		6,019,008.54	16,213,495.63		
14	10	8,426,611.96	28,203,360.65	187,265,448.90	215,468,809.08
16		15,819,960.79	26,277,277.92		
17	5	6,019,008.54	13,113,706.23	44,424,123.73	57,537,828.84
18/1	4	11,375,926.15	40,414,725.20	132,900,104.82	173,314,829.03
18/2		10,232,314.53	29,082,135.92		
19		8,426,611.96	24,965,134.05		
20		8,847,942.56	20,777,709.81		
22	14	9,720,698.80	21,210,562.52	128,409,373.37	146,323,232.08
23	1	5,758,184.84	8,485,438.49	60,091,491.09	68,576,929.23
24		9,530,096.86	17,277,710.50		
26	9	15,819,960.79	39,366,213.90	135,365,767.77	174,731,980.91
28		15,438,756.92	27,137,394.25		

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

The routes where privatization is found suitable are those where the evaluated ticket fare is cheaper than the current ticket fare. The ticket price is proportional to the cost of the private company and related demand of that route. When the cost of the private company is low and the demand is high, the ticket price comes out to be low. The cost of the private company for the operation of any route is proportional to the cost of the Municipality for the operation of the buses on the same route. It is known that the costs of the Municipality is proportional to the product of the daily number of trips and the route length. Therefore, privatization of any route is suitable when the demand is high compared to the other routes, as well as when the number of trips of municipality buses currently operating on short routes are low.

It can be concluded that the privatization of the operation of the routes which are found to be suitable is profitable for the Municipality

because the Municipality will not have any cost for the operation of the buses. The reason is that the Municipality does not profit from its operations even when the depreciation expense is not taken into account. When privatization is performed the Municipality will not lose its annual income in form of licencing fee even when the minibuses are converted to private buses.

In conclusion, the approach used in this study can be used as a tool to analyze the applicability of privatization to urban bus transportation. However, care should be exercised in the interpretation of the costs obtained from the Municipalities. Since these costs are accounting costs, they do not reflect the actual costs incurred in providing the service, but infact reflect the economical policies employed by the Municipalities, such as, overloaded employees resulting in inefficient operation.

It seems the use of engineered cost elements yield more reliable estimates to make sound decisions for privatizing urban bus transportation.

6.2. Some Terms Recommended for Contract to be Awarded

The operations of the evaluated routes in the previous chapter can be converted to private buses as recommended in the corresponding strategies. The routes can be contracted either to one company or to separate companies; even the operation of one route, which can be operated by more than one bus, can be divided and contracted to different companies, i.e. different bus owners.

The Municipality does not have to pay to the private companies, so the competition will not be according to price but will be according to the service quality among the private companies.

The buses should strictly be new and should have the other qualities recommended by the Municipality.

After contracting, the bus owners should obey the rules set by the Municipality such as the speed limit, time schedule, the maximum number of passengers in one bus, periodical maintenance of the bus and repair when needed.

The Municipality should clearly identify what is needed and the punishment. The Municipality should have a special group who will control the private bus service.

If the bus owners come together and form a company/companies, these company/companies can offer some other jobs such as maintenance of bus stops, construction of bus-ways, maintenance of the municipality buses, etc. After examining these offers if the Municipality finds their offers economical and finds the companies qualified to perform these jobs, these jobs can be contracted to these companies as well.

The private company can offer to operate some services, which is not found to be feasible, by cross subsidizing i.e., using the profit gained for the operation of unprofitable routes. Then the Municipality can accept this offer if it is profitable for the Municipality as well.

The private company contracted should be given some flexibility such as operating the buses for purposes other than urban transportation at times except from the scheduled periods, such as weekends and holidays. The company should be given permission to have part-time workers.

As a result, operation and ownership of the buses and some other jobs, if contracted, can be maintained by private companies, resulting in the decrease of the governmental subsidy.

6.3. Recommendations for further research

The analysis for privatization is performed with the data which belong to a certain period of time. Therefore, if such a study is to be performed for any system, inflation would better be considered to obtain more reliable results. After the study is completed, in order to set the level of fare for a date, the effect of inflation should again be considered.

The depreciaiton costs of the Municipality buses are not included in the costs obtained, but they should be included in the costs to analyze operation of both the Municipality service and private bus service.

All the costs and incomes are gathered from the Municipality accountings. If the costs are obtained by engineering approach, assuming that the private company will be in tendancy of reducing its costs, different fare levels can be found regarding different levels of service Thus, the use of engineered costs is another area of further reseach.

REFERENCES

[1] Akyılmaz, M.Ö., Analysis of Transpotation Systems, Lecture Notes,METU

[2] Robertson, D.I. and Vincent, R.A., Bus Priority in a Network of fixed signals, TRRL, Lab Report No. 666

[3] Rebelo, J. M. and Benvenuto, P. P., Concessions of Busways to the Private Sector: The Sao Paulo Metropolitan Experience, The World Bank

[4] Wood, D. F. and Johnson, J. C., Contemporary Transportation

[5] Savas, E.S., Daha İyi Devlet Yönetiminin Anahtarı: Özelleştirme

[6] Turner, R., Deregulation of British Urban Bus Operation: The evidence examined, TRF

[7] Felsefe: Yeni Başlayanlar İçin, Remzi Kitapevi

[8] Planning for transport operations, TRRL Lab Report No. 671

[9] Barnekov, Boyle and Rich, Privatism and Urban Policy in Britain and the United States

[10] Morlok, E.K., Privitizing bus transit: cost savings from competitive contracting

[11] Ramamurti, R. and Vernon, R., Privatization and Control of State-Owned Enterprises, The World Bank

[12] Adler, H. A., Sector and Project Planning in Transportation, The World Bank

[13] Morlok, E. K.and Viton, P. A., Self-Sustaining Public Transportation Services, Volume 1 and Volume 2, Lessons from the C & NW experience

[14] Menteş, G., Türel, A., Günal, T., Turkey: Coping with High Transit Demands through Extraponenship, METU

[15] Attoe, W., Transit, Land Use and Urban Forum, Editor

[16] Cevizoğlu, M. H., Türkiye' nin Gündemindeki Özelleştirme

APPENDIX A.1.

MUNICIPALITY BUS ROUTES

ROUTE NO
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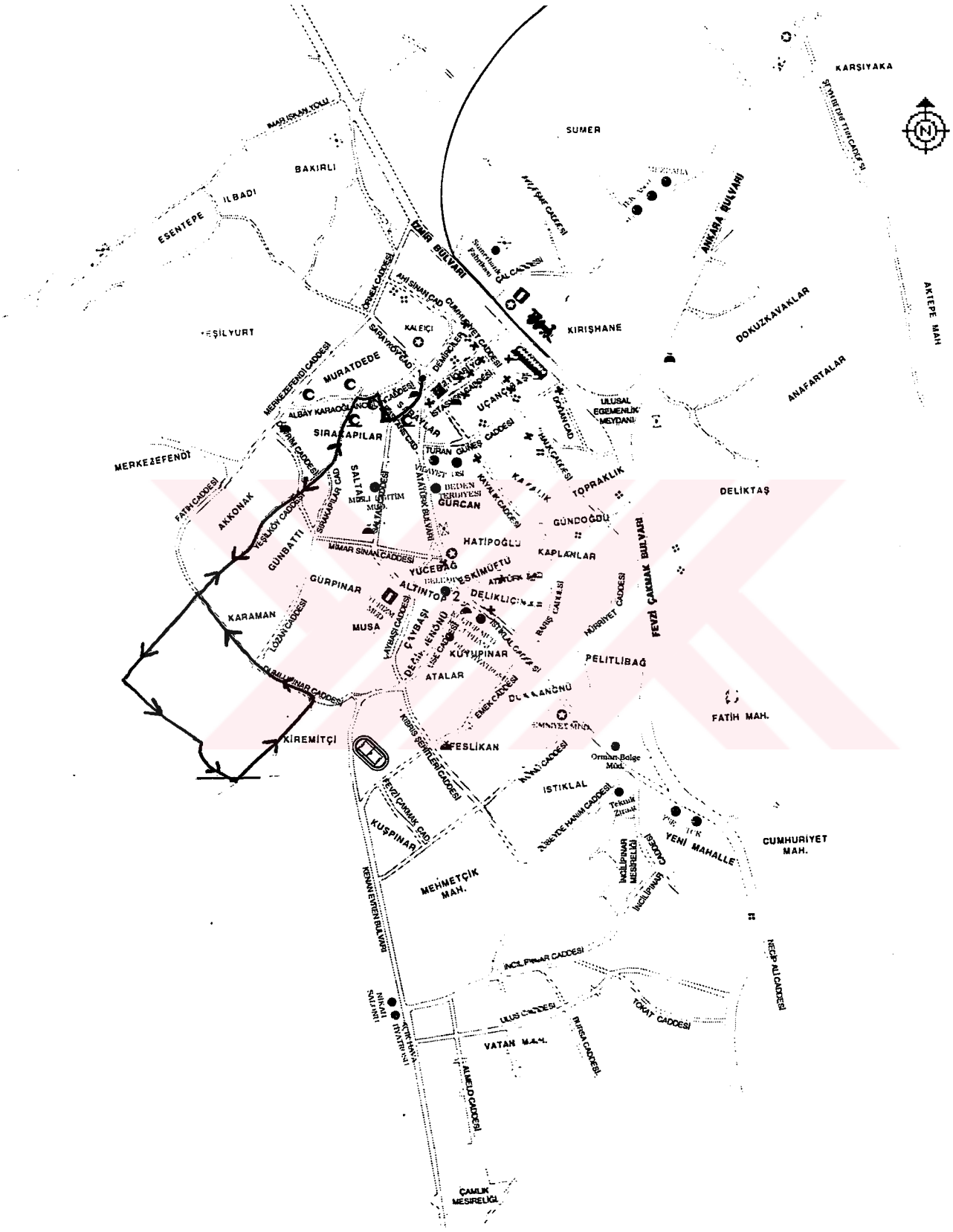
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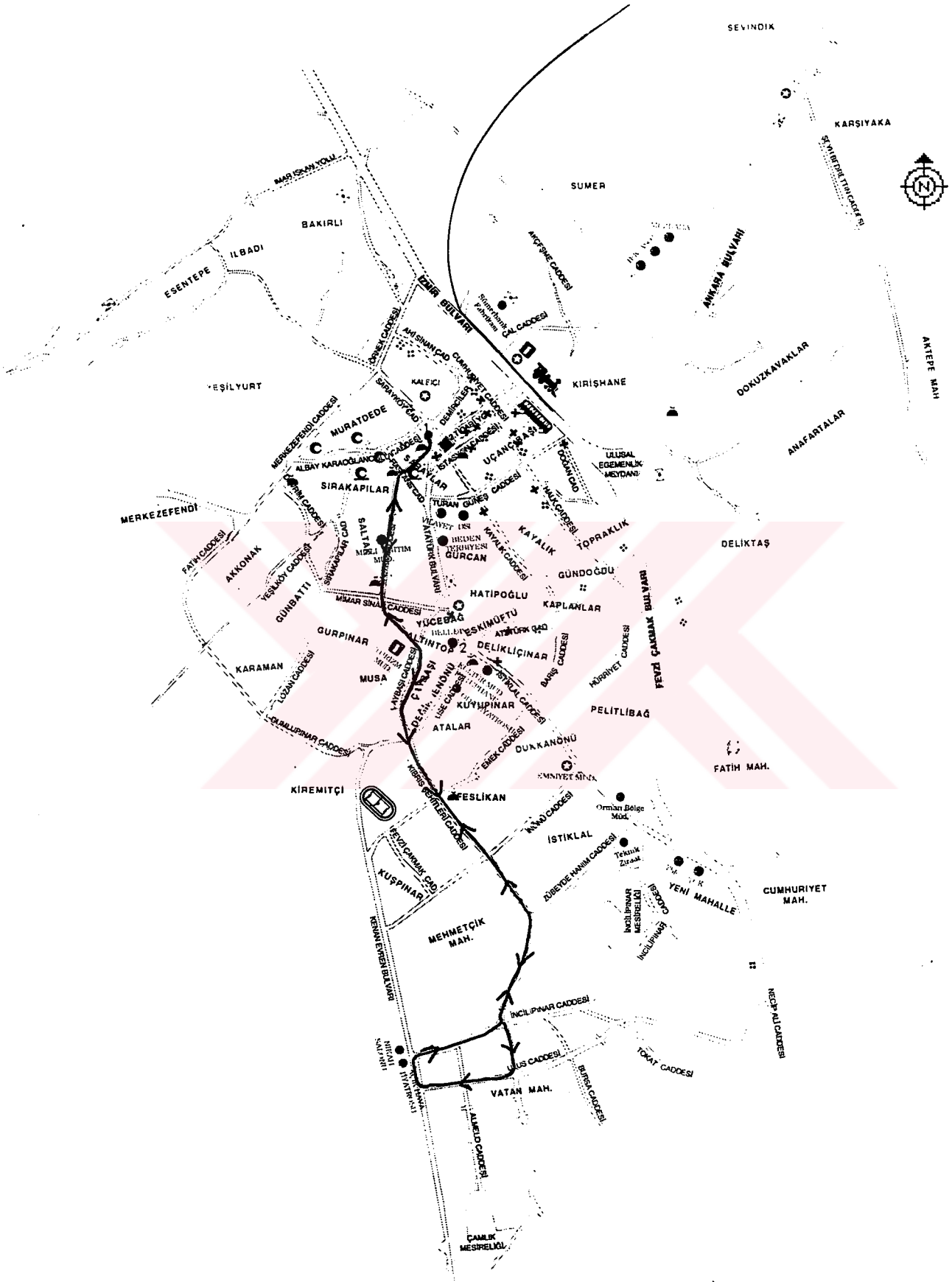
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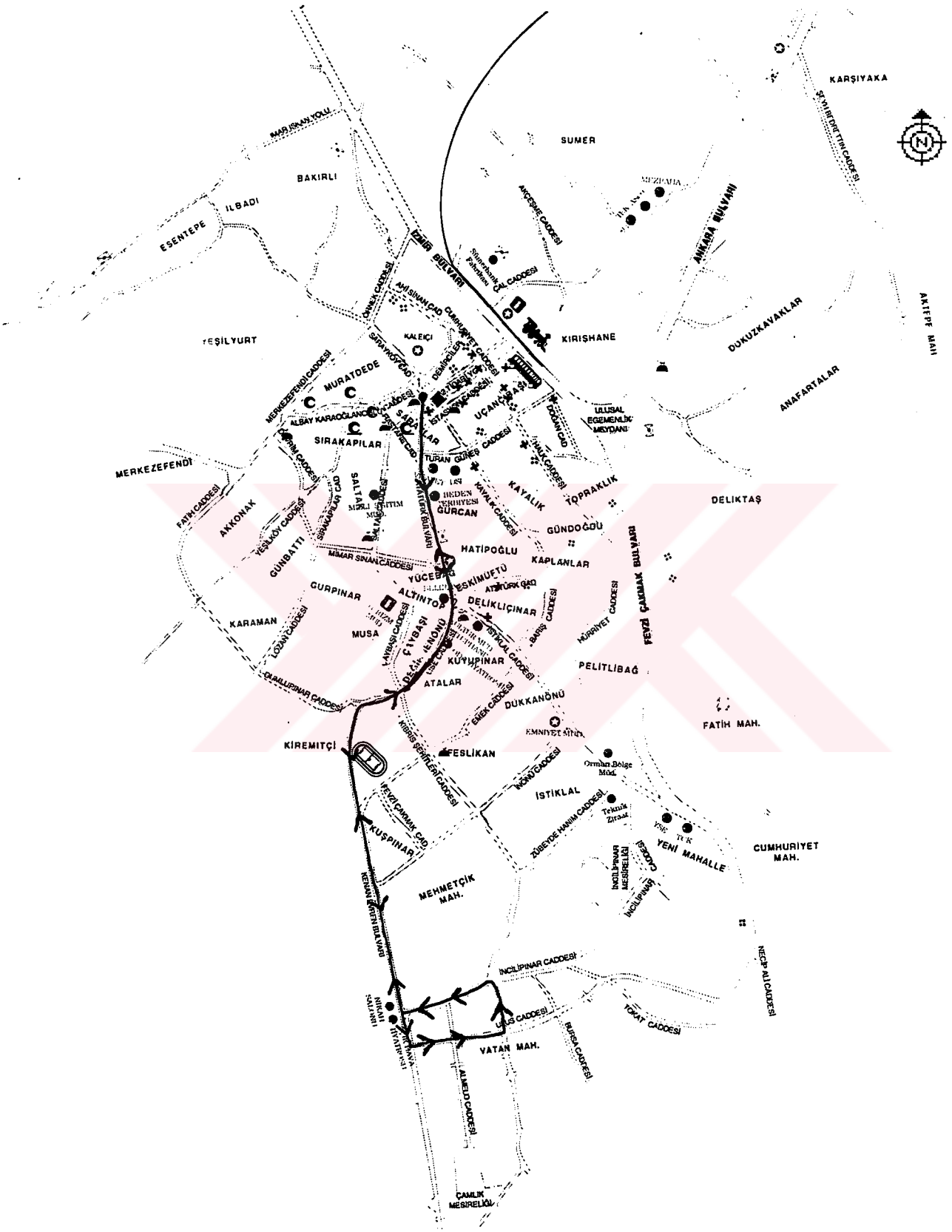
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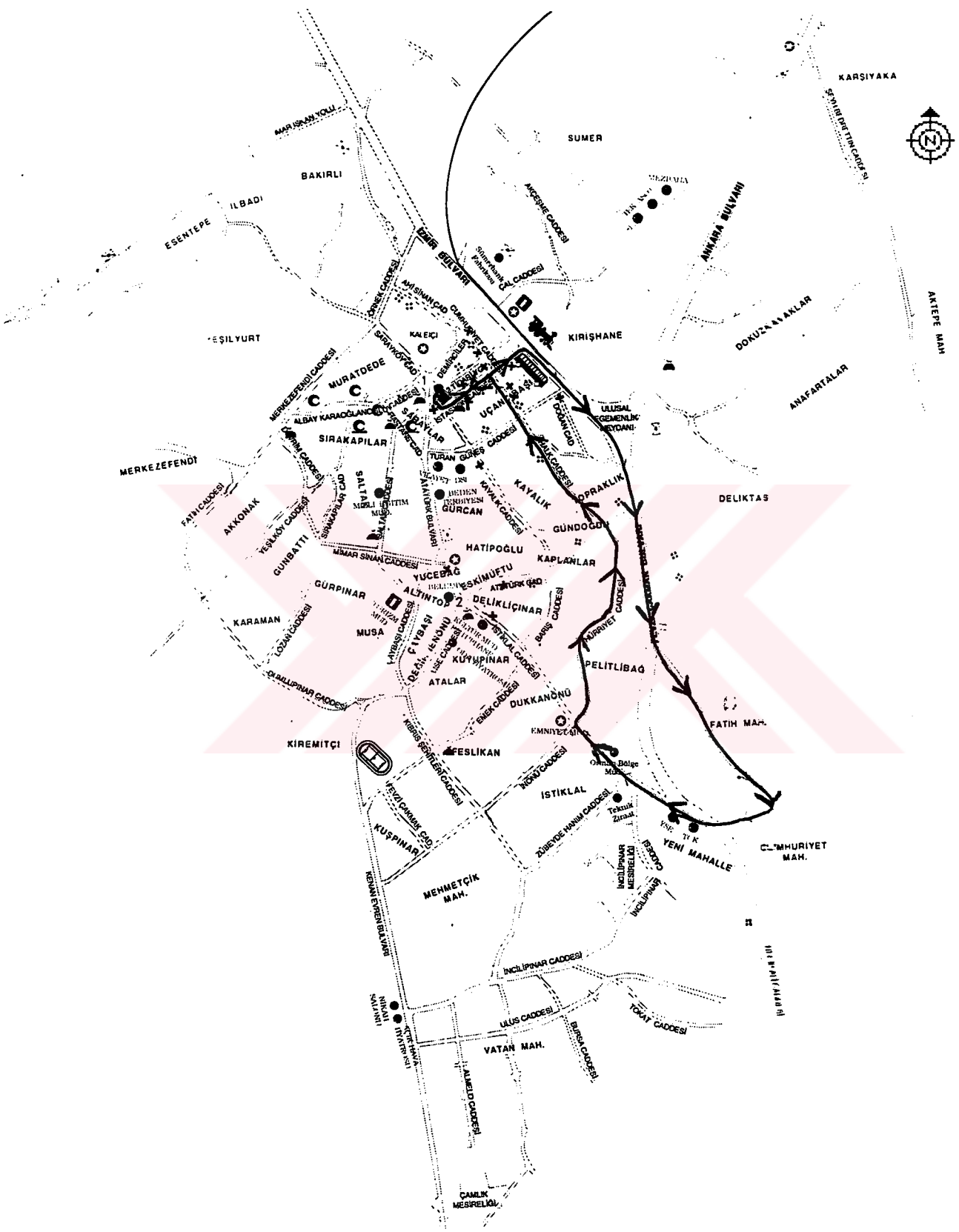
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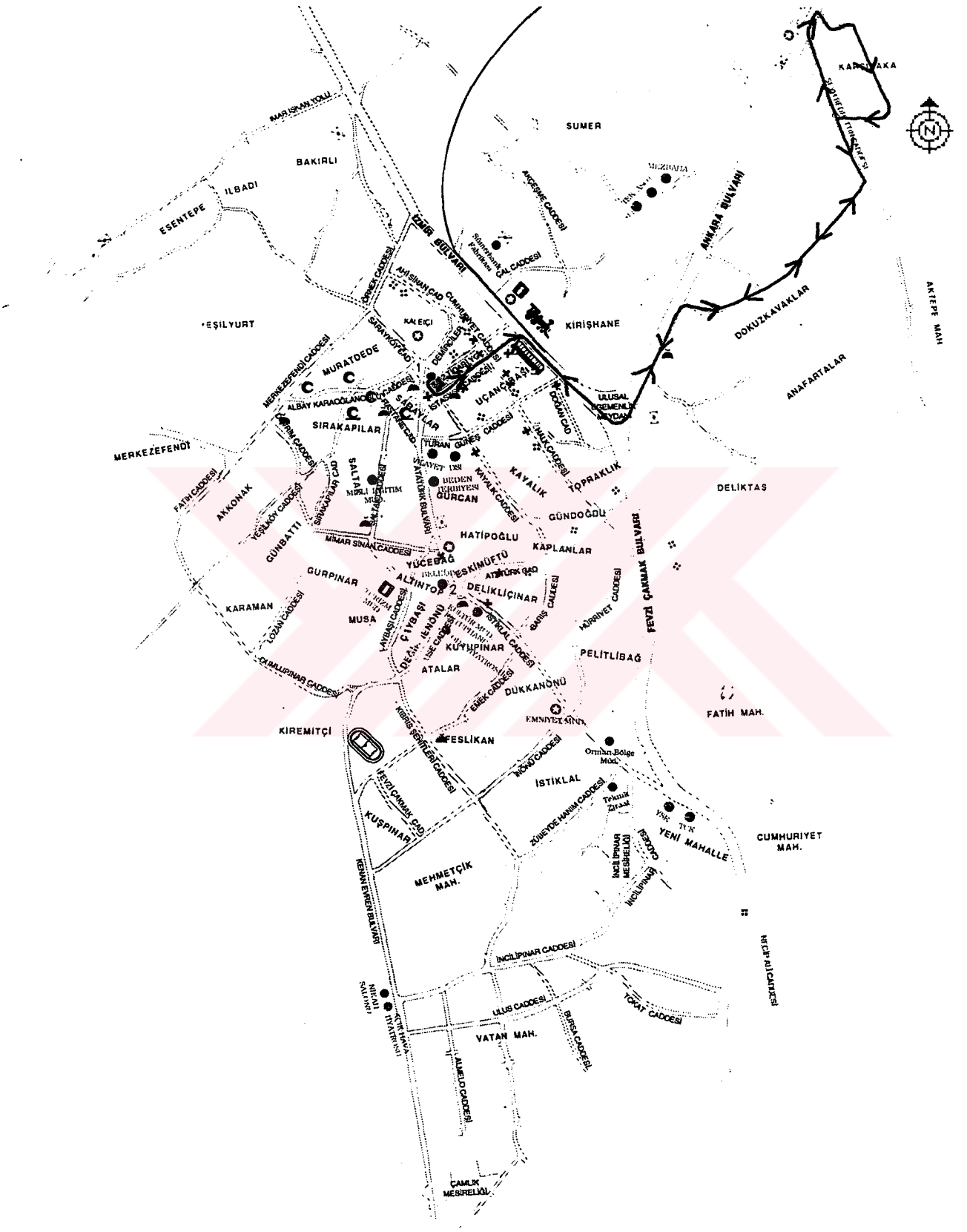
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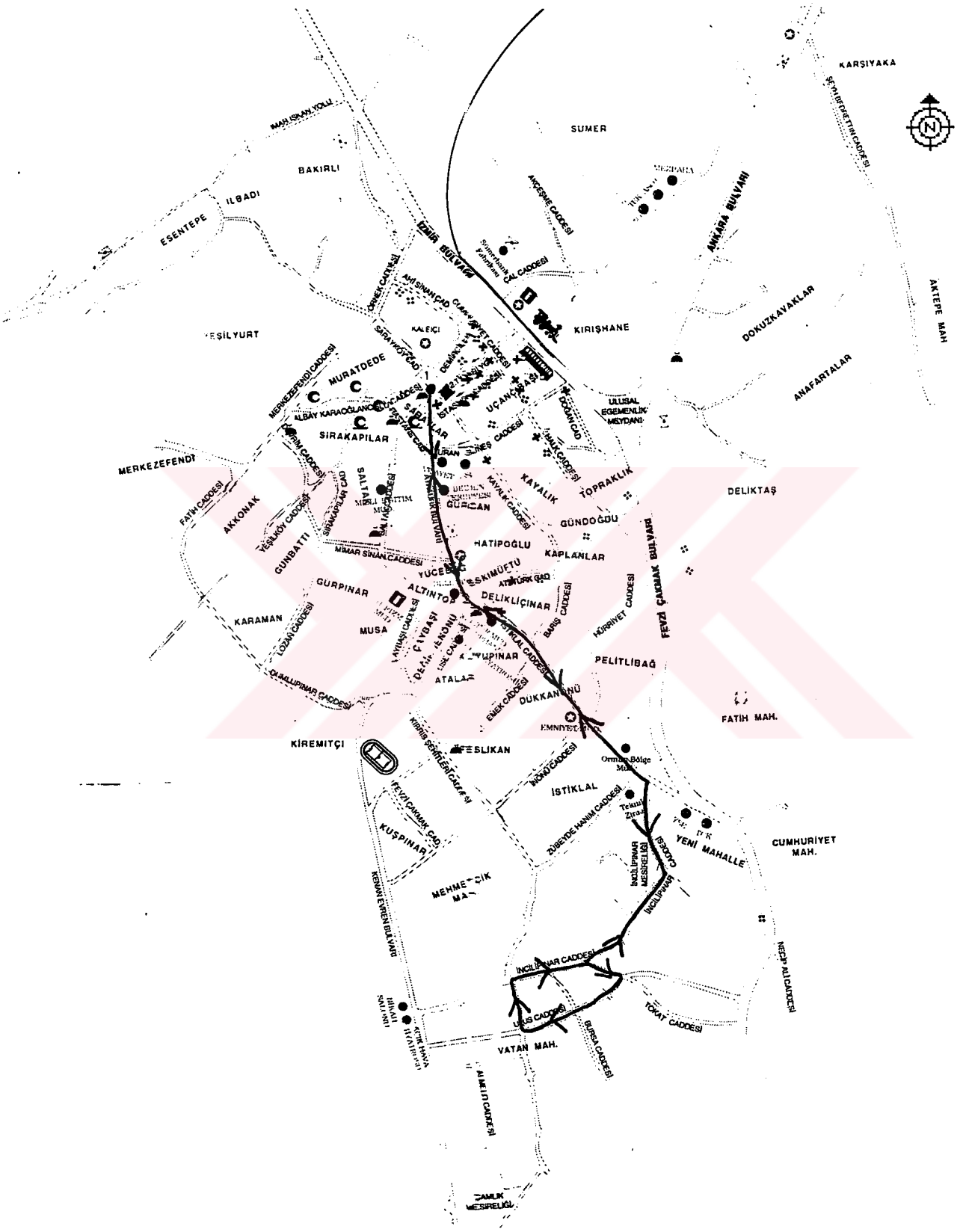
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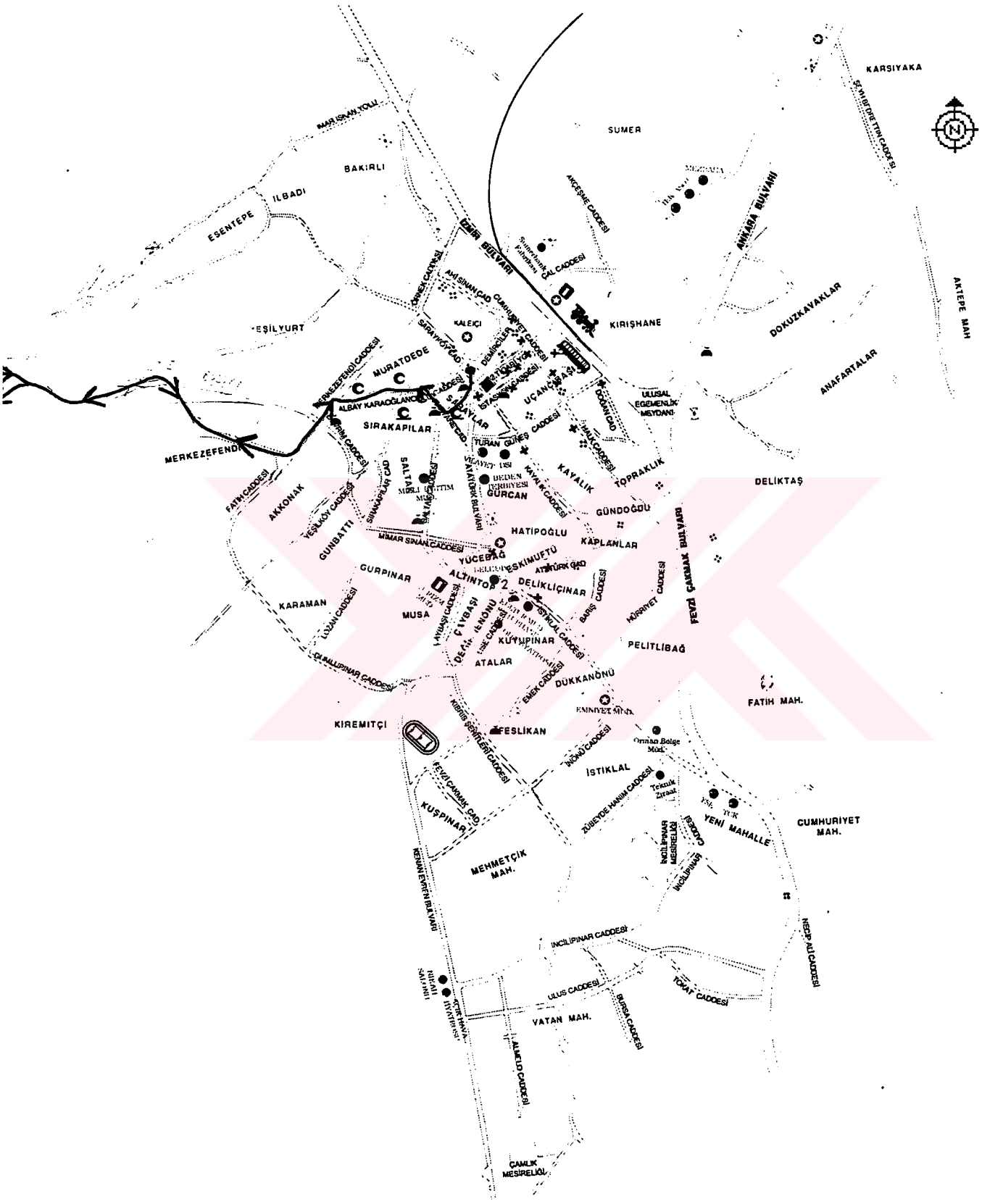
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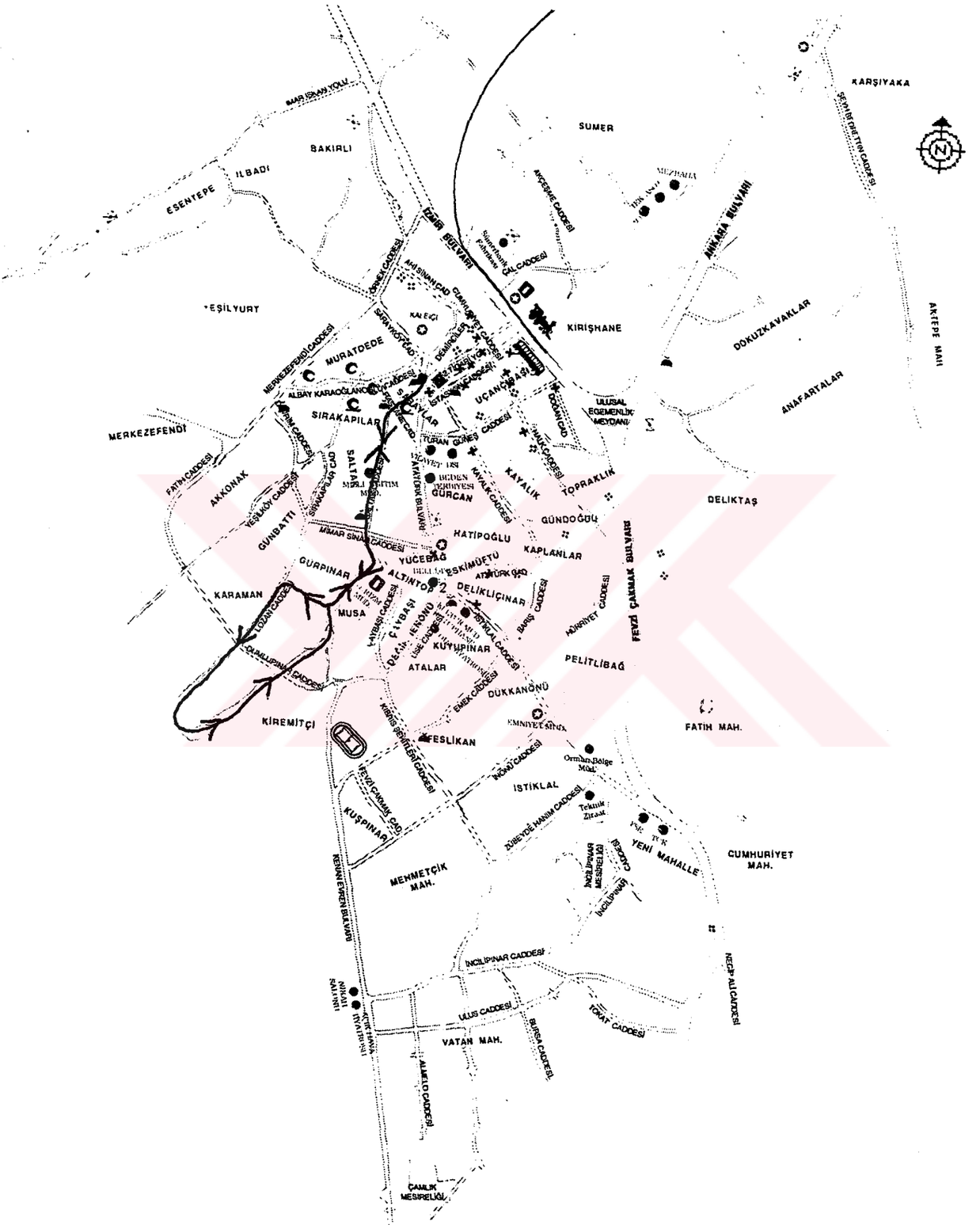
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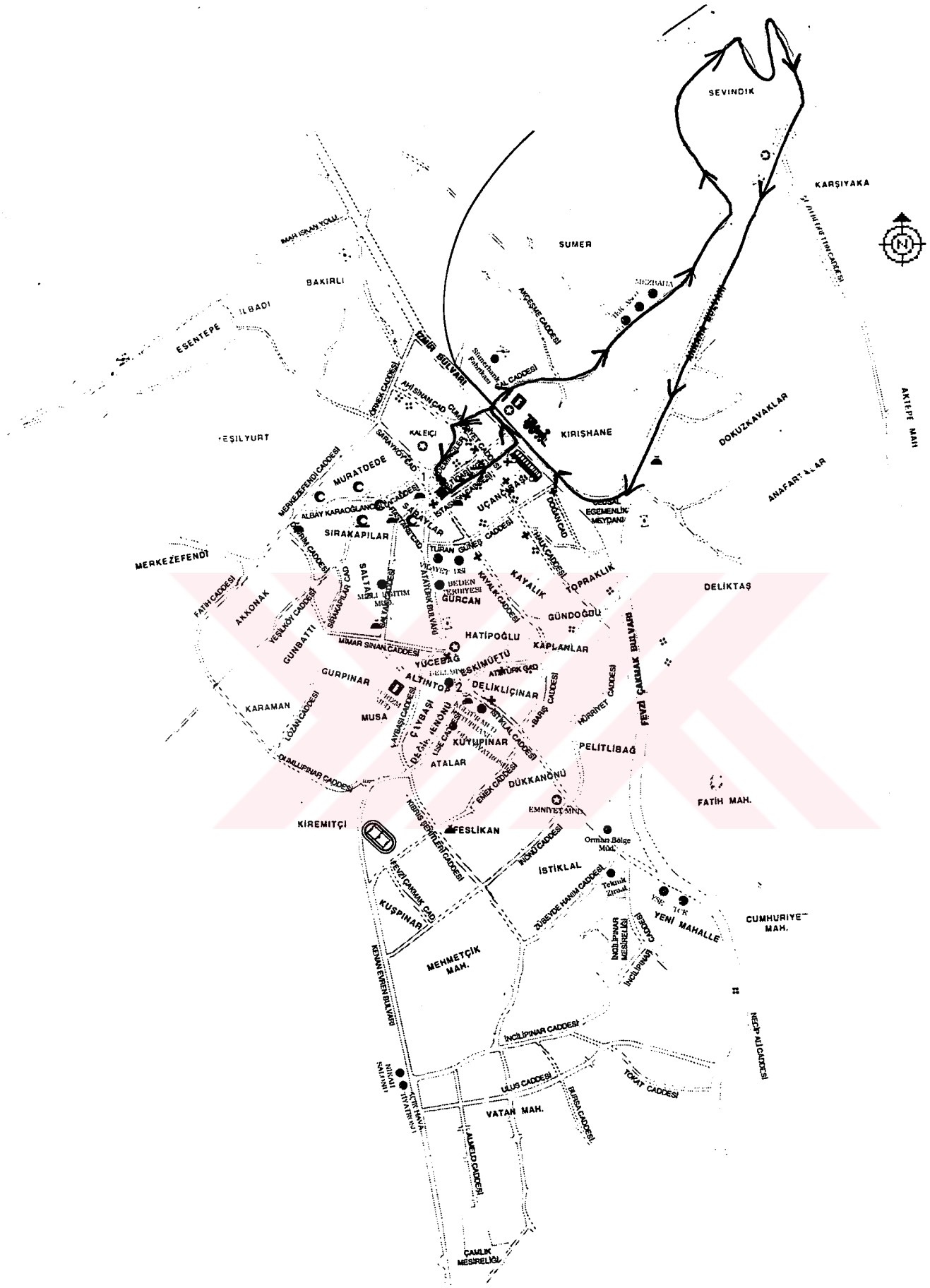
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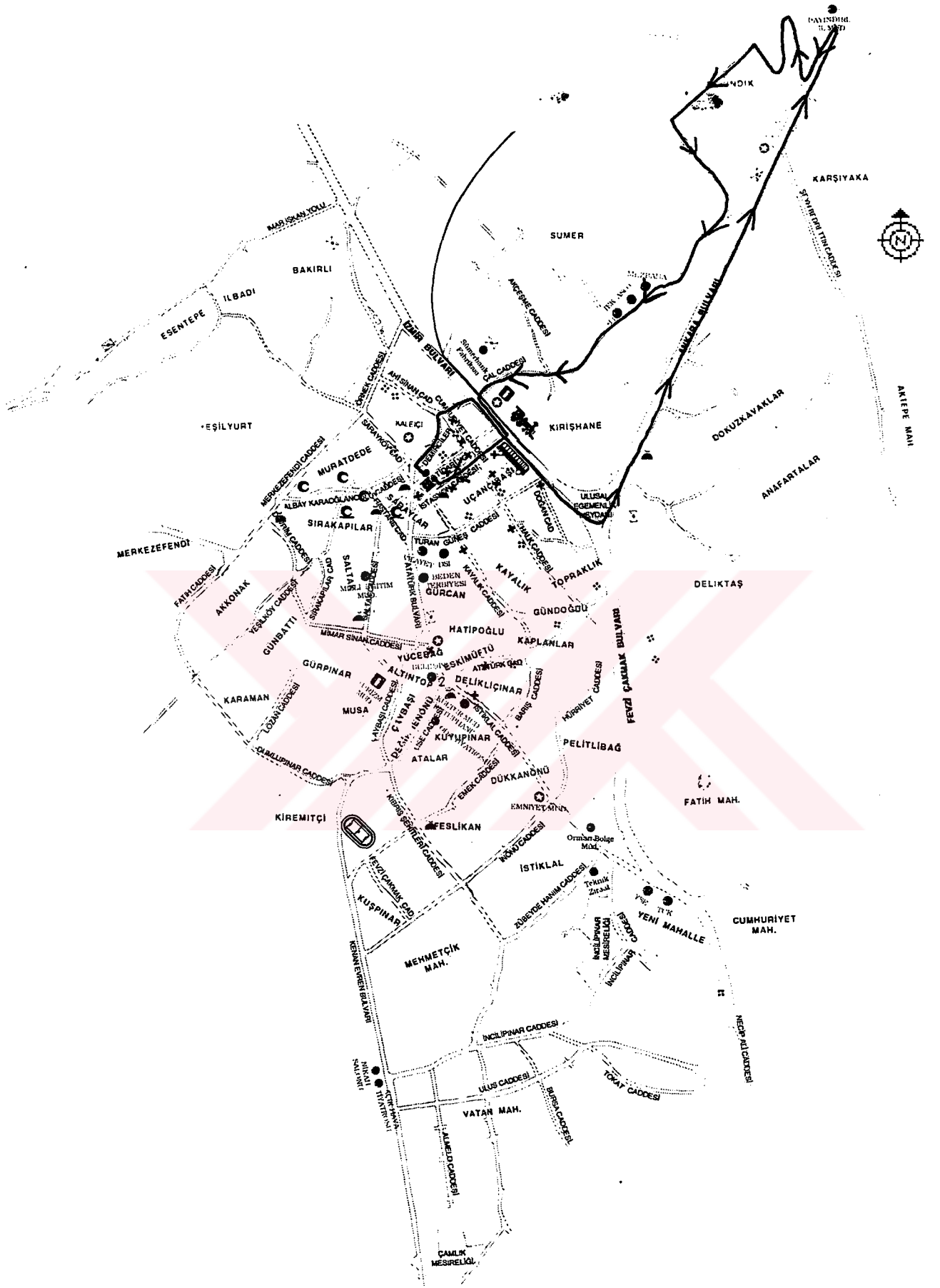
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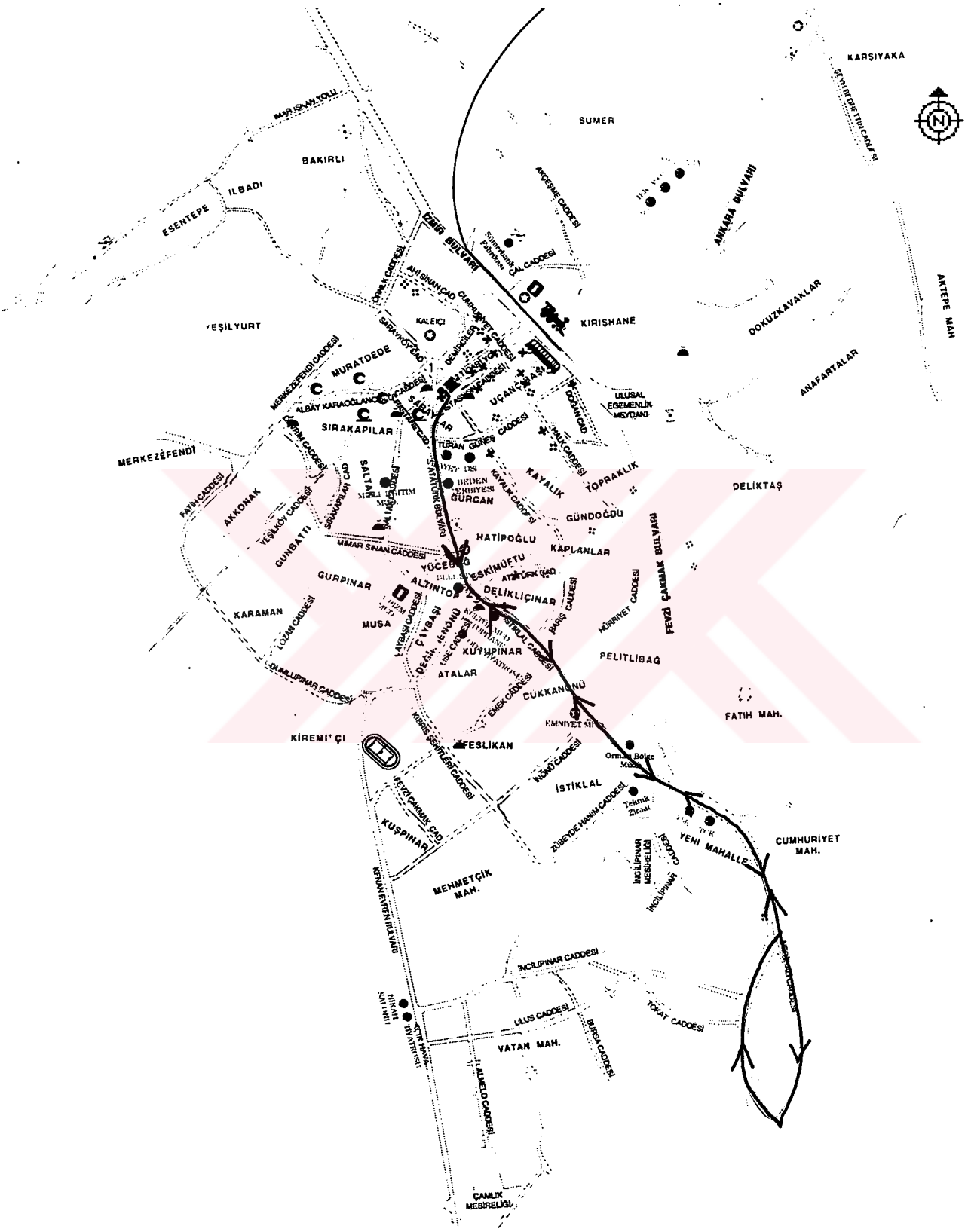
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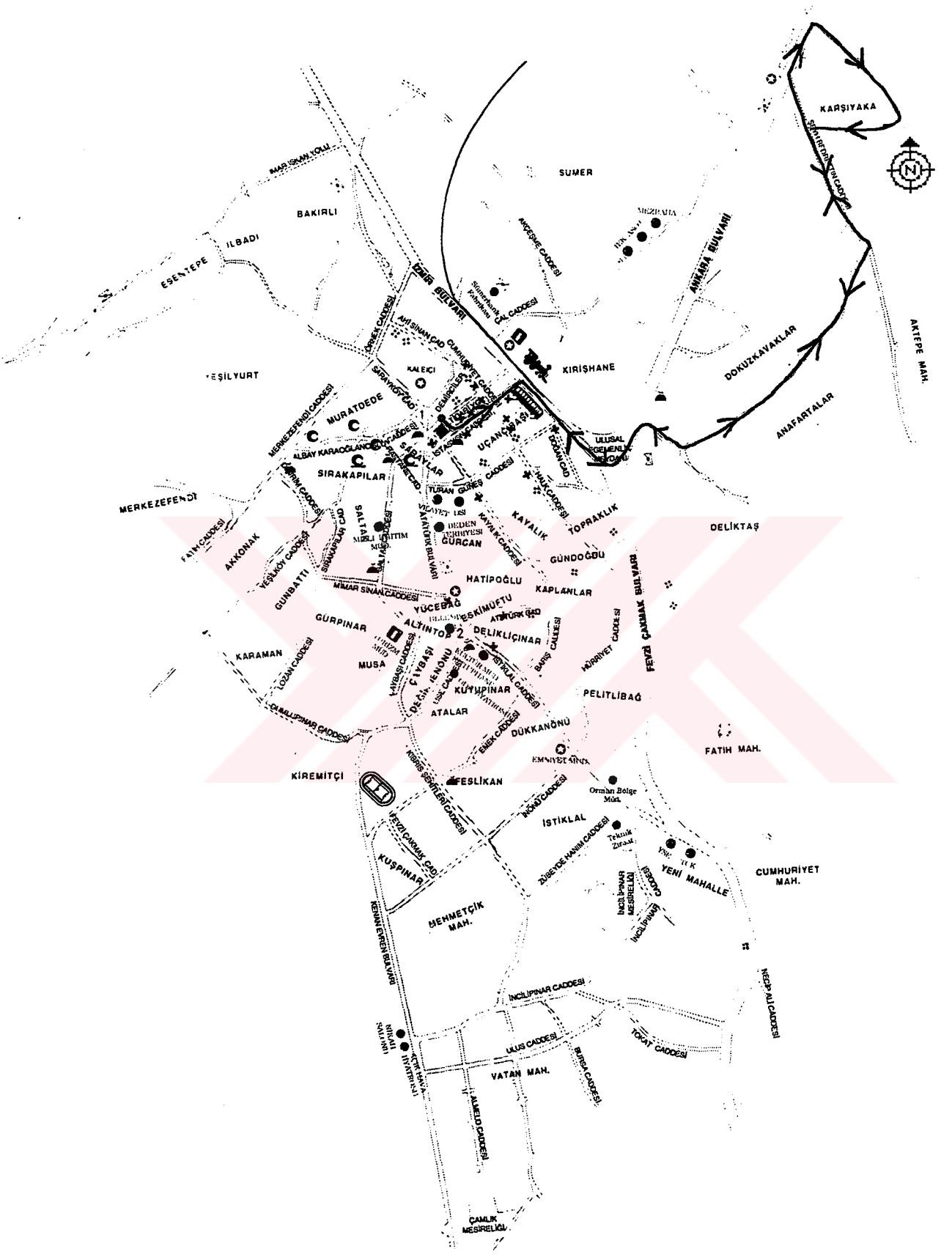
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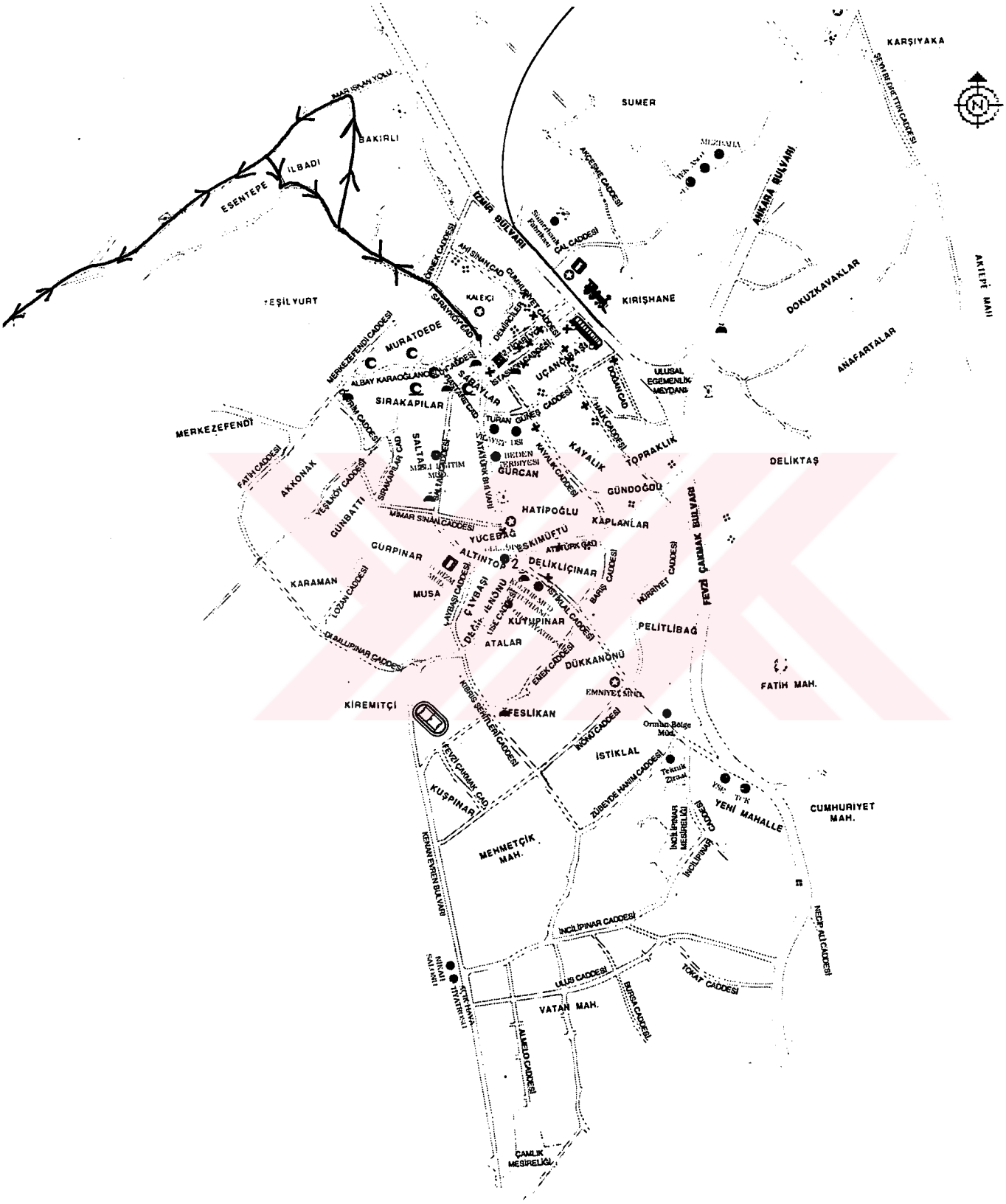
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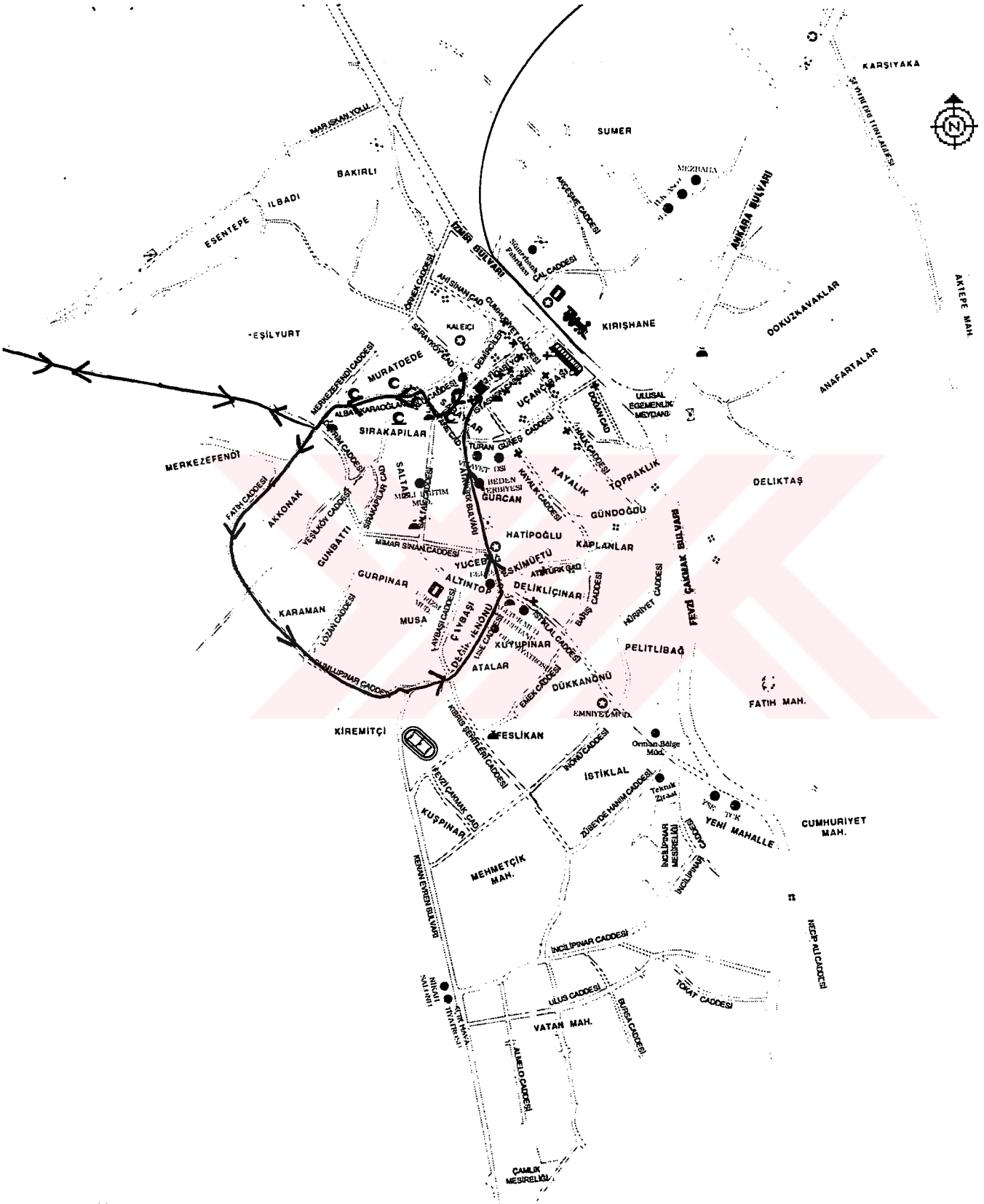
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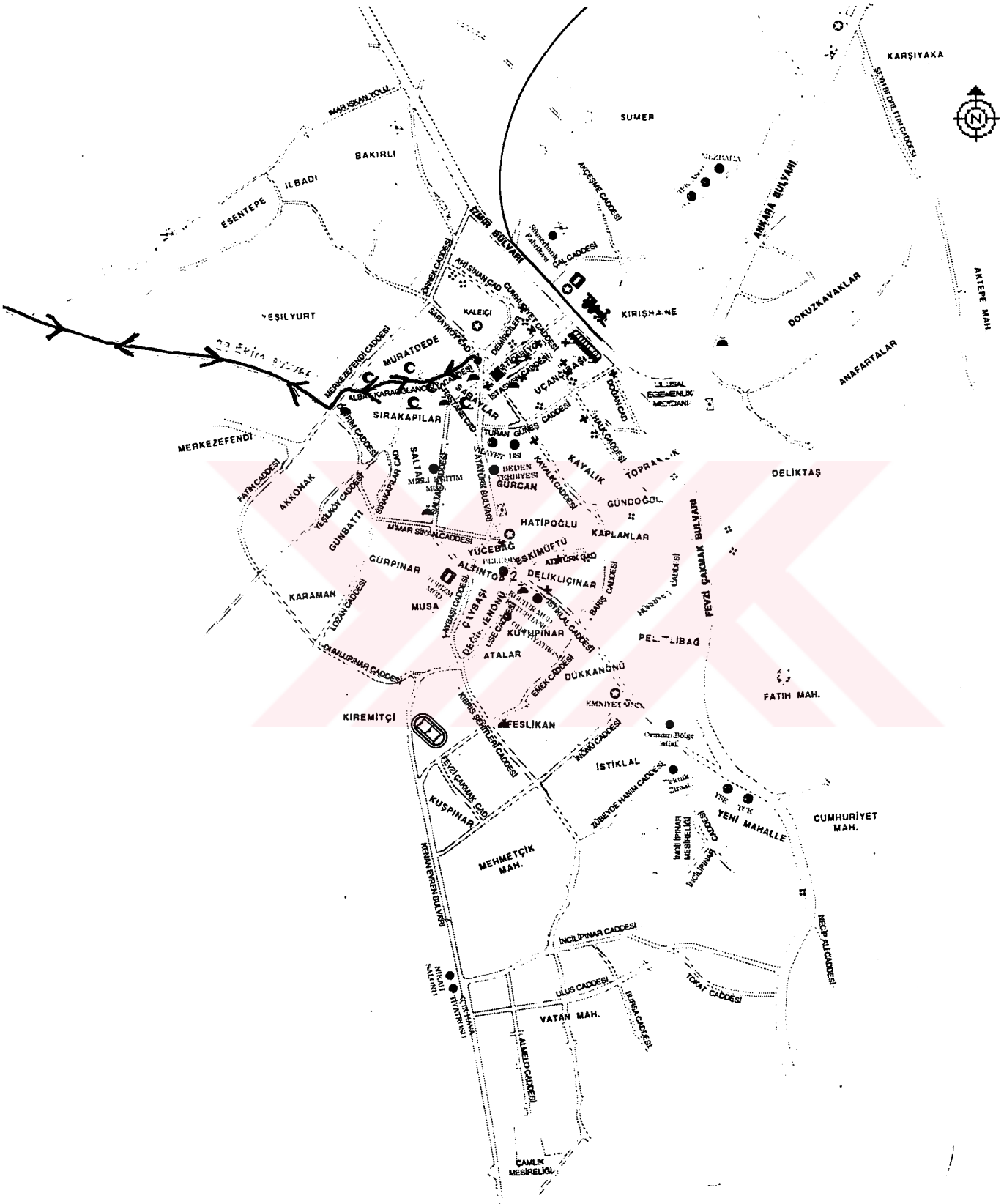
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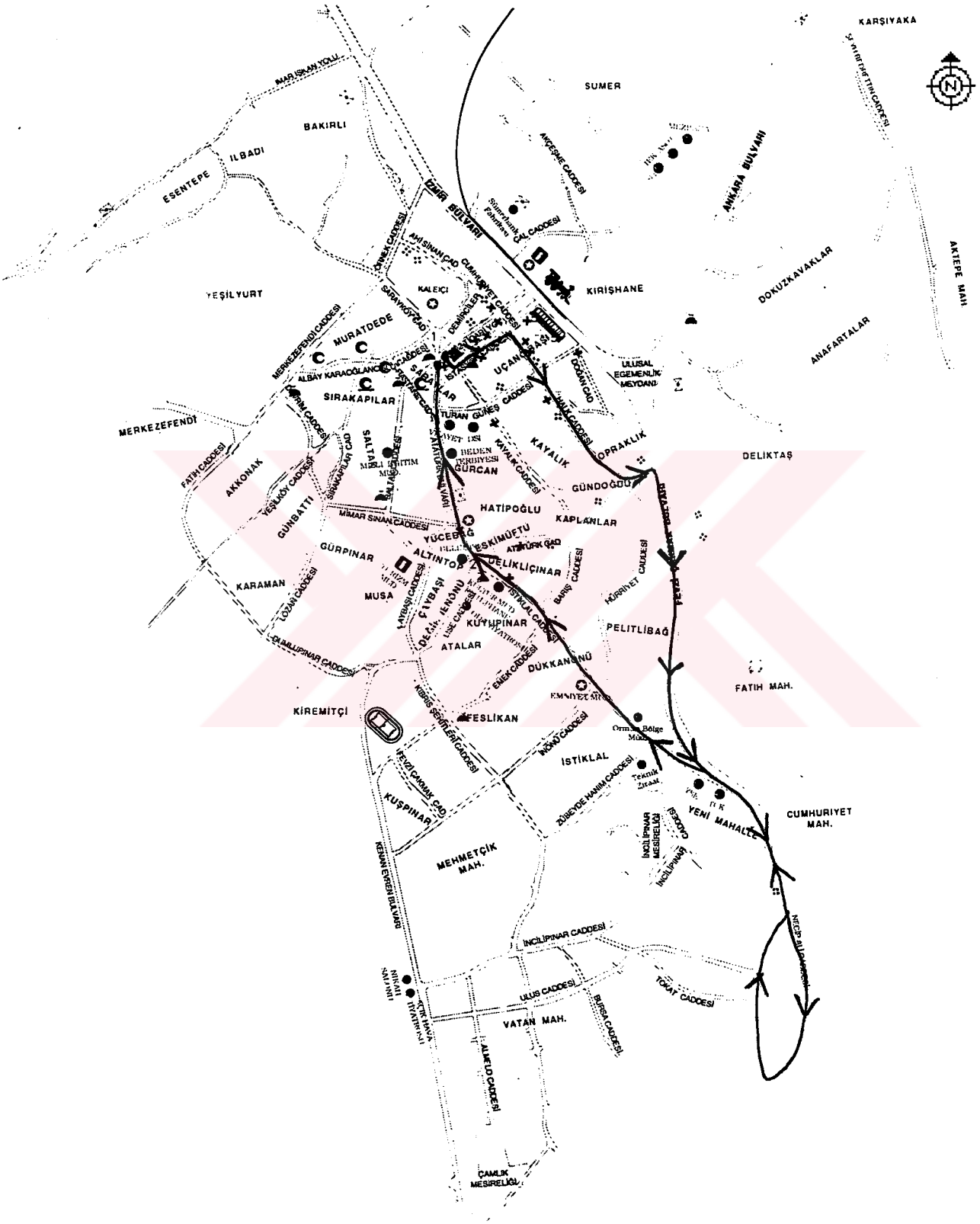
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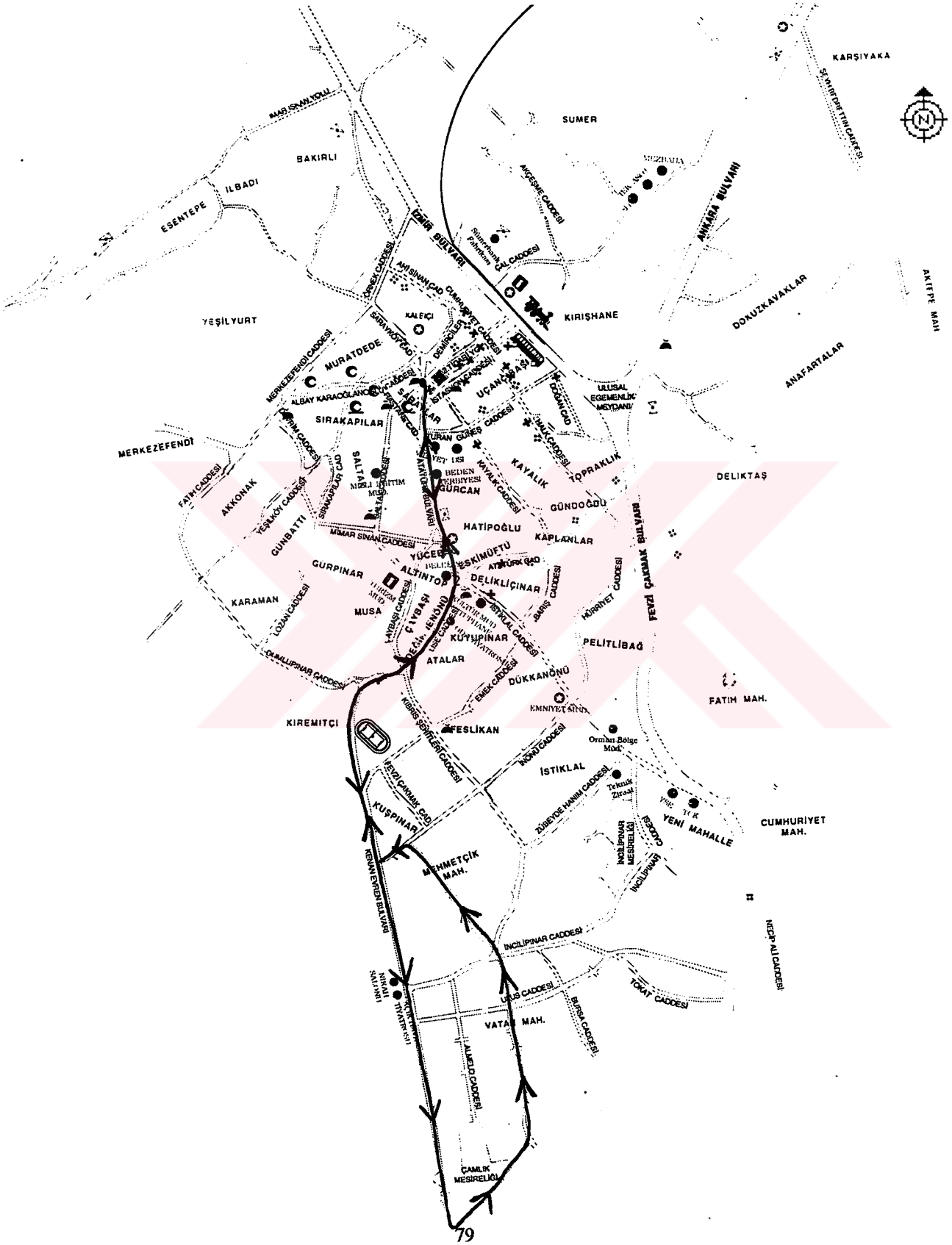
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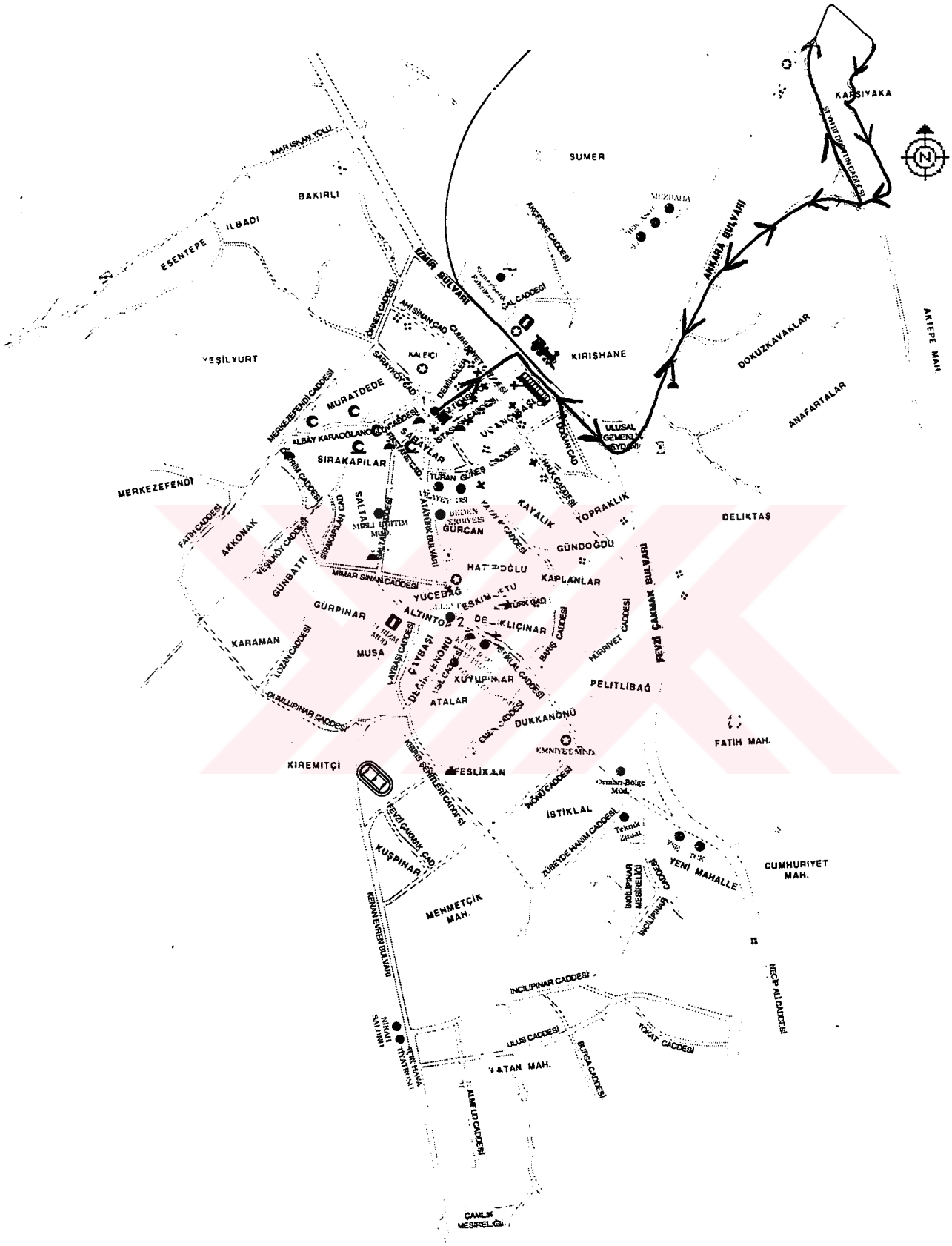
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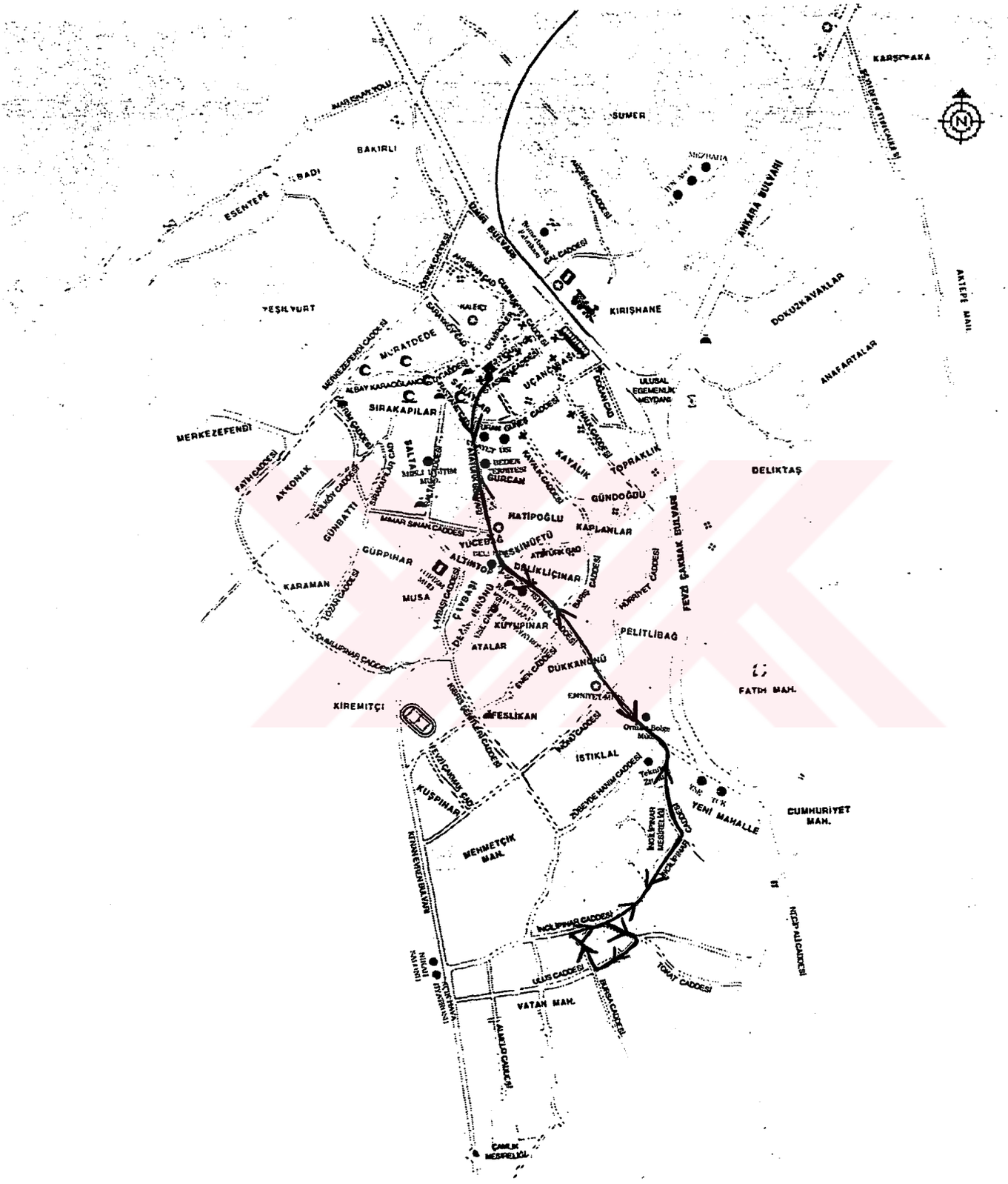
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APPENDIX A.2.

MINIBUS ROUTES

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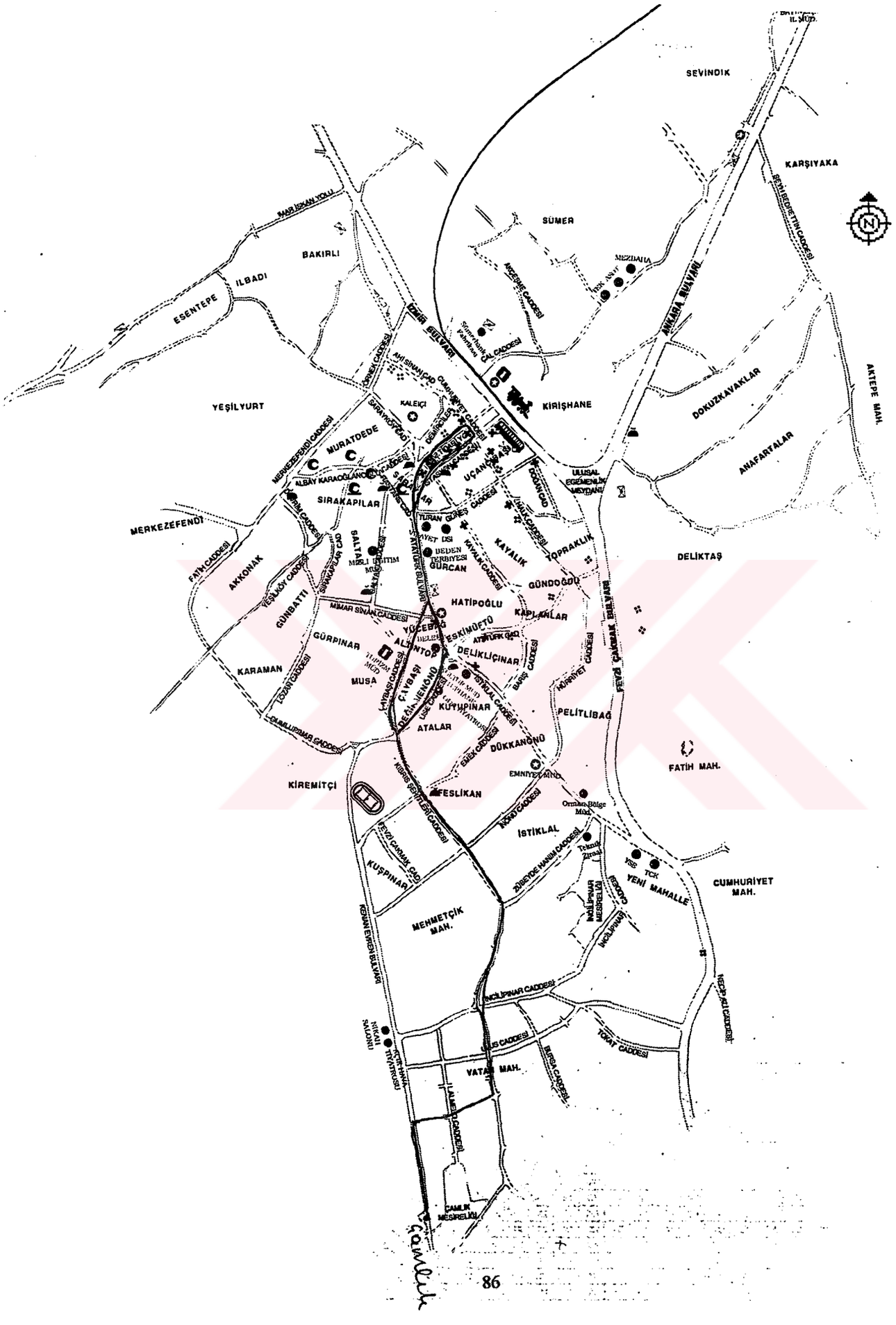
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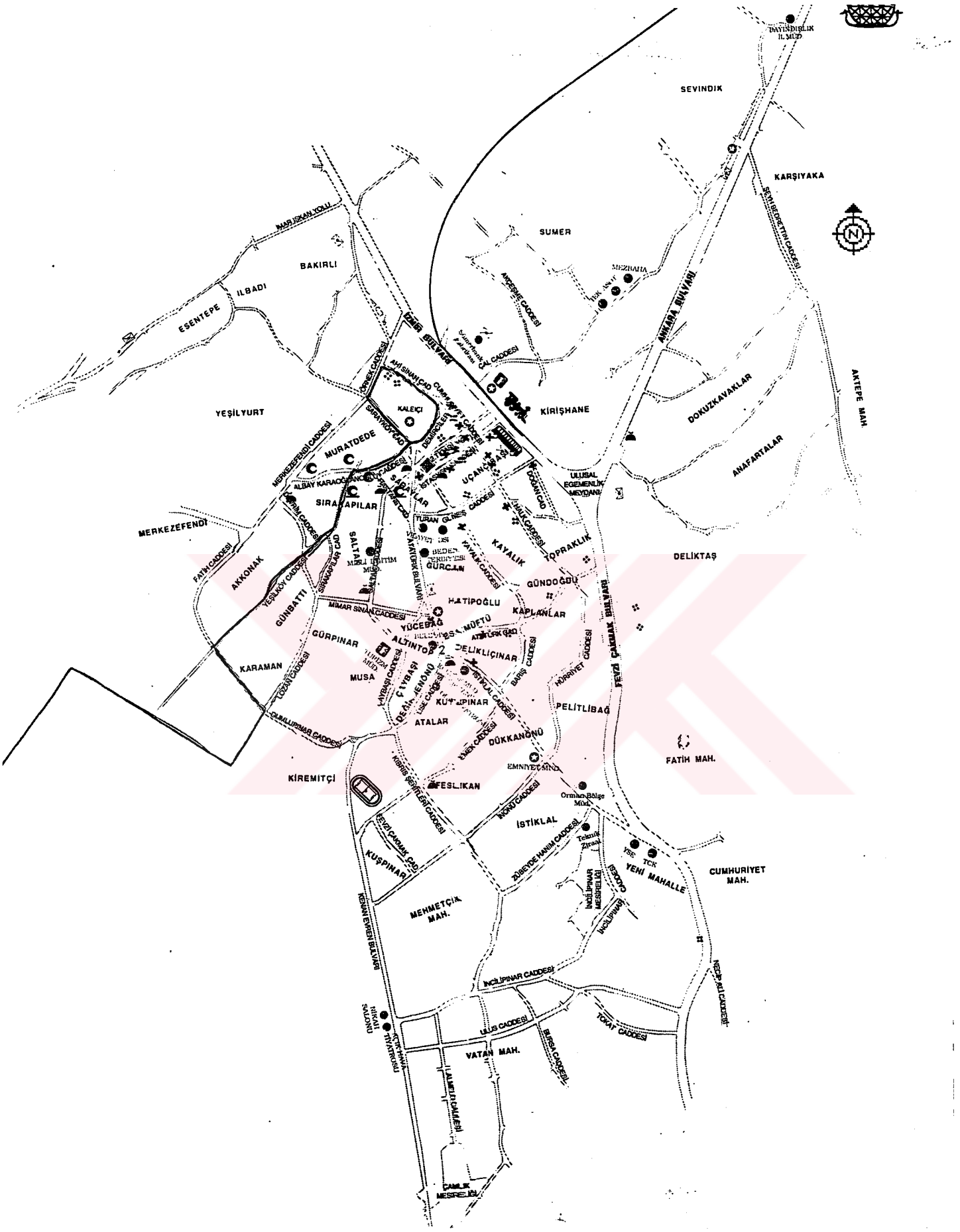
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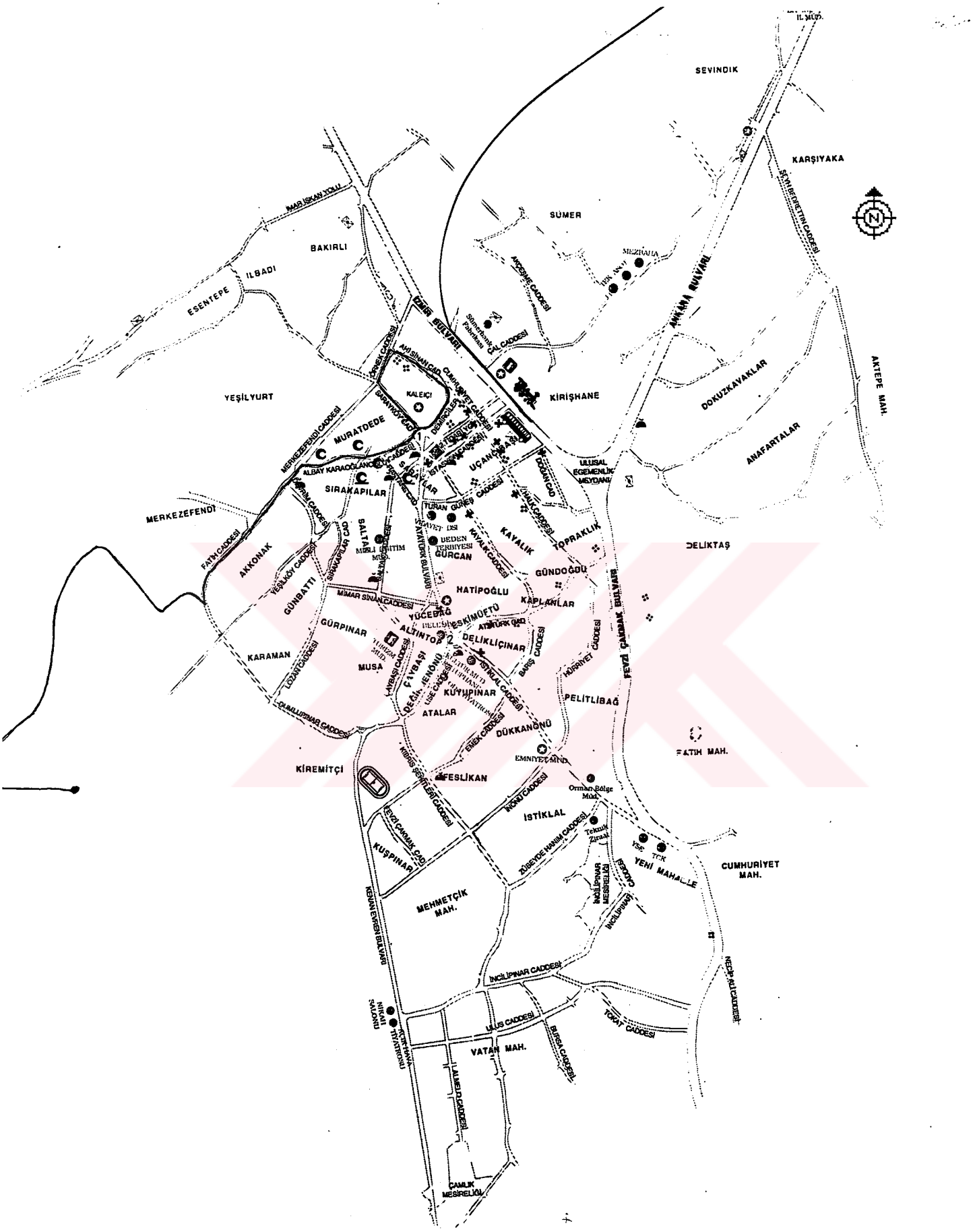
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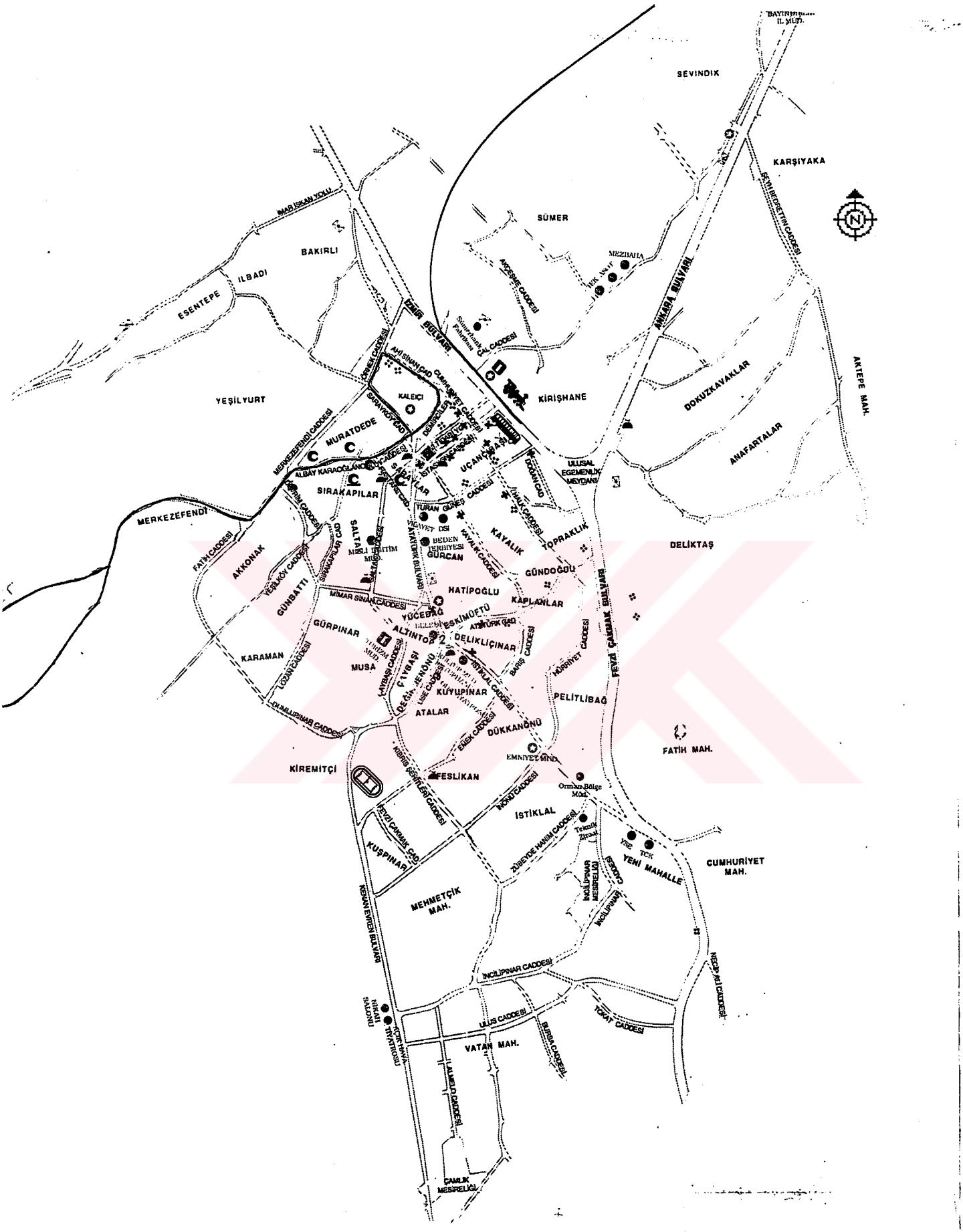
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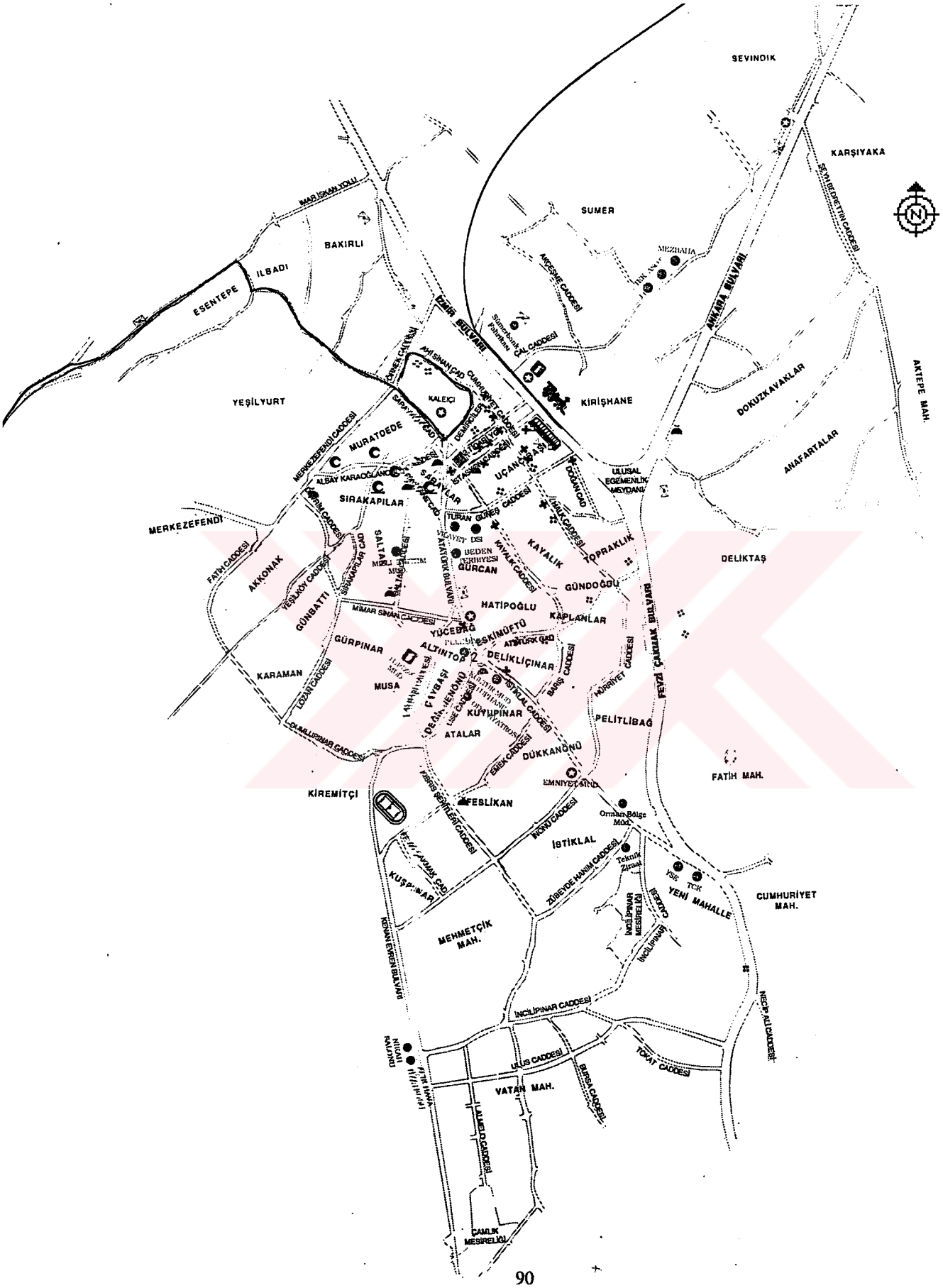
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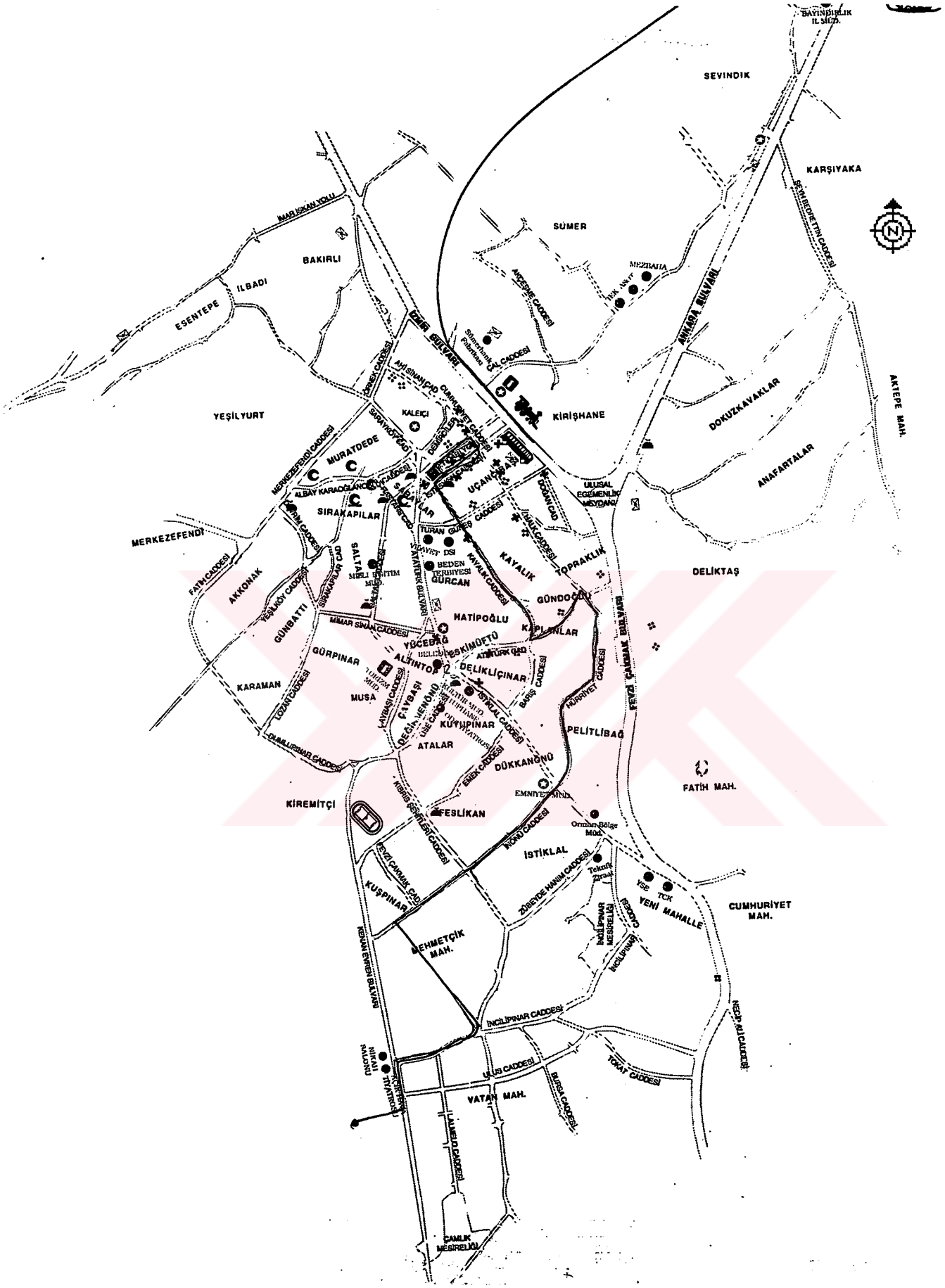
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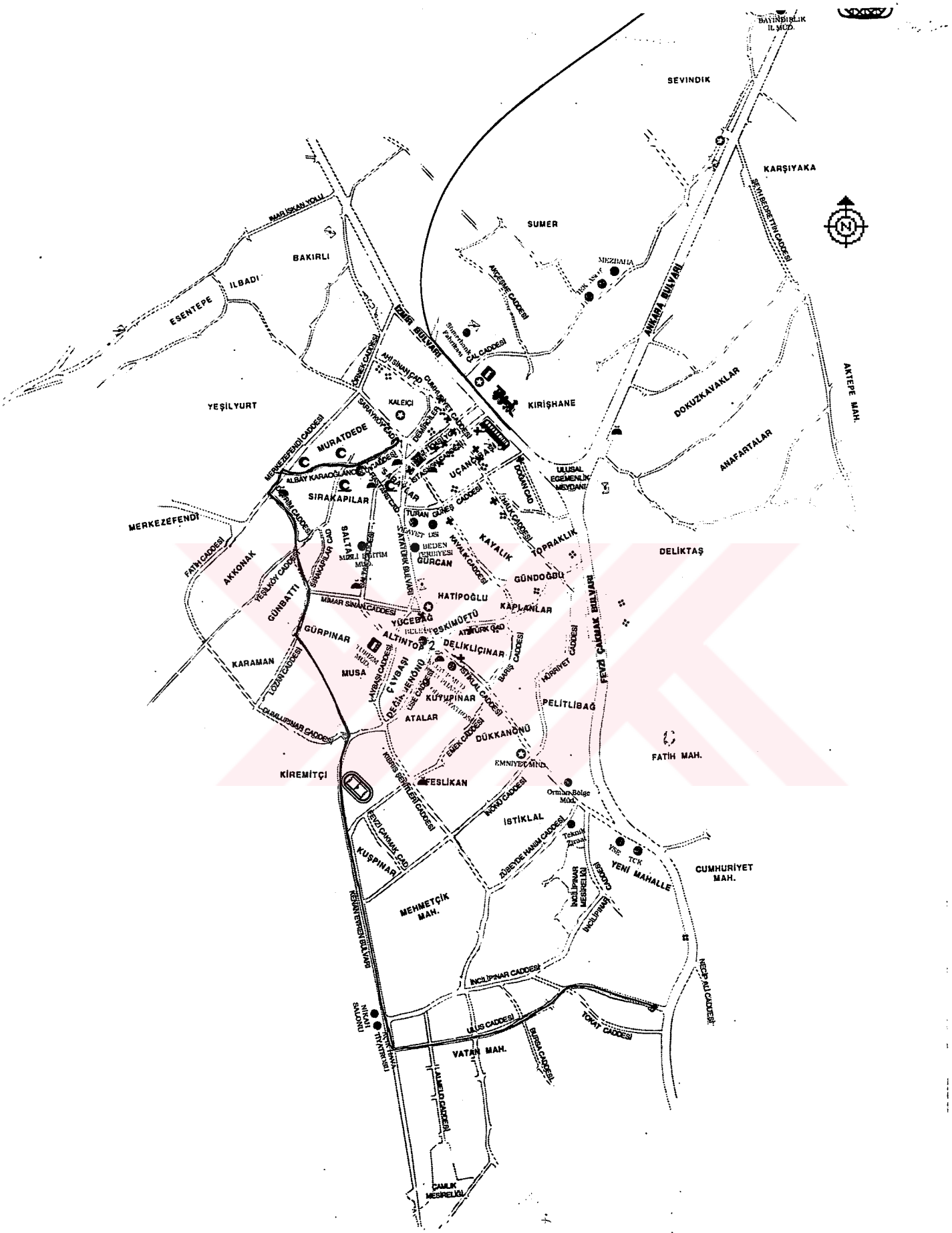
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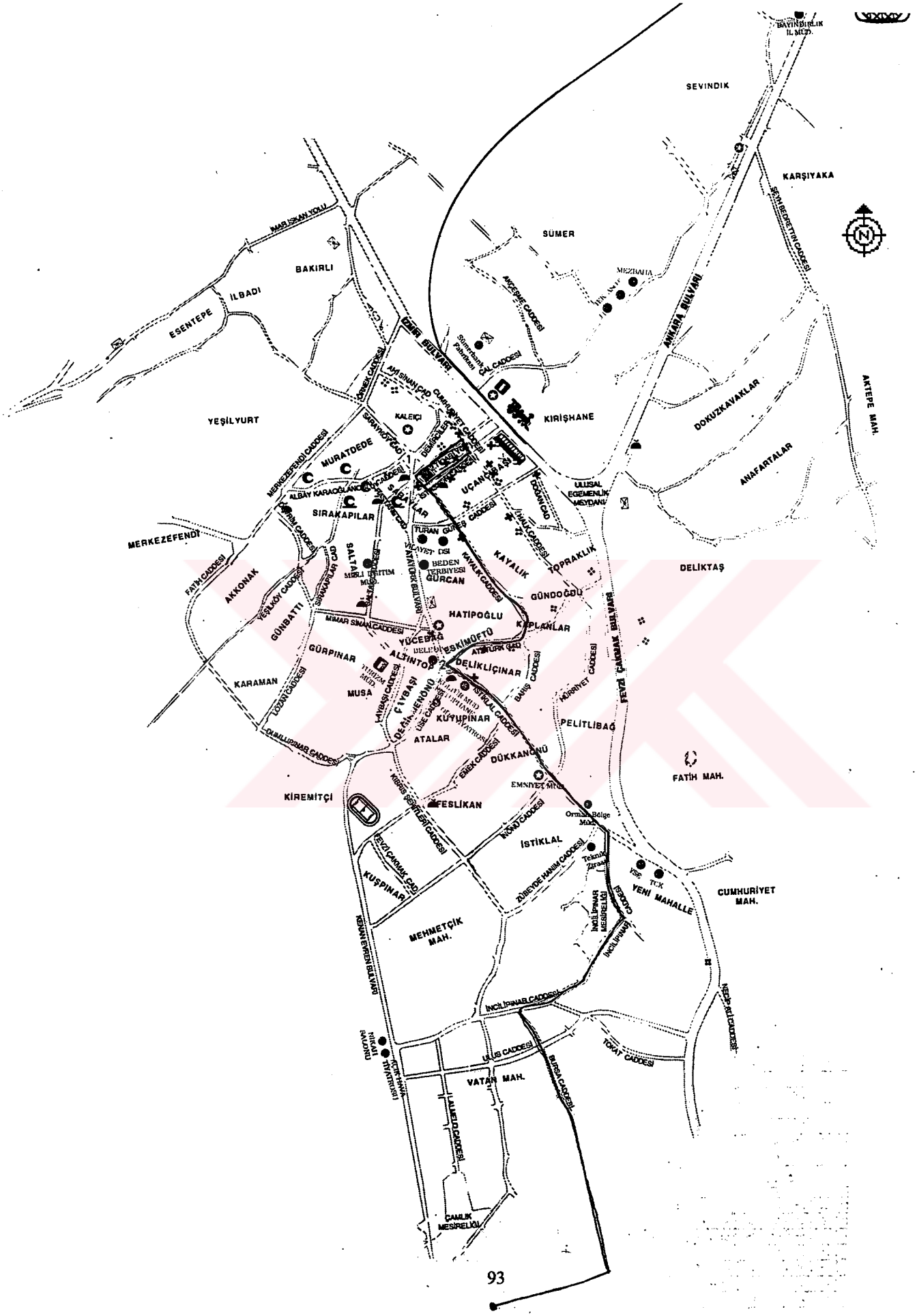
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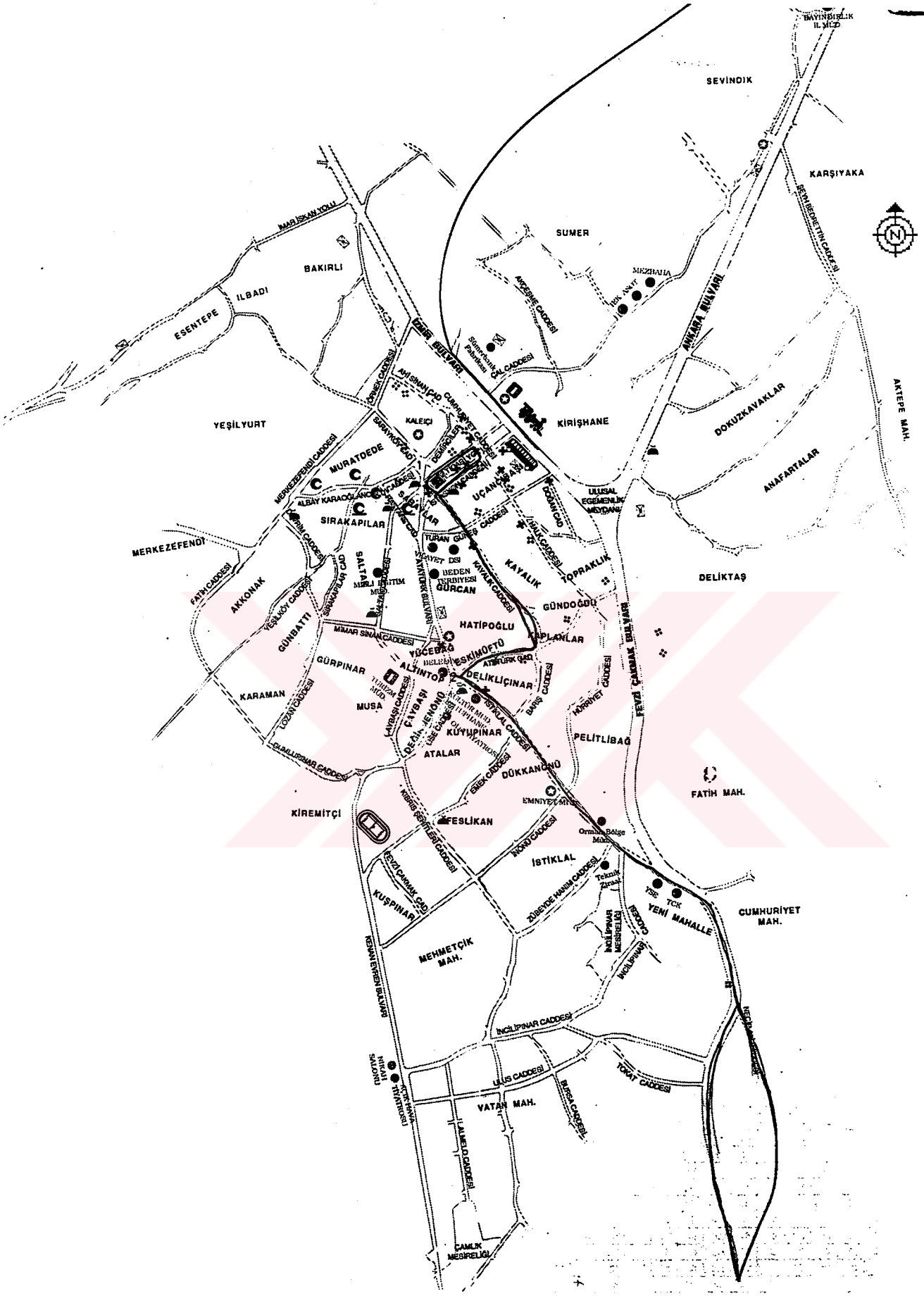
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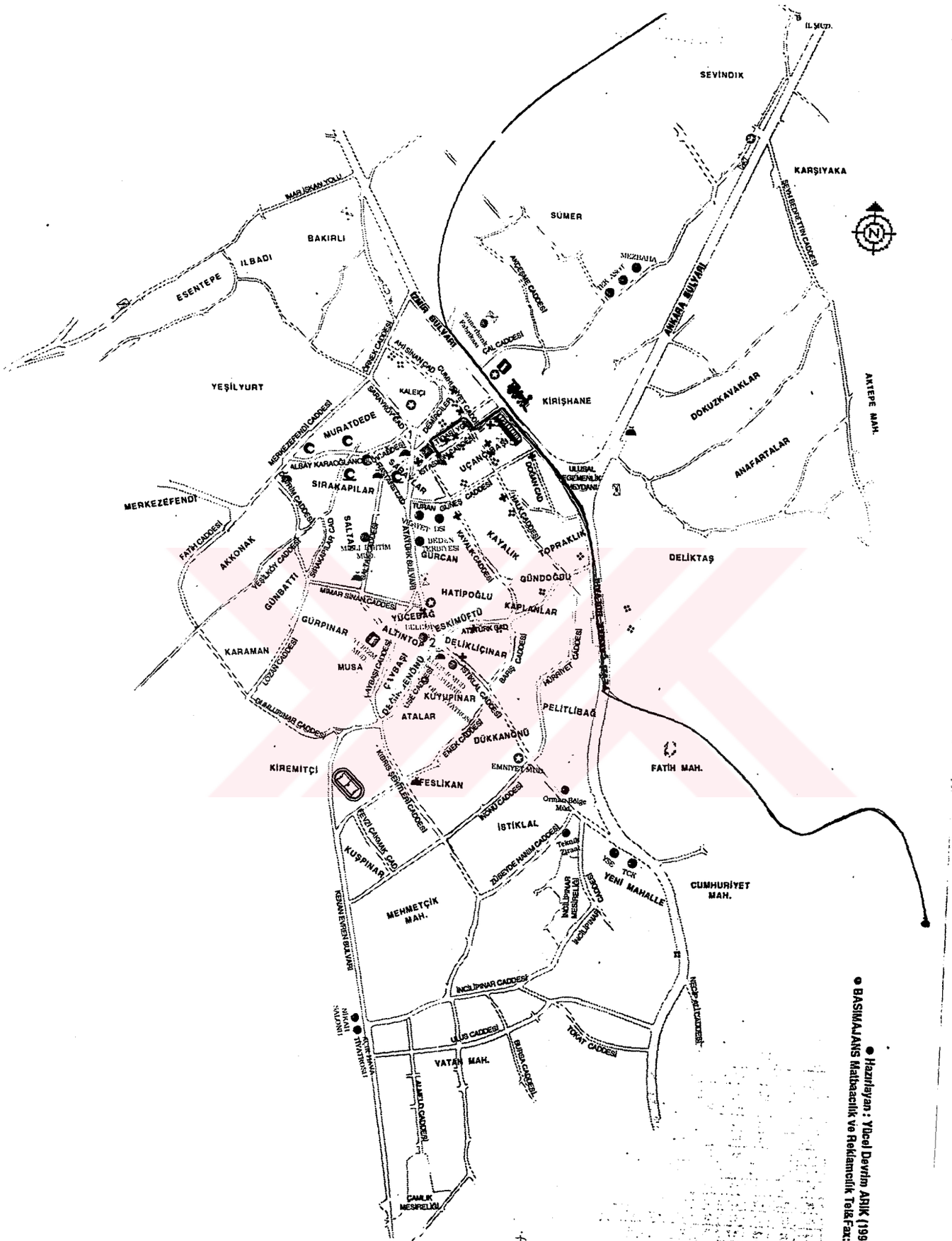

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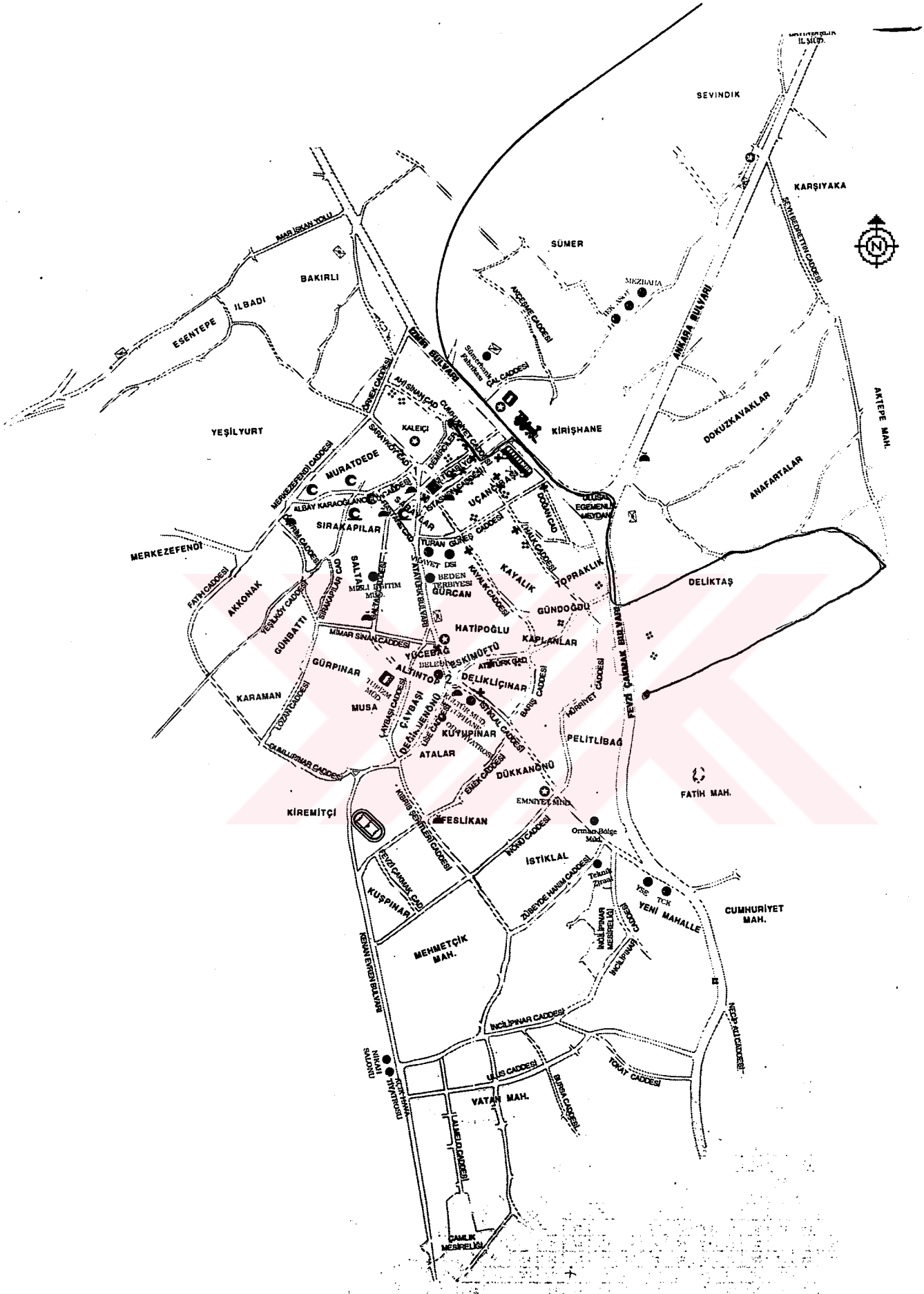
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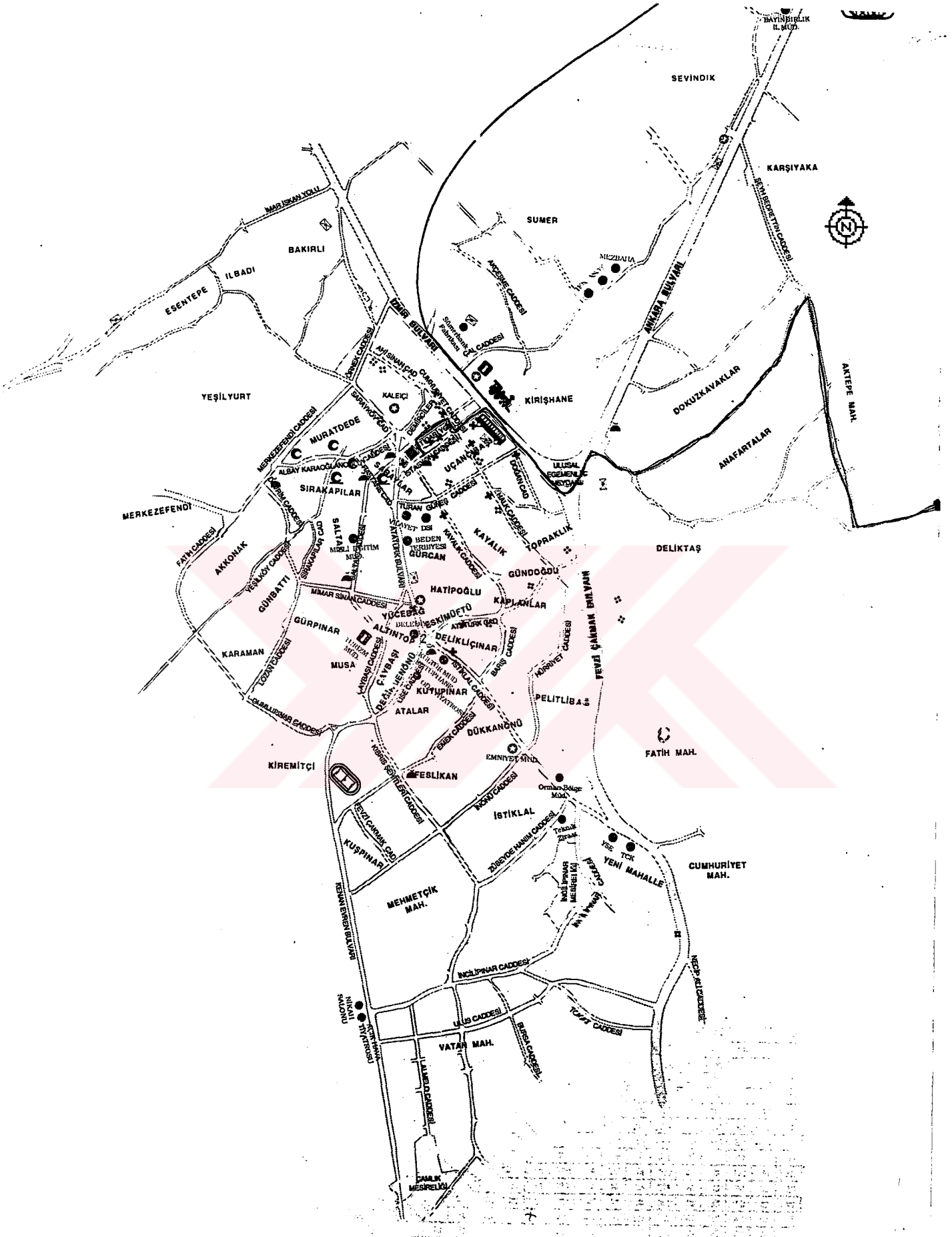
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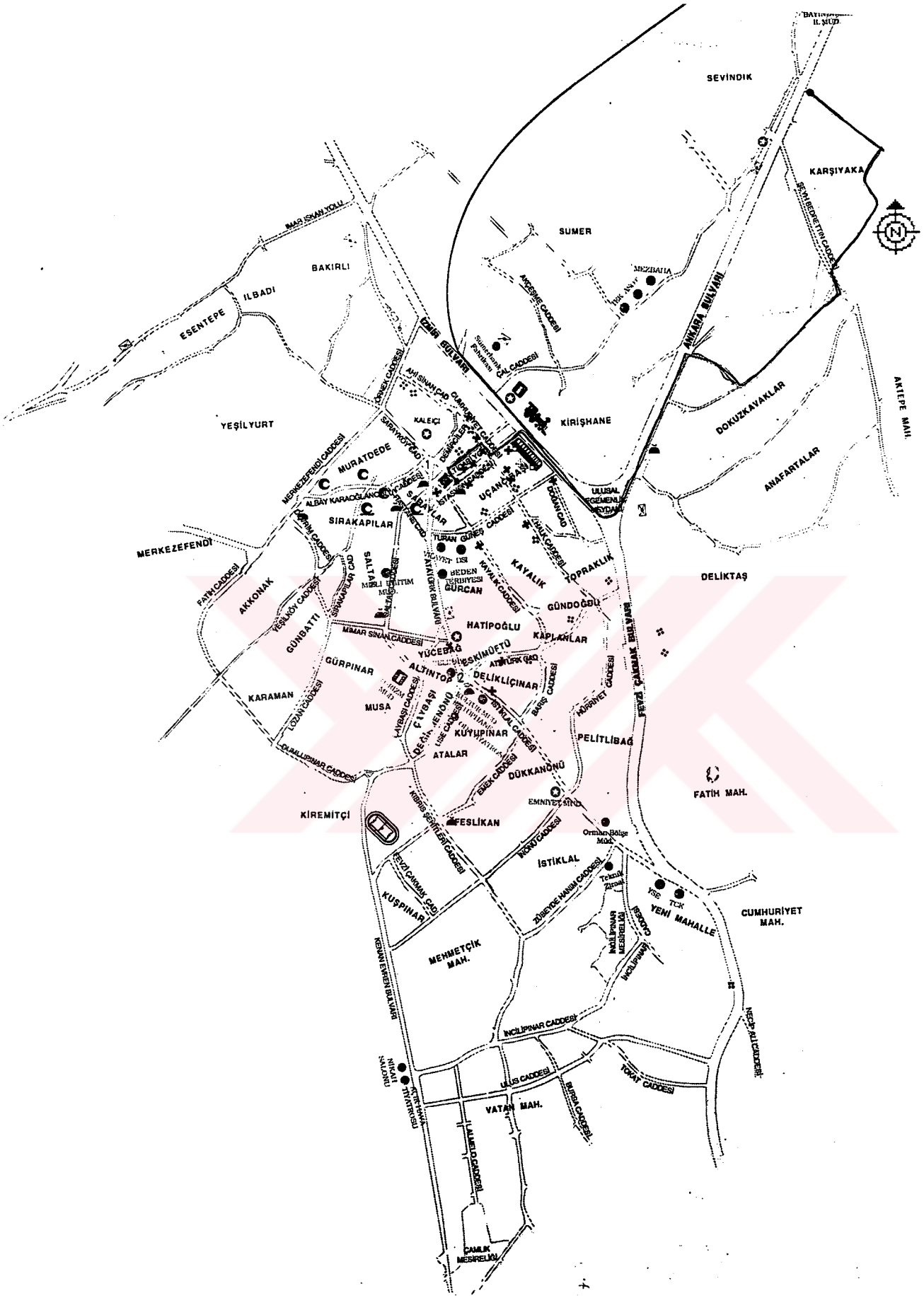
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PELİTLİBAĞ
DÜKKANÖNÜ
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MEHMETÇİK MAH.
YENİ MAHALLE
CUMHURİYET MAH.
VATAN MAH.
ÇAMLIK MEŞİRELİĞİ
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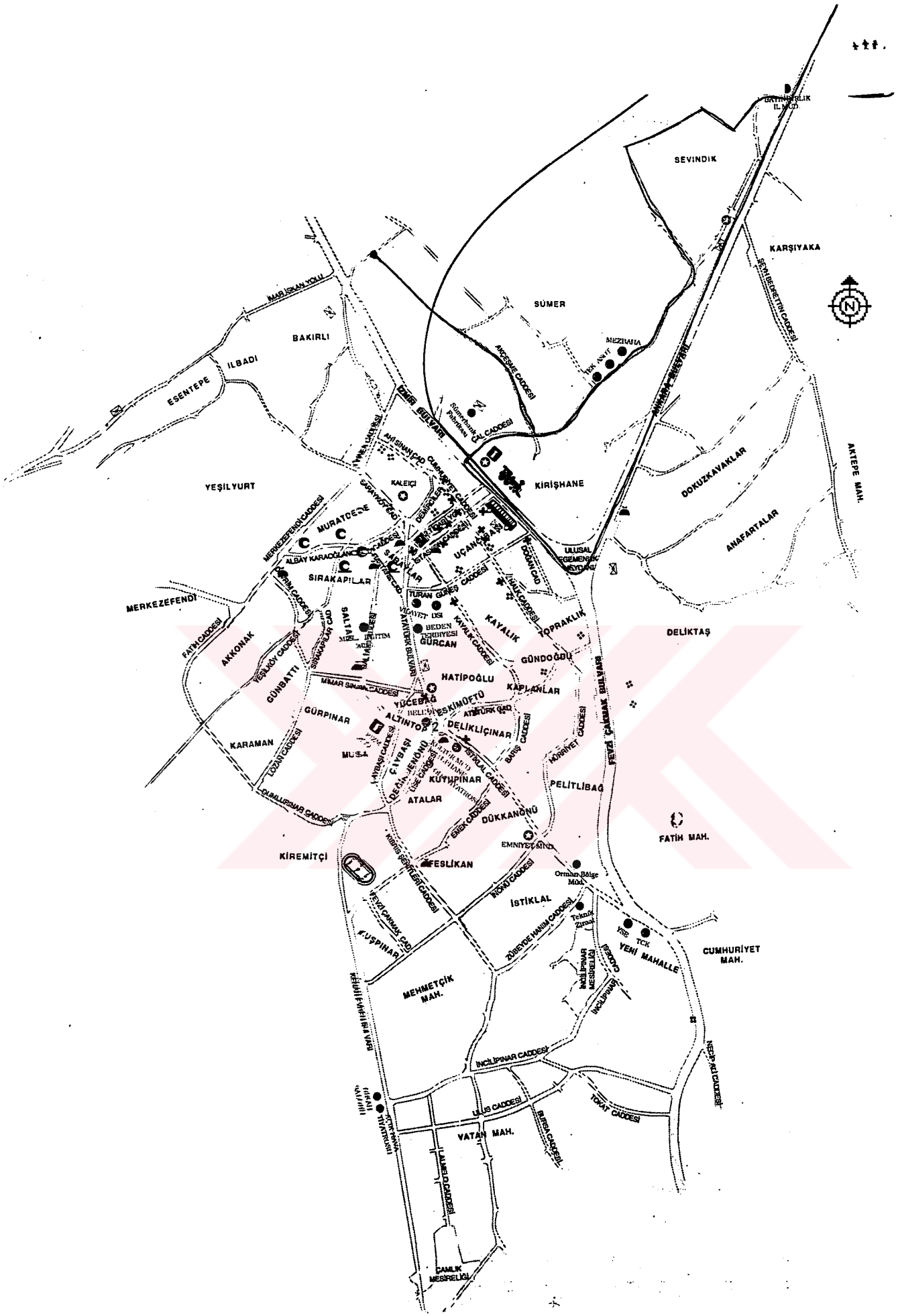
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Sümerbank Fabrikası
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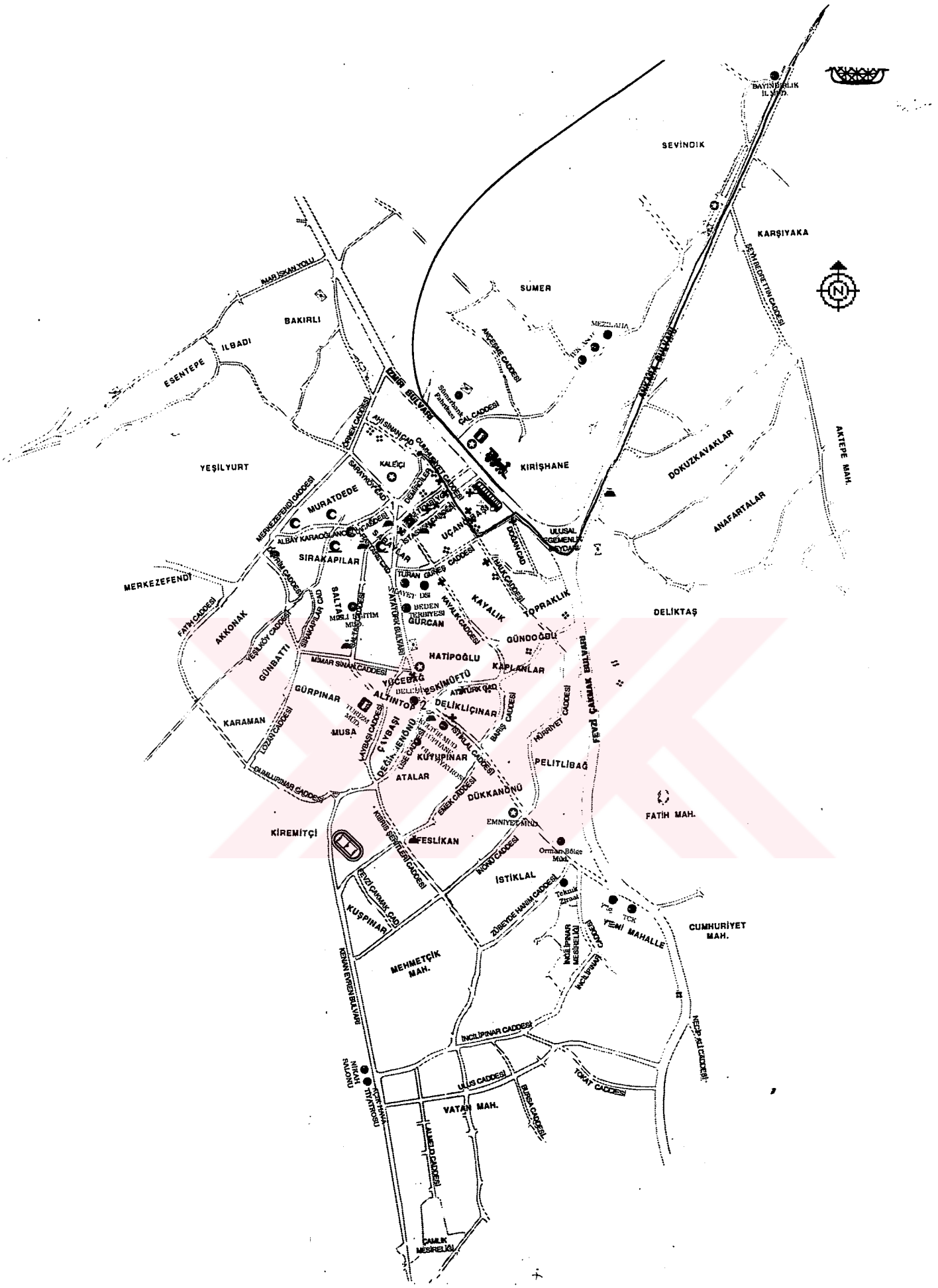
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NECİP ALİ CADDESİ
VATAN MAH.
BURSA CADDESİ
ALİ HAMDİ CADDESİ
ÇAMLIK MESİRELİĞİ
N

APPENDIX A.3.

MUNICIPALITY BUS ROUTES AND MINIBUS ROUTES

ROUTE NO
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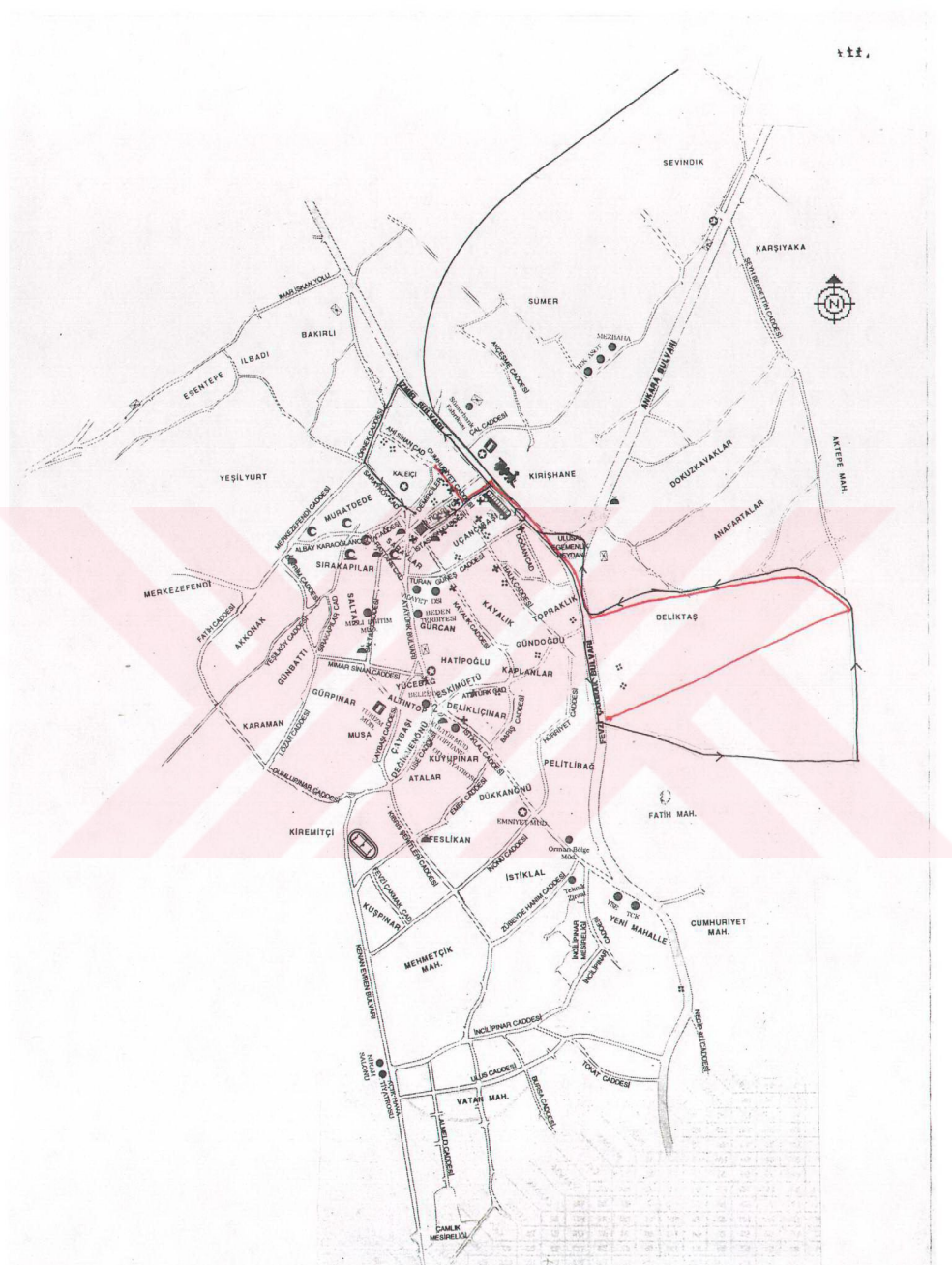
2 – 2
9 – 3
11,12 – 15
14 – 10
17 – 5
18/1 – 4
22 – 14
23 – 1
26 - 9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Teknik Lise
Hükümet Konağı
Hıfzıssıhha Müessesesi
Tapu Müdürlüğü
Vergi Dairesi
Belediye Hizmet Binası
Otogar
Hal
Cami
Hamam
Çeşme
Kütüphane
Okul
Hastane
Sağlık Ocağı
Polis Merkezi
Jandarma Karakolu
Askeri Birlik
Spor Alanı
Park
Mezarlık
Otopark
Benzin İstasyonu
Sanayi Sitesi
Fabrika
Sinema
Tiyatro
Müze
Kütüphane
Banka
Pazar Yeri
Kapalı Çarşı
Otel
Lokanta
Kahvehane
Eczane
Muhtarlık
Belediye
Valilik
Kaymakamlık
Emniyet Müdürlüğü
Adliye
Tapu
Nüfus
Vergi
Gümrük
Liman
Havaalanı
Tren Garı
Otobüs Terminali
Taksi Durağı
Dolmuş Durağı
Bisiklet Yolu
Yaya Yolu
Köprü
Tünel
Viyadük
Kavşak
Meydan
Bulvar
Cadde
Sokak
Yol
Demiryolu
Nehir
Göl
Deniz
Ada
Dağ
Tepe
Vadi
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Tarla
Bağ
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Kır
Köy
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Göç
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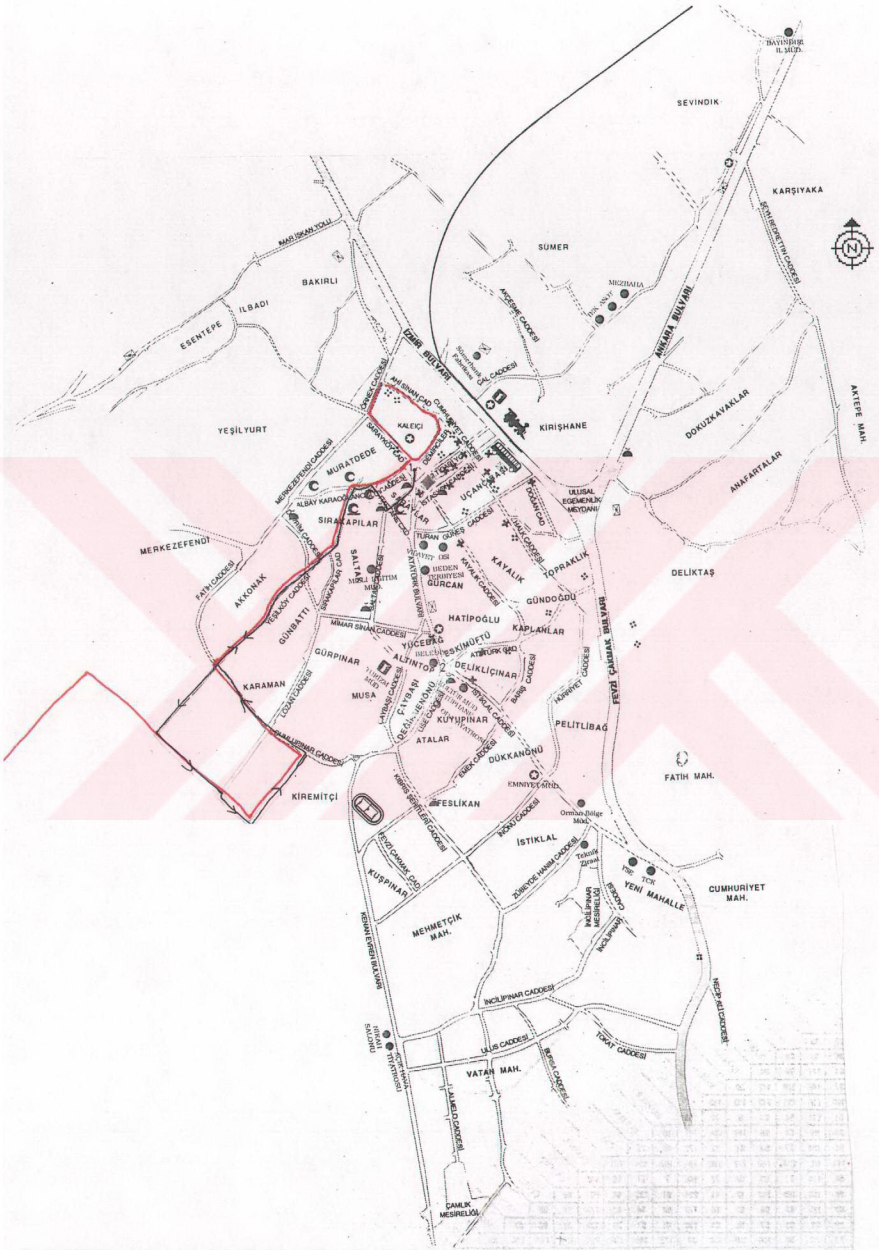
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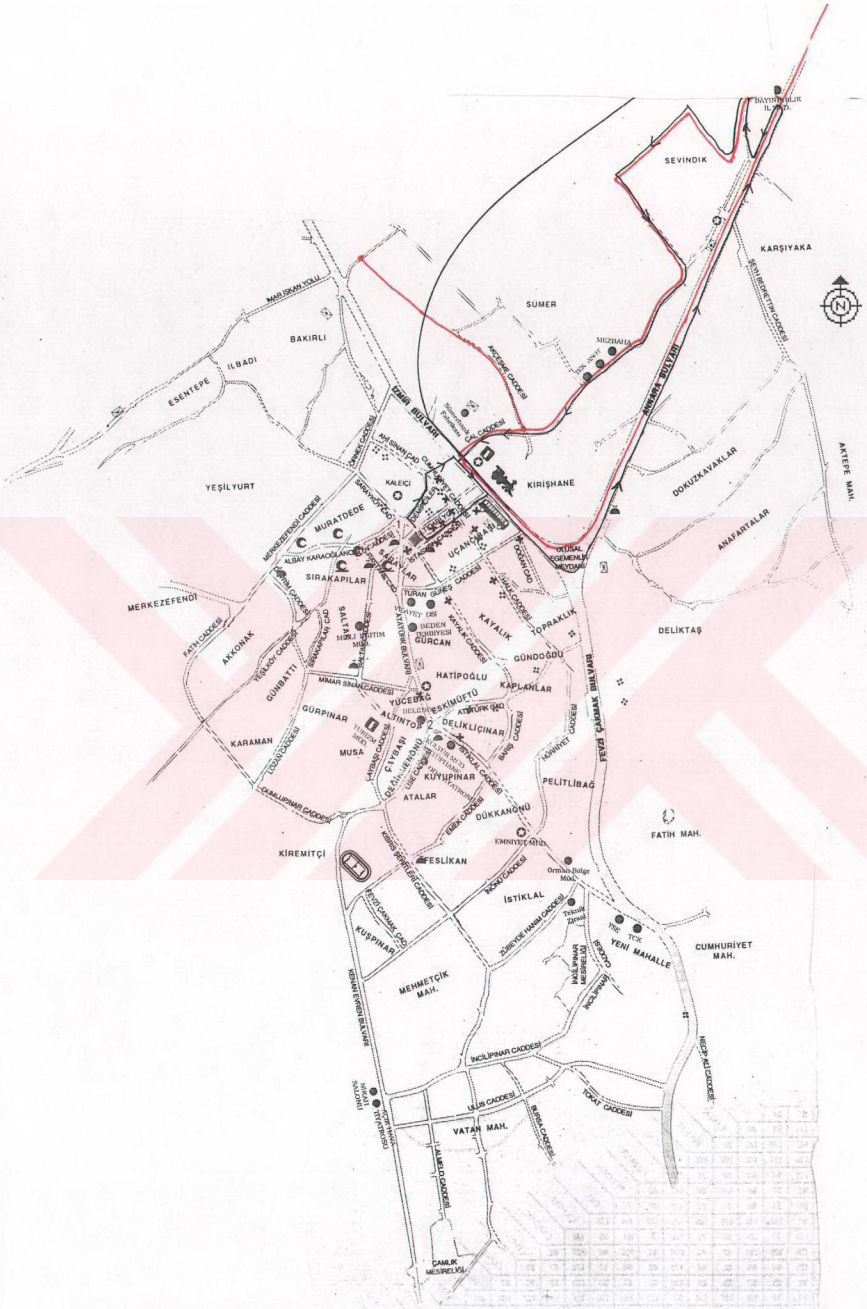
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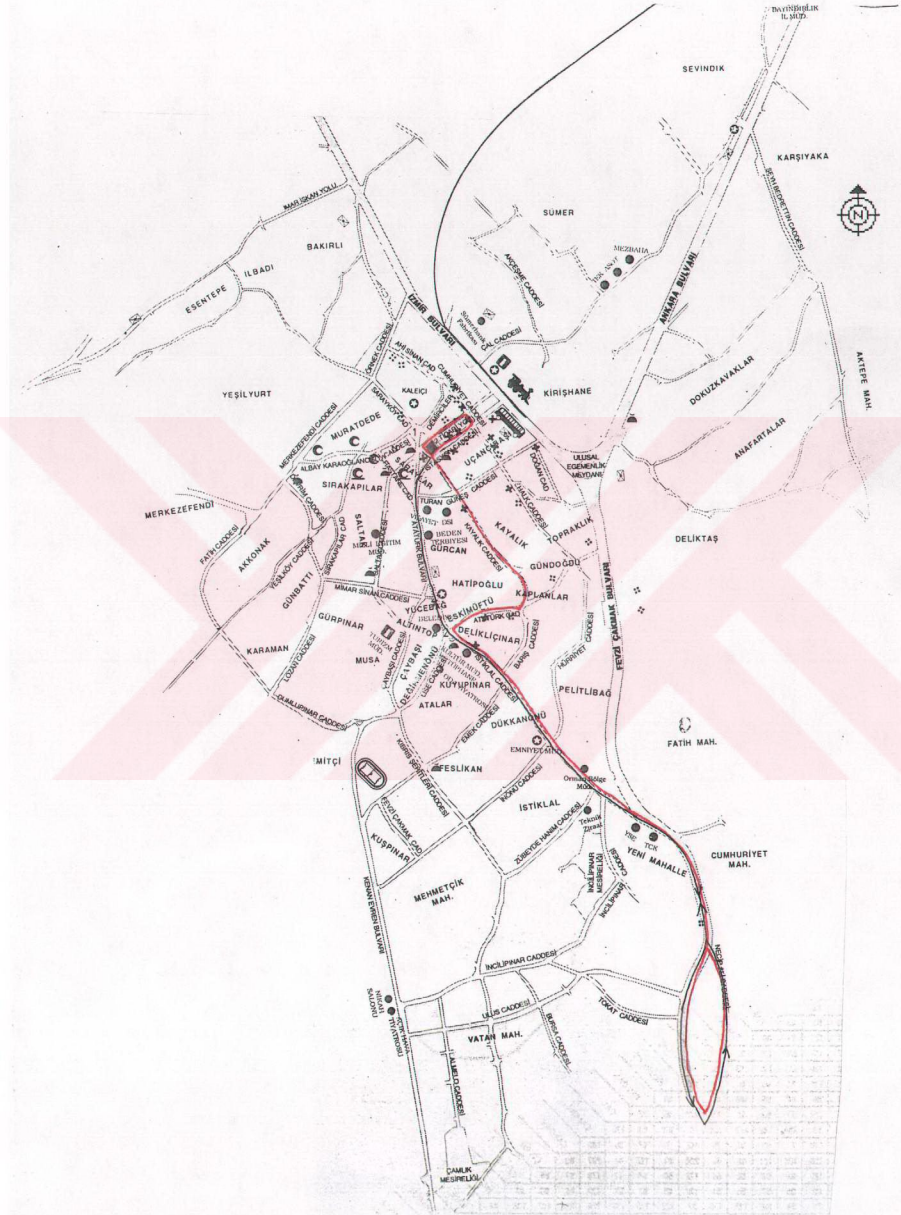
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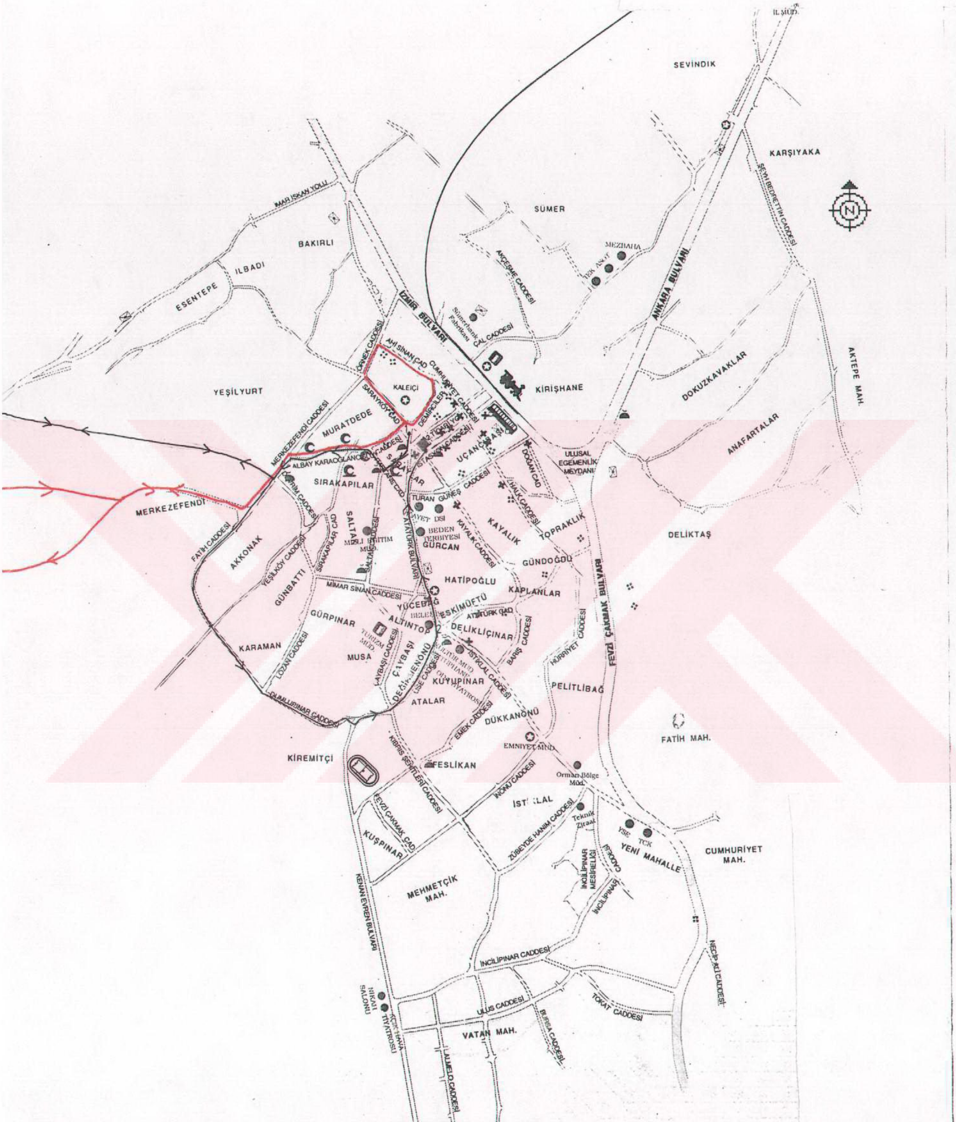
ÇAMLIK MESİRELİĞİ


İL MÜD.
SEVİNDİK
KARŞIYAKA
SEYİT BEDRETTİN CADDESİ
N
SÜMER
MEZBAHA
TEK. ASUF
AKÇEŞME CADDESİ
ANKARA BULVARI
İMAR İSKAN YOLU
BAKIRLI
İLBADI
ESENTEPE
İZMİR BULVARI
Sümerbank Fabrikası
ÇAL CADDESİ
AKTEPE MAH.
DOKUZKAVAKLAR
KİRİŞHANE
ÖRNEK CADDESİ
AHİ SİNAN CAD
CUMHURİYET CADDESİ
KALEİÇİ
YEŞİLYURT
SARAYKÖY CAD
DEMİRCİLER
MERKEZEFENDİ CADDESİ
MURATDEDE
2. TİCARİ YOL
ANAFARTALAR
İSTASYON CADDESİ
UÇANCIBAŞI
ULUSAL EGEMENLİK MEYDANI
ALBAY KARAOĞLANOĞLU CADDESİ
SARAYLAR
DOĞAN CAD
DEVRİM CADDESİ
SIRAKAPILAR
MERKEZEFENDİ
TURAN GÜNEŞ CADDESİ
HALK CADDESİ
DELİKTAŞ
DİYANET
DSİ
TOPRAKLIK
FATİH CADDESİ
SIRAKAPILAR CAD
SALTAK
BEDEN TERBİYESİ
KAYALIK
AKKONAK
MİLLİ EĞİTİM MÜD.
KAYALIK CADDESİ
GÜRCAN
YEŞİLKÖY CADDESİ
SALTAK CADDESİ
ATATÜRK BULVARI
GÜNDOĞDU
FEVZİ ÇAKMAK BULVARI
GÜNBATTI
HATİPOĞLU
KAPLANLAR
MİMAR SİNAN CADDESİ
YÜCEBAĞ
ESKİMÜFTÜ
BELEDİYE
ATATÜRK CAD
GÜRPINAR
ALTINTOP
DELİKLİÇINAR
TURİZM MÜD.
BARIŞ CADDESİ
HÜRRİYET CADDESİ
KARAMAN
LOZAN CADDESİ
ÇAYBAŞI CADDESİ
ÇAYBAŞI
DELİKLİÇINAR
KÜLTÜR MÜD.
KÜTÜPHANE
İSTİKLAL CADDESİ
MUSA
DENİZENÖNÜ
ÜSE CADDESİ
KUTUPINAR
ODA TİYATROSU
PELİTLİBAĞ
GUMUŞPINAR CADDESİ
ATALAR
EMEK CADDESİ
DÜKKANÖNÜ
FATİH MAH.
KİREMİTÇİ
KIBRIS ŞEHİTLERİ CADDESİ
EMNİYET MÜD.
FESLİKAN
Orman Bölge Müd.
İNÖNÜ CADDESİ
İSTİKLAL
FEVZİ ÇAKMAK CAD
Teknik Ziraat
ZÜBEYDE HANIM CADDESİ
YSE
TCK
KUŞPINAR
İNCİLİPINAR MESİRELİĞİ
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YENİ MAHALLE
CUMHURİYET MAH.
MEHMETÇİK MAH.
KENAN EVREN BULVARI
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NECİP ALİ CADDESİ
ULUS CADDESİ
TOKAT CADDESİ
HİKMET SALONU
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VATAN MAH.
LALELİ CADDESİ
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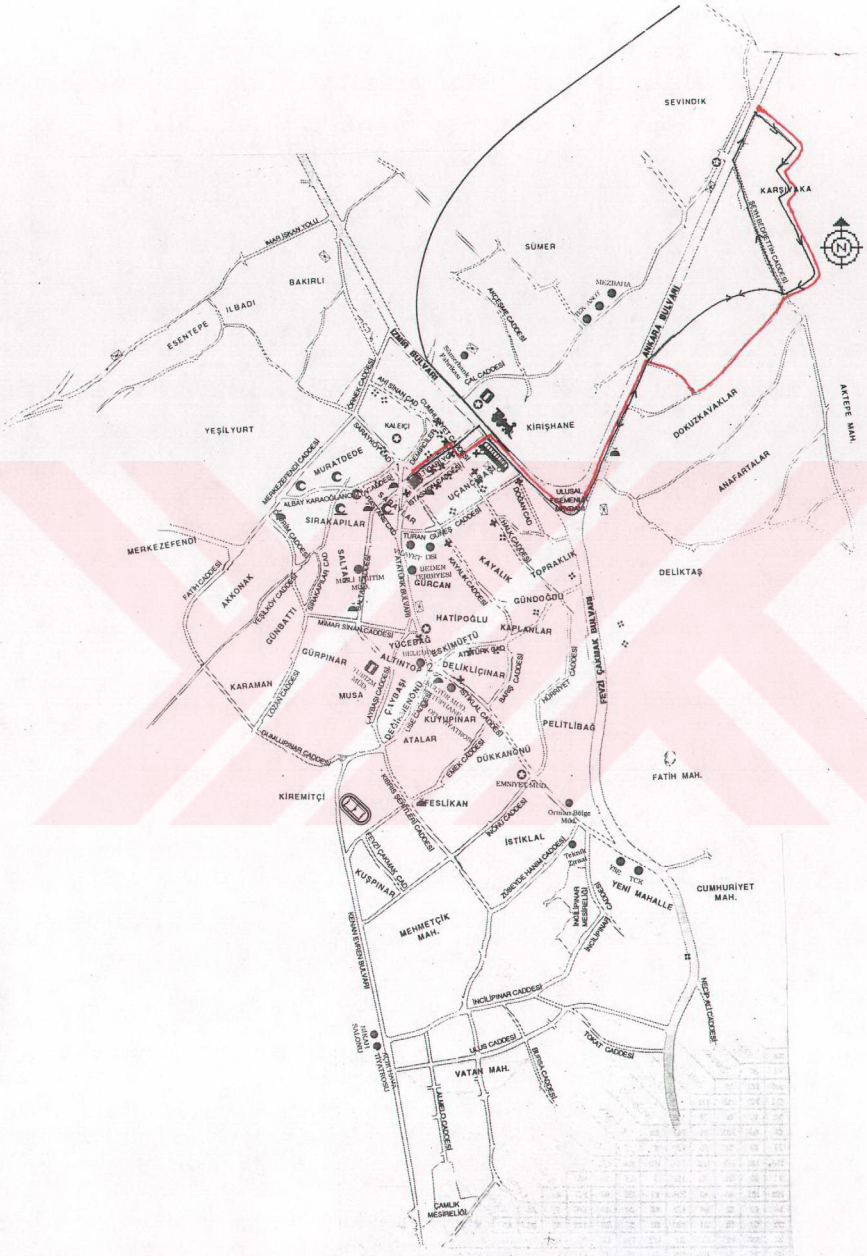
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YATAK MAH.
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ÖMER BULVARI
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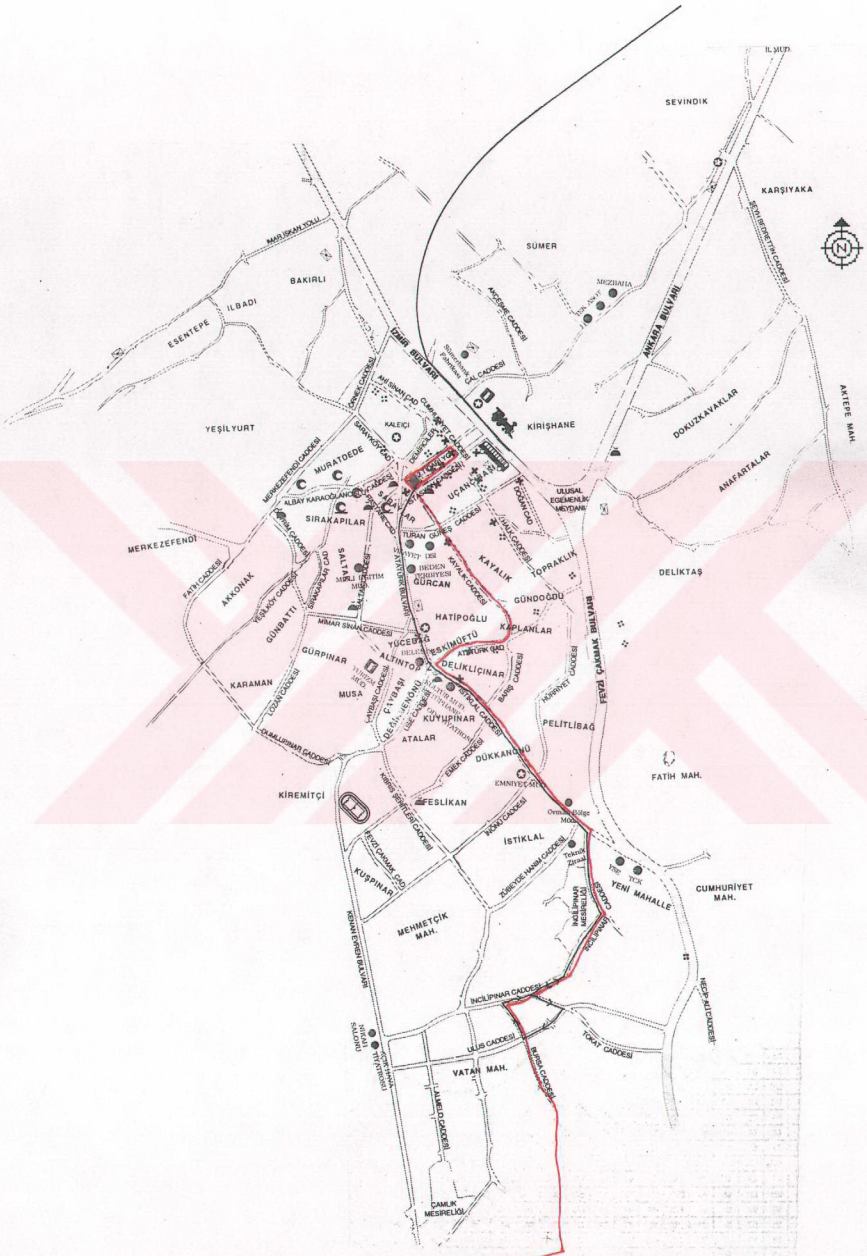
FEVZİ ÇAKMAK BULVARI
İNÖNÜ CADDESİ
İNÖNÜ SALONU


SEVİNDİK
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BURSA CADDESİ
ULUS CADDESİ
TOKAT CADDESİ
HECİ ALİ CADDESİ
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ATATÜRK CADDESİ
ESKİMÜFTÜ
ALTINTOP
MUSA
ÇAYBAŞI
ÇAYIRBAŞI
MEZBAHA
ULUSAL EGEMENLİK MEYDANI
MİLLİ İRADE MEYDANI
ŞEHİTLİK
İTFAİYE
SAĞLIK OCAĞI
POLİS MERKEZİ
Ormanköy Köyü
Teknik Direk
TSK
TOK
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SEVINDIK
KARŞIYAKA
SUMER
BAKIRLI
ILBADI
ESENTEPE
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KIRIŞHANE
DOKUZKAVAKLAR
AKTEPE MAH.
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VATAN MAH.
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İZMİR BÜYÜKŞEHİR BELEDİYESİ
ANKARA BULVARI
MEZİLAHA
İNCİLİPINAR CADDESİ
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