DELHI DEVELOPMENT AUTHORITY
(MASTER PLAN SECTION)

No. F.1(16)98-MP Dt. 4.9.98

Minutes of the Special Technical Committee meeting held on 18.8.98 at 10.00 A.M. in Conference Hall, 5th floor, Vikas Minar, I.P. Estate, New Delhi.

The following were present:-

DELHI DEVELOPMENT AUTHORITY:

1. Sh. P.K. Ghosh Vice Chairman (In chair)
2. Sh. Vijay Risbud, Commissioner (Plg.)
3. Sh. Pradeep Behari, Chief Architect
4. Sh. Chandra Ballabh, Addl. Commr.(AP)
5. Sh. K.K. Bandyopadhyay, Addl. Commr.(MPD)
6. Sh. A.K. Jain, Addl. Commr. (DC&B)
7. Smt. Savita Bhandari, Director (LS)

MUNICIPAL CORPORATION OF DELHI

8. Sh. D.D. Nayar, Chief Engineer-I
9. Sh. Sanjay Kumar Jain, Ex. Er.-XX

T.C.P.O.

10. Sh. K.T. Gurumukhi, Addl. Chief Planner

DELHI POLICE:

11. Sh. Ravinder Suri, A.C.P.(T)

C.P.W.D.

12. Sh. Rajiv Shanker

SPECIAL INVITEES:

13. Sh. K.B. Rajoria, Er.-in -Chief, PWD
14. Sh. P.S. Rana, Ex. Director (Inf.) HUDCO
15. Sh. B.I. Singal, Advisor, RITES
16. Sh. S.P. Banwait, Chief Engineer-I, PWD
17. Sh. A.K. Sarin, Director (P&I) PWD
18. Sh. Anand Prakash, Scientist, CRRI
19. Dr. G.Gangopadhyay, CRRI
20. Bh. D. Sanyal, Consultant, CRAPHTS
21. Sh. P.D. Gupta, G.A/RITES
22. Sh. Kant Chawla, Manager (T&T) RITES
23. Sh. S.K. Raj, UT/RITES
24. Sh. Abhay Hegi, UT/RITES
25. Sh. Abhijeet Samanta, UT/RITES

Vc Vikas Sadan

26. Sh. V.K. Sibal, G.G.M/RITES
27. Sh. B.V.M. Rao, J.G.M., UT/RITES
28. Sh. P.D. Gupta, RITES
29. Sh. Sushil Verma, RITES
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31. Sh. S.C. Karanwal, ACA-II, DDA
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37. Sh. S.C. Tayal, Director (MM), DDA
38. Sh. R.K. Jain, Joint Director (MP)
39. Sh. R.M. Lal, Joint Director (Plg.) (TT), DDA
40. Sh. P.K. Behera, Dy. Director (AP-II), DDA
41. Sh. H.S. Dhillon, Dy. Director (TT), DDA
42. Sh. Anand Prakash, A.D. (MP), DDA.

Item No.43/98

Sub : Corridor improvement plan of Outer Ring Road between Savitri Cinema 'T' Junction to Nehru Place Intersection integrating:

1. Grade Separator on Savitri Cinema 'T' Junction.

2. Grade Separator on Nehru Place intersection.

F.5(40)89-MP/Pt.I

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The proposal was introduced by Engineer-in-Chief and Chief Engineer, PWD, GNCTD which was followed by a detailed presentation by Sh. D.Sanyal, Consultant. After detailed discussion, Technical Committee agreed, in principle, with the concept subject to the following observations:-

i) In Phase-I, leftin and leftout movements may be allowed from Savitri Cinema road to Outer Ring Road and there will be free movement of straight traffic on Outer Ring Road on this 'T' Junction. The right turning traffic shall use the proposed link of 18m right of way road through Jahapanah forest. Approval of the Forest Deptt., GNCTD shall be taken for construction of the new road through Jahapanah forest. If required in the Phase-II, a 3 lane flyover on the southern arm of outer ring road could be taken, in this the right turning traffic would negotiate from below the flyover. The straight traffic on outer ring road going towards Nehru Place shall be segregated by a Channeliser in this junction, so that this movement also remains free.

ii) One lane for bus movoement shall be reserved on the flyover and at the surface level.

iii) Due to the very limited right of way available with continuous plotted development on both sides, it was felt that there was no scope for a dedicated cycle track along this road.

iv) A cantilever from the flyover on outer ring road may be used to optimise the availability of additional space of C/W at surface level.

v) Approval of DUAC and other concerned agencies may be obtained for the proposal.

contd.....2/-

Item No.44/98

Sub : Grade separator proposal on Ring Road and Africa Avenue intersection.

F.5(16)90-MP

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The proposal was introduced by Engineer-in-Chief and Chief Engineer, PWD, GNCTD which was followed by a detailed presentation by Sh.D.Sanyal, Consultant. After detailed discussion, Technical Committee agreed, in principle, with the concept with the following observations:-

i) The proposal may be supported by Traffic Management studies and planning inputs required at various junctions/interesections covering the influence area of about 1 km on all arms.

ii) Approval of DUAC and other concerned agencies may be obtained.

Item No.45/98

Sub : Grade Separator proposal on road no.13-A and NH-2, Sarita Vihar.

F.5(9)98-MP

The proposal was presented by the RITES. The Technical Committee after detailed discussion agreed, in principle, with the concept with the following observations:-

i) To achieve 5.5 mtr. clear height below the Railway Line as well as NH-2, if necessary the level of NH-2 (Mathura Road) may be raised.

ii) The possibility of linking road no.13-A with road no.13 (providing access to Okhla Industrial Estate) with Road under bridge having clear height of 5 mtr. be explored.

iii) A proper circulation plan for the proposed Non-hierarchy Commercial Centre, Jasola Resdl. Scheme, Sports Complex and Apollo Hospital may be worked out

iv) 2 loops for right turning movement from Mathura Road be developed in the first phase.

v) Proper road geometrics and i.e. length of the proposed loops be ensured.

vi) The clearance from MOST/National Highway Authority of India shall be required.

vii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated

Item No.46/98

Sub: Grade Separator proposal on Vikas Marg/Road No.57.

F.5(10)98-MP

M/s RITES, the consultant of the proposed grade separator at Vikas Marg and road no.57 made a detailed presentation of the proposal. The Technical Committee after detailed discussion decided that the proposal needs to be reviewed keeping in view the following observations:-

i) A Traffic Management Plan for the entire Vikas Marg (ITO) bridge to the proposed location of flyover) be worked out.

ii) Partial covering of drain no.1 running parallel to Road No.57 may also be considered for the improvement of traffic circulation.

iii) The proposal may also integrate entry and exit of proposed metropolitan passenger terminal, Anand Vihar.

iv) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.47/98

Sub : Grade Separator proposal on NH-24 NOIDA road mor.

F.5(11)98-MP

A detailed presentation was made by the Consultant of the project - M/s RITES. The Technical Committee after detailed discussion decided that the proposal requires working out alternatives in view of the following observations:-

i) This proposal needs to be framed keeping in view the circulation for the area along Patparganj-Mother Dairy Road and Bundh Road.

ii) Flyover along with Marginal Bundh Road was agreed in principle.

iii) The development of Marginal Bundh Road (from ITO Bridge to Nizamuddin Bridge) shall be taken up by PWD on priority so that the grade separator can be connected with the Road.

iv) 2 loops for right turning traffic from NH-24 byepass shall be taken up in first phase.

v) Proper road geometrics and i.e. weiving length between the proposed loops be ensured.

vi) The proposal may also be examined with reference to the approved alignment plan of proposed IL&FS (NOIDA) Bridge.

vii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution

Item No.48/98

Sub : Grade Separator proposal on Wazirabad Road & Road No.66.

F.5(14)98-MP

RITES, the consultant of the grade separator made a detailed presentation. The Technical Committee after detailed discussion suggested the consultant to review/revise the proposal keeping in view the following:-

i) The proposal of improvement of this intersection may be worked out keeping in view the earlier proposal of improvement of Wazirabad Road. The trumpet solutions may be examained for the intersection design.

ii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.49/98

Sub : Proposed grade separator on Najafgarh road - Outer Ring Road junction adjacent to Janakpuri District Centre.

F.5(61)87-MP

Introducing the proposal, the representative of MCD explained that this flyover is to be taken up by the MCD. Two alternatives were presented, of which Technical Committee agreed, in principle, with alternative no.2, which has proposed bulbs on 2 arms, one on Najafgarh and other on outer ring road so as to allow free flow of traffic on the two roads whereas right hand turning traffic is handled by the proposed bulbs. It was also agreed to close entry of through traffic into Janakpuri residential area from Outer Ring Road. Technical Committee suggested that the proposal may be finalised keeping in view the feasibility and availability of land at the site.

Approval of DUAC & concerned agencies may be obtained by MCD.

(A.K.JAIN)
ADDL.COMMR.(DC&B)

F.1(1)98-MP

Copy to:

1. OSD to VC for information of the latter.
2. Engineer Member
3. Principal Commissioner
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5. Commissioner (LD), DDA
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17. Chief Engineer (Plg.) DVB
18. Director (Landscape)
19. Secretary to Lt.Governer

(R.K.JAIN)
JOINT DIRECTOR (MP)

DELHI DEVELOPMENT AUTHORITY
(MASTER PLAN SECTION)

No. F.1(16)98-MP Dt. 4.9.98

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O/C Vikas minar

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F.5(40)89-MP/Pt.I

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Item No.44/98

Sub : Grade separator proposal on Ring Road and Africa Avenue intersection.

F.5(16)90-MP

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Item No.47/98

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(R.K.JAIN)
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iv) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.47/98

Sub : Grade Separator proposal on NH-24 NOIDA road mor.

F.5(11)98-MP

A detailed presentation was made by the Consultant of the project - M/s RITES. The Technical Committee after detailed discussion decided that the proposal requires working out alternatives in view of the following observations:-

i) This proposal needs to be framed keeping in view the circulation for the area along Patparganj-Mother Dairy Road and Bundh Road.

ii) Flyover along with Marginal Bundh Road was agreed in principle.

iii) The development of Marginal Bundh Road (from ITO Bridge to Nizamuddin Bridge) shall be taken up by PWD on priority so that the grade separator can be connected with the Road.

iv) 2 loops for right turning traffic from NH-24 byepass shall be taken up in first phase.

v) Proper road geometrics and i.e. weiving length between the proposed loops be ensured.

vi) The proposal may also be examined with reference to the approved alignment plan of proposed IL&FS (NOIDA) Bridge.

vii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.48/98

Sub : Grade Separator proposal on Wazirabad Road & Road No.66.

F.5(14)98-MP

RITES, the consultant of the grade separator made a detailed presentation. The Technical Committee after detailed discussion suggested the consultant to review/revise the proposal keeping in view the following:-

i) The proposal of improvement of this intersection may be worked out keeping in view the earlier proposal of improvement of Wazirabad Road. The trumpet solutions may be examained for the inter-section design.

ii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.49/98

Sub : Proposed grade separator on Najafgarh road - Outer Ring Road junction adjacent to Janakpuri District Centre.

F.5(61)87-MP

Introducing the proposal, the representative of MCD explained that this flyover is to be taken up by the MCD. Two alternatives were presented, of which Technical Committee agreed, in principle, with alternative no.2, which has proposed bulbs on 2 arms, one on Najafgarh and other on outer ring road so as to allow free flow of traffic on the two roads whereas right hand turning traffic is handled by the proposed bulbs. It was also agreed to close entry of through traffic into Janakpuri residential area from Outer Ring Road. Technical Committee suggested that the proposal may be finalised keeping in view the feasibility and availability of land at the site.

Approval of DUAC & concerned agencies may be obtained by MCD.

(A.K.JAIN)
ADDL.COMMR.(DC&B)

F.1(16)98-MP

Dated : 4.9.98

Copy to:

1. OSD to VC for information of the latter.
2. Engineer Member
3. Principal Commissioner
4. Commissioner (Planning), DDA
5. Commissioner (LD), DDA
6. Commissioner (LM), DDA
7. Chief Architect ,DDA
8. Addl. Commissioner (MPD)
9. Addl. Commissioner (AP) DDA
10. Chief Planner, TCPO
11. Chief Architect, NDMC
12. Town Planner, MCD
13. Secretary,DUAC
14. Land & Development Officer,MOUAE
15. Sr. Architect, (H & TP) CPWD
16. Dy. Commissioner of Police (T)
17. Chief Engineer (Plg.) DVB
18. Director (Landscape)
19. Secretary to Lt.Governer

4/9/98

(R.K.JAIN)
JOINT DIRECTOR (MP)

DELHI DEVELOPMENT AUTHORITY
(MASTER PLAN SECTION)

No. F.1(16)98-MP Dt.18.8.98

Minutes of the Special Technical Committee meeting held on 18.8.98 at 10.00 A.M. in Conference Hall, 5th floor, Vikas Minar, I.P. Estate, New Delhi.

The following were present:-

DELHI DEVELOPMENT AUTHORITY:

1. Sh. P.K. Ghosh Vice Chairman (In chair)
2. Sh. Vijay Risbud, Commissioner (Plg.)
3. Sh. Pradeep Behari, Chief Architect
4. Sh. Chandra Ballabh, Addl. Commr.(AP)
5. Sh. K.K. Bandyopadhyay, Addl. Commr.(MPD)
6. Sh. A.K. Jain, Addl. Commr. (DC&B)
7. Smt. Savita Bhandari, Director (LS)

MUNICIPAL CORPORATION OF DELHI

8. Sh. D.D. Nayar, Chief Engineer-I
9. Sh. Sanjay Kumar Jain, Ex. Er.-XX

T.C.P.O.

10. Sh. K.T. Gurumukhi, Addl. Chief Planner

DELHI POLICE:

11. Sh. Ravinder Suri, A.C.P.(T)

C.P.W.D.

12. Sh. Rajiv Shanker

SPECIAL INVITEES:

13. Sh. K.B. Rajoria, Er.-in -Chief, PWD
14. Sh. P.S. Rana, Ex. Director (Inf.) HUDCO
15. Sh. B.I. Singal, Advisor, RITES
16. Sh. S.P. Banwait, Chief Engineer-I, PWD
17. Sh. A.K. Sarin, Director (P&I) PWD
18. Sh. Anand Prakash, Scientist, CRRI
19. Dr. G.Gangopadhyay, CRRI
20. Sh. D. Sanyal, Consultant, CRAPHTS
21. Sh. P.D. Gupta, G.A/RITES
22. Sh. Kant Chawla, Manager (T&T) RITES
23. Sh. S.K. Rai, UT/RITES
24. Sh. Abhay Negi, UT/RITES
25. Sh. Abhijeet Samanta, UT/RITES

Contd....2/-

26. Sh. V.K. Sibal, G.G.M/RITES
27. Sh. B.V.M. Rao, J.G.M., UT/RITES
28. Sh. P.D. Gupta, RITES
29. Sh. Sushil Verma, RITES
30. Sh. B.L. Khurana, CE(Elect.), DDA
31. Sh. S.C. Karanwal, ACA-II, DDA
32. Sh. Prakash Narain, Director (TT), DDA
33. Dr. S.P. Bansal, Director (ZP), DDA
34. Sh. S. Srivastva, Director (PPI), DDA
35. Sh. D.K. Saluja, Director (AP-II), DDA
36. Sh. K.L. Sabharwal, Director (Plg.) N.P.DDA
37. Sh. S.C. Tayal, Director (MM), DDA
38. Sh. R.K. Jain, Joint Director (MP)
39. Sh. R.M. Lal, Joint Director (Plg.)(TT), DDA
40. Sh. P.K. Behera, Dy. Director (AP-II), DDA
41. Sh. H.S. Dhillon, Dy. Director (TT), DDA
42. Sh. Anand Prakash, A.D.(MP), DDA.

Item No.43/98

Sub : Corridor improvement plan of Outer Ring Road between Savitri Cinema 'T' Junction to Nehru Place Intersection integrating:

1. Grade Separator on Savitri Cinema 'T' Junction.

2. Grade Separator on Nehru Place intersection.

F.5(40)89-MP/Pt.I

-.-.-.-.-.-

The proposal was introduced by Engineer-in-Chief and Chief Engineer, PWD, GNCTD which was followed by a detailed presentation by Sh. D.Sanyal, Consultant. After detailed discussion, Technical Committee agreed, in principle, with the concept subject to the following observations:-

i) In Phase-I, leftin and leftout movements may be allowed from Savitri Cinema road to Outer Ring Road and there will be free movement of straight traffic on Outer Ring Road on this 'T' Junction. The right turning traffic shall use the proposed link of 18m right of way road through Jahapanah forest. Approval of the Forest Deptt., GNCTD shall be taken for construction of the new road through Jahapanah forest. If required in the Phase-II, a 3 lane flyover on the southern arm of outer ring road could be taken, in this the right turning traffic would negotiate from below the flyover. The straight traffic on outer ring road going towards Nehru Place shall be segregated by a Channeliser in this junction, so that this movement also remains free.

ii) One lane for bus movoement shall be reserved on the flyover and at the surface level.

iii) Due to the very limited right of way available with continuous plotted development on both sides, it was felt that there was no scope for a dedicated cycle track along this road.

iv) A cantilever from the flyover on outer ring road may be used to optimise the availability of additional space of C/W at surface level.

v) Approval of DUAC and other concerned agencies may be obtained for the proposal.

contd.....2/-

Item No.44/98

Sub : Grade separator proposal on Ring Road and Africa Avenue intersection.

F.5(16)90-MP

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The proposal was introduced by Engineer-in-Chief and Chief Engineer, PWD, GNCTD which was followed by a detailed presentation by Sh.D.Sanyal, Consultant. After detailed discussion, Technical Committee agreed, in principle, with the concept with the following observations:-

i) The proposal may be supported by Traffic Management studies and planning inputs required at various junctions/interesections covering the influence area of about 1 km on all arms.

ii) Approval of DUAC and other concerned agencies may be obtained.

Item No.45/98

Sub : Grade Separator proposal on road no.13-A and NH-2, Sarita Vihar.

F.5(9)98-MP

The proposal was presented by the RITES. The Technical Committee after detailed discussion agreed, in principle, with the concept with the following observations:-

i) To achieve 5.5 mtr. clear height below the Railway Line as well as NH-2, if necessary the level of NH-2 (Mathura Road) may be raised.

ii) The possibility of linking road no.13-A with road no.13 (providing access to Okhla Industrial Estate) with Road under bridge having clear height of 5 mtr. be explored.

iii) A proper circulation plan for the proposed Non-hierarchy Commercial Centre, Jasola Resdl. Scheme, Sports Complex and Apollo Hospital may be worked out

iv) 2 loops for right turning movement from Mathura Road be developed in the first phase.

v) Proper road geometrics and i.e. length of the proposed loops be ensured.

vi) The clearance from MOST/National Highway Authority of India shall be required.

vii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

contd..../3-

Item No.46/98

Sub: Grade Separator proposal on Vikas Marg/Road No.57.
F.5(10)98-MP

M/s RITES, the consultant of the proposed grade separator at Vikas Marg and road no.57 made a detailed presentation of the proposal. The Technical Committee after detailed discussion decided that the proposal needs to be reviewed keeping in view the following observations:-

i) A Traffic Management Plan for the entire Vikas Marg (ITO) bridge to the proposed location of flyover) be worked out.

ii) Partial covering of drain no.1 running parallel to Road No.57 may also be considered for the improvement of traffic circulation.

iii) The proposal may also integrate entry and exit of proposed metropolitan passenger terminal, Anand Vihar.

iv) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.47/98

Sub : Grade Separator proposal on NH-24 NOIDA road mor.
F.5(11)98-MP

A detailed presentation was made by the Consultant of the project - M/s RITES. The Technical Committee after detailed discussion decided that the proposal requires working out alternatives in view of the following observations:-

i) This proposal needs to be framed keeping in view the circulation for the area along Patparganj-Mother Dairy Road and Bundh Road.

ii) Flyover along with Marginal Bundh Road was agreed in principle.

iii) The development of Marginal Bundh Road (from ITO Bridge to Nizamuddin Bridge) shall be taken up by PWD on priority so that the grade separator can be connected with the Road.

iv) 2 loops for right turning traffic from NH-24 byepass shall be taken up in first phase.

v) Proper road geometrics and i.e. weiving length between the proposed loops be ensured.

vi) The proposal may also be examined with reference to the approved alignment plan of proposed IL&FS (NOIDA) Bridge.

vii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.48/98

Sub : Grade Separator proposal on Wazirabad Road & Road No.66.

F.5(14)98-MP

RITES, the consultant of the grade separator made a detailed presentation. The Technical Committee after detailed discussion suggested the consultant to review/revise the proposal keeping in view the following:-

i) The proposal of improvement of this intersection may be worked out keeping in view the earlier proposal of improvement of Wazirabad Road. The trumpet solutions may be examained for the inter-section design.

ii) While working out the details, the directions of Supreme Court vis-a-vis reducing pollution in Delhi and also the Action Plan circulated by the Central Pollution Control Board may be duly considered.

Item No.49/98

Sub : Proposed grade separator on Najafgarh road - Outer Ring Road junction adjacent to Janakpuri District Centre.

F.5(61)87-MP

Introducing the proposal, the representative of MCD explained that this flyover is to be taken up by the MCD. Two alternatives were presented, of which Technical Committee agreed, in principle, with alternative no.2, which has proposed bulbs on 2 arms, one on Najafgarh and other on outer ring road so as to allow free flow of traffic on the two roads whereas right hand turning traffic is handled by the proposed bulbs. It was also agreed to close entry of through traffic into Janakpuri residential area from Outer Ring Road. Technical Committee suggested that the proposal may be finalised keeping in view the feasibility and availability of land at the site.

Approval of DUAC & concerned agencies may be obtained by MCD.

MOST URGENT

OUT TODAY

DELHI DEVELOPMENT AUTHORITY
(MASTER PLAN SECTION)

F.1(1)98-MP/ Dated 17.8.1998

MEETING NOTICE

A special meeting of the Technical Committee of the DDA will be held under the chairmanship of the VC, DDA on 18.8.98 at 10.00 AM in the Conference Hall, 5th Floor, Vikas Minar, I.P.Estate, New Delhi.

The agenda includes the proposals of flyovers which will be laid on table. It is requested to kindly make it convenient to attend the meeting.

(A.K. JAIN)
ADDL. COMMR. (DC&B)
MEMBER SECRETARY
Ph. Off.3311416
Res.6492237

I N D E X

Subject : Corridor Improvement Plan of Outer Ring Road between Savitri Cinema 'T' Junction to Nehru Place Intersection integrating :

i) Grade Separator on Savitri Cinema 'T' Junction.

ii) Grade Separator on Nehru Place Intersection.

File No.: F.5(40)89 MP. Part I

****

1. INTRODUCTION

Savitri Cinema 'T' junction & Nehru Place intersection on the southern tangent of Outer Ring Road are amongst the 15 locations identified for construction of grade separators as decided in the meeting under hon'ble LG, Delhi on 13/5/98. Grade Separator at the above two locations are to be constructed by PWD, GNCTD. M/s. CRAPHTS have been retained as Consultants for these projects by PWD. The objective of grade separation at these two locations is to have uninterrupted flow of straight traffic on Outer Ring Road between Savitri Cinema 'T' junction to Modi Flour Mills Flyover by treating the smaller junction in between in this package by Traffic Management measures All the details mentioned in this agenda are based on the proposal submitted by consultant

Location Plan is placed as Annexure-I.

2. EXISTING TRAFFIC CHARACTERISTICS

The study stretch extends from Nehru Place intersection in the east to Savitri Cinema intersection in the west. However, the influence area extends upto the Modi Flyover in the east and Chiragh Delhi intersection an the west.

Traffic surveys were carried out by CRAPHTS at in the five intersections for 24 hrs. in three shifts on average working days. The survey had to be carried out on different days at different locations in view of the large number of intersections that appear on this stretch. This warranted certain statistical distribution of differences in traffic volume figures arising out of surveys being carried out on different days. However, the difference was not more than 1.5% in any case as dated in the report. Morning and evening peak hour traffic flow diagrams at the intersections alongwith the volume of cross pedestrian traffic during the same hour an as placed as Annexures II to V. Summary findings from traffic surveys are as follows:

Sl. No.	Intersection	Peak hour traffic volume (PCU)	
		Morning	Evening
i.	Nehru Place intersection.	9611	9074
ii.	Nehru Apartment intersection	6389	6986
iii.	G.I.I intersection	7013	7561
iv.	C.R. Park intersection	5896	7067
v.	Savitri Cinema intersection	7561	8632

Evening peak hour traffic volumes are higher than the same during the morning peak hour at all locations except at Nehru Place intersection where the A.M. Peak exceeds the P.M. peak by little less than 600 PCU's. In order to maintain consistency in designing the entire stretch as a continuous corridor, evening peak hour traffic volumes have been considered for forecasting purposes.

Pedestrian volumes crossing the approach arms to the various intersections re significant in the case of Nehru Place intersection followed by Savitri Cinema intersection. Heaviest volume of cross pedestrian traffic is observed at the opening in the service road near paras Theatre (across Outer Ring Road). The reason for such heavy pedestrian volume (nearly 1200 in peak hour) at this location is that commuters travelling by chartered buses use this portion for boarding/alighting the buses.

The idling chartered buses consume one complete lane of the carriage way (often on both sides), thus considerably reducing the capacity of the Outer Ring in this portion.

All the intersections over the study stretch are controlled by automatic traffic signals at present. The cycle times at the three major intersections vary between 135 to 165 sec. with an average waiting time of 75 sec.

3. TRAFFIC FORECASTS

3.1 Nehru Place Intersection

Of the present intersection volume of nearly 9000 PCU's during the peak hour at Nehru Place intersection, nearly 1500 PCU's has been diverted to this intersection with the commissioning of the ROB-22. In order to project this traffic to the design year of 2021 A.D. (assuming that any major traffic improvement scheme would probably be logical to imagine that the traffic contributed by the opening of ROB 22 and the traffic attracted by Nehru Place would escalate at different rates. Nehru Place is nearly all built up. This intersection, was handling a peak hour traffic volume of 7255 PCU's during A.M. peak and 6721 PCU during evening peak in 1990. During the intervening period several towers and complexes have come up at Nehru Place and this activity has stabilised since 1995. Growth rate in traffic is caused by a District Centre by relating floor space to traffic generated. The CRAPHTS has the datas for floor space at Nehru Place.

Through the studies carried out by the CRAPHTS, it has been found that city/intercity traffic is now increasing at the rate of 2.5-5 percent per annum (simple) with the higher percentage of growth being observed along direct axis to trans Yamuna areas.Keeping in view this trend as also the likely developments for Road 13A and NOIDA bridge, a lower bound growth rate of 3.00 percent p.a. (simple) is assumed for the traffic coming to Nehru Place intersection through ROB-22.

Following the assumptions as stated above the design peak hour traffic volume (2021 A.D.) at Nehru Place intersection has been estimated as 11,760 PCUs (say 12,000 PCU's. Possible directional split of this traffic at Nehru Place intersection is shown in Annexure IV.

It may be seen that the straight component of traffic along H.R. Sethi Marg is

expected to be or the order of 2150 PCUs. While that along the Outer Ring Road is expected to be of the order of 4660 PCU's by the design year.

3.2 **Savitri Cinema Intersection**

The intersection at Savitri Cinema used to cater to 7484 PCU's of traffic during 1990 (P.M. peak). It is now found to cater to an evening peak hour traffic volume of 8632 PCU's. The growth factor that could be extracted out of this works out to be 1.9 percent p.a. (simple). Development of residential activities (also commercial activities) have largely stabilised within the influence area of this intersection. The growth rate of increases in traffic volume would stabilise around 1.5% p.a. as observed at other similar places in Delhi (peripheral areas).

4. PROPOSED GRADE SEPARATOR PROPOSALS & IMPROVEMENT SCHEMES

4.1 **Nehru Place Intersection**

The capacity of Nehru Place intersection had been exceeded in 1990 itself. With 45m R.O.W. along Outer Ring Road and 30m R.O.W. along H.R. Sethi Marg it would not be possible to bring about very significant augmentation of intersection capacity at this location through at grade treatments alone.

The Outer Ring Road, as major arterial should offer a higher level of service and as such, this corridor enjoys priority over H.R. Sethi Marg in terms of improvements. It must be noted in this context that removal of chartered buses from this segment of Outer Ring Road will definitely increase the capacity of the mid block but that, in no way, is going to increase the capacity of the intersection very significantly. Three quadrants at this intersection are heavily built up while the fourth quadrant (south-eastern) has an open playground.

Straight flyover along Outer Ring Road/s the feasible solution that could be implemented here. Because of the existing levels along the Outer Ring Road an overpass (flyover) will have the added advantage of a shorter ramp towards the eastern side of the intersection.

In view of heavy movement of cross pedestrian traffic near Paras Theatre, a pedestrian subway has been proposed at this location. An immediate alternative location for shifting idling of chartered buses has been indicated along the service road on the southern flank of Outer Ring Road over this segment.

The intersection at DTC terminal has been proposed to be improved as a well designed traffic rotary. This would necessitate acquisition of land from the DDA (open spaces). Details of the proposal are shown in Drg. Nos. CRTS/PWD/FP/ORR/001&002.

Details of the flyover are given in Annexure VI.

4.2 **Savitri Cinema Intersection**

Located at a distance of 400m due east from the starting point of the eastern ramp of Chiragh Delhi Flyover, the Savitri Cinema intersections a major bottleneck along the Outer Ring Road. The peak hour traffic flow diagram clearly indicates a very heavy proportion of high turning traffic at this location.

Improvement in efficiency of traffic operation between Chiragh Delhi flyover and Nehru Place would warrant closure of the intersections between Savitri Cinema and Nehru Place (in all) that will bring about a certain degree of severance effect. However, the internal roads in these colonies (G.K.I, C.R. park and G.K.II) can very well be used for the circulation of the internal traffic which could finally find access to Kalkaji Marg on one side and the road to Alaknanda on the other (particularly for traffic wanting to turn right at any of the three intersections).

More specifically the following type of traffic circulation is being contemplated at each of the three locations.

4.3 **Road to Nehru Apartments**

Closure of this intersection on Outer Ring Road will warrant traffic turning right from the road to Nehru Apartments to nehru Place side to take one of the several roads leading to Kalkaji Marg and reach Nehru Place. The total diversion to Kalkaji Marg on this account would be 400 p.c.u. during the p.m. peak by the design year. Traffic turning right from Chiragh Delhi side to Nehru Apartments side will go upto Nehru Place intersection and take 'U' turns at surface level to reach the various colonies. During the design year, the p.m. peak will see nearly 1350 p.c.u. going upto Nehru Place intersection on this account.

4.4 **G.K.II Intersection**

Closure of right turn from G.K.I to Chiragh Delhi side will result in two different route choice options depending on origin-dotination characteristics of traffic. One stream may choose to turn left on Outer Ring Road to reach Nehru Place for a 'U' turn for finally going towards Nehru Apartments. The other stream may choose the road adjacent to Archna Cinema for reaching J.B. Tito Marg for onward movement to Chiragh Delhi side. The total volume of traffic so affected by the design year (p.m. peak) would be of the order of 1000 p.c.u.

Traffic from Nehru Place side wanting to turn right into G.K. I (particularly the component coming out of the road to Nehru Apartments and wanting to go to G.K.I) will have to make use of the Nehru Place intersection (accessing Kalkaji Marg) and enter G.K. I through Santnagar intersection on Kalkaji Marg. The total volume of traffic so affected furing design year p.m. peak would be of the order of 400 p.c.u.

4.5 **Road to C.R. Park**

On closure of this intersection on Outer Ring Road, traffic coming from Chiragh Delhi side and turning right into C.R. Park will stand diverted to the road to Alaknanda from where it could be distributed to C.R. Park. The total volume of traffic so diverted during design year p.m. peak would be of the order of 550 p.c.u.

Traffic turning right from the road to C.R. park onto the Outer Ring Road (going towards Nehru Place) would be distributed partly to the road to Alaknanda and partly through Bipin Chandra Pal Avenue. The total traffic so affected so affected would be of the order of 700 p.c.u. during the design year peak hour.

4.6 **Alternative proposals for Savitri 'T' junction are as follows:**

4.6.1 **Alt. I - Straight flyover**

The alternative considers provision of a straight flyover along the Outer Ring Road. At an approach slope of 1 in 30 and with a clear head room of 5.5m, the ramp towards Chiragh Delhi extends through a distance of 218 m leaving a clear distance of 175m between the starting point of eastern approach to Chiragh Delhi flyover and starting point of western approach to proposed Savitri Cinema flyover.

A straight flyover would have a signalized intersection at surface level and thus, would not warrant any change in the area traffic circulation pattern. The distance between the starting of the eastern approach to the flyover at Savitri Cinema and the western approach to the flyover at Nehru Place works to be 550m and this is adequate to accommodate the weaving movements and would absorb the roller-coaster effect that might otherwise be caused by two closely spaced flyover.

The details of the plan are shown in Drg. Nos. CRTS/PWD/FP/ORR/004.

4.6.2 **Alt.II - Oneway elevated right turning ramp**

In this option a one way elevated right turning ramp with vertical clearance of 5.00m and approach slope of 1 in 25 (approach length 168m towards Chiragh Delhi) has been proposed. The ramp is proposed to be 2 lane wide as otherwise surface level movements cannot be managed on the road to Alaknanda (it may please be noted that provision of underpass is ruled out in this area because the road to Alaknanda steeply slopes towards the intersection and it very frequently works as a drain during the monsoon).

This option also envisages closure of the surface level intersection resulting in uninterrupted movement for straight traffic along Outer Ring Road and traffic turning right from Chiragh Delhi side to Alaknanda side.

This scheme will necessitate closure of right turn at the intersection adjacent to Savitri Cinema Complex towards south (on the road to Alaknanda). Even presently, right turn is closed at this location. Traffic from Alaknanda side wanting to turn right to Nehru Place side will actually take a left turn at Savitri Cinema intersection and take 'U' turn under Chiragh Delhi flyover to proceed towards Nehru Place under this option.

The elevated ramp will have to cater to nearly 2300 PCU's. during the design year p.m. peak. The details of the scheme are shown in Drg. No.CTTS/PWD/FP/ORR/004A.

4.6.3 **Alt.III - Closure of Savitri Cinema Intersection without the Provision of Flyover**
The provision of any flyover

Uninterrupted movement for straight traffic at Savitri Cinema intersection could be ensured through closure of the intersection as well. However, this would warrant the introduction of a satisfactory circulation system particularly for the traffic turning right at this intersection from Chiragh Delhi side to Alaknanda side. One of the ways of reducing the traffic load at Savitri Cinema intersection would be to divert the right turning component from Chiragh Delhi intersection itself to L.B.

Shastri Marg towards Saket. The intersection leading to Saket is a 'T' intersection. Very close to the intersection and, through Jhanapanah Forest there is an existing track that leads straight to the road leading to Alaknanda. Scooters, motorcycles, cycles and pedestrians use this road for reaching the road leading to Alaknanda from L.B Shastri Marg along this through punctures in the boundary wall of Jahnpanah Forest Annexure V shows the peak hour traffic flow diagram for Lal Bahadur Shastri Marg Road to Saket intersection.

If this road could be developed and merged with the intersection of L.B. Shastri Marg. This could provide a viable link for the traffic moving from Chiragh Delhi side to Alaknanda side. This will necessitate improvements to the intersection of L.B. Shastri Marg with the road to Saket (to be converted into a four arm intersection) as shown in Drg. No.CRTS/PWD/FP/ORR/006. The overall traffic circulation scheme with closure of median at Savitri Cinema is shown in Drg. No.CRTS/PWD/FP/ORR/004b.

5. ENVIRONMENTAL IMPACTS

Environmental Impact Assessment (EIA) could be described as the assessment of environmental consequences or impact of proposed projects or activities which could be positive or negative. A broad assessment of impact on the various attributes associated with the proposed project have been made without detailing out the various steps involved in an EIA study.

Broadly, the impacts are described as follows:

The impact on topography would be negative beyond Nehru Place intersection towards west and at Savitri Cinema intersection as the grade separators at these locations would intrude the urban landscape.

The impact on air quality on commmissioning of proposed grade separator would be significant and positive as the pollution load due to idling of vehicles at the signals for the entire stretch would be reduced.

The savings in travel time and vehicle operating cost due to improved level of service of the study stretch of Outer Ring Road would have positive impact.

Visual intrusion caused by overhead structures would have negative impact on aesthetics. However, the overall planning philosophy duly takes into consideration this aspect.

Provision of grade separator along the study stretch would eliminate all lower gear movements and would reduce the idling of vehicles, which will ultimately decrease the noise levels. Thus the impact will be positive.

Approximately 29 trees of varying girth and species will be affected through provision of flyover at Nehru Place intersection. Fresh plantation in the delineated pockets (as shown in the layout plan) could be organised on time bound basis for balancing the affected trees.

i. There are three signalised junctions between Savitri Cinema and Nehru Place which have considerable right turning traffic. R/W of these roads vary between 13.5 M to 24 M. Once these junctions are closed and used for leftin - left out movements then the entire right during traffic has to negotiate a 'U' turn below the flyover, as the layout roads have hardly any capacity to accomodate right turning movements. All these three junctions were closed but have been opened up recently by the traffic police to case out right turning movements.

ii. The road to G.K.II from Savitri Cinema junction has a R/W of only 24M, any grade separator falling on this read will hardly lead any scope for local and pedestrian movement due to the entry/exits from the plots abutting this road.

iii. The right turning movement on Savitri junction is to the order of 1771 PCUs in the evening peak which is very high. This could be reduced by having the proposed link of the G.K.-II with Madangir Road through Jahapanah Forest. With this proposed link, the right turning movements may ease out but this is also likely to attract through traffic of Outer Ring Road within the residential area. Height barrier could be put up at the entrance of this road on either side to avoid entry of heavy vehicle. The proposed link for Jahapanah Forest would also have to approve by the Forest Deptt. GNCTD as it will involve cuttings of some trees also.

iv. Alternative proposal with non-conventional flyover of low height for light & medium vehicle which constitute nearly 70% of total vehicle should be studied in view of the large number fully grown rare species of trees required to be cut at Nehru Place Intersection flyover proposal.

v. The consultant has not mentioned about the cycle traffic along this corridor, however a separate cycle may not be feasible due to the limited R/W of this road with continuous plotted developments on either sides.

vi. Circulation proposal beyond the Nehru Place intersection upto the Modi flyover may be examined by the consultants in the light of studies made earlier by M/s. Gillson consultants and thereafter suggest corridor improvement plan accordingly.

vii. Recened bus bays at the stops have only partially be shown by the consultants and not the entire corridor plan. These are necessarily to be seen in relation to the level difference between service road on outer ring road on certain points.

viii. Traffic Management Plan during implementation of Flyover has to be submitted.

ix. Feasibility report with regards to U/G - O/H services affected in the proposal needs to be studied and discussed with WSSDU.

x. The detail Flyover Proposal after finalisation with urban design and landscape scheme with model shall be submitted to DUAC for their approval.

7. RECOMENDATIONS

Proposals under para 4 and the observations under para 6 are placed before the Technical Committee for consideration.

D.K. Saluja
Director (AP) II

: ANNEXURE-I :

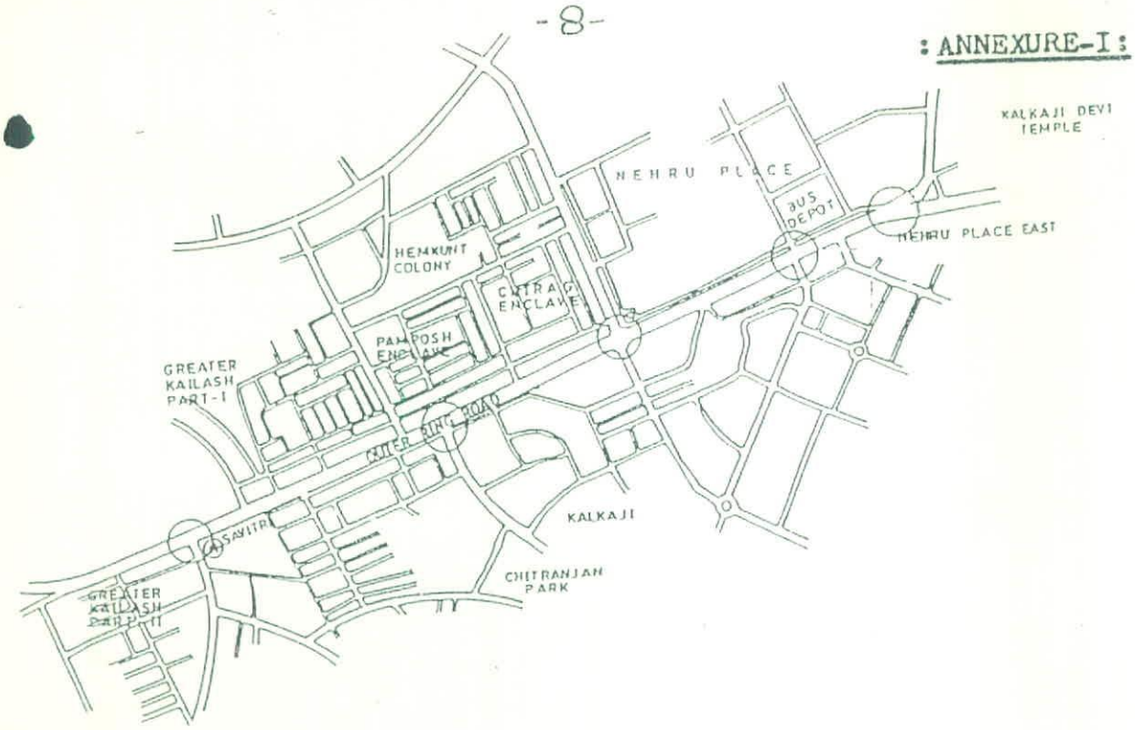
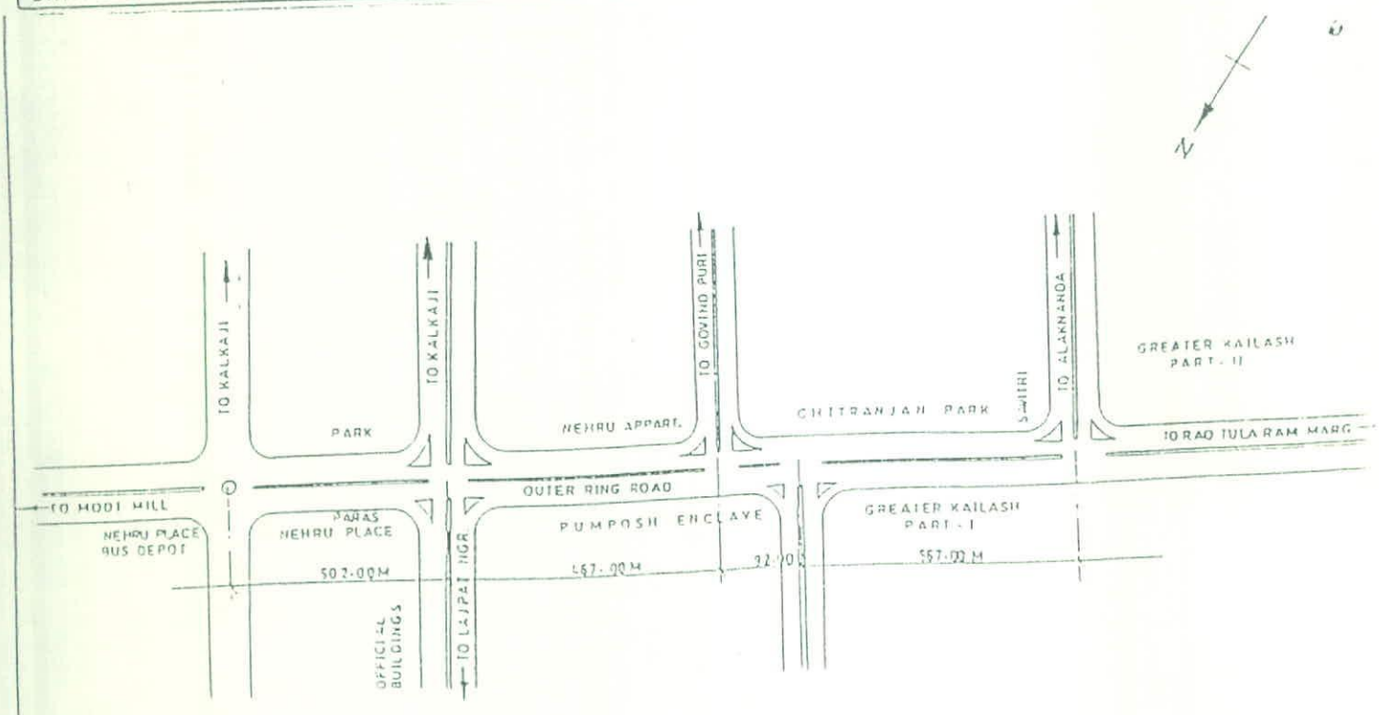


FIG - 1

KEY PLAN SHOWING THE INTERSECTIONS UNDER STUDY

P. W. D., G.O.D.

CRAPHTS

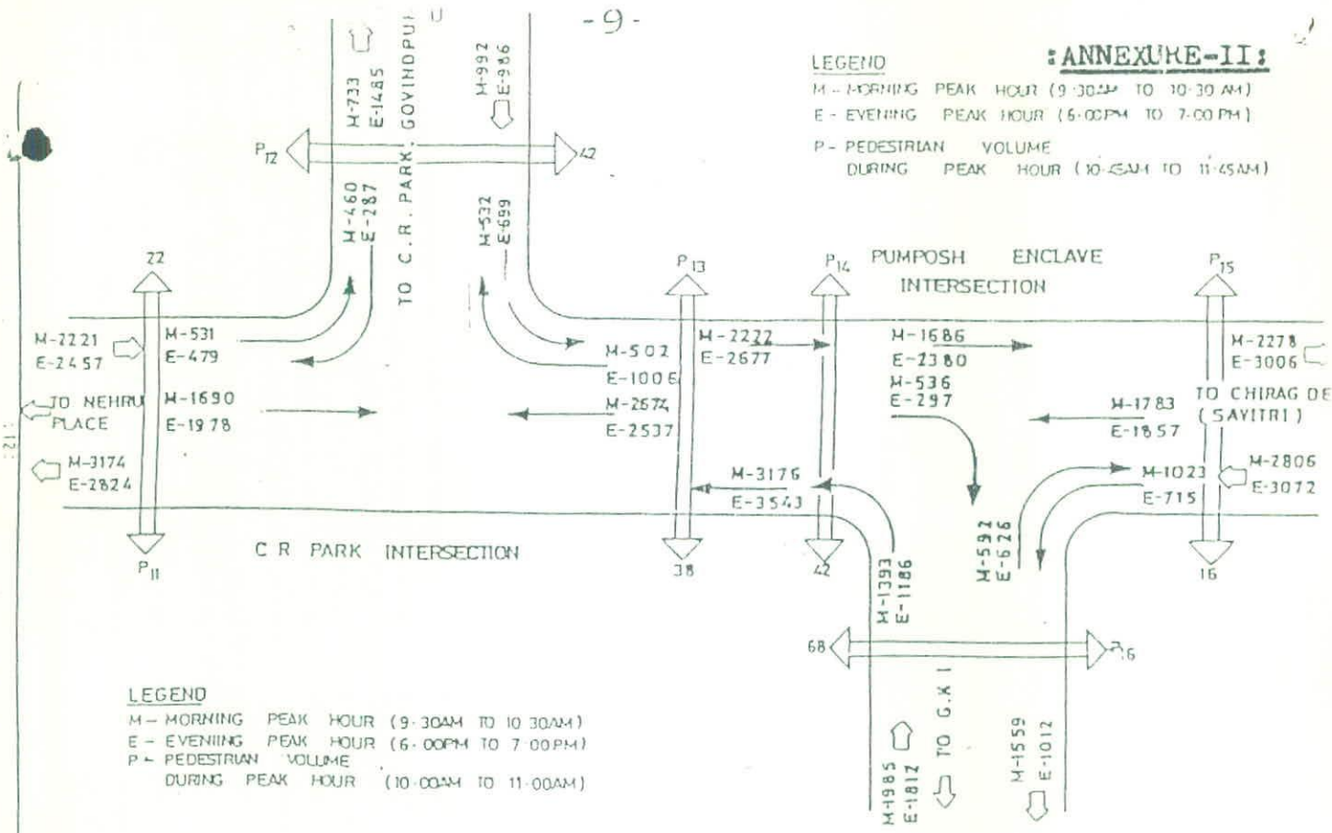


KEY PLAN SHOWING THE OUTER RING ROAD SEGMENT UNDER STUDY

P.W.D.

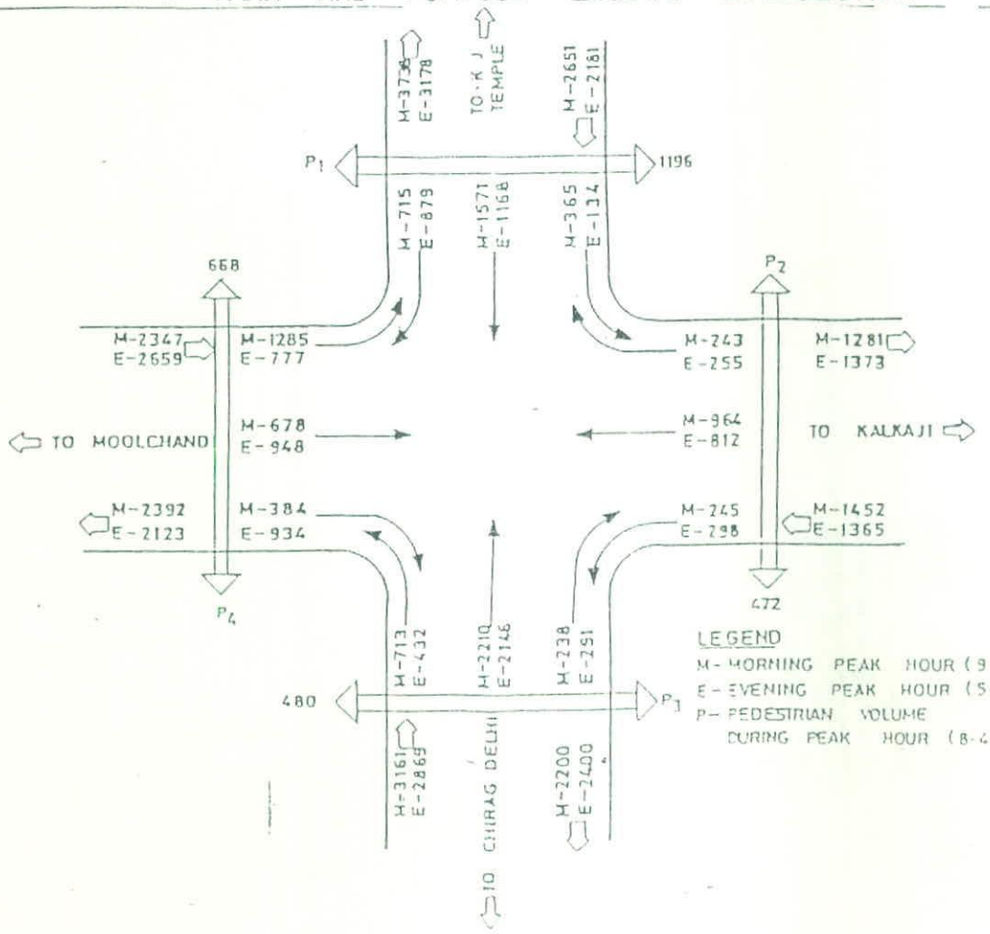
CRAPHTS

:ANNEXURE-II:



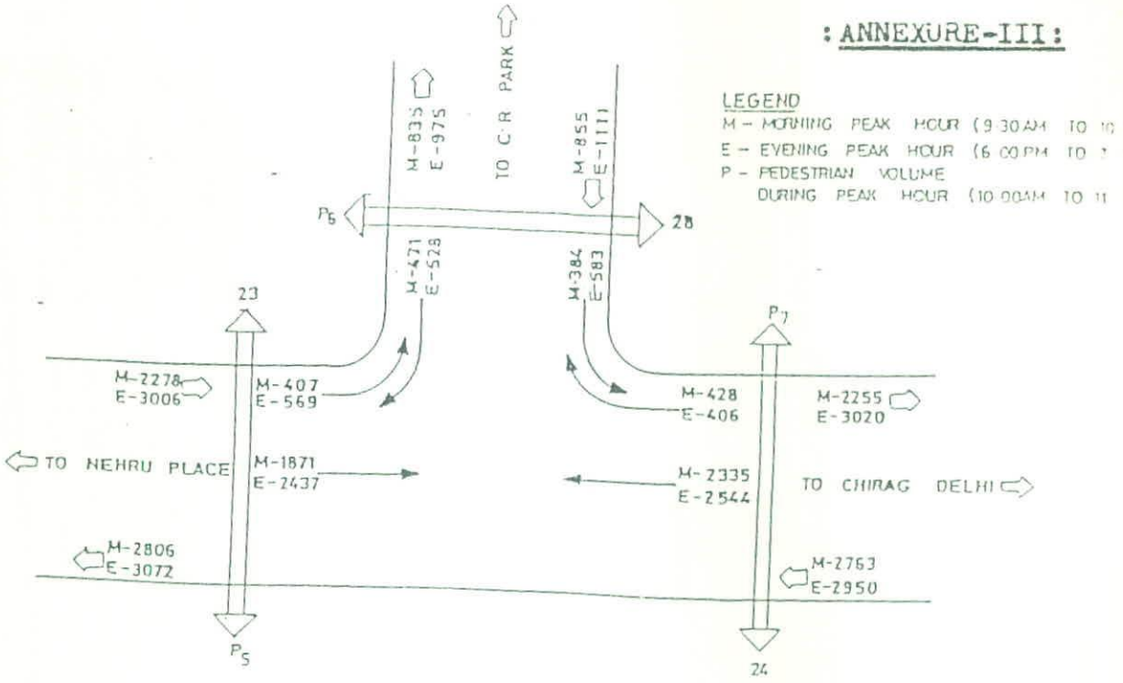
PEAK HOUR TRAFFIC FLOW DIAGRAM (IN P.C.U) FOR C R PARK AND PUMPOSH ENCLAVE INTERSECTION

CRAPHTS FIG-



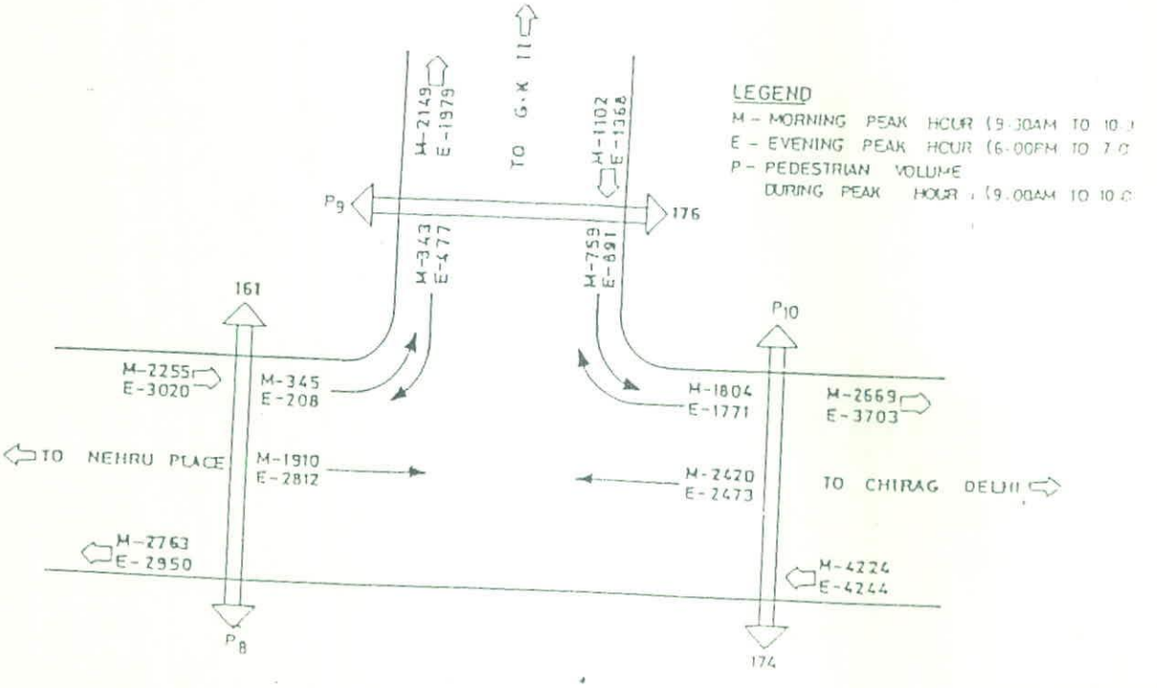
CRAPHTS PEAK HOUR TRAFFIC FLOW DIAGRAM (IN P.C.U) FOR NEHRU PLACE IN

: ANNEXURE-III :



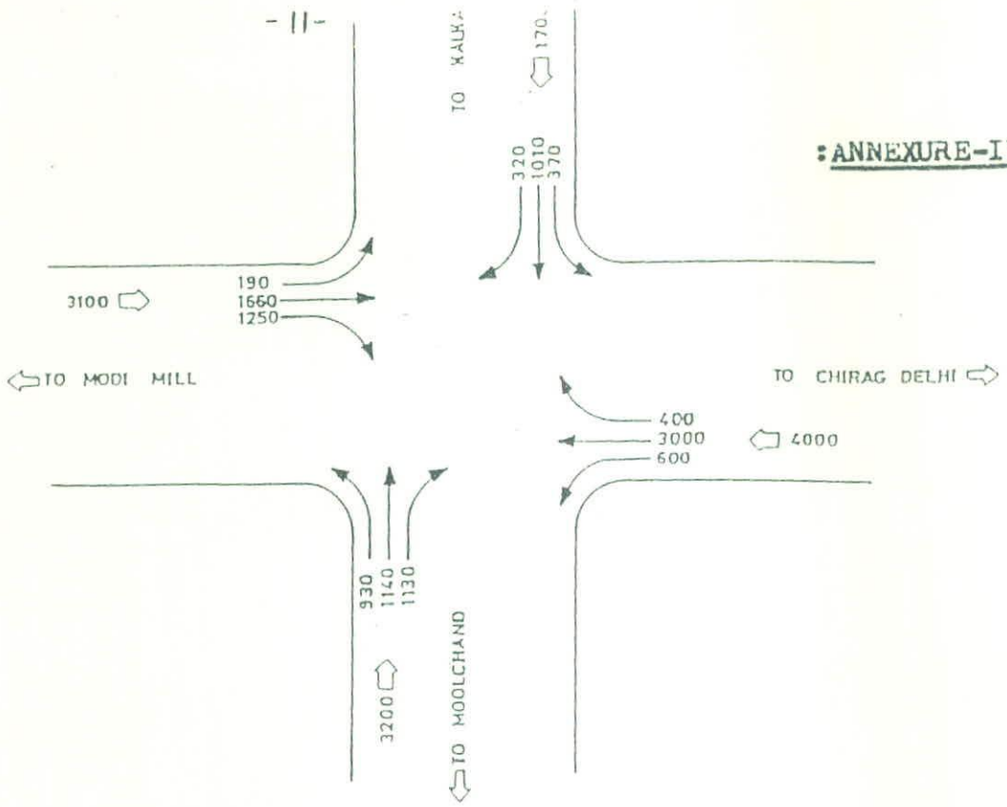
PEAK HOUR TRAFFIC FLOW DIAGRAM (IN P.C.U)
FOR C.R PARK INTERSECTION

FIG.



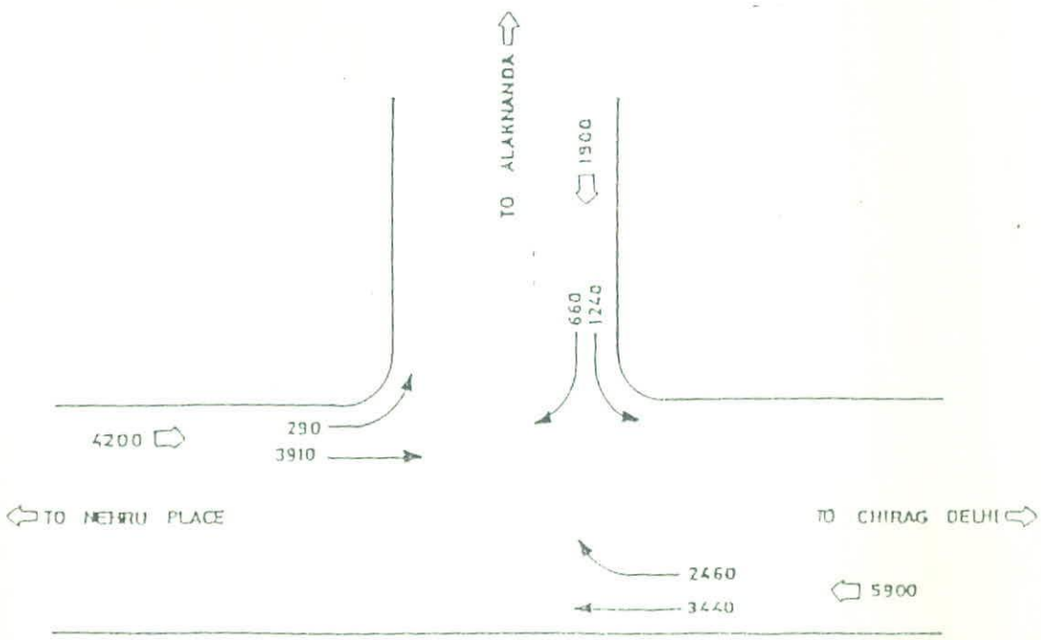
PEAK HOUR TRAFFIC FLOW DIAGRAM (IN P.C.U)
FOR SAVITRI CINEMA INTERSECTION

:ANNEXURE-IV:



ESTIMATED DESIGN YEAR (2021 AD) PEAK HOUR TRAFFIC FLOW DIAGRAM (IN P.C.U) FOR NEHRU PLACE INTERSECTION CORRESPONDING TO PM PEAK (TRAFFIC VOLUME ROUNDED OFF TO NEAREST TEN)

GRAPHTS FIG.



DESIGN YEAR (2021 AD) ESTIMATED PEAK HOUR TRAFIC FLOW DIAGRAM (IN P.C.U) FOR SAVITRI CINEMA INTERSECTION (CORRESPONDING TO EVENING PEAK) (TRAFFIC VOLUME ROUNDED OFF TO NEAREST TEN)

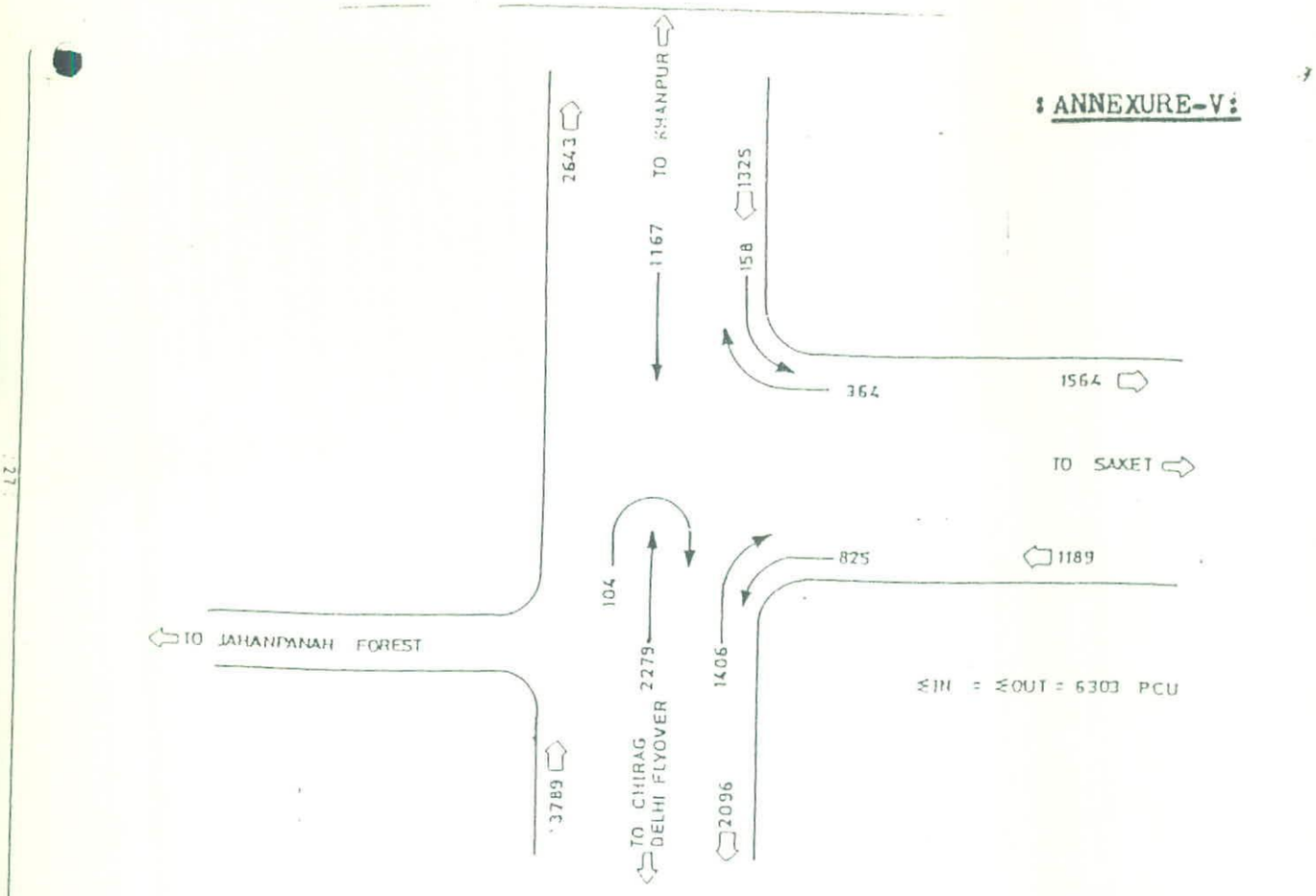
GRAPHTS

SAVITRI CINEMA JUNCTION PROPOSAL/DETAILS

Name of Road	Existing R/W	Proposed R/W
Outer Ring Road	45M	45M
Savitri Cinema Road	24M	24M

Existing/Projected Traffic Vol.-2021 At Intersection	8632/ PCU's	
Name of Road on which Flyover is proposed	For right turning traffic only from Outer Ring Road to Savitri Cinema Road.	
No. of Lanes/width of Flyover in each direction	Two lanes of 7.50 Mf width only.	
Width of Central Verge	Not applicable	
Width of Curb/Railing	0.60M on either sides.	
No. of lanes/width of C/W at Surface level.	Three lanes of 9M width on either side of C/V of 0.6M width.	
Width of inner footpath on either side.	2M on the southern side only on Outer Ring Road	
Width of Service Road	6M on southern side only on outer Ring Road	
Width of Outer Footpath	0.00 M (S/R C/W abutting the property line. Outer Ring Road.	
Clear height below the fight turning ramp flyover.	5.50M	
Total height of Flyover	8.00 M	
Details of Separate cycle corridor.	Not provided	
Slope of Ramp	1.25 (as against the norm of 1:30)	
Space reservation for H.T. Corridor	Not provided	
Cycle time of signals on Surface level before/after construction of Flyover	135/90 secs. (approx.)	
Lighting on Flyover	Overhead sodium vapor lights on either sides from M.S. Poles	
No. of structures affected	Details not given	
No. of trees affected & their species	Details not given	
U/G -O/H Services Affected	Details not given	
Treatment for Noise/Air Pollution	No specific treatment suggested.	
Treatment for Vibrations in abutting properties	No specific treatment suggested	
Utilization of space below Flyover	Not mentioned.	
Movements of Public Transport	In Bus Lane along Outer Ring Road	
Pedestrain Facilities	At Surface Level through Zebra Crossing	
Management During Constn.	Details not Submitted	

: ANNEXURE-V :



EVENING PEAK HOUR TRAFFIC FLOW DIAGRAM FOR INTERSECTION OF L. B SHASTRI MARG AND ROAD TO SAKET (1998)

Crossing Ring Road (east)		907 (near bus stop)
Crossing Ring Road (west)	:	400 (near Bhikaji Cama Place)
Crossing Africa Avenue (north)	:	238 (near bus stop)
Crossing Africa Avenue (south)	:	1318 (near Bhikaji Cama Place)

Peak hour traffic flow (total traffic) showing the directional split is as follows:

- Straight component of traffic (fast) along Ring Road (both directions) during peak hour(p.c.u.) : 4341 (a.m. peak) 4777 (p.m. peak)

- Straight component of traffic (fast) along Africa Avenue (both directions) during peak hour (in p.c.u.) : 2609 (a.m. peak) 2452 (p.m. peak)

- Total right turning traffic (fast) in p.c.u. : 2261 (a.m. peak) 2550 (p.m. peak)

- Total left turning traffic (fast) in p.c.u. : 1606 (a.m. peak) 2272 (p.m. peak)

3. TRAFFIC GROWTH RATE AND PROJECTED TRAFFIC

The CRAPHTS has peak hour traffic volumes for Africa Avenue intersection in the following manner:

Direction of peak hour traffic	1990 (p.c.u.)	1998 (p.c.u.)
Total intersection traffic volume	10384	12297
Straight traffic along Ring Road (both directions)	2485	2504
Total right turning traffic	1804	2593
Total left turning traffic	1485	2315
Pedestrian volume across Africa Avenue nea Bhikaji Cama Place (South)	456	1318

The Simple growth factors extracted from the above are as follows (with 1990 as base year):

Total intersection volume	:	2.3% p.a.
Straight traffic along Ring Road	:	0.72% p.a.
Straight traffic along Africa Avenue	:	0.1% p.a.

Annexure - VI

NEHRU PLACE INTERSECTION FLYOVER PROPOSAL DETAILS

Name of Road	Existing R/W	Proposed R/W
Outer Ring Road	45M	45M
H.R.Sethi Marg	30.48M	30.48M

Existing/Proposed Traffic Vol 2021 At Intersection	9611/12000 PCU's
Name or Road on which Flyover is proposed	Outer Ring Road.
No.of Lanes/width or Flyover in each direction.	Three lanes of 9M width oneither side of Central Verge.
Width of Central Verge	1.20 M
Width of Curb/Railing	1.0 M on either sides
No. of lanes/width of C/W at surface level.	Two lane of 7.50 M width on either sides
Width of Inner Footpath on either side	Not provided
Width of service Road	No separate service road provided
Width off outer Footpath.	4.40 M on eithr sides
Clear Height below the Flyover.	5.50M
Total Height of Flyover.	8.00 M
Details of Separate Cycle Corridor	Not provided
Slope of Ramp	1:30
Space reservation for H.T. Corridor	Not feasible
Cycle time of signals on surface level before/after construction of flyover.	165/120 secs (approx.)
Lighting on Flyover	Overhead sodium vapour lamps in central on M.S. poles 30 M C/C
Treatment for Noise/Air pollution	Two rows of Tree Planta6tionin 4.40 M wide footpath on either side
Treatment for vibrations in abutting proportion	No specific treatment suggested.
No.of trees affected & their species	29 (Shisham, Amaltas & other Rare Varieties)
Utilization of space below flyover	Not mentioned.
Movements of Public Transport	In the Bus Lane on the Surface Level

intersection area and its immediate neighborhood;

iii) The total development should, as far as possible, be confined within the stipulated R/W for each road except where essential for smooth traffic operation;

iv) The scheme finally selected should be simple from the point of view of users as well as for implementation.

An underpass for light & medium vehicles with 3M clear height could be obtained by rasing the level of Ring Road at the intersection by 1.5 M or so. This would entail free movement for more than 75% of straight traffic on Africa Avenue.

Considering all aspects the grade separator in Phase I has to take the shape of a flyover along Ring Road across Africa Avenue with attendant improvements to ground level intersection, Flyover details are given in Annexure II.

The details have been developed as shown in Drg. Nos. CRTS/PWD/FP/AA/001 & 002.

4.3 Area Traffic Circulation Scheme

A grade separator of the type recommended here will not have any severance effect at all as the surface level intersection remains accessible for performing all types of movements. However, closure of intersections at Vivekanad Marg and 'I' Avenue would tend to cause certain reorientation in traffic pattern. The road near Muhammadpur (south of Bhikaji Cama Place) and the internal roads of Sarojini Nagar would have to take care of the internal traffic that is likely to be reoriented on this account. Drg. No. CRTS/PWD/FP/AA/005 shows the proposed area traffic circulation scheme around the intersection area.

Physical Environment

Broadly the impacts on the abutting land on commissioning of flyover would be positive. The height of the flyover at the central span would be 8.0M without an underpass on Africa Avenue & 9.5 M with an underpass above the existing ground level which is lower than the height of the existing building of Bhikaji Cama Place meaning thereby it shall merge with the urban landscape of the study area. The change in the drainage pattern of the study area on commissioning of the project could be managed with the help of a proper drainage plan to be developed for the entire study area.

The impact on the air quality on commissioning of proposed project would be significant and positive. Out of 5653 vehicles waiting at the signal of Africa Avenue intersection and approaching from both the arms of Ring Road, approximately 4500 vehicles would cross the intersection using the flyover and without waiting at the intersection. This will substantially reduce the pollution load generated by idling of vehicles at the signal. Other impacts on air quality could be assessed on collection of data on the attributes associated with this after its prediction and evaluation.

Noise is one of the environmental pollutants that is encountered in daily life. At

SR.No.2/ITEM No 44/98/T.C.

Subject: **Grade Separator Proposal on Ring Road & Africa Avenue Intersection.**

File No..F.5(16)90.MP.

1. **INTRODUCTION**

As per MPD-62 and MPD-2001 Ring Road is envisaged for intra urban movements at the city level and thus needs to be developed as an Express Corrider. Total length of Ring Road is 48 KMs & there are 36 signilised junctions/ intersections falling in this stretch. Africa Avenue intersection is falling on the southern tangent of this road. Ring Road has a R/W of 63 M while the R/W of Africa Avenue is 45M. Africa Avenue is an important radial which connects Vasant Kunj JNU, Outer Ring Road in the south to the Centt. Sectt. Con.Place. ITO and other important work centres in the north.

A Flyover at the intersection is amongst the 15 locations identified for construction of grade separator as decided in the meeting held under Hon'ble LG, Delhi on 13/05/98. The grade separator is to be constructed by PWD. GNCTD. M/s. CRAPHTS have been retained as Consultant for this project by PWD.

All the details mentioned in this agenda are based on the proposal submitted by consultants.

Location plan is placed as Annexure I.

2. **EXISTING TRAFFIC CHARACTERISTICS**

The CRAPHTS carried classified traffic volume surveys in June 1998 to find out the actual traffic characteristics at the intersection under consideration. It also carried our pedestrian volume surveys crossing at different approach arms at all significant crossing points within the influence area of the intersection. Surveys were carried out for a period of 24 hours and 16 hours for vehicular traffic and pedestrian traffic respectively. The salient findings are as follows:

- Intersection control : Signalised with a cycle time of 205 secs.
- Peak hour traffic vol. (total) : 11,078 p.c.u. (morning peaks 9.00 a.m.- 10.00 a.m.)
  12,297 p.c.u. (evening peak 6.15 p.m. - 7.15 p.m.)
- Peak hour traffic vol.(slow) : 361 p.c.u. (morning peak)
  237 p.c.u. (evening peak)
- Percentage of heavy traffic (bus) : 6.50 (a.m, peak) in terms of p.c.u. 6.30 (p.m., (peak) in terms of p.c.u.
- Pedestrian traffic volume :

corners may be integrated with the layout and circulation of District Centre.

v. The proposed intersection layout involved acquisition of some private land in the south eastern corner and of Govt. land in north western and south eastern corner.

vi. The underground and overhead services are affected in the proposal need to be studed & discussed with DVB/WSSDU. The urban design aspects, its land-scape, utilisation of space below the flyover, lighting arrangements etc. have to be prepared and submitted to DUAC for approval. After the approval of DUAC same shall be submitted to DDA for final approval of the Authority.

vii. The design does not takes into account the cycle traffic on Ring Road/Africa Avenue nor any proposal for the same have been indicated in the Plan.

viii. R/W of Vivekanand Marg is 30 M as per Master Plan while the same is indicated as 45M feasibility about the availability of 45M R/W may be ascertained so that necessary action for reconsidering the R/W of this road could be seen. Some modifications have been made in the alignment of service of the road of the Bikaji Cama Place which needs to be integrated with the Distt. Centre plan in consultation with Chief Architect.

ix. Circulation pattern of Sarojini Nagar and Nouroji Nagar needs to be integrated with the flyover proposal.

x. Details of feasibility of the affected structures is not clear, same may be submitted by the consultants.

xi. Traffic Management plan during the implementation of the project needs to be submited.

RECOMENDATION

The Flyover proposal as explained under para 4 & the observation made under para 5 are put up to the Technical Committee for consideration.

(D.K Saluja)
Director (AP) II

Total right turning traffic	:	5.5% p.a.
Total left turning traffic	:	6.9% p.a.

The design year (2021 A.D.) peak hour traffic volume at Ring Road - Africa Avenue intersection would be 18,802 p.c.u. Following the same directional split as observed during 1978 (in absence of any better information), the various design components work out as follows:

Direction	Peak hour traffic flows (p.c.u.)
Straight traffic along Ring Road (both direction)	7460
Straight traffic along Africa Avenue (both directions)	3830
Total right turning traffic	3970
Total left turning traffic	3540
TOTAL	18,800

4. PROPOSALS - INTERSECTION IMPROVEMENT PLAN

4.1 General

Before describing any improvement plan that may be necessary for this intersection, it may be appropriate to examines if any improvement is really necessary at this location.

The usual indices that dictate such improvement schemes are traffic volume and delay. A four arm intersection of the configuration as obtained at the location under study has a rated capacity of 7500 p.c.u. per hour (peak) at which level, the signal cycle time is expected to be optimum at 120 secs. As traffic load at an intersection increases, it starts losing out on efficiency (formation of residual queue etc.)

The intersection of Ring Road with Africa Avenue caters to peak hour traffic volume that is far in excess of its rated capacity. It has a cycle time of 205 seconds which clearly, is unacceptable under urban traffic conditions. Together, these two indices amply indicate the high degree of inefficiency at which this intersection, already developed to its maximum at-grade configuration, is functioning.

4.2 Grade separation form

There could be any number of different types of grade separator forms that could be recommended for a four arm intersection. However, the improvement plan has to confine itself within given ground conditions and, that restricts the choice in a case-specific manner.

The guiding parameters that have dictated the choice of grade separator form in the present case are as follows:

i) Priority of uninterrupted traffic movement first goes to Ring Road traffic;
ii) There should be an overall improvement in traffic circulation facilities within the

present, the steady sound pressure level (Leq) is observed to be in the range of 70-80 decibel at Africa Avenue intersection on an average working day during day time which is already in excess of the limit prescribed by Central Pollution Control Board.

Provision of flyover at this location would decrease the noise level as it would eliminate all lower gear movements along Ring Road and would reduce the idlling of vehicles.

Ecological Environment

Approximately 142 trees of varying girth and species will be affected on provision of flyover at the study location. The tree line existing on either side of Ring Road would thereby disappear over the length of the flyover. Pockets of different sizes have been delineated in the proposed Layout Plan for plantation of trees equal to or more than the number of affected trees. Generally the space beyond the R/W of roads have not been considered for development of green belts. A very small area of park in north-western quadrant would be required for provision of road. Flora and fauna existing within the existing gardens/parks of the study area will not be affected.

Socio-economic environment

Generally rehabilitation of affected population is an attribute which has impacts on socio-economic environment. Provision of flyover and widening for surface level road would require rehabilitation of 14 shops of Nauroji Nagar existing along Ring Road near Nauroji Nagar market. All other attributes associated with socio-economic environment will generally have insignificant impact.

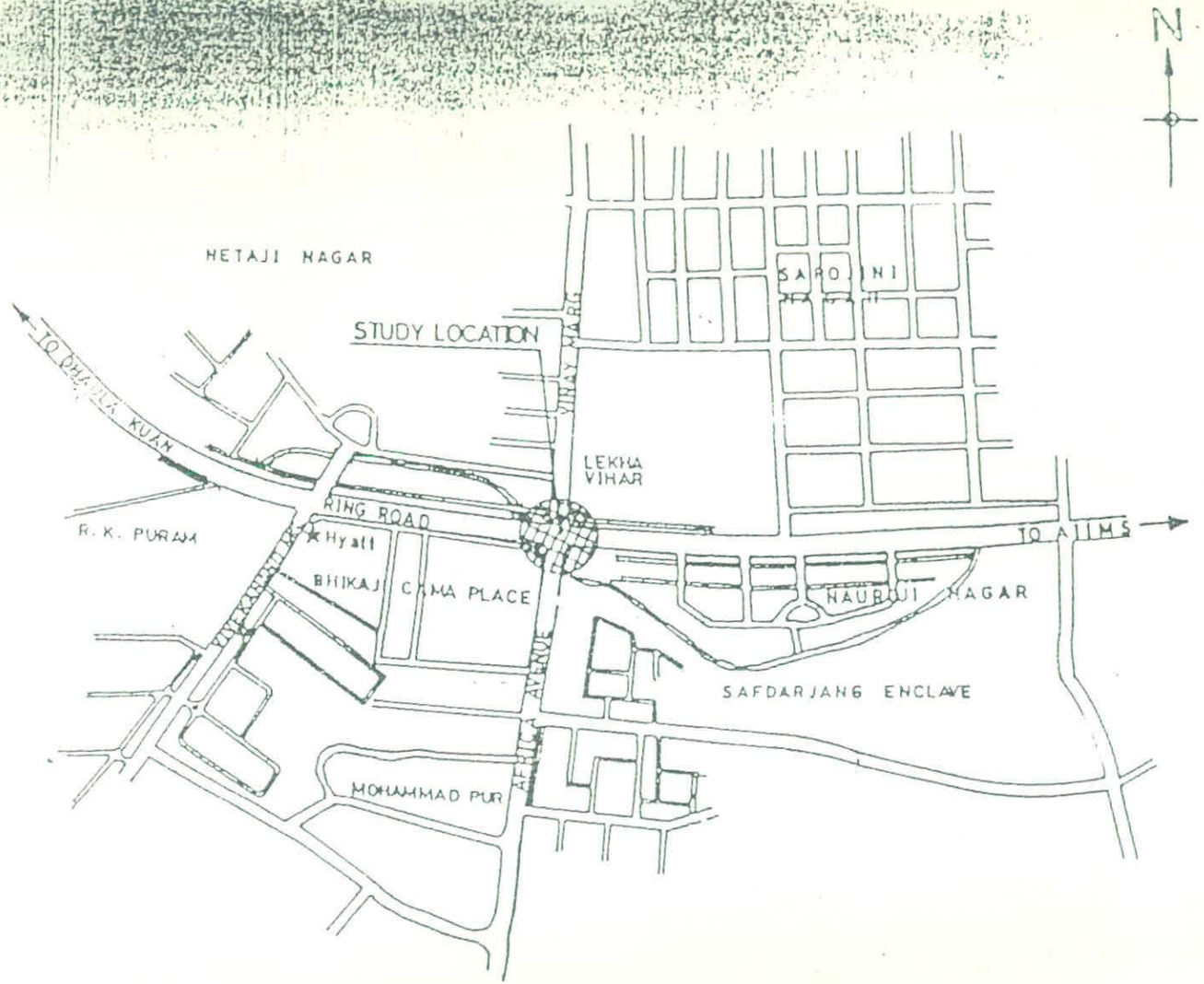
5. OBSERVATIONS

i. Total peak hour traffic volum at this intersection is 12297 PCU's out of which the straight traffic on Ring Road is 4777 PCU's and that of Africa Avenue is 2452 PCU's the grade separator has been proposed on Ring Road considering its importance at the city level. The straight traffic volume at Africa Avenue is also high higher. The Consultant in his report has ruled out the possibility of grade separation on Africa Avenue due to the existing Nallah. The consultants should work out the proposal of a low hight subway for light & medium vehicles on Africa Avenue. This will be even more essential due to the closure of Vivekaanand Marg 'T' Junction, the entire traffic from this road will be trasferred to Africa Avenue.

ii. The existing junctioin of road from Sarojini Nagar meeting with Ring Road in Nauroji Nagar market has been closed, the right turning from this road would also be transferred to Africa Avenue which would further increase the traffic volum on the same.

iii. In view of the above the pedestrian subway on Africa Avenue in front of Bhikaji Cama Place could be avoided for the time being.

iv. The R/W details of Ring Road & Africa Avenue along with champhering of the



KEY PLAN SHOWING THE STUDY LOCATION

FIG-1

P. W. D. GOVT. OF DELHI

CR[illegible]HTS

Annexure -I

3.2 **Authority's Decision**

L.G. Delhi while recording the progress of grade separators desired that DDA in consultation with PWD(DA) may work out the guidelines for designing the flyovers/grade separators and bring before the Authority for its consideration. Accordingly the agenda was prepared and placed before Authority vide resolution no. 54 dated. 13.8.90.

3.3 **Directions Issued By Hon'able Supreme Court in WP (Civil) Nos 13029/85, 9300/92 And Others (M.C.Mehta V/S Union Of India & Others)**

Supreme court in its order in WP (C) nos 13029/85 & 9300/92 etcs (M.C.Mehta V/S Union Of India & Others) ordered that a comprehensive programme on traffic management ensuring road safety be prepared including

- Marking Zebra crossings
- Marking of bus lanes and bus bays,
- Provision of regulatory road signage regarding speed restrictions, presence of schools by the road side
- removing hazardous hoardings
- Ban of Heavy Vehicles in day time

The recent order of the Hon'ble Supreme Court is placed at Annexure III.

3.4 **White Paper on Pollution**

To relieve congestion on Delhi roads, the actions that need to be taken include:

- The existing road capacity / network to be better utilised by upgrading traffic management systems.
- Provision of Cycle tracks and greater use of existing ones.
- Construction of Mass Rapid Transit System (MRTS) and dovetailing the rail based mass transport system with the road transport system.
- Construction of road bye-pass for Delhi.
- Construction of expressways
- Constructing fast motorways to enable transit traffic to pass unhindered .

3.5 **Decisions of GNCTD**

GNCTD has awarded the work of preparation of Master plan for cycle tracks in NCTD to IIT Delhi. The study is in progress.

4. **EXAMINATION**

The case has been examined with reference to the guidelines as approved by Authority vide Reso. No. 54 dated. 13.8.90 and directions issued by Hon"able Supreme Court in WP (C) 13029/85, & 9300/92 - M.C.Mehta v/s Union Of India & OTHERS, White Paper on Environment, Ministry of Environment & various decisions of GNCTD available in this unit. The comparative statement and observations are given below:

ANNEXURE - II

RING ROAD/AFRICA AVENUE INTERSECTION
FLYOVER PROPOSAL DETAILS

Name of Road	Existing R/W	Proposed R/W
Ring Road	63 M	63 M - Addl. land Reqd. at Corners as/plan
Africa Avenue	45 M	45 M

Existing/Proposed Traffic Vol. 2021 at intersection	12297/18800 PCU's
Name of Road on which Flyover is proposed	Ring Road
No.of lanes/width of Flyover in each direction	3 lanes of 11M width in each directions
Width of Central Verge	1.20M
Width of Curb/Railing	1.20M on either side
No.of lanes/width of C/W at Surface level	Three lanes of 9 M width on either side
Width of Inner Footpath on either side	2M to 2.5M (approx.) on the southern side only
Width of Service Road	5.45M to 7M on the southern side only
Width of outer Footpath	2.5M to 3.95M on the northern side only
Clear Height below the Flyover	5.50M
Total height of Flyover	8.00M
Slope of ramp	1:30
Space reservation for H.T. Corridor	Existing H.T. lines adjusted in the inner/outer footpath since road.
Cycle time of signals on surface level before/after construction of flyover	205/130 secs. (approx.)
Pedestrian facilities	Two Pedestrian subway proposed on both arms on Ring Road and one the southern arm of Africa Avenue
Details of separate Cycle Corridor	Not provided
Lighting on Flyover	Overhead sodium vapour lamps in central verge on M.S. Poles 30M C/C
Treatment for Noise/Air pollution	New Tree Plantation in footpaths on either sides
Treatment for vibration in abutting buildings	Generally not affected
Number of trees to be cut	142
Utilization of space below flyover	Not mentioned
Movements of Public Transport	In the Bus lane on the surface level
Management during construction	Details not submitted

SR. NO. 3/ITEM NO. 45/98/TC

Sub **Grade Separator AT NH2 and Road 13 A intersection near Sarita Vihar**

Ref: **File No. File NO.F5 (9) 98-MP**

1. BACKGROUND

A meeting was held under the Chairman ship of Hon'ble Lt. Governor on 30.05.98 to firm up the location for the provision of grade separators and to distribute the work among the various agencies to complete the work in 18 to 24 months.

In this meeting, 15 intersections were identified for provision of grade separators in order to resolve the traffic congestion. It was also clarified that out of these 15 locations, 7 would be taken up by the DDA, 6 by PWD, 1 by MCD and 1 by DTTDC.

2. INTRODUCTION

2.1 DDA appointed RITES as consultants for all the seven locations. The proposal for the three level grade separator at **NH 2 and Road 13 A intersection near Sarita Vihar** has been submitted by **RITES** vide letter No. **RITES/UT/334/98** dated **August 13, 1998.** The same was forwarded by Dir (MM) Project incharge to Planning Wing for placing before the Technical commitee.

2.2 Location :
The proposed grade separator is located at the crossing of NH2 and 13A near Sarita Vihar .At present it is a 'T' junction which would become a complete four arm junction once the proposed connection to Okhla with a crossing on the Delhi Faridabad Rly Line is completed. It is an important location as NH2 caters to the regional traffic along with local traffic and road No 13A connects to Noida.
Location plan is placed at Annexure I.

2.3 Proposal
A technical note submitted by RITES giving description of the proposal is placed at Annexure II.

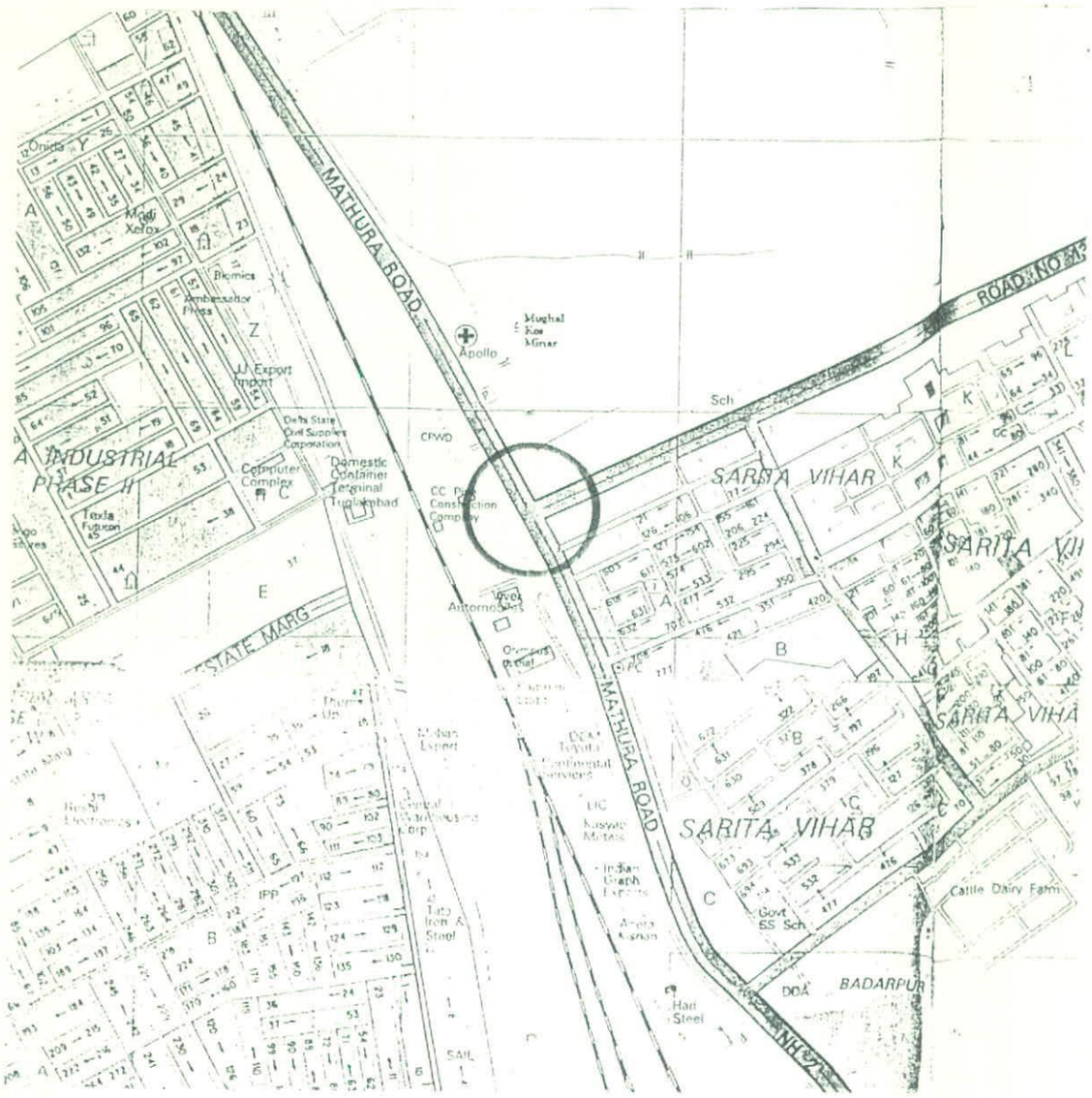
3.0 PREVIOUS DECISIONS/ DIRECTIVES

3.1 MPD 2001 Provisions

(i) The Grade separators should also have the grade separation for the pedestrians in general and cyclist wherever required

(ii) All master plan roads (30 m and above right of way) crossing railway lines shall have grade separation.

Annexure : I



N.H.-2 & ROAD NO 13-A

ANNEXURE- II

TRAFFIC DATA & CONCEPT PLANS FOR FLY OVERS AT

1. MATHURA ROAD (NH2)-ROAD NO. 13 A
2. VIKAS MARG – ROAD NO. 57
3. NH 24-NOIDA ROAD MODE
4. WAZIRABAD ROAD- ROAD NO. 66

RITES

MATHURA ROAD (NH2)- ROAD NO. 13A

1. SITE APPRAISAL

The above junction is three-armed intersection along the Mathura Road (NH2) as indicated in the location map (Figure No.1). The Railway line runs parallel to Mathura Road on the western side about 80 m from the intersection. The land use on the South Eastern side is residential (Sarita Vihar) and on the western side is the Okhla Industrial Area. A commercial center is proposed along the Road 13A in the Master Plan. Traffic from Noida to Nehru Place and South Delhi passes through this intersection apart from the main traffic on the NH2 from Delhi towards Badarpur and beyond. At present the corners of the intersection are vacant (DDA land). Two corners on the southern side are reserved for cloverleaf interchange. A major housing complex (JASOLA) is coming up near the secondary junction i.e. the main road of the Sarita Vihar along the Road No. 13A. Delhi's Master Plan proposes a road across the railway line by suitable grade separation in future connecting Road no.13A to Anand Mai Marg/ Thus the intersection should be planned as a four armed intersection.

2.0 TRAFFIC CHARACTERISTICS.

2.1 APPROACH VOLUMES

Ashram		Okhla		Faridabad		Noida		Total	
PCU	Vehs	PCU	Vehs	PCU	Vehs	PCU	Vehs	PCU	Vehs
				Morning					
2420	1885	242	464	2498	1637	3802	3466	8962	7452
27%		3%		28%		42%			
				Evening					
PCU	Vehs	PCU	Vehs	PCU	Vehs	PCU	Vehs	PCU	Vehs
3139	3755	204	689	1605	2475	2444	2029	7392	8948
43%		2%		22%		33%		100 %	

2.2 COMPOSITION (MORNING PEAK HOUR)

- Major bus flows are

  Ashram to Faridabad (142)

- Major fast passenger vehicle flows are

  Noida to Ashram (1975)
  Faridabad to Ashram (1109)
  Ashram to Faridabad (792)
  Ashram to Noida (531)

- **NMT flows are**:

  Noida to Okhla (586)
  Noida to Ashram (487)
  Okhla to Noida (352)

  Evening peak hours

- Bus flows are

  Ashram to Faridabad (71)
  Faridabad to Ashram (68)

- Fast passengers

  Ashram to Faridabad (1558)
  Ashram to Noida (1427)
  Faridabad to Ashram (1503)
  Noida to Ashram (11227)

- NMT flows are:

  Ashram to Faridabad (438)
  Okhla to Noida (383)

2.3 TRAFFIC PROJECTIONS

- Growth rate is assumed as 3% per annum for passenger vehicles
- Jasola Housing Complex expected traffic accounted for
- Commercial Center traffic expected considered.
- Effect of Noida-Maharani Bagh Toll Bridge accounted for.
- MRTS along Tughlakabad-Tilak Bridge is expected only after 2010. It is estimated to bring in a reduction of 15 % in the passenger traffic in 2021.

- Estimated traffic 2010 = Existing traffic x 1.5 times + 1000 PCU's = 14500 PCU:
- Estimated traffic 2021 = (2 times in existing traffic + 1000 PCU's x 1.5) * .85 = 17500

Details are presented in Fig. 2

3 PROBLEMS

- Very heavy straight traffic on NH2 and also Right turning traffic from Noida to Ashram and from Badarpur to Noida.
- Road 13-A will be extended towards Okhla with a grade separation at the Railway track.

4. TRAFFIC MANAGEMENT PLAN

The majority of the traffic coming on to the intersection in the morning hours is from Noida on Road 13A and traffic along NH2 from Delhi to Badarpur and beyond in the evening hours and vice versa. A reduction of traffic demand on the intersection by local traffic management measures is not possible since only one major road (4 lanes divided) is available for the to Sarita Vihar area. Thus all the traffic will continue to ply across the intersection. However, ILFS has planned a Toll Bridge across Yamuna connecting the Ring Road to Noida. The major bottle neck on the Ring Road is Ashram Junction, thus even if the vehicles ply on the proposed toll bridge, they will get choked at Ashram junction. Accordingly it is assumed that about 50% of the traffic will shift to Noida Maharani Bagh Toll Bridge, reducing the right turning traffic from road 13A to NH2 by about 1000 PCU's. However, the traffic expected to be generated by the proposed commercial complex and Jasola Housing Complex is close to 1000 PCU's, thus the right turning traffic will still be high in future also.

The Apollo Hospital is located at the secondary junction along the Mathura Road. Uninterrupted entry and exit to the hospital has been planned by providing an under pass exclusively for the Apollo Hospital. The entry and exit from the commercial complex will be through service roads provided along the road Noida and will be connected to the secondary intersection i.e. at Road No. 13A with Sarita Vihar main road, This will be an signalized intersection. Pedestrian subways and busboys are recommended. A conceptual Management Plan is presented in Fig. 3.

5. CONCEPTS FOR GRADE SEPARATION

Various concepts were developed for improvement of the intersection capacity. Initially, widening of the approaches by one lane width will increase the capacity of the intersection but will not reduce 'Y' value below. Thus a grade separation is essential. The following options were examined:

i) Fly over Mathura Road and loops for two right turning movements

ii) ROB over Rly line and extending under the Mathura Road with loops for two right turning movements.

iii) Flyover Mathura Road plus loops and a limited height Road under pass (3.5 m clearance) under the Railway line, extending it across Mathura Road and provision of additional two loops in future.

The evaluation of the above will saturation capacity is presented in Figure No. 4

The ROB over the Electrified Railway Line (8.5 meter high) had constraints of the ramp extending too long along 13 A. It blocks the secondary intersection for Sarita Vihar and also the provision of ramp along Anand Mai Marg is also constraints because of inadequate ROW and also cuts across HT line. Thus, this option was not considered for further evaluation.

6.0 RECOMMENDED OPTION

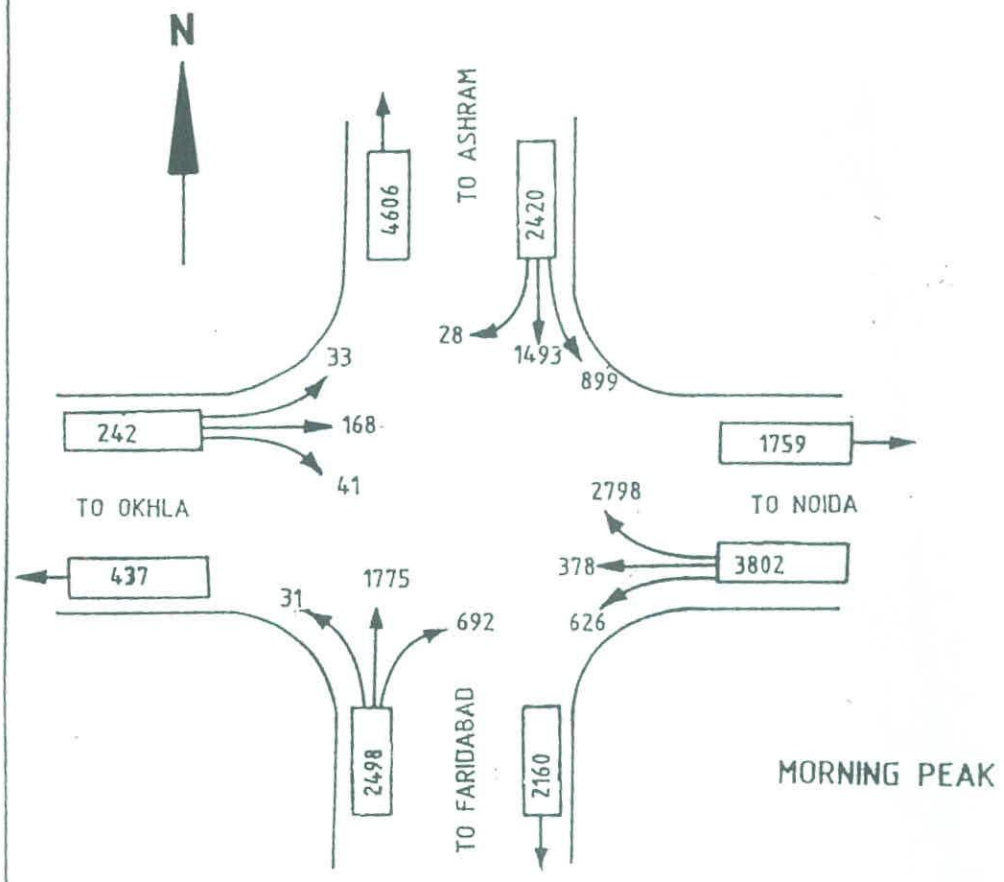
A fly over along Mathura Road (6 lanes) with 7.5 m slip roads on either side is recommended. The right turning conflicts from Road 13-A to Mathura Road towards Ashram and Badarpur side to Road 13-A, still remain on the ground. Since the right turning traffic is very heavy, two loops are proposed which will eliminate the above conflicts.

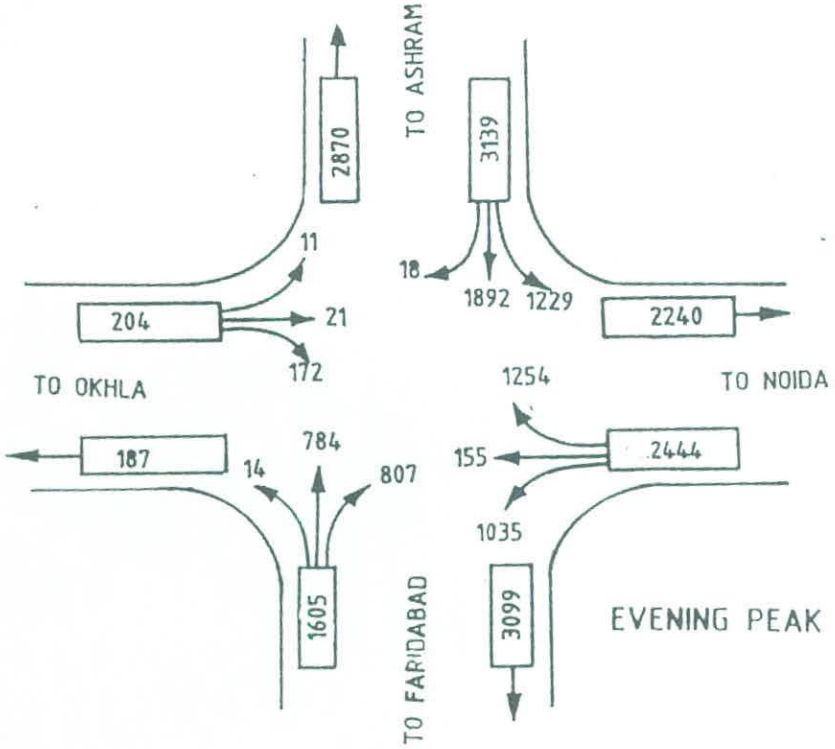
In the second phase, a limited height (3.5 metres) RUB under the Railway line and Mathura road is proposed for only light vehicles.

In the third phase additional two loops may be provided to complete the clover leaf.

The recommended option is presented in Fig. No.5.

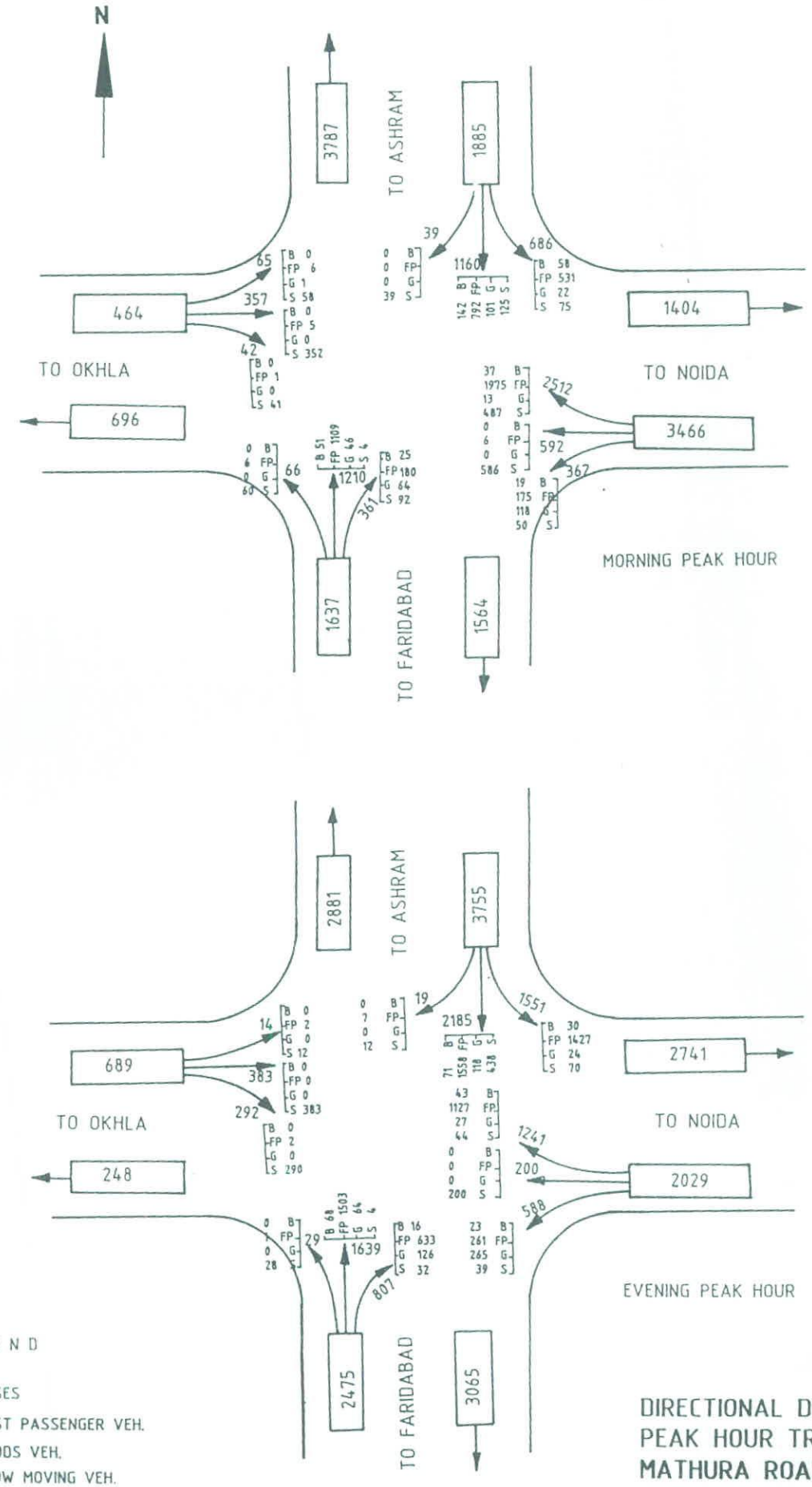
MATHURA ROAD (NH2)- ROAD NO. 13 A FIG.1





DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (PCU) 1998
MATHURA ROAD (NH-2)
ROAD 13A INTERSECTION

FIGURE. 2(a)



DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (VEH.) 1998
MATHURA ROAD (NH-2)
ROAD NO. 13A INTERSECTION

FIGURE. 2(b)

NH 2 - ROAD 13A INTERSECTION

SATURATION CAPACITY ('Y') VALUE

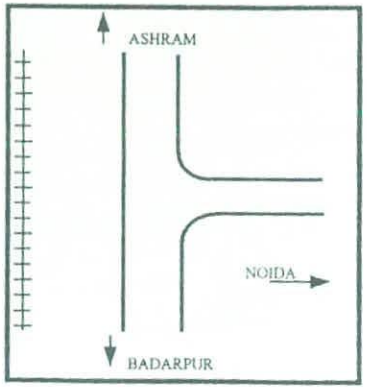
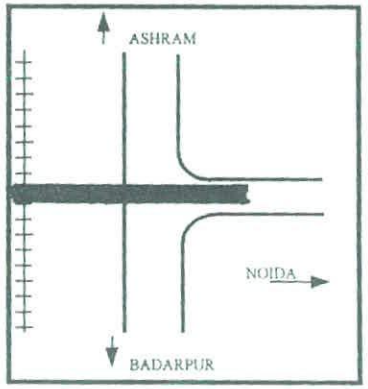
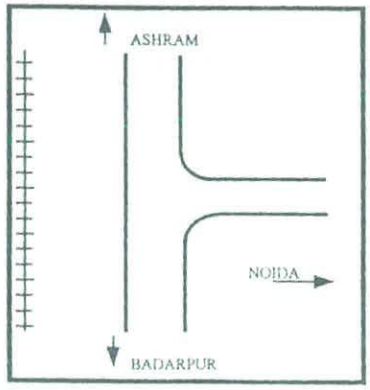
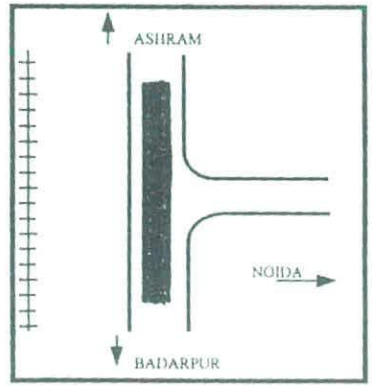
YEAR	DO NOTHING	ALTERNATIVE 1
		 ROB ALONG ROAD 13A
1998	1.46	1.3
2010	2.2	2
2021	2.9	2.5

FIG. 4

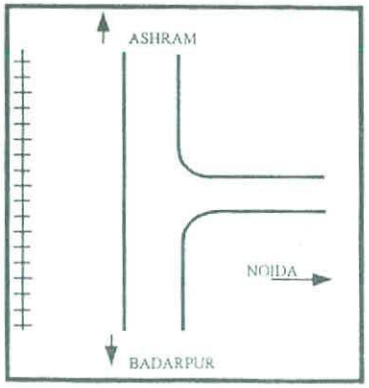
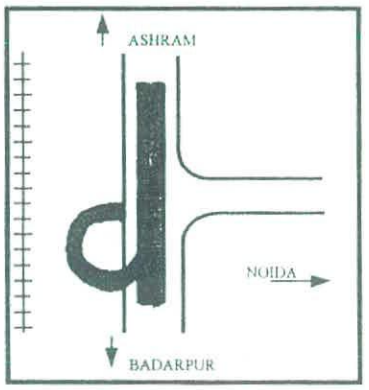
NH 2 - ROAD 13A INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 2
		 FLYOVER ALONG MATHURA ROAD
1998	1.5	1.1
2010	2.2	1.6
2021	2.9	2.2

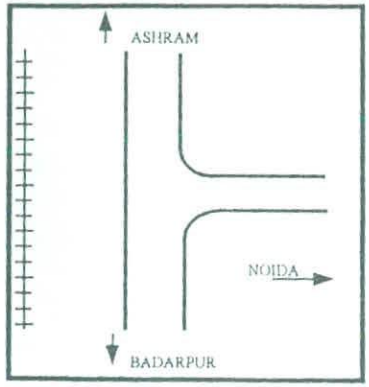
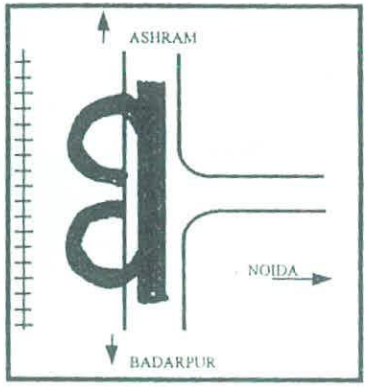
NH 2 - ROAD 13A INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 3
		
		FLYOVER ALONG MATHURA ROAD WITH SINGLE LOOP
1998	1.46	0.82
2010	2.2	1.2
2021	2.9	1.7

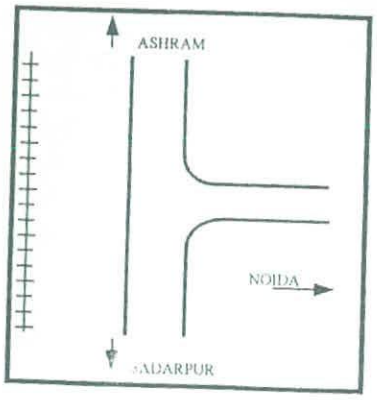
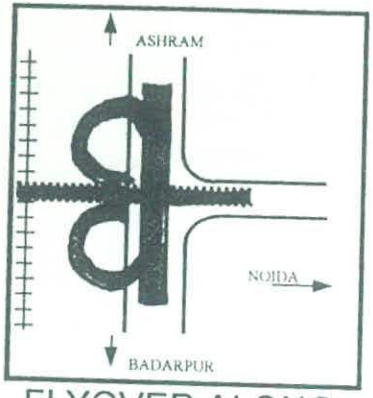
NH 2 - ROAD 13A INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 4
		 FLYOVER ALONG MATHURA ROAD WITH DOUBLE LOOP
1998	1.46	0.68
2010	2.2	1.05
2021	2.9	1.4

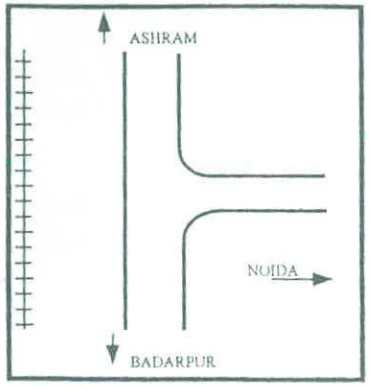
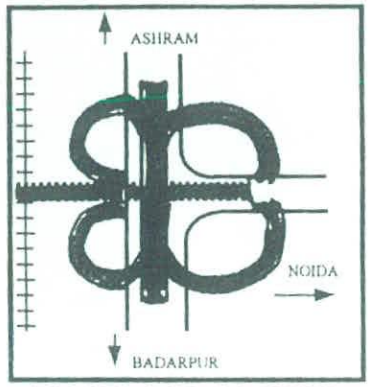
NH 2 - ROAD 13A INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 5
		 FLYOVER ALONG MATHURA ROAD WITH DOUBLE LOOP + RUB ALONG ROAD 13A
1998	1.46	0.31
2010	2.2	0.46
2021	2.9	0.62

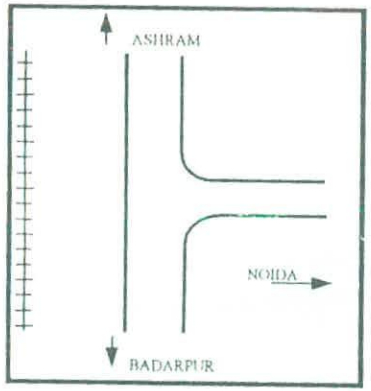
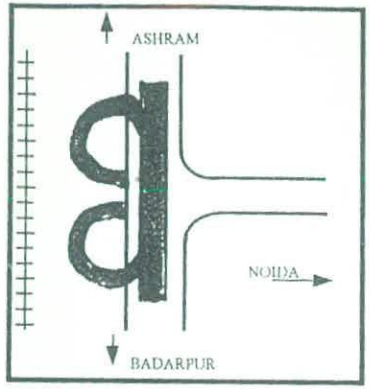
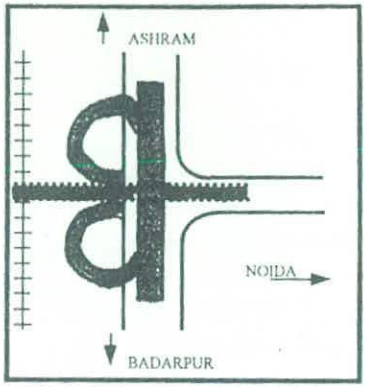
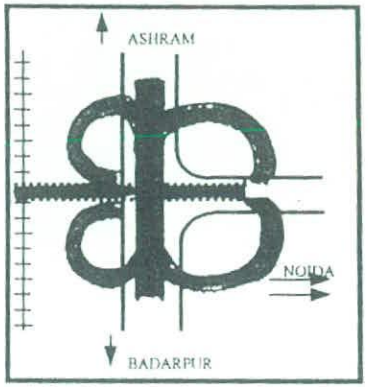
NH 2 - ROAD 13A INTERSECTION

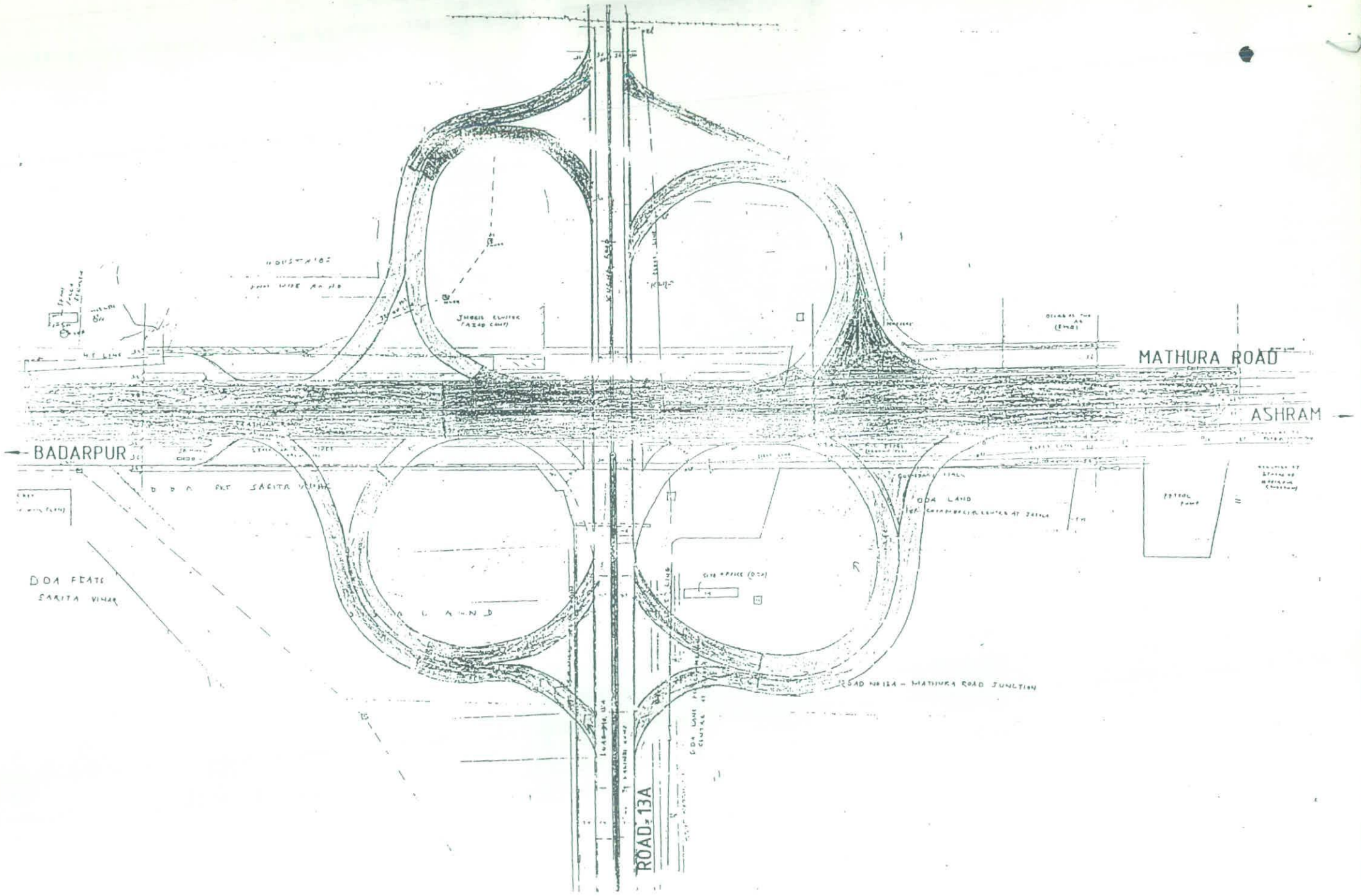
SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 6
		 FLYOVER ALONG MATHURA ROAD WITH DOUBLE LOOP + RUB ALONG 13A WITH DOUBLE LOOP
1998	1.46	O.K.
2010	2.2	O.K.
2021	2.9	O.K.

NH 2 - ROAD 13A INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6
		 FLYOVER ALONG MATHURA ROAD WITH DOUBLE LOOP	 FLYOVER ALONG MATHURA ROAD WITH DOUBLE LOOP + RUB ALONG ROAD 13A	 FLYOVER ALONG MATHURA ROAD WITH DOUBLE LOOP + RUB ALONG 13A WITH DOUBLE LOOP
1998	1.46	**0.68**	0.31	O.K.
2010	2.2	1.05	**0.46**	O.K.
2021	2.9	1.4	0.62	**O.K.**



RECOMMENDED OPTION FOR ROAD NO. 13A - NH 2 INTERSECTION

FIGURE. 5

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

(vii) No bus belonging to or hired by an educational institution shall be driven by a driver who has :

a) less than five years of experience.

b) been challaned more than twice in a year in respect of offences of jumping red lights, improper or obstructive parking, vigilating the stop line, violating the rule requiring driving within the bus lane, violating restricting the overtaking, allowing unauthorised person to drive.

c) been challaned/charged even once for the offence of over speeding, drunken driving and driving dangerously or for the offences under Sections 279, 337, 338 and 304-A of the Indian Penal Code.

(viii) All drivers of school buses or buses hired by an educational institution would be dressed in a distinctive uniform and all such buses shall carry a suitable inscription to indicate that they are in the duty of an educational institution.

(ix) Flying Squads shall be made up or inter-departmental teams headed by an SDM shall be constituted and they shall exercise powers under Section 207 as well as Section 84 of the Motor Vehicles Act.

(x) The Government shall notify under Section 86(4) the officers of the rank of Assistant Commissioners of Police or above so that these officers are also utilised for constituting the flying squads.

(xi) The Transport Authorities shall consider immediately the problems arising out of congestion caused by different kinds of motorised and non-motorised vehicles using the same roads. The police and transport authorities shall identify those roads which they consider unfit for use by motorised or certain kinds of motorised traffic and issue suitable directions to exclude the undesirable form of traffic from those roads.

(xii) The civic authorities including DDA, the Railways, the Police and Transport Authorities, would identify and remove all hoardings which are on road-sides and which are hazardous and a disturbance to safe traffic movement. In addition, steps would be taken to put up road/traffic signs which facilitate free flow of traffic.

(xiii) No authority shall interfere with the functioning of the Police and Transport Authority in so far as implementation and execution of these directions are concerned.

(xiv) All Commercial licences issued during the period 1993-95 shall be re-verified by the Transport Department to weed out all such licences which have been issued without following the Rules.

(xv) The Transport Department to prescribe a suitable refresher training course as a condition for the renewal of any licence to drive a heavy vehicle.

(xvi) The Transport Authorities shall not renew any permit which has been or is being used by any person other than the original grantee, without the express prior permission of the grantee.

(xvii) The Civic Authorities shall take necessary steps to remove immediately all encroachments - temporary or permanent on roads and pavements, which affect the smooth flow of traffic or obstruct the way of pedestrians. Stray cattle and other similar obstructions shall also be similarly dealt with.

(xviii) No bus shall be used by an educational institution unless it is fitted with doors which can be closed. No additional institutions shall use a bus after 31.12.98 if it has an open door.

(xix) No bus shall be used by or in the service of an educational institution shall be permitted to operate without a qualified conductor being present at all times after 30th April, 1998.

(xx) The Education Department shall ask all Schools including Government and Municipal schools to evolve a system in which parents of the wards could accompany the bus to ensure that drivers drive safely and lives of the school children are not put in danger. As far as possible, to ensure that in each bus there is atleast one parent present who would be able to oversee the conduct of the driver. This step would go a long way in ensuring that the directions given as well as other safety measures prescribed are complied with in letter and spirit and that the driver drives carefully.

(xxi) No bus belonging to or in use of any educational institution shall seat children in excess of 1.5 times its registered seating capacity. Similarly, other modes of public transport such as TSRs, Taxis and other vehicles including rickshaws used for transporting the students of an educational institution should be permitted to carry children more than 1.5 times their registered seating capacity.

(xxii) There would be no grant of fresh permits in respect of TSRs, except by way of replacement of an existing working TSR with a new one.

(xxiii) We direct the Police Commissioner to frame appropriate guidelines for regulating processions - religious, political or otherwise which tend to obstruct the flow of traffic. These guidelines should be in conformity with the rights of the users of the roads and the exercise of fundamental freedom of other citizens indicated by this Court in its judgement in Communist Party of India (M) Vs Bharat Kumar and Others, JT 1997 (9) SC 101.

A. S. KHULLAR
ADDITIONAL DIRECTOR TRANSPORT

ADDENDUM

EXPECTED TRAFFIC ON THE FLYOVER (IN PCU's)

NH 2 (MATHURA ROAD) – ROAD NO. 13A INTERSECTION

	1998	2010	2021
FLYOVER	5588	8662	11176
LOOP-1 (Road No. 13A to Ashram)	2798	2255	2909
LOOP-2 (Badarpur to Ashram)	692	1073	1384
RUB	--	2928	3779

3.3 **Directions Issued By Hon'able Supreme Court in WP (Civil) Nos 13029/85, 9300/92 And Others (M.C.Mehta V/S Union Of India & Others)**

Supreme Court in its order in WP (C) nos 13029/85 & 9300/92 etcs (M.C.Mehta V/S Union Of India & Others) ordered that a comprehensive programme on traffic management ensuring road safety be prepared including

- Marking Zebra crossings
- Marking of bus lanes and bus bays,
- Provision of regulatory road signage regarding speed restrictions, presence of schools by the road side
- removing hazardous hoardings
- Ban of Heavy Vehicles in day time

The recent order of the Hon'ble Supreme Court is placed at Annexure III.

3.4 **White Paper on Pollution**

To relieve congestion on Delhi roads, the actions that need to be taken include:

- The existing road capacity / network to be better utilised by upgrading traffic management systems.
- Provision of Cycle tracks and greater use of existing ones.
- Construction of Mass Rapid Transit System (MRTS) and dovetailing the rail based mass transport system with the road transport system.
- Construction of road bye-pass for Delhi.
- Construction of expressways
- Constructing fast motorways to enable transit traffic to pass unhindered .

3.4 **Decisions of GNCTD**

GNCTD has awarded the work of preparation of Master plan for cycle tracks in NCTD to IIT Delhi. The study is in progress.

4. **EXAMINATION**

The case has been examined witlf reference to the guidelines as approved by Authority vide Resolution No. 54 dated. 13.8.90 and directions issued by Hon'able Supreme Court in WP (C) 13029/85, & 9300/92 - M.C.Mehta v/s Union Of India & Others, White Paper on Environment, Ministry of Environment & various decisions of GNCTD available in this unit The comparative statement and observations are given below

GOVERNMENT OF NCT OF DELHI
DEPARTMENT OF TRANSPORT
5/9, Under Hill Road, Delhi-110054

DIRECTIONS OF THE HON'BLE SUPREME COURT OF INDIA IN WRIT PETITION (CIVIL) NO. 13029 OF 1985 IN THE MATTER OF M.C. MEHTA VS. UNION OF INDIA AND OTHERS FOR GENERAL NOTICE OF PUBLIC AND ALL CONCERNED :

1. Plying of All Commercial Vehicles including taxis, which are 15 years old, shall be restricted by 2nd October 1998.
2. Restrictions on plying of goods vehicles during the day time shall be strictly enforced by 15th August, 1998.
3. Expansion of pre-mixed old dispenser (Petrol and 2T oil) shall be undertaken by 31st December, 1998.
4. Ban on supply of loose 2T oils at petrol stations and service garages shall be enforced by 31st December, 1998.

The following time schedule shall be adhered in respect of items indicated by all concerned authorities :

		Time frame
a)	Augmentation of public transport (stage carriage) to 10,000 buses.	1.4.2001
b)	Elimination of leaded petrol from NCT of Delhi.	1.9.1998
c)	Supply of only pre-mix petrol in filling stations to two-stroke engine vehicles.	31.12.1998
d)	Replacement of all pre-1990 autos and taxis with new vehicles on clean fuels.	31.3.2000
e)	Financial incentives for replacement of all post-1990 autos and taxis with new vehicles on clean fuels.	31.3.2001
f)	No 8-year old buses to ply except on CNG or other clean fuels.	1.4.2000
g)	Entire city bus felt (DTC & Private) to be steadily converted to single fuel mode on CNG.	31.3.2001
h)	New ISBTs to be built at entry points in North and South-West to avoid pollution due to entry of inter-state buses.	31.3.2000
i)	GAIL to expedite and expand from 9 to 80 CNG supply outlets.	31.3.2000
j)	Two independent fuel testing labs to be established.	1.6.1999
k)	Automated inspection and maintenance facilities to be set up for commercial vehicles in the first phase.	Immediate
l)	Comprehensive I/M programme to be started by Transport Department & private sector.	31.3.2000
m)	CPCB/DPCC to set up new stations and strengthen existing air quality monitoring stations for critical pollutants.	1.4.2000

DIRECTIONS :-

(i) No heavy and medium transport vehicles, and light goods vehicles being four wheelers would be permitted to operate on the roads of the NCR and NCT, Delhi unless they are fitted with suitable speed control devices to ensure that they do not exceed the speed limit of 40 KMPH except the transport vehicles operating on Inter-State permits and National goods permits and All India Tourist Permits. Such exempted vehicles would, however, be confined to such routes and such timings during day and night as the police/transport authorities may publish. It is made clear that no vehicle would be permitted on roads other than the aforementioned exempted roads other than the aforesaid time without a speed control device.

(ii) The authorities shall ensure that the transport vehicles are not permitted to overtake any other four-wheel motorised vehicle.

(iii) This will also ensure that wherever it exists, buses, heavy goods vehicles, medium goods vehicles and 4-wheel light goods vehicles plying during the permitted hours shall confine the bus lanes and no other motorised vehicle is permitted to enter upon the bus lane. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government and DDA, Union Government and the Delhi Cantt. Board shall take steps to ensure that bus lanes are segregated and road markings are provided on all such roads.

(iv) Buses halt only at Bus stops designated for the purpose and within the marked area. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government, DDA and Union of India and Delhi Cantt. Board would take all steps to have appropriate bus stops constructed, appropriate markings made, and 'bus-Bays' built.

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

IV.B	Phasing of the Scheme	shall be prepared along with detailed proposal	
	Traffic Diversion Plan (during construction period)	Details awaited	
	Utilisation of space below fly over	not envisaged	
	Petrol Pump	Details awaited	
	Lighting	Details awaited	
	Environment issues	Details awaited	

5. Detailed drawings, Report & Feasibility are in the process of completion by the consultant (RITES). Due to the crashed time schedule, the proposal in conceptual form, for this grade separator, as presented by the consultant, is placed before the Technical commitee for its consideration.

17/8/98

SR.NO. 4 / ITEM NO. 46/98/TC

Sub **Grade Separator at Vikas Marg and Road No 57 nearPreet Vihar**

Ref: **File NO.F5 (10) 98-MP**

1. BACKGROUND

A meeting washeld under the Chairman ship of Hon'ble Lt. Governor on 30.05.98 to firm up the location for the provision of grade separators and to distribute the work among the various agencies to complete the work in 18 to 24 months.

In this meeting, 15 intersections were identified for provision of grade separators in order to resolve the traffic congestion. It was also clarified that out of these 15 locations, 7 would be taken up by the DDA, 6 by PWD), 1 by MCD and 1 by DTTDC.

2. INTRODUCTION

2.1 DDA appointed RITES as consultants for all the seven locations.The proposal for a two level grade separator at **Vikas Marg and Road No 57 near Preet Vihar** has been submitted by **RITES** vide letter No. **RITES/UT/334/98** dated **August 17, 1998.**

2.2 Location

The proposed grade separator is located at the crossing of Vikas Marg and Road No 57 near Preet Vihar. It is an important location as Vikas Marg is the major transport artery connecting east Delhi to Rring road and Connaught Place via ITO. Road no 57 is an important link as this provides regional linkage from ISBT, Kashmiri Gate to east bound traffic, in addition to north-south movement in trans Yamuna areas. (ANNEXUR - I)

2.3 Proposal

A technical note submitted by RITES giving description of the proposal is placed at Annexure II

3.0 PREVIOUS DECISIONS/ DIRECTIVES

3.1 MPD 2001 Provisions

(i) The Grade separators should also have the grade separation for the pedestrians in general and cyclist wherever required

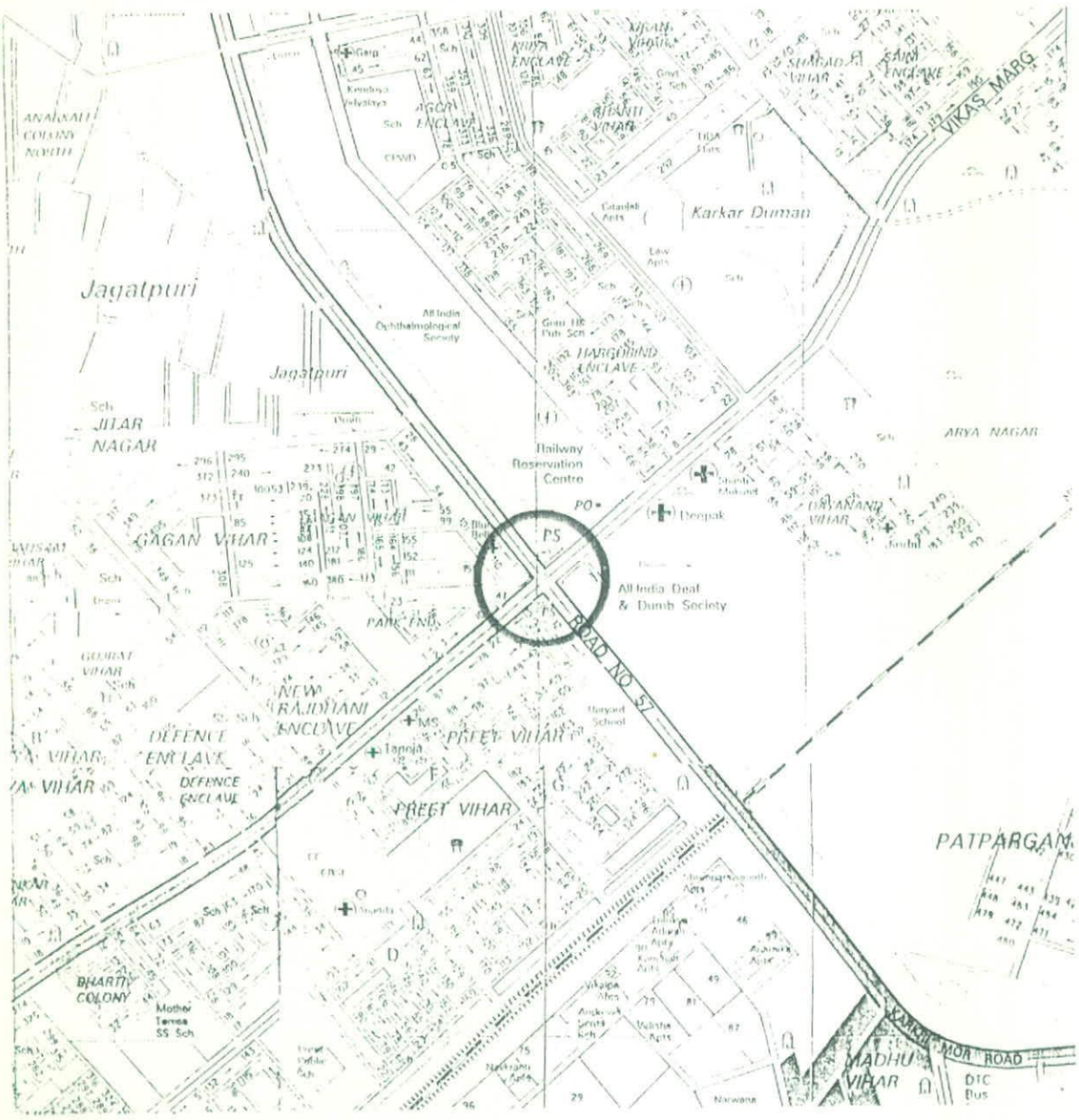
(ii) All master plan roads (30 m and above right of way) crossing railway lines shall have grade separation.

3.2 Authority's Decision

L.G. Delhi while recording the progress of grade separator desired that DDA in consultation with PWD(DA) may workout the guidelines for designing the flyovers/grade separators and bring before the Authority for its consideration. Accordingly the agenda was prepared and placed before Authority vide resolution no. 54 dated. 13.8.90.

	AUTHORITY GUIDELINES	PROPOSAL SUBMITTED	REMARKS
I	Grade separator should be provided on Ring Road/Outer Ring Road	a) Not applicable b) Grade Separator provided along Road No 57. In addition two loops have been proposed on the eastern side of raod no 57 in the first phase.	
II	Flyover provision could be made for 3rd level below ground when found necessary	Not applicable	
III A	On the Ring Road (60 m. R/W) and on parts of the Outer Ring Road width (60 m R/W) the flyover shall consist of 9 m. width of 3 lanes (3 m each) in each direction	Not applicable	
B	In cases where the R/W of Outer Ring Road is 45 m then 2 lanes of 7.5 could be provided. In such cases efforts should be made to increase the R/W of Outer Ring Road is 300 m, length of flyover section.	Not applicable	
C	Service road of about 6 m should be provided which could be reduced to 4.5 m incase of 45 m. R/W	Service Lane of 7.5 m width on either side are proposed	
D	The minimum width of the footpath should be specified as 2 m.	2 m wide foot paths are proposed	
E	The clear head way between road camber & bottom of the beam should be 5.5 m	Clear head way under the bottom of the proposed structure is kept as 5.5 m	
F	3.5 m wide strip (as base on one side) shall be reserved for H.T. Lines.	Details awaited	
G	The slope of the bridge should be at 1:30 For smooth movement of cyclist depending upon the volume.	Details awaited	
IV.A	a) The road improvement upto the next major intersection on each and on all the arms shall form part of a grade separator b) The circulation of surrounding area shall be properly integrated with grade separator scheme	Details awaited Details awaited	

Annexure : I



VIKAS MARG & ROAD NO.57 (KAKARI MORE)

TRAFFIC DATA & CONCEPT PLANS FOR FLY OVERS AT

1. MATHURA ROAD (NH2)-ROAD NO. 13 A
2. VIKAS MARG – ROAD NO. 57
3. NH 24-NOIDA ROAD MODE
4. WAZIRABAD ROAD- ROAD NO. 66

RITES

VIKAS MARG – ROAD NO. 57 INTERSECTION

1. SITE APPRAISAL

The Vikas Marg – Road No.57 (Kadkadi Morh) Intersection is located in East Delhi as shown in key plan (Figure No.1). The intersection is four armed. The two corners on the Northern side of the Intersection along Vikas Marg are built up while the Eastern corners are open with a Nallah running parallel to Road No.57. The ramp of road over bridges over the railway line starts just about 50 metres from the intersection along Road No.57. The right of way (ROW) of Vikas Marg towards ITO is 45 metre, but towards Anand Vihar, it reduces to 24-30 metres.

All the traffic from East Delhi (Shahdra, Anand Vihar,Vivek Vihar,etc) to other areas of Delhi passes through this intersection. It also connects NH 24 with Shahdra and new ISBT Bridge; thus the regional buses also pass through this intersection.

The proposed land use across the Nallah on the north eastern side is DDA's Institutional Area.

2.0 TRAFFIC CHARACTERISTICS

2.1 Approach Volumes From

Anand Vihar		Ghaziabad		ITO		Shahdara		Total	
PCU	Vehicles	PCU	Vehicles	PCU	Vehicles	PCU	Vehicles	PCU	Vehicles
Morning									
3905	4358	3502	4086	2594	2628	2128	2606	11629	13732
29%		30%		22%		19%		100%	
Evening									
1732	2159	2321	2540	4334	4851	1904	2565	10291	12115
17%		23%		42%		18%		100%	

Ref. Fig. 2a & 2b

2.2 Present Traffic Composition

Morning Peak Hours (MPH)

- Major Bus flows are

  Anand Vihar to ITO (153)

  ITO to Shahdara (93) followed by Shahdara to ITO (75)

- Major Fast Passenger Vehicles flows are

  Anand Vihar to ITO (2662)

  Ghaziabad to ITO (995) and Ghaziabad to Shahdara (748)

- NMT flows are

  Anand Vihar to ITO (868)

  Ghaziabad to Anand Vihar (451)

Evening Peak Hours (EPH)

- Bus flows are

  ITO – Shahdara (169)

- Fast Passenger

  ITO to Anand Vihar (1678)

  ITO to Ghaziabad (1295)

  Anand Vihar to ITO (1081)

- NMT flows are:

  Shahdra to Ghaziabad (714)

  ITO to Anand Vihar (548)

  Anand Vihar to ITO (363)

2.3 Traffic Projections

- Growth rate is assumed as 3% per annum for passenger vehicles
- Estimated traffic to/from sub-CBD Shahdara(MPD-2001) = 4000 PCU's in peak hour.
- It is assumed that 50% of this traffic will use this intersection.

- Estimated traffic by 2010 = 1.5 times of existing traffic + 2000 PCU's = 19443 PCU's

- It is assumed that by 2010 MRTS will be implemented between Shahdara / Sahibabad and Tilak Bridge. It is expected to bring in reduction of 15% in the passanger traffic by 2021.

- Estimated traffic by 2021 = (2 times of existing traffic + 2000 PCU's*1.5)* 0.85=22000 PCU's

3.0 PROBLEMS

- Very heavy straight traffic on both roads and three right turn movements.

- Anand Vihar - ITO straight movement, Ghaziabad -Shahdara straight movement,

- ITO – Ghaziabad (Right turn).

- Shahdra-ITO(Right turn).

- Ghaziabad - Anand Vihar (Right turn).

4.0 TRAFFIC MANAGEMENT PLAN

The approach volume at the intersection is of the order of 11629 PCUs, which is beyond the capacity(approx.7000 PCU's) of a signalised intersection. A traffic management plan has been prepared keeping in view the measures, which will reduce the traffic coming to the intersection. The traffic management plan is shown in figure No.3.* The traffic turning right from Anand Vihar towards Shahdara is proposed to be banned as an alternate parallel road to the road No.57 is available. Moreover, there is no access to any building to be provided upto the secondary intersection along road No.57 as it is at higher level than the service road serving the Gagan Vihar area. Widening of existing approaches especially on Anand Vihar side is essential i.e. widening of the existing culvert to 6 lane-way. No other traffic can be diverted due to constraints of railway lines and nallah. With the above traffic management measures, the reduction in the traffic is minimal and the intersection still needs grade separation. The saturation capacity (Y-value) marginally reduces from 2.5 to 2.0.

5.0 CONCEPT FOR GRADE SEPARATION

The two basic options at this intersection are Vikas Marg flyover (Option 1) or the Road No 57 flyover (Option 2).

Option 1. (Figure 4.1) has the problem inadequate of right of way along the Vikas Marg east of the intersection. The planned right of way of east intersection is 30 metres but the actual right of way is 24 metres. This flyover will also have to cross the Nallah above the existing bridge. The option of lifting road No.57 will mean that the flyover has to be in continuation of the existing Road Over Bridge (ROB). This option (figure 4.2) of an extension of the existing ROB is preferred as sufficient land is available along the road to accommodate the ramps.

The traffic at this inter-section both straightway and right turning is very heavy with a very high value of 'Y' (2.5). A simple flyover will not be adequate even today. Interchange loops are essential because of the intensity of the traffic. Two loops on the east side of road No.57 to accommodate the right turning movements from ITO to Ghaziabad and from Shahdara to ITO can be accommodated because adequate land is available by covering the nallah. One right turning movement from Anand Vihar to Shahdara, which is very light, can be banned. Alternate roads are available to take care of this movement. The fourth right turning movement from Ghaziabad to Anand Vihar will have to be maintained at grade by signalising the inter-section.

With this option i.e. flyover at road No.57 with two loops, the saturation capacity of intersection (Y value) reduces to 0.95 at present. Based on the traffic projections, the Y value becomes 1.45 and 1.61 by the years 2010 and 2021. This figure is very high and will result in choking of the intersection unless some drastic measures are taken. The options of providing underpass at Vikas Marg was examined but is not found feasible because of inadequate right of way. The only solution available is to prohibit right turning movement for all vehicles from Ghaziabad end to Anand Vihar. This will bring down the Y values acceptable limits in the years 2010 and 2021.

However, banning of all right turning movements from Ghaziabad to Anand Vihar is not recommended, as there is a considerable NMT and public bus traffic. It is accordingly, recommended that all right turning traffic towards Anand Vihar, other than cycles and public transport be banned after construction of the flyover.

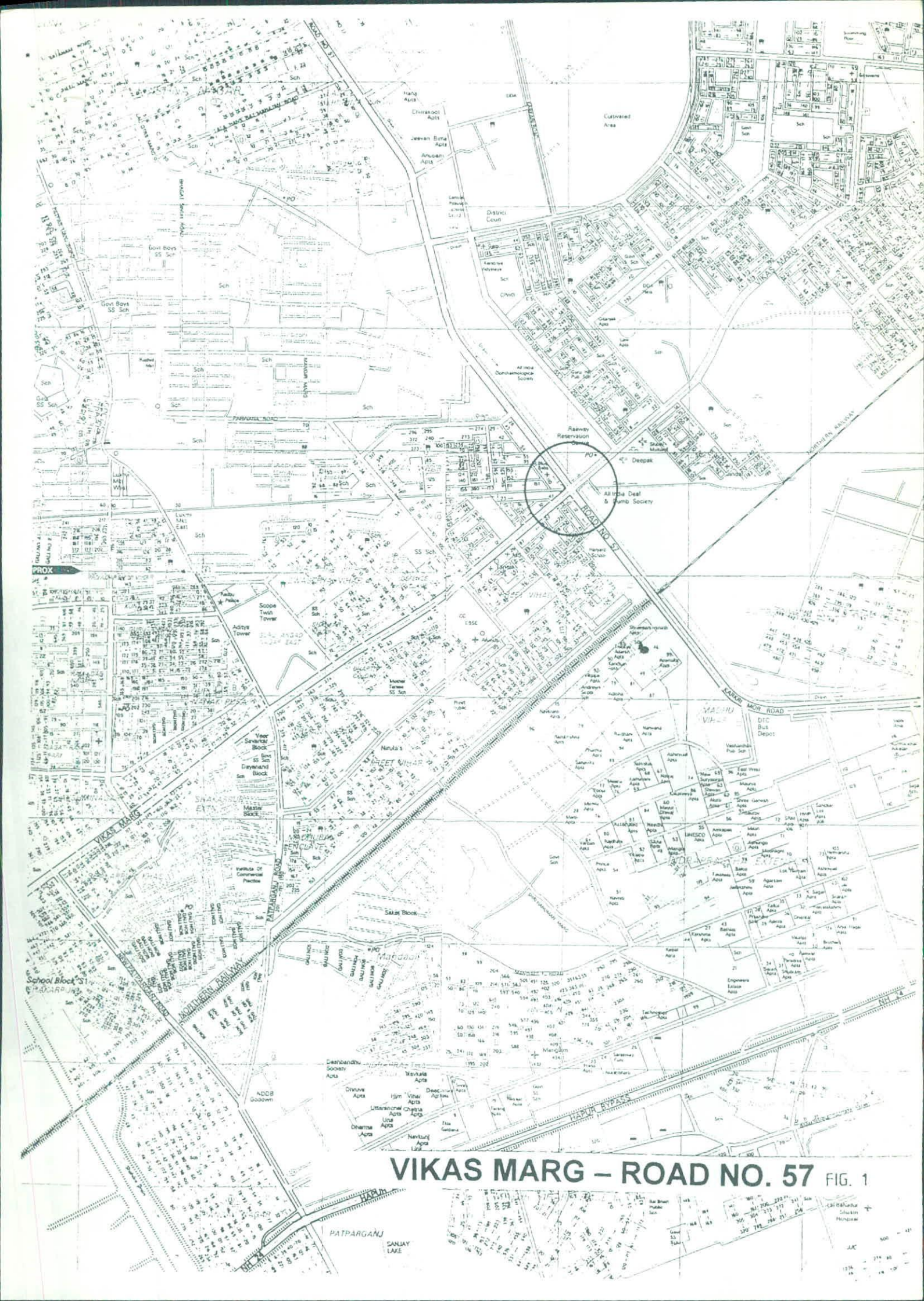
The estimated 'Y' values will be 1.42 and 1.56 respectively in years 2010 and 2021 respectively. The position will need to be reviewed in year 2010 and if required right turning movements towards Anand Vihar may be banned.

6.0 RECOMMENDED OPTION

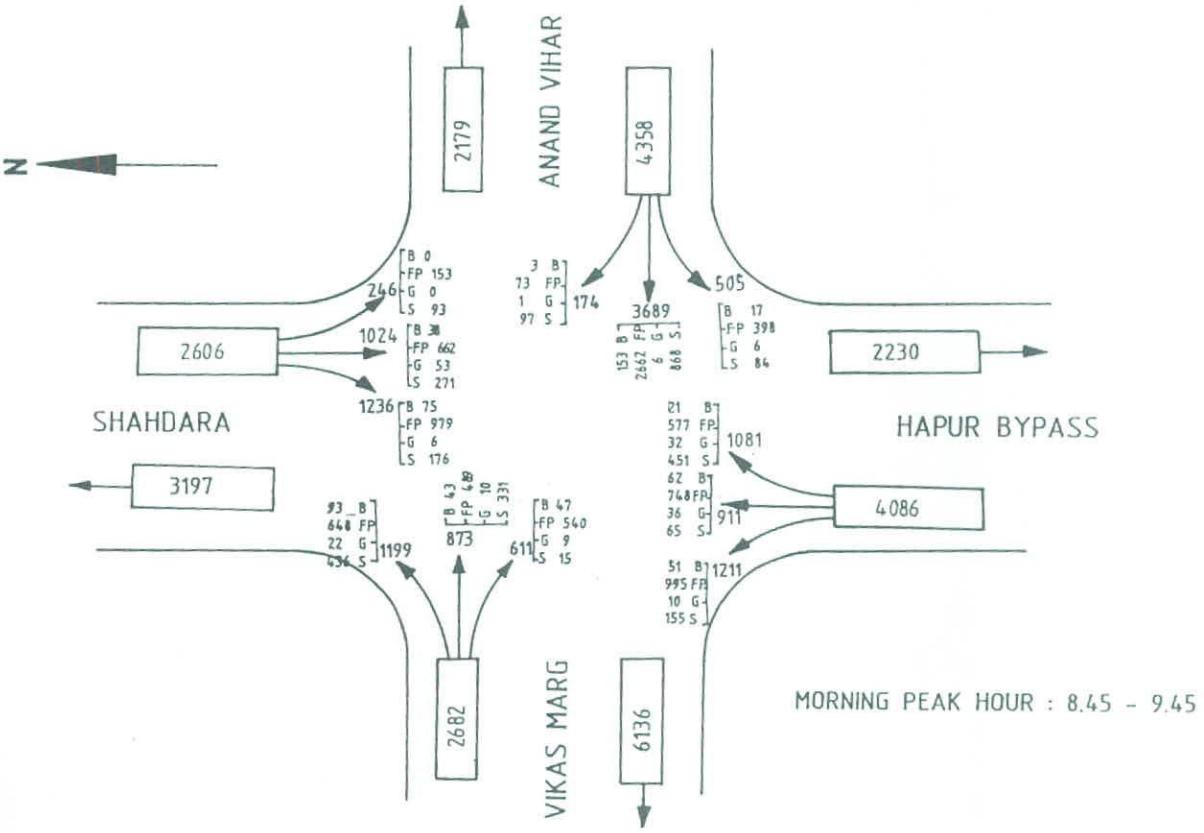
Considering the factors mentioned in the preceding section, the recommended option is to have a flyover along Road 57 with two loops to take care of right turning movements between ITO and Ghaziabad and between Shahdara and I.T.O. A conceptual sketch for this option is enclosed as Figure 5.

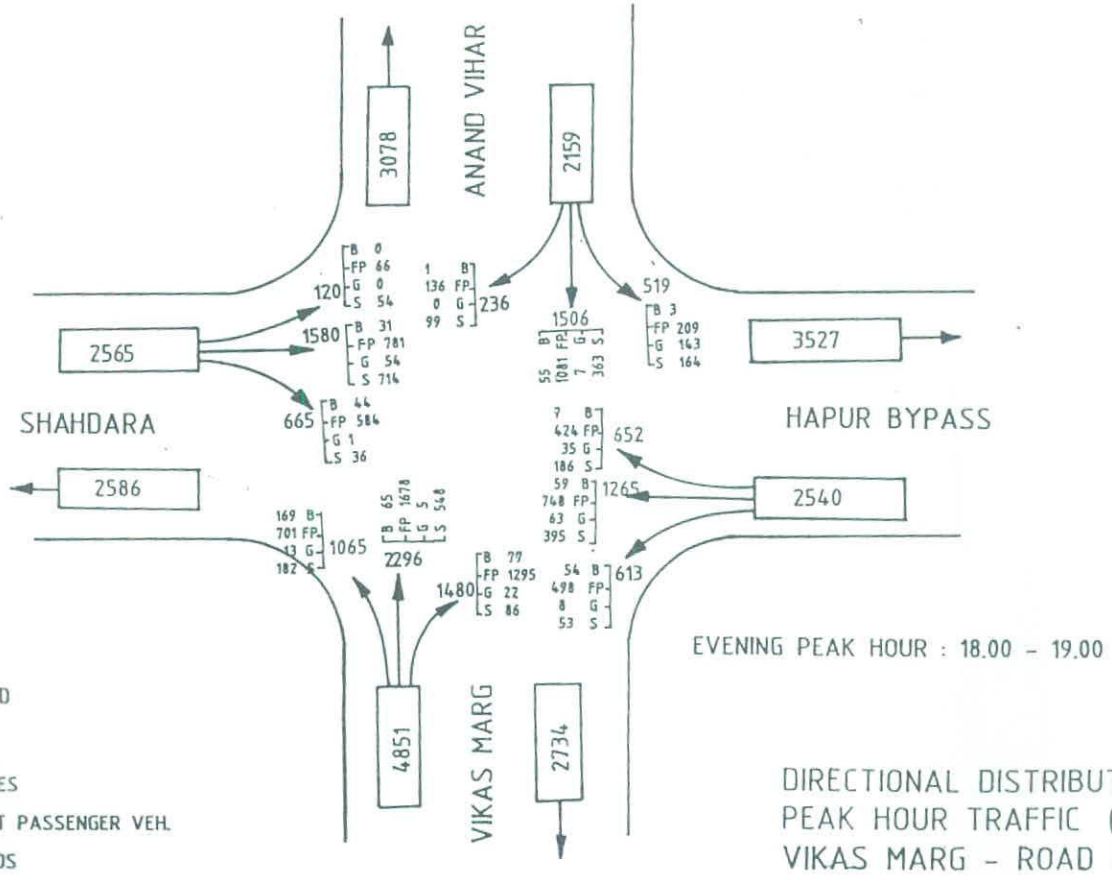
It is also recommended that right turning movement for all vehicles other than cycles and public transport from Ghaziabad to Anand Vihar be also banned after construction of the flyover.

The 'Y' values for present as well as for years 2010 and 2021 are estimated to be 0.95, 1.42 and 1.56, respectively. These figures are not very low and accordingly, it is recommended that the option be implemented at one go.



VIKAS MARG – ROAD NO. 57 FIG. 1



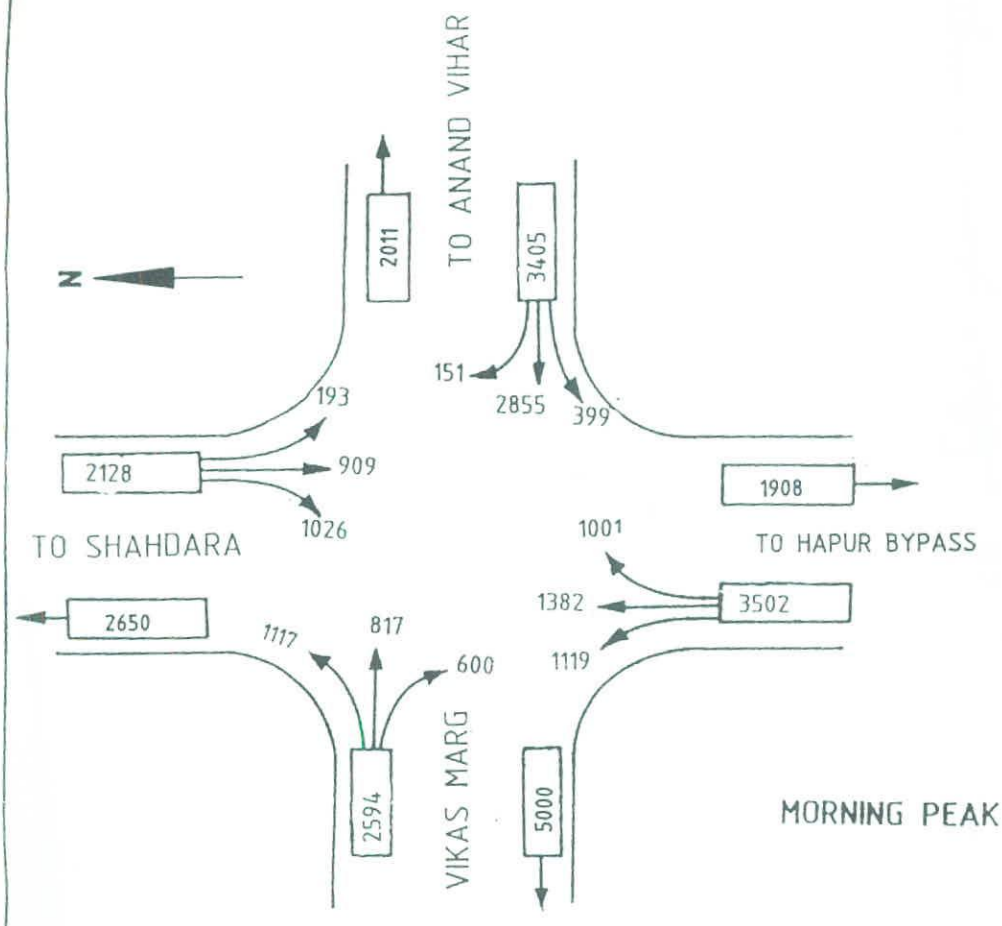


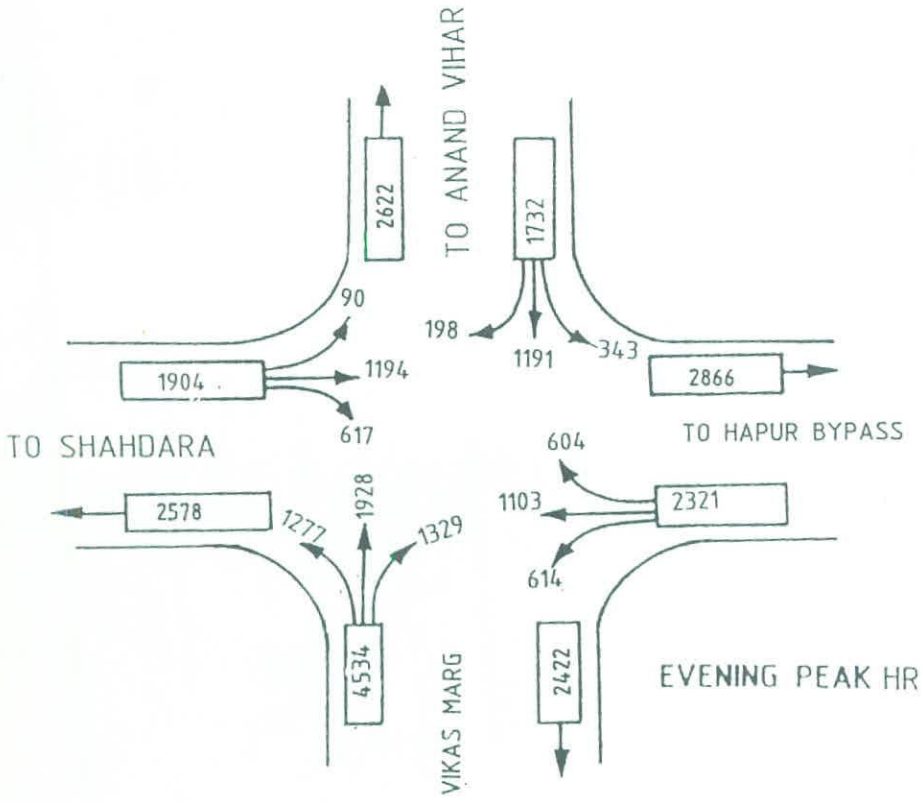
LEGEND

B	BUSES
FP	FAST PASSENGER VEH.
G	GOODS
S	SLOW MOVING VEH.

DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (VEH.) 1998
VIKAS MARG - ROAD No. 57 INTERSECTION

FIGURE. 2(b)





DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (PCU) 1998
VIKAS MARG - ROAD NO. 57 INTERSECTION

FIGURE. 2(a)

VIKAS MARG - ROAD NO. 57 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 1
		 FLYOVER ALONG VIKAS MARG
1998	2.50	1.08
2010	3.80	1.65
2021	4.25	1.87

FIG. 4-A

VIKAS MARG - ROAD NO. 57 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

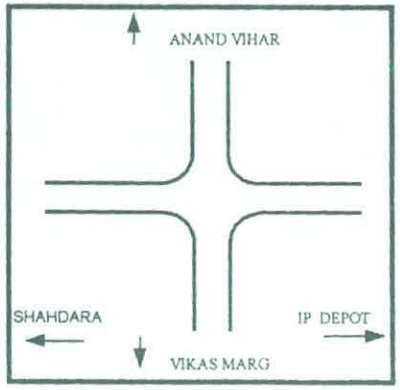
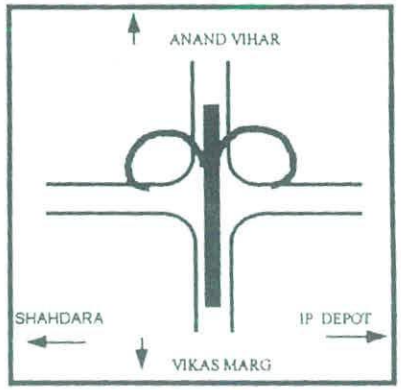
YEAR	DO NOTHING	ALTERNATIVE 2
		 FLYOVER ALONG VIKAS MARG + DOUBLE LOOPS
1998	2.50	0.94
2010	3.80	1.50
2021	4.25	1.63

FIG. 4B

VIKAS MARG - ROAD NO. 57 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

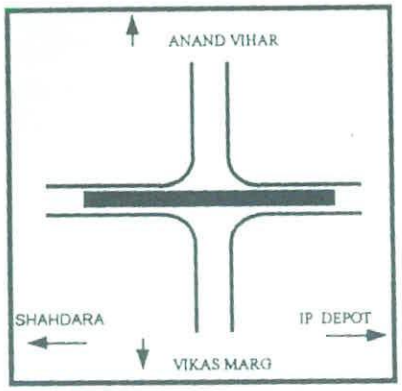
YEAR	DO NOTHING	ALTERNATIVE 3
		 FLYOVER ALONG ROAD NO. 57
1998	2.50	2.03
2010	3.80	3.10
2021	4.25	3.44

FIG. 4C

VIKAS MARG - ROAD NO. 57 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

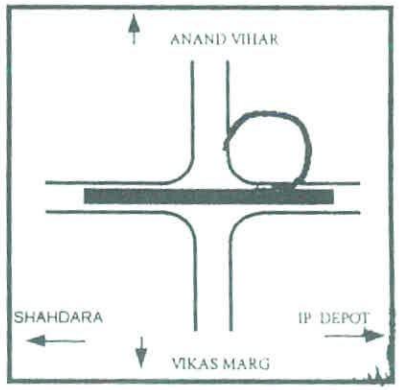
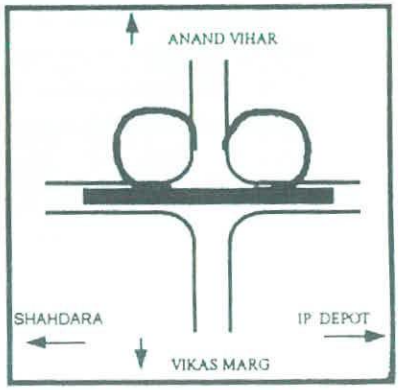
YEAR	DO NOTHING	ALTERNATIVE 4
		
		FLYOVER ALONG ROAD NO. 57 + SINGLE LOOP
1998	2.50	1.63
2010	3.80	2.45
2021	4.25	2.81

FIG. 4D

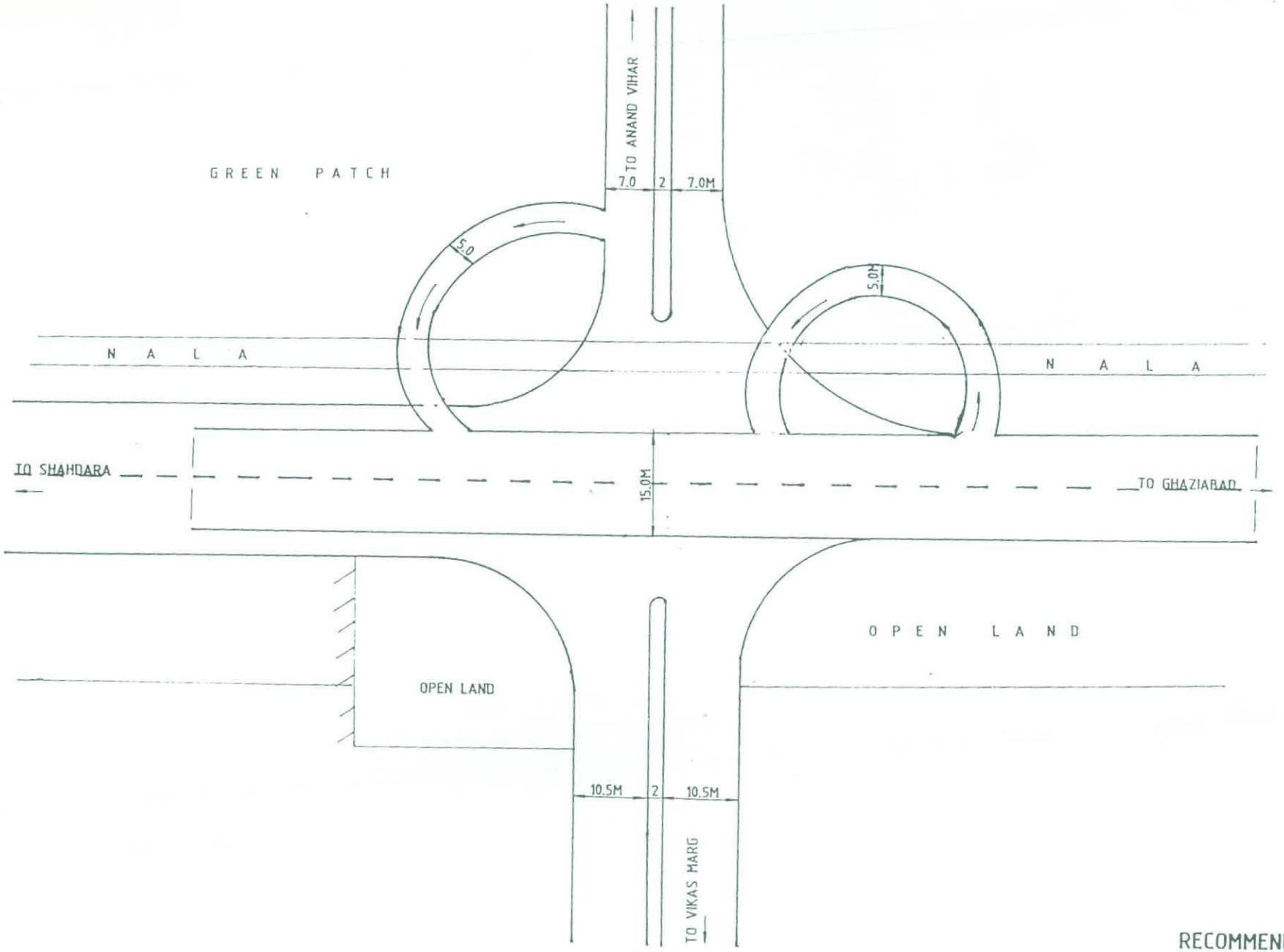
VIKAS MARG - ROAD NO. 57 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 5
		
		FLYOVER ALONG ROAD NO. 57 + DOUBLE LOOP
1998	2.50	0.95
2010	3.80	1.42 *
2021	4.25	1.56 *

* BAN ON RIGHT TURNING MOVEMENT TOWARDS ANAND VIHAR FOR ALL PRIVATE / GOODS VEHICLES

FIG. 4E



RECOMMENDED OPTION

FIGURE. 5

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

(vii) No bus belonging to or hired by an educational institution shall be driven by a driver who has :

a) less than five years of experience.

b) been challaned more than twice in a year in respect of offences of jumping red lights, improper or obstructive parking, vigilating the stop line, violating the rule requiring driving within the bus lane, violating restricting the overtaking, allowing unauthorised person to drive.

c) been challaned/charged even once for the offence of over speeding, drunken driving and driving dangerously or for the offences under Sections 279, 337, 338 and 304-A of the Indian Penal Code.

(viii) All drivers of school buses or buses hired by an educational institution would be dressed in a distinctive uniform and all such buses shall carry a suitable inscription to indicate that they are in the duty of an educational institution.

(ix) Flying Squads shall be made up or inter-departmental teams headed by an SDM shall be constituted and they shall exercise powers under Section 207 as well as Section 84 of the Motor Vehicles Act.

(x) The Government shall notify under Section 86(4) the officers of the rank of Assistant Commissioners of Police or above so that these officers are also utilised for constituting the flying squads.

(xi) The Transport Authorities shall consider immediately the problems arising out of congestion caused by different kinds of motorised and non-motorised vehicles using the same roads. The police and transport authorities shall identify those roads which they consider unfit for use by motorised or certain kinds of motorised traffic and issue suitable directions to exclude the undesirable form of traffic from those roads.

(xii) The civic authorities including DDA, the Railways, the Police and Transport Authorities, would identify and remove all hoardings which are on road-sides and which are hazardous and a disturbance to safe traffic movement. In addition, steps would be taken to put up road/traffic signs which facilitate free flow of traffic.

(xiii) No authority shall interfere with the functioning of the Police and Transport Authority in so far as implementation and execution of these directions are concerned.

(xiv) All Commercial licences issued during the period 1993-95 shall be re-verified by the Transport Department to weed out all such licences which have been issued without following the Rules.

(xv) The Transport Department to prescribe a suitable refresher training course as a condition for the renewal of any licence to drive a heavy vehicle.

(xvi) The Transport Authorities shall not renew any permit which has been or is being used by any person other than the original grantee, without the express prior permission of the grantee.

(xvii) The Civic Authorities shall take necessary steps to remove immediately all encroachments - temporary or permanent on roads and pavements, which affect the smooth flow of traffic or obstruct the way of pedestrians. Stray cattle and other similar obstructions shall also be similarly dealt with.

(xviii) No bus shall be used by an educational institution unless it is fitted with doors which can be closed. No additional institutions shall use a bus after 31.12.98 if it has an open door.

(xix) No bus shall be used by or in the service of an educational institution shall be permitted to operate without a qualified conductor being present at all times after 30th April, 1998.

(xx) The Education Department shall ask all Schools including Government and Municipal schools to evolve a system in which parents of the wards could accompany the bus to ensure that drivers drive safely and lives of the school children are not put in danger. As far as possible, to ensure that in each bus there is atleast one parent present who would be able to oversee the conduct of the driver. This step would go a long way in ensuring that the directions given as well as other safety measures prescribed are complied with in letter and spirit and that the driver drives carefully.

(xxi) No bus belonging to or in use of any educational institution shall seat children in excess of 1.5 times its registered seating capacity. Similarly, other modes of public transport such as TSRs, Taxis and other vehicles including rickshaws used for transporting the students of an educational institution should be permitted to carry children more than 1.5 times their registered seating capacity.

(xxii) There would be no grant of fresh permits in respect of TSRs, except by way of replacement of an existing working TSR with a new one.

(xxiii) We direct the Police Commissioner to frame appropriate guidelines for regulating processions - religious, political or otherwise which tend to obstruct the flow of traffic. These guidelines should be in conformity with the rights of the users of the roads and the exercise of fundamental freedom of other citizens indicated by this Court in its judgement in Communist Party of India (M) Vs Bharat Kumar and Others, JT 1997 (9) SC 101.

A. S. KHULLAR
ADDITIONAL DIRECTOR TRANSPORT

ADDENDUM

EXPECTED TRAFFIC ON THE FLYOVER (IN PCU's)

VIKAS MARG – ROAD NO. 57 INTERSECTION

	1998	2010	2021
FLYOVER	4318	6693	8636
LOOP-1 (Shahdara to Vikas Marg)	1026	2590	3052
LOOP-2 (Vikas Marg to Patparganj Depot)	1329	2060	2658

3.2 **Authority's Decision**

L.G., Delhi while recording the progress of grade separators, desired that DDA in consultation with PWD(DA) may workout the guidelines for designing the flyovers/grade separators and bring before the Authority for its consideration. Accordingly the agenda was prepared and placed before Authority vide resolution no. 54 dated. 13.8.90.

3.3 **Directions Issued By Hon'able Supreme Court in WP (Civil) Nos 13029/85, 9300/92 And Others (M.C.Mehta V/S Union Of India & Others)**

Supreme court in its order in WP (C) nos 13029/85 & 9300/92 etcs (M.C.Mehta V/S Union Of India & Others) ordered that a comprehensive programme on traffic management ensuring road safety be prepared including

- Marking Zebra crossings
- Marking of bus lanes and bus bays,
- Provision of regulatory road signage regarding speed restrictions, presence of schools by the road side
- removing hazardous hoarding
- Ban of Heavy Vehicles in day time

The recent order of the Hon'ble Supreme Court is placed at Annexure III.

3.4 **White Paper on Pollution**

To relieve congestion on Delhi roads, the actions that need to be taken include:

- The existing road capacity / network to be better utilised by upgrading traffic management systems.
- Provision of Cycle tracks and greater use of existing ones.
- Construction of Mass Rapid Transit System (MRTS) and dovetailing the rail based mass transport system with the road transport system.
- Construction of road bye-pass for Delhi.
- Construction of expressways
- Constructing fast motorways to enable transit traffic to pass unhindered .

3.4 **Decisions of GNCTD**

GNCTD has awarded the work of preparation of Master plan for cycle tracks in NCTD to IIT Delhi. The study is in progress.

4. **EXAMINATION**

The case has been examined with reference to the guidelines as approved by Authority vide Reso. No. 54 dated. 13.8.90 and directions issued by Hon'able Supreme Court in WP (C) 13029/85, & 9300/92 - M.C.Mehta v/s Union Of India & OTHERS, White Paper on Environment, Ministry of Environment & various decisions of GNCTD available in this unit. The comparative statement and observations are given below

ANNEXURE III

GOVERNMENT OF NCT OF DELHI
DEPARTMENT OF TRANSPORT
5/9, Under Hill Road, Delhi-110054

DIRECTIONS OF THE HON'BLE SUPREME COURT OF INDIA IN WRIT PETITION (CIVIL) NO. 13029 OF 1985 IN THE MATTER OF M.C. MEHTA VS. UNION OF INDIA AND OTHERS FOR GENERAL NOTICE OF PUBLIC AND ALL CONCERNED :

1. Plying of All Commercial Vehicles including taxis, which are 15 years old, shall be restricted by 2nd October 1998.
2. Restrictions on plying of goods vehicles during the day time shall be strictly enforced by 15th August, 1998.
3. Expansion of pre-mixed old dispenser (Petrol and 2T oil) shall be undertaken by 31st December, 1998.
4. Ban on supply of loose 2T oils at petrol stations and service garages shall be enforced by 31st December, 1998.

The following time schedule shall be adhered in respect of items indicated by all concerned authorities :

		Time frame
a)	Augmentation of public transport (stage carriage) to 10,000 buses.	1.4.2001
b)	Elimination of leaded petrol from NCT of Delhi.	1.9.1998
c)	Supply of only pre-mix petrol in filling stations to two-stroke engine vehicles.	31.12.1998
d)	Replacement of all pre-1990 autos and taxis with new vehicles on clean fuels.	31.3.2000
e)	Financial incentives for replacement of all post-1990 autos and taxis with new vehicles on clean fuels.	31.3.2001
f)	No 8-year old buses to ply except on CNG or other clean fuels.	1.4.2000
g)	Entire city bus felt (DTC & Private) to be steadily converted to single fuel mode on CNG.	31.3.2001
h)	New ISBTs to be built at entry points in North and South-West to avoid pollution due to entry of inter-state buses.	31.3.2000
i)	GAIL to expedite and expand from 9 to 80 CNG supply outlets.	31.3.2000
j)	Two independent fuel testing labs to be established.	1.6.1999
k)	Automated inspection and maintenance facilities to be set up for commercial vehicles in the first phase.	Immediate
l)	Comprehensive I/M programme to be started by Transport Department & private sector.	31.3.2000
m)	CPCB/DPCC to set up new stations and strengthen existing air quality monitoring stations for critical pollutants.	1.4.2000

DIRECTIONS :-

(i) No heavy and medium transport vehicles, and light goods vehicles being four wheelers would be permitted to operate on the roads of the NCR and NCT, Delhi unless they are fitted with suitable speed control devices to ensure that they do not exceed the speed limit of 40 KMPH except the transport vehicles operating on Inter-State permits and National goods permits and All India Tourist Permits. Such exempted vehicles would, however, be confined to such routes and such timings during day and night as the police/transport authorities may publish. It is made clear that no vehicle would be permitted on roads other than the aforementioned exempted roads other than the aforesaid time without a speed control device.

(ii) The authorities shall ensure that the transport vehicles are not permitted to overtake any other four wheel motorised vehicle.

(iii) This will also ensure that wherever it exists, buses, heavy goods vehicles, medium goods vehicles and 4 wheel light goods vehicles plying during the permitted hours shall confine the bus lanes and no other motorised vehicle is permitted to enter upon the bus lane. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government and DDA, Union Government and the Delhi Cantt. Board shall take steps to ensure that bus lanes are segregated and road markings are provided on all such roads.

(iv) Buses halt only at Bus stops designated for the purpose and within the marked area. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government, DDA and Union of India and Delhi Cantt. Board would take all steps to have appropriate bus stops constructed, appropriate markings made, and 'bus Bays' built.

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

IV B	Phasing of the Scheme	shall be prepared along with detailed proposal	
	Traffic Diversion Plan (during construction period)	Details awaited	
	Utilisation of space below fly over	not envisaged	
	Petrol Pump	Details awaited	
	Lighting	Details awaited	
	Environment issues	Details awaited	

5. Detailed drawings, Report & Feasibility are in the process of completion by the consultant (RITES). Due to the crashed time schedule, the proposal in conceptual form, for this grade separator, as presented by the consultant, is placed before the Technical commitee for its consideration.

17/8/98

SR.NO. 5/ITEM NO. 417/98/TC

Sub **Grade Separator at NH 24 (Bye-pass) and Noida Road intersection**

Ref: **File NO.F5 (11) 98-MP**

1. **BACKGROUND**

A meeting was held under the Chairman ship of Hon'ble Lt. Governor on 30.05.98 to firm up the location for the provision of grade separators and to distribute the work among the various agencies to complete the work in 18 to 24 months.

In this meeting, 15 intersections were identified for provision of grade separators in order to resolve the traffic congestion. It was also clarified that out of these 15 locations, 7 would be taken up by the DDA, 6 by PWD, 1 by MCD and 1 by DTTDC.

2. **INTRODUCTION**

2.1 DDA appointed RITES as consultants for all the seven locations.The proposal for a two level grade separator at **NH 24 and Noida Road intersection near Nizamuddin Bridge** has been submitted by **RITES** vide letter No. **RITES/UT/334/98** dated **August 13, 1998.**

2.2 **Location :**

The proposed grade separator is located at the crossing of NH 24 (bye-pass) and Noida Road near Nizamuddin Bridge. At present it is a 'T' junction which would become a complete four arm junction once the proposed eastern bund road connection to ITO is completed. It is an important location as NH 24 caters to the regional traffic along with local traffic and Noida road provides access to Mayur vihar residential area and group housing societies in addition to being an important connection for Noida traffic bound for north Delhi, ITO and Connaught Place etc.

A location plan is placed at annexure I

2.3 **Proposal**

A technical note submitted by RITES giving description of the proposal is placed at Annexure II.

3.0 **PREVIOUS DECISIONS/ DIRECTIVES**

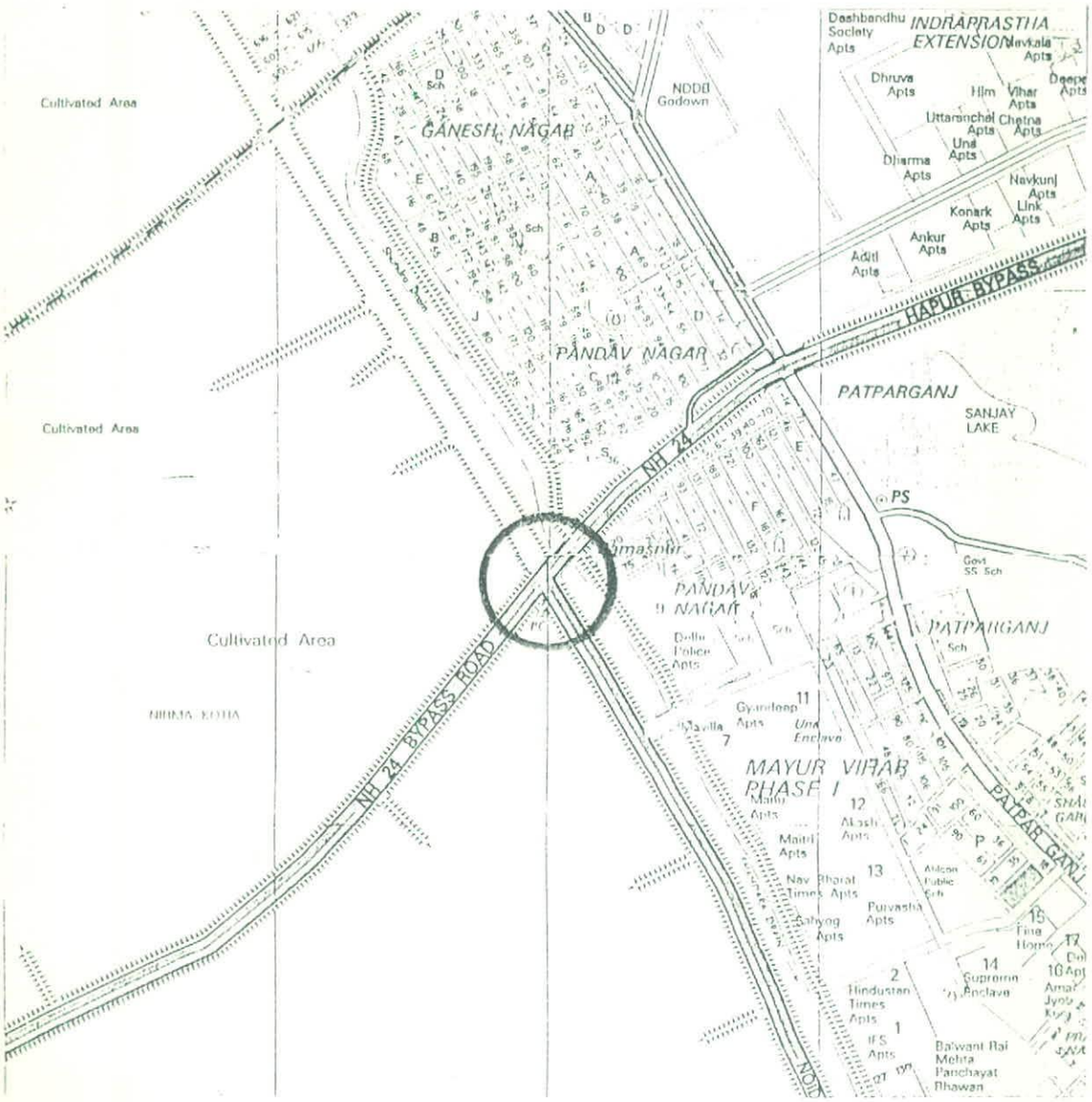
3.1 **MPD 2001 Provisions**

(i) The Grade separators should also have the grade separation for the pedestrians in general and cyclist wherever required

(ii) All master plan roads (30 m and above right of way) crossing railway lines shall have grade separation.

	AUTHORITY GUIDELINES	PROPOSAL SUBMITTED	REMARKS
I	Grade separator should be provided on Ring Road/Outer Ring Road	Grade Separator provided along Eastern Marginal bund Road along with two loops in the north of NH24 (bye-pass} in the first phase.	
II	Flyover provision could be made for 3rd level below ground when found necessary	Provision for two additional loops in the south of NH24, has been proposed in the second phase.	
III A	On the Ring Road (60 m. R/W) and on parts of the Outer Ring Road width (60 m R/W) the flyover shall consist of 9 m. width of 3 lanes (3 m each) in each direction	Not applicable	
B	In cases whether the R/W of Outer Ring Road is 45 m then 2 lanes of 7.5 could be provided. In such cases efforts should be made to increase the R/W of Outer Ring Road is 300 m, length of flyover section.	Not applicable	
C	Service road of about 6 m should be provided which could be reduced to 4.5 m incase of 45 m. R/W	Service Lane of 7.5 m width on either side are proposed	
D	The minimum width of the footpath should be specified as 2 m.	2 m wide foot paths are proposed	
E	The clear head way between road camber & bottom of the beam should be 5.5 m	Clear head way under the bottom of the proposed structure is kept as 5.5 m	
F	3.5 m wide strip (as base on one side) shall be reserved for H.T. Lines.	Details awaited	
G	The slope of the bridge should be at 1:30 For smooth movement of cyclist depending upon the volume.	Details awaited	
IV.A	a) The road improvement upto the next major intersection on each and on all the arms shall form part of a grade separator b) The circulation of surrounding area shall be properly integrated with grade separator scheme	Details awaited Details awaited	

Annexure : I



NH-24 BYEPASS & MARGINAL BUND ROAD

ANNEXURE- II

TRAFFIC DATA & CONCEPT PLANS FOR FLY OVERS AT

1. MATHURA ROAD (NH2)-ROAD NO. 13 A
2. VIKAS MARG – ROAD NO. 57
3. NH 24-NOIDA ROAD MODE
4. WAZIRABAD ROAD- ROAD NO. 66

RITES

NH 24 – NOIDA ROAD INTERSECTION

1.0 SITE APPRAISAL

The above intersection is a T-Junction formed by the intersection of NH 24 with Noida Road as shown in the location Map (***Figure 1***). The intersection is surrounded by agricultural open land towards the Nizamuddin Bridge while the corners on the eastern side are also vacant land. A Nallah runs parallel to the Noida Road. The HT line along the Nallah cuts across the NH 24 close to the intersection. A petrol pump is located 50 metres from the intersection along NH 24. A skewed 'Y' Junction exists 200 metres away from the main intersection leading to the Mother Dairy Road, which further connects with Vikas Marg. The right of way of Noida Road is 45 m and for NH 24 are 60 metres. The Master Plan has a proposal of a Marginal Bund Road (45 m ROW) connecting the Nizamuddin bridge and ITO bridge, the construction of which is likely to be taken up shortly. Thus above intersection will accordingly, be a four armed intersection in the future. All traffic towards Connaught Place from Noida, Mayur Vihar I, II & III and from Ghaziabad side will pass through this intersection.

2.0 TRAFFIC CHARACTERISTICS

2.1 Approach Volumes From

Nizamuddin		Noida		Ghaziabad		Total	
PCU	Vehicles	PCU	Vehicles	PCU	Vehicles	PCU	Vehicles
Morning							
2701	2745	3410	3846	7166	9605	13277	16196
20%		**26%**		**54%**		**100%**	
Evening							
6918	7780	3239	3378	2548	2785	12705	13943
54%		**26%**		**20%**		**100%**	

(Details presented in *Figure 2 (a) & (b)*)

2.2 Present Traffic Composition

Morning Peak Hours (MPH)

1. *Major Bus flows are*

Ghaziabad to Nizamuddin (210)
Nizamuddin to Ghaziabad (102)
Noida to Nizamuddin (87)

2. *Major Fast Passenger Vehicles flows are*

Ghaziabad to Nizamuddin (5723)
Noida to Nizamuddin (2945)
Nizamuddin to Ghaziabad (1368)

3. *NMT flows are*

Ghaziabad to Nizamuddin (2308)

Evening Peak Hours (EPH)

1. *Major Bus flows are*

Nizamuddin to Ghaziabad (236) followed by Noida to Ghaziabad (112)

2. *Major Fast Passenger Vehicle flows are*

Nizamuddin to Ghaziabad (3858)
Noida to Nizamuddin (2698)

3. *NMT flows are:*

Nizamuddin to Ghaziabad (398)

2.2 Traffic Projections

- Growth rate is assumed ad 3% per annum for passenger vehicles.
- Estimated traffic by 2010 = 1.5 time of existing traffic = 19915 PCU's
- It is assumed that by the year 2010 MRTS will be implemented between Shahdara/Shahibabad-Tilak Bridge. It is expected to bring in reduction of 15% in the passenger traffic by 2021.
- Estimated traffic by 2021 = (2 times of existing traffic *0.85)= 22570.

3.0 PROBLEMS

- Very heavy straight traffic on NH 24
- Heavy right turning traffic from Ghaziabad to Noida and from Noida to Nizamumddin.

4.0 TRAFFIC MANAGEMENT PLAN

The influence area of the intersection will extend upto the Mayur Vihar mode junction and up to Mother Dairy junction leading to IP Extension. The Mother Dairy Road and its environs are a very congested stretch with constraints in road capacity and mix of slow moving traffic especially cycle rickshaws and cycles. Thus in a close proximity four intersections within 400 metres distance cause a lot of delay to the traffic movement. Provision of free movement at Noida Mode may further congest Mother Dairy area. Thus traffic management plan for the traffic moving in and out from Mother Dairy Road is proposed by providing an underpass of 60 Mts. long for traffic from Mother Dairy to NH24, thus reducing the right turning conflict with the NH 24 traffic. Further this will give better accessibility for the IP Extension area to NH 24, thus diverting some traffic from ITO bridge to NH 24 and also reducing the right turning traffic at the T- Intersection between Mother Dairy Road and IP Extension main road.

A conceptual traffic management plan is presented in ***Figure 3.***

5.0 CONCEPT PLANS FOR GRADE SEPARATION

The following options for grade separation at the above intersection were examined.:

1. Elevating of NH 24 with two loops
2. Elevating Noida Road over NH 24 with two loops.

Along NH 24, large volumes of cycles (2000 cycles) in peak hour ply. In addition, heavy overloaded trucks and trailers also ply along NH 24. The flyover alignment cuts across the HT power line. Considering the traffic composition and the constraints of HT line, it is advisable to keep the NH 24 traffic on ground, thus this option was not considered.

The elevation of NOIDA Road was the *second option.* Currently the junction is 3 armed and there are heavy right turning movements from Nizamuddin bridge to Noida and Noida to NH 24. Thus two loops are recommended which will eliminate the above right turning conflicts. When the Marginal Bund Road is constructed, the fly over will be completed along the Bund Road, which will facilitate the movement of straight traffic along Noida Road and Marginal Bund Road.

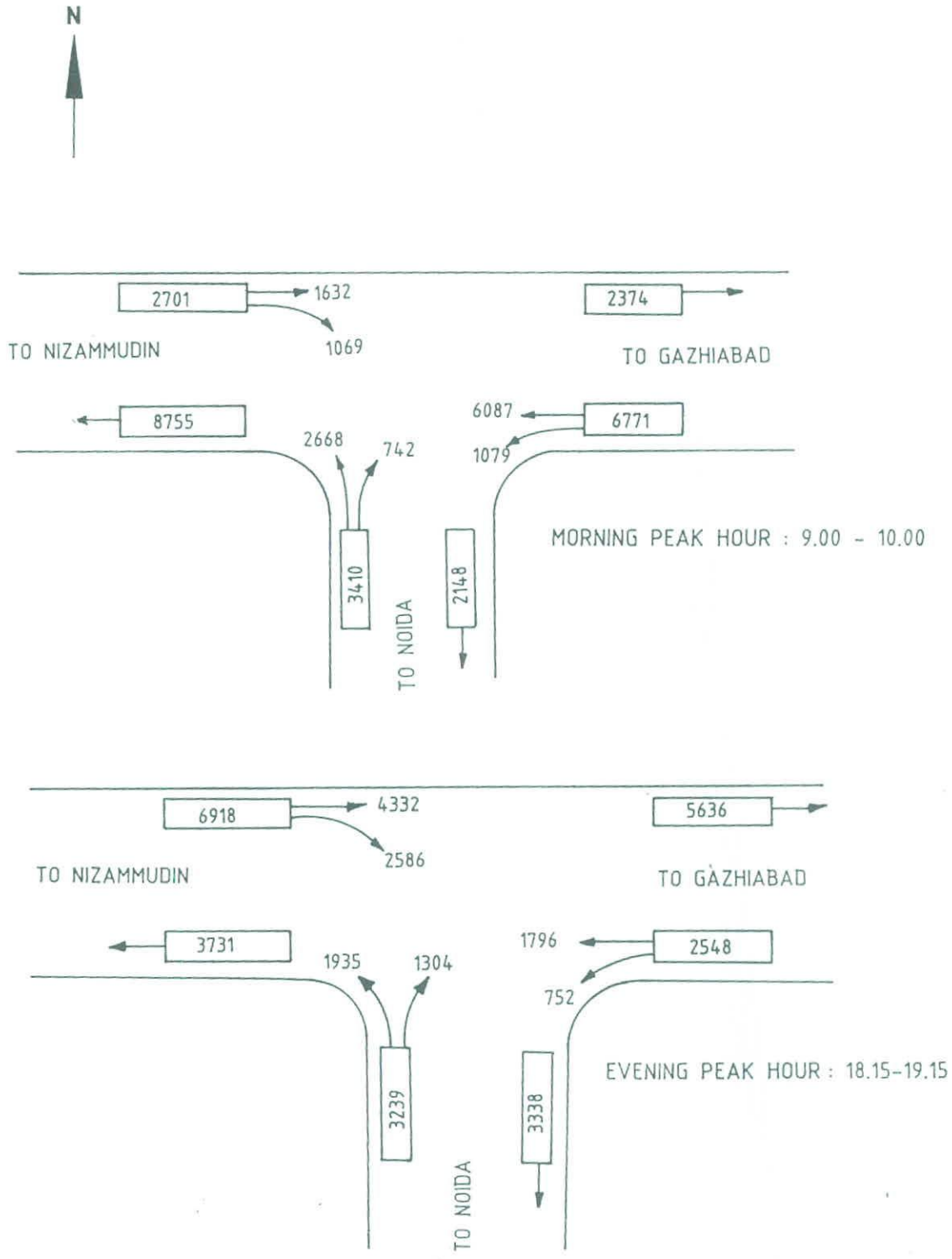
In the third phase additional two loops will be added to complete the cloverleaf depending upon the turning traffic from Marginal Bund Road.

The saturation capacity of the intersection ('Y' values) for all the options are presented in ***Figure 4.***

6.0 RECOMMENDED OPTION

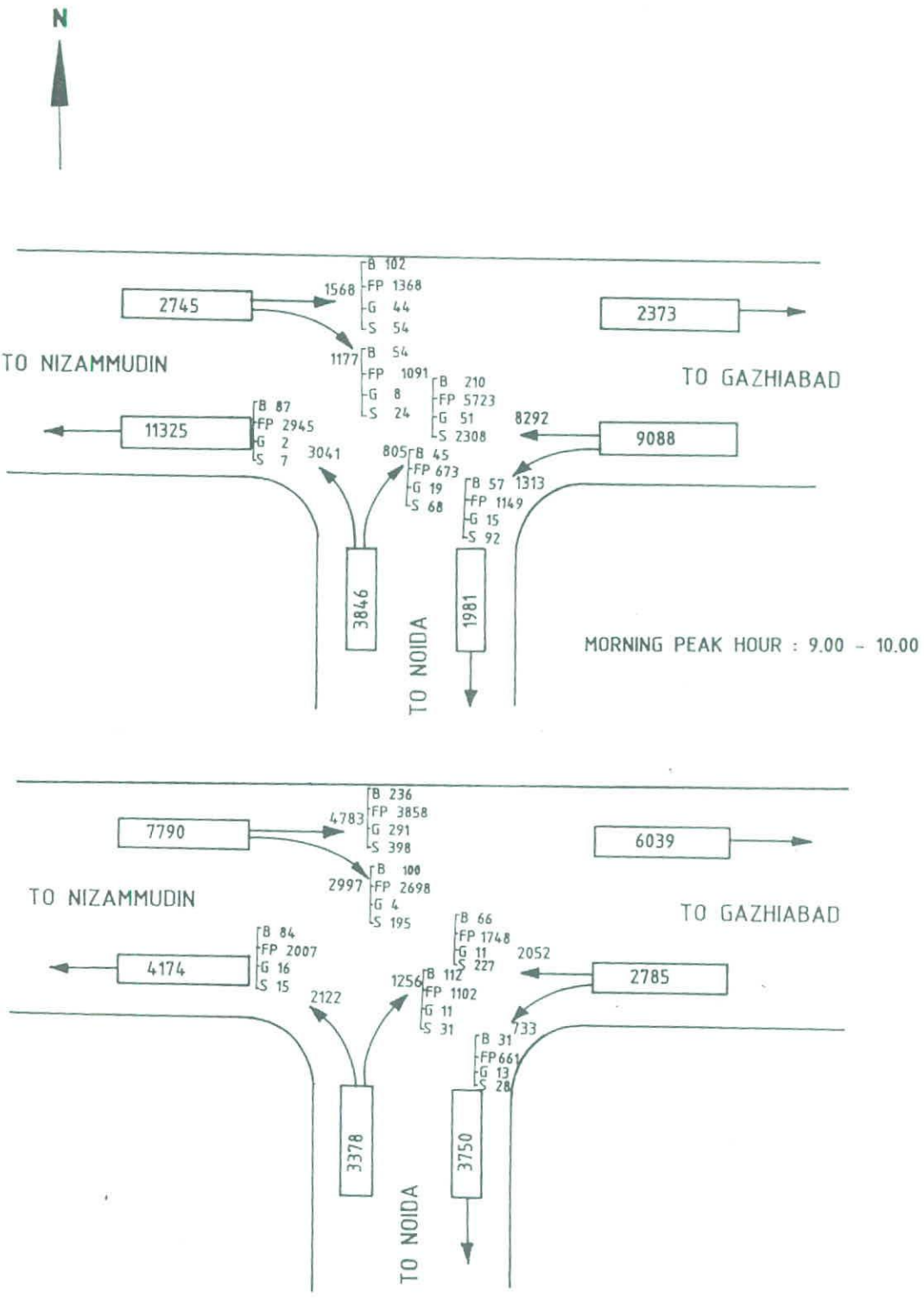
It is proposed that the Noida Road be elevated with two loops to take care of right turning traffic from Noida to Ghaziabad and from Nizamuddin to Noida.

NH 24- NOIDA ROAD FIG. 1



DIRECTIONAL DISTRIBUTION OF
PEAK HOUR TRAFFIC (PCU) 1998
NOIDA ROAD INTERSECTION - NH 24

FIGURE. 2(a)



DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (VEH.) 1998
NOIDA ROAD INTERSECTION-NH24

FIGURE. 2(b)

NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

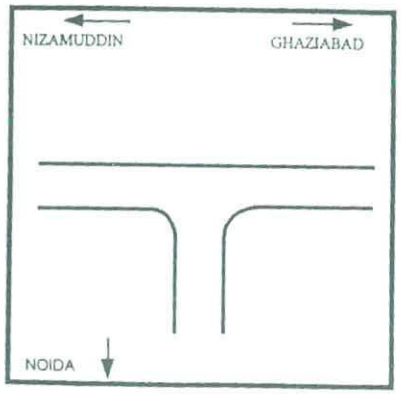
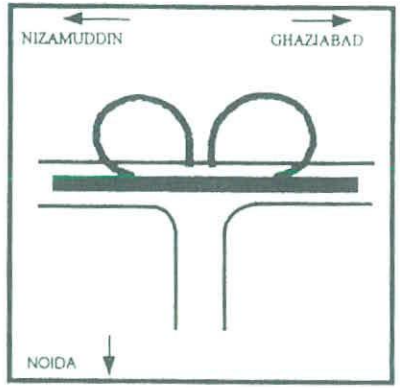
YEAR	DO NOTHING	ALTERNATIVE 1
		
		FLYOVER ALONG NH 24
1998	2.13	1.35
2010	3.25	2.05
2021	4.3	2.75

FIGURE 4

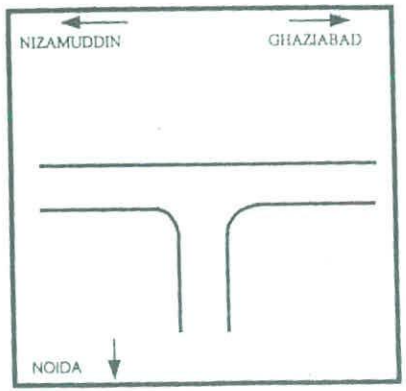
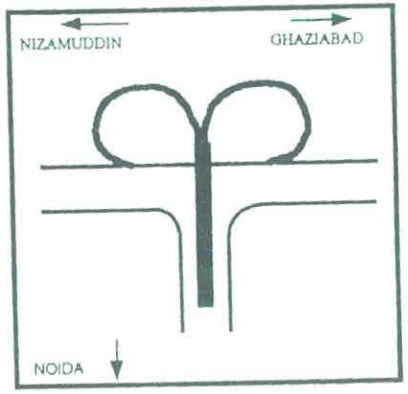
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 2
		 FLYOVER ALONG NH 24 + DOUBLE LOOP
1998	2.13	O.K.
2010	3.25	O.K.
2021	4.3	O.K.

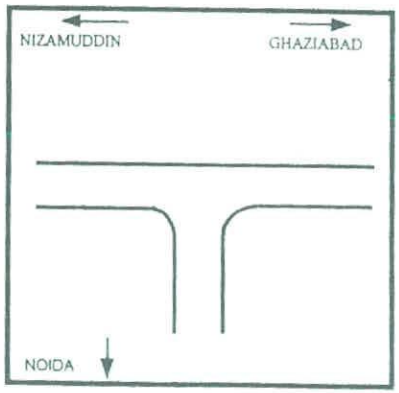
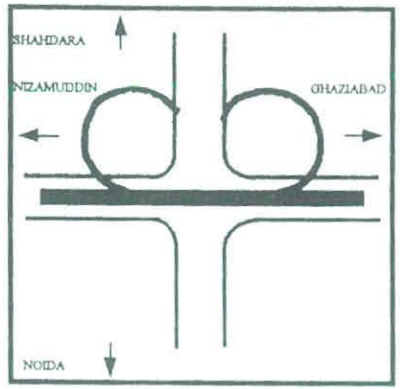
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 3
		 2 LOOPS ON RAMP FROM NOIDA ROAD (WITH PROVISION OF EXTENSION ALONG PROPOSED BUNDH ROAD)
1998	2.13	O.K.
2010	3.25	O.K.
2021	4.3	O.K.

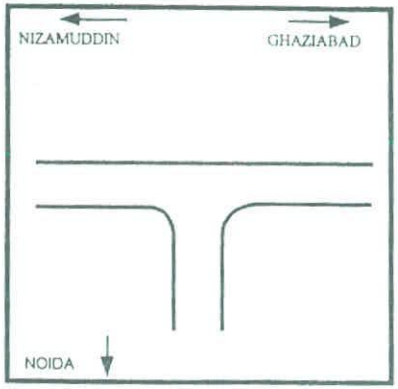
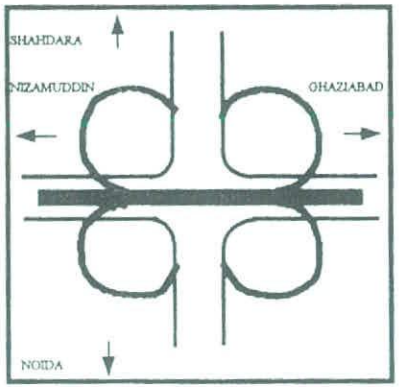
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 4
		 FLYOVER ALONG NH 24 + DOUBLE LOOP (MARGINAL BUNDH ROAD COMES UP)
1998	2.13	0.82
2010	3.25	1.25
2021	4.3	1.65

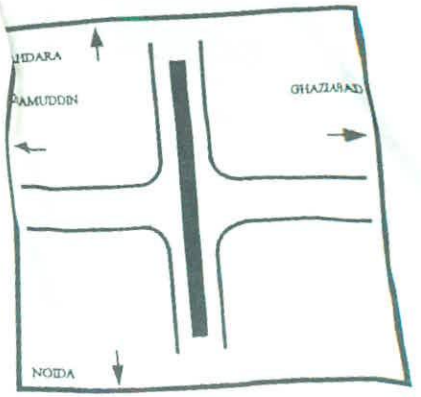
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 5
		 FLYOVER ALONG NH 24 + 4 LOOPS (MARGINAL BUNDH ROAD COMES UP)
1998	2.13	O.K.
2010	3.25	O.K.
2021	4.3	O.K.

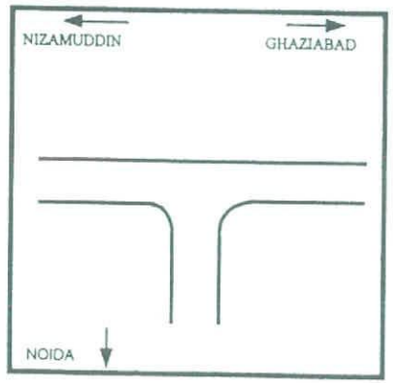
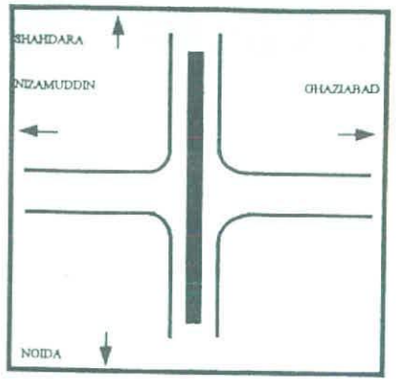
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUES

YEAR	DO NOTHING	ALTERNATIVE 6
		 FLYOVER ALONG NOIDA ROAD (MARGINAL BUNDH ROAD COMES UP)
1998	2.13	2.20
2010	3.25	3.35
2021	4.3	4.40

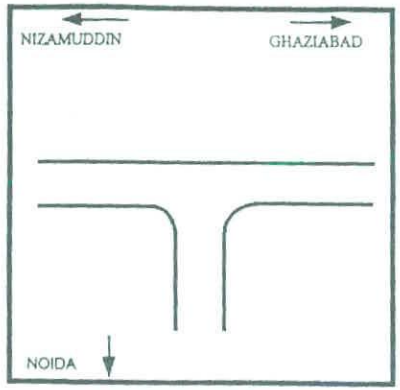
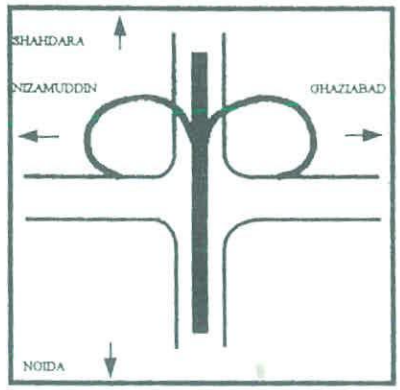
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 6
		 FLYOVER ALONG NOIDA ROAD (MARGINAL BUNDH ROAD COMES UP)
1998	2.13	2.20
2010	3.25	3.35
2021	4.3	4.40

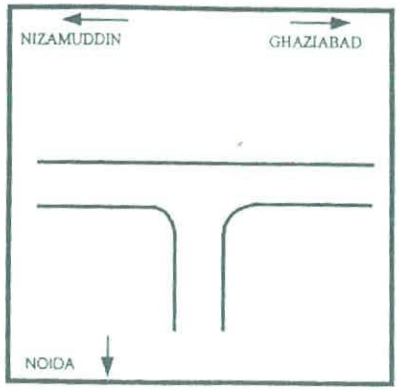
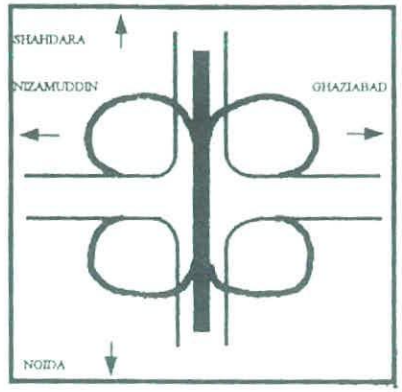
NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 7
		 FLYOVER ALONG NOIDA ROAD + 2 LOOPS (MARGINAL BUNDH ROAD COMES UP)
1998	2.13	2.09
2010	3.25	3.20
2021	4.3	4.20

NH 24 - NOIDA ROAD INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 8
		 FLYOVER ALONG NOIDA ROAD + 4 LOOPS (MARGINAL BUNDH ROAD COMES UP)
1998	2.13	O.K.
2010	3.25	O.K.
2021	4.3	O.K.

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

(vii) No bus belonging to or hired by an educational institution shall be driven by a driver who has :

a) less than five years of experience.

b) been challaned more than twice in a year in respect of offences of jumping red lights, improper or obstructive parking, vigilating the stop line, violating the rule requiring driving within the bus lane, violating restricting the overtaking, allowing unauthorised person to drive.

c) been challaned/charged even once for the offence of over speeding, drunken driving and driving dangerously or for the offences under Sections 279, 337, 338 and 304-A of the Indian Penal Code.

(viii) All drivers of school buses or buses hired by an educational institution would be dressed in a distinctive uniform and all such buses shall carry a suitable inscription to indicate that they are in the duty of an educational institution.

(ix) Flying Squads shall be made up or inter-departmental teams headed by an SDM shall be constituted and they shall exercise powers under Section 207 as well as Section 84 of the Motor Vehicles Act.

(x) The Government shall notify under Section 86(4) the officers of the rank of Assistant Commissioners of Police or above so that these officers are also utilised for constituting the flying squads.

(xi) The Transport Authorities shall consider immediately the problems arising out of congestion caused by different kinds of motorised and non-motorised vehicles using the same roads. The police and transport authorities shall identify those roads which they consider unfit for use by motorised or certain kinds of motorised traffic and issue suitable directions to exclude the undesirable form of traffic from those roads.

(xii) The civic authorities including DDA, the Railways, the Police and Transport Authorities, would identify and remove all hoardings which are on road-sides and which are hazardous and a disturbance to safe traffic movement. In addition, steps would be taken to put up road/traffic signs which facilitate free flow of traffic.

(xiii) No authority shall interfere with the functioning of the Police and Transport Authority in so far as implementation and execution of these directions are concerned.

(xiv) All Commercial licences issued during the period 1993-95 shall be re-verified by the Transport Department to weed out all such licences which have been issued without following the Rules.

(xv) The Transport Department to prescribe a suitable refresher training course as a condition for the renewal of any licence to drive a heavy vehicle.

(xvi) The Transport Authorities shall not renew any permit which has been or is being used by any person other than the original grantee, without the express prior permission of the grantee.

(xvii) The Civic Authorities shall take necessary steps to remove immediately all encroachments - temporary or permanent on roads and pavements, which affect the smooth flow of traffic or obstruct the way of pedestrians. Stray cattle and other similar obstructions shall also be similarly dealt with.

(xviii) No bus shall be used by an educational institution unless it is fitted with doors which can be closed. No additional institutions shall use a bus after 31.12.98 if it has an open door.

(xix) No bus shall be used by or in the service of an educational institution shall be permitted to operate without a qualified conductor being present at all times after 30th April, 1998.

(xx) The Education Department shall ask all Schools including Government and Municipal schools to evolve a system in which parents of the wards could accompany the bus to ensure that drivers drive safely and lives of the school children are not put in danger. As far as possible, to ensure that in each bus there is atleast one parent present who would be able to oversee the conduct of the driver. This step would go a long way in ensuring that the directions given as well as other safety measures prescribed are complied with in letter and spirit and that the driver drives carefully.

(xxi) No bus belonging to or in use of any educational institution shall seat children in excess of 1.5 times its registered seating capacity. Similarly, other modes of public transport such as TSRs, Taxis and other vehicles including rickshaws used for transporting the students of an educational institution should be permitted to carry children more than 1.5 times their registered seating capacity.

(xxii) There would be no grant of fresh permits in respect of TSRs, except by way of replacement of an existing working TSR with a new one.

(xxiii) We direct the Police Commissioner to frame appropriate guidelines for regulating processions - religious, political or otherwise which tend to obstruct the flow of traffic. These guidelines should be in conformity with the rights of the users of the roads and the exercise of fundamental freedom of other citizens indicated by this Court in its judgement in Communist Party of India (M) Vs Bharat Kumar and Others, JT 1997 (9) SC 101.

A. S. KHULLAR
ADDITIONAL DIRECTOR TRANSPORT

ADDENDUM

EXPECTED TRAFFIC ON THE FLYOVER (IN PCU's)

NH 24 - NOIDA ROAD INTERSECTION

	1998	2010	2021
FLYOVER ALONG MARGINAL ROAD	2400 (Potential)	3720	4800
LOOP-1 (Noida to Ghaziabad)	2586	4008	5172
LOOP-2 (Nizamuddin to Noida)	500	775	1000
NH 2	10200	15810	20400

before the Authority for its consideration. According the agenda was prepared and placed before Authority vide resolution no. 54 dated. 13.8.90.

3.2 **Authority's Decision**

L.G., Delhi while recording the progress of grade separators, desired that DDA in consultation with PWD(DA) may workout the guidelines for designing the flyovers/grade separators and bring before the Authority for its consideration. Accordingly the agenda was prepared and placed before Authority vide resolution no. 54 dated. 13.8.90.

3.3 **Directions Issued By Hon'able Supreme Court in WP (Civil) Nos 13029/85, 9300/92 And Others (M.C.Mehta V/S Union Of India & Others)**

Supreme Court in its order in WP (C) nos 13029/85 & 9300/92 etcs (M.C.Mehta V/S Union Of India & Others) ordered that a comprehensive programme on traffic management ensuring road safety be prepared including

- Marking Zebra crossings
- Marking of bus lanes and bus bays,
- Provision of regulatory road signage regarding speed restrictions, presence of schools by the road side
- removing hazardous hoardings
- Ban of Heavy Vehicles in day time

The recent order of the Hon'ble Supreme Court is placed at Annexure III.

3.4 **White Paper on Pollution**

To relieve congestion on Delhi roads, the actions that need to be taken include:

- The existing road capacity / network to be better utilised by upgrading traffic management systems.
- Provision of Cycle tracks and greater use of existing ones.
- Construction of Mass Rapid Transit System (MRTS) and dovetailing the rail based mass transport system with the road transport system.
- Construction of road bye-pass for Delhi.
- Construction of expressways
- Constructing fast motorways to enable transit traffic to pass unhindered .

3.4 **Decisions of GNCTD**

GNCTD has awarded the work of preparation of Master plan for cycle tracks in NCTD to IIT Delhi. The study is in progress.

4. **EXAMINATION**

The case has been examined with reference to the guidelines as approved by Authority vide Resolution No. 54 dated. 13.8.90 and directions issued by Hon'able Supreme Court in WP (C) 13029/85, & 9300/92 - M.C.Mehta v/s Union Of India & Others, White Paper on Environment, Ministry of Environment & various decisions of GNCTD available in this unit. The comparative statement and observations are given below

ANNEXURE III

GOVERNMENT OF NCT OF DELHI
DEPARTMENT OF TRANSPORT
5/9, Under Hill Road, Delhi-110054

DIRECTIONS OF THE HON'BLE SUPREME COURT OF INDIA IN WRIT PETITION (CIVIL) NO. 13029 OF 1985 IN THE MATTER OF M.C. MEHTA VS. UNION OF INDIA AND OTHERS FOR GENERAL NOTICE OF PUBLIC AND ALL CONCERNED :

1. Plying of All Commercial Vehicles including taxis, which are 15 years old, shall be restricted by 2nd October 1998.
2. Restrictions on plying of goods vehicles during the day time shall be strictly enforced by 15th August, 1998.
3. Expansion of pre-mixed old dispenser (Petrol and 2T oil) shall be undertaken by 31st December, 1998.
4. Ban on supply of loose 2T oils at petrol stations and service garages shall be enforced by 31st December, 1998.

The following time schedule shall be adhered in respect of items indicated by all concerned authorities :

		Time frame
a)	Augmentation of public transport (stage carriage) to 10,000 buses.	1.4.2001
b)	Elimination of leaded petrol from NCT of Delhi.	1.9.1998
c)	Supply of only pre-mix petrol in filling stations to two-stroke engine vehicles.	31.12.1998
d)	Replacement of all pre-1990 autos and taxis with new vehicles on clean fuels.	31.3.2000
e)	Financial incentives for replacement of all post-1990 autos and taxis with new vehicles on clean fuels.	31.3.2001
f)	No 8-year old buses to ply except on CNG or other clean fuels.	1.4.2000
g)	Entire city bus felt (DTC & Private) to be steadily converted to single fuel mode on CNG.	31.3.2001
h)	New ISBTs to be built at entry points in North and South-West to avoid pollution due to entry of inter-state buses.	31.3.2000
i)	GAIL to expedite and expand from 9 to 80 CNG supply outlets.	31.3.2000
j)	Two independent fuel testing labs to be established.	1.6.1999
k)	Automated inspection and maintennance facilities to be set up for commercial vehicles in the first phase.	Immediate
l)	Comprehensive I/M programme to be started by Transport Department & private sector.	31.3.2000
m)	CPCB/DPCC to set up new stations and strengthen existing air quality monitoring stations for critical pollutants.	1.4.2000

DIRECTIONS :-

(i) No heavy and medium transport vehicles, and light goods vehicles being four wheelers would be permitted to operate on the roads of the NCR and NCT, Delhi unless they are fitted with suitable speed control devices to ensure that they do not exceed the speed limit of 40 KMPH except the transport vehicles operating on Inter-State permits and National goods permits and All India Tourist Permits. Such exempted vehicles would, however, be confined to such routes and such timings during day and night as the police/transport authorities may publish. It is made clear that no vehicle would be permitted on roads other than the aforementioned exempted roads other than the aforesaid time without a speed control device.

(ii) The authorities shall ensure that the transport vehicles are not permitted to overtake any other four-wheel motorised vehicle.

(iii) This will also ensure that wherever it exists, buses, heavy goods vehicles, medium goods vehicles and 4-wheel light goods vehicles plying during the permitted hours shall confine the bus lanes and no other motorised vehicle is permitted to enter upon the bus lane. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government and DDA, Union Government and the Delhi Cantt. Board shall take steps to ensure that bus lanes are segregated and road markings are provided on all such roads.

(iv) Buses halt only at Bus stops designated for the purpose and within the marked area. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government, DDA and Union of India and Delhi Cantt. Board would take all steps to have appropriate bus stops constructed, appropriate markings made, and 'bus-Bays' built.

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

IV B	Phasing of the Scheme	shall be prepared along with detailed proposal	
	Traffic Diversion Plan (during construction period)	Details awaited	
	Utilisation of space below fly over	not envisaged	
	Petrol Pump	Details awaited	
	Lighting	Details awaited	
	Environment issues	Details awaited	

5. Detailed drawings, Report & Feasibility are in the process of completion by the consultant (RITES). Due to the crashed time schedule, the proposal in conceptual form, for this grade separator, as presented by the consultant, is placed before the Technical committee for its consideration.

12/8/98

SR.NO. 6 / ITEM NO. 48/98/TC

Sub **Grade Separator at Wazirabad Road and Road No 66 intersection near Yamuna Vihar**

Ref: **File NO.F5 (14) 98-MP**

1. **BACKGROUND**

A meeting was held under the Chairman ship of Hon'ble Lt. Governor on 30.05.98 to firm up the location for the provision of grade separators and to distribute the work among the various agencies to complete the work in 18 to 24 months.

In this meeting, 15 intersections were identified for provision of grade separators in order to resolve the traffic congestion. It was also clarified that out of these 15 locations, 7 would be taken up by the DDA, 6 by PWD, 1 by MCD and 1 by DTTDC.

2. **INTRODUCTION**

2.1 DDA appointed RITES as consultants for all the seven locations. The proposal for a two level grade separator at **Wazirabad Road and Road No 66 intersection near Yamuna Vihar** has been submitted by **RITES** vide letter **No. RITES/UT/334/98** dated **August 17, 1998.**

2.2 **Location**

The proposed grade separator is located at the crossing of Wazirabad Road and Road No 66 near Yamuna Vihar. It is an important location as Wazirabad road is a major transport artery linking Delhi to Ghaziabad / Merrut in UP. This road caters to the east bound regional passenger and goods traffic. Whereas road no 66 caters to north-south passenger movement, largely slow moving traffic, generated from residential areas around the intersection.

A location plan is placed at annexure I

2.3 **Proposal**

A technical note submitted by RITES giving description of the proposal is placed at Annexure II.

3.0 **DECISIONS/ DIRECTIVES**

3.1 **MPD 2001 Provisions**

(i) The Grade separators should also have the grade separation for the pedestrians in general and cyclist wherever required

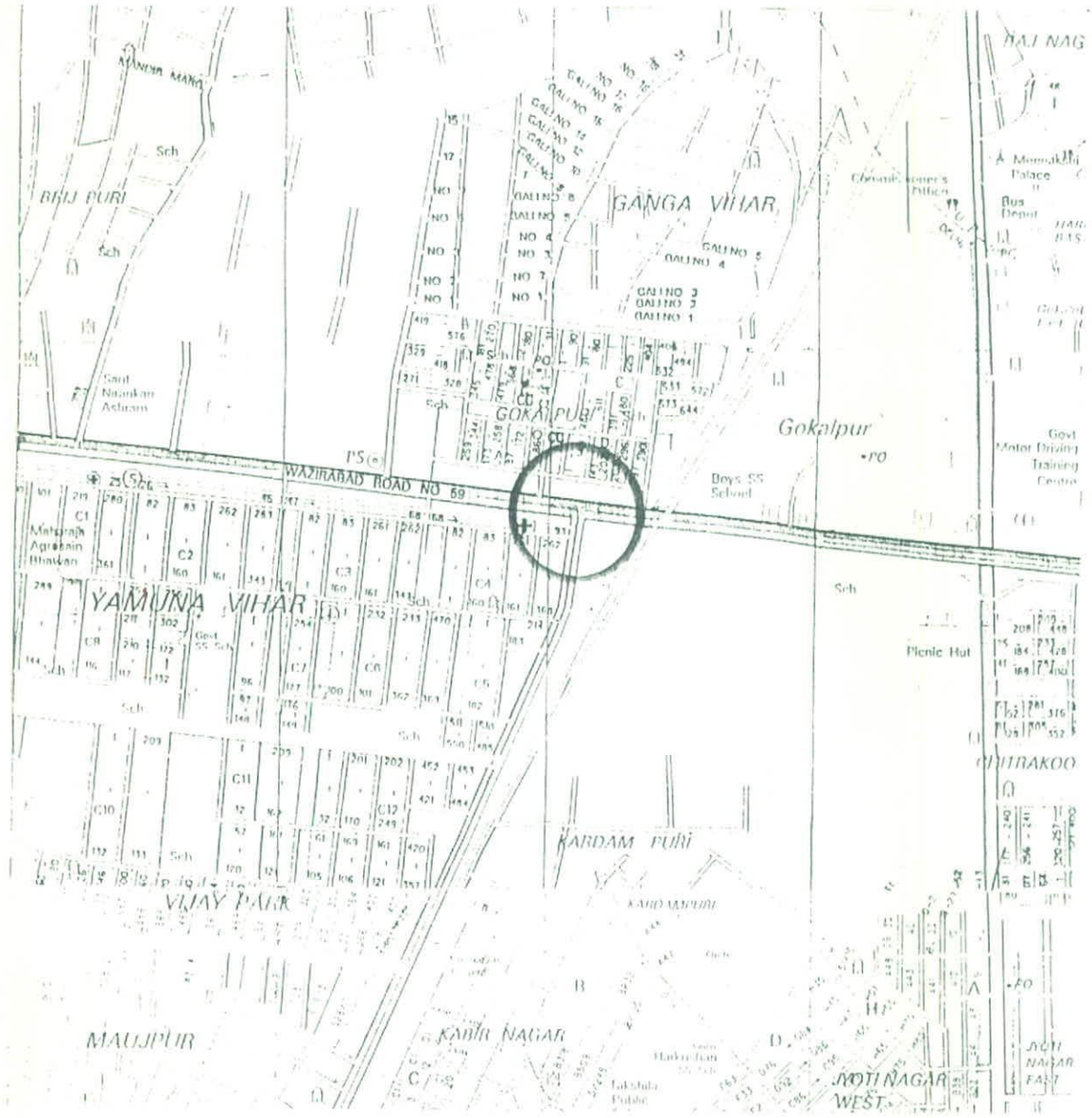
(ii) All master plan roads (30 m and above right of way) crossing railway lines shall have grade separation.

3.1 **Authority's Decision**

L.G. Delhi while recording the progress and grade separator in the meetings held on 15.6.90 and 20.7.90 at Raj Niwas desired that DDA in consultation with PWD(DA) may workout the guidelines for designing the flyovers/grade separators and bring

	AUTHORITY GUIDELINES	PROPOSAL SUBMITTED	REMARKS
I	Grade separator should be provided on Ring Road/Outer Ring Road	a) Not applicable b) Two underpasses for right turning light vehicles are proposed	
II	Flyover provision could be made for 3rd level below ground when found necessary	Not applicable	
III A	On the Ring Road (60 m. R/W) and on parts of the Outer Ring Road width (60 m R/W) the flyover shall consist of 9 m. width of 3 lanes (3 m each) in each direction	Not applicable	
B	In cases whether the R/W of Outer Ring Road is 45 m then 2 lanes of 7.5 could be provided. In such cases efforts should be made to increase the R/W of Outer Ring Road is 300 m, length of flyover section.	Not applicable	
C	Service road of about 6 m should be provided which could be reduced to 4.5 m in case of 45 m. R/W	Service Lane of 7.5 m width on either side are proposed	
D	The minimum width of the footpath should be specified as 2 m.	2 m wide foot paths are proposed	
E	The clear head way between road camber & bottom of the beam should be 5.5 m	Clear head way under the bottom of the proposed structure is kept as 5.5 m	
F	3.5 m wide strip (as base on one side) shall be reserved for H.T. Lines.	Details awaited	
G	The slope of the bridge should be at 1:30 For smooth movement of cyclist depending upon the volume.	Details awaited	
IV.A	a) The road improvement upto the next major intersection on each and on all the arms shall form part of a grade separator b) The circulation of surrounding area shall be properly integrated with grade separator scheme	Details awaited Details awaited	

Annexure : I



WAZIRABAD ROAD & ROAD NO.66

ANNEXURE - II

TRAFFIC DATA & CONCEPT PLANS FOR FLY OVERS AT

1. MATHURA ROAD (NH2)-ROAD NO. 13 A
2. VIKAS MARG – ROAD NO. 57
3. NH 24-NOIDA ROAD MODE
4. WAZIRABAD ROAD- ROAD NO. 66

RITES

WAZIRABAD ROAD - ROAD NO. 66

1. Site Appraisal

The above intersection is a junction formed by the intersection of Wazirabad Road (ROW 60 m) and Road No.66 (Row 45 m). The Wazirabad road is on an embankment of about 2 m high compared to the surrounding area. A drain runs parallel to road No.66 and cross Wazirabad Road about 80 m from the intersection. In between the Wazirabad Road and the Gokulpuri residential area, a green strip of 20 m is available. The location is shown in key map (Figure 1). A pedestrian subway close to the intersection is under construction. HT line runs parallel to Wazirabad Road.

2.0 TRAFFIC CHARACTERISTICS

2.1 Approach Volumes From

Bhajanpura		Seelampur		Ghaziabad		Total	
PCU	Vehicles	PCU	Vehicles	PCU	Vehicles	PCU	Vehicles
3352	4178	1206	1376	2077	2267	6636	7821
50%		18%		32%		100%	
2338	2073	2645	4063	1847	1687	6830	7823
39%		39%		27%		100%	

(Details presented in Fig.2)

2.2 Composition

Morning Peak Hours (MPH)

- Major Bus flows are

  Ghaziabad to Bhajanpura (132)

  Bhajanpura to Ghaziabad (103)

- Major Fast Passenger Vehicles flows are

  Ghaziabad to Bhajanpura (551)

  Bhajanpura to Seelampur (563)

- NMT flows are

  Bhajanpura to Seelampur (2373)

Evening Peak Hours (EPH)

- Bus flows are

  Bhajanpura to Ghaziabad (131)

  Ghaziabad to Bhajanpura

- Fast Passenger

  Bhajanpura to Ghaziabad (589)

- NMT flows are:

  Seelampur to Bhajanpura (1666)

  Seelampur to Ghaziabad (1535)

2.3 Traffic Projections

- Growth rate is assumed as 3% per annum for passenger vehicles
- Estimated traffic by 2010 = 1.5 times of existing traffic.
- Estimated traffic by 2021 = 2 times of existing traffic.

3.0 Problems.

- Very heavy straight traffic on Wazirabad Road.
- Heavy right turning traffic from Bhajanpura to Seelampur.
- Heavy right turning traffic from Seelampur to Ghaziabad.

4.0 TRAFFIC MANAGEMENT PLAN

The existing traffic characteristics reveal that during peak hour high volume of slow moving traffic, especially cycles pass through the intersection. A majority of them are right turning. Diversion of slow moving traffic through other roads is not possible since the next motorable road is Gonda Road which is 1 km away. Gonda road will not finally connect to NH2 (GT Road) since there is a missing link at the end. Thus, if this missing link is completed at least to allow light fast and slow vehicles, then reduction of traffic on the intersection can be achieved. A conceptual traffic management plan is given in Fig.3 (to be Submitted later)

5.0 CONCEPT PLANS FOR GRADE SEPARATION.

Various concepts for improvement of the capacity of the intersection were examained. These included, interalia , the following:

1) Widening of the approaches by one lane width.

2) Flyover along Wazirabad Road

3) Flyover for turning traffic (Bhajanpura to Seelampur and Seelampur to Ghaziabad).

4) Underpass for light vehicles (For both right turns).

The first option will give relief to the junction and can be managed by signals for next 5 years. But the mixing of slow and fast traffic still remains. In any case grade separation is required after 4-5 years.

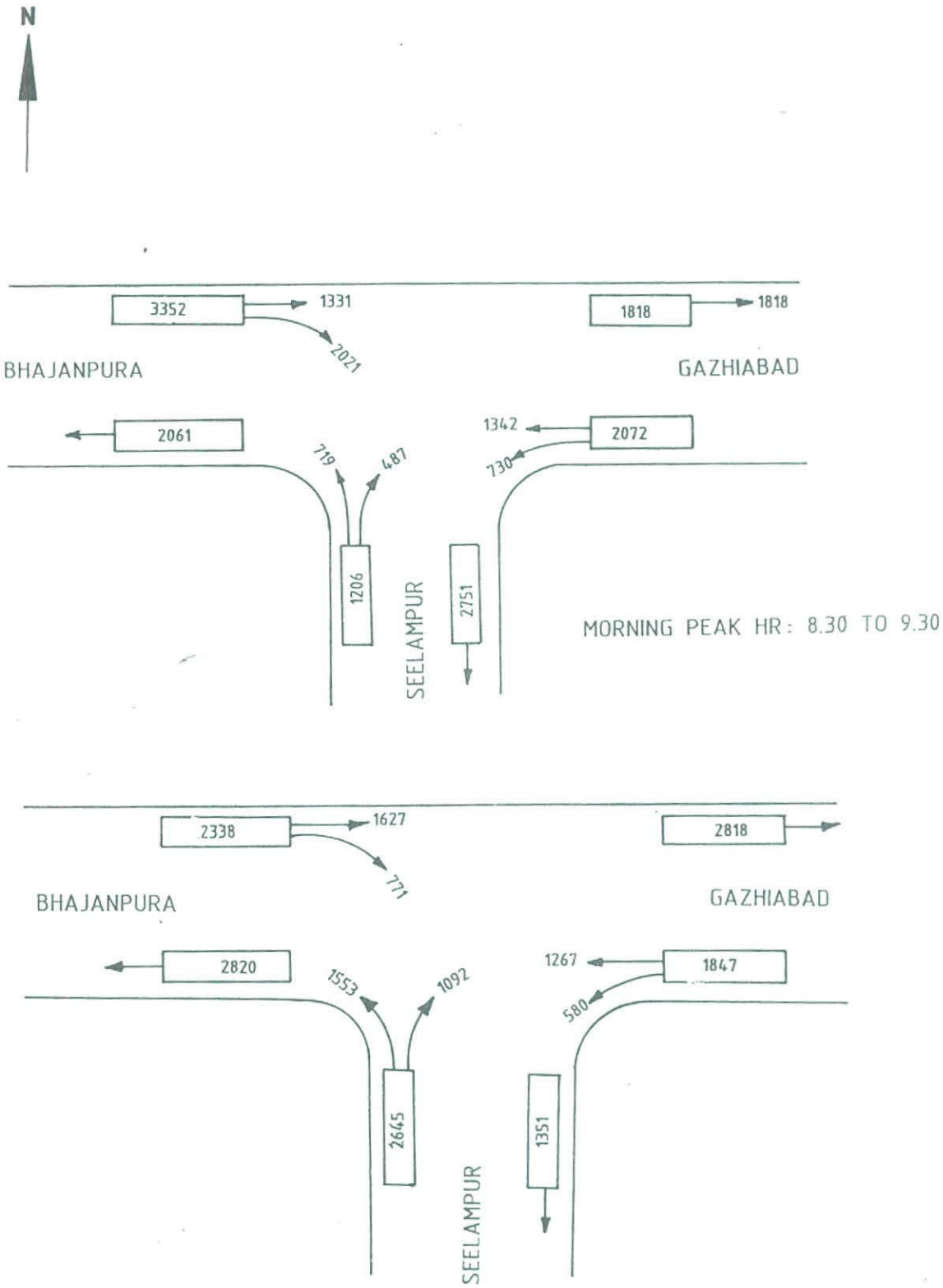
The flyover option will separate the through traffic but the right turning traffic will need to be managed by signals. Within ten years, the junction will be saturated and further improvements will be required which will be difficult to implement..

The basic problem is the slow moving traffic and right turning traffic. Taking advantage of the topography but with the site constraints of Nallah and pedestrian subways and also keeping in view the gentle gradients to be provided for cycles, an underpass was planned to cater to the right turning light vehicles and slow moving vehicles. However, the buses will ply at grade and can be managed by signals, as shown in the figure (4)

6.0 RECOMMENDED OPTION

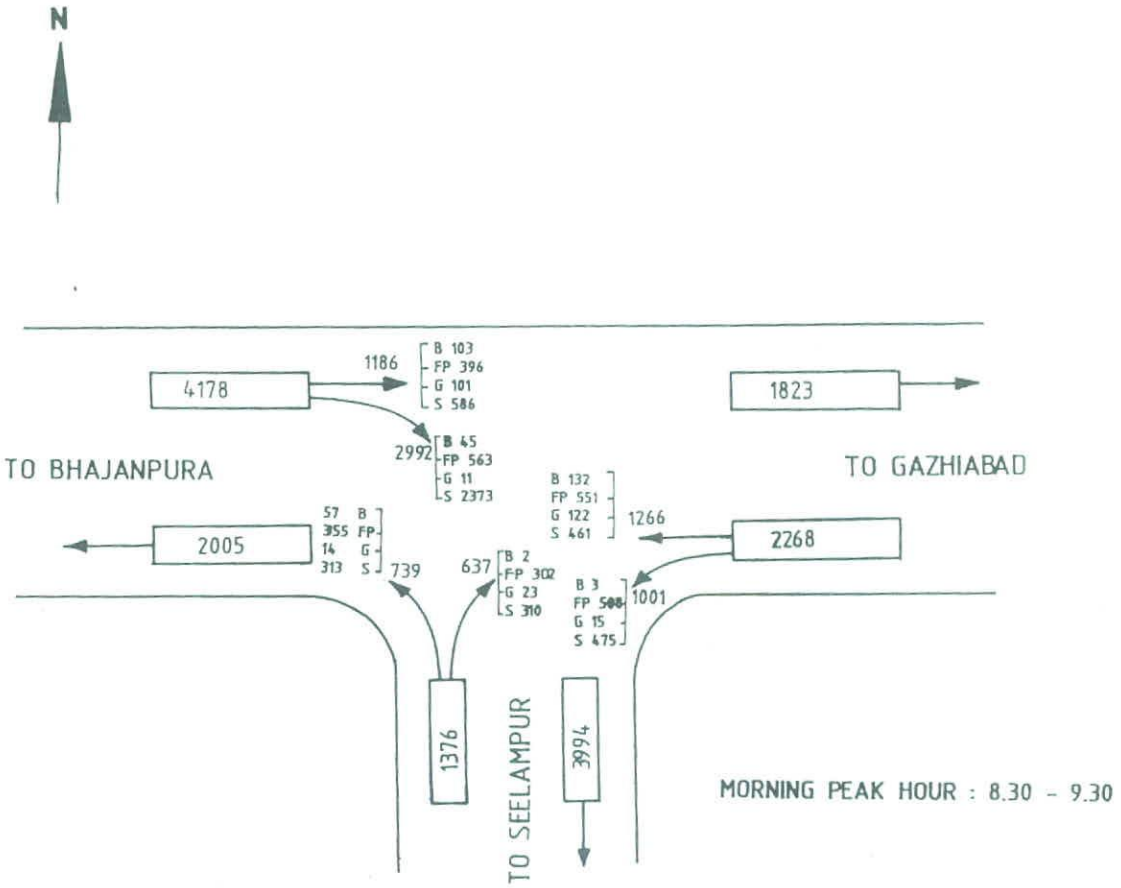
It is recommended that option of providing two underpasses for Light Motor Vehicles and non-motorised slow vehicles from Bhajanpura to Seelampur and from Seelampur to Ghaziabad be implemented at one go. (Fig. 5)

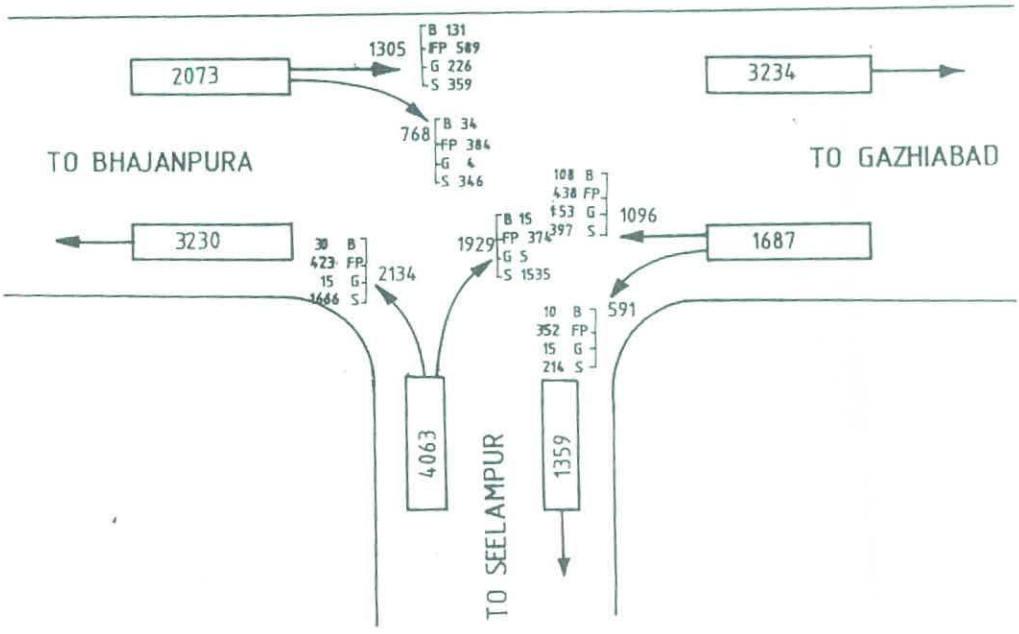
WAZIRABAD ROAD- ROAD NO. 66 FIG. 1



DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (PCU) 1998
WAZIRABAD-ROAD - ROAD NO.66 INTERSECTION

FIGURE. 2(a)





LEGEND

B BUSES

FP FAST PASSENGER VEH.

G GOODS VEH.

S SLOW MOVING VEH.

DIRECTIONAL DISTRIBUTION OF PEAK HOUR TRAFFIC (VEH.) 1998
WAZIRABAD ROAD - ROAD NO. 66 INTERSECTION

FIGURE. 2(b)

WAZIRABAD ROAD - ROAD NO. 66 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

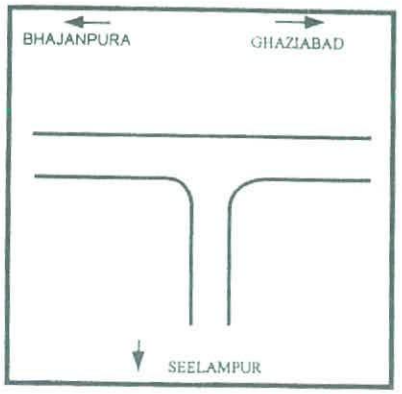
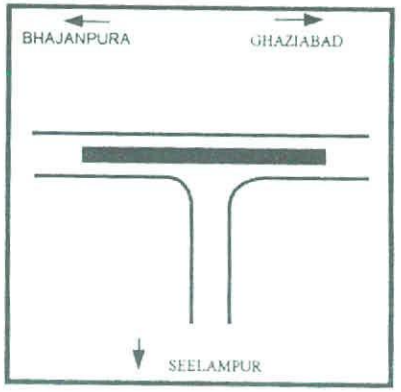
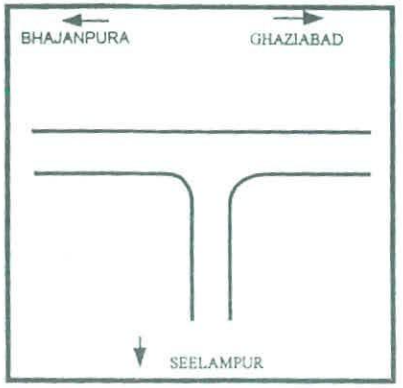
YEAR	DO NOTHING	ALTERNATIVE 1
		
		FLYOVER ALONG WAZIRABAD ROAD
1998	0.91	0.65
2010	1.40	0.98
2021	1.85	1.30

FIG. 4

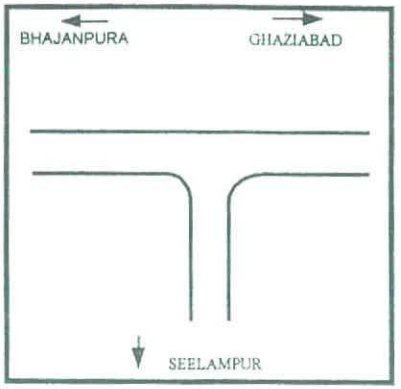
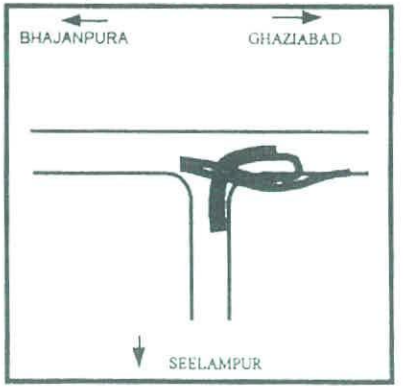
WAZIRABAD ROAD - ROAD NO. 66 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 2
		 FLYOVER ALONG WAZIRABAD ROAD + GROUND LOOP FOR RIGHT TURN FROM BHAJANPURA
1998	0.91	O.K.
2010	1.40	O.K.
2021	1.85	O.K.

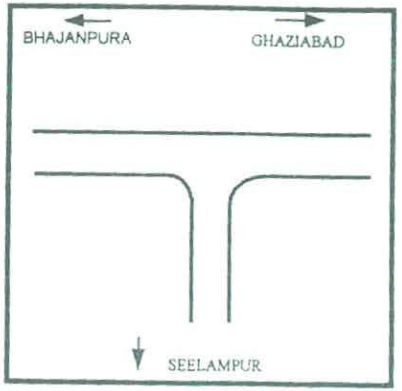
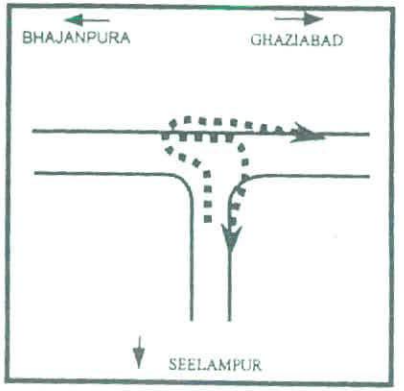
WAZIRABAD ROAD - ROAD NO. 66 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 3
		 RAMP FROM ROAD NO. 57 FOR BOTH RIGHT TURNS
1998	0.91	O.K.
2010	1.40	O.K.
2021	1.85	O.K.

WAZIRABAD ROAD - ROAD NO. 66 INTERSECTION

SATURATION CAPACITY ('Y') VALUE

YEAR	DO NOTHING	ALTERNATIVE 4
		 UNDERGROUND RAMPS FOR RIGHT TURNING LIGHT TRAFFIC AND CYCLE TRACK ALONG WAZIRABAD ROAD
1998	0.91	0.30
2010	1.40	0.47
2021	1.85	0.60

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

(vii) No bus belonging to or hired by an educational institution shall be driven by a driver who has :

a) less than five years of experience.

b) been challaned more than twice in a year in respect of offences of jumping red lights, improper or obstructive parking, vigilating the stop line, violating the rule requiring driving within the bus lane, violating restricting the overtaking, allowing unauthorised person to drive.

c) been challaned/charged even once for the offence of over speeding, drunken driving and driving dangerously or for the offences under Sections 279, 337, 338 and 304-A of the Indian Penal Code.

(viii) All drivers of school buses or buses hired by an educational institution would be dressed in a distinctive uniform and all such buses shall carry a suitable inscription to indicate that they are in the duty of an educational institution.

(ix) Flying Squads shall be made up or inter-departmental teams headed by an SDM shall be constituted and they shall exercise powers under Section 207 as well as Section 84 of the Motor Vehicles Act.

(x) The Government shall notify under Section 86(4) the officers of the rank of Assistant Commissioners of Police or above so that these officers are also utilised for constituting the flying squads.

(xi) The Transport Authorities shall consider immediately the problems arising out of congestion caused by different kinds of motorised and non-motorised vehicles using the same roads. The police and transport authorities shall identify those roads which they consider unfit for use by motorised or certain kinds of motorised traffic and issue suitable directions to exclude the undesirable form of traffic from those roads.

(xii) The civic authorities including DDA, the Railways, the Police and Transport Authorities, would identify and remove all hoardings which are on road-sides and which are hazardous and a disturbance to safe traffic movement. In addition, steps would be taken to put up road/traffic signs which facilitate free flow of traffic.

(xiii) No authority shall interfere with the functioning of the Police and Transport Authority in so far as implementation and execution of these directions are concerned.

(xiv) All Commercial licences issued during the period 1993-95 shall be re-verified by the Transport Department to weed out all such licences which have been issued without following the Rules.

(xv) The Transport Department to prescribe a suitable refresher training course as a condition for the renewal of any licence to drive a heavy vehicle.

(xvi) The Transport Authorities shall not renew any permit which has been or is being used by any person other than the original grantee, without the express prior permission of the grantee.

(xvii) The Civic Authorities shall take necessary steps to remove immediately all encroachments - temporary or permanent on roads and pavements, which affect the smooth flow of traffic or obstruct the way of pedestrians. Stray cattle and other similar obstructions shall also be similarly dealt with.

(xviii) No bus shall be used by an educational institution unless it is fitted with doors which can be closed. No additional institutions shall use a bus after 31.12.98 if it has an open door.

(xix) No bus shall be used by or in the service of an educational institution shall be permitted to operate without a qualified conductor being present at all times after 30th April, 1998.

(xx) The Education Department shall ask all Schools including Government and Municipal schools to evolve a system in which parents of the wards could accompany the bus to ensure that drivers drive safely and lives of the school children are not put in danger. As far as possible, to ensure that in each bus there is atleast one parent present who would be able to oversee the conduct of the driver. This step would go a long way in ensuring that the directions given as well as other safety measures prescribed are complied with in letter and spirit and that the driver drives carefully.

(xxi) No bus belonging to or in use of any educational institution shall seat children in excess of 1.5 times its registered seating capacity. Similarly, other modes of public transport such as TSRs, Taxis and other vehicles including rickshaws used for transporting the students of an educational institution should be permitted to carry children more than 1.5 times their registered seating capacity.

(xxii) There would be no grant of fresh permits in respect of TSRs, except by way of replacement of an existing working TSR with a new one.

(xxiii) We direct the Police Commissioner to frame appropriate guidelines for regulating processions - religious, political or otherwise which tend to obstruct the flow of traffic. These guidelines should be in conformity with the rights of the users of the roads and the exercise of fundamental freedom of other citizens indicated by this Court in its judgement in Communist Party of India (M) Vs Bharat Kumar and Others, JT 1997 (9) SC 101.

A. S. KHULLAR
ADDITIONAL DIRECTOR TRANSPORT

ADDENDUM

EXPECTED TRAFFIC ON THE FLYOVER (IN PCU's)

WAZIRABAD ROAD – ROAD NO. 66 INTERSECTION

	1998	2010	2021
WAZIRABAD ROAD	2651	4110	5032
UNDERGROUND RAMP FROM ROAD NO.-66 TO GHAZIABAD	1900	2945	3800
UNDERGROUND RAMP FROM BHAJANPURA TO ROAD-66	1030	1597	2060

ANNEXURE III

GOVERNMENT OF NCT OF DELHI
DEPARTMENT OF TRANSPORT
5/9, Under Hill Road, Delhi-110054

DIRECTIONS OF THE HON'BLE SUPREME COURT OF INDIA IN WRIT PETITION (CIVIL) NO. 13029 OF 1985 IN THE MATTER OF M.C. MEHTA VS. UNION OF INDIA AND OTHERS FOR GENERAL NOTICE OF PUBLIC AND ALL CONCERNED :

1. Plying of All Commercial Vehicles including taxis, which are 15 years old, shall be restricted by 2nd October 1998.
2. Restrictions on plying of goods vehicles during the day time shall be strictly enforced by 15th August, 1998.
3. Expansion of pre-mixed old dispenser (Petrol and 2T oil) shall be undertaken by 31st December, 1998.
4. Ban on supply of loose 2T oils at petrol stations and service garages shall be enforced by 31st December, 1998.

The following time schedule shall be adhered in respect of items indicated by all concerned authorities :

		Time frame
a)	Augmentation of public transport (stage carriage) to 10,000 buses.	1.4.2001
b)	Elimination of leaded petrol from NCT of Delhi.	1.9.1998
c)	Supply of only pre-mix petrol in filling stations to two-stroke engine vehicles.	31.12.1998
d)	Replacement of all pre-1990 autos and taxis with new vehicles on clean fuels.	31.3.2000
e)	Financial incentives for replacement of all post-1990 autos and taxis with new vehicles on clean fuels.	31.3.2001
f)	No 8-year old buses to ply except on CNG or other clean fuels.	1.4.2000
g)	Entire city bus felt (DTC & Private) to be steadily converted to single fuel mode on CNG.	31.3.2001
h)	New ISBTs to be built at entry points in North and South-West to avoid pollution due to entry of inter-state buses.	31.3.2000
i)	GAIL to expedite and expand from 9 to 80 CNG supply outlets.	31.3.2000
j)	Two independent fuel testing labs to be established.	1.6.1999
k)	Automated inspection and maintenance facilities to be set up for commercial vehicles in the first phase.	Immediate
l)	Comprehensive I/M programme to be started by Transport Department & private sector.	31.3.2000
m)	CPCB/DPCC to set up new stations and strengthen existing air quality monitoring stations for critical pollutants.	1.4.2000

DIRECTIONS :-

(i) No heavy and medium transport vehicles, and light goods vehicles being four wheelers would be permitted to operate on the roads of the NCR and NCT, Delhi unless they are fitted with suitable speed control devices to ensure that they do not exceed the speed limit of 40 KMPH except the transport vehicles operating on Inter-State permits and National goods permits and All India Tourist Permits. Such exempted vehicles would, however, be confined to such routes and such timings during day and night as the police/transport authorities may publish. It is made clear that no vehicle would be permitted on roads other than the aforementioned exempted roads other than the aforesaid time without a speed control device.

(ii) The authorities shall ensure that the transport vehicles are not permitted to overtake any other four-wheel motorised vehicle.

(iii) This will also ensure that wherever it exists, buses, heavy goods vehicles, medium goods vehicles and 4-wheel light goods vehicles plying during the permitted hours shall confine the bus lanes and no other motorised vehicle is permitted to enter upon the bus lane. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government and DDA, Union Government and the Delhi Cantt. Board shall take steps to ensure that bus lanes are segregated and road markings are provided on all such roads.

(iv) Buses halt only at Bus stops designated for the purpose and within the marked area. Municipal Corporation of Delhi, NDMC, PWD, Delhi Government, DDA and Union of India and Delhi Cantt. Board would take all steps to have appropriate bus stops constructed, appropriate markings made, and 'bus-Bays' built.

(v) Any breach of the aforesaid directions by any person would apart from entailing other legal consequences, be dealt with as contravention of the conditions of the permit which could entail suspension/cancellation of the permit and impounding of the vehicle.

(vi) Every holder of a permit issued by any of the road transport authorities in the NCR and NCT, Delhi will within ten days from today, file with its RTA a list of drivers who are engaged by him together with suitable photographs and other particulars to establish the identity of such persons. Every vehicle shall carry a suitable photograph of the authorised driver, duly certified by the RTA. Any vehicle being driven by a person other than the authorised driver shall be treated as being used in contravention of the permit and the consequences would accordingly follow.

1.	Vice Chairman, DDA	Chairman
2.	Engineer Member, DDA	
3.	Principal Commissioner, DDA	
4.	Commissioner (Planning), DDA	
5.	Commissioner (LD), DDA	
6.	Commissioner (LM), DDA	
7.	Chief Architect,DDA	
8.	Addl.Commissioner (MPD), Dda	
9.	Addl. Commissioner (AP), DDA	
10.	Addl. Commissioner (DC&B), DDA	Member Secretary
11.	Chief Planner, TCPO	
12.	Chief Architect. NDMC	
13.	Town Planner, MCD	
14.	Secretary, DUAC	
15.	Land & Development Officer, MOUAE	
16.	Sr. Architect (H&TP) CPWD	
17.	Chief Engineer (Plg.) DVB	
18.	Dy. Commissioner of Police (T)	
19.	Director (Landscape) DDA	

SPECIAL INVITEES

1. Chief Engineer (Elect.) DDA
2. Addl. Chief Architect-I , DDA
3. Addl. Chief Architect-II. DDA
4. OSD (Project Coord.) DDA
5. Director (ZP) DDA
6. Director (AP)-I, DDA
7. Director (AP)-II, DDA
8. Director (Narela) DDA
9. Director (NCR & UE) DDA
10. Sh.K.B.Rajoria, Engineer-in-Chief, PWD, GNCTD
11. Sh.C.M.Vij, Engineer-in-chief, MCD
12. Chief Engineer, DWS&SDU
13. Commissioner(Transport), GNCTD.
14. Sh.D.Sanyal (Consultant) CRAPHTS
15. Sh.A.K.Sareen, Director(Project) PWD
16. Sh.T.S.Reddy, Director, CRRI
17. Sh.P.S.Rana, Executive Director(Infra) HUDCO

S.No.7 /ITEM NO. 49/98/TC.

Subject : Grade Seperator proposal on Najafgarh Road & Outer Ring Road inter-section near District Centre, Janakpuri.
File No. F.5(61)87 MP.

.-.-.-.-.

1. INTRODUCTION

Najafgarh Road and outer Ring Road intersection is among the 15 locations identified for construction of grade seperators as decided in the meeting held under Hon'ble LG Delhi on 13/5/98. Grade seperater at this intersection is to be constructed by M.C.D. M/s. Kam Engineering(I) Pvt.Ltd. have bee n retained as Consultants for this project by the M.C.D. Location plan is placed as Annexure-I. The objectives of the grade seperater at this in-te-rsection are as under :-

a) To not allow the straight movement of heavy traffic from Outer Ring Road entering Janakpuri residential area.

b) To have uninterrupted flow of straight moving traffic on Najafgarh Road.

c) Integration of circulation of traffic of flyover and Distt.Centre.

All details mentioned in this agenda are based on the proposal submitted by the consultant.

2. EXISTING TRAFFIC CHARACTERSTIC.

7 Days Traffic surveys were carried out by M/s. KAM ENGG. at this intersection for 24 hours. Morning & evening peak hour traffic flow diagrames of the inter-section are placed with this report as Annexure-I. Summary findings from traffic surveys are as follows :-

../2/-

1.	Peak hour traffic volume(PCUs)	8505 (Morning) 7623 (Evening)
2.	Total average daily (PCUs)-24 hrs.	10500
3.	Break-up of Daily Slow & Fast Traffic (PCUs).	18.04% (Slow)
4.	Break-up of Peak hour Slow & Fast Traffic (Morning Peak hourx PCUs)	25.2% (Slow) 74.8% (Fast)
5.	Percentage of right turning traffic.	38% to 50%

Janakpuri leg of the intersection was closed for traffic due to some development works being carried out, hence traffic datas on this leg could not be taken.

Note : Ref.Annexures for Traffic Vol. details.

3. TRAFFIC FORECASTS.

In order to project the present volume of nearly 10000 PCUs in peakkhour (assuming Janakpuri leg traffic to be 1000 PCUs and attracted traffic to be 500 PCUs) at the intersection for the design year of 2021 AD, the trend in the growth rate of City traffic which is 2.5% to 5% p.a. has been considered.

Since the major residential development is coming up fast at DDA's Dwarka Sub-city and this intersection being on the main corridor linking this vast residential area, a higher growth rate of 3.5% p.a. (simple) is assumed. Following the assumptions as mentioned above the design peak hour traffic volume at this intersection has been estimated to be about 18000 PCUs.

4. PROPOSED GRADE SEPERATOR PROPOSALS.

It would not be possible to significantly augment the intersection capacity through at grade improvements. As mentioned earlier in the objectives, the Najafgarh

..3/-

Road should offer higher level of service and as such this corridor enjoys priority, but at the same time, it is also the priority to divert the straight moving heavy vehicles from Outer Ring Road to Janakpuri on to the Najafgarh Road by a right turning grade seperator, since the outer ring road enters the residential area of J-anakpuri. Based on the objectives and priorities, two alternatives have been worked out . The salient features of these proposals are as under :-

4.1 Alternative-I : Straight Flyover on Najafgarh Road.

a) In the Alternative-I, straight flyover on the main corridor of Najafgarh Road has been proposed, thereby giving the priority for the straight uninterrupted movement of traffic on the Najafgarh Road and achieving the objective-I.

b) In this alternative all other movements at the intersection will be at the surface level & controlled by traffic signals.

c) To achieve the objective of not allowing the heavy traffic from outer Ring Road to Janakpuri residential area, a blockade for straight traffic has been created by a channeliser.

d) Entry/exist of the Distt.Centre will be from Najafgarh Road as well as Janakpuri Road. One way movement has not been found to be desirable as it is likely to create a long detour for certain traffic & load certain corridors unnecessarily.

e) In this option approach length towards Tilak Nagar side is 335M and Uttam Nagar side is 350M. Straight slope in between summit curves & valley curves is 1:30 and the vertical clearance is 5.50M. The details are shown in the detailed plan of proposal.

..4/-

4.2 Alternative-II : One way elevated right turning ramp with two 'U' turning loops to make all the 12 movement of traffic free from signals.

&&

a) In this option, the main corrider of Najafgarh Road has been made free from any turning at the intersection and the straight movement of traffic will be uninterrupted at the grade only, thus achieving objective 1.

b) One way elevated right turning grade seperator has been proposed from Outer Ring Road on to the Najafgarh Road, thus giving priority to this movement and encourage the heavy traffic to divert on the Najafgarh Road instead of passing through Janakpuri residential area. All right turning movements are managed through the bulbs proposed on Najafgarh Road & Outer Ring Road for which some land of Park & setbacks of DVB S/Stn. shall have to be acquired.

c) Entry/exist to the Distt.Centre can be from Najafgarh Road and Janakpuri Road.

d) Straight slope on the ramps will be 1:25 as against the recommended slope of 1:30, and verticle clearance 5.5M.

e) The detailed arrangement has been shown on the ~~xxxx~~ plan of proposal. However, finer details w.r.t. horizental & vertical curves and levels will be worked out after the proposal is accepted.

5. ENVIRONMENTAL IMPACT ASSESSMENT.

The broad assessment of impact (positive or negative) on the various attributes associated with the proposed project have been made without detailing out the various steps involved in the EIA study. These are as under :-

i) The impact on the air quality is likely to be positive and significant as the pollution load due to the idling of vehicles at the intersection would be reduced.

ii) Visual Intrusion caused by overhead structure in close proximity to the Distt.Centre would have negative impact on aesthetics but these shall be improved by landscaping.

iii) Noise level of the vehicles will come down considerably due to continuous movement.

iv) The details of trees affected in each proposal is given hereunder :-

PROPOSAL I	150	Trees
PROPOSAL II	160	Trees

6. OBSERVATIONS.

i) Outer Ring Road and Najafgarh Road have a R/W of 63M & 61M respectively as per MPD-2001. Since Outer Ring Road does not have a continuity with Najafgarh Road, the heavy traffic from Outer Ring Road enters the 30.48M ft. wide collector road of Janak-puri residential colony. This causes lot of traffic problems inside the Janakpuri residential colony for which we have been receiving represen-tations from the past several years and now a court case is also there in the Delhi High Court. Although the Najafgarh Road is a major radial road on which a flyover at Jail Road Intersection is already under construction but at this intersection we have to see that while the straight traffic of Najafgarh Road is given a priority, the heavy traffic from Outer Ring Road does not enter the Janakpuri residential colony.

ii. Location of existing trees and their spicies falling in the R/W have not been shown in the Plan. There are atleast 30-40 fully grown Neem trees in the C/V of Najafgarh Road which will be affected in this proposal.

..6/-

iii. The Consultant has proposed two alternative proposals for this intersection. In Alternative-II, all the movements are supposed to be free with a right turning two lane grade seperator on Najafgarh Road by having a right turning ramp with a clear height of 5.50M above the intersection.

iv. There is a signalised intersection almost at a distance of ½ KM on the eastern and western side of this road. Closing of the gap in verge on these intersections will create lot of problems for rig-ht turning movement from the residential areas.

v. The circulation proposals have been studied with the circulation of Janakpuri Distt.Centre, it is felt that two way movement on the inner road of Janakpuri Distt. Centre connecting 'B' block road and Najafgarh Road should be allowed by having a central verge on this road.

vi. In Alternative-II proposal, the right turning ramp from Outer Ring Road shall foul with the existing 66 KV H.T,line, same will have to be shifted & realigned, feasibility of this shall have to be ascertained from DVB.

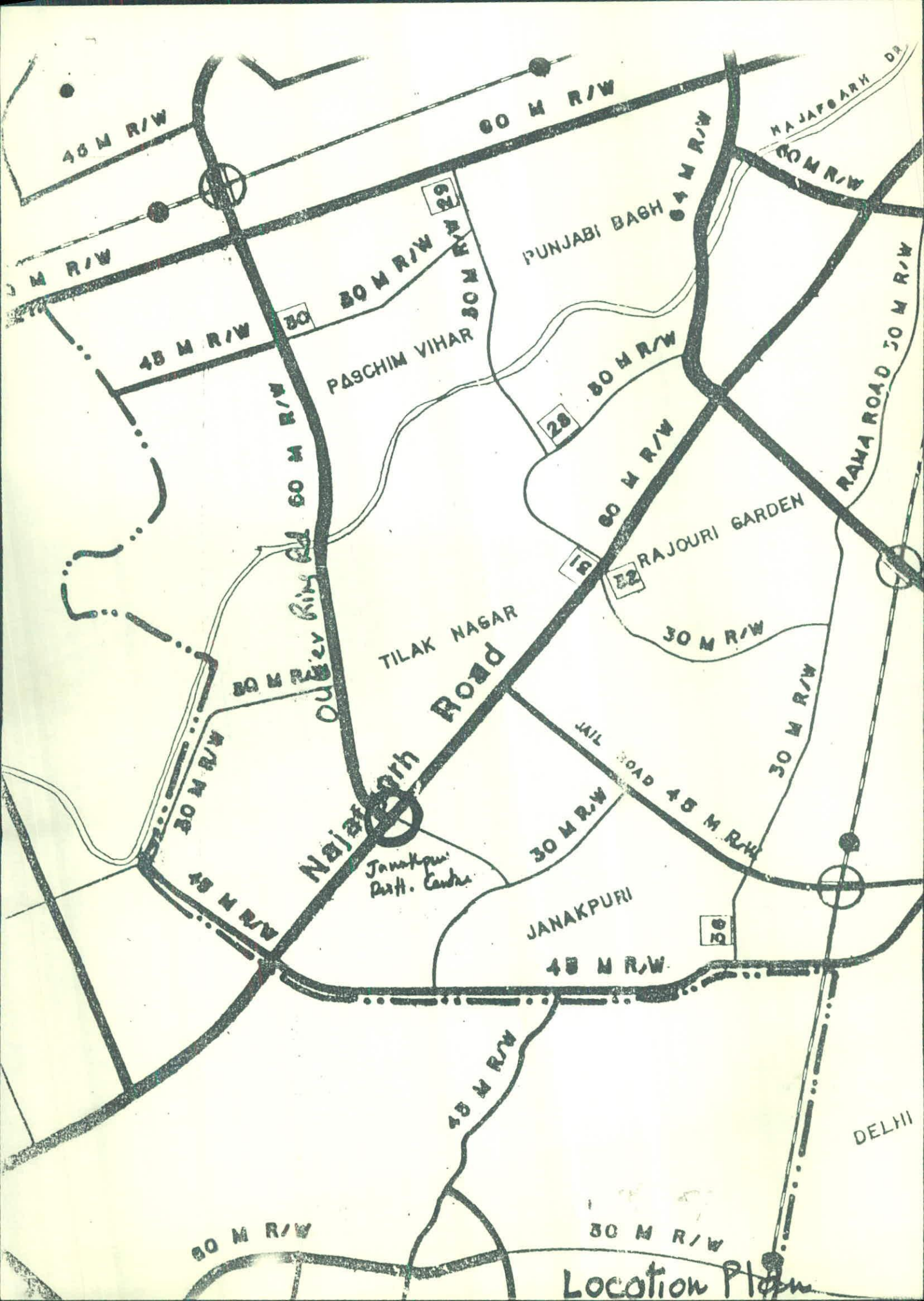
vii. Najafgarh Road is maintained by MCD and Outer Ring Road is maintained by PWD. In case of Alternative-II proposal, it has to be seen as to how these proposals shall have to be implemented due to the jurisdiction of different agencies on these roads.

viii. Pedestrian subway proposal needs to be linked up with the busbays and circulation of Janakpuri Distt.Centre.

7. RECOMMENDATIONS.

Alternative-I & II proposals explained under para 4 and the observations mentioned under para 6 are put up to the Technical Committee for consideration.

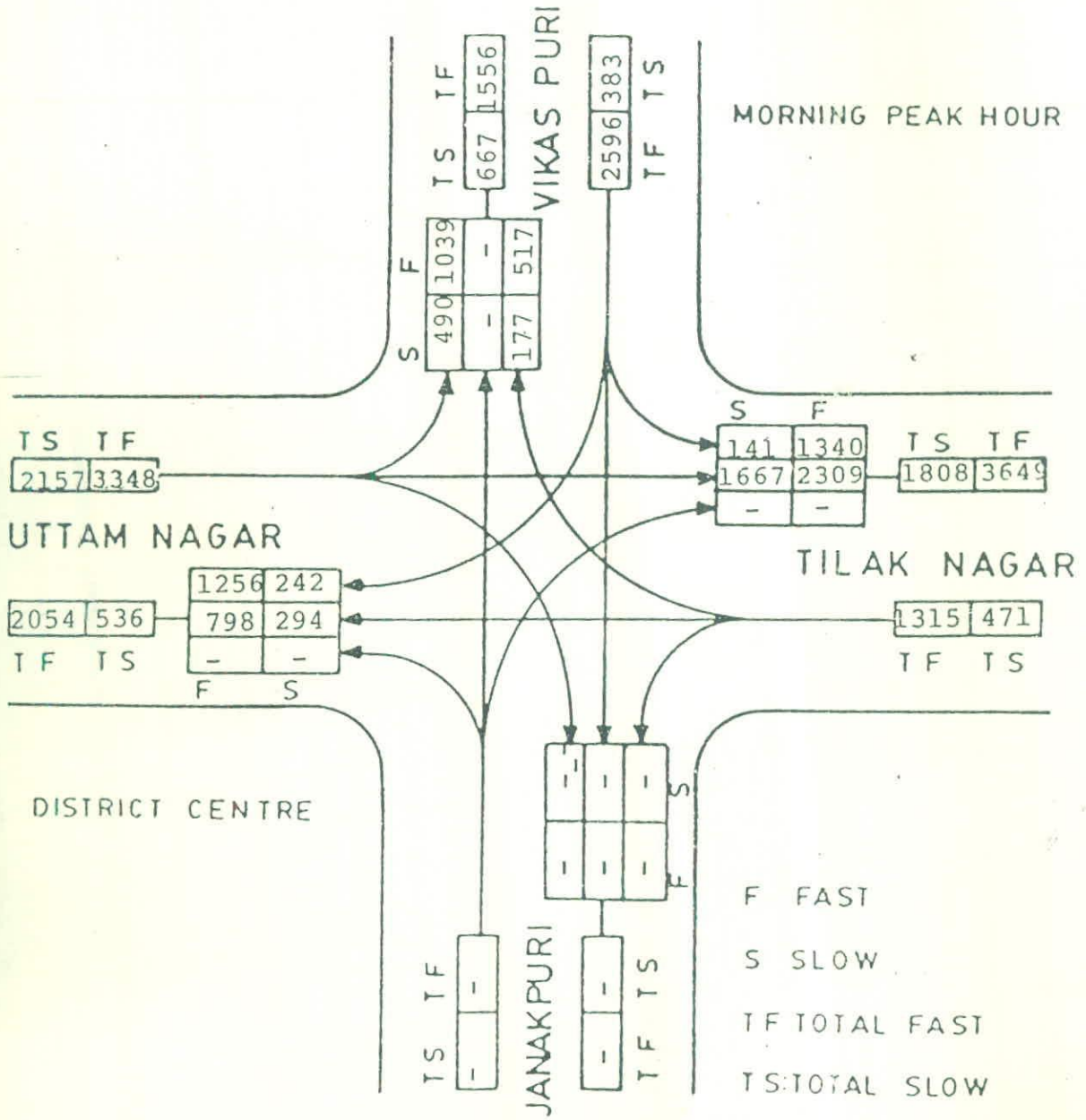
(D.K.SALUJA)
DIRECTOR(AP)-II


45 M R/W
60 M R/W
NAJAFGARH DR
60 M R/W
PUNJABI BAGH
60 M R/W
29
30 M R/W
30 M R/W
45 M R/W
30
PASCHIM VIHAR
60 M R/W
30 M R/W
28
RAMA ROAD 30 M R/W
60 M R/W
60 M R/W
RAJOURI GARDEN
19
E2
30 M R/W
TILAK NAGAR
Outer Ring Rd
30 M R/W
Najafgarh Road
30 M R/W
30 M R/W
JAIL ROAD 45 M R/W
30 M R/W
45 M R/W
Janakpuri Distt. Centre
30 M R/W
JANAKPURI
10
45 M R/W
45 M R/W
DELHI
30 M R/W
30 M R/W
Location Plan

PEAK HOUR TRAFFIC FLOW DIAGRAM IN NUMBER OF VEHICLES

PEAK HOURS 0900 HOURS TO 1000 HOURS

NAME AND LOCATION OF INTERSECTION – NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE



PEAK HOUR TRAFFIC DATA IN NUMBER OF VEHICLES (MORNING)

PEAK HOURS 0900 HOURS TO 1000 HOURS

NAME AND LOCATION OF INTERSECTION NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE

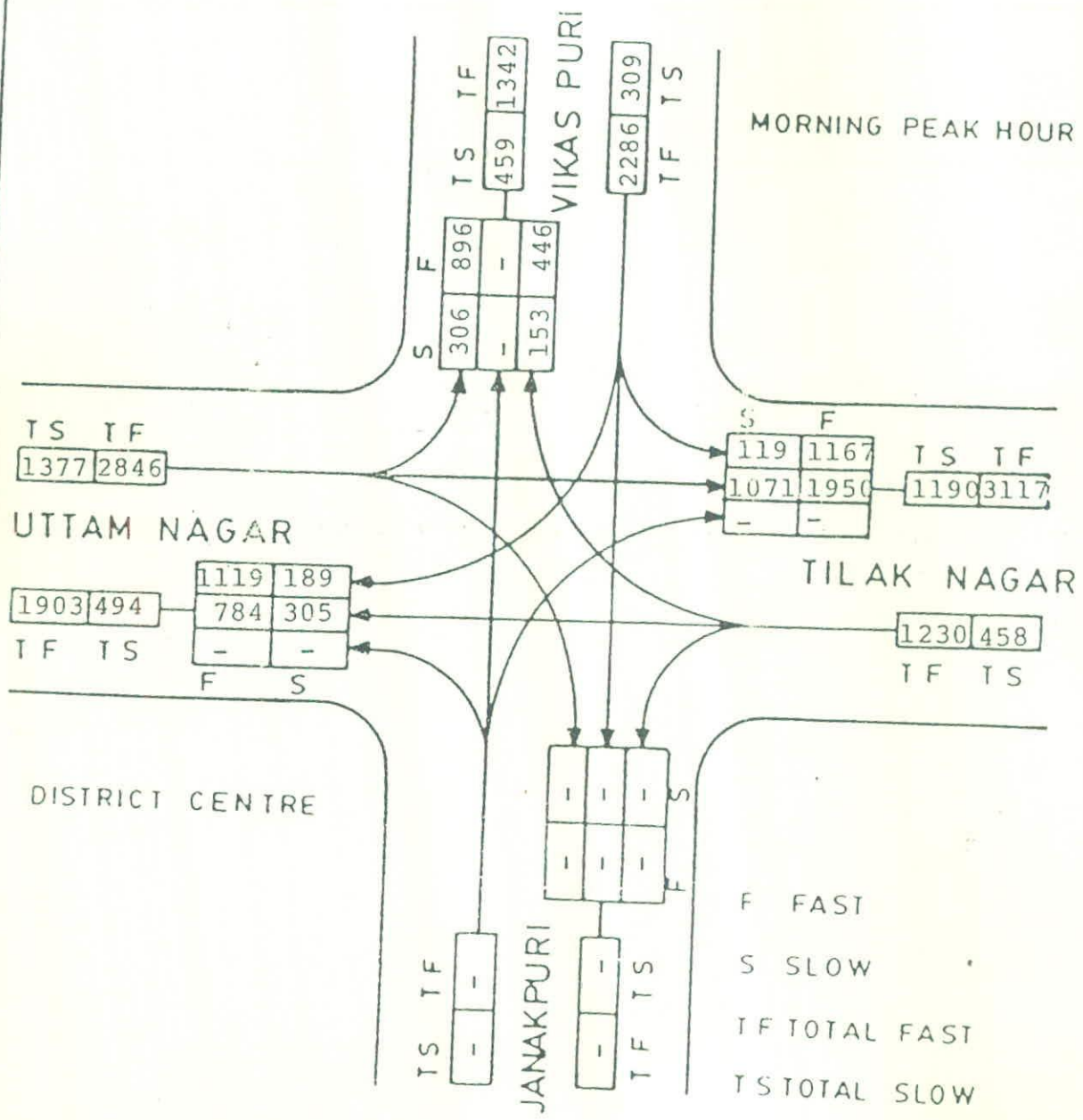
FROM	TILAK NAGAR			VIKASPURI			UTTAM NAGAR			JANAKPURI		
ENTERING	VIKAS PURI	UTTAM NAGAR	JANAK PURI	UTTAM NAGAR	JANAK PURI	TILAK NAGAR	JANAK PURI	TILAK NAGAR	VIKAS PURI	TILAK NAGAR	VIKAS PURI	UTTAM NAGAR
TYPE	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.
FAST VEHICLES												
1 PASSENGER CARS, TEMPOS, AUTO RICKSHAWS	250	275	-	404	-	692	-	705	325	-	-	-
2 MOTOR CYCLES, SCOOTER	240	411	-	720	-	586	-	1415	616	-	-	-
3 AGRICULTURE TRACTOR/LCV	4	22	-	28	-	3	-	20	23	-	-	-
4 TRUCKS/ BUSES	23	90	-	104	-	59	-	169	75	-	-	-
5 TRACTOR TRAILER	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL FAST	517	798	-	1256	-	1340	-	2309	1039	-	-	-
SLOW VEHICLES												
6 CYCLES	113	138	-	175	-	94	-	1440	436	-	-	-
7 CYCLE RICKSHAWS	64	156	-	67	-	47	-	221	54	-	-	-
8 HAND CART	-	-	-	-	-	-	-	6	-	-	-	-
9 HORSE CART	-	-	-	-	-	-	-	-	-	-	-	-
10 BULLOCK CART	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SLOW	177	294	-	242	-	141	-	1667	490	-	-	-

TABLE-I

PEAK HOUR TRAFFIC FLOW DIAGRAM IN PCU'S

PEAK HOURS 0900 HOURS TO 1000 HOURS

NAME AND LOCATION OF INTERSECTION – NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE



PEAK HOUR TRAFFIC DATA IN PCU'S (MORNING)

PEAK HOURS 0900 HOURS TO 1000HOURS

NAME AND LOCATION OF INTERSECTION – NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE

FROM	TILAK NAGAR			VIKAS PURI			UTTAM NAGAR			JANAKPURI		
ENTERING	VIKAS PURI	UTTAM NAGAR	JANAK PURI	UTTAM NAGAR	JANAK PURI	TILAK NAGAR	JANAK PURI	TILAK NAGAR	VIKAS PURI	TILAK NAGAR	VIKAS PURI	UTTAM NAGAR
TYPE	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S
FAST VEHICLES												
1 PASSENGER CARS, TEMPOS, AUTO RICKSHAWS	250	275	–	404	–	692	–	705	325	–	–	–
2 MOTOR CYCLES, SCOOTER	120	206	–	360	–	293	–	708	309	–	–	–
3 AGRICULTURE TRACTOR/LCV	7	33	–	43	–	5	–	30	37	–	–	–
4 TRUCKS / BUSES	69	270	–	312	–	177	–	507	225	–	–	–
5 TRACTOR TRAILER	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL FAST	446	784	–	1119	–	1167	–	1950	896	–	–	–
SLOW VEHICLES												
6 CYCLES	57	70	–	88	–	47	–	720	224	–	–	–
7 CYCLE RICKSHAWS	96	235	–	101	–	72	–	333	82	–	–	–
8 HAND CART	–	–	–	–	–	–	–	18	–	–	–	–
9 HORSE CART	–	–	–	–	–	–	–	–	–	–	–	–
10 BULLOCK CART	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL SLOW	153	305	–	189	–	119	–	1071	306	–	–	–

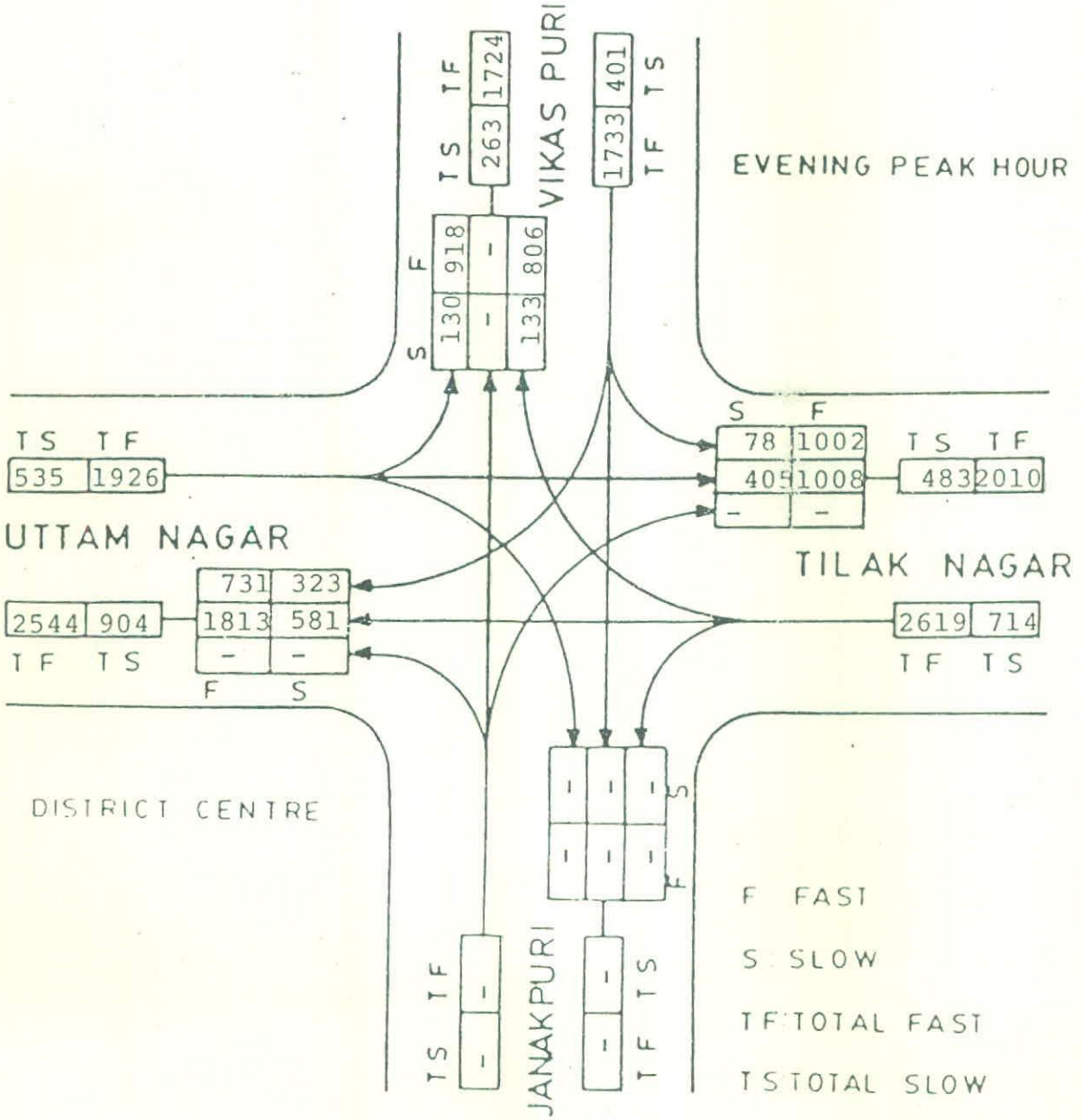
PCU'S EQ. FACTOR :– 1=1.0 2=0.5 3=1.5 4=3.0 5=4.5 6=0.5 7=1.5 8=3.0 9=4.0 10=8.0

TABLE-II

PEAK HOUR TRAFFIC FLOW DIAGRAM IN NUMBER OF VEHICLES

PEAK HOURS 1930 HOURS TO 2030 HOURS

NAME AND LOCATION OF INTERSECTION – NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE



PEAK HOUR TRAFFIC DATA IN NUMBER OF VEHICLES

PEAK HOURS 1930 HOURS TO 2030 HOURS (EVENING)

NAME AND LOCATION OF INTERSECTION NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE

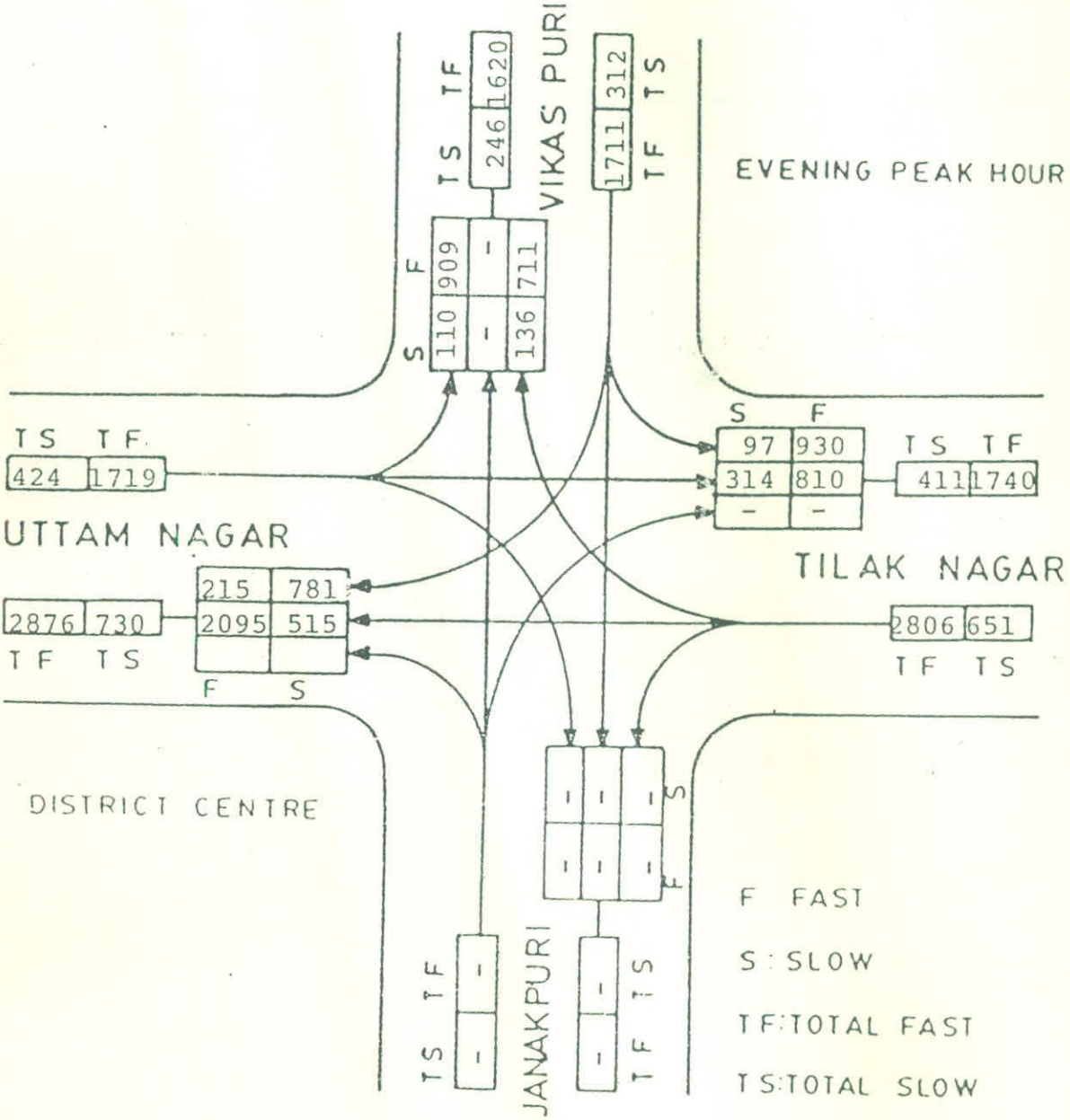
FROM	TILAK NAGAR			VIKASPURI			UTTAM NAGAR			JANAK PURI		
ENTERING	VIKAS PURI	UTTAM NAGAR	JANAK PURI	UTTAM NAGAR	JANAK PURI	TILAK NAGAR	JANAK PURI	TILAK NAGAR	VIKAS PURI	TILAK NAGAR	VIKAS PURI	UTTAM NAGAR
TYPE	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.
FAST VEHICLES												
1 PASSENGER CARS, TEMPOS, AUTO RICKSHAWS	393	670	-	260	-	567	-	382	339	-	-	-
2 MOTOR CYCLES, SCOOTER	364	743	-	331	-	367	-	493	435	-	-	-
3 AGRICULTURE TRACTOR/LCV	5	100	-	45	-	17	-	38	55	-	-	-
4 TRUCKS/ BUSES	44	300	-	95	-	51	-	95	89	-	-	-
5 TRACTOR TRAILER	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL FAST	806	1813	-	731	-	1002	-	1008	918	-	-	-
SLOW VEHICLES												
6 CYCLES	65	357	-	270	-	21	-	294	87	-	-	-
7 CYCLE RICKSHAWS	68	224	-	53	-	57	-	111	42	-	-	-
8 HAND CART	-	-	-	-	-	-	-	-	01	-	-	-
9 HORSE CART	-	-	-	-	-	-	-	-	-	-	-	-
10 BULLOCK CART	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SLOW	133	581	-	323	-	78	-	405	130	-	-	-

TABLE-I

PEAK HOUR TRAFFIC FLOW DIAGRAM IN PCU'S

PEAK HOURS 1930 HOURS TO 2030 HOURS

NAME AND LOCATION OF INTERSECTION – NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE



PEAK HOUR TRAFFIC DATA IN PCU'S

(EVENING)

PEAK HOURS 1930 HOURS TO 2030 HOURS

NAME AND LOCATION OF INTERSECTION – NAJAFGARH ROAD AND OUTER RING ROAD INTERSECTION NEAR DISTRICT CENTRE

FROM	TILAK NAGAR			VIKASPURI			UTTAM NAGAR			JANAKPURI		
ENTERING	VIKAS PURI	UTTAM NAGAR	JANAK PURI	UTTAM NAGAR	JANAK PURI	TILAK NAGAR	JANAK PURI	TILAK NAGAR	VIKAS PURI	TILAK NAGAR	VIKAS PURI	UTTAM NAGAR
TYPE	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S	PCU'S
FAST VEHICLES												
1 PASSENGER CARS, TEMPOS, AUTO RICKSHAWS	393	670	–	260	–	567	–	382	339	–	–	–
2 MOTOR CYCLES, SCOOTER	178	370	–	168	–	184	–	247	224	–	–	–
3 AGRICULTURE TRACTOR/LCV	8	155	–	68	–	26	–	58	79	–	–	–
4 TRUCKS / BUSES	132	900	–	285	–	153	–	123	267	–	–	–
5 TRACTOR TRAILER	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL FAST	711	2095	–	781	–	930	–	810	909	–	–	–
SLOW VEHICLES												
6 CYCLES	33	179	–	135	–	11	–	147	44	–	–	–
7 CYCLE RICKSHAWS	103	336	–	80	–	86	–	167	63	–	–	–
8 HAND CART	–	–	–	–	–	–	–	–	3	–	–	–
9 HORSE CART	–	–	–	–	–	–	–	–	–	–	–	–
10 BULLOCK CART	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL SLOW	136	515	–	215	–	97	–	314	110	–	–	–

PCU'S EQ. FACTOR :– 1=1.0 2=0.5 3=1.5 4=3.0 5=4.5 6=0.5 7=1.5 8=3.0 9=4.0 10=8.0

TABLE-II

District Center , Janak puri Intersection/ Proposal Annexure-I Details

Name of the Road,	Existing R/W	Proposed R/w
Outer Ring Rod,	60.96M	60.96M
NajafgarhRoad	60.96M	60.96M
Janak puri Road,	30.48M	30.48M

Existing/Projected Traffic Vol .-2021 At Intersection	10,000/18,000 PCUS
Name of Road on which Flyover is proposed	For Straight Trafic on Najafgrah Road both Sides
No. of Lanes/ width of Flyover in each direction	3lanes in each direction of width 3.5 mtr. each
Width of Central Verge	1.2M.
Width of Curb/Railing	0.6M
No. of lanes/Width of C/W at Surfacelevel	4 lanes on each 3 Sides- Vikas Kujn, District Center and School 3 lanes on Residences side
Width of inner footpath on either side.	Not Applicable
Width of Service Road	6M wide service road on Residences side,
Width of Outer Footpath	2 M
Clear height below the flyover.	5.5M
Total height of Flyover	8M
Details of SeparateCycle corridor	Not Provided
Slope of Ramp	1:30
Space reservation for H.T. Corridor	No t Provided
Cycle timeof signals on Surface level before/after cdonstruction of Flyover	120Sec. Approx
Lighting on Flyover	Over head Sodium Vapour lights on either sides.from MS Poles
No. of Structures affected	Not Affected
No. of trees afffted & their species	Details not given
U/G -O/H Services Affected	Details not Given
Treat ment for Noise/Air Pollution	No specfic treatment suggested
Treatment for Vibration in abutting properties	No Specific treatment suggested
Utilisation of Space below flyover	Not mentioned
Movements of Public Transport	In Bus lanes along N.G. Road & Outer Ring Road
Pedestrian Facilites	One Pedestrian Subways is proposed placed diagonally
Management During Constn.	Details not submitted