



An Overview Towards Flyover Construction for Lessening Congestion of Traffic

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Abstract: While the traffic on road is increasing day by day and there is no space left in both dimensions, and finally the only option left is to go to third dimension and that is made all the way through flyover construction. Flyover is a bridge that carries one road or else railway line above another moreover with or lacking subsidiary roads, for communication connecting the two. The main purpose is to get better present state of affairs vastly and make association of traffic convenient to possible extend, although a completely difference free situation cannot be understood. Scope of work includes collection of data concerning existing pavement crust composition as well as features and existing sub grade type conditions.

Keywords: Flyover, Bridge, Pavement, Road, Third Dimensions, Traffic.

INTRODUCTION

All flyovers and roads etc are considered exclusively to hold the heaviest as well as tallest vehicle. Flyovers play a most important role within streamlining the system of traffic control. All the way through flyovers lots time is saved avoiding congestion. Effect of pollution is reduced and Flyovers decrease risk of accidents. These moreover contribute a lot toward the aesthetics of city [1]. The person who travels on flyover can enjoy panoramic vision of the city. A variety of engineering surveys were carried out for proper planning and designing of grade separator at proposed junction. These surveys are for instance Topographical survey, Trial pit/subsoil investigations and Geotechnical investigations intended for foundations. Topographical Surveys collect necessary ground features of proposed junction by means of Total Station to build up a Digital Terrain Model to look after design necessities of grade separated facility, identify areas of restriction as well as their remedies [2][3]. The data that is collected will result in final design and is moreover used for computation of earthwork as well as other quantities necessary. Trial Pit / Subsoil Investigations offer basis for pavement design for service roads keeping in vision of composition as well as characteristics of existing pavement. The scope of work, therefore, comprise collection of data concerning existing pavement crust composition as well as features and existing sub grade type as well as sub-soil conditions.

PROPOSALS OF IMPROVEMENT AND DESIGN STANDARDS

The junction caters in support of extremely congested as well as crammed traffic throughout the day especially during peak hours. Based on surveys results an arrangement suiting for the traffic pattern is projected for improvisation of situation. The entire site constraints were taken care during formulation of improvement scheme. The main purpose is to get better present state of affairs vastly and make association of traffic convenient to possible extend, although a completely difference free situation cannot be understood. Geometry of NH 9 contains a mild curve in this stretch and therefore elevated structure moreover follows geometry containing of mild curve. As our project road falls in limits off urban, appropriate Indian Roads Congress design standards by due consideration towards most recent directive as well as guidelines were followed, while formulating standards of design. The necessary design standards implemented for structural designs are as per necessities laid down in most recent editions of Indian Roads Congress codes of practices and regular specifications of Ministry of Road Transport as well as Highways. The proposal of flyover needs improvement as well as reorganization of traffic understanding existing at junction. The traffic is channelized making sure appropriate turning radius. Traffic regulation arrangements are restructured to make simple smooth turning of vehicles. A variety of structural arrangement options were considered for proposed

flyover based on Functional requirement, features of subsoil, services to be provided at grade, simplicity in construction and Economy and so on. The structural system was considered in view of suitability of the same at projected location, constructability, impact level on traffic movement throughout construction [4][5]. When considering distance of coverage essential for required spans, a span length concerning 35m is approved there and similar span length is followed for complete length of flyover.

CLASSIFICATION OF FLYOVERS

Flyovers are important within streamlining the system of traffic control. All the way through flyovers lots time is saved avoiding congestion. The flyover is considered to simplify traffic congestion at Tolichowki T-junction and make easy hassle-free movement among Mehdipatnam as well as Gachibowli. Flyovers are not as a rule appropriate for developed areas as they need a huge area and also it is expensive and lack of proper managing within flyover construction might cause lots of problems [6]. The road from Mehdipatnam towards Tolichowki is a high traffic density area. There are different classification of flyovers such as:

Railway Crossing: At railway crossing in which there is more traffic congestion regarding frequency of trains passing by or else the traffic on road, in both cases flyover must be provided all along the road. There are two forms of flyovers that are used in support of traffic management at road crossings such as **Simple Flyovers:** in which main road is employed for fast traffic, which is made to pass highest level by means of bridge, offering ramps on both approaches; and slowest traffic is prepared to pass underneath as a result traffics pass at two various levels, and have no chance for accident. **Grade Separator:** Rotary Grade Separator unites benefits of rotary with notion of a flyover. It is basically multi-level rotary by traffic segregation at separate vertical levels on basis of mode of traffic and not direction alone [7][8]. The biggest advantage of Rotary Grade Separator is that it is considered around human being, the pedestrian and offering him secured movement as well as access. **Cloverleaf Junction:** It is moreover a type of grade separator which was first used in America and needs an extremely huge area of land. The entire conflicting streams concerning traffic are avoided, and as a result traffic moves at its individual speed. This is beneficial when compared to roundabout, as there is no need for weaving as well as slowing down of traffic. The cloverleaf is simple means to bond two freeways. The only bridge necessary is to divide two roadways. When land is costly, so moreover can be cloverleaf, which turn into an option among tight turning radii or else lots of consumed land.

SCENARIO OF TRAFFIC AT TOLICHOWKI

Tolichowki junction on NH 9 is one of important locations that hold highest volume of traffic. The speed survey that is performed on this stretch of highway moreover indicates peak hour average speed of 19 kmph [9]. The study contain mandated flyover to be build at junction of NH9 by 2015. Geometry of NH 9 contains a mild curve in this stretch and therefore elevated structure moreover follows geometry containing of mild curve. Suitable Indian roads congress design standards by due consideration towards most recent directive as well as guidelines were followed, while formulating standards of design. Detailed design of projected flyover was carried out on the basis of data collected throughout a variety of surveys similar to topographical survey, geotechnical survey and moreover as specified in the findings of traffic studies. The proposal of flyover needs enhancement as well as reorganization of traffic understanding existing at junction. The traffic is channelized making sure appropriate turning radius. Traffic regulation arrangements are restructured to make simple smooth turning of vehicles. Various structural arrangement options were considered for proposed flyover. Apart from various outcomes of survey, urban environment of area moreover played a most important role in making a decision of span length, shape of substructure and so on. Most recent versions of relevant standard codes of practices that are published by Indian Roads Congress standard specifications have been followed in finalizing design thought and in design of a variety of structural components. The design of substructure as well as foundation of the flyover is carried out on the basis of IRC 6- 2000 as well as IRC 78-2000. RCC hammer headed piers by means of flaring on the top portion as well as straight portion below is projected. Pier cap is offered above the flaring. Abutments are designed related to piers devoid of earth pressure forces. Total item wise quantities in support of flyover are considered as per detailed drawings [10].

| S. No | Year | PCU |
|-------|------|--------|
| 1 | 2010 | 6,867 |
| 2 | 2015 | 9,299 |
| 3 | 2020 | 11,893 |
| 4 | 2025 | 13,816 |
| 5 | 2030 | 14,632 |

Fig1: An overview of projected traffic at Tolichowki.

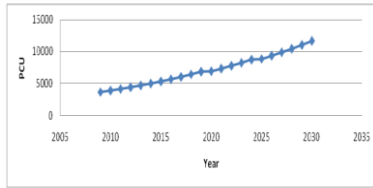


Fig 2: An overview of Projected Traffic at Tolichowki

From the traffic analysis performed, it can be observed that flyover is mandated at this location in 2015.

CONCLUSION

Flyovers contain several advantages, but limitations arise only due to several mistakes committed at some stage in their construction or else because of improper planning, and so on. Flyovers are not as a rule appropriate for developed areas as they need a huge area and also it is expensive. Lack of proper managing within flyover construction might cause lots of problems. Various engineering surveys were carried out for proper planning and designing of grade separator at proposed junction. The major intention is to get better present state of affairs vastly and make association of traffic convenient to possible extend, although a completely difference free situation cannot be understood. The necessary design standards implemented for structural designs are as per necessities laid down in most recent editions of Indian Roads Congress codes of practices and regular specifications of Ministry of Road Transport as well as Highways.

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