

## **A CASE STUDY OF PARKING DEMAND FROM MADHA VGANJ TO TILAK CHOWK VIDISHA STATION ROAD**

**Neeraj Giri, Prof. Y.P Joshi**

*\*M.Tech. Scholar, Samrat Ashok Technological Institute, Vidisha, M.P., India.*

*\*\*Prof Department of Civil Engineering, SATI Vidisha l*

***ABSTRACT: The transport infrastructure contributes largely to the state economy. Parking is an necessary part of the transportation system. This necessary component causes some major problems that are created by the increasing vehicle traffic. Some of the issues associated to parking are congestion, delay, accident, pollution etc. It has an effect on transport development. The availability of less space in city areas has increased demand for parking space especially in central business area. The Aim of the study was to investigate the existing condition of parking. & also collect the behaviour response from the travellers. In city areas parking causes more and more problems which need a goal-oriented and well-organized parking policy. license plate method will conducted for collecting the data of existing conditions for improving services. But based on the present parking demand in the study area long duration parking management can also be proposed, such as provision of Surface Parking.***

### **INTRODUCTION**

Parking is a situation when any vehicle is at rest and occupies a land space and is an integral part of any roadway system. With rapid urbanization and growing number of vehicles, parking demand has been increasing consuming large urban spaces. As mentioned earlier vehicular growth rate in the city has been considerable causing supply and demands demand disparity of parking space. Parking has become an integral part of our cultural requirement and an issue of global concern. Fast, safe and reliable mobility is a concern along with parking in auto based landscape developments (TDM Encyclopedia, WTPI, July 2008). Urban spaces in Indian cities have started to adopt auto based landscape developments that dedicate large area of usable space to parking lots. Parking facility is considered as a fringe benefit by everyone, being supplied without cost. Contrary to an auto-oriented urban sprawl aim should be towards sustainable development and better planned environments (David King et.al. 2007). It thus becomes a challenge to regulate, supply and incorporate parking as a crucial parameter for such a development. A big challenge to face this rapid growth in sustainable manner is to identify new ways to address the parking needs simultaneously minimizing its negative impacts and encouraging better and different design

The vehicular population growth is enormous in Vidisha, with just 17,491 registered motor vehicles in 2011 to 22,664 in 2014, an increase of 5,173 vehicles in duration of 3 years only. Due to the non-availability of public transport a tremendous growth in personalized vehicles mainly two wheeler and motor cars registered vehicle was 14387 in 2011 which gone high up to 16836 in year 2014. The yearly growth in different types of vehicles is shown in table given below. The following data is collected from the transportation department of vidisha.

<b>TYPE OF VEHICLE</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
TRUCKS	88	99	151	189
MOTOR CARS	395	480	693	856
MOTOR CYCLES	14,387	9,037	11,078	16,836
THREE WHEELED VEHICLES FOR PUBLIC TRANSPORT	98	77	131	198
MOTOR CABS/LUXURY CABS	30	29	43	62
PUBLIC SERVICE VEHICLES	3	2	17	14
TRACTOR	2,273	1,186	1,200	3,932
<b>TOTAL</b>	<b>17274</b>	<b>10910</b>	<b>13313</b>	<b>22087</b>

**SCOPE OF WORK**

Objective of the study is to provide the city with a parking policy design guideline through pricing mechanism and management and design alternatives that would help the city administrative authority to regulate and manage on-street (kerb side) and off-street (multi-level or ground level) parking schemes in the city.

- To evaluate the adequacy of parking facilities to meet the parking demand at road between Tilak chowk to madhavganj chowk.
- To estimate the revenue generated on account of paid parking.
- To propose appropriate location for off-street parking facilities depending upon the space availability and parking demand.
- Improvement in accessibility to CBD (central business district) between Tilak chowk to Madhavganj.

**METHODOLOGY**

**VIDISHA GROWTH PROFILE**

Vidisha is a city in the state of Madhya Pradesh, India. The district was created as “Bhilsa District” in 1904 by joining tehsil of vidisha (also known as Bhilsa) and basoda. It is located near the state capital Bhopal. The town is situated east of the Betwa River, in the fork of the Betwa and Bes rivers, 9 Km from Sanchi. As of 2011 India census Vidisha had a population 14.5 lakh spread over 730197 hectare.

<b>Year</b>	<b>1951</b>	<b>1961</b>	<b>1971</b>	<b>1981</b>	<b>1991</b>	<b>2001</b>	<b>2011</b>
Area (Sq.Km)	7371	7371	7371	7371	7371	7371	7371
Population	386075	489213	658427	783098	970388	1214857	1458875
Decade Growth Rate (%)	0.71	26.71	34.59	18.93	23.92	25.12	20.09
Population Density (per sq.km)	53	67	90	107	132	165	198

Source (Census 2011)

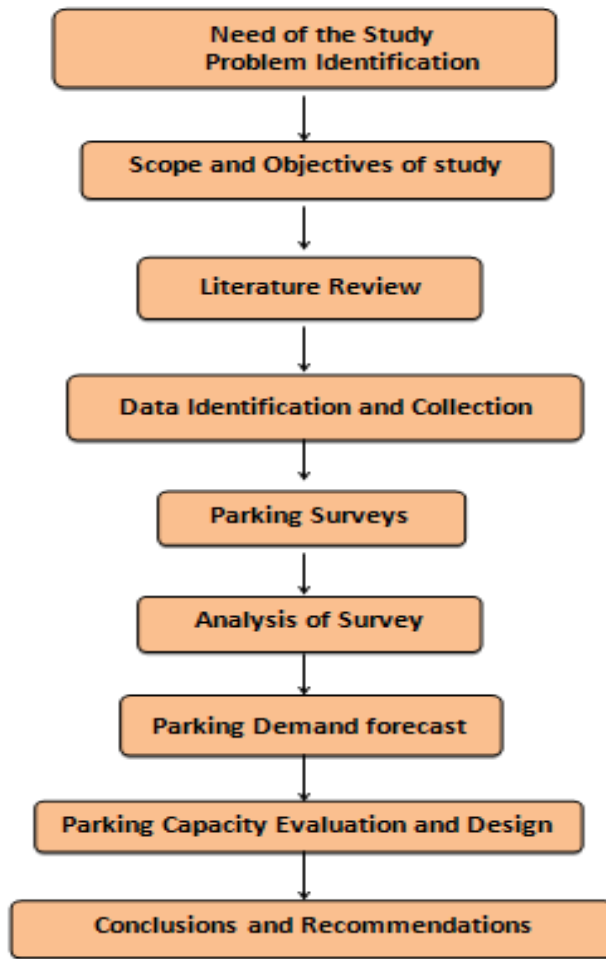
Information about on street parking at Station Road Vidisha



The methodology involved the following tasks:

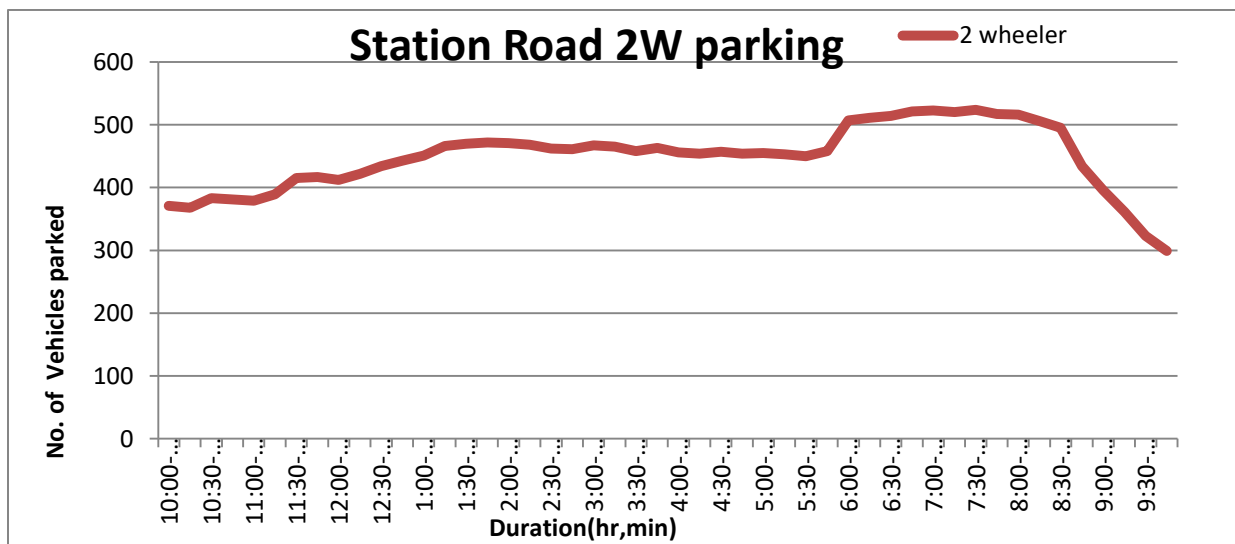


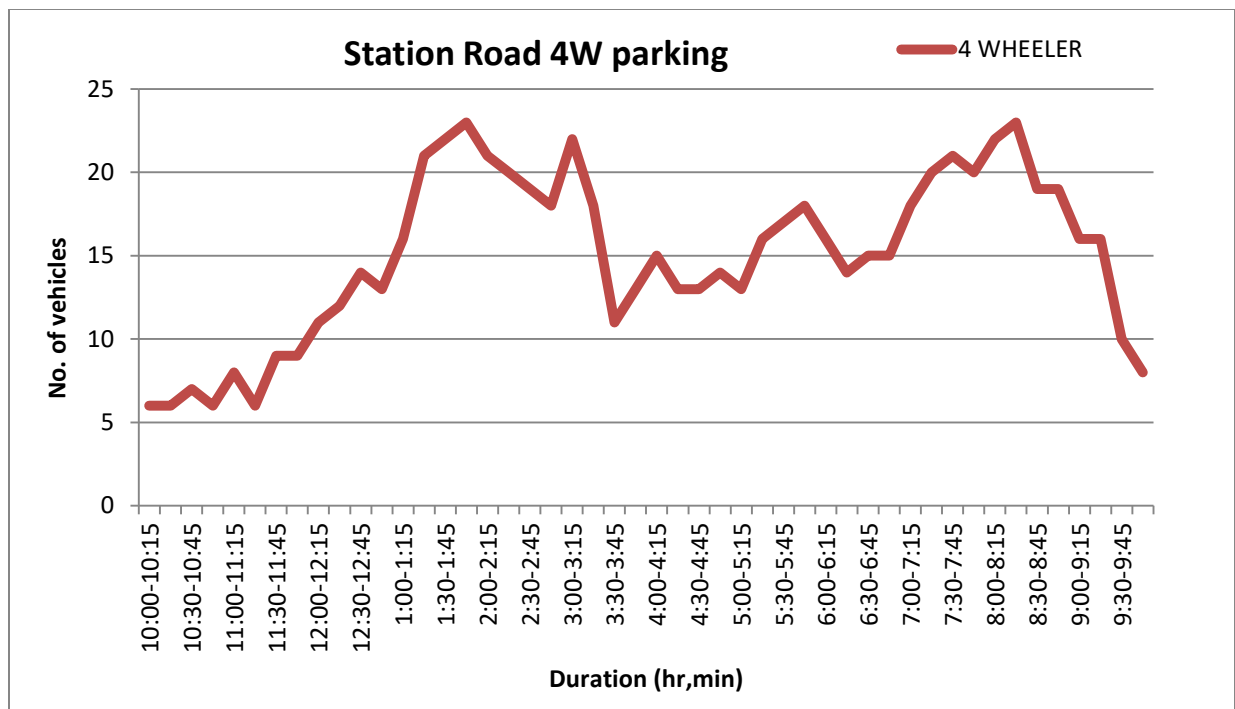
1. Review of earlier study report, parking guidelines and codes, existing and proposed development plans and schemes pertaining to the study area, if available.
2. Design and conduct primary surveys.
3. Analysis of data.
4. Forecasting future parking demand and suggest implementation to satisfy the demand.



### PARKING ACCUMULATION ANALYSIS

The parking accumulation analysis shows variation of parking of vehicles at different interval of time. The vehicle parked data given in Annexure-1





#### 4.5 PARKING DURATION

Parking duration analysis was carried out to find the length of time spent in a parking space by the vehicles. After doing License plate survey of all parking lots it is found that number of vehicles parked for which different time duration.

Time	Location	Parking Duration	2w	%age
<b>Morning</b>	Station Road (Madhavganj) to Tilak chowk)	< 30 Min.	107	66.45%
		30 Min. – 1 Hr.	32	19.87%
		1 Hr. – 3 Hrs.	14	8.69%
		>3 Hrs.	8	4.96%
<b>Evening</b>		< 30 Min.	75	71.42%
		30 Min. – 1 Hr.	21	20%
		1 Hr. – 3 Hrs.	6	5.71%
		>3 Hrs.	3	2.85%

Time	Location	Parking Duration	4w	%age
Morning	Station Road (Madhavganj to Tilak chowk)	< 30 Min.	18	50%
		30 Min. – 1 Hr.	9	25%
		1 Hr. – 3 Hrs.	5	13.88%
		>3 Hrs.	4	11.11%
Evening	Station Road (Madhavganj to Tilak chowk)	< 30 Min.	21	65.62%
		30 Min. – 1 Hr.	8	25%
		1 Hr. – 3 Hrs.	3	9.37%
		>3 Hrs.	0	0.00%

**CAPACITY OF ROAD**

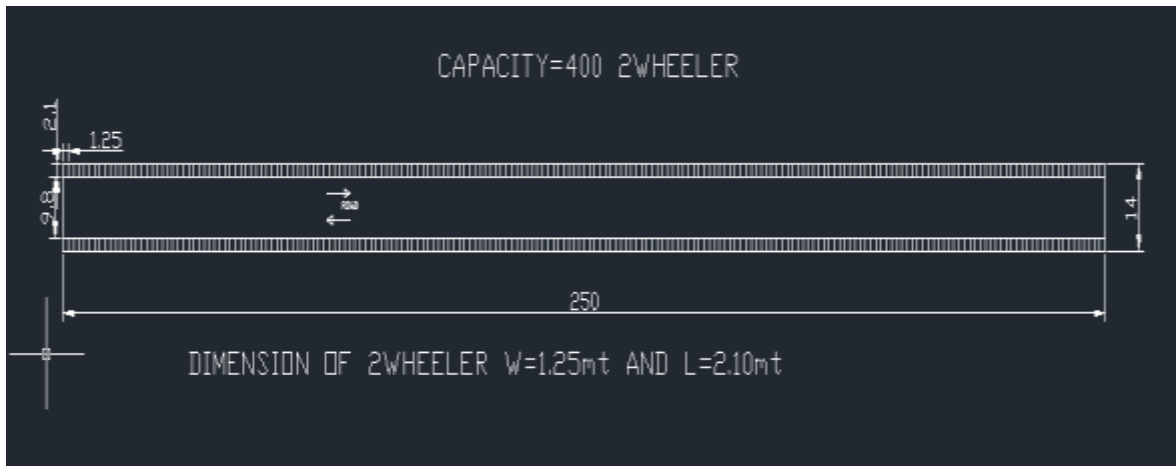


Figure 4.7 shows 2W Parking Capacity of Station Road

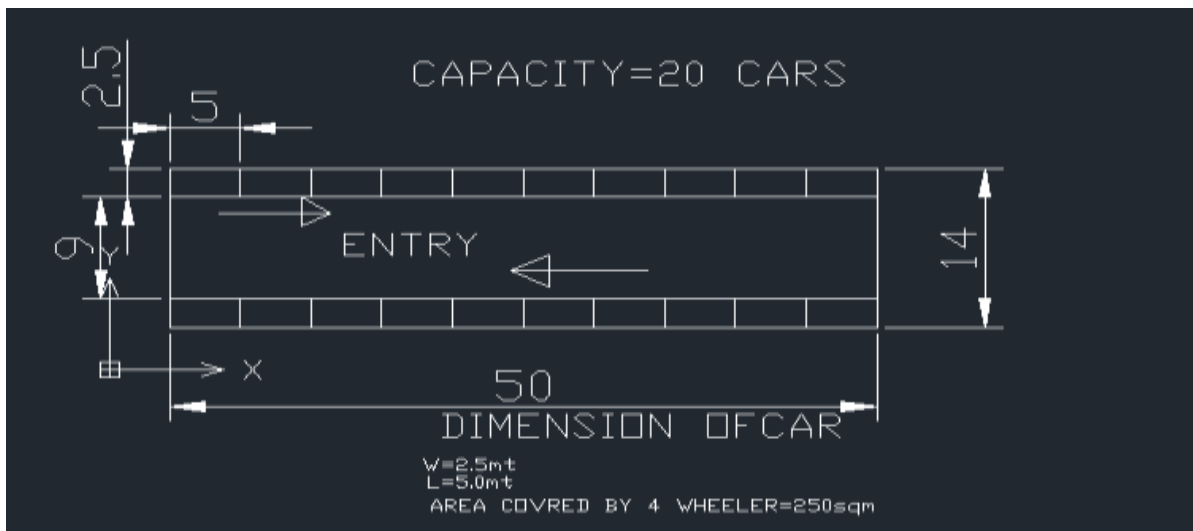


Figure 4.8 Shows 4W Parking Capacity of Station Road

## RECOMMENDATION AND CONCLUSION

### 5.1 RECOMMENDATION

The above inferences make it clear that parking lots management of areas, having distinctive parking characteristics and multiple activities, is a complex problem and can be Controlled by implementing a combination of possible policies.

- For the time being, a time restricted policy can be implemented in the areas. There Should be different provisions for short-term and long-term parking to improve the Mobility and hence efficiency.
- Provision of off-street parking lots like Surface parking, which is conveniently Accessible and within the acceptable walking distance must be explored and developed On Public Private Partnership (PPP) bases, this parking lot provide sufficient land area for Construction of Surface parking.
- Near about market approx. 50-80 mt un useful land available so I will Recommend for parking.
- In this study I was found at morning and evening parking Demand increased at Station Road Vidisha.
- Pedestrian space on the entire network ranges from 0.5 – 1.5 mt. and is unavailable on certain sections that brings pedestrian movement on the main carriageway. Improving the quality of public spaces for pedestrians, cyclists, and hawkers.
- On-street parking facility is not existent and kerb side parking is done in random patterns by all the category of vehicles.
- Reducing pollution, noise, and congestion by discouraging the use of private motor vehicles.
- Raising revenue for public transport and for bicycle and pedestrian infrastructure.
- On the junction it would turn out to be congestion point due to movement of vehicles near on street parking.



Figure 5.1 Shows Satellite image of Parking Location

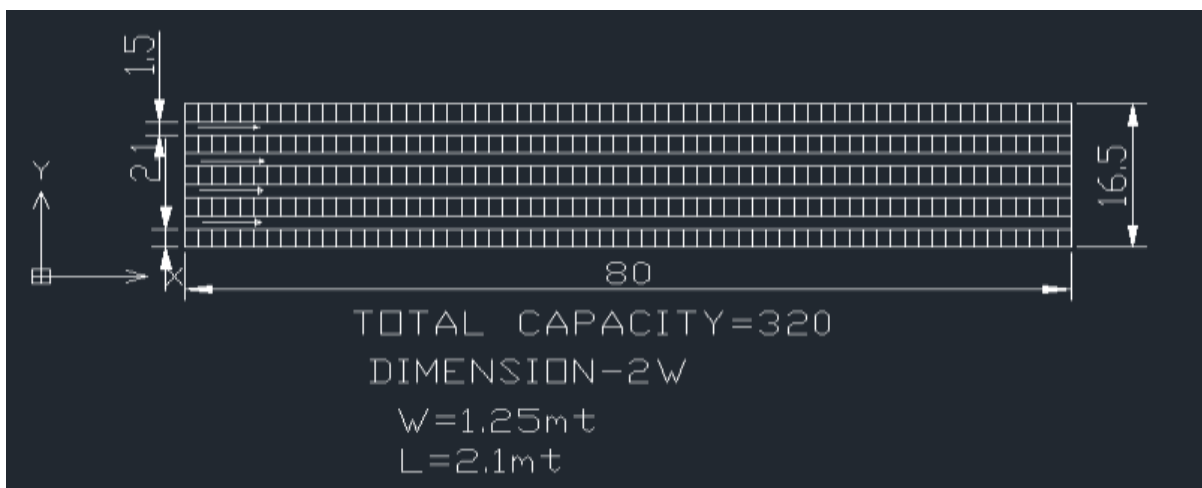


Figure 5.2 Two Wheeler Capacity of Parking Lot at front side of Bal Bihar park

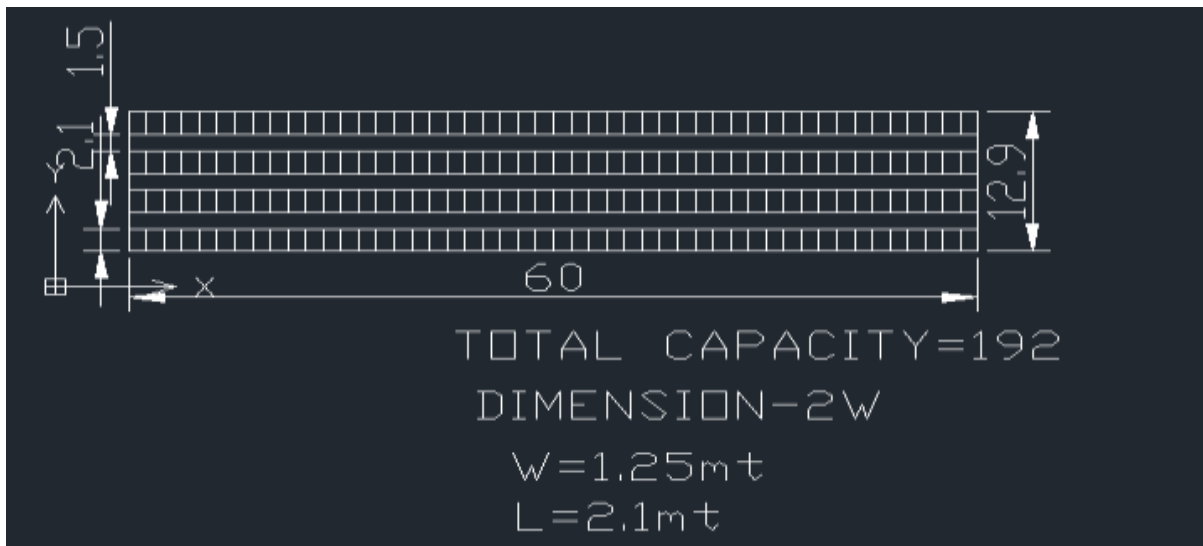


Figure 5.3 Two Wheeler Capacity of parking Lot at Warehouse.

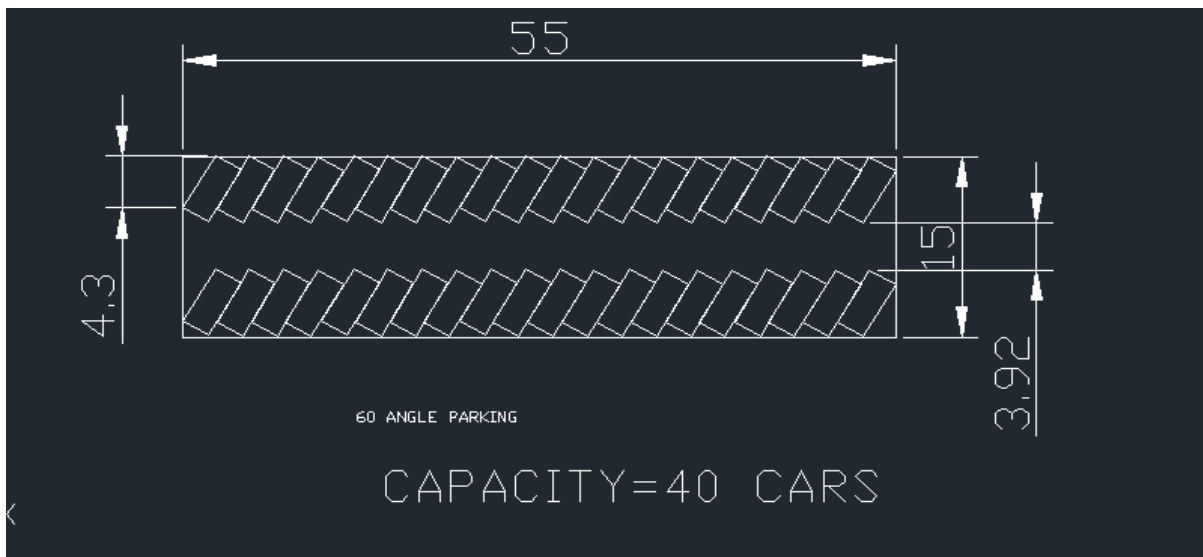


Figure 5.4 Four Wheeler Capacity of Parking Lot at Left side of Bal Bihar Park

### CONCLUSION

- Parking is not a minor problem. If it is not solved thoughtfully now, then it will become a Massive problem in the near future.
- As talk over in earlier chapter parking demand is higher at on street parking.
- The Surface parking recommended for provide the easy accessibility and flexibility. By providing surface parking we can satisfy the demand of Two-wheeler and also satisfy the demand of Four Wheeler parking.
- This research has been attention on improving the Vidisha parking arrangement for the better life style.

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