



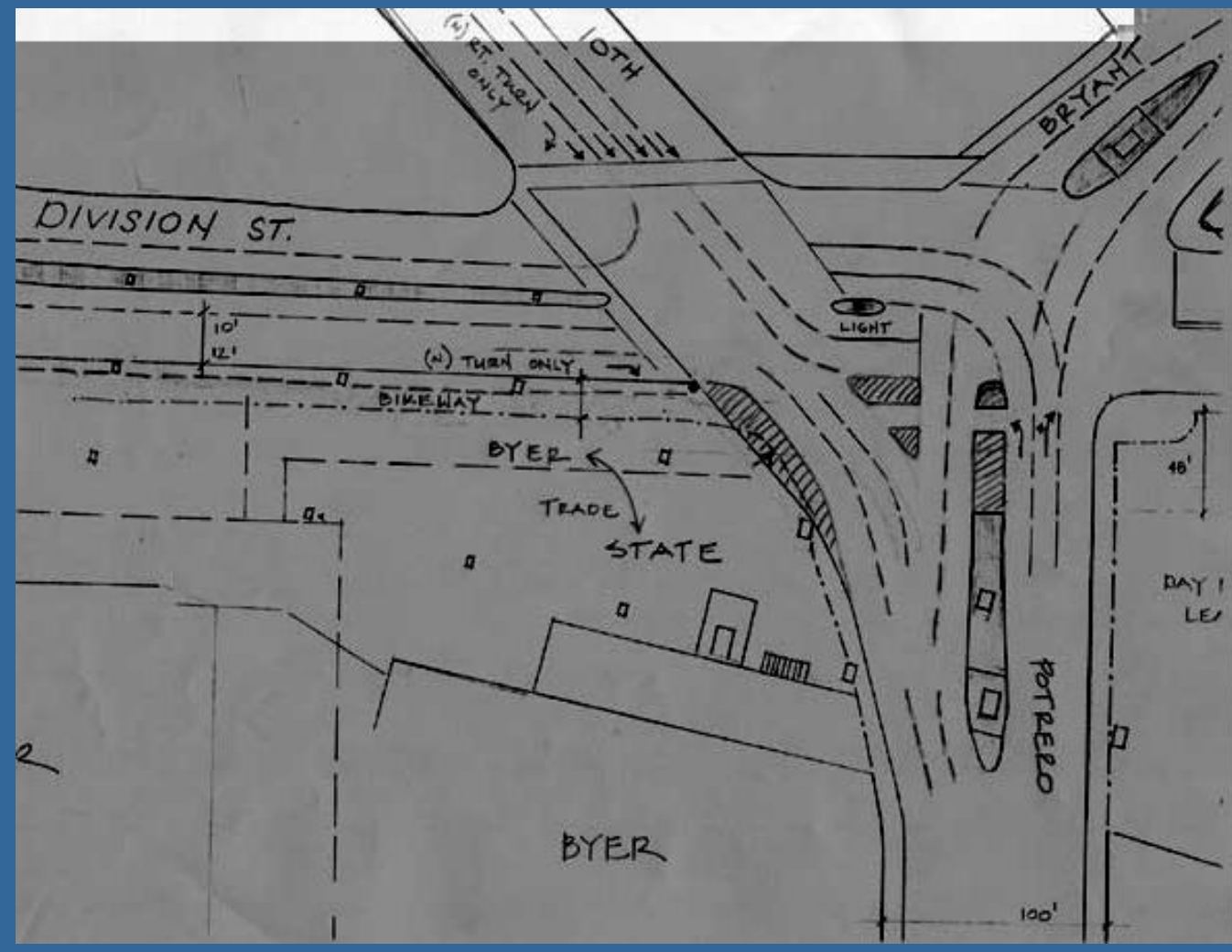
Rick Engineering Company

Excellence in Land Planning, Design, Engineering, and Surveying
Covering the Southwestern USA



NSF Grant # DUE0653277

Fernando Villasenor
Civil Engineering, San Diego State University, f_villas@yahoo.com



Introduction

The Rick Engineering Company is a firm that offers a wide range of engineering and land development services. One of its more important services is traffic engineering. The division of traffic engineering help plan, analyze, and design all transportation methods to help accommodate for the continuous change in urban landscapes. Rick Engineering Company is currently engaged in providing the city of Carlsbad statistics and analysis of their traffic.

San Diego State University student Fernando Villasenor worked with Rick Engineering Company as an intern. He assisted them in successfully acquiring traffic data for the city of Carlsbad. Fernando Villasenor is a Senior at SDSU and is emphasizing in Traffic Engineering.

Method

- Worked with the traffic engineering division to organize and set up the count boards and team
- Monitored traffic flow through the use of electric count boards
- Monitored traffic from the corner of intersections three times a week
- Counted in the morning and evening with each count containing 12 fifteen minute intervals
- Supervised a traffic data team of 8 – 10 people

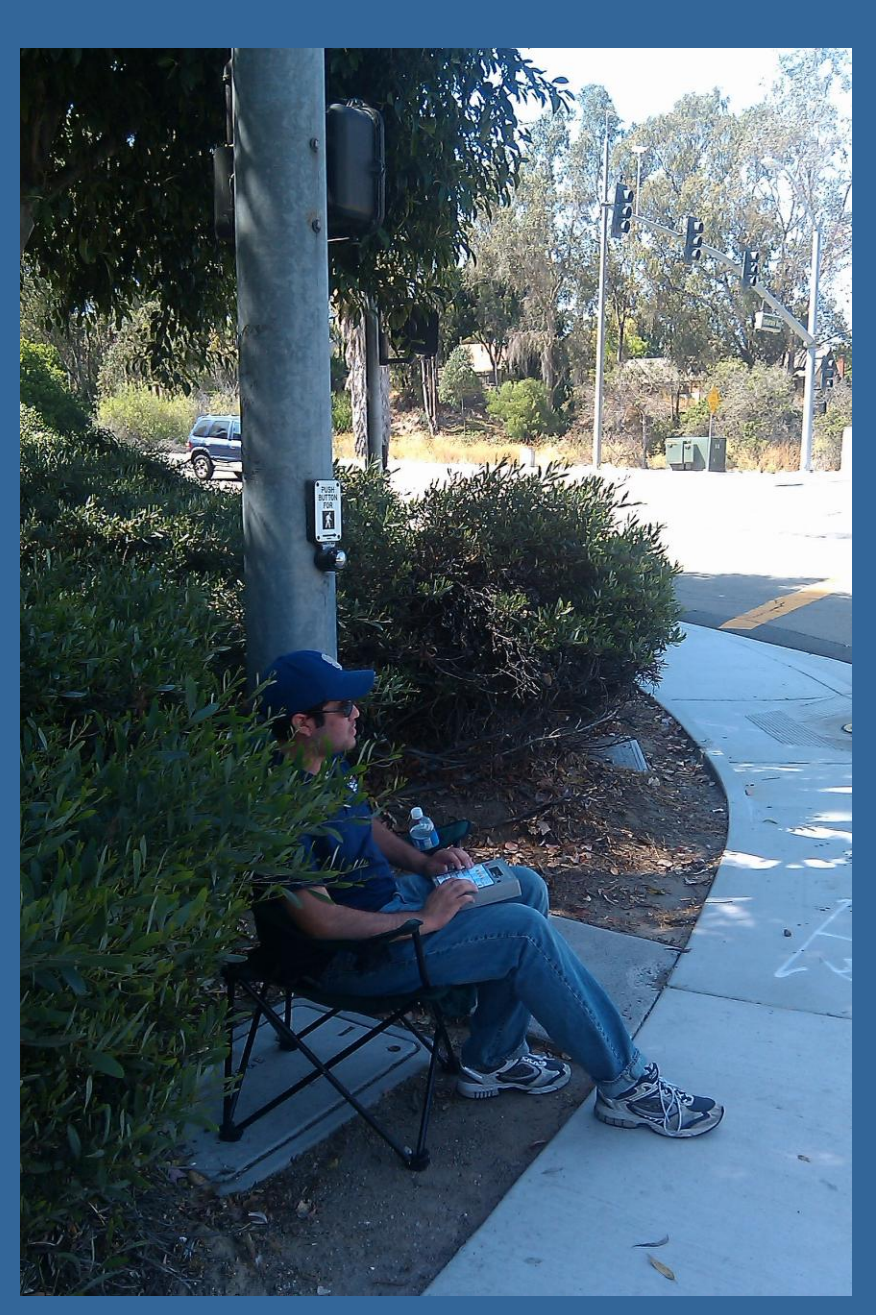
Results

After gathering the traffic volume from each intersection, the data collected will be downloaded from each count board to a computer. Once downloaded, capacity analysis is performed based on existing lane configurations. The information will then be organized which would highlight traffic volumes from over the years. This report will then be sent to the city of Carlsbad

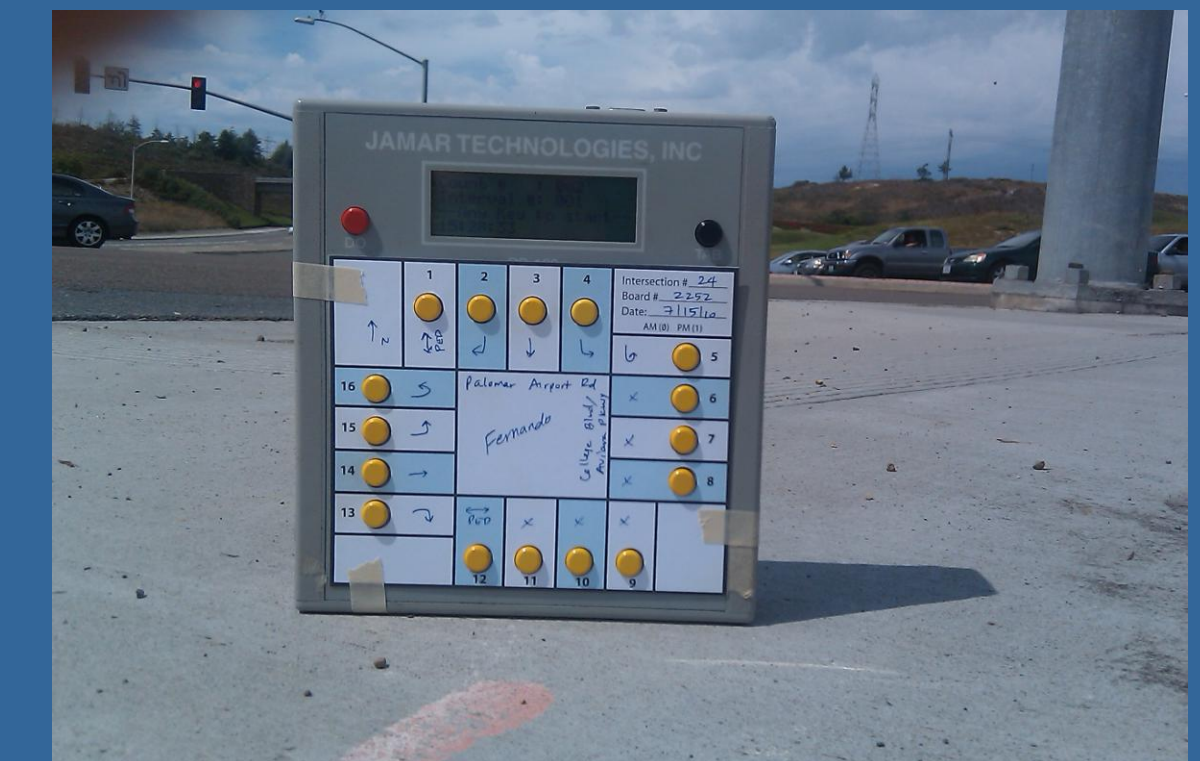
The Information gathered by Rick Engineering Company would allow the city of Carlsbad to analyze and re-examine its current traffic system. The city can then use this information to improve transportation among its roads, by adding lanes, creating alternative lanes, and increasing public transportation.

Conclusion

Interning at Rick Engineering Company has helped me to gain better knowledge of Traffic Engineering. Rick Engineering Company introduced me to many aspects that go into traffic monitoring. This included counting, downloading and organizing data into excel. This opportunity will provide me with the necessary experience needed to compete and succeed in obtaining a job as an Engineer. The experience was highly enjoyable and one that I feel is necessary for the field of civil engineering.



Rick Engineering Intern, Fernando Villasenor is monitoring an intersection using a count board to count cars



The electric count board is an essential tool used by Rick Engineering to count all cars and pedestrians crossing an intersection.

Acknowledgements

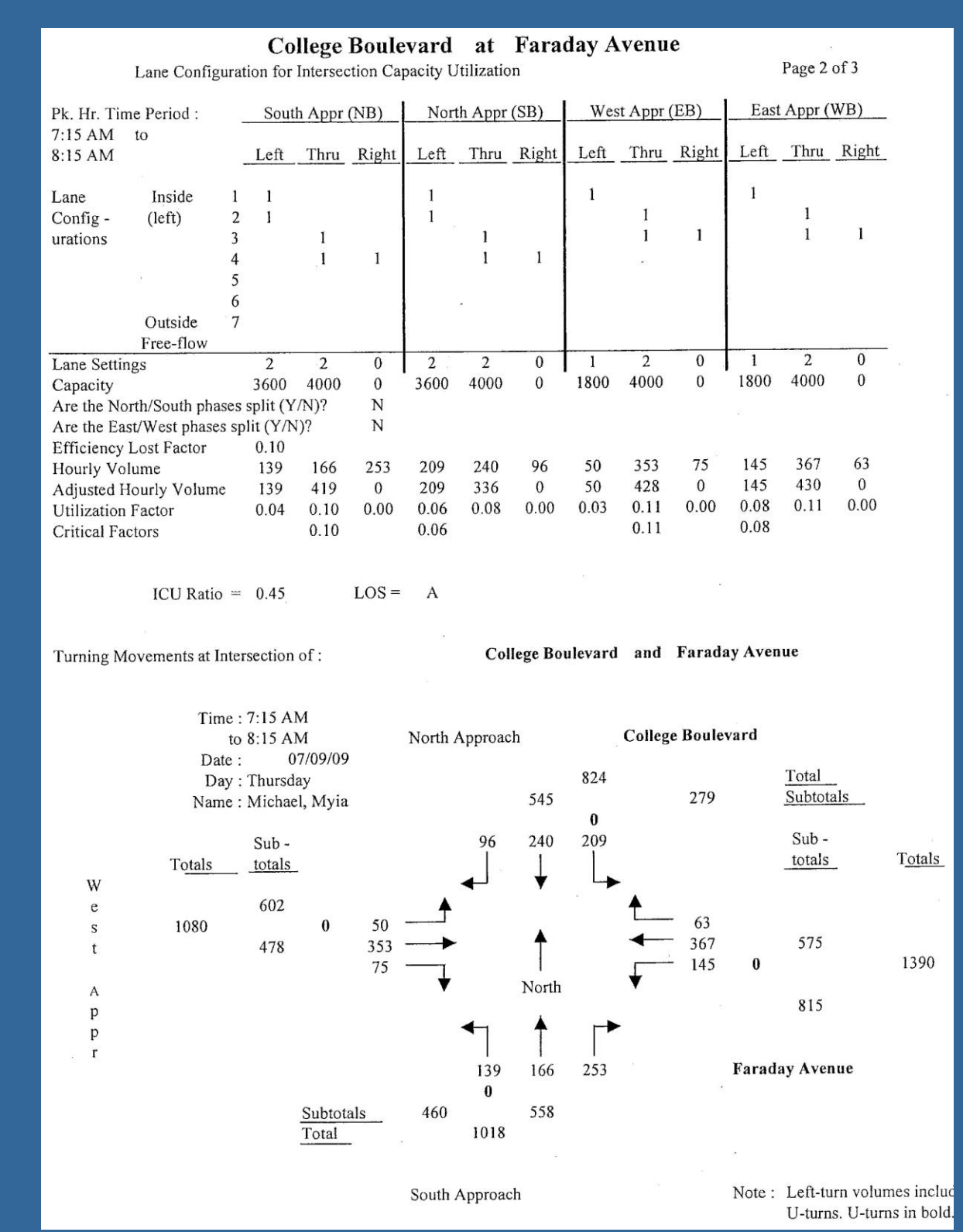
Thanks to the Mesa Engineering Program and The National Science Foundation for putting together the Summer Team Internship Program giving students a chance to work with companies

Thanks to Rick Engineering Company and its Traffic Division for giving me the opportunity to learn and gain valuable experience as an engineer. Special Thanks to Mark Jugar and Aida Mulugeta who have put their time in guiding and mentoring me.

RICK ENGINEERING TURNING MOVEMENT ANALYSIS

| Time Period | South Approach (SB) | | | North Approach (NB) | | | West Approach (WB) | | | East Approach (EB) | | |
|---------------------|---------------------|------------|-----------|---------------------|------------|------------|--------------------|------------|------------|--------------------|------------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| 7:15 AM - 8:15 AM | 10 | 15 | 5 | 12 | 18 | 8 | 8 | 10 | 15 | 10 | 12 | 15 |
| 8:15 AM - 9:15 AM | 15 | 20 | 10 | 18 | 25 | 12 | 12 | 15 | 20 | 15 | 18 | 22 |
| 9:15 AM - 10:15 AM | 12 | 18 | 8 | 15 | 22 | 10 | 10 | 12 | 18 | 12 | 15 | 18 |
| 10:15 AM - 11:15 AM | 18 | 25 | 12 | 22 | 30 | 15 | 15 | 20 | 25 | 20 | 25 | 30 |
| 11:15 AM - 12:15 PM | 15 | 20 | 10 | 18 | 25 | 12 | 12 | 15 | 20 | 15 | 18 | 22 |
| 12:15 PM - 1:15 PM | 10 | 15 | 5 | 12 | 18 | 8 | 8 | 10 | 15 | 10 | 12 | 15 |
| 1:15 PM - 2:15 PM | 12 | 18 | 8 | 15 | 22 | 10 | 10 | 12 | 18 | 12 | 15 | 18 |
| 2:15 PM - 3:15 PM | 15 | 20 | 10 | 18 | 25 | 12 | 12 | 15 | 20 | 15 | 18 | 22 |
| 3:15 PM - 4:15 PM | 18 | 25 | 12 | 22 | 30 | 15 | 15 | 20 | 25 | 20 | 25 | 30 |
| 4:15 PM - 5:15 PM | 12 | 18 | 8 | 15 | 22 | 10 | 10 | 12 | 18 | 12 | 15 | 18 |
| 5:15 PM - 6:15 PM | 15 | 20 | 10 | 18 | 25 | 12 | 12 | 15 | 20 | 15 | 18 | 22 |
| 6:15 PM - 7:15 PM | 10 | 15 | 5 | 12 | 18 | 8 | 8 | 10 | 15 | 10 | 12 | 15 |
| Total | 120 | 180 | 90 | 150 | 225 | 120 | 120 | 150 | 200 | 150 | 180 | 225 |

(Above) After the count boards have been downloaded, All information is presented in a chart.



(Right) The document shows an in depth analysis of each intersection.