APPENDIX F

TRAFFIC IMPACT ANALYSIS

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LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

NEW LONG BEACH COURTHOUSE

Long Beach, California
December 8, 2008

Prepared for:

SAPPHOS ENVIRONMENTAL, INC.
430 North Halstead Street
Pasadena, California 91107

LLG Ref. 2-08-3026

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December 8, 2008

Ms. Eimon Raoof, Environmental Compliance Coordinator
Sapphos Environmental, Inc.
430 North Halstead Street
Pasadena, California 91107

LLG Reference: 2.08.3026.1

Subject: **Traffic Impact Analysis for the New Long Beach Courthouse**
Long Beach, California

Dear Ms. Raoof:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Traffic Impact Analysis for the New Long Beach Courthouse Project. The proposed Project site lies on a two-block parcel bounded by 3rd Street to the north, Magnolia Avenue on the east, West Broadway to the south, and Maine Avenue on the west in downtown Long Beach. The proposed Project, which will replace the existing Long Beach Courthouse located at 415 W. Ocean Boulevard, involves the construction of an approximately 10-story, 545,000 square-foot (SF) building consisting of 370,000 SF of floor area for 31 courtrooms for the Superior Court, approximately 80,000 SF for the County, and approximately 95,000 SF for commercial office and retail uses. The project is expected to be completed by late 2012.

This traffic impact analysis presents an inventory of existing characteristics and traffic volumes at 13 key study intersections within the vicinity of the Project, forecasts vehicular traffic generated by the proposed Project, and evaluates potential project-related traffic impacts on the surrounding street system.

We appreciate the opportunity to prepare this study. A summary of findings, conclusions and recommendations can be found on pages 31 and 32 of this report. Should you have any questions or comments regarding the findings this report, please contact our office at (714) 641-1587.

Very truly yours,
Linscott, Law & Greenspan, Engineers

Richard E. Barretto, P.E.
Principal

cc: file

TABLE OF CONTENTS

APPENDICES

APPENDIX

A. Existing Traffic Count Data

B. ICU/HCM Level of Service Calculation Worksheets

LIST OF FIGURES

LIST OF TABLES

TRAFFIC IMPACT ANALYSIS

NEW LONG BEACH COURTHOUSE

Long Beach, California
December 8, 2008

1.0 INTRODUCTION

This Traffic Impact Analysis report addresses the potential traffic impacts and circulation needs associated with the development of the New Long Beach Courthouse project (hereinafter referred to as Project) by the Administrative Office of the Courts (AOC). The proposed Project site lies on a two-block parcel bounded by 3rd Street to the north, Magnolia Avenue on the east, West Broadway to the south, and Maine Avenue on the west in downtown Long Beach. This area is currently predominantly vacant, with the exception of parking spaces provided by a private firm immediately north of West Broadway between Maine Avenue and Daisy Avenue.

This report documents the findings and recommendations of a traffic impact analysis, as well as a parking analysis, conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the proposed Project.

1.1 Scope of Work

The traffic analysis evaluates the existing operating conditions at thirteen (13) intersections within the project vicinity, estimates the trip generation potential of the proposed Project, and forecasts future operating conditions without and with the Project. Where necessary, intersection improvements/mitigation measures are identified.

The traffic report satisfies the traffic impact requirements of the City of Long Beach and is consistent with the requirements and procedures outlined in the *2004 Congestion Management Program (CMP) for Los Angeles County.*

The Project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at thirteen (13) study locations on a "typical" weekday for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the project has been researched at the City of Long Beach. Based on our research, there are eighteen (18) related project in the City of Long Beach that will contribute to the traffic analysis. These eighteen (18) related projects were considered in the cumulative traffic analysis for this Project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2012) traffic setting upon opening of the Proposed Project. Peak hour traffic forecasts for the Year 2012 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of 1.0% per year and adding traffic volumes generated by eighteen (18) related projects.

1.2 Study Area

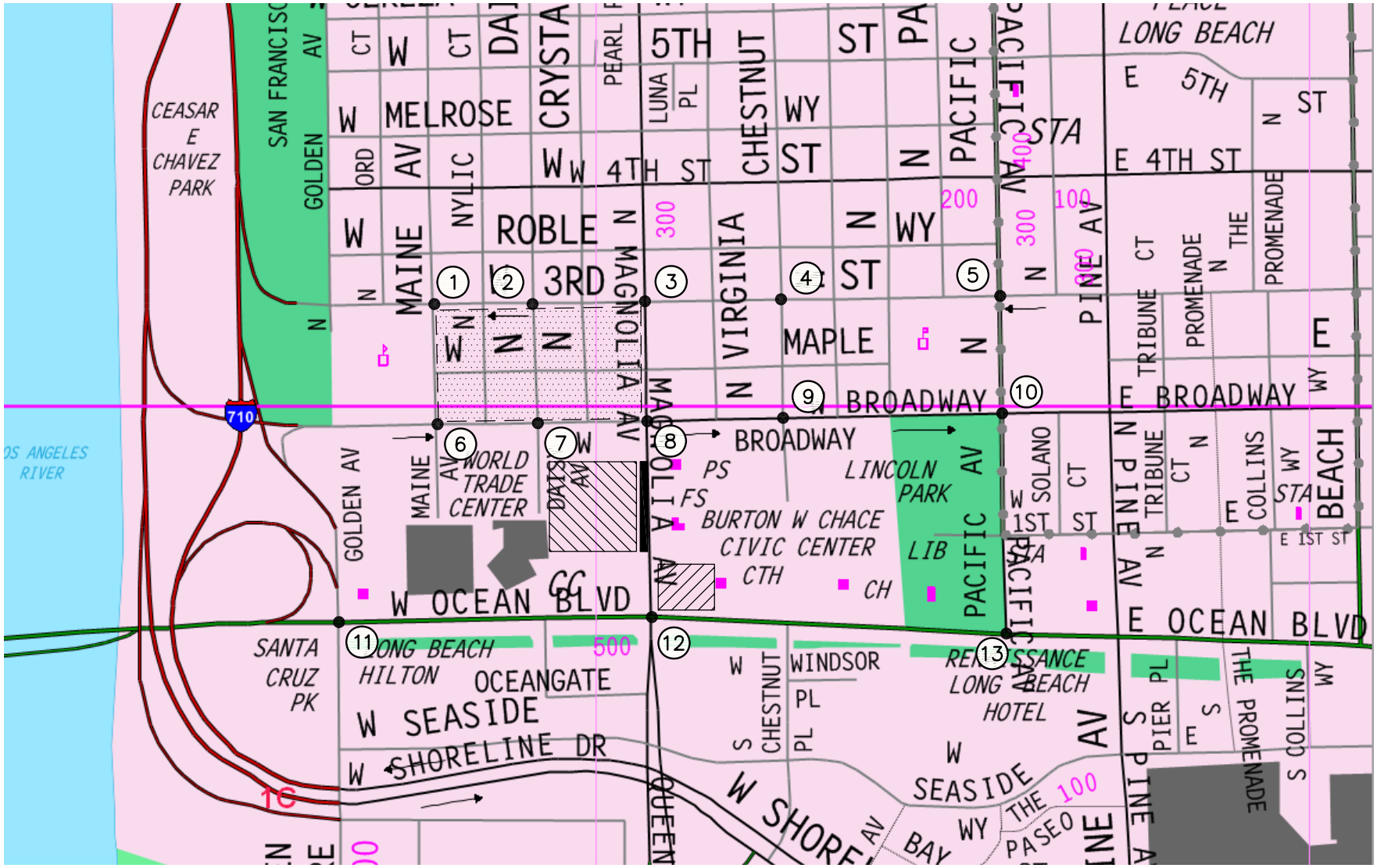
The thirteen (13) key area intersections selected for evaluation in this report provide both regional and local access to the study area. They consist of the following:

1. Maine Avenue at 3rd Street
2. Daisy Avenue at 3rd Street
3. Magnolia Avenue at 3rd Street
4. Chestnut Avenue at 3rd Street
5. Pacific Avenue at 3rd Street
6. Maine Avenue at Broadway
7. Daisy Avenue at Broadway
8. Magnolia Avenue at Broadway
9. Chestnut Avenue at Broadway
10. Pacific Avenue at Broadway Avenue
11. Golden Shore/Golden Avenue at Ocean Boulevard
12. Magnolia Avenue at Ocean Boulevard
13. Pacific Avenue at Ocean Boulevard

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the proposed Project and the existing Long Beach Courthouse, and depicts the study locations and surrounding street system.

Level of Service (LOS) calculations for the AM and PM peak hours at these thirteen (13) study intersections were performed to evaluate the future potential traffic impacts associated with anticipated area growth, related projects, and the proposed Project. Included in this traffic and parking analysis are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions (Year 2008),
- AM and PM peak hour capacity analyses for future (Year 2012) conditions without and with Project traffic, and
- Area Traffic Improvements,



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N NO SCALE

SOURCE: THOMAS BROS.

KEY

(#) = POTENTIAL STUDY INTERSECTION

= PROJECT SITE

= MAGNOLIA PARKING STRUCTURE

= EXISTING COURTHOUSE

FIGURE 1-1

VICINITY MAP

NEW LONG BEACH COURTHOUSE, LONG BEACH

2.0 PROJECT DESCRIPTION

The Project site is a roughly 5.9-acre parcel of land bounded by 3rd Street to the north, Magnolia Avenue on the east, West Broadway to the south, and Maine Avenue on the west in downtown Long Beach, California. The proposed Project site is partly located on land owned by the State of California (State), the County of Los Angeles (County), and the Redevelopment Agency of the City of Long Beach (Agency). The County owns the Magnolia Avenue parking garage, which is located south of the proposed Project site. This parking garage, which is now used by the existing Long Beach Courthouse, is expected to be acquired by the State in late 2008 under the provisions of SB1732. The garage is bound by a small surface parking lot to the north, Magnolia Avenue to the east, commercial development to the south and Daisy Avenue to the west.

The proposed New Long Beach Courthouse project involves the construction of an approximate 10-story building with a basement with approximately 545,000 square-feet of floor area. The proposed facility is intended to serve the State Superior Court, the County of Los Angeles, commercial office space, and other retail uses. The roughly 545,000 SF courthouse facility would consists of approximately 370,000 SF of floor area with 31 courtrooms for the Superior Court, approximately 80,000 SF for the County and 95,000 SF of commercial office and retail space for private agencies.

The proposed Project would be designed to accommodate all of the operational functions of the existing superior courthouse, which is located at 415 West Ocean Boulevard. The Superior Court would generally maintain current patterns of use for 27 courtrooms and use the new courthouse's additional four courtrooms for criminal judicial proceedings. The Superior Court would relocate its staff and operations from the existing courthouse to the proposed new courthouse. County staff in the existing courthouse that interacts with the Superior Court would also move from the existing courthouse to the new courthouse. Staffing for the Superior Court would increase from 265 staff to 305 staff members, and the County would increase staffing by 15 percent from 260 staff to 299 staff members. The Superior Court would increase juror population by approximately 60 persons per day and visitor population by approximately 15 percent per day.

There would be several relevant site improvements pertaining to the proposed Project. The City of Long Beach intends to upgrade 3rd Street. The upgrade would add street corner enhancements, a bicycle lane (as part of a city-wide bike improvement plan, which would convert existing parking spaces on 3rd Street to a bike lane), eliminate some parking spaces, and possibly reduce the number of through lanes. The proposed Project would require a street closure of Daisy Avenue between Broadway and 3rd Street. Additionally, the proposed Project would remove the existing Magnolia Avenue crosswalk that extends from the County parking facility to the existing courthouse. For the purposes of this analysis, it is assumed that access to the Project site would be provided via the Daisy Avenue/3rd Street intersection and Daisy Avenue/Broadway intersection. Parking for the New Long Beach Courthouse would continue to be provided at the Magnolia Avenue parking structure. Parking for the proposed commercial office and retail space will be provided via a 200 space on-site parking garage. The proposed Project is expected to be completed by late 2012.

3.0 EXISTING CONDITIONS

Regional access to the Project site is provided by the Long Beach (I-710) Freeway, which is a north-south regional highway located west of the Project site. The Long Beach (I-710) Freeway begins at Queensway Bay in Long Beach and extends north to Valley Boulevard in Alhambra. The 1-710 Freeway generally provides four travel lanes in each direction and is under the jurisdiction of California Department of Transportation (CALTRANS). Freeway access to the Project site is provided via on and off-ramps with 3rd Street and Broadway.

Other key roadways in the local area network include Maine Avenue, Daisy Avenue, Magnolia Avenue, Chestnut Avenue, Pacific Avenue, 3rd Street, Broadway Avenue, and Ocean Boulevard. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

3.1 Street Network

3rd Street is an east-west major arterial between the I-710 Freeway and Alamitos Avenue in the City of Long Beach Circulation Element. This roadway, which borders the Project site on the north, is a one-way street with three lanes in the westbound direction. Parking is generally permitted on both sides of this roadway within the vicinity of the Project. The posted speed limit on 3rd Street is 30 miles per hour.

Broadway Avenue is an east-west major arterial between the I-710 Freeway and Alamitos Avenue in the City of Long Beach Circulation Element. This roadway, which borders the Project site on the south, is a one-way street with three lanes in the eastbound direction. Parking is generally permitted on both sides of this roadway within the vicinity of the project. The posted speed limit on Broadway Avenue is 30 miles per hour.

Ocean Boulevard is primarily a six-lane divided roadway that extends in the east-west direction. West of Golden Shore, Ocean Boulevard is a four-lane roadway. Parking is generally permitted on both sides of this roadway within the vicinity of the project. East of Golden Shore, the posted speed limit on Ocean Boulevard is 30 miles per hour. West of Golden Shore, the posted speed limit on Ocean Boulevard is 45 miles per hour.

Maine Avenue is a two-lane undivided roadway that borders the Project site on the west. Parking is permitted on both sides of this roadway within the vicinity of the Project. The intersections of Maine Avenue at 3rd Street and Maine Avenue at Broadway Avenue are both controlled by traffic signals.

Daisy Avenue is a two-lane undivided roadway that extends in the north-south direction, running through the Project site. Parking is permitted on both sides of this roadway within the vicinity of the Project. The intersection of Daisy Avenue at 3rd Street is stop-controlled and Daisy Avenue at Broadway Avenue is controlled by a traffic signal.

Magnolia Avenue is a two-lane divided roadway that extends in the north-south direction and borders the Project site on the east. Parking is permitted on both sides of this roadway within the vicinity of the Project. The posted speed limit on Magnolia Avenue is 25 miles per hour. The intersections of Magnolia Avenue at 3rd Street, Magnolia Avenue at Broadway Avenue, and Magnolia Avenue at Ocean Boulevard are all controlled by traffic signals.

Pacific Avenue is a four-lane divided roadway that is located east of the Project site. Parking is generally not permitted on either side of this roadway within the vicinity of the Project. The posted speed limit on Pacific Avenue is 30 miles per hour. The intersections of Pacific Avenue at 3rd Street, Pacific Avenue at Broadway Avenue, and Pacific Avenue at Ocean Boulevard are controlled by traffic signals.

Chestnut Avenue is a two-lane undivided roadway north of 3rd Street and two-lane divided south of 3rd Street. Parking is permitted on both sides of this roadway within the vicinity of the project. The intersections of Chestnut Avenue at 3rd Street and Chestnut Avenue at Broadway Avenue are both controlled by traffic signals.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. The number of travel lanes and intersection controls for the key area intersections are identified.

3.2 Existing Public Transit

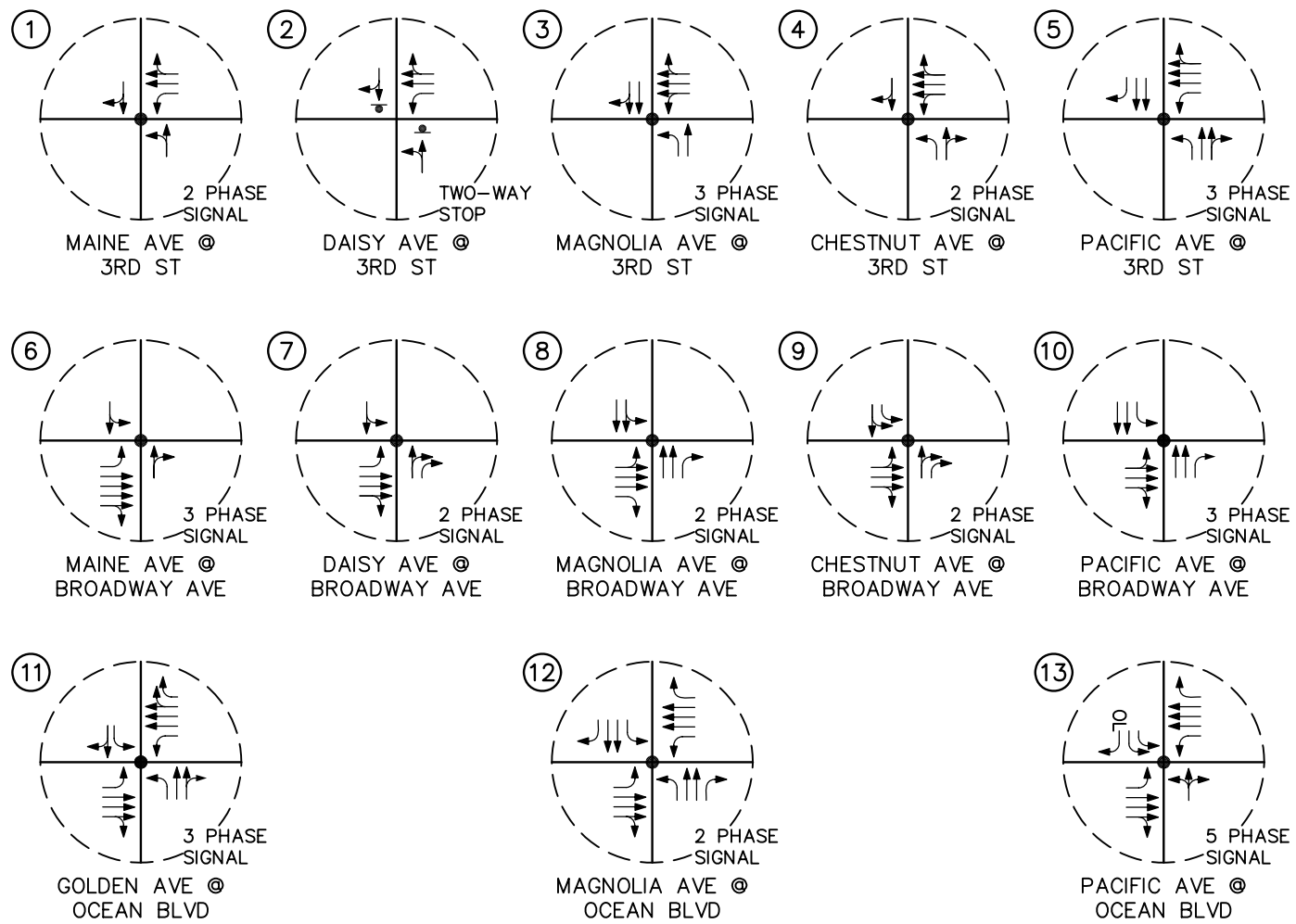
The Los Angeles County Metropolitan Transportation Authority (LACMTA), Long Beach Transit (LBT), and the Orange County Transportation Authority (OCTA) provide public transit services in the vicinity of the proposed Project. A brief description of the transit services is as follows:

Metro Blue Line:

- The Metro Blue Line runs from 7th Street in downtown L.A., through the communities of Vernon, Huntington Park, South Gate, Watts, Compton, Carson, ending in downtown Long Beach.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of 6 trains in the northbound direction and 5 trains in the southbound direction. During the weekday PM peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of 5 trains in the northbound direction and 6 trains in the southbound direction.

Metro Local Line 232:

- The Metro Local Line 232 runs from the downtown Long Beach Transit Station to LAX City Bus Center.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM and PM peak hour, in the northbound direction, the Metro Line 232 provides headways of 3 buses. During the weekday AM and PM peak hour, in the



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N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT, ● = TRAFFIC SIGNAL, ☞ = STOP SIGN
P = PARKING, NP = NO PARKING, U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES, (XX) = POSTED SPEED LIMIT (MPH)
OL = RIGHT-TURN OVERLAP
= MAGNOLIA PARKING STRUCTURE, = EXISTING COURTHOUSE
= PROJECT SITE

FIGURE 3-1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

NEW LONG BEACH COURTHOUSE, LONG BEACH

southbound direction, the Metro Line 232 provides headways of 3 buses during the AM peak hour and 4 buses in the PM peak hour.

Metro Express Line 577X:

- The Metro Local Line 232 runs from the downtown Long Beach Transit Station to El Monte Transit Center.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Friday.
- During the weekday AM and PM peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of 1 bus in each direction.

OCTA Route 60:

- The OCTA Route 60 runs from Larwin Square in Tustin to 1st Street and Elm Avenue in downtown Long Beach.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM peak hour, in the eastbound/westbound directions, the OCTA Route 60 provides headways of 4 buses in the northbound direction and 3 buses in the southbound direction. During the weekday PM peak hour, in the eastbound/westbound directions, the Metro Blue Line provides headways of 3 buses in the northbound direction and 4 buses in the southbound direction.

Route 1:

- The route extends from the Long Beach Transit Mall Station to Wardlow Station.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM and PM peak hour, in the northbound/southbound directions, Route 1 provides headways of 3 buses in each direction.

Route 7:

- The route extends from the Long Beach Transit Mall Station to Orange Avenue and Rosecrans in City of Norwalk.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM and PM peak hour, in the northbound/southbound directions, Route 7 provides headways of 3 buses in each direction.

Routes 21, 22, and 23:

- Routes 21 provides services from the Long Beach Transit Mall Station to Garfield Avenue at Alondra Boulevard. Route 22 provides services from downtown Long Beach Transit Mall Station to Downey Avenue at Alondra Boulevard. Route 23 provides services from Long Beach Transit Mall Station to Cherry Avenue at Carson Street.
- The route traverses the study area on Pacific Avenue. Route 21 and 22 operates throughout the day, Monday through Sunday. On weekdays, route 23 northbound only provides bus service between the hours 8:05 PM to 12:55 AM and southbound only provides bus service between the hours 9:00 PM to 12:21 PM.
- During the weekday AM and PM peak hour, in the northbound/southbound directions, Routes 21 and 22 provide headways of 2 buses in each direction.

Routes 46:

- Route 46 provides services from the downtown Long Beach Transit Mall Station to Pacific Coast Highway at Anaheim Street.
- Route 46 traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM and PM peak hour, in the eastbound/westbound directions, Routes 46 provide headways of 4 buses in each direction.

Routes 51 and 52:

- The route extends from the downtown Long Beach Transit Mall Station to Artesia Transit Station.
- The route traverses the study area on Pacific Avenue. Route 51 operates throughout the day, Monday through Sunday. On weekdays, Route 52 northbound only provides bus service between the hours 10:05 PM to 12:11 AM, and southbound only provides bus service between the hours 10:47 PM to 12:25AM.
- During the weekday AM and PM peak hour, in the northbound/southbound directions, Route 51 provides headways of 4 buses in each direction.

Routes 61, 62, 63 and 66:

- Routes 61, 62, 63, and 66 provide service between the downtown Long Beach Transit Mall Station and Artesia Transit Station.
- Within the study area, Routes 61, 62, 63 and 66 traverse the study area on Pacific Avenue. Routes 61 and 62 operate throughout the day, Monday through Sunday. On weekdays, Route 63 northbound only provides bus service between the hours 10:05 PM to 1:10 AM, and southbound only provides bus service from 10:48 PM to 12:25AM. On weekdays, Route 66 northbound only provides bus service till 5:17 PM, southbound only provides service till 5:10 PM, and does not service on weekends.
- During the AM and PM peak hour, in the northbound and southbound directions, Routes 61 and 62 provides headways of 2 buses in each direction. During the AM and PM peak hour Route 66 provide headways of 4 buses and 2 buses respectively in each direction.

Route 81:

- The route extends from the Long Beach Transit Mall Station to Studebaker Road at Atherton Street.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Friday.
- During the weekday AM and PM peak hour, in the eastbound/westbound directions, Route 81 provides headways of 2 buses in each direction.

Routes 91, 92, 93 and 94:

- Routes 91 and 93 provide service between the downtown Long Beach Transit Mall Station and Bellflower Boulevard at Harvard Street. Route 92 provides service from the Long Beach Transit Mall Station to Woodruff Avenue at Alondra Boulevard. Route 94 provides service from the Long Beach Boulevard Transit Station to Bellflower Boulevard at Stearns Street.
- Within the study area, Routes 91, 92, 93 and 94 traverse the study area on Pacific Avenue. Route 91 operates throughout the day, Monday through Sunday and Routes 92 and 93 operates throughout the day, Monday through Friday. On weekdays, Route 94 eastbound

only provides bus service between the hours 5:25 PM to 9:05 PM, and westbound only provides bus service from 6:24 PM to 9:00 PM.

- During the AM and PM peak hour, in the eastbound/westbound directions, Routes 91, 92, 93 provides headways of 1 bus in each direction.

Route 96:

- The route extends from the Long Beach Transit Mall Station to Los Altos Market Center.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Friday, eastbound only from 6:33 AM to 9:09 PM and westbound from 1:00 PM to 5:14 PM.
- During the weekday AM peak hour, in the eastbound direction, Route 96 provides headways of 6 buses. During the weekday PM peak hour, in the westbound direction, Route 96 provides headways of 5 buses.

Routes 111 and 112:

- The route extends from the Long Beach Transit Mall Station to Downey Avenue at South Street.
- The route traverses the study area on Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday AM and PM peak hour, in the northbound/southbound directions, Routes 111 and 112 provides headways of 2 buses in each direction.

Routes 172, 173 and 174:

- Routes 172, 173 and 174 provide service between the downtown Long Beach Transit Mall Station and Norwalk Metro Green Line Metro Station.
- Within the study area, Routes 172, 173 and 174 traverse the study area on Pacific Avenue. Routes 172 and 173 operate throughout the day, Monday through Sunday. On weekdays, Route 174 northbound only provides bus service between the hours 10:05 PM and 12:50 AM, and southbound only provides bus service from 5:42 AM to 6:05 AM and from 12:05 AM to 12:25 AM.
- During the AM, PM and Saturday peak hour, in the northbound and southbound directions, Routes 172 and 173 provides headways of 2 buses in each direction.

Routes 181 and 182:

- The route extends from the Colorado Lagoon and Wardlow Transit Station.
- The route traverses the study area on Magnolia Avenue, Broadway, 3rd Street and Pacific Avenue and operates throughout the day, Monday through Sunday,
- During the weekday AM and PM peak hour, in the eastbound and westbound directions, routes 181 and 182 provide headways of 2 buses in each direction.

Routes 191, 192 and 193:

- Route 191 provides service between Long Beach Transit Mall and Bloomfield Street at Del Amo Boulevard. Route 192 provides service between Long Beach Transit Mall and Los Cerritos Center. Route 193 provides service from the downtown Long Beach Transit Mall Station to Del Amo Station.
- Within the study area, Routes 191, 192 and 193 traverse the study area on Magnolia Avenue, Broadway, 3rd Street and Pacific Avenue. Routes 191 and 192 operate throughout the day, Monday through Sunday. On weekdays, Route 193 northbound only provides bus service

between the hours 10:05 PM and 1:06 AM, and southbound only provides bus service from 11:50 PM to 12:25 AM.

- During the AM and PM peak hour in the northbound/southbound directions, Routes 191 and 192 provides headways of 2 buses in each direction.

Passports Routes A, B, C and D:

- Route A provides free ride service between Alamitos Bay Landing and Catalina Landing. Route B runs from Pine Avenue at 1st Street through downtown Long Beach's East Village, West Gateway and hotspots. Route C provides service between Pine Avenue, downtown Long Beach and Queen Mary. Route D provides service between Los Altos Market Center and Catalina Landing.
- Within the study area, Routes A and D traverse the study area on Ocean Boulevard and operate throughout the day, Monday through Sunday. Route B and C traverse the study area on 3rd Street. On weekdays, Route B's Daily East Village Tour only operates from 10:00 AM to 6:55 PM and Route B's Daily West Gateway Tour only operates from 9:40 AM to 7:15 PM. Route C operates throughout the day, Monday through Sunday.
- During the AM and PM peak hour in the eastbound/westbound directions, Routes A and D provides headways of 2 buses in each direction. During the PM peak hour the Route B's Daily East Village Tour provides headways of 1 bus and the Route B's Daily West Gateway Tour provides headways of 2 buses. During AM peak hour in the southbound/northbound directions, Route C provides headways of 4 buses in each direction. During PM peak hour in the southbound/northbound directions, Route C provides headways of 6 buses in each direction.

3.3 Existing Area Traffic Volumes

Manual vehicular turning movement counts were conducted at thirteen (13) study locations during the weekday morning and evening peak commuter periods to determine the existing AM peak hour and PM peak hour traffic volumes. Traffic counts at the study intersections were conducted in June and October 2008 by Southland Car Counters and Pacific Data Traffic Services.

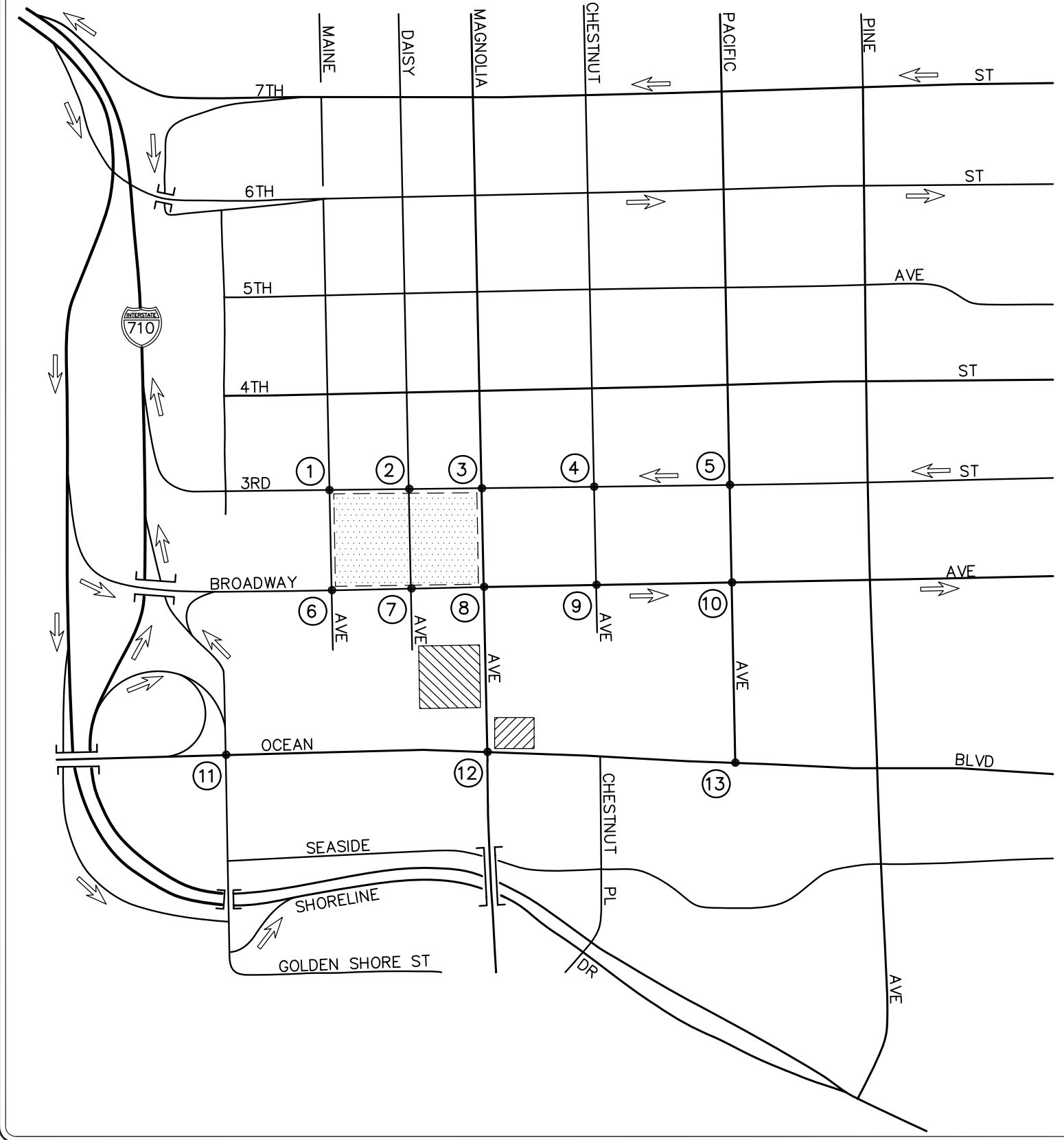
Figures 3-2 and ***3-3*** depict the existing AM and PM peak hour traffic volumes at the key study intersections, respectively. ***Appendix A*** contains the detailed manual turning movement count sheets for the 13 key study intersections evaluated in this report.

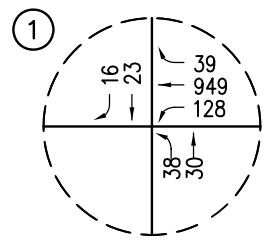
3.4 Existing Intersection Conditions

Existing AM and PM peak hour operating conditions for the thirteen (13) key study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections and the methodology outlined in Chapter 17 of the *Highway Capacity Manual 2000* (HCM2000) for unsignalized intersections.

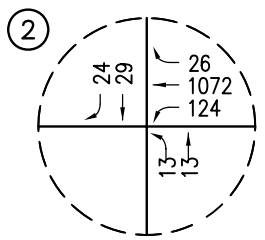
3.4.1 *Intersection Capacity Utilization (ICU) Method of Analysis*

In conformance with the City of Long Beach and LA County CMP requirements, existing AM and PM peak hour operating conditions for the 12 key signalized study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) method. The ICU technique is intended for

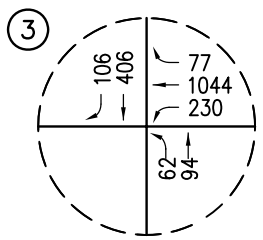




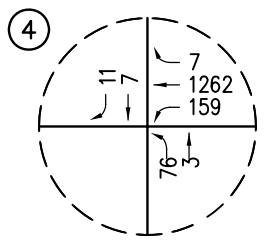
MAINE AVE @ 3RD ST



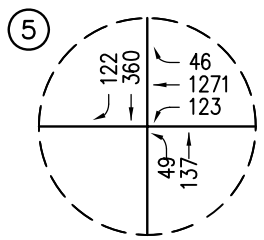
DAISY AVE @ 3RD ST



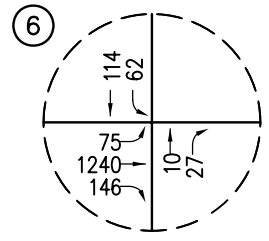
MAGNOLIA AVE @ 3RD ST



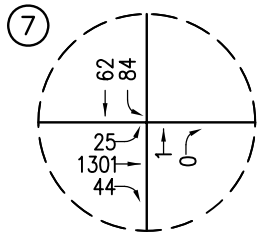
CHESTNUT AVE @ 3RD ST



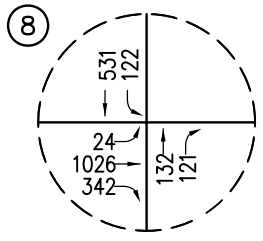
PACIFIC AVE @ 3RD ST



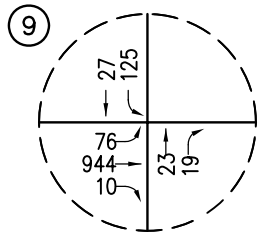
MAINE AVE @ BROADWAY AVE



DAISY AVE @ BROADWAY AVE



MAGNOLIA AVE @ BROADWAY AVE



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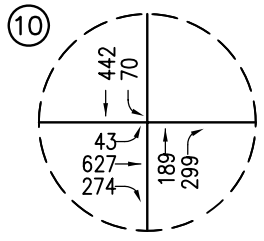
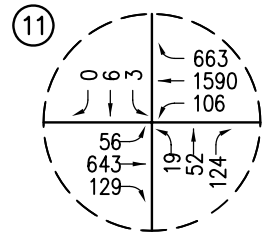
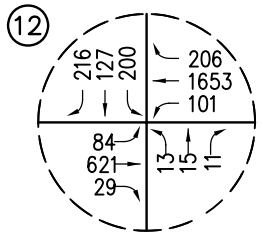


PACIFIC AVE @ BROADWAY AVE



GOLDEN AVE @ OCEAN BLVD



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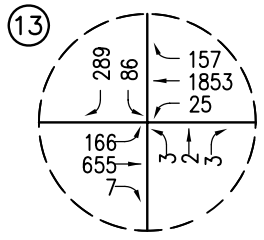

PACIFIC AVE @ BROADWAY AVE

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

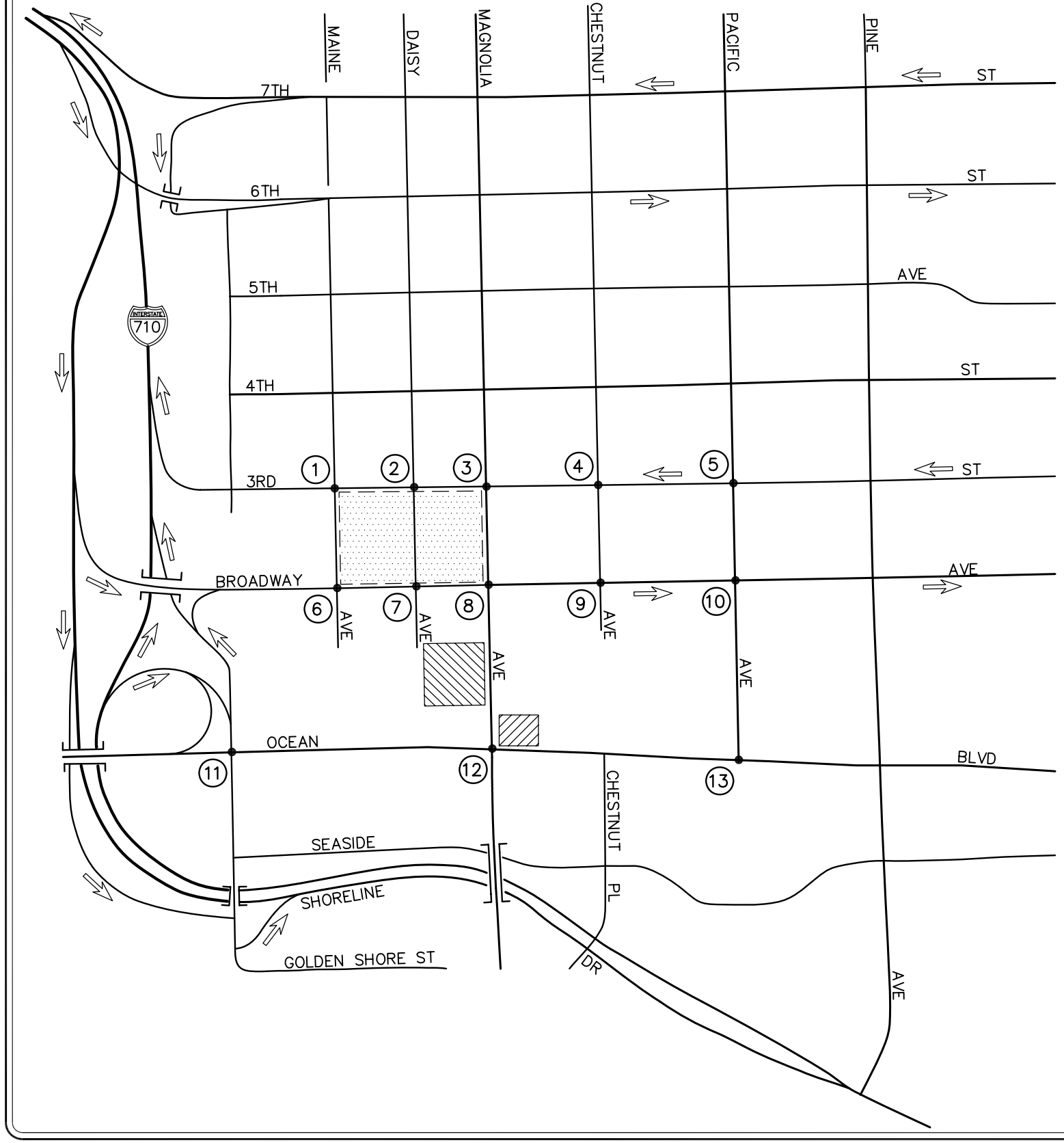
= EXISTING COURTHOUSE

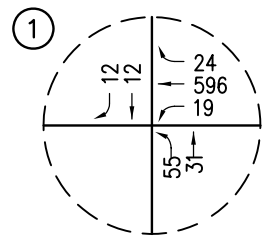
= PROJECT SITE

FIGURE 3-2

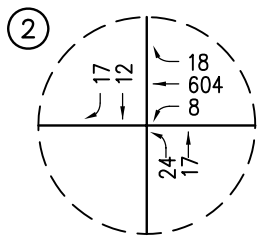
EXISTING AM PEAK HOUR TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH





MAINE AVE @
3RD ST



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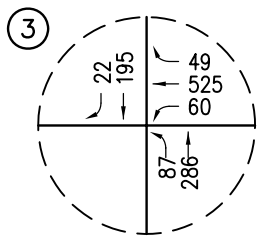
3RD ST



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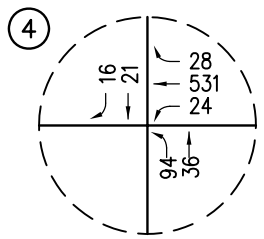
3RD ST



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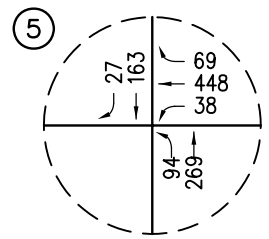

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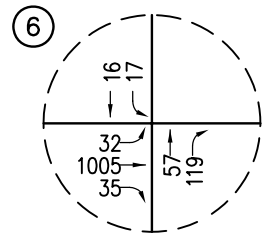
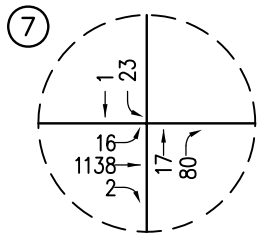


MAINE AVE @
BROADWAY AVE



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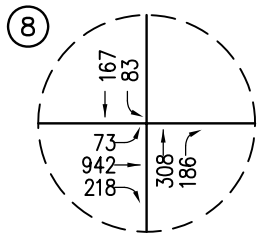
BROADWAY AVE



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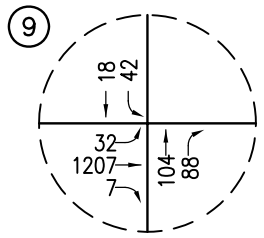
BROADWAY AVE



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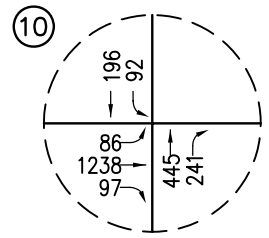

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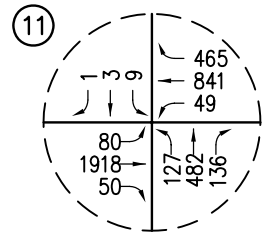
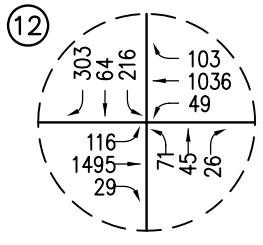
BROADWAY AVE



GOLDEN AVE @
OCEAN BLVD



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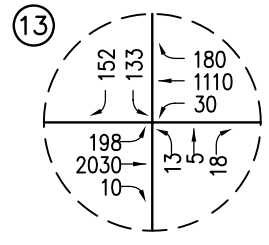
OCEAN BLVD



PACIFIC AVE @
BROADWAY AVE

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION
= MAGNOLIA PARKING STRUCTURE
= EXISTING COURTHOUSE
= PROJECT SITE

FIGURE 3-3

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH

signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 3-1***. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements. In the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F).

Per LA County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. Clearance intervals are based on the number of phases in the intersection and whether the left turning movements are all fully protected or whether some of them are permitted with other left-turn movements being protected. ***Table 3-2*** shows the clearance intervals used in the analysis of the key study intersections within the City of Long Beach.

3.4.2 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The 2000 HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of one key unsignalized intersection, Daisy Avenue at 3rd Street. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 3-3***.

3.5 Existing Level of Service Results

Table 3-4 summarizes the existing peak hour service level calculations for the 13 key study intersections based on existing traffic volumes and current street geometrics. Review of Table *3-4* indicates that based on the ICU or HCM method of analysis and the City's LOS criteria, all of the 13 key study intersections currently operate at acceptable LOS D or better during the AM and PM peak hours.

Appendix B presents the peak hour ICU/HCM calculation worksheets for the key signalized and unsignalized study intersections.

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

TABLE 3-2

CITY OF LONG BEACH CLEARANCE INTERVALS[1]

Number of Signal Phases	Left-turn Phasing Type	Clearance Interval (percent)
2	Permitted	10%
3	Protected and Permitted	12%
3	Fully Protected	15%
4	Protected and Permitted	14%
4	Fully Protected	18%

[1] Source: *City of Long Beach Guidelines for Signalized Intersection Analysis, 2004.*

TABLE 3-3

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 30.0	Little or no delay
B	> 30.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

TABLE 3-4

EXISTING PEAK HOUR LEVELS OF SERVICE[2]

	Key Intersection	Time Period	Control Type	ICU/Delay (sec/veh)	LOS
1.	Maine Avenue at 3rd Street	AM	2∅ Traffic	0.457	A
		PM	Signal	0.343	A
2.	Daisy Avenue at 3rd Street	AM	Two-Way	28.5 s/v	D
		PM	Stop	12.4 s/v	B
3.	Magnolia Avenue at 3rd Street	AM	3∅ Traffic	0.630	B
		PM	Signal	0.461	A
4.	Chestnut Avenue at 3rd Street	AM	2∅ Traffic	0.456	A
		PM	Signal	0.303	A
5.	Pacific Avenue at 3rd Street	AM	3∅ Traffic	0.568	A
		PM	Signal	0.367	A
6.	Maine Avenue at Broadway Avenue	AM	3∅ Traffic	0.500	A
		PM	Signal	0.443	A
7.	Daisy Avenue at Broadway Avenue	AM	2∅ Traffic	0.405	A
		PM	Signal	0.325	A
8.	Magnolia Avenue at Broadway Avenue	AM	2∅ Traffic	0.523	A
		PM	Signal	0.480	A
9.	Chestnut Avenue at Broadway Avenue	AM	2∅ Traffic	0.376	A
		PM	Signal	0.443	A
10.	Pacific Avenue at Broadway Avenue	AM	3∅ Traffic	0.485	A
		PM	Signal	0.654	B
11.	Golden Shore Street/Golden Avenue at Ocean Boulevard	AM	3∅ Traffic	0.616	B
		PM	Signal	0.759	C
12.	Magnolia Avenue at Ocean Boulevard	AM	2∅ Traffic	0.640	B
		PM	Signal	0.682	B
13.	Pacific Avenue at Ocean Boulevard	AM	3∅ Traffic	0.689	B
		PM	Signal	0.632	B

Notes:
s/v = seconds per vehicle (delay).

[2] *Appendix B* contains ICU/HCM sheets for key study intersections.

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure can typically be found in the Seventh Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2003] or *San Diego Traffic Generators,* published by the San Diego Association of Governments (SANDAG).

However, given the uniqueness of the proposed Project, the trip generation potential of the "courthouse" component of the Project was forecast based on site specific data provided by the AOC for the existing Long Beach Courthouse. The published trip rates for office buildings were considered but were deemed inappropriate since only a portion of the courthouse is comprised of true "office" uses (e.g. clerical). Courthouses generally have a lower density in terms of employees per square-foot as compared to typical offices. Further yet, the courtroom itself comprises large amounts of square-footage that is only partially utilized (rarely are all courtrooms utilized concurrently). Additionally, courthouses tend to have a relatively large amount of transit usage and a large amount of visitors. For the "commercial" component of the Project, ITE Land Use Code 710: General Office Building and ITE Land Use 820: Shopping Center average trips rates were utilized.

The amount of daily trip generated by the "courthouse" component of the proposed Project was estimated based on specific values for modal split percentage, daily vehicle trip-ends per person and vehicle occupancy rates supplied by surveys provided by the AOC of the existing courthouse. Using this information, LLG calculated the daily trip generation of the "courthouse" component of the proposed Project, while the peak hour percentages for office buildings were utilized since they appeared reasonable and since no other courthouse data was available.

The following is a description of visitor and juror modal splits taken from the existing Long Beach Courthouse and assumptions utilized to derive the trip generation potential of employees:

Modal Splits / User	**Jurors**	**Visitor**	**Employee**
▪ Drive Alone	85%	42%	70%
▪ Transit	1%	13%	10%
▪ Carpool	1%	37%	20%
▪ Bike/Walk	3%	3%	--
▪ Drop-off	9%	5%	--
▪ Total	100%	100%	100%

5.1.1 *Courthouse Trip Generation*

Based on review of the Project description and juror/visitor statistics of the existing courthouse provided by the AOC, the new Long Beach Courthouse project would result in four (4) new courtrooms, 60 additional jurors per day (15 per courtroom), 140 additional visitors per day (35 per courtroom) and an additional staff of 79 employees (35 for the Superior Court and 39 for the County).

Table 5-1 shows the trip generation calculations for the "courthouse" component of the proposed Project. Review of this table shows that the "courthouse" component of the proposed Project is calculated to generate an additional 457 daily trips, with 59 trips (53 inbound, 6 outbound) produced in the AM peak hour and 62 trips (12 inbound, 50 outbound) produced in the PM peak hour on a "typical" weekday.

5.1.2 *Commercial Trip Generation*

Table 5-2 summarizes the trip generation rates used in forecasting the vehicular trips generated by the "commercial" component of the proposed Project and presents its associated trip generation potential for a "typical" weekday. As shown, the trip generation potential for the "commercial" component of the proposed Project was forecast using ITE Land Use Code 710: General Office Building and ITE Land Use 820: Shopping Center. Review of *Table 5-2* indicates that the proposed commercial/retail uses is forecast to generate 1,463 daily "net" trips, with 123 "net" trips (103 inbound, 20 outbound) produced in the AM peak hour and 165 "net" trips (48 inbound, 117 outbound) produced in the PM peak hour on a "typical" weekday.

Please note that the aforementioned trip generation includes adjustments for the internal trip capture within the project site. The internal trip capture is based on the ITE Internal Capture Summary calculation worksheets contained in the *Trip Generation Handbook*, 2nd Edition, published by ITE, June 2004. The internal trip capture accounts for the trip interaction between the office and retail uses.

5.1.3 *Total Project Trip Generation Potential*

Review of bottom portion of *Table 5-2* indicates that the proposed Project is forecast to generate 1,920 daily "net" trips, with 182 "net" trips (156 inbound, 26 outbound) produced in the AM peak hour and 227 "net" trips (60 inbound, 167 outbound) produced in the PM peak hour on a "typical" weekday. The potential traffic impact of these trips is evaluated in this traffic report.

TABLE 5-1

COURTHOUSE TRAFFIC GENERATION CALCULATIONS

Entity	Modal Split %	Daily Vehicle Trip End / Person	Vehicle Occupancy Rate	Total Daily Vehicle Trip End	AM Peak Hour					PM Peak Hour				
					% of Daily	In : Out Split	In	Out	Total	% of Daily	In : Out Split	In	Out	Total
Jurors (60)														
Drive Alone	85%	2.0		102	13%	9:1	12	1	13	14%	2:8	3	11	14
Transit	2%	0.0			13%	9:1	0	0	0	14%	2:8	0	0	0
Carpool	1%	2.0	2	1	13%	9:1	0	0	0	14%	2:8	0	0	0
Bike/Walk	3%	0.0			13%	9:1	0	0	0	14%	2:8	0	0	0
Drop-Off	9%	2.0	2	5	13%	9:1	1	0	1	14%	2:8	0	1	1
Subtotal	***100%***			***108***			***13***	***1***	***14***			***3***	***12***	***15***
Visitors (140)														
Drive Alone	42%	2.0		116	13%	9:1	14	1	15	14%	2:8	3	13	16
Transit	13%	0.0			13%	9:1	0	0	0	14%	2:8	0	0	0
Carpool	37%	2.0	2	52	13%	9:1	6	1	7	14%	2:8	1	6	7
Bike/Walk	3%	0.0			13%	9:1	0	0	0	14%	2:8	0	0	0
Drop-Off	5%	2.0	2	7	13%	9:1	1	0	1	14%	2:8	0	1	1
Subtotal	***100%***			***175***			***21***	***2***	***23***			***4***	***20***	***24***
Employees (79)														
Drive Alone	70%	2.5		138	13%	9:1	16	2	18	14%	2:8	4	15	19
Transit	10%	0.0			13%	9:1	0	0	0	14%	2:8	0	0	0
Carpool	20%	2.0	2	16	13%	9:1	2	0	2	14%	2:8	0	2	2
subtotal	***100%***			***154***			***18***	***2***	***20***			***4***	***17***	***21***
Misc./Deliveries	**10**			***20***	*10%*	*5:5*	***1***	***1***	***2***	*10%*	*5:5*	***1***	***1***	***2***
Total Courthouse Trip Generation Potential				**457**			**53**	**6**	**59**			**12**	**50**	**62**

TABLE 5-2

PROJECT TRAFFIC GENERATION RATES AND FORECAST

ITE Land Use / Project Description	Daily 2-way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors: [3]							
▪ 710: General Office Building (TE/1000 SF)	11.01	1.36	0.19	1.55	0.25	1.24	1.49
▪ 820: Shopping Center (TE/1000 SF)	42.94	0.63	0.40	1.03	1.80	1.95	3.75
Generation Forecast:							
"Commercial" Component							
▪ 710: General Office (75,000 SF)	826	102	14	116	19	93	112
▪ 820: Specialty Retail (20,000 SF)	859	13	8	21	36	39	75
Subtotal	1,685	115	22	137	55	132	187
Less internal Capture[4]	-60	0	0	0	-2	-2	-4
Mode Shift Reduction (Daily/AM/PM: 10%/10%/10%)[5]	-162	-12	-2	-14	-5	-13	-18
Net Trips – Commercial Component	*1,463*	*103*	*20*	*123*	*48*	*117*	*165*
"Courthouse" Component							
▪ New LB Courthouse (4 courtrooms, 60 jurors, 140 visitors, 79 staff/ employees) [6]	*457*	*53*	*6*	*59*	*12*	*50*	*62*
Total Project Net Trip Generation Potential	***1,920***	***156***	***26***	***182***	***60***	***167***	***227***

3 Source: *Trip Generation*, 7th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2003)].

4 Source: Internal Capture rates were estimated based on the methodology outlines in *Chapter 7 – Multi-Use Development* of *Trip Generation Handbook*, published by ITE, June 2004.

5 Due to location of proposed Project and availability of bus and rail services in the area, transit usage by the project can be expected. The 10% mode shift reduction is assumed to represent the project's potential transit ridership as well as pedestrian (walking) trips.

6 Source: See *Table 5-1*.

5.2 Project Traffic Distribution and Assignment

Traffic distribution determines the directional orientation of traffic. It is based upon the location, intensity of use, accessibility of existing and planned residential areas, employment centers, and other commercial activities. Traffic assignment is the determination of specific trip routes, given the previously developed traffic distribution. Primary factors in route selection are the generalized travel direction, minimum time and minimum distance paths.

The general directional traffic distribution pattern for the "commercial" and "courthouse" components of the proposed Project is tabulated in ***Table 5-3*** and ***Table 5-4*** and graphically presented in ***Figures 5-1*** and ***5-2.*** Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

1. The site's proximity to major traffic carriers (i.e. I-710 Freeway, Magnolia Avenue, Pacific Avenue, Ocean Boulevard, etc.),
2. Expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
3. Existing intersection traffic volumes at the two project driveways, and
4. Ingress/egress availability at the Project site and the location of existing and proposed parking areas.

The anticipated AM and PM peak hour Project volumes associated with the proposed commercial uses are presented in ***Figures 5-3*** and ***5-4,*** respectively. The traffic volume assignments presented in *Figures 5-3* and *5-4* reflect the traffic distribution characteristics shown in *Figure 5-1* and the "commercial" component's traffic generation forecast presented in *Table 5-2.*

The anticipated AM and PM peak hour Project volumes associated with the "courthouse" component of the proposed Project are presented in ***Figures 5-5*** and ***5-6,*** respectively. The traffic volume assignments presented in *Figures 5-5* and *5-6* reflect the traffic distribution characteristics shown in *Figure 5-2* and the proposed courthouse's traffic generation forecast presented in *Tables 5-1* and *5-2.*

TABLE 5-3

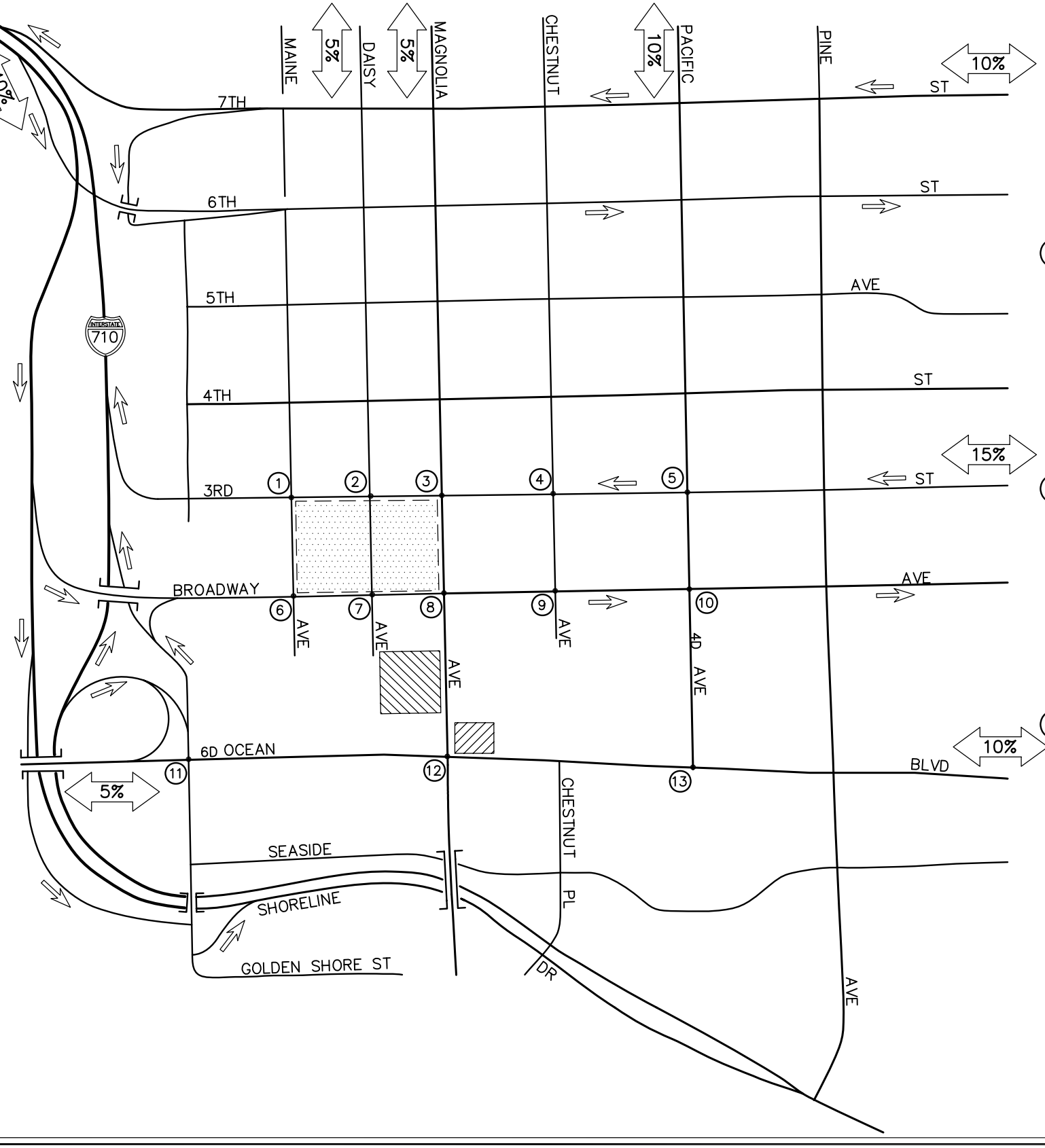
PROJECT DIRECTIONAL DISTRIBUTION PATTERN (COMMERCIAL)

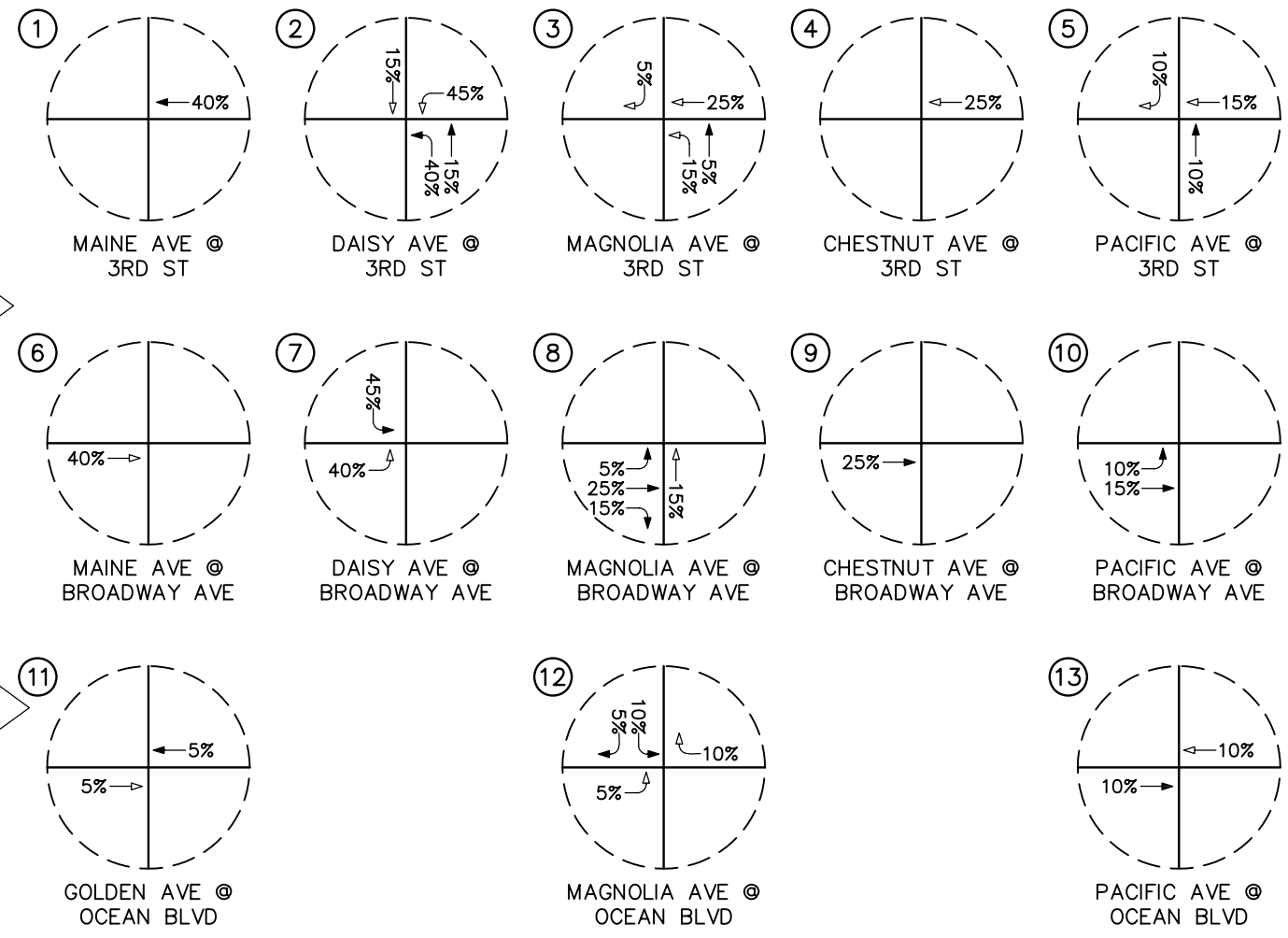
Distribution Percentage	Orientation
40%	To/from the north on I-710 Freeway
5%	To/from the north on Daisy Avenue
5%	To/from the north on Magnolia Avenue
10%	To/from the north on Pacific Avenue
10%	To/from the east on 7th Street
15%	To/from the east on 3rd Street
5%	To/from the west on Ocean Boulevard
10%	To/from the east on Ocean Boulevard
100%	**Total**

TABLE 5-4

PROJECT DIRECTIONAL DISTRIBUTION PATTERN (COURTHOUSE)

Distribution Percentage	Orientation
40%	To/from the north on I-710 Freeway
15%	To/from the north on Magnolia Avenue
10%	To/from the east on 7th Street
20%	To/from the east on 3rd Street
5%	To/from the west on Ocean Boulevard
10%	To/from the east on Ocean Boulevard
100%	**Total**





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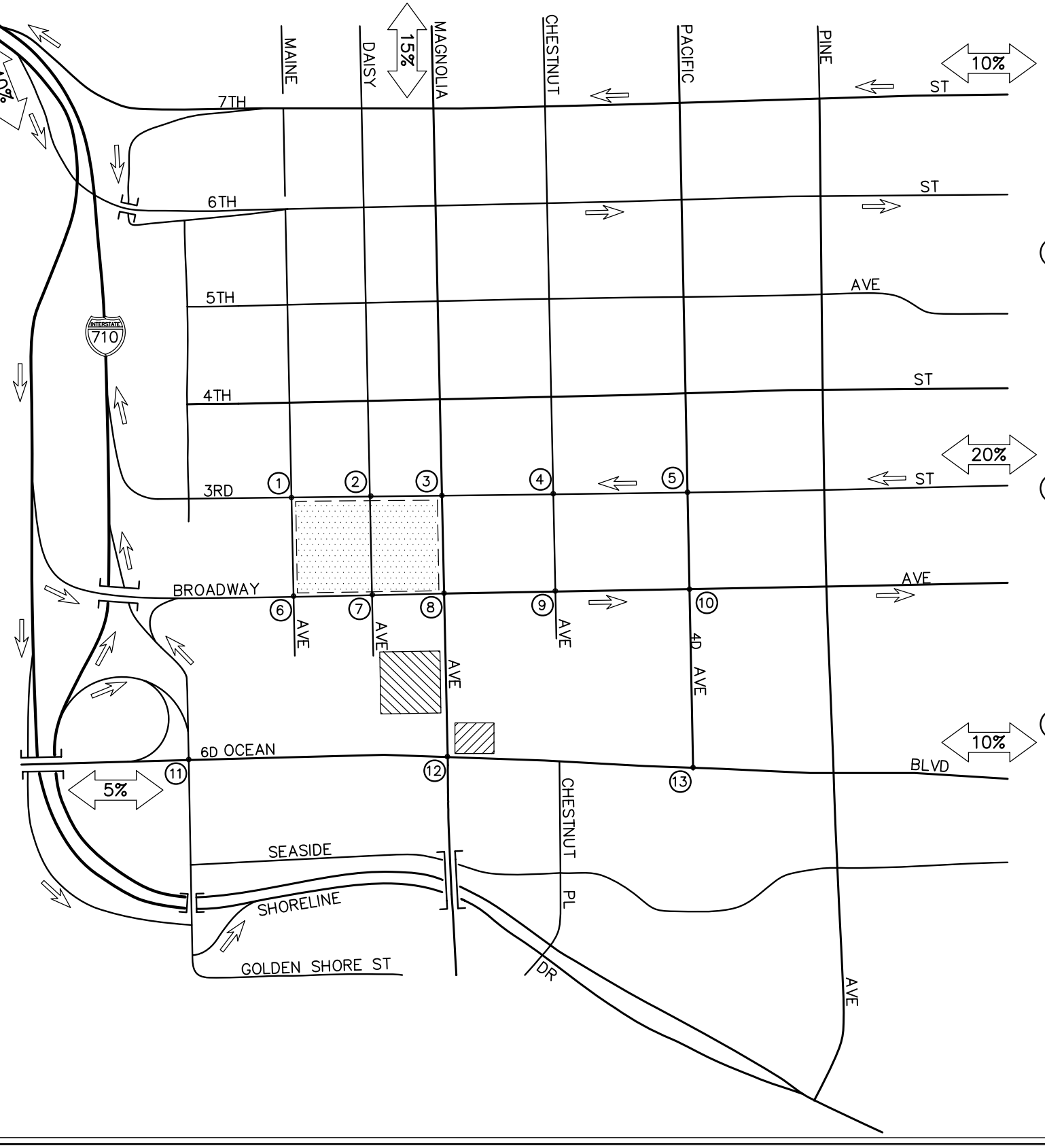
KEY

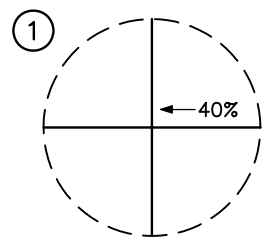
- ⇦ = INBOUND PERCENTAGE
- ⇦ = OUTBOUND PERCENTAGE
- (#) = POTENTIAL STUDY INTERSECTION
- = MAGNOLIA PARKING STRUCTURE
- = EXISTING COURTHOUSE
- = PROJECT SITE

FIGURE 5-1

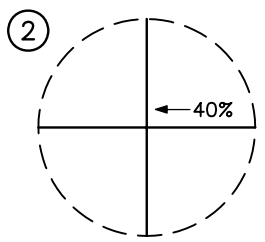
PROJECT TRAFFIC DISTRIBUTION PATTERN (COMMERCIAL)

NEW LONG BEACH COURTHOUSE, LONG BEACH

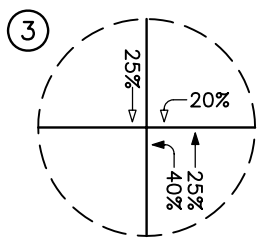




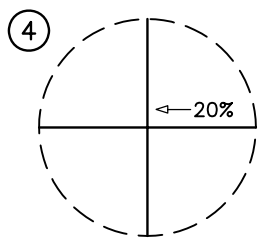
MAINE AVE @ 3RD ST



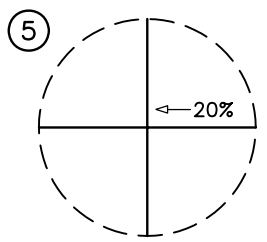
DAISY AVE @ 3RD ST



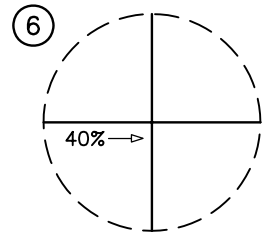
MAGNOLIA AVE @ 3RD ST



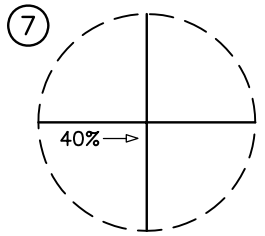
CHESTNUT AVE @ 3RD ST



PACIFIC AVE @ 3RD ST



MAINE AVE @ BROADWAY AVE



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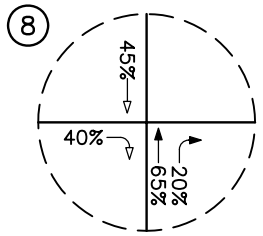

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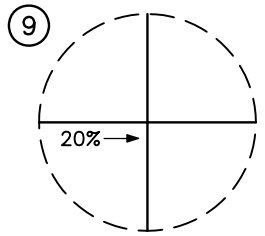

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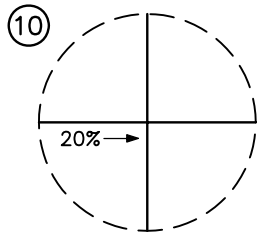

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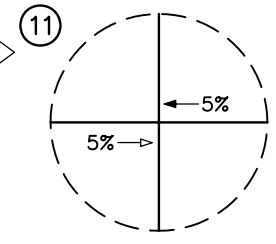
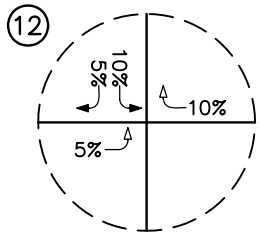
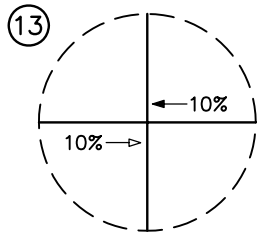


GOLDEN AVE @ OCEAN BLVD



MAGNOLIA AVE @ OCEAN BLVD



PACIFIC AVE @ OCEAN BLVD

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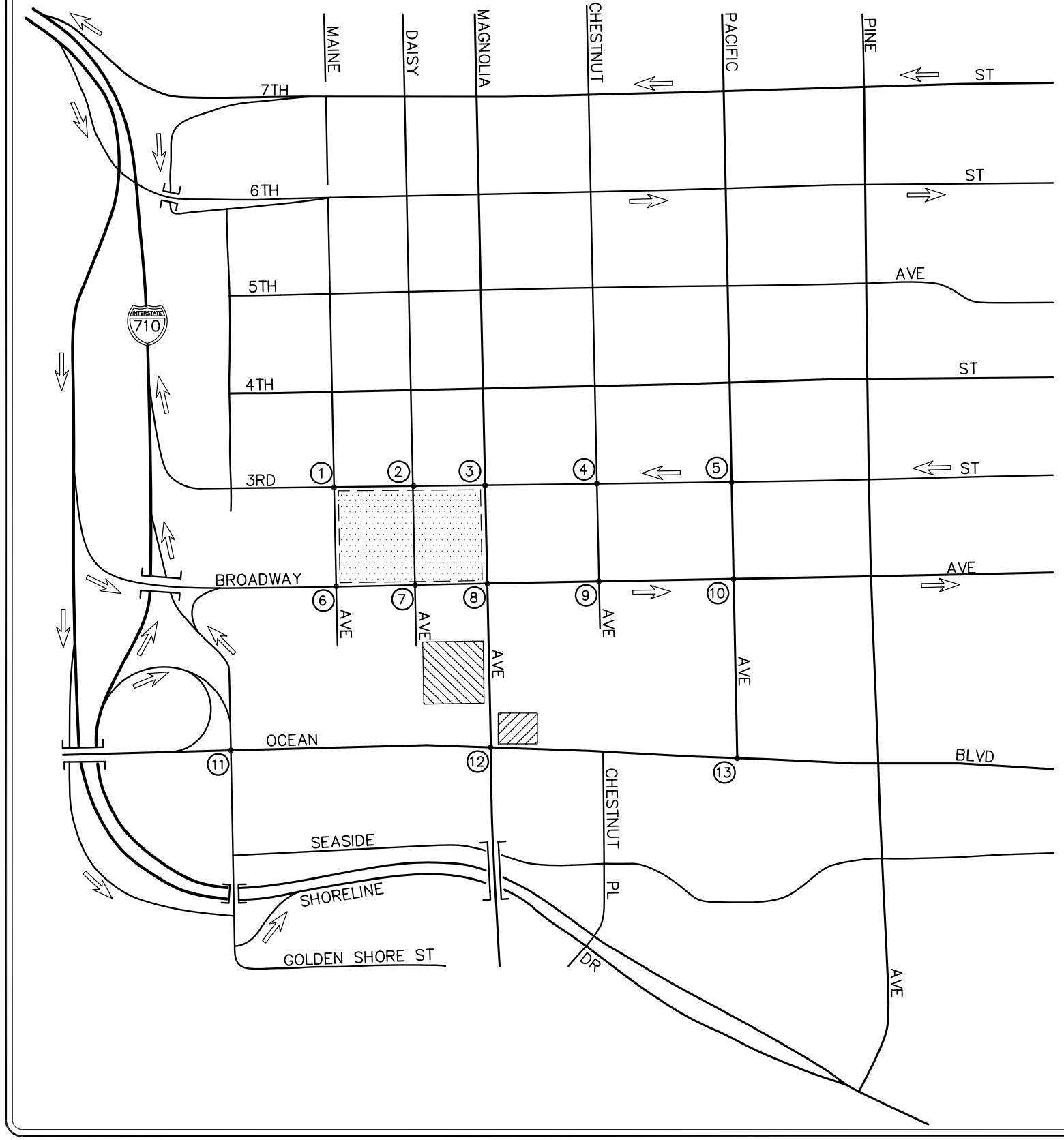
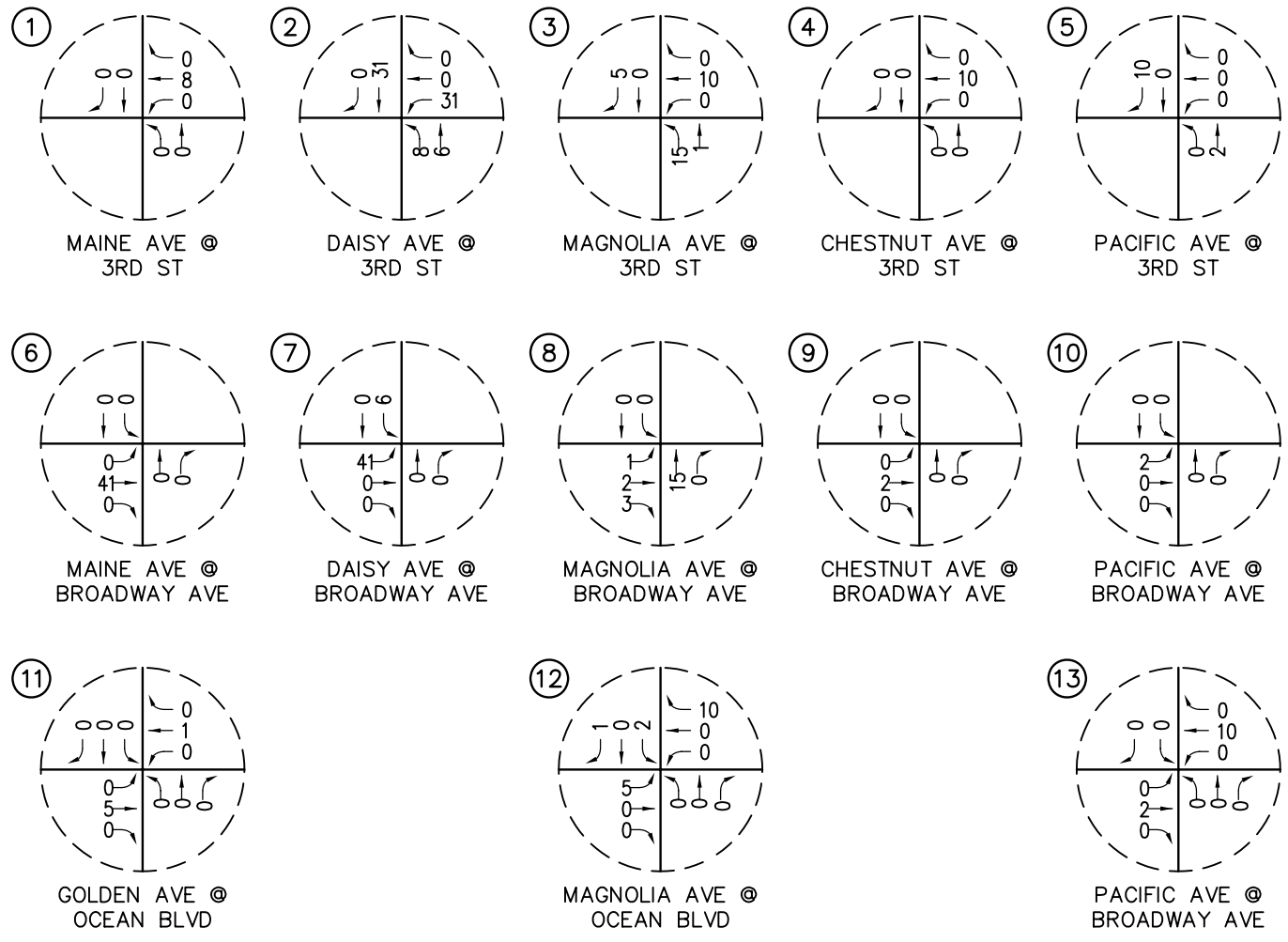
- (#) = POTENTIAL STUDY INTERSECTION
- = MAGNOLIA PARKING STRUCTURE
- = EXISTING COURTHOUSE
- = PROJECT SITE

FIGURE 5-2

PROJECT TRAFFIC DISTRIBUTION PATTERN (COURTHOUSE)

NEW LONG BEACH COURTHOUSE, LONG BEACH





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KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

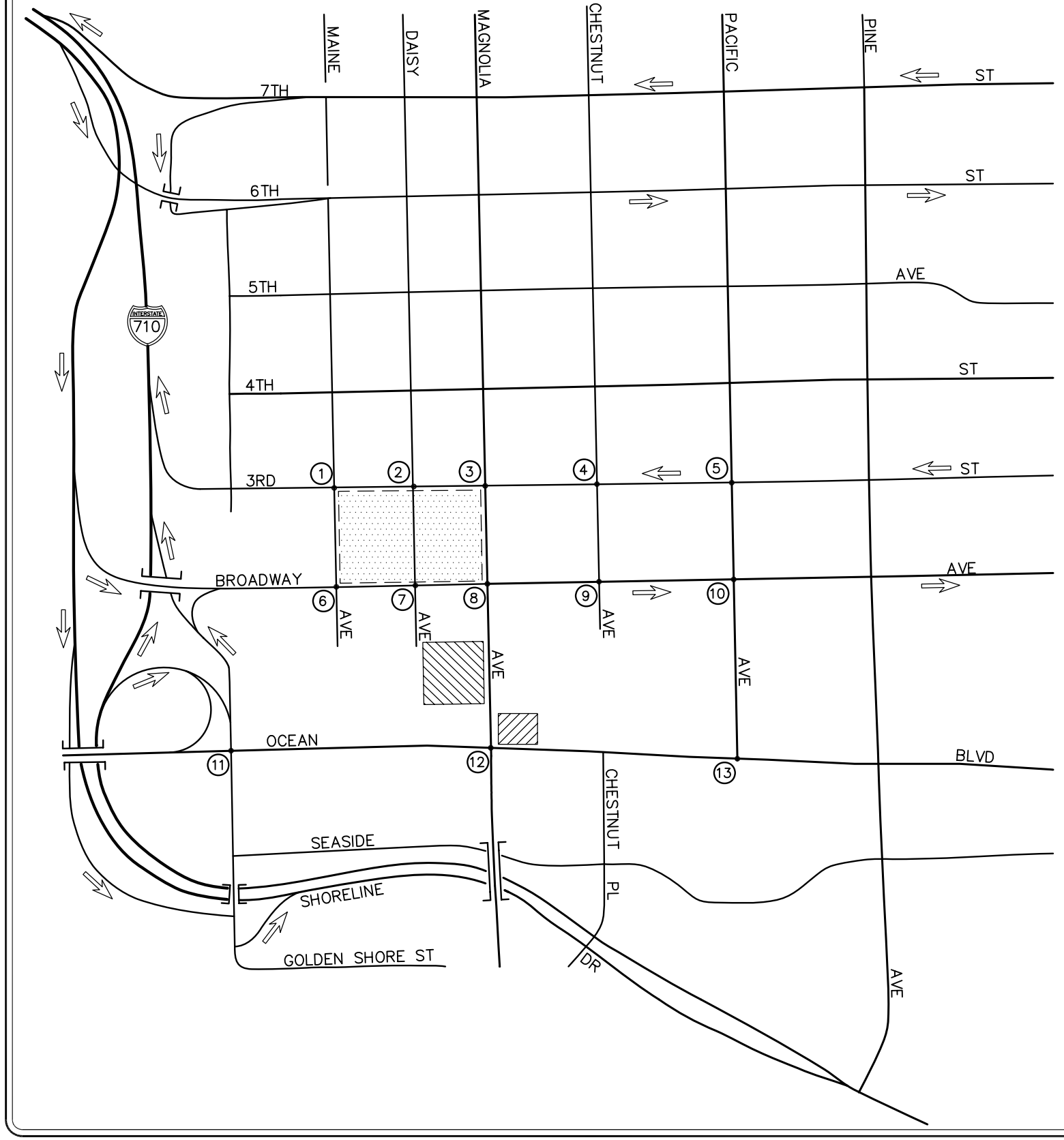
= EXISTING COURTHOUSE

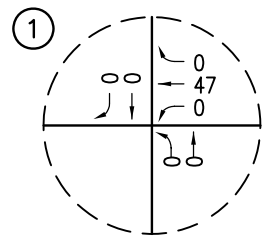
= PROJECT SITE

FIGURE 5-3

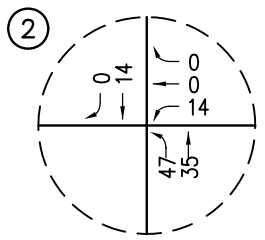
AM PEAK HOUR PROJECT TRAFFIC VOLUMES (COMMERCIAL)

NEW LONG BEACH COURTHOUSE, LONG BEACH





MAINE AVE @
3RD ST



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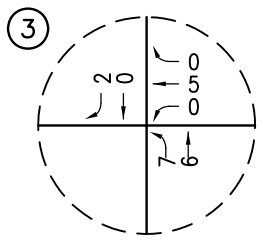

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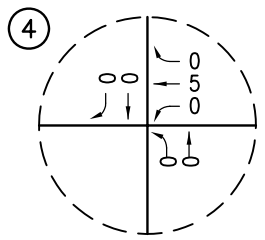
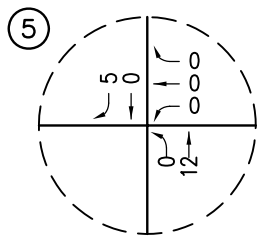
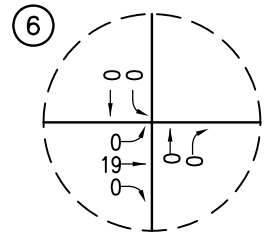


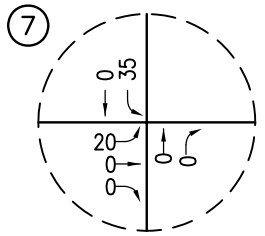
CHESTNUT AVE @
3RD ST



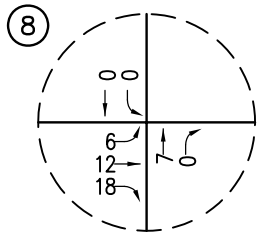
PACIFIC AVE @
3RD ST



MAINE AVE @
BROADWAY AVE



DAISY AVE @
BROADWAY AVE



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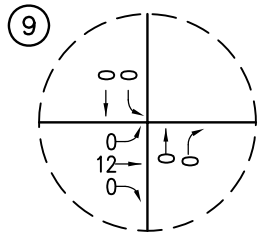
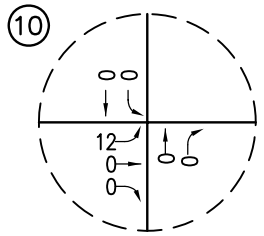
BROADWAY AVE



CHESTNUT AVE @
BROADWAY AVE



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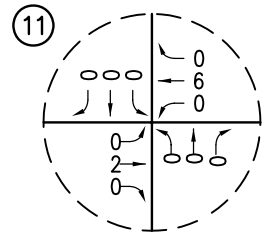
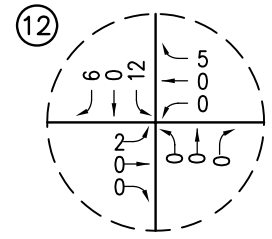
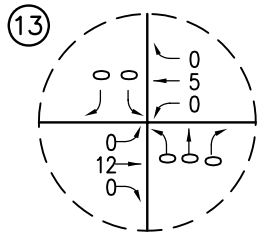
BROADWAY AVE



GOLDEN AVE @
OCEAN BLVD



MAGNOLIA AVE @
OCEAN BLVD



PACIFIC AVE @
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KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

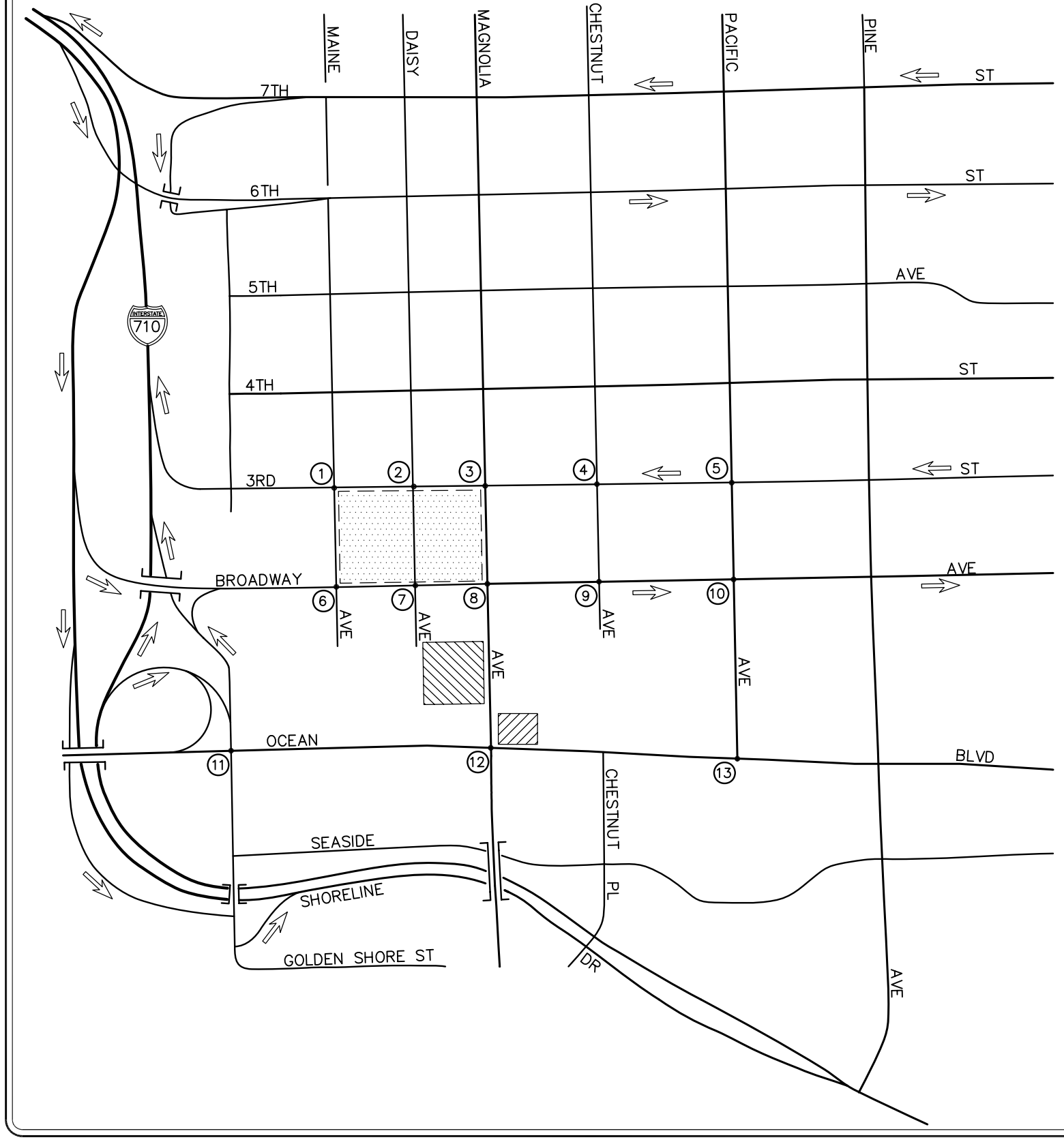
= EXISTING COURTHOUSE

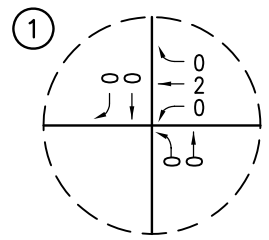
= PROJECT SITE

FIGURE 5-4

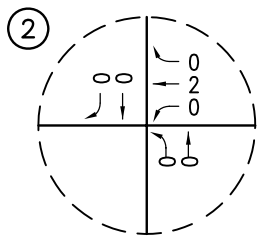
PM PEAK HOUR PROJECT TRAFFIC VOLUMES (COMMERCIAL)

NEW LONG BEACH COURTHOUSE, LONG BEACH

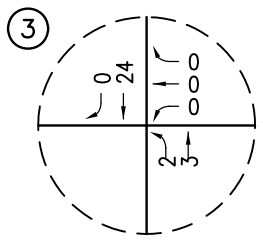




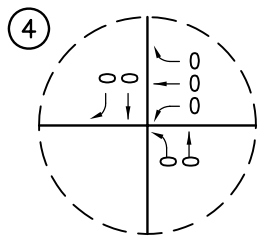
MAINE AVE @ 3RD ST



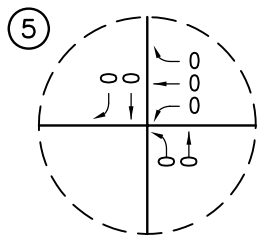
DAISY AVE @ 3RD ST



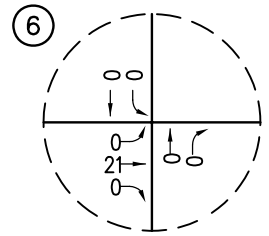
MAGNOLIA AVE @ 3RD ST



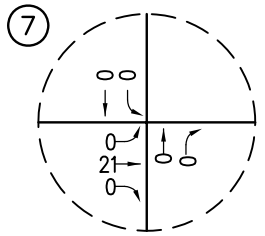
CHESTNUT AVE @ 3RD ST



PACIFIC AVE @ 3RD ST



MAINE AVE @ BROADWAY AVE



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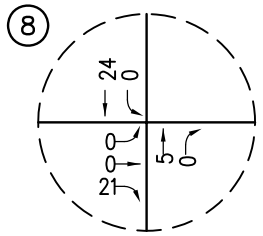
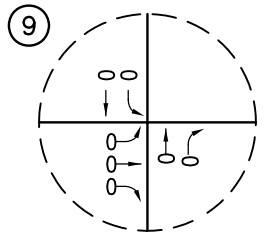


MAGNOLIA AVE @ BROADWAY AVE



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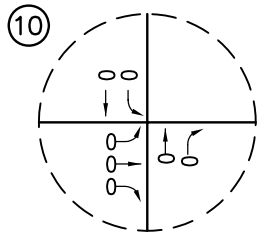
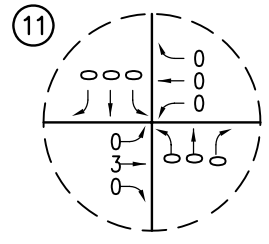
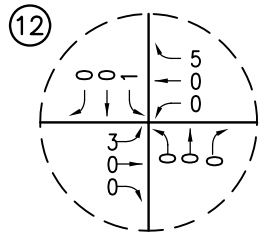


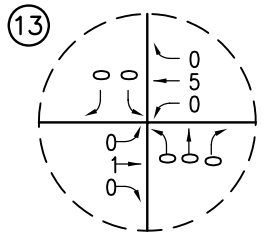
PACIFIC AVE @ BROADWAY AVE



GOLDEN AVE @ OCEAN BLVD



MAGNOLIA AVE @ OCEAN BLVD



PACIFIC AVE @ BROADWAY AVE

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N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

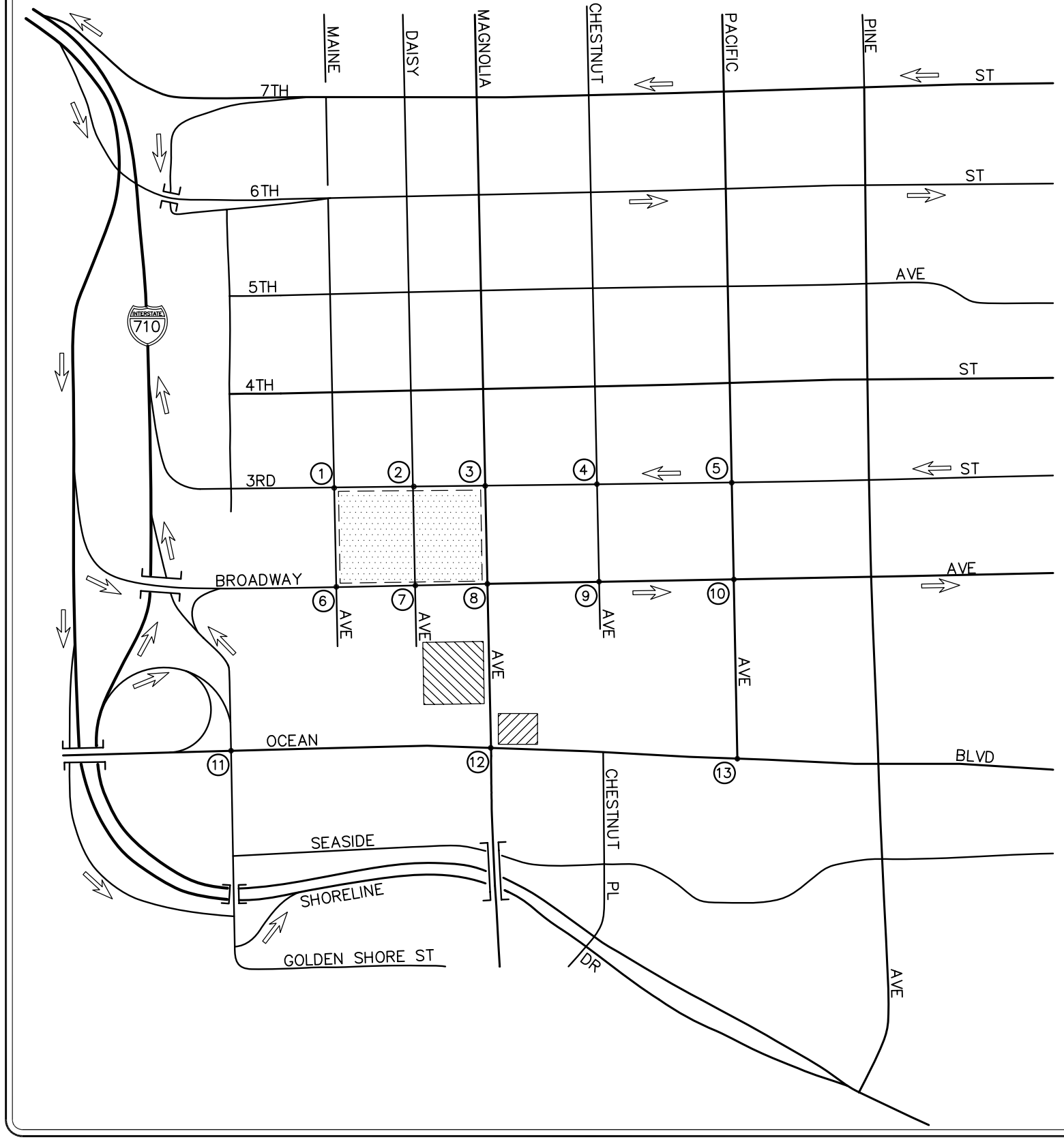
= EXISTING COURTHOUSE

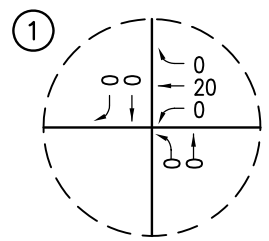
= PROJECT SITE

FIGURE 5-5

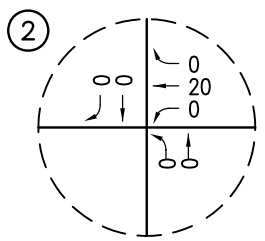
AM PEAK HOUR PROJECT TRAFFIC VOLUMES (COURTHOUSE)

NEW LONG BEACH COURTHOUSE, LONG BEACH

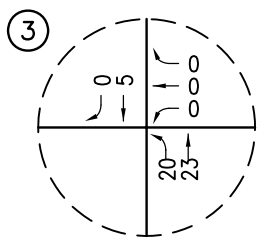




MAINE AVE @ 3RD ST



DAISY AVE @ 3RD ST



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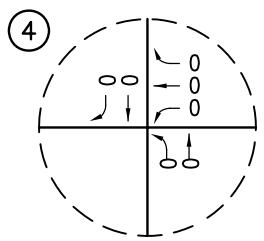

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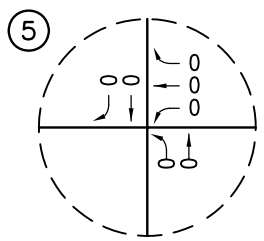

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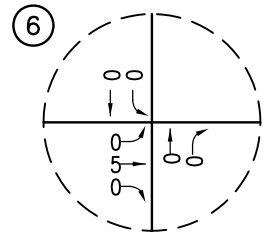

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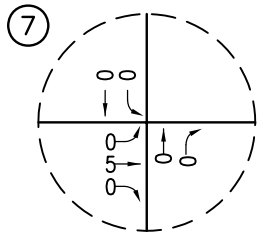

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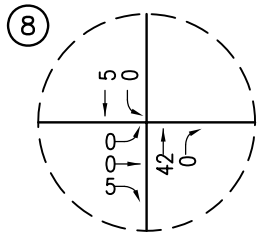

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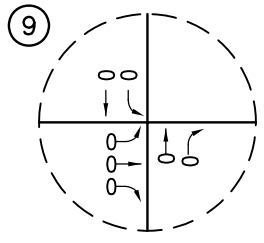

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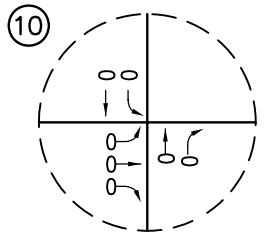

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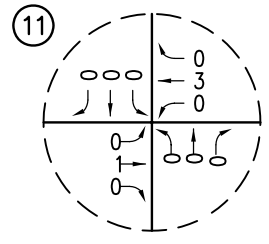

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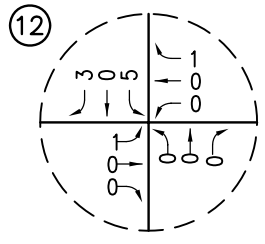

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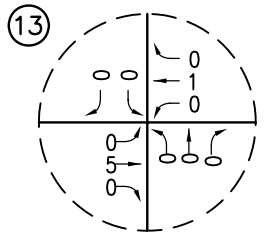

PACIFIC AVE @ BROADWAY AVE

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

= EXISTING COURTHOUSE

= PROJECT SITE

FIGURE 5-6

PM PEAK HOUR PROJECT TRAFFIC VOLUMES (COURTHOUSE)

NEW LONG BEACH COURTHOUSE, LONG BEACH

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1%) per year. Applied to existing Year 2008 traffic volumes results in a four percent (4%) increase growth in existing volumes to horizon year 2012.

6.2 Related Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (related projects) in the area has been researched. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are eighteen (18) related projects within a two-mile radius of the project that are located in the City of Long Beach. These projects have either been built, but not yet fully occupied, or are being processed for approval and have been included as part of the cumulative background setting.

Table 6-1 provides the location and a brief description for each of the eighteen related projects. ***Figure 6-1*** graphically illustrates the location of the related projects. These related projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

The AM and PM peak hour traffic volumes associated with the eighteen (18) related projects are presented in ***Figures 6-2*** and ***6-3***, respectively.

Table 6-2 presents the development totals and resultant trip generation for the related projects. As shown in *Table 6-2*, the related projects are expected to generate a combined total of 34,609 daily trips on a "typical" weekday, with 2,405 trips (892 inbound and 1,513 outbound) forecast during the AM peak hour, and 2,835 trips (1,636 inbound and 1,199 outbound) during the PM peak hour.

6.3 Year 2012 Traffic Volumes

Figures 6-4 and ***6-5*** present future AM and PM peak hour background traffic volumes at the key study intersections for Year 2012. Please note that the background traffic volumes represent the accumulation of existing traffic, ambient growth traffic, and related projects traffic.

Figures 6-6 and ***6-7*** illustrate Year 2012 forecast AM and PM peak hour traffic volumes with the inclusion of the trips generated by the proposed Project.

TABLE 6-1

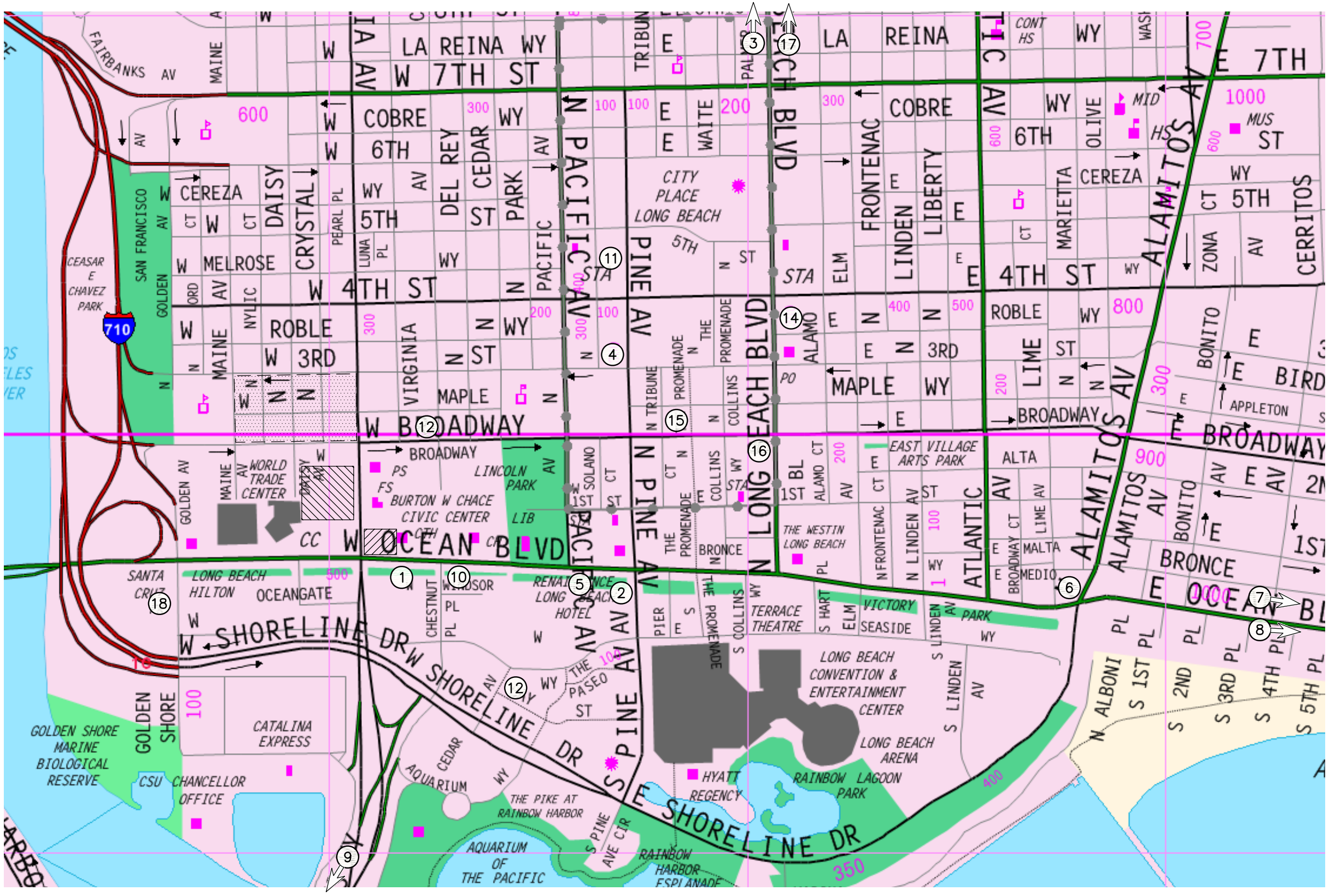
LOCATION AND DESCRIPTION OF RELATED PROJECTS[7]

No.	Location/Address	Description
1.	432-440 W. Ocean Boulevard	107 DU apartments
2.	110 W. Ocean Boulevard	82 hotel rooms
3.	1598 Long Beach Boulevard	64 DU apartments and 15,000 SF commercial
4.	301 Pine Avenue	375 DU apartments and 26,000 SF commercial
5.	150 W. Ocean Boulevard	216 DU condominiums
6.	777 E. Ocean Boulevard	358 DU high-rise condominiums and 13,561 SF commercial
7.	1628-1724 Ocean Boulevard	51 DU condominiums and 47 hotel rooms
8.	2010 Ocean Boulevard	56 DU condominiums
9.	600 Queensway Drive	178 hotel rooms
10.	25 S. Chestnut Street	246 DU high-rise condominiums
11.	433 Pine Avenue	18 DU apartments and 15,000 SF of commercial
12.	285 Bay Street	138 hotel rooms
13.	421 W. Broadway Avenue	291 DU apartments and 15,580 SF commercial
14.	350 Long Beach Boulevard	82 DU single family detached housing and 7,000 SF commercial
15.	201 The Promenade	165 hotel rooms
16.	155 Long Beach Boulevard	191 hotel rooms
17.	1235 Long Beach Boulevard	79,543 SF of Retail floor/Restaurant floor area, 152 DU Senior Apartments, and 210 Condominiums.
18.	11 Golden Shore	1,110 DU high-rise condominiums, 400 hotel rooms, and 373,541 SF general offices

[7] Source: City of Long Beach Quarterly Major Projects List – September 2008

KEY

1. 432–440 W. OCEAN BOULEVARD
2. 110 W. OCEAN BOULEVARD
3. 1598 LONG BEACH BOULEVARD
4. 301 PINE AVENUE
5. 150 W. OCEAN BOULEVARD
6. 777 E. OCEAN BOULEVARD
7. 1628–1724 OCEAN BOULEVARD
8. 2010 OCEAN BOULEVARD
9. 600 QUEENSWAY DRIVE
10. 25 S. CHESTNUT STREET
11. 433 PINE AVENUE
12. 285 BAY STREET
13. 421 W. BROADWAY AVENUE
14. 350 LONG BEACH BOULEVARD
15. 201 THE PROMENADE
16. 155 LONG BEACH BOULEVARD
17. 1235 LONG BEACH BOULEVARD
18. 11 GOLDEN SHORE



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N NO SCALE

KEY

(#) = LOCATION OF RELATED PROJECT
= MAGNOLIA PARKING STRUCTURE
= EXISTING COURTHOUSE
= PROJECT SITE

FIGURE 6–1

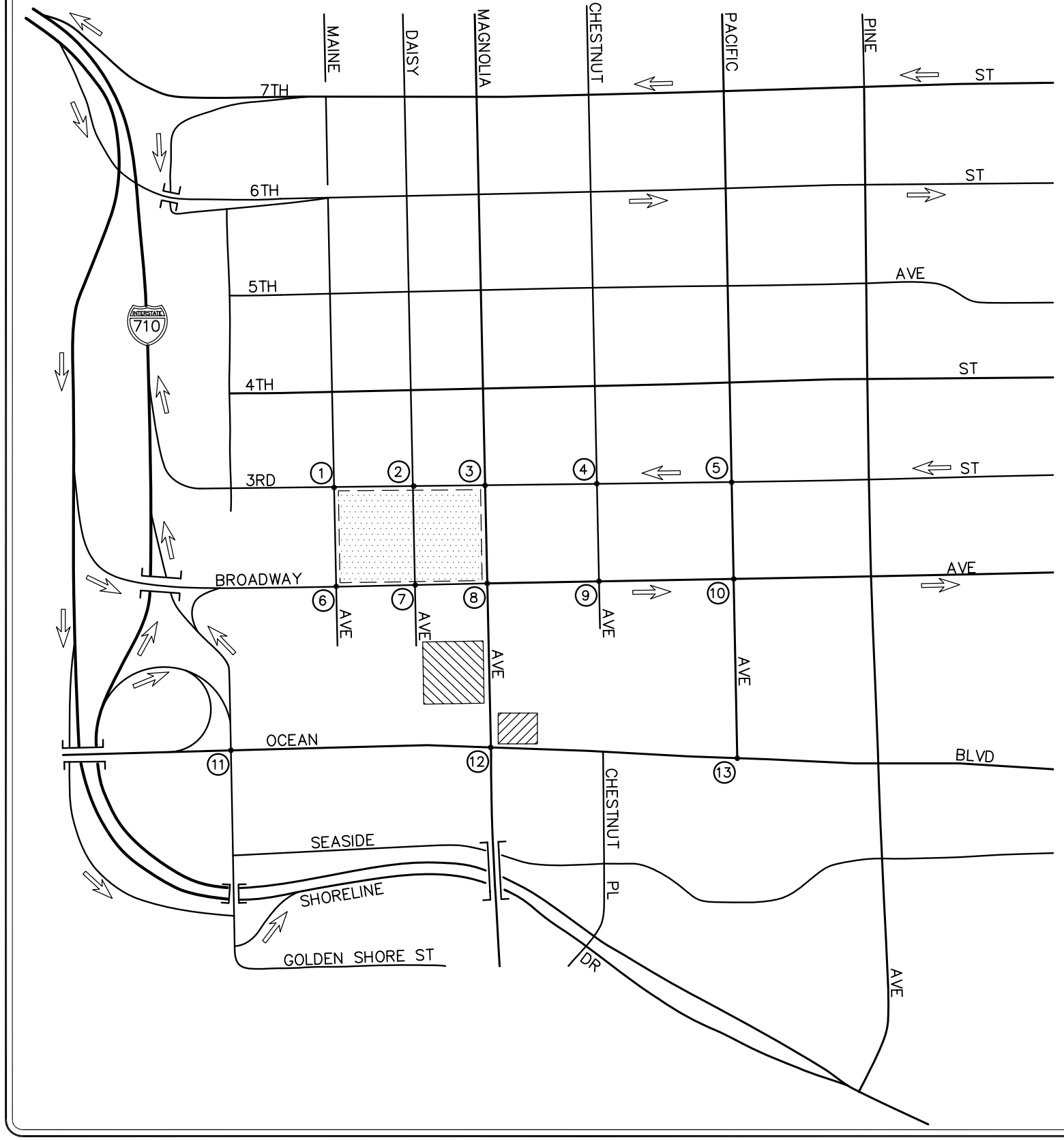
LOCATION OF RELATED PROJECTS
NEW LONG BEACH COURTHOUSE, LONG BEACH

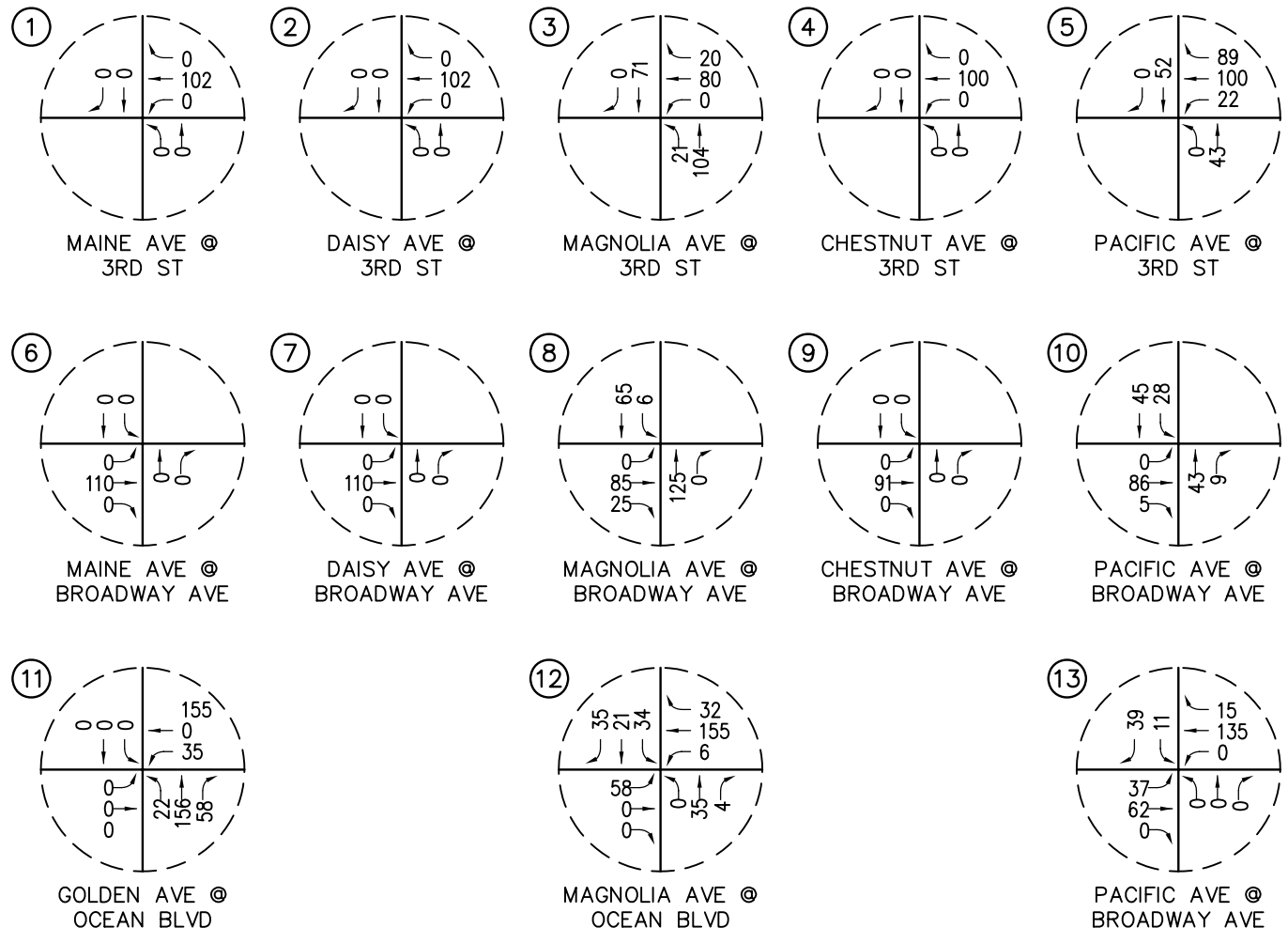
TABLE 6-2

RELATED PROJECTS TRAFFIC GENERATION FORECAST[8]

No. / Related Projects Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. Apartments (107 DU)	719	11	44	55	43	24	67
2. Hotel (82 rooms)	670	28	18	46	25	23	48
3. Apartments (64 DU) & Commercial (15,000 SF)	1,010	14	31	45	44	33	77
4. Apartments (375 DU) & Commercial (26,000 SF)	3,524	52	163	215	181	117	298
5. Condominiums (216 DU)	1,266	15	80	95	76	37	113
6. High-Rise Condominiums (358 DU) & Commercial (13,561 SF)	2,020	29	104	133	102	67	169
7. Condominiums (51 DU) & Hotel (47 rooms)	683	20	29	49	33	22	55
8. Condominiums (56 DU)	328	4	21	25	20	10	30
9. Hotel (178 rooms)	1,454	61	39	100	55	50	105
10. High-Rise Condominiums (246 DU)	1,028	15	69	84	59	34	93
11. Apartments (18 DU) & Commercial (15,000 SF)	701	10	12	22	25	23	48
12. Hotel (138 rooms)	1,127	47	30	77	43	39	82
13. Apartments (291 DU) & Commercial (15,580 SF)	2,558	38	124	162	134	84	218
14. Single Family Detached (82 DU) & Commercial (7,000 SF)	1,056	20	49	69	61	39	100
15. Hotel (165 rooms)	1,348	56	36	92	51	46	97
16. Hotel (191 rooms)	1,560	65	42	107	59	53	112
17. Retail floor/Restaurant floor area (79,543 SF), Senior Apartments (152 DU), and Condominiums (210 DU)	4,876	138	175	313	218	154	372
18. Condominiums (1,110 DU, Hotel (400 rooms), and Office Building (373,541 SF)	8,681	269	447	716	407	344	751
Total Related Projects Trip Generation Potential	**34,609**	**892**	**1,513**	**2,405**	**1,636**	**1,199**	**2,835**

[8] Source: *Trip Generation*, 7th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2003)].





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KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

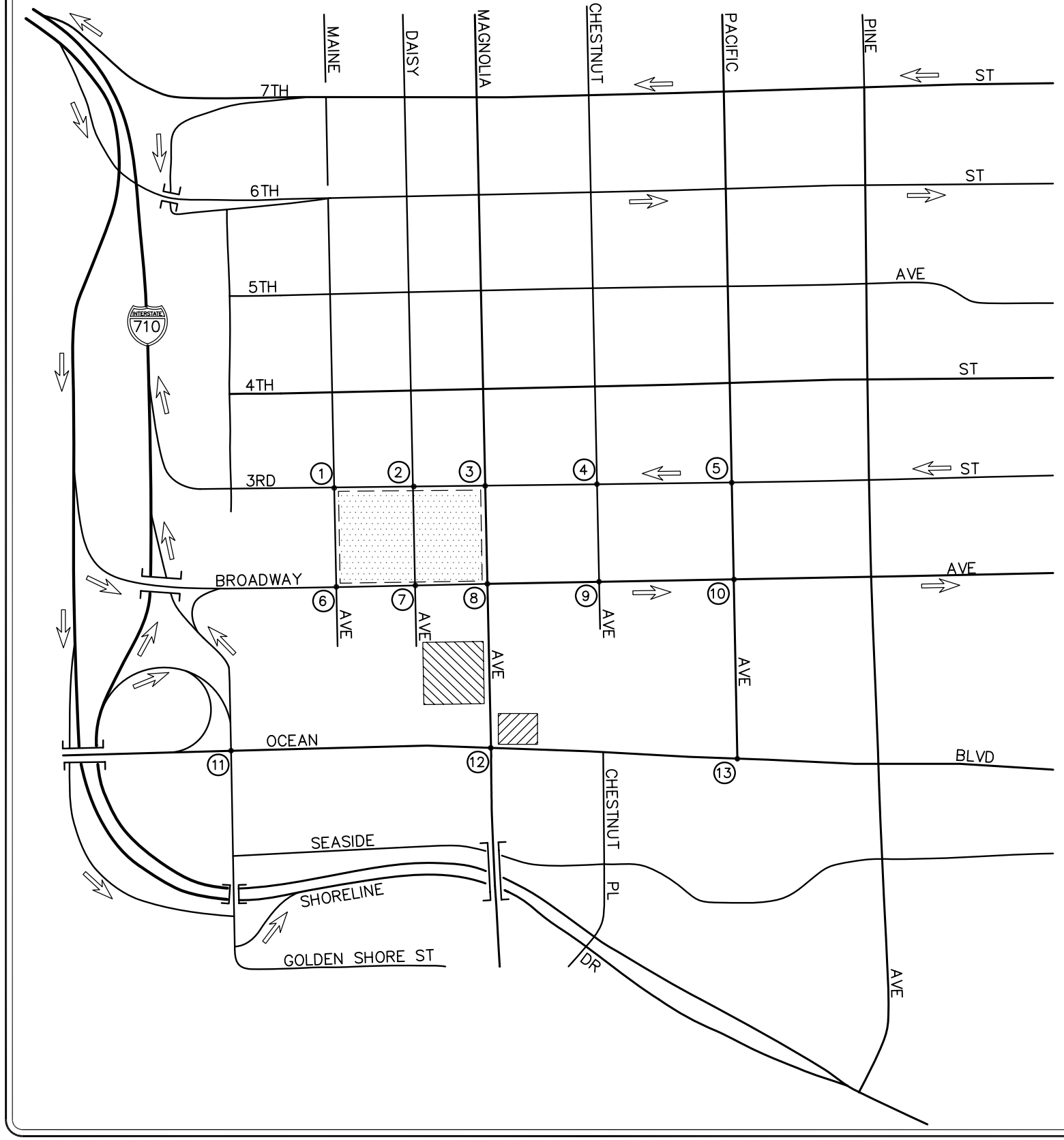
= EXISTING COURTHOUSE

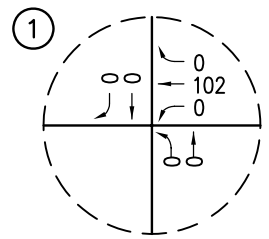
= PROJECT SITE

FIGURE 6-2

AM PEAK HOUR RELATED PROJECTS TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH





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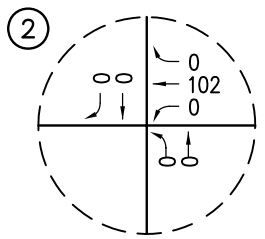

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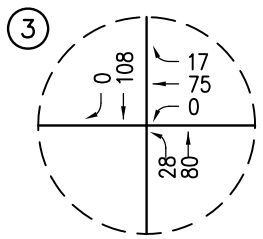

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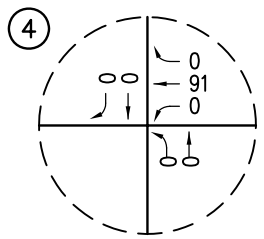

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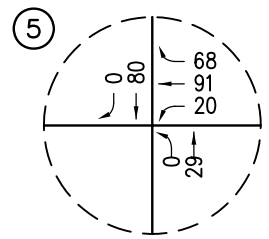

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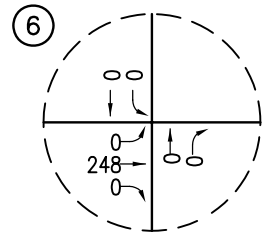

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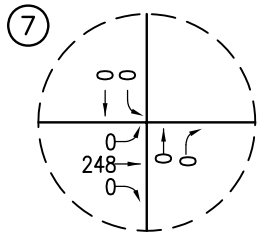

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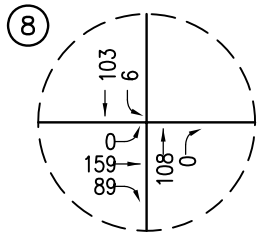

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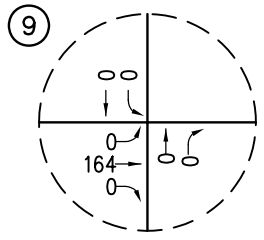

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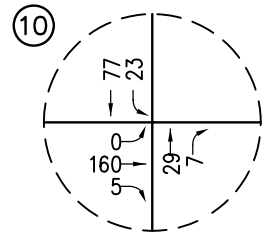

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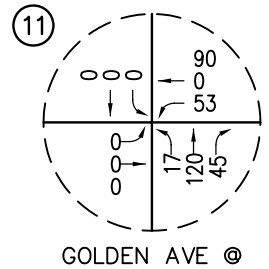

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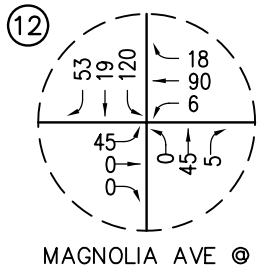

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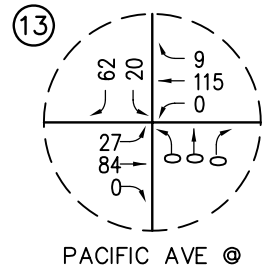

PACIFIC AVE @ BROADWAY AVE

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N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

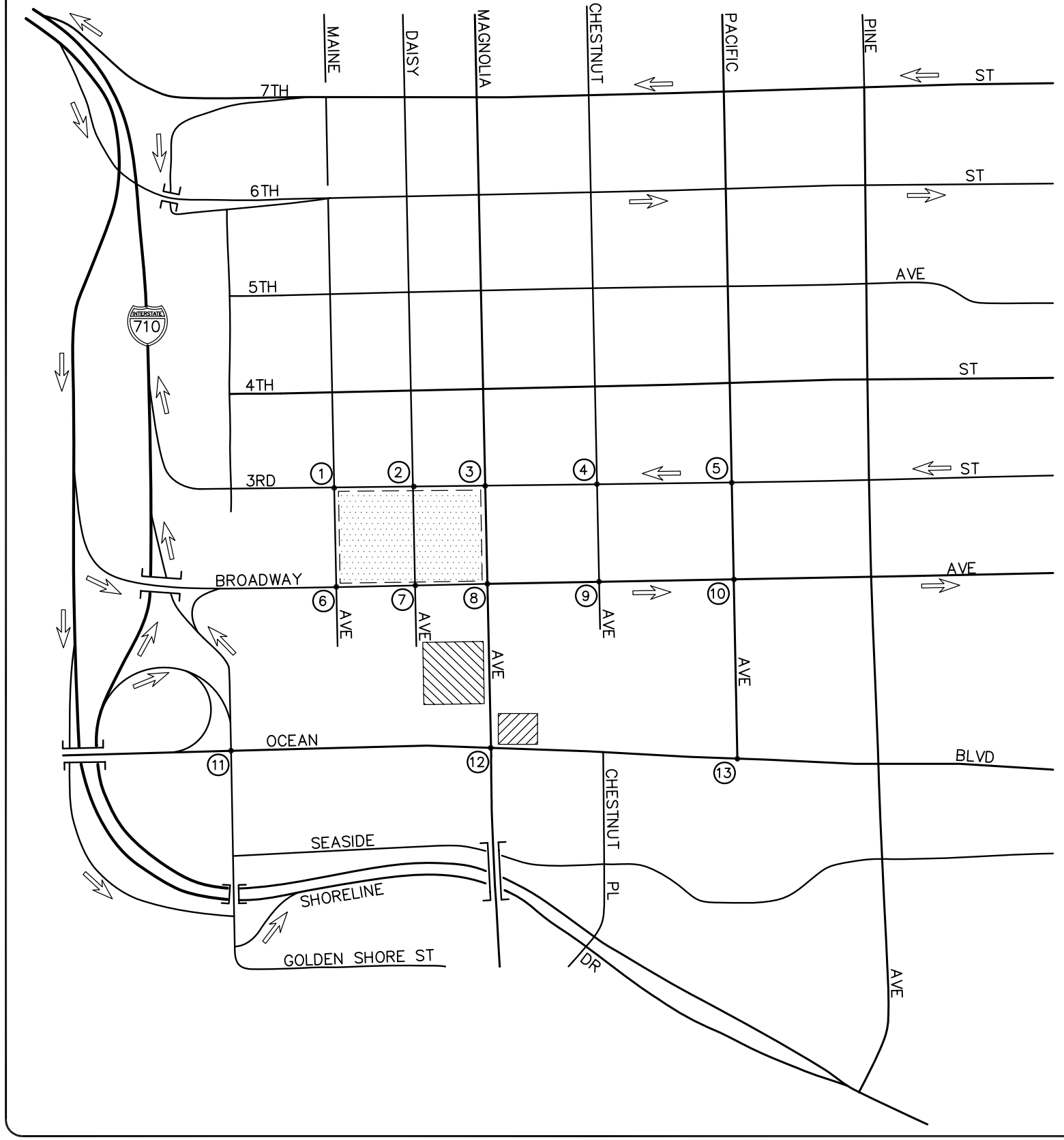
= EXISTING COURTHOUSE

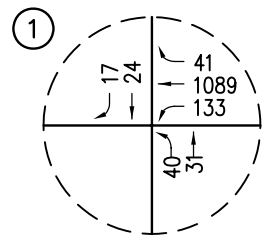
= PROJECT SITE

FIGURE 6-3

PM PEAK HOUR RELATED PROJECTS TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH





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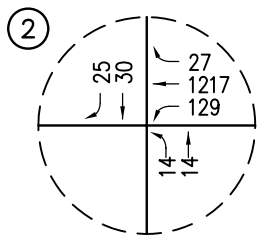

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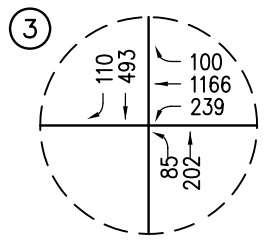

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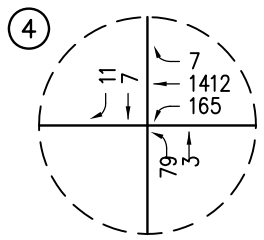

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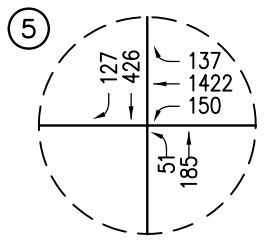

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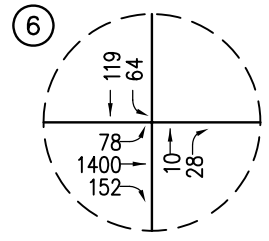

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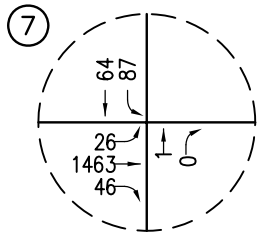

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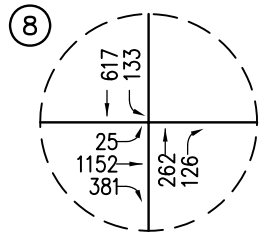

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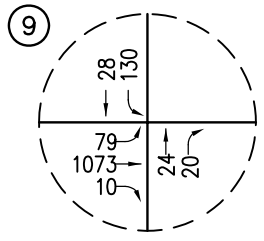

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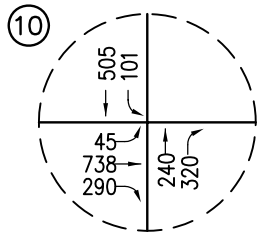

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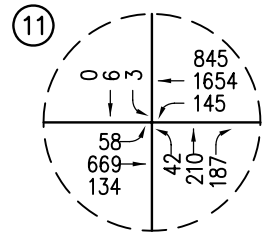
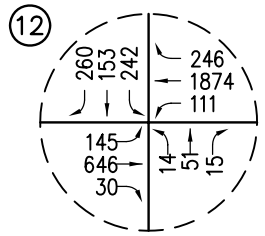
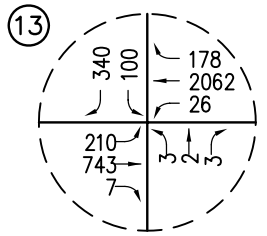
BROADWAY AVE



GOLDEN AVE @
OCEAN BLVD



MAGNOLIA AVE @
OCEAN BLVD



PACIFIC AVE @
BROADWAY AVE

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

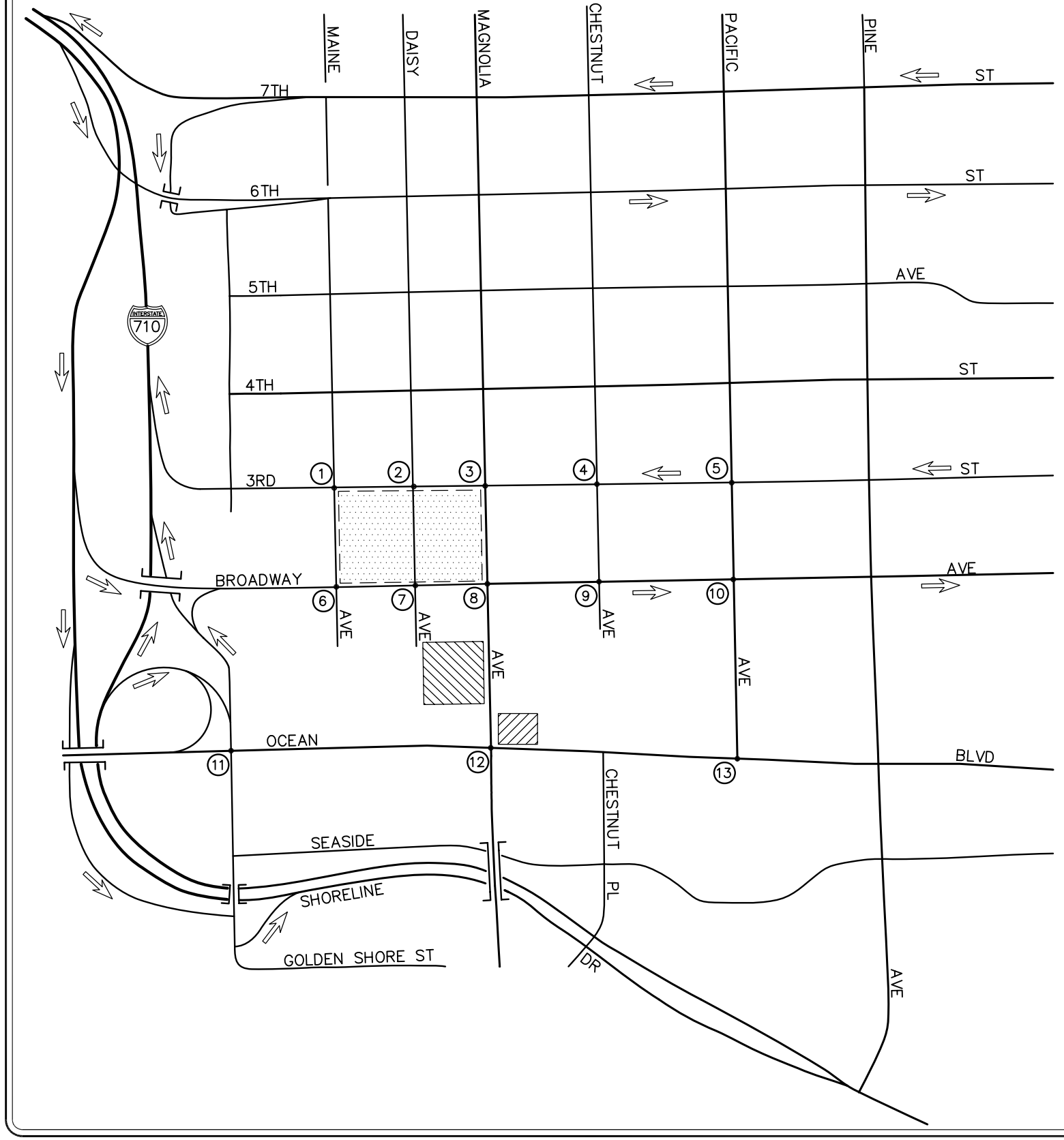
= EXISTING COURTHOUSE

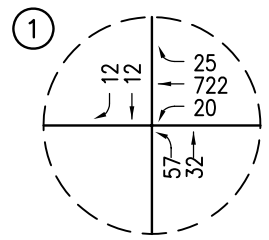
= PROJECT SITE

FIGURE 6-4

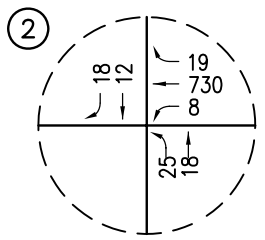
YEAR 2012 AM PEAK HOUR BACKGROUND TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH

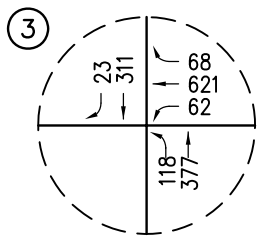




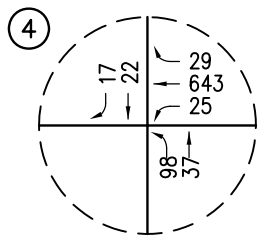
MAINE AVE @ 3RD ST



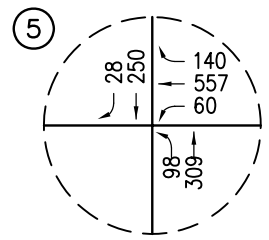
DAISY AVE @ 3RD ST



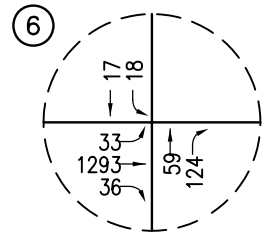
MAGNOLIA AVE @ 3RD ST



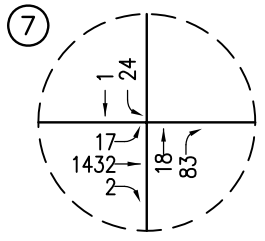
CHESTNUT AVE @ 3RD ST



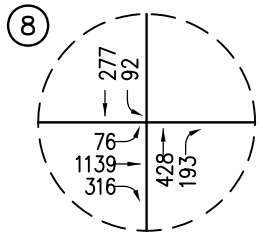
PACIFIC AVE @ 3RD ST



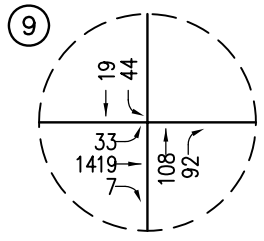
MAINE AVE @ BROADWAY AVE



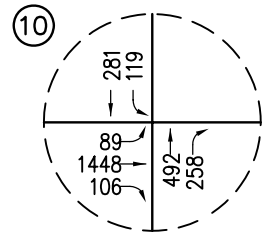
DAISY AVE @ BROADWAY AVE



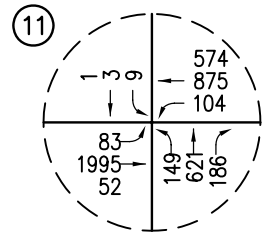
MAGNOLIA AVE @ BROADWAY AVE



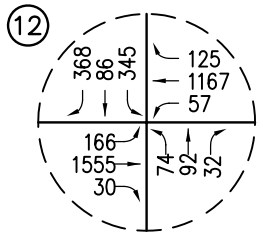
CHESTNUT AVE @ BROADWAY AVE



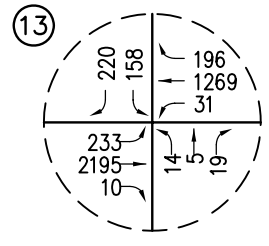
PACIFIC AVE @ BROADWAY AVE



GOLDEN AVE @ OCEAN BLVD



MAGNOLIA AVE @ OCEAN BLVD



PACIFIC AVE @ BROADWAY AVE

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N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

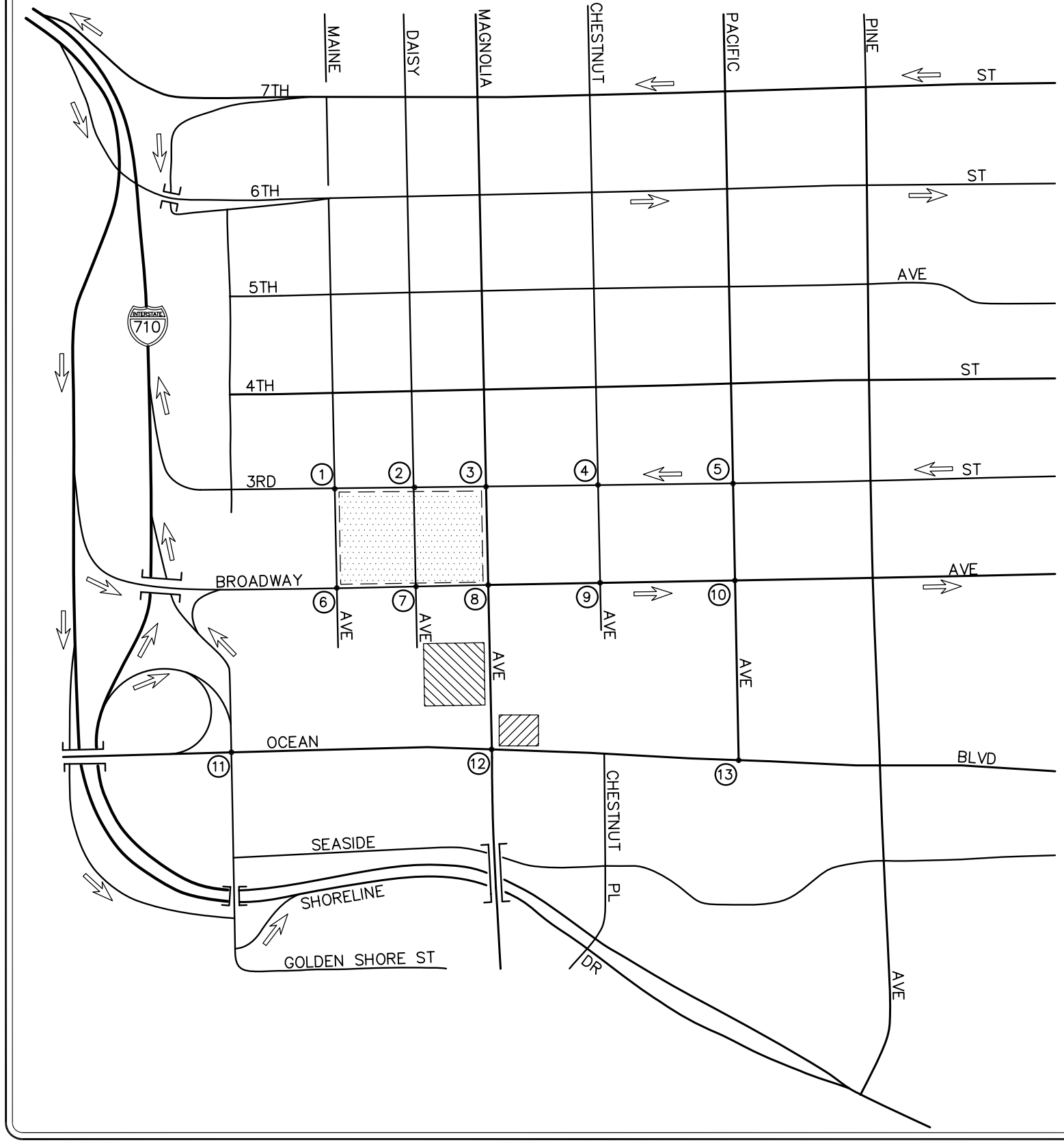
= EXISTING COURTHOUSE

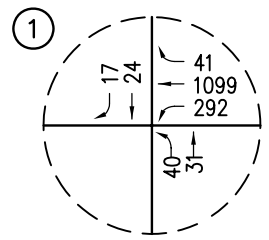
= PROJECT SITE

FIGURE 6-5

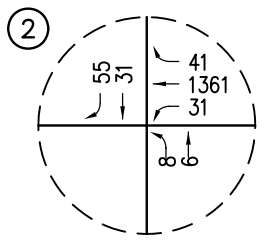
YEAR 2012 PM PEAK HOUR BACKGROUND TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH

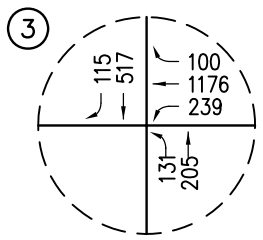




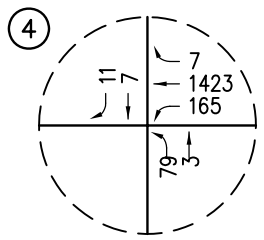
MAINE AVE @ 3RD ST



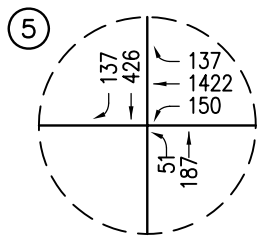
DAISY AVE @ 3RD ST



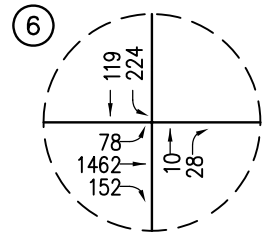
MAGNOLIA AVE @ 3RD ST



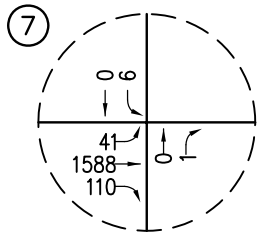
CHESTNUT AVE @ 3RD ST



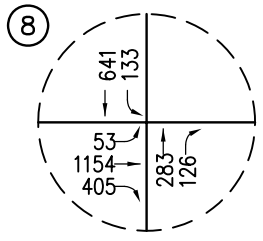
PACIFIC AVE @ 3RD ST



MAINE AVE @ BROADWAY AVE



DAISY AVE @ BROADWAY AVE



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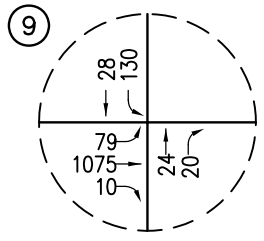
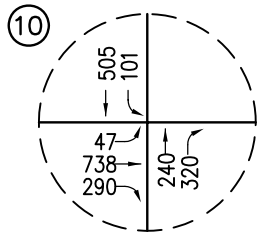
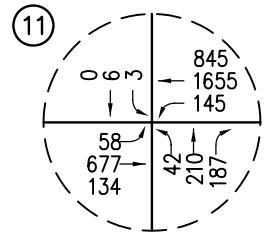


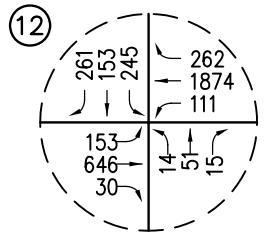
CHESTNUT AVE @ BROADWAY AVE



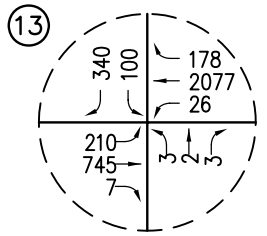
PACIFIC AVE @ BROADWAY AVE



GOLDEN AVE @ OCEAN BLVD



MAGNOLIA AVE @ OCEAN BLVD



PACIFIC AVE @ BROADWAY AVE

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = POTENTIAL STUDY INTERSECTION

= MAGNOLIA PARKING STRUCTURE

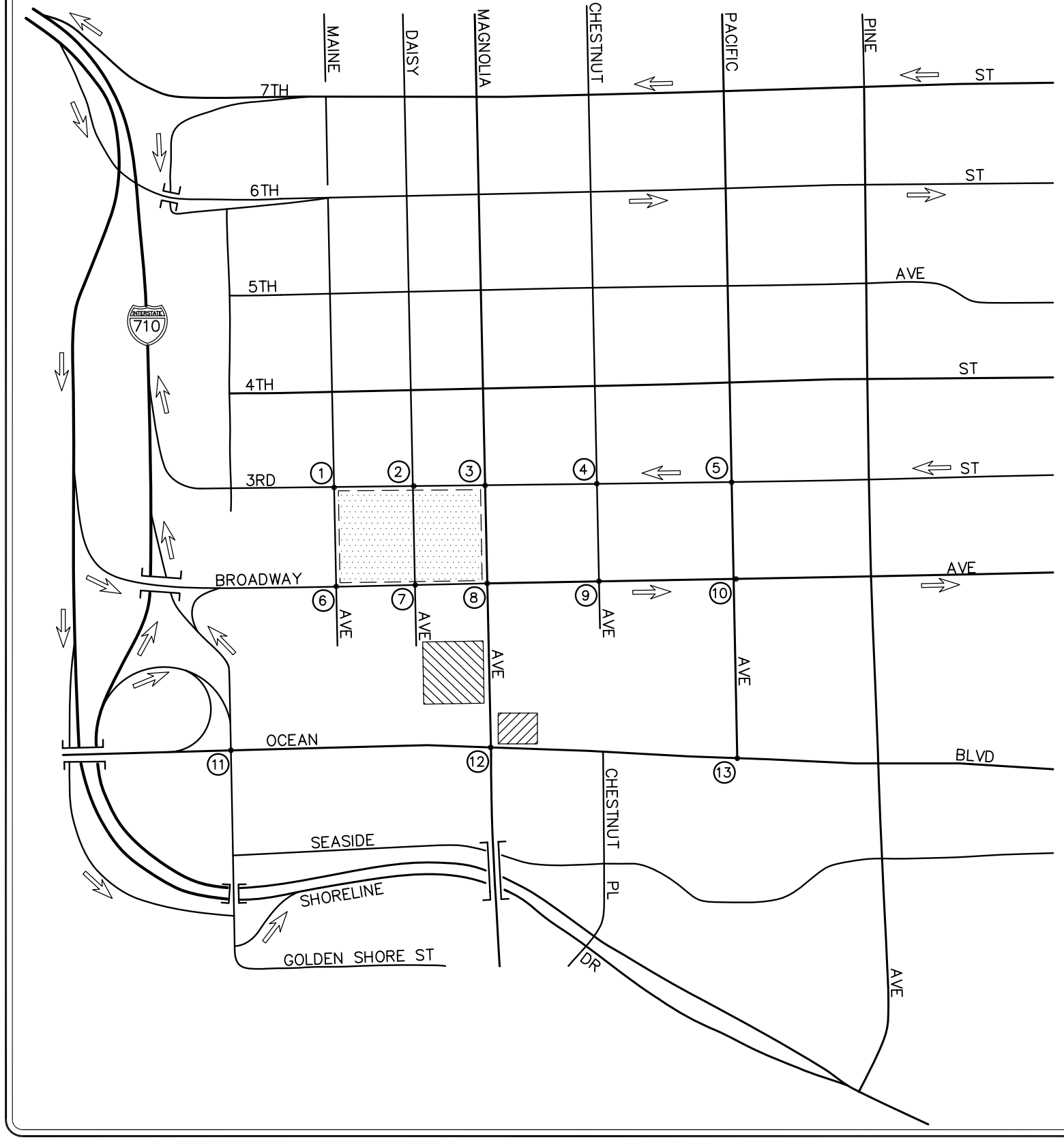
= EXISTING COURTHOUSE

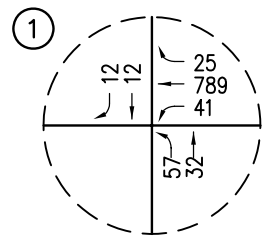
= PROJECT SITE

FIGURE 6-6

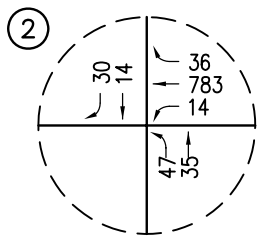
YEAR 2012 AM PEAK HOUR BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH

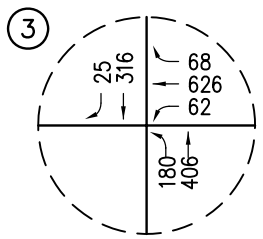




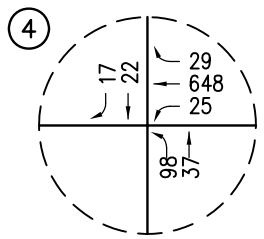
MAINE AVE @ 3RD ST



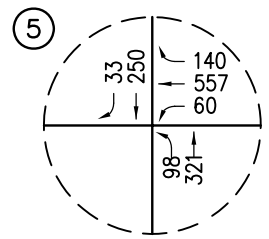
DAISY AVE @ 3RD ST



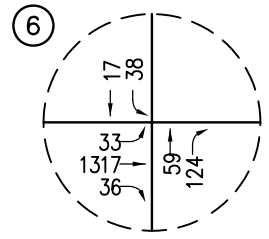
MAGNOLIA AVE @ 3RD ST



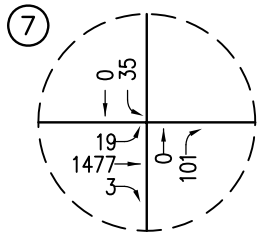
CHESTNUT AVE @ 3RD ST



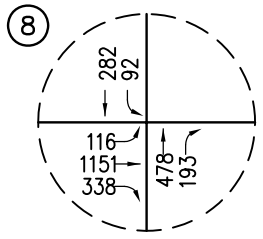
PACIFIC AVE @ 3RD ST



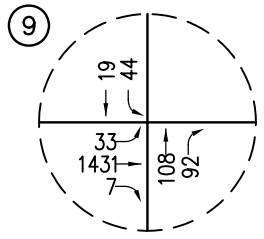
MAINE AVE @ BROADWAY AVE



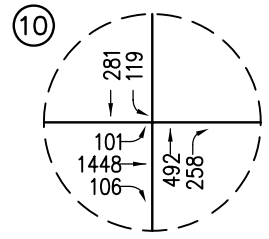
DAISY AVE @ BROADWAY AVE



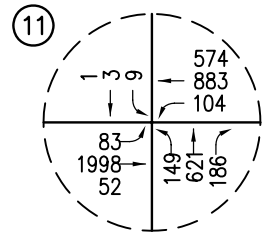
MAGNOLIA AVE @ BROADWAY AVE



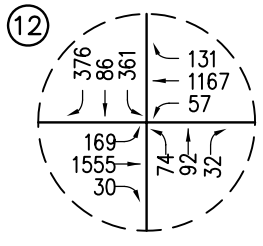
CHESTNUT AVE @ BROADWAY AVE



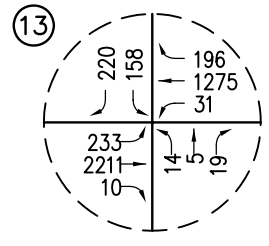
PACIFIC AVE @ BROADWAY AVE



GOLDEN AVE @ OCEAN BLVD



MAGNOLIA AVE @ OCEAN BLVD



PACIFIC AVE @ BROADWAY AVE

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

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= EXISTING COURTHOUSE

= PROJECT SITE

FIGURE 6-7

YEAR 2012 PM PEAK HOUR BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

NEW LONG BEACH COURTHOUSE, LONG BEACH

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

7.1 Impact Criteria and Thresholds

The relative impact of the added Project traffic volumes generated by the proposed Project during the AM and PM peak hours was evaluated based on analysis of future operating conditions at the thirteen (13) key study intersections, without, then with, the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the project at each key intersection was then evaluated using the City's LOS standards and traffic impact criteria defined below.

7.1.1 *LOS Standards and Impact Criteria*

Within the City of Long Beach, impacts to local and regional transportation systems are considered significant if:

- An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained; and

- The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a "significant" adverse traffic impact is defined as a project that: adds 2% of more traffic delay (seconds per vehicle) at an intersection operating LOS E or F.

7.2 Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed using the ICU and HCM methodologies:

A. Existing Traffic Conditions;
B. Year 2012 Future Background Traffic Conditions (existing plus ambient growth to Year 2012 at 1% per year plus related projects traffic);
C. Year 2012 Future Background Traffic Conditions plus the Project; and
D. Scenario (C) with Mitigation, if necessary.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Year 2012 Traffic Conditions

Table 8-1 summarizes the peak hour Level of Service results at the key study intersections for the 2012 horizon year. The first column (1) of ICU/LOS and HCM/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-4*). The second column (2) lists future Year 2012 background traffic conditions (existing plus ambient growth traffic plus related projects traffic) based on existing intersection geometry, but without any traffic generated by the proposed Project. The third column (3) presents future forecast traffic conditions with the addition of traffic generated by the proposed Project. The fourth column (4) shows the increase in ICU or HCM value due to the added peak hour project trips and indicates whether the traffic associated with the project will have a significant impact based on the LOS standards and the significance impact criteria defined in this report. The fifth column (5) presents the intersection operating conditions based on the total anticipated near-term (Year 2012) traffic volumes and planned and/or recommended intersection improvements.

Please note that the ICU/LOS values or HCM/LOS values presented in *Table 8-1* take into consideration the re-routed traffic associated with closure of Daisy Avenue, between 3rd Street and Broadway, to through traffic as proposed by the Project. Refer to the footnotes in *Table 8-1* for the key study intersections affected by the closures.

8.1.1 *Year 2012 Background Traffic Conditions*

An analysis of Year 2012 background traffic conditions indicates that one intersection is forecast to operate an adverse LOS in the Year 2012. The intersection, reported below, is forecast to operate at LOS E or LOS F during the peak hour indicated:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
2. Daisy Avenue at 3rd Street	36.1 s/v	E	--	--

The remaining 12 key study intersections are expected to continue to operate at acceptable service levels (LOS D or better) during the weekday AM and PM peak commute hours in the Year 2012.

8.1.2 *Year 2012 Background Plus Project Conditions*

Review of Columns 3 and 4 of *Table 8-1* indicate that traffic associated with the proposed Project will not have a significant (cumulative) traffic impact at any of the 13 study intersections when compared to the LOS standards and the significant traffic impact criteria defined in this report.

Please note even with the implementation of the "3rd Street Protected Bike Lane Plan", which will result in a reduction in the number of westbound through lanes on 3rd Street from three lanes to two lanes, the intersection of Magnolia Avenue/3rd Street, Chestnut Avenue/3rd Street and Pacific Avenue/3rd Street will continue to operate at LOS D or better (See Column 5 of *Table 8-1*).

TABLE 8-1

YEAR 2012 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2012 Background Traffic Conditions		(3) Year 2012 Plus Project Traffic Conditions		(4) Project Significant Impact[9]		(5) Year 2012 With Improvements	
		ICU / Delay (s/v)	LOS	ICU / Delay (s/v)	LOS	ICU / Delay (s/v)	LOS	Change in ICU / Delay	Yes/No	ICU / Delay (s/v)	LOS
1. Maine Avenue at 3rd Street	AM	0.457	A	0.503	A	0.506	A[10]	0.003	No	--	--
	PM	0.343	A	0.385	A	0.406	A	0.021	No	--	--
2. Daisy Avenue at 3rd Street[11]	AM	28.5 s/v	D	**36.1 s/v**	**E**	25.8 s/v	D[10]	0.0[12] s/v	No	--	--
	PM	12.4 s/v	B	13.5 s/v	B	15.7 s/v	C	2.2 s/v	No	--	--
3. Magnolia Avenue at 3rd Street	AM	0.630	B	0.706	C	0.745	C[10]	0.039	No	0.828	D[13]
	PM	0.461	A	0.542	A	0.562	A	0.020	No	0.621	B
4. Chestnut Avenue at 3rd Street	AM	0.456	A	0.491	A	0.494	A	0.003	No	0.608	B[13]
	PM	0.303	A	0.330	A	0.331	A	0.001	No	0.397	A
5. Pacific Avenue at 3rd Street	AM	0.568	A	0.640	B	0.640	B	0.000	No	0.802	D[13]
	PM	0.367	A	0.434	A	0.434	A	0.000	No	0.507	A
6. Maine Avenue at Broadway Avenue	AM	0.500	A	0.531	A	0.640	B[10]	0.109	No	--	--
	PM	0.443	A	0.494	A	0.510	A	0.016	No	--	--

Notes:

Bold ICU/LOS values indicate adverse service levels based on City LOS standards.

[9] Significant project impact is defined as a 0.020 or greater increase in ICU value of a signalized intersection or a 2% or more increase in delay at an unsignalized location where the final LOS is E or F.

[10] The LOS values for this key study intersection represents anticipated operating conditions with closure of Daisy Avenue, between 3rd Street and Broadway, to through traffic (Project access only is assumed) Traffic in the immediate area were re-routed to account for this proposed street closure.

[11] Intersection is unsignalized.

[12] Theoretical negative Project "increases" (that can result with the ICU method) reported as 0.0. Represents anticipated LOS with the vacation of Daisy Avenue, between 3rd Street and Broadway. Access through the project site limited to "project only" traffic.

[13] Represents anticipated LOS with implementation of the "3rd Street Protected Bike Lane Plan", which will result reduce the number of westbound through lanes from three lanes to two lanes.

TABLE 8-1 (CONTINUED)

YEAR 2012 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2012 Background Traffic Conditions		(3) Year 2012 Plus Project Traffic Conditions		(4) Project Significant Impact[14]		(5) Year 2012 With Improvements	
		ICU / Delay (s/v)	LOS	ICU / Delay (s/v)	LOS	ICU / Delay (s/v)	LOS	Change in ICU/ Delay	Yes/No	ICU / Delay (s/v)	LOS
7. Daisy Avenue at Broadway Avenue	AM	0.405	A	0.435	A	0.372	A[15]	0.000[16]	No	--	--
	PM	0.325	A	0.373	A	0.388	A	0.015	No	--	--
8. Magnolia Avenue at Broadway Avenue	AM	0.523	A	0.580	A	0.595	A[15]	0.015	No	--	--
	PM	0.480	A	0.545	A	0.571	A	0.026	No	--	--
9. Chestnut Avenue at Broadway Avenue	AM	0.376	A	0.406	A	0.407	A	0.001	No	--	--
	PM	0.443	A	0.491	A	0.494	A	0.003	No	--	--
10. Pacific Avenue at Broadway Avenue	AM	0.485	A	0.531	A	0.532	A	0.001	No	--	--
	PM	0.654	B	0.727	C	0.730	C	0.003	No	--	--
11. Golden Shore St./Golden Ave. at Ocean Boulevard	AM	0.616	B	0.703	C	0.703	C	0.000	No	--	--
	PM	0.759	C	0.835	D	0.835	D	0.000	No	--	--
12. Magnolia Avenue at Ocean Boulevard	AM	0.640	B	0.752	C	0.758	C	0.006	No	--	--
	PM	0.682	B	0.742	C	0.747	C	0.005	No	--	--
13. Pacific Avenue at Ocean Boulevard	AM	0.689	B	0.764	C	0.767	C	0.003	No	--	--
	PM	0.632	B	0.672	B	0.675	B	0.003	No	--	--

[14] Significant project impact is defined as a 0.020 or greater increase in ICU value of a signalized intersection or a 2% or more increase in delay at an unsignalized location where the final LOS is E or F.

[15] The LOS values for this key study intersection represents anticipated operating conditions with closure of Daisy Avenue, between 3rd Street and Broadway, to through traffic (Project access only is assumed) Traffic in the immediate area were re-routed to account for this proposed street closure.

[16] Theoretical negative Project "increases" (that can result with the ICU method) reported as 0.0. Represents anticipated LOS with the vacation of Daisy Avenue, between 3rd Street and Broadway. Access through the project site limited to "project only" traffic.

9.0 AREA-WIDE IMPROVEMENTS

For those intersections where projected traffic volumes are expected to result in unacceptable operating conditions, this report recommends (identifies) improvement measures that change the intersection geometry to increase capacity. These capacity improvements involve roadway widening, re-striping to reconfigure (add lanes) to specific approaches of a key intersection and/or peak hour turn restrictions. The identified improvements are expected to:

- mitigate the impact of existing traffic, project traffic and future non-project (ambient traffic growth and cumulative project) traffic, and
- improve Levels of Service to an acceptable range and/or to pre-project conditions.

9.1 Year 2012 Planned Improvements

Based on research at the City of Long Beach, the following planned improvements, which are associated with the "3rd Street Protected Bike Lane Plan" have been identified and are included in Year 2012 conditions.

- ***3rd Street Protected Bike Lane Plan:*** Re-stripe 3rd Street, between Pine Avenue and Magnolia Avenue to provide two westbound through lanes, on-street parking on the north side of 3rd Street, an on-street bike lane and separate westbound left-turn lanes at Pine Avenue, Pacific Avenue, Cedar Avenue, Chestnut Avenue and Magnolia Avenue (Source: City of Long Beach Department of Public Works).

9.2 Project-Specific Improvements

The results of the intersection capacity analyses summarized in *Table 8-1* indicates that the proposed Project is not expected to have a significant impact at any of the key study intersections. As there are no significant impacts, no traffic mitigation measures are required or recommended for the study intersections.

10.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Description*** – The Project site is a roughly 5.9-acre parcel of land bounded by 3rd Street to the north, Magnolia Avenue on the east, West Broadway to the south, and Maine Avenue on the west in downtown Long Beach, California. The proposed New Long Beach Courthouse project involves the construction of an approximate 10-story building with a basement with approximately 545,000 square-feet of floor area. The proposed facility is intended to serve the State Superior Court, the County of Los Angeles, commercial office space, and other retail uses. The roughly 545,000 SF courthouse facility would consists of approximately 370,000 SF of floor area with 31 courtrooms for the Superior Court, approximately 80,000 SF for the County and 95,000 SF of commercial office and retail space for private agencies.

  The proposed Project would be designed to accommodate all of the operational functions of the existing superior courthouse, which is located at 415 West Ocean Boulevard. The Superior Court would generally maintain current patterns of use for 27 courtrooms and use the new courthouse's additional four courtrooms for criminal judicial proceedings. The Superior Court would relocate its staff and operations from the existing courthouse to the proposed new courthouse. County staff in the existing courthouse that interacts with the Superior Court would also move from the existing courthouse to the new courthouse. Staffing for the Superior Court would increase from 265 staff to 305 staff members, and the County would increase staffing by 15 percent from 260 staff to 299 staff members. The Superior Court would increase juror population by approximately 60 persons per day and visitor population by approximately 15 percent per day.

- ***Study Scope*** – The following thirteen intersections were selected for detailed peak hour level of service analyses under Existing (Year 2008) Traffic Conditions, Year 2012 Background Traffic Conditions and Year 2012 Future Background plus Project Traffic Conditions:

  1. Maine Avenue at 3rd Street (Signal)
  2. Daisy Avenue at 3rd Street (Two-Way Stop Control)
  3. Magnolia Avenue at 3rd Street (Signal)
  4. Chestnut Avenue at 3rd Street (Signal)
  5. Pacific Avenue at 3rd Street (Signal)
  6. Maine Avenue at Broadway (Signal)
  7. Daisy Avenue at Broadway (Signal)
  8. Magnolia Avenue at Broadway (Signal)
  9. Chestnut Avenue at Broadway (Signal)
  10. Pacific Avenue at Broadway Avenue (Signal)
  11. Golden Shore Street/Golden Avenue at Ocean Boulevard (Signal)
  12. Magnolia Avenue at Ocean Boulevard (Signal)
  13. Pacific Avenue at Ocean Boulevard (Signal)

The analysis is focused on assessing potential traffic impacts during the morning and evening commute peak hours (between 7:00-9:00 AM, and 4:00-6:00 PM) on a typical weekday.

- ***Level of Service (LOS) Standards and Significant Impact Criteria*** - Impacts to local and regional transportation systems are considered significant if:
  - An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained; and
  - The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a "significant" adverse traffic impact is defined as a project that adds 2% or more to traffic delay (seconds per vehicle) at an intersection operating LOS E or F.

- ***Existing Traffic Conditions*** – All of the 13 key study intersections currently operate at acceptable LOS D or better during the AM and PM peak hours.

- ***Project Trip Generation*** – On a typical weekday, the proposed Project is forecast to generate 1,920 daily trips, with 182 trips (156 inbound, 26 outbound) produced in the AM peak hour and 227 trips (60 inbound, 167 outbound) produced in the PM peak hour.

- ***Related Projects Trip Generation*** – Eighteen (18) related projects were considered as part of the cumulative traffic analysis. On a typical weekday, the four related projects are expected to generate a combined total of 34,609 daily trips on a "typical" weekday, with 2,405 trips (892 inbound and 1,513 outbound) forecast during the AM peak hour, and 2,835 trips (1,636 inbound and 1,199 outbound) during the PM peak hour.

- ***Year 2012 Future Traffic Conditions Plus Project*** – The results of traffic analysis indicates the proposed Project will not significantly impact any of the thirteen (13) key study intersections, when compared to the City of Long Beach LOS standards and significant impact criteria specified in this report. All key study intersections are forecast to operate at LOS D or better during the AM peak hour and PM peak hour with the addition of the proposed Project. As there are no project significant impacts, no project-specific traffic mitigation measures are required or recommended for the study intersections.