Appendix G
Traffic Report

9.3.24
Report accepted as submitted.

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August 27, 2024

Ms. Vasanthi Okuma
Fountainhead Development
1401 Quail Street, Suite 100
Newport Beach, CA 92660

LLG Reference: 2.23.4748.1

Subject: **Focused Traffic Impact Analysis for the Proposed Starbucks and McDonald's Project (Revision to March 14, 2024 Report)**
Hesperia, California

Dear Ms. Okuma:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Focused Traffic Impact Analysis for the proposed Starbucks and McDonald's Project (herein referred to as "Project"), generally located on the southwest corner of Seventh Avenue and Main Street in the City of Hesperia, California. ***Figure 1*** presents a Vicinity Map, which illustrates the general location of the project site and depicts the surrounding street system and ***Figure 2*** presents an existing site aerial.

The Focused Traffic Impact Analysis for the proposed Project will satisfy the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS), July 2020.* The Scope of Work for this focused traffic impact analysis, which is included in ***Appendix A***, was developed in conjunction with City of Hesperia staff. Included in this focused traffic impact analysis are the following:

1) Existing traffic counts,
2) Estimated Project traffic generation/distribution/assignment,
3) AM and PM peak hour analyses for existing traffic conditions,
4) AM and PM peak hour analyses for Year 2025 traffic conditions without and with the proposed Project,
5) Recommended Improvements (if any),
6) Site access evaluation,
7) Intersection queuing evaluation, and
8) Vehicle Miles Traveled (VMT) screening assessment.

Our method of analysis, findings, and recommendations are detailed in the following sections of this letter report.

PROJECT DESCRIPTION

Per the *City of Hesperia General Plan Land Use,* dated August 15, 2017, the Project site is classified as Neighborhood Commercial (NC). The Project site is currently occupied with an approximately 1,100 square-foot (SF) used car dealership. ***Figure 3*** presents the proposed site plan for the proposed Project, prepared by Greenberg Farrow. As shown in *Figure 3,* the proposed Project will consist of the development of 1,263 SF Starbucks coffee shop with drive-through window and no indoor seating and a 3,684 SF McDonald's restaurant with drive-through window, to be completed and occupied by Year 2025.

Access to the Project site will be provided via one (1) existing right-in/right-out driveway along Main Street and one (1) full-movement unsignalized driveway along Walnut Street.

Project Specific Site Access Improvements

Figure 4 presents the proposed Project specific improvements to address queuing requirements along Seventh Avenue as a result of the traffic analyses upon completion of the proposed Project. The Project will restripe Seventh Avenue to extend the northbound left-turn pocket at the intersection with Main Street to provide a storage of 200 feet and a southbound left-turn pocket storage of 50 feet at the intersection with Walnut Street. The Project will also restripe to provide a Class II Bike Lane along the Project frontage on the west side of Seventh Avenue.

STUDY AREA

The following three (3) intersections represent the study intersections to be evaluated in the Focused Traffic Impact Analysis:

1. Seventh Avenue at Main Street
2. Seventh Avenue at Walnut Street
3. Seventh Avenue at Orange Street

EXISTING TRAFFIC CONDITIONS

Existing Lane Geometrics

Figure 5 presents an inventory of the existing roadway conditions for the three (3) key study intersections. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

Existing Public Transit

The Victor Valley Transit Authority (VVTA) operates Bus Route 68 within the vicinity of the Project site (i.e. along Seventh Avenue). There is an existing bus stop located on the eastern Project frontage along Seventh Avenue. Bus Route 68 operates on weekdays and weekends through Hesperia between the Post Office and Super Target. On both weekdays and weekends, Route 68 has approximate headways of 60 minutes in the inbound and outbound directions.

Existing Pedestrian and Bicycle Facilities

Pedestrian connection to the surrounding areas as well as nearby public transit stops is currently provided via existing sidewalks on the northern Project frontage on Main Street and partially along the eastern Project frontage on Seventh Avenue.

The Project will reconstruct and/or complete the sidewalk along the Project frontage on Seventh Avenue (i.e. the west side of Seventh Avenue). The Project will also construct the sidewalk along the Project frontage on Walnut Street (i.e. the north side of Walnut Street).

The following bicycle facilities are currently located within the vicinity of the Project site:

- A Class II Bicycle Lane currently exists along Seventh Avenue, north of Main Street (i.e. on both sides of the street).

Consistent with the *City of Hesperia Non-Motorized Transportation Plan,* the Project will construct:

- A Class II Bicycle Lane along the Project frontage on Seventh Avenue (i.e. the west side of Seventh Avenue).

Existing Traffic Volumes

AM peak hour and PM peak hour traffic counts were collected by Counts Unlimited, Inc. in November 2023 at the intersections of Seventh Avenue at Main Street and Seventh Avenue at Walnut Street and in January 2024 at the intersection of Seventh

Avenue at Orange Street in order to develop the baseline peak hour traffic volume data for the intersection analysis. ***Figures 6*** and *7* illustrate the existing AM and PM peak hour traffic volumes at the three (3) key study intersections, respectively.

Appendix B contains the detailed peak hour traffic count sheets for the three (3) key study intersections.

LEVEL OF SERVICE METHODOLOGY

In conformance with City of Hesperia requirements, AM and PM peak hour operating conditions for the unsignalized intersections were evaluated using the *Highway Capacity Manual 7th Edition* (HCM 7) methodology.

Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)
Based on the HCM operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road.

In Chapter 19 of the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay.* Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In contrast, in previous versions of the HCM (1994 and earlier), delay included only stopped delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 1***.

Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)
The HCM 7 unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. 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 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 2***.

LEVEL OF SERVICE STADARDS AND IMPACT CRITERIA

According to the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS), July 2020,* the City's Level of Service (LOS) standard is LOS D for all intersections.

PROJECT TRAFFIC CHARACTERISTICS

Project Trip 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 are typically found in the 11th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2021].

Table 3 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and presents the forecast daily and peak hour project traffic volumes for a "typical" weekday. As shown in the upper portion of *Table 3*, the trip generation potential for the proposed Project was estimated using ITE Land Use Code 934: Fast Food Restaurant With Drive-Through Window and ITE Land Use 937: Coffee/Donut Shop With Drive-Through Window trip rates. It should be noted that the existing used car dealership is forecast to generate minimal traffic and therefore has not been included as a trip credit on the site to remain conservative.

As shown at the bottom of *Table 3*, the proposed Project is expected to generate 1,459 net daily trips, with 125 net trips (64 inbound, 61 outbound) produced in the AM peak hour and 85 net trips (44 inbound, 41 outbound) produced in the PM peak hour on a "typical" weekday. It should be noted that the aforementioned overall trip generation includes adjustments for pass-by to account for trips that are already in the everyday traffic stream on the adjoining streets (i.e. Main Street and Seventh Avenue) and will stop as they pass by the Project site as a matter of convenience on their path to another destination. The pass-by reduction factors utilized are summarized in the footnotes of *Table 3*.

Trip Distribution and Assignment

Figure 8 presents the traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e. Main Street, etc.)
- expected localized traffic flow patterns based on adjacent street channelization, and presence of traffic signals,
- ingress/egress availability at the Project site, and
- the location of existing Starbucks Coffee Shops and McDonald's restaurants in the area.

The anticipated AM and PM peak hour traffic volumes associated with proposed Project are presented in ***Figures 9*** and ***10***, respectively. The traffic volume assignments presented in *Figures 9* and *10* reflect the traffic distribution characteristics shown in *Figure 8* and the traffic generation forecast presented in *Table 3*.

FUTURE YEAR 2025 TRAFFIC CONDITIONS

Year 2025 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 cumulative 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 two percenter (2.0%) per year. Applied to existing Year 2023 traffic volumes results in a four percent (4.0%) growth in existing volumes to horizon Year 2025. It should be noted that the City of Hesperia indicated that no cumulative projects currently existing within two miles of the Project site.

Cumulative 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 (cumulative projects) has been researched at the City of Hesperia. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. The City of Hesperia indicated that no current cumulative projects currently exist within two miles of the Project site.

Year 2025 Traffic Volumes

Figures 11 and ***12*** illustrate the Year 2025 Without Project AM peak hour and PM peak hour traffic volumes. ***Figures 13*** and ***14*** illustrate the Year 2025 With Project AM peak hour and PM peak hour traffic volumes.

YEAR 2025 WITH PROJECT CAPACITY ANALYSIS

Table 4 summarizes the peak hour level of service results at the three (3) key study intersections for Year 2025 With Project traffic conditions. Review of column (1) of *Table 4* indicates that the three (3) key study intersections currently operate at acceptable LOS C or better during the AM and PM peak hours. Review of column (2) of *Table 4* indicates that the three (3) key study intersections are forecast to continue to operate in the Year 2025 at acceptable LOS C or better during the AM and PM peak hours. Review of columns (3) and (4) of *Table 4* indicates that traffic associated with proposed Project ***will not*** cause an operational deficiency at any of the three (3) key study intersections when compared to the LOS standards specified in this letter report. The three (3) key study intersections currently operate and are forecast to continue to operate in the Year 2025 at an acceptable LOS during the AM and PM peak hours with the addition of Project generated traffic to existing traffic and ambient growth traffic.

Appendix C contains the existing, Year 2025 Without Project, and Year 2025 With Project AM peak hour and PM peak hour HCM/LOS calculation worksheets for the three (3) key study intersections.

RECOMMENDED IMPROVEMENTS

The results of the Year 2025 With Project intersection capacity analyses presented previously in *Table 4* indicates that the proposed Project *will not* cause an operational deficiency at any of the three (3) key study intersections. Given that there are no adverse levels of service, no improvements are required under Year 2025 With Project traffic conditions.

SITE ACCESS EVALUATION

Capacity Analysis for Project Access Locations

Table 5 summarizes the intersection operations at the two (2) proposed Project driveways under Year 2025 With Project traffic conditions. *Table 5* shows that the proposed two (2) Project Driveways are forecast to operate at LOS C or better during

the AM and PM peak hours for Year 2025 With Project traffic conditions. As such, Project access will be adequate.

Appendix D contains the Year 2025 With Project AM peak hour and PM peak hour HCM/LOS calculation worksheets for the two (2) proposed Project driveways.

Internal Circulation Evaluation

The on-site circulation layout of the proposed Project as illustrated in *Figure 3* on an overall basis is adequate. Curb return radii have been confirmed and are generally adequate for small service/delivery (FedEx, UPS) vehicles, trash trucks and emergency vehicles.

INTERSECTION QUEUING EVALUATION

To address stacking/storage lengths at the key study intersections of Seventh Avenue at Main Street and Seventh Avenue at Walnut Street, a queuing evaluation was prepared based on projected Year 2025 With Project traffic volumes. ***Table 6*** presents the peak hour queuing analysis results for Year 2025 With Project traffic conditions at the intersections of Seventh Avenue at Main Street and Walnut Street with the implementation of the proposed Project specific improvements, which consists of restriping Seventh Avenue between Main Street and Walnut Street to provide 200 feet of northbound left turn storage at Main Street and 40 feet of southbound left turn storage at Walnut Street. As shown in *Table 6*, adequate storage is provided to accommodate the forecast 95th percentile queues under Year 2025 With Project traffic conditions at the two (2) key study intersections adjacent to the Project site.

SB 743 VEHICLE MILES TRAVELED (VMT) ASSESSMENT

On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines. Among the changes to the guidelines was the removal of vehicle delay and LOS from consideration for transportation impacts under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled.

Under the VMT methodology, screening is used to determine if a project will be required to conduct a detailed VMT analysis. The following section discusses the various screening methods outlined in the *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS),* dated July 2020, hereinafter referred to "VMT Guidelines", and outlines whether the Project will screen-out, either in its entirety, or partially based on individual land uses. Based on

the VMT Guidelines, the first step in evaluating a land use project's VMT impact is to perform an initial screening assessment. A project is presumed to have a less than significant impact on VMT if the project satisfies at least one of the VMT screening criteria. The VMT screening criteria and their applicability to the Project are discussed below.

Step 1: Transit Priority Area (TPA) Screening

The VMT guidelines state:

> *"Projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may **NOT** be appropriate if the project:*
>
> 1. *Has a Floor Area Ratio (FAR) of less than 0.75;*
> 2. *Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);*
> 3. *Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or*
> 4. *Replaces affordable residential units with a smaller number of moderate- or high-income residential units."*

- Based on the above, the proposed Project will not screen out under this criterion since it is not located within a Transit Priority Area per the San Bernardino County Transportation Authority (SBCTA) VMT screening tool.

Step 2: Low VMT Area Screening

The VMT Guidelines state:

> *"Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area…*

To identify if the project is in a low VMT-generating area, the analyst may review the SBCTA screening tool and ***comparing the appropriate baseline TAZ VMT to current County of San Bernardino VMT threshold of 32.7% VMT/Service Population****. Additionally, as noted above the analyst must identify if the project is consistent with the existing land use within that TAZ and use professional judgment that there is nothing unique about the project that would otherwise be mis-represented utilizing the data from the travel demand model."*

- Based on the above, the proposed Project will not screen out under this criterion since it is not located within a Low VMT area per the SBCTA VMT screening tool.

Step 3: Project Type Screening

The VMT Guidelines state:

"*Projects generating less than 110 daily vehicle trips*

- *This generally corresponds to the following "typical" development potentials:*
  - *11 single family housing units*
  - *16 multi-family, condominiums, or townhouse housing units*
  - *10,000 sq. ft. of office*

Local serving retail projects less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel.

In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- *Local-serving K-12 schools*
- *Local parks*
- *Day care centers*
- *Local-serving gas stations*
- *Local-serving banks*
- *Local-serving hotels (e.g. non-destination hotels)*

- *Local-serving medical*
- *Student housing projects on or adjacent to college campuses*
- *Local-serving assembly uses (places of worship, community organizations)*
- *Community institutions (public libraries, fire stations, local government)*
- *Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS*
- *Affordable or supportive housing*
- *Assisted living facilities*
- *Senior housing (as defined by HUD)*
    - *15,000 sq. ft. of light industrial*
    - *63,000 sq. ft. of warehousing*
    - *79,000 sq. ft. of high cube transload and short-term storage warehouse*

➢ Based on the above, the proposed Project will screen out under this criterion since it consists of 1,263 SF coffee shop with drive-through window and no indoor seating and 3,684 SF of fast food restaurant with drive-through window, both local-serving restaurant land uses under 50,000 SF.

Consistent with the City of Hesperia VMT Guidelines and based on the VMT screening methodology and findings outlined in this section, the proposed Project satisfies at least one of the VMT screening criteria (i.e. local serving retail projects less than 50,000 SF) and thus would screen out. Therefore, in accordance with the City of Hesperia VMT Guidelines, the proposed Project is exempt from the preparation of any further VMT analysis and may be presumed to have a less than significant CEQA-related transportation impact.

CONCLUSION

The results of the Focused Traffic Impact Analysis indicate that the proposed Starbucks and McDonald's Project will not impact the existing surrounding roadway network. The three (3) key study intersections are forecast to operate in the Year 2025 at acceptable levels of service during the AM peak hour and PM peak hour. In addition, the surrounding turn pockets are expected to provide adequate storage for the forecast queues with implementation of the proposed Project specific improvements, which consists of restriping Seventh Avenue between Main Street and Walnut Street to

provide 200 feet of northbound left turn storage at Main Street and 40 feet of southbound left turn storage at Walnut Street. Furthermore, the proposed two (2) Project Driveways are forecast to operate at LOS C or better during the AM and PM peak hours for Year 2025 With Project traffic conditions. As such, Project access will be adequate. Lastly, the Project can be screened from further VMT analysis and can be presumed to have a less than significant impact on VMT, per the City's guidelines.

We appreciate the opportunity to provide this Focused Traffic Impact Analysis. Should you have any questions, please call us at (949) 825-6175.

Sincerely,
Linscott, Law & Greenspan, Engineers

Keil D. Maberry, P.E.
Principal
California Registration: TR 1802

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SOURCE: OPEN STREETS

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FIGURE 1

VICINITY MAP

STARBUCKS AND MCDONALD'S, HESPERIA

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SOURCE: GOOGLE

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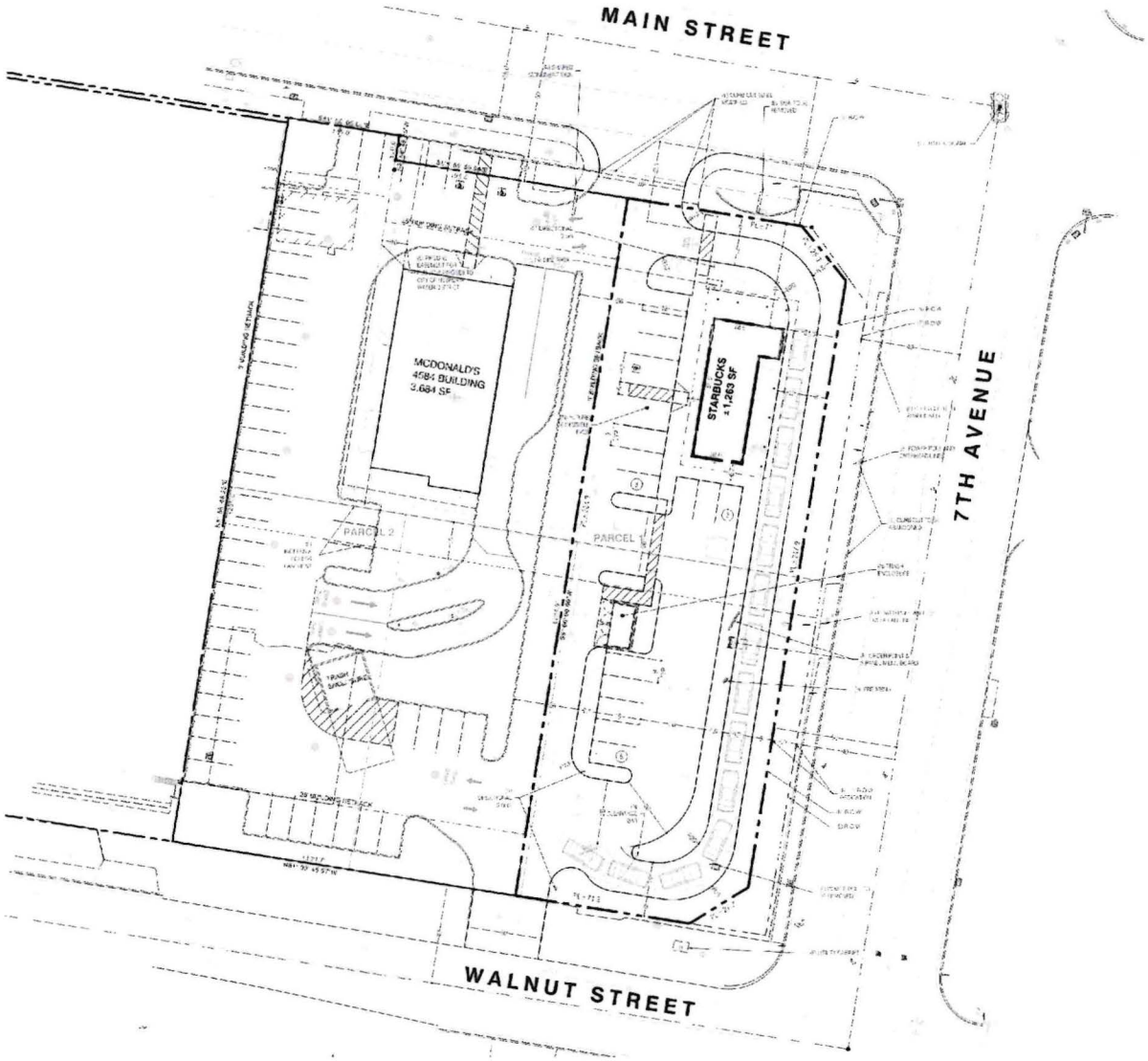
FIGURE 2

EXISTING SITE AERIAL

STARBUCKS AND MCDONALD'S, HESPERIA



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SOURCE: GREENBERG FARROW

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FIGURE 3

PROPOSED SITE PLAN

STARBUCKS AND MCDONALD'S, HESPERIA

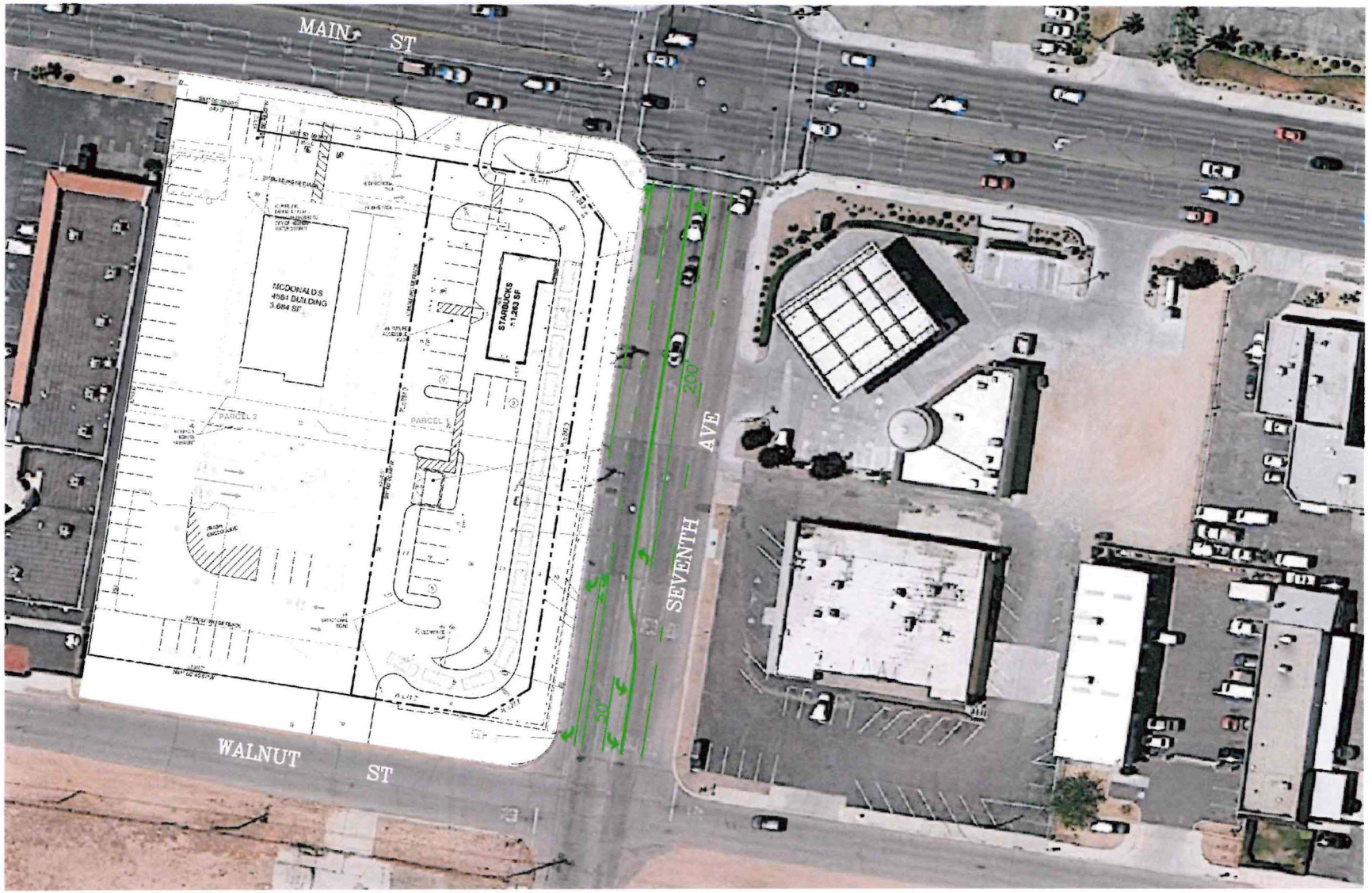

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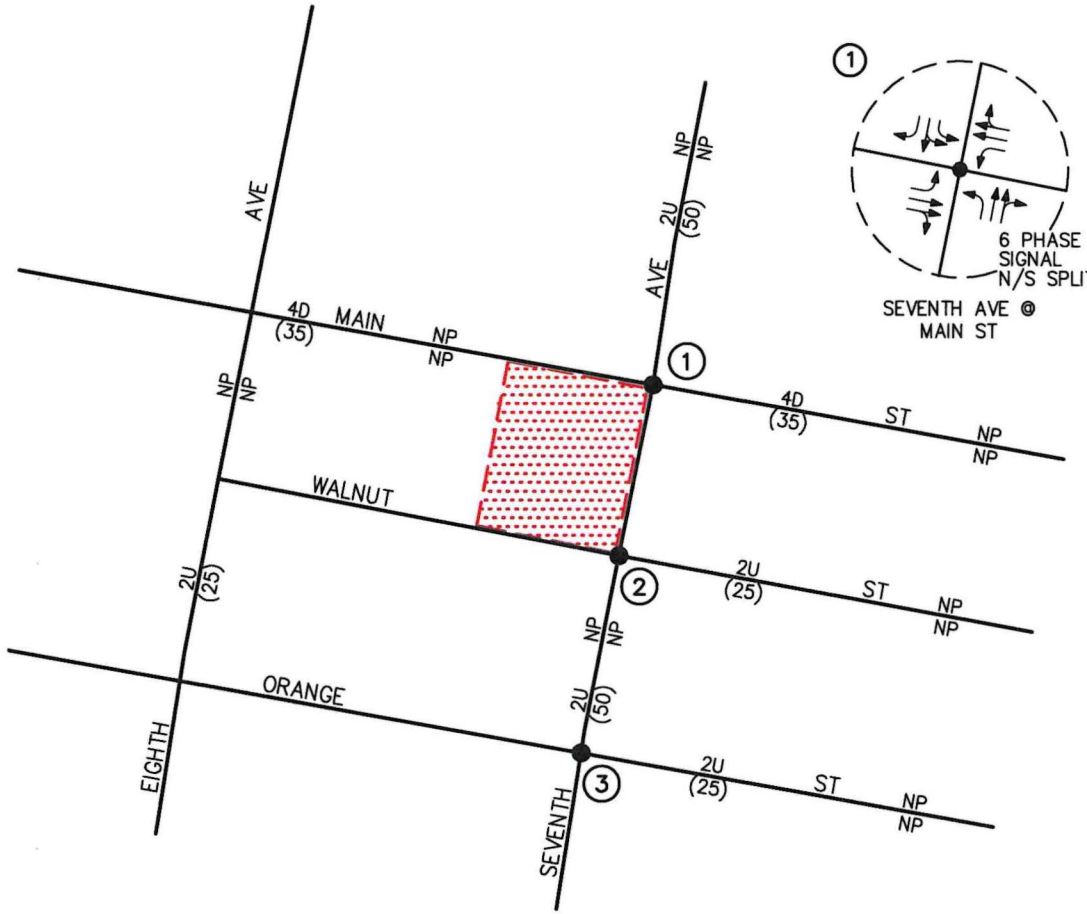
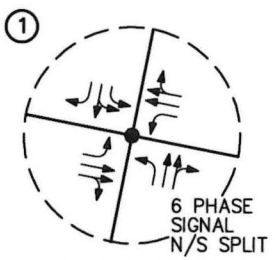
FIGURE 4

PROJECT SPECIFIC IMPROVEMENTS

STARBUCKS AND MCDONALD'S, HESPERIA





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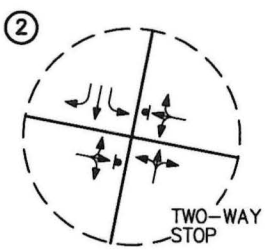

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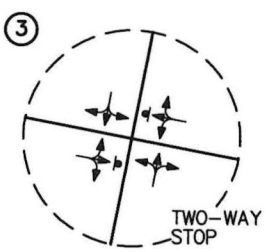

SEVENTH AVE @ ORANGE ST

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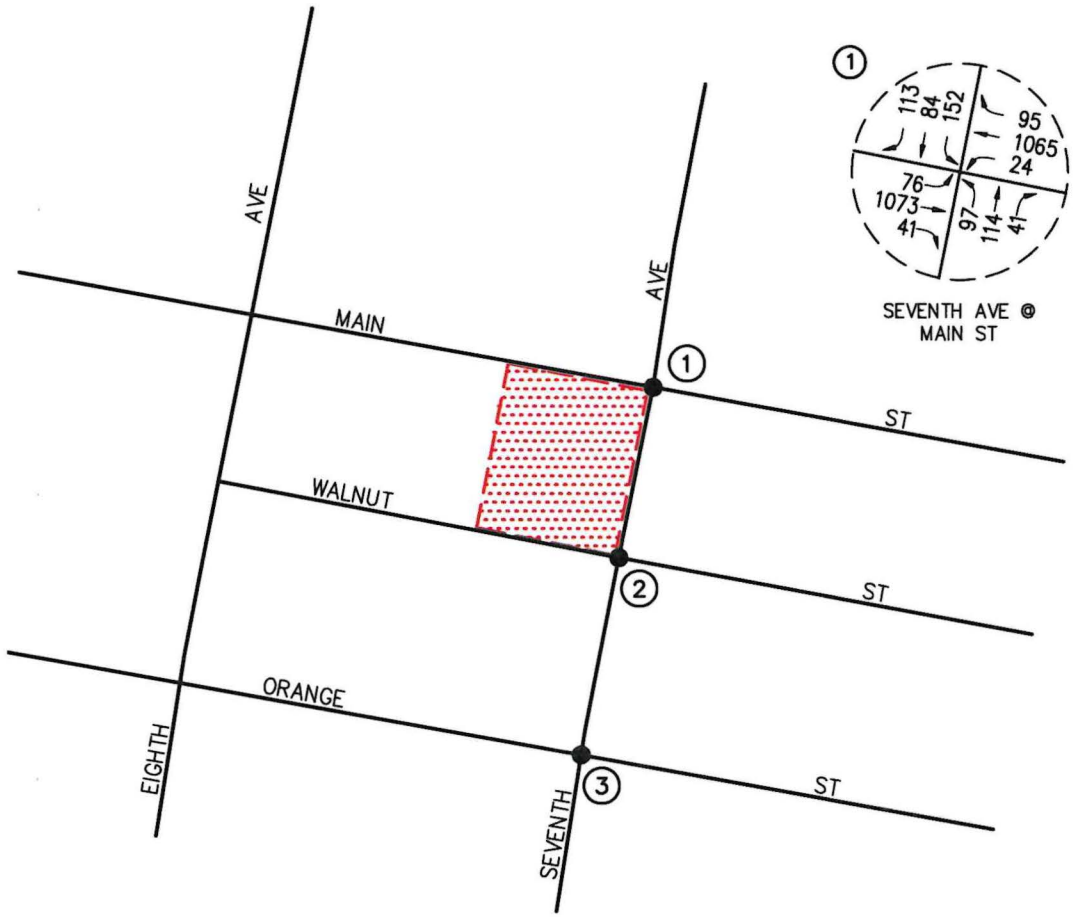
KEY

- ← = 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)
- ▭ = PROJECT SITE

FIGURE 5

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

STARBUCKS AND MCDONALD'S, HESPERIA



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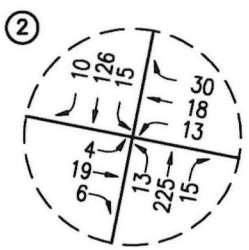

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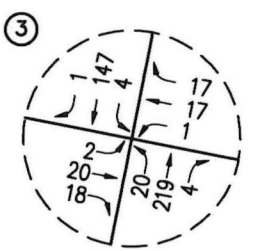

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(#) = STUDY INTERSECTION

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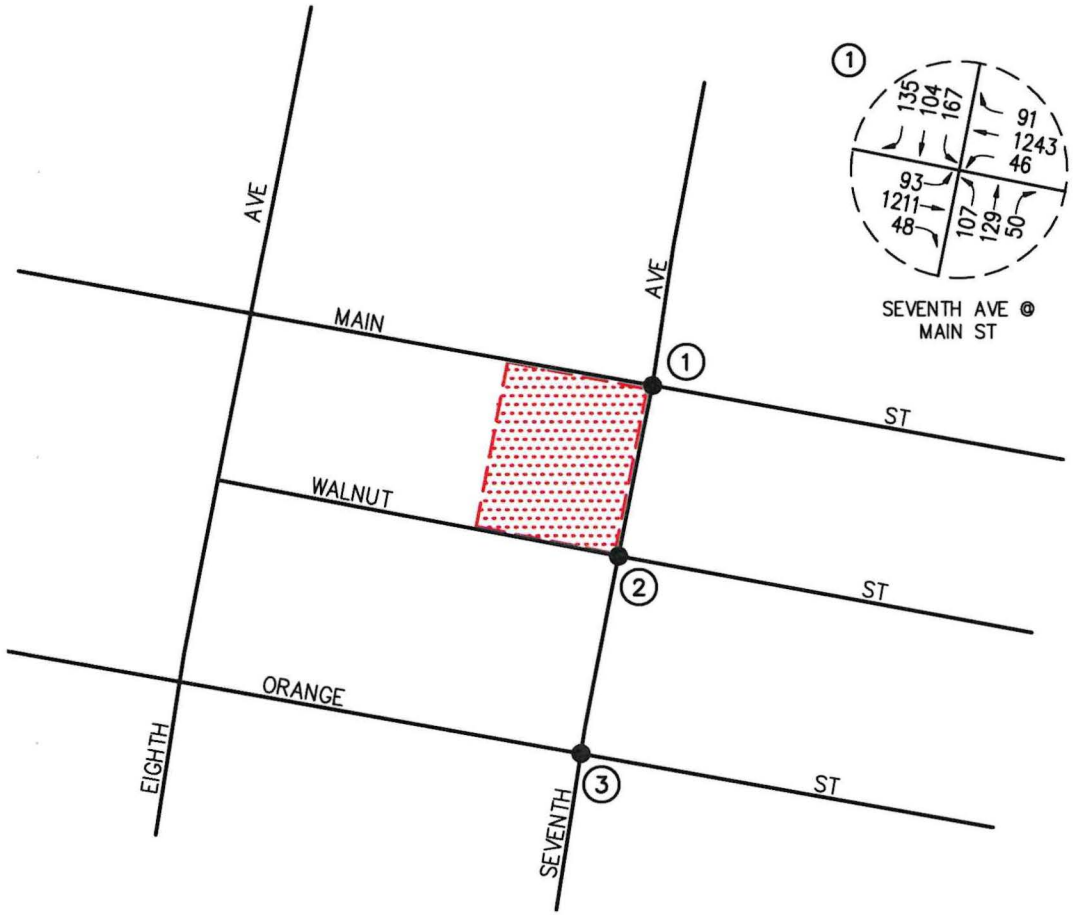
FIGURE 6

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

STARBUCKS AND MCDONALD'S, HESPERIA



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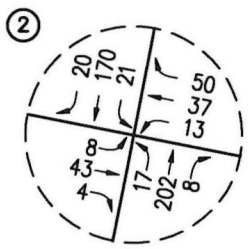

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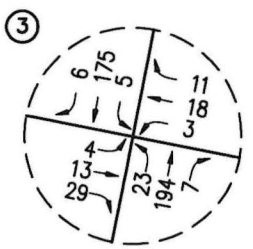

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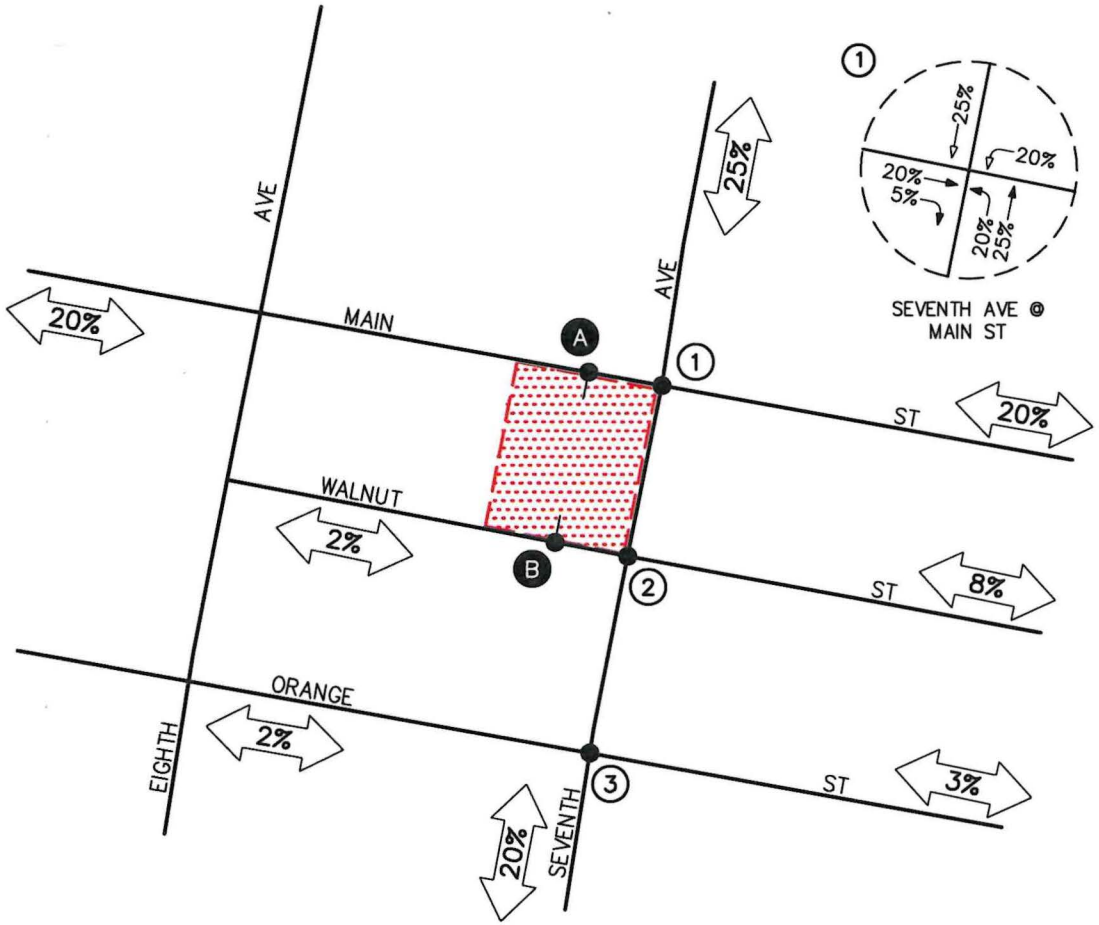
FIGURE 7

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

STARBUCKS AND MCDONALD'S, HESPERIA



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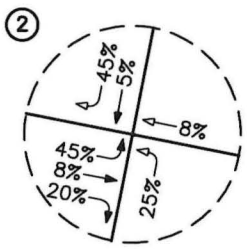

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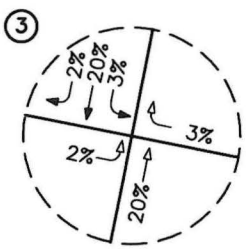
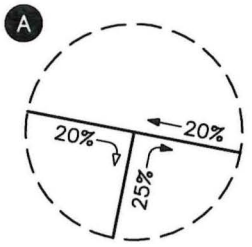


SEVENTH AVE @ ORANGE ST



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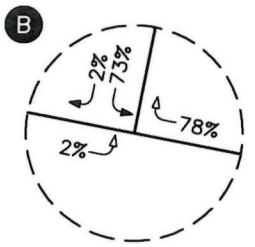


PROJECT DWY NO. 2 @ WALNUT ST

n:\4700\2234748 - starbucks, hesperio\dwg\4748 f-8.dwg LDP 10:04:08 02-29-2024 aguilar

LLG

N NO SCALE

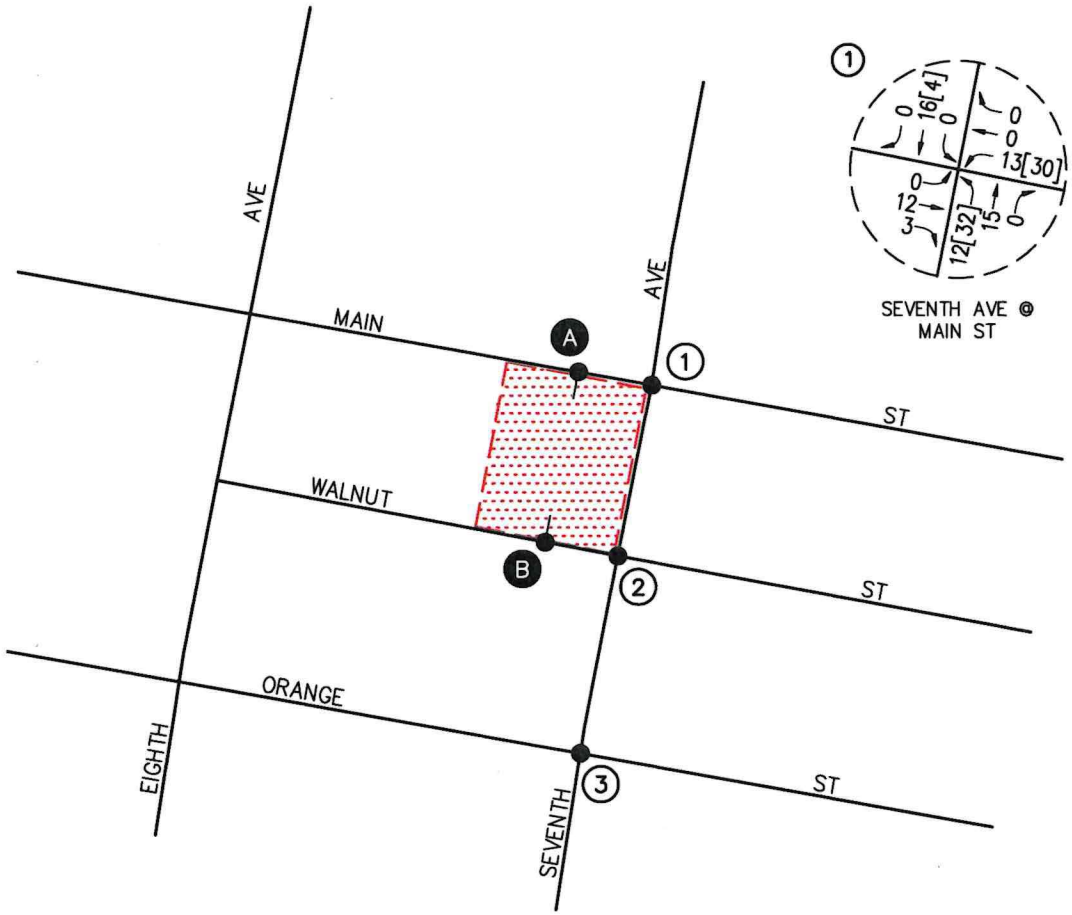
KEY

(#) = STUDY INTERSECTION
= INBOUND PERCENTAGE
= OUTBOUND PERCENTAGE
= PROJECT SITE

FIGURE 8

PROJECT DISTRIBUTION PATTERN

STARBUCKS AND MCDONALD'S, HESPERIA



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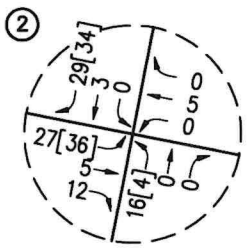

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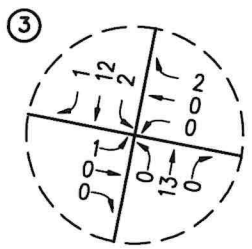

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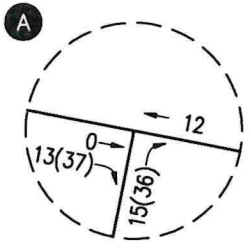

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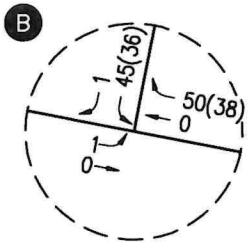


PROJECT DWY NO. 2 @ WALNUT ST

n:\4700\2234748 - starbucks, hesperio\dwg\4748 f-9.dwg LDP 13:50:32 08-27-2024 aguilar

LLG

N NO SCALE

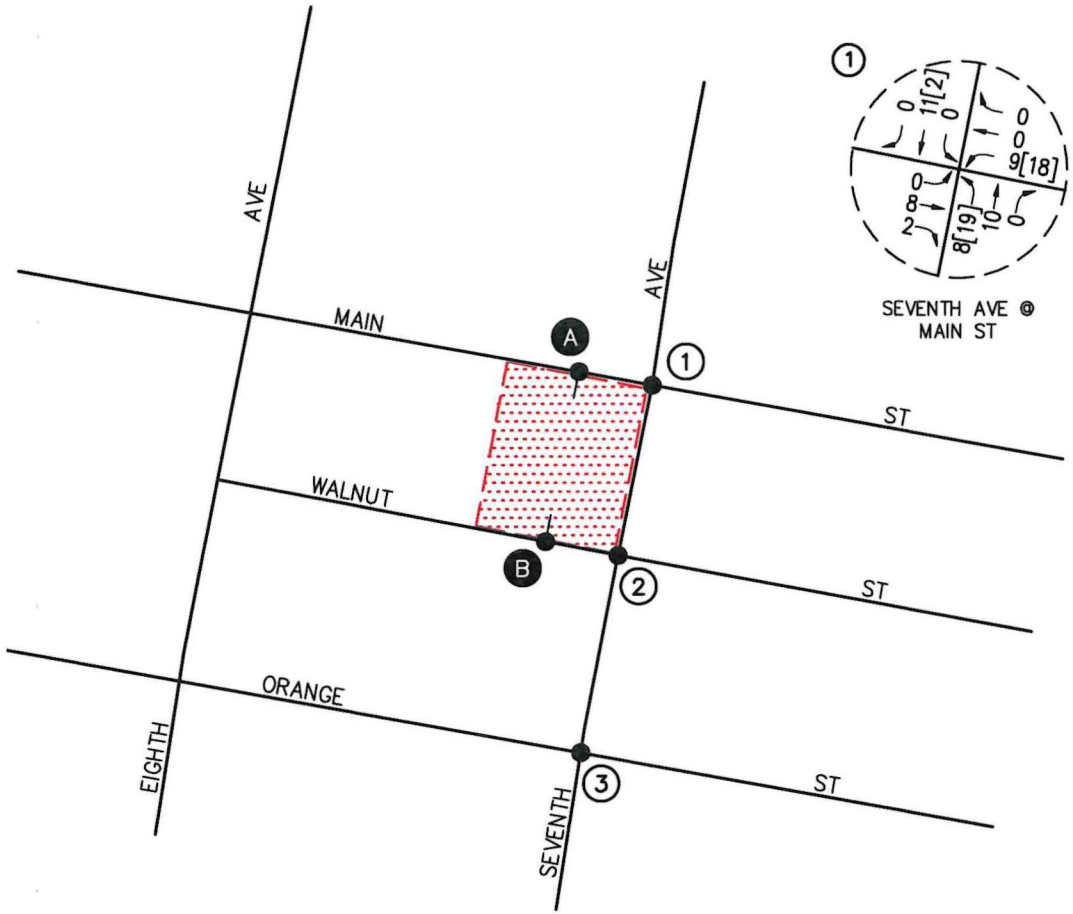
KEY

(#) = STUDY INTERSECTION
(XX) = PASS-BY TRIPS
[YY] = DIVERTED TRIPS
= PROJECT SITE

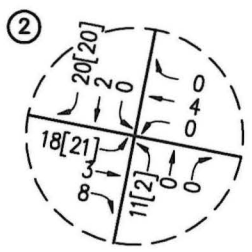
FIGURE 9

AM PEAK HOUR PROJECT TRAFFIC VOLUMES

STARBUCKS AND MCDONALD'S, HESPERIA



SEVENTH AVE @ MAIN ST



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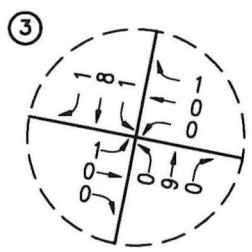

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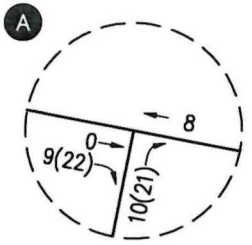

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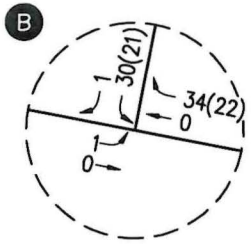


PROJECT DWY NO. 2 @ WALNUT ST

n:\4700\2234748 - starbucks, hesperia\dwg\4748 f-10.dwg LDP 13:58:34 08-27-2024 aguilar

LLG

N NO SCALE

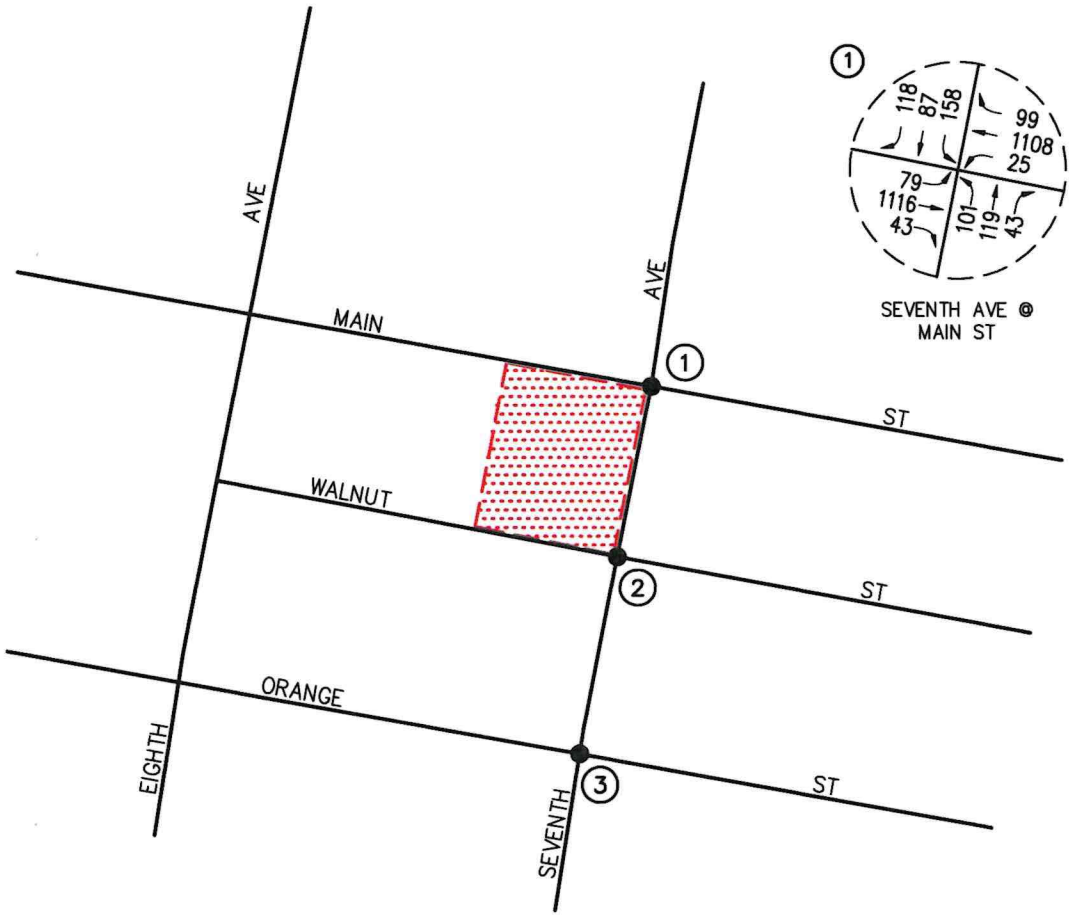
KEY

(#) = STUDY INTERSECTION
(XX) = PASS-BY TRIPS
[YY] = DIVERTED TRIPS
= PROJECT SITE

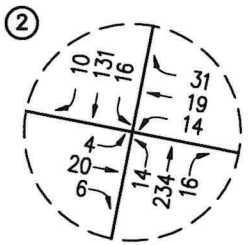
FIGURE 10

PM PEAK HOUR PROJECT TRAFFIC VOLUMES

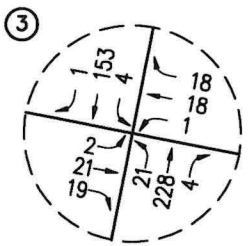
STARBUCKS AND MCDONALD'S, HESPERIA



SEVENTH AVE @ MAIN ST



SEVENTH AVE @ WALNUT ST



SEVENTH AVE @ ORANGE ST

n:\4700\2234748 - starbucks, hesperia\dwg\4748 f-11.dwg LDP 08:17:31 02-29-2024 aguilar

LLG

N NO SCALE

KEY

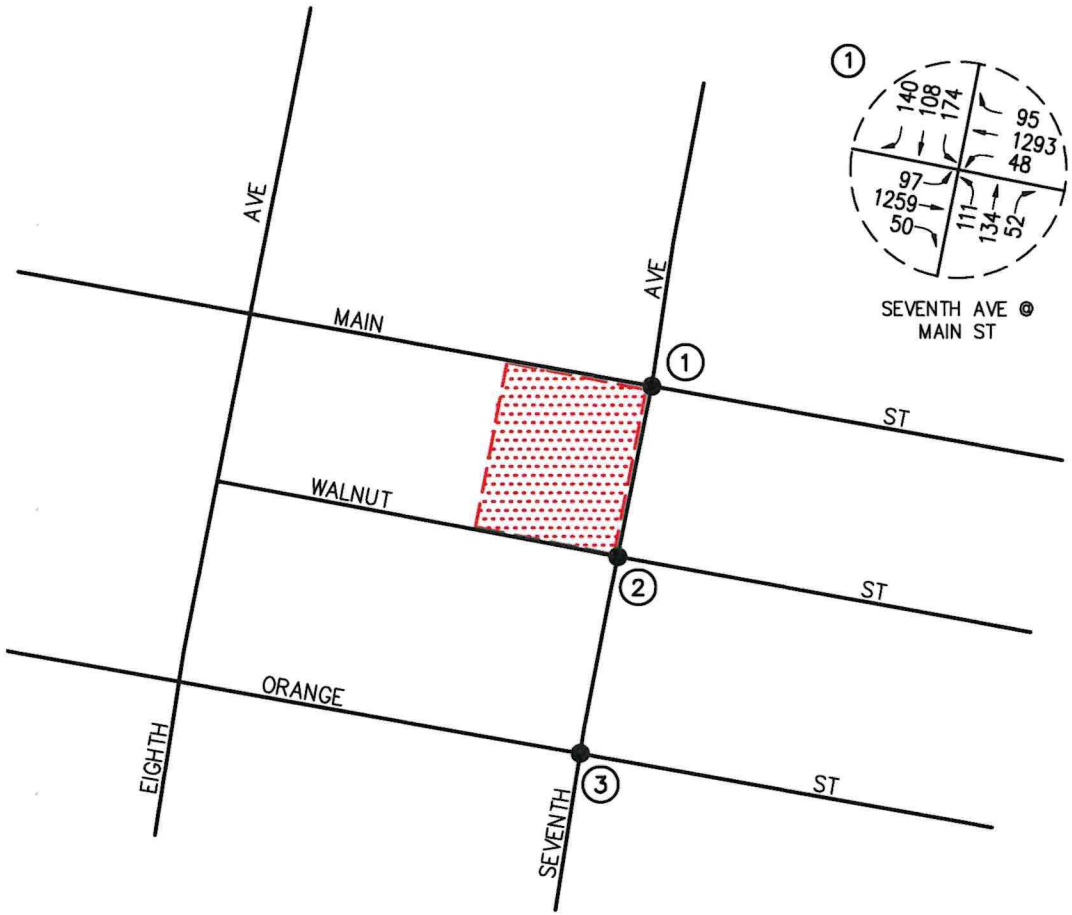
(#) = STUDY INTERSECTION

= PROJECT SITE

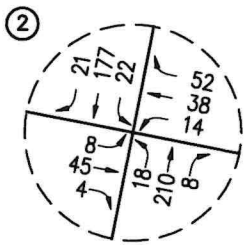
FIGURE 11

YEAR 2025 WITHOUT PROJECT AM PEAK HOUR TRAFFIC VOLUMES

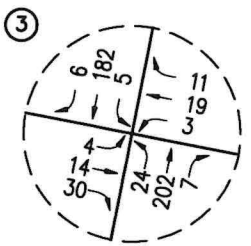
STARBUCKS AND MCDONALD'S, HESPERIA



SEVENTH AVE @ MAIN ST



SEVENTH AVE @ WALNUT ST



SEVENTH AVE @ ORANGE ST

n:\4700\2234748 - starbucks, hesperio\dwg\4748 f-12.dwg LDP 08:18:34 02-29-2024 aguilar

LLG

N NO SCALE

KEY

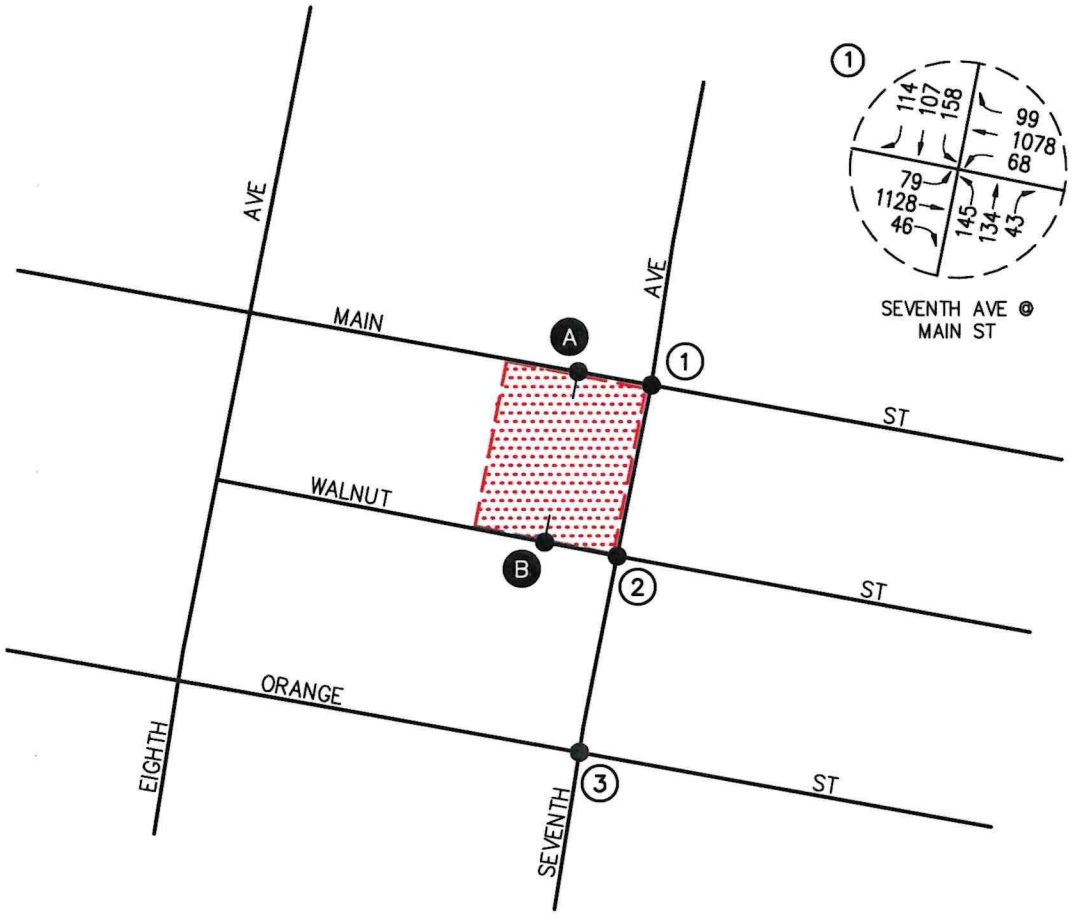
(#) = STUDY INTERSECTION

= PROJECT SITE

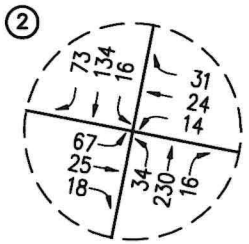
FIGURE 12

YEAR 2025 WITHOUT PROJECT PM PEAK HOUR TRAFFIC VOLUMES

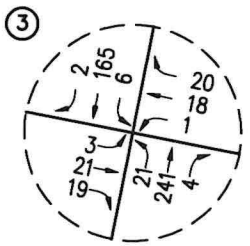
STARBUCKS AND MCDONALD'S, HESPERIA



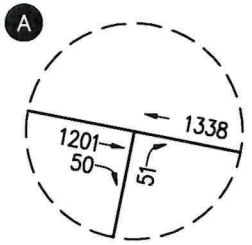
SEVENTH AVE @
MAIN ST



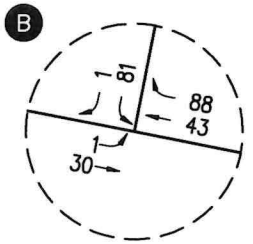
SEVENTH AVE @
WALNUT ST



SEVENTH AVE @
ORANGE ST



PROJECT DWY NO. 1 @
MAIN ST



PROJECT DWY NO. 2 @
WALNUT ST

n:\4700\2234748 - storbucks, hesperio\dwg\4748 f-13.dwg LDP 10:15:13 02-29-2024 aguilar

LLG

N NO SCALE

KEY

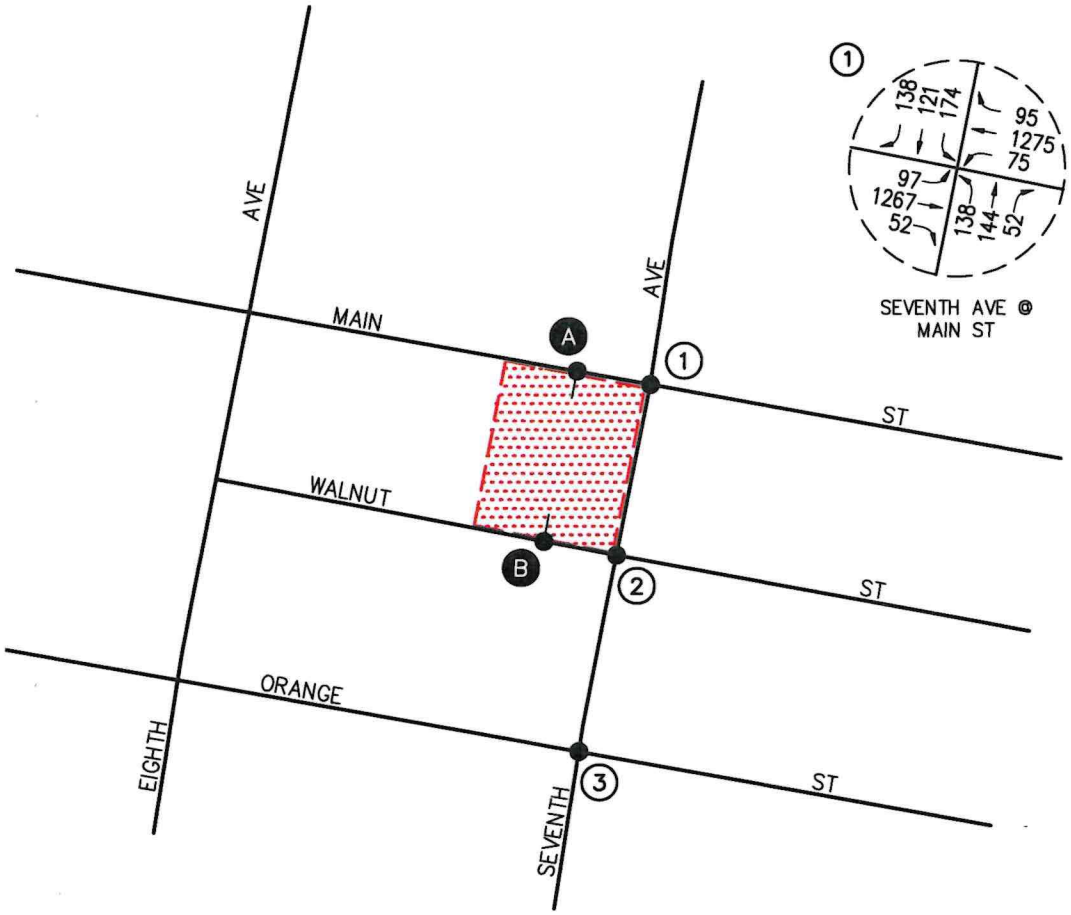
(#) = STUDY INTERSECTION

= PROJECT SITE

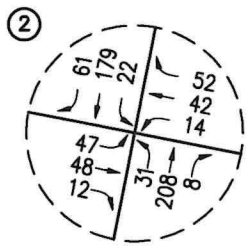
FIGURE 13

YEAR 2025 WITH PROJECT AM PEAK HOUR TRAFFIC VOLUMES

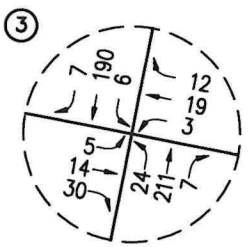
STARBUCKS AND MCDONALD'S, HESPERIA



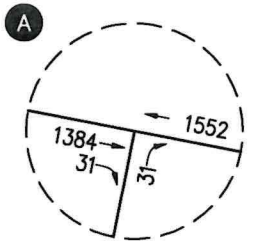
SEVENTH AVE @
MAIN ST



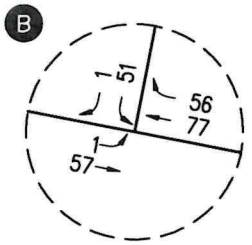
SEVENTH AVE @
WALNUT ST



SEVENTH AVE @
ORANGE ST



PROJECT DWY NO. 1 @
MAIN ST



PROJECT DWY NO. 2 @
WALNUT ST

n:\4700\2234748 - starbucks, hesperio\dwg\4748 f-14.dwg LDP 10:16:52 02-29-2024 aguilar

LLG

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 14

YEAR 2025 WITH PROJECT PM PEAK HOUR TRAFFIC VOLUMES

STARBUCKS AND MCDONALD'S, HESPERIA

TABLE 1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM 7 METHODOLOGY)[1]

STARBUCKS AND MCDONALD'S PROJECT, HESPERIA

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	≤ 10.0	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and ≤ 20.0	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	> 20.0 and ≤ 35.0	Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35.0 and ≤ 55.0	Long traffic delays At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and ≤ 80.0	Very long traffic delays This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent occurrences.
F	≥ 80.0	Severe congestion This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high *v/c* ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

[1] Source: *Highway Capacity Manual 7*, Chapter 19: Signalized Intersections.

TABLE 3
PROJECT TRAFFIC GENERATION RATES AND FORECAST[3]
STARBUCKS & MCDONALD'S, HESPERIA

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
▪ 937: Coffee/Donut Shop With Drive-Through Window (TE/TSF)	533.57	51%	49%	85.88	50%	50%	38.99
▪ 934: Fast Food Restaurant with Drive-Through Window (TE/KSF)	467.48	51%	49%	44.61	52%	48%	33.03
Proposed Project Generation Forecast:							
▪ Starbucks (1,263 SF)	674	55	53	108	25	24	49
Pass-by Rates (Daily: 75%, AM: 75% PM: 75%)[4]	-506	-41	-40	-81	-19	-18	-37
Starbucks Net Trip Generation	***168***	***14***	***13***	***27***	***6***	***6***	***12***
▪ McDonald's (3,684 SF)	1,722	84	80	164	63	59	122
Pass-by Rates (Daily: 25%, AM: 40% PM: 40%)[5]	-431	-34	-32	-66	-25	-24	-49
McDonald's Net Trip Generation	***1,291***	***50***	***48***	***98***	***38***	***35***	***73***
Total Project Trip Generation	**1,459**	**64**	**61**	**125**	**44**	**41**	**85**

Notes:
- TE/TSF = Trip ends per thousand square feet

[3] Source: *Trip Generation, 11th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2021)].

[4] Source: Source: Daily, AM peak hour, and PM peak hour pass-by reductions conservatively assumed at 75%, respectively, based on *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021) pass-by tables for Coffee/Donut Shop With Drive-Through Window, which indicates AM and PM pass-by rates of 90% and 98%, respectively.

[5] Source: Source: Daily, AM peak hour, and PM peak hour pass-by reductions conservatively assumed at 25%, 40%, and 40%, respectively, based on *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021) pass-by tables for Fast Food Restaurant With Drive-Through Window and input from City Staff.

TABLE 4
YEAR 2025 WITH PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY
STARBUCKS AND MCDONALD'S PROJECT, HESPERIA

Key Intersection	Time Period	Minimum Acceptable LOS	(1) Existing Traffic Conditions		(2) Year 2025 Without Project Traffic Conditions		(3) Year 2025 With Project Traffic Conditions		(4) Operational Deficiency	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (s/v)	Yes/No
1. Seventh Avenue at Main Street	AM	D	23.3	C	23.6	C	26.2	C	2.6	No
	PM		25.5	C	27.2	C	29.5	C	2.3	No
2. Seventh Avenue at Walnut Street	AM	D	12.1	B	12.3	B	13.1	B	0.8	No
	PM		14.1	B	14.0	B	16.7	C	2.7	No
3. Seventh Avenue at Orange Street	AM	D	11.9	B	11.4	B	11.7	B	0.3	No
	PM		12.1	B	12.0	B	12.1	B	0.1	No

Notes:

- s/v = seconds per vehicle (delay)
- LOS = Level of Service

TABLE 5
PROJECT DRIVEWAY PEAK HOURS LEVELS OF SERVICE SUMMARY
STARBUCKS AND MCDONALD'S PROJECT, HESPERIA

Key Intersection		Time Period	Minimum Acceptable LOS	(1) Year 2025 With Project Traffic Conditions	
				Delay (s/v)	LOS
A.	Project Driveway No. 1 at Main Street	AM	D	17.2	C
		PM		18.2	C
B.	Project Driveway No. 2 at Walnut Street	AM	D	9.6	A
		PM		9.7	A

Notes:

- s/v = seconds per vehicle (delay)
- LOS = Level of Service

TABLE 6
YEAR 2025 WITH PROJECT PEAK HOUR QUEUING ANALYSIS[6]
STARBUCKS AND MCDONALD'S PROJECT, HESPERIA

Key Intersection	Proposed/ Estimated Storage Provided	Year 2025 With Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour	
		Max. Queue	Adequate Storage (Yes / No)	Max. Queue	Adequate Storage (Yes / No)
1. Seventh Avenue at Main Street					
Northbound Left-Turn	200'[7]	173'	Yes	174'	Yes
Southbound Left-Turn	110'	155'	Yes [a]	180'	Yes [a]
Southbound Left-Turn/Through	235'	162'	Yes	190'	Yes
Eastbound Left-Turn	160'	105'	Yes	133'	Yes
Westbound Left-Turn	145'	93'	Yes	106'	Yes
2. Seventh Avenue at Walnut Street					
Southbound Left-Turn	50'[8]	25'	Yes	25'	Yes
Eastbound Left-Turn/Through/Right-Turn	80'[9]	25'	Yes	27'	Yes

Notes:

- [a] = Spillover queue may be accommodated by transition and/or the adjacent Southbound Left-Turn/Through lane.

6 Queue is based on the *95th Percentile Queue* and is reported in total queue length (feet) per lane for signalized intersections.

7 Includes Project-specific improvement that consists of restriping the NBL pocket to 200' of storage.

8 Includes Project-specific improvement that consists of restriping the SBL pocket to 40' of storage.

9 Estimated storage provided before Project driveway.