CITY OF LAGUNA HILLS
TRAFFIC COMMISSION
REGULAR MEETING AGENDA
MAY 21, 2014
7:00 PM

Donald Froelich – Chair

Michael Caputo – Vice Chair | **Rick Frazier - Commissioner**
Steven Beeuwsaert - Commissioner | **Ed Rowe - Commissioner**

Location: City Council Chamber, 24035 El Toro Road, Laguna Hills, California 92653

Any person wishing to address the Traffic Commission on any matter, whether or not it appears on this Agenda, is asked to complete a "Request to Speak" form available on the table at the back of the Chamber. The completed form is to be submitted to the Recording Secretary prior to an individual being heard by the Traffic Commission.

Members of the public wishing to address the Traffic Commission can do so during the Public Comments portion of the Agenda with a time limitation of three minutes per person, an overall time limit of ten minutes for any one subject, and a total time limit of thirty minutes for Public Comments. If you are commenting on an Agenda item, your comments will be heard at the time that item is scheduled on the Agenda. If you are addressing the Commission on an item not listed on the Agenda, the Traffic Commission is prohibited by law from discussing or taking any action on that item.

CALL TO ORDER

Resolution No. 96-04-09-1 established rules of decorum for public meetings held by the City of Laguna Hills. Resolution No. 96-04-09-1 is available on the table at the back of the City Council Chamber.

PLEDGE OF ALLEGIANCE

ROLL CALL OF COMMISSION MEMBERS

1. PUBLIC COMMENTS

This is the time to address the Traffic Commission on any matter not listed on this Agenda that is within the subject matter jurisdiction of the Commission. Public Comments are limited to three minutes per person, an overall time limit of ten minutes for any one subject, and a total time limit of thirty minutes.

2. MINUTES

3. PRESENTATIONS

4. ADMINISTRATIVE REPORTS

4.1 CITY WIDE ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

RECOMMENDATION: THAT THE TRAFFIC COMMISSION RECOMMEND TO THE CITY COUNCIL THE APPROVAL OF THE ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS, JANUARY 2014

4.2 SIGHT DISTANCE EVALUATION AT EL TORO ROAD AND AVENIDA DE LA CARLOTA

RECOMMENDATION: THAT THE TRAFFIC COMMISSION RECEIVE AND FILE THIS REPORT.

5. INFORMATIONAL ITEMS

5.1 SHERIFF'S DEPARTMENT VERBAL REPORT

5.2 RADAR SPEED TRAILER

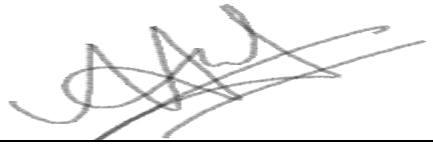
6. COMMISSIONER COMMENTS

7. ADJOURNMENT

The next Regular Meeting of the Traffic Commission will be July 16, 2014, at 7:00 PM, in the City Council Chamber, located at 24035 El Toro Road, Laguna Hills, California.

CERTIFICATION

I, HUMZA JAVED, Associate Civil Engineer of the City of Laguna Hills, do hereby certify that a copy of the foregoing Agenda was posted at Laguna Hills City Hall, Laguna Hills Community Center, and the Courtyard at La Paz Center by May 16, 2014 at 5:00 PM.



5/16/2014

HUMZA JAVED **DATE**
ASSOCIATE CIVIL ENGINEER

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, you should contact the office of the City Engineer at (714) 707-2650. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to assure access.

Materials related to an item on this Agenda submitted to the Commission after distribution of the Agenda packet are available for public inspection in the Public Services Department at 24035 El Toro Road, Laguna Hills, California, during normal business hours.

CITY OF LAGUNA HILLS, CALIFORNIA
TRAFFIC COMMISSION MEETING
MINUTES
MARCH 19, 2014

CALL TO ORDER

The Regular Meeting of the Traffic Commission of the City of Laguna Hills, California, was called to order by Chair Ed Row at 7:00 p.m. in the Laguna Hills City Council Chamber, 24035 El Toro Road, Laguna Hills

PLEDGE OF ALLEGIANCE: Chair Ed Rowe

ROLL CALL OF COMMISSION MEMBERS

Present: Chair Rowe, Vice Chair Froelich, Commissioner Beeuwsaert, Commissioner Caputo

Absent: Commissioner Frazier

1. ELECTION OF CHAIR

Motion was made by Chair Rowe to open nominations to elect a new Chair. Commissioner Michael Caputo nominated Commissioner Donald Froelich. The nomination was seconded by Commissioner Beeuwsaert. Nominations were closed. Vote was unanimous.

Approved by a vote of 4-0 (Commissioner Frazier Absent)

2. ELECTION OF VICE CHAIR

Motion was made by Chair Froelich to open nominations to elect a new Vice Chair. Commissioner Steven Beeuwsaert nominated Commissioner Michael Caputo. The nomination was seconded by Commissioner Ed Rowe. Nominations were closed, Vote was unanimous.

Approved by a vote of 4-0 (Commissioner Frazier Absent)

3. PUBLIC COMMENTS

There were no Public Comments

4. MINUTES

THE TRAFFIC COMMISSION APPROVED THE MINUTES OF THE JANUARY 15, 2014, REGULAR MEETING, BY M/COMMISSIONER ROWE, S/VICE CHAIR CAPUTO

Approved by a vote of 4-0 (Commissioner Frazier Absent)

5. PRESENTATIONS

5.1 CITYWIDE ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

Humza Javed, Associate Civil Engineer, indicated that the Citywide Engineering and Traffic Survey for Speed Limits is required by the California Vehicle Code and is required to be performed by Agencies in order to set speed limits. Mr. Javed introduced consulting Traffic Engineer, Jerry Stock, from Hartzog and Crabill, Inc., to present the Engineering and Traffic Survey for Speed Limits. Jerry Stock, Traffic Engineer, reported that the Traffic Survey ensures that speed limits are being properly established, speed traps are not being created, and speed limit enforcement is allowed by radar. This Traffic Survey was performed by having a certified radar technician use a calibrated radar gun and collect surveys in an inconspicuous unmarked car that is away from stop signs and traffic signals to be able to record free flow of traffic. This data is collected during off peak hours to allow a measurement of the free flow of traffic. The information is entered into a computer program that generates the 85^{th} percentile speed, which is the speed at which 85 percent of the motorists are traveling at or below. The information is compiled into a report that documents all of the findings, road assessments, streetlight and sign locations, and specific recommendations are made based on this information. In the current City Wide Engineering and Traffic survey, 62 roadway segments throughout the City were surveyed. In summary, recommendations are as follows: (1) Removal of conflicting speed limit signage on Rapid Falls Road from Cabot Road to Lost Trail Drive in the westbound direction; and (2) Establishment of a Residence District (25 mph) along Nellie Gail Road from Cabot Road to Gallup Circle. There are no recommendations for speed limit changes.

6. ADMINISTRATIVE REPORTS

6.1 ALL-WAY STOP SIGN WARRANT ANALYSIS AT THE INTERSECTION OF BARBERA AT MARSALA

Humza Javed, Associate Civil Engineer, indicated that staff received a request from a resident to perform a Multi-Way Stop Sign Analysis at the intersection of Barbera at Marsala in order to assist with traffic flow during school drop-off and pick-up hours. Mr. Javed reported that the intersection was adjacent to San Joaquin Elementary School and that a similar analysis was performed in 1996. Upon receiving the current request, the City's consulting firm, Hartzog and Crabill, Inc., performed a Multi-Way Stop Sign Analysis in accordance with the California Manual on Uniform Traffic Control Devices (MUTCD). Mr. Javed indicated that the results revealed that there was no stop sign warranted at this location. Mr. Javed reported that the City was going to perform a pedestrian count to see if a crossing guard is warranted at this intersection in order to assist with pedestrian crossing.

THAT THE TRAFFIC COMMISSION RECEIVE AND FILE THE REPORT WITH THE ADDITION OF RESEARCHING ADDING PARKING RESTRICTIONS ON BARBERA.

Approved by a vote of 4-0 (Commissioner Frazier Absent)

7. INFORMATIONAL ITEMS

7.1 ACCIDENT HISTORY AT THE INTERSECTION OF MOULTON PARKWAY AND LA PAZ ROAD

Humza Javed, Associate Civil Engineer, reported that the City previously received a request to perform an accident review at the intersection of Moulton Parkway and La Paz Road. Mr. Javed indicated that the City reviewed the five-year accident history and it was revealed that there were approximately 15 accidents in a five-year time frame. Approximately 3 accidents a year, which was not excessive for an intersection of that nature. Mr. Javed indicated that there were no fatalities, a few injuries, and a few driving under the influence (DUI's).

Approved by a vote of 4-0 (Commissioner Frazier Absent)

7.2 ORANGE COUNTY TRANSPORTATION AUTHORITY (OCTA) MEASURE M2 ENVIRONMENTAL CLEANUP PROGRAM UPDATE

Humza Javed, Associate Civil Engineer, gave an update on the Orange County Transportation Authority (OCTA) Measure M2 Environmental Clean-Up Grant Program. Mr. Javed provided a summary of the projects the City had received funding for.

7.3 SHERIFF'S DEPARTMENT VERBAL REPORT

Sergeant Matthew Prince introduced himself to the Traffic Commission and gave a brief summary of his background and experience in the Sheriff's Department.

7.4 RADAR SPEED TRAILER

Staff submitted the schedule for the radar trailer.

8. COMMISSIONER COMMENTS

Humza Javed, Associate Civil Engineer, introduced the new Administrative Assistant, Lucy Echevarria, to the Traffic Commission.

9. ADJOURNMENT

There being no further business before the Traffic Commission at this session, Chair Froelich declared the meeting adjourned at 7:40 p.m. to the meeting of May 14, 2014

Prepared by:

_____
Humza Javed, P.E.
Associate Civil Engineer

Approved By:

_____
Donald Froelich
Chair

City of Laguna Hills
Traffic Commission
Staff Report

DATE: 05/21/14

TO: TRAFFIC COMMISSIONERS

FROM: HUMZA JAVED, P.E.
ASSOCIATE CIVIL ENGINEER

ISSUE: CITY WIDE ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

RECOMMENDATION: THAT THE TRAFFIC COMMISSION RECOMMEND TO THE CITY COUNCIL THE APPROVAL OF THE ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS, JANUARY 2014

SUMMARY:

In accordance with the California Vehicle Code and procedures established by the California State Department of Transportation, each jurisdiction is required, every five to seven years, to review its speed limits that are intended to be enforced by the use of electronic devices (radar or laser). The Consulting Traffic Engineers of Hartzog & Crabill, Inc., were retained to perform this work and the attached January 2014 Engineering and Traffic Survey for Speed Limits is presented for Traffic Commission review. There are no recommended changes to existing speed limits.

BACKGROUND:

The orderly movement of traffic on City streets requires the establishment of reasonable speed limits allowing for the enforcement of vehicular speeds that are deemed unreasonable for the conditions of the roadway. The procedures and regulations governing the establishment of speed limits are described within the attached Engineering and Traffic Survey for Speed Limits, January 2014. This document, as prepared by the Consulting Traffic Engineers of Hartzog & Crabill, Inc., details all of the extensive data collection effort and analysis performed and recommends the establishment of speed limits throughout the community. The Traffic Commission was provided this document at the Traffic Commission meeting of March 19, 2014 for review. There are no speed limit changes being recommended in the report.

ATTACHMENT:

- Engineering and Traffic Survey for Speed Limits January, 2014

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

CITY OF LAGUNA HILLS

JANUARY 2014

PREPARED FOR:

CITY OF LAGUNA HILLS
24035 EL TORO ROAD
LAGUNA HILLS, CALIFORNIA 92653

PREPARED BY:

HARTZOG & CRABILL, INC.
TRAFFIC ENGINEERS
17852 E. 17TH STREET, SUITE 101
TUSTIN, CA 92680
(714) 731-9455

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- Radar Gun Certification .....
- Technician Certification .....

5/21/2014 ITEM NO. 4.1

CERTIFICATION

I, Gerald Stock, do hereby certify that this Engineering and Traffic Survey for the City of Laguna Hills was performed under my supervision and is accurate and complete. I certify that I am both experienced in performing surveys of this type and duly registered in the State of California as a professional Traffic Engineer.

Gerald Stock
RTE # 2049

File: LAGUNA HILLS Radar Rpt 2013-14

CITY OF LAGUNA HILLS
ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

Introduction

In accordance with procedures established by the State of California, this Engineering and Traffic Survey has been developed for the City of Laguna Hills as the basis for the establishment and enforcement of speed limits for selected streets within the City. The work provided herein was authorized by the City and was performed by the engineering consulting firm of Hartzog & Crabill. The goal of the review was two-fold. The first was to review new roadway segments to determine if speed limit postings should be recommended. The second involved a determination as to whether changes in pre-existing conditions have occurred where older speed limits should be modified.

The requirement to perform Engineering and Traffic surveys for speed limits is based on the California Vehicle Code (CVC). CVC Section 40802 states that at least once every five (5), seven (7) or ten (10) years, States and local agencies should re-evaluate non-statuary speed limits on segments of their roadways. Recent changes to the CA. MUCTD changed the policy and procedure for setting speed limits in California. Engineering and Traffic Surveys must be performed with the use of radar or other approved electronic devices if the use of radar is to be employed to enforce speed limits. If such a survey is not performed within five years (or seven years, or ten years as stated previously) of the date of the preceding survey, then the new data and its use will constitute a speed trap. Hence, evidence using such would not be admissible in court. From the Vehicle Code, a "speed trap" is either of the following:

(a) A particular section of a highway measured as to distance and with boundaries marked, designated, or otherwise determined in order that the speed of a vehicle may be calculated by securing the time it takes the vehicle to travel the known distance.

(b) A particular section of a highway with a prima facie speed limit provided by this code or by local ordinance under sub-paragraph (A) of paragraph (2) of subdivision (a) of Section 22352, or established pursuant to Section 22354, 22357, 22358, or 22358.3 if that prima facie speed limit is not justified by an engineering and traffic survey conducted within five years prior to the date of the alleged violation, and where enforcement involves the use of radar or other electronic devices that measures the speed of moving objects. This paragraph does not apply to a local street, road, or school zone.

The definition of a Traffic and Engineering Survey is contained in Section 627 of the Vehicle Code and is as follows:

Engineering and Traffic survey, as used in this code, means a survey of highway and traffic conditions in accordance with methods determined by the California Department of Transportation (Caltrans) for use by State and local authorities. An engineering and traffic survey shall include, among other requirements deemed necessary by the department, consideration of the following:

(a) Prevailing speeds as determined by traffic engineering measurements.

(b) Accident records.

(c) Highway, traffic and roadside conditions not readily apparent to the driver.

The California Vehicle code has set certain regulations regarding the posting and enforcement of speed zones. These regulations generally reflect the viewpoint that speed zoning should be based on traffic conditions and natural driver behavior and not because of an arbitrary response to a traffic event or occurrence. Therefore, it is important to have a general understanding of the "Basic Speed Law", "Prima Facie Speed Limits" and "Intermediate Speed Zones".

Basic Speed Law (CVC 22350)

All fifty states base their speed regulations on the Basic Speed Law. In California, CVC 22350 defines the basic speed law as:

"No Person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of the highway, and in no event at a speed which endangers the safety of persons or property."

This law recognizes that driving conditions vary widely from time-to-time and place-to-place and, therefore, no set of fixed driving rules will adequately serve all conditions. The motorist will constantly adjust their driving behavior to fit the conditions encountered, and must learn to do this with a minimum of assistance from the police. The Basic Speed Law is founded on the belief that a majority of motorists are able to modify their driving behavior properly, as long as they are aware of the conditions around them.

Prima Facie Speed Limits (CVC 22352)

All other speed limits are prima facie limits which, "on the face of it", are reasonable and prudent under normal conditions. The opportunity given to the driver to exceed a prima facie speed limit when it is safe to do so recognizes the fact that any posted speed limit cannot adequately reflect the many different conditions of traffic, weather, visibility, etc., that may be found on the same highway at different times.

Certain prima facie limits are automatically established by law (CVC 22352), including a 15 mph limit in alleys, blind intersections, blind railroad crossing, and the 25 mph limit in business and residence districts. There is also a part time 25 mph limit in school zones when children are present in route to or from school.

Business and residence districts are defined in the Vehicle Code as specific areas meeting a specified minimum density of roadside development. CVC Sections 235 and 515 define these regulations. A count of houses or active businesses facing on a highway must be made to determine whether or not a valid business or residence district exists. The law does not require posting these prima facie limits that are readily apparent.

Residence District (CVC 515)

A "residence district" is that portion of a highway and the property contiguous thereto, other than a business district, (a) upon one side of which highway, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures, or (b) upon both sides of which highway, collectively, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures. A residence district may be longer than one-quarter of a mile if the above ratio of separate dwelling houses or business structures to the length of the highway exists.

Establishment of Speed Zones

The reason that speed limit areas and their required postings are done is to guard reasonable drivers from the unreasonable behavior of reckless, unreliable, or otherwise dangerous drivers. As with other similar laws, the limits identified are based on the consensus of the majority of those who drive the highway as to what speed is reasonable and safe. It is this type of information that is reflected in the analysis section of this report. Namely, posted speed limits are a reflection of that speed which most people deem to be safe as opposed to a minority of drivers who do not drive in a reasonable manner.

Speed zones are also established to advise of road conditions or hazards that may not be readily apparent to a reasonable driver. For that reason, a field review of related road/traffic variables is conducted which considers the analytical data and accident history of a particular roadway segment to determine a safe and reasonable speed limit.

Data Collection Procedures

Speed evaluation data was collected at 62 different segments on 29 different roadways in the City of Laguna Hills. These areas and the number of segments on each are described as follows:

1. Alameda Ave (1)
2. Alicia Parkway (4)
3. Aliso Hills Drive (2)
4. Avenida De La Carlota (3)
5. Beckenham Street (1)
6. Bridlewood Drive (2)
7. Cabot Road (4)
8. El Toro Road (1)
9. Gallup Circle (1)
10. Gordon Road (1)
11. Greenfield Drive (1)
12. Hon Avenue (1)
13 Indian Hill Lane (1)
14. La Paz Road (5)
15. Laguna Hills Drive (1)
16. Lake Forest Drive (2)
17. Los Alisos Boulevard (1)
18. Louisa Street (1)
19. Mill Creek Drive (1)
20 Moulton Parkway (5)
21. Nellie Gail Road (5)
22. Oso Parkway (4)
23. Paseo De Valencia (6)
24. Rapid Falls Road (1)
25 Ridge Route Drive (2)
26. San Remo Drive (1)
27. Santa Maria Avenue (1)
28. Santa Vittoria Drive (2)
29. Vista Viejo Road (1)

As described in various traffic engineering documents - including information provided by the State of California, the individual locations on which radar data collection procedures were used involved considerations for the following:

a. Stop sign or traffic signal locations;
b. Visibility issues;
c. Traffic flow at intersections, cross-traffic, major driveways, crosswalks, railroad crossings and unusual turning movements;
d. The influence of other traffic factors on the speed of cars: such as on street parking, roadway features, adjacent land uses, and lighting.

Speed Zoning Methodology

The Manual on Uniform Traffic Control Devices, California Supplement (MUTCD CA. Supplement) specifies a "short method of determining speed limits on City and County Through Highways, Arterial and Collector Roads Procedures.

Introduction - This short method of speed zoning is based on the premise that the reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorist speeds, one will be able to select a speed limit that is both reasonable and effective. Other factors that need to be considered include, but are not limited to: the most recent three-year collision record, roadway design speed, safe stopping sight distance, superelevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, pedestrian traffic in the roadway without sidewalks.

Speed Zone Survey

- Only one person is required for the fieldwork. Speeds can be read directly from a radar speed meter.

- A section of road should be selected with representative operating speeds. If speeds vary on a given road, additional surveys should be conducted. In this case, it may be necessary to establish additional speed zones with different speed limits. The section selected should be straight and should have no traffic signal, stop sign or intersection with a major cross street.

- Speed measurements should be taken during off-peak hours on weekdays. The weather should be fair with no unusual conditions prevailing. It is important that the surveyor and his equipment be so inconspicuous as not to affect traffic speeds. For this reason, an unmarked car is recommended, with the radar speed meter located as inconspicuously as possible. It should be placed so as to be able to survey traffic in both directions, and should not make an angle greater than 15 degrees with the roadway center line.

- It is desirable to have a minimum sample of 100 automobiles in each survey. This may result in excessive survey periods for low-volume roads. Under these conditions, the survey should be conducted for a minimum of two hours, but in no case should the sample for any survey contain less than 50 automobiles.

- The MUTCD with California Supplement states that speed limits are established at or near the 85th percentile speed, which is defined as that speed at or below which 85 percent of the traffic is moving. This speed can be selected directly from the data sheet. However, roadway conditions not readily apparent to the motorist such as vertical or horizontal curves or other roadway conditions that may impact sight distance may result in a further reduction of 5 mph in the recommended speed limit.

- As a check on the validity of the proposed speed limit, an analysis should be made of the three-year accident record for the section of roadway under consideration. If this record shows an abnormally high percentage of accidents normally associated with excessive speeds, the proposed speed limit should be further reduced. This is a judgement situation, and will not usually be a factor,

- Short speed zones of less than half a mile should be avoided, except in transition areas.

- Speed zone changes should be coordinated with changes in roadway conditions or roadway development.

- Speed zoning in 5 mile per hour increments should be avoided if possible. A 10-mile per hour increment is preferable.

- Speed zoning should be coordinated between adjacent jurisdictions.

Local Street Exemptions (CVC 40802)

Many streets are designated as "Local" streets per CVC 40802. These streets are exempt from the radar study. Therefore, the speed limit for these streets does not require an Engineering and Traffic Survey. The code is as follows:

"For the purpose of this section, local streets and roads shall be defined by the latest functional usage and federal aid system maps as submitted to the Federal Highway Administration. When these maps have not been submitted, the following definition shall be used: A local street or road primarily provides access to abutting residential property and shall meet the following three conditions:

1. Roadway width of not more than 40 feet.
2. Not more than one half mile of uninterrupted length.
3. Not more than one traffic lane in each direction.

Other Considerations

Every street should be inspected for unusual traffic, roadway and roadside conditions not readily apparent to a motorist. A check should be made of the adequacy of traffic control devices, roadway alignment, width surface conditions, accident history and any unique traffic hazards that may exist. Any of these conditions may warrant the selection of a speed lower than the 85th percentile speed for speed zoning.

Radar Collection Time-Frames

The hours of radar operation were restricted to off-peak periods (when possible) for heavily traveled streets and to uncongested peak periods on lightly traveled streets. All surveys were conducted in fair weather.

The radar unit was mounted at the top of the front dash of an unmarked vehicle with the meter-reading unit sustained inside the vehicle. The radar unit's calibration was checked periodically using a tuning fork.

The radar operator and assistant recorded the speed meter readings for each location on Radar Speed Survey Field Sheets included in the appendix of this report. A representative sampling of at least 100 vehicles were surveyed in each direction or a cumulative sample of 200 vehicles for both directions where possible. On low volume roads, where a total sample of 200 vehicles would result in an excessive time period, sampling was continued until a representative bell-shaped frequency distribution was attained.

Analysis Factors

Several factors were used as input to our recommendations for speed limits. These include the 85th Percentile, the 10 MPH Pace and others. These are described in detail below.

1. The **CRITICAL SPEED**, or the 85th percentile is defined as that speed at or below which 85 percent of the traffic is moving. From experience, traffic engineers have found that this is one of the most reliable factors in determining appropriate speed limits.

   Hence, the accepted practice, and one that has been used in this case is to set the speed limit at or near the critical speed. This recognizes that other factors could be present where the above may not be appropriate. When this procedure is used, it not only conforms to that required by the State but it also provides a strong base for law enforcement personnel to properly enforce speed limits.

2. The **10 MPH PACE** is that continuous 10 mph incremental range of speeds in which the largest number of recorded vehicles is contained. It is a measure of the dispersion of speeds within the sample surveyed. For this element, the accepted practice to the greatest extent possible, is to try and keep the recommended speed limit within the 10 mph pace after considering the critical speed and any factors requiring a speed lower than the critical speed.

3. The **MEDIAN (MIDDLE) SPEED**, or 50th percentile speed, represents the mid-point value within the range of recorded speeds for a particular roadway location. In other words, 50% of the vehicles travel faster than, and 50% travel slower than the median speeds. This value is another measure of the central tendency of the vehicle speed distribution.

4. The **15th PERCENTILE SPEED** is that speed at or below which 15% of the vehicles are traveling. This value is important in determining the minimum allowable speed limit, given

that the vehicles traveling below this speed tend to obstruct the flow of traffic, thereby increasing the accident potential.

5. **MODAL SPEED**: The modal speed is the speed, which occurs most frequently in the distribution (the most). It serves as another useful measure in verifying the correct recommendation for speed limits.

6. **STANDARD DEVIATION**: This is a mathematical element, which relates to measures of dispersion of data. It is used to assist in describing the center of speed distribution information around the arithmetic mean or the time mean speed. It also is used in the overall review of recommended speed limits and serves to verify the level of confidence of data used in making recommendations.

7. The **MEAN (AVERAGE)** is the sum of the speeds of the samples divided by the number of samples.

The numerical values of the above factors are derived from the speed distribution curves calculated for each survey location. These distribution curves represent a method of graphic analysis that compares the cumulative percentage of vehicles to the speed at which the vehicles are traveling.

Field Review

In addition to the availability of the above statistical data, a significant aspect of speed limit recommendations is based on the field review. Its importance is that existing conditions may warrant a lower speed than is actually indicated by the application of survey data. Examples of the field data collected for the purposes of analyzing related roadway characteristics as they pertain to the determination of appropriate speed limits are listed below:

1. Segment length, width and alignment
2. Level of pedestrian activity
3. Traffic flow characteristics
4. Vertical and/or horizontal curves.
5. Driver sight distance constraints.
6. Adjacent residential/commercial/industrial etc. zoning.
7. Number of lanes and other channelization/striping factors
8. Frequency of intersections, driveways and on street parking;
9. Location of stop signs, traffic signals, and other regulatory traffic control devices;
10. Roadway conditions, bumps and dips;
11. Obstructions to pedestrian visibility;
12. Land use and proximity of schools;
13. Uniformity with existing speed zones to/with adjacent jurisdictions;
14. Any other unusual conditions not readily apparent to the driver.

The results of the field review of related road/traffic variables are summarized on the Engineering and Traffic Survey forms found in the Appendix of this report.

Accident History

The Engineering and Traffic Survey forms summarize the available three-year accident information for the subject streets. The accident information includes the total number of accidents within each street segment and of those accidents, the number that are speed-related. This information was obtained from the California Statewide Integrated Traffic Records System (SWITRS) for the City of Laguna Hills.

The annual accident rate figures represent the number of speed-related accidents divided by years of accident records. The evaluation of accidents is useful as a check on the accuracy of recommended or existing speed limits. Should this review show a high percentage of accidents associated with excessive speeds, then consideration based on professional traffic engineering judgement should be directed toward reducing the posted or recommended speed limit.

Results and Recommendations

The following Summaries: No Speed Limit Changes, New Speed Limit Postings, Speed Limit Increases, Speed Limit Reductions and Summary of Recommendations presents the results of the radar survey for the selected 62 locations. As shown, the Summary of Recommendations chart presents the necessary analysis elements that in addition to the field review of a registered traffic engineer led to the recommendations indicated.

Locations of "No Speed Limit Changes"

The Summary indicates that 60 of the 62 segments studied are recommended for no speed limit changes. The reason centers mostly on the fact that the newly measured values of the 85th percentile and the 10 MPH pace are still within the parameters of the existing speed limits. Additional factors such as the presence of horizontal or vertical curves reducing sight distance form the basis in some instances of our recommendation. Therefore, the current postings should remain as is. At two of these locations, only one direction of travel is posted and is listed for no change in the speed limit. Hence, the other direction should be posted for consistency. These segments noted as "install", as well as the segments recommended for "No Change" are listed below:

Alameda Avenue	
Aliso Hills Dr to La Paz Rd	Remain posted at 25 mph
Alicia Parkway	
South City Limits to Moulton Pkwy	Remain posted at 45 mph
Moulton Pkwy to Paseo De Valencia	Remain posted at 45 mph
Paseo De Valencia to Costeau Dr	Remain posted at 45 mph
Costeau Dr to I-5 Freeway	Remain posted at 40 mph
Aliso Hills Drive	
Alicia Pkwy to Alameda Ave	Remain posted at 35 mph
Alameda Ave to La Paz Rd	Remain posted at 35 mph

Avenida De La Carlota	
Lake Forest Dr to Ridge Route Dr	Remain posted at 45 mph
Ridge Route Dr to Paseo De Valencia	Remain posted at 40 mph
Paseo De Valencia to Los Alisos Bl	Remain posted at 40 mph
Beckenham Street	
Paseo De Valencia to East End	Remain posted at 30 mph
Bridlewood Drive	
Nellie Gail Rd to Oso Pkwy	Remain posted at 25 mph
Oso Pkwy to Laurel Crest	Remain posted at 30 mph
Cabot Road	
La Paz Rd to Paseo De Valencia	Remain posted at 45 mph
Paseo De Valencia to Oso Pkwy	Remain posted at 45 mph
Oso Pkwy to SCL (850' s/o Oso)	Remain posted at 45 mph
Rapid Falls Rd to SCL (800' s/o Rapid Falls)	Remain posted at 45 mph
El Toro Road	
I-5 Fwy to Paseo De Valencia	Remain posted at 35 mph
Gallup Circle	
La Paz Rd to Nellie Gail Rd	Remain posted at 25 mph
Gordon Road	
Moulton Pkwy to East End	Remain posted at 25 mph
Greenfield Drive	
Hidden Trail Dr to Route 73 (SCL)	Remain posted at 30 mph
Hon Avenue	
Julie Ave to Alicia Pkwy	Install 25 mph Southbound
Indian Hill Lane	
Laguna Hills Dr to Moulton Pkwy	Remain posted at 30 mph
La Paz Road	
West City Limits to Moulton Pkwy	Remain posted at 45 mph
Moulton Pkwy to Aliso Hills Dr	Remain posted at 50 mph
Aliso Hills Dr to Paseo De Valencia	Remain posted at 45 mph
Paseo De Valencia to Rickenbacker Rd	Remain posted at 40 mph
Rickenbacker Rd to I-5 Fwy	Remain posted at 35 mph
Laguna Hills Drive	
Moulton Pkwy to Paseo De Valencia	Remain posted at 45 mph

Lake Forest Drive	
Santa Vittoria Dr to Moulton Pkwy	Remain posted at 45 mph
Moulton Pkwy to I-5 Fwy	Remain posted at 40 mph
Los Alisos Boulevard	
I-5 Fwy to Paseo De Valencia	Remain posted at 40 mph
Louisa Street	
Moulton Pkwy to Lupita	Remain posted at 30 mph
Mill Creek Drive	
Lake Forest Dr to Ridge Route Dr	Remain posted at 30 mph
Moulton Parkway	
Lake Forest Dr to El Pacifico	Remain posted at 45 mph
El Pacifico to Santa Maria Ave	Remain posted at 45 mph
North City Limits to Via Lomas	Remain posted at 50 mph
Via Lomas to La Paz Rd	Remain posted at 45 mph
La Paz Rd to I-73	Remain posted at 45 mph
Nellie Gail Road	
Bridlewood Dr to Dapple Grey (N)	Remain posted at 25 mph
Dapple Grey (N) to Oso Pkwy	Remain posted at 30 mph
Oso Pkwy to Hidden Trail Rd	Remain posted at 25 mph
Lost Colt to Moulton Pkwy	Remain posted at 25 mph
Oso Parkway	
West City Limits to Moulton Pkwy	Install 45 mph Eastbound
Moulton Pkwy to Nellie Gail Rd	Remain posted at 50 mph
Nellie Gail Rd to Bridlewood Dr	Remain posted at 50 mph
Bridlewood Dr to I-5 Fwy	Remain posted at 50 mph
Paseo Dr Valencia	
Avendia De La Carlota to El Toro Rd	Remain posted at 35 mph
El Toro Rd to Los Alisos Bl	Remain posted at 40 mph
Los Alisos Bl to Laguna Hills Dr	Remain posted at 45 mph
Laguna Hills Dr to Alicia Pkwy	Remain posted at 45 mph
Alicia Pkwy to La Paz Rd	Remain posted at 45 mph
La Paz Rd to Cabot Rd	Remain posted at 45 mph
Ridge Route Drive	
Avenida De La Carlota to Moulton Pkwy	Remain posted at 45 mph
Moulton Pkwy to Santa Vittoria	Remain posted at 45 mph
San Remo Drive	
Santa Vittoria to Santa Maria Ave	Remain posted at 30 mph

Santa Maria Avenue	
San Remo Dr to Santa Vittoria Dr	Remain posted at 40 mph
Santa Vittoria	
Lake Forest Dr to Ridge Route Dr	Remain posted at 30 mph
Ridge Route Dr to Santa Maria Ave	Remain posed at 30 mph
Vista Viejo	
Devonshire Rd to East City Limits	Remain posted at 30 mph

Support Explanations of "No Speed Limit Changes"

The following are support explanations for the three roadway segments that the recommended speed limit is 5 mph lower or more than the newly measured 85th percentile speed.

Alameda Avenue

Aliso Hills Drive to La Paz Road

Alameda Avenue is a two lane roadway that is solely residential with multiple direct access driveways. This area is a speed concern to the City as periodic speed studies are conducted, and "Strict Enforcement Area" and "Watch Downhill Speed" signs are posted along the roadway. The roadway features include a constant moderate uphill grade northbound and several gradual to moderate horizontal curves. These roadway curves may limit the line-of-sight and may not be readily apparent to the driver. With the roadway features, and areas of limited sight distance, it is recommended that the existing 25 mph speed limit be maintained.

Bridlewood Drive

Nellie Gail Road to Oso Parkway

This portion of Bridlewood is a two lane residential roadway. The posted speed limit is 25 mph. Based upon the 85th percentile speed of 32.1 mph, the CVC code suggests a 30 mph speed limit. However, due to (1) equestrian trails and crossings, (2) solely single-family residential dwellings, (3) the steep grades and curving nature of the roadway, and (4) many areas of limited sight distance, it is recommended that the 25 mph speed limit be maintained.

Oso Parkway to Laurel Crest

This portion of Bridlewood is a two lane roadway. The posted speed limit is 30 mph. Based upon the 85th percentile speed of 37.4 mph, the CVC code suggests a 35 mph speed limit. However, due to (1) the residential nature of the area, (2) steep grades and curving nature of the roadway, (3) areas of limited sight distance, and (4) with a vertical curve north of Aprian the sight distance exiting said street is approximately 210 feet and the CVC required distance for a 35 mph speed limit is 250 feet, it is recommended that the 25 mph speed limit be maintained.

Hon Avenue

Julie Avenue to Alicia Parkway

The recommended 25 mph is within 3.3 mph of the 85th percentile speed and meets CVC standards. For enforcement, it is recommended that a 25 mph speed sign be installed southbound. Post on S/B as well

Oso Parkway

West City Limits to Moulton Parkway

The section of Oso Parkway is a six lane roadway. Adjacent land uses are commercial, business and Route 73 overpass. Field notes state this segment is a short 0.13 mile section with bus stops, painted bike lanes, narrow shoulders, no parking anytime, and has a 45 mph speed sign posted westbound only. The speed study resulted with an 85th percentile speed of 46.4 mph and a 10 mph pace range 38 to 47 mph. It is recommended that the existing 45 mph speed limit remain. For enforcement, it is recommended that a 45 mph speed sign be installed eastbound. //

Locations of "Conflicting Speed Postings"

One of 62 segments that are listed in the previous section as "No Speed Limit Changes" have conflicting posted speed limit signs within the segment boundaries. These roadway segments have one direction or a portion of the survey segment recommended for "No Change" in the existing speed limit. These segments are recommended for removal of the conflicting sign and/or replacement of the appropriate speed sign in the other direction. These segments and the reasons for the recommendations are listed as follows:

Rapid Falls Road Cabot Road to Losst Trail Drive	Remain posted at 25 mph, and Remove 30 mph posting WB

Support Explanations for " Conflicting Speed Postings "

Rapid Falls Road

Cabot Road to Lost Trail Drive

This section of Rapid Falls Road is a two lane roadway. The segment has conflicting speed limits postings, with 25 mph at both ends of segments and a 30 mph speed sign posted westbound only near Cabot Rd. The speed study results show an 85th percentile speed of 30.6 mph and a 10 mph pace range of 23 to 32 mph. With the area consisting of 100% residential, many driveways fronting the roadway, a neighborhood park, moderate roadway curves and grades, and several areas of limited sight distance, it is recommended that the existing 25 mph be maintained. With that, it is recommended that the 30 mph speed sign near Cabot Rd be removed.

(4)

Locations of "Residence District"

One roadway segment listed for the Engineering and Traffic Study fall under the California Vehicle Code 515, "Resident District Speed Limit." Explanations and requirements for Resident District are on Page 3. The CVC states that prima facie roadways are not required to be posted. Therefore, the City may choose to remove existing speed signs or leave them alone. These roadway segments are listed below:

Nellie Gail Road

Cabot Road to Gallup Circle	Establish as Resident District – 25 mph

Support Explanations for "Residence District"

Nellie Gail Road

Cabot Road to Gallup Circle

Nellie Gail Road is a two lane residential roadway. The speed data resulted with an 85th percentile speed of 31.0 mph that initially suggests a 30 mph posting. The need to retain the CVC defined lower speed is based on (1) 20 single-family dwellings with direct access driveways between Glen Canyon Drive to Sheriff Road (0.22 mi) and, (2) 20 single-family dwellings with direct access driveways between Sheriff Road to Hitching Post Road (0.25 mi) and, (3) several horizontal and vertical curves, and (4) several areas of limited sight distance. This segment meets the requirement for the CVC 515 "Residence District". Therefore with all these factors, it is recommended that the City establish the segment of Nellie Gail Road a Residence District". This segment does not require continued speed surveys.

1) establish residence district (not subject to future survey)
2) Remove conflicting signage

CITY OF LAGUNA HILLS

SUMMARY OF RECOMMENDATIONS

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
ALAMEDA AVENUE							
ALISO HILLS DR TO LA PAZ RD	25	**25**	30.6	26.5	23-32	88.2	NO CHANGE – RESIDENTIAL / LIMITED SIGHT DISTANCE
ALICIA PARKWAY							
SOUTH CITY LIMITS TO MOULTON PKWY	45	**45**	49.0	44.4	452-51	73.5	NO CHANGE – 85TH PERCENTILE
MOULTON PKWY TO PASEO DE VALENCIA	45	**45**	48.2	42.7	38-47	63.6	NO CHANGE – 85TH PERCENTILE
PASEO DE VALENCIA TO COSTEAU DR	45	**45**	47.6	43.2	40-49	76.4	NO CHANGE – 85TH PERCENTILE
COSTEAU DR TO I-5 FREEWAY	40	**40**	41.0	35.0	31-40	71.0	NO CHANGE – 85TH PERCENTILE
ALISO HILLS DRIVE							
ALICIA PKWY TO ALAMEDA AVE	35	**35**	38.1	35.2	31-40	88.3	NO CHANGE – 85TH PERCENTILE
ALAMEDA AVE TO LA PAZ RD	35	**35**	37.5	34.8	30-39	91.6	NO CHANGE – 85TH PERCENTILE
AVENIDA DE LA CARLOTA							
LAKE FOREST DR TO RIDGE ROUTE DR	45	**45**	47.2	42.5	39-48	70.1	NO CHANGE – 85TH PERCENTILE
RIDGE ROUTE DR TO PASEO DE VALENCIA	40	**40**	44.9	40.8	37-46	78.7	NO CHANGE – 85TH PERCENTILE
PASEO DE VALENCIA TO LOS ALISOS BLVD	40	**40**	43.9	39.4	35-44	78.6	NO CHANGE – 85TH PERCENTILE
BECKENHAM STREET							
PASEO DE VALENCIA TO EAST END	30	**30**	31.8	28.4	25-34	84.0	NO CHANGE – 85TH PERCENTILE

*25 MPH When Children Present, School Zone

5/21/2014 ITEM NO. 4.1

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
BRIDLEWOOD DRIVE							
NELLIE GAIL RD TO OSO PKWY	25	**25**	32.1	28.8	25-34	85.2	NO CHANGE – RESIDENTIAL / LIMITED SIGHT DISTANCE
OSO PKWY TO LAUREL CREST	30	**30**	37.4	33.0	30-39	81.8	NO CHANGE – RESIDENTIAL / LIMITED SIGHT DISTANCE
CABOT ROAD							
LA PAZ RD TO PASEO DE VALENCIA	45	**45**	47.0	42.6	40-49	74.5	NO CHANGE – 85TH PERCENTILE
PASEO DE VALENCIA TO OSO PKWY	45	**45**	47.2	42.3	40-49	71.3	NO CHANGE – 85TH PERCENTILE
OSO PKWY TO SCL (850' s.OSO PKWY)	45	**45**	47.8	43.4	39-48	73.8	NO CHANGE – 85TH PERCENTILE
RAPID FALLS RD TO SCL (800' S. RAPID FALLS)	45	**45**	48.8	44.7	41-50	78.2	NO CHANGE – 85TH PERCENTILE
EL TORO ROAD							
I-5 FREEWAY TO PASEO DE VALENCIA	35	**35**	37.6	34.0	30-39	82.0	NO CHANGE – 85TH PERCENTILE
GALLUP CIRCLE							
LA PAZ RD TO NELLIE GAIL RD	25	**25**	26.8	24.2	19-28	89.0	NO CHANGE – 85TH PERCENTILE
GORDON ROAD							
MOULTON PKWY TO EAST END	25	**25**	26.1	21.7	19-28	83.9	NO CHANGE – 85TH PERCENTILE
GREENFIELD DRIVE							
HIDDEN TRAIL DR TO ROUTE 73 FWY (SCL)	30	**30**	30.8	28.0	25-34	91.6	NO CHANGE – 85TH PERCENTILE
HON AVENUE							
JULIE AVE TO ALICIA PKWY	25 NB	**25**	28.8	25.4	22-31	87.8	NO CHANGE – 85TH PERCENTILE / POST SB

NB = Northbound, SB = Southbound

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
INDIAN HILL LANE							
LAGUNA HILLS DR TO MOULTON PKWY	30	**30**	33.2	29.7	25-34	85.0	NO CHANGE – 85TH PERCENTILE
LA PAZ ROAD							
WEST CITY LIMITS (I-73) TO MOULTON PKWY	45	**45**	45.2	41.4	37-46	81.7	NO CHANGE– 85TH PERCENTILE
MOULTON PKWY TO ALISO HILLS DR	50	**50**	51.1	46.4	43-52	75.0	NO CHANGE– 85TH PERCENTILE
ALISO HILLS DR TO PASEO DE VALENCIA	45 / 25*	**45 / 25***	47.6	43.6	40-49	77.0	NO CHANGE– 85TH PERCENTILE
PASEO DE VALENCIA TO RICKENBACKER RD	40 / 25*	**40 / 25***	42.3	38.3	35-44	83.4	NO CHANGE– 85TH PERCENTILE
RICKENBACKER RD TO I-5 FREEWAY	35	**35**	36.3	32.4	29-38	81.8	NO CHANGE– 85TH PERCENTILE
LAGUNA HILLS DRIVE							
MOULTON PKWY TO PASEO DE VALENCIA	45 / 25*	**45 / 25***	49.3	45.1	42-51	74.7	NO CHANGE – 85TH PERCENTILE
LAKE FOREST DRIVE							
SANTA VITTORIA DR TO MOULTON PKWY	45	**45**	47.7	43.7	39-48	78.7	NO CHANGE – 85TH PERCENTILE
MOULTON PKWY TO I-5 FREEWAY	40	**40**	43.3	39.1	35-44	78.5	NO CHANGE– 85TH PERCENTILE
LOS ALISOS BOULEVARD							
I-5 FREEWAY TO PASEO DE VALENCIA	40	**40**	43.7	39.3	36-45	75.3	NO CHANGE– 85TH PERCENTILE
LOUISA STREET							
MOULTON PKWY TO LUPITA ST	30	**30**	32.2	29.0	25-34	92.7	NO CHANGE – 85TH PERCENTILE

*25 MPH When Children Present, School Zone

5/21/2014 ITEM NO. 4.1

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
MILL CREEK DRIVE							
LAKE FOREST DR TO RIDGE ROUTE DR	30	**30**	34.3	31.1	28-37	88.0	NO CHANGE– 85TH PERCENTILE
MOULTON PARKWAY							
LAKE FOREST DR TO EL PACIFICO	45	**45**	48.0	43.1	40-49	65.5	NO CHANGE – 85TH PERCENTILE
EL PACIFICO TO SANTA MARIA AVE	45	**45**	47.6	43.8	39-48	76.2	NO CHANGE – 85TH PERCENTILE
NORTH CITY LIMITS TO VIA LOMAS	50	**50**	52.7	48.1	42-51	79.5	NO CHANGE – 85TH PERCENTILE
VIA LOMAS TO LA PAZ RD	45	**45**	47.9	44.2	40-49	82.8	NO CHANGE – 85TH PERCENTILE
LA PAZ RD TO I-73 FREEWAY	45	**45**	47.3	41.2	37-46	74.0	NO CHANGE – 85TH PERCENTILE
NELLIE GAIL ROAD							
CABOT RD TO GALLUP CIRCLE	25	**25**	31.0	27.0	23-32	86.1	2014 RECOMMEND ESTABLISH AS RESIDENCE DISTRICT CVC 515
GALLUP CIRCLE TO BRIDLEWOOD DR	25	-	-	-	-	-	2008 ESTABLISHED AS RESIDENCE DISTRICT CVC 515 DOES NOT REQUIRE CONTINUED SPEED SURVEYS
BRIDLEWOOD DR TO DAPPLE GREY (N)	25	**25**	31.5	27.1	23-32	86.4	NO CHANGE – LIMITED SIGHT DISTANCE / RESIDENTIAL
DAPPLE GREY (N) TO OSO PKWY	30	**30**	34.8	31.2	27-36	83.7	NO CHANGE – LIMITED SIGHT DISTANCE / RESIDENTIAL
OSO PKWY TO HIDDEN TRAIL RD	25	**25**	30.6	26.7	23-32	88.4	NO CHANGE – LIMITED SIGHT DISTANCE / RESIDENTIAL
HIDDEN TRAIL RD TO LOST COLT	25	-	-	-	-	-	2008 ESTABLISHED AS RESIDENCE DISTRICT CVC 515 DOES NOT REQUIRE CONTINUED SPEED SURVEYS
LOST COLT TO MOULTON PKWY	25	**25**	31.8	28.6	25-34	88.3	NO CHANGE – LIMITED SIGHT DISTANCE / RESIDENTIAL

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
OSO PARKWAY							
WEST CITY LIMITS TO MOULTON PKWY	45 WB	45	46.4	42.5	38-47	81.4	NO CHANGE – 85TH PERCENTILE / POST EB
MOULTON PKWY TO NELLIE GAIL RD	50	50	53.9	49.0	45-54	78.9	NO CHANGE – 85TH PERCENTILE
NELLIE GAIL RD TO BRIDLEWOOD DR	50	50	53.8	49.0	45-54	71.8	NO CHANGE – 85TH PERCENTILE
BRIDLEWOOD DR TO I-5 FREEWAY	50	50	50.8	46.8	43-52	75.2	NO CHANGE – 85TH PERCENTILE
PASEO DE VALENCIA							
AVENDIA DE LA CARLOTA TO EL TORO RD	35	35	35.8	31.9	28-37	85.5	NO CHANGE – 85TH PERCENTILE
EL TORO RD TO LOS ALISOS BLVD	40	40	41.4	37.8	34-43	75.8	NO CHANGE – 85TH PERCENTILE
LOS ALISOS BLVD TO LAGUNA HILLS DR	45	45	47.6	43.7	40-49	73.3	NO CHANGE – 85TH PERCENTILE
LAGUNA HILLS DR TO ALICIA PKWY	45 / 25*	45	45.0	40.7	37-46	72.0	NO CHANGE – 85TH PERCENTILE
ALICIA PKWY TO LA PAZ RD	45	45	49.0	44.4	40-49	73.4	NO CHANGE – 85TH PERCENTILE
LA PAZ RD TO CABOT RD	45 / 25*	45	46.6	43.7	40-49	84.4	NO CHANGE – 85TH PERCENTILE
RAPID FALLS ROAD							
CABOT RD TO LOST TRAIL DR	25 / 30WB	25	30.6	26.8	23-32	88.3	NO CHANGE – CONFLICTING SPEEDS RETAIN 25 MPH AND REMOVE 30 MPH WB
LOST TRAIL DR TO HIDDEN TRAIL ROAD	25	-	-	-	-	-	2008 ESTABLISHED AS RESIDENCE DISTRICT CVC 515 DOES NOT REQUIRE CONTINUED SPEED SURVEYS
RIDGE ROUTE DRIVE							
AVENIDA DE LA CARLOTA TO MOULTON PKWY	45	45	46.2	42.0	39-48	71.8	NO CHANGE – 85TH PERCENTILE
MOULTON PKWY TO SANTA VITTORIA	45	45	45.4	39.3	36-45	63.1	NO CHANGE – 85TH PERCENTILE

*25 MPH When Children Present, School Zone, WB = Westbound, EB = Eastbound

5/21/2014 ITEM NO. 4.1

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
SAN REMO DRIVE							
SANTA VITTORIA DR TO SANTA MARIA AVE	30	**30**	32.0	27.3	23-32	80.3	NO CHANGE – 85TH PERCENTILE
SANTA MARIA AVENUE							
SAN REMO DR TO SANTA VITTORIA DR	40 / 25*	**40**	43.1	39.7	36-45	82.9	NO CHANGE – 85TH PERCENTILE
SANTA VITTORIA							
LAKE FOREST DR TO RIDGE ROUTE DR	30	**30**	33.0	28.9	25-34	87.1	NO CHANGE – 85TH PERCENTILE
RIDGE ROUTE DR TO SANTA MARIA AVE	30 / 25*	30 / 25*	32.0	29.0	25-34	91.6	NO CHANGE – 85TH PERCENTILE
VISTA VIEJO							
DEVONSHIRE RD TO EAST CITY LIMITS	30	**30**	32.2	27.7	24-33	80.8	NO CHANGE – 85TH PERCENTILE

*25 MPH When Children Present, School Zone

APPENDIX A

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALAMEDA AVENUE — **ALISO HILLS DR TO LA PAZ RD**

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:15 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF EL PRADO
DATE OF SURVEY	11/26/2013
85th PERCENTILE	30.6 MPH
10 MPH PACE	23 - 32 MPH
PERCENT IN PACE	88.2 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	2
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,600
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - ALISO HILLS / EL PRADO / LA PAZ
CROSSWALKS	AT ALISO HILLS
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	"STRICT ENFORCEMENT AREA" SIGNS POSTED "WATCH DOWNHILL SPEED" SIGNS POSTED

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.58
VERTICAL CURVE	CONSTANT MODERATE UPHILL GRADE (NB)
HORIZONTAL CURVE	GRADUAL-MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	

ADJACENT LAND USE	RESIDENTIAL (F+NF)**
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

Alameda Avenue is a two lane roadway that is solely residential with multiple direct access driveways. This area is a speed concern to the City as periodic speed studies are conducted, and "Strict Enforcement Area" and "Watch Downhill Speed" signs are posted along the roadway. The roadway features include a constant moderate uphill grade northbound and several gradual to moderate horizontal curves. These roadway curves may limit the line-of-sight and may not be readily apparent to the driver. With the roadway features, and areas of limited sight distance, it is recommended that the existing 25 mph speed limit be maintained.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Alameda 2013-01

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

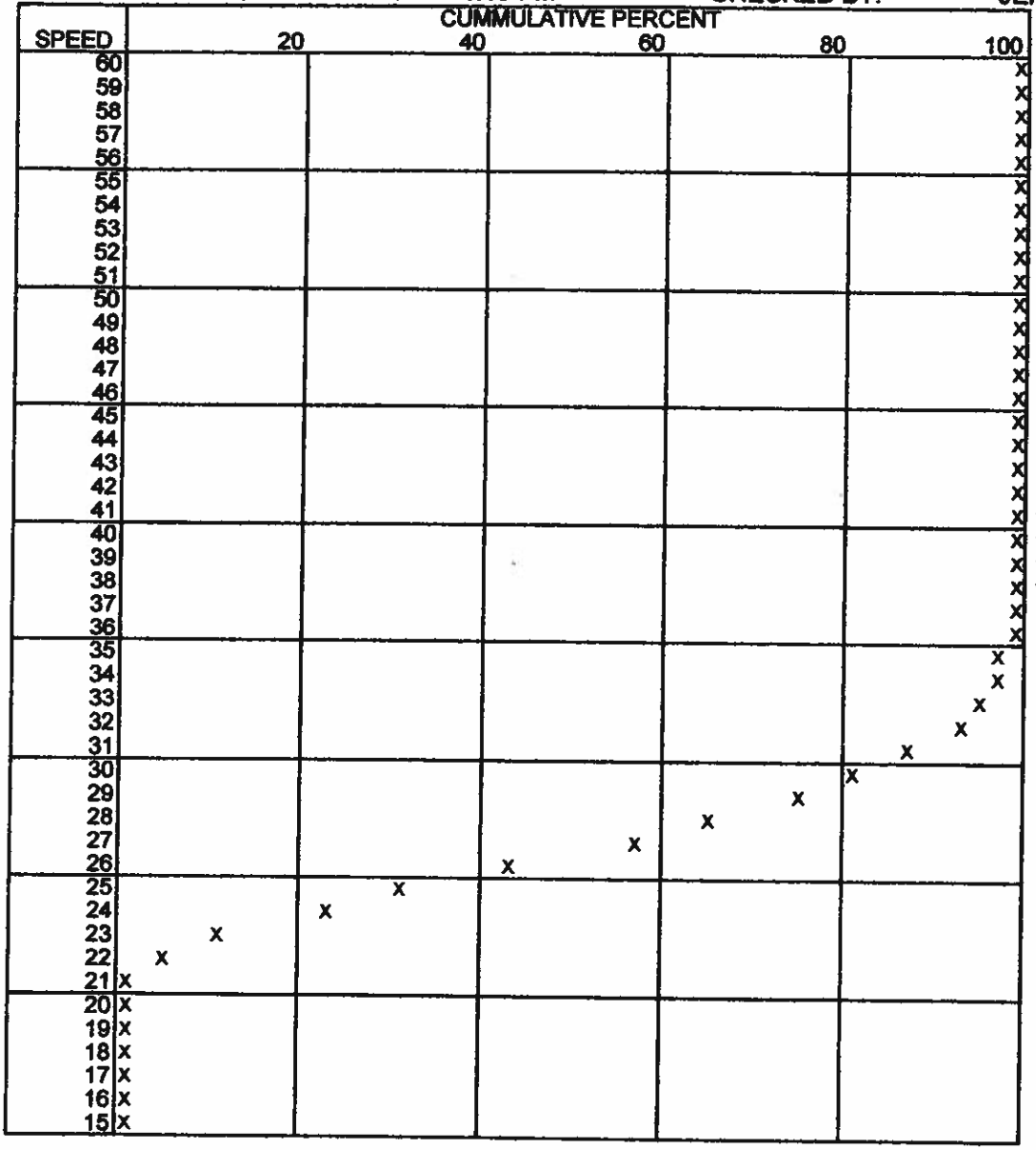
CITY OF LAGUNA HILLS

HCI

ALAMEDA AVENUE — ALISO HILLS DR TO LA PAZ RD

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:15 PM — CHECKED BY: JERRY STOCK



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43	100.0%	
42	100.0%	
41	100.0%	
40	100.0%	
39	100.0%	
38	100.0%	
37	99.1%	
36	98.2%	
35	97.3%	
34	96.4%	
33	94.5%	
32	92.7%	}PACE
31	87.3%	}PACE
30	81.8%	}PACE -- 85PCT
29	74.5%	}PACE
28	65.5%	}PACE
27	56.4%	}PACE
26	43.6%	}PACE - - - MEAN
25	31.8%	}PACE
24	22.7%	}PACE
23	11.8%	}PACE - - - 15PCT
22	4.5%	
21	1.8%	
20	0.9%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	32	MPH
LOWER LIMIT 10 MPH PACE:	23	MPH
PERCENT OVER PACE:	7.3	%
PERCENT IN PACE:	88.2	%
PERCENT UNDER PACE:	4.5	%

85th PERCENTILE SPEED:	30.6	MPH
MEDIAN SPEED:	26.5	MPH
15th PERCENTILE SPEED:	23.3	MPH

Alameda 2013-01

5/21/2014 ITEM NO. 4.1

$SPD—HCI.dwg

Radar Speed Survey Field Sheet

Hatzenbeller & Cordell, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS

STREET: ALICIA AVENUE

LOCATION: ALISO HILLS DR. TO LA PAZ RD

WEATHER: SUNNY

ROAD CONDITION: DRY

OBSERVER: Cathy Buendia

DATE: 11/26/13

START TIME: 12:30 PM

END TIME: 1:15 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35		
34		
33	/	1
32	///	4
31	///	3
30	////	5
29	////	6
28	/////	5
27	/////	7
26	/////	7
25	////	5
24	////	6
23	/	4
22		
21	/	1
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38	/	1	1	38
37	/	1	1	37
36	/	1	2	36
35	/	1	2	35
34	//	2	4	34
33	///	3	6	33
32	///	3	6	32
31	///	3	8	31
30	////	4	10	30
29	/////	5	10	29
28	/////	7	14	28
27	/////	7	15	27
26	////	6	13	26
25	///	5	10	25
24	////	6	12	24
23	////	4	8	23
22	///	3	6	22
21	//	2	3	21
20	/	1	1	20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALICIA PARKWAY — **SOUTH CITY LIMITS TO MOULTON PKWY**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 1:30 PM - 2:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF RAMONA
DATE OF SURVEY	11/19/2013
85th PERCENTILE	49.0 MPH
10 MPH PACE	42 - 51 MPH
PERCENT IN PACE	73.5 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	8
TOTAL ACCIDENTS	14
ANNUAL ACCIDENT RATE	4.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	1.19 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	40,100
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON / RAMONA
CROSSWALKS	AT MOULTON / RAMONA
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.23
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUA "S" CURVE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF)**
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

This recommended 45 mph is within 4.0 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, seperated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Alicia 2013-02

RADAR SPEED DISTRIBUTION SHEET

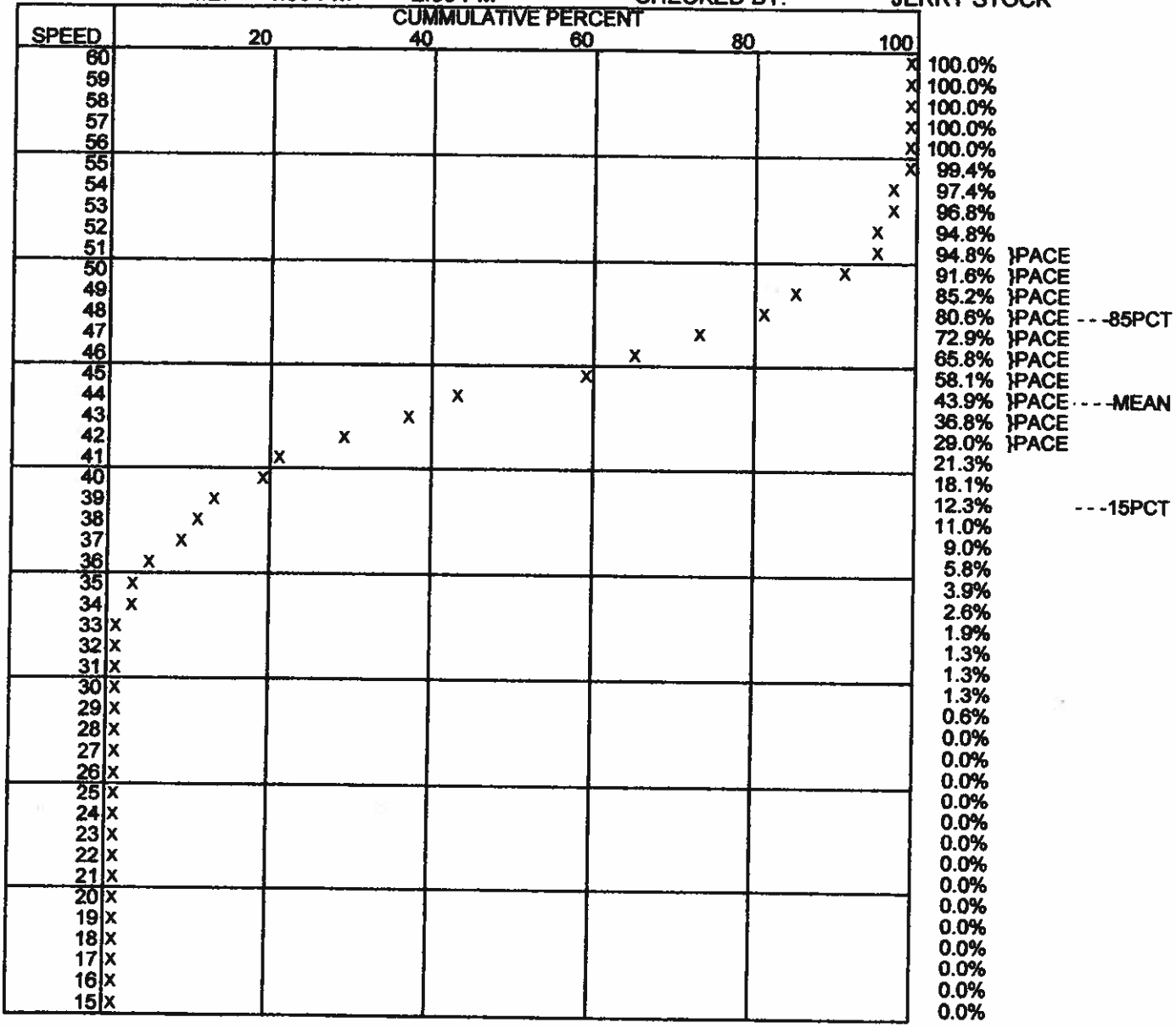
HCI

CITY OF LAGUNA HILLS

ALICIA PARKWAY — SOUTH CITY LIMITS TO MOULTON PKWY

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 1:30 PM - 2:00 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	51	MPH
LOWER LIMIT 10 MPH PACE:	42	MPH
PERCENT OVER PACE:	8.4	%
PERCENT IN PACE:	73.5	%
PERCENT UNDER PACE:	21.3	%

85th PERCENTILE SPEED:	49.0	MPH
MEDIAN SPEED:	44.4	MPH
15th PERCENTILE SPEED:	39.5	MPH

Alicia 2013-02

Radar Speed Survey Field Sheet

Hastings & Smith, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: ALICIA PARKWAY
LOCATION: S/W CITY LIMITS TO MOULTON PARKWAY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11-19-13
START TIME: 1:30 PM
END TIME: 2:00 PM

VIAL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55	/	1
54	/	1
53	//	2
52		0
51	/////	5
50	//////	6
49	/////	5
48	/////	5
47	/////	5
46	/////	5
45	//////////	10
44	/////	5
43	/////	5
42	/////	5
41		0
40	//	2
39		0
38	///	3
37	///	3
36		0
35	/	1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: W

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56	/	1	1	56
55	//	2	3	55
54		0	1	54
53	/	1	3	53
52		0	0	52
51		0	5	51
50	//	2	10	50
49	//	2	7	49
48	/////	7	12	48
47	/////	5	11	47
46	/////	7	12	46
45	//////////	10	22	45
44	/////	5	11	44
43	/////	6	12	43
42	/////	7	12	42
41	////	4	5	41
40	//////	7	9	40
39	//	2	2	39
38		0	3	38
37	//	2	5	37
36	///	3	3	36
35	/	1	2	35
34	/	1	1	34
33	/	1	1	33
32		0	0	32
31		0	0	31
30	/	1	1	30
29	/	1	1	29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALICIA PARKWAY — **MOULTON PKWY TO PASEO DE VALENCIA**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF ALISO HILLS
DATE OF SURVEY	11/19/2013
85th PERCENTILE	48.2 MPH
10 MPH PACE	38 - 47 MPH
PERCENT IN PACE	63.6 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	20
TOTAL ACCIDENTS	36
ANNUAL ACCIDENT RATE	fb
ACC./MILLION VEH. MILES	0.86 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	43,300
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON / ALISO HILLS / COMMUNITY CTR / PASEO DE VALENCIA
CROSSWALKS	AT MOULTON / ALISO HILLS / COMMUNITY CTR (sch)/ PASEO DE VALENCIA (sch)
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS
	RxR XING

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.74
VERTICAL CURVE	SLIGHT UPHILL GRADES (EB)
HORIZONTAL CURVE	GRADUAL - MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (areas of slight)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (NF)** / COMMERCIAL / REGIONAL PARK / COMMUNITY CENTER
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 3.2 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Alicia 2013-03

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

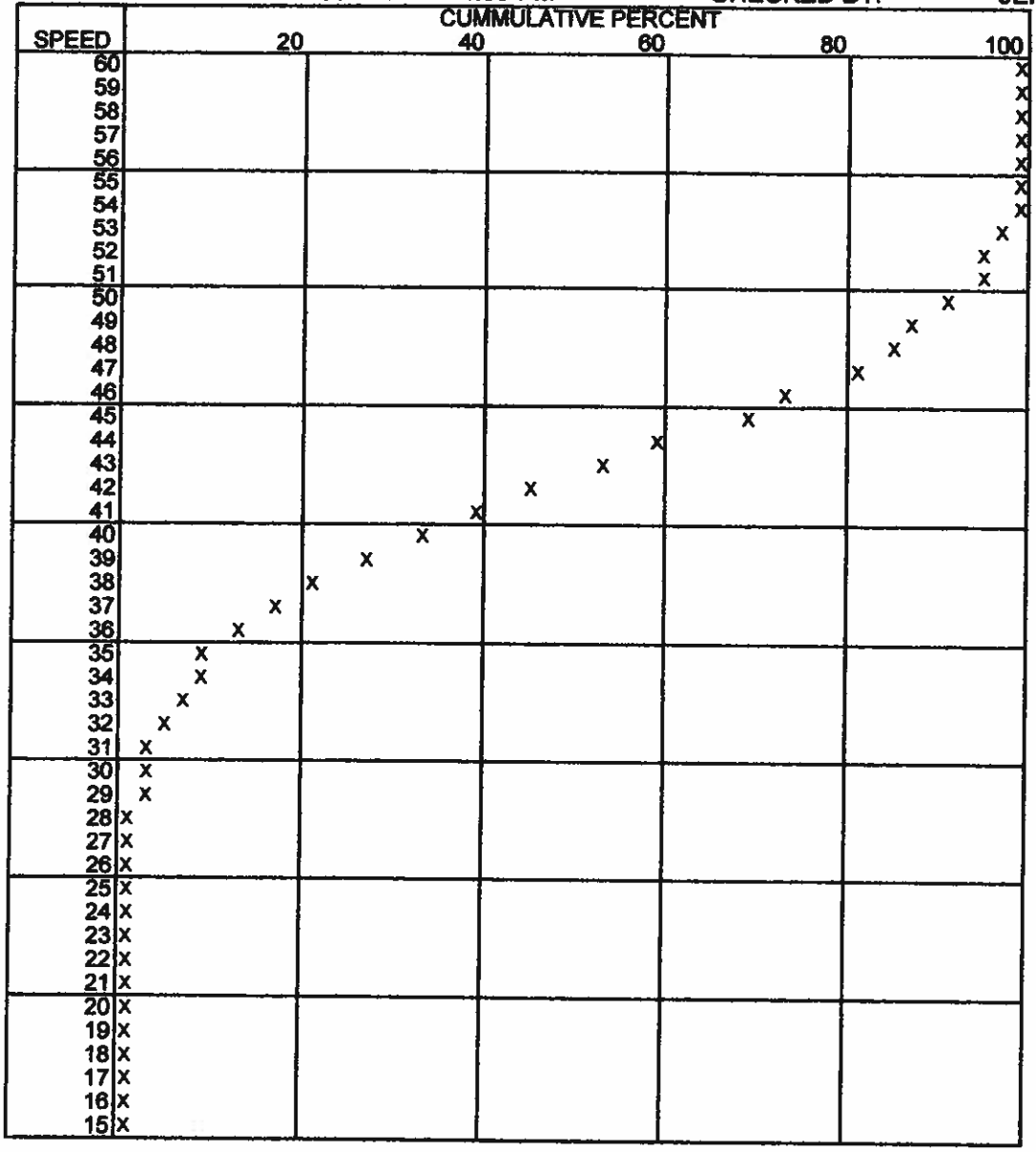
HCI

CITY OF LAGUNA HILLS

ALICIA PARKWAY — MOULTON PKWY TO PASEO DE VALENCIA

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	47	MPH
LOWER LIMIT 10 MPH PACE:	38	MPH
PERCENT OVER PACE:	19.7	%
PERCENT IN PACE:	63.6	%
PERCENT UNDER PACE:	16.8	%

85th PERCENTILE SPEED:	48.2	MPH
MEDIAN SPEED:	42.7	MPH
15th PERCENTILE SPEED:	36.4	MPH

Alicia 2013-03

Radar Speed Survey Field Sheet

Hastings & Associates, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA Hills

STREET: ALICIA PARKWAY

LOCATION: MOULTON PKWY TO PASEO DE VALENCIA

WEATHER: PARTIAL SUNNY DATE: 11-19-13

ROAD CONDITION: DRY START TIME: 1:00 PM

OBSERVER: Cathy Buendia END TIME: 1:30 PM

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57	/	1
56		0
55	/	1
54	//	2
53	//	2
52	/	1
51	///	3
50	///	3
49	///	3
48	///	3
47	///////	7
46	///////	7
45	/////	5
44		
43	/////	5
42	///	3
41		
40	///	3
39	///	3
38	//	2
37	//	2
36	//	2
35	/	1
34		
33		
32	/	1
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57			1	57
56			0	56
55			1	55
54			2	54
53	/	1	3	53
52	/	1	2	52
51	///	3	6	51
50	///	3	6	50
49	///	3	6	49
48	////	4	7	48
47	///	3	11	47
46	////	4	9	46
45	/////////	9	16	45
44	/////////	9	12	44
43	//////	6	13	43
42	////////	8	11	42
41	////////	8	10	41
40	/////	5	9	40
39	///////	7	11	39
38	//////	6	8	38
37	///	3	5	37
36	/////	5	8	36
35		0	2	35
34	/	1	2	34
33	///	3	3	33
32	///	3	4	32
31			1	31
30		0	0	30
29	/	1	2	29
28	//	2	1	28
27	/	1		27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

E of Alisa

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALICIA PARKWAY — **PASEO DE VALENCIA TO COSTEAU DR**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 10:30 AM - 11:00 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF PASEO DE VALENCIA
DATE OF SURVEY	11/19/2013
85th PERCENTILE	47.6 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	76.4 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	19
TOTAL ACCIDENTS	31
ANNUAL ACCIDENT RATE	9.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.84 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	47,600
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PASEO DE VALENCIA / WILKES / COSTEAU
CROSSWALKS	AT PASEO DE VALENCIA (sch)(/ WILKES (sch) / COSTEAU
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.65
VERTICAL CURVE	SLIGHT UP/DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (NF)** / COMMERCIAL
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 2.6 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Alicia 2013-04

RADAR SPEED DISTRIBUTION SHEET

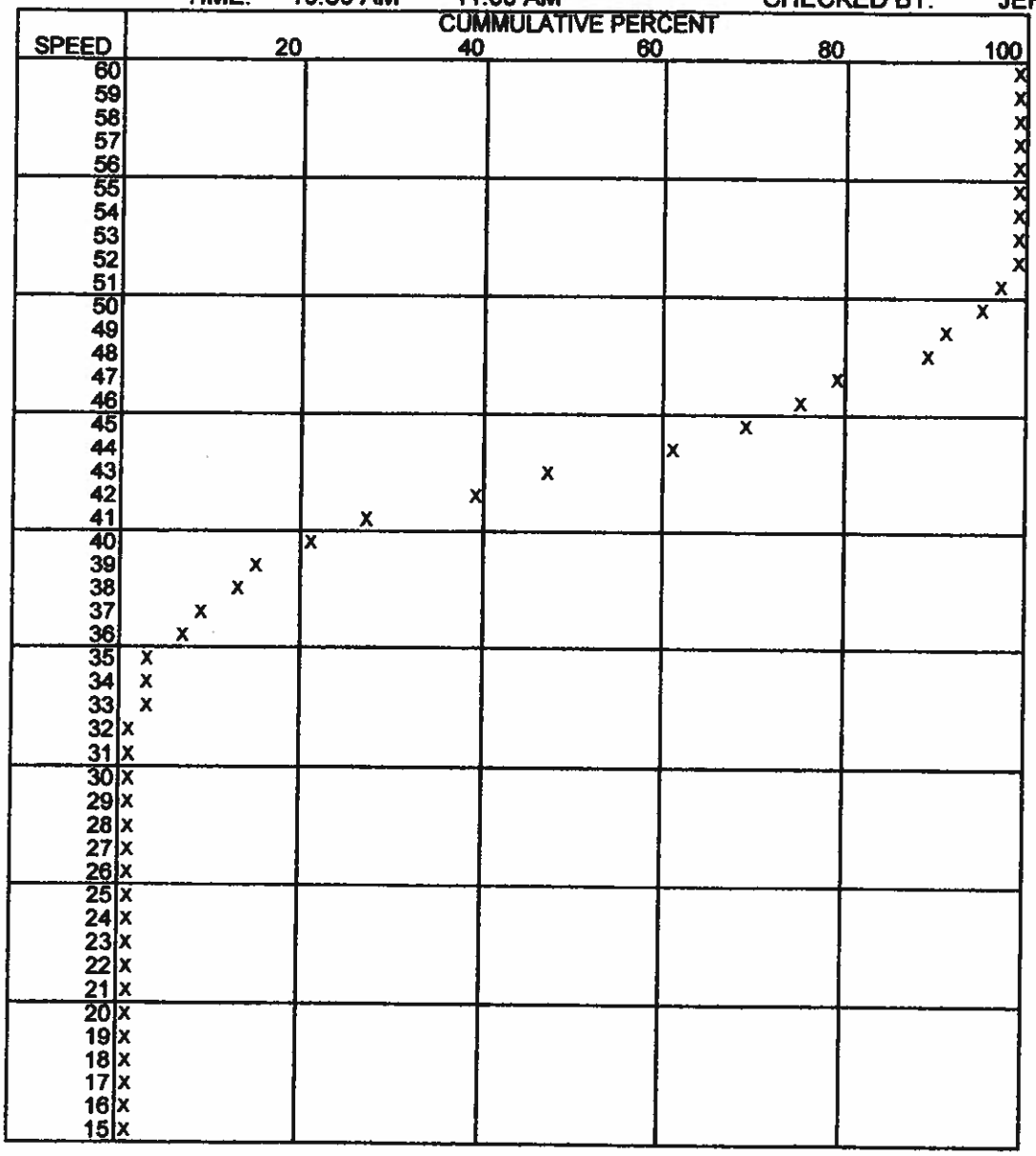
HCI

CITY OF LAGUNA HILLS

ALICIA PARKWAY — PASEO DE VALENCIA TO COSTEAU DR

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 10:30 AM - 11:00 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	11.4	%
PERCENT IN PACE:	76.4	%
PERCENT UNDER PACE:	15.0	%

85th PERCENTILE SPEED:	47.6	MPH
MEDIAN SPEED:	43.2	MPH
15th PERCENTILE SPEED:	39.0	MPH

Alicia 2013-04

Radar Speed Survey Field Sheet

Hastings & Chrisman, Inc.
Consulting Traffic Engineers
27832 E. 10th Street, Suite 101
Yucaipa, California 92399
714.731.9681 fax: 714.731.3686
www.hastingscrmhill.com

AGENCY: CITY OF LAGUNA HILLS
STREET: ALICIA PARKWAY
LOCATION: PASEO DE VALENCIA TO COSTEAU DR

WEATHER: PARTIAL SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/19/13
START TIME: 10:30 AM
END TIME: 11:00 AM VEH

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51	/	1
50	/	1
49		
48	////	4
47	///	3
46	////	4
45	/////	5
44	/////	5
43	/////	5
42	/////	5
41	////	4
40	////	4
39	/	1
38	/	1
37	//	2
36	/	1
35		
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53	//	2	2	53
52	//	2	2	52
51	///	3	4	51
50	///	3	4	50
49	////	4	4	49
48	//////	6	13	48
47	////	4	6	47
46	////	4	9	46
45	///////	7	10	45
44	//////////	10	20	44
43	//////	6	10	43
42	//////	6	19	42
41	////	4	8	41
40	//	2	8	40
39	//	2	4	39
38	///	3	5	38
37	/	1	3	37
36	///	3	4	36
35	/	1	0	35
34		0	0	34
33	//	2	2	33
32	/	1	1	32
31		0	0	31
30	/	1	1	30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALICIA PARKWAY — **COSTEAU DR TO I-5 FREEWAY**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 10:30 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF HON
DATE OF SURVEY	11/19/2013
85th PERCENTILE	41.0 MPH
10 MPH PACE	31 - 40 MPH
PERCENT IN PACE	71.0 %
POSTED SPEED LIMIT	40 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	12
TOTAL ACCIDENTS	20
ANNUAL ACCIDENT RATE	6.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.84 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	54,300
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - COSTEAU / HON / I-5 FWY SB
CROSSWALKS	AT COSTEAU / HON / I-5 FWY SB
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS
	DENSE TRAFFIC NEAR FWY

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.36
VERTICAL CURVE	SLIGHT-GRADUAL UP/DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "C" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (areas of slight)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	SHORT DISTANCE BTWN INTERSECTIONS

ADJACENT LAND USE	RESIDENTIAL (NF)** / COMMERCIAL / I-5 FWY
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph speed limit is within 1.0 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Alicia 2013-05

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

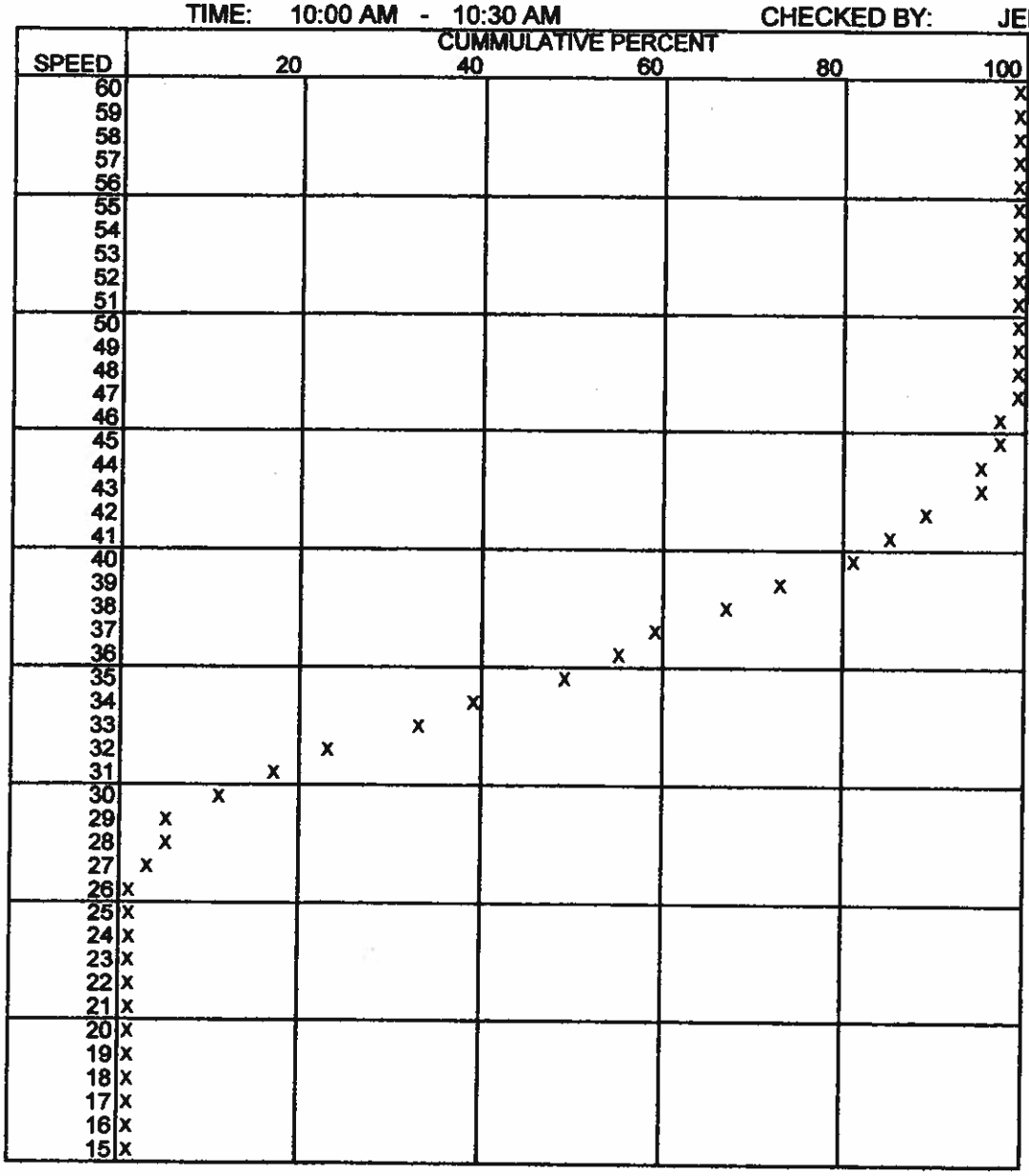
HCI

CITY OF LAGUNA HILLS

ALICIA PARKWAY — COSTEAU DR TO I-5 FREEWAY

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 10:30 AM — CHECKED BY: JERRY STOCK



60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	100.0%	
51	100.0%	
50	100.0%	
49	100.0%	
48	99.3%	
47	98.6%	
46	97.1%	
45	96.4%	
44	94.9%	
43	94.2%	
42	89.9%	
41	84.8%	---85PCT
40	81.2%	}PACE
39	72.5%	}PACE
38	66.7%	}PACE
37	59.4%	}PACE
36	54.3%	}PACE
35	50.0%	}PACE ---MEAN
34	38.4%	}PACE
33	32.6%	}PACE
32	23.9%	}PACE
31	17.4%	}PACE
30	10.1%	---15PCT
29	5.8%	
28	5.1%	
27	3.6%	
26	1.4%	
25	1.4%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	40	MPH
LOWER LIMIT 10 MPH PACE:	31	MPH
PERCENT OVER PACE:	18.8	%
PERCENT IN PACE:	71.0	%
PERCENT UNDER PACE:	10.1	%

85th PERCENTILE SPEED:	41.0	MPH
MEDIAN SPEED:	35.0	MPH
15th PERCENTILE SPEED:	30.7	MPH

Alicia 2013-05

Radar Speed Survey Field Sheet

Hanson & Courtney, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: ALICIA PARKWAY
LOCATION: COSTEAU DR TO I-5 FWY

WEATHER: Partial SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/19/13
START TIME: 10:00 AM
END TIME: 10:30 AM JGH

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46	/	1
45		0
44	/	1
43	/	1
42		0
41		1
40	/ / / / /	6
39	/ / / / /	6
38	/ / / /	5
37	/ / / / /	7
36	/ / / / /	7
35	/ / / / / / /	9
34	/ / / / / / /	9
33	/ / / / / / /	9
32	/ / / / /	5
31	/ / / / /	5
30	/ / / / /	3
29		1
28	/	0
27	/ / /	3
26		0
25	/	1
24		
23	/	
22		
21	/	
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49	/	1	1	49
48	/	1	2	48
47	/ /	2	4	47
46		0	4	46
45	/ /	2	6	45
44		0	6	44
43	/ / / /	5	12	43
42	/ / / / / /	7	19	42
41	/ / / / /	5	24	41
40	/ / / / /	6	30	40
39	/ / / / /	6	36	39
38	/ / / / /	6	42	38
37	/ / / / /	5	47	37
36	/	1	48	36
35	/ / / / / /	7	55	35
34	/ / /	3	58	34
33	/ / / /	4	62	33
32	/ / / / / /	7	69	32
31	/	1	70	31
30		0	70	30
29	/	1	71	29
28	/	1	72	28
27		0	72	27
26		0	72	26
25	/	1	73	25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALISO HILLS DRIVE — **ALICIA PKWY TO ALAMEDA AVE**

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 11:30 AM - 12:15 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF EL SEGUNDO
DATE OF SURVEY	11/26/2013
85th PERCENTILE	38.1 MPH
10 MPH PACE	31 - 40 MPH
PERCENT IN PACE	88.3 %
POSTED SPEED LIMIT	35 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	4
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	2,700
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - ALICIA, STOP - ALAMEDA
CROSSWALKS	AT ALICIA / ALAMEDA
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	"WATCH DOWNHILL SPEEDS" SIGNS POSTED

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.56
VERTICAL CURVE	CONSTANT MODERATE UPHILL GRADES (EB)
HORIZONTAL CURVE	SEVERAL GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	SOLID DBL YELLOW CENTERLINE

ADJACENT LAND USE	RESIDENTIAL (NF)**
RECOMMENDED SPEED LIMIT	35 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 35 mh speed limit is within 3.1 mph of the 85the percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Aliso Hills 2013-06

RADAR SPEED DISTRIBUTION SHEET

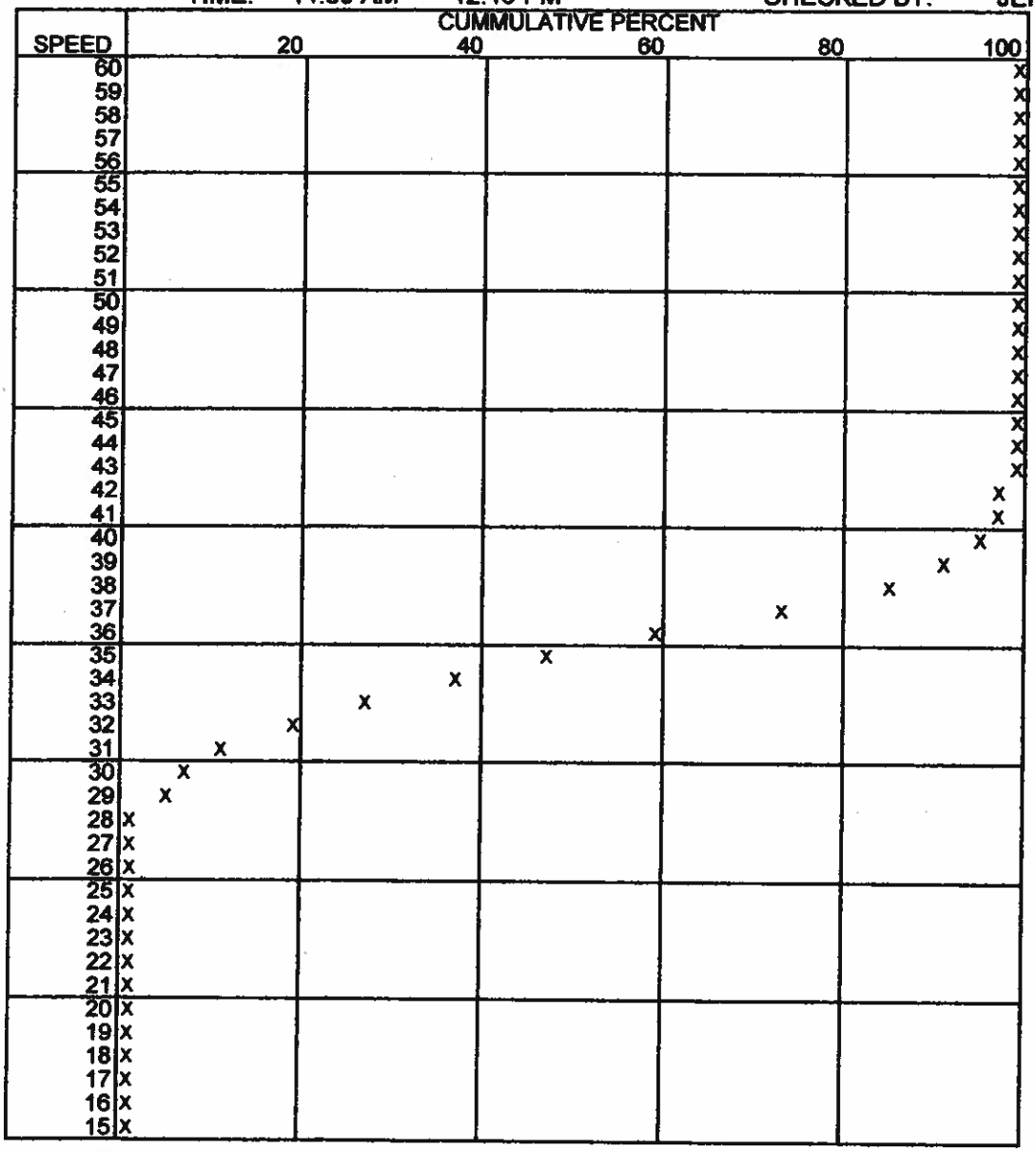
HCI

CITY OF LAGUNA HILLS

ALISO HILLS DRIVE — ALICIA PKWY TO ALAMEDA AVE

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 11:30 AM - 12:15 PM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT	
60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	100.0%	
51	100.0%	
50	100.0%	
49	100.0%	
48	100.0%	
47	100.0%	
46	100.0%	
45	100.0%	
44	99.1%	
43	98.2%	
42	97.3%	
41	96.4%	
40	94.6%	}PACE
39	91.0%	}PACE
38	84.7%	}PACE - - -85PCT
37	73.9%	}PACE
36	59.5%	}PACE
35	47.7%	}PACE - - - -MEAN
34	36.0%	}PACE
33	26.1%	}PACE
32	18.0%	}PACE
31	11.7%	}PACE - - -15PCT
30	6.3%	
29	4.5%	
28	1.8%	
27	0.9%	
26	0.9%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	40	MPH
LOWER LIMIT 10 MPH PACE:	31	MPH
PERCENT OVER PACE:	5.4	%
PERCENT IN PACE:	88.3	%
PERCENT UNDER PACE:	6.3	%

85th PERCENTILE SPEED:	38.1	MPH
MEDIAN SPEED:	35.2	MPH
15th PERCENTILE SPEED:	31.5	MPH

Aliso Hills 2013-06

Radar Speed Survey Field Sheet

Hastings & Chasney, Inc.
Consulting Traffic Engineers
17631 E. 17th Street, Suite 101
Tustin, California 92780
714.731.9401 fax: 714.731.9405
www.hastingsandchasney.com

AGENCY: CITY OF LAGUNA HILLS
STREET: ALISO HILLS DRIVE
LOCATION: ALICIA PKWY TO ALAMEDA AVE

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/26/13
START TIME: 11:30 AM
END TIME: 12:15 PM

DIRECTION: EAST BOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41	/	1
40	/	1
39	///	3
38	/////	5
37	//////	6
36	//////	6
35	//////	6
34	//////	6
33	/////	5
32	///	3
31	///	3
30	/	1
29	//	2
28		
27		
26	/	1
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WEST BOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45	/	1	1	45
44			1	44
43			1	43
42			1	42
41			2	41
40	///	3	4	40
39	////	4	7	39
38	//////	6	13	38
37	//////	6	16	37
36	//////	6	13	36
35	//////	6	13	35
34	//////	6	11	34
33	/////	5	9	33
32	////	4	7	32
31	////	4	6	31
30	///	3	2	30
29	/	1	3	29
28			0	28
27			1	27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

ALISO HILLS DRIVE — **ALAMEDA AVE TO LA PAZ RD**

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:35 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF EL SEGUNDO
DATE OF SURVEY	11/26/2013
85th PERCENTILE	37.5 MPH
10 MPH PACE	30 - 39 MPH
PERCENT IN PACE	91.6 %
POSTED SPEED LIMIT	35 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	4
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	1.75 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,700
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LA PAZ, STOP - ALAMEDA
CROSSWALKS	AT ALAMEDA / LA PAZ
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	FEW ON-STREET PARKING NEAR PARK

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.46
VERTICAL CURVE	CONSTANT UPHILL GRADES (EB)
HORIZONTAL CURVE	SEVERAL GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED-FAIR SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	SOLID DBL YELLOW CENTERLINE

ADJACENT LAND USE	RESIDENTIAL (NF)** / PARK (at Alameda)
RECOMMENDED SPEED LIMIT	35 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 35 mph speed limit is within 2.5 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Aliso Hills 2013-07

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

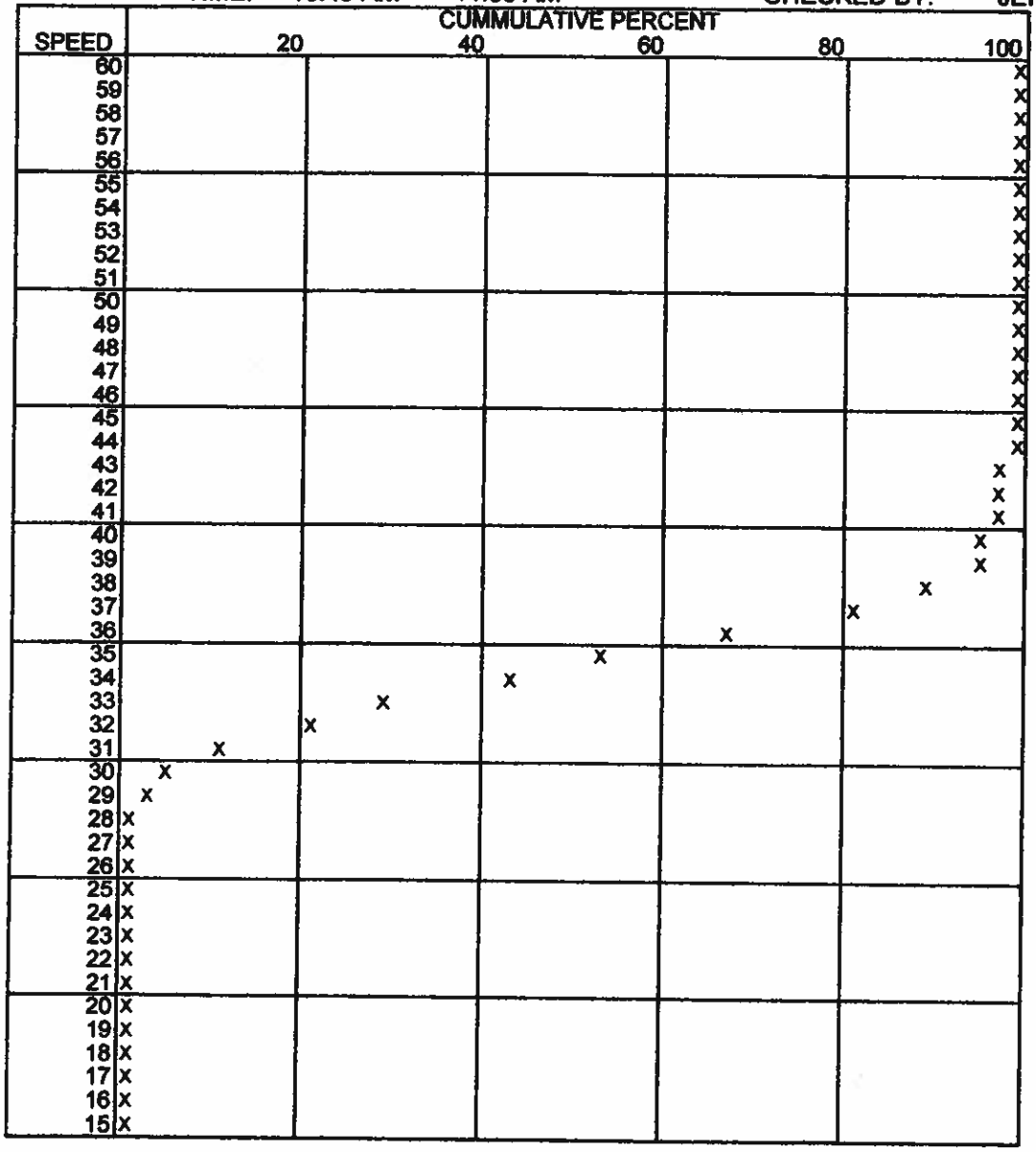
HCI

CITY OF LAGUNA HILLS

ALISO HILLS DRIVE — ALAMEDA AVE TO LA PAZ RD

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:35 AM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT		
60	X	100.0%	
59	X	100.0%	
58	X	100.0%	
57	X	100.0%	
56	X	100.0%	
55	X	100.0%	
54	X	100.0%	
53	X	100.0%	
52	X	100.0%	
51	X	100.0%	
50	X	100.0%	
49	X	100.0%	
48	X	100.0%	
47	X	100.0%	
46	X	100.0%	
45	X	99.1%	
44	X	98.1%	
43	X	97.2%	
42	X	97.2%	
41	X	96.3%	
40	X	95.3%	
39	X	94.4%	}PACE
38	X	89.7%	}PACE
37	X	80.4%	}PACE - - -85PCT
36	X	66.4%	}PACE
35	X	52.3%	}PACE
34	X	42.1%	}PACE - - - -MEAN
33	X	29.9%	}PACE
32	X	20.6%	}PACE
31	X	11.2%	}PACE - - -15PCT
30	X	5.6%	}PACE
29	X	2.8%	
28	X	0.9%	
27	X	0.0%	
26	X	0.0%	
25	X	0.0%	
24	X	0.0%	
23	X	0.0%	
22	X	0.0%	
21	X	0.0%	
20	X	0.0%	
19	X	0.0%	
18	X	0.0%	
17	X	0.0%	
16	X	0.0%	
15	X	0.0%	

UPPER LIMIT 10 MPH PACE:	39	MPH
LOWER LIMIT 10 MPH PACE:	30	MPH
PERCENT OVER PACE:	5.6	%
PERCENT IN PACE:	91.6	%
PERCENT UNDER PACE:	2.8	%

85th PERCENTILE SPEED:	37.5	MPH
MEDIAN SPEED:	34.8	MPH
15th PERCENTILE SPEED:	31.4	MPH

Aliso Hills 2013-07

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hastings & Chavez Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: ALISO HILLS AVENUE
LOCATION: ALAMEDA AVE TO LA PAZ RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/26/13
START TIME: 10:45 AM
END TIME: 11:30 AM VOL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44	/	
43	/	
42		
41		
40	/	
39	///	1
38	/////	3
37	///// //	5
36	///// ///	7
35	///// ///	8
34	/////	5
33	/////	6
32	/////	6
31	/////	5
30	///	3
29		2
28	/	0
27		1
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46	/	1	1	46
45	/	1	1	45
44	/	1	1	44
43			0	43
42	/	1	1	42
41	/	1	1	41
40			1	40
39	//	2	5	39
38	/////	5	10	38
37	///// ///	8	15	37
36	///// //	7	15	36
35	///// /	6	11	35
34	///// //	7	13	34
33	/////	4	10	33
32	/////	5	10	32
31	///	3	6	31
30	/	1	3	30
29	//	2	2	29
28			1	28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

AVENIDA DE LA CARLOTA — **LAKE FOREST DR TO RIDGE ROUTE DR**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF PLAZA
DATE OF SURVEY	11/18/2013
85th PERCENTILE	47.2 MPH
10 MPH PACE	39 - 48 MPH
PERCENT IN PACE	70.1 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	2
TOTAL ACCIDENTS	14
ANNUAL ACCIDENT RATE	1.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.34 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	10,800
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LAKE FOREST / RIDGE ROUTE
CROSSWALKS	AT LAKE FOREST / RIDGE ROUTE
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME ENTIRE BLOCK
OTHER	NO SHOULDERS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.75
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	SHARP-GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED-FAIR SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (SB) - PARTIAL / FEW (NB)
STREET LIGHTING	YES
OTHER	2 WAY LEFT TURN & PAINTED ISLAND

ADJACENT LAND USE	COMMERCIAL / I-5 FWY
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 2.2 mph of the 85th percentile speed and meets CVC standards.

File: Avd De La Carlota 2013-08

RADAR SPEED DISTRIBUTION SHEET

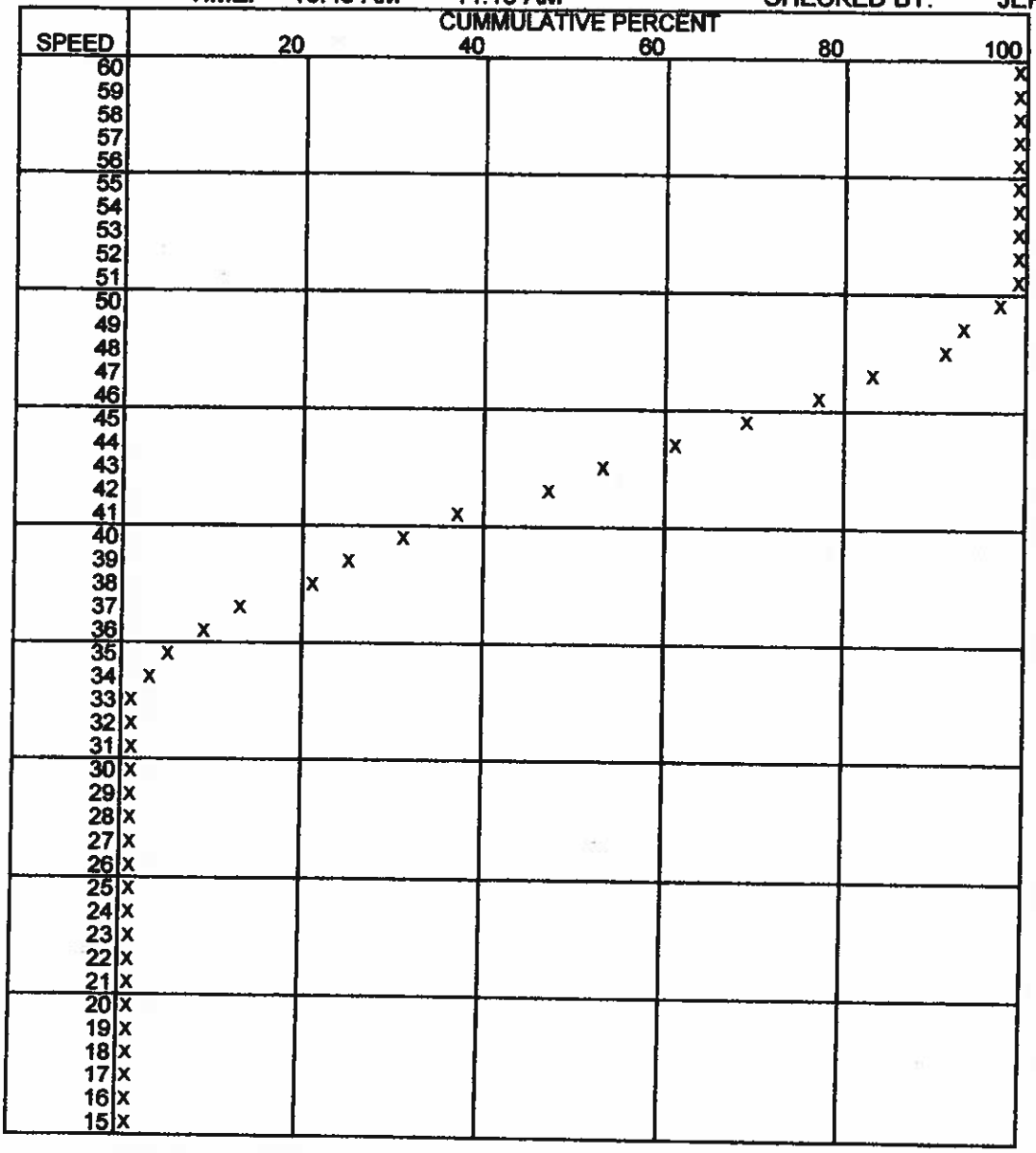
CITY OF LAGUNA HILLS

HCI

AVENIDA DE LA CARLOTA — LAKE FOREST DR TO RIDGE ROUTE DR

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	48	MPH
LOWER LIMIT 10 MPH PACE:	39	MPH
PERCENT OVER PACE:	16.2	%
PERCENT IN PACE:	70.1	%
PERCENT UNDER PACE:	20.8	%

85th PERCENTILE SPEED:	47.2	MPH
MEDIAN SPEED:	42.5	MPH
15th PERCENTILE SPEED:	37.2	MPH

J De La Carlota 2013-08

Radar Speed Survey Field Sheet

Hamilton & Cassell, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: AVD DE LA CARLOTA
LOCATION: LAKE FOREST DR TO RIDGE ROUTE DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11-18-13
START TIME: 10:45 AM
END TIME: 11:15 AM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54	/	1
53	/	1
52		0
51	///	4
50	///	3
49	////	7
48	////	6
47	////	6
46	////	8
45	////	6
44	////	2
43	////	3
42	////	3
41	////	7
40	////	5
39	////	5
38	/	6
37	////	5
36	////	6
35	/	3
34		1
33	/	0
32		1
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54			1	54
53			1	53
52			0	52
51			4	51
50	/	1	4	50
49	//	2	6	49
48	////	5	11	48
47	////	4	15	47
46	///	3	18	46
45	///	7	25	45
44	////	10	35	44
43	////	7	42	43
42	////	7	49	42
41	////	4	53	41
40	////	5	58	40
39	////	7	65	39
38	////	8	73	38
37	////	2	75	37
36	////	3	78	36
35	//	2	80	35
34				34
33	/	0	80	33
32	//	2	82	32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

AVENIDA DE LA CARLOTA — **RIDGE ROUTE DR TO EL TORO RD**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 10:15 AM - 10:45 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF PLAZA
DATE OF SURVEY	11/18/2013
85th PERCENTILE	44.9 MPH
10 MPH PACE	37 - 46 MPH
PERCENT IN PACE	78.7 %
POSTED SPEED LIMIT	40 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	6
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.06 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	30,800
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - RIDGE ROUTE /VIA PUERTA / PASEO DE VALENCIA / EL TORO
CROSSWALKS	AT RIDGE ROUTE / PASEO DE VALENCIA / EL TORO
PEDESTRIAN/BICYCLES	NO / NO
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	NO SHOULDERS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.70
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	SHARP-GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED-FAIR SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (SB) - PARTIAL / FEW (NB)
STREET LIGHTING	YES
OTHER	2 WAY LEFT TURN & PAINTED ISLAND
	DENSE TRAFFIC FROM PDV TO EL TORO

ADJACENT LAND USE	COMMERCIAL / I-5 FWY SB OFF (at PDV)
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph speed limit is within 4.9 mph of the 85th percentile speed and meets CVC standards.

* 25 MPH When Children Present, School Zone

File: Avd De La Carlota 2013-09

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

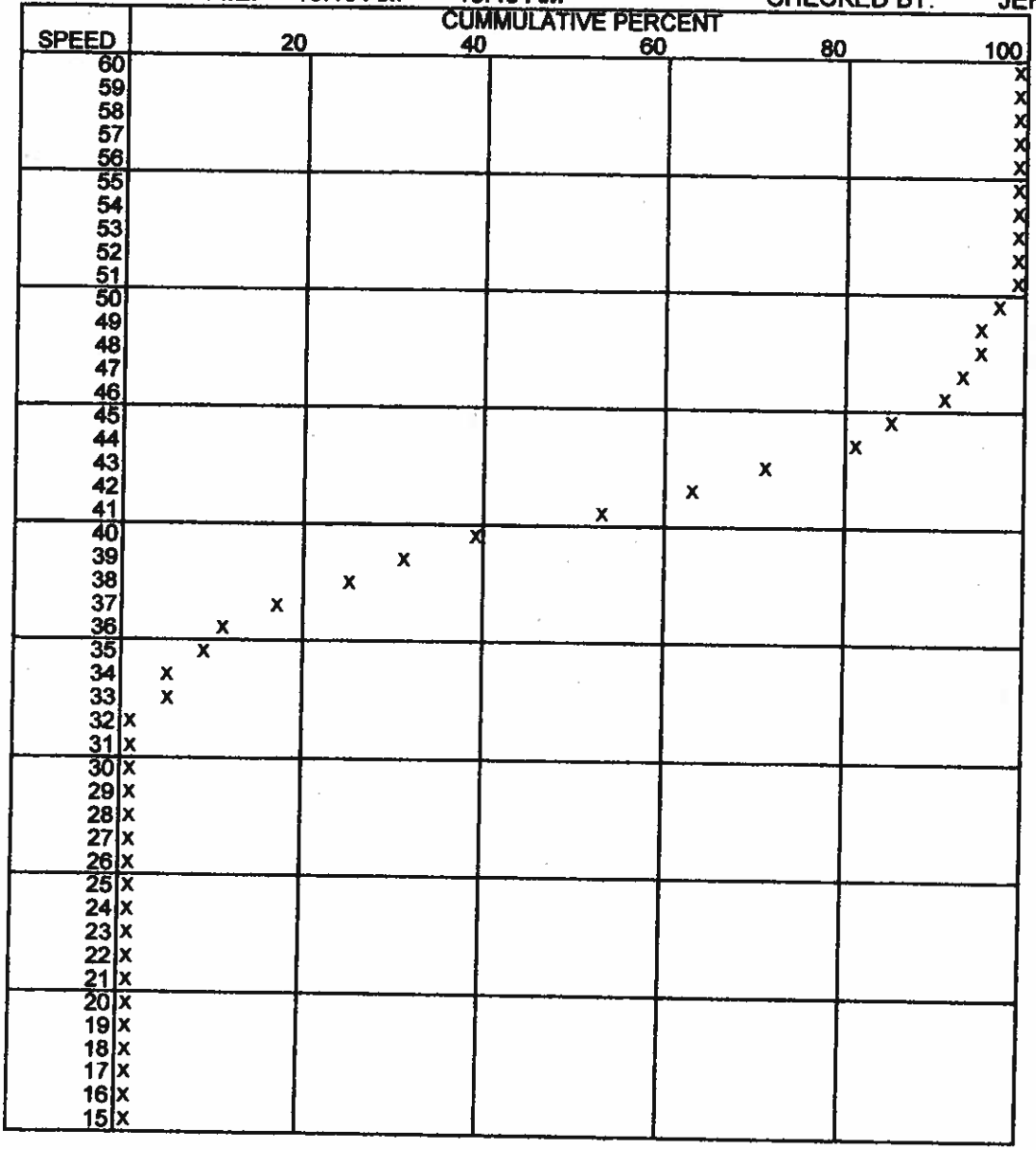
HCI

CITY OF LAGUNA HILLS

AVENIDA DE LA CARLOTA — RIDGE ROUTE DR TO EL TORO RD

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 10:15 AM - 10:45 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	46	MPH	85th PERCENTILE SPEED:	44.9	MPH
LOWER LIMIT 10 MPH PACE:	37	MPH	MEDIAN SPEED:	40.8	MPH
PERCENT OVER PACE:	9.6	%	15th PERCENTILE SPEED:	36.6	MPH
PERCENT IN PACE:	78.7	%			
PERCENT UNDER PACE:	11.8	%			

I De La Carlota 2013-09

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hastrup & Cahill, Inc. Consulting Traffic Engineers
17532 E. 17th Street, Suite 101
Tustin, California 92780
714.730.9661 fax: 714.730.9664
www.hastrup-cahill.com

AGENCY: CITY OF LAGUNA HILLS
STREET: AVD. DE LA CARLOTA
LOCATION: RIDGE ROUTE DR TO PASEO DE VALENCIA

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 10:15 AM
END TIME: 10:45 AM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52	/	1
51	//	2
50	//	2
49	//	3
48	//	3
47	//	5
46	////	7
45	////	8
44	////	6
43	//// /	6
42	////	4
41	////	5
40	////	7
39	//	9
38	//	3
37	/	3
36	/	1
35	/	2
34		1
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52			1	52
51			2	51
50			3	50
49			5	49
48			5	48
47	/	1	6	47
46	//	2	10	46
45	/	1	11	45
44	///	3	14	44
43	///	3	17	43
42	////	5	22	42
41	//// ///	8	30	41
40	//// ////	9	39	40
39	//// ////	10	49	39
38	////	4	53	38
37	////	4	57	37
36	//// /	6	63	36
35	////	4	67	35
34	///	3	70	34
33	//	2	72	33
32	////	4	76	32
31	/	1	77	31
30		0	77	30
29	/	1	78	29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

AVENIDA DE LA CARLOTA — **EL TORO RD TO LOS ALISOS BL**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 9:45 AM - 10:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF PLAZA LN
DATE OF SURVEY	11/18/2013
85th PERCENTILE	43.9 MPH
10 MPH PACE	35 - 44 MPH
PERCENT IN PACE	78.6 %
POSTED SPEED LIMIT	40 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	2
TOTAL ACCIDENTS	7
ANNUAL ACCIDENT RATE	1.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.26 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	13,800
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PASEO DE VALENCIA / EL TORO / PLAZA LN (Mall Ent) / LOS ALISOS
CROSSWALKS	AT PASEO DE VALENCIA / EL TORO / PLAZA LN (Mall Ent) / LOS ALISOS
PEDESTRIAN/BICYCLES	FEW / FEW
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.75
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (SB) - NO/ FEW (NB)
STREET LIGHTING	YES
OTHER	PAINTED ISLAND
	NO SHOULDERS

ADJACENT LAND USE	COMMERCIAL / LAGUNA HILLS MALL / I-5 FWY
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph speed limit is within 3.9 mph of the 85th percentile speed and meets CVC standards.

File: Avd De La Carlota 2013-10

RADAR SPEED DISTRIBUTION SHEET

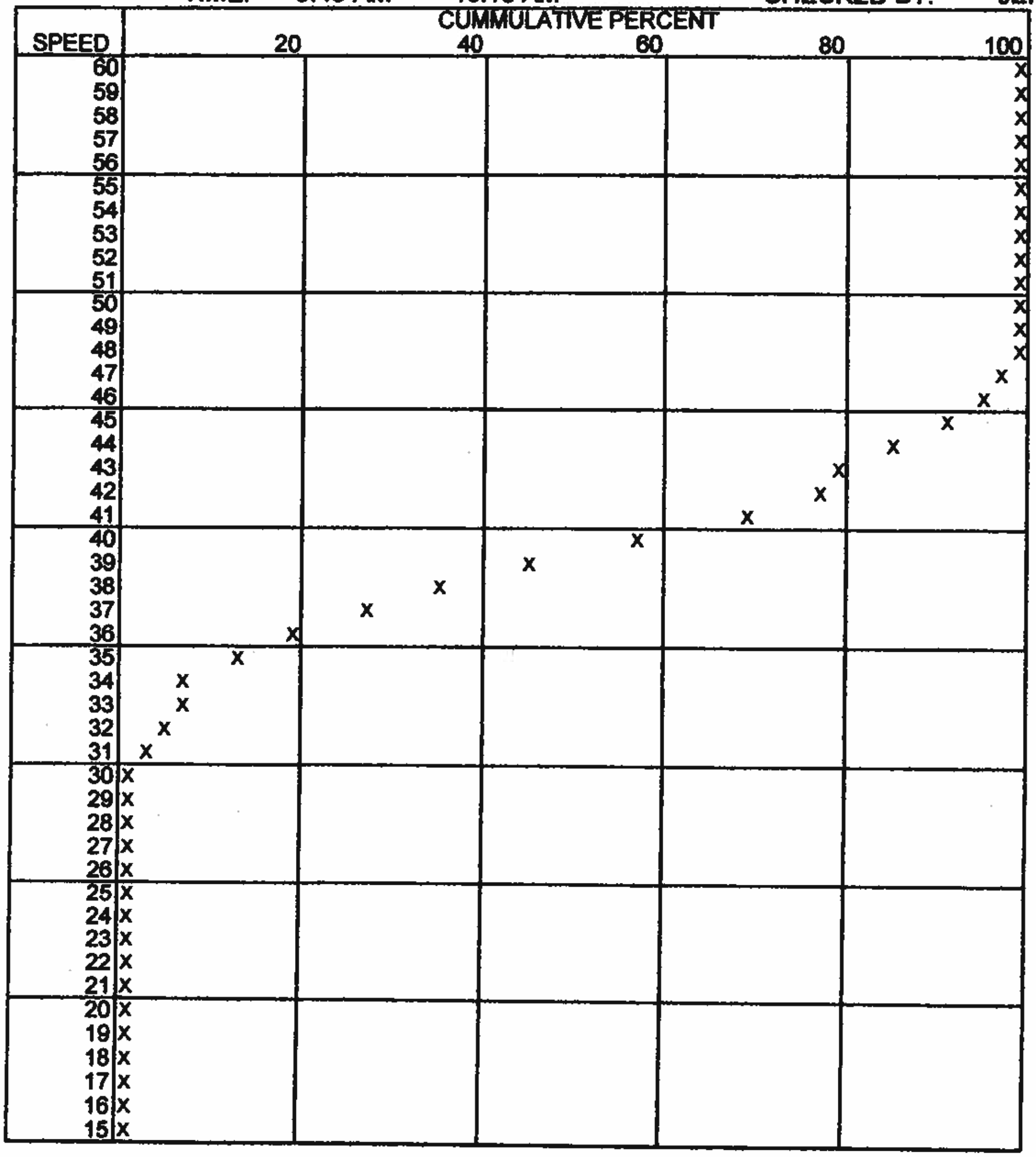
CITY OF LAGUNA HILLS

HCI

AVENIDA DE LA CARLOTA — EL TORO RD TO LOS ALISOS BL

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 9:45 AM - 10:15 AM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT	
60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	100.0%	
51	100.0%	
50	100.0%	
49	99.3%	
48	98.6%	
47	97.1%	
46	94.3%	
45	90.7%	
44	85.7%	}PACE
43	80.0%	}PACE - - -85PCT
42	76.4%	}PACE
41	70.0%	}PACE
40	57.9%	}PACE
39	45.0%	}PACE - - -MEAN
38	34.3%	}PACE
37	26.4%	}PACE
36	18.6%	}PACE
35	13.6%	}PACE - - -15PCT
34	7.1%	
33	7.1%	
32	5.0%	
31	3.6%	
30	1.4%	
29	0.7%	
28	0.7%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	44	MPH
LOWER LIMIT 10 MPH PACE:	35	MPH
PERCENT OVER PACE:	14.3	%
PERCENT IN PACE:	78.6	%
PERCENT UNDER PACE:	7.1	%

85th PERCENTILE SPEED:	43.9	MPH
MEDIAN SPEED:	39.4	MPH
15th PERCENTILE SPEED:	35.3	MPH

Radar Speed Survey Field Sheet

Hanford & Associates, Inc.
Consulting Traffic Engineers
1763 E. 17th Street, Suite 100
Tustin, California 92780
714.730.7681 fax 714.730.7684
www.hanford-assoc.com

AGENCY: CITY OF LAGUNA HILLS
STREET: AVD. DE LA CARLOTA
LOCATION: EL TORO RD TO LOS ALISOS BL

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 9:45 AM
END TIME: 10:15 AM JW

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50	/	1
49	/	1
48	/	1
47	//	2
46	//	2
45	///	3
44	////	4
43	/	1
42	//	2
41	//////	6
40	//////	10
39	//////	10
38	////	6
37	////	5
36	/	1
35	////	6
34		
33	//	5
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50			1	50
49			1	49
48	/	1	2	48
47	//	2	4	47
46	//	2	5	46
45	//	2	7	45
44	///	3	8	44
43	///	3	5	43
42	/////	5	9	42
41	//////	7	17	41
40	//////	8	18	40
39	//////	9	15	39
38	//////	6	11	38
37	//////	5	11	37
36	//////	6	7	36
35	////	4	9	35
34		0	0	34
33		0	3	33
32	/	2	2	32
31	///	3	3	31
30	/	1	1	30
29		0	0	29
28	/	1	1	28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

BECKENHAM STREET — **PASEO DE VALENCIA TO EAST END**

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF SUNSET
DATE OF SURVEY	11/12/2013
85th PERCENTILE	31.8 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	84.0 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,500
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PASEO DE VALENCIA
CROSSWALKS	AT PASEO DE VALENCIA
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	HEAVY LEFTS INTO MEDICAL OFFICE PARKING LOT AREAS OF NO PARKING ANYTIME

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.30
VERTICAL CURVE	SLIGHT-GRADUAL UPHILL GRADE (EB)
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	NOT A THRU STREET

ADJACENT LAND USE	RESIDENTIAL (NF)** / MEDICAL OFFICE / PARK
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph speed limit is within 1.8 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Beckenham 2013-11

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

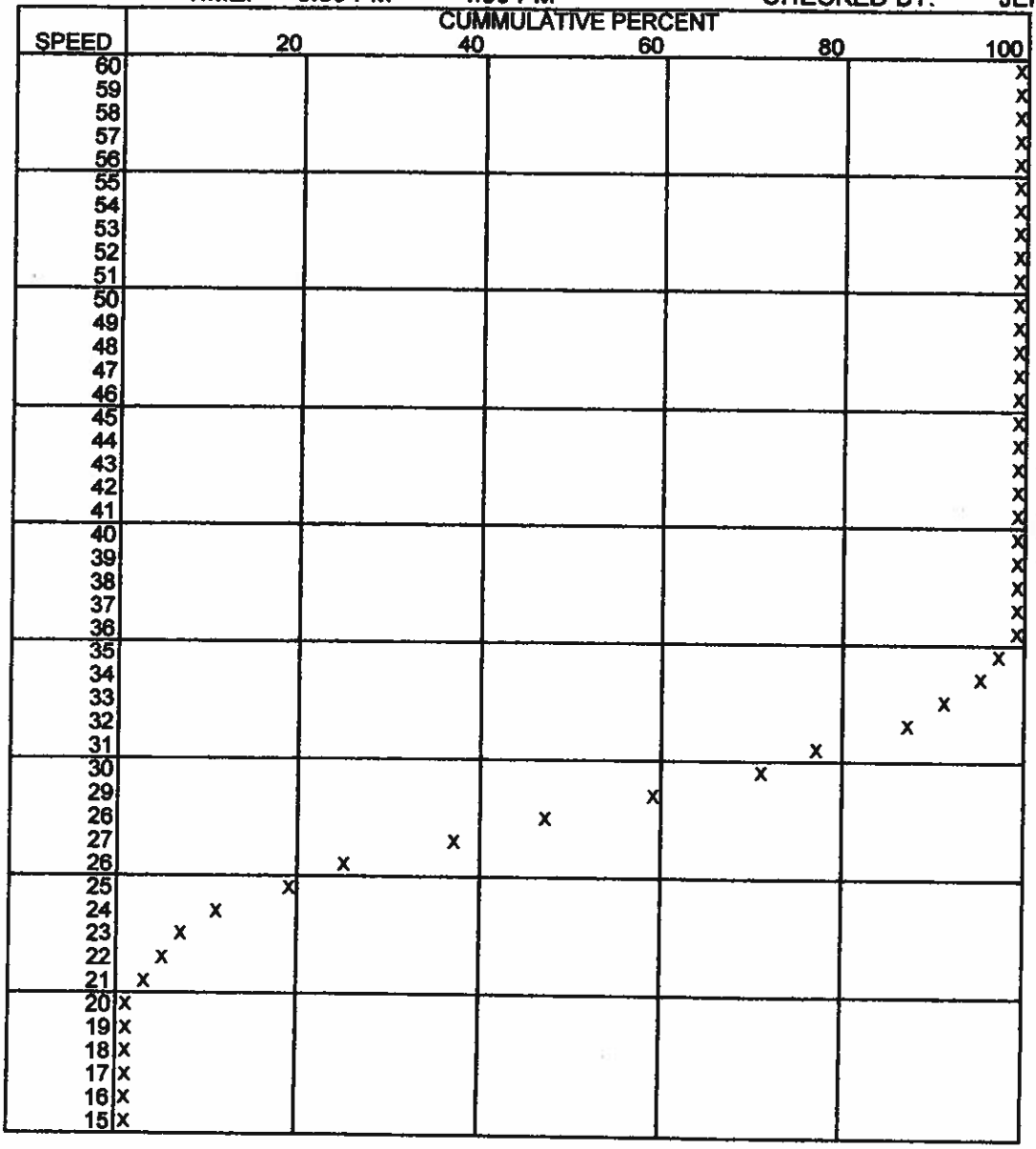
HCI

CITY OF LAGUNA HILLS

BECKENHAM STREET — PASEO DE VALENCIA TO EAST END

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:30 PM — CHECKED BY: JERRY STOCK



100.0% 99.2% 99.2% 99.2% 97.5% 95.8% }PACE 90.8% }PACE 86.6% }PACE 77.3% }PACE - - -85PCT 71.4% }PACE 58.8% }PACE 47.9% }PACE - - - -MEAN 37.8% }PACE 24.4% }PACE 18.5% }PACE 11.8% - - -15PCT 6.7% 5.0% 3.4% 0.8% 0.0% 0.0% 0.0% 0.0% 0.0%

UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	9.2	%
PERCENT IN PACE:	84.0	%
PERCENT UNDER PACE:	11.8	%

85th PERCENTILE SPEED:	31.8	MPH
MEDIAN SPEED:	28.2	MPH
15th PERCENTILE SPEED:	24.5	MPH

Beckenham 2013-11

SPD-HUI.dwg

Radar Speed Survey Field Sheet

Hamilton & Cordell Inc.
Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: BECKENHAM STREET
LOCATION: PASEO DE VALENCIA TO EAST END

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/12/13
START TIME: 3:30 PM
END TIME: 4:30 PM

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39	/	1
38		
37		8
36	/	1
35	/	
34	//	3
33	//	2
32	///	6
31	///	3
30	///	5
29	///	5
28	///	6
27	///	8
26	/	1
25	///	5
24	//	2
23	//	2
22	/	1
21	///	3
20	/	1
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39			1	39
38			0	38
37			1	37
36	/	1	2	36
35	/		2	35
34	///	3	5	34
33	///	3	5	33
32	///	3	11	32
31	///	4	7	31
30	////	8	15	30
29	////	8	13	29
28	////	8	12	28
27	////	8	16	27
26	////	8	7	26
25	///	6	8	25
24	///	4	6	24
23	//	2	2	23
22	/	1	2	22
21			3	21
20			1	20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

BRIDLEWOOD DRIVE — **NELLIE GAIL RD TO OSO PKWY**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF FLINTROCK
DATE OF SURVEY	11/5/2013
85th PERCENTILE	32.1 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	85.2 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,000
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - OSO, STOP - NELLIE GAIL
CROSSWALKS	AT OSO
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	EQUESTRIAN TRAILS & XINGS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.30
VERTICAL CURVE	CONSTANT MODERATE UPHILL (NB)
HORIZONTAL CURVE	CONSTANT MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED-FAIR SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	SMALL MEDIAN ISLAND AT OSO

ADJACENT LAND USE	RESIDENTIAL (F+NF)**
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

This portion of Bridlewood is a two lane residential roadway. The posted speed limit is 25 mph. Based upon the 85th percentile speed of 32.1 mph, the CVC code suggests a 30 mph speed limit. However, due to (1) equestrian trails and crossings, (2) solely single-family residential dwellings, (3) the steep grades and curving nature of the roadway, and (4) many areas of limited sight distance, it is recommended that the 25 mph speed limit be maintained.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)
F+NF = fronting + non-fronting

File: Bridlewood 2013-12

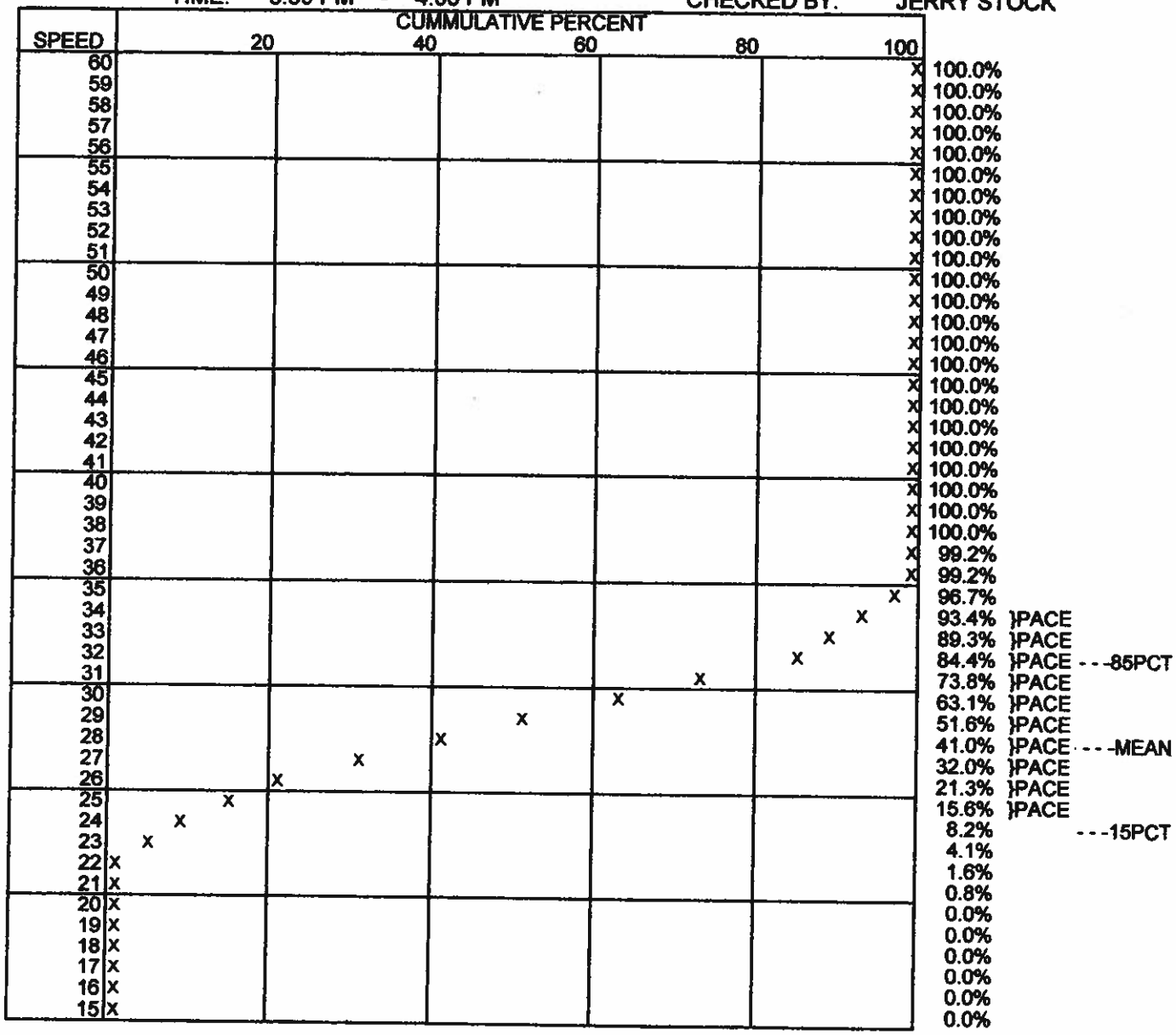
RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE
DATE: 11/5/2013
TIME: 3:30 PM - 4:00 PM

NELLIE GAIL RD TO OSO PKWY
SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	10.7	%
PERCENT IN PACE:	85.2	%
PERCENT UNDER PACE:	8.2	%

85th PERCENTILE SPEED:	32.1	MPH
MEDIAN SPEED:	28.8	MPH
15th PERCENTILE SPEED:	24.9	MPH

Bridlewood 2013-12

Radar Speed Survey Field Sheet

Hastings & Associates, Inc.
Consulting Traffic Engineers
27632 E. 17th Street, Suite 101
Yucaipa, California 92399
714.731.9415 fax: 714.731.9416
www.hastingsandassoc.com

AGENCY: CITY OF LAGUNA HILLS
STREET: BRIDLEWOOD DRIVE
LOCATION: NELLIE GAIL RD TO OSO PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 3:30 PM
END TIME: 4:00 PM VM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35		1
34	////	0
33	////	3
32	//// //	3
31	//// ///	7
30	//// ////	8
29	//// //// /	6
28	//// ////	7
27	//// ////	5
26	////	6
25	////	3
24	/	4
23	/	2
22		1
21	/	0
20		1
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38	/	1	1	38
37		0	0	37
36	//	2	3	36
35	///	4	4	35
34	//	2	5	34
33	///	3	6	33
32	//// /	6	13	32
31	////	5	13	31
30	//// ///	8	14	30
29	//// /	6	13	29
28	//// /	6	11	28
27	//// //	7	13	27
26	////	4	7	26
25	////	5	9	25
24	///	3	5	24
23	//	2	3	23
22	/	1	1	22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

BRIDLEWOOD DRIVE — **OSO PKWY TO LAUREL CREST**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 3:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF APRIAN
DATE OF SURVEY	11/5/2013
85th PERCENTILE	37.4 MPH
10 MPH PACE	30 - 39 MPH
PERCENT IN PACE	81.8 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	2.49 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	2,200
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - OSO, STOP - LAUREL CREST
CROSSWALKS	AT OSO / LAUREL CREST
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	PERMITTED, NONE OBSERVED
OTHER	EQUESTRIAN TRAILS & XINGS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.25
VERTICAL CURVE	CONSTANT MODERATE-STEEP UPHILL (NB)
HORIZONTAL CURVE	CONSTANT MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED-FAIR SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	

ADJACENT LAND USE	RESIDENTIAL (NF)**
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

This portion of Bridlewood is a two lane roadway. The posted speed limit is 30 mph. Based upon the 85th percentile speed of 37.4 mph, the CVC code suggests a 35 mph speed limit. However, due to (1) the residential nature of the area, (2) steep grades and curving nature of the roadway, (3) areas of limited sight distance, and (4) with a vertical curve north of Aprian the sight distance exiting said street is approximately 210 feet and the CVC required distance for a 35 mph speed limit is 250 feet, it is recommended that the 25 mph speed limit be maintained.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F+NF = fronting + non-fronting

File: Bridlewood 2013-13

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

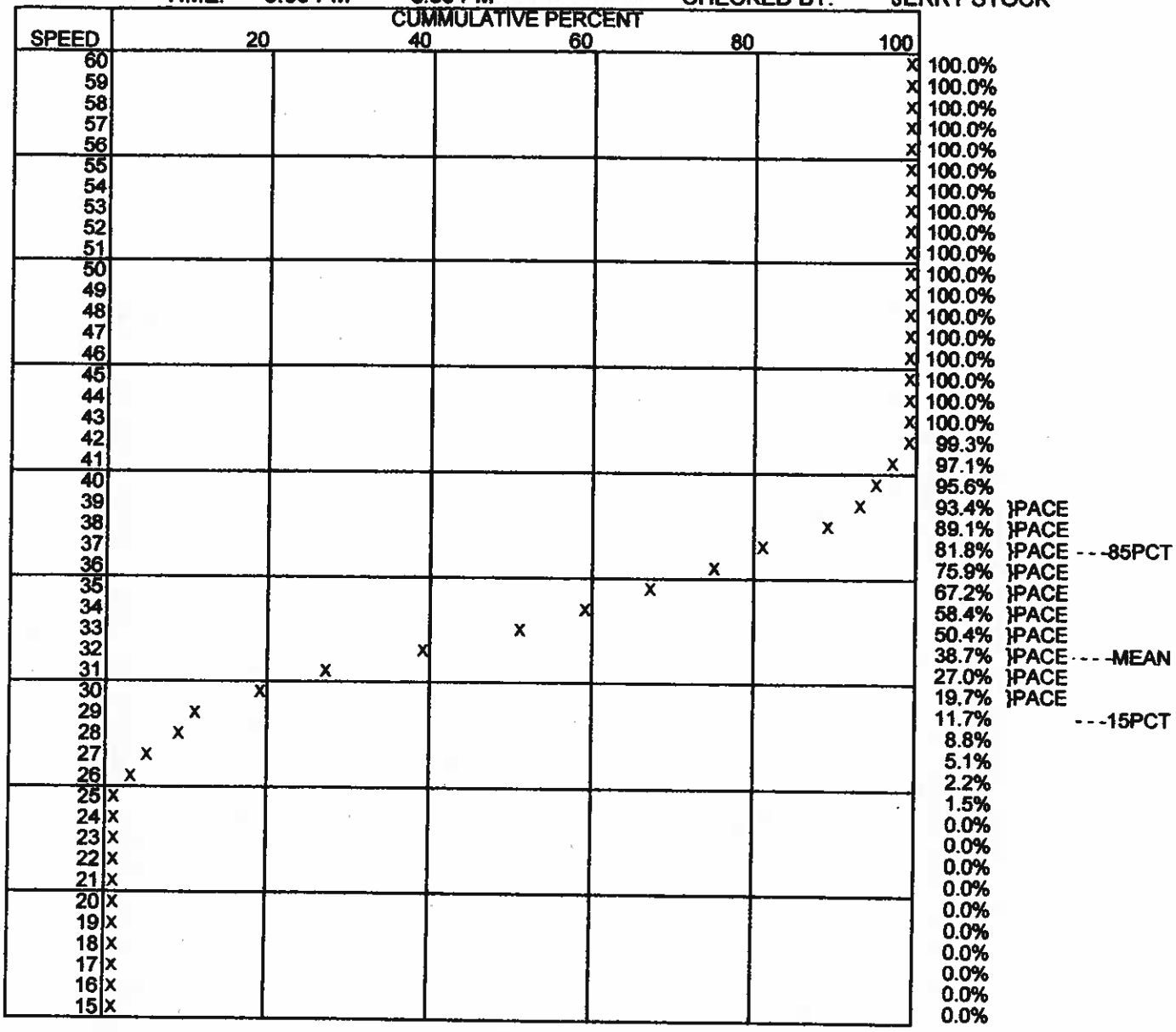
HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE — OSO PKWY TO LAUREL CREST

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 3:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	39	MPH
LOWER LIMIT 10 MPH PACE:	30	MPH
PERCENT OVER PACE:	6.6	%
PERCENT IN PACE:	81.8	%
PERCENT UNDER PACE:	11.7	%

85th PERCENTILE SPEED:	37.4	MPH
MEDIAN SPEED:	33.0	MPH
15th PERCENTILE SPEED:	29.4	MPH

Bridlewood 2013-13

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hawkins & Associates, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: BRIDLEWOOD DRIVE
LOCATION: OSO PKWY TO LAUREL CREST

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 3:00 PM
END TIME: 3:30 PM ✓ CAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42	///	2
41	/	1
40	///	2
39		
38	/////	5
37	///	3
36	/////	5
35	/////	5
34	//////	6
33	//////	6
32	//////	6
31	/////	5
30	//////	6
29	//	2
28	//	2
27	//	2
26	//	2
25	/	1
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43	/	1	1	43
42	///	3	3	42
41	//	2	2	41
40	///	3	3	40
39	////	4	6	39
38	////	4	10	38
37	////	4	8	37
36	////	4	12	36
35	////	4	12	35
34	////	4	11	34
33	///	3	16	33
32	///	3	16	32
31	////	4	10	31
30	///	3	11	30
29	/	1	4	29
28	///	3	5	28
27	//	2	4	27
26		0		26
25	/	1	2	25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

CABOT ROAD — **LA PAZ RD TO PASEO DE VALENCIA**

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 2:00 PM - 2:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF LA PAZ
DATE OF SURVEY	11/7/2013
85th PERCENTILE	47.0 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	74.5 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	5
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.27 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	10,300
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LA PAZ / PASEO DE VALENCIA
CROSSWALKS	AT LA PAZ
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING AT ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.49
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	SLIGHT "S" CURVES
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	PARTIAL PAINTED ISLAND & 2 WAY LEFT TURN LANE

ADJACENT LAND USE	COMMERCIAL / BUSINESS
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 2.0 mph of the 85th percentile speed and meets CVC standards.

File: Cabot 2013-14

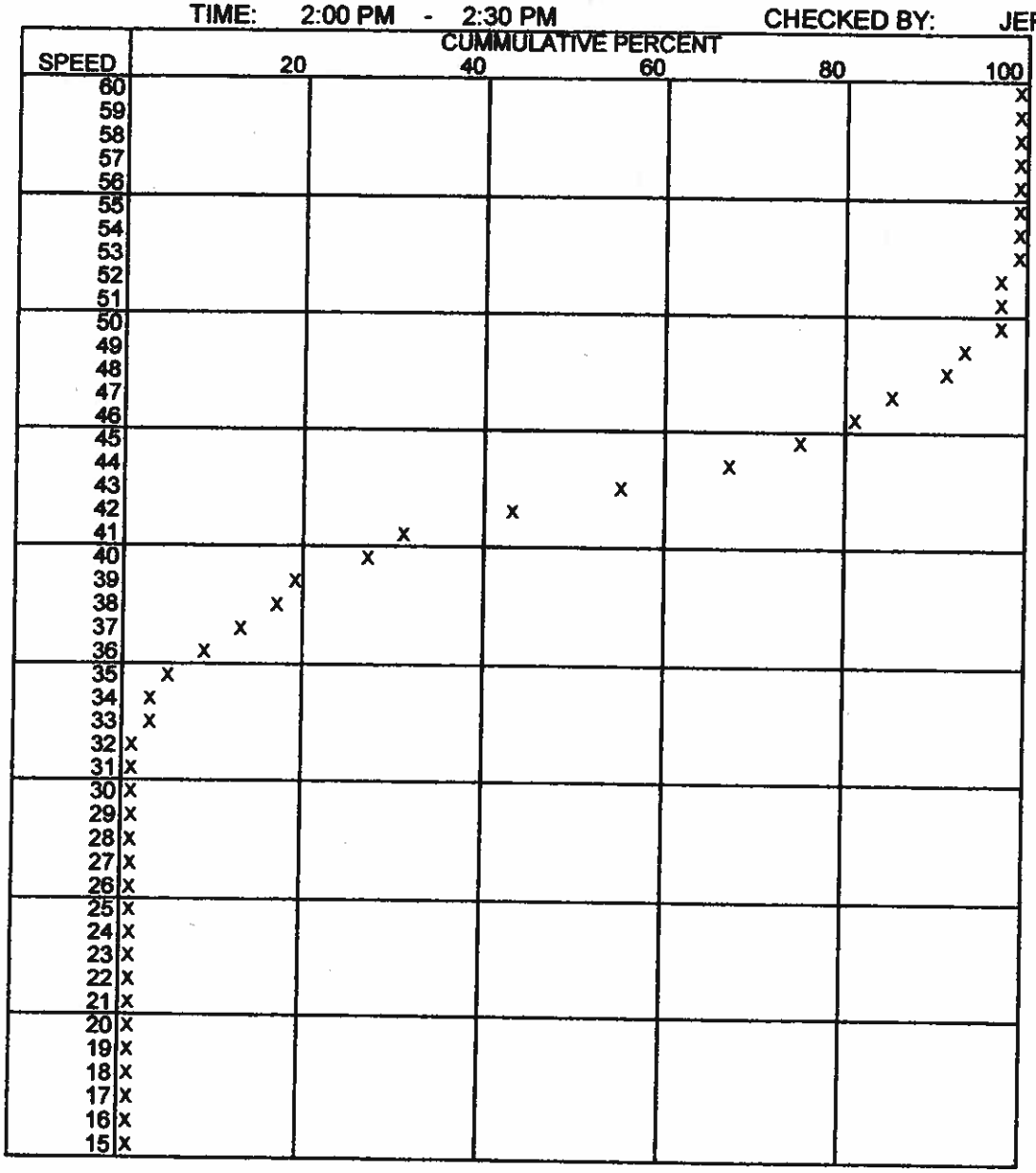
RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

CABOT ROAD
DATE: 11/7/2013
TIME: 2:00 PM - 2:30 PM

LA PAZ RD TO PASEO DE VALENCIA
SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	6.4	%
PERCENT IN PACE:	74.5	%
PERCENT UNDER PACE:	19.1	%

85th PERCENTILE SPEED:	47.0	MPH
MEDIAN SPEED:	42.6	MPH
15th PERCENTILE SPEED:	37.7	MPH

Cabot 2013-14

Radar Speed Survey Field Sheet

Hexagon & Gibbs, Inc.
Consulting Traffic Engineers
27442 E. 17th Street, Suite 100
Tustin, California 92782
714.731.8451 fax 714.731.8455
www.hexagongibbs.com

AGENCY: CITY OF LAGUNA HILLS
STREET: CABOT ROAD
LOCATION: LA PAZ RD TO PASEO DE VALENCIA

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/07/13
START TIME: 2:00 PM
END TIME: 2:30 PM vm

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		1
50		1
49		2
48		4
47		1
46		2
45		5
44		10
43		6
42		6
41		3
40		6
39		2
38		5
37		1
36		2
35		2
34		0
33		1
32		1
31		1
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54	/	1	1	54
53	//	2	2	53
52	/	1	1	52
51		0	0	51
50	//	3	4	50
49	//	3	5	49
48	//	3	7	48
47	///	4	5	47
46	////	7	9	46
45	////	8	11	45
44	////	8	8	44
43	////	11	17	43
42	////	7	15	42
41	////	4	7	41
40	////	5	11	40
39	/	1	4	39
38	/	2	6	38
37	///	4	5	37
36	///	3	5	36
35	///	2	4	35
34			0	34
33			1	33
32			1	32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

CABOT ROAD — **PASEO DE VALENCIA TO OSO PKWY**

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 1:30 PM - 2:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF PASEO DE VALENCIA
DATE OF SURVEY	11/7/2013
85th PERCENTILE	47.2 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	71.3 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	7
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.15 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	13,600
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PASEO DE VALENCIA / NELLIE GAIL / EL PASEO / OSO
CROSSWALKS	AT PASEO DE VALENCIA / EL PASEO / OSO
PEDESTRIAN/BICYCLES	FEW / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING AT ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.69
VERTICAL CURVE	SLIGHT UPHILL (SB)
HORIZONTAL CURVE	SLIGHT "S" CURVES
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	NO / NO (NB) - YES / NO (SB)
STREET LIGHTING	YES
OTHER	PAINTED ISLAND / NARROW SHOULDERS
	PASEO DE VALENCIA HAS FREE RIGHT ONTO CABOR RD (SB)

ADJACENT LAND USE	RESIDENTIAL (NF)** / COMMERCIAL / RxR (Parallels)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 2.2 mph of the 85th percentile speed and meets CVC standards.

File: Cabot 2013-15

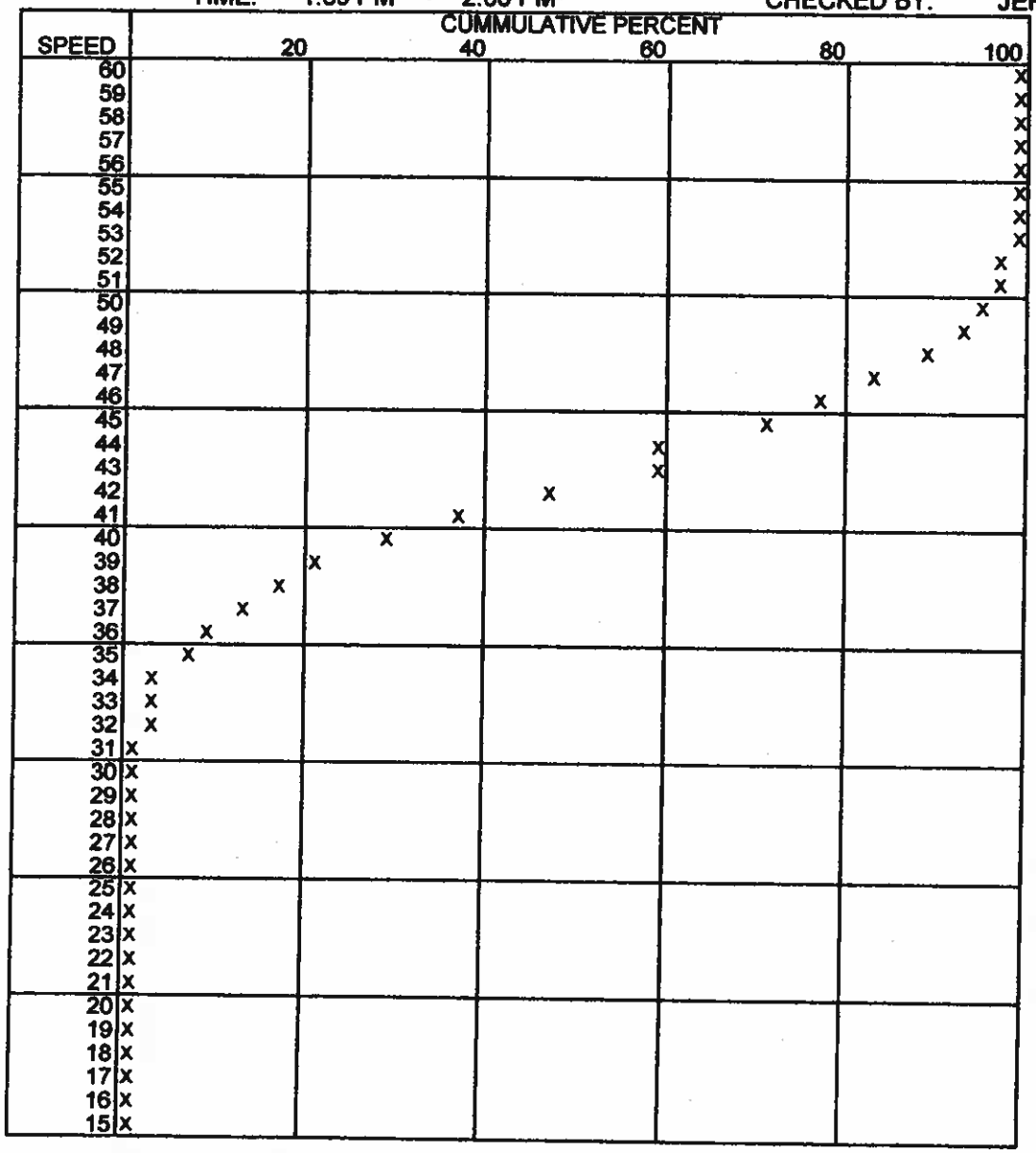
RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

CABOT ROAD
DATE: 11/7/2013
TIME: 1:30 PM - 2:00 PM

PASEO DE VALENCIA TO OSO PKWY
SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	11.0	%
PERCENT IN PACE:	71.3	%
PERCENT UNDER PACE:	21.3	%

85th PERCENTILE SPEED:	47.2	MPH
MEDIAN SPEED:	42.3	MPH
15th PERCENTILE SPEED:	37.3	MPH

Cabot 2013-15

Radar Speed Survey Field Sheet

Hastings & Chavez, Inc. Consulting Traffic Engineers
7843 E. 6th Street, Suite 100
Tustin, California 92780
714.731.9581 fax 714.731.3686
www.hastings-chavez.com

AGENCY: CITY OF LAGUNA HILLS
STREET: CABOT ROAD
LOCATION: PASEO DE VALENCIA TO OSO PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/07/13
START TIME: 1:30 PM
END TIME: 2:00 PM VAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53	/	1
52	/	1
51		0
50	///	3
49	///	3
48	////	4
47	////	4
46	///	3
45	///////	7
44	///	3
43	////	4
42	////	4
41	////	4
40	////	4
39	///	3
38	///	3
37	///	3
36	//	2
35	//	2
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55	/	1	1	55
54	/	1	1	54
53		0	1	53
52	/	1	2	52
51	//	2	2	51
50		0	2	50
49	//	2	3	49
48	///	3	5	48
47	////	4	7	47
46	/////	5	9	46
45	/////	5	9	45
44	//////	6	10	44
43	//////	6	10	43
42	//////	6	13	42
41	//////	6	11	41
40	//////	6	11	40
39	///	3	5	39
38	//	2	5	38
37	///	3	6	37
36	///	3	5	36
35	///	3	5	35
34	//	2	2	34
33		0	0	33
32	/	1	2	32
31	/	1	1	31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

CABOT ROAD — **OSO PKWY TO SOUTH CITY LIMITS (850' s/o Oso)**

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF OSO
DATE OF SURVEY	11/7/2013
85th PERCENTILE	47.8 MPH
10 MPH PACE	39 - 48 MPH
PERCENT IN PACE	73.8 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	2
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	16,700
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - OSO
CROSSWALKS	AT OSO
PEDESTRIAN/BICYCLES	FEW / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING AT ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOP (near Oso)
	PARKING PROHIBITTED 1) ANY VEHICLE OVER 25', 2) UN-ATTACHED NON-MOTORIZED VEHICLES

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.16
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	NO / NO (NB) - YES / YES (SB)
STREET LIGHTING	YES
OTHER	PAINTED ISLAND
	NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF)** / COMMERCIAL / RxR (Parallels)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 2.8 mph of the 85th percentile speed and meets CVC standards.

File: Cabot 2013-16

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

CABOT ROAD

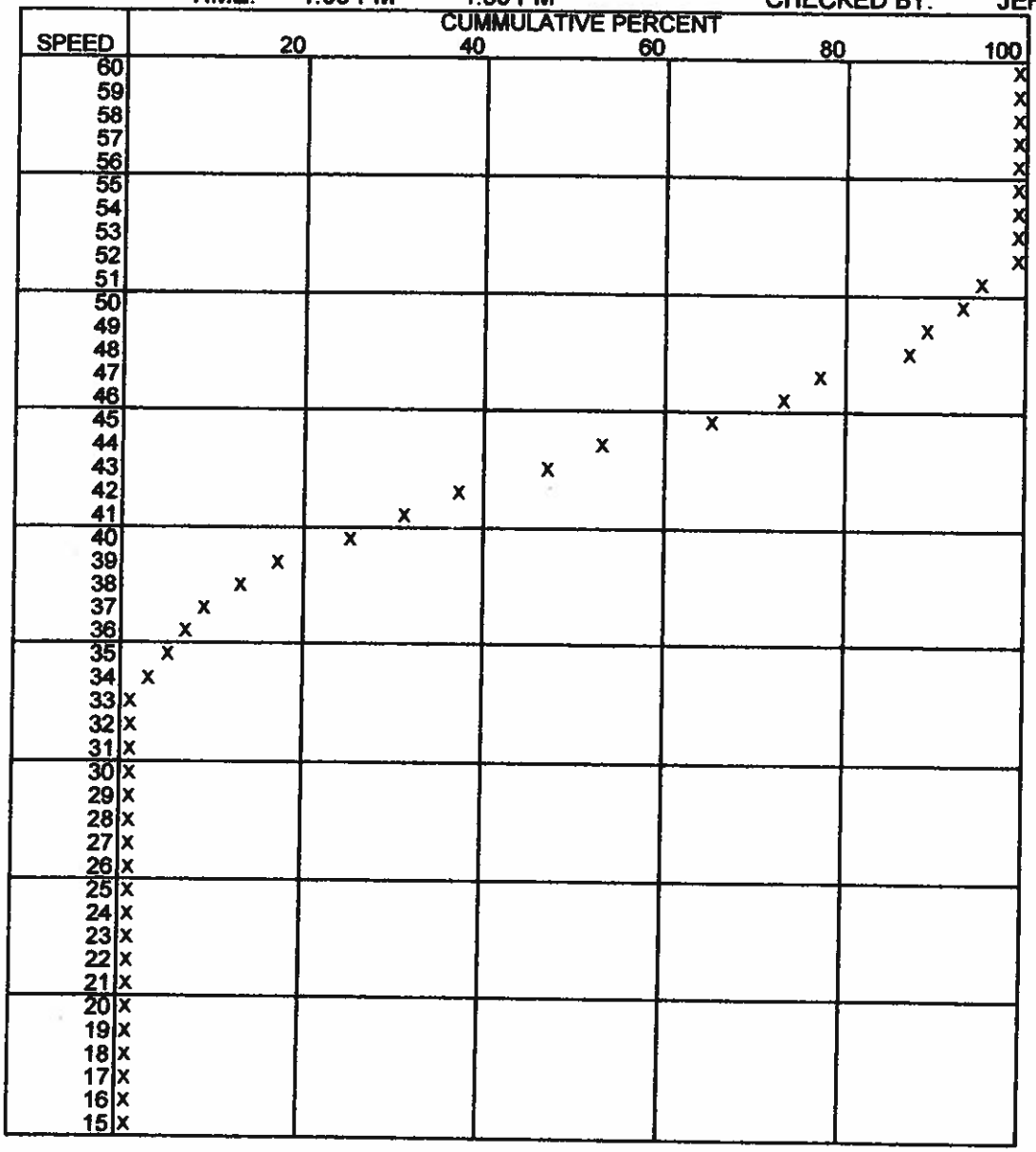
DATE: 11/7/2013

TIME: 1:00 PM - 1:30 PM

OSO PKWY TO SOUTH CITY LIMITS (850' s/

SURVEY BY: C. BUENDIA

CHECKED BY: JERRY STOCK



60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	98.6%	
52	98.6%	
51	95.7%	
50	92.2%	
49	89.4%	
48	86.5%	}PACE
47	76.6%	}PACE ---85PCT
46	72.3%	}PACE
45	64.5%	}PACE
44	53.2%	}PACE
43	47.5%	}PACE ---MEAN
42	36.2%	}PACE
41	31.2%	}PACE
40	25.5%	}PACE
39	17.7%	}PACE
38	12.8%	---15PCT
37	9.9%	
36	7.1%	
35	4.3%	
34	2.1%	
33	1.4%	
32	1.4%	
31	0.7%	
30	0.7%	
29	0.0%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	48	MPH
LOWER LIMIT 10 MPH PACE:	39	MPH
PERCENT OVER PACE:	13.5	%
PERCENT IN PACE:	73.8	%
PERCENT UNDER PACE:	12.8	%

85th PERCENTILE SPEED:	47.8	MPH
MEDIAN SPEED:	43.4	MPH
15th PERCENTILE SPEED:	38.5	MPH

Cabot 2013-16

Radar Speed Survey Field Sheet

Hanson & Crabill Inc. Consulting Traffic Engineers
17517 E. 17th Street, Suite 101
Tustin, California 92780
714.258.8455 fax: 714.731.9488
www.hansoncrabill.com

AGENCY:

STREET: CABOT ROAD

LOCATION: OSO PKWY TO SCL (850 S/O OSO)

WEATHER: OVERCAST

ROAD CONDITION: DRY

OBSERVER: Cathy Buendia

DATE: 11/07/13

START TIME: 1:00 PM

END TIME: 1:30 PM VAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54	/	1
53		0
52	/	1
51	///	3
50	/	1
49	///	3
48	////////	8
47	////	5
46	////	5
45	//////////	12
44	//////	6
43	//////	9
42	///	3
41	/	1
40	////	5
39	///	3
38		2
37	/	1
36		0
35	/	1
34		0
33		2
32	/	1
31		0
30	/	1
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED:

CRITICAL SPEED:

PACE SPEED:

CUMULATIVE (BOTH DIRECTIONS)

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54	/	1	2	54
53		0	0	53
52	///	3	4	52
51	//	2	5	51
50	///	3	4	50
49	/	1	4	49
48	////	5	14	48
47	/	1	6	47
46	/////	8	11	46
45	//	2	8	45
44	//	2	8	44
43	///	7	16	43
42	////	4	7	42
41	////	6	8	41
40	////	6	11	40
39	////	5	7	39
38	////	4	4	38
37	///	3	4	37
36	///	4	4	36
35	/	1	3	35
34			1	34
33			0	33
32			1	32
31			0	31
30			1	30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED:

CRITICAL SPEED:

PACE SPEED:

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

CABOT ROAD — **RAPID FALLS RD TO SOUTH CITY LIMITS (850' s/o Rapid Falls)**

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF RAPID FALLS
DATE OF SURVEY	11/7/2013
85th PERCENTILE	48.8 MPH
10 MPH PACE	41 - 50 MPH
PERCENT IN PACE	78.2 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	12,500
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - RAPID FALLS / PARK ENTRANCE
CROSSWALKS	AT RAPID FALLS
PEDESTRIAN/BICYCLES	NO / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING AT ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE
	RED CURB (at Rapid Falls-SB)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.15
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (slight)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	PAINTED ISLAND
	NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF)** /PARK / RxR (Parallels)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 3.8 mph of the 85th percentile speed and meets CVC standards.

File: Cabot 2013-17

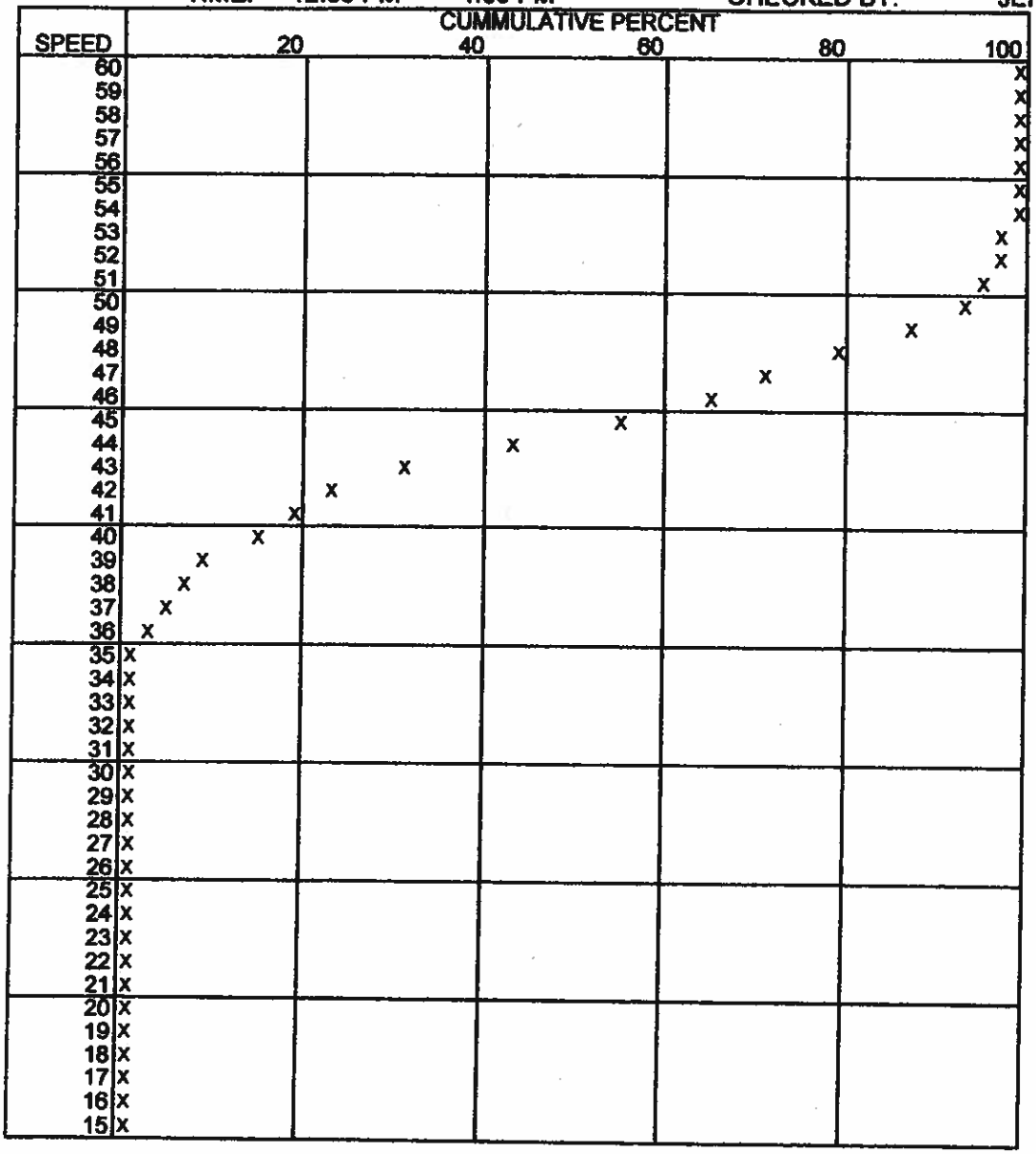
RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

CABOT ROAD
DATE: 11/7/2013
TIME: 12:30 PM - 1:00 PM

RAPID FALLS RD TO SCL (850' s/o Rapid Falls)
SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK



60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	99.2%	
53	97.7%	
52	97.0%	
51	95.5%	
50	92.5%	}PACE
49	87.2%	}PACE
48	78.2%	}PACE ---85PCT
47	71.4%	}PACE
46	65.4%	}PACE
45	54.1%	}PACE
44	42.1%	}PACE ---MEAN
43	30.8%	}PACE
42	22.6%	}PACE
41	18.0%	}PACE
40	14.3%	---15PCT
39	9.8%	
38	7.5%	
37	4.5%	
36	3.0%	
35	1.5%	
34	1.5%	
33	0.8%	
32	0.0%	
31	0.0%	
30	0.0%	
29	0.0%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	50	MPH
LOWER LIMIT 10 MPH PACE:	41	MPH
PERCENT OVER PACE:	7.5	%
PERCENT IN PACE:	78.2	%
PERCENT UNDER PACE:	14.3	%

85th PERCENTILE SPEED:	48.8	MPH
MEDIAN SPEED:	44.7	MPH
15th PERCENTILE SPEED:	40.2	MPH

Cabot 2013-17

Radar Speed Survey Field Sheet

Hastrup & Associates, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: CABOT ROAD
LOCATION: RAPID FALLS RD TO SCL (800' S/O RAPID FALLS)

WEATHER: OVERCAST
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11-07-13
START TIME: 12:30 PM
END TIME: 1:00 PM VAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55	/	1
54	//	2
53	/	1
52	//	2
51	//	2
50	///	3
49	//////	7
48	////	4
47	////	4
46	/////	5
45	//////////	10
44	//////	6
43	////	4
42	////	4
41		0
40	//	2
39	//	2
38		0
37	/	1
36		
35		
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55			1	55
54			2	54
53			1	53
52			2	52
51	//	2	4	51
50	////	4	7	50
49	/////	5	12	49
48	/////	5	9	48
47	///	3	8	47
48	/////	5	15	46
45	//////////	10	16	45
44	///////	7	15	44
43	///////	7	11	43
42	//	2	6	42
41	/////	5	5	41
40	////	4	6	40
39			3	39
38	////	4	4	38
37			2	37
36	//	2	2	36
35		0	0	35
34			1	34
33	/	1	1	33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

EL TORO ROAD — **I-5 FREEWAY TO PASEO DE VALENCIA**

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 9:45 AM - 10:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF PASEO DE VALENCIA
DATE OF SURVEY	11/4/2013
85th PERCENTILE	37.6 MPH
10 MPH PACE	30 - 39 MPH
PERCENT IN PACE	82.0 %
POSTED SPEED LIMIT	35 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	13
TOTAL ACCIDENTS	33
ANNUAL ACCIDENT RATE	6.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	1.38 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	34,900
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - AVD DE LA CARLOTA / REGIONAL CTR / PASEO DE VALENCIA
CROSSWALKS	AT AVD DE LA CARLOTA / REGIONAL CTR / PASEO DE VALENCIA
PEDESTRIAN/BICYCLES	YES / FEW
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING & STOPPING AT ANYTIME
OTHER	BUS STOP CUT-OUTS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.37
VERTICAL CURVE	NONE
HORIZONTAL CURVE	GRADUAL "C" CURVES
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND / NO SHOULDERS
	SHORT DISTANCE BTWN SIGNALS - SURVEYED ON GREENS ONLY

ADJACENT LAND USE	LAGUNA HILLS MALL / COMMERCIAL
RECOMMENDED SPEED LIMIT	35 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 35 mph is within 2.6 mph of the 85th percentile speed and meets CVC standards.

File: El Toro 2013-18

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

EL TORO ROAD

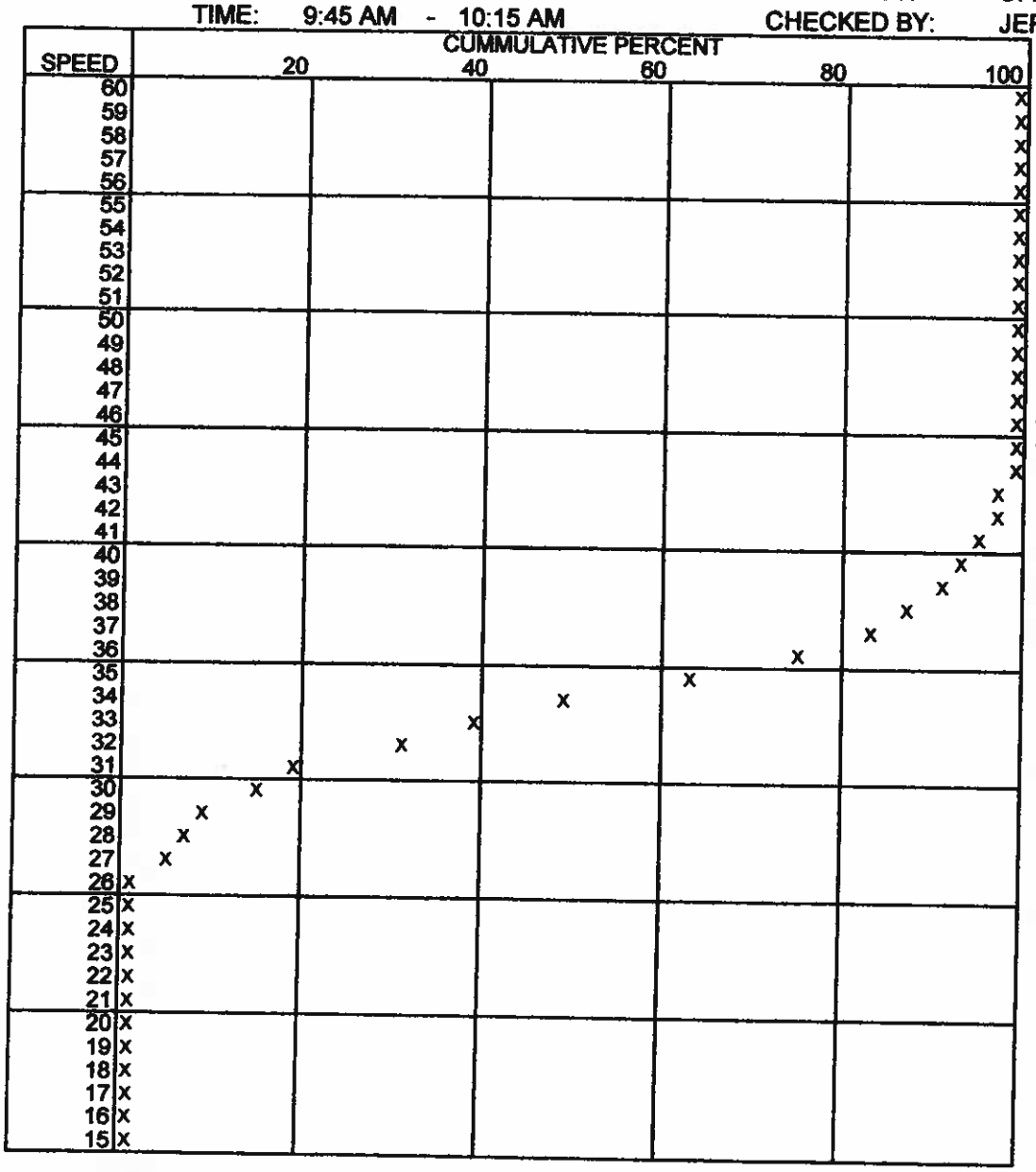
DATE: 11/4/2013

TIME: 9:45 AM - 10:15 AM

I-5 FREEWAY TO PASEO DE VALENCIA

SURVEY BY: C. BUENDIA

CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	39	MPH
LOWER LIMIT 10 MPH PACE:	30	MPH
PERCENT OVER PACE:	9.4	%
PERCENT IN PACE:	82.0	%
PERCENT UNDER PACE:	8.6	%

85th PERCENTILE SPEED:	37.6	MPH
MEDIAN SPEED:	34.0	MPH
15th PERCENTILE SPEED:	30.0	MPH

El Toro 2013-18

Radar Speed Survey Field Sheet

Hartzog & Crabbill, Inc. Consulting Traffic Engineers
17852 E. 17th Street, Suite 104
Tustin, California 92780
714.730.0671 fax 714.730.1461
www.hartzog-crabbill.com

AGENCY: CITY OF LAGUNA HILLS
STREET: EL TORO ROAD
LOCATION: I-5 FWY TO PASEO DE VALENCIA

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/04/13
START TIME: 9:45 AM
END TIME: 10:15 AM

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49	/	1
48		
47		
46		
45		
44	///	3
43		0
42	/	1
41	////	4
40	///	3
39	///	3
38	////	4
37	//////	6
36	//////	6
35	/////	5
34	/////	5
33	//////	6
32	//////	6
31	////	4
30	////	4
29		
28	/	1
27	////	4
26		0
25	/	1
24	/	1
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45	/	1	1	45
44		0	3	44
43		0	3	43
42	/	1	4	42
41		0	4	41
40	/	1	3	40
39	//	2	5	39
38	///	3	7	38
37	////	4	11	37
36	//////	6	16	36
35	////// /////	12	18	35
34	////// ///	9	14	34
33	////// //	8	14	33
32	////// ////	10	17	32
31	///	3	17	31
30	/// //	5	16	30
29	//	2	9	29
28	/	1	3	28
27			2	27
26			5	26
25			0	25
24			1	24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

GALLUP CIRCLE — **LA PAZ RD TO NELLIE GAIL RD**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 4:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF RANGEWOOD
DATE OF SURVEY	11/19/2013
85th PERCENTILE	26.8 MPH
10 MPH PACE	19 - 28 MPH
PERCENT IN PACE	89.0 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,200
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - LA PAZ / NELLIE GAIL
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	CHILDREN AT PLAY SIGNS POSTED EQUESTRIAN TRAILS AND CROSSINGS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.59
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	CONSTANT MODERATE SWEEPING "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	HEAVY DRIVEWAY ACCESS RAISED MEDIAN ISLAND AT LA PAZ

ADJACENT LAND USE	RESIDENTIAL (F) / PARK (at Nellie Gail)
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 25 mph is within 1.8 mph of the 85th percentile speed and meets CVC standards.

File: Gallup 2013-19

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

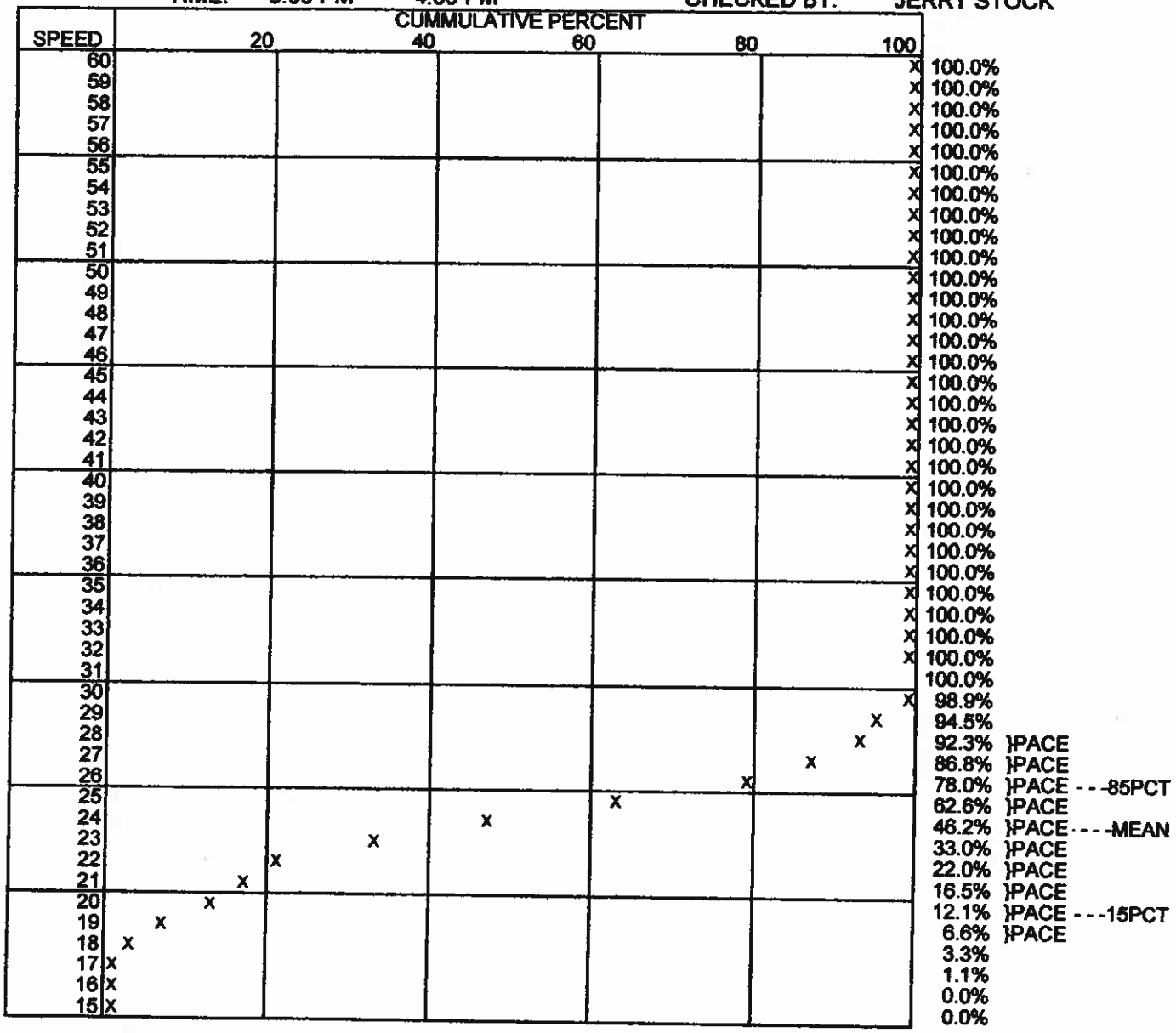
HCI

CITY OF LAGUNA HILLS

GALLUP CIRCLE — LA PAZ RD TO NELLIE GAIL RD

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 4:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	28	MPH
LOWER LIMIT 10 MPH PACE:	19	MPH
PERCENT OVER PACE:	7.7	%
PERCENT IN PACE:	89.0	%
PERCENT UNDER PACE:	3.3	%

85th PERCENTILE SPEED:	26.8	MPH
MEDIAN SPEED:	24.2	MPH
15th PERCENTILE SPEED:	20.7	MPH

Gallup 2013-19

Radar Speed Survey Field Sheet

Hanford & Cassell, Inc. Consulting Traffic Engineers
1522 E. 17th Street, Suite 101
Tustin, California 92780
714.731.9601 fax 714.731.9606
www.hanford-cassell.com

AGENCY: CITY OF LAGUNA HILLS
STREET: GALLUP CIRCLE
LOCATION: LA PAZ RD TO NELLIE GAIL RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/19/13
START TIME: 3:00 PM
END TIME: 4:30 PM

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35		
34		
33		
32		
31		
30	//	2
29	/	1
28	///	3
27	//	2
26	//////	6
25	//////	7
24	////// /	8
23	//////	6
22	/////	5
21		
20	///	3
19		
18	/	1
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38				38
37				37
36				36
35				35
34				34
33				33
32				32
31	/	1	1	31
30	//	2	4	30
29	/	1	2	29
28	///	3	5	28
27	///	3	8	27
26	//////	6	14	26
25	//////	7	15	25
24	//////	6	12	24
23	//////	6	10	23
22	/////	5	5	22
21	///	3	4	21
20	//	2	5	20
19	/	1	3	19
18			2	18
17			1	17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

GORDON ROAD — **MOULTON PKWY TO EAST END**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:15 PM - 4:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF MOULTON
DATE OF SURVEY	11/18/2013
85th PERCENTILE	26.1 MPH
10 MPH PACE	19 - 28 MPH
PERCENT IN PACE	83.9 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,500
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - MOULTON
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO PARKING EXCEPT w/PERMINT
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.08
VERTICAL CURVE	SLIGHT UPHILL GRADE (EB)
HORIZONTAL CURVE	VERY SLIGHT "S" CURVE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	VERY SHORT SEGMENT

ADJACENT LAND USE	RESIDENTIAL (NF) / WATER DISTRICT
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 25 mph is within 1.1 mph of the 85th percentile speed and meets CVC standards.

File: Gordon 2013-20

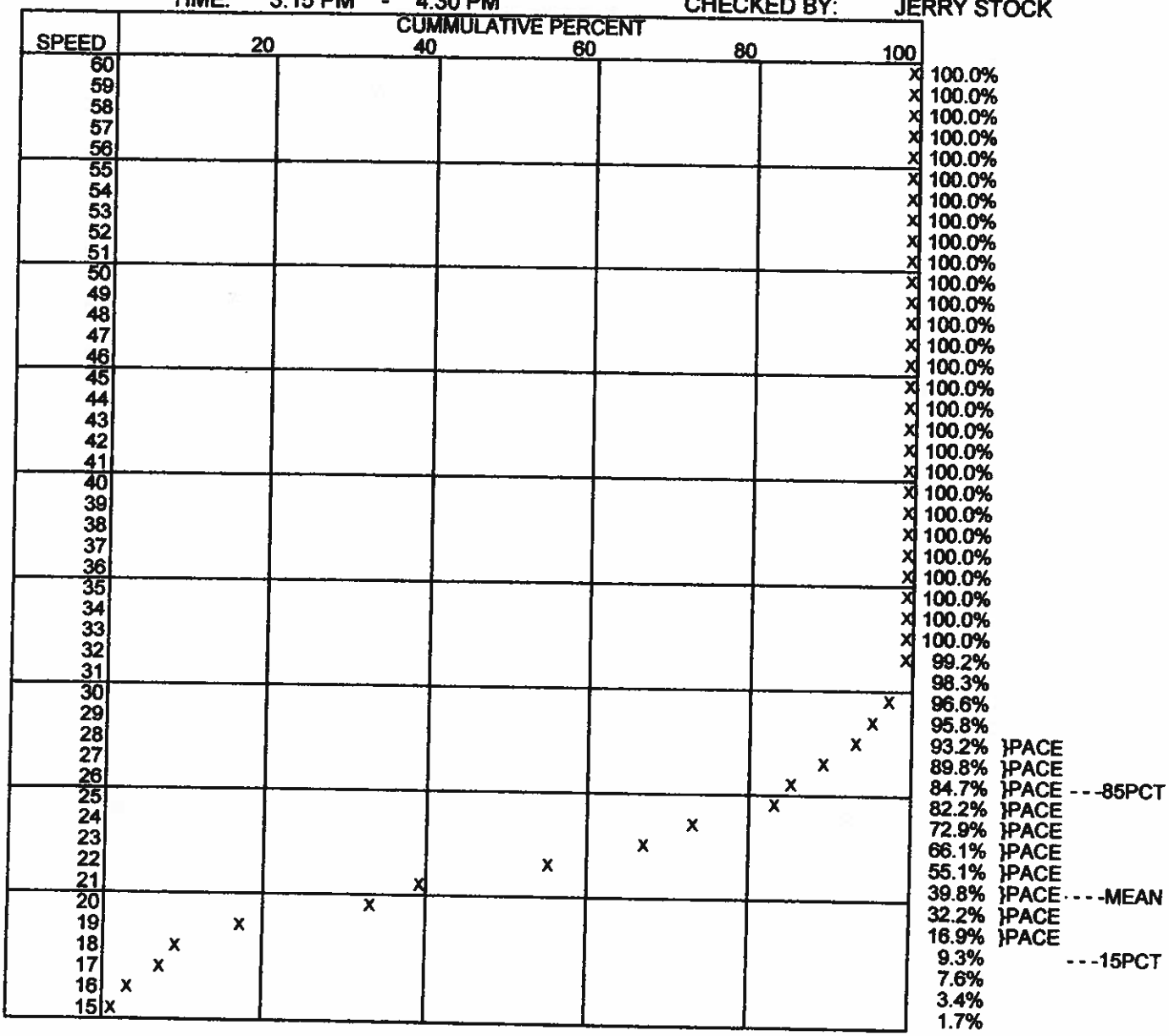
RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

GORDON ROAD
DATE: 11/18/2013
TIME: 3:15 PM - 4:30 PM

MOULTON PKWY TO EAST END
SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	28	MPH
LOWER LIMIT 10 MPH PACE:	19	MPH
PERCENT OVER PACE:	6.8	%
PERCENT IN PACE:	83.9	%
PERCENT UNDER PACE:	9.3	%

85th PERCENTILE SPEED:	26.1	MPH
MEDIAN SPEED:	21.7	MPH
15th PERCENTILE SPEED:	18.7	MPH

Gordon 2013-20

Radar Speed Survey Field Sheet

Hartzog & Crabbill, Inc. Consulting Traffic Engineers
17632 S. 17th Street, Suite 100
Tustin, California 92780
(714) 731-9401 fax 714-731-2001
www.hartzog-crabbill.com

AGENCY: CITY OF LAGUNA HILLS
STREET: GORDON ROAD
LOCATION: MOULTON PKWY TO EAST END

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 3:15 PM
END TIME: 4:30 PM

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35		
34		
33		
32		
31		
30		
29	/	1
28	//	2
27	//	2
26	//	2
25	/////	6
24	////	4
23	/////////	9
22	/////////	9
21	////	4
20	/////////	9
19	/////	5
18		0
17	/	1
15	/	1

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38				38
37				37
36				36
35				35
34				34
33	/	1	1	33
32	/	1	0	32
31		0	1	31
30	/	1	3	30
29	/	2	4	29
28	//	2	6	28
27	///	4	3	27
26	/	1	11	26
25	/////	5	8	25
24	////	4	13	24
23	////	4	18	23
22	/////////	9	9	22
21	/////	5	18	21
20	/////////	9	9	20
19	////	4	2	19
18	//	2	5	18
17	////	4	2	17
16	//	2	2	16
15	/	1		15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

GREENFIELD DRIVE — **HIDDEN TRAIL RD TO I-73 FWY**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 11:00 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF HIDDEN TRAIL
DATE OF SURVEY	11/20/2013
85th PERCENTILE	30.8 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	91.6 %
POSTED SPEED LIMIT	30 MPH 15 MPH Advisory (at bend)

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,900
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - 73 FWY
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	NO / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO (SB) / YES (NB)
OTHER	HORSE XING / HORSE TRAILS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.17
VERTICAL CURVE	CONTINUOUS GRADUAL-MODERATE DOWNHILL GRADES (SB)
HORIZONTAL CURVE	SLIGHT "S" CURVE / BEND (at Hidden Trail)
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (at bend)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	NO / NO (SB) - YES / YES (NB)
STREET LIGHTING	YES
OTHER	SMALL MEDIAN ISLAND AT SCL / DBL YELLOW CENTERLINE

ADJACENT LAND USE	RESIDENTAIL (F)
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph is within 0.8 mph of the 85th percentile speed and meets CVC standards.

F = Facing

File: Greenfield 2013-21

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

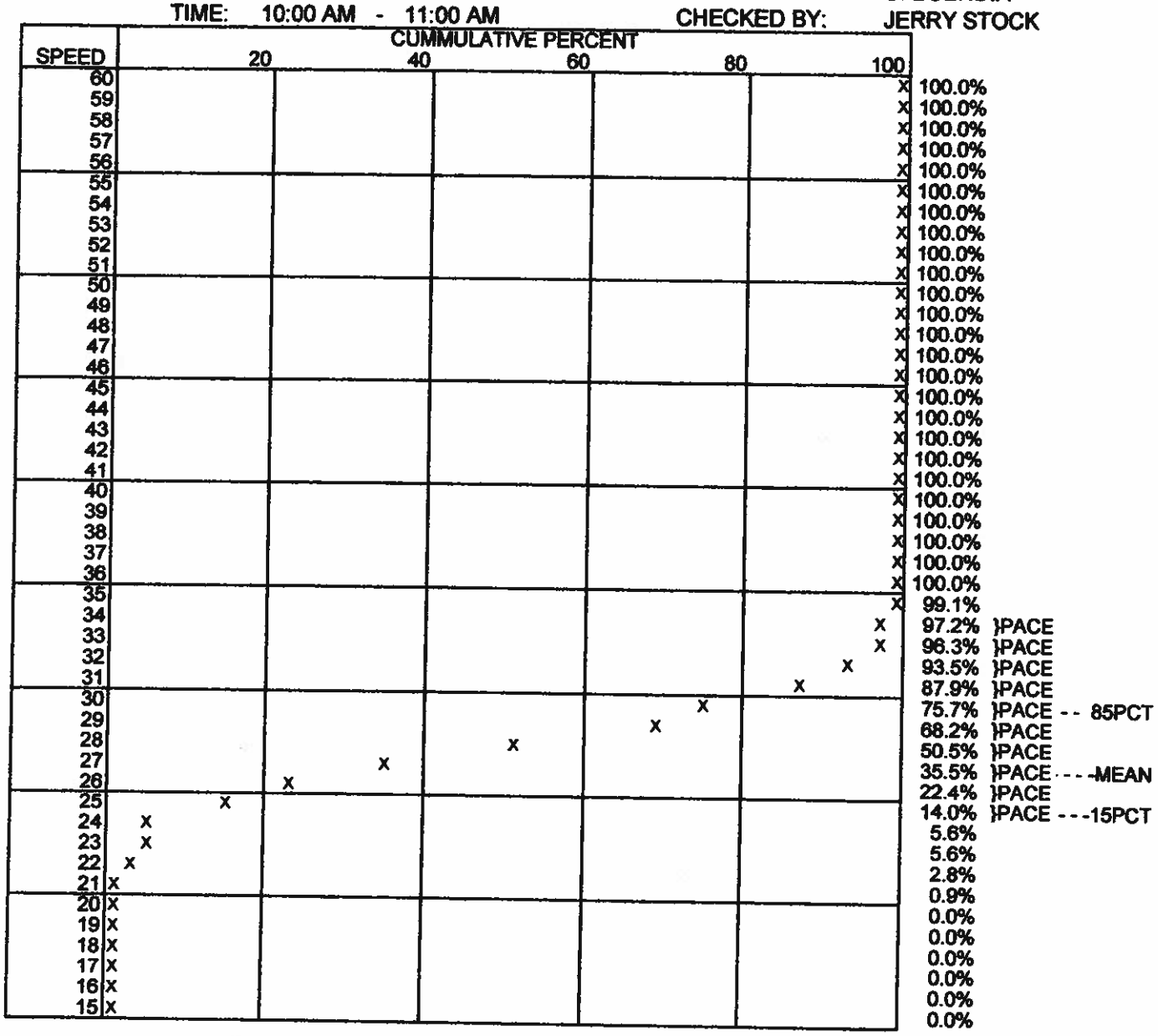
HCI

CITY OF LAGUNA HILLS

GREENFIELD DRIVE — HIDDEN TRAIL RD TO I-73 FWY

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 11:00 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	2.8	%
PERCENT IN PACE:	91.6	%
PERCENT UNDER PACE:	5.6	%

85th PERCENTILE SPEED:	30.8	MPH
MEDIAN SPEED:	28.0	MPH
15th PERCENTILE SPEED:	25.1	MPH

Greenfield 2013-21

SPD-HCI.dwg

Radar Speed Survey Field Sheet

Hatton & Smith, Inc.
Consulting Traffic Engineers
1960 E. 17th Street, Suite 101
Tustin, California 92780
(714) 731-9955 Fax: (714) 731-9956
www.hatton-smith.com

AGENCY: CITY OF LAGUNA HILLS
STREET: GREENFIELD DRIVE
LOCATION: HIDDEN TRAIL RD TO I-73 FWY (SCL)

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/26/13
START TIME: 10:00 AM
END TIME: 11:00 AM

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40	/	1
39		
38		
37		
36	/	1
35	/	1
34	/	1
33	//	2
32	///	3
31	////	4
30	/////	5
29	//////	7
28	//////	7
27	//////	7
26	/////	5
25	/////	5
24		
23	//	2
22	/	1
21	/	1
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____
CRITICAL SPEED: _____
PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38				38
37				37
36			1	36
35	/	1	2	35
34		0	2	34
33	/	1	3	33
32	//	2	5	32
31	////	4	9	31
30	/////	5	14	30
29	//////	6	20	29
28	//////	8	28	28
27	//////	8	36	27
26	//////	7	43	26
25	////	4	47	25
24	///	3	50	24
23	/	1	51	23
22			51	22
21			51	21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____
CRITICAL SPEED: _____
PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

HON AVENUE — **JULIE AVE TO ALICIA PKWY**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 11:15 AM - 12:15 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF CAMBERWELL
DATE OF SURVEY	11/19/2013
85th PERCENTILE	28.8 MPH
10 MPH PACE	22 - 31 MPH
PERCENT IN PACE	87.8 %
POSTED SPEED LIMIT	25 MPH (NB)

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	3,500
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - ALICIA, STOP - CAMBERWELL
CROSSWALKS	AT ALICIA / CAMBERWELL
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO (delivery trucks s.of Camberwell)
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.30
VERTICAL CURVE	VERY SLIGHT UPHILL (NB)
HORIZONTAL CURVE	SLIGHT-GRADUAL "S" CURVE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	2 WAY LEFT TURN CENTERLANE & SMALL RAISED MEDIAN ISLAND (at Alicia)

ADJACENT LAND USE	COMMERCIAL / RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE - POST SOUTHBOUND

JUSTIFICATION:

The recommended 25 mph is within 3.3 mph of the 85th percentile speed and meets CVC standards. For enforcement, it is recommended that a 25 mph speed sign be installed southbound.

File: Hon 2013-22

RADAR SPEED DISTRIBUTION SHEET

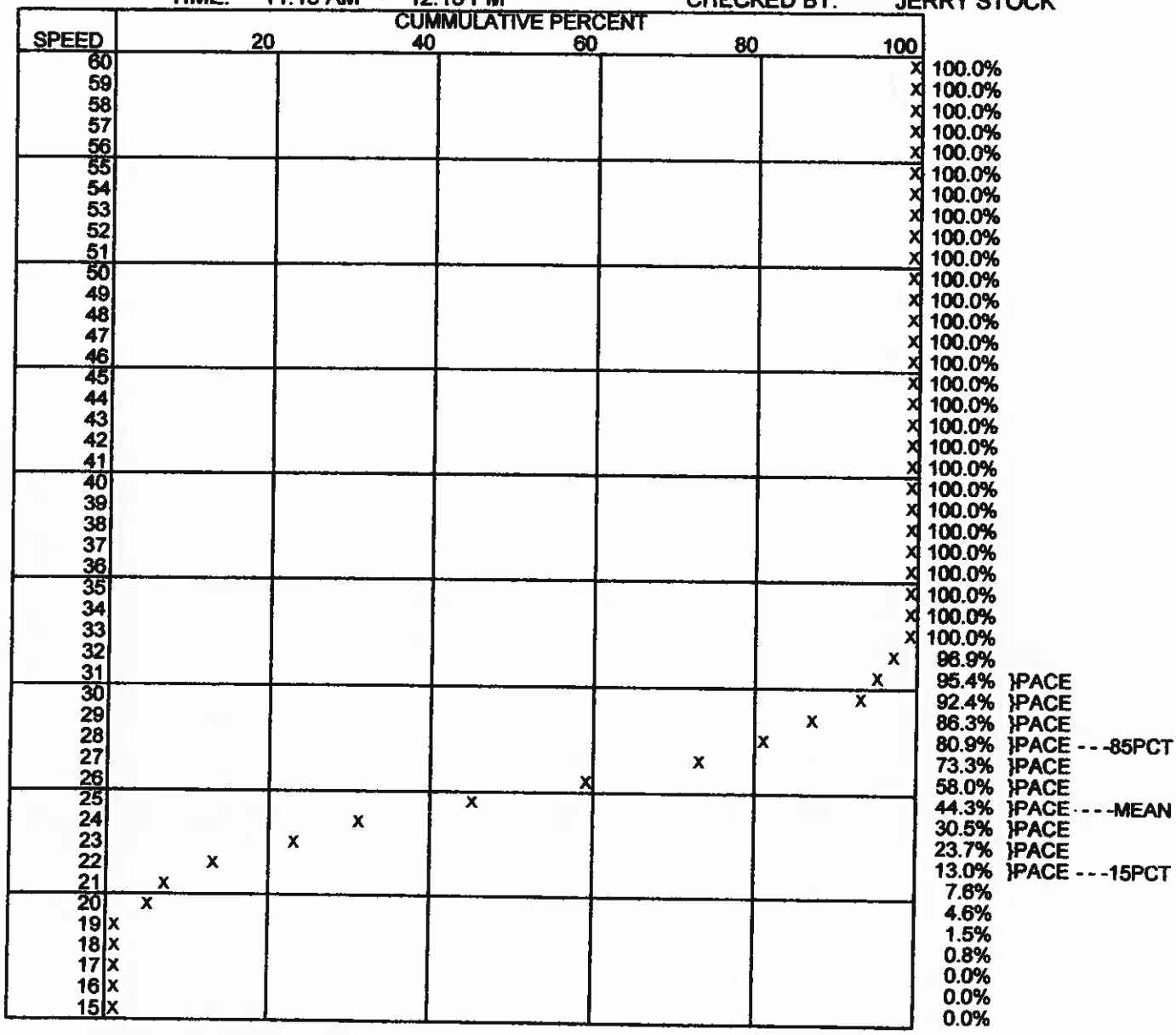
CITY OF LAGUNA HILLS

HCI

HON AVENUE — JULIE AVE TO ALICIA PKWY

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 11:15 AM - 12:15 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	31	MPH
LOWER LIMIT 10 MPH PACE:	22	MPH
PERCENT OVER PACE:	7.6	%
PERCENT IN PACE:	87.8	%
PERCENT UNDER PACE:	7.6	%

85th PERCENTILE SPEED:	28.8	MPH
MEDIAN SPEED:	25.4	MPH
15th PERCENTILE SPEED:	22.2	MPH

Hon 2013-22

Radar Speed Survey Field Sheet

Hastings & Associates, Inc.
Consulting Traffic Engineers
7832 E. 17th Street, Suite 101
Tustin, California 92780
714.731.9661 Fax: 714.731.9664
www.hastings-assoc.com

AGENCY: CITY OF LAGUNA HILLS
STREET: MON AVENUE
LOCATION: JULIE AVE TO ALICIA PKWY

WEATHER: PARTIAL SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11-19-13
START TIME: 11:15 AM
END TIME: 12:15 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35		
34		
33	//	2
32	/	1
31	/	1
30	//	3
29	/	1
28	//	3
27	////////	8
26	////////	8
25	//////	6
24	//////	6
23	/////	5
22	////	4
21	///	3
20	///	3
19		0
18	/	1
17		
16		
15		

AVERAGE SPEED: _____
CRITICAL SPEED: _____
PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38				38
37				37
36				36
35				35
34				34
33	//	2	4	33
32	//	2	2	32
31	///	3	4	31
30	/////	5	8	30
29	//////	6	7	29
28	//////	6	10	28
27	//////	6	20	27
26	//////	6	18	26
25	//////	6	18	25
24	/////	5	9	24
23	/////	5	14	23
22	//	2	7	22
21			4	21
20			4	20
19			1	19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____
CRITICAL SPEED: _____
PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

INDIAN HILL LANE — **LAGUNA HILLS DR TO MOULTON PKWY**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 4:15 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF HOLLY HILL
DATE OF SURVEY	11/25/2013
85th PERCENTILE	33.2 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	85.0 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,300
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LAGUNA HILLS, STOP - MOULTON
CROSSWALKS	AT LAGUNA HILLS / MOULTON
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	PARTIAL
OTHER	NO PARKING ANYTIME (near Laguna Hills)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.37
VERTICAL CURVE	MODERATE UP-DOWNHILL GRADES (SB)
HORIZONTAL CURVE	SWEEPING "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE

ADJACENT LAND USE	MULTI-FAMILY RESIDENTIAL / PARK
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph is within 3.2 mph of the 85th percentile speed and meets CVC standards.

Note: The sight distance south of Holly Hill is approximately 230 feet.

File: Indian Hills 2013-23

RADAR SPEED DISTRIBUTION SHEET

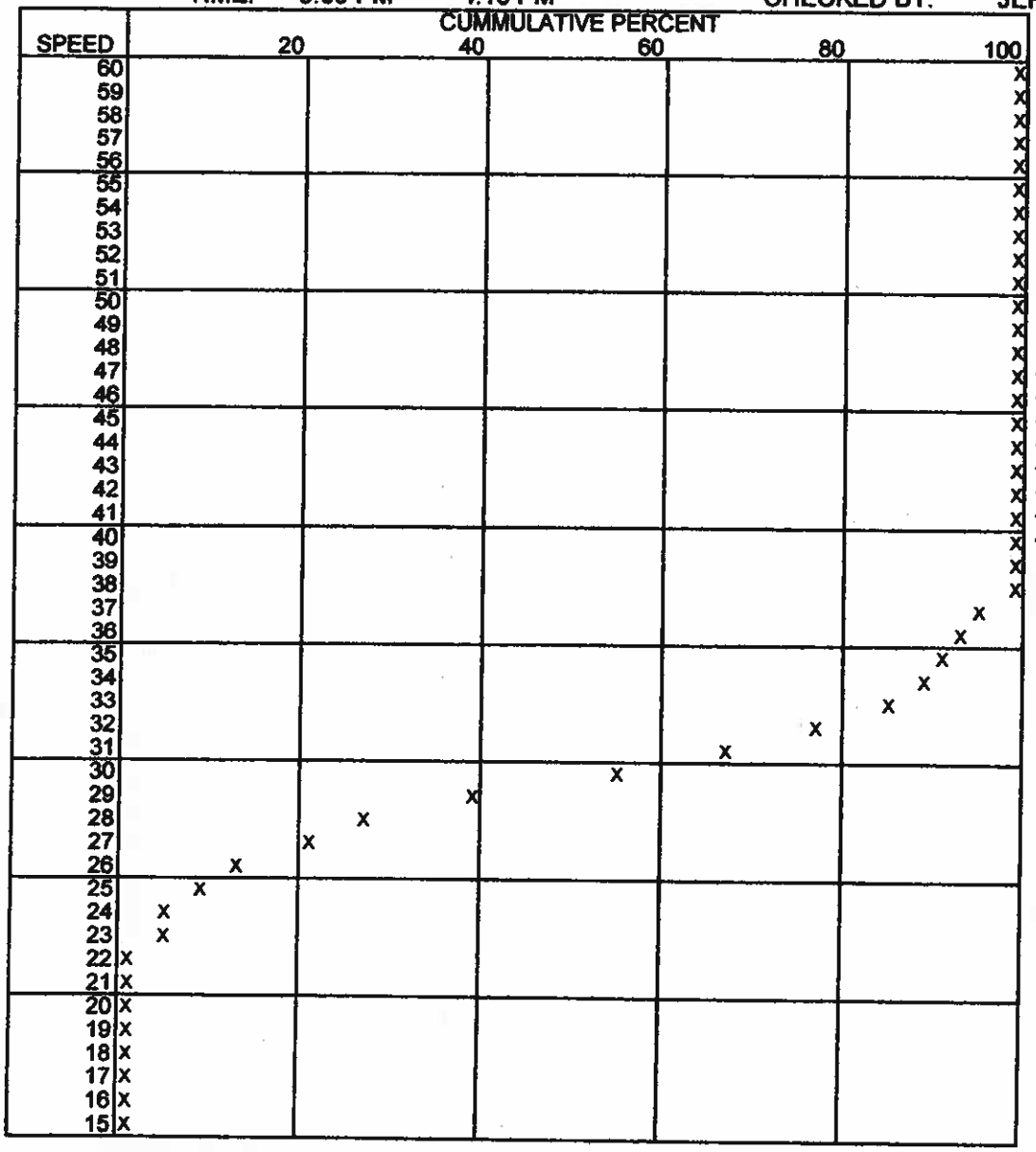
CITY OF LAGUNA HILLS

HCI

INDIAN HILL LANE — LAGUNA HILLS DR TO MOULTON PKWY

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 4:15 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	10.6	%
PERCENT IN PACE:	85.0	%
PERCENT UNDER PACE:	4.4	%

85th PERCENTILE SPEED:	33.2	MPH
MEDIAN SPEED:	29.7	MPH
15th PERCENTILE SPEED:	26.3	MPH

Indian Hills 2013-23

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

HARTZOG & CRABBS, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: INDIAN HILL LANE
LOCATION: LAGUNA HILLS DR TO MOULTON PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/25/13
START TIME: 3:00 PM
END TIME: 9:15 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38	//	2
37	//	2
36		0
35	/	2
34	////	4
33	//	2
32	//////	6
31	////	4
30	//////	8
29	//////	8
28	////	4
27	//////	6
26	///	3
25		0
24		0
23	///	3
22	/	1
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40	/	1	1	40
39	/	1	3	39
38	/	1	4	38
37	//	2	6	37
36		0	6	36
35	/	1	7	35
34	//	2	9	34
33	//////	6	15	33
32	//////	6	21	32
31	//////	6	27	31
30	//////	6	33	30
29	//////	6	39	29
28	////	4	43	28
27	///	3	46	27
26	/	1	47	26
25	///	3	50	25
24		0	50	24
23	/	1	51	23
22			51	22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LA PAZ ROAD — **WEST CITY LIMITS ()I-73) TO MOULTON PKWY**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 9:45 AM - 10:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF MOULTON
DATE OF SURVEY	11/25/2013
85th PERCENTILE	45.2 MPH
10 MPH PACE	37 - 46 MPH
PERCENT IN PACE	81.7 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	4
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.13 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	16,400
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON / 73 FWY / MERIENDA
CROSSWALKS	AT MOULTON / 73 FWY
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.65
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	SLIGHT "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (NF) / COMMERCIAL / 73 TOLL ROAD
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 0.2 mph of the 85th percentile speed and meets CVC standards.

File: La Paz 2013-24

RADAR SPEED DISTRIBUTION SHEET

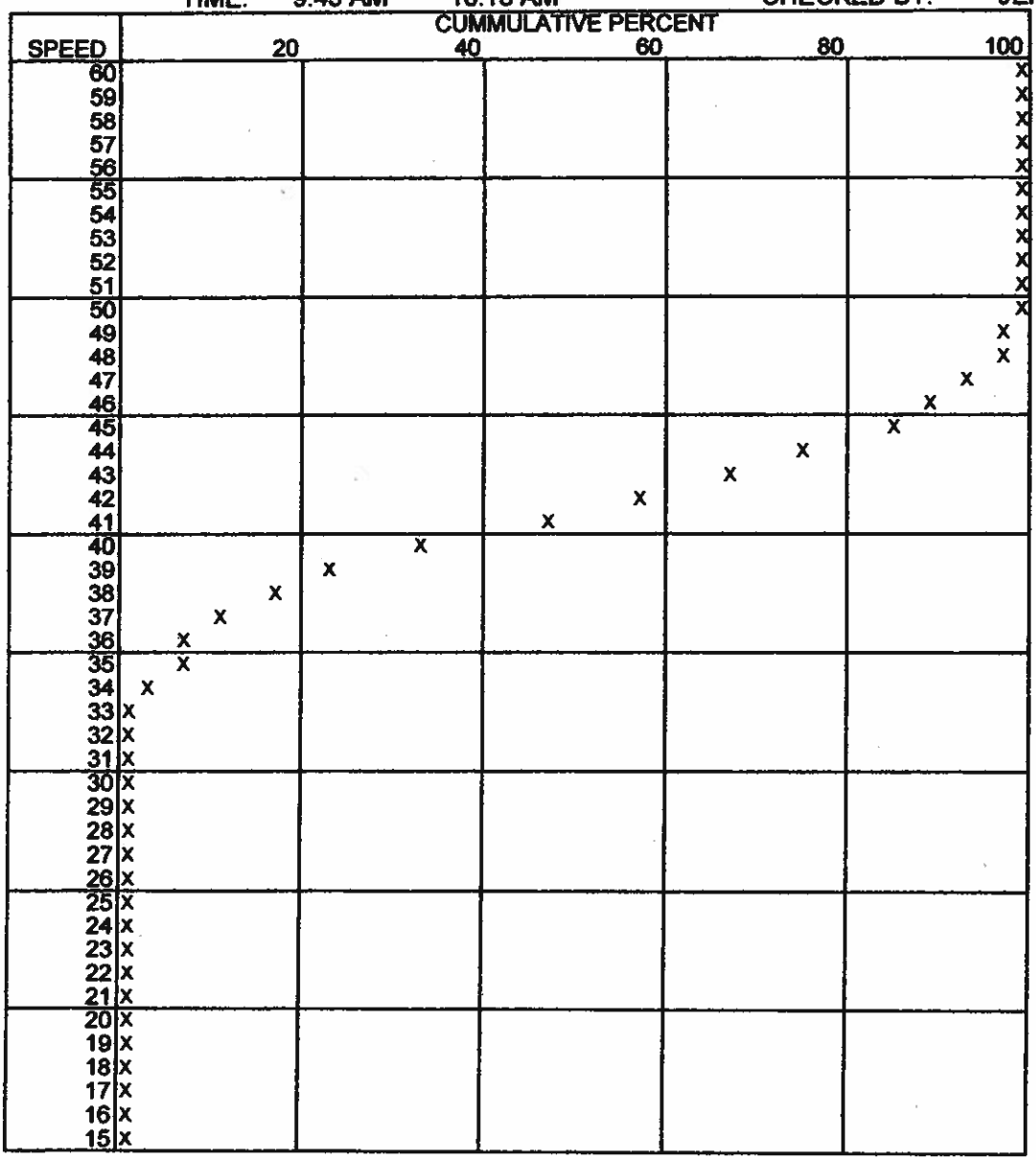
CITY OF LAGUNA HILLS

HCI

LA PAZ ROAD — WEST CITY LIMITS (I-73) TO MOULTON PK

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 9:45 AM - 10:15 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	46	MPH
LOWER LIMIT 10 MPH PACE:	37	MPH
PERCENT OVER PACE:	11.9	%
PERCENT IN PACE:	81.7	%
PERCENT UNDER PACE:	6.3	%

85th PERCENTILE SPEED:	45.2	MPH
MEDIAN SPEED:	41.4	MPH
15th PERCENTILE SPEED:	37.7	MPH

La Paz 2013-24

Radar Speed Survey Field Sheet

Hardrock & Engel, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: LA PAZ ROAD
LOCATION: WCL (ROUTE 73) TO MOULTON PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/25/13
START TIME: 9:45 AM
END TIME: 10:15 AM VAL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50	/	1
49		0
48	//	2
47	///	3
46	//	2
45	////	4
44	/////	7
43	///	3
42	////	5
41	/////	10
40	/////	9
39	////	5
38	///	3
37	///	4
36		0
35	//	3
34	//	2
33		0
32	/	1
31		0
30	/	1
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52	/	1	1	52
51	/	1	1	51
50	/	1	2	50
49	/	1	1	49
48	///	3	5	48
47	///	3	5	47
46	///	3	5	46
45	/////	5	11	45
44	/////	6	11	44
43	///// //	10	13	43
42	///// ///	8	13	42
41	///// /	6	16	41
40	/////	5	14	40
39	////	2	7	39
38	///	3	16	38
37	///	3	7	37
36		0	0	36
35	/	1	4	35
34			2	34
33			0	33
32			1	32
31			0	31
30			1	30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LA PAZ ROAD — **MOULTON PKWY TO ALISO HILLS DR**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 10:15 AM - 11:45 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF MOULTON
DATE OF SURVEY	11/25/2013
85th PERCENTILE	51.1 MPH
10 MPH PACE	43 - 52 MPH
PERCENT IN PACE	75.0 %
POSTED SPEED LIMIT	50 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	3
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.07 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	16,800
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON / ALISO HILLS
CROSSWALKS	AT MOULTN / ALISO HILLS
PEDESTRIAN/BICYCLES	FEW / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE
	SIGNAL AHEAD FLASHING BEACON

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	1.19
VERTICAL CURVE	GRADUAL -MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	PAINTED MEDIAN ISLAND
	NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTAIL (NF) / COMMERCIAL
RECOMMENDED SPEED LIMIT	50 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 50 mph is within 1.1 mph of the 85th percentile speed and meets CVC standards. Also, exiting Holly Hill Lane looking sb the sight distance is approximately 230 feet

File: La Paz 2013-25

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

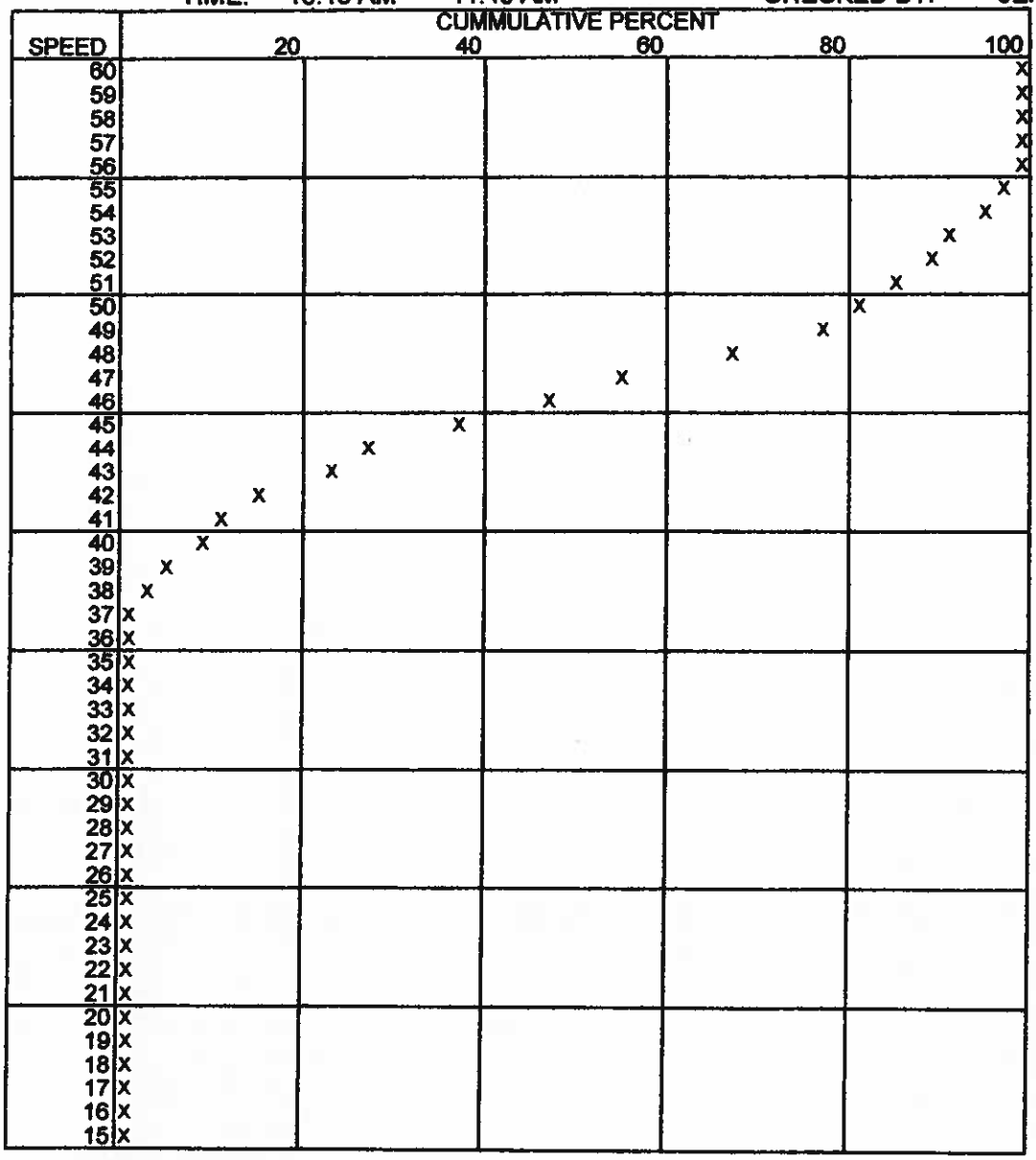
HCI

CITY OF LAGUNA HILLS

LA PAZ ROAD — MOULTON PKWY TO ALISO HILLS DR

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 10:15 AM - 11:45 AM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT		
60	100.0%		
59	100.0%		
58	100.0%		
57	98.5%		
56	98.5%		
55	96.3%		
54	94.1%		
53	91.2%		
52	89.7%	}PACE	
51	84.6%	}PACE	---85PCT
50	81.6%	}PACE	
49	77.2%	}PACE	
48	67.6%	}PACE	
47	55.9%	}PACE	
46	46.3%	}PACE	----MEAN
45	36.0%	}PACE	
44	26.5%	}PACE	
43	22.1%	}PACE	
42	14.7%		---15PCT
41	11.8%		
40	8.8%		
39	4.4%		
38	2.9%		
37	1.5%		
36	0.0%		
35	0.0%		
34	0.0%		
33	0.0%		
32	0.0%		
31	0.0%		
30	0.0%		
29	0.0%		
28	0.0%		
27	0.0%		
26	0.0%		
25	0.0%		
24	0.0%		
23	0.0%		
22	0.0%		
21	0.0%		
20	0.0%		
19	0.0%		
18	0.0%		
17	0.0%		
16	0.0%		
15	0.0%		

UPPER LIMIT 10 MPH PACE:	52	MPH
LOWER LIMIT 10 MPH PACE:	43	MPH
PERCENT OVER PACE:	10.3	%
PERCENT IN PACE:	75.0	%
PERCENT UNDER PACE:	14.7	%

85th PERCENTILE SPEED:	51.1	MPH
MEDIAN SPEED:	46.4	MPH
15th PERCENTILE SPEED:	42.0	MPH

La Paz 2013-25

Radar Speed Survey Field Sheet

Hanford & Crosby, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: LA PAZ ROAD
LOCATION: MOULTON PKWY TO ALISO HILLS DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/25/13
START TIME: 10:15 AM
END TIME: 11:45 AM VAL

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58	//	2
57		0
56	//	3
55	//	2
54	//	3
53	//	2
52	///	4
51	///	4
50	///	5
49	//////	9
48	//////	9
47	//////	9
46	/////	8
45	/////	8
44	////	5
43	////	4
42		0
41	/	1
40		0
39		0
38	/	1
37	/	1
36		
35		
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58			2	58
57			0	57
56			3	56
55	/	1	3	55
54	/	1	4	54
53		0	2	53
52	//	3	7	52
51	//	3	4	51
50	//	3	6	50
49	///	4	13	49
48	//////	7	16	48
47	//////	7	13	47
46	//////	8	14	46
45	/////	5	13	45
44	///	3	10	44
43	//////	6	10	43
42	////	4	4	42
41	///	3	4	41
40	//////	6	6	40
39	//	2	2	39
38	/	1	2	38
37	/	1	2	37
36				36
35				35
34				34
33				33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LA PAZ ROAD — **ALISO HILLS DR TO PASEO DE VALENCIA**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 12:00 PM - 12:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF APPALOOSA
DATE OF SURVEY	11/25/2013
85th PERCENTILE	47.6 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	77.0 %
POSTED SPEED LIMIT	45 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	3
TOTAL ACCIDENTS	3
ANNUAL ACCIDENT RATE	1.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.73 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	15,200
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - ALISO HILLS / PASEO DE VALENCIA
CROSSWALKS	AT ALISO HILLS / PASEO DE VALENCIA
PEDESTRIAN/BICYCLES	FEW / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE
	ADVANCE WARNING "SIGNAL AHEAD" FLASHING BEACON (EB)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.37
VERTICAL CURVE	MODERATE DOWNHILL TO PASEO DE VALENCE (EB)
HORIZONTAL CURVE	MODERATE "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	PAINTED MEDIAN ISLAND
	NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 2.6 mph of the 85th percentile speed and meets CVC standards.

File: La Paz 2013-26

RADAR SPEED DISTRIBUTION SHEET

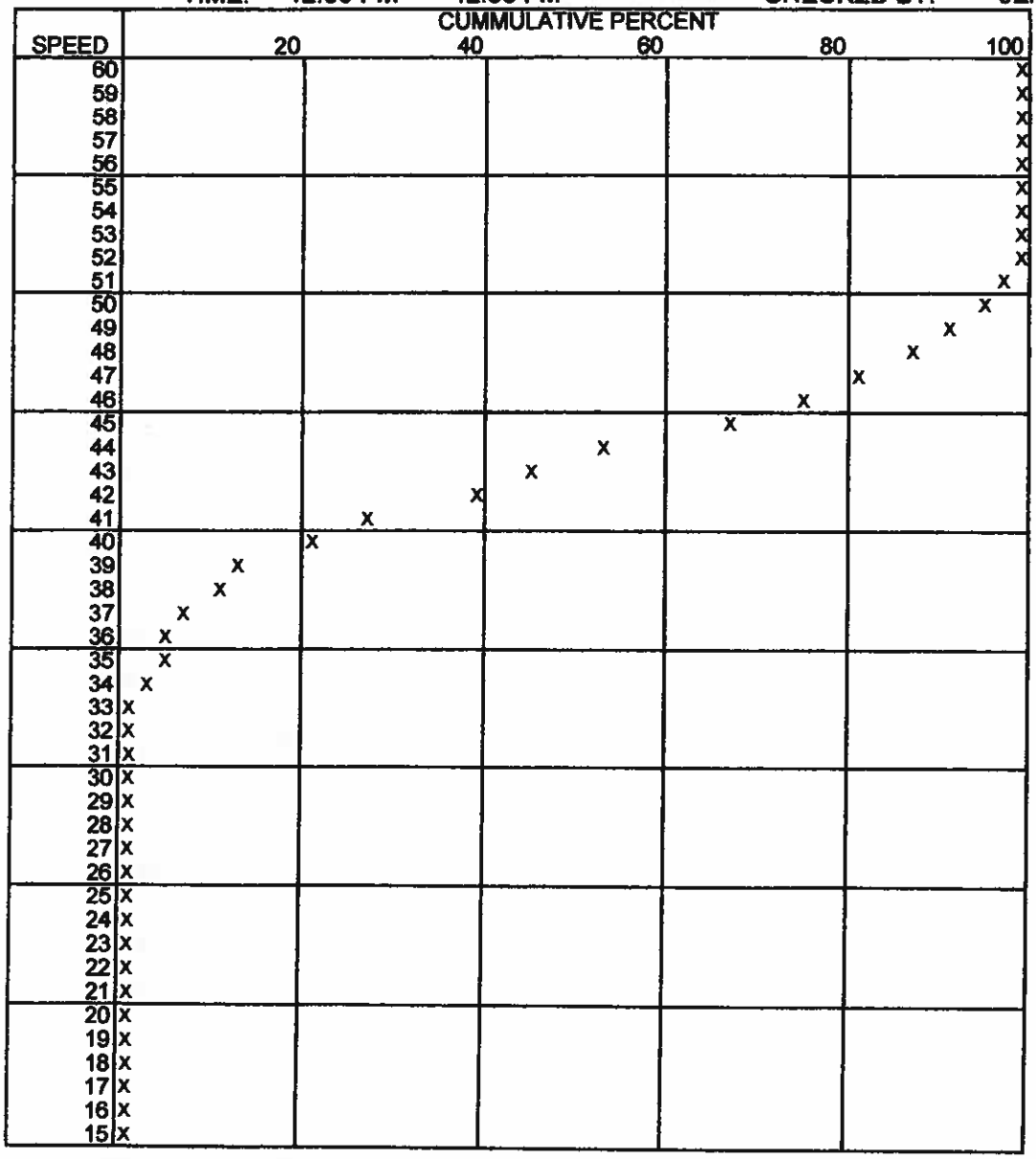
HCI

CITY OF LAGUNA HILLS

LA PAZ ROAD — ALISO HILLS DR TO PASEO DE VALENCIA

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 12:00 PM - 12:30 PM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT		
60	100.0%		
59	100.0%		
58	100.0%		
57	100.0%		
56	100.0%		
55	100.0%		
54	100.0%		
53	100.0%		
52	100.0%		
51	98.0%		
50	95.3%		
49	90.5%	}PACE	
48	87.8%	}PACE	
47	80.4%	}PACE	---85PCT
46	75.0%	}PACE	
45	66.9%	}PACE	
44	52.7%	}PACE	
43	45.3%	}PACE	---MEAN
42	38.5%	}PACE	
41	27.0%	}PACE	
40	21.6%	}PACE	
39	13.5%		---15PCT
38	10.8%		
37	7.4%		
36	5.4%		
35	4.7%		
34	3.4%		
33	1.4%		
32	1.4%		
31	1.4%		
30	0.7%		
29	0.0%		
28	0.0%		
27	0.0%		
26	0.0%		
25	0.0%		
24	0.0%		
23	0.0%		
22	0.0%		
21	0.0%		
20	0.0%		
19	0.0%		
18	0.0%		
17	0.0%		
16	0.0%		
15	0.0%		

UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	12.2	%
PERCENT IN PACE:	77.0	%
PERCENT UNDER PACE:	13.5	%

85th PERCENTILE SPEED:	47.6	MPH
MEDIAN SPEED:	43.6	MPH
15th PERCENTILE SPEED:	39.2	MPH

La Paz 2013-26

Radar Speed Survey Field Sheet

Hastings & Chasse, Inc.
Consulting Traffic Engineers
17632 E. 17th Street, Suite 101
Tustin, California 92780
714.731.5463 Fax: 714.731.5465
www.hastingschasse.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LA PAZ ROAD
LOCATION: ALISO HILLS DR TO PASEO DE VALENCIA

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/25/13
START TIME: 12:00 PM
END TIME: 12:30 PM

DIRECTION: WEST BOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52	/	1
51	/	1
50	/	1
49		0
48	///	4
47	///	2
46	////	6
45	////	10
44	////	7
43	////	5
42	////	10
41	////	4
40	////	7
39	///	3
38	///	4
37	/	2
36	/	1
35	/	1
34	/	1
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EAST BOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52	//	2	3	52
51	///	3	4	51
50	/////	6	7	50
49	////	4	4	49
48	/////	7	11	48
47	/////	6	8	47
46	/////	6	12	46
45	///// //	11	21	45
44	////	4	11	44
43	////	5	10	43
42	////	7	17	42
41	////	4	8	41
40	////	5	12	40
39	/	1	4	39
38	/	1	5	38
37	/	1	3	37
36		0	1	36
35	/	1	2	35
34	/	1	3	34
33		0	0	33
32	//	2	0	32
31	//	8	1	31
30	/	1	1	30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LA PAZ ROAD — **PASEO DE VALENCIA TO RICKENBACKER RD**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF PASEO DE VALENCIA
DATE OF SURVEY	11/25/2013
85th PERCENTILE	42.3 MPH
10 MPH PACE	35 - 44 MPH
PERCENT IN PACE	83.4 %
POSTED SPEED LIMIT	40 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	17,500
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PASEO DE VALENCIA
CROSSWALKS	AT PASEO DE VALENCIA (sch)
PEDESTRIAN/BICYCLES	YES / FEW
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	BIKE LANE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.31
VERTICAL CURVE	GRADUAL-MODERATE UPHILL (WB)
HORIZONTAL CURVE	MODERATE "S" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO (WB) - YES / FEW (EB)
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	NO SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF) / COMMERCIAL (at Rickenbacher) / ELEMENTARY SCH
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph is within 2.3 mph of the 85th percentile speed and meets CVC standards. Also, exiting Holly Hill Lane looking sb the sight distance is approximately 230 feet

*25 MPH While Children Present, School zone

File: La Paz 2013-27

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

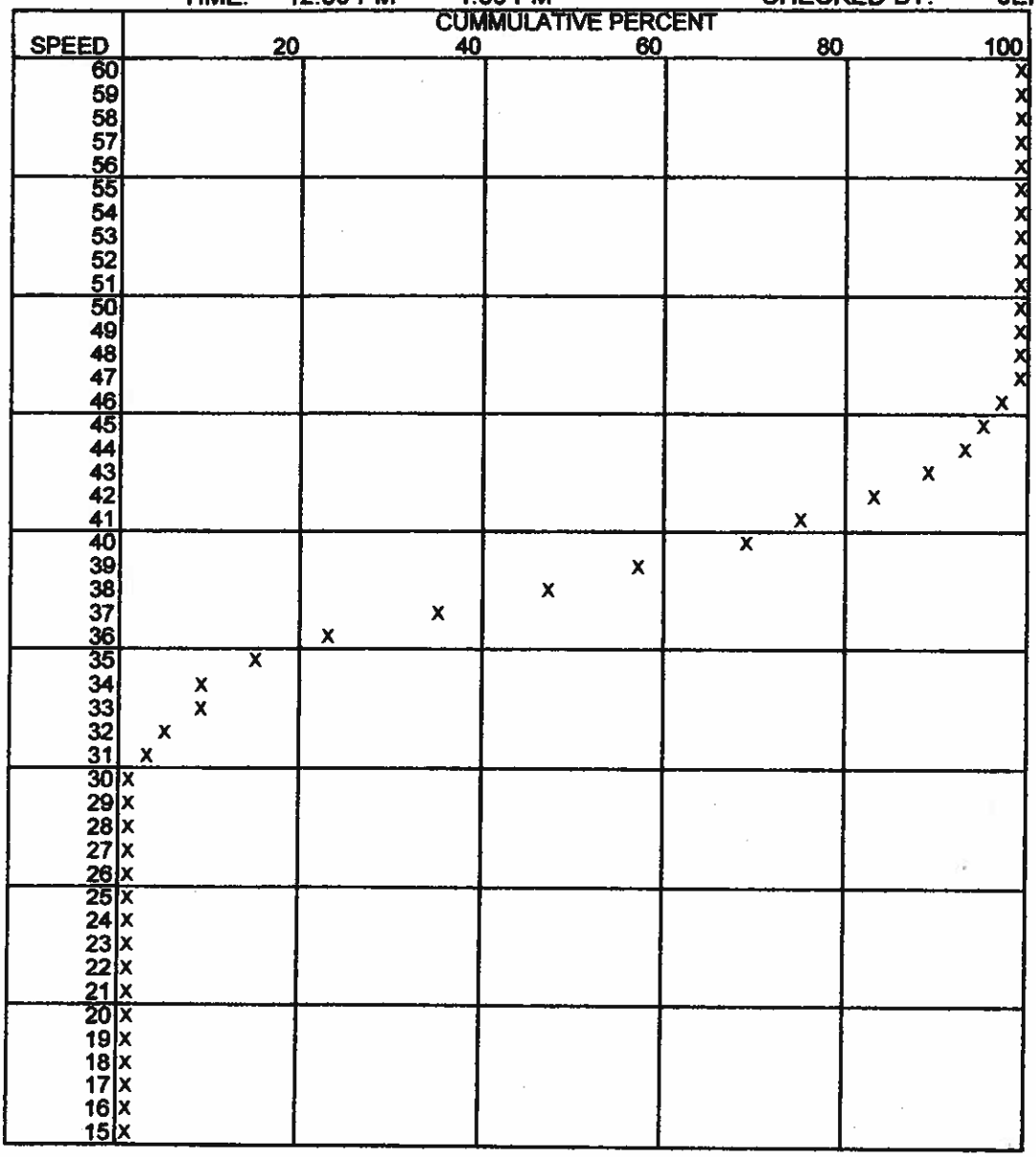
HCI

CITY OF LAGUNA HILLS

LA PAZ ROAD — PASEO DE VALENCIA TO RICKENBACKER

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:00 PM — CHECKED BY: JERRY STOCK



SPEED		
60	X	100.0%
59	X	100.0%
58	X	100.0%
57	X	100.0%
56	X	100.0%
55	X	100.0%
54	X	100.0%
53	X	100.0%
52	X	100.0%
51	X	100.0%
50	X	100.0%
49	X	100.0%
48	X	100.0%
47	X	100.0%
46	X	97.2%
45	X	95.2%
44	X	92.4% }PACE
43	X	89.0% }PACE
42	X	83.4% }PACE - - -85PCT
41	X	75.2% }PACE
40	X	69.0% }PACE
39	X	56.6% }PACE
38	X	47.6% }PACE - - - -MEAN
37	X	34.5% }PACE
36	X	22.1% }PACE
35	X	14.5% }PACE - - -15PCT
34	X	9.0%
33	X	9.0%
32	X	4.8%
31	X	2.8%
30	X	1.4%
29	X	0.7%
28	X	0.0%
27	X	0.0%
26	X	0.0%
25	X	0.0%
24	X	0.0%
23	X	0.0%
22	X	0.0%
21	X	0.0%
20	X	0.0%
19	X	0.0%
18	X	0.0%
17	X	0.0%
16	X	0.0%
15	X	0.0%

UPPER LIMIT 10 MPH PACE:	44	MPH
LOWER LIMIT 10 MPH PACE:	35	MPH
PERCENT OVER PACE:	7.6	%
PERCENT IN PACE:	83.4	%
PERCENT UNDER PACE:	9.0	%

85th PERCENTILE SPEED:	42.3	MPH
MEDIAN SPEED:	38.3	MPH
15th PERCENTILE SPEED:	35.1	MPH

La Paz 2013-27

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

HARRIS & CONSULTANTS, Inc.
Consulting Traffic Engineers
17452 E. 17th Street, Suite 104
Tustin, California 92780
714.730.2455 fax 714.730.0595
www.harrisconsultants.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LA PAZ ROAD
LOCATION: PASEO DE VALENCIA TO RICKENBACKER RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/25/13
START TIME: 12:30 PM
END TIME: 1:00 PM

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47	/	1
46	/	1
45	///	3
44		0
43	//	2
42	//////	7
41	/////	5
40	////////	9
39	////////	8
38	//////////	11
37	//////	8
36	//////	6
35	///	4
34		0
33	//	2
32	//	2
31	/	1
30		0
29	/	1
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47	///	3	4	47
46	//	2	3	46
45	/	1	1	45
44	////	5	5	44
43	////	6	6	43
42	/////	5	12	42
41	////	4	9	41
40	////////	9	18	40
39	/////	5	13	39
38	////////	8	19	38
37	//////////	10	18	37
36	/////	5	11	36
35	////	4	8	35
34		0	0	34
33	///	4	6	33
32	/	1	3	32
31	/	1	2	31
30	/	1	1	30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
18				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LA PAZ ROAD — **RICKENBACKER RD TO I-5 FREEWAY**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF RICKENBACHER
DATE OF SURVEY	11/25/2013
85th PERCENTILE	36.3 MPH
10 MPH PACE	29 - 38 MPH
PERCENT IN PACE	81.8 %
POSTED SPEED LIMIT	35 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	7
TOTAL ACCIDENTS	17
ANNUAL ACCIDENT RATE	3.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.77 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	35,800
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - CABOT / McINTIRE
CROSSWALKS	AT CABOT / McINTIRE
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	BUS STOPS
	BIKE LANE

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.35
VERTICAL CURVE	STEEP DOWNHILL (EB)
HORIZONTAL CURVE	SLIGHT "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND / NO SHOULDERS
	SHORT DISTANCE BTWN SIGNALS - SURVEYED ON GREENS ONLY

ADJACENT LAND USE	COMMERCIAL / FWY RAMPS
RECOMMENDED SPEED LIMIT	35 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 35 mph is within 1.3 mph of the 85th percentile speed and meets CVC standards.

File: La Paz 2013-28

RADAR SPEED DISTRIBUTION SHEET

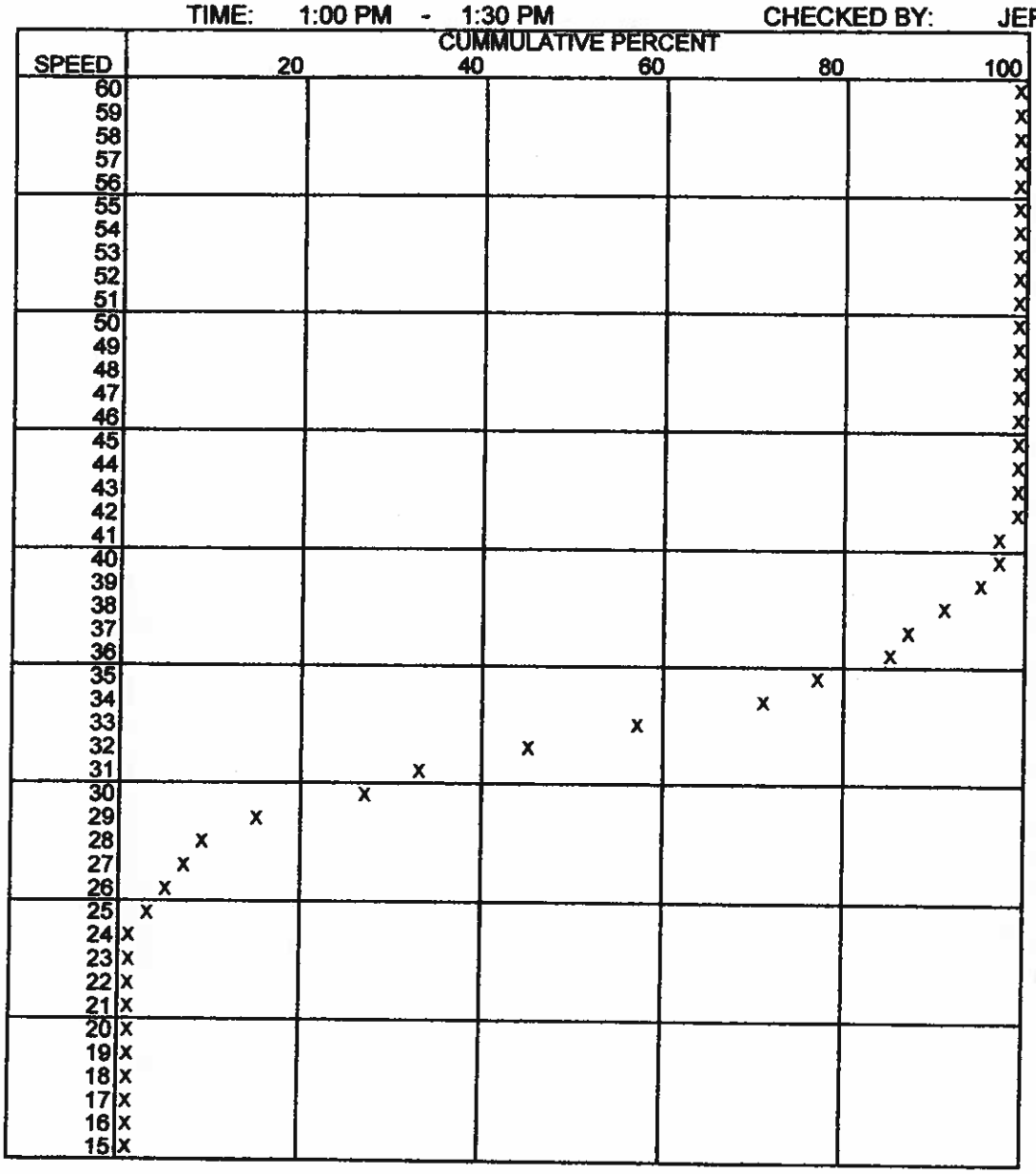
HCI

CITY OF LAGUNA HILLS

LA PAZ ROAD — RICKENBACKER RD TO I-5 FREEWAY

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK



SPEED			
60	x	100.0%	
59	x	100.0%	
58	x	100.0%	
57	x	100.0%	
56	x	100.0%	
55	x	100.0%	
54	x	100.0%	
53	x	100.0%	
52	x	100.0%	
51	x	100.0%	
50	x	100.0%	
49	x	100.0%	
48	x	100.0%	
47	x	100.0%	
46	x	100.0%	
45	x	100.0%	
44	x	100.0%	
43	x	100.0%	
42	x	99.3%	
41	x	98.0%	
40	x	96.6%	
39	x	94.6%	
38	x	90.5%	}PACE
37	x	86.5%	}PACE
36	x	84.5%	}PACE - - -85PCT
35	x	77.7%	}PACE
34	x	70.3%	}PACE
33	x	56.8%	}PACE
32	x	45.3%	}PACE - - - -MEAN
31	x	33.8%	}PACE
30	x	26.4%	}PACE
29	x	15.5%	}PACE
28	x	8.8%	- - -15PCT
27	x	6.8%	
26	x	4.7%	
25	x	2.0%	
24	x	1.4%	
23	x	0.7%	
22	x	0.7%	
21	x	0.0%	
20	x	0.0%	
19	x	0.0%	
18	x	0.0%	
17	x	0.0%	
16	x	0.0%	
15	x	0.0%	

UPPER LIMIT 10 MPH PACE:	38	MPH
LOWER LIMIT 10 MPH PACE:	29	MPH
PERCENT OVER PACE:	9.5	%
PERCENT IN PACE:	81.8	%
PERCENT UNDER PACE:	8.8	%

85th PERCENTILE SPEED:	36.3	MPH
MEDIAN SPEED:	32.4	MPH
15th PERCENTILE SPEED:	28.9	MPH

La Paz 2013-28

Radar Speed Survey Field Sheet

Hamilton & Associates, Inc.
Consulting Traffic Engineers
17511 S. 19th Street, Suite 201
Tustin, California 92780
714.731.9405 fax: 714.731.9406
www.hamilton-assoc.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LA PAZ ROAD
LOCATION: RICKENEBACKER RD TO I-5 FWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/25/13
START TIME: 1:00 PM
END TIME: 1:30 PM Vol

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43	/	1
42	/	1
41	/	2
40	//	3
39	//	3
38	///	4
37	///	4
36	////	8
35	////	8
34	////	8
33	////	8
32	////	8
31	////	8
30	////	8
29	////	8
28	/	1
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43			1	43
42	/	1	2	42
41	/	1	2	41
40	///	3	5	40
39	///	3	8	39
38	////	4	12	38
37	////	4	16	37
36	//// /	6	22	36
35	//// /	6	28	35
34	///	3	31	34
33	////	9	40	33
32	////	9	49	32
31	//// //	7	56	31
30	//// //	7	63	30
29	////	5	68	29
28	//	2	70	28
27	///	3	73	27
26	////	4	77	26
25	/	1	78	25
24	/	1	79	24
23		0	79	23
22	/	1	80	22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LAGUNA HILLS DRIVE — **MOULTON PKWY TO PASEO DE VALENCIA**

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 2:15 PM - 2:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF PASEO DE VALENCIA
DATE OF SURVEY	11/25/2013
85th PERCENTILE	49.3 MPH
10 MPH PACE	42 - 51 MPH
PERCENT IN PACE	74.7 %
POSTED SPEED LIMIT	45 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	4
TOTAL ACCIDENTS	10
ANNUAL ACCIDENT RATE	2.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.50 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	21,800
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PASEO DE VALENCIA / INDIAN HILL / MOULTON
CROSSWALKS	AT PASEO DE VALENCIA / INDIAN HILL / MOULTON
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	YES (w/PERMIT-WB) / YES (Heavy -EB)
OTHER	BIKE LANES

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.50
VERTICAL CURVE	GRADUAL UPHILL GRADES
HORIZONTAL CURVE	SLIGHT "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	LAGUNA HILLS HIGH SCH / RESIDENTIAL (NF) / PARK
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 4.3 mph of the 85th percentile speed and meets CVC standards.

File: Laguna Hills 2013-29

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

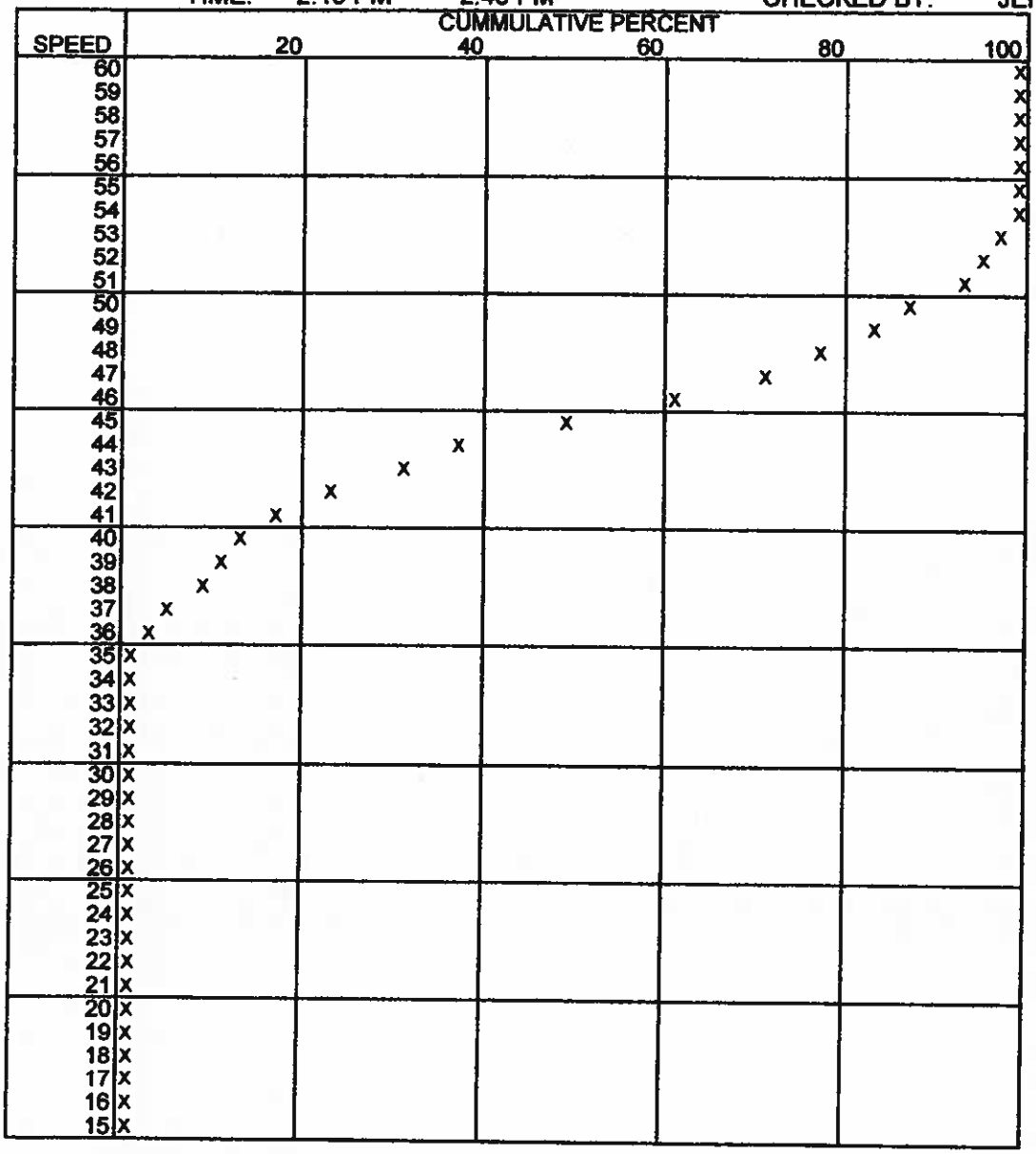
HCI

CITY OF LAGUNA HILLS

LAGUNA HILLS DRIVE — MOULTON PKWY TO PASEO DE VALENCIA

DATE: 11/25/2013 — SURVEY BY: C. BUENDIA

TIME: 2:15 PM - 2:45 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	51	MPH
LOWER LIMIT 10 MPH PACE:	42	MPH
PERCENT OVER PACE:	7.6	%
PERCENT IN PACE:	74.7	%
PERCENT UNDER PACE:	17.7	%

85th PERCENTILE SPEED:	49.3	MPH
MEDIAN SPEED:	45.1	MPH
15th PERCENTILE SPEED:	40.3	MPH

Laguna Hills 2013-29

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hastrup & Associates, Inc.
Consulting Traffic Engineers
[illegible]

AGENCY: CITY OF LAGUNA HILLS
STREET: LAGUNA HILLS DRIVE
LOCATION: MOULTON PKWY TO PASEO DE VALENCIA

WEATHER: _____ DATE: 11 / 25 / 13
ROAD CONDITION: _____ START TIME: 2:15 PM
OBSERVER: Cathy Buendia END TIME: 2:45 PM VM

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55	/	1
54	//	3
53	//	2
52	/	1
51	////	5
50	///	4
49	///	4
48	////	8
47	////	6
46	////	6
45	////	7
44	////	4
43	////	6
42	////	6
41	////	5
40	///	3
39		1
38	//	3
37	//	2
36		0
35		1
34	/	0
33		1
32	/	0
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55			1	55
54	/	1	4	54
53		0	4	53
52	///	4	5	52
51	//	2	7	51
50	////	6	7	50
49	////	5	9	49
48	////	4	12	48
47	////	8	14	47
46	////	10	19	46
45	////	11	18	45
44	////	8	12	44
43	////	6	12	43
42	////	7	8	42
41		1	6	41
40	///	2	5	40
39	////	5	4	39
38	///	3	6	38
37		1	3	37
36		0	1	36
35	/	1	1	35
34				34
33			0	33
32			1	32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LAKE FOREST DRIVE — **SANTA VITTORIA DR TO MOULTON PKWY**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF MILL
DATE OF SURVEY	11/18/2013
85th PERCENTILE	47.7 MPH
10 MPH PACE	39 - 48 MPH
PERCENT IN PACE	78.7 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	2
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.34 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	6,200
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON-IRVINE CTR / MILL CREEK-SCIENTIFIC / SANTA VITTORIA
CROSSWALKS	AT MOULTON-IRVINE CTR / MILL CREEK-SCIENTIFIC / SANTA VITTORIA
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	DESIGNATED BIKE LANES

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.65
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	NONE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	BUS CUT OUTS

ADJACENT LAND USE	INDUSTRIAL / COMMERCIAL / BUSINESS / RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph is within 2.7 mph of the 85th percentile speed and meets CVC standards.

NF = NON-FRONTING

File: Lake Forest 2013-30

RADAR SPEED DISTRIBUTION SHEET

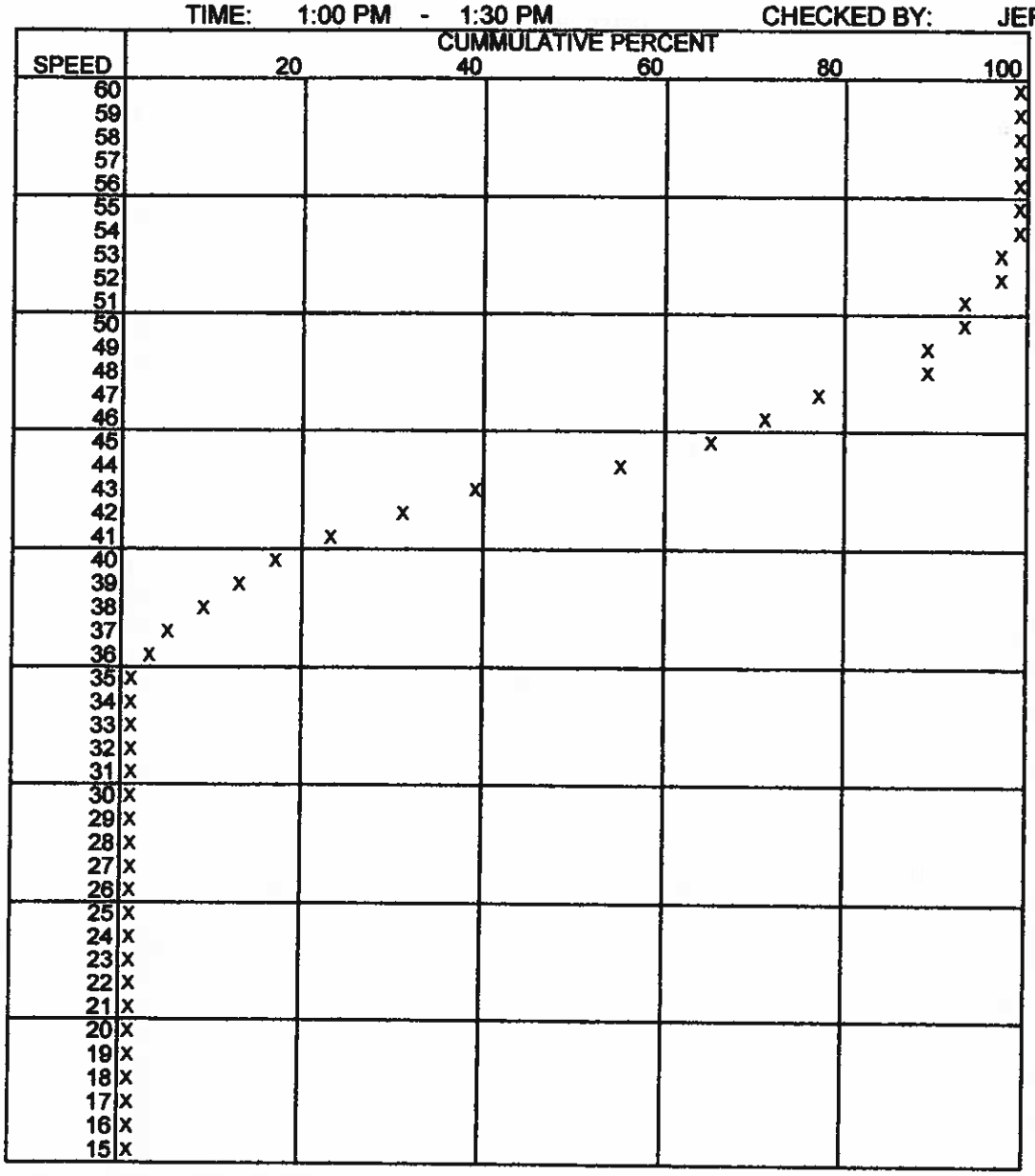
HCI

CITY OF LAGUNA HILLS

LAKE FOREST DRIVE — SANTA VITTORIA DR TO MOULTON PKWY

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK



SPEED			
60	X	100.0%	
59	X	100.0%	
58	X	100.0%	
57	X	100.0%	
56	X	100.0%	
55	X	100.0%	
54	X	99.2%	
53	X	97.5%	
52	X	96.7%	
51	X	93.4%	
50	X	93.4%	
49	X	89.3%	
48	X	88.5%	}PACE
47	X	77.9%	}PACE - - -85PCT
46	X	70.5%	}PACE
45	X	65.6%	}PACE
44	X	54.1%	}PACE
43	X	39.3%	}PACE - - - -MEAN
42	X	30.3%	}PACE
41	X	23.8%	}PACE
40	X	17.2%	}PACE
39	X	12.3%	}PACE - - -15PCT
38	X	9.8%	
37	X	5.7%	
36	X	3.3%	
35	X	1.6%	
34	X	1.6%	
33	X	1.6%	
32	X	0.8%	
31	X	0.0%	
30	X	0.0%	
29	X	0.0%	
28	X	0.0%	
27	X	0.0%	
26	X	0.0%	
25	X	0.0%	
24	X	0.0%	
23	X	0.0%	
22	X	0.0%	
21	X	0.0%	
20	X	0.0%	
19	X	0.0%	
18	X	0.0%	
17	X	0.0%	
16	X	0.0%	
15	X	0.0%	

UPPER LIMIT 10 MPH PACE:	48	MPH
LOWER LIMIT 10 MPH PACE:	39	MPH
PERCENT OVER PACE:	11.5	%
PERCENT IN PACE:	78.7	%
PERCENT UNDER PACE:	9.8	%

85th PERCENTILE SPEED:	47.7	MPH
MEDIAN SPEED:	43.7	MPH
15th PERCENTILE SPEED:	39.6	MPH

Lake Forest 2013-30

Radar Speed Survey Field Sheet

Hastings & Chavez, Inc. Consulting Traffic Engineers
17111 E. 17th Street, Suite 101
Tustin, California 92780
714.731.9431 Fax: 714.731.9435
www.hastingschavez.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LAKE FOREST DRIVE
LOCATION: SANTA VITTORIA DR TO MOULTON PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 1:00 PM
END TIME: 1:30 PM JVA

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55	/	1
54	/	1
53	/	1
52	//	3
51		0
50	///	3
49		0
48	////////	8
47	////////	8
46	//////	6
45	//////////	9
44	//////////	9
43	//////	7
42		5
41	/////	6
40	//	2
39	/	1
38	/	1
37		0
36		0
35		0
34		0
33	/	1
32	/	1
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55			1	55
54	/	1	2	54
53		0	2	53
52	/	1	4	52
51		0	0	51
50	/	2	5	50
49		0	1	49
48	////	5	13	48
47	///	3	9	47
46		1	6	46
45	/////	5	14	45
44	//////////	11	18	44
43	//////	6	8	43
42	//////	7	8	42
41	///	3	6	41
40	///	4	3	40
39	//	2	5	39
38	//	2	3	38
37	///	4	2	37
36	///	3	0	36
35	//	2	0	35
34			1	34
33				33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LAKE FOREST DRIVE — **MOULTON PKWY TO I-5 FREEWAY**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF MOULTON
DATE OF SURVEY	11/18/2013
85th PERCENTILE	43.3 MPH
10 MPH PACE	35 - 44 MPH
PERCENT IN PACE	78.5 %
POSTED SPEED LIMIT	40 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	8
TOTAL ACCIDENTS	16
ANNUAL ACCIDENT RATE	4.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.65 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	31,100
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - CARLOTA / MOULTON / DEL LAGO / RESEARCH
CROSSWALKS	AT CARLOTA / MOULTON / DEL LAGO / RESEARCH
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES (Heavy)
ON-STREET PARKING	NO STOPPING ANYTIME ENTIRE BLOCK
OTHER	DESIGNATED BIKE LANES / BUS CUT OUTS
	SHORT DISTANCE BTWN INTERSECTIONS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.54
VERTICAL CURVE	CONSTANT GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	SLIGHT "S" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / MANY
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	DENSE TRAFFIC

ADJACENT LAND USE	COMMERCIAL / BUSINESS / FWY RAMPS
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph is within 3.3 mph of the 85th percentile speed and meets CVC standards.

File: Lake Forest 2013-31

5/21/2014 ITEM NO. 4.1

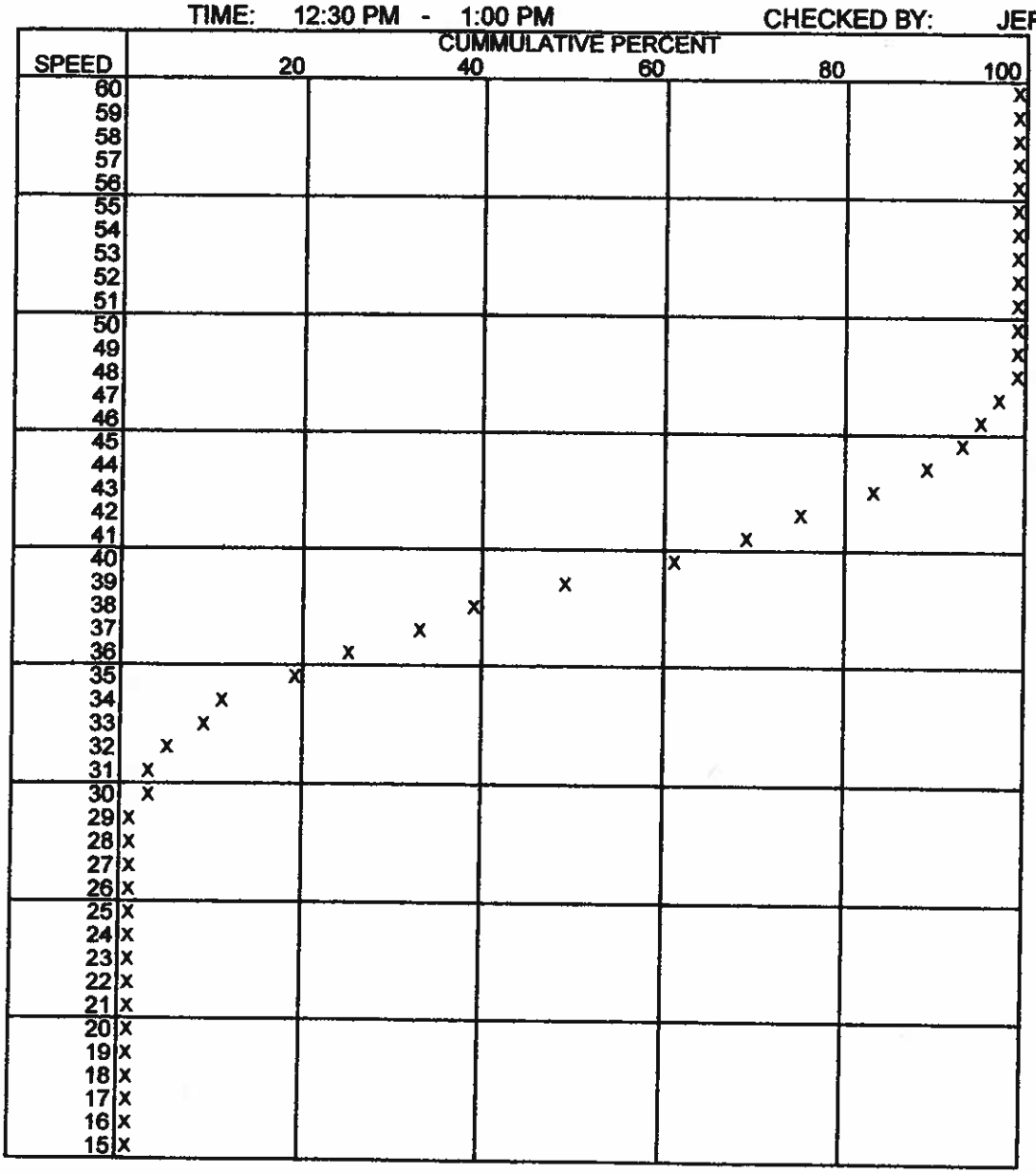
RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

LAKE FOREST DRIVE
DATE: 11/18/2013
TIME: 12:30 PM - 1:00 PM

MOULTON PKWY TO I-5 FREEWAY
SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK



SPEED			
60	x	100.0%	
59	x	100.0%	
58	x	100.0%	
57	x	100.0%	
56	x	100.0%	
55	x	100.0%	
54	x	100.0%	
53	x	100.0%	
52	x	100.0%	
51	x	100.0%	
50	x	100.0%	
49	x	100.0%	
48	x	98.5%	
47	x	97.8%	
46	x	94.1%	
45	x	93.3%	
44	x	88.9%	}PACE
43	x	83.7%	}PACE - - -85PCT
42	x	75.6%	}PACE
41	x	69.6%	}PACE
40	x	60.7%	}PACE
39	x	48.1%	}PACE - - -MEAN
38	x	39.3%	}PACE
37	x	33.3%	}PACE
36	x	25.2%	}PACE
35	x	20.0%	}PACE
34	x	10.4%	- - -15PCT
33	x	8.1%	
32	x	5.9%	
31	x	3.0%	
30	x	3.0%	
29	x	0.7%	
28	x	0.0%	
27	x	0.0%	
26	x	0.0%	
25	x	0.0%	
24	x	0.0%	
23	x	0.0%	
22	x	0.0%	
21	x	0.0%	
20	x	0.0%	
19	x	0.0%	
18	x	0.0%	
17	x	0.0%	
16	x	0.0%	
15	x	0.0%	

UPPER LIMIT 10 MPH PACE:	44	MPH
LOWER LIMIT 10 MPH PACE:	35	MPH
PERCENT OVER PACE:	11.1	%
PERCENT IN PACE:	78.5	%
PERCENT UNDER PACE:	10.4	%

85th PERCENTILE SPEED:	43.3	MPH
MEDIAN SPEED:	39.1	MPH
15th PERCENTILE SPEED:	34.5	MPH

Lake Forest 2013-31

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hastings & Chasney, Inc.
Consulting Traffic Engineers
17872 E. 17th Street, Suite 100
Tustin, California 92780
T 714.731.0425 Fax 714.731.0446
www.hastingschasney.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LAKE FOREST DRIVE
LOCATION: MOULTON PKWY TO I-5 FWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 12:30
END TIME: 1:00 PM

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49	/	1
48	/	1
47	///	3
46		0
45	///	4
44	////	4
43	//////	6
42	/	1
41	////	4
40	//////	6
39	////	4
38	///	3
37	////	4
36	///	3
35	///	3
34		0
33	//	2
32	/	1
31		0
30	/	1
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49	/	1	2	49
48		0	1	48
47	//	2	5	47
46	/	1	1	46
45	//	2	6	45
44	/	1	7	44
43	///	3	11	43
42	////	5	8	42
41	////	4	12	41
40	////	8	17	40
39	////	7	12	39
38	////	4	8	38
37	////	6	11	37
36	////	5	7	36
35	////	8	13	35
34	/	2	3	34
33	/	2	3	33
32	//	3	4	32
31		0	0	31
30	//	2	3	30
29	/	1	1	29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LOS ALISOS BOULEVARD — **I-5 FREEWAY TO PASEO DE VALENCIA**

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 11:30 AM - 12:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF PASEO DE VALENCIA
DATE OF SURVEY	11/7/2013
85th PERCENTILE	43.7 MPH
10 MPH PACE	36 - 45 MPH
PERCENT IN PACE	75.3 %
POSTED SPEED LIMIT	40 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	7
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.15 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	21,400
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - AVENIDA CARLOTA / PASEO DE VALENCIA
CROSSWALKS	AT AVENIDA CARLOTA / PASEO DE VALENCIA
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	YES (WB) / NO PARKING ANYTIME ENTIRE BLOCK (EB)
OTHER	DESIGNATED BIKE LANES

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.43
VERTICAL CURVE	SLIGHT UPHILL GRADE (EB)
HORIZONTAL CURVE	GRADUAL "S" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (slight)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	NO SHOULDER (EB)

ADJACENT LAND USE	RESIDENTIAL (NF) / FWY OVERPASS
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph is within 3.7 mph of the 85th percentile speed and meets CVC standards.

File: Los Alisos 2013-32

RADAR SPEED DISTRIBUTION SHEET

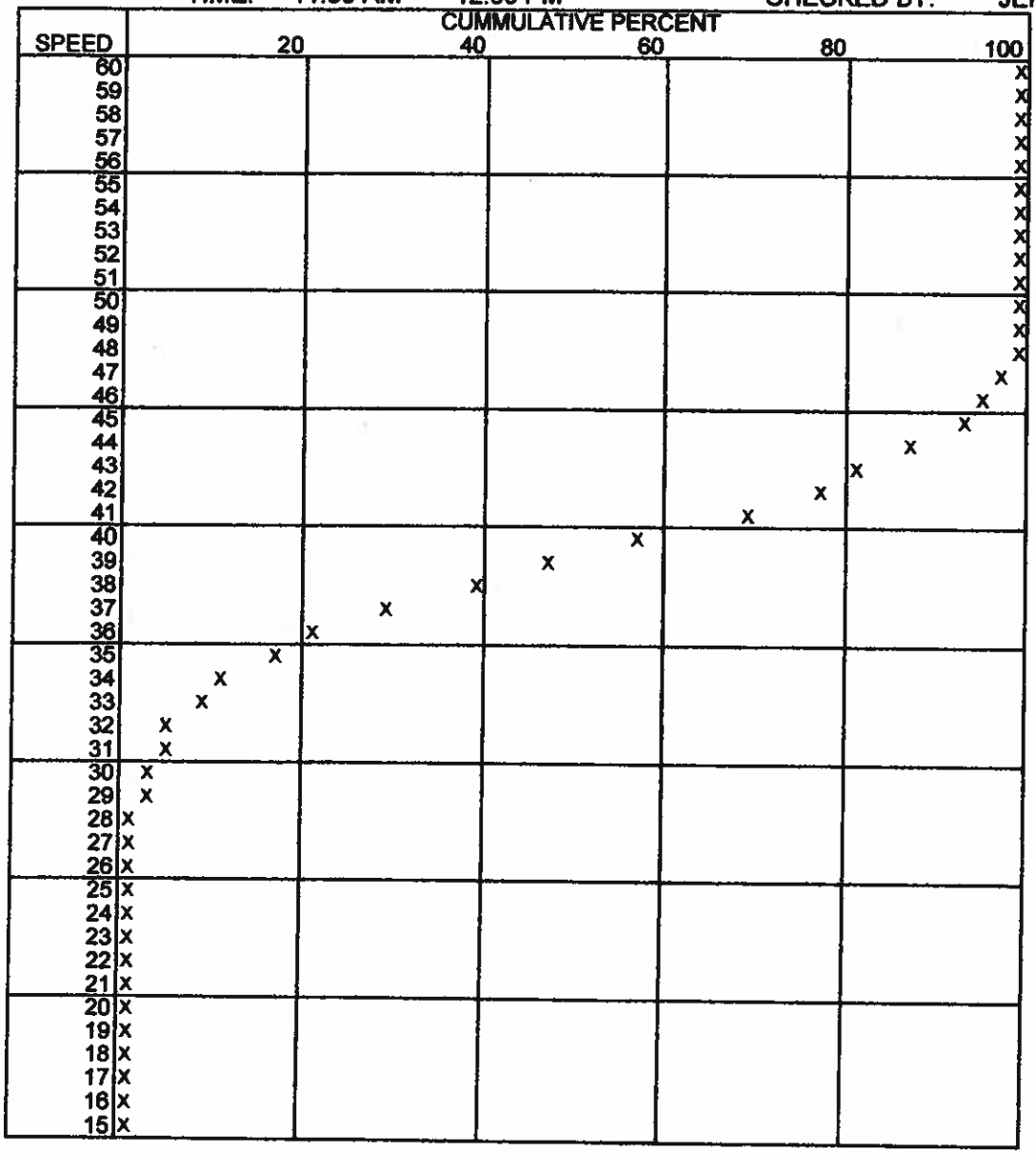
HCI

CITY OF LAGUNA HILLS

LOS ALISOS BOULEVARD — I-5 FREEWAY TO PASEO DE VALENCIA

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 11:30 AM - 12:00 PM — CHECKED BY: JERRY STOCK



60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	100.0%	
51	100.0%	
50	100.0%	
49	100.0%	
48	99.3%	
47	97.9%	
46	95.9%	
45	93.2%	}PACE
44	86.3%	}PACE
43	81.5%	}PACE - - -85PCT
42	76.7%	}PACE
41	68.5%	}PACE
40	57.5%	}PACE
39	46.6%	}PACE - - - -MEAN
38	38.4%	}PACE
37	28.1%	}PACE
36	21.9%	}PACE
35	17.8%	
34	11.0%	- - -15PCT
33	9.6%	
32	5.5%	
31	4.8%	
30	2.1%	
29	2.1%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	45	MPH
LOWER LIMIT 10 MPH PACE:	36	MPH
PERCENT OVER PACE:	13.7	%
PERCENT IN PACE:	75.3	%
PERCENT UNDER PACE:	17.8	%

85th PERCENTILE SPEED:	43.7	MPH
MEDIAN SPEED:	39.3	MPH
15th PERCENTILE SPEED:	34.6	MPH

Los Alisos 2013-32

Radar Speed Survey Field Sheet

Hastings & Chrisman, Inc.
Consulting Traffic Engineers
7853 E. 10th Court, Suite 101
Tustin, California 92780
P 714.730.9661 Fax 714.731.3668
www.hastings-chrisman.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LOS ALISOS BOULEVARD
LOCATION: I-5 FWY TO PASEO DE VALENCIA

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/07/13
START TIME: 11:30 AM
END TIME: 12:00 PM VAL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49	/	1
48	/	1
47		0
46	//	2
45	///	3
44	///	3
43	///	3
42	////////	8
41	//////	6
40	/////	7
39	//////	6
38	//////	8
37		1
36	//	2
35	////	6
34	//	2
33	///	3
32		0
31	///	3
30		0
29	//	2
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49			1	49
48	/	1	2	48
47	///	3	3	47
46	//	2	4	46
45	///////	7	10	45
44	////	4	7	44
43	////	4	5	43
42	///	3	12	42
41	//////////	10	16	41
40	/////////	9	16	40
39	//////	6	12	39
38	//////	6	15	38
37	////////	8	9	37
36	////	4	6	36
35	////	4	10	35
34		0	2	34
33	///	3	6	33
32		0		32
31	/	1	4	31
30		0	0	30
29	/	1	3	29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

LOUISA STREET — **MOULTON PKWY TO LUPITA (END)**

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 5:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF MOULTON
DATE OF SURVEY	11/7/2013
85th PERCENTILE	32.2 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	92.7 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	900
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - MOULTON
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES (EB) WITH PERMIT
OTHER	NO PARKING ANYTIME (WB)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.08
VERTICAL CURVE	SLIGHT UPHILL GRADE (EB)
HORIZONTAL CURVE	SLIGHT "S" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (slight)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (EB) - NO / NO (WB)
STREET LIGHTING	YES
OTHER	

ADJACENT LAND USE	RESIDENTIAL (F+NF)
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph is within 2.2 mph of the 85th percentile speed and meets CVC standards.

F+NF = Fronting + Non-Fronting

File: Louisa 2013-33

RADAR SPEED DISTRIBUTION SHEET

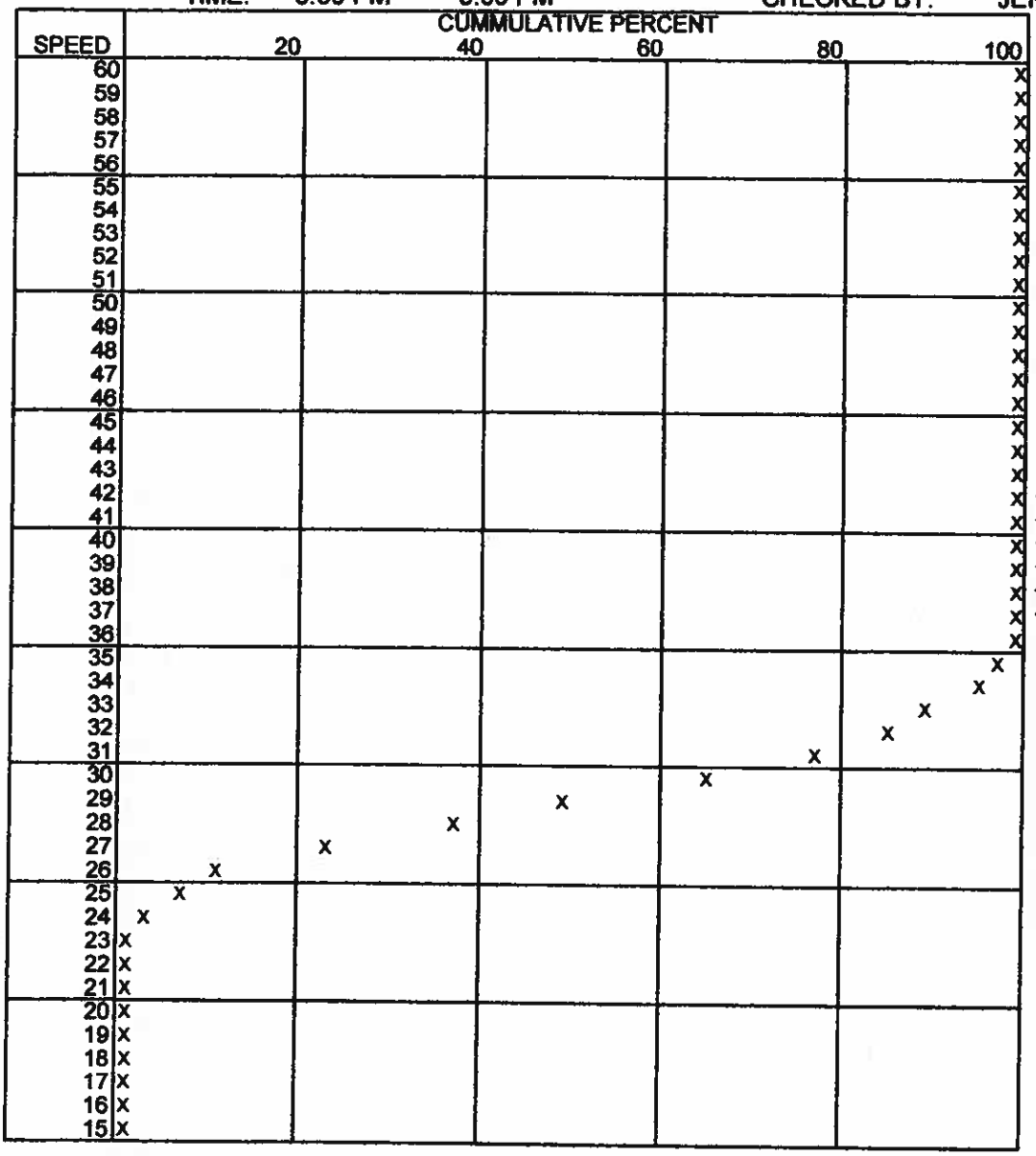
CITY OF LAGUNA HILLS

HCI

LOUISA STREET — MOULTON PKWY TO LUPITA (END)

DATE: 11/7/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 5:00 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	34	MPH	85th PERCENTILE SPEED:	32.2	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH	MEDIAN SPEED:	29.0	MPH
PERCENT OVER PACE:	4.9	%	15th PERCENTILE SPEED:	26.3	MPH
PERCENT IN PACE:	92.7	%			
PERCENT UNDER PACE:	2.4	%			

Louisa 2013-33

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hastrup & Associates, Inc.
Consulting Traffic Engineers
19533 E. 17th Street, Suite 101
Tustin, California 92780
714.731.9403 Fax 714.731.9405
www.hastrup-traffic.com

AGENCY: CITY OF LAGUNA HILLS
STREET: LOUISA STREET
LOCATION: MOULTON PKWY TO LUPITA (END)

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/07/13
START TIME: 3:30 AM
END TIME: 5:00 PM VGL

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35	/	1
34	//	2
33	///	3
32	///	3
31	////-	6
30	////-	5
29	////- /	8
28	////-	5
27	////-	5
26	////-	5
25	////-	5
24	//	2
23	/	1
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38				38
37	/	1	1	37
36	//	2	2	36
35		0	2	35
34	///	3	5	34
33	/	1	6	33
32	////	4	10	32
31	//// /	5	15	31
30	//// //	7	22	30
29	///	3	25	29
28	//// /	6	31	28
27	////	4	35	27
26		0	35	26
25	/	1	36	25
24	/	1	37	24
23		0	37	23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

MILL CREEK DRIVE — **LAKE FOREST DR TO RIDGE ROUTE DR**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF ARBOLADO
DATE OF SURVEY	11/18/2013
85th PERCENTILE	34.3 MPH
10 MPH PACE	28 - 37 MPH
PERCENT IN PACE	88.0 %
POSTED SPEED LIMIT	30 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	2,800
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LAKE FOREST, STOP - RIDGE ROUTE
CROSSWALKS	AT LAKE FOREST
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	AREAS OF NO PARKING ANYTIME

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.70
VERTICAL CURVE	CONSTANT MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	CONSTANT MODERATE SWEEPING "S" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (many areas of)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	PARTIAL / YES (heavy)
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE

ADJACENT LAND USE	BUSINESS / NEW VISTA SCHOOL
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph is within 4.3 mph of the 85th percentile speed and meets CVC standards.

*25 MPH When Children Present, School Zone

File: Mill Creek 2013-34

RADAR SPEED DISTRIBUTION SHEET

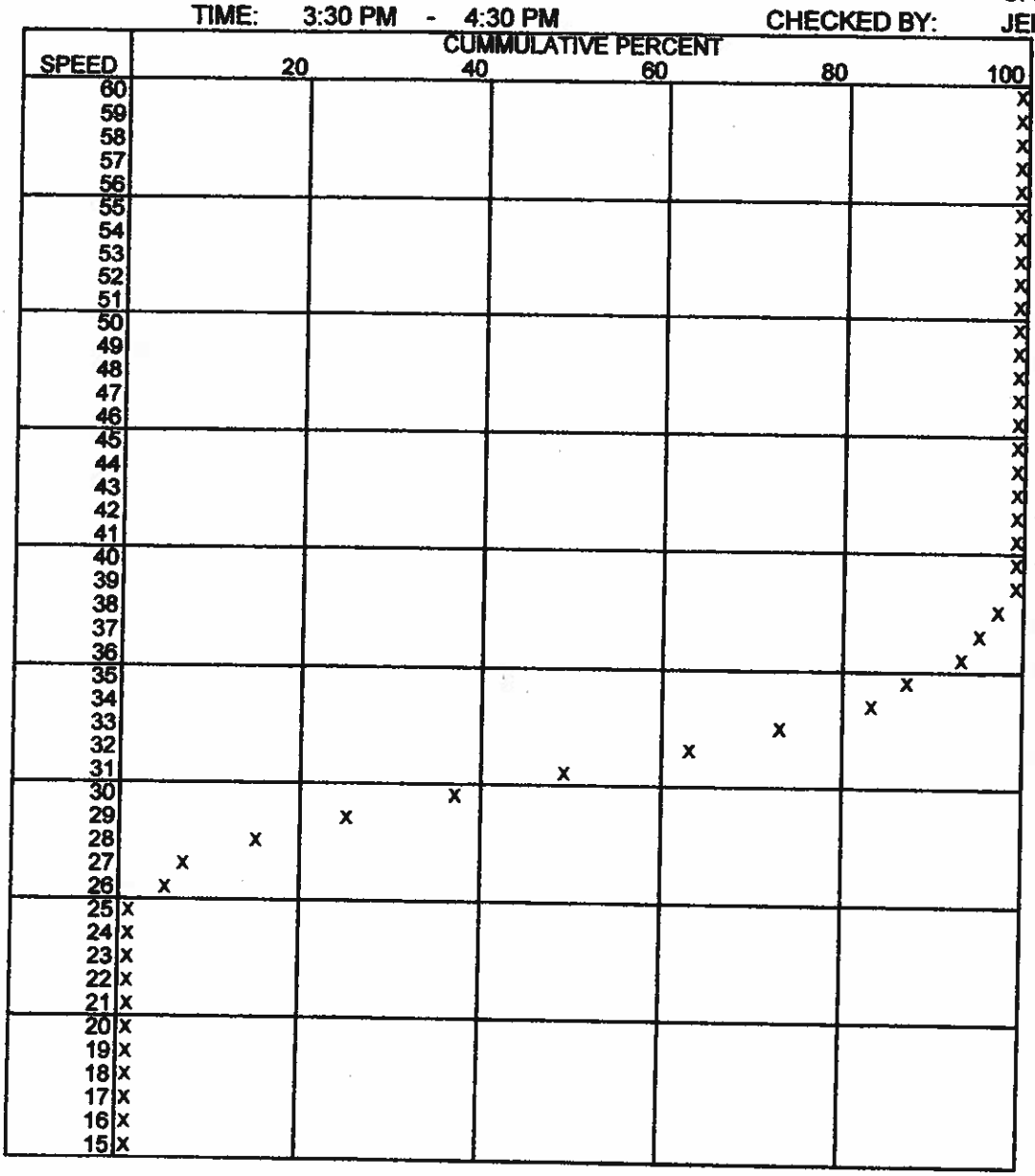
HCI

CITY OF LAGUNA HILLS

MILL CREEK DRIVE — LAKE FOREST DR TO RIDGE ROUTE DR

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	37	MPH
LOWER LIMIT 10 MPH PACE:	28	MPH
PERCENT OVER PACE:	4.5	%
PERCENT IN PACE:	88.0	%
PERCENT UNDER PACE:	7.5	%

85th PERCENTILE SPEED:	34.3	MPH
MEDIAN SPEED:	31.1	MPH
15th PERCENTILE SPEED:	28.1	MPH

Mill Creek 2013-34

Radar Speed Survey Field Sheet

Hartzog & Crabbe, Inc.
Consulting Traffic Engineers
7730 E. Pitcher Street, Suite 101
Tustin, California 92780
714.730.0931 fax: 714.730.0935
www.hartzog-crabbe.com

AGENCY: CITY OF LAGUNA HILLS
STREET: MILL CREEK DRIVE
LOCATION: LAKE FOREST DR TO RIDGE ROUTE DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 3:30 PM
END TIME: 4:30 PM VAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		1
37		2
36		1
35		7
34		4
33		11
32		11
31		7
30		8
29		4
28		0
27		2
26		1
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39		1	1	39
38		3	3	38
37		1	2	37
36		3	4	36
35		4	6	35
34		5	6	34
33		7	14	33
32		8	12	32
31		10	21	31
30		5	16	30
29		8	15	29
28		6	14	28
27		5	9	27
26		3	3	26
25		3	5	25
24		1	2	24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — **LAKE FOREST DR TO EL PACIFICO**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 10:30 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF LAKE FOREST
DATE OF SURVEY	11/20/2013
85th PERCENTILE	48.0 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	65.5 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	24,300
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LAKE FOREST / EL PACIFICO
CROSSWALKS	AT LAKE FOREST / EL PACIFICO
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES (many)
ON-STREET PARKING	NO STOPPING ANYTIME ENTIRE BLOCK
OTHER	DESIGNATED BIKE LANES
	BUS STOPS CUT OUTS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.28
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	NONE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	SHORT DISTANCE BTWN INTERSECTIONS

ADJACENT LAND USE	BUSINESS / INDUSTRIAL / MEDICAL / COMMERCIAL
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 3.0 mph of the 85th percentile speed and meets CVC standards.

File: Moulton-35

RADAR SPEED DISTRIBUTION SHEET

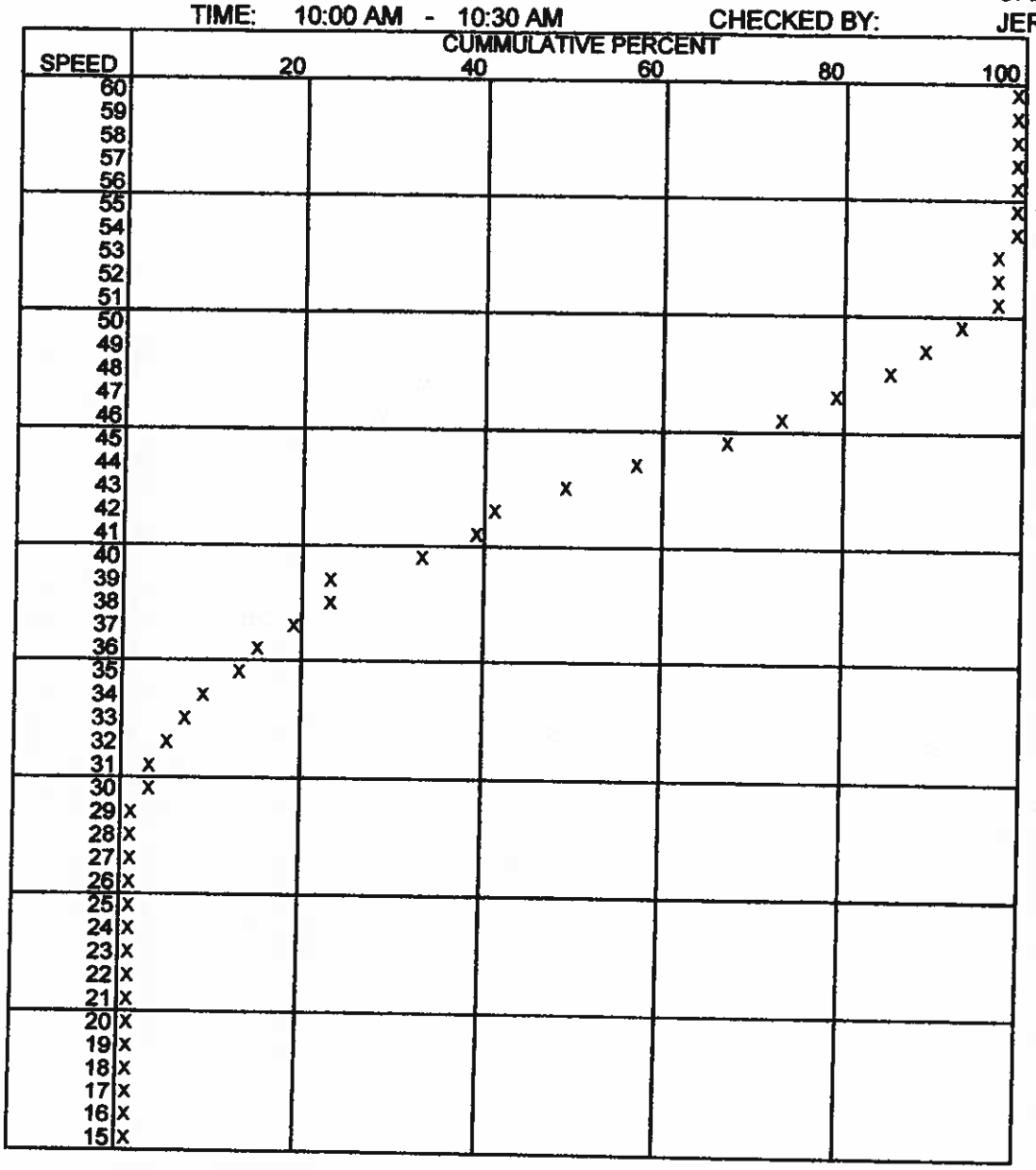
CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — LAKE FOREST DR TO EL PACIFICO

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 10:30 AM — CHECKED BY: JERRY STOCK



60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	98.6%	
53	97.9%	
52	97.2%	
51	96.5%	
50	92.3%	
49	89.4%	}PACE
48	85.2%	}PACE
47	79.6%	}PACE - - -85PCT
46	73.9%	}PACE
45	68.2%	}PACE
44	57.0%	}PACE
43	49.3%	}PACE - - -MEAN
42	41.5%	}PACE
41	38.7%	}PACE
40	32.4%	}PACE
39	23.9%	
38	23.2%	
37	19.7%	
36	14.8%	- - -15PCT
35	12.7%	
34	9.2%	
33	7.7%	
32	4.2%	
31	2.1%	
30	2.1%	
29	0.7%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	10.6	%
PERCENT IN PACE:	65.5	%
PERCENT UNDER PACE:	23.9	%

85th PERCENTILE SPEED:	48.0	MPH
MEDIAN SPEED:	43.1	MPH
15th PERCENTILE SPEED:	36.0	MPH

Moulton-35

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hartzog & Crabbe, Inc. — Consulting Traffic Engineers
7535 E. 17th Street, Suite 100
Tustin, California 92780
714.731.5601 fax: 714.731.5604
www.hartzog-crabbe.com

AGENCY: CITY OF LAGUNA HILLS
STREET: MOULTON PARKWAY
LOCATION: LAKE FOREST DR TO EL PACIFICO

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/20/13
START TIME: 10:00 AM
END TIME: 10:30 AM

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55	/	2
54	/	1
53		0
52	/	1
51	///	3
50	///	3
49	///	4
48	///	4
47	////	5
46	////	4
45	//////	8
44	////	3
43	////	6
42	//	2
41	///	3
40	////	6
39	/	1
38	///	4
37	//	2
36	//	3
35	/	1
34	/	1
33	///	3
32		0
31		0
30	/	1
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55			2	55
54			1	54
53	/	1	1	53
52		0	1	52
51	///	3	6	51
50	///	3	4	50
49	///	4	6	49
48	///	4	8	48
47	///	3	8	47
46	//////	7	11	46
45	////	5	13	45
44	////	8	11	44
43	////	5	11	43
42	//	2	4	42
41	/////	6	9	41
40	////	6	12	40
39		0	1	39
38	/	1	5	38
37	////	5	7	37
36		0	3	36
35	///	4	5	35
34	//	2	2	34
33	//	3	5	33
32		0	3	32
31		0	0	31
30	/	1	2	30
29	/	1	1	29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — **EL PACIFICO TO SANTA MARIA AVE**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 10:30 AM - 11:00 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF PACIFICO
DATE OF SURVEY	11/20/2013
85th PERCENTILE	47.6 MPH
10 MPH PACE	39 - 48 MPH
PERCENT IN PACE	76.2 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	5
TOTAL ACCIDENTS	11
ANNUAL ACCIDENT RATE	2.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.97 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	25,200
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - EL PACIFICO / RIDGE ROUTE / SANTA MARIA
CROSSWALKS	AT EL PACIFICO / RIDGE ROUTE / SANTA MARIA
PEDESTRIAN/BICYCLES	FEW / YES
TRUCK TRAFFIC	YES (many)
ON-STREET PARKING	NO STOPPING ANYTIME ENTIRE BLOCK
OTHER	DESIGNATED BIKE LANES
	BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.28
VERTICAL CURVE	SLIGHT UP/DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "C" CURVE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	RAISED MEDAIN ISLAND

ADJACENT LAND USE	BUSINESS / INDUSTRIAL / CHURCH / GOLF COURSE
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 2.6 mph of the 85th percentile speed and meets CVC standards.

File: Moulton-36

RADAR SPEED DISTRIBUTION SHEET

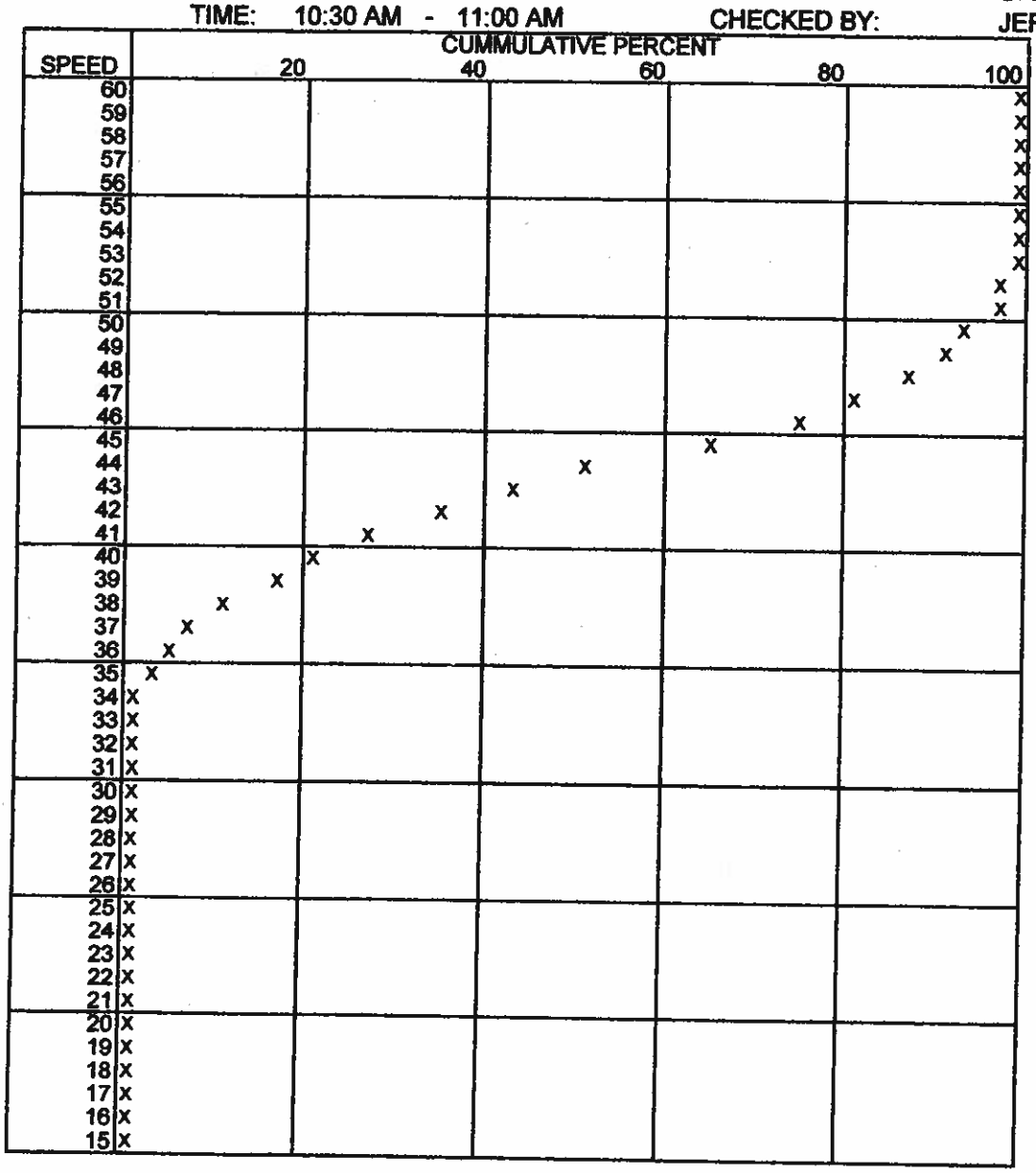
HCI

CITY OF LAGUNA HILLS

MOULTON PARKWAY — EL PACIFICO TO SANTA MARIA AVE

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 10:30 AM - 11:00 AM — CHECKED BY: JERRY STOCK



SPEED			
60	X	100.0%	
59	X	100.0%	
58	X	100.0%	
57	X	100.0%	
56	X	100.0%	
55	X	100.0%	
54	X	100.0%	
53	X	99.3%	
52	X	97.9%	
51	X	96.5%	
50	X	93.0%	
49	X	91.6%	
48	X	87.4%	}PACE
47	X	81.1%	}PACE - - -85PCT
46	X	74.8%	}PACE
45	X	64.3%	}PACE
44	X	51.7%	}PACE
43	X	42.7%	}PACE - - -MEAN
42	X	35.0%	}PACE
41	X	28.0%	}PACE
40	X	20.3%	}PACE
39	X	16.8%	}PACE
38	X	11.2%	- - -15PCT
37	X	7.7%	
36	X	5.6%	
35	X	2.1%	
34	X	0.7%	
33	X	0.0%	
32	X	0.0%	
31	X	0.0%	
30	X	0.0%	
29	X	0.0%	
28	X	0.0%	
27	X	0.0%	
26	X	0.0%	
25	X	0.0%	
24	X	0.0%	
23	X	0.0%	
22	X	0.0%	
21	X	0.0%	
20	X	0.0%	
19	X	0.0%	
18	X	0.0%	
17	X	0.0%	
16	X	0.0%	
15	X	0.0%	

UPPER LIMIT 10 MPH PACE:	48	MPH
LOWER LIMIT 10 MPH PACE:	39	MPH
PERCENT OVER PACE:	12.6	%
PERCENT IN PACE:	76.2	%
PERCENT UNDER PACE:	11.2	%

85th PERCENTILE SPEED:	47.6	MPH
MEDIAN SPEED:	43.8	MPH
15th PERCENTILE SPEED:	38.7	MPH

Moulton-36

Radar Speed Survey Field Sheet

Hamilton & Cubell, Inc.
Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: MOULTON PARKWAY
LOCATION: EL PACIFIC TO SANTA MARIA AVE

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/20/13
START TIME: 10:30 AM
END TIME: 11:00 AM VGL

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53	/	1
52	/	1
51	//	2
50	///	3
49	///	3
48	///	3
47	////	5
46	//// ///	8
45	//// ////	9
44	//// //	7
43	//// //	7
42	////	5
41	////	5
40	///	3
39	////	4
38	///	3
37	//	2
36	///	3
35	/	1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54	/	1	1	54
53	/	1	2	53
52	///	3	2	52
51	/	1	5	51
50	///	3	2	50
49	///	3	6	49
48	////	4	9	48
47	//// //	7	9	47
46	//// ////	9	15	46
45	//// //	7	8	45
44	////	6	3	44
43	////	4	1	43
42	//// //	6	10	42
41	////	4	1	41
40	//	2	5	40
39	////	4	8	39
38	//	2	5	38
37	/	1	3	37
36	//	2	5	36
35	/	1	2	35
34			1	34
33				33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — **NORTH CITY LIMIT (n/o Glenwood) TO VIA LOMAS**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 11:45 AM - 12:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF VIA LOMAS
DATE OF SURVEY	11/20/2013
85th PERCENTILE	52.7 MPH
10 MPH PACE	42 - 51 MPH
PERCENT IN PACE	76.3 %
POSTED SPEED LIMIT	50 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	7
TOTAL ACCIDENTS	13
ANNUAL ACCIDENT RATE	3.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.49 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	21,600
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - GLENWOOD-INDIAN CREEK / LAGUNA HILLS-ALISO VIEJO / VIA LOMAS
CROSSWALKS	AT GLENWOOD-INDIAN CREEK / LAGUNA HILLS-ALISO VIEJO / VIA LOMAS
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	SIGNAL AHEAD FLASHER (s/o Indian Hill) SB ONLY
	BIKE ROUTE / BUS CUT OUTS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.90
VERTICAL CURVE	SLIGHT-GRADUAL UP/DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "S" CURVES
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL**
RECOMMENDED SPEED LIMIT	50 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 50 mph speed limit is within 2.7 mph of the 85th percentile speed and meets CVC standards.

File: Moulton-37

RADAR SPEED DISTRIBUTION SHEET

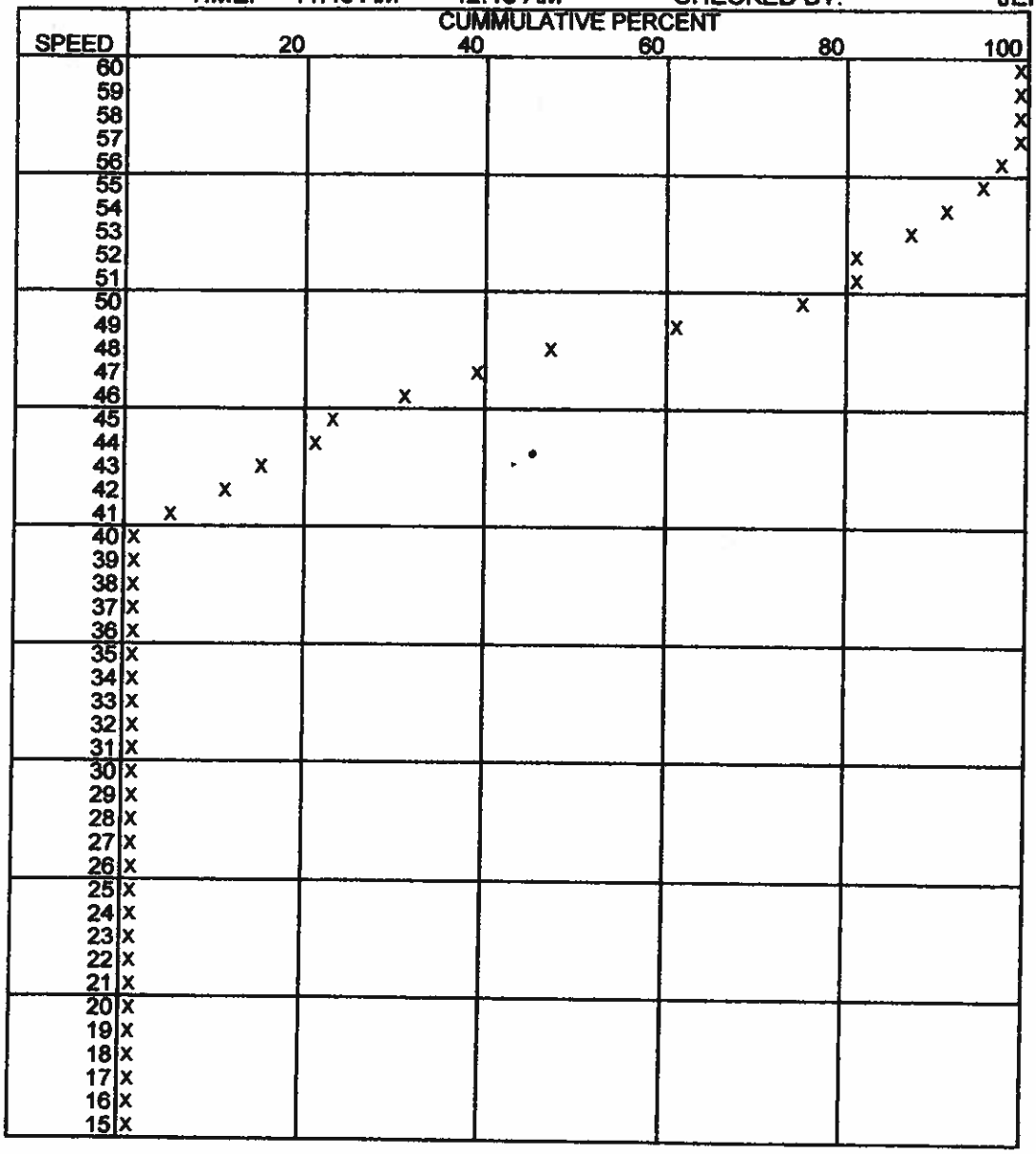
CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — NORTH CITY LIMIT (n/o Glenwood) TO VIA LOMAS

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 11:45 AM - 12:15 AM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT		
60	100.0%		
59	99.3%		
58	99.3%		
57	98.6%		
56	96.4%		
55	95.7%		
54	90.6%		
53	86.3%		
52	81.3%		---85PCT
51	80.6%	}PACE	
50	74.8%	}PACE	
49	61.9%	}PACE	
48	46.8%	}PACE	---MEAN
47	38.1%	}PACE	
46	30.9%	}PACE	
45	23.0%	}PACE	
44	20.1%	}PACE	
43	14.4%	}PACE	---15PCT
42	10.1%	}PACE	
41	4.3%		
40	1.4%		
39	0.0%		
38	0.0%		
37	0.0%		
36	0.0%		
35	0.0%		
34	0.0%		
33	0.0%		
32	0.0%		
31	0.0%		
30	0.0%		
29	0.0%		
28	0.0%		
27	0.0%		
26	0.0%		
25	0.0%		
24	0.0%		
23	0.0%		
22	0.0%		
21	0.0%		
20	0.0%		
19	0.0%		
18	0.0%		
17	0.0%		
16	0.0%		
15	0.0%		

UPPER LIMIT 10 MPH PACE:	51	MPH
LOWER LIMIT 10 MPH PACE:	42	MPH
PERCENT OVER PACE:	19.4	%
PERCENT IN PACE:	76.3	%
PERCENT UNDER PACE:	4.3	%

85th PERCENTILE SPEED:	52.7	MPH
MEDIAN SPEED:	48.2	MPH
15th PERCENTILE SPEED:	43.1	MPH

Moulton-37

Radar Speed Survey Field Sheet

Hamilton & Cassell, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: MOULTON PARKWAY
LOCATION: N C L (Near GLENWOOD) TO VIA LOMAS

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/20/13
START TIME: 11:45 AM
END TIME: 12:15 PM

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		1
59		0
58		1
57		1
56		1
55	///	3
54	////	3
53	////	4
52		1
51	//	3
50	//////	8
49	//////	10
48	////	4
47	/////	7
46	////	6
45		2
44		2
43	///	4
42		2
41	/	2
40	/	1
39		
38		
37		
36		
35		
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60			1	60
59			0	59
58			1	58
57	//	2	3	57
56		0	1	56
55	///	4	7	55
54	///	3	6	54
53	///	3	7	53
52		0	7	52
51	////	5	8	51
50	//////	10	18	50
49	//////	11	21	49
48	//////	8	12	48
47	///	3	10	47
46	///	5	11	46
45	//	2	4	45
44	///	6	8	44
43	//	2	6	43
42	///	6	8	42
41	//	2	4	41
40	/	1	2	40
39				39
38				38
37				37
36				36
35				35
34				34
33				33
32				32
31				31
30				30
29	/			29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

N. OF INDIAN HILLS

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — **VIA LOMAS TO LA PAZ RD**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:00 [PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF ALICIA
DATE OF SURVEY	11/20/2013
85th PERCENTILE	47.9 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	82.8 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	2
TOTAL ACCIDENTS	7
ANNUAL ACCIDENT RATE	1.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.21 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	21,800
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - VIA LOMAS / ALICIA / LA PAZ
CROSSWALKS	AT VIA LOMAS / ALICIA / LA PAZ
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.60
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "C" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF) / COMMERCIAL
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 2.9 mph of the 85th percentile speed and meets CVC standards.

File: Moulton 2013-38

RADAR SPEED DISTRIBUTION SHEET

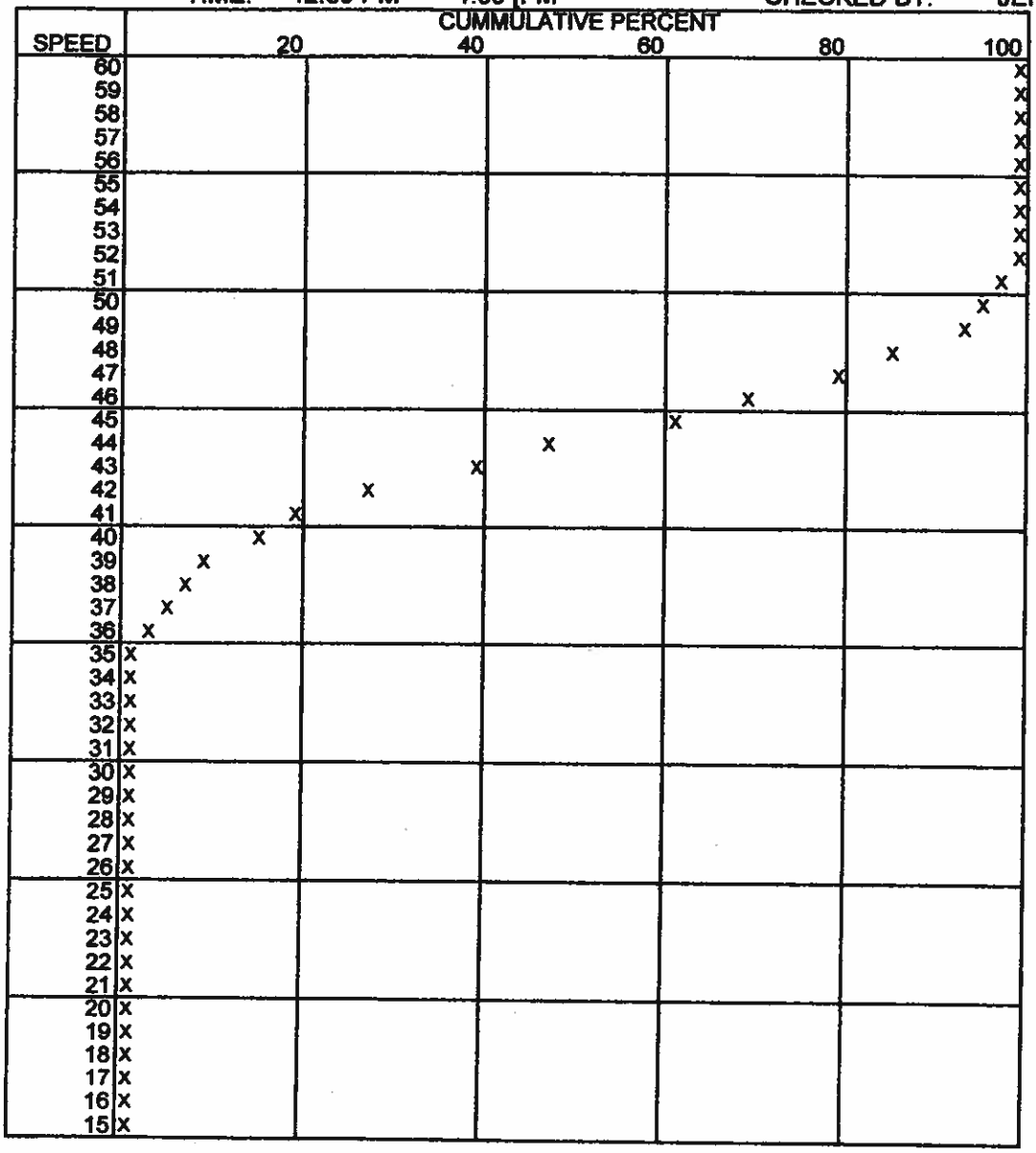
HCI

CITY OF LAGUNA HILLS

MOULTON PARKWAY — VIA LOMAS TO LA PAZ RD

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 12:30 PM - 1:00 PM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT	
60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	99.2%	
51	96.9%	
50	94.5%	
49	92.2%	}PACE
48	85.9%	}PACE
47	78.9%	}PACE - - -85PCT
46	69.5%	}PACE
45	61.7%	}PACE
44	47.7%	}PACE - - - -MEAN
43	38.3%	}PACE
42	27.3%	}PACE
41	19.5%	}PACE
40	14.1%	}PACE - - -15PCT
39	9.4%	
38	6.3%	
37	4.7%	
36	3.1%	
35	1.6%	
34	0.0%	
33	0.0%	
32	0.0%	
31	0.0%	
30	0.0%	
29	0.0%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	7.8	%
PERCENT IN PACE:	82.8	%
PERCENT UNDER PACE:	9.4	%

85th PERCENTILE SPEED:	47.9	MPH
MEDIAN SPEED:	44.2	MPH
15th PERCENTILE SPEED:	40.2	MPH

Moulton 2013-38

Radar Speed Survey Field Sheet

Hastings & Associates, Inc.
Consulting Traffic Engineers
17452 E. 17th Street, Suite 101
Tustin, California 92780
714.730.9401 Fax 714.731.9996
www.hastings-assoc.com

AGENCY: CITY OF LAGUNA HILLS
STREET: MOULTON PARKWAY
LOCATION: VIA LOMAS TO LA PAZ RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/20/13
START TIME: 12:30 PM
END TIME: 1:00 PM VOL

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57	/	
56		
55		
54		
53		
52	//	2
51	/	1
50	/	1
49	///	4
48	////	5
47	/////	6
46	//////	7
45	////// //	9
44	////	4
43	//// ///	9
42	//// /	6
41	////	4
40	//	2
39	//	2
38		0
37		0
36	/	1
35	/	1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53	/	1	1	53
52	/	1	3	52
51	//	2	3	51
50	//	2	3	50
49	////	4	8	49
48	////	4	9	48
47	//// /	6	12	47
46	///	3	10	46
45	/// ///	8	18	45
44	/// //	5	12	44
43	////	4	14	43
42	///	3	10	42
41	////	4	7	41
40	//	2	6	40
39	//	2	4	39
38	//	2	2	38
37	/	1	2	37
36			2	36
35	/	1	2	35
34				34
33				33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

N OF LA PAZ

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — **LA PAZ RD TO I-73 FREEWAY**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF LA PAZ
DATE OF SURVEY	11/20/2013
85th PERCENTILE	47.3 MPH
10 MPH PACE	37 - 46 MPH
PERCENT IN PACE	74.0 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	5
TOTAL ACCIDENTS	9
ANNUAL ACCIDENT RATE	2.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.50 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	21,100
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LA PAZ / OSO PKWY / NELLIE GAIL
CROSSWALKS	AT LA PAZ / OSO PKWY / NELLIE GAIL
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	BIKE ROUTE / BUS STOP CUT OUTS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.65
VERTICAL CURVE	MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	SLIGHT "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (areas of slight)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO (NB) - YES / YES (SB)
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 45 mph speed limit is within 7.3 mph of the 85th percentile speed and meets CVC standards.

File: Moulton 2013-39

RADAR SPEED DISTRIBUTION SHEET

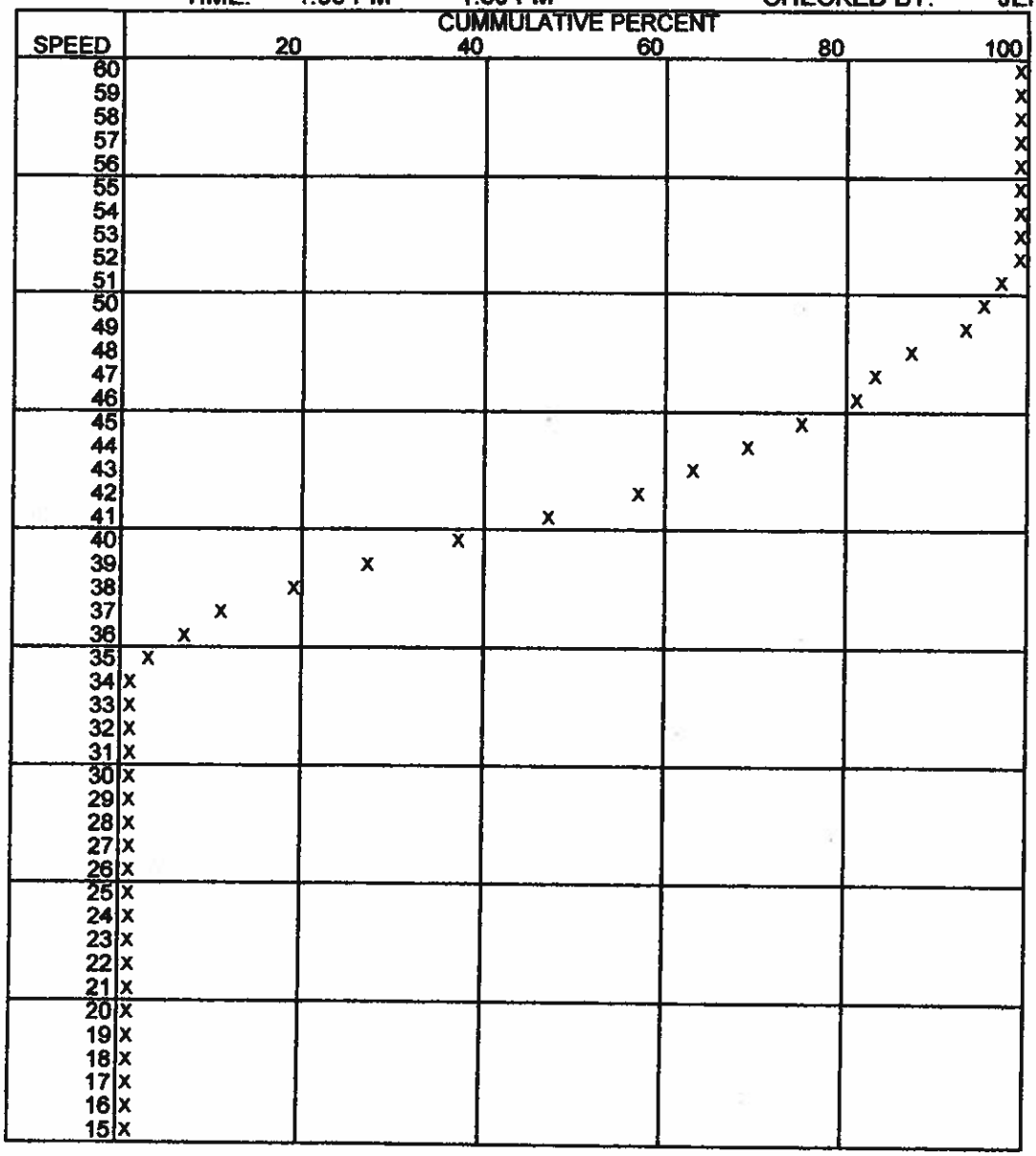
CITY OF LAGUNA HILLS

HCI

MOULTON PARKWAY — LA PAZ RD TO I-73 FREEWAY

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK



SPEED							
60						X	100.0%
59						X	100.0%
58						X	100.0%
57						X	100.0%
56						X	100.0%
55						X	100.0%
54						X	100.0%
53						X	99.3%
52						X	98.7%
51						X	97.3%
50						X	96.0%
49						X	92.7%
48						X	88.0%
47						X	84.0% --- 85PCT
46						X	81.3% }PACE
45					X		75.3% }PACE
44					X		69.3% }PACE
43				X			62.7% }PACE
42				X			57.3% }PACE
41			X				48.0% }PACE --- MEAN
40			X				38.0% }PACE
39		X					26.7% }PACE
38	X						20.0% }PACE
37	X						12.0% }PACE --- 15PCT
36	X						7.3%
35	X						4.0%
34	X						2.0%
33	X						0.7%
32	X						0.7%
31	X						0.0%
30	X						0.0%
29	X						0.0%
28	X						0.0%
27	X						0.0%
26	X						0.0%
25	X						0.0%
24	X						0.0%
23	X						0.0%
22	X						0.0%
21	X						0.0%
20	X						0.0%
19	X						0.0%
18	X						0.0%
17	X						0.0%
16	X						0.0%
15	X						0.0%

UPPER LIMIT 10 MPH PACE:	46	MPH
LOWER LIMIT 10 MPH PACE:	37	MPH
PERCENT OVER PACE:	18.7	%
PERCENT IN PACE:	74.0	%
PERCENT UNDER PACE:	7.3	%

85th PERCENTILE SPEED:	47.3	MPH
MEDIAN SPEED:	41.2	MPH
15th PERCENTILE SPEED:	37.4	MPH

Moulton 2013-39

5/21/2014 ITEM NO. 4.1

Radar Speed Survey Field Sheet

Hastings & Shell, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: MOULTON PARKWAY
LOCATION: LA PAZ RD TO I-73 FWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/20/13
START TIME: 1:00 PM
END TIME: 1:30 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51	/	1
50	//	2
49	///	3
48	///	3
47	///	3
46	////	4
45	/	1
44	////	4
43	//	2
42	////-//	7
41	////-///	8
40	////-//	7
39	////-/	6
38	////-////	9
37	////-/	6
36	///	3
35	/	1
34	//	2
33		0
32	/	1
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54	/	1	1	54
53	/	1	2	53
52	//	2	4	52
51	///	3	7	51
50	////	4	11	50
49	///	3	14	49
48	///	3	17	48
47	////	4	21	47
46	////	4	25	46
45	//// ///	8	33	45
44	//// /	6	39	44
43	//// //	7	46	43
42	//// ///	8	54	42
41	//// ///	8	62	41
40	//// ///	8	70	40
39	//// //	7	77	39
38	////	5	82	38
37	//	2	84	37
36	//	2	86	36
35	//	2	88	35
34				34
33				33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — **CABOT RD TO GALLUP CIRCLE**

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 2:00 PM - 2:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF SHERIFF
DATE OF SURVEY	11/12/2013
85th PERCENTILE	31.0 MPH
10 MPH PACE	23 - 32 MPH
PERCENT IN PACE	86.1 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	5
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	1.65 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,200
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - CABOT, STOP - GALLUP
CROSSWALKS	AT CABOT / GALLUP
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	EQUESTRIAN XING

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.69
VERTICAL CURVE	CONSTANT MODERATE DOWNHILL GRADE (NB)
HORIZONTAL CURVE	SEVERAL MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (heavy)
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE

ADJACENT LAND USE	RESIDENTIAL (F)
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	ESTABLISH AS A RESIDENCE DISTRICT - CVC 515

JUSTIFICATION:

Nellie Gail Road is a two lane residential roadway. The speed data resulted with an 85th percentile speed of 31.0 mph that initially suggests a 30 mph posting. The need to retain the CVC defined lower speed is based on (1) 20 single-family dwellings with direct access driveways between Glen Canyon Drive to Sheriff Road (0.22 mi) and, (2) 20 single-family dwellings with direct access driveways between Sheriff Road to Hitching Post Road (0.25 mi) and, (3) several horizontal and vertical curves, and (4) several areas of limited sight distance. This segment meets the requirement for the CVC 515 "Residence District". Therefore with all these factors, it is recommended that the City establish the segment of Nellie Gail Road a Residence District". This segment does not require continued speed surveys.

F+NF = Fronting + Non-fronting

File: Nellie Gail 2013-40

RADAR SPEED DISTRIBUTION SHEET

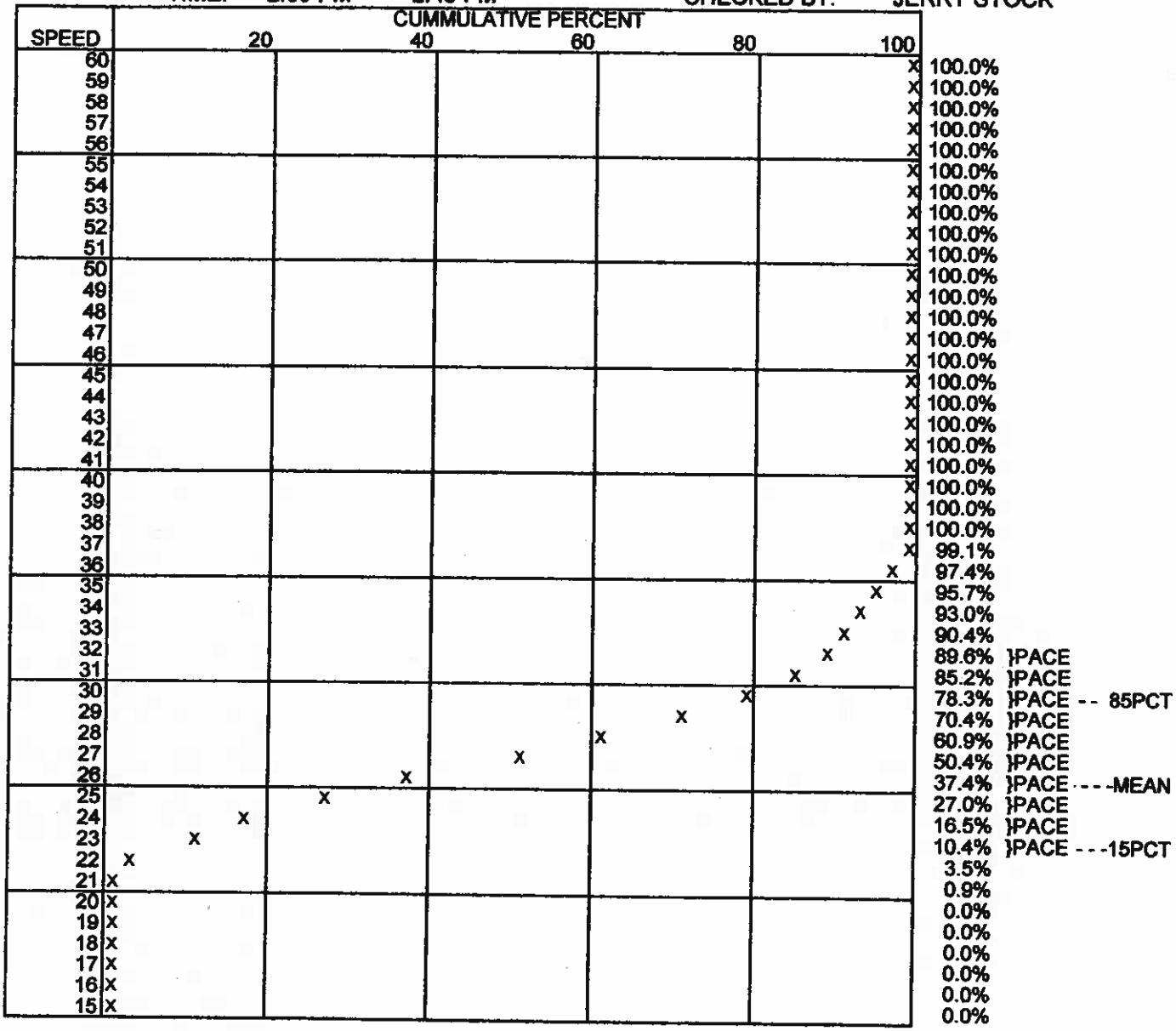
HCI

CITY OF LAGUNA HILLS

NELLIE GAIL ROAD — CABOT RD TO GALLUP CIRCLE

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 2:00 PM - 2:45 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	32	MPH
LOWER LIMIT 10 MPH PACE:	23	MPH
PERCENT OVER PACE:	10.4	%
PERCENT IN PACE:	86.1	%
PERCENT UNDER PACE:	3.5	%

85th PERCENTILE SPEED:	31.0	MPH
MEDIAN SPEED:	27.0	MPH
15th PERCENTILE SPEED:	23.8	MPH

Nellie Gail 2013-40

Radar Speed Survey Field Sheet

Consulting Traffic Engineers
17632 E. 17th Street, Suite 108
Tustin, California 92780
714.731.2432 Fax: 714.731.2430
www.hernandezcoleman.com

AGENCY: CITY OF LAGUNA HILLS
STREET: NELLIE GAIL ROAD
LOCATION: CABOT RD TO GALLUP CIRCLE

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/12/13
START TIME: 2:00 PM
END TIME: 2:45 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		1
36		2
35		3
34		4
33		5
32		5
31		7
30		7
29		14
28		4
27		2
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38			1	38
37		0	1	37
36			2	36
35		2	4	35
34			3	34
33			5	33
32		2	8	32
31		4	9	31
30		5	11	30
29		6	12	29
28		7	15	28
27		8	12	27
26		5	12	26
25		6	7	25
24		3	8	24
23		4	3	23
22		1		22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — **BRIDLEWOOD DR TO DAPPLE GREY (N)**

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF HOUSTON
DATE OF SURVEY	11/12/2013
85th PERCENTILE	31.5 MPH
10 MPH PACE	23 - 32 MPH
PERCENT IN PACE	86.4 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	3
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	900
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - BRIDLEWOOD
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	FEW / FEW
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.22
VERTICAL CURVE	GRADUAL - MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	SEVERAL MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (areas of fair)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (many)
STREET LIGHTING	YES
OTHER	

ADJACENT LAND USE	RESIDENTIAL (F)
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

This portion of Nellie Gail Road is a two lane roadway. The posted speed is 25 mph. The speed study results show an 85th percentile speed of 31.5 mph and a 10 mph pace range of 23 to 32 mph. Although the speed data suggests a higher speed, but with the existing conditions of frequent driveways, equestrian trails and crossing, and the several areas of limited sight distance due to the horizontal and vertical curves. With that, it is recommended that the exiting 25 mph remain.

F = Fronting

File: Nellie Gail 2013-41

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

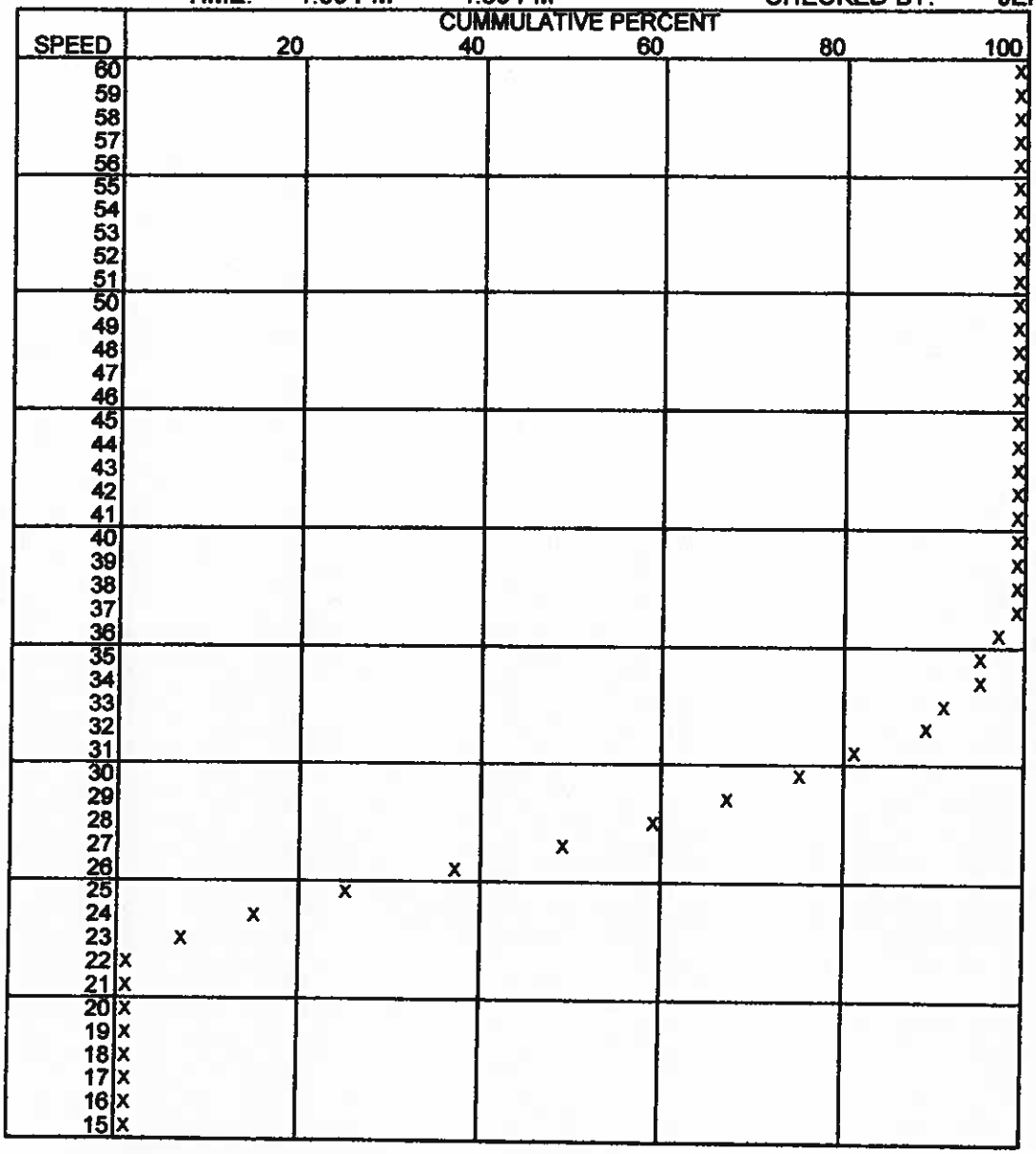
CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — BRIDLEWOOD DR TO DAPPLE GREY (N)

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT	
60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	100.0%	
51	100.0%	
50	100.0%	
49	100.0%	
48	100.0%	
47	100.0%	
46	100.0%	
45	100.0%	
44	100.0%	
43	100.0%	
42	100.0%	
41	100.0%	
40	100.0%	
39	99.2%	
38	99.2%	
37	99.2%	
36	96.6%	
35	94.9%	
34	94.1%	
33	91.5%	
32	88.1%	}PACE
31	81.4%	}PACE - - -85PCT
30	74.6%	}PACE
29	66.9%	}PACE
28	58.5%	}PACE
27	49.2%	}PACE - - -MEAN
26	37.3%	}PACE
25	24.6%	}PACE
24	15.3%	}PACE
23	7.6%	}PACE - - -15PCT
22	1.7%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	32	MPH
LOWER LIMIT 10 MPH PACE:	23	MPH
PERCENT OVER PACE:	11.9	%
PERCENT IN PACE:	86.4	%
PERCENT UNDER PACE:	1.7	%

85th PERCENTILE SPEED:	31.5	MPH
MEDIAN SPEED:	27.1	MPH
15th PERCENTILE SPEED:	24.0	MPH

Nellie Gail 2013-41

Radar Speed Survey Field Sheet

Hastings & Shadle, Inc.
Consulting Traffic Engineers
13191 E. 17th Street, Suite 101
Tustin, California 92780
714.731.3483 fax 714.731.3485
www.hastings-shadle.com

AGENCY: CITY OF LAGUNA Hills
STREET: NELLIE GAIL ROAD
LOCATION: BRIDLEWOOD DR. TO DAPPLE GREY (N)

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/12/13
START TIME: 1:00 PM
END TIME: 1:30 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40	/	1
39		0
38		0
37	/	1
36	/	0
35		1
34	/	2
33	//	4
32	//	5
31	//	4
30	//	4
29	///	6
28	///	5
27	///	7
26	///	7
25	//	6
24	//	3
23	//	4
22	/	1
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40			1	40
39			0	39
38			0	38
37	/	2	3	37
36		1	2	36
35			3	35
34	/	2	4	34
33	//	4	8	33
32	//	3	8	32
31	///	5	9	31
30	//	4	10	30
29	///	6	11	29
28	///	7	14	28
27	///	8	15	27
26	///	5	15	26
25	//	6	11	25
24	//	3	9	24
23	/	1	7	23
22			2	22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — **DAPPLE GREY (N) TO OSO PKWY**

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 12:00 PM - 12:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF BUCKSKIN
DATE OF SURVEY	11/12/2013
85th PERCENTILE	34.8 MPH
10 MPH PACE	27 - 36 MPH
PERCENT IN PACE	83.7 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,700
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - OSO PKWY
CROSSWALKS	AT OSO PKWY
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	YES
OTHER	AREAS OF NO STOPPING ANYTIME EQUESTRIAN TRAILS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.47
VERTICAL CURVE	CONSTANT GRADUAL-MODERATE UPHILL GRADE (NB)
HORIZONTAL CURVE	CONTINUOUS MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	SOLID DBL YELLOW CENTERLINE / RAISED MEDIAN ISLAND (at Oso)

ADJACENT LAND USE	RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph speed limit is within 4.8 mph of the 85th percentile speed and meets CVC standards.

File: Nellie Gail 2013-42

RADAR SPEED DISTRIBUTION SHEET

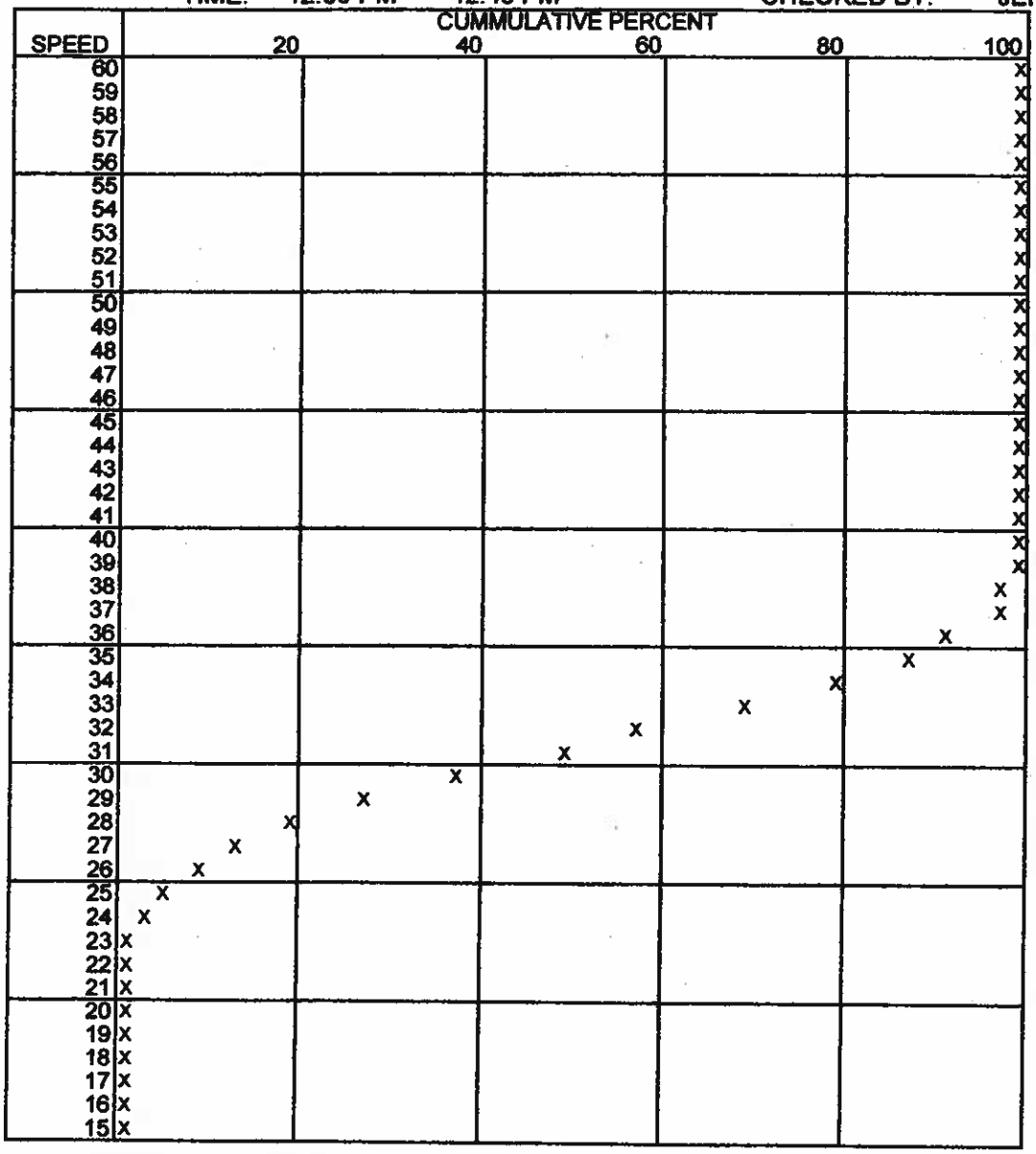
CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — DAPPLE GREY (N) TO OSO PKWY

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 12:00 PM - 12:45 PM — CHECKED BY: JERRY STOCK



SPEED							
60						X	100.0%
59						X	100.0%
58						X	100.0%
57						X	100.0%
56						X	100.0%
55						X	100.0%
54						X	100.0%
53						X	100.0%
52						X	100.0%
51						X	100.0%
50						X	100.0%
49						X	100.0%
48						X	100.0%
47						X	100.0%
46						X	100.0%
45						X	100.0%
44						X	100.0%
43						X	100.0%
42						X	100.0%
41						X	100.0%
40						X	100.0%
39						X	99.3%
38						X	97.8%
37						X	96.3%
36					X		91.9% }PACE
35					X		86.7% }PACE
34					X		79.3% }PACE - - -85PCT
33				X			69.6% }PACE
32				X			57.8% }PACE
31			X				48.1% }PACE - - -MEAN
30			X				37.0% }PACE
29		X					27.4% }PACE
28	X						19.3% }PACE
27	X						13.3% }PACE - - -15PCT
26	X						8.1%
25	X						4.4%
24	X						3.0%
23	X						1.5%
22	X						0.0%
21	X						0.0%
20	X						0.0%
19	X						0.0%
18	X						0.0%
17	X						0.0%
16	X						0.0%
15	X						0.0%

UPPER LIMIT 10 MPH PACE:	36	MPH
LOWER LIMIT 10 MPH PACE:	27	MPH
PERCENT OVER PACE:	8.1	%
PERCENT IN PACE:	83.7	%
PERCENT UNDER PACE:	8.1	%

85th PERCENTILE SPEED:	34.8	MPH
MEDIAN SPEED:	31.2	MPH
15th PERCENTILE SPEED:	27.3	MPH

Nellie Gail 2013-42

Radar Speed Survey Field Sheet

Hunsaker & Associates Irvine, Inc.
Consulting Traffic Engineers
1900 E. 17th Street, Suite 200
Tustin, California 92705
714.730.2455 fax: 714.730.2575
www.hunsaker.com

AGENCY: CITY OF LAGUNA HILLS
STREET: NELLIE GAIL ROAD
LOCATION: DAPPLE GREY (N) TO OSO PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/12/13
START TIME: 12:00 PM
END TIME: 12:45 PM VOL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39	/	1
38		0
37	///	4
36	///	3
35	///	4
34	////	6
33	/////	8
32	/////	8
31	/////	7
30	////	8
29	////	6
28	////	7
27	///// /	5
26	///	6
25		3
24	/	1
23	/	2
22		1
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40	/	1	1	40
39	//	1	2	39
38	//	2	4	38
37	//	2	6	37
36	///	4	10	36
35	/////	6	16	35
34	/////	7	23	34
33	/////	8	31	33
32	/////	6	37	32
31	/////	7	44	31
30	/////	7	51	30
29	////	4	55	29
28	///	3	58	28
27	//	2	60	27
26	/	1	61	26
25		0	61	25
24		0	61	24
23	/	1	62	23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — **OSO PKWY TO HIDDEN TRAIL RD**

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 11:30 AM - 12:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF EMPTY SADDLE
DATE OF SURVEY	11/12/2013
85th PERCENTILE	30.6 MPH
10 MPH PACE	23 - 32 MPH
PERCENT IN PACE	88.4 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	2,300
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - OSO PKWY
CROSSWALKS	AT OSO PKWY
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.32
VERTICAL CURVE	MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	SEVERAL MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO (NB) - NO / NO (SB)
STREET LIGHTING	YES
OTHER	PARTIAL MEDIAN ISLAND & DBL YELLOW CENTERLINE

ADJACENT LAND USE	RESIDENTIAL (NF) / EQUESTRIAN CENTER
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

This section of Nellie Gail Road is a two lane roadway. Field observations include 100% residential with heavy driveways, equestrian crossings, moderate to sweeping roadway curves, and several areas of limited sight distance. With that it is recommended that the existing 25 mph speed limit be maintained.

File: Nellie Gail 2013-43

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

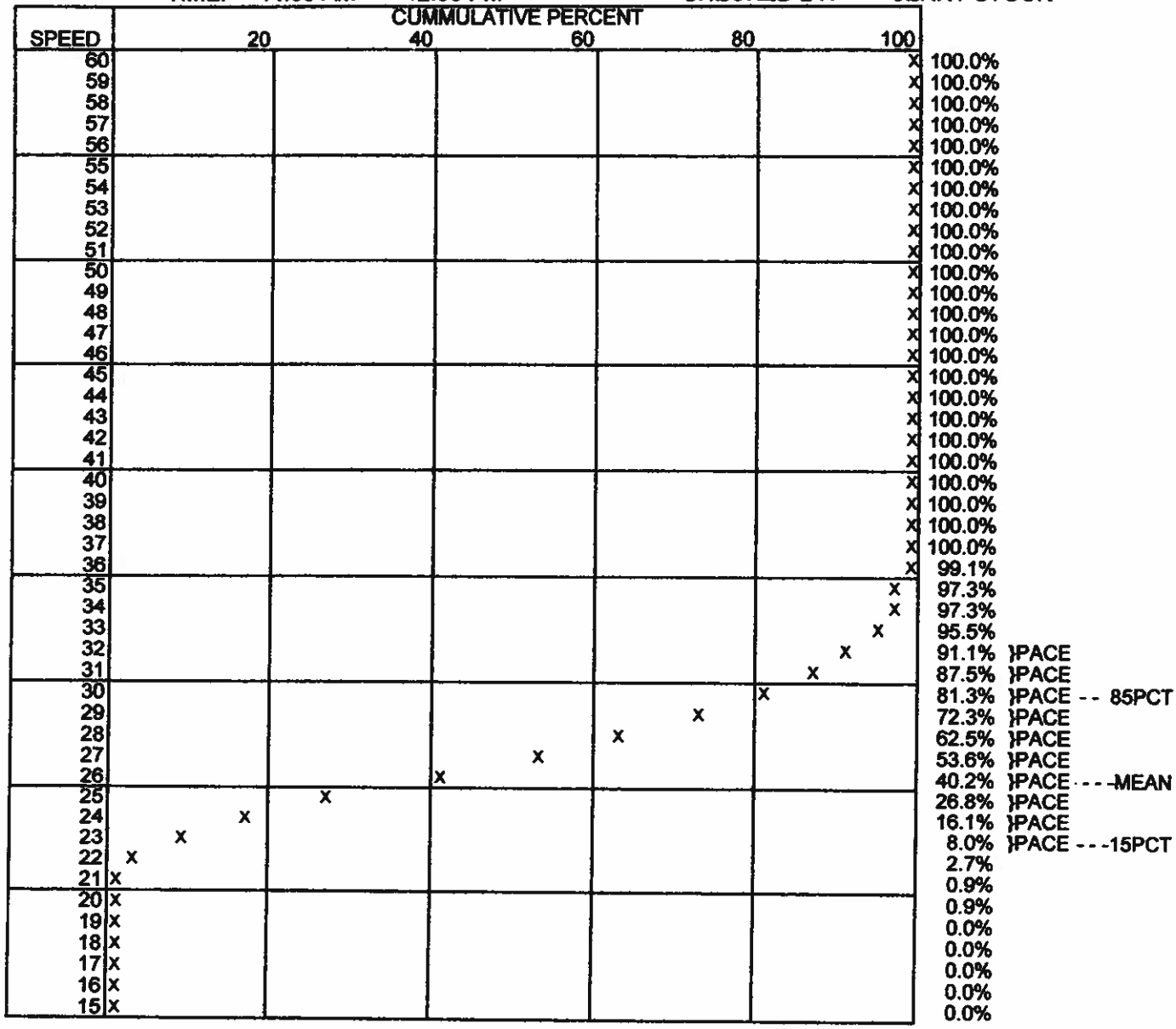
HCI

CITY OF LAGUNA HILLS

NELLIE GAIL ROAD — OSO PKWY TO HIDDEN TRAIL RD

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 11:30 AM - 12:00 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	32	MPH
LOWER LIMIT 10 MPH PACE:	23	MPH
PERCENT OVER PACE:	8.9	%
PERCENT IN PACE:	88.4	%
PERCENT UNDER PACE:	2.7	%

85th PERCENTILE SPEED:	30.6	MPH
MEDIAN SPEED:	26.7	MPH
15th PERCENTILE SPEED:	23.9	MPH

Nellie Gail 2013-43

Radar Speed Survey Field Sheet

Hastings & Chabot, Inc.
Consulting Traffic Engineers
17152 E. 17th Street, Suite 108
Tustin, California 92780
714.731.9063 fax: 714.731.9065
www.hastingschabot.com

AGENCY: CITY OF LAGUNA HILLS
STREET: NELLIE GAIL ROAD
LOCATION: OSO PKWY TO HIDDEN TRAIL RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/12/13
START TIME: 11:30 AM
END TIME: 12:00 AM

VGL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37	/	1
36	/	0
35		
34	/	1
33	///	3
32	///	2
31	///	3
30	////	4
29	////	5
28	////	5
27	//////	6
26	//////	8
25	////	8
24	////	7
23	////	6
22	/	6
21		3
20		1
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38				38
37			1	37
36	/	1	2	36
35		0	2	35
34	/	1	3	34
33	//	2	5	33
32	////	4	7	32
31	////	5	10	31
30	////	5	10	30
29	////	6	15	29
28	////	8	15	28
27	////	6	12	27
26	///	3	4	26
25	///	3	6	25
24		0	6	24
23			6	23
22			6	22
21			6	21
20			6	20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — **LOST COLT TO MOULTON PKWY**

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF LOST COLT
DATE OF SURVEY	11/12/2013
85th PERCENTILE	31.8 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	88.3 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,100
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON
CROSSWALKS	AT MOULTON
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.10
VERTICAL CURVE	MODERATE UPHILL GRADE (EB)
HORIZONTAL CURVE	GRADUAL "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	NO / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	NO SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF) / ENTRANCE
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph speed limit is within 1.8 mph of the 85th percentile speed and meets CVC standards.

File: Nellie Gail 2013-44

RADAR SPEED DISTRIBUTION SHEET

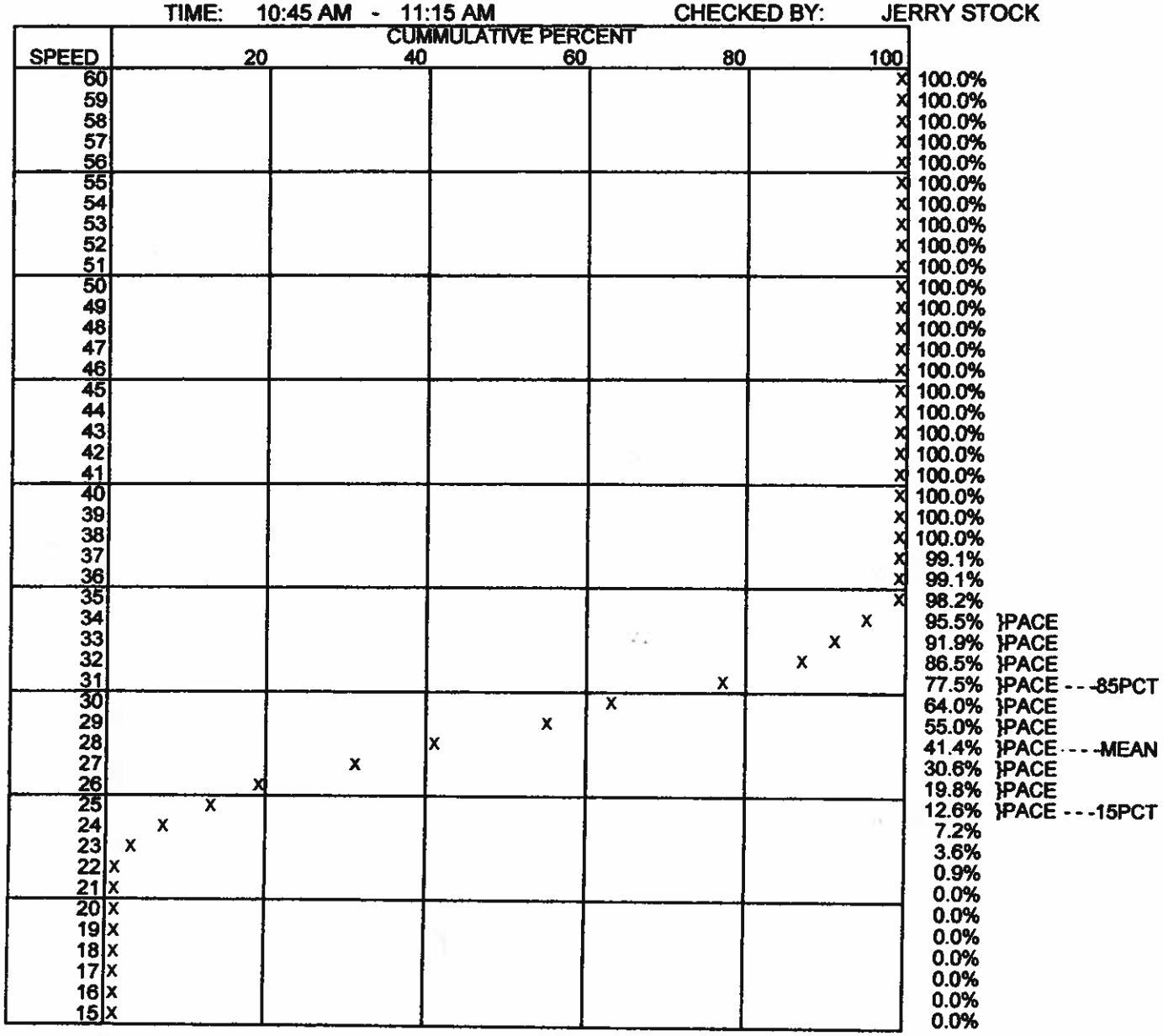
CITY OF LAGUNA HILLS

HCI

NELLIE GAIL ROAD — LOST COLT TO MOULTON PKWY

DATE: 11/12/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	8.1	%
PERCENT IN PACE:	88.3	%
PERCENT UNDER PACE:	7.2	%

85th PERCENTILE SPEED:	31.8	MPH
MEDIAN SPEED:	28.6	MPH
15th PERCENTILE SPEED:	25.3	MPH

Nellie Gail 2013-44

Radar Speed Survey Field Sheet

Hartzog & Crabill, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: NELLIE GAIL ROAD
LOCATION: LOST COLT TO MOULTON PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/12/13
START TIME: 10:45 AM
END TIME: 11:15 AM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35		
34	/	1
33	/	1
32	////	4
31	//////	6
30	//////	6
29	////// /	7
28	//////	6
27	//////	6
26	////	4
25	////	4
24	////	4
23	/	1
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38	/	1	1	38
37		0	1	37
36	/	1	2	36
35	///	3	5	35
34	///	3	8	34
33	////	4	12	33
32	//////	6	18	32
31	////// /	7	25	31
30	//////	6	31	30
29	//////	6	37	29
28	//////	5	42	28
27	//////	5	47	27
26	///	3	50	26
25	/	1	51	25
24	/	0	51	24
23	/	1	52	23
22			52	22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

OSO PARKWAY — **WEST CITY LIMITS TO MOULTON PKWY**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 2:00 PM - 2:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF MOULTON
DATE OF SURVEY	11/18/2013
85th PERCENTILE	46.4 MPH
10 MPH PACE	38 - 47 MPH
PERCENT IN PACE	81.4 %
POSTED SPEED LIMIT	45 MPH (WB)

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	2
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.46 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	22,700
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON / MAREBLU
CROSSWALKS	AT MOULTON
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME
OTHER	DESIGNATED BIKE LANES
	BUS STOPS (EB)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.13
VERTICAL CURVE	NONE
HORIZONTAL CURVE	NONE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	NARROW SHOULDERS

ADJACENT LAND USE	BUSINESS / COMMERCIAL / ROUTE 73 OVERPASS

RECOMMENDED SPEED LIMIT	45 MPH

SPEED LIMIT CHANGE	NO CHANGE - POST (EB)

JUSTIFICATION:

The section of Oso Parkway is a six lane roadway. Adjacent land uses are commercial, business and Route 73 overpass. Field notes state this segment is a short 0.13 mile section with bus stops, painted bike lanes, narrow shoulders, no parking anytime, and has a 45 mph speed sign posted westbound only. The speed study resulted with an 85th percentile speed of 46.4 mph and a 10 mph pace range 38 to 47 mph. It is recommended that the existing 45 mph speed limit remain. For enforcement, it is recommended that a 45 mph speed sign be installed eastbound.

File: Oso Pkwy 2013-45

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

OSO PARKWAY — WEST CITY LIMITS TO MOULTON PKWY

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 2:00 PM - 2:30 PM — CHECKED BY: JERRY STOCK

CUMMULATIVE PERCENT

SPEED	CUMMULATIVE PERCENT	
60	100.0%	
59	100.0%	
58	100.0%	
57	100.0%	
56	100.0%	
55	100.0%	
54	100.0%	
53	100.0%	
52	99.3%	
51	98.6%	
50	96.6%	
49	95.9%	
48	93.8%	
47	90.3%	}PACE
46	80.7%	}PACE - - -85PCT
45	75.2%	}PACE
44	61.4%	}PACE
43	55.9%	}PACE
42	44.1%	}PACE - - -MEAN
41	35.9%	}PACE
40	31.0%	}PACE
39	20.7%	}PACE
38	13.1%	}PACE - - -15PCT
37	9.0%	
36	4.1%	
35	4.1%	
34	2.1%	
33	1.4%	
32	0.7%	
31	0.7%	
30	0.7%	
29	0.0%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	47	MPH
LOWER LIMIT 10 MPH PACE:	38	MPH
PERCENT OVER PACE:	9.7	%
PERCENT IN PACE:	81.4	%
PERCENT UNDER PACE:	9.0	%

85th PERCENTILE SPEED:	46.4	MPH
MEDIAN SPEED:	42.5	MPH
15th PERCENTILE SPEED:	38.3	MPH

Oso Pkwy 2013-45

Radar Speed Survey Field Sheet

Hartzog & Crabbe, Inc.
Consulting Traffic Engineers
17311 E. 17th Street, Suite 100
Tustin, California 92780
714.731.9403 fax 714.731.2688
www.hartzogcrabbe.com

AGENCY: CITY OF LAGUNA HILLS
STREET: OSO PARKWAY
LOCATION: WEST CITY LIMIT TO MOULTON PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 2:00 PM
END TIME: 2:30 PM

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49	/	1
48	///	3
47	/////	5
46	///// /	6
45	///// /////	10
44	///// /////	10
43	///// /////	10
42	///// ///	8
41	/////	5
40	/////	5
39	/////	5
38	/////	5
37	///	3
36		0
35	/	1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53	/	1	1	53
52	/	1	1	52
51	///	3	3	51
50	///	3	3	50
49	/// /	4	5	49
48	/// ///	8	13	48
47	/// ///	8	21	47
46	/// ///	8	29	46
45	/// ///	8	37	45
44	/// ///	8	45	44
43	/// ///	8	53	43
42	/// ///	8	61	42
41	/// ///	8	69	41
40	/// ///	8	77	40
39	/// ///	8	85	39
38	/// ///	8	93	38
37	/// ///	8	101	37
36	/// ///	8	109	36
35	/// ///	8	117	35
34	/// ///	8	125	34
33	/// ///	8	133	33
32	/// ///	8	141	32
31	/// ///	8	149	31
30	/// ///	8	157	30
29	/// ///	8	165	29
28	/// ///	8	173	28
27	/// ///	8	181	27
26	/// ///	8	189	26
25	/// ///	8	197	25
24	/// ///	8	205	24
23	/// ///	8	213	23
22	/// ///	8	221	22
21	/// ///	8	229	21
20	/// ///	8	237	20
19	/// ///	8	245	19
18	/// ///	8	253	18
17	/// ///	8	261	17
16	/// ///	8	269	16
15	/// ///	8	277	15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

OSO PARKWAY — **MOULTON PKWY TO NELLIE GAIL RD**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 2:30 PM - 3:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF NELLIE GAIL
DATE OF SURVEY	11/18/2013
85th PERCENTILE	53.9 MPH
10 MPH PACE	45 - 54 MPH
PERCENT IN PACE	78.9 %
POSTED SPEED LIMIT	50 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	2
TOTAL ACCIDENTS	4
ANNUAL ACCIDENT RATE	1.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.15 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	29,400
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON / NELLIE GAIL
CROSSWALKS	AT MOULTON / NELLIE GAIL
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	DESIGNATED BIKE LANES
	EQUESTRIAN TRAILS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.63
VERTICAL CURVE	NONE
HORIZONTAL CURVE	GRADUAL-MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	NO / NO
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (NF) / EQUESTRAIN CENTER & TRAILS
RECOMMENDED SPEED LIMIT	50 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 50 mph speed limit is within 3.9 mph of the 85th percentile speed and meets CVC standards.

File: Oso Pkwy 2013-46

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

OSO PARKWAY

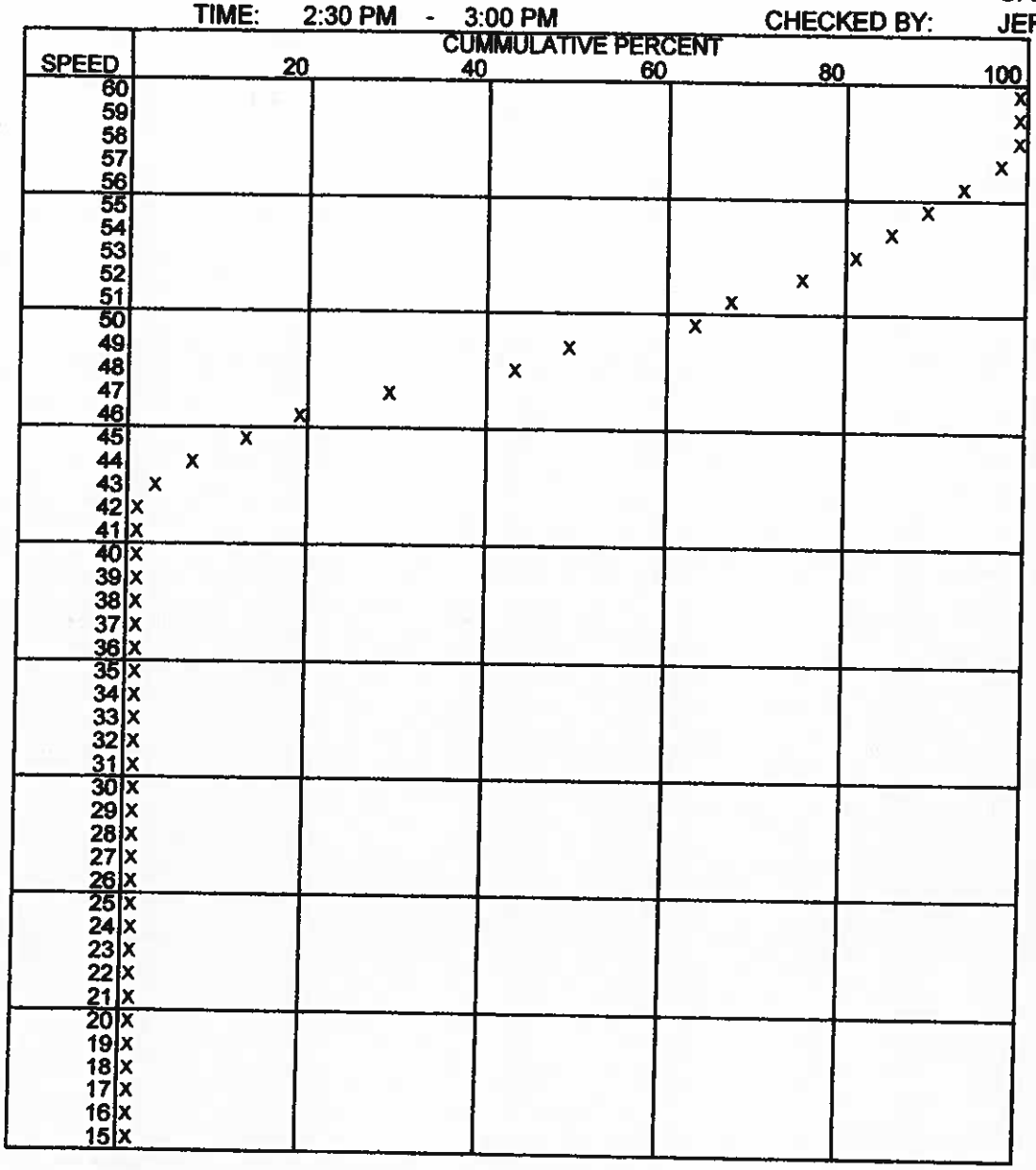
MOULTON PKWY TO NELLIE GAIL RD

DATE: 11/18/2013

TIME: 2:30 PM - 3:00 PM

SURVEY BY: C. BUENDIA

CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	54	MPH
LOWER LIMIT 10 MPH PACE:	45	MPH
PERCENT OVER PACE:	14.5	%
PERCENT IN PACE:	78.9	%
PERCENT UNDER PACE:	6.6	%

85th PERCENTILE SPEED:	53.9	MPH
MEDIAN SPEED:	49.0	MPH
15th PERCENTILE SPEED:	45.3	MPH

Oso Pkwy 2013-46

Radar Speed Survey Field Sheet

Hastings & Chivers, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: OSO PARKWAY
LOCATION: MOULTON PKWY TO NELLIE GAIL RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 2:30 PM
END TIME: 3:00 PM

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55	//	2
54	///	3
53	///	3
52	////	5
51	////	4
50	////////	9
49	////////	9
48	//////////	12
47	//////////	12
46	//////	6
45	//////	6
44	//	2
43	///	3
42	///	3
41		0
40	/	1
39		
38		
37		
36		
35		
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59	/	1
58	////	4
57	//////	6
56	//////	7
55	//	2
54	////	5
53	////	4
52	//////	7
51	////	4
50	//////////	10
49	/////	5
48	////////	8
47	//	2
46	///	3
45	//	2
44	//	2
43		
42		
41		
40		
39		
38		
37		
36		
35		
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

CUMULATIVE TOTAL	MPH
	60
1	59
4	58
6	57
7	56
4	55
5	54
7	53
12	52
8	51
19	50
11	49
10	48
18	47
4	46
10	45
4	44
3	43
2	42
0	41
1	40
	39
	38
	37
	36
	35
	34
	33
	32
	31
	30
	29
	28
	27
	26
	25
	24
	23
	22
	21
	20
	19
	18
	17
	16
	15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

OSO PARKWAY — **NELLIE GAIL RD TO BRIDLEWOOD DR**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 3:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF NOTTINGHAM
DATE OF SURVEY	11/18/2013
85th PERCENTILE	53.8 MPH
10 MPH PACE	45 - 54 MPH
PERCENT IN PACE	71.8 %
POSTED SPEED LIMIT	50 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	6
TOTAL ACCIDENTS	8
ANNUAL ACCIDENT RATE	3.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.48 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	29,100
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - NELLIE GAIL / BRIDLEWOOD
CROSSWALKS	AT NELLIE GAIL / BRIDLEWOOD
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	DESIGNATED BIKE LANES
	EQUESTRIAN TRAILS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.59
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	SWEEPING "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	NO / NO
STREET LIGHTING	YES
OTHER	BI-LEVEL ROADWAY
	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	50 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 50 mph speed limit is within 3.8 mph of the 85th percentile speed and meets CVC standards.

NF = Non-fronting

File: Oso Pkwy 2013-47

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

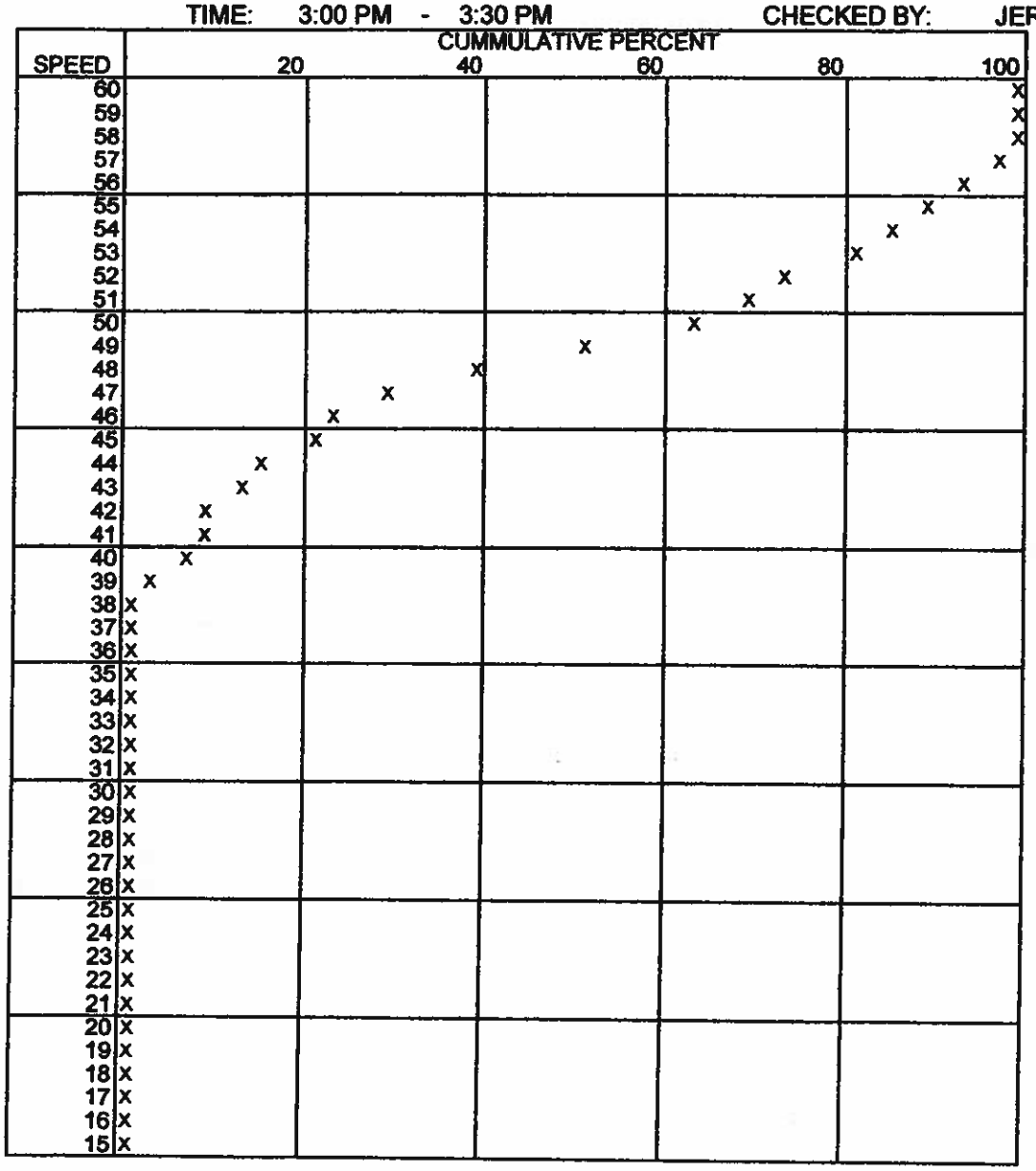
HCI

CITY OF LAGUNA HILLS

OSO PARKWAY — NELLIE GAIL RD TO BRIDLEWOOD DR

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 3:30 PM — CHECKED BY: JERRY STOCK



SPEED	CUMMULATIVE PERCENT	
60	100.0%	
59	100.0%	
58	99.3%	
57	96.6%	
56	93.3%	
55	89.9%	
54	85.9%	}PACE
53	80.5%	}PACE - - -85PCT
52	73.2%	}PACE
51	68.5%	}PACE
50	63.1%	}PACE
49	50.3%	}PACE
48	38.3%	}PACE - - -MEAN
47	29.5%	}PACE
46	23.5%	}PACE
45	20.1%	}PACE
44	14.1%	- - -15PCT
43	12.8%	
42	8.7%	
41	8.1%	
40	6.0%	
39	3.4%	
38	1.3%	
37	0.7%	
36	0.7%	
35	0.0%	
34	0.0%	
33	0.0%	
32	0.0%	
31	0.0%	
30	0.0%	
29	0.0%	
28	0.0%	
27	0.0%	
26	0.0%	
25	0.0%	
24	0.0%	
23	0.0%	
22	0.0%	
21	0.0%	
20	0.0%	
19	0.0%	
18	0.0%	
17	0.0%	
16	0.0%	
15	0.0%	

UPPER LIMIT 10 MPH PACE:	54	MPH
LOWER LIMIT 10 MPH PACE:	45	MPH
PERCENT OVER PACE:	14.1	%
PERCENT IN PACE:	71.8	%
PERCENT UNDER PACE:	14.1	%

85th PERCENTILE SPEED:	53.8	MPH
MEDIAN SPEED:	49.0	MPH
15th PERCENTILE SPEED:	44.2	MPH

Oso Pkwy 2013-47

Radar Speed Survey Field Sheet

Hawkins & Cuniff, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: OSO PARKWAY
LOCATION: NELLIE GAIL RD TO BRIDLEWOOD DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 3:00 PM
END TIME: 3:30 PM JAL

DIRECTION: EAST BOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		2
57	//	2
56	//	1
55	/	3
54	///	4
53	///	4
52	//	6
51	//	6
50	/////	9
49	/////	9
48	/////	9
47	//	4
46	//	5
45	//	5
44		4
43	////	8
42	/	5
41	///	5
40	///	1
39	//	3
38	/	4
37		3
36	/	10
35		1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59	/	1		59
58	///	4	4	58
57	///	3	5	57
56	//	2	5	56
55	///	5	6	55
54	///	5	8	54
53	///	7	8	53
52	///	5	7	52
51	///	4	8	51
50	/////	10	9	50
49	///	7	8	49
48	///	4	8	48
47	///	5	9	47
46	//	2	5	46
45	//	5	9	45
44	//	2	6	44
43	/	1	6	43
42			3	42
41			4	41
40			5	40
39			1	39
38			0	38
37			1	37
36				36
35				35
34				34
33				33
32				32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

OSO PARKWAY — **BRIDLEWOOD DR TO I-5 FREEWAY**

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF TOMBSTONE
DATE OF SURVEY	11/18/2013
85th PERCENTILE	50.8 MPH
10 MPH PACE	43 - 52 MPH
PERCENT IN PACE	75.2 %
POSTED SPEED LIMIT	50 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	6
TOTAL ACCIDENTS	14
ANNUAL ACCIDENT RATE	3.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.35 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	37,800
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - FWY / CABOT / BRIDLEWOOD
CROSSWALKS	AT CABOT / BRIDLEWOOD
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME
OTHER	DESIGNATED BIKE LANES FLASHING BEACON "SIGNAL AHEAD" / EQUESTRIAN TRAILS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.63
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE & RAISED MEDIAN ISLAND NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF) / I-5 FWY
RECOMMENDED SPEED LIMIT	50 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 50 mph speed limit is within 0.8 mph of the 85th percentile speed and meets CVC standards.

NF = Non-fronting

File: Oso Pkwy 2013-48

RADAR SPEED DISTRIBUTION SHEET

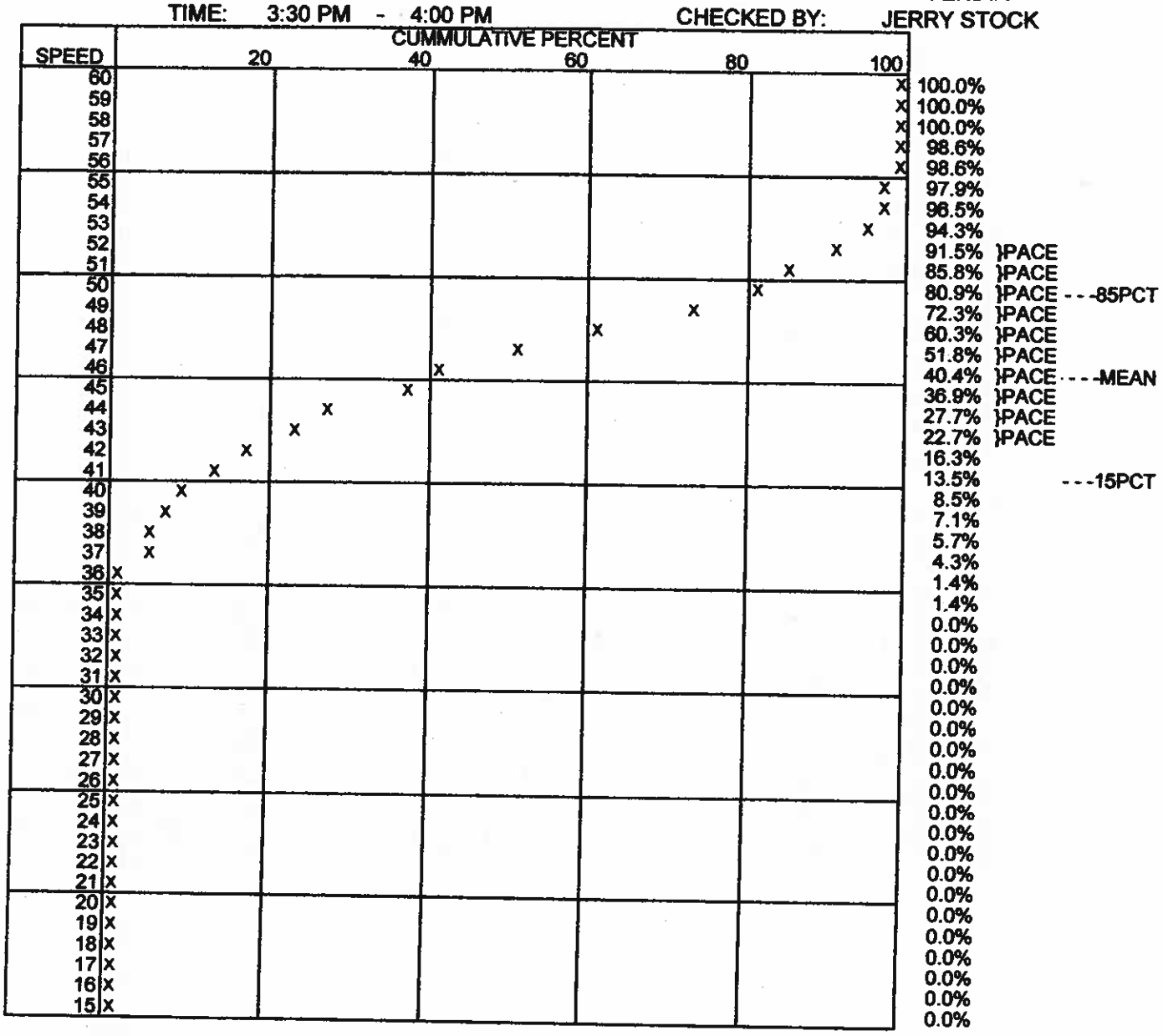
CITY OF LAGUNA HILLS

HCI

OSO PARKWAY — BRIDLEWOOD DR TO I-5 FREEWAY

DATE: 11/18/2013 — SURVEY BY: C. BUENDIA

TIME: 3:30 PM - 4:00 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	52	MPH	
LOWER LIMIT 10 MPH PACE:	43	MPH	
PERCENT OVER PACE:	8.5	%	85th PERCENTILE SPEED: 50.8 MPH
PERCENT IN PACE:	75.2	%	MEDIAN SPEED: 46.8 MPH
PERCENT UNDER PACE:	16.3	%	15th PERCENTILE SPEED: 41.5 MPH

Oso Pkwy 2013-48

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Radar Speed Survey Field Sheet

Hanford & Christ, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: OSO PARKWAY
LOCATION: BRIDLEWOOD DR TO I-5 FWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/18/13
START TIME: 3:30 PM
END TIME: 4:00 PM

VGV

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55	/	1
54	//	2
53	///	3
52	////	5
51		3
50	/////	6
49	//////	9
48	//////	9
47	//////	9
46	////	4
45	/////	7
44	////	4
43	////	5
42		
41	////	6
40	/	2
39		0
38	/	1
37	/	
36		0
35	/	1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58	/	2
57	//	0
56	/	1
55	/	1
54		
53	/	1
52	//	3
51	///	4
50	//////	8
49	//////	8
48	///	3
47	///	7
46		
45	////	6
44	///	3
43	///	4
42	///	3
41	/	1
40		0
39	/	2
38	/	1
37	///	3
36		0
35	/	1
34		
33		
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE TOTAL	MPH
	60
	59
2	58
2	57
0	56
1	55
2	54
3	53
4	52
8	51
7	50
12	49
17	48
12	47
16	46
5	45
13	44
7	43
9	42
4	41
7	40
2	39
2	38
2	37
4	36
0	35
2	34
	33
	32
	31
	30
	29
	28
	27
	26
	25
	24
	23
	22
	21
	20
	19
	18
	17
	16
	15

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

PASEO DE VALENCIA — **AVENIDA DE LA CARLOTA TO EL TORO RD**

DATE: 11/4/2013
TIME: 1:00 PM - 1:30 PM

SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF AVD DE LA CARLOTA
DATE OF SURVEY	11/4/2013
85th PERCENTILE	35.8 MPH
10 MPH PACE	28 - 37 MPH
PERCENT IN PACE	85.5 %
POSTED SPEED LIMIT	35 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	2
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	15,700
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - AVD DE LA CARLOTA / EL TORO
CROSSWALKS	AT AVD DE LA CARLOTA / EL TORO
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTIME
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.25
VERTICAL CURVE	NONE
HORIZONTAL CURVE	MODERATE "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	PARTIAL / YES
STREET LIGHTING	YES
OTHER	PAINTED MEDIAN ISLAND

ADJACENT LAND USE	COMMERCIAL / FIRE STATION / CITY HALL
RECOMMENDED SPEED LIMIT	35 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 35 mph is within 0.8 mph of the 85th percentile speed and meets CVC standards.

File: PDV-49

RADAR SPEED DISTRIBUTION SHEET

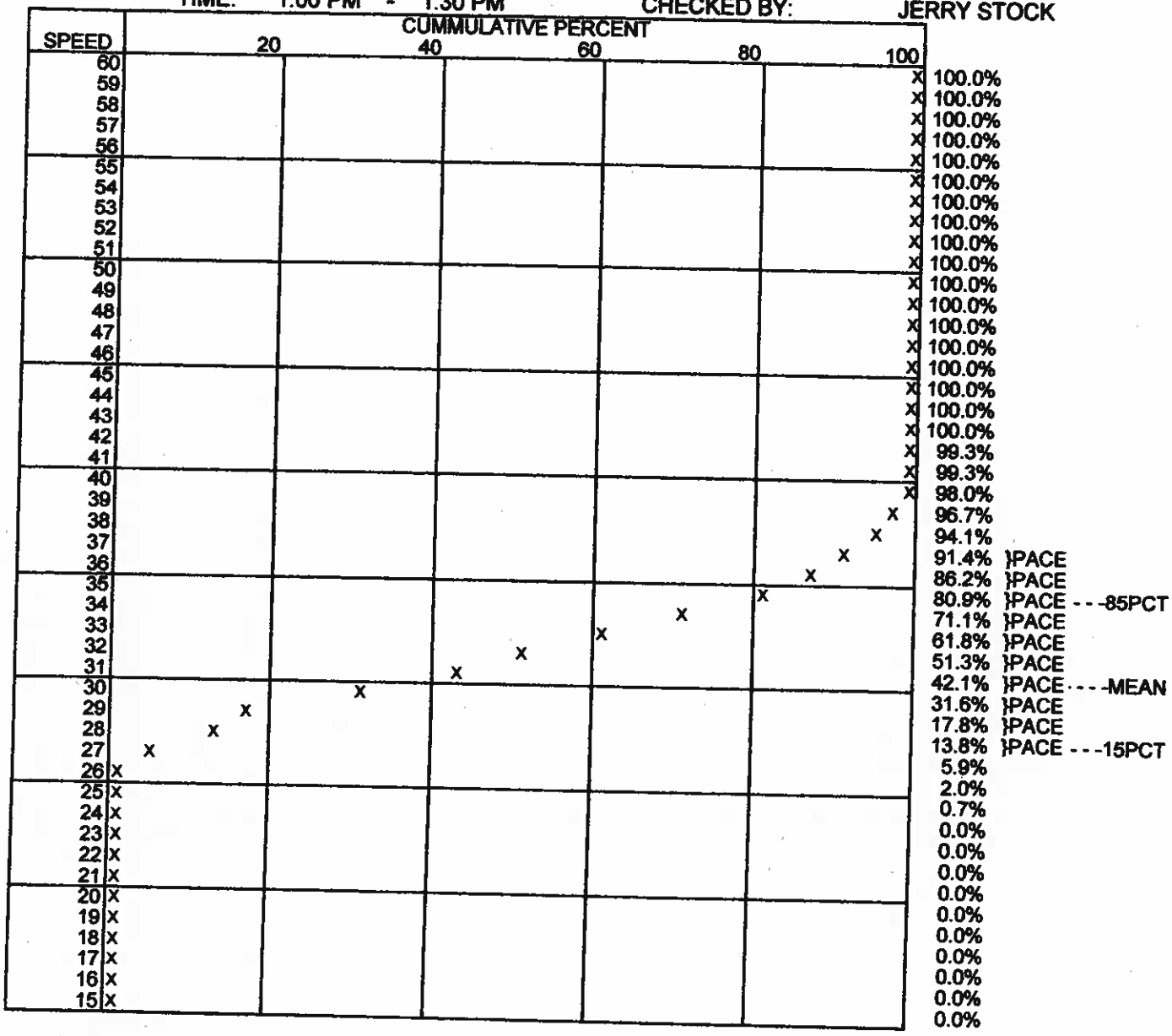
HCI

CITY OF LAGUNA HILLS

PASEO DE VALENCIA — AVENIDA DE LA CARLOTA TO EL TORO RD

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	37	MPH	85th PERCENTILE SPEED:	35.8	MPH
LOWER LIMIT 10 MPH PACE:	28	MPH	MEDIAN SPEED:	31.9	MPH
PERCENT OVER PACE:	8.6	%	15th PERCENTILE SPEED:	28.3	MPH
PERCENT IN PACE:	85.5	%			
PERCENT UNDER PACE:	5.9	%			

PDV-49

Radar Speed Survey Field Sheet

Hanson & Crisell, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: PASEO DE VALENCIA
LOCATION: AVENIDA DE LA CARLOTA TO EL TORO RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/04/13
START TIME: 1:00 PM
END TIME: 1:30 PM VAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40	//	2
39	//	2
38	/	1
37	///	5
36	///	4
35	///	4
34	////	5
33	////	10
32	////	6
31	////	6
30	////	12
29	////	4
28	///	7
27	///	4
26	//	2
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43	/	1	1	43
42				42
41	/	1	2	41
40				40
39	//	2	4	39
38	///	3	7	38
37	///	3	10	37
36	////	4	14	36
35	////////	11	25	35
34	///////	7	32	34
33	///////	6	38	33
32	////////	8	46	32
31	//////	6	52	31
30	//////	6	58	30
29	///	3	61	29
28	///	2	63	28
27	///	3	66	27
26	//	2	68	26
25	/	0	68	25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

PASEO DE VALENCIA — **EL TORO RD TO LOS ALISOS BL**

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 1:30 PM - 2:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF MAGDALENA
DATE OF SURVEY	11/4/2013
85th PERCENTILE	41.4 MPH
10 MPH PACE	34 - 43 MPH
PERCENT IN PACE	75.8 %
POSTED SPEED LIMIT	40 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	11
TOTAL ACCIDENTS	26
ANNUAL ACCIDENT RATE	5.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.75 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	23,300
LANE CONFIGURATION	2 LANES (SB) - 3 LANES (NB)
TRAFFIC CONTROLS	SIGNAL - EL TORO / LA PLATA / MAGDALENA / HEALTH CTR / VIA ESTRADA / LOS ALISOS
CROSSWALKS	AT EL TORO / LA PLATA / MAGDALENA / HEALTH CTR / VIA ESTRADA / LOS ALISOS
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	DESIGNATED BIKE LANES
	BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.86
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	CONSTANT GRADUAL-MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / MANY
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	COMMERCIAL / BUSINESS / MEDICAL OFFICES / HOSPITAL
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 40 mph is within 1.4 mph of the 85th percentile speed and meets CVC standards.

File: PDV-50

RADAR SPEED DISTRIBUTION SHEET

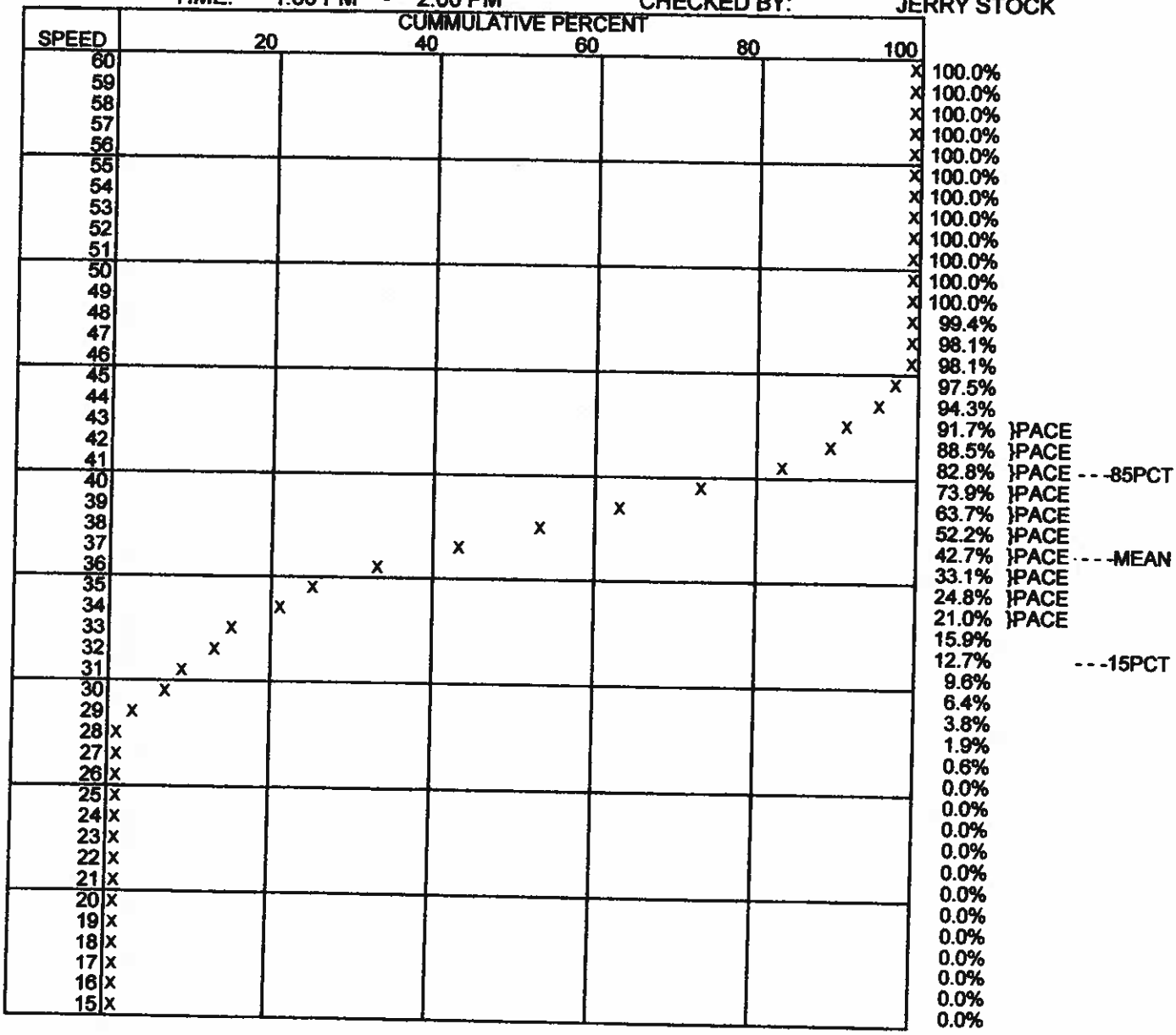
HCI

CITY OF LAGUNA HILLS

PASEO DE VALENCIA — EL TORO RD TO LOS ALISOS BL

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 1:30 PM - 2:00 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	43	MPH
LOWER LIMIT 10 MPH PACE:	34	MPH
PERCENT OVER PACE:	11.5	%
PERCENT IN PACE:	75.8	%
PERCENT UNDER PACE:	15.9	%

85th PERCENTILE SPEED:	41.4	MPH
MEDIAN SPEED:	37.8	MPH
15th PERCENTILE SPEED:	32.7	MPH

PDV-50

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

Hanford & Cisneros, Inc.
Consulting Traffic Engineers
17631 E. 17th Street, Suite 100
Tustin, California 92780
714.731.9401 fax: 714.731.9405
www.hanford-ciscos.com

AGENCY: CITY OF LAGUNA HILLS
STREET: PASEO DE VALENCIA
LOCATION: EL TORO RD TO LOS ALISOS BL

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/04/13
START TIME: 1:30 PM
END TIME: 2:00 PM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49	/	1
48		0
47		0
46		0
45	/	1
44	/	2
43	///	4
42	///	4
41	////	8
40	////	8
39	//// /	11
38	//// ///	13
37	//// ///	8
36	//// ///	8
35	//// ////	9
34	//// /	5
33	//// ////	10
32	//// //	7
31	///	3
30	///	3
29	/	1
28	/	1
27	/	1
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49			1	49
48	/	2	2	48
47		0	2	47
46	/	1	3	46
45	///	4	7	45
44	///	2	9	44
43	///	1	10	43
42	//// //	7	17	42
41	//// /////	10	27	41
40	//// //	7	34	40
39	//// /	6	40	39
38	//// //	7	47	38
37	//// //	7	54	37
36	//// //	7	61	36
35	//// /	4	65	35
34	//	2	67	34
33	///	3	70	33
32	////	5	75	32
31	//	2	77	31
30	///	3	80	30
29	//	2	82	29
28	/	1	83	28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

PASEO DE VALENCIA — **LOS ALISOS BL TO LAGUNA HILLS DR**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 10:30 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF LOS ALISOS
DATE OF SURVEY	11/5/2013
85th PERCENTILE	47.6 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	73.3 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	16
TOTAL ACCIDENTS	25
ANNUAL ACCIDENT RATE	8.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	1.06 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	31,800
LANE CONFIGURATION	2 LANES (SB) - 3 LANES (NB)
TRAFFIC CONTROLS	SIGNAL - LOS ALISOS / KENNINGTON / BECKENHAM / LAGUNA HILLS
CROSSWALKS	AT LOS ALISOS / BECKENHAM / LAGUNA HILLS (sch)
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.65
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	CONSTANT GRADUAL-MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO (NB) - NO / NO (SB)
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL**
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 45 mph is within 2.6 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

File: PDV-51

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

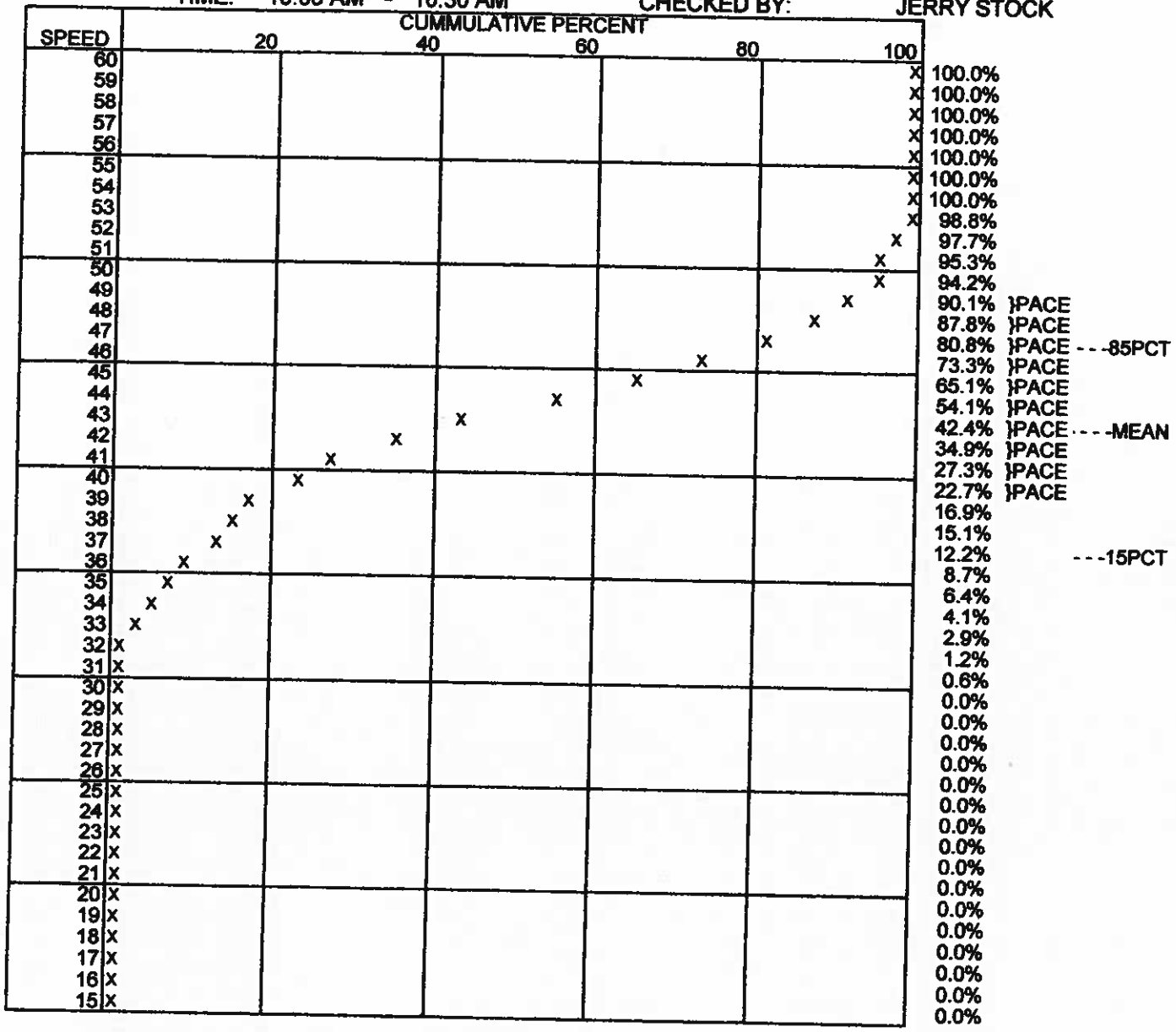
HCI

CITY OF LAGUNA HILLS

PASEO DE VALENCIA — LOS ALISOS BL TO LAGUNA HILLS DR

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 10:00 AM - 10:30 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	9.9	%
PERCENT IN PACE:	73.3	%
PERCENT UNDER PACE:	16.9	%

85th PERCENTILE SPEED:	47.6	MPH
MEDIAN SPEED:	43.7	MPH
15th PERCENTILE SPEED:	38.0	MPH

PDV-51

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

Hastrup & Orsell, Inc.
Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: PASEO DE VALENCIA
LOCATION: LOS ALISOS BL TO LAGUNA HILLS DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 10:00 AM
END TIME: 10:30 AM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54	/	2
53	/	2
52		0
51	/	1
50	//	3
49	//	2
48	///	6
47	///	8
46	////	5
45	//// /	12
44	//// //	9
43	////	5
42	////	8
41	////	3
40	////	5
39		0
38	///	3
37	///	6
36	//	4
35	/	2
34		1
33	///	3
32	/	1
31	/	1
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54	//	4	2	54
53	//	4	2	53
52	///	2	4	52
51	////	6	2	51
50	////	5	7	50
49	//// /	9	4	49
48	//// //	7	12	48
47	//// ///	13	13	47
46	//// ///	13	14	46
45	//// ///	8	14	45
44	////	5	20	44
43	////	5	13	43
42	////	3	13	42
41	////	2	8	41
40	////	0	10	40
39		0	3	39
38	/	2	5	38
37		1	6	37
36			4	36
35			4	35
34			2	34
33			3	33
32			1	32
31				31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

PASEO DE VALENCIA — **LAGUNA HILLS DR TO ALICIA PKWY**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF LAGUNA HILLS
DATE OF SURVEY	11/5/2013
85th PERCENTILE	45.0 MPH
10 MPH PACE	37 - 46 MPH
PERCENT IN PACE	72.0 %
POSTED SPEED LIMIT	45 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	5
TOTAL ACCIDENTS	18
ANNUAL ACCIDENT RATE	2.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.93 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	24,600
LANE CONFIGURATION	3 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LAGUNA HILLS / HAWK / ALICIA
CROSSWALKS	AT LAGUNA HILLS / HAWK (sch) / ALICIA
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO PARKING ANYTIME
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.30
VERTICAL CURVE	SLIGHT UPHILL GRADE (NB)
HORIZONTAL CURVE	GRADUAL "C" CURVE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	RAISED MEDIAN ISLAND
	SHORT DISTANCE BTWN SIGNALS / NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL** / LAGUNA HILLS HIGH SCH / COMMERCIAL (at Alicia)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 45 mph is at the 85th percentile speed of 45.0 mph and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

* 25 MPH When Children Present, School Zone

File: PDV-52

RADAR SPEED DISTRIBUTION SHEET

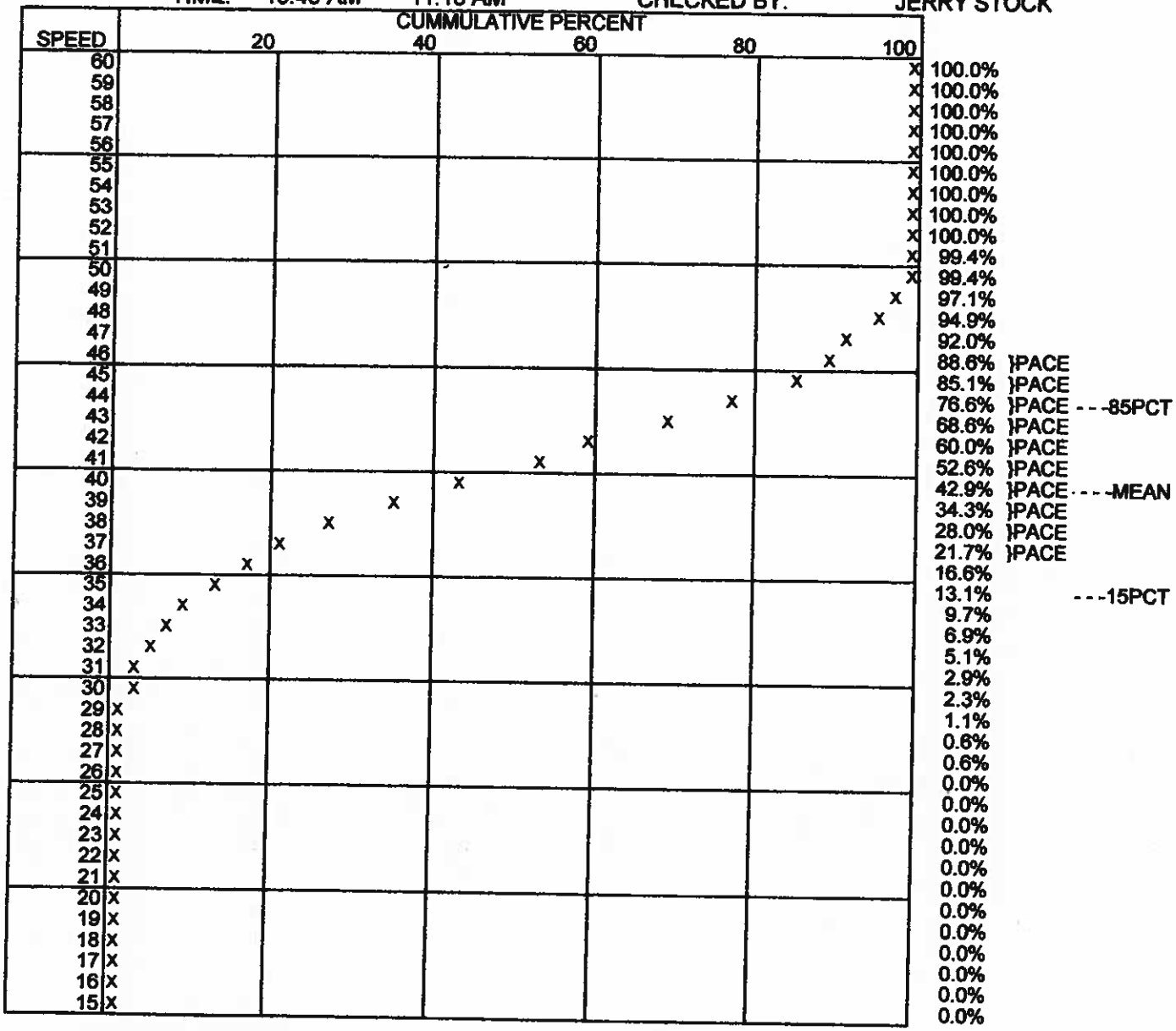
HCI

CITY OF LAGUNA HILLS

PASEO DE VALENCIA — LAGUNA HILLS DR TO ALICIA PKWY

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	46	MPH
LOWER LIMIT 10 MPH PACE:	37	MPH
PERCENT OVER PACE:	14.9	%
PERCENT IN PACE:	72.0	%
PERCENT UNDER PACE:	16.6	%

85th PERCENTILE SPEED:	45.0	MPH
MEDIAN SPEED:	40.7	MPH
15th PERCENTILE SPEED:	35.5	MPH

PDV-52

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

Hastings & Chavez, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: PASEO DE VALENCIA
LOCATION: LAGUNA HILLS TO ALICIA PKWY

WEATHER: SUNNY
ROAD CONDITION: DR
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 10:45 AM
END TIME: 11:15 AM

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50	//	2
49	//	2
48	//	2
47	//	2
46	//	2
45	///	3
44	///	3
43	///	3
42	////	4
41	////	4
40	////	4
39	////	4
38	///	3
37	///	3
36		
35	///	3
34	///	3
33	///	3
32	///	3
31	//	2
30	//	2
29		
28		
27	/	1
28		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52	/	1	1	52
51				51
50	//	2	3	50
49	///	3	6	49
48	///	3	9	48
47	////	4	13	47
46	////	4	17	46
45	//// ///	8	25	45
44	//// ///	10	35	44
43	//// /// //	12	47	43
42	//// /// ///	13	60	42
41	//// /// ///	13	73	41
40	//// /// ///	13	86	40
39	//// /// ////	14	100	39
38	//// /// ////	14	114	38
37	//// /// ////	14	128	37
36	//// /// ////	14	142	36
35	//// /// ////	14	156	35
34	//// /// ////	14	170	34
33	//// /// ////	14	184	33
32	//// /// ////	14	198	32
31	//// /// ////	14	212	31
30	//// /// ////	14	226	30
29	//// /// ////	14	240	29
28	//// /// ////	14	254	28
27	//// /// ////	14	268	27
26	//// /// ////	14	282	26
25	//// /// ////	14	296	25
24	//// /// ////	14	310	24
23	//// /// ////	14	324	23
22	//// /// ////	14	338	22
21	//// /// ////	14	352	21
20	//// /// ////	14	366	20
19	//// /// ////	14	380	19
18	//// /// ////	14	394	18
17	//// /// ////	14	408	17
16	//// /// ////	14	422	16
15	//// /// ////	14	436	15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

PASEO DE VALENCIA — **ALICIA PKWY TO LA PAZ RD**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 11:15 AM - 11:45 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF SUNBURST
DATE OF SURVEY	11/5/2013
85th PERCENTILE	49.0 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	73.4 %
POSTED SPEED LIMIT	45 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	9
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.14 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	10,900
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - ALICIA / LA PAZ
CROSSWALKS	AT ALICIA (sch) / LA PAZ (sch)
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.91
VERTICAL CURVE	SLIGHT-GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL-MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED-FAIR SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	DBL YELLOW PAINTED ISLAND

ADJACENT LAND USE	RESIDENTIAL** / COMMERCIAL (at Alicia)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 45 mph is within 4.0 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

* 25 MPH When Children Present, School Zone

File: PDV-53

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

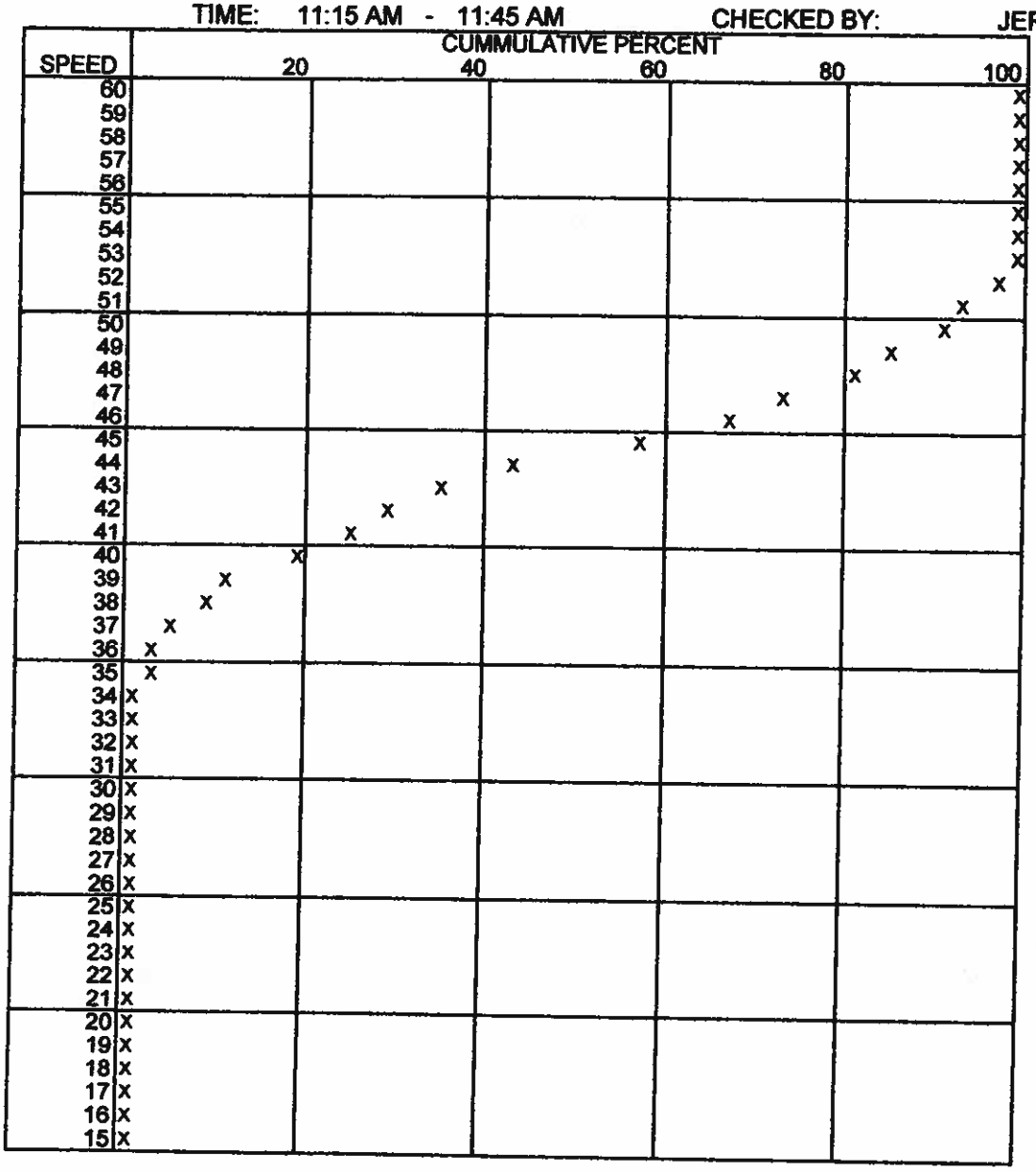
HCI

CITY OF LAGUNA HILLS

PASEO DE VALENCIA — ALICIA PKWY TO LA PAZ RD

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 11:15 AM - 11:45 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	49	MPH
LOWER LIMIT 10 MPH PACE:	40	MPH
PERCENT OVER PACE:	14.8	%
PERCENT IN PACE:	73.4	%
PERCENT UNDER PACE:	11.7	%

85th PERCENTILE SPEED:	49.0	MPH
MEDIAN SPEED:	44.4	MPH
15th PERCENTILE SPEED:	39.5	MPH

PDV-53

Radar Speed Survey Field Sheet

Hastings & Chavez, Inc.
Consulting Traffic Engineers
135 E. 17th Street, Suite 101
Tustin, California 92780
714.731.9401 fax: 714.731.9405
www.hastings-chavez.com

AGENCY: CITY OF LAGUNA HILLS
STREET: PASEO DE VALENCIA
LOCATION: ALICIA PKWY TO LA PAZ RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 11:15 AM
END TIME: 11:45 AM VAL

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54	//	2
53	//	2
52	//	2
51	////	4
50	////	5
49	////////	8
48	////////	8
47	////	4
46	////	4
45	////	4
44	////	4
43	////	4
42	////	4
41	////	4
40	////	4
39	////	4
38	//	2
37	//	2
36		0
35	/	1
34		
33		
32		
31	/	1
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54			2	54
53	/	1	3	53
52	//	2	5	52
51	//	2	5	51
50	///	3	8	50
49	///	3	11	49
48	////	4	15	48
47	////	4	19	47
46	////////	8	27	46
45	////////	8	35	45
44	////////	8	43	44
43	////////	8	51	43
42	////////	8	59	42
41	////////	8	67	41
40	////////	8	75	40
39	////////	8	83	39
38	////////	8	91	38
37	////////	8	99	37
36	////////	8	107	36
35	////////	8	115	35
34	////////	8	123	34
33	////////	8	131	33
32	////////	8	139	32
31	////////	8	147	31
30	////////	8	155	30
29	////////	8	163	29
28	////////	8	171	28
27	////////	8	179	27
26	////////	8	187	26
25	////////	8	195	25
24	////////	8	203	24
23	////////	8	211	23
22	////////	8	219	22
21	////////	8	227	21
20	////////	8	235	20
19	////////	8	243	19
18	////////	8	251	18
17	////////	8	259	17
16	////////	8	267	16
15	////////	8	275	15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

PASEO DE VALENCIA — **LA PAZ RD TO CABOT RD**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 12:00 PM - 12:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF FIRENZE
DATE OF SURVEY	11/5/2013
85th PERCENTILE	46.6 MPH
10 MPH PACE	40 - 49 MPH
PERCENT IN PACE	84.4 %
POSTED SPEED LIMIT	45 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	5,500
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LA PAZ / CABOT
CROSSWALKS	AT LA PAZ (sch) / CABOT
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTME ENTIRE BLOCK
OTHER	BIKE ROUTE / BUS STOPS
	HEAVY ON-STREET PARKING (NB) NEAR SCH AT LA PAZ

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.60
VERTICAL CURVE	SLIGHT-GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL-MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	DBL YELLOW PAINTED ISLAND
	VERY NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL** / BUSINESS (at PDV)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 45 mph is within 1.6 mph of the 85th percentile speed and meets CVC standards.

** RESIDENTIAL (non-fronting to roadway, separated by brick walls or landscaped hillsides)

* 25 MPH When Children Present, School Zone

File: PDV-54

RADAR SPEED DISTRIBUTION SHEET

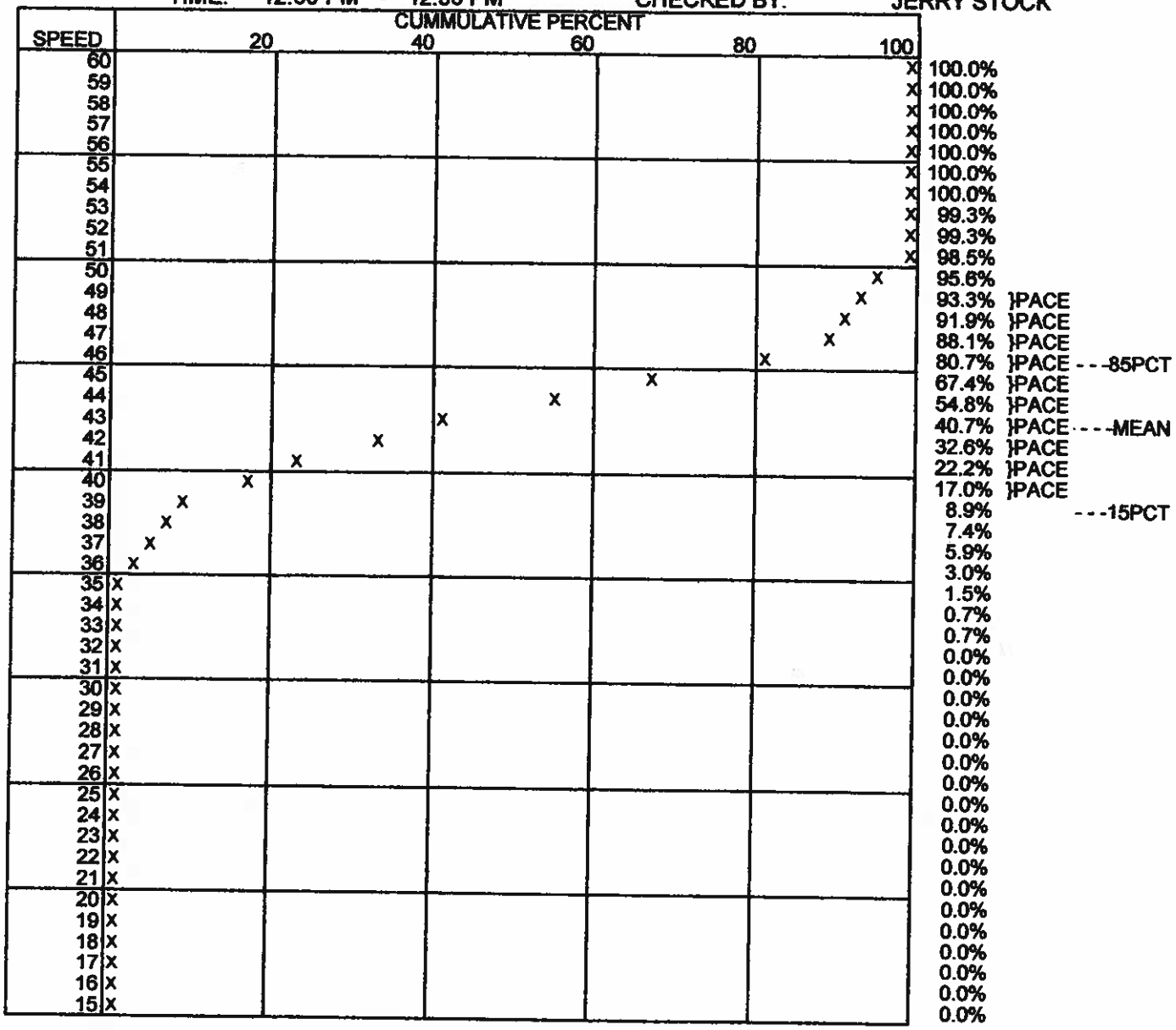
HCI

CITY OF LAGUNA HILLS

PASEO DE VALENCIA — LA PAZ RD TO CABOT RD

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 12:00 PM - 12:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	49	MPH	
LOWER LIMIT 10 MPH PACE:	40	MPH	
PERCENT OVER PACE:	8.1	%	
PERCENT IN PACE:	84.4	%	
PERCENT UNDER PACE:	8.9	%	
85th PERCENTILE SPEED:	46.6	MPH	
MEDIAN SPEED:	43.7	MPH	
15th PERCENTILE SPEED:	39.8	MPH	

PDV-54

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

Consulting Traffic Engineers
Hartzog & Crabill, Inc.

AGENCY: CITY OF LAGUNA HILLS
STREET: PASEO DE VALENCIA
LOCATION: LA PAZ RD TO CABOT RD

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 12:00 PM
END TIME: 12:30 PM VAL

DIRECTION: WESTBOUND (NB)

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51	/	1
50	/	0
49	/	1
48	/	0
47	////	5
46	//////////	12
45	//////	6
44	//////	9
43	////	6
42	////	6
41	///	3
40	//////	8
39		2
38		0
37	///	3
36	/	1
35	/	1
34		0
33	/	1
32		
31		
30		
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND (SB)

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54	/	1	1	54
53		0	1	53
52	/	1	2	52
51	///	3	4	51
50	///	3	7	50
49	////	4	11	49
48	/////	5	16	48
47	//////	6	22	47
46	//////////	11	33	46
45	//////////	10	43	45
44	/////	5	48	44
43	////	4	52	43
42	///	3	55	42
41		0	55	41
40	//	2	57	40
39	/	1	58	39
38			58	38
37			58	37
36			58	36
35			58	35
34			58	34
33			58	33
32			58	32
31			58	31
30			58	30
29			58	29
28			58	28
27			58	27
26			58	26
25			58	25
24			58	24
23			58	23
22			58	22
21			58	21
20			58	20
19			58	19
18			58	18
17			58	17
16			58	16
15			58	15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

RAPID FALLS ROAD — **CABOT RD TO LOST TRAIL DR**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 2:30 PM - 3:30 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF LOST TRAIL
DATE OF SURVEY	11/19/2013
85th PERCENTILE	30.6 MPH
10 MPH PACE	23 - 32 MPH
PERCENT IN PACE	88.3 %
POSTED SPEED LIMIT	25 MPH / 30 MPH (WB)

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	3
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	2,000
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - CABOT, STOP - LOST TRAIL
CROSSWALKS	AT CABOT
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO PARKING ANYTIME ENTIRE BLOCK
OTHER	AREAS OF PARKING WITH PERMIT (WB)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.41
VERTICAL CURVE	GRADUAL-MODERATE UPHILL GRADES (WB)
HORIZONTAL CURVE	GRADUAL-MODERATE "C" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES (many)
STREET LIGHTING	YES
OTHER	EQUESTRIAN TRAILS
	DBL YELLOW CENTERLINE & RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (F)
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO CHANGE - CONFLICTING SPEEDS / REMOVE 30 MPH

JUSTIFICATION:

This section of Rapid Falls Road is a two lane roadway. The segment has conflicting speed limits postings, with 25 mph at both ends of segments and a 30 mph speed sign posted westbound only near Cabot Rd. The speed study results show an 85th percentile speed of 30.6 mph and a 10 mph pace range of 23 to 32 mph. With the area consisting of 100% residential, many driveways fronting the roadway, neighborhood park, moderate roadway curves and grades, and several areas of limited sight distance, it is recommended that the existing 25 mph be maintained. With that, it is recommended that the 30 mph speed sign near Cabot Rd be removed.

NF = (non-fronting to roadway, separated by brick walls or landscaped hillsides)

F = Fronting to roadway

File: Rapid Falls 2013-55

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

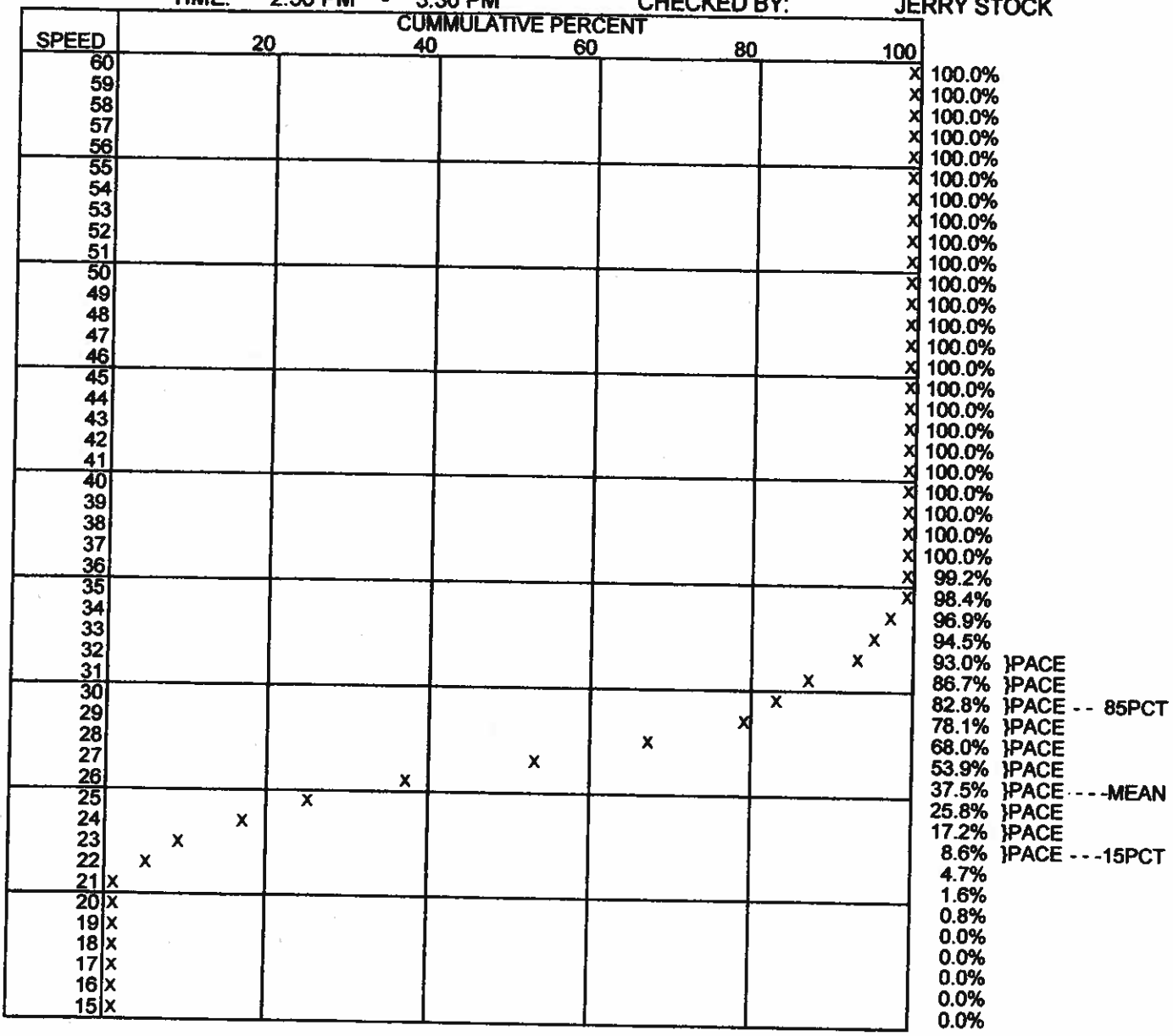
CITY OF LAGUNA HILLS

HCI

RAPID FALLS ROAD — CABOT RD TO LOST TRAIL DR

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 2:30 PM - 3:30 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	32	MPH
LOWER LIMIT 10 MPH PACE:	23	MPH
PERCENT OVER PACE:	7.0	%
PERCENT IN PACE:	88.3	%
PERCENT UNDER PACE:	4.7	%

85th PERCENTILE SPEED:	30.6	MPH
MEDIAN SPEED:	26.8	MPH
15th PERCENTILE SPEED:	23.7	MPH

Rapid Falls 2013-55

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

Consulting Traffic Engineers
Marticorena & Associates, Inc.

AGENCY: CITY OF LAGUNA HILLS
STREET: RAPID FALLS ROAD
LOCATION: CABOT RD TO LOST TRAIL DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/19/13
START TIME: 2:30 PM
END TIME: 3:30 PM VHL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37	/	1
36	/	1
35		
34		0
33	//	2
32	//	2
31	///	3
30		2
29	///	3
28	///	3
27	///	3
26	///	3
25	///	3
24	///	3
23	//	2
22	//	2
21	/	1
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 10 15 20 25 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35	/	1
34	///	3
33		
32	///	3
31		
30	///	3
29	////	4
28	////	4
27	////	4
26	////	4
25	////	4
24	////	4
23	////	4
22	////	4
21	////	4
20	////	4
19	////	4
18	////	4
17	////	4
16	////	4
15	////	4

MPH	CUMULATIVE TOTAL
60	
59	
58	
57	
56	
55	
54	
53	
52	
51	
50	
49	
48	
47	
46	
45	
44	
43	
42	
41	
40	
39	
38	1
37	2
36	3
35	5
34	8
33	13
32	18
31	23
30	28
29	32
28	36
27	40
26	44
25	48
24	52
23	56
22	60
21	64
20	68
19	72
18	76
17	80
16	84
15	88

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

RIDGE ROUTE DRIVE — **AVD DE LA CARLOTA TO MOULTON PKWY**

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 11:15 AM - 11:45 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF MOULTON
DATE OF SURVEY	11/4/2013
85th PERCENTILE	46.2 MPH
10 MPH PACE	39 - 48 MPH
PERCENT IN PACE	71.8 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	3
TOTAL ACCIDENTS	6
ANNUAL ACCIDENT RATE	1.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.54 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	8,100
LANE CONFIGURATION	1-2 LANE PER DIRECTION (2 lanes near Carlota)
TRAFFIC CONTROLS	SIGNAL - AVENIDA DE LA CARLOTA / PERALTA / MOULTON
CROSSWALKS	AT AVENIDA DE LA CARLOTA /PERALTA / MOULTON
PEDESTRIAN/BICYCLES	FEW / FEW
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTME ENTIRE BLOCK
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.94
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	GRADUAL "C" CURVE (near Avd Carlota)
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / YES
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE

ADJACENT LAND USE	RESIDENTIAL (NF) / COMMERCIAL / BUSINESS / DOG PARK
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 45 mph is within 1.2 mph of the 85th percentile speed and meets CVC standards.

NF = Non-fronting

File: Ridge Route 2013-56

RADAR SPEED DISTRIBUTION SHEET

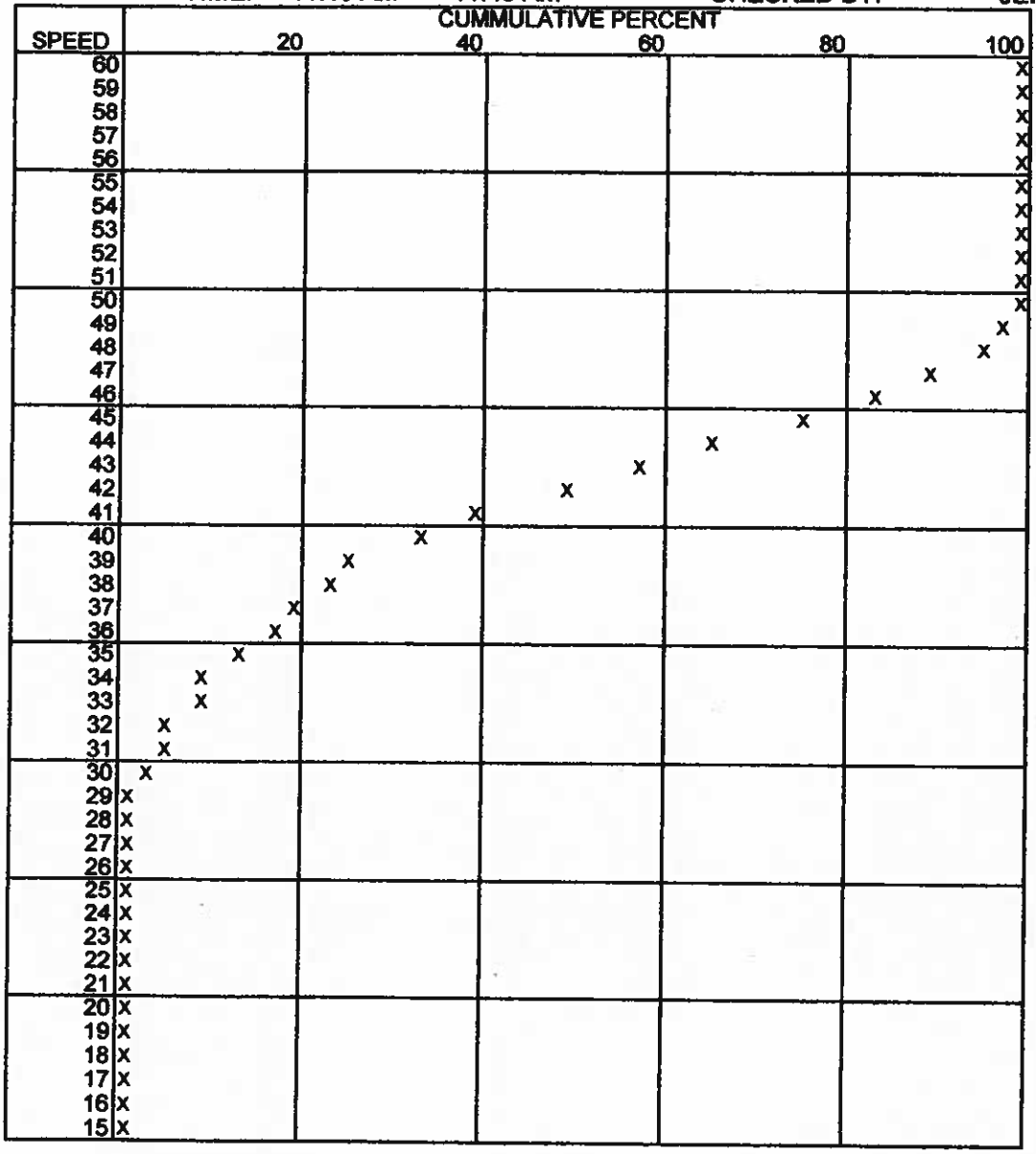
HCI

CITY OF LAGUNA HILLS

RIDGE ROUTE DRIVE — AVD DE LA CARLOTA TO MOULTON PKWY

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 11:15 AM - 11:45 AM — CHECKED BY: JERRY STOCK



SPEED			
60	X	100.0%	
59	X	100.0%	
58	X	100.0%	
57	X	100.0%	
56	X	100.0%	
55	X	100.0%	
54	X	100.0%	
53	X	100.0%	
52	X	99.4%	
51	X	98.7%	
50	X	98.7%	
49	X	96.8%	
48	X	94.9%	}PACE
47	X	89.7%	}PACE
46	X	84.0%	}PACE - - -85PCT
45	X	75.6%	}PACE
44	X	64.1%	}PACE
43	X	57.1%	}PACE
42	X	50.0%	}PACE - - - -MEAN
41	X	39.1%	}PACE
40	X	32.1%	}PACE
39	X	25.6%	}PACE
38	X	23.1%	
37	X	19.9%	
36	X	17.9%	
35	X	12.8%	- - -15PCT
34	X	9.6%	
33	X	9.6%	
32	X	5.8%	
31	X	4.5%	
30	X	3.8%	
29	X	1.9%	
28	X	0.6%	
27	X	0.6%	
26	X	0.0%	
25	X	0.0%	
24	X	0.0%	
23	X	0.0%	
22	X	0.0%	
21	X	0.0%	
20	X	0.0%	
19	X	0.0%	
18	X	0.0%	
17	X	0.0%	
16	X	0.0%	
15	X	0.0%	

UPPER LIMIT 10 MPH PACE:	48	MPH
LOWER LIMIT 10 MPH PACE:	39	MPH
PERCENT OVER PACE:	5.1	%
PERCENT IN PACE:	71.8	%
PERCENT UNDER PACE:	23.1	%

85th PERCENTILE SPEED:	46.2	MPH
MEDIAN SPEED:	42.0	MPH
15th PERCENTILE SPEED:	35.4	MPH

Ridge Route 2013-56

$SPD-HCI.dwg

Radar Speed Survey Field Sheet

Consulting Traffic Engineers
Hartzog & Crabbill, Inc.

AGENCY: CITY OF LAGUNA HILLS
STREET: RIDGE ROUTE DRIVE
LOCATION: AVD. DE LA CARLOTA TO MOULTON PKWY

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/04/13
START TIME: 11:15 AM
END TIME: 11:45 AM VAL

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50	//	2
49	//	2
48	///	3
47	////	4
46	////	5
45	//// ///	9
44	////	5
43	////	6
42	//// ///	9
41	////	5
40	////	5
39	////	7
38	////	4
37	///	3
36	///	3
35	//	2
34		3
33	/	1
32	/	2
31	/	1
30	/	1
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53	/	1	1	53
52	/	1	1	52
51			0	51
50	/	1	3	50
49	//	2	3	49
48	////	5	8	48
47	////	4	9	47
46	//// //	9	13	46
45	//// //	9	18	45
44	////	6	11	44
43	////	5	11	43
42	//// ///	8	17	42
41	////	6	17	41
40	///	3	10	40
39		0	4	39
38	//	3	5	38
37	//	2	3	37
36	//// /	6	8	36
35	//	2	5	35
34		0	0	34
33	///	4	6	33
32		0	2	32
31		0	1	31
30	//	2	3	30
29	//	2	2	29
28		0	0	28
27	/	1		27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

RIDGE ROUTE DRIVE — **MOULTON PKWY TO SANTA VITTORIA**

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF MILL CREEK
DATE OF SURVEY	11/4/2013
85th PERCENTILE	45.4 MPH
10 MPH PACE	36 - 45 MPH
PERCENT IN PACE	63.1 %
POSTED SPEED LIMIT	45 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	4,200
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - MOULTON, STOP - SANTA VITTORIA
CROSSWALKS	AT MOULTON / SANTA VITTORIA
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	YES
ON-STREET PARKING	NO STOPPING ANYTME ENTIRE BLOCK
OTHER	

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.80
VERTICAL CURVE	MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	SLIGHT "S" CURVE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	FAIR
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	DBL YELLOW PAINTED ISLAND
	WIDE ROADWAY

ADJACENT LAND USE	RESIDENTIAL (NF) / COMMERCIAL (at Moulton)
RECOMMENDED SPEED LIMIT	45 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 45 mph is within 0.4 mph of the 85th percentile speed and meets CVC standards.

NF = Non-fronting to roadway

File: Ridge Route 2013-57

5/21/2014 ITEM NO. 4.1

RADAR SPEED DISTRIBUTION SHEET

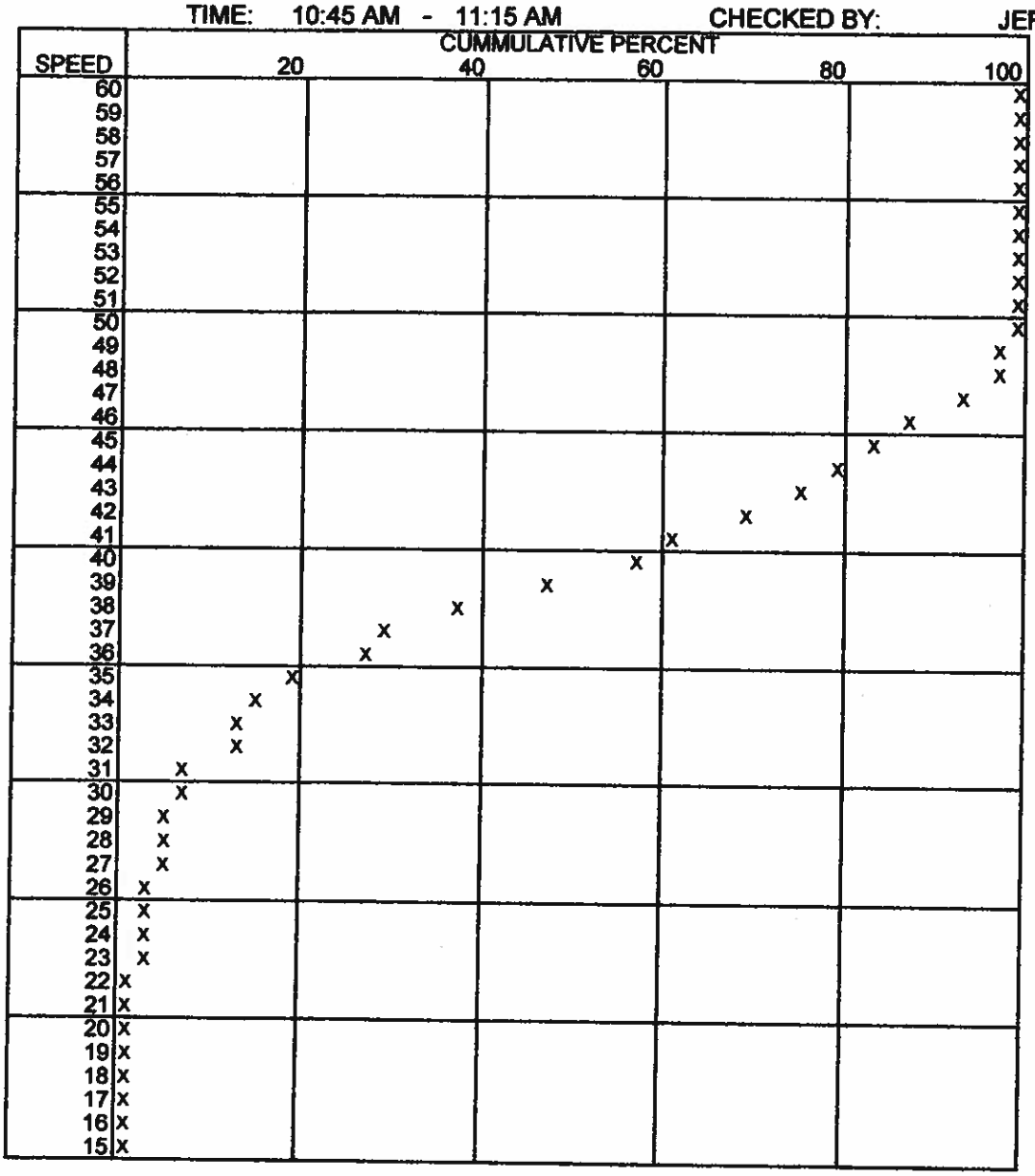
CITY OF LAGUNA HILLS

HCI

RIDGE ROUTE DRIVE — MOULTON PKWY TO SANTA VITTORIA

DATE: 11/4/2013 — SURVEY BY: C. BUENDIA

TIME: 10:45 AM - 11:15 AM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	45	MPH	85th PERCENTILE SPEED:	45.4	MPH
LOWER LIMIT 10 MPH PACE:	36	MPH	MEDIAN SPEED:	39.3	MPH
PERCENT OVER PACE:	22.0	%	15th PERCENTILE SPEED:	34.0	MPH
PERCENT IN PACE:	63.1	%			
PERCENT UNDER PACE:	19.9	%			

Ridge Route 2013-57

Radar Speed Survey Field Sheet

Hastings & Chabre, Inc. Consulting Traffic Engineers
27632 E. Fifth Street, Suite 100
Tustin, California 92780
714.731.9401 fax 714.731.9404
www.hastings-chabre.com

AGENCY: CITY OF LAGUNA HILLS
STREET: RIDGE ROUTE DRIVE
LOCATION: MOULTON PARKWAY TO SANTA VITTORIA DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/04/13
START TIME: 10:45 AM
END TIME: 11:15 AM VAL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52	/	1
51		
50		8
49	/	0
48	///	3
47	///	2
46	///	3
45		0
44	/	2
43	/	2
42	////	5
41	////	3
40	/////	6
39	/////	8
38	////	6
37	////	4
36	////	6
35	///	3
34	///	3
33		0
32	///	4
31		0
30	/	
29		
28		8
27	/	
26		0
25	//	2
24		0
23	/	
22	/	1
21	/	
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52	/		2	52
51		1	0	51
50	/	0	1	50
49	/	1	2	49
48	///	3	6	48
47	///	4	6	47
46	///	4	9	46
45	/////	7	7	45
44	///	3	5	44
43	///	5	7	43
42	///	3	12	42
41	///	3	6	41
40	/////	8	14	40
39	/////	6	14	39
38	////	4	10	38
37			5	37
36	///	3	9	36
35	///	4	7	35
34		0	3	34
33	/	1	1	33
32	///	3	7	32
31		0	0	31
30	/	1	2	30
29	/	1	1	29
28	/	1	1	28
27				27
26			0	26
25			2	25
24			0	24
23			1	23
22			1	22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

SAN REMO DRIVE — **SANTA VITTORIA DR TO SANTA MARIA AVE**

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 4:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF PALERMA
DATE OF SURVEY	11/20/2013
85th PERCENTILE	32.0 MPH
10 MPH PACE	23 - 32 MPH
PERCENT IN PACE	80.3 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	1
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	2.32 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,000
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - SANTA MARIA / SANTA VITTORIA
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO STOPPING ANYTME
OTHER	BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.59
VERTICAL CURVE	CONSTANT MODERATE UPHILL GRADES (NB)
HORIZONTAL CURVE	MODERATE - SHARP "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (poor)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	SINGLE YELLOW CENTERLINE
	NARROW SHOULDERS

ADJACENT LAND USE	RESIDENTIAL (NF) / NEIGHBORHOOD PARK
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended speed of 30 mph is within 2.0 mph of the 85th percentile speed and meets CVC standards.

NF = Non-fronting to roadway

File: San Remo 2013-58

RADAR SPEED DISTRIBUTION SHEET

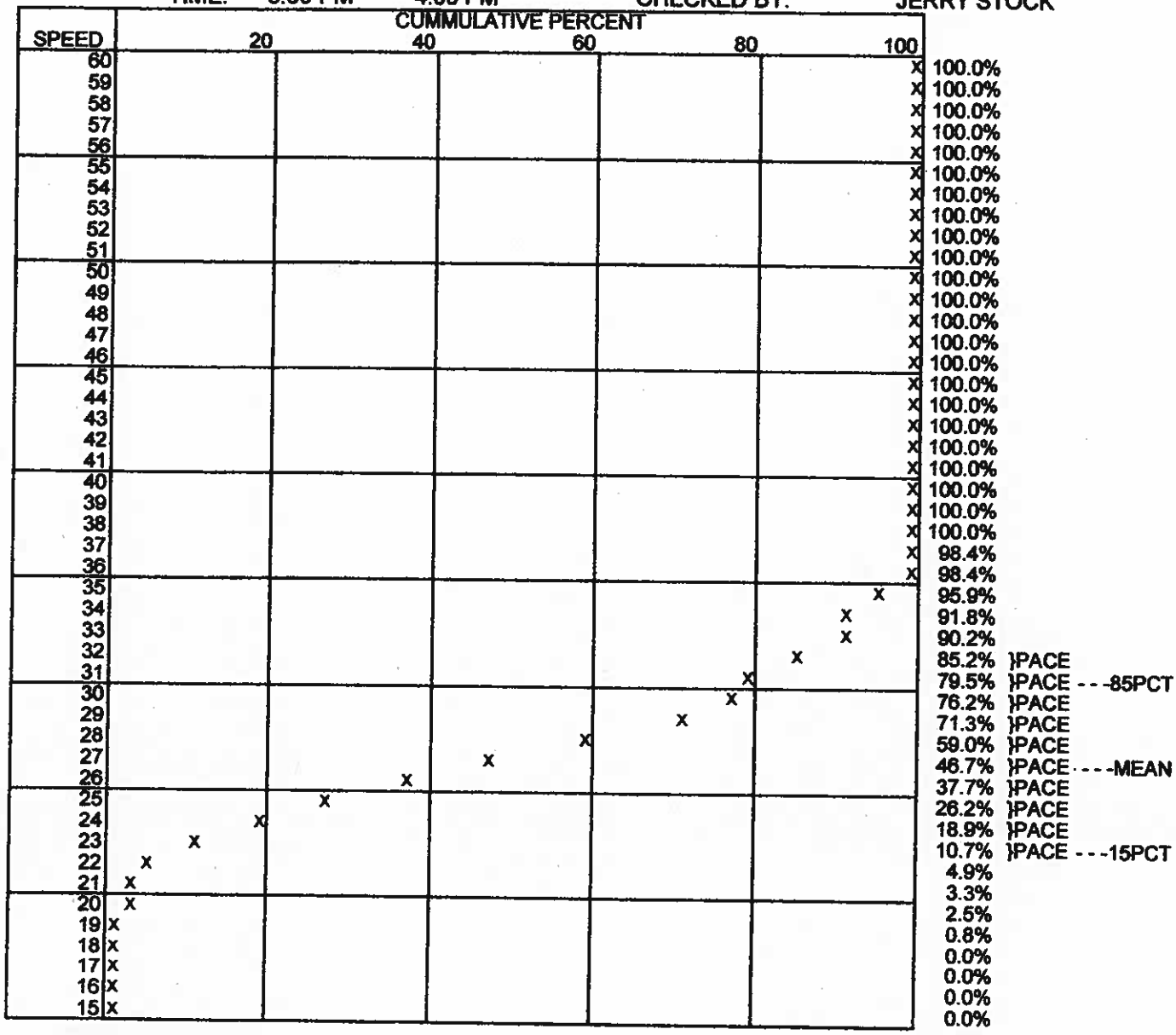
CITY OF LAGUNA HILLS

HCI

SAN REMO DRIVE — SANTA VITTORIA DR TO SANTA MARIA AVE

DATE: 11/20/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 4:00 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	32	MPH	85th PERCENTILE SPEED:	32.0 MPH
LOWER LIMIT 10 MPH PACE:	23	MPH	MEDIAN SPEED:	27.3 MPH
PERCENT OVER PACE:	14.8	%	15th PERCENTILE SPEED:	23.5 MPH
PERCENT IN PACE:	80.3	%		
PERCENT UNDER PACE:	4.9	%		

San Remo 2013-58

Radar Speed Survey Field Sheet

HARRIS & ASSOCIATES, INC. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: SAN REMO DRIVE
LOCATION: SANTA VITTORIA DR TO SANTA MARIA AVE

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/20/13
START TIME: 3:00 PM
END TIME: 4:00 PM

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38	//	2
37		0
36	///	3
35	////	4
34	////	2
33	/////	5
32	///	3
31		1
30	///	4
29	//////	7
28	//////	7
27	//////	7
26	////	4
25	//////	6
24	////	4
23	///	3
22	//	2
21		0
20	/	1
19	/	1
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38			2	38
37			0	37
36	/	1	3	36
35	/	1	5	35
34		0	2	34
33	/	1	6	33
32	///	4	7	32
31	///	3	4	31
30	///	7	16	30
29	//////	8	15	29
28	//////	8	15	28
27	//////	8	11	27
26	//////	8	14	26
25	/////	5	9	25
24	////	4	10	24
23	////	4	7	23
22		0	2	22
21			1	21
20	/	1	4	20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

SANTA MARIA AVENUE — **SAN REMO DR TO SANTA VITTORIA DR**

DATE: 11/19/2013 — SURVEY BY: C. BUENDIA

TIME: 2:45 PM - 2:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF SAN REMO
DATE OF SURVEY	11/19/2013
85th PERCENTILE	43.1 MPH
10 MPH PACE	36 - 45 MPH
PERCENT IN PACE	82.9 %
POSTED SPEED LIMIT	40 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	2
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	7,700
LANE CONFIGURATION	2 LANES PER DIRECTION
TRAFFIC CONTROLS	STOP - VIA VISTA
CROSSWALKS	AT VIA VISTA
PEDESTRIAN/BICYCLES	YES / YES
TRUCK TRAFFIC	NO
ON-STREET PARKING	PARTIAL
OTHER	BUS STOPS NO PARKING ENTIRE BLOCK

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.71
VERTICAL CURVE	SLIGHT UP-DOWNHILL GRADES
HORIZONTAL CURVE	MODERATE "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (poor)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE & RAISED MEDIAN ISLAND

ADJACENT LAND USE	RESIDENTIAL (F+NF) / ELEM SCHOOL / PARK / COMMERCIAL (at Moulton)
RECOMMENDED SPEED LIMIT	40 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 40 mph speed limit is within 3.1 mph of the 85th percentile speed and meets CVC standards.

* 25 MPH When Children Present, School Zone

F+NF = Fronting + Non-fronting

File: Santa Maria 2013-69

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

SANTA MARIA AVENUE

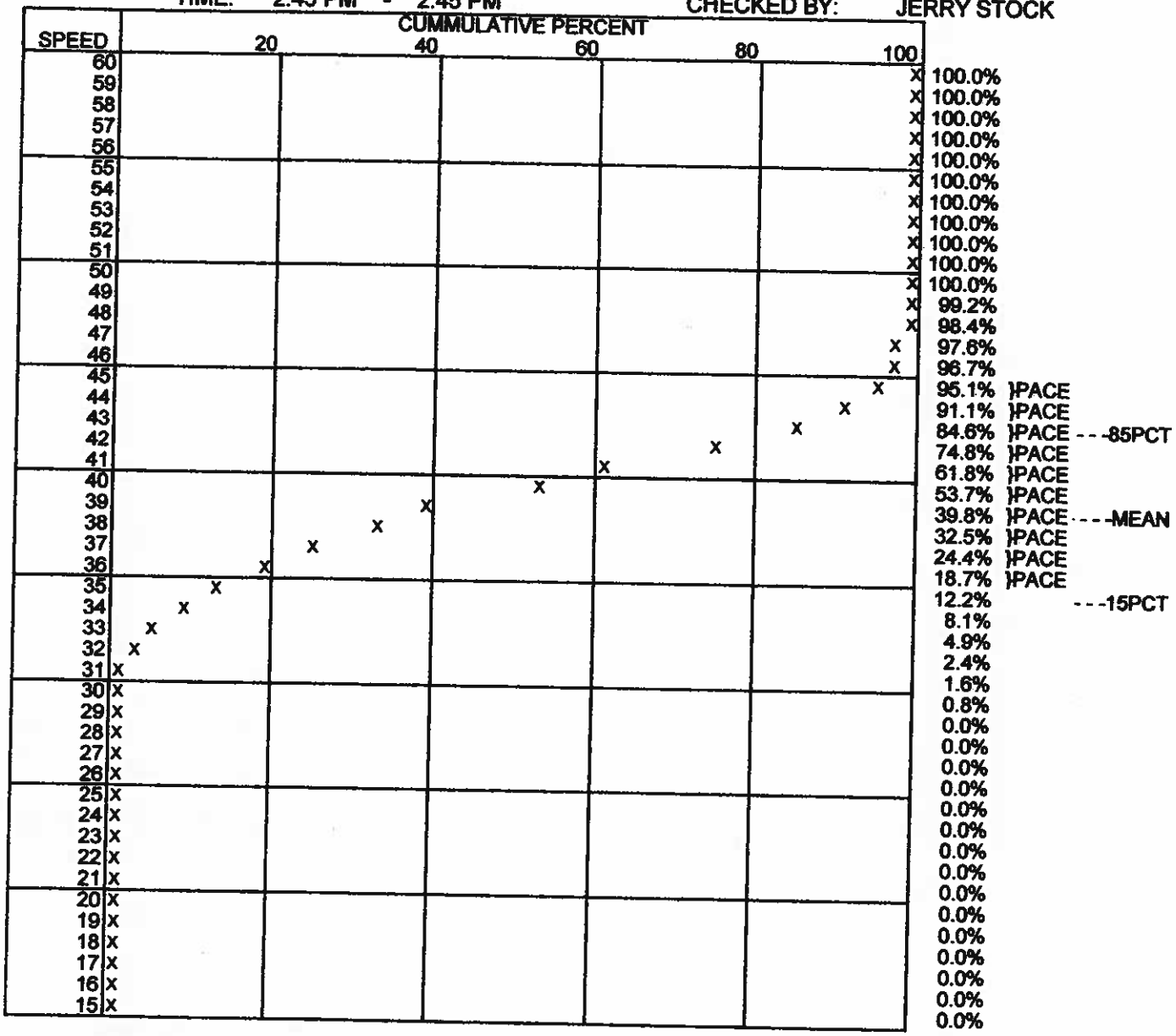
SAN REMO DR TO SANTA VITTORIA DR

DATE: 11/19/2013

TIME: 2:45 PM - 2:45 PM

SURVEY BY: C. BUENDIA

CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	45	MPH
LOWER LIMIT 10 MPH PACE:	36	MPH
PERCENT OVER PACE:	8.9	%
PERCENT IN PACE:	82.9	%
PERCENT UNDER PACE:	12.2	%

85th PERCENTILE SPEED:	43.1	MPH
MEDIAN SPEED:	39.7	MPH
15th PERCENTILE SPEED:	35.4	MPH

Santa Maria 2013-59

Radar Speed Survey Field Sheet

HANSON & CIVIL Inc.
Consulting Traffic Engineers
17511 E. 17th Street, Suite 109
Tustin, California 92780
714.731.9403 Fax: 714.731.9595
www.hansoncivil.com

AGENCY: CITY OF LAGUNA HILLS
STREET: SANTA MARIA AVENUE
LOCATION: SAN REMO TO SANTA VITTORIA

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/26/13
START TIME: 2:15 PM
END TIME: 2:45 PM VHL

DIRECTION: EASTBOUND

MPH	NUMBER OF VEHICLES	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47	/	1
46	/	1
45	//	2
44	////	4
43	//////	6
42	//////	6
41	/////	5
40	//////	6
39	/////	5
38	/////	5
37	///	3
36	////	4
35	///	3
34	/	1
33	///	3
32		0
31	/	1
30	/	1
29		
28		
27		
26		
25		
24		
23		
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: WESTBOUND

MPH	NUMBER OF VEHICLES	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50	/	1	1	50
49	/	1	1	49
48	/	1	1	48
47	/	1	1	47
46	/	1	2	46
45	///	3	5	45
44	////	4	8	44
43	//////	6	12	43
42	//////	6	16	42
41	/////	5	18	41
40	//////	6	17	40
39	///	3	9	39
38	////	4	10	38
37	////	4	7	37
36	///	3	8	36
35	/	1	5	35
34	///	3	4	34
33		0	3	33
32	/	1	1	32
31			1	31
30				30
29				29
28				28
27				27
26				26
25				25
24				24
23				23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

SANTA VITTORIA DRIVE — **LAKE FOREST DDR TO RIDGE ROUTE DR**

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 3:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	NORTH OF AVE COPETE
DATE OF SURVEY	11/26/2013
85th PERCENTILE	33.0 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	87.1 %
POSTED SPEED LIMIT	30 MPH 25 MPH Advisory at Curves

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	2
TOTAL ACCIDENTS	6
ANNUAL ACCIDENT RATE	1.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.83 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	5,100
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - LAKE FOREST, STOP - RIDGE ROUTE
CROSSWALKS	AT LAKE FOREST / RIDGE ROUTE
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	PARTIAL
OTHER	AREAS OF NO STOPPING ANYTIME HEAVY ON-STREET PARKING (s/o Lake Forest)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.65
VERTICAL CURVE	MODERATE UP-DOWNHILL GRADES
HORIZONTAL CURVE	MODERATE - SHARP "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (poor)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	PARTIAL DBL YELLOW CENTERLINE & RAISED MEDIAN ISLAND BUS STOPS

ADJACENT LAND USE	RESIDENTIAL (fronting with no direct driveway access)
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph speed limit is within 3.0 mph of the 85th percentile speed and meets CVC standards.

File: Santa Vittoria 2013-60

RADAR SPEED DISTRIBUTION SHEET

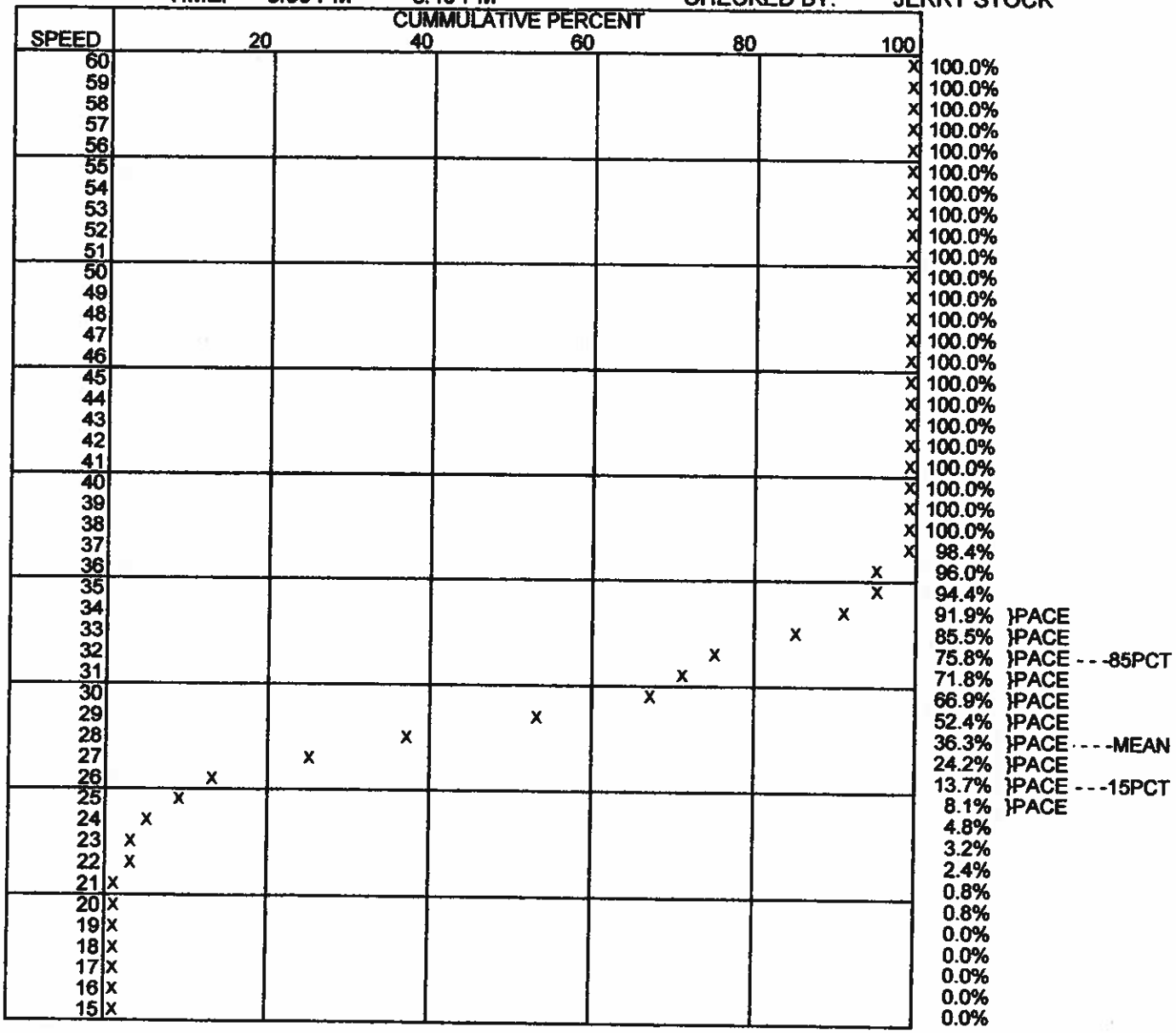
HCI

CITY OF LAGUNA HILLS

SANTA VITTORIA DRIVE — LAKE FOREST DDR TO RIDGE ROUTE DR

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 3:00 PM - 3:45 PM — CHECKED BY: JERRY STOCK



SPEED							
60						X	100.0%
59						X	100.0%
58						X	100.0%
57						X	100.0%
56						X	100.0%
55						X	100.0%
54						X	100.0%
53						X	100.0%
52						X	100.0%
51						X	100.0%
50						X	100.0%
49						X	100.0%
48						X	100.0%
47						X	100.0%
46						X	100.0%
45						X	100.0%
44						X	100.0%
43						X	100.0%
42						X	100.0%
41						X	100.0%
40						X	100.0%
39						X	100.0%
38						X	100.0%
37						X	98.4%
36						X	96.0%
35						X	94.4%
34						X	91.9% }PACE
33						X	85.5% }PACE
32					X		75.8% }PACE - - -85PCT
31					X		71.8% }PACE
30					X		66.9% }PACE
29				X			52.4% }PACE
28			X				36.3% }PACE - - - -MEAN
27		X					24.2% }PACE
26	X						13.7% }PACE - - -15PCT
25	X						8.1% }PACE
24	X						4.8%
23	X						3.2%
22	X						2.4%
21	X						0.8%
20	X						0.8%
19	X						0.0%
18	X						0.0%
17	X						0.0%
16	X						0.0%
15	X						0.0%

UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	8.1	%
PERCENT IN PACE:	87.1	%
PERCENT UNDER PACE:	4.8	%

85th PERCENTILE SPEED:	33.0	MPH
MEDIAN SPEED:	28.9	MPH
15th PERCENTILE SPEED:	26.1	MPH

Santa Vittoria 2013-60

Radar Speed Survey Field Sheet

Hanson & Orbil, Inc. — Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: SANTA VITTORIA DRIVE
LOCATION: LAKE FOREST DR TO RIDGE ROUTE DR

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/26/13
START TIME: 3:00 PM
END TIME: 3:45 PM

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38	////	2
37	//// /	3
36	/	1
35	////	3
34	////	5
33	//// //	7
32	////	3
31	//// /////	10
30	//// ////	9
29	//// ////	11
28	//// ///	8
27	//// //	8
26		2
25		0
24	/	1
23	/	1
22		0
21		0
20	/	1
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39				39
38			2	38
37			3	37
36	/	1	2	36
35		0	3	35
34	////	3	8	34
33	////	5	12	33
32	////	2	5	32
31	//// /	6	16	31
30	//// ////	9	18	30
29	//// ////	9	20	29
28	//// //	7	15	28
27	//// //	5	13	27
26	////	4	7	28
25	////	4	4	25
24	/	1	2	24
23		0	1	23
22	/	2	2	22
21			0	21
20			1	20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

SANTA VITTORIA DRIVE — **RIDGE ROUTE DR TO SANTA MARIA AVE**

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 3:45 PM - 4:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	SOUTH OF AVD DEL SOL
DATE OF SURVEY	11/26/2013
85th PERCENTILE	32.0 MPH
10 MPH PACE	25 - 34 MPH
PERCENT IN PACE	91.6 %
POSTED SPEED LIMIT	30 MPH / 25 MPH*

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	1
TOTAL ACCIDENTS	4
ANNUAL ACCIDENT RATE	0.50 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	1.23 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	1,800
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	STOP - SANTA MARIA / RIDGE ROUTE
CROSSWALKS	AT SANTA MARIA / RIDGE ROUTE
PEDESTRIAN/BICYCLES	YES / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	PARTIAL
OTHER	AREAS OF NO STOPPING ANYTIME HEAVY PARKING NEAR BARBERA ELEM SCH / BUS STOPS

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.62
VERTICAL CURVE	GRADUAL UP-DOWNHILL GRADES
HORIZONTAL CURVE	MODERATE - SHARP "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE (poor)
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / NO
STREET LIGHTING	YES
OTHER	DBL YELLOW CENTERLINE AREAS OF NARROW ROADWAY

ADJACENT LAND USE	RESIDENTIAL (NF) / ELEM SCH
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph speed limit is within 2.0 mph of the 85th percentile speed and meets CVC standards.

* 25 MPH When Children Present, School Zone

NF = Non-fronting to roadway

File: Santa Vittoria 2013-61

RADAR SPEED DISTRIBUTION SHEET

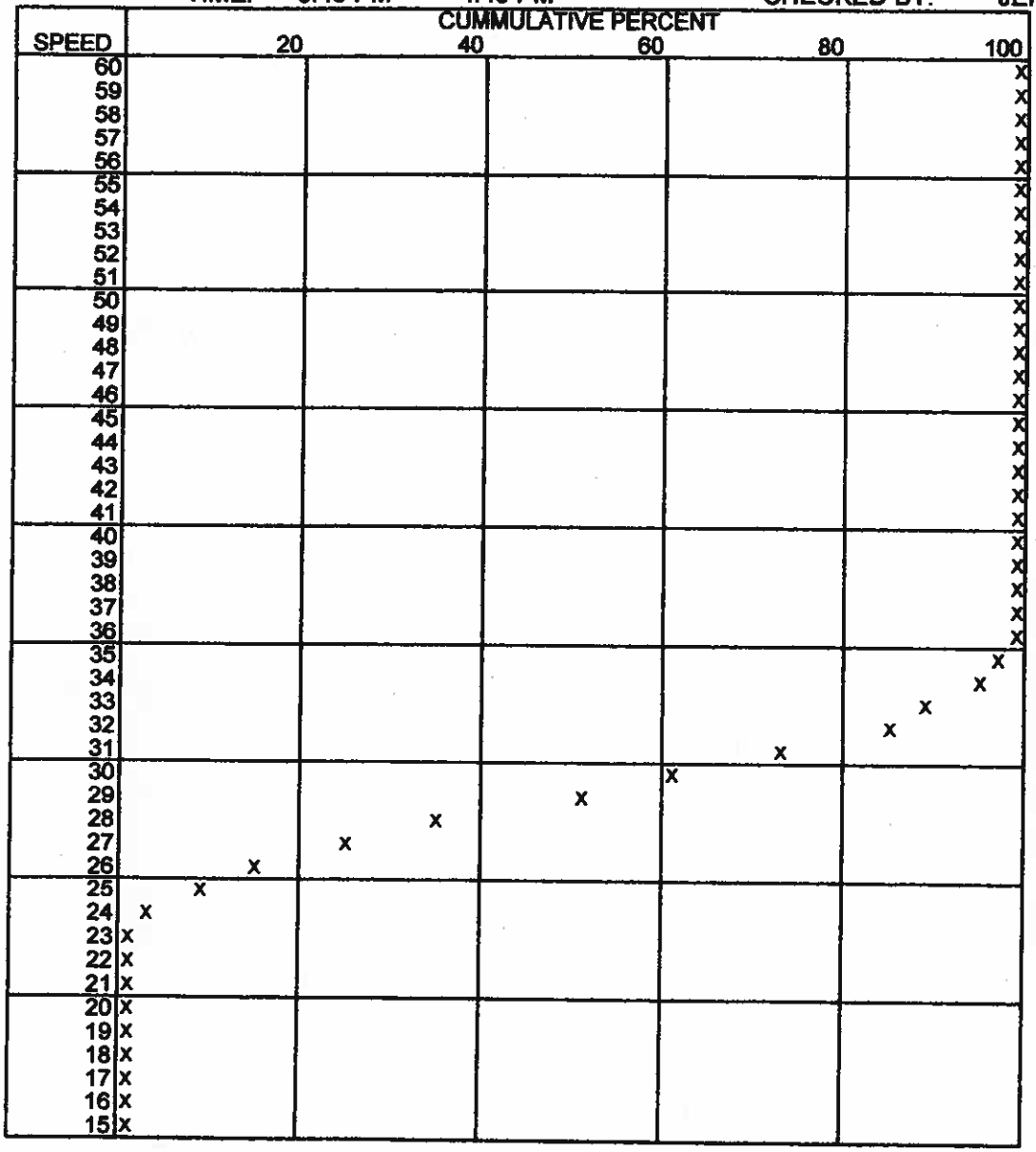
HCI

CITY OF LAGUNA HILLS

SANTA VITTORIA DRIVE — RIDGE ROUTE DR TO SANTA MARIA AVE

DATE: 11/26/2013 — SURVEY BY: C. BUENDIA

TIME: 3:45 PM - 4:45 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	5.9	%
PERCENT IN PACE:	91.6	%
PERCENT UNDER PACE:	2.5	%

85th PERCENTILE SPEED:	32.0	MPH
MEDIAN SPEED:	29.0	MPH
15th PERCENTILE SPEED:	26.0	MPH

Santa Vittoria 2013-61

Radar Speed Survey Field Sheet

Hastrup & Cassell, Inc. Consulting Traffic Engineers

AGENCY: CITY OF LAGUNA HILLS
STREET: SAN VITTORIA DRIVE
LOCATION: RIDGE ROUTE DR. TO SANTA CLARA AVE

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/26/13
START TIME: 3:45 PM
END TIME: 4:45 PM VAL

DIRECTION: SOUTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40		
39		
38		
37		
36		
35	/	1
34	//	2
33	//	2
32	/////	5
31	/////	5
30	/////	5
29	//////	6
28	//////	6
27	////	4
26	////	4
25	////	4
24	/	1
23	/	1
22		
21		
20		
19		
18		
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: NORTHBOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40				40
39	/	1	1	39
38		0	0	38
37	/	1	1	37
36	/	1	1	36
35	///	3	4	35
34	///	3	5	34
33	/////	5	6	33
32	///// //	7	13	32
31	///// ////	9	15	31
30	///// //	7	13	30
29	///// ////	9	15	29
28	////	4	13	28
27	/////	5	11	27
26	///	3	7	26
25	///	3	8	25
24		0	1	24
23	/	1	2	23
22				22
21				21
20				20
19				19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

ENGINEERING AND TRAFFIC SURVEY

CITY OF LAGUNA HILLS

HCI

VISTA VIEJO ROAD — **DEVONSHIRE RD TO EAST CITY LIMITS**

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:45 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF BARSTONE
DATE OF SURVEY	11/5/2013
85th PERCENTILE	32.2 MPH
10 MPH PACE	24 - 33 MPH
PERCENT IN PACE	80.8 %
POSTED SPEED LIMIT	30 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	24
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	3,000
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	NONE
CROSSWALKS	NONE
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO
ON-STREET PARKING	NO
OTHER	NO STOPPING ANYTIME (e/o of Woodbluff)

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.37
VERTICAL CURVE	CONSTANT MODERATE UPHILL GRADE (WB)
HORIZONTAL CURVE	SLIGHT - GRADUAL "S" CURVES
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	GOOD
SIDEWALKS/DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	INTERMITENT SMALL RAISED MEDIAN ISLANDS

ADJACENT LAND USE	RESIDENTIAL (NF)
RECOMMENDED SPEED LIMIT	30 MPH
SPEED LIMIT CHANGE	NO CHANGE

JUSTIFICATION:

The recommended 30 mph speed limit is within 2.2 mph of the 85th percentile speed and meets CVC standards.

NF = Non-fronting

File: Vista Viejo 2013-62

RADAR SPEED DISTRIBUTION SHEET

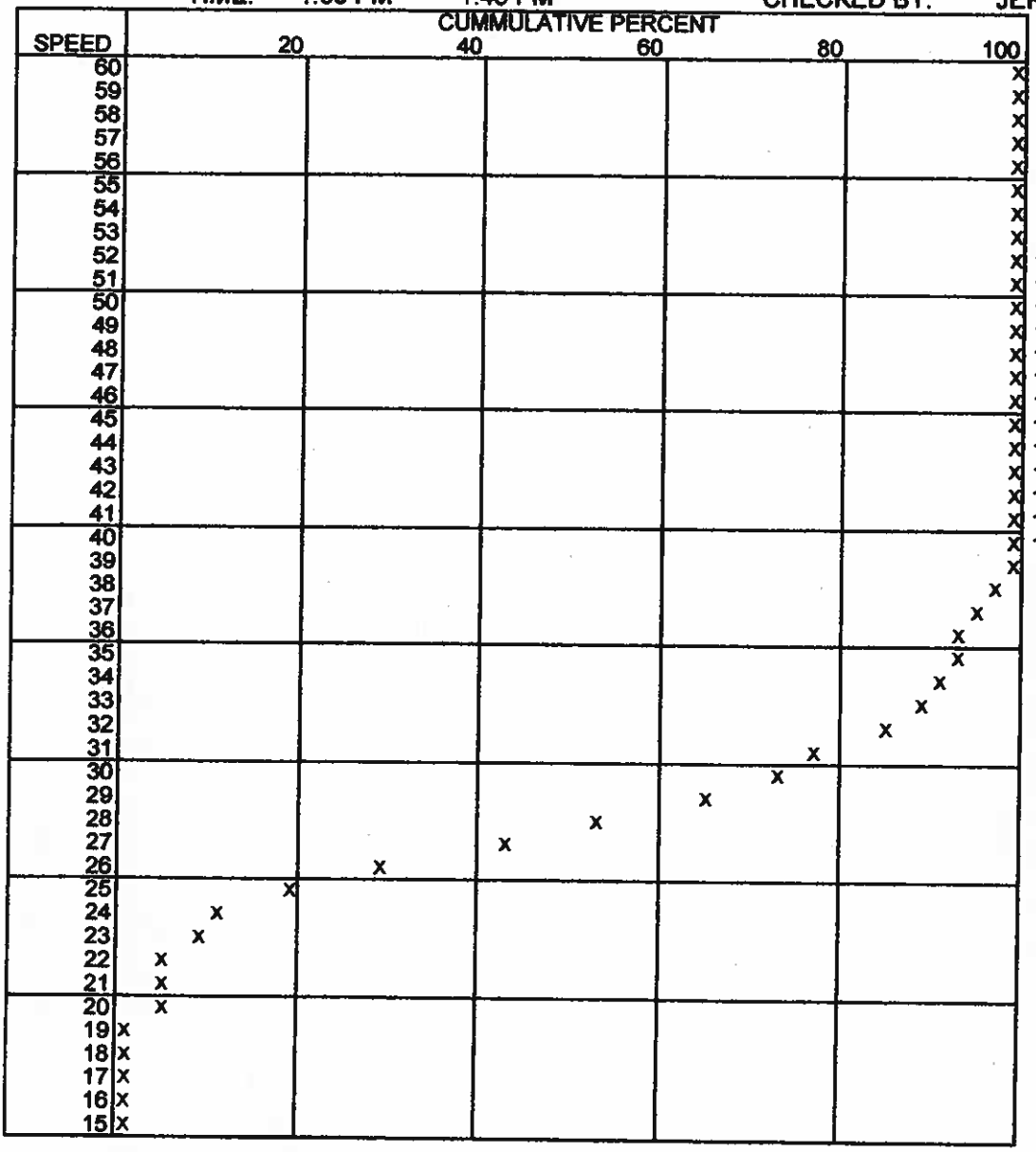
HCI

CITY OF LAGUNA HILLS

VISTA VIEJO ROAD — DEVONSHIRE RD TO EAST CITY LIMITS

DATE: 11/5/2013 — SURVEY BY: C. BUENDIA

TIME: 1:00 PM - 1:45 PM — CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	33	MPH
LOWER LIMIT 10 MPH PACE:	24	MPH
PERCENT OVER PACE:	10.8	%
PERCENT IN PACE:	80.8	%
PERCENT UNDER PACE:	8.3	%

85th PERCENTILE SPEED:	32.2	MPH
MEDIAN SPEED:	27.7	MPH
15th PERCENTILE SPEED:	24.4	MPH

Vista Viejo 2013-62

Radar Speed Survey Field Sheet

Hartzog & Crabill, Inc.
Consulting Traffic Engineers
17151 E. 17th Street, Suite 300
Tustin, California 92780
714.730.0401 Fax 714.734.2466
www.hartzog-crabill.com

AGENCY: CITY OF LAGUNA HILLS
STREET: VISTA VIEJO
LOCATION: DEVONSHIRE RD TO EAST CITY LIMIT

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: Cathy Buendia

DATE: 11/05/13
START TIME: 1:00 PM
END TIME: 1:45 PM

DIRECTION: WEST BOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL
60		
59		
58		
57		
56		
55		
54		
53		
52		
51		
50		
49		
48		
47		
46		
45		
44		
43		
42		
41		
40	/	1
39		0
38	//	2
37		2
36		0
35	/	1
34	//	2
33	//	2
32	///	3
31	//	2
30	//	2
29	///////	6
28	///////	7
27	///////	8
26	///////	7
25	///////	7
24	//	2
23	//	3
22		3
21		1
20	//	0
19		3
18	/	1
17		
16		
15		

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: EAST BOUND

MPH	NUMBER OF VEHICLES (5 / 10 / 15 / 20 / 25 / 30)	TOTAL	CUMULATIVE TOTAL	MPH
60				60
59				59
58				58
57				57
56				56
55				55
54				54
53				53
52				52
51				51
50				50
49				49
48				48
47				47
46				46
45				45
44				44
43				43
42				42
41				41
40	/	1	2	40
39				39
38	//	2	4	38
37				37
36		0	0	36
35	/	1	2	35
34	//	2	3	34
33	///	4	6	33
32	////	5	8	32
31	///	4	5	31
30	///////	7	11	30
29	///////	7	13	29
28	///////	6	13	28
27	///////	8	16	27
26	/////	5	12	26
25	///////	7	9	25
24			4	24
23			4	23
22				22
21			0	21
20			3	20
19			1	19
18				18
17				17
16				16
15				15

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

5/21/2014 ITEM NO. 4.1

APPENDIX B

RHF Inc.
Radar Repair

16202 Keats Circle
Westminster, Calif. 92683

TRAFFIC RADAR CERTIFICATION

TESTED TO NHTSA SPECIFICATIONS / IACP CRITICAL PERFORMANCE STANDARDS
(NHTSA) National Highway and Traffic Safety Administration.
(IACP) International Association of Chiefs of Police.

R.H.F. is a certified independent testing and repair facility.

1	TEST ID	Date Received 6-3-13		Certification Number 64903						
2	DEVICE ID	Manufacturer MPH		Model: K-15	Type (I-IV) III		Directional radar ☐ Yes ☑ No		Same direction ☐ Yes ☑ No	
		Counting unit S/N 12145		Antenna-1 S/N N/A			Antenna-2 S/N N/A			
3	§ 2.4 / § 5.4 TUNING FORK CALIBRATION	Low speed fork S/N 276979	Last date calib.	Freq. (Hz)	Speed (mph) 35	Measured (Hz) 2526		PASS		FAIL
		High speed fork S/N	Last date calib.	Freq. (Hz)	Speed (mph)	Measured (Hz)				
4	§ 2.5 / § 5.5 RADAR DEVICE TUNING FORK TESTS			Lo fork	High fork			PASS		FAIL
		Stationary mode	Fork speed (mph)	35	65					
			Disp. Speed (mph)	35	65					
		Moving mode Opposite Direction	TARGET SPEED (Hi fork – Lo fork)	Expected. (mph) N/A	Displayed. (mph) N/A					
		Moving mode Same Direction	TARGET SPEED Hi fork + Lo fork Ho fork - Lo fork	Expected. (mph) N/A	Displayed. (mph) N/A					
5	§ 2.6.1. / § 5.6.1 TRANSMISSION FREQUENCY STABILITY	Standard supply Voltage (V) 13.6 V	Antenna 1 Freq. GHz 24.155	Antenna 2 Freq. GHz N/A				PASS		FAIL
		Standard supply Voltage – 20% (V) 10.8 V	Antenna 1 Freq. GHz 24.155	Antenna 2 Freq. GHz N/A						
		Standard supply voltage + 20% (V) 16.3 V	Antenna 1 Freq. GHz 24.155	Antenna 2 Freq. GHz N/A						
6	§ 2.6.5 / § 5.6.5 POWER DENSITY	Mfg. Spec. (max mW/cm) ≤ 5	Antenna 1 Power (mW/cm) .3	Antenna 2 Power (mW/cm) N/A				PASS		FAIL
7	§ 2.8 / § 5.8 LOW VOLTAGE	Mfg. spec. (V) ≤ 10.8V	LVA activates (V) N/A	LVA deactivates (V) N/A				PASS		FAIL
8	§ 2.9.1 / § 5.9.1 DOPPLER AUDIO	A. Audio tone correlates with received Doppler signal ☑ Yes ☐ No						PASS		FAIL
		B. Functioning audio volume-adjustment control ☑ Yes ☐ No								
9	§ 2.12.4 / § 5.12.4 INTERNAL CIRCUIT	Mfg. Spec. 32	Test results 32					PASS		FAIL
10	§ 2.12.6.5 / § 5.12.6.5 DIRECTIONAL	A. Selects only targets moving towards radar ☐ Yes ☐ No ☑ N.A.						PASS		FAIL
		B. Selects only targets moving away from radar ☐ Yes ☐ No ☑ N.A.								
11	§ 2.12.7 / § 2.12.8 / 5.12.7 / 5.12.8 LOW AND HIGH SPEED DISPLAY TEST	Stationary mode: target channel (mph)	Low speed spec. 20	Lo speed disp. 20				PASS		FAIL
			Hi speed spec. 199	Hi speed disp. 199						
		Moving Mode target channel (mph)	Low speed spec. N/A	Lo speed disp. N/A						
			Hi speed spec. N/A	Hi speed disp. N/A						
		Moving Mode: patrol channel (mph)	Low speed spec. N/A	Lo speed disp. N/A						
			Hi speed spec. N/A	Hi speed disp. N/A						
12	§ 2.13 / § 5.13 RFI TEST	N/A						PASS		FAIL
13	LABORATORY COMMENTS									
14	NHTSA/IACP CERTIFICATION	***This radar device meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration. California Vehicle Code Section 40802*** ☑ PASS ☐ FAIL								
		Certified by: Ford Bauman Date: 6-3-13								
15	INVENTORY	☐ Fork Cert ☐ Manual ☐ 2nd Ant. ☐ Remote ☐ Bat. ☐ Carrying Case Other: (please list)								

RHF Inc.
Radar Repair

16202 Keats Circle
Westminster, Calif. 92683

TRAFFIC RADAR CERTIFICATION

TESTED TO NHTSA SPECIFICATIONS / IACP CRITICAL PERFORMANCE STANDARDS
(NHTSA) National Highway and Traffic Safety Administration.
(IACP) International Association of Chiefs of Police.

R.H.F. is a certified Independent testing and repair facility.

1	TEST ID	Date Received: 6-3-13		Certification Number: 64904						
2	DEVICE ID	Make: Kustom Electronics		Model: KR-10SP		Type (I-IV): IV		Directional radar: ☐ Yes ☑ No	Same direction: ☐ Yes ☑ No	
		Counting unit S/N: EE8364		Antenna-1 S/N: CC 9108		Antenna-2 S/N:				
3	§ 2.4 / § 5.4 TUNING FORK CALIBRATION	Low speed fork S/N: 6359	Last date calib.	Freq. (Hz)	Speed (mph): 35	Measured (Hz): 2542		PASS	FAIL	
		High speed fork S/N: 157151	Last date calib.	Freq. (Hz)	Speed (mph): 65	Measured (Hz): 4732				
4	§ 2.5 / § 5.5 RADAR DEVICE TUNING FORK TESTS			Lo fork	High fork			PASS	FAIL	
		Stationary mode	Fork speed (mph)	35	65					
			Disp. Speed (mph)	35	65					
		Moving mode Opposite Direction	TARGET SPEED (Hi fork – Lo fork)	Expected. (mph) 30	Displayed. (mph)					
		Moving mode Same Direction	TARGET SPEED Hi fork + Lo fork Ho fork - Lo fork	Expected. (mph) N/A	Displayed. (mph) N/A					
5	§ 2.6.1. / § 5.6.1 TRANSMISSION FREQUENCY STABILITY	Standard supply Voltage (V) 13.6 V	Antenna 1 Freq. GHz: 24.162	Antenna 2 Freq. GHz				PASS	FAIL	
		Standard supply Voltage – 20% (V) 10.8 V	Antenna 1 Freq. GHz: 24.162	Antenna 2 Freq. GHz						
		Standard supply voltage + 20% (V) 16.3 V	Antenna 1 Freq. GHz: 24.162	Antenna 2 Freq. GHz						
6	§ 2.6.5 / § 5.6.5 POWER DENSITY	Mfg. Spec. (max mW/cm) ≤ 5	Antenna 1 Power (mW/cm): .4	Antenna 2 Power (mW/cm)				PASS	FAIL	
7	§ 2.8 / § 5.8 LOW VOLTAGE	Mfg. spec. (V) ≤10.8 V	LVA activates (V): 9.9	LVA deactivates (V): 10.4				PASS	FAIL	
8	§ 2.9.1 / § 5.9.1 DOPPLER AUDIO	A. Audio tone correlates with received Doppler signal ☑ Yes ☐ No						PASS	FAIL	
		B. Functioning audio volume-adjustment control ☑ Yes ☐ No								
9	§ 2.12.4 / § 5.12.4 INTERNAL CIRCUIT	Mfg. Spec. 32	Test results: 32					PASS	FAIL	
10	§ 2.12.6.5 / § 5.12.6.5 DIRECTIONAL	A. Selects only targets moving towards radar ☐ Yes ☐ No ☑ N.A.						PASS	FAIL	
		B. Selects only targets moving away from radar ☐ Yes ☐ No ☑ N.A.								
11	§ 2.12.7 / § 2.12.8 / 5.12.7 / 5.12 8 LOW AND HIGH SPEED DISPLAY TEST	Stationary mode: target channel (mph)	Low speed spec. 15	Lo speed disp. 15				PASS	FAIL	
			Hi speed spec. 175	Hi speed disp. 175						
		Moving Mode target channel (mph)	Low speed spec. 20	Lo speed disp. 20						
			Hi speed spec. 155	Hi speed disp. 155						
		Moving Mode: patrol channel (mph)	Low speed spec. 20	Lo speed disp. 20						
			Hi speed spec. 80	Hi speed disp. 80						
12	§ 2.13 / § 5.13 RFI TEST							PASS	FAIL	
13	LABORATORY COMMENTS									
14	NHTSA/IACP CERTIFICATION	*This radar device meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration. California Vehicle Code Section 40802* ☑ PASS ☐ FAIL								
		Certified by: Ford Bauman				Date: 6-3-13				
15	INVENTORY	☐ Fork Cert ☐ Manual ☐ 2nd Ant. ☐ Remote ☐ Bat. ☐ Carrying Case Other: (please list)								

Radar Certification

Certificate of Completion and Competency
DOPPLER RADAR OPERATION

Name & Title: Cathy Buendia Technician

Department: Transportation

has successfully completed a course of instruction in the operation of Moving Car and Stationary Doppler Radar and is deemed competent to utilize the same Doppler Radar to determine the velocity of motor vehicles.

7/23/91
Date

Instructor

Subsidiaries of MPD, Inc.

316 East Ninth Street
Owensboro, KY 42301
(502) 685-6200

5/21/2014 ITEM NO. 4.1

City of Laguna Hills
Traffic Commission
Staff Report

DATE: 05/21/14

TO: TRAFFIC COMMISSIONERS

FROM: HUMZA JAVED, P.E.
ASSOCIATE CIVIL ENGINEER

ISSUE: SIGHT DISTANCE ANALYSIS AT El TORO ROAD AND AVENIDA DE LA CARLOTA

RECOMMENDATION: THAT THE TRAFFIC COMMISSION RECEIVE AND FILE THIS REPORT.

SUMMARY:

Upon receiving a complaint from a motorist about northbound Avenida De La Carlota through traffic being in potential conflict with westerly bound El Toro Road traffic turning right on red to go northerly on Avenida De La Carlota, City Staff contracted the services of its consulting Traffic Engineers to perform an evaluation. It was determined that sight distance is not restricted and there are no other identified traffic conflicts that would trigger turning movement restrictions at this intersection. It is recommended that the Traffic Commission receive and file this report.

BACKGROUND:

Recently, City Staff received a complaint from a motorist regarding the northbound Avenida De La Carlota through-movement being in potential conflict with westerly-bound El Toro Road traffic turning right on red. The motorists' concern was that westbound right-turning drivers cannot discern the lane shift for northbound through vehicles and may turn into them as they both proceed northerly on Avenida De La Carlota, please see attached Vicinity Map.

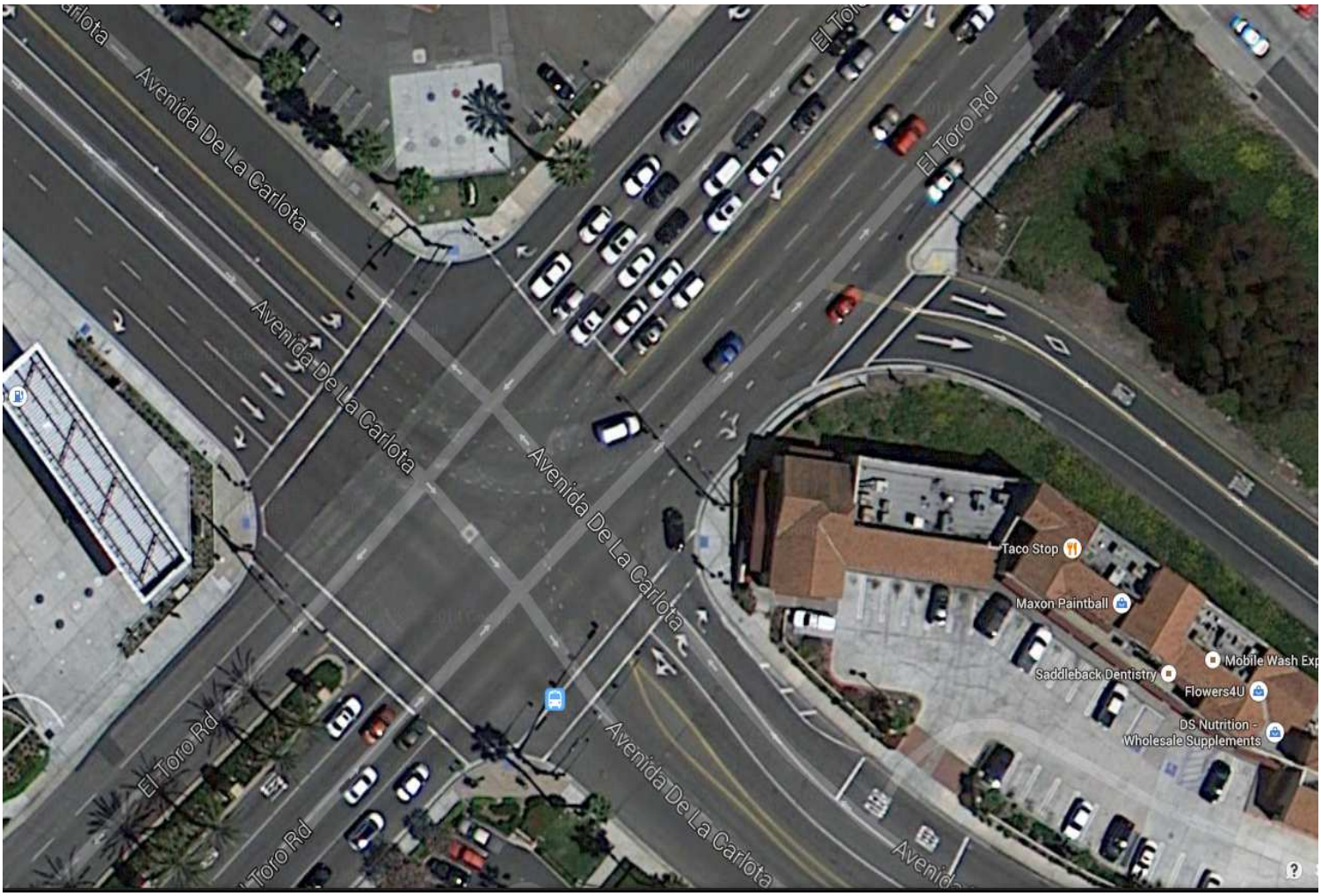
In response to the motorist concern, Staff contracted the services of the Traffic Engineer's at Hartzog & Crabill, Inc. (HCI), to perform a sight distance evaluation and two year accident analysis of this location. A two year accident history review revealed a number of accidents at this intersection, however, there was no pattern detected for northbound vs westbound right-turn movement. For the sight distance evaluation, right turning vehicles on El Toro Road were observed as they stopped on the red indication and looked for northbound Avenida De La Carlota traffic before proceeding. There were no site issues that were noted.

Moreover, it was determined the existing sight distance of 300 feet is adequate for the condition. Please see attached HCI report and photos dated February 20, 2014.

An additional site observation noted was that the westbound phase on El Toro Road is assigned a sufficient amount of green time to clear traffic, and right-turns can also be made during a separate right-turn overlap interval. Hence, there is only a small interval when the westbound to northbound right-turning drivers face a red indication in between green phase assignments. During this red interval, vehicles are required to comply with traffic laws, by stopping, looking towards on-coming traffic, and proceeding only when it is safe to do so. From the field observations, it was concluded that traffic was flowing smoothly and no issues were observed.

ATTACHMENT:

- Vicinity Map
- Hartzog and Crabill, Inc. report, February 20, 2014



VICINITY MAP

5/21/2014 ITEM NO. 4.2

5/21/2014 ITEM NO. 4.2

HARTZOG & CRABILL, Inc.

Trammell Hartzog, President
Jerry Crabill, P.E. (Retired)
Gerald J. Stock, P.E.,
Executive Vice President

17852 E. 17th Street
Suite 101
Tustin, CA 92780

Phone: (714) 731-9455
FAX: (714) 731-9498

www.hartzog-crabill.com

February 20, 2014

Mr. Kenneth H. Rosenfield, P.E.
Director of Public Services
City of Laguna Hills
24045 El Toro Road
Laguna Hills, CA 92653

Subject: Intersection of El Toro Road and Avenida de La Carlota

Dear Mr. Rosenfield:

Pursuant to your request, Hartzog & Crabill, Inc. (HCI) has completed a focused evaluation of a reported sight distance issue at the subject intersection. In more specific terms, the City received a complaint regarding the northbound Avenida de La Carlota through-movement being in potential conflict with the westerly-bound El Toro Road traffic turning right-on-red. The explanation stated that westbound right-turning drivers cannot discern the lane shift for northbound through vehicles and turn into them as they both proceed northerly on Avenida de La Carlota. Our findings confirmed that a driver's visibility from a westbound right-turning vehicle's perspective is not restricted when looking towards the northbound approach lanes on Avenida de La Carlota.

Our approach included a review of intersection accident history, followed by a sight distance evaluation in the field in order to prepare our findings.

COLLISION HISTORY

Our initial task was to review the intersection collision history. The most recent 2-year collision history was gathered from iSWITRS and a report prepared (attached).

This location had several reported collisions occurring at or near the intersection; however, none were confirmed as occurring between the northbound through vs. westbound right-turn movements. Consequently, a certain pattern of collisions could not be verified for further evaluation.

SIGHT DISTANCE EVALUATION

HCI field-reviewed the sight distance between these two movements for approximately one-half hour on Thursday, February 6, 2014. More specifically, HCI staff reviewed westbound El Toro Road right-turning vehicles as they stopped on the red indication and looked for northbound Avenida de La Carlota traffic before proceeding to make their right turns. It was observed that all westbound right-turning drivers did not seem to have an issue determining if the northbound 'through' vehicles on Avenida de La Carlota were going to be in conflict for the same near lane. The sight distance measurements were verified between 150 to 300 feet (150' clear to the northbound limit line, and ranged farther back from there to approximately 300' depending on if there were higher profile vehicles waiting in the northbound right-turning lanes – see attached photos).

It was also noted that the westbound phase on El Toro Road is assigned a sufficient amount of green time to clear traffic, and right-turns can also be made during a separate right-turn overlap interval. As a result, there is only a smaller interval when the westbound right-turning drivers face a red indication in between these green phase assignments. During this red interval, it was verified that westbound right-turning vehicles stopped, looked, and proceeded with caution.

FINDINGS:

- The most recent 2-year intersection collision history did not confirm any accidents or pattern occurring between the northbound through vs. westbound right-turn movement.
- Field measurements/observations confirmed adequate visibility when westbound right-turning drivers were stopped on the red indication and looked for northbound Avenida de La Carlota traffic before proceeding to make their right turns.
- At this time, there are no other recommendations.

We look forward to your acceptance of our analysis findings and to any additional services the City of Laguna Hills may request. If you have any questions or need more information please call me at (714) 731-9455. Thank you again for the opportunity to serve your community.

Sincerely,
HARTZOG & CRABILL, INC.

Gerald Stock, P.E.
Executive Vice President
City & Traffic Engineering Services

Attachments: Accident History
Sight Distance Photo Exhibit

INTERSECTION
COLLISION HISTORY

5/21/2014 ITEM NO. 4.2

5/21/2014 ITEM NO. 4.2

CITY OF LAGUNA HILLS
SWITRS COLLISION DATABASE
JANUARY 1, 2010 TO DECEMBER 31, 2012
INTERSECTION OF EL TORO ROAD AT AVENIDA DE LA CARLOTA

E ID	COLLISION DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH. 1	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL CAT.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROAD SURF.
3283	20100119	1000	EL TORO RD	DE LA CARLOTA	50	E	N	B	0	A	3	N	C	C	B
0907	20100121	1115	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	C	0	A	3	N	C	C	B
3113	20100210	1818	AVENIDA DE LA CARLOTA	EL TORO RD	515	S	N	A	4	A	3	N	C	C	A
7104	20100216	1124	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	0	A	8	N	D	C	A
3255	20100501	2159	EL TORO RD	AVENIDA DE LA CARLOTA	68	W	N	A	0	A	3	M	C	C	A
4081	20100518	1440	EL TORO FRONTAGE	AVENIDA DE LA CARLOTA	261	E	N	A	0	D	0	M	C	C	A
3241	20100530	1239	EL TORO	AVENIDA DE LA CARLOTA	105	E	N	A	0	A	-	N	B	C	A
1701	20100807	1813	EL TORO RD	AVENIDA DE LA CARLOTA	23	W	N	A	0	A	3	N	C	C	A
3858	20100901	2100	EL TORO RD	AVENIDA DE LA CARLOTA	45	E	N	A	0	A	21	N	C	C	A
4895646	20101002	1630	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	0	A	9	N	D	C	A
4945833	20101005	1735	EL TORO RD	AVENIDA DE LA CARLC	0		Y	A	4	A	8	N	A	C	A
4947836	20101016	1858	AVD DE LA CARLOTA	EL TORO RD	150	N	N	A	0	D	0	M	C	C	A
5035033	20101104	1345	EL TORO RD	AVENIDA DE LA CARLOTA	125	E	N	A	0	A	8	N	D	C	A
4958639	20101105	1553	EL TORO RD	CARLOTA DR	500	E	N	A	0	A	7	M	B	C	A
4952942	20101109	942	AVENIDA DE LA CARLOTA	EL TORO RD	59	N	N	A	4	A	21	N	C	C	A
4971508	20101118	2050	AVD DE LA CARLOTA	EL TORO RD	0		Y	A	0	A	1	N	D	C	A
5035001	20101122	625	EL TORO RD	AVENIDA DE LA CARLC	0		Y	A	0	A	8	N	D	C	A
5012929	20101202	2025	EL TORO RD	AVD CARLOTA	70	E	N	A	0	A	3	N	C	C	A
5012933	20101203	1120	EL TORO	AVE DE CERLOTA	50	W	N	A	0	A	21	N	C	C	A
4997380	20101206	855	AVENIDA DE LA CARLOTA	EL TORO RD	202	S	N	A	0	A	3	N	E	I	B
4986574	20110113	1455	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	0	A	3	N	C	C	A
5099074	20110227	1930	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	4	A	1	N	D	C	A
5153039	20110312	1245	EL TORO RD	AVENIDA DE LA CARLOTA	110	E	N	A	0	A	8	M	B	C	A
5097671	20110316	1355	EL TORO RD	AVENIDA DE LA CARLOTA	148	E	N	A	3	A	3	N	C	C	A
5158128	20110319	1955	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	4	A	8	N	D	C	A
5134234	20110331	1350	EL TORO RD	AVD DELA CARLOTA	500	N	N	A	0	A	3	N	C	C	A
5226563	20110610	1505	EL TORO RD	AVENIDA DE LA CARLOTA	106	W	N	B	0	A	8	N	D	C	A
5299667	20110811	1950	EL TORO RD	AVENIDA DE LA CARLOTA	108	E	N	A	0	A	7	N	B	C	A
5297871	20110906	1835	EL TORO RD	AVE DE LA CARLOTA	26	E	N	A	0	A	3	N	C	C	A
5404358	20111001	2314	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	0	A	8	M	D	C	A
5357756	20111014	930	AVENIDA DE LA CARLOTA	EL TORO RD	0		Y	A	0	A	3	N	C	C	A
5425776	20111107	1218	AVE DE LA CARLOTA	TORO RD	932	S	N	A	0	A	9	N	D	C	A
5396475	20111109	2100	EL TORO RD	AVENIDA DE LA CARLOTA	37	E	N	A	2	A	3	F	C	C	A
5390364	20111114	1310	EL TORO RD	AVENIDA DE LA CARLOTA	122	E	N	A	0	A	7	N	B	C	A
5434757	20111207	1515	EL TORO	AVE DE LA CARLOTA	52	W	N	A	0	A	7	N	B	C	A
5438945	20111208	1910	AVENIDA DE LA CARLOTA	EL TORO RD	110	N	N	A	0	A	7	N	B	C	A
5452808	20111230	1738	AVENIDA DE LA CARLOTA	EL TORO RD	1247	S	N	A	4	A	9	N	D	C	A
5445559	20111230	1150	EL TORO RD	AVENIDA DE LA CARLOTA	244	E	N	A	4	A	3	N	C	C	A

CITY OF LAGUNA HILLS
SWITRS COLLISION DATABASE
JANUARY 1, 2010 TO DECEMBER 31, 2012
INTERSECTION OF EL TORO ROAD AT AVENIDA DE LA CARLOTA

CASE ID	COLLISION DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH. 1	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL CAT.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROAD SURF.
5508828	20111231	1400	EL TORO RD	AVENIDA DE LA CARLOTA	0		Y	A	0	A	7	N	B	C	A
5505160	20120121	1120	AVENIDA DE LA CARLOTA	EL TORO	0		Y	C	4	A	3	N	C	C	B
5513506	20120201	1820	DE LA CARLOTA	EL TORO RD	1215	S	N	A	4	A	9	N	D	C	A
5510588	20120215	520	AVENIDA DE LA CARLOTA	EL TORO RD	25	N	N	A	4	A	21	N	H	C	A
5529715	20120219	1650	AVENIDA DE LA CARLOTA	EL TORO RD	300	S	N	A	0	A	21	M	-	A	A
5622622	20120504	1619	EL TORO RD	AVENIDA DE LA CARLOTA	122	E	N	A	0	A	7	N	B	C	A
5797072	20120809	1255	AVENIDA DE LA CARLOTA	EL TORO RD	344	N	N	A	4	A	9	N	D	C	A
5776594	20120920	1345	EL TORO RD	AVENIDA DE LA CARLOTA	172	E	N	A	4	A	8	N	C	C	A

NOTES:

Weather 1
A - Clear
B - Cloudy
C - Raining
D - Snowing
E - Fog
F - Other
G - Wind
- - Not Stated

Collision Severity
1 - Fatal
2 - Injury (Severe)
3 - Injury (Other Visible)
4 - Injury (Complaint of Pain)
0 - PDO (Property Damage Only)

Primary Collision Factor
A - (Vehicle) Code Violation
B - Other Improper Driving
C - Other Than Driver
D - Unknown
E - Fell Asleep
- - Not Stated

PCF Violation Category
01 - Driving or Bicycling Under Influence
02 - Impeding Traffic
03 - Unsafe Speed
04 - Following Too Closely
05 - Wrong Side of Road
06 - Improper Passing
07 - Unsafe Lane Change
08 - Improper Turning
09 - Automobile ROW
10 - Pedestrian ROW
11 - Pedestrian Violation
12 - Traffic Signals and Signs
13 - Hazardous Parking
14 - Lights
15 - Brakes
16 - Other Equipment
17 - Other Hazardous Violation
18 - Other Than Driver (or Ped)
19 -
20 -
21 - Unsafe Starting or Backing
22 - Other Improper Driving
23 - Pedestrian or "Other" Under the Influence
24 - Fell Asleep
00 - Unknown
- - Not Stated

Hit and Run
F - Felony
M - Misdemeanor
N - Not Hit & Run

Type of Collision
A - Head-On
B - Sideswipe
C - Rear-End
D - Broadside
E - Hit Object
F - Overturned
G - Vehicle/Pedestrian
H - Other
- - Not Stated

Motor Vehicle Involved With:
A - Non-Collision
B - Pedestrian
C - Other Motor Vehicle
D - Motor Vehicle on Other Roadway
E - Parked Motor Vehicle
F - Train
G - Bicycle
H - Animal
I - Fixed Object
J - Other Object
- - Not Stated

Road Surface
A - Dry
B - Wet
C - Snowy or Icy
D - Slippery
- - Not Stated

5/21/2014 ITEM NO. 4.2

SIGHT DISTANCE
PHOTO EXHIBIT

5/21/2014 ITEM NO. 4.2

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CITY OF LAGUNA HILLS

May 2014

RADAR TRAILER SCHEDULE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 Bridlewood N/O Laurel Crest 25 MPH	7 Lost Colt E/O Beargrass 25 MOH	8 Nellie Gail N/O Empty Saddle 25 MPH	9	10
11	12	13	14	15	16	17
18	19	20 Woodbluff W/O Middleridge 25 MPH	21 Rapid Falls W/O Sundowner 25 MPH	22 Mustang W/O Farrier 25 MPH	23	24
25	26 Holiday	27	28	29	30	31

5/21/2014 ITEM NO. 5.2

Radar Trailer Calendar 2013 Bi-weekly
5/16/2014

5/21/2014 ITEM NO. 5.2

CITY OF LAGUNA HILLS

June 2014

RADAR TRAILER SCHEDULE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10 Nellie Gail N/O Empty Saddle 25 MPH	11 Bridlewood S/O Laurel crest 25 MPH	12 Rapid Falls W/O Sundowner 25 MPH	13	14
15	16	17	18	19	20	21
22	23	24 Woodbluff W/O Middleridge 25 MPH	25 Lost Colt W/B Mid-Block 25 MPH	26 San Vittoria N/O Ridge Route 30 MPH	27	28
29	30					

Rainy Days Excluded

Radar Trailer Calendar 2013 Bi-weekly
5/16/2014