

Darnell & ASSOCIATES, INC.

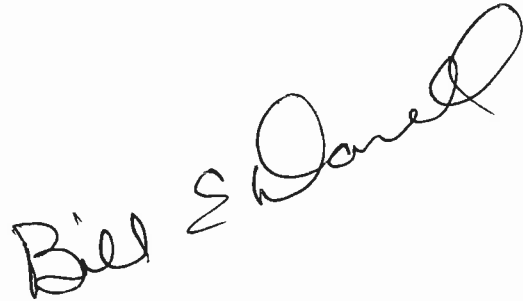
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: July 10, 2018

TO: Sean D. McLean, County of San Diego
Alisha Ballard, County of San Diego
Zoubir Ouadah, County of San Diego
Josh Ziegler, Spear & Associates

FROM: Bill E. Darnell, Darnell & Associates, Inc.



D&A Ref. No: 170103

RE: Corner Distance for ResQue Ranch Corner Sight Distance on Highland Valley Road.
(PDS2016-LDGRMJ-30067, APN: 276-030-049)

Attached are the following\:

1. Corner Sight Distance Certification Letter;
2. July 10, 2018 revised Corner Sight Distance Report and Design Exception Request.

Please advise if you have questions or need additional information.

Darnell & ASSOCIATES, INC.

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

July 10, 2018

Richard E. Crompton, Director
Department of Public Works
County of San Diego
Traffic Engineering
5510 Overland Ave., Suite 410
San Diego, CA 92123

D&A No: 170103

Subject: Corner Sight Distance Certification for the Project Driveway located at Highland Valley Road, (PDS2016-LDGRMJ-30067)

Dear Mr. Crompton:

I, Bill E. Darnell, (REC: 22338) certify the following:

- That there is 225' feet of unobstructed intersectional Stopping Sight Distance looking to the easterly direction along Highland Valley Road from the Private Easement Driveway serving the project and 200' feet of unobstructed intersectional Stopping Sight Distance looking to the westerly direction along Highland Valley Road from the Private Easement Driveway serving the project, both were measured in accordance with the methodology described in Table 5 of the March 2012 County of San Diego Public Roads Standards. These Stopping Sight Distances meet the required intersectional sight distance requirement for AASHTO Stopping Sight Distance per a report by Darnell & Associates, Inc. dated July 10, 2018, D&A Job Number: 170103

The line of sight falls within the existing street right-of-way and a clear easement is not required. I have exercised responsible charge for the certification as defined in Section 6703 of the Professional Engineers Act of the California Business and Professions Code.

Sincerely,

DARNELL & ASSOCIATES, INC.



Bill E Darnell, P.E.
Firm Principal
RCE 22338



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170103 - ResQue Ranch -PDS2016-LDGRMJ-30067 Certification Letter_07-10-2018.doc 07/18

Date Signed: July 10, 2018

Darnell & Associates, Inc.

- TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

July 10, 2018

Josh Zeigler P.E.
Spear & Associates, Inc.
475 Production Street,
San Marcos, CA. 92078

D&A: 170103

Subject: Corner Sight Distance Services for ResQue Ranch Driveway at Highland Valley Road. (APN: 276-030-049)

Dear Mr. Zeigler,

In accordance with your authorization, Darnell & Associates, Inc. (D&A) has revised its investigation to determine the recommended Corner and Stopping Sight Distance looking east and west from the projects proposed driveway. Figure 1 is a copy of the projects grading plan and the location of the driveway. The driveway is within the narrow property adjacent to the neighbor's property APN: 276-030-44. The proposed access is the projects legal access to Highland Valley Road.

Highland Valley Road east and west of the project driveway is constructed with reversing curves east and west of the project access. From the east traffic approaches the driveway thru 320 foot, 275 foot and 210 foot radius curves. To the west of the project driveway traffic travels through two (2) 275 radius curves. The average grade of the roadway is 13% downhill from the east and 14.5% uphill from the west. The County of San Diego has posted both directions of travel on Highland Valley Road with curve warning signage with advisory speed of 30 Miles per Hour (MPH). A spot check of the 30 MPH advisory speed was confirmed using a Ball Bank to determine the recommended advisory speed. The investigation concluded the existing 30 MPH advisory speed should be used. Based on the County of San Diego Public Road Standards of ten (10) feet of Corner Sight Distance for each MPH speed of the posted advisory speed of 30 MPH requires 300' feet of Corner Sight Distance.

Figures 2 and 3 present the required 300' feet of Corner Sight Distance looking east and west on Highland Valley Road from the project driveway. Review of Figure 2 shows the 300' feet of Corner Sight Distance cannot be accommodated due to the topography and landscaping within the line of sight that is outside the Public Right-of-Way looking east and west on Highland Valley Road. Therefore a design exception to use Stopping Sight Distance will be submitted. It should be noted the existing vegetation and foliage within the Public right-of-way has been removed and Spears & Associates has determined there is a minimum of 204' feet of Corner Sight Distance looking east on Highland Valley Road at westbound traffic measured from a point 10' feet from the travel lane.

To satisfy County of San Diego requirements a design exception to use AASHTO Stopping Sight Distance has been prepared. Examination of the required Stopping Sight Distance looking to the east and west of the driveway on Highland Valley Road based on the Association of State Highway and Transportation Officials (AASHTO) criteria found the Stopping Sight Distance could be satisfied with the existing foliage and vegetation east of the project access trimmed and/or removed to allow certification.

The Stopping Sight Distance was then calculated and summarized in Table 1, based on the following AASHTO Criteria:

$V = 30$ mph posted advisory speed.

$t =$ Reaction time of 2.0 seconds.

$G_w =$ Grade of +14.5% west of the driveway.

$G_E =$ -13.0% east of the driveway.

$a = 11.2$ ft/sec²

Table 1 shows the Stopping Sight Distance calculations assuming an average approach grade on Highland Valley Road of a positive (uphill) 14.5% grade to the west of the project driveway and a negative 13% grade approaching from the east, a braking-reaction time of 2.0 seconds, and a deceleration rate of 11.2 feet per second squared. As can be seen in Table 1, the minimum Stopping Sight Distance is 224' feet looking to the east of the project driveway and 149' feet looking to the west of the project driveway.

Table 1 - Stopping Sight Distance Requirements Per AASHTO								
Location	Speed - V (mph) (a)	Reaction Time - t (seconds)	Deceleration Rate - a (ft/sec ²)	Grade (%) (b)	Reaction Distance - d ₁ (feet)	Braking Distance - d ₂ (feet)	Required Stopping Sight Distance d ₁ + d ₂ (feet)	Available Stopping Sight Distance (feet)
Highland Valley Road								
e/o Project Driveway (Westbound Traffic)	30	2.0	11.2	-13%	88.2' feet	136.0' feet	224' feet	225'
w/o Project Driveway (Eastbound Traffic)	30	2.0	11.2	+14.5%	88.2' feet	60.88' feet	149' feet	200' feet
(a) Speeds are based on the posted 30 MPH Advisory speed for Highland Valley Road, (b) All calculations based on average grades obtained in the field by Spear & Associates. w/o = West of; d ₁ = 1.47Vt; e/o = East of; d ₂ = 1.47Vt; d ₂ = V ² ÷ [30*((a+32.2)±G)];								

As illustrated in Table 1, based on AASHTO Stopping Sight Distance criteria, a minimum of 149' feet of Stopping Sight Distance is required on Highland Valley Road to the west of the project driveway (looking at eastbound traffic). As previously discussed, based on field investigations conducted in February and March, 2017 and July 9, 2018 there is a minimum of 200' feet of Corner Sight Distance looking to the west of the project driveway looking at eastbound traffic on Highland Valley Road. Figure 4 is a photo showing the available 200' feet of Stopping Sight Distance. Thus the available 200' feet of Stopping Sight Distance on Highland Valley Road looking to the west of the project driveway is fifty one feet (51') more than the required 149' feet of Stopping Sight Distance based on the AASHTO Stopping Sight Distance criteria.

Looking east on Highland Valley Road Table 1 shows 224' feet of Stopping Sight distance is required based on AASHTO Stopping Sight distance criteria. Also the available 225' feet of Stopping Sight Distance on Highland Valley Road is one (1') foot more than the 224' feet of Stopping Sight Distance, based on AASHTO Stopping Sight distance criteria. Figure 5 presents the available 225' feet of Stopping

Josh Zeigler P.E.
Spear & Associates, Inc.
July 10, 2018
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Sight Distance. Figure 6 was prepared showing the available 225' feet of Stopping Sight Distance for vehicles westbound on Highland Valley Road approaching the project driveway.

In summary, it can be certified there is a 204' feet of unobstructed Stopping Sight Distance along Highland Valley Road looking west and 225' Feet of unobstructed Stopping Sight Distance looking east from the project access at Highland Valley Road, based on actual measured site distance based on the recommended 30 MPH design speed and use of the Stopping Sight Distance looking to the east and west of the project driveway per the Design Standards of Section 6.1F of the County of San Diego Public Road Standards (approved March 1, 2012) provided the attached design exception is approved.

- Looking west at eastbound traffic on Highland Valley Road from the project access from a point eight (8') feet from the edge of the travel way there is a minimum of 200' feet of Corner Sight Distance (Stopping Sight Distance) which exceeds the 30 MPH AASHTO'S Stopping Sight Distance of 149' feet shown in Table 1. Figure 4 is a photo showing the 200' feet of Stopping Sight Distance.
- Looking to the east at westbound traffic on Highland Valley Road a minimum of 225' feet of Stopping Sight Distance can be provided by measuring the Corner Sight Distance from a point eight (8) feet from the edge of the travel way, based on the 30 MPH posted advisory speed and 2.0 seconds of reaction time which exceeds the AASHTO Stopping Sight Distance of 224' feet shown in Table 1. Figures 5 and 6 are photos showing the available 225' feet of Stopping Sight Distance.

It should be noted that for both eastbound and westbound Highland Valley Road, the lines of sight fall within the existing right-of way; therefore, a clear space easement is not required.

If you have any questions, please feel free to contact the office.

Sincerely,

DARNELL & ASSOCIATES, INC.



Bill E. Darnell, P.E.
Firm Principal
RCE 22338

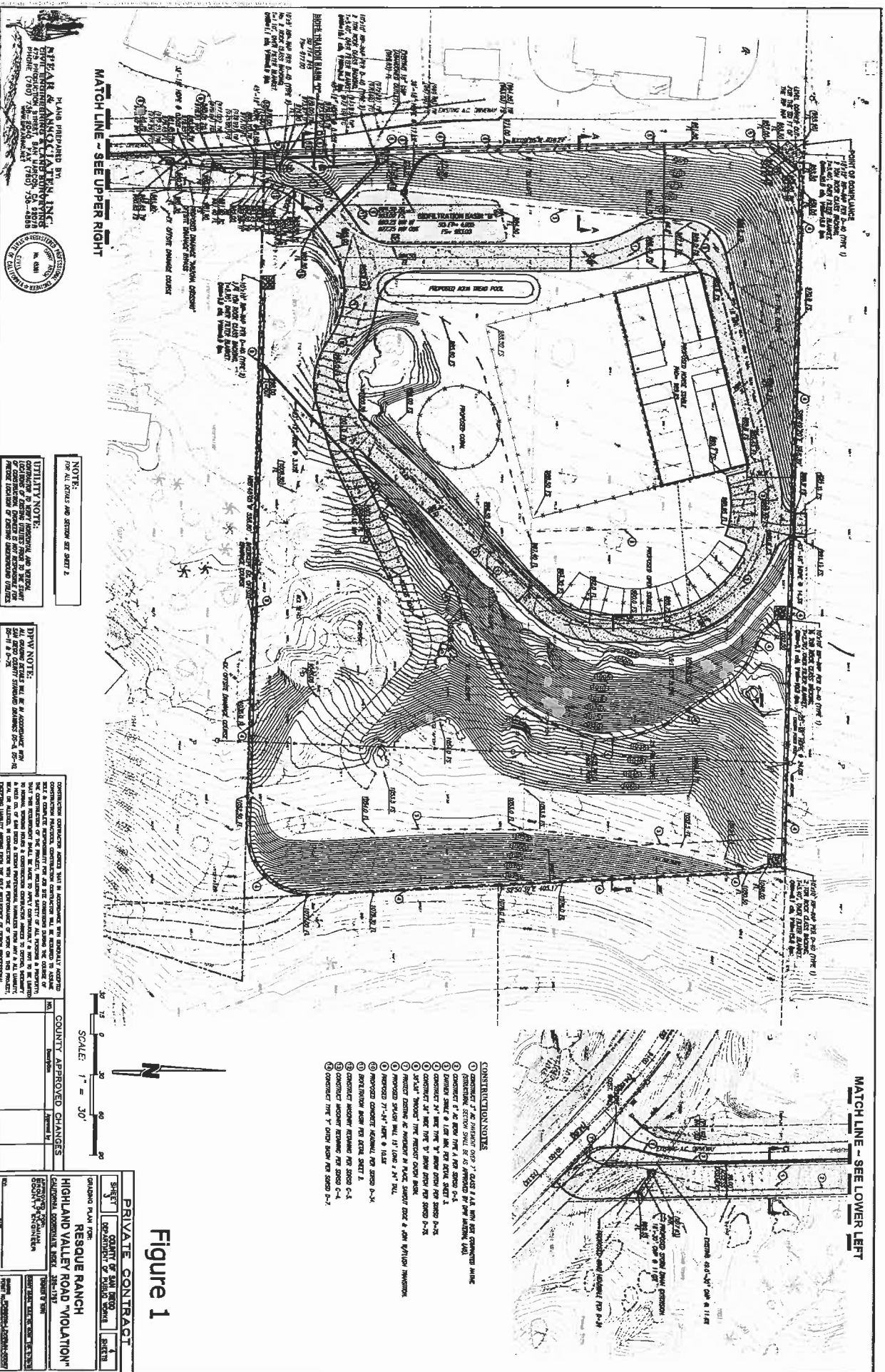


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170103 - ResQue Ranch Corner Sight Distance Certification. doc/ 07/18

Date Signed: 7/10/2018

Attachments:

County of San Diego Design Exception Modification



NOTE:
FOR ALL DETAILS AND SECTION SEE SHEET 2

UTILITY NOTE:
CONTRACTOR TO VERIFY ALL UTILITIES AND RECORD THEM IN THE FIELD. ALL UTILITIES SHALL BE DEEPENED AND RECORDED IN THE FIELD. ALL UTILITIES SHALL BE DEEPENED AND RECORDED IN THE FIELD.

DRAWING NOTE:
ALL DRAWING DETAILS WILL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CALIFORNIA CIVIL ENGINEERING BOARD'S STANDARD DRAWING SYMBOLS AND NOTATION.

CONSTRUCTION NOTES:
CONTRACTOR TO VERIFY ALL UTILITIES AND RECORD THEM IN THE FIELD. ALL UTILITIES SHALL BE DEEPENED AND RECORDED IN THE FIELD. ALL UTILITIES SHALL BE DEEPENED AND RECORDED IN THE FIELD.

SCALE: 1" = 30'

COUNTY APPROVED CHANGES

PRIVATE CONTRACT	
SHEET NO.	1
PROJECT NO.	17-1187
OWNER	RESOLVE RANCH
DESIGNED BY	SPEAR & ASSOCIATES, INC.
CHECKED BY	SPEAR & ASSOCIATES, INC.
DATE	10/1/88

Figure 1

"NOT FOR CONSTRUCTION"

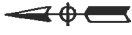
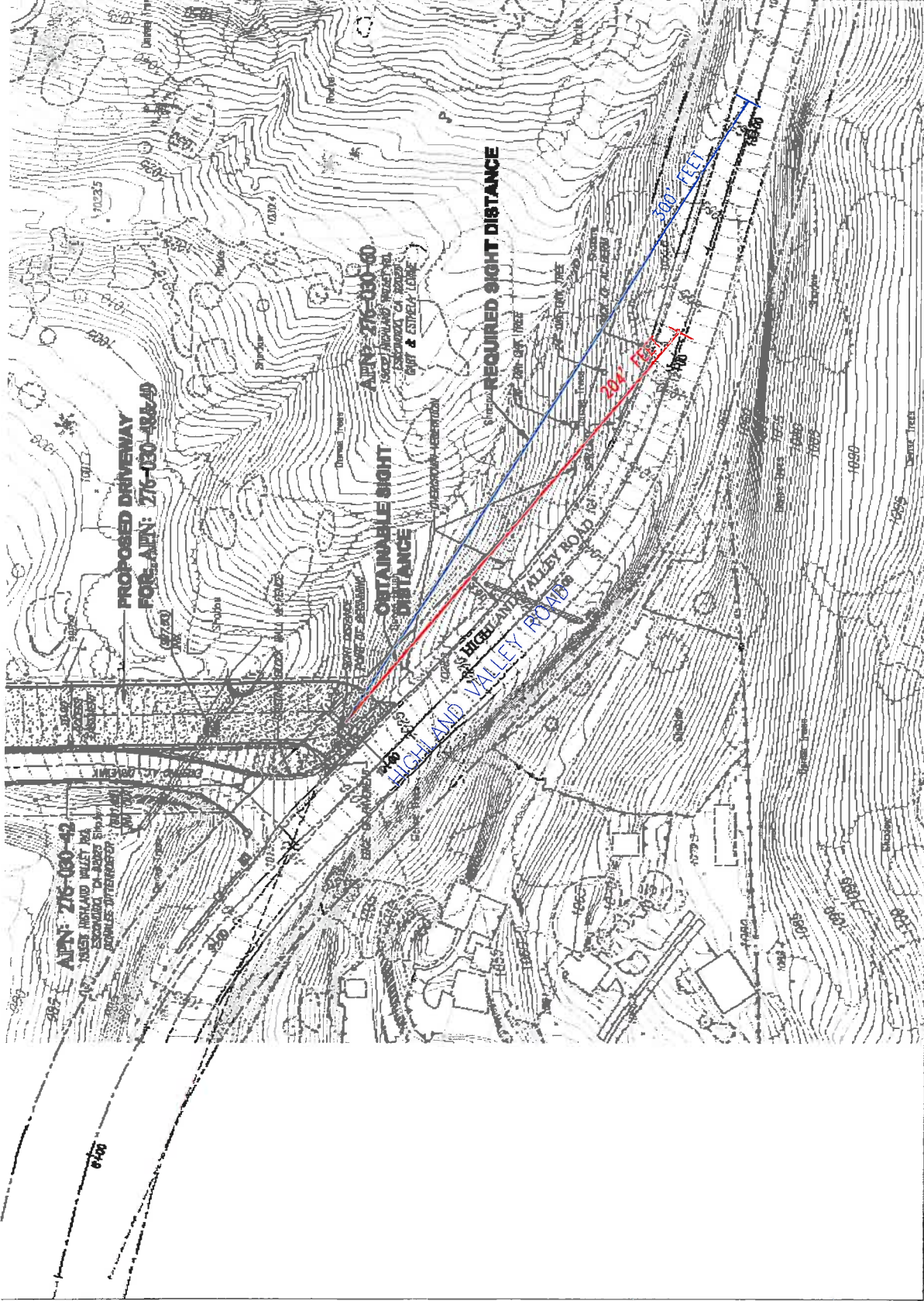
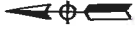


FIGURE 2
REQUIRED CORNER SIGHT DISTANCE

Darnell & ASSOCIATES, INC.

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LEGEND

- REQUIRED CORNER SIGHT DISTANCE
- AVAILABLE CORNER SIGHT DISTANCE MEASURED FROM 10' FEET FROM TRAVEL LANE.

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FIGURE 3
 REQUIRED AND AVAILABLE CORNER SIGHT DISTANCE



Looking West on Highland Valley Road to provide 200' Feet of Stopping Sight Distance (SSD) from the projects driveway.



Looking West on Highland Valley Road to provide 200' Feet of Stopping Sight Distance (SSD) from the projects driveway. (Zoomed In)

Darnell & Associates, Inc.

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FIGURE 4

Looking west on Highland Valley Road to provide 200' Feet of Stopping Sight Distance from the Project Driveway.

(Measured 8' Feet from the Travel Lane)



Looking East on Highland Valley Road from the projects driveway to provide 225' Feet Stopping Sight Distance (SSD).



Looking East on Highland Valley Road from the projects driveway to provide 225' Feet Stopping Sight Distance (SSD). (Zoomed In)

Darnell & ASSOCIATES, INC.

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FIGURE 5

Looking East on Highland Valley Road to provide 225' Feet of Stopping Sight Distance from the Project Driveway. (Measured 8' Feet from the Travel Lane)



Looking West on Highland Valley Road from the projects driveway to provide 225' Feet Stopping Sight Distance.



Looking West on Highland Valley Road from the projects driveway to provide 225' Feet Stopping Sight Distance. (Zoomed In)

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FIGURE 6

Looking West on Highland Valley Road to the proposed project driveway showing 225' Feet of Stopping Sight Distance.

ATTACHMENT A

- **County of San Diego Design Exception Modification**

DEPARTMENT OF PUBLIC WORKS

**Request for a
Modification to a Road Standard
and/or to Project Conditions**

Project Number: ResQue Ranch **Date of Request:** July 10, 2018
Project Location: Highland Valley Road
Thos. Bros. Map/Grid: 1151A3 **APN:** 276-030-049
Requestor Name: Bill E. Darnell, Darnell & Associates, Inc. **Telephone:** (619) 233-9373
Address: 4411 Mercury Street, Suite 207A, San Diego, CA 92111

Requested Modification (attach engineering sketches showing existing layout, details and notes):

Request to base intersection Corner Sight Distance at Highland Valley Road access on AASHTO Stopping Sight Distance criteria for the posted 30 MPH Advisory Speed for east and west of the project access and a 2.0 reaction time looking from a point eight (8') feet from the edge line.

Reason for requested Modification (provide attachment if additional space is required):

The project cannot meet County of San Diego intersection Corner Sight Distance requirements to the east and west of the project driveway due to the horizontal and vertical curvature of the roadway.

List alternatives that could mitigate the requested Modification (attach engineering sketches showing proposed layouts, details and notes):

Mitigation alternatives would include realigning the horizontal curvature of Highland Valley Road to the east and west of the project driveway. This improvement would require a major reconstruction of Highland Valley Road to comply with the County of San Diego Design Standards.

Describe the hardship(s) to the property owner(s) and/or neighbor(s) if the request is not approved (see note 3. on reverse):

The realignment of the roadway would be excessively expensive, would require acquisition of rights of way, and major grading.

Provide Design and Cost Estimate for meeting the Condition (see note 3. on reverse):

The cost of mitigation has not been fully explored, however, there would be substantial costs involved in the redesign of the alignment of the roadway to remove the horizontal curve and to grade and construct the roadway to provide the required sight distance.

This form is to be used for the following:

- A. Request modification to a Road Standard and/or modify DPW Conditions included in the **Preliminary Approval** *prior* to the issuance of the Final Approval.
- B. Request modification to a Road Standard and/or modify DPW Conditions included in the **Final Approval** document(s) *prior* to the recordation of the map, which may also require an amendment of conditions.

Note: Request for modifications to conditions of a recorded map, in most cases, requires a map modification, which is a separate process.

This request may be initiated by the owner or by an agent or consultant, the local fire prevention district or the local planning group acting on behalf of the owner. Where professional opinions, judgments, analysis, etc are included, these documents shall be signed, sealed and dated by the responsible licensed professional.

The following guidelines apply to this request:

1. Incomplete or unclear requests, or requests not supported by appropriate documents will be returned as incomplete applications. Requests must be specific and clear.
2. This request must be completed and submitted with supporting attachments. Attachments may consist of documents from the relevant County departments, regulatory agencies, fire prevention districts, water and utility districts, planning groups. Photos, plan and profile sketches, diagrams, engineering studies, certifications, cost estimates, and other pertinent information may also be included.
3. Provide detailed cost estimates for work included in this request. Single figure summary and "bottom line" cost estimates will not be accepted. Please note that financial hardship cannot be the sole basis of a modification request.

Example 1: A request to reduce an intersectional sight distance condition must, as a minimum, be supported by a detailed plan of the intersection showing the right-of-way easements, the available/required line(s) of sight and the existing obstructions to the line(s) of sight, a certification by a registered engineer of the prevailing speed along the major road, certification as to the minimum acceptable sight distance and the availability of such distance, as well as a detailed cost estimate for compliance with the initial condition.

Example 2: A request to reduce road width improvement standard must, as a minimum, cite the reasons necessitating the request, a letter from the local Fire Prevention District stipulating the acceptable changes to the road(s), plan and profile sketches of the road showing centerline stationing, nature, size and location of utilities that are impacted, and a detailed cost estimate for compliance with the initial improvement condition(s).

4. The applicant will be contacted if additional information or clarification is required. Your request may be forwarded to the local planning group for input. The DPW Project Team responsible for the project area will evaluate the request and make a recommendation to the Director through the Deputy Director. The Director's decision, which is final, will be conveyed to the applicant in writing, with copies to all parties and agencies concerned.
5. Requests take an average of ten (10) working days to process. They may take longer if submitted without the proper supporting documents or if there is insufficient balance in the project account.
6. Mail or submit your completed request(s) to the Department of Public Works (DPW), 5201 Ruffin Road (MS-O336), Suite D, San Diego, CA, 92123. An emailed pdf copy is recommended, also.