

Technical Memorandum

Date: July 13, 2022

To: Karl Mallick, David Evans and Associates, Inc.
Zack Cui, Henghou Group

From: Sarah Brandenburg, Biling Liu

Subject: Lancaster TTM 82777 VMT Analysis

LA21-3386

Fehr & Peers has completed quantifying Vehicle Miles Traveled (VMT) for the Tentative Tract Map No. 82777 (TTM 82777) housing project (the Project) in the City of Lancaster. This analysis compares Home-Based VMT per capita generated by the Project to the City's adopted threshold of 15% below Baseline VMT of Antelope Valley. An impact will occur if the Project's Home-Based VMT per capita exceeds this threshold. This VMT analysis is consistent with requirements of Senate Bill 743 (SB 743), the Office of Planning and Research's (OPR) Technical Advisory, and the *City of Lancaster Department of Public Works Local Transportation Assessment Guidelines* (January 2021).

This memorandum is divided into four sections: Project Introduction, Modeling Methodology, VMT Analysis, and Conclusions.

1. Project Introduction

The Project proposes a total of 36 single family residential units on vacant land located at the southwest corner of Avenue J-8 and 65th Street West in the City of Lancaster. **Attachment 1** presents the Project site plan.

2. Modeling Methodology

The Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) trip-based model is a travel demand forecasting model with socioeconomic and transportation network inputs, such as population, employment, and the regional and local roadway network, that estimates current travel behavior and forecasts future changes in travel demand. The current SCAG model has 2012 as the base year and 2040 as



the forecast year and can be used to estimate VMT for existing year 2022 conditions. The 2040 model contains the planned transportation improvements in the RTP and the growth projections in the SCS.

Table 1 presents the socioeconomic inputs for the Project. The Project population was estimated by referring to population per household ratio of the Project TAZ in SCAG base year model.

Table 1: SCAG Model Land Uses Inputs

Project TAZ SED	Households	Population
Proposed Project	36	126

When calculating VMT for a project site, the VMT methodology should match the methodology used to establish the Baseline VMT metrics and impact thresholds. For residential projects in the City of Lancaster, Baseline VMT is defined as a measurement of Home-Based VMT per capita, which reflects all trips that begin or end at a residential unit within the Los Angeles County Antelope Valley Planning Area (Antelope Valley). All Home-Based auto vehicle trips are traced back to the residence of the trip-maker (non-Home-Based trips are excluded) and then divided by the population within the geographic area to get the efficiency metric of Home-Based VMT per capita.

Following the VMT analysis, the Home-Based VMT per capita of the Project was then compared to the Antelope Valley Baseline VMT to determine if it exceeds the City's impact threshold.

3. VMT Assessment

The Home-Based VMT per capita of the Project was calculated for the base year (2022) using the SCAG travel demand model. While the Project will be built over time, the year 2022 analysis shows how the VMT generated by the Project compares to current travel and VMT characteristics in the area. **Table 2** shows the Home-Based VMT per capita of the Project.

Table 2: Project VMT and VMT Threshold for Residential Projects in Lancaster

VMT Metrics for Housing Projects	Home-Based VMT per capita
Project VMT Estimates (2022)	24.8
Antelope Valley Planning Area (AVPA) Baseline VMT (2022)	20.0
Threshold: 15% Below AVPA Baseline VMT	17.0
Percent Higher than VMT Threshold	46%
VMT Exceeds Threshold?	Yes

As shown above, the Project generates 24.8 Home-Based VMT per capita. In comparison to the City's threshold of 15% below Baseline VMT of the Antelope Valley, the Project is 7.8 Home-Based



VMT per capita higher and will result in a VMT impact. The higher VMT result is due to the location of the Project in the western area of Lancaster with lower development densities that can result in longer travel distance compared to the broader Antelope Valley area.

To mitigate the Project's VMT impact, the Home-Based VMT per capita needs to be reduced by 46%. This VMT reduction equates to 986 total VMT as shown in **Table 3**. Current state mitigation guidance provided by the California Air Pollution Control Officers Association (CAPCOA)¹ caps the maximum possible reduction in VMT at 20% in suburban locations. Therefore, the Project is unable to fully mitigate the residential VMT impact.

Table 3: VMT Reduction Required

Home-Based VMT for Residential	Project VMT Estimate	VMT Threshold (15% below Baseline)	VMT Reduction Required
VMT / capita	24.8	17.0	7.8
Total VMT	3,128	2,142	986

4. Conclusions

This technical memorandum documents the process to determine the potential VMT impacts of the proposed residential development TTM 82777 in the City of Lancaster. The following summarizes the results of the VMT analysis:

- The VMT analysis for the Project is based on the City's guidance for transportation impacts. The VMT analysis methodology for the Project is consistent with the methodology used to establish the Baseline VMT metrics and impact thresholds for projects in the City of Lancaster.
- For residential projects in the City of Lancaster, the Home-Based VMT per capita is analyzed to determine the VMT impact. The Home-Based VMT per capita generated by the Project under base year (2022) is then compared to the Antelope Valley Baseline VMT.
- The Project generates 24.8 Home-Based VMT per capita which is 46% higher than the City's threshold. Therefore, the Project will result in a VMT impact.

¹ Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (CAPCOA, 2021); Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Access Emission Reductions from Greenhouse Gas Mitigation Measures (CAPCOA, 2010)



- According to mitigation guidance provided by CAPCOA, the maximum possible reduction in VMT is 20% in suburban locations; therefore, the Project is unable to fully mitigate the expected residential VMT impacts.

Attachment A - Project Site Plan



GENERAL NOTES:

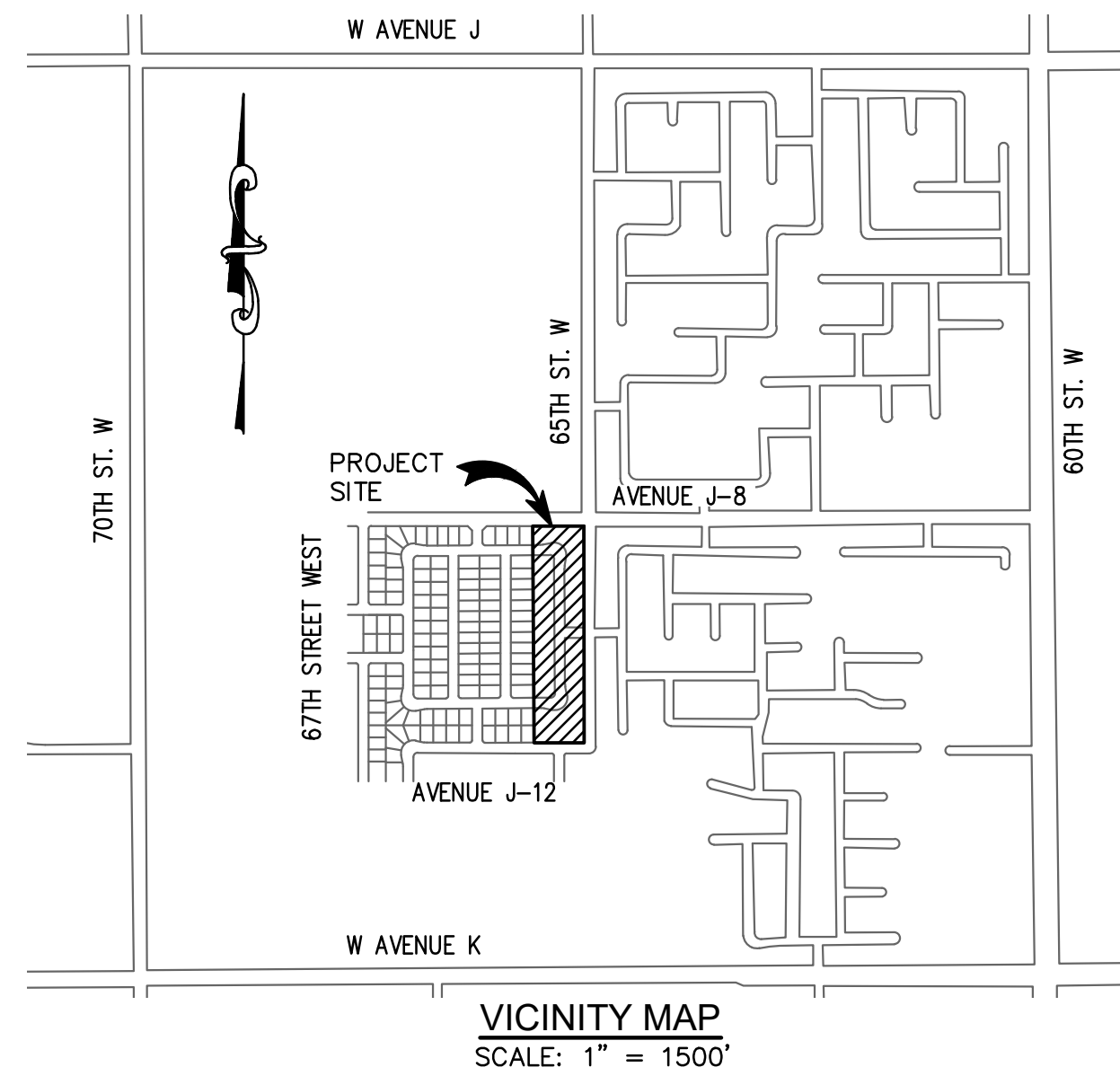
- PROJECT ADDRESS: SW AVENUE "J"-8" AND 65TH ST. WEST, LANCASTER, CALIFORNIA
- GROSS AREA (PROPERTY TO CENTER LINE OF ABUTTING STREETS): 10 ACRES ± (436500 SF ±)
- GROSS DEVELOPMENT AREA (AREA WITHIN TRACT): 8.3 ACRES ± (361548 SF ±)
- EXISTING ZONING: R-7,000
- PROPOSED ZONING: R-7,000
- PROPOSED LAND USE: 36 SINGLE-FAMILY HOMES / EXISTING LAND USE: VACANT
- ROADWAY DEDICATION: 1.7 ACRES ±
- NET DENSITY: 4.3 DU/ACRE
GROSS DENSITY: 3.6 DU/ACRE
- THE PROPOSED METHOD OF SEWAGE DISPOSAL: CONNECT TO COUNTY OF LOS ANGELES SANITARY SEWER SYSTEM, IN AVENUE "J"-8" AT THE 63RD ST. WEST INTERSECTION.
- THE PROPOSED METHOD OF DRAINAGE: CONSTRUCT STORM DRAIN UNDERGROUND CONDUITS AND CONNECTS TO EXISTING 84" STORM DRAIN IN 65TH ST. WEST.
- THE PROPOSED STREET AND LOT GRADING ARE APPROXIMATE ONLY AND SUBJECT TO ADJUSTMENTS FOR BALANCED EARTHWORK IN THE FINAL DESIGN OF THE PROJECT.
- CUT AND FILL WILL BE AS CLOSE AS POSSIBLE TO BALANCE THE SITE.
- LOT SIZES AND CONFIGURATIONS ARE ILLUSTRATIVE ONLY AND WILL BE FINALIZED ON THE FINAL MAP BASED ON TENTATIVE MAP CONDITIONS.
- THE RIGHT IS RESERVED TO ADJUST STREET AND BUILDING PAD ELEVATIONS ON THE FINAL GRADING PLAN.
- THE RIGHT IS RESERVED TO ADJUST LOT LINES AND MERGE LOTS ON THE FINAL MAP (ACRES ARE APPROXIMATE).
- ALL DIMENSIONS SHOWN ARE APPROXIMATE.
- ASSESSOR PARCEL NUMBERS: 3203-018-114.

LEGAL DESCRIPTION:

THE EAST ONE-HALF OF THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER AND THE SOUTHWEST ONE-QUARTER OF SECTION 22, TOWNSHIP 7 NORTH, RANGE 13 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

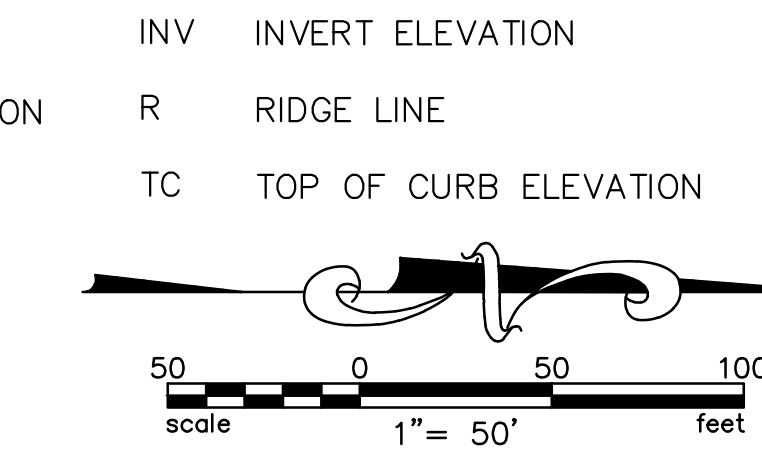
EXISTING EASEMENT INFORMATION:

- (A) 20' WIDE EASEMENT FOR ROAD PURPOSES AND RIGHTS INCIDENTAL, RECORDED SEPTEMBER 16, 1953 IN BK 42698 PG 34 OF OFFICIAL RECORDS.
- (B) THE EAST 40' OF THE NORTH 40' OF THE EAST ONE-HALF OF THE EAST ONE-HALF OF THE NORTHEAST ONE-QUARTER OF SECTION 22, TOWNSHIP 7 NORTH, RANGE 13 WEST, SAN BERNARDINO BASE AND MERIDIAN EASEMENT FOR PUBLIC ROAD AND HIGHWAY EASEMENT GRANTED TO CITY OF LANCASTER, RECORDED NOVEMBER 20, 1991, AS INSTRUMENT No. 91-1832349 OF OFFICIAL RECORDS.
- (C) 42' WIDE EASEMENT FOR PUBLIC ROAD, HIGHWAY AND UTILITY PURPOSES AS GRANTED TO CITY OF LANCASTER, A MUNICIPAL CORPORATION, RECORDED MAY 4, 2004 AS INSTRUMENT No. 04-1127603 OF OFFICIAL RECORDS.



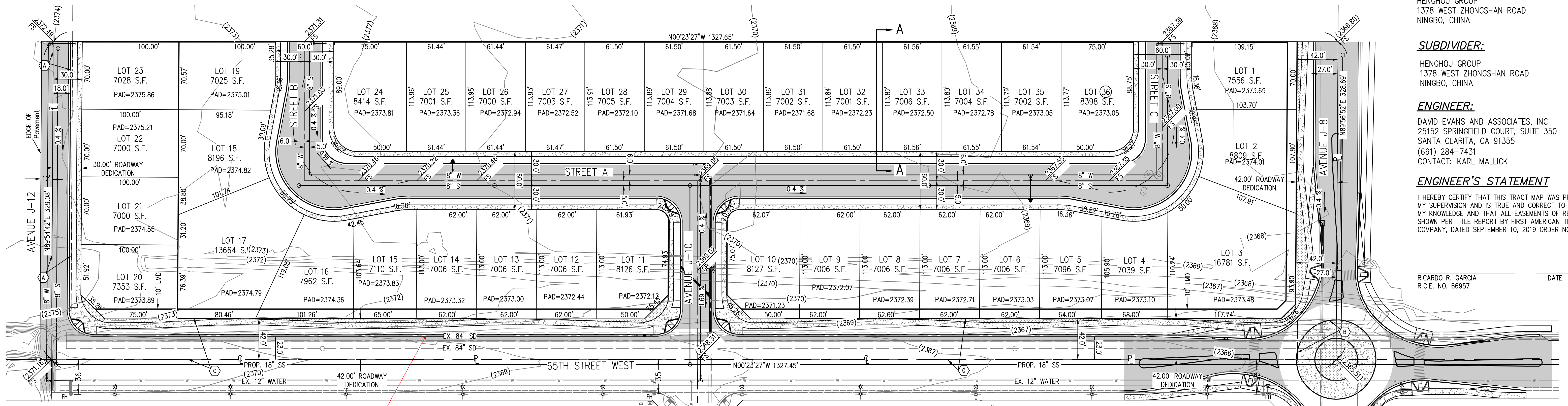
LEGEND:

- EXISTING SANITARY SEWER PER SEPARATE PLANS
- EXISTING WATER LINE PER SEPARATE PLANS
- PROPOSED SANITARY SEWER PER SEPARATE PLANS
- PROPOSED WATER LINE PER SEPARATE PLANS
- PROPOSED STORM DRAIN LINE PER SEPARATE PLANS
- EXISTING STREET LIGHT



UTILITIES:

- ELECTRIC:** SOUTHERN CALIFORNIA EDISON, P.O. BOX 4349, 42060 10TH ST. WEST, LANCASTER, CA 93534, (661) 726-5667
- CABLE T.V.:** TIME WARNER CABLE, 41551 10TH STREET WEST, PALMDALE, CA 93550, (888)892-2253
- GAS:** THE GAS COMPANY, 44416 DIVISION ST., LANCASTER, CA 93536, (818) 200-0800
- WATER:** L.A. COUNTY WATERWORKS DISTRICT 40, REGION 34, 260 E. AVE. K-8, LANCASTER, CA 93535, PHONE (661) 940-7270
- SEWER:** L.A. COUNTY SANITATION DIST. DIST. # 14 & 20, 41769 11TH STREET WEST, PALMDALE, CA 93551, PHONE (661)947-5027
- TELEPHONE:** VERIZON COMMUNICATIONS, P.O. BOX 1929, LANCASTER, CA 93539, PHONE (661) 948-4843



OWNER:
HENGHOU GROUP
1378 WEST ZHONGSHAN ROAD
NINGBO, CHINA

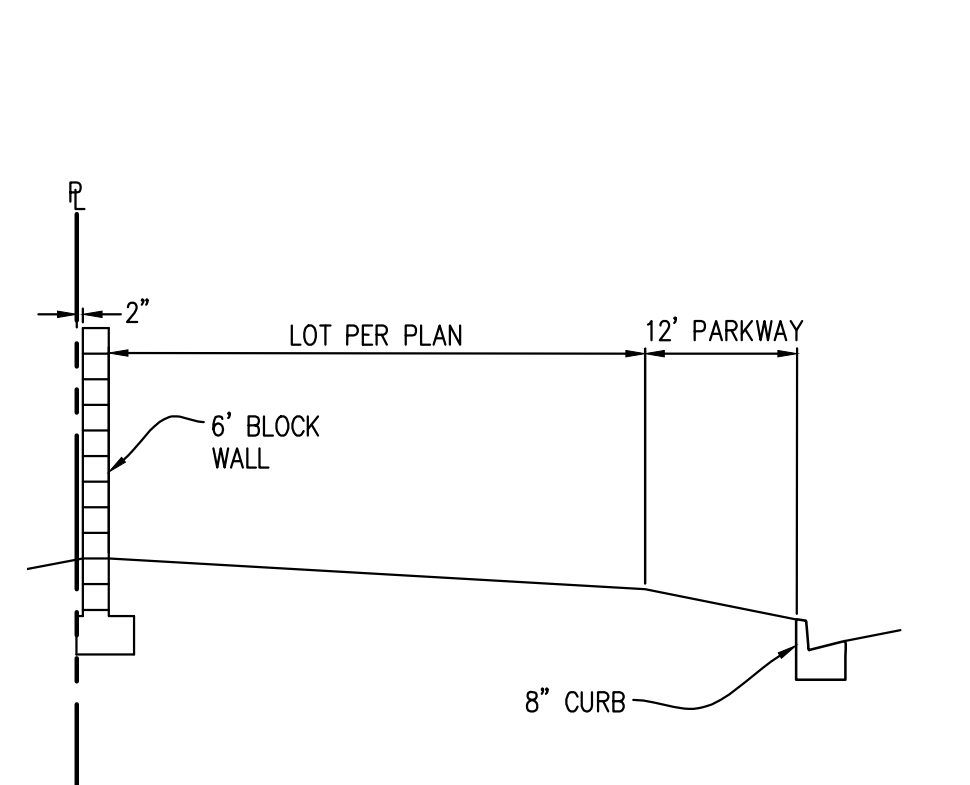
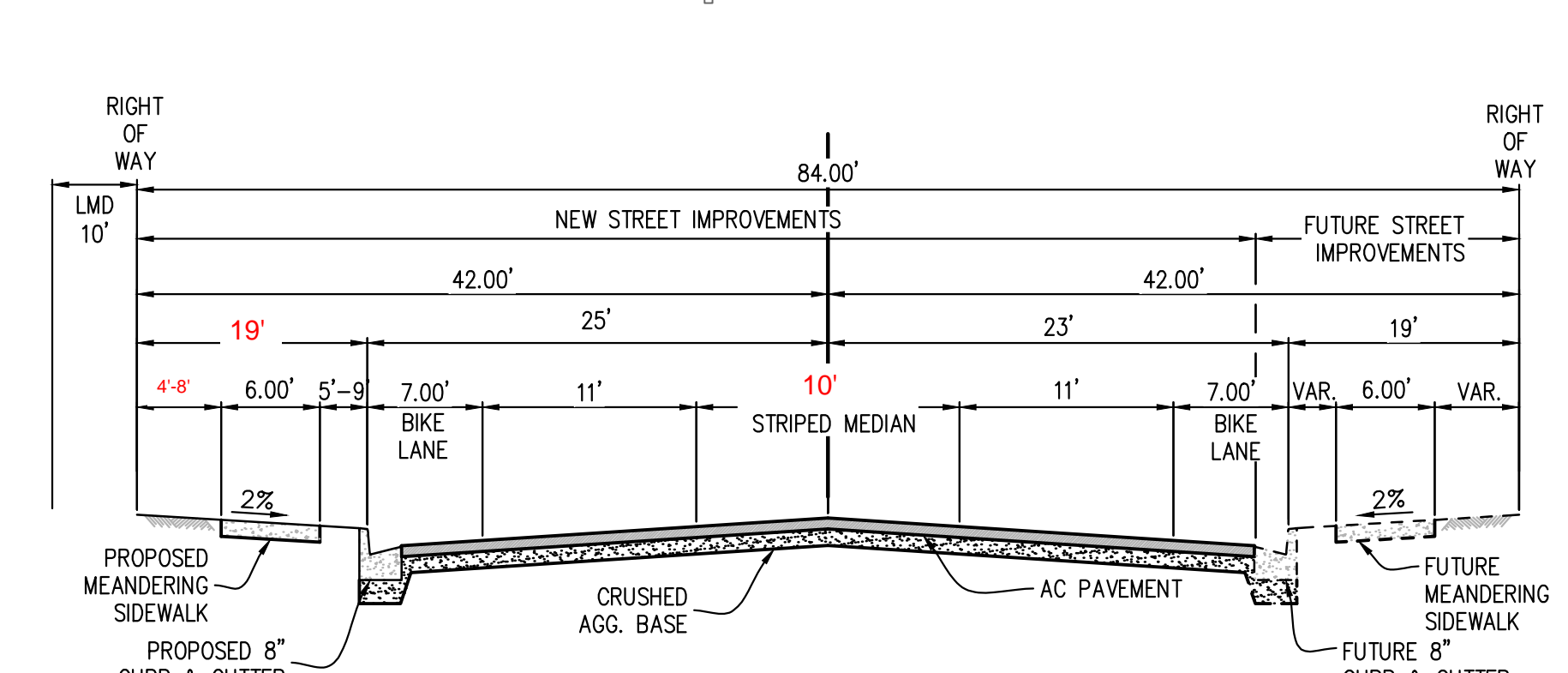
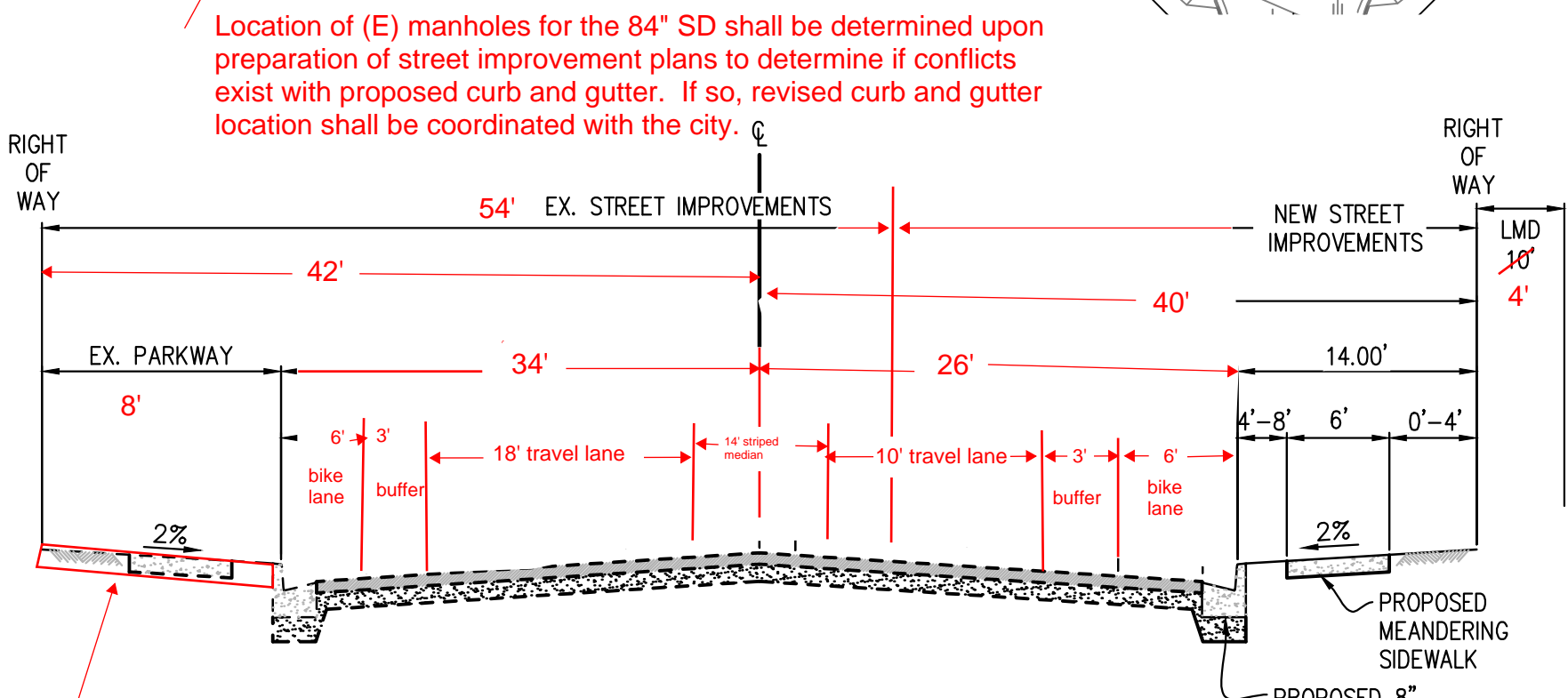
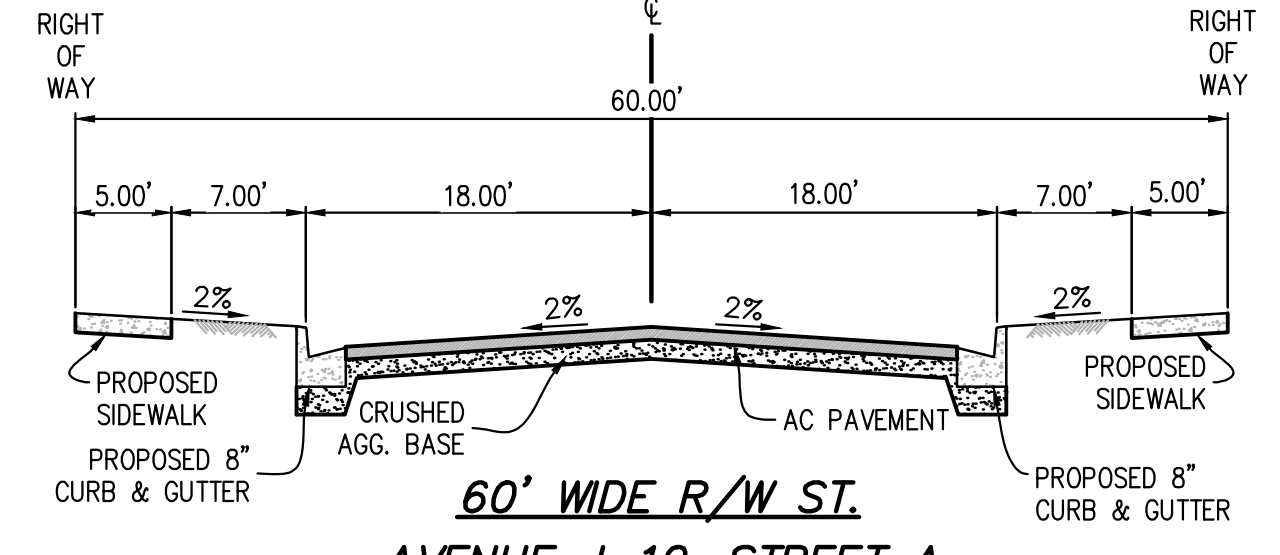
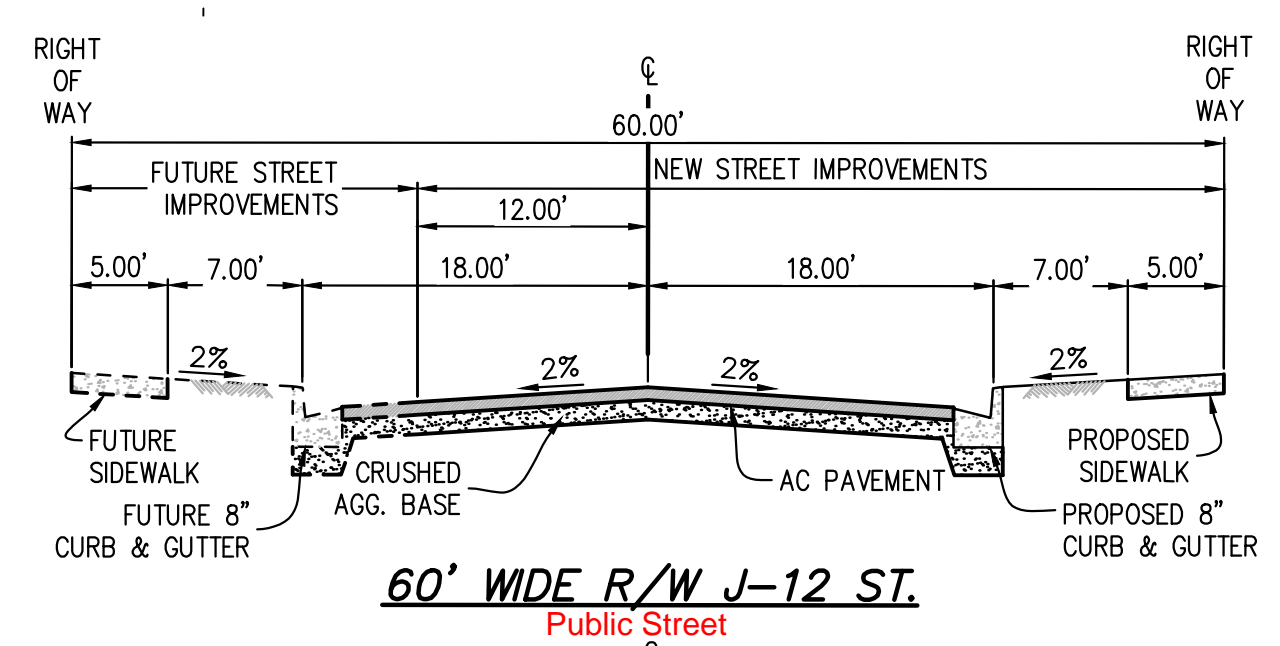
SUBDIVIDER:
HENGHOU GROUP
1378 WEST ZHONGSHAN ROAD
NINGBO, CHINA

ENGINEER:
DAVID EVANS AND ASSOCIATES, INC.
25152 SPRINGFIELD COURT, SUITE 350
SANTA CLARITA, CA 91355
(661) 284-7431
CONTACT: KARL MALLICK

ENGINEER'S STATEMENT
I HEREBY CERTIFY THAT THIS TRACT MAP WAS PREPARED UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THAT ALL EASEMENTS OF RECORD ARE SHOWN PER TITLE REPORT BY FIRST AMERICAN TITLE INSURANCE COMPANY, DATED SEPTEMBER 10, 2019 ORDER NO. LDE-5658791

RICARDO R. GARCIA
R.C.E. NO. 66957

DATE



Location of (E) manholes for the 84" SD shall be determined upon preparation of street improvement plans to determine if conflicts exist with proposed curb and gutter. If so, revised curb and gutter location shall be coordinated with the city.

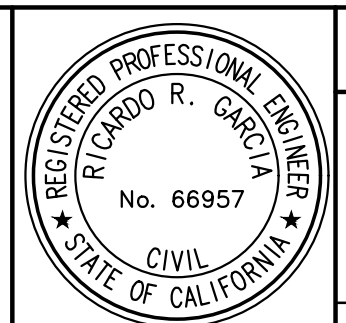
show sidewalk full width of 8 ft parkway

update

OWNER / DEVELOPER:
HENGHOU GROUP
1378 WEST ZHONGSHAN ROAD
NINGBO, CHINA

DAVID EVANS AND ASSOCIATES, INC.
PREPARED UNDER THE SUPERVISION OF:
RICARDO R. GARCIA, R.C.E. NO. 66957

25152 Springfield Court Suite 350
Santa Clarita California 91355-1096
Phone: 661.284.7400



CITY OF LANCASTER
TENTATIVE TRACT MAP
TRACT 82777

SHEET
1 OF 1
SHTS

SCALE: AS SHOWN HENG00000001