
Appendix J



BRENTWOOD BRIDLE GATE VMT ANALYSIS

DATE: March 2, 2022

TO: Doug Chen | Discovery Builders

FROM: Erin Vaca | DKS Associates

SUBJECT: VMT Assessment for Bridle Gate Residential Project

Project #22265-000

INTRODUCTION

This memorandum documents the VMT characteristics of the proposed Bridle Gate residential development located in Brentwood, California. The proposed project (Bridle Gate Project) consists of 286 single family residential lots to be constructed in the southwest quadrant of Highway 4 and Sand Creek Road, with parcels for parks, open space, and designated remainder within a gross area of approximately 135 acres. The project site is currently vacant and is being used for grazing (see **Figure 1** for project location; a copy of the site plan is attached).

BACKGROUND ON SENATE BILL 743 AND VMT METRICS

California Senate Bill 743, adopted in 2013, brought about changes in the approach to measuring the transportation impacts of projects subject to the California Environmental Quality Act (CEQA). Effective July 2020, the transportation impacts of projects are primarily measured in terms of Vehicle Miles Traveled (VMT) characteristics.

The Governor's Office of Planning and Research (OPR) has issued technical guidance recommending that residential and employment land use projects be assessed in terms of VMT per capita, and that the recommended threshold of significance be set at 85% of the existing baseline VMT per capita or per employee. The OPR technical guidance also specifies circumstances under which projects may be presumed to have less than significant VMT impacts (i.e., screening criteria).

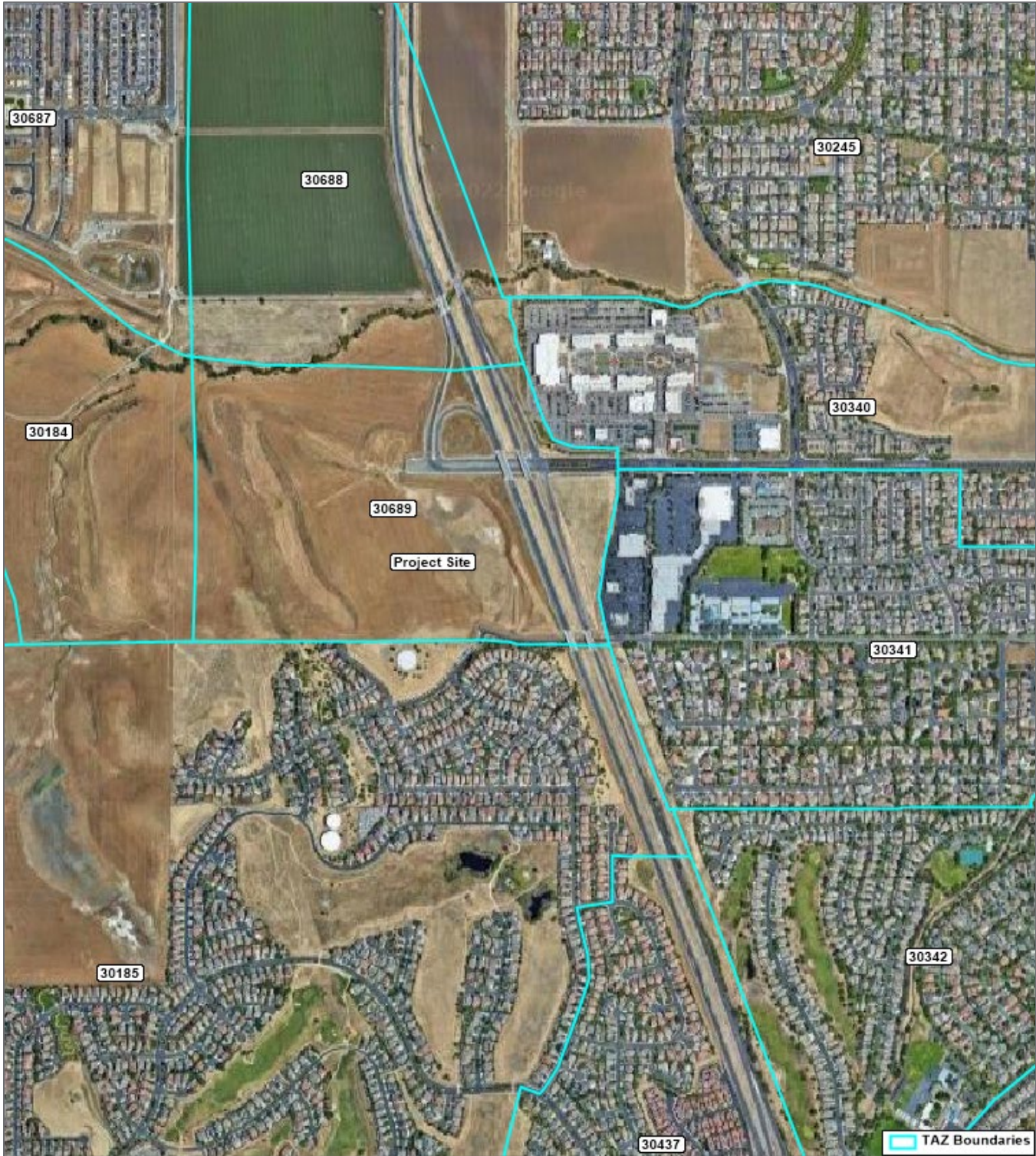


FIGURE 1: PROJECT LOCATION

METHODOLOGY AND ANALYSIS STANDARDS

In compliance with SB 743 and following OPR guidance, the Contra Costa Transportation Authority (CCTA) has implemented VMT analysis methodologies in its Growth Management Plan (GMP) Implementation Guide (revised February 2021). This document specifies the methodology, screening criteria, and thresholds of significance that member jurisdictions should follow to remain in compliance with the GMP. This assessment utilizes follows methodologies specified in the GMP Implementation Guide to calculate the VMT characteristics of the proposed project.

VERSION OF CCTA MODEL AND VMT SUMMARY SCRIPT

DKS conducted analysis using the 2020 version of the CCTA travel demand model¹ which incorporates the “P2017” land use forecasts. Model files previously used for analysis of other projects in Brentwood were reviewed to ensure consistency (model files used by TJKM and provided by the City of Brentwood). In particular, the land use input file (without the project) was compared and found to be identical. While the TJKM script used to calculate VMT for each TAZ appeared to differ from the script supplied by CCTA, the resulting VMT was very similar (see Project VMT Analysis, below).

Although the project’s proposed residential units are in the model’s land use file, the model does not forecast activation of this land use until many years in the future. To conduct the project VMT analysis, DKS modified the master land use file to reflect project land use for a 2020 scenario.

THRESHOLD OF SIGNIFICANCE

The threshold of significance is based on a citywide average of 29.6 VMT per capita, as reported by the City of Brentwood. In conformance with the GMP, this results in a threshold of significance of 25.2 VMT per capita or 15% below the existing citywide average. For comparison, the County-wide residential VMT per capita is 19.4, which would imply a significance threshold of 16.5. Per the GMP, however, the less stringent threshold may be used.

PROJECT ANALYSIS

PROJECT SCREENING

The GMP Implementation Guide lists five screening criteria to which projects may be compared. Projects meeting at least one screening criterion may be considered to have less than significant VMT impacts, and further analysis is not required. The proposed Bridle Gate Project does not meet any of the criteria for a presumption of less than significant impacts, as discussed below.

¹ For reference, the source script for this version of the model is “cctamodel20201014.rsc”.

1. CEQA Exemption – Any project that is exempt from CEQA is not required to conduct a VMT analysis. The proposed Project is not exempt from CEQA and thus does not meet this criterion.
2. Small Projects – Small projects are defined as having 10,000 square feet or less of non-residential space or 20 residential units or less, or otherwise generating less than 836 VMT per day. The proposed Project consists of 286 single family residential units and thus does not meet this criterion.
3. Local-Serving Uses – Projects that consist of Local-Serving Uses primarily draw users and customers from a relatively small geographic area that will lead to short-distance trips and trips that are linked to other destinations. This screening criterion applies to commercial or retail uses. Since the proposed Project is a residential project, this screening criterion is not applicable.
4. Projects Located in Transit Priority Areas (TPAs) – Projects located within a TPA can be presumed to have a less-than-significant impact absent substantial evidence to the contrary. The proposed Project is not located within a TPA and thus does not meet this criterion.
5. Projects Located in Low VMT Areas – Residential and employment-generating projects located within a low VMT-generating area can be presumed to have a less-than-significant impact absent substantial evidence to the contrary. For a residential project, a low VMT area is defined as cities and unincorporated portions within CCTA’s five subregions that have existing home-based VMT per capita that is 85% or less of the existing County-wide average. The proposed Project is located within the city limits of Brentwood, in which the home-based VMT per capita is above the County-wide average. Therefore, the proposed Project does not meet this criterion.

PROJECT VMT ANALYSIS

BASELINE ANALYSIS

Because the proposed Project is in a Transportation Analysis Zone (TAZ) that is currently vacant, analysis of the Project’s VMT effects was conducted using the CCTA Travel Demand Model. The Project was analyzed for a 2020 condition for consistency with the scenario year used for the baseline VMT calculation.

The model run was conducted using the 2020 version of the CCTA model script and outputs were summarized using the VMT tabulation script and summary spreadsheet provided by CCTA (the calculation spreadsheet is available upon request). Note that the VMT calculation script previously used for other City of Brentwood projects was also tested and the resulting outputs were almost identical.

The threshold of significance is 85% of the baseline VMT per capita for the City of Brentwood, or 25.2 VMT per capita. As shown in Table 1, while the Project TAZ home-based VMT is lower than the baseline average for the City of Brentwood, it exceeds the threshold of significance by 7%.

TABLE 1: PROJECT VMT AVERAGE RATES AND THRESHOLDS OF SIGNIFICANCE

TABLE 1: HOME-BASED VMT PER RESIDENT

GEOGRAPHIC AREA	AVERAGE VMT PER RESIDENT	85% AVERAGE VMT PER RESIDENT
TAZ WITH PROJECT	27.0	n/a
CITY OF BRENTWOOD	29.6 ^a	25.2
CONTRA COSTA COUNTY	19.4	16.5

^a Threshold of significance based on direction from City of Brentwood (email from Raney Planning and Management dated 1/12/2023). This threshold has been selected to be consistent with previous VMT studies for projects in Brentwood (see TJKM, "VMT Analysis for the Orchard Grove Residential Development", January 2022).

MITIGATION

Applicable site-level VMT mitigation measures listed in the guide published by the California Air Pollution Control Officer's Association (CAPCOA) were evaluated for potential incorporation into the Project. Applicable mitigation strategies are listed in **Table 2**.

The most feasible and quantifiable mitigation was determined to be an increase in intersection density, listed as Measure T-17. As shown in **Table 3 "Mitigation Summary"**, an intersection density of 61.5 is needed for an approximately 10% VMT reduction, which would then result in a less-than-significant impact as discussed previously. The proposed project can add an intersection (a potential location is shown in the attached exhibit prepared by Apex, the project civil engineer) to achieve this intersection density. Therefore, the proposed project is found to have a less-than-significant with mitigation.

Other potential mitigation measures considered and their corresponding VMT reductions include:

T-4 "Integrate Affordable Housing" (28.6% VMT reduction): The project is proposing 10% affordable housing, but the documented effectiveness of this measure applies only to multifamily units.

TABLE 2: APPLICABLE MITIGATION STRATEGIES

STRATEGY	MAXIMUM MITIGATION EFFECTIVENESS
T-1 INCREASE RESIDENTIAL DENSITY	30.0%
T-4 INTEGRATE AFFORDABLE HOUSING	28.6%
T-9 IMPLEMENT SUBSIDIZED TRANSIT PROGRAM	5.5%
T-15 LIMIT RESIDENTIAL PARKING SUPPLY	13.7%
T-16 UNBUNDLE RESIDENTIAL PARKING COSTS	15.7%
T-17 IMPROVE STREET CONNECTIVITY	30.0%
T-19-A. CONSTRUCT OR IMPROVE BIKE FACILITY	0.8%
T-21-A IMPLEMENT CARSHARE PROGRAM	0.15%
T-22-A-C. IMPLEMENT BIKESHARE OR SCOOTER SHARE PROGRAM	0.02-0.07%
T-23 IMPLEMENT COMMUNITY BASED TRAVEL PLANNING	2.3%

Source: CAPCOA. *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, December 2021.

TABLE 3: MITIGATION SUMMARY

FORMULA	$A = (B-C)/C \times D$
A – PERCENT VMT REDUCTION	-9.97%
B - INTERSECTION DENSITY WITH MITIGATION	Area = 135 acres (0.21 square miles) Intersections with mitigation = 13 Intersection density with mitigation = 61.5 per square mile
C - AVERAGE INTERSECTION DENSITY	36
D – ELASTICITY OF VMT TO DENSITY	-0.14

Sources: CAPCOA (2021) and DKS Associates.

CUMULATIVE ANALYSIS

Although not required by the GMP since the project VMT impacts can be mitigated, a cumulative analysis was conducted for informational purposes. This analysis was conducted for a 2040 horizon year and With Project and No Project scenarios. Since, the CCTA travel demand model land use input file contained sufficient forecasted quantities of residential development, the standard inputs were used for the With Project scenario. The Project TAZ is forecasted to remain predominantly residential, with only 24 primarily retail jobs by 2040. Note that both cumulative scenarios assumed the extension of Sand Creek Road west from the project site.

The No Project scenario was developed by subtracting 286 single family residential units from the given total and proportionately adjusting the total population, household population, and employed residents variables. **Table 4** summarizes the With Project and No Project 2040 land use inputs.

The Project and No Project VMT per capita was tabulated using the CCTA-provided scripts and summary spreadsheet. In addition, the sum of study area VMT was tabulated for both scenarios, per the GMP Implementation Guide. The study area was defined as the City of Brentwood as shown in **Figure 3**. Daily VMT was calculated for all network links within or leading to the city boundaries.

The cumulative analysis results are summarized in **Table 5**. As shown, the With Project VMT per capita for the study area is lower than that of the No Project scenario. Therefore, the Project will not result in a cumulative impact to overall VMT.

TABLE 4: CUMULATIVE ANALYSIS LAND USE INPUTS

TAZ 30689

LAND USE INPUT	ORIGINAL (WITH PROJECT)	REVISED (NO PROJECT)
TOTHH_40	791	504
TOTPOP_40	2497	1591
EMPRES_40	851	542
SFDU_40	730	444
MFDU_40	60	60
TOTEMP_40	24	24

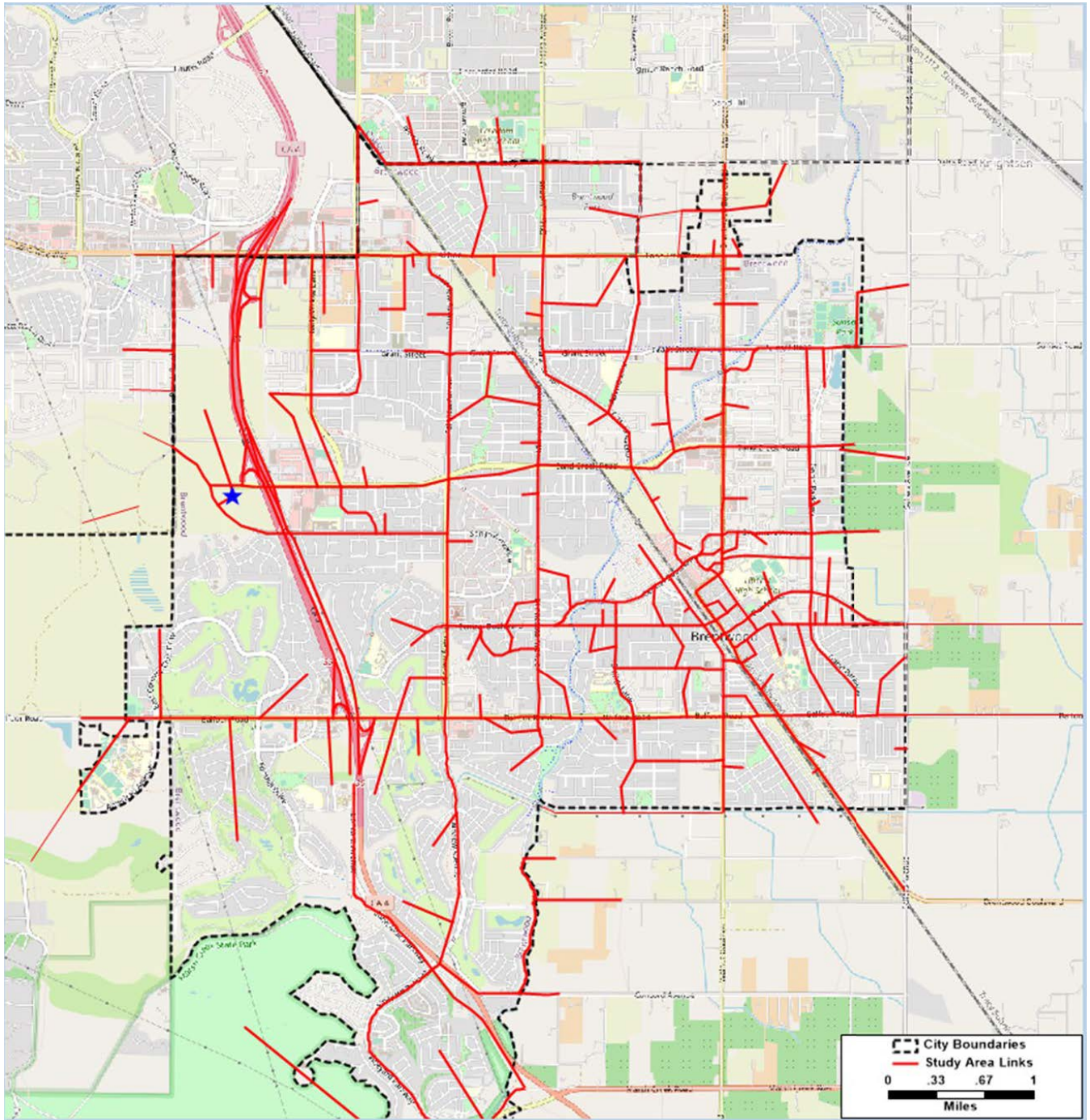


FIGURE 2: STUDY AREA FOR CUMULATIVE ANALYSIS

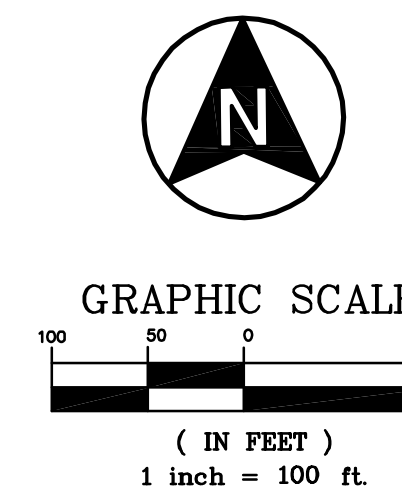
TABLE 5: CUMULATIVE METRICS
 YEAR 2040

GEOGRAPHIC AREA	WITH PROJECT	NO PROJECT
TAZ 30689 HOME-BASED VMT PER CAPITA	19.1	19.2
STUDY AREA LINK VMT	704,816	703,602
POPULATION IN STUDY AREA TAZS	83,577	82,671
STUDY AREA VMT PER POPULATION	8.4	8.5

APPENDIX

VESTING TENTATIVE MAP

"BRIDLE GATE" SUBDIVISION 9586 CITY OF BRENTWOOD COUNTY OF CONTRA COSTA STATE OF CALIFORNIA



OWNER/DEVELOPER

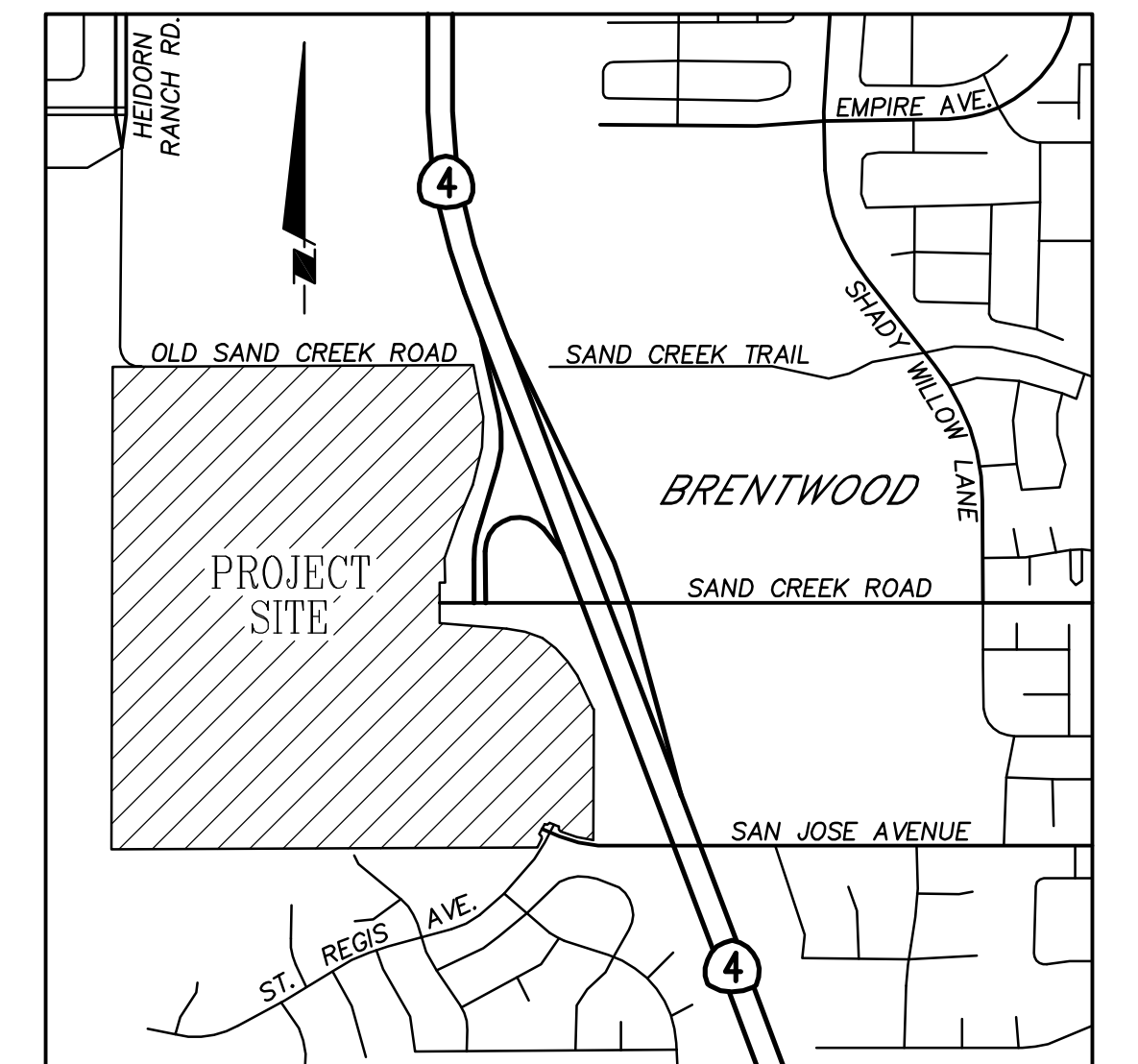
WCHB DEVELOPMENT, LLC
4021 PORT CHICAGO HIGHWAY
CONCORD, CA 94520
(925) 671-7711

CIVIL ENGINEER

APEX CIVIL ENGINEERING & LAND SURVEYING
817 ARNOLD DRIVE, SUITE 50
MARTINEZ, CA 94553
(925) 476-8499
ION VIZCAY, PE (R.C.E. #78203)

SOILS ENGINEER

ENGEO INC
2401 CROW CANYON ROAD, SUITE 200
SAN RAMON, CA 94583
(925) 838-1600



VICINITY MAP
NOT TO SCALE

GENERAL

ASSESSORS PARCEL NO(S): 019-082-007
PROJECT ADDRESS: WEST TERMINUS OF SAN JOSE AVENUE & SAND CREEK ROAD IN BRENTWOOD, CA
TOTAL GROSS: 135.31 ACRES
PROPOSED ZONING: PD-PLANNED DEVELOPMENT
GENERAL PLAN: R-LD: RESIDENTIAL-LOW DENSITY
P: PARK
P-OS: PERMANENT OPEN SPACE
EXISTING USE: VACANT LAND-CATTLE GRAZING
PROPOSED USE: 286 SINGLE FAMILY RESIDENTIAL LOTS (4,500 SF MIN.)
PARCEL A: 6.00 AC (PARK) (1.55 AC < 3% SLOPE)
PARCEL B: 1.85 AC (STORM, C.3, SEWER)
PARCEL C: 0.20 AC (LANDSCAPING)
PARCEL D: 0.48 AC (LANDSCAPING)
PARCEL E: 2.49 AC (STORM, C.3)
PARCEL F: 0.14 AC (LANDSCAPING)
PARCEL G: 3.39 AC (PARK) (3.10 AC < 3% SLOPE)
PARCEL H: 0.05 AC (LANDSCAPING)
PARCEL I: 25.00 AC (OPEN SPACE)
PARCEL J: 0.04 AC (PEDESTRIAN ACCESS)
PARCEL K: 0.02 AC (PEDESTRIAN ACCESS)
PROPOSED DENSITY: 3 DU/AC (SOUTH OF SAND CREEK ROAD CENTERLINE)
FEMA FLOOD DESIGNATION: ZONES "A", "AE" & "X" (FIRM MAPS 060130335F & 060130335G, DATED 06-16-2009)
EXISTING TOPOGRAPHY DATE: 05-23-2017

FACILITIES

WATER: CITY OF BRENTWOOD
SEWER: CITY OF BRENTWOOD
STORM DRAIN: CITY OF BRENTWOOD
GAS & ELECTRIC: PACIFIC GAS & ELECTRIC
TELEPHONE: AT&T
CABLE: COMCAST
FIRE PROTECTION: CONTRA COSTA COUNTY

NOTE

PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT, THE OWNER RESERVES THE RIGHT TO FILE MULTIPLE MAPS ON THE LANDS SHOWN ON THIS MAP.

BENCHMARK

CONTRA COSTA COUNTY BM. NO. 982, A P.K. NAIL SET IN SOUTHWEST LEG OF P.G.&E. TOWER 200 FEET EAST OF BRIDGE CROSSING SAND CREEK ON OLD SAND CREEK ROAD 40 FEET NORTH OF CENTERLINE OF ROAD. ELEV.=135.43

BASIS OF BEARINGS

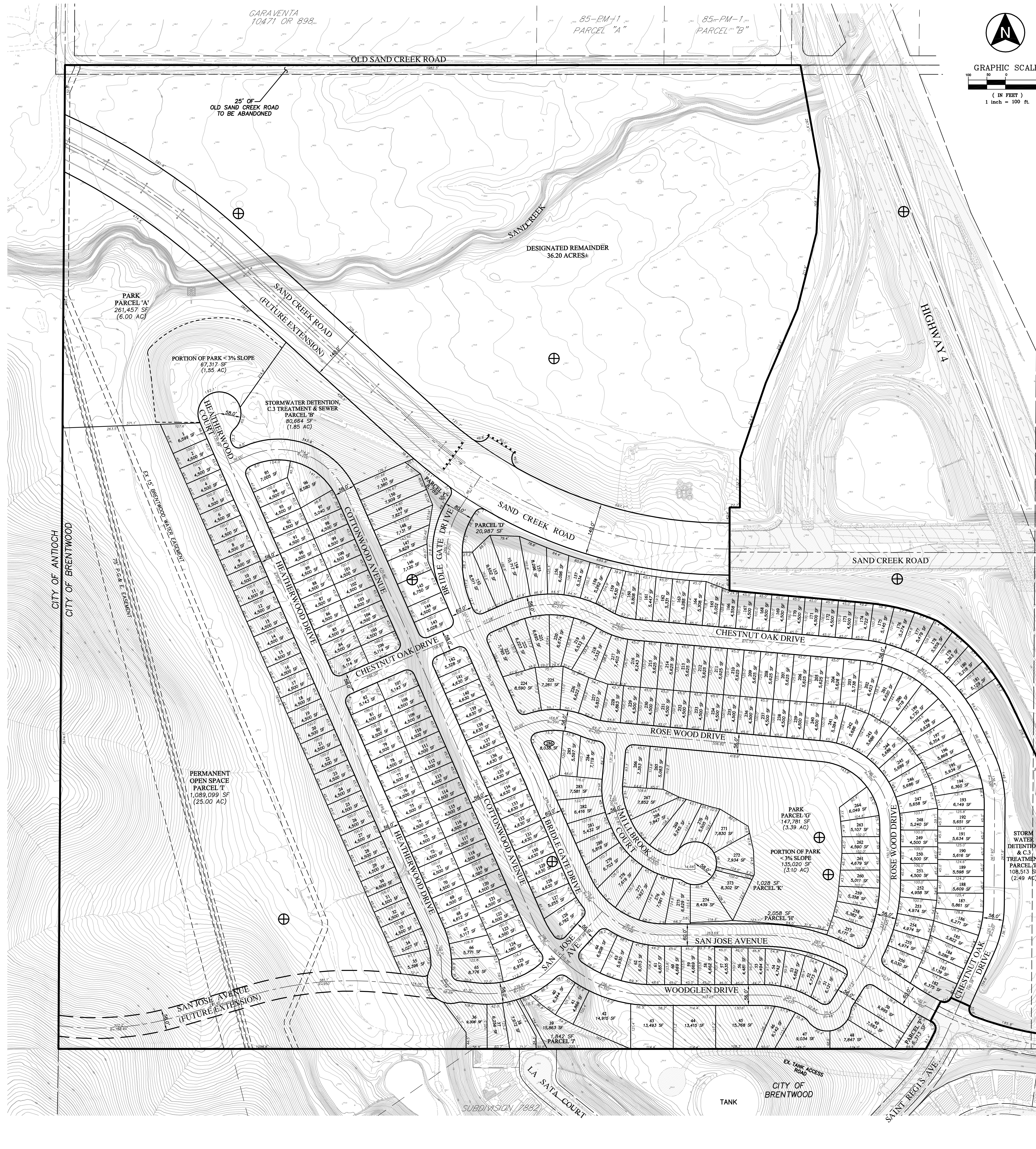
THE BASIS OF BEARINGS FOR THIS MAP IS DETERMINED BY FOUND MONUMENTS SHOWN HEREON, THE BEARING BEING N89°28'41"W BETWEEN STATION 2129 AND STATION 2120 PER RECORD OF SURVEY NO. 2496 (118 LSW 40). THE BEARINGS SHOWN ARE ON CALIFORNIA COORDINATE SYSTEM ZONE III (NAD 83). MULTIPLY DISTANCES AS SHOWN BY 0.99993501 TO OBTAIN GRID DISTANCES.

SHEET INDEX

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	PRELIMINARY GRADING & UTILITY PLAN

LEGEND

EXISTING	PROPOSED	ITEM
[Symbol]	[Symbol]	PAVEMENT
[Symbol]	[Symbol]	SIDEWALK
[Symbol]	[Symbol]	CURB & GUTTER
[Symbol]	[Symbol]	SANITARY SEWER MAIN
[Symbol]	[Symbol]	SANITARY SEWER MANHOLE
[Symbol]	[Symbol]	STORM DRAIN LINE
[Symbol]	[Symbol]	STORM DRAIN MH
[Symbol]	[Symbol]	INLET OR CATCH BASIN
[Symbol]	[Symbol]	FIRE HYDRANT
[Symbol]	[Symbol]	WATER LINE & VALVE
[Symbol]	[Symbol]	WATER METER & BACKFLOW DEVICE
[Symbol]	[Symbol]	AIR RELEASE VALVE
[Symbol]	[Symbol]	SIGN
[Symbol]	[Symbol]	STREET LIGHT
[Symbol]	[Symbol]	UTILITY POLE
[Symbol]	[Symbol]	STREET MONUMENTS
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	RIGHT-OF-WAY
[Symbol]	[Symbol]	LOT BOUNDARY
[Symbol]	[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	[Symbol]	DIRECTION OF DRAINAGE FLOW
[Symbol]	[Symbol]	RETAINING WALL
[Symbol]	[Symbol]	ABANDONED OIL WELL



CITY OF BRENTWOOD
PUBLIC WORKS DEPARTMENT
700 Third Street, Brentwood, CA 94511
Ph: (925) 336-6504 • FAX: (925) 336-6501
www.ci.brentwood.ca.us

APEX
CIVIL ENGINEERING & LAND SURVEYING
817 Arnold Drive, Ste. 50
Martinez, CA 94553
Ph: (925) 476-8499
www.apexce.net

NO.	REVISIONS	NO	BY	DATE

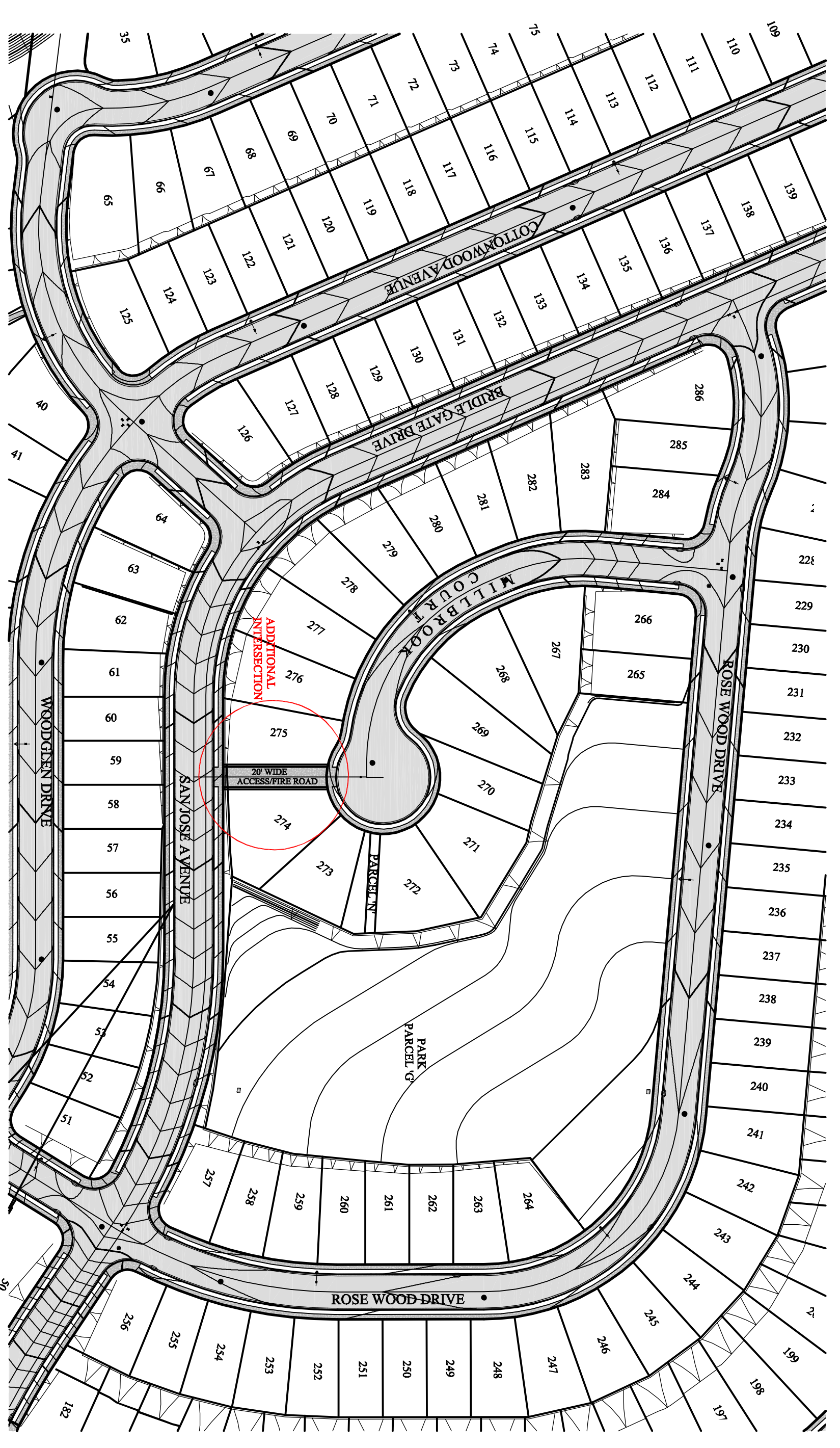
DESIGN:	JV
DRAWN:	STAFF
CHECKED:	JV
PROJECT #:	20066



VESTING TENTATIVE MAP
"BRIDLE GATE" SUB # 9586 BRENTWOOD, CA

SHEET 1 OF 2
DATE 01-06-2022

BRIDLE GATE - VESTING TENTATIVE MAP - 01-06-2022



APEX
 CIVIL ENGINEERING & LAND SURVEYING
 817 Arnold Drive Ste. 50
 Martinez, CA 94553
 Ph: (925) 476-8499

ADDITIONAL
 INTERSECTION
 "BRIDLEGATE"
 BRENTWOOD, CA

DRAWN BY:	SHEET
STAFF	1 OF 1
PROJECT NO:	DATE:
20066	01-31-23
SCALE:	
1"-100'	

