DOCKETED	
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Project Title:	Lafayette Backup Generating Facility
TN #:	242943
Document Title:	Vehicle Miles Traveled Analysis -LBGF
Description:	N/A
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	5/6/2022 7:24:15 AM
Docketed Date:	5/6/2022

MEMORANDUM

To:	Digital Realty
From:	Mike Mowery, P.E. and Elizabeth Chau, P.E. Kimley-Horn and Associates, Inc.
Date:	May 6, 2022
Subject:	2825 Lafayette Street Backup Generating Facility Transportation Operational Analysis

Digital Realty is proposing to demolish two existing office building and construct a 576,120 square-foot backup generating facility in Santa Clara, California (City). This memorandum summarizes the assumptions, methodology, and results of a transportation operation analysis conducted for the Project to identify any potential traffic operational implications.

Project Description

The Project is located at 2825 Lafayette Street in Santa Clara, California. The Project consists of demolishing two office buildings, totaling 326,000 square feet and constructing 576,120 square-foot backup generating facility. A site plan for the Project is included as **Attachment A**.

Similar to other Digital Realty sites, the Project will be operational 24-hours, 7-days a week. It is anticipated that there will be a total of 30-35 employees, where the majority of employees work a day shift and the remaining working swing or graveyard shifts.

Transportation Operational Analysis

Kimley-Horn conducted a Transportation Operational Analysis (TOA) which evaluated the Project's potential effect relating to transportation operations. The TOA evaluated the following:

- Trip Generation
- VMT Analysis
- Site Access and Circulation

It should be noted that as of July 1, 2020, the state of California has fully adopted a change in the California Environmental Quality Act (CEQA) significant impact methodology for transportation impacts to use vehicle miles traveled (VMT) as opposed to level of service (LOS) via State Bill 743 (SB 743). To address this change, on June 23, 2020, the City of Santa Clara adopted Resolution No. 20-8861, which updated the City's Transportation Analysis Policy. This analysis is based on the City's updated transportation policy.

TRIP GENERATION

A trip generation analysis was conducted to determine the change in the number of trips the project will generate. The trip generation was determined based on average rates from the Institute of

Transportation Engineer's (ITE) publication, *Trip Generation, 11th Edition*. The ITE *Trip Generation Manual, 11th Edition* is a standard reference used by jurisdictions throughout the country for the estimation of trip generation potential of proposed projects. This manual provides trip rates based on land use. For the existing land use, ITE Land Use 710: General Office Building was assumed. For the proposed backup generating facility, *Trip Generation* does not have specific rates for this land use, therefore rates for a similar land use, ITE Land Use 160: Data Center were used. **Table 1** presents the trip generation for the project. The project is expected to generate net new -2,964 daily trips, -433 trips in the AM peak hour, and -417 trips in the PM peak hour.

LEVEL OF SERVICE ANALYSIS

A level of service analysis was not conducted due to the Project's negative trip generation. The Project will result in a net decrease in trips and would not result in an increase of delay for nearby intersections.

VMT ANALYSIS

VMT Screening

The City's Transportation Analysis Policy provides guidance on when a project may be exempt from performing VMT analysis if the project meets at least one screening criteria based on:

- Small Project
- Local Serving Retail Project
- Local Serving Public Project
- 100% Affordable Housing Project
- Transit Supportive Project

Project information was evaluated to determine if the Project would be exempt from a VMT analysis and is summarized in **Table 2**. Based on current project information given for this analysis, a VMT analysis is required for the Project. Detailed evaluation for each criterion is discussed in the following sections.

Small Project

Small projects are defined as projects that generate fewer than 110 average daily trips. For projects where there is a change use, the total project trips are considered without any credit for existing land use replacement. As shown in **Table 1**, the proposed data center generates more than 110 daily trips and does not satisfy this criterion.

Local Serving Retail Project

Local Serving Retail Projects are defined as project that are of 50,000 square feet or less or retail land use. The project is not considered retail land uses; therefore, this criterion does not apply.

Table 1: Project Trip Generation

ITE Land Use Code	Land Use	Units	Daily	AM Peak			PM Peak		
				Rate	In%	Out%	Rate	In%	Out%
160	Date Center	1,000 Sq Ft	0.99	0.11	55%	45%	0.09	30%	70%
710	General Office Building	1,000 Sq Ft	10.84	1.52	88%	12%	1.44	17%	83%

	ITE Land Use Code	Land Use	Size	Units	Daily Trips	AM Peak			PM Peak		
						Total	In	Out	Total	In	Out
Existing	710	General Office Building	326.000	1,000 Sq Ft	3,534	496	436	60	469	80	389
Proposed	160	Date Center	576.120	1,000 Sq Ft	570	63	35	28	52	16	36
Data Center Net New Project Trips					**-2,964**	**-433**	**-401**	**-32**	**-417**	**-64**	**-353**

Source: ITE *Trip Generation, 11th Edition*

Table 2: Project CEQA Screening

CEQA Land Use Screening Criteria	Project Exempt?
Small Project	No
Local Serving Retail Project	N/A
Local Serving Public Project	N/A
100% Affordable Housing Project	N/A
Transit Supportive Project	N/A

Local Serving Public Project

Local Serving Public Projects are projects such as fire stations, neighborhood parks, libraries, and community centers. The project is not considered a public project; therefore, this criterion does not apply.

100% Affordable Housing

Project components which consist of 100 percent restricted affordable housing may be exempt. This criterion is not applicable to the Project since this project is not proposing any affordable housing.

Transit Supportive Project

Locations near major transit stops or high-quality transit corridors will have a less-than-significant impact on VMT and may be exempt. This criterion is not applicable to the Project since the project site is not near any major transit stops or high-quality transit corridors.

VTA VMT Evaluation Tool

The Santa Clara Valley Transportation Authority (VTA) in conjunction with Santa Clara County cities, developed the VTA VMT Evaluation Tool. This tool allows city staff, consultants, and developments to measure VMT for land use projects within Santa Clara County. **Table 3** shows that the target VMT for the Project is 15 percent below the county average. The construction of the project alone would not reduce VMT for the parcel to below the target threshold. Therefore, consistent with the data center use of the project, the evaluation incorporates an alternative work schedule for employees reflecting a 4-40 work schedule (40 hours in 4 days). With the implementation of the 4-40 work schedule the project VMT is anticipated to be below the target threshold. The VTA VMT Evaluation outputs are included in **Attachment B**.

Table 3: VTA VMT Estimation

	VMT per Worker
County Average VMT	16.64
Target 15% Below County Average	14.14
Existing Parcel Without Project	15.74
Estimated VMT With Project	15.69
Estimated VMT with Project and 4-40 Work Schedule	13.34

SITE ACCESS AND CIRCULATION

Kimley-Horn qualitatively reviewed the site plan (**Attachment A**) for on-site vehicular access, circulation, and parking for overall safety access and parking considerations.

Site Access

The Project will utilize the existing driveway on Lafayette Street, approximately 500 feet south of Central Expressway. This driveway will continue to be shared with the existing 2805 building located south of the Project.

For pedestrian traffic, the site is accessible via the sidewalk along Lafayette Street. For bicyclists, there are currently no bicycle facility near the project site, however there are proposed Class Iv Separate Bikeways along Lafayette Street. There is currently no transit service near the project site. The closet transit routes are located along Scott Boulevard, approximately 0.5 mile away from the project site.

Overall, the review of the site plan found no deficiencies related to site access. In addition, the Project does not conflict with any pedestrian, bicycle, or transit plans.

Site Circulation

Attachment C illustrates truck turning movements for a CA Legal throughout the site and garbage truck (SU -40) at the two trash enclosure located at the northwest and northeast corner of the Project building. This exhibit shoes that both truck sizes are able to maneuver into and out of the trash enclosures and loading docks, as well as transverse throughout the stie.

Parking

The parking for the existing 2805 building and Project will be connected where 77 spaces will be provided for 2805 building and 190 spaces for the Project. These parking spaces will be located through the project site with more parking concentrated on the eastern and western section of the stie.

Table 4 summarizes the parking requirements for the Project. Santa Clara City Code 18.74.0.0 for data centers requires one parking space per four thousand (4,000) square feet of gross floor area, which equates to 144 required parking spaces. The Project will provide 190 parking spaces, which exceeds the City's requirements.

Table 4: Parking Requirements

Facility	Size	Santa Clara Municipal Code Requirements		
		Land Use Description	Requirement	Parking Spaces Required
Data Center	576,120 SF	Data Center	1 space for each 4,000 square feet of gross floor area	144
Proposed Parking Spaces				190
Parking Surplus (+) / Deficient (-)				+46

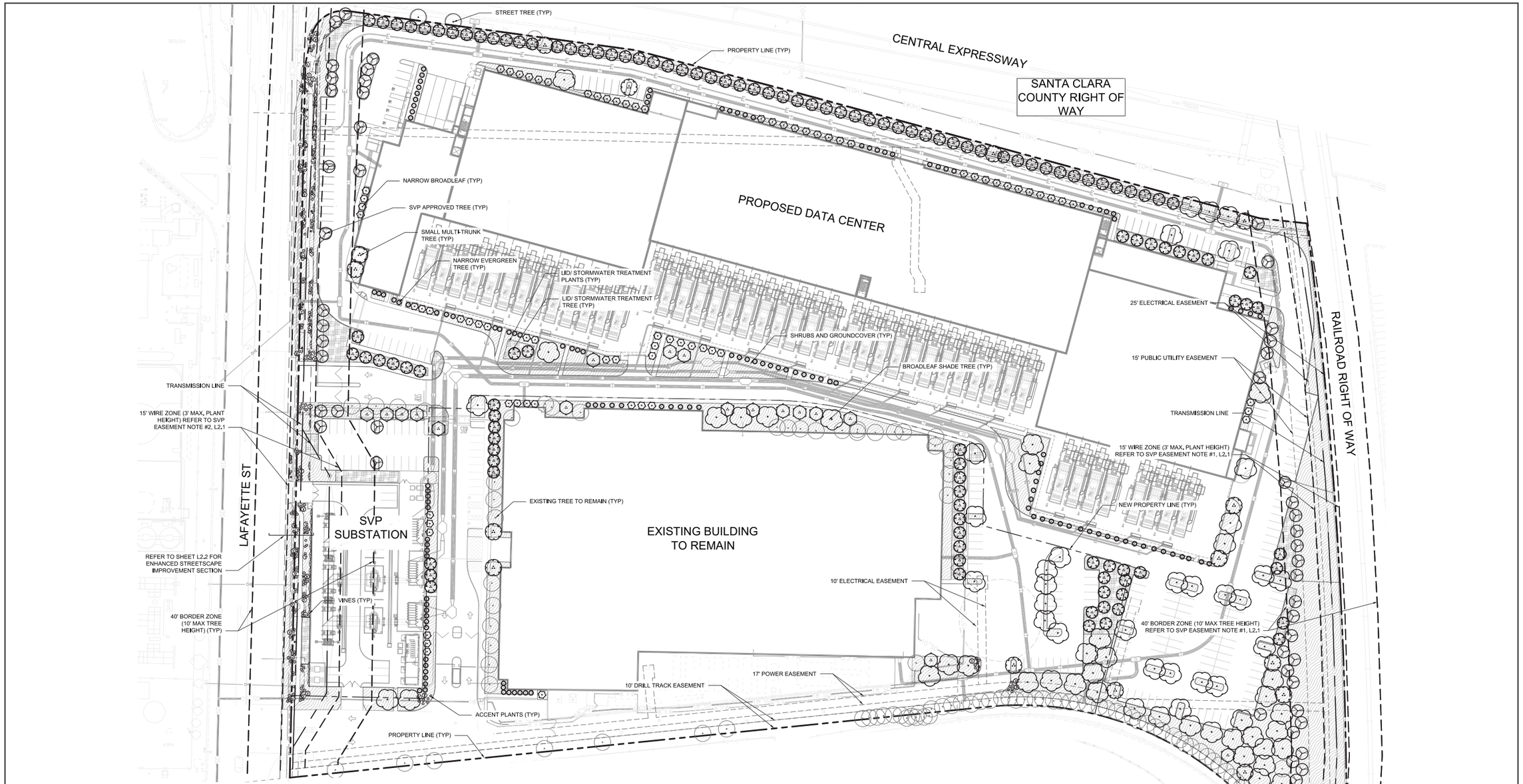
Conclusion

A transportation operational analysis (TOA) was conducted to determine the Project's potential effect relating to transportation operation. The TOA included a trip generation analysis, VMT analysis, and site access and circulation evaluation. The trip generation calculations resulted in the Project generating net new -2,964 daily trips, -433 trips in the AM peak hour, and -417 trips in the PM peak hour. Since the Project is reducing the number of trips, it is anticipated that the Project would not increase the delay at any surrounding intersections. A VMT analysis using the VTA VMT online tool determined that the project would be below the target count threshold with the TDM measure of a 4-40 work schedule. Site access and circulation evaluation found that the site will provide adequate site access and circulation, as well as parking.

Attachment A – Site Plan
Attachment B – VTA VMT Evaluation Outputs
Attachment C – Truck Turning Movements

Kimley»Horn

Attachment A – Site Plan



PRELIMINARY LANDSCAPE SCHEDULE

TREES	QTY	DESCRIPTION
	99	EXISTING TREE TO REMAIN
	2	STREET TREE
	116	LID/STORMWATER TREATMENT TREE
	71	BROADLEAF SHADE TREE

TREES	QTY	DESCRIPTION
	58	SVP APPROVED TREE
	135	NARROW EVERGREEN TREE
	36	SMALL MULTI-TRUNK TREE
	74	NARROW BROADLEAF TREE

GROUNDCOVER	QTY	DESCRIPTION
		SHRUBS AND GROUNDCOVER
		LID/STORMWATER TREATMENT PLANTS
		ACCENT PLANTS
		VINES
		LANDSCAPE BOULDERS

TREE MITIGATION / REPLACEMENT	
TREES REMOVED	375
24" BOX SIZED TREES REQUIRED OR 36" BOX SIZED TREES REQUIRED	750 OR 375
NEW 24" BOX SIZED TREES (REPLACES 103 TREES)	207
NEW 36" BOX SIZED TREES (REPLACES 282)	282
SURPLUS OF ADDITIONAL NEW TREES	10

LANDSCAPE PLAN | FIGURE 2.3-2

Attachment B – VTA VMT Evaluation Outputs

Santa Clara Countywide VMT Evaluation Tool - Version 2 - Report

Project Details

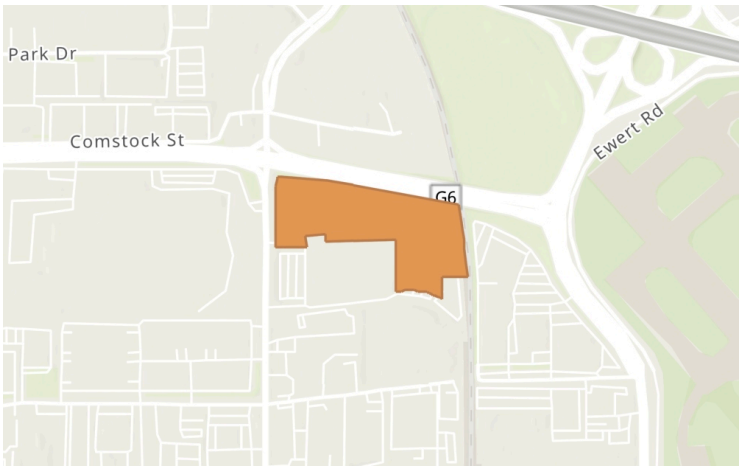
Timestamp of Analysis	May 03, 2022, 01:53:40 PM
Project Name	Digital Realty Lafayette Backup Generating Facility
Project Description	Construct 576,120 square foot back-up generating facility.

Project Location Map

Jurisdiction:

Santa Clara

APN	TAZ
22404093	1229



Analysis Details

Data Version	VTA Countywide Model December 2019
Analysis Methodology	Parcel Buffer Method
Baseline Year	2015

Project Land Use

Residential:

Single Family DU:	
Multifamily DU:	
Total DUs:	0

Non-Residential:

Office KSF:	
Local Serving Retail KSF:	
Industrial KSF:	576

Residential Affordability (percent of all units):

Extremely Low Income:	0 %
Very Low Income:	0 %
Low Income:	0 %

Parking:

Motor Vehicle Parking:	190
Bicycle Parking:	

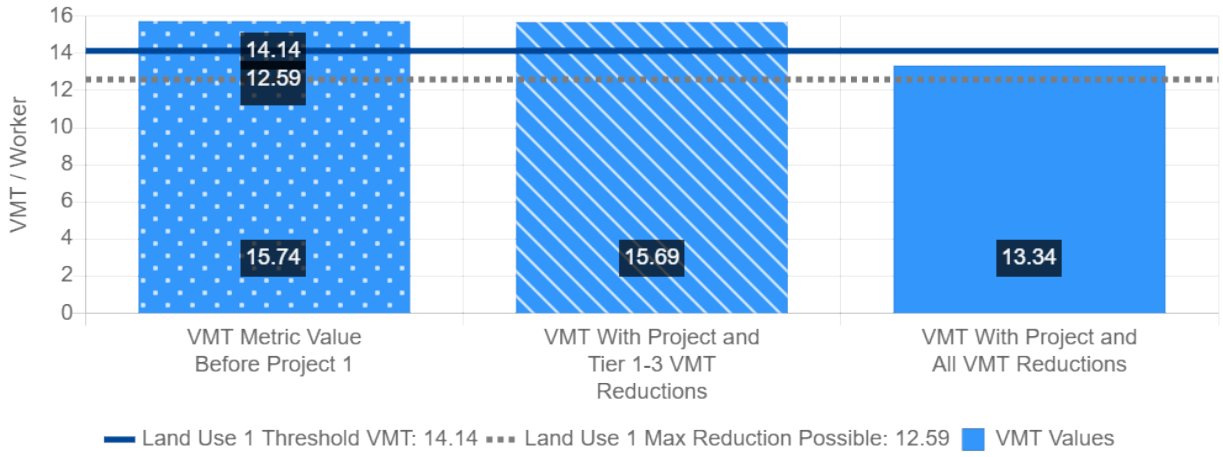
Proximity to Transit Screening

Inside a transit priority area? No (Fail)

Industrial Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Industrial
VMT Metric 1:	Home-based Work VMT per Worker
VMT Baseline Description 1:	County Average
VMT Baseline Value 1:	16.64
VMT Threshold Description 1 / Threshold Value 1:	-15% / 14.14
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	15.74	15.69	13.34
Low VMT Screening Analysis	No (Fail)	No (Fail)	Yes (Pass)



Tier 1 Project Characteristics

PC01 Increase Residential Density

Existing Residential Density:	11.19
With Project Residential Density:	11.19

PC02 Increase Residential Diversity

Existing Residential Diversity Index:	0.67
With Project Residential Diversity Index:	0.64

PC03 Affordable Housing

PC04 Increase Employment Density

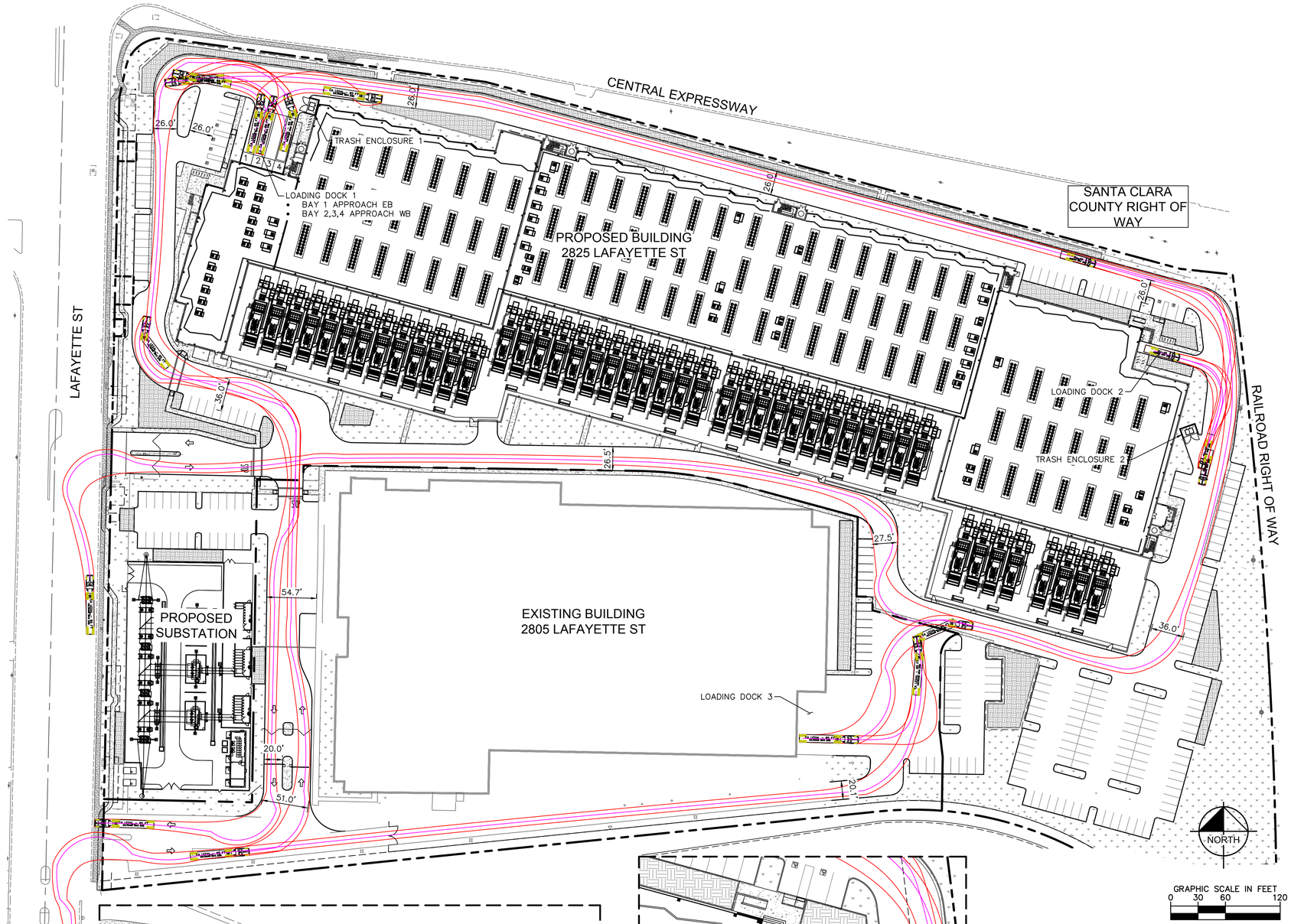
Existing Employment Density:	19.44
With Project Employment Density:	21.29

Tier 4 TDM Programs

TP08 Telecommuting and Alternative Work Schedules

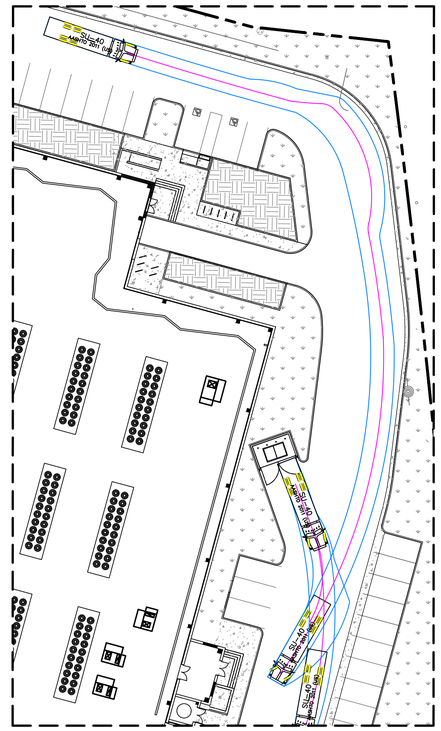
Telecommuting and Alternative Work Schedule Type:	4/40 schedule
Alternative Work Schedule Percent Participants:	100 %

Attachment C: Truck Turning Movement

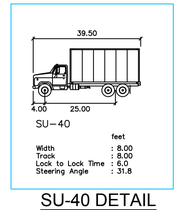


LEGEND

- PROPERTY LINE
- LANDSCAPE/ PLANTER AREA
- BIORETENTION AREA
- ASPHALT CONCRETE PAVEMENT

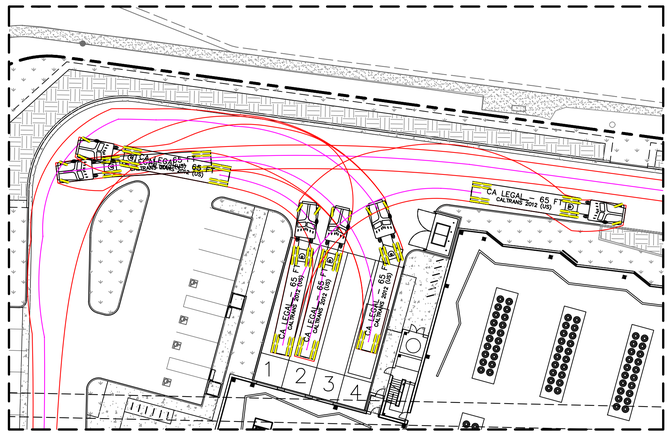


DETAIL D: 40' GARBAGE TRUCK AT TRASH ENCLOSURE 2
SCALE: 1"=30'

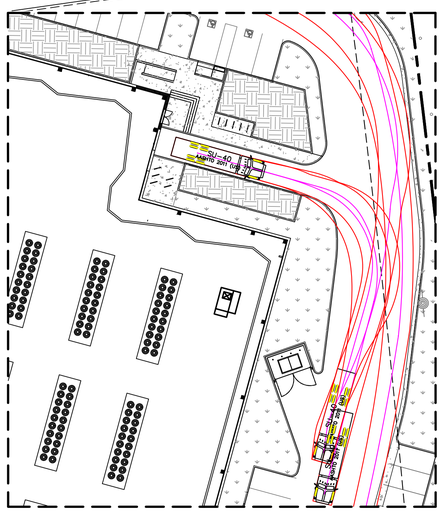


NOTE THAT SU-40 IS USED TO SIMULATE A GARBAGE TRUCK FOR THE PURPOSE OF THIS DRAWING.

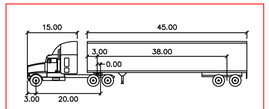
SU-40 DETAIL



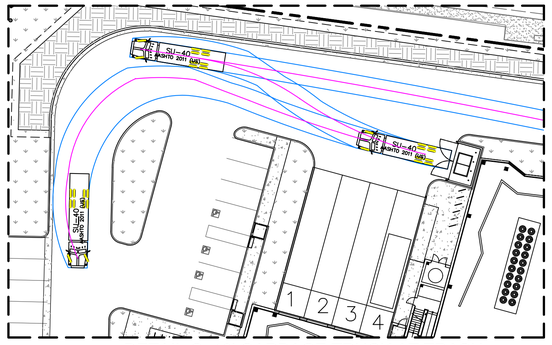
DETAIL A: 65' TRUCK AT LOADING DOCK 1
SCALE: 1"=30'



DETAIL B: 40' TRUCK AT LOADING DOCK 2
SCALE: 1"=30'



CA LEGAL - 65 FT DETAIL



DETAIL C: 40' GARBAGE TRUCK AT TRASH ENCLOSURE 1
SCALE: 1"=30'

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Data Center Solutions

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CIVIL ENGINEER STAMP

REGISTERED PROFESSIONAL ENGINEER
MILES R. JOHNSON
RCE NO. 84307
CIVIL
STATE OF CALIFORNIA

NO.	RECORD	DATE
3	PCC ISSUANCE	11.18.20
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.07.19

DLR DATA CENTER
2825 LAFAYETTE STREET
SANTA CLARA, CA, 95050

TRUCK TURN PLAN

PRINCIPAL IN CHARGE JP	PROJECT NUMBER 197250001
PROJECT MANAGER MJ	DATE 09/02/20
PROJECT ENGINEER KN	SHEET NUMBER C6.0
SCALE AS SHOWN	