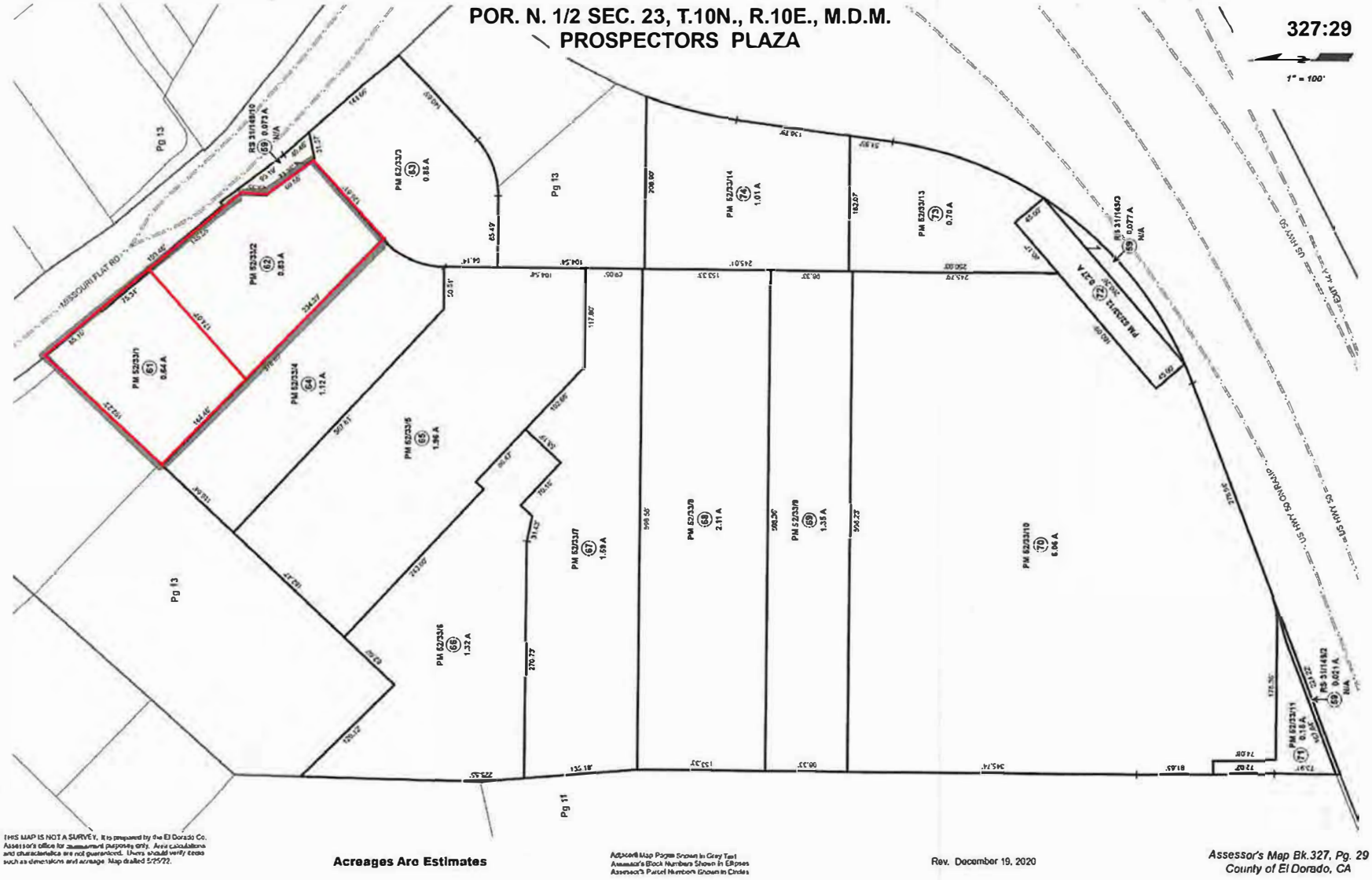
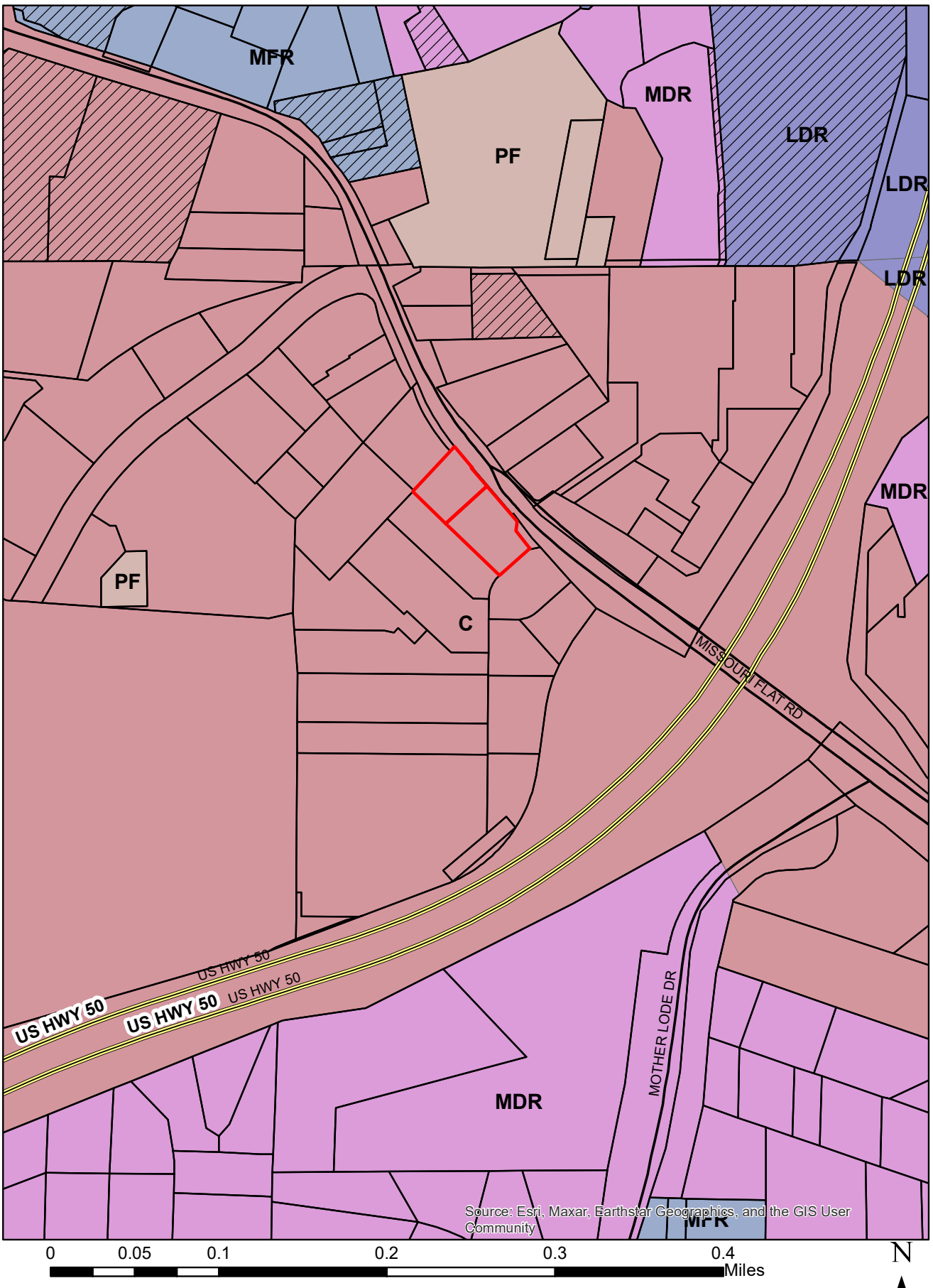
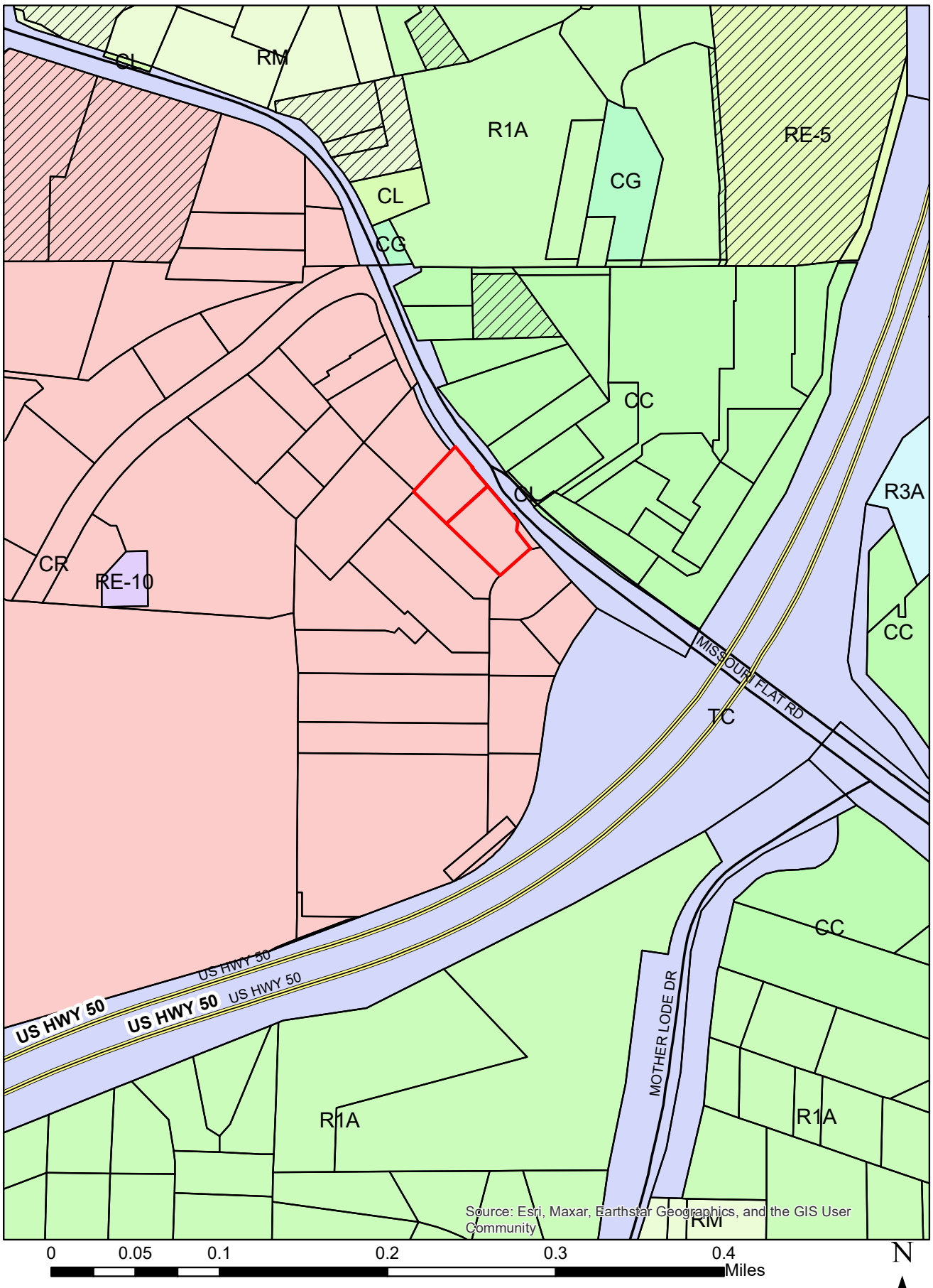
CUP22-0008/PD-R22-0002 Exhibit A: Location/Vicinity Map



CUP22-0008/PD-R22-0002 Exhibit B: Assessor's Parcel Map



CUP22-0008/PD-R22-0002 Exhibit C: General Plan Land Use Map



CUP22-0008/PD-R22-0002 Exhibit D: Zoning Map

QUICK QUACK CARWASH #26-630

3970 MISSOURI FLAT ROAD
APN # 327-290-063-000

PLACERVILLE, CA

GENERAL ABBREVIATIONS / LEGEND

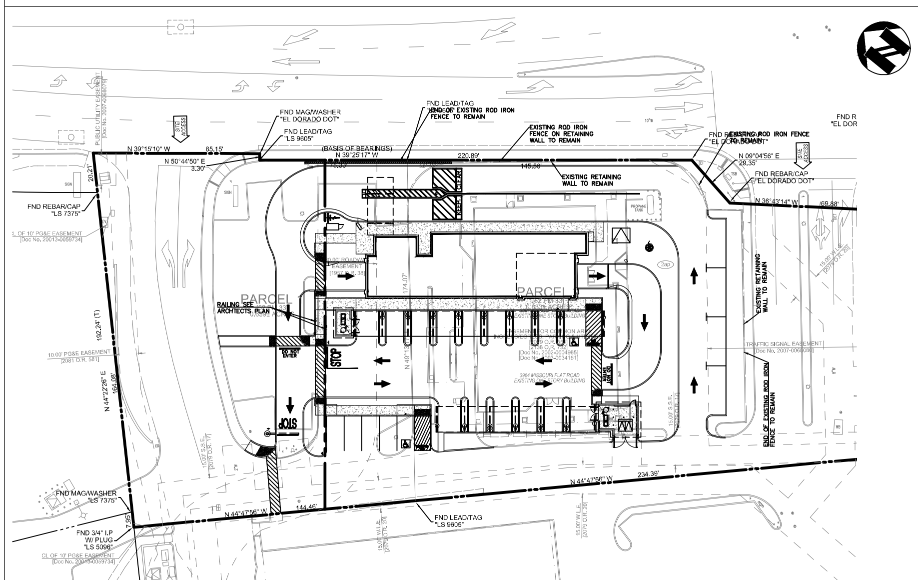
BFP	BACKFLOW PREVENTER
CB	CATCH BASIN
CL	CENTERLINE
DCV	DETECTOR CHECK VALVE
DE	DIRT ELEVATION
DWY	DRIVEWAY
E	ELECTRICAL LINE
EB	ELECTRIC BOX
EP	EDGE OF PAVEMENT
EX	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FL	FLOWLINE
FS	FINISHED SURFACE/FIRE SERVICES
G	GAS PIPE
GB	GRADE BREAK
GM	GAS METER
GP	GUARD POST
GR	GRATE
HCR	HANDICAP RAMP
INV	INVERT
JP	JOINT POLE
JT	JOINT TRENCH
LF	LINEAR FEET
MW	MONITORING WELL
OHE	OVERHEAD ELECTRIC
OHT	OVERHEAD TELEPHONE
PAE	PUBLIC ACCESS EASEMENT
PB	PULL BOX
PCC	PORTLAND CEMENT CONCRETE
PG&E	PACIFIC GAS & ELECTRIC
PIV	POST INDICATOR VALVE
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RIDGE LINE
RCP	REINFORCED CONCRETE PIPE
RPP	REDUCED PRESSURE PRINCIPLE BACKFLOW
SD	STORM DRAIN PIPE
SDCB	STORM DRAIN CATCH BASIN
SDCO	STORM DRAIN CLEANOUT
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER PIPE
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
SW	SIDEWALK
T	TELEPHONE LINE
TC	TOP OF CURB
TH	TOP OF CONCRETE HEADER
TORW	TOP OF RETAINING WALL
TP	TELEPHONE POLE
TS	TRAFFIC SIGNAL
TSB	TRAFFIC SIGNAL BOX
VG	VALLEY GUTTER
W	WATER PIPE
~~WM~~	~~WATER METER~~
COL	COLUMN

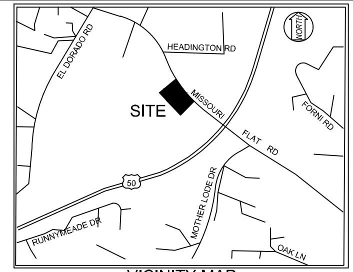
Symbol	Description
MW	MONITORING WELL
	POWER POLE
	IRON PIPE
	RAILROAD SPIKE
	STANDARD CITY MONUMENT
	SURVEY MONUMENT
	STORM DRAIN MANHOLE
	STREET SIGN
	STREET LIGHT
WV	WATER VALVE
12"	TREE WITH SIZE
	TREE REMOVAL
	TRANSFORMER
	BARBED WIRE FENCE
	CHAIN-LINKED FENCE
	WOOD FENCE
	SAWCUT LINE
	WALL
SD	EXISTING STORM DRAIN CATCH BASIN
WM	EXISTING WATER METER / GAS METER
	EXISTING SANITARY SEWER CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING SANITARY SEWER MANHOLE
	STORM DRAIN MANHOLE
WV	EXISTING WATER VALVE
GV	EXISTING GAS VALVE
51	EXISTING CONTOUR
XX.XX	EXISTING ELEVATION
TC XX.XX / FS XX.XX	TC – TOP OF CURB ELEVATION FS – FINISHED SURFACE
GR XX.XX	GR – GRATE ELEVATION
FL XX.XX	FL – FLOW LINE
XX.XX H.P.	HP – HIGH POINT
51	PROPOSED CONTOUR
3.0%	SLOPE
	PROPOSED CURB
	PROPOSED BIOSWALE CURB
	PROPOSED CURB AND GUTTER
	PROPOSED FIRE LANE
	HANDICAP RAMP

Line	Description
6"W	EXISTING WATER LINE
2"G	EXISTING GAS LINE
8"SS	EXISTING SANITARY SEWER LINE
SD	EXISTING STORM DRAIN LINE
E	EXISTING ELECTRICAL LINE
TEL	EXISTING TELEPHONE LINE
6"FS	PROPOSED FIRE SERVICE
W	PROPOSED WATER LINE
2"G	PROPOSED GAS LINE
S	PROPOSED SANITARY SEWER LINE
SD	PROPOSED STORM DRAIN LINE
E	PROPOSED ELECTRICAL LINE
TEL	PROPOSED TELEPHONE LINE
JUT	PROPOSED JOINT UTILITY TRENCH
R R R	RIDGE LINE
X	PROPOSED FENCE
	PROPERTY LINE
	MATCH LINE
	LIMIT OF DEMOLITION
GB GB	GRADE BREAK
307	PROPOSED CONTOUR

Symbol	Description
GV	PROPOSED GAS VALVE
	OVERLAND RELEASE
	CONTROLLER CABINET
	FIRE HYDRANT
	GUY POLE
	HANDICAP SPACE
	PROPOSED STORM DRAIN CATCH BASIN
WM GM	PROPOSED WATER METER / GAS METER
	PROPOSED SANITARY SEWER CLEANOUT PROPOSED STORM DRAIN CLEANOUT
	PROPOSED FIRE HYDRANT
	PROPOSED SANITARY SEWER MANHOLE/ STORM DRAIN MANHOLE

SITE KEY MAP 1"=30'





VICINITY MAP
NOT TO SCALE

SHEET INDEX

CIVIL

C-1.1 COVER SHEET
C-2.1 HORIZONTAL CONTROL PLAN
C-3.1 GRADING PLAN
C-4.1 UTILITY PLAN

PROJECT CONTACTS

DEVELOPER
QUICK QUACK CARWASH
1380 LEAD HILL BLVD #260
ROSEVILLE, CA 95661
PHONE: (916) 472-8689
CAMERON DRENNAN
E-MAIL: CDRENNAN@DONTDRIVEDIRTY.COM

CIVIL ENGINEER
ams associates, inc.
801 YGNACIO VALLEY ROAD, SUITE 220
WALNUT CREEK, CA 94596
PHONE: (925) 943-2777
FAX: (925) 943-2778
EMAIL: ROBERT@AMSASSOCIATES.US
BOB BURDUE

ARCHITECT
LA DESIGN GROUP
21671 GATEWAY CENTER DRIVE, SUITE 213
DIAMOND BAR, CA 91765
CONTACT: SAEID SHANTIYAI
PHONE: 909 860-1010
EMAIL: SSHANTIYAI@LADESIGNGROUP.NET

GEOTECH
KRAZAN AND ASSOCIATES. INC
4617 AUBURN BLVD.
SACRAMENTO, CA 95841
PHONE: (916)564-2200
EMAIL: DAVEJAROSZ@KRAZAN.COM

SEWER/WATER
CITY OF OF PLACERVILLE
PUBLIC WORKS
549 MAIN STREET
ROSEVILLE, CA 95678
DIRECTOR OF PUBLIC WORKS
CONTACT: NICK STONE
PHONE: (530) 642-5232
EMAIL: NSTONE@CITYOFPLACERVILLE.ORG

ENGINEERING
CITY OF PLACERVILLE
ENGINEERING DEPARTMENT
3101 CENTER STREET – THIRD FLOOR
PLACERVILLE, CA 95667
CITY ENGINEER
CONTACT: REBECCA NEVES
PHONE: (530) 642-5250
EMAIL: RNEVES@CITYOFPLACERVILLE.ORG

FIRE DEPARTEMENT
EL DORADO COUNTY FIRE PROTECTION DISTRICT
4040 CARLSON ROAD
CAMINO, CA 95709
CONTACT:
PHONE: (530) 644-9630
EMAIL:

NOT APPROVED FOR PRIVATE UNDERGROUND FIRE SERVICE INSTALLATION. A SEPARATE PLAN SUBMITTAL IS REQUIRED FROM THE INSTALLING CONTRACTOR. SEE THE SACRAMENTO METROPOLITAN FIRE DISTRICT NOTES.

CALL BEFORE YOU DIG
USA
800-227-2600
CITY UTILITIES · VERIZON, SCG. · P.G.&E. · CABLE TV.

PROJECT DATA

FLOOD ZONE NOTE:
THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 060040 0775 E, DATED SEPTEMBER 26, 2008, AS BEING LOCATED IN FLOOD ZONE "X";

AREAS OF DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD.

INFORMATION WAS OBTAINED FROM THE FEMA WEBSITE (WWW.FEMA.GOV) ON AUGUST 5, 2021.

BASIS OF BEARINGS:
THE BEARING OF NORTH 39°25'17" WEST TAKEN ON THE WESTERLY RIGHT-OF-WAY LINE OF MISSOURI FLAT ROAD AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON DECEMBER 19, 2019 IN BOOK 52 OF PARCEL MAPS AT PAGE 33, EL DORADO COUNTY RECORDS WAS TAKEN AS THE BASIS OF ALL BEARINGS SHOWN HEREON.

BENCHMARK:
NGS MONUMENT "HPGN D CA 03 DM":
FOUND BRASS DISK IN MONUMENT WELL LOCATED A PARKING STALL AT THE ENTRANCE TO THE PARK N RIDE LOCATED AT THE INTERSECTION OF MISSOURI FLAT ROAD AND MOTHER LODE DRIVE.
ELEVATION: 1779.0 FEET (GPS OBSERVED) (DATUM) NAVD 1988

REV #	DESCRIPTION	DATE	BY
1			

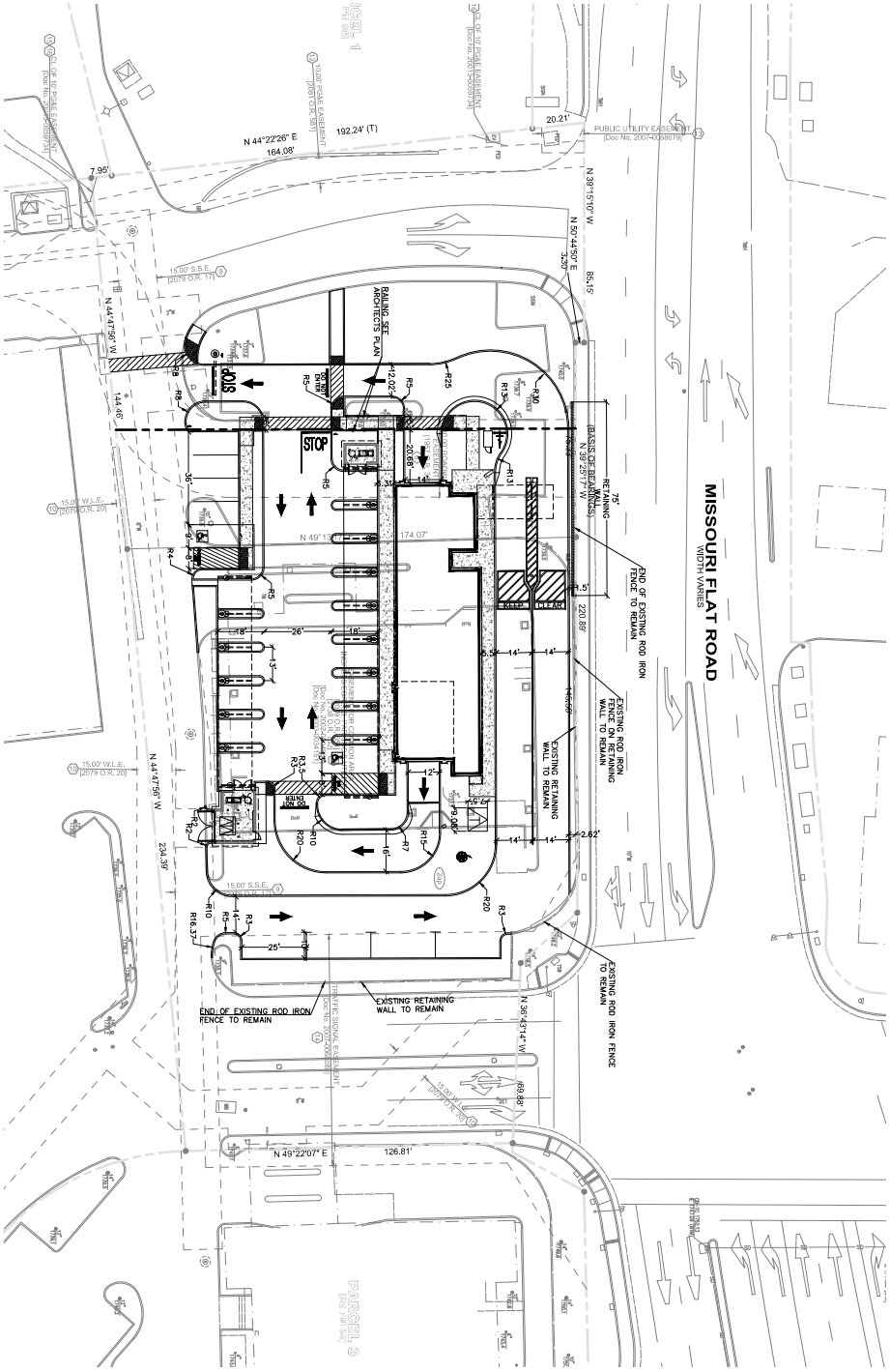
DATE: 07-14-22
SCALE:
DESIGNED:
DRAWN:
CHECKED:
PROJ. MGR:
FILE PATH:

ams associates, inc.
801 YGNACIO VALLEY ROAD
SUITE 220
WALNUT CREEK, CA 94596
925-943-2777 FAX 925-943-2778
PLANNING ENGINEERING SURVEYING

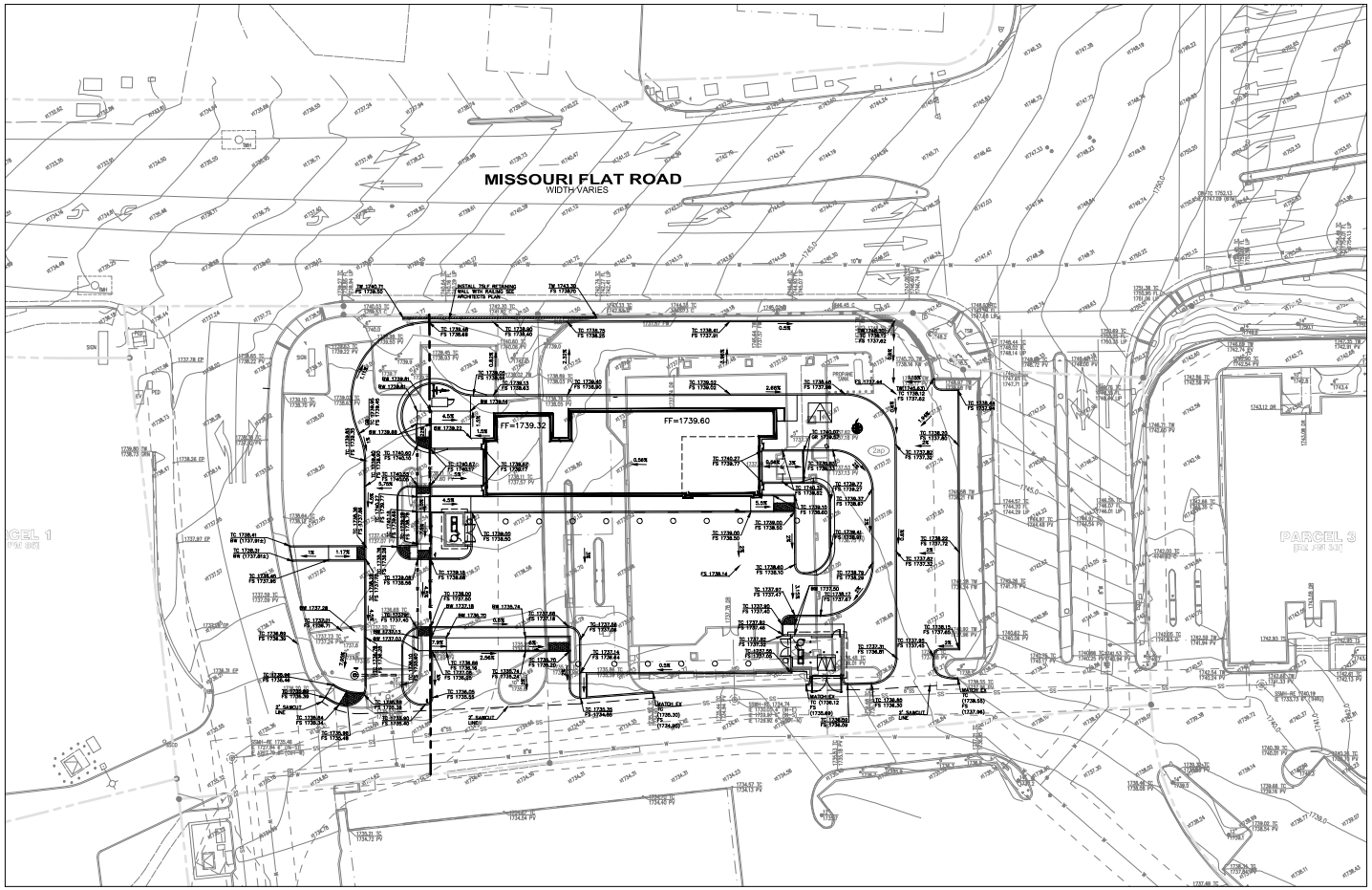
COVER SHEET
QUICK QUACK CARWASH #26-630
3970 MISSOURI FLAT ROAD
PLACERVILLE EL DORADO CALIFORNIA

SHEET C-1.1 OF
PROJECT 22-2514-1

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set



SHEET C-2.1 OF	HORIZONTAL CONTROL PLAN QUICK QUACK CARWASH #26-630 3970 MISSOURI FLAT ROAD PLACERVILLE EL DORADO CALIFORNIA	ams associates, inc. PLANNING ENGINEERING SURVEYING 801 YGNACIO VALLEY ROAD SUITE 220 WALNUT CREEK, CA 94596 925-943-2777 FAX 925-943-2778	DATE: 07-14-22 SCALE: 1" = 20' DESIGNED: DRAWN: CHECKED: RB PROJ. MGR: FILE PATH:	REV #	BY	DATE	DESCRIPTION
PROJECT 20-2514-1							



GRAPHIC SCALE
0 20
1"=20'

NOTE:
EXISTING SITE GRADING SHEET FLOWS TO THE SHOPPING CENTER STORM DRAINAGE SYSTEM TO THE SOUTH, THE PROPOSED QUICK QUACK CAR WASH DRAINAGE PATTERN SHEET FLOWS SOUTH TO THE EXISTING SHOPPING CENTER DRAINAGE SYSTEM.

DATE:	07-14-22
SCALE:	1" = 20'
DESIGNED:	
DRAWN:	
CHECKED:	RB
PROJ. MGR:	
FILE PATH:	

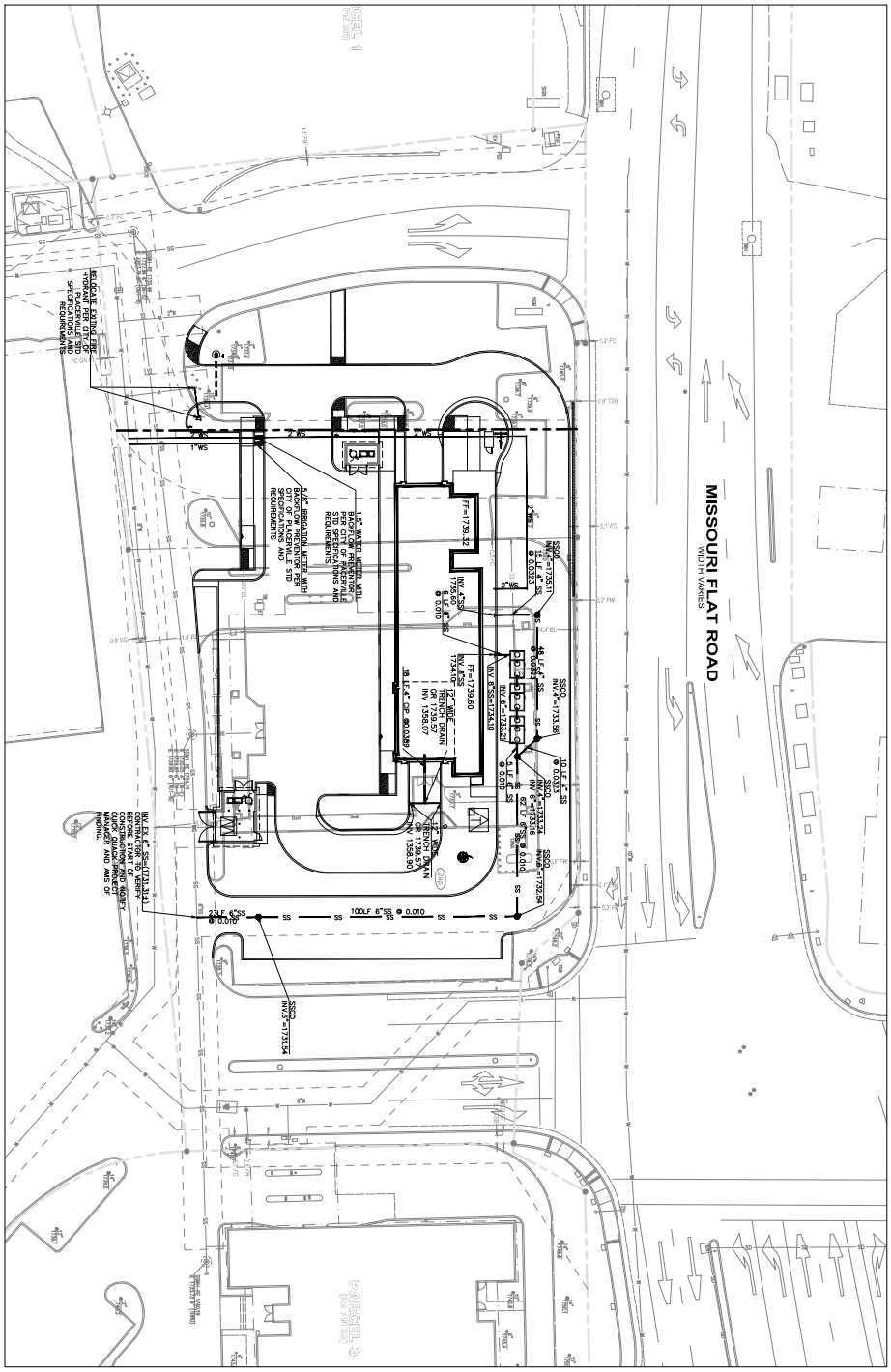
REV #	BY	DATE	DESCRIPTION
1			
2			
3			
4			
5			

ams associates, inc. PLANNING ENGINEERING SURVEYING
801 YGNACIO VALLEY ROAD
SUITE 220
WALNUT CREEK, CA 94596
925-943-2777 FAX 925-943-2778

GRADING PLAN
QUICK QUACK CARWASH #26-630
MISSOURI FLAT RD & FORNIA DRIVE
EL DORADO CALIFORNIA
PLACERVILLE

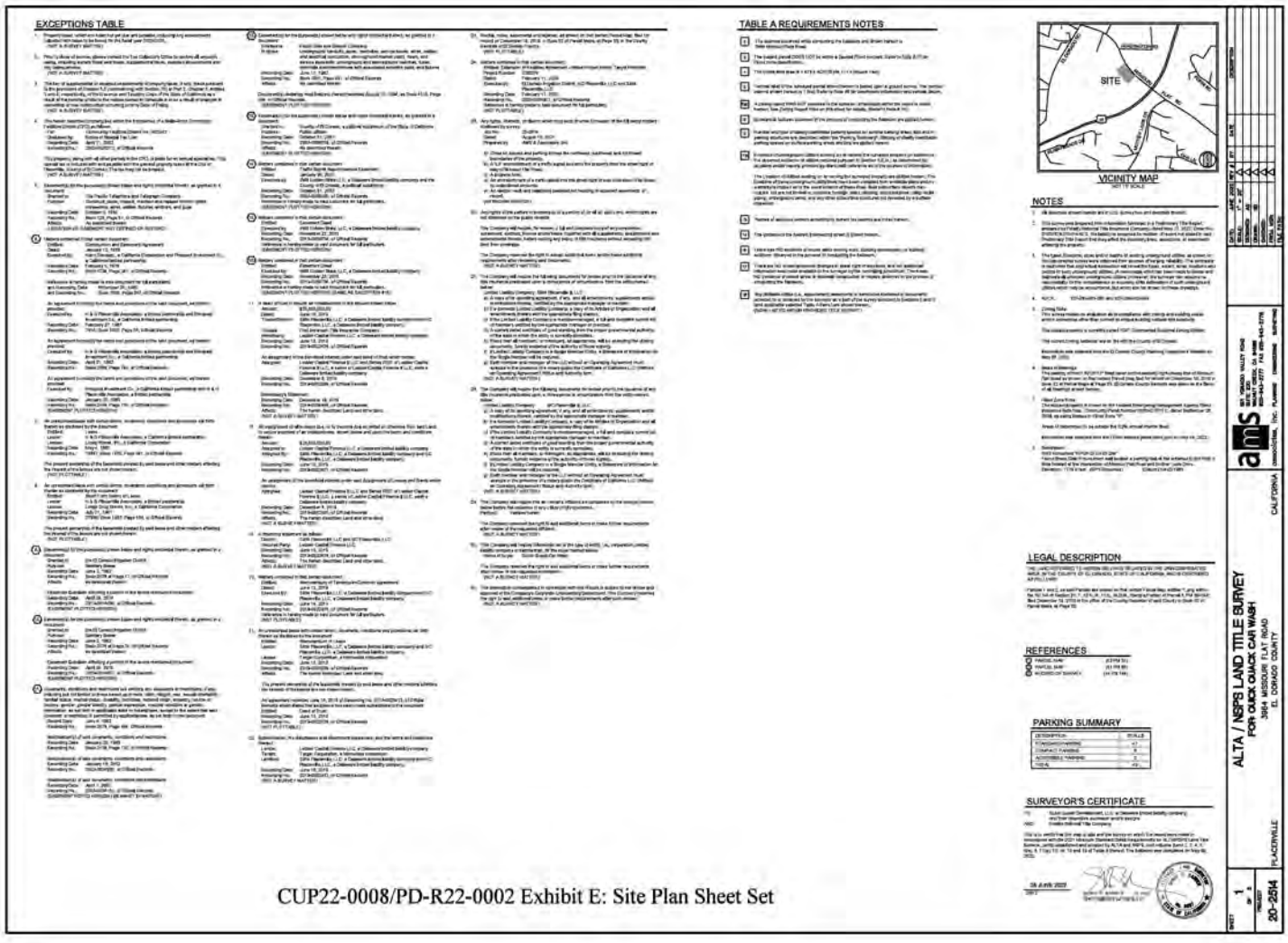
SHEET C-3.1 OF
PROJECT 20-2514-1

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

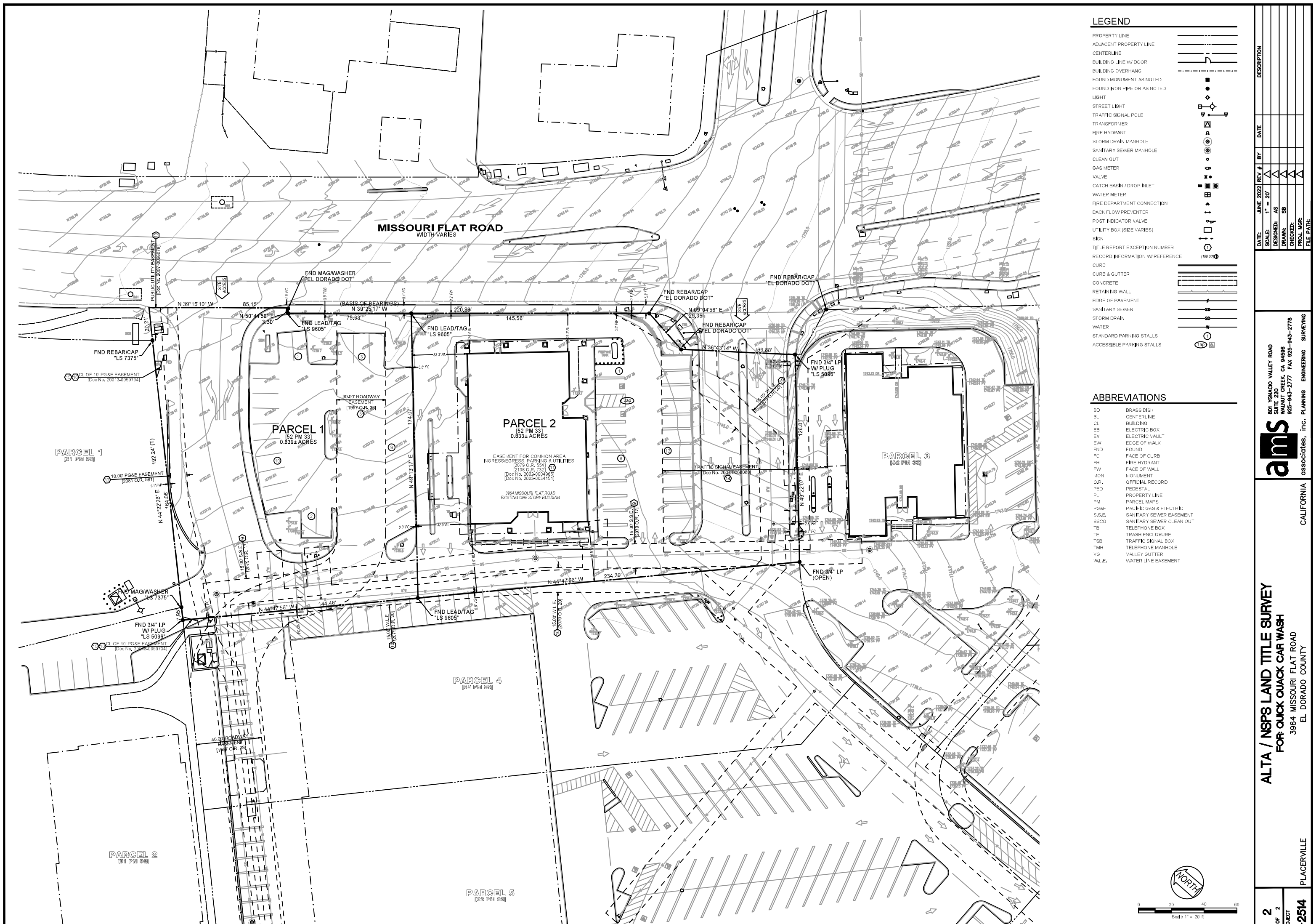


GRAPHIC SCALE
1"=20'

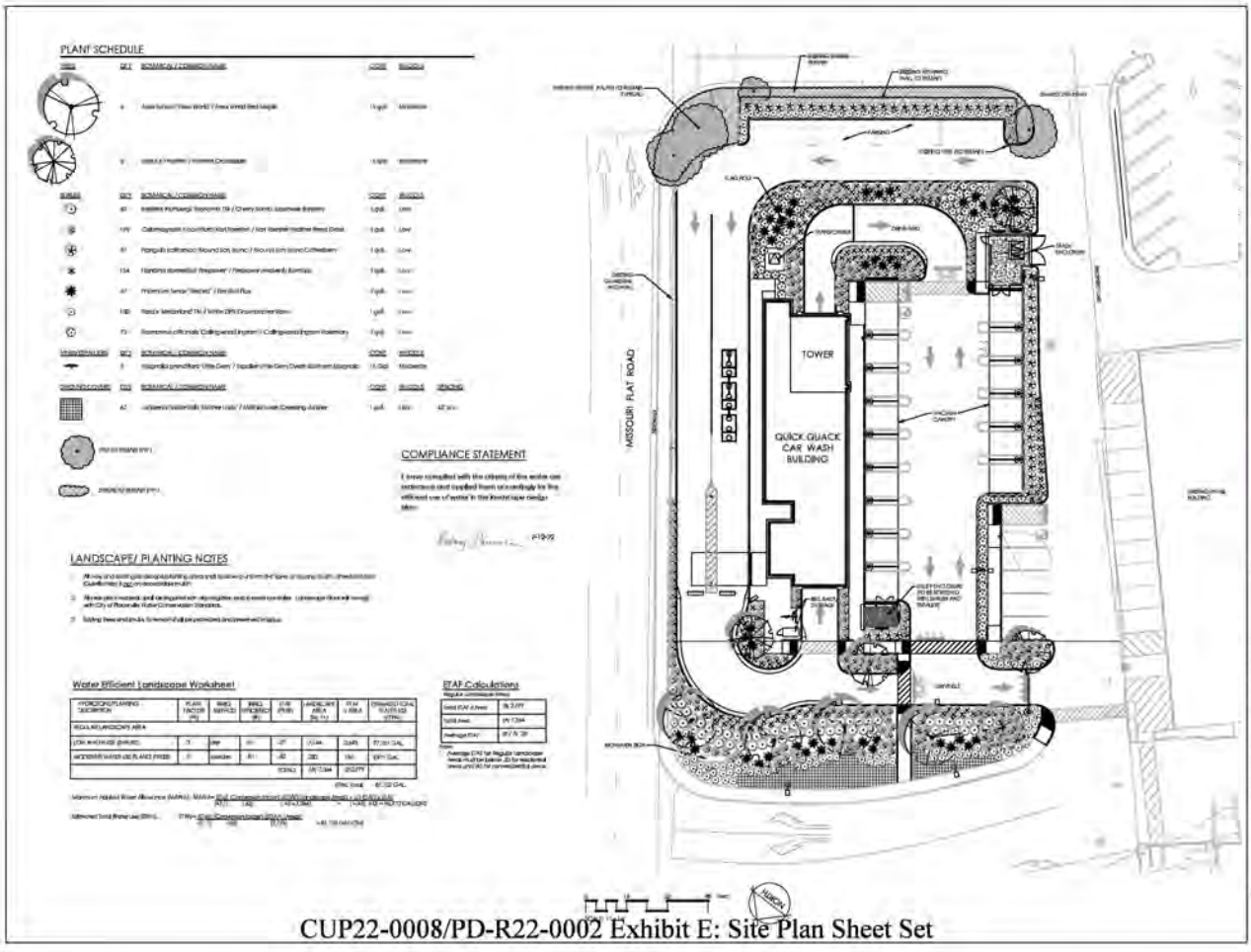
SHEET C-4.1 OF	UTILITY PLAN QUICK QUACK CARWASH #26-630 MISSOURI FLAT RD & FORNIA DRIVE PLACERVILLE EL DORADO CALIFORNIA	ams associates, inc. PLANNING ENGINEERING SURVEYING 801 YGNACIO VALLEY ROAD SUITE 220 WALNUT CREEK, CA 94596 925-943-2777 FAX 925-943-2778		DATE: 07-14-22 SCALE: 1" = 20' DESIGNED: DRAWN: CHECKED: RB PROJ. MGR: FILE PATH:	REV # / BY / DATE / DESCRIPTION	
PROJECT 20-2514-1						



CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

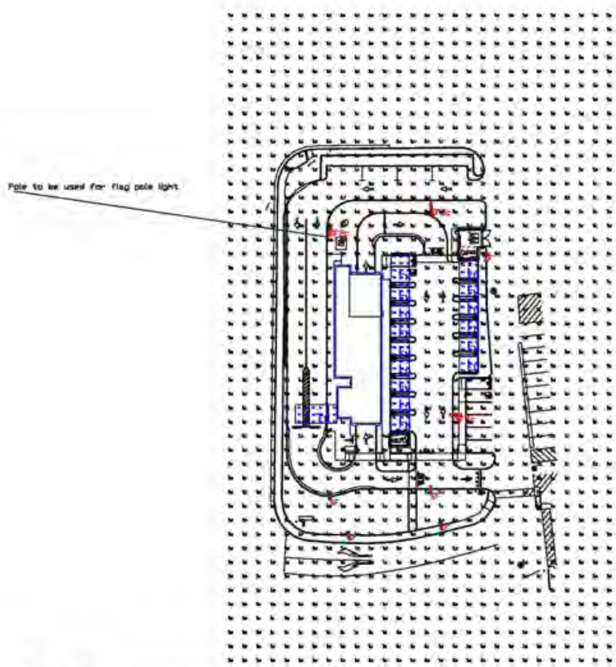


CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set



CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set



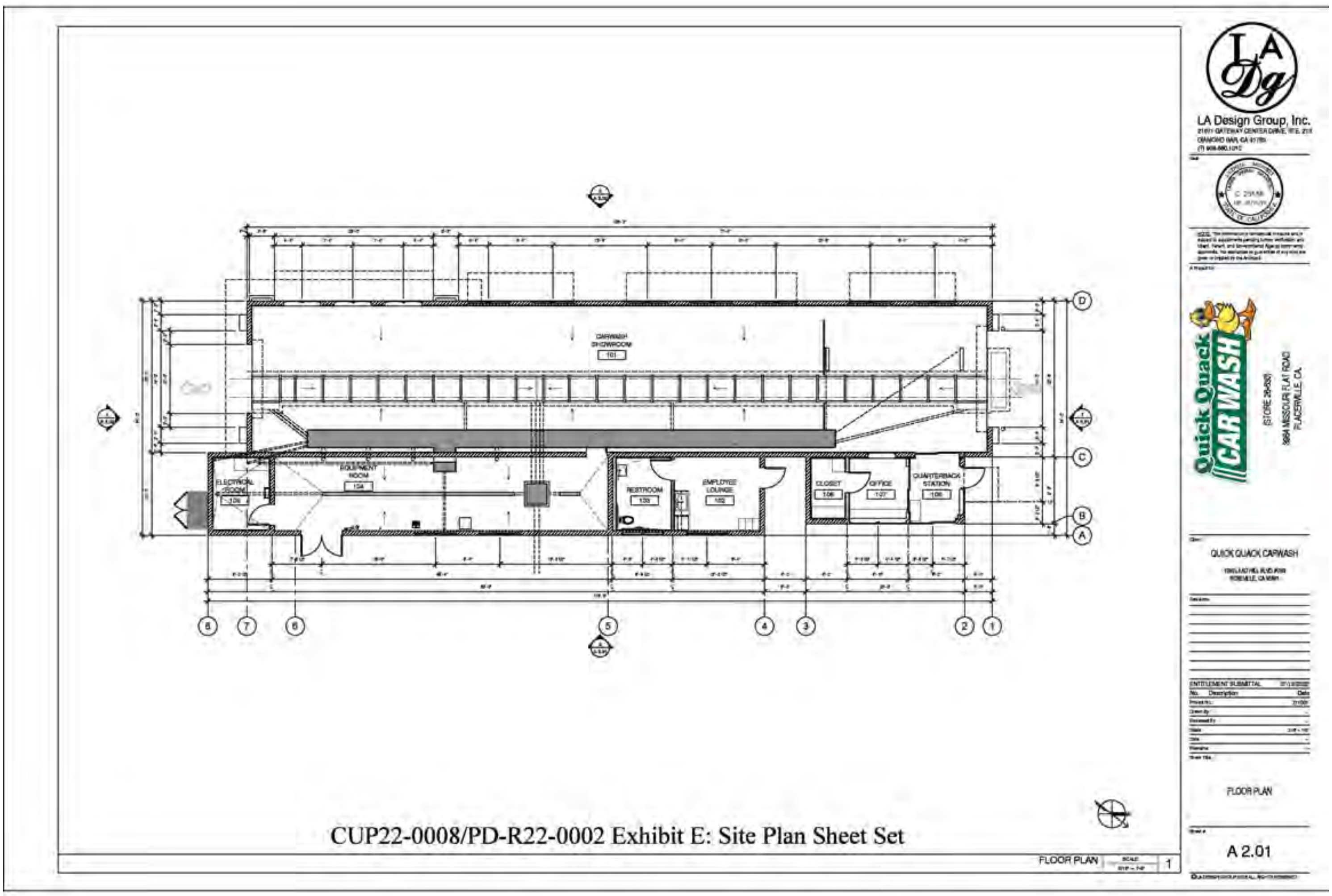
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PAY CANOPY	Illuminance	Fc	6.86	15.5	1.9	3.61	8.16
VACUUM CANOPY 1	Illuminance	Fc	16.48	24.8	5.8	2.84	4.27
VACUUM CANOPY 2	Illuminance	Fc	17.15	22.4	11.6	1.48	1.93
PAVED AREA	Illuminance	Fc	5.18	11.8	0.1	51.80	118.00

NOTE:STANDARD 120-277v UNLESS OTHERWISE SPECIFIED

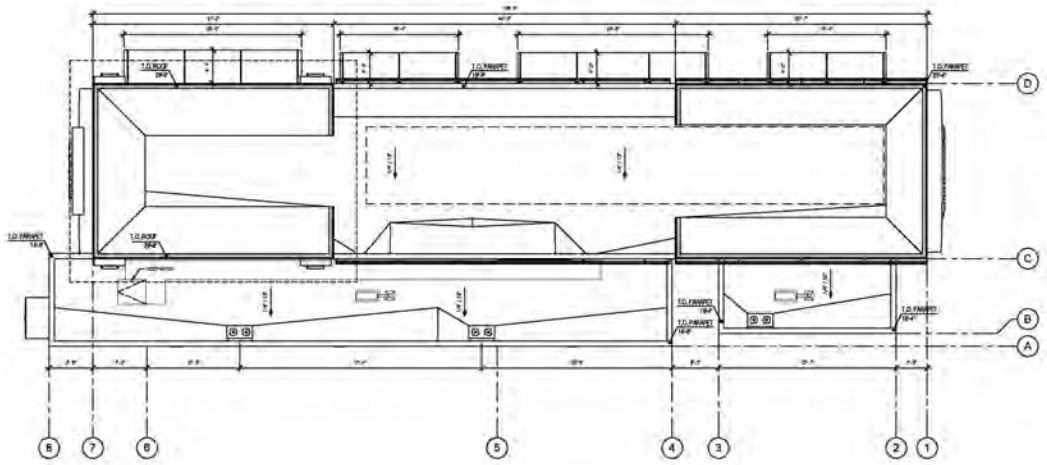
PHOTOMETRIC EVALUATION
NOT FOR CONSTRUCTION

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	LLD	LDD	LLF	Arr. Lum. Lumens	Arr. Watts
	16	F1S	SINGLE	VT32544UNV50 (FIXTURE SUPPLIED BY HERMITAGE)	1.000	1.000	1.000	6778	51.95
	5	SF	SINGLE	MRS-LED-38L-SIL-FT-50-70CRI-SINGLE-16' POLE+2' BASE	1.000	1.000	1.000	16890	135
	3	SF2x	D180°	MRS-LED-38L-SIL-FT-50-70CRI-D180-16' POLE+2' BASE	1.000	1.000	1.000	33780	270

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set



CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set



CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

ROOF PLAN | SCALE | 1

LA Design Group, Inc.

Quick Quack CAR WASH

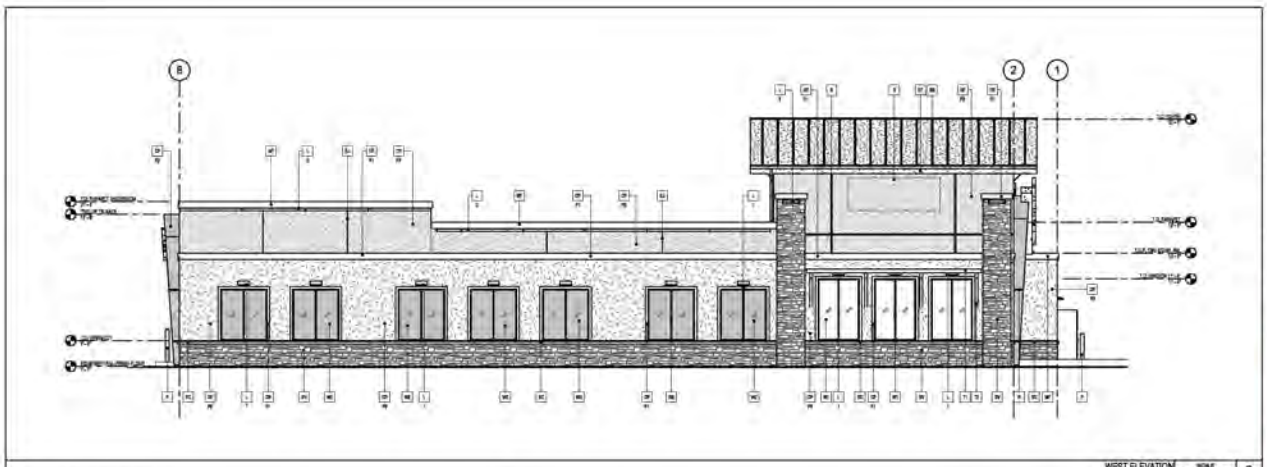
(STORE 29-008)
9564 MISSOUR FLAT ROAD
PLACERVILLE, CA.

QUICK QUACK CARWASH

ENTITLEMENT SUBMITTAL

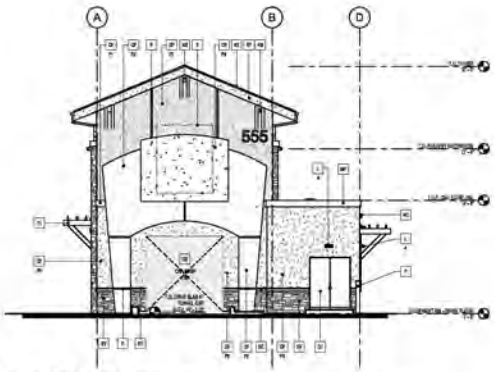
ROOF PLAN

A 2.02



WEST ELEVATION 2

EXTERIOR ELEVATION KEYNOTES



SOUTH ELEVATION 1

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

LA Design Group, Inc.
21051 GATEWAY CENTER DRIVE, STE. 210
DIAMOND BAR, CA 91765
(T) 909.860.1010

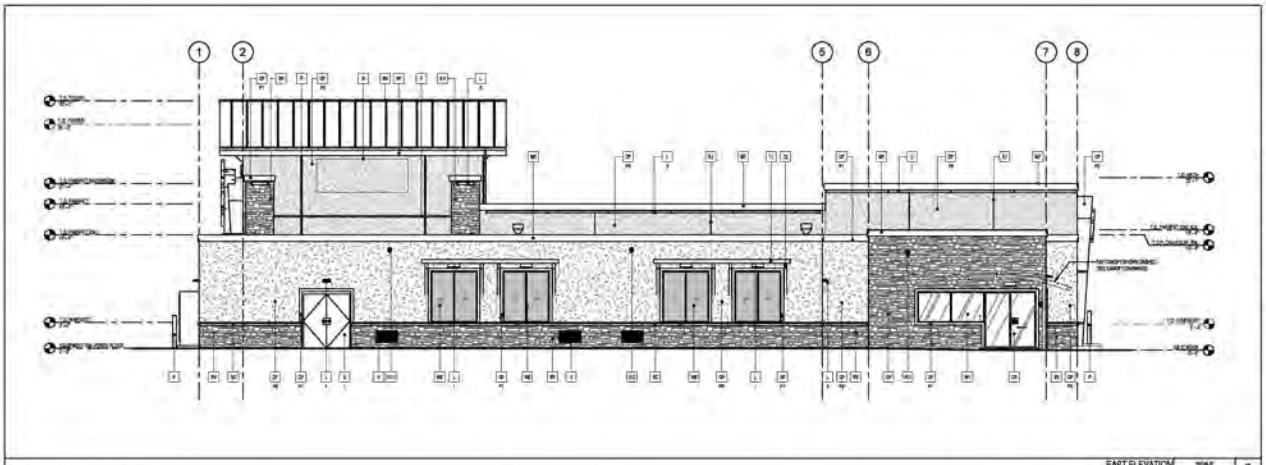
Quick Quack CAR WASH
(PROJECT NO. 23-058)
3994 MISSOURI FLAT ROAD
PLACERVILLE, CA 95667

QUICK QUACK CAR WASH

No.	Description	Date
	UPDATED EXT. SUBMITTAL	05/10/2023
	ENTITLEMENT SUBMITTAL	12/16/2022

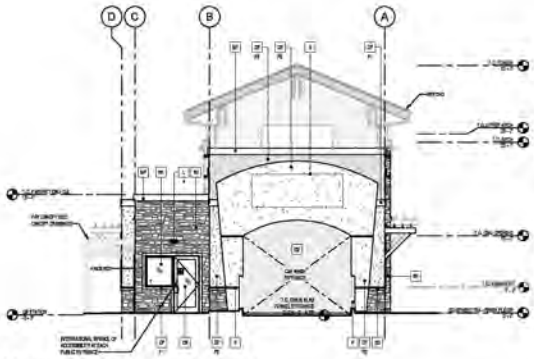
S & W EXTERIOR ELEVATIONS

A 3.01



EAST ELEVATION 2

EXTERIOR ELEVATION KEYNOTES



NORTH ELEVATION 1

CUP22-0002/PD-R22-0002 Exhibit E: Site Plan Sheet Set

LA Design Group, Inc.

Quick Quack CAR WASH

(PROJECT NO. 22-055)
3994 MISSOURI FLAT ROAD
PLACERVILLE, CA 95667

QUICK QUACK CAR WASH

No.	Description	Date
	UPDATED ENT. SUBMITTAL	05/10/2023
	ENTITLEMENT SUBMITTAL	12/16/2022

N & E EXTERIOR ELEVATIONS

A 3.02

WEST ELEVATION SCALE 3/16" = 1'-0" 2

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

SOUTH ELEVATION SCALE 3/16" = 1'-0" 1

LA Design Group, Inc.
21871 GATEWAY CENTER DRIVE, STE. 213
DIAMOND BAR, CA 91765
(T) 909.869.1010

C 23558
RENEWAL 08/31/23
STATE OF CALIFORNIA

NOTE: This information is conceptual in nature and is subject to adjustments pending further verification and Client, Tenant, and Governmental Agency comments/approvals. No warranties or guarantees of any kind are given or implied by the Architect.

A Project for:

Quick Quack CAR WASH

(PROJECT NO. 22-550)
3994 MISSOURI FLAT ROAD
PLACERVILLE, CA 95667

Client:
QUICK QUACK CAR WASH
1360 LEAD HILL BLVD., STE. 200
ROSEVILLE, CA 95661

Revisions:

No.	Description	Date
	UPDATED ENT. SUBMITTAL	05/10/2023
	ENTITLEMENT SUBMITTAL	12/16/2022

Project No.: 21001
Drawn By: -
Reviewed By: -
Scale: 3/16" = 1'-0"
Date: 11/2022
Filename: -
Sheet Title:

COLOR ELEVATIONS

Sheet #:
A 3.03

EAST ELEVATION SCALE 3/16" = 1'-0" 2

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

NORTH ELEVATION SCALE 3/16" = 1'-0" 1

LA Design Group, Inc.
21871 GATEWAY CENTER DRIVE, STE. 210
DIAMOND BAR, CA 91765
(T) 909.869.1010

C 23558
REN: 08/31/23

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A Project for:

Quick Quack CAR WASH

(PROJECT NO. 22-650)
3994 MISSOURI FLAT ROAD
PLACERVILLE, CA 95667

Client:
QUICK QUACK CAR WASH
1380 LEAD HILL BLVD., STE. 290
ROSEVILLE, CA 95661

Revisions:

No.	Description	Date
	UPDATED ENT. SUBMITTAL	05/16/2023
	ENTITLEMENT SUBMITTAL	12/16/2022

Project No.: 21001
Drawn By: -
Reviewed By: -
Scale: 3/16" = 1'0"
Date: 11/2022
Filename: -
Sheet Title

COLOR ELEVATIONS

Sheet #:
A 3.04

SOUTHWEST PERSPECTIVE ILLUSTRATION — SCALE N.T.S. — 2

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

NORTHEAST PERSPECTIVE ILLUSTRATION — SCALE N.T.S. — 1

LA Design Group, Inc.
21871 GATEWAY CENTER DRIVE, STE. 213
DIAMOND BAR, CA 91765
(T) 909.869.1010

C 23558
REN 08/31/23

NOTE: This information is conceptual in nature and is subject to adjustments pending further verification and Client, Tenant, and Governmental Agency comments/approvals. No warranties or guarantees of any kind are given or implied by the Architect.

A Project for:

Quick Quack CAR WASH

(PROJECT NO. 22-650)
3994 MISSOURI FLAT ROAD
PLACERVILLE, CA 95667

Client:
QUICK QUACK CAR WASH
1360 LEAD HILL BLVD., STE. 200
ROSEVILLE, CA 95661

Revisions:

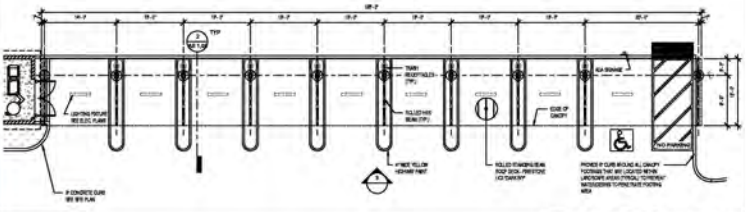
No.	Description	Date
	UPDATED ENT. SUBMITTAL	03/16/2023
	ENTITLEMENT SUBMITTAL	12/16/2022

Project No.: 21001
Drawn By: MP
Reviewed By: -
Scale: -
Date: -
Filename: -

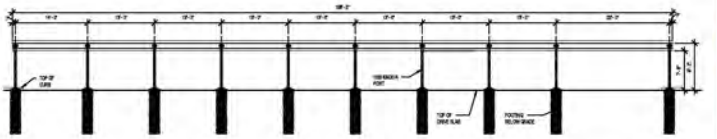
Sheet Title:
PERSPECTIVES

Sheet #:
A 3.05

WEST VACUUM CANOPY PHOTO — SCALE: NO SCALE — 15



WEST VACUUM CANOPY PLAN — SCALE: 1/8" = 1'-0" — 4



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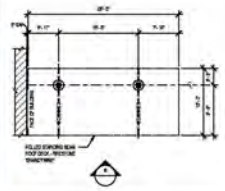
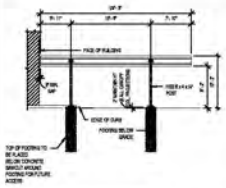
PAY STATION CANOPY PHOTO — SCALE: NO SCALE — 13



PAY STATION PLAN — SCALE: 1/8" = 1'-0" — 10



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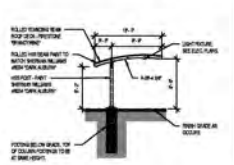
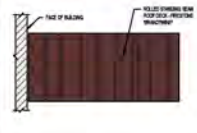


TYPICAL CANOPY SECTION — SCALE: 1/8" = 1'-0" — 2



PAY STATION COLOR ROOF PLAN — SCALE: 1/8" = 1'-0" — 9

PAY STATION COLORED ELEVATION — SCALE: 1/8" = 1'-0" — 5

TYPICAL CANOPY SIDE ELEVATION — SCALE: 1/8" = 1'-0" — 1

LA Design Group, Inc.
21871 GATEWAY CENTER DRIVE, STE. 213
DIAMOND BAR, CA 91765
(T) 909.869.1010

C 23/58
OF REVIEW
STATE OF CALIFORNIA

NOTE: This information is conceptual in nature and is subject to adjustments pending further verification and Client, Tenant, and Governmental Agency/community approvals. No warranties or guarantees of any kind are given or implied by the Architect.

A Project for:

Quick Quack CAR WASH

(PROJECT NO. 29-550)
3564 MISSOURI FLAT ROAD
PLACERVILLE, CA.

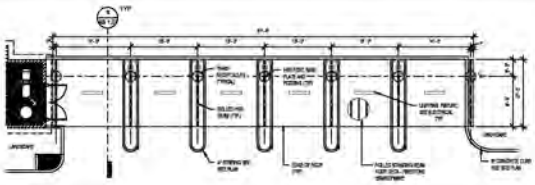
Client:
QUICK QUACK CARWASH
1380 LEAD HILL BLVD #316
ROSEVILLE, CA 95661

Revisions:	
UPDATED ENT. SUBMITTAL	05/16/2023
ENTITLEMENT SUBMITTAL	12/16/2022
No. Description	Date
Project No.	21001
Drawn By:	-
Reviewed By:	-
Scale:	1/8" = 1'0"
Date:	-
Filename:	-

Sheet Title:
WEST VACUUM CANOPY

Sheet #:
AS 1.06

CUP22-0002/PD-R22-0002 Exhibit E: Site Plan Sheet Set



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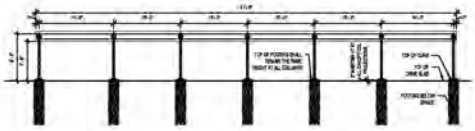


EAST VACUUM CANOPY ELEVATION — 3

EAST VACUUM CANOPY COLORED ROOF PLAN — 2

TYP CANOPY SECTION — 17

EAST VACUUM CANOPY COLORED ELEVATION — 1

CUP22-000/PD-R22-0002 Exhibit E: Site Plan Sheet Set

LA Design Group, Inc.
21101 GATEWAY CENTER DRIVE, STE. 210
DIAMOND BAR, CA 91765
(T) 909.860.1010

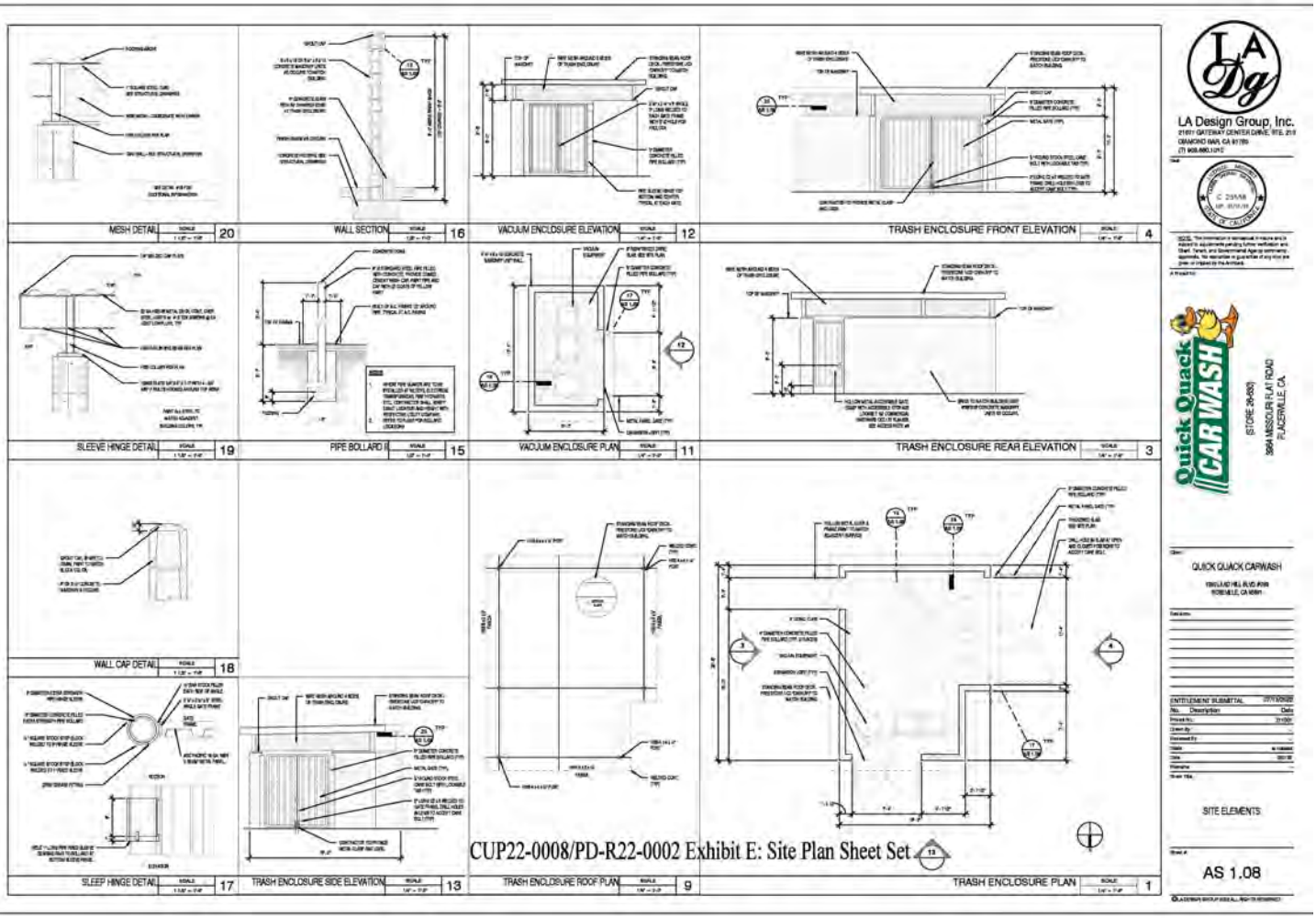
Quick Quack CAR WASH
(PROJECT NO. 29-050)
3564 MISSOURI FLAT ROAD
PLACERVILLE, CA.

QUICK QUACK CARWASH

No.	Description	Date
	UPDATED CUP, SUBMITTAL	05/10/2023
	ENTITLEMENT SUBMITTAL	12/16/2022

EAST VACUUM CANOPY

AS 1.07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WALL SECTION 16
VACUUM ENCLOSURE ELEVATION 12
TRASH ENCLOSURE FRONT ELEVATION 4
SLEEVE HINGE DETAIL 19
PIPE BOLLARD D 15
VACUUM ENCLOSURE PLAN 11
TRASH ENCLOSURE REAR ELEVATION 3
WALL CAP DETAIL 18
SLEEP HINGE DETAIL 17
TRASH ENCLOSURE SIDE ELEVATION 13
TRASH ENCLOSURE ROOF PLAN 9
TRASH ENCLOSURE PLAN 1
CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set
LA Design Group, Inc.
Quick Quack CAR WASH
(STORE 29-550)
SITE ELEMENTS
AS 1.08

CP - CEMENT PLASTER COLOR COAT

P1 - SHERWIN WILLIAMS #6034 DARK AUBURN

P2 - SHERWIN WILLIAMS #6374 "TORCHLIGHT"

P3 - SHERWIN WILLIAMS #6120 "BELIEVABLE BUFF"

P4 - SHERWIN WILLIAMS #7004 "SNOWBOUND"

P5 - SHERWIN WILLIAMS #6122 "CAMELBACK"

W1 - EXTERIOR STOREFRONT SYSTEM
CLEAR ANODIZED ALUMINUM STOREFRONT

ST - STONE VENEER TRIM SILL. ANGELUS BLOCK - "PLACER CREEK BURNISHED"

SV - STONE VENEER. CORONADO STONE "QUICK STACK - CAMEL MOUNTAIN"

FINISH AND MATERIAL BOARD

CUP22-0008/PD-R22-0002 Exhibit E: Site Plan Sheet Set

LADG | LA Design Group, Inc.

QUICK QUACK CAR WASH
3964 MISSOURI FLAT ROAD
PLACERVILLE, CA 95667

LADG JOB #:	211001
DATE:	03/18/2023
REVISIONS:	

Quick Quack Car Wash (Store #26-630)

Noise Impact Study

County of El Dorado, CA

Prepared for:

Quick Quack Development II, LLC
Vance Shannon
1380 Lead Hill Blvd #260
Roseville, CA 95661

Prepared by:

MD Acoustics, LLC
Claire Pincock, INCE-USA
1197 Los Angeles Avenue, Ste 256
Simi Valley, CA 93065

Date: 10/10/2022

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1.0 Executive Summary

This report has been prepared to provide the calculated noise projections from the proposed Quick Quack Car Wash ("Project") located near Missouri Flat Road & Hwy 50 in the County of El Dorado, CA. All calculations are compared to the County of El Dorado's noise ordinance and General Plan as well as the existing ambient condition. The Project proposes to construct a 108-foot car wash tunnel with 15 vacuum stalls on approximately 1.00 acre.

1.1 Findings and Conclusions

Two (2) baseline 15-minute ambient measurement were performed at the western and eastern corners of the Project site and represent the current operational noise and ambient levels within the Project vicinity. The predominant source of noise impacting the existing site is traffic noise propagating Missouri Flat Road.

This study compares the Project's operational noise levels to two (2) different noise assessment scenarios: 1) Project only operational noise level projections, and 2) Project plus ambient noise level projections.

Project-only operational noise levels are anticipated to be 41 to 45 dBA Leq at residential uses north and southeast of the project site. The "project-only" noise projections to the adjacent uses do not exceed the City's 45 dBA evening limit for rural regions as outlined within the City's Municipal Code (see Section 4.3).

Project plus ambient noise level projections are not anticipated to increase the existing ambient noise level. This assessment evaluates the baseline noise condition and compares the Project's worst-case operational noise level to the measured noise level (during the Project's proposed hours of operation).

The following outlines the project design features:

1. The Project will incorporate a 12 Sonny's blower system with the silencer package installed or equivalent to meet these acoustical benchmarks.

2.0 Introduction

2.1 Purpose of Analysis and Study Objectives

This noise impact study aims to evaluate the potential noise impacts for the Project study area and recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to potentially applicable noise standards set forth by the State and/or local agencies. Consistent with the County's Noise Guidelines, the Project must demonstrate compliance with the applicable noise zoning ordinance and sound attenuation requirements.

The following is provided in this report:

- A description of the study area and the proposed Project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An evaluation of the existing ambient noise environment
- An analysis of stationary noise impact (e.g., blowers and vacuums) from the Project site to adjacent land uses
- An analysis of construction noise to adjacent uses

2.2 Site Location and Study Area

The Project site is near Missouri Flat Road & Hwy 50 in the County of El Dorado, CA, as shown in Exhibit A. The land uses directly surrounding the Project are commercial. There is a church to the south and residential uses to the north and southeast.

2.3 Proposed Project Description

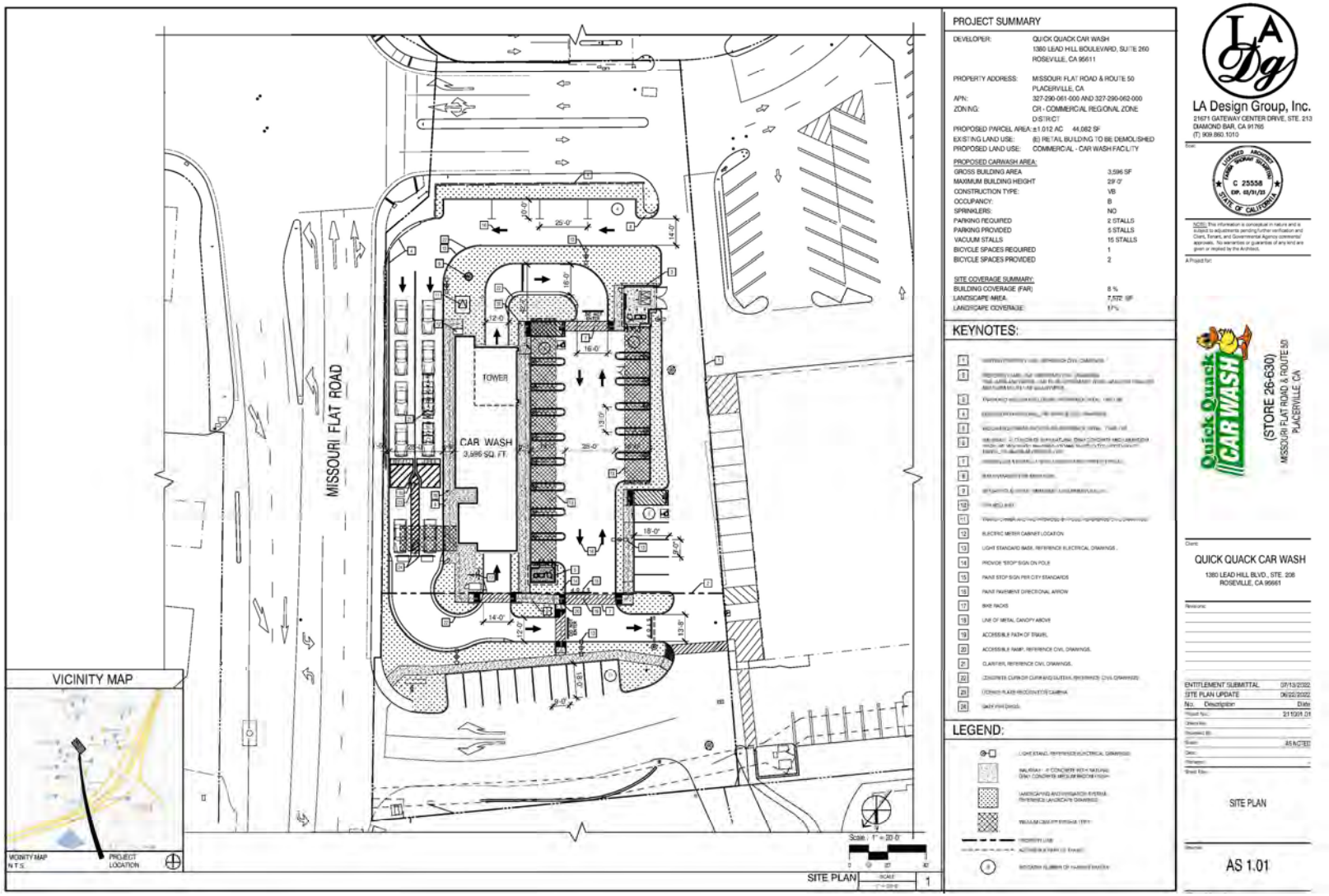
The Project proposes to develop a 108-foot car wash tunnel and 15 covered vacuum stall systems. The site plan used for this is illustrated in Exhibit B. The Project operational hours are assumed to be between 7 AM to 9 PM, seven days per week.

Exhibit A

Location Map

Exhibit B

Site Plan



3.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

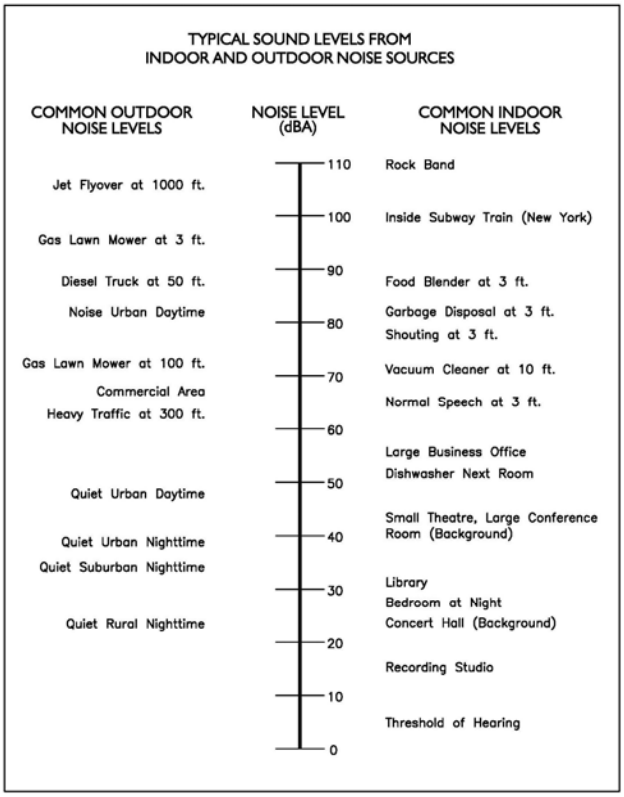
3.1 Sound, Noise, and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as the mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

3.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding), and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting at 20 Hz to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



3.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square meter ($\mu N/m^2$), also called micro-Pascal (μPa). One μPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels, abbreviated dB. Exhibit C illustrates reference sound levels for different noise sources.

3.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

3.5 Human Response to Changes in Noise Levels

Generally, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz (A-weighted scale). It perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in the noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the traffic volume on a highway) would result in a barely perceptible change in sound level.

3.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns; others are random. Some noise levels are constant, while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after the addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking, or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly, L50, L90, L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level, which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

3.7 Sound Propagation

As sound propagates from a source, it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt, or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall

noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located at least 200 feet from a noise source. Wind, temperature, air humidity, and turbulence can further impact how far sound can travel.

4.0 Regulatory Setting

The proposed Project is located in the County of El Dorado, California, and noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was originally tasked with implementing the Noise Control Act. However, it was eventually eliminated, leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible for regulating noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible for regulating noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers. The Housing and Urban Development (HUD) is responsible for establishing noise regulations as it relates to exterior/interior noise levels for new HUD-assisted housing developments near high-noise areas.

The federal government advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being constructed adjacent to a highway or that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

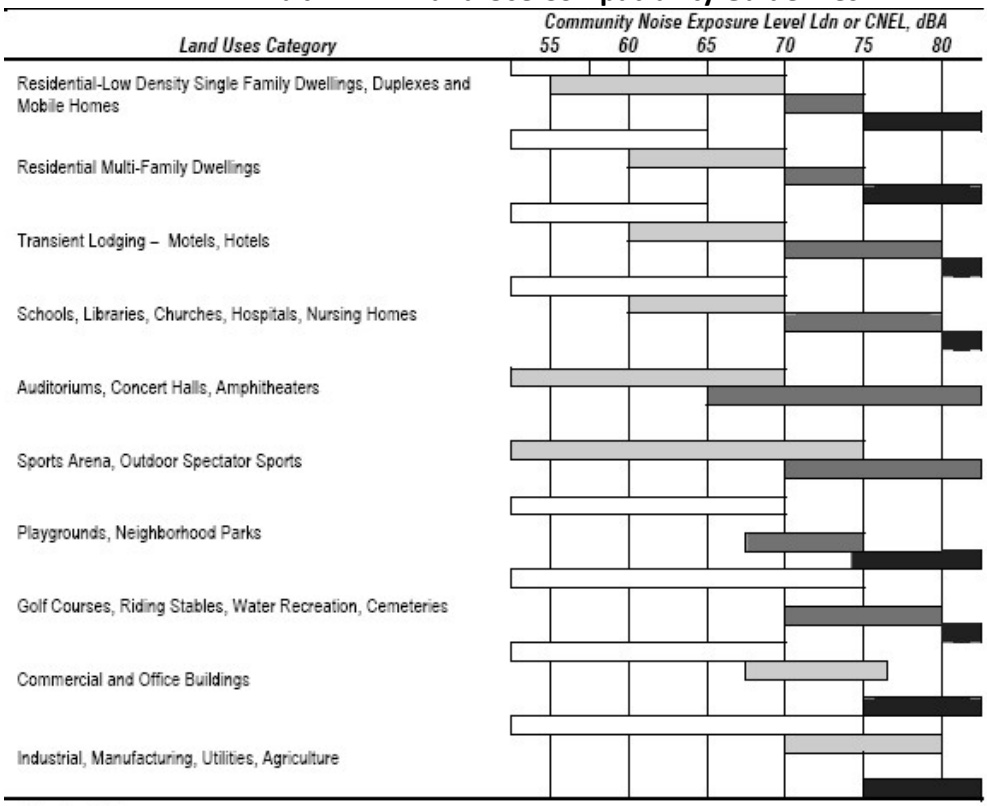
4.2 State Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix." The matrix allows the local jurisdiction to clearly delineate the compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 of the California Building Code (CBC), which in some cases requires acoustical analyses to outline exterior noise levels and

to ensure interior noise levels do not exceed the interior threshold. The state mandates that the legislative body of each county and City adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable, as illustrated in Exhibit D.

Exhibit D: Land Use Compatibility Guidelines



Explanatory Notes

Normally Acceptable:
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice. Outdoor environment will seem noisy.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.

Clearly Unacceptable:
New construction or development should generally not be undertaken. Construction cost to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

Source: California Office of Noise Control

4.3 County of El Dorado Noise Regulations

The County of El Dorado outlines their noise regulations and standards within the Municipal Code and the Noise Element of the County of El Dorado General Plan.

County of El Dorado General Plan

Applicable policies and standards governing environmental noise in the County are set forth in the General Noise Element. Section 130.37.060 of the El Dorado noise ordinance outlines the acceptable noise standards as 55 dBA exterior limit during daytime hours (7AM-7PM), 50 dBA during evening hours (7PM-10PM), and 45 dBA during nighttime hours (10PM-7AM). Therefore, the project must demonstrate compliance to the County's noise standards. In addition to the noise standards, the County has outlined goals, policies and implementation measures to reduce potential noise impacts and are presented below:

Goals, Policies, and Implementation Measures

Policies, goals and implementation program measures from the Noise Element that would mitigate potential impacts on noise include the following.

GOAL 6.5 – Acceptable Noise Levels

Ensure that County residents are not subjected to noise beyond acceptable levels.

Objective 6.5.1 – Protection of Noise-Sensitive Development

Protect existing noise-sensitive developments (e.g. hospitals, schools, churches, and residential) from new uses that would generate noise levels incompatible with those uses and conversely, discourage noise sensitive uses from locating near sources of high noise levels.

Policy 6.5.1.1: Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6-1 or the performance standards of Table 6-2, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.2: Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 6-2 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.3: Where noise mitigation measures are required to achieve the standards of Tables 6-1 and 6-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

Policy 6.5.1.4: Existing dwellings and new single-family dwellings on legal lots of record, as of the date of adoption of this General Plan, are not subject to County review with respect to satisfaction of the standards of the Public Health, Safety, and Noise Element except in areas governed by the Airport Land Use Compatibility Plan for applicable airports. (See Objective 6.5.2.)

As a consequence, such dwellings may be constructed in other areas where noise levels exceed the standards of the Public Health, Safety, and Noise Element. It is not the responsibility of the County to ensure that such dwellings meet the noise standards of the Public Health, Safety, and Noise Element, or the noise standards imposed by lending agencies such as HUD, FHA and Cal Vet. If homes are located and constructed in accordance with the Public Health, Safety, and Noise Element, it is expected that the resulting exterior and interior noise levels will conform to the HUD/FHA/Cal Vet noise standards.

Policy 6.5.1.5: Setbacks shall be the preferred method of noise abatement for residential projects located along U.S. Highway 50. Noise walls shall be discouraged within the foreground viewshed of U.S. Highway 50 and shall be discouraged in favor of less intrusive noise mitigation (e.g., landscaped berms, setbacks) along other high volume roadways.

Policy 6.5.1.6: New noise-sensitive uses shall not be allowed where the noise level, due to non-transportation noise sources, will exceed the noise level standards of Table 6-2 unless effective noise mitigation measures have been incorporated into the development design to achieve those standards.

Policy 6.5.1.7: Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 6-2 for noise-sensitive uses.

Policy 6.5.1.8: New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-1.

Policy 6.5.1.9: Noise created by new transportation noise sources, excluding airport expansion but including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 6-1 at existing noise-sensitive land uses.

Policy 6.5.1.10: To provide a comprehensive approach to noise control, the County shall:

A. Develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process

B. Develop and employ procedures to monitor compliance with the standards of the Noise Element after completion of projects where noise mitigation measures were required.
C. The zoning ordinance shall be amended to provide that noise standards will be applied to ministerial projects with the exception of single-family residential building permits if not in areas governed by the Airport Land Use Compatibility Plan. (See Objective 6.5.2.)

TABLE 6-1
MAXIMUM ALLOWABLE NOISE EXPOSURE FOR TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60[3]	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes:
[1] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L_{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L_{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

TABLE 6-2
NOISE LEVEL PERFORMANCE PROTECTION STANDARDS FOR NOISE SENSITIVE LAND USES AFFECTED BY NON-TRANSPORTATION* SOURCES

	Daytime 7 a.m. - 7 p.m.		Evening 7 p.m. - 10 p.m.		Night 10 p.m. - 7 a.m.	
Noise Level Descriptor	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

Notes:
Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.

*Note: For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission (CPUC) regulations. All other noise sources are subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, schools, hospitals, commercial land uses, other outdoor land use, etc.

Policy 6.5.1.11: The standards outlined in Tables 6-3, 6-4, and 6-5 shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally-recognized holidays. Further, the standards

outlined in Tables 6-3, 6-4, and 6-5 shall not apply to public projects to alleviate traffic congestion and safety hazards.

Policy 6.5.1.12: When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.

A. Where existing or projected future traffic noise levels are less than 60 dBA Ldn at the outdoor activity areas of residential uses, an increase of more than 5 dBA Ldn caused by a new transportation noise source will be considered significant;
B. Where existing or projected future traffic noise levels range between 60 and 65 dBA Ldn at the outdoor activity areas of residential uses, an increase of more than 3 dBA Ldn caused by a new transportation noise source will be considered significant; and
C. Where existing or projected future traffic noise levels are greater than 65 dBA Ldn at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA Ldn caused by a new transportation noise will be considered significant.

Policy 6.5.1.13: When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration:

A. In areas in which ambient noise levels are in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non transportation noise sources that exceed 5 dBA shall be considered significant; and
B. In areas in which ambient noise levels are not in accordance with the standards in Table 6-2, increases in ambient noise levels caused by new non transportation noise sources that exceed 3 dBA shall be considered significant.

Policy 6.5.1.14: The County will adopt a noise ordinance to resolve neighborhood conflicts and to control unnecessary noise in the County. Examples of the types of noise sources that can be controlled through the use of a quantitative noise ordinance include noisy mechanical equipment (e.g., swimming pool pumps, HVAC units), and amplified music in commercial establishments.

Policy 6.5.1.15: The County will establish and maintain coordination among city, county, and state agencies involved in noise abatement and other agencies to reduce noise generated from sources outside the County's jurisdiction.

County of El Dorado – Noise Ordinance

Chapter 130.37.060.1 from the noise ordinance outlines the County's exterior noise limits as it relates to stationary noise sources.

Table 1: Allowable Noise Level[1]

NOISE LEVEL PERFORMANCE STANDARDS FOR NOISE SENSITIVE LAND USES AFFECTED BY NON-TRANSPORTATION SOURCES						
NOISE LEVEL DESCRIPTOR	Daytime 7 a.m. - 7 p.m.		Evening 7 p.m. - 10 p.m.		Night 10 p.m. - 7 a.m.	
	Community/ Rural Centers	Rural Regions	Community/ Rural Centers	Rural Regions	Community/ Rural Centers	Rural Regions
Hourly Leq, dB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

1. Each of the noise levels specified above shall be lowered by five dBA for simple tone noises, noises consisting primarily of unamplified speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses, such as caretaker dwellings.
2. The Director can impose noise level standards which are up to five dBA less than those specified above, based upon a determination of existing low ambient noise levels in the vicinity of the project site.
3. The exterior noise level standard shall be applied as follows:

A. In Community Regions, at the property line of the receiving property;

B. In Rural Centers and Regions, at a point 100 feet away from a sensitive receptor or, if the sensitive receptor is within the Platted Lands Overlay (-PL) where the underlying land use designation is consistent with Community Region densities, at the property line of the receiving property or 100 feet away from the sensitive receptor, whichever is less; or

C. In all areas, at the boundary of a recorded noise easement between affected properties.

Construction

Section 130.37.020(I) states that construction is exempt as long as it is performed during daylight hours provided that all construction equipment shall be fitted with factory installed muffling devices and maintained in good working order.

Regulatory Summary

The land uses directly surrounding the project include commercial uses to the north, south, east, and west with residential approximately 400 feet to the south. Acceptable noise standards are 50 dBA exterior limit during daytime hours (7AM-7PM), 45 dBA during evening hours (7PM-10PM), and 40 dBA during nighttime hours (10PM-7AM). Therefore, the project must demonstrate compliance to the County's most strict noise standard during operational hours 45 dBA.

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

MD conducted two (2) short-term noise measurement near the Project site, representing the noise level from the traffic conditions along Missouri Flat Road (see Appendix A for the field sheet data).

5.2 Stationary Noise Modeling

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP's software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the various stationary on-site sources (vacuums and car wash blowers at the exit). The SP model assumes a total of 15 vacuums and the dryer systems are operating simultaneously (worst-case scenario) when the noise will, in reality, be intermittent and lower in noise level. In addition, the modeling takes into account the louver, windows, and openings on the car wash tunnel based on the plan elevations. The reference vacuum equipment and blower system sound level data are provided in Appendix C.

All other noise-producing equipment (e.g., compressors, pumps) will be housed within mechanical equipment rooms.

The following outlines the project design features:

1. The Project will incorporate a 12 Sonny's blower system with the silencer package installed or equivalent to meet these acoustical benchmarks.

6.0 Existing Noise Environment

Two (2) 15-minute ambient noise measurement was taken at the project site to determine the existing ambient noise levels. Noise data indicates that traffic along Missouri Flat Road is the primary source of noise impacting the site and the surrounding area.

6.1 Short-Term Noise Measurement Results

The results of the 15-minute measurements are presented in Table 2.

Table 2: Short-Term Noise Measurement Data (dBA)

Location	Start Time	Stop Time	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
ST-1	10:37 AM	10:52 AM	65.1	85.8	46.4	73.0	63.4	57.4	54.1	49.5
ST-2	10:13 AM	10:28 AM	63.6	72.0	55.2	69.3	66.4	64.2	62.3	59.5
Notes: 1. Short-term noise monitoring locations are illustrated in Exhibit E.										

For this evaluation, MD has utilized the measured ambient noise level of 64 to 65 dBA Leq to estimate the noise levels at the adjacent sensitive receptors around the site using the inverse square law for comparison to the Project's projected noise levels.

Exhibit E

Measurement Locations

= Short-Term Monitoring Location

7.0 Future Noise Environment Impacts

This assessment analyzes future noise impacts as a result of the Project. The analysis details the estimated exterior noise levels. Stationary noise impacts are analyzed from the noise sources on-site such as dryers/blowers and vacuums.

7.1 Stationary Source Noise

The following sections outline the exterior noise levels associated with the proposed Project.

7.1.1 Noise Impacts to Off-Site Receptors Due to Stationary Sources

Sensitive receptors affected by Project operational noise include existing residences to the north. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes the blowers, vacuums, and equipment are always operational when in reality, the noise will be intermittent and cycle on/off depending on the customer usage.

A total of three (3) residential receptors (R1 – R3) were modeled to evaluate the proposed Project's operational impact. This study analyzes the Project only operational noise level projections and the Project plus ambient noise level projections, see Table 3 below.

Table 3: Worst-Case Predicted Operational Noise Levels (dBA)

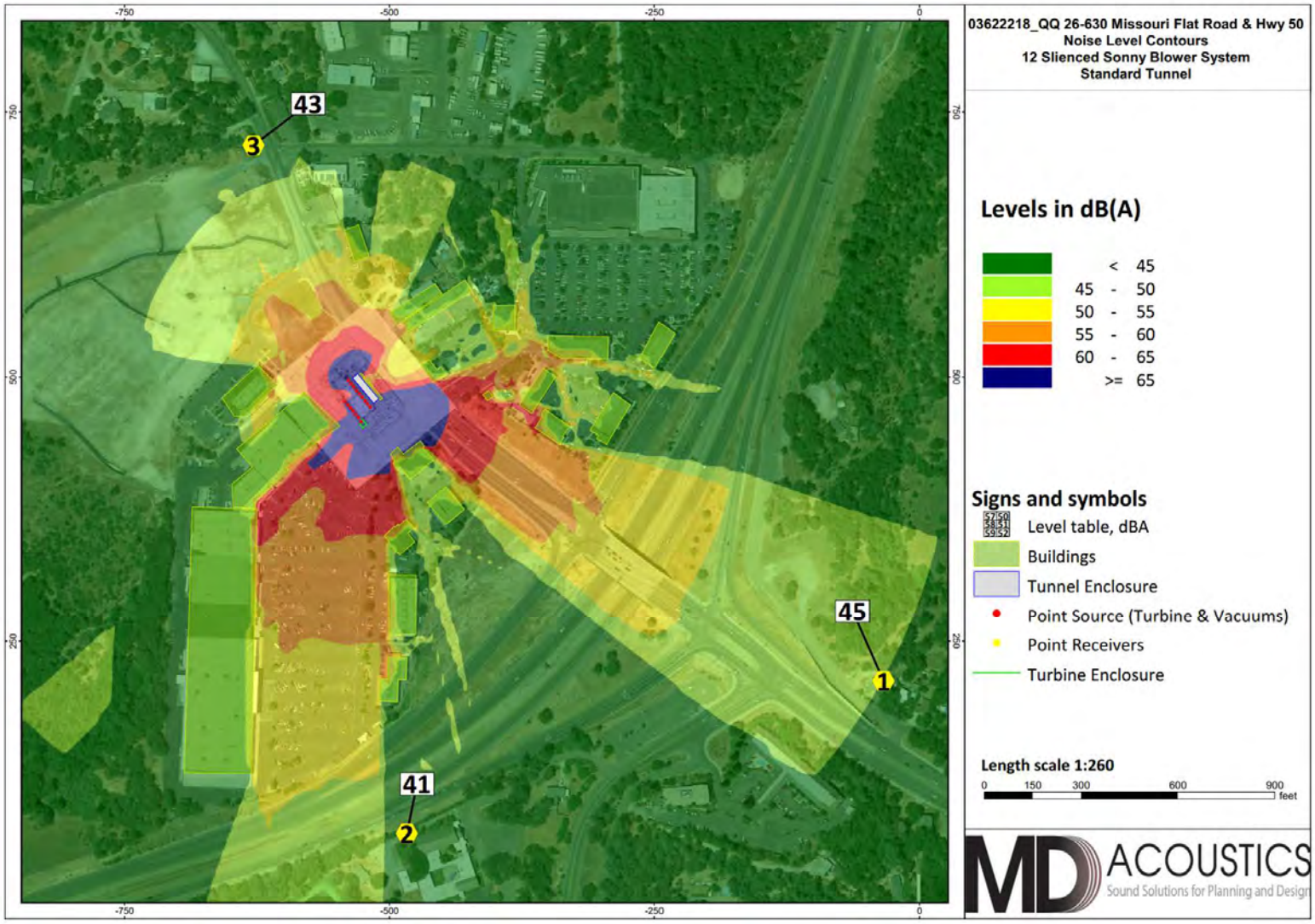
Receptor[1]	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Leq)[3]	Total Combined Noise Level (dBA, Leq)	Evening (7PM - 10PM) Non Transp. Noise Limit (dBA, Leq)	Change in Noise Level as Result of Project
1	64	45	65	**45**	0
2	71	42	64	**45**	0
3	61	43	64	**45**	0

Notes:
1. Receptors 1 and 3 represent resident uses and receptor 2 represents the nearby hotel.
2. See Appendix A for the ambient noise measurement.
3. See Exhibit F for the operational noise level projections at said receptors.

The model indicates that the project-only noise level at the existing residences to the north and southeast and the church to the south will be 41 to 45 dBA. The project-only level will meet the County's noise limit for both daytime hours and evening hours according to the municipal code. The project noise will not increase the ambient noise at the sensitive receptors.

Exhibit F

Operational Noise Level Contours



8.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

County of El Dorado: General Plan

County of El Dorado: Municipal Code Chapter 130.27

Appendix A:

Field Measurement Data

15-Minute Continuous Noise Measurement Datasheet

Project Name:	QQ 26-630 Missouri Flat Rd & Hwy 50
Project: #/Name:	0362-2022-018
Site Address/Location:	Missouri Flat Rd & Hwy 50
Date:	09/29/2022
Field Tech/Engineer:	Dennis Jordan / Claire Pincock

Site Observations:

74°, sunny and clear, winds 5 mph, light to moderate traffic with a few loud vehicles and const. noise from demolition of building

Sound Meter:	XL2, NTI	**SN:**	A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 15-minute interval		
Site Id:	ST-1, ST-2		

MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: QQ 26-630 Missouri Flat Rd & Hwy 50

Site Address/Location: Missouri Flat Rd & Hwy 50

Site Id: ST-1, ST-2

Figure 1: ST-1 150 ft from Missouri Flat Rd

Figure 2: ST-2 60 ft from Missouri Flat Rd

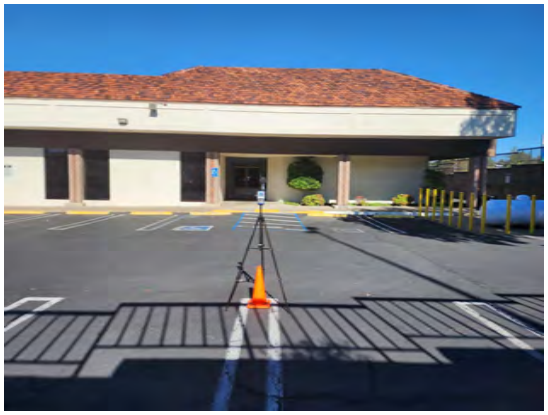


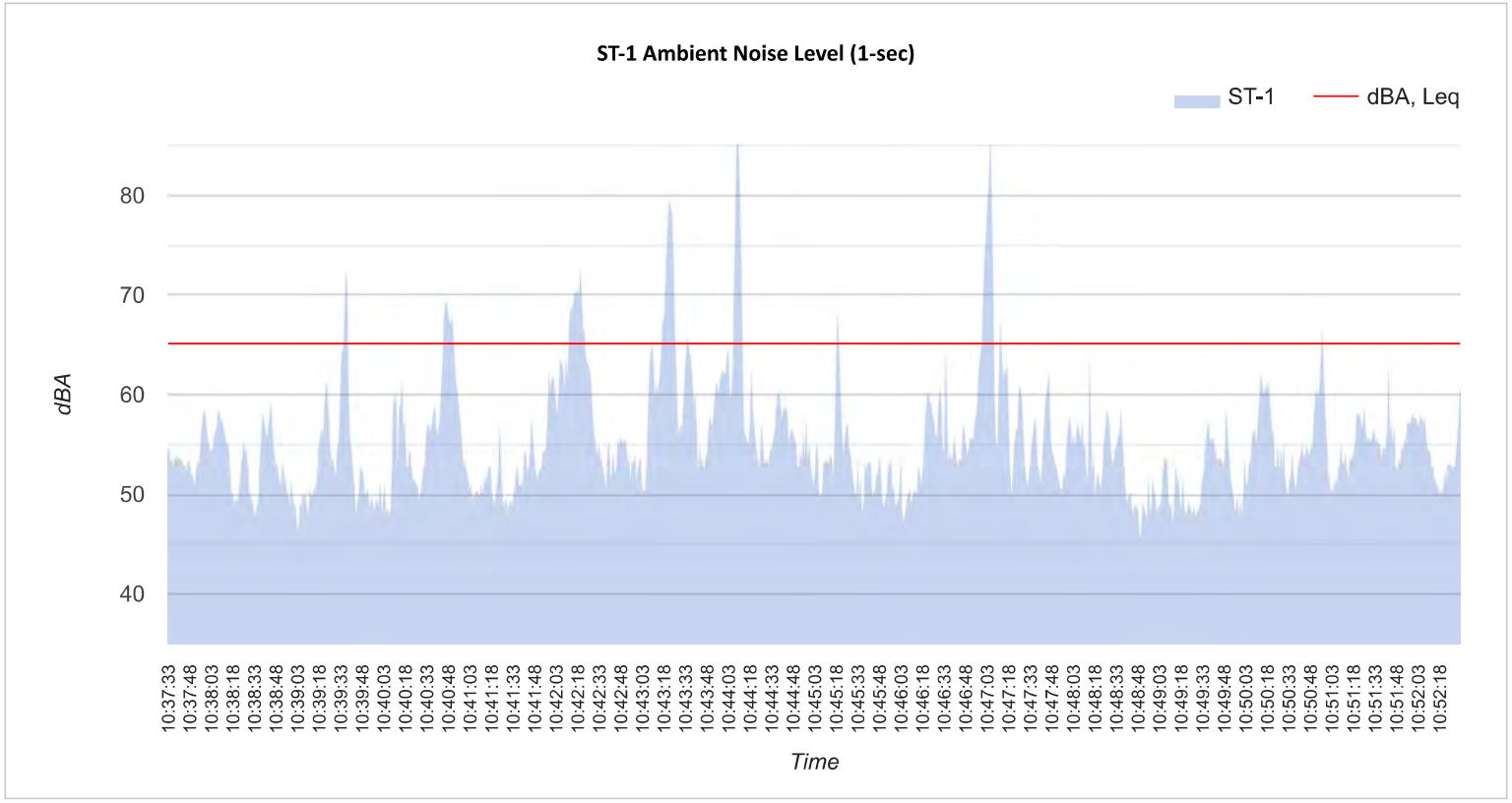
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-1	10:37 AM	10:52 AM	65.1	85.8	46.4	73	63.4	57.4	54.1	49.5
ST-2	10:13 AM	10:28 AM	63.6	72.0	55.2	69.3	66.4	64.2	62.3	59.5

MD ACOUSTICS

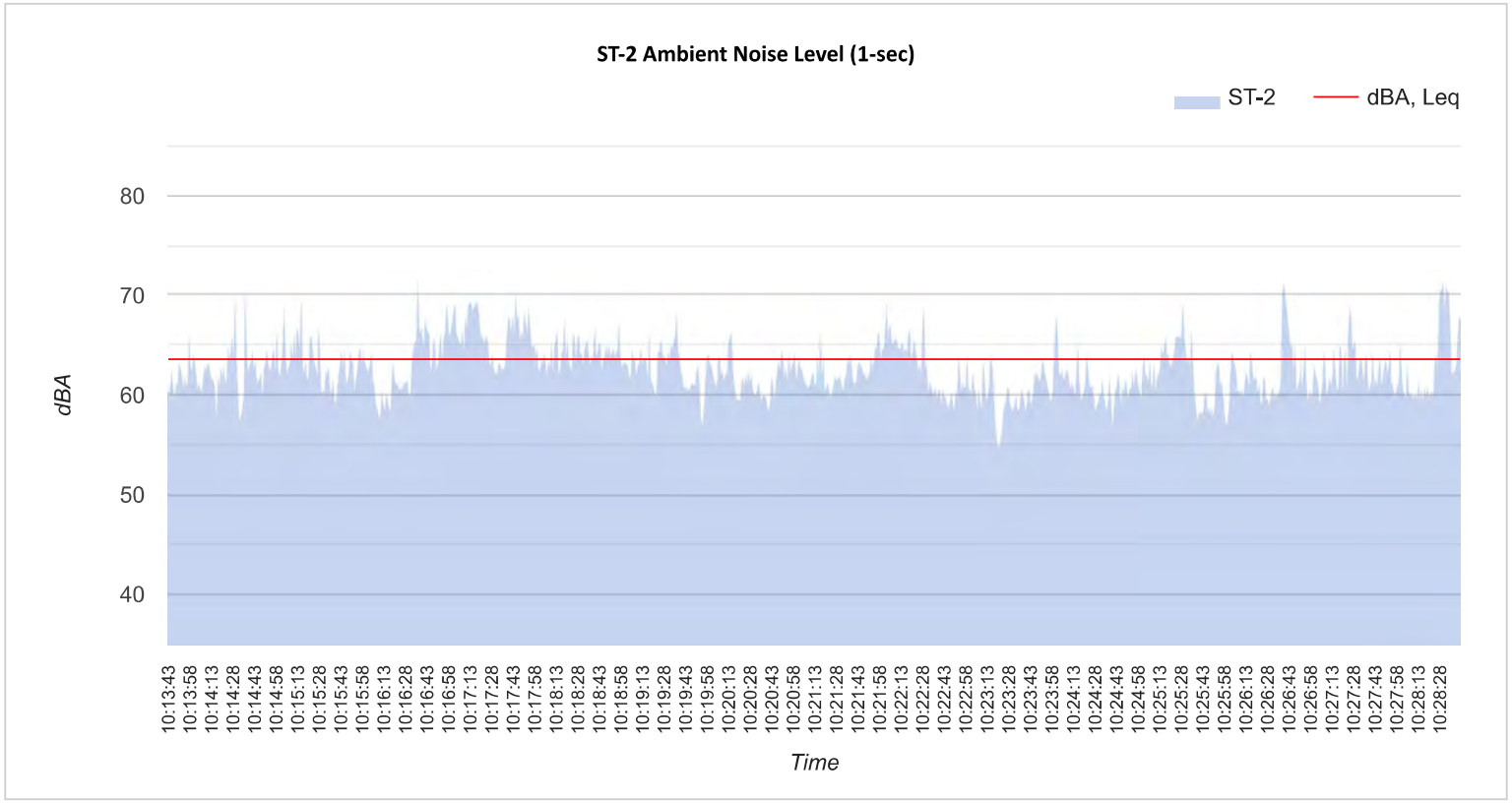
15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	QQ 26-630 Missouri Flat Rd & Hwy 50	**Site Topo:**	Buildings 1 to 2 stories tall	**Noise Source(s) w/ Distance:**
Site Address/Location:	Missouri Flat Rd & Hwy 50	**Meteorological Cond.:**	74° , winds 5 mph, sunny and clear	Road Noise / 2 to 10 ft from meter
Site Id:	ST-1	**Ground Type:**	Buildings, Cement, Asphalt and Vegetation	



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	QQ 26-630 Missouri Flat Rd & Hwy 50	**Site Topo:**	Buildings 1 to 2 stories tall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	Missouri Flat Rd & Hwy 50	**Meteorological Cond.:**	74°, winds 5 mph, sunny and clear	Const. & Road Noise / Demo of Building approx 100 ft , Rd 23	
Site Id:	ST-2	**Ground Type:**	Buildings, Cement, Asphalt, Dirt and Vegetation		



Appendix B:

SoundPLAN Input/Outputs

QQ 26-630 Missouri Flat Road & Hwy 50
Octave spectra of the sources in dB(A) - 001 - 12 Sonny - Standard: Outdoor SP

3

Name	Source type	I or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
001 - 12 Sonny - Standard-Facade 01	Area	28.22	101.4	57.0	46.4	60.9	0.0	0.0		3	100%/24h	29_Facade 01_	50.2	45.0	55.1	57.9	50.3	46.1	34.1	24.1	
001 - 12 Sonny - Standard-Facade 02	Area	185.69	98.6	57.0	44.3	67.0	0.0	0.0		3	100%/24h	30_Facade 02_	56.2	50.9	61.8	64.0	55.5	50.9	38.8	28.3	
001 - 12 Sonny - Standard-Facade 03	Area	21.90	90.2	57.0	39.6	53.0	0.0	0.0		3	100%/24h	31_Facade 03_	41.2	35.5	49.5	49.6	35.5	21.3	1.3	-13.0	
001 - 12 Sonny - Standard-Facade 04	Area	185.69	98.6	57.0	44.3	67.0	0.0	0.0		3	100%/24h	32_Facade 04_	56.2	50.9	61.8	64.0	55.5	50.9	38.8	28.3	
001 - 12 Sonny - Standard-Roof 01	Area	193.47	98.6	57.0	44.3	67.2	0.0	0.0		0	100%/24h	27_Roof 01_	56.4	51.1	61.9	64.1	55.6	51.0	38.9	28.4	
001 - 12 Sonny - Standard-Transmissive area 01	Area	15.61	89.8	0.0	89.8	101.8	0.0	0.0		3	100%/24h	63_Transmissive area 01_	69.4	77.5	93.7	99.7	94.6	84.6	67.4	52.0	
001 - 12 Sonny - Standard-Transmissive area 02	Area	9.29	101.5	0.0	101.5	111.2	0.0	0.0		3	100%/24h	64_Transmissive area 02_	75.4	84.2	96.4	105.2	106.6	106.3	97.5	85.7	
Turbine	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech Turbine	47.3	57.5	54.5	51.9	55.8	59.5	66.1	69.3	65.0
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2

QQ 26-630 Missouri Flat Road & Hwy 50
Octave spectra of the sources in dB(A) - 001 - 12 Sonny - Standard: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	62.4	69.2	75.8	72.6	71.3	73.2	72.6	67.8	59.2

QQ 26-630 Missouri Flat Road & Hwy 50
Contribution spectra - 001 - 12 Sonny - Standard: Outdoor SP

Source	Time slice	Sum dB(A)	25Hz dB(A)	31.5Hz dB(A)	40Hz dB(A)	50Hz dB(A)	63Hz dB(A)	80Hz dB(A)	100Hz dB(A)	125Hz dB(A)	160Hz dB(A)	200Hz dB(A)	250Hz dB(A)	315Hz dB(A)	400Hz dB(A)	500Hz dB(A)	630Hz dB(A)	800Hz dB(A)	1kHz dB(A)	1.25kHz dB(A)	1.6kHz dB(A)	2kHz dB(A)	2.5kHz dB(A)	3.15kHz dB(A)	4kHz dB(A)	5kHz dB(A)	6.3kHz dB(A)	8kHz dB(A)	10kHz dB(A)
Receiver -34,212 Fl G Lr,lim dB(A) Leq,d 45.0 dB(A) Sigma(Leq,d) 0.0 dB(A)																													
001 - 12 Sonny - Standard-Facade 01	Leq,d	-4.2					-8.6			-21.0			-13.4			-8.4			-14.0			-21.2			-45.8				
001 - 12 Sonny - Standard-Facade 02	Leq,d	-4.3					-6.4			-19.8			-12.1			-12.0			-19.5			-28.3			-54.5				
001 - 12 Sonny - Standard-Facade 03	Leq,d	-22.2					-24.2			-38.7			-28.6			-31.4			-47.4			-66.8							
001 - 12 Sonny - Standard-Facade 04	Leq,d	-6.7					-8.3			-22.2			-15.6			-15.2			-24.5			-34.1			-61.2				
001 - 12 Sonny - Standard-Roof 01	Leq,d	-4.5					-10.4			-20.8			-10.4			-8.7			-16.6			-24.0			-49.0				
001 - 12 Sonny - Standard-Transmissive area 01	Leq,d	17.5					2.7			0.8			11.2			14.9			9.5			-4.6			-37.5				
001 - 12 Sonny - Standard-Transmissive area 02	Leq,d	44.9					17.1			18.5			25.9			36.8			42.3			39.5			18.0			-39.8	
Turbine	Leq,d	-10.0				-34.0	-27.0	-20.1	-22.5	-17.3	-16.6	-21.3	-22.6	-23.7	-26.5	-28.9	-27.6	-26.8	-26.8	-24.7	-23.0	-24.7	-28.4	-27.9	-33.0	-42.7	-56.5	-78.4	
Vac	Leq,d	7.9	-22.4	-19.5	-12.7	-8.8	-5.9	-2.0	-6.6	-5.8	-3.0	-1.8	-0.9	-5.0	-6.8	-3.0	-9.3	-4.9	-4.7	-7.9	-4.7	-6.9	-10.0	-14.7	-21.8	-34.3	-51.0	-77.3	
Vac	Leq,d	7.7	-22.5	-19.6	-12.8	-8.9	-6.1	-2.3	-6.8	-6.0	-3.3	-1.7	-0.8	-5.0	-6.8	-3.0	-9.2	-5.7	-5.6	-8.8	-5.6	-7.9	-11.1	-15.8	-22.8	-35.3	-52.0	-78.2	
Vac	Leq,d	7.5	-22.5	-19.7	-12.9	-9.1	-6.3	-2.5	-7.0	-6.3	-3.6	-1.6	-0.8	-4.9	-6.7	-2.9	-9.1	-6.5	-6.4	-9.6	-6.5	-8.8	-12.0	-16.7	-23.8	-36.3	-52.9	-78.9	
Vac	Leq,d	8.2	-22.4	-19.5	-12.6	-8.7	-5.8	-1.9	-6.5	-5.6	-2.8	-1.8	-0.9	-5.1	-6.9	-3.1	-9.3	-4.1	-3.8	-6.9	-3.6	-5.7	-8.9	-13.5	-20.6	-33.1	-49.9	-76.3	
Vac	Leq,d	6.1	-23.1	-20.2	-13.4	-9.6	-6.8	-3.0	-8.0	-7.4	-4.8	-2.7	-2.4	-7.2	-9.9	-6.8	-13.8	-7.2	-7.2	-10.4	-7.3	-9.5	-12.8	-17.6	-24.7	-37.3	-54.1	-80.5	
Vac	Leq,d	4.9	-23.2	-20.4	-13.5	-9.8	-7.0	-3.4	-8.4	-7.9	-5.6	-3.4	-3.4	-8.4	-11.4	-8.5	-15.7	-9.9	-10.1	-13.6	-10.7	-13.2	-16.7	-21.7	-29.0	-41.8	-58.7	-85.2	
Vac	Leq,d	3.4	-23.5	-20.7	-14.0	-10.3	-7.7	-4.2	-9.5	-9.2	-7.1	-5.0	-5.2	-10.4	-13.5	-10.7	-17.9	-12.9	-13.3	-16.9	-14.1	-16.7	-20.3	-25.4	-32.8	-45.5	-62.4	-89.0	
Vac	Leq,d	2.6	-23.6	-20.9	-14.2	-10.7	-8.2	-4.8	-10.2	-10.0	-8.0	-5.9	-6.1	-11.2	-14.3	-11.5	-18.7	-14.2	-14.6	-18.2	-15.5	-18.1	-21.7	-26.9	-34.3	-47.0	-63.9	-90.5	
Vac	Leq,d	2.3	-23.5	-20.9	-14.3	-10.8	-8.4	-5.1	-10.5	-10.4	-8.4	-6.2	-6.3	-11.5	-14.5	-11.7	-18.9	-14.7	-15.1	-18.8	-16.0	-18.7	-22.3	-27.5	-35.0	-47.7	-64.7	-91.4	
Vac	Leq,d	10.3	-21.0	-18.0	-11.0	-7.0	-4.0	0.0	-5.6	-4.7	-1.8	-1.7	-0.9	-5.0	-6.8	-3.0	-9.2	-0.7	-0.1	-2.8	0.9	-0.7	-3.3	-7.4	-13.7	-25.5	-41.4	-66.8	
Vac	Leq,d	8.6	-22.4	-19.5	-12.6	-8.7	-5.7	-1.8	-6.4	-5.5	-2.7	-1.9	-1.0	-5.2	-7.0	-3.2	-9.4	-3.1	-2.7	-5.6	-2.2	-4.1	-7.1	-11.6	-18.5	-30.9	-47.6	-74.0	
Vac	Leq,d	10.1	-21.1	-18.1	-11.2	-7.2	-4.2	-0.2	-5.9	-5.0	-2.1	-1.9	-1.1	-5.2	-7.0	-3.2	-9.4	-0.9	-0.4	-3.1	0.7	-1.0	-3.7	-7.8	-14.3	-26.3	-42.5	-68.4	
Vac	Leq,d	10.5	-20.8	-17.8	-10.8	-6.8	-3.8	0.1	-5.3	-4.4	-1.5	-1.5	-0.7	-4.8	-6.6	-2.8	-9.0	-0.5	0.1	-2.6	1.2	-0.4	-3.0	-6.9	-13.1	-24.7	-40.4	-65.3	
Vac	Leq,d	10.5	-20.8	-17.8	-10.9	-6.9	-3.9	0.1	-5.4	-4.5	-1.6	-1.6	-0.7	-4.9	-6.7	-2.9	-9.1	-0.6	0.0	-2.7	1.1	-0.5	-3.1	-7.1	-13.3	-25.0	-40.7	-65.8	
Vac	Leq,d	10.4	-20.9	-17.9	-10.9	-6.9	-3.9	0.0	-5.5	-4.6	-1.7	-1.7	-0.8	-5.0	-6.8	-2.9	-9.2	-0.6	-0.1	-2.7	1.0	-0.6	-3.2	-7.2	-13.5	-25.2	-41.0	-66.3	
Receiver -483,69 Fl G Lr,lim dB(A) Leq,d 41.5 dB(A) Sigma(Leq,d) 0.0 dB(A)																													
001 - 12 Sonny - Standard-Facade 01	Leq,d	-4.3					-9.1			-20.1			-11.0			-8.9			-16.2			-23.3			-41.2			-89.8	
001 - 12 Sonny - Standard-Facade 02	Leq,d	-6.6					-9.2			-21.7			-13.5			-13.6			-23.0			-31.0			-53.1				

QQ 26-630 Missouri Flat Road & Hwy 50
Contribution spectra - 001 - 12 Sonny - Standard: Outdoor SP

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
001 - 12 Sonny - Standard-Facade 03	Leq,d	-22.3					-25.0			-38.6			-28.1			-30.4			-45.9			-63.9			-95.1				
001 - 12 Sonny - Standard-Facade 04	Leq,d	1.4					-2.9			-14.5			-5.2			-3.4			-11.4			-18.5			-38.0			-86.4	
001 - 12 Sonny - Standard-Roof 01	Leq,d	-2.0					-8.5			-18.3			-7.8			-6.0			-13.8			-20.6			-41.0			-88.0	
001 - 12 Sonny - Standard-Transmissive area 01	Leq,d	18.0					1.3			0.6			11.3			15.4			10.5			-2.3			-30.3			-82.8	
001 - 12 Sonny - Standard-Transmissive area 02	Leq,d	41.4					16.0			18.3			28.6			36.6			37.6			34.1			19.2			-32.1	
Turbine	Leq,d	-7.0				-31.9	-25.0	-18.2	-20.4	-17.9	-15.3	-20.1	-21.4	-22.7	-25.6	-24.5	-23.2	-22.5	-22.4	-20.1	-18.7	-20.0	-18.5	-16.7	-20.2	-27.6	-38.0	-54.9	-81.7
Vac	Leq,d	11.5	-19.5	-16.7	-9.9	-6.2	-3.4	0.3	-3.7	-3.0	-0.3	1.2	2.1	-2.0	-3.8	0.1	-6.1	-2.3	-1.9	-4.7	-0.9	-2.5	0.9	-2.5	-7.7	-17.7	-30.7	-51.6	-80.0
Vac	Leq,d	11.4	-19.4	-16.6	-9.9	-6.1	-3.4	0.3	-3.6	-2.9	-0.3	1.3	2.2	-1.9	-3.7	0.2	-6.0	-2.3	-1.9	-4.7	-1.0	-2.5	0.4	-3.0	-8.1	-18.0	-30.9	-51.5	-79.7
Vac	Leq,d	11.4	-19.4	-16.6	-9.8	-6.1	-3.4	0.4	-3.6	-2.9	-0.2	1.4	2.3	-1.8	-3.6	0.3	-5.9	-2.4	-2.0	-4.8	-1.1	-2.6	0.3	-3.0	-8.1	-18.0	-30.9	-51.4	-79.5
Vac	Leq,d	11.2	-19.5	-16.7	-9.9	-6.2	-3.4	0.3	-3.7	-3.0	-0.3	1.1	2.0	-2.1	-3.8	0.0	-6.1	-2.3	-1.9	-4.7	-0.9	-2.5	-1.0	-4.5	-9.9	-20.1	-33.3	-54.0	-81.9
Vac	Leq,d	11.5	-21.0	-18.4	-11.8	-8.2	-5.6	-2.0	-6.1	-5.5	-0.2	3.4	4.0	-0.4	-2.6	1.0	-5.4	-2.8	-2.6	-5.5	-1.9	-3.6	-1.2	-4.8	-10.2	-20.6	-34.2	-55.9	-85.4
Vac	Leq,d	11.4	-20.5	-17.8	-11.1	-7.4	-4.7	-1.1	-5.3	-4.7	-2.2	3.3	4.2	-0.1	-2.3	1.2	-5.2	-2.4	-2.1	-5.0	-1.4	-3.0	-4.8	-8.5	-13.9	-24.0	-37.1	-57.9	-86.4
Vac	Leq,d	12.0	-19.9	-17.1	-10.4	-6.6	-3.9	-0.2	-4.3	-3.5	0.7	3.2	4.1	0.0	-2.1	1.6	-4.8	-1.6	-1.3	-4.1	-0.5	-2.1	-4.0	-7.6	-12.9	-23.0	-35.9	-56.6	-85.1
Vac	Leq,d	11.9	-20.0	-17.2	-10.4	-6.6	-3.9	-0.2	-4.3	-3.6	0.7	3.2	4.0	-0.1	-2.2	1.5	-4.9	-1.6	-1.3	-4.1	-0.4	-2.1	-4.0	-7.5	-12.9	-23.0	-36.0	-56.8	-85.4
Vac	Leq,d	11.9	-20.0	-17.2	-10.4	-6.7	-3.9	-0.2	-4.3	-3.6	0.7	3.1	4.0	-0.1	-2.2	1.5	-4.8	-1.6	-1.2	-4.1	-0.4	-2.0	-3.9	-7.5	-12.9	-23.0	-36.1	-57.0	-85.9
Vac	Leq,d	11.7	-21.1	-18.5	-11.9	-8.3	-5.6	-2.1	-6.1	-5.6	-0.2	3.4	4.0	-0.3	-2.5	1.1	-5.4	-2.9	-2.7	-5.6	-2.1	-3.8	1.4	-2.1	-7.5	-17.9	-31.5	-53.4	-83.4
Vac	Leq,d	11.2	-19.6	-16.8	-10.0	-6.2	-3.4	0.3	-3.7	-3.0	-0.3	1.1	2.0	-2.1	-3.9	0.0	-6.2	-2.3	-1.9	-4.7	-0.9	-2.5	-1.1	-4.6	-10.0	-20.2	-33.4	-54.2	-82.3
Vac	Leq,d	11.1	-19.7	-16.8	-10.0	-6.2	-3.5	0.3	-3.7	-3.0	-0.3	1.0	1.9	-2.2	-4.0	-0.1	-6.3	-2.3	-1.9	-4.6	-0.9	-2.5	-1.1	-4.6	-10.0	-20.3	-33.6	-54.5	-82.8
Vac	Leq,d	10.4	-20.4	-17.7	-11.0	-7.3	-4.5	-0.8	-4.7	-4.0	-1.2	1.2	2.1	-2.0	-3.8	0.1	-6.1	-3.2	-2.9	-5.7	-2.1	-3.7	-4.6	-8.2	-13.6	-23.6	-36.4	-56.6	-84.1
Vac	Leq,d	11.4	-19.6	-16.8	-10.0	-6.3	-3.6	0.1	-3.9	-3.3	-0.6	1.1	2.0	-2.1	-3.9	0.0	-6.2	-2.7	-2.3	-5.0	-1.3	-2.9	1.7	-1.8	-7.1	-17.3	-30.8	-52.2	-81.3
Vac	Leq,d	13.0	-19.6	-16.9	-10.1	-6.4	-3.7	0.0	-4.0	-3.3	1.2	3.5	4.4	0.3	-1.5	2.4	-3.8	-0.7	-0.3	-3.1	0.6	-1.0	2.1	-1.4	-6.7	-16.9	-30.3	-51.7	-80.7
Receiver -628,719 Fl G Lr,lim dB(A) Leq,d 43.3 dB(A) Sigma(Leq,d) 0.0 dB(A)																													
001 - 12 Sonny - Standard-Facade 01	Leq,d	-9.1					-10.8			-23.6			-17.9			-17.8			-26.9			-34.3			-53.6			-86.9	
001 - 12 Sonny - Standard-Facade 02	Leq,d	5.1					1.8			-10.2			-3.6			-0.1			-7.3			-13.6			-31.8			-62.8	
001 - 12 Sonny - Standard-Facade 03	Leq,d	-5.4					-11.3			-21.8			-11.4			-8.9			-20.7			-35.7			-61.9			-95.6	
001 - 12 Sonny - Standard-Facade 04	Leq,d	0.3					-1.8			-13.5			-8.1			-7.2			-15.7			-23.6			-43.6			-76.8	
001 - 12 Sonny - Standard-Roof 01	Leq,d	2.5					-5.0			-13.7			-3.1			-1.1			-9.1			-14.6			-32.3			-64.0	

QQ 26-630 Missouri Flat Road & Hwy 50
Contribution spectra - 001 - 12 Sonny - Standard: Outdoor SP

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
001 - 12 Sonny - Standard-Transmissive area 01	Leq,d	42.9					17.5			21.1			30.9			40.0			38.6			27.7			3.9			-30.7	
001 - 12 Sonny - Standard-Transmissive area 02	Leq,d	30.5					13.1			13.3			18.4			24.7			26.3			24.5			9.3			-25.4	
Turbine	Leq,d	-0.3				-23.0	-19.5	-12.8	-14.7	-12.2	-11.5	-17.6	-18.8	-19.9	-22.4	-24.7	-17.9	-16.5	-13.7	-10.8	-9.6	-10.0	-13.1	-10.2	-10.2	-14.8	-21.2	-32.1	-51.5
Vac	Leq,d	20.1	-15.0	-12.0	-5.0	-1.0	2.0	6.0	3.1	4.1	7.0	4.8	5.7	1.7	-0.1	3.8	0.0	8.7	9.5	7.1	12.4	11.5	10.2	8.2	5.0	-1.9	-10.3	-24.4	-43.5
Vac	Leq,d	18.7	-15.1	-12.1	-5.1	-1.1	1.9	5.9	3.0	3.9	6.9	4.7	5.6	1.5	-0.2	3.7	-2.4	6.3	7.0	4.7	10.6	9.7	8.4	6.4	3.2	-3.8	-12.2	-26.4	-45.4
Vac	Leq,d	20.0	-15.2	-12.2	-5.2	-1.2	1.8	5.8	2.8	3.8	6.7	4.5	5.5	1.4	-0.3	6.0	-0.1	8.6	9.3	7.0	12.3	11.4	10.1	8.0	4.8	-2.2	-10.7	-25.0	-44.4
Vac	Leq,d	20.3	-14.9	-11.9	-4.9	-0.9	2.1	6.1	3.3	4.2	7.2	4.9	5.8	1.8	0.1	4.0	0.1	8.8	9.6	7.2	12.5	11.7	10.4	8.4	5.2	-1.6	-10.0	-24.0	-42.8
Vac	Leq,d	16.4	-16.7	-13.8	-7.0	-3.1	-0.3	3.5	0.6	1.4	4.2	4.5	5.0	0.5	-1.8	1.8	-4.6	2.5	3.2	0.8	8.1	7.3	5.9	3.8	0.6	-6.3	-14.6	-28.4	-46.6
Vac	Leq,d	19.4	-14.5	-11.5	-4.5	-0.5	2.5	6.5	3.8	4.7	7.7	5.4	6.3	2.2	0.5	4.4	-1.7	7.0	7.8	5.5	11.1	10.3	9.1	7.1	4.1	-2.5	-10.4	-23.7	-41.4
Vac	Leq,d	19.6	-14.3	-11.3	-4.3	-0.3	2.7	6.6	4.0	4.9	7.9	5.5	6.5	2.4	0.7	4.6	-1.5	7.1	7.9	5.6	11.2	10.5	9.2	7.3	4.4	-2.1	-9.9	-23.0	-40.5
Vac	Leq,d	19.2	-14.2	-11.2	-4.2	-0.2	2.8	6.8	4.1	5.1	8.0	5.6	6.6	2.5	0.8	4.7	-1.4	7.3	8.1	5.8	10.1	9.4	8.3	6.5	3.8	-2.5	-9.9	-22.7	-39.8
Vac	Leq,d	19.4	-14.1	-11.1	-4.1	-0.1	2.9	6.9	4.3	5.2	8.2	5.8	6.7	2.7	0.9	4.9	-1.2	7.4	8.2	5.9	10.3	9.6	8.5	6.7	4.0	-2.1	-9.5	-22.1	-39.0
Vac	Leq,d	15.2	-16.8	-13.9	-7.1	-3.3	-0.5	3.3	0.3	1.0	3.7	4.0	4.4	-0.4	-2.9	0.3	-6.4	0.6	1.0	-1.8	6.8	5.8	4.2	1.8	-1.9	-9.4	-18.8	-34.0	-54.2
Vac	Leq,d	20.4	-14.7	-11.7	-4.8	-0.8	2.2	6.2	3.4	4.4	7.3	5.0	6.0	1.9	0.2	4.1	0.2	8.9	9.7	7.4	12.6	11.8	10.5	8.5	5.4	-1.4	-9.6	-23.5	-42.1
Vac	Leq,d	20.5	-14.6	-11.6	-4.6	-0.6	2.3	6.3	3.6	4.5	7.5	5.2	6.1	2.0	0.3	4.2	0.4	9.0	9.8	7.5	12.7	11.9	10.7	8.7	5.6	-1.1	-9.3	-22.9	-41.3
Vac	Leq,d	10.7	-17.1	-14.3	-7.6	-3.9	-1.3	2.2	-1.3	-0.9	1.4	1.7	1.6	-3.4	-6.3	-3.3	-10.4	-4.8	-4.9	-8.1	-4.8	-6.5	-8.7	-11.6	-15.5	-23.0	-32.0	-46.5	-65.9
Vac	Leq,d	11.4	-17.0	-14.2	-7.5	-3.7	-1.1	2.5	-0.8	-0.3	2.1	2.3	2.3	-2.7	-5.6	-2.5	-9.5	-3.5	-3.6	-6.7	-3.3	-5.0	-7.1	-10.0	-13.8	-21.3	-30.2	-44.6	-63.9
Vac	Leq,d	12.2	-16.9	-14.1	-7.3	-3.5	-0.8	2.9	-0.3	0.3	2.8	3.1	3.2	-1.8	-4.6	-1.5	-8.4	-2.0	-1.9	-4.9	-1.4	-3.0	-5.0	-7.8	-11.6	-19.0	-27.8	-42.2	-61.3
Receiver -1175,666 Fl G Lr,lim dB(A) Leq,d 33.5 dB(A) Sigma(Leq,d) 0.0 dB(A)																													
001 - 12 Sonny - Standard-Facade 01	Leq,d	-18.5					-20.2			-33.9			-27.0			-27.0			-36.3			-46.0			-75.2				
001 - 12 Sonny - Standard-Facade 02	Leq,d	-7.2					-8.9			-22.5			-15.3			-16.3			-26.5			-36.8			-66.0				
001 - 12 Sonny - Standard-Facade 03	Leq,d	-14.1					-19.0			-32.6			-20.3			-18.2			-30.7			-48.2			-84.2				
001 - 12 Sonny - Standard-Facade 04	Leq,d	-0.5					-4.4			-17.5			-8.7			-5.2			-11.7			-19.7			-47.4				
001 - 12 Sonny - Standard-Roof 01	Leq,d	-6.2					-11.7			-22.4			-12.1			-10.5			-18.6			-26.9			-54.6				
001 - 12 Sonny - Standard-Transmissive area 01	Leq,d	33.1					9.3			9.3			21.8			30.5			28.5			15.0			-18.6			-89.1	
001 - 12 Sonny - Standard-Transmissive area 02	Leq,d	19.5					2.1			0.6			8.6			14.4			15.5			11.8			-13.3			-83.3	
Turbine	Leq,d	-12.8				-37.7	-31.1	-24.6	-27.4	-25.2	-24.8	-29.9	-31.4	-32.9	-36.0	-38.6	-37.5	-24.2	-22.8	-20.5	-20.3	-22.1	-27.3	-27.5	-34.0	-45.9	-63.3	-90.7	
Vac	Leq,d	4.8	-25.1	-22.3	-15.5	-11.8	-9.1	-5.4	-9.9	-9.3	-6.7	-3.4	-2.5	-6.7	-9.0	-5.6	-12.4	-10.5	-10.6	-14.1	-11.3	-14.0	-17.9	-23.6	-32.0	-46.6	-66.4	-97.1	

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Vac	Leq,d	4.6	-25.3	-22.5	-15.8	-12.0	-9.3	-5.6	-10.1	-9.5	-6.9	-3.4	-2.6	-6.7	-9.2	-5.8	-12.6	-10.8	-10.9	-14.4	-11.6	-14.4	-18.3	-24.0	-32.5	-47.1	-67.0	-97.9	
Vac	Leq,d	7.0	-25.4	-22.7	-15.9	-12.2	-9.5	-5.8	-10.3	-9.6	-7.0	-3.4	-2.6	-6.8	-9.3	-5.9	-9.6	-3.2	-2.8	-5.8	-2.4	-4.5	-7.8	-12.9	-20.8	-35.1	-54.8	-85.7	
Vac	Leq,d	4.9	-24.9	-22.1	-15.4	-11.6	-8.9	-5.2	-9.8	-9.1	-6.5	-3.3	-2.5	-6.7	-8.8	-5.5	-12.2	-10.2	-10.4	-13.9	-11.1	-13.8	-17.6	-23.3	-31.7	-46.2	-65.9	-96.6	
Vac	Leq,d	9.7	-24.0	-21.0	-14.1	-10.1	-7.2	-3.2	-8.2	-7.3	-1.8	-0.9	0.0	-4.2	-6.1	-2.3	-8.5	-1.0	-0.5	-3.3	0.2	-1.8	-4.9	-9.8	-17.4	-31.2	-50.2	-80.2	
Vac	Leq,d	10.2	-22.4	-19.4	-12.4	-8.5	-5.5	-1.5	-7.9	-7.0	-4.1	-0.8	0.0	-4.2	-6.0	-2.2	-8.5	0.0	0.4	-2.4	1.2	-0.8	-3.9	-8.7	-16.3	-30.0	-48.9	-78.7	
Vac	Leq,d	10.4	-22.4	-19.4	-12.4	-8.4	-5.4	-1.5	-7.8	-6.9	-1.6	-0.8	0.1	-4.1	-5.9	-2.2	-8.4	0.0	0.5	-2.3	1.2	-0.7	-3.8	-8.6	-16.1	-29.8	-48.6	-78.3	
Vac	Leq,d	8.4	-22.3	-19.3	-12.4	-8.4	-5.4	-1.5	-7.8	-6.9	-4.0	-3.2	-2.4	-6.6	-8.4	-4.6	-10.9	-2.4	-1.9	-4.7	-1.2	-3.1	-6.2	-11.0	-18.4	-32.0	-50.6	-80.1	
Vac	Leq,d	8.5	-22.3	-19.3	-12.3	-8.3	-5.4	-1.4	-7.7	-6.8	-3.9	-3.2	-2.4	-6.5	-8.4	-4.6	-10.8	-2.4	-1.9	-4.7	-1.1	-3.1	-6.1	-10.8	-18.3	-31.8	-50.3	-79.7	
Vac	Leq,d	9.4	-24.0	-21.1	-14.1	-10.2	-7.3	-3.3	-8.3	-7.4	-1.9	-0.9	-0.1	-4.3	-6.1	-2.3	-8.6	-1.3	-0.9	-3.8	-0.3	-2.4	-5.6	-10.6	-18.3	-32.3	-51.5	-81.7	
Vac	Leq,d	5.9	-24.4	-21.6	-14.8	-11.0	-8.2	-4.5	-9.1	-8.3	-5.6	-3.3	-2.4	-6.6	-8.4	-4.7	-10.9	-7.4	-7.2	-10.2	-6.9	-9.1	-12.5	-17.7	-25.6	-39.7	-58.9	-89.1	
Vac	Leq,d	6.0	-24.2	-21.4	-14.6	-10.8	-8.0	-4.2	-8.9	-8.1	-5.4	-3.2	-2.4	-6.6	-8.4	-4.6	-10.9	-7.3	-7.0	-10.0	-6.8	-9.0	-12.4	-17.5	-25.4	-39.4	-58.6	-88.6	
Vac	Leq,d	7.8	-24.3	-21.4	-14.6	-10.8	-7.9	-4.1	-9.0	-8.2	-5.4	-1.0	-0.2	-4.4	-6.2	-2.5	-8.7	-4.7	-4.3	-7.2	-3.8	-5.9	-9.2	-14.2	-22.1	-36.2	-55.6	-86.3	
Vac	Leq,d	8.9	-24.2	-21.3	-14.4	-10.5	-7.7	-3.8	-8.7	-7.9	-5.1	-1.0	-0.2	-4.4	-6.2	-2.4	-8.7	-2.0	-1.6	-4.4	-1.0	-3.0	-6.3	-11.3	-19.0	-33.1	-52.4	-82.9	
Vac	Leq,d	9.2	-24.1	-21.2	-14.3	-10.4	-7.5	-3.6	-8.5	-7.6	-2.1	-1.0	-0.1	-4.3	-6.1	-2.4	-8.6	-1.7	-1.3	-4.2	-0.8	-2.9	-6.1	-11.1	-18.8	-32.8	-52.1	-82.4	

Source	Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
Receiver -34,212 Fl G Lr,lim dB(A) Leq,d 45.0 dB(A) Sigma(Leq,d) 0.0 dB(A)					
001 - 12 Sonny - Standard-Transmissive area 02	Default industrial noise	Area		44.9	0.0
001 - 12 Sonny - Standard-Transmissive area 01	Default industrial noise	Area		17.5	0.0
Vac	Default industrial noise	Point		10.5	0.0
Vac	Default industrial noise	Point		10.5	0.0
Vac	Default industrial noise	Point		10.4	0.0
Vac	Default industrial noise	Point		10.3	0.0
Vac	Default industrial noise	Point		10.1	0.0
Vac	Default industrial noise	Point		8.6	0.0
Vac	Default industrial noise	Point		8.2	0.0
Vac	Default industrial noise	Point		7.9	0.0
Vac	Default industrial noise	Point		7.7	0.0
Vac	Default industrial noise	Point		7.5	0.0
Vac	Default industrial noise	Point		6.1	0.0
Vac	Default industrial noise	Point		4.9	0.0
Vac	Default industrial noise	Point		3.4	0.0
Vac	Default industrial noise	Point		2.6	0.0
Vac	Default industrial noise	Point		2.3	0.0
001 - 12 Sonny - Standard-Facade 01	Default industrial noise	Area		-4.2	0.0
001 - 12 Sonny - Standard-Facade 02	Default industrial noise	Area		-4.3	0.0
001 - 12 Sonny - Standard-Roof 01	Default industrial noise	Area		-4.5	0.0
001 - 12 Sonny - Standard-Facade 04	Default industrial noise	Area		-6.7	0.0
Turbine	Default industrial noise	Point		-10.0	0.0
001 - 12 Sonny - Standard-Facade 03	Default industrial noise	Area		-22.2	0.0
Receiver -483,69 Fl G Lr,lim dB(A) Leq,d 41.5 dB(A) Sigma(Leq,d) 0.0 dB(A)					
001 - 12 Sonny - Standard-Transmissive area 02	Default industrial noise	Area		41.4	0.0
001 - 12 Sonny - Standard-Transmissive area 01	Default industrial noise	Area		18.0	0.0
Vac	Default industrial noise	Point		13.0	0.0
Vac	Default industrial noise	Point		12.0	0.0
Vac	Default industrial noise	Point		11.9	0.0
Vac	Default industrial noise	Point		11.9	0.0
Vac	Default industrial noise	Point		11.7	0.0
Vac	Default industrial noise	Point		11.5	0.0
Vac	Default industrial noise	Point		11.5	0.0
Vac	Default industrial noise	Point		11.4	0.0
Vac	Default industrial noise	Point		11.4	0.0
Vac	Default industrial noise	Point		11.4	0.0
Vac	Default industrial noise	Point		11.4	0.0
Vac	Default industrial noise	Point		11.2	0.0
Vac	Default industrial noise	Point		11.2	0.0
Vac	Default industrial noise	Point		11.1	0.0
Vac	Default industrial noise	Point		10.4	0.0
001 - 12 Sonny - Standard-Facade 04	Default industrial noise	Area		1.4	0.0
001 - 12 Sonny - Standard-Roof 01	Default industrial noise	Area		-2.0	0.0

Source	Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
001 - 12 Sonny - Standard-Facade 01	Default industrial noise	Area		-4.3	0.0
001 - 12 Sonny - Standard-Facade 02	Default industrial noise	Area		-6.6	0.0
Turbine	Default industrial noise	Point		-7.0	0.0
001 - 12 Sonny - Standard-Facade 03	Default industrial noise	Area		-22.3	0.0
Receiver -628,719 Fl G Lr,lim dB(A) Leq,d 43.3 dB(A) Sigma(Leq,d) 0.0 dB(A)					
001 - 12 Sonny - Standard-Transmissive area 01	Default industrial noise	Area		42.9	0.0
001 - 12 Sonny - Standard-Transmissive area 02	Default industrial noise	Area		30.5	0.0
Vac	Default industrial noise	Point		20.5	0.0
Vac	Default industrial noise	Point		20.4	0.0
Vac	Default industrial noise	Point		20.3	0.0
Vac	Default industrial noise	Point		20.1	0.0
Vac	Default industrial noise	Point		20.0	0.0
Vac	Default industrial noise	Point		19.6	0.0
Vac	Default industrial noise	Point		19.4	0.0
Vac	Default industrial noise	Point		19.4	0.0
Vac	Default industrial noise	Point		19.2	0.0
Vac	Default industrial noise	Point		18.7	0.0
Vac	Default industrial noise	Point		16.4	0.0
Vac	Default industrial noise	Point		15.2	0.0
Vac	Default industrial noise	Point		12.2	0.0
Vac	Default industrial noise	Point		11.4	0.0
Vac	Default industrial noise	Point		10.7	0.0
001 - 12 Sonny - Standard-Facade 02	Default industrial noise	Area		5.1	0.0
001 - 12 Sonny - Standard-Roof 01	Default industrial noise	Area		2.5	0.0
001 - 12 Sonny - Standard-Facade 04	Default industrial noise	Area		0.3	0.0
Turbine	Default industrial noise	Point		-0.3	0.0
001 - 12 Sonny - Standard-Facade 03	Default industrial noise	Area		-5.4	0.0
001 - 12 Sonny - Standard-Facade 01	Default industrial noise	Area		-9.1	0.0
Receiver -1175,666 Fl G Lr,lim dB(A) Leq,d 33.5 dB(A) Sigma(Leq,d) 0.0 dB(A)					
001 - 12 Sonny - Standard-Transmissive area 01	Default industrial noise	Area		33.1	0.0
001 - 12 Sonny - Standard-Transmissive area 02	Default industrial noise	Area		19.5	0.0
Vac	Default industrial noise	Point		10.4	0.0
Vac	Default industrial noise	Point		10.2	0.0
Vac	Default industrial noise	Point		9.7	0.0
Vac	Default industrial noise	Point		9.4	0.0
Vac	Default industrial noise	Point		9.2	0.0
Vac	Default industrial noise	Point		8.9	0.0
Vac	Default industrial noise	Point		8.5	0.0
Vac	Default industrial noise	Point		8.4	0.0
Vac	Default industrial noise	Point		7.8	0.0
Vac	Default industrial noise	Point		7.0	0.0
Vac	Default industrial noise	Point		6.0	0.0
Vac	Default industrial noise	Point		5.9	0.0
Vac	Default industrial noise	Point		4.9	0.0

Source	Source group	Source type	Tr. lane	Leq,d dB(A)	A dB
Vac	Default industrial noise	Point		4.8	0.0
Vac	Default industrial noise	Point		4.6	0.0
001 - 12 Sonny - Standard-Facade 04	Default industrial noise	Area		-0.5	0.0
001 - 12 Sonny - Standard-Roof 01	Default industrial noise	Area		-6.2	0.0
001 - 12 Sonny - Standard-Facade 02	Default industrial noise	Area		-7.2	0.0
Turbine	Default industrial noise	Point		-12.8	0.0
001 - 12 Sonny - Standard-Facade 03	Default industrial noise	Area		-14.1	0.0
001 - 12 Sonny - Standard-Facade 01	Default industrial noise	Area		-18.5	0.0

Appendix C:

Equipment Reference Data

CUP22-0008/PD-R22-0002 Exhibit F: Noise Impact Study

SOUND LEVEL METER READINGS

MODEL: FT-DD-T340HP4 (40hp VACSTAR TURBINE VACUUM PRODUCER)

READING ONE: 43 DB-A, 3 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING TWO: 36 DB-A, 10 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING THREE: 24 DB-A, 20 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING FOUR: 12 DB-A, 30 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

NOTE: THESE READINGS WERE TAKEN OUTSIDE OF 8'x10'x8' CINDER BLOCK ENCLOSURE WITH CONCRETE SLAB AND WOOD JOIST ROOF.

SOUND LEVEL METER USED:

SIMPSON MODEL #40003 – MSHA APPROVED.
MEETS OSHA & WALSH-HEALY REQUIREMENTS FOR NOISE CONTROL.
CONFORMS TO ANSI S1.4-1983, IEC 651 SPECS FOR METER TYPE.

Vacutech
1350 Hi-Tech Drive, Sheridan WY, 82801
PHONE: (800) 917-9444 FAX: (303) 675-1988
EMAIL: info@vacutechllc
WEB SITE: vacutechllc.com

MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249
p. (602) 774-1950

CA Office
1197 Los Angeles Ave, Ste C-256
Simi Valley, CA 93065
p. (805) 426-4477

Project: SuperStar Car Wash Chula Vista
Site Location: 1555 W Warner Rd, Gilbert, AZ 85233
Date: 4/5/2018
Field Tech/Engineer: Robert Pearson
Source/System: Vacutec System

Location: Vac Bay 1
Sound Meter: NTi XL2 **SN:** A2A-05967-E0
Settings: A-weighted, slow, 1-sec, 10-sec duration
Meteorological Cond.: 80 degrees F, 2 mph wind

Site Observations:
Clear sky, measurements were performed within 1.5ft of source. Measurements were performed while the vacuum was positiioned at three (3) different positions. Holstered, unholstered and inside a car. This data is utilized for acoustic modeling purposes and represents an average sound level at a vacuum station.

Table 1: Summary Measurement Data

Source	System	Overall dB(A)	3rd Octave Band Data (dBA)																														
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1K	1.25K	1.6K	2K	2.5K	3.15K	4K	5K	6.3K	8K	10K	12.5K	16K	20K
Vacutech (Holstered)	Vacuum	63.3	9	17	22	29	31	35	40	41	44	43	46	48	47	49	51	51	51	52	53	52	52	50	52	53	50	47	47	48	45	39	30
Vacutech (Unholstered)	Vacuum	80.7	6	19	22	28	34	37	40	43	47	46	48	48	48	49	54	55	58	58	62	65	68	70	74	75	73	69	67	65	63	60	55
Vacutech (Inside Car)	Vacuum	69.6	16	28	31	38	42	45	49	51	52	55	60	61	57	55	59	53	55	56	54	57	57	57	57	57	55	54	51	48	46	42	36
Average Level*	Vacuum	76.3	13	24	28	34	38	41	45	47	49	51	56	57	53	52	56	54	56	56	59	61	64	66	69	70	68	64	62	60	58	55	50

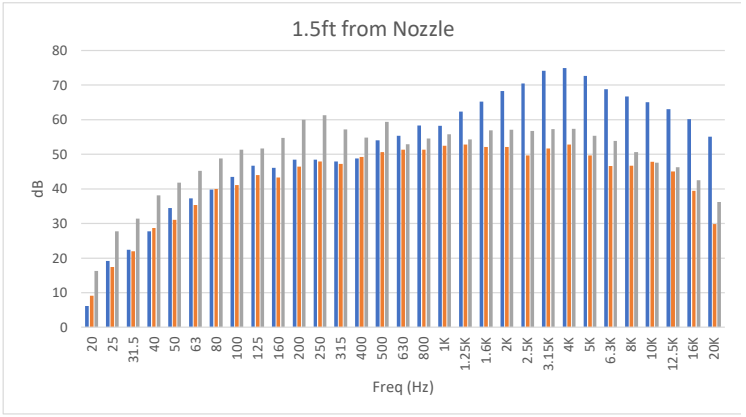
* Refers to the logarithmic average of all measurements. This measurement represents an average of the multiple vacuum positions.

Figure 1: Example Measurement Position

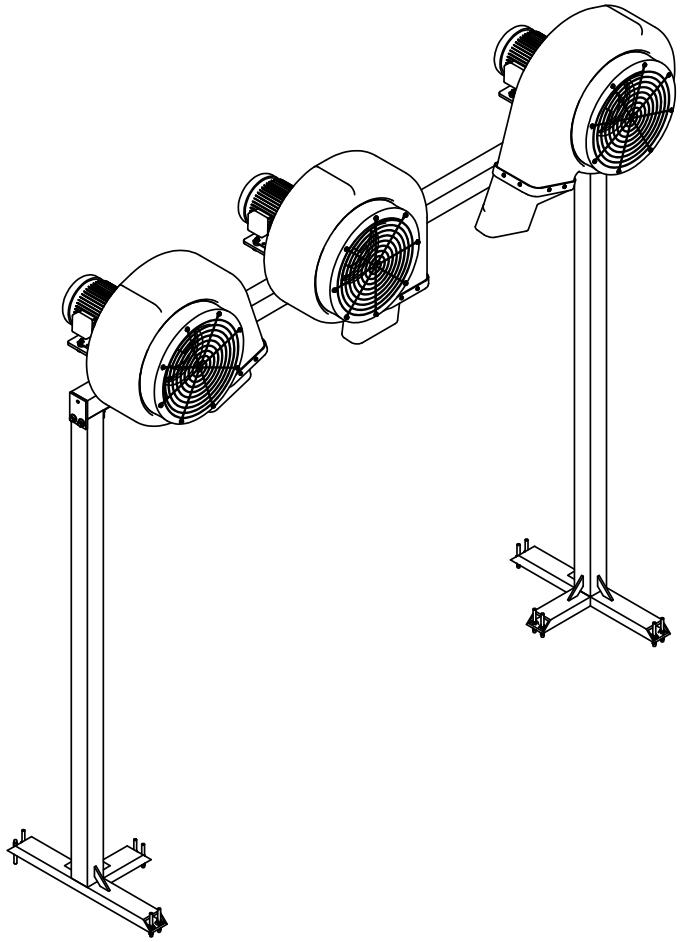
Figure 1: Holstered

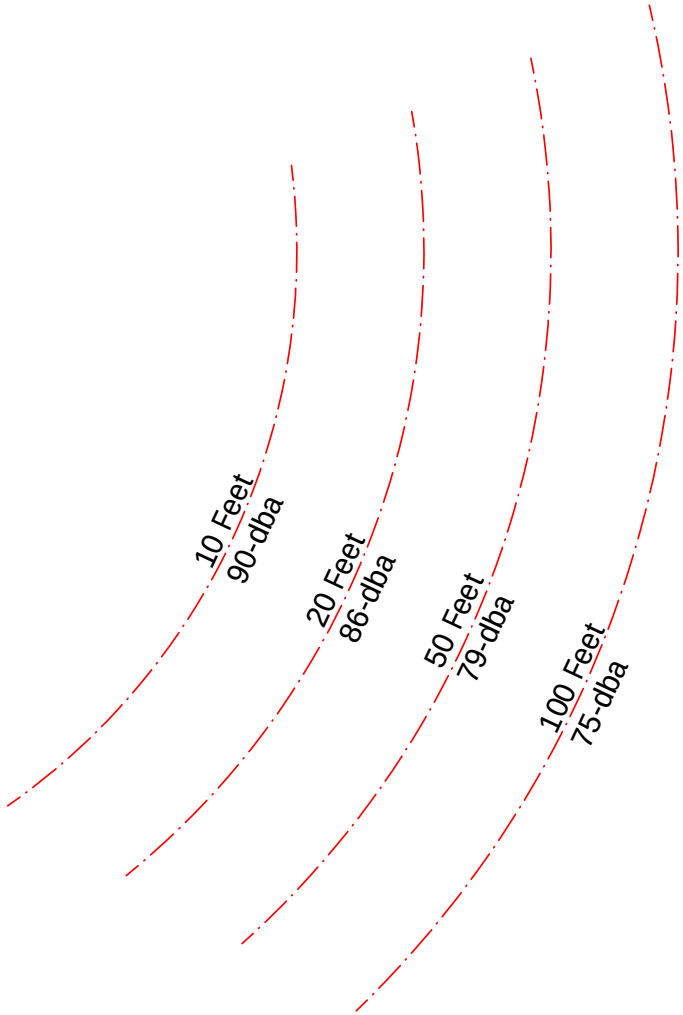
Figure 2: Unholstered

Figure 3: Inside Car



Enviromental Noise with Dryer OFF: 70 dba





THIRD ANGLE PROJECTION	MACHINING TOLERANCES	DRAWN LVerdecia	8/26/2011	SONNY'S ENTERPRISES THE CARWASH FACTORY
BREAK ALL SHARP CORNERS. PART TO BE FREE OF BURRS.	FRACTION± 1/16"	APPROVED	8/1/2012	
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES	.XX DECIMAL ± 0.030	CATEGORY BLOWER		DESCRIPTION BLOWER ASSEMBLY, ONE ARCH 45HP
MATERIAL	.XXX DECIMAL ± 0.005	THIS SHEET CONTAINS CONFIDENTIAL INFORMATION, IMAGES AND TRADE SECRETS OF SONNY'S ENTERPRISES, INC. ANY UNAUTHORIZED USE OR DISCLOSURE OF ANY PORTION THEREOF IS STRICTLY PROHIBITED. THIS WORK IS THE EXCLUSIVE PROPERTY OF SONNY'S ENTERPRISES, INC. ALL RIGHTS RESERVED.		PART NUMBER BL1-45HP-1
	ANGULARITY ± 2°			SHEET 2 OF 2 / SIZE A / SCALE N.T.S.
	FINISH 125			

CUP22-0008/PD-R22-0002 Exhibit F: Noise Impact Study

Product Features

- Gain flexibility in complying with noise ordinances that limit the allowable noise levels in some zoned areas.
- Blower Inlet Silencer retrofits to an existing Sonny's blower to reduce noise level by up to 7 decibels at 50 feet (depending on site specific architecture and other variables).
- Available in three colors: **Blue (# 20018006), Black (# 20018005)** and **Red (# 20018008)**

Note: Hardware is not included. Order a self-tapping screw kit (# **10013134**) for each silencer.

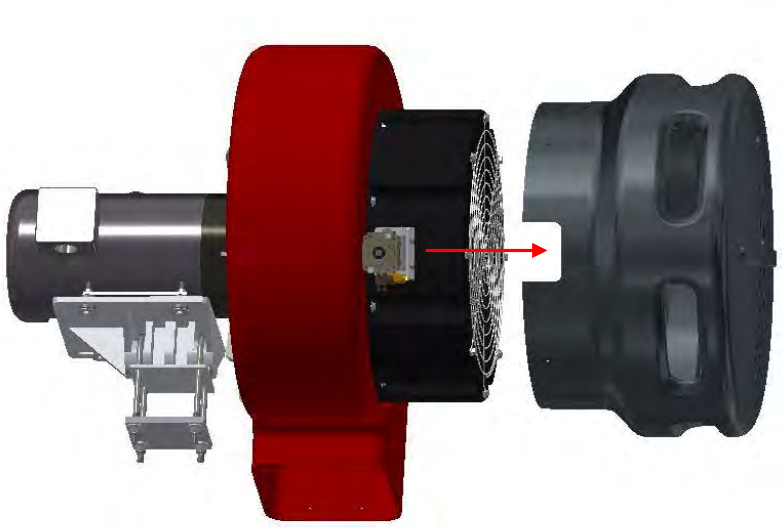
INSTALLATION

Tools
1. Safety Glasses
2. Cordless Drill
3. Drive Socket Set
4. 8' Ladder

Consumables
None

Work Force
Two (2) persons

Time (assuming no problems)
15 - 30 minutes



Caution: You must shut off all power to the conveyor and lock out the Motor Control Center before starting this install.

1. Shut off all power to the conveyor, blowers and lock out the Motor Control Center.
2. Insert the silencer over the venturi. For the gator silencer option, align notches to the gator actuator bracket (as pictured above).
3. Using the existing holes on the Silencer housing, affix the silencer to the gator housing using (8) of the provided self-tapping screws **(# 10013134**).
4. Avoid over-torqueing the self-tapping screws to prevent stripping the plastic housing.

ON-SITE TRANSPORTATION REVIEW

for

Quick Quack Car Wash #26-630
Missouri Flat Road
Placerville, CA 95667

by

ams associates, inc.
801 Ygnacio Valley Road, Suite 220
Walnut Creek, CA 94596
(925) 943-2777
ams Project No. 2514-1

Prepared:
October 25 , 2022

Prepared By:
Farhad Iranitalab

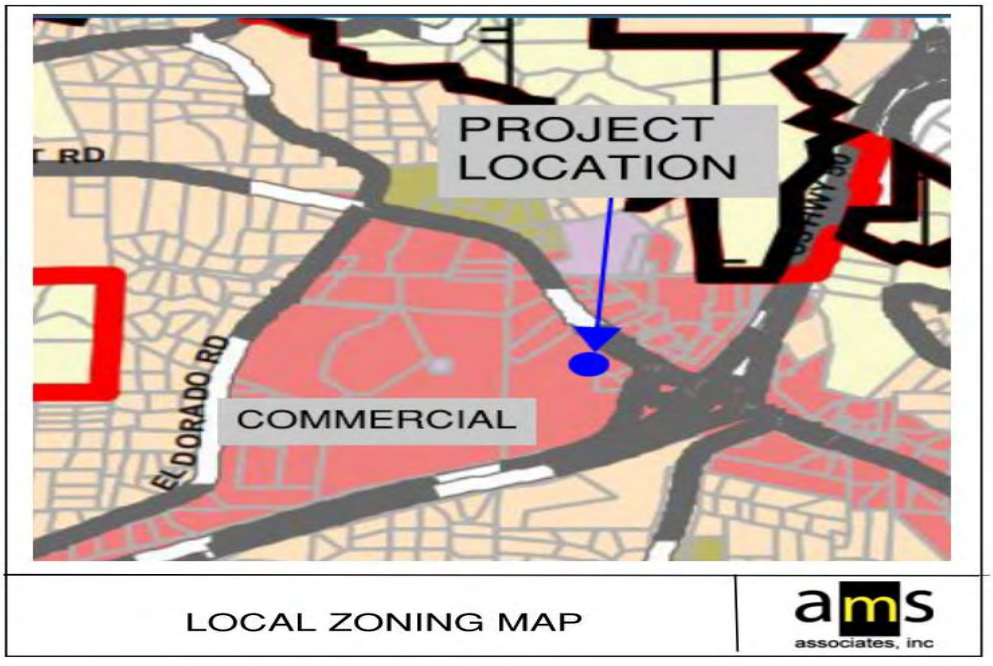
R.C.E. 33142
R.T.~~E.~~ 1695

INTRODUCTION

The purpose of this report is to evaluate the existing traffic issues and the impact of the proposed project on roadway network serving the project.

Project Setting

The project is located within the existing shopping center on the east side of Missouri Flat Road to the north of SR50 in the City of Placerville, El Dorado County. Proposed project will be constructed on a parcel previously occupied by 7,855 square feet drive in bank.



The main access to the project site is via the signalized intersection at Missouri Flat Road and Plaza Drive approximately 550 feet to the north of SR50 westbound Off and On ramps.

Missouri Flat Road is a major north-south undivided two lanes road (one lane in each direction) north of the northerly driveways onto the shopping center. Missouri Flat Road widens to four lanes (two lanes in each direction) divided by a two-way left turn lane center striping in the vicinity of shopping center. As depicted on the photo above the southbound approach to the intersection has one left-turn lane, two through lanes, bike lane, and a right turn lane.

In the northbound approach, Missouri Flat road is a divided four lane road (two lanes in each direction) with two left turn lanes, two through lanes (one lane is dropped two hundred feet north of the Plaza Drive intersection), a bike lane and a right turn lane.

The traffic signal at the intersection of Missouri Flat Road and Plaza Drive is operating in split mode. In other words, the eastbound and westbound traffic on Plaza Drive run independently and not concurrently.

Project Description

proposed project will demolish existing building and construct a one-tunnel automated carwash with 3,600 square feet of building, fourteen standard vacuum stalls and one disabled parking stall, on 0.85-acre parcel. No direct access is provided onto Missouri Flat Road. The main access to the shopping center is off Missouri Flat Road at the signalized intersection of Missouri Flat and Plaza Drive as shown below.

The Quick Quack automated car wash requires to have 2 to 3 employees at the site at any given time, the existing site has adequate parking stalls to accommodate the employees. The project is a drive through car wash and does not have demand for parking.
Based on the project characteristics, the project does not generate any truck traffic except foe waste collection trucks.

Site Circulation

As shown on figure below the ingress to the car wash is from a one-way driveway inside the shopping center in a counterclockwise direction and exit the site via a one-way driveway onto the shopping center. Patrons have a choice to either exit toward Missouri Flat road at the northerly shopping center exit or from the signalized intersection at Plaza Drive and Missouri Flat Road.

Trip Generation Calculation

Trip generation represents the amount of traffic generated by a development. The Institute of Transportation Engineers (ITE), Trip Generation Manual, 11 Edition, for Land Use 948 "automated carwash" does not include daily or a.m. peak hour rates. Based on the ITE Manual , trip generation rates for p.m. peak hour (4 to 6) are seventy-eight trips. However, our research located a survey of generated trips for automated car wash conducted by RK Engineering at two automated car wash sites in the City of Santa Anna in Orange County, southern California in March 2019 and data collected at a Quick Quack Car Wash in the City of Corona, in Southern California indicates the rates as shown on Table 1.

Table 1- Summary of Trip Generation for Automated Car Wash

Observed Car Wash Location	Weekday Peak Hour						Weekday Daily Trips
	AM			PM			
	In	Out	Total	In	Out	Total	
ITE, Traffic Generation Manual 11th Edition (land use 948)	-	-	-	39	39	78	-
Scrub Bot Express Car Wash (1807 Main Street), San Anna, California	12	10	22	36	55	91	745
Zaro Express Car Wash (1205 W. 17th Street)	15	13	28	43	37	80	644
Quick Quack Car Wash 850 N. Main Street , Corona, California	32	25	57	40	41	81	-
Average	20	16	36	40	43	83	695
Pass-By plus internal capture Trip Reduction 45%	-9	-7	-16	-18	-19	-37	-313
Total Net New Trips.	11	9	20	22	24	46	382

As shown on Table 1, the generated number of trips vary between the sites depending on the location and access point. All three sites' trips are more conservative than the values presented in the ITE Trip Generation Manual. This study uses the average collected data at the driveways from the three sites surveyed plus the ITE Manual for use in calculation. Table 2 present the comparison between the trip generated by the previous drive-in bank and the proposed project.

Table 2- Comparison of Trip Generation of the Drive-thru Bank and Proposed Project

Previous Land Use	Unit Quantity	Size	Trips Per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Drive-In Bank (LU 912)	KSF	7.86	100.35	58%	42%	9.95	50%	50%	21.01
Drive in bank (LU 912)			789	45	33	78	82	83	165
Proposed Automated Car Wash*	Tunnel	1	695	56%	44%	36	48%	52%	83
Automated Car Wash (LU 948)			695	20	16	36	40	43	83
Changes in Number of Trips			**-95**	**-25**	**-17**	**-42**	**-52**	**-40**	**-82**

Collision History

The collision data were collected from Statewide Integrated Traffic Records System (SWITRS) between the year 2018, and 2022. The graphical presentation is illustrated on the exhibit on the next page. Based on the reported collisions, there were three accidents (two broadside and one sideswipe type) reported in 2018, Three accidents (one broadside, one rear end, and one

sideswipe type) in 2019, four collisions (two broadsides, one rear end, and one sideswipe type) in 2020, one collision (sideswipe type) in 2021, and six accidents (five sideswipe type, and one broadside type) in the first half of 2022.

All sideswipe collisions were associated with improper lane change, the broadside collisions were associated with disregard to right of way.

No unusual conditions observed, visibility is adequate and lane lines are fresh and visible.

Parking

The Quick Quack Car Wash have two to three employees on site at any given period, the parking provided on site and the project vicinity is adequate for the project parking demand.

Truck Circulation

The proposed project does not generate truck trips.

Conclusion

Based on the above information and comparison between trips generated by the proposed project and previous drive-in bank, there would not be any significant traffic impact from the proposed project. Except as the requirements set by the conditions of approval no other recommendation is proposed