

TRAFFIC LETTER OF CONFORMANCE

Prepared for

BUBBLE BATH CAR WASH – AIRPORT & COLFAX

STATION 60 FILING NO. 2, LOT 4,

AURORA, COLORADO 80011

PREPARED FOR:

Evergreen Devco, Inc
2390 E Camelback Rd Suite 410
Phoenix, Arizona 85016

August 29, 2024

Prepared by



Lique Engineers, LLC

816 Camaron Street, Suite 110 | San Antonio, Texas 78212
(210) 549-4207 Phone | (210) 545-9302 Fax



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<https://www.lique.us/>

From: LIQUE Engineers, LLC

Date: August 29, 2024

To: City of Aurora
15151 E. Alameda Parkway
Aurora, CO 80012

Project Number: 1676053

Re: Conformance letter for a proposed car wash at northern side of E. Colfax Ave between Norfolk St. and Airport Blvd. in the city of Aurora, Colorado 80011.

Introduction:

The proposed development is approximately 1.6946 acres within the Station 60 Master Plan. This report was prepared to show conformance to a previously approved Traffic Impact Study (TIS), provided by Kimley Horn for the Station 60 Master Plan. This letter will include a site plan, a circulation plan, analyzing pedestrian connectivity, and discuss trip generation from the proposed site in comparison to the previously assumed land uses.

Project Description:

The proposed site being analyzed in this report is 1.6946 acres, being Lot 4, Filing No. 2, and is located on the northern section of E. Colfax Ave. between Norfolk St. and N. Airport Blvd. The anticipated land use of this parcel is an automated car wash.

The proposed site is currently vacant and has an assumed land use of mixed-use commercial site. The previously approved report includes trip generation estimates utilizing the 11th edition of the ITE Manual for its computations. The assumed land uses included residential, office, two retail stores, and a restaurant. The proposed land use will remove one of the retail stores and replace it with the proposed automated car wash found in the site circulation exhibit, "Exhibit". All other uses and daily trip calculations will remain as the previously approved report.

It is interpreted that the design intent of the Station 60 Master Plan is to promote a commercial corridor with pedestrian access to all encompassed developments. A site circulation plan is included as an exhibit in this report. This exhibit models the flow of vehicle traffic and highlights areas of pedestrian access/connectivity to show compliance with the original design intent.

Methodology/Projected Conditions

The intended use of the 1.6946-acre site is to be constructed into an automated car wash as shown in the Exhibit "SITE PLAN WITH VICINITY MAP" of this letter. The analysis of the traffic rates was conducted using the linear rates of the 11th edition ITE Manual. Assumptions were made for the AM and Daily trip rates. The AM trip rate is assumed to be half the PM rate which places the AM Peak Rate at 7.1 trips per 1000 square feet of gross floor area, while the daily trip rate is assumed to be 10 times the PM Peak Hour Trip Rate. These assumptions for the AM and Daily Trip Rate were referenced from a study conducted in California that utilized the San Diego Association of Governments (SANDAG) *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002), which assume that the AM Peak Hour and PM Peak Hour trip rates are 4 percent and 9 percent of the ADT rate, respectively.

A copy of the analysis is provided in the exhibits/figures portion of the report. The previously approved report will be utilized for most calculations, only removing the assumed restaurant land use as it is closest to the square footage of the proposed development. This revision replaces the assumed 68 derived total PM trips and replacing it with the allotted automatic car wash's 62 total PM trips.

Vehicle Queuing Capacity/Analysis

Upon entry of the site, the cars are directed into a 12-foot driveway with the capacity of holding approximately 9 average-length vehicles (14.7 feet) without obstructing traffic. The vehicles are then directed into 3 separate queuing lanes for this specific site plan. This deviation of traffic into three lanes allows for a total vehicle queuing/stacking of approximately 25 vehicles. An exhibit of the path and vehicle counts is provided in the appendix of the report. Also included in Vehicle Queuing Exhibits section of the report are three additional exhibits of car washes that are in construction and/or development.

Summary:

A trip generation analysis was conducted for the proposed automated carwash utilizing the 11th edition of the ITE Manual. This analysis demonstrates compliance by analyzing the variation in trips between the proposed development and the previously approved TIA report. The change to the assumed land use will decrease the total PM trips from the assumed amount of 68 to 62. Therefore, the proposed will comply with any traffic impact requirements and conform to the previously approved traffic analysis. Below are tables that compare and summarize the individual AM, PM, and Daily trip rates for the Car Wash and total PM trips for the Station 60 development.

TRIP GENERATION ESTIMATES (AM, PM, & ADT)	
ITE CODE	948
LAND USE	AUTOMATED CAR WASH
UNIT	KSF
SIZE	4.30
PM Trip Rate	14.20
PM TRIPS	61.09
AM TRIP RATE (ASSUMPTION)	7.10
AM TRIPS	30.54
DAILY TRIP RATE (ASSUMPTION)	10X PM TRIPS
DAILY TRIPS	610.88

TRIP GENERATION ESTIMATES (Station 60 - Trolley Station)				
ITE CODE	LAND USE	UNIT	SIZE	PM Trips
				TOTAL
223	Residential	ROOMS	228	105
720	Office	KSF	14.4	57
821	Retail	KSF	86	446
932	Restaurant	KSF	7.5	68
945	Retail	KSF	5.3	419
SUBTOTALS				1095

TRIP GENERATION ESTIMATES (BBCW - Airport & Colfax)				
ITE CODE	LAND USE	UNIT	SIZE	PM Trips
				TOTAL
223	Residential	ROOMS	228	105
720	Office	KSF	14.4	57
821	Retail	KSF	86	446
948	Automated Car Wash	KSF	4.302	62
945	Retail	KSF	5.3	419
SUBTOTALS				1089

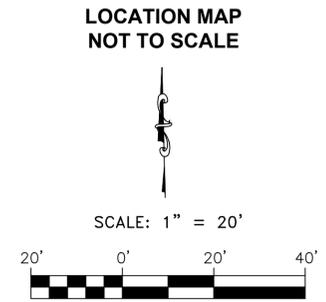
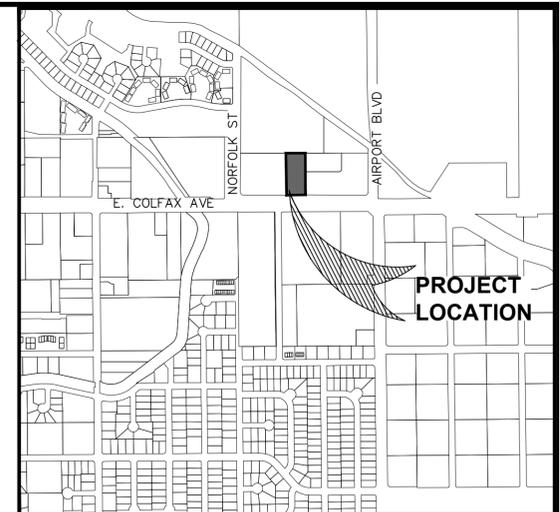
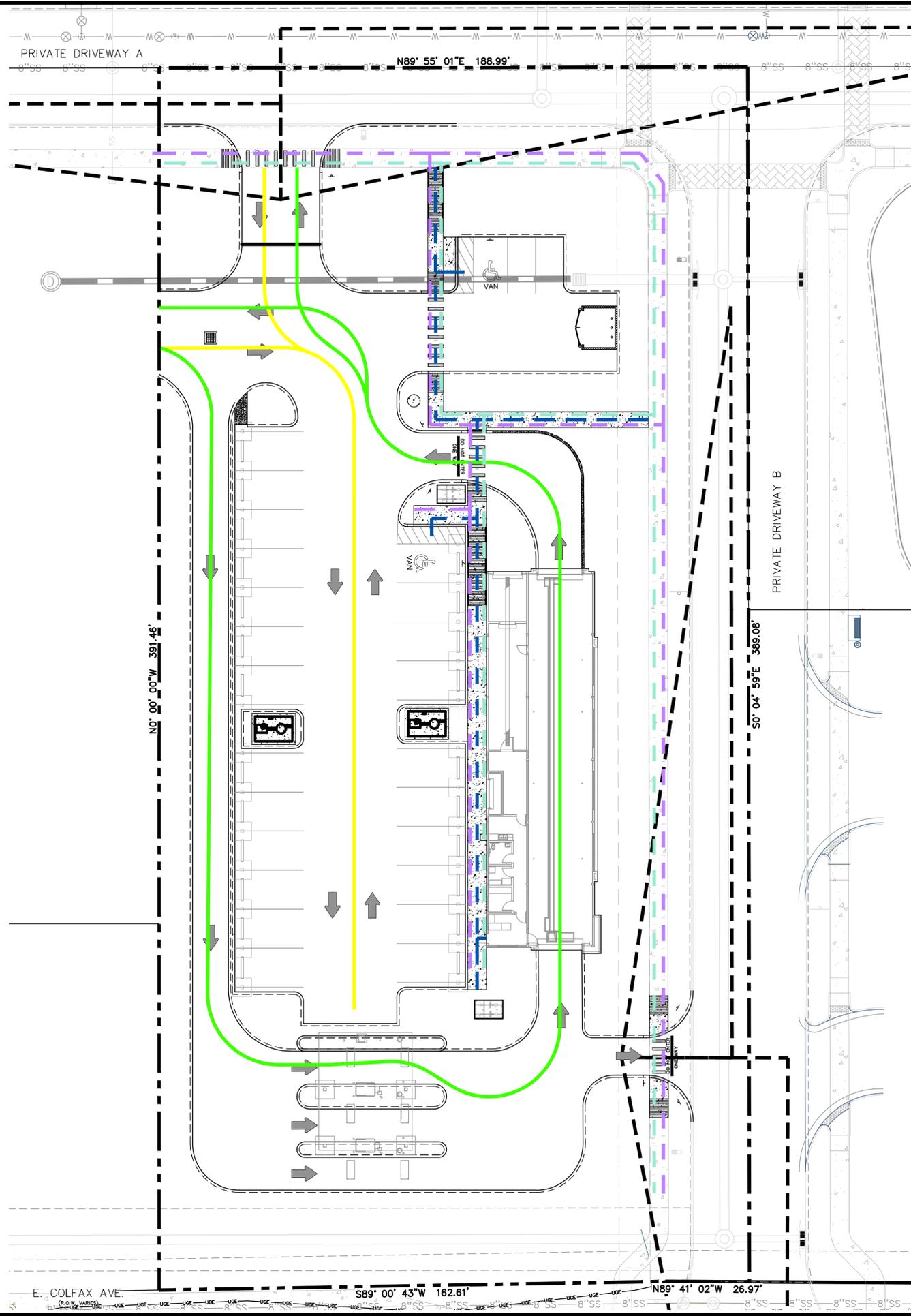
EXHIBITS/FIGURES

- 1. SITE PLAN WITH VICINITY MAP**
- 2. SITE CIRCULATION PLAN**
- 3. VEHICLE QUEUING EXHIBITS**
- 4. SITE GENERATED TRAFFIC VOLUMES/REFERENCE MATERIAL**

1. SITE PLAN WITH VICINITY MAP

2. SITE CIRCULATION PLAN

Date: Aug 26, 2024, 12:21pm User: ID: jelllorres
 File: \\lique_server01\p\176\01\04 - Aurora, CO (4251)\Civil\Exhibits\Site Circulation.dwg



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- LIMITS OF CONSTRUCTION
- SITE DISTANCE TRIANGLE
- BENCH MARK
- FOUND 1/2" IRON ROD
- EXISTING OVERHEAD ELECTRIC LINE AND POWER POLE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING 8" SANITARY SEWER
- EXISTING 10" SANITARY SEWER
- EXISTING FENCE
- 8' ZONING BUFFER
- EXISTING SEWER MANHOLE
- EXISTING UTILITY POLE
- CENTERLINE
- EDGE OF ASPHALT
- PROPOSED FIRE HYDRANT
- PROPOSED CURB
- PROPOSED RIBBON CURB
- POSSIBLE VEHICLE PATH 1
- POSSIBLE VEHICLE PATH 2
- PEDESTRIAN PATHWAYS
- BICYCLE PATHWAY

EVERGREEN DEVCO, INC. 2390 E CAMELBACK RD, SUITE 410, PHOENIX, ARIZONA 85016, (602) 808-8600, SHALL BE RESPONSIBLE FOR PAYMENT OF 50% OF THE TRAFFIC SIGNALIZATION COSTS FOR THE INTERSECTION OF COLFAX AVENUE AND NORFOLK STREET, IF AND WHEN TRAFFIC SIGNAL WARRANTS ARE SATISFIED. TRAFFIC SIGNAL WARRANTS TO CONSIDER SHALL BE AS DESCRIBED IN THE MOST RECENTLY ADOPTED VERSION OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AS OF THE DATE OR DATES OF ANY SUCH WARRANT STUDIES. FOR WARRANT PURPOSES, THE MINOR STREET APPROACH TRAFFIC SHALL TYPICALLY BE COMPRISED OF ALL THROUGH AND LEFT-TURN MOVEMENT AND 50% OF RIGHT TURN MOVEMENTS UNLESS OTHERWISE DETERMINED BY THE TRAFFIC ENGINEER. PURSUANT TO 147-37.5 OF CITY CODE, THE PERCENTAGE OF THE TRAFFIC SIGNALIZATION COSTS IDENTIFIED ABOVE SHALL BE PAID TO THE CITY BY THE APPLICANT / OWNER, TO BE HELD IN ESCROW FOR SUCH PURPOSE, PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR THE RELATED DEVELOPMENT OR AS OTHERWISE REQUIRED BY CITY CODE. THE PERCENTAGE ABOVE WILL BE APPLIED TO THE ENTIRE TRAFFIC SIGNALIZATION COST AS ESTIMATED AT THE TIME OF THE ESCROW DEPOSIT TO CALCULATE SPECIFIC DOLLAR FUNDING REQUIREMENT.

NO.	DATE	COMMENTS

BUBBLE BATH CAR WASH
STATION 60 FILING NO. 2, LOT 4
AURORA, CO. 80011
SITE CIRCULATION



TBPELS #: 20405 & 10194727
 816 Camaron Ste. 110
 San Antonio, TX. 78212
 Phone: 210-549-4207

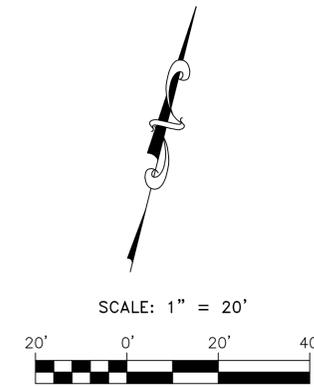
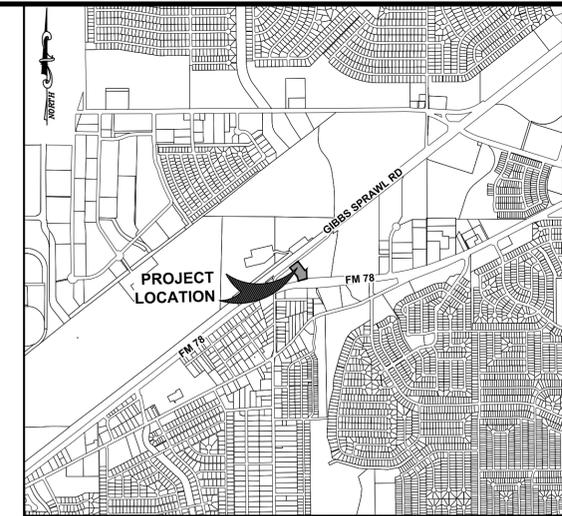
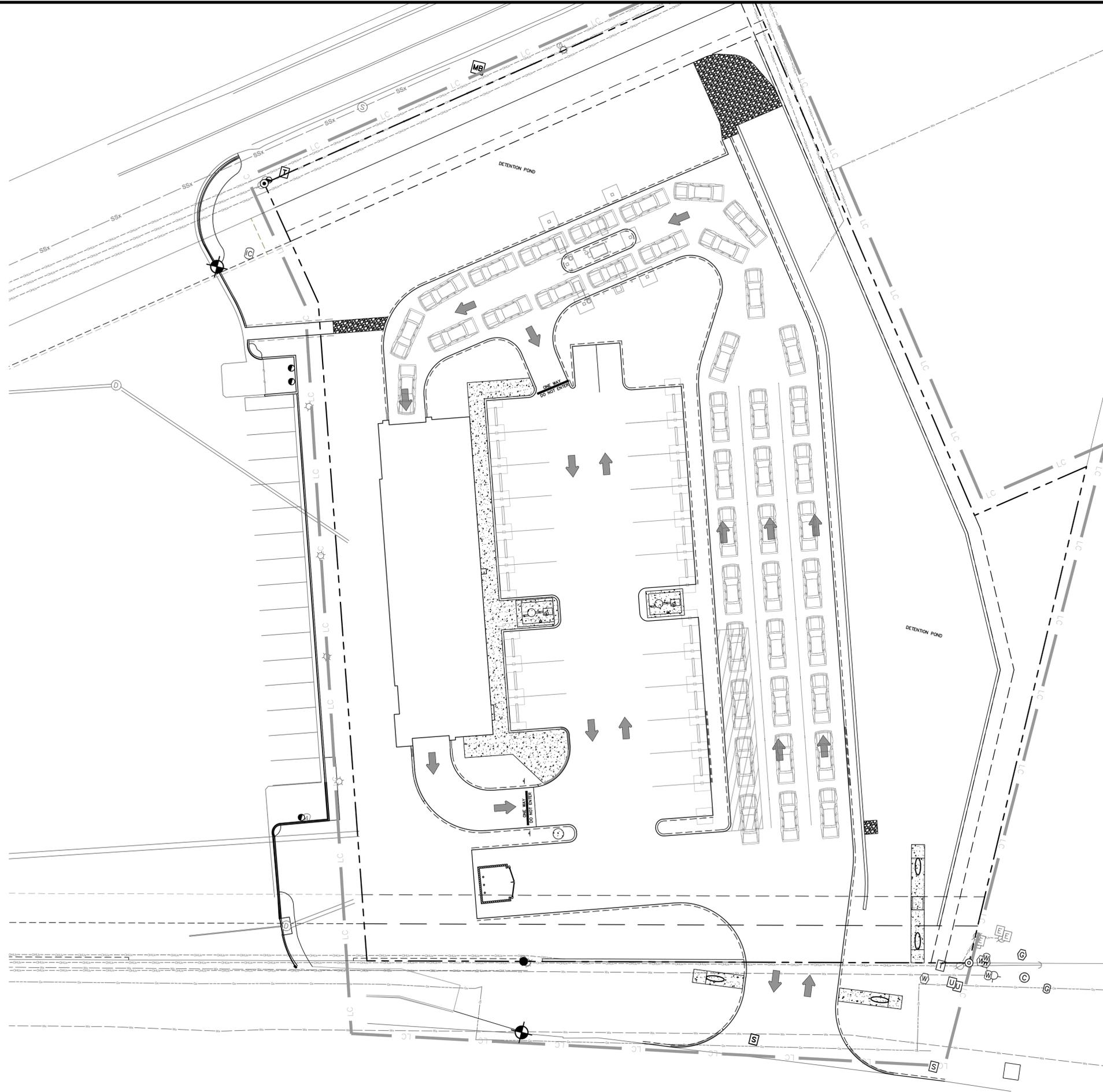
REVIEW PURPOSES ONLY
 NOT FOR CONSTRUCTION

JOB:	SCALE:
176-01-04	1" = 20'

SHEET NO.
EXHIBIT

3. VEHICLE QUEUING EXHIBITS

Date: Aug 29, 2024, 6:49pm User: ID: Dethia
 File: P:\104\10- Gibbs Sprawl\Civil\Exhibits_Cor & Truck Stacking_2.dwg



NO. DATE COMMENTS

NO.

DATE

COMMENTS

BUBBLE BATH CAR WASH
 KIRBY, TEXAS 78219
 BEXAR COUNTY, TEXAS

VEHICLE QUEUING EXHIBIT

LIQUE
 ENGINEERS
 & SURVEYING

TBPELS #: 20405 & 10194727
 816 Cameron Ste. 110
 San Antonio, TX. 78212
 Phone: 210-549-4207

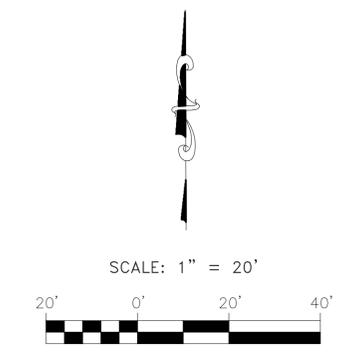
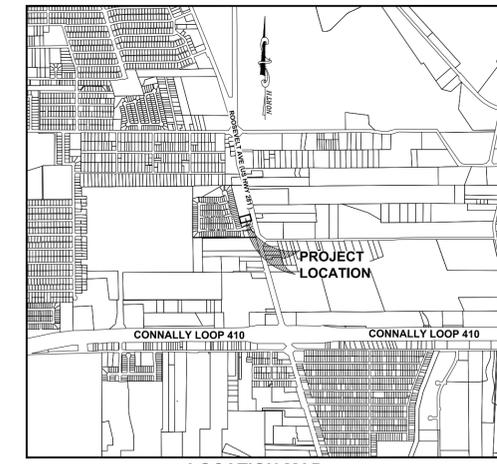
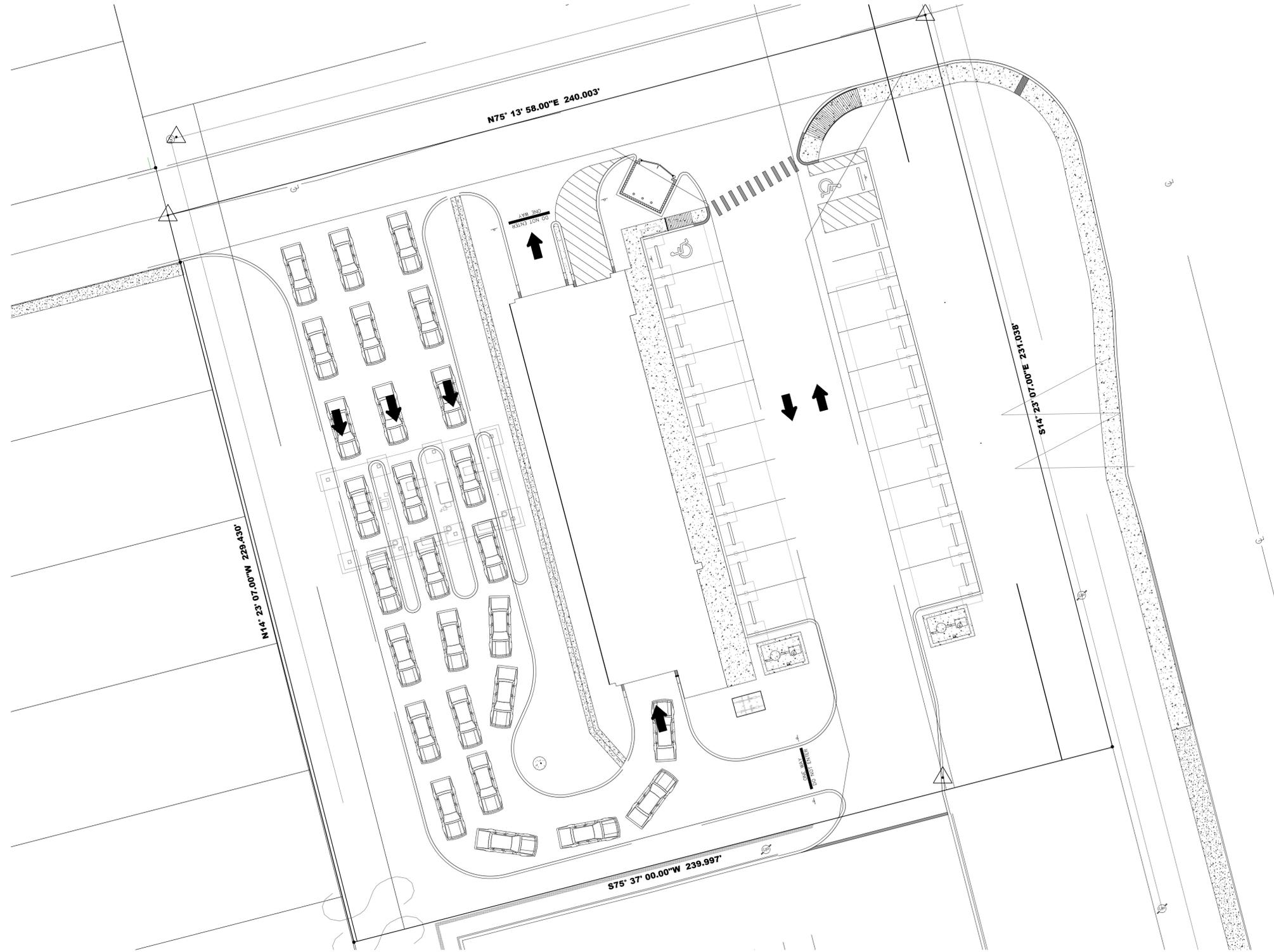
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 MAY NOT BE REPRODUCED IN ANY FORM,
 BY ANY METHOD, FOR ANY PURPOSE,
 WITHOUT PRIOR WRITTEN CONSENT FROM
 LIQUE ENGINEERS.

THIS DOCUMENT IS RELEASED
 FOR REVIEW PURPOSES ONLY
 UNDER THE AUTHORIZATION OF:
 DAMIAN ESQUIVEL, P.E. #98362
 OCTOBER 2023

JOB:	SCALE:
104-01-10	1"=20'

**SHEET NO.
 EXHIBIT**

Date: Aug 29, 2024, 6:56pm User: ID: Dethia
 File: P:\104\109-Roosevelt\Civil\Exhibits\2024.08.22 - stacking.dwg



NO. DATE COMMENTS

BUBBLE BATH CAR WASH
 5007 ROOSEVELT AVE.
 SAN ANTONIO, TEXAS 78214
VEHICLE QUEUING EXHIBIT

LIQUE
 ENGINEERS
 & SURVEYING
 TBPELS # - 20405 &
 # - 10194727
 816 Camaron Ste. 110
 San Antonio, TX. 78212
 Phone: 210-549-4207

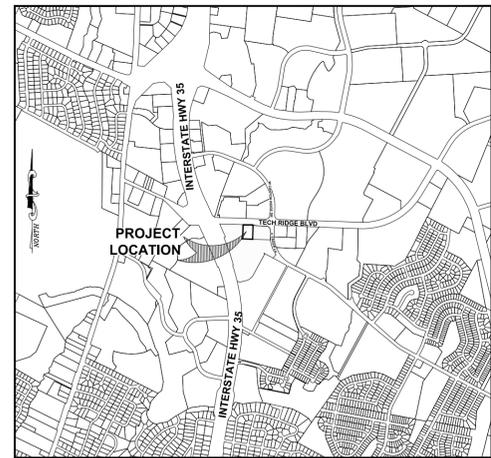
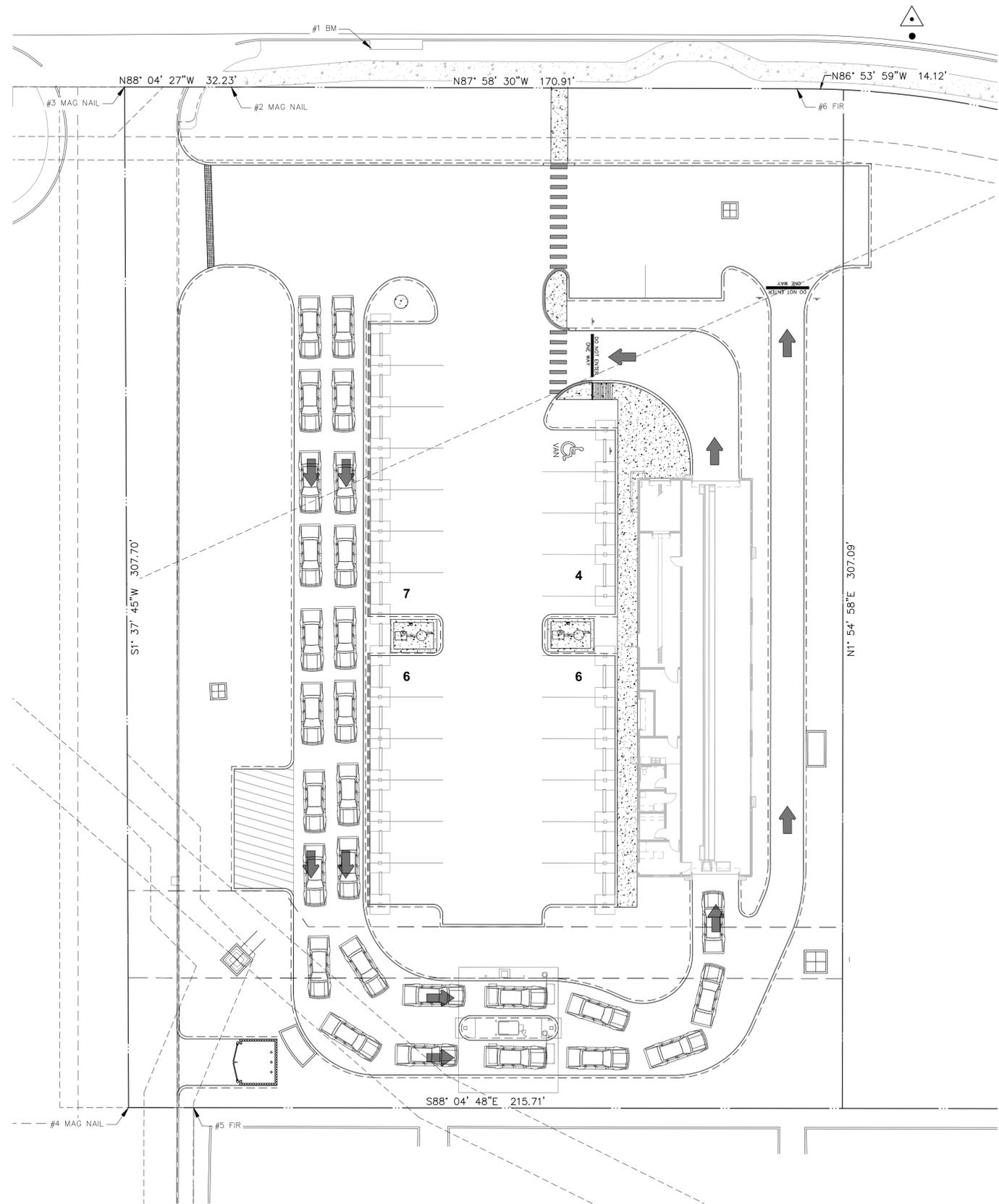
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 DAMIAN ESQUIVEL,
 P.E. #98362

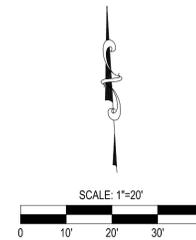
JOB: 104-01-09 SCALE: 1" = 20'

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Date: Aug 29, 2024, 6:42am User: JD, Dennis
 File: F:\104\112 - TechBridge (4129)\Civil\Exhibits\VEHICLE QUEUING EXHIBIT.dwg



LOCATION MAP
NOT TO SCALE



LEGEND

PROPERTY LINE	—————
ADJACENT PROPERTY LINE	—————
LIMITS OF CONSTRUCTION	—— LC ——
BENCH MARK	BM
FOUND 3/4" IRON ROD	FIR
PROPOSED CURB	—————
PROPOSED RIBBON CURB	—————
SAW CUT & REPLACE ASPHALT	—————
SAW CUT & REPLACE W/CONCRETE	—————

NO.	DATE	COMMENTS

**BUBBLE BATH CAR WASH
 TECH RIDGE BLVD.
 AUSTIN, TEXAS 78753
 VEHICLE QUEUING EXHIBIT**



TBPELS # - 20405 &
 # - 10194727
 816 Camaron Ste. 110
 San Antonio, TX. 78212
 Phone: 210-549-4207

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THIS DOCUMENT IS RELEASED FOR REVIEW PURPOSES ONLY UNDER THE AUTHORIZATION OF: DAMIAN ESQUIVEL, P.E. #78203 JANUARY 2024

JOB:	SCALE:
104-01-12	1" = 20'

**SHEET NO.
 EXHIBIT**

4. SITE GENERATED TRAFFIC VOLUMES/REFERENCE MATERIAL

Summary of Peak Hour Trip Analysis

PM Peak Hour Trip Rates

Proposed Type of Development: _____ Critical Peak Hour: **PM** Peak Hour Override: **PM**

Land Use	ITE Code	Project Size	Unit	Peak Hour Trip Rate	Peak Hour Trips (PHT)
Automated Car Wash	948	4.30	1,000 SF GFA	14.2	62

Previous Development on Site: _____ Critical Peak Hour: Peak Hour Override: _____

Land Use	ITE Code	Project Size	Unit	Peak Hour Trip Rate	Peak Hour Trips (PHT)

Total Trips: Please ensure land uses for all lots/parcels are included in the above sections.

Proposed Development	Previous Development	Difference in PHT
62		62 100%

If there is an increase of 76 PHT and an increase of 10% of the total PHT, a new TIA is required

(NOT SO)
**BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES
 FOR THE SAN DIEGO REGION**



401 B Street, Suite 800
 San Diego, California 92101
 (619) 699-1900 • Fax (619) 699-1950

APRIL 2002

NOTE: This listing only represents a *guide* of average, or estimated, traffic generation "driveway" rates and some very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual. *Always check with local jurisdictions for their preferred or applicable rates.*

LAND USE	TRIP CATEGORIES [PRIMARY:DIVERTED:PASS-BY]P	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio)		TRIP LENGTH (Miles) ^t
			Between 6:00-9:30 A.M.	Between 3:00-6:30 P.M.	
AGRICULTURE (Open Space)	[80:18:2]	2/acre**			10.8
AIRPORT	[78:20:2]				12.5
Commercial		60/acre, 100/flight, 70/1000 sq. ft. * **	5% (6:4)	8% (5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft * **	9% (7:3)	15% (5:5)	
Heliports		100/acre**			
AUTOMOBILE ^s					
Car Wash					
Automatic		900/site, 600/acre**	4% (5:5)	9% (5:5)	
Self-serve		100/wash stall**	4% (5:5)	8% (5:5)	
Gasoline	[21:51:28]				2.8
with/Food Mart		160/vehicle fueling space**	7% (5:5)	8% (5:5)	
with/Food Mart & Car Wash		155/vehicle fueling space**	8% (5:5)	9% (5:5)	
Older Service Station Design		150/vehicle fueling space, 900/station**	7% (5:5)	9% (5:5)	
Sales (Dealer & Repair)		50/1000 sq. ft., 300/acre, 60/service stall* **	5% (7:3)	8% (4:6)	
Auto Repair Center		20/1000 sq. ft., 400/acre, 20/service stall*	8% (7:3)	11% (4:6)	
Auto Parts Sales		60/1000 sq. ft. **	4%	10%	
Quick Lube		40/service stall**	7% (6:4)	10% (5:5)	
Tire Store		25/1000 sq. ft., 30/service stall**	7% (6:4)	11% (5:5)	
CEMETERY		5/acre*			
CHURCH (or Synagogue)	[64:25:11]	9/1000 sq. ft., 30/acre** (quadruple rates for Sunday, or days of assembly)	5% (6:4)	8% (5:5)	5.1
COMMERCIAL/RETAIL ^s					
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3+ major stores)		35/1000 sq. ft., ^c 400/acre*	4% (7:3)	10% (5:5)	
Regional Shopping Center	[54:35:11]	50/1000 sq. ft., ^c 500/acre*	4% (7:3)	9% (5:5)	5.2
(40-80 acres, 400,000-800,000 sq. ft., w/usually 2+ major stores)					
Community Shopping Center	[47:31:22]	80/1000 sq. ft., 700/acre* **	4% (6:4)	10% (5:5)	3.6
(15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)					
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & fast food services)		120/1000 sq. ft., 1200/acre* **	4% (6:4)	10% (5:5)	
Commercial Shops	[45:40:15]				
Specialty Retail/Strip Commercial		40/1000 sq. ft., 400/acre*	3% (6:4)	9% (5:5)	4.3
Electronics Superstore		50/1000 sq. ft.**		10% (5:5)	
Factory Outlet		40/1000 sq. ft.**	3% (7:3)	9% (5:5)	
Supermarket		150/1000 sq. ft., 2000/acre* **	4% (7:3)	10% (5:5)	
Drugstore		90/1000 sq. ft.**	4% (6:4)	10% (5:5)	
Convenience Market (15-16 hours)		500/1000 sq. ft.**	8% (5:5)	8% (5:5)	
Convenience Market (24 hours)		700/1000 sq. ft.**	9% (5:5)	7% (5:5)	
Convenience Market (w/gasoline pumps)		850/1000 sq. ft., 550/vehicle fueling space**	6% (5:5)	7% (5:5)	
Discount Club		60/1000 sq. ft., 600/acre* **	1% (7:3)	9% (5:5)	
Discount Store		60/1000 sq. ft., 600/acre**	3% (6:4)	8% (5:5)	
Furniture Store		6/1000 sq. ft., 100/acre**	4% (7:3)	9% (5:5)	
Lumber Store		30/1000 sq. ft., 150/acre**	7% (6:4)	9% (5:5)	
Home Improvement Superstore		40/1000 sq. ft.**	5% (6:4)	8% (5:5)	
Hardware/Paint Store		60/1000 sq. ft., 600/acre**	2% (6:4)	9% (5:5)	
Garden Nursery		40/1000 sq. ft., 90/acre**	3% (6:4)	10% (5:5)	
Mixed Use: Commercial (w/supermarket)/Residential		110/1000 sq. ft., 2000/acre* (commercial only) 5/dwelling unit, 200/acre* (residential only)	3% (6:4) 9% (3:7)	9% (5:5) 13% (6:4)	
EDUCATION					
University (4 years)	[91:9:0]	2.4/student, 100 acre*	10% (8:2)	9% (3:7)	8.9
Junior College (2 years)	[92:7:1]	1.2/student, 24/1000 sq. ft., 120/acre* **	12% (8:2)	9% (6:4)	9.0
High School	[75:19:6]	1.3/student, 15/1000 sq. ft., 60/acre* **	20% (7:3)	10% (4:6)	4.8
Middle/Junior High	[63:25:12]	1.4/student, 12/1000 sq. ft. 50/acre**	30% (6:4)	9% (4:6)	5.0
Elementary	[57:25:10]	1.6/student, 14/1000 sq. ft., 90/acre* **	32% (6:4)	9% (4:6)	3.4
Day Care	[28:58:14]	5/child, 80/1000 sq. ft.**	17% (5:5)	18% (5:5)	3.7
FINANCIAL ^s	[35:42:23]				3.4
Bank (Walk-In only)		150/1000 sq. ft., 1000/acre* **	4% (7:3)	8% (4:6)	
with Drive-Through		200/1000 sq. ft., 1500/acre*	5% (6:4)	10% (5:5)	
Drive-Through only		250 (125 one-way)/lane*	3% (5:5)	13% (5:5)	
Savings & Loan		60/1000 sq. ft., 600/acre**	2%	9%	
Drive-Through only		100 (50 one-way)/lane**	4%	15%	
HOSPITAL	[73:25:2]				8.3
General		20/bed, 25/1000 sq. ft., 250/acre*	8% (7:3)	10% (4:6)	
Convalescent/Nursing		3/bed**	7% (6:4)	7% (4:6)	
INDUSTRIAL					
Industrial/Business Park (commercial included)	[79:19:2]	16/1000 sq. ft., 200/acre* **	12% (8:2)	12% (2:8)	9.0
Industrial Park (no commercial)		8/1000 sq. ft., 90/acre**	11% (9:1)	12% (2:8)	
Industrial Plant (multiple shifts)	[92:5:3]	10/1000 sq. ft., 120/acre*	14% (8:2)	15% (3:7)	11.7
Manufacturing/Assembly		4/1000 sq. ft., 50/acre**	19% (9:1)	20% (2:8)	
Warehousing		5/1000 sq. ft., 60/acre**	13% (7:3)	15% (4:6)	
Storage		2/1000 sq. ft., 0.2/vault, 30/acre*	6% (5:5)	9% (5:5)	
Science Research & Development		8/1000 sq. ft., 80/acre*	16% (9:1)	14% (1:9)	
Landfill & Recycling Center		6/acre	11% (5:5)	10% (4:6)	

(OVER)

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista and County of San Diego.

ADVISORY/LIAISON MEMBERS: California Department of Transportation, County Water Authority, U.S. Department of Defense, S.D. Unified Port District and Tijuana/Baja California.

LAND USE	TRIP CATEGORIES [PRIMARY:DIVERTED:PASS-BY] ^P	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio)		TRIP LENGTH (Miles) ^L		
			Between 6:00-9:30 A.M.	Between 3:00-6:30 P.M.			
LIBRARY	[44:44:12]	50/1000 sq. ft., 400/acre**	2%	(7:3)	10%	(5:5)	3.9
LODGING	[58:38:4]						7.6
Hotel (w/convention facilities/restaurant)		10/occupied room, 300/acre	6%	(6:4)	8%	(6:4)	
Motel		9/occupied room, 200/acre*	8%	(4:6)	9%	(6:4)	
Resort Hotel		8/occupied room, 100/acre*	5%	(6:4)	7%	(4:6)	
Business Hotel		7/occupied room**	8%	(4:6)	9%	(6:4)	
MILITARY	[82:16:2]	2.5/military & civilian personnel*	9%	(9:1)	10%	(2:8)	11.2
OFFICE							
Standard Commercial Office	[77:19:4]	20/1000 sq. ft., ^o 300/acre*	14%	(9:1)	13%	(2:8)	8.8
(less than 100,000 sq. ft.)							
Large (High-Rise) Commercial Office	[82:15:3]	17/1000 sq. ft., ^o 600/acre*	13%	(9:1)	14%	(2:8)	10.0
(more than 100,000 sq. ft., 6+ stories)							
Office Park (400,000+ sq. ft.)		12/1000 sq.ft., 200/acre* **	13%	(9:1)	13%	(2:8)	
Single Tenant Office		14/1000 sq. ft., 180/acre*	15%	(9:1)	15%	(2:8)	8.8
Corporate Headquarters		7/1000 sq. ft., 110/acre*	17%	(9:1)	16%	(1:9)	
Government (Civic Center)	[50:34:16]	30/1000 sq. ft.**	9%	(9:1)	12%	(3:7)	6.0
Post Office							
Central/Walk-In Only		90/1000sq. ft.**	5%		7%		
Community (not including mail drop lane)		200/1000 sq. ft., 1300/acre*	6%	(6:4)	9%	(5:5)	
Community (w/mail drop lane)		300/1000 sq. ft., 2000/acre*	7%	(5:5)	10%	(5:5)	
Mail Drop Lane only		1500 (750 one-way)/lane*	7%	(5:5)	12%	(5:5)	
Department of Motor Vehicles		180/1000 sq. ft., 900/acre**	6%	(6:4)	10%	(4:6)	
Medical-Dental	[60:30:10]	50/1000 sq. ft., 500/acre*	6%	(8:2)	11%	(3:7)	6.4
PARKS	[66:28:6]						5.4
City (developed w/meeting rooms and sports facilities)		50/acre*	4%		8%		
Regional (developed)		20/acre*	13%	(5:5)	9%	(5:5)	
Neighborhood/County (undeveloped)		5/acre (add for specific sport uses), 6/picnic site* **					
State (average 1000 acres)		1/acre, 10/picnic site**					
Amusement (Theme)		80/acre, 130/acre (summer only)**			6%	(6:4)	
San Diego Zoo		115/acre*					
Sea World		80/acre*					
RECREATION							
Beach, Ocean or Bay	[52:39:9]	600/1000 ft. shoreline, 60/acre*					6.3
Beach, Lake (fresh water)		50/1000 ft. shoreline, 5/acre*					
Bowling Center		30/1000 sq. ft., 300/acre, 30/lane **	7%	(7:3)	11%	(4:6)	
Campground		4/campsite**	4%		8%		
Golf Course		7/acre, 40/hole, 700/course* **	7%	(8:2)	9%	(3:7)	
Driving Range only		70/acre, 14/tee box*	3%	(7:3)	9%	(5:5)	
Marinas		4/berth, 20/acre* **	3%	(3:7)	7%	(6:4)	
Multi-purpose (miniature golf, video arcade, batting cage, etc.)		90/acre	2%		6%		
Racquetball/Health Club		30/1000 sq. ft., 300/acre, 40/court*	4%	(6:4)	9%	(6:4)	
Tennis Courts		16/acre, 30/court**	5%		11%	(5:5)	
Sports Facilities							
Outdoor Stadium		50/acre, 0.2/seat*					
Indoor Arena		30/acre, 0.1/seat*					
Racetrack		40/acre, 0.6 seat*					
Theaters (multiplex w/matinee)	[66:17:17]	80/1000 sq. ft., 1.8/seat, 360/screen*	1/3%		8%	(6:4)	6.1
RESIDENTIAL	[86:11:3]						7.9
Estate, Urban or Rural		12/dwelling unit**	8%	(3:7)	10%	(7:3)	
(average 1-2 DU/acre)							
Single Family Detached		10/dwelling unit**	8%	(3:7)	10%	(7:3)	
(average 3-6 DU/acre)							
Condominium		8/dwelling unit**	8%	(2:8)	10%	(7:3)	
(or any multi-family 6-20 DU/acre)							
Apartment		6/dwelling unit**	8%	(2:8)	9%	(7:3)	
(or any multi-family units more than 20 DU/acre)							
Military Housing (off-base, multi-family)							
(less than 6 DU/acre)		8/dwelling unit	7%	(3:7)	9%	(6:4)	
(6-20 DU/acre)		6/dwelling unit	7%	(3:7)	9%	(6:4)	
Mobile Home							
Family		5/dwelling unit, 40/acre*	8%	(3:7)	11%	(6:4)	
Adults Only		3/dwelling unit, 20/acre*	9%	(3:7)	10%	(6:4)	
Retirement Community		4/dwelling unit**	5%	(4:6)	7%	(6:4)	
Congregate Care Facility		2.5/dwelling unit**	4%	(6:4)	8%	(5:5)	
RESTAURANT^s	[51:37:12]						4.7
Quality		100/1000 sq. ft., 3/seat, 500/acre* **	1%	(6:4)	8%	(7:3)	
Sit-down, high turnover		160/1000 sq. ft., 6/seat, 1000/acre* **	8%	(5:5)	8%	(6:4)	
Fast Food (w/drive-through)		650/1000 sq. ft., 20/seat, 3000/acre* **	7%	(5:5)	7%	(5:5)	
Fast Food (without drive-through)		700/1000 sq. ft.**	5%	(6:4)	7%	(5:5)	
Delicatessen (7am-4pm)		150/1000 sq. ft., 11/seat*	9%	(6:4)	3%	(3:7)	
TRANSPORTATION							
Bus Depot		25/1000 sq. ft.**					
Truck Terminal		10/1000 sq. ft., 7/bay, 80/acre**	9%	(4:6)	8%	(5:5)	
Waterport/Marine Terminal		170/berth, 12/acre**					
Transit Station (Light Rail w/parking)		300/acre, 2 ^{1/2} /parking space (4/occupied)**	14%	(7:3)	15%	(3:7)	
Park & Ride Lots		400/acre (600/paved acre), { 5/parking space (8/occupied)* **	14%	(7:3)	15%	(3:7)	

* Primary source: *San Diego Traffic Generators*.

* Other sources: *ITE Trip Generation Report [6th Edition]*, Trip Generation Rates (other agencies and publications), various SANDAG & CALTRANS studies, reports and estimates.

^P Trip category percentage ratios are daily from local household surveys, often cannot be applied to very specific land uses, and do not include non-resident drivers (draft SANDAG *Analysis of Trip Diversion*, revised November, 1990):

PRIMARY - one trip directly between origin and primary destination.

DIVERTED - linked trip (having one or more stops along the way to a primary destination) whose distance compared to direct distance ≥ 1 mile.

PASS-BY - undiverted or diverted < 1 mile.

^L Trip lengths are average weighted for all trips to and from general land use site. (All trips system-wide average length = 6.9 miles)

^c Fitted curve equation: $\ln(T) = 0.502 \ln(x) + 6.945$ } T = total trips, x = 1,000 sq. ft.

^o Fitted curve equation: $\ln(T) = 0.756 \ln(x) + 3.950$ }

^R Fitted curve equation: $t = -2.169 \ln(d) + 12.85$ t = trips/DU, d = density (DU/acre), DU = dwelling unit

^S Suggested PASS-BY (undiverted or diverted < 1 mile) percentages for trip rate reductions only during P.M. peak period (based on combination of local data/review and Other sources**):

COMMERCIAL/RETAIL	
Regional Shopping Center	20%
Community " "	30%
Neighborhood " "	40%
Specialty Retail/Strip Commercial (other)	10%
Supermarket	40%
Convenience Market	50%
Discount Club/Store	30%
FINANCIAL	
Bank	25%
AUTOMOBILE	
Gasoline Station	50%
RESTAURANT	
Quality	10%
Sit-down high turnover	20%
Fast Food	40%

^T Trip Reductions - In order to help promote regional "smart growth" policies, and acknowledge San Diego's expanding mass transit system, consider vehicle trip rate reductions (with proper documentation and necessary adjustments for peak periods). The following are some examples:

[1] A 5% daily trip reduction for land uses with transit access or near transit stations accessible within 1/4 mile.

[2] Up to 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).

Trip Generation Planner (ITE 11th Edition) - Summary Report



Weekday Trip Generation
Trips Based on Average Rates/Equations

Project Name
Project Number

Station 60 - Trolley Station
096888020

ITE Code	Internal Capture Use	Land Use Description	Independent Variable	Setting/Location	No. of Units	Avg Rate or Eq	Rates			Total Trips							Net Trips after Internal Capture						
							Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
223	Residential	Multifamily Affordable Housing	Dwelling Unit(s)	General Urban/Suburban	228	Avg	4.81	0.36	0.46	1,098	82	105	24	58	62	43	706	71	44	23	48	27	17
720	Office	Medical-Dental Office Building	1,000 Sq Ft	General Urban/Suburban	14.4	Avg	36.00	3.10	3.93	520	45	57	36	9	17	40	352	30	39	29	1	9	30
821	Retail	Shopping Plaza	1,000 Sq Ft	General Urban/Suburban	86	Avg	67.52	1.73	5.19	5,806	149	446	92	57	219	227	5,400	142	403	90	53	200	203
932	Restaurant	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	General Urban/Suburban	7.5	Avg	107.20	9.57	9.05	804	72	68	40	32	41	27	346	28	32	6	22	22	10
945	Retail	Gasoline Station w/ Convenience Market	1,000 Sq Ft	General Urban/Suburban	5.3	Avg	1283.38	91.35	78.95	6,818	485	419	242	243	209	210	6,342	464	379	237	226	191	188
Grand Total										15,046	833	1,095	434	399	548	547	13,146	735	897	385	350	449	448

LEGEND

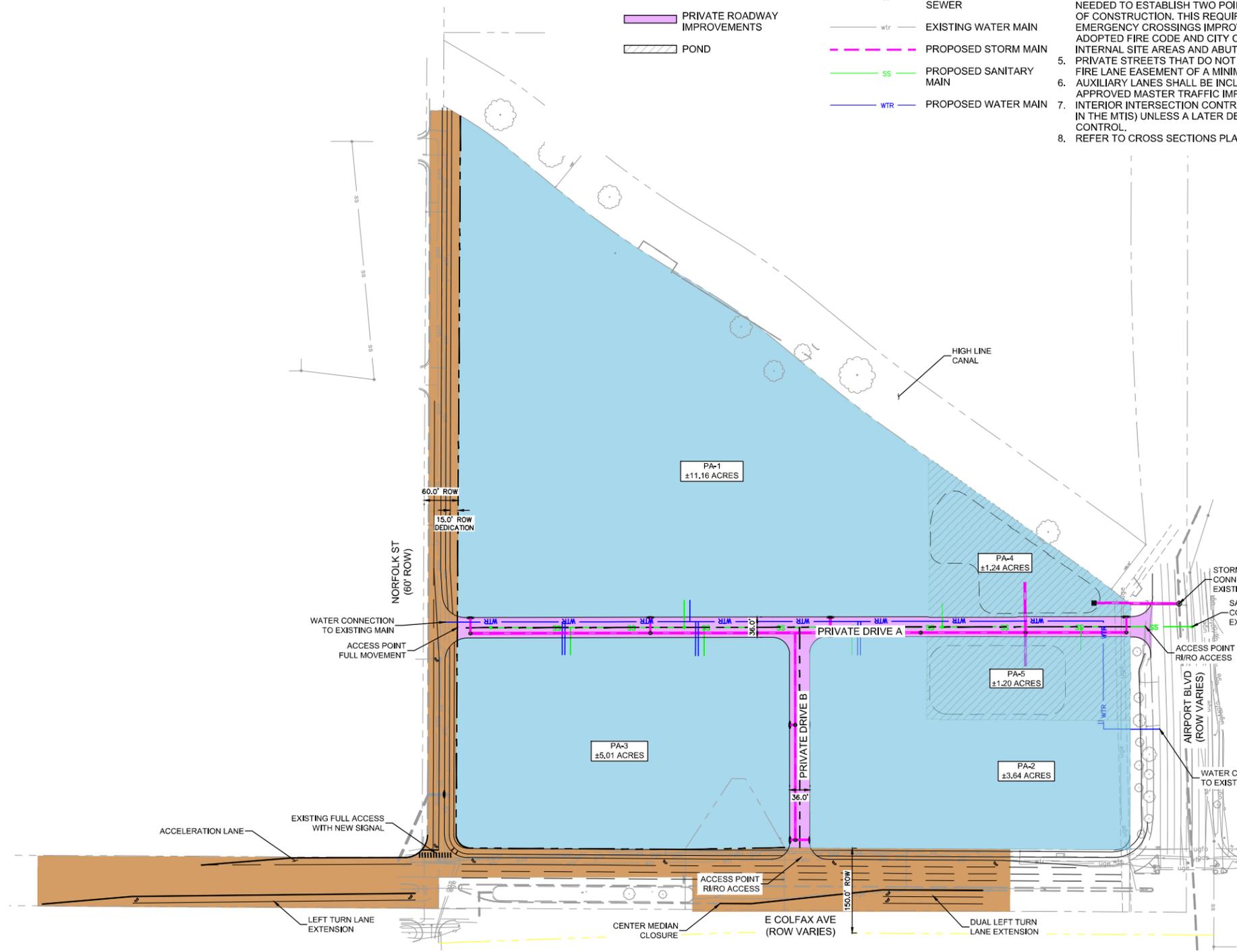
-  PUBLIC ROADWAY IMPROVEMENTS
-  PLANNING AREA
-  PRIVATE ROADWAY IMPROVEMENTS
-  POND

UTILITY LEGEND

-  EXISTING STORM SEWER
-  EXISTING SANITARY SEWER
-  EXISTING WATER MAIN
-  PROPOSED STORM MAIN
-  PROPOSED SANITARY MAIN
-  PROPOSED WATER MAIN

NOTES:

1. PROPERTY LINES AND EXISTING INFRASTRUCTURE OBTAINED FROM SURVEY COMPLETED BY ALTURA SEPTEMBER 2020.
2. TOTAL SITE AREA IS ±24.1 ACRES.
3. ALL ROADWAY CURB AND GUTTER SHALL BE PER COA STD DWG S7.1.
4. THE DEVELOPER IS RESPONSIBLE FOR CONSTRUCTION OF ALL ON-SITE AND OFF-SITE INFRASTRUCTURE NEEDED TO ESTABLISH TWO POINTS OF EMERGENCY ACCESS TO THE OVERALL SITE AND EACH INTERNAL PHASE OF CONSTRUCTION. THIS REQUIREMENT INCLUDES, BUT IS NOT LIMITED TO, THE CONSTRUCTION OF ANY EMERGENCY CROSSINGS IMPROVEMENTS, LOOPED WATER SUPPLY AND FIRE HYDRANTS AS REQUIRED BY THE ADOPTED FIRE CODE AND CITY ORDINANCES. FIRE HYDRANT COVERAGE REQUIREMENTS INCLUDE BOTH INTERNAL SITE AREAS AND ABUTTING PUBLIC STREET SYSTEMS.
5. PRIVATE STREETS THAT DO NOT MEET A CITY OF AURORA APPROVED ROADWAY STANDARD MAY REQUIRE A FIRE LANE EASEMENT OF A MINIMUM WIDTH OF 23' (OR A 26' WHEN REQUIRED BY APPENDIX D OF THE 2015 IFC)
6. AUXILIARY LANES SHALL BE INCLUDED IN THE PUBLIC ROADWAY IMPROVEMENTS AS IDENTIFIED IN THE APPROVED MASTER TRAFFIC IMPACT STUDY (MTIS).
7. INTERIOR INTERSECTION CONTROL SHALL BE SIDE STREET STOP (LOWER VOLUME ROADWAY STOP, AS SHOWN IN THE MTIS) UNLESS A LATER DETAILED TRAFFIC IMPACT STUDY SUPPORTS AN ALTERNATIVE INTERSECTION CONTROL.
8. REFER TO CROSS SECTIONS PLAN FOR ROADWAY CROSS-SECTIONS

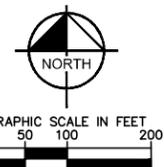


STATION 60
COLFAX AVENUE AND AIRPORT BOULEVARD
AURORA, COLORADO

OWNER:
QUIKTRIP CORPORATION
4705 S. 129TH EAST AVE
TULSA, OK 74134-7005
913-905-2026

DATE:
06/10/2021 SUBMITTAL 1
09/10/2021 SUBMITTAL 2

SHEET TITLE:
OVERALL
BUILDOUT



CHECKED BY: XX
DRAWN BY: XX