

Approved

By Alan Heathcoat 01/12/2022 10:29:53 AM

TRAFFIC STATEMENT

Proposed Car Wash / Take 5 Retail Facility
Northwest Corner of 83rd Avenue and Camelback Road
In Glendale, Arizona

Prepared for:

M3 Design
2008 N. 7th Avenue
Phoenix, AZ 85007

And

The City of Glendale

Prepared by:

Lee Engineering, LLC
3610 N. 44th St., Suite 100
Phoenix, AZ 85018

January 2022



This report documents the traffic impacts expected from construction of a combined car wash and automotive oil change facility, following the requirements of the Maricopa County Department of Transportation (MCDOT) *Traffic Impact Study Manual*, which is used by the City of Glendale to assess the impact of the site.

EXECUTIVE SUMMARY

A combined car wash and automotive oil change facility is proposed for construction on the northwest corner of 83rd Avenue and Camelback Road in Glendale, Arizona. This report has documented the following about the proposed development:

- The subject site is accessible via two shared driveways, about 350 feet north of Camelback Road and about 300 feet west of 83rd Avenue. Because of interparcel connectivity, both driveways also provide access to the remaining development on the northwest corner of the intersection.
- The car wash is proposed to consist of a 4,755-SF building, one customer drive-through tunnel with two gated point-of-service access lanes, and 14 covered vacuum stanchions. The quick-service oil change shop is proposed to consist of a 1,315-SF building with three service bays.
- The car wash site plan proposes two access lanes with enough queuing space for a total of 10 to 12 vehicles. The oil change shop proposes storage of about four vehicles per bay, or a total of 12 vehicles. For both uses, enough space is provided to avoid queues outside the designated ingress drives on the shared driveways
- The car wash is expected to generate 78 trips (39 entering and 39 exiting) during the afternoon peak hour of the roadway, which is the highest-volume peak hour, according to the ITE *Trip Generation Manual*. The oil change shop is expected to generate 15 trips (8 entering, 7 exiting) during the same hour, for total site peak-hour trip generation of 93 trips (47 entering, 46 exiting).
- About half of site trips are expected to be generated from pass-by traffic, based on pass-by data for similar land uses. At that rate, 47 of the 93 weekday PM peak-hour trips are estimated to be new vehicle trips on the roadway network.
- Trip distribution percentages for site-generated traffic are expected to be 25 percent to and from the east, 25 percent to and from the west, 25 percent to and from the north, and 25 percent to and from the south.
- Adequate intersection sight visibility can be provided at the site access points without roadway modification.
- The two site-access driveways and the internal layout as shown on the site plan are able to satisfactorily accommodate site-generated traffic.

EXISTING CONDITIONS

A combined car wash and automotive oil change facility is proposed for construction on a vacant lot on the northwest corner of 83rd Avenue and Camelback Road in Glendale, Arizona. The site is proposed on a 1.51-acre parcel (APN #102-11-947, Lot 6, zoned PAD Commercial). Per the Maricopa County Assessor's website, the subject site has approximately 200 feet of frontage along Camelback Road. The site is located next to a medical center (Dignity Health) to the east and a recently developed fitness center (EOS Fitness) to the north. South of the site is a driveway that provides access to a Walgreens and a shopping plaza.

The intersection of 83rd Avenue and Camelback Road is signalized. The posted speed limit on 83rd Avenue and Camelback Road is 40 mph. Both 83rd Avenue and Camelback Road are straight without significant vertical curvature. This will permit adequate intersection sight visibility to be provided at the site access points without roadway modification.

A vicinity map of the subject area is shown in **Figure 1**, while the site plan of the proposed facility is provided as an attachment.

Figure 1: Vicinity Map



The subject site is accessible via two shared driveways, about 350 feet north of Camelback Road and about 300 feet west of 83rd Avenue. Because of interparcel connectivity, both driveways also provide access to the remaining development on the northwest corner of the intersection. Both 83rd Avenue and Camelback Road are paved and undivided four-lane roadways with two-way left turn lanes. From scaling aerial imagery, both 83rd Avenue and Camelback Road consist of travel lanes about 12 feet wide and have sidewalks on both sides of the street. No bike lanes are present on either street.

PROPOSED DEVELOPMENT

The proposed site is to consist of two separate uses, a car wash and an oil change shop. The car wash, with a building area of 4,755 square feet (SF), consists of one customer drive-through tunnel with two gated point-of-service access lanes, 14 covered vacuum stanchions, restrooms, a small office, and

storage/equipment areas that are ancillary to the operation. The oil change shop, with a building area of 1,315 SF, consists of three service bays, a small office area, and restrooms. The intended operation of the oil change shop is to be a quick service, in which customers do not have to step out of their vehicles. Additionally, three parking spaces are proposed north of the oil change ingress drive. These parking spaces are set back about 7 feet from the shared driveway to maximize viewing during backup maneuvers. Overall, the site plan indicates a building area of 6,070 SF on a lot size of 65,584 SF, equal to a floor-area ratio of 9.3 percent.

Entrance to the car wash tunnel is to be provided by a 26-foot-wide ingress drive on the north side of the site, and further south is the entrance to the oil change facility provided by a 30-foot-wide ingress drive. A 21-foot wide exit-only drive is proposed on the south side of the site to serve vehicles exiting the car wash and the oil change service bays. Vehicles will exit the wash tunnel at the south end of the site where drivers will either turn left to use the vacuums or exit the facility. (Customers do not have the option to use the vacuums before entering the wash tunnel). Interior directional drive aisles are shown to be 25 and 40 feet wide adjacent to the vacuum stanchions. An emergency exit drive aisle is provided past the gated points of service for vehicles to exit the waiting lines.

Site-related vehicles will approach and depart the site from the two shared access points mentioned earlier, a right-in/right-out driveway on 83rd Avenue, and a right-in/right-out/left-in driveway about 300 feet west of the intersection as shown in **Figure 2**, **Figure 3**, and **Figure 4**. Both access points also serve the adjacent sites (Dignity Health and EOS Fitness) east and north of the proposed site, respectively. From review of Google Street View, access onto 83rd Avenue from the site is shown to have been constructed to include a southbound right-turn deceleration lane.

Approaching the car wash, the site layout plan shows two access lanes with enough queuing space for a total of 10 to 12 vehicles, and approaching the oil change shop, the plan shows three service bays with storage of about four vehicles per bay, or a total of 12 vehicles. For both uses, enough space is provided to avoid queues outside the designated ingress drives on the shared driveways, which would block access to the adjacent sites.

Figure 2: Car Wash Ingress

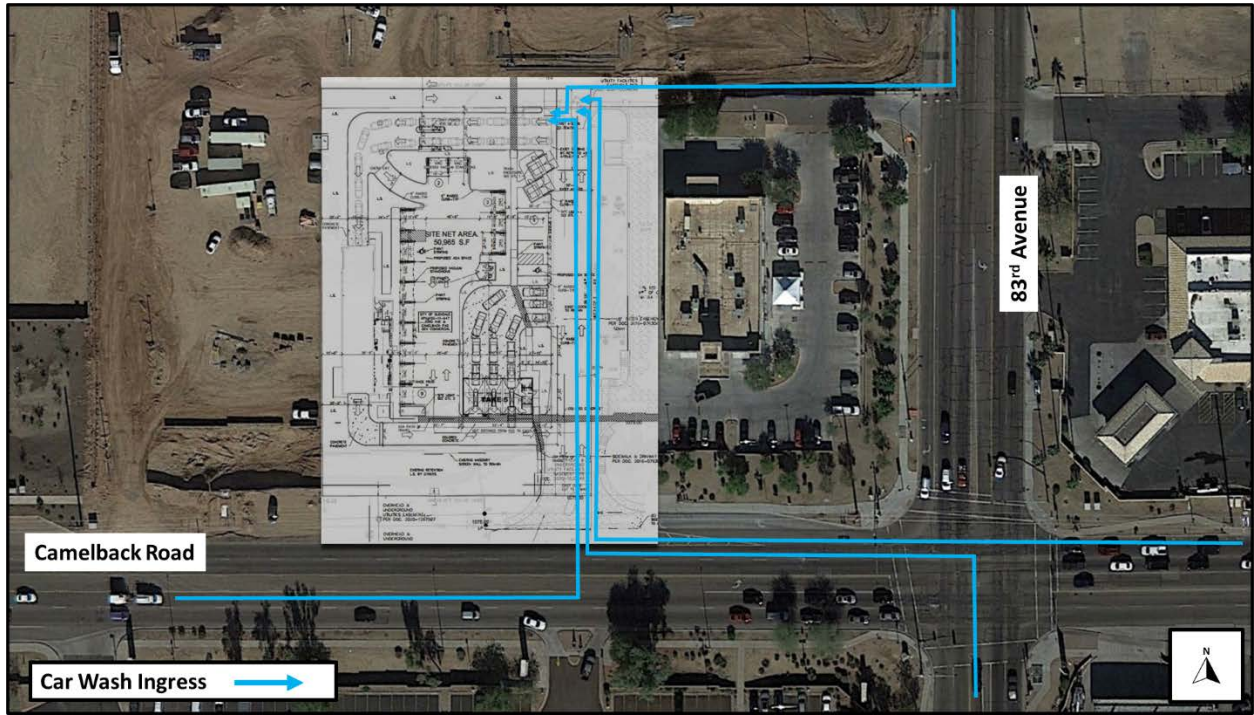


Figure 3: Oil Change Shop Ingress

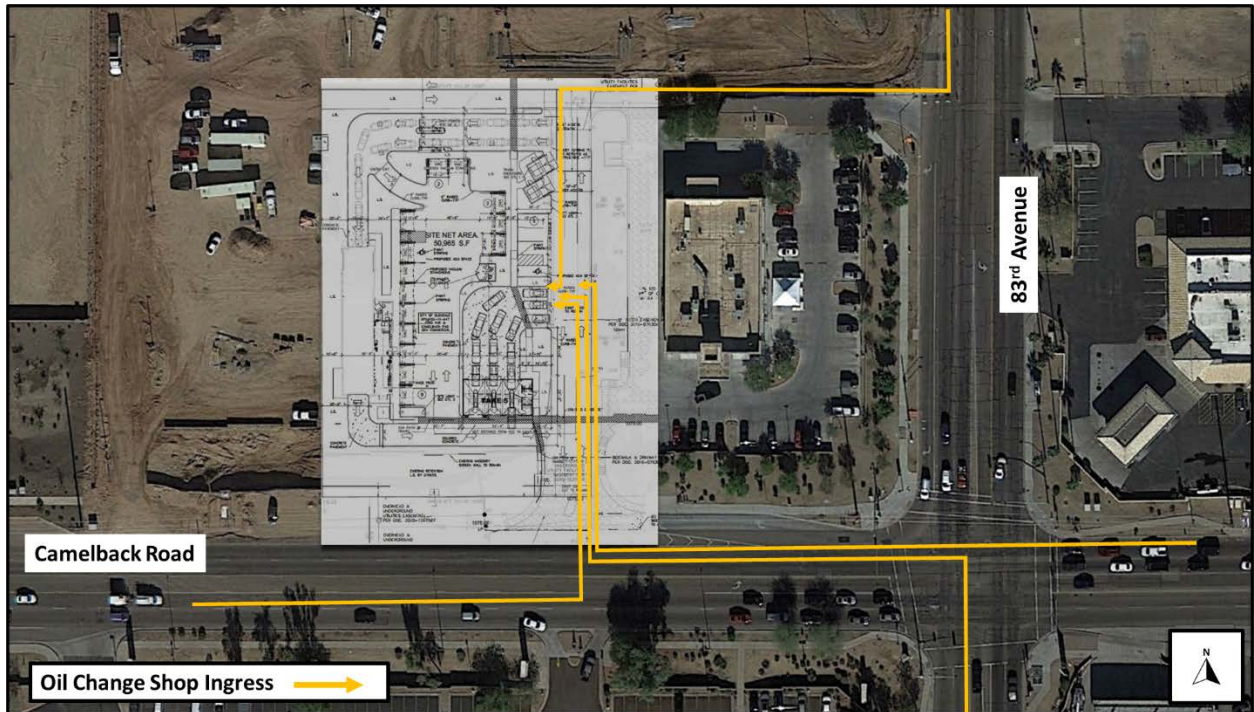
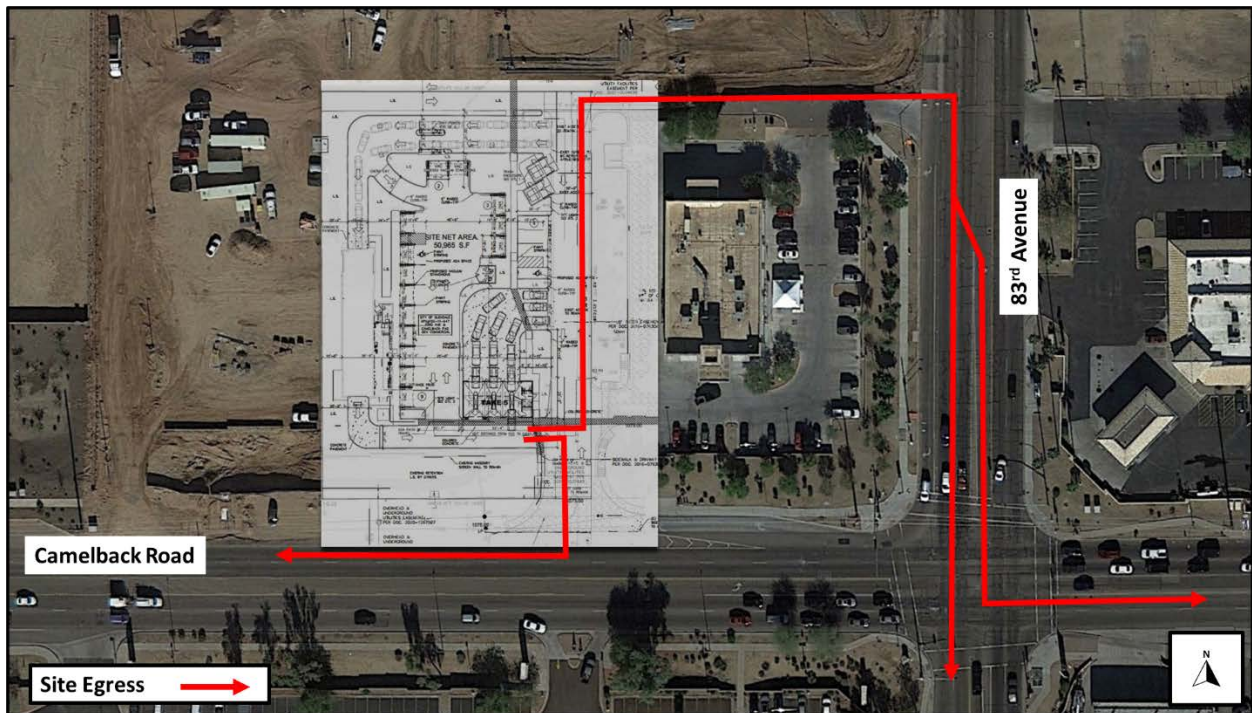


Figure 4: Site Egress



To travel northbound on 83rd Avenue, exiting site traffic has two options:

- Turn right onto westbound Camelback Road, then execute a U-turn to reach the left-turn lane approaching 83rd Avenue
- Turn right onto southbound 83rd Avenue, then make a U-turn at Camelback Road

TRIP GENERATION

The ITE *Trip Generation* Manual (10th Edition) was used to estimate the number of vehicle trip ends the proposed facility is expected to generate.

The most representative land use for the car wash is identified to be ITE LUC 948: Automated Car Wash. This land use has a very low number of studies associated with its trip rate development, having data available only for the weekday PM peak-hour of the roadway and the Saturday peak hour of the generator. No data is provided for daily weekday trip ends or for the AM peak hour for the car wash, when facilities may not be open.

The most representative land use for the oil change facility is LUC 941: Quick Lubrication Vehicle Shop. This land use has data available for daily weekday trip ends, AM and PM peak hour, and Saturday peak hour of the generator.

Table 1 shows the trip generation estimate for the proposed site based on the number of car wash tunnels (one) and the number of oil-change service positions (three).

Table 1: ITE Trip Generation Estimate (Car Wash Tunnels & Oil Change Servicing Positions)

Proposed Development									All Units		
Land Use: (948) Automated Car Wash									# of Trips Equation		
# of Units	Daily		AM Peak Roadway		PM Peak Roadway		Sat Peak Generator		Daily	0	N/A
	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	AM Pk	0	N/A
1									PM Pk	78	T = 77.50 (X)
Dir. Dist.	50%	50%	50%	50%	50%	50%	50%	50%	Sat Pk	41	T = 41.00 (X)
Trips	N/A	N/A	N/A	N/A	39	39	21	20			
	N/A		N/A		78		41				
Land Use: (941) Quick Lubrication Vehicle Shop									# of Trips Equation		
# of Units	Daily		AM Peak Roadway		PM Peak Roadway		Sat Peak Generator		Daily	120	T = 40.00 (X)
	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	AM Pk	9	T = 3.00 (X)
3									PM Pk	15	T = 4.85 (X)
Dir. Dist.	50%	50%	67%	33%	56%	44%	47%	53%	Sat Pk	14	T = 4.50 (X)
Trips	60	60	6	3	8	7	7	7			
	120		9		15		14				
Total Trips Generated											
	Daily		AM Peak Roadway		PM Peak Roadway		Sat Peak Generator				
	Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit			
Trips	60	60	6	3	47	46	28	27			
	120		9		93		55				

Source: ITE Trip Generation, 10th Edition

When considering both land uses, the hourly site trip generation is expected to peak in the afternoon with 93 site trips per hour.

Since the proposed development is a service-related land use, it is likely that a high percentage of site trips will be generated from pass-by traffic, although pass-by data is not provided for either of the two site land uses in the *ITE Trip Generation Handbook*. For land uses where pass-by percentages are available, ITE indicates around 50 percent of generated trips for service-related land uses (gas stations, restaurants, coffee/donut shops, and to a lesser extent drive-in-banks) are from pass-by trips. Assuming the same pass-by percentage for the proposed car wash and oil change shop, only 47 of the 93 total weekday PM peak-hour trips are estimated to be new vehicle trips on the roadway network.

TRIP DISTRIBUTION

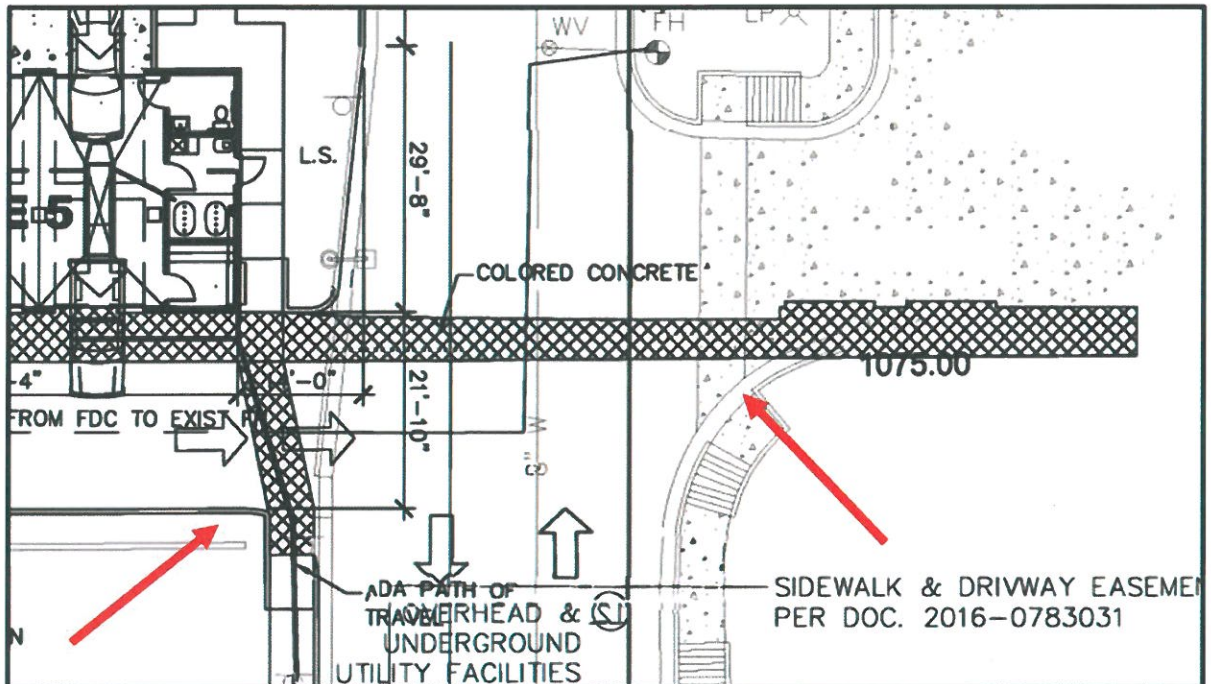
Based on engineering judgment and review of the area surrounding the proposed site, trip distribution percentages for site-generated traffic are expected to be 25 percent to and from the east, 25 percent to and from the west, 25 percent to and from the north, and 25 percent to and from the south.

INTERNAL SITE CONFIGURATION

The City of Glendale made a comment about the alignment of the two internal site roadways shown in **Figure 5**, noting the presence of an offset. However, it is anticipated that most of the exiting traffic generated by the medical center (Dignity Health) uses the access point to 83rd Avenue because the access onto Camelback Road only provides direct access to the west, whereas the 83rd Avenue access point

provides access to more directions. This will minimize medical center traffic volume using the Camelback Road access point and hence minimal conflict will be created with traffic leaving the car wash and oil change shop exit drive. Furthermore, the car wash and oil change shop exit drive is proposed to be 21 feet wide, which will place left- and right-turn vehicles into de facto turn lanes. This will make opposing drivers aware of the turn movement intent of the site's exiting drivers.

Figure 5: Access Points



CLOSURE

The project proposes to use existing shared driveways for access to 83rd Avenue and Camelback Road. No physical modifications are required to the existing access points to accommodate site-generated trips.

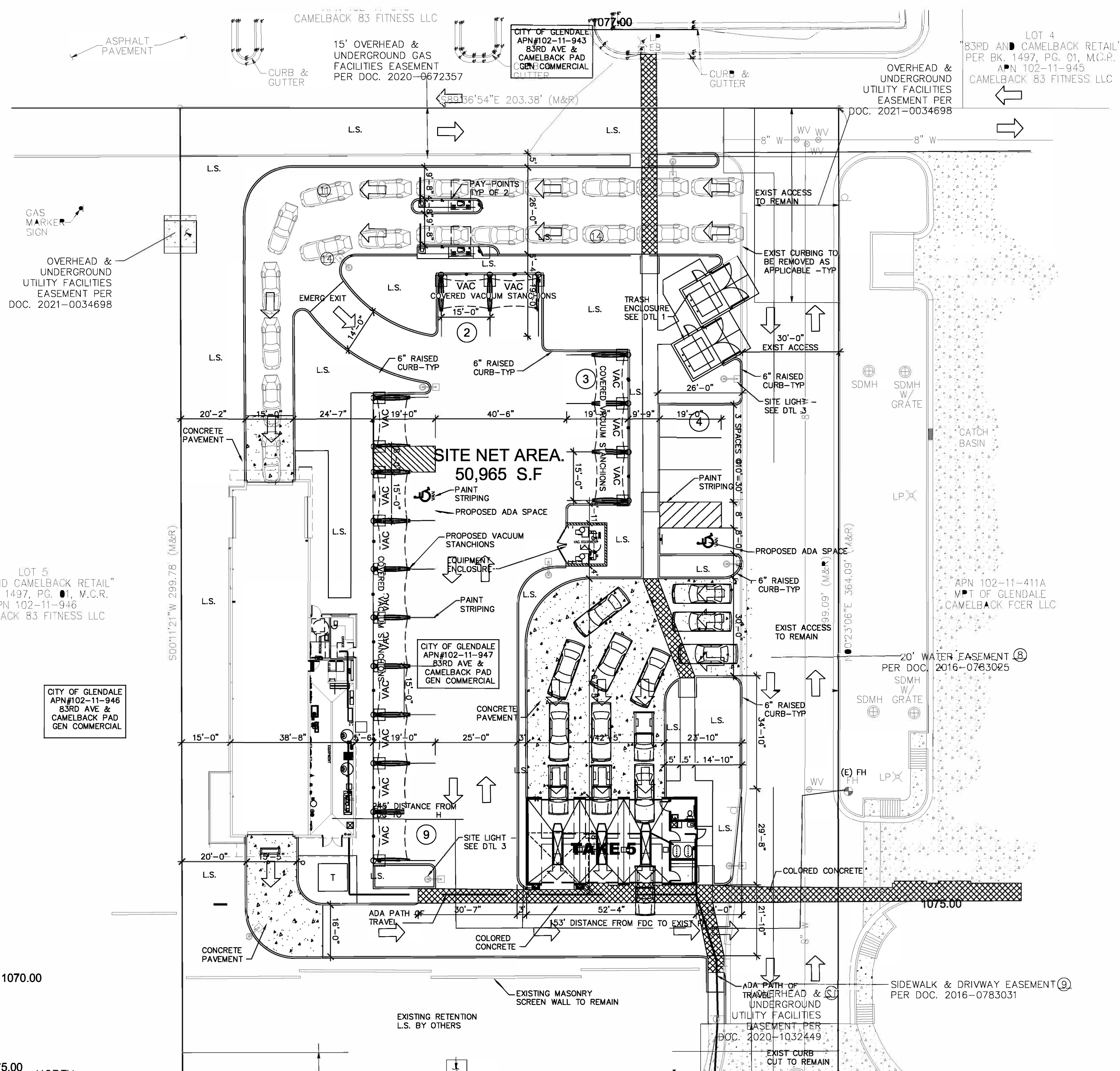
If you have any questions regarding this study, feel free to contact me at 602-955-7206 or by email at rdittberner@lee-eng.com.

Respectfully Submitted,

Randy Dittberner, PE, PTOE
Lee Engineering, LLC

attachment





LOT 4
"83RD AND CAMELBACK RETAIL"
PER BK. 1497, PG. 01, M.C.R.
APN 102-11-945
CAMELBACK 83 FITNESS LLC

OVERHEAD & UNDERGROUND UTILITY FACILITIES EASEMENT PER DOC. 2021-0034698

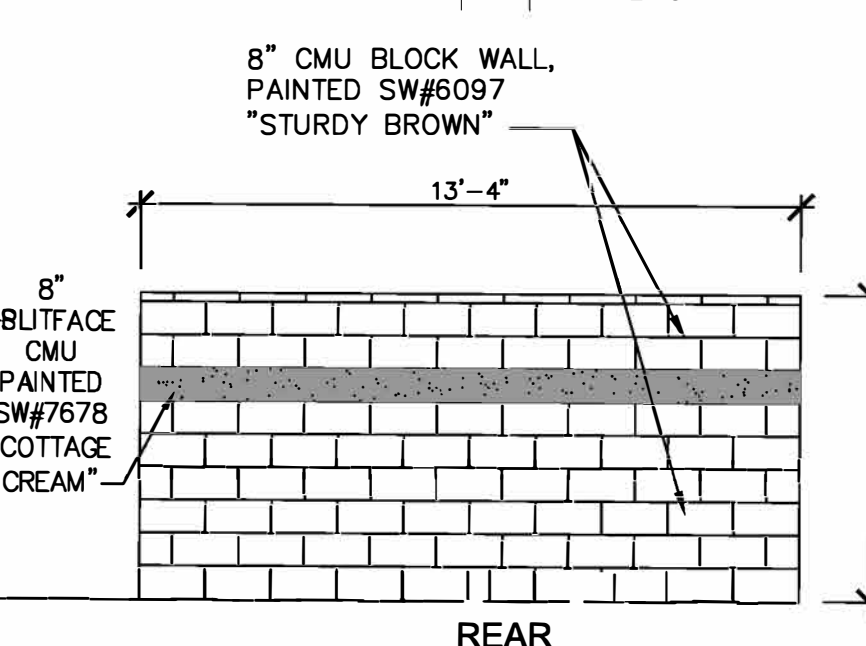
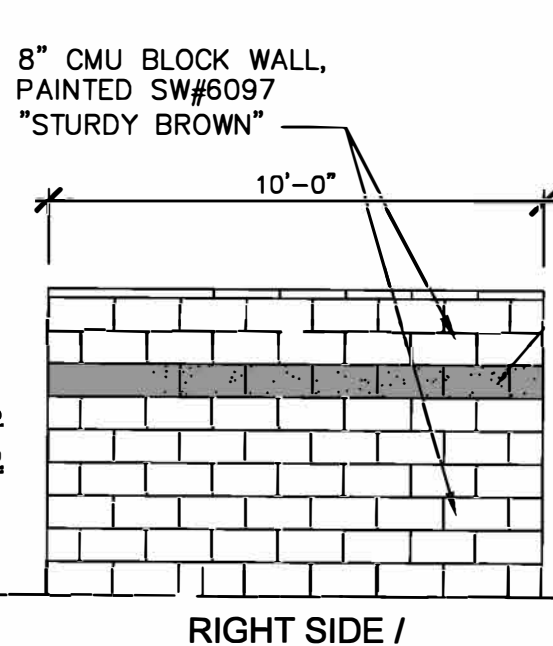
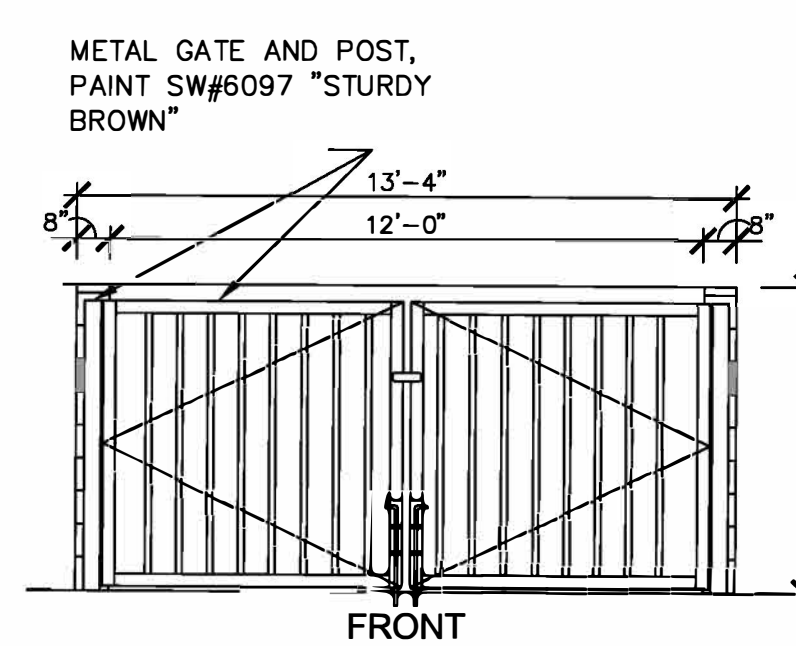
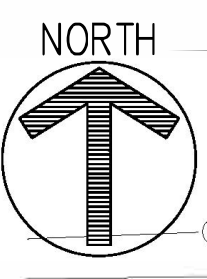
LOT 5
"83RD AND CAMELBACK RETAIL"
PER BK. 1497, PG. 01, M.C.R.
APN 102-11-946
CAMELBACK 83 FITNESS LLC

CITY OF GLENDALE
APN#102-11-946
83RD AVE & CAMELBACK PAD
GEN COMMERCIAL

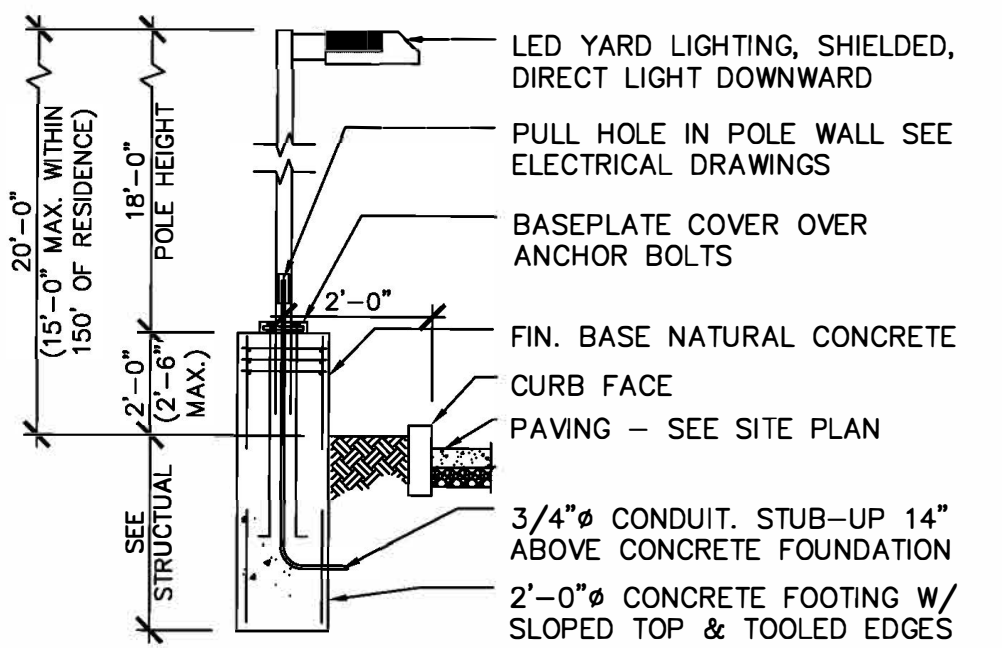
APN 102-11-411A
CITY OF GLENDALE
CAMELBACK FCER LLC

CITY OF GLENDALE
APN#102-11-411A
G-O ZONING

1 SITE PLAN
DD1.0 SCALE: 1" = 20'-0"



1 TRASH ENCLOSURE
DD1.0 SCALE: 1/4"=1'-0"



2 LIGHT POLE DETAIL
DD1.0 SCALE: 1/4"=1'-0"

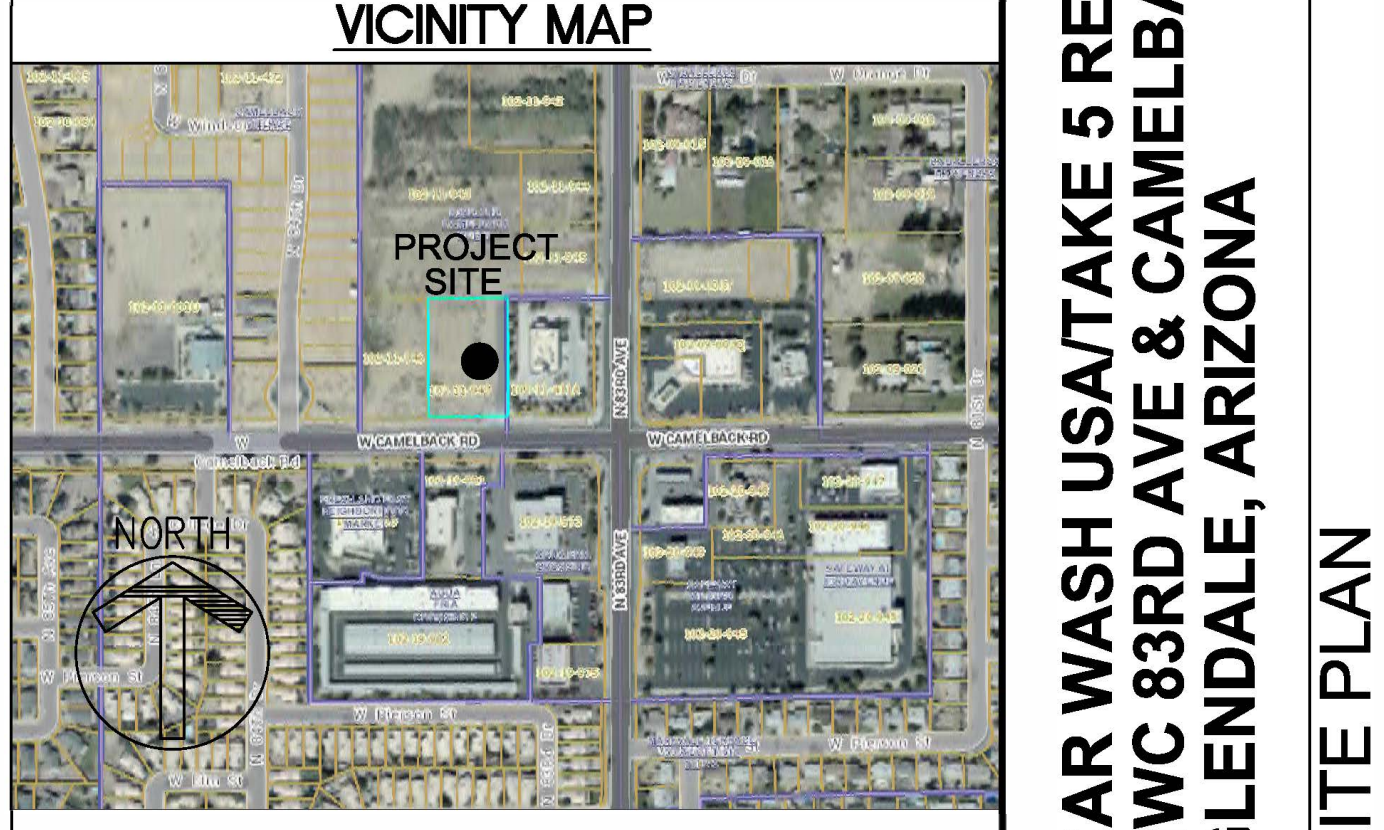
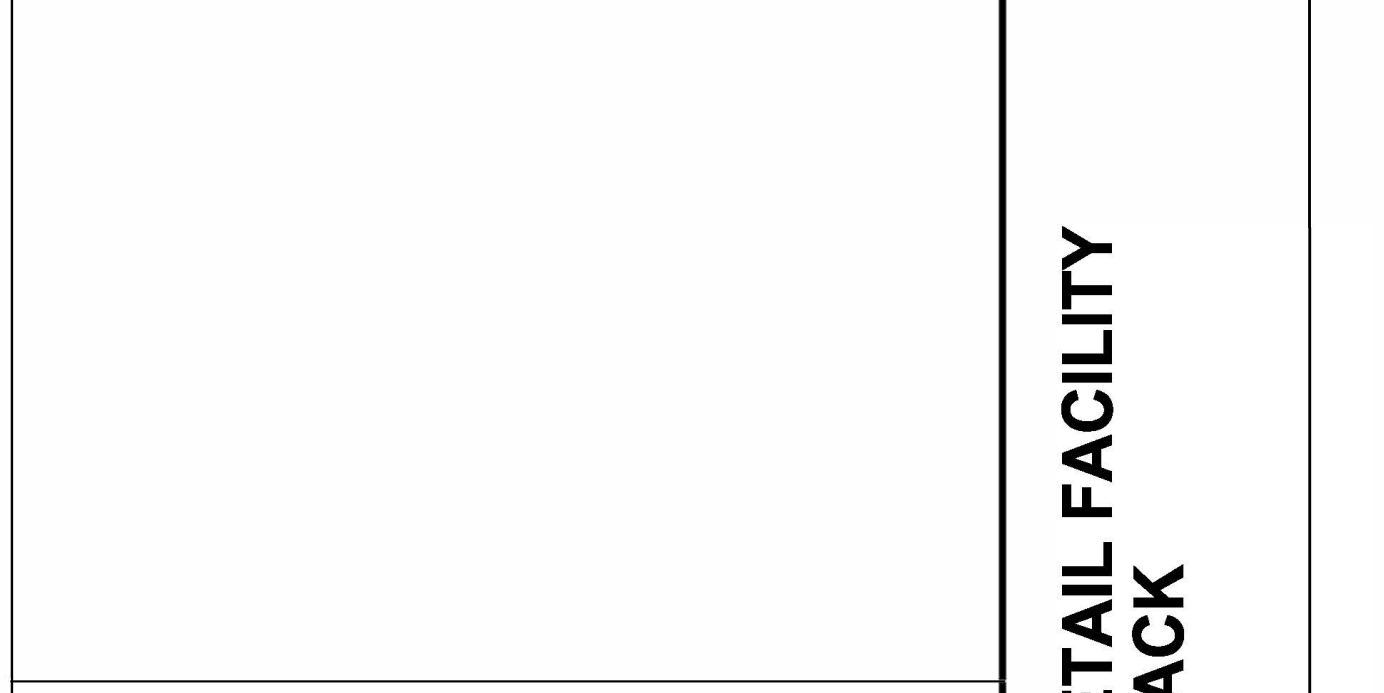
PROJECT DATA	
PROJECT NAME:	CAR WASH USA/TAKE 5 RETAIL FACILITY NWC 83RD AVENUE & CAMELBACK RD GLENDALE, ARIZONA
EXISTING USE:	VACANT
PROPOSED USE:	CAR WASH EXPRESS/OIL CHANGE
DEVELOPER:	DRIVEN BRANDS 440 S. CHURCH ST #700 CHARLOTTE, NC 28202 CONTACT: LISA WHITE/MATTHEW GILBERT (980) 259-0701
ARCHITECT:	M3 DESIGN 2008 N 7TH AVE PHOENIX, ARIZONA 85007 (480) 528-3136 CONTACT: JESSE MACIAS

SITE DATA																																	
SITE NET AREA:	65,584 S.F. / 1.51 AC.																																
APN #:	102-11-411A																																
GENERAL PLAN DESIGNATION:	COMMERCIAL																																
ZONING:	PAD																																
BUILDING FOOTPRINT:	4,755 S.F.																																
CAR WASH:	1,315 S.F.																																
TAKE 5:																																	
BUILDING COVERAGE:	6,070 S.F. / 65,584 S.F. = 9.3%																																
BUILDING HEIGHT:	MAXIMUM: 30'-0" PROVIDED: ±28'-0"																																
LANDSCAPE:	17,536 S.F. / 65,584 S.F. = 26.7%																																
IMPERVIOUS COVERAGE:	41,978 S.F. / 65,584 S.F. = 64.0%																																
SETBACKS:	<table border="1"> <thead> <tr> <th>SETBACKS</th> <th>REQ'D</th> <th>PROVIDED</th> </tr> </thead> <tbody> <tr> <td>STREET FRONT (SOUTH)</td> <td>25'</td> <td>25'-0"</td> </tr> <tr> <td>SIDE (EAST)</td> <td>10'</td> <td>10'-0"</td> </tr> <tr> <td>SIDE (WEST)</td> <td>15'</td> <td>15'-0"/20'-0"</td> </tr> <tr> <td>REAR (SOUTH)</td> <td>0'</td> <td>5'-0"</td> </tr> </tbody> </table>	SETBACKS	REQ'D	PROVIDED	STREET FRONT (SOUTH)	25'	25'-0"	SIDE (EAST)	10'	10'-0"	SIDE (WEST)	15'	15'-0"/20'-0"	REAR (SOUTH)	0'	5'-0"																	
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PROJECT DESCRIPTION	
NEW ICWG 4,755SF EXPRESS CAR WASH AND 1,315SF TAKE 5 EXPRESS OIL CHANGE FACILITY ON 1.51 VACANT PARCEL	

LEGAL DESCRIPTION	
Parcel 2, of Minor Land Division - Lot Split for 83RD & CAMELBACK, LLC, A DELAWARE LIMITED LIABILITY COMPANY, being a portion of the Southeast quarter of Section 15, Township 2 North, Range 1 East of the Gila and Salt River Basins and Meridian, Maricopa County, Arizona recorded in book 1274 of Maps, page 44.	

CITY OF GLENDALE SITE PLAN NOTES



APPROVAL STAMPS	
DATE:	2021-2-14
SCALE:	SCALE
DRAWN BY:	JM
PROJECT NUMBER:	CWU20004.0
SHEET:	DD1
REV:	

1415 NORTH 7th AVENUE
PHOENIX, ARIZONA 85007



CAR WASH USA/TAKE 5 RETAIL FACILITY
NWC 83RD AVE & CAMELBACK
GLENDALE, ARIZONA
SITE PLAN