



February 17, 2022

Mr. Lou Turner
Hillstone Homes
2440 West Mission Lane, Suite 15
Phoenix, Arizona 85021

Subject: Traffic Impact Statement
Hillstone Homes
NEC of 107th Avenue and Missouri Avenue
Phoenix, Arizona

INTRODUCTION

The proposed single-family housing development is planned to consist of 41 homes. The site is located on the east side of 107th Avenue north of Missouri Avenue in Phoenix, Arizona. The proposed project is planned to be completed in one phase.

This Traffic Impact Statement (TIS) has been performed in general accordance with the City of Phoenix Street Planning and Design Guidelines, locally accepted standards and industry practice. The purpose of this TIS is to forecast the trip generation of the proposed Hillstone Homes development and evaluate the site access driveways of the development.

SITE DESCRIPTION

The proposed single-family housing development will be located on a vacant site which consists of a 19.7-acre parcel (102-16-002). The site is located on the east side of 107th Avenue north of Missouri Avenue in Phoenix, Arizona. A vicinity map, aerial view, and site plan are attached that illustrate the site in relation to the surrounding area.

SITE ACCESSIBILITY

As shown in the attached site plan in Figure 3, the subject site is planned to have two main site access points. Their planned location and function are as follows:

- Access A is located on 107th Avenue approximately 470 feet north of Missouri Avenue (centerline to centerline). This driveway is proposed to function as a full movement access.
- Access B is located on Missouri Avenue approximately 760 feet east of 107th Avenue (centerline to centerline). This driveway is proposed to function as full movement access.

EXISTING ROADWAY CONDITIONS

107th Avenue consists of one travel lane in both the northbound and southbound directions within the vicinity of the site. The posted speed limit along 107th Avenue within the vicinity of the site is 35 miles per hour.

Missouri Avenue consists of one travel lane in both the eastbound and westbound directions within the vicinity of the site. The posted speed limit along Missouri Avenue within the vicinity of the site is 25 miles per hour.

SITE TRAFFIC GENERATION

Estimates of the traffic volumes that will be generated by the proposed Single-Family Housing development were determined from transportation planning data taken from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition, 2021*. The ITE rates are based on studies that measure trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit of land use type. ITE Land Use Code 210 – Single-Family Detached Housing was utilized for trip generation purposes and the site’s forecasted trips are presented in Table 1.

TABLE 1: TRIP GENERATION

Land Use	Units	Size	Daily	AM Peak			PM Peak		
				in	out	total	in	out	total
Single-Family Detached Housing	Dwelling Units	41	387	7	22	29	24	15	39

Single-Family Detached Housing – ITE LUC 210

AM Peak Hour	T = 0.70 x (Dwelling Units)	26% entering, 74% exiting
PM Peak Hour	T = 0.94 x (Dwelling Units)	63% entering, 37% exiting
Daily	T = 9.43 x (Dwelling Units)	50% entering, 50% exiting

Due to the low forecasted peak hour volumes at the subject site, site generated traffic by the proposed development is not anticipated to cause detrimental impacts to the surrounding roadway network.

SIGHT DISTANCE

Sufficient intersection sight distance shall be provided to give drivers exiting the site a clear view of oncoming traffic on 107th Avenue. After a vehicle has stopped at an intersection, the driver must have sufficient sight distance to make a safe departure.

Per AASHTO’s A Policy on Geometric Design of Highways and Streets Manual, 2018, along the major road (107th Avenue) at the access of the proposed development, the sight distance is determined by the following formula:

$$SD = 1.47 \times V_{\text{major}} \times t_g$$

Where:

V_{major} = design speed (=posted speed) on 107th Avenue (35 miles per hour)

t_g = time gap. The time gap for left-turns (looking right) is 7.5 seconds for passenger vehicles; the time gap for right-turns (looking left) is 6.5 seconds for passenger vehicles.

Considering a flat grade, the required sight distance at the site’s access driveway for left-turns from a stop (looking right) is **385 feet**; the required sight distance at the site’s access driveway for right-turns from a stop (looking left) is **335 feet**.



In addition, sight triangles shall be provided and maintained - the landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. Per the City of Phoenix Street Planning and Design Guidelines, a 10-foot by 20-foot sight visibility triangle (20 feet measured along the property line) is required on both sides of the driveway.

CONCLUSIONS

Due to the low forecasted peak hour volumes, site generated traffic by the proposed development is not anticipated to cause detrimental impacts to the surrounding roadway network.

Proper intersection sight distance and sight triangles shall be provided and maintained at the site access of the proposed development to give drivers exiting the site a clear view of oncoming traffic on 107th Avenue. The landscape and hardscape within the sight triangles must not obstruct the driver's view of the adjacent travel lanes. To ensure adequate sight distances and sight distance triangles, AASHTO's *A Policy on Geometric Design of Highways and Streets* should be followed when designing the accesses and landscaping.

This Traffic Statement letter is based on a variety of assumptions related to the site plan and land use of the proposed development. If more homes or alternate land use is ultimately proposed, these trip generation calculations and criteria evaluation may not remain valid.

If you have any questions, please feel free to contact our office at (602) 265-6155.

Sincerely,
United Civil Group



David Kinnear, PE
Project Manager

Attachments: Figure 1: Vicinity Map
Figure 2: Aerial View
Figure 3: Site Plan



ArcGIS - 2022

Figure 1: Vicinity Map



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Figure 2: Aerial View

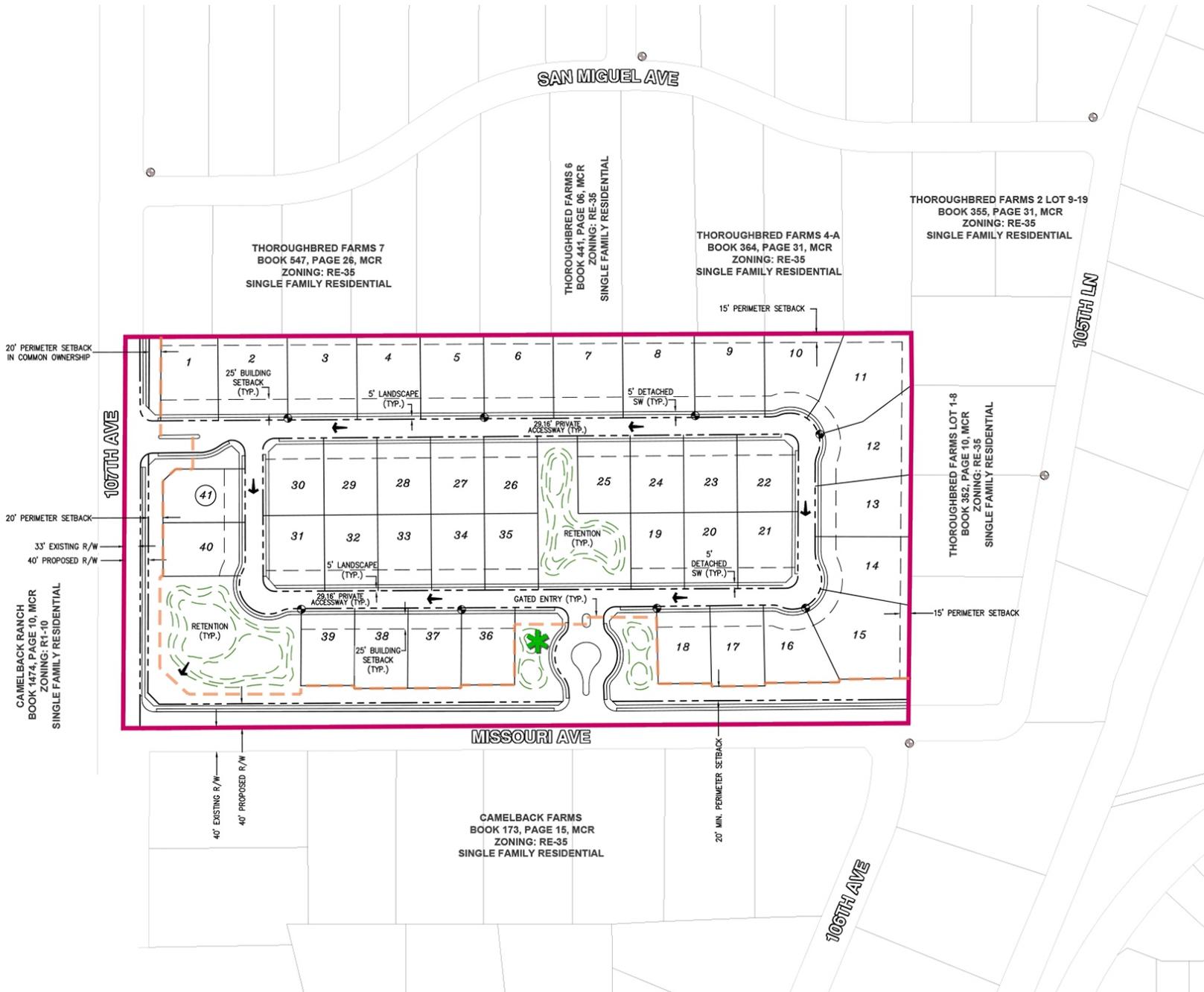


Figure 3: Site Plan