

[Environmental Review Main \(/programs/environmental-review/\)](/programs/environmental-review/)

DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the Day/Night Noise Level Calculator Electronic Assessment Tool Overview (<https://onecpd.info/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/>).

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID

Record Date

User's Name

Road # 1 Name:

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input type="checkbox"/>
Effective Distance	<input type="text" value="35"/>	<input type="text" value="35"/>	<input type="text"/>
Distance to Stop Sign	<input type="text" value="260"/>	<input type="text" value="260"/>	<input type="text"/>
Average Speed	<input type="text" value="25"/>	<input type="text" value="25"/>	<input type="text"/>
Average Daily Trips (ADT)	<input type="text" value="152"/>	<input type="text" value="8"/>	<input type="text"/>

Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text"/>
Road Gradient (%)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Vehicle DNL	<input type="text" value="42.4"/>	<input type="text" value="39.6"/>	<input type="text"/>
Calculate Road #1 DNL	<input type="text" value="44.3"/>	<input type="text"/>	<input type="text" value="Reset"/>

Road # 2 Name:

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	<input type="text" value="400"/>	<input type="text" value="400"/>	<input type="text" value="400"/>
Distance to Stop Sign	<input type="text"/>	<input type="text"/>	<input type="text"/>
Average Speed	<input type="text" value="30"/>	<input type="text" value="30"/>	<input type="text" value="30"/>
Average Daily Trips (ADT)	<input type="text" value="3660"/>	<input type="text" value="1440"/>	<input type="text" value="900"/>
Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text" value="15"/>
Road Gradient (%)	<input type="text"/>	<input type="text"/>	<input type="text" value="2"/>
Vehicle DNL	<input type="text" value="45.1"/>	<input type="text" value="41"/>	<input type="text" value="60.7"/>
Calculate Road #2 DNL	<input type="text" value="60.9"/>	<input type="text"/>	<input type="text" value="Reset"/>

Airport Noise Level

Loud Impulse Sounds? Yes No

Combined DNL for all Road and Rail sources

Combined DNL including Airport

Site DNL with Loud Impulse Sound

[Calculate](#)

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative:** Cancel the project at this location
- **Other Reasonable Alternatives:** Choose an alternate site
- **Mitigation**
 - Contact your Field or Regional Environmental Officer (<https://www.onecpd.info/programs/environmental-review/hud-environmental-staff-contacts/>)
 - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
 - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
 - Incorporate natural or man-made barriers. See *The Noise Guidebook* (<https://www.onecpd.info/resource/313/hud-noise-guidebook/>)
 - Construct noise barrier. See the Barrier Performance Module (<https://onecpd.info/programs/environmental-review/bpm-calculator/>)

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (<https://www.onecpd.info/resource/3822/day-night-noise-level-assessment-tool-user-guide/>)

Day/Night Noise Level Assessment Tool Flowcharts (<https://www.onecpd.info/resource/3823/day-night-noise-level-assessment-tool-flowcharts/>)

[Environmental Review Main \(/programs/environmental-review/\)](/programs/environmental-review/)

DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the Day/Night Noise Level Calculator Electronic Assessment Tool Overview (<https://onecpd.info/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/>).

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID

Record Date

User's Name

Road # 1 Name:

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input type="checkbox"/>
Effective Distance	<input type="text" value="35"/>	<input type="text" value="35"/>	<input type="text"/>
Distance to Stop Sign	<input type="text" value="260"/>	<input type="text" value="260"/>	<input type="text"/>
Average Speed	<input type="text" value="25"/>	<input type="text" value="25"/>	<input type="text"/>
Average Daily Trips (ADT)	<input type="text" value="367"/>	<input type="text" value="19"/>	<input type="text"/>

Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text"/>
Road Gradient (%)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Vehicle DNL	<input type="text" value="46.3"/>	<input type="text" value="43.4"/>	<input type="text"/>
Calculate Road #1 DNL	<input type="text" value="48.1"/>	<input type="text"/>	<input type="text" value="Reset"/>

Road # 2 Name:

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	<input type="text" value="400"/>	<input type="text" value="400"/>	<input type="text" value="400"/>
Distance to Stop Sign	<input type="text"/>	<input type="text"/>	<input type="text"/>
Average Speed	<input type="text" value="30"/>	<input type="text" value="30"/>	<input type="text" value="30"/>
Average Daily Trips (ADT)	<input type="text" value="3798"/>	<input type="text" value="1494"/>	<input type="text" value="934"/>
Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text" value="15"/>
Road Gradient (%)	<input type="text"/>	<input type="text"/>	<input type="text" value="2"/>
Vehicle DNL	<input type="text" value="45.2"/>	<input type="text" value="41.2"/>	<input type="text" value="60.9"/>
Calculate Road #2 DNL	<input type="text" value="61.1"/>	<input type="text"/>	<input type="text" value="Reset"/>

Airport Noise Level

Loud Impulse Sounds? Yes No

Combined DNL for all Road and Rail sources

Combined DNL including Airport

Site DNL with Loud Impulse Sound

[Calculate](#)

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative:** Cancel the project at this location
- **Other Reasonable Alternatives:** Choose an alternate site
- **Mitigation**
 - Contact your Field or Regional Environmental Officer (<https://www.onecpd.info/programs/environmental-review/hud-environmental-staff-contacts/>)
 - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
 - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
 - Incorporate natural or man-made barriers. See *The Noise Guidebook* (<https://www.onecpd.info/resource/313/hud-noise-guidebook/>)
 - Construct noise barrier. See the Barrier Performance Module (<https://onecpd.info/programs/environmental-review/bpm-calculator/>)

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (<https://www.onecpd.info/resource/3822/day-night-noise-level-assessment-tool-user-guide/>)

Day/Night Noise Level Assessment Tool Flowcharts (<https://www.onecpd.info/resource/3823/day-night-noise-level-assessment-tool-flowcharts/>)

Ambient Noise Survey Data Sheet

Project: Pioneer Street Apartments

Date: July 17, 2015

Measurement	Begin	Finish	Leq	Lmin	Lmax	L(10)	L(50)
1	10:20:00 AM	10:35:00 AM	53.6	39.6	75.9	51	44.5
2	10:40:00 AM	10:55:00 AM	45.7	41.1	62.3	47.6	44.9

L(90)

41.6

43.2



ASSOCIATED TRANSPORTATION ENGINEERS

100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Since 1978

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

July 29, 2015

15057.L01

Mr. Steve Simoulis
SKS Portfolio, LLC
1332 Peach Street
San Luis Obispo, CA 93401

TRAFFIC AND CIRCULATION STUDY FOR THE PIONEER STREET APARTMENTS PROJECT, CITY OF GUADALUPE

Associated Transportation Engineers (ATE) has prepared the following traffic and circulation study for the Pioneer Street Apartments Project proposed in the City of Guadalupe. It is understood that this traffic and circulation study will be submitted to the City of Guadalupe as part of the environmental review for the project.

PROJECT DESCRIPTION

The project is proposing to construct a 38-unit apartment complex on a 1.25-acre lot located on the east side of Pioneer Street in Guadalupe. Figure 1 (attached) illustrates the project site location. Vehicular access is proposed via two driveways on Pioneer Street. Figure 2 (attached) shows the project site plan.

PROJECT TRIP GENERATION

Trip generation estimates were developed for the project using the standard trip rates published in the Institute of Transportation Engineers' (ITE), Trip Generation, 9th Edition¹. The ITE rates for Apartments (ITE Land Use Code #220) were selected to develop the trip generation estimates for the project. Table 2 presents the trip generation estimates for the project based on ITE rates.

¹ Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

**Table 1
Project Trip Generation**

Land Use	Size	ADT(a)		A.M. Peak Hour(b)		P.M. Peak Hour(b)	
		Rate	Trips	Rate	Trips	Rate	Trips
Apartments	38 Units	6.65	226	0.51	17 (3/14)	0.62	21 (14/7)

(a) ADT = Average Daily Trips.

(b) Peak hour trip generation includes breakdown of directional trips (Inbound/Outbound).

Table 1 shows that the project is forecast to generate 226 average daily trips (ADT), 17 A.M. peak hour trips and 21 P.M. peak hour trips. The project-generated roadway traffic volumes were distributed and assigned to the adjacent street system as illustrated on attached Figure 3.

POTENTIAL TRAFFIC IMPACTS

Congestion Management Program Roadway System Impacts

The Santa Barbara County Association of Governments (SBCAG) has developed a set of traffic impact thresholds to assess the impacts of land use decisions made by local jurisdictions (including the City of Guadalupe) on regional transportation facilities located within the Congestion Management Program (CMP) roadway system.

According to the CMP criteria, projects that generate less than 500 ADT and less than 50 peak hour trips do not have the potential to generate significant impacts and are therefore consistent with the CMP. As shown in Table 1, the project is forecast to generate 226 ADT, with 17 trips occurring during the A.M. peak hour and 21 trips during the P.M. peak hour. The Pioneer Street Apartments Project is therefore considered to be consistent with CMP standards and would not significantly impact the CMP roadway system in Guadalupe.

Local Impacts

Roadway Levels of Service. Access for the project is proposed via two driveways on Pioneer Street. Pioneer Street is a 2-lane arterial that extends between 9th Street north of the project site and 8th Street south of the project site. Pioneer Street serves residential, and agricultural uses in the western portion of the City of Guadalupe.

Current traffic counts show that Pioneer Street, 9th Street and 8th Street carry between 200 to 300 vehicles per day in the vicinity of the project site. Existing and Existing + Project traffic volumes and levels of service are summarized in Table 2 and illustrated on the attached Figures 4 and 5. Levels of service are based on standard engineering design capacities (attached), which show that 2-lane residential streets such as Pioneer Street, 9th Street and 8th Street have a capacity to carry approximately 5,000 vehicles per day.

Table 2
Traffic Volumes and Levels of Service

Roadway Segment	Roadway Classification	Roadway Capacity	Existing		Project Added ADT	Existing + Project	
			ADT	LOS		ADT	LOS
Pioneer Street	2-Lane Collector	5,000 ADT	200	LOS A	226	426	LOS A
9 th Street	2-Lane Collector	5,000 ADT	235	LOS A	113	348	LOS A
8 th Street	2-Lane Collector	5,000 ADT	300	LOS A	113	413	LOS A

Note: LOS based on standard engineering design capacities.

The study-area roadways currently operate at LOS A and are forecast to operate at LOS A with Existing + Project traffic. LOS A represents relatively free flow operations with no congestion.

Site Driveway Levels of Service. Vehicular access to the site is proposed via two driveways that would connect to Pioneer Street (see site plan). Both driveways would provide for inbound and outbound access. Pioneer Street carries less than 20 vehicles per hour during the A.M. and P.M. peak commuter periods and each of the project driveways would generate less than 20 vehicles per hour during the same periods. Given the relatively low volumes on Pioneer Street and the minor volumes turning to/from the site, the driveways would operate at LOS A during the A.M. and P.M. peak commuter periods.

Sight Distances. ATE conducted a field review to determine if sufficient sight distance exists at the project driveways. The Caltrans Highway Design Manual² sight distance standards were used for the sight distance analysis. The segment of Pioneer Street adjacent to the project site is flat and unposted 25 MPH. Based on Caltrans criteria, the minimum required sight distance standard for a 25 MPH design speed is 150 feet. Obstructions, such as fences, walls, screens, etc., should not be constructed within the sight triangles adjacent to the project driveways in order to maintain adequate sight distances for vehicles exiting the site.

Northern Project Driveway Site Distance: Photo "A" (attached) shows the sight distance looking to the north along Pioneer Street. As shown, Pioneer Street is flat and straight. The sight distance to the north was measured at 285 feet (to 9th Street), in excess of the 150-foot minimum. Photo "B" (attached) shows the sight distance looking to the south along Pioneer Street. As shown, Pioneer Street is flat however the horizontal curve and the fence on the adjacent property limits the sight distance in this direction. The sight distance to the south was measured at 215 feet from the northern site driveway which exceeds the 150-foot minimum.

² Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

Southern Project Driveway Site Distance: Photo "C" (attached) shows the sight distance looking to the north along Pioneer Street. The sight distance to the north was measured at 415 feet (to 9th Street), in excess of the 150-foot minimum. Photo "D" (attached) shows the sight distance looking to the south along Pioneer Street. As shown, Pioneer Street is flat, however the fence on the adjacent property limits the sight distance in this direction. The sight distance to the south was measured at 140 feet from the southern site driveway which does not meet the Caltrans 150-foot minimum.

The fence on the adjacent property to the south is in violation of the City of Guadalupe Municipal Code. Per section 18.52.121 (C) of the Municipal Code, no fence or screen wall shall be permitted to exist in excess of 3 feet in height within 60 feet of the street corner measured from the edge of the pavement; or which otherwise impairs the vision of the driver of a vehicle approaching the intersection within 60 feet (see attached). Lowering the fence height to 3 feet would provide adequate sight distance for vehicles exiting from the project's southern driveway.

This concludes our traffic and circulation study for the Pioneer Street Apartments Project. Thank you for your assistance during the course of the study.

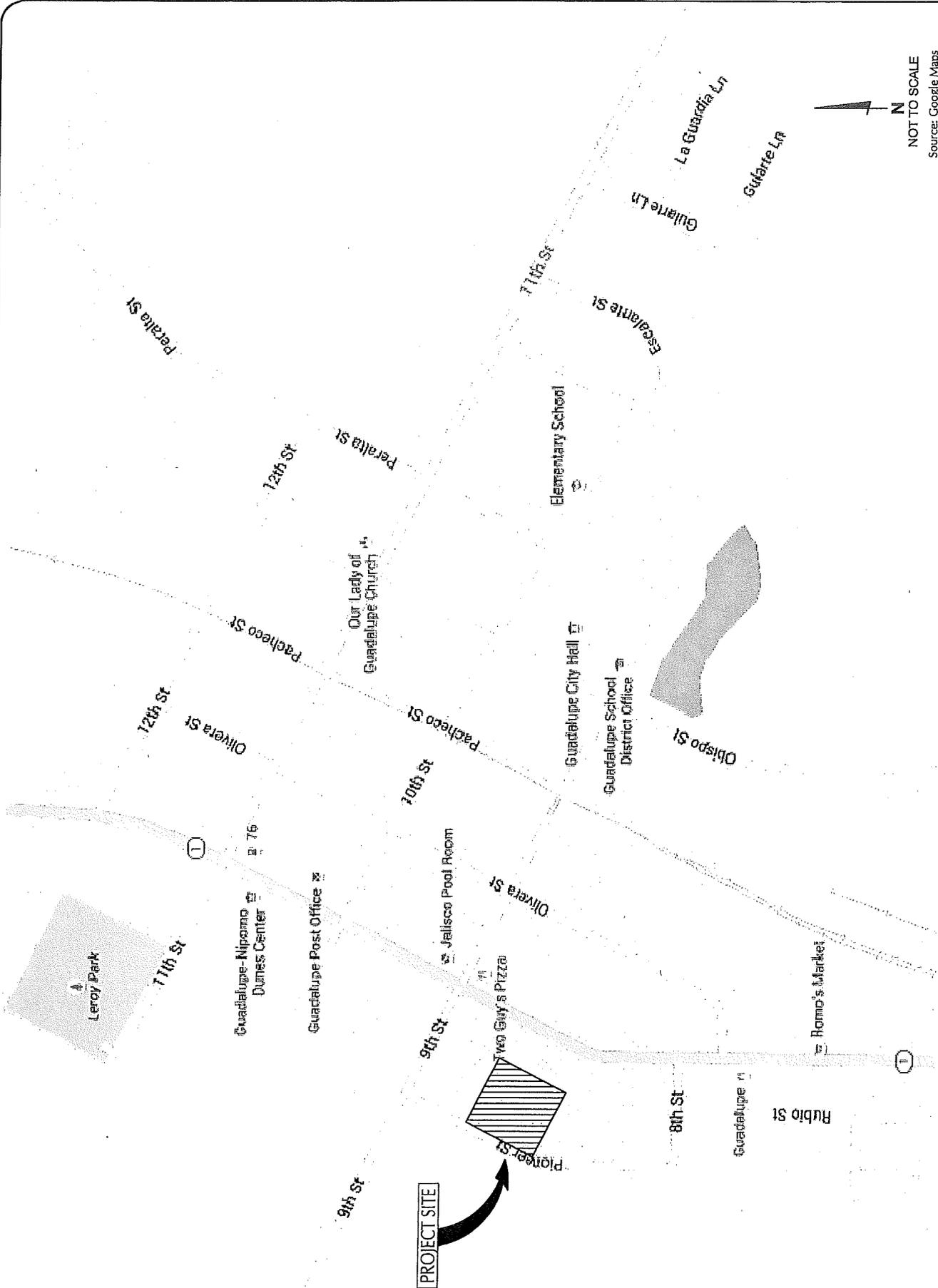
Associated Transportation Engineers,



Scott A. Schell, AICP, PTP
Vice President

SAS/DFN/wp

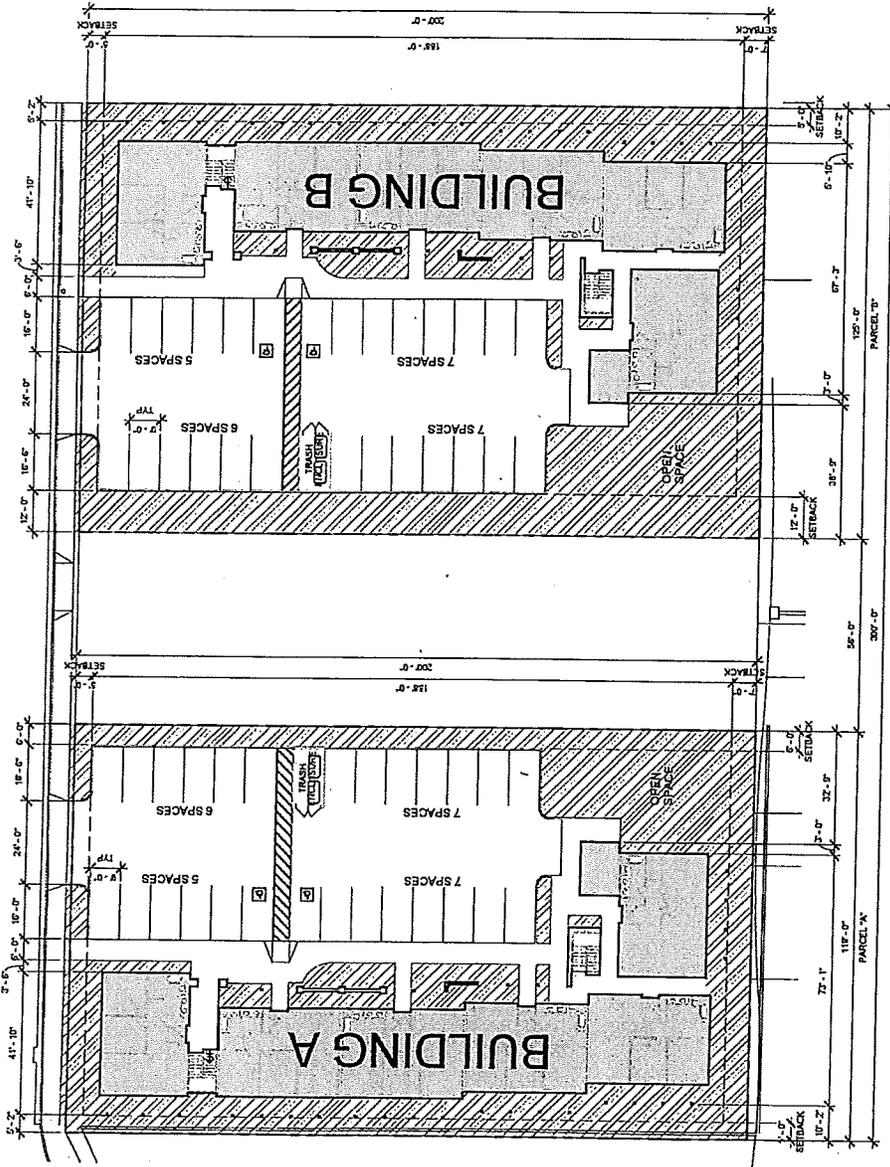
Attachments Figure 1 - Project Site Location
Figure 2 - Project Site Plan
Figure 3 - Project Trip Distribution and Assignment
Figure 4 - Existing Roadway Traffic Volumes
Figure 5 - Existing + Project Roadway Traffic Volumes
Photos "A" - "D"
Section 18.52.121 City of Guadalupe Municipal Code



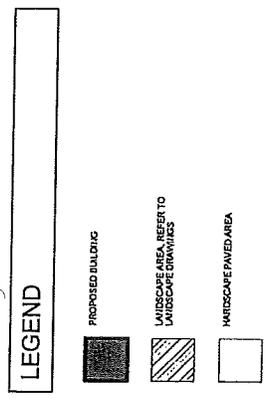
PROJECT SITE LOCATION

ASSOCIATED
TRANSPORTATION
ENGINEERS

PIONEER STREET



1 ARCHITECTURAL SITE PLAN
 22' x 34' 1" x 28' 2"

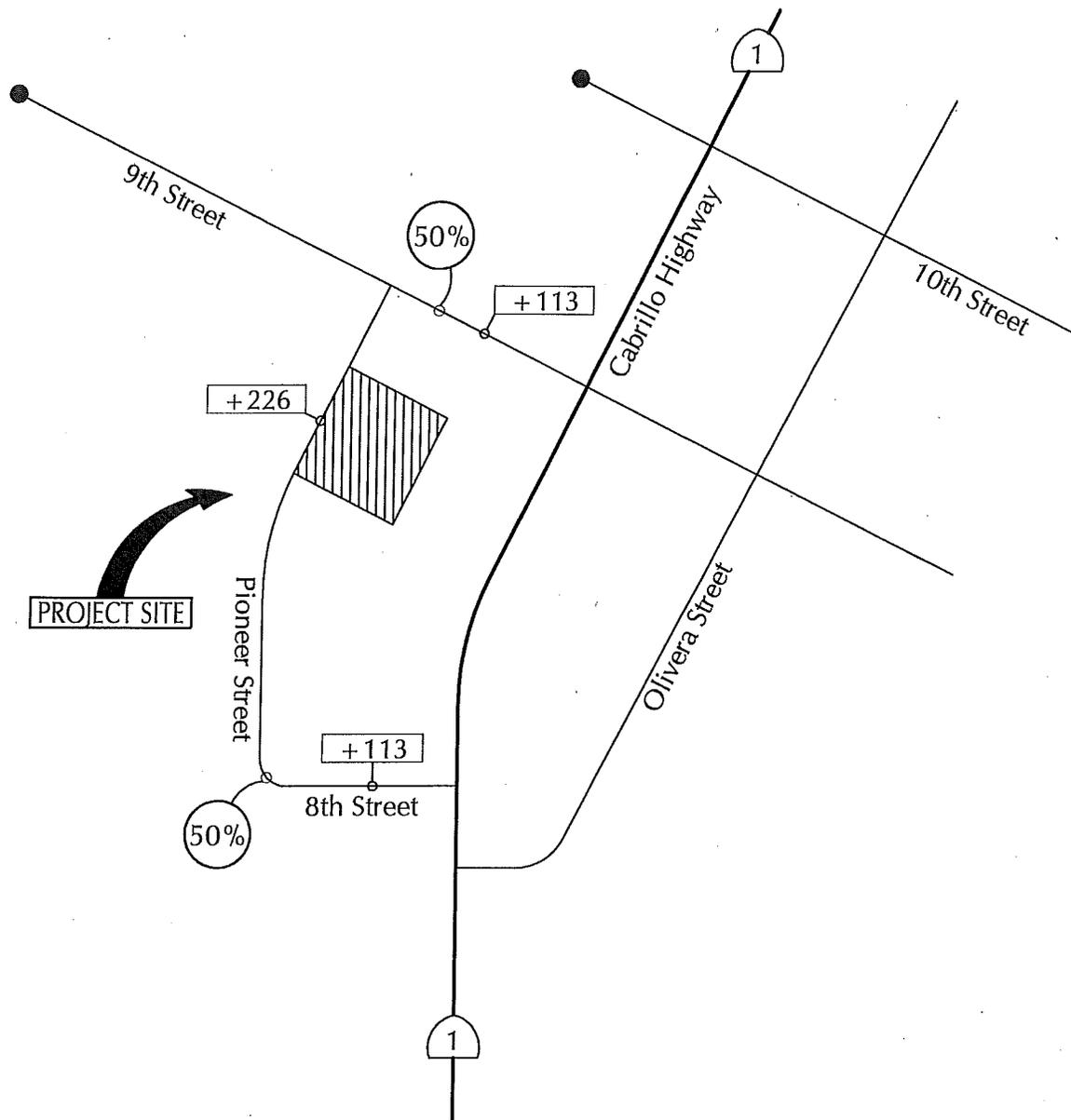


ASSOCIATED
 TRANSPORTATION
 ENGINEERS

PROJECT SITE PLAN

FIGURE 2

MMF - #15057



LEGEND

X - Average Daily Traffic Volume

% - Distribution Percentage

N
NOT TO SCALE

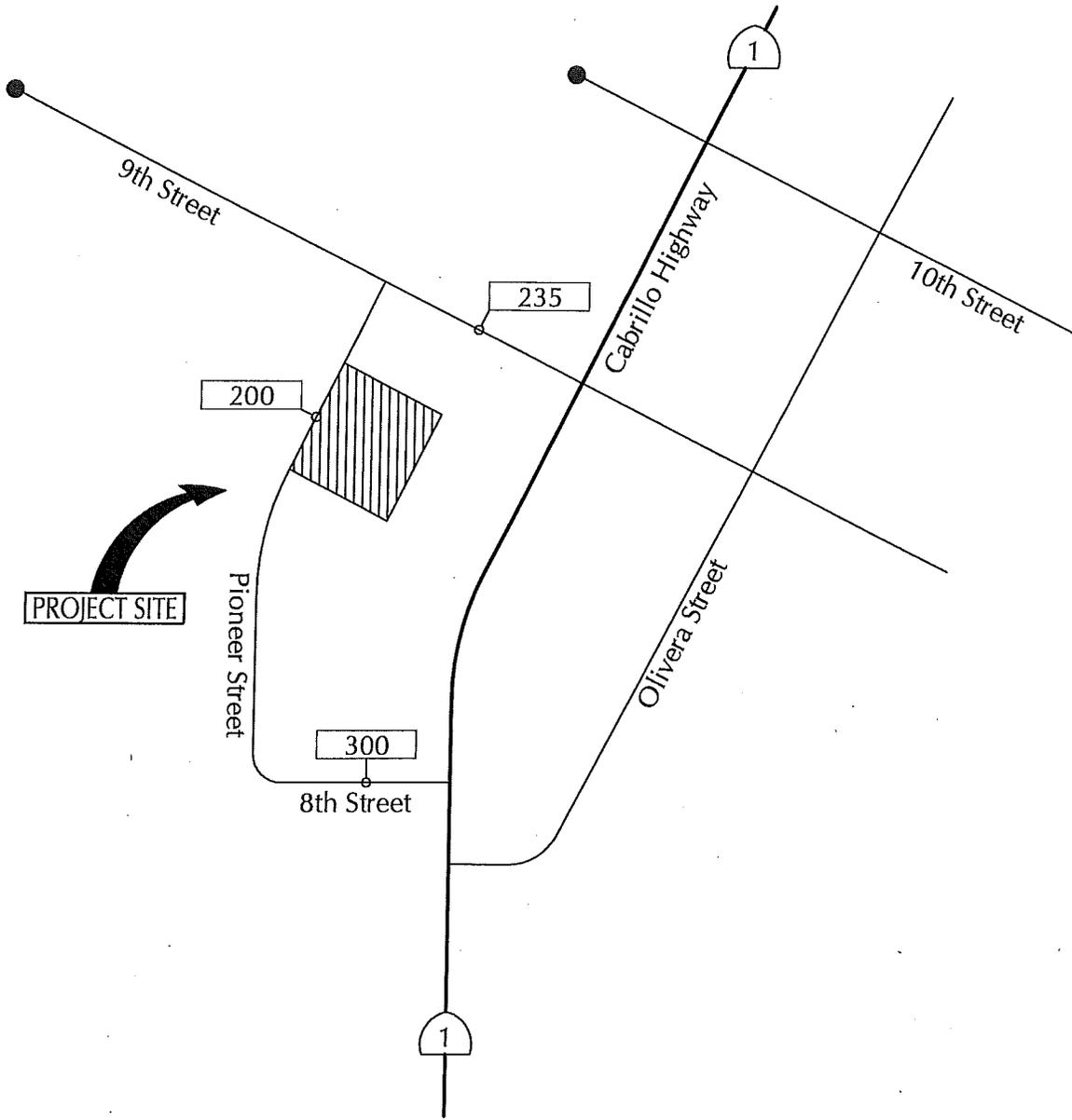


ASSOCIATED
TRANSPORTATION
ENGINEERS

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

FIGURE 3

MMF - #15057



PROJECT SITE

LEGEND

X - Average Daily Traffic Volume

N
NOT TO SCALE

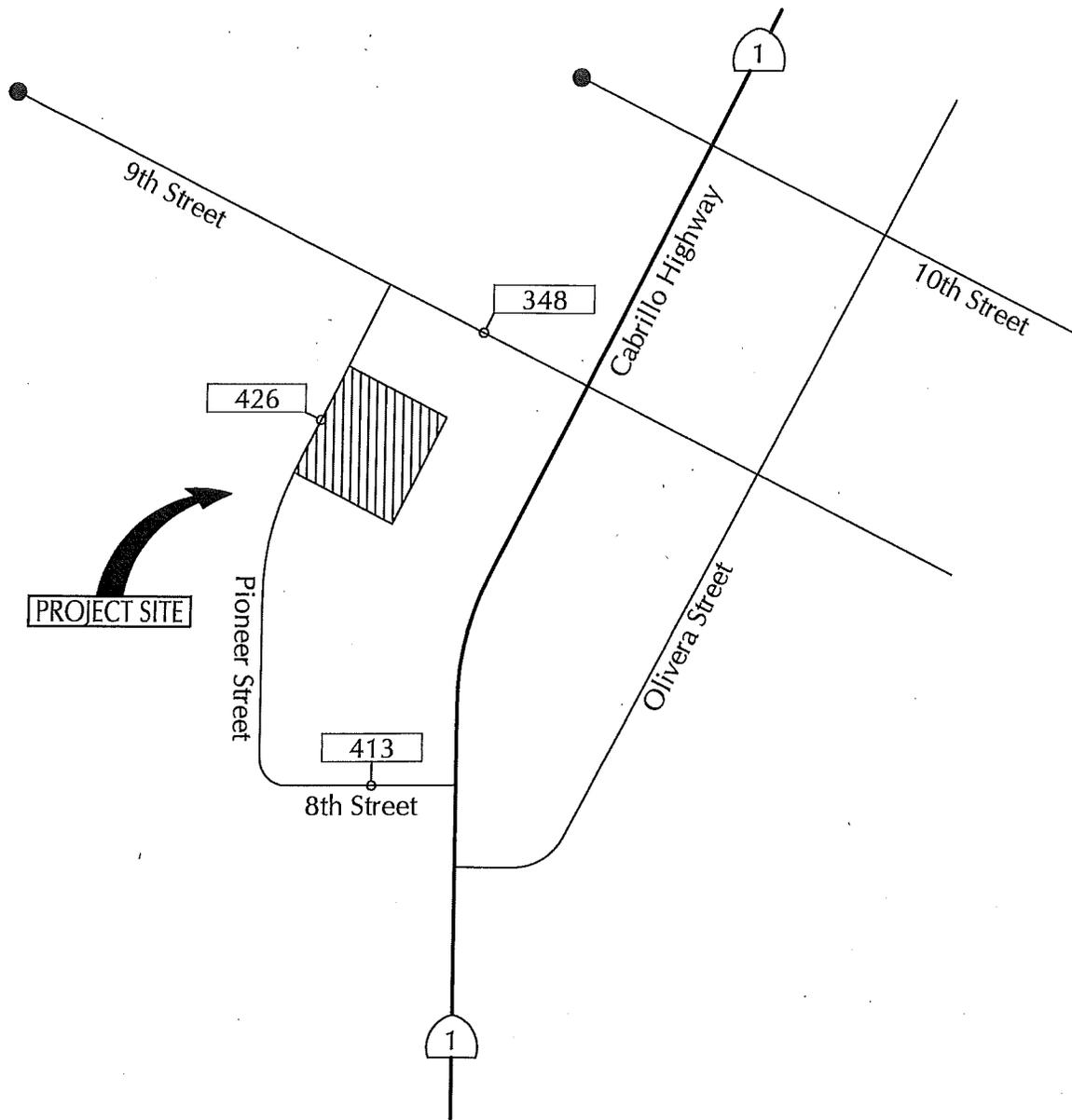


ASSOCIATED
TRANSPORTATION
ENGINEERS

EXISTING TRAFFIC VOLUMES

FIGURE 4

MMF - #15057



PROJECT SITE

N
NOT TO SCALE

LEGEND

X - Average Daily Traffic Volume

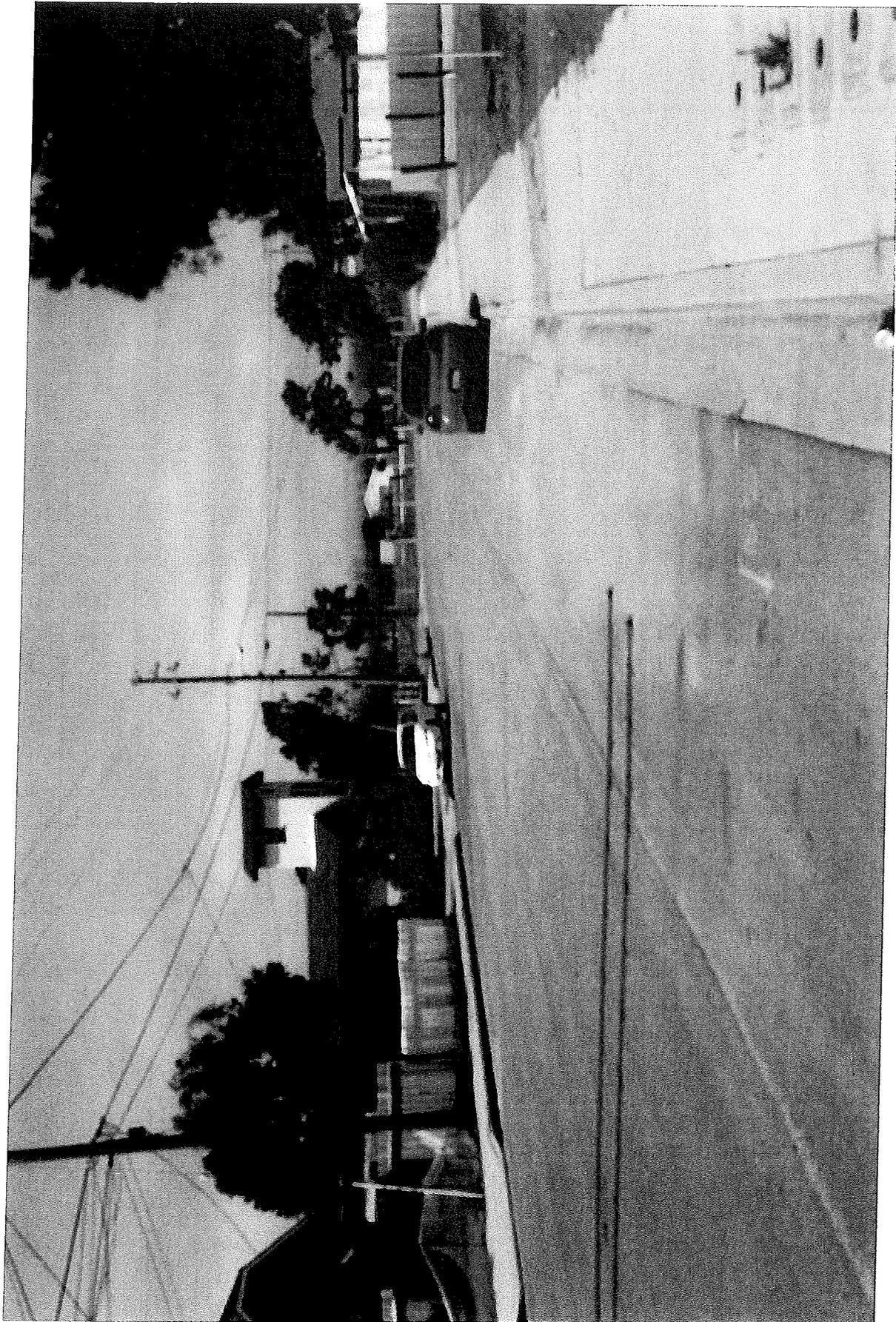


ASSOCIATED
TRANSPORTATION
ENGINEERS

EXISTING + PROJECT TRAFFIC VOLUMES

FIGURE 5

MMF - #15057

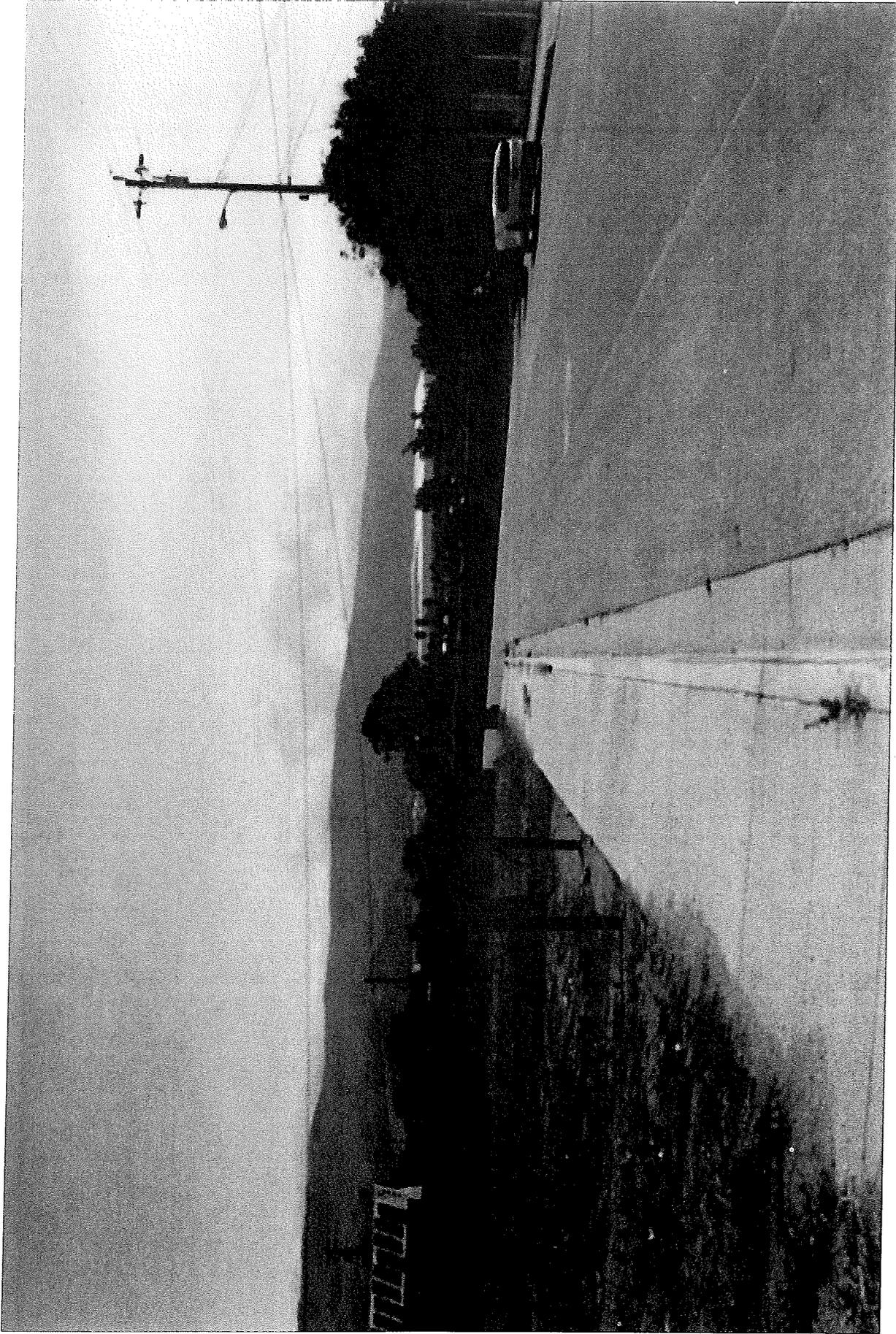


ASSOCIATED
TRANSPORTATION
ENGINEERS

NORTHERN PROJECT DRIVEWAY - SIGHT DISTANCE TO THE NORTH - 285 FEET

PHOTO A

MMF - #15057



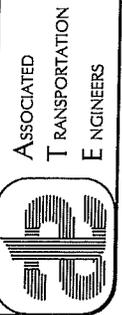
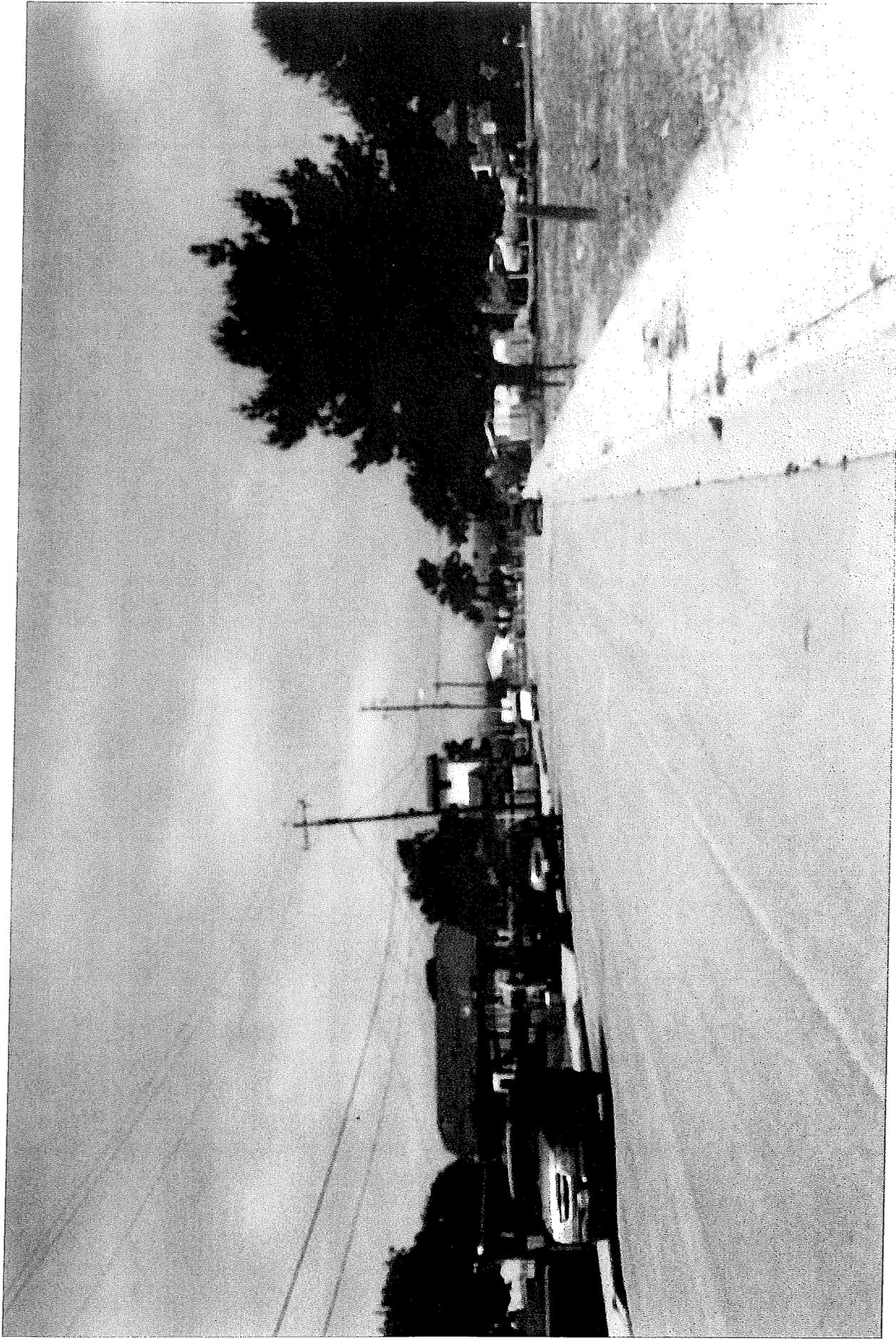
ASSOCIATED
TRANSPORTATION
ENGINEERS



NORTHERN PROJECT DRIVEWAY - SIGHT DISTANCE TO THE SOUTH - 215 FEET

PHOTO B

MMF - #15057

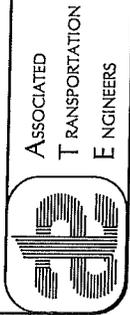


ASSOCIATED
TRANSPORTATION
ENGINEERS

SOUTHERN PROJECT DRIVEWAY - SIGHT DISTANCE TO THE NORTH - 415 FEET

PHOTO C

MMF - #15057



ASSOCIATED
TRANSPORTATION
ENGINEERS

SOUTHERN PROJECT DRIVEWAY - SIGHT DISTANCE TO THE SOUTH - 140 FEET

PHOTO D

MNF - #15057

18.52.121 Height requirements.

A. In all districts, fences and walls over 6 feet in height shall not be constructed within any yard setbacks required by Sections 18.52.040 through 18.52.080 inclusive of this chapter. Any wall or fence over 6 feet in height regardless of where located shall be deemed a structure and shall be subject to all regulations requiring issuing of a building permit or a zoning permit as required under the provisions of Sections 18.12.010 and 18.12.020 of this title.

B. In all R-1, R-1-M, R-2, and R-3 districts, a wall, fence or hedge shall not be constructed or allowed to grow over 3 feet in height within the front yard setback of any lot as required by Sections 18.52.040 through 18.52.080, inclusive of this chapter and Section 18.24.070 of this title except for the purpose of providing a screen for a trash enclosure.

C. Corner Lots. In all R-1, R-1-M, R-2 and R-3 districts, no fence, hedge or screen wall shall be permitted to exist in excess of 3 feet in height within 60 feet of the street corner measured from the edge of the pavement; or which otherwise impairs the vision of a driver of a vehicle approaching the intersection within said 60 feet. The City Building Official shall have discretion to further limit the height of the fence, hedge or screen wall to prevent such impairment of vision.

D. Non-Corner Lots. In all R-1, R-1-M, R-2 and R-3 districts, a fence, hedge or screen wall may be permitted to exist to a maximum height of 4 feet if the plant and/or construction material is of a nature to permit visibility through the same by vehicular traffic on the adjacent roadway. Solid fences, hedges and screen walls higher than 3 feet shall not be permitted. The City Building Official may impose reasonable maintenance conditions on any permit to construct a fence, hedge or screen wall to assure that adequate visibility is continuously maintained. (Ord. 2000-348 §1; Ord. 87-276)

View the [mobile version](#).



April 23, 2015

Mr. Robert Montoya, PE
Civil Design Solutions
PO Box 207
Arroyo Grande, CA 93421

RE: Review of Impacts to City of Guadalupe Wastewater Collection System - Pioneer Apartments

1. INTRODUCTION

Michael K. Nunley & Associates (MKN) was retained by the City of Guadalupe to analyze the potential impacts to the City's wastewater collection system resulting from the proposed Pioneer Street Apartments (Development). The scope of services for this project included the following:

- Identify current wastewater flows to Pioneer Lift Station
- Estimate future wastewater flows to Pioneer Lift Station (from Pioneer Street Apartments)
- Analyze and provide opinion on lift station adequacy under existing and proposed flow conditions

This report only evaluates the potential collection system impacts from the Development and does not evaluate the potential impacts to the City's water distribution system.

2. OVERVIEW

Based on the Pioneer Street Apartments Preliminary Utility Plan provided by Civil Design Solutions, the proposed Development will include the construction of two buildings with 17 units per building for a total of 34 units (with 3 people per unit) located on Pioneer Street. The apartment complexes will occupy APN 115-092-001 and APN 115-092-003 and will connect to the City's existing 10-inch gravity sewer on Pioneer Street. The proposed Development is located upstream of the Pioneer Street Lift Station, which is the oldest lift station in the City's wastewater collection system.

The proposed Development is located upstream of the Pioneer Street Lift Station. The Pioneer Street Lift Station was constructed in the 1950's, is a dry pit/wet pit configuration, and originally served the downtown City service area. Currently the lift station serves 23 commercially zoned parcels (primarily residential homes).

The location of the proposed Development, the Pioneer Lift Station, and associated City wastewater collection facilities are shown in **Figure 1** below.

Figure 1: Pioneer Street Apartments Project Site



3. DOCUMENT REVIEW

MKN completed a comprehensive Wastewater Collection and Treatment Plant Master Plan (Master Plan) in October 2014. All existing wastewater flows, projected population for the proposed Development, and per capita flow projections are based on the information in the Master Plan report.

4. EXISTING AND FUTURE WASTEWATER FLOWS

Based on population information provided Civil Design Solutions and wastewater flow projections from the City's Master Plan, it is estimated that the apartment complexes will have a total occupancy of 102 people with an average daily flow (ADF) of 8,160 gpd (assuming 80 gpcd) and a peak hour flow (PHF) of 38,352 gpd (assuming a peaking factor of 4.7).

The Pioneer Lift Station currently receives 5 gpm of flow during ADF conditions and 22 gpm of flow during PHF conditions. In the Master Plan, it was estimated that the lift station would receive 8 gpm of flow during future ADF conditions and 38 gpm during future PHF conditions.

Based on the identified number of occupants for the Development it is estimated that the existing ADF and PHF wastewater flows would increase to 11 gpm and 49 gpm respectively. Future wastewater flow would also increase to 13 gpm of flow during ADF conditions and 60 gpm of flow during PHF conditions.

5. HYDRAULIC ANALYSIS

The Pioneer lift station has a pumping capacity of 230-250 gpm (simplex operation), which is not optimized for the anticipated current (49 gpm) and future (60 gpm) peak hour wastewater flows as identified in this report. Based on the current configuration of the lift station there is sufficient pumping capacity to serve the proposed Development.

While the Pioneer Lift Station has sufficient pumping capacity for existing and future flows, the pumped flow from the lift station triggers collection system impacts downstream of the lift station. Pumped flow from the Pioneer Lift Station exceeds the capacity of the existing 6-inch community collection system and the City's 12-inch trunk sewer that runs from Highway 1 to the WWTP. In addition, an emergency repair was completed on the Pioneer Lift Station force main because of blockages associated with a long force main alignment and short pumping duration's lack of ability to sufficiently cleanse the force main.

The City's Master Plan identifies this lift station and force main as an existing deficiency and recommends that the lift station be replaced and the force main be reconfigured to eliminate downstream system impacts. It is anticipated that the lift station will be replaced with a smaller submersible lift station to better serve the existing and future flows for the Pioneer Lift Station tributary area. It is also assumed that the force main will be re-routed to Highway 1 to reduce downstream system impacts.

6. CONCLUSIONS

Based on the hydraulic analysis performed for this evaluation, the City's existing collection system and the Pioneer Lift Station have sufficient capacity to serve the proposed Pioneer Street Apartments development. It is recommended that the City continue efforts to address existing deficiencies in portions of the collection system that serve the proposed development, including the Pioneer Lift Station and force main, and the 12-inch trunk main, as recommended in the City's Master Plan.



PRELIMINARY DRAINAGE ANALYSIS

Pioneer Street Apartments
856, 864, and 872 Pioneer Street
CITY OF GUADALUPE, CA

Prepared for
Mr. Steve Simoulis

Prepared By
Civil Design Solutions
Robert J Montoya PE

April 2015



PURPOSE & CRITERIA

The purpose of this analysis is to provide the backup calculations for the proposed drainage system being proposed for the apartment project located at 856, 864, and 872 Pioneer street Guadalupe, CA and meet the City Conditions of Approval for this project.

The City of Guadalupe storm water management requirements for the project are:

1. Infiltrate runoff from the 95th percentile, 24 HOUR storm, over the area which is drained to each infiltration facility, within 72 hours.
2. Meet County of Santa Barbara Criteria for onsite retention.
3. No negative impacts to existing street gutters, roadways, public storm water collection systems or adjacent properties, public or private.

METHODOLOGY

The 24 HOUR - 95th Percentile Storm event was determined to be 1.5". The 95th percentile storm event was applied to the new impervious area of the project and the associated required volume is infiltrated. Underground infiltration chambers were sized based on the required volume to be infiltrated. The overflow pipe is set at the top of chambers so that the overflow will be safely conveyed to the adjacent street gutter or into the storm drain system.

ANALYSIS

The existing impervious area = 0

Total Lot Area = 23,745 SF per lot

The proposed impervious area = 17,225 square feet per lot

The required retention volume = 1.5IN. (17,225 SF) = 2,150 CF per lot

SB County requirements: (.07)(23,745 SF) = 1,662 CF per lot

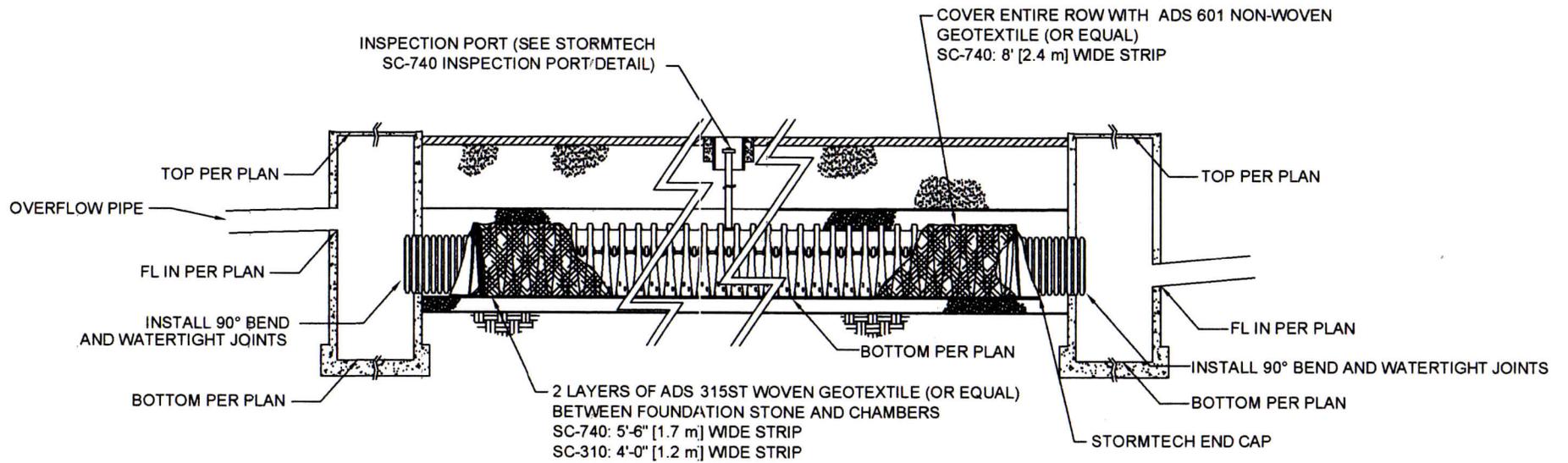
VOLUME PROVIDED IN UNDERGROUND DETENTION = 2,210 CF per lot

RESULTS

The 95TH percentile storm event is infiltrated and volume provided in the underground infiltration system to achieve this. The remaining flow will exit the infiltration system through an overflow pipe and either connect into the existing underground storm drain system or outlet through the curb face.

CONCLUSION

The infiltration requirements are met by the installation of underground detention which will infiltrate the required volume of storm water. The drainage system will convey the 25 year storm under the sidewalk and out of the curbface or into the existing underground stormdrain system. Therefore No negative impacts to existing street gutters, roadways, public storm water collection systems or adjacent properties, public or private are anticipated as a result of this project.



UNDERGROUND RETENTION PROFILE

NOT TO SCALE