ITEM# 1.3

REZONING: A 19.06 acre tract of land, more or less,
being the South 19.06 acres of Lot 28-12,
West Addition to Sharyland of Porciones 53-57
AO-I to P
Vanguard Academy, Inc.
c/o Dr. Narcisco Garcia

REVIEW DATA

The subject site is located approximately 1,028' south of E. Mile 2 Road along the west side of Stewart Road. – see vicinity map.

SURROUNDING ZONES:	N:	R-1A	– Large Lot Single Family
	E:	R-1A	– Large Lot Single Family
	W:	AO-I	– Agricultural Open Interim
	S:	AO-I	– Agricultural Open Interim

EXISTING LAND USES:	N:	Single Family Home
	E:	Single Family Home
	W:	Vacant
	S:	Single Family Home
	Site:	Vacant

FLUM: Lower Density Residential (LDA)

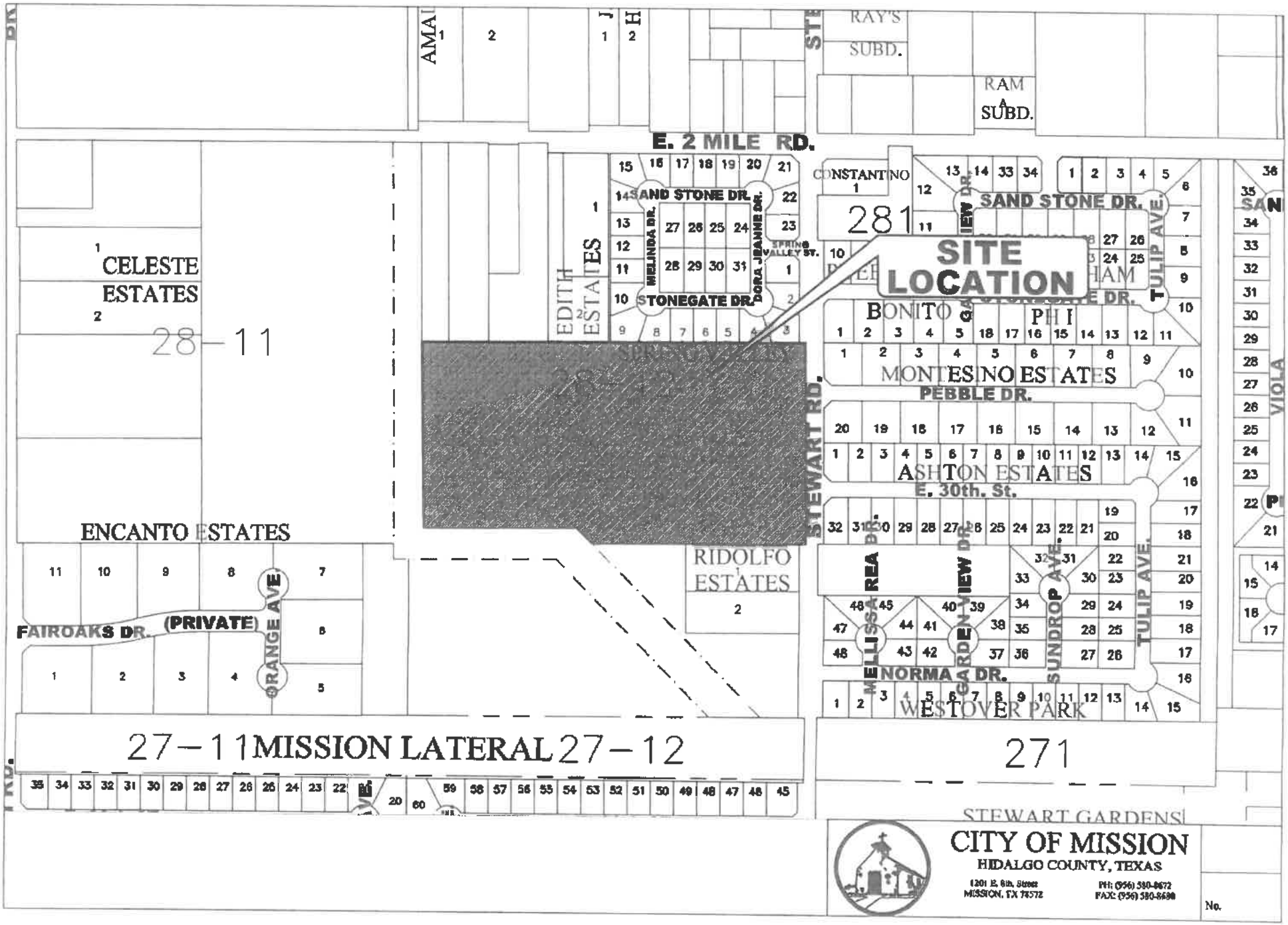
REVIEW COMMENTS: This item was previously considered on December 24, 2022 by the City Council and it was denied due to the substantial amount of opposition to the P (Public) zone. During that meeting the residents submitted a petition reflecting 49% opposition. The concerns expressed in the petition refer to being in contravention to the City's purpose in establishing zone districts, the current road that will be used for ingress and egress is not designated to sustain additional heavy traffic and subsequent congestion, and would further complicate the drainage issues.

Staff notes that schools have been allowed in Agricultural, and Single-Family Residential zones in the past. On August 13, 2012, City Council created a new zone which requires all public facilities such as City, County, Federal buildings, Churches and Schools to fall within this zone. Vanguard wishes to comply with this new zoning requirement. The school use is exactly what the P zone is intended to regulate.

The applicant submitted a traffic count for Stewart Road and a site plan showing compliance with all the required setbacks, two entrances to the school off of Stewart Road.

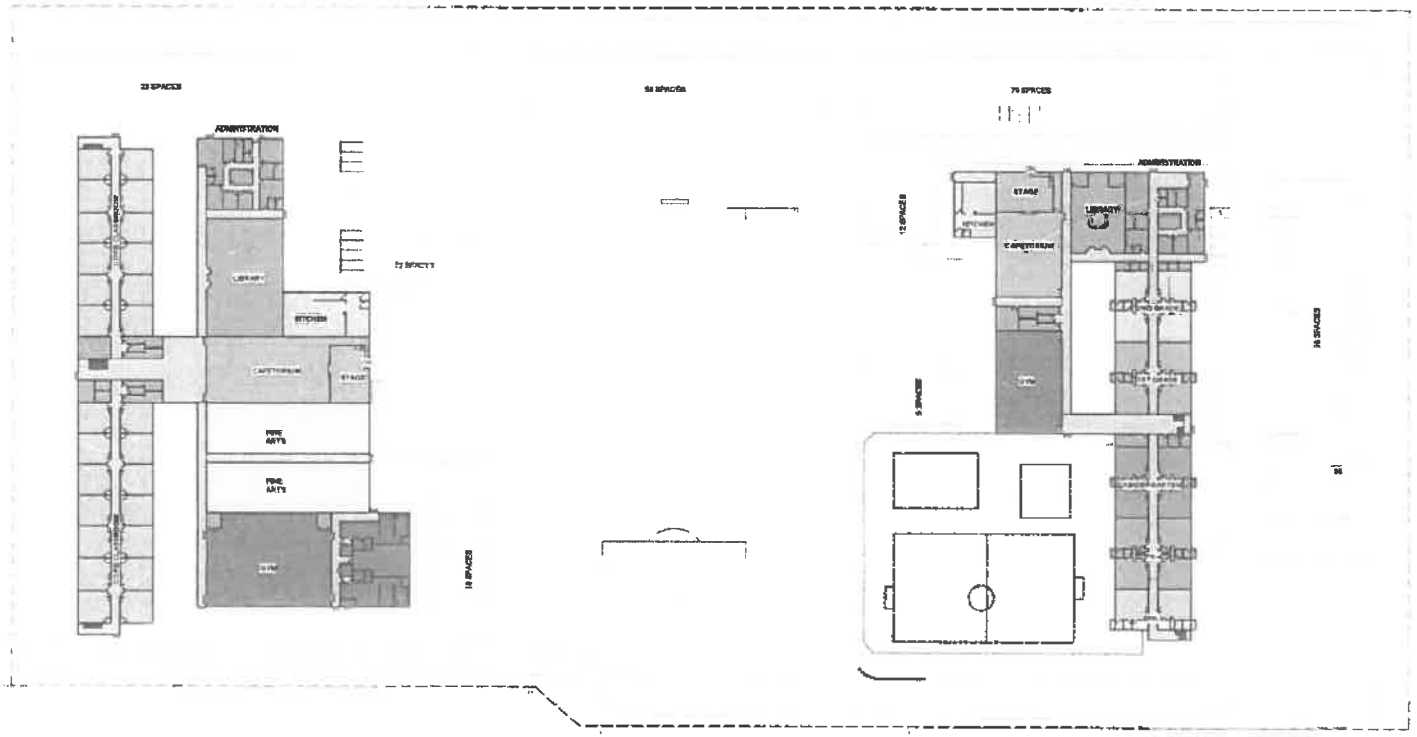
In regards to schools, Former Attorney General, Greg Abbott explained that a home rule city "may enforce its reasonable land development regulations and ordinances against an independent school district for the purpose of aesthetics and the maintenance of property values.

RECOMMENDATION: Staff seeks direction.


E. 2 MILE RD.
RAY'S SUBD.
RAM SUBD.
CELESTE ESTATES
28-11
ENCANTO ESTATES
FAIROAKS DR. (PRIVATE)
ORANGE AVE.
EDITH ESTATES
SAND STONE DR.
STONEGATE DR.
MELINDA DR.
DORA JEANNE DR.
SPRING VALLEY ST.
CONSTANTINO
281
SITE LOCATION
BONITO
MONTESINO ESTATES
PEBBLE DR.
ASHTON ESTATES
E. 30th. St.
STEWART RD.
RIDOLFO ESTATES
MELISSA DR.
GARDEN VIEW DR.
SUNDROP AVE.
TULIP AVE.
NORMA DR.
WESTOVER PARK
27-11 MISSION LATERAL 27-12
271
STEWART GARDENS
VIOLA
CITY OF MISSION
HIDALGO COUNTY, TEXAS
1201 E. 8th. Street
MISSION, TX 78572
PH: (956) 580-8672
FAX: (956) 580-8680
No.


E. MILE 2 ROAD
SITE
LOCATION
STEWART RD.

OPTION 2



Room Legend

- 1ST GRADE
- 2ND GRADE
- ADMINISTRATION
- ART CLASSROOM
- CAFETORIUM
- CIRCULATION
- CLASSROOM
- GYMNASIUM
- KINDERGARTEN
- KITCHEN
- LIBRARY
- PRE-K3
- PRE-K4
- SUPPORT BUILDING SPACES

PARKING

OVERALL ARCHITECTURAL SITE PLAN 1

rofa architects

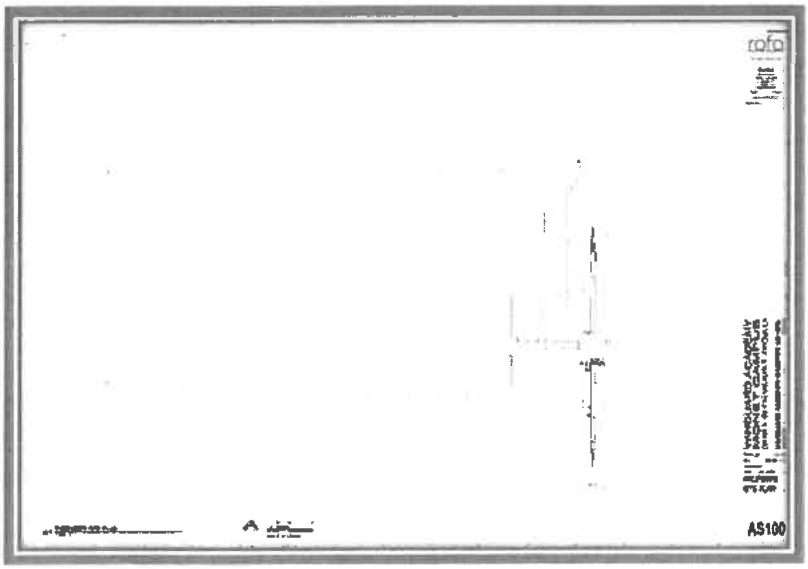
McAllen

VANGUARD ACADEMY
MONET MISSION CAMPUS
VANGUARD ACADEMY CHARTER SCHOOLS

ARCHITECTURAL - SITE PLAN

AS1.1

VANGUARD ACADEMY
MONET SCHOOL
in Mission, Texas



ALDANA ENGINEERING & TRAFFIC DESIGN, LLC

ENGINEERING CONSULTANTS
TEXAS REGISTERED ENGINEERING FIRM # F-9769

922 W Mile 11N
Weslaco, Texas 78599

Tel: (956) 272-1496

www.aetdengineers.com

May 15, 2023

VANGUARD ACADEMY
MONET SCHOOL
MISSION, TEXAS
Traffic Impact Analysis

The Impact of the Proposed Improvements to
Monet School
in Mission, TX

May 15, 2023

ALDANA ENGINEERING & TRAFFIC DESIGN, LLC
ENGINEERING CONSULTANTS
TEXAS REGISTERED ENGINEERING FIRM # F-9769

922 W Mile 11N Rd
Weslaco, Texas 78599

Office: (956) 272-1496

www.aetdengineers.com

EXECUTIVE SUMMARY

Vanguard Academy proposes to expand the Monet campus located on Stewart Rd between E Mile 2 Rd and Norma Dr in the City of Mission, Texas. The new Vanguard Monet campus will be built on an existing 19-acre parcel of land and will include construction of an Elementary school.

Vanguard Monet consists of an existing Elementary School, currently located at a distinct location, with an enrollment of 1,200 students in grades PK through 10th grade. The proposed Elementary school will provide for a maximum enrollment of approximately 1,200 students. Overall, it is expected that after completion of the proposed Elementary school, the total enrollment at Vanguard Monet will be approximately 2,400 students.

This traffic impact study evaluated the impacts of the traffic that will be generated by the proposed Vanguard Monet Campus Project. The conclusions, and recommendations for the proposed project are as follows:

- Analysis of post-project conditions revealed that the existing and projected traffic along Stewart Rd, during the AM peak hour, will remain at a LOS B, which is acceptable. Mitigation improvements are required to provide more capacity for northbound and southbound traffic during morning student drop-off and pick-up movements. Steward Rd should be widened to a 62-foot roadway. This recommendation is graphically depicted in Figure 4 in **Appendix A**.
- The proposed elementary school will provide approximately 3,000 LF of queuing length internally, removing approximately 150 vehicles from Stewart Rd during the peak hour school rush.
- The two-way stop intersection at Stewart Rd and E Mile 2 Rd is expected to deteriorate to a Level of Service D during school hours of operation. Although there aren't sufficient vehicular volumes to justify a traffic signal at this location, a traffic signal should be programmed for the next 2-5 years.
- Security Patrols should direct traffic flows into and out of Monet Academy during morning and afternoon arrival and departure times. This includes the driveways for ingress and egress movements to Monet Elementary.
- With the widening of Steward Rd, the intersection of Stewart Rd and 30th Street should operate adequately at LOS A. However, if excessive delays result from congestion during school hours of operation, a traffic signal should be considered.
- It is recommended that start/end times be staggered by approximately 30 minutes to reduce the number of vehicles queueing on Stewart Rd.

This proposed project will not have a detrimental impact on Stewart Rd, with the mitigations recommended. It is recommended that the proposed Vanguard Monet Elementary School project be approved as proposed with the mitigating recommendations.

1.0 INTRODUCTION

This *traffic impact analysis* was requested to perform an in-depth examination of the traffic to be generated by the proposed Vanguard Monet Elementary Campus located on Stewart Rd, South of E Mile 2 Rd in the City of Mission, Texas.

Monet Elementary campus will be built on nineteen acres of undeveloped land. The campus will include a large gymnasium building, soccer field, parking, and internal circulation drives.

The proposed campus will begin with elementary grade students and will be gradually expanded in phases to accommodate elementary and high school students.

Overall, it is expected that the Vanguard Academy Monet School enrollment will reach a maximum of 1,200 students.

The project site is located on the west side of Stewart Rd, South of E Mile 2 Rd.

The study limits for this project include Stewart Rd within the southern school boundary and E Mile 2 Rd.

Figure 1 in **Appendix A** illustrates the study area for this traffic impact analysis.

1.1 PURPOSE AND SCOPE

The purpose of this study was to evaluate the vehicular impacts of the proposed construction of the Vanguard Monet Elementary School on Stewart Rd.

The scope of this analysis included estimating the trip generation for this project during the A.M. and P.M. peak hours and preparing trip distribution and assignment. The following scenario and locations were evaluated:

The study scenario is as follows:

1. Existing Year 2023
2. Projected Year 2024 with Project

The study intersections were:

1. Stewart Rd at E Mile 2 Rd

The following roadway segments are analyzed:

1. Stewart Rd, south of E Mile 2 Rd

1.2 PROJECT APPROACH

Aldana Engineering & Traffic Design (AETD) received specific information pertaining to this proposed project. The information included the proposed site plan for the proposed construction of Vanguard Monet Campus.

Next AETD calculated the trip generation based on Trip Generation Rates published by the Institute of Transportation Engineers, for the A.M. peak hour and the P.M. peak hour of generator.

Then AETD prepared trip distribution and trip assignment for the proposed project. The trip distribution and trip assignment considered the proposed access locations and specific arriving and departing movements in estimating the arrival and departure patterns.

Following this, AETD added the newly assigned trips to the A.M peak hour traffic volumes--the A.M. peak hour was the worst case as determined during the trip generation calculations and the existing traffic counts.

Finally, AETD evaluated the Level of Service (LOS) at the study intersections and roadway segment. LOS analysis was performed for existing and post project conditions.

This study evaluated traffic operations during the roadway peak hours of 7:00 A.M. to 9:00 A.M. and 3:00 P.M. to 5:00 P.M. timeframe. The A.M. peak hour was determined to be the worst case, and thus it was used to perform specific analyses throughout.

2.0 EXISTING CONDITIONS

This section covers the existing conditions within the study area and the existing development site access and circulation conditions. The existing conditions were verified in field visits conducted by Aldana Engineering & Traffic Design on February 6th and 10th, 2023.

2.1 EXISTING ROADWAY CONDITIONS

Stewart Rd

The Stewart Rd segment under consideration runs North and South between Norma Dr and E Mile 2 Rd. Stewart Rd is 55-foot wide and presently is marked to accommodate one lane of traffic in each direction. The roadway is presently centered on eighty feet right-of-way. Stewart Rd is classified as a minor collector road and there are no programmed or planned roadway improvements near the project site. The existing speed limit along Stewart Rd South of E Mile 2 Rd is 40 MPH.

Per traffic counts performed by AETD, Stewart Rd carries approximately 6,200 vehicles per day.

2.2 EXISTING SITE ACCESS AND CIRCULATION CONDITIONS

The project site is located on approximately nineteen acres of undeveloped land. Monet Elementary School will be located on the West side of Stewart Rd and will provide one ingress access driveway and one egress access driveway along Stewart Rd.

Monet Elementary School will be accessed from one driveway along southbound Stewart Rd. The ingress access point provides two inbound lanes with sufficient vehicle queue storage. The egress driveway intersects Stewart Rd/30th St and may be controlled by stop signs on the eastbound and westbound approaches.

The proposed Monet school will provide approximately 3,000 LF of queue storage length internally. This is expected to remove approximately 150 vehicles from Stewart Rd during the peak hours when student pickup and drop-off operations are occurring.

3.0 TRIP CHARACTERISTICS

This section covers the trip characteristics of the proposed Monet Elementary School that will be added to Stewart Rd. It is projected that the proposed improvements will trigger approximately 2,300 daily vehicle trips. Trip generation, trip distribution, and trip assignment are covered.

3.1 TRIP GENERATION

3.1.1 Input Parameters

The proposed Monet Elementary school improvements will provide for a maximum enrollment of 1,200 students and is expected to generate additional vehicle trips on Stewart Rd. The corresponding Institute of Transportation Engineers (ITE) land use code and independent variable, namely, number of students are summarized and illustrated in **Table 3.1-1** below.

Table 3.1-1
Proposed Land Use

Land Use	ITE Code	# Of Students
538-Charter School (K-12)	538	1,200

Institute of Transportation Engineers (ITE)

3.1.2 Trip Generation Values

Table 3.1-2 shows the estimated trip generation values for the proposed Monet Elementary School Project. These values were estimated based on student enrollment and vehicle counts at the proposed Monet Campus.

Table 3.1-2
Trip Generation Values

Land Use	Trip Generation								
	Average Weekday			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
538–Charter School (K-12)	1,156	1,156	2,312	623	552	1,175	456	457	913

Aldana Engineering & Traffic Design

3.2 TRIP DISTRIBUTION

Vanguard Monet Campus masterplan has developed a well-established traffic flow plan for drop-off and pick-up movements. The proposed traffic flow provides one inbound lane of traffic at both ingress and egress locations. Inbound traffic will come in off two driveways on Stewart Rd and will exit back to Stewart Rd at the intersection of 30th St.

Parent drop-offs and pick-ups for the elementary school occur via three driveways on Stewart Rd. Traffic circulates in a counterclockwise flow and provides internal queueing. The traffic circulation will remain unchanged for the existing elementary school.

Parent drop-offs and pick-up movements for the elementary school will be accommodated by the driveway furthest north via counterclockwise flow. Vehicles will exit onto Stewart Rd on the south side of campus at 30th St.

Figure 2 in **Appendix A** graphically illustrates the trip distribution for the proposed Monet School Campus.

3.3 TRIP ASSIGNMENT

It was observed that the worst hour of the day was the AM peak hour. During the AM peak hour, it is expected that out of the projected 1,175 vehicles, approximately 623 will be entering and 552 will be exiting. **Table 3.3-1** shows AM peak hour trip assignments at each campus access location.

Table 3.3-1
AM Peak Hour Trip Assignments

Access Driveways Distribution	Entering	Exiting
Driveway#1	503	432
Driveway#2	120	120
TOTAL	**623**	**552**

Figure 3 in **Appendix A** graphically illustrates the trip assignment for this project.

4.0 ANALYSES

This section presents analysis of the traffic volumes and Level of Service for the existing 2023 and projected 2024 conditions—when the project is expected to be completed and fully operational.

4.1 TRAFFIC VOLUMES

Twenty-four-hour counts were collected for Stewart Rd, south of E Mile 2 Rd. The ADT counts were collected between Tuesday, February 7th and Thursday, February 9th, 2023. Projected 2024 conditions were developed using existing traffic counts as well as trip assignment volumes. These volumes serve as the input parameters for the Level of Service analysis to follow.

Table 4.1-1 shows average daily traffic (ADT) counts collected.

Table 4.1-1
ADT Traffic Counts

		ADT	
No.	**Roadway Segment**	**NB/SB**	**TOTAL**
1	Stewart Rd	3,048 / 3,168	**6,216**

ALDANA ENGINEERING & TRAFFIC DESIGN

Turning movement counts (TMC) were also collected at the intersection of Stewart Rd and E Mile 2 Rd. TMC's were collected on Wednesday, February 8th, during the AM and PM Peak Hours.

TMC counts during the AM and PM peak hours are included in Appendix B.

4.2 LEVEL OF SERVICE ANALYSIS

Level of Service (LOS) is defined as a quality measure describing operational conditions within a traffic stream, generally in terms of service measures such as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from "A" to "F", with LOS "A" representing the best operating conditions and "F" the worst. Each LOS represents a range of operating conditions and the driver's perception of those conditions. A LOS "C" rating is commonly considered acceptable.

4.2.1 INTERSECTION ANALYSIS

Synchro Software was used to analyze existing and projected conditions for the study intersection during the A.M. peak hour of school operation.

LOS analysis for existing conditions at the study intersection shows that operations at this intersection is acceptable.

Table 4.2-1 summarizes the LOS result per approach for analysis of the intersection based on the existing A.M. peak hour traffic (worst case).

Table 4.2-1
Existing Intersection Level of Service

Intersection LOS Analysis (Unsignalized)			
		A.M. Peak Hour	
No.	Intersection	ICU (%)	LOS
1	Stewart Rd at E Mile 2 Rd	59.1	B

Reported Level of Service is for unsignalized Intersection, Synchro Software

A LOS analysis of post project conditions was also performed at the study intersection.

Per analysis of conditions after the project is completed, the study intersection is projected to operate at an unacceptable Level of Service as shown in **Table 4.2-2** below.

Table 4.2-2
Post-Project Intersection Level of Service

	Intersection LOS Analysis (Unsignalized)		
		A.M. Peak Hour	
No.	Intersection	ICU (%)	LOS
1	Stewart Rd at E Mile 2 Rd	75.3	D

Reported Level of Service is for unsignalized Intersection, Synchro Software

Synchro LOS Output Sheets are found in **Appendix C**.

4.2.2 ROADWAY SEGMENT ANALYSIS

A Volume to Capacity Ratio analysis was used to analyze existing and projected conditions for the study roadway segments. LOS analysis for existing conditions for roadway segments resulted in acceptable LOS. All existing roadways presently operate at LOS B.

Table 4.2-3 summarizes the Level of Service result for each study roadway segment for existing conditions.

Table 4.2-3
Existing Roadway Segment Level of Service

Roadway Segment LOS Analysis			
No.	Segment	Existing	
		V/C	LOS
1	Stewart Rd	0.62	B

ALDANA ENGINEERING & TRAFFIC DESIGN

Per analysis of conditions after the proposed Vanguard Monet Project is completed, the study roadway segments are projected to operate at a good LOS as shown in **Table 4.2-4** below.

Table 4.2-4
Projected Roadway Segment Level of Service

Roadway Segment LOS Analysis			
No.	Segment	Existing	
		V/C	LOS
1	Stewart Rd	0.67	B

ALDANA ENGINEERING & TRAFFIC DESIGN

Table 4.2-4 above shows that Stewart Rd has sufficient roadway capacity to handle projected traffic.

4.3 TRAFFIC OPERATIONS

It is possible that traffic flows during afternoon peak hour of school operations may cause traffic build up on Stewart Rd. This is due to current parent trends to arrive early to pick up students in the afternoon.

The morning school operations during the parent/student drop-offs, typically operate efficiently.

However, during the afternoon release times, vehicles may queue on Stewart Rd up to an hour in advance and possibly create traffic flow issues. The southbound Stewart Rd queues hinder southbound flow as well as traffic safety. This is typical of most school campuses as this problem persists for approximately 45 minutes until vehicle queues begin to move when students are released, and parents begin picking up students.

Post Project Traffic Operations

Traffic flowing into and out of the Monet School may cause traffic queues on Stewart Rd to build up.

Internal queue storage will be provided to accommodate school traffic internally and reduce queueing on Stewart Rd. Stewart Rd should be widened to accommodate an additional southbound lane and a dedicated left turn lane should be added to provide for northbound left turn movements into the proposed elementary school. See recommendations depicted in Figure 4 in **Appendix A**.

If the afternoon pickup movement causes detrimental impact to traffic operations on Stewart Rd, the use of staggered start/end times could be implemented to reduce the number of vehicles that queue along Stewart Rd and help with congestion during peak school hours of operation.

5.0 CONCLUSIONS & RECOMMENDATIONS

This *traffic impact analysis* was requested to perform an in-depth examination of the traffic to be generated by the proposed Vanguard Monet Elementary School in Mission, Texas. This study evaluated existing and post project conditions to determine if any mitigations are necessary resulting from the construction of this project. The study findings and recommendations are as follows:

Vanguard Monet Elementary School Trip Generation (2023):

- Average Weekday: **2,312** Trips
- A.M. Peak Hour: **1,175** Trips
- P.M. Peak Hour: **913** Trips

Existing Conditions Analyses:

Stewart Rd

- Stewart Rd presently carries approximately 6,216 vehicles per day in the segment south of E Mile 2 Rd. Stewart Rd has ample capacity and can carry up to 10,000 vehicles per day. Additionally, the Stewart Rd study segment operates at LOS "B" which is an adequate LOS.

Study Intersection

- The intersection of Stewart Rd at E Mile 2 Rd presently operates at LOS "B" during morning peak period which is adequate.

Post Project Analyses:

Stewart Rd

- Analysis of projected conditions for the study roadway segment results in an acceptable Level of Service. Stewart Rd segment is expected to continue operating at an adequate LOS of "B". The roadway may experience traffic queues between E Mile 2 Rd Dr and Norma Dr due to Vanguard Monet Academy.

- Study Intersection
    - After the project is complete, the unsignalized intersection of Stewart Rd and E Mile 2 Rd is projected to operate at LOS "D" which is unacceptable.

Proposed Vanguard Monet Elementary School improvements include internal driveways that provide approximately 3,000 LF storage length. It is estimated that approximately 150 vehicles will be stored within the Monet Campus proposed internal loops for drop-off and pick-up maneuvers and will be subtracted from possible queues on Stewart Rd.

Recommendations

The following recommendations are made to improve traffic operations along Stewart Rd at the project site:

- Stewart Rd should be widened to a 62-foot pavement width to accommodate three southbound lanes, and two northbound lanes. This improvement will provide sufficient capacity for traffic moving along Stewart Rd during morning and afternoon student drop-off and pick-up movements. This improvement would improve the level of service from LOS "D" to LOS "A". This recommendation is graphically depicted in Figure 4 in **Appendix A.**
- Security Patrols should direct traffic flows into and out of Vanguard Monet Elementary School during morning and afternoon arrival and departure times.
- It is anticipated that vehicular queues will form along southbound Stewart Rd between E Mile 2 Rd and Norma Dr during the afternoon release hours as parents may begin to arrive approximately 45 minutes to an hour prior to student release time. If this occurs, to help offset this impact, it is recommended that start/end times be staggered by approximately 30 minutes to reduce the number of vehicles queueing on Stewart Rd.
- The proposed elementary school will provide approximately 3,000 LF of queuing length internally, removing approximately 150 vehicles from Stewart Rd during the peak hour school rush.
- The two-way stop intersection at Stewart Rd and E Mile 2 Rd is expected to deteriorate to a Level of Service D during school hours of operation. Although there aren't sufficient vehicular volumes to justify a traffic signal at this location, a traffic signal should be programmed for the next 2-5 years.
- With the widening of Steward Rd, the intersection of Stewart Rd and 30th Street should operate adequately at LOS A. However, if excessive delays result from congestion during school hours of operation, a traffic signal should be considered.

Overall Impacts and Conclusion:

- Based on traffic analyses for the study roadway segments and study intersection, it is expected that this project **will not have a detrimental impact on Stewart Rd with the recommended improvements.** As a result, it is recommended that the mitigating improvements be implemented with this project.

- **This project should be approved with the mitigating recommendations presented herein.**

6.0 PROJECT TEAM AND REFERENCES

Project Team:

Project Manager:	Angela Gonzalez **VANGUARD ACADEMY**
Traffic Engineer:	Albert J. Aldana, P.E. **ALDANA ENGINEERING & TRAFFIC DESIGN, LLC**

References:

HCM2010 Highway Capacity Manual, Transportation Research Board, 2010.

Procedures for Establishing Speed Zones, Texas Department of Transportation, 2015.

Synchro plus SimTraffic, software, Version 10.0, Trafficware, 2017.

Trip Generation Manuel, Institute of Transportation Engineers (ITE)

Texas Manual of Uniform Traffic Control Devices (TxMUTCD), Texas Department of Transportation, 2011.

APPENDIX A

FIGURES

VICINITY MAP

N.T.S.

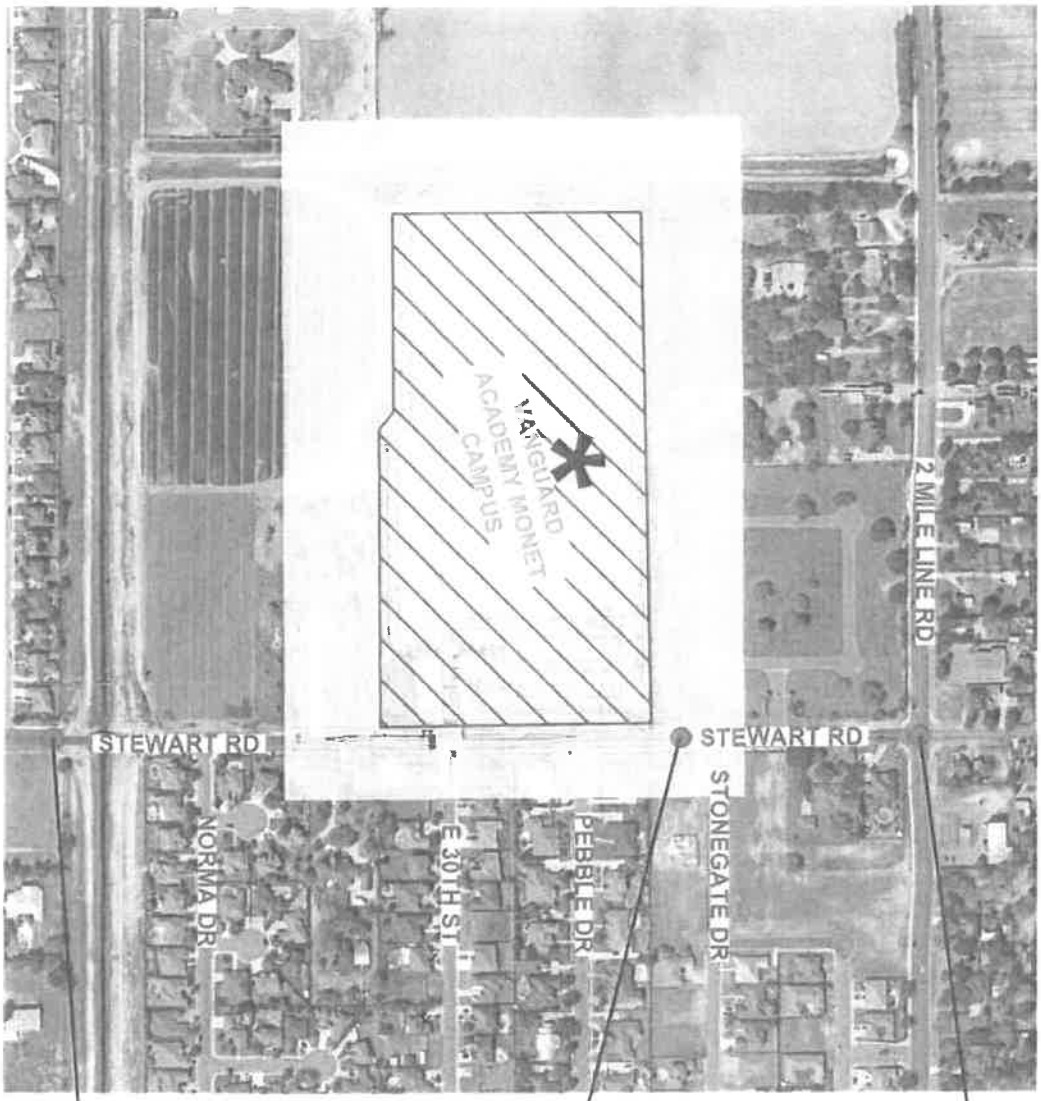
TRIP GENERATION			
VANGUARD ACADEMY MONET CAMPUS			
VEHICLE TRIPS GENERATED	* AM PEAK HOUR (IN/OUT)	PM PEAK HOUR (IN/OUT)	AVERAGE WEEKDAY (IN/OUT)
ITE CODE 538 CHARTER K-12 SCHOOL	913 (484/429)	687 (344/343)	1,850 (925/925)
SUMMARY	913 (484/429)	687 (344/343)	1,850 (925/925)

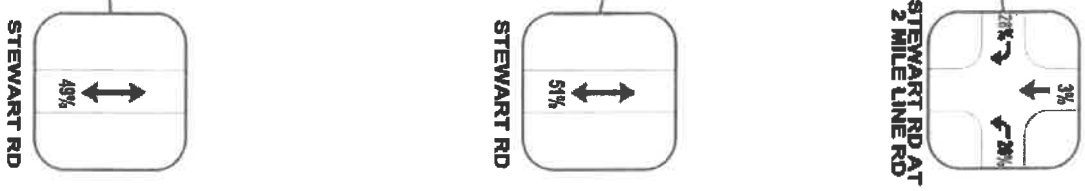
VANGUARD ACADEMY MONET CAMPUS TIA

VICINITY MAP

City: CITY OF MISSION, TEXAS
Project: VANGUARD ACADEMY MONET CAMPUS TIA
Client: MELDEN & HUNT, INC.
Title: VICINITY MAP
Exhibit No. 1 | Date: 02-10-23 | Project Number: 220315

ALDANA ENGINEERING & TRAFFIC DESIGN, LLC
TRAFFIC ENGINEERING CONSULTANTS
922 W Mile 11 N
Weslaco, Texas 78599
Off: (956) 279-1496
Texas Registered Engineering Firm F-17869
traffic@aetdengineers.com





TRIP DISTRIBUTION

N.T.S.

ALDANA ENGINEERING & TRAFFIC DESIGN, LLC
TRAFFIC ENGINEERING CONSULTANTS
922 W Mile 11 N
Weslaco, Texas 78599
Ofc (956) 272-1496
Texas Registered Engineering Firm F-9789
traffic@aldaengineers.com

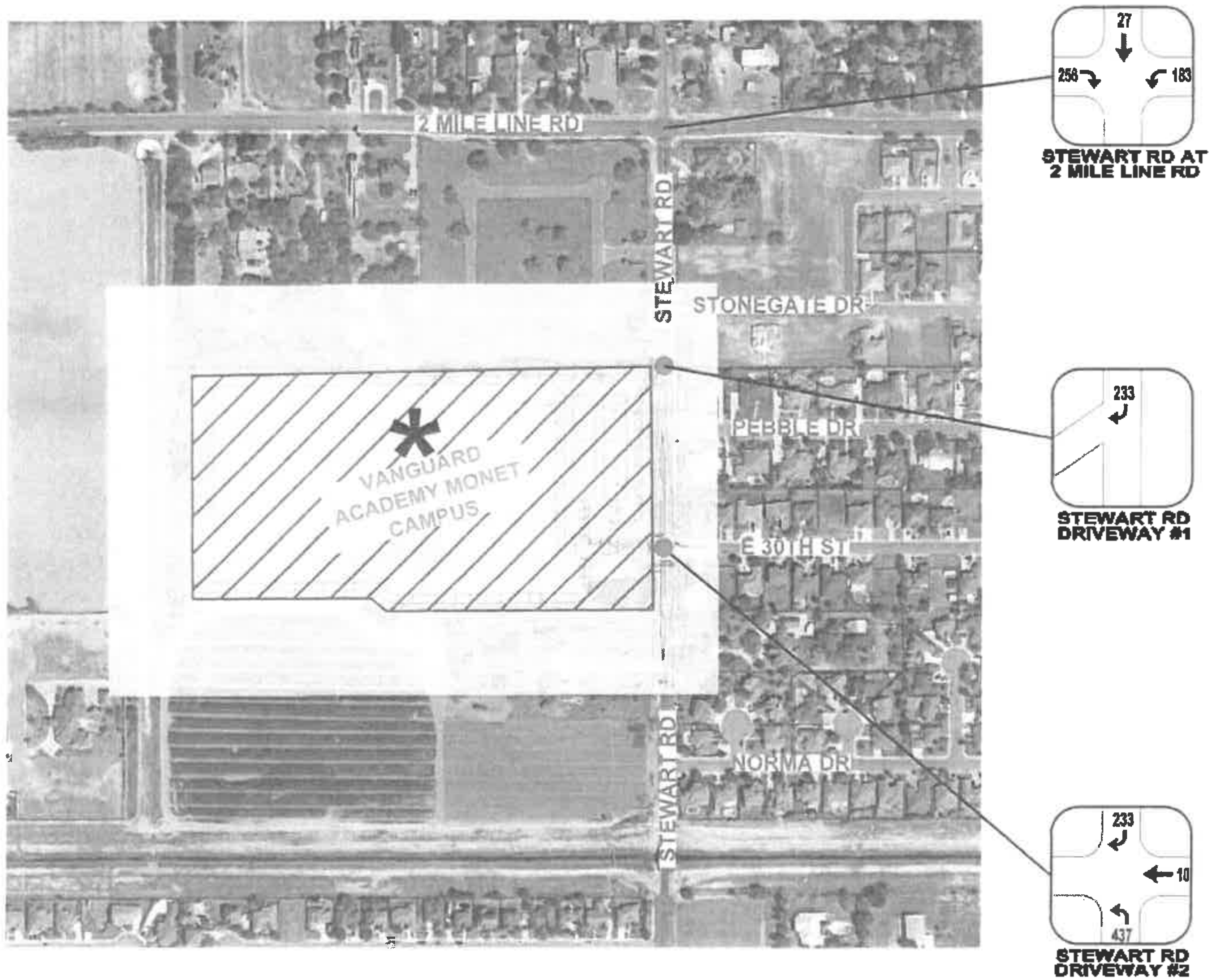
VANGUARD ACADEMY MONET CAMPUS TIA

TRIP DISTRIBUTION

City:	CITY OF MISSION, TEXAS
Project:	VANGUARD ACADEMY MONET CAMPUS TIA
Client:	MELDEN & HUNT, INC.
Title:	TRIP DISTRIBUTION

Exhibit No.	Date	Project Number:
2	02-10-23	220315

TRIP ASSIGNMENT



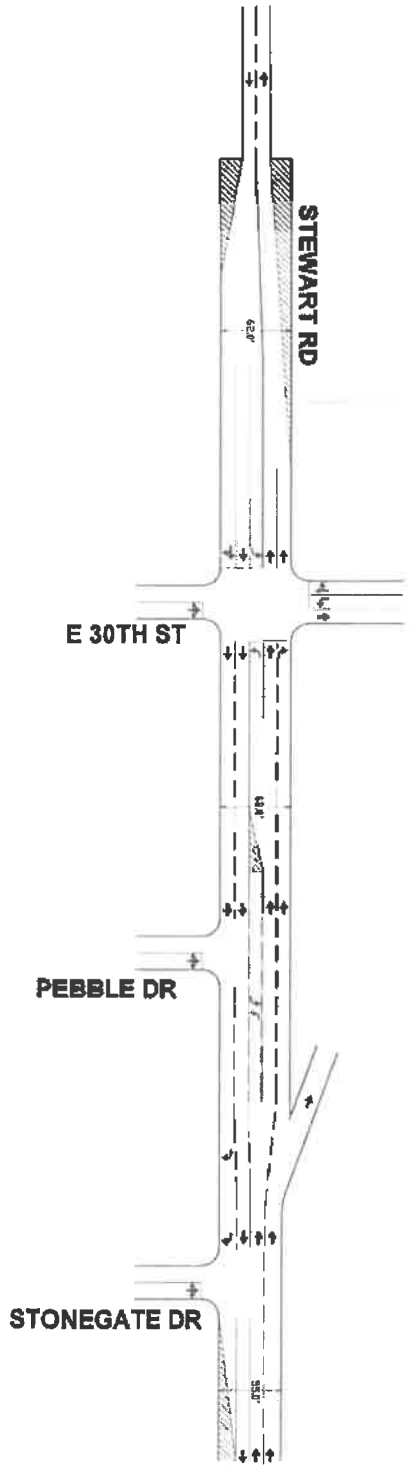
ALDANA ENGINEERING & TRAFFIC DESIGN, LLC

928 W Mile 11 N
Weslaco, Texas 78599
OE: (956) 279-1496

VANGUARD ACADEMY MONET CAMPUS TIA

TRIP ASSIGNMENT

City:	CITY OF MISSION, TEXAS
Project:	VANGUARD ACADEMY MONET CAMPUS TIA
Client:	MELDEN & HUNT, INC.
Title:	TRIP ASSIGNMENT
Exhibit No.: 2	Date: 02-10-23
Project Number:	220315



RECOMMENDATIONS

1"=100'

ALDANA ENGINEERING & TRAFFIC DESIGN, LLC
TRAFFIC ENGINEERING CONSULTANTS
992 W Mile 11 N
Weslaco, Texas 78599
Off: (956) 973-1406
Texas Registered Engineering Firm F-3762
traffic@aedengineers.com

VANGUARD ACADEMY MONET CAMPUS TIA

RECOMMENDATIONS

City:	CITY OF MISSION, TEXAS
Project:	VANGUARD ACADEMY MONET CAMPUS TIA
Client:	MELDEN & HUNT, INC.
Title:	RECOMMENDATIONS

Exhibit No.	Date	Project Number
4	02-14-23	220315

APPENDIX B

TRAFFIC DATA

TURNING MOVEMENT COUNTS
Stewart Rd at 2 Mile Line Rd AM

TimePeriod	NBL	NBT	NBR	SBL	SBT	SBR	WBL	WBT	WBR	EBL	EBT	EBR	Total Vehicles
2/8/23 7:00 AM	9	24	21	2	28	7	7	41	2	3	60	5	209
2/8/23 7:15 AM	17	28	54	15	43	18	17	58	1	8	105	11	375
2/8/23 7:30 AM	19	44	57	7	40	22	29	37	1	7	128	14	405
2/8/23 7:45 AM	8	33	46	10	49	17	21	56	2	18	126	19	405
Totals	**53**	**129**	**178**	**34**	**160**	**64**	**74**	**192**	**6**	**36**	**419**	**49**	**1394**
2/8/23 8:00 AM	17	19	30	6	44	9	30	48	6	9	111	8	337
2/8/23 8:15 AM	8	33	15	9	43	6	30	39	2	5	105	6	301
2/8/23 8:30 AM	5	25	16	10	41	3	17	29	1	5	62	16	230
2/8/23 8:45 AM	4	18	12	4	21	6	13	25	1	5	56	5	170
Totals	**34**	**95**	**73**	**29**	**149**	**24**	**90**	**141**	**10**	**24**	**334**	**35**	**1038**
Combined Total	**87**	**224**	**251**	**63**	**309**	**88**	**164**	**333**	**16**	**60**	**753**	**84**	**2432**

TURNING MOVEMENT COUNTS
Stewart Rd at 2 Mile Line Rd PM

TimePeriod	NBL	NBT	NBR	SBL	SBT	SBR	WBL	WBT	WBR	EBL	EBT	EBR	Total Vehicles
2/8/23 3:00 PM	5	20	14	3	22	5	14	48	0	1	38	2	172
2/8/23 3:15 PM	9	39	13	6	18	2	30	43	4	5	51	5	225
2/8/23 3:30 PM	5	31	30	7	23	3	34	58	7	9	64	11	282
2/8/23 3:45 PM	7	38	17	7	22	8	31	66	6	7	68	6	283
Totals	**26**	**128**	**74**	**23**	**85**	**18**	**109**	**215**	**17**	**22**	**221**	**24**	**962**
2/8/23 4:00 PM	7	23	16	5	30	9	16	53	3	7	48	10	227
2/8/23 4:15 PM	8	29	21	6	36	25	32	61	4	13	94	4	333
2/8/23 4:30 PM	8	36	31	8	29	13	33	80	5	16	112	13	384
2/8/23 4:45 PM	7	33	21	4	30	6	22	77	9	12	87	17	325
Totals	**30**	**121**	**89**	**23**	**125**	**53**	**103**	**271**	**21**	**48**	**341**	**44**	**1269**
Combined Total	**56**	**249**	**163**	**46**	**210**	**71**	**212**	**486**	**38**	**70**	**562**	**68**	**2231**

Aldana Engineering & Traffic Design

5832 N FM 88
Weslaco, TX 78596
956-272-1496
aaldana@aetdengineers.com

Site Code: STEWART SO 2 MILE

2/6/2023	2/6/2023		2/7/2023		2/8/2023		2/9/2023		2/10/2023		Weekday Average		2/11/2023		2/12/2023	
Time	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2
12:00 AM			6	19	13	14	14	9			11	14	*	*	*	*
1:00			9	10	8	6	6	10			8	9	*	*	*	*
2:00			6	3	2	6	6	3			5	4	*	*	*	*
3:00			7	7	5	9	6	6			6	7	*	*	*	*
4:00			13	7	16	9	11	9			13	8	*	*	*	*
5:00			31	22	29	20	31	17			30	20	*	*	*	*
6:00			95	93	91	97	88	90			91	93	*	*	*	*
7:00			266	342	295	349	282	349			281	347	*	*	*	*
8:00			262	156	264	191	262	192			263	180	*	*	*	*
9:00			190	64	178	153	179	149			182	122	*	*	*	*
10:00			146	51	147	133	169	143			154	109	*	*	*	*
11:00			159	139	160	145	167	155			162	146	*	*	*	*
12:00 PM			149	164	169	158	148	184			155	169	*	*	*	*
1:00			167	152	190	150	184	193			180	165	*	*	*	*
2:00			190	189	177	187	195	207			187	194	*	*	*	*
3:00			204	197	217	230	225	250			215	226	*	*	*	*
4:00			278	246	266	237	248	235			264	239	*	*	*	*
5:00			241	298	275	249	276	278			264	275	*	*	*	*
6:00			245	234	261	255	220	206			242	232	*	*	*	*
7:00			148	170	130	162	165	146			148	159	*	*	*	*
8:00			119	154	155	142	124	135			133	144	*	*	*	*
9:00			103	87	87	84	105	106			98	92	*	*	*	*
10:00			46	62	43	67	41	60			43	63	*	*	*	*
11:00			32	34	35	28	26	32			31	31	*	*	*	*
Total	0	0	3112	2900	3213	3081	3178	3164	0	0	3166	3048	0	0	0	0
Day	0		6012		6294		6342		0		6214		0		0	
AM Peak			7:00	7:00	7:00	7:00	7:00	7:00			7:00	7:00				
Volume			266	342	295	349	282	349			281	347				
PM Peak			4:00	5:00	5:00	6:00	5:00	5:00			4:00	5:00				
Volume			278	298	275	255	276	278			264	275				
Comb Total	0		6012		6294		6342		0		6214		0		0	
ADT	ADT: 6,216		AADT: 6,216													

APPENDIX C

SYNCHRO ANALYSIS

Lanes, Volumes, Timings
3: N Stewart Rd & E Mile 2

05/14/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	419	49	74	192	6	53	129	178	34	160	64
Future Volume (vph)	36	419	49	74	192	6	53	129	178	34	160	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		60	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.996				0.850		0.966	
Flt Protected		0.996			0.987			0.986			0.993	
Satd. Flow (prot)	0	3472	0	0	3479	0	0	1837	1583	0	1787	0
Flt Permitted		0.996			0.987			0.986			0.993	
Satd. Flow (perm)	0	3472	0	0	3479	0	0	1837	1583	0	1787	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		2604			2108			803			886	
Travel Time (s)		39.5			31.9			13.7			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	455	53	80	209	7	58	140	193	37	174	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	547	0	0	296	0	0	198	193	0	281	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 59.1% ICU Level of Service B
Analysis Period (min) 15

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	10	255	3	3	287
Future Volume (vph)	10	10	255	3	3	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976					
Satd. Flow (prot)	1694	0	1861	0	0	1863
Flt Permitted	0.976					
Satd. Flow (perm)	1694	0	1861	0	0	1863
Link Speed (mph)	30		40			40
Link Distance (ft)	1077		822			328
Travel Time (s)	24.5		14.0			5.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	277	3	3	312
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	280	0	0	315
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 27.5% ICU Level of Service A
Analysis Period (min) 15

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	9	360	2	3	280
Future Volume (vph)	7	9	360	2	3	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.925		0.999			
Flt Protected	0.978					
Satd. Flow (prot)	1685	0	1861	0	0	1863
Flt Permitted	0.978					
Satd. Flow (perm)	1685	0	1861	0	0	1863
Link Speed (mph)	30		40			40
Link Distance (ft)	1088		328			803
Travel Time (s)	24.7		5.6			13.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	10	391	2	3	304
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	393	0	0	307
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 29.1% ICU Level of Service A
Analysis Period (min) 15

Lanes, Volumes, Timings
3: N Stewart Rd & E Mile 2

05/14/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	419	305	257	192	6	53	129	178	34	187	64
Future Volume (vph)	36	419	305	257	192	6	53	129	178	34	187	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		60	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940			0.998				0.850		0.970	
Flt Protected		0.998			0.973			0.986			0.994	
Satd. Flow (prot)	0	3320	0	0	3437	0	0	1837	1583	0	1796	0
Flt Permitted		0.998			0.973			0.986			0.994	
Satd. Flow (perm)	0	3320	0	0	3437	0	0	1837	1583	0	1796	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		2604			2108			643			886	
Travel Time (s)		39.5			31.9			11.0			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	455	332	279	209	7	58	140	193	37	203	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	826	0	0	496	0	0	198	193	0	310	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 75.3% ICU Level of Service D
Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑	↑	
Traffic Volume (vph)	0	0	0	0	516	233
Future Volume (vph)	0	0	0	0	516	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.958	
Flt Protected						
Satd. Flow (prot)	0	0	0	1863	1785	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	1863	1785	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	400			160	643	
Travel Time (s)	9.1			2.7	11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	561	253
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	814	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 44.7% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	10	10	437	255	3	3	287	233
Future Volume (vph)	0	0	0	10	10	10	437	255	3	3	287	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.955			0.999			0.940	
Flt Protected					0.984			0.970				
Satd. Flow (prot)	0	0	0	0	1750	0	0	1805	0	0	1751	0
Flt Permitted					0.984			0.970				
Satd. Flow (perm)	0	0	0	0	1750	0	0	1805	0	0	1751	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		598			1077			822			328	
Travel Time (s)		13.6			24.5			14.0			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	11	11	475	277	3	3	312	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	33	0	0	755	0	0	568	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 80.6% ICU Level of Service D
Analysis Period (min) 15

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	9	360	2	3	516
Future Volume (vph)	7	9	360	2	3	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.925		0.999			
Flt Protected	0.978					
Satd. Flow (prot)	1685	0	1861	0	0	1863
Flt Permitted	0.978					
Satd. Flow (perm)	1685	0	1861	0	0	1863
Link Speed (mph)	30		40			40
Link Distance (ft)	1088		328			160
Travel Time (s)	24.7		5.6			2.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	10	391	2	3	561
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	393	0	0	564
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 39.5% ICU Level of Service A
Analysis Period (min) 15

Lanes, Volumes, Timings
3: N Stewart Rd & E Mile 2

05/14/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	419	305	257	192	6	53	129	178	34	187	64
Future Volume (vph)	36	419	305	257	192	6	53	129	178	34	187	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		60	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940			0.998				0.850		0.970	
Flt Protected		0.998			0.973			0.986			0.994	
Satd. Flow (prot)	0	3320	0	0	3437	0	0	1837	1583	0	1796	0
Flt Permitted		0.998			0.973			0.986			0.994	
Satd. Flow (perm)	0	3320	0	0	3437	0	0	1837	1583	0	1796	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		2604			2108			473			886	
Travel Time (s)		39.5			31.9			8.1			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	455	332	279	209	7	58	140	193	37	203	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	826	0	0	495	0	0	198	193	0	310	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 75.3% ICU Level of Service D
Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	516	233
Future Volume (vph)	0	0	0	0	516	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.953	
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	3373	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	3373	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	400			160	170	
Travel Time (s)	9.1			2.7	2.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	561	253
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	814	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 25.1% ICU Level of Service A
Analysis Period (min) 15

Lanes, Volumes, Timings
6: N Stewart Rd & Driveway 2/E 30th St

05/14/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	10	10	437	255	3	3	287	233
Future Volume (vph)	0	0	0	10	10	10	437	255	3	3	287	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.955			0.998				0.850
Flt Protected					0.984		0.950			0.950		
Satd. Flow (prot)	1863	1863	0	0	1750	0	1770	3532	0	1770	1863	1583
Flt Permitted					0.984		0.950			0.950		
Satd. Flow (perm)	1863	1863	0	0	1750	0	1770	3532	0	1770	1863	1583
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		598			1077			409			328	
Travel Time (s)		13.6			24.5			7.0			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	11	11	475	277	3	3	312	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	33	0	475	280	0	3	312	253
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 52.6% ICU Level of Service A
Analysis Period (min) 15

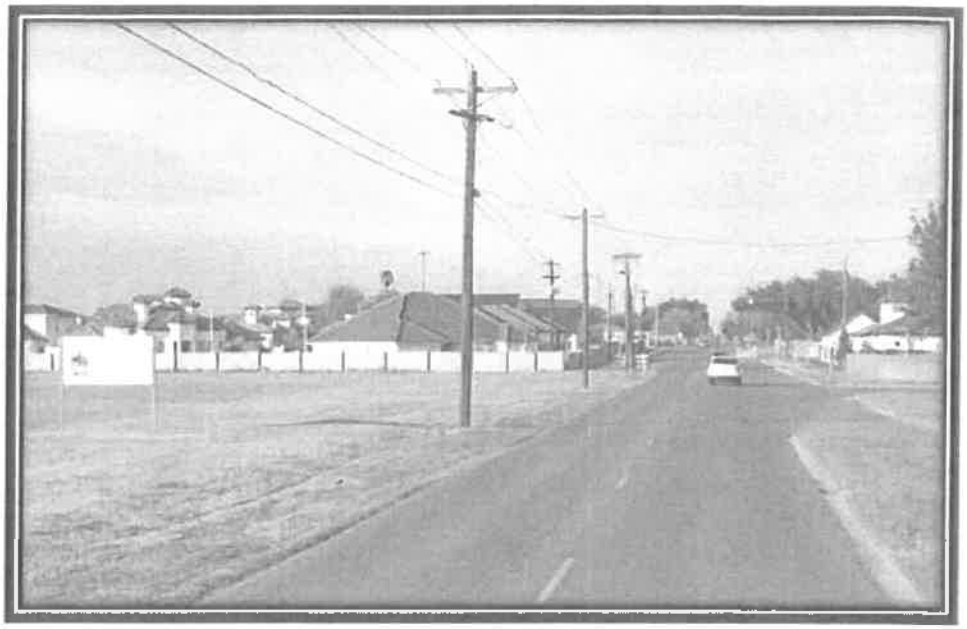
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	9	360	2	3	516
Future Volume (vph)	7	9	360	2	3	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.925		0.999			
Flt Protected	0.978				0.950	
Satd. Flow (prot)	1685	0	3536	0	1770	3539
Flt Permitted	0.978				0.950	
Satd. Flow (perm)	1685	0	3536	0	1770	3539
Link Speed (mph)	30		40			40
Link Distance (ft)	1088		328			180
Travel Time (s)	24.7		5.6			2.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	10	391	2	3	561
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	393	0	3	561
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 24.3% ICU Level of Service A
Analysis Period (min) 15

APPENDIX D

PHOTOS



Facing North on Stewart Rd, North of 30th St

Facing South on Stewart Rd, South of E. Mile 2 Rd

E3340-00-000-0002-00 (576545)
SOLIS HORACIO III & GEORGINA
2408 BROCK STREET SUITE 11-7
MISSION TX 78572

S2950-00-000-0271-16 (539847)
BAZAN ELIAS JR & MARIA DELIA
BAZAN FAMILY REVOCABLE LVG TRUST
2316 N CONWAY AVE
MISSION TX 78574

W0100-00-027-0012-01 (317142)
RIDOLFO JAMES EXC
NORMA ANN RIDOLFO ESTATE
2907 N STEWART RD
MISSION TX 78574

W0100-00-028-0011-00 (317221)
GARCIA FMLY RVCBL TRST
CASTULO P & DOLORES M GARCIA TRT
1211 S 16TH AVE
EDINBURG TX 78539

W0100-00-028-0012-01 (317226)
BARRERA RENE C
1402 E MILE 2 RD
MISSION TX 78574

W0100-00-028-0012-03 (317228)
LEON LUIS E
1410 E MILE 2 RD
MISSION TX 78574

W0100-00-028-0012-06 (317231)
VANGUARD ACADEMY INC
2510 S VETERANS BLVD
EDINBURG TX 78539

W0100-00-028-0012-09 (317233)
UNITED IRRIGATION DISTRICT
PO BOX 687
MISSION TX 78573

W0100-00-028-0012-10 (347178)
BARRERA ELVA & GUADALUPE
1400 E MILE 2 RD
MISSION TX 78574

W0100-00-028-0011-04 (624134)
CITY OF MISSION
1201 E 8TH ST
MISSION TX 78572

M6070-00-000-0001-00 (629987)
GARZA SONYA & GILBERTO
1601 PEBBLE DR
MISSION TX 78574

M6070-00-000-0002-00 (629988)
FLORES TANYA K & JOSE TORRES
1605 PEBBLE DR
MISSION TX 78574

M6070-00-000-0019-00 (630005)
GRUN PRISCILLA & ANGEL RODRIGUEZ JR
1604 PEBBLE DR
MISSION TX 78574

M6070-00-000-0020-00 (630006)
VASQUEZ MOISES
1600 PEBBLE DR
MISSION TX 78574

A6095-00-000-0001-00 (695677)
RIOS LEONARDO & SANDRA
1601 E 30TH ST
MISSION TX 78574

A6095-00-000-0002-00 (695678)
GUERRA JESUS III & LIZETTE G
1603 E 30TH ST
MISSION TX 78574

A6095-00-000-0031-00 (695707)
GALINDO MARILU
PO BOX 819
HIDALGO TX 78557

A6095-00-000-0032-00 (695708)
OCHOA MIGUEL & DIANA E
1600 E 30TH ST
MISSION TX 78574

W4295-00-000-0046-00 (689465)
VO HUNG T
2508 E BUS HWY 83 NO 2
MISSION TX 78572

W4295-00-000-0047-00 (689466)
KING ANTONIA
2905 MELISSA REA DR
MISSION TX 78574

R2755-00-000-0001-00 (692842)
RIDOLFO JAMES JR & GENEVIEVE L
2911 N STEWART RD
MISSION TX 78574

R2755-00-000-0002-00 (692844)
RIDOLFO JAMES EXC
NORMA ANN RIDOLFO ESTATE
2907 N STEWART RD
MISSION TX 78574

E5662-00-000-0000-05 (712206)
HIDALGO COUNTY DRAINAGE DISTRICT NO.
902 N DOOLITTLE RD
EDINBURG TX 78542

P9274-00-000-0001-00 (1068169)
FOMBON-NAMBOUH BRIDGET K
583 CHESTNUT ST STE 5
LYNN MA 1904

P9274-00-000-0002-00 (1068171)
RODRIGUEZ BRENDA EDITH
3802 ANDREW AVE
ALTON TX 78573

S5481-00-000-0001-00 (1238091)
RIOJAS RUIZ HUGO A
OSCAR ENRIQUEZ
3102 DORA JEANNE DR
MISSION TX 78574

S5481-00-000-0002-00 (1238096)
VILLARREAL ROBERTO C & ESTRELLA
3100 DORA JEANNE DR
MISSION TX 78574

S5481-00-000-0003-00 (1238097)
AGUILAR SONIA YVETTE
1512 STONEGATE DR
MISSION TX 78574

S5481-00-000-0004-00 (1238098)
ROSALES PEGGY RAMON & MARK
1001 S TAYLOR ROAD APT 1023
MCALLEN TX 78501-8599

S5481-00-000-0005-00 (1238099)
TRIGO MARIO A SOLIS & JAHAIRA A
1508 STONEGATE DR
MISSION TX 78574

S5481-00-000-0006-00 (1238100)
CORTES JESUS DORIA & VERONICA L
1506 STONEGATE DR
MISSION TX 78574-2701

S5481-00-000-0007-00 (1238101)
VALADEZ SANCHEZ JAIME F
1504 STONEGATE DR
MISSION TX 78574

S5481-00-000-0008-00 (1238102)
TRINITY SAAB GROUP LLC
1208 CIMARRON DR
MISSION TX 78572

S5481-00-000-0009-00 (1238103)
MUNIZ ALEJANDRO H & MARCELA
1500 STONEGATE DR
MISSION TX 78574-2701

S5481-00-000-0010-00 (1238104)
LOPEZ AMAIRANY
4405 S SHARY RD APT 827
MISSION TX 78572

S5481-00-000-0028-00 (1238122)
MONTOYA ADRIENNE & MINERVA
18024 ALEPPO PINE TRAIL
ELGIN TX 78621

S5481-00-000-0029-00 (1238123)
TAFOLLA FRANCISCO GUADALUPE &
608 W EISENHOWER AVE
ALTON TX 78573

S5481-00-000-0030-00 (1238124)
DE LEON OSBALDO JR
1507 STONEGATE DR
MISSION TX 78574

S5481-00-000-0031-00 (1238125)
GARZA URIEL & LISSETTE A PENAFLO
1509 STONEGATE DR
MISSION TX 78574