

APPENDIX C

Traffic Impact Study

TRAFFIC IMPACT STUDY

MIXED USE DEVELOPMENT

NORTH OF SR178
WEST OF MASTERSON STREET
EAST AND WEST OF VINELAND ROAD AND SOUTH OF PALADINO
CITY OF BAKERSFIELD

REVISED:

March 10, 2000

PREPARED FOR:

Porter-Robinson Engineering
1200 21st Street
Bakersfield, CA 93301

CTE

CRENSHAW TRAFFIC ENGINEERING

Traffic and Transportation Consulting

29950 Pinedale Drive

Tehachapi, California 93561

(661) 821-3909

Fax (661) 821-1740

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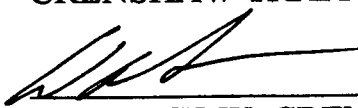
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1200 21st Street
Bakersfield, CA 93301

PREPARED BY:

CRENSHAW TRAFFIC ENGINEERING



WALLACE W. CRENSHAW, P.E. TR# 0366



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TRAFFIC IMPACT STUDY
MIXED USE DEVELOPMENT

NORTH OF STATE ROUTE 178
WEST OF MASTERSON STREET
EAST AND WEST OF VINELAND ROAD AND SOUTH OF PALADINO
CITY OF BAKERSFIELD

INTRODUCTION

This traffic study has been prepared to determine the traffic impact on the local roadway system from traffic generated by the proposed Mixed Use Development. The proposed project will be located north of State Route 178, west of Masterson Street, South of Paladino Drive and East and West of Vineland Road, in the City of Bakersfield, California. The traffic (trips) estimated to be generated by this project has been added to the existing on-street traffic volumes and their impact has been analyzed on the existing and proposed street network within the area of this project as well as key intersections in the general vicinity of the site. Future traffic volumes have also been added to this scenario. The following material sets forth existing traffic counts, estimated trip generation, distribution of project related traffic and capacity analysis at key intersections and street segments for projected conditions before and after the proposed Development.

PROJECT

The proposed project consists of a Mixed Use Development containing approximately 2750 Single Family lots, 1300 Multi Family lots and 1,048.706 SF (Gross Leasable Floor Area) of Commercial. Project covers approximately 666 acres of land. The site is presently undeveloped.

SITE LOCATION

The proposed project is a Mixed Use Development that is located in the City of Bakersfield. The project is adjacent to and north of State Route 178, West of Masterson Road, South of Paladino Drive and East and West of Vineland Road. Main access to the site will be by entrance street into the development from Vineland Road, Paladino Drive, Masterson Road and Panorama Drive. See Exhibit 1.

TRAFFIC AND CIRCULATION

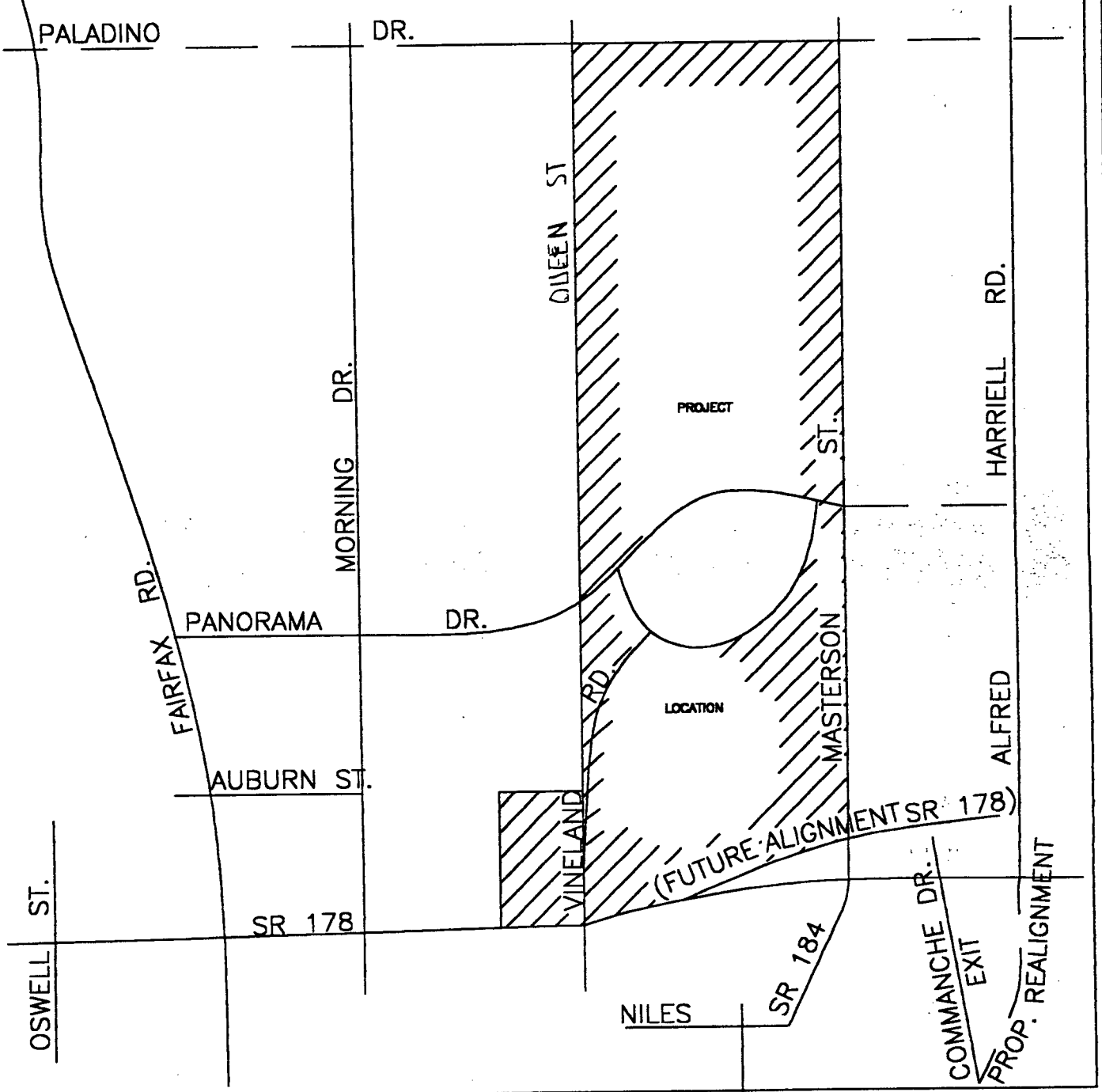
At the present time State Route 178 is a two-lane street in the vicinity of the project. In the future State Route 178 will be a Freeway with limited access. Vineland Road, Masterson Street and Panorama Drive do not exist in the project area but will be developed with this project. A network of major and secondary highways and local streets will be developed in the area. In the project vicinity, these future street networks will provide access to nearby commercial, residential and employment centers.



PROJECT BOUNDARY



N.T.S.

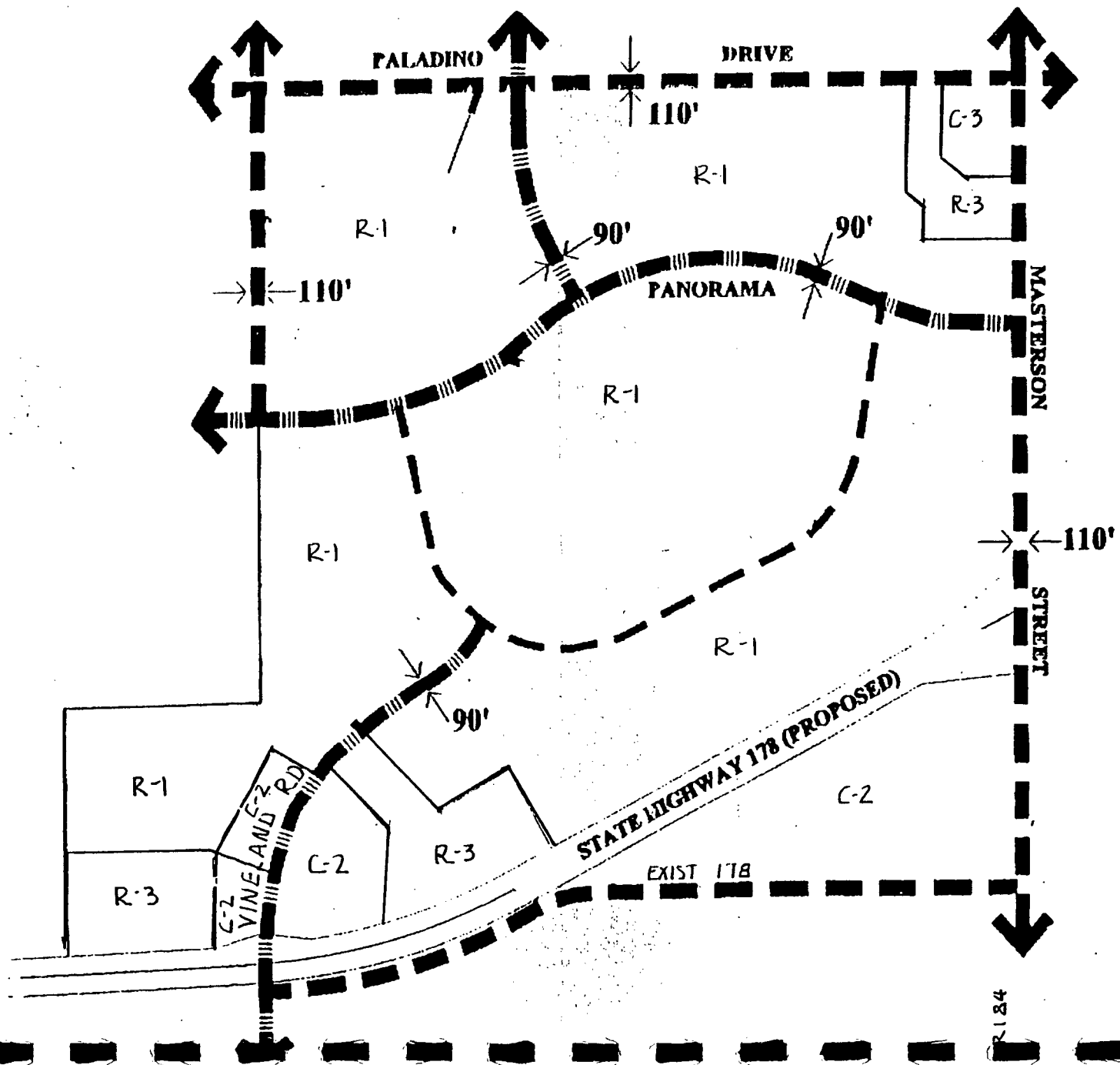


CRENSHAW TRAFFIC ENGINEERING
 TRAFFIC AND TRANSPORTATION CONSULTING
 2995 PINEDALE DR., TEHACHAPI, CA. 93561
 (661)821-3909

J.N.9-111

LOCATION MAP

EXHIBIT 1



PLDT PLAN

Regional transportation to this area and the Bakersfield area is provided by State Route 58, State Route 178, and State Route 184. Near the project site, Fairfax Road and State Route 184 connects with State Route 58. State Route 178 changes from Primary Highway to Freeway approximately 1 miles west of the development.

STREETS AND HIGHWAYS

Following is a summary description of the streets and highways which will serve the proposed project, and which could be affected by project traffic.

State Route 178 currently is a two-lane road that extends from West of Fairfax Road to the Kern Canyon and is a Freeway West of Fairfax Road to State Route 203.

Panorama Drive within the project will be secondary Highway and will eventually connect with the existing Panorama Drive at Morning Drive.

Paladino Drive is a major arterial within the project, and will be extended to Fairfax Road as area development. Paladino Drive is designated as a major arterial and planned to be a primary east and west travel route for the vicinity.

Vineland Road will be constructed with the project from State Route 178 northerly as a secondary street. Vineland Road is shown on General Plan to have on and off access with State Route 178 and will continue southerly of State Route 178.

Masterson Street is at present, partially developed in the area of the project. Masterson street is shown on the 2010 Circulation Element to be a major north and south of State Route 178. Masterson will have on and off Ramp access to Future state Route 178 Freeway.

RECENT AREA TRAFFIC COUNTS

Traffic volumes on State Route 178, Fairfax Road and other major thoroughfares in the area show typical peak periods associated with major streets in this area.

The volumes show a peak during the morning commuter period, another peak during the noon hour, and a third peak during the evening commuter period. The evening peak has the highest volume of traffic during the three peak periods. Table 1 and Exhibits 2 and 3 show a summary of recent traffic counts taken in the area. These counts were conducted at the key intersection in the vicinity of the project. Manual counts were conducted during the PM peak hours at all intersections studied in the analysis to determine the turning movements at key intersections. These turning movements were used in the intersection analysis. The average PM peak hour of these counts was found to be between 4:00 PM and 6:00 PM. The AM and

PM peak hours were used for analysis purposes on intersections, as they represent the highest peak volumes. (See Appendix for details of manual count data.)

TABLE 1

A.M. MANUAL TURN MOVEMENT COUNTS

<u>STREET LOCATION</u>	<u>COUNT HOUR DATE</u>	<u>DIR.</u>	<u>A.M. PEAK</u>	
			<u>BEGAN</u>	<u>VOL.</u>
SR 178 - Fairfax Road	12.02.99	SB	7:00	939
		WB		431
		NB		733
		EB		529
SH 178 E/B - Oswell Street	12.21.99	SB	7:00	282
		WB		0
		NB		442
		EB		186
SH 178 W/B - Oswell Street	12.21.99	SB	7:00	697
		WB		75
		NB		512
		EB		0
Morning Drive - Niles Street	12.29.99	SB	7:00	23
		WB		151
		NB		159
		EB		107
Morning Drive - Auburn Drive	11.02.99	SB	7:00	109
		WB		0
		NB		48
Fairfax Drive - Panorama Drive	11.02.99	SB	7:00	301
		WB		294
		NB		363
		EB		333

TABLE 1 (Cont'd)

A.M. MANUAL TURN MOVEMENT COUNTS

<u>STREET LOCATION</u>	COUNT	<u>DIR.</u>	A.M. PEAK	
	HOUR		<u>BEGAN</u>	<u>VOL.</u>
	<u>DATE</u>			
Fairfax Drive - Auburn Drive	11.03.99	SB	7:00	621
		WB		255
		NB		573
		EB		299
SR 178 - Masterson (SR 184)	10.26.99	SB	7:00	15
		WB		462
		NB		125
		EB		265
Fairfax Road - Paladino Drive	10.26.99	SB	7:00	75
		WB		0
		NB		110
		EB		4
SR 178 - Alfred Harrell Hwy	10.27.99	SB	7:00	69
		WB		271
		NB		0
		EB		199
SR 178 - Comanche Dr	10.27.99	SB	7:00	2
		WB		335
		NB		74
		EB		222
Morning Drive - Panorama Drive	10.28.99	SB	7:00	6
		WB		0
		NB		95
		EB		91

A.M. MANUAL TURN MOVEMENT COUNTS

<u>STREET LOCATION</u>	<u>COUNT DATE</u>	<u>DIR.</u>	<u>A.M. PEAK BEGAN</u>	<u>HOUR VOL.</u>
SR 178 - Morning Drive	10.28.99	SB	7:00	86
		WB		409
		NB		0
		EB		231

P.M. MANUAL TURN MOVEMENT COUNTS

<u>STREET LOCATION</u>	<u>COUNT DATE</u>	<u>DIR.</u>	<u>P.M. PEAK BEGAN</u>	<u>HOUR VOL.</u>
SR 178 - Fairfax Road	12.02.99	SB	5:00	736
		WB		267
		NB		618
		EB		1304
SH 178 W/B - Oswell Street	12.21.99	SB	4:30	999
		WB		183
		NB		1576
		EB		0
SH 178 E/B - Oswell Street	12.21.99	SB	5:00	832
		WB		0
		NB		1217
		EB		1279

P.M. MANUAL TURN MOVEMENT COUNTS

<u>STREET LOCATION</u>	<u>COUNT DATE</u>	<u>DIR.</u>	<u>P.M. PEAK BEGAN</u>	<u>HOUR VOL.</u>
Morning Drive - Niles Street	12.29.99	SB	4:30	22
		WB		230
		NB		335
		EB		444
Morning Drive - Auburn Drive	11.02.99	SB	4:45	69
		WB		0
		NB		119
		EB		30
Fairfax Drive Panorama Drive	11.02.99	SB	5:00	240
		WB		286
		NB		567
		EB		264
Fairfax Drive Auburn Drive	11.03.99	SB	5:00	513
		WB		182
		NB		862
		EB		338
Fairfax Road Paladino Drive	10.26.99	SB	4:45	127
		WB		0
		NB		80
		EB		6
SR 178 - Masterson (SR 184)	10.26.99	SB	4:45	13
		WB		323
		NB		123
		EB		395

P.M. MANUAL TURN MOVEMENT COUNTS

<u>STREET LOCATION</u>	<u>COUNT DATE</u>	<u>DIR.</u>	<u>P.M. PEAK BEGAN</u>	<u>HOUR VOL.</u>
SR 178 - Alfred Harrell Hwy	10.27.99	SB	4:30	81
		WB		206
		NB		0
		EB		351
SR 178 - Comanche Dr	10.27.99	SB	4:30	2
		WB		265
		NB		93
		EB		373
SR 178 - Morning Drive	10.28.99	SB	4:45	63
		WB		295
		NB		0
		EB		426
Morning Drive - Panorama Drive	10.28.99	SB	4:45	7
		WB		0
		NB		88
		EB		59

TRAFFIC GENERATION AND DISTRIBUTION

The daily traffic volumes estimated to be generated by the proposed development were based on the data obtained from the Institute of Transportation Engineers (ITE), "Trip Generation", 6th Edition, dated January, 1997. At full buildout, it is estimated that this project will generate a total of approximately 60,976 vehicular trip ends per day. It is assumed that 15% of the Trip ends will remain within the development. Approximately 51,830 Daily trip ends will access street in the area.

Table 2 shows the daily and peak hour generation factors and resulting trip ends for the proposed project. Table 2 also shows an increase of 2777 vehicles arriving and 2161 vehicles leaving the site during the PM commuter peak hour. AM increase in volume is 836 in and 1910 out.

The expected project-related traffic volumes were distributed onto the local roadway system based on manual count data, observation of peak hour traffic movements, the characteristics of the nearby road system and the population distribution of the region.

The project is expected to be developed to ½ of it's final buildout by year 2010. Exhibit shows the percentage of trip distribution for year 2010. Exhibit 5 shows the percentage of trip distribution on a regional scale for year 2020. Exhibit 6 and 7 shows the project

related traffic distribution for year 2010 on the local roadway system for the peak hours. Exhibit 8 shows project distribution for year 2010 without project, Exhibit 9 is AM with project, 2010 PM without project is shown on Exhibit 10, PM peak hour distribution year 2010 with project is Exhibit 11. AM 2020 project is in Exhibit 12, AM 2020 is shown in Exhibit 13. PM peak hour distribution project is shown on Exhibit 14, PM year 2020 with project is Exhibit 15.

TABLE 2

RESIDENTIAL DEVELOPMENT TRAFFIC GENERATION

2750 Single Family Units

Average Daily Trips:	Equation Volume	22,160 TPD
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AM Peak Hour Trips: (25% in, 75% out)	Equation Volume	1934 TPD
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Volume In	484
Out	1450

PM Peak Hour Trips: (64% in, 36% out)	Equation Volume	2126
--	--------------------	------

Volume In	1361
Out	765

1300 Multi Family Units

Average Daily Trips:	Equation Volume	7926 TPD
----------------------	--------------------	----------

AM Peak Hour Trips: (16% in, 84% out)	Equation Volume	649 TPD
--	--------------------	---------

Volume In	104
Out	545

PM Peak Hour Trips: (48% in, 52% out)	Equation Volume	722 TPD
--	--------------------	---------

Volume In	484
Out	238

Commercial
1,048,700 Leaseable Square Feet

Average Daily Trips: Equation
Volume 30,890 TPD

AM Peak Hour Trips: Equation
(61% in, 39% out) Volume 648 TPD

Volume in 395
out 253

PM Peak Hour Trips: Equation
(48% in, 52% Out) Volume 2962 TPD

Volume in 1422
out 1540

Total Generated Trips

	TOTAL	IN	OUT
ADT	60,976	30,488	30,488
AM	3231	983	2248
PM	5810	3267	2543

It is assumed that 15% of the Generated trips will be Captured Trip (i.e. from Residential to Commercial within the development) so therefore the trips generated to outside of the development will be reduced by 15%. These reduced trip were used in this study.

Reduced Generated Trips

	TOTAL	IN	OUT
ADT	51,830	25,915	25,915
AM	2746	836	1910
PM	4938	2777	2161

OTHER KNOWN PROJECTS

The City of Bakersfield's records were reviewed to obtain any known projects in the area. The City of Bakersfield has agreed to a 3% growth factor rate per annum to be used for this area.

Expected trip distribution of the future trips generated by applying the growth factor of 3.0% per year to study intersections is shown in Exhibit 11 and 12 entitled "Future Without Project". For AM and PM distribution to 2010. Exhibit 13 and 14 show AM and PM Volumes with Project to year 2010. Exhibit 15 shows Future 2020 AM volume for project only. Exhibit 16 shows Future volume of year 2020 PM volume for project only. Exhibit 17 and 18 shows Future 2020 volume with Project, AM and PM volume.

TRAFFIC ANALYSIS AND IMPACT

This project is expected to be completed by 2020. Analysis assumptions include the following:

1. The proposed development will be completed before or by the year 2020, with traffic patterns established. The development will be approximately one-half developed by year 2010.
2. The primary access to and from the site will be from streets off of Vineland Road, Masterson Street, Panorama Drive and Paladino Drive. This development will construct ultimate street improvements within the project site, including Traffic Signal installation at intersection of major and secondary streets as development access and signals are warranted.

3. That the actual AM and PM peak hour traffic conditions are appropriate for this analysis.
4. The growth factor of 3.0% per year will be appropriate to calculate future volumes to year 2010.
5. 2020 Volumes were developed by using KERNCOG information.
6. That by year 2020 State Route 178 will be constructed to full Freeway Status in the area and will have interchange at Fairfax Road, Vineland Road and Masterson Street.

INTERSECTION ANALYSIS

The intersection analysis was based on information obtained from observation of traffic patterns and manual counts of turning movements at these key intersections:

1. Oswell Street and State Route 178 off and on ramps.
2. Fairfax Road and State Route 178.
3. Morning Drive and State Route 178.
4. Masterson Street/SR 184 and State Route 178.
5. Comanche Drive and State Route 178.*
6. Alfred Harrell Highway and State Route 178.
7. Panorama Drive and Fairfax Road.
8. Paladino Drive and Fairfax Road.
9. Auburn Drive and Fairfax Road.
10. Weedpatch Highway (SR 184) and Niles Street.
11. Panorama Drive and Morning Drive.

12. Highland Knolls and Morning Drive
13. College Avenue and Morning Drive
14. Niles Street and Morning Drive
15. Highland Knolls and Vineland Road
16. SR 184 and Vineland Road
17. Chase Avenue and SR 184

LEVEL OF SERVICE

Intersections

The capacity and Level of Service (LOS) of these intersection as well as other intersection that will be constructed as part of the development were determined for existing conditions and conditions in 2010 and 2020 with and without project, using the 1995 Highway Capacity Manual (Special Report 209) method for signalized and unsignalized intersections. Table 3 presents a summary of results of this analysis for all studied intersections. Table 4 shows Level of Service for these intersections after mitigation measures are satisfied. This Mitigation consists of:

1. Upgrade Fairfax Road and State Route 178 intersection to accommodate 2 left turn lanes for east bound traffic; upgrade Traffic Signals.
2. Install Traffic Signals at Morning Drive and State Route 178.
3. Install Traffic Signal at Vineland Road and State Route 178.
4. Install Traffic Signal at Masterson (SR 184) and State Route 178.

5. Install Traffic Signal at Panorama Drive and Morning drive.
6. Install Traffic Signal at Morning Drive and Auburn Street.
7. Install Traffic Signals at all Major and Secondary intersection within the project. Queen Street and Panorama Drive has a LOS of "D" for SBL but does not meet signal warrants (see table 6) The overall delay is insignifigant, no mitigation required.

The comprehensive circulation plan 2010 for Metropolitan Bakersfield shows other planned arterial and collector streets in the vicinity of this project. These streets will, in the future, service this project from all directions. Because they are not essential to the project and some are dirt roads, or non-existent streets with negligible volumes of traffic, Level of Service analyses were not conducted for these streets.

* The level of service for Comanche Drive and State Route 178 was calculated for Existing Volumes only as the street will be relocated to align with Alfred Harrell Highway prior to year 2010.

TABLE 3
LEVEL OF SERVICE (LOS)
SIGNALIZED AND UNSIGNALIZED INTERSECTIONS

<u>SIGNALIZED INTERSECTIONS</u>	<u>EXISTING</u>		<u>2010 W/O PROJECT</u>		<u>2010 WITH PROJECT</u>		<u>2020 WITHOUT PROJECT</u>		<u>2020 WITH PROJECT</u>		
	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>	
	<u>Oswell Street and E/B Ramp SR 178</u>	A	B	B	A	B	A	B	B	B	B
<u>Oswell Street and W/B Ramp SR 178</u>	A	A	A	B	B	B	A	A	B	B	
<u>Fairfax Road and SR 178</u>	C	C	F	C	F	F	B*	B*	B*	B*	
<u>Auburn Street and Fairfax Road</u>	C	C	C	C	C	C	C	C	B	B	
<u>Niles Street and Weedpatch Hwy. (SR184)</u>	A	B	B	B	B	B	B	B	B	B	
<u>Panorama Drive and Fairfax Road</u>	C	C	C	C	C	C	C	C	C	C	
<u>Fairfax Road and Panorama Drive</u>	C	C	C	C	C	C	C	C	C	C	
UNSIGNALIZED INTERSECTIONS											
<u>Morning Drive and SR 178</u>	SBL	C	C	D	C	F	F	F	F	F	F
	SBR	A	A	A	A	B	F	F	F	F	F
	EBR	A	A	A	A	B	F	F	F	F	F

TABLE 3 (Cont'd)

		EXISTING		2010 W/O PROJ		2010 WITH PROJ		2020 W/O PROJ		2020 WITH PROJ	
		PM	AM	PM	AM	PM	AM	PM	AM	PM	AM
<u>Masterson St.(SR 184) and SR 178</u>	NB	B	B	C	C	F	F	B	B	F	C
	SB	C	B	C	B	F	F	C	B	F	C
	EBL	A	A	A	A	A	A	A	A	C	A
	WBL	A	A	A	A	A	A	A	A	A	A
<u>Comanche Drive and SR 178</u>	NB	B	B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
	SB	B	B	"	"	"	"	"	"	"	"
	EBL	A	A	"	"	"	"	"	"	"	"
	WBL	A	A	"	"	"	"	"	"	"	"
<u>Alfred Harrell Hwy. and SR 178</u>	SB	A	A	B	A	B	B	F	B	C	B
	NB	-	-	-	-	-	-	F	A	F	B
	EBL	A	A	A	A	A	A	A	A	A	A
	WBL	-	-	-	-	-	-	B	A	A	A
<u>Panorama Drive and Morning Drive</u>	NB	A	A	A	A	B	A	C	B	F	F
	SB	A	A	A	A	A	A	B	B	F	F
	EB	A	A	A	A	A	A	A	B	F	F
	WB	-	-	-	-	A	A	A	A	F	F
<u>Paladino Drive and Fairfax Road</u>	NB	A	A	A	A	A	A	F	B	F	F
	SB	A	A	A	A	A	A	F	B	F	F
	EB	A	A	A	A	A	A	A	B	A	A
	WB	-	-	-	-	-	A	A	A	A	A
<u>Morning Drive and Auburn St</u>	NBL	A	A	A	A	B	B	C	C	F	C
	NBT	A	A	A	A	C	C	B	B	B	A
	SBT	A	A	A	A	B	B	B	B	E	B
	SBR	A	A	A	A	A	A	A	A	B	B
	EBL	A	A	A	A	A	A	A	F	A	A
<u>Queen Street and Panorama St.</u>	SBL	N/A	N/A	N/A	N/A	B	A	A	A	D	B
	SBR	N/A	N/A	N/A	N/A	A	A	B	A	B	A
	EBR	N/A	N/A	N/A	N/A	A	A	C	A	A	A

TABLE 3 (Cont'd)

		2010		2010		2020		2020			
		EXISTING		W/O PROJ		W/O PROJ		WITH PROJ			
		PM	AM	PM	AM	PM	AM	PM	AM		
<u>SR 178 and Vineland Road</u>	SBL	N/A	N/A	N/A	N/A	B	F	F	F *	F	F
	SBR	N/A	N/A	N/A	N/A	A	F	F	F	F	F
	EBL	N/A	N/A	N/A	N/A	A	F	F	F	F	F
<u>Morning Drive Higland Knolls</u>	EB	N/A	N/A	N/A	N/A	N/A	N/A	C	B	C	B
	WB	N/A	N/A	N/A	N/A	N/A	N/A	B	B	B	B
	NB	N/A	N/A	N/A	N/A	N/A	N/A	A	A	B	A
	SB	N/A	N/A	N/A	N/A	N/A	N/A	A	A	C	A
<u>Vineland and Highland Knolls</u>	EBL	N/A	N/A	N/A	N/A	N/A	N/A	C	B	C	B
	EBR	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
	NBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
<u>SR 184 and Chase Avenue</u>	WBL	N/A	N/A	N/A	N/A	N/A	N/A	E	C	F	E*
	WBR	N/A	N/A	N/A	N/A	N/A	N/A	B	B	B	B
	SBL	N/A	N/A	N/A	N/A	N/A	N/A	B	A	B	B
<u>Vineland Road And SR 184</u>	NB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	F
	SB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	F
	EBL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C	B
	WBL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C	B
<u>Morning Drive And College Ave</u>	EB	N/A	N/A	N/A	N/A	N/A	N/A	B	B	B	B
	WB	N/A	N/A	N/A	N/A	N/A	N/A	B	B	B	B
	NBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
	SBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
<u>Paladino Dr and Morning Drive</u>	NB	N/A	N/A	N/A	N/A	N/A	N/A	C	F	F	F
	SB	N/A	N/A	N/A	N/A	N/A	N/A	F	F	F	F
	EBL	N/A	N/A	N/A	N/A	N/A	N/A	B	A	A	A
	WBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
<u>Queen Street and Paladino Drive</u>	NB	N/A	N/A	N/A	N/A	N/A	N/A	B	B	F	B
	SB	N/A	N/A	N/A	N/A	N/A	N/A	C	B	E	B
	EBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
	WBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A

TABLE 3 (Cont'd)

		EXISTING		2010 W/O PROJ		2010 WITH PROJ		2020 W/O PROJ		2020 WITH PROJ	
		PM	AM	PM	AM	PM	AM	PM	AM	PM	AM
<u>Masterson Street</u>	NB	N/A	N/A	N/A	N/A	N/A	N/A	C	C	C	C
<u>And Paladino Dr.</u>	SB	N/A	N/A	N/A	N/A	N/A	N/A	C	B	C	C
	EBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A
	WBL	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A	A

* See 2020 With Project below

Assume at year 2020 State Route 178 will be full Freeway status with interchanges at Fairfax Road, Morning Drive, Vineland Road and Masterson Street (SR 184)

	2020 WITHOUT PROJECT		2020 WITH PROJECT	
	PM	AM	PM	AM
<u>Signalized</u>				
<u>SR 178 and E/B Ramps Fairfax Road</u>	B	B	B	B
<u>SR 178 and W/B Ramps Fairfax Road</u>	A	A	A	A
<u>SR 178 and E/B Ramps Morning Drive</u>	A	A	A	A
<u>SR 178 and W/B Ramps Morning Drive</u>	A	A	A	A
<u>SR 178 and E/B Ramps Vineland Road</u>	A	A	A	A

Table 3 (Cont'd)

<u>Signalized</u>	<u>2020 WITHOUT PROJECT</u>		<u>2020 WITH PROJECT</u>	
	<u>PM</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>
<u>SR 178 and W/B Ramps Vineland Road</u>	A	A	A	A
<u>SR 178 and E/B Ramps Masterson Street (SR 184)</u>	B	A	A	B
<u>SR 178 and W/B Ramps Masterson Street (SR 184)</u>	A	A	A	A
<u>Chase Ave. and SR 184</u>	A	A	B	B

TABLE 4
LEVEL OF SERVICE (LOS)
INTERSECTIONS WITH MITIGATION

YEAR 2010

UPGRADE INTERSECTIONS	AFTER MITIGATION
Fairfax Road and State Route 178	C
 SIGNALIZED INTERSECTIONS 	
Morning Drive and State Route 178	C
Masterson Street and State Route 178	C
Panorama Drive and Morning Drive	C
Panorama Drive and Fairfax Road	C
Western Street and Panorama Drive	A
Vineland Road and State Route 178	B
All major and Secondary intersection within development will be constructed as development occurs:	
Panorama Drive and interior Secondary st. (2 location)	A
Masterson Street and Interior Secondary st.	A
Vineland Road and Interior Secondary st.	A
Masterson Street and Panorama Drive (East)	A

YEAR 2020

SIGNALIZED INTERSECTIONS

AFTER MITIGATION

Paladino Drive and Fairfax Road	B
Morning Drive and Highland Knolls	B
SR 184 and Chase Avenue	A
Vineland Road and SR 184	A
Morning Drive and Paladino Drive	A
Morning Drive and Auburn Street	A

TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic Signal Warrants were prepared for the unsignalized intersection as studied here in. Warrants for this analysis were Warrant #1 and Warrant #2. (State Division of Highway Warrants). Results of these warrant analyses are shown in Table 5.

The intersections of State Route 178 and Masterson (SR 184) warrant a signal under future without project and all future conditions. All of the unsignalized intersection studied herein warrant Signals under future with project year 2010 except Fairfax Road and Paladino Drive. All intersection warrant Traffic Signals under year 2020 condition. See Conclusion Section for discussion of additional factors that influence this intersection.

STREET SEGMENT ANALYSIS

Descriptions of Assumed Roadway Capacities

The capacity of a roadway is affected by a number of factors, including the width of the roadway, the number of crossing arterioles and collectors, the presence or absence of on-street parking, the number of turning lanes at each intersection and the number of driveways.

An urban major arterial provides higher capacity than a normal major arterial does. The higher capacity accounts for higher geometric standards, fewer access points to abutting properties, greater running speed as a result of signal coordination, raised median island, and wider travel lanes. Level of Service "E" is considered to be the ultimate capacity of the street. By policy for daily traffic

TABLE 5
SIGNAL WARRANT ANALYSIS
AM AND PM PEAK HOUR VOLUMES

INTERSECTIONS	Warrant #	SIGNAL WARRANTS SATISFIED			
		1		2	
		AM	PM	AM	PM
<u>Existing Volumes</u>					
Morning Drive and State Route 178		No	No	No	No
State Route 178 and Masterson (SR 184)		No	No	No	No
State Route 178 and Comanche Road		No	No	No	No
State Route 178 and Alfred Harrell Hwy.		No	No	No	No
Fairfax Road and Paladino Drive		No	No	No	No
Panorama Drive and Morning Drive		No	No	No	No
Auburn Street and Morning Drive		No	No	No	No
<u>2010 Future Volumes Without Project</u>					
Morning Drive and State Route 178		No	No	No	No
State Route 178 and Masterson (SR 184)		Yes	No	No	No
State Route 178 and Alfred Harrell Hwy. (Comanche Road)		No	No	No	No
Fairfax Road and Paladino Drive		No	No	No	No
Panorama Drive and Morning Drive		No	No	No	No
Auburn Street and Morning Drive		No	No	No	No
<u>2010 Future Volumes With Project</u>					
Morning Drive and State Route 178		Yes	Yes	Yes	Yes
State Route 178 and Masterson (SR 184)		Yes	Yes	Yes	Yes
State Route 178 and Alfred Harrell Hwy. (Comanche Road)		No	Yes	Yes	Yes
Fairfax Road and Paladino Drive		No	No	No	No
Panorama Drive and Morning Drive		No	Yes	No	Yes
Auburn Street and Morning Drive		No	No	No	No
Queen Street and Panorama Road		No	No	No	No
Vineland Rd and SR 178		Yes	Yes	Yes	Yes

Table 5 (Con't)

INTERSECTIONS	SIGNAL WARRANTS SATISFIED				
	Warrant #	1		2	
		AM	PM	AM	PM
<u>2020 Without Project</u>					
Old SR 178 and Masterson Street	Yes	Yes	Yes	Yes	
Old SR 178 and Alfred Harrel Hwy (Comanche Drive	Yes	Yes	Yes	Yes	
Chase Avenue and SR 184	Yes	Yes	Yes	Yes	
Vineland Avenue and SR 184	Yes	Yes	Yes	Yes	
Highland Knolls and Vineland	No	No	No	No	
Morning Drive and Highland Knolls	No	No	No	No	
Morning Drive and College Avenue	No	No	No	No	
Fairfax Road and Paladino Drive	Yes	Yes	Yes	No	
Auburn Street and Morning Drive	Yes	Yes	Yes	Yes	
Queen Street and Paladino Drive	No	No	No	No	
<u>2020 With Project</u>					
Old 178 and Masterson Street	Yes	Yes	Yes	Yes	
Old State Route 178 and Alfred Harrell Hwy. (Comanche Road)	Yes	Yes	Yes	Yes	
Fairfax Road and Paladino Drive	Yes	Yes	Yes	Yes	
Panorama Drive and Morning Drive	Yes	Yes	No	Yes	
Auburn Street and Morning Drive	Yes	Yes	Yes	Yes	
Paladino Drive and Morning Drive	Yes	Yes	Yes	Yes	
Queen Street and Paladino Drive	Yes	Yes	Yes	Yes	
Masterson Street and Paladino Drive	No	No	No	No	
Chase Avenue and SR 184	Yes	Yes	Yes	Yes	
Vineland Avenue and SR 184	Yes	Yes	Yes	Yes	
Highland Knolls and Vineland Road	No	No	No	No	
Morning Drive and Highland Knoll	No	No	No	No	
Morning Drive and College Avenue	No	No	No	No	
Queen Street and Panorama Drive	No	No	No	No	

analysis, Level of Service "C" is the basis for identifying whether a capacity problem exists at a midblock location. A complete definition of Levels of Service, as they relate to various ranges of volume-to-capacity ratios is indicated in the Appendix. The HCM Method was used for all street segments analyzed herein.

Arterial Operations

Table 6 contains a complete capacity analysis of existing volumes for all of the major and minor arterial in the general vicinity of the project. For each arterial and its various distinct segments, this table identifies the existing capacity, the future capacity with and without project volumes and the level of service. A level of service column is included to show LOS after mitigation is applied, if applicable. (Also see worksheets in Appendix.)

As noted in Table 6, the arterial network in the general area of the project currently operates at adequate levels of service, i.e., at or better than Level of Service "C"

TABLE 6
LEVELS OF SERVICE - STREET SEGMENTS

<u>STREET SEGMENTS</u>	<u>STRIPPING/ GEOMETRIC</u>	<u>EXISTING VOLUMES</u>	<u>2010 W/O/T P/O/J</u>	<u>2010 W/I/H P/O/J</u>	<u>2020 W/O/T P/O/J</u>	<u>2020 W/I/H P/O/J</u>
<u>Panorama Drive</u> From Morning Drive to Fairfax Road	2 Lane Major Art	B	B	B	C	C
From Morning Drive to Queen Street	2 Lane Major Art	N/A	N/A	B	B	C
<u>State Route 178</u> From Fairfax Road to Morning Drive	2 Lane Major Art	B	C	F	*	*
From Morning Drive to Vineland Road	2 Lane Major Art	B	C	E	*	*
From Vineland Road to Masterson (SR 184)	2 Lane Major Art	A	B	D	*	*
From Masterson (SR 184) to Comanche Drive	2 Lane Major Art	A	B	D	*	*

TABLE 6 (Cont'd)

<u>STREET SEGMENTS</u>	<u>STRIPPING/ GEOMETRIC</u>	<u>EXISTING VOLUMES</u>	<u>2010 W/O PROJ</u>	<u>2010 WITH PROJ</u>	<u>2020 W/O PROJ</u>	<u>2020 WITH PROJ</u>
Old SR 178						
From Vineland Road to SR 184	2 Lane Major	N/A	N/A	N/A	A	B
From SR 184 to Alfred Harrell Hwy (Comanche Rd)	2 Lane Major Art	N/A	N/A	N/A	A	A
<u>Fairfax Road</u>						
From Paladino Road to Panorama Drive	2 Lane Major Art	B	B	B	C	C
From Panorama Drive to State Route 178	4 Lane	B	B	B	C	C
From SR 178 to Highland Knolls	Major Art	C	C	C	C	C
<u>Paladino Drive</u>						
From Fairfax Road to Morning Drive	2 Lane Major Art	N/A	N/A	N/A	B	C
From Morning Drive To Queen Street	2 Lane	N/A	N/A	N/A	B	C
<u>Highland Knolls</u>						
From Morning Drive To Vineland	2 Lane	N/A	N/A	N/A	B	B

TABLE 6 (Cont'd)

<u>STREET SEGMENTS</u>	<u>STRIPPING/ GEOMETRIC</u>	<u>EXISTING VOLUMES</u>	<u>2010 W/O PROJ</u>	<u>2010 WITH PROJ</u>	<u>2020 W/O PROJ</u>	<u>2020 WITH PROJ</u>
<u>Morning Drive</u> From Paladino Drive to State Route 178	2 Lane Major Art	B	B	C	C	C
From SR 178 to Niles Street	2 Lane Major Art	N/A	N/A	N/A	C	C
<u>Vineland Street</u> From SR 178 to Kern Canyon Road (SR 184)	2 Lane Major Art	N/A	N/A	N/A	B	C
<u>Kern Canyon Road (SR 184)</u> From SR 178 to Niles Street	2 Lane Major	B	B	B	E	F*
<u>Alfred Harrell Highway</u> From SR 178 to Paladino	2 Lane Major	A	A	A	A	B
<u>Auborn Street</u>	2 Lane Secondary	B	B	B	B	B
<u>SR 178 Freeway</u> From Oswell Street to Morning Dr		-	-	-	C	C
From Morning Dr to Vineland		-	-	-	B	C
From Vineland to Alfred Harrel Hwy		-	-	-	A	B

TABLE 7
LEVELS OF SERVICE - STREET SEGMENTS
WITH MITIGATION

<u>STREET SEGMENTS</u>	<u>STRIPPING/ GEOMETRIC</u>	<u>2010</u>		<u>2020</u>	
		<u>WITH PROJ</u>	<u>WITH PROJ</u>	<u>WITH PROJ</u>	<u>WITH PROJ</u>
		<u>EB</u>	<u>WB</u>	<u>EB</u>	<u>WB</u>
<u>State Route 178</u>					
From Fairfax Road to Morning Drive	4 Lane Major	A	B	*	*
From Morning Drive to Vineland Road	4 Lane Major	B	B	*	*
From Vineland Road to Masterson Street (SR 184)	4 Lane Major	A	A	*	*
From Masterson Street to Comanche Drive	4 Lane Major	A	A	*	*
From Comanche Drive to Alfred Harrell Hwy	4 Lane Major	A	A	*	*
<u>Fairfax Road</u>					
State Route 178 to Highland Knolls	4 Lane Major	A	A	B	B

TABLE 7 (Con't)

<u>SR 184</u>						
From Morning Drive to	4 Lane					
SR 178	Major	-	-	B	B	

By year 2020, State Route 178 will be constructed to Full Freeway status in the area.

FUTURE WITHOUT PROJECT

This section describes the future circulation and operating conditions, and potential capacity deficiencies in the study area, based on the forecast volumes without project, to buildout. Table 6 depicts this analysis.

As noted in Table 6, all studied street sections are at or above Level of Service "D".

FUTURE WITH PROJECT

In order to assess the effect of developing will have in the year 2010 and 2020, this project volume was added to expected growth volume at the target date of 2005 and 2020.

The capacity analysis for this scenario is shown in Table 6 entitled "Future With Project". This analysis assumes that the same geometrical patterns that now exist will be present at this future date. See table 7 for Street Segments LOS. After mitigation.

MITIGATION MEASURES

Improvements

To Year 2010 (Project One-Half Buildout)

1. For better access to and from the development, install required street improvements along:

North side of State Route 178, and West side of Masterson Street.

2. Install Primary and Secondary Arterial street within development to City of Bakersfield standards.
3. Install 2 Lane of pavement on Panorama Drive from Morning Road to Westerly Tract Boundary (Queen Street).
4. Install 2 additional lanes of pavement on State Route 178 from Fairfax Road to Alfred Harrell Highway.
5. Install traffic signals at:
Morning Drive and State Route 178.
Vineland Road and State Route 178.
Masterson Street (SR 184) and State Route 178.
State Route 178 and Alfred Harrell Hwy. (Comanche Road)
Panorama Drive and Morning Drive.
At intersection of Primary and Secondary Street within project as development warrants, i.e. Vineland Road / Interior Secondary Street, Interior Secondary Street / Panorama Drive (2 locations), Masterson Street / Panorama Drive.
6. Upgrade intersection of Fairfax Road and SR 178: add 1 Left turn lanes to east and west bound lanes and retime signals.

This development should contribute it's fair share toward the cost of items 3, 4 and 5. See Conclusion Section for development's proportionate share.

Note: It is assumed that by year 2020 State Route 178 will be constructed to full Freeway status in it's new alignment from West of Fairfax Road to beyond this development, to East, and that interchanges will be developed at Fairfax Road, Morning Drive, Vineland Road and Masterson Street.

Improvements
To Year 2020

1. Mitigation shown in Improvements 2010
2. Install Traffic Signals at:
Old State Route 178 and Masterson Street.
Fairfax Road and Paladino Drive.
Highland Knolls and Morning Drive.
Chase Avenue and State Route 184
Vineland Road and SR 184
Paladino Drive and Morning Drive
Queen Street and Paladino Drive
Morning Drive and Auburn Street
3. Install Street Improvements at:
Morning Drive from Panorama Drive to Paladino Drive.
Paladino Drive from Westerly Tract Boundary to Fairfax Road.
Kern Canyon Road (SR 184) from Niles to SR 178
4. Prior to issuance of a Building Permit, the Project applicant shall provide funding for SR 178 Freeway between Fairfax Road and Alfred Harrell Hwy/Comanche Drive. The funding will be for the project's prorata share of the amount that is determined to be the obligation of local development. The project's share of traffic on SR 178 Freeway is 7.5 percent.

This development should contribute it's fair share of year 2020 items number 1, 2, 3 and 4. See conclusion Section for development proportionate share.

CONCLUSION

The overall traffic volumes expected to be generated from the proposed development will require traffic mitigation measures as stated herein.

Planned arterial and collector streets shown in Plan 2010 should be developed in the area as future development requirements arise.

This development should comply with all requirements of the Congestion Management Plan for the City of Bakersfield and State of California. This may include, but is not limited to: trip reduction, deficiency plan, traffic and public transportation requirements and improvements, and impact fees requirements as applicable.

This report shows the project at one-half developed stage at 2010 and at fully developed at 2020.

The developer's percent of impact of the cost of these traffic signals and street segments is computed as:

$$\frac{\text{State Jurisdiction Project Generated Volumes}}{2010 \text{ or } 2020 \text{ Volumes} - \text{Existing Volumes}}$$

$$\frac{\text{City Jurisdiction Project Generated Volumes}}{2010 \text{ or } 2020 \text{ Volumes}}$$

SIGNAL UPGRADE TRAFFIC CALCULATIONS

2010

$$\text{Fairfax Road / State Route 178} \quad \frac{1025}{(4940 - 2925) 2015} = 0.508 \quad \times \quad 100 = 51\%$$

NEW TRAFFIC SIGNAL INSTALLATION CALCULATIONS

$$\text{Morning Dr / State Route 178} \quad \frac{980}{(2030 - 7840) 1246} = 0.508 \quad \times \quad 100 = 78\%$$

$$\text{Vineland Rd / State Route 178} \quad \frac{2057}{2310} = 0.90 \quad \times \quad 100 = 90\%$$

$$(1810 - 715) 1095$$

$$\text{Masterson St / State Route 178} \quad \frac{530}{(1715 - 854) 861} = 0.61 \quad \times \quad 100 = 62\%$$

$$\text{Alfred Harrell (Comanche Dr) / State Route 178} \quad \frac{190}{(1120 - 730) 390} = 0.148 \quad \times \quad 100 = 48\%$$

$$\text{Panorama Dr / Morning Dr} \quad \frac{580}{785} = 0.74 \quad \times \quad 100 = 74\%$$

NEW TRAFFIC SIGNAL INSTALLATION CALCULATIONS (Con't)

Morning Dr / Auburn St	$\frac{380}{970} = 0.39$	x 100 =	39%
Queen St / Panorama Dr			100%
Vineland Road / Interior Secondary St			100%
Panorama Drive / Interior Secondary St. (2 locations)			100% each
Masterson Street / Panorama Drive			100%

Street Improvement

Panorama Drive from Morning Drive to Queen Street	2 Lane Pavement		100%
--	-----------------	--	------

Install 2 additional lanes of pavement on SR 178 from Fairfax Road to Masterson Street.

Year 2020 Mitigation

Install Traffic Signals at:

Old State Route 178 and Masterson Street	$\frac{1260}{1575} = 0.165 \times 100 = 16\%$
Fairfax Road and Paladino Drive	$\frac{270}{2285} = 0.118 \times 100 = 12\%$
Highland Knolls and Morning Drive	$\frac{190}{1690} = 0.112 \times 100 = 11\%$
Chase avenue and State Route 184	$\frac{515}{2145} = 0.24 \times 100 = 24\%$
Vineland Road and State Route 184	$\frac{150}{890} = 0.168 \times 100 = 17\%$
Kern Canyon Road (SR 184) add two lanes From SR 178 to Niles Street	$\frac{405}{2020} = 0.20 \times 100 = 20\%$
Queen Street and Paladino Drive	$\frac{385}{1460} = 0.26 \times 100 = 26\%$
Paladino Drive and Morning Drive	$\frac{470}{1730} = 0.27 \times 100 = 27\%$
Morning Drive and Auburn St	$\frac{380}{1135} = 0.33 \times 100 = 33\%$

REGIONAL TRANSPORTATION FACILITY IMPACT

This project will affect other locations within the City of Bakersfield and some impact will be expected.

The following locations listed on the City of Bakersfield "Regional Transportation Facility List - Metro Bakersfield Transportation Impact Fee Program" may be affected by this project with five (5) Peak Hour Trips or more.

		<u>Dev.</u>	<u>Total</u>	<u>Dev.</u>	<u>Improv.</u>	<u>Dev.</u>
		<u>Traffic</u>	<u>Traffic</u>	<u>Share</u>	<u>Cost</u>	<u>Share</u>
<u>Edison Road</u>						
SR 178 / Breakenbridge St. Imp		24	2050	0.012	1,463,500	17,135
Breakenbridge / SR 158 St. Imp		12	2046	0.0059	507,108	2,974
<u>Fairfax Road</u>						
SR 178	Inter	335	3145	0.106	1,700,000	181,081
Paladino / Alf. Harrell	St. Imp	7	1670	0.004	716,072	3,195
Panorama to Niles	St. Imp	68	1697	0.040	107,500	4,308
Highland Knolls Dr.	Tr. Signal	36	2112	0.017	120,000	2,045
College Avenue	Tr. Signal	28	1966	0.0142	120,000	1,709
<u>Kern Canyon Road</u>						
Morning Dr. / Vineland	St. Imp	85	2711	0.031	747,489	23,436
Vineland Rd / Edison	St. Imp	90	1709	0.053	747,489	39,364
Edison Rd / SR 178	St. Imp	100	1614	0.062	373,745	23,156
@ Vineland Road	Tr. Signal	85	2210	0.038	120,000	4,615
@ Mesa Marin Dr.	Tr. Signal	90	1614	0.056	120,000	6,691
@ Edison	Tr. Signal	100	1613	0.062	120,000	7,440
<u>Morning Drive</u>						
Alfred Harell / Paladino	St. Imp	10	805	0.12	1,794,000	21,530
Paladino / Panorama	St. Imp	110	821	0.13	601,298	60,564
Panorama / SR 178	St. Imp	530	821	0.64	1,086,080	695,195
SR 178	Inter	485	2109	0.23	1,700,000	390,944
SR 178 / College	St. Imp	145	784	0.185	387,000	71,575
@ College Dr.	Tr. Signal	130	800	0.163	120,000	19,500
College / Niles	Tr. Signal	125	777	0.160	107,500	17,294

Mount Vernon

Belle Tr. /	St. Imp	7	1381	0.005	753,125	3,817
@ SR 58 Ramps	T. Signal	10	1113	0.009	240,000	2,156
@ SR 178 E/B Ramp	St. Imp	28	2380	0.011	250,000	2,750

<u>Dev.</u>	<u>Total</u>	<u>Dev.</u>	<u>Improv.</u>	<u>Dev.</u>
<u>Traffic</u>	<u>Traffic</u>	<u>Share</u>	<u>Cost</u>	<u>Share</u>

Oswell Street

SR 178 / Brundage	Med. Imp	38	2508	0.015	430,000	6,515
@ Virginia Avenue	Tr. Signal	12	2976	0.004	120,000	484
@ Brundage Lane	Tr. Signal	11	3197	0.0034	120,000	412
@ SR 58 Ramps	Tr. Signal	10	1554	0.006	240,000	1,544
@ Sunset RR	Grade Sep	14	3138	0.005	100,000	447

Paladino Drive

Fairfax / Morning	St. Imp	90	1180	0.076	1,059,143	80,782
@ Fairfax Road	Tr. Signal	90	1460	0.061	120,000	7,397
@ Morning Drive	Tr. Signal	275	1460	0.188	120,000	2,260
0.3 Mile E/O Edison to 1 Mile						
E/O Alfred Harrell	St. Imp	27	1614	0.017	1,116,124	18,670

State Route 184

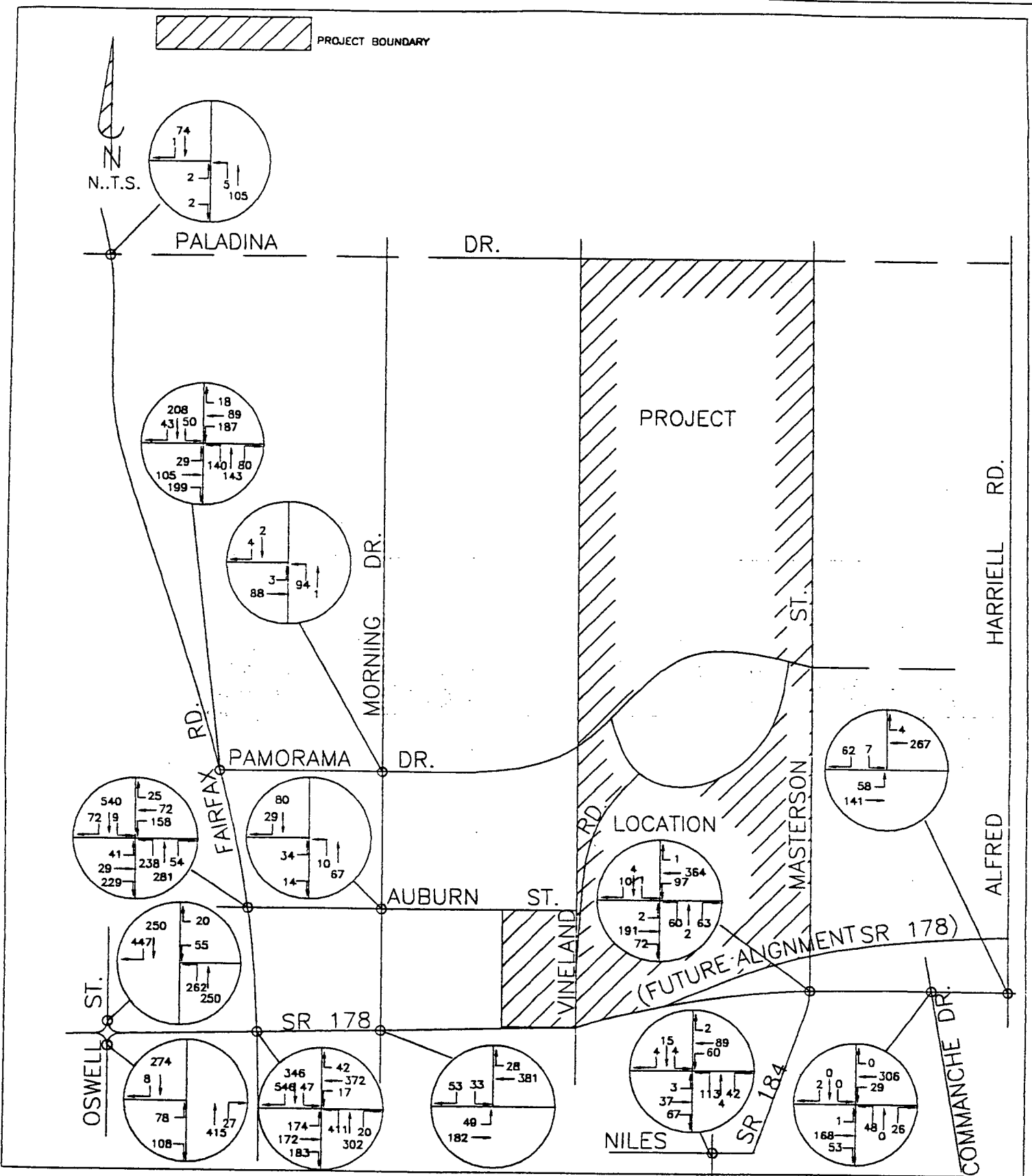
@ Edison Hwy	Tr. Signal	22	4780	0.004	120,000	552
Edison Hwy/Pioneer Dr.	St. Imp	26	2982	0.009	574,859	5,012
Pioneer / Niles	St. Imp	30	2547	0.012	383,239	4,514
@ SPRR	Grade Sep	22	3487	0.006	500,000	3,155
@ Breakenridge Rd.	Tr. Signal	24	3354	0.007	120,000	858
@ Eucalyptus Dr.	Tr. Signal	25	2776	0.009	120,000	1,080

Vineland Road

SR 58 / Edison Hwy	St. Imp	20	2400	0.008	100,078	833
Edison / Eucalyptus	St. Imp	24	2400	0.010	443,077	4,430
@ SPRR	St. Imp	22	2400	0.009	100,000	916
Eucalyptus / Pioneer	St. Imp	24	2400	0.010	115,076	1,150

Total \$1,352,542

APPENDIX



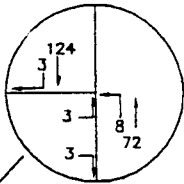
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 2995 PINEDALE DR., TEHACHAPI, CA. 93561
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AM PEAK HOUR DISTRIBUTION
 EXISTING VOLUMES

J.N.9-111

EXHIBIT 2

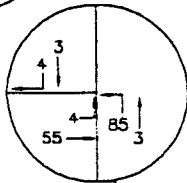
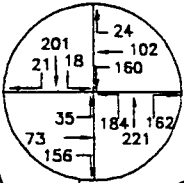
 PROJECT BOUNDARY



PALADINA DR.

DR.

PROJECT

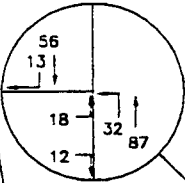
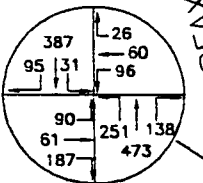


MORNING DR.

PAMORAMA DR.

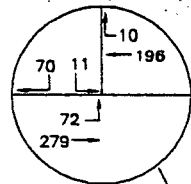
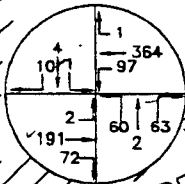
DR.

LOCATION



AUBURN ST.

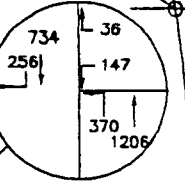
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HARRIELL RD.

ALFRED

OSWELL ST.

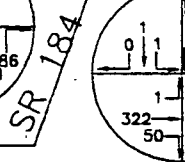
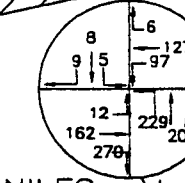
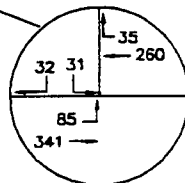
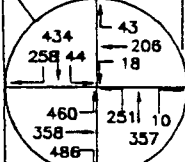
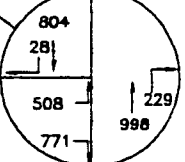


SR 178

AUBURN ST.

ST.

(FUTURE ALIGNMENT SR 178)



NILES

SR 184

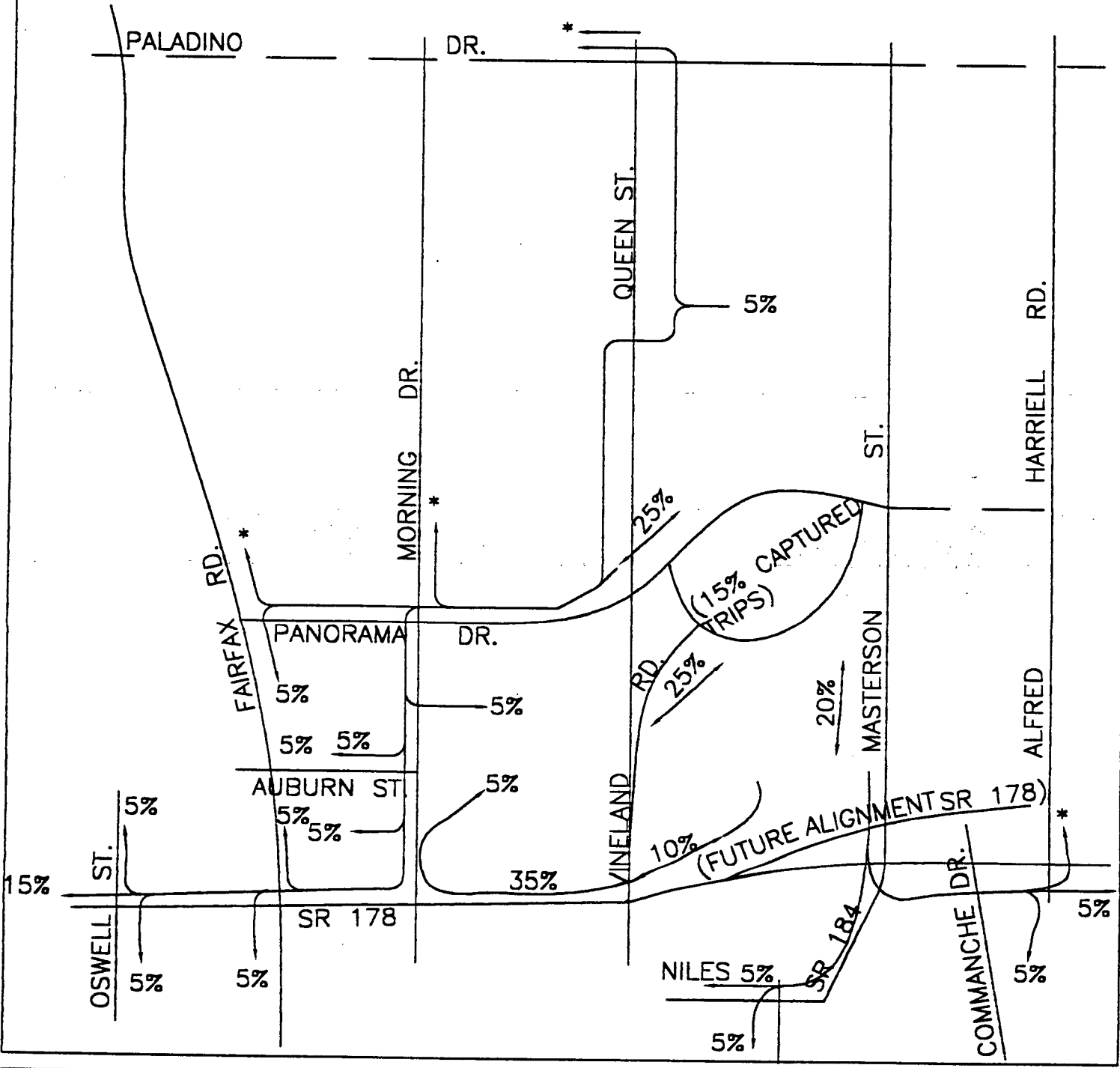
COMMANCHE DR.

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 EXISTING VOLUMES

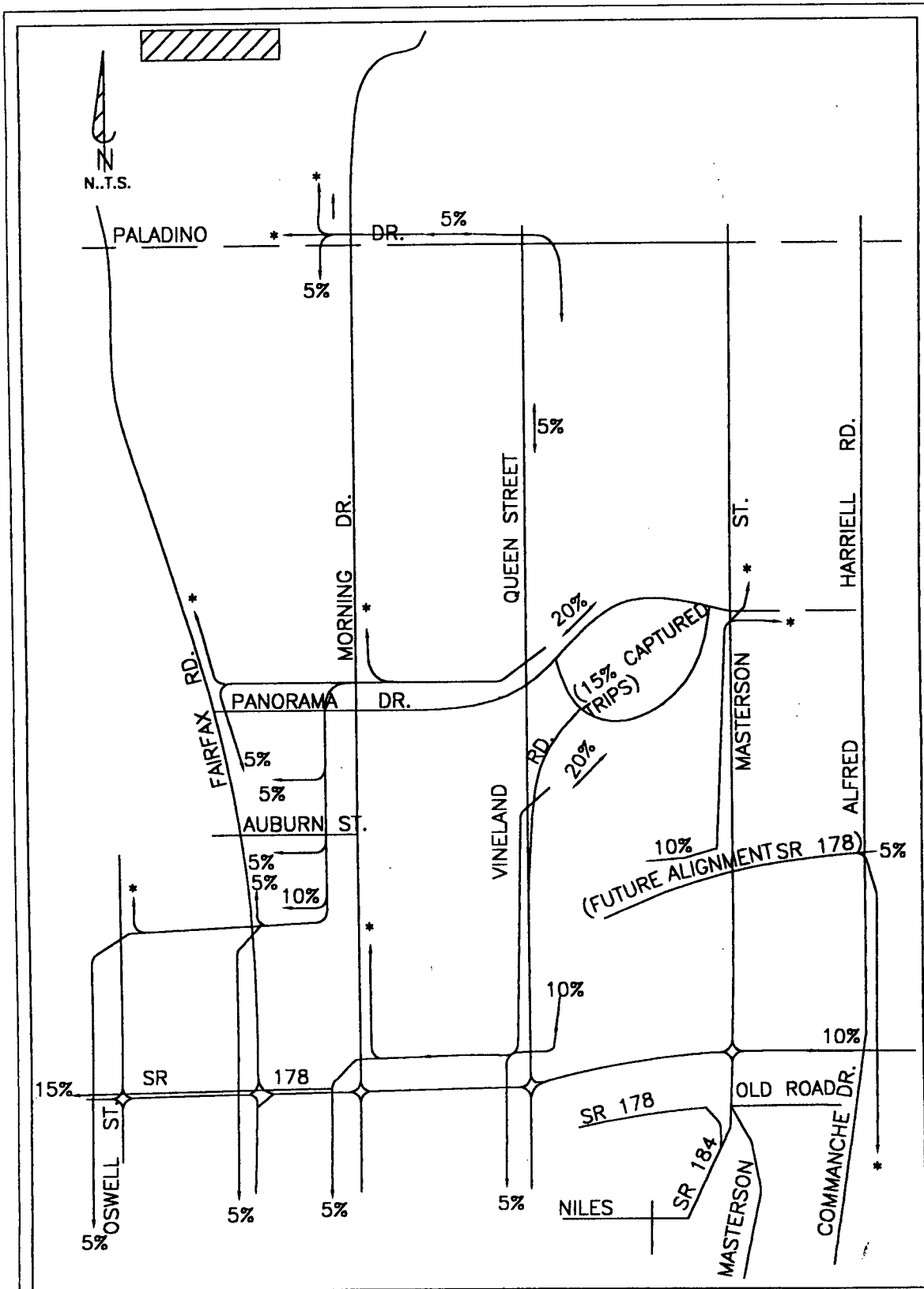
J.N.9-111

EXHIBIT 3



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 TRAFFIC AND TRANSPORTATION CONSULTING
 2995 PINEDALE DR., TEHACHAPI, CA. 93561
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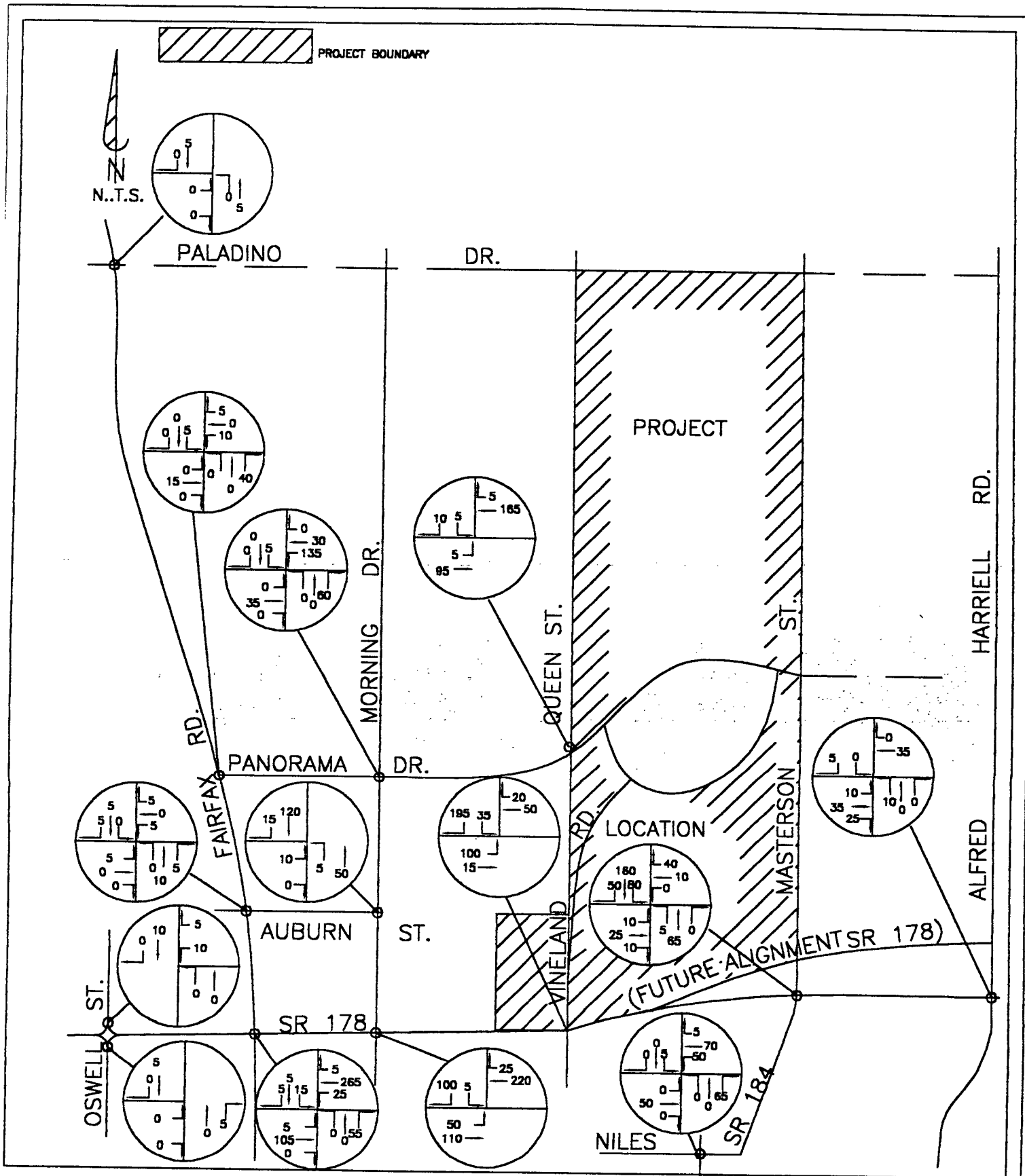
AM & PM PEAK HOURS DISTRIBUTION
 YEAR 2010



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AM & PM PEAK HOURS DISTRIBUTION
 YEAR 2020

EXHIBIT 5



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 2995 PINEDALE DR., TEHACHAPI, CA. 93561
 (661)821-3909

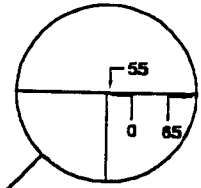
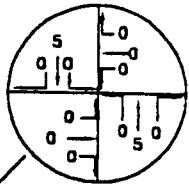
AM PEAK HOUR DISTRIBUTION
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J.N.9-111

EXHIBIT 6

PROJECT BOUNDARY

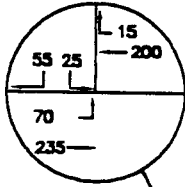
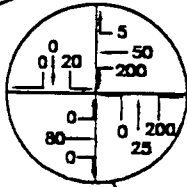
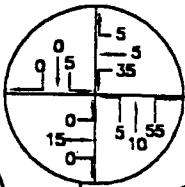
N.T.S.



PALADINO DR.

DR.

PROJECT



MORNING DR.

QUEEN ST.

HARRIELL HWY.

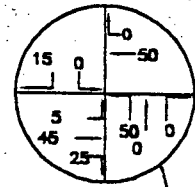
FAIRFAX RD.

PANORAMA DR.

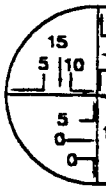
DR.

RD.

LOCATION



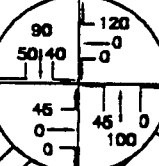
ALFRED



AUBURN ST.

ST.

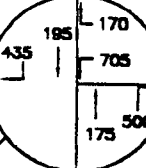
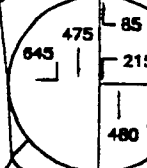
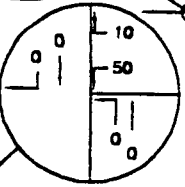
VINELAND RD.



MASTERTON ST.

(FUTURE ALIGNMENT SR 178)

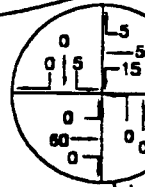
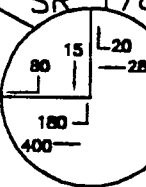
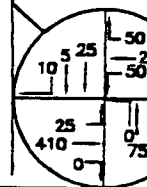
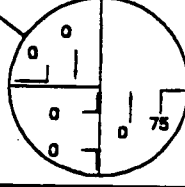
OSWELL ST.



SR 178

NILES

SR 184

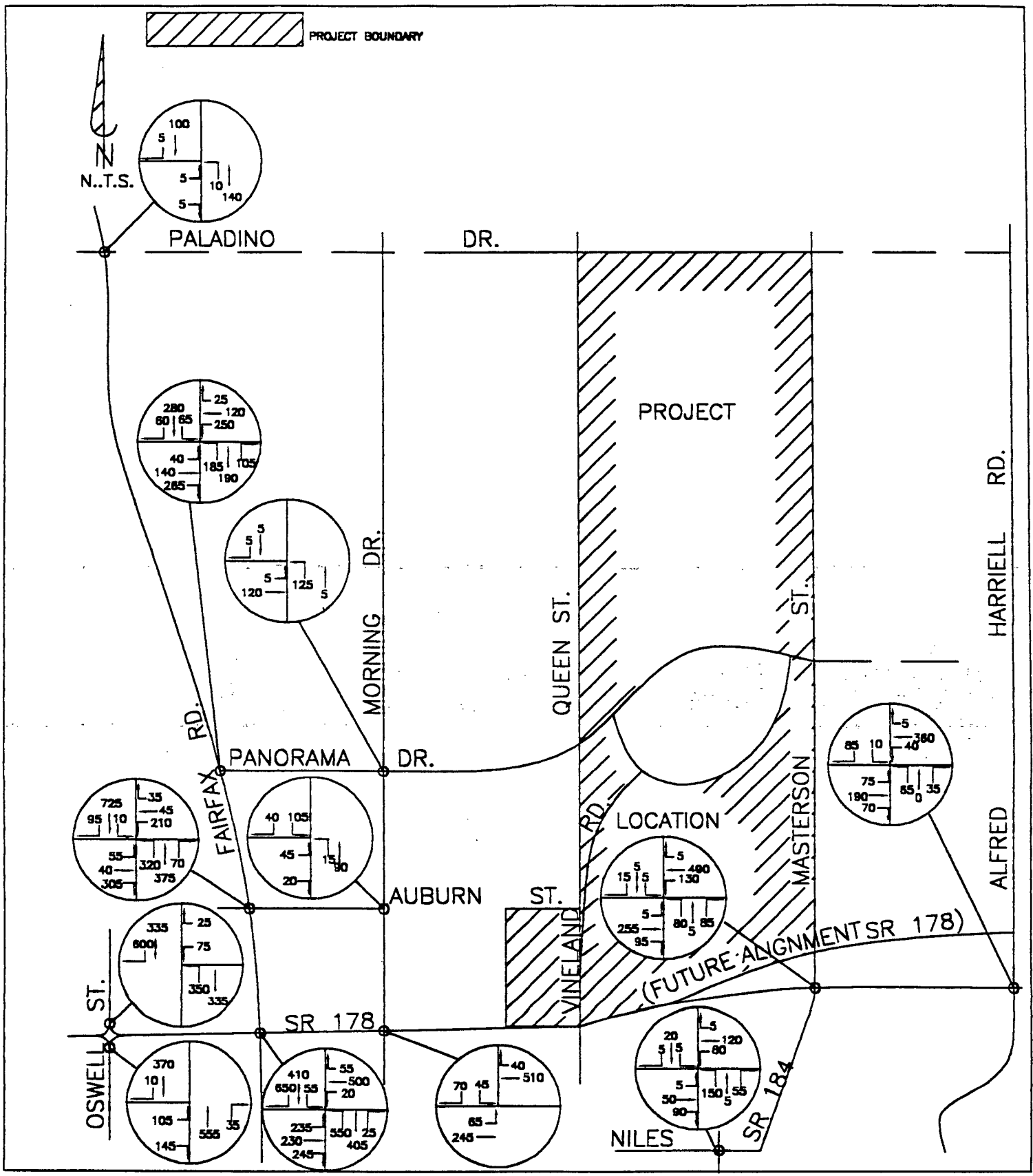


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EXHIBIT 7

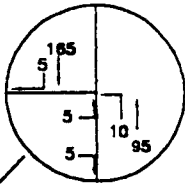


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 YEAR 2010 WITHOUT PROJECT

EXHIBIT 8

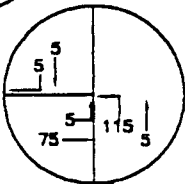
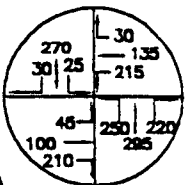
 PROJECT BOUNDARY



PALADINO

DR.

PROJECT



MORNING DR.

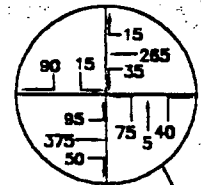
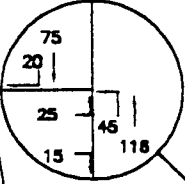
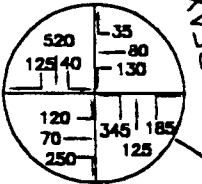
QUEEN ST.

HARRIELL RD.

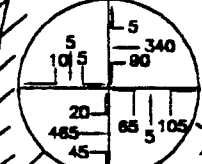
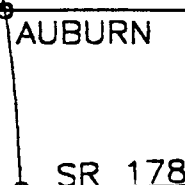
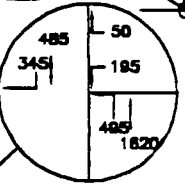
PANORAMA

DR.

LOCATION



OSWELL ST.



(FUTURE ALIGNMENT SR 178)

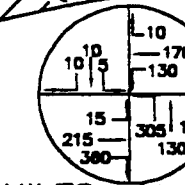
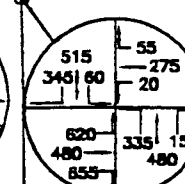
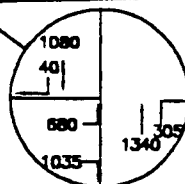
ALFRED

SR 178

ST.

VINELAND RD.

MASTERTON ST.



NILES

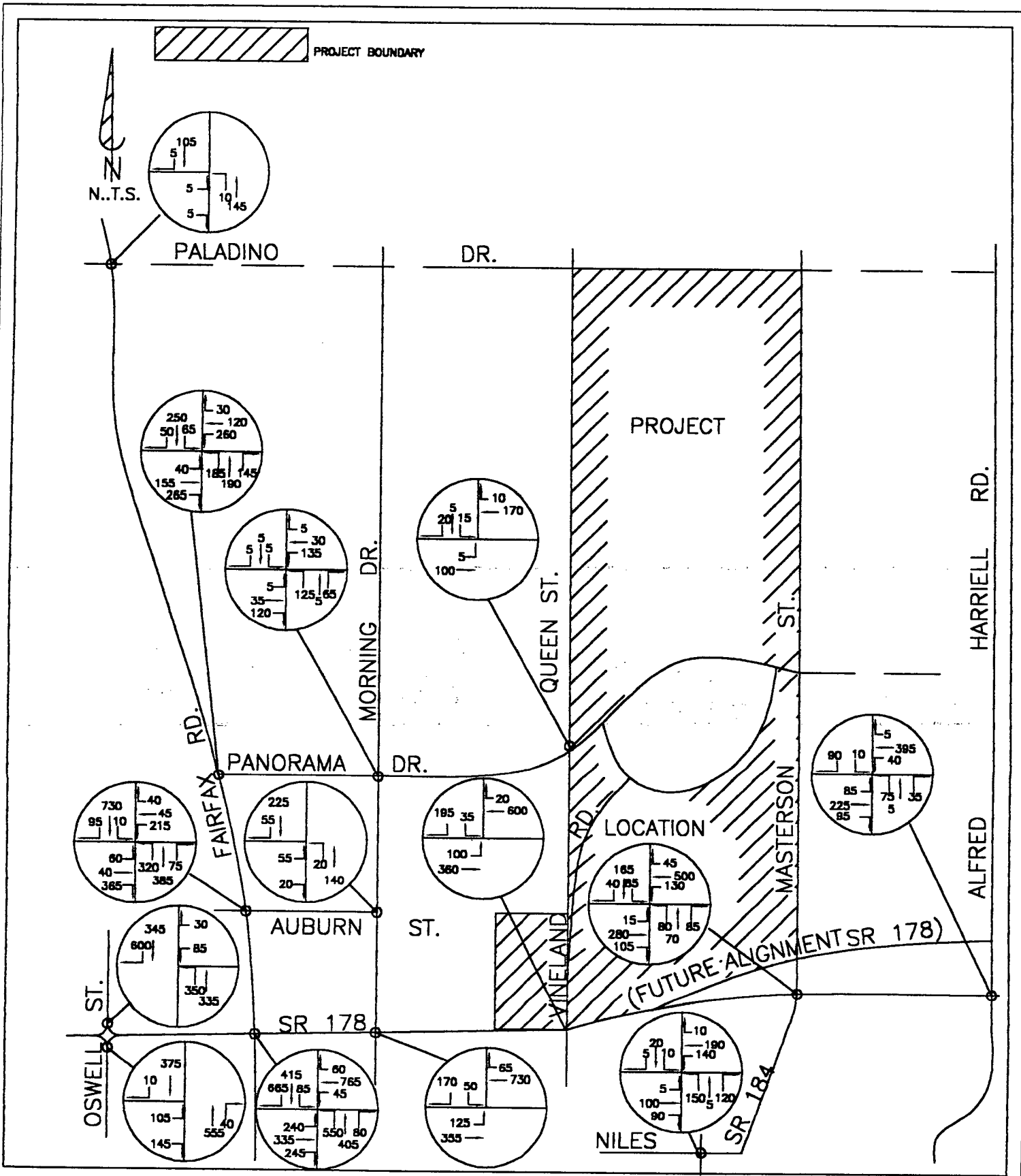
SR 184

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EXHIBIT 9



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 (661)821-3909

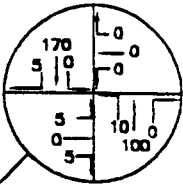
AM PEAK HOUR DISTRIBUTION
 YEAR 2010 WITH PROJECT

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EXHIBIT 10

 PROJECT BOUNDARY

N...T.S.



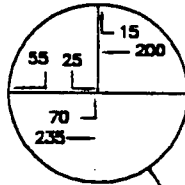
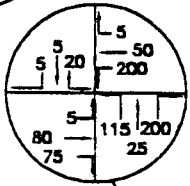
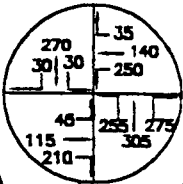
PALADINO DR.

DR.

QUEEN ST.

PROJECT

HARRIELL RD.



MORNING DR.

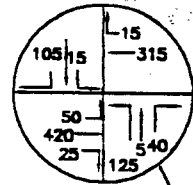
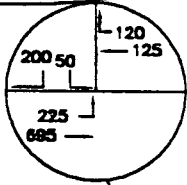
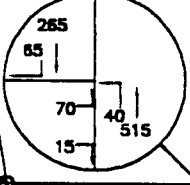
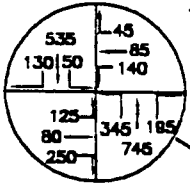
PANORAMA DR.

DR.

RD.

LOCATION

ALFRED



FAIRFAX RD.

AUBURN ST.

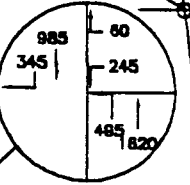
ST.

RD.

(FUTURE ALIGNMENT SR 178)

COMMANDACHE DR.

OSWELL ST.



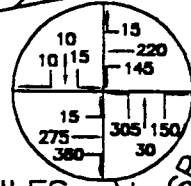
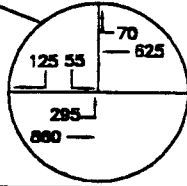
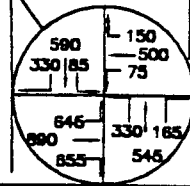
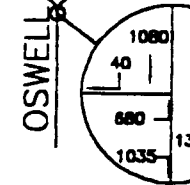
SR 178

DR.

RD.

NILES

SR 184

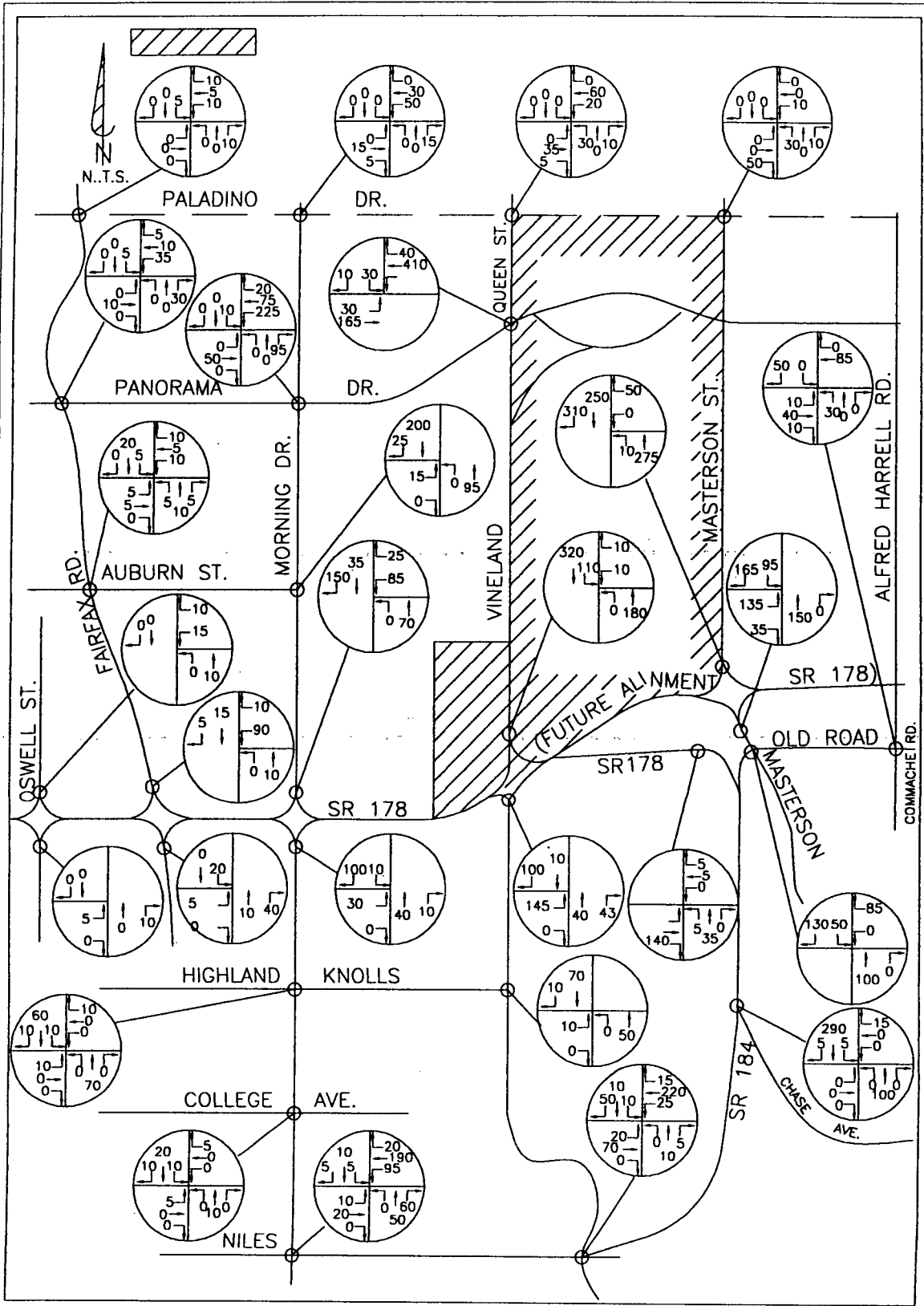


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EXHIBIT 11

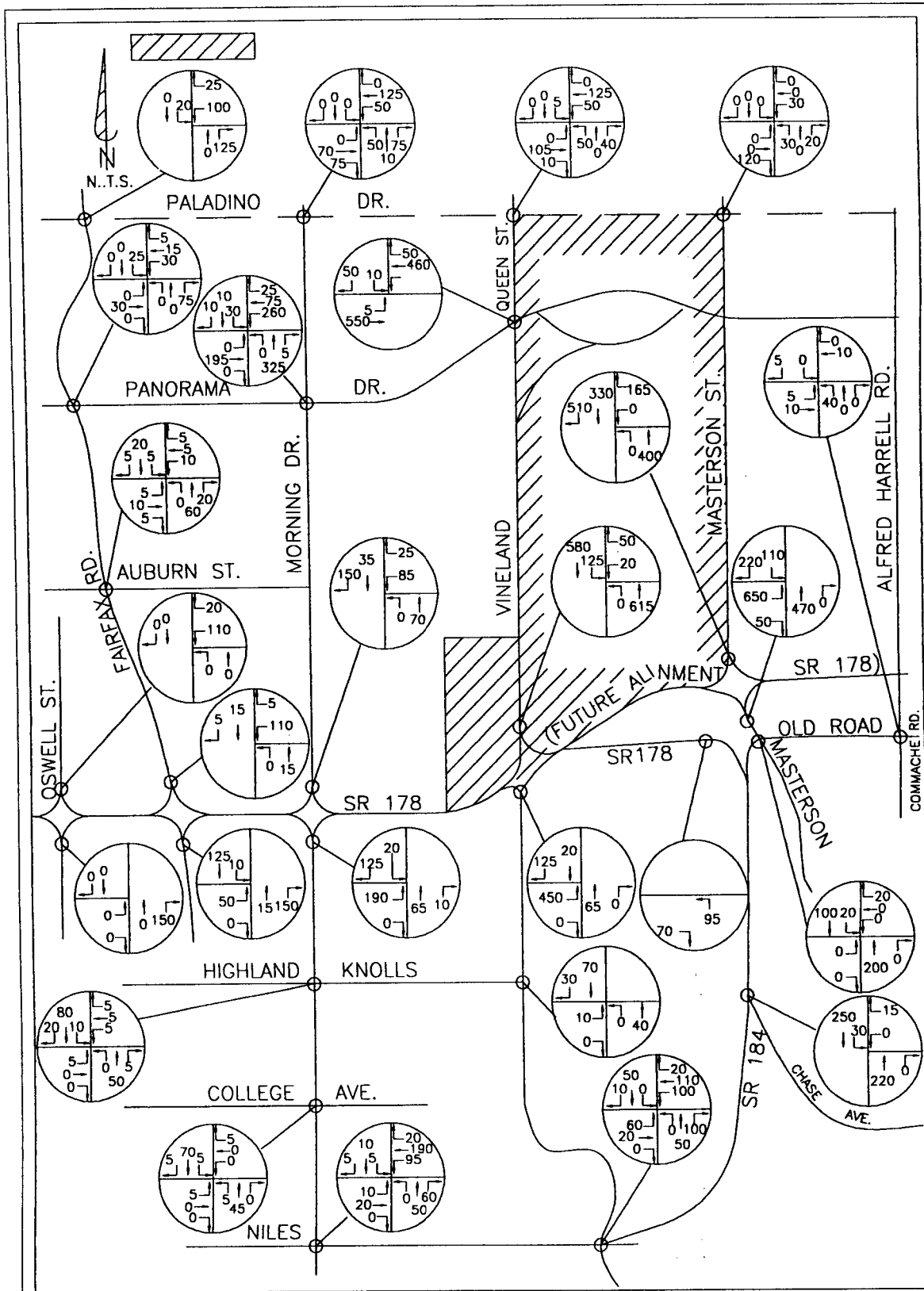


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EXHIBIT 12

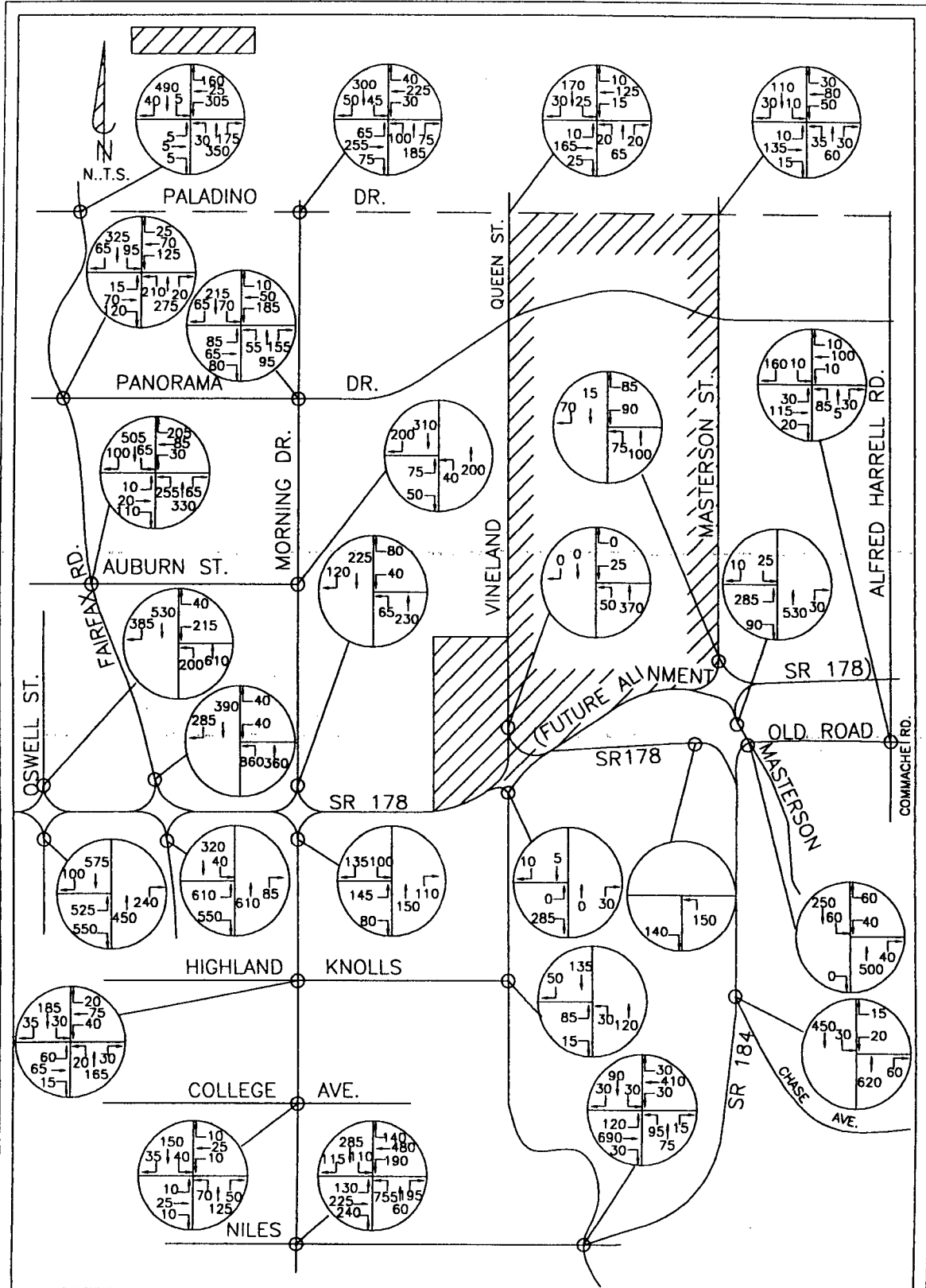


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 2020 VOLUMES PROJECT ONLY

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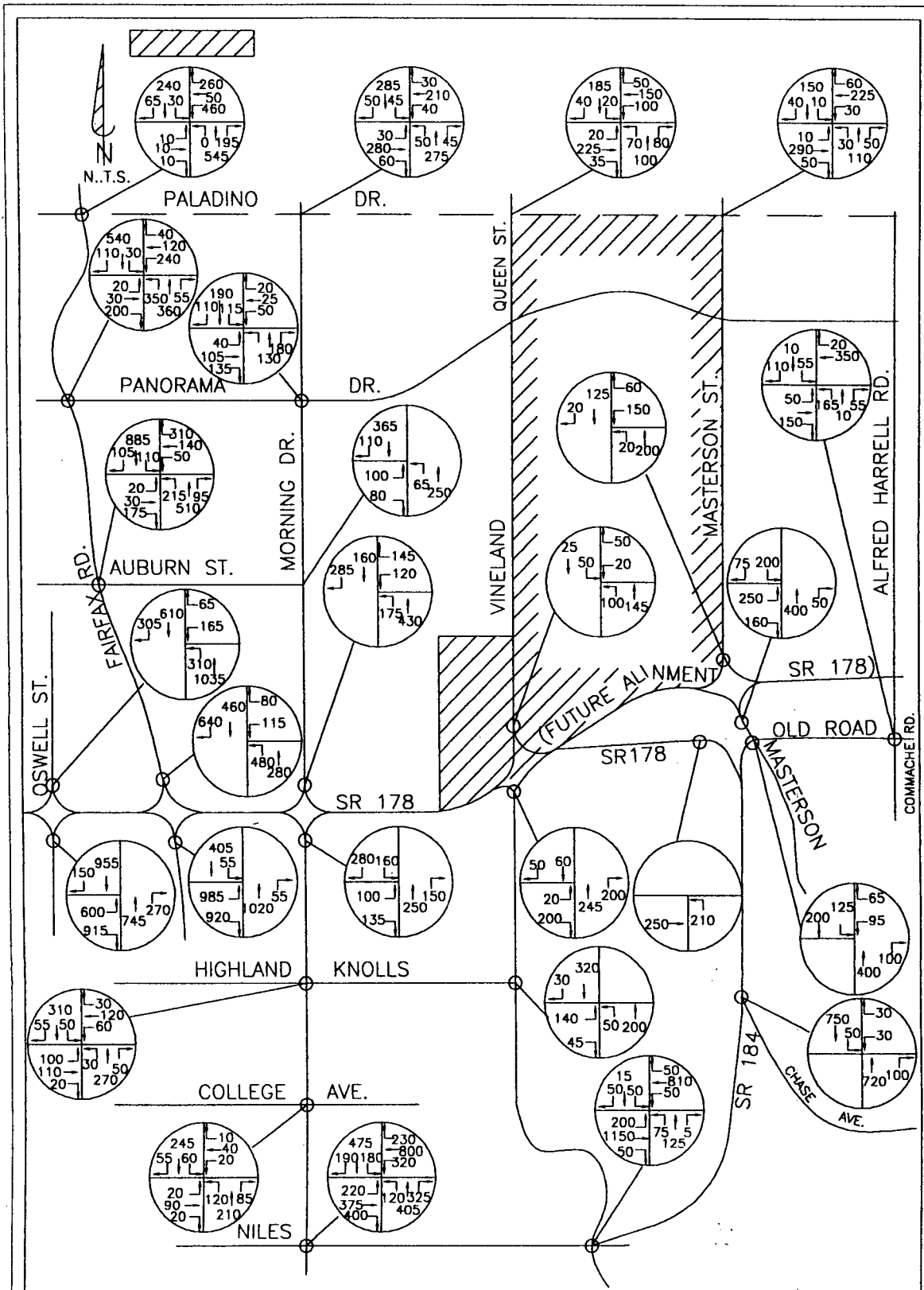
EXHIBIT 13



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 2020 VOLUMES WITHOUT PROJECT

EXHIBIT 14

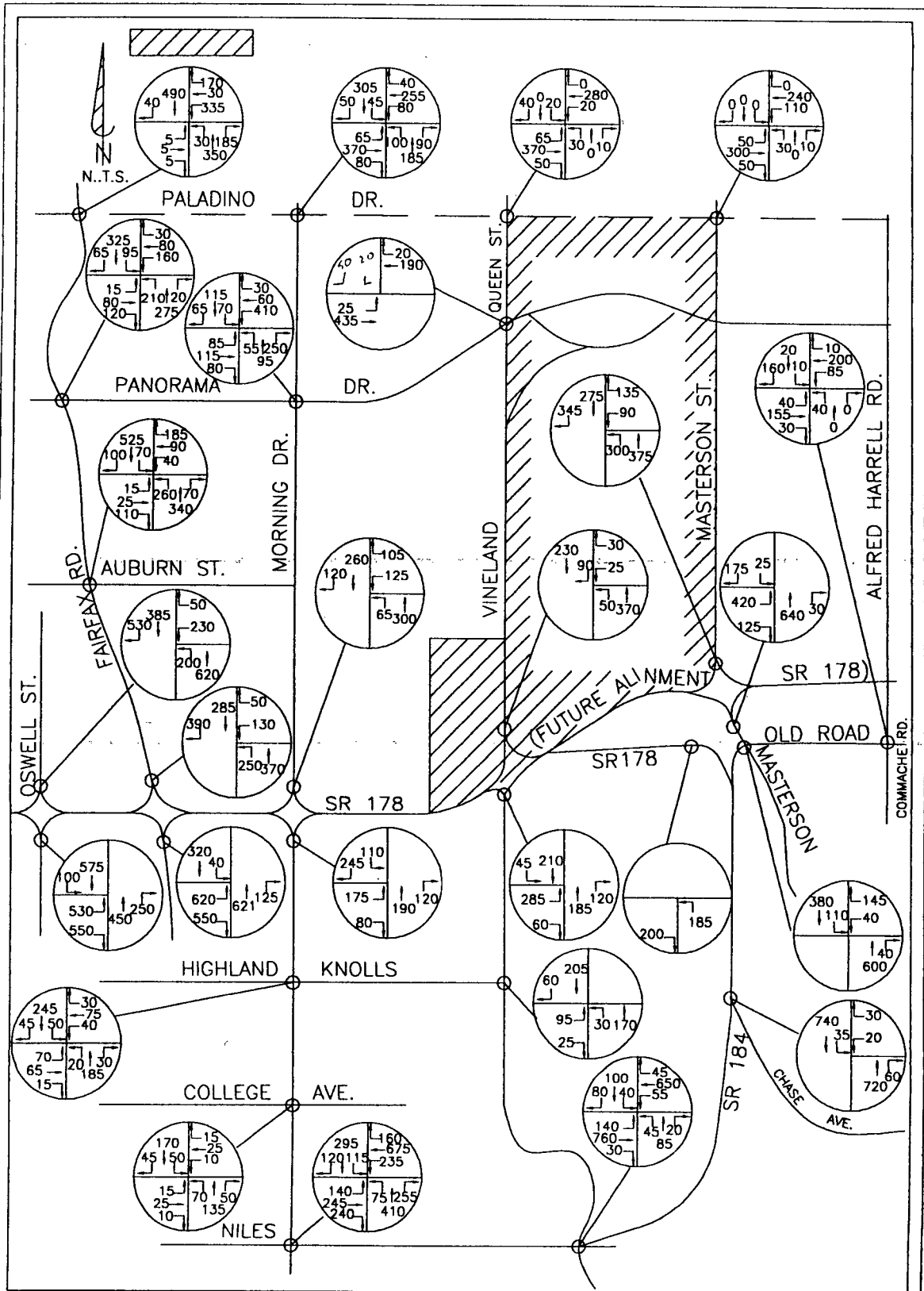


CRENSHAW TRAFFIC ENGINEERING
 TRAFFIC AND TRANSPORTATION CONSULTING
 2995 PINEDALE DR., TEHACHAPI, CA. 93561
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PM PEAK HOUR DISTRIBUTION
 2020 VOLUMES WITHOUT PROJECT

J.N.9-111

EXHIBIT 15

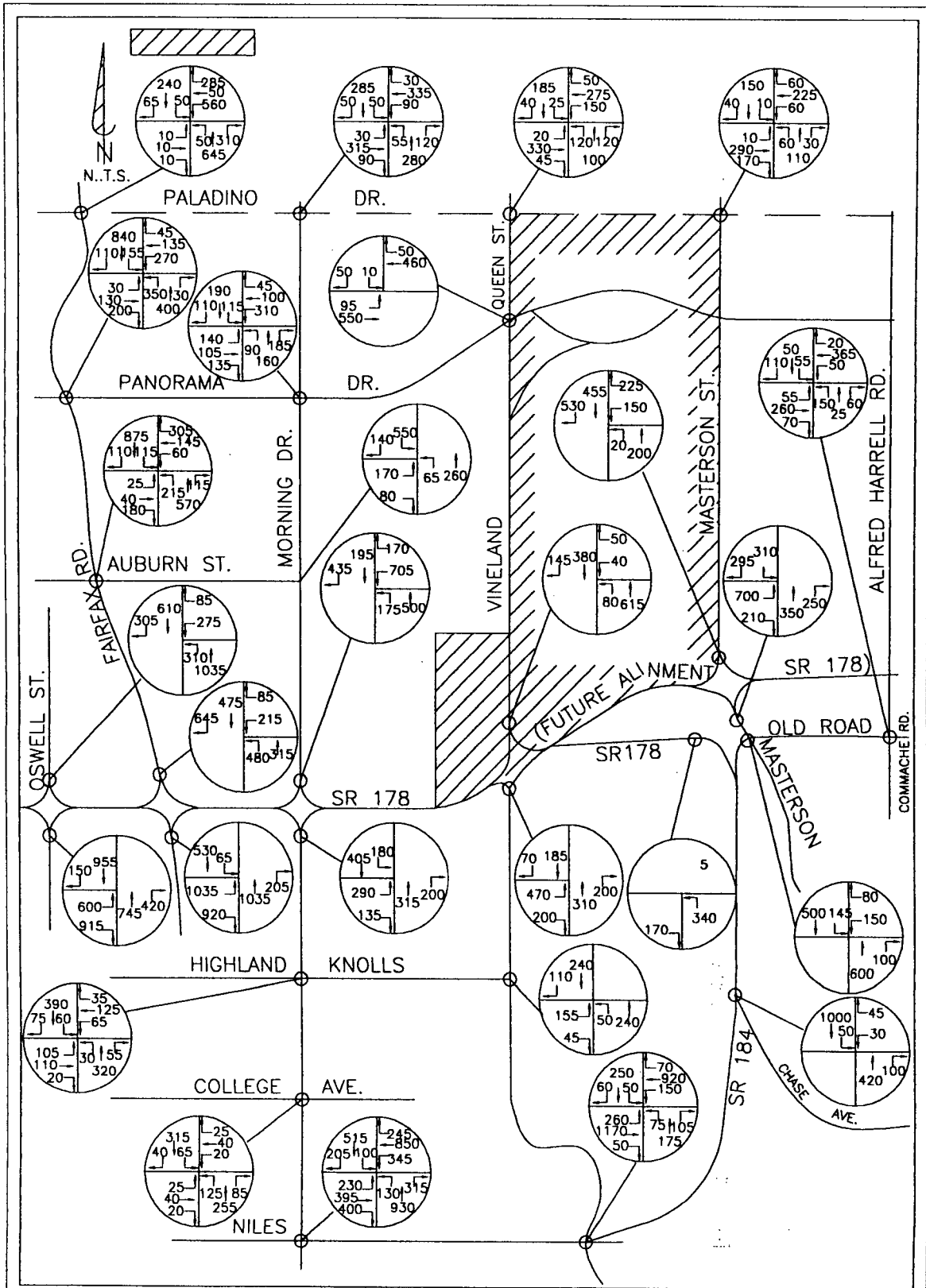


CRENSHAW TRAFFIC ENGINEERING
 TRAFFIC AND TRANSPORTATION CONSULTING
 2995 PINEDALE DR., TEHACHAPI, CA. 93561
 (661)821-3909

AM PEAK HOUR DISTRIBUTION
 2020 VOLUMES WITH PROJECT

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EXHIBIT 16



CRENSHAW TRAFFIC ENGINEERING
 TRAFFIC AND TRANSPORTATION CONSULTING
 2995 PINEDALE DR., TEHACHAPI, CA. 93561
 (661)821-3909

J.N.9-111

PM PEAK HOUR DISTRIBUTION
 2020 VOLUMES WITH PROJECT

EXHIBIT 17

**APPENDIX
EXHIBITS, TRAFFIC COUNTS, AND WORKSHEETS**

This appendix to the Traffic Impact Study is located in Volume II of the Draft EIR. Volume II is available for review at the City of Bakersfield Planning Department, 1715 Chester Avenue, Bakersfield, California. This appendix includes exhibits illustrating peak hour traffic volumes by turning movement, traffic counts, and worksheets.