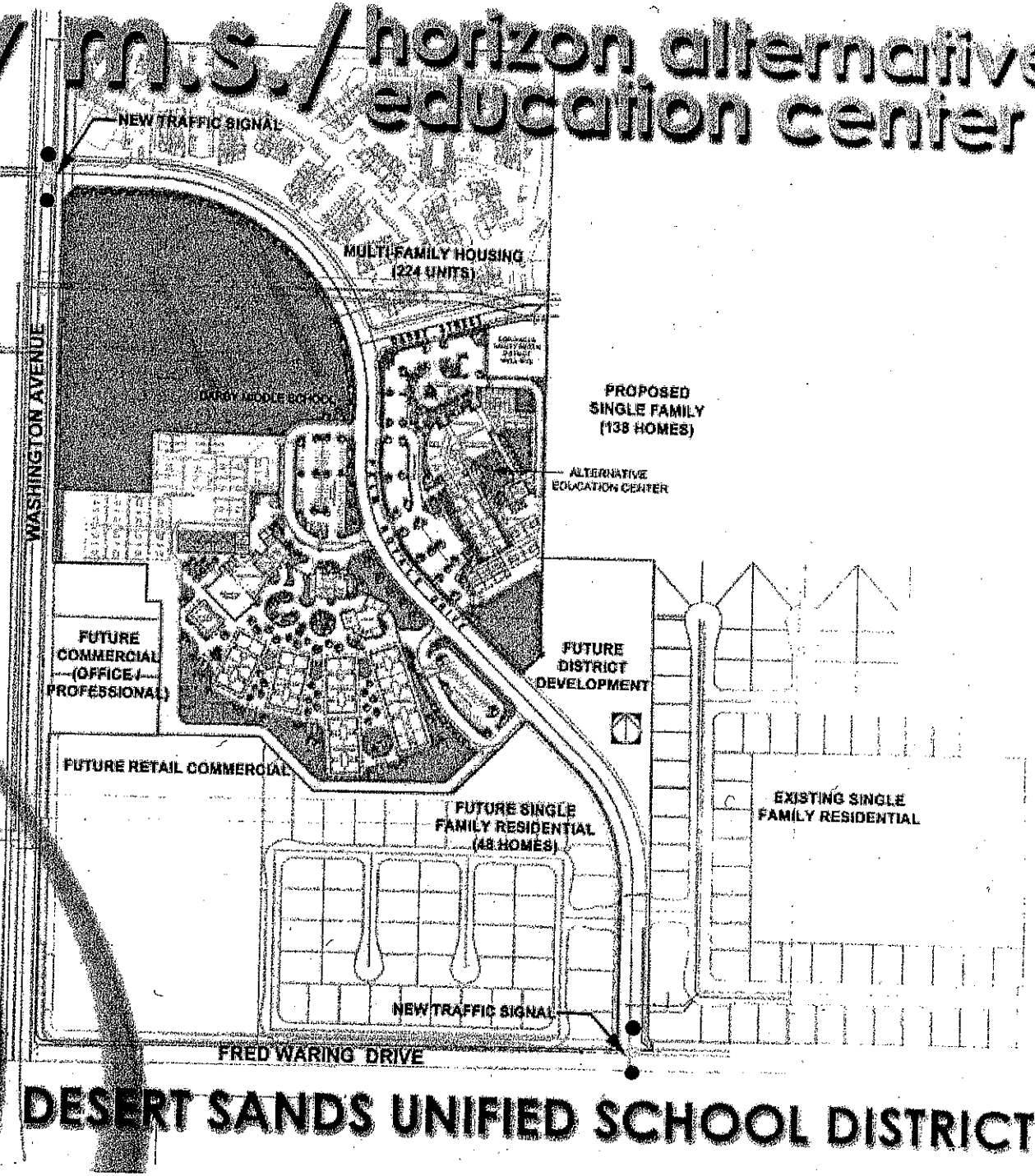
darby m.s. / horizon alternative education center

SURROUNDING SITE PLAN



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Architects · Planners

DESERT SANDS UNIFIED SCHOOL DISTRICT

DRAFT

DARBY MIDDLE SCHOOL, HORIZON SCHOOL AND ALTERNATIVE EDUCATION HIGH SCHOOL TRAFFIC STUDY

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April 8, 2003

DARBY MIDDLE SCHOOL, HORIZON SCHOOL AND ALTERANTIVE EDUCATION HIGH SCHOOL
TRAFFIC STUDY

This report presents the results of a traffic analysis performed for the proposed Darby Middle School, Horizon School and Alternative Education High School in the City of La Quinta. This report has been prepared at the request of Desert Sands Unified School District (DSUSD) in conjunction with the required CEQA process.

PROJECT DESCRIPTION

The proposed project is located on the southeast corner of Palm Royale and Washington Street. This is a new intersection with Washington Street opposite Mountain View Avenue. The project proposes to realign Darby Road to intersect with Palm Royale Drive and Palm Royale Drive extended to the newly created intersection. The location of the proposed project is illustrated in Figure 1. The proposed project consists of a grade 6 through 8 middle school located on the west side of Palm Royale Drive, with an Alternative Education High School and Horizon School grades K-8 located on the southeast corner of Palm Royale Drive and the realigned Darby Road. Maximum enrollment of the middle school is 1,200 students with the Alternative Education High School and Horizon School having a maximum of 350 and 140 students, respectively. Access to the project for the middle school will be provided by four driveways serving two separate parking lots, one for faculty parking and bus drop-off/pick-up and the second for parent parking and drop-off/pick-up as shown in Figure 2. The access for the Alternative Education High School and Horizon School has yet to be determined.

SURROUNDING HIGHWAY NETWORK

The project will take access from Palm Royale Drive. Traffic to and from the site will be mostly locally generated (i.e., parents driving children to/from school). This locally generated traffic will reach the proposed site by utilizing Washington Street, Fred Waring Drive and Hovley Lane E/42nd Avenue.

The study area included five intersection in the immediate area. These intersections are as follows:

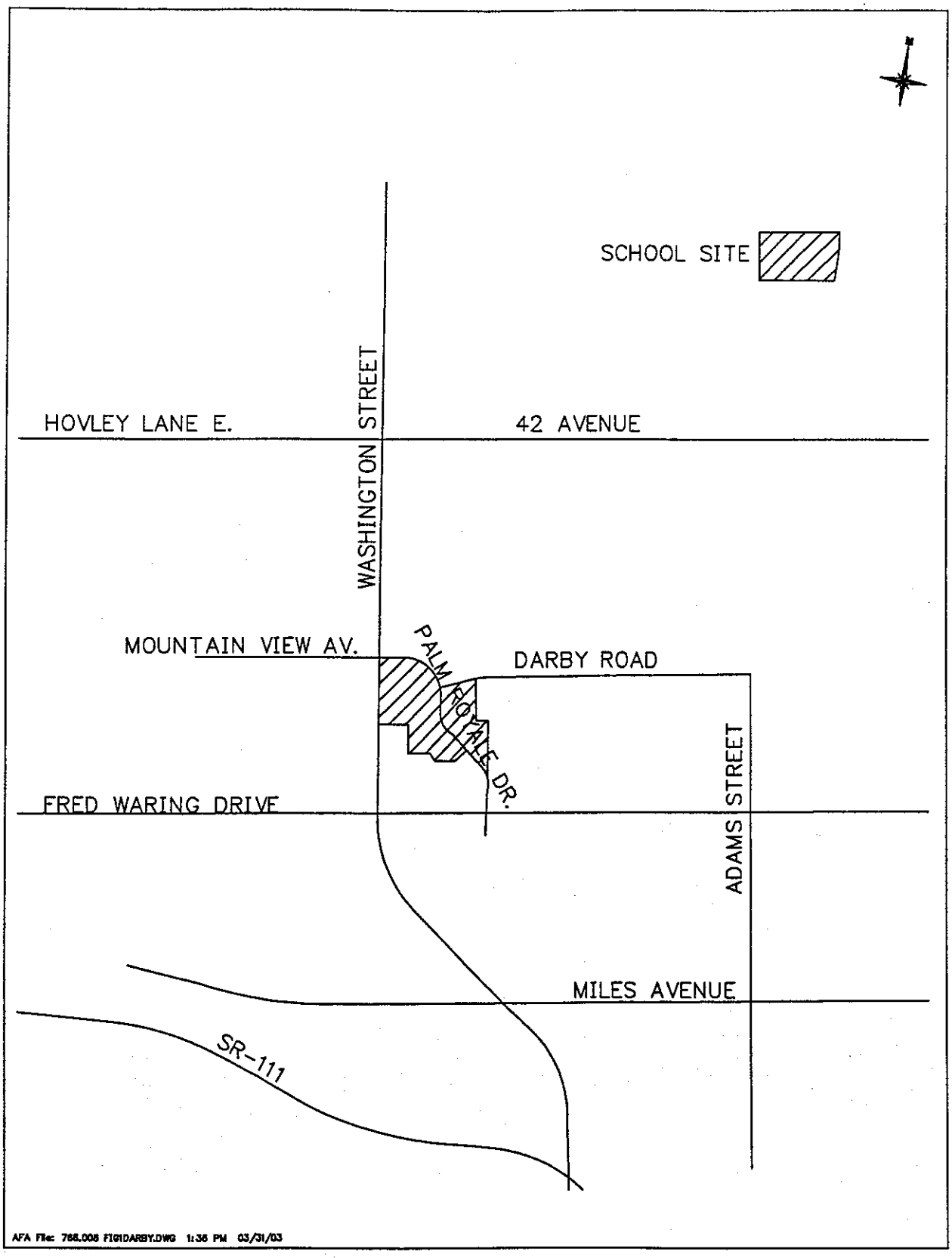


Figure 1

PROJECT LOCATION

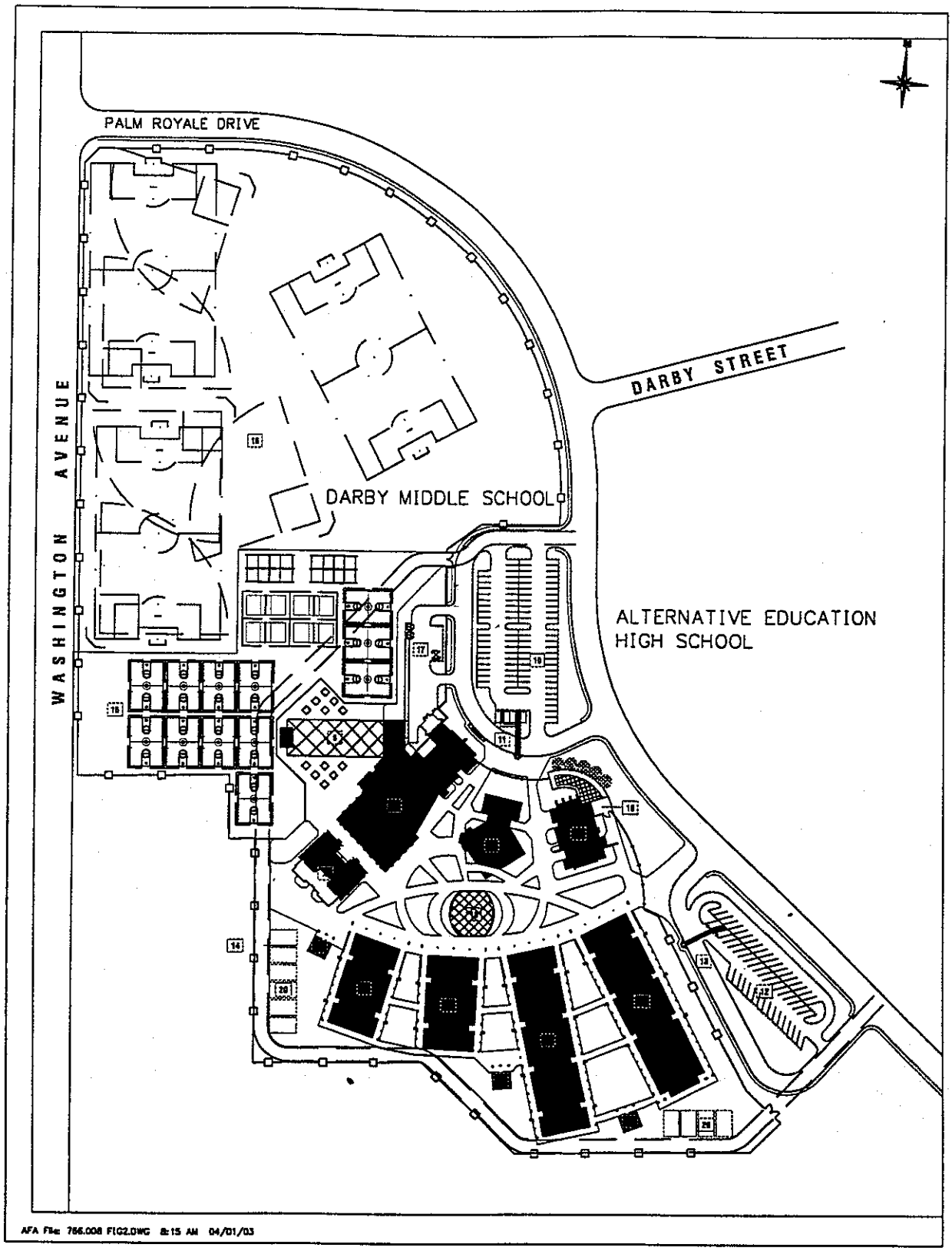


Figure 2

PROPOSED SITE PLAN

Washington Street and 42nd Avenue/Hovley Lane E

Washington Street and Palm Royale Drive/Mountain View

Washington Street and Fred Waring Drive

Fred Waring Drive and Palm Royale Drive

Fred Waring Drive and Adams Street

Existing AM peak hour volumes were counted by Traffic Data Service, Inc. (TDS) and Newport Traffic Studies (count data sheets are in the Appendix). Existing AM peak hour volumes for the study intersections are illustrated in Figure 3. The existing PM peak hour volumes for school traffic (1:45 – 2:45 PM) was also counted by TDS for Washington Street and 42nd Street/Hovley Lane E and is illustrated in Figure 4.

TRIP GENERATION AND DISTRIBUTION

The proposed project consists of a middle school with a maximum of 1,200 students, an Alternative Education High School with a maximum of 350 students, and a Horizon School with a maximum of 140 students. Trip generation rates for the middle school were obtained from a study of actual schools in the Desert Sands Unified School District and are as indicated in Table 1 (trip generation data sheets are included in the appendix). No actual generated rates were available for the Alternative Education High School and Horizon School. The actual trips for the Alternative Education High School were derived from the fact that only 15 percent of the students arrive during the peak hour since they do not attend a full school day and meet with only minimum school staff. The Horizon School will have only 15 teachers and therefore a maximum of 15 students at anytime. Trip generation from the project is summarized in Table 2. As this table indicates, the proposed project will generate 1,240 AM peak hour trips and 622 school PM peak hour trips (1:45 – 2:45 PM). The school PM peak hour is from 1:45 – 2:45 PM and does not correspond to intersection peak hour, usually 4:00 – 6:00 PM. The site trips during the intersection PM peak hour are nominal, therefore no analysis is deemed necessary for the 4:00 – 6:00 PM peak hour. Since project generated trips have the most impact on the intersection of Washington Street/42nd Street/Hovley Lane E, a school PM peak hour (1:45 – 2:45 PM) was conducted.

DSUSD proposed a boundary for the middle school from Fred Waring Drive, northerly to the district boundary and from El Dorado Drive easterly to Jefferson (south of the I-10 Freeway) and Madison (north the I-10 Freeway). Based on the 577 middle school students presently in this area and potential areas of growth trip distribution for the middle school was determined. The Alternative

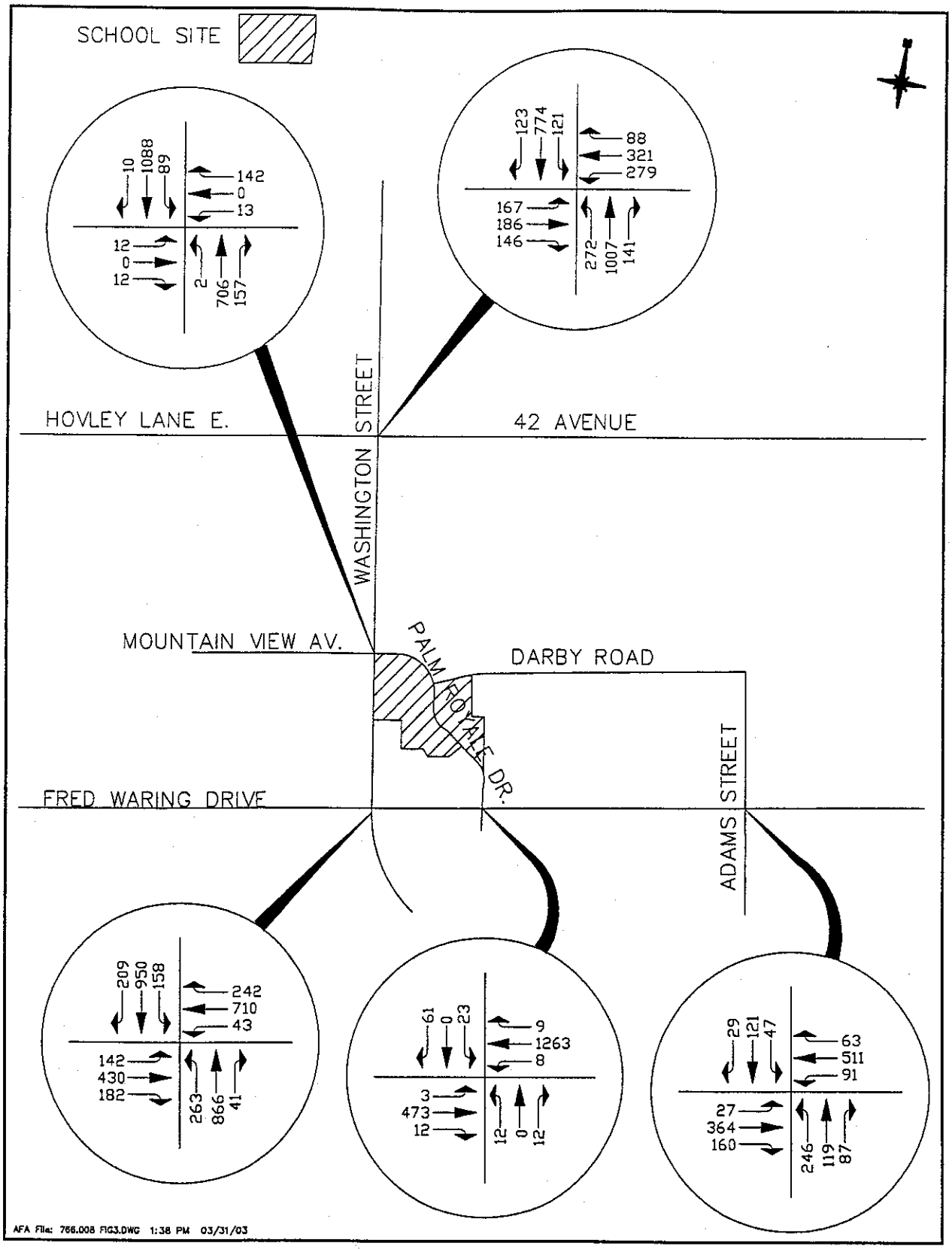


Figure 3

EXISTING AM PEAK HOUR VOLUMES

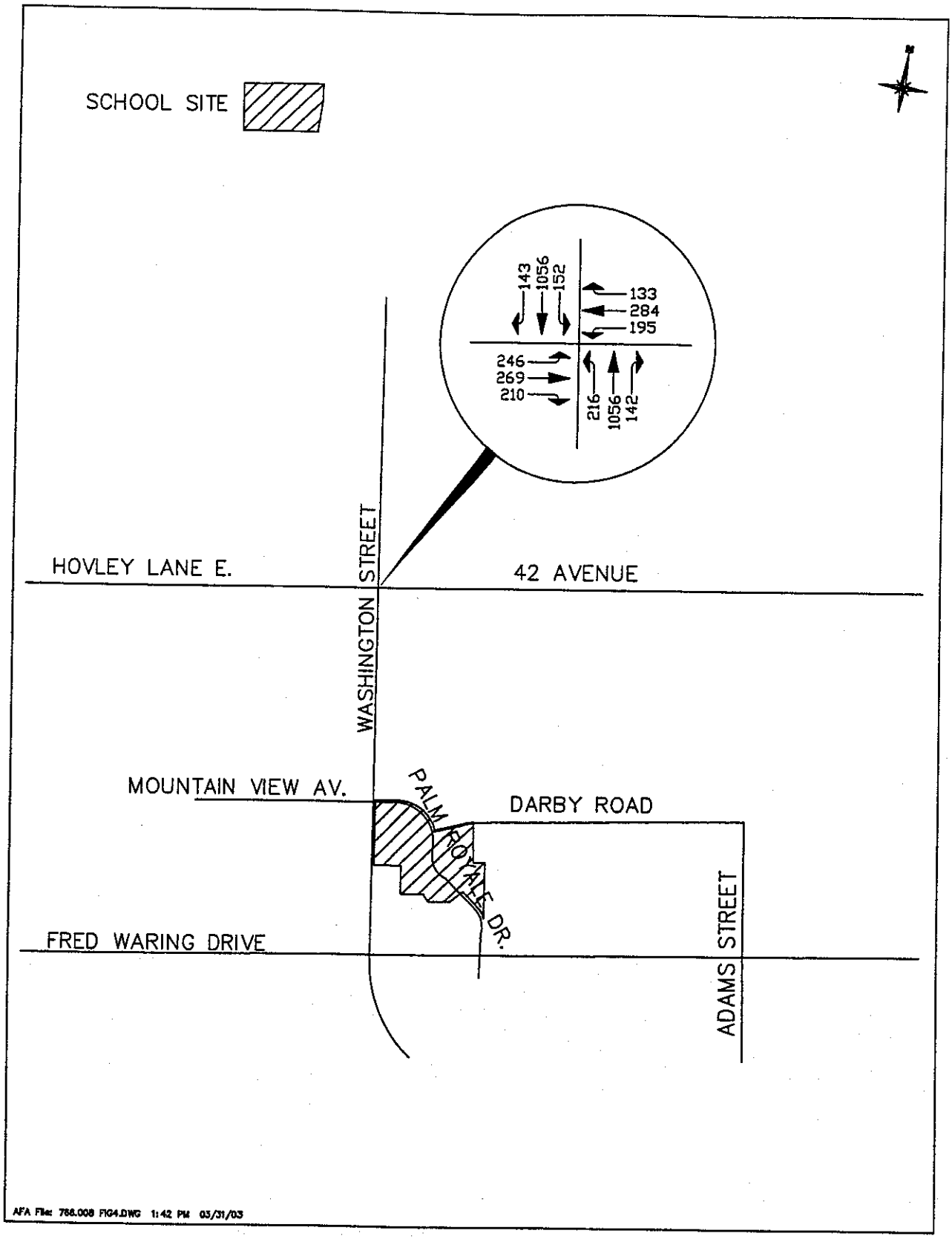


Figure 4

EXISTING SCHOOL PM PEAK HOUR VOLUMES
1:45 PM - 2:45 PM

Table 1

TRIP GENERATORS

MIDDLE SCHOOL	IN	OUT	TOTAL JOHN GLENN*	ITE (STUDENTS ONLY)	DIFFERENCE
AM Peak Hour (6:40 – 7:40 AM)	.49	.41	.90/student	.46/student	+95.6%
PM Peak Hour (1:45 – 2:45 PM)	.18	.23	.41/student	.29/student	+41.3%
TOTAL PER DAY			2.44**	1.45/student	+68.5%

* Includes staff
** Increased ITE by average AM/PM peak hour

Table 2

PROPOSED PROJECT TRIP GENERATION SUMMARY

	IN	OUT	TOTAL
Middle School Students 1200			
School AM Peak Hour (6:40 – 7:40 AM)	588	492	1080
School PM Peak Hour (1:45 – 2:45 PM)	216	276	492
Alternative High School (peak hour 52 students) + staff			
School AM Peak Hour (6:40 – 7:40 AM)	70	40	110
School PM Peak Hour (1:45 – 2:45 PM)	30	50	80
Horizon School (15 teachers, 15 students)			
School AM Peak Hour (6:40 – 7:40 AM)	35	15	50
School PM Peak Hour (1:45 – 2:45 PM)	20	30	50
TOTAL AM PEAK HOUR	693	547	1,240
TOTAL PM PEAK HOUR	266	356	622

Education High School and Horizon School can come from anywhere in the DSUSD and is expected to be mostly from the south and west of the site. Figures 5 and 6 shows project distribution and related project distribution for the AM and PM peak hours, respectively.

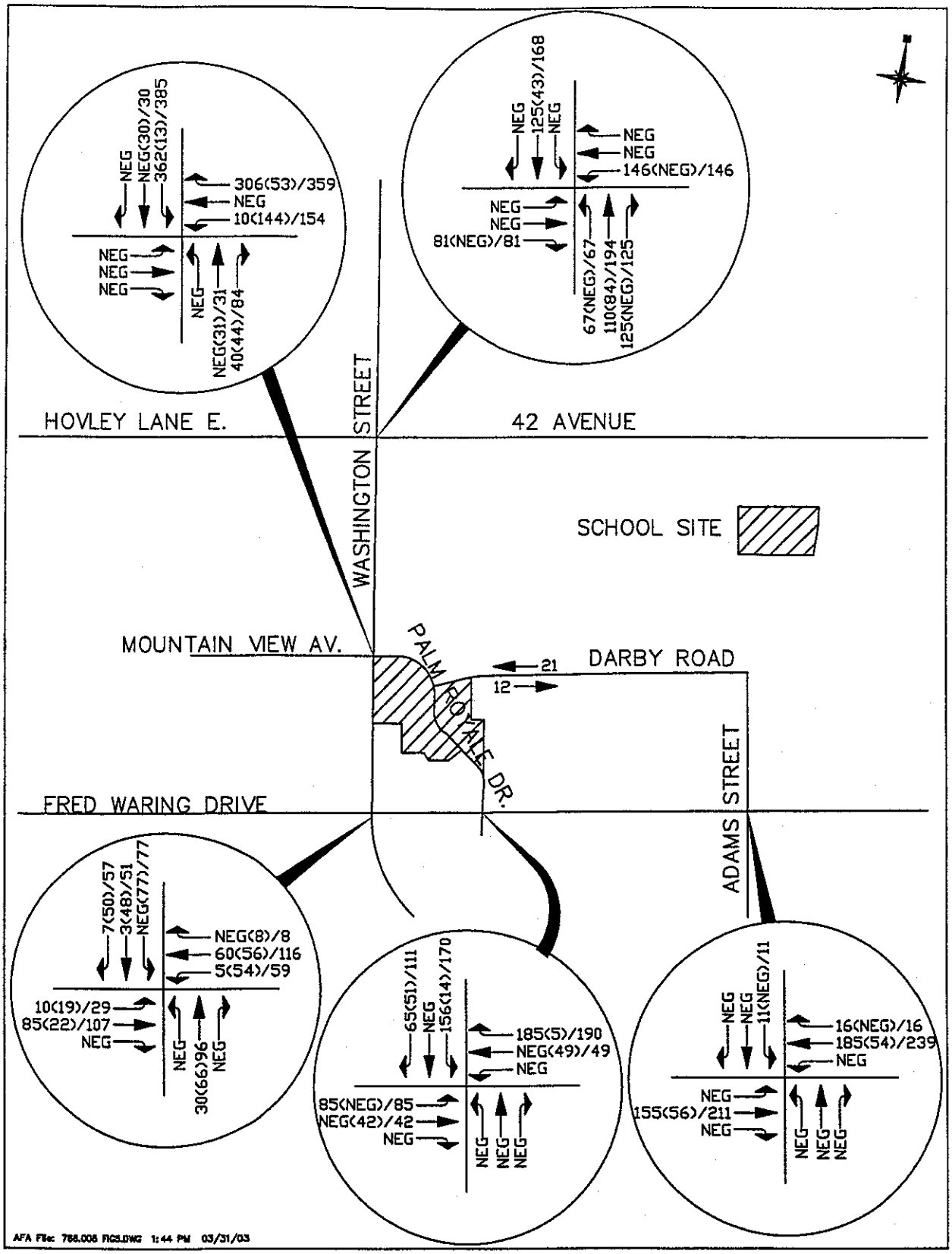
TRAFFIC IMPACT ANALYSIS

AM and PM peak hour project and related project (Dutch Parent Entitlement) were added to the existing volumes and are illustrated in Figures 7 and 8. The intersection of Fred Waring and Palm Royale Drive is presently stop controlled. A traffic study for the Dutch Parent Entitlement at the northeast corner of Fred Waring Drive and Washington Street indicated that with that project traffic signal warrants are met for this intersection and also for the new intersection of Palm Royale Drive and Washington Street. The Dutch Parent Entitlement project would also make improvements on Fred Waring Drive at Washington Street, therefore, all study intersections are considered to be signalized for comparison purposes.

Intersection capacity utilization (ICU) values were determined for existing and existing-plus-project and related project conditions for the AM peak hour at all study intersections and also for the school PM peak hour at the Washington Street/42nd Avenue/Hovley Lane E intersection. The ICU values are a means of representing peak hour volumes to capacity (V/C) ratios, with a value of .80 representing the upper threshold for level of service (LOS) "C."

Table 3 summarizes the results of the ICU analysis at the study intersections (actual ICU calculation sheets are included in the appendix). As this table indicates, all the study intersections except Palm Royale Drive and Washington Street will operate at LOS "C" or better for both existing and existing-plus-project-plus-related project conditions.

The new intersection of Palm Royale/Mountain View and Washington Street is expected to operate at LOS "D" for the with-project scenario. To mitigate this to an acceptable LOS "C," it is recommended that a southbound dual left-turn lane of approximately 200 feet be constructed and the westbound lane configuration changed to a left-thru-right and right lane. The southbound dual left-turn lane will require widening of the east side of Washington Street six feet at the intersection of Palm Royale Drive and a transition widening both north and south of Palm Royal Drive. This mitigation would result in an intersection LOS of "A."



Legend	Figure 5
XX(XX)/XX PROJECT(RELATED PROJECT)/TOTAL	AM PEAK HOUR PROJECT GENERATED TRIPS (RELATED PROJECT TRIPS)

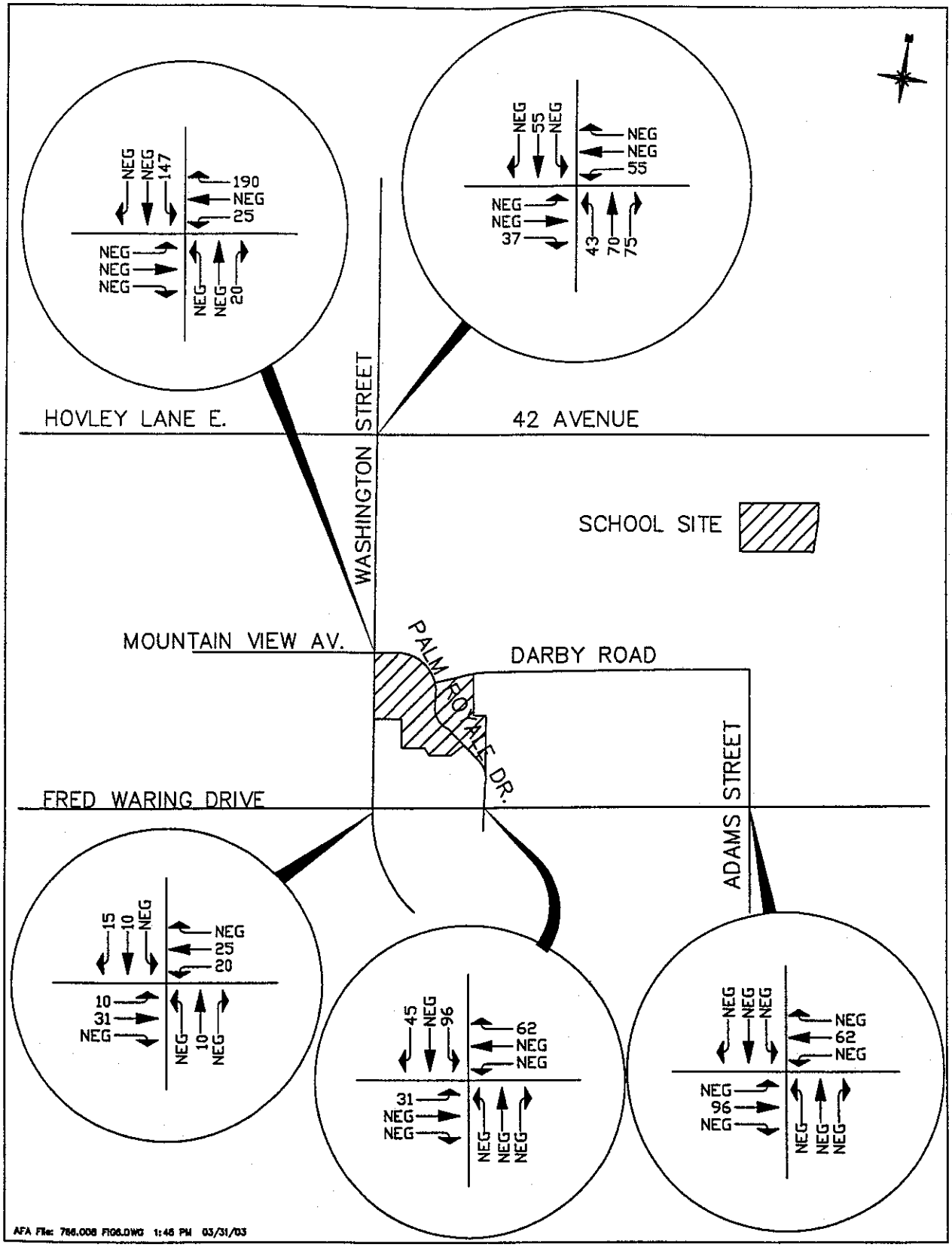


Figure 6

SCHOOL PM PEAK HOUR
PROJECT GENERATED TRIPS
1:45 PM TO 2:45 PM

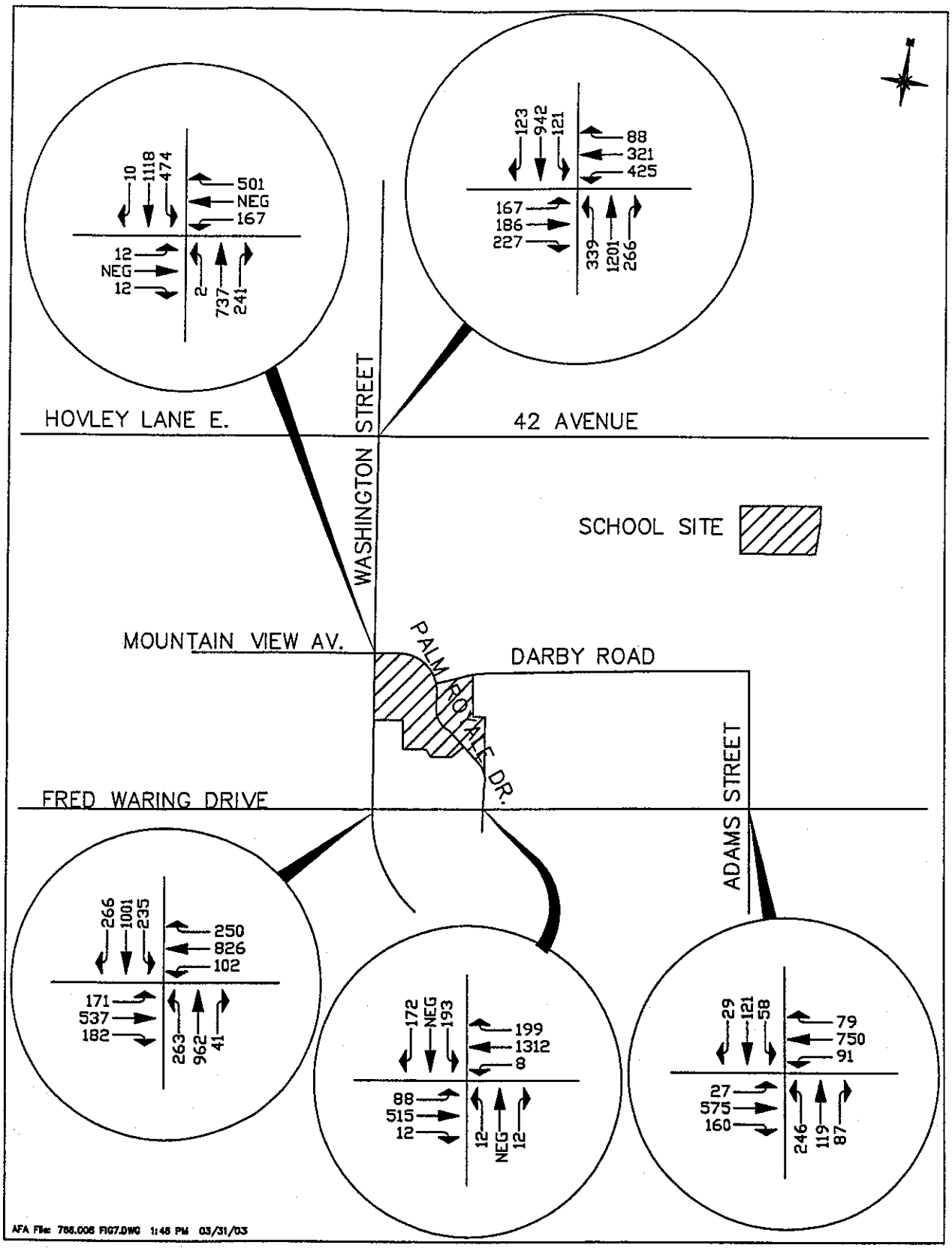


Figure 7

EXISTING AM PEAK HOUR PLUS
PROJECT GENERATED TRIPS
& RELATED PROJECT TRIPS

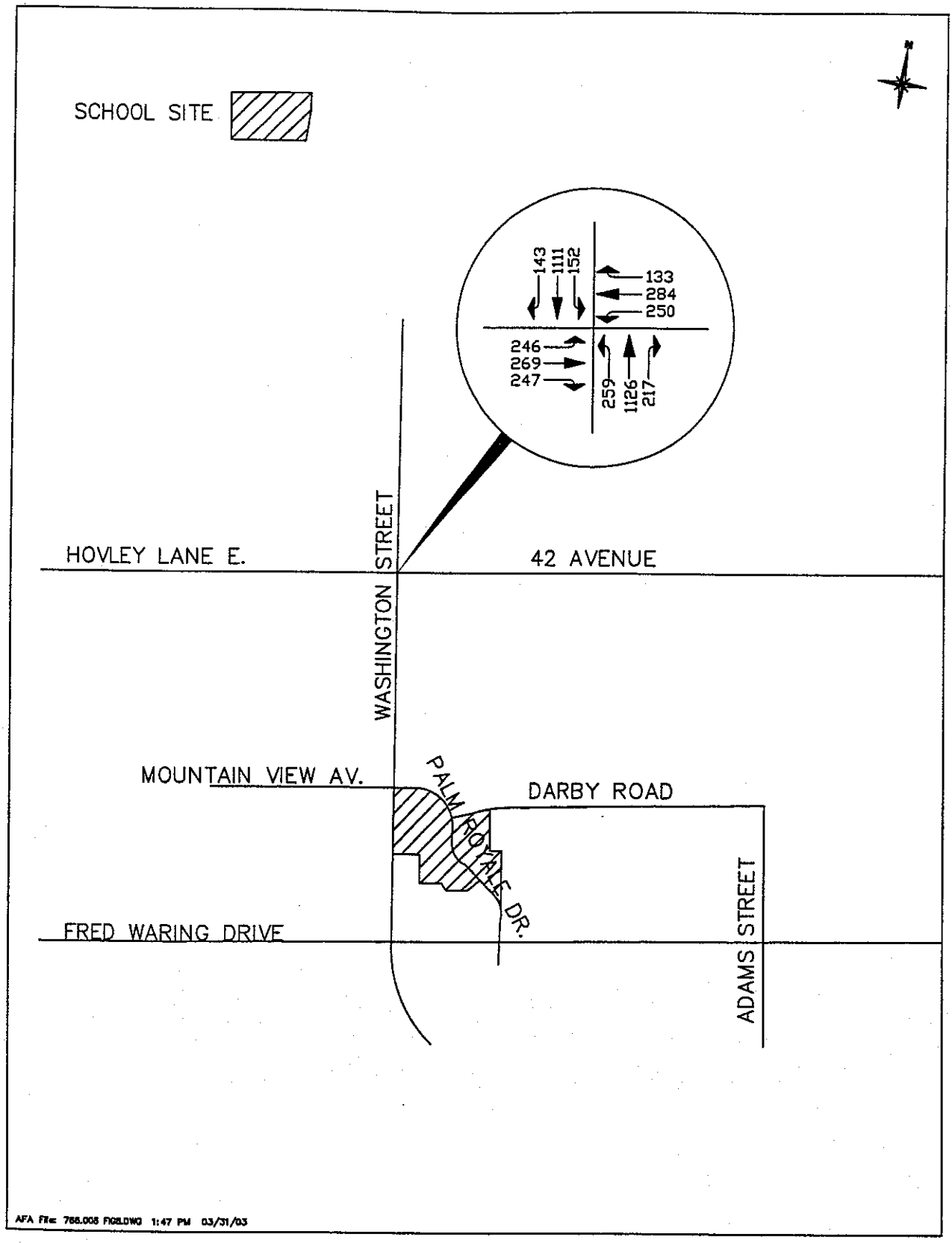


Figure 8

EXISTING SCHOOL PM PEAK HOUR VOLUMES
PLUS SCHOOL GENERATED TRIPS
1:45 PM - 2:45 PM

Table 3

ICU SUMMARY

INTERSECTION	EXISTING AM	EXISTING PM	EXISTING + PROJECT + RELATED PROJECTS AM	EXISTING + PROJECT + RELATED PROJECTS PM	EXISTING + PROJECT + RELATED PROJECTS WITH MITIGATION AM	EXISTING + PROJECT + RELATED PROJECTS WITH MITIGATION PM
1. Hovley Land/42nd & Washington	.61	.65	.79	.68	.71	.68
2. Palm Royale & Washington	.40	NS	.87	NS	.56	NS
3. Fred Waring & Washington	.59	NS	.65	NS	NM	NS
4. Fred Waring & Palm Royale	.49	NS	.64	NS	NM	NS
5. Fred Waring & Adams	.64	NS	.78	NS	NM	NS

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 – 1.00 E
Above 1.00 F

NS = not studied
NM = no mitigation

The intersection of Washington Street and 42nd Street/Hovley Lane E is projected to operate at LOS "C" in the with-project condition. This is an acceptable level of service, but with 279 existing and 425 projected westbound left-turns, it is recommended that 42nd Street/Hovley be re-striped and the signal modified to provide dual eastbound and westbound left turns. The LOS for the intersection would thereby be improved to a high "C."

LOCAL CIRCULATION AND STACKING

The proposed project will have four access points on Palm Royale Drive for the middle school. It is recommended that access points for the Alternative Education High School and Horizon School line up with the middle school access points. Since the majority of the traffic is generated by the middle school, the four access points are necessary. These points are proposed to serve two separate parking areas with one driveway in-only and one driveway out-only for each parking lot. One parking lot is for faculty parking and bus drop-off/pick-up and the second parking lot accommodates visitor parking and parent drop-off/pick-up. One parking lot will provide 97 parking spaces and the other 55 parking spaces. Both will have an additional area for drop-off/pick-up of students.

This design minimizes the conflict between thru-traffic on the adjacent street and vehicles entering or exiting the project site. The one-way circulation through the visitor drop-off/pick-up area virtually eliminates the chance that Palm Royale Drive thru-traffic will be blocked by vehicles trying to enter or exit the school parking lots.

One problem that occurs at most middle schools is the impact of parents blocking traffic while waiting to pick up their child in the afternoon. Using the data from the study of afternoon arrivals and departures at John Glenn Middle School in La Quinta (trip generation data sheets are in the appendix), it was determined that on-site storage for 55 vehicles is necessary. The proposed middle school provides 55 parking spaces with space for an additional 12 vehicles adjacent to the pick-up/drop-off curb for the proposed visitor/student drop-off/pick-up parking lot. In both parking lots, additional space is provided for the one-way movement of vehicles through the pick-up/drop-off areas. Therefore, adequate parking and space is provided to eliminate conflict between thru-traffic and entering/exiting project vehicles. The DSUSD has indicated that if this parking lot does not prove sufficient, the other parking lot with 97 parking spaces and room for an additional 15 + vehicles adjacent to the curb could be used.

SUMMARY AND CONCLUSIONS

The proposed project, which consists of a maximum of 1,200 student high school, a maximum 350 student alternative Education High School and a maximum 140 student Horizon School, will generate 1,240 trips during the AM peak hour and 622 trips during the project PM peak hour (1:45 - 2:45 PM). The project peak hour afternoon trips are not expected to have a significant impact because they are completed before 4:00 PM, with very few trips generated after 4:00 PM, and the surrounding streets peak hour. The school PM peak hour was checked at the intersection most impacted (Washington Street and 42nd Avenue/Hovley Lane E) and indicates no significant impact. The AM peak hour trips were distributed to the surrounding arterial network and added along with related projects to the existing traffic. The project was found to have no significant impact on the study intersections in the project vicinity with the exception of the Washington Street/42nd Avenue/Hovley Lane E and Washington Street/Palm Royale Drive intersections.

To mitigate the impact of the project on the intersection of Washington Street and 42nd Avenue/Hovley Lane E, it is recommended that the project be responsible for its fair share of the re-striping and signal modification necessary to provide eastbound and westbound dual left-turn lanes. Fair share analysis for this work is determined to be the project's contribution to the westbound left turns divided by the total left turns, which is 146/425, or 34.4 percent.

To mitigate the impact of the project on the intersection of Fred Waring Drive and Palm Royale Drive, it is recommended that the project be responsible for its fair share of the proposed new traffic signal installation at this location. Fair share for this mitigation is the project traffic divided by the overall (or approach) volume at the intersection or 491/2,515 (20 percent).

To mitigate the impact of the project on the intersection of Washington Street and Palm Royale Drive, it is recommended that the project be responsible for 50 percent of the cost of the new traffic signal. It is also recommended that the project pay for improvements on Palm Royal Drive along its frontage and 100 percent of the cost for southbound dual left-turn lanes which also require widening of Washington Street six feet at the intersection and transition widening north and south of the intersection.

DEFINITIONS

Certain terms used throughout this report are defined below to clarify their intended meaning:

ADT	Average Daily Traffic. Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.
DU	Dwelling Unit. Used in quantifying residential land use.
ICU	Intersection Capacity Utilization. A measure of the volume to capacity ratio for an intersection. Typically used to determine the peak hour level of service for a given set of intersection volumes.
LOS	Level of Service. A scale used to evaluate circulation system performance based on intersection ICU values or volume/capacity ratios of arterial segments.
Peak Hour	This refers to the hour during the AM peak period (typically 7 AM - 9 AM) or the PM peak period (typically 3 PM - 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.
Tripend	A trip generation measure which represents the total trips entering and leaving a location.
TSF	Thousand Square Feet. Used in quantifying non-residential land uses, and refers to building floor area.
V/C	Volume to Capacity Ratio. This is typically used to describe the percentage of capacity utilized by existing or projected traffic on a segment of an arterial or intersection.
VPD	Vehicles Per Day. Similar to ADT, but more typically applied to trip generation (i.e., the amount of traffic generated by a given amount of land use).
VPH	Vehicles Per Hour. Used for roadway volumes (counts or forecasts) and trip generation estimates. Measures the number of vehicles in a one hour period, typically the AM or PM peak hour.

APPENDIX

Traffic Data Services, Inc.
TABULAR SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S STREET: ADAMS ST E/W STREET: FRED WARING CITY: LA QUINTA

DATE: 3/18/03 DAY: TUESDAY FILENAME: 0330902A

15 Min Period	Northbound			Southbound			Eastbound			Westbound			
Beginning	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	0	1	2	1	1	1	1	
6:00 AM													
15 AM													
30 AM													
45 AM													
7:00 AM	62	31	32	12	48	6	10	112	57	24	135	17	546
15 AM	64	33	24	13	27	11	5	75	37	25	120	16	450
30 AM	74	33	16	8	25	6	9	87	31	23	146	15	473
45 AM	46	22	15	14	21	6	3	90	35	19	110	15	396
8:00 AM	68	29	13	7	18	13	5	87	24	21	121	19	425
15 AM	45	18	9	2	14	5	2	81	23	22	95	11	327
30 AM	48	28	11	6	18	8	1	73	29	16	132	16	386
45 AM	54	29	14	15	18	15	2	80	27	23	131	12	420
9:00 AM													
15 AM													
30 AM													
45 AM													
10:00 AM													
15 AM													
30 AM													
45 AM													
AM Peak Hr Begins at 700													
VOLUMES =	246	119	87	47	121	29	27	364	160	91	511	63	1865

COMMENTS:

Traffic Data Services, Inc.
TABULAR SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S STREET: WASHINGTON ST E/W STREET: HOVLEY LN/ AVE 42 CITY: PALM DESERT
DATE: 3/17/03 DAY: MONDAY FILENAME: 0330901A

15 Min Period	Northbound			Southbound			Eastbound			Westbound			
Beginning	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	3	1	1	2	0	1	2	0	
6:00 AM													
15 AM													
30 AM													
45 AM													
7:00 AM	59	194	8	14	158	28	27	39	23	43	66	23	682
15 AM	52	202	12	22	171	21	31	27	25	43	69	14	689
30 AM	63	280	38	35	209	25	49	51	30	67	105	19	971
45 AM	99	297	45	22	202	41	48	62	50	83	100	23	1072
8:00 AM	58	258	28	25	180	28	28	43	27	63	52	17	807
15 AM	52	172	30	39	183	29	42	30	39	66	64	29	775
30 AM	52	212	23	33	135	35	35	39	42	64	58	10	738
45 AM	57	202	29	39	186	39	40	40	35	57	81	21	826
9:00 AM													
15 AM													
30 AM													
45 AM													
10:00 AM													
15 AM													
30 AM													
45 AM													
AM Peak Hr Begins at 730													
VOLUMES =	272	1007	141	121	774	123	167	186	146	279	321	88	3625

COMMENTS:

Traffic Data Services, Inc.
TABULAR SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S STREET: WASHINGTON ST E/W STREET: HOVLEY LN/ AVE 42 CITY: PALM DESERT
DATE: 3/20/03 DAY: THURSDAY FILENAME: 0330901N

15 Min Period Beginning	Northbound			Southbound			Eastbound			Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	3	1	1	2	0	1	2	0	
1:00 PM													
15 PM													
30 PM	59	253	47	44	198	44	60	56	62	54	66	26	969
45 PM	41	223	28	38	256	34	52	57	43	38	48	26	884
2:00 PM	63	296	29	49	273	39	72	63	60	47	71	30	1092
15 PM	61	267	43	25	249	32	52	64	36	42	40	19	930
30 PM	51	270	42	40	278	38	70	85	71	68	83	42	1138
45 PM	55	278	52	45	239	43	59	60	47	71	66	17	1032
3:00 PM	66	310	40	48	262	43	57	71	54	69	65	37	1122
15 PM	58	354	46	41	265	52	87	104	74	70	70	37	1258
30 PM													
45 PM													
4:00 PM													
15 PM													
30 PM													
45 PM													
Mid Day Pk Hr Begins at 1430													
VOLUMES =	230	1212	180	174	1044	176	273	320	246	278	284	133	4550

216 1056 142 ~~187~~ ~~143~~ 143
1345 = 1056
152 246 269 210 195 242 117

COMMENTS:

school PK

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: WASHINGTON
EAST-WEST STREET: DARBY/TUCSON
JURISDICTION: LA QUINTA

DATE: 04-23-02

PEAK HOUR: 07:45AM

NORTH LEG

TOTAL: 1,183

Rt	Thru	Lt	
6	1088	89	Total
1	307	20	1st
2	256	29	2nd
0	256	22	3rd
3	269	18	4th

EAST LEG TOTAL: 155

	1st	2nd	3rd	4th	Total
Rt	43	42	32	25	142
Thru	0	0	0	0	
Lt	1	2	8	2	13

Total	1st	2nd	3rd	4th	
17	2	4	4	7	Lt
	0	0	0	0	Thru
17	4	3	2	8	Rt

WEST LEG TOTAL: 34

	Lt	Thru	Rt
1st	0	288	4
2nd	3	377	1
3rd	0	364	2
4th	2	271	2
Total	5	1300	9

TOTAL: 1,314

SOUTH LEG

HOUR TOTAL: 2,686

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: WASHINGTON
EAST-WEST STREET: DARBY/TUCSON
JURISDICTION: LA QUINTA

DATE: 04-23-02

PEAK HOUR: 03:30PM

NORTH LEG

TOTAL: 1,585

Rt	Thru	Lt	
9	1454	122	Total
4	296	40	1st
2	430	37	2nd
0	410	30	3rd
3	318	15	4th

EAST LEG TOTAL: 157

	1st	2nd	3rd	4th	Total
Rt	49	26	46	28	149
Thru	0	0	0	0	
Lt	4	3	0	1	8

Total	1st	2nd	3rd	4th	
6	1	2	2	1	Lt
	0	0	0	0	Thru
11	1	2	2	6	Rt

WEST LEG TOTAL: 17

	Lt	Thru	Rt	
1st	7	342	24	
2nd	4	381	21	
3rd	0	288	12	
4th	1	326	3	
Total	12	1337	60	TOTAL: 1,409

SOUTH LEG

HOUR TOTAL: 3,168

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: WASHINGTON
EAST-WEST STREET: FRED WARING
JURISDICTION: PD/LQ/COR

DATE: 03-27-01

PEAK HOUR: 07:45AM

NORTH LEG 950

TOTAL: 3,116

Rt	Thru	Lt	
209	~~2748~~	158	Total
53	268	38	1st
56	277	28	2nd
54	206	44	3rd
46	199	48	4th

EAST LEG TOTAL: 995

	1st	2nd	3rd	4th	Total
Rt	80	56	58	48	242
Thru	236	176	154	144	710
Lt	6	15	12	10	43

Total	1st	2nd	3rd	4th	
142	49	39	28	26	Lt
430	115	141	100	74	Thru
182	34	40	58	50	Rt

WEST LEG TOTAL: 754

	Lt	Thru	Rt
1st	81	186	4
2nd	56	250	13
3rd	58	234	16
4th	68	196	8
Total	263	866	41

TOTAL: 1,170

SOUTH LEG

HOUR TOTAL: 6,035

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: WASHINGTON
EAST-WEST STREET: FRED WARING
JURISDICTION: PD/LQ/COR

DATE: 03-27-01

PEAK HOUR: 04:30PM

NORTH LEG

TOTAL: 1,521

Rt	Thru	Lt	
142	1063	316	Total
38	266	82	1st
39	279	84	2nd
34	261	78	3rd
31	257	72	4th

EAST LEG TOTAL: 624

	1st	2nd	3rd	4th	Total
Rt	38	39	36	32	145
Thru	106	121	118	113	458
Lt	4	6	5	6	21

WEST LEG TOTAL: 1,021

Total	1st	2nd	3rd	4th	
151	40	38	39	34	Lt
666	168	173	167	158	Thru
204	54	50	53	47	Rt

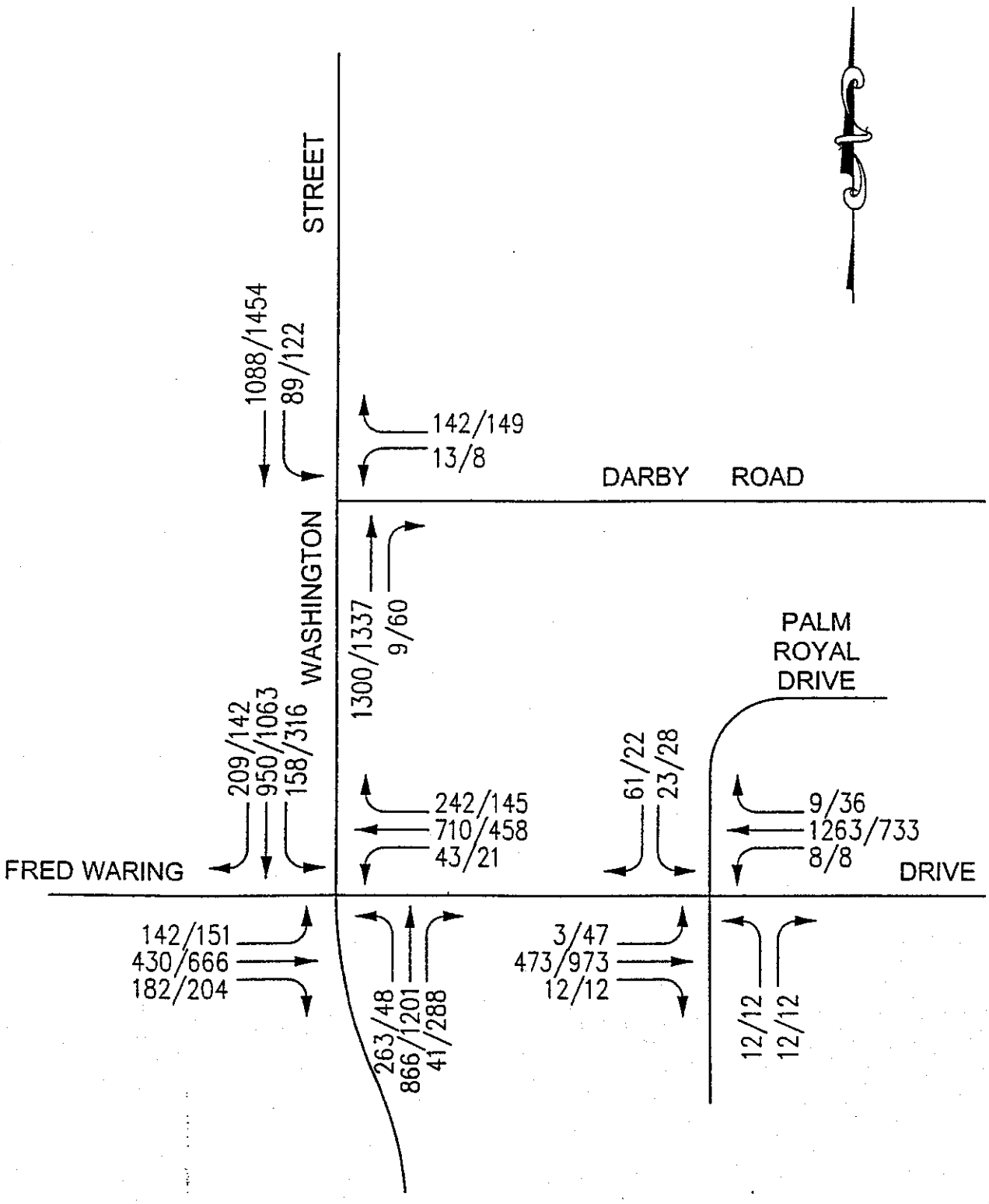
SOUTH LEG

TOTAL: 1,537

	Lt	Thru	Rt
1st	12	303	74
2nd	13	311	76
3rd	11	301	71
4th	12	286	67
Total	48	1201	288

HOUR TOTAL: 4,703

Prepared by NEWPORT TRAFFIC STUDIES

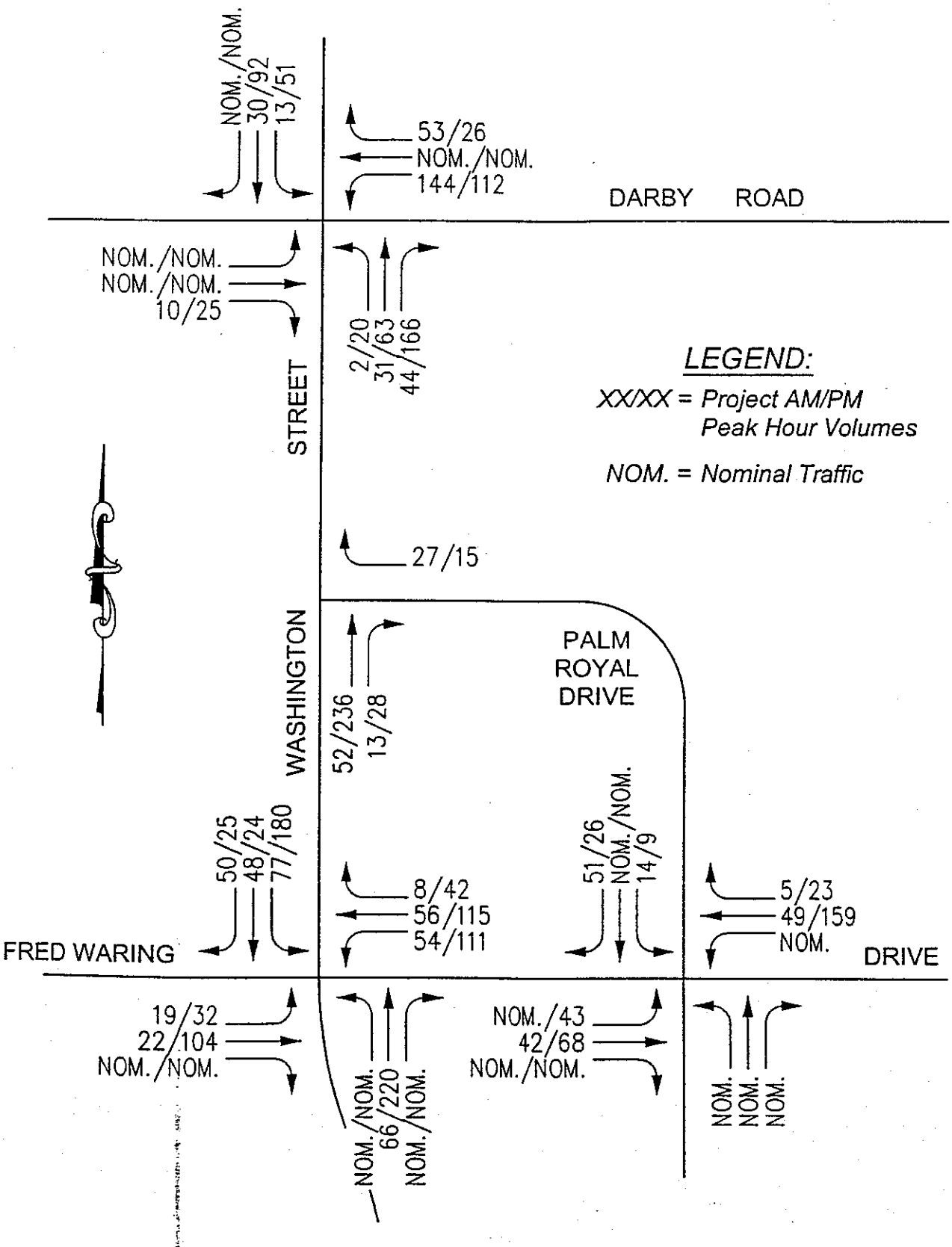


HARTZOG & CRABILL, Inc.

EXISTING PEAK HOUR VOLUMES

EXHIBIT 'D'

FILE: FW04.dwg



HARTZOG & CRABILL, Inc.

RELATED

PROJECT PEAK HOUR VOLUMES

EXHIBIT 'F'

FILE: FW06.dwg

1. Hovley Lane/42 & Washington

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	272	.17*	216	.14*
NBT	3	4800	1007	.21	1056	.22
NBR	1	1600	141	.09	142	.09
SBL	1	1600	121	.08	152	.10
SBT	3	4800	774	.16*	1056	.22*
SBR	1	1600	123	.08	143	.09
EBL	1	1600	167	.10	246	.15*
EBT	2	3200	186	.06*	269	.08
EBR	d	1600	146	.09	210	.13
WBL	1	1600	279	.17*	195	.12
WBT	2	3200	321	.10	284	.09*
WBR	d	1600	88	.06	133	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.65

Exist. Plus Project & Related Proj.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	339	.21*	259	.16*
NBT	3	4800	1201	.25	1126	.23
NBR	1	1600	266	.17	217	.14
SBL	1	1600	121	.08	152	.10
SBT	3	4800	942	.20*	1111	.23*
SBR	1	1600	123	.08	143	.09
EBL	1	1600	167	.10	246	.15*
EBT	2	3200	186	.06*	269	.08
EBR	d	1600	227	.14	247	.15
WBL	1	1600	425	.27*	250	.16
WBT	2	3200	321	.10	284	.09*
WBR	d	1600	88	.06	133	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.68

Exist. Plus Proj. & Rel. Proj. MITIGATED

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	339	.21*	259	.16*
NBT	3	4800	1201	.25	1126	.23
NBR	1	1600	266	.17	217	.14
SBL	1	1600	121	.08	152	.10
SBT	3	4800	942	.20*	1111	.23*
SBR	1	1600	123	.08	143	.09
EBL	2	3200	167	.05	246	.08
EBT	2	3200	186	.12*	269	.16*
EBR	0	0	227	.14	247	
WBL	2	3200	425	.13*	250	.08*
WBT	2	3200	321	.13	284	.13
WBR	0	0	88		133	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.68

2. Palm Royale & Washington

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	2	.00	0	.00
NBT	3	4800	706	.18	0	.00
NBR	0	0	157		0	
SBL	1	1600	10	.01	0	.00
SBT	3	4800	1088	.25*	0	.00*
SBR	0	0	89		0	
EBL	0	0	12	{.01}*	0	
EBT	1	1600	0	.02	0	.00
EBR	0	0	12		0	
WBL	1	1600	13	.01	0	.00
WBT	1	1600	0	.09*	0	.00*
WBR	0	0	142		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.05

Exist. Plus Project & Related Proj.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	2	.00	0	.00
NBT	3	4800	737	.20*	0	.00
NBR	0	0	241		0	
SBL	1	1600	474	.30*	0	.00
SBT	3	4800	1118	.24	0	.00*
SBR	0	0	10		0	
EBL	0	0	12	{.01}*	0	
EBT	1	1600	0	.02	0	.00
EBR	0	0	12		0	
WBL	1	1600	167	.10	0	.00
WBT	1	1600	0	.31*	0	.00*
WBR	0	0	501		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		.05

Exist. Plus Proj. & Rel. Proj. MITIGATED

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	2	.00	0	.00
NBT	3	4800	737	.20*	0	.00
NBR	0	0	241		0	
SBL	2	3200	474	.15*	0	.00
SBT	3	4800	1118	.24	0	.00*
SBR	0	0	10		0	
EBL	0	0	12	{.01}*	0	
EBT	1	1600	0	.02	0	.00
EBR	0	0	12		0	
WBL	0.5		167		0	
WBT	0	3200	0	{.15}*	0	
WBR	1.5		501		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.05

3. Fred Waring & Washington

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	263	.08*	0	.00
NBT	3	4800	866	.18	0	.00
NBR	1	1600	41	.03	0	.00
SBL	2	3200	158	.05	0	.00
SBT	3	4800	950	.20*	0	.00*
SBR	1	1600	209	.13	0	.00
EBL	2	3200	142	.04*	0	.00
EBT	2	3200	430	.13	0	.00
EBR	1	1600	182	.11	0	.00
WBL	1	1600	43	.03	0	.00
WBT	2	3200	710	.22*	0	.00*
WBR	1	1600	242	.15	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.05

Exist. Plus Project & Related Proj.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	263	.08*	0	.00
NBT	3	4800	962	.20	0	.00
NBR	1	1600	41	.03	0	.00
SBL	2	3200	235	.07	0	.00
SBT	3	4800	1001	.21*	0	.00*
SBR	1	1600	266	.17	0	.00
EBL	2	3200	171	.05*	0	.00
EBT	2	3200	537	.17	0	.00
EBR	1	1600	182	.11	0	.00
WBL	1	1600	102	.06	0	.00
WBT	2	3200	826	.26*	0	.00*
WBR	1	1600	250	.16	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.65		.05

Exist. Plus Proj. & Rel. Proj. MITIGATED

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	263	.08*	0	.00
NBT	3	4800	962	.20	0	.00
NBR	1	1600	41	.03	0	.00
SBL	2	3200	235	.07	0	.00
SBT	3	4800	1001	.21*	0	.00*
SBR	1	1600	266	.17	0	.00
EBL	2	3200	171	.05*	0	.00
EBT	2	3200	537	.17	0	.00
EBR	1	1600	182	.11	0	.00
WBL	1	1600	102	.06	0	.00
WBT	2	3200	826	.26*	0	.00*
WBR	1	1600	250	.16	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.65		.05

4. Fred Waring & Palm Royale

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	12	.01*	0	.00
NBT	1	1600	0	.00	0	.00
NBR	1	1600	12	.01	0	.00
SBL	1	1600	23	.01	0	.00
SBT	1	1600	0	.04*	0	.00*
SBR	0	0	61		0	
EBL	1	1600	3	.00	0	.00
EBT	2	3200	473	.15	0	.00
EBR	1	1600	12	.01	0	.00
WBL	1	1600	8	.01	0	.00
WBT	2	3200	1263	.39*	0	.00*
WBR	1	1600	9	.01	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.05

Exist. Plus Project & Related Proj.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	12	.01*	0	.00
NBT	1	1600	0	.00	0	.00
NBR	1	1600	12	.01	0	.00
SBL	1	1600	193	.12	0	.00
SBT	1	1600	0	.11*	0	.00*
SBR	0	0	172		0	
EBL	1	1600	88	.06*	0	.00
EBT	2	3200	515	.16	0	.00
EBR	1	1600	12	.01	0	.00
WBL	1	1600	8	.01	0	.00
WBT	2	3200	1312	.41*	0	.00*
WBR	1	1600	199	.12	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.05

Exist. Plus Proj. & Rel. Proj. MITIGATED

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	12	.01*	0	.00
NBT	1	1600	0	.00	0	.00
NBR	1	1600	12	.01	0	.00
SBL	1	1600	193	.12	0	.00
SBT	1	1600	0	.11*	0	.00*
SBR	0	0	172		0	
EBL	1	1600	88	.06*	0	.00
EBT	2	3200	515	.16	0	.00
EBR	1	1600	12	.01	0	.00
WBL	1	1600	8	.01	0	.00
WBT	2	3200	1312	.41*	0	.00*
WBR	1	1600	199	.12	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.05

5. Fred Waring & Adams

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	246	.15*	0	.00
NBT	1	1600	119	.07	0	.00
NBR	1	1600	87	.05	0	.00
SBL	1	1600	47	.03	0	.00
SBT	1	1600	121	.09*	0	.00*
SBR	0	0	29		0	
EBL	1	1600	47	.03*	0	.00
EBT	2	3200	121	.04	0	.00
EBR	1	1600	29	.02	0	.00
WBL	1	1600	91	.06	0	.00
WBT	1	1600	511	.32*	0	.00*
WBR	1	1600	63	.04	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.05

Exist. Plus Project & Related Proj.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	246	.15*	0	.00
NBT	1	1600	119	.07	0	.00
NBR	1	1600	87	.05	0	.00
SBL	1	1600	58	.04	0	.00
SBT	1	1600	121	.09*	0	.00*
SBR	0	0	29		0	
EBL	1	1600	27	.02*	0	.00
EBT	2	3200	575	.18	0	.00
EBR	1	1600	160	.10	0	.00
WBL	1	1600	91	.06	0	.00
WBT	1	1600	750	.47*	0	.00*
WBR	1	1600	79	.05	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.05

Exist. Plus Proj. & Rel. Proj. MITIGATED

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	246	.15*	0	.00
NBT	1	1600	119	.07	0	.00
NBR	1	1600	87	.05	0	.00
SBL	1	1600	58	.04	0	.00
SBT	1	1600	121	.09*	0	.00*
SBR	0	0	29		0	
EBL	1	1600	27	.02*	0	.00
EBT	2	3200	575	.18	0	.00
EBR	1	1600	160	.10	0	.00
WBL	1	1600	91	.06	0	.00
WBT	1	1600	750	.47*	0	.00*
WBR	1	1600	79	.05	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.05

JOHN GLENN MIDDLE SCHOOL
Start 7:30 Out 2:04 Enrollment 1038

FILENAME: 1211005A
DATE: 12/13/01
DAY: THURSDAY

TIME	VEHICLES IN	BUSES IN	VEHICLES OUT	BUSES OUT	TOTAL
6:40	9	0	3	0	12
:45	6	0	4	0	10
:50	12	0	6	0	18
:55	13	2	10	0	25
7:00	31	1	22	0	54
:05	31	0	23	0	54
:10	41	0	29	0	70
:15	62	0	49	0	111
:20	82	2	70	1	155
:25	136	1	123	1	261
:30	68	2	63	2	135
:35	13	1	14	0	28
:40	8	1	7	0	16
:45	4	0	1	0	5
:50	5	1	3	1	10
:55	4	0	2	0	6
TOTAL	525	11	429	5	970
PEAK HOUR AM 6:40-7:40	503	10	420	4	937

Parking Analysis

+10 Assumed (over 20 min before school out)

:45	10	2	2	1	15	+8
:50	12	1	3	0	16	+9
:55	18	2	7	1	28	+11
2:00	14	2	7	1	24	+7
:05	37	1	34	0	72	+3
:10	27	0	45	0	72	-18
:15	11	0	34	0	45	-23
:20	16	0	34	0	50	-
:25	13	0	19	0	32	
:30	10	0	19	0	29	
:35	6	0	16	0	22	
:40	7	0	18	0	25	
TOTAL	181	8	238	3	430	
PEAK HOUR PM 1:45-2:40	181	8	238	3	430	

$48 \times \frac{120}{1038} = 55$