STEVEN G. JEWELL, P.E.

TRAFFIC AND TRANSPORTATION ENGINEERING
CONSULTING SERVICES

1802 Stemwood Drive
Columbus, Ohio 43228

(614) 876-9682

December 20, 1992

Mr. Robert Tucker, P.E.
Service Director
3800 Municipal Way
Hilliard, Ohio 43026

Re: Signal Study for Hilliard-Rome Road at Springdale/Hyde Park

Dear Mr. Tucker:

Enclosed is the traffic signal warrant analysis for the intersection of Hilliard-Rome Road at Springdale/Hyde Park. The traffic count was done in October when the I-270 construction was still in session, but the freeway had two lanes open in both directions.

The analysis shows that neither Warrant 1 or 2 are met even with the increase in traffic due to the freeway construction and the reduction in requirements due to the speed limit. The analysis does show that the Four-Hour Warrant is met under the construction traffic volumes. The accident data shows no correctable accidents (by a traffic signal) from January 1991 through August 1992.

I did two observations at the intersection after the I-270 construction was completed for the season. Both observations showed no problems with exiting from Springdale Drive during the morning peak hour. A traffic count during the 7:00 to 8:00 am period showed a decrease in southbound traffic of 45 percent. The volume of traffic exiting Springdale dropped 16 percent. A vehicle delay study during the same 7:00 to 8:00 am period showed only a 14 second delay per stopped vehicle. The average delay at a traffic signal is about 40 seconds.

Based on all the engineering data collected, this intersection does not warrant a traffic signal. There may be some increase in volume and delay next year when the I-270 construction starts up again, but the increase should be relatively minor compared to this year. The construction remaining will not require the freeway to be reduced to one lane each direction.

Very truly yours,

Steven G. Jewell

Steven G. Jewell, P.E.

INTERSECTION: Hilliard-Rome Rd and Spring Dale/Hyde Park — DATE ____ SECT ____

LOCATED IN CITY/VILLAGE/RURAL Hilliard Ohio — CONSULTANT: ____

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1 — CALC BY: ____ CK'D BY ____

PRESENTLY SIGNALIZED? YES-NO NO — DOES 70% WARRANT APPLY? YES

MAINTAINING AGENCY City of Hilliard

ADDITIONAL ITEMS ATTACHED

SKETCH OR DRAWING	
VEHICULAR VOLUME COUNT	X
TRAFFIC PROJECTION	
ACCIDENT DATA	X
PEDESTRIAN COUNT	
GAP ANALYSIS	
SPEED DATA	
DELAY ANALYSIS	
TIME/SPACE DIAGRAM	
GROUND PHOTOGRAPHS	
AERIAL PHOTOGRAPHS	
DOCUMENTATION/EXPLANATION	

OTHER (DESCRIBE) Warrant - Future House — Speed Limit 45 mph

CONDITION	NO. LANE	ADJUSTED HOURLY VOLUMES: MAJOR ST 2-WAY	MINOR 1-WAY	MINOR 1-WAY	WARRANT #1: 100% MAJ	100% MIN	80% MAJ	80% MIN	WARRANT #2: 100% MAJ	100% MIN	80% MAJ	80% MIN	WARRANT #3: 100% VEH	100% PED	80% VEH	80% PED
N NORM	1				500	150	400	120	750	75	600	60	600	150	480	120
	2+				600	200	480	160	900	90	720	80				
70% N	1	4 R	5	11 L	350	105	280	84	525	53	420	42	420	105	336	84
	2+				420	140	336	112	650	70	504	56				
MID-1 A.M.																
1 A.M.-2 A.M.																
2																
3																
4																
5																
6																
7		1073	112	13												
8		813	91	13												
9		643	92	11												
10		643	114	21												
11																
NOON-1 P.M.																
1 P.M.-2 P.M.																
2		813	93	8												
3		2-1	66	12												
4		1-3	7-7	7												
5		15 1	191	13												
6																
7																
8																
9																
10																
11																
HOURS MET					5		2	1	2		2					
WARRANT SATISFIED ?					YES		NO		NO		NO					

N CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

5 hours met 70% value

WARRANT #4 (SCHOOL CROSSING)

On approved school route ? ..... YES - NO

Gap analysis made during period from ____ to ____

Number of vehicles during analysis period: ____

Pedestrian crossing time (t): ____

Number of gaps greater than (t) during period: ____

Approximate vehicular speed: ____

Number of children crossing during period: ____

Warrant Satisfied ? ..... YES - NO

WARRANT #5 (PROGRESSIVE MOVEMENT)

Major street is: ..... ONE WAY - TWO WAY

Distance to nearest signal in each direction on major street: ____ and ____

Time space diagram (attached) shows that this location can be implemented into a system: ..... YES - NO

Warrant Satisfied ? ..... YES - NO

WARRANT #6 (ACCIDENT HAZARD)

Adequate trial of less restrictive measures: ..... YES - NO

Number of accidents per year of a type which could be prevented by signalization: ____

80% of warrant #1 or #2 satisfied: ..... YES - NO

Will signalization disrupt progressive movement ? ..... YES - NO

Warrant Satisfied ? ..... YES - (NO)

WARRANT #7 (SYSTEMS)

Both streets are considered major routes: ..... YES - (NO)

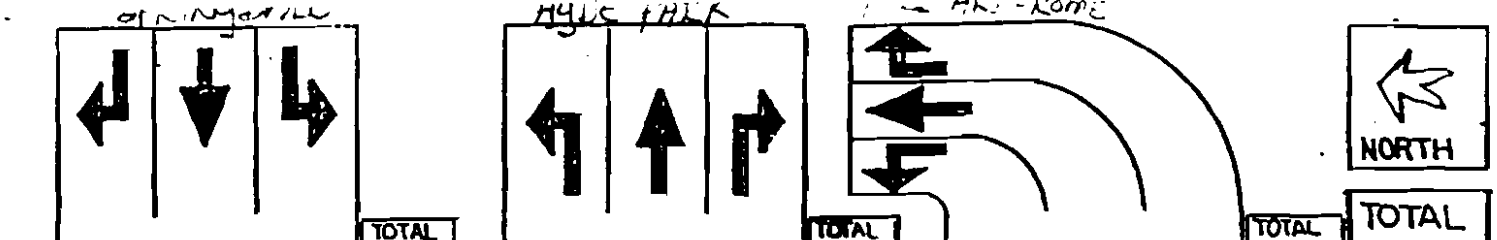
At least 800 V.P.H. during weekday peak hour: ..... YES - NO

At least 800 V.P.H. for any 5 hours on a saturday or sunday: ..... YES - NO

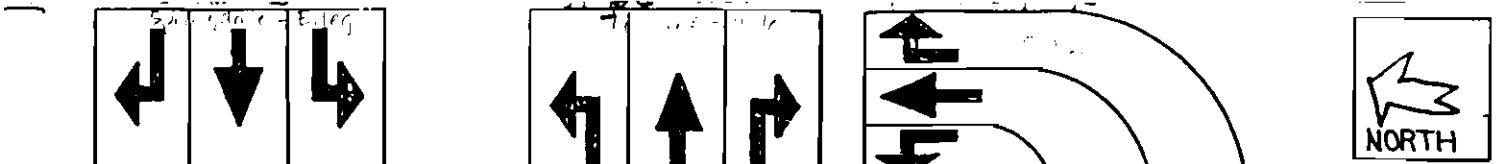
Warrant Satisfied ? ..... YES - NO

WARRANT #8 (COMBINATION)

Warrants numbered ____ and ____ are each met at the 80% level: ..... YES - (NO)



			TOTAL				TOTAL				TOTAL	TOTAL
5	-	5	10	1	1	1	3	-	113	5	118	227
5	-	7	12	2	-	1	3	-	73	4	77	188
6	-	10	16	-	-	-	-	1	91	5	97	217
11	-	6	17	1	1	-	2	-	103	13	116	273
7	-	8	15	1	1	1	3	1	94	11	106	246
8	1	7	16	-	-	2	2	-	115	9	124	236
10	-	9	19	1	-	3	4		101	19	121	270
9	-	9	18		-	2	2	-	104	21	125	296
15	-	11	26	1	1	2	4	2	123	17	142	357
12	-	14	26	-	-	-	-	-	109	19	128	325
18	-	13	31	2	-	1	3	-	143	16	159	387
14	-	10	24	-	-	-	-	2	123	17	142	377
14	-	12	26	1	-	1	2	5	140	24	169	415
24	2	12	38	3	-	1	4	-	151	25	176	458
30	1	14	45	-	1	3	4	2	158	18	178	427
33	1	8	42	-	1	1	2	-	161	30	191	417
221	5	155	381	13	6	19	38	14	1902	253	2169	5116
379	13	341	733	40	15	41	96	45	3196	378	3619	8837

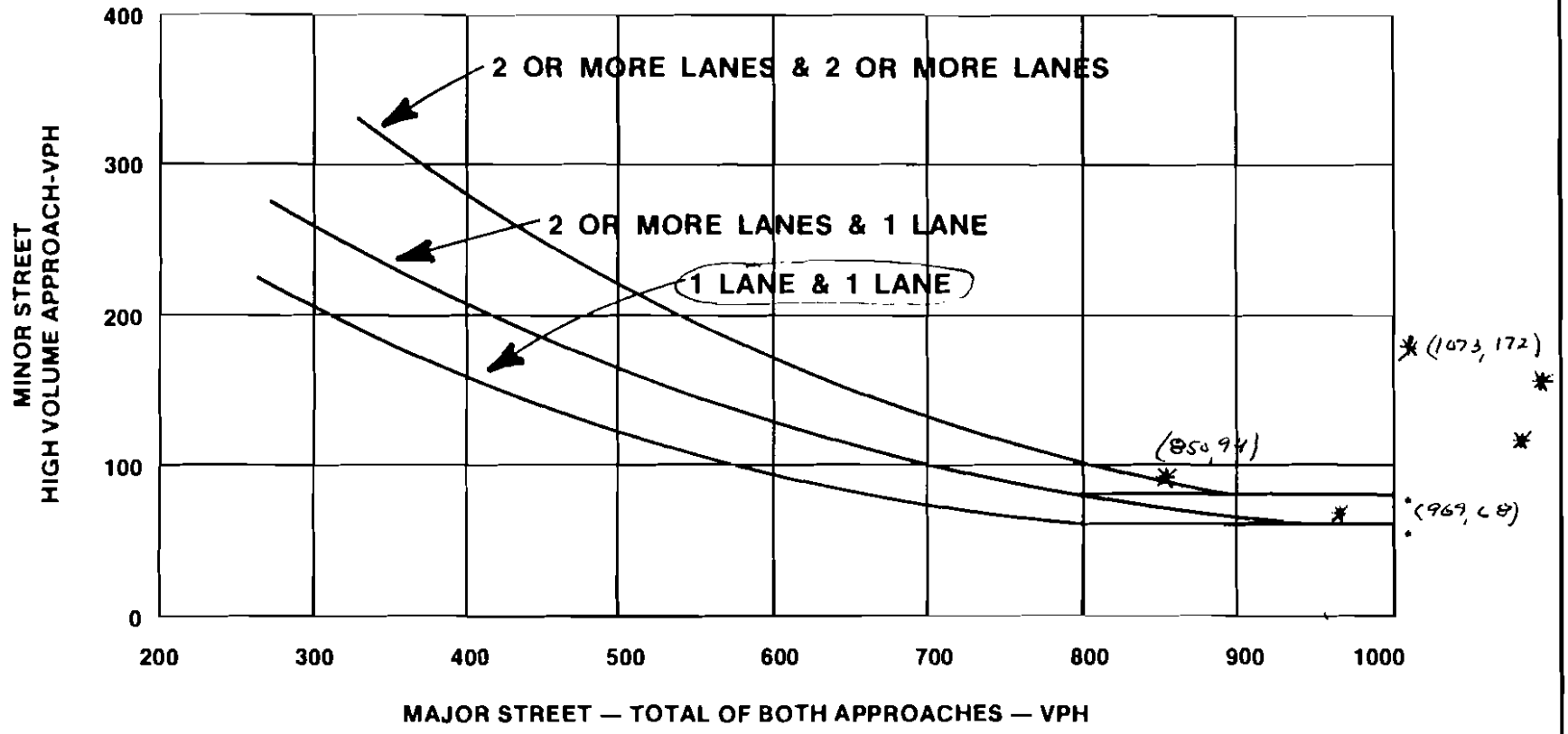


			TOTAL				TOTAL				TOTAL	TOTAL
14	-	32	46	1	2	-	3	-	77	9	86	230
27	2	19	48	2	-	-	2	1	120	5	126	331
17	1	24	42	5	1	1	7	-	107	13	120	385
18	-	18	36	-	1	-	1	-	86	13	99	312
8	1	18	27	1	1	1	3	2	76	15	93	275
6	1	17	24	3	-	1	4	-	83	13	96	255
10	-	12	22	2	-	-	2	3	74	5	82	197
15	-	6	21	2	-	2	4	2	100	6	108	230
8	-	6	14	2	-	4	6	8	85	6	99	230
4	-	9	13	1	-	1	2	1	70	7	78	173
5	1	5	11	2	-	1	3	1	66	8	75	208
2	-	2	4	-	-	-	-	3	60	-	63	137
6	1	4	11	1	-	2	3	2	58	4	64	161
3	1	6	10	3	1	4	8	3	83	3	89	205
9	-	5	14	1	3	4	8	1	82	5	88	206
6	-	3	9	1	-	1	2	4	67	13	84	186
											325	
158	8	186	352	27	9	22	58	31	1294	125	1450	3721

HILLIARD - ROME RD AT SPRINGDALE / HYDE PARK

FOUR HOUR VOLUME WARRANT

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*NOTE: 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
60 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

REF. SEC.
6C-10.1

(Rev. 13)

TS-9

6-29

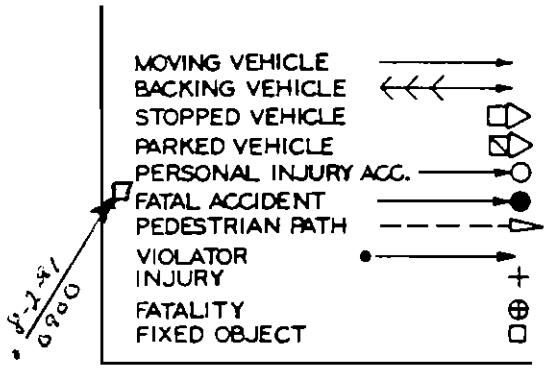
COLLISION DIAGRAM

LOCATION HILLIARD-ROME RD SPRINGDALE / HYDE PARK

PERIOD FROM JAN 1991 THRU AUG 1992

LOCATION HILLIARD ROME AT SPRINGDALE/HYDE PK

YEAR	TIME OF DAY				PAVEMENT CONDITION				TYPE OF COLLISION									TOTAL ACCIDENTS			
	DAY	NITE	DAWN	DUSK	DRY	WET	ICY	N.S.	PED.	TURN	ANGLE	REAR END	HEAD ON	SIDE-SWIPE	PARK VEH.	FIX. OBJ.	OTHER	PROP. DAM.	PERS. INJ.	FATAL	TOTAL
91	1																				
TOTAL																					



COMPILED BY S. JEWELL

DATE OCT. 1992

UPDATED BY _____

DATE _____

TOTAL INJURIES _____

REMARKS _____