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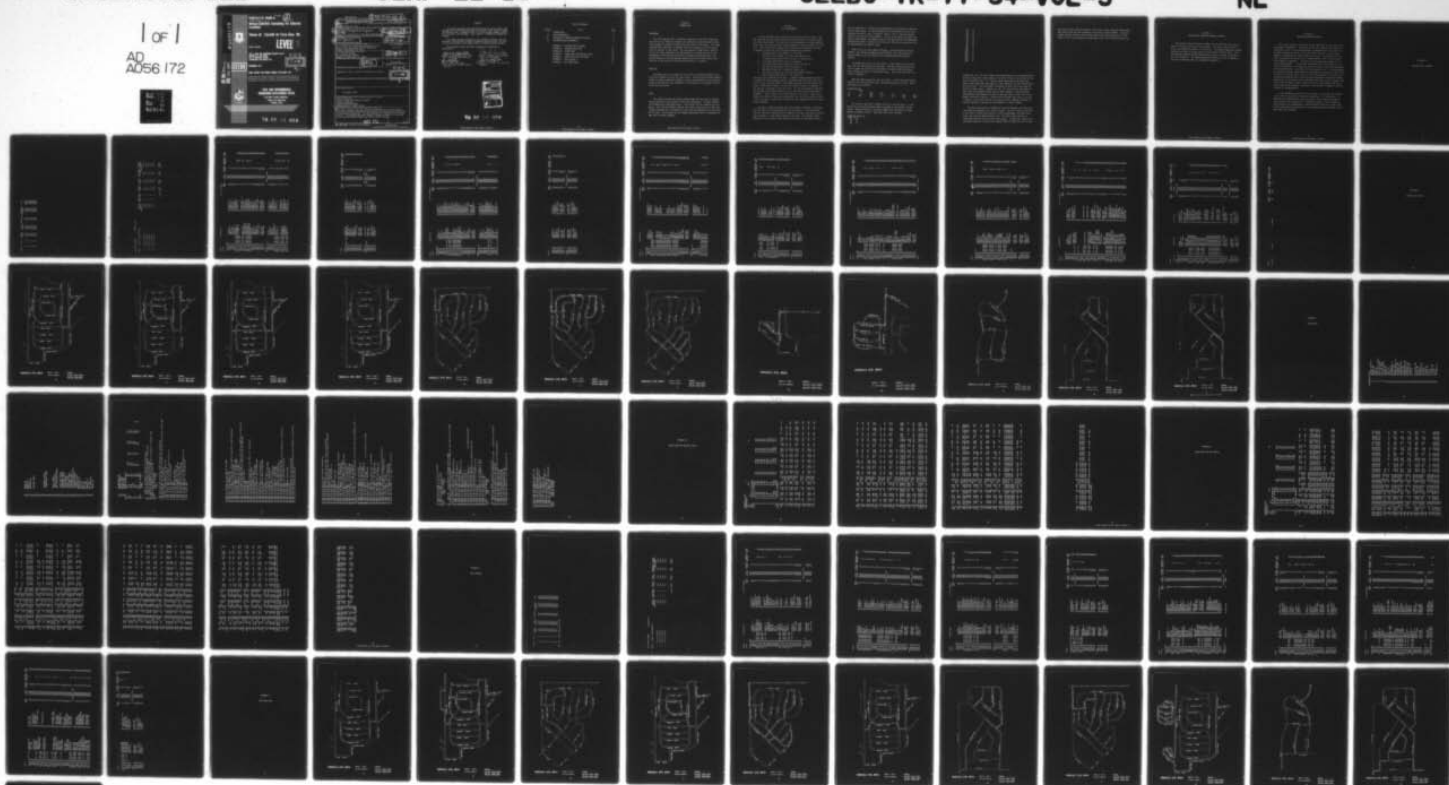
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Refuse-Collection Scheduling For Selected Locations

Volume III: Fairchild Air Force Base, WA

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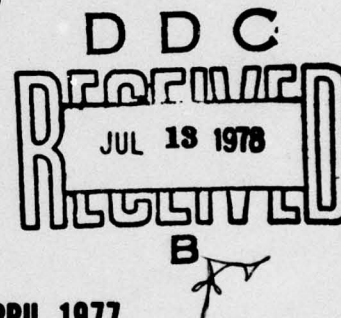
FINAL REPORT FOR PERIOD JANUARY 1976-APRIL 1977

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CIVIL AND ENVIRONMENTAL ENGINEERING DEVELOPMENT OFFICE

(AIR FORCE SYSTEMS COMMAND)

TYNDALL AIR FORCE BASE
FLORIDA 32403



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report presents maps and schedules produced by the Air Force Refuse-Collection Scheduling Program for residential refuse collection at Fairchild Air Force Base, Washington. The data required for scheduling are discussed briefly. The computer-generated schedule reduced the number of trips from 10 to 8 and the total mileage from 272.6 to 264.4 miles.		

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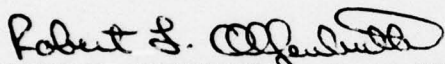
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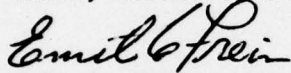
PREFACE

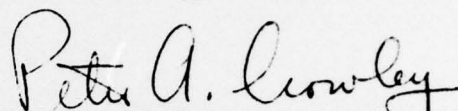
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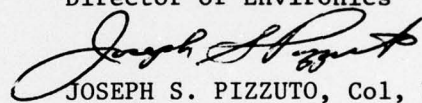
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SECTION I INTRODUCTION

BACKGROUND

From 1973 through 1975, a study was conducted at the Civil Engineering Research Facility (CERF) to evaluate the usefulness of the IBM Vehicle Scheduling Program for scheduling refuse collection at Air Force bases. This study indicated that reductions in manpower and total mileage of up to 20 percent could be obtained in some cases. The large amount of human effort required to put the routes produced by the IBM program in a useable form led to the development of the CERF Refuse-Collection Scheduling Program (RCSP). This program produces a printed schedule and maps that can be used, without modification, by the driver of the collection vehicle or in reports.

OBJECTIVE

The objective of this report was to use RCSP to determine optimum refuse-collection schedules for four Air Force bases. These test bases provide enough variety in refuse-scheduling problems to allow a determination of the program's range of applicability and, ultimately, an evaluation of its potential for use on all Air Force bases.

SCOPE

This report presents the results obtained when RCSP was used to schedule refuse collection at Fairchild Air Force Base, Washington. The data required for scheduling are described briefly. The original and new schedules are compared. Since the new schedule requires only eight collection trips, while the original required ten, a procedure for verifying and implementing the new schedule is given. The original and the computer-generated routes are presented on maps and as printed schedules.

SECTION II

DATA REQUIREMENTS

The data available for Fairchild Air Force Base include six maps. One map shows the area surrounding the base with the locations of Geiger Heights and Geiger Base marked. Two other maps show enlargements of on-base housing areas, while the remaining maps show enlargements of Geiger Heights and Geiger Base. The original routes within the housing areas are marked on the maps. In addition to the maps, the following information was provided:

1. unloading time at the landfill is 15 minutes,
2. the speed limit on base is 30 miles per hour outside of housing areas and 15 miles per hour in housing areas,
3. a 10-cubic-yard vehicle services 70 houses,
4. the collection vehicle travels at 5 miles per hour in the housing areas while collecting refuse,
5. the vehicle stops for 1 minute per house, and
6. the vehicle averages 45 miles per hour between off-base housing areas and traveling to the landfill.

Ten routes were indicated on the maps. To obtain computer-generated maps and a schedule for these original routes, information describing the routes was used as input to program PHASE4. The schedule and maps thus obtained are presented in Appendixes A and B. On the first page of material in Appendix A, the sections correspond to the final trips. The section numbers on that page can be found on the route summary on the second page, in the column marked SECTION(S). Thus, section 5 is serviced by trip 1 of route 3. The section numbers are useful to the person running RCSP, but not to the vehicle drivers, so only the pages including and following the route summary would go to operational personnel.

The page of output preceeding the route summary in Appendix A indicates that 196 families are serviced by the trip to section 5. This information conflicts with the information that accompanied the maps (one vehicle services only 70 houses), so the smaller number was not used. The original routes showed two trips on Cedar Street between Palm Drive and South Maple Street,

with no indication as to which trip collected the six households on that portion of Cedar Street. If these households are collected by the trip corresponding to route 3, trip 2, instead of route 3, trip 1, then the largest capacity trip services 194 households. If each of the two trip collects one side of Cedar Street, the largest capacity trip would service 193 households. Although the latter is unlikely to be the case, the vehicle capacity was set at 193 households for safety's sake.

RCSP consists of four computer programs: the data-checking program (RCINPT), the section-assignment program (PHASE2), the route-traversing program (PHASE3), and the route-map- and schedule-generating program (PHASE4).

The RCINPT data consist of six records: street names, size of output maps, and four descriptions of input maps. The third record describes the streets connecting Fairchild Air Force Base to Geiger Heights and Geiger Base, without any details of the housing areas. The actual data cards are listed in Appendix C.

Data for PHASE2 consist of only five cards: a title card, the vehicle-capacity card, the time-limits card, and two output-map size cards. These data cards are as follows:

FAIRCHILD AFB

193.

.5		15.	4.			
.8	2.8	10.	3.5	5.5	10.	10.
8.	10.	10.	1.	5.	20.	10.

The required input data to PHASE3 consist of only two cards: a title card and a card giving the node numbers assigned to the landfill and the garage. Twenty-one optional cards were added, each reassigning a street segment to another section. These data cards are as follows:

FAIRCHILD AFB, WA

1800 726

22	6
34	6
35	5

51	7
52	7
56	7
75	6
57	8
43	8
62	8
61	8
49	8
66	4
64	5
102	3
113	3
116	2
117	2
137	3
139	2
188	1

Segments 34, 116, 117, and 139 were reassigned because the close approximation of street shapes had caused segments of a single street to be assigned to different collection trips. If a coarser shape approximation had been used, these streets would have been shown as single segments, and the problem would not have arisen. The reassignment eliminated the need to use two trucks to service a single street. Segments 22, 102, 113, and 188 were reassigned because they were somewhat remote from the other segments in their sections. The remaining reassignments were made to keep the loads in each trip from exceeding the vehicle capacity. Because each trip comes very close to filling a vehicle, it was often necessary to reassign several segments to remove an overflow condition caused by the reassignment of a single segment.

The three data records for PHASE4 are listed in Appendix D for the original routes and Appendix E for the RCSP routes. The first record consists of a title card, a card giving the unit of refuse measurement, two time-limits cards, and a vehicle-identification card. The third record consists of cards describing the paths in each of the routes. For the final routes, this information normally is passed from program PHASE3 to PHASE4 on disk or tape,

but since a minor change was desired in the final routes, the data were punched onto cards, modified, and included as card input to program PHASE4. The minor change involved replacing travel along Harder Place and Wortman Drive in RCSP route 4, trip 2, by an equally long but more direct route along Malstrom Drive.

SECTION III

EVALUATION OF COMPUTER-GENERATED SCHEDULE

The original refuse-collection schedule for Fairchild Air Force Base required 10 trips to service all of the houses. The total mileage for the 10 trips, as estimated by PHASE4, is 272.6 miles. The computer-generated schedule requires only eight trips and covers a total distance of 264.4 miles. Thus, the computer-generated schedule decreases mileage by 3 percent and number of trips by 20 percent. The computer-generated schedule is given in Appendix F, and the corresponding maps are presented in Appendix G.

SECTION IV IMPLEMENTATION REQUIREMENTS

RCSP assumes that any two vehicles of the same capacity could service the same number of households. Therefore, the two most important preliminary verifications are that 1) the maximum number of households serviced on one trip has been correctly determined and 2) the vehicle involved is almost always capable of completing its route without overfilling. For Fairchild Air Force Base, the heaviest collection trip is labeled ROUTE3, TRIPI in the original route summary in Appendix A. The vehicle involved was found capable of servicing 196 households. In the routes produced by RCSP, the longest trip services 192 households, so it need only be verified that at least 192 households are serviced by what is currently the largest-capacity trip. If 196 households are actually serviced, there should be no problem with the vehicle overfilling. If none of the current trips service at least 192 households, corrected route information should be sent to the Civil and Environmental Engineering Development Office so the capacity can be determined accurately and the program rerun. If the trip described as ROUTE3, TRIPI does service approximately 196 households, then the new schedule in Appendix F and the maps in Appendix G will be suitable for implementation.

If the scheduling is under Air Force control, the new maps and schedules can be given to the person in charge of scheduling. If a contractor is responsible for scheduling and refuse collection, the new maps and schedules may be given to him; the savings in mileage and number of trips should provide incentive for implementation. When the refuse collection contract goes out for open bidding, distribution of the computer-generated schedule may produce lower cost estimates.

APPENDIX A

ORIGINAL ROUTE SCHEDULE

SECTION	TRIP	DISTANCE (MILES)	TIME (MINUTES)	HOUSEHOLDS	CAPACITY (HOUSEHOLDS)	LOAD
1	1	18.9	11A.3	159	193.0	159.0
2	1	18.9	99.9	125	193.0	125.0
3	1	19.1	113.3	147	193.0	147.0
4	1	19.1	7A.8	84	193.0	84.0
5	1	18.0	139.2	196	193.0	196.0
6	1	19.0	13A.1	188	193.0	188.0
7	1	22.2	124.8	143	193.0	143.0
8	1	23.1	121.8	160	193.0	160.0
9	1	19.0	126.0	156	193.0	156.0
10	1	18.0	113.8	146	193.0	146.0

FINAL ROUTE SUMMARY FAIRCHILD AFB

ROUTE	VEHICLE IDENTIFICATION	VEHICLE CAPACITY (HOUSEHOLDS)	SECTION(S) TRIP1 TRIP2	DISTANCE (MILES)	TIME (HRRMIN)	HOUSEHOLDS SERVICED (HOUSEHOLDS)	REFUSE QUANTITY (HOUSEHOLDS)
1	10 CU YD VEHICLE	193.0	1 2	53.9	4:20	284	284.0
2	10 CU YD VEHICLE	193.0	3 4	54.2	3:54	231	231.0
3	10 CU YD VEHICLE	193.0	5 6	53.1	5:19	384	384.0
4	10 CU YD VEHICLE	193.0	7 8	58.4	4:48	303	303.0
5	10 CU YD VEHICLE	193.0	9 10	53.0	4:42	382	382.0
TOTALS				272.6	23:04	1584	1584.0

ROUTE 1 FAIRCHILD AFB

10 CU YD VEHICLE

ACTION	10 CU YD VEHICLE	SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
LEAVE GARAGE			8:00			
DRIVE ON	5TH AVE	30	8:01	.3		
DRIVE ON	FAIRCHILD ST	30	8:01	.3		
DRIVE ON	MARCH ST	30	8:01	.2		
DRIVE ON	HOSPITAL DR	15	8:02	.1		
DRIVE ON	OFFUTT DR	30	8:02	.2		
DRIVE ON	MAINE AVE	15	8:04	.3		
PICK UP ON BOTH SIDES	CALIFORNIA ST	5	8:08	.1	8	4
PICK UP ON BOTH SIDES	CALIFORNIA ST	5	8:25	.2	29	19
PICK UP ON BOTH SIDES	CALIFORNIA ST	5	8:35	.1	18	28
PICK UP ON BOTH SIDES	CALIFORNIA ST	5	8:37	.0	2	29
DRIVE ON	TO DAKOTA AVE	15	8:37	.0		
PICK UP ON BOTH SIDES	DAKOTA AVE	5	8:59	.2	39	49
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	9:00	.0	2	50
DRIVE ON	TO DAKOTA AVE	15	9:00	.0		
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	9:05	.1	8	50
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	9:24	.2	33	72
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	9:29	.1	9	76
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	9:33	.1	7	80
PICK UP ON BOTH SIDES	MAINE AVE	5	9:36	.1	4	82
DRIVE ON	OFFUTT DR	30	9:36	.2		
DRIVE ON	HOSPITAL DR	15	9:37	.1		
DRIVE ON	MARCH ST	30	9:37	.2		
DRIVE ON	FAIRCHILD ST	30	9:39	.0		
DRIVE ON	MITCHELL ST	30	9:39	.1		
DRIVE ON	SUNSET HIGHWAY	55	9:45	5.9		
DRIVE ON	TO HALLET ROAD	45	9:49	3.2		
DRIVE ON	HENRY ROAD	45	9:51	1.0		
DRIVE ON	TO SPOKANE ROAD	40	9:54	2.0		
DRIVE ON	TO LAND FILL	40	9:58	3.0		
UNLOAD			9:58 TO 10:00			
LEAVE LANC FILL			10:00			
DRIVE ON	5TH AVE	30	10:09	.3		
DRIVE ON	FAIRCHILD ST	30	10:09	.3		
DRIVE ON	MARCH ST	30	10:10	.3		
DRIVE ON	OFFUTT DR	30	10:10	.2		
DRIVE ON	PENNSYLVANIA ST	15	10:11	.1		
PICK UP ON BOTH SIDES	MICHIGAN AVE	5	10:31	.2	36	18
PICK UP ON BOTH SIDES	OHIO ST	5	10:35	.1	6	21
PICK UP ON BOTH SIDES	CAROLINA DR	5	10:43	.1	14	29
PICK UP ON BOTH SIDES	TO CAROLINA DR	5	10:48	.0	10	34
DRIVE ON	TO CAROLINA DR	15	10:48	.0		
PICK UP ON BOTH SIDES	COLORADO AVE	5	10:56	.1	12	40
PICK UP ON BOTH SIDES	COLORADO AVE	5	11:03	.1	13	47
PICK UP ON BOTH SIDES	MINNESOTA PL	5	11:09	.1	9	51
DRIVE ON	CALIFORNIA ST	15	11:09	.2		
PICK UP ON BOTH SIDES	CAROLINA DR	5	11:14	.1	7	51
PICK UP ON BOTH SIDES	OHIO ST	5	11:21	.1	12	55
PICK UP ON BOTH SIDES	COLORADO AVE	5				61

ACTION	SPEED (MPH)	TIME (H:MM:SS)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
DRIVE ON	15	11:21	.1		61
PICK UP ON 80TH SIGES	5	11:25	.1	6	64
DRIVE ON	15	11:25	.1		64
DRIVE ON	15	11:26	.1		64
DRIVE ON	30	11:26	.2		64
DRIVE ON	15	11:26	.1		64
DRIVE ON	30	11:27	.2		64
DRIVE ON	30	11:28	.8		64
DRIVE ON	30	11:29	.1		64
DRIVE ON	55	11:35	5.9		64
DRIVE ON	45	11:39	2.2		64
DRIVE ON	45	11:41	1.0		64
DRIVE ON	40	11:44	2.0		64
DRIVE ON	40	11:48	3.0		64
UNLOAD		11:48 TO 11:58			
DRIVE ON	40	12:03	3.0		
BREAK FOR LUNCH		12:03 TO 12:33			
DRIVE ON	40	12:36	2.0		
DRIVE ON	45	12:37	1.0		
DRIVE ON	45	12:41	3.2		
DRIVE ON	55	12:48	5.9		
DRIVE ON	30	12:48	.1		
DRIVE ON	30	12:49	.5		
DRIVE ON	30	12:50	.3		
TO CAROLINA DR					
TO PENNSYLVANIA ST					
TO MAINE AVE					
TO OFFUTT DR					
TO HOSPITAL DR					
TO MARCH ST					
TO FAIRCHILD ST					
TO MITCHELL ST					
TO SUNSET HIGHWAY					
TO HALLET ROAD					
TO HENRY ROAD					
TO SPOKANE ROAD					
TO LAND FILL					
TO HENRY ROAD					
TO HALLET ROAD					
TO SUNSET HIGHWAY					
TO MITCHELL ST					
TO FAIRCHILD ST					
TO 5TH AVE					
TO GARAGE					

ACTION	SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
DRIVE ON	15	10:59	.2		43
DRIVE ON	15	11:00	.2		43
DRIVE ON	30	11:02	.9		43
DRIVE ON	30	11:02	.3		43
DRIVE ON	30	11:03	.1		43
DRIVE ON	55	11:09	5.9		43
DRIVE ON	45	11:13	3.2		43
DRIVE ON	45	11:15	1.0		43
DRIVE ON	40	11:18	2.0		43
DRIVE ON	40	11:22	3.0		43
UNLOAD		11:22 TO 11:32			
DRIVE ON	40	11:37	3.0		
DRIVE ON	40	11:40	2.0		
DRIVE ON	45	11:41	1.0		
DRIVE ON	45	11:45	3.2		
DRIVE ON	55	11:52	5.9		
DRIVE ON	30	11:52	.1		
DRIVE ON	30	11:53	.5		
DRIVE ON	30	11:54	.3		
GALVESTON AVE					
CASTLE ST					
CASTLE ST					
FAIRCHILD ST					
MITCHELL ST					
SUNSET HIGHWAY					
HALLET ROAD					
HENRY ROAD					
SPOKANE ROAD					
TO CASTLE ST					
TO MAINE AVE					
TO FAIRCHILD ST					
TO MITCHELL ST					
TO SUNSET HIGHWAY					
TO HALLET ROAD					
TO HENRY ROAD					
TO SPOKANE ROAD					
TO LAND FILL					
SPOKANE ROAD					
HENRY ROAD					
HALLET ROAD					
SUNSET HIGHWAY					
MITCHELL ST					
FAIRCHILD ST					
5TH AVE					
TO HENRY ROAD					
TO HALLET ROAD					
TO					
TO SUNSET HIGHWAY					
TO MITCHELL ST					
TO FAIRCHILD ST					
TO 5TH AVE					
TO GARAGE					

ROUTE	3	FAIRCHILD AFB	10 CU YD VEHICLE	SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
ACTION	LEAVE GARAGE							
	DRIVE ON	5TH AVE		30	0800			
	DRIVE ON	FAIRCHILD ST		30	0801	.3		
	DRIVE ON	MITCHELL ST		30	0802	.5		
	PICK LP ON	BOTH SIDES POPLAR AVE		30	0802	.1	3	1
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0804	.0	16	9
	PICK LP ON	BOTH SIDES		5	0813	.1	6	12
	DRIVE ON			15	0817	.0		
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0817	.0	21	23
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0829	.1	10	29
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0835	.1	7	32
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0839	.1	7	36
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0843	.1	2	37
	PICK LP ON	BOTH SIDES N MAPLE ST		5	0844	.0	7	40
	PICK LP ON	BOTH SIDES ELM ST		5	0848	.1	25	53
	PICK LP ON	BOTH SIDES ELM ST		5	0802	.1	14	61
	PICK LP ON	BOTH SIDES ELM ST		5	0811	.1	5	63
	PICK LP ON	BOTH SIDES ELM ST		5	0814	.1	6	66
	PICK LP ON	BOTH SIDES ELM ST		5	0818	.1	16	75
	PICK LP ON	BOTH SIDES ELM ST		5	0827	.1	2	76
	PICK LP ON	BOTH SIDES S MAPLE ST		5	0829	.1	5	76
	DRIVE ON			15	0829	.1		
	PICK LP ON	BOTH SIDES S MAPLE ST		5	0832	.1	5	78
	PICK LP ON	BOTH SIDES CEDAR ST		5	0836	.1	6	81
	PICK LP ON	BOTH SIDES CEDAR ST		5	0842	.1	10	87
	PICK LP ON	BOTH SIDES CEDAR ST		5	0855	.2	24	99
	PICK LP ON	BOTH SIDES CEDAR ST		5	0858	.1	4	101
	DRIVE ON			15	0859	.3		
	DRIVE ON	POPLAR AVE		15	0859	.0		
	DRIVE ON	MITCHELL ST		30	0859	.2		
	DRIVE ON	SUNSET HIGHWAY		55	0800	5.9		
	DRIVE ON			45	0806	3.2		
	DRIVE ON	HALLET ROAD		45	0810	1.0		
	DRIVE ON	HENRY ROAD		40	0812	2.0		
	DRIVE ON	SPOKANE ROAD		40	0815	3.0		
	DRIVE ON			40	0819			
	UNLOAD							
	LEAVE LAND FILL							
	DRIVE ON	5TH AVE		30	1029	.3		4
	DRIVE ON	FAIRCHILD ST		30	1030	.5		8
DRIVE ON	MITCHELL ST		30	1031	.1		11	
DRIVE ON	POPLAR AVE		15	1031	.0		16	
DRIVE ON	N MAPLE ST		15	1032	.3		20	
DRIVE ON	CEDAR ST		15	1032	.1		22	
PICK LP ON	BOTH SIDES PALM DR		5	1037	.1	8		
PICK LP ON	BOTH SIDES PALM DR		5	1042	.0	9		
PICK LP ON	BOTH SIDES PALM DR		5	1046	.1	6		
PICK LP ON	BOTH SIDES PALM DR		5	1051	.1	8		
PICK LP ON	BOTH SIDES PALM DR		5	1055	.1	8		
PICK LP ON	BOTH SIDES PALM DR		5	1058	.0	4		

ACTION	SPEED (MPH)	TIME (HRS:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
DRIVE ON CEDAR ST	15	10:50	.1		22
PICK UP ON BOTH SIDES S MAPLE ST	5	11:07	.1	16	30
PICK UP ON BOTH SIDES S MAPLE ST	5	11:17	.1	17	39
PICK UP ON BOTH SIDES POPLAR AVE	5	11:19	.1	2	40
DRIVE ON PALM DR	15	11:20	.2		40
DRIVE ON CEDAR ST	15	11:20	.1		40
DRIVE ON N MAPLE ST	15	11:20	.1		40
PICK UP ON BOTH SIDES PINE ST	5	11:27	.1	12	46
PICK UP ON BOTH SIDES PINE ST	5	11:44	.2	30	62
DRIVE ON ELM ST	15	11:45	.1		62
PICK UP ON BOTH SIDES OAK ST	5	11:49	.1	7	65
PICK UP ON BOTH SIDES SYCAMORE ST	5	11:55	.1	10	70
PICK UP ON BOTH SIDES SYCAMORE ST	5	12:00	.1	23	82
BREAK FOR LUNCH		12:00 TO 12:30			
DRIVE ON N MAPLE ST	15	12:30	.1		82
PICK UP ON BOTH SIDES OAK ST	5	12:55	.2	20	97
DRIVE ON SYCAMORE ST	15	12:55	.2		97
DRIVE ON N MAPLE ST	15	12:57	.4		97
DRIVE ON POPLAR AVE	15	12:57	.0		97
DRIVE ON MITCHELL ST	30	12:58	.2		97
DRIVE ON SUNSET HIGHWAY	55	13:04	5.9		97
DRIVE ON HALLET ROAD	45	13:08	3.2		97
DRIVE ON HENRY ROAD	45	13:10	1.0		97
DRIVE ON SPOKANE ROAD	40	13:13	2.0		97
DRIVE ON	40	13:17	3.0		97
UNLOAD		13:17 TO 13:27			
DRIVE ON SPOKANE ROAD	40	13:32	3.0		
DRIVE ON HENRY ROAD	40	13:35	2.0		
DRIVE ON HALLET ROAD	45	13:36	1.0		
DRIVE ON	45	13:40	3.2		
DRIVE ON SUNSET HIGHWAY	55	13:47	5.9		
DRIVE ON MITCHELL ST	30	13:47	.1		
DRIVE ON FAIRCHILD ST	30	13:48	.5		
DRIVE ON 5TH AVE	30	13:49	.3		

ROUTE 4 FAIRCHILD AFB

10 CU YD VEHICLE

ACTION		SPEED (MPH)		TIME (HRS:MIN)		DISTANCE (MILES)		HOUSEHOLDS SERVICED		LOAD (PCT)	
LEAVE GARAGE				8:00							
DRIVE ON	5TH AVE	30		8:01		.3					
DRIVE ON	FAIRCHILD ST	30		8:01		.4					
DRIVE ON	9TH AVE	15		8:03		.3					
DRIVE ON	ELM ST	15		8:04		.2					
DRIVE ON	OAK ST	15		8:04		.1					
PICK UP ON	BOTH SIDES OAK ST	5		8:14		.1		17		8	
PICK UP ON	BOTH SIDES OAK ST	5		8:16		.1		2		9	
PICK UP ON	BOTH SIDES 9TH AVE	5		8:17		.0		2		10	
DRIVE ON	9TH AVE	15		8:18		.0					
PICK UP ON	BOTH SIDES 9TH AVE	5		8:23		.1		8		15	
PICK UP ON	BOTH SIDES LINDEN ST	5		8:28		.1		8		19	
PICK UP ON	BOTH SIDES LINDEN ST	5		8:40		.2		21		38	
PICK UP ON	BOTH SIDES LINDEN ST	5		8:46		.1		9		34	
DRIVE ON	OAK ST	15		8:47		.1					
PICK UP ON	BOTH SIDES S MAPLE ST	5		8:50		.1		6		37	
PICK UP ON	BOTH SIDES S MAPLE ST	5		8:54		.1		5		40	
DRIVE ON	S MAPLE ST	15		9:02		.1					
PICK UP ON	BOTH SIDES WALNUT ST	5		9:02		.1		12		46	
DRIVE ON	WALNUT ST	15		9:03		.1					
DRIVE ON	S MAPLE ST	15		9:06		.1		5		46	
PICK UP ON	BOTH SIDES ELM ST	5		9:06		.3					
DRIVE ON	BONG ST	30		9:07		.2					
DRIVE ON	6TH AVE	30		9:08		.8					
DRIVE ON	CASTLE ST	30		9:08		.0					
DRIVE ON	MAINE AVE	30		9:10		.3					
DRIVE ON	MAINE AVE	15		9:10		.2					
DRIVE ON	GRAMAM RD	30		9:12		.0		2		50	
PICK UP ON	BOTH SIDES 43RD ST	5		9:16		.1		6		53	
PICK UP ON	BOTH SIDES 43RD ST	5		9:19		.1		5		55	
PICK UP ON	BOTH SIDES ARTILLERY CIRCLE	5		9:23		.1		7		59	
DRIVE ON	43RD ST	15		9:24		.1		3		59	
PICK UP ON	BOTH SIDES 43RD ST	5		9:25		.0		4		61	
PICK UP ON	BOTH SIDES 43RD ST	5		9:41		.2		21		63	
DRIVE ON	GRAMAM RD	30		9:41		.2					
DRIVE ON	MAINE AVE	15		9:42		.3					
DRIVE ON	MAINE AVE	30		9:43		.0					
DRIVE ON	CASTLE ST	30		9:44		.9					
DRIVE ON	FAIRCHILD ST	30		9:45		.3					
DRIVE ON	MITCHELL ST	30		9:45		.1					
DRIVE ON	SUNSET HIGHWAY	55		9:52		5.9					
DRIVE ON	HALLET ROAD	45		9:56		3.2					
DRIVE ON	HENRY ROAD	45		9:57		1.0					
DRIVE ON	SPOKANE ROAD	40		10:00		2.0					
DRIVE ON	TO LAND FILL	40		10:05		3.0					

10:05 TO 10:15

UNLOAD

ACTION	SPEED (MPH)	TIME (MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
LEAVE LAND FILL					
DRIVE ON 5TH AVE	30	10:15			
DRIVE ON FAIRCHILD ST	30	10:15	.3		
DRIVE ON MARCH ST	30	10:16	.3		
DRIVE ON OFFUTT DR	30	10:16	.3		
DRIVE ON GRAHAM RD	30	10:17	.5		
DRIVE ON UTAM DR NORTH	30	10:18	.2		
PICK UP ON BOTH SIDES	5	10:19	.0		1
PICK UP ON BOTH SIDES	5	10:20	.1		14
PICK UP ON BOTH SIDES	5	10:20	.2		20
PICK UP ON BOTH SIDES	5	10:21	.0		2
DRIVE ON OREGON DR	15	10:22	.1		19
DRIVE ON UTAM DR NORTH	15	10:24	.1		19
PICK UP ON BOTH SIDES	5	10:25	.0	6	22
PICK UP ON BOTH SIDES	5	10:25	.0	10	27
PICK UP ON BOTH SIDES	5	10:26	.0	31	31
PICK UP ON BOTH SIDES	5	10:27	.2	24	43
DRIVE ON IOWA ST	15	11:08	.1	43	56
PICK UP ON BOTH SIDES	5	11:24	.2	26	56
DRIVE ON NEVADA ST	15	11:24	.0		
DRIVE ON UTAM DR WEST	5	11:24	.0		
PICK UP ON BOTH SIDES	5	11:31	.1	12	63
PICK UP ON BOTH SIDES	5	11:33	.1	20	73
PICK UP ON BOTH SIDES	5	11:44	.0	2	74
DRIVE ON UTAM DR SOUTH	15	11:44	.0		
PICK UP ON BOTH SIDES	5	11:48	.1	6	77
PICK UP ON BOTH SIDES	5	11:50	.1	4	79
PICK UP ON BOTH SIDES	5	11:54	.1	6	82
DRIVE ON UTAM DR NORTH	15	11:54	.0		
DRIVE ON GRAHAM RD	30	11:56	.0		
DRIVE ON SUNSET HIGHWAY	55	12:03	7.0		
BREAK FOR LUNCH					
DRIVE ON HALLET ROAD	45	12:33	3.2		
DRIVE ON HENRY ROAD	45	12:39	1.0		
DRIVE ON SPOKANE ROAD	40	12:42	2.0		
DRIVE ON SPOKANE ROAD	40	12:47	3.0		
UNL GAC					
DRIVE ON SPOKANE ROAD	40	12:47 TO 12:57	3.0		
DRIVE ON HENRY ROAD	40	13:01	2.0		
DRIVE ON HALLET ROAD	45	13:05	1.0		
DRIVE ON SUNSET HIGHWAY	45	13:10	3.2		
DRIVE ON MITCHELL ST	55	13:16	5.9		
DRIVE ON FAIRCHILD ST	30	13:16	.1		
DRIVE ON 5TH AVE	30	13:17	.5		
DRIVE ON 5TH AVE	30	13:18	.3		

ACTION	SPEED (MPH)	TIME (H:MM:SS)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
DRIVE ON	40	10:06	3.0		80
UNLOAT		10:06 TO 10:16			
LEAVE LANC FILL		10:16			
DRIVE ON	30	10:17	.3		
DRIVE ON	30	10:18	.5		
DRIVE ON	30	10:18	.1		
DRIVE ON	55	10:24	5.9		
DRIVE ON	45	10:29	3.2		
DRIVE ON	45	10:30	1.0		
DRIVE ON	40	10:30	.0		
DRIVE ON	15	10:30	.1		
DRIVE ON	5	10:33	.1	4	2
PICK UP ON BOTH SIDES	5	10:34	.1	20	12
PICK UP ON BOTH SIDES	5	10:44	.1	4	14
PICK UP ON BOTH SIDES	5	10:47	.1	4	14
DRIVE ON	15	10:47	.1		
DRIVE ON	5	11:02	.2	24	26
PICK UP ON BOTH SIDES	5	11:04	.0	4	29
PICK UP ON BOTH SIDES	5	11:14	.1	16	37
PICK UP ON BOTH SIDES	5	11:16	.0	4	39
DRIVE ON	15	11:17	.0		
PICK UP ON BOTH SIDES	5	11:22	.1	8	43
PICK UP ON BOTH SIDES	5	11:24	.0	4	45
PICK UP ON BOTH SIDES	5	11:24	.1	14	52
DRIVE ON	15	11:32	.0		
DRIVE ON	15	11:33	.0		
DRIVE ON	15	11:33	.1		
DRIVE ON	5	11:43	.1	17	61
DRIVE ON	5	11:45	.0	3	63
PICK UP ON BOTH SIDES	5	11:46	.0	2	64
PICK UP ON BOTH SIDES	5	11:50	.1	5	66
PICK UP ON BOTH SIDES	5	11:53	.1	6	69
PICK UP ON BOTH SIDES	5	11:55	.0	3	71
PICK UP ON BOTH SIDES	5	11:56	.0	2	72
PICK UP ON BOTH SIDES	5	11:58	.0	2	73
PICK UP ON BOTH SIDES	5	12:00	.1	3	75
DRIVE ON	15	12:00	.0		
BREAK FOR LUNCH		12:00 TO 12:30			
PICK UP ON	5	12:31	.0	1	75
DRIVE ON	15	12:33	.4		
DRIVE ON	40	12:35	1.0		
DRIVE ON	40	12:40	3.0		
UNLOAT		12:40 TO 12:50			
DRIVE ON	40	12:54	2.0		
DRIVE ON	40	12:57	2.0		
DRIVE ON	45	12:59	1.3		
DRIVE ON	45	13:03	3.2		
DRIVE ON	55	13:09	5.9		
DRIVE ON	30	13:10	.1		
DRIVE ON	30	13:11	.5		

ACTION	DRIVE ON	5TH AVE	TO GARAGE	SPEED (MPH)	TIME (H:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
				30	13:11	.3		

APPENDIX B

ORIGINAL ROUTE MAPS



FAIRCHILD AFB, WASH.

ROUTE 1 TRIP 1
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 1 TRIP 2
10 CU YD VEHICLE

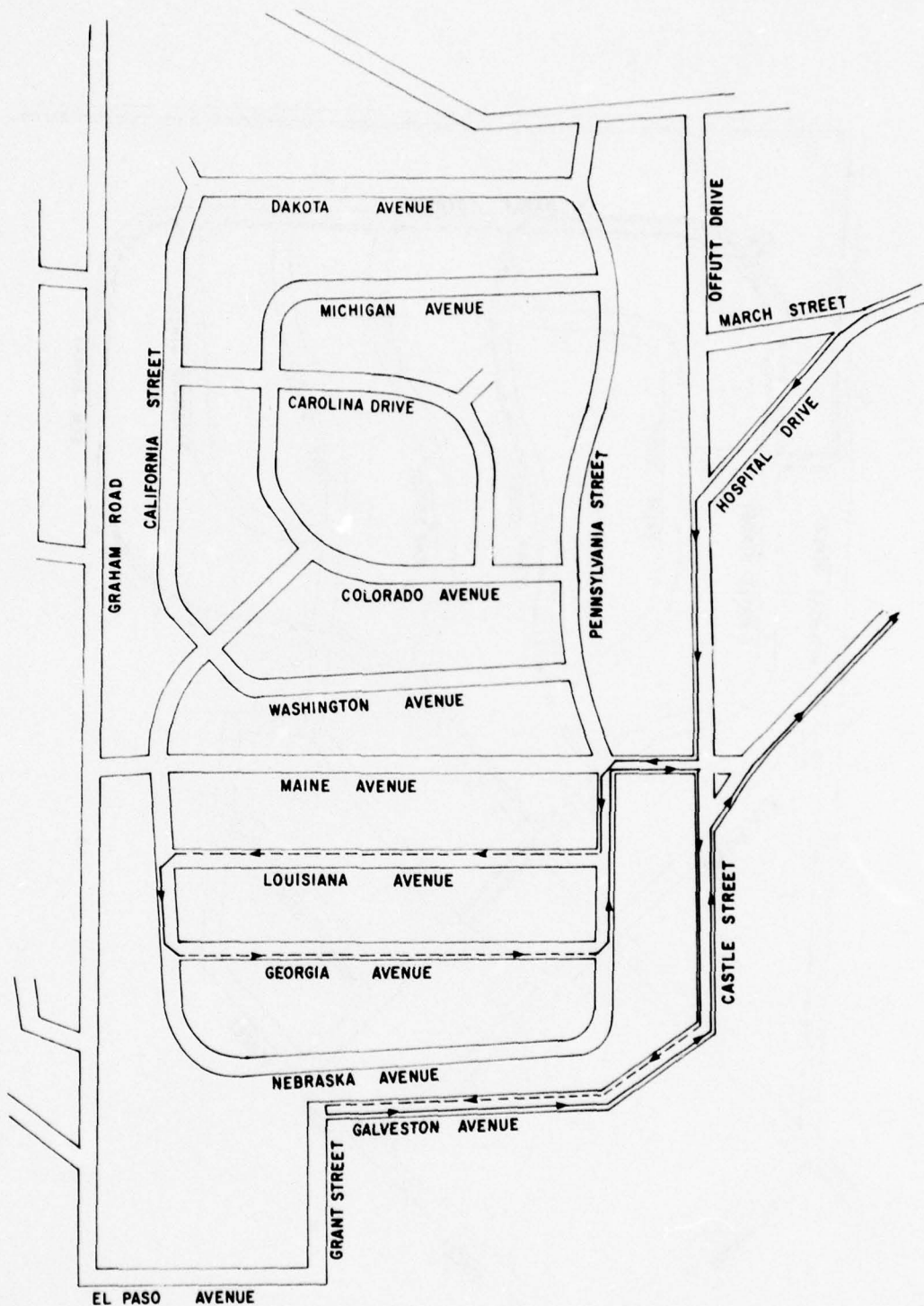
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 2 TRIP 1
10 CU YD VEHICLE

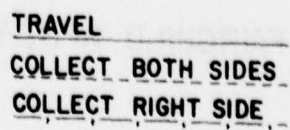
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE

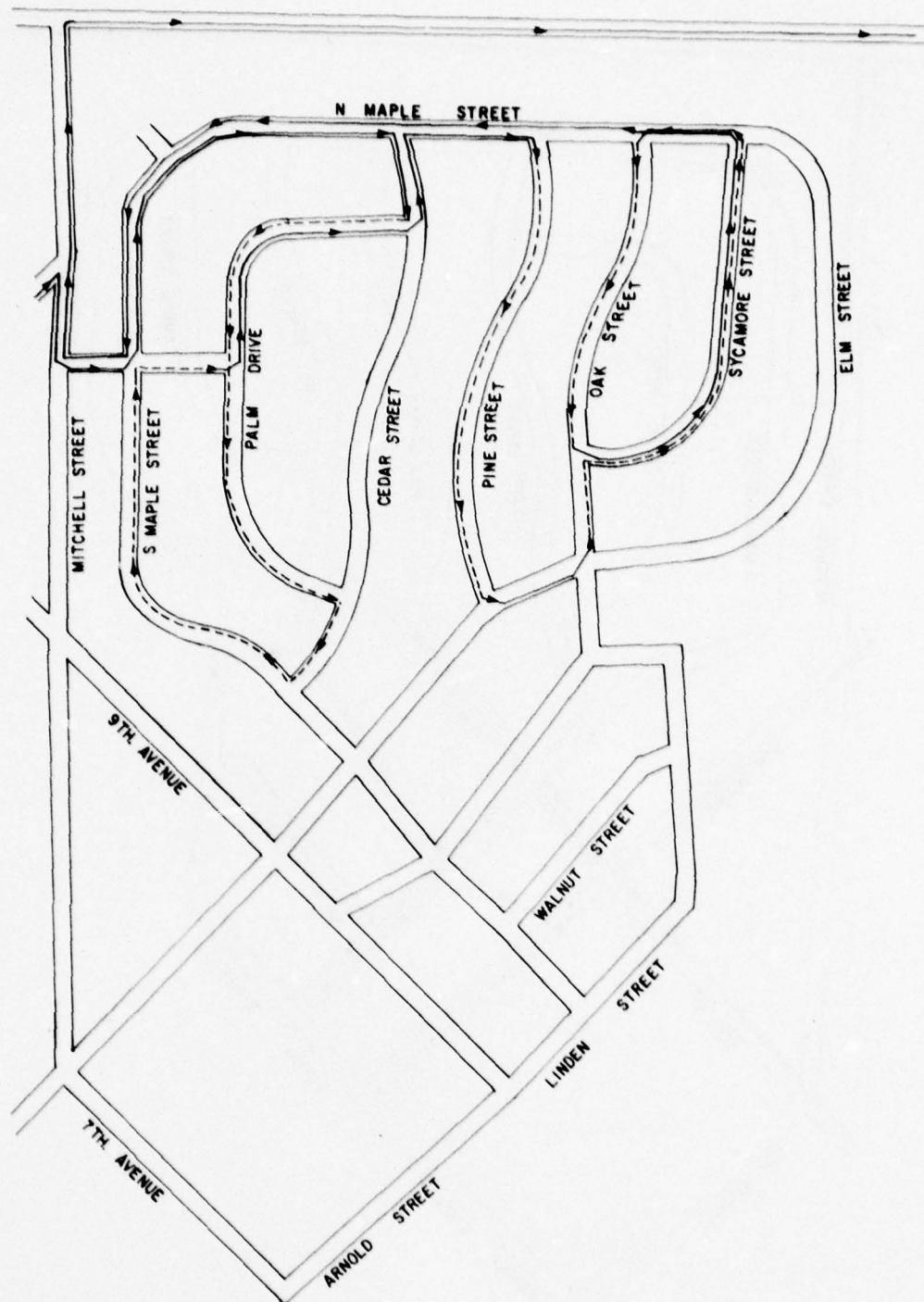


FAIRCHILD AFB, WASH.

ROUTE 2 TRIP 2
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE

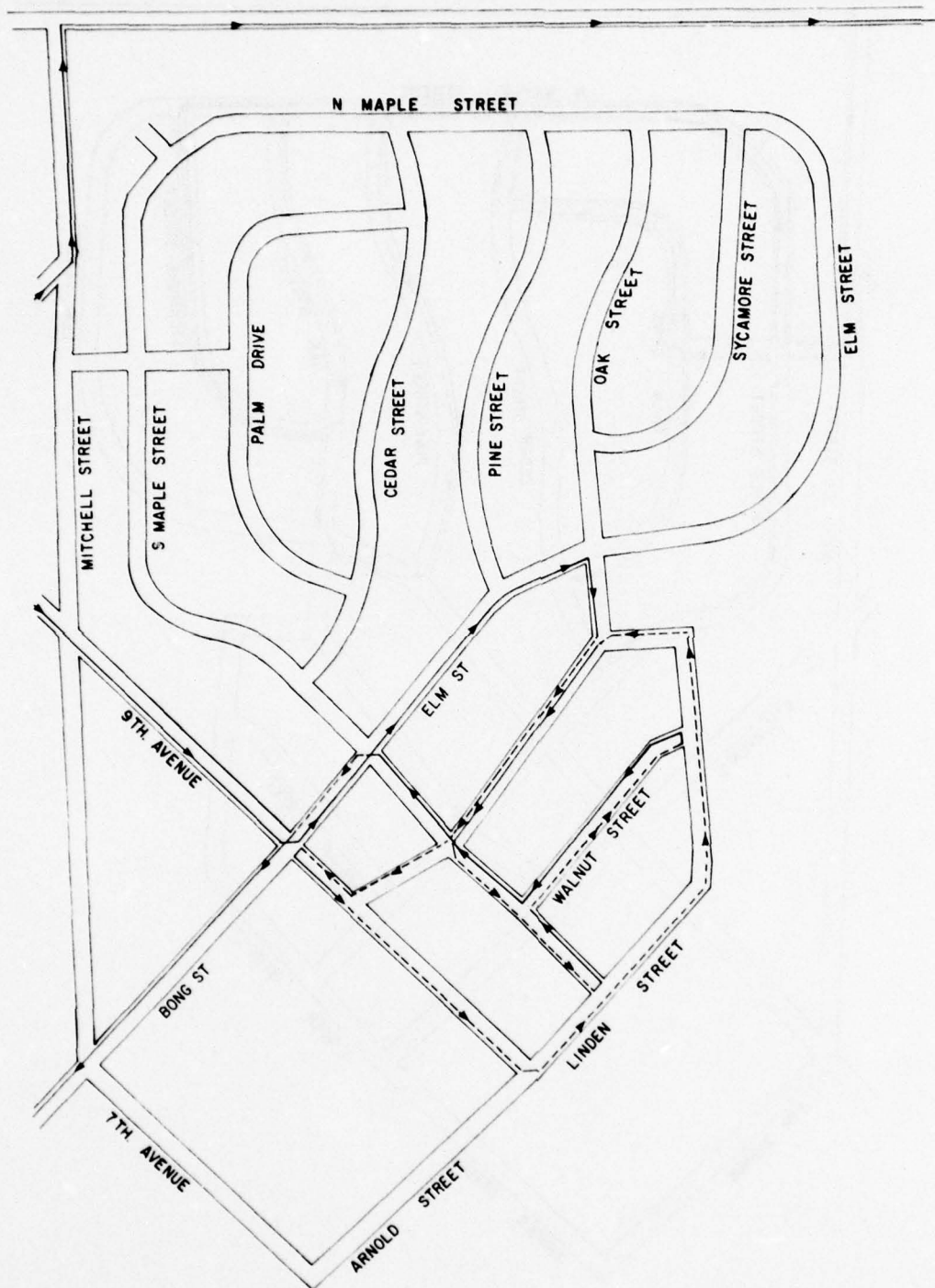




FAIRCHILD AFB, WASH.

ROUTE 3 TRIP 2
10 CU YD VEHICLE

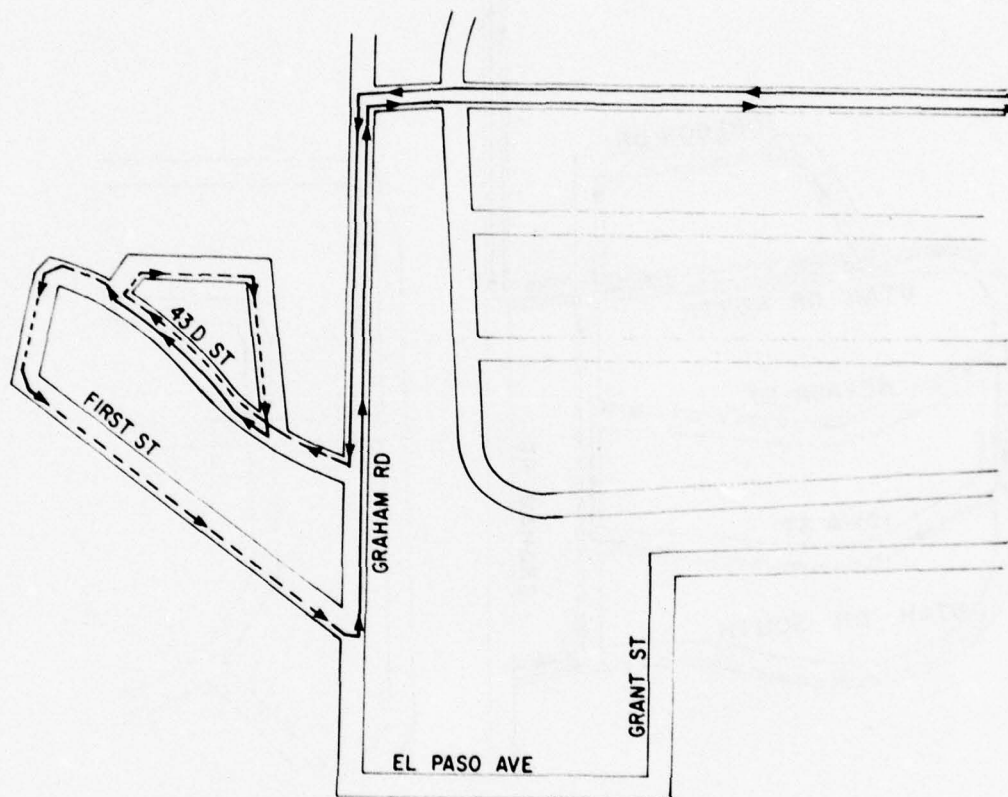
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 4 TRIP 1
10 CU YD VEHICLE

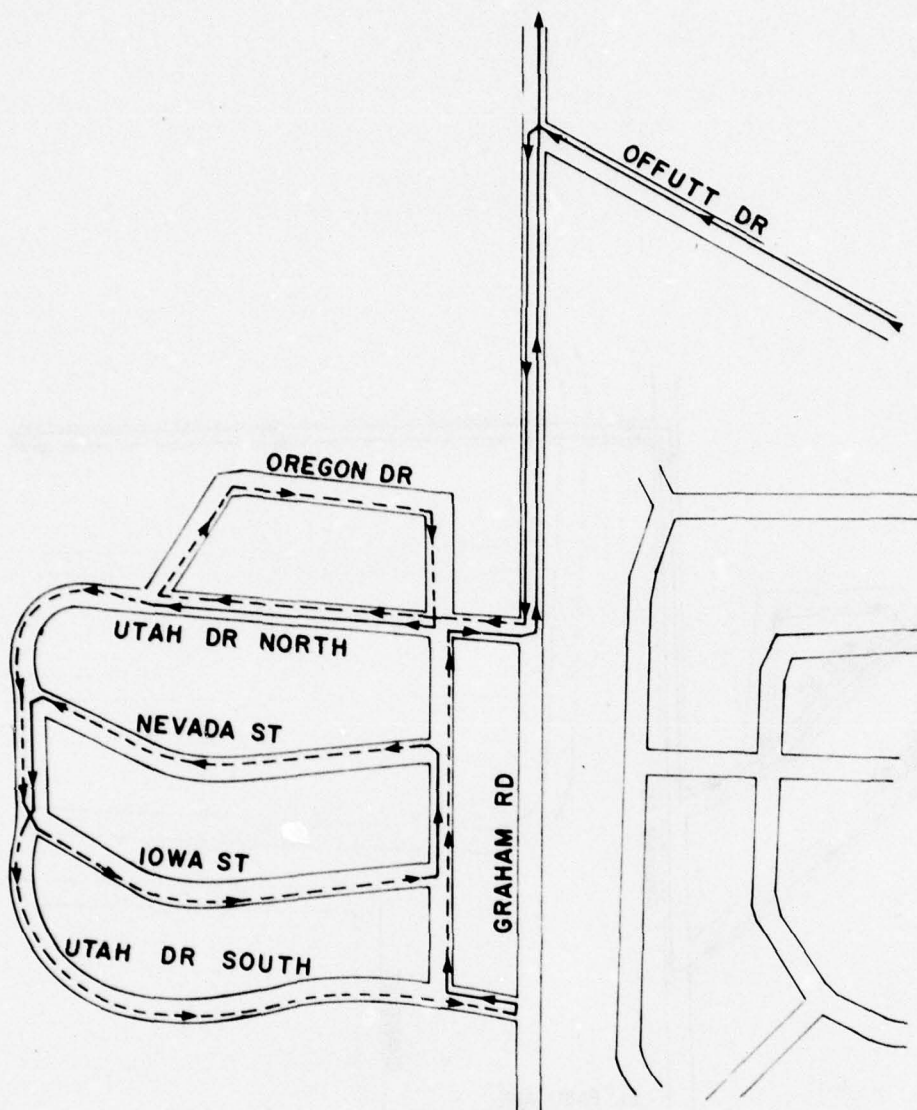
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 4 TRIP I
10 CU YD VEHICLE

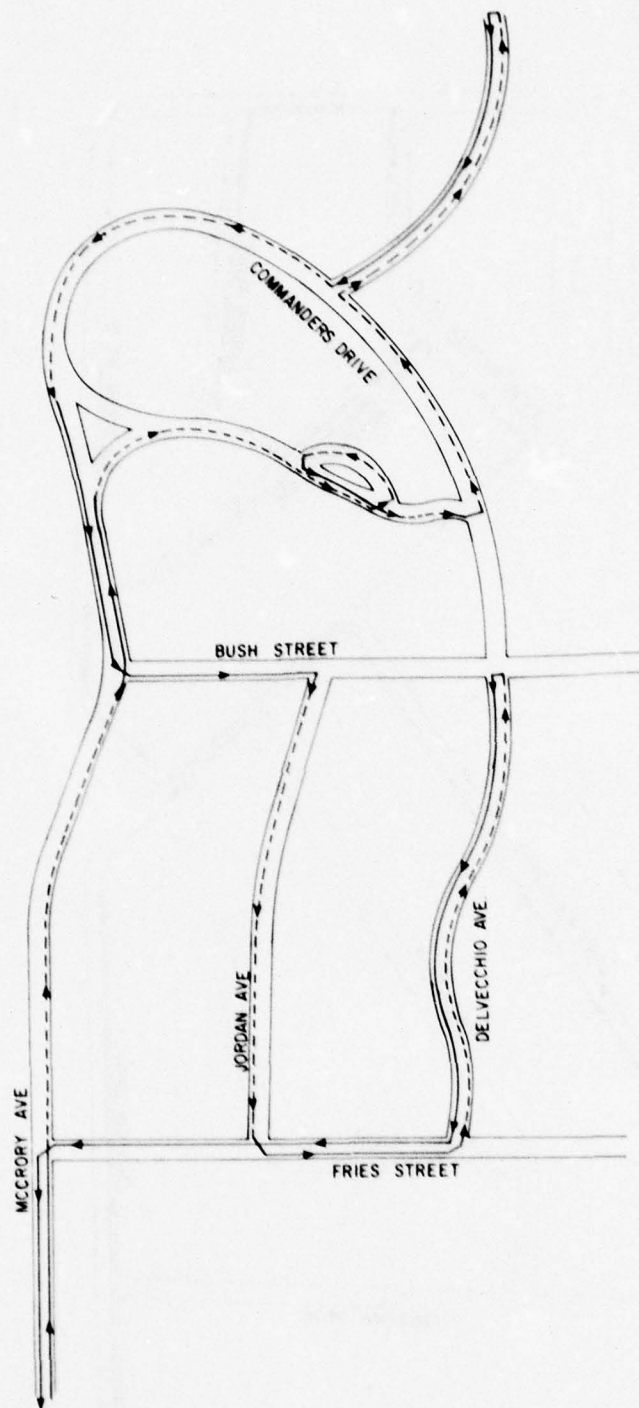
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 4 TRIP I
10 CU YD VEHICLE

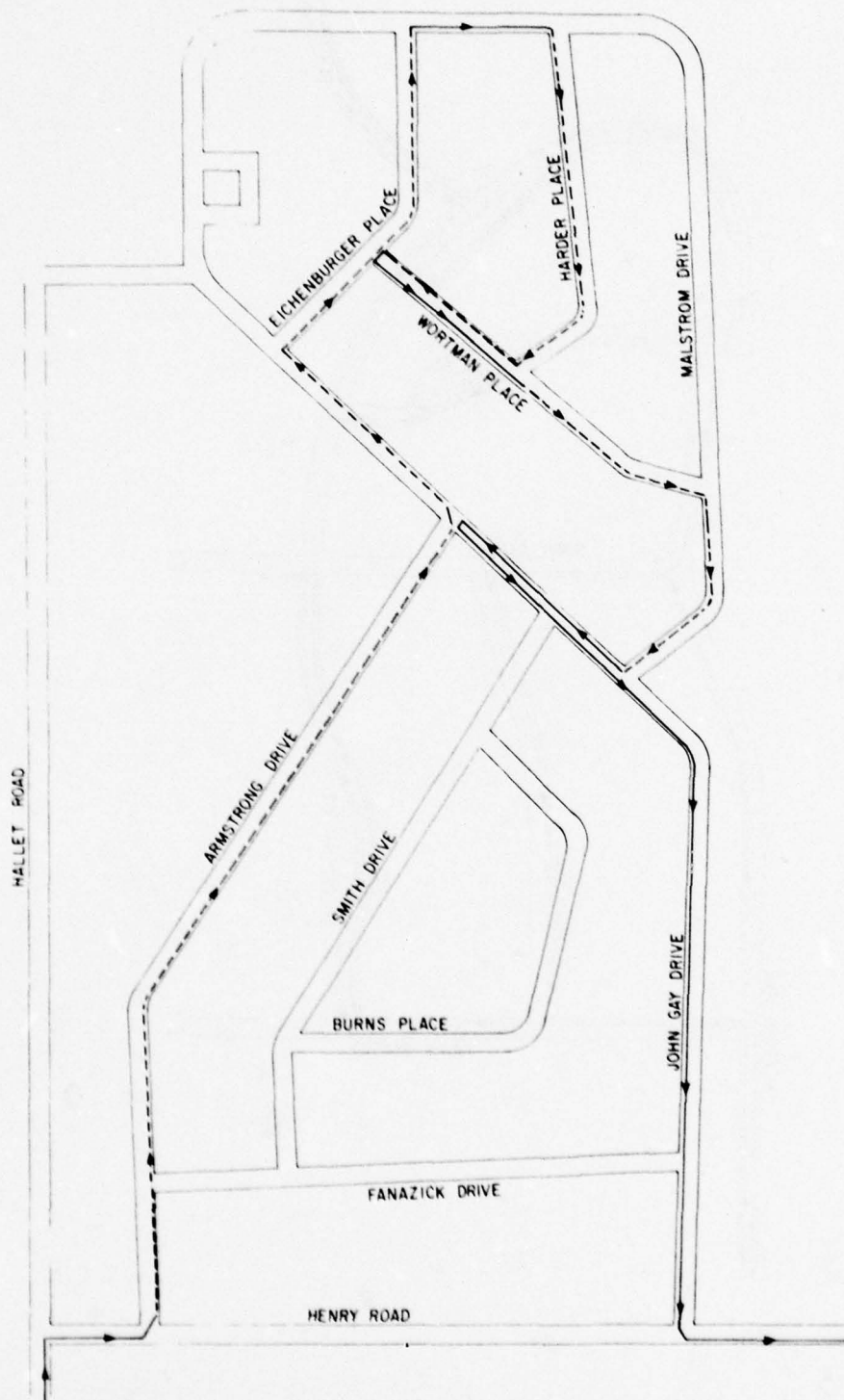
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 6 TRIP 1
10 CU YD VEHICLE

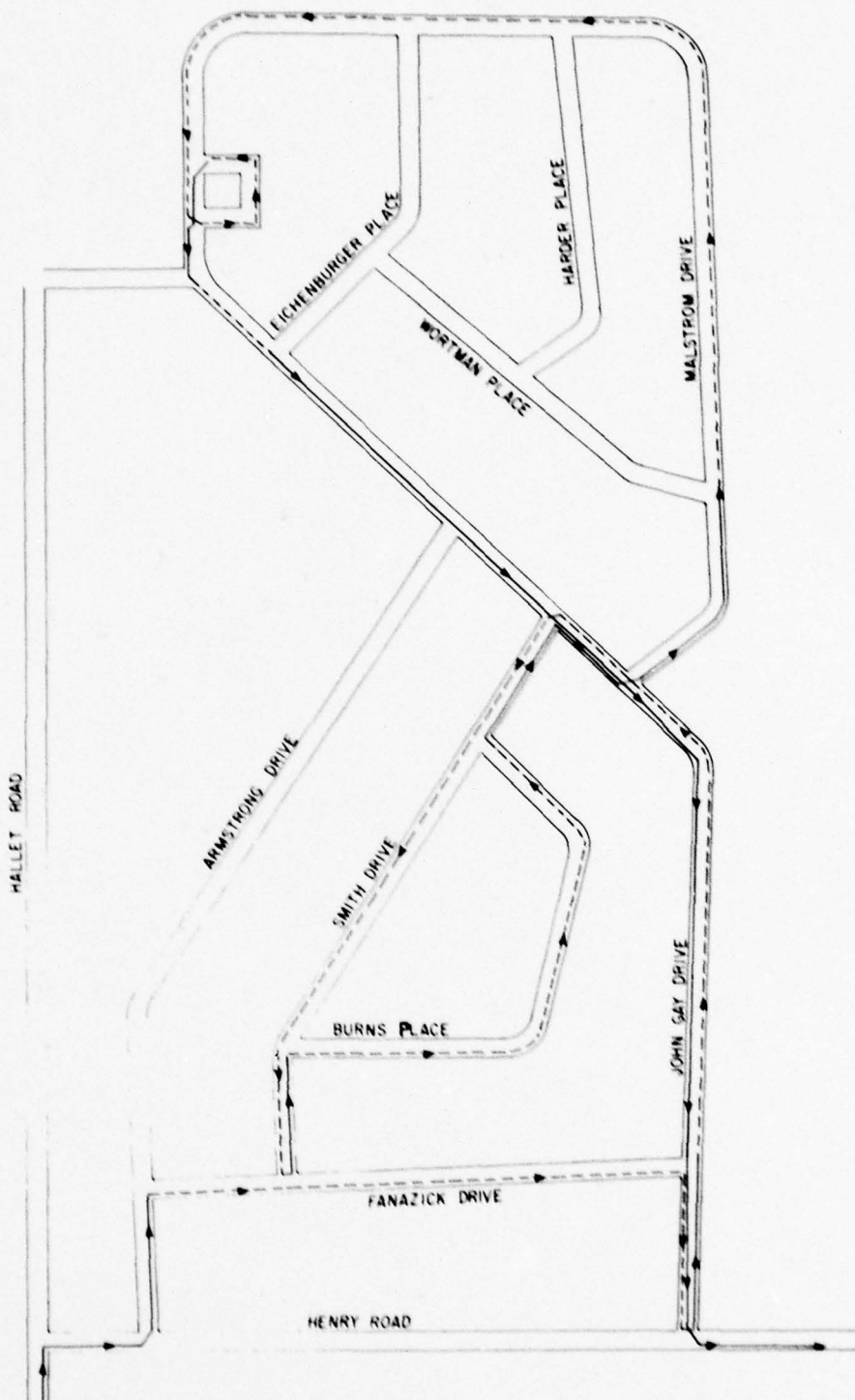
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 5 TRIP 1
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 5 TRIP 2
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE

APPENDIX C

RCINPT DATA

FAIRCHILD AFB	
1	SUNSET HIGHWAY
2	GRAHAM RD
3	FIRST ST
4	43RD ST
5	ARTILLERY CIRCLE
6	UTAH DR SOUTH
7	UTAH DR WEST
8	UTAH DR NORTH
9	OREGON DR
10	IDAHO ST
11	IOWA ST
12	NEVADA ST
13	CALIFORNIA ST
14	DAKOTA AVE
15	PENNSYLVANIA ST
16	NEBRASKA AVE
17	GEORGIA AVE
18	LOUISIANA AVE
19	MAINE AVE
20	WASHINGTON AVE
21	MINNESOTA PL
22	COLORADO AVE
23	CAROLINA DR
24	OHIO ST
25	
26	MICHIGAN AVE
27	OFFUTT DR
28	MARCH ST
29	FAIRCHILD ST
30	MITCHELL ST
31	9TH AVE
32	LINDEN ST
33	WALNUT ST
34	ELM ST
35	N MAPLE ST
36	S MAPLE ST
37	OAK ST
38	SYCAMOPE ST

39	PINE ST
40	CEDAR ST
41	PALM DR
42	POPLAR AVE
43	
44	SPOKANE ROAD
45	
46	
47	
48	
49	
50	MCCRORY AVENUE
51	COMMANDERS DRIVE
52	
53	
54	
55	BUSH STREET
56	JORDAN AVENUE
57	DEL VECCHIO AVENUE
58	
59	JOHN GAY DRIVE
60	ARMSTRONG DRIVE
61	FANAZICK DRIVE
62	SMITH DRIVE
63	BURNS PLACE
64	MALSTROM CRIVE
65	WORTHMAN PLACE
66	EICHENBURGER PLACE
67	MITCHELL PLACE
68	MARGER PLACE
70	HOSPITAL DR
71	CASTLE ST
72	6TH AVE
73	BONG ST
74	7TH AVE
75	ARNOLD ST
76	5TH AVE
77	EL PASO AVE
78	GRANT ST

79 GALVESTON AVE
96 FRIES STREET
97 HALLET ROAD
98 HENRY ROAD

7/8/9 (END OF RECORD)

0.	12.	30.	-2.0	6.	20.	10.
0.8	2.8	20.	3.8	5.3	15.	10.
8.	8.5	10.	3.5	4.	10.	10.
9.	9.75	15.	1.5	2.	10.	10.
0.	12.	30.	0.	10.	25.	10.
0.	12.	30.	0.	6.	15.	10.
0.	8.	20.	0.	4.	10.	10.

7/8/9 (END OF RECORD)

1. 5280. 1.

1 1400 5. 0.0 20/55 (8.05.5.2) (3.15.5.2)
80 1420 1.8 0.0 1410 1.4 0.0 1400/45 (8.05.1.95)
97 1430 1. 0.0 1420/45 (9.05.1.95)
98 1790 1.77 0.0 2050 .19 0.0 1820 .04 0.0 1430/ 40 (9.05.-.05)
44 1800 3 0.0 1790/ 40 (8.-2.5) RS

7/8/9 (END OF RECORD)

1. 400. 2.5

1 20 11.6 0.0 110 14.6 0.0 80/55 (11.85.8.1) (1.27.8.1)
2 80 7.8 0.0 90 2.8 0.0 100 2.1 0.0 120 1.6 0.0 130 2.1 0.0 140 .9 0.0 150
.85 0.0 155/30 (.) (1.24..85)
3 150 2.3 10.11 160/(.) LS (.5.1.75)
4 160 .6 0.4 170 / (.) (.55.2)
4 170 .4 1.2 180 1.2 6.0 190 .5 2.0 140/(.) LS
5 180 .9 1.4 182/(.) L.2 (1.02.2)
5 190 .9 5.2 182
6 200 .5 0.2 120/(1.05.3.05)
6 210 1.9 10.10 200/(.3.3.05) RS
7 210 1.2 4.8 230/(.) LC (.14.3.45)
7 230 .5 2.4 240/(.) (.13.3.72)
7 240 .65 2.8 260 / (.) LC (.2.3.95)
8 260 .5 2.4 270 1.6 8.6 280 .5 0.2 100/(.) RS
9 270 2 8.12 300/(.) L.8 (1.05.4.15)
9 300 .5 0.2 280

10 200 .7 4.2 310 .7 4.0 320 .7 4.2 280
11 230 2.4 12.12 310/(.) R.9
12 240 2.4 14.12 320/(.) R1
13 360 .65 1.4 350 .7 0.3 340 .7 2.3 330 /(1.5,1.57) L.25 (1.45,2.4)
13 330 1.0 3.5 370/(.) LC(1.0,2.75)
13 370 2.2 12.17 390/(.) L.5 (1.48,3.58)
13 390 1.45 8.10 410/(.) L1 (1.55,4.15)
14 410 2.9 18.21 450/(.) (2.7,4.15)
15 450 .75 2.6 460 2.25 14.19 470 .75 3.6 480 .75 3.4 490/(.) LS (2.8,2.4)
15 490 .7 2.4 500 .7 0.2 510 .75 1.5 520/(.) L1.9 (2.75,1.55)
16 520 3.2 15.20 360/(.) L2.8
17 350 3.3 18.16 510
18 500 3.3 25.23 340
19 130 .5 2.0 330 3.3 24.24 490 .7 2.2 550 / (.) (3.1,2.4)
19 551 .35 0.0 550/30 (3.23,2.42)
20 480 2.9 16.19 370/(.) L2.5
21 370 1.1 6.3 570 / (.) (1.9,3.05)
22 570 1.35 11.2 590/(.) R.4 (2.42,2.98)
22 590 .7 3.3 470
23 590 1.35 6.6 600/(.) R.9 (2.35,3.5)
23 600 1.45 7.7 620/(.) R.45 (1.78,3.57)
23 620 .7 3.4 390
24 570 1.4 2.10 620/(.) L.6
24 620 .7 2.4 640/(.) L.55 (1.82,3.84)
25 600 .4 4.6 660/(.) (2.45,3.6)
26 640 2.4 16.20 460/(.) L.2
43 410 .3 0.2 710 / (.) (1.5,4.25)
77 155 1.7 0.0 530/(.) (1.93,.85)
78 530 1.2 0.0 540/(.) (1.93,1.35)
79 540 3.1 2.0 545/(.) R2.2 (3.1,1.6)
71 545 1.5 0.0 610 .65 0.0 551/(.) L1.5
27 610 .5 0.0 550 2 0.0 670 1.2 0.0 690 1.8 0.0 700/30 (.) (3.05,4.4)
27 700 .8 0.0 1180 4.1 0.0 90/30 (.) L1.6
15 450 .6 2.0 1180
28 691 1.2 0.0 690/30 (3.54,3.75)
70 670 1.8 0.0 691
28 691 2.20 0.0 720/30 (.) RC (4.22,4.28)
29 720 3.7 0.0 724 2.9 0.0 725 2.2 0.0 730 2.0 0.0 740/30 (.) (7.2,7.4)
76 726 3.75 0.0 724/30 (4.17,6.4)

71 554 6.0 0.0 553 4.2 0.0 551/30 (6.08,5.4)
71 725 2.0 0.0 554/30 (,)
30 110 1.7 0.0 740 .8 0.0 750 2.0 0.0 760 / 30 (,) (7.2,6.3)
31 730 1.9 0.0 760 2.2 0.0 770 .6 0.2 780 1.8 0.8 810/(,) (8.55,5)
72 555 2.7 0.0 554/30 (6.88,4.66)
73 770 2.2 0.0 556 1.3 0.0 555/30 (,)
30 556 3.2 0.0 760 /30
74 557 2.3 0.0 556/30 (7.9,4.41)
75 557 2.2 0.0 810
32 810 .8 4.4 820 2.2 12.9 840/(,) R1.9 (9.04,6)
32 840 1.3 7.2 860/(,) R.7 (8.77,6.27)
33 840 1.85 7.5 1370/(,) R.3 (8.53,5.48)
34 770 .9 4.1 870 1.5 9.7 880 / (,) (8.47,5.42)
34 880 .7 4.2 890 / (,) LC (8.75,6.55)
34 890 1.0 3.2 900 / (,) (9.15,6.6)
34 900 1.3 7.7 910 / (,) RC (9.45,7.0)
34 910 1.6 13.12 920 / (,) (9.42,7.6)
34 920 .7 5.2 930 / (,) RC (9.25,7.8)
35 930 .2 2.0 940 .72 4.3 950 .78 4.3 960 1.0 6.4 970 1.75 11.10 1060/(,) R4 +
(7.5,7.7)
49 1060 .35 3.3 1080/(,) (7.4,7.8)
35 1060 1.6 8.8 1000/(,) R.45 (7.4,7.1)
36 1000 1.6 8.9 1010/(,) (7.4,6.47)
36 1010 1.5 9.7 1030/(,) RS (7.88,6.15)
36 1030 .7 3.2 870 .9 1.1 1040
37 780 1.0 0.2 1040/(,) (8.32,5.67)
37 1040 1.9 7.10 860
37 860 .7 0.8 890 .8 3.4 1081 / (,) (8.72,6.87)
37 1081 2.4 13.15 950 / (,) LS (,)
38 940 1.9 11.12 1091 / (,) (9.12,7.05)
38 1091 1.2 4.6 1081 / (,) LC (,)
39 880 2.3 13.17 1380/(,) LC (8.52,7.3)
39 1380 1.29 7.5 960/(,) RC
40 1030 .82 5.1 1100 .82 6.4 1110/(,) RC (8.07,6.75)
40 1110 1.98 13.11 1120/(,) LS (8.23,7.52)
40 1120 .7 3.1 970 / (,) RC
41 1100 .6 1.3 1170 / (,) (7.85,6.50)
41 1170 .75 2.6 1160/(,) LC (7.7,6.75)
41 1160 .85 3.5 1150 .7 2.4 1140 / (,) (7.7,7.4)
.7 4.2 1370 .8 4.1 820

*1 1140 .6 3.6 1130 / (,) LC (7.9,7.5)
 *1 1130 .8 4.4 1120 / (,) (,)
 42 750 .6 1.2 1000 .7 1.1 1150
 7/8/9 (END OF RECORD)
 1. 100 2.5

97 1430 20 0,0 1810/45 (.3,5.45) (8.3, 5.42)
 59 2050 3.1 4,0 2060 9.8 14.10 2090 1.8 1.2 2000 2.6 3,0 1860 4.6 4,0 2100 +

2.1 1.0 2110/(,) R11 (8.3,4.25)

60 1840 3.4 4,4 1830 2.9 2,0 1820/(2.8,4.7)

60 1840 10.8 14,8 1860/(,) L6.4

61 1830 2.65 4,0 1870 7.4 10.10 2060/(,)

62 1880 2.6 4,0 1870/(2.48,3.62)

62 1880 6.8 8,8 1900 2.6 0,4 2000/(,) L5.4

63 2010 4.1 2,6 1880/(2.5,2.0)

63 2020 1.0 2,2 2010/(2.7,1.7) LC

63 2020 6.2 10,4 1900/(,) R3.5

64 2140 1.6 2,0 2270 1.0 2,0 2240 1.1

64 2150 1.42 2,1 2140/(10.2,3.9) RC

64 2170 1.4 2,0 2161 2.9 4,1 2160 3.15 4.2 2150/(10.15,.95)

64 2180 1.50 2,1 2170/(9.8,0.5) RC

64 2090 4.4 2,4 2190 7.9 10.7 2180/(,) R2.2

58 1810 3 0,0 2110

66 2100 2.6 2,1 2220 4.6 2,3 2160/(,) R3.6

65 2190 4.4 2,5 2210 3.5 2,3 2220/(,) L1.5

68 2210 7.3 8,6 2161/(,) R1.7

67 2240 3.1 3,0 2270/(,) RR

7/8/9 (END OF RECORD)

1. 100 2.5

50 1760 6 0,0 1410/ (1.2,3.5) (-1.2,3.5)

96 1760 2.95 0,0 1660 2.7 0,0 1650 2.5 0,0 1740/ (1.2,3.5) (1.2,0.25)

50 1760 7.2 10,2 1540/(,) L3.8 (4,3.05)

55 1750 2.25 0,0 1600 2.35 0,0 1700 2.8 0,0 1540/(4.03,0.1)

51 1550 2.60 0,0 1540/(5.05,3.22)

51 1560 1.75 0,0 1550/(5.75,3.38)

51 1571 3 2,0 1560/(6.66,2.82) RC

51 1570 2.62 3,0 1571/(6.2,1.9) RC

51 1600 2.20 0,0 1590 3.0 6,0 1570/(4.0,1.0) RC

52 1710 1.70 0.0 1550/(5.42,2.7) RC
 52 1710 1.95 0.0 1560/(.) LC
 52 1720 1.74 1.1 1710/(5.19,2.06) RC
 52 1730 1.3 0.1 1720/(4.95,1.6) LC
 52 1730 1.35 2.0 1590/(.) RS
 53 1730 1.63 1.0 1720/(.) RC
 54 1580 5.1 3.4 1570/(7.85,.98) LC
 56 1660 7.15 10.10 1700/(.) L4
 57 1650 3.6 4.4 1630/(.) RS (2.62,1.27)
 57 1630 3.6 6.4 1600/(.) RC
 7/8/9 (END OF RECORD)
 7/8/9 (END OF RECORD)

APPENDIX D

PHASE4 DATA FOR ORIGINAL ROUTES

FAIRCHILD AFB		1		10.		5.	
HOUSEHOLDS		12.		10 CU YD VEHICLE		18.	
30.		(END OF RECORD)				4.55	
193.						4.55	
7/8/9						4.55	
1	1.10	1.60	12.	3.80	4.55	18.	
2	1.10	1.60	12.	3.80	4.55	18.	
3	1.10	1.60	12.	3.80	4.55	18.	
4	1.10	1.60	12.	3.80	4.55	18.	
5	1.25	2.75	12.	4.48	5.22	18.	
6	2.25	2.75	12.	4.48	5.22	18.	
7	1.25	2.75	12.	4.48	5.22	18.	
7	1.0.9	1.4	12.	3.75	4.15	9.5	
8	2.0.8	1.3	12.	4.2	4.65	10.8	
9	1.8.1	8.5	18.	3.55	3.80	12.	
9	1.9.035	9.535	18.	1.692	1.956	9.5	
10	2.9.035	9.535	18.	1.692	1.956	9.5	
7/8/9	(END OF RECORD)						
14							
1800	8T 1790	5T 2050	6T 1820	7T 1430	4T 1420	2T 1410	3T 1400
20	9T 110	96T 740	91T 730	90T 725	89T 724	92T 726	
7		1	193.0				
726	92T 724	88T 720	87T 691	86T 670	79T 550	59T 490	58T 330
13		1	193.0				
330	43C 370	44C 390	45C 410	72C 710	72T 410	46C 450	84C 1180
450	47C 460	48C 470	49C 480	50C 490	59C 550		
17		1	193.0				
550	79T 670	86T 691	87T 720	88T 724	89T 725	90T 730	91T 740
110	9T 20	1T 1400	3T 1410	2T 1420	4T 1430	7T 1820	6T 2050
1790	8T 1800						5T
8		2	193.0				
726	92T 724	88T 720	87T 691	85T 690	81T 700	82T 1180	84T 450
460							47T
13		2	193.0				
460	71C 640	69C 620	66C 600	70C 660	70T 600	65C 590	63C 570
370	44T 390	67C 620	68C 570	63T 590	64C 470		
20		2	193.0				
470	49T 480	50T 490	59T 550	79T 670	86T 691	87T 720	88T 724
							89T

725	90T	730	91T	740	96T	110	9T	20	1T	1400	3T	1410	2T	1420	4T
1430	7T	1820	6T	2050	5T	1790	8T	1800							
8			3	193.0											
726	92T	724	88T	720	87T	691	86T	670	79T	550	59T	490	58T	330	43T
370															
12			3	193.0											
370	61C	480	50T	490	58C	330	57C	130	57T	330	42C	340	41C	350	40C
360	54C	520	53C	510	52C	500	51C	490							
18			3	193.0											
490	59T	550	79T	670	86T	691	87T	720	88T	724	89T	725	90T	730	91T
740	96T	110	9T	20	1T	1400	3T	1410	2T	1420	4T	1430	7T	1820	6T
2050	5T	1790	8T	1800											
7			4	193.0											
726	92T	724	88T	720	87T	691	86T	670	79T	550	59T	490	51T	500	
9			4	193.0											
500	56C	340	41T	350	55C	510	52T	500	51T	490	59T	550	78T	610	76T
545	75C	540													
18			4	193.0											
540	75T	545	76T	610	77T	551	94T	553	93T	554	95T	725	90T	730	91T
740	96T	110	9T	20	1T	1400	3T	1410	2T	1420	4T	1430	7T	1820	6T
2050	5T	1790	8T	1800											
5			5	193.0											
726	92T	724	89T	725	90T	730	91T	740	97T	750					
22			5	193.0											
750	152C	1000	126C	1060	125C	1080	125T	1060	124C	970	123C	960	122C	950	121C
940	120C	930	119C	920	118C	910	117C	900	116C	890	115C	880	114C	870	130C
1040	130T	870	129C	1030	142C	1100	143C	1110	144C	1120	145C	970			
14			5	193.0											
970	124T	1060	126T	1000	152T	750	97T	740	96T	110	9T	20	1T	1400	3T
1410	2T	1420	4T	1430	7T	1820	6T	2050	5T	1790	8T	1800			
9			6	193.0											
726	92T	724	89T	725	90T	730	91T	740	97T	750	152T	1000	126T	1060	124T
970	145T	1120													
23			6	193.0											
1120	151C	1130	150C	1140	149C	1150	148C	1160	147C	1170	146C	1100	142T	1030	128C
1010	127C	1000	153C	1150	149T	1140	150T	1130	151T	1120	145T	970	123T	960	141C
1380	140C	880	115T	890	136C	1081	139C	1091	138C	940	121T	950	137C	1081	
19			6	193.0											
1081	139T	1091	138T	940	121T	950	122T	960	123T	970	124T	1060	126T	1000	152T

750	97T	740	96T	110	9T	20	1T	1400	3T	1410	2T	1420	4T	1430	7T
1820	6T	2050	5T	1790	8T	1800									
9			7	193.0											
726	92T	724	89T	725	90T	730	99T	760	100T	770	113T	870	114T	880	115T
890	135T	860													
35			7	193.0											
860	134C	1040	133C	780	101C	770	101T	780	102C	810	109C	820	110C	840	111C
860	134T	1040	131C	1370	132C	820	132T	1370	112C	840	112T	1370	131T	1040	130T
870	113C	770	104T	556	105T	555	103T	554	93T	553	94T	551	60T	550	59T
490	58T	330	57T	130	15T	140	22C	190	21C	180	23C	182	24C	190	21T
180	20C	170	19C	160	18C	150									
21			7	193.0											
150	16T	140	15T	130	57T	330	58T	490	59T	550	60T	551	94T	553	93T
554	95T	725	90T	730	91T	740	96T	110	9T	20	1T	1400	3T	1410	2T
1420	4T	1430	7T	1820	6T	2050	5T	1790	8T	1800					
8			8	193.0											
726	92T	724	88T	720	87T	691	85T	690	81T	700	82T	1180	83T	90	12T
100															
19			8	193.0											
100	32C	280	31C	270	33C	300	34C	280	31T	270	30C	260	29C	240	28C
230	38C	310	36T	320	39C	240	28T	230	27C	210	26C	200	25C	120	25T
200	35C	310	36C	320	37C	280									
13			8	193.0											
280	32T	100	12T	90	11T	80	10T	110	9T	20	1T	1400	3T	1410	2T
1420	4T	1430	7T	1820	6T	2050	5T	1790	8T	1800					
9			9	193.0											
726	92T	724	89T	725	90T	730	91T	740	96T	110	9T	20	1T	1400	3T
1410	189T	1760													
42			9	193.0											
1760	193C	1540	197T	1550	203T	1710	205C	1720	206C	1730	208C	1720	206T	1730	207C
1590	202C	1570	209C	1580	209T	1570	200C	1571	199C	1560	198T	1550	197T	1540	196T
1700	210C	1660	191T	1650	211C	1630	212C	1600	212T	1630	211T	1650	191T	1660	190T
1760	189T	1410	2T	1420	4T	1430	7T	1820	162C	1830	161C	1840	163C	1860	159C
2100	183C	2220	184C	2160	177T	2161	187C	2210	186C	2220	186T	2210	185C	2190	180C
2090	157C	2000	158C	1860											
6			9	193.0											
1860	158T	2000	157T	2090	156T	2060	155T	2050	5T	1790	8T	1800			
12			10	193.0											
726	92T	724	89T	725	90T	730	91T	740	96T	110	9T	20	1T	1400	3T

1410	2T	1420	4T	1430	7T	1820	162T	1830	
28			10		193.0				
1830	164C	1870	165C	2060	155C	2050	155T	2060	156C 2090 157T 2000 168C 1900 167C
1880	166C	1870	166T	1880	169C	2010	170C	2020	171C 1900 168T 2000 157T 2090 180T
2190	181C	2180	179C	2170	176C	2161	177C	2160	178C 2150 175C 2140 172C 2270 173C
2240	188C	2270	173T	2240	174T	2110	160C	2100	
7			10		193.0				
2100	159T	1860	158T	2000	157T	2090	156T	2060	155T 2050 5T 1790 8T 1800
7/8/9									(END OF RECORD)

APPENDIX E

PHASE4 DATA FOR RCSP ROUTES

10.	12.	10 CU YO VEHICLE (END OF RECORD)	18.	1.692	1.956	9.5
30.	2 9.035	9.535	18.	1.692	1.956	9.5
193.	2 8.10	8.50	18.	3.592	3.790	9.5
7/8/9	2 2.25	2.75	12.	4.48	5.22	18.
1	2 2.25	2.75	12.	4.48	5.22	18.
2	2 2.25	2.75	12.	4.48	5.22	18.
3	1 2.25	2.75	12.	4.48	5.22	18.
4	1 1.10	1.60	12.	3.80	4.55	18.
5	2 0.85	1.75	18.	4.10	4.70	12.
6	1 0.90	1.60	12.	3.80	4.675	18.
7	1 1.10	1.60	12.	3.80	4.55	18.
8	1 1.10	1.60	12.	3.80	4.55	18.
8	1 9.035	9.535	18.	1.692	1.956	9.5
7/8/9	(END OF RECORD)					
14	16.030					
1800	8T 1790	5T 2050	6T 1820	7T 1430	4T 1420	2T 1410
20	9T 110	96T 740	91T 730	90T 725	89T 724	92T 726
10	8.399	1	193.000	188.000		
726	92T 724	89T 725	90T 730	91T 740	96T 110	9T 20
1410	189T 1760	190T 1660				1T 1400
52	6.065	1	193.000	188.000		
1660	210C 1700	195T 1600	201T 1590	202C 1570	209C 1580	209T 1570
1560	204T 1710	205C 1720	206C 1730	208C 1720	206T 1730	207C 1590
1630	211C 1650	191T 1660	210T 1700	196T 1540	193C 1760	189T 1410
1430	7T 1820	162C 1830	164C 1870	166C 1880	167C 1900	168C 2000
2100	183C 2220	183T 2100	160C 2110	174T 2240	173C 2270	186C 2240
2140	175C 2150	178C 2160	177C 2161	187T 2210	185T 2190	180C 2090
1870	166T 1880	169C 2010	170C 2020	171C 1900		156T 2060
6	5.098	1	193.000	188.000		
1900	168T 2000	157T 2090	156T 2060	155T 2050	5T 1790	8T 1800
3	4.829	1	193.000	188.000		
1800	8T 1790	5T 2050	155T 2060			
59	1	1	193.000	188.000		
2060	165C 1870	164C 1830	162C 1820	7T 1430	4T 1420	2T 1410
1660	210C 1700	195T 1600	201T 1590	202C 1570	209C 1580	209T 1570
						200C 1571
						1760 190T
						1990

1560	204T	1710	205C	1720	206C	1730	208C	1720	206T	1730	207C	1590	201T	1600	212C
1630	211C	1650	191T	1660	210T	1700	196T	1540	193C	1760	189T	1410	2T	1420	4T
1430	7T	1820	162T	1830	164T	1870	166C	1880	167C	1900	171C	2020	170C	2010	169C
1880	167T	1900	168C	2000	158C	1860	159C	2100	183T	2220	183C	2100	160C	2110	174T
2240	173T	2270	188C	2240	173C	2270	172C	2140	175C	2150	178C	2160	177C	2161	176T
2170	179T	2180	181T	2190	180C	2090									
4	5.014	1	193.000	188.000											
2090	156T	2060	155T	2050	5T	1790	8T	1800							
10	1.140	2	193.000	190.000											
726	92T	724	89T	725	90T	730	91T	740	97T	750	152T	1000	153T	1150	149T
1140	150T	1130	151T	1120											
21	1.728	2	193.000	190.000											
1120	144C	1110	143C	1100	142T	1030	129T	870	114T	880	140C	1380	141C	960	122C
950	121C	940	120C	930	119C	920	118C	910	117C	900	116C	890	136T	1081	139C
1091	138C	940	121T	950	122T	960	123C	970	145C	1120					
16	15.526	2	193.000	190.000											
1120	151T	1130	150T	1140	149T	1150	153T	1000	152T	750	97T	740	96T	110	9T
20	1T	1400	3T	1410	2T	1420	4T	1430	7T	1820	6T	2050	5T	1790	8T
1800															
16	15.526	2	193.000	190.000											
1800	8T	1790	5T	2050	6T	1820	7T	1430	4T	1420	2T	1410	3T	1400	1T
20	9T	110	96T	740	97T	750	152T	1000	153T	1150	149T	1140	150T	1130	151T
1120															
21	1.728	2	193.000	190.000											
1120	144C	1110	143C	1100	142T	1030	129T	870	114T	880	140C	1380	141C	960	122C
950	121C	940	120C	930	119C	920	118C	910	117C	900	116C	890	136T	1081	139C
1091	138C	940	121T	950	122T	960	123C	970	145C	1120					
16	15.526	2	193.000	190.000											
1120	151T	1130	150T	1140	149T	1150	153T	1000	152T	750	97T	740	96T	110	9T
20	1T	1400	3T	1410	2T	1420	4T	1430	7T	1820	6T	2050	5T	1790	8T
1800															
6	1.125	3	193.000	190.000											
726	92T	724	89T	725	95T	554	103T	555	105T	556	104T	770			
33	2.757	3	193.000	190.000											
770	101C	780	133C	1040	131C	1370	112C	840	110C	820	109C	810	102C	780	101T
770	113C	870	130C	1040	131T	1370	132C	820	110T	840	111C	860	134C	1040	130T
870	114C	880	115C	890	136C	1081	137C	950	121T	940	138T	1091	139T	1081	136T
890	115T	880	114T	870	129C	1030	142C	1100	146C	1170	147C	1160	148C	1150	153C
1000	152C	750													

726	92T	724	88T	720	87T	691	85T	690	80T	670	79T	550	59T	490	50T
480	49T	470													
21	1.670		5	193.000		186.000									
470	64C	590	63C	570	68C	620	67C	390	45C	410	72C	710	72T	410	46C
450	47T	460	71C	640	69C	620	67T	390	44C	370	43T	330	57T	130	14T
120	25T	200	35C	310	36C	320	37C	280	32C	100					
12	16.988		5	193.000		186.000									
100	12T	90	11T	80	10T	110	9T	20	1T	1400	3T	1410	2T	1420	4T
1430	7T	1820	6T	2050	5T	1790	8T	1800							
12	16.988		5	193.000		186.000									
1800	8T	1790	5T	2050	6T	1820	7T	1430	4T	1420	2T	1410	3T	1400	1T
20	9T	110	10T	80	11T	90	12T	100							
21	1.784		5	193.000		186.000									
100	32C	280	37C	320	36C	310	35C	200	25T	120	14T	130	57T	330	43T
370	44C	390	67C	620	68C	570	63C	590	64C	470	48T	460	71C	640	69C
620	67T	390	45C	410	72T	710	72C	410	46C	450					
19	16.526		5	193.000		186.000									
450	84T	1180	82T	700	81T	690	85T	691	87T	720	88T	724	89T	725	90T
730	91T	740	96T	110	9T	20	1T	1400	3T	1410	2T	1420	4T	1430	7T
1820	6T	2050	5T	1790	8T	1800									
8	1.216		6	193.000		192.000									
726	92T	724	88T	720	87T	691	85T	690	80T	670	79T	550	78T	610	76T
545															
30	2.795		6	193.000		192.000									
545	75C	540	74T	530	73T	155	17T	150	18C	160	19C	170	20C	180	21C
190	24C	182	23C	180	21T	190	22C	140	15T	130	14T	120	25C	200	26C
210	27C	230	28C	240	29C	260	30C	270	31C	280	37T	320	36T	310	38C
230	28T	240	39C	320	37T	280	31T	270	33C	300	34C	280			
13	17.026		6	193.000		192.000									
280	32T	100	12T	90	11T	80	10T	110	9T	20	1T	1400	3T	1410	2T
1420	4T	1430	7T	1820	6T	2050	5T	1790	8T	1800					
15	17.132		6	193.000		192.000									
1800	8T	1790	5T	2050	6T	1820	7T	1430	4T	1420	2T	1410	3T	1400	1T
20	9T	110	10T	80	11T	90	12T	100	32T	280	37T	320	36T	310	
34	3.367		6	193.000		192.000									
310	38C	230	28C	240	29C	260	30C	270	31C	280	34C	300	33C	270	31T
280	37T	320	39C	240	28T	230	27C	210	26C	200	25C	120	14T	130	15T
140	22C	190	24C	182	23C	180	20C	170	19C	160	18C	150	17T	155	73T
530	74T	540	75C	545	75T	540	74T	530	73T	155	17T	150	18T	160	19T

2050	155C	2060	156C	2090	180T	2190	181C	2180	179C	2170	176C	2161	187C	2210	186C
2220	184C	2160	177T	2161	187T	2210	185C	2190	180T	2090	157C	2000	158T	1860	163C
1840	161C	1830	162T	1820	7T	1430	4T	1420	2T	1410	3T	1400	1T	20	9T
110	96T	740	91T	730	90T	725	95T	554	93T	553	94T	551	60T	550	59C
490	50C	480	61C	370	43C	330	57C	130	57T	330	43T	370	62C	570	63T
590	64T	470	49C	480											
18	16.586	8	193.000	188.000											
480	50T	490	59T	550	60T	551	94T	553	93T	554	95T	725	90T	730	91T
740	96T	110	9T	20	1T	1400	3T	1410	2T	1420	4T	1430	7T	1620	6T
2050	5T	1790	8T	1800											
7/8/9															

(END OF RECORD)

APPENDIX F

RCSP SCHEDULE

SECTION	TRIP	DISTANCE (MILES)	TIME (MINUTES)	HOUSEHOLDS	CAPACITY (HOUSEHOLDS)	LOAD
1	1	19.6	146.4	188	193.0	188.0
1	2	18.9	147.0	188	193.0	188.0
2	1	18.4	136.2	190	193.0	190.0
2	2	32.8	154.4	190	193.0	190.0
3	1	19.2	143.4	190	193.0	190.0
3	2	33.6	162.2	190	193.0	190.0
4	1	19.6	131.0	178	193.0	178.0
4	2	35.2	151.7	178	193.0	178.0
5	1	19.9	134.7	186	193.0	186.0
5	2	35.3	154.8	186	193.0	186.0
6	1	21.0	146.2	192	193.0	192.0
6	2	38.0	169.5	192	193.0	192.0
7	1	19.1	137.0	192	193.0	192.0
7	2	34.5	157.2	192	193.0	192.0
8	1	19.9	142.0	188	193.0	188.0
8	2	35.3	162.2	188	193.0	188.0

ONLY HALF OF THESE TRIPS WILL BE USED.

FINAL ROUTE SUMMARY FAIRCHILD AFB

ROUTE	VEHICLE IDENTIFICATION	VEHICLE CAPACITY (HOUSEHOLDS)	SECTION(S) TRIP1 TRIP2	DISTANCE (MILES)	TIME (HR:MIN)	HOUSEHOLDS SERVICED (HOUSEHOLDS)	REFUSE QUANTITY (HOUSEHOLDS)
1	10 CU YD VEHICLE	193.0	4 3	69.2	5135	368	368.0
2	10 CU YD VEHICLE	193.0	7 5	70.4	5134	378	378.0
3	10 CU YD VEHICLE	193.0	8 2	68.7	5138	378	378.0
4	10 CU YD VEHICLE	193.0	6 1	56.0	5135	380	380.0
TOTALS				264.3	22122	1504	1504.0

ROUTE 1		FAIRCHILD AFB		10 CU YD VEHICLE		TIME		DISTANCE		HOUSEHOLDS		LOAD	
ACTION				SPEED		(HR:MIN)		(MILES)		SERVICED		(PCT)	
LEAVE GARAGE						8:00							
DRIVE ON	5TH AVE	TO FAIRCHILD ST		30		8:01		.3					
DRIVE ON	FAIRCHILD ST	TO MARCH ST		30		8:01		.3					
DRIVE ON	MARCH ST	TO OFFUTT DR		30		8:02		.3					
DRIVE ON	OFFUTT DR	TO PENNSYLVANIA ST		30		8:02		.2		2		1	
PICK LP ON	EOTH SIDES	PENNSYLVANIA ST		5		8:04		.0		8		5	
PICK LP ON	EOTH SIDES	PENNSYLVANIA ST		5		8:08		.1		33		22	
PICK LP ON	EOTH SIDES	PENNSYLVANIA ST		5		8:27		.2				22	
DRIVE ON	COLORADO AVE	TO COLORADO DR		15		8:34		.1		12		28	
PICK LP ON	EOTH SIDES	COLORADO DR		5		8:40		.0		10		33	
PICK LP ON	EOTH SIDES	COLORADO DR		5		8:40		.0					
DRIVE ON	COLORADO DR	TO CAROLINA DR		15		8:40		.1		14		40	
PICK LP ON	EOTH SIDES	COLORADO DR		15		8:48		.1				40	
DRIVE ON	OHIO ST	TO PENNSYLVANIA ST		15		8:48		.1				40	
DRIVE ON	COLORADO AVE	TO MAINE AVE		15		8:49		.2				40	
DRIVE ON	MAINE AVE	TO OFFUTT DR		15		8:50		.1				40	
DRIVE ON	MAINE AVE	TO CASTLE ST		15		8:50		.1				40	
DRIVE ON	MAINE AVE	TO CASTLE ST		30		8:50		.0				40	
DRIVE ON	6TH AVE	TO 6TH AVE		30		8:51		.8				40	
DRIVE ON	BONG ST	TO BONG ST		30		8:52		.2				40	
DRIVE ON	ELM ST	TO ELM ST		30		8:52		.3				40	
DRIVE ON	S MAPLE ST	TO S MAPLE ST		15		8:53		.1				40	
PICK LP ON	EOTH SIDES	S MAPLE ST		5		8:53		.1		16		49	
PICK LP ON	EOTH SIDES	S MAPLE ST		5		9:02		.1		17		58	
DRIVE ON	POPLAR AVE	TO PALM DR		15		9:12		.1				61	
PICK LP ON	EOTH SIDES	PALM DR		5		9:16		.1		6		65	
PICK LP ON	EOTH SIDES	PALM DR		5		9:21		.0		9		69	
PICK LP ON	EOTH SIDES	PALM DR		5		9:26		.1		8		69	
DRIVE ON	CEDAR ST	TO N MAPLE ST		15		9:26		.1				80	
PICK LP ON	EOTH SIDES	N MAPLE ST		5		9:30		.1		21		83	
PICK LP ON	EOTH SIDES	N MAPLE ST		5		9:41		.0		6		83	
DRIVE ON	N MAPLE ST	TO N MAPLE ST		15		9:41		.0		16		92	
DRIVE ON	POPLAR AVE	TO POPLAR AVE		5		9:51		.1				92	
DRIVE ON	MITCHELL ST	TO MITCHELL ST		15		9:51		.0				92	
DRIVE ON	SUNSET HIGHWAY	TO SUNSET HIGHWAY		30		9:51		.2				92	
DRIVE ON	SUNSET HIGHWAY	TO HALLET ROAD		55		9:58		5.9				92	
DRIVE ON	HALLET ROAD	TO HALLET ROAD		45		10:02		3.2				92	
DRIVE ON	HENRY ROAD	TO HENRY ROAD		45		10:03		1.0				92	
DRIVE ON	SPOKANE ROAD	TO SPOKANE ROAD		40		10:06		2.0				92	
DRIVE ON	SPOKANE ROAD	TO LAND FILL		40		10:11		3.0				92	
UNLOAD						10:11 TO 10:21							
LEAVE LAND FILL						10:21							
DRIVE ON	SPOKANE ROAD	TO HENRY ROAD		40		10:25		3.0					
DRIVE ON	HENRY ROAD	TO HALLET ROAD		40		10:28		2.0					
DRIVE ON	HALLET ROAD	TO SUNSET HIGHWAY		45		10:30		1.0					
DRIVE ON	SUNSET HIGHWAY	TO MITCHELL ST		45		10:34		3.2					
DRIVE ON	SUNSET HIGHWAY	TO MITCHELL ST		55		10:40		5.9					

ACTION	SPEED (MPH)	TIME (HRS:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
DRIVE ON	30	10:41	.2		
PICK UP ON BOTH SIDES MITCHELL ST	5	10:43	.0	3	1
PICK UP ON BOTH SIDES POPLAR AVE	5	10:45	.1	2	2
PICK UP ON BOTH SIDES PALM DR	5	10:49	.1	8	6
PICK UP ON BOTH SIDES PALM DR	5	10:54	.1	8	10
PICK UP ON BOTH SIDES PALM DR	5	10:57	.0	4	12
PICK UP ON BOTH SIDES CEDAR ST	5	11:00	.1	6	16
PICK UP ON BOTH SIDES S MAPLE ST	5	11:03	.1	5	18
PICK UP ON BOTH SIDES ELM ST	5	11:13	.1	16	26
PICK UP ON BOTH SIDES ELM ST	5	11:16	.1	6	30
PICK UP ON BOTH SIDES OAK ST	5	11:21	.1	7	33
PICK UP ON BOTH SIDES OAK ST	5	11:37	.2	28	48
DRIVE ON	15	11:37	.1		
DRIVE ON	15	11:38	.2		
DRIVE ON	15	11:38	.1		
DRIVE ON	15	11:39	.2		
PICK UP ON BOTH SIDES S MAPLE ST	5	11:41	.1	2	49
PICK UP ON BOTH SIDES OAK ST	5	11:43	.1	2	50
PICK UP ON BOTH SIDES 9TH AVE	5	11:48	.1	8	54
PICK UP ON BOTH SIDES LINDEN ST	5	11:53	.1	8	58
PICK UP ON BOTH SIDES LINDEN ST	5	12:06	.2	21	69
BREAK FOR LUNCH		12:06 TO 12:36			
PICK UP ON BOTH SIDES WALNUT ST	5	12:43	.1	12	75
PICK UP ON BOTH SIDES S MAPLE ST	5	12:47	.1	6	78
PICK UP ON BOTH SIDES OAK ST	5	12:57	.1	17	87
PICK UP ON BOTH SIDES LINDEN ST	5	13:03	.1	9	92
DRIVE ON	15	13:03	.2		
PICK UP ON BOTH SIDES S MAPLE ST	5	13:07	.1	5	94
DRIVE ON	15	13:07	.1		
DRIVE ON	15	13:07	.1		
PICK UP ON BOTH SIDES 9TH AVE	5	13:09	.0	2	95
PICK UP ON BOTH SIDES ELM ST	5	13:12	.1	5	98
DRIVE ON	15	13:12	.1		
DRIVE ON	15	13:13	.2		
DRIVE ON	30	13:14	.3		
DRIVE ON	55	13:20	5.9		
DRIVE ON	45	13:24	3.2		
DRIVE ON	45	13:26	1.0		
DRIVE ON	40	13:29	2.0		
DRIVE ON	40	13:33	3.0		
UNLOAD		13:33 TO 13:43			
DRIVE ON	40	13:48	3.0		
DRIVE ON	40	13:51	2.0		
DRIVE ON	45	13:52	1.0		
DRIVE ON	45	13:56	3.2		
DRIVE ON	55	14:03	5.9		
DRIVE ON	30	14:03	.1		
DRIVE ON	30	14:04	.5		
DRIVE ON	30	14:05	.3		
TO POPLAR AVE					
TO S MAPLE ST					
TO PALM DR					
TO CEDAR ST					
TO S MAPLE ST					
TO ELM ST					
TO PINE ST					
TO OAK ST					
TO SYCAMORE ST					
TO S MAPLE ST					
TO ELM ST					
TO OAK ST					
TO S MAPLE ST					
TO OAK ST					
TO 9TH AVE					
TO LINDEN ST					
TO S MAPLE ST					
TO WALNUT ST					
TO S MAPLE ST					
TO OAK ST					
TO 9TH AVE					
TO ELM ST					
TO S MAPLE ST					
TO BONG ST					
TO MITCHELL ST					
TO SUNSET HIGHWAY					
TO HALLET ROAD					
TO HENRY ROAD					
TO SPOKANE ROAD					
TO LAND FILL					
TO HENRY ROAD					
TO HALLET ROAD					
TO SUNSET HIGHWAY					
TO MITCHELL ST					
TO FAIRCHILD ST					
TO 5TH AVE					
TO GARAGE					
SPOKANE ROAD					
HENRY ROAD					
HALLET ROAD					
SUNSET HIGHWAY					
MITCHELL ST					
FAIRCHILD ST					
5TH AVE					

ROUTE 2 FAIRCHILD AFB

10 CU YO VEHICLE

ACTION	10 CU YO VEHICLE	SPEED (MPH)	TIME (HHMMSS)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
LEAVE GARAGE			0800			
DRIVE ON	5TH AVE	30	0801	.3		
DRIVE ON	TO FAIRCHILD ST	30	0801			
DRIVE ON	TO MARCH ST	30	0801			
DRIVE ON	TO OFFUTT DR	30	0802	.3		
DRIVE ON	TO MAINE AVE	30	0802	.2		
DRIVE ON	TO PENNSYLVANIA ST	15	0802	.1		
DRIVE ON	TO LOUISIANA AVE	5	0806	.1	6	3
PICK LP ON BOTH SIDES	TO GEORGIA AVE	5	0808	.1	2	4
PICK LP ON BOTH SIDES	TO NEBRASKA AVE	5	0811	.1	6	7
PICK LP ON BOTH SIDES	TO CALIFORNIA ST	5	0832	.2	35	25
PICK LP ON BOTH SIDES	TO GEORGIA AVE	5	0835	.0	5	27
PICK LP ON BOTH SIDES	TO LOUISIANA AVE	5	0837	.1	3	29
PICK LP ON BOTH SIDES	TO PENNSYLVANIA ST	5	0804	.3	48	54
DRIVE ON	TO GEORGIA AVE	15	0804	.1		
PICK LP ON BOTH SIDES	TO CALIFORNIA ST	5	0824	.3	34	54
DRIVE ON	TO LOUISIANA AVE	15	0824	.1		
PICK LP ON BOTH SIDES	TO MAINE AVE	5	0827	.1	5	72
PICK LP ON BOTH SIDES	TO PENNSYLVANIA ST	5	0854	.3	48	74
DRIVE ON	TO OFFUTT DR	15	0855	.1		
DRIVE ON	TO CASTLE ST	30	0855	.0		
DRIVE ON	TO FAIRCHILD ST	30	0857	.9		
DRIVE ON	TO MITCHELL ST	30	0857	.3		
DRIVE ON	TO SUNSET HIGHWAY	30	0857	.1		
DRIVE ON	TO HALLET ROAD	55	1004	5.9		
DRIVE ON	TO HENRY ROAD	45	1008	3.2		
DRIVE ON	TO SPOKANE ROAD	45	1010	1.0		
DRIVE ON	TO LAND FILL	40	1013	2.0		
DRIVE ON		40	1017	3.0		

10:17 TO 10:27

UNLOAD			1027			
LEAVE LAND FILL			1032	3.0		
DRIVE ON	TO HENRY ROAD	40	1032	2.0		
DRIVE ON	TO HALLET ROAD	40	1035	1.0		
DRIVE ON	TO SUNSET HIGHWAY	45	1036	1.0		
DRIVE ON	TO GRAMAM RD	45	1040	3.2		
DRIVE ON	TO UTAH DR NORTH	55	1040	7.0		
DRIVE ON	TO IDAHO ST	30	1049	.8		
PICK LP ON BOTH SIDES	TO NEVADA ST	5	1051	.0	2	1
PICK LP ON BOTH SIDES	TO IOWA ST	5	1054	.1	6	4
PICK LP ON BOTH SIDES	TO UTAH DR SOUTH	5	1057	.1	4	6
DRIVE ON	TO GRAMAM RD	15	1101	.1	6	9
DRIVE ON	TO MAINE AVE	30	1101	.1		
DRIVE ON	TO CALIFORNIA ST	15	1101	.0		
DRIVE ON	TO MINNESOTA PL	15	1101	.1		
PICK LP ON BOTH SIDES	TO CAROLINA DR	5	1102	.2	29	24
PICK LP ON BOTH SIDES	TO OHIO ST	5	1110	.1	7	27
PICK LP ON BOTH SIDES	TO COLORADO AVE	5	1122	.1	12	34
PICK LP ON BOTH SIDES	TO CAROLINA DR	5	1129	.1	13	40
PICK LP ON BOTH SIDES		5	1137	.1		

ACTION	SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
PICK UP ON BOTH SIDES COLORADO AVE	5	11:41	.1	6	44
DRIVE ON PENNSYLVANIA ST	15	11:42	.2		44
PICK UP ON BOTH SIDES MICHIGAN AVE	5	12:02	.2	36	62
BREAK FOR LUNCH		12:02 TO 12:32			
PICK UP ON BOTH SIDES OHIO ST	5	12:35	.1	6	65
DRIVE ON CAROLINA DR	15	12:36	.1		65
PICK UP ON BOTH SIDES CALIFORNIA ST	5	12:46	.1	18	75
DRIVE ON	15	12:46	.0		75
PICK UP ON BOTH SIDES	5	12:47	.0	2	76
PICK UP ON BOTH SIDES	5	13:09	.2	39	96
DRIVE ON PENNSYLVANIA ST	15	13:10	.0		96
DRIVE ON OFFUTT DR	30	13:10	.2		96
DRIVE ON MARCH ST	30	13:10	.3		96
DRIVE ON FAIRCHILD ST	30	13:12	.8		96
DRIVE ON MITCHELL ST	30	13:12	.1		96
DRIVE ON SUNSET HIGHWAY	55	13:19	5.9		96
DRIVE ON HALLET ROAD	45	13:23	3.2		96
DRIVE ON HENRY ROAD	45	13:24	1.0		96
DRIVE ON SPOKANE ROAD	40	13:27	2.0		96
DRIVE ON	40	13:32	3.0		96
UNLOAD		13:32 TO 13:42			
DRIVE ON SPOKANE ROAD	40	13:46	3.0		
DRIVE ON HENRY ROAD	40	13:49	2.0		
DRIVE ON HALLET ROAD	45	13:51	1.0		
DRIVE ON SUNSET HIGHWAY	45	13:55	3.2		
DRIVE ON MITCHELL ST	55	14:01	5.9		
DRIVE ON FAIRCHILD ST	30	14:02	.1		
DRIVE ON 5TH AVE	30	14:03	.5		
DRIVE ON	30	14:03	.3		

ROUTE 3 FAIRCHILD AFB

10 CU YD VEHICLE

ACTION		SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
LEAVE GARAGE			8:00			
DRIVE ON	5TH AVE	30	8:01	.3		
DRIVE ON	FAIRCHILD ST	30	8:01	.3		
DRIVE ON	MARCH ST	30	8:02	.3		
DRIVE ON	OFFUTT DR	30	8:02	.2		
PICK UP ON BOTH SIDES	MAINE AVE	5	8:05	.1	4	2
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	8:09	.1	7	5
PICK UP ON BOTH SIDES	PENNSYLVANIA ST	5	8:14	.1	9	10
DRIVE ON	COLORADO AVE	15	8:15	.2		
PICK UP ON BOTH SIDES	MINNESOTA PL	5	8:20	.1	9	15
PICK UP ON BOTH SIDES	CALIFORNIA ST	5	8:25	.1	8	19
PICK UP ON BOTH SIDES	MAINE AVE	5	8:27	.0	2	20
DRIVE ON	MAINE AVE	15	8:27	.1		
DRIVE ON	CALIFORNIA ST	15	8:27	.1		
PICK UP ON BOTH SIDES	WASHINGTON AVE	5	8:47	.2	35	38
DRIVE ON	PENNSYLVANIA ST	15	8:47	.1		
DRIVE ON	MAINE AVE	15	8:48	.1		
DRIVE ON	MAINE AVE	30	8:48	.0		
DRIVE ON	CASTLE ST	30	8:50	.3		
DRIVE ON	FAIRCHILD ST	30	8:50	.3		
DRIVE ON	MITCHELL ST	30	8:50	.1		
DRIVE ON	SUNSET HIGHWAY	30	8:50	.1		
DRIVE ON	HALLET ROAD	55	8:57	5.9		
DRIVE ON	HENRY ROAD	45	9:01	3.2		
DRIVE ON	ARMSTRONG DRIVE	45	9:02	1.0		
DRIVE ON	ARMSTRONG DRIVE	40	9:03	.0		
DRIVE ON	FANAZICK DRIVE	15	9:03	.1		
PICK UP ON BOTH SIDES	JOHN GAY DRIVE	5	9:08	.1	8	42
PICK UP ON BOTH SIDES	JOHN GAY DRIVE	15	9:21	.2	22	53
DRIVE ON	SMITH DRIVE	15	9:21	.0		
PICK UP ON BOTH SIDES	MALSTROM DRIVE	5	9:23	.0	3	55
DRIVE ON	MORTMAN PLACE	15	9:23	.1		
PICK UP ON BOTH SIDES	MALSTROM DRIVE	5	9:34	.1	17	64
PICK UP ON BOTH SIDES	MALSTROM DRIVE	5	9:36	.0	3	65
PICK UP ON BOTH SIDES	MALSTROM DRIVE	5	9:37	.0	2	66
PICK UP ON BOTH SIDES	HARDER PLACE	5	9:46	.1	14	74
PICK UP ON BOTH SIDES	MORTMAN PLACE	5	9:49	.1	5	76
PICK UP ON BOTH SIDES	EICHENBURGER PLACE	5	9:52	.1	5	79
DRIVE ON	MALSTROM DRIVE	15	9:53	.1		
DRIVE ON	HARDER PLACE	15	9:53	.1		
PICK UP ON BOTH SIDES	MORTMAN PLACE	5	9:58	.1	7	79
DRIVE ON	MALSTROM DRIVE	15	9:58	.1		
PICK UP ON BOTH SIDES	JOHN GAY DRIVE	5	10:12	.2	24	82
PICK UP ON BOTH SIDES	JOHN GAY DRIVE	5	10:15	.1	4	95
DRIVE ON	HENRY ROAD	40	10:18	1.8		
DRIVE ON	SPOKANE ROAD	40	10:22	3.0		
UNLOAD			10:22 TO 10:32			
LEAVE LAND FILL			10:32			
DRIVE ON	SPOKANE ROAD	40	10:37	3.0		
DRIVE ON	TO HENRY ROAD					

ACTION	SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
DRIVE ON HENRY ROAD	40	10:40	2.0		12
DRIVE ON HALLET ROAD	45	10:41	1.0		17
DRIVE ON SUNSET HIGHWAY	45	10:45	3.2		17
DRIVE ON MITCHELL ST	55	10:52	5.9		17
DRIVE ON POPLAR AVE	30	10:52	.2		17
DRIVE ON PALM DR	15	10:53	.2		17
PICK UP ON BOTH SIDES CEDAR ST	5	11:07	.2	24	12
PICK UP ON BOTH SIDES CEDAR ST	5	11:13	.1	10	17
DRIVE ON S MAPLE ST	15	11:13	.1		17
DRIVE ON ELM ST	15	11:13	.1		17
PICK LP ON BOTH SIDES PINE ST	5	11:31	.2	30	33
PICK LP ON BOTH SIDES PINE ST	5	11:38	.1	12	39
PICK LP ON BOTH SIDES N MAPLE ST	5	11:42	.1	7	43
PICK LP ON BOTH SIDES N MAPLE ST	5	11:46	.1	7	46
PICK LP ON BOTH SIDES N MAPLE ST	5	11:47	.0	2	47
PICK LP ON BOTH SIDES ELM ST	5	11:51	.1	7	51
PICK LP ON BOTH SIDES ELM ST	5	12:05	.1	25	64
BRFAK FOR LUNCH		12:05 TO 12:35			
PICK LP ON BOTH SIDES ELM ST	5	12:44	.1	14	71
PICK LP ON BOTH SIDES ELM ST	5	12:47	.1	5	74
DRIVE ON OAK ST	15	12:47	.1		74
PICK LP ON BOTH SIDES SYCAMORE ST	5	12:53	.1	10	79
PICK LP ON BOTH SIDES SYCAMORE ST	5	13:06	.1	23	91
DRIVE ON N MAPLE ST	15	13:07	.1		91
PICK LP ON BOTH SIDES N MAPLE ST	5	13:13	.1	10	96
PICK LP ON BOTH SIDES CEDAR ST	5	13:15	.1	4	98
DRIVE ON PALM DR	15	13:16	.2		98
DRIVE ON POPLAR AVE	15	13:17	.1		98
DRIVE ON MITCHELL ST	30	13:17	.2		98
DRIVE ON SUNSET HIGHWAY	55	13:23	5.9		98
DRIVE ON HALLET ROAD	45	13:28	3.2		98
DRIVE ON HENRY ROAD	45	13:29	1.0		98
DRIVE ON SPOKANE ROAD	40	13:32	2.0		98
DRIVE ON SPOKANE ROAD	40	13:36	3.0		98
UNLOAD		13:36 TO 13:46			
DRIVE ON SPOKANE ROAD	40	13:51	3.0		
DRIVE ON HENRY ROAD	40	13:54	2.0		
DRIVE ON HALLET ROAD	45	13:55	1.0		
DRIVE ON SUNSET HIGHWAY	45	14:00	3.2		
DRIVE ON MITCHELL ST	55	14:06	5.9		
DRIVE ON FAIRCHILD ST	30	14:06	.1		
DRIVE ON FAIRCHILD ST	30	14:07	.5		
DRIVE ON 5TH AVE	30	14:08	.3		

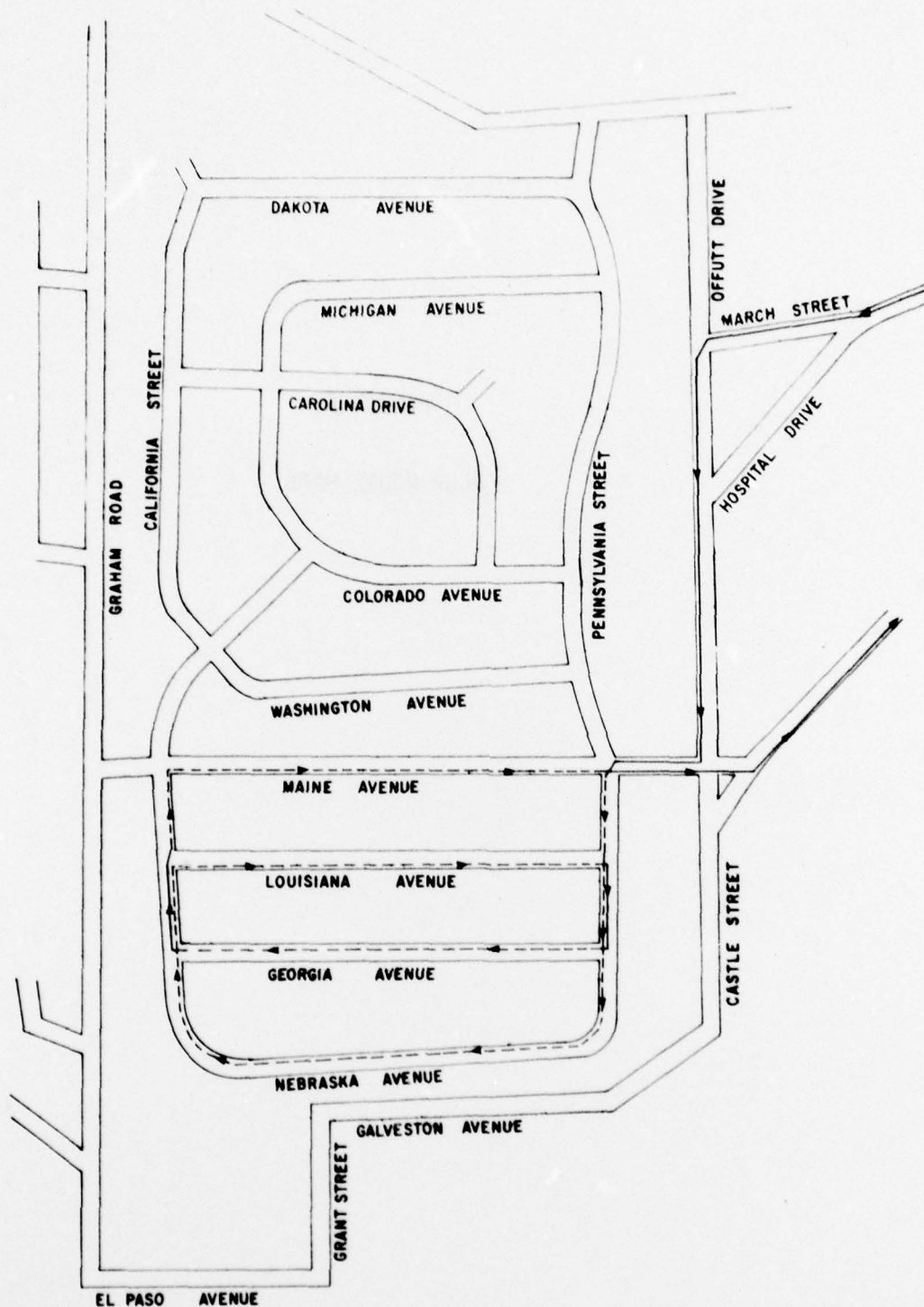
ROUTE	ACTION	10 CU YD VEHICLE	SPEED (MPH)	TIME (HR:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
FAIRCHILD AFB	LEAVE GARAGE			0100			
	DRIVE ON	5TH AVE	30	0101	.3		
	DRIVE ON	FAIRCHILD ST	30	0101	.3		
	DRIVE ON	MARCH ST	30	0102	.3		
	DRIVE ON	OFFUTT DR	30	0102	.3		
	DRIVE ON	CASTLE ST	15	0103	.1		
	PICK UP ON BOTH SIDES	GALVESTON AVE	5	0106	.2	2	1
	DRIVE ON	GRANT ST	15	0107	.1		
	DRIVE ON	EL PASO AVE	15	0107	.1		
	DRIVE ON	GRAHAM RD	30	0107	.1		
	PICK UP ON BOTH SIDES	FIRST ST	5	0120	.2	21	11
	PICK UP ON BOTH SIDES	43RD ST	5	0123	.0	4	13
	PICK UP ON BOTH SIDES	43RD ST	5	0124	.0	3	15
	PICK UP ON BOTH SIDES	43RD ST	5	0129	.1	6	18
	PICK UP ON BOTH SIDES	ARTILLERY CIRCLE	5	0133	.1	7	22
	PICK UP ON BOTH SIDES	ARTILLERY CIRCLE	5	0136	.1	5	22
	DRIVE ON	43RD ST	15	0137	.1		
	PICK UP ON BOTH SIDES	43RD ST	5	0138	.0	2	24
	DRIVE ON	GRAHAM RD	30	0139	.3		
	PICK UP ON BOTH SIDES	UTAH DR SOUTH	5	0140	.0	2	25
PICK UP ON BOTH SIDES	UTAH DR SOUTH	5	0152	.1	20	26	
PICK UP ON BOTH SIDES	UTAH DR WEST	5	0152	.1	12	37	
PICK UP ON BOTH SIDES	UTAH DR WEST	5	0159	.1	12	43	
PICK UP ON BOTH SIDES	UTAH DR WEST	5	0102	.0	6	46	
PICK UP ON BOTH SIDES	UTAH DR WEST	5	0108	.0	10	51	
PICK UP ON BOTH SIDES	UTAH DR NORTH	5	0111	.0	6	54	
PICK UP ON BOTH SIDES	UTAH DR NORTH	5	0120	.1	14	62	
DRIVE ON	IDAHO ST	15	0120	.1			
PICK UP ON BOTH SIDES	IDAHO ST	5	0134	.2	24	62	
DRIVE ON	UTAH DR WEST	15	0135	.2			
PICK UP ON BOTH SIDES	NEVADA ST	5	0150	.2	26	74	
DRIVE ON	IDAHO ST	15	0150	.1			
DRIVE ON	UTAH DR NORTH	15	0150	.1			
PICK UP ON BOTH SIDES	OREGON DR	5	1002	.2	20	88	
PICK UP ON BOTH SIDES	OREGON DR	5	1004	.0	2	98	
DRIVE ON	IDAHO ST	15	1004	.0			
DRIVE ON	GRAHAM RD	15	1004	.0			
DRIVE ON	SUNSET HIGHWAY	30	1005	.8			
DRIVE ON	SUNSET HIGHWAY	55	1013	7.0			
DRIVE ON	HALLET ROAD	45	1017	3.2			
DRIVE ON	HENRY ROAD	45	1019	1.0			
DRIVE ON	HENRY ROAD	40	1022	2.0			
DRIVE ON	SPOKANE ROAD	40	1026	3.0			
UNLOAD				10:26 TO 10:36			
LEAVE LAND FILL				10:36			
DRIVE ON	SPOKANE ROAD	40	10:41	3.0			
DRIVE ON	HENRY ROAD	40	10:43	1.6			
DRIVE ON	JOHN GAY DRIVE	15	10:44	.1			
PICK UP ON BOTH SIDES	FANAZICK DRIVE	5	10:55	.1	20	10	
PICK UP ON BOTH SIDES	FANAZICK DRIVE	5	10:58	.1	4	12	

ACTION	SPEED (MPH)	TIME (MRS MIN)	DISTANCE (FILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
PICK LP ON BOTH SIDES	5	11:00	.1	2	13
ARMSTRONG DRIVE					
DRIVE ON	40	11:00	.0		13
HENRY ROAD					
DRIVE ON	45	11:01	1.0		13
HALLEY ROAD					
DRIVE ON	45	11:03	1.8		13
DRIVE ON	15	11:04	.1		13
DRIVE ON	15	11:04	.1		13
PICK LP ON BOTH SIDES	5	11:16	.1	20	23
DRIVE ON	15	11:16	.0		23
DRIVE ON	15	11:16	.0		23
DRIVE ON	5	11:20	.1	6	26
PICK LP ON BOTH SIDES	5	11:25	.1	7	30
PICK LP ON BOTH SIDES	15	11:25	.1	30	30
DRIVE ON	15	11:27	.0	3	32
PICK LP ON BOTH SIDES	5	11:29	.1	2	33
PICK LP ON BOTH SIDES	15	11:29	.0	33	33
DRIVE ON	5	11:30	.0	2	34
PICK LP ON	5	11:31	.0	1	34
PICK LP ON	5	11:32	.0	1	35
PICK LP ON	15	11:32	.0	2	35
PICK LP ON BOTH SIDES	5	11:33	.0	2	36
DRIVE ON	15	11:33	.0	36	36
DRIVE ON	5	11:39	.1	10	41
PICK LP ON BOTH SIDES	5	11:44	.1	8	45
PICK LP ON BOTH SIDES	15	11:44	.1	45	45
DRIVE ON	15	11:45	.1	45	45
DRIVE ON	15	11:45	.1	45	45
PICK LP ON BOTH SIDES	5	11:53	.1	12	51
DRIVE ON	15	11:53	.1	51	51
DRIVE ON	45	11:56	1.0		51
DRIVE ON	45	11:57	1.0		51
DRIVE ON	40	11:57	.0		51
DRIVE ON	15	11:57	.1		51
DRIVE ON	15	11:57	.1		51
PICK LP ON BOTH SIDES	5	12:00	.0	4	53
PICK LP ON BOTH SIDES	5	12:10	.1	16	62
BREAK FOR LUNCH		12:10 TO 12:40			
PICK LP ON BOTH SIDES	5	12:48	.1	14	69
PICK LP ON BOTH SIDES	5	12:50	.0	4	71
PICK LP ON BOTH SIDES	5	12:55	.1	8	75
DRIVE ON	15	12:56	.1	75	75
PICK LP ON BOTH SIDES	5	12:58	.0	4	77
PICK LP ON BOTH SIDES	5	13:00	.0	3	79
PICK LP ON BOTH SIDES	5	13:03	.1	4	81
DRIVE ON	15	13:04	.0	81	81
PICK LP ON BOTH SIDES	5	13:06	.0	3	82
PICK LP ON	5	13:07	.0	1	83
DRIVE ON	15	13:07	.0	83	83
PICK LP ON BOTH SIDES	5	13:09	.1	3	84
PICK LP ON BOTH SIDES	5	13:10	.0	2	86
PICK LP ON BOTH SIDES	5	13:12	.0	2	87

ACTION	SPEED (MPH)	TIME (HRS:MIN)	DISTANCE (MILES)	HOUSEHOLDS SERVICED	LOAD (PCT)
PICK UP ON BOTH SIGES	5	13113	.9	3	88
PICK UP ON BOTH SIGES	5	13117	.1	6	91
PICK UP ON BOTH SIGES	5	13120	.1	5	94
DRIVE ON	15	13121	.2		94
PICK UP ON BOTH SIGES	5	13125	.1	6	97
DRIVE ON	15	13126	.2		97
DRIVE ON	40	13129	1.8		97
DRIVE ON	40	13133	3.0		97
UNLOAD		13133 TO 13143			
DRIVE ON	40	13140	2.0		
DRIVE ON	40	13151	2.9		
DRIVE ON	45	13152	1.3		
DRIVE ON	45	13156	3.2		
DRIVE ON	55	14103	5.9		
DRIVE ON	30	14103	.1		
DRIVE ON	30	14104	.5		
DRIVE ON	30	14105	.3		
TO EICHENBURGER PLACE					
TO HARDER PLACE					
TO MORTMAN PLACE					
TO JOHN GAY DRIVE					
TO HENRY ROAD					
TO SPOKANE ROAD					
TO LAND FILL					
TO HENRY ROAD					
TO HALLET ROAD					
TO SUNSET HIGHWAY					
TO MITCHELL ST					
TO FAIRCHILD ST					
TO 5TH AVE					
TO GARAGE					
SPOKANE ROAD					
HENRY ROAD					
HALLET ROAD					
SUNSET HIGHWAY					
MITCHELL ST					
FAIRCHILD ST					
5TH AVE					

APPENDIX G

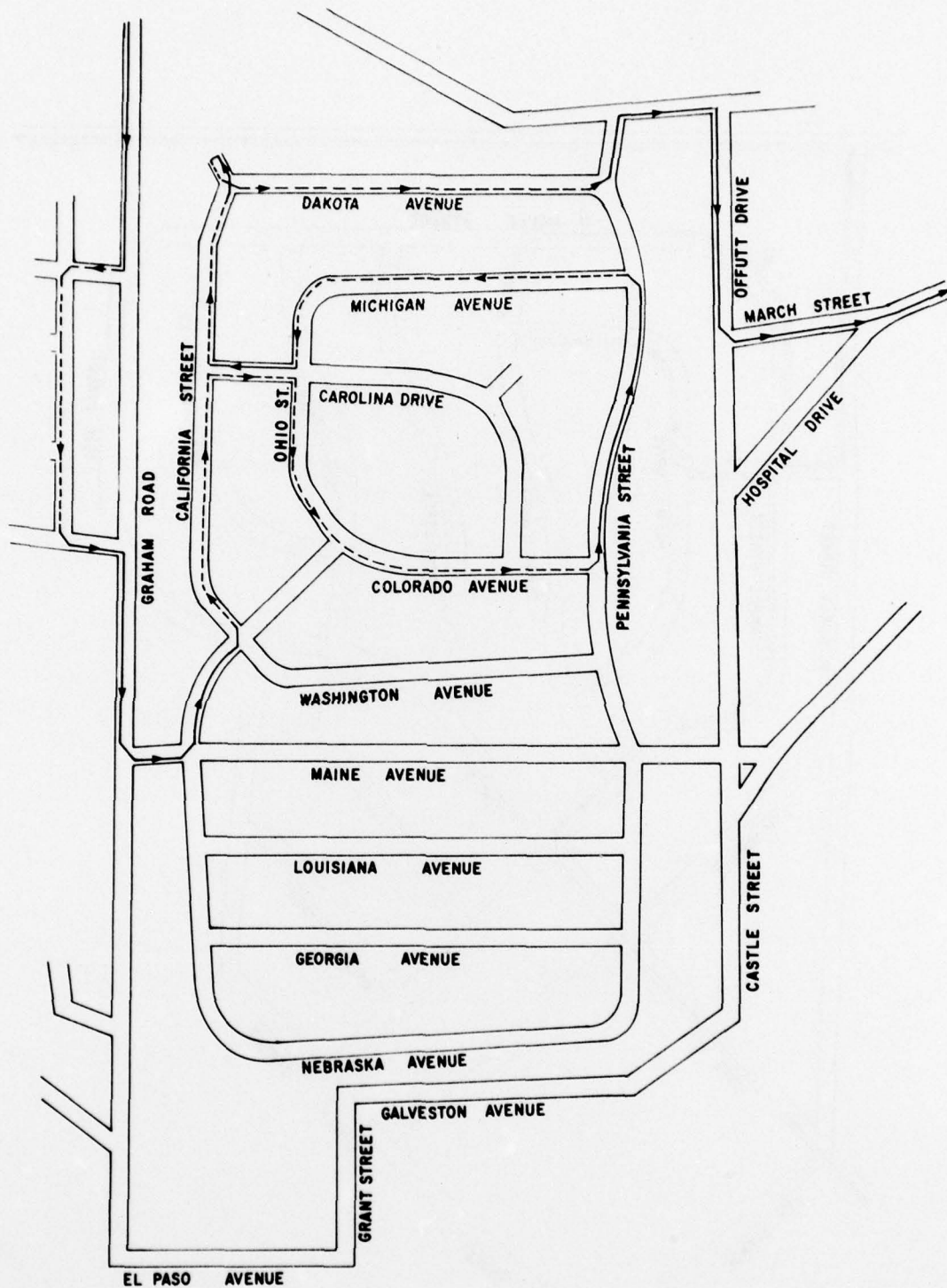
RCSP ROUTE MAPS



FAIRCHILD AFB, WASH.

ROUTE 1 TRIP 1
10 CU YD VEHICLE

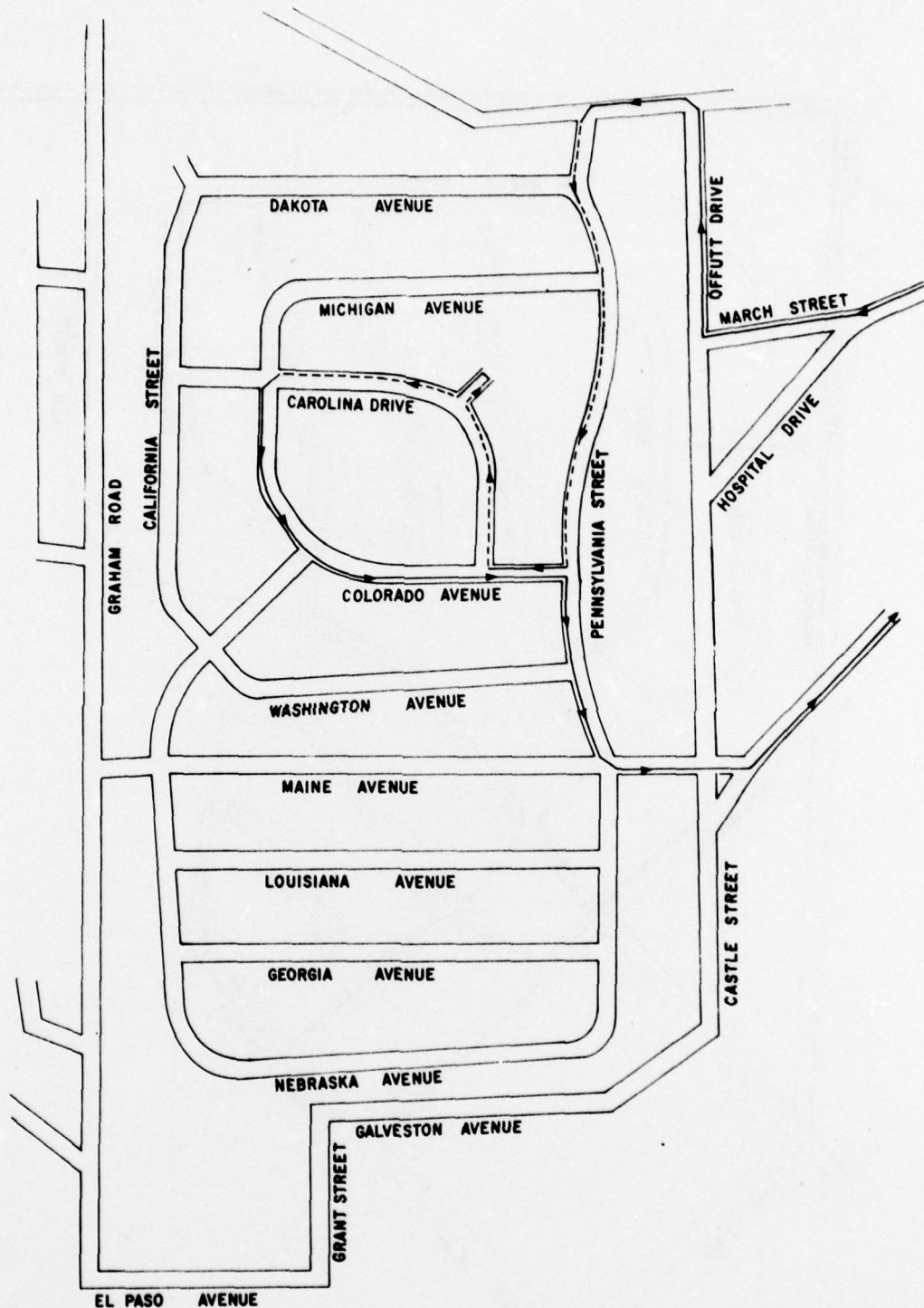
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 1 TRIP 2
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



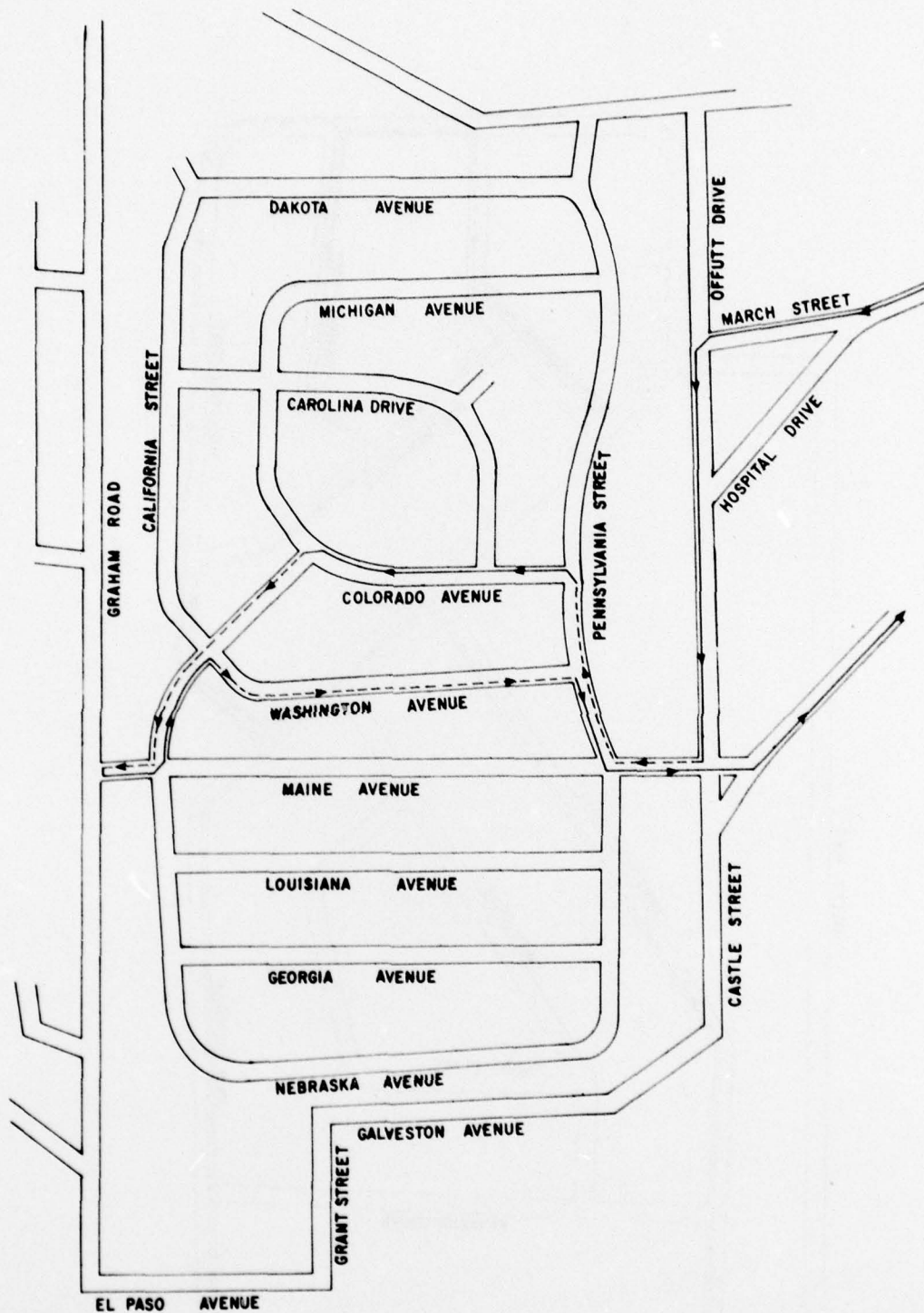
FAIRCHILD AFB, WASH.

ROUTE 2 TRIP 1
10 CU YD VEHICLE

TRAVEL

COLLECT BOTH SIDES
COLLECT RIGHT SIDE

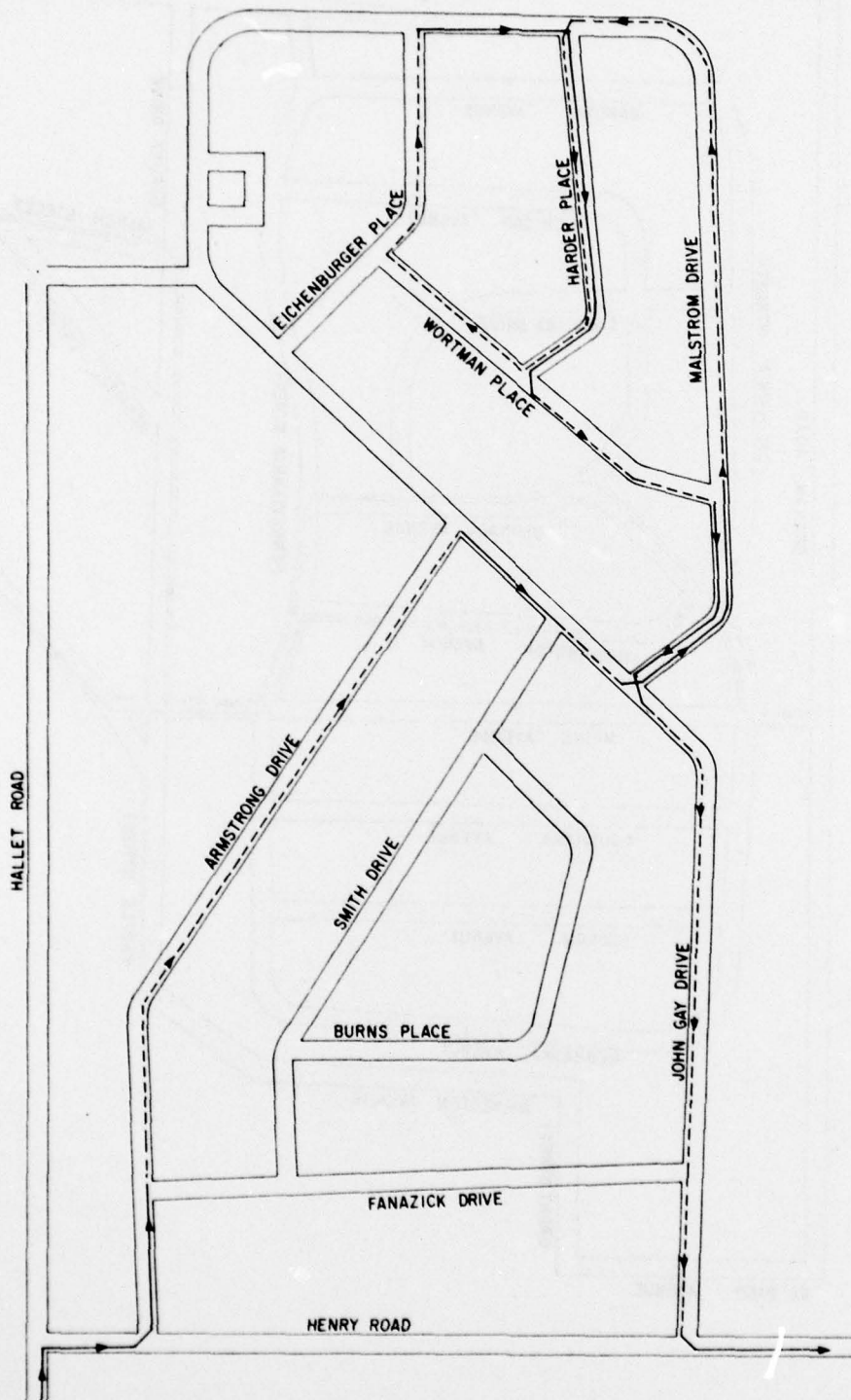




FAIRCHILD AFB, WASH.

ROUTE 3 TRIP 1
10 CU YD VEHICLE

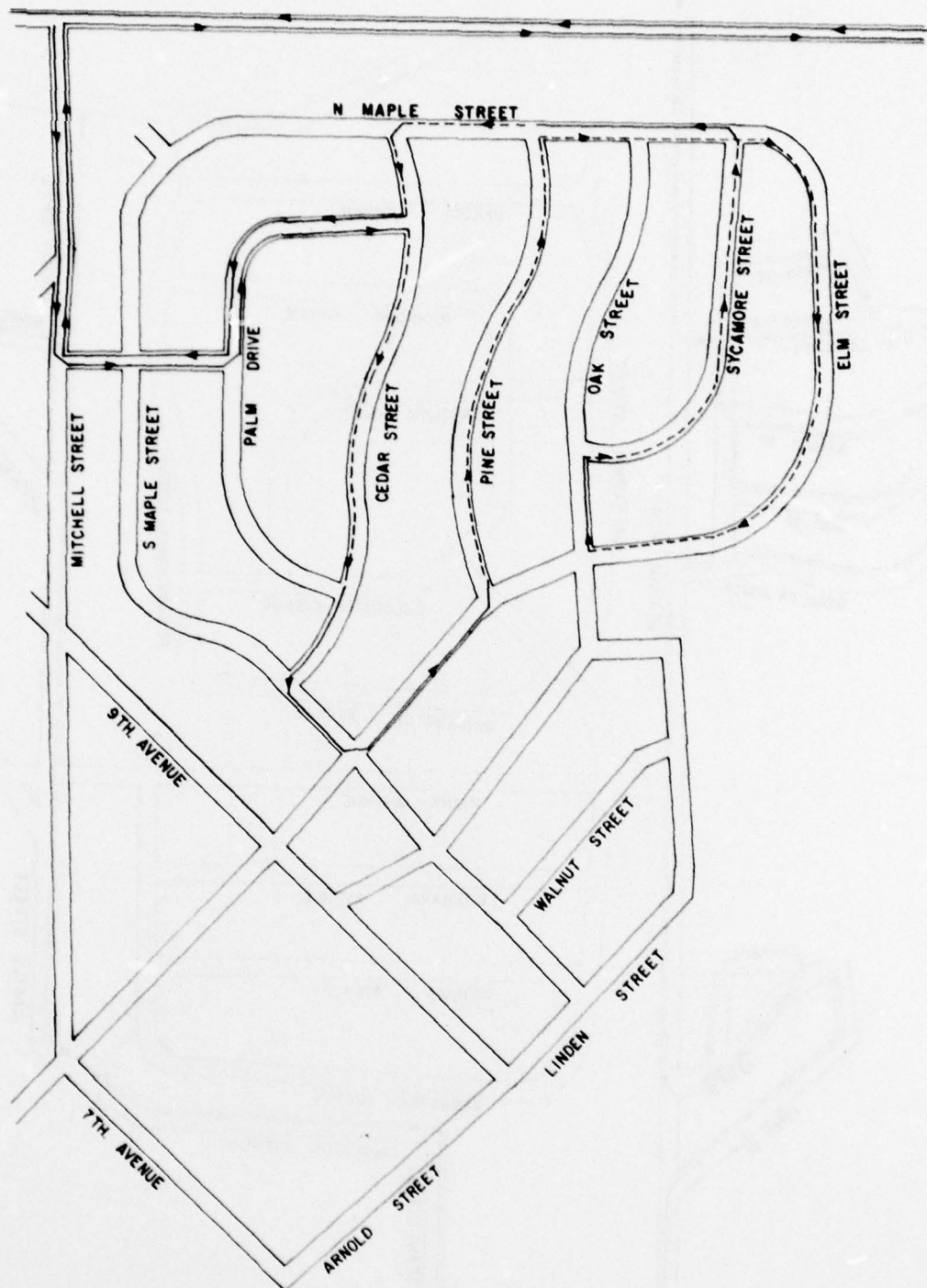
TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 3 TRIP 1
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE

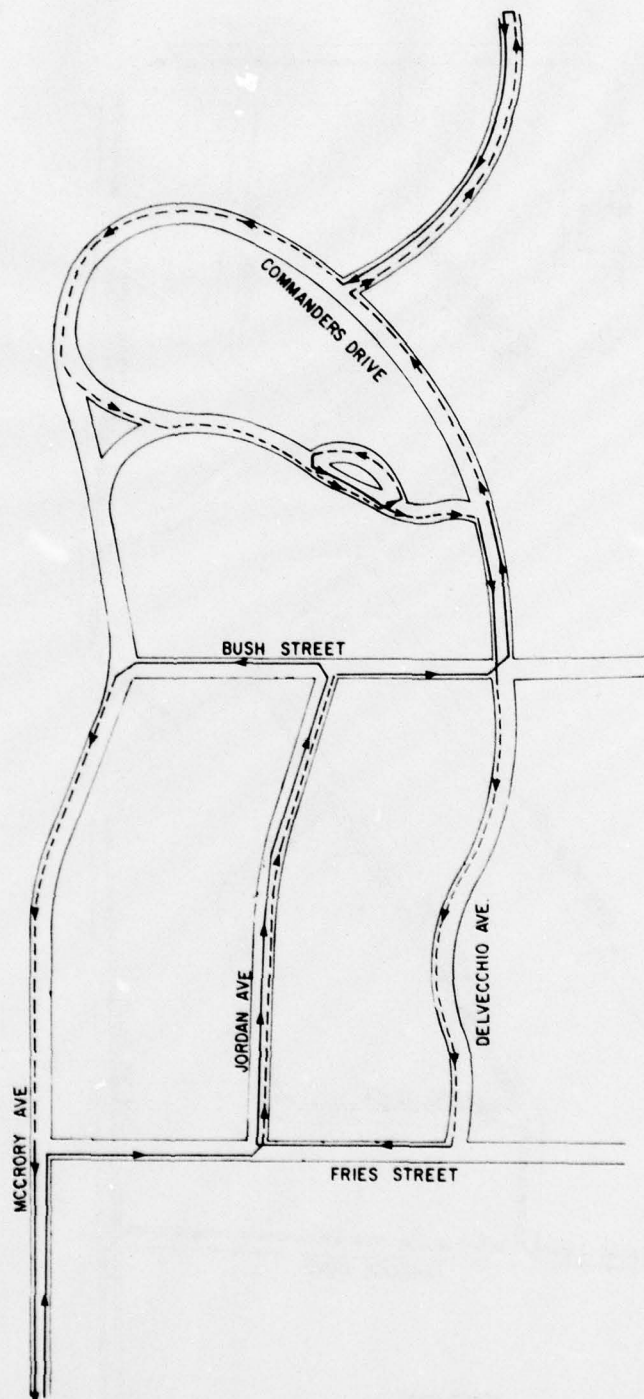


FAIRCHILD AFB, WASH.

ROUTE 3 TRIP 2
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE



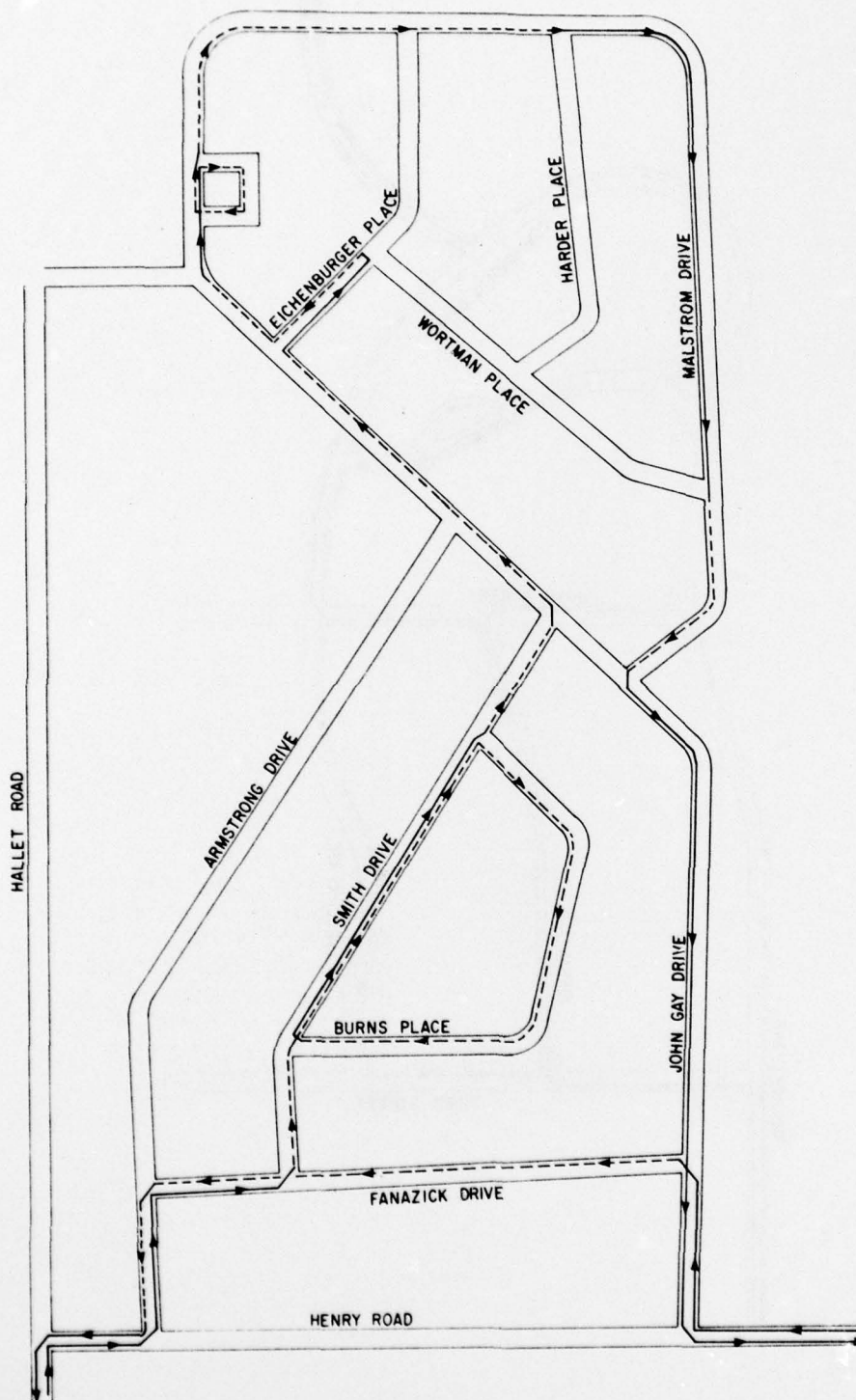


FAIRCHILD AFB, WASH.

ROUTE 4 TRIP 2
10 CU YD VEHICLE

TRAVEL

COLLECT BOTH SIDES
COLLECT RIGHT SIDE



FAIRCHILD AFB, WASH.

ROUTE 4 TRIP 2
10 CU YD VEHICLE

TRAVEL
COLLECT BOTH SIDES
COLLECT RIGHT SIDE

INITIAL DISTRIBUTION

Hq USAF/PREE	1	SAMSO/DEC	1
Hq USAF/PREVP	1	ADTC/CSV	1
Hq USAF/PREVX	1	ADTC/DLODL	1
Hq USAF/RDPS	2	AFFTC/DE	1
Hq USAF/SAFOI	1	AFETR/DER	1
Hq USAF/SGPA	1	ESD/DE	1
Hq COMD USAF/DEE	1	USAF Rgn Civ Engrg/ER	1
CINCAD/DEEV	2	USAF Rgn Civ Engrg/WR	1
CINCAD/DEECV	1	USAF Rgn Civ Engrg/CR	1
AFCS/DEEE	1	SAMMA/MAGCB	1
AFLC/DEPV	1	USAFSO/DEE	1
AFLC/MAUT	1	DDC/TCA	2
AFLC/MMRF	1	DR&E/AD/E&LS	1
AFSC/DE	1	OASD (I&L)/ES	1
AFSC/SD	1	USA Environ Hygn Agency	1
AFSC/DEV	1	Ch of Engrg/ENGMC-RD	1
AFSC/DLCAM	2	Dir, USA WW Exp Sta	1
ATC/DEPV	1	USA CERL	1
AAC/DEV	1	Dir, USA Engrg R&D Lab/MERDC	1
MAC/DEEE	1	Ch of R&D	1
MAC/DEMP	1	Dept of the Army/DARD-ARE-E	1
CINCPACAF/DEMU	2	Ch of Naval Op	1
CINCSAC/DEPA	2	NESO, Code 25111	1
CINCSAC/DEVQ	1	NCEL, Code L08A	1
TAC/DE	1	Naval Ship R&D Ctr/Code 3021	1
TAC/DEEV	1	Technical Applications Ctr/UNM	1
USAFSS/DEE	1	Technology Transfer Staff/EPA	1
USAFSS/DEMM	1	Office of R&D/EPA	1
CINCUSAFE/DEPV	2	National Science Foundation	1
AFISC/SES	1	US Army Med Bioengrg R&D Lab	1
AFRES/DEEE	1	Det 1 Hq ADTC/EC	1
USAF/DEV	1	Det 1 Hq ADTC/ECW	4
3800 ABW/DEE	1	Det 1 Hq ADTC/PRL	1
AFIT/DEM	1	AFCEC/DE	1
AU/LDG	1	AFCEC/DEVP	2
AUL	1	SAF/MIQ	1
AFOSR	1	AFIT/Library	1
AFML/DO (Library)	1	USA Chief, R&D/EQ	1
OEHL/CC	1	USAFSAM/EDE	1
OEHL/OL-AA	1	1 MSEW	1
OEHL/OL-AB	1	OUSDRE	1
AFWL/SUL	1	USAF Hospital, Wiesbaden	1
AFRPL/Library	1	USN Chief, R&D/EQ	1
ASD/DEP	1		
RADC/DOT	1		
AEDC/DEE	1		
SAMTEC/SEH	1		