U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-271 334

Summary Statistics of the National Railroad-Highway Crossing Inventory for Public At-Grade Crossings

Transportation Systems Center, Cambridge, Mass

Prepared for

Federal Railroad Administration, Washington, D C Office of Policy and Program Development

Jun 77

PB 271 334

REPORT NO. FRA-OPPD-77-8

SUMMARY STATISTICS OF THE NATIONAL RAILROAD - HIGHWAY CROSSING INVENTORY FOR PUBLIC AT-GRADE CROSSINGS

JUNE 1977

FINAL REPORT

Prepared for

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
Office of Policy and Program Development
Washington DC 20591

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U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1977

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FRA-OPPD-77-8		

4. Title and Subtitle	5. Report Date
Summary Statistics of the National Railroad-Highway Crossing Inventory for Public At-Grade Crossings	June 1977
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
John S. Hitz, Editor	DOT-TSC-FRA-77-10

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
U.S. Department of Transportation Transportation Systems Center Kendall Square Cambridge, MA 02142	R7301/RR733
	11. Contract or Grant No.
	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address U.S. Department of Transportation Federal Railroad Administration Office of Policy and Program Development Washington DC 20591	Final Report March 1976 - February 1977
	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

In response to the Federal Railroad Safety Act of 1970, a joint government/industry effort to compile a national inventory of railroad-highway crossings was initiated in 1972 and completed in 1976. The inventory contains data on the physical and operational characteristics of all 402,000 railroad-highway crossings in the United States of which 219,000 are public at-grade, 142,000 are private, 37,500 are public grade separated and 3,500 are pedestrian. This report presents comprehensive statistical summaries of the characteristics for all public at-grade crossings reported in the inventory as of August 1976. This information will be useful at the Federal, state, and local levels for determining effective allocation of crossing improvement funds and developing R&D, legislative, information and education programs aimed at improving safety at crossings.

17. Key Words	18. Distribution Statement
National Railroad-Highway Crossing Inventory Grade Crossing Safety Railroad-Highway Grade Crossing Statistics	DOCUMENT IS AVAILABLE TO THE U.S. PUBLIC THROUGH THE NATIONAL TECHNICAL INFORMATION SERVICE SPRINGFIELD, VIRGINIA 22161

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	155	PCA08 / MF A01

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
		2.5		
		30		
		0.9		
		1.6		
	AREA			
		6.5		
		0.09		
		0.8		
		2.6		
		0.4		
	MASS (weight)			
		28		
		0.45		
		0.9		
	VOLUME			
		5		
		15		
		30		
		0.24		
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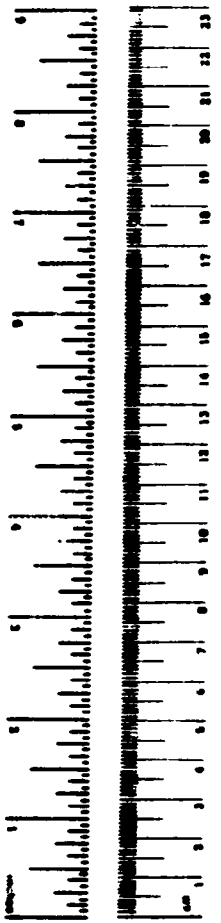

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
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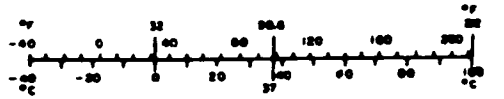
		0.4		
		3.3		
		1.1		
		0.6		
	AREA			
		0.16		
		1.2		
		0.4		
		2.5		
	MASS (weight)			
		0.035		
		2.2		
		1.1		
	VOLUME			
		0.03		
		2.1		
		1.06		
		0.26		
		35		
		1.3		
	TEMPERATURE (exact)			
		9/5 (then add 32)		



PREFACE

The intent of this report is to provide information for helping to improve safety at railroad-highway crossings. It was prepared by the Transportation Systems Center under the sponsorship of the Federal Railroad Administration, Office of Rail Systems Analysis and Information. Information presented in this report will be updated periodically to reflect changes in the inventory and the expressed needs of its users.

The following individuals have contributed to the preparation of this report: John S. Hitz (Editor), Robert Hinckley, James Steinberg and Thomas Vaughn of the Transportation Systems Center, and Theodore Balaban and James Guarente of Kentron Hawaii, Ltd. These participants express their appreciation to Bruce F. George and Dr. Richard E. Snow of the Federal Railroad Administration for their advice and assistance in this work.

Please mail suggestions for changes to this report, in terms of additional data or methods of presentation, to

Office of Rail Systems Analysis and
Information (RPD-20)
Federal Railroad Administration
400 Seventh St., S.W.
Washington, D.C., 20590

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1. INTRODUCTION

1.1 Purpose

This report represents a comprehensive statistical summary of the characteristics for all public, at-grade railroad crossings reported in the joint government/industry National Inventory of Railroad Highway Crossings as of August 1976. The information in this report will be useful at the Federal, state, local and railroad levels for determining effective allocation of crossing improvement funds and developing R&D, legislative, information and education programs aimed at improving crossing safety. The report will be updated and expanded in the future to reflect changes in the inventory and the expressed information needs of its users.

1.2 Background

The Federal Railroad Safety Act of 1970 required the Secretary of Transportation to investigate and recommend solutions to the problems of safety at railroad-highway crossings. In response to this mandate, the U.S. Department of Transportation submitted a report to Congress, in 1972, entitled: Railway-Highway Safety Part II: Recommendations for Resolving the Problem. At that time, the extent, reliability and accessibility of information on railroad-highway crossings varied widely among local, state and Federal jurisdictions. The report recommended that an adequate, overall information system be developed to assist in systematic planning and evaluation of programs for improving safety at crossings. This information system included:

(1) A national inventory of railroad-highway crossings
(2) A uniform national numbering system for railroad-highway crossings
(3) An expansion of the current railroad-highway crossing accident reporting to include all train-involved public and private crossing accidents.

Acting on these recommendations, the Federal Railroad Administration, the Federal Highway Administration, and the Association of American Railroads jointly funded the development of a comprehensive national railroad highway crossing information and numbering system, the so called National Inventory of Railroad Highway Crossings. With assistance from the American Short Line Railroad Association and the nation's railroads, a site-specific inventory of all railroad-highway crossings was conducted, and a unique identifying number installed at each crossing. The railroads and states are responsible for updating the inventory as changes are made, and maintaining the identifying number.

The state highway departments, in cooperation with the Federal Highway Administration, assisted in the inventory by providing site-specific highway location and use data. A sample railroad-highway crossing inventory form used by both the railroads and the state highway departments to provide data, is presented in Appendix A.

Development of the national railroad-highway crossing inventory was started in June of 1972 and completed in January of 1976. The inventory is currently maintained by the Federal Railroad Administration and contains information on a total of over 402,000 crossings of which 219,000 are public at-grade, 142,000 are private, 37,500 are public grade separated and 3,500 are pedestrian.

1.3 Uses of the Railroad-Highway Crossing Inventory Data

The national inventory file and its summary for public, at-grade crossings as presented in this document provide basic railroad-highway crossing information for users at the Federal, state and local levels. At the Federal level, the inventory file is being merged with the accident reporting system to:

- determine accident causes and prediction methods,
- determine the effectiveness of warning devices,
- establish programs and procedures for allocation of improvement funds,
- study rail line relocation and abandonment proposals,

- investigate accident costs and,
- develop public awareness and driver training programs.

State and local governments and the railroad industry can use the inventory data for purposes similar to the above and also to:

- prepare statistical reports and public information documents,
- plan crossing improvement programs,
- plan legislative programs,
- develop education and safety programs,
- respond to the inventory reporting requirements of the Federal Highway Act of 1973 (Section 203), and
- perform market analyses and develop crossing warning equipment requirements.

1.4 Content of Report

This report contains summary statistics of the physical and operational characteristics of all public at-grade, railroad-highway crossings in the United States. The statistics reflect the status of the national inventory as of August 1976. The physical characteristics presented describe crossings in terms of their location, surroundings, trackage, associated highway, warning devices, and crossing angle and surface. The operational characteristics describe the railroad and highway traffic over the crossing in terms of the number of trains per day, the speed of trains and the number of highway vehicles. Section 2. of the report describes in more detail the organization, interpretation and updating of the statistics presented. Sections 3., 4., and 5. contain the statistical summaries which are presented using a variety of tables, charts and maps.

2. ORGANIZATION, INTERPRETATION AND UPDATING OF STATISTICS

2.1 Organization of Statistics

The statistical summaries of public at-grade crossings are organized under the general categories of physical and operational characteristics and are presented in Sections 3.0 and 4.0 respectively. Summaries of responses received to miscellaneous yes/no questions on the DOT-AAR Inventory Form are presented in Section 5.0. Table 2-1 lists the various crossing characteristics in the order they are presented, by report section.

2.2 Interpretation of Statistics

The crossing characteristics listed in Table 2-1 are, in general, presented using one-dimensional distributions which simply describe the number of crossings having a certain characteristic, e.g., the number of crossings in each state or state equivalent. For some characteristics, multi-dimensional distributions are given. The multi-dimensional distributions describe the number of crossings having a certain primary characteristic and, at the same time, possess certain other characteristics, e.g., the number of crossings in each state that have active warning devices. In most cases, the multi-dimensional distributions are two-dimensional, the secondary characteristics being either state warning device class/warning device group*, or average annual daily highway traffic. Three-dimensional distributions are used to further describe crossings that are on either Federal aid or non-Federal aid highway systems.

*See Glossary

TABLE 2-1 REPORT LOCATION OF CROSSING CHARACTERISTIC CATEGORIES

Category of Characteristics	Report Section
Physical Characteristics	3.0
o Location State Railroad Urban/Rural	3.1
o Surroundings Type of Development	3.2
o Trackage Number of Tracks Single/Multiple	3.3
o Highway Highway System Federal Aid/Non-Federal Aid Functional Class Number of Traffic Lanes	3.4
o Warning Devices Warning device Warning device class/group Pavement markings Advance warning	3.5
o Crossing Smallest crossing angle Crossing surface	3.6
Operational Characteristics	4.0
o Train Traffic Number of trains per day	4.1
o Train Speed Maximum timetable speed Typical minimum & maximum speed Typical maximum minus typical minimum speed	4.2
o Highway Traffic Annual average daily traffic (AADT) Percent trucks	4.3
Miscellaneous Data Requested on DOT-AAR Inventory form	5.0

The statistics for each crossing characteristic presented are first displayed in a tabular format immediately followed by a graphical format. The tables are used to present the data in a form which can be interpreted accurately. The graphs, either bar charts, pie charts or maps, cannot always be interpreted as accurately as the tables but permit quick visual comparisions of data to determine trends and correlations. In a few cases, where a small quantity of data is presented, only tables are used.

Information and instructions required for interpretation of specific displays are included with the presentations. For example, highway system codes are included with the table of crossings by highway system. The definitions of terminology used in the presentations are given in Appendix B. A list of railroad companies and their abbreviated codes is presented in Appendix C.

It should be generally noted that this document simply reports the contents of the inventory. While the Federal Railroad Administration is continuously editing and updating the inventory, some inconsistencies still exist and are reflected in the statistics. For example, there are minor discrepancies between various presentations in the total number of crossings listed. Errors such as these are usually due to the omission of data or insertion of incorrect data when filling out the DOT-AAR Inventory Form; e.g., leaving an item blank rather than inserting a zero.

2.3 Updating of Statistics

The statistics presented in Sections 3., 4. and 5. include over 100 tables and graphical displays. The statistics and methods of presentation were those judged to be most useful. Additional statistics and presentation techniques can and will be developed, however, to meet expressed needs of the users of this data and to reflect future changes in the inventory. Any suggestions for changes to the report in terms of additional data or methods of presentation should be forwarded to:

Office of Rail Systems Analysis and Information (RPD-20)
Federal Railroad Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

3. PRESENTATIONS OF PHYSICAL CHARACTERISTICS

3.1 LOCATION CHARACTERISTICS

TABLE 3-1. CROSSINGS BY STATE

ALABAMA	4803	MONTANA	2296
ALASKA	221	NEBRASKA	5580
ARIZONA	1060	NEVADA	358
ARKANSAS	4089	N.H.	717
CALIFORNIA	9482	NEW JERSEY	2202
COLORADO	2354	NEW MEXICO	869
CONN.	570	NEW YORK	4450
DELEWARE	263	N.C.	5444
D.C.	70	N.D.	5744
FLORIDA	5964	OHIO	9963
GEORGIA	6930	OKLAHOMA	5775
HAWAII	6	OREGON	2969
IDAHO	2071	PENN.	6764
ILLINOIS	13897	R.I.	142
INDIANA	10145	S.C.	4452
IOWA	9066	S.D.	3393
KANSAS	9851	TENNESSEE	4166
KENTUCKY	3692	TEXAS	14616
LOUISIANA	4928	UTAH	1372
MAINE	1119	VERMONT	594
MARYLAND	1123	VIRGINIA	2806
MASS.	1230	WASHINGTON	4290
MICHIGAN	8457	W.VA.	2460
MINNESOTA	8104	WISCONSIN	7339
MISS.	3581	WYOMING	620
MISSOURI	6650	P.R.	55

TABLE 3-2. CROSSINGS BY RAILROAD (1 of 2)

AA	393	CACV	13	DC	9	GSW	45
AMB	57	CAD	9	DH	545	GTW	1430
ABL	36	CARR	28	DKS	33	GU	29
ACY	222	CASR	6	DM	257	GWP	8
ADM	83	CASS	2	DMIR	253	GWR	72
AEW	19	CBC	1	DMM	10	HB	14
AL	4	CBL	6	DMU	58	HBS	9
ALM	68	CCR	10	DNE	8	HBT	282
ALS	27	CCT	89	DOD	125	HE	39
AMC	6	CDOT	130	DQE	39	HIR	24
AMIW	4	CEI	540	DR	14	HLHE	8
AMR	12	CFR	16	DRGW	1108	HW	5
AN	52	CHTT	24	DRI	66	HPTD	85
ANR	14	CHV	50	DS	93	HRT	23
APA	22	CHW	73	DT	69	HS	29
AR	66	CI	19	DTI	533	HSW	2
ARA	16	CIC	41	DTS	75	IAT	54
ARC	44	CIM	118	DUT	2	ICG	10306
ARR	217	CIND	128	DVS	2	IHB	114
ARW	34	CIRD	57	DWP	99	IRM	13
ASAB	136	CIRR	5	EDHA	1	ITC	197
ATSF	12124	CKSC	8	EDM	5	ITTR	3
ATW	12	CLC	11	EEC	5	IU	45
AUG	19	CLCO	44	EJE	265	JSC	4
AUGA	9	CLIF	11	EJR	2	KC	4
AVL	36	CLJ	6	EL	2364	KCHW	8
AWP	152	CLP	13	ELS	30	KCS	1030
AWW	11	CMTC	11	ERIE	8	KCT	47
AZDC	55	CN	144	ESLJ	1	KEHM	2
BA	36	CNJ	403	ETHM	36	KIT	75
BAP	56	CNL	133	EV	6	KM	18
BAR	214	CNW	11170	EW	25	KNOR	2
BCK	4	CNYR	27	FCIM	7	KT	2
BCRR	12	CO	4583	FDDM	124	LA	739
BEDT	7	COP	20	FEC	865	LAJ	80
BERM	2	CP	108	FJG	46	LAL	12
BFC	15	CPF	12	FOR	5	LBR	16
BH	10	CPLT	3	FP	4	LC	35
BLE	167	CRI	59	FRDM	10	LEI	18
BM	1253	CRR	145	FSV	27	LHR	52
BNL	29	CS	427	FWD	938	LI	313
BNLP	34	CSL	2	GA	407	LKP	6
BN	20733	CSP	111	GBW	314	LM	7997
BO	5518	CSS	136	GCM	17	LME	35
BOCT	150	CTA	25	GHM	113	LMO	3
BRC	38	CTM	32	GJ	15	LMW	82
BRFD	7	CWST	1	GM	79	LPM	3
BRR	5	CV	224	GMRC	38	LPW	43
BRW	8	CW	13	GNA	40	LRS	66
BS	41	CWI	28	GNWR	15	LSRC	7
BVS	9	CWP	17	GRM	27	LSI	88
BXM	5	CWR	8	GRR	7	LSTT	31

TABLE 3-2. CROSSINGS BY RAILROAD (2 of 2)

LT	2	MWOK	15	SAW	19	TSR	23
LUM	7	MWP	181	SB	2	TSU	30
LV	684	MYD	28	SBK	32	TT	70
LW	4	MYLB	102	SC	2	TTRA	8
LWV	9	MYSW	78	SCL	11884	UHP	5
MAA	12	OBPA	22	SDAE	159	UNI	1
MAYW	4	OCE	39	SEAV	8	UC	8
MB	41	OCW	8	SERA	39	UP	6897
MBRR	45	OKGE	15	SH	3	URR	17
MBT	28	OLB	9	SIMP	39	USAL	9
MCR	33	OMW	17	SIND	12	USWY	9
MCSA	6	OPE	22	SJB	8	UT	18
MDW	10	OTR	41	SJL	90	UTAH	8
ME	15	PAA	17	SJT	6	VALR	17
MEC	661	PAM	1	SLC	13	VBR	2
MET	49	PBCC	16	SLGW	8	VC	4
MGA	96	PBR	5	SLSF	5510	VCY	32
MHCO	6	PC	19801	SM	25	VE	41
MHM	5	PCM	8	SMA	9	VS	9
MI	167	PCY	26	SMV	39	VSC	27
MILW	9322	PETE	6	SN	225	VTR	99
MISS	25	PGBL	1	SOO	4359	WA	121
MJ	1	PHD	60	SOU	13080	WAG	33
MKT	2239	PI	8	SP	11834	WAP	7
MNJ	22	PICK	23	SRC	6	WBCC	4
MNS	122	PLE	105	SRW	16	WHR	4
MOV	5	PNRC	36	SRT	9	WIM	23
MP	10208	POCA	15	SS	62	WITE	16
MPA	58	PPU	34	SSL	8	WKS	5
MRS	60	PRSL	587	SSLV	5	WLFB	9
MSE	82	PRT	3	SSW	1426	WLO	107
MSV	4	PRTD	73	ST	9	WM	514
MTPR	106	PRV	11	STE	40	WNF	5
MTR	17	PS	38	STIS	11	WNFR	11
MTW	18	PSR	57	TASD	1	WOV	20
MWR	4	PTH	89	TAW	7	WP	663
MALS	10	PTRA	58	TB	2	WRY	4
MAP	8	PTRR	9	TCG	7	WRWK	2
MB	4	PUBP	13	TCT	12	WS	8
MRZP	17	PUCC	25	TEXC	29	WSR	13
NPD	172	PVS	30	TILL	9	WSS	63
NPG	88	PW	63	TM	216	WSYP	7
NNIR	22	QRR	1	TNRL	40	WTCO	15
NJII	6	RBTD	1	TW	5	WTCW	26
NLG	24	RDG	1312	TOE	30	WVN	15
NN	28	RFP	118	TOV	19	WW	19
NOPB	117	RI	6968	TP	1694	WYS	1
NPB	52	RR	12	TPW	292	WYT	8
NPT	99	RSHC	8	TRC	4	YDC	10
NSL	15	RSP	39	TRRA	171	YS	66
NSS	8	RT	7	TS	141	YW	10
NW	7847	RV	26	TSE	21		

TABLE 3-3. CROSSINGS BY LOCATION (URBAN/RURAL) VS. STATE

	LOCATION		
	URBAN	RURAL	TOTAL
ALABAMA	2383	2420	4803
ALASKA	88	133	221
ARIZONA	551	509	1060
ARKANSAS	1981	2108	4089
CALIFORNIA	6743	2739	9482
COLORADO	1060	1294	2354
CONN.	419	151	570
DELAWARE	87	176	263
D.C.	70	0	70
FLORIDA	3091	2873	5964
GEORGIA	3582	3348	6930
HAWAII	4	2	6
IDAHO	636	1435	2071
ILLINOIS	6471	7426	13897
INDIANA	4621	5524	10145
IOWA	1972	7094	9066
KANSAS	2876	6975	9851
KENTUCKY	1076	2616	3692
LOUISIANA	2619	2309	4928
MAINE	487	632	1119
MARYLAND	474	649	1123
MASS.	867	363	1230
MICHIGAN	3884	4573	8457
MINNESOTA	3298	4806	8104
MISS.	1555	2026	3581
MISSOURI	2025	4625	6650
MONTANA	381	1915	2296
NEBRASKA	1637	3943	5580
NEVADA	118	240	358
N.H.	417	300	717
NEW JERSEY	1566	636	2202
NEW MEXICO	318	551	869
NEW YORK	1912	2538	4450
N.C.	2582	2862	5444
N.D.	825	4919	5744
OHIO	3795	6168	9963
OKLAHOMA	1879	3896	5775
OREGON	1591	1378	2969
PENN.	3266	3498	6764
R.I.	129	13	142
S.C.	1831	2621	4452
S.D.	798	2595	3393
TENNESSEE	2165	2001	4166
TEXAS	8255	6361	14616
UTAH	711	661	1372
VERMONT	117	477	594
VIRGINIA	1268	1538	2806
WASHINGTON	2145	2145	4290
W.VA.	762	1698	2460
WISCONSIN	3539	3800	7339
WYOMING	161	459	620
P.R.	14	41	55
TOTAL	95102	124060	219162

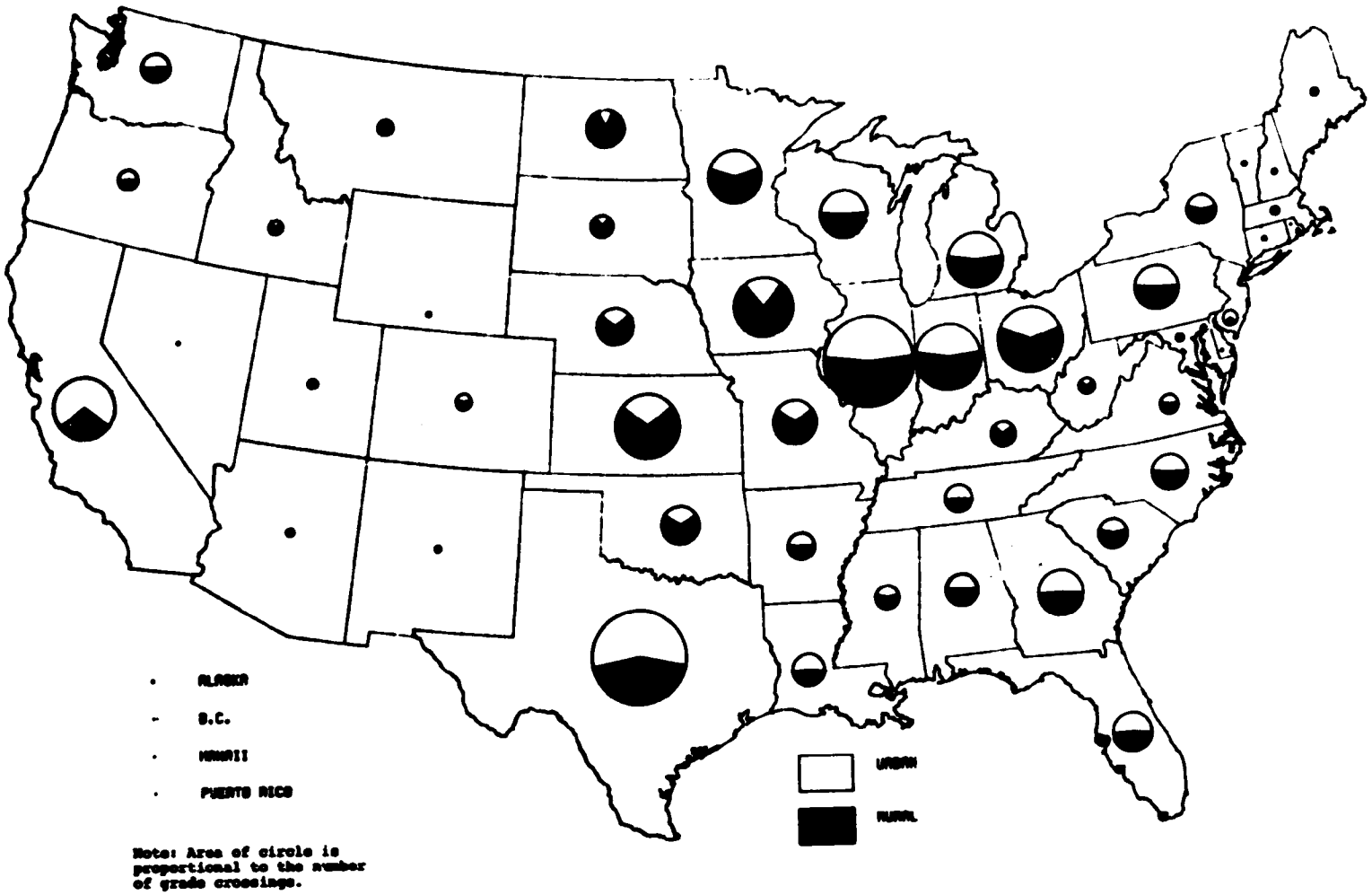


FIGURE 3-1. CROSSINGS BY LOCATION (URBAN/RURAL) VS. STATE

TABLE 3-4. CROSSINGS BY LOCATION (URBAN/RURAL) VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

LOCATION	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
URBAN	29874	65228	95102
RURAL	19473	104587	124060
TOTAL	49347	169815	219162

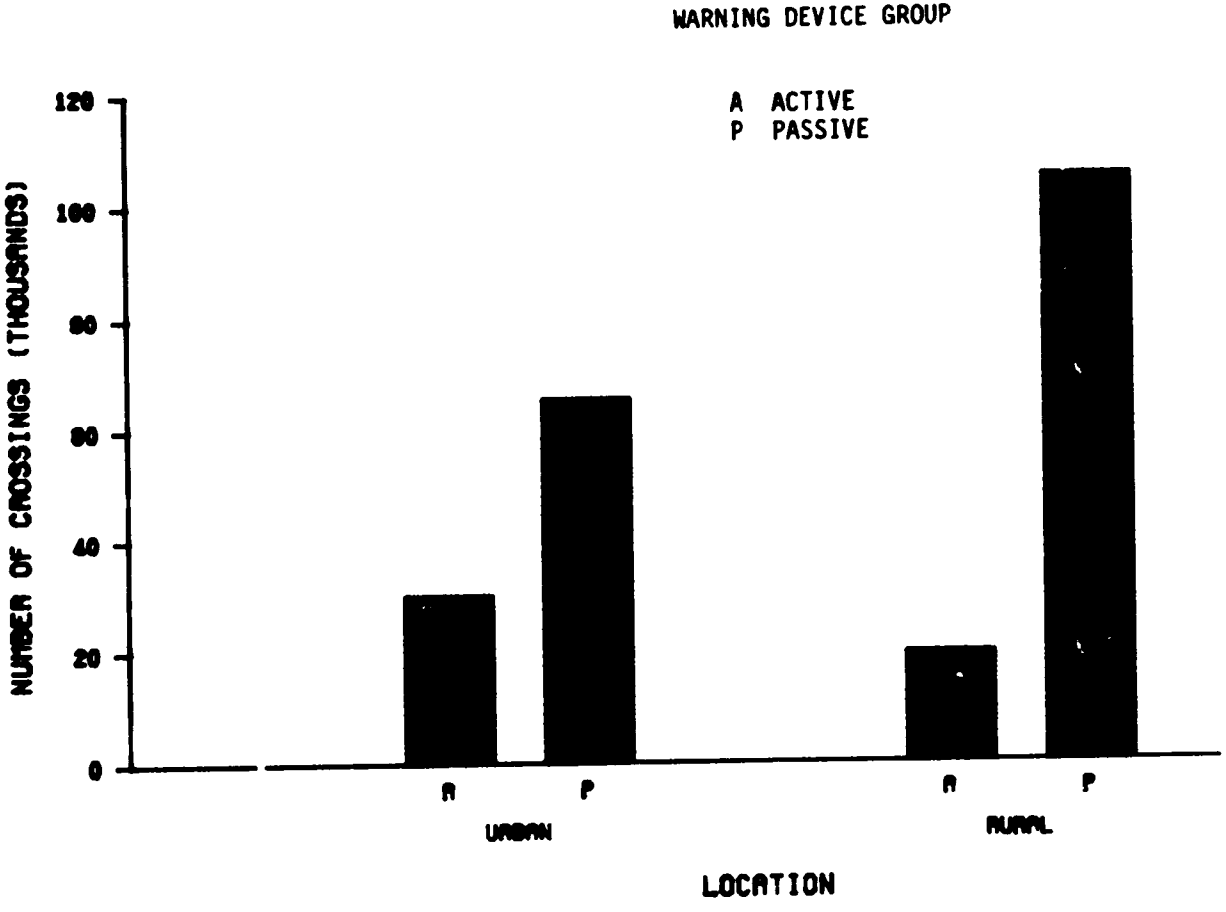


FIGURE 3-2. CROSSINGS BY LOCATION (URBAN/RURAL) VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 3-5. CROSSINGS BY LOCATION (URBAN/RURAL) VS. WARNING DEVICE CLASS

WARNING DEVICE CLASS	LOCATION URBAN	RURAL	TOTAL
GATES	8456	3527	11983
FLASHING LIGHTS	19289	14680	33969
HWY. SIGNALS, WIGWAGS, BELLS	2129	1266	3395
SPECIAL WARNING DEVICES	6391	2027	8418
CROSSBUCKS	46473	95004	141477
STOP SIGNS	1713	1812	3525
OTHER SIGNS	430	649	1079
NO SIGNS OR SIGNALS	10221	5095	15316
TOTAL	95102	124060	219162

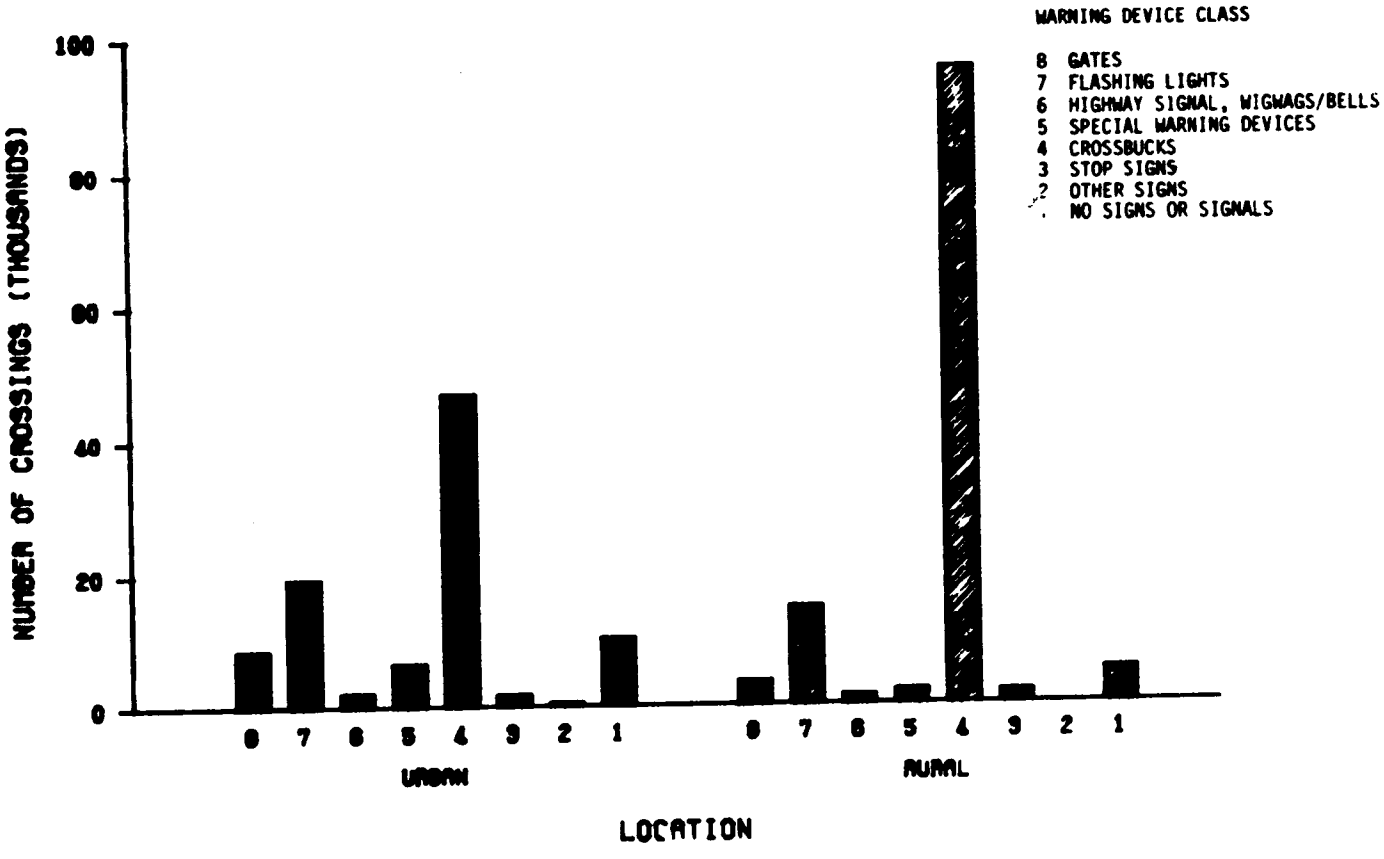


FIGURE 3-3. CROSSINGS BY LOCATION (URBAN/RURAL) VS. WARNING DEVICE CLASS

TABLE 3-6. CROSSINGS BY LOCATION (URBAN/RURAL) VS. ANNUAL AVERAGE DAILY TRAFFIC

LOCATION	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
URBAN	28150	12151	12273	25985	9566	6676	94801
RURAL	86939	11891	9871	13048	1650	373	123772
TOTAL	115089	24042	22144	39033	11216	7049	218573

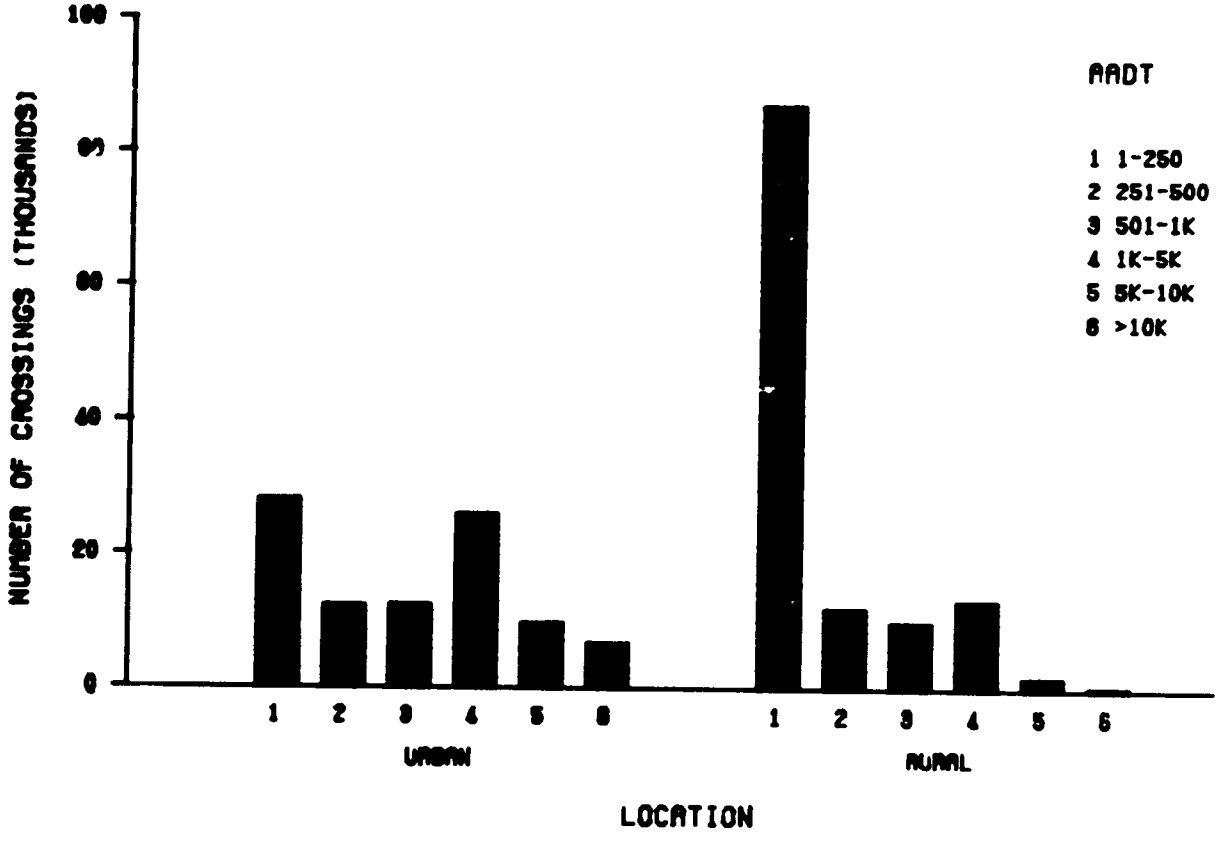


FIGURE 3-4. CROSSINGS BY LOCATION (URBAN/RURAL) VS. ANNUAL AVERAGE DAILY TRAFFIC

3.2 SURROUNDING CHARACTERISTICS

TABLE 3-7. CROSSINGS BY TYPE OF DEVELOPMENT

DEVELOPMENT	NO. XINGS
OPEN SPACE	87860
RESIDENTIAL	50031
COMMERCIAL	44784
INDUSTRIAL	33338
INSTITUTIONAL	3063

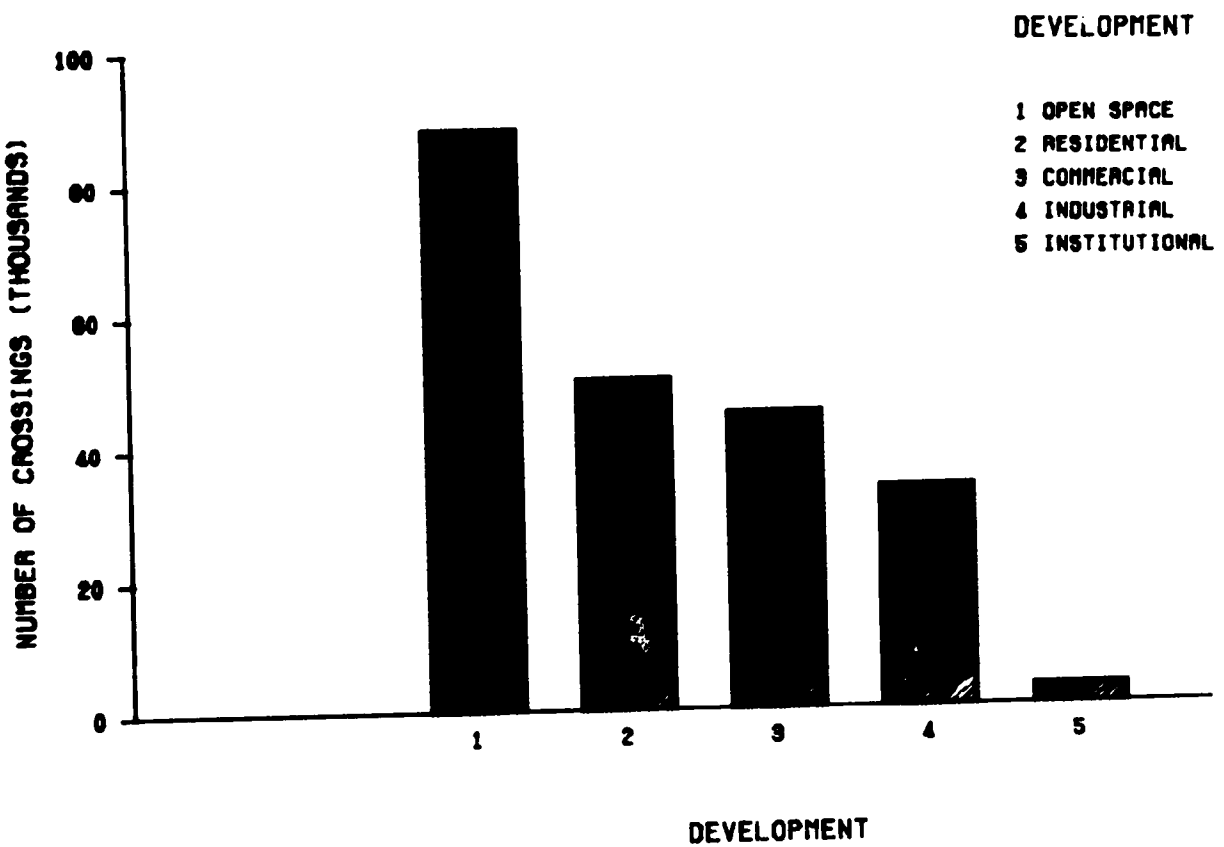


FIGURE 3-5. CROSSINGS BY TYPE OF DEVELOPMENT

3.3 TRACKAGE CHARACTERISTICS

TABLE 3-8. CROSSINGS BY NUMBER OF MAIN VS. OTHER TRACKS AND TOTAL TRACKS

NO. OF OTHER TRACKS	NO. OF MAIN TRACKS							
	0	1	2	3	4	5	>5	TOTAL
0	372	129894	10382	334	88	12	2	141084
1	23884	26687	2942	97	19	2	2	53633
2	5516	9426	1321	42	13	1	0	16319
3	1702	2851	444	23	8	0	0	5028
4	483	974	226	12	8	0	0	1703
5	180	387	116	7	2	0	0	692
>5	193	381	117	2	7	3	0	703
TOTAL	32330	170600	15548	517	145	18	4	219162

TOTAL TRACKS (MAIN TRACKS PLUS OTHER TRACKS)

NO. TRACK	NO. XINGS
1	153778
2	42585
3	14404
4	4840
5	1671
>5	1512

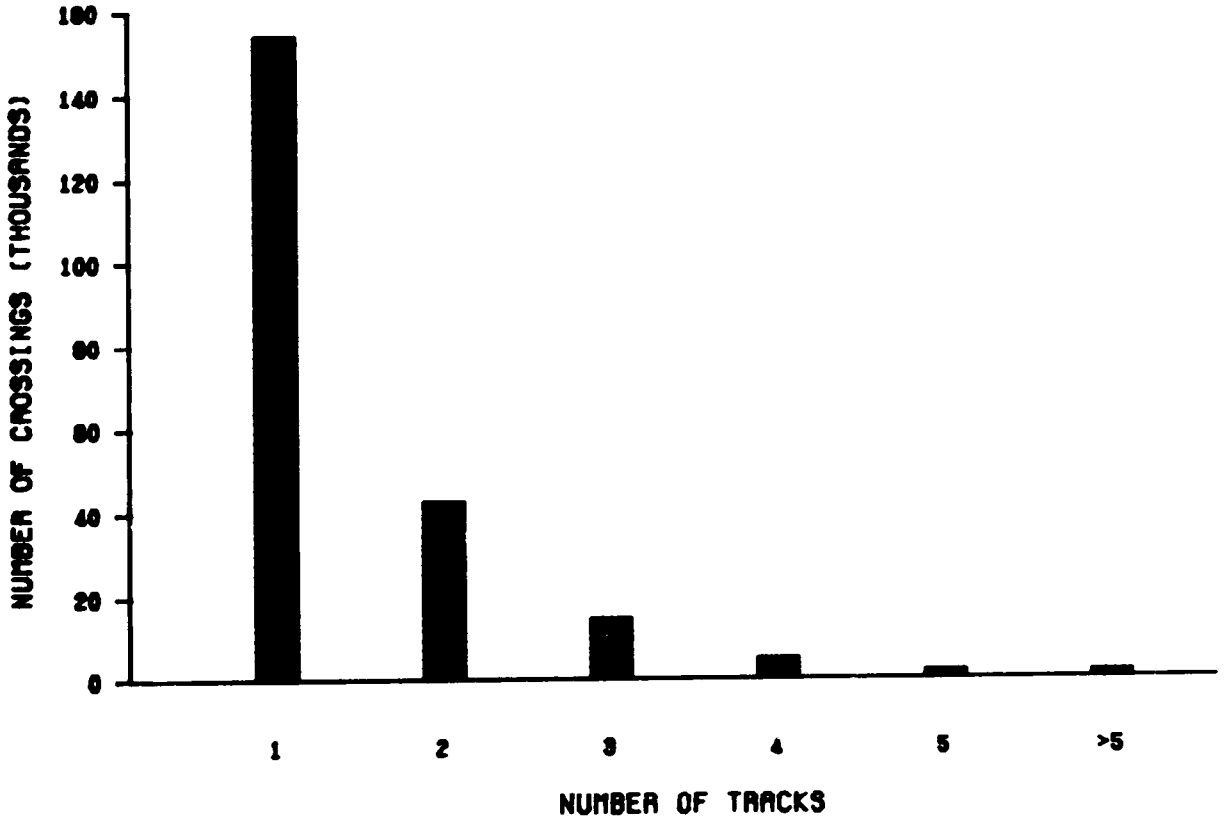


FIGURE 3-6. CROSSINGS BY TOTAL NUMBER OF TRACKS

TABLE 3-9. CROSSINGS BY NUMBER OF TRACKS (MULTIPLE/SINGLE) VS. STATE

	TRACKS		
	SINGLE	MULTIPLE	TOTAL
ALABAMA	3500	1303	4803
ALASKA	179	42	221
ARIZONA	760	300	1060
ARKANSAS	2887	1202	4089
CALIFORNIA	6649	2833	9482
COLORADO	1639	715	2354
CONN.	438	132	570
DELAWARE	213	50	263
D.C.	54	16	70
FLORIDA	4016	1948	5964
GEORGIA	5132	1798	6930
HAWAII	6	0	6
IDAHO	1470	601	2071
ILLINOIS	8543	5354	13897
INDIANA	6718	3427	10145
IOWA	6446	2620	9066
KANSAS	7217	2634	9851
KENTUCKY	2455	1237	3692
LOUISIANA	3572	1356	4928
MAINE	860	259	1119
MARYLAND	795	328	1123
MASS.	953	277	1230
MICHIGAN	6090	2367	8457
MINNESOTA	5808	2296	8104
MISS.	2415	1166	3581
MISSOURI	4499	2151	6650
MONTANA	1683	613	2296
NEBRASKA	3997	1583	5580
NEVADA	240	118	358
N.H.	609	108	717
NEW JERSEY	1571	631	2202
NEW MEXICO	610	259	869
NEW YORK	3198	1252	4450
N.C.	3970	1474	5444
N.D.	4662	1082	5744
OHIO	5816	4147	9963
OKLAHOMA	4338	1437	5775
OREGON	2170	799	2969
PENN.	4538	2226	6764
R.I.	89	53	142
S.C.	3364	1088	4452
S.D.	2763	630	3393
TENNESSEE	2853	1313	4166
TEXAS	10433	4183	14616
UTAH	971	401	1372
VERMONT	481	113	594
VIRGINIA	1864	942	2806
WASHINGTON	3030	1261	4290
W.VA.	1737	723	2460
WISCONSIN	5364	1975	7339
WYOMING	432	188	620
P.R.	53	2	55
TOTAL	154150	65012	219162

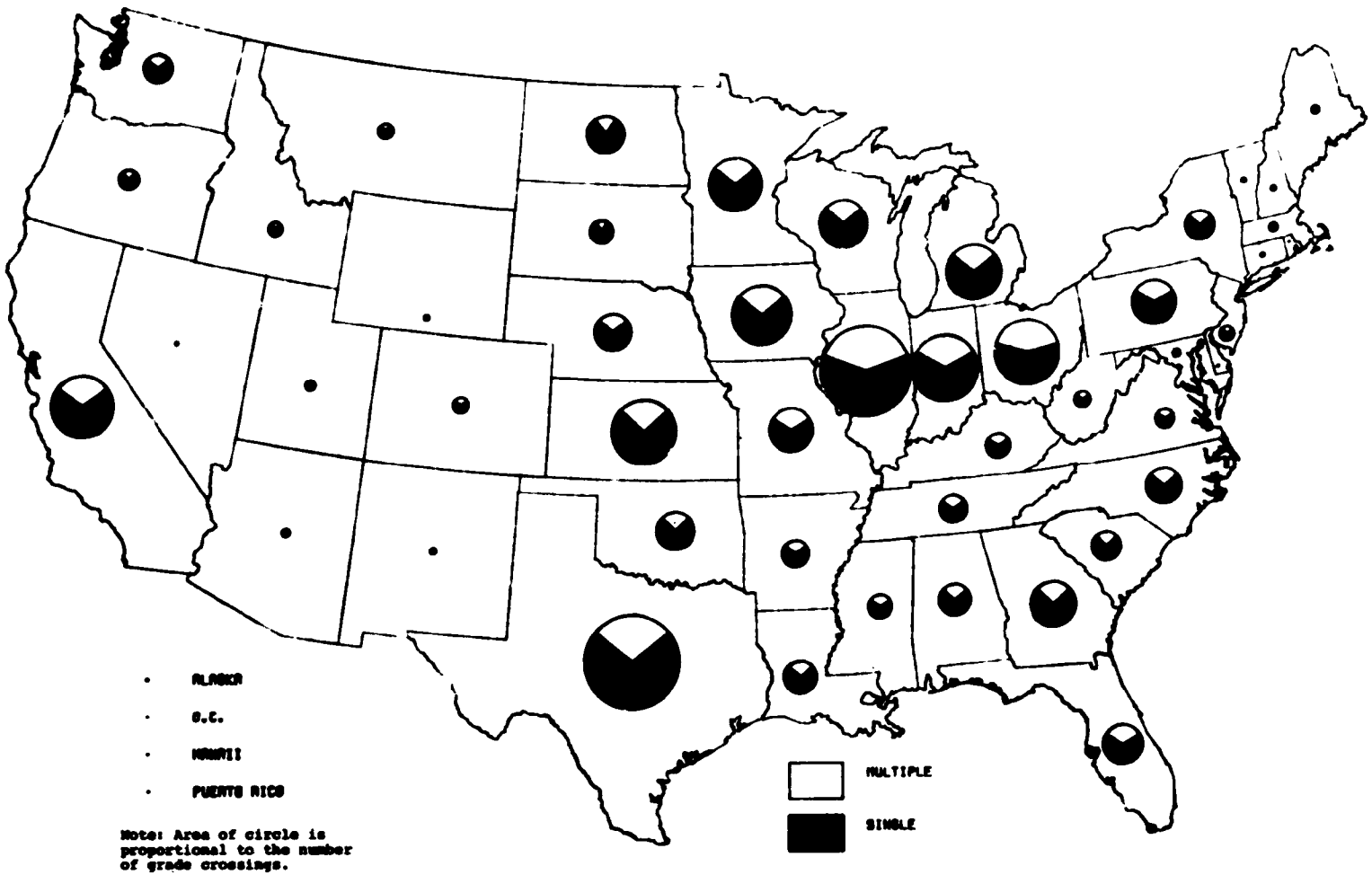


FIGURE 3-7. CROSSINGS BY NUMBER OF TRACKS (MULTIPLE/SINGLE) VS. STATE

TABLE 3-10. CROSSINGS BY NUMBER OF TRACKS VS. STATE

	NO. OF TRACKS						
	1	2	3	4	5	>5	TOTAL
ALABAMA	3499	830	313	88	37	35	4802
ALASKA	179	33	6	1	1	1	221
ARIZONA	759	194	69	24	6	7	1059
ARKANSAS	2885	813	264	74	32	19	4087
CALIFORNIA	6634	1744	646	224	113	106	9467
COLORADO	1627	439	164	50	29	33	2342
CONN.	438	96	24	7	4	1	570
DELAWARE	213	32	10	4	4	0	263
D.C.	54	12	4	0	0	0	70
FLORIDA	3965	1339	408	129	46	26	5913
GEORGIA	5113	1201	372	144	39	42	6911
HAWAII	6	0	0	0	0	0	6
IDAHO	1453	350	140	65	21	25	2054
ILLINOIS	8521	3590	1143	381	126	114	13875
INDIANA	6709	2408	642	240	83	54	10136
IOWA	6421	1602	655	216	73	74	9041
KANSAS	7213	1566	688	234	79	67	9847
KENTUCKY	2452	886	238	75	15	23	3689
LOUISIANA	3546	902	287	96	33	38	4902
MAINE	859	193	46	16	3	1	1118
MARYLAND	793	219	72	24	4	9	1121
MASS.	952	210	41	15	7	4	1229
MICHIGAN	6087	1597	475	169	63	63	8454
MINNESOTA	5802	1434	557	178	54	73	8098
MISS.	2414	749	249	104	33	31	3580
MISSOURI	4498	1296	575	171	55	54	6649
MONTANA	1681	389	158	33	14	19	2294
NEBRASKA	3992	992	382	118	42	49	5575
NEVADA	235	83	23	5	3	4	353
N.H.	609	88	13	3	4	0	717
NEW JERSEY	1569	464	128	22	11	6	2200
NEW MEXICO	610	166	57	22	4	10	869
NEW YORK	3198	914	230	71	17	20	4450
N.C.	3964	980	313	114	36	31	5438
N.D.	4605	729	264	62	20	7	5687
OHIO	5809	2767	862	340	114	64	9956
OKLAHOMA	4334	807	390	142	46	52	5771
OREGON	2167	509	202	60	15	13	2966
PENN.	4516	1548	434	158	44	42	6742
R.I.	89	43	8	2	0	0	142
S.C.	3360	763	230	53	26	16	4448
S.D.	2761	405	149	46	17	13	3391
TENNESSEE	2852	888	273	87	30	35	4165
TEXAS	10429	2660	941	343	121	118	14612
UTAH	963	261	86	23	21	10	1364
VERMONT	481	78	25	4	1	5	594
VIRGINIA	1857	619	212	74	23	14	2799
WASHINGTON	3027	777	304	119	30	30	4287
W.VA.	1736	515	159	33	6	10	2459
WISCONSIN	5357	1294	425	154	59	43	7332
WYOMING	432	109	48	23	7	1	620
P.R.	53	2	0	0	0	0	55
TOTAL	153778	42585	14404	4840	1671	1512	218790

TABLE 3-11. CROSSINGS BY NUMBER OF TRACKS VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

NO. OF TRACKS	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
1	26298	127480	153778
2	13545	29040	42585
3	5682	8722	14404
4	2207	2633	4840
5	805	866	1671
>5	751	761	1512
TOTAL	49288	169502	218790

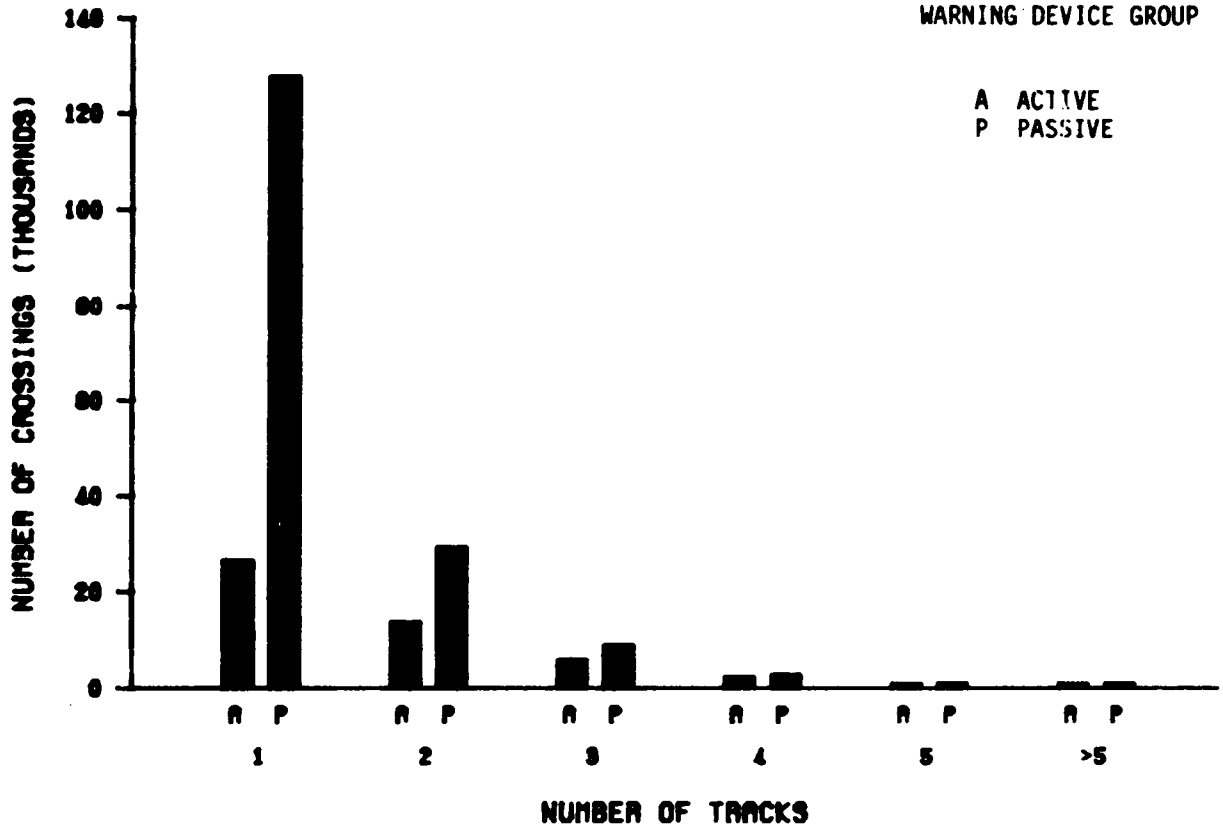


FIGURE 3-8. CROSSINGS BY NUMBER OF TRACKS VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 3-12. CROSSINGS BY NUMBER OF TRACKS VS. WARNING DEVICE CLASS

WARNING DEVICE CLASS	NO. OF TRACKS 1	2	3	4	5	>5	TOTAL
GATES	3591	4801	2076	865	306	332	11971
FLASHING LIGHTS	20757	7892	3241	1207	441	389	33927
HWY. SIGNALS, HIGWAGS, BELLS	1950	852	365	135	58	30	3390
SPECIAL WARNING DEVICES	5992	1494	553	201	78	90	8408
CROSSBUCKS	106567	24150	7158	2115	680	559	141229
STOP SIGNS	2461	688	239	86	23	25	3522
OTHER SIGNS	809	177	37	17	14	8	1062
NO SIGNS OR SIGNALS	11651	2531	735	214	71	79	15281
TOTAL	153778	42585	14404	4840	1671	1512	218790

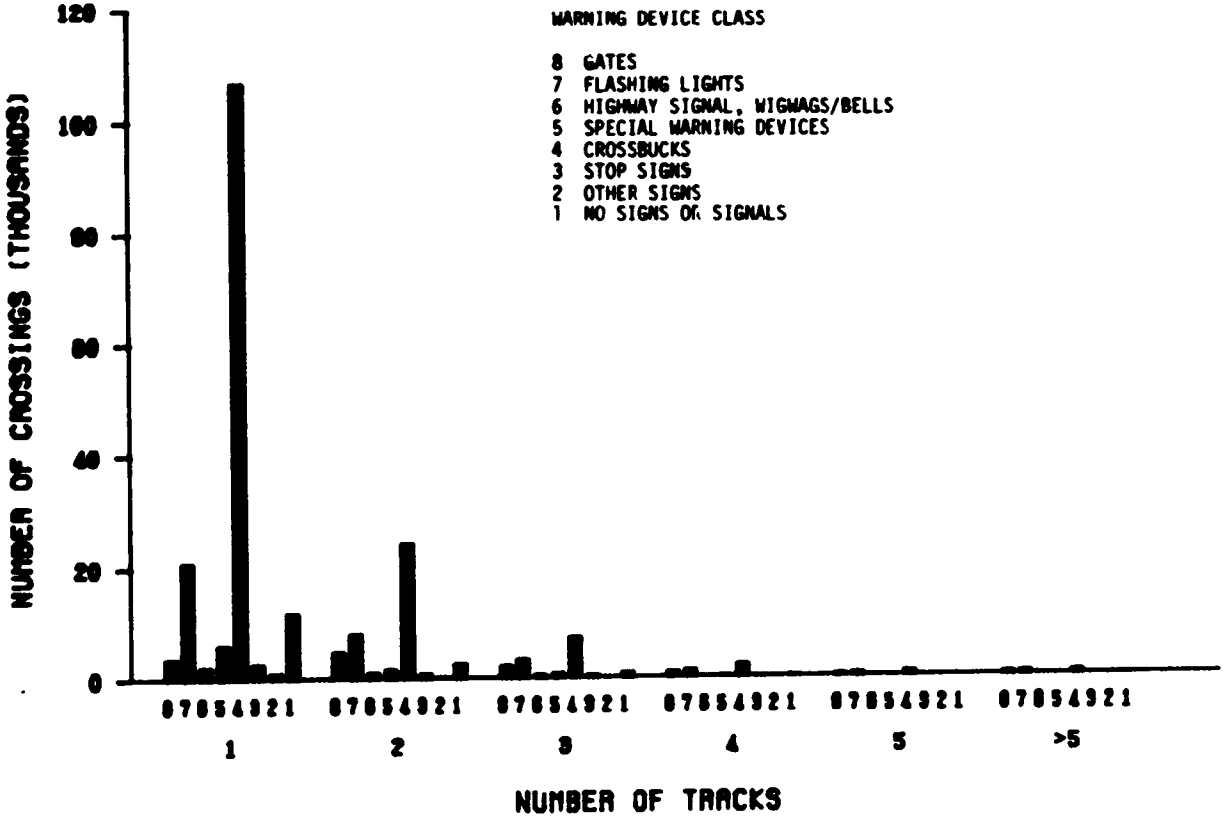


FIGURE 3-9. CROSSINGS BY NUMBER OF TRACKS VS. WARNING DEVICE CLASS

TABLE 3-13. CROSSINGS BY NUMBER OF TRACKS VS. ANNUAL AVERAGE DAILY TRAFFIC

NO. OF TRACKS	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
1	89018	15872	13788	23506	6950	4651	153385
2	18818	5463	5041	9035	2554	1544	42455
3	4993	1973	2075	3799	1004	517	14361
4	1364	668	717	1496	383	202	4830
5	390	228	259	580	145	62	1664
>5	285	200	237	565	158	63	1508
TOTAL	114868	24004	22117	38981	11194	7039	218203

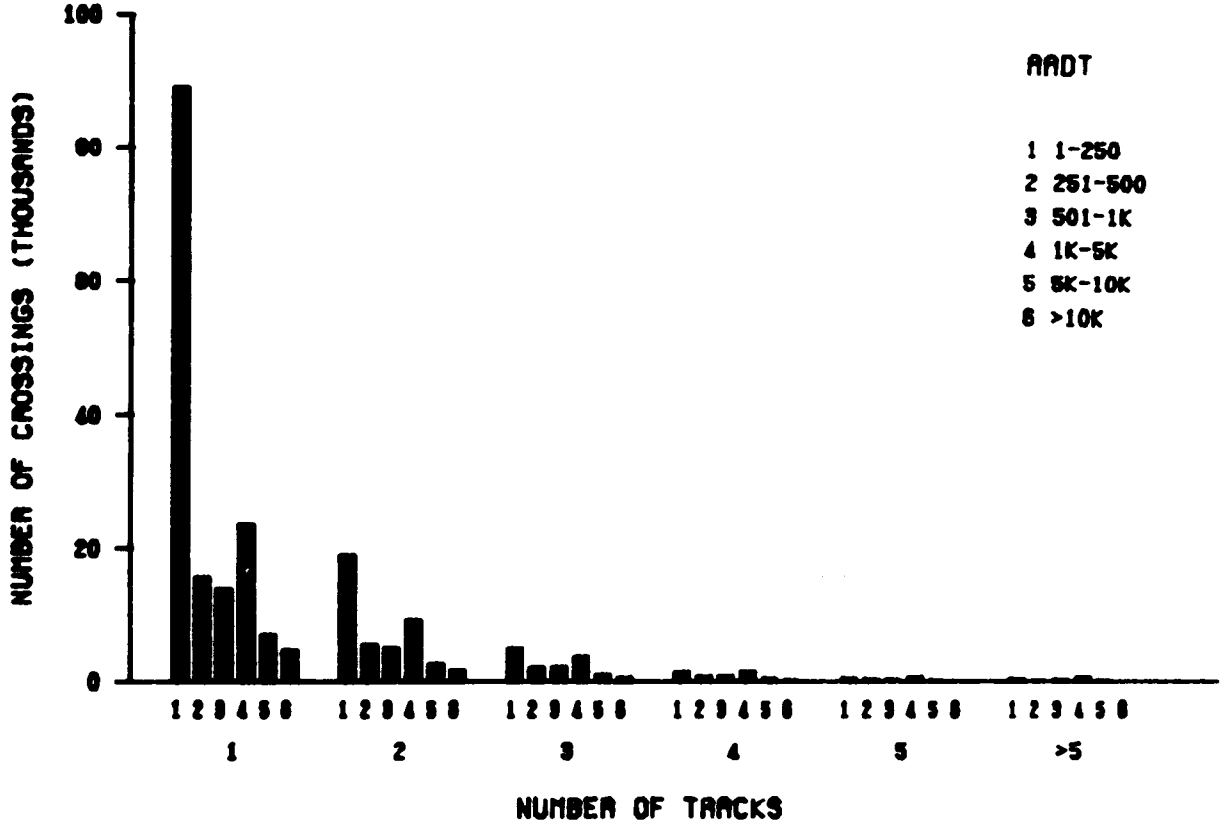


FIGURE 3-10. CROSSINGS BY NUMBER OF TRACKS VS. ANNUAL AVERAGE DAILY TRAFFIC

3.4 HIGHWAY CHARACTERISTICS

TABLE 3-14. CROSSINGS BY HIGHWAY SYSTEM

HWY SYS	NO. XINGS	HWY SYS	NO. XINGS	HWY SYS	NO. XINGS	HWY SYS	NO. XINGS
01	65	21	0	61	0	81	0
02	133	22	0	62	0	82	0
03	5019	23	1	63	1	83	0
04	6093	24	1	64	0	84	0
05	10956	25	0	65	0	85	0
06	3715	26	3	66	0	86	0
07	14602	27	0	67	0	87	0
08	2827	28	0	68	0	88	0
09	6217	29	0	69	0	89	0
10	1987	30	0	70	0	90	0
11	87109	31	0	71	0	91	0
12	73895	32	3	72	0	92	0
14	6433	34	0	74	0	94	0

HIGHWAY SYSTEM CODES

CODE	SYSTEM
01	INTERSTATE, RURAL, OPEN TO TRAFFIC
02	INTERSTATE, URBAN, OPEN TO TRAFFIC
03	OTHER FA* PRIMARY, RURAL
04	OTHER FA PRIMARY, URBAN
05	FA SECONDARY RURAL, STATE JURISDICTION
06	FA SECONDARY URBAN, STATE JURISDICTION
07	FA SECONDARY RURAL, LOCAL JURISDICTION
08	FA SECONDARY URBAN, LOCAL JURISDICTION
09	OTHER STATE HIGHWAYS, RURAL (NON-FA)
10	OTHER STATE HIGHWAYS, URBAN (NON-FA)
11	LOCAL RURAL ROADS (NON-FA)
12	LOCAL URBAN ROADS (NON-FA)
14	FEDERAL-AID URBAN

FOR TOLL ROADS ON WHICH TRUCKS ARE PERMITTED, ADD 20 TO THE APPROPRIATE SYSTEM CODE. FOR EXAMPLE, CODE 24 WOULD BE A TOLL FACILITY ON THE FEDERAL-AID PRIMARY URBAN SYSTEM.

FOR TOLL PARKWAYS ON WHICH TRUCKS ARE NOT PERMITTED, 60 SHOULD BE ADDED TO THE APPROPRIATE SYSTEM CODE.

FOR NON-TOLL ROADS ON WHICH TRUCKS ARE NOT PERMITTED, ADD 80 TO THE APPROPRIATE SYSTEM CODE.

*FA--Federal Aid

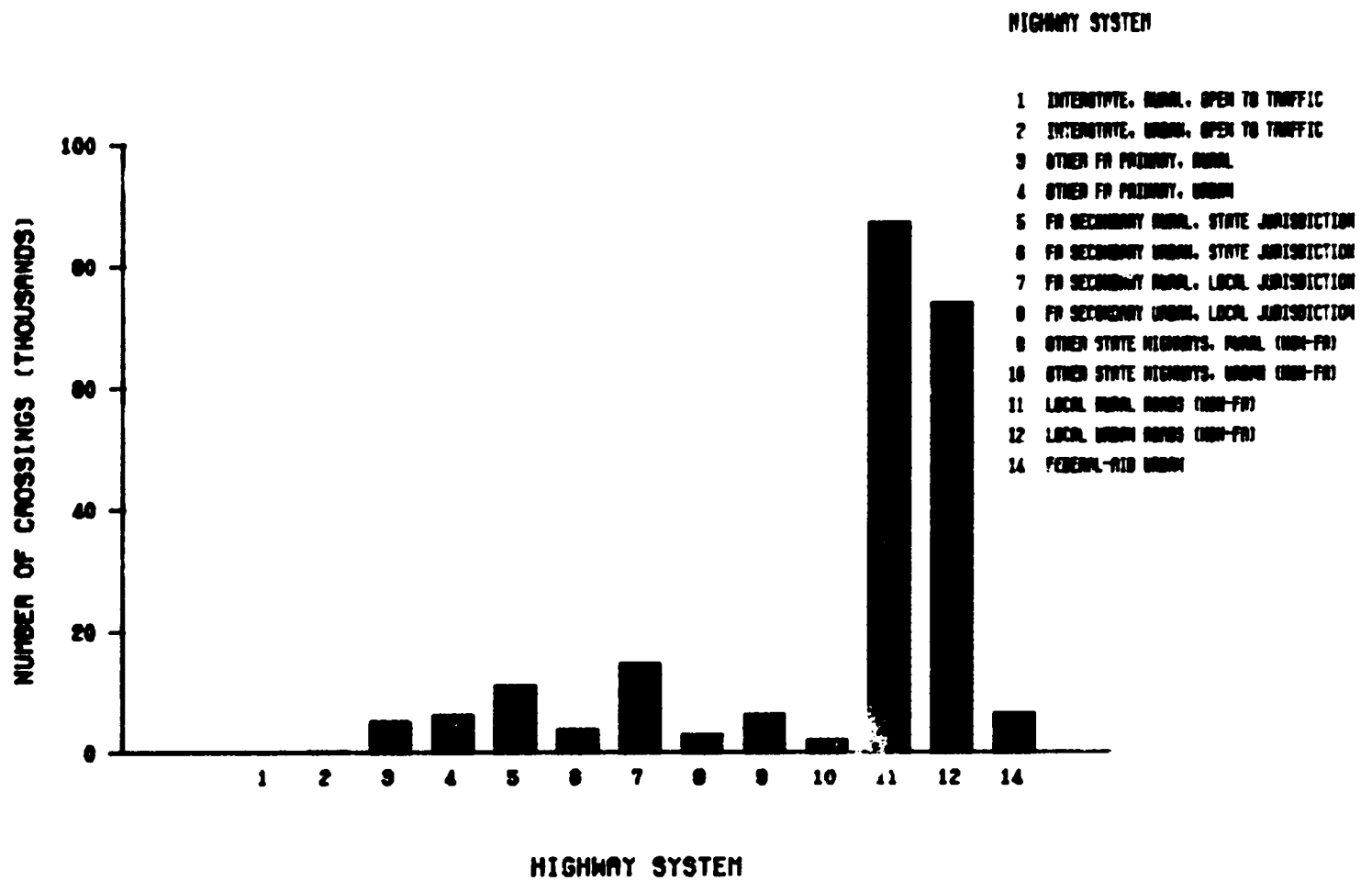


FIGURE 3-11. CROSSINGS BY HIGHWAY SYSTEM

TABLE 3-15. CROSSINGS BY HIGHWAY SYSTEM (FEDERAL AID/NON-FEDERAL AID) VS. STATE

	HIGHWAY SYSTEM		
	FEDERAL AID	NON FEDERAL AID	TOTAL
ALABAMA	991	3812	4803
ALASKA	77	144	221
ARIZONA	193	867	1060
ARKANSAS	859	3230	4089
CALIFORNIA	2849	6633	9482
COLORADO	341	2013	2354
CONN.	110	460	570
DELAWARE	172	91	263
D.C.	21	49	70
FLORIDA	1157	4807	5964
GEORGIA	1307	5623	6930
HAWAII	0	6	6
IDAHO	353	1718	2071
ILLINOIS	2426	11471	13897
INDIANA	2792	7353	10145
IOWA	2555	6511	9066
KANSAS	1889	7962	9851
KENTUCKY	812	2880	3692
LOUISIANA	699	4229	4928
MAINE	238	881	1119
MARYLAND	524	599	1123
MASS.	542	688	1230
MICHIGAN	2610	5847	8457
MINNESOTA	1756	6348	8104
MISS.	933	2648	3581
MISSOURI	1280	5370	6650

	HIGHWAY SYSTEM		
	FEDERAL AID	NON FEDERAL AID	TOTAL
MONTANA	359	1937	2296
NEBRASKA	1112	4468	5580
NEVADA	65	293	358
N.H.	245	472	717
NEW JERSEY	478	1724	2202
NEW MEXICO	163	706	869
NEW YORK	1090	360	4450
N.C.	1506	3938	5444
N.D.	1035	4709	5744
OHIO	2565	7398	9963
OKLAHOMA	947	4828	5775
OREGON	836	2133	2969
PENN.	1358	5406	6764
R.I.	58	84	142
S.C.	2194	2258	4452
S.D.	711	2682	3393
TENNESSEE	559	3607	4166
TEXAS	1888	12728	14616
UTAH	192	1180	1372
VERMONT	143	451	594
VIRGINIA	979	1827	2806
WASHINGTON	956	3334	4290
W.VA.	780	1680	2460
WISCONSIN	2123	5216	7339
WYOMING	106	514	620
P.R.	17	38	55
TOTAL	49951	169211	219162

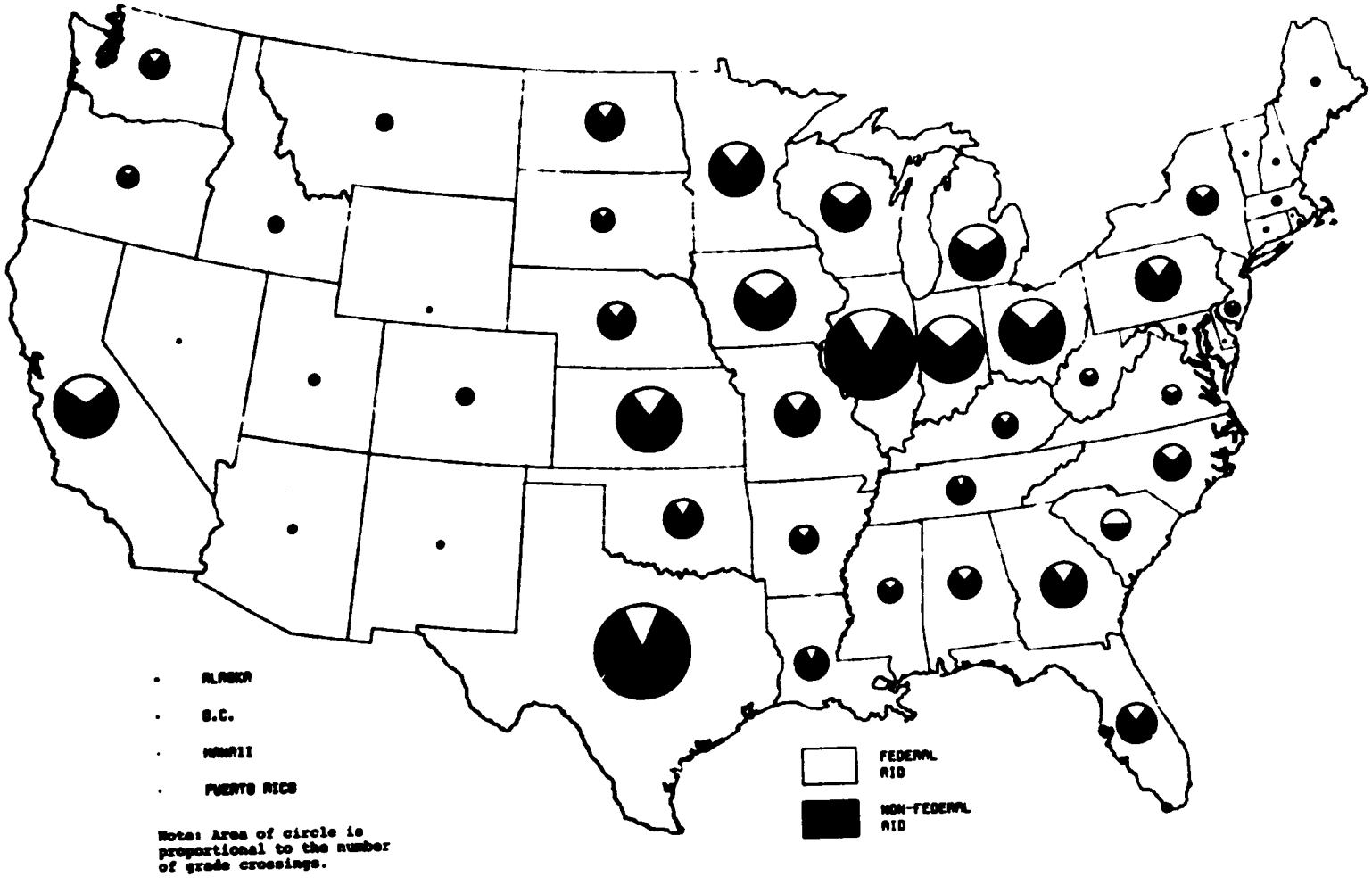


FIGURE 3-12. CROSSINGS BY HIGHWAY SYSTEM (FEDERAL AID/NON-FEDERAL AID) VS. STATE

TABLE 3-16. CROSSINGS BY HIGHWAY SYSTEM (FEDERAL AID/NON-FEDERAL AID) VS. STATE AND WARNING DEVICE GROUP (ACTIVE/PASSIVE)

	FEDERAL AID HWYS			NON-FEDERAL AID HWYS		
	WARNING DEVICE GROUP			WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL	ACTIVE	PASSIVE	TOTAL
ALABAMA	391	600	991	304	3508	3812
ALASKA	40	37	77	5	139	144
ARIZONA	124	69	193	140	727	867
ARKANSAS	338	521	859	206	3024	3230
CALIFORNIA	2095	754	2849	2208	4425	6633
COLORADO	167	174	341	315	1698	2013
CONN.	64	46	110	177	283	460
DELAWARE	97	75	172	18	73	91
D.C.	3	18	21	0	49	49
FLORIDA	666	491	1157	968	3839	4807
GEORGIA	516	791	1307	340	5283	5623
HAWAII	0	0	0	0	6	6
IDAHO	133	220	353	83	1635	1718
ILLINOIS	1677	749	2426	2959	8512	11471
INDIANA	1528	1264	2792	1617	5736	7353
IOWA	827	1728	2555	697	5814	6511
KANSAS	637	1252	1889	515	7447	7962
KENTUCKY	381	431	812	452	2428	2880
LOUISIANA	368	331	699	437	3792	4229
MAINE	141	97	238	283	598	881
MARYLAND	176	348	524	120	479	599
MASS.	309	233	542	340	348	688
MICHIGAN	1493	1117	2610	1025	4822	5847
MINNESOTA	553	1203	1756	516	5832	6348
MISS.	253	680	933	132	2516	2648
MISSOURI	624	656	1280	670	4700	5370
MONTANA	140	219	359	135	1802	1937
NEBRASKA	456	654	1112	305	4163	4468
NEVADA	46	19	65	44	249	293
N.H.	108	137	245	87	385	472
NEW JERSEY	322	156	478	703	1021	1724
NEW MEXICO	101	62	163	78	628	706
NEW YORK	739	351	1090	1338	2022	3360
N.C.	575	931	1506	398	3540	3938
N.D.	225	810	1035	53	4656	4709
OHIO	1500	1065	2565	1584	5814	7398
OKLAHOMA	438	509	947	396	4432	4828
OREGON	283	553	836	205	1928	2133
PENN.	706	652	1358	1289	4117	5406
R.I.	19	39	58	31	53	84
S.C.	366	1828	2194	80	2178	2258
S.D.	148	563	711	49	2633	2682
TENNESSEE	196	363	559	411	3196	3607
TEXAS	1272	616	1888	2152	10576	12728
UTAH	105	87	192	171	1009	1180
VERMONT	77	66	143	85	366	451
VIRGINIA	428	551	979	293	1534	1827
WASHINGTON	377	579	956	324	3010	3334
W.VA.	186	594	780	177	1503	1680
WISCONSIN	1133	990	2123	754	4462	5216
WYOMING	56	50	106	68	446	514
P.R.	2	15	17	3	35	38
TOTAL	23607	26344	49951	25740	143871	169211

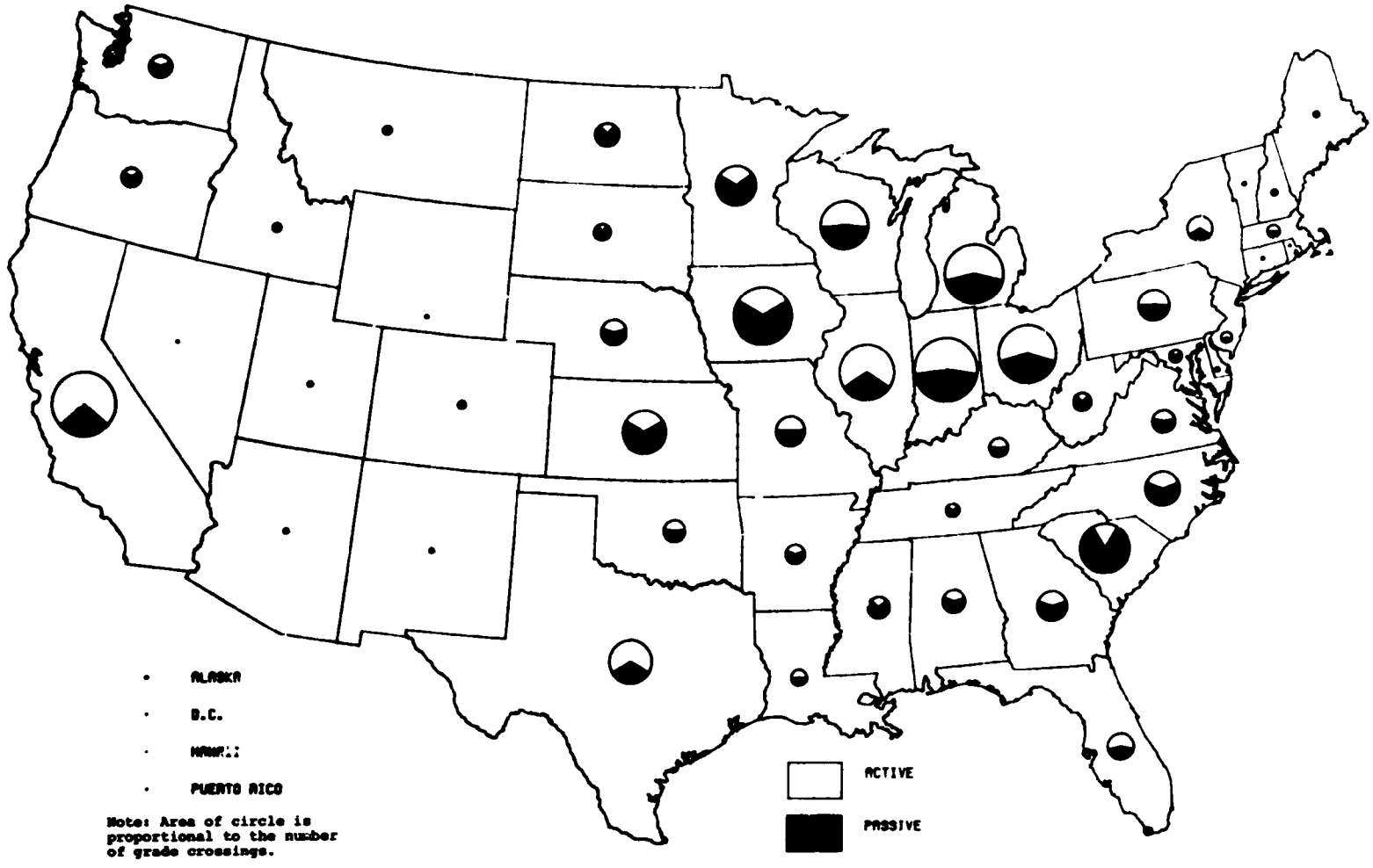


FIGURE 3-13. CROSSINGS BY HIGHWAY SYSTEM (FEDERAL AID) VS. STATE AND WARNING DEVICE GROUP (ACTIVE/PASSIVE)

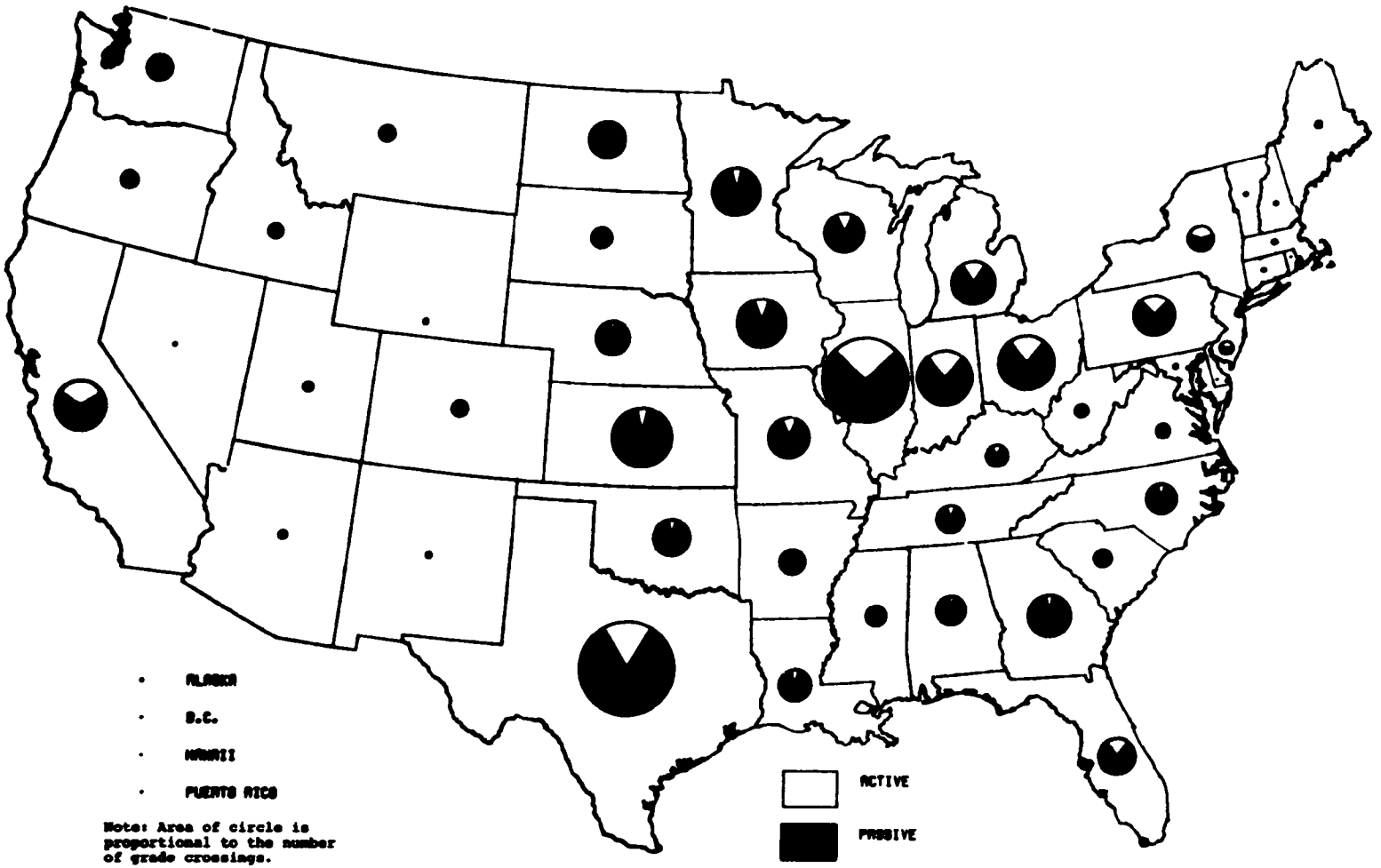


FIGURE 3-14. CROSSINGS BY HIGHWAY SYSTEM (NON-FEDERAL AID) VS. STATE AND WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 3-17. CROSSINGS BY HIGHWAY SYSTEM (FEDERAL AID) VS. STATE AND WARNING DEVICE CLASS

FEDERAL AID HIGHWAYS

	WARNING DEVICE CLASS								
	WDC 8	WDC 7	WDC 6	WDC 5	WDC 4	WDC 3	WDC 2	WDC 1	TOTAL
ALABAMA	49	326	16	27	502	8	1	62	991
ALASKA	1	39	0	0	26	0	0	3	77
ARIZONA	49	74	1	21	45	0	0	3	193
ARKANSAS	66	268	4	25	438	0	1	57	859
CALIFORNIA	1141	744	210	43	634	24	4	49	2949
COLORADO	29	121	17	55	106	0	0	13	341
CONN.	21	41	2	27	9	0	0	10	110
DELAWARE	28	69	0	27	35	1	0	12	172
D.C.	0	3	0	7	8	0	0	3	21
FLORIDA	174	488	4	50	368	4	12	57	1157
GEORGIA	133	374	9	32	691	1	2	65	1307
HAWAII	0	0	0	0	0	0	0	0	0
IDAHO	9	122	2	1	212	0	2	5	353
ILLINOIS	407	1233	37	52	660	2	0	35	2426
INDIANA	290	1160	58	85	1045	8	2	124	2792
IOWA	146	621	60	22	1673	0	1	12	2555
KANSAS	156	449	32	48	1189	1	0	14	1889
KENTUCKY	73	292	16	29	370	0	0	32	812
LOUISIANA	88	317	3	12	261	12	0	86	699
MAINE	25	112	4	67	27	0	0	3	238
MARYLAND	34	119	23	37	211	3	9	88	524
MASS.	104	187	18	133	89	0	0	11	542
MICHIGAN	296	1171	26	89	985	0	6	37	2610
MINNESOTA	75	474	4	14	1165	1	0	23	1756
MISS.	18	228	7	11	110	509	6	44	933
MISSOURI	68	520	36	28	581	1	3	41	1280
MONTANA	35	105	0	4	195	0	0	20	359
NEBRASKA	120	318	20	5	630	0	0	19	1112
NEVADA	12	30	4	1	17	0	0	1	65
N.H.	14	46	8	87	83	2	0	5	245
NEW JERSEY	129	187	6	81	64	0	0	11	478
NEW MEXICO	36	64	1	3	55	0	2	2	163
NEW YORK	173	545	21	105	220	0	4	22	1090
N.C.	72	497	6	52	810	1	2	66	1506
N.D.	46	178	1	0	781	0	0	29	1035
OHIO	191	1095	14	27	987	1	1	49	2565
OKLAHOMA	44	378	16	26	463	0	2	18	947
OREGON	132	117	34	41	400	30	4	78	836
PENN.	143	532	31	210	348	5	27	62	1358
R.I.	0	9	10	18	7	3	0	11	58
S.C.	102	260	4	221	1539	0	3	65	2194
S.D.	0	148	0	0	558	0	0	5	711
TENNESSEE	27	163	6	60	275	3	0	25	559
TEXAS	122	1140	10	23	578	0	0	15	1888
UTAH	13	90	2	10	72	0	0	5	192
VERMONT	5	69	3	14	46	0	2	4	143
VIRGINIA	146	255	27	58	447	0	5	41	979
WASHINGTON	57	296	24	18	488	0	1	72	956
W.VA.	30	148	8	31	529	0	0	34	780
WISCONSIN	125	813	195	99	846	0	0	45	2123
WYOMING	8	41	7	0	48	1	0	1	106
P.R.	1	1	0	15	0	0	0	0	17
TOTAL	5423	17137	1047	2159	21888	621	102	1574	49951

WARNING DEVICE CLASS CODES

WDC 8 GATES
WDC 7 FLASHING LIGHTS
WDC 6 HIGHWAY SIGNALS, WIGWAGS OR BELLS
WDC 5 SPECIAL WARNING DEVICES
WDC 4 CROSSBUCKS
WDC 3 STOP SIGNS
WDC 2 OTHER SIGNS
WDC 1 NO SIGNS OR SIGNALS

TABLE 3-18. CROSSINGS BY HIGHWAY SYSTEM (NON-FEDERAL AID) VS. STATE AND WARNING DEVICE CLASS

NON-FEDERAL AID HIGHWAYS

	WARNING DEVICE CLASS								
	WDC 8	WDC 7	WDC 6	WDC 5	WDC 4	WDC 3	WDC 2	WDC 1	TOTAL
ALABAMA	35	261	8	24	3015	67	9	393	3812
ALASKA	0	5	0	10	116	2	1	10	144
ARIZONA	66	59	15	75	570	8	0	74	867
ARKANSAS	36	144	26	73	2510	20	0	421	3230
CALIFORNIA	1045	762	401	174	3776	73	17	385	6633
COLORADO	35	255	25	290	1283	21	2	102	2013
CONN.	26	145	6	78	76	10	3	116	460
DELAWARE	2	16	0	21	46	1	0	5	91
D.C.	0	0	0	5	17	6	0	21	49
FLORIDA	75	483	10	150	3180	43	100	366	4807
GEORGIA	53	266	15	134	4692	17	4	436	5623
HAWAII	0	0	0	0	6	0	0	0	6
IDAHO	6	68	9	17	1509	7	0	102	1718
ILLINOIS	1105	1648	208	311	7608	10	2	581	11471
INDIANA	321	1171	125	205	4807	84	14	626	7353
IOWA	129	457	111	61	5439	6	0	308	6511
KANSAS	65	361	89	224	6906	3	1	313	7962
KENTUCKY	98	332	22	111	1750	8	1	558	2880
LOUISIANA	53	369	15	73	2617	299	26	777	4229
MAINE	33	215	35	104	477	0	4	13	881
MARYLAND	34	73	13	53	271	12	35	106	599
MASS.	60	255	25	114	194	2	2	36	688
MICHIGAN	248	714	63	197	4364	20	42	199	5847
MINNESOTA	53	447	16	31	5519	17	2	263	6348
MISS.	3	117	12	48	287	1862	19	300	2648
MISSOURI	102	426	182	134	4114	7	1	444	5370
MONTANA	25	100	10	18	1573	4	1	206	1937
NEBRASKA	65	195	45	65	3817	4	23	254	4468
NEVADA	9	34	1	8	203	0	7	31	293
N.H.	11	68	6	93	260	7	4	21	472
NEW JERSEY	227	850	26	333	571	6	3	108	1724
NEW MEXICO	15	52	11	10	583	0	4	31	706
NEW YORK	501	754	83	431	1327	3	52	209	3360
N.C.	84	310	4	210	2833	6	22	469	3938
N.D.	12	40	1	0	4289	2	0	365	4709
OHIO	291	1210	83	89	5248	14	16	447	7398
OKLAHOMA	37	316	43	147	4092	4	9	180	4828
OREGON	76	77	52	71	1498	70	8	281	2133
PENN.	355	853	81	591	2481	73	423	549	5806
R.I.	6	16	9	19	21	2	2	9	84
S.C.	16	63	1	163	1703	1	15	216	2258
S.D.	1	43	5	0	2516	0	1	116	2682
TENNESSEE	77	323	11	245	2149	33	2	767	3607
TEXAS	397	1615	140	458	8967	32	16	1103	12728
UTAH	17	142	12	66	793	6	51	93	1180
VERMONT	7	74	4	43	300	1	5	17	451
VIRGINIA	72	201	20	187	1039	1	7	300	1827
WASHINGTON	37	251	36	45	2407	21	11	446	3334
W.VA.	21	144	12	19	1160	8	6	310	1680
WISCONSIN	101	393	260	195	4065	1	3	198	5216
WYOMING	8	59	1	1	383	0	1	61	514
P.R.	3	0	0	35	0	0	0	0	38
TOTAL	6560	16872	2388	6259	119589	2908	977	13742	169211

WARNING DEVICE CLASS CODES

WDC 8 GATES
WDC 7 FLASHING LIGHTS
WDC 6 HIGHWAY SIGNALS, WIGWAGS OR BELLS
WDC 5 SPECIAL WARNING DEVICES
WDC 4 CROSSBUCKS
WDC 3 STOP SIGNS
WDC 2 OTHER SIGNS
WDC 1 NO SIGNS OR SIGNALS

TABLE 3-19. CROSSINGS BY HIGHWAY SYSTEM (FEDERAL AID) VS. STATE AND ANNUAL AVERAGE DAILY TRAFFIC

	FEDERAL AID HIGHWAYS						
	AADT						
	1-250	251-500	501-1K	1K-5K	5K-10K	>10K	TOTAL
ALABAMA	178	132	134	302	128	117	991
ALASKA	10	12	20	16	12	7	77
ARIZONA	12	8	20	50	49	54	193
ARKANSAS	139	88	130	318	130	54	859
CALIFORNIA	108	101	198	883	624	934	2848
COLORADO	26	26	48	133	41	48	322
CONN.	2	2	1	42	37	25	109
DELAWARE	11	16	21	76	24	24	172
D.C.	1	0	3	3	3	11	21
FLORIDA	125	108	126	353	185	218	1115
GEORGIA	166	129	176	510	223	103	1307
HAWAII	0	0	0	0	0	0	0
IDAHO	74	78	55	100	28	18	353
ILLINOIS	317	310	375	850	309	265	2426
INDIANA	640	257	516	855	300	223	2791
IOWA	1206	351	317	502	121	57	2554
KANSAS	717	294	283	426	108	61	1889
KENTUCKY	72	99	145	341	88	65	810
LOUISIANA	44	55	101	293	134	71	698
MAINE	3	12	27	120	33	42	237
MARYLAND	52	55	56	148	94	119	524
MASS.	4	10	27	233	142	126	542
MICHIGAN	270	275	342	936	398	389	2610
MINNESOTA	588	329	283	394	108	54	1756
MISS.	217	118	139	319	91	46	930
MISSOURI	260	204	229	378	130	79	1280
MONTANA	83	73	60	111	18	14	359
NEBRASKA	415	199	175	226	60	37	1112
NEVADA	23	9	5	17	3	7	64
N.H.	7	16	19	133	50	20	245
NEW JERSEY	0	8	15	113	164	178	478
NEW MEXICO	31	21	25	49	23	14	163
NEW YORK	190	30	251	400	130	82	1083
N.C.	172	206	242	587	204	93	1504
N.D.	489	168	156	169	38	15	1035
OHIO	344	245	339	1073	381	182	2564
OKLAHOMA	251	133	117	283	86	77	947
OREGON	97	86	97	349	144	63	836
PENN.	21	64	111	547	331	282	1356
R.I.	11	1	3	15	14	14	58
S.C.	783	327	272	510	191	110	2193
S.D.	314	115	103	126	29	24	711
TENNESSEE	60	74	69	182	93	81	559
TEXAS	231	238	275	681	290	173	1888
UTAH	31	30	26	69	18	18	192
VERMONT	19	6	25	67	15	10	142
VIRGINIA	179	131	155	260	124	90	939
WASHINGTON	159	104	108	345	134	106	956
W.VA.	185	111	126	326	54	18	788
WISCONSIN	192	228	293	855	328	227	2123
WYOMING	31	16	20	21	10	8	106
P.R.	0	0	0	6	8	3	17
TOTAL	9520	5708	6859	16101	6480	5156	49824

TABLE 3-20. CROSSINGS BY HIGHWAY SYSTEM (NON-FEDERAL AID) VS. STATE AND ANNUAL AVERAGE DAILY TRAFFIC

	NON-FEDERAL AID HIGHWAYS						
	AADT						
	1-250	251-500	501-1K	1K-5K	5K-10K	>10K	TOTAL
ALABAMA	2175	546	401	598	82	9	3811
ALASKA	105	22	11	4	2	0	144
ARIZONA	458	109	123	143	24	10	867
ARKANSAS	2112	342	315	404	43	14	3230
CALIFORNIA	2034	1141	1062	1763	446	183	6629
COLORADO	1238	192	167	306	82	26	2011
CONN.	93	73	93	163	28	8	458
DELAWARE	48	18	7	9	3	0	85
D.C.	0	5	24	19	1	0	49
FLORIDA	1952	688	499	1146	307	213	4805
GEORGIA	3630	617	408	733	163	64	5615
HAWAII	6	0	0	0	0	0	6
IDAHO	1313	186	81	115	15	8	1718
ILLINOIS	7546	1501	763	1129	310	219	11468
INDIANA	5909	82	971	329	46	16	7353
IOWA	4298	579	464	932	168	45	6486
KANSAS	6293	562	370	566	115	32	7938
KENTUCKY	1849	330	211	386	76	26	2878
LOUISIANA	2062	972	479	505	125	77	4220
MAINE	463	135	122	140	7	2	869
MARYLAND	163	115	107	177	29	7	598
MASS.	205	243	90	133	14	3	688
MICHIGAN	3528	665	576	830	164	83	5846
MINNESOTA	5472	192	177	377	98	30	6346
MISS.	1804	331	188	274	39	8	2644
MISSOURI	4005	501	307	458	72	26	5369
MONTANA	1664	95	59	101	12	2	1933
NEBRASKA	3795	240	167	215	46	5	4468
NEVADA	146	19	19	21	7	6	218
N.H.	307	64	46	51	3	1	472
NEW JERSEY	29	353	287	825	205	24	1723
NEW MEXICO	537	58	42	60	5	4	706
NEW YORK	1687	30	805	564	172	80	3338
N.C.	1408	840	678	857	130	24	3937
N.D.	4357	144	86	97	14	0	4698
OHIO	4208	931	770	1130	267	81	7387
OKLAHOMA	3503	477	279	455	78	43	4825
OREGON	1208	374	266	261	20	4	2133
PENN.	1993	891	779	1412	275	52	5402
R.I.	23	15	9	18	16	3	84
S.C.	1569	187	166	279	50	7	2258
S.D.	2405	97	61	93	22	4	2682
TENNESSEE	1939	391	435	614	154	74	3607
TEXAS	6994	1373	1170	2407	516	268	12728
UTAH	599	185	125	203	42	26	1180
VERMONT	286	53	41	54	8	5	447
VIRGINIA	839	242	167	301	86	38	1673
WASHINGTON	2116	349	278	478	88	25	3334
W.VA.	1183	193	102	110	24	5	1617
WISCONSIN	3578	572	404	630	29	3	5216
WYOMING	422	21	20	43	8	0	514
P.R.	13	3	8	14	0	0	38
TOTAL	105569	18334	15285	22932	4736	1893	168749

TABLE 3-21. CROSSINGS BY FUNCTIONAL CLASSIFICATION OF ROAD OVER CROSSING

CL*	XINGS	CL	XINGS	CL	XINGS	CL	XINGS	CL	XINGS
01	28	11	15	21	2	31	8	41	36
02	1559	12	79	22	85	32	74	42	380
03	5369	13	1028	23	1452	33	815	43	5001
04	12172	14	1409	24	2160	34	1245	44	8126
05	15871	15	1565	25	1976	35	1172	45	6355
06	103973	16	6029	26	8007	36	4932	46	28039

*FUNCTIONAL CLASSIFICATION (CL) CODES

RURAL CODES		URBAN CODES				
			URBAN POPULATION (THOUSANDS)			
			05-10	10-25	25-50	>50
INTERSTATE	01					
OTHER PRINCIPAL ARTERIAL	02					
MINOR ARTERIAL	03	INTERSTATE	11	21	31	41
MAJOR COLLECTOR	04	OTHER FREEWAY AND EXPRESSWAY	12	22	32	42
MINOR COLLECTOR	05	OTHER PRINCIPAL ARTERIAL	13	23	33	43
LOCAL	06	MINOR ARTERIAL	14	24	34	44
		COLLECTOR	15	25	35	45
		LOCAL	16	26	36	46

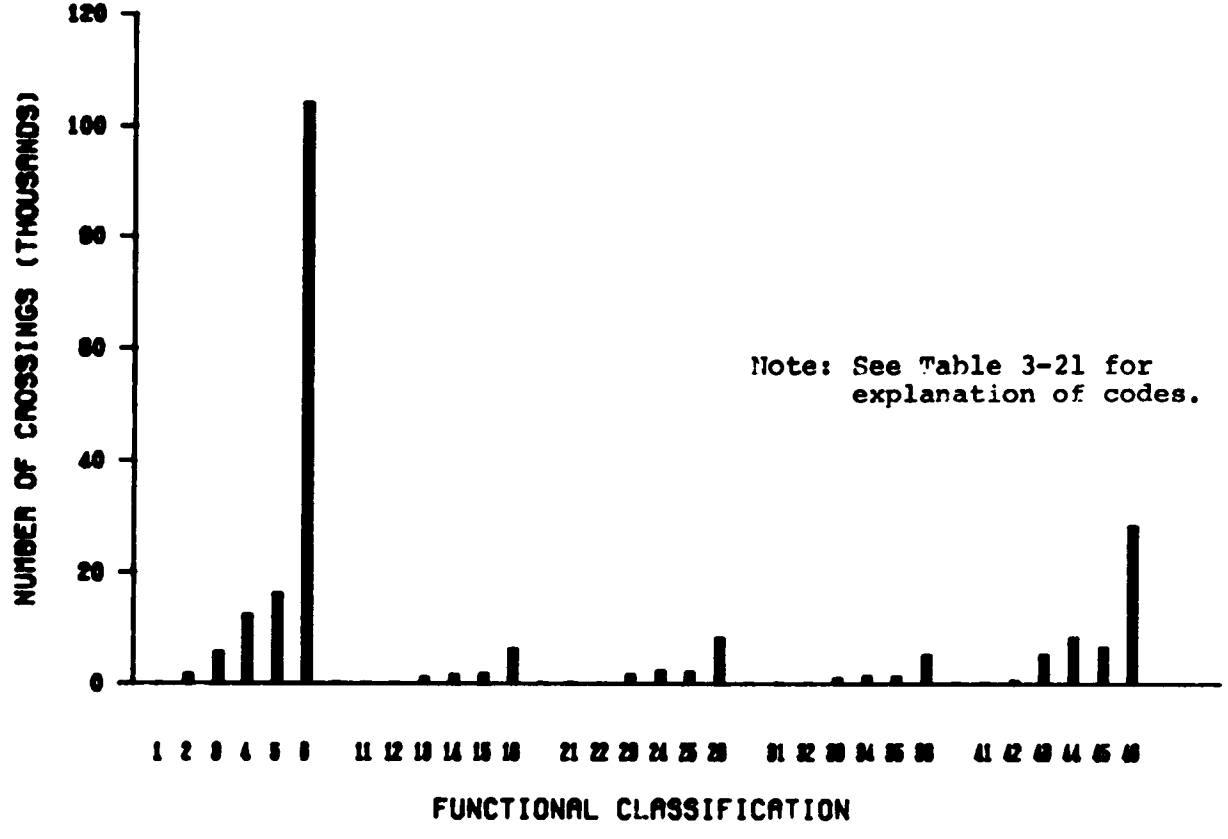


FIGURE 3-15. CROSSINGS BY FUNCTIONAL CLASSIFICATION OF ROAD OVER CROSSING

TABLE 3-22. CROSSINGS BY NUMBER OF TRAFFIC LANES

NO. LANES*	NO. XINGS
1	38716
2	167857
3	1204
4	10117
5	440
>5	704

* Total of lanes in both directions

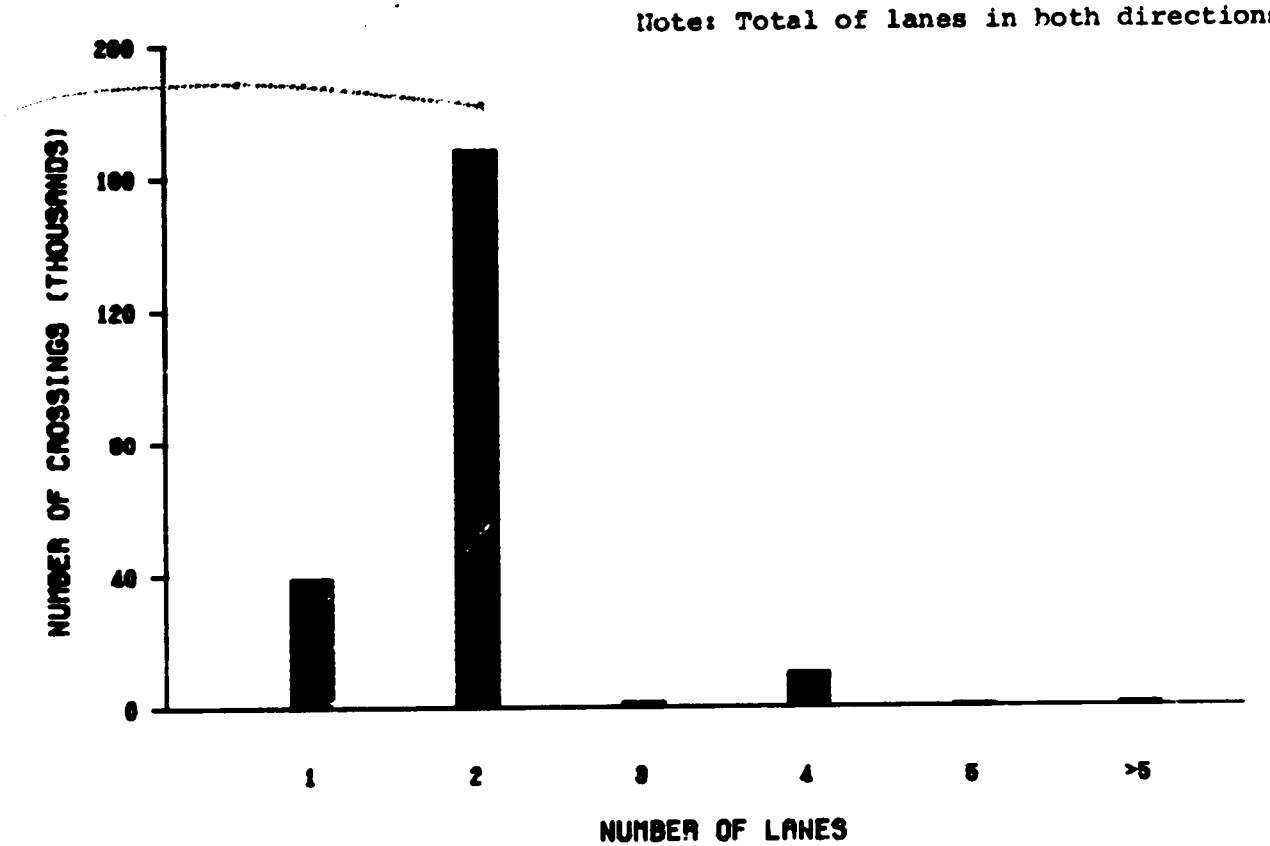


FIGURE 3-16. CROSSINGS BY NUMBER OF TRAFFIC LANES

TABLE 3-23. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. STATE

	NO. OF LANES						
	1	2	3	4	5	>5	TOTAL
ALABAMA	1000	3542	25	217	8	11	4803
ALASKA	29	183	1	7	1	0	221
ARIZONA	164	769	5	92	10	20	1060
ARKANSAS	1113	2910	14	51	0	1	4089
CALIFORNIA	526	6691	191	1648	179	247	9482
COLORADO	178	1985	19	148	4	6	2340
CONN.	53	487	5	24	0	0	569
DELAWARE	4	237	3	18	0	1	263
D.C.	5	56	0	6	0	3	70
FLORIDA	337	4934	68	459	35	47	5890
GEORGIA	1425	5258	29	211	0	7	6930
HAWAII	0	6	0	0	0	0	6
IDAHO	594	1392	8	72	2	3	2071
ILLINOIS	2649	10458	51	710	12	17	13897
INDIANA	2067	7599	47	414	6	12	10145
IOWA	2021	6802	22	212	2	7	9066
KANSAS	2404	7129	7	307	0	4	9851
KENTUCKY	1154	2464	7	66	1	0	3692
LOUISIANA	731	3961	14	197	7	18	4928
MAINE	72	1030	3	14	0	0	1119
MARYLAND	169	867	10	71	1	5	1123
MASS.	49	1113	7	60	1	0	1230
MICHIGAN	679	7014	66	625	28	45	8457
MINNESOTA	1402	6443	13	245	1	0	8104
MISS.	489	2972	8	105	2	5	3581
MISSOURI	1847	4651	8	137	2	5	6650
MONTANA	319	1946	5	25	1	0	2296
NEBRASKA	1420	4052	4	99	2	3	5580
NEVADA	141	182	0	26	0	1	350
N.H.	45	641	4	24	2	1	717
NEW JERSEY	135	1907	10	143	2	5	2202
NEW MEXICO	311	525	2	25	3	3	869
NEW YORK	435	3845	24	136	4	6	4450
N.C.	350	4837	37	200	9	11	5444
N.D.	1300	4406	0	38	0	0	5744
OHIO	1468	8064	74	330	14	13	9963
OKLAHOMA	1029	4459	6	274	5	2	5775
OREGON	367	2450	48	98	3	3	2969
PENN.	1051	5348	127	207	2	29	6764
R.I.	6	115	0	21	0	0	142
S.C.	777	3485	15	158	8	9	4452
S.D.	918	2404	5	63	0	3	3393
TENNESSEE	778	3151	22	196	14	5	4166
TEXAS	2749	10522	70	1146	35	94	14616
UTAH	261	1022	0	78	1	10	1372
VERMONT	135	447	4	8	0	0	594
VIRGINIA	1020	1676	15	56	5	7	2779
WASHINGTON	445	3385	70	351	24	15	4290
W.VA.	1274	1165	10	10	0	1	2460
WISCONSIN	658	6386	19	254	3	19	7339
WYOMING	161	431	2	25	1	0	620
P.R.	2	53	0	0	0	0	55
TOTAL	38716	167857	1205	10117	440	704	219038

Note: Total of lanes in both directions.

TABLE 3-24. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

NO. OF LANES	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
1	1308	37408	38716
2	40178	127679	167857
3	646	558	1204
4	6314	3803	10117
5	351	89	440
>5	522	182	704
TOTAL	49319	169719	219038

Note: Total of lanes in both directions.

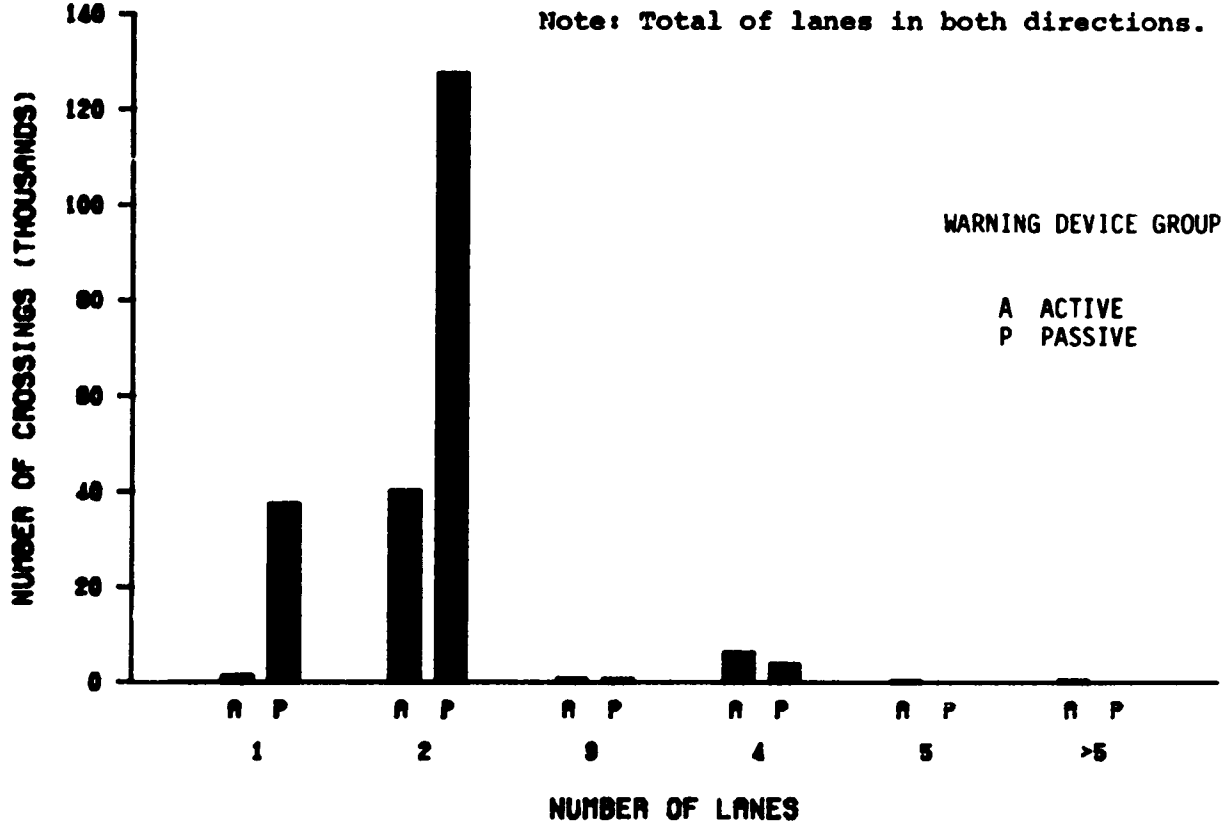


FIGURE 3-17. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 3-25. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. WARNING DEVICE CLASS

WARNING DEVICE CLASS	NO. OF LANES 1	2	3	4	5	>5	TOTAL
GATES	213	9167	210	2030	146	211	11977
FLASHING LIGHTS	782	28329	393	4005	177	263	33949
HWY. SIGNALS, WIGWAGS, BELLS	313	2682	43	279	28	48	3393
SPECIAL WARNING DEVICES	731	6704	132	763	22	36	8388
CROSSBUCKS	31700	106950	299	2325	49	110	141433
STOP SIGNS	542	2899	11	65	1	7	3525
OTHER SIGNS	244	803	7	20	0	2	1076
NO SIGNS OR SIGNALS	4191	10323	109	630	17	27	15297
TOTAL	38716	167857	1204	10117	440	704	219038

Note: Total of lanes in both directions.

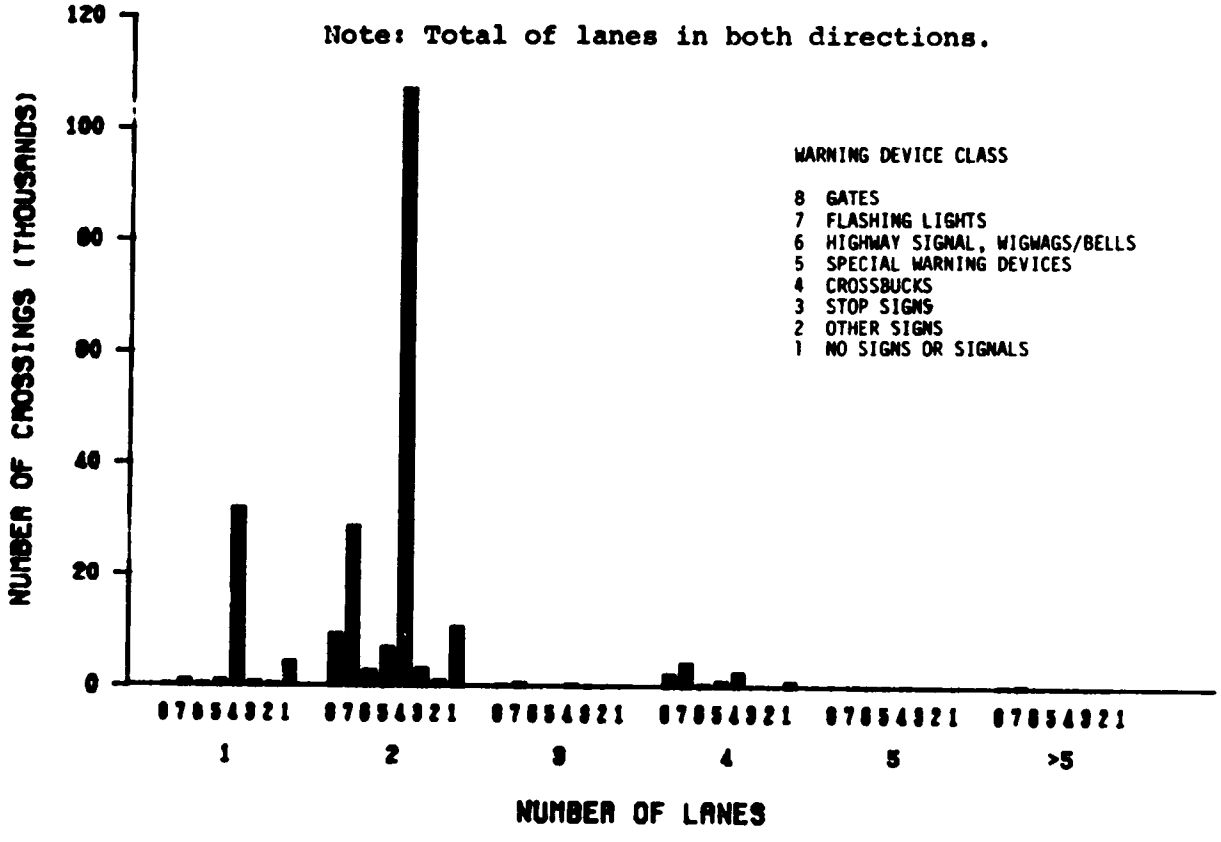


FIGURE 3-18. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. WARNING DEVICE CLASS

TABLE 3-26. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. ANNUAL AVERAGE DAILY TRAFFIC

NO. OF LANES	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
1	34142	1860	1055	1090	234	105	38486
2	80171	21776	20486	34860	7746	2476	167515
3	113	56	82	360	342	249	1202
4	589	324	477	2562	2690	3464	10106
5	9	3	10	46	92	280	440
>5	28	7	19	75	101	474	704
TOTAL	115052	24026	22129	38993	11205	7048	218453

Note: Total of lanes in both directions.

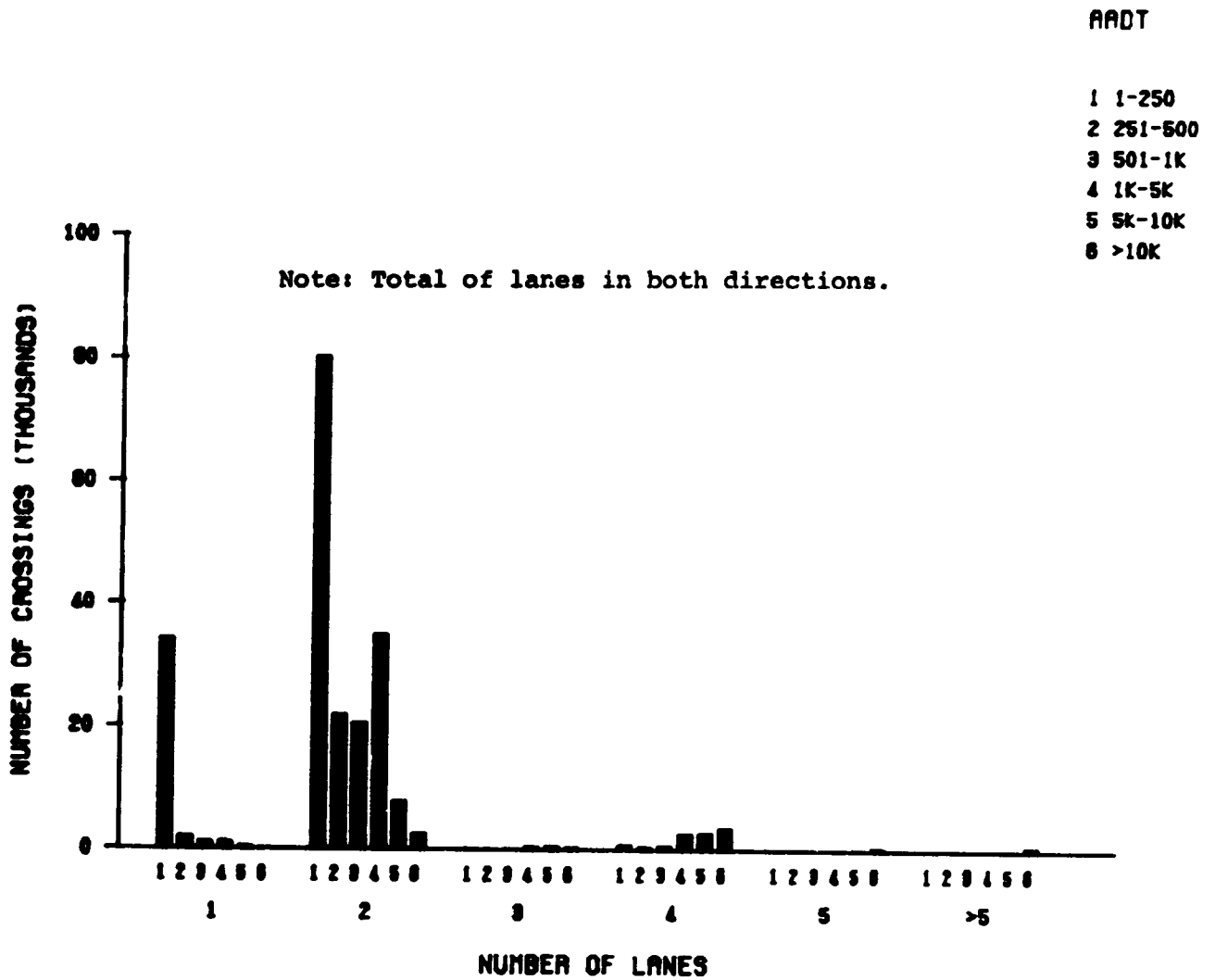


FIGURE 3-19. CROSSINGS BY NUMBER OF TRAFFIC LANES VS. ANNUAL AVERAGE DAILY TRAFFIC

3.5 CHARACTERISTICS OF WARNING DEVICES

TABLE 3-27. CROSSINGS BY DISTRIBUTION OF WARNING DEVICES

WARNING DEVICE	CROSSINGS WITH NONE OF THE DEVICE INDICATED	CROSSINGS WITH AT LEAST ONE OF THE DEVICE INDICATED
REFLECTORIZED CROSSBUCKS	93740	125422
NON-REFLECTORIZED CROSSBUCKS	178963	40199
STANDARD HIGHWAY STOP SIGNS	207490	11672
OTHER STOP SIGNS	213329	5833
OTHER SIGNS	207594	11568
RED AND WHITE REFLECTORIZED GATES	212651	6511
OTHER COLORED GATES	212842	6320
CANTILEVERED FLASHING LIGHTS OVER TRAFFIC LANES	213905	5257
CANTILEVERED FLASHING LIGHTS NOT OVER TRAFFIC LANES	217993	1169
MAST MOUNTED FLASHING LIGHTS	177655	41507
OTHER FLASHING LIGHTS	217405	1757
HIGHWAY TRAFFIC SIGNALS	214197	965
WIGWAGS	217014	2148
BELLS	188339	30823
SPECIAL WARNING DEVICES	210744	8418

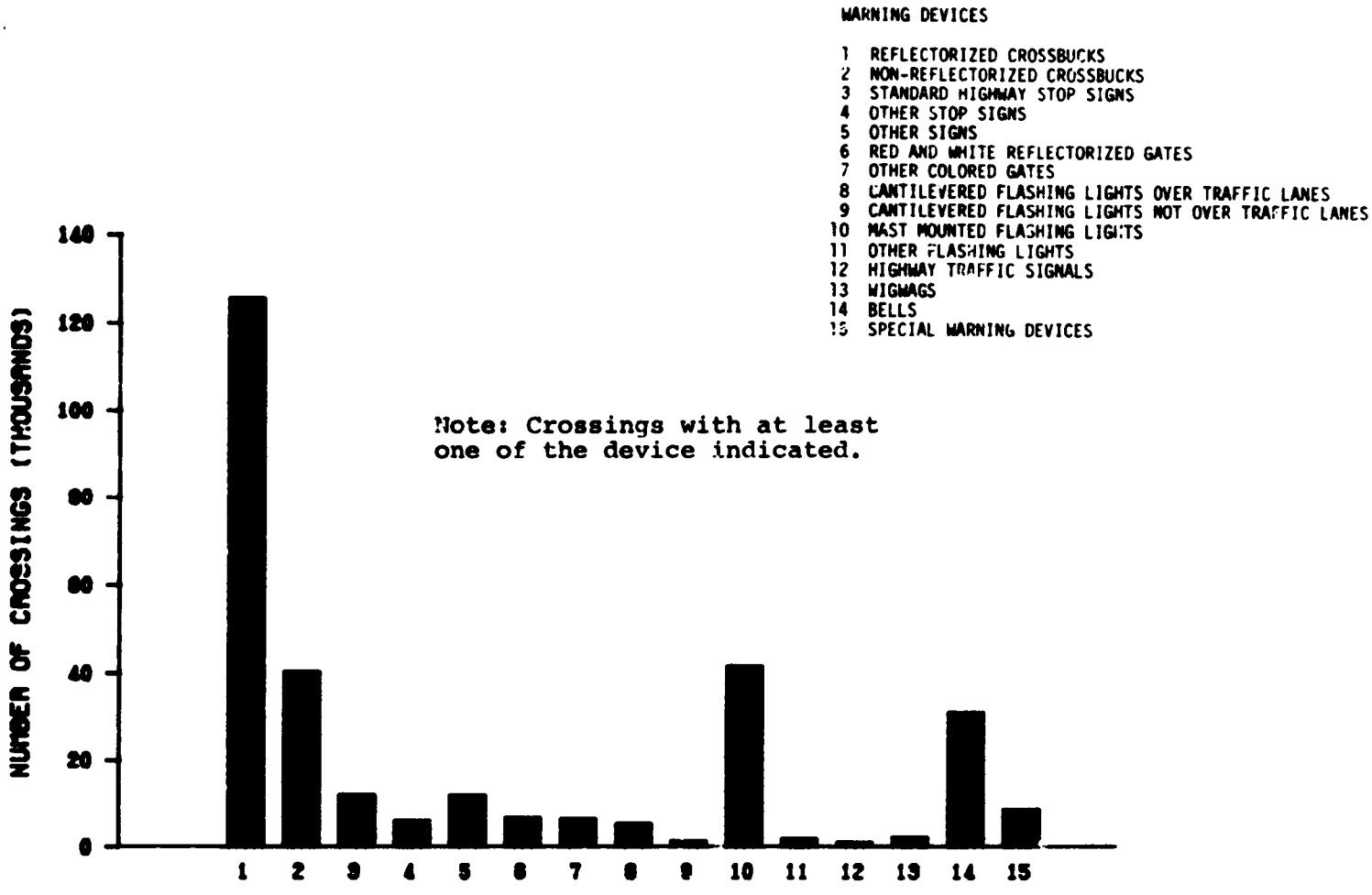
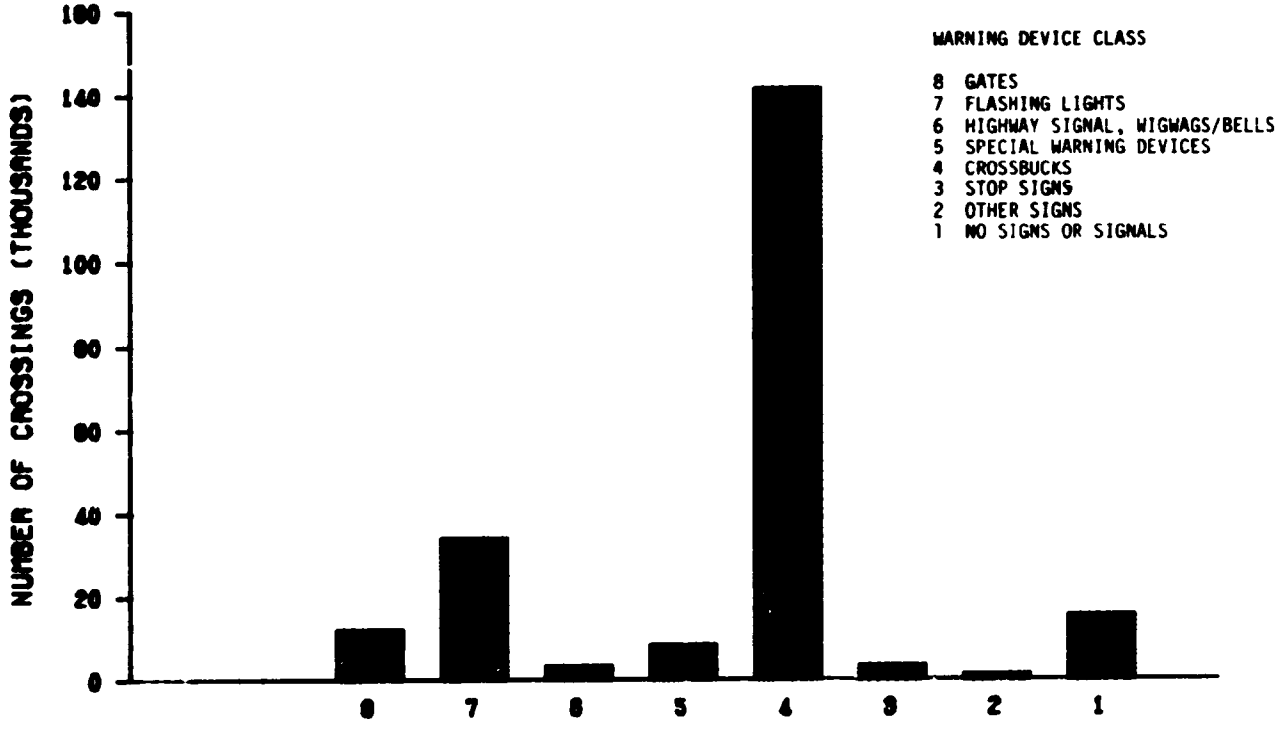


FIGURE 3-20. CROSSINGS BY DISTRIBUTION OF WARNING DEVICES

TABLE 3-28. CROSSINGS BY WARNING DEVICE CLASS

CLASS CODE	WARNING DEVICE CLASS	NO. XINGS
8	GATES	11983
7	FLASHING LIGHTS	33969
6	HIGHWAY SIGNALS, WIGWAGS OR BELLS	3395
5	SPECIAL WARNING DEVICES	8418
4	CROSSBUCKS	141477
3	STOP SIGNS	3525
2	OTHER SIGNS	1079
1	NO SIGNS OR SIGNALS	15316



WARNING DEVICE CLASS

FIGURE 3-21. CROSSINGS BY WARNING DEVICE CLASS

TABLE 3-29. CROSSINGS BY WARNING DEVICE GROUP (ACTIVE/PASSIVE) VS. STATE

	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
ALABAMA	695	4108	4803
ALASKA	45	176	221
ARIZONA	264	796	1060
ARKANSAS	544	3545	4089
CALIFORNIA	4303	5179	9482
COLORADO	482	1872	2354
CONN.	241	329	570
DELAWARE	115	148	263
D.C.	3	67	70
FLORIDA	1634	4330	5964
GEORGIA	856	6074	6930
HAWAII	0	6	6
IDAHO	216	1855	2071
ILLINOIS	4636	9261	13897
INDIANA	3145	7000	10145
IOWA	1524	7542	9066
KANSAS	1152	8699	9851
KENTUCKY	833	2859	3692
LOUISIANA	805	4123	4928
MAINE	424	695	1119
MARYLAND	296	827	1123
MASS.	649	581	1230
MICHIGAN	2518	5939	8457
MINNESOTA	1069	7035	8104
MISS.	385	3196	3581
MISSOURI	1294	5356	6650
MONTANA	275	2021	2296
NEBRASKA	763	4817	5580
NEVADA	90	268	358
N.H.	195	522	717
NEW JERSEY	1025	1177	2202
NEW MEXICO	179	690	869
NEW YORK	2077	2373	4450
N.C.	973	4471	5444
N.D.	278	5466	5744
OHIO	3084	6879	9963
OKLAHOMA	834	4941	5775
OREGON	488	2481	2969
PENN.	1995	4769	6764
R.I.	50	92	142
S.C.	446	4006	4452
S.D.	197	3196	3393
TENNESSEE	607	3559	4166
TEXAS	3424	11192	14616
UTAH	276	1096	1372
VERMONT	162	432	594
VIRGINIA	721	2085	2806
WASHINGTON	701	3589	4290
W.VA.	363	2097	2460
WISCONSIN	1887	5452	7339
WYOMING	124	496	620
P.R.	5	50	55
TOTAL	49347	169815	219162

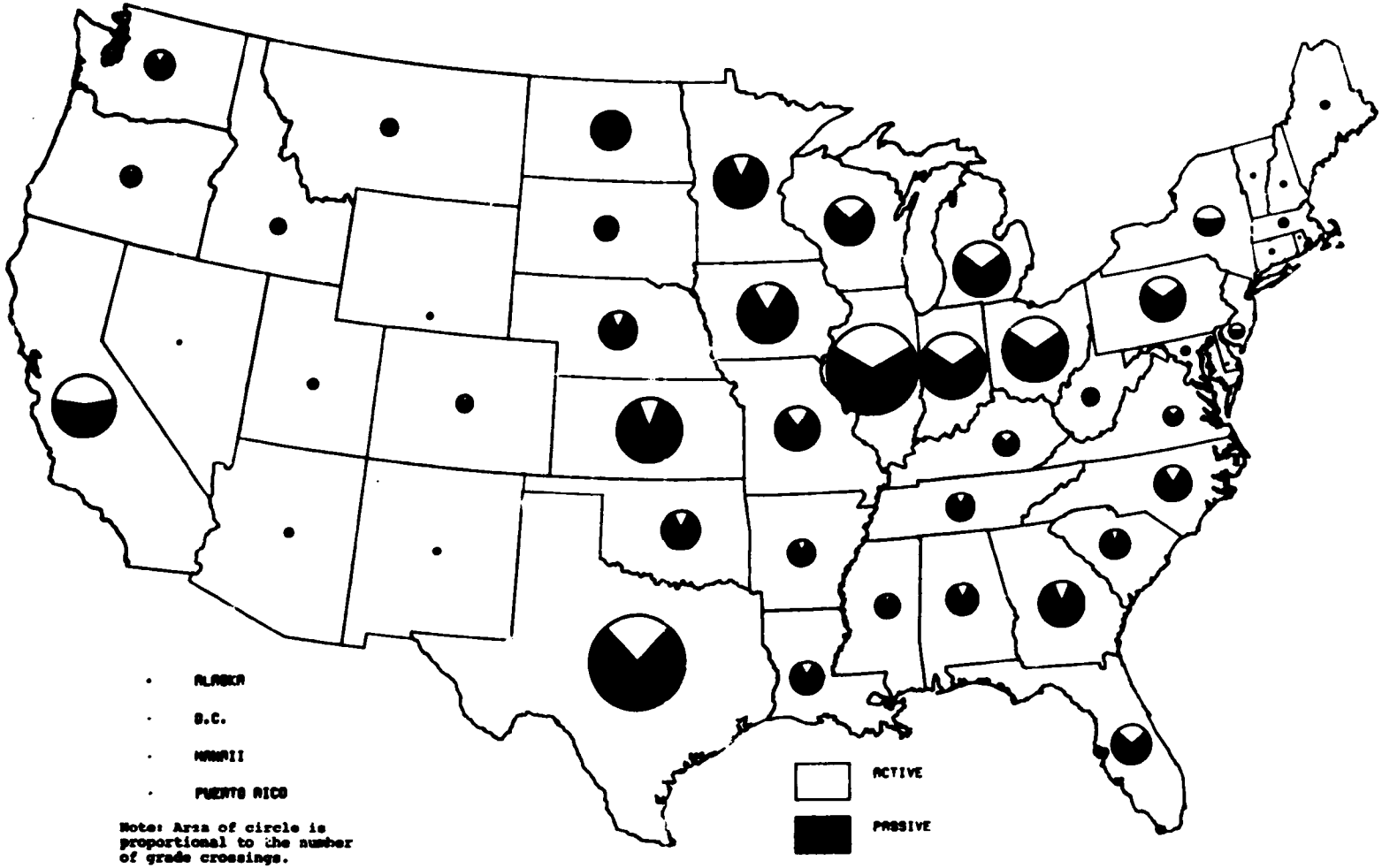


FIGURE 3-22. CROSSINGS BY WARNING DEVICE GROUP (ACTIVE/PASSIVE) VS. STATE

TABLE 3-30. CROSSINGS BY WARNING DEVICE CLASS VS. STATE

	WARNING DEVICE CLASS								
	WDC 8	WDC 7	WDC 6	WDC 5	WDC 4	WDC 3	WDC 2	WDC 1	TOTAL
ALABAMA	84	587	24	51	3517	75	10	455	4803
ALASKA	1	44	0	18	142	2	1	13	221
ARIZONA	115	133	16	96	615	8	0	77	1060
ARKANSAS	102	412	30	98	2948	20	1	478	4089
CALIFORNIA	2186	1506	611	217	4410	97	21	434	9482
COLORADO	64	376	42	345	1389	21	2	115	2354
CONN.	47	186	8	105	85	10	3	126	570
DELAWARE	30	85	0	48	81	2	0	17	263
D.C.	0	3	0	12	25	6	0	24	70
FLORIDA	649	971	14	200	3548	47	112	423	5964
GEORGIA	192	640	24	166	5383	18	6	501	6930
HAWAII	0	0	0	0	6	0	0	0	6
IDAHO	15	190	11	18	1721	7	2	107	2071
ILLINOIS	1512	2881	243	363	8268	12	2	616	13897
INDIANA	611	2351	183	290	5852	92	16	750	10145
IOWA	275	1078	171	83	7112	6	1	340	9066
KANSAS	221	810	121	272	8095	4	1	327	9851
KENTUCKY	171	624	38	140	2120	8	1	590	3692
LOUISIANA	101	686	16	85	2878	311	26	823	4928
MAINE	58	327	39	171	504	0	4	16	1119
MARYLAND	68	192	36	90	484	15	44	194	1123
MASS.	164	442	43	247	283	2	2	47	1230
MICHIGAN	544	1865	89	286	5349	20	48	236	8457
MINNESOTA	128	921	20	45	6684	18	2	286	8104
MISS.	21	385	19	59	397	2371	25	344	3581
MISSOURI	170	946	178	162	4697	8	4	485	6650
MONTANA	60	205	10	22	1768	4	1	226	2296
NEBRASKA	185	513	65	70	4467	4	23	273	5580
NEVADA	21	64	5	9	220	0	7	32	358
N.H.	25	154	16	180	303	9	4	26	717
NEW JERSEY	356	617	32	414	635	6	3	119	2202
NEW MEXICO	51	116	12	13	638	0	6	33	869
NEW YORK	674	1299	104	536	1547	3	56	231	4450
N.C.	156	807	10	262	3643	7	28	535	5444
N.D.	58	218	2	0	5070	2	0	394	5744
OHIO	682	2305	97	116	6235	15	17	496	9963
OKLAHOMA	81	694	59	173	4555	4	11	198	5775
OREGON	208	194	86	112	1898	100	12	359	2969
PENN.	498	1385	112	801	2829	78	450	611	6764
R.I.	6	25	19	37	28	5	2	20	142
S.C.	118	323	5	384	3322	1	18	781	4452
S.D.	1	191	5	0	3074	0	1	121	3393
TENNESSEE	104	486	17	305	2814	36	2	792	4166
TEXAS	519	2755	150	481	9545	32	16	1118	14616
UTAH	30	232	14	76	865	6	51	98	1372
VERMONT	12	183	7	57	386	1	7	21	594
VIRGINIA	218	456	47	245	1886	1	12	341	2806
WASHINGTON	94	547	60	63	2975	21	12	518	4290
W.VA.	51	292	20	50	1689	8	6	344	2460
WISCONSIN	226	1206	455	294	4911	1	3	243	7139
WYOMING	16	100	8	1	431	1	1	62	620
P.R.	4	1	0	50	0	0	0	0	55
TOTAL	11983	33949	3395	8418	141477	3525	1079	15316	219162

WARNING DEVICE CLASS CODES

WDC 8 GATES
WDC 7 FLASHING LIGHTS
WDC 6 HIGHWAY SIGNALS, WIGWAGS OR BELLS
WDC 5 SPECIAL WARNING DEVICES
WDC 4 CROSSBUCKS
WDC 3 STOP SIGNS
WDC 2 OTHER SIGNS
WDC 1 NO SIGNS OR SIGNALS

TABLE 3-31. CROSSINGS BY WARNING DEVICE GROUP (ACTIVE/PASSIVE) VS. ANNUAL AVERAGE DAILY TRAFFIC

WARNING DEVICE GROUP	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
ACTIVE	7437	4999	7127	18190	6703	4801	49257
PASSIVE	107652	19043	15017	20843	4513	2248	169316
TOTAL	115089	24042	22144	39033	11216	7049	218573

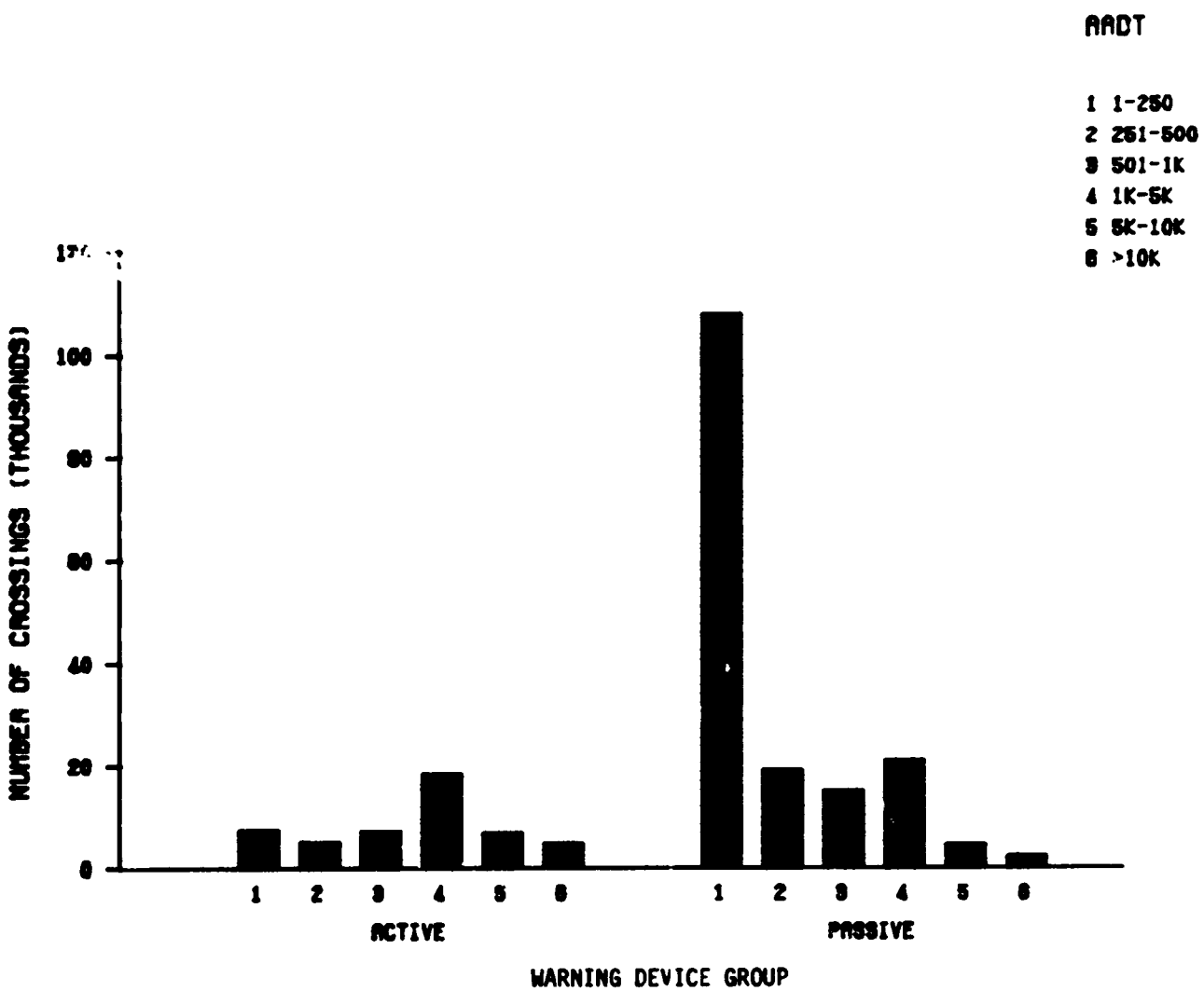


FIGURE 3-23. CROSSINGS BY WARNING DEVICE GROUP (ACTIVE/PASSIVE) VS. ANNUAL AVERAGE DAILY TRAFFIC

TABLE 3-32. CROSSINGS BY PAVEMENT MARKINGS

MARKING	NO. XINGS
STOPLINE	4959
RR XING SYMBOL	4502
BOTH	22024
NONE,PAVED ROAD	116749
NONE, UNPAVED	70928

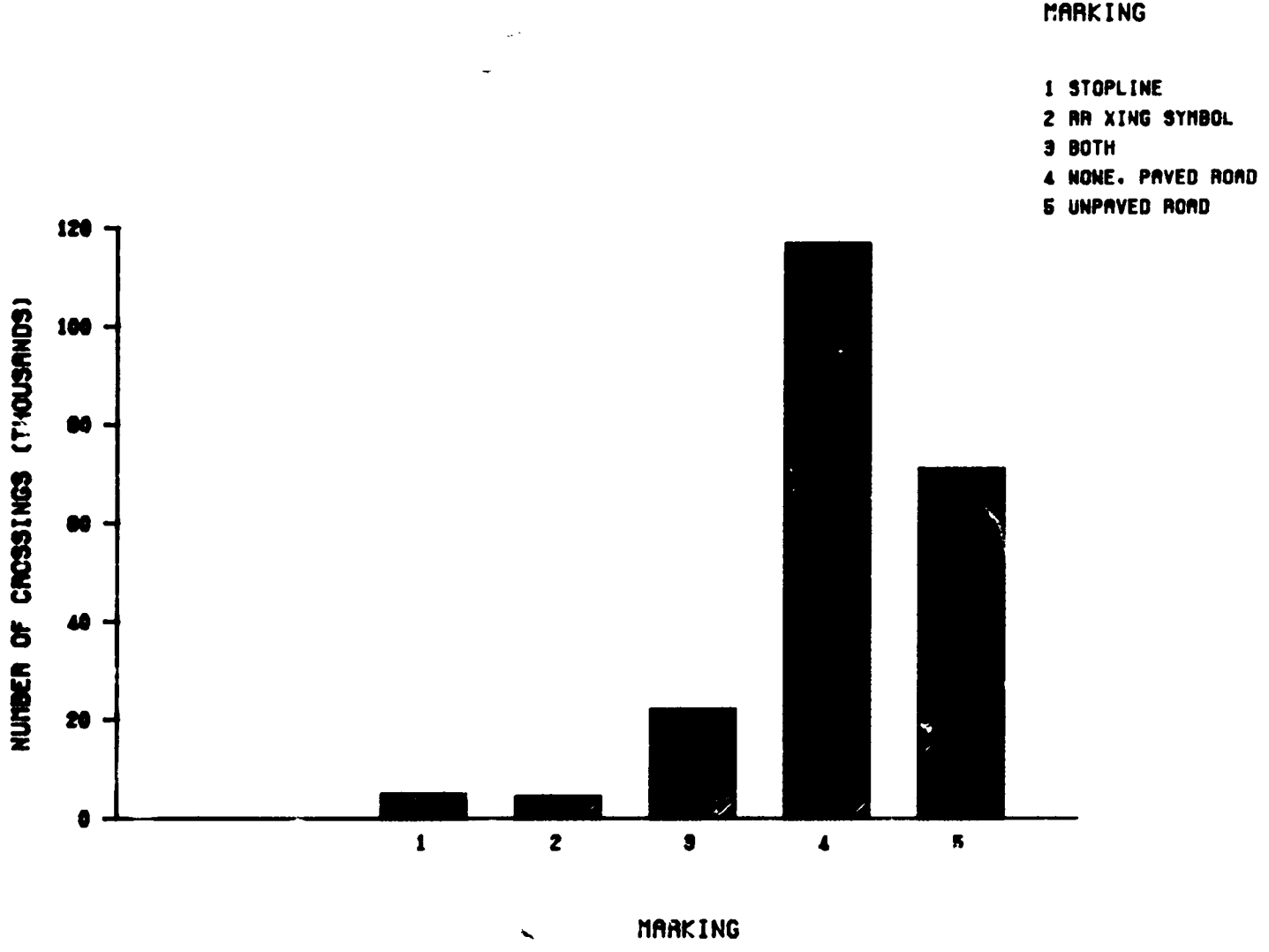


FIGURE 3-24. CROSSINGS BY PAVEMENT MARKINGS

TABLE 3-33. CROSSINGS BY PAVEMENT MARKINGS VS. STATE

	MARKING					
	STOP LINES	RR XING SYMBOL	BOTH	NONE PAVED	NONE UNPAVED	TOTAL
ALABAMA	32	101	106	3370	1194	4803
ALASKA	3	1	13	93	111	221
ARIZONA	48	11	180	484	337	1060
ARKANSAS	52	88	109	2072	1766	4089
CALIFORNIA	1144	246	5351	2355	336	9482
COLORADO	19	29	47	1283	976	2354
CONN.	22	8	44	480	16	570
DELAWARE	2	17	15	221	8	263
D.C.	1	0	0	68	1	70
FLORIDA	324	120	1346	3005	1169	5964
GEORGIA	47	143	260	4270	2210	6930
HAWAII	2	0	0	4	0	6
IDAHO	34	2	62	1012	961	2071
ILLINOIS	114	262	504	8793	4224	13897
INDIANA	75	153	379	7552	1986	10145
IOWA	82	112	626	3146	5100	9066
KANSAS	24	78	260	3172	6317	9851
KENTUCKY	97	101	295	2237	962	3692
LOUISIANA	3	19	2	3669	1235	4928
MAINE	9	15	96	834	165	1119
MARYLAND	48	24	83	884	84	1123
MASS.	46	14	31	1099	40	1230
MICHIGAN	82	138	597	5152	2488	8457
MINNESOTA	122	97	444	3155	4286	8104
MISS.	15	21	10	2375	1160	3581
MISSOURI	88	151	598	2740	3073	6650
MONTANA	10	27	26	666	1567	2296
NEBRASKA	51	52	285	1356	3836	5580
NEVADA	9	1	40	144	164	358
N.H.	22	7	15	591	82	717
NEW JERSEY	50	84	86	1847	135	2202
NEW MEXICO	4	15	39	361	450	869
NEW YORK	130	247	296	3369	408	4450
N.C.	344	149	985	3076	890	5444
N.D.	13	8	187	756	4780	5744
OHIO	741	792	4785	2766	879	9963
OKLAHOMA	18	17	45	2948	2747	5775
OREGON	142	321	464	1383	659	2969
PENN.	70	145	163	5603	783	6764
R.I.	13	0	1	128	0	142
S.C.	105	126	460	2917	844	4452
S.D.	20	4	108	893	2368	3393
TENNESSEE	11	23	59	3095	978	4166
TEXAS	216	371	1163	8195	4671	14616
UTAH	16	8	86	892	370	1372
VERMONT	13	17	23	349	192	594
VIRGINIA	150	75	467	1712	402	2806
WASHINGTON	164	30	580	2538	978	4290
W.VA.	25	10	102	1503	820	2460
WISCONSIN	72	17	63	5921	1266	7339
WYOMING	15	4	38	166	397	620
P.R.	0	1	0	49	5	55
TOTAL	4959	4502	22024	116749	70928	219162

TABLE 3-34. CROSSINGS BY PAVEMENT MARKINGS VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

MARKING	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
STOPLINE	2410	2549	4959
RR XING SYMBOL	2333	2169	4502
BOTH	11381	10643	22024
NONE, PAVED ROAD	31378	85371	116749
NONE, UNPAVED	1845	69083	70928
TOTAL	49347	169815	219162

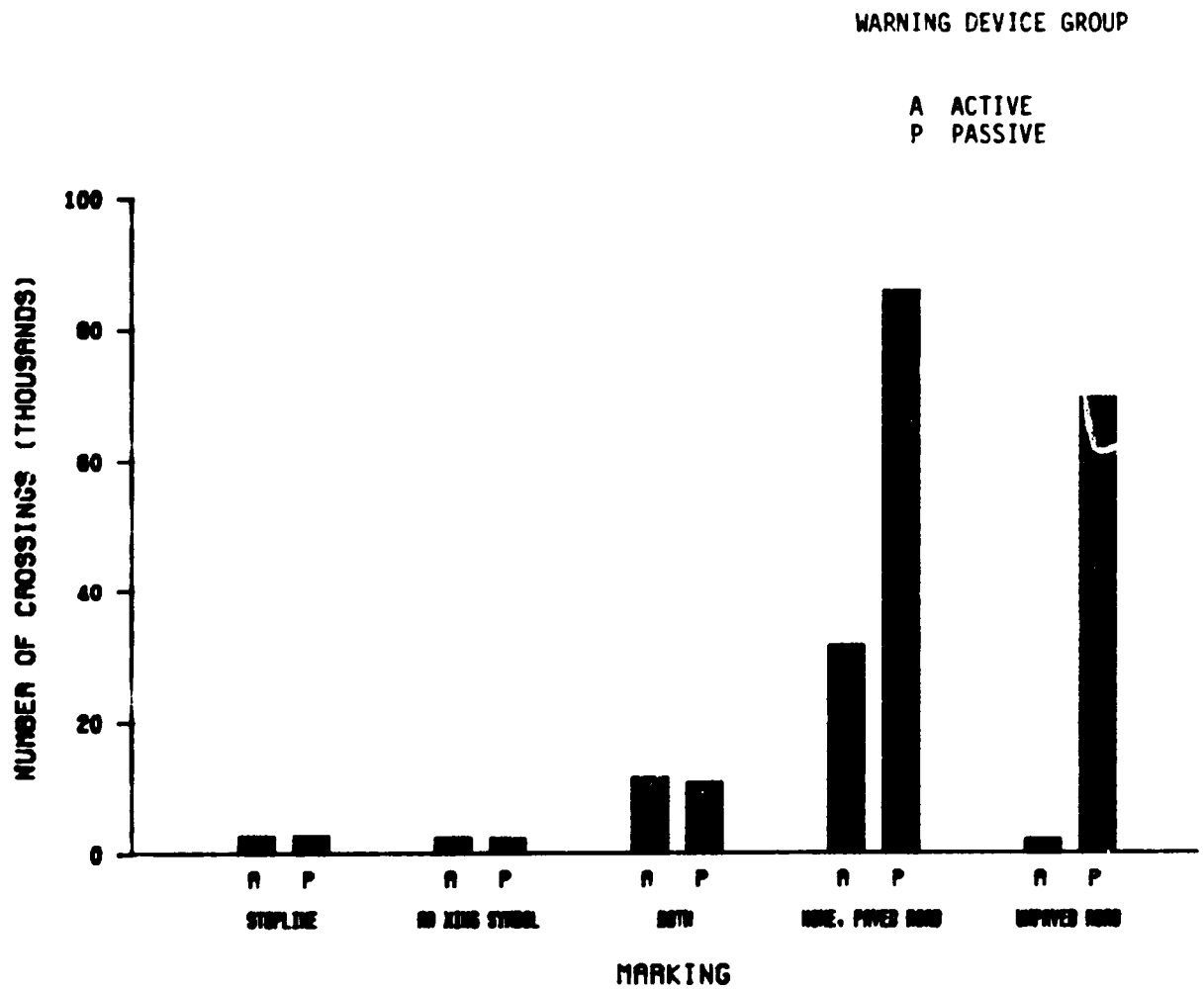


FIGURE 3-25. CROSSINGS BY PAVEMENT MARKINGS VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 3-35. CROSSINGS BY PAVEMENT MARKINGS VS. WARNING DEVICE CLASS

WARNING DEVICE CLASS	MARKING					
	STOP LINES	PP XING SYMBOL	BOTH	NONE PAVED	NONE UNPAVED	TOTAL
GATES	703	581	3430	6950	319	11983
FLASHING LIGHTS	1526	1658	7395	22275	1115	33969
HWY. SIGNALS, WIGWAGS, BELLS	181	94	556	2153	411	3395
SPECIAL WARNING DEVICES	128	112	410	6728	1040	8418
CROSSBUCKS	2287	1968	9903	66023	61290	141477
STOP SIGNS	49	19	21	2344	1092	3525
OTHER SIGNS	14	15	44	717	289	1079
NO SIGNS OR SIGNALS	71	55	259	9559	5372	15316
TOTAL	4959	4502	22024	116749	70928	219162

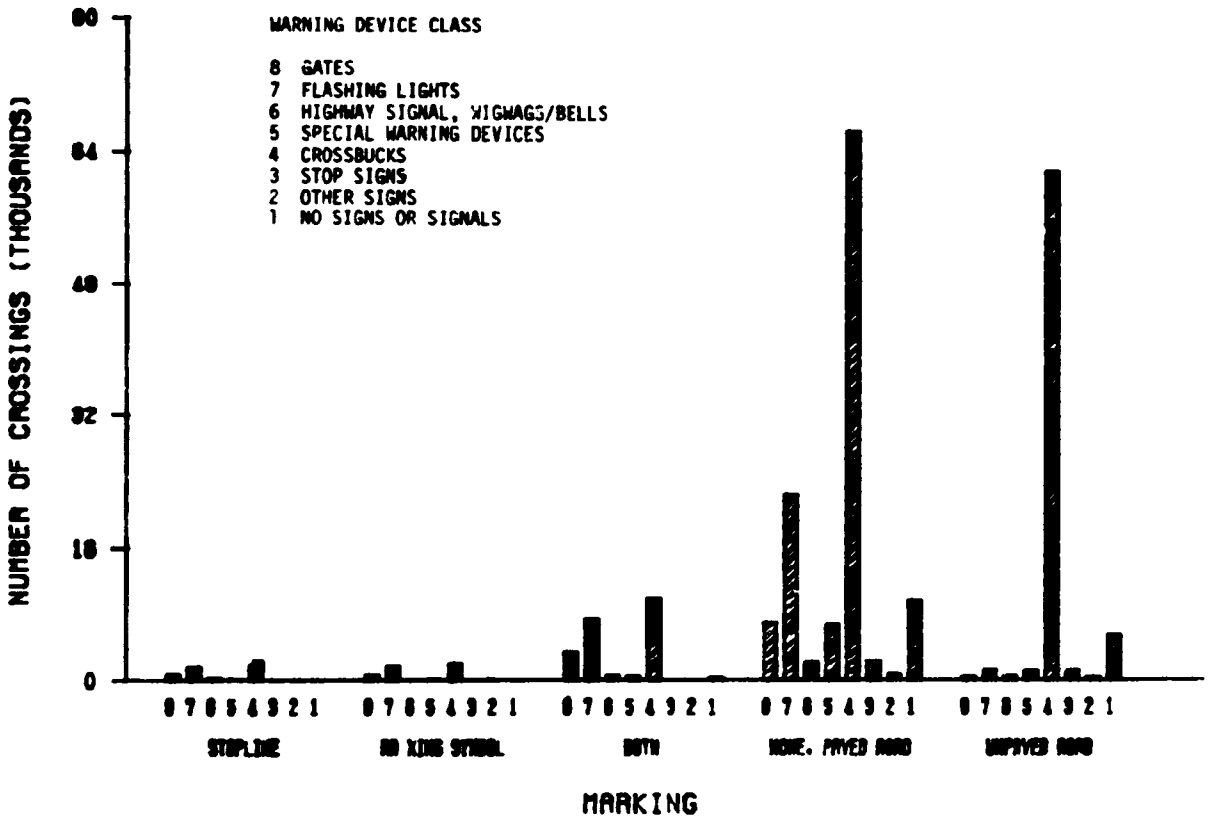


FIGURE 3-26. CROSSINGS BY PAVEMENT MARKINGS VS. WARNING DEVICE CLASS

TABLE 3-36. CROSSINGS BY PAVEMENT MARKINGS VS. ANNUAL AVERAGE DAILY TRAFFIC

MARKING	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
STOPLINE	983	672	682	1512	535	509	4953
RR XING SYMBOL	997	563	688	1501	450	294	4493
BOTH	4490	2860	3248	7196	2415	1793	22002
NONE, PAVED ROAD	43382	17155	16208	27703	7597	4384	116429
NONE, UNPAVED	65237	2792	1318	1121	159	69	70696
TOTAL	115089	24042	22144	39033	11216	7049	218573

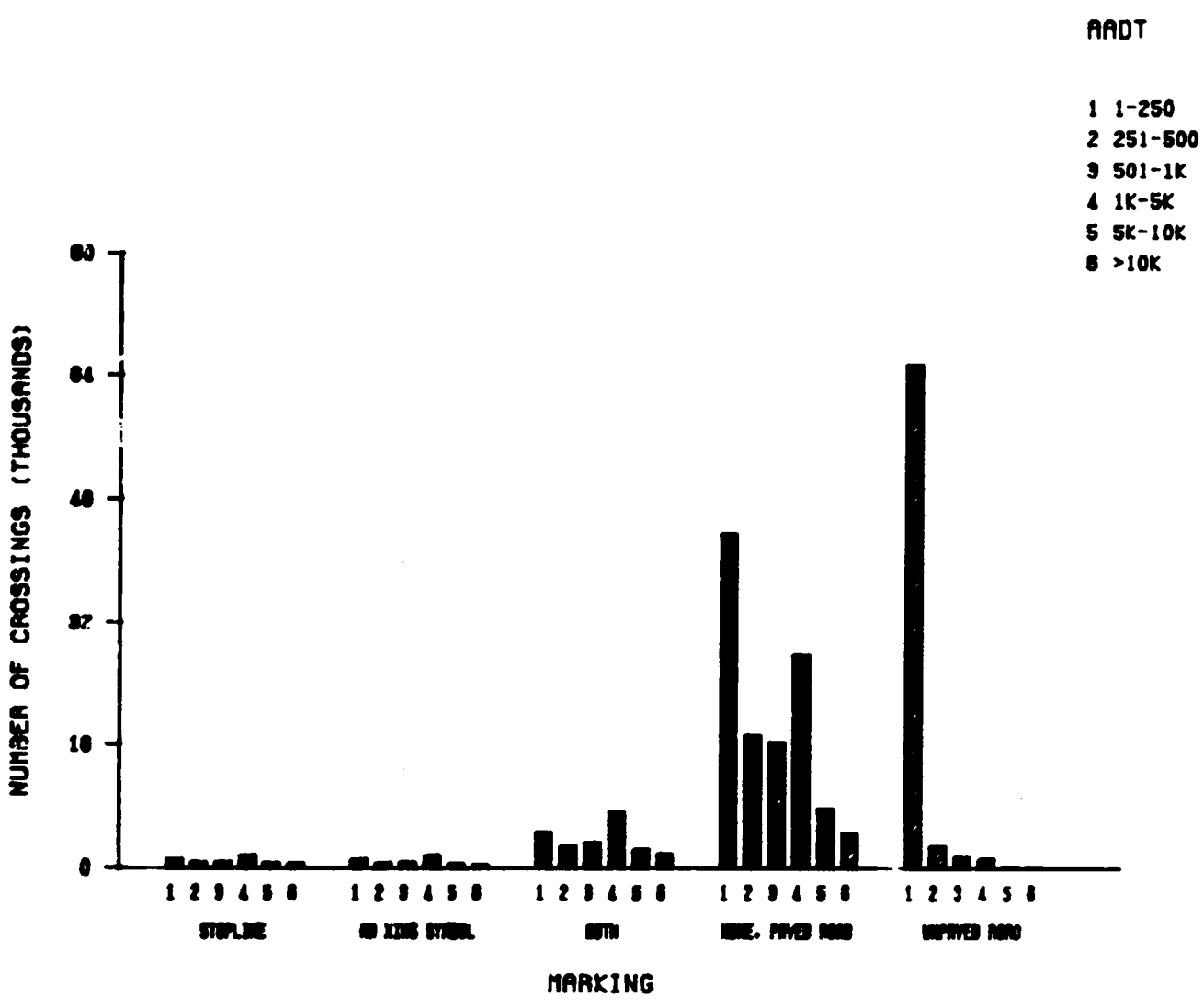


FIGURE 3-27. CROSSINGS BY PAVEMENT MARKINGS VS. ANNUAL AVERAGE DAILY TRAFFIC

TABLE 3-37. CROSSINGS BY RR ADVANCE WARNINGS VS. STATE

	RR ADVANCE WARNING		
	YES	NO	TOTAL
ALABAMA	872	3931	4803
ALASKA	67	154	221
ARIZONA	452	608	1060
ARKANSAS	551	3538	4089
CALIFORNIA	7436	2046	9482
COLORADO	772	1564	2336
CONN.	229	340	569
DELAWARE	223	40	263
D.C.	30	40	70
FLORIDA	2392	3545	5937
GEORGIA	1052	5878	6930
HAWAII	1	5	6
IDAHO	389	1682	2071
ILLINOIS	4926	8971	13897
INDIANA	5160	4985	10145
IOWA	4753	4313	9066
KANSAS	3556	6295	9851
KENTUCKY	760	2932	3692
LOUISIANA	1229	3699	4928
MAINE	896	223	1119
MARYLAND	418	705	1123
MASS.	888	342	1230
MICHIGAN	5460	2997	8457
MINNESOTA	3226	4878	8104
MISS.	360	3221	3581
MISSOURI	1253	5397	6650
MONTANA	330	1966	2296
NEBRASKA	1828	3752	5580
NEVADA	95	263	358
N.H.	513	204	717
NEW JERSEY	776	1426	2202
NEW MEXICO	167	702	869
NEW YORK	3270	1180	4450
N.C.	3522	1922	5444
N.D.	920	4824	5744
OHIO	6176	3787	9963
OKLAHOMA	981	4794	5775
OREGON	1705	1264	2969
PENN.	2355	4409	6764
R.I.	15	127	142
S.C.	2225	2227	4452
S.D.	919	2474	3393
TENNESSEE	537	3629	4166
TEXAS	3133	11483	14616
UTAH	376	996	1372
VERMONT	202	392	594
VIRGINIA	1679	1107	2786
WASHINGTON	2852	1438	4290
W.VA.	492	1968	2460
WISCONSIN	3195	4144	7339
WYOMING	107	513	620
P.R.	31	24	55
TOTAL	85752	133344	219096

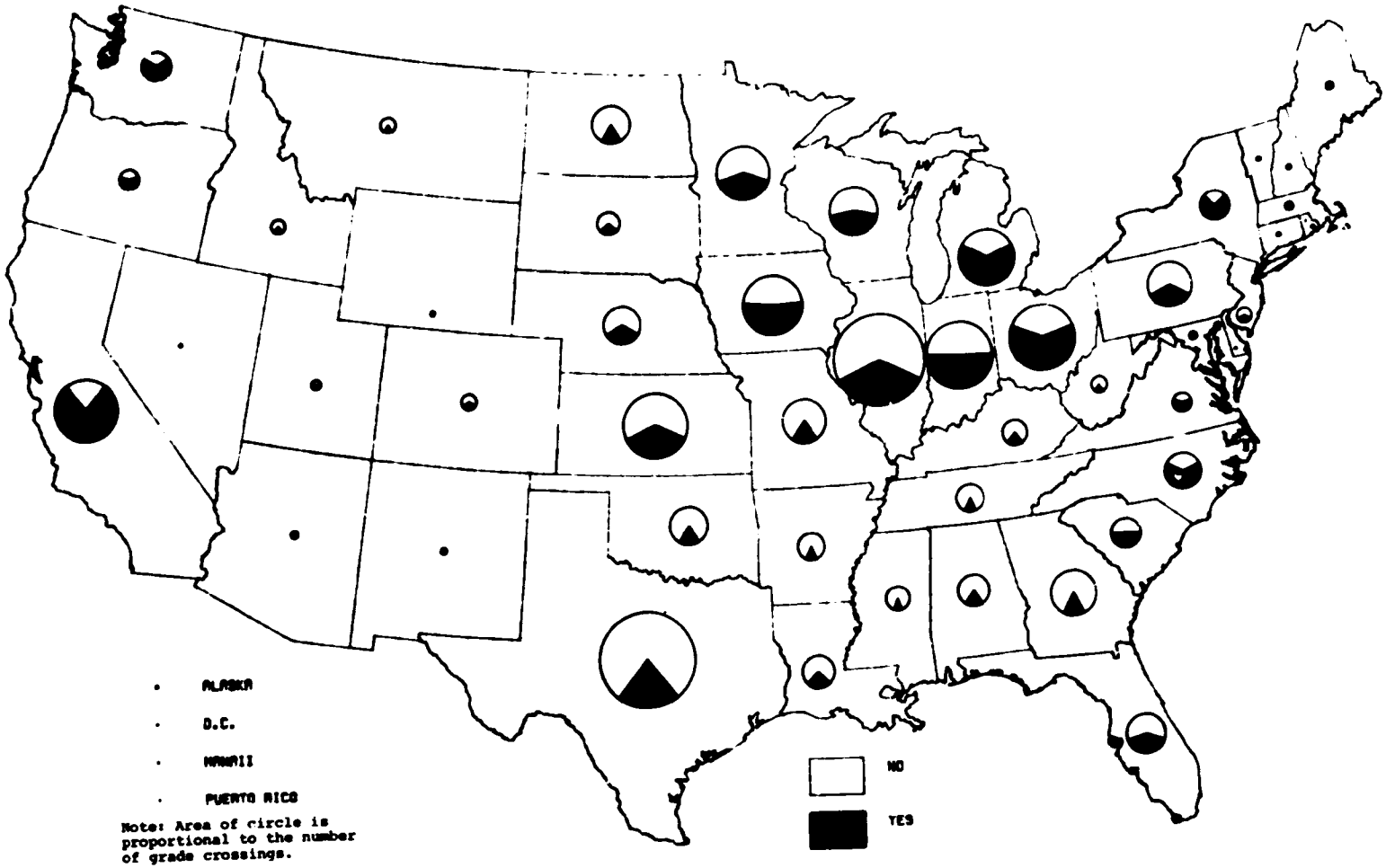


FIGURE 3-28. CROSSINGS BY RR ADVANCE WARNINGS VS. STATE

3.6 CROSSING CHARACTERISTICS

TABLE 3-38. CROSSINGS BY SMALLEST CROSSING ANGLE

ANGLE		NO. XINGS
0-29	DEGREES	7815
30-59	DEGREES	35769
60-90	DEGREES	175549

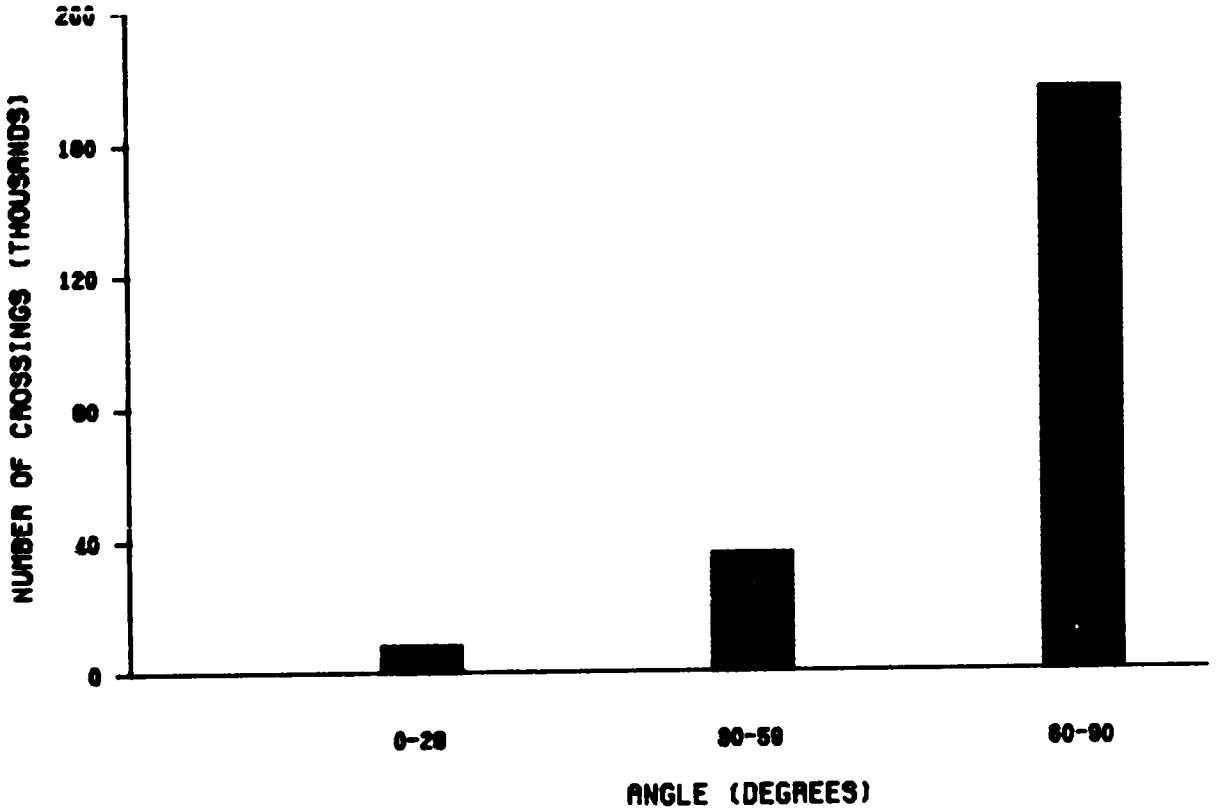


FIGURE 3-29. CROSSINGS BY SMALLEST CROSSING ANGLE

TABLE 3-39. CROSSINGS BY CROSSING SURFACE

SURFACE	NO. XINGS	SURFACE	NO. XINGS
SECTION TIMBER	30098	RUBBER	255
FULL WOOD PLANK	34987	METAL SECTIONS	250
ASPHALT	118917	OTHER METAL	197
CONCRETE SLAB	819	UNCONSOLIDATED	32631
CONCRETE PAVE.	949	OTHER	159

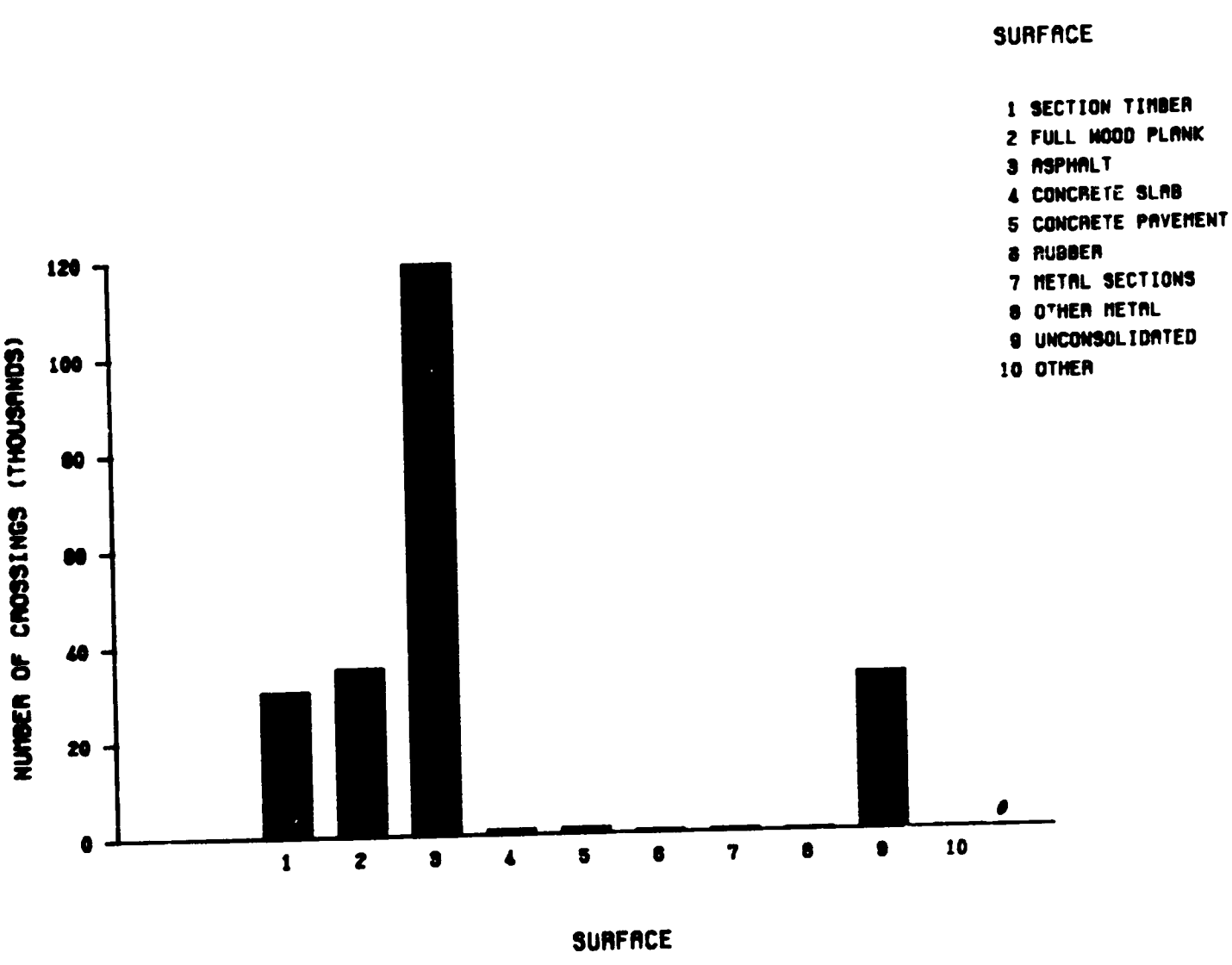


FIGURE 3-30. CROSSINGS BY CROSSING SURFACE

4. PRESENTATIONS OF OPERATIONAL CHARACTERISTICS

4.1 TRAIN TRAFFIC CHARACTERISTICS

TABLE 4-1. CROSSINGS BY NUMBER OF DAYLIGHT THRU TRAINS PER DAY

NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS
<1	87633	01-05	95290	51-55	114
1	29673	06-10	23224	56-60	69
2	33274	11-15	7336	61-65	79
3	13101	16-20	3307	66-70	1
4	13679	21-25	895	71-75	6
5	5563	26-30	629	76-80	47
6	8082	31-35	232	81-85	0
7	3158	36-40	128	86-90	8
8	4286	41-45	67	91-95	5
9	2713	46-50	66	96-99	26
>9	18000				

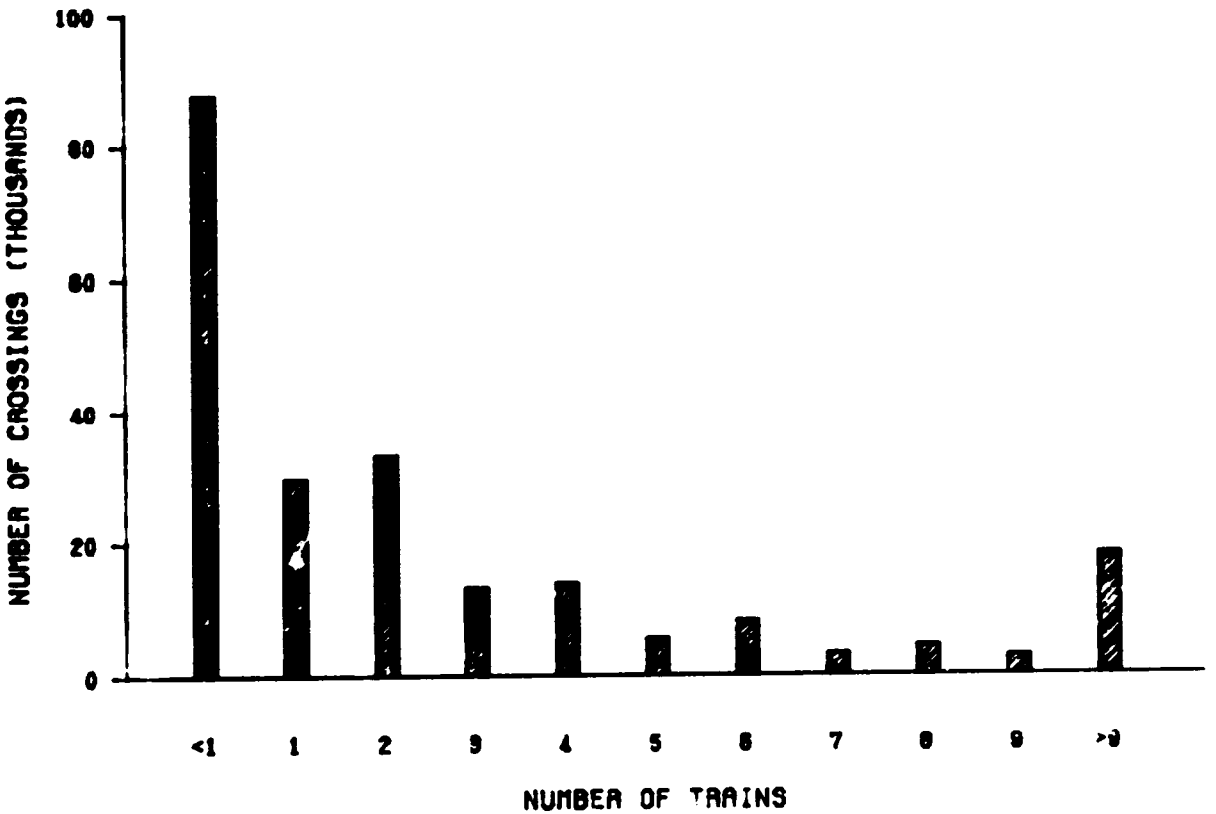


FIGURE 4-1. CROSSINGS BY NUMBER OF DAYLIGHT THRU TRAINS PER DAY

TABLE 4-2. CROSSINGS BY NUMBER OF DAYLIGHT SWITCH TRAINS PER DAY

NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS
<1	133587	01-05	77330	51-55	3
1	30372	06-10	6099	56-60	10
2	34566	11-15	934	61-65	2
3	3207	16-20	605	66-70	5
4	8023	21-25	200	71-75	5
5	1162	26-30	180	76-80	3
6	2826	31-35	29	81-85	1
7	271	36-40	85	86-90	3
8	1377	41-45	4	91-95	2
9	107	46-50	52	96-99	23
>9	3664				

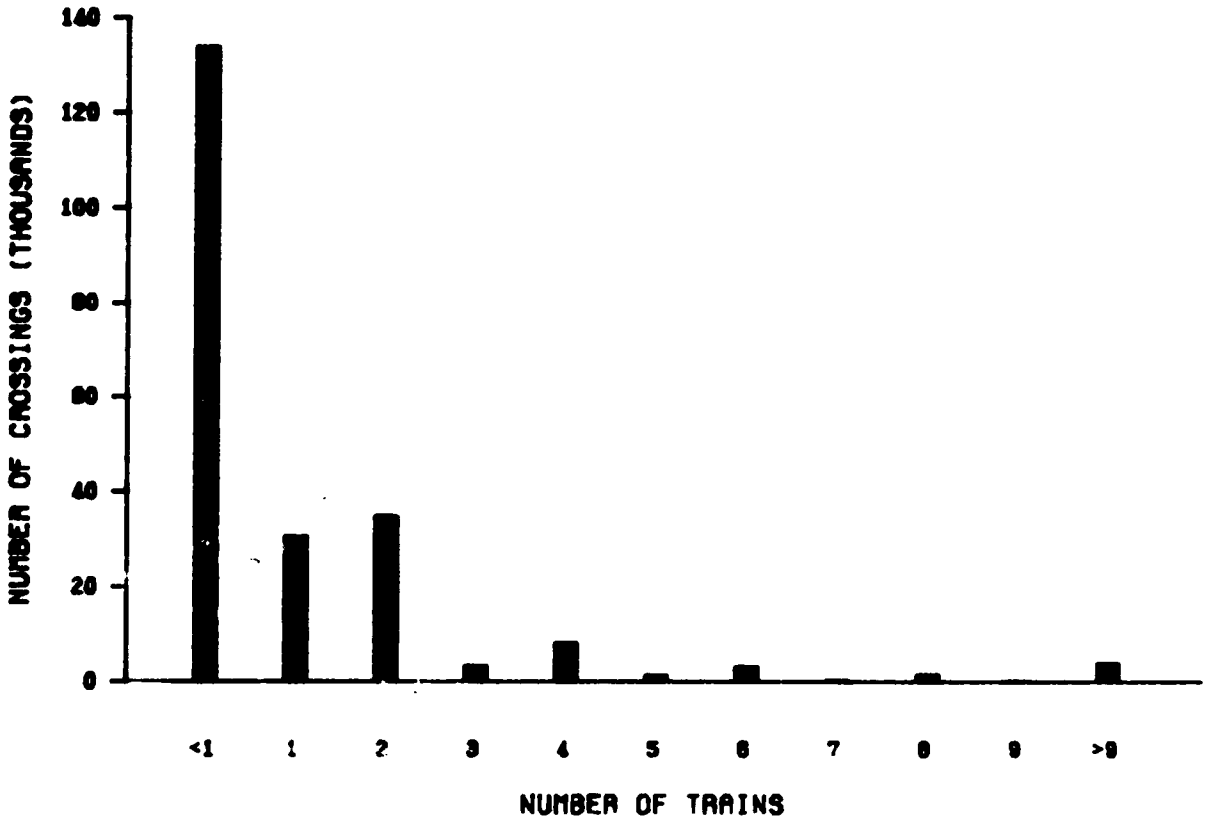


FIGURE 4-2. CROSSINGS BY NUMBER OF DAYLIGHT SWITCH TRAINS PER DAY

TABLE 4-3. CROSSINGS BY NUMBER OF NIGHT THRU TRAINS PER DAY

NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS
<1	108674	01-05	78414	51-55	0
1	23424	06-10	19555	56-60	1
2	27490	11-15	7979	61-65	1
3	11808	16-20	2818	66-70	0
4	10806	21-25	811	71-75	0
5	4886	26-30	627	76-80	0
6	6275	31-35	147	81-85	0
7	2132	36-40	99	86-90	0
8	3807	41-45	7	91-95	0
9	2894	46-50	11	96-99	18
>9	16966				

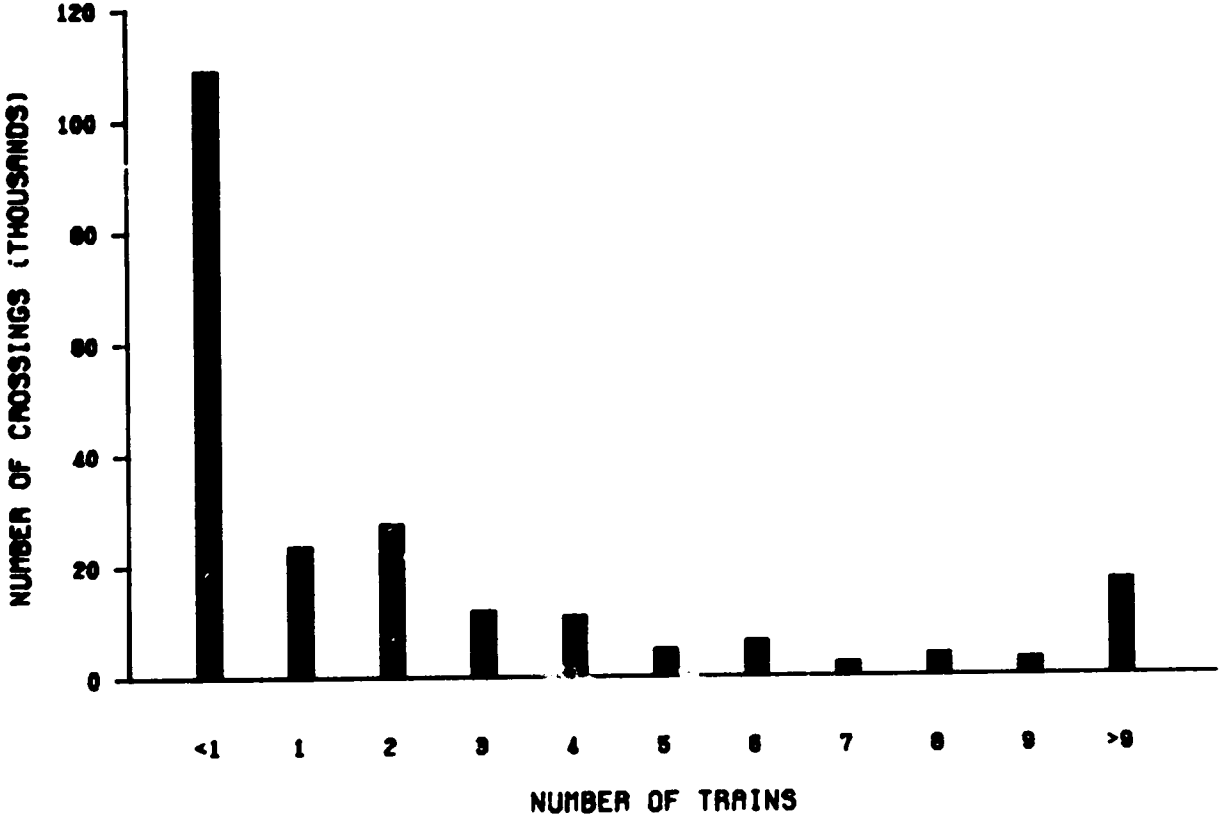


FIGURE 4-3 CROSSINGS BY NUMBER OF NIGHT THRU TRAINS PER DAY

TABLE 4-4. CROSSINGS BY NUMBER OF NIGHT SWITCH TRAINS PER DAY

NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS
<1	174314	01-05	40285	51-55	1
1	18773	06-10	3128	56-60	8
2	15087	11-15	620	61-65	3
3	2090	16-20	412	66-70	3
4	3679	21-25	152	71-75	2
5	656	26-30	87	76-80	6
6	1317	31-35	17	81-85	1
7	162	36-40	42	86-90	1
8	622	41-45	3	91-95	2
9	73	46-50	60	96-99	15
>9	2389				

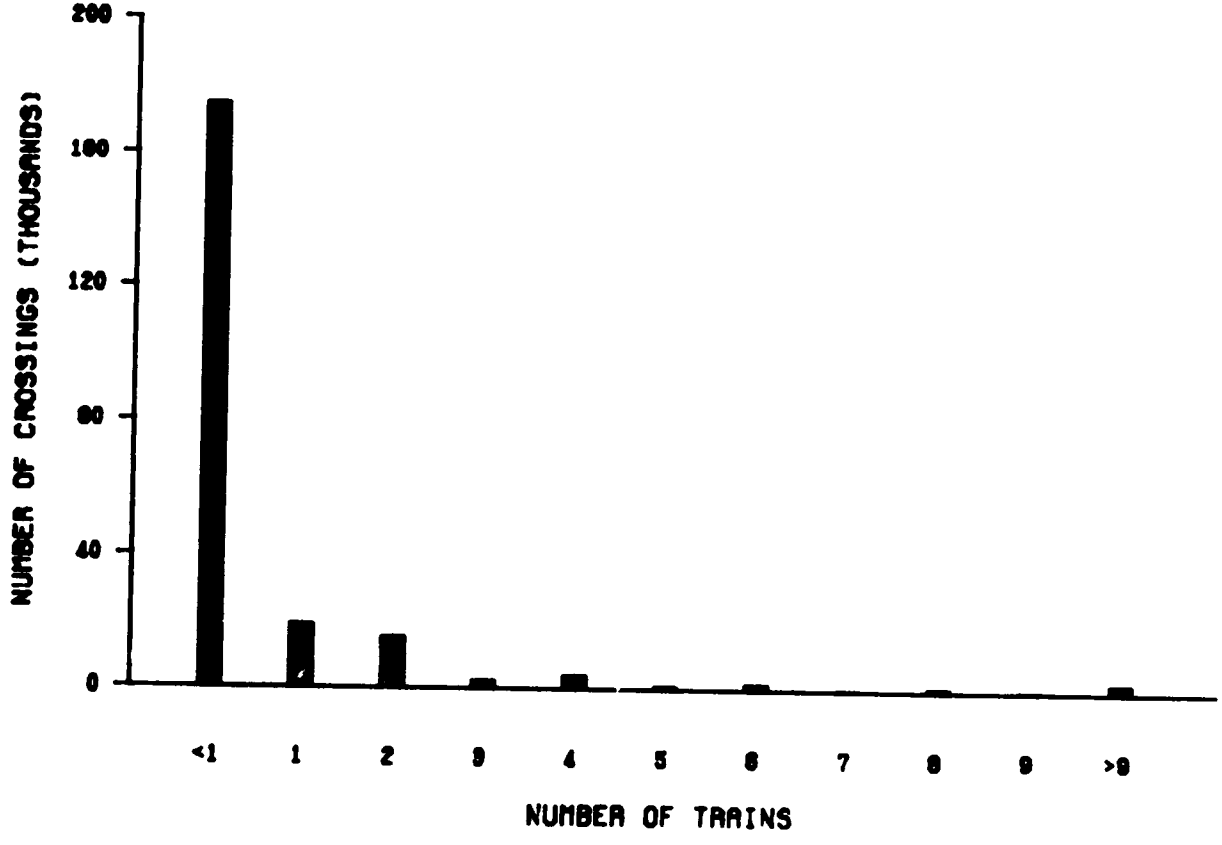


FIGURE 4-4. CROSSINGS BY NUMBER OF NIGHT SWITCH TRAINS PER DAY

TABLE 4-5. CROSSINGS BY TOTAL NUMBER OF TRAIN MOVEMENTS PER DAY

NO. TRAINS	NO. XINGS
<1	38202
1-2	66739
3-5	34531
6-10	36678
11-15	12773
16-20	12689
21-25	5536
>25	12014

NO. TRAINS	NO. XINGS	NO. TRAINS	NO. XINGS
01-05	101270	101-105	25
06-10	36678	106-110	60
11-15	12773	111-115	5
16-20	12689	116-120	10
21-25	5536	121-125	13
26-30	4568	126-130	5
31-35	2190	131-135	6
36-40	1698	136-140	12
41-45	540	141-145	8
46-50	1143	146-150	3
51-55	263	151-155	2
56-60	456	156-160	4
61-65	264	161-165	2
66-70	150	166-170	5
71-75	110	171-175	0
76-80	188	176-180	3
81-85	40	181-185	1
86-90	41	186-190	2
91-95	75	191-195	2
96-100	87	196-200	24
<1	38202	>200	9

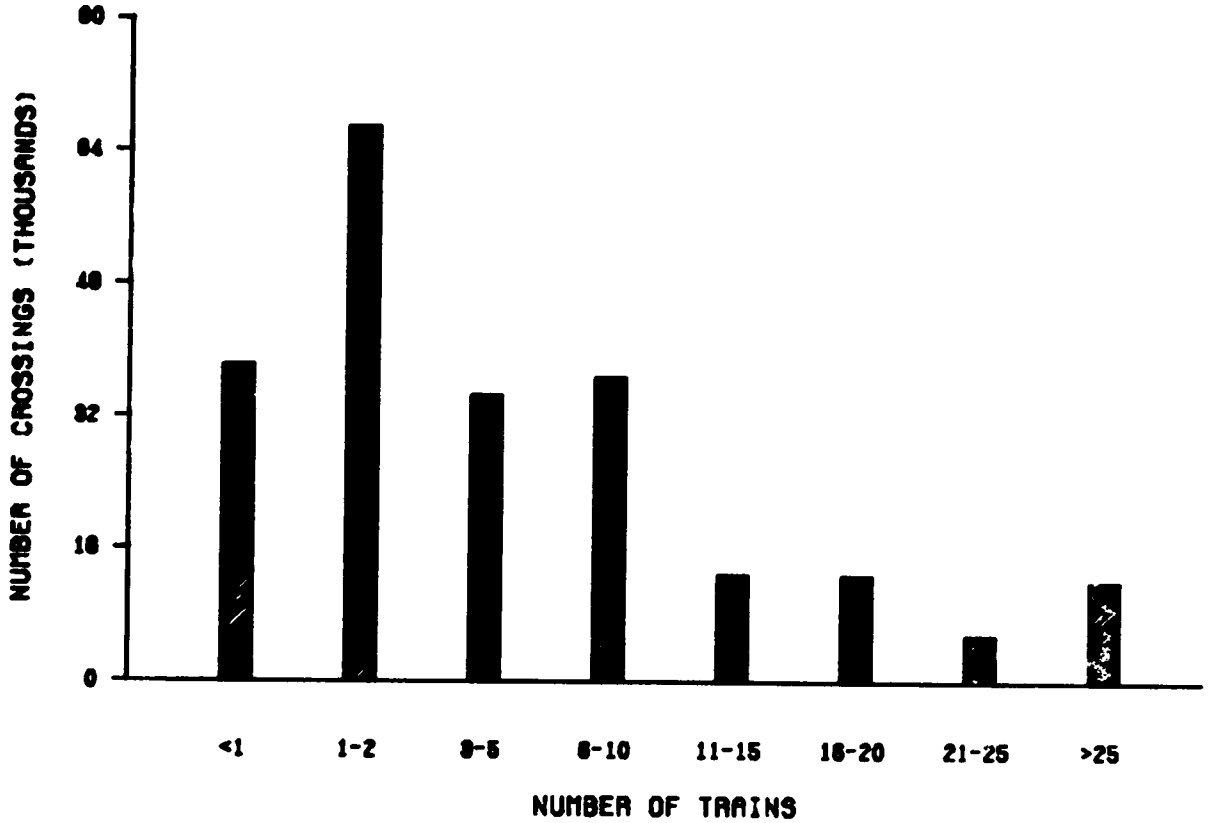


FIGURE 4-5. CROSSINGS BY TOTAL NUMBER OF TRAIN MOVEMENTS PER DAY

TABLE 4-6. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. STATE

	NO. OF TRAINS								
	<1	1-2	3-5	6-10	11-15	16-20	21-25	>25	TOTAL
ALABAMA	356	1392	734	1186	499	500	36	100	4803
ALASKA	39	28	93	33	13	4	1	10	221
ARIZONA	113	388	164	219	41	47	12	76	1060
ARKANSAS	486	1379	567	807	87	324	179	260	4089
CALIFORNIA	1427	2591	1664	1228	545	809	403	815	9482
COLORADO	92	1016	374	445	212	179	21	15	2354
CONN.	156	170	125	30	16	24	0	49	570
DELAWARE	63	89	14	90	0	4	0	3	263
D.C.	16	45	1	8	0	0	0	0	70
FLORIDA	682	1842	864	923	576	754	155	168	5964
GEORGIA	356	2727	1327	1141	231	677	167	304	6930
HAWAII	0	0	0	6	0	0	0	0	6
IDAHO	565	593	318	222	70	47	78	178	2071
ILLINOIS	2349	3101	1866	2794	1188	528	348	1723	13897
INDIANA	1686	2298	1458	1626	993	606	697	781	10145
IOWA	2302	3108	1272	1482	251	237	167	247	9066
KANSAS	976	4238	1517	1854	350	293	162	461	9851
KENTUCKY	367	997	567	704	250	357	142	308	3692
LOUISIANA	768	1560	746	956	467	263	70	98	4928
MAINE	145	471	271	187	28	10	6	1	1119
MARYLAND	343	302	179	132	84	38	10	35	1123
MASS.	397	409	116	140	57	11	18	82	1230
MICHIGAN	1912	2255	1667	1107	362	691	238	225	8457
MINNESOTA	2115	2443	1397	1432	283	109	116	209	8104
MISS.	232	1092	835	687	316	255	42	122	3581
MISSOURI	1007	1730	1137	1727	183	337	212	317	6650
MONTANA	900	484	178	333	130	230	67	14	2296
NEBRASKA	1388	1882	725	562	247	253	122	401	5580
NEVADA	76	114	17	20	13	58	33	27	358
N.H.	362	118	138	61	23	12	0	3	717
NEW JERSEY	500	765	211	410	91	28	2	195	2202
NEW MEXICO	90	217	172	199	46	16	15	114	869
NEW YORK	1121	1080	549	621	363	209	75	432	4850
N.C.	771	1870	986	889	202	395	208	123	5444
N.D.	1461	2573	848	395	338	91	9	29	5744
OHIO	1517	2178	1021	1371	659	1134	419	1664	9963
OKLAHOMA	875	1877	927	1210	477	64	135	210	5775
OREGON	332	921	587	554	208	122	100	145	2969
PENN.	2034	1581	926	864	307	422	261	369	6764
R.I.	22	75	7	12	12	1	0	13	142
S.C.	517	1783	695	1044	77	135	178	23	4452
S.D.	1334	1417	367	245	25	3	0	2	3393
TENNESSEE	480	1312	514	668	462	316	120	294	4166
TEXAS	1820	3932	2733	3077	1056	1164	268	566	14616
UTAH	384	386	142	213	65	115	2	65	1372
VERMONT	40	296	139	82	14	19	1	3	594
VIRGINIA	454	772	558	467	168	107	118	162	2806
WASHINGTON	896	1549	748	553	100	242	20	182	4290
W.VA.	371	751	547	395	143	113	41	99	2460
WISCONSIN	1406	2363	1373	1176	401	318	61	241	7339
WYOMING	101	216	121	75	38	18	0	51	620
P.R.	0	3	29	16	6	0	1	0	55
TOTAL	38202	66739	34531	36678	12773	12689	5536	12014	219162

TABLE 4-7. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

NO. OF TRAINS	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
<1	3284	34918	38202
1-2	8807	57932	66739
3-5	7368	27163	34531
6-10	10398	26280	36678
11-15	4920	7853	12773
16-20	5235	7454	12689
21-25	2565	2971	5536
>25	6770	5244	12014
TOTAL	49347	169815	219162

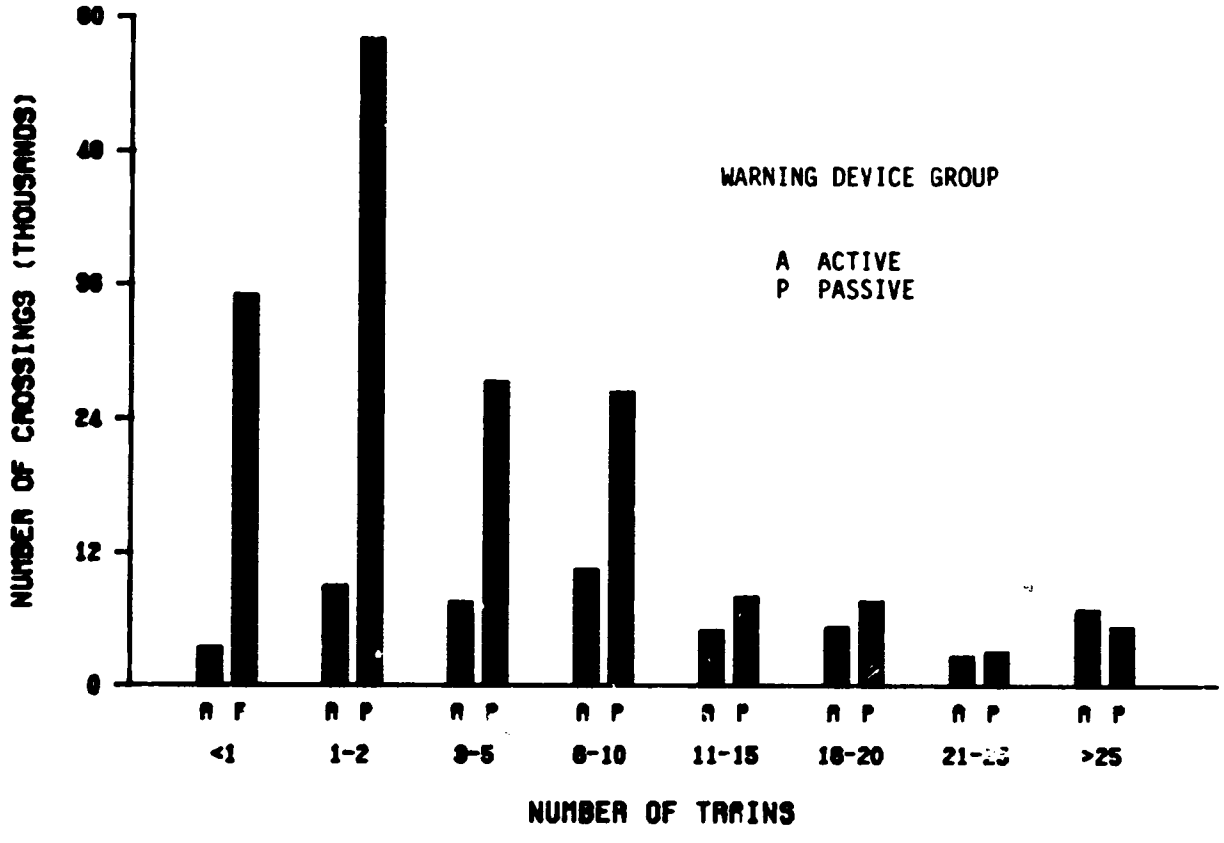


FIGURE 4-6. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 4-8. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. WARNING DEVICE CLASS

WARNING DEVICE CLASS	NO. OF TRAINS								
	<1	1-2	3-5	6-10	11-15	16-20	21-25	>25	TOTAL
GATES	228	775	858	1886	1465	1980	1066	3725	11983
FLASHING LIGHTS	2736	7122	5863	7843	3189	3018	1386	2812	33969
HWY. SIGNALS, HIGWAGS, BELLS	320	910	647	669	266	237	113	233	3395
SPECIAL WARNING DEVICES	2914	2824	1051	712	422	286	46	163	8418
CROSSBUCKS	25246	48484	23472	23378	6747	6634	2768	4748	141477
STOP SIGNS	410	1117	809	707	171	151	47	113	3525
OTHER SIGNS	400	299	150	135	35	36	2	22	1079
NO SIGNS OR SIGNALS	5948	5208	1681	1348	478	347	108	196	15316
TOTAL	38202	66739	34531	36678	12773	12689	5536	12014	219162

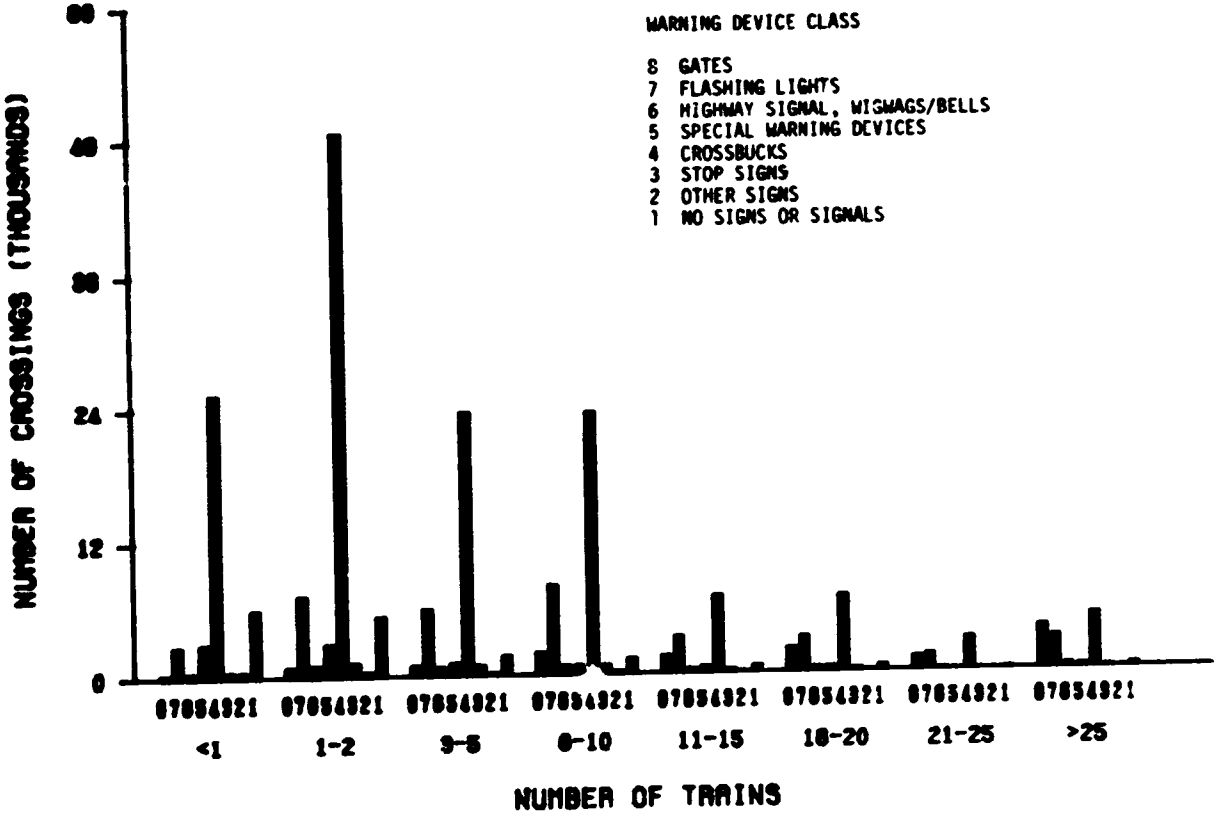


FIGURE 4-7. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. WARNING DEVICE CLASS

TABLE 4-9. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. ANNUAL AVERAGE DAILY TRAFFIC

NO. OF TRAINS	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
<1	19639	4281	3856	7034	2062	1203	38075
1-2	37859	7129	6297	10604	2884	1786	66559
3-5	18374	3845	3549	6002	1634	1071	34475
6-10	19688	4187	3635	6214	1742	1118	36584
11-15	6119	1288	1379	2615	796	554	12751
16-20	6032	1409	1421	2536	766	474	12638
21-25	2565	656	655	1158	295	188	5517
>25	4813	1247	1352	2870	1037	655	11974
TOTAL	115089	24042	22144	39033	11216	7049	218573

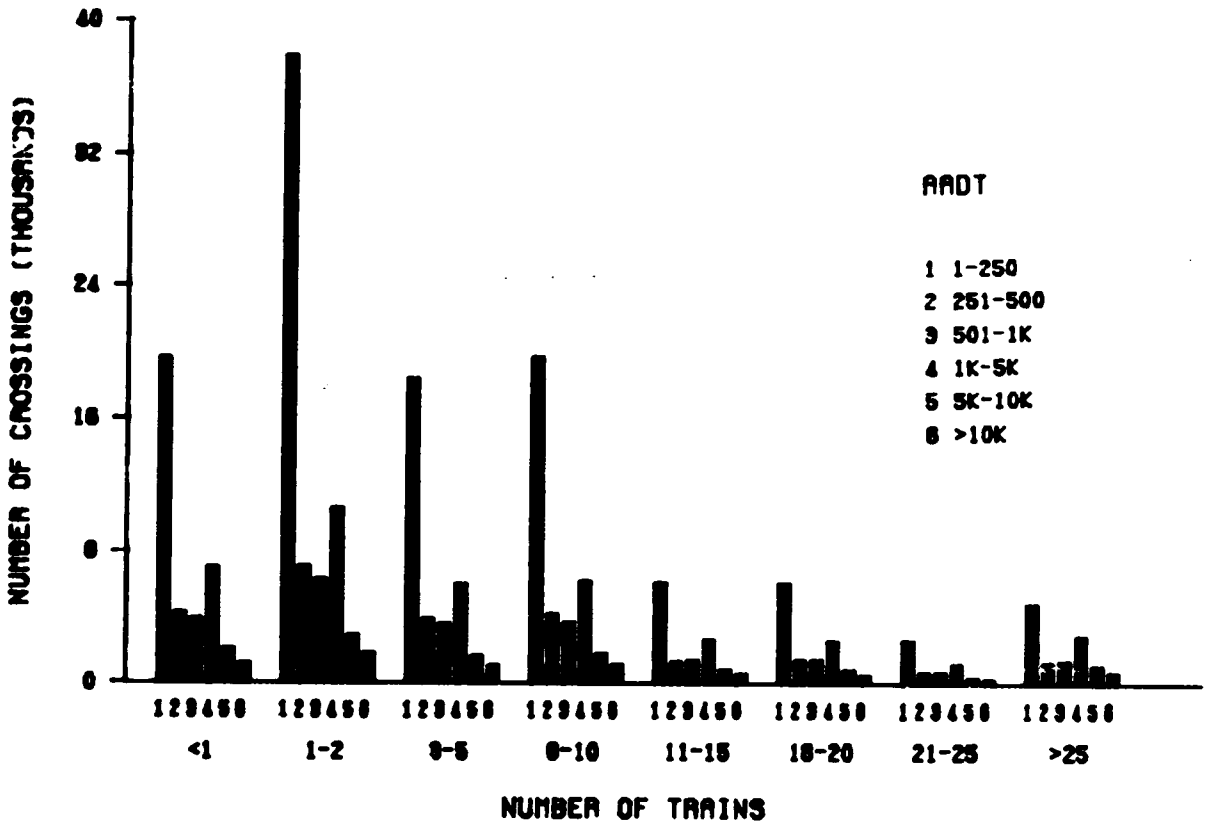


FIGURE 4-8. CROSSINGS BY NUMBER OF TRAINS PER DAY VS. ANNUAL AVERAGE DAILY TRAFFIC

4.2 TRAIN SPEED CHARACTERISTICS

TABLE 4-10. CROSSINGS BY MAXIMUM TIMETABLE SPEED

SPEED	NO. XINGS.	SPEED	NO. XINGS.	SPEED	NO. XINGS.
01-05	9918	36-40	20348	71-75	872
06-10	31567	41-45	5646	76-80	5289
11-15	17359	46-50	18306	81-85	11
16-20	18019	51-55	2697	86-90	857
21-25	25725	56-60	11814	91-95	0
26-30	28271	61-65	1153	96-100	5
31-35	16178	66-70	4544	>100	5

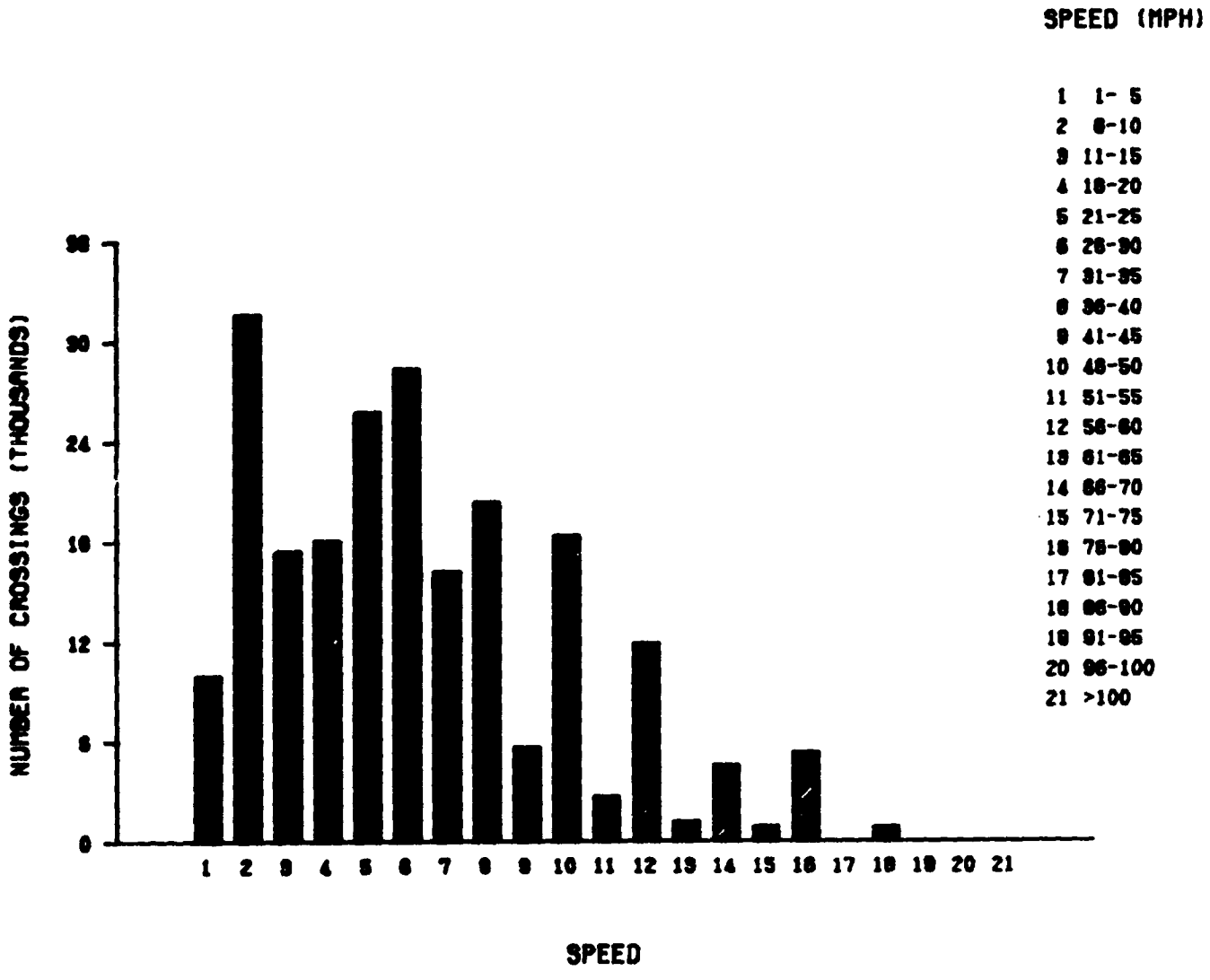


FIGURE 4-9. CROSSINGS BY MAXIMUM TIMETABLE SPEED

TABLE 4-11. CROSSINGS BY TYPICAL MINIMUM SPEED

SPEED	NO. XINGS.	SPEED	NO. XINGS.	SPEED	NO. XINGS.
01-05	76722	36-40	8775	71-75	90
06-10	28654	41-45	2610	76-80	5
11-15	14517	46-50	4668	81-85	0
16-20	19032	51-55	1794	86-90	0
21-25	11501	56-60	911	91-95	0
26-30	13368	61-65	34	96-100	1
31-35	5296	66-70	29	>100	1
<1	31154				

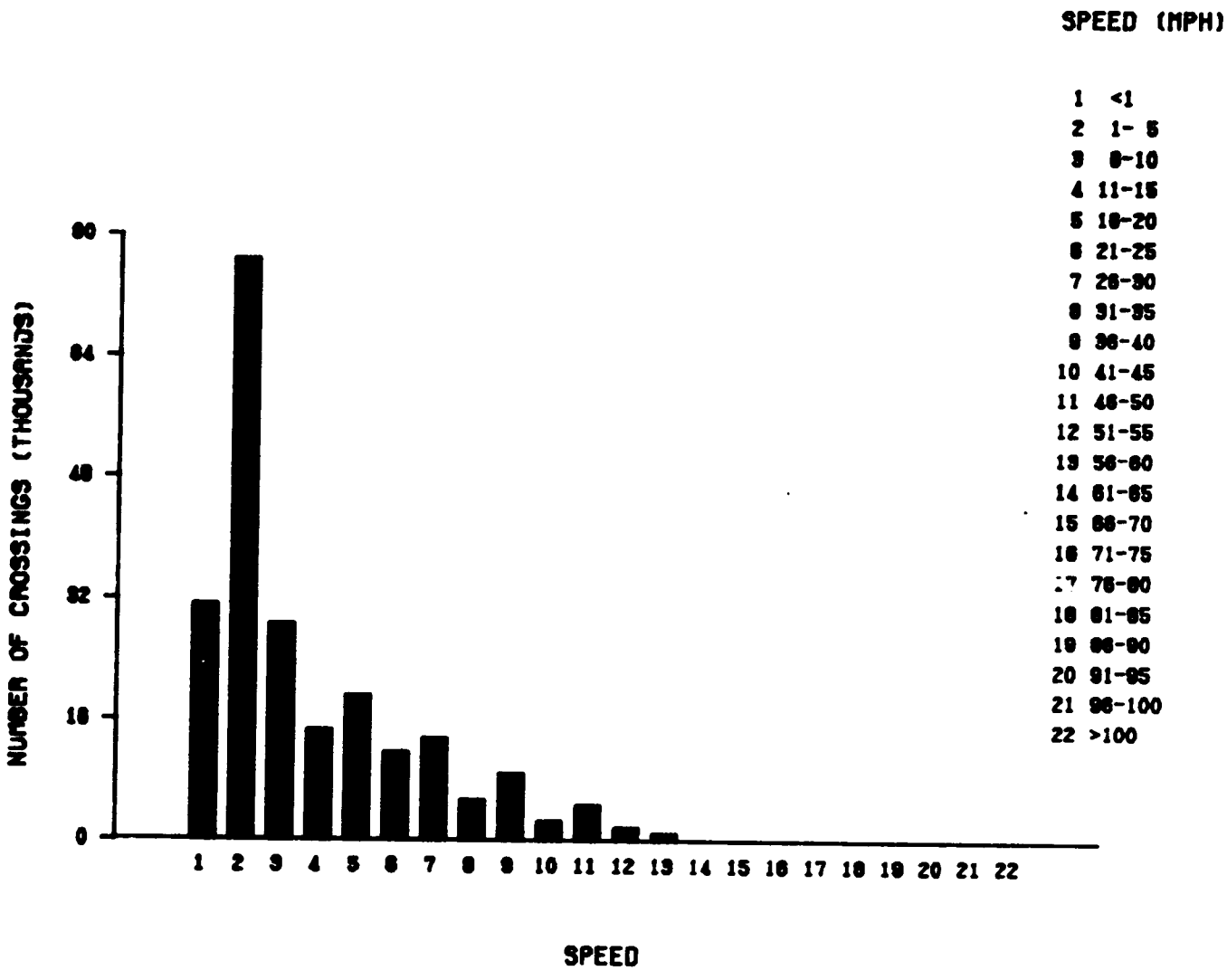


FIGURE 4-10. CROSSINGS BY TYPICAL MIMIMUM SPEED

TABLE 4-12. CROSSINGS BY TYPICAL MAXIMUM SPEED

SPEED	NO. XINGS.	SPEED	NO. XINGS.	SPEED	NO. XINGS.
01-05	12677	36-40	19790	71-75	779
06-10	37072	41-45	5557	76-80	4016
11-15	16947	46-50	16923	81-85	11
16-20	18302	51-55	2659	86-90	786
21-25	24538	56-60	10947	91-95	0
26-30	27358	61-65	1237	96-100	5
31-35	14883	66-70	4265	>100	3

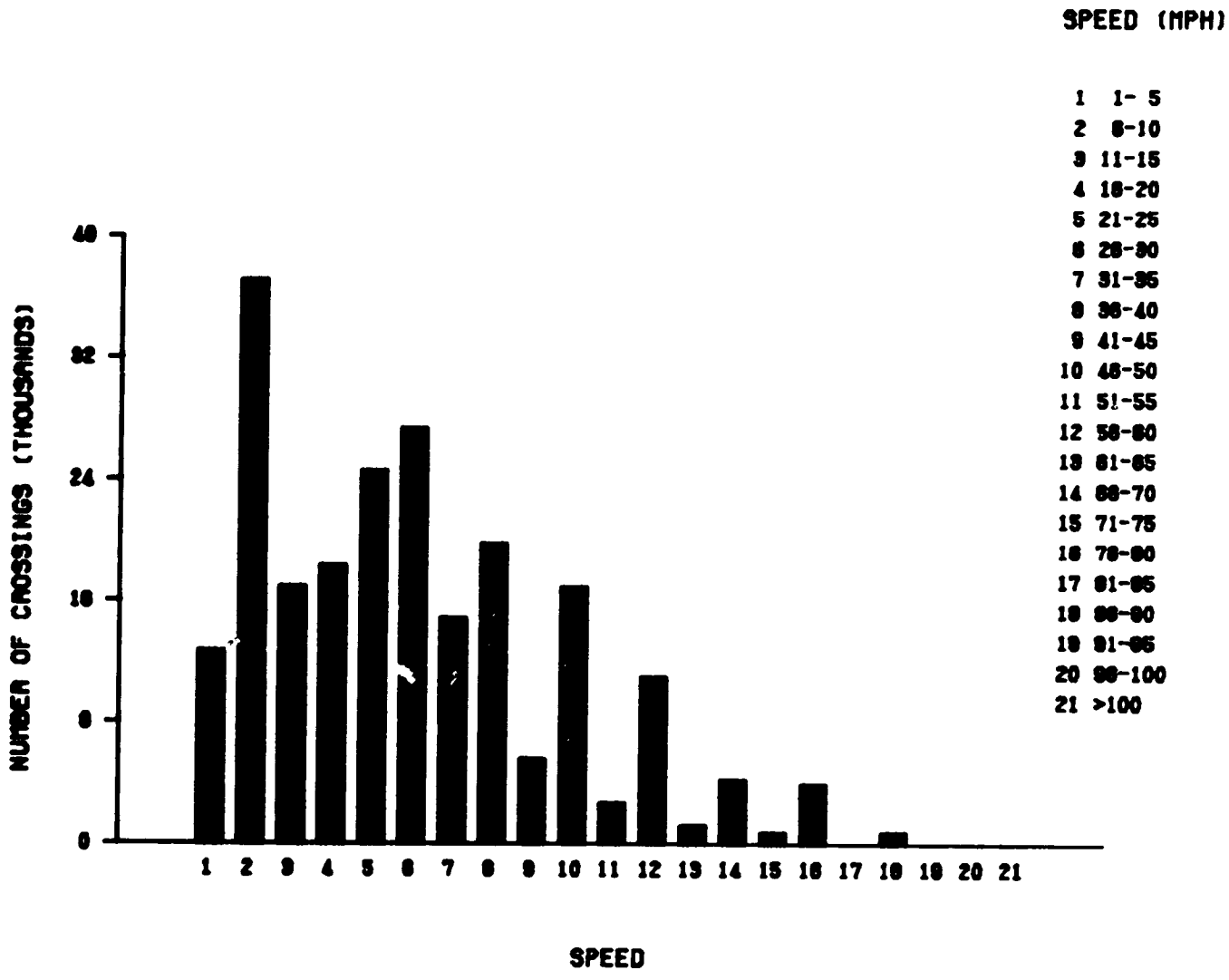


FIGURE 4-11. CROSSINGS BY TYPICAL MAXIMUM SPEED

TABLE 4-13. CROSSINGS BY MAXIMUM SPEED MINUS MINIMUM SPEED

SPEED	NO. XINGS.	SPEED	NO. XINGS.	SPEED	NO. XINGS.
01-05	60865	36-40	6564	71-75	688
06-10	54487	41-45	3418	76-80	493
11-15	25063	46-50	5087	81-85	58
16-20	21598	51-55	1068	86-90	62
21-25	13385	56-60	2629	91-95	0
26-30	12194	61-65	806	96-100	1
31-35	6164	66-70	747	>100	2
<1	3783				

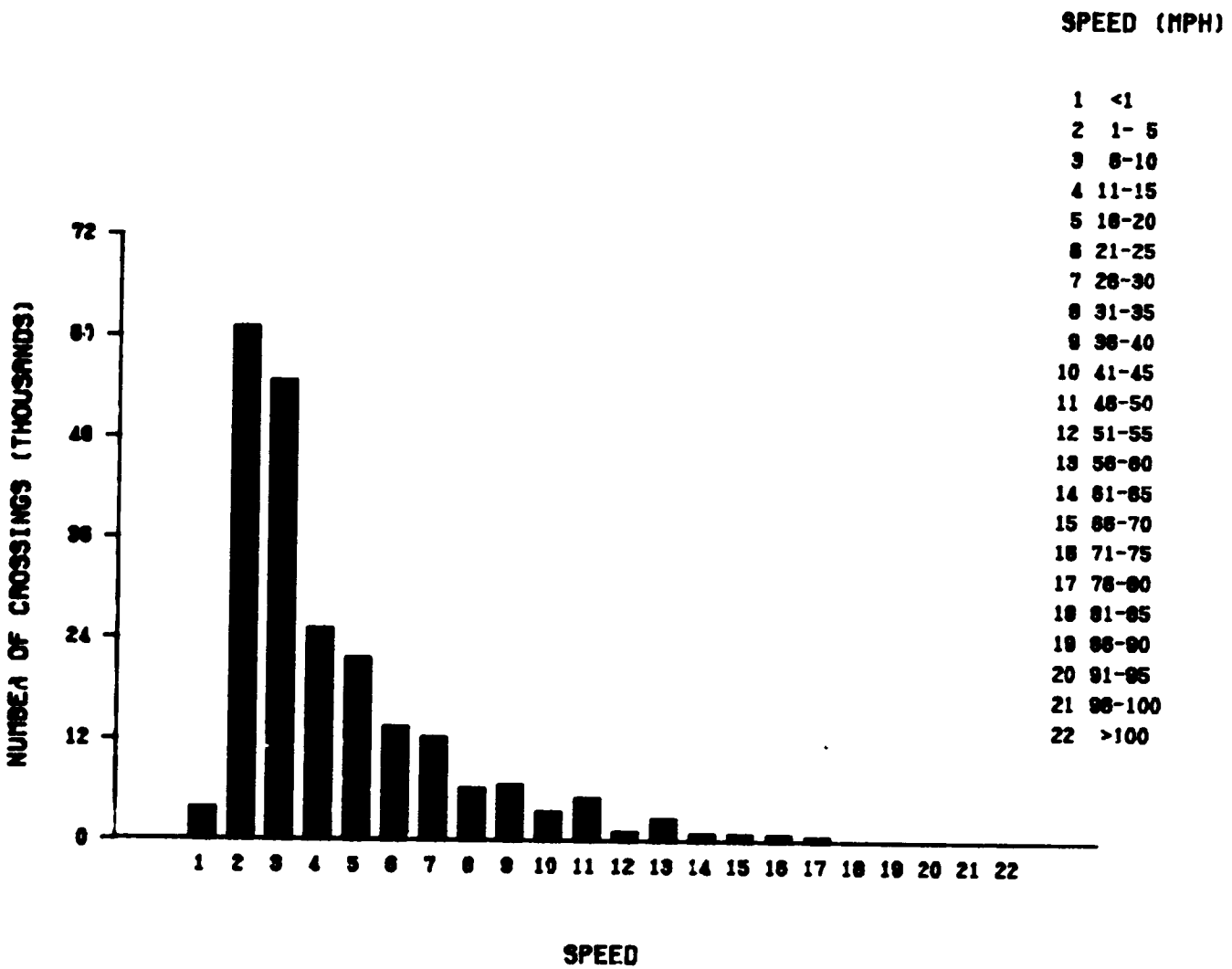


FIGURE 4-12. CROSSINGS BY MAXIMUM SPEED MINUS MINIMUM SPEED

4.3 HIGHWAY TRAFFIC CHARACTERISTICS

TABLE 4-14. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC

AADT	NO. XINGS.
1-250	115089
251-500	24042
501-1K	22144
1K-5K	39033
5K-10K	11216
>10K	7049

AADT	NO. XINGS.	AADT	NO. XINGS.	AADT	XINGS
1-100	80515	1-1K	161275	1-10K	211524
101-200	20785	1K-2K	17524	10K-20K	5717
201-300	20598	2K-3K	10449	20K-30K	1087
301-400	6374	3K-4K	5808	30K-40K	193
401-500	8859	4K-5K	5252	40K-50K	31
501-600	4931	5K-6K	3071	50K-60K	7
601-700	3768	6K-7K	2297	60K-70K	4
701-800	5975	7K-8K	2359	70K-80K	4
801-900	2887	8K-9K	1576	80K-90K	3
901-1K	4583	9K-10K	1913	90K-100K	0

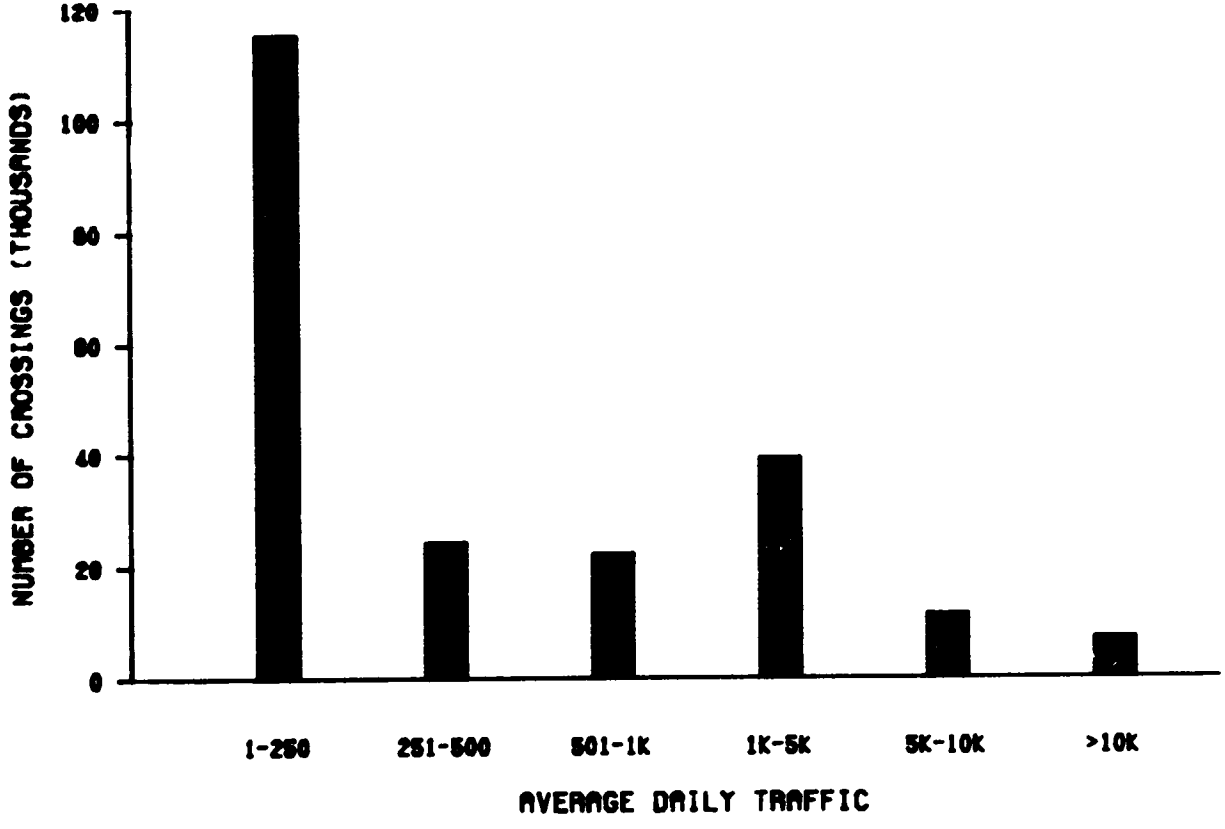


FIGURE 4-13. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC

TABLE 4-15. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. STATE (1 OF 2)

	AADT			
	0-1K	1K-5K	>5K	TOTAL
ALABAMA	3567	900	336	4803
ALASKA	190	20	21	221
ARIZONA	730	193	137	1060
ARKANSAS	3126	722	241	4089
CALIFORNIA	4649	2646	2187	9482
COLORADO	1718	439	197	2354
CONN.	267	205	98	570
DELAWARE	127	85	51	263
D.C.	33	22	15	70
FLORIDA	3542	1499	923	5964
GEORGIA	5134	1243	553	6930
HAWAII	6	0	0	6
IDAHO	1787	215	69	2071
ILLINOIS	10815	1979	1103	13897
INDIANA	8376	1184	585	10145
IOWA	7241	1434	391	9066
KANSAS	8543	992	316	9851
KENTUCKY	2710	727	255	3692
LOUISIANA	3723	798	307	4928
MAINE	775	260	84	1119
MARYLAND	549	325	249	1123
MASS.	579	366	285	1230
MICHIGAN	5657	1766	1034	8457
MINNESOTA	7043	771	290	8104
MISS.	2804	593	184	3581
MISSOURI	5507	836	307	6650
MONTANA	2038	212	46	2296
NEBRASKA	4991	441	148	5580
NEVADA	297	38	23	358
N.H.	459	184	74	717
NEW JERSEY	693	938	571	2202
NEW MEXICO	714	109	46	869
NEW YORK	3022	964	464	4450
N.C.	3549	1444	451	5444
N.D.	5411	266	67	5744
OHIO	6849	2203	911	9963
OKLAHOMA	4753	738	284	5775
OREGON	2128	610	231	2969
PENN.	3865	1959	940	6764
R.I.	62	33	47	142
S.C.	3305	789	358	4452
S.D.	3095	219	79	3393
TENNESSEE	2966	796	402	4166
TEXAS	10281	3088	1247	14616
UTAH	996	272	104	1372
VERMONT	435	121	38	594
VIRGINIA	1907	561	338	2806
WASHINGTON	3114	823	353	4290
W.VA.	1923	436	101	2460
WISCONSIN	5267	1485	587	7339
WYOMING	530	64	26	620
P.R.	24	20	11	55
TOTAL	161864	39033	18265	219162

TABLE 4-15. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. STATE (2 OF 2)

	AADT						
	1-250	251-500	501-1K	1K-5K	5K-10K	>10K	TOTAL
ALABAMA	2353	678	535	900	210	126	4802
ALASKA	115	34	31	20	14	7	221
ARIZONA	470	117	143	193	73	64	1060
ARKANSAS	2251	430	445	722	173	68	4089
CALIFORNIA	2142	1242	1260	2646	1070	1117	9477
COLORADO	1264	218	215	439	123	74	2333
CONN.	95	75	94	205	65	33	567
DELAWARE	59	34	28	85	27	24	257
D.C.	1	5	27	22	4	11	70
FLORIDA	2077	796	625	1499	492	431	5920
GEORGIA	3796	746	584	1243	386	167	6922
HAWAII	6	0	0	0	0	0	6
IDAHO	1387	264	136	215	43	26	2071
ILLINOIS	7863	1811	1138	1979	619	484	13894
INDIANA	6549	339	1487	1184	346	239	10144
IOWA	5504	930	781	1434	289	102	9040
KANSAS	7010	856	653	992	223	93	9527
KENTUCKY	1921	429	356	727	164	91	3688
LOUISIANA	2106	1027	580	798	259	148	4918
MAINE	466	147	149	260	40	44	1106
MARYLAND	215	170	163	325	123	126	1122
MASS.	209	253	117	366	156	129	1230
MICHIGAN	3798	940	918	1766	562	472	8456
MINNESOTA	6060	521	460	771	206	84	8102
MISS.	2021	449	327	593	130	54	3574
MISSOURI	4265	705	536	836	202	105	6649
MONTANA	1747	168	119	212	30	16	2292
NEBRASKA	4210	439	382	441	106	42	5580
NEVADA	169	28	24	38	10	13	282
N.H.	314	80	65	184	53	21	717
NEW JERSEY	29	361	302	938	369	202	2201
NEW MEXICO	568	79	67	109	28	18	869
NEW YORK	1877	60	1056	964	302	162	4421
N.C.	1580	1046	920	1444	334	117	5441
N.D.	4846	312	242	266	52	15	5733
OHIO	4552	1176	1109	2203	648	263	9951
OKLAHOMA	3754	600	396	738	164	120	5772
OREGON	1305	460	363	610	164	67	2969
PENN.	2014	955	890	1959	606	334	6758
R.I.	34	16	12	33	30	17	142
S.C.	2352	514	438	789	241	117	4451
S.D.	2719	212	164	219	51	28	3393
TENNESSEE	1999	465	504	796	247	155	4166
TEXAS	7225	1611	1445	3088	806	441	14616
UTAH	630	215	151	272	60	44	1372
VERMONT	305	59	66	121	23	15	589
VIRGINIA	1018	373	322	561	210	128	2612
WASHINGTON	2275	453	386	823	222	131	4290
W.VA.	1328	304	228	436	78	23	2397
WISCONSIN	3770	800	697	1485	357	230	7339
WYOMING	453	37	40	64	18	8	620
P.R.	13	3	8	20	8	3	55
TOTAL	115089	24042	22144	39033	11216	7049	218573

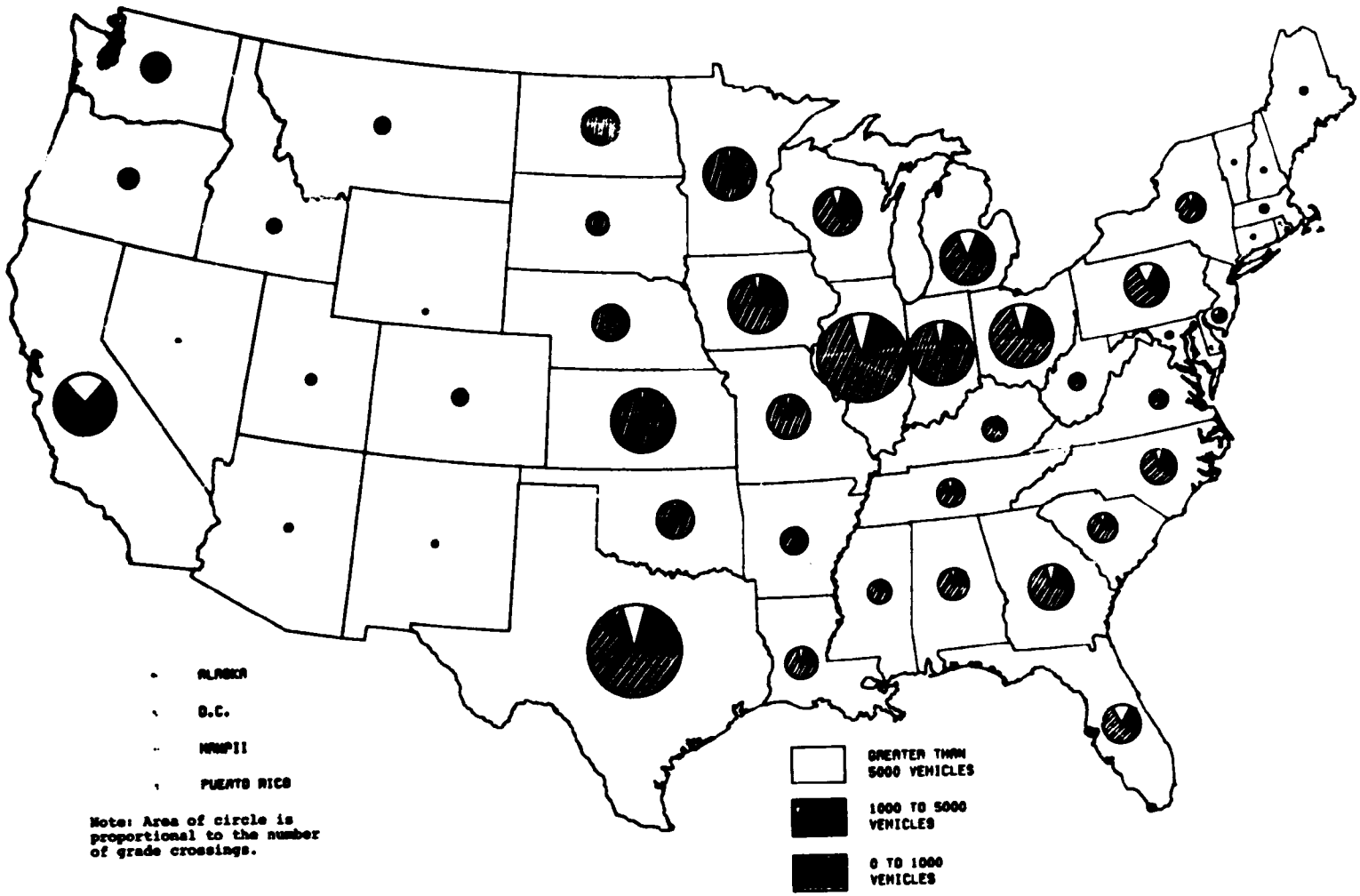


FIGURE 4-14. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. STATE

TABLE 4-16. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

AADT	WARNING DEVICE GROUP		
	ACTIVE	PASSIVE	TOTAL
1-250	7437	107652	115089
251-500	4999	19043	24042
501-1K	7127	15017	22144
1K-5K	18190	20843	39033
5K-10K	6703	4513	11216
>10K	4801	2248	7049
TOTAL	49257	169316	218573

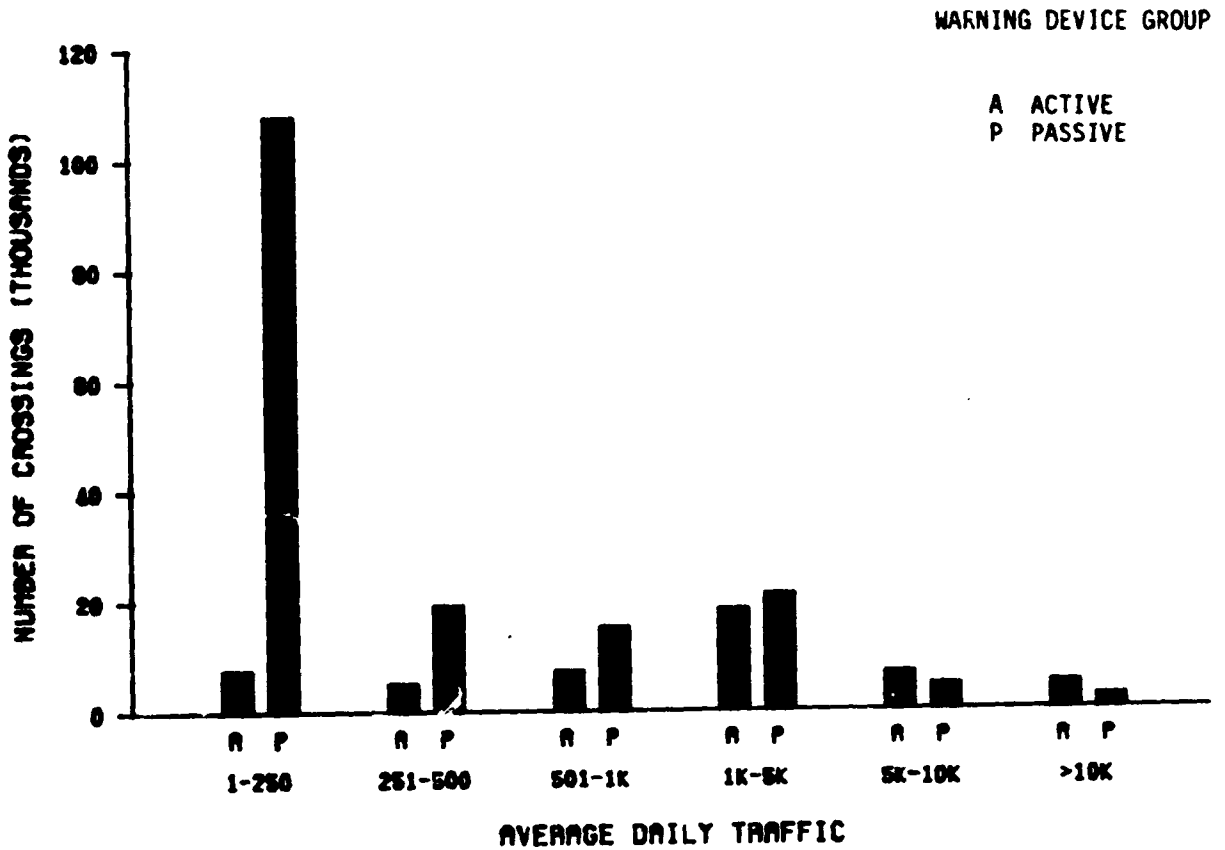


FIGURE 4-15. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. WARNING DEVICE GROUP (ACTIVE/PASSIVE)

TABLE 4-17. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. WARNING DEVICE CLASS

WARNING DEVICE CLASS	AADT 1-250	251-500	501-1K	1K-5K	5K-10K	>10K	TOTAL
GATES	1451	1056	1558	4295	1935	1647	11942
FLASHING LIGHTS	4966	3524	5080	12960	4475	2916	33921
HWY. SIGNALS, WIGWAGS BELLS	1020	419	489	935	293	238	3394
SPECIAL WARNING DEVICES	2118	995	1053	2586	921	679	8352
CROSSBUCKS	94595	15627	11951	15146	2724	1148	141191
STOP SIGNS	2055	485	382	486	83	28	3519
OTHER SIGNS	521	210	139	144	44	12	1070
NO SIGNS OR SIGNALS	8363	1726	1492	2481	741	381	15184
TOTAL	115089	24042	22144	39033	11216	7049	218573

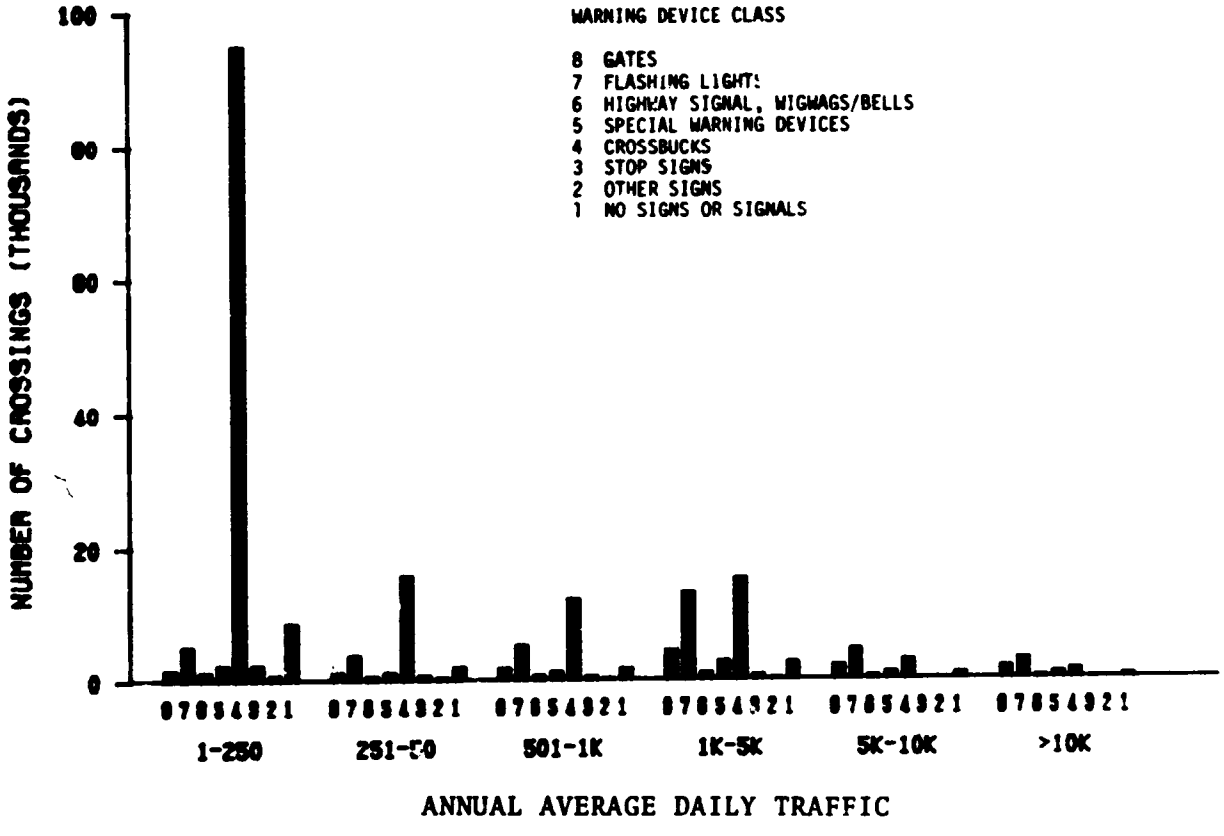


FIGURE 4-16. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC VS. WARNING DEVICE CLASS

TABLE 4-18. CROSSINGS VS. TRUCK TRAFFIC AS PERCENT OF AADT

PCT	NO. XINGS.	PCT	NO. XINGS.	PCT	NO. XINGS.
<1	8188	01-05	88506	51-55	22
1	13912	06-10	77759	56-60	163
2	13096	11-15	20321	61-65	5
3	12580	16-20	10241	66-70	61
4	12714	21-25	2489	71-75	115
5	36204	26-30	8224	76-80	71
6	22112	31-35	417	81-85	6
7	10635	36-40	1211	86-90	56
8	17831	41-45	159	91-95	1
9	3228	46-50	1142	96-99	5
>9	68662				

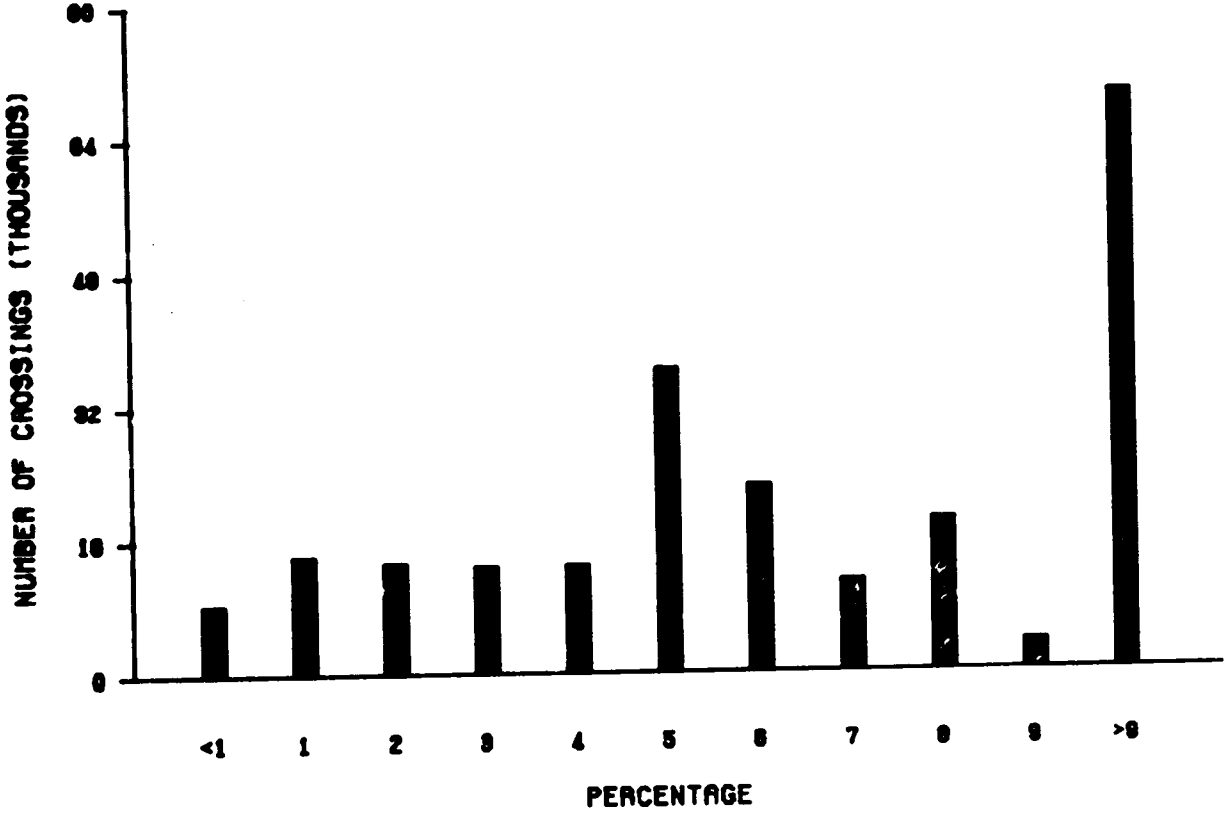


FIGURE 4-17. CROSSINGS VS. TRUCK TRAFFIC AS PERCENT OF AADT

TABLE 4-19. CROSSINGS BY TRUCK TRAFFIC AS PERCENT OF AADT VS. STATE

	PERCENT							
	00-05	06-10	11-15	16-20	21-25	26-30	>30	TOTAL
ALABAMA	1512	1873	511	393	143	130	241	5066
ALASKA	101	36	34	19	8	7	16	221
ARIZONA	0	2	0	13	54	210	781	1060
ARKANSAS	21	3944	75	41	4	4	0	4089
CALIFORNIA	909	1225	1979	2875	584	719	1191	9482
COLORADO	2164	103	48	29	7	1	2	2354
CONN.	570	0	0	0	0	0	0	570
DELAWARE	33	72	148	8	1	1	0	263
D.C.	52	8	0	1	1	1	7	70
FLORIDA	2454	339	3114	46	3	3	5	5964
GEORGIA	5790	996	99	13	3	7	22	6930
HAWAII	6	0	0	0	0	0	0	6
IDAHO	513	178	920	395	46	9	10	2071
ILLINOIS	13821	62	6	2	3	0	3	13897
INDIANA	20	3152	867	47	314	5730	15	10145
IOWA	3377	5328	249	78	18	8	8	9066
KANSAS	3595	5997	151	75	17	8	8	9851
KENTUCKY	985	1598	970	88	20	16	15	3692
LOUISIANA	1380	3342	47	57	6	26	70	4928
MAINE	145	937	27	3	1	6	0	1119
MARYLAND	378	388	138	85	12	35	87	1123
MASS.	769	459	2	0	0	0	0	1230
MICHIGAN	4844	3071	331	97	36	26	52	8457
MINNESOTA	3275	4654	113	32	9	0	21	8104
MISS.	2165	1066	203	100	16	17	14	3581
MISSOURI	1483	2812	195	1907	120	63	70	6650
MONTANA	672	749	536	215	49	26	49	2296
NEBRASKA	5149	241	146	30	5	5	4	5580
NEVADA	198	79	26	21	31	1	2	358
N.H.	674	40	0	1	2	0	0	717
NEW JERSEY	1772	348	29	33	13	5	2	2202
NEW MEXICO	489	238	89	30	11	3	9	869
NEW YORK	197	2658	1394	143	32	0	26	4450
N.C.	4328	1095	17	1	0	0	3	5444
N.D.	392	645	2739	1949	10	0	9	5744
OHIO	643	9119	110	38	21	13	19	9963
OKLAHOMA	4078	1599	64	12	2	13	7	5775
OREGON	163	785	683	537	161	130	510	2969
PENN.	5156	1432	145	20	4	2	5	6764
R.I.	107	21	1	0	6	1	6	142
S.C.	1954	2071	279	125	0	5	18	4452
S.D.	595	1839	880	69	8	0	2	3393
TENNESSEE	2344	1048	382	180	128	36	48	4166
TEXAS	12763	1095	430	211	66	44	7	14616
UTAH	645	570	125	25	6	0	1	1372
VERMONT	290	216	59	22	0	3	4	594
VIRGINIA	267	1094	21	10	504	906	4	2806
WASHINGTON	1153	1926	1000	147	3	4	57	4290
W.VA.	2223	157	70	9	0	0	1	2460
WISCONSIN	0	6986	353	0	0	0	0	7339
WYOMING	42	50	516	9	0	0	3	620
P.R.	38	16	0	0	1	0	0	55
TOTAL	88506	77759	20321	10284	2889	8224	3434	219162

TABLE 4-20. CROSSINGS BY TRUCK TRAFFIC AS PERCENT OF AADT, VS. ANNUAL AVERAGE DAILY TRAFFIC

TRUCKS (PERCENT OF AADT)	AADT 1- 250	251- 500	501- 1K	1K- 5K	5K- 10K	>10K	TOTAL
00-05	53756	11609	8981	15716	3985	2103	96150
06-10	38926	3189	8638	14815	4429	2737	77734
11-15	8590	1940	2224	4883	1604	1064	20305
16-20	5218	744	888	1903	684	804	10241
21-25	998	334	277	448	244	186	2487
26-30	5428	805	838	902	150	99	8222
>30	2173	421	298	366	120	56	3434
TOTAL	115089	24042	22144	39033	11216	7049	218573

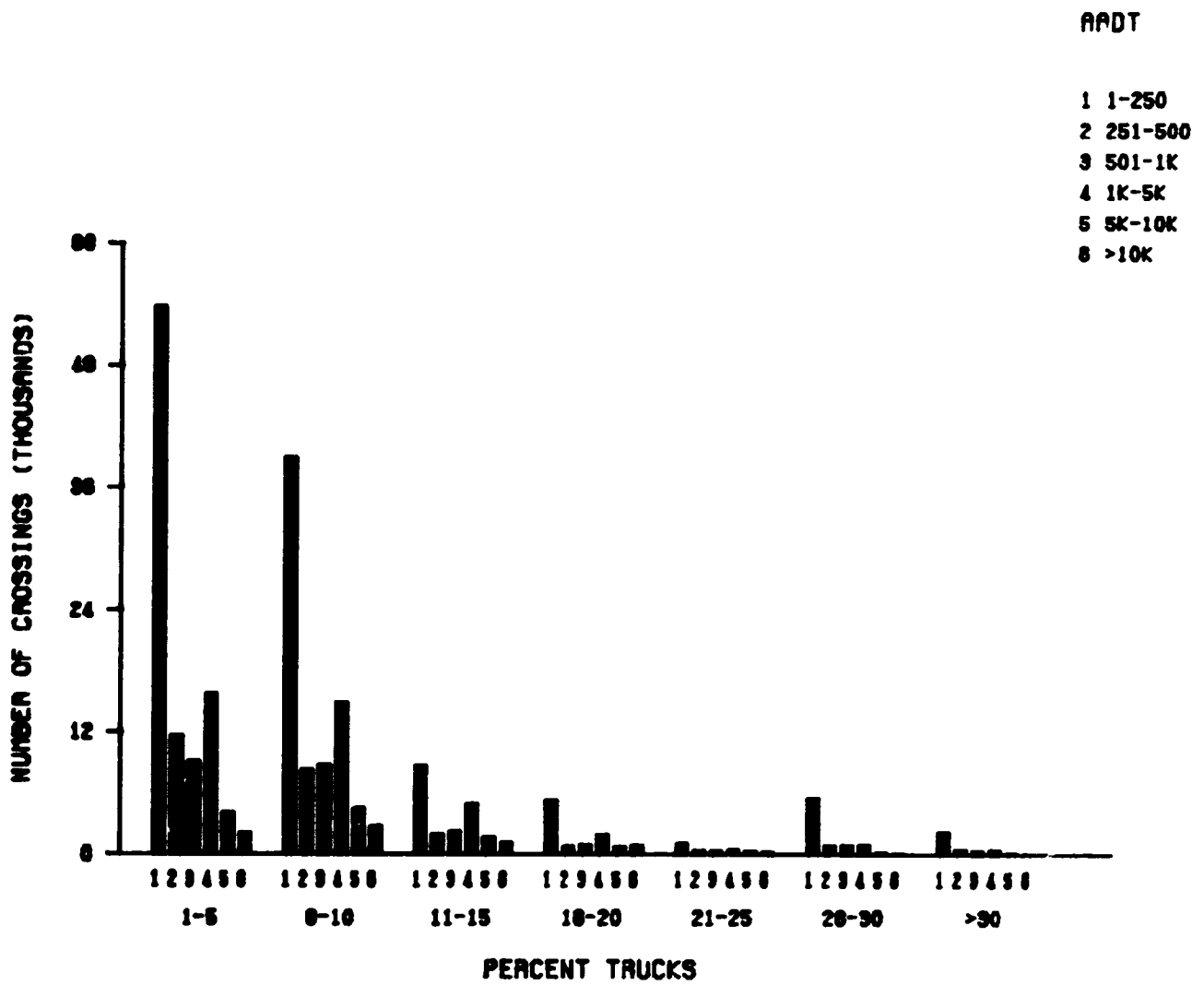


FIGURE 4-18. CROSSINGS BY TRUCKS AS A PERCENT OF AADT VS. ANNUAL AVERAGE DAILY TRAFFIC

5. MISCELLANEOUS DATA REQUESTED ON DOT-AAR INVENTORY FORM

TABLE 5-1. MISCELLANEOUS DATA REQUESTED ON THE DOT-AAR INVENTORY FORM

LESS THAN ONE TRAIN PER DAY?

YES	NO	N/R
38758	180404	0

DOES ANOTHER RAILROAD OPERATE A SEPARATE TRACK AT CROSSING?

YES	NO	N/R
5462	213595	105

DOES ANOTHER RAILROAD OPERATE OVER YOUR TRACK AT CROSSING?

YES	NO	N/R
13250	205748	164

IS TRACK EQUIPPED WITH ANY SIGNS OR SIGNALS?

YES	NO	N/R
202267	16894	1

IS TRACK EQUIPPED WITH SIGNALS FOR TRAIN OPERATION?

YES	NO	N/R
60307	158401	454

IS HIGHWAY PAVED?

YES	NO	N/R
148202	70928	32

IS COMMERCIAL POWER AVAILABLE?

YES	NO	N/R
197246	21916	0

DOES TRACK RUN DOWN A STREET?

YES	NO	N/R
6716	201731	10715

NEARBY INTERSECTING HIGHWAY?

YES	NO	N/R
75820	132542	10800

RR ADVANCE WARNING SIGNS PRESENT?

YES	NO	N/R
85752	133344	66

ANY TRUCK PULLOUT LANES PRESENT?

YES	NO	N/R
2772	216276	114

IS CROSSING ON STATE HIGHWAY SYSTEM?

YES	NO	N/R
33207	185840	115

DOES CROSSING PROVIDE SPEED SELECTION?

YES	NO	N/R
5230	75053	N/A 138879

N/R MEANS NOT RECORDED
N/A MEANS NOT APPLICABLE

APPENDIX A

U.S. DEPARTMENT OF TRANSPORTATION - ASSOCIATION OF AMERICAN RAILROADS INVENTORY FORM

OMB-004-R4039

U.S. DOT – AAR CROSSING INVENTORY FORM

A. INITIATING AGENCY ☐ RAILROAD ☐ STATE

C. REASON FOR UPDATE: ☐ CHANGES IN EXISTING CROSSING DATA ☐ NEW CROSSING ☐ CLOSED CROSSING

D. EFFECTIVE DATE M D Y

B. CROSSING NUMBER

Part I Location and Classification of All Crossings (Must Be Completed)

1. Railroad Operating Company
2. Railroad Division or Region
3. Railroad Subdivision or District
4. State
5. County
6. County Map Ref. No.
7. City
8. Nearest City
9. Highway Type and No.
10. Street or Road Name
11. RR I. D. No.
12. Nearest RR Timetable Station
13. Branch or Line Name
14. Railroad Mile Post

DO NOT WRITE IN THIS SPACE: State, County, City, Nearest City, RR Code, Timetable Station

15. Pedestrian Crossing ☐ 1. at grade ☐ 2. RR under ☐ 3. RR over

16. Private Vehicle Crossing
A. ☐ 1. Farm ☐ 2. Residential ☐ 3. Recreational ☐ 4. Industrial
B. ☐ 5. at grade ☐ 6. RR under ☐ 7. RR over
C. ☐ 8. signs-specify ☐ 9. signals-specify ☐ 0. none

17. Public Vehicle Crossing ☐ 1. at grade ☐ 2. RR under ☐ 3. RR over

COMPLETE REMAINDER OF FORM ONLY FOR PUBLIC VEHICLE CROSSINGS AT GRADE

Part II Detailed Information for Public Vehicular at Grade Crossing

1A. Typical Number of Daily Train Movements

Daylight (6 AM to 6 PM)		Night (6 PM to 6 AM)	
thru trains	switching	thru trains	switching
1	2	3	4

1B. Check if Less Than One Movement Per Day ☐ 5

2. Speed of Train at Crossing
A. Maximum time table speed 1
B. Typical Speed Range Over Crossing from 2 to 3 mph

3. Type and Number of Tracks
main 1 other 2 If other specify

4. Does Another RR Operate a Separate Track at Crossing?
☐ Yes 1 ☐ No Specify: RR 2

5. Does Another RR Operate Over Your Track at Crossing?
☐ Yes 1 ☐ No Specify: RR 2

6. Type of Warning Device at Crossing
A. Signs

Crossbucks		Standard Highway Stop Sign	Other Stop Signs	Other Signs Specify
reflectorized	non-reflectorized			
01 Number	02 Number	03 Number	04 Number	05 Number, 06, 07 Number, 08

B. Train Activated Devices

Gates		Cantilevered Flashing Lights		Mast Mounted Flashing Lights	Other Flashing Lights Specify	Highway Traffic Signals	Wigwags	Bells
red & white - reflectorized	other colored	over traffic lane	not over traffic lane					
09 Number	10 Number	11 Number	12 Number	13 Number	14 Number, 15	16 Number	17 Number	18 Number

C. Specify Special Warning Device not Train Activated 19
D. No Signs or Signals ☐ 20
7. Is Commercial Power Available? ☐ Yes ☐ No
8. Does Crossing Signal Provide Speed Selection for Trains? ☐ Yes ☐ No ☐ N/A
9. Method of Signaling for Train Operation: Is Track Equipped with Signals? ☐ Yes ☐ No

Part III Physical Data

1. Type of Development ☐ 1. Open Sp. ☐ 2. Res ☐ 3. Comm. ☐ 4. Ind. ☐ 5. Inst.
2. Smallest Crossing Angle ☐ 0°-29° ☐ 30°-59° ☐ 60°-90°
3. Number of Traffic Lanes Crossing Railroad Number
4. Are Truck Pullout Lanes Present? ☐ Yes ☐ No
5. Is Highway Paved ☐ Yes ☐ No
6. Pavement Markings ☐ Stoplines ☐ RR Xing Sym. ☐ None
7. Are RR Advance Warning Signs Present? ☐ Yes ☐ No
8. Crossing Surface ☐ 1. Sec. Timber ☐ 2. Full Wd. Plank ☐ 3. Asphalt ☐ 4. Concrete Slab ☐ 5. Concrete Pave ☐ 6. Rubber ☐ 7. Metal Sections ☐ 8. Other Metal ☐ 9. Unconsolidated ☐ 0. Other Specify
9. Does Track Run Down A Street? ☐ Yes ☐ No
10. Nearby Intersecting Highway? ☐ Yes ☐ No

Part IV Highway Department Information

1. Highway System
2. Is Crossing on State Highway System? ☐ Yes ☐ No.
3. Functional Classification of Road over Crossing
4. Estimate AADT
5. Estimate Percent Trucks

I. D. Number

APPENDIX B
GLOSSARY

AADT: Estimate of the annual average daily highway traffic total in both directions.

ACTIVE WARNING DEVICES: Warning systems activated by an approaching train; e.g., gates, flashing lights, highway signals, wigwags and bells.

COMMERCIAL POWER: A source of commercial power within 500 feet of the crossing.

CROSSING SURFACE:

1. Sectional Treated Timber: Prefabricated units approximately 8 feet in length of treated timber individually installed and removable for maintenance and replacement purposes.

2. Full Wood Plank: Wood surface, other than sectional treated timber, covering the entire crossing area above the crossties.

3. Asphalt: Asphalt surface over the entire crossing area or in the area between planks or other material forming flangeway openings, with or without single planks on outside of running rails.

4. Concrete Slab: Precast concrete slabs, installed and removable individually for maintenance and replacement purposes.

5. Concrete Pavement: Concrete surface which is continuous over the track area and is not removable except by destruction of the surface.

6. Rubber Slabs: Preformed rubber sections, installed and removable individually for maintenance and replacement purposes.

7. Metal Sections: Preformed sections of steel or other metal, installed and removable individually for maintenance and replacement purposes.

8. Other Metal: Complete coverage of the crossing area with railroad rails or other metal materials not removable in limited sectional units.

9. Unconsolidated: Ballast or other unconsolidated material placed above the tops of crossties, with or without planks on one or both sides of the running rails.

DAYLIGHT TRAIN MOVEMENTS: Train movements between 6 am to 6 pm.

FLASHING LIGHTS: Includes cantilevered flashing lights, mast mounted flashing lights and other flashing lights not in accord with the latest AAR Bulletin on Railroad-Highway Grade Crossing Warning Devices.

HIGHWAY SIGNALS: Train activated typical highway red-amber-green lights that control street traffic over the crossing.

MAIN TRACK: A track over which thru trains operate.

MAXIMUM SPEED MINUS MINIMUM SPEED: Typical variation in train speed, mph, over the crossing. Indicates the possible variability on warning time between signaling of the train and its passage over the crossing if the warning devices are not equipped with speed selection equipment.

MAXIMUM TIMETABLE SPEED: Maximum train speed, mph, permitted over the crossing.

NEARBY INTERSECTING HIGHWAY: A highway intersection within 75 feet of the crossing.

NIGHT TRAIN MOVEMENTS: Train movements between 6 pm to 6 am.

NUMBER OF CROSSBUCKS: The number of masts with crossbucks. A mast with two or more crossbucks is counted as one. A crossbuck on an active device is not counted.

OTHER SIGNS: Signs other than crossbucks or stop signs.

OTHER STOP SIGNS: Stop signs other than the standard highway stop signs.

OTHER TRACK: A track other than main track.

PASSIVE WARNING DEVICE: Warning systems not automatically activated by an approaching train; e.g. signs (crossbucks, standard highway signs) and special warning devices (manually operated gates, flood lights).

PAVEMENT MARKINGS: Markings as prescribed or generally similar to those contained in highway traffic manuals, in particular, stoplines and railroad crossing symbols.

PERCENTAGE TRUCKS: The percentage of total daily highway traffic represented by trucks.

PUBLIC CROSSING: A location where tracks cross a road which is under the jurisdiction of, and maintained by, a public authority and which is open to public travel.

RAILROAD: The railroad company that owns and maintains the roadbed, tracks and signal system controlling the crossing.

RR ADVANCE WARNINGS: Advance warning signs present on any of the highway approaches.

RURAL CROSSING: A crossing located in a community with less than 5,000 population.

SIGNALS FOR TRAIN OPERATION: Automatic signals or interlocks which control train operation in the vicinity of the crossing.

SMALLEST CROSSING ANGLE: The smallest angle between the highway and the track.

SPECIAL WARNING DEVICES: Non-train-activated devices not including signs. Includes manually operated gates, train crew flagging the crossing, watchmen and flood lights.

SPEED SELECTION FOR TRAINS: The provisions for a uniform warning time for the speed range of trains typically encountered at the crossing.

STANDARD HIGHWAY STOP SIGN: Octagonal, red sign with white letters.

STOP SIGNS: The standard octagonal highway stop sign or other stop signs.

SWITCH TRAINS: All trains per day other than thru trains, i.e., locals, industrial runs, switch engines.

THRU TRAINS: Trains per day whose primary responsibility is to move cars over the road and which may have a limited number of pickups and setouts along the route.

TOTAL TRAIN MOVEMENTS: Includes all movements per day for both the reporting company and any other railroad operating over the crossing.

TRAFFIC LANES: Number of highway traffic lanes not including shoulders or lanes that are typically used for parking.

TRUCK PULLOUT LANE: A special lane added to the highway to accomodate vehicles required to stop at the crossing.

TYPE OF DEVELOPMENT:

1. Open space: undeveloped or sparsely developed, very lightly populated, agricultural.
2. Residential: built-up residential area.
3. Commercial: retail stores and businesses, offices, personal services.
4. Industrial: manufacturing, construction, heavy products, factories, warehouses.
5. Institutional: schools, churches, hospitals, parks, and other community facilities.

TYPICAL MAXIMUM SPEED: Maximum train speed, mph, typically encountered at the crossing.

TYPICAL MINIMUM SPEED: Minimum train speed, mph, typically encountered at the crossing.

URBAN CROSSING: A crossing located in a community with greater than 5,000 population.

WARNING DEVICE CLASS: Warning devices categorized as defined in Table 3-28. A crossing is assigned a warning device class equal to the highest class warning device installed.

WARNING DEVICE GROUP: Warning devices categorized as either active or passive.

SYMBOL	COMPANY
AA	ANN ARBOR RR
ABB	AKRON & BARBERTON BELT RAILWAY
ABL	ALAMEDA BELT LINE
ACY	AKRON, CANTON AND YOUNGSTOWN RR
ADN	ASHLEY, DREW & NORTHERN RAILWAY
AHW	AHNAPEE & WESTERN RY
AL	ALMANOR RR
ARR	ALASKA RR
ALM	ARKANSAS & LOUISIANA MISSOURI RR
ALS	ALTON & SOUTHERN
AMC	AMADOR & CENTRAL RR
AMIN	AYERSHIRE MINE
AMR	ARCATA & MAD RIVER RR
AN	APALACHICOLA NORTHERN RR
ANR	ANGELINA & NECHES RR
APA	APACHE RY
AR	ABERDEEN & ROCKFISH
ARA	ARCADE & ATTICA RR
ARC	ALEXANDER RR
ARW	ARKANSAS WESTERN RR
ASAB	ATLANTA & ST. ANDREWS BAY RAILWAY CO.
ATSF	ATCHISON, TOPEKA & SANTA FE RR
ATW	ATLANTA & WESTERN RAILWAY
AUG	AUGUSTA & SUMMERVILLE RR
AUGA	AUGUSTA RR
AVL	AROOSTOOK VALLEY RR

SYMBOL	COMPANY
AWP	ATLANTA & WEST POINT RR
AWW	ALGERS, WINSLOW & WESTERN RY
AZUC	CORPORATION AZUCA
BA	BALTIMORE & ANNAPOLIS
BAP	BUTTE, ANACONDA & PACIFIC RY
BAR	BANGOR & AROOSTOOK
BCK	BUFFALO CREEK RR
BCRR	BOYNE CITY RR
BEDT	BROOKLYN EASTERN DISTRICT TERMINAL
BEEM	BEECH MOUNTAIN
BFC	BELLEFONTE CENTRAL RR
BH	BATH & HAMMONDSPORT RR
BLE	BESSEMER & LAKE ERIE
BM	BOSTON & MAINE CORP.
BML	BELFAST & MOOSEHEAD LAKE RR
BMS	BERLIN MILLS
BN	BURLINGTON NORTHERN
BO	BALTIMORE & OHIO RR CO.
BOCT	BALTIMORE & OHIO CHICAGO TERMINAL
BRC	BELT RAILWAY OF CHICAGO
BRFD	BRANFORD STEAM RR
BRR	BELTON RR
BRW	BLACK RIVER & WESTERN
BS	BIRMINGHAM SOUTHERN
BVS	BEVIER & SOUTHERN
BXN	BAUXITE & NORTHERN RAILWAY

SYMBOL	COMPANY
CACV	COOPERSTOWN & CHARLOTTE VALLEY
CAD	CADIZ RR
CARR	CARROLLTON RR
CASR	CASCADE RECREATIONAL RR
CASS	CASS SCENIC RR
CBC	CARBON COUNTY RR
CBL	CONEMAUGH & BLACK LICK RR
CCR	CORINTH & COUNCE RR
CCT	CENTRAL CALIFORNIA TRACTION CO.
CDOT	CONNECTICUT DEPT. OF TRANSPORTATION
CEI	CHICAGO & EASTERN ILLINOIS RR CO.
CFR	CAPE FEAR RY INC.
CHTT	CHICAGO HEIGHTS TERMINAL TRANSFER RR
CHV	CHATTAHOOCHEE VALLEY RY
CHW	CHEASAPEAKE WESTERN RY
CI	CAMBRIA & INDIANA
CIC	CEDAR RAPIDS & IOWA CITY RY
CIM	CHICAGO & ILLINOIS MIDLAND RY CO.
CIND	CENTRAL INDIANA RY
CIRD	CENTRAL IOWA RAILWAY & DEVELOPMENT CO.
CIRR	CHATTAHOOCHEE INDUSTRIAL RR
CKSO	CONDON, KINZUA & SOUTHERN RR
CLC	COLUMBIA & COWLITZ RY
CLCO	CLAREMONT & CONCORD RY
CLIF	CLIFFSIDE RR
CLJ	CITY OF LA JUNTA
CLP	CLARENDON & PITTSFORD RR
CMTC	CUMBRES & TOLTEC RR

SYMBOL	COMPANY
CN	CANADIAN NATIONAL RYS
CNJ	CENTRAL RR OF NEW JERSEY
CNL	COLUMBIA, NEWBERRY & LAURENS RR CO.
CNW	CHICAGO & NORTHWESTERN RY
CNYR	CENTRAL NEW YORK RAILROAD CORP.
CO	CHEAPEAKE & OHIO RY CO.
COP	CITY OF PRINEVILLE
CP	CANADIAN PACIFIC RY
CPF	COTTON PLANT-FARGO RY
CPLT	CAMINO, PLACERVILLE & LAKE TAHOE
CRI	CHICAGO RIVER & INDIANA RR CO.
CRR	CLINCHFIELD RR CO.
CS	COLORADO & SOUTHERN RY CO.
CSL	CHICAGO SHORT LINE RY
CSP	CAMAS PRAIRIE RR
CSS	CHICAGO SOUTH SHORE & SOUTH BEND
CTA	CHICAGO TRANSIT AUTHORITY
CTN	CANTON RY
CV	CENTRAL VERMONT
CW	COLORADO & WYOMING RY
CWI	CHICAGO & WESTERN INDIANA RR
CWP	CHICAGO & WEST PULLMAN & SOUTHERN
CWR	CALIFORNIA WESTERN RR
DC	DELRAY CONNECTING RR
DH	DELAWARE & HUDSON RY CO.
DKS	DONIPHAN, KENSETT & SEARCY
DM	DETROIT & MACINAC RY CO.
DMIR	DULUTH, MISSABE, & IRON RANGE RY CO.

SYMBOL	COMPANY
DMM	DANSVILLE & MOUNT MORRIS RR
DMU	DES MOINES UNION RY
DNE	DULUTH & NORTHEASTERN RR
DOD	DEPARTMENT OF DEFENSE
DQE	DEQUEEN & EASTERN RR
DR	DARDANELLE & RUSSELVILLE RR
DRGW	DENVER & RIO GRANDE WESTERN RR CO.
DRI	DAVENPORT, ROCK ISLAND & NORTHWESTERN RY
DS	DURHAM & SOUTHERN RY
DT	DETROIT TERMINAL RR
DTI	DETROIT, TOLEDO, & IRONTON RR CO.
DTS	DETROIT & TOLEDO SHORE LINE RR
DUT	DENVER UNION TERMINAL
DVS	DELTA VALLEY & SOUTHERN RY
DWP	DULUTH, WINNIPEG, & PACIFIC RY CO.
EDMA	EDGEMOOR & MANETTA
EDW	EL DORADO & WESSON RY
EEC	EAST ERIE COMMERCIAL RR
EJE	ELGIN, JOLIET, & EASTERN RY CO.
EJR	EAST JERSEY RR & TERMINAL CO.
EL	ERIE LACKAWANNA RY CO.
ELS	ESCANABA & LAKE SUPERIOR RR
ERIE	ERIE MINING CO.
ESLJ	EAST ST. LOUIS JUNCTION RR

SYMBOL	COMPANY
EV	EVERETT RR
EW	EAST WASHINGTON RY
FCIN	FRANKFORT & CINCINNATI RR
FDDM	FORT DODGE, DES MOINES & SOUTHERN RY CO.
FEC	FLORIDA EAST COAST RY CO.
FJG	FONDA, JOHNSTON & GLOVERSVILLE RR
FOR	FORE RIVER RR
FP	FORDYCE & PRINCTON RR
FRDN	FERDINAND RR
FSV	FORT SMITH & VAN BUREN RY
FWD	FORT WORTH & DENVER RY CO.
GA	GEORGIA RR
GBW	GREEN BAY & WESTERN RR CO.
GCW	GARDEN CITY WESTERN RY.
GHH	GALVESTON, HOUSTON & HENDERSON RR
GJ	GREENWICH & JOHNSONVILLE RY
GM	GAINSVILLE MIDLAND RR
GMRC	GREEN MOUNTAIN RR
GNA	GRAYSONIA, NASHVILLE & ASHDOWN
GNWR	GENNESEE & WYOMING RR
GRN	GREENVILLE & NORTHERN RY
GRR	GEORGETOWN RR
GSW	GREAT SOUTHWEST RR
GTW	GRAND TRUNK WESTERN RR. CO.

SYMBOL	COMPANY
GU	GRAFTON & UPTON RR
GWF	GALVESTON WHARVES
GWR	GREAT WESTERN RY
HB	HAMPTON & BRANCHVILLE RR
HBS	HOBOKEN SHORE RR
HBT	HOUSTON BELT & TERMINAL RY CO.
HE	HOLLIS & EASTERN RR
HIR	HOLTON INTER-URBAN RY
HLNE	HILLSBORO & NORTHEASTERN
HN	HUTCHINSON & NORTHERN
HPTD	HIGHPOINT, THOMASVILLE & DENTON RR
HRT	HARTWELL RY
HS	HARTFORD & SLOCOMB RR
HSW	HELENA SOUTHWESTERN RR
IAT	IOWA TERMINAL
ICG	ILLINOIS CENTRAL GULF RR CO.
IHB	INDIANA HARBOR BELT RR CO.
IRN	IRONTON RR
ITC	ILLINOIS TERMINAL RR CO.
ITTR	ITT RAYONIER RR
IU	INDIANAPOLIS UNION RY
JSC	JOHNSTOWN & STONY CREEK RR
KC	KANAWHA CENTRAL RY.
KCNW	KELLY'S CREEK & NORTHWESTERN
KCS	KANSAS CITY SOUTHERN RY CO.
KCT	KANSAS CITY TERMINAL RY CO.
KENN	KENNICOTT COPPER
KIT	KENTUCKY & INDIANA TERMINAL RR
KM	KANSAS & MISSOURI RY TERMINAL CO.
KNOR	KLAMATH NORTHERN RY
KT	KENTUCKY & TENNESSEE
LA	LOUISIANA & ARKANSAS RY CO
LAJ	LOS ANGELES JUNCTION RY CO.
LAL	LIVIONA, AVON, & LAKEVILLE RR
LBR	LOWVILLE & BEAVER RIVER RR
LC	LANCASTER & CHESTER RY
LEF	LAKE ERIE, FRANKLIN & CLARION RR
LHR	LEHIGH & HUDSON RIVER RY
LI	LONG ISLAND RR
LKP	LAHANINA, KAANAPALI & PACIFIC
LN	LOUISVILLE & NASHVILLE RR CO.
LNE	LEHIGH & NEW ENGLAND RY
LNO	LAONA & NORTHERN RY
LNW	LOUISIANA & NORTHWEST RR
LPB	LOUISIANA & PINEBLUFF
LPN	LONGVIEW, PORTLAND & NORTHERN RY
LRS	LAURINBURG & SOUTHERN RR
LSBC	LA SALLE & BUREAU COUNTY RR
LSI	LAKE SUPERIOR & ISPEMING RR
LSTT	LAKE SUPERIOR TERMINAL & TRANSFER RY
LT	LAKE TERMINAL RR
LUN	LUDINGTON & NORTHERN RY
LV	LEHIGH VALLEY RR CO
LW	LOUISVILLE & WADLEY RY

SYMBOL	COMPANY
LWV	LACKAWANA & WYOMING VALLEY RY
MAA	MAGMA ARIZONA RR
MAYW	MAYWOOD & SUGAR CREEK
MB	MONTPELIER & BARRE RR
MBRR	MERIDIAN & BIGBEE RR
MBT	MARIANNA & BLOUNTSTOWN RR
MCR	MC CLOUD RIVER RR
MCSA	MOSCOW, CAMDEN & SAN AUGUSTINE RR
MDW	MINNESOTA, DAKOTA & WESTERN RY
ME	MORRISTOWN & ERIE
MEC	MAINE CENTRAL RR CO
MET	MODESTO & EMPIRE TRACTION CO.
MGA	MONONGAHELA RY CO
MHCO	MARQUETTE & HURON MOUNTAIN
MHM	MOUNT HOPE MINERAL RR
MI	MISSOURI-ILLINOIS RR CO
MILW	CHICAGO, MILWAUKEE, ST. PAUL, & PACIFIC RR CO
MISS	MISSISSIPPIAN RY
MJ	MANUFACTURERS JUNCTION RY
MKT	MISSOURI-KANSAS-TEXAS RR CO
MNJ	MIDDLETOWN & JERSEY RY CO
MNS	MINNEAPOLIS, NORTHFIELD, & SOUTHERN
MOV	MOSHASSUCK VALLEY RR
MP	MISSOURI PACIFIC RR CO
MPA	MARYLAND & PENNSYLVANIA RR

SYMBOL	COMPANY
MRS	MANUFACTURERS RY
MSE	MISSISSIPPI EXPORT RR
MSV	MISSISSIPPI & SKUNA VALLEY RR
MTFR	MINNESOTA TRANSFER RY CO
MTR	MONTOUR RR
MTW	MARINETTE TOMAHAWK & WESTERN RR
MWR	MUNCIE & WESTERN RR
NALE	NATIONAL LEAD
NAP	NARRAGANSET PIER RR
NB	NORTHAMPTON & BATH RR
NEZP	NEZPERCE RR
NFD	NORFOLK, FRANKLIN, & DANVILLE RY CO
NFG	NICHOLAS, FAYETTE, & GREENBRIAR
NHIR	NEW HOPE AND IVYLAND RR
NJII	NEW JERSEY, INDIANA & ILLINOIS
NLG	NO. LOUISIANA & GULF RR
NN	NEVADA NORTHERN RY
NOPB	NEW ORLEANS PUBLIC BELT RR CO
NPB	NORFOLK & PORTSMOUTH BELT LINE RR CO
NPT	PORTLAND TERMINAL RR
NSL	NORWOOD & ST. LAWRENCE
NSS	NEWBURG & SOUTH SHORE RY
NW	NORFOLK & WESTERN RY CO
NWOK	NORTHWEST OKLAHOMA
NWP	NORTHWESTERN PACIFIC RR CO

SYMBOL	COMPANY
NYD	NEW YORK DOCK RY
NYLB	NEW YORK & LONG BRANCH RR
NYSW	NEW YORK, SUSQUEHANNA & WESTERN RR
OBPA	OGDENSBURG BRIDGE & POST AUTHORITY
OCE	OREGON, CALIFORNIA & EASTERN RY
OCW	OCEAN CITY WESTERN
OKGE	OKLAHOMA GENERAL ELECTRIC
OLB	OMAHA, LINCOLN & BEATRICE RY
ONW	OREGON & NORTHWESTERN RR
OPE	OREGON PACIFIC & EASTERN RY
OTR	OAKLAND TERMINAL RY
PAA	PENNSYLVANIA & ATLANTA RR
PAM	PITTSBURGH, ALLEGHENY & MC KEES ROCKS RR
PBCC	PEABODY COAL CO
PBR	PATAPSCO & BACK RIVERS RR
PC	PENN CENTRAL TRANSPORTATION CO
PCN	POINT COMFORT & NORTHERN RY
PCY	PITTSBURGH, CHARTIERS & YOUGHIOGHENY RR
PETE	PENNINSULA TERMINAL
PGBL	PROCTOR & GAMBLE
PHD	PORT HURON & DETRIOT RR
PI	PADUCAH & ILLINOIS RR
PICK	PICKINS RR
PLE	PITTSBURGH & LAKE ERIE RR CO
PNRC	PRESCOTT & NORTHWESTERN RR
POCA	PORT OF CATOOSA
POV	PITTSBURGH & OHIO VALLEY RY
PPU	PEORIA & PEKIN UNION RY CO
PRSL	PENNSYLVANIA-READING SEASHORE LINES
PRT	PARR TERMINAL RR
PRTD	PORTLAND TRACTION CO
PRV	PEARL RIVER VALLEY RR
PS	PITTSBURGH & SHAWMUT RR
PSR	PETALUMA & SANTA ROSA RR
PTM	PORTLAND TERMINAL CO
PTRA	PORT TERMINAL RR ASSOC.
PTRR	PORT TOWNSHEND RR
PUBP	PUBLISHER PAPER CO
PUCC	PORT UTILITIES COMMISSION OF CHARLESTON, S.C.
PVS	PECOS VALLEY SOUTHERN RY
PW	PROVIDENCE & WORCHESTER
QRR	QUINCY RR
RBTD	ROBERT DOLLAR CO
RDG	READING CO
RFP	RICHMOND, FREDERICKSBURG & POTOMAC RR
RI	CHICAGO, ROCK ISLAND, AND PACIFIC RR CO
RR	RARITAN RIVER RR
RSMC	RESERVE MINING CO
RSP	ROSCOE, SNYDER & PACIFIC RY
RT	RIVER TERMINAL RY
RV	RAHWAY VALLEY CO
SAN	SANDERSVILLE RR

SYMBOL	COMPANY
SB	SOUTH BUFFALO RY
SBK	SOUTH BROOKLYN
SC	SUMTER & CHOCTAW RY
SCL	SEABOARD COAST LINE RR CO
SDAE	SAN DIEGO & ARIZONA EASTERN RY CO
SEAV	SEAVIEW RR
SERA	SIERRA RR
SH	STEELTON & HIGHSPIRE RR
SIMP	SIMPSON TIMBER CO.
SIND	SOUTHERN INDIANA RY
SJB	ST. JOSEPH BELT
SJL	ST. JOHNSBURY & LAMOILLE COUNTY RR CO.
SJT	ST. JOSEPH TERMINAL
SLC	SAN LUIS CENTRAL RR
SLGW	SALT LAKE, GARFIELD & WESTERN RY
SLSF	ST. LOUIS-SAN FRANCISCO RY CO.
SM	ST. MARY'S RR
SMA	SAN MANUEL ARIZONA RR
SMV	SANTA MARIA VALLEY RR
SN	SACRAMENTO NORTHERN RY CO.
SOO	SOO LINE RR CO.
SOU	SOUTHERN RY CO.
SP	SOUTHERN PACIFIC TRANSPORTATION CO.
SRC	STRASBURG RR
SRN	SABINE RIVER & NORTHERN RR
SRT	SAVANNAH RIVER TERMINAL
SS	SAND SPRINGS RY
SSL	SKANEATELES SHORT LINE RR
SSLV	SOUTHERN SAN LOUIS VALLEY RR
SSW	ST. LOUIS-SOUTHWESTERN LINES
ST	SPRINGFIELD TERMINAL RY
STE	STOCKTON TERMINAL & EASTERN RR
STIS	STATEN ISLAND RR
TASD	TERMINAL RY ALABAMA STATE DOCKS
TAW	TOLEDO, ANGOLA & WESTERN RY
TB	TWIN BRANCH RR
TCG	TUCSON, CORNELIA & GILA BEND
TCT	TEXAS CITY TERMINAL RY
TEXC	TEXAS CENTRAL RR CO.
TILL	PORT OF TILLAMOOK BAY
TM	TEXAS MEXICAN RY CO.
TMBL	TACOMA MUNICIPAL BELT LINE
TN	TEXAS NORTHERN RY
TOE	TEXAS-OKLAHOMA & EASTERN RR
TOV	TOOELE VALLEY RY
TP	TEXAS & PACIFIC RY CO.
TPW	TOLEDO, PEORIA, & WESTERN RR CO.
TRC	TRONA RY
TRRA	TERMINAL RR ASSN. OF ST. LOUIS
TS	TIDEWATER SOUTHERN RY CO.
TSE	TEXAS-SOUTHEASTERN RR
TSR	TEXAS STATE RR
TSU	TULSA-SAPULA UNION RY
TT	TOLEDO TERMINAL RR
TTRA	TEXAS TRANSPORTATION CO.
UMP	UPPER MERION & PLYMOUTH

SYMBOL	COMPANY
UNI	UNITY RYS
UO	UNION RR OF OREGON
UP	UNION PACIFIC RR CO.
URR	UNION RR OF PENNSYLVANIA
USAL	U.S. STEEL CO. - ALABAMA
USWY	U.S. STEEL CO. - WYOMING
UT	UNION TERMINAL RY OF ST. JOSEPH, MO.
UTAH	UTAH RY
VALR	VALLEY RR
VBR	VIRGINIA BLUE RIDGE RY
VC	VIRGINIA CENTRAL RY
VCY	VENTURA COUNTY RY
VE	VISALIA ELECTRIC RR
VSO	VALLEY & SILETZ
VS	VALDOSTA SOUTHERN RR
VTR	VERMONT RY CO.
WA	WESTERN OF ALABAMA, INC.
WAG	WELLSVILLE, ADDISON & GALETON RR
WAR	WARRENTON RR
WBCC	WILKES BARRE CONNECTING
WHR	WHARTON & NORTHERN RR
WIM	WASHINGTON, IDAHO & MONTANA RY
WITE	WHITE CITY
WKS	WANAMAKERS KEMPTON & SOUTHERN
WLFB	WOLFBORO RR
WLO	WATERLOO RR
WM	WESTERN MARYLAND RR CO.
WNF	WINFIELD RR
WNFR	WINIFREDE RR
WOV	WARREN & OUACHITA VALLEY
WP	WESTERN PACIFIC RR CO.
WPY	WHITE PASS & YUKON
WRWK	WARWICK RR
WS	WARE SHOALS RR
WSR	WARREN & SALINE RIVER RR
WSS	WINSTON-SALEM SOUTHBOUND RY CO.
WSYP	WHITE SULPHUR SPRINGS & YELLOWSTONE PARK RY
WTCO	WEYERHAUSER TIMBER CO. - OREGON LINES
WTCW	WEYERHAUSER TIMBER CO. - WASHINGTON LINES
WVN	WEST VIRGINIA NORTHERN RR
WW	WINCHESTER & WESTERN RR
WYS	WYANDOTTE SOUTHERN
WYT	WYANDOTTE TERMINAL RR
YDC	YANKEE TOWN DOCK CORP.
YS	YOUNGSTOWN & SOUTHERN
YW	YREKA WESTERN RR CO.

APPENDIX D
PATENT DECLARATION

This report is a comprehensive statistical summary of the characteristics for all public, at-grade railroad crossings reported in the joint government/industry National Inventory of Railroad Highway Crossings as of August 1976.

The report, prepared under Contract RR733, contains no information on any subject which could be considered an invention, improvement or discovery.

2000 copies

*U.S. GOVERNMENT PRINTING OFFICE: 1977-701-300/99