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STATE OF CALIFORNIA
BUSINESS AND TRANSPORTATION AGENCY
DEPARTMENT OF TRANSPORTATION
DIVISION OF ADMINISTRATIVE SERVICES

OFFICE OF COMPUTER SYSTEMS

USER INSTRUCTIONS FOR

ENG- 127

APRAC - 1A
SRI
URBAN DIFFUSION MODEL
FOR
CARBON MONOXIDE

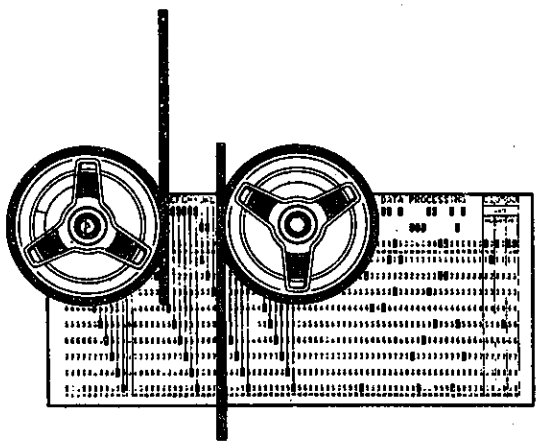
74-41

AN

ELECTRONIC

COMPUTER

SERVICE



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June 21, 1974

FROM: Office of Computer Systems
Engineering Applications Unit
J. Racin

Attention Users of ENG127

Subject: First Update to User Instructions for ENG127, APRAC-1A, SRI Urban Diffusion Model for Carbon Monoxide, DOT, OCS, January 1974

Page 3, Section 1.1: Change "ENGØCK" to "TRENGØL"

Change "SYS1.PROCLIB" to "SYS1.UPROCLIB"

Page 9, Section 3.2: Change the sentence to read:

The grid point model computes rooftop carbon monoxide concentrations for 625 or fewer receptor points, for only one specified hour, and for only one date per run.

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From: Office of Computer Systems
Engineering Applications Unit
J. A. Racin, July 29, 1974

Attention: Users of ENG127

Subject: Second Update to User Instructions for ENG127, APRAC-1A, SRI Urban Diffusion Model for Carbon Monoxide, DOT, OCS, January 1974

Page 5 In SUMMARY OF CARDS TYPES, the value recommended for Card Type "A1 - Grid Size" is ONE MILE.

Page A-2 Change sample value in Field A by coding a "1" in Column 6, and zeros in Columns 7 and 8.

Page C-1 Correct listing for Card Type A1, Field A.

Clarification of Units and Columns:

	Page A-3, RECEPTOR CARD B(I)		Page A-4, CITY CENTER CARD C	
	Field A	Field B	Field C	Field D
hundredths	Column 6	Column 16	Column 26	Column 36
tenths	" 5	" 15	" 25	" 35
ones	" 4	" 14	" 24	" 34
tens	" 3	" 13	" 23	" 33

For example: Card B, Field A,

Column	4	5	6
Value	1	1	1

represents 1.11 miles.

Pages D-1 through D-6. The output message that gives the X, Y coordinates is no longer "(FROM CITY CENTER)". The coordinates returned are the ones that you input and are in hundredth miles. For example, if 2000 is input to represent 20.00 miles, then the value returned is 2000.0000.

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USER INSTRUCTIONS FOR

APRAC - 1A

SRI Computer Model for Urban Diffusion of Carbon Monoxide

Department of Transportation
Office of Computer Systems
January, 1974

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1. Introduction

1.1. The APRAC-1A* urban diffusion model, developed at Stanford Research Institute and funded by the EPA, is a FORTRAN program that is stored in TRANSLIB; it is called by the ENGØCK procedure that is catalogued in SYS1.PROCLIB. This regional model is endorsed by the Environmental Protection Agency as being sufficiently accurate to predict the temporal and spatial distribution of carbon monoxide for transportation planning purposes.

1.2. Carbon monoxide concentrations are calculated from diffusion of extraurban sources (upwind cities), intraurban sources (freeway, arterial and feeder streets) and local sources (street canyons). The model treats carbon monoxide only. Correlation coefficients range from 0.4 to 0.7 between observed and calculated values of carbon monoxide, as measured in St. Louis and San Jose. (Ref 6.1)

1.3. With a crosswind line source the vertical concentration of carbon monoxide is based on either a "Gaussian plume" formulation or a simplified "box" model. The Gaussian formulation is used for horizontal distances close to the source; as downwind distance increases the vertical concentration becomes uniform and the calculation reverts to the "box" model. (Ref 6.1)

*APRAC: Acronym for the Air Pollution Research Advisory Committee (Ref 6.1)

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2. Inputs to APRAC-1A

2.1. Explicit examples on coding the various input card types are presented in Appendix A. Data for all the card types must be submitted, otherwise meaningless or misleading results will be produced. Vertically dashed lines on the sample input forms are decimal locations; therefore it is not necessary to code any decimals. If there are no implicit decimals then right-justify numbers. It is not necessary to code zeros in front of any left-most digit; i.e. leading zeros need not be coded. Do not code any commas in numeric fields.

2.2 Forms: Input data for keypunching can be submitted on any standard 80 column coding form.

2.3 Keypunch instructions: "Punch as shown" and "Interpret". Zero's can be coded as 0, Ø, or ⍉. Alphabetic "o" should be coded as $\overline{o}$. Conform with the conventions of your local keypunch section, and indicate the local conventions on your "Instructions to Keypunch" form.

2.4 Possible Problem Areas:

Omitted end-of-data-set cards ("9" cards), data coded in wrong fields, failure to code specifically recommended values, and submittal of input decks with card types out of alphabetical order can cause job failures.

Pay special attention to the units of the various inputs, since both the English and metric systems are used. Inputs involving direction must all be based on true north.

Some other possible errors are pointed out in the SUMMARY OF CARD TYPES.

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SUMMARY OF CARD TYPES

Card Type and Name	General Description	Possible Errors and Notes
A-Model Indicator	Model type and output option	Suggest line printer output only. Code Ø for card output.
A1-Grid Size	Primary traffic grid for region under study	
B-Receptor	Locate and describe receptor	Traffic code no.'s are in Appendix B, Table 1.
C-City Center	Defines center of primary traffic grid	Need minus sign in column 66. See Table 2, Appendix B, for Emissions coefficients.
D-Fuel	Fuel consumption rates	See Table 3, Appendix B and Section 2.7
E-Speed	Car speeds for up to 8 road types	Table 1, Appendix B. For Road type 5, you must report local street average speed.
F-Peak Hour	Peak or off-peak traffic indicator	
G-Daily Fraction (1,2)	Hourly fraction of traffic for 24 hours on road types 1 and 2	Road types correspond to "Traffic Code No." Appendix B, Table 1.
H-Daily Fraction(3,4,5)	Hourly fraction of traffic for 24 hours on road types 3, 4 and 5	
I-Street Fraction	Same as G & H for Street Canyon Submodel	
J-Saturday Fraction	Same as G, H, and I for Saturdays	

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SUMMARY OF CARD TYPES

Card Type and Name	General Description	Possible Errors and Notes
K-Sunday Fraction	Same as G, H, I, and J for Sundays and Holidays	
L-First/Last Days	Period of time under study, no. of holidays	Starting date must be earlier than ending date.
M-Holiday	Date(s) of Holiday(s)	No. of holidays read is specified on card L. If no holidays, omit this card, and Code Ø on card L, Data Field E.
N-Link	Traffic Link data: volumes, lengths, coords.	Limited to 1200 links. Ends reading of links with "9" - card.
O-Secondary Traffic	Center coordinates of 2X2 grid and % of secondary traffic	End reading of Secondary traffic cards with "9" - card.
P-City Date	City, day, max-min. temperatures; mixing depth <u>option</u>	If no max-min. mixing depths then include Q-cards. Limits are 50 to 4000 meters.
Q-Sounding	Radiosonde data	Include several Q-cards, but not more than 25. Last card must have a 500 millibar pressure.
R-Surface	Surface observations for day on P-City Date card	
End Set	<u>Either</u> a P-Q-R <u>combination</u> <u>or</u> one P and one R	Must have valid soundings for day after your study period. See Section 2.5.

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2.5 For any given run of the program you must be consistent in your usage of the sounding cards or the specification of maximum and minimum mixing depths. For example, if you are coding P,Q and R cards for the first day, then continue to code P, Q and R cards for all subsequent days, including the "End Set". Similarly, if you are coding P and R cards then for all the subsequent days code only P and R cards, including the "End Set".

Appendix C contains a sample set of input data card images for the required card types A through R.

2.6 These input instructions are designed for input of cards only. However, there are programs being developed to utilize existing traffic and aerometric data files. See Section 5.1 herein.

2.7 If field measured samples of upwind CO concentrations are available, then code zeros for the values of fuel consumption. Presently the measured values of upwind CO must be added to the results by hand. Include the two D-cards in your data deck even if the fuel consumption values are zero. See Appendix C, page C-1.

3. Outputs from APRAC-1A

3.1 Currently APRAC-1A has three output options: 1-synoptic model, 2-synoptic model with street canyon submodel, and 3-grid point model. The synoptic model computes hourly carbon monoxide concentrations for 10 or fewer receptor

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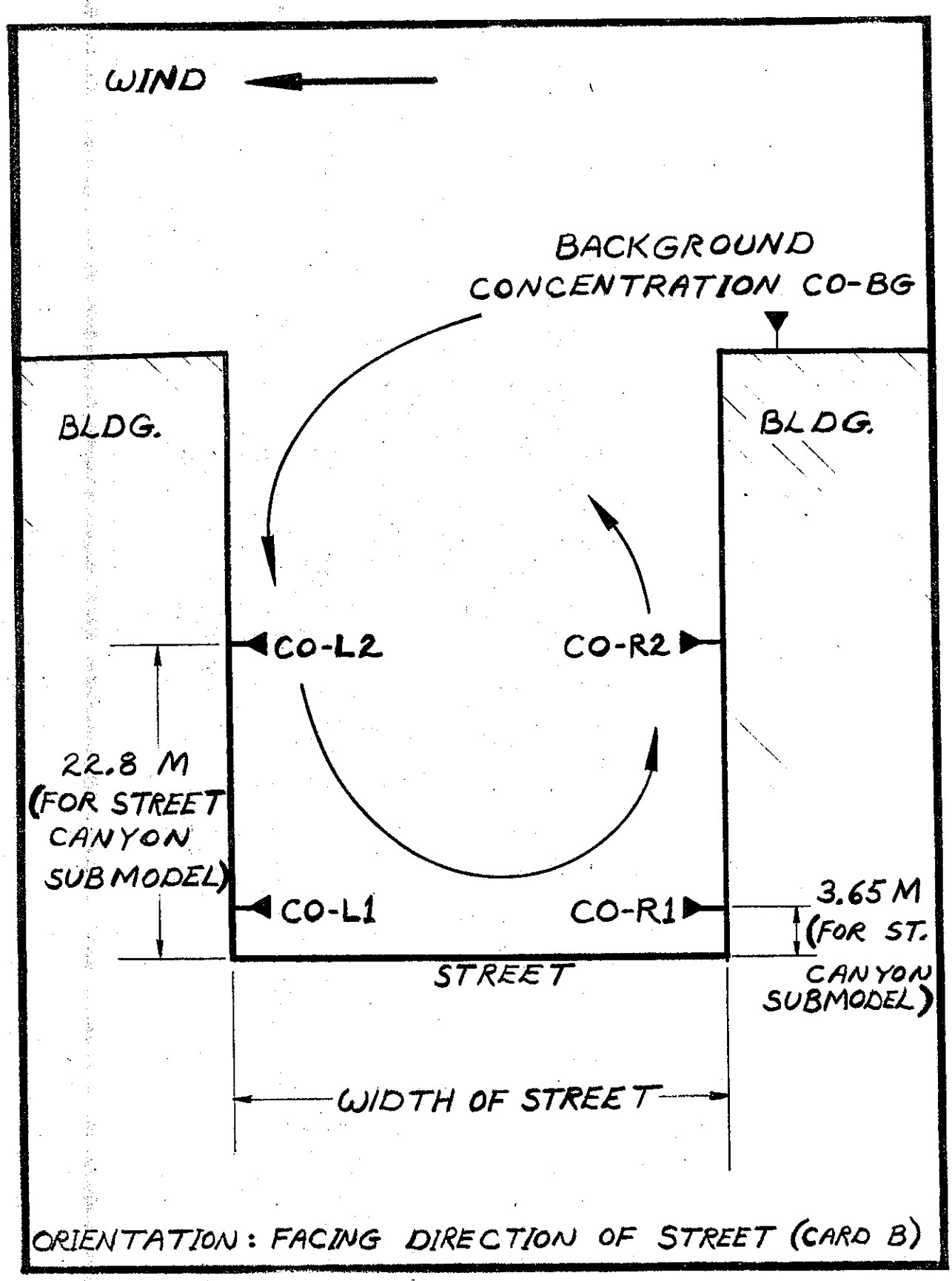

FIGURE 1. STREET CANYON

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points. "Street canyon" effects may be analyzed with the synoptic model only, as indicated in Appendix A, page A-1.

3.2 The grid point model computes rooftop carbon monoxide concentrations for 625 or fewer receptor points and for only one specified hour.

3.3 The relative locations of receptors, CO-BG, CO-L1, L2, R1 and R2, are depicted in Figure 1 (Ref 6.1). An examination of the exhibits in Appendix D shows that background concentrations are obtained from the synoptic and grid point models. The synoptic model with street canyon submodel outputs right and left, low and high concentrations in addition to background concentrations.

4. Job Control Language

4.1 A set of Job Control Cards must precede the input data cards. Submit jobs with the Job Control Language deck as follows:

Order	Card Name
1st	JOB
2nd	EXECUTE
3rd	DATA DEFINITION
	INPUT DECK GOES HERE
4th	SLASH SLASH

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```
//ENGQCK[1][2] JOB (TR1QQP,TR3N,TR[3],E974L),[4],REGION=14QK,CLASS=B
//STEP1   EXEC  TRENGQL
//FTQ4FQQ1 DD *,DCB=(BLKSIZE=8Q,RECFM=F)
[INPUT CARDS
 (A→R) AND "END SET"
   GO HERE]
//
```

1. District Identifier (Alpha)
2. Batch No. (1 through 9)
3. User's MSP Code
4. Name (up to 8 characters returned--Enclose in quotes if name contains periods, blanks, commas, etc.)
   See your EDP section for Items 1 and 3

FIGURE 2. SAMPLE JCL DECK

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4.2 The set of input cards always follows the data definition card. See example JCL deck in Figure 2. Do not forget to place a "//" card after your input data deck.

4.3 It is suggested that you consult with your EDP section for updates to JCL; e.g. jobname conventions and PROC name changes.

5. Sources of Assistance

5.1 Questions regarding job failures, computer diagnostics and these User Instructions should be referred to Ora Hogan or Jim Racin, ATSS 8-485-7218 of Computer Systems, Engineering Applications Unit in Sacramento. An addendum to this package of instructions that will interface the FWYØ15B and FWYØ59A traffic files with APRAC-1A is forthcoming.

5.2 Questions regarding the theory and application to assess the impact of transportation systems on the air environment should be referred to Andrew J. Ranzieri, ATSS 8-432-4828, of the Transportation Laboratory in Sacramento.

5.3 Questions regarding traffic networks should be referred to Leonard Seitz (916) 489-4654, of the Department of Transportation Planning, Transportation Modeling Simulation Branch in Sacramento.

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6. References

Further details on the assumptions and operation of the model are contained in the several references below.

6.1 Mancuso and Ludwig, User's Manual for the APRAC-1A Urban Diffusion Model Computer Program, Stanford Research Institute, Menlo Park, California, 1972.

6.2 Ludwig and Dabberdt, Evaluation of the APRAC-1A Urban Diffusion Model for Carbon Monoxide, Stanford Research Institute, Menlo Park, California, 1972.

6.3 Beaton, Skog, Shirley & Ranzieri, Meteorology and Its Influence on the Dispersion of Pollutants from Highway Line Sources, State of California, April, 1972, Air Quality Manual CA-HWY-MR657082S(1)-72-11.

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APPENDIX A

Input Card Formats

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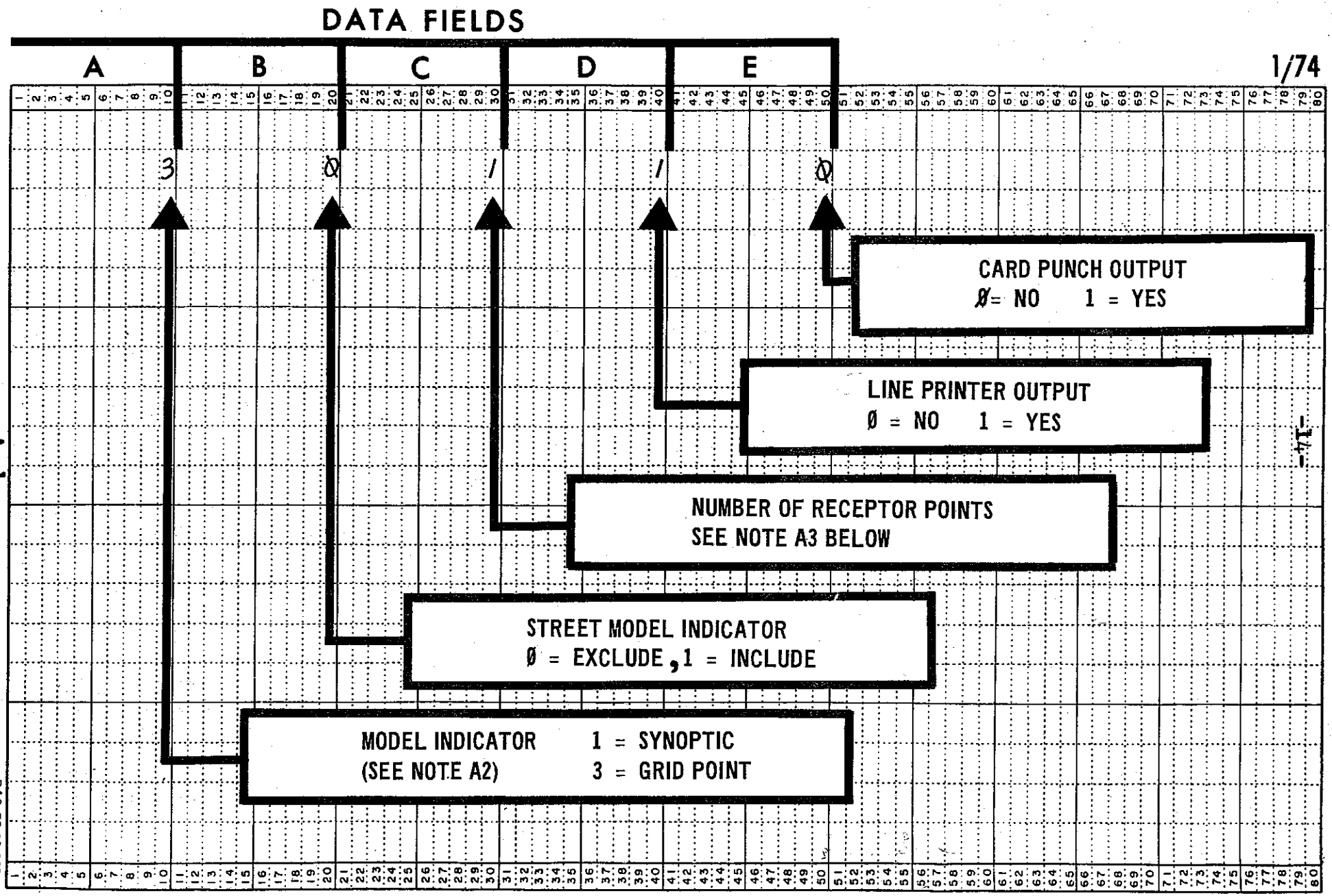

MODEL INDICATOR CARD A

NOTES:
- A1. NO. OF "A" CARDS IS ONE.
- A2. EXCLUDE STREET MODEL FOR GRID POINT RUNS.
- A3. NO. OF RECEPTOR POINTS FOR GRID POINT ≤625: FOR SYNOPTIC ≤10

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DATA FIELDS

A	B	C
100	50	50

NO. OF COLUMNS IN PRIMARY GRID
RANGE 1 TO 50

NO. OF ROWS IN PRIMARY GRID
RANGE 1 TO 50

LENGTH ALONG INDIVIDUAL SIDE OF SQUARE
IN PRIMARY GRID. UNITS = 0.01 MILE

Primary traffic link emission computations are based on this grid, where the total grid size is equal to rows x columns. The center of this primary grid is defined as being the city center, whose x,y coordinates are specified on card c, Data Fields C and D. Receptors can be anywhere within the grid. Do not confuse the primary grid with the secondary grid – See Card Type 0.

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GRID SIZE CARD A1

NOTES: A1-1 NO. OF A1 CARDS IS ONE.

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DATA FIELDS

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A	B	C	D	E	F	G
56789	43210	471500	5000	1650	5	1

X COORDINATE OF ITH RECEPTOR. UNITS = Ø.Ø1 MILE SEE NOTE B1

Y COORDINATE OF Ith RECEPTOR. UNITS = Ø.Ø1 MILE

DIRECTION OF STREET WHERE RECEPTOR IS LOCATED. UNITS = DEGREES FROM TRUE NORTH, CLOCKWISE FROM Ø TO 36Ø

NO. OF VEHICLES PER DAY ON Ith RECEPTOR STREET. UNITS = ADT

RECEPTOR STREET WIDTH, BLDG. TO BLDG. UNITS = METER

TRAFFIC CODE NO. OF RECEPTOR STREET – SEE TABLE 1 – APP. B

CARD ORDER NO. SEE NOTE B2

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RECEPTOR CARD B(I)

(I) represents a subscript.

NOTES:

B1, $I \leq 10$ FOR SYNOPTIC: FOR GRID POINT $I \leq 625$

B2, INITIAL VALUE = 1, FINAL VALUE SHOULD BE THE SAME AS INDICATED ON CARD A – DATA FIELD C

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DATA FIELDS

1/74

A	B	C	D	E	F	G
385	167	101	112	95	160	-48

CITY'S POPULATION. UNITS = MILLIONS

CITY'S LATITUDE. UNITS = DEGREES SEE NOTE C2

Y COORDINATE OF CITY CENTER. UNITS = Ø.Ø1 MILE

X COORDINATE OF CITY CENTER.* UNITS = Ø.Ø1 MILE

EMISSION'S CONSTANT SEE TABLE 2 – APP. B

TOTAL AMOUNT OF CITY'S SECONDARY TRAFFIC.** UNITS = PERCENT

EMISSION'S EXPONENT SEE TABLE 2 – APP. B

* Choose an arbitrary city center, such that the center chosen lies near the geometric center of the rectangular region under study defined on grid size card A1.

** Secondary traffic (specified on O cards) is any traffic that was not accounted for on the Primary network (specified on N cards); thus Primary plus Secondary traffic should represent total traffic.

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CITY CENTER CARD C

NOTES: C1. NO OF C CARDS IS ONE.
C2. DO NOT CODE MINUTES AND SECONDS IN COLUMNS 7 THRU 10 – USE DECIMAL PORTION

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DATA FIELDS

1/74

A	B	C	D	E	F	G	H
111	222	333	444	555	666	777	888

If you are going to add the values of upwind CO concentration by hand, then submit both these cards coded with zeros for each run.

TWO CARDS REQUIRED. ANNUAL CONSUMPTION OF FUEL WITHIN A 22.5 DEGREE ANGULAR SECTOR FOR 16 SECTORS (8 PER CARD). THE 16 VALUES ARE ASSOCIATED WITH THE 16 WIND DIRECTIONS. SECTORS EXTEND FROM 32 TO 1000 KILOMETERS UPWIND OF RECEPTOR.
UNITS = BILLIONS OF GALLONS PER YEAR
SEE APPENDIX B, TABLE 3

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A-5

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FUEL CARDS D1 & D2

NOTES: D1. NO. OF D CARDS IS TWO.

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DATA FIELDS

1/74

A	B	C	D	E	F	G	H
55	45	35	25	12	13		

NOTE: Local street average speed should be coded in data field E; it corresponds to average speed for Traffic Code No. 5 (See Appendix B, Table 1.)

CAR SPEEDS FOR UP TO EIGHT ROAD TYPES. UNITS = MILES PER HOUR .SEE APPENDIX B, TABLE 1.IF LESS THAN 8 ROAD TYPES, THEN CODE THIS CARD FOR AS MANY AS THERE ARE, LEAVING THE REMAINING DATA FIELDS BLANK.

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A-6

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SPEED CARD E

NOTES: NO. OF E CARDS IS ONE.

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DATA FIELDS

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A	B	C	D	E	F	G	H
2	2	2	2	2	1	1	1

THREE CARDS REQUIRED.
PEAK HOUR INDICATOR 1 = PEAK HOUR
2 = OFF PEAK HOUR
CARD F1 DATA FIELDS A THRU H CORRESPOND TO A.M. HOURS 1 THRU 8; F2 FIELDS A THRU H TO 9 A.M. THRU 4 P.M.; F3 FIELDS 5 P.M. TO MIDNIGHT

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A-7

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PEAK HOUR CARDS F1,F2,F3

NOTES: F1. NO. OF F CARDS IS THREE.

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A	B	C	D	E	F	G	H
0100	0200	0300	0400	0500	0600	0700	0800

THREE CARDS REQUIRED.
FOR ROAD TYPES 1 AND 2 (SEE APPENDIX B, TABLE 1 FOR ROAD TYPE) GIVE FRACTION OF DAILY TRAFFIC WITHIN EACH HOUR OF 24 HOURS ON WEEKDAYS ONLY. CARD G1 DATA FIELDS A THRU H CORRESPOND TO A.M. HOURS 1 TO 8, ETC.

SUM OF FRACTIONS SHOULD TOTAL 1.0

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A-8

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DAILY FRACTION (1,2) CARDS G1,G2 & G3

NOTES: G1. NO. OF G CARDS IS THREE.

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A	B	C	D	E	F	G	H
0100	0200	0300	0400	0500	0600	0700	0800

THREE CARDS REQUIRED. FOR ROAD TYPES 3, 4, & 5
GIVE FRACTION OF DAILY TRAFFIC WITHIN EACH
HOUR OF 24 HOURS ON WEEKDAYS.
CARD H1 DATA FIELDS A THRU H CORRESPOND TO
A.M. HOURS 1 TO 8, ETC.

SUM OF FRACTIONS SHOULD TOTAL 1.0

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DAILY FRACTION (3, 4, 5) CARDS H1,H2, & H3

NOTES: H1. NO. OF H CARDS IS THREE.

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DATA FIELDS

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A	B	C	D	E	F	G	H
0100	0200	0300	0400	05	06	07	08

THREE CARDS REQUIRED. FOR STREET MODEL GIVE FRACTIONS OF DAILY TRAFFIC AS WAS DONE ON G AND H CARDS

SUM OF FRACTIONS SHOULD TOTAL 1.Ø

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A—10

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STREET FRACTION CARDS I1,I2 & I3

NOTES: I1. NO. OF I CARDS IS THREE.

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DATA FIELDS

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A	B	C	D	E	F	G	H
01	02	03	04	05	06	07	08

THREE CARDS REQUIRED. FOR ALL ROAD TYPES GIVE FRACTION OF TRAFFIC IN EACH HOUR ON SATURDAYS AS WAS DONE ON G, H, AND I CARDS.

SUM OF FRACTIONS SHOULD TOTAL 1.0

-24-

A-11

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SATURDAY FRACTION CARDS J1,J2 & J3

NOTES: J1. NO. OF J CARDS IS THREE.

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A	B	C	D	E	F	G	H
12	12	12	1	1	1	01	01

THREE CARDS REQUIRED. FOR ALL ROAD TYPES GIVE FRACTION OF TRAFFIC IN EACH HOUR ON SUNDAYS AND HOLIDAYS AS WAS DONE ON G, H, I, & J CARDS

SUM OF FRACTIONS SHOULD TOTAL 1.0

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SUNDAY FRACTION CARDS K1,K2, & K3

NOTES: K1. NO. OF K CARDS IS THREE.

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DATA FIELDS

1/74

A	B	C	D	E	F	G
731225	731226	3	11	1	75	15

FOR FIRST DAY OF STUDY, CODE THE DAY OF WEEK.
1 = MON
2 = TUES
3 = WED
4 = THUR
5 = FRI
6 = SAT
7 = SUN

NO. OF HOLIDAYS BETWEEN BEGINNING AND ENDING DATE. SEE NOTE L2

HOUR OF DAY TO BE TREATED IN GRID POINT MODEL, 1 TO 24

RATIO OF PEAK TO OFF PEAK HOUR SPEEDS. Ø TO 1.Ø SEE NOTE L3

AVERAGE BUILDING HEIGHT. UNITS = METER SEE NOTE L4

ENDING DATE: SAME FORMAT AS BEGINNING DATE. MUST BE AFTER BEGINNING DATE. IF ONLY ONE DAY OF DATA, THEN ENDING DATE IS EQUAL TO BEGINNING DATE.

BEGINNING DATE MUST BE 6 DIGITS WITH NO INTERVENING SLASHES, DASHES, ETC. E.G. DECEMBER 5,1973 IS CODED 731205

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A-13

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FIRST/LAST DAYS CARD L

NOTES:
- L1. NO. OF L CARD IS ONE.
- L2. PROVIDE AN M CARD ONLY IF NO. OF HOLIDAYS > Ø
- L3. IF OMITTED, A DEFAULT RATIO OF Ø.5 IS USED
- L4. IF OMITTED, A DEFAULT HEIGHT OF 1Ø.Ø METERS IS USED

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DATA FIELDS

A	B	C	D	E	F	G	H	1/74

731225

FOR ONE OR AS MANY AS 8 HOLIDAYS, GIVE "YEAR MONTH DAY" DATE OF HOLIDAY. SEE NOTE M1.

A—14

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DAS-CS 90-062

HOLIDAY CARD M

Notes: M1. No. of M cards is one. If card L, data field E shows a zero, then omit this card.

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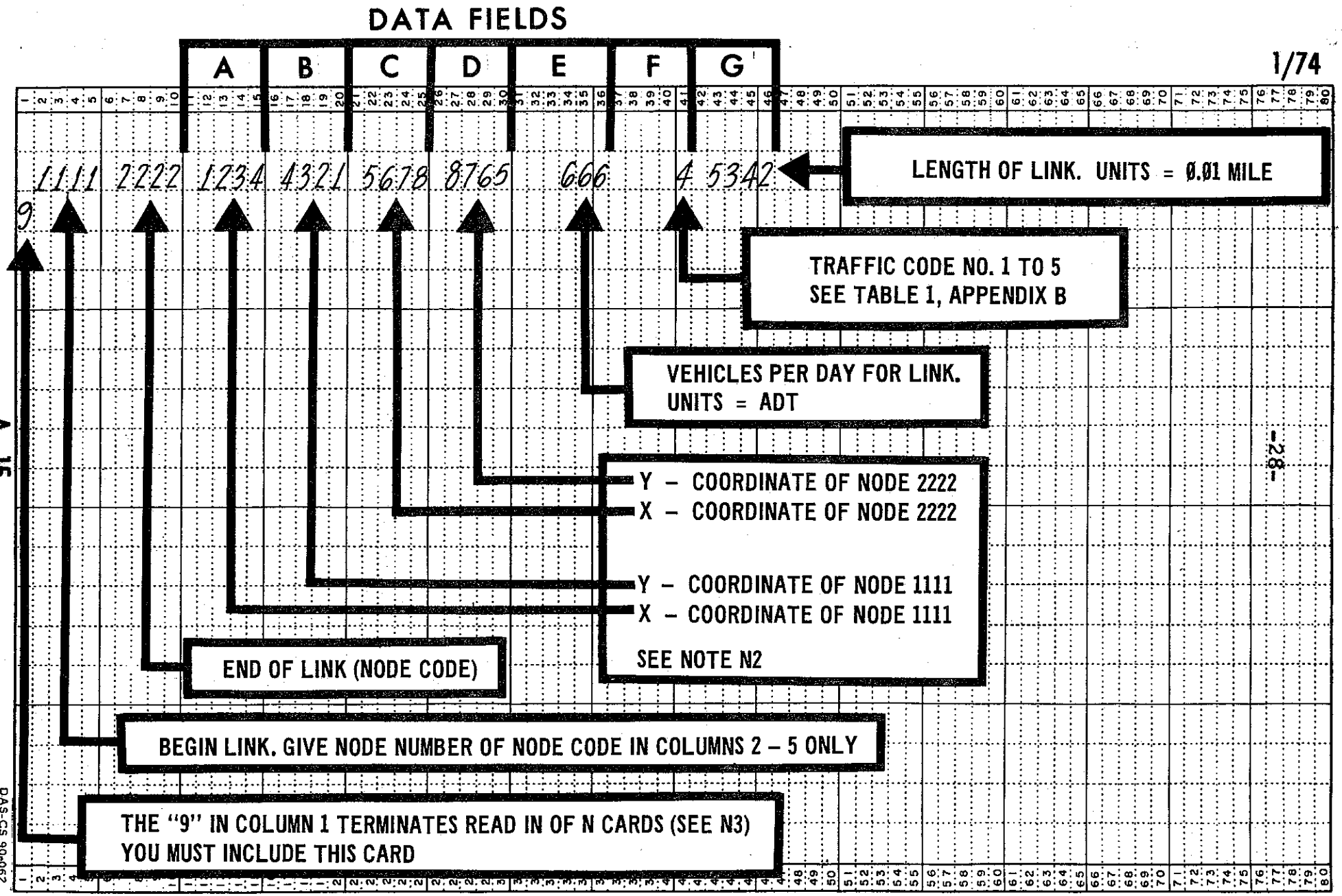

LINK CARD N(I)

(I) represents a subscript.

NOTES:
N1. NO. OF N CARDS IS I, WHERE I ≤ 1200
N2. COORDINATE UNITS = 0.01 MILES
N3. ONE CARD WITH A "9" PUNCHED IN COLUMN ONE MUST BE INCLUDED AFTER Ith LINK CARD.

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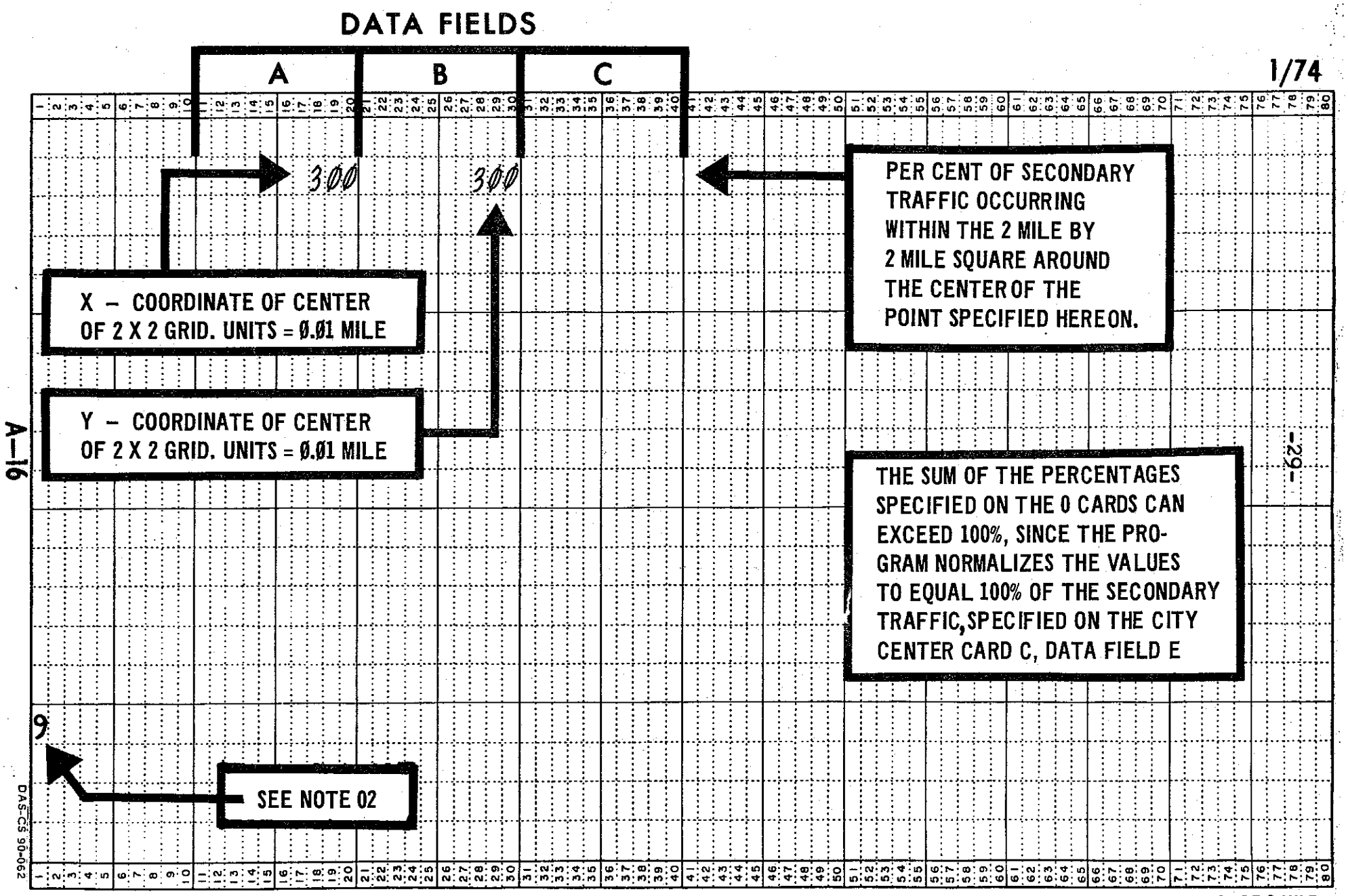

SECONDARY TRAFFIC CARD O(I)

(I) represents a subscript.

NOTES:

01 – NO. OF 0 CARDS IS I, WHERE I = NO. OF 2 MILE BY 2 MILE GRID SQUARES THAT COVER THE REGION UNDER STUDY.

02 – INCLUDES A SEPARATE CARD WITH A "9" IN COLUMN ONE TO TERMINATE READING OF 0 CARDS.

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DATA FIELDS

A	B	C	D	E	F	G
SACRAMENTO	731205	85	71	Ø	1000	150

CITY NAME

MAXIMUM TEMP. UNITS = °F

MINIMUM TEMPERATURE. UNITS = °F

"YEAR MONTH DAY" DATE

TIME CHANGE FROM PREVIOUS DAY.
−1 = DAYLIGHT SAVINGS TO STANDARD
Ø = NO CHANGE
1 = STANDARD TO DAYLIGHT SAVINGS

MAXIMUM MIXING DEPTH. UNITS = METERS SEE NOTE P2!

MINIMUM MIXING DEPTH. UNITS = METER. 5Ø TO 4ØØØ SEE NOTE P2!

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CITY DATE CARD P

NOTES: P1. INCLUDE A P CARD FOR EACH SET OF R CARDS.
P2. IF MAX. & MIN. MIXING DEPTHS ARE OMITTED, THEN YOU MUST INCLUDE A SET OF Q CARDS. HOWEVER IF YOU DO INCLUDE MIXING DEPTHS, THEN OMIT THE Q CARDS.

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DATA FIELDS

A	B
24	1011
50	5000

TEMPERATURE UNITS = °CENT.

ATMOSPHERIC PRESSURE UNITS = MILLIBARS

THERE MUST BE A CARD WITH A TEMPERATURE AND A CORRESPONDING PRESSURE OF 500.0 MILLIBARS TO END READING OF Q CARDS. SEE NOTE Q2

In columns 1 through 6 of each SOUNDING card you may code the 'YEAR MONTH DAY' date for the day on which the sounding was taken. See Appendix C, Sample Input Data Set.

SOUNDING CARD Q(I)

(I) represents a subscript.

CARDS: Q1. NO. OF Q CARDS IS I, WHERE I ≤ 25
Q2. IF YOU SPECIFIED ANY VALUES IN DATA FIELDS F AND G, ON CARD P THEN OMIT THE Q CARDS.

DAS-CS 90-062

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DATA FIELDS

A	B	C		D	E
Ø	5	7Ø		1	1

WIND SPEED. UNITS = KNOTS

WIND DIRECTION. UNITS = TENS OF DEGREES FROM TRUE NORTH, Ø TO 36

TEMPERATURE. UNITS = °F

CLOUD COVER
Ø = SUNNY
1Ø = COMPLETELY OBSCURED
SEE APPENDIX B TABLE 4

HOUR OF DAY. Ø = MIDNIGHT
YOU MUST INCLUDE DATA FOR 24 HOURS OF EACH DAY.
SEE NOTE R1.

In columns 1 through 6 on each of the 24 SURFACE cards you may code the 'YEAR MONTH DAY' date of the day being studied. See Appendix C.

A-19

-32-

DAS-CS 90-062

SURFACE CARD R(I)

(I) represents a subscript.

NOTES: R1. NO. OF R CARDS IS 24K WHERE K = NO. OF DAYS IN STUDY, AS INDICATED ON FIRST/LAST DAYS CARD L.

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```
SACRAMENTO      731227   79    61    Ø                  }P
                         241                 1ØØØ1
                         239                  99Ø2
                         197                  97Ø3      }Q   'END
                         158                  9654
                         1Ø1                  5ØØØ
          Ø     1    62          1     1                 }R
```

USE AN 'END SET' COMPARABLE TO THIS ONE, WHEN YOU HAVE BEEN SUBMITTING TEMP.-PRES. SOUNDINGS. REMEMBER TO INCLUDE THE 5ØØ.Ø MILLIBAR PRESSURE AS THE LAST SOUNDING CARD.

```
SACRAMENTO      731227   79    61    Ø   22ØØØ      15ØØ  }P   'END
          Ø     1    62          1     1                  }R   SET'
```

USE AN 'END SET' COMPARABLE TO THIS ONE, WHEN YOU HAVE BEEN SUBMITTING MAX.-MIN. MIXING DEPTHS.

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SAMPLE 'END SET' CARDS

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APPENDIX B

Tables 1 through 5

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Table 1

Traffic Facility Codes

Traffic Code No.	Speed Range (Mile Per Hour)	Average Speed*
1	Greater than 50	55
2	40 to 49	45
3	31 to 39	35
4	20 to 30	25
5**	1 to 19	12
6***	----	--
7***	----	--
8***	----	--

*These are the recommended speed values to be coded on the Speed Card E. IF the ranges or averages do not agree, then you may redefine them; however, be sure to make Card Types G, H, and I suitably compatible, except as noted below.

**Traffic Code Number 5 should correspond to a local street average speed.

***Street canyon speeds should be coded for Traffic Codes 6, 7, and 8.

Traffic Code No.'s should be coded for each link on N-cards. Traffic Code No.'s are used by the program as indicators for speeds and diurnal volume distributions.

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Table 2

Beta Emission Coefficient is-0.843 and is coded on City Center Card C, Data Field G. Remember to code the minus sign.

Alpha Emission Coefficient is selected for year of interest and is coded on City Center Card C, Data Field F.

Year	Alphas				
1972	681	731	781	831	881
73	607	660	713	766	819
74	544	600	656	711	767
75	454	519	583	647	711
76	360	434	509	583	657
77	296	372	449	525	601
78	240	318	396	475	553
79	189	269	349	430	510
80	146	227	308	390	471
81	120	202	284	366	448
82	91	173	256	339	422
1983	80	162	245	327	409
84	72	153	235	316	398
85	60	149	238	326	415
86	53	137	222	306	391
1987 to 1995	53	126	199	273	346
	0*	5*	10*	15*	20*

*Percent of heavy duty vehicles

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Table 3

FUEL CONSUMPTION*

Methods for projecting these figures for future years of study should be cleared through the DOT Planning, Transportation Modeling Simulation Branch.

County	Thousands of Gallons	
	Gasoline	Diesel**
Alameda	372,832	46,558
Alpine	570	172
Amador	5,184	1,128
Butte	53,877	21,071
Calaveras	8,890	1,706
Colusa	10,926	4,243
Contra Costa	376,595	109,260
Del Norte	14,682	5,278
El Dorado	30,199	3,845
Fresno	176,348	44,648
Glenn	15,619	2,772
Humboldt	52,691	20,080
Imperial	38,256	14,861
Inyo	14,341	2,299
Kern	188,488	45,211
Kings	17,181	7,585
Lake	12,822	1,392
Lassen	9,595	3,272
Los Angeles	2,846,997	311,565
Madera	20,348	3,634
Marin	72,906	2,891
Mariposa	5,103	391
Mendocino	32,433	17,695
Merced	46,474	9,957
Modoc	4,031	1,324
Mono	6,628	759
Monterey	98,189	15,683
Napa	33,689	2,857
Nevada	26,185	3,991
Orange	597,350	30,218
Placer	43,677	6,802
Plumas	12,364	1,162
Riverside	191,112	29,737
Sacramento	289,391	36,124
San Benito	9,094	1,613
San Bernardino	308,093	35,216
San Diego	532,158	71,089
San Francisco	321,201	28,511
San Joaquin	129,481	37,522
San Luis Obispo	60,256	7,355
San Mateo	204,048	7,558
Santa Barbara	112,458	13,154
Santa Clara	425,843	35,268
Santa Cruz	47,160	5,626
Shasta	40,886	12,616
Sierra	2,069	615
Siskiyou	17,463	8,158
Solano	81,990	9,199
Sonoma	95,051	11,992
Stanislaus	143,446	18,385
Sutter	15,416	3,931
Tehama	14,232	4,104
Trinity	4,406	542
Tulare	75,722	15,036
Tuolumne	10,924	3,445
Ventura	128,080	16,343
Yolo	43,146	14,686
Yuba	12,557	2,106
TOTAL	8,561,153	1,174,241

*Western Oil and Gas Association's Estimates of Member Company Fuel Sales by County in 1972 for California. These estimates do not account for small, independent suppliers; however, comparison with other sources will show reasonable compatibility.

**Diesel estimates are generally higher by comparison with other estimates, since exports may be included. Also a variety of heating oils and other oils were included by W.O.G.A. as diesel.

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Table 4 (Ref. 6.3)

U. S. Weather Bureau Service Symbol	Cloud Cover	Value To Be Coded On Cards R, Data Field B
○	Clear to less than 1/10	0
— ◐	Thin scattered 1/10-5/10	1
◐	Scattered 1/10-5/10	2
+ ◐	Dark-Scattered 1/10-5/10	3
— ◑	Thin Broken 6/10-9/10	4
◑	Broken 6/10-9/10	5
+ ◑	Dark Broken 6/10-9/10	6
— ⊕	Thin Overcast 10/10	7
⊕	Overcast 10/10	8
+ ⊕	Dark Overcast 10/10	9
×	Obscuration	9

Table 5

APRAC Stability Index
(A Refinement of Pasquill's Stability Classes. Ref. 6.2)
See Exhibits of Output in Appendix D

Surface Winds (knots)	Daytime Solar Elevation Angle > 15°			Opaque Cloud Cover ≥ 9/10, Day or Night or Solar Elevation Angle ≤ 15°	Nighttime	
	Strong Insolation	Moderate Insolation	Slight Insolation		≥ 5/10 Clouds	≤ 4/10 Clouds
≤ 3	1	2	2	4	5	5
3-6	1	2	3	4	4	5
6-10	2	3	3	4	4	4
10-12	3	3	4	4	4	4
≥ 13	3	4	4	4	4	4

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APPENDIX C

Sample Input Data Set

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MESSAGE PRODUCED BY PROGRAM

COLUMN 10 ↓ COLUMN 80 ↓

INPUT CARD IMAGES

CARD TYPE								
A	1	1	2	1				
A1	100	49	49					
B	19770	20710	1970	146920	243	6	1	
	20010	20730	2870	60880	185	7	2	
C	386	236	19315	20405	50	7000	-75	
* D								
E	430	90	530	200	120	90	50	
F	2	2	2	2	2	2	1	1
	1	2	2	2	2	2	2	1
	1	1	1	2	2	2	2	2
G	121	80	46	42	64	190	514	726
	659	606	634	628	638	660	658	782
	796	554	354	280	270	268	246	184
H	170	100	60	50	100	340	620	640
	500	450	460	440	450	500	580	710
	760	610	530	520	430	380	340	250
I	121	80	46	42	64	190	514	726
	659	606	634	628	638	660	658	782
	796	554	354	280	270	268	246	184
J	150	100	70	580	110	200	390	540
	580	620	640	580	660	620	620	620
	620	590	510	420	340	320	300	220
K	140	80	60	50	60	100	140	180
	280	360	360	410	460	480	530	560
	560	520	420	340	300	240	180	170
L	710826	710827	4	8	1	85	388	
M	710827							
N	1016 1017 1998 2074 1996 2068 14692 2 6							
	1006 1016 2004 2072 1998 2074 6088 2 7							
	1000 1001 1981 2004 1996 2043 13333 2 43							
	1001 1002 1996 2043 1998 2049 15600 2 6							
	1002 1003 1998 2049 2000 2055 16400 2 6							
	1003 1004 2000 2055 2001 2061 16400 2 5							
	1004 1005 2001 2061 2003 2066 16400 2 6							

ALL LINKS NOT SHOWN

* TWO CARDS WITH BLANKS CAN BE SUBMITTED INSTEAD OF CODING ZEROS IN THE FIELDS DESIGNATED ON PAGE A-5.

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ALL LINKS NOT SHOWN

N

CODED IN COLUMN 1

9 9

1083	1084	1948	2117	1916	2125	10000	2	31
1086	1087	1909	2106	1908	2097	6000	2	8
1080	1087	1937	2091	1908	2097	7000	2	30
1087	1088	1908	2097	1906	2091	6000	2	7
1088	1089	1906	2091	1905	2085	6000	2	6
1089	1090	1905	2085	1903	2080	7000	2	6
1090	1091	1903	2080	1902	2076	9000	2	5
1091	1092	1902	2076	1900	2059	13000	2	15
1092	1093	1900	2059	1892	2028	11500	2	31
1083	1095	1948	2117	1956	2125	21500	2	14
1085	1096	1914	2117	1912	2121	10000	2	6
1084	1096	1916	2125	1912	2121	10000	2	6
1087	1097	1908	2097	1908	2110	6000	2	4
1086	1097	1909	2106	1908	2110	6000	2	5
1309	1354	1600	1805	1555	1810	26150	4	55

O

900	1300	2
1300	2300	7
1300	3300	5
1100	1300	3
1500	2300	8
1900	3100	3
900	1500	2
1700	2300	9
1900	2900	3
1100	1500	3
900	2500	5
1900	2500	2
1300	1500	6
1100	2500	3
1900	2300	8
1500	1500	8
1300	2500	1
1900	2100	4
700	1700	2
1500	2500	8

ALL SECONDARY TRAFFIC NOT SHOWN

C-2

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ALL SECONDARY TRAFFIC NOT SHOWN

	2300	1900	2
	700	2100	2
	1500	2900	7
	2300	1700	3
	900	2100	1
	1700	2900	5
	2500	2300	6
	1100	2100	6
	700	3100	1
	2500	2100	8
	1300	2100	7
O	900	3100	1
	2500	1900	7
	1500	2100	2
	1100	3100	3
	2500	1700	2
	1700	2100	4
	1300	3100	7
	2700	2100	1
	500	2300	1
	1500	3100	2
	2900	1300	7
	700	2300	3
	1700	3100	2
	2700	1500	1
	900	2300	3
	900	3300	1
	2900	2300	4
	1100	2300	7
	1100	3300	6
	2900	1500	4

CODED IN COLUMN 1

C-3

9	9					
P	ST LOUIS	710826	84	58	1	
	710826		158			9930
Q	710826		183			9890
	710826		215			9810

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	710826				226		9770	
	710826				219		9460	
	710826				154		8500	
Q	710826				97		7830	
	710826				76		7290	
	710826				55		7000	
	710826				20		6300	
	710826				-095		5000	← 500.0 MILLIBAR PRESSURE CARD
	710826	0	0	68	0	0		
	710826	1	0	66	27	4		
	710826	2	0	66	26	4		
	710826	3	0	65	33	10		
	710826	4	0	64	27	4		
	710826	5	0	61	27	4		
	710826	6	0	61	27	4		
	710826	7	0	65	30	5		
	710826	8	0	68	33	10		
	710826	9	0	72	36	5		
R	710826	10	0	76	32	5		
	710826	11	0	79	34	5		
	710826	12	0	81	30	10		
	710826	13	1	82	30	13		
	710826	14	1	83	34	14		
	710826	15	1	84	32	14		
	710826	16	1	82	32	9		
	710826	17	0	80	35	11		
	710826	18	0	76	34	13		
	710826	19	0	71	36	10		
	710826	20	0	68	1	9		
	710826	21	0	64	2	8		
	710826	22	0	61	1	7		
	710826	23	0	60	36	7		
P	ST LOUIS		710827	76	53			
	710827				119		9965	
Q	710827				144		9790	
	710827				132		9280	

C-4

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C-5

	710827				106		8830
	710827				104		8500
	710827				113		8290
Q	710827				68		7420
	710827				75		7280
	710827				61		7000
	710827				50		6580
	710827				25		6140
	710827				-037		5500
	710827				-078		5000
	710827	0	0	58	3	4	
	710827	1	0	58	1	6	
	710827	2	0	58	35	7	
	710827	3	0	57	33	4	
	710827	4	0	55	0	0	
	710827	5	0	54	27	4	
	710827	6	0	53	30	5	
	710827	7	0	57	28	4	
	710827	8	0	62	35	6	
R	710827	9	1	67	35	6	
	710827	10	7	70	36	10	
	710827	11	8	71	35	7	
	710827	12	8	73	36	7	
	710827	13	6	73	1	8	
	710827	14	6	75	34	9	
	710827	15	3	76	1	8	
	710827	16	2	75	34	10	
	710827	17	3	74	36	11	
	710827	18	2	72	36	8	
	710827	19	0	67	1	5	
	710827	20	0	65	35	3	
	710827	21	0	64	35	3	
	710827	22	0	63	0	0	
	710827	23	0	61	0	0	
P	ST LOUIS		710828		84	55	
Q	710828				127		9986

5000 MILLIBAR PRESSURE CARD

END SET (CONTINUED NEXT SHEET)

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END	710828			169			9870	
	710828			169			9750	
SET	710828			112			8810	
	710828			103			8500	
Q	710828			110			8280	
	710828			85			7650	
	710828			88			7210	
	710828			76			7000	
	710828			6			5730	
	710826			20			6300	
	710826			-095			5000	← 500.0 MILLIBAR PRESSURE CARD
R	710828	0	0	60		27	4	

C-6

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APPENDIX D

Sample Output Options

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SYNOPTIC AIR POLLUTION MODEL WITH STREET CANYON SUBMODEL
NO. OF LINKS = 166
ST LOUIS

DATE: 710826(THU) NO OF RAOBS: 11 LEVELS SFC PRESS: 993.0 MILLIBARS MAX SFC TEMP: 302 DEG. KELVIN MIN SFC TEMP: 288 DEG. KELVIN

RECEPTOR STATION 1 X-COOR IS 45.5000 Y-COOR IS 30.5000 (FROM CITY CENTER)

HOUR	CLD-C TENTHS	TEMP KELVIN	WND-D DEGREES	WND-S METER/S	APRAC STBLTY INDEX	MIX-D METER	CO-BG PPM	CO-R1 PPM	CO-R2 PPM	CO-L1 PPM	CO-L2 PPM
1	0	292	270	2.1	5	118.8	0.47	0.95	0.69	1.67	0.97
2	0	292	260	2.1	5	118.8	0.24	0.52	0.37	0.93	0.52
3	0	292	330	5.1	4	118.8	0.04	0.16	0.10	0.33	0.16
4	0	291	270	2.1	5	118.8	0.37	0.76	0.55	1.34	0.77
5	0	289	270	2.1	5	118.8	1.11	2.26	1.64	3.97	2.29
6	0	289	270	2.1	4	218.5	2.02	5.54	3.62	10.76	5.63
7	0	292	300	2.6	2	517.5	1.05	5.19	2.94	11.34	5.30
8	0	293	330	5.1	3	617.1	0.57	2.61	1.50	5.65	2.66
9	0	295	360	2.6	1	816.4	0.55	6.03	3.80	6.03	3.80
10	0	298	320	2.6	1	1115.4	0.67	3.87	2.13	8.63	3.96
11	0	299	340	2.6	1	1215.1	0.53	3.70	1.98	8.41	3.78
12	0	300	300	5.1	2	1314.7	0.41	2.16	1.21	4.76	2.20
13	1	301	300	6.7	3	1414.4	0.43	1.86	1.08	3.97	1.89
14	1	302	340	7.2	3	1514.1	0.33	1.66	0.94	3.62	1.69
15	1	302	320	7.2	3	1514.1	0.55	2.33	1.36	4.97	2.37
16	1	301	320	4.6	3	1414.4	0.87	3.58	2.10	7.62	3.65
17	0	300	350	5.7	3	1314.7	0.33	3.16	2.01	3.16	2.01
18	0	298	340	6.7	4	1115.4	0.31	1.17	0.70	2.45	1.19
19	0	295	360	5.1	4	816.4	0.27	1.65	1.09	1.65	1.09
20	0	293	10	4.6	4	684.5	0.30	1.77	1.17	1.77	1.17
21	0	291	20	4.1	4	552.5	0.35	1.97	1.31	1.97	1.31
22	0	289	10	3.6	4	420.6	0.35	2.02	1.34	2.02	1.34
23	0	289	360	3.6	4	288.6	0.25	1.50	1.00	1.50	1.00
24	0	288	30	2.1	5	156.7	0.59	1.91	1.37	1.91	1.37

NOTE: This sheet and the three that follow are outputs produced from a run of the inputs of Appendix C.

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DATE: 710826

RECEPTOR STATION 2 X-COOR IS 69.5000 Y-COOR IS 32.5000 (FROM CITY CENTER)

HOUR	CLD-C TENTHS	TEMP KELVIN	WND-D DEGREES	WND-S METER/S	APRAC STBLTY INDEX	MIX-D METER	CO-BG PPM	CO-R1 PPM	CO-R2 PPM	CO-L1 PPM	CO-L2 PPM
1	0	292	270	2.1	5	118.8	0.51	1.13	0.90	1.13	0.90
2	0	292	260	2.1	5	118.8	0.24	0.60	0.47	0.60	0.47
3	0	292	330	5.1	4	118.8	0.05	0.15	0.10	0.24	0.13
4	0	291	270	2.1	5	118.8	0.41	0.90	0.72	0.90	0.72
5	0	289	270	2.1	5	118.8	1.22	2.68	2.14	2.68	2.14
6	0	289	270	2.1	4	218.5	2.13	6.59	4.93	6.59	4.93
7	0	292	300	2.6	2	517.5	1.11	6.36	4.41	6.36	4.41
8	0	293	330	5.1	3	617.1	0.72	2.45	1.50	3.99	2.07
9	0	295	360	2.6	1	816.4	0.76	3.34	1.93	5.65	2.77
10	0	298	320	2.6	1	1115.4	0.66	3.36	1.89	5.78	2.77
11	0	299	340	2.6	1	1215.1	0.85	3.54	2.07	5.93	2.95
12	0	300	300	5.1	2	1314.7	0.43	2.65	1.83	2.65	1.83
13	1	301	300	6.7	3	1414.4	0.46	2.26	1.59	2.26	1.59
14	1	302	340	7.2	3	1514.1	0.49	1.61	1.00	2.61	1.37
15	1	302	320	7.2	3	1514.1	0.53	2.04	1.22	3.38	1.71
16	1	301	320	4.6	3	1414.4	0.84	3.14	1.89	5.19	2.64
17	0	300	350	5.7	3	1314.7	0.60	1.94	1.21	3.13	1.64
18	0	298	340	6.7	4	1115.4	0.43	1.16	0.76	1.81	1.00
19	0	295	360	5.1	4	816.4	0.39	1.04	0.69	1.62	0.90
20	0	293	10	4.6	4	684.5	0.42	1.11	0.73	1.72	0.95
21	0	291	20	4.1	4	552.5	0.41	1.17	0.75	1.85	1.00
22	0	289	10	3.6	4	420.6	0.49	1.27	0.84	1.98	1.10
23	0	289	360	3.6	4	288.6	0.37	0.96	0.64	1.48	0.83
24	0	288	30	2.1	5	156.7	0.49	1.11	0.77	1.66	0.97

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You get one sheet per receptor station per day.

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DATE: 710827

RECEPTOR STATION 2 X-COOR IS 69.5000 Y-COOR IS 32.5000 (FROM CITY CENTER)

HOUR	CLD-C TENTHS	TEMP KELVIN	WND-D DEGREES	WND-S METER/S	APRAC STBLTY INDEX	MIX-D METER	CO-BG PPM	CO-R1 PPM	CO-R2 PPM	CO-L1 PPM	CO-L2 PPM
1	0	288	10	3.1	5	156.7	0.30	0.59	0.43	0.85	0.53
2	0	288	350	3.6	4	156.7	0.12	0.31	0.21	0.49	0.27
3	0	287	330	2.1	5	156.7	0.25	0.50	0.36	0.73	0.45
4	0	286	330	1.0	5	156.7	0.61	1.14	0.85	1.61	1.02
5	0	285	270	2.1	5	156.7	0.64	1.41	1.12	1.41	1.12
6	0	285	300	2.6	4	156.7	0.36	1.26	0.93	1.26	0.93
7	0	287	280	2.1	2	354.8	0.33	1.72	1.20	1.72	1.20
8	0	290	350	3.1	2	652.1	0.39	1.41	0.85	2.32	1.18
9	1	293	350	3.1	1	949.3	0.41	1.72	1.01	2.90	1.43
10	7	294	360	5.1	3	1048.4	0.37	1.20	0.75	1.95	1.02
11	8	295	350	3.6	3	1147.5	0.62	1.93	1.22	3.10	1.65
12	8	296	360	3.6	3	1246.6	0.67	2.14	1.34	3.45	1.81
13	6	296	10	4.1	2	1246.6	0.44	1.81	1.06	3.02	1.51
14	6	297	340	4.6	3	1345.7	0.62	1.97	1.24	3.18	1.68
15	3	298	10	4.1	2	1444.8	0.52	2.11	1.24	3.53	1.76
16	2	297	340	5.1	3	1345.7	0.59	1.89	1.18	3.05	1.60
17	3	297	360	5.7	4	1345.7	0.66	1.77	1.17	2.76	1.53
18	2	295	360	4.1	4	1147.5	0.73	1.93	1.28	2.99	1.67
19	0	293	10	2.6	5	949.3	1.52	2.97	2.18	4.26	2.65
20	0	292	350	1.5	5	785.2	2.17	4.10	3.05	5.81	3.67
21	0	291	350	1.5	5	621.0	1.74	3.28	2.44	4.65	2.94
22	0	290	350	1.0	5	456.9	2.01	3.59	2.73	4.99	3.24
23	0	289	350	1.0	5	292.7	1.90	3.39	2.58	4.71	3.06
24	0	289	270	2.1	5	128.6	0.90	1.97	1.57	1.97	1.57

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SYNOPTIC AIR POLLUTION MODEL
NO. OF LINKS = 166
ST LOUIS

DATE: 710826(THU) NO OF RAOBS: 0 LEVELS SFC PRESS: 0.0 MILLIBARS MAX SFC TEMP: 302 DEG. KELVIN MIN SFC TEMP: 288 DEG. KELVIN

RECEPTOR STATION 1 X-COOR IS 45.5000 Y-COOR IS 30.5000 (FROM CITY CENTER)

HOUR	CLD-C TENTHS	TEMP KELVIN	WND-D DEGREES	WND-S METER/S	APRAC STBLTY INDEX	MIX-D METER	CO-BG PPM
1	0	292	270	2.1	5	100.0	0.48
2	0	292	260	2.1	5	100.0	0.25
3	0	292	330	5.1	4	100.0	0.06
4	0	291	270	2.1	5	100.0	0.39
5	0	289	270	2.1	5	100.0	1.12
6	0	289	270	2.1	4	203.6	2.03
7	0	292	300	2.6	2	514.3	1.06
8	0	293	330	5.1	3	617.9	0.58
9	0	295	360	2.6	1	825.0	0.56
10	0	298	320	2.6	1	1135.7	0.68
11	0	299	340	2.6	1	1239.3	0.55
12	0	300	300	5.1	2	1342.9	0.42
13	1	301	300	6.7	3	1446.4	0.44
14	1	302	340	7.2	3	1550.0	0.34
15	1	302	320	7.2	3	1550.0	0.56
16	1	301	320	4.6	3	1446.4	0.88
17	0	300	350	5.7	3	1342.9	0.34
18	0	298	340	6.7	4	1135.7	0.32
19	0	295	360	5.1	4	825.0	0.28
20	0	293	10	4.6	4	680.0	0.31
21	0	291	20	4.1	4	535.0	0.36
22	0	289	10	3.6	4	390.0	0.36
23	0	289	360	3.6	4	245.0	0.27
24	0	288	30	2.1	5	100.0	0.60

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GRID POINT AIR POLLUTION MODEL
NO. OF LINKS = 166
ST LOUIS

DATE: 710826(THU) NO OF RAOBS: 11 LEVELS SFC PRESS: 993.0 MILLIBARS MAX SFC TEMP: 302 DEG. KELVIN MIN SFC TEMP: 288 DEG. KELVIN

RECEPTOR STATION 1 X-COOR IS 45.5000 Y-COOR IS 30.5000 (FROM CITY CENTER)

HOUR	CLD-C TENTHS	TEMP KELVIN	WND-D DEGREES	WND-S METER/S	APRAC STBLTY INDEX	MIX-D METER	CO-BG PPM
8	0	293	330	5.1	3	617.1	0.58

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NOTES: You get one sheet per receptor station per hour.

CT SAC 5-74 1C

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