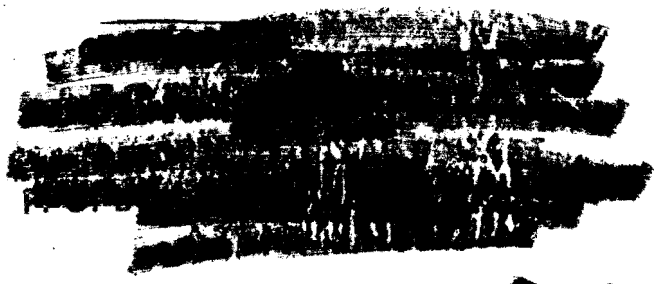
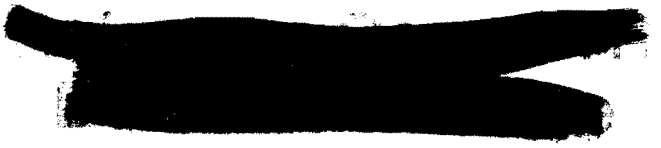
EVALUATION OF COMPUTER PROGRAMS NULOAD AND REHAB

VOLUME 3: NULOAD COMPUTER PROGRAM

RESEARCH REPORT 298/312-1



PROJECT 2-8-80-298
PROJECT 3-8-80-312



STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

CENTER FOR TRANSPORTATION RESEARCH
THE UNIVERSITY OF TEXAS AT AUSTIN

TEXAS TRANSPORTATION INSTITUTE
THE TEXAS A&M UNIVERSITY SYSTEM

SEPTEMBER 1980

EVALUATION OF COMPUTER PROGRAMS NULOAD AND REHAB

by

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Center for Transportation Research

Research Report 298/312-1

Volume 3

Computerized Methods of Projecting Rehabilitation and Maintenance Requirements Due to Vehicle Loadings

Research Projects 2-8-80-298 and 3-8-80-312

conducted for

The State Department of Highways and Public Transportation

by the

Texas Transportation Institute
The Texas A&M University System

Center for Transportation Research
The University of Texas at Austin

September 1980

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55B 4080

NULOAD

MICHALAK

JOB 4080 NULOAD STARTED ON PRINTER1 FORMS 3100 10.33.30 AM 29 AUG 80 BOX 55-B MICHALAK, C H HASP-II VERSION 4.0

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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

                C      PROGRAM NULOAD %INPUT,OUTPUT,TAPE1,TAPE5=INPUT,TAPE6=OUTPUT<
   ISN 0002             COMMON /AGES/ AGE25, AGE75
   ISN 0003             COMMON /COSTS/ COSM(20,2), COSV(20,2), COSMS(20,2), COSVS(20,2),
                       1               CSMPW(2), CSVPW(2), CSMUA(2), CSVUA(2)
   ISN 0004             COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEQTRP
   ISN 0005             COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0006             COMMON /FUNDS/ APOF(20,2), RTINT, RTINF
   ISN 0007             COMMON /IO/ LI, LO, LD
   ISN 0008             COMMON /LABELS/ MATLAB(5,10)
   ISN 0009             COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),
                       1            TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0010             COMMON /MISC/ IPOT, IARMS, OLDMNT, AGE
   ISN 0011             COMMON /OUT/ PSIE(30,2), EALREM(30,2), COSTM(20,30,2),CSTOV(30,2)
                       1           ,PSIB(30)
   ISN 0012             COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
   ISN 0013             COMMON /OVRLAY/ WLANE, WPSH, WGSH, PPVDSH, CAC, CGR
   ISN 0014             COMMON / POV/ SNOVP(20,2), THOVP(20,2), CSTOVP(20,2), PP(20,2)
                       1           , RLP(20,2)
   ISN 0015             COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0016             COMMON /STRCDE/ STRCD(8),CC(4),MC(11),NC,STRC(5),RFS(4),RFB(4)
   ISN 0017             COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0018             COMMON /SUMARY/ SECTLE(2,10,5),SYSTLE(60,5),NSECT(5),DELC(10,5),
                       1                COSR(10,5),DELCPW(10,5),COSRPW(10,5),DELCUA(10,5),
                       2                COSRUA(10,5),RLRAT(10,5),TLM(10,5),DSLV(10,5),NSYS
   ISN 0019             COMMON /CMP/ COMP(30,34), PCOMP(30), AATP(30)
   ISN 0020             COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                       1              U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                       2              PB,VPB,RPB, NS, NY, SV(5,2), SVS, FLRPTP(4)
   ISN 0021             COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0022             COMMON /TITLE/ TITLE(20,3), SECTTL(20)
   ISN 0023             CALL INIT(1)
   ISN 0024          100 CALL INPUT (IGO)
   ISN 0025             GO TO (110, 200, 300,300), IGO
   ISN 0026          110 CALL INIT(2)
   ISN 0027             CALL POTSET
   ISN 0028             CALL MNTSET
   ISN 0029             CALL INPRNT
   ISN 0030             CALL EALGET
   ISN 0031             CALL OUTPUT (2)
   ISN 0032             CALL LIFCYC
   ISN 0033             CALL OUTPUT(1)
   ISN 0034             IF (ISLV .GT. 0) CALL SALVAG
   ISN 0036             CALL FINANC (IERR)
   ISN 0037             CALL OUTPUT (4)
   ISN 0038             IF (IERR .GT. 0) GO TO 300
   ISN 0040             GO TO 100
   ISN 0041          200 CONTINUE
   ISN 0042             GO TO 100
   ISN 0043          300 CALL OUTPUT(0)
   ISN 0044             STOP
   ISN 0045             END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.29       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002             SUBROUTINE NPAGE
                     C
                     C     THIS ROUTINE EJECTS THE CURRENT PRINTER PAGE AND PRINTS THE
                     C     HEADING AND PAGE NUMBER
                     C
   ISN 0003             COMMON /IO/ LI, LO, LD
   ISN 0004             DATA NPG /0/
   ISN 0005             NPG = NPG + 1
   ISN 0006             WRITE (LO,20) NPG
   ISN 0007           20 FORMAT(1H1/1X,29HAUSTIN RESEARCH ENGINEERS INC,90X,
                     1         5HPAGE , I3 //
                     2    1X,48HNU_OAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE /
                     3       1X,27HVERSION 1.0 - OCTOBER 1978 //)
   ISN 0008             RETURN
   ISN 0009             END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        8, PROGRAM SIZE =       372, SUBPROGRAM NAME = NPAGE

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  52K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            BLOCK DATA
   ISN 0003            COMMON /CNSTS/ NAPOV, PAPOV, SIZE, AVRG
   ISN 0004            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0005            COMMON /FUNDS/ APOF(20,2), RTINT, RTINF
   ISN 0006            COMMON /IO/ LI, LO, LD
   ISN 0007            COMMON /LABELS/ MATLAB(5,10)
   ISN 0008            COMMON /LMP/ XLM(30), YLN(30), POTLM(20,2), OUTP(20,2),
                      1             TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0009            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGE
   ISN 0010            COMMON /OVRLAY/ WLANE, WPSH, WGSH, PPVOSH, CAC, CGR
   ISN 0011            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0012            COMMON /STEER/ EQFACT(15,5), PTST(4)
   ISN 0013            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0014            COMMON /STRCOE/ STRCO(8),CC(4),MC(11),NC,STRC(5),RFS(4),RFB(4)
   ISN 0015            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0016            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                      1              U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                      2              PB,VPB,RPB, NS, NY, SV(6,2), SVB, FLRPTP(4)
   ISN 0017            DATA NAPOV, PAPOV, SIZE, AVRG /21, 5.0, 2.0, 100./
   ISN 0018            DATA PICON, PTERM, PIOV, PTOV / 4*-1. /
   ISN 0019            DATA IF, IR, IC /1, 2, 3 /
   ISN 0020            DATA LI, LO, LD /5, 6, 1/
   ISN 0021            DATA SS, R, SC, XK, E /3., 1., 690., 50., 4.2E6/
   ISN 0022            DATA NYAP, OVLIF, ATP, NYR / 20, 20., 20., 40 /
   ISN 0023            DATA PPF,TPF,PFNO /0., 0., 0. /
   ISN 0024            DATA RTINT, RTINF /0., 0. /
                  C    TABLE OF STEERING AXLE EQUIVALENCIES BY AXLE LOAD AND TERMINAL PSI
   ISN 0025            DATA PTST /1.5, 2.0, 2.5, 3.0/
   ISN 0026            DATA EQFACT /2., 4., 6., 8., 10., 12., 14., 16., 18., 20., 22.,
                      1              24., 26., 28., 30.,
                      2              .0005, .008, .04, .13, .28, .52, .92, 1.42, 2.12,
                      3              2.95, 4.02, 5.29, 6.73, 8.31, 10.19,
                      4              .0009, .01, .05, .14, .31, .54, .86, 1.31, 1.94,
                      5              2.62, 3.35, 4.4, 5.49, 6.67, 8.05,
                      6              .002, .02, .06, .18, .36, .62, .93, 1.33, 1.9, 2.44,
                      7              3.15, 3.95, 4.82, 5.83, 6.8,
                      8              .004, .03, .09, .23, .41, .66, .94, 1.28, 1.74,
                      9              2.16, 2.7, 3.28, 3.89, 4.59, 5.23/
   ISN 0027            DATA STRCO /.44, .34, .23, .14, .30, .18, .11, .14 /
   ISN 0028            DATA RFS /.9, .7, .5, .5/
   ISN 0029            DATA RFB /1., .9, .7, .5/
   ISN 0030            DATA CC / 1.0, 0.85, 0.75, 0.75 /
   ISN 0031            DATA NC /11/
   ISN 0032            DATA MC /3HACP,3HATB,3HCTB,3HAGB,3HSAB,3HLTB,3HAGS,3HLTS,
                      1         3HJCP, 3HCRC, 3HACO /
   ISN 0033            DATA MATLAB / 4HASPH, 4HALT , 4HSURF, 4HACE , 4H    ,
                      1              4HASPH, 4HALT , 4HBASE, 4H    , 4H    ,
                      2              4HCEME, 4HNT T, 4HREAT, 4HED B, 4HASE ,
                      3              4HAGGR, 4HEGAT, 4HE BA, 4HSE  , 4H    ,
                      4              4HSAND, 4H ASP, 4HHALT, 4H BAS, 4HE   ,
                      5              4HLIME, 4H TRE, 4HATED, 4H BAS, 4HE   ,
                      6              4HAGGR, 4HEGAT, 4HE SU, 4HBBAS, 4HE   ,
                      7              4HLIME, 4H TRE, 4HATED, 4H SUB, 4HBASE,
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                      8              4HJCP , 4HSURF, 4HACE , 4H    , 4H    ,
                      9              4HCRC , 4HSURF, 4HACE , 4H    , 4H
                      A              /
  ISN 0034             DATA FLRPT3 /1.2, 1.4, 1.6, 1.8 /
  ISN 0035             END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*     SOURCE STATEMENTS =       34, PROGRAM SIZE =         0, SUBPROGRAM NAME = CNSTS

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  48K BYTES OF CORE NOT USED
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```
REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

ISN 0002            SUBROUTINE INPUT (IGO)
ISN 0003            COMMON /AGES/ AGE25, AGE75
ISN 0004            COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEQTRP
ISN 0005            COMMON /EXPVT/ THIC<(4), MTYPE(4), NLAY, IP, IF, IR, IC
ISN 0006            COMMON /FUNDS/ APOF(20,2), RTINT, RTINF
ISN 0007            COMMON /INTVLS/ STARTS(6)
ISN 0008            COMMON /IO/ LI, LO, LD
ISN 0009            COMMON /LABELS/ MATLAB(5,10)
ISN 0010            COMMON /LDS/ PGVML, PSAL, PTAL, PTRAL, FGVML, FSAL, FTAL, FTRAL,
                   1          PSTAW(10), FSTAW(10)
ISN 0011            COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),TOTALM, PPF,
                   1          TPF, PFNO, NASL, NSLR, TOVLM(30,2)
ISN 0012            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGF
ISN 0013            COMMON /MNTPAR/ UNTCST(7), USRMDL(31,3), WDTH, S, XML, JSLAG, MFLG
ISN 0014            COMMON /NEWSYS/ NEWSYS
ISN 0015            COMMON /NMBR/ SA(30,11), TA(30,11), TR(50,11), VE(30,11),
                   1          VG(75,11), NLDI(6), EPI(10), ST(30,11)
ISN 0016            COMMON /OUTSWH/ IOUT
ISN 0017            COMMON /OVRLAY/ WLAVE, WPSH, WGSH, PPVDSH, CAC, CGR
ISN 0018            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
ISN 0019            COMMON /STRCOE/ STRCD(8),CC(4),MC(11),NC,STRC(5),RFS(4),RFB(4)
ISN 0020            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
ISN 0021            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
ISN 0022            COMMON /TITLE/ TITLE(20,3), SECTTL(20)
ISN 0023            COMMON /TRTYP/ TTYP(2,10), PTTYP(10,20,2), PCTTR(20,2),
                   1          NAXLES(10,4),NT(4), NTTY, NATT, NTT, NEWTRK
ISN 0024            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                   1          U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                   2          PB,VPB,RPB, NS, NY, SV(6,2), SVB, FLRPTP(4)
ISN 0025            COMMON /SWTCHS/ OVLIFE, PCTINT, PCTINF, TPFPC, PFNOPC, AGR, SPCUT,
                   1          XMLI, CACI, CGRI, ICAC, ACDENS, ICGR, GRDENS,
                   2          INTT, SAVMNT, IDST, NLD, MCODE(5)
ISN 0026            DIMENSION KWORD(5), IVAL(2), VAL(5), KEY(22), STRCIN(5)
ISN 0027            DATA ISTOP /4HSTOP/
ISN 0028            DATA SATP /0./
ISN 0029            DATA KEY /4HSTOP, 4HEXEC, 4HFLEX, 4HRIGI, 4HPERF, 4HAGE , 4HOVER,
                   1          4HMODE, 4HHIST, 4HNO M, 4HTRUC, 4HSYST, 4HOLD , 4HRUN ,
                   2          4HLOAD, 4HSING, 4HTAND, 4HTRID, 4HGVW , 4HEMPT, 4HSTEE,
                   3          4HOUTP/
ISN 0030            DATA IACO /4HACO /
ISN 0031            DATA NKEY /22/
ISN 0032            IDST = 0
ISN 0033            NEWTRK = 0
ISN 0034            NEWSYS = 0
ISN 0035            ATP = SATP
ISN 0036            CALL NPAGE
                C
                C     READ AND ECHO PRINT A KEYWORD CARD
                C
ISN 0037          2 READ (LI,3) KWORD, IVAL, VAL
ISN 0038          3 FORMAT(5A4,2I5,5F10.0)
ISN 0039            WRITE (LO,4) KWORD, IVAL, VAL
ISN 0040          4 FORMAT(1X,5A4,2I5,5(F10.2,2X))
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                C
                C     TEST FOR NORMAL PROGRAM TERMINATION
                C
ISN 0041              IF (KWORD(I) .EQ. ISTOP) GO TO 9992
                C
                C     SEARCH THE KEY TABLE FOR THE KEYWORD READ IN
                C
ISN 0043              DO 10 I=1,NKEY
ISN 0044              IKEY = I
ISN 0045              IF (KWORD(I) .EQ. KEY(I)) GO TO 15
ISN 0047           10 CONTINUE
ISN 0048              GO TO 9996
ISN 0049           15 GO TO (9998, 9997, 100, 200, 300, 400, 500, 600, 700, 800, 900,
                     1        1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900,
                     2        2000) , IKEY
                C
                C     *** FLEXIBLE SECTION ***
                C
ISN 0050          100 IP = IP
ISN 0051              WLANE = VAL(1)
ISN 0052              WDTH = WLANE
ISN 0053              SS = VAL(2)
ISN 0054              R = VAL(3)
                C
                C     READ A TITLE CARD FOR THIS SECTION
                C
ISN 0055          101 READ (_I,102) SECTTL
ISN 0056          102 FORMAT (20A4)
ISN 0057              WRITE (LO,103) SECTTL
ISN 0058          103 FORMAT (1X,20A4)
                C
                C     READ AND ECHO PRINT THE MATERIALS CARD
ISN 0059              READ (_I,110) (MCODE(I), THICK(I), STRCIN(I), I=1,4)
ISN 0060          110 FORMAT(5(A3,2X,2F5.0,1X))
ISN 0061              WRITE (LO,120) (MCODE(I), THICK(I), STRCIN(I), I=1,4)
ISN 0062          120 FORMAT(1X,5(A3,2X,F5.1,F5.3,1X))
                C
                C     DETERMINE THE NUMBER OF LAYERS IN THE PAVEMENT STRUCTURE
                C
ISN 0063              IPFLG = 0
ISN 0064              DO 140 I=1,4
ISN 0065              IF (THICK(I) .LE. 0.0) GO TO 160
ISN 0067              NLAY = I
ISN 0068              STRC(I) = STRCIN(I)
ISN 0069              DO 135 J=1,NC
ISN 0070              IF (MCODE(I) .NE. MC(J)) GO TO 135
ISN 0072              IF ((IP .EQ. IF) .AND. ((J .EQ. 9) .OR. (J .EQ. 10))) GO TO 9994
ISN 0074              IF ((IP .EQ. IR) .AND. (J .EQ. 1)) IPFLG = I
ISN 0076              MTYPE(I) = J
ISN 0077              GO TO 140
ISN 0078          135 CONTINUE
ISN 0079              GO TO 9993
ISN 0080          140 CONTINUE
ISN 0081          160 IF (IPFLG .EQ. 0) GO TO 165
ISN 0083              IF (MTYPE(2) .NE. 9 .AND. MTYPE(2) .NE. 10) GO TO 9989
ISN 0085              IP = IC
ISN 0086          165 STRC(5) = STRC(1)
ISN 0087              MCODE(5) = MCO
```

```
ISN 0088            GO TO 2
                C
                C   *** RIGID SECTION ***
                C
ISN 0089      200 IP = IR
ISN 0090          W_ANE = VAL(1)
ISN 0091          WDTH = WLANE
ISN 0092          XK = VAL(2)
ISN 0093          IF (VAL(3) .NE. 0.0) SC = VAL(3)
ISN 0095          IF (VAL(4) .NE. 0.0) E = VAL(4)
ISN 0097          GO TO 101
                C
                C   *** PERFORMANCE SECTION ***
                C
ISN 0098      300 PICON = VAL(1)
ISN 0099          PTERM = VAL(2)
ISN 0100          PIOV = VAL(3)
ISN 0101          PTOV = PTERM
ISN 0102          OVLIFE = VAL(4)
ISN 0103          OVLIF = NYAP
ISN 0104          IF (VAL(4) .GT. 0.) OVLIF = VAL(4)
ISN 0106          READ (LI,310) ATP, AGE25, AGE75
ISN 0107      310 FORMAT(3F10.0)
ISN 0108          WRITE (LO,320) ATP, AGE25, AGE75
ISN 0109      320 FORMAT(1X,8F10.2)
ISN 0110          SATP = ATP
ISN 0111          GO TO 2
                C
                C   *** AGE DISTRIBUTION SECTION ***
                C
ISN 0112      400 NASL = IVAL(1)
ISN 0113          ISLV = IVAL(2)
ISN 0114          FURP = VAL(1)
                C
                C   READ AND ECHO PRINT THE DISTRIBUTION OF LANE MILES BY AGE
                C
ISN 0115          READ (LI,410) (YLM(I),I=1,NASL)
ISN 0116      410 FORMAT(15F5.0)
ISN 0117          WRITE (LO,420) (YLM(I),I=1,NASL)
ISN 0118      420 FORMAT(1X,15F8.1/1X,15F8.1)
ISN 0119          IF (ISLV .EQ. 0) GO TO 2
ISN 0121          READ (LI,430) (VI(I),I=1,NASL)
ISN 0122          WRITE (LO,320) (VI(I),I=1,NASL)
ISN 0123      430 FORMAT(16F5.0)
ISN 0124          READ (LI,430) (RI(I),I=1,NASL)
ISN 0125          WRITE (LO,320) (RI(I),I=1,NASL)
ISN 0126          GO TO 2
                C
                C   *** OVERLAY SECTION ***
                C
ISN 0127      500 ICAC = IVAL(1)
ISN 0128          ICGR = IVAL(2)
                C
                C   READ AND ECHO PRINT THE OVERLAY PARAMETERS
                C
ISN 0129          READ (LI,510) PPVDSH, WPSH, WGSH, CACI, CGRI, ACDENS, GRDENS
ISN 0130      510 FORMAT(7F10.0)
ISN 0131          WRITE (LO,520) PPVDSH, WPSH, WGSH, CACI, CGRI, ACDENS, GRDENS
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ISN 0132       520 FORMAT (1X,7F10.2)
ISN 0133           GO TO 2
                C
                C      *** MODEL MAINTENANCE SECTION ***
                C
ISN 0134       500 IARMS = IVAL(1)
ISN 0135           MFLG = 1
                C
                C      READ AND ECHO PRINT THE UNIT COSTS FOR BOTH FLEXIBLE AND RIGID
                C      PAVEMENTS, AND THE JOINT SEALING PARAMETERS
                C
ISN 0136           READ (LI,610) (UNTCST(I),I=1,3)
ISN 0137       510 FORMAT(3F10.0)
ISN 0138           READ (LI,620) (UNTCST(I),I=4,7), SPCJT, XMLI, JSLAG
ISN 0139       520 FORMAT(4F10.0,2F5.0,I5)
ISN 0140           WRITE (LO,630) (UNTCST(I),I=1,7), SPCJT, XMLI, JSLAG
ISN 0141       630 FORMAT(1X,3F10.2/1X,6F10.2,I5)
ISN 0142           GO TO 2
                C
                C      *** HISTORICAL MAINTENANCE SECTION ***
                C
ISN 0143       700 IARMS = IVAL(1)
ISN 0144           MFLG = 2
                C
                C      READ AND ECHO PRINT THE MAINTENANCE COSTS PER LANE MILE BY AGE FOR
                C      FLEXIBLE PAVEMENTS
                C
ISN 0145           READ (LI,710) (USRMDL(I,1),I=1,24)
ISN 0146       710 FORMAT(3F10.0)
ISN 0147           WRITE (LO,720) (USRMDL(I,1),I=1,24)
ISN 0148       720 FORMAT(1X,8F10.0)
                C
                C      READ AND ECHO PRINT THE MAINTENANCE COSTS PER LANE MILE BY AGE FOR
                C      RIGID PAVEMENTS
                C
ISN 0149           READ (LI,710) (USRMDL(I,2),I=1,24)
ISN 0150           WRITE (LO,720) (USRMDL(I,2),I=1,24)
ISN 0151           GO TO 2
                C
                C      *** NO MAINTENANCE SECTION ***
                C
ISN 0152       800 MFLG = 0
ISN 0153           GO TO 2
                C
                C      *** TRUCK TYPES SECTION ***
                C
ISN 0154       900 NTTY = IVAL(1)
ISN 0155           NATT = IVAL(2)
ISN 0156           NEWTRK = NEWTRK + 1
ISN 0157           IF ((NTTY+NATT) .GT. 10) GO TO 9995
ISN 0159           NTT = NTTY
ISN 0160           K = 0
ISN 0161           INTT = NTT + NATT
                C
                C      READ AND ECHO PRINT THE TRUCK LABELS
                C
ISN 0162           READ (LI,910) ((TTYP(M,J),M=1,2),J=1,INTT)
ISN 0163       910 FORMAT(8(2A4,2X))
```

```
ISN 0164            WRITE (_O,920) ((TTYP(M,J),M=1,2),J=1,INTT)
ISN 0165          920 FORMAT(1X,8(2A4,2X))
                  C
                  C     READ AND ECHO PRINT THE AXLE CONFIGURATIONS
                  C
ISN 0166            READ (_I,921) ((NAXLES(M,J),J=1,4),M=1,INTT)
ISN 0167          921 FORMAT(8(4I2,2X))
ISN 0168            WRITE (_O,922) ((NAXLES(M,J),J=1,4),M=1,INTT)
ISN 0169          922 FORMAT(1X,8(4I2,2X))
ISN 0170            DO 929 J=1,4
ISN 0171            NT(J) = 0
ISN 0172            DO 928 M=1,NTT
ISN 0173            NT(J) = NT(J) + NAXLES(M,J)
ISN 0174          928 CONTINUE
ISN 0175          929 CONTINUE
                  C
                  C     READ AND ECHO PRINT THE TRUCK PERCENTAGES
                  C
ISN 0176          935 K = K+1
ISN 0177            DO 950 N=1,NYAP
ISN 0178            READ (_I,930) I, (PTTYP(J,I,K),J=1,10), PCTTR(I,K)
ISN 0179          930 FORMAT(I3, 1X, 11F6.0)
ISN 0180            WRITE (_O,940) I, (PTTYP(J,I,K),J=1,10), PCTTR(I,K)
ISN 0181          940 FORMAT(1X,I3,1X,11F6.2)
ISN 0182          950 CONTINUE
ISN 0183            IF ((NATT .GT. 0) .AND. (K .EQ. 1)) GO TO 935
ISN 0185            IF (K .EQ. 2) GO TO 2
ISN 0187            DO 970 J=1,10
ISN 0188            DO 960 I=1,20
ISN 0189            PTTYP(J,I,2) = PTTYP(J,I,1)
ISN 0190          960 CONTINUE
ISN 0191          970 CONTINUE
ISN 0192            GO TO 2
                  C
                  C     *** TITLE CARD SECTION ***
                  C
                  C     READ AND ECHO PRINT THE THREE TITLE CARDS
                  C
ISN 0193         1000 DO 1030 J=1,3
ISN 0194            READ (_I,102) (TITLE(I,J),I=1,20)
ISN 0195            WRITE (_O,103) (TITLE(I,J),I=1,20)
ISN 0196         1030 CONTINUE
ISN 0197            NEWSYS = 1
ISN 0198            GO TO 2
                  C
                  C     *** OLD SECTIONS ***
                  C
ISN 0199         1150 SAVNT = VAL(1)
ISN 0200            IPDT = IVAL(1)
ISN 0201            IFF = IVAL(2)
ISN 0202            IF (IPDT .EQ. 0) GO TO 2
ISN 0204            IF (IPDT .EQ. 1) GO TO 1150
ISN 0206            PENOPC = VAL(3)
ISN 0207            PCTINF = VAL(4)
                  C
                  C     READ AND ECHO PRINT THE ANNUAL PROJECTED OVERLAY FUNDS FOR PRESENT
                  C     REGULATIONS
                  C
```

```
ISN 0208            READ (LI,1110) (APOF(I,1),I=1,NYAP)
ISN 0209       1110 FORMAT(8F10.0)
ISN 0210            WRITE (LO,1120) (APOF(I,1),I=1,NYAP)
ISN 0211       1120 FORMAT(1X,8F10.0)
ISN 0212            IF (IFF .EQ. 1) GO TO 1140
ISN 0214            DO 1130 I=1,NYAP
ISN 0215            APOF(I,2) = APOF(I,1)
ISN 0216       1130 CONTINUE
ISN 0217            GO TO 2
                C
                C     READ AND ECHO PRINT THE ANNUAL PROJECTED OVERLAY FUNDS FOR FUTURE
                C     REGULATIONS
                C
ISN 0218       1140 READ (LI,1110) (APOF(I,2),I=1,NYAP)
ISN 0219            WRITE (LO,1120) (APOF(I,2),I=1,NYAP)
ISN 0220            GO TO 2
ISN 0221       1150 TPFPC = VAL(2)
ISN 0222            PFNOPC = VAL(3)
ISN 0223            GO TO 2
                C
                C     *** RUN PARAMETERS ***
                C
ISN 0224       1200 IF (IVAL(1) .NE. 0) NYAP = MIN0(IVAL(1),20)
ISN 0226            IEQTRP = IVAL(2)
ISN 0227            AGR = VAL(1)
ISN 0228            PCTINT = VAL(2)
ISN 0229            GO TO 2
                C
                C     *** LOAD LIMITS SECTION ***
                C
                C     READ THE PRESENT AND FUTURE LOAD LIMITS
                C
ISN 0230       1300 IEWS = IVAL(1)
ISN 0231            IOST = 1
ISN 0232            NEWTRK = NEWTRK + 2
ISN 0233            READ (LI,1310) PGVWL, PSAL, PTAL, PTRAL
ISN 0234       1310 FORMAT(4F10.0)
ISN 0235            WRITE (LO,1315) PGVWL, PSAL, PTAL, PTRAL
ISN 0236       1315 FORMAT(1X,4F10.2)
ISN 0237            READ (LI,1310) FGVWL, FSAL, FTAL, FTRAL
ISN 0238            WRITE (LO,1315) FGVWL, FSAL, FTAL, FTRAL
                C
                C     READ THE PRESENT AND FUTURE STEERING AXLE WEIGHTS FOR EACH TRUCK TYPE
                C
ISN 0239            NTT = INTT
ISN 0240            READ (LI,1320) (PSTAW(I),I=1,NTT)
ISN 0241            READ (LI,1320) (FSTAW(I),I=1,NTT)
ISN 0242       1320 FORMAT(10F8.0)
ISN 0243            WRITE (LO,1325) (PSTAW(I),I=1,NTT)
ISN 0244            WRITE (LO,1325) (FSTAW(I),I=1,NTT)
ISN 0245       1325 FORMAT(1X,10F8.0)
                C
                C     READ THE NEW EMPTY WEIGHT AS A PERCENTAGE OF THE CURRENT EMPTY WEIGHT<
                C     FOR EACH TRUCK TYPE
                C
ISN 0246            IF (IEWS .EQ. 0) GO TO 2
ISN 0248            READ (LI,1320) (EPI(I),I=1,NTT)
ISN 0249            WRITE (LO,1320) (EPI(I),I=1,NTT)
```

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ISN 0250      1330 FORMAT(1X,10F8.2)
ISN 0251           GO TO 2
                C
                C     *** SINGLE AXLE SECTION ***
                C
ISN 0252      1400 NLDI(1) = IVAL(1)
ISN 0253           NLD = IVAL(1)
ISN 0254           NTT = INTT
ISN 0255           STARTS(1) = VAL(1)
ISN 0256           NEWTRK = NEWTRK + 2
                C
                C     READ THE LOAD INTERVALS AND, FOR EACH TRUCK TYPE, THE NUMBER OF
                C     SINGLE AXLES FOR EACH INTERVAL
                C
ISN 0257           DO 1420 L=1,NLD
ISN 0258           READ (LI,1410) ELDINT, (SA(L,J),J=1,NTT)
ISN 0259      1410 FORMAT(F10.0,10F7.0)
ISN 0260           WRITE (LO,1415) ELDINT, (SA(L,J),J=1,NTT)
ISN 0261      1415 FORMAT(1X,F10.0,10F7.0)
ISN 0262           SA(L,11) = ELDINT
ISN 0263      1420 CONTINUE
ISN 0264           GO TO 2
                C
                C     *** TANDEM AXLE SECTION ***
                C
ISN 0265      1500 NLDI(2) = IVAL(1)
ISN 0266           NLD = IVAL(1)
ISN 0267           NTT = INTT
ISN 0268           STARTS(2) = VAL(1)
ISN 0269           NEWTRK = NEWTRK + 2
                C
                C     READ THE LOAD INTERVALS AND NUMBER OF DOUBLES PER TRUCK TYPE PER INTERVAL
                C
ISN 0270           DO 1510 L=1,NLD
ISN 0271           READ (LI,1410) ELDINT, (TA(L,J),J=1,NTT)
ISN 0272           WRITE (LO,1415) ELDINT, (TA(L,J),J=1,NTT)
ISN 0273           TA(L,11) = ELDINT
ISN 0274      1510 CONTINUE
ISN 0275           GO TO 2
                C
                C     *** TRIPLE AXLE SECTION ***
                C
ISN 0276      1600 NLDI(3) = IVAL(1)
ISN 0277           NLD = IVAL(1)
ISN 0278           NTT = INTT
ISN 0279           STARTS(3) = VAL(1)
ISN 0280           NEWTRK = NEWTRK + 2
                C
                C     READ THE LOAD INTERVALS AND NUMBER OF TRIPLES PER TRUCK TYPE PER INTERVAL
                C
ISN 0281           DO 1610 L=1,NLD
ISN 0282           READ (LI,1410) ELDINT, (TR(L,J),J=1,NTT)
ISN 0283           WRITE (LO,1415) ELDINT, (TR(L,J),J=1,NTT)
ISN 0284           TR(L,11) = ELDINT
ISN 0285      1610 CONTINUE
ISN 0286           GO TO 2
                C
                C     *** GROSS VEHICLE WEIGHT SECTION ***
```

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                C
ISN 0287         1700 NLDI(4) = IVAL(1)
ISN 0288              NLD = IVAL(1)
ISN 0289              NTT = INTT
ISN 0290              STARTS(4) = VAL(1)
ISN 0291              NEWTRK = NEWTRK + 2
                C
                C     READ THE LOAD INTERVALS AND THE NUMBER OF EACH TRUCK TYPE WHOSE GVW FALLS
                C     WITHIN EACH INTERVAL
                C
ISN 0292              DO 1710 L=1,NLD
ISN 0293              READ (LI,1410) ELDINT, (VG(L,J),J=1,NTT)
ISN 0294              WRITE (LO,1415) ELDINT, (VG(L,J),J=1,NTT)
ISN 0295              VG(L,11) = ELDINT
ISN 0296         1710 CONTINUE
ISN 0297              GO TO 2
                C
                C     *** EMPTY VEHICLE WEIGHT SECTION ***
                C
ISN 0298         1800 NLDI(5) = IVAL(1)
ISN 0299              NLD = IVAL(1)
ISN 0300              NTT = INTT
ISN 0301              STARTS(5) = VAL(1)
ISN 0302              NEWTRK = NEWTRK + 2
                C
                C     READ THE LOAD INTERVALS AND THE NUMBER OF EACH TRUCK TYPE WHOSE EVW FALLS
                C     WITHIN EACH INTERVAL
                C
ISN 0303              DO 1810 L=1,NLD
ISN 0304              READ (LI,1410) ELDINT, (VE(L,J),J=1,NTT)
ISN 0305              WRITE (LO,1415) ELDINT, (VE(L,J),J=1,NTT)
ISN 0306              VE(L,11) = ELDINT
ISN 0307         1810 CONTINUE
ISN 0308              GO TO 2
                C
                C     *** STEERING AXLES SECTION ***
                C
ISN 0309         1900 NLDI(6) = IVAL(1)
ISN 0310              NLD = IVAL(1)
ISN 0311              NTT = INTT
ISN 0312              STARTS(6) = VAL(1)
ISN 0313              IDST = 6
ISN 0314              NEWTRK = NEWTRK + 2
                C
                C     READ THE LOAD INTERVALS AND, FOR EACH TRUCK TYPE, THE NUMBER OF
                C     STEERING AXLES FOR EACH INTERVAL
                C
ISN 0315              DO 1910 L=1,NLD
ISN 0316              READ (LI,1410) ELDINT, (ST(L,J),J=1,NTT)
ISN 0317              WRITE (LO,1415) ELDINT, (ST(L,J),J=1,NTT)
ISN 0318              ST(L,11) = ELDINT
ISN 0319         1910 CONTINUE
ISN 0320              GO TO 2
                C
                C     *** OUTPUT KEYWORD SECTION ***
                C
ISN 0321         2000 IOUT = IVAL(1)
ISN 0322              GO TO 2
```

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                C
                C     *** KEYWORD ERROR PROCESSING SECTION ***
                C
   ISN 0323      9989 WRITE (LO,9089) IPFLG
   ISN 0324      9089 FORMAT(/1X,19H*** ERROR IN LAYER ,I1,4H ***/
                     1       38H ACP NOT PERMITTED FOR RIGID PAVEMENT /
                     2       30H UNLESS ABOVE JCP OR CRC LAYER//
                     3       15H RUN TERMINATED)
   ISN 0325           GO TO 9999
   ISN 0326      9992 IGO = 3
   ISN 0327           GO TO 99999
   ISN 0328      9993 WRITE (LO,9093)
   ISN 0329      9093 FORMAT(/1X,37H*** UNRECOGNIZABLE MATERIALS CODE ***//
                     1       15H RUN TERMINATED)
   ISN 0330           GO TO 9999
   ISN 0331      9994 WRITE (LO,9094)
   ISN 0332      9094 FORMAT(/1X,51H*** ILLEGAL MATERIAL CODE FOR THIS TYPE OF PAVEMENT,
                     1       4H ***//15H RUN TERMINATED)
   ISN 0333           GO TO 9999
   ISN 0334      9995 WRITE (LO,9095)
   ISN 0335      9095 FORMAT(/1X,28H*** TOO MANY TRUCK TYPES ***//
                     1       15H RUN TERMINATED)
   ISN 0336           GO TO 9999
   ISN 0337      9996 WRITE (LO,9096)
   ISN 0338      9096 FORMAT(/1X,44H*** SPECIFIED KEYWORD NOT FOUND IN TABLE ***,
                     1       //15H RUN TERMINATED)
   ISN 0339           GO TO 9999
   ISN 0340      9997 IGO = 1
   ISN 0341           GO TO 99999
   ISN 0342      9998 WRITE (LO,9098)
   ISN 0343      9098 FORMAT(/1X,44H*** STOP DIRECTIVE FOUND OUT OF SEQUENCE ***,
                     1       //15H RUN TERMINATED)
   ISN 0344      9999 IGO = 4
   ISN 0345     99999 DO 3500 I=1,30
   ISN 0346           XLM(I) = YLM(I)
   ISN 0347      3500 CONTINUE
   ISN 0348           S = SPOUT
   ISN 0349           XML = 0.
   ISN 0350           IF (XMLI .NE. 0.) XML = XMLI
   ISN 0352           LP = MIN0(4, MAX0(1,INT(7.1 - 2.*PTERM)))
   ISN 0353           IF (FLRP .LE. 0.) FLRP = FLRPTP(LP)
   ISN 0355           RETURN
   ISN 0356           END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      355, PROGRAM SIZE =      8628, SUBPROGRAM NAME = INPUT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE INPRNT
   ISN 0003            COMMON /AGES/ AGE25, AGE75
   ISN 0004            COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEQTRP
   ISN 0005            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0006            COMMON /FUNDS/ APOF(20,2), RTINT, RTINF
   ISN 0007            COMMON /INTVLS/ STARTS(6)
   ISN 0008            COMMON /IO/ LI, LO, LD
   ISN 0009            COMMON /LABELS/ MATLAB(5,10)
   ISN 0010            COMMON /LDS/ PGVWL, PSAL, PTAL, PTRAL, FGVWL, FSAL, FTAL, FTRAL,
                      1            PSTAW(10), FSTAW(10)
   ISN 0011            COMMON /LMP/ XLM(30), YLM(30), POTLM(20,2), OUTP(20,2), TOTALM,
                      1            PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0012            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGF
   ISN 0013            COMMON /MNTPAR/ UNTCST(7), USRMDL(31,3), WDTH, S, XML, JSLAG, MFLG
   ISN 0014            COMMON /NEWSYS/ NEWSYS
   ISN 0015            COMMON /NMBR/ SA(30,11), TA(30,11), TR(50,11), VE(30,11),
                      1            VG(75,11), NLDI(6), EPI(10), ST(30,11)
   ISN 0016            COMMON /OUTSWH/ IOUT
   ISN 0017            COMMON /OVRLAY/ WLANE, WPSH, WGSH, PPVDSH, CAC, CGR
   ISN 0018            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0019            COMMON /STRCDE/ STRCD(8), CC(4), MC(11), NC, STRC(5), RFS(4),
                      1            RFB(4)
   ISN 0020            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0021            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0022            COMMON /TITLE/ TITLE(20,3), SECTTL(20)
   ISN 0023            COMMON /TRTYP/ TTYP(2,10), PTTYP(10,20,2), PCTTR(20,2),
                      1            NAXLES(10,4), NT(4), NTTY, NATT, NTT, NEWTRK
   ISN 0024            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                      1            U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                      2            PB, VPB, RPB, NS, NY, SV(6,2), SVB, FLRPT2(4)
   ISN 0025            COMMON /SWTCHS/ OVLIFE, PCTINT, PCTINF, TPFPC, PFNOPC, AGR, SPCJT,
                      1            XMLI, CACI, CGRI, ICAC, ACDENS, ICGR, GRDENS,
                      2            INTT, SAVMNT, IDST, NLD, MCODE(5)
   ISN 0026            DIMENSION HEAD(5,6), TOTL(2), IOVLY(2), IPRFT(2,2), MEQTRP(4,2),
                      1          MDASH(4,2), IUNIT(9), MCRAM(2), NAMES(4,2)
   ISN 0027            DATA MAXLN, MCRAM, TOTL /10, 4HNO  , 4HYES , 4HTOTA, 4HL   /
   ISN 0028            DATA IPRFT, IOVLY /4HPRES, 4HENT , 4HPROP, 4HOSED, 4HOVER, 4H_AY /
   ISN 0029            DATA MEQTRP /4HPAYL, 4HOAD , 4H    , 4H    ,
                      1            4HNUMB, 4HER O, 4HF TR, 4HIPS /
   ISN 0030            DATA MDASH / 4H====, 4H=== , 4H    , 4H    ,
                      1            4H====, 4H== =, 4H= ==, 4H=== /
   ISN 0031            DATA IUNIT /4H$/TO, 4H$/CY, 4H$/SY, 4HN   , 4H    , 4H/IN,,
                      1           4H    , 4H    , 4H    /
   ISN 0032            DATA HEAD /4HSING, 4HLE A, 4HXLE , 4HLOAD, 4HS   ,
                      1           4HTAND, 4HEM A, 4HXLE , 4HLOAD, 4HS   ,
                      2           4HTRIP, 4HLE A, 4HXLE , 4HLOAD, 4HS   ,
                      3           4HGROS, 4HS VE, 4HHICL, 4HE WE, 4HIGHT,
                      4           4HEMPT, 4HY VE, 4HHICL, 4HE WE, 4HIGHT,
                      5           4HSTEE, 4HRING, 4H AXL, 4HE LO, 4HADS /
   ISN 0033            DATA NAMES /4HAXLE, 4HS WE, 4HIGHE, 4HD   ,
                      1           4HVEHI, 4HCLES, 4H WEI, 4HGHED/
   ISN 0034            DATA ITYPE /4HTYPE/
   ISN 0035            OLDMNT = SAVMNT
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ISN 0036            IF (MFLG .EQ. 0) OLDMNT = 0.
ISN 0038            CALL NPAGE
ISN 0039            DO 2515 J=1,3
ISN 0040            WRITE (LO,2510) (TITLE(I,J),I=1,20)
ISN 0041         2510 FORMAT(1X,20A4)
ISN 0042         2515 CONTINUE
ISN 0043            WRITE (LO,2517) SECTTL
ISN 0044         2517 FORMAT(/1X,20A4)
ISN 0045            WRITE (LO,2520) NYAP, AGR, PCTINT
ISN 0046         2520 FORMAT(//5X,14HRUN PARAMETERS/5X,3H===,1X,10(1H=)//
                     1       3X,26HLENGTH OF ANALYSIS PERIOD ,27(1H=),I10,6H YEARS/
                     2       8X,33HANNUAL GROWTH RATE OF 18 KIP EAL ,20(1H=),F10.2,
                     2          13H PERCENT/YEAR/
                     3       8X,53HANNUAL INTEREST RATE FOR PRESENT WORTH CALCULATIONS =
                     3         ,F10.2,13H PERCENT/YEAR)
ISN 0047            I = IEQTRP + 1
ISN 0048            WRITE (LO,2522) (MEQTRP(J,I),J=1,4), (MDASH(J,I),J=1,4)
ISN 0049         2522 FORMAT(/8X,48HNUMBER OF 18-KIP ESAL UNDER PROPOSED REGULATIONS/
                     1        8X,50HDERIVED FROM 18-KIP ESAL UNDER PRESENT REGULATIONS/
                     2        8X,28HAND THE ASSUMPTION OF EQUAL ,4A4/36X,4A4)
ISN 0050            IF (IP .EQ. IR) GO TO 2570
ISN 0052            WRITE (LO,2530) NLAY, WLANE, SS, R
ISN 0053         2530 FORMAT(//5X,18HFLEXIBLE STRUCTURE/5X,9(1H=),1X,9(1H=)//
                     1       8X,17HNUMBER OF LAYERS ,11(1H=),I10/
                     2       8X,11HLANE WIDTH ,17(1H=),F10.2,5H FEET/
                     3       8X,20HDESIGN SOIL SUPPORT ,8(1H=),F10.2/
                     4       8X,16HREGIONAL FACTOR ,12(1H=),F10.2)
ISN 0054         2535 WRITE (LO,2540)
ISN 0055         2540 FORMAT(/8X,9HMATERIALS/8X,9(1H=)//
                     1       10X,5HLAYER,4X,9HTHICKNESS,3X,10HSTRUCTURAL,4X,8HMATERIAL/
                     2       10X,6HNUMBER,5X,5H(IN.),5X,11HCOEFFICIENT,5X,4HCODE/
                     3       10X,6(1H=),3X,9(1H=),3X,11(1H=),3X,8(1H=)/)
ISN 0056            DO 2560 I=1,NLAY
ISN 0057            M = MTYPE(I)
ISN 0058            WRITE (LO,2550) I, THICK(I), STRC(I), MCODE(I),(MATLAB(J,M),J=1,5)
ISN 0059         2550 FORMAT(12X,I1,F13.2,F12.3,9X,A4,2X,5A4)
ISN 0060         2560 CONTINUE
ISN 0061            GO TO 2590
ISN 0062         2570 WRITE (LO,2580) NLAY, WLANE, XK, SC, E
ISN 0063         2580 FORMAT(//5X,15HRIGID STRUCTURE/5X,5(1H=),1X,9(1H=)//
                     1       8X,17HNUMBER OF LAYERS ,19(1H=),I12/
                     A       8X,11HLANE WIDTH ,25(1H=),F12.1,5H FEET/
                     2       8X,16HSUBBASE MODULUS ,20(1H=),F12.0,5H  PCI/
                     3       8X,14HFLEX STRENGTH ,22(1H=),F12.0,5H  PSI/
                     4       8X,17HCONCRETE MODULUS ,19(1H=),F12.0,5H  PCI)
ISN 0064            IF (IP .NE. IR) GO TO 2535
ISN 0065            WRITE (LO,2600)
ISN 0067         2600 FORMAT(/8X,9HMATERIALS/8X,9(1H=)//
                     1       10X,5HLAYER,4X,9HTHICKNESS,4X,8HMATERIAL/
                     2       10X,6HNUMBER,5X,5H(IN.),8X,4HCODE/
                     3       10X,6(1H=),3X,9(1H=),4X,8(1H=)/)
ISN 0068            DO 2620 I=1,NLAY
ISN 0069            M = MTYPE(I)
ISN 0070            WRITE (LO,2610) I, THICK(I), MCODE(I), (MATLAB(J,M),J=1,5)
ISN 0071         2610 FORMAT(12X,I1,F13.2,8X,A4,3X,5A4)
ISN 0072         2620 CONTINUE
ISN 0073         2590 WRITE (LO,3000) PICON, PTERM, PIOV, ATP, AGE2S, AGE7S, OVLIF
ISN 0074         3000 FORMAT(//5X,11HPERFORMANCE/5X,11(1H=)//
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                1       8X,21HPSI INITIAL CONSTANT ,51(1H=),F10.2/
                2       8X,13HTERMINAL PSI ,59(1H=),F10.2/
                3       8X,18HPSI AFTER OVERLAY ,54(1H=),F10.2/
                5       8X,49HAVERAGE AGE AT TERMINAL PSI FOR EXISTING DESIGN =,
                6          23(1H=),F10.2,6H YEARS/
                7       8X,50HAVERAGE AGE OF PAVEMENT WHEN 25 PERCENT OF MILEAGE,
                8          22H IS ALREADY OVERLAID =,F10.2,6H YEARS/
                9       8X,50HAVERAGE AGE OF PAVEMENT WHEN 75 PERCENT OF MILEAGE,
                4          22H IS ALREADY OVERLAID =,F10.2,6H YEARS/
                5       8X,20HOVERLAY DESIGN LIFE ,52(1H=),F10.2,6H YEARS)
ISN 0075         CALL NPAGE
ISN 0076         WRITE (LO,3010) FLRP
ISN 0077    3010 FORMAT(5X,16HAGE DISTRIBUTION/5X,4H=== ,12(1H=)//
                A       5X,39HLOSS RATE FACTOR FOR MILEAGE IN POTTS =,F6.2//
                1       11X,3(4HLANE,14X,4HLOSS,15X)/
                2        5X,3(3HAGE,3X,5HMILES,4X,5HVALUE,4X,4HRATE,9X)/
                3        5X,3(3H===,3X,5H=====,4X,5H=====,4X,4H====,9X)/)
ISN 0078         NLINES = MIN0(NASL,MAXLN)
ISN 0079         DO 3030 J=1,NLINES
ISN 0080         WRITE (LO,3020) (I, YLN(I), VI(I), RI(I), I=J,NASL,MAX_N)
ISN 0081    3020 FORMAT(5X,3(I2,F9.1,F10.0,F8.2,8X))
ISN 0082    3030 CONTINUE
ISN 0083         WRITE (LO,3035)
ISN 0084    3035 FORMAT(//10X,29HVALUE IN THOUSANDS OF DOLLARS/
                1       /10X,29HLOSS RATE IN PERCENT PER YEAR)
ISN 0085         WRITE (LO,3040) PPVOSH, WPSH, WGSH, CACI, (IUNIT(I),I=ICAC,9,3),
                1                CGRI, (IUNIT(I),I=ICGR,9,3)
ISN 0086    3040 FORMAT(//5X,7HOVERLAY/5X,7(1H=)//
                1       8X,27HPERCENT OF PAVED SHOULDERS ,11(1H=),F10.2,8H PERCENT/
                2       8X,39HAVERAGE PAVED SHOULDER WIDTH/LANE ====,F10.2,5H FEET/
                A       8X,38HAVERAGE GRANULAR SHOULDER WIDTH/LANE =,F10.2,5H FEET/
                3       8X,17HUNIT COST OF ACP ,21(1H=),F10.2,1X,3A4/
                4       8X,22HUNIT COST OF GRANULAR ,16(1H=),F10.2,1X,3A4)
ISN 0087         IF (ICAC .NE. 1) GO TO 3044
ISN 0089         WRITE (LO,3042) ACDENS
ISN 0090    3042 FORMAT(8X,24HDENSITY OF COMPACTED AC ,14(1H=),F10.2,
                1          12H LBS/CU. FT.)
ISN 0091    3044 IF (ICGR .NE. 1) GO TO 3048
ISN 0093         WRITE (LO,3046) GRDENS
ISN 0094    3046 FORMAT(8X,30HDENSITY OF COMPACTED GRANULAR ,8(1H=),F10.2,
                1          12H LBS/CU. FT.)
ISN 0095    3048 IARM1 = IARMS + 1
ISN 0096         IF (MFLG .EQ. 0) GO TO 3130
ISN 0098         IF (MFLG .EQ. 2) GO TO 3060
ISN 0100         WRITE (LO,3050) MCRAM(IARM1), (UNTCST(I),I=1,7), S, XM_, JSLAG
ISN 0101    3050 FORMAT(//5X,17HMODEL MAINTENANCE/5X,5(1H=),1X,11(1H=)//
                1       8X,26HACCELERATED MAINTENANCE = ,A4//
                2       8X,25HUNIT COSTS OF MAINTENANCE/
                3       9X,4(1H=),1X,5(1H=),4H == ,11(1H=)//
                4       8X,8HFLEXIBLE,2X,5HCRACK,5X,8HBASE AND,4X,8HCONCRETE,
                5          2(1X,8HCONCRETE),3X,5HJOINT/
                6       8X,8HPATCHING,1X,7HSEALING,1X,14HSURFACE REPAIR,1X,
                7          8HPATCHING,1X,7HBLOWUPS,2X,10HMUDJACKING,1X,7HSEALING/
                8       9X,6H%$/SY<,3X,6H%$/FT<,5X,6H%$/CY<,6X,6H%$/SY<,2X,
                9          7H%$/AVG<,4X,7H%$/AVG<,2X,6H%$/FT</
                A       8X,8(1H=),1X,7(1H=),1X,14(1H=),1X,8(1H=),1X,8(1H=),1X,
                B          10(1H=),1X,7(1H=)//
                C       5X,F9.2,F10.2,F12.2,F11.2,F8.2,F11.2,F9.2//
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                     D       8X,14HJOINT SPACING ,23(1H=),F6.2,5H FEET/
                     E       8X,37HFRACTION OF JOINTS SEALED EACH YEAR =,F6.2/
                     F       8X,29HTIME BEFORE FIRST JOINT SEAL ,8(1H=),I6,6H YEARS)
ISN 0102              CALL NPAGE
ISN 0103              WRITE (LO,3051)
ISN 0104           3051 FORMAT(8X,40HMAINTENANCE COSTS PER LANE-MILE PER YEAR/
                     1       9X,11(1H=),1X,5(1H=),5H === ,9(1H=),5H === ,4(1H=)///
                     2       12X,4HYEAR,3X,8HFLEXIBLE,3X,5HRIGID,3X,9HCOMPOSITE/
                     3       12X,4H====,3X,8(1H=),3X,5(1H=),3X,9(1H=)//)
ISN 0105              WRITE (L3,3052) (I, (USRMDL(I,J),J=1,3), I=1,24)
ISN 0106           3052 FORMAT(13X,I2,F10.2,F9.2,F10.2)
ISN 0107              GO TO 3250
ISN 0108           3060 CONTINUE
ISN 0109              CALL NPAGE
ISN 0110              WRITE (LO,3070) MCRAM(IARM1)
ISN 0111           3070 FORMAT(//5X,22HHISTORICAL MAINTENANCE/5X,10(1H=),1X,11(1H=)//
                     1       9X,26HACCELERATED MAINTENANCE = ,A4//
                     2       8X,40HMAINTENANCE COSTS PER LANE-MILE PER YEAR/
                     3       8X,11(1H=),1X,5(1H=),5H === ,9(1H=),1X,4H=== ,4(1H=)//)
ISN 0112              NLINES = MIN0(NYAP,MAXLN)
ISN 0113              WRITE (L3,3075)
ISN 0114           3075 FORMAT(3X,17HFLEXIBLE PAVEMENT/8X,8(1H=),1X,8(1H=)//)
ISN 0115              DO 3090 J=1,NLINES
ISN 0116              WRITE (L3,3080) (I, USRMDL(I,1), I=J,24,MAXLN)
ISN 0117           3080 FORMAT(10X,6(I2,F10.0,8X))
ISN 0118           3090 CONTINUE
ISN 0119              WRITE (L3,3105)
ISN 0120           3105 FORMAT(/8X,14HRIGID PAVEMENT/8X,5(1H=),1X,8(1H=)//)
ISN 0121              DO 3120 J=1,NLINES
ISN 0122              WRITE (L3,3080) (I,USRMDL(I,2), I=J,24,MAXLN)
ISN 0123           3120 CONTINUE
ISN 0124              GO TO 3250
ISN 0125           3130 WRITE (L3,3140)
ISN 0126           3140 FORMAT(///51H NO ROUTINE MAINTENANCE CONSIDERED IN THIS PROBLEM.)
ISN 0127           3250 CALL NPAGE
ISN 0128              PPFF = PPF * 100.
ISN 0129              WRITE (L3,3260) OLDMNT, PPFF
ISN 0130           3260 FORMAT(5X,12HOLD SECTIONS/5X,4H=== ,8(1H=)//
                     1       8X,46HMAINTENANCE COST %DOLLARS/LANE MILE/YEAR< FOR ,
                     2          15HPAVEMENTS OLDER/
                     3       8X,29HTHAN TERMINAL SERVICEABILITY ,32(1H=),F10.2//
                     4       8X,40HPERCENT OF TOTAL LANE MILES IN POTTS AT /
                     5      13X,42HBEGINNING OF ANALYSIS PERIOD %CALCULATED< ,14(1H=),
                     6          F10.2)
ISN 0131              IF (IPOT .EQ. 0) GO TO 3320
ISN 0133              IF (IPOT .EQ. 2) GO TO 3280
ISN 0135              WRITE (L3,3270) TPFPC, PFNOPC
ISN 0136           3270 FORMAT(13X,44HEND OF ANALYSIS PERIOD %INPUT TARGET VALUE< ,
                     6          12(1H=),F10.2//
                     2       9X,43HPERCENT OF TOTAL LANE MILES NEVER OVERLAID ,
                     3          18(1H=),F10.2)
ISN 0137              GO TO 3320
ISN 0138           3280 WRITE (L3,3290) PCTINF
ISN 0139           3290 FORMAT(8X,52HINFLATION RATE TO DEFLATE THE PROJECTED DOLLARS PER /
                     1       8X,49HYEAR FOR OVERLAY FUNDING FOR THIS REPRESENTATIVE ,
                     2          10HSECTION ==,F10.2//
                     3       8X,30HANNUAL PROJECTED OVERLAY FUNDS/8X,30(1H=)//
                     4       18X,7HPRESENT,5X,6HFUTURE/18X,7(1H=),5X,6(1H=)//)
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ISN 0140            DO 3310 I=1,NYAP
ISN 0141            WRITE (LO,3300) I, (APOF(I,J),J=1,2)
ISN 0142       3300 FORMAT(12X,I2,F11.1,F13.1)
ISN 0143       3310 CONTINUE
ISN 0144       3320 CONTINUE
ISN 0145            K = 0
ISN 0146            NUM = NTT
ISN 0147       3321 K = K+1
ISN 0148            CALL NPAGE
ISN 0149            WRITE (LO,3330) (IPRFT(I,K),I=1,2), ((TTYP(M,J),M=1,2),J=1,NUM),
                   1 TOTL
ISN 0150       3330 FORMAT(//5X,11HTRUCK TYPES,5X,2A4/5X,5(1H=),1X,5(1H=)//
                   1       10X,4HTYPE,3X,11(2A4,2X))
ISN 0151            WRITE (LO,3333) ((NAXLES(M,J),J=1,4),M=1,NUM)
ISN 0152       3333 FORMAT(/5X,9HAXLE CODE,3X,10(4I1,6X))
ISN 0153            WRITE (LO,3335)
ISN 0154       3335 FORMAT(/10X,4HYEAR,3X,23HPERCENT OF ALL VEHICLES//)
ISN 0155            DO 3350 I=1,NYAP
ISN 0156            WRITE (LO,3340) I, (PTTYP(J,I,K), J=1,NTT), PCTTR(I,K)
ISN 0157       3340 FORMAT(11X,I2,4X,11(F5.2,5X))
ISN 0158       3350 CONTINUE
ISN 0159            NTT = INTT
ISN 0160            IF((NATT .GT. 0) .AND.  (K .EQ. 1)) GO TO 3321
ISN 0162            IF (NEWTRK .LT. 2) GO TO 3500
ISN 0164            CALL NPAGE
ISN 0165            WRITE (LO,3053) PGVWL, PSAL, PTAL, PTRAL, FGVWL, FSAL, FTAL, FTRAL
ISN 0166       3053 FORMAT(5X,11HLOAD LIMITS/5X,4(1H=),1X,6(1H=)//
                   1       8X,36HPRESENT GROSS VEHICLE WEIGHT LIMIT =,F10.3,5H KIPS/
                   2       8X,36HPRESENT SINGLE AXLE WEIGHT LIMIT ==,F10.0,5H KIPS/
                   3       8X,36HPRESENT TANDEM AXLE WEIGHT LIMIT ==,F10.0,5H KIPS/
                   4       8X,36HPRESENT TRIPLE AXLE WEIGHT LIMIT ==,F10.0,5H KIPS/
                   5       8X,36HFUTURE GROSS VEHICLE WEIGHT LIMIT ==,F10.0,5H KIPS/
                   6       8X,36HFUTURE SINGLE AXLE WEIGHT LIMIT ===,F10.0,5H KIPS/
                   7       8X,36HFUTURE TANDEM AXLE WEIGHT LIMIT ===,F10.0,5H KIPS/
                   8       8X,36HFUTURE TRIPLE AXLE WEIGHT LIMIT ===,F10.0,5H KIPS)
ISN 0167            WRITE (LO,3055)
ISN 0168       3055 FORMAT(//23X,7HPRESENT,11X,6HFUTURE/
                   1       16X,2(4X,13HSTEERING AXLE),6X,16HPERCENT INCREASE/
                   2       10X,5HTRUCK,8X,6HWEIGHT,11X,6HWEIGHT,10X,
                   3           15HIN EMPTY WEIGHT/
                   4       10X,4HTYPE,9X,6H%KIPS<,11X,6H%KIPS<,15X,6H%KIPS</
                   5       10X,5(1H=),5X,13(1H=),4X,13(1H=),6X,16(1H=)/)
ISN 0169            DO 3058 I=1,NTT
ISN 0170            WRITE (LO,3057) (TTYP(J,I),J=1,2), PSTAW(I), FSTAW(I), EPI(I)
ISN 0171       3057 FORMAT(9X,2A4,4X,F10.3,5X,F13.3,8X,F11.2)
ISN 0172       3058 CONTINUE
ISN 0173            NTT = INTT
ISN 0174            DO 3490 K=1,6
ISN 0175            NLO = NLOI(K)
ISN 0176            GO TO (3380, 3410, 3430, 3450, 3470, 3403) , K
ISN 0177       3380 IF (NT(I) .EQ. 0) GO TO 3490
ISN 0179            BLI = STARTS(K)
ISN 0180            CALL NPAGE
ISN 0181            WRITE (LO,3370) (HEAD(N,K),N=1,5), NLOI(K), (NAMES(N,I),N=1,4),
                   1                (ITYPE,I=1,NTT)
ISN 0182       3370 FORMAT(5X,5A4/5X,6(1H=),1X,4(1H=),1X,5(1H=)//
                   1       8X,26HNUMBER OF LOAD INTERVALS =,I6//
                   2       14X,4HLOAD,11X,10HNUMBER OF ,4A4/
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                     3       12X,8HINTERVAL/
                     4       30X,10(A4,6X))
ISN 0183                WRITE (LO,3371) ((TTYP(M,N),M=1,2),N=1,NTT)
ISN 0184             3371 FORMAT(30X,10(2A4,2X))
ISN 0185                WRITE (LO,3372)
ISN 0186             3372 FORMAT (/)
ISN 0187                DO 3400 L=1,NLO
ISN 0188                WRITE (LO,3390) BLI, SA(L,11), (SA(L,J),J=1,NTT)
ISN 0189             3390 FORMAT(7X,F7.3,3H = ,F7.3,3X,10(F6.0,4X))
ISN 0190                BLI = AINT(SA(L,11) * 10. + 0.5) / 10.
ISN 0191             3400 CONTINUE
ISN 0192                GO TO 3490
ISN 0193             3410 IF (NT(2) .EQ. 0) GO TO 3490
ISN 0195                BLI = STARTS(K)
ISN 0196                CALL NPAGE
ISN 0197                WRITE (LO,3370) (HEAD(N,K),N=1,5), NLOI(K), (NAMES(N,1),N=1,4),
                       1                (ITYPE,I=1,NTT)
ISN 0198                WRITE (LO,3371) ((TTYP(M,N),M=1,2),N=1,NTT)
ISN 0199                WRITE (LO,3372)
ISN 0200                DO 3420 L=1,NLO
ISN 0201                WRITE (LO,3390) BLI, TA(L,11), (TA(L,J),J=1,NTT)
ISN 0202                BLI = AINT(TA(L,11) * 10. + 0.5) / 10.
ISN 0203             3420 CONTINUE
ISN 0204                GO TO 3490
ISN 0205             3430 IF (NT(3) .EQ. 0) GO TO 3490
ISN 0207                BLI = STARTS(K)
ISN 0208                CALL NPAGE
ISN 0209                WRITE (LO,3370) (HEAD(N,K),N=1,5), NLOI(K), (NAMES(N,1),N=1,4),
                       1                (ITYPE,I=1,NTT)
ISN 0210                WRITE (LO,3371) ((TTYP(M,N),M=1,2),N=1,NTT)
ISN 0211                WRITE (LO,3372)
ISN 0212                DO 3440 L=1,NLO
ISN 0213                WRITE (LO,3390) BLI, TR(L,11), (TR(L,J),J=1,NTT)
ISN 0214                BLI = AINT(TR(L,11) * 10. + 0.5) / 10.
ISN 0215             3440 CONTINUE
ISN 0216                GO TO 3490
ISN 0217             3450 CALL NPAGE
ISN 0218                WRITE (LO,3370) (HEAD(N,K),N=1,5), NLOI(K), (NAMES(N,2),N=1,4),
                       1                (ITYPE,I=1,NTT)
ISN 0219                WRITE (LO,3371) ((TTYP(M,N),M=1,2),N=1,NTT)
ISN 0220                WRITE (LO,3372)
ISN 0221                BLI = STARTS(K)
ISN 0222                DO 3460 L=1,NLO
ISN 0223                WRITE (LO,3390) BLI, VG(L,11), (VG(L,J),J=1,NTT)
ISN 0224                BLI = AINT(VG(L,11) * 10. + 0.5) / 10.
ISN 0225             3460 CONTINUE
ISN 0226                GO TO 3490
ISN 0227             3470 CALL NPAGE
ISN 0228                WRITE (LO,3370) (HEAD(N,K),N=1,5), NLOI(K), (NAMES(N,2),N=1,4),
                       1                (ITYPE,I=1,NTT)
ISN 0229                WRITE (LO,3371) ((TTYP(M,N),M=1,2),N=1,NTT)
ISN 0230                WRITE (LO,3372)
ISN 0231                BLI = STARTS(K)
ISN 0232                DO 3480 L=1,NLO
ISN 0233                WRITE (LO,3390) BLI, VE(L,11), (VE(L,J),J=1,NTT)
ISN 0234                BLI = AINT(VE(L,11) * 10. + 0.5) / 10.
ISN 0235             3480 CONTINUE
ISN 0236                GO TO 3490
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ISN 0237      3403 IF (IDST .NE. 6) GO TO 3490
ISN 0239           CALL NPAGE
ISN 0240           WRITE (L3,3370) (HEAD(N,K),N=1,5), NLD((K), (NAMES(N,I),N=1,4),
                  1                (ITYPE,I=1,NTT)
ISN 0241           WRITE (L3,3371) ((TTYP(M,N),M=1,2),N=1,NTT)
ISN 0242           WRITE (L3,3372)
ISN 0243           BLI = STARTS(K)
ISN 0244           DO 3407 L=1,NLD
ISN 0245           WRITE (L3,3390) BLI, ST(L,11), (ST(L,J),J=1,NTT)
ISN 0246           BLI = AINT(ST(L,11) * 10. + 0.5) / 10.
ISN 0247      3407 CONTINUE
ISN 0248      3490 CONTINUE
ISN 0249      3500 CONTINUE
ISN 0250           RTINT = PCTINT * 0.01
ISN 0251           RTINF = PCTINF * 0.01
ISN 0252           TPF = TPFPC*.01
ISN 0253           PFNO = PFNOPC * 0.01
ISN 0254           AGF = AGR * 0.01
ISN 0255           CAC = CACI
ISN 0256           CGR = CGRI
ISN 0257           IF (ICAC .EQ. 1) GO TO 4000
ISN 0259           IF (ICAC .EQ. 2) GO TO 4010
ISN 0261           CAC = CACI * 36.
ISN 0262           GO TO 4010
ISN 0263      4000 CAC = CACI * (ACDENS * 27.) / 2000.
ISN 0264      4010 IF (ICGR .EQ. 2) GO TO 99999
ISN 0266           IF (ICGR .EQ. 1) GO TO 4020
ISN 0268           CGR = CGRI * 36.
ISN 0269           GO TO 99999
ISN 0270      4020 CGR = CGRI * (GRDENS * 27.) / 2000.
ISN 0271     99999 RETURN
ISN 0272           END
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NUMBER LEVEL FORTRAN H EXTENDED ERROR MESSAGES

IFE307I 4(W) NAME IOVLY THE DATA STATEMENT CONTAINS A VARIABLE THAT IS NOT REFERENCED.

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT XREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

STATISTICS SOURCE STATEMENTS = 271, PROGRAM SIZE = 11820, SUBPROGRAM NAME =INPRNT

STATISTICS 1 DIAGNOSTICS GENERATED, HIGHEST SEVERITY CODE IS 4

****** END OF COMPILATION ******

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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

ISN 0002            SUBROUTINE INIT (IGO)
ISN 0003            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
ISN 0004            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
ISN 0005            COMMON /STRCOE/ STRCO(8),CC(4),MC(11),NC,STRC(5),RFS(4),RFB(4)
ISN 0006            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
ISN 0007            DATA ICON, F /2, 1. /
                C   ICON IS THE INDEX ON CONDITION FACTOR USED TO RELATE AN  OLD PCC
                C   PAVEMENT WITH AN AC OVERLAY TO AN EQUIVALENT SLAB THICKNESS.
                C   F IS A FACTOR ALSO USED IN THE ABOVE RELATION.
ISN 0008            GO TO (100, 200, 300), IGO
                C   HERE FOR PROGRAM INITIALIZATION, FIRST EXECUTION.
ISN 0009          100 DO 110 J=1,NYR
ISN 0010            YR(J) = FLOAT(J)
ISN 0011          110 CONTINUE
ISN 0012            GO TO 900
                C
                C   HERE FOR SET UP CHORES AFTER READING INPUT DATA.
ISN 0013          200 CONTINUE
                C   WE HAVE ALL THE INPUT FOR A REPRESENTATIVE SECTION.  DETERMINE =SN=
                C   OR =D= FOR COMPOSITE PAVTS, AS WELL AS SET UP STRUCTURAL COEF.
ISN 0014            IF (IP .EQ. IR .OR. IP .EQ. IC) GO TO 230
ISN 0016            SN = 0.
ISN 0017            DO 215 L=1,NLAY
ISN 0018            M = MTYPE(L)
                C   REPLACE VALUE IN DATA STATEMENT WITH VALUE READ IN.
ISN 0019            IF (STRC(L) .NE. 0.) STRC0(M) = STRC(L)
                C   IF NO VALUE READ IN, SET VALUE FROM THE DATA STATEMENT.
ISN 0021            IF (STRC(L) .EQ. 0.) STRC(L) = STRC0(M)
ISN 0023          215 SN = SN + STRC(L)*THICK(L)
                C   SET =A= VALUE FOR OVERLAY = =A= FOR AC IF NOT READ IN SEPARATELY.
ISN 0024            IF (STRC(5) .EQ. 0.) STRC(5) = STRC0(1)
ISN 0026            GO TO 250
ISN 0027          230 XJ = 3.2
                C   CONTINUITY FACTOR FOR PCC PAVEMENTS   3.2 FOR JCP, 2.2 FOR CRC.
                C   TEST FOR COMPOSITE PAVEMENT %AC TOP LAYER READ UNDER =RIGID=.<
ISN 0028            IF (MTYPE(1) .EQ. 1) GO TO 240
ISN 0030            D = THICK(1)
ISN 0031            IF (MTYPE(1) .EQ. 10) XJ = 2.2
ISN 0033            GO TO 250
                C   EQUIVALENT SLAB THICKNESS FOR INITIALLY COMPOSITE PAVT.
ISN 0034          240 D = (THICK(1)/2.5 + CC(ICON)*THICK(2))/F
ISN 0035            IP = IC
ISN 0036            IF (MTYPE(2) .EQ. 10) XJ = 2.2
ISN 0038          250 CONTINUE
ISN 0039            GO TO 900
                C
ISN 0040          300 CONTINUE
                C
ISN 0041          900 CONTINUE
ISN 0042            RETURN
ISN 0043            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
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```
REQUESTED OPTIONS: E8CDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE E8CDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE POTSET
   ISN 0003            COMMON /AGES/ AGE25, AGE75
   ISN 0004            COMMON /STDDEV/ SIGMA
   ISN 0005            COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),
                      1             TOTALM, PPF, TPF, PEND, NASL, NSLR, TOVLM(30,2)
   ISN 0006            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0007            COMMON /CMP/ COMP(30,34), PCOMP(30), AATP(30)
   ISN 0008            DIMENSION ZLM(30), P(13)
   ISN 0009            DATA NHIST /13/
   ISN 0010            POTTS = 0.0
   ISN 0011            TOTALM = 0.
   ISN 0012            CALL ZERO (COMP,1020)
   ISN 0013            CALL ZERO (PCOMP, 30)
   ISN 0014            NH = NHIST/2
   ISN 0015            DO 7 I=1,NASL
   ISN 0016            TOTALM = TOTALM + XLM(I)
   ISN 0017          7 CONTINUE
   ISN 0018            SIGMA1 = (AGE25 - ATP) / (-0.674)
   ISN 0019            SIGMA2 = (AGE75 - ATP) / 0.674
   ISN 0020            SIGMA = (SIGMA1 + SIGMA2) / 2.0
   ISN 0021            IF (SIGMA .LE. 0.0) SIGMA = 2.0
   ISN 0023            IATP = ATP + 1.
   ISN 0024            NSLR = IATP + NH
   ISN 0025            CALL DISTR (ATP, SIGMA, P, NHIST)
   ISN 0026            NOBPOT = IATP - NH
   ISN 0027            NOBPOT = MAX0(0, MIN0(IATP-NH, NASL))
   ISN 0028            NSLICE = 0
   ISN 0029            DO 55 I=1,30
   ISN 0030         55 ZLM(I) = 0.
   ISN 0031            IF (NOBPOT .EQ. 0) GO TO 75
   ISN 0033            DO 70 I=1,NOBPOT
   ISN 0034            ICTR = IATP-I+1
   ISN 0035            NSLICE = NSLICE + 1
   ISN 0036            IX = ICTR - NH - 1
   ISN 0037            DO 60 J=1,NHIST
   ISN 0038            IX = IX+1
   ISN 0039            TEMP = P(J) * YLM(NSLICE)
   ISN 0040            IF (IX .GT. 30) GO TO 59
   ISN 0042            COMP(NSLICE,IX) = TEMP
   ISN 0043            ZLM(IX) = ZLM(IX) + TEMP
   ISN 0044            GO TO 60
   ISN 0045         59 COMP(NSLICE,30) = COMP(NSLICE,30) + TEMP
   ISN 0046            ZLM(30) = ZLM(30) + TEMP
   ISN 0047         60 CONTINUE
   ISN 0048         70 CONTINUE
   ISN 0049         75 CONTINUE
   ISN 0050            NODPOT = MIN0(NASL-NOBPOT, NHIST-1)
   ISN 0051            IF (NODPOT .EQ. 0) GO TO 110
   ISN 0053            DO 100 I=1,NODPOT
   ISN 0054            NSLICE = NSLICE + 1
   ISN 0055            DO 80 J=1,I
   ISN 0056            TEMP = P(J) * YLM(NSLICE)
   ISN 0057            PCOMP(NSLICE) = PCOMP(NSLICE) + TEMP
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ISN 0058            POTTS = POTTS + TEMP
ISN 0059          80 CONTINUE
ISN 0060             K = I+1
ISN 0061             L = 0
ISN 0062             DO 90 J=K,NHIST
ISN 0063             L = L+1
ISN 0064             COMP(NSLICE,L) = P(J) * YLM(NSLICE)
ISN 0065             ZLM(L) = ZLM(L) + COMP(NSLICE,L)
ISN 0066          90 CONTINUE
ISN 0067         100 CONTINUE
ISN 0068         110 IF (NSLICE .GE. NASL) GO TO 130
ISN 0070             I = NSLICE + 1
ISN 0071             DO 120 NSLICE =I,NASL
ISN 0072             PCOMP(NSLICE) = PCOMP(NSLICE) + YLM(NSLICE)
ISN 0073             POTTS = POTTS + YLM(NSLICE)
ISN 0074         120 CONTINUE
ISN 0075         130 IF (NSLR .GT. 30) NSLR = 30
ISN 0077             DO 140 I=1,NSLR
ISN 0078             XLM(I) = ZLM(I)
ISN 0079         140 CONTINUE
ISN 0080             DO 160 L=1,NSLR
ISN 0081             SUM = 0.
ISN 0082             DO 155 I=1,NASL
ISN 0083         155 SUM = SUM + COMP(I,L) * FLOAT(I+L)
ISN 0084             AATP(L) = SUM / XLM(L)
ISN 0085         160 CONTINUE
ISN 0086             PPF = POTTS / TOTALM
ISN 0087             RETURN
ISN 0089             END
```

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT XREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

STATISTICS SOURCE STATEMENTS = 87, PROGRAM SIZE = 2292, SUBPROGRAM NAME =POTSET

STATISTICS NO DIAGNOSTICS GENERATED

****** END OF COMPILATION ****** 40K BYTES OF CORE NOT USED

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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.44       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE DISTR (ATP, SIGMA, P, N)
   ISN 0003            DIMENSION P(N)
   ISN 0004            IATP = ATP + 0.5
   ISN 0005            N2 = N/2 + 1
   ISN 0006            DA = ATP - FLOAT(IATP)
   ISN 0007            C = .39894/SIGMA
   ISN 0008            S = 2.*SIGMA**2
   ISN 0009            SUM = 0.
   ISN 0010            DO 10 I=1,N
   ISN 0011            X = FLOAT(I-N2) - DA
   ISN 0012            P(I) = C*EXP(-X**2/S)
   ISN 0013         10 SUM = SUM + P(I)
   ISN 0014            DO 20 I=1,N
   ISN 0015         20 P(I) = P(I)/SUM
   ISN 0016            RETURN
   ISN 0017            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       16, PROGRAM SIZE =       702, SUBPROGRAM NAME = DISTR

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.45       PAGE    1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002              SUBROUTINE EALGET
                    C    THIS ROUTINE CALCULATES THE RATIO OF EAL PER UNIT TIME UNDER THE
                    C    PROPOSED REGULATIONS TO THAT UNDER THE PRESENT REGULATIONS.
                    C    SUBJECT TO THE RESTRAINT OF EQUAL PAYLOAD PER UNIT TIME%IEQTRP#0<,
                    C    OR TO THE RESTRAINT OF EQUAL NUMBER OF TRIPS %IEQTRP#1<.
   ISN 0003              COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEQTRP
   ISN 0004              COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0005              COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0006              COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0007              COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0008              COMMON /TRTYP/ TTYP(2,10), PTTYP(10,20,2), PCTTR(20,2),
                        1               NAXLES(10,4),NT(4), NTTY, NATT, NTT, NEWTRK
   ISN 0009              DIMENSION S1(10), S2(10), T1(10), T2(10)
   ISN 0010              IPVT = IP
   ISN 0011              IF (IP .EQ. IC) IPVT = IR
                    C    CALL =TRAFIC= ONLY IF NEW LIMITS OR WEIGHT DISTRIBUTIONS HAVE BEEN
                    C    READ FOR THIS PROBLEM
   ISN 0013              IF (NEWTRK .GT. 1) CALL TRAFIC
   ISN 0015              CALL EAL18 (SN, D, PTERM, IPVT)
                    C    EAL18 RETURNS 18K EAL PER AVERAGE TRUCK, EALPT, AND PAYLOAD PER
                    C    AVERAGE TRUCK, APPT, FOR EACH TRUCK TYPE.
                    C    FOR EACH YEAR OBTAIN THE %NORMALIZED< TOTAL PAYLOAD AND TOTAL 18K
                    C    EAL
   ISN 0016              DO 10 J=1,NYAP
   ISN 0017              CALL MULT (PTTYP(1,J,1), APPT(1,1), NTTY, S1)
   ISN 0018              CALL MULT (PTTYP(1,J,2), APPT(1,2), NTT , S2)
   ISN 0019              CALL MULT (PTTYP(1,J,1), EALPT(1,1), NTTY, T1)
   ISN 0020              CALL MULT (PTTYP(1,J,2), EALPT(1,2), NTT , T2)
   ISN 0021              CALL SUM (S1, NTTY, SUM1)
   ISN 0022              CALL SUM (S2, NTT, SUM2)
   ISN 0023              CALL SUM (T1, NTTY, TUM1)
   ISN 0024              CALL SUM (T2, NTT, TUM2)
   ISN 0025              IF (IEQTRP .EQ. 0) EALFCT(J) = SUM1*TUM2/(SUM2*TUM1)
   ISN 0027              IF (IEQTRP .EQ. 1) EALFCT(J) = TUM2/TUM1
   ISN 0029           10 CONTINUE
   ISN 0030              RETURN
   ISN 0031              END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       30, PROGRAM SIZE =      1074, SUBPROGRAM NAME =EALGET

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.48       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002              SUBROUTINE LDSHFT (XN1, XN2, N, M)
                    C    MULTIPLY %EAL/YR, PRESENT REGS.< FOR EACH YEAR BY CORRESPONDING
                    C    RATIO FROM EALGET TO OBTAIN %EAL/YR, PROPOSED<.
   ISN 0003              COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEOTRP
   ISN 0004              DIMENSION XN1(1), XN2(1)
   ISN 0005              XN2(1) = EALFCT(1)*XN1(1)
   ISN 0006              DO 10 J=2,N
                    C    EALFCT%J< IS DEFINED ONLY FOR J .LE. M.
   ISN 0007              FACT = EALFCT(M)
   ISN 0008              IF (J .LE. M) FACT = EALFCT(J)
   ISN 0010           10 XN2(J) = XN2(J-1) + FACT*(XN1(J) - XN1(J-1))
   ISN 0011              RETURN
   ISN 0012              END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       11, PROGRAM SIZE =       532, SUBPROGRAM NAME =LDSHFT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        56K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM I8M FLAG(I) DUMP

ISN 0002            SUBROUTINE LIFCYC
                C   FOR GIVEN STRUCTURE, EVALUATES AASHO-PREDICTED 18KEAL FO TERMINAL
                C   PSI, TOTEAL.
                C   FOR GIVEN GROWTH FACTOR AGF, EQUIVALENT AGE AT OVERLAY, ATPT, AND
                C   TOTEAL, EVALUATES 18KEAL IN FIRST YEAR OF PAVEMENT LIFE
                C   LOOPS OVER ALL AGE SLICES, CALLING -CYCLE- FOR EACH
                C   DEFINES AN AVERAGE TRAFFIC AND OVERLAY DESIGNS FOR PAVEMENT CYCLED
                C   OUT OF POTTS, AND, FOR PRESENT AND PROPOSED REGULATIONS, OBTAINS
                C   THE PRODUCT OF COST/%LANE MILE< AND %LANE MILES< FROM -CXLM-.
ISN 0003            COMMON /CMP/ CONP(30,34), PCONP(30), AATP(30)
ISN 0004            COMMON /COSTS/ COSM(20,2), COSV(20,2), COSMS(20,2), COSVS(20,2),
                   1               CSMPW(2), CSVPW(2), CSMUA(2), CSVUA(2)
ISN 0005            COMMON /OSN/ EALOSN(30,2), EALONP(20,2)
ISN 0006            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
ISN 0007            COMMON /FUNDS/ APOF(20,2), RTINT, RTINF
ISN 0008            COMMON /LMP/ XLM(30), YLM(30), POTLM(20,2), OUTP(20,2),
                   1             TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
ISN 0009            COMMON /MISC/ IPOT, IARMS, OLOMNT, AGF
ISN 0010            COMMON /OUT/ PSIE(30,2), EALREM(30,2), COSTM(20,30,2),CSTOV(30,2)
                   1            ,PSI8(30)
ISN 0011            COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
ISN 0012            COMMON / POV/ SNOVP(20,2), THOVP(20,2), CSTOVP(20,2), PP(20,2)
                   1            , RLP(20,2)
ISN 0013            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
ISN 0014            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
ISN 0015            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
ISN 0016            DIMENSION ACCEAL (40,2)
ISN 0017            EXP10(X) = EXP(X*2.302585)
ISN 0018            CALL ZERO (SNOV,60)
ISN 0019            CALL ZERO (THOV,60)
ISN 0020            CALL ZERO (CSTOV,60)
ISN 0021            CALL ZERO (TOVLM,60)
ISN 0022            SATP = ATP
ISN 0023            IF (IP .EQ. IF)
                   1      TOTEAL = EXP10(RWT18L(SN,SS,R,PICON,PTERM) )
ISN 0025            IF (IP .EQ. IR .OR. IP .EQ. IC)
                   1      TOTEAL = EXP10(RWT18L(D,PICON,PTERM) + (4.22-.32*PTERM)*
                   2                 RNAASH(D) )
                C   EAL1 # NUMBER OF EAL IN FIRST YR OF PAVT. LIFE, NOT YEAR 1 OF A. P.
ISN 0027            DO 10 L=1,NSLR
                C   YR%I< IS A SEQUENTIAL REAL ARRAY, FROM 1 TO NYR.
                C   AGE HERE IS THE AGE OF THE CURRENT AGE SLICE AT THE BEG. OF THE A.P.
ISN 0028            ATP = AATP(L)
                C   NOTE THAT YR%L< %#L< IS THE YEAR OF THE ANALYSIS PERIOD
                C   IN WHICH THESE MILES ARE DUE FOR OVERLAY.
ISN 0029            AGE = ATP - YR(L)
ISN 0030            IF (AGF .EQ. 0.) EAL1 = TOTEAL/ATP
ISN 0032            IF (AGF .NE. 0.) EAL1 = TOTEAL*AGF/((1.+AGF)**ATP-1.)
ISN 0034            CALL CYCLE (L, TOTEAL, AGE, EAL1, ACCEAL)
ISN 0035           10 CONTINUE
ISN 0036            NY2  = NYAP/2
ISN 0037            EAL8P = EAL1*(1. + AGF)**NY2
ISN 0038            DO 20 K=1,2
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   ISN 0039            IF (K .EQ. 1) CALL ACCTFC(EALBP, AGF, NYR, ACCEAL(1,1))
   ISN 0041            IF (K .EQ. 2) CALL LDSHFT (ACCEAL(1,1), ACCEAL(1,2), NYR, NYA2)
   ISN 0043            CALL POVDSN (ACCEAL(1,K),SNOVP(1,K),THOVP(1,K),PP(1,K),
                      1             CSTOVP(1,K),RLP(1,K),EALDNP(1,K))
   ISN 0044            CALL CXLM (TOV(1,K),COSTM(1,1,K),CSTOV(1,K),CSTOVP(1,K),APOF(1,K),
                      1           COSM(1,K), COSV(1,K), POTLM(1,K), OUTP(1,K),TOVLM(1,K))
   ISN 0045         20 CONTINUE
   ISN 0046            ATP = SATP
   ISN 0047            RETURN
   ISN 0048            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      47, PROGRAM SIZE =     2168, SUBPROGRAM NAME =LIFCYC

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    48K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE CYCLE (I, TOTEAL, AGE, EAL1, ACCEAL)
                     C     FOR GIVEN AGE SLICE
                     C     DETERMINES AGE AT BEGINNING OF ANALYSIS PERIOD, AND 18KEAL IN
                     C     FIRST YEAR OF ANALYSIS PERIOD
                     C     USES GROWTH FACTOR TO PROJECT 18KEAL FOR FUTURE YEARS
                     C     GETS TIME, THICKNESS AND COST OF OVERLAY
   ISN 0003            COMMON /DSN/ EALDSN(30,2), EALDNP(20,2)
   ISN 0004            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0005            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGF
   ISN 0006            COMMON /OUT/ PSIE(30,2),EALREM(30,2),COSTM(20,30,2),CSTOV(30,2),
                      1             PSIB(30)
   ISN 0007            COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
   ISN 0008            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0009            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0010            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0011            DIMENSION DOV(30,2)
   ISN 0012            EQUIVALENCE (SNOV(1,1), DOV(1,1))
   ISN 0013            DIMENSION ACCEAL (40,2)
   ISN 0014            EALAP1 = EAL1*(1. + AGF)**AGE
   ISN 0015            IF (AGF .EQ. 0.) EALBAP = EAL1*AGE
   ISN 0017            IF (AGF .NE. 0.) EALBAP = EAL1*((1.+AGF)**AGE - 1.)/AGF
   ISN 0019            XNREM = TOTEAL - EALBAP
   ISN 0020            CALL ACCTFC (EALAP1, AGF, NYR, ACCEAL(1,1) )
   ISN 0021            CALL LDSHFT (ACCEAL(1,1), ACCEAL(1,2), NYR, NYAP)
   ISN 0022            IF (IP .EQ. IF) PSIB(I) = GPSIF(EALBAP, PICON, SN, SS, R)
   ISN 0024            IF (IP .EQ. IR .OR. IP .EQ. IC) PSIB(I) = GPSIR(EALBAP, PICON, D)
   ISN 0026            IF (XNREM .LE. 0.) XNREM = 1.
   ISN 0028            DO 50 K=1,2
   ISN 0029            IF (K .EQ. 1) TOV(I,K) = FLOAT(I)
                     C     DETERMINE OVERLAY TIME FOR PROPOSED REGULATIONS
                     C     TIME AT WHICH CUMULATIVE 18KEAL FROM BEGINNING OF ANALYSIS PERIOD
                     C     EQUALS REMAINING ALLOWABLE 18KEAL TO TERMINAL PSI.
   ISN 0031            IF (K .EQ. 2) CALL INTERP (ACCEAL(1,2),YR,NYR,XNREM,TOV(I,2))
   ISN 0033            IF (TOV(I,K) .GT. YR(NYAP)) GO TO 40
   ISN 0035            IF (IP .EQ. IR .OR. IP .EQ. IC) GO TO 25
   ISN 0037            CALL SUBCY (ACCEAL(1,K),TOV(I,K), SNOV(I,K), EALREM(I,K),XNOV)
   ISN 0038            CALL OVTHKF (SNOV(I,K), THOV(I,K))
   ISN 0039            GO TO 30
   ISN 0040         25 CALL SUBCY (ACCEAL(1,K),TOV(I,K), DOV(I,K), EALREM(I,K), XNOV)
   ISN 0041            DEX = 0
   ISN 0042            CALL OVTHKR (DOV(I,K), DEX, THOV(I,K))
   ISN 0043         30 CONTINUE
   ISN 0044            CALL OVCOST (THOV(I,K), CSTOV(I,K))
   ISN 0045            EALDSN(I,K) = XNOV
   ISN 0046            GO TO 50
   ISN 0047         40 CONTINUE
   ISN 0048            EALREM(I,K) = TOTEAL - EALBAP - ACCEAL(NYAP,K)
   ISN 0049            EALDSN(I,K) = TOTEAL
   ISN 0050         50 CONTINUE
   ISN 0051            CALL MPPR (I, AGE, EALBAP, ACCEAL, TOTEAL)
   ISN 0052            RETURN
   ISN 0053            END

*OPTIONS IN EFFECT(NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.51       PAGE   2
*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP
*STATISTICS*      SOURCE STATEMENTS =       52, PROGRAM SIZE =     2232, SUBPROGRAM NAME = CYCLE
*STATISTICS*  NO  DIAGNOSTICS GENERATED
****** END OF COMPILATION ******                                        48K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.53       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE SUBCY  (XNC, YROV, OV, REM, XNOV)
                     C     OBTAINS DESIGN REAL FOR OVERLAY AND CORRESPONDING STRUCTURAL
                     C     NUMBER OR SLAB THICKNESS, D.
                     C     DETERMINES REMAINING LIFE (REAL) AT END OF ANALYSIS PERIOD
   ISN 0003            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0004            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0005            COMMON /STRUC/ SN, SS, R, D  , SC, XJ, XK, E
   ISN 0006            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0007            DIMENSION XNC(1)
   ISN 0008            CALL INTERP (YR, XNC, NYR, YROV, BN)
   ISN 0009            CALL INTERP (YR, XNC, NYR, YROV + OVLIF, EN)
   ISN 0010            XNOV = EN - BN
   ISN 0011            REM = EN - XNC(NYAP)
   ISN 0012            IF (IP .EQ. IR .OR. IP .EQ. IC) GO TO 10
   ISN 0014            CALL GETSN (ALOG10(XNOV), PIOV, PTOV, SN, SS, R, SNOV)
   ISN 0015            OV = SNOV
   ISN 0016            GO TO 20
   ISN 0017         10 CALL GETD (ALOG10(XNOV), PIOV, PTOV, D, DOV)
   ISN 0018            OV = DOV
   ISN 0019         20 CONTINUE
   ISN 0020            RETURN
   ISN 0021            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       20, PROGRAM SIZE =       670, SUBPROGRAM NAME = SUBCY

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        56K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE POVDSN (EALC, SNOVP, THOVP, PP, CSTOVP, RL, DL)
                  C    ROUTINE TO DESIGN OVERLAYS FROM THE POT.
                  C    REDUCE PTERM FOR ORIG. PAVT. BY 0.5 TO KEY PROPER CONDITION
                  C    LEVEL IN THICKNESS ROUTINES.
                  C    SNOVP = SN FOR OVERLAY DESIGN OUT OF THE POT %EQUIV. TO DOVP<
                  C    THOVP THICKNESS FOR OVERLAY DESIGN OUT OF THE POT.
                  C    PP      = PSI AT END OF ANALYSIS PERIOD  FOR THESE PAVTS.
   ISN 0003            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0004            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0005            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0006            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0007            DIMENSION EALC(1), SNOVP(1), THOVP(1), PP(1), CSTOVP(1)
   ISN 0008            DIMENSION RL(1), DL(1)
   ISN 0009            PTS = PTERM
   ISN 0010            PTERM = PTERM - 0.5
   ISN 0011            DO 100 J=1,NYAP
   ISN 0012            IF (IP .EQ. IR .OR. IP .EQ. IC) GO TO 25
   ISN 0014            CALL SUBCY (EALC, FLOAT(J), SNOVP(J), EALR, XNOV)
   ISN 0015            CALL OVTHKR (SNOVP(J), THOVP(J))
   ISN 0016            XM = XNOV - EALR
   ISN 0017            PP(J) = PIOV
   ISN 0018            IF (XM .GT. 0.) PP(J) = GPSIR(XM, PIOV, SNOVP(J), SS, R)
   ISN 0020            GO TO 90
   ISN 0021         25 CONTINUE
                  C    FOR RIGID DESIGN, SNOVP HOLDS THE VALUE OF DOVP.
   ISN 0022            CALL SUBCY (EALC, FLOAT(J), SNOVP(J), EALR, XNOV)
   ISN 0023            DEX = D
   ISN 0024            CALL OVTHKR (SNOVP(J), DEX, THOVP(J))
   ISN 0025            XM = XNOV - EALR
   ISN 0026            PP(J) = PIOV
   ISN 0027            IF (XM .GT. 0.) PP(J) = GPSIR(XM, PIOV, SNOVP(J))
   ISN 0029         90 CALL OVCOST (THOVP(J), CSTOVP(J))
   ISN 0030            RL(J) = EALR
   ISN 0031            DL(J) = XNOV
   ISN 0032        100 CONTINUE
   ISN 0033            PTERM = PTS
   ISN 0034            RETURN
   ISN 0035            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      34, PROGRAM SIZE =     1340, SUBPROGRAM NAME =POVDSN

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    05/360  FORTRAN H EXTENDED          DATE 80.242/09.38.57       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM I9M FLAG(I) DUMP

   ISN 0002            SUBROUTINE OVCOST (THOV, OVCST)
                 C     OBTAINS COST/%LANE MILE< FOR GIVEN OVERLAY THICKNESS
   ISN 0003            COMMON /OVRLAY/ WLANE, WPSH, WGSH, PPVDSH, CAC, CGR
   ISN 0004            DATA C1/16.2962963/
                 C     COSTS ARE INPUT TO THIS ROUTINE IN DOLLARS/CU YD.
                 C     C1 IS THE NUMBER OF CUBIC YDS IN A LAYER 1 MILE BY 1 FOOT BY 1 IN.
                 C
   ISN 0005            F = PPVDSH/100.
   ISN 0006            TH = THOV
                 C     FIND THE VOLUME/%LANE MILE< OF ROAD OVERLAY, OF PAVED SHOULDER
                 C     OVERLAY, AND OF GRANULAR SHOULDER OVERLAY
   ISN 0007            VPO = WLANE*TH*C1
   ISN 0008            VPSO = WPSH*TH*C1
   ISN 0009            VGSO = WGSH*TH*C1
                 C     PAVEMENT OVERLAY COST
   ISN 0010            PVTOC = VPO*CAC
                 C     UNPAVED SHOULDER OVERLAY COST
   ISN 0011            UPSHOC = CGR*(1.-F)*VGSO
                 C     PAVED SHOULDER COST
   ISN 0012            PSHOC = CAC*F*VPSO
                 C     TOTAL OVERLAY COST
   ISN 0013            OVCST  = PVTOC + UPSHOC + PSHOC
   ISN 0014            RETURN
   ISN 0015            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM I8M FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      14, PROGRAM SIZE =      386, SUBPROGRAM NAME =OVCOST

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        52K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.38.59       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE ACCTFC (TFC1, AGF, NYR, TFCA)
                 C     CUMULATIVE TRAFFIC BY YEAR FROM BASE YEAR %18 KIP EAL<.
                 C     INPUT
                 C     TFC1    = 18KIP EAL IN BASE YEAR %YEAR 1<
                 C     AGF     = ANNUAL GROWTH FACTOR %PERCENT/100.<
                 C     NYR     = NUMBER OF YEARS FOR WHICH ACCUMULATED TRAFFIC )ESIRED).
                 C     OUTPUT
                 C     TFCA    = ARRAY OF CUMULATIVE 18 KIP EAL THROUGH END OF INDEX YEAR.
   ISN 0003            DIMENSION TFCA (NYR)
   ISN 0004            TFCA(1) = TFC1
   ISN 0005            T = TFC1
   ISN 0006            DO 10 I=2,NYR
   ISN 0007            T = T*(1. + AGF)
   ISN 0008            TFCA(I) = TFCA(I-1) + T
   ISN 0009         10 CONTINUE
   ISN 0010            RETURN
   ISN 0011            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      10, PROGRAM SIZE =      398, SUBPROGRAM NAME =ACCTFC

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

ISN 0002            SUBROUTINE MPPR (I, AB, CNB, XNA, XNTP)
                    C
                    C     INPUT   AB          = PAVEMENT AGE AT BEGINNING OF ANALYSIS PERIOD.
                    C             TOVX(I,K)   = TIME IN THE ANALYSIS PERIOD AT WHICH PAVEMENT
                    C                           SLICE I REACHES TERMINAL PSI AND IS OVERLAID
                    C                           K=1 = PRESENT LIMITS.
                    C                           K=2 = FUTURE LIMITS.
                    C             CNB         = CUMULATIVE EAL ON PAVT TO START OF A.P.
                    C             C
                    C             XNA(J,K)    = CUMULATIVE EAL THRU YEAR J FROM BEG. OF A.P.
                    C             XNTP        = TOTAL EAL TO TERM. PSI (PAVT BEFORE OVERLAY).
                    C             N           = NUMBER OF YEARS IN ANALYSIS PERIOD (A.P.).
                    C             IP          = PAVEMENT TYPE (=IF, IR, OR IC)
                    C
                    C     OUTPUT  P(J,K)      = PSI AT END OF YEAR J, LOAD LIMITS K.
                    C             COSTM(J,K)  = MAINTENANCE COSTS
                    C
                    C     INTERNAL
                    C             PVAGE(J,K)  = PAVEMENT AGE IN YEAR J OF A.P.
                    C                           K=1 = PRESENT LIMITS.
                    C                           K=2 = PROPOSED LIMITS
                    C                           K=3 = PROPOSED LIMITS INTERPOLATED TO PRESENT
                    C                                 LIMITS AT SAME PSI.
                    C
ISN 0003            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
ISN 0004            COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),
                   1             TOTALM, PPF, TPF, PENO, NASL, NSLR, TOVLM(30,2)
ISN 0005            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGF
ISN 0006            COMMON /OUT/ PSIE(30,2), EALREM(30,2), COSTM(20,30,2),CSTOV(30,2)
                   1            ,PSIB(30)
ISN 0007            COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
ISN 0008            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
ISN 0009            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
ISN 0010            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
ISN 0011            DIMENSION DOV(30,2)
ISN 0012            EQUIVALENCE (SNOV(1,1), DOV(1,1))
ISN 0013            DIMENSION          XNA(40,2), PVAGE(20,3), P(20,2),NY(2)
ISN 0014            DO 40 K=1,2
ISN 0015            NY(K) = INT (TOV(I,K))
ISN 0016            NA = MIN0(NY(K), NYAP)
ISN 0017            NY1 = NA
ISN 0018            IF (NA .EQ. 0) GO TO 12
ISN 0020            DO 10 J=1,NA
ISN 0021            PVAGE(J,K) = AB + FLOAT(J)
ISN 0022            XN = CNB + XNA(J,K)
ISN 0023            IF (XN .LE. 0.) XN = 1.
ISN 0025            IF (IP .EQ. IF) P(J,K) = GPSIF(XN, PICON, SN, SS, R)
ISN 0027            IF ((IP .EQ. IR .OR. IP .EQ. IC) P(J,K) = GPSIR(XN, PICON, D)
ISN 0029         10 CONTINUE
ISN 0030            IF (NY(K) .GE. NYAP) GO TO 25
ISN 0032         12 NA1 = NA + 1
ISN 0033            YN = XNTP - CNB
ISN 0034            DO 20 J=NA1,NYAP
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ISN 0035            PVAGE(J,K) = FLOAT(J) - TOV(I,K)
                C   YN IS TOTAL 18K EAL USED IN A.P. BEFORE OVERLAY.
ISN 0036            XN = XNA(J,K) - YN
ISN 0037            IF (XN .LE. 0.) XN = 1.
ISN 0039            IF (IP .EQ. IF) P(J,K) = GPSIF(XN, PIOV, SNOV(I,K), SS, R)
ISN 0041            IF (IP .EQ. IR .OR. IP .EQ. IC) P(J,K) = GPSIR(XN, PIOV, DOV(I,K))
ISN 0043         20 CONTINUE
                C   PSI AT END OF A.P.
ISN 0044            PSIE(I,K) = P(NYAP,K)
ISN 0045            GO TO 40
ISN 0046         25 PSIE(I,K) = P(NYAP,K)
ISN 0047            IF (TOV(I,K) .EQ. YR(NYAP)) PSIE(I,K) = PIOV
ISN 0049         40 CONTINUE
ISN 0050            NA1 = 1
ISN 0051            IF (IARMS .EQ. 0) GO TO 52
ISN 0053            IF (NY(1) .LE. 1) GO TO 52
ISN 0055            NA = MIN0(NY(2), NYAP)
ISN 0056            IF (NA .EQ. 0) GO TO 52
ISN 0059            DO 50 J=1,NA
ISN 0059            CALL INTERP (P(I,1), PVAGE(I,1), NY1, P(J,2), PVAGE(J,3))
ISN 0060         50 IF (PVAGE(J,3) .GT. ATP) PVAGE(J,3) = ATP
ISN 0062            IF (NY(2) .GE. NYAP) GO TO 60
ISN 0064            NA1 = NA + 1
ISN 0065         52 CONTINUE
ISN 0066            DO 55 J=NA1, NYAP
ISN 0067            PVAGE(J,3) = PVAGE(J,2)
ISN 0068         55 CONTINUE
ISN 0069         60 CONTINUE
ISN 0070            CALL MAINT (AB, PVAGE(I,1), TOV(I,1), COSTM(1,I,1))
ISN 0071            CALL MAINT (AB, PVAGE(I,3), TOV(I,2), COSTM(1,I,2))
ISN 0072            RETURN
ISN 0073            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      72, PROGRAM SIZE =     2826, SUBPROGRAM NAME =  MPPR

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    44K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.02       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE CXLM (TOV, COSTM,CSTOV,CSTOVP, APOF,COSM,COSV,
                      1                 PTLM, POUT, TVLM)
                 C     CXLM    COSTS/LANE MILE X LANE MILES
                 C             ALSO MANAGES POTTS BASED ON POTTS OPTION SWITCH.
   ISN 0003            COMMON /LMP/ XLM(30), YLM(30), POTLM(20,2), OUTP(20,2),
                      1           TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0004            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGF
   ISN 0005            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0006            DIMENSION TOV(1), COSTM(20,1), CSTOV(1), CSTOVP(1)
   ISN 0007            DIMENSION APOF(1), COSM(1), COSV(1), PTLM(1), POUT(1)
   ISN 0008            DIMENSION TVLM(1), ZLM(30)
   ISN 0009            T = YR(NYAP)
   ISN 0010            SUM = 0.
   ISN 0011            DO 10 I=1,NSLR
   ISN 0012           10 IF (TOV(I) .GT. T) SUM = SUM + XLM(I)
   ISN 0014            GFNO = SUM / TOTALM
   ISN 0015            P = PPF * TOTALM
   ISN 0016            Q = PFNO * TOTALM
   ISN 0017            W = AMAX1(PPF,PFNO)
   ISN 0018            X = (W - PFNO) / (1. - PPF - GFNO)
   ISN 0019            W = AMAX1(TPF,PFNO)
   ISN 0020            Y = (W - PFNO) / (1. - PPF - GFNO)
   ISN 0021            DO 20 I=1,NSLR
   ISN 0022           20 ZLM(I) = XLM(I)
   ISN 0023            BANK = 0.
   ISN 0024            DO 200 J=1,NYAP
   ISN 0025            CM = 0.
   ISN 0026            CV = 0.
   ISN 0027            U=0.
                 C     -IN- AND -OUT- REFER TO IN AND OUT OF THE POT.
   ISN 0028            XOUT = 0.
   ISN 0029            YIN = 0.
   ISN 0030            IF (IPOT .EQ. 2) BANK = BANK + APOF(J)
   ISN 0032            DO 100 I=1,NSLR
   ISN 0033            CM = CM + COSTM(J,I)*XLM(I)
   ISN 0034            ITOV = TOV(I) + 0.99999
   ISN 0035            IF (ITOV .NE. J) GO TO 100
   ISN 0037            IF (IPOT .EQ. 2) GO TO 50
   ISN 0039            IF (IPOT .EQ. 1) GO TO 40
   ISN 0041            CV = CV + CSTOV(I)*XLM(I)
   ISN 0042            TVLM(I) = XLM(I)
   ISN 0043            GO TO 100
   ISN 0044           40 T = Y*XLM(I)
   ISN 0045            S = X*XLM(I)
   ISN 0046            YIN = YIN + T
   ISN 0047            XOUT = XOUT + S
   ISN 0048            CV = CV + CSTOV(I)*(XLM(I) - T)
   ISN 0049            TVLM(I) = XLM(I) - T
   ISN 0050            XLM(I) = XLM(I) + S - T
   ISN 0051            GO TO 100
   ISN 0052           50 IL = I
   ISN 0053            R = BANK/CSTOV(I)
   ISN 0054            S = AMIN1(R,XLM(I))
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   ISN 0055            C = CSTOV(I)*S
   ISN 0056            TVLM(I) = S
   ISN 0057            BANK = BANK - C
   ISN 0058            CV = CV + C
   ISN 0059            U = U + XLM(I) - S
   ISN 0060        100 CONTINUE
   ISN 0061            COSM(J) = CM + P*OLDMNT
   ISN 0062            IF (IPOT .EQ. 2) GO TO 150
   ISN 0064            IF (IPOT .EQ. 1) GO TO 140
   ISN 0066            COSV(J) = CV
   ISN 0067            GO TO 200
   ISN 0068        140 COSV(J) = CV + XOUT*CSTOVP(J)
   ISN 0069            P = P - XOUT + YIN
   ISN 0070            PT_M(J) = P
   ISN 0071            POUT(J) = XOUT
   ISN 0072            GO TO 200
   ISN 0073        150 R = BANK/CSTOVP(J)
   ISN 0074            S = AMIN1(R, AMAX1(P-0.0,))
   ISN 0075            COSV(J) = CV + S*CSTOVP(J)
   ISN 0076            BANK = BANK - S * CSTOVP(J)
   ISN 0077            P = P - S + U
   ISN 0078            XLM(IL) = XLM(IL) - U + S
   ISN 0079            IF (XLM(IL) .GE. 0.) GO TO 190
   ISN 0081            XLM(IL+1) = XLM(IL+1) + ABS(XLM(IL))
   ISN 0082            XLM(IL) = 0.
   ISN 0083        190 CONTINUE
   ISN 0084            PT_M(J) = P
   ISN 0085            POUT(J) = S
   ISN 0086        200 CONTINUE
   ISN 0087            DO 220 I=1,NSLR
   ISN 0088        220 X_M(I) = ZLM(I)
   ISN 0089            RETURN
   ISN 0090            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      89, PROGRAM SIZE =     2564, SUBPROGRAM NAME =  CXLM

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    44K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE FINANC (IERR)
                  C    INCREMENTS SYSTEM/SECTION COUNTERS, STORES CURRENT SYSTEM AND
                  C    SECTION TITLE, AND TESTS FOR OVERFLOW.
                  C    DETERMINES PRESENT WORTH AND UNIFORM ANNUAL COSTS FROM ARRAYS OF
                  C    ANNUAL UNDISCOUNTED COSTS.
   ISN 0003            COMMON /COSTS/ COSM(20,2),COSV(20,2),COSMS(20,2),COSVS(20,2),
                      1             CSMPW(2),CSVPW(2),CSMUA(2),CSVUA(2)
   ISN 0004            COMMON /FUNDS/ APOF(20,2), RTINT, RTINF
   ISN 0005            COMMON /IO/ LI, LO, LD
   ISN 0006            COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),
                      1            TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0007            COMMON /NEWSYS/ NEWSYS
   ISN 0008            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                      1          U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                      2          PB,VPB,RPB, NS, NY, SV(6,2), SVB, FLRPTP(4)
   ISN 0009            COMMON /SUMMARY/ SECTLE(2,10,5),SYSTLE(60,5),NSECT(5),DELC(10,5),
                      1              COSR(10,5),DELCPW(10,5),COSRPW(10,5),DELCUA(10,5),
                      2              COSRUA(10,5),RLRAT(10,5),TLM(10,5),DSLV(10,5),NSYS
   ISN 0010            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0011            COMMON /TITLE/ TITLE(20,3), SECTTL(20)
   ISN 0012            DIMENSION CSVS(2), CSMS(2)
   ISN 0013            DATA ISYS /0/, MAXSEC, MAXSYS /10,5/
   ISN 0014            IERR = 0
   ISN 0015            IF (NEWSYS .EQ. 0) GO TO 10
   ISN 0017          3 ISYS = ISYS + 1
   ISN 0018            IF (ISYS .GT. MAXSYS) GO TO 98
   ISN 0020            NSYS = ISYS
   ISN 0021            DO 7 I=1,20
   ISN 0022            SYSTLE(I,ISYS) = TITLE(I,1)
   ISN 0023            SYSTLE(I+20,ISYS) = TITLE(I,2)
   ISN 0024          7 SYSTLE(I+40,ISYS) = TITLE(I,3)
   ISN 0025            ISECT = 0
   ISN 0026         10 ISECT = ISECT + 1
   ISN 0027            IF (ISECT .GT. MAXSEC) GO TO 97
   ISN 0029            NSECT(ISYS) = ISECT
   ISN 0030            DO 15 I=1,2
   ISN 0031         15 SECTLE(I,ISECT,ISYS) = SECTTL(I)
   ISN 0032            TLM(ISECT,ISYS) = TOTALM
   ISN 0033            DO 20 K=1,2
   ISN 0034            CALL PWUAC(COSM(1,K),NYAP,RTINT,CSMS(K),CSMPW(K),CSMUA(K))
   ISN 0035            CALL PWUAC(COSV(1,K),NYAP,RTINT,CSVS(K),CSVPW(K),CSVUA(K))
   ISN 0036         20 CONTINUE
   ISN 0037            F = (1. + RTINT)**NYAP
   ISN 0038            PWFN = 1./F
   ISN 0039            UACF = RTINT/(F-1.)
                  C    NOTE THAT SALVAGE VALUE IS CONSIDERED A NEGATIVE COST.
                  C    IT HAS BEEN MULTIPLIED BY X=1.<
   ISN 0040            S = CSMS(1) + CSVS(1)
   ISN 0041            T = CSMS(2) + CSVS(2)
   ISN 0042            DSV = SV(6,2) - SV(6,1)
   ISN 0043            DSLV(ISECT,ISYS) = DSV
   ISN 0044            DELC  (ISECT,ISYS) = T - S
   ISN 0045            COSR  (ISECT,ISYS) = T/S
```

```
   ISN 0046            S = CSMPW(1) + CSVPW(1)
   ISN 0047            T = CSMPW(2) + CSVPW(2) + PWFN*DSV
   ISN 0048            DE_CPW(ISECT,ISYS) = T - S
   ISN 0049            COSRPW(ISECT,ISYS) = T/S
   ISN 0050            S = CSMUA(1) + CSVUA(1)
   ISN 0051            T = CSMUA(2) + CSVUA(2) + UACF*DSV
                  C    NOTE THAT THIS UACF %UNIFORM ANNUAL COST FACTOR< MULTIPLIES
                  C    UNDISCOUNTED SALVAGE VALUE, NOT PRESENT WORTH.
   ISN 0052            DELCUA(ISECT,ISYS) = T - S
   ISN 0053            COSRUA(ISECT,ISYS) = T/S
   ISN 0054            CALL REMLIF(RATIO)
   ISN 0055            RLRAT (ISECT,ISYS) = RATIO
   ISN 0056            GO TO 99
   ISN 0057         97 WRITE (LO,197) MAXSEC, ISYS
   ISN 0058        197 FORMAT(/1X,20HTOO MANY SECTIONS %-,I2,12H< FOR SYSTEM, I5,
                     1            31H, DIMENSIONS WOULD BE EXCEEDED.  /
                     2          1X,51HPLEASE CHECK DATA FOR PROPER USE OF =TITLE= <EYWORD
                     3            ,21H TO BEGIN NEW SYSTEM. /
                     4          1X,47HA NEW SYSTEM WILL BE STARTED WITH THIS SECTION.  /)
   ISN 0059            GO TO 3
   ISN 0060         98 WRITE (LO,198) MAXSYS
   ISN 0061        198 FORMAT (/1X,19HTOO MANY SYSTEMS %-,I2,13H< FOR ONE RUN /
                     1          1X,51HPLEASE CHECK DATA FOR PROPER USE OF =TITLE= KEYWORD
                     2            ,21H TO BEGIN NEW SYSTEM. / 1X,19HTHIS RUN WILL STOP
                     3            ,41HAFTER PRINTING RESULTS UP TO THIS SYSTEM. /)
   ISN 0062            IERR = 1
   ISN 0063         99 RETURN
   ISN 0064            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT XREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*     SOURCE STATEMENTS =      63, PROGRAM SIZE =     2306, SUBPROGRAM NAME =FINANC

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    40K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.08       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE PWUAC (A,NYAP, RTINT, SUM, PW, UAC)
                  C    CALCULATES PRESENT WORTH AND UNIFORM ANNUAL COST FACTORS FOR GIVEN
                  C    INTEREST RATE.
   ISN 0003            DIMENSION A(1), PWF(20)
   ISN 0004            DATA RTOLD /1.E+10/
   ISN 0005            IF (RTINT .EQ. RTOLD) GO TO 15
   ISN 0007            RTOLD = RTINT
   ISN 0008            R = RTINT
   ISN 0009            F = 1./(1.+R)
   ISN 0010            PWF(1) = F
   ISN 0011            DO 10 I=2,20
   ISN 0012           10 PWF(I) = PWF(I-1)*F
   ISN 0013            UACF = R*(1.+R)**NYAP/((1.+R)**NYAP - 1.)
   ISN 0014           15 CONTINUE
   ISN 0015            SUMPW = 0.
   ISN 0016            SUM = 0.
   ISN 0017            DO 20 I=1,NYAP
   ISN 0018            SUM = SUM + A(I)
   ISN 0019            SUMPW = SUMPW + A(I)*PWF(I)
   ISN 0020           20 CONTINUE
   ISN 0021            PW = SUMPW
   ISN 0022            UAC = SUMPW*UACF
   ISN 0023            RETURN
   ISN 0024            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      23, PROGRAM SIZE =      830, SUBPROGRAM NAME = PWUAC

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        52K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE REMLIF (RATIO)
                  C    OBTAINS TOTAL REMAINING LIFE %EAL TO TERMINAL PSI REMAINING AT END
                  C    OF ANALYSIS PERIOD< OVER ALL COMPONENTS %AGE SLICES< FOR A SECTION
                  C    FOR BOTH PRESENT AND PROPOSED REGULATIONS.
                  C    FORMS THE RATIO OF THESE TOTALS %PROPOSED/PRESENT<
   ISN 0003            COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),
                      1            TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0004            COMMON /OUT/ PSIE(30,2),EALREM(30,2),COSTM(20,30,2),CSTOV(30,2)
   ISN 0005            COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
   ISN 0006            COMMON /POV/ SNOVP(20,2),THOVP(20,2),CSTOVP(20,2),PP(20,2)
                      1          , RLP(20,2)
   ISN 0007            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0008            DIMENSION TOTRL(2)
                  C    FORM TOTAL REMAINING LIFE IN %LANE MILE=EAL<
   ISN 0009            DO 20 K=1,2
   ISN 0010            SUM = 0.
   ISN 0011            SUMP = 0.
                  C    SUM OVER TIMELY OVERLAID LANE MILES
                  C    AND OVER MILES NEVER COMING DUE FOR OVERLAY.
   ISN 0012            DO 10 L=1,NSLR
   ISN 0013            Z = TOVLM(L,K)
   ISN 0014            IF (TOV(L,K) .GT. YR(NYAP)) Z = XL*(L)
   ISN 0016         10 SUM = SUM + Z*EALREM(L,K)
   ISN 0017            DO 15 J=1,NYAP
                  C    SUM OVER LANE MILES OVERLAID FROM POTTS
   ISN 0018         15 SUMP = SUMP + OUTP(J,K)*RLP(J,K)
   ISN 0019            TOTRL(K) = SUM + SUMP
   ISN 0020         20 CONTINUE
   ISN 0021            RATIO = TOTRL(2)/TOTRL(1)
   ISN 0022            RETURN
   ISN 0023            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      22, PROGRAM SIZE =      728, SUBPROGRAM NAME =REMLIF

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

```
ISN 0002            SUBROUTINE SALVAG
ISN 0003            COMMON /CMP/ COMP(30,34), PCOMP(30), AATP(30)
ISN 0004            COMMON /DSN/ EALDSN(30,2), EALDNP(20,2)
ISN 0005            COMMON /LMP/ XLM(30), YLM(30), POTLM(20,2), OUTP(20,2), TOTALM,
                   1             PPF, TPF, PFND, NASL, NSLR, TOVLM(30,2)
ISN 0006            COMMON /OUT/ PSIE(30,2), EALREM(30,2), COSTM(20,30,2), CSTOV(30,2)
                   1            ,PSIB(30)
ISN 0007            COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
ISN 0008            COMMON /POV/ SNOVP(20,2), THOVP(20,2), CSTOVP(20,2), PP(20,2),
                   1             RLP(20,2)
ISN 0009            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
ISN 0010            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                   1              U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                   2              PB,VPB,RPB, NS, NY, SV(6,2), SVB, FLRPTP(4)
ISN 0011            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
ISN 0012            DIMENSION DUM(30), RIP(30)
ISN 0013            NS = NSLR
ISN 0014            NY = NYAP
ISN 0015            SVB = -1000. * DOT(VI, YLM, NASL)
ISN 0016            DO 5 I=1,NASL
ISN 0017          5 RIP(I) = RI(I) * .01
ISN 0018            DO 10 L=1,NS
ISN 0019            VL(L) = DOT(VI, COMP(1,L), NASL)/XLM(L)
ISN 0020         10 RL(L) = DOT (RIP, COMP(1,L), NASL) / XLM(L)
ISN 0021            CALL SUM (PCOMP, NASL, PB)
ISN 0022            VPB = DOT(VI, PCOMP, NASL)/PB
ISN 0023            RPB = FLRP * DOT (RIP, PCOMP, NASL) / PB
ISN 0024            YRNY = FLOAT(NY)
ISN 0025            DO 100 K=1,2
ISN 0026            DO 20 L=1,NS
ISN 0027            MI(L) = INT(TOV(L,K) + 1. - 1.E-5)
ISN 0028            P(L) = 0.
ISN 0029            IF (TOV(L,K) .LE. YRNY) PL(L) = XLM(L) - TOVLM(L,K)
ISN 0031            U(L) = XLM(L) - PL(L)
ISN 0032         20 CONTINUE
                C     SALVAGE VALUE OF EXISTING PAVEMENT EITHER OVERLAID ON TIMELY
                C     BASIS OR NEVER OVERLAID.
ISN 0033            SV(1,K) = SALV1(U, VL, RL, NY, NS)
                C     SALVAGE VALUE OF EXISTING PAVEMENT IN POT AT END OF ANALYSIS
                C     PERIOD.
ISN 0034            SV(2,K) = SALV2(OUTP(1,K), DUM)
                C     SALVAGE VALUE OF EXISTING PAVEMENT OVERLAID FROM POT.
ISN 0035            SV(3,K) = SALV3 (OUTP(1,K), VP, RP, NY)
                C     SALVAGE VALUE OF TIMELY OVERLAYS
ISN 0036            SV(4,K) = SALV4(TOVLM(1,K),CSTOV(1,K),EALREM(1,K),EALDSN(1,K),NS)
                C     SALVAGE VALUE OF OVERLAYS FROM POT.
ISN 0037            SV(5,K) = SALV4(OUTP(1,K),CSTOVP(1,K),RLP(1,K),EALDNP(1,K),NY)
                C     TOTAL SALVAGE VALUE OF REPRESENTATIVE SECTION, UNDISCOUNTED,
                C     AT END OF ANALYSIS PERIOD.  STORED IN SV(6,K).
ISN 0038            SV(6,K) = 1000.*(SV(1,K) + SV(2,K) + SV(3,K) ) + SV(4,K) + SV(5,K)
ISN 0039        100 CONTINUE
ISN 0040            SV(6,1) = -SV(6,1)
ISN 0041            SV(6,2) = -SV(6,2)
```

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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.18       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION SALV1 (U, V, R, NY, N)
   ISN 0003            DIMENSION U(N), V(N), R(N)
   ISN 0004            S = 0.
   ISN 0005            DO 10 L=1,N
   ISN 0006         10 S = S + U(L)*V(L)*(1. - R(L))**NY
   ISN 0007            SALV1 = S
   ISN 0008            RETURN
   ISN 0009            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        8, PROGRAM SIZE =      494, SUBPROGRAM NAME = SALV1

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION SALV2 (OP, DUM)
   ISN 0003            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                      1              U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                      2              PB,VPB,RPB, NS, NY, SV(6,2), SVB, FLRPTP(4)
   ISN 0004            DIMENSION OP(20), DUM(30), ONES(30)
   ISN 0005            DO 10 L=1,NS
   ISN 0006            ONES(L) = 1.
   ISN 0007            DUM(L) = 1. - RL(L)
   ISN 0008          10 CONTINUE
   ISN 0009            P(1) = PB - OP(1) + SUMEQ(PL, ONES, ONES, MI, 1, NS)
   ISN 0010            TMP = VPB*(1.-RPB)*(PB-OP(1)) + SUMEQ(VL,PL,DUM,MI,1,NS)
   ISN 0011            VP(1) = TMP/P(1)
   ISN 0012            TMP = RPB*(PB-OP(1)) + FLRP*SUMEQ(RL,PL,ONES,MI,1,NS)
   ISN 0013            RP(1) = TMP / P(1)
   ISN 0014            DO 50 J=2,NY
   ISN 0015            P(J) = P(J-1) - OP(J) + SUMEQ(PL,ONES,ONES,MI,J,NS)
   ISN 0016            DO 20 L=1,NS
   ISN 0017          20 DUM(L) = DUM(L)*(1.-RL(L))
   ISN 0018            TMP = VP(J-1)*(1.-RP(J-1))*(P(J-1) - OP(J))
                      1      +SUMEQ(PL, VL, DUM, MI, J, NS)
   ISN 0019            VP(J) = TMP/P(J)
   ISN 0020            TMP = RP(J-1)*(P(J-1)-OP(J)) +FLRP*SUMEQ(PL,RL,ONES,MI,J,NS)
   ISN 0021            RP(J) = TMP/P(J)
   ISN 0022          50 CONTINUE
   ISN 0023            SALV2 = VP(NY)*P(NY)
   ISN 0024            RETURN
   ISN 0025            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      24, PROGRAM SIZE =     1442, SUBPROGRAM NAME = SALV2

*STATISTICS*  NO DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.21       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION SALV3(OP, VP, RP, NY)
                 C     VALUE OF ORIGINAL PAVEMENT OVERLAID FROM POT.
   ISN 0003            DIMENSION OP(20), VP(20), RP(20)
   ISN 0004            S=0.
   ISN 0005            DO 10 J=1,NY
   ISN 0006         10 S = S + OP(J)*VP(J)*(1.-RP(J))**(NY-J)
   ISN 0007            SALV3 = S
   ISN 0008            RETURN
   ISN 0009            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        8, PROGRAM SIZE =       498, SUBPROGRAM NAME = SALV3

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.23       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION SALV4(OV, C, ER, ED, N)
   ISN 0003            DIMENSION OV(1), C(1), ER(1), ED(1)
   ISN 0004            S = 0.
   ISN 0005            DO 10 I=1,N
   ISN 0006         10 S = S + OV(I)*C(I)*ER(I)/ED(I)
   ISN 0007            SA_V4 = S
   ISN 0008            RETURN
   ISN 0009            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*     SOURCE STATEMENTS =        8, PROGRAM SIZE =      474, SUBPROGRAM NAME = SALV4

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.24       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION SUMEQ (A, B, C, MI, J, N)
   ISN 0003            DIMENSION A(N), MI(N), B(N), C(N)
                 C     ASSUME INTEGER ARRAY MI IS MONOTONICALLT INCREASING.
   ISN 0004            SUM = 0.
   ISN 0005            DO 10 L=1,N
   ISN 0006            IF (MI(L) .LT. J) GO TO 10
   ISN 0008            IF (MI(L) .GT. J) GO TO 20
   ISN 0010            SUM = SUM + A(L)*B(L)*C(L)
   ISN 0011         10 CONTINUE
   ISN 0012         20 SUMEQ = SUM
   ISN 0013            RETURN
   ISN 0014            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       13, PROGRAM SIZE =       530, SUBPROGRAM NAME = SUMEQ

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.25       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION DOT (A, B, N)
                 C     DOT PRODUCT OF TWO VECTORS A AND B OF LENGTH N.
   ISN 0003            DIMENSION A(N), B(N)
   ISN 0004            SUM = 0.
   ISN 0005            DO 10 I=1,N
   ISN 0006          10 SUM = SUM + A(I)*B(I)
   ISN 0007            DOT = SUM
   ISN 0008            RETURN
   ISN 0009            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        8, PROGRAM SIZE =       366, SUBPROGRAM NAME =    DOT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        56K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE OUTPUT (LOCSW)
   ISN 0003            COMMON /IO/ LI, LO, LD
   ISN 0004            COMMON /OUTSWH/ IOUT
   ISN 0005            COMMON /TRINDX/ IT
   ISN 0006            COMMON /AGES/ AGE25, AGE75
   ISN 0007            COMMON /STDDEV/ SIGMA
   ISN 0008            COMMON /TRFFIC/ ELVWI(75), APVWE(75), APVWG(75), SAAPV(75),
                      1                TAAPV(75), TRAPV(75), STAPV(75), NGVW
   ISN 0009            COMMON /TRTYP/ TTYP(2,10), PTTYP(10,20,2), PCTTR(20,2),
                      1               NAXLES(10,4),NT(4), NTTY, NATT, NTT, NEWTRK
   ISN 0010            COMMON /COSTS/ COSM(20,2), COSV(20,2), COSMS(20,2), COSVS(20,2),
                      1               CSMPW(2), CSVPW(2), CSMUA(2), CSVUA(2)
   ISN 0011            COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEQTRP
   ISN 0012            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0013            COMMON /LMP/ XLM(30),YLM(30),POTLM(20,2),OUTP(20,2),
                      1             TOTALM, PPF, TPF, PFNO, NASL, NSLR, TOVLM(30,2)
   ISN 0014            COMMON /OUT/ PSIE(30,2), EALREM(30,2), COSTM(20,30,2),CSTOV(30,2)
                      1            ,PSIB(30)
   ISN 0015            COMMON /OVER/ TOV(30,2), SNOV(30,2), THOV(30,2)
   ISN 0016            COMMON / POV/ SNOVP(20,2), THOVP(20,2), CSTOVP(20,2), PP(20,2)
                      1           , RLP(20,2)
   ISN 0017            COMMON /SUMARY/ SECTLE(2,10,5),SYSTLE(60,5),NSECT(5),DELC(10,5),
                      1                COSR(10,5),DELCPW(10,5),COSRPW(10,5),DELCUA(10,5),
                      2                COSRUA(10,5),RLRAT(10,5),TLM(10,5),DSLV(10,5),NSYS
   ISN 0018            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0019            COMMON /TITLE/ TITLE(20,3), SECTTL(20)
   ISN 0020            COMMON /CMP/ COMP(30,34), PCOMP(30), AATP(30)
   ISN 0021            COMMON /SLVG/ ISLV, FLRP, VI(30), RI(30), VL(30), RL(30),
                      1              U(30), PL(30), MI(30), P(20), VP(20), RP(20),
                      2              PB, VPB, RPB, NS, NY, SV(6,2), SVB, FLRPT(4)
   ISN 0022            DIMENSION IWORD(2), TOT(30)
   ISN 0023            DATA MAXLN /10/
   ISN 0024            DATA IWORD(1), IWORD(2) /4HSN  , 4HD   /
   ISN 0025            IF (LOCSW .LT. 0  .OR. LOCSW .GT. 4) GO TO 9991
   ISN 0027            LOC1 = LOCSW + 1
   ISN 0028            GO TO (900, 1000, 2000, 3000, 2100), LOC1
   ISN 0029        900 K = 1
   ISN 0030        905 CALL NPAGE
   ISN 0031            SUMTLM = 0.
   ISN 0032            SUMDC = 0.
   ISN 0033            SUMCPW = 0.
   ISN 0034            SUMCUA = 0.
   ISN 0035            SUMSV = 0.
   ISN 0036            WRITE (LO,920) (SYSTLE(I,K), I=1,60)
   ISN 0037        920 FORMAT(5X,20A4)
   ISN 0038            WRITE (LO,9000)
   ISN 0039       9000 FORMAT(/)
   ISN 0040            WRITE (LO,940)
   ISN 0041        940 FORMAT(3X,2(2X,7HSECTION),4X,4HLANE,8X,12HUNDISCOUNTED,7X,
                      1          13HPRESENT WORTH,3X,19HUNIFORM ANNUAL COST,3X,
                      2          23HRATIO OF REMAINING LIFE/
                      3       5X,6HNUMBER,2X,10HIDENTIFIER,2X,5HMILES,3X,5HDELTA,6H  COST
                      4         ,4X,5HDELTA,3X,5HDELTA,3X,4HCOST,6X,5HDELTA,5X,4HCOST,9X,
```

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                     5          16HPROPOSED/PRESENT/
                     6       33X,4HCOST,3X,5HRATIO,2X,13HSALVAGE  COST,4X,5HRATIO,5X,
                     7          4HCOST,6X,5HRATIO/
                     8       48X,5HVALUE/)
ISN 0042              NS = NSECT(K)
ISN 0043              DO 960 J=1,NS
ISN 0044              SUMTLM = SUMTLM + TLM(J,K)
ISN 0045              SUMDC = SUMDC + DELC(J,K)
ISN 0046              SUMCPW = SUMCPW + DELCPW(J,K)
ISN 0047              SUMCUA = SUMCUA + DELCUA(J,K)
ISN 0048              SUMSV = SUMSV + DSLV(J,K)
ISN 0049              WRITE (L3,950) J, (SECTLE(I,J,K),I=1,2), TLM(J,K), DELC(J,K),
                     1                COSR(J,K), DSLV(J,K), DELCPW(J,K), COSRPW(J,K),
                     2                DELCUA(J,K), COSRUA(J,K), RLRAT(J,K)
ISN 0050          950 FORMAT(3X,I2,4X,2A4,F8.0,-6PF8.3,0PF6.2,-6PF10.3,-6PF8.3,0PF6.2,
                     1       -6PF11.3,0PF9.2,14X,F6.2)
ISN 0051          960 CONTINUE
ISN 0052              K = K+1
ISN 0053              IF (K .GT. NSYS) GO TO 980
ISN 0055              IF (MOD(K-1,2) .EQ. 0) GO TO 905
ISN 0057              WRITE (L3,970)
ISN 0058          970 FORMAT(/////)
ISN 0059              GO TO 905
ISN 0060          980 WRITE (L3,990) SUMTLM, SUMDC, SUMSV, SUMCPW, SUMCUA
ISN 0061          990 FORMAT(/6X,5HTOTAL,10X,F9.0,-6PF8.3,-6PF16.3,-6PF8.3,-5PF17.3///
                     1       5X,36HALL COSTS ARE IN MILLIONS OF DOLLARS)
ISN 0062              GO TO 9999
ISN 0063         1000 IF (IOUT .LT. 1) GO TO 9999
ISN 0065              CALL NPAGE
ISN 0066              PPFF = PPF * 100.
ISN 0067              WRITE (L3,1011) AGE25, AGE75, ATP, SIGMA, PPFF
ISN 0068         1011 FORMAT(5X,51HAVERAGE PAVEMENT AGE WHEN 25 PERCENT OF MILEAGE IS ,
                     1          18HALREADY OVERLAID =,F10.2,6H YEARS/
                     2       5X,51HAVERAGE PAVEMENT AGE WHEN 75 PERCENT OF MILEAGE IS ,
                     3          18HALREADY OVERLAID =,F10.2,6H YEARS/
                     4       5X,48HAVERAGE AGE AT TERMINAL PSI FOR EXISTING DESIGN ,
                     5          21(1H=),F10.2,6H YEARS/
                     6       5X,41HSTANDARD DEVIATION OF THE SURVIVOR CURVE ,29(1H=),
                     7          F10.2,6H YEARS/
                     8       5X,36HPERCENT OF TOTAL LANE MILES IN POTTS/
                     9       9X,31HXBEGINNING OF ANALYSIS PERIOD< ,34(1H=),F10.2///
                     A       5X,47HLANE-MILES FROM GIVEN AGE SLICE DUE FOR TIMELY ,
                     8          30HOVERLAY IN GIVEN ANALYSIS YEAR/)
ISN 0069              LIM = MINO(NSLR,13)
ISN 0070              PTOT = 0.
ISN 0071              DO 1004 I=1,30
ISN 0072              TOT(I) = PCOMP(I)
ISN 0073              PTOT = PTOT + PCOMP(I)
ISN 0074              DO 1007 J=1,NSLR
ISN 0075              TOT(I) = TOT(I) + COMP(I,J)
ISN 0076         1007 CONTINUE
ISN 0077         1004 CONTINUE
ISN 0078              WRITE (L3,1001) (I,I=1,LIM)
ISN 0079         1001 FORMAT(16X,9HPAVEMENT/
                     1       17X,6HAGE AT,37X,13HANALYSIS YEAR/
                     2       10X,4HLOSS,2X,9HBEGINNING,11X,4HINTO/
                     3        2X,5HVALUE,3X,4HRATE,3X,7HOF A.P.,3X,5HTOTAL,4X,5HPOTTS,
                     4        1X,12(I5,2X),I5)
```

```
ISN 0080            WRITE (L3,1009)
ISN 0081       1009 FORMAT (/)
ISN 0082            DO 1003 I=1,NASL
ISN 0083            WRITE (L3,1002) VI(I), RI(I), I, TOT(I), PCOMP(I),
                   1                (COMP(I,J),J=1,LIM)
ISN 0084       1002 FORMAT(1X,F7.0,F6.2,I7,F11.1,F8.1,1X,13(1X,F6.1))
ISN 0085       1003 CONTINUE
ISN 0086            WRITE (L3,1016) PTOT, (XLM(I),I=1,LIM)
ISN 0087       1016 FORMAT(/21X,6HTOTALS,4X,F9.1,1X,13(1X,F6.1))
ISN 0088            WRITE (L3,1014) (AATP(I),I=1,LIM)
ISN 0089       1014 FORMAT(/2X,27HAVERAGE AGE AT TERMINAL PSI,13X,13(F6.2,1X))
ISN 0090            WRITE (L0,1017)
ISN 0091       1017 FORMAT(/2X,29HVALUE IN THOUSANDS OF DOLLARS,
                   1         9X,29HLOSS RATE IN PERCENT PER YEAR)
ISN 0092            IF (NSLR .LE. 13) GO TO 1018
ISN 0094            CALL NPAGE
ISN 0095            WRITE (L3,1008) (I,I=14,NSLR)
ISN 0096       1008 FORMAT(5X,47HLANE=MILES FROM GIVEN AGE SLICE DUE FOR TIMELY ,
                   1           30HOVERLAY IN GIVEN ANALYSIS YEAR//
                   2        1X,8HPAVEMENT/
                   3        2X,6HAGE AT,12X,13HANALYSIS YEAR/
                   4        1X,9HBEGINNING/
                   5        2X,7HOF A,P,,1X,17(I5,2X))
ISN 0097            WRITE (L0,1009)
ISN 0098            DO 1006 I=1,NASL
ISN 0099            WRITE (L3,1005) I, (COMP(I,J),J=14,NSLR)
ISN 0100       1005 FORMAT(4X,I2,4X,17(F6.1,1X))
ISN 0101       1006 CONTINUE
ISN 0102            WRITE (L0,1012) (XLM(I),I=14,NSLR)
ISN 0103       1012 FORMAT(/2X,6HTOTALS,2X,17(F6.1,1X))
ISN 0104            WRITE (L3,1013) (AATP(I),I=14,NSLR)
ISN 0105       1013 FORMAT(/2X,27HAVERAGE AGE AT TERMINAL PSI/
                   1        19X,17(F6.2,1X))
ISN 0106            WRITE (L3,1017)
ISN 0107       1018 L=2
ISN 0108            IF (IP .EQ. IF) L = 1
ISN 0110            CALL NPAGE
ISN 0111            WRITE (L3,2005) (SECTTL(I),I=1,20)
ISN 0112       2005 FORMAT(5X,20A4//)
ISN 0113            WRITE (L3,1010)
ISN 0114       1010 FORMAT(31X,34HP E R F O R M A N C E    T A B L E//)
ISN 0115            WRITE (L3,1015)
ISN 0116       1015 FORMAT(29X,38HP R E S E N T    R E G U L A T I O N S//)
ISN 0117            DO 1070 K=1,2
ISN 0118            WRITE (L3,1020) IWORD(L)
ISN 0119       1020 FORMAT(72X,6HPSI AT/
                   1         1X,2(4X,10HLANE MILES),3X,7HYEAR OF,4X,7HOVERLAY,5X,
                   2           7HOVERLAY,5X,16HBEGINNING    END,7X,
                   3           14HREMAINING LIFE,6X,12HOVERLAY COST/
                   4        5X,11HDUE OVERLAY,4X,8HOVERLAID,4X,7HOVERLAY,3X,7HDESIGN ,
                   5           A4,10H THICKNESS,3X,18HOF ANALYSIS PERIOD,3X,
                   6           20H$MILLION 18=KIP EAL<,3X,13H$/LANE MILE<//)
ISN 0120            DO 1040 J=1,NSLR
ISN 0121            WRITE (L3,1030) XL4(J), TOVL4(J,K), TOV(J,K), SNOV(J,K), THOV(J,K)
                   1                ,PSIB(J), PSIE(J,K), EALREM(J,K), CSTOV(J,K)
ISN 0122       1030 FORMAT(F12.1,F14.1,F12.2,F11.2,2F12.2,F10.2,7X,=6PF10.3,10X,
                   1        0PF11.0)
ISN 0123       1040 CONTINUE
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ISN 0124            IF (K .EQ. 2) GO TO 1070
ISN 0126            IF (NYAP .LE. 15) GO TO 1060
ISN 0128            CALL NPAGE
ISN 0129            WRITE (LO,2005) (SECTTL(I),I=1,20)
ISN 0130            WRITE (LO,1010)
ISN 0131            WRITE (LO,1050)
ISN 0132         1050 FORMAT(/28X,40HP R O P O S E D    R E G U L A T I O N S//)
ISN 0133            GO TO 1070
ISN 0134         1060 WRITE (LO,1050)
ISN 0135         1070 CONTINUE
ISN 0136            CALL NPAGE
ISN 0137            WRITE (LO,2005) (SECTTL(I),I=1,20)
ISN 0138            WRITE (LO,1080)
ISN 0139         1080 FORMAT(36X,22HP O T T S    T A B L E//)
ISN 0140            WRITE (LO,1090)
ISN 0141         1090 FORMAT(28X,38HP R E S E N T    R E G U L A T I O N S//)
ISN 0142            DO 1150 K=1,2
ISN 0143            WRITE (LO,1100) IWORD(L)
ISN 0144         1100 FORMAT(5X,8HANALYSIS,2(2X,10HLANE MILES),3X,7HOVERLAY,4X,7HOVERLAY
                    1          ,4X,13HPSI AT END OF,4X,12HOVERLAY COST/
                    2        7X,4HYEAR,5X,8HIN POTTS,4X,8HOVERLAID,3X,7HDESIGN ,A4,
                    3           9HTHICKNESS,2X,15HANALYSIS PERIOD,3X,13H%$/LANE-MILE</
                    4        27X,10HFROM POTTS//)
ISN 0145            DO 1120 J=1,NYAP
ISN 0146            WRITE (LO,1110) J, POTL4(J,K), OUTP(J,K), SNOVP(J,K), THOVP(J,K),
                    1                  PP(J,K), CSTOVP(J,K)
ISN 0147         1110 FORMAT(6X,I2,2F12.1,2F11.2,F14.2,F18.0)
ISN 0148         1120 CONTINUE
ISN 0149            IF (K .EQ. 2) GO TO 1150
ISN 0151            IF (NYAP .LE. 17) GO TO 1140
ISN 0153            CALL NPAGE
ISN 0154            WRITE (LO,2005) (SECTTL(I),I=1,20)
ISN 0155            WRITE (LO,1080)
ISN 0156            WRITE (LO,1130)
ISN 0157         1130 FORMAT(/27X,40HP R O P O S E D    R E G U L A T I O N S//)
ISN 0158            GO TO 1150
ISN 0159         1140 WRITE (LO,1130)
ISN 0160         1150 CONTINUE
ISN 0161            GO TO 9999
ISN 0162         2000 IF (IOUT .LT. 2) GO TO 9999
ISN 0164            CALL NPAGE
ISN 0165            WRITE (LO,2005) (SECTTL(I),I=1,20)
ISN 0166            WRITE (LO,2010)
ISN 0167         2010 FORMAT(5X,10HTRUCK TYPE,4X,17HPAYLOAD PER TRUCK,4X,12H18-KIP AXLES
                    1          ,10H PER TRUCK//
                    2        19X,7HPRESENT,2X,8HPROPOSED,6X,7HPRESENT,3X,8HPROPOSED//)
ISN 0168            INTT = NTTY + NATT
ISN 0169            DO 2030 I=1,INTT
ISN 0170            WRITE (LO,2020) (TTYP(J,I),J=1,2), APPT(I,1), APPT(I,2),
                    1                  EALPT(I,1), EALPT(I,2)
ISN 0171         2020 FORMAT(5X,2A4,5X,F7.2,2X,F7.2,6X,F7.2,3X,F7.2)
ISN 0172         2030 CONTINUE
ISN 0173            WRITE (LO,2040)
ISN 0174         2040 FORMAT(/////7X,4HYEAR,3X,17H18-KIP ESAL RATIO,10X,4HYEAR,
                    1          3X,17H18-KIP ESAL RATIO/
                    2        14X,18H%PROPOSED/PRESENT<,16X,18H%PROPOSED/PRESENT<//)
ISN 0175            N_INES = MIN0(NYAP,MAXLN)
ISN 0176            DO 2060 I=1,NLINES
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ISN 0177            WRITE (LO,2050) (J, EALFCT(J), J=I,NYAP,MAXLN)
ISN 0178       2050 FORMAT(8X,I2,6X,F10.3,16X,I2,6X,F10.3)
ISN 0179       2060 CONTINUE
ISN 0180            GO TO 9999
ISN 0181       2100 IF (IOUT .LT. 1) GO TO 9999
ISN 0183            CALL NPAGE
ISN 0184            WRITE (LO,2005) (SECTTL(I),I=1,20)
ISN 0185            WRITE (LO,2070)
ISN 0186       2070 FORMAT(22X,36HU N D I S C O U N T E D    C O S T S//
                   1        30X,21H*MILLIONS OF DOLLARS*//
                   2         9X,7HYEAR IN,13X,11HMAINTENANCE,20X,7HOVERLAY/
                   3         5X,15HANALYSIS PERIOD,4X,7HPRESENT,6X,8HPROPOSED,9X,
                   4            7HPRESENT,5X,8HPROPOSED//)
ISN 0187            TOTM1 = 0.
ISN 0188            TOTM2 = 0.
ISN 0189            TOTV1 = 0.
ISN 0190            TOTV2 = 0.
ISN 0191            DO 2090 I=1,NYAP
ISN 0192            WRITE (LO,2080) I, (COSM(I,K),K=1,2), (COSV(I,K),K=1,2)
ISN 0193       2080 FORMAT(12X,I2,6X,4(F10.3,4X),4(F10.3,6X))
ISN 0194            TOTM1 = TOTM1 + COSM(I,1)
ISN 0195            TOTM2 = TOTM2 + COSM(I,2)
ISN 0196            TOTV1 = TOTV1 + COSV(I,1)
ISN 0197            TOTV2 = TOTV2 + COSV(I,2)
ISN 0198       2090 CONTINUE
ISN 0199            WRITE (LO,2095) TOTM1, TOTM2, TOTV1, TOTV2
ISN 0200       2095 FORMAT(/10X,6HTOTALS,4X,4(F10.3,4X),4(F10.3,6X))
ISN 0201            XSLVG = SV(6,2) - SV(6,1)
ISN 0202            WRITE (LO,2096) SVB, SV(6,1), SVB, SV(6,2), XSLVG
ISN 0203       2096 FORMAT(////24X,26HS A L V A G E    V A L U E/
                   1        26X,21H*MILLIONS OF DOLLARS*//
                   2        29X,15HANALYSIS PERIOD/
                   3        25X,9HBEGINNING,9X,3HEND//
                   4        15X,7HPRESENT,4(F12.3,4X),F10.3/
                   5        15X,8HPROPOSED,4(F11.3,4X),F10.3//
                   6        31X,5HDELTA,4(F12.3))
ISN 0204            GO TO 9999
ISN 0205       3000 IF (IOUT .LT. 3) GO TO 9999
ISN 0207            II = 1
ISN 0208            LIMIT = MIN0(NGVW,40)
ISN 0209       3005 CALL NPAGE
ISN 0210            WRITE (LO,3010) (SECTTL(I),I=1,20)
ISN 0211       3010 FORMAT(5X,20A4//
                   1        5X,48HCUMULATIVE SHIFTED AXLE DISTRIBUTIONS *IN 2=KIP .
                   2           25HINTERVALS< FOR EACH TRUC<//)
ISN 0212            WRITE (LO,3020) (TTYP(I,IT),I=1,2)
ISN 0213       3020 FORMAT(5X,11HTRUCK TYPE ,2A4///
                   1           10X,6HEND OF,6X,9HUNSHIFTED,3X,5HFINAL/
                   2           10X,6HWEIGHT,4X,6(3X,7HPERCENT)/
                   3            9X,8HINTERVAL,3X,2(3X,7HWEIGHED),3X,6HSINGLE,4X,
                   4               6HTANDEM,4X,6HTRIDEM,4X,8HSTEERING/
                   5           10X,6H*KIPS<,3X,2(5X,5HGROSS),4X,5HAXLES,3(5X,5HAXLES)
                   6               //)
ISN 0214            DO 3040 I=II,LIMIT
ISN 0215            WRITE (LO,3030) ELVWI(I), APVWE(I), APVWG(I), SAAPV(I), TAAPV(I),
                   1                TRAPV(I), STAPV(I)
ISN 0216       3030 FORMAT(6X,F10.3,3X,6F10.2)
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   ISN 0217      3040 CONTINUE
   ISN 0218           IF ((NGVW .LE. 40) .OR. (LIMIT .EQ. NGVW)) GO TO 9999
   ISN 0220           II = 41
   ISN 0221           LIMIT = NGVW
   ISN 0222           GO TO 3005
   ISN 0223      9991 WRITE (LO, 9091) LOCSW
   ISN 0224      9091 FORMAT(/18H LOCATION SWITCH #,I3,16H IS OUT OF RANGE//)
   ISN 0225      9999 RETURN
   ISN 0226           END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =     225, PROGRAM SIZE =     8932, SUBPROGRAM NAME =OUTPUT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.29       PAGE    1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION FWT18L (SN, SS, R, PI, PT)
               C       AASHO-FLEXIBLE PREDICTION OF 18-KIP EAL TO TERMINAL PSI
   ISN 0003            GT = ALOG10((PI-PT)/(PI-1.5))
   ISN 0004            GTERM = GT/(0.40+1094./(SN+1.)**5.19)
   ISN 0005            FWT18L= 9.36*ALOG10(SN+1.)-0.20+GTERM-ALOG10(R)+0.372*(SS-3.0)
   ISN 0006            RETURN
   ISN 0007            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        6, PROGRAM SIZE =       590, SUBPROGRAM NAME =FWT18L

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.30       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION GPSIF (XN, PI, SN, SS, R)
                 C     AASHO-FLEXIBLE PREDICTION OF PSI AFTER GIVEN 18-KIP EAL.
   ISN 0003            EXP10(X) = EXP(2.302585*X)
   ISN 0004            GTERM = ALOG10(XN)-9.36*ALOG10(SN+1.)+0.20+ALOG10(R)
                      1 -0.372*(SS-3.)
   ISN 0005            GT = GTERM*(0.40+1094./(SN+1.)**5.19)
   ISN 0006            Q = EXP10(GT)
   ISN 0007            PT = PI-(PI-1.5)*Q
   ISN 0008            GPSIF = PT
   ISN 0009            RETURN
   ISN 0010            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        9, PROGRAM SIZE =       610, SUBPROGRAM NAME = GPSIF

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  52K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.31       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE GETSN (W18L, PI, PT, SNB, SS, R, SNF)
                     C     SOLVE FOR REQUIRED STRUCTURAL NUMBER, GIVEN
                     C     W18L    = LOG %BASE 10< OF 18 KIP EAL,
                     C     SS      = SOIL SUPPORT VALUE,
                     C     R       = REGIONAL FACTOR,
                     C     PI, PT = INITIAL AND TERMINAL SERVICABILITIES,
                     C     SNB     = STRTING =SN= FOR ITERATIVE SOLUTION,
                     C     OUTPUT
                     C     SNF     = FINAL =SN= FROM ITERATIVE SOLUTION,
   ISN 0003            DATA MAX, TEST /10, 0.05/
   ISN 0004            A = W18L+ 0.20 + ALOG10(R) = .372*(SS = 3.0)
   ISN 0005            SN1 = SNB + 1,
   ISN 0006            G = ALOG10((PI = PT)/(PI = 1.5))
   ISN 0007            ITER = 0
   ISN 0008           10 ITER = ITER + 1
   ISN 0009              IF (ITER .GT. MAX) GO TO 99
   ISN 0011              GT = G/(0.40 + 1094./SN1**5.19)
   ISN 0012              SN1N = 10.**((A=GT)/9.36)
   ISN 0013              IF (ABS(SN1 = SN1N) .LT. TEST) GO TO 20
   ISN 0015              SN1 = SN1N
   ISN 0016              GO TO 10
   ISN 0017           20 SNF = SN1N = 1,
   ISN 0018              RETURN
   ISN 0019           99 WRITE (6,100) ITER, W18L,PI, PT, SN1
   ISN 0020          100 FORMAT(6H AFTER, I2, 29H ITERATIONS FOR W18L, PI, PT#, 3F10.4/
                        1       42H GETSN HAS NOT CONVERGED,  CURRENT %SN&1<#, F10.4)
   ISN 0021              SNF = SN1 = 1,
   ISN 0022              RETURN
   ISN 0023              END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       22, PROGRAM SIZE =       926, SUBPROGRAM NAME = GETSN

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  52K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.33       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE OVTHKF (SNOV, THOV)
                 C     OBTAIN THICKNESS OF AC OVERLAY REQUIRED TO BRING STRUCTURAL NUMBER
                 C     OF EXISTING PAVEMENT %DISCOUNTED FOR USE< UP TO NEW DESIGN VALUE.
   ISN 0003            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0004            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0005            COMMON /STRCOE/ STRCO(8),CC(4),MC(11),NC,STRC(5),RFS(4),RFB(4)
   ISN 0006            INDX = 7.5 - 2.*PTERM
                 C     SNEX IS THE SN OF THE EXISTING STRUCTURE, DISCOUNTED FOR USE
                 C     BASED ON THE TERMINAL PSI AT OVERLAY.
   ISN 0007            INDX = MAX0(1, MIN0(4,INDX))
   ISN 0008            SNEX = 0.
   ISN 0009            DO 10 M=1,NLAY
   ISN 0010            KEY = MTYPE(M)
   ISN 0011            IF (M .EQ. 1) A = STRCO(KEY)*RFS(INDX)
   ISN 0013            IF (M .GT. 1) A = STRCO(KEY)*RFB(INDX)
   ISN 0015            SNEX = SNEX + A*THICK(M)
   ISN 0016         10 CONTINUE
   ISN 0017            THOV = (SNOV - SNEX)/STRC(5)
   ISN 0018            RETURN
   ISN 0019            END

#OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

#OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       18, PROGRAM SIZE =       616, SUBPROGRAM NAME =OVTHKF

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.34      PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION RWT18L(D,PI,PT)
                     C     AASHO-RIGID PREDICTION OF 18 KIP EAL TO TERMINAL PSI
   ISN 0003            GT = ALOG10((PI-PT)/(PI-1.5))
   ISN 0004            GTERM = GT/(1.+1.624E7/(D+1.)**8.46)
   ISN 0005            RWT18L= 7.35*ALOG10(D+1.)-0.06+GTERM
   ISN 0006            RETURN
   ISN 0007            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        6, PROGRAM SIZE =       480, SUBPROGRAM NAME =RWT18L

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.35       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION RNAASH(DA)
                 C     MODIFY AASHO-RIGID PREDICTION FOR NON-AASHO CONDITIONS
   ISN 0003            COMMON /STRUC/ SN, SS, R, D, SC, XJ, XK, E
   ISN 0004            Z = E/XK
   ISN 0005            D75 = DA**.75
   ISN 0006            RNAASH = ALOG10(((SC*0.75)/(215.63*XJ))*(D75-1.132)/
                      1 (D75-18.42/Z**0.25))
   ISN 0007            RETURN
   ISN 0008            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        7, PROGRAM SIZE =       424, SUBPROGRAM NAME =RNAASH

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.37       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION GPSIR (XN, PI, D)
                 C     AASHO-RIGID PREDICTION OF PSI AFTER GIVEN 18 KIP EAL
   ISN 0003            DATA MAX, TEST /10, .001 /
   ISN 0004            EXP10(X) = EXP(2.302585*X)
   ISN 0005            PTN = 3.
   ISN 0006            ITER = 0
   ISN 0007            RN = RNAASH(D)
   ISN 0008            XNL = ALOG10(XN)
   ISN 0009            DT1 = 7.35*ALOG10(D+1.) - 0.06
   ISN 0010            DT2 = 1. + 1.624E7/(D+1.)**8.46
   ISN 0011           10 ITER = ITER + 1
   ISN 0012              IF (ITER .GT. MAX) GO TO 30
   ISN 0014              PT = PTN
   ISN 0015              GT = (XNL - DT1 - (4.22 - 0.32*PT)*RN)*DT2
   ISN 0016              PTN = PI - (PI - 1.5)*EXP10(GT)
   ISN 0017              IF (ABS(PTN - PT) .LT. TEST) GO TO 20
   ISN 0019              GO TO 10
   ISN 0020           20 GPSIR = PTN
   ISN 0021              RETURN
   ISN 0022           30 GPSIR = PTN
   ISN 0023              WRITE (6,1) MAX, PTN, PT, XN
   ISN 0024            1 FORMAT (1X, 37HFUNCTION GPSIR DID NOT CONVERGE AFTER, I5,
                       1         11H ITERATIONS / 1X,33HLAST AND PREVIOUS PSI VALUES WERE,
                       2         2F10.6 / 1X,  3HFOR , F10.0,26H 18KIP EAL TO DATE, ABORT.)
   ISN 0025              STOP
   ISN 0026              END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      25, PROGRAM SIZE =      944, SUBPROGRAM NAME = GPSIR

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  52K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.39        PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002              SUBROUTINE GETD (W18, PI, PT, DB, DF)
                     C   AASHO-RIGID SLAB THICKNESS FOR GIVEN LIFE X18 KIP EALS AND INITIAL
                     C   AND TERMINAL PSI
   ISN 0003              DATA MAX, TEST /10, .001 /
   ISN 0004              EXP10(X) = EXP(2.3025E5*X)
   ISN 0005              ITER = 0
   ISN 0006              DN = DB
   ISN 0007           10 ITER = ITER + 1
   ISN 0008              IF (ITER .GT. MAX) GO TO 99
   ISN 0010              D = DN
   ISN 0011              W = RWT18L(D,PI,PT) + (4.22-.32*PT)*RNAASH(D)
   ISN 0012              DTERM = 7.35*ALOG10(D + 1.)
   ISN 0013              DIN_OG = (W18 - (W - DTERM))/7.35
   ISN 0014              DN = EXP10(DINLOG) - 1.
   ISN 0015              IF (ABS(D-DN) .LT. TEST) GO TO 20
   ISN 0017              GO TO 10
   ISN 0018           20 DF = DN
   ISN 0019              RETURN
   ISN 0020           99 DF = D
   ISN 0021              WRITE (6,1) D, DN, W18, PI,PT,DB
   ISN 0022              RETURN
   ISN 0023            1 FORMAT (1X, 27HTOO MANY ITERATIONS IN GETD /
                      1         1X, 20HLAST TWO VALUES WERE , 2F8.4 /
                      2         1X, 36HINPUT  LOG N18, PI, PT, STARTING D #  /
                      3         1X, 4F10.4 /)
   ISN 0024              END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       23, PROGRAM SIZE =       870, SUBPROGRAM NAME =  GETD

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    52K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.40       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE OVTHKR (D, EXD, TH)
               C       OBTAIN THICKNESS OF AC OVERLAY TO BRING EQUIVALENT SLAB
               C       THICKNESS, D, OF COMBINATION UP TO NEW DESIGN VALUE.
               C       %EXISTING D DISCOUNTED FOR USE<
   ISN 0003            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0004            COMMON /PSI/ PICON, PTERM, PIOV, PTOV
   ISN 0005            COMMON /STRCOE/ STRCO(8),CC(4),MC(11),NC,STRC(5),RFS(4),RFB(4)
   ISN 0006            DATA F/1./
   ISN 0007            INDX = 7.5 - 2.*PTERM
   ISN 0008            INDX = MIN0(4,MAX0(1,INDX))
   ISN 0009            C = CC(INDX)
   ISN 0010            TH = 2.5*(F*D - C*EXD)
   ISN 0011            RETURN
   ISN 0012            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       11, PROGRAM SIZE =       424, SUBPROGRAM NAME =OVTHKR

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  52K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

ISN 0002            SUBROUTINE MNTSET
                C
                C   SET UP THE CUMULATIVE MAINTENANCE COST ARRAYS FOR MODEL OR
                C   HISTORICAL MAINTENANCE
                C
                C   INPUTS ARE
                C     1. UNTCST%7< ==== UNIT COST OF MAINTENANCE
                C          %1< = $/SQ.YD. OF FLEXIBLE PATCHING
                C          %2< = $/LINEAL FT. OF BITUMINOUS CRACK SEALING
                C          %3< = $/CU.YD. OF BITUMINOUS BASE AND SURFACE REPAIR
                C          %4< = $/SQ.YD. OF CONCRETE PATCHING
                C          %5< = $/AVERAGE CONCRETE BLOWUP
                C          %6< = $/AVERAGE CONCRETE MUDJACK
                C          %7< = $/LINEAL FT. OF CONCRETE JOINT SEALING
                C     2. USRMDL%31,2< = USER INPUT COST OF MAINTENANCE PER YEAR FOR
                C                       31 YEARS
                C          COLUMN 1 = FOR FLEXIBLE PAVEMENTS
                C          COLUMN 2 = FOR RIGID PAVEMENTS
                C     3. WDTH  = LANE WIDTH IN FEET
                C     4. S ===== JOINT SPACING IN FEET
                C     5. XML === FRACTION OF JOINTS SEALED EACH YEAR
                C     6. JSLAG = TIME BEFORE FIRST JOINT SEAL IN YEARS
                C     7. MFLG == MAINTENANCE TYPE
                C          0 # NO MAINTENANCE
                C          1 # EAROMAR MODEL
                C          2 # USER INPUT MODEL
                C
                C   OUTPUT IS
                C     ACCMDL%31,3< = EAROMAR MODEL COST OF MAINTENANCE PER YEAR FOR
                C                    31 YEARS %CUMULATIVE< FOR
                C        COLUMN 1 = FLEXIBLE PAVEMENTS
                C        COLUMN 2 = RIGID PAVEMENTS
                C        COLUMN 3 = COMPOSITE PAVEMENTS
                C
ISN 0003            COMMON /MNTPAR/ UNTCST(7), USRMDL(31,3), WDTH, S, XML, JSLAG, MFLG
ISN 0004            COMMON /MODELS/ ACCMDL(31,3)
ISN 0005            COMMON /IO/ LI, LO, LD
ISN 0006            DATA LEN /24/
ISN 0007            DATA MAX /31/
                C
                C   TEST FOR USER OVERRIDE OF EAROMAR MODELS
                C
ISN 0008            IF (MFLG .EQ. 0) GO TO 9999
ISN 0010            IF (MFLG .EQ. 1) GO TO 8
                C
                C   ACCUMULATE THE USER DEFINED COSTS PER YEAR.
                C
ISN 0012            ACCMDL(1,1) = USRMDL(1,1)
ISN 0013            ACCMDL(1,2) = USRMDL(1,2)
ISN 0014            DO 5 I=2,LEN
ISN 0015            DO 1 J=1,2
ISN 0016            K = I-1
ISN 0017            ACCMDL(I,J) = ACCMDL(K,J) + USRMDL(I,J)
```

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ISN 0018          1 CONTINUE
ISN 0019          5 CONTINUE
ISN 0020            DO 7 I=25,MAX
ISN 0021            DO 6 J=1,2
ISN 0022            ACCMDL(I,J) = ACCMDL(I-1,J) + USRMDL(LEN,J)
ISN 0023          6 CONTINUE
ISN 0024          7 CONTINUE
ISN 0025            DO 10 I=1,MAX
ISN 0026            ACCMDL(I,3) = ACCMDL(I,1)
ISN 0027         10 CONTINUE
ISN 0028            GO TO 9999
                C
                C     FLEXIBLE PAVEMENT - CALCULATE YEARLY MAINTENANCE COSTS %20 YEARS<
                C
ISN 0029          8 DO 40 I=1,LEN
ISN 0030            A = I
ISN 0031            FACTI = 1. + EXP(-1. * (A - 10.) / 1.16)
                C
                C     SY OF PATCHING
ISN 0032            SUM = 1100. / FACTI * UNTCST(1)
                C
                C     CRACK SEALING
ISN 0033            SUM = SUM + 1000. / FACTI * UNTCST(2)
ISN 0034            USRMDL(I,3) = SUM
                C
                C     BASE AND SURFACE REPAIR
ISN 0035            USRMDL(I,1) = SUM + 5. / FACTI * UNTCST(3)
                C
                C     RIGID PAVEMENT - CALCULATE YEARLY MAINTENANCE COSTS %20 YEARS<
                C
                C
                C     SY OF PATCHING
ISN 0036            SUM = 34. / (1. + EXP(-1. * (A - 10.) / 1.25)) * UNTCST(4)
                C
                C     BLOWUPS
ISN 0037            IF ((I .LT. 5) .OR. (I .GT. 25)) GO TO 30
ISN 0039            TOT1 = 0.005 * (A - 4.) * UNTCST(5)
ISN 0040            SUM = SUM + TOT1
                C
                C     MUDJACKING
ISN 0041         30 TOT1 = 0.25 * ((0.5*A) ** 2) * EXP(-0.5*A) * UNTCST(6)
ISN 0042            SUM = SUM + TOT1
                C
                C     JOINT SEALING
ISN 0043            IF (I .LE. JSLAG) GO TO 35
ISN 0045            SUM = SUM + ((5280. * WDTH) / S) * XML * UNTCST(7)
ISN 0046         35 USRMDL(I,2) = SUM
ISN 0047         40 CONTINUE
                C
                C     SET THE COSTS OF YEARS 25-MAX EQUAL TO THE COST OF YEAR LEN
                C
ISN 0048            DO 46 I=25,MAX
ISN 0049            DO 43 J=1,3
ISN 0050            USRMDL(I,J) = USRMDL(I-1,J)
ISN 0051         43 CONTINUE
ISN 0052         46 CONTINUE
                C
                C     CALCULATE THE ACCUMULATED COSTS ARRAY
```

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                C
   ISN 0053             ACCMDL(1,1) = USRMDL(1,1)
   ISN 0054             ACCMDL(1,2) = USRMDL(1,2)
   ISN 0055             ACCMDL(1,3) = USRMDL(1,3)
   ISN 0056             DO 60 I=2,MAX
   ISN 0057             DO 55 J=1,3
   ISN 0058             ACCMDL(I,J) = ACCMDL(I-1,J) + USRMDL(I,J)
   ISN 0059          55 CONTINUE
   ISN 0060          60 CONTINUE
   ISN 0061        9999 RETURN
   ISN 0062             END
```

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*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       61, PROGRAM SIZE =      1938, SUBPROGRAM NAME =MNTSET

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    44K BYTES OF CORE NOT USED
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REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE MAINT (AGEI, AGE, TOV, YMCOST)
                     C
                     C     CALCULATE MAINTENANCE COSTS PER YEAR FOR EACH YEAR IN THE A. P.
                     C
                     C     THE INPUTS ARE
                     C       1. AGEI -------- PAVEMENT AGE AT BEGINNING OF ANALYSIS PERIOD
                     C       2. AGE%20< ----- PAVEMENT AGE FOR EACH YEAR OF THE A. P.
                     C       3. TOV --------- TIME OF OVERLAY
                     C
                     C     THE OUTPUT IS
                     C       YMCOST%20< = COST OF MAINTENANCE PER YEAR FOR EACH YEAR OF THE
                     C                    ANALYSIS PERIOD
                     C
   ISN 0003            COMMON /MISC/ IPOT, IARMS, OLDMNT, AGF
   ISN 0004            COMMON /TIME/ ATP, OVLIF, NYAP, NYR, YR(40)
   ISN 0005            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0006            DIMENSION AGE(20) , YMCOST(20)
                     C
                     C     INITIALIZE THE YEARLY MAINTENANCE COSTS ARRAY
                     C
   ISN 0007            DO 10 I=1,20
   ISN 0008            YMCOST(I) = 0.
   ISN 0009         10 CONTINUE
                     C
                     C  PAVEMENT AGE AT TIME OF OVERLAY
                     C
   ISN 0010            PAV = ATP
   ISN 0011            IF (IARMS .EQ. 0) PAV = AGEI + TOV
                     C
                     C     DETERMINE THE OVERLAY YEAR, ITOV, THE PAVEMENT TYPE, NP, AND
                     C     THE CUMULATIVE COST AT THE BEGINNING OF THE ANALYSIS PERIOD
                     C
   ISN 0013            ITOV = INT(TOV+1.E-5)
   ISN 0014            NP = IP
   ISN 0015            CALL MCOSTS (AGEI, NP, COSTZ)
                     C
                     C     CALCULATE THE MAINTENANCE COST FOR EACH YEAR IN THE A. P.
                     C
   ISN 0016            DO 50 I=1,NYAP
                     C  TEST FOR FIRST YEAR OF THE ANALYSIS PERIOD
   ISN 0017            IF (I .GT. 1) GO TO 30
                     C  TEST FOR OVERLAY IN FIRST YEAR OF THE ANALYSIS PERIOD
   ISN 0019            IF (ITOV .EQ. 0) GO TO 20
                     C
                     C     YEAR 1 OF ANALYSIS PERIOD --- NO OVERLAY
                     C
   ISN 0021            CALL MCOSTS (AGE(1), NP, SVCOST)
   ISN 0022            YMCOST(1) = SVCOST - COSTZ
   ISN 0023            GO TO 50
                     C
                     C     OVERLAY IN FIRST YEAR OF ANALYSIS PERIOD
                     C
   ISN 0024         20 CALL MCOSTS (PAV, NP, COST)
```

```
                C  TEST FOR UNACCELERATED MAINTENANCE
ISN 0025            IF (IARMS .EQ. 0) GO TO 25
ISN 0027            COST = COST - COSTZ
ISN 0028            IF (AGE(I) .LE. 1.) GO TO 23
ISN 0030            YMCOST(I) = COST
ISN 0031            SVCOST = 0.
                C  IF RIGID PAVEMENT OVERLAID, CHANGE PAVEMENT TYPE TO COMPOSITE
ISN 0032            IF (IP .EQ. IR) NP = IC
ISN 0034            GO TO 50
ISN 0035           23 IF (IP .EQ. IR) NP = IC
ISN 0037            CALL MCOSTS (AGE(I), NP, SVCOST)
ISN 0038            YMCOST(I) = COST * (1. - AGE(I)) + SVCOST
ISN 0039            GO TO 50
                C  UNACCELERATED MAINTENANCE - OVERLAY IN YEAR I OF ANALYSIS PERIOD
ISN 0040           25 IF (AGE(I) .LE. 1.) GO TO 27
ISN 0042            YMCOST(I) = COST - COSTZ
ISN 0043            SVCOST = 0.
ISN 0044            IF (IP .EQ. IR) NP = IC
ISN 0046            GO TO 50
ISN 0047           27 AG = AGE + (1. - AGE(I))
ISN 0048            CALL MCOSTS (AG, NP, COST)
ISN 0049            IF (IP .EQ. IR) NP = IC
ISN 0051            CALL MCOSTS (AGE(I), NP, SVCOST)
ISN 0052            YMCOST(I) = COST - COSTZ + SVCOST
ISN 0053            GO TO 50
                C  TEST FOR OVERLAY YEAR
ISN 0054           30 IF (I .EQ. ITOV+1) GO TO 40
                C
                C     YEAR I OF ANALYSIS PERIOD --- NO OVERLAY
                C
ISN 0056            CALL MCOSTS (AGE(I), NP, COST)
ISN 0057            YMCOST(I) = COST - SVCOST
ISN 0058            SVCOST = COST
ISN 0059            GO TO 50
                C
                C     OVERLAY IN YEAR I OF ANALYSIS PERIOD
                C
                C  TEST FOR UNACCELERATED MAINTENANCE
ISN 0060           40 IF (IARMS .EQ. 0) GO TO 45
ISN 0062            IF (AGE(I) .LE. 1.) GO TO 43
ISN 0064            CALL MCOSTS (AGE(I), NP, COST)
ISN 0065            YMCOST(I) = COST - SVCOST
ISN 0066            SVCOST = 0.
                C  IF RIGID PAVEMENT OVERLAID, CHANGE PAVEMENT TYPE TO COMPOSITE
ISN 0067            IF (IP .EQ. IR) NP = IC
ISN 0069            GO TO 50
ISN 0070           43 CALL MCOSTS (PAV, NP, COST)
ISN 0071            COST = COST - SVCOST
ISN 0072            IF (IP .EQ. IR) NP = IC
ISN 0074            CALL MCOSTS (AGE(I), NP, SVCOST)
ISN 0075            YMCOST(I) = COST + SVCOST
ISN 0076            GO TO 50
                C  UNACCELERATED MAINTENANCE - OVERLAY IN YEAR I OF ANALYSIS PERIOD
ISN 0077           45 IF (AGE(I) .LE. 1.) GO TO 47
ISN 0079            CALL MCOSTS (AGE(I), NP, COST)
ISN 0080            YMCOST(I) = COST - SVCOST
ISN 0081            SVCOST = 0.
ISN 0082            IF (IP .EQ. IR) NP = IC
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.05       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE MIDPNT (X1, NM, X2)
                     C
                     C     THIS ROUTINE DETERMINES THE MIDPOINT OF EACH INTERVAL IN ARRAY X1,
                     C     WHERE EACH VALUE IN X1 IS AN END-OF-INTERVAL KIP VALUE
                     C
   ISN 0003            COMMON /CNSTS/ NAPOV, PAPOV, SIZE, AVRG
   ISN 0004            DIMENSION X1(1), X2(1)
   ISN 0005            I = 0
   ISN 0006            J = 1
   ISN 0007            ELI = X1(NM)
   ISN 0008            X2(1) = X1(1) - (SIZE/2.)
   ISN 0009          10 I = I+1
   ISN 0010            J = J+1
   ISN 0011            X2(J) = X2(I) + SIZE
   ISN 0012            IF (X1(J) .LT. ELI) GO TO 10
   ISN 0014            RETURN
   ISN 0015            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      14, PROGRAM SIZE =      448, SUBPROGRAM NAME =MIDPNT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.04       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN E=FECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002              SUBROUTINE ACMLTE (AIN, NA, AOUT)
                C
                C        THIS ROUTINE CONVERTS ARRAY AIN TO A CUMULATIVE ARRAY
                C
   ISN 0003              DIMENSION AIN(1), AOUT(1)
   ISN 0004              AOUT(1) = AIN(1)
   ISN 0005              NB = NA-1
   ISN 0006              DO 10 I=1,NB
   ISN 0007              J = I+1
   ISN 0008              AOUT(J) = AOUT(I) + AIN(J)
   ISN 0009           10 CONTINUE
   ISN 0010              RETURN
   ISN 0011              END

*OPTIONS IN E=FECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       10, PROGRAM SIZE =       410, SUBPROGRAM NAME =ACMLTE

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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```
LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.03       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE COUNT (CA, ICA)
                     C
                     C     THIS ROUTINE DETERMINES WHICH OF THE *ICA* VALUES IN ARRAY CA IS
                     C     THE LAST NON-ZERO VALUE
                     C
   ISN 0003            DIMENSION CA(1)
   ISN 0004            DO 10 I=1,ICA
   ISN 0005            IF (CA(I) .GT. 0.0) J = I
   ISN 0007          10 CONTINUE
   ISN 0008            ICA = J
   ISN 0009            RETURN
   ISN 0010            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*     SOURCE STATEMENTS =        9, PROGRAM SIZE =       326, SUBPROGRAM NAME = COUNT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                        56K BYTES OF CORE NOT USED
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```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.01       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE PCTAGE (P1, NP, P2)
                     C
                     C     THIS ROUTINE SUMS THE *NP* VALUES IN ARRAY P1 AND DETERMINES, FOR
                     C     EACH VALUE IN P1, ITS PERCENTAGE OF THE TOTAL
                     C
   ISN 0003            DIMENSION P1(1), P2(1)
   ISN 0004            TOT = 0.0
   ISN 0005            DO 10 I=1,NP
   ISN 0006            TOT = TOT + P1(I)
   ISN 0007         10 CONTINUE
   ISN 0008            DO 20 I=1,NP
   ISN 0009            P2(I) = P1(I) / TOT * 100.0
   ISN 0010         20 CONTINUE
   ISN 0011            RETURN
   ISN 0012            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       11, PROGRAM SIZE =       440, SUBPROGRAM NAME =PCTAGE

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

```
                C     INTERVAL
                C
  ISN 0034            IF (IV .EQ. 0) GO TO 999
  ISN 0036            J = NV
  ISN 0037            DO 60 I=2,NV
  ISN 0038            V4(J) = V4(J) - V4(J-1)
  ISN 0039            J = J-1
  ISN 0040         60 CONTINUE
  ISN 0041        999 RETURN
  ISN 0042            END
```

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

STATISTICS SOURCE STATEMENTS = 41, PROGRAM SIZE = 1132, SUBPROGRAM NAME = ITRP

STATISTICS NO DIAGNOSTICS GENERATED

****** END OF COMPILATION ****** 56K BYTES OF CORE NOT USED

```
REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

 ISN 0002            SUBROUTINE ITRP (V1, V2, V3, LIS, NV, NL, V4, IV)
                C
                C     THIS ROUTINE PERFORMS LINEAR INTERPOLATION
                C
                C     THE INPUTS ARE
                C       1. V1 == ARRAY OF X1 VALUES
                C       2. V2 == ARRAY OF F2%X< VALUES
                C       3. V3 == ARRAY OF X=VALUES
                C       4. LIS = FIRST NON=ZERO VALUE IN V3
                C       5. NV == LAST VALUE IN V3
                C       6. NL == LAST VALUE IN V1
                C       7. IV == INTERPOLATION INDICATOR WHERE,
                C                  IV#1 = VALUES ARE CUMULATIVE
                C                     0 = VALUES ARE NOT CUMULATIVE
                C
                C     THE OUTPUT IS
                C       V4 == ARRAY OF INTERPOLATED RESULTS
                C
 ISN 0003            DIMENSION V1(1), V2(1), V3(1), V4(1)
 ISN 0004            IF (LIS .EQ. 1) V4(1) = 0.0
 ISN 0006            J = 1
 ISN 0007            DO 50 I=LIS,NV
 ISN 0008            DO 10 K=J,NL
                C
                C     FIND THE SMALLEST X1 GREATER THAN OR EQUAL TO X
                C
 ISN 0009            IF (V1(K) .GE. V3(I)) GO TO 20
 ISN 0011         10 CONTINUE
 ISN 0012            K = NL+1
 ISN 0013            V2SV = V2(K)
 ISN 0014            V1SV = V1(K)
 ISN 0015            V2(K) = V2(NL)
 ISN 0016            V1(K) = V3(I)
 ISN 0017            L = NL
 ISN 0018            GO TO 25
                C
                C     SET X1 AND F1 VALUES APPROPRIATELY, THEN INTERPOLATE
                C
 ISN 0019         20 J = K
 ISN 0020            L = K-1
 ISN 0021            IF (L .EQ. 0) GO TO 30
 ISN 0023         25 F1 = V2(L)
 ISN 0024            X1 = V1(L)
 ISN 0025            GO TO 40
 ISN 0026         30 X1 = 0.0
 ISN 0027            F1 = V4(I)
 ISN 0028         40 V4(I) = F1 + (V3(I)-X1) * ((V2(K)-F1) / (V1(K)-X1))
 ISN 0029            IF (K .LE. NL) GO TO 50
 ISN 0031            V2(K) = V2SV
 ISN 0032            V1(K) = V1SV
 ISN 0033         50 CONTINUE
                C
                C     IF VALUES ARE CUMULATIVE, SUBTRACT TO GET CORRECT VALUES PER
```

```
   ISN 0026        30 CONTINUE
   ISN 0027           I = K+I
   ISN 0028           CALL ACMLTE (A1(1,NM), N, ACC)
   ISN 0029           CALL ITRP (A1(1,II), ACC, A2, I, N1, N, A3, 1)
   ISN 0030           RETURN
   ISN 0031           END
```

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

STATISTICS SOURCE STATEMENTS = 30, PROGRAM SIZE = 1236, SUBPROGRAM NAME = INTVL

STATISTICS NO DIAGNOSTICS GENERATED

****** END OF COMPILATION ****** 56K BYTES OF CORE NOT USED

```
REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE INTVL (A1, A2, N, N1, IS, NN, A3, NN)
                     C
                     C     THIS ROUTINE CONVERTS THE END-OF-INTERVAL KIP TABLES TO EVENLY
                     C     DISTRIBUTED INTERVALS BASED ON THE VARIABLE *SIZE*.
                     C
                     C     THE INPUTS ARE
                     C       1. A1 = ARRAY OF END-OF-INTERVAL KIP VALUES
                     C       2. N = NUMBER OF VALUES IN A1
                     C       3. IS = ARRAY IDENTIFIER WHERE,
                     C                 IS#1 = SINGLE AXLE ARRAY
                     C                 IS#2 = TANDEM AXLE ARRAY
                     C                 IS#3 = TRIPLE AXLE ARRAY
                     C                 IS#4 = GROSS WEIGHT ARRAY
                     C                 IS#5 = EMPTY WEIGHT ARRAY
                     C                 IS#6 = STEERING AXLE ARRAY
                     C       4. NN = MAXIMUM ALLOWABLE ROW LENGTH OF A1
                     C       5. NN = INDICATES WHICH TRUCK TYPE IS CURRENTLY BEING CONSIDERED
                     C
                     C     THE OUTPUTS ARE
                     C       1. N1 = THE NEW LENGTH OF THE END-OF-INTERVAL KIP TABLE
                     C       2. A2 = THE NEW END-OF-INTERVAL KIP TABLE
                     C       3. A3 = THE NUMBER OF TRUCKS (OR AXLES) WEIGHED IN EACH INTERVAL
                     C
   ISN 0003            COMMON /INTVLS/ STARTS(6)
   ISN 0004            COMMON /CNSTS/ NAPOV, PAPOV, SIZE, AVRG
   ISN 0005            DIMENSION A1(NN,1), A2(1), A3(1), ACC(75)
   ISN 0006            XMLOAD = A1(N,11)
   ISN 0007            A2(1) = SIZE
                     C
                     C     SET *S* TO  THE LARGEST EVEN NUMBER GREATER THAN OR EQUAL TO THE
                     C     FIRST END-OF-INTERVAL KIP VALUE
                     C
   ISN 0008            S = 0.
   ISN 0009            K = 0
   ISN 0010          5 IF (S .GE. STARTS(IS)) GO TO 7
   ISN 0012            S = S + SIZE
   ISN 0013            K = K+1
   ISN 0014            GO TO 5
                     C
                     C     SET UP THE EVENLY DISTRIBUTED END-OF-INTERVAL KIP TABLE AND ZERO
                     C     ALL INTERVALS AT BEGINNING OF TABLE IN WHICH NO TRUCKS/AXLES WERE
                     C     WEIGHED
                     C
   ISN 0015          7 I = 1
   ISN 0016            J = 1
   ISN 0017         10 IF (A2(I) .GE. XMLOAD) GO TO 20
   ISN 0019            I = I+1
   ISN 0020            A2(I) = A2(J) + SIZE
   ISN 0021            J = J+1
   ISN 0022            GO TO 10
   ISN 0023         20 N1 = I
   ISN 0024            DO 30 I=1,K
   ISN 0025            A3(I) = 0.
```

```
REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE STEREQ (IEQ, SEQ, NEQ, EQM)
                     C
                     C     THIS ROUTINE COMPUTES STEERING AXLE EQUIVALENCY FACTORS
                     C
                     C     THE INPUTS ARE
                     C       1. EQM = ARRAY OF INTERVAL MIDPOINTS
                     C       2. NEQ = NUMBER OF MIDPOINTS IN EQM
                     C       3. IEQ = INDICATES WHICH COLUMN OF THE EQUIVALENCY FACTOR TABLE
                     C                XBY PSI< IS TO BE USED
                     C
                     C     THE OUTPUT IS
                     C       SEQ = ARRAY OF STEERING AXLE EQUIVALENCIES
                     C
   ISN 0003            DIMENSION SEQ(1), EQM(1)
   ISN 0004            COMMON /STEER/ EQFACT(15,5), PTST(4)
                     C
                     C     EQFACT%J,1< CONTAINS THE LOAD VALUES %J<.
                     C     EQFACT%J,K< CONTAINS THE EQUIVALENCY FOR LOAD J, TERM PSI PTST%K=1<
                     C
   ISN 0005            DO 30 I=1,NEQ
   ISN 0006            IF (EQM(I) .LT. EQFACT(1,1)) GO TO 25
   ISN 0008            DO 10 J=2,15
   ISN 0009            IF (EQFACT(J,1) .GE. EQM(I)) GO TO 20
   ISN 0011         10 CONTINUE
   ISN 0012            SEQ(I) = EQFACT(15,IEQ)
   ISN 0013         20 K = J-1
   ISN 0014            SEQ(I) = EQFACT(K,IEQ) + (EQM(I) - EQFACT(K,1)) *
                      1          ((EQFACT(J,IEQ)-EQFACT(K,IEQ)) / (EQFACT(J,1)-EQFACT(K,1)
                      2                                                                  ))
   ISN 0015            GO TO 30
   ISN 0016         25 SEQ(I) = EQFACT(1,IEQ) * EQM(I) / EQFACT(1,1)
   ISN 0017         30 CONTINUE
   ISN 0018            RETURN
   ISN 0019            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*     SOURCE STATEMENTS =      18, PROGRAM SIZE =      852, SUBPROGRAM NAME =STEREQ

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
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 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.54       PAGE    1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE FLEXEQ (XL, NL, ST, SN, GT, EQ)
   ISN 0003            DIMENSION XL(1), EQ(1)
   ISN 0004            SNP = (SN + 1.0) ** 5.19
   ISN 0005            GT318 = GT / (0.40 + 1094.0 / SNP)
   ISN 0006            B1 = SNP * ST ** 3.23
   ISN 0007            CON = 6.125 + 4.33 * ALOG10(ST) - GT818
   ISN 0008            DO 20 L=1,NL
   ISN 0009            B2 = 4.79 * ALOG10(XL(L) + ST)
   ISN 0010            BX = 0.40 + 0.081 * (XL(L) + ST) ** 3.23 / B1
   ISN 0011            E = CON - B2 + GT / BX
   ISN 0012         20 EQ(L) = 10.0 ** (-E)
   ISN 0013            RETURN
   ISN 0014            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       13, PROGRAM SIZE =       810, SUBPROGRAM NAME =FLEXEQ

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******

                                                                  56K BYTES OF CORE NOT USED
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```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.52       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE RIGEQ (XL, NL, ST, D, GT, EQ)
   ISN 0003            DIMENSION XL(1), EQ(1)
   ISN 0004            D1 = D + 1.0
   ISN 0005            D1P = D1 ** 8.46
   ISN 0006            C = 3.28 * ALOG10(ST)
   ISN 0007            GT818 = GT / (1.0 + 1.620E+7 / D1P)
   ISN 0008            STP = ST ** 3.52
   ISN 0009            CON = 5.908 + C - GT818
   ISN 0010            DO 10 L=1,NL
   ISN 0011            B2 = 3.63 * (XL(L) + ST) ** 5.20
   ISN 0012            BX = 1.0 + B2 / (D1P * STP)
   ISN 0013            E = CON - 4.62 * ALOG10(XL(L) + ST) + GT / BX
   ISN 0014         10 EQ(L) = 10.0 ** (-E)
   ISN 0015            RETURN
   ISN 0016            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       15, PROGRAM SIZE =       836, SUBPROGRAM NAME = RIGEQ

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

```
   ISN 0076            CALL MULT (EFST, STNOV, NST, STPN18)
   ISN 0077            CALL SUM (STN18, NNS, TSTN18)
   ISN 0078            CALL SUM (STPN18, NST, TWN18)
   ISN 0079        200 EALPF(IT,1) = (TSN18*FLOAT(NAXLES(IT,1)) + TDN18 *
                      1               FLOAT(NAXLES(IT,2)) + TTN18*FLOAT(NAXLES(IT,3)) +
                      2               TSTN18*FLOAT(NAXLES(IT,4))) * 0.01
   ISN 0080            EALPF(IT,2) = (TXN18*FLOAT(NAXLES(IT,1)) + TYN18 *
                      1               FLOAT(NAXLES(IT,2)) + TZN18*FLOAT(NAXLES(IT,3)) +
                      2               TWN18*FLOAT(NAXLES(IT,4))) * 0.01
   ISN 0081       1000 CONTINUE
   ISN 0082            RETURN
   ISN 0083            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       82, PROGRAM SIZE =     11346, SUBPROGRAM NAME = EAL18

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    36K BYTES OF CORE NOT USED
```

```
ISN 0021            IF (IPVT .EQ. 2) GO TO 10
ISN 0023            GT = ALOG10((PSI1 - TPSI) / PK1)
ISN 0024            CALL FLEXEQ (SAM, NSA, 1.0, STRNUM, GT, EFSA)
ISN 0025            GO TO 20
ISN 0026         10 GT = ALOG10((PSI2 - TPSI) / PK2)
ISN 0027            CALL RIGEQ (SAM, NSA, 1.0, SLBTHK, GT, EFSA)
ISN 0028         20 CALL MULT (EFSA, PSA, NNA, SAN18)
ISN 0029            CALL MULT (EFSA, SANOV, NSA, SPN18)
ISN 0030            CALL SUM (SAN18, NNA, TSN18)
ISN 0031            CALL SUM (SPN18, NSA, TXN18)
ISN 0032         50 CONTINUE
ISN 0033            TDN18 = 0.
ISN 0034            TYN18 = 0.
ISN 0035            IF (NAXLES(IT,2) .EQ. 0) GO TO 100
                 C
                 C      TANDEM AXLES
                 C
ISN 0037            CALL MIDPNT (TAI, NTA, TAM)
ISN 0038            IF (IPVT .EQ. 2) GO TO 12
ISN 0040            GT = ALOG10((PSI1 - TPSI) / PK1)
ISN 0041            CALL FLEXEQ (TAM, NTA, 2.0, STRNUM, GT, EFTA)
ISN 0042            GO TO 22
ISN 0043         12 GT = ALOG10((PSI2 - TPSI) / PK2)
ISN 0044            CALL RIGEQ (TAM, NTA, 2.0, SLBTHK, GT, EFTA)
ISN 0045         22 CALL MULT (EFTA, PTA, NNT, TAN18)
ISN 0046            CALL MULT (EFTA, TANOV, NTA, DPN18)
ISN 0047            CALL SUM (TAN18, NNT, TDN18)
ISN 0048            CALL SUM (DPN18, NTA, TYN18)
ISN 0049        100 CONTINUE
ISN 0050            TTN18 = 0.
ISN 0051            TZN18 = 0.
ISN 0052            IF (NAXLES(IT,3) .EQ. 0) GO TO 150
                 C
                 C      TRIPLE AXLES
                 C
ISN 0054            CALL MIDPNT (TRI, NTR, TRM)
ISN 0055            IF (IPVT .EQ. 2) GO TO 14
ISN 0057            GT = ALOG10((PSI1 - TPSI) / PK1)
ISN 0058            CALL FLEXEQ (TRM, NTR, 3.0, STRNUM, GT, EFTR)
ISN 0059            GO TO 24
ISN 0060         14 GT = ALOG10((PSI2 - TPSI) / PK2)
ISN 0061            CALL RIGEQ (TRM, NTR, 3.0, SLBTHK, GT, EFTR)
ISN 0062         24 CALL MULT (EFTR, PTR, NNR, TRN18)
ISN 0063            CALL MULT (EFTR, TRNOV, NTR, TPN18)
ISN 0064            CALL SUM (TRN18, NNR, TTN18)
ISN 0065            CALL SUM (TPN18, NTR, TZN18)
ISN 0066        150 CONTINUE
ISN 0067            TSTN18 = 0.
ISN 0068            TWN18 = 0.
ISN 0069            IF ((NAXLES(IT,4) .EQ. 0) .OR. (IP .NE. IF)) GO TO 200
                 C
                 C      STEERING AXLES
                 C
ISN 0071            CALL MIDPNT (STI, NST, STM)
ISN 0072            IA = -1.5 + 2. * TPSI
ISN 0073            IA = MAX0(1, MIN0(4,IA))
ISN 0074            CALL STEREQ (IA, EFST, NST, STM)
ISN 0075            CALL MULT (EFST, PST, NNS, STN18)
```

```
REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE EAL18 (STRNUM, SLBTHK, TPSI, IPVT)
                     C
                     C     THIS ROUTINE CALCULATES THE EQUIVALENT 18-KIP AXLE LOAD
                     C     APPLICATIONS FOR EACH VEHICLE USING INFORMATION WRITTEN ON DISK BY
                     C     SUBROUTINE TRAFIC
                     C
                     C     THE INPUTS ARE
                     C       1. STRNUM = STRUCTURAL NUMBER FOR A FLEXIBLE PAVEMENT
                     C       2. SLBTHK = SLAB THICKNESS FOR A RIGID PAVEMENT
                     C       3. TPSI --- TERMINAL PSI
                     C       4. IPVT --- PAVEMENT TYPE SWITCH
                     C       5. APPT(10,2) = AVERAGE PAYLOAD PER VEHICLE, PRESENT & PROPOSED
                     C
                     C     THE OUTPUT IS
                     C       EALPT(10,2) = 18-KIP EAL PER TRUCK = PRESENT AND PROPOSED REGS.
                     C
   ISN 0003            DIMENSION PSA(75), PTA(75), PTR(75), SANOV(75), TANOV(75),
                    1           TRNOV(75), EFSA(75), EFTA(75), EFTR(75), SAN18(75),
                    2           TAN18(75), TRN18(75), SPN18(75), DPN18(75), TPN18(75),
                    3           SAI(75), TAI(75), TRI(75), SAM(75), TAM(75), TRM(75),
                    4           PST(75), STNOV(75), EFST(75), STN18(75), STPN18(75),
                    5           STI(75), STM(75)
   ISN 0004            COMMON /EALPAY/ EALPT(10,2), APPT(10,2), EALFCT(20), IEQTRP
   ISN 0005            COMMON /EXPVT/ THICK(4), NTYPE(4), NLAY, IP, IF, IR, IC
   ISN 0006            COMMON /CNSTS/ NAPOV, PAPOV, SIZE, AVRG
   ISN 0007            COMMON /TRTYP/ TTYP(2,10), PTTYP(10,20,2), PCTTR(20,2),
                    1             NAXLES(10,4),NT(4), NTTY, NATT, NTT, NEWTRK
   ISN 0008            COMMON /IO/ LI, LO, LD
   ISN 0009            DATA PSI1, PK1, PSI2, PK2 /4.2, 2.7, 4.5, 3.0/
   ISN 0010            REWIND 1
   ISN 0011            NTT = NTTY + NATT
   ISN 0012            DO 1003 IT=1,NTT
                     C
                     C     READ FROM DISK THE INFORMATION STORED BY SUBROUTINE TRAFIC
                     C
   ISN 0013            READ (LD) NSA, NTA, NTR, NST, NNA, NNT, NNR, NNS,
                    1          (PSA(I),I=1,NNA), (PTA(I),I=1,NNT), (PTR(I),I=1,NNR),
                    2          (PST(I),I=1,NNS), (SANOV(I),I=1,NSA),
                    3          (TANOV(I),I=1,NTA), (TRNOV(I),I=1,NTR),
                    4          (STNOV(I),I=1,NST), (SAI(I),I=1,NSA), (TAI(I),I=1,NTA),
                    5          (TRI(I),I=1,NTR), (STI(I),I=1,NST), VTN, APV, PAPV
   ISN 0014            APPT(IT,1) = APV
   ISN 0015            APPT(IT,2) = PAPV
                     C
                     C     COMPUTE THE 18-KIP EAL FOR EACH AXLE TYPE
                     C
   ISN 0016            TSN18 = 0.
   ISN 0017            TXN18 = 0.
   ISN 0018            IF (NAXLES(IT,1) .EQ. 0) GO TO 50
                     C
                     C     SINGLE AXLES
                     C
   ISN 0020            CALL MIDPNT (SAI, NSA, SAM)
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```
ISN 0293            STI(I) = STI(NST) + SIZE
ISN 0294            NST = I
ISN 0295            IF (STI(I) .LT. ELI) GO TO 162
ISN 0297          168 CALL ITRP (STLAT, APOV, STI, I, NST, NAPOV, STAPV, 0)
ISN 0298            CALL DIFF (STAPV, NST, STNOV)
ISN 0299          170 CONTINUE
ISN 0300            GO TO 150
ISN 0301          146 DO 147 I=1,NSA
ISN 0302            SAAPV(I) = APSA(I)
ISN 0303            SANOV(I) = PSA(I)
ISN 0304            PSA(I) = 0.
ISN 0305          147 CONTINUE
ISN 0306            NNA = NSA
ISN 0307            DO 148 I=1,NTA
ISN 0308            TAAPV(I) = APTA(I)
ISN 0309            TANOV(I) = PTA(I)
ISN 0310            PTA(I) = 0.
ISN 0311          148 CONTINUE
ISN 0312            NNT = NTA
ISN 0313            DO 149 I=1,NTR
ISN 0314            TRAPV(I) = APTR(I)
ISN 0315            TRNOV(I) = PTR(I)
ISN 0316            PTR(I) = 0.
ISN 0317          149 CONTINUE
ISN 0318            NNR = NTR
ISN 0319            DO 151 I=1,NST
ISN 0320            STAPV(I) = APST(I)
ISN 0321            STNOV(I) = PST(I)
ISN 0322            PST(I) = 0.
ISN 0323          151 CONTINUE
ISN 0324            NNS = NST
ISN 0325            DO 152 I=1,NJ
ISN 0326            APVWG(I) = APVWE(I)
ISN 0327          152 CONTINUE
ISN 0328            NGVW = MAX0(NSA,NTA,NTR,NST,NJ)
                  C
                  C     WRITE TO DISK FOR RECALL IN EQUIVALENT LOAD APPLICATIONS ROUTINE
                  C
ISN 0329          150 CALL OUTPUT (3)
ISN 0330            WRITE (L3) NSA, NTA, NTR, NST, NNA, NNT, NNR, NNS,
                   1           (PSA(I),I=1,NNA), (PTA(I),I=1,NNT), (PTR(I),I=1,NNR),
                   2           (PST(I),I=1,NNS), (SANOV(I),I=1,NSA),
                   3           (TANOV(I),I=1,NTA), (TRNOV(I),I=1,NTR),
                   4           (STNOV(I),I=1,NST), (SAI(I),I=1,NSA), (TAI(I),I=1,NTA),
                   5           (TRI(I),I=1,NTR), (STI(I),I=1,NST), VTN, APV, PAPV
ISN 0331          160 CONTINUE
ISN 0332         9999 RETURN
ISN 0333            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      332, PROGRAM SIZE =      8896, SUBPROGRAM NAME =TRAFIC

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******
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ISN 0242            DO 87 I=1,NAPOV
ISN 0243            IF (GWA(I) .EQ. 0.0) GO TO 85
ISN 0245            STLAR(I) = STLA(I) / GWA(I)
ISN 0246            GO TO 87
ISN 0247         85 STLAR(I) = 0.
ISN 0248         87 CONTINUE
ISN 0249            CALL MULT (STLAR, GWAF, NAPOV, STLAT)
ISN 0250         88 CONTINUE
                 C
                 C     *** AXLE WEIGHT DISTRIBUTIONS BY VEHICLE CLASSIFICATION - PROPOSED
                 C         LIMITS ***
                 C
                 C     DETERMINE THE PERCENTAGE OF EACH 2-KIP INTERVAL OF WEIGHT FOR THE
                 C     PROPOSED DISTRIBUTION
                 C
ISN 0251            IF (NAXLES(IT,1) .EQ. 0) GO TO 105
                 C
                 C     SINGLE AXLES
                 C
ISN 0253            IF (SLAT(NAPOV) .LE. SAI(NSA)) GO TO 100
ISN 0255            ELI = SLAT(NAPOV)
ISN 0256         90 I = NSA + 1
ISN 0257            SAI(I) = SAI(NSA) + SIZE
ISN 0258            NSA = I
ISN 0259            IF (SAI(I) .LT. ELI) GO TO 90
ISN 0261        100 CALL ITRP (SLAT, APOV, SAI, 1, NSA, NAPOV, SAAPV, 0)
ISN 0262            CALL DIFF (SAAPV, NSA, SANOV)
ISN 0263        105 IF (NAXLES(IT,2) .EQ. 0) GO TO 125
                 C
                 C     TANDEM AXLES
                 C
ISN 0265            IF (TLAT(NAPOV) .LE. TAI(NTA)) GO TO 120
ISN 0267            ELI = TLAT(NAPOV)
ISN 0268        110 I = NTA + 1
ISN 0269            TAI(I) = TAI(NTA) + SIZE
ISN 0270            NTA = I
ISN 0271            IF (TAI(I) .LT. ELI) GO TO 110
ISN 0273        120 CALL ITRP (TLAT, APOV, TAI, 1, NTA, NAPOV, TAAPV, 0)
ISN 0274            CALL DIFF (TAAPV, NTA, TANOV)
ISN 0275        125 IF (NAXLES(IT,3) .EQ. 0) GO TO 145
                 C
                 C     TRIPLE AXLES
                 C
ISN 0277            IF (TRLAT(NAPOV) .LE. TRI(NTR)) GO TO 140
ISN 0279            ELI = TRLAT(NAPOV)
ISN 0280        130 I = NTR + 1
ISN 0281            TRI(I) = TRI(NTR) + SIZE
ISN 0282            NTR = I
ISN 0283            IF (TRI(I) .LT. ELI) GO TO 130
ISN 0285        140 CALL ITRP (TRLAT, APOV, TRI, 1, NTR, NAPOV, TRAPV, 0)
ISN 0286            CALL DIFF (TRAPV, NTR, TRNOV)
ISN 0287        145 IF ((NAXLES(IT,4) .EQ. 0) .OR. (IP .NE. IF)) GO TO 170
                 C
                 C     STEERING AXLES
                 C
ISN 0289            IF (STLAT(NAPOV) .LE. STI(NST)) GO TO 168
ISN 0291            ELI = STLAT(NAPOV)
ISN 0292        162 I = NST + 1
```

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                C     SET UP THE TABLE OF SELECTED CUMULATIVE PERCENTAGES DEFINING THE
                C     GROSS WEIGHT AND AXLE WEIGHT CURVES
                C
  ISN 0181            P = 0.0
  ISN 0182            DO 70 I=1,NAPOV
  ISN 0183            APOV(I) = P
  ISN 0184            P = P + PAPOV
  ISN 0185         70 CONTINUE
                C
                C     FOR THE GROSS WEIGHT PRESENT AND PROPOSED, AND FOR THE AXLE
                C     WEIGHTS, FIND, BY INTERPOLATION, THE WEIGHTS CORRESPONDING TO THE
                C     PERCENTAGES IN ARRAY *APOV*. COMPUTE THE RATIOS OF THE AXLE
                C     WEIGHTS TO THE GROSS WEIGHTS IN *GWA* AND FINALLY, COMPUTE THE
                C     AXLE WEIGHT DISTRIBUTIONS FOR THE PROPOSED REGS. USING *GWAF*.
                C
  ISN 0186            GWA(1) = ELVWI(1) - SIZE
  ISN 0187            IF (GWA(1) .LT. 0.0) GWA(1) = 0.0
  ISN 0189            CALL ITRP (APVWE, ELVWI,  APOV, 2, NAPOV, NK, GWA, 0)
  ISN 0190            GWAF(1) = ELVWI(1) - SIZE
  ISN 0191            IF (GWAF(1) .LT. 0.0) GWAF(1) = 0.0
  ISN 0193            CALL ITRP (APVWG, ELVWI,  APOV, 2, NAPOV, NJ, GWAF, 0)
  ISN 0194            IF (NAXLES(IT,1) .EQ. 0) GO TO 72
  ISN 0196            SLA(1) = SAI(1) - SIZE
  ISN 0197            IF (SLA(1) .LT. 0.0) SLA(1) = 0.0
  ISN 0199            CALL ITRP (APSA, SAI, APOV, 2, NAPOV, NSA, SLA, 0)
  ISN 0200            DO 80 I=1,NAPOV
  ISN 0201            IF (GWA(I) .EQ. 0.0) GO TO 79
  ISN 0203            SLAR(I) = SLA(I) / GWA(I)
  ISN 0204            GO TO 80
  ISN 0205         79 SLAR(I) = 0.
  ISN 0206         80 CONTINUE
  ISN 0207            CALL MULT (SLAR, GWAF, NAPOV, SLAT)
  ISN 0208         72 IF (NAXLES(IT,2) .EQ. 0) GO TO 75
  ISN 0210            TLA(1) = TAI(1) - SIZE
  ISN 0211            IF (TLA(1) .LT. 0.0) TLA(1) = 0.0
  ISN 0213            CALL ITRP (APTA, TAI, APOV, 2, NAPOV, NTA, TLA, 0)
  ISN 0214            DO 82 I=1,NAPOV
  ISN 0215            IF (GWA(I) .EQ. 0.0) GO TO 81
  ISN 0217            TLAR(I) = TLA(I) / GWA(I)
  ISN 0218            GO TO 82
  ISN 0219         81 TLAR(I) = 0.
  ISN 0220         82 CONTINUE
  ISN 0221            CALL MULT (TLAR, GWAF, NAPOV, TLAT)
  ISN 0222         75 IF (NAXLES(IT,3) .EQ. 0) GO TO 86
  ISN 0224            TRLA(1) = TRI(1) - SIZE
  ISN 0225            IF (TRLA(1) .LT. 0.0) TRLA(1) = 0.0
  ISN 0227            CALL ITRP (APTR, TRI, APOV, 2, NAPOV, NTR, TRLA, 0)
  ISN 0228            DO 84 I=1,NAPOV
  ISN 0229            IF (GWA(I) .EQ. 0.0) GO TO 83
  ISN 0231            TRLAR(I) = TRLA(I) / GWA(I)
  ISN 0232            GO TO 84
  ISN 0233         83 TRLAR(I) = 0.
  ISN 0234         84 CONTINUE
  ISN 0235            CALL MULT (TRLAR, GWAF, NAPOV, TRLAT)
  ISN 0236         86 IF ((NAXLES(IT,4) .EQ. 0) .OR. (IP .NE. IF)) GO TO 88
  ISN 0238            STLA(1) = STI(1) - SIZE
  ISN 0239            IF (STLA(1) .LT. 0.0) STLA(1) = 0.0
  ISN 0241            CALL ITRP (APST, STI, APOV, 2, NAPOV, NST, STLA, 0)
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ISN 0140            DO 60 I=1,NJ
ISN 0141            PPV(I) = ELVWMP(I) - TD4(IT,6,2)
ISN 0142         60 CONTINUE
ISN 0143            CALL MULT (PVWE, PPV, NJ, TPFAV)
ISN 0144            CALL AVRGE (TPFAV, NJ, AVRG, PAPV)
                 C
                 C     *** NUMBER OF VEHICLES REQUIRED TO CARRY TOTAL PAYLOAD %CARGO< =
                 C         PROPOSED LIMITS ***
                 C
ISN 0145            VTN = APV / PAPV * 100.
                 C
                 C     *** DISTRIBUTION OF AXLE WEIGHTS - PRESENT LIMITS ***
                 C
ISN 0146            IF (NAXLES(IT,1) .EQ. 0) GO TO 64
                 C
                 C     SINGLE AXLES
                 C
ISN 0148            NLDS = NLDI(1)
ISN 0149            CALL COUNT (SA(1,IT), NLDS)
ISN 0150            CALL INTVL (SA, SAI, NLDS, NSA, 1, 30, SAA, IT)
ISN 0151            CALL PCTAGE (SAA, NSA, PSA)
ISN 0152            CALL ACMLTE (PSA, NSA, APSA)
ISN 0153            NNA = NSA
ISN 0154         64 IF (NAXLES(IT,2) .EQ. 0) GO TO 66
                 C
                 C     TANDEM AXLES
                 C
ISN 0156            NLDS = NLDI(2)
ISN 0157            CALL COUNT (TA(1,IT), NLDS)
ISN 0158            CALL INTVL (TA, TAI, NLDS, NTA, 2, 30, TAA, IT)
ISN 0159            CALL PCTAGE (TAA, NTA, PTA)
ISN 0160            CALL ACMLTE (PTA, NTA, APTA)
ISN 0161            NNT = NTA
ISN 0162         66 IF (NAXLES(IT,3) .EQ. 0) GO TO 68
                 C
                 C     TRIPLE AXLES
                 C
ISN 0164            NLDS = NLDI(3)
ISN 0165            CALL COUNT (TR(1,IT), NLDS)
ISN 0166            CALL INTVL (TR, TRI, NLDS, NTR, 3, 50, TRA, IT)
ISN 0167            CALL PCTAGE (TRA, NTR, PTR)
ISN 0168            CALL ACMLTE (PTR, NTR, APTR)
ISN 0169            NNR = NTR
ISN 0170         68 IF ((NAXLES(IT,4) .EQ. 0) .OR. (IP .NE. IF)) GO TO 69
                 C
                 C     STEERING AXLES
                 C
ISN 0172            NLDS = NLDI(6)
ISN 0173            CALL COUNT (ST(1,IT), NLDS)
ISN 0174            CALL INTVL (ST, STI, NLDS, NST, 6, 30, STA, IT)
ISN 0175            CALL PCTAGE (STA, NST, PST)
ISN 0176            CALL ACMLTE (PST, NST, APST)
ISN 0177            NNS = NST
ISN 0178         69 IF (IT .GT. NTTY) GO TO 146
ISN 0180            NGVW = NJ
                 C
                 C     *** DISTRIBUTION OF SINGLE/TANDEM/TRIDEM AXLE WEIGHTS - PROPOSED LIMITS **
                 C
```

```
                C
ISN 0095            TD4(IT,5,K) = FSTAW(IT) + FSAL*FLOAT(NAXLES(IT,1)) + FTAL *
                   1                FLOAT(NAXLES(IT,2)) + FTRAL*FLOAT(NAXLES(IT,3))
ISN 0096            NLDS = NLDI(4)
ISN 0097            CALL COUNT (VG(1,IT), NLDS)
ISN 0098            CALL INTVL (VG, ELVWI, NLDS, NJ, 4, 75, TVWE, IT)
ISN 0099            ELOAD = ELVWI(NJ)
ISN 0100            CALL PCTAGE (TVWE, NJ, PVWE)
ISN 0101            CALL ACMLTE (PVWE, NJ, APVWE)
ISN 0102            IF (IT .GT. NTTY) GO TO 50
ISN 0104            CALL MIDPNT (ELVWI, NJ, ELVWMP)
ISN 0105            DO 10 I=1,NJ
ISN 0106            APPV(I) = ELVWMP(I) - AEW
ISN 0107           10 CONTINUE
ISN 0108            CALL MULT (PVWE, APPV, NJ, TPFAV)
ISN 0109            CALL AVRGE (TPFAV, NJ, AVRG, APV)
                C
                C     *** ADJUSTED GROSS WEIGHT AND TOTAL PAYLOAD CARRIED = PROPOSED REG
                C
                C     COMPUTE THE PROPOSED/PRESENT RATIO OF THE PMGW*S
                C
ISN 0110            RATIO = TD4(IT,5,2) / TD4(IT,5,1)
ISN 0111            SMALL = AMIN1(TD4(IT,5,1),ELOAD)
ISN 0112            NK = INT(SMALL) - INT(ELVWI(1) + 0.5) + 1
ISN 0113            XNK = FLOAT(NK) / 2.0 + 0.5
ISN 0114            NK = INT(XNK)
                C
                C     FOR ALL INTERVALS GREATER THAN THE PRESENT PMGW VALUE, RECORD THE
                C     VALUE OF THE RATIO OF THE PMGW*S IN *FACT*
                C
ISN 0115            DIST = (RATIO - 1.0) / FLOAT(NK)
ISN 0116            FACT(1) = 1.0 + DIST
ISN 0117            DO 20 J=2,NK
ISN 0118            I = J-1
ISN 0119            FACT(J) = FACT(I) + DIST
ISN 0120           20 CONTINUE
ISN 0121            IF (NJ .LE. NK) GO TO 35
ISN 0123            J = NK+1
ISN 0124            DO 30 I=J,NJ
ISN 0125            FACT(I) = RATIO
ISN 0126           30 CONTINUE
ISN 0127            NK = NJ
                C
                C     COMPUTE THE END OF INTERVAL WEIGHT FOR THE PROPOSED REGULATIONS,
                C     AND EXTEND THE 2-KIP INTERVAL ARRAY *ELVWI* TO THE MAXIMUM END OF
                C     INTERVAL WEIGHT COMPUTED
                C
ISN 0128           35 CALL MULT (ELVWI, FACT, NJ, GLVWNI)
ISN 0129            ELI = GLVWNI(NJ)
ISN 0130            I = NJ
ISN 0131           40 NJ = NJ+1
ISN 0132            ELVWI(NJ) = ELVWI(I) + SIZE
ISN 0133            I = I+1
ISN 0134            IF (ELVWI(I) .LT. ELI) GO TO 40
ISN 0136            CALL ITRP (GLVWNI, APVWE, ELVWI, 1, NJ, NK, APVWG, 0)
ISN 0137            PVWE(1) = APVWG(1)
ISN 0138            CALL DIFF (APVWG, NJ, PVWE)
ISN 0139           50 CALL MIDPNT (ELVWI, NJ, ELVWMP)
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ISN 0052            SAAPV(I) = 0.
ISN 0053            TAAPV(I) = 0.
ISN 0054            TRAPV(I) = 0.
ISN 0055            STAPV(I) = 0.
ISN 0056            FACT(I) = 0.
ISN 0057            GLVWNI(I) = 0.
ISN 0058            APSA(I) = 0.
ISN 0059            APTA(I) = 0.
ISN 0060            APTR(I) = 0.
ISN 0061            APST(I) = 0.
ISN 0062          8 CONTINUE
ISN 0063            DO 9 I=1,6
ISN 0064            NLDI(I) = NLDISV(I)
ISN 0065          9 CONTINUE
                  C
                  C     *** ADJUSTED AVERAGE EMPTY WEIGHT SECTION ***
                  C
ISN 0066            CALL INTVL (VE, EVWI, NLDI(5), NI, 5, 30, VWE, IT)
                  C
                  C     CALCULATE THE NUMBER OF EMPTY VEHICLES WEIGHED IN EACH 2-KIP GROSS
                  C     EMPTY WEIGHT INTERVAL
                  C
ISN 0067            CALL PCTAGE (VWE, NI, PVWE)
ISN 0068            CALL ACMLTE (PVWE, NI, APVWE)
ISN 0069            CALL MIDPNT (EVWI, NI, EVWMP)
ISN 0070            CALL MULT (PVWE, EVWMP, NI, TWFAV)
ISN 0071            CALL AVRGE (TWFAV, NI, AVRG, AEW)
                  C
                  C     COMPUTE THE PRACTICAL MAXIMUM GROSS VEHICLE WEIGHT FOR PRESENT AND
                  C     PROPOSED LIMITS AND MAKE SURE THAT THE VEHICLE GROSS INTERVALS
                  C     INPUT HAS A MAXIMUM END-OF-INTERVAL VALUE GREATER THAN OR EQUAL TO
                  C     THE CALCULATED PMGW.
                  C
ISN 0072            K = 1
ISN 0073            TD4(IT,6,K) = AEW
ISN 0074            TD4(IT,1,K) = PSTAW(IT)
ISN 0075            TD4(IT,2,K) = PSAL
ISN 0076            TD4(IT,3,K) = PTAL
ISN 0077            TD4(IT,4,K) = PTRAL
ISN 0078            TD4(IT,5,K) = PSTAW(IT) + PSAL*FLOAT(NAXLES(IT,1)) + PTAL *
                   1                FLOAT(NAXLES(IT,2)) + PTRAL*FLOAT(NAXLES(IT,3))
ISN 0079            NLD = NLDI(4)
ISN 0080         11 IF (TD4(IT,5,1) .LE. VG(NLD,11)) GO TO 15
ISN 0082            NLD = NLD + 1
ISN 0083            VG(NLD,11) = VG(NLD-1,11) + SIZE
ISN 0084            DO 12 ID=1,NTT
ISN 0085            VG(NLD,ID) = 0.
ISN 0086         12 CONTINUE
ISN 0087            GO TO 11
ISN 0088         15 NLDI(4) = NLD
ISN 0089            K = K+1
ISN 0090            TD4(IT,5,K) = AEW + (EMPTY(IT) * 0.01 * AEW)
ISN 0091            TD4(IT,1,K) = FSTAW(IT)
ISN 0092            TD4(IT,2,K) = FSAL
ISN 0093            TD4(IT,3,K) = FTAL
ISN 0094            TD4(IT,4,K) = FTRAL
                  C
                  C     *** ADJUSTED GROSS WEIGHT AND TOTAL PAYLOAD CARRIED - PRESENT REGS
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```
ISN 0005          COMMON /TRTYP/ TTYP(2,10), PTTYP(10,20,2), PCTTR(20,2),
                 1               NAXLES(10,4),NT(4), NTTY, NATT, NTT, NEWTRK
ISN 0006          COMMON /NMBR/ SA(30,11), TA(30,11), TR(50,11), VE(30,11),
                 1              VG(75,11), NLDI(6), EMPTY(10), ST(30,11)
ISN 0007          COMMON /LDS/ PGVWL, PSAL, PTAL, PTRAL, PGVWL, FSAL, FTAL, FTRAL,
                 1             PSTAW(10), FSTAW(10)
ISN 0008          COMMON /CNSTS/ NAPOV, PAPOV, SIZE, AVRG
ISN 0009          COMMON /TRINDX/ ITT
ISN 0010          COMMON /IO/ LI, LO, LD
ISN 0011          COMMON /OUTPTS/ TD4(10,6,2)
ISN 0012          COMMON EVWI(75), EVWMP(75), ELVWMP(75), GLVWNI(75), VWE(75),
                 2           PVWE(75), TWFAV(75), TPFAV(75), TVWE(75),
                 3           APPV(75), PPV(75), FACT(75), SAI(75), TAI(75), TRI(75),
                 4           SAA(75), TAA(75), TRA(75), SLA(75), TLA(75),
                 5           TRLA(75), APSA(75), APTA(75), APTR(75), APOV(75),
                 6           GWA(75), GWAF(75), SLAR(75), TLAR(75), TRLAR(75),
                 7           SANOV(75), TANOV(75), TRNOV(75), PSA(75), PTA(75),
                 8           PTR(75), SLAT(75), TLAT(75), TRLAT(75), STA(75),
                 9           PST(75), STLA(75), STLAR(75), STLAT(75), APST(75),
                 A           STI(75), STNOV(75), NLDISV(6)
ISN 0013           IF (NEWTRK .EQ. 1) GO TO 9999
ISN 0015           DO 6 K=1,2
ISN 0016           DO 4 J=1,6
ISN 0017           DO 2 I=1,10
ISN 0018           TD4(I,J,K) = 0.0
ISN 0019         2 CONTINUE
ISN 0020         4 CONTINUE
ISN 0021         6 CONTINUE
ISN 0022           DO 7 I=1,6
ISN 0023           NLDISV(I) = NLDI(I)
ISN 0024         7 CONTINUE
ISN 0025           DO 160 IT=1,NTT
ISN 0026           IFT = IT
ISN 0027           VTN = 0.
ISN 0028           NSA = 0
ISN 0029           NTA = 0
ISN 0030           NTR = 0
ISN 0031           NNA = 0
ISN 0032           NNT = 0
ISN 0033           NNR = 0
ISN 0034           APV = 0.
ISN 0035           PAPV = 0.
ISN 0036           DO 8 I=1,75
ISN 0037           PSA(I) = 0.
ISN 0038           PTA(I) = 0.
ISN 0039           PTR(I) = 0.
ISN 0040           PST(I) = 0.
ISN 0041           SAI(I) = 0.
ISN 0042           TAI(I) = 0.
ISN 0043           TRI(I) = 0.
ISN 0044           STI(I) = 0.
ISN 0045           SANOV(I) = 0.
ISN 0046           TANOV(I) = 0.
ISN 0047           TRNOV(I) = 0.
ISN 0048           STNOV(I) = 0.
ISN 0049           ELVWI(I) = 0.
ISN 0050           APVWE(I) = 0.
ISN 0051           APVWG(I) = 0.
```

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

```
ISN 0002            SUBROUTINE TRAFIC
                C
                C     THIS ROUTINE COMPUTES THE FOLLOWING
                C        1. THE ADJUSTED AVERAGE EMPTY WEIGHT OF VEHICLES WEIGHED EMPTY
                C        2. ADJUSTED GROSS WEIGHT AND TOTAL PAYLOAD CARRIED = PRESENT
                C           AND PROPOSED REGULATIONS
                C        3. DISTRIBUTION OF AXLE WEIGHTS = PRESENT AND PROPOSED REGS.
                C        4. AXLE WEIGHT DISTRIBUTIONS BY VEHICLE CLASSIFICATION =
                C           PROPOSED REGULATIONS
                C
                C     THE INPUTS ARE
                C       1. NAXLES%10,4< = THE NUMBER OF SINGLE, TANDEM, TRIPLE AND
                C                         STEERING AXLES FOR EACH TRUCK TYPE
                C       2. NTTY = NUMBER OF TRUCK TYPES TO BE CONSIDERED %EXISTING<
                C       3. NATT = NUMBER OF ADDED TRUCK TYPES %FUTURE DESIGN<
                C       4. NEWTRK = SHIFTING INDICATOR
                C            0 = SHIFTING PROCEDURE TO BE DONE
                C            1 = SHIFTING PROCEDURE NOT TO BE DONE %ALREADY DONE<
                C       5. SA%30,11< = NUMBER OF SINGLE AXLES WEIGHED BY INTERVAL AND
                C                      TRUCK TYPE
                C       6. TA%30,11< = NUMBER OF TANDEM AXLES WEIGHED BY INTERVAL AND
                C                      TRUCK TYPE
                C       7. TR%50,11< = NUMBER OF TRIPLE AXLES WEIGHED BY INTERVAL AND
                C                      TRUCK TYPE
                C       8. ST%30,11< = NUMBER OF STEERING AXLES WEIGHED BY INTERVAL AND
                C                      TRUCK TYPE
                C       9. VE%30,11< = NUMBER OF VEHICLES WEIGHED EMPTY BY INTERVAL AND
                C                      TRUCK TYPE
                C      10. VG%75,11< = NUMBER OF VEHICLES WEIGHED GROSS BY INTERVAL AND
                C                      TRUCK TYPE
                C      11. NLDI%6< = NUMBER OF INTERVALS INPUT FOR EACH OF THE ABOVE SIX
                C                    ARRAYS, WHERE,
                C                       1 # SA   2 # TA  3 # TR  4 # VG  5 # VE  6 # ST
                C      12. EMPTY%10< = PERCENT INCREASE IN AVERAGE EMPTY WEIGHT FOR EACH
                C                      TRUCK TYPE
                C      13. PGVWL = PRESENT GROSS VEHICLE WEIGHT LIMIT
                C      14. PSAL = PRESENT SINGLE AXLE WEIGHT LIMIT
                C      15. PTAL = PRESENT TANDEM AXLE WEIGHT LIMIT
                C      16. PTRAL = PRESENT TRIPLE AXLE WEIGHT LIMIT
                C      17. PSTAW%10< = PRESENT STEERING AXLE WEIGHT LIMIT BY TRUCK TYPE
                C      18-22.
                C          FGVWL, FSAL, FTAL, FTRAL, FSTAW%10< = SAME AS 13 THROUGH 17
                C                EXCEPT THAT THESE ARE VALUES UNDER PROPOSED REGULATIONS
                C      23. SIZE = STANDARD INTERVAL SIZE %2=KIPS<
                C      24. AVRG = AVERAGE VARIABLE %AVRG # 100. GIVES AVERAGE VALUES
                C                                  PER 100 TRUCKS<
                C      25. NAPOV = NUMBER OF SELECTED CUMULATIVE PERCENTAGES FOR THE
                C                  DISTRIBUTION OF AXLE WEIGHTS = PROPOSED REGS. SECTION
                C      25. PAPOV = PERCENTAGE INCREMENT CORRESPONDING TO NAPOV ABOVE
                C
ISN 0003            COMMON /TRFFIC/ ELVWI(75), APVWE(75), APVWG(75), SAAPV(75),
                   1                TAAPV(75), TRAPV(75), STAPV(75), NGVW
ISN 0004            COMMON /EXPVT/ THICK(4), MTYPE(4), NLAY, IP, IF, IR, IC
```

```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.39.45       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE MCOSTS (A, NP, COST)
                C
                C      THIS ROUTINE CALCULATES THE MAINTENENCE COSTS FOR EACH YEAR OF THE
                C      ANALYSIS PERIOD
                C
                C      THE INPUTS ARE THE FOLLOWING
                C        1. A ------ PAVEMENT AGE FOR THE CURRENT YEAR
                C        2. NP ----- PAVEMENT TYPE INDICATOR FOR ARRAY ACCMDL WHERE,
                C                          NP#1 = FLEXIBLE
                C                             2 = RIGID
                C                             3 = COMPOSITE
                C
                C      THE OUTPUT IS
                C         COST = THE CALCULATED CUMULATIVE COST TO THE GIVEN PAVEMENT AGE
                C
   ISN 0003            COMMON /MODELS/ ACCMDL(31,3)
   ISN 0004            IF (A .GT. 1.) GO TO 10
   ISN 0006            COST = ACCMDL(1,NP) * A
   ISN 0007            GO TO 20
   ISN 0008         10 I1 = INT(A)
   ISN 0009            I2 = I1 + 1
   ISN 0010            AG = A - AINT(A)
   ISN 0011            COST = ACCMDL(I1,NP) + (ACCMDL(I2,NP) - ACCMDL(I1,NP)) * AG
   ISN 0012         20 RETURN
   ISN 0013            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       12, PROGRAM SIZE =       532, SUBPROGRAM NAME =MCOSTS

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
```

```
   ISN 0084            GO TO 50
   ISN 0085         47 AG = AGE(I-1) + (1. - AGE(I))
   ISN 0086            CALL MCOSTS (AG, NP, COST)
   ISN 0087            COST = COST - SVCOST
   ISN 0088            IF (IP .EQ. IR) NP = IC
   ISN 0090            CALL MCOSTS (AGE(I), NP, SVCOST)
   ISN 0091            YMCOST(I) = COST + SVCOST
   ISN 0092         50 CONTINUE
   ISN 0093            RETURN
   ISN 0094            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      93, PROGRAM SIZE =     1944, SUBPROGRAM NAME = MAINT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    48K BYTES OF CORE NOT USED
```

```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.07       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE MULT (YA, YB, NU, YC)
                     C
                     C     THIS ROUTINE MULTIPLIES TWO VECTORS SUCH THAT YC%I< # YA%I<*YB%I<
                     C
   ISN 0003            DIMENSION YA(1), YB(1), YC(1)
   ISN 0004            DO 10 I=1,NU
   ISN 0005            YC(I) = YA(I) * YB(I)
   ISN 0006          10 CONTINUE
   ISN 0007            RETURN
   ISN 0008            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =        7, PROGRAM SIZE =       396, SUBPROGRAM NAME =  MULT

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.08       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE AVRGE (AV, NV, AN, AVG)
                  C
                  C     THIS ROUTINE COMPUTES THE AVERAGE OF THE VALUES IN ARRAY AV
                  C     OVER *AN*
                  C
   ISN 0003            DIMENSION AV(1)
   ISN 0004            AVG = 0.0
   ISN 0005            DO 10 I=1,NV
   ISN 0006            AVG = AV(I) + AVG
   ISN 0007         10 CONTINUE
   ISN 0008            AVG = AVG / AN
   ISN 0009            RETURN
   ISN 0010            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       9, PROGRAM SIZE =      350, SUBPROGRAM NAME = AVRGE

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.09       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE DIFF (D1, ND, D2)
                     C
                     C     THIS ROUTINE TAKES SUCCESSIVE DIFFERENCES OF THE VALUES IN
                     C     ARRAY D1
                     C
   ISN 0003            DIMENSION D1(1), D2(1)
   ISN 0004            D2(1) = D1(1)
   ISN 0005            DO 10 I=2,ND
   ISN 0006            J = I-1
   ISN 0007            D2(I) = D1(I) - D1(J)
   ISN 0008         10 CONTINUE
   ISN 0009            RETURN
   ISN 0010            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       9, PROGRAM SIZE =      390, SUBPROGRAM NAME =  DIFF

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.10       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE SUM (S1, NS, S2)
                     C
                     C     THIS ROUTINE COMPUTES THE SUM OF THE VALUES IN ARRAY S1
                     C
   ISN 0003            DIMENSION S1(1)
   ISN 0004            S2 = 0.0
   ISN 0005            DO 10 I=1,NS
   ISN 0006            S2 = S2 + S1(I)
   ISN 0007          10 CONTINUE
   ISN 0008            RETURN
   ISN 0009            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       8, PROGRAM SIZE =      322, SUBPROGRAM NAME =   SUM

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
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```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.12       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE ZERO (A,N)
   ISN 0003            DIMENSION A(N)
   ISN 0004            DO 10 I=1,N
   ISN 0005         10 A(I) = 0.
   ISN 0006            RETURN
   ISN 0007            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       6, PROGRAM SIZE =      280, SUBPROGRAM NAME =  ZERO

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                  56K BYTES OF CORE NOT USED
```

```
REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            SUBROUTINE INTERP (X, F, N, XR, FR)
                  C    PARABOLIC INTERPOLATION %LINEAR IF ONLY TWO POINTS GIVEN< F3R
                  C    FR%XR< GIVEN N VALUES FOR F%X<.
                  C    INPUT VALUES OF X MUST BE MONOTONIC INCREASING OR DECREASING.
                  C    EXTRAPOLATION, WHEN NEEDED, IS PARABOLIC. USE WITH CARE.
   ISN 0003            DIMENSION X(N), F(N)
   ISN 0004            IF (N .GT. 2) GO TO 10
   ISN 0006            FI = F(1) + (XR-X(1))*(F(2)-F(1))/(X(2)-X(1))
   ISN 0007            GO TO 99
   ISN 0008         10 CONTINUE
   ISN 0009            IB = 1
   ISN 0010            IF (N .EQ. 3) GO TO 30
   ISN 0012            R = +1.
   ISN 0013            IF (X(2) .LT. X(1)) R = -1.
   ISN 0015            DO 15 I=2,N
   ISN 0016            IX = I
   ISN 0017            IF ((X(I) - XR)*R .GT. 0.) GO TO 20
   ISN 0019         15 CONTINUE
   ISN 0020         20 IF  ((2.*XR - X(IX-1) - X(IX))*R .LT. 0.) IX = IX - 1
   ISN 0022            IB = IX - 1
   ISN 0023            IF (IB .LT. 1) IB = 1
   ISN 0025            IF (IB .GT. (N-2)) IB = N-2
   ISN 0027         30 FI = PARAB (XR, X(IB), F(IB))
   ISN 0028         99 FR = FI
   ISN 0029            RETURN
   ISN 0030            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =       29, PROGRAM SIZE =       976, SUBPROGRAM NAME =INTERP

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED
```

100

```
 LEVEL 2.3.0 (JUNE 78)                    OS/360  FORTRAN H EXTENDED          DATE 80.242/09.40.15       PAGE   1

REQUESTED OPTIONS: EBCDIC

OPTIONS IN EFFECT: NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)
                   SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

   ISN 0002            FUNCTION PARAB (XR, X, F)
                     C     PART OF INTERPOLATION PACKAGE.
                     C     PARABOLIC FUNCTION VALUE IS F%XR<, GIVEN THREE VALUES F%X<.
   ISN 0003            DIMENSION X(3), F(3)
   ISN 0004            XL = X(2) - X(1)
   ISN 0005            XU = X(3) - X(2)
   ISN 0006            D = XL*XU*(X(3) - X(1))
   ISN 0007            P1 = XL*(F(3)-F(2))
   ISN 0008            P2 = XU*(F(2)-F(1))
   ISN 0009            S1 = P1*XL+P2*XU
   ISN 0010            S2 = P1 - P2
   ISN 0011            T = XR - X(2)
   ISN 0012            PARAB =F(2)+ (S1 +S2*T)*T/D
   ISN 0013            RETURN
   ISN 0014            END

*OPTIONS IN EFFECT*NAME(MAIN) NOOPTIMIZE LINECOUNT(60) SIZE(MAX) AUTODBL(NONE)

*OPTIONS IN EFFECT*SOURCE EBCDIC NOLIST NODECK OBJECT NOMAP NOFORMAT GOSTMT NOXREF ALC NOANSF NOTERM IBM FLAG(I) DUMP

*STATISTICS*      SOURCE STATEMENTS =      13, PROGRAM SIZE =      528, SUBPROGRAM NAME = PARAB

*STATISTICS*  NO  DIAGNOSTICS GENERATED

****** END OF COMPILATION ******                                    56K BYTES OF CORE NOT USED

*STATISTICS*    1 DIAGNOSTICS THIS STEP, HIGHEST SEVERITY CODE IS  4
```

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1973

```
RUN PARAMETERS          20    0      2.00        6.00        0.0         0.0         0.0
SYSTEM TITLE             0    0      0.0         0.0         0.0         0.0         0.0
SAMPLE SOLUTION USING HYPOTHETICAL STATE DATA
-THIS RUN INTENDED FOR ILLUSTRATIVE PURPOSES ONLY
INTERSTATE SYSTEM, RIGID AND FLEXIBLE.
FLEXIBLE                 0    0     12.00        5.50        2.00        0.0         0.0
INTFLX A  INTERSTATE SYSTEM FLEXIBLE SECTION *A*
ACP    6.00.440 ATB    4.00.340 AGS    6.00.110        0.00.0
AGE DISTRIBUTION        25    1      0.0         0.0         0.0         0.0         0.0
   107.0    87.0   110.0   118.0   118.0    87.0    78.0    65.0    80.0    50.0    48.0    28.0    17.0    22.0    17.0
    10.0    17.0    13.0    10.0     7.0     2.0     3.0     3.0     2.0     2.0
   287.00   270.00   254.00   251.00   182.00   159.00   146.00   134.00
   114.00   102.30    94.00    89.00    83.00    77.00    72.00    67.00
    63.00    59.00    55.00    51.00    48.00    45.00    42.00    39.00
    36.00
     3.00     3.00     3.00     3.00     3.00     3.00     3.00     3.00
     3.00     3.00     3.00     3.00     3.00     3.00     3.00     3.00
     3.00     3.00     3.00     3.00     3.00     3.00     3.00     3.00
     3.00
PERFORMANCE              0    0      4.20        2.50        4.20        0.0         0.0
    14.00    11.50    16.00
MODEL MAINT              1    0      0.0         0.0         0.0         0.0         0.0
     1.45     0.06     9.40
    10.30     0.0      0.0      0.20    20.00     0.04     7
OVERLAY                  2    3      0.0         0.0         0.0         0.0         0.0
    95.00     7.00     5.00    25.00     0.35     0.0      0.0
OLD SECTIONS             1    0   1500.00       10.00       0.0         0.0         0.0
OUTPUT                   3    0      0.0         0.0         0.0         0.0         0.0
TRUCK TYPE               4    0      0.0         0.0         0.0         0.0         0.0
20        3A        3=S2      2=S1=2
 1 0 0 0   0 1 0 0   0 2 0 0   4 0 0 0
  1   3.75  0.93 12.43  0.57  0.0   0.0   0.0   0.0   0.0   0.0  17.68
  2   3.81  0.93 12.51  0.57  0.0   0.0   0.0   0.0   0.0   0.0  17.82
  3   3.92  0.93 12.60  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.01
  4   3.96  0.92 12.68  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.13
  5   4.04  0.92 12.77  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.30
  6   4.10  0.92 12.75  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.34
  7   4.14  0.92 12.83  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.46
  8   4.21  0.91 12.81  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.39
  9   4.25  0.91 12.89  0.57  0.0   0.0   0.0   0.0   0.0   0.0  18.62
 10   4.31  0.91 12.87  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.67
 11   4.35  0.91 12.86  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.70
 12   4.41  0.90 12.85  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.74
 13   4.45  0.90 12.83  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.76
 14   4.48  0.90 12.81  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.77
 15   4.52  0.90 12.79  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.79
 16   4.58  0.89 12.77  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.82
 17   4.63  0.89 12.76  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.85
 18   4.67  0.89 12.74  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.89
 19   4.69  0.89 12.72  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.89
 20   4.73  0.88 12.70  0.58  0.0   0.0   0.0   0.0   0.0   0.0  18.90
LOAD LIMITS              1    0      0.0         0.0         0.0         0.0         0.0
    80.00    18.00    32.00    56.00
   120.00    20.00    34.00    58.00
```

	13.	13.	12.	8.					
	16.	16.	16.	16.					
	0.0	0.0	0.50	0.75					
SINGLE AXLES			13	0	0.0	0.0	0.0	0.0	0.0
	3.	12.	0.	0.	0.				
	7.	169.	5.	0.	37.				
	8.	29.	7.	0.	13.				
	12.	50.	19.	0.	89.				
	16.	25.	2.	0.	62.				
	18.	9.	2.	0.	9.				
	19.	0.	0.	0.	2.				
	20.	0.	0.	0.	1.				
	22.	0.	0.	0.	1.				
	24.	0.	0.	0.	1.				
	26.	0.	0.	0.	0.				
	30.	0.	0.	0.	0.				
	35.	0.	0.	0.	0.				
TANDEM AXLES			15	0	4.00	0.0	0.0	0.0	0.0
	6.	0.	0.	69.	0.				
	12.	0.	18.	249.	0.				
	18.	0.	6.	110.	0.				
	24.	0.	3.	160.	0.				
	30.	0.	2.	148.	0.				
	32.	0.	0.	22.	0.				
	33.	0.	2.	6.	0.				
	34.	0.	1.	3.	0.				
	36.	0.	1.	4.	0.				
	38.	0.	2.	1.	0.				
	40.	0.	0.	3.	0.				
	42.	0.	0.	1.	0.				
	44.	0.	0.	0.	0.				
	46.	0.	0.	0.	0.				
	50.	0.	0.	0.	0.				
	55.	0.	0.	0.	0.				
GVW			23	0	8.00	0.0	0.0	0.0	0.0
	10.	125.	0.	0.	0.				
	14.	110.	1.	0.	0.				
	20.	132.	13.	4.	0.				
	22.	28.	5.	15.	0.				
	24.	15.	1.	46.	0.				
	26.	14.	2.	39.	1.				
	28.	5.	3.	23.	1.				
	30.	7.	0.	16.	0.				
	32.	2.	2.	15.	2.				
	34.	1.	0.	8.	0.				
	36.	2.	2.	12.	1.				
	38.	0.	1.	10.	0.				
	40.	1.	2.	6.	2.				
	45.	0.	1.	12.	1.				
	50.	0.	3.	27.	2.				
	55.	0.	1.	33.	5.				
	60.	0.	0.	58.	10.				
	65.	0.	0.	34.	6.				
	70.	0.	0.	22.	4.				
	72.	0.	0.	0.	0.				
	75.	0.	0.	1.	0.				
	80.	0.	0.	5.	0.				
	85.	0.	0.	1.	0.				
EMPTY			13	0	4.00	0.0	0.0	0.0	0.0
	6.	14.	0.	0.	0.				
	8.	78.	0.	0.	0.				

10.	143.	4.	0.	0.					
12.	107.	10.	0.	0.					
14.	75.	26.	0.	0.					
16.	50.	47.	2.	0.					
18.	9.	35.	4.	0.					
20.	7.	14.	19.	0.					
25.	4.	23.	290.	3.					
30.	0.	6.	262.	10.					
35.	0.	0.	120.	4.					
40.	0.	0.	24.	0.					
45.	0.	0.	4.	2.					
EXECUTE		0	0	0.0	0.0	0.0	0.0	0.0	

NUDAMAGE - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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SAMPLE SOLUTION USING HYPOTHETICAL STATE DATA
-THIS RUN INTENDED FOR ILLUSTRATIVE PURPOSES ONLY
INTERSTATE SYSTEM, RIGID AND FLEXIBLE.

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

RUN PARAMETERS

LENGTH OF ANALYSIS PERIOD	20	YEARS
ANNUAL GROWTH RATE OF 18 KIP EAL	2.00	PERCENT/YEAR
ANNUAL INTEREST RATE FOR PRESENT WORTH CALCULATIONS	6.00	PERCENT/YEAR

NUMBER OF 18-KIP ESAL UNDER PROPOSED REGULATIONS
DERIVED FROM 18-KIP ESAL UNDER PRESENT REGULATIONS
AND THE ASSUMPTION OF EQUAL PAYLOAD

FLEXIBLE STRUCTURE

NUMBER OF LAYERS	3	
LANE WIDTH	12.00	FEET
DESIGN SOIL SUPPORT	5.50	
REGIONAL FACTOR	2.00	

MATERIALS

LAYER NUMBER	THICKNESS (IN.)	STRUCTURAL COEFFICIENT	MATERIAL CODE	
1	6.00	0.440	ACP	ASPHALT SURFACE
2	4.00	0.340	ATB	ASPHALT BASE
3	6.00	0.110	AGS	AGGREGATE SUBBASE

PERFORMANCE

PSI INITIAL CONSTANT	4.20	
TERMINAL PSI	2.50	
PSI AFTER OVERLAY	4.20	
AVERAGE AGE AT TERMINAL PSI FOR EXISTING DESIGN	14.00	YEARS
AVERAGE AGE OF PAVEMENT WHEN 25 PERCENT OF MILEAGE IS ALREADY OVERLAID	11.50	YEARS
AVERAGE AGE OF PAVEMENT WHEN 75 PERCENT OF MILEAGE IS ALREADY OVERLAID	16.00	YEARS
OVERLAY DESIGN LIFE	20.00	YEARS

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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AGE DISTRIBUTION

LOSS RATE FACTOR FOR MILEAGE IN POTTS - 1.40

AGE	LANE MILES	VALUE	LOSS RATE	AGE	LANE MILES	VALUE	LOSS RATE	AGE	LANE MILES	VALUE	LOSS RATE
1	107.0	287.	3.00	11	48.0	94.	3.00	21	2.0	48.	3.00
2	87.0	270.	3.00	12	28.0	89.	3.00	22	3.0	45.	3.00
3	110.0	264.	3.00	13	17.0	83.	3.00	23	3.0	42.	3.00
4	118.0	251.	3.00	14	22.0	77.	3.00	24	2.0	39.	3.00
5	118.0	182.	3.00	15	17.0	72.	3.00	25	2.0	36.	3.00
6	87.0	159.	3.00	16	10.0	67.	3.00				
7	78.0	146.	3.00	17	17.0	63.	3.00				
8	65.0	134.	3.00	18	13.0	59.	3.00				
9	80.0	114.	3.00	19	10.0	55.	3.00				
10	50.0	102.	3.00	20	7.0	51.	3.00				

VALUE IN THOUSANDS OF DOLLARS

LOSS RATE IN PERCENT PER YEAR

OVERLAY

PERCENT OF PAVED SHOULDERS	95.00	PERCENT
AVERAGE PAVED SHOULDER WIDTH/LANE	7.00	FEET
AVERAGE GRANULAR SHOULDER WIDTH/LANE	5.00	FEET
UNIT COST OF ACP	25.00	$/CY
UNIT COST OF GRANULAR	0.35	$/SY/IN.

MODEL MAINTENANCE

ACCELERATED MAINTENANCE - YES

UNIT COSTS OF MAINTENANCE

FLEXIBLE PATCHING $/SY	CRACK SEALING $/FT	BASE AND SURFACE REPAIR $/CY	CONCRETE PATCHING $/SY	CONCRETE BLOWUPS $/AVG	CONCRETE MUDJACKING $/AVG	JOINT SEALING $/FT
1.45	0.06	9.40	10.30	0.0	0.0	0.20

JOINT SPACING 20.00 FEET
FRACTION OF JOINTS SEALED EACH YEAR - 0.04
TIME BEFORE FIRST JOINT SEAL 7 YEARS

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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MAINTENANCE COSTS PER LANE-MILE PER YEAR

YEAR	FLEXIBLE	RIGID	COMPOSITE
1	0.73	0.26	0.71
2	1.72	0.58	1.67
3	4.07	1.29	3.95
4	9.60	2.86	9.33
5	22.55	6.30	21.93
6	52.46	13.72	51.01
7	119.19	29.13	115.90
8	257.58	84.17	250.47
9	505.34	133.91	491.38
10	851.00	200.44	827.50
11	1196.66	266.97	1163.62
12	1444.42	316.72	1404.53
13	1582.81	346.42	1539.10
14	1649.54	361.83	1603.99
15	1679.45	369.25	1633.07
16	1692.40	372.69	1645.67
17	1697.93	374.25	1651.05
18	1700.28	374.96	1653.33
19	1701.27	375.28	1654.29
20	1701.69	375.43	1654.70
21	1701.87	375.49	1654.87
22	1701.95	375.52	1654.95
23	1701.98	375.53	1654.98
24	1701.99	375.54	1654.99

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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OLD SECTIONS

MAINTENANCE COST (DOLLARS/LANE MILE/YEAR) FOR PAVEMENTS OLDER THAN TERMINAL SERVICEABILITY	1500.00
PERCENT OF TOTAL LANE MILES IN POTTS AT	
BEGINNING OF ANALYSIS PERIOD (CALCULATED)	109.84
END OF ANALYSIS PERIOD (INPUT TARGET VALUE)	10.00
PERCENT OF TOTAL LANE MILES NEVER OVERLAID	0.0

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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TRUCK TYPES PRESENT

TYPE	2D	3A	3-S2	2-S1-2	TOTAL
AXLE CODE	1000	0100	0200	4000	
YEAR	PERCENT OF ALL VEHICLES				
1	3.75	0.93	12.43	0.57	17.68
2	3.81	0.93	12.51	0.57	17.82
3	3.92	0.93	12.60	0.57	18.01
4	3.96	0.92	12.68	0.57	18.13
5	4.04	0.92	12.77	0.57	18.30
6	4.10	0.92	12.75	0.57	18.34
7	4.14	0.92	12.83	0.57	18.46
8	4.21	0.91	12.81	0.57	18.39
9	4.25	0.91	12.89	0.57	18.62
10	4.31	0.91	12.87	0.58	18.67
11	4.35	0.91	12.86	0.58	18.70
12	4.41	0.90	12.85	0.58	18.74
13	4.45	0.90	12.83	0.58	18.76
14	4.48	0.90	12.81	0.58	18.77
15	4.52	0.90	12.79	0.58	18.79
16	4.58	0.89	12.77	0.58	18.82
17	4.63	0.89	12.76	0.58	18.85
18	4.67	0.89	12.74	0.58	18.99
19	4.69	0.89	12.72	0.58	18.89
20	4.73	0.88	12.70	0.58	18.90

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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LOAD LIMITS

PRESENT GROSS VEHICLE WEIGHT LIMIT - 80. KIPS
PRESENT SINGLE AXLE WEIGHT LIMIT --- 18. KIPS
PRESENT TANDEM AXLE WEIGHT LIMIT --- 32. KIPS
PRESENT TRIPLE AXLE WEIGHT LIMIT --- 56. KIPS
FUTURE GROSS VEHICLE WEIGHT LIMIT -- 120. KIPS
FUTURE SINGLE AXLE WEIGHT LIMIT ---- 20. KIPS
FUTURE TANDEM AXLE WEIGHT LIMIT ---- 34. KIPS
FUTURE TRIPLE AXLE WEIGHT LIMIT ---- 58. KIPS

TRUCK TYPE	PRESENT STEERING AXLE WEIGHT (KIPS)	FUTURE STEERING AXLE WEIGHT (KIPS)	PERCENT INCREASE IN EMPTY WEIGHT (KIPS)
2D	13.000	16.000	0.0
3A	13.000	16.000	0.0
3-S2	12.000	16.000	0.50
2-S1-2	8.000	16.000	0.75

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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SINGLE AXLE LOADS

NUMBER OF LOAD INTERVALS = 13

LOAD INTERVAL	NUMBER OF AXLES WEIGHED			
	TYPE 2D	TYPE 3A	TYPE 3-S2	TYPE 2-S1-2
0.0 - 3.000	12.	0.	0.	0.
3.000 - 7.000	169.	5.	0.	37.
7.000 - 8.000	29.	7.	0.	13.
8.000 - 12.000	50.	19.	0.	89.
12.000 - 16.000	25.	2.	0.	62.
16.000 - 18.000	9.	2.	0.	9.
18.000 - 18.500	0.	0.	0.	2.
18.500 - 20.000	0.	0.	0.	1.
20.000 - 22.000	0.	0.	0.	1.
22.000 - 24.000	0.	0.	0.	1.
24.000 - 26.000	0.	0.	0.	0.
26.000 - 30.000	0.	0.	0.	0.
30.000 - 35.000	0.	0.	0.	0.

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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TANDEM AXLE LOADS

NUMBER OF LOAD INTERVALS = 16

LOAD INTERVAL	NUMBER OF AXLES WEIGHED			
	TYPE 2D	TYPE 3A	TYPE 3-S2	TYPE 2-S1-2
4.000 - 6.000	0.	0.	68.	0.
6.000 - 12.000	0.	18.	249.	0.
12.000 - 18.000	0.	6.	110.	0.
18.000 - 24.000	0.	3.	160.	0.
24.000 - 30.000	0.	2.	148.	0.
30.000 - 32.000	0.	0.	22.	0.
32.000 - 32.500	0.	2.	6.	0.
32.500 - 34.000	0.	1.	3.	0.
34.000 - 36.000	0.	1.	4.	0.
36.000 - 38.000	0.	2.	1.	0.
38.000 - 40.000	0.	0.	3.	0.
40.000 - 42.000	0.	0.	1.	0.
42.000 - 44.000	0.	0.	0.	0.
44.000 - 46.000	0.	0.	0.	0.
46.000 - 50.000	0.	0.	0.	0.
50.000 - 55.000	0.	0.	0.	0.

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GROSS VEHICLE WEIGHT

NUMBER OF LOAD INTERVALS = 23

LOAD INTERVAL	NUMBER OF VEHICLES WEIGHED			
	TYPE 2D	TYPE 3A	TYPE 3-S2	TYPE 2-S1-2
9.000 - 10.000	125.	0.	0.	0.
10.000 - 13.500	110.	1.	0.	0.
13.500 - 20.000	132.	13.	4.	0.
20.000 - 22.000	28.	5.	16.	0.
22.000 - 24.000	15.	1.	46.	0.
24.000 - 26.000	14.	2.	39.	1.
26.000 - 28.000	5.	3.	23.	1.
28.000 - 30.000	7.	0.	16.	0.
30.000 - 32.000	2.	2.	15.	2.
32.000 - 34.000	1.	0.	8.	0.
34.000 - 36.000	2.	2.	12.	1.
36.000 - 38.000	0.	1.	10.	0.
38.000 - 40.000	1.	2.	6.	2.
40.000 - 45.000	0.	1.	12.	1.
45.000 - 50.000	0.	3.	27.	2.
50.000 - 55.000	0.	1.	33.	5.
55.000 - 60.000	0.	0.	58.	10.
60.000 - 65.000	0.	0.	34.	6.
65.000 - 70.000	0.	0.	22.	4.
70.000 - 72.000	0.	0.	0.	0.
72.000 - 75.000	0.	0.	1.	0.
75.000 - 80.000	0.	0.	5.	0.
80.000 - 85.000	0.	0.	1.	0.

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EMPTY VEHICLE WEIGHT

NUMBER OF LOAD INTERVALS = 13

LOAD INTERVAL	NUMBER OF VEHICLES WEIGHED			
	TYPE 2D	TYPE 3A	TYPE 3-S2	TYPE 2-S1-2
4.000 - 6.000	14.	0.	0.	0.
6.000 - 8.000	78.	0.	0.	0.
8.000 - 10.000	143.	4.	0.	0.
10.000 - 12.000	137.	10.	0.	0.
12.000 - 14.000	75.	26.	0.	0.
14.000 - 16.000	50.	47.	2.	0.
16.000 - 18.000	9.	35.	4.	0.
18.000 - 20.000	7.	14.	19.	0.
20.000 - 25.000	4.	23.	290.	3.
25.000 - 30.000	0.	6.	262.	10.
30.000 - 35.000	0.	0.	120.	4.
35.000 - 40.000	0.	0.	24.	0.
40.000 - 45.000	0.	0.	4.	2.

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

CUMULATIVE SHIFTED AXLE DISTRIBUTIONS %IN 2=KIP INTERVALS< FOR EACH TRUCK

TRUCK TYPE 2D

END OF WEIGHT INTERVAL %KIPS<	UNSHIFTED PERCENT WEIGHED GROSS	FINAL PERCENT WEIGHED GROSS	PERCENT SINGLE AXLES	PERCENT TANDEM AXLES	PERCENT TRIDEM AXLES	PERCENT STEERING AXLES
2.000	0.0	0.0	4.31	0.0	0.0	0.0
4.000	0.0	0.0	17.48	0.0	0.0	0.0
6.000	0.0	0.0	41.79	0.0	0.0	0.0
8.000	0.0	0.0	63.79	0.0	0.0	0.0
10.000	28.28	21.35	76.08	0.0	0.0	0.0
12.000	42.50	37.58	83.37	0.0	0.0	0.0
14.000	55.46	49.47	89.01	0.0	0.0	0.0
16.000	64.65	59.21	92.85	0.0	0.0	0.0
18.000	73.84	67.08	95.89	0.0	0.0	0.0
20.000	83.03	74.83	98.17	0.0	0.0	0.0
22.000	89.37	82.46	100.00	0.0	0.0	0.0
24.000	92.76	87.81	0.0	0.0	0.0	0.0
26.000	95.93	91.27	0.0	0.0	0.0	0.0
28.000	97.06	93.89	0.0	0.0	0.0	0.0
30.000	98.64	96.09	0.0	0.0	0.0	0.0
32.000	99.09	96.96	0.0	0.0	0.0	0.0
34.000	99.32	98.14	0.0	0.0	0.0	0.0
36.000	99.77	98.87	0.0	0.0	0.0	0.0
38.000	99.77	99.18	0.0	0.0	0.0	0.0
40.000	100.00	99.42	0.0	0.0	0.0	0.0
42.000	100.00	99.77	0.0	0.0	0.0	0.0
44.000	100.00	99.77	0.0	0.0	0.0	0.0
46.000	100.00	99.96	0.0	0.0	0.0	0.0
48.000	0.0	100.00	0.0	0.0	0.0	0.0

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

CUMULATIVE SHIFTED AXLE DISTRIBUTIONS XIN 2=KIP INTERVALS< FOR EACH TRUC<

TRUCK TYPE 3A

END OF WEIGHT INTERVAL XKIPS<	UNSHIFTED PERCENT WEIGHED GROSS	FINAL PERCENT WEIGHED GROSS	PERCENT SINGLE AXLES	PERCENT TANDEM AXLES	PERCENT TRIDEM AXLES	PERCENT STEERING AXLES
2.000	0.0	0.0	0.0	1.48	0.0	0.0
4.000	0.0	0.0	0.0	2.97	0.0	0.0
6.000	0.0	0.0	0.0	4.45	0.0	0.0
8.000	0.0	0.0	0.0	14.55	0.0	0.0
10.000	0.0	0.0	0.0	30.43	0.0	0.0
12.000	1.54	1.28	0.0	45.63	0.0	0.0
14.000	5.41	4.51	0.0	54.93	0.0	0.0
16.000	15.22	12.97	0.0	60.11	0.0	0.0
18.000	27.03	22.95	0.0	65.17	0.0	0.0
20.000	37.84	32.86	0.0	69.17	0.0	0.0
22.000	51.35	43.89	0.0	72.00	0.0	0.0
24.000	54.05	52.29	0.0	74.54	0.0	0.0
26.000	59.46	55.36	0.0	76.60	0.0	0.0
28.000	67.57	60.51	0.0	78.56	0.0	0.0
30.000	67.57	67.57	0.0	80.43	0.0	0.0
32.000	72.97	67.57	0.0	82.02	0.0	0.0
34.000	72.97	71.60	0.0	83.61	0.0	0.0
36.000	78.38	72.97	0.0	85.80	0.0	0.0
38.000	81.08	75.46	0.0	91.08	0.0	0.0
40.000	86.49	79.21	0.0	94.52	0.0	0.0
42.000	87.57	81.88	0.0	97.73	0.0	0.0
44.000	88.65	86.40	0.0	100.00	0.0	0.0
46.000	93.81	87.36	0.0	0.0	0.0	0.0
48.000	94.05	88.25	0.0	0.0	0.0	0.0
50.000	97.30	89.73	0.0	0.0	0.0	0.0
52.000	98.38	92.11	0.0	0.0	0.0	0.0
54.000	99.46	95.03	0.0	0.0	0.0	0.0
56.000	100.00	97.51	0.0	0.0	0.0	0.0
58.000	0.0	98.49	0.0	0.0	0.0	0.0
60.000	0.0	99.46	0.0	0.0	0.0	0.0
62.000	0.0	99.95	0.0	0.0	0.0	0.0
64.000	0.0	100.00	0.0	0.0	0.0	0.0

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

CUMULATIVE SHIFTED AXLE DISTRIBUTIONS %IN 2-KIP INTERVALS< FOR EACH TRUCK

TRUCK TYPE 3-S2

END OF WEIGHT INTERVAL %KIPS<	UNSHIFTED PERCENT WEIGHED GROSS	FINAL PERCENT WEIGHED GROSS	PERCENT SINGLE AXLES	PERCENT TANDEM AXLES	PERCENT TRIDEM AXLES	PERCENT STEERING AXLES
2.000	0.0	0.0	0.0	1.92	0.0	0.0
4.000	0.0	0.0	0.0	3.83	0.0	0.0
6.000	0.0	0.0	0.0	8.33	0.0	0.0
8.000	0.0	0.0	0.0	18.02	0.0	0.0
10.000	0.0	0.0	0.0	28.20	0.0	0.0
12.000	0.0	0.0	0.0	38.12	0.0	0.0
14.000	0.08	0.07	0.0	43.98	0.0	0.0
16.000	0.40	0.34	0.0	48.45	0.0	0.0
18.000	0.71	0.65	0.0	52.74	0.0	0.0
20.000	1.03	0.95	0.0	57.80	0.0	0.0
22.000	5.15	3.85	0.0	63.79	0.0	0.0
24.000	17.01	12.57	0.0	69.88	0.0	0.0
26.000	27.06	22.66	0.0	75.98	0.0	0.0
28.000	32.99	30.00	0.0	81.67	0.0	0.0
30.000	37.11	34.73	0.0	87.23	0.0	0.0
32.000	40.98	38.46	0.0	92.61	0.0	0.0
34.000	43.04	41.53	0.0	95.39	0.0	0.0
36.000	45.13	43.60	0.0	96.10	0.0	0.0
38.000	48.71	46.37	0.0	96.82	0.0	0.0
40.000	50.26	48.71	0.0	97.54	0.0	0.0
42.000	51.49	50.11	0.0	98.25	0.0	0.0
44.000	52.73	51.25	0.0	98.97	0.0	0.0
46.000	54.74	52.36	0.0	99.68	0.0	0.0
48.000	57.53	53.91	0.0	100.00	0.0	0.0
50.000	59.31	56.06	0.0	0.0	0.0	0.0
52.000	63.71	58.52	0.0	0.0	0.0	0.0
54.000	67.11	61.11	0.0	0.0	0.0	0.0
56.000	71.80	64.09	0.0	0.0	0.0	0.0
58.000	77.78	67.06	0.0	0.0	0.0	0.0
60.000	83.76	71.11	0.0	0.0	0.0	0.0
62.000	87.27	76.08	0.0	0.0	0.0	0.0
64.000	90.77	81.23	0.0	0.0	0.0	0.0
66.000	93.66	85.28	0.0	0.0	0.0	0.0
68.000	95.93	88.28	0.0	0.0	0.0	0.0
70.000	98.20	91.17	0.0	0.0	0.0	0.0
72.000	98.20	93.62	0.0	0.0	0.0	0.0
74.000	98.37	95.54	0.0	0.0	0.0	0.0
76.000	98.71	97.45	0.0	0.0	0.0	0.0
78.000	99.23	98.20	0.0	0.0	0.0	0.0
80.000	99.74	98.25	0.0	0.0	0.0	0.0

NUDAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

CUMULATIVE SHIFTED AXLE DISTRIBUTIONS %IN 2-KIP INTERVALS< FOR EACH TRUCK

TRUCK TYPE 3-S2

END OF WEIGHT INTERVAL %KIPS<	UNSHIFTED PERCENT WEIGHED GROSS	FINAL PERCENT WEIGHED GROSS	PERCENT SINGLE AXLES	PERCENT TANDEM AXLES	PERCENT TRIDEM AXLES	PERCENT STEERING AXLES
82.000	99.85	98.43	0.0	0.0	0.0	0.0
84.000	99.95	98.71	0.0	0.0	0.0	0.0
86.000	100.00	99.18	0.0	0.0	0.0	0.0
88.000	0.0	99.64	0.0	0.0	0.0	0.0
90.000	0.0	99.92	0.0	0.0	0.0	0.0
92.000	0.0	99.91	0.0	0.0	0.0	0.0
94.000	0.0	99.98	0.0	0.0	0.0	0.0
96.000	0.0	100.00	0.0	0.0	0.0	0.0

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

CUMULATIVE SHIFTED AXLE DISTRIBUTIONS %IN 2-KIP INTERVALS< FOR EACH TRUCK

TRUCK TYPE 2-S1-2

END OF WEIGHT INTERVAL %KIPS<	UNSHIFTED PERCENT WEIGHED GROSS	FINAL PERCENT WEIGHED GROSS	PERCENT SINGLE AXLES	PERCENT TANDEM AXLES	PERCENT TRIDEM AXLES	PERCENT STEERING AXLES
2.000	0.0	0.0	2.23	0.0	0.0	0.0
4.000	0.0	0.0	4.45	0.0	0.0	0.0
6.000	0.0	0.0	10.53	0.0	0.0	0.0
8.000	0.0	0.0	18.60	0.0	0.0	0.0
10.000	0.0	0.0	30.96	0.0	0.0	0.0
12.000	0.0	0.0	47.67	0.0	0.0	0.0
14.000	0.0	0.0	64.38	0.0	0.0	0.0
16.000	0.0	0.0	76.24	0.0	0.0	0.0
18.000	0.0	0.0	87.58	0.0	0.0	0.0
20.000	0.0	0.0	95.02	0.0	0.0	0.0
22.000	0.0	0.0	96.15	0.0	0.0	0.0
24.000	0.0	0.0	97.28	0.0	0.0	0.0
26.000	2.86	0.44	98.42	0.0	0.0	0.0
28.000	5.71	2.94	99.55	0.0	0.0	0.0
30.000	5.71	5.42	100.00	0.0	0.0	0.0
32.000	11.43	5.71	0.0	0.0	0.0	0.0
34.000	11.43	9.18	0.0	0.0	0.0	0.0
36.000	14.29	11.43	0.0	0.0	0.0	0.0
38.000	14.29	12.26	0.0	0.0	0.0	0.0
40.000	20.00	14.29	0.0	0.0	0.0	0.0
42.000	21.14	14.29	0.0	0.0	0.0	0.0
44.000	22.29	18.67	0.0	0.0	0.0	0.0
46.000	24.00	20.66	0.0	0.0	0.0	0.0
48.000	26.29	21.58	0.0	0.0	0.0	0.0
50.000	28.57	22.61	0.0	0.0	0.0	0.0
52.000	34.29	23.97	0.0	0.0	0.0	0.0
54.000	40.00	25.76	0.0	0.0	0.0	0.0
56.000	48.57	27.55	0.0	0.0	0.0	0.0
58.000	60.00	30.47	0.0	0.0	0.0	0.0
60.000	71.43	34.89	0.0	0.0	0.0	0.0
62.000	73.29	39.28	0.0	0.0	0.0	0.0
64.000	85.14	45.45	0.0	0.0	0.0	0.0
66.000	90.86	53.06	0.0	0.0	0.0	0.0
68.000	95.43	61.67	0.0	0.0	0.0	0.0
70.000	100.00	70.21	0.0	0.0	0.0	0.0
72.000	0.0	75.79	0.0	0.0	0.0	0.0
74.000	0.0	80.85	0.0	0.0	0.0	0.0
76.000	0.0	85.77	0.0	0.0	0.0	0.0
78.000	0.0	89.93	0.0	0.0	0.0	0.0
80.000	0.0	93.43	0.0	0.0	0.0	0.0

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 = OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

CUMULATIVE SHIFTED AXLE DISTRIBUTIONS %IN 2-KIP INTERVALS< FOR EACH TRUCK

TRUCK TYPE 2-S1-2

END OF WEIGHT INTERVAL %KIPS<	UNSHIFTED PERCENT WEIGHED GROSS	FINAL PERCENT WEIGHED GROSS	PERCENT SINGLE AXLES	PERCENT TANDEM AXLES	PERCENT TRIDEM AXLES	PERCENT STEERING AXLES
82.000	3.0	96.72	0.0	0.0	0.0	0.0
84.000	0.0	100.00	0.0	0.0	0.0	0.0

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

TRUCK TYPE	PAYLOAD PER TRUCK		18-KIP AXLES PER TRUCK	
	PRESENT	PROPOSED	PRESENT	PROPOSED
2D	3.97	5.30	0.08	0.14
3A	9.71	11.69	0.26	0.38
3-S2	15.53	18.21	0.36	0.57
2-S1-2	23.42	31.56	0.89	1.94

YEAR	18-KIP ESAL RATIO %PROPOSED/PRESENT<	YEAR	18-KIP ESAL RATIO %PROPOSED/PRESENT<
1	1.389	11	1.387
2	1.387	12	1.387
3	1.387	13	1.387
4	1.387	14	1.387
5	1.387	15	1.387
6	1.387	16	1.387
7	1.387	17	1.387
8	1.387	18	1.387
9	1.385	19	1.387
10	1.387	20	1.387

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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AVERAGE PAVEMENT AGE WHEN 25 PERCENT OF MILEAGE IS ALREADY OVERLAID = 11.50 YEARS
AVERAGE PAVEMENT AGE WHEN 75 PERCENT OF MILEAGE IS ALREADY OVERLAID = 16.00 YEARS
AVERAGE AGE AT TERMINAL PSI FOR EXISTING DESIGN = 14.00 YEARS
STANDARD DEVIATION OF THE SURVIVOR CURVE = 3.34 YEARS
PERCENT OF TOTAL LANE MILES IN POTTS
XBEGINNING OF ANALYSIS PERIODX = 109.84

LANE-MILES FROM GIVEN AGE SLICE DUE FOR TIMELY OVERLAY IN GIVEN ANALYSIS YEAR

VALUE	LOSS RATE	PAVEMENT AGE AT BEGINNING OF A.P.	TOTAL	INTO POTTS	ANALYSIS YEAR 1	2	3	4	5	6	7	8	9	10	11	12	13
287.	3.00	1	214.0	107.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	4.4	6.6	9.0	11.3	12.9	13.5
270.	3.00	2	174.0	87.0	0.0	0.0	0.0	0.0	0.0	2.2	3.6	5.3	7.3	9.2	10.5	11.0	10.5
264.	3.00	3	220.0	110.0	0.0	0.0	0.0	0.0	2.8	4.5	6.8	9.2	11.5	13.2	13.8	13.2	11.6
251.	3.00	4	236.0	118.0	0.0	0.0	0.0	3.0	4.8	7.2	9.9	12.4	14.2	14.9	14.2	12.4	9.9
182.	3.00	5	236.0	118.0	0.0	0.0	3.0	4.8	7.2	9.9	12.4	14.2	14.9	14.2	12.4	9.9	7.2
159.	3.00	6	174.0	87.0	0.0	2.2	3.6	5.3	7.3	9.2	10.5	11.0	10.5	9.2	7.3	5.3	3.5
146.	3.00	7	156.0	78.0	2.0	3.2	4.8	6.6	8.2	9.4	9.8	9.4	8.2	6.6	4.8	3.2	2.0
134.	3.00	8	130.0	66.6	2.7	4.0	5.5	6.8	7.8	8.2	7.8	6.8	5.5	4.0	2.7	1.6	0.0
114.	3.00	9	160.0	85.3	4.9	6.7	8.4	9.6	10.1	9.6	8.4	6.7	4.9	3.3	2.0	0.0	0.0
102.	3.00	10	100.0	56.4	4.2	5.3	6.0	6.3	6.0	5.3	4.2	3.1	2.1	1.3	0.0	0.0	0.0
94.	3.00	11	96.0	58.2	5.0	5.8	6.0	5.8	5.0	4.0	2.9	2.0	1.2	0.0	0.0	0.0	0.0
89.	3.00	12	56.0	36.9	3.4	3.5	3.4	2.9	2.4	1.7	1.1	0.7	0.0	0.0	0.0	0.0	0.0
83.	3.00	13	34.0	24.4	2.1	2.0	1.8	1.4	1.0	0.7	0.4	0.3	0.0	0.0	0.0	0.0	0.0
77.	3.00	14	44.0	34.4	2.6	2.3	1.8	1.4	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.	3.00	15	34.0	28.6	1.8	1.4	1.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.	3.00	16	20.0	17.9	0.8	0.6	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
63.	3.00	17	34.0	31.8	1.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
59.	3.00	18	26.0	25.1	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55.	3.00	19	20.0	19.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51.	3.00	20	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48.	3.00	21	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.	3.00	22	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.	3.00	23	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39.	3.00	24	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36.	3.00	25	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		TOTALS	1209.3		31.4	38.1	46.1	54.9	64.0	72.5	80.6	85.2	86.8	84.7	79.0	69.6	58.2
AVERAGE AGE AT TERMINAL PSI					12.29	12.36	12.42	12.54	12.73	12.95	13.15	13.52	13.94	14.40	14.92	15.47	16.09

VALUE IN THOUSANDS OF DOLLARS LOSS RATE IN PERCENT PER YEAR

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

LANE-MILES FROM GIVEN AGE SLICE DUE FOR TIMELY OVERLAY IN GIVEN ANALYSIS YEAR

PAVEMENT AGE AT BEGINNING OF A.P.	ANALYSIS YEAR 14	15	16	17	18	19
1	12.9	11.3	9.0	6.6	4.4	2.7
2	9.2	7.3	5.3	3.6	2.2	0.0
3	9.2	6.8	4.5	2.8	0.0	0.0
4	7.2	4.8	3.0	0.0	0.0	0.0
5	4.8	3.0	0.0	0.0	0.0	0.0
6	2.2	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	45.5	33.1	21.8	12.9	6.6	2.7
AVERAGE AGE AT TERMINAL PSI	16.75	17.42	18.07	18.70	19.33	20.00

VALUE IN THOUSANDS OF DOLLARS LOSS RATE IN PERCENT PER YEAR

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 = OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

PERFORMANCE TABLE

PRESENT REGULATIONS

LANE MILES DUE OVERLAY	LANE MILES OVERLAID	YEAR OF OVERLAY	OVERLAY DESIGN SN	OVERLAY THICKNESS	PSI AT BEGINNING OF ANALYSIS	PSI AT END PERIOD	REMAINING LIFE XMILLION 18=KIP EALX	OVERLAY COST X$/LANE MILEX
31.4	63.3	1.00	5.24	3.57	2.58	2.55	1.698	27280.
38.1	76.8	2.00	5.23	3.56	2.67	2.60	3.348	27221.
46.1	93.0	3.00	5.23	3.55	2.76	2.65	4.948	27157.
54.9	110.7	4.00	5.22	3.54	2.85	2.70	6.478	27050.
64.0	129.1	5.00	5.21	3.51	2.93	2.76	7.918	26887.
72.5	146.1	6.00	5.20	3.49	3.02	2.81	9.268	26695.
80.6	162.5	7.00	5.19	3.47	3.11	2.87	10.566	26526.
85.2	171.9	8.00	5.17	3.43	3.19	2.93	11.663	26214.
86.8	175.0	9.00	5.15	3.38	3.27	2.99	12.663	25881.
84.7	170.7	10.00	5.13	3.33	3.35	3.05	13.553	25448.
79.0	159.2	11.00	5.11	3.28	3.42	3.11	14.320	25065.
69.6	140.3	12.00	5.09	3.23	3.49	3.18	15.001	24679.
58.2	117.3	13.00	5.06	3.17	3.55	3.25	15.562	24258.
45.5	91.8	14.00	5.04	3.12	3.60	3.33	16.051	23840.
33.1	66.8	15.00	5.01	3.06	3.66	3.41	16.479	23430.
21.8	44.0	16.00	4.99	3.01	3.71	3.50	16.896	23059.
12.9	26.0	17.00	4.97	2.97	3.77	3.60	17.280	22705.
6.6	13.2	18.00	4.95	2.92	3.83	3.71	17.640	22372.
2.7	5.4	19.00	4.93	2.88	3.89	3.86	17.942	22032.

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 = OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

PERFORMANCE TABLE

PROPOSED REGULATIONS

LANE MILES DUE OVERLAY	LANE MILES OVERLAID	YEAR OF OVERLAY	OVERLAY DESIGN SN	OVERLAY THICKNESS	PSI AT BEGINNING OF ANALYSIS	PSI AT END PERIOD	REMAINING LIFE XMILLION 18-KIP EALX	OVERLAY COST X$/LANE MILEX
31.4	63.3	0.72	5.47	4.11	2.58	2.53	1.698	31425.
38.1	76.8	1.45	5.47	4.09	2.67	2.57	3.346	31293.
46.1	93.0	2.18	5.46	4.07	2.76	2.61	4.946	31159.
54.9	110.7	2.91	5.45	4.05	2.85	2.64	6.475	30980.
64.0	129.1	3.65	5.43	4.02	2.93	2.68	7.914	30746.
72.5	146.1	4.40	5.42	3.99	3.02	2.72	9.265	30483.
80.6	162.5	5.14	5.41	3.95	3.11	2.76	10.563	30245.
85.2	171.9	5.89	5.38	3.90	3.19	2.80	11.665	29861.
86.8	175.0	6.65	5.36	3.85	3.27	2.84	12.660	29458.
84.7	170.7	7.40	5.34	3.80	3.35	2.88	13.551	29037.
79.0	159.2	8.16	5.31	3.74	3.42	2.93	14.318	28582.
69.6	140.3	8.93	5.28	3.68	3.49	2.97	15.000	28125.
58.2	117.3	9.70	5.26	3.61	3.55	3.02	15.560	27634.
45.5	91.8	10.47	5.23	3.55	3.60	3.07	16.049	27147.
33.1	66.8	11.24	5.20	3.49	3.66	3.12	16.478	26668.
21.8	44.0	12.02	5.17	3.43	3.71	3.18	16.894	26230.
12.9	26.0	12.80	5.15	3.36	3.77	3.23	17.278	25728.
6.6	13.2	13.59	5.12	3.31	3.83	3.29	17.639	25335.
2.7	5.4	14.38	5.10	3.26	3.89	3.35	17.941	24936.

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

POTTS TABLE

PRESENT REGULATIONS

ANALYSIS YEAR	LANE MILES IN POTTS	LANE MILES OVERLAID FROM POTTS	OVERLAY DESIGN SN	OVERLAY THICKNESS	PSI AT END OF ANALYSIS PERIOD	OVERLAY COST %$/LANE-MILE<
1	1527.9	-350.5	4.81	4.72	2.55	36076.
2	1914.3	-425.1	4.82	4.75	2.60	36315.
3	2382.4	-515.0	4.84	4.78	2.66	36553.
4	2939.4	-612.8	4.85	4.81	2.71	36792.
5	3589.2	-714.9	4.86	4.84	2.77	37032.
6	4324.5	-808.9	4.88	4.87	2.83	37271.
7	5142.1	-899.5	4.89	4.90	2.88	37512.
8	6006.9	-951.4	4.91	4.94	2.94	37752.
9	6887.8	-969.1	4.92	4.97	3.00	37994.
10	7746.9	-945.2	4.93	5.00	3.06	38235.
11	8548.0	-881.4	4.95	5.03	3.12	38477.
12	9253.9	-776.6	4.96	5.06	3.19	38719.
13	9844.4	-649.6	4.98	5.09	3.26	38962.
14	10306.4	-508.3	4.99	5.13	3.33	39206.
15	10642.4	-369.7	5.00	5.16	3.41	39449.
16	10863.6	-243.3	5.02	5.19	3.50	39693.
17	10994.4	-143.9	5.03	5.22	3.59	39938.
18	11061.0	-73.3	5.05	5.25	3.70	40183.
19	11088.2	-29.9	5.06	5.29	3.85	40428.
20	11089.2	0.0	5.07	5.32	4.20	40674.

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

P O T T S T A B L E

P R O P O S E D R E G U L A T I O N S

ANALYSIS YEAR	LANE MILES IN POTTS	LANE MILES OVERLAID FROM POTTS	OVERLAY DESIGN SN	OVERLAY THICKNESS	PSI AT END OF ANALYSIS PERIOD	OVERLAY COST X$/LANE-MILE<
1	1527.9	-350.5	5.04	5.24	2.55	40063.
2	1914.3	-425.1	5.05	5.27	2.60	40308.
3	2939.4	-1127.8	5.07	5.30	2.65	40553.
4	3589.2	-714.9	5.08	5.33	2.70	40799.
5	4324.5	-808.9	5.09	5.37	2.76	41045.
6	6006.9	-1851.0	5.11	5.40	2.81	41292.
7	6887.8	-969.1	5.12	5.43	2.87	41540.
8	7746.9	-945.2	5.14	5.46	2.92	41787.
9	9253.9	-1658.0	5.16	5.51	2.99	42120.
10	9844.4	-649.6	5.17	5.54	3.05	42370.
11	10306.4	-508.3	5.19	5.57	3.11	42621.
12	10642.4	-369.7	5.20	5.60	3.17	42871.
13	10994.4	-387.2	5.21	5.64	3.24	43123.
14	11061.0	-73.3	5.23	5.67	3.31	43374.
15	11088.2	-29.9	5.24	5.70	3.39	43627.
16	11088.2	0.0	5.26	5.74	3.47	43879.
17	11088.2	0.0	5.27	5.77	3.57	44132.
18	11088.2	0.0	5.29	5.80	3.68	44385.
19	11088.2	0.0	5.30	5.84	3.83	44639.
20	11088.2	0.0	5.32	5.87	4.20	44893.

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTFLX A INTERSTATE SYSTEM FLEXIBLE SECTION *A*

U N D I S C O U N T E D C O S T S

(MILLIONS OF DOLLARS)

YEAR IN ANALYSIS PERIOD	MAINTENANCE		OVERLAY	
	PRESENT	PROPOSED	PRESENT	PROPOSED
1	2.070	2.166	-10.916	-12.051
2	2.616	2.801	-13.346	-14.731
3	3.281	3.559	-16.299	-39.410
4	4.082	5.273	-19.553	-25.196
5	5.022	6.403	-23.001	-28.748
6	6.087	7.521	-26.248	-66.384
7	7.238	9.904	-29.433	-35.099
8	8.436	10.983	-31.413	-34.539
9	9.599	11.902	-32.288	-61.337
10	10.652	13.661	-31.794	-24.282
11	11.514	13.897	-29.923	-19.173
12	12.124	13.732	-26.606	-14.067
13	12.443	13.161	-22.464	-14.877
14	12.459	12.437	-17.740	-2.843
15	12.169	11.125	-13.018	-1.170
16	11.589	9.648	-8.646	0.0
17	10.754	8.099	-5.157	0.0
18	9.726	6.606	-2.649	0.0
19	8.576	5.250	-1.090	0.0
20	7.383	4.099	0.0	0.0
TOTALS	167.820	172.226	-361.585	-393.906

S A L V A G E V A L U E
(MILLIONS OF DOLLARS)

	ANALYSIS PERIOD BEGINNING	END
PRESENT	-197.739	-29.459
PROPOSED	-197.739	-50.781
DELTA		-21.322

NULOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 = OCTOBER 1978

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RIGID                    1    0     12.00      250.00      690.00  4200000.00        0.0
INTRIG A  INTERSTATE RIGID PAVEMENT SECTION *A*
JCP     9.00.0    CT3     7.00.0          0.00.0          0.00.0
AGE DISTRIBUTION         25    1       0.0         0.0         0.0         0.0        0.0
   217.0    175.0    223.0    242.0    240.0    175.0    158.0    132.0    162.0    102.0     99.0     53.0     33.0     43.0     33.0
    20.0     33.0     26.0     20.0     14.0      4.0      6.0      4.0      2.0      4.0
    526.00    499.00    493.00    474.00    347.00    306.00    283.00    262.00
    226.00    203.00    191.00    180.00    170.00    160.00    151.00    142.00
    134.00    126.00    119.00    112.00    106.00    100.00     94.00     89.00
     84.00
      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00
      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00
      2.00      2.00      2.00      2.00      2.00      2.00      2.00      2.00
      2.00
PERFORMANCE              0    0      4.20        2.50        4.20        0.0        0.0
    23.00    19.00    28.00
OLD SECTIONS             1    0    350.00       10.00         0.0         0.0        0.0
EXECUTE                  0    0       0.0         0.0         0.0         0.0        0.0
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NUCOAD = WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 = OCTOBER 1978

SAMPLE SOLUTION USING HYPOTHETICAL STATE DATA
=THIS RUN INTENDED FOR ILLUSTRATIVE PURPOSES ONLY
INTERSTATE SYSTEM, RIGID AND FLEXIBLE.

INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

RUN PARAMETERS

LENGTH OF ANALYSIS PERIOD	20 YEARS
ANNUAL GROWTH RATE OF 18 KIP EAL	2.00 PERCENT/YEAR
ANNUAL INTEREST RATE FOR PRESENT WORTH CALCULATIONS	6.00 PERCENT/YEAR

NUMBER OF 18=KIP ESAL UNDER PROPOSED REGULATIONS
DERIVED FROM 18=KIP ESAL UNDER PRESENT REGULATIONS
AND THE ASSUMPTION OF EQUAL PAYLOAD

RIGID STRUCTURE

NUMBER OF LAYERS	2
LANE WIDTH	12.0 FEET
SUBBASE MODULUS	250. PCI
FLEX STRENGTH	690. PSI
CONCRETE MODULUS	4200000. PCI

MATERIALS

LAYER NUMBER	THICKNESS (IN.)	MATERIAL CODE	
1	8.00	JCP	JCP SURFACE
2	7.00	CTB	CEMENT TREATED BASE

PERFORMANCE

PSI INITIAL CONSTANT	4.20
TERMINAL PSI	2.50
PSI AFTER OVERLAY	4.20
AVERAGE AGE AT TERMINAL PSI FOR EXISTING DESIGN	23.00 YEARS
AVERAGE AGE OF PAVEMENT WHEN 25 PERCENT OF MILEAGE IS ALREADY OVERLAID	19.00 YEARS
AVERAGE AGE OF PAVEMENT WHEN 75 PERCENT OF MILEAGE IS ALREADY OVERLAID	28.00 YEARS
OVERLAY DESIGN LIFE	20.00 YEARS

AGE DISTRIBUTION

LOSS RATE FACTOR FOR MILEAGE IN POTTS = 1.40

AGE	LANE MILES	VALUE	LOSS RATE	AGE	LANE MILES	VALUE	LOSS RATE	AGE	LANE MILES	VALUE	LOSS RATE
1	217.0	526.	2.00	11	99.0	191.	2.00	21	4.0	106.	2.00
2	175.0	499.	2.00	12	53.0	180.	2.00	22	6.0	100.	2.00
3	223.0	493.	2.00	13	33.0	170.	2.00	23	4.0	94.	2.00
4	242.0	474.	2.00	14	43.0	160.	2.00	24	2.0	89.	2.00
5	240.0	347.	2.00	15	33.0	151.	2.00	25	4.0	84.	2.00
6	175.0	306.	2.00	16	20.0	142.	2.00				
7	158.0	283.	2.00	17	33.0	134.	2.00				
8	132.0	262.	2.00	18	26.0	126.	2.00				
9	162.0	226.	2.00	19	20.0	119.	2.00				
10	102.0	203.	2.00	20	14.0	112.	2.00				

VALUE IN THOUSANDS OF DOLLARS

LOSS RATE IN PERCENT PER YEAR

OVERLAY

PERCENT OF PAVED SHOULDERS	95.00	PERCENT
AVERAGE PAVED SHOULDER WIDTH/LANE	7.00	FEET
AVERAGE GRANULAR SHOULDER WIDTH/LANE	5.00	FEET
UNIT COST OF ACP	25.00	$/CY
UNIT COST OF GRANULAR	0.35	$/SY/IN.

MODEL MAINTENANCE

ACCELERATED MAINTENANCE = YES

UNIT COSTS OF MAINTENANCE

FLEXIBLE PATCHING $/SY<	CRACK SEALING $/FT<	BASE AND SURFACE REPAIR $/CY<	CONCRETE PATCHING $/SY<	CONCRETE BLOWUPS $/AVG<	CONCRETE MUDJACKING $/AVG<	JOINT SEALING $/FT<
1.45	0.06	9.40	10.30	0.0	0.0	0.20

JOINT SPACING	20.00	FEET
FRACTION OF JOINTS SEALED EACH YEAR	0.04	
TIME BEFORE FIRST JOINT SEAL	7	YEARS

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

MAINTENANCE COSTS PER LANE-MILE PER YEAR

YEAR	FLEXIBLE	RIGID	COMPOSITE
1	0.73	0.26	0.71
2	1.72	0.58	1.67
3	4.07	1.29	3.95
4	9.60	2.86	9.33
5	22.55	6.30	21.93
6	52.46	13.72	51.01
7	119.19	29.13	115.90
8	257.58	84.17	250.47
9	505.34	133.91	491.38
10	851.00	200.44	827.50
11	1196.66	266.97	1163.62
12	1444.42	316.72	1404.53
13	1582.81	346.42	1539.10
14	1649.54	361.83	1603.99
15	1679.45	369.25	1633.07
16	1692.40	372.69	1645.67
17	1697.93	374.25	1651.05
18	1700.28	374.96	1653.33
19	1701.27	375.28	1654.29
20	1701.69	375.43	1654.70
21	1701.87	375.49	1654.87
22	1701.95	375.52	1654.95
23	1701.98	375.53	1654.98
24	1701.99	375.54	1654.99

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

OLD SECTIONS

MAINTENANCE COST %DOLLARS/LANE MILE/YEAR< FOR PAVEMENTS OLDER THAN TERMINAL SERVICEABILITY	350.00
PERCENT OF TOTAL LANE MILES IN POTTS AT	
BEGINNING OF ANALYSIS PERIOD %CALCULATED<	1.07
END OF ANALYSIS PERIOD %INPUT TARGET VALUE<	10.00
PERCENT OF TOTAL LANE MILES NEVER OVERLAID	0.0

TRUCK TYPES PRESENT

TYPE	2D	3A	3-S2	2-S1-2	TOTAL
AXLE CODE	1000	0100	0200	4000	
YEAR	PERCENT OF ALL VEHICLES				
1	3.75	0.93	12.43	0.57	17.68
2	3.81	0.93	12.51	0.57	17.82
3	3.92	0.93	12.60	0.57	18.01
4	3.96	0.92	12.68	0.57	18.13
5	4.04	0.92	12.77	0.57	18.30
6	4.10	0.92	12.75	0.57	18.34
7	4.14	0.92	12.83	0.57	18.46
8	4.21	0.91	12.81	0.57	18.39
9	4.25	0.91	12.89	0.57	18.62
10	4.31	0.91	12.87	0.58	18.67
11	4.35	0.91	12.86	0.58	18.70
12	4.41	0.90	12.85	0.58	18.74
13	4.45	0.90	12.83	0.58	18.76
14	4.48	0.90	12.81	0.58	18.77
15	4.52	0.90	12.79	0.58	18.79
16	4.58	0.89	12.77	0.58	18.82
17	4.63	0.89	12.76	0.58	18.85
18	4.67	0.89	12.74	0.58	18.89
19	4.69	0.89	12.72	0.58	18.89
20	4.73	0.88	12.70	0.58	18.90

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

TRUCK TYPE	PAYLOAD PER TRUCK		18-KIP AXLES PER TRUCK	
	PRESENT	PROPOSED	PRESENT	PROPOSED
2D	3.97	5.30	0.08	0.14
3A	9.71	11.69	0.43	0.66
3-S2	15.53	18.21	0.60	0.97
2-S1-2	23.42	31.56	0.86	1.97

YEAR	18-KIP ESAL RATIO %PROPOSED/PRESENT<	YEAR	18-KIP ESAL RATIO %PROPOSED/PRESENT<
1	1.388	11	1.388
2	1.388	12	1.388
3	1.388	13	1.388
4	1.388	14	1.387
5	1.388	15	1.387
6	1.388	16	1.387
7	1.387	17	1.387
8	1.387	18	1.387
9	1.387	19	1.387
10	1.388	20	1.387

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

AVERAGE PAVEMENT AGE WHEN 25 PERCENT OF MILEAGE IS ALREADY OVERLAID = 19.00 YEARS
AVERAGE PAVEMENT AGE WHEN 75 PERCENT OF MILEAGE IS ALREADY OVERLAID = 28.00 YEARS
AVERAGE AGE AT TERMINAL PSI FOR EXISTING DESIGN = 23.00 YEARS
STANDARD DEVIATION OF THE SURVIVOR CURVE = 6.68 YEARS
PERCENT OF TOTAL LANE MILES IN POTTS
%BEGINNING OF ANALYSIS PERIOD< = 1.07

LANE-MILES FROM GIVEN AGE SLICE DUE FOR TIMELY OVERLAY IN GIVEN ANALYSIS YEAR

VALUE	LOSS RATE	PAVEMENT AGE AT BEGINNING OF A.P.	TOTAL	INTO POTTS	ANALYSIS YEAR 1	2	3	4	5	6	7	8	9	10	11	12	13
526.	2.00	1	217.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
499.	2.00	2	175.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
493.	2.00	3	223.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
474.	2.00	4	242.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4
347.	2.00	5	240.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	16.2
306.	2.00	6	175.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	11.8	13.0
283.	2.00	7	158.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	10.6	11.8	12.7
262.	2.00	8	132.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	8.9	9.8	10.6	11.3
226.	2.00	9	152.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	10.9	12.1	13.1	13.8	14.3
203.	2.00	10	102.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	6.9	7.6	8.2	8.7	9.0	9.1
191.	2.00	11	99.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	6.7	7.4	8.0	8.4	8.7	8.8	8.7
180.	2.00	12	53.0	0.0	0.0	0.0	0.0	0.0	3.2	3.6	3.9	4.3	4.5	4.7	4.7	4.7	4.5
170.	2.00	13	33.0	0.0	0.0	0.0	0.0	2.0	2.2	2.5	2.7	2.8	2.9	2.9	2.9	2.8	2.7
160.	2.00	14	43.0	0.0	0.0	0.0	2.6	2.9	3.2	3.5	3.7	3.8	3.8	3.8	3.7	3.5	3.2
151.	2.00	15	33.0	0.0	0.0	2.0	2.2	2.5	2.7	2.8	2.9	2.9	2.9	2.8	2.7	2.5	2.2
142.	2.00	16	20.0	0.0	1.2	1.3	1.5	1.6	1.7	1.8	1.8	1.8	1.7	1.6	1.5	1.3	1.2
134.	2.00	17	33.0	2.0	2.2	2.5	2.7	2.8	2.9	2.9	2.9	2.8	2.7	2.5	2.2	2.0	0.0
125.	2.00	18	26.0	3.3	1.9	2.1	2.2	2.3	2.3	2.3	2.2	2.1	1.9	1.8	1.5	0.0	0.0
119.	2.00	19	20.0	4.0	1.6	1.7	1.8	1.8	1.8	1.7	1.6	1.5	1.3	1.2	0.0	0.0	0.0
112.	2.00	20	14.0	3.9	1.2	1.2	1.2	1.2	1.2	1.1	1.0	0.9	0.8	0.0	0.0	0.0	0.0
106.	2.00	21	4.0	1.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0
100.	2.00	22	6.0	2.7	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
94.	2.00	23	4.0	2.2	0.4	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.	2.00	24	2.0	1.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.	2.00	25	4.0	2.9	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		TOTALS		23.8	9.9	12.5	15.8	18.6	22.3	29.0	36.1	47.1	57.0	68.3	80.6	96.8	113.5
AVERAGE AGE AT TERMINAL PSI					19.77	20.09	20.32	20.73	20.84	20.68	20.68	20.49	20.65	20.72	20.82	20.82	20.91

VALUE IN THOUSANDS OF DOLLARS LOSS RATE IN PERCENT PER YEAR

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

LANE-MILES FROM GIVEN AGE SLICE DUE FOR TIMELY OVERLAY IN GIVEN ANALYSIS YEAR

PAVEMENT AGE AT BEGINNING OF A.P.	ANALYSIS YEAR 14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	0.0	0.0	12.9	14.6	16.2	17.5	18.5	19.1	19.3	19.1	18.5	17.5	16.2	14.6	12.9
2	0.0	10.4	11.8	13.0	14.1	14.9	15.4	15.6	15.4	14.9	14.1	13.0	11.8	10.4	0.0
3	13.3	15.0	16.6	18.0	19.0	19.7	19.9	19.7	19.0	18.0	16.6	15.0	13.3	0.0	0.0
4	16.3	18.0	19.5	20.6	21.3	21.6	21.3	20.6	19.5	18.0	16.3	14.4	0.0	0.0	0.0
5	17.9	19.3	20.5	21.2	21.4	21.2	20.5	19.3	17.9	16.2	14.3	0.0	0.0	0.0	0.0
6	14.1	14.9	15.4	15.6	15.4	14.9	14.1	13.0	11.8	10.4	0.0	0.0	0.0	0.0	0.0
7	13.5	13.9	14.1	13.9	13.5	12.7	11.8	10.6	9.4	0.0	0.0	0.0	0.0	0.0	0.0
8	11.6	11.8	11.6	11.3	10.6	9.8	8.9	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	14.4	14.3	13.8	13.1	12.1	10.9	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	9.0	8.7	8.2	7.6	6.9	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	8.4	8.0	7.4	6.7	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	4.3	3.9	3.6	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	2.5	2.2	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	2.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	130.1	143.1	157.4	158.7	156.4	149.3	140.0	125.9	112.4	96.5	79.8	60.0	41.2	25.0	12.9
AVERAGE AGE AT TERMINAL PSI	21.17	21.51	21.75	22.48	23.17	23.79	24.44	25.00	25.66	26.29	26.92	27.44	27.93	28.42	29.00

VALUE IN THOUSANDS OF DOLLARS LOSS RATE IN PERCENT PER YEAR

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

PERFORMANCE TABLE

PRESENT REGULATIONS

LANE MILES DUE OVERLAY	LANE MILES OVERLAID	YEAR OF OVERLAY	OVERLAY DESIGN D	OVERLAY THICKNESS	PSI AT BEGINNING OF ANALYSIS	PSI AT END PERIOD	REMAINING LIFE XMILLION 18-KIP EAL<	OVERLAY COST X$/LANE MILE<
9.9	8.6	1.00	8.58	4.45	2.63	2.62	0.329	34105.
12.5	10.8	2.00	8.56	4.41	2.75	2.74	0.644	33746.
15.8	13.6	3.00	8.55	4.38	2.86	2.85	0.947	33488.
18.6	16.0	4.00	8.53	4.32	2.96	2.96	1.230	33036.
22.3	19.3	5.00	8.52	4.30	3.06	3.06	1.516	32914.
29.0	25.1	6.00	8.53	4.32	3.16	3.16	1.813	33081.
36.1	31.2	7.00	8.53	4.33	3.26	3.25	2.095	33090.
47.1	40.7	8.00	8.54	4.35	3.36	3.35	2.389	33296.
57.0	49.3	9.00	8.53	4.33	3.44	3.44	2.646	33123.
68.3	59.0	10.00	8.53	4.32	3.52	3.52	2.903	33038.
80.6	69.7	11.00	8.52	4.31	3.60	3.60	3.151	32934.
96.8	83.8	12.00	8.52	4.31	3.68	3.68	3.405	32934.
113.5	98.2	13.00	8.52	4.29	3.75	3.76	3.641	32840.
130.1	112.5	14.00	8.50	4.26	3.81	3.83	3.846	32564.
143.1	123.8	15.00	8.48	4.21	3.86	3.90	4.030	32205.
157.4	136.1	16.00	8.47	4.18	3.91	3.97	4.218	31942.
158.7	137.2	17.00	8.43	4.08	3.94	4.04	4.328	31229.
156.4	135.3	18.00	8.40	4.00	3.97	4.10	4.432	30566.
149.3	129.1	19.00	8.37	3.92	4.00	4.15	4.540	29991.
140.0	121.1	20.00	8.34	3.84	4.02	4.20	4.636	29408.
125.9	0.0	21.00	0.0	0.0	4.05	2.61	0.184	0.
112.4	0.0	22.00	0.0	0.0	4.07	2.70	0.357	0.
96.6	0.0	23.00	0.0	0.0	4.09	2.79	0.520	0.
79.8	0.0	24.00	0.0	0.0	4.11	2.88	0.674	0.
60.0	0.0	25.00	0.0	0.0	4.13	2.96	0.823	0.
41.2	0.0	26.00	0.0	0.0	4.15	3.03	0.965	0.
25.0	0.0	27.00	0.0	0.0	4.16	3.10	1.101	0.
12.9	0.0	28.00	0.0	0.0	4.18	3.17	1.227	0.

NULOAD -*WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
VERSION 1.0 - OCTOBER 1978

INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

PERFORMANCE TABLE

PROPOSED REGULATIONS

LANE MILES DUE OVERLAY	LANE MILES OVERLAID	YEAR OF OVERLAY	OVERLAY DESIGN D	OVERLAY THICKNESS	PSI AT BEGINNING OF ANALYSIS PERIOD	PSI AT END PERIOD	REMAINING LIFE %MILLION 18-KIP EALS	OVERLAY COST %$/LANE MILES
9.9	8.9	0.72	9.06	5.65	2.63	2.59	0.329	43250.
12.5	11.2	1.45	9.03	5.59	2.75	2.67	0.643	42723.
15.8	14.1	2.18	9.01	5.53	2.86	2.75	0.947	42303.
18.6	16.6	2.91	8.98	5.45	2.96	2.83	1.230	41687.
22.3	20.0	3.65	8.97	5.41	3.06	2.91	1.516	41412.
29.0	26.0	4.39	8.97	5.42	3.16	2.99	1.812	41437.
36.1	32.4	5.14	8.96	5.40	3.26	3.06	2.094	41302.
47.1	42.2	5.89	8.96	5.41	3.36	3.14	2.388	41371.
57.0	51.1	6.64	8.95	5.37	3.44	3.21	2.645	41054.
68.3	61.2	7.40	8.93	5.34	3.52	3.28	2.902	40829.
80.6	72.3	8.16	8.92	5.31	3.60	3.35	3.150	40587.
96.8	86.9	8.92	8.92	5.29	3.68	3.42	3.404	40454.
113.5	101.3	9.69	8.90	5.26	3.75	3.48	3.640	40225.
130.1	116.8	10.46	8.88	5.20	3.81	3.55	3.845	39813.
143.1	128.4	11.24	8.86	5.14	3.86	3.61	4.029	39319.
157.4	141.2	12.02	8.84	5.09	3.91	3.67	4.217	38925.
158.7	142.4	12.80	8.79	4.98	3.94	3.74	4.327	38073.
156.4	140.3	13.58	8.75	4.87	3.97	3.80	4.431	37275.
149.3	133.9	14.37	8.71	4.78	4.00	3.85	4.539	36569.
140.0	125.6	15.16	8.68	4.69	4.02	3.91	4.635	35859.
125.9	113.0	15.96	8.64	4.61	4.05	3.96	4.737	35247.
112.4	100.8	16.75	8.61	4.52	4.07	4.02	4.820	34576.
96.6	86.7	17.56	8.57	4.44	4.09	4.07	4.901	33943.
79.8	71.6	18.36	8.54	4.35	4.11	4.12	4.978	33334.
60.0	53.8	19.17	8.52	4.29	4.13	4.16	5.065	32827.
41.2	37.0	19.98	8.49	4.23	4.15	4.20	5.151	32352.
25.0	0.0	20.79	0.0	0.0	4.16	2.59	0.162	0.
12.9	0.0	21.61	0.0	0.0	4.18	2.63	0.321	0.

NULOAD - WEIGHT EFFECTS IN PAVEMENT PERFORMANCE
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INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

POTTS TABLE

PRESENT REGULATIONS

ANALYSIS YEAR	LANE MILES IN POTTS	LANE MILES OVERLAID FROM POTTS	OVERLAY DESIGN D	OVERLAY THICKNESS	PSI AT END OF ANALYSIS PERIOD	OVERLAY COST X$/LANE-MILE<
1	25.0	0.1	7.65	4.12	2.63	31522.
2	26.5	0.2	7.68	4.19	2.76	32054.
3	28.4	0.2	7.70	4.26	2.87	32583.
4	30.6	0.3	7.73	4.33	2.99	33113.
5	33.3	0.3	7.76	4.40	3.09	33644.
6	36.8	0.4	7.79	4.47	3.20	34175.
7	41.1	0.5	7.81	4.54	3.29	34707.
8	46.8	0.7	7.84	4.61	3.38	35239.
9	53.7	0.8	7.87	4.68	3.47	35772.
10	61.9	1.0	7.90	4.75	3.56	36306.
11	71.7	1.2	7.93	4.82	3.64	36841.
12	83.4	1.4	7.95	4.89	3.71	37378.
13	97.1	1.6	7.98	4.96	3.79	37912.
14	112.8	1.9	8.01	5.03	3.86	38448.
15	130.1	2.1	8.04	5.10	3.92	38984.
16	149.0	2.3	8.07	5.17	3.99	39524.
17	168.2	2.3	8.09	5.24	4.05	40062.
18	187.1	2.3	8.12	5.31	4.10	40602.
19	205.1	2.2	8.15	5.38	4.16	41142.
20	222.0	2.0	8.18	5.45	4.20	41684.

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

POTTS TABLE

PROPOSED REGULATIONS

ANALYSIS YEAR	LANE MILES IN POTTS	LANE MILES OVERLAID FROM POTTS	OVERLAY DESIGN D	OVERLAY THICKNESS	PSI AT END OF ANALYSIS PERIOD	OVERLAY COST ($/LANE-MILE)
1	24.7	0.1	8.11	5.28	2.62	40353.
2	25.8	0.1	8.14	5.35	2.74	40893.
3	29.0	0.4	8.17	5.42	2.86	41433.
4	31.0	0.2	8.19	5.49	2.97	41974.
5	33.7	0.3	8.22	5.56	3.07	42517.
6	41.3	0.9	8.25	5.63	3.17	43060.
7	46.5	0.6	8.28	5.70	3.26	43603.
8	52.8	0.8	8.31	5.77	3.36	44148.
9	69.1	2.0	8.34	5.84	3.44	44694.
10	79.5	1.2	8.37	5.91	3.53	45240.
11	91.5	1.4	8.39	5.99	3.61	45787.
12	104.6	1.6	8.42	6.06	3.69	46336.
13	133.7	3.5	8.45	6.13	3.76	46885.
14	148.0	1.7	8.48	6.20	3.84	47435.
15	151.8	1.6	8.51	6.27	3.90	47986.
16	186.2	2.9	8.54	6.35	3.97	48538.
17	196.5	1.2	8.57	6.42	4.03	49091.
18	205.4	1.1	8.60	6.49	4.09	49645.
19	212.7	0.9	8.62	6.56	4.15	50200.
20	222.0	1.1	8.65	6.64	4.20	50756.

INTRIG A INTERSTATE RIGID PAVEMENT SECTION *A*

UNDISCOUNTED COSTS

(MILLIONS OF DOLLARS)

YEAR IN ANALYSIS PERIOD	MAINTENANCE		OVERLAY	
	PRESENT	PROPOSED	PRESENT	PROPOSED
1	0.207	0.295	0.296	0.388
2	0.263	0.413	0.370	0.484
3	0.335	0.557	0.464	1.308
4	0.418	0.713	0.539	0.838
5	0.506	0.846	0.645	1.091
6	0.589	0.927	0.843	3.124
7	0.657	0.954	1.052	2.127
8	0.704	0.943	1.379	2.534
9	0.729	0.908	1.662	6.537
10	0.738	0.854	1.986	4.153
11	0.737	0.799	2.339	4.714
12	0.731	0.744	2.811	5.122
13	0.722	0.685	3.286	11.079
14	0.712	0.648	3.737	5.312
15	0.703	0.633	4.067	4.976
16	0.697	0.652	4.438	8.628
17	0.697	0.691	4.378	3.546
18	0.709	0.781	4.226	2.996
19	0.736	0.912	3.961	2.431
20	0.781	1.090	3.646	3.019
TOTALS	12.370	15.044	46.124	74.406

SALVAGE VALUE

(MILLIONS OF DOLLARS)

	ANALYSIS PERIOD	
	BEGINNING	END
PRESENT	-761.882	-540.915
PROPOSED	-761.882	-553.907
DELTA		-12.992

AUSTIN RESEARCH ENGINEERS INC

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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STOP 0 0 0.0 0.0 0.0 0.0 0.0

NULOAD - WEIGHT EFFECTS ON PAVEMENT PERFORMANCE
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SAMPLE SOLUTION USING HYPOTHETICAL STATE DATA
-THIS RUN INTENDED FOR ILLUSTRATIVE PURPOSES ONLY
INTERSTATE SYSTEM, RIGID AND FLEXIBLE.

SECTION NUMBER	SECTION IDENTIFIER	LANE MILES	UNDISCOUNTED DELTA COST	UNDISCOUNTED COST RATIO	UNDISCOUNTED DELTA SALVAGE VALUE	PRESENT WORTH DELTA COST	PRESENT WORTH COST RATIO	UNIFORM ANNUAL COST DELTA COST	UNIFORM ANNUAL COST COST RATIO	RATIO OF REMAINING LIFE PROPOSED/PRESENT
1	INTFLX A	1101.	-27.915	1.14	-21.322	-43.683	1.32	-3.809	1.32	1.10
2	INTRIG A	2220.	30.955	1.53	-12.992	13.667	1.50	1.192	1.50	1.39
TOTAL		3321.	3.041		-34.314	-30.016		-2.617		

ALL COSTS ARE IN MILLIONS OF DOLLARS