```
RRRRRRRRRRR      UUU          UUU  NNN          NNN     000000000     FFFFFFFFFFFFFFF  FFFFFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN          NNN     000000000     FFFFFFFFFFFFFFF  FFFFFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN          NNN     000000000     FFFFFFFFFFFFFFF  FFFFFFFFFFFFFFF
RRR          RRR UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNNNNN       NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNNNNN       NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNNNNN       NNN  000         000  FFF              FFF
RRRRRRRRRRRR     UUU          UUU  NNN  NNN     NNN  000         000  FFFFFFFFFFFF     FFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN  NNN     NNN  000         000  FFFFFFFFFFFF     FFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN  NNN     NNN  000         000  FFFFFFFFFFFF     FFFFFFFFFFFF
RRR    RRR       UUU          UUU  NNN       NNNNNN  000         000  FFF              FFF
RRR    RRR       UUU          UUU  NNN       NNNNNN  000         000  FFF              FFF
RRR    RRR       UUU          UUU  NNN       NNNNNN  000         000  FFF              FFF
RRR       RRR    UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR       RRR    UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR       RRR    UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
```

```
_$2

Sym
---
NDX
NDX
NUM
NUM
OPE
OUT
PAC
PAC
PAC
PAC
PAC
PAC
PAC
PAD
PAG
PAG
PAG
PAG
PAG
PAG
PAG
PER
PUT
RCO
RIN

RLI
RNO
RNO
RTY
SAV
STR
STR
STR
STR
STR
STR
STR

STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
```

FILEID**NDXINI

```
NN      NN  DDDDDDDD    XX      XX    IIIIII    NN      NN    IIIIII
NN      NN  DDDDDDDD    XX      XX    IIIIII    NN      NN    IIIIII
NN      NN  DD      DD  XX      XX      II      NN      NN      II
NN      NN  DD      DD  XX      XX      II      NN      NN      II
NNNN    NN  DD      DD    XX  XX        II      NNNN    NN      II
NNNN    NN  DD      DD    XX  XX        II      NNNN    NN      II
NN  NN  NN  DD      DD      XX          II      NN  NN  NN      II
NN  NN  NN  DD      DD      XX          II      NN  NN  NN      II
NN    NNNN  DD      DD    XX  XX        II      NN    NNNN      II
NN    NNNN  DD      DD    XX  XX        II      NN    NNNN      II
NN      NN  DD      DD  XX      XX      II      NN      NN      II      ....
NN      NN  DD      DD  XX      XX      II      NN      NN      II      ....
NN      NN  DDDDDDDD    XX      XX    IIIIII    NN      NN    IIIIII    ....
NN      NN  DDDDDDDD    XX      XX    IIIIII    NN      NN    IIIIII    ....

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II        SSSSSS
LL                II        SSSSSS
LL                II              SS
LL                II              SS
LL                II              SS
LL                II              SS
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

NDX
V04

```
;  1          0001  0 %TITLE 'NDXINI -- Once only initialization and global data'
;  2          0002  0 MODULE NDXINI (IDENT = 'V04-000'
;  3          0003  0                 %BLISS32 [, ADDRESSING_MODE (EXTERNAL = LONG_RELATIVE, NONEXTERNAL = LONG_RELATIVE)]
;  4          0004  0                 ) =
;  5          0005  1 BEGIN
;  6          0006  1
;  7          0007  1 !
;  8          0008  1 !*****************************************************************************
;  9          0009  1 !*                                                                           *
; 10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
; 11          0011  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                   *
; 12          0012  1 !*  ALL RIGHTS RESERVED.                                                     *
; 13          0013  1 !*                                                                           *
; 14          0014  1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
; 15          0015  1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE  *
; 16          0016  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
; 17          0017  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
; 18          0018  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
; 19          0019  1 !*  TRANSFERRED.                                                             *
; 20          0020  1 !*                                                                           *
; 21          0021  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
; 22          0022  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
; 23          0023  1 !*  CORPORATION.                                                             *
; 24          0024  1 !*                                                                           *
; 25          0025  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
; 26          0026  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
; 27          0027  1 !*                                                                           *
; 28          0028  1 !*                                                                           *
; 29          0029  1 !*****************************************************************************
; 30          0030  1 !
; 31          0031  1
; 32          0032  1 !++
; 33          0033  1 ! FACILITY:
; 34          0034  1 !   DSR (Digital Standard RUNOFF) /DSRPLUS DSRINDEX/INDEX Utility
; 35          0035  1 !
; 36          0036  1 ! ABSTRACT:
; 37          0037  1 !   This module contains once only initialization code and global data.
; 38          0038  1 !
; 39          0039  1 ! ENVIRONMENT:   Transportable
; 40          0040  1 !
; 41          0041  1 ! AUTHOR:        JPK
; 42          0042  1 !
; 43          0043  1 ! CREATION DATE: December 1981
; 44          0044  1 !
; 45          0045  1 ! MODIFIED BY:
; 46          0046  1 !
; 47          0047  1 !       005     JPK00017        23-Feb-1983
; 48          0048  1 !               Modified NDXINI to initialize the zero'th entries of LLINES,
; 49          0049  1 !               RLINES and TLINES which is where the telltale strings are
; 50          0050  1 !               stored by NDXFMT.
; 51          0051  1 !               Modified NDXFMT to write appropriate prologue for /TELLTALE,
; 52          0052  1 !               save the appropriate lines for left and right telltales, and
; 53          0053  1 !               to mark the end of every entry with a NULL.
; 54          0054  1 !               Modified NDXPAG to change the NULL following each entry to a
; 55          0055  1 !               space if LAYOUT is SEPARATE or to a comma otherwise and to
; 56          0056  1 !               generate and output telltales.
; 57          0057  1 !
```

```
;    58          0058  1 !        004     JPK00015        04-Feb-1983
;    59          0059  1 !                Cleaned up module names, modified revision history to
;    60          0060  1 !                conform with established standards. Updated copyright dates.
;    61          0061  1 !
;    62          0062  1 !        003     JPK00009        24-Jan-1983
;    63          0063  1 !                Modified to enhance performance. The sort buckets have each
;    64          0064  1 !                been divided into 27 sub-buckets; 1 for each letter and 1
;    65          0065  1 !                for non-alphas. Removed reference to BUCKET from INDEX.
;    66          0066  1 !                Definition of the structure was added to NDXPOL. References
;    67          0067  1 !                to BUCKET were changed in modules NDXOUT, NDXINI, NDXFMT
;    68          0068  1 !                and NDXDAT.
;    69          0069  1 !
;    70          0070  1 !        002     JPK00005        24-Sep-1982
;    71          0071  1 !                Removed definition of CHRFWD in NDXINI. No longer needed.
;    72          0072  1 !
;    73          0073  1 !--
```

```
;    75          0074  1 !
;    76          0075  1 ! TABLE OF CONTENTS:
;    77          0076  1 !
;    78          0077  1 FORWARD ROUTINE
;    79          0078  1     NDXINI : NOVALUE;                    ! Once only initialization routine
;    80          0079  1 !
;    81          0080  1 ! INCLUDE FILES:
;    82          0081  1 !
;    83          0082  1
;    84          0083  1 LIBRARY 'NXPORT:XPORT';
;    85          0084  1
;    86          0085  1 SWITCHES LIST (REQUIRE);
;    87          0086  1
;    88          0087  1 REQUIRE 'REQ:NDXCLI';
```

```
;  R0088  1        !                                          IDENT = 0V04-00004
;  R0089  1        !
;  R0090  1        !*****************************************************************************
;  R0091  1        !*                                                                           *
;  R0092  1        !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
;  R0093  1        !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                   *
;  R0094  1        !*  ALL RIGHTS RESERVED.                                                     *
;  R0095  1        !*                                                                           *
;  R0096  1        !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED    *
;  R0097  1        !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
;  R0098  1        !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER    *
;  R0099  1        !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY    *
;  R0100  1        !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY    *
;  R0101  1        !*  TRANSFERRED.                                                             *
;  R0102  1        !*                                                                           *
;  R0103  1        !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE    *
;  R0104  1        !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT    *
;  R0105  1        !*  CORPORATION.                                                             *
;  R0106  1        !*                                                                           *
;  R0107  1        !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS    *
;  R0108  1        !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
;  R0109  1        !*                                                                           *
;  R0110  1        !*                                                                           *
;  R0111  1        !*****************************************************************************
;  R0112  1        !
;  R0113  1
;  R0114  1        !++
;  R0115  1        ! FACILITY:
;  R0116  1        !   DSR (Digital Standard RUNOFF) /DSRPLUS DSRINDEX/INDEX Utility
;  R0117  1        !
;  R0118  1        ! ABSTRACT:       INDEX command line definitions
;  R0119  1        !
;  R0120  1        ! ENVIRONMENT:    Transportable
;  R0121  1        !
;  R0122  1        ! AUTHOR:         JPK
;  R0123  1        !
;  R0124  1        ! CREATION DATE: January 1982
;  R0125  1        !
;  R0126  1        ! MODIFIED BY:
;  R0127  1        !
;  R0128  1        !       004     JPK00015        04-Feb-1983
;  R0129  1        !               Cleaned up module names, modified revision history to
;  R0130  1        !               conform with established standards. Updated copyright dates.
;  R0131  1        !
;  R0132  1        !       003     JPK00011        24-Jan-1983
;  R0133  1        !               Changed CMDBLK [NDX$G_LEVEL] to CMDBLK [NDX$H_LEVEL]
;  R0134  1        !               Changed CMDBLK [NDX$H_FORMAT] to CMDBLK [NDX$R_LAYOUT]
;  R0135  1        !               Changed CMDBLK [NDX$V_TMS11] and CMDBLK [NDX$V_TEX] to CMDBLK [NDX$H_FORMAT]
;  R0136  1        !               Changed comparisons of (.CHRSIZ EQLA CHRSZA) to
;  R0137  1        !               (.CMDBLK [NDX$H_FORMAT] EQL TMS11_A).
;  R0138  1        !               Definitions were changed in NDXCLI and references to the
;  R0139  1        !               effected fields were changed in NDXPAG, NDXFMT, INDEX, NDXVMS
;  R0140  1        !               and NDXCLIDMP.
;  R0141  1        !
;  R0142  1        !       002     RER00002        20-Jan-1983
;  R0143  1        !               Modified VMS command line interface module NDXVMS:
;  R0144  1        !                 - changed /FORMAT qualifier to /LAYOUT.
```

```
;  R0145  1     !                 - changed use of /RESERVE and /REQUIRE for DSRPLUS.
;  R0146  1     !                 - added code for new DSRPLUS qualifiers /FORMAT and
;  R0147  1     !                   /TELLTALE_HEADINGS.
;  R0148  1     !               Added fields to NDXCLI for new qualifiers: NDX$V_TELLTALE
;  R0149  1     !               and NDX$V_TEX.
;  R0150  1     !               Conditionalized output of NDX$V_PAGE_MERGE in NDXCLIDMP to
;  R0151  1     !               account for different DSR and DSRPLUS default values.
;  R0152  1     !
;  R0153  1     !--
;  R0154  1
```

```
;  R0155  1     !
;  R0156  1     !  NDXCMD_FIELDS
;  R0157  1     !
;  R0158  1     $FIELD ndxcmd_fields =
;  R0159  1         SET
;  R0160  1
;  R0161  1         NDX$V_OPTIONS       = [$INTEGER],           ! Command option indicators:
;  R0162  1
;  R0163  1             $OVERLAY (NDX$V_OPTIONS)
;  R0164  1
;  R0165  1             NDX$V_INPUT_CONCAT      = [$BIT],       ! Input file concatenated to previous
;  R0166  1             NDX$V_OUTPUT            = [$BIT],       ! Generate output file
;  R0167  1             NDX$V_REQUIRE           = [$BIT],       ! Require file specified
;  R0168  1             NDX$V_PAGES             = [$BIT],       ! Include page references in index
;  R0169  1             NDX$V_OVERRIDE          = [$BIT],       ! Override master index information
;  R0170  1             NDX$V_STANDARD_PAGE     = [$BIT],       ! Generate standard page numbers
;  R0171  1             NDX$V_CONTINUATION      = [$BIT],       ! Generate continuation headings
;  R0172  1             NDX$V_GUIDE             = [$BIT],       ! Generate guide headings
;  R0173  1             NDX$V_WORD_SORT         = [$BIT],       ! Sort entries word by word
;  R0174  1             NDX$V_LOG               = [$BIT],       ! Generate /LOG message
;  R0175  1             NDX$V_MASTER            = [$BIT],       ! Generate a master index
;  R0176  1             NDX$V_PAGE_MERGE        = [$BIT],       ! Merge adjacent page references
;  R0177  1             NDX$V_TELLTALE          = [$BIT],       ! Generate telltale headings
;  R0178  1
;  R0179  1             $CONTINUE
;  R0180  1
;  R0181  1         NDX$H_FORMAT        = [$SHORT_INTEGER],     ! Output format: DSR, TMS, TEX
;  R0182  1         NDX$H_LAYOUT        = [$SHORT_INTEGER],     ! Output layout type
;  R0183  1         NDX$H_NONALPHA      = [$SHORT_INTEGER],     ! Treatment of leading nonalphas during sort
;  R0184  1         NDX$H_LEVEL         = [$SHORT_INTEGER],     ! Deepest level to include in index
;  R0185  1         NDX$G_COLUMN_WID    = [$INTEGER],           ! Column width
;  R0186  1         NDX$G_GUTTER_WID    = [$INTEGER],           ! Gutter width
;  R0187  1         NDX$G_LINES_PAGE    = [$INTEGER],           ! Lines per page
;  R0188  1         NDX$G_RESERVE_LINES = [$INTEGER],           ! Number of lines to reserve when requiring a file
;  R0189  1         NDX$G_SEPARATE_WIDTH= [$INTEGER],           ! Width of reference portion of entry
;  R0190  1         NDX$T_MASTER_BOOK   = [$DESCRIPTOR(DYNAMIC)], ! Book name descriptor for Master indexing
;  R0191  1         NDX$T_INPUT_FILE    = [$DESCRIPTOR(DYNAMIC)], ! Input file name descriptor
;  R0192  1         NDX$T_OUTPUT_FILE   = [$DESCRIPTOR(DYNAMIC)], ! Output file name descriptor
;  R0193  1         NDX$T_REQUIRE_FILE  = [$DESCRIPTOR(DYNAMIC)], ! Require file name descriptor
;  R0194  1         NDX$T_RELATED_FILE  = [$DESCRIPTOR(DYNAMIC)], ! Related file name descriptor is saved here
;  R0195  1                                                       ! by NDXINP for later use by MAKNDX
;  R0196  1         NDX$T_COMMAND_LINE  = [$DESCRIPTOR(DYNAMIC)]  ! Copy of entire command line
;  R0197  1
;  R0198  1         TES;
;  R0199  1     !
;  R0200  1     !  End of NDXCMD_FIELDS
;  R0201  1     !
;  R0202  1
;  R0203  1     LITERAL
;  R0204  1         NDXCMD$K_LENGTH = $FIELD_SET_SIZE;
;  R0205  1
;  R0206  1     MACRO
;  R0207  1         $NDXCMD = BLOCK [NDXCMD$K_LENGTH] FIELD (NDXCMD_FIELDS) %;
;  R0208  1
;  R0209  1     $LITERAL                                        ! Output formats (NDX$H_FORMAT)
;  R0210  1         DSR                 = $DISTINCT,           ! Runoff
;  R0211  1         TMS11_A             = $DISTINCT,           ! TMS=A
```

```
;  R0212  1          TMS11_E                 = $DISTINCT,    ! TMS=E
;  R0213  1          TEX                     = $DISTINCT;    ! TEX
;  R0214  1
;  R0215  1      $LITERAL                                    ! Output layouts (NDX$H_LAYOUT)
;  R0216  1          TWO_COLUMN              = $DISTINCT,    ! Normal two column format
;  R0217  1          ONE_COLUMN              = $DISTINCT,    ! Normal one column format
;  R0218  1          SEPARATE                = $DISTINCT,    ! Separate reference format
;  R0219  1          GALLEY                  = $DISTINCT;    ! TMS11 Galley format
;  R0220  1
;  R0221  1      $LITERAL                                    ! Treatment of leading nonalphas during sort (NDX$H_NONALPHA)
;  R0222  1          BEFORE                  = $DISTINCT,    ! Leading nonalphas sort before alphas
;  R0223  1          AFTER                   = $DISTINCT,    ! Leading nonalphas sort after alphas
;  R0224  1          IGNORE                  = $DISTINCT;    ! Leading nonalphas are ignored
;  R0225  1
;  R0226  1      !
;  R0227  1      !--     End of NDXCLI.REQ
```

```
;    89          0228  1
;    90          0229  1 REQUIRE 'REQ:NDXXPL';
```

```
;  R0230  1
;  R0231  1        Version:      'V04-000'
;  R0232  1
;  R0233  1        ****************************************************************************
;  R0234  1        *                                                                          *
;  R0235  1        *  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                *
;  R0236  1        *  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
;  R0237  1        *  ALL RIGHTS RESERVED.                                                    *
;  R0238  1        *                                                                          *
;  R0239  1        *  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
;  R0240  1        *  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE  *
;  R0241  1        *  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
;  R0242  1        *  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
;  R0243  1        *  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
;  R0244  1        *  TRANSFERRED.                                                            *
;  R0245  1        *                                                                          *
;  R0246  1        *  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
;  R0247  1        *  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
;  R0248  1        *  CORPORATION.                                                            *
;  R0249  1        *                                                                          *
;  R0250  1        *  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
;  R0251  1        *  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
;  R0252  1        *                                                                          *
;  R0253  1        *                                                                          *
;  R0254  1        ****************************************************************************
;  R0255  1
;  R0256  1
;  R0257  1        !++
;  R0258  1        ! FACILITY:      DSR (Digital Standard RUNOFF) / DSRPLUS
;  R0259  1        !
;  R0260  1        ! ABSTRACT:
;  R0261  1        !       This file contains definitions of data structures used to support
;  R0262  1        !       the extended indexing features of the DSRPLUS INDEX program.
;  R0263  1        !
;  R0264  1        ! ENVIRONMENT:   Transportable BLISS
;  R0265  1        !
;  R0266  1        ! AUTHOR:        J.P. Kellerman
;  R0267  1        !
;  R0268  1        ! CREATION DATE: January 1982
;  R0269  1        !
;  R0270  1        ! MODIFIED BY:
;  R0271  1        !
;  R0272  1        !       002     KAD00002        Keith Dawson    07-Mar-1983
;  R0273  1        !               Global edit of all modules. Updated module names, idents,
;  R0274  1        !               copyright dates. Changed require files to BLISS library.
;  R0275  1        !
;  R0276  1        !--
;  R0277  1
;  R0278  1        ! Extended INDEX attributes block.
;  R0279  1
;  R0280  1        $FIELD XPL_FIELDS =
;  R0281  1            SET
;  R0282  1
;  R0283  1            XPL$V_OPTIONS       = [$INTEGER],           ! Attributes options
;  R0284  1
;  R0285  1                $OVERLAY (XPL$V_OPTIONS)
;  R0286  1
```

```
;  R0287  1                XPL$V_VALID             = [$BIT],       ! Attributes block contains valid information.
;  R0288  1                XPL$V_BOLD              = [$BIT],       ! Bold page reference.
;  R0289  1                XPL$V_UNDERLINE         = [$BIT],       ! Underlined page reference.
;  R0290  1                XPL$V_BEGIN             = [$BIT],       ! Begin page range.
;  R0291  1                XPL$V_END               = [$BIT],       ! End page range.
;  R0292  1                XPL$V_MASTER            = [$BIT],       ! Master index entry.
;  R0293  1                XPL$V_PERMUTE           = [$BIT],       ! Permute index entry.
;  R0294  1                XPL$V_NOPERMUTE         = [$BIT],       ! Set if permute explicitly forbidden.
;  R0295  1                XPL$V_SORT              = [$BIT],       ! Set if SORT string present.
;  R0296  1                XPL$V_APPEND            = [$BIT],       ! Set if append string present.
;  R0297  1
;  R0298  1                $CONTINUE
;  R0299  1
;  R0300  1            XPL$T_SORT          = [$DESCRIPTOR(DYNAMIC)], ! SORT string.
;  R0301  1            XPL$T_APPEND        = [$DESCRIPTOR(DYNAMIC)]  ! APPEND string.
;  R0302  1
;  R0303  1            TES;
;  R0304  1
;  R0305  1        LITERAL
;  R0306  1            XPL$K_LENGTH = $FIELD_SET_SIZE;
;  R0307  1
;  R0308  1        MACRO
;  R0309  1            $XPL_BLOCK = BLOCK [XPL$K_LENGTH] FIELD (XPL_FIELDS) %;
;  R0310  1
;  R0311  1        !
;  R0312  1        ! Macros for INDEX_ATTRIBUTES flags
;  R0313  1        !
;  R0314  1        MACRO
;  R0315  1            XPLUS$V_VALID       = 0, 0, 1, 0 %,  ! Set if attributes data is valid.
;  R0316  1            XPLUS$V_BOLD        = 0, 1, 1, 0 %,  ! Set if page reference is bolded.
;  R0317  1            XPLUS$V_UNDERLINE   = 0, 2, 1, 0 %,  ! Set if page reference is underlined.
;  R0318  1            XPLUS$V_BEGIN       = 0, 3, 1, 0 %,  ! Set if entry begins a page range.
;  R0319  1            XPLUS$V_END         = 0, 4, 1, 0 %,  ! Set if entry ends a page range.
;  R0320  1            XPLUS$V_MASTER      = 0, 5, 1, 0 %,  ! Set if master index entry only.
;  R0321  1            XPLUS$V_PERMUTE     = 0, 6, 1, 0 %,  ! Set if entry is to be permuted.
;  R0322  1            XPLUS$V_NOPERMUTE   = 0, 7, 1, 0 %,  ! Set if permute is explicitly forbidden.
;  R0323  1            XPLUS$V_SORT        = 0, 8, 1, 0 %,  ! Set if entry contains a SORT string.
;  R0324  1            XPLUS$V_APPEND      = 0, 9, 1, 0 %;  ! Set if entry contains an APPEND string.
;  R0325  1
;  R0326  1    !                           End of NDXXPL.REQ
```

```
;   91          0327  1
;   92          0328  1 REQUIRE 'REQ:NDXPOL';
```

```
;  R0329  1     !
;  R0330  1     ! Version:      'V04-000'
;  R0331  1     !
;  R0332  1     !****************************************************************************
;  R0333  1     !*                                                                          *
;  R0334  1     !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
;  R0335  1     !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
;  R0336  1     !*  ALL RIGHTS RESERVED.                                                    *
;  R0337  1     !*                                                                          *
;  R0338  1     !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
;  R0339  1     !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
;  R0340  1     !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER    *
;  R0341  1     !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
;  R0342  1     !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
;  R0343  1     !*  TRANSFERRED.                                                            *
;  R0344  1     !*                                                                          *
;  R0345  1     !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
;  R0346  1     !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
;  R0347  1     !*  CORPORATION.                                                            *
;  R0348  1     !*                                                                          *
;  R0349  1     !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
;  R0350  1     !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
;  R0351  1     !*                                                                          *
;  R0352  1     !*                                                                          *
;  R0353  1     !****************************************************************************
;  R0354  1     !
;  R0355  1
;  R0356  1     !++
;  R0357  1     ! FACILITY:
;  R0358  1     !   DSR (Digital Standard RUNOFF) /DSRPLUS DSRINDEX/INDEX Utility
;  R0359  1     !
;  R0360  1     ! ABSTRACT:
;  R0361  1     !   This file contains literals and macros defining the data structures
;  R0362  1     !   found in the internal index pool
;  R0363  1     !
;  R0364  1     ! ENVIRONMENT:   Transportable
;  R0365  1     !
;  R0366  1     ! AUTHOR:        JPK
;  R0367  1     !
;  R0368  1     ! CREATION DATE: January 1982
;  R0369  1     !
;  R0370  1     ! MODIFIED BY:
;  R0371  1     !
;  R0372  1     !       003     JPK00015        04-Feb-1983
;  R0373  1     !               Cleaned up module names, modified revision history to
;  R0374  1     !               conform with established standards. Updated copyright dates.
;  R0375  1     !
;  R0376  1     !       002     JPK00009        24-Jan-1983
;  R0377  1     !               Modified to enhance performance. The sort buckets have each
;  R0378  1     !               been divided into 27 sub-buckets; 1 for each letter and 1
;  R0379  1     !               for non-alphas. Removed reference to BUCKET from INDEX.
;  R0380  1     !               Definition of the structure was added to NDXPOL. References
;  R0381  1     !               to BUCKET were changed in modules NDXOUT, NDXINI, NDXFMT
;  R0382  1     !               and NDXDAT.
;  R0383  1     !
;  R0384  1     !--
;  R0385  1
```

```
;  R0386  1     ! Index entry
;  R0387  1
;  R0388  1     $FIELD XE_FIELDS =
;  R0389  1         SET
;  R0390  1
;  R0391  1         XE$A_PREV           = [$ADDRESS],          ! Link to previous item
;  R0392  1         XE$A_NEXT           = [$ADDRESS],          ! Link to next item
;  R0393  1         XE$A_SUBX           = [$ADDRESS],          ! Sub index pointer
;  R0394  1         XE$A_REF            = [$ADDRESS],          ! Reference pointer
;  R0395  1         XE$A_TEXT           = [$ADDRESS],          ! Pointer to text of index item
;  R0396  1         XE$A_SORT_AS        = [$ADDRESS],          ! Pointer to SORT_AS string
;  R0397  1         XE$H_SUBC           = [$SHORT_INTEGER],    ! Sub index level
;  R0398  1
;  R0399  1         XE$V_FLAGS          = [$SHORT_INTEGER],    ! Entry flags
;  R0400  1
;  R0401  1             $OVERLAY (XE$V_FLAGS)
;  R0402  1
;  R0403  1             XE$V_BARS               = [$BIT],      ! Change bar flag
;  R0404  1
;  R0405  1             $CONTINUE
;  R0406  1
;  R0407  1         XE$A_BOOK_LIST      = [$ADDRESS]           ! Master index book name list
;  R0408  1
;  R0409  1         $ALIGN (FULLWORD)
;  R0410  1
;  R0411  1         TES;
;  R0412  1
;  R0413  1     LITERAL
;  R0414  1         XE$K_LENGTH = $FIELD_SET_SIZE;
;  R0415  1
;  R0416  1     MACRO
;  R0417  1         $XE_BLOCK = BLOCK [XE$K_LENGTH] FIELD (XE_FIELDS) %;
;  R0418  1
;  R0419  1     ! End of Index entry
;  R0420  1
;  R0421  1
;  R0422  1     ! Reference entry
;  R0423  1
;  R0424  1     $FIELD XX_FIELDS =
;  R0425  1         SET
;  R0426  1
;  R0427  1         XX$A_LINK           = [$ADDRESS],          ! Link to additional entries
;  R0428  1         XX$A_APPEND         = [$ADDRESS],          ! APPEND text pointer
;  R0429  1         XX$H_PAGE           = [$SHORT_INTEGER],    ! Transaction number
;  R0430  1
;  R0431  1         XX$V_FLAGS          = [$SHORT_INTEGER],    ! Display attributes
;  R0432  1
;  R0433  1             $OVERLAY (XX$V_FLAGS)
;  R0434  1
;  R0435  1             XX$V_BOLD       = [$BIT],              ! Bold page reference
;  R0436  1             XX$V_UNDERLINE  = [$BIT],              ! Underline page reference
;  R0437  1             XX$V_BEGIN      = [$BIT],              ! Begin page range
;  R0438  1             XX$V_END        = [$BIT],              ! End page range
;  R0439  1
;  R0440  1             $CONTINUE
;  R0441  1
;  R0442  1         XX$A_BOOK           = [$ADDRESS]           ! Master index book name
```

```
;  R0443  1
;  R0444  1        $ALIGN (FULLWORD)
;  R0445  1
;  R0446  1        TES;
;  R0447  1
;  R0448  1    LITERAL
;  R0449  1        XX$K_LENGTH = $FIELD_SET_SIZE;
;  R0450  1
;  R0451  1    MACRO
;  R0452  1        $XX_BLOCK = BLOCK [XX$K_LENGTH] FIELD (XX_FIELDS) %;
;  R0453  1
;  R0454  1    ! End of Reference entry
;  R0455  1
;  R0456  1
;  R0457  1    ! Master index book reference entry
;  R0458  1
;  R0459  1    $FIELD XM_FIELDS =
;  R0460  1        SET
;  R0461  1
;  R0462  1        XM$A_LINK           = [$ADDRESS],       ! Link to additional entries
;  R0463  1        XM$A_BOOK           = [$ADDRESS]        ! Pointer to book name
;  R0464  1
;  R0465  1        TES;
;  R0466  1
;  R0467  1    LITERAL
;  R0468  1        XM$K_LENGTH = $FIELD_SET_SIZE;
;  R0469  1
;  R0470  1    MACRO
;  R0471  1        $XM_BLOCK = BLOCK [XM$K_LENGTH] FIELD (XM_FIELDS) %;
;  R0472  1
;  R0473  1    ! End of Master index book reference entry
;  R0474  1
;  R0475  1
;  R0476  1    ! Current Entry
;  R0477  1
;  R0478  1    $FIELD C_FIELDS =
;  R0479  1        SET
;  R0480  1
;  R0481  1        C$A_CURR            = [$ADDRESS],       ! Pointer to current cell
;  R0482  1        C$A_PREV            = [$ADDRESS],       ! Pointer to previous cell
;  R0483  1        C$A_HEAD            = [$ADDRESS],       ! Pointer to head of chain
;  R0484  1
;  R0485  1        $ALIGN (FULLWORD)
;  R0486  1
;  R0487  1        C$V_FLAGS           = [$INTEGER],       ! Current cell flags
;  R0488  1
;  R0489  1            $OVERLAY (C$V_FLAGS)
;  R0490  1
;  R0491  1            C$V_IDNS        = [$BIT]            ! Identical string flag
;  R0492  1
;  R0493  1            $CONTINUE
;  R0494  1
;  R0495  1        TES;
;  R0496  1
;  R0497  1    LITERAL
;  R0498  1        C$K_LENGTH = $FIELD_SET_SIZE;
;  R0499  1
```

```
;  R0500  1     MACRO
;  R0501  1         $C_BLOCK = BLOCK [C$K_LENGTH] FIELD (C_FIELDS) %;
;  R0502  1
;  R0503  1     ! End of current entry
;  R0504  1
;  R0505  1
;  R0506  1     !
;  R0507  1     ! Dummy datasets
;  R0508  1     !
;  R0509  1     LITERAL
;  R0510  1         DS_X_ENTRY  = XE$K_LENGTH,
;  R0511  1         DS_XX_ENTRY = XX$K_LENGTH,
;  R0512  1         DS_XM_ENTRY = XM$K_LENGTH,
;  R0513  1         DS_X_STRING = 0;
;  R0514  1
;  R0515  1     !
;  R0516  1     ! Structure definition for bucket array.
;  R0517  1     !
;  R0518  1     !       Buckets are arranged so that each row represents the first letter of
;  R0519  1     !       the string and each column represents the second letter of the string.
;  R0520  1     !
;  R0521  1     !       This approach is used only for master indexes as no performance
;  R0522  1     !       improvement is realised until about 10 input files have been processed.
;  R0523  1     !
;  R0524  1     !       Indexes which are not master indexes use only the first element of
;  R0525  1     !       each row, i.e., [0, 0] ... [26, 0].
;  R0526  1     !
;  R0527  1     !       The only exception is for nonalphabetic characters which use only
;  R0528  1     !       element [0, 0]. Elements [0, 1] ... [0, 26] are not used since mapping
;  R0529  1     !       all nonalphabetics into one row loses the sort order of the first
;  R0530  1     !       character in the string. For nonalphabetics to work correctly in a two
;  R0531  1     !       dimensional bucket scheme, the array would have to be at least 127 x 127
;  R0532  1     !
;  R0533  1     !           0   1   .   .   .  26
;  R0534  1     !       0  **  not used  .  .  .
;  R0535  1     !       1  A?  AA            AZ
;  R0536  1     !       .                     .
;  R0537  1     !       .                     .
;  R0538  1     !       .
;  R0539  1     !      26  Z?  ZA   .   .   .  ZZ
;  R0540  1     !
;  R0541  1     STRUCTURE
;  R0542  1         $BUCKET_ARRAY [ROW_IDX, COL_IDX; M, N] =
;  R0543  1             [M * N * %UPVA[]] ($BUCKET_ARRAY + (ROW_IDX * N + COL_IDX) * %UPVAL);
;  R0544  1
;  R0545  1     !--     End of NDXPOL.REQ
```

```
;   93          0546  1
;   94          0547  1 REQUIRE 'REQ:PAGEN';
```

```
;  R0548  1
;  R0549  1      Version:      'V04-000'
;  R0550  1
;  R0551  1      ****************************************************************************
;  R0552  1      *                                                                          *
;  R0553  1      *  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                *
;  R0554  1      *  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
;  R0555  1      *  ALL RIGHTS RESERVED.                                                    *
;  R0556  1      *                                                                          *
;  R0557  1      *  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
;  R0558  1      *  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE  *
;  R0559  1      *  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
;  R0560  1      *  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
;  R0561  1      *  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
;  R0562  1      *  TRANSFERRED.                                                            *
;  R0563  1      *                                                                          *
;  R0564  1      *  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
;  R0565  1      *  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
;  R0566  1      *  CORPORATION.                                                            *
;  R0567  1      *                                                                          *
;  R0568  1      *  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
;  R0569  1      *  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
;  R0570  1      *                                                                          *
;  R0571  1      *                                                                          *
;  R0572  1      ****************************************************************************
;  R0573  1
;  R0574  1
;  R0575  1      !++
;  R0576  1      ! FACILITY:      DSR (Digital Standard RUNOFF) / DSRPLUS
;  R0577  1      !
;  R0578  1      ! ABSTRACT:
;  R0579  1      !       A page number carries with it not only its current value, but also
;  R0580  1      !       codes as to how those values are to be displayed when they are finally
;  R0581  1      !       output. It was decided to do it this way rather than have a separate
;  R0582  1      !       table so that the program TCX would have less trouble.
;  R0583  1      !
;  R0584  1      ! ENVIRONMENT:   Transportable BLISS
;  R0585  1      !
;  R0586  1      ! AUTHOR:        Rich Friday
;  R0587  1      !
;  R0588  1      ! CREATION DATE: 1978
;  R0589  1      !
;  R0590  1      ! MODIFIED BY:
;  R0591  1      !
;  R0592  1      !       004     KAD00004        Keith Dawson    07-Mar-1983
;  R0593  1      !               Global edit of all modules. Updated module names, idents,
;  R0594  1      !               copyright dates. Changed require files to BLISS library.
;  R0595  1      !
;  R0596  1      !--
;  R0597  1
;  R0598  1      LITERAL
;  R0599  1          page_sct_size = 4;
;  R0600  1
;  R0601  1      LITERAL                                         !Type of section:
;  R0602  1          sct_chapt     = 1,                        ! Chapter section.
;  R0603  1          sct_index     = 2,                        ! Index section.
;  R0604  1          sct_append    = 3;                        ! Appendix section.
```

```
;  R0605  1
;  R0606  1     LITERAL
;  R0607  1         sct_low         = 1,                            ! Lowest section type key.
;  R0608  1         sct_high        = 3;                            ! Highest section type key.
;  R0609  1
;  R0610  1     MACRO
;  R0611  1         sct_typ         = 0, 0,         4,          0 %, ! Section Type (zero if none).
;  R0612  1         sct_page_d      = 0, 4,         4,          0 %, ! Display code for page number.
;  R0613  1         sct_sub_page    = 0, %BPVAL/2, %BPVAL/2,    0 %, ! Subpage, if any (zero if none).
;  R0614  1         sct_number      = 1, 0,         %BPVAL,     0 %, ! Type of section number.
;  R0615  1         sct_page        = 2, 0,         %BPVAL,     0 %, ! Page number.
;  R0616  1         sct_subpg_d     = 3, 0,         4,          0 %, ! Display code for subpages.
;  R0617  1         sct_chapt_d     = 3, 4,         4,          0 %, ! Display code for chapters.
;  R0618  1         sct_appen_d     = 3, 8,         4,          0 %, ! Display code for appendices.
;  R0619  1         sct_index_d     = 3, 12,        4,          0 %; ! Display code if indexes.
;  R0620  1
;  R0621  1     MACRO
;  R0622  1         sct_run_page    = 3, %BPVAL/2, %BPVAL/2,    0 %; ! Running page number.
;  R0623  1
;  R0624  1     MACRO
;  R0625  1         page_definition = BLOCK [page_sct_size] %;
;  R0626  1
;  R0627  1     !                           End of PAGEN.REQ
```

```
;    95          0628  1
;    96          0629  1 SWITCHES LIST (NOREQUIRE);
;    97          0630  1
;    98          0631  1 !
;    99          0632  1 ! MACROS:
;   100          0633  1 !
;   101          0634  1 !
;   102          0635  1 ! EQUATED SYMBOLS:
;   103          0636  1 !
;   104          0637  1
;   105          0638  1 GLOBAL LITERAL
;   106          0639  1     TAB    = %O'11' : UNSIGNED (8),     ! TAB character
;   107          0640  1     TMSCOL = 39,                        ! Default TMS column width
;   108          0641  1     RINTES = %O'34' : UNSIGNED (8),     ! RUNOFF escape sequence character
;   109          0642  1     MAXLST = 10,                        ! Maximum subindex depth
;   110          0643  1     MAXLIN = 80;                        ! Maximum number of lines per page
;   111          0644  1
;   112          0645  1 LITERAL
;   113          0646  1     TRUE = 1,
;   114          0647  1     FALSE = 0;
;   115          0648  1
;   116          0649  1 !
;   117          0650  1 ! OWN STORAGE:
;   118          0651  1 !
;   119          0652  1
;   120          0653  1 GLOBAL
;   121          0654  1     OUTIOB : $XPO_IOB (),                   ! Output file IOB
;   122          0655  1     CMDBLK : $NDXCMD,                       ! Command line information block
;   123          0656  1     XPLBLK : $XPL_BLOCK,                    ! Extended indexing information block
;   124          0657  1     PAGEN  : PAGE_DEFINITION;               ! Page reference block
;   125          0658  1
;   126          0659  1 GLOBAL                                      ! Hashing buckets
;   127          0660  1     BUCKET : $BUCKET_ARRAY [27, 27];        ! There are 26 buckets for letters, and
;   128          0661  1                                             ! one for all other characters.
;   129          0662  1
;   130          0663  1 GLOBAL
;   131          0664  1     LSTPTR : REF $XE_BLOCK,
;   132          0665  1     INDLVL,                                 ! Index level
;   133          0666  1     LSTSTK : VECTOR [MAXLST + 1];           ! Temporary entry stack
;   134          0667  1
;   135          0668  1 GLOBAL                                      ! Index pool variables
;   136          0669  1     NDXPOL : INITIAL (0),                   ! Address of indexing pool
;   137          0670  1     NDXSGE : INITIAL (0),                   ! End of current segment.
;   138          0671  1     NDXSGF : INITIAL (0);
;   139          0672  1
;   140          0673  1 GLOBAL                                      ! Transaction pool variables
;   141          0674  1     XTNPOL : INITIAL (0),                   ! Address of transaction pool
;   142          0675  1     XTNCNT : INITIAL (0),                   ! Number of XTNTAB entries
;   143          0676  1     XTNLSP : INITIAL (0),
;   144          0677  1     XTNLSX : INITIAL (0),
;   145          0678  1     XTNSGP : INITIAL (0),
;   146          0679  1     XTNTAB : INITIAL (0),                   !List of transaction numbers assigned
;   147          0680  1     XPAGEN : INITIAL (0);
;   148          0681  1
;   149          0682  1 GLOBAL
;   150          0683  1     BOOKID : INITIAL (0);                   ! Address of master index book id
;   151          0684  1
```

```
;  152     0685  1 GLOBAL                                                  ! Line and page counting variables
;  153     0686  1     PAGENO : INITIAL (0),                               ! Page number
;  154     0687  1     ALLOWD,                                             ! Usuable lines per page
;  155     0688  1     LCOUNT,                                             ! Number of lines in left column
;  156     0689  1     RCOUNT,                                             ! Number of lines in right column
;  157     0690  1     TCOUNT;                                             ! Number of lines in temp column
;  158     0691  1
;  159     0692  1 !
;  160     0693  1 ! NOTE: The vectors and blockvectors below have two extra entries allocated.
;  161     0694  1 !       The zeroth entry is used to save the telltale strings for the column.
;  162     0695  1 !       The last entry is so that there will always be an available line at
;  163     0696  1 !       the end of the column.
;  164     0697  1 !
;  165     0698  1 !       The temp column is used during the generation of the index as a
;  166     0699  1 !       temporary save area for lines that are moved from one column to
;  167     0700  1 !       another. It is also used during generation of the last page of
;  168     0701  1 !       two column output.
;  169     0702  1 !
;  170     0703  1 GLOBAL
;  171     0704  1     LTYPE  : VECTOR      [MAXLIN + 2],                  ! Left column line types
;  172     0705  1     LLINES : BLOCKVECTOR [MAXLIN + 2, STR$K_D_BLN],     ! Left column string descriptors
;  173     0706  1     RTYPE  : VECTOR      [MAXLIN + 2],                  ! Right column line types
;  174     0707  1     RLINES : BLOCKVECTOR [MAXLIN + 2, STR$K_D_BLN],     ! Right column string descriptors
;  175     0708  1     TTYPE  : VECTOR      [MAXLIN + 2],                  ! Temp column line types
;  176     0709  1     TLINES : BLOCKVECTOR [MAXLIN + 2, STR$K_D_BLN];     ! Temp column string descriptors
;  177     0710  1
;  178     0711  1 !
;  179     0712  1 ! EXTERNAL REFERENCES:
;  180     0713  1 !
```

```
;  182     0714  1 %SBTTL 'GLOBAL ROUTINE NDXINI -- Once only initialization'
;  183     0715  1 GLOBAL ROUTINE NDXINI : NOVALUE =
;  184     0716  1 !++
;  185     0717  1 !
;  186     0718  1 ! FUNCTIONAL DESCRIPTION:
;  187     0719  1 !
;  188     0720  1 !       This routine is called by the command line interface routine
;  189     0721  1 !       to do once only initialization of global data structures.
;  190     0722  1 !
;  191     0723  1 ! FORMAL PARAMETERS:
;  192     0724  1 !
;  193     0725  1 !       None.
;  194     0726  1 !
;  195     0727  1 ! IMPLICIT INPUTS:
;  196     0728  1 !
;  197     0729  1 !       None.
;  198     0730  1 !
;  199     0731  1 ! IMPLICIT OUTPUTS:
;  200     0732  1 !
;  201     0733  1 !       CMDBLK  - Command line information block is initialized
;  202     0734  1 !       XPLBLK  - Extended indexing attributes block is initialized
;  203     0735  1 !       LLINES  - Left column string descriptors are initialized
;  204     0736  1 !       RLINES  - Right column string descriptors are initialized
;  205     0737  1 !       TLINES  - String descriptors for right column on last page
;  206     0738  1 !
;  207     0739  1 ! ROUTINE VALUE:
;  208     0740  1 ! COMPLETION CODES:
;  209     0741  1 !
;  210     0742  1 !       None.
;  211     0743  1 !
;  212     0744  1 ! SIDE EFFECTS:
;  213     0745  1 !
;  214     0746  1 !       None.
;  215     0747  1 !--
;  216     0748  2     BEGIN
;  217     0749  2     !
;  218     0750  2     ! Initialize the command line information block
;  219     0751  2     !
;  220     0752  2     CMDBLK [NDX$V_OPTIONS] = 0;
;  221     0753  2     $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_MASTER_BOOK], CLASS = DYNAMIC);
;  222     0754  2     $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_INPUT_FILE], CLASS = DYNAMIC);
;  223     0755  2     $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_OUTPUT_FILE], CLASS = DYNAMIC);
;  224     0756  2     $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_REQUIRE_FILE], CLASS = DYNAMIC);
;  225     0757  2     $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_COMMAND_LINE], CLASS = DYNAMIC);
;  226     0758  2
;  227     0759  2     !
;  228     0760  2     ! Initialize related file specification descriptor. This string is
;  229     0761  2     ! set to the resultant input file specification by NDXINP for every
;  230     0762  2     ! input file which is not concatenated to the previous one. Thus the
;  231     0763  2     ! related file name for a series of concatenated input files is the
;  232     0764  2     ! resultant file name of the first file in the series.
;  233     0765  2     !
;  234     0766  2     $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_RELATED_FILE], CLASS = DYNAMIC);
;  235     0767  2
;  236     0768  2     !
;  237     0769  2     ! Initialize extended indexing attributes block
;  238     0770  2     !
```

```
;  239          0771  2     XPLBLK [XPL$V_VALID] = FALSE;                ! No extended indexing attributes seen yet
;  240          0772  2     $STR_DESC_INIT (DESCRIPTOR = XPLBLK [XPL$T_SORT], CLASS = DYNAMIC);
;  241          0773  2     $STR_DESC_INIT (DESCRIPTOR = XPLBLK [XPL$T_APPEND], CLASS = DYNAMIC);
;  242          0774  2
;  243          0775  2     !
;  244          0776  2     ! Initialize string descriptors used to build a page of output
;  245          0777  2     !
;  246          0778  2     INCR I FROM 0 TO MAXLIN + 1 DO
;  247          0779  3         BEGIN
;  248          0780  3         $STR_DESC_INIT (DESCRIPTOR = LLINES [.I, 0,0,0,0], CLASS = DYNAMIC);
;  249          0781  3         $STR_DESC_INIT (DESCRIPTOR = RLINES [.I, 0,0,0,0], CLASS = DYNAMIC);
;  250          0782  3         $STR_DESC_INIT (DESCRIPTOR = TLINES [.I, 0,0,0,0], CLASS = DYNAMIC);
;  251          0783  2         END;
;  252          0784  2
;  253          0785  1     END;


;                                                       .TITLE  NDXINI NDXINI -- Once only initialization and g
                                                                lobal d
                                                        .IDENT  \V04-000\

                                                        .PSECT  $GLOBAL$,NOEXE,2

                                                00000 OUTIOB::.BLKB   244
                                                000F4 CMDBLK::.BLKB   80
                                                00144 XPLBLK::.BLKB   20
                                                00158 PAGEN::.BLKB    16
                                                00168 BUCKET::.BLKB   2916
                                                00CCC LSTPTR::.BLKB   4
                                                00CD0 INDLVL::.BLKB   4
                                                00CD4 LSTSTK::.BLKB   44
                                    00000000    00D00 NDXPOL::.LONG   0                                         ;
                                    00000000    00D04 NDXSGE::.LONG   0                                         ;
                                    00000000    00D08 NDXSGF::.LONG   0                                         ;
                                    00000000    00D0C XTNPOL::.LONG   0                                         ;
                                    00000000    00D10 XTNCNT::.LONG   0                                         ;
                                    00000000    00D14 XTNLSP::.LONG   0                                         ;
                                    00000000    00D18 XTNLSX::.LONG   0                                         ;
                                    00000000    00D1C XTNSGP::.LONG   0                                         ;
                                    00000000    00D20 XTNTAB::.LONG   0                                         ;
                                    00000000    00D24 XPAGEN::.LONG   0                                         ;
                                    00000000    00D28 BOOKID::.LONG   0                                         ;
                                    00000000    00D2C PAGENO::.LONG   0                                         ;
                                                00D30 ALLOWD::.BLKB   4
                                                00D34 LCOUNT::.BLKB   4
                                                00D38 RCOUNT::.BLKB   4
                                                00D3C TCOUNT::.BLKB   4
                                                00D40 LTYPE::.BLKB    328
                                                00E88 LLINES::.BLKB   656
                                                01118 RTYPE::.BLKB    328
                                                01260 RLINES::.BLKB   656
                                                014F0 TTYPE::.BLKB    328
                                                01638 TLINES::.BLKB   656

                                                      TAB==             9
                                                      TMSCOL==          39
                                                      RINTES==          28
```

```
                                                MAXLST==            10
                                                MAXLIN==            80
                                                $STR$DESC=          CMDBLK+32
                                                $STR$BIN_DESC=      CMDBLK+32
                                                $STR$DESC=          CMDBLK+40
                                                $STR$BIN_DESC=      CMDBLK+40
                                                $STR$DESC=          CMDBLK+48
                                                $STR$BIN_DESC=      CMDBLK+48
                                                $STR$DESC=          CMDBLK+56
                                                $STR$BIN_DESC=      CMDBLK+56
                                                $STR$DESC=          CMDBLK+72
                                                $STR$BIN_DESC=      CMDBLK+72
                                                $STR$DESC=          CMDBLK+64
                                                $STR$BIN_DESC=      CMDBLK+64
                                                $STR$DESC=          XPLBLK+4
                                                $STR$BIN_DESC=      XPLBLK+4
                                                $STR$DESC=          XPLBLK+12
                                                $STR$BIN_DESC=      XPLBLK+12

                                                                    .PSECT  $CODE$,NOWRT,2

                                                0004 00000          .ENTRY  NDXINI, Save R2                                 ; 0715
                                    52 00000000'  EF   9E 00002     MOVAB   CMDBLK, R2                                      ;
                                                  62   D4 00009     CLRL    CMDBLK                                          ; 0752
                                20  A2 020E0000     8F   D0 0000B     MOVL    #34471936, $STR$DESC                          ; 0753
                                                24    A2   D4 00013     CLRL    $STR$DESC+4                                   ;
                                28  A2 020E0000     8F   D0 00016     MOVL    #34471936, $STR$DESC                          ; 0754
                                                2C    A2   D4 0001E     CLRL    $STR$DESC+4                                   ;
                                30  A2 020E0000     8F   D0 00021     MOVL    #34471936, $STR$DESC                          ; 0755
                                                34    A2   D4 00029     CLRL    $STR$DESC+4                                   ;
                                38  A2 020E0000     8F   D0 0002C     MOVL    #34471936, $STR$DESC                          ; 0756
                                                3C    A2   D4 00034     CLRL    $STR$DESC+4                                   ;
                                48  A2 020E0000     8F   D0 00037     MOVL    #34471936, $STR$DESC                          ; 0757
                                                4C    A2   D4 0003F     CLRL    $STR$DESC+4                                   ;
                                40  A2 020E0000     8F   D0 00042     MOVL    #34471936, $STR$DESC                          ; 0766
                                                44    A2   D4 0004A     CLRL    $STR$DESC+4                                   ;
                                50  A2              01   8A 0004D     BICB2   #1, XPLBLK                                    ; 0771
                                54  A2 020E0000     8F   D0 00051     MOVL    #34471936, $STR$DESC                          ; 0772
                                                58    A2   D4 00059     CLRL    $STR$DESC+4                                   ;
                                5C  A2 020E0000     8F   D0 0005C     MOVL    #34471936, $STR$DESC                          ; 0773
                                                60    A2   D4 00064     CLRL    $STR$DESC+4                                   ;
                                                      50   D4 00067     CLRL    I                                             ; 0778
                                    51      0D94  C240   7E 00069 1$:   MOVAQ   LLINES[I], R1                                ; 0780
                                    61 020E0000     8F   D0 0006F     MOVL    #34471936, (R1)                               ;
                                                04    A1   D4 00076     CLRL    4(R1)                                         ;
                                    51      116C  C240   7E 00079     MOVAQ   RLINES[I], R1                                 ; 0781
                                    61 020E0000     8F   D0 0007F     MOVL    #34471936, (R1)                               ;
                                                04    A1   D4 00086     CLRL    4(R1)                                         ;
                                    51      1544  C240   7E 00089     MOVAQ   TLINES[I], R1                                 ; 0782
                                    61 020E0000     8F   D0 0008F     MOVL    #34471936, (R1)                               ;
                                                04    A1   D4 00096     CLRL    4(R1)                                         ;
                                C8              50 00000051   8F   F3 00099     AOBLEQ  #81, I, 1$                            ; 0778
                                                              04 000A1          RET                                           ; 0785

; Routine Size:  162 bytes,    Routine Base:  $CODE$ + 0000
```

```
;  254          0786  1
;  255          0787  1 END                                   ! End of module
;  256          0788  0 ELUDOM



;                                  PSECT SUMMARY
;
;       Name                    Bytes                           Attributes
;
;  $GLOBAL$                      6344  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                         162  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  .  ABS  .                        0  NOVEC,NOWRT,NORD ,NOEXE,NOSHR,  LCL,  ABS,  CON,NOPIC,ALIGN(0)



;                                Library Statistics
;
;                                        -------- Symbols --------      Pages       Processing
;       File                             Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]XPORT.L32;1          590       130        22       252          00:00.2



;                                  COMMAND QUALIFIERS
;
;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:NDXINI/OBJ=OBJ$:NDXINI MSRC$:NDXINI/UPDATE=(ENH$:NDXINI)

; Size:         162 code + 6344 data bytes
; Run Time:         00:30.9
; Elapsed Time:     01:03.4
; Lines/CPU Min:     1530
; Lexemes/CPU-Min:  89295
; Memory Used:  155 pages
; Compilation Complete
```

0344 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
CONFIDENTIAL AND PROPRIETARY

NDXMSG
LIS

NDXOUT
LIS

NDXINI
LIS