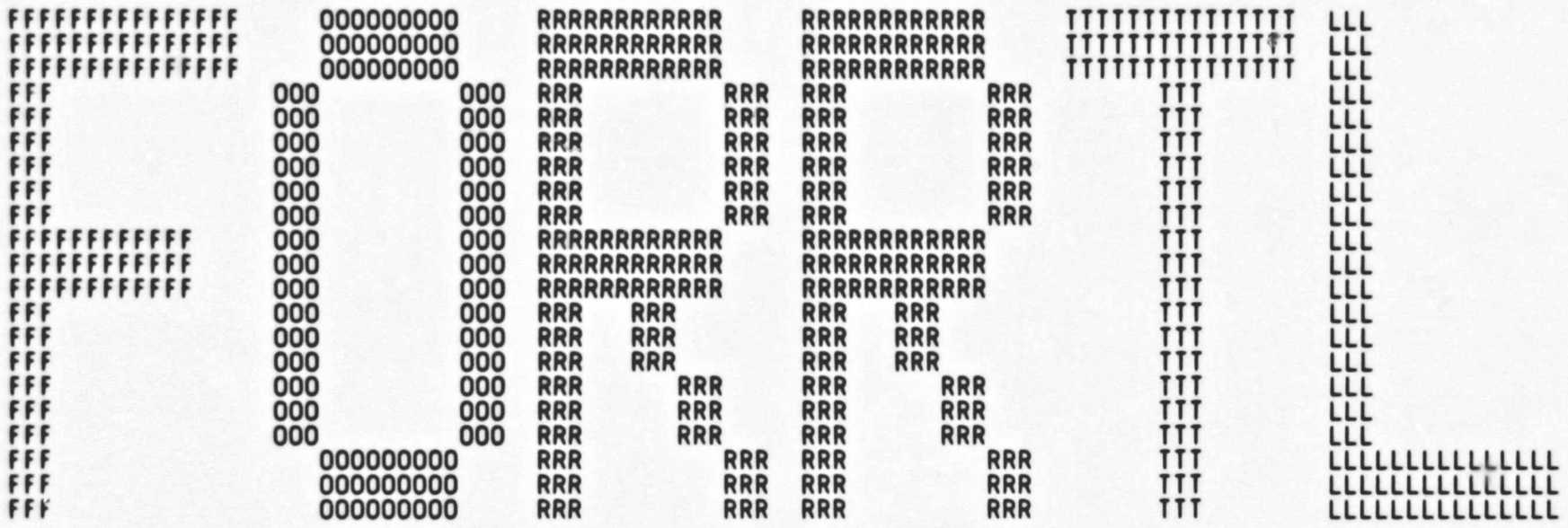
FORTRAN
LLLLLLLLLLLLLLL

```
FFFFFFFFFF    000000    RRRRRRRR    DDDDDDDD     IIIIII     SSSSSSSS  PPPPPPPP     AAAAAA    TTTTTTTTTT
FFFFFFFFFF    000000    RRRRRRRR    DDDDDDDD     IIIIII     SSSSSSSS  PPPPPPPP     AAAAAA    TTTTTTTTTT
FF          00      00  RR      RR  DD      DD     II     SS          PP      PP  AA    AA      TT
FF          00      00  RR      RR  DD      DD     II     SS          PP      PP  AA    AA      TT
FF          00      00  RR      RR  DD      DD     II     SS          PP      PP  AA    AA      TT
FF          00      00  RR      RR  DD      DD     II     SS          PP      PP  AA    AA      TT
FFFFFFFF    00      00  RRRRRRRR    DD      DD     II       SSSSSS    PPPPPPPP  AA    AA      TT
FFFFFFFF    00      00  RRRRRRRR    DD      DD     II       SSSSSS    PPPPPPPP  AA    AA      TT
FF          00      00  RR  RR      DD      DD     II             SS  PP        AAAAAAAAAA      TT
FF          00      00  RR  RR      DD      DD     II             SS  PP        AAAAAAAAAA      TT
FF          00      00  RR    RR    DD      DD     II             SS  PP        AA    AA        TT
FF          00      00  RR    RR    DD      DD     II             SS  PP        AA    AA        TT
FF            000000    RR      RR  DDDDDDDD     IIIIII     SSSSSSSS  PP        AA    AA        TT
FF            000000    RR      RR  DDDDDDDD     IIIIII     SSSSSSSS  PP        AA    AA        TT

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
```

```
;     1          0001  0 MODULE FOR$$DISPATCH_T (%TITLE'I/O dispatch tables for FORTRAN'
;     2          0002  0                   IDENT = '1-020'          ! File: FORDISPAT.B32  Edit: SBL1020
;     3          0003  0                   ) =
;     4          0004  1 BEGIN
;     5          0005  1 !
;     6          0006  1 !*****************************************************************************
;     7          0007  1 !*                                                                           *
;     8          0008  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
;     9          0009  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                    *
;    10          0010  1 !*  ALL RIGHTS RESERVED.                                                      *
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;    14          0014  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER    *
;    15          0015  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY    *
;    16          0016  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY    *
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;    18          0018  1 !*                                                                           *
;    19          0019  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE    *
;    20          0020  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT    *
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;    22          0022  1 !*                                                                           *
;    23          0023  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS    *
;    24          0024  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                   *
;    25          0025  1 !*                                                                           *
;    26          0026  1 !*                                                                           *
;    27          0027  1 !*****************************************************************************
;    28          0028  1 !
;    29          0029  1
;    30          0030  1 !++
;    31          0031  1 ! FACILITY:     FORTRAN I/O
;    32          0032  1 !
;    33          0033  1 ! ABSTRACT:
;    34          0034  1 !
;    35          0035  1 !       This module contains the Global dispatch tables for the UDF (user data
;    36          0036  1 !       formatter) level and REC (record) level for FORTRAN.
;    37          0037  1 !       In addition it contains a routine which signals errors for invalid
;    38          0038  1 !       statement types.
;    39          0039  1 !
;    40          0040  1 ! ENVIRONMENT:
;    41          0041  1 !
;    42          0042  1 !       AST reentrant - all OWN storage is read only
;    43          0043  1 !
;    44          0044  1 ! AUTHOR: Donald G. Petersen    , CREATION DATE: 07-Dec-78
;    45          0045  1 !
;    46          0046  1 ! MODIFIED BY:
;    47          0047  1 !
;    48          0048  1 !       DGP,06-Dec-78 : VERSION 1-001
;    49          0049  1 ! 1-001 - original.  DGP 06-Dec-78
;    50          0050  1 ! 1-002 - Add some functionality to OTS$$SIGDIS_ERR.  DGP 08-Dec-78
;    51          0051  1 ! 1-003 - Change dispatch tables to longwords.  DGP 11-Dec-78
;    52          0052  1 ! 1-004 - Add Basic READ to dispatch tables.  DGP 12-Dec-78
;    53          0053  1 ! 1-005 - Change FORLNK require file to OTSLNK.  JBS 22-DEC-78
;    54          0054  1 ! 1-006 - Signal the proper errors in the error routine.  DGP 18-Jan-79
;    55          0055  1 ! 1-007 - Change file name to OTSDISPAT to agree with RTL standards
;    56          0056  1 !           and internal comments.  JBS 27-JAN-1979
;    57          0057  1 ! 1-008 - Use 32-bit addresses for externals.  JBS 27-JAN-1979
```

```
;    58          0058  1 ! 1-009 - Track SBL's changes to the statement types in the ISB.
;    59          0059  1 !           JBS 09-FEB-1979
;    60          0060  1 ! 1-010 - Add GET and PUT.  DGP 19-Feb-79
;    61          0061  1 ! 1-011 - Add PRINT USING and straighten up a lot of Basic stuff.  DGP
;    62          0062  1 !           15-May-79
;    63          0063  1 ! 1-012 - Add MAT INPUT.  DGP 05-Jun-79
;    64          0064  1 ! 1-013 - Add MAT PRINT.  DGP 15-Jun-79
;    65          0065  1 ! 1-014 - Add remaining FORTRAN statement types.  Indexed REWRITE,
;    66          0066  1 !           keyed READ, internal READ and WRITE.  SBL 18-Jun-1979
;    67          0067  1 ! 1-015 - Remove BASIC and change name to FOR$$DISPATCH_T.  The
;    68          0068  1 !           BASIC part is put into BAS$$DISPATCH_T.  JBS 26-JUN-1979
;    69          0069  1 ! 1-016 - Use ISB symbols to determine table size.  SBL 12-July-1979
;    70          0070  1 ! 1-017 - Add FOR$$SIGDIS_JSB.  JBS 01-JUL-1979
;    71          0071  1 ! ***** - VMS V2.0
;    72          0072  1 ! 1-018 - Add table entries for NAMELIST.  SBL 16-July-1980
;    73          0073  1 ! 1-019 - Make UDF- and REC-level references WEAK.  JAW 25-Aug-1981
;    74          0074  1 ! ***** - VMS V3.0
;    75          0075  1 ! 1-020 - Add table entries for list-directed internal files.  Use
;    76          0076  1 !           prologue file.  SBL 21-Apr-1983
;    77          0077  1 !--
;    78          0078  1
```

```
;    80          0079  1 !
;    81          0080  1 ! PROLOGUE FILE:
;    82          0081  1 !
;    83          0082  1
;    84          0083  1 REQUIRE 'RTLIN:FORPROLOG';                      ! FORTRAN definitions
;    85          0149  1
;    86          0150  1 !
;    87          0151  1 ! TABLE OF CONTENTS:
;    88          0152  1 !
;    89          0153  1
;    90          0154  1 FORWARD ROUTINE
;    91          0155  1     FOR$$SIGDIS_ERR : CALL_CCB NOVALUE,          ! Signal a dispatch error
;    92          0156  1     FOR$$SIGDIS_JSB : JSB_ODF0 NOVALUE;          ! (JSB entry point)
;    93          0157  1
;    94          0158  1 !
;    95          0159  1 ! MACROS:
;    96          0160  1 !
;    97          0161  1 !       NONE
;    98          0162  1 !
;    99          0163  1 ! EQUATED SYMBOLS:
;   100          0164  1 !
;   101          0165  1 !       NONE
;   102          0166  1 !
;   103          0167  1 ! EXTERNAL REFERENCES:
;   104          0168  1 !
;   105          0169  1
;   106          0170  1 EXTERNAL LITERAL
;   107          0171  1     OTS$_FATINTERR,
;   108          0172  1     OTS$_IO_CONCLO;
;   109          0173  1
;   110          0174  1 !+
;   111          0175  1 ! Formatting level of abstraction
;   112          0176  1 !-
;   113          0177  1
;   114          0178  1 EXTERNAL ROUTINE
;   115          0179  1     FOR$$UDF_RF0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize read formatted
;   116          0180  1     FOR$$UDF_RF1 : CALL_CCB NOVALUE WEAK,        ! format one I/O list element
;   117          0181  1     FOR$$UDF_RF9 : JSB_ODF9 NOVALUE WEAK,        ! terminate read formatted
;   118          0182  1     FOR$$UDF_WF0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize write formatted
;   119          0183  1     FOR$$UDF_WF1 : CALL_CCB NOVALUE WEAK,        ! Format one I/O list element
;   120          0184  1     FOR$$UDF_WF9 : JSB_ODF9 NOVALUE WEAK,        ! Terminate write formatted
;   121          0185  1     FOR$$UDF_RU0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize read unformatted
;   122          0186  1     FOR$$UDF_RU1 : CALL_CCB NOVALUE WEAK,        ! Transmit one I/O list element
;   123          0187  1     FOR$$UDF_RU9 : JSB_ODF9 NOVALUE WEAK,        ! Terminate read unformatted
;   124          0188  1     FOR$$UDF_WU0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize write unformatted
;   125          0189  1     FOR$$UDF_WU1 : CALL_CCB NOVALUE WEAK,        ! Transmit one I/O list element
;   126          0190  1     FOR$$UDF_WU9 : JSB_ODF9 NOVALUE WEAK,        ! Terminate write unformatted
;   127          0191  1     FOR$$UDF_RL0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize read list-directed
;   128          0192  1     FOR$$UDF_RL1 : CALL_CCB NOVALUE WEAK,        ! Transmit one I/O list element
;   129          0193  1     FOR$$UDF_RL9 : JSB_ODF9 NOVALUE WEAK,        ! Terminate read list directed
;   130          0194  1     FOR$$UDF_WL0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize write list-directed
;   131          0195  1     FOR$$UDF_WL1 : CALL_CCB NOVALUE WEAK,        ! Transmit one I/O list element
;   132          0196  1     FOR$$UDF_WL9 : JSB_ODF9 NOVALUE WEAK,        ! Terminate write list-directed
;   133          0197  1     FOR$$UDF_RN0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize read NAMELIST
;   134          0198  1                                                  ! No UDF_RN1 exists
;   135          0199  1     FOR$$UDF_RN9 : JSB_UDF9 NOVALUE WEAK,        ! Terminate read NAMELIST
;   136          0200  1     FOR$$UDF_WN0 : JSB_UDF0 NOVALUE WEAK,        ! Initialize write NAMELIST
```

```
;  137     0201  1                                          ! No UDF_WN1 exists
;  138     0202  1      FOR$$UDF_WN9 : JSB_UDF9 NOVALUE WEAK;       ! Terminate write NAMELIST
;  139     0203  1
;  140     0204  1  !+
;  141     0205  1  ! Record processing level of abstraction
;  142     0206  1  !-
;  143     0207  1
;  144     0208  1  EXTERNAL ROUTINE                                ! Read sequential formatted record
;  145     0209  1      FOR$$REC_RSF0 : JSB_REC0 NOVALUE WEAK,      ! read first record
;  146     0210  1      FOR$$REC_RSF1 : JSB_REC1 NOVALUE WEAK,      ! read all subsequent records
;  147     0211  1      FOR$$REC_RSF9 : JSB_REC9 NOVALUE WEAK,      ! terminate read write sequential
;  148     0212  1      ! formatted record
;  149     0213  1      FOR$$REC_WSF0 : JSB_REC0 NOVALUE WEAK,      ! initialize output buffer
;  150     0214  1      FOR$$REC_WSF1 : JSB_REC1 NOVALUE WEAK,      ! write all but last record
;  151     0215  1      FOR$$REC_WSF9 : JSB_REC9 NOVALUE WEAK,      ! write last record
;  152     0216  1      ! read sequential unformatted record
;  153     0217  1      FOR$$REC_RSU0 : JSB_REC0 NOVALUE WEAK,      ! read first record
;  154     0218  1      FOR$$REC_RSU1 : JSB_REC1 NOVALUE WEAK,      ! read all subsequent records
;  155     0219  1      FOR$$REC_RSU9 : JSB_REC9 NOVALUE WEAK,      ! terminate read
;  156     0220  1      ! write sequential unformatted record:
;  157     0221  1      FOR$$REC_WSU0 : JSB_REC0 NOVALUE WEAK,      ! initialize output buffer
;  158     0222  1      FOR$$REC_WSU1 : JSB_REC1 NOVALUE WEAK,      ! write all but last record
;  159     0223  1      FOR$$REC_WSU9 : JSB_REC9 NOVALUE WEAK,      ! write last record
;  160     0224  1      ! read direct (formatted: and unformatted)
;  161     0225  1      FOR$$REC_RD0 : JSB_REC0 NOVALUE WEAK,       ! read first record
;  162     0226  1      FOR$$REC_RD1 : JSB_REC1 NOVALUE WEAK,       ! read next record
;  163     0227  1      FOR$$REC_RD9 : JSB_REC9 NOVALUE WEAK,       ! terminate read
;  164     0228  1      ! write direct (formatted: and unformatted)
;  165     0229  1      FOR$$REC_WD0 : JSB_REC0 NOVALUE WEAK,       ! initialize output buffer
;  166     0230  1      FOR$$REC_WD1 : JSB_REC1 NOVALUE WEAK,       ! write next record
;  167     0231  1      FOR$$REC_WD9 : JSB_REC9 NOVALUE WEAK,       ! write last record
;  168     0232  1      ! read sequential list-directed
;  169     0233  1      FOR$$REC_RSL0 : JSB_REC0 NOVALUE WEAK,      ! read first record
;  170     0234  1      FOR$$REC_RSL1 : JSB_REC1 NOVALUE WEAK,      ! read all subsequent records
;  171     0235  1      FOR$$REC_RSL9 : JSB_REC9 NOVALUE WEAK,      ! terminate read
;  172     0236  1      ! write sequential list-directed
;  173     0237  1      FOR$$REC_WSL0 : JSB_REC0 NOVALUE WEAK,      ! initialize output buffer
;  174     0238  1      FOR$$REC_WSL1 : JSB_REC1 NOVALUE WEAK,      ! write all but last record
;  175     0239  1      FOR$$REC_WSL9 : JSB_REC9 NOVALUE WEAK,      ! write last record
;  176     0240  1      ! read memory formatted (DECODE)
;  177     0241  1      FOR$$REC_RMF0 : JSB_REC0 NOVALUE WEAK,      ! initialize pointers to user area
;  178     0242  1      FOR$$REC_RMF1 : JSB_REC1 NOVALUE WEAK,      ! illegal
;  179     0243  1      FOR$$REC_RMF9 : JSB_REC9 NOVALUE WEAK,      ! terminate read
;  180     0244  1      ! write memory formatted (ENCODE)
;  181     0245  1      FOR$$REC_WMF0 : JSB_REC0 NOVALUE WEAK,      ! initialize output buffer to user area
;  182     0246  1      FOR$$REC_WMF1 : JSB_REC1 NOVALUE WEAK,      ! illegal
;  183     0247  1      FOR$$REC_WMF9 : JSB_REC9 NOVALUE WEAK,      ! terminate write
;  184     0248  1      FOR$$REC_RKF0 : JSB_REC0 NOVALUE WEAK,      ! read keyed formatted
;  185     0249  1      FOR$$REC_RKF1 : JSB_REC1 NOVALUE,
;  186     0250  1      FOR$$REC_RKF9 : JSB_REC9 NOVALUE,
;  187     0251  1      FOR$$REC_RKU0 : JSB_REC0 NOVALUE WEAK,      ! read keyed unformatted
;  188     0252  1      FOR$$REC_RKU1 : JSB_REC1 NOVALUE,
;  189     0253  1      FOR$$REC_RKU9 : JSB_REC9 NOVALUE,
;  190     0254  1      FOR$$REC_WXF0 : JSB_REC0 NOVALUE WEAK,      ! REWRITE indexed formatted
;  191     0255  1      FOR$$REC_WXF1 : JSB_REC1 NOVALUE,
;  192     0256  1      FOR$$REC_WXF9 : JSB_REC9 NOVALUE,
;  193     0257  1      FOR$$REC_WXU0 : JSB_REC0 NOVALUE WEAK,      ! REWRITE indexed unformatted
```

```
;   194          0258  1      FOR$$REC_WXU1 : JSB_REC1 NOVALUE,
;   195          0259  1      FOR$$REC_WXU9 : JSB_REC9 NOVALUE,
;   196          0260  1      FOR$$REC_WIF0 : JSB_REC0 NOVALUE WEAK,      ! Write internal file
;   197          0261  1      FOR$$REC_WIF1 : JSB_REC1 NOVALUE,
;   198          0262  1      FOR$$REC_WIF9 : JSB_REC9 NOVALUE,
;   199          0263  1      FOR$$REC_RIF0 : JSB_REC0 NOVALUE WEAK,      ! Read internal file
;   200          0264  1      FOR$$REC_RIF1 : JSB_REC1 NOVALUE,
;   201          0265  1      FOR$$REC_RIF9 : JSB_REC9 NOVALUE,
;   202          0266  1      FOR$$REC_WSN0 : JSB_REC0 NOVALUE WEAK,      ! Write NAMELIST
;   203          0267  1      FOR$$REC_WSN1 : JSB_REC1 NOVALUE,
;   204          0268  1                                                  ! There is no 9 level REC
;   205          0269  1                                                  ! routine for Write NAMELIST
;   206          0270  1      FOR$$REC_RSN0 : JSB_REC0 NOVALUE WEAK,      ! Read NAMELIST
;   207          0271  1      FOR$$REC_RSN1 : JSB_REC1 NOVALUE WEAK,
;   208          0272  1                                                  ! There is no 9 level REC
;   209          0273  1                                                  ! routine for Read NAMELIST
;   210          0274  1      FOR$$REC_WIL0 : JSB_REC0 NOVALUE WEAK,      ! Write internal list-directed
;   211          0275  1      FOR$$REC_WIL1 : JSB_REC1 NOVALUE,
;   212          0276  1      FOR$$REC_WIL9 : JSB_REC9 NOVALUE,
;   213          0277  1      FOR$$REC_RIL0 : JSB_REC0 NOVALUE WEAK,      ! Read internal list-directed
;   214          0278  1      FOR$$REC_RIL1 : JSB_REC1 NOVALUE,
;   215          0279  1      FOR$$REC_RIL9 : JSB_REC9 NOVALUE;
;   216          0280  1
;   217          0281  1  !
;   218          0282  1  ! OWN STORAGE:
;   219          0283  1  !
```

```
;   221          0284  1 !+
;   222          0285  1 ! GLOBAL DISPATCH VECTORS (indexed by I/O statement type numbers):
;   223          0286  1 ! Connects the first level of abstraction (UPI) to the
;   224          0287  1 ! second level (UDF). Note: The comments down the
;   225          0288  1 ! side describe the I/O statement index (UPI level) into the
;   226          0289  1 ! dispatch table rather than the external routine contained in
;   227          0290  1 ! the entry (UDF level). The entries are the name of the
;   228          0291  1 ! User data formatters (UDF level = 2nd level of abstraction) -
;   229          0292  1 ! First letter: R = READ, W = WRITE; second letter: F = formatted,
;   230          0293  1 ! U = unformatted, L = list-directed.
;   231          0294  1 ! Declare as GLOBAL rather then GLOBAL BIND because
;   232          0295  1 ! BLISS doesn't allow BIND table = ... - table).
;   233          0296  1 !-
;   234          0297  1 !+
;   235          0298  1 ! Initialization of UDF level:
;   236          0299  1 !-
;   237          0300  1
;   238          0301  1 GLOBAL
;   239          0302  1     FOR$$AA_UDF_PRO : VECTOR [ISB$K_FORSTTYHI - ISB$K_FORSTTYLO + 2,, SIGNED]
;   240          0303  1         PSECT (_FOR$CODE) INITIAL (
;   241          0304  1                                 ! I/O on closed unit
;   242          0305  1             FOR$$SIGDIS_JSB - FOR$$AA_UDF_PRO,  ! Error
;   243          0306  1                                 ! I/O statement type:
;   244          0307  1             FOR$$UDF_WFO - FOR$$AA_UDF_PRO,     !   WRITE sequential formatted (WSF)
;   245          0308  1             FOR$$UDF_RFO - FOR$$AA_UDF_PRO,     ! READ sequential formatted (RSF)
;   246          0309  1             FOR$$UDF_WUO - FOR$$AA_UDF_PRO,     ! WRITE sequential unformatted (WSU)
;   247          0310  1             FOR$$UDF_RUO - FOR$$AA_UDF_PRO,     ! READ sequential unformatted (RSU)
;   248          0311  1             FOR$$UDF_WFO - FOR$$AA_UDF_PRO,     ! WRITE direct formatted (WDF)
;   249          0312  1             FOR$$UDF_RFO - FOR$$AA_UDF_PRO,     ! READ direct formatted (RDF)
;   250          0313  1             FOR$$UDF_WUO - FOR$$AA_UDF_PRO,     ! WRITE direct unformatted (WDU)
;   251          0314  1             FOR$$UDF_RUO - FOR$$AA_UDF_PRO,     ! READ direct unformatted (RDU)
;   252          0315  1             FOR$$UDF_WLO - FOR$$AA_UDF_PRO,     ! WRITE sequential list-direct (WSL)
;   253          0316  1             FOR$$UDF_RLO - FOR$$AA_UDF_PRO,     ! READ sequential list-directed (RSL)
;   254          0317  1             FOR$$UDF_WFO - FOR$$AA_UDF_PRO,     ! ENCODE (memory formatted) (WMF)
;   255          0318  1             FOR$$UDF_RFO - FOR$$AA_UDF_PRO,     ! DECODE (memory formatted) (RMF)
;   256          0319  1             FOR$$UDF_WFO - FOR$$AA_UDF_PRO,     ! FORTRAN REWRITE indexed formatted (WXF)
;   257          0320  1             FOR$$UDF_RFO - FOR$$AA_UDF_PRO,     ! FORTRAN READ keyed formatted (RKF)
;   258          0321  1             FOR$$UDF_WUO - FOR$$AA_UDF_PRO,     ! FORTRAN REWRITE indexed unformatted (WXU)
;   259          0322  1             FOR$$UDF_RUO - FOR$$AA_UDF_PRO,     ! FORTRAN READ keyed unformatted (RKU)
;   260          0323  1             FOR$$UDF_WFO - FOR$$AA_UDF_PRO,     ! FORTRAN WRITE internal formatted (WIF)
;   261          0324  1             FOR$$UDF_RFO - FOR$$AA_UDF_PRO,     ! FORTRAN READ internal formatted (RIF)
;   262          0325  1             FOR$$UDF_WNO - FOR$$AA_UDF_PRO,     ! FORTRAN WRITE NAMELIST
;   263          0326  1             FOR$$UDF_RNO - FOR$$AA_UDF_PRO,     ! FORTRAN READ NAMELIST
;   264          0327  1             FOR$$UDF_WLO - FOR$$AA_UDF_PRO,     ! FORTRAN WRITE internal list-directed
;   265          0328  1             FOR$$UDF_RLO - FOR$$AA_UDF_PRO);    ! FORTRAN READ internal list-directed
```

```
;  267          0329  1 !+
;  268          0330  1 ! Transmit a single I/O list element
;  269          0331  1 !-
;  270          0332  1
;  271          0333  1 GLOBAL
;  272          0334  1     FOR$$AA_UDF_PR1 : VECTOR [ISB$K_FORSTTYHI - ISB$K_FORSTTYLO + 2,, SIGNED]
;  273          0335  1         PSECT (FOR$CODE) INITIAL (
;  274          0336  1             FOR$$SIGDIS_ERR - FOR$$AA_UDF_PR1,   ! I/O on closed unit error
;  275          0337  1                                                  ! I/O statement type:
;  276          0338  1             FOR$$UDF_WF1 - FOR$$AA_UDF_PR1,      ! WRITE sequential formatted (WSF)
;  277          0339  1             FOR$$UDF_RF1 - FOR$$AA_UDF_PR1,      ! READ sequential formatted (RSF)
;  278          0340  1             FOR$$UDF_WU1 - FOR$$AA_UDF_PR1,      ! WRITE sequential unformatted (WSU)
;  279          0341  1             FOR$$UDF_RU1 - FOR$$AA_UDF_PR1,      ! READ sequential unformatted (RSU)
;  280          0342  1             FOR$$UDF_WF1 - FOR$$AA_UDF_PR1,      ! WRITE direct formatted (WDF)
;  281          0343  1             FOR$$UDF_RF1 - FOR$$AA_UDF_PR1,      ! READ direct formatted (RDF)
;  282          0344  1             FOR$$UDF_WU1 - FOR$$AA_UDF_PR1,      ! WRITE direct unformatted (WDU)
;  283          0345  1             FOR$$UDF_RU1 - FOR$$AA_UDF_PR1,      ! READ direct unformatted (RDU)
;  284          0346  1             FOR$$UDF_WL1 - FOR$$AA_UDF_PR1,      ! WRITE sequential list-direct (WSL)
;  285          0347  1             FOR$$UDF_RL1 - FOR$$AA_UDF_PR1,      ! READ sequential list-directed (RSL)
;  286          0348  1             FOR$$UDF_WF1 - FOR$$AA_UDF_PR1,      ! ENCODE (memory formatted) (WMF)
;  287          0349  1             FOR$$UDF_RF1 - FOR$$AA_UDF_PR1,      ! DECODE (memory formatted) (RMF)
;  288          0350  1             FOR$$UDF_WF1 - FOR$$AA_UDF_PR1,      ! FORTRAN REWRITE indexed formatted (WXF)
;  289          0351  1             FOR$$UDF_RF1 - FOR$$AA_UDF_PR1,      ! FORTRAN READ keyed formatted (RKF)
;  290          0352  1             FOR$$UDF_WU1 - FOR$$AA_UDF_PR1,      ! FORTRAN REWRITE indexed unformatted (WXU)
;  291          0353  1             FOR$$UDF_RU1 - FOR$$AA_UDF_PR1,      ! FORTRAN READ keyed unformatted (RKU)
;  292          0354  1             FOR$$UDF_WF1 - FOR$$AA_UDF_PR1,      ! FORTRAN WRITE internal formatted (WIF)
;  293          0355  1             FOR$$UDF_RF1 - FOR$$AA_UDF_PR1,      ! FORTRAN READ internal formatted (RIF)
;  294          0356  1             FOR$$SIGDIS_ERR - FOR$$AA_UDF_PR1,   ! No elements for WRITE NAMELIST
;  295          0357  1             FOR$$SIGDIS_ERR - FOR$$AA_UDF_PR1,   ! No elements for READ NAMELIST
;  296          0358  1             FOR$$UDF_WL1 - FOR$$AA_UDF_PR1,      ! FORTRAN WRITE internal list-dorected
;  297          0359  1             FOR$$UDF_RL1 - FOR$$AA_UDF_PR1);     ! FORTRAN READ internal list-directed
```

```
;  299          0360  1 !+
;  300          0361  1 ! End I/O list entry points:
;  301          0362  1 !-
;  302          0363  1
;  303          0364  1 GLOBAL
;  304          0365  1     FOR$$AA_UDF_PR9 : VECTOR [ISB$K_FORSTTYHI - ISB$K_FORSTTYLO + 2,, SIGNED]
;  305          0366  1         PSECT (_FOR$CODE) INITIAL (
;  306          0367  1             FOR$$SIGDIS_JSB - FOR$$AA_UDF_PR9,  ! I/O on closed unit error
;  307          0368  1                                 ! I/O statement type:
;  308          0369  1             FOR$$UDF_WF9 - FOR$$AA_UDF_PR9,     ! WRITE sequential formatted (WSF)
;  309          0370  1             FOR$$UDF_RF9 - FOR$$AA_UDF_PR9,     ! READ sequential formatted (RSF)
;  310          0371  1             FOR$$UDF_WU9 - FOR$$AA_UDF_PR9,     ! WRITE sequential unformatted (WSU)
;  311          0372  1             FOR$$UDF_RU9 - FOR$$AA_UDF_PR9,     ! READ sequential unformatted (RSU)
;  312          0373  1             FOR$$UDF_WF9 - FOR$$AA_UDF_PR9,     ! WRITE direct formatted (WDF)
;  313          0374  1             FOR$$UDF_RF9 - FOR$$AA_UDF_PR9,     ! READ direct formatted (RDF)
;  314          0375  1             FOR$$UDF_WU9 - FOR$$AA_UDF_PR9,     ! WRITE direct unformatted (WDU)
;  315          0376  1             FOR$$UDF_RU9 - FOR$$AA_UDF_PR9,     ! READ direct unformatted (RDU)
;  316          0377  1             FOR$$UDF_WL9 - FOR$$AA_UDF_PR9,     ! WRITE sequential list-direct (WSL)
;  317          0378  1             FOR$$UDF_RL9 - FOR$$AA_UDF_PR9,     ! READ sequential list-directed (RSL)
;  318          0379  1             FOR$$UDF_WF9 - FOR$$AA_UDF_PR9,     ! ENCODE (memory formatted) (WMF)
;  319          0380  1             FOR$$UDF_RF9 - FOR$$AA_UDF_PR9,     ! DECODE (memory formatted) (RMF)
;  320          0381  1             FOR$$UDF_WF9 - FOR$$AA_UDF_PR9,     ! FORTRAN REWRITE indexed formatted (WXF)
;  321          0382  1             FOR$$UDF_RF9 - FOR$$AA_UDF_PR9,     ! FORTRAN READ keyed formatted (RKF)
;  322          0383  1             FOR$$UDF_WU9 - FOR$$AA_UDF_PR9,     ! FORTRAN REWRITE indexed unformatted (WXU)
;  323          0384  1             FOR$$UDF_RU9 - FOR$$AA_UDF_PR9,     ! FORTRAN READ keyed unformatted (RKU)
;  324          0385  1             FOR$$UDF_WF9 - FOR$$AA_UDF_PR9,     ! FORTRAN WRITE internal formatted (WIF)
;  325          0386  1             FOR$$UDF_RF9 - FOR$$AA_UDF_PR9,     ! FORTRAN READ internal formatted (RIF)
;  326          0387  1             FOR$$UDF_WN9 - FOR$$AA_UDF_PR9,     ! FORTRAN WRITE NAMELIST
;  327          0388  1             FOR$$UDF_RN9 - FOR$$AA_UDF_PR9,     ! FORTRAN READ NAMELIST
;  328          0389  1             FOR$$UDF_WL9 - FOR$$AA_UDF_PR9,     ! FORTRAN WRITE internal list-dorectec
;  329          0390  1             FOR$$UDF_RL9 - FOR$$AA_UDF_PR9);    ! FORTRAN READ internal list-directed
```

```
;   331          0391  1 !+
;   332          0392  1 ! Dispatch tables to call record processing level of abstraction
;   333          0393  1 ! routines (REC = 3rd level). Used to connect 2nd level of
;   334          0394  1 ! abstraction (UDF) to third level of abstraction (REC).
;   335          0395  1 ! The dispatch tables are indexed by I/O statement type (1st
;   336          0396  1 ! level UPI.)
;   337          0397  1 ! Record processing routine names have the form:
;   338          0398  1 ! First letters: R = READ, W = WRITE));
;   339          0399  1 ! Second letters: S = sequential, D = direct, M = memory));
;   340          0400  1 ! third letters: F = formatted, U = unformatted, L = list-directed.
;   341          0401  1 !-
;   342          0402  1 !+
;   343          0403  1 ! Initialize entry points (read first record or setup
;   344          0404  1 ! output buffer).
;   345          0405  1 !-
;   346          0406  1
;   347          0407  1 GLOBAL
;   348          0408  1     FOR$$AA_REC_PRO : VECTOR [ISB$K_FORSTTYHI - ISB$K_FORSTTYLO + 2,, SIGNED]
;   349          0409  1         PSECT (FOR$CODE) INITIAL (
;   350          0410  1             FOR$$SIGDIS_JSB - FOR$$AA_REC_PRO,  ! I/O on closed unit error
;   351          0411  1                                 ! I/O statement type:
;   352          0412  1             FOR$$REC_WSF0 - FOR$$AA_REC_PRO,    ! WRITE sequential formatted (WSF)
;   353          0413  1             FOR$$REC_RSF0 - FOR$$AA_REC_PRO,    ! READ sequential formatted (RSF)
;   354          0414  1             FOR$$REC_WSU0 - FOR$$AA_REC_PRO,    ! WRITE sequential unformatted (WSU)
;   355          0415  1             FOR$$REC_RSU0 - FOR$$AA_REC_PRO,    ! READ sequential unformatted (RSU)
;   356          0416  1             FOR$$REC_WD0 - FOR$$AA_REC_PRO,     ! WRITE direct formatted (WDF)
;   357          0417  1             FOR$$REC_RD0 - FOR$$AA_REC_PRO,     ! READ direct formatted (RDF)
;   358          0418  1             FOR$$REC_WD0 - FOR$$AA_REC_PRO,     ! WRITE direct unformatted (WDU)
;   359          0419  1             FOR$$REC_RD0 - FOR$$AA_REC_PRO,     ! READ direct unformatted (RDU)
;   360          0420  1             FOR$$REC_WSL0 - FOR$$AA_REC_PRO,    ! WRITE sequential list-direct (WSL)
;   361          0421  1             FOR$$REC_RSL0 - FOR$$AA_REC_PRO,    ! READ sequential list-directed (RSL)
;   362          0422  1             FOR$$REC_WMF0 - FOR$$AA_REC_PRO,    ! ENCODE (memory formatted) (WMF)
;   363          0423  1             FOR$$REC_RMF0 - FOR$$AA_REC_PRO,    ! DECODE (memory formatted) (RMF)
;   364          0424  1             FOR$$REC_WXF0 - FOR$$AA_REC_PRO,    ! FORTRAN REWRITE indexed formatted (WXF)
;   365          0425  1             FOR$$REC_RKF0 - FOR$$AA_REC_PRO,    ! FORTRAN READ keyed formatted (RKF)
;   366          0426  1             FOR$$REC_WXU0 - FOR$$AA_REC_PRO,    ! FORTRAN REWRITE indexed unformatted (WXU)
;   367          0427  1             FOR$$REC_RKU0 - FOR$$AA_REC_PRO,    ! FORTRAN READ keyed unformatted (RKU)
;   368          0428  1             FOR$$REC_WIF0 - FOR$$AA_REC_PRO,    ! FORTRAN WRITE internal formatted (WIF)
;   369          0429  1             FOR$$REC_RIF0 - FOR$$AA_REC_PRO,    ! FORTRAN READ internal formatted (RIF)
;   370          0430  1             FOR$$REC_WSN0 - FOR$$AA_REC_PRO,    ! FORTRAN WRITE NAMELIST
;   371          0431  1             FOR$$REC_RSN0 - FOR$$AA_REC_PRO,    ! FORTRAN READ NAMELIST
;   372          0432  1             FOR$$REC_WIL0 - FOR$$AA_REC_PRO,    ! FORTRAN WRITE internal list-dorected
;   373          0433  1             FOR$$REC_RIL0 - FOR$$AA_REC_PRO);   ! FORTRAN READ internal list-directec
```

```
;  375          0434  1 !+
;  376          0435  1 ! Intermediate transfer a record - read second and
;  377          0436  1 ! subsequent records for this I/O statement or write
;  378          0437  1 ! first and all but last record for this I/O statement.
;  379          0438  1 !-
;  380          0439  1
;  381          0440  1 GLOBAL
;  382          0441  1     FOR$$AA_REC_PR1 : VECTOR [ISB$K_FORSTTYHI - ISB$K_FORSTTYLO + 2,, SIGNED]
;  383          0442  1         PSECT (FOR$CODE) INITIAL (
;  384          0443  1             FOR$$SIGDIS_JSB - FOR$$AA_REC_PR1,  ! I/O on closed unit error
;  385          0444  1                                 ! I/O statement type:
;  386          0445  1             FOR$$REC_WSF1 - FOR$$AA_REC_PR1,    ! WRITE sequential formatted (WSF)
;  387          0446  1             FOR$$REC_RSF1 - FOR$$AA_REC_PR1,    ! READ sequential formatted (RSF)
;  388          0447  1             FOR$$REC_WSU1 - FOR$$AA_REC_PR1,    ! WRITE sequential unformatted (WSU)
;  389          0448  1             FOR$$REC_RSU1 - FOR$$AA_REC_PR1,    ! READ sequential unformatted (RSU)
;  390          0449  1             FOR$$REC_WD1 - FOR$$AA_REC_PR1,     ! WRITE direct formatted (WDF)
;  391          0450  1             FOR$$REC_RD1 - FOR$$AA_REC_PR1,     ! READ direct formatted (RDF)
;  392          0451  1             FOR$$REC_WD1 - FOR$$AA_REC_PR1,     ! WRITE direct unformatted (WDU)
;  393          0452  1             FOR$$REC_RD1 - FOR$$AA_REC_PR1,     ! READ direct unformatted (RDU)
;  394          0453  1             FOR$$REC_WSL1 - FOR$$AA_REC_PR1,    ! WRITE sequential list-direct (WSL)
;  395          0454  1             FOR$$REC_RSL1 - FOR$$AA_REC_PR1,    ! READ sequential list-directed (RSL)
;  396          0455  1             FOR$$REC_WMF1 - FOR$$AA_REC_PR1,    ! ENCODE (memory formatted) (WMF)
;  397          0456  1             FOR$$REC_RMF1 - FOR$$AA_REC_PR1,    ! DECODE (memory formatted) (RMF)
;  398          0457  1             FOR$$REC_WXF1 - FOR$$AA_REC_PR1,    ! FORTRAN REWRITE indexed formatted (WXF)
;  399          0458  1             FOR$$REC_RKF1 - FOR$$AA_REC_PR1,    ! FORTRAN READ keyed formatted (RKF)
;  400          0459  1             FOR$$REC_WXU1 - FOR$$AA_REC_PR1,    ! FORTRAN REWRITE indexed unformatted (WXU)
;  401          0460  1             FOR$$REC_RKU1 - FOR$$AA_REC_PR1,    ! FORTRAN READ keyed unformatted (RKU)
;  402          0461  1             FOR$$REC_WIF1 - FOR$$AA_REC_PR1,    ! FORTRAN WRITE internal formatted (WIF)
;  403          0462  1             FOR$$REC_RIF1 - FOR$$AA_REC_PR1,    ! FORTRAN READ internal formatted (RIF)
;  404          0463  1             FOR$$REC_WSN1 - FOR$$AA_REC_PR1,    ! FORTRAN WRITE NAMELIST
;  405          0464  1             FOR$$REC_RSN1 - FOR$$AA_REC_PR1,    ! FORTRAN READ NAMELIST
;  406          0465  1             FOR$$REC_WIL1 - FOR$$AA_REC_PR1,    ! FORTRAN WRITE internal list-directed
;  407          0466  1             FOR$$REC_RIL1 - FOR$$AA_REC_PR1);   ! FORTRAN READ internal list-directed
```

```
;  409          0467  1 !+
;  410          0468  1 ! End of I/O list record processing
;  411          0469  1 !-
;  412          0470  1
;  413          0471  1 GLOBAL
;  414          0472  1     FOR$$AA_REC_PR9 : VECTOR [ISB$K_FORSTTYHI - ISB$K_FORSTTYLO + 2,, SIGNED]
;  415          0473  1         PSECT (FOR$CODE) INITIAL (
;  416          0474  1             FOR$$SIGDIS_JSB - FOR$$AA_REC_PR9,  ! I/O on closed unit error
;  417          0475  1                                 ! I/O statement type:
;  418          0476  1             FOR$$REC_WSF9 - FOR$$AA_REC_PR9,    ! WRITE sequential formatted (WSF)
;  419          0477  1             FOR$$REC_RSF9 - FOR$$AA_REC_PR9,    ! READ sequential formatted (RSF)
;  420          0478  1             FOR$$REC_WSU9 - FOR$$AA_REC_PR9,    ! WRITE sequential unformatted (WSU)
;  421          0479  1             FOR$$REC_RSU9 - FOR$$AA_REC_PR9,    ! READ sequential unformatted (RSU)
;  422          0480  1             FOR$$REC_WD9 - FOR$$AA_REC_PR9,     ! WRITE direct formatted (WDF)
;  423          0481  1             FOR$$REC_RD9 - FOR$$AA_REC_PR9,     ! READ direct formatted (RDF)
;  424          0482  1             FOR$$REC_WD9 - FOR$$AA_REC_PR9,     ! WRITE direct unformatted (WDU)
;  425          0483  1             FOR$$REC_RD9 - FOR$$AA_REC_PR9,     ! READ direct unformatted (RDU)
;  426          0484  1             FOR$$REC_WSL9 - FOR$$AA_REC_PR9,    ! WRITE sequential list-direct (WSL)
;  427          0485  1             FOR$$REC_RSL9 - FOR$$AA_REC_PR9,    ! READ sequential list-directed (RSL)
;  428          0486  1             FOR$$REC_WMF9 - FOR$$AA_REC_PR9,    ! ENCODE (memory formatted) (WMF)
;  429          0487  1             FOR$$REC_RMF9 - FOR$$AA_REC_PR9,    ! DECODE (memory formatted) (RMF)
;  430          0488  1             FOR$$REC_WXF9 - FOR$$AA_REC_PR9,    ! FORTRAN REWRITE indexed formatted (WXF)
;  431          0489  1             FOR$$REC_RKF9 - FOR$$AA_REC_PR9,    ! FORTRAN READ keyed formatted (RKF)
;  432          0490  1             FOR$$REC_WXU9 - FOR$$AA_REC_PR9,    ! FORTRAN REWRITE indexed unformatted (WXU)
;  433          0491  1             FOR$$REC_RKU9 - FOR$$AA_REC_PR9,    ! FORTRAN READ keyed unformatted (RKU)
;  434          0492  1             FOR$$REC_WIF9 - FOR$$AA_REC_PR9,    ! FORTRAN WRITE internal formatted (WIF)
;  435          0493  1             FOR$$REC_RIF9 - FOR$$AA_REC_PR9,    ! FORTRAN READ internal formatted (RIF)
;  436          0494  1             FOR$$SIGDIS_JSB - FOR$$AA_REC_PR9,  ! No REC9 for WRITE NAMELIST
;  437          0495  1             FOR$$SIGDIS_JSB - FOR$$AA_REC_PR9,  ! No REC9 for READ NAMELIST
;  438          0496  1             FOR$$REC_WIL9 - FOR$$AA_REC_PR9,    ! FORTRAN WRITE internal list-dorected
;  439          0497  1             FOR$$REC_RIL9 - FOR$$AA_REC_PR9);   ! FORTRAN READ internal list-directed
;  440          0498  1
```

```
;  442          0499  1 ROUTINE FOR$$SIGDIS_ERR : CALL_CCB NOVALUE =    !
;  443          0500  1
;  444          0501  1 !++
;  445          0502  1 ! FUNCTIONAL DESCRIPTION:
;  446          0503  1 !
;  447          0504  1 !       Signal an error from the I/O dispatch process.  The error code
;  448          0505  1 !       signalled depends on the statement type.  One statement type is
;  449          0506  1 !       used by CLOSE to catch dispatches on a closed unit, which can
;  450          0507  1 !       happen if the CLOSE is done as part of recursive I/O.  If the
;  451          0508  1 !       statement type is not the one used by CLOSE, we have an error
;  452          0509  1 !       in the RTL (an invalid statement type).
;  453          0510  1 !       Note that, at the present time, FORTRAN does not permit
;  454          0511  1 !       recursive I/O.
;  455          0512  1 !
;  456          0513  1 ! FORMAL PARAMETERS:
;  457          0514  1 !
;  458          0515  1 !       NONE
;  459          0516  1 !
;  460          0517  1 ! IMPLICIT INPUTS:
;  461          0518  1 !
;  462          0519  1 !       ISB$B_STTM_TYPE.rb.r            Statement type of I/O statement
;  463          0520  1 !
;  464          0521  1 ! IMPLICIT OUTPUTS:
;  465          0522  1 !
;  466          0523  1 !       NONE
;  467          0524  1 !
;  468          0525  1 ! ROUTINE VALUE:
;  469          0526  1 ! COMPLETION CODES:
;  470          0527  1 !
;  471          0528  1 !       NONE
;  472          0529  1 !
;  473          0530  1 ! SIDE EFFECTS:
;  474          0531  1 !
;  475          0532  1 !       Signals OTS$_IO_CONCLO if the LUB is not open, or
;  476          0533  1 !       OTS$_FATINTERR if it is.
;  477          0534  1 !
;  478          0535  1 !--
;  479          0536  1
;  480          0537  2     BEGIN
;  481          0538  2
;  482          0539  2     EXTERNAL REGISTER
;  483          0540  2         CCB : REF $FOR$CCB_DECL;
;  484          0541  2
;  485          0542  3     IF ( NOT .CCB [LUB$V_OPENED])
;  486          0543  2     THEN
;  487          0544  2 !+
;  488          0545  2 ! The file must have been closed with I/O still active on it.
;  489          0546  2 !-
;  490          0547  2         SIGNAL_STOP (OTS$_IO_CONCLO)
;  491          0548  2     ELSE
;  492          0549  2 !+
;  493          0550  2 ! This must be an attempt to use an unimplemented feature.  It represents
;  494          0551  2 ! an internal error in the OTS.
;  495          0552  2 !-
;  496          0553  2         SIGNAL_STOP (OTS$_FATINTERR);
;  497          0554  2
;  498          0555  2     0
```

```
;  499          0556  1     END;                                    !End of FOR$$SIGDIS_ERR


                                                                    .TITLE  FOR$$DISPATCH_T I/O dispatch tables for FORTRAN
                                                                    .IDENT  \1-020\

                                                                    .PSECT  _FOR$CODE,NOWRT,  SHR,  PIC,2

00000000* 00000000* 00000000* 00000000* 00000000* 00000000V 00000 FOR$$AA_UDF_PR0::
                                                                    .LONG   <FOR$$SIGDIS_JSB-FOR$$AA_UDF_PR0>, -        ;
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 00018                  <FOR$$UDF_WF0-FOR$$AA_UDF_PR0>, -        ;
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 00030                  <FOR$$UDF_RF0-FOR$$AA_UDF_PR0>, -        ;
          00000000* 00000000* 00000000* 00000000* 00000000* 00048                  <FOR$$UDF_WU0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RU0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WU0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RU0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WL0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RL0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WU0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RU0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RF0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WN0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RN0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_WL0-FOR$$AA_UDF_PR0>, -        ;
                                                                                   <FOR$$UDF_RL0-FOR$$AA_UDF_PR0>           ;
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 0005C FOR$$AA_UDF_PR1::
                                                                    .LONG   <FOR$$SIGDIS_ERR-FOR$$AA_UDF_PR1>, -         ;
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 00074                  <FOR$$UDF_WF1-FOR$$AA_UDF_PR1>, -         ;
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 0008C                  <FOR$$UDF_RF1-FOR$$AA_UDF_PR1>, -         ;
          00000000* 00000000* 00000000* 00000000* 00000000* 000A4                  <FOR$$UDF_WU1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RU1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WU1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RU1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WL1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RL1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WU1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RU1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_WF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RF1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$SIGDIS_ERR-FOR$$AA_UDF_PR1>, -      ;
                                                                                   <FOR$$SIGDIS_ERR-FOR$$AA_UDF_PR1>, -      ;
                                                                                   <FOR$$UDF_WL1-FOR$$AA_UDF_PR1>, -         ;
                                                                                   <FOR$$UDF_RL1-FOR$$AA_UDF_PR1>            ;
00000000* 00000000* 00000000* 00000000* 00000000* 00000000V 000B8 FOR$$AA_UDF_PR9::
```

```
                                                                .LONG   <FOR$$SIGDIS_JSB-FOR$$AA_UDF_PR9>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 000D0              <FOR$$UDF_WF9-FOR$$AA_UDF_PR9>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 000E8              <FOR$$UDF_RF9-FOR$$AA_UDF_PR9>, -
          00000000* 00000000* 00000000* 00000000* 00000000* 00100              <FOR$$UDF_WU9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RU9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WU9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RU9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WL9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RL9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WU9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RU9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RF9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WN9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RN9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_WL9-FOR$$AA_UDF_PR9>, -
                                                                               <FOR$$UDF_RL9-FOR$$AA_UDF_PR9>
00000000* 00000000* 00000000* 00000000* 00000000* 00000000V 00114 FOR$$AA_REC_PR0::
                                                                .LONG   <FOR$$SIGDIS_JSB-FOR$$AA_REC_PR0>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 0012C              <FOR$$REC_WSF0-FOR$$AA_REC_PR0>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 00144              <FOR$$REC_RSF0-FOR$$AA_REC_PR0>, -
          00000000* 00000000* 00000000* 00000000* 00000000* 0015C              <FOR$$REC_WSU0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RSU0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WD0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RD0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WD0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RD0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WSL0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RSL0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WMF0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RMF0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WXF0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RKF0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WXU0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RKU0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WIF0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RIF0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WSN0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RSN0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_WIL0-FOR$$AA_REC_PR0>, -
                                                                               <FOR$$REC_RIL0-FOR$$AA_REC_PR0>
00000000* 00000000* 00000000* 00000000* 00000000* 00000000V 00170 FOR$$AA_REC_PR1::
                                                                .LONG   <FOR$$SIGDIS_JSB-FOR$$AA_REC_PR1>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 00188              <FOR$$REC_WSF1-FOR$$AA_REC_PR1>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 001A0              <FOR$$REC_RSF1-FOR$$AA_REC_PR1>, -
          00000000* 00000000* 00000000* 00000000* 00000000* 001B8              <FOR$$REC_WSU1-FOR$$AA_REC_PR1>, -
                                                                               <FOR$$REC_RSU1-FOR$$AA_REC_PR1>, -
                                                                               <FOR$$REC_WD1-FOR$$AA_REC_PR1>, -
                                                                               <FOR$$REC_RD1-FOR$$AA_REC_PR1>, -
                                                                               <FOR$$REC_WD1-FOR$$AA_REC_PR1>, -
                                                                               <FOR$$REC_RD1-FOR$$AA_REC_PR1>, -
```

```
                                                                <FOR$$REC_WSL1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RSL1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_WMF1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RMF1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_WXF1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RKF1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_WXU1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RKU1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_WIF1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RIF1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_WSN1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RSN1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_WIL1-FOR$$AA_REC_PR1>, -
                                                                <FOR$$REC_RIL1-FOR$$AA_REC_PR1>
00000000* 00000000* 00000000* 00000000* 00000000* 00000000V 001CC FOR$$AA_REC_PR9::
                                                          .LONG   <FOR$$SIGDIS_JSB-FOR$$AA_REC_PR9>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 001E4  <FOR$$REC_WSF9-FOR$$AA_REC_PR9>, -
00000000* 00000000* 00000000* 00000000* 00000000* 00000000* 001FC  <FOR$$REC_RSF9-FOR$$AA_REC_PR9>, -
          00000000* 00000000* 00000000V 00000000V 00000000* 00214  <FOR$$REC_WSU9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RSU9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WD9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RD9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WD9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RD9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WSL9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RSL9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WMF9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RMF9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WXF9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RKF9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WXU9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RKU9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WIF9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RIF9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$SIGDIS_JSB-FOR$$AA_REC_PR9>, -
                                                                <FOR$$SIGDIS_JSB-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_WIL9-FOR$$AA_REC_PR9>, -
                                                                <FOR$$REC_RIL9-FOR$$AA_REC_PR9>

                .EXTRN  OTS$_FATINTERR, OTS$_IO_CONCLO
                .EXTRN  FOR$$REC_RKF1, FOR$$REC_RKF9
                .EXTRN  FOR$$REC_RKU1, FOR$$REC_RKU9
                .EXTRN  FOR$$REC_WXF1, FOR$$REC_WXF9
                .EXTRN  FOR$$REC_WXU1, FOR$$REC_WXU9
                .EXTRN  FOR$$REC_WIF1, FOR$$REC_WIF9
                .EXTRN  FOR$$REC_RIF1, FOR$$REC_RIF9
                .EXTRN  FOR$$REC_WSN1, FOR$$REC_WIL1
                .EXTRN  FOR$$REC_WIL9, FOR$$REC_RIL1
                .EXTRN  FOR$$REC_RIL9
                .WEAK   FOR$$UDF_RF0, FOR$$UDF_RF1
                .WEAK   FOR$$UDF_RF9, FOR$$UDF_WF0
                .WEAK   FOR$$UDF_WF1, FOR$$UDF_WF9
                .WEAK   FOR$$UDF_RU0, FOR$$UDF_RU1
                .WEAK   FOR$$UDF_RU9, FOR$$UDF_WU0
                .WEAK   FOR$$UDF_WU1, FOR$$UDF_WU9
                .WEAK   FOR$$UDF_RL0, FOR$$UDF_RL1
                .WEAK   FOR$$UDF_RL9, FOR$$UDF_WL0
```

```
                                        .WEAK   FOR$$UDF_WL1, FOR$$UDF_WL9
                                        .WEAK   FOR$$UDF_RN0, FOR$$UDF_RN9
                                        .WEAK   FOR$$UDF_WN0, FOR$$UDF_WN9
                                        .WEAK   FOR$$REC_RSF0, FOR$$REC_RSF1
                                        .WEAK   FOR$$REC_RSF9, FOR$$REC_WSF0
                                        .WEAK   FOR$$REC_WSF1, FOR$$REC_WSF9
                                        .WEAK   FOR$$REC_RSU0, FOR$$REC_RSU1
                                        .WEAK   FOR$$REC_RSU9, FOR$$REC_WSU0
                                        .WEAK   FOR$$REC_WSU1, FOR$$REC_WSU9
                                        .WEAK   FOR$$REC_RD0, FOR$$REC_RD1
                                        .WEAK   FOR$$REC_RD9, FOR$$REC_WD0
                                        .WEAK   FOR$$REC_WD1, FOR$$REC_WD9
                                        .WEAK   FOR$$REC_RSL0, FOR$$REC_RSL1
                                        .WEAK   FOR$$REC_RSL9, FOR$$REC_WSL0
                                        .WEAK   FOR$$REC_WSL1, FOR$$REC_WSL9
                                        .WEAK   FOR$$REC_RMF0, FOR$$REC_RMF1
                                        .WEAK   FOR$$REC_RMF9, FOR$$REC_WMF0
                                        .WEAK   FOR$$REC_WMF1, FOR$$REC_WMF9
                                        .WEAK   FOR$$REC_RKF0, FOR$$REC_RKU0
                                        .WEAK   FOR$$REC_WXF0, FOR$$REC_WXU0
                                        .WEAK   FOR$$REC_WIF0, FOR$$REC_RIF0
                                        .WEAK   FOR$$REC_WSN0, FOR$$REC_RSN0
                                        .WEAK   FOR$$REC_RSN1, FOR$$REC_WIL0
                                        .WEAK   FOR$$REC_RIL0

                        0000 00000 FOR$$SIGDIS_ERR:
                                        .WORD   Save nothing                    ; 0499
                08        FC   AB  E8 00002     BLBS    -4(CCB), 1$           ; 0542
                   00000000G 8F  DD 00006     PUSHL   #OTS$_IO_CONCLO         ; 0547
                             06  11 0000C     BRB     2$                      ;
                   00000000G 8F  DD 0000E 1$: PUSHL   #OTS$_FATINTERR         ; 0553
          00000000G  00      01  FB 00014 2$: CALLS   #1, LIB$STOP            ;
                             04  0001B       RET                             ; 0556

; Routine Size:  28 bytes,    Routine Base:  _FOR$CODE + 0228
```

```
;  501          0557  1 ROUTINE FOR$$SIGDIS_JSB : JSB_UDFO NOVALUE =    !
;  502          0558  1
;  503          0559  1 !++
;  504          0560  1 ! FUNCTIONAL DESCRIPTION:
;  505          0561  1 !
;  506          0562  1 !       Signal an error from the I/O dispatch process.  The error code
;  507          0563  1 !       signalled depends on the statement type.  One statement type is
;  508          0564  1 !       used by CLOSE to catch dispatches on a closed unit, which can
;  509          0565  1 !       happen if the CLOSE is done as part of recursive I/O.  If the
;  510          0566  1 !       statement type is not the one used by CLOSE, we have an error
;  511          0567  1 !       in the RTL (an invalid statement type).
;  512          0568  1 !       Note that, at the present time, FORTRAN does not permit
;  513          0569  1 !       recursive I/O.
;  514          0570  1 !
;  515          0571  1 ! FORMAL PARAMETERS:
;  516          0572  1 !
;  517          0573  1 !       NONE
;  518          0574  1 !
;  519          0575  1 ! IMPLICIT INPUTS:
;  520          0576  1 !
;  521          0577  1 !       ISB$B_STTM_TYPE.rb.r            Statement type of I/O statement
;  522          0578  1 !
;  523          0579  1 ! IMPLICIT OUTPUTS:
;  524          0580  1 !
;  525          0581  1 !       NONE
;  526          0582  1 !
;  527          0583  1 ! ROUTINE VALUE:
;  528          0584  1 ! COMPLETION CODES:
;  529          0585  1 !
;  530          0586  1 !       NONE
;  531          0587  1 !
;  532          0588  1 ! SIDE EFFECTS:
;  533          0589  1 !
;  534          0590  1 !       Signals OTS$_IO_CONCLO if the LUB is not open, or
;  535          0591  1 !       OTS$_FATINTERR if it is.
;  536          0592  1 !
;  537          0593  1 !--
;  538          0594  1
;  539          0595  2     BEGIN
;  540          0596  2
;  541          0597  2     EXTERNAL REGISTER
;  542          0598  2         CCB : REF $FOR$CCB_DECL;
;  543          0599  2
;  544          0600  3     IF ( NOT .CCB [LUB$V_OPENED])
;  545          0601  2     THEN
;  546          0602  2 !+
;  547          0603  2 ! The file must have been closed with I/O still active on it.
;  548          0604  2 !-
;  549          0605  2         SIGNAL_STOP (OTS$_IO_CONCLO)
;  550          0606  2     ELSE
;  551          0607  2 !+
;  552          0608  2 ! This must be an attempt to use an unimplemented feature.  It represents
;  553          0609  2 ! an internal error in the OTS.
;  554          0610  2 !-
;  555          0611  2         SIGNAL_STOP (OTS$_FATINTERR);
;  556          0612  2
;  557          0613  2     0
```

```
;  558          0614  1     END;                                    !End of FOR$$SIGDIS_JSB



                                08       FC    AB  E8 00000 FOR$$SIGDIS_JSB:
                                                               BLBS    -4(CCB), 1$                     ; 0600
                                   00000000G    8F  DD 00004          PUSHL   #OTS$_IO_CONCLO         ; 0605
                                                06  11 0000A          BRB     2$
                                   00000000G    8F  DD 0000C 1$:       PUSHL   #OTS$_FATINTERR         ; 0611
                             00000000G  00              01  FB 00012 2$:       CALLS   #1, LIB$STOP
                                                        05  00019          RSB                         ; 0614

; Routine Size:  26 bytes,    Routine Base:  _FOR$CODE + 0244

;  559          0615  1 END                                         !End of module
;  560          0616  1
;  561          0617  0 ELUDOM



                                                                .EXTRN  LIB$STOP

;                                PSECT SUMMARY
;
;       Name                            Bytes                           Attributes
;
;  _FOR$CODE                             606  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(2)


;                               Library Statistics
;
;                                                 --------  Symbols  --------      Pages       Processing
;       File                                      Total     Loaded   Percent       Mapped      Time
;
;  _$255$DUA28:[SYSLIB]STARLET.L32;1               9776          0         0          581       00:01.0
;  _$255$DUA28:[FORRTL.OBJ]FORLIB.L32;1             711        185        26           52       00:00.6
;  _$255$DUA28:[FORRTL.OBJ]RTLLIB.L32;1              36          0         0            8       00:00.1



;                                       COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS$:FORDISPAT/OBJ=OBJ$:FORDISPAT MSRC$:FORDISPAT/UPDATE=(ENH$:FORDISPAT
;       )

; Size:            54 code + 552 data bytes
; Run Time:        00:10.7
```

```
; Elapsed Time:    00:32.2
; Lines/CPU Min:    3476
; Lexemes/CPU-Min: 10061
; Memory Used:  110 pages
; Compilation Complete
```

COMRS0WD
LIS

FORDATEDS
LIS

FORDECOMO
LIS

FORCLB
LIS

COMSETST
LIS

FORASSOC
LIS

FORCLOSEF
LIS

FORDATE
LIS

FORCLOSE
LIS

FORDECOMF
LIS

FORDELETE
LIS

COMRAD50
LIS

COMUSEREX
LIS

FORBITOPS
LIS

FORDEFINE
LIS

FORBACKSP
LIS

FORDISPA
LIS

FORCUTRT
LIS

FORFIND
LIS

FORFMTINT
LIS

FOREXITHA
LIS

FORENODEF
LIS

FORENCOMF
LIS

FORIDATE
LIS

FORENDFIL
LIS

FORERRSNS
LIS

FOREXIT
LIS

FORERROR
LIS

FORFMTCP
LIS

FORENCOMO
LIS

FORTNIDES
LIS