#### 516 SEGMENT FORMAT

|                            | SEGMENT<br>TYPE (5)            | SEGMENT (11)<br>SIZE=N         | 1        | (HEADER)                      |
|----------------------------|--------------------------------|--------------------------------|----------|-------------------------------|
| BASE ADDRESS               | I/O POINTER COUNT (6)          | RELOCATABLE (10) POINTER COUNT | 2        | (MEMORY MANAGE-<br>MENT WORD) |
| IN SEGMENT TABLE POINTS TO |                                | •                              | .3       |                               |
|                            | SEGMENT BODY  MAX = 2045 WORDS |                                |          |                               |
| •                          |                                |                                |          |                               |
|                            | CHECK SUM                      |                                | N-1<br>N |                               |
|                            | One                            |                                | ] "      |                               |

The above diagram shows the three words of overhead required for a segment in the 516 virtual addressing scheme.

These three words stay with the segment while it is in core or on disk.

### SEGMENT TYPE (5 BITS)

The following is a list of segment types and their corresponding 5 bit segment type codes (in hexadecimal).

| HIGH ORDER BIT = O<br>DO NOT RESTORE TO DISK | HIGH ORDER BIT = 1<br>RESTORE SEGMENT TO DISK |
|--|---|
| OO - HOLE                                    | 10 - USER DATA SEG.                           |
| O1 - REENTRANT SUBR. (NORMAL)                | 11 - REENTRANT SUBR. (INITIAL)                |
| O2 - DIRECTORY(UNCHANGED)                    | 12 - DIRECTOR (CHANGED)                       |
| 03 -   | 13 -  |
| 04 -   | 14 -  |
| 05 -   | 15 -  |
| 06 -   | 16 -  |
| 07 -   | 17 -  |
| 08 -   | 18 -  |
| 09 -   | 19 -  |
| 0a -   | la -  |
| Ob -   | 1b -  |
| Oc -   | lc -  |
| Od -   | 1d -  |
| Oe -   | le -  |
| Of   | lf  |
|  |   |

## SEGMENT SIZE (11 BITS)

is the number of words in the segment (including the 3 words of overhead) MAXIMUM = 2" = 2048 MEMORY MANAGEMENT WORD (16 BITS)

is composed of two counts. One is the count of all relocatable pointers which point to this segment, i.e., user relocatable pointers in thread save blocks, pointers on the call

push down lists. The I/O pointer count is a count of all the relocatable pointers in the I/O transfer vector which point to this segment. Whenever either of these counts is nonzero the segment cannot be removed from core memory. When the segment is on disk the two counts in the memory management word are replaced by the ID of the segment. The check sum word is only used when the segment is written on or read from disk. It is the 2's compliment sum + 1 of all words in the segment except the check sum. This includes the header and the memory management word (ID).

C, A.D.H.

# 516 SEGNIENT FORMATS

# ON DISK SEGMENT FORMAT

CHECK SUM

BODY

B

CHEST TUN OF TESNELT BODY + ID

HEADER WORD

OFFI EN DON SMITHER COLLEGE

TO ANN ACCESS TO THE SESSIES

ID TIBLE ENTRY

CLO DEN CHECK SUM (NOTUSED WHILE IN CORE)

CONVENTION - INCREASING CORE OF DISH ADDRESSE

### IN CORF SEGMENT FORMAT

CHECK SUM

POON WORD'S

SIR NORD'S

SIR NORD'S

SIR NORD'S

(5)

UNUSED SES. SIEE(10)

1-RESTORE

O-NON RESTORE

HENDER WORD
WHEN A STRUMENT IS PEAD FR
DISH THE TO WORD IS
REPLACED BY THE SIZE
WORD OF THE JOTHER
ENTRY, WHICH IS USED BY THE
MENIORY MINNAGEMENT SYST

SIZE = SEG. BODY SIZE+2

CHEADER Y