

LOW LEVEL DISK SYSTEM ACTIONS

- ✓ 1) CREATE FILE ✓
- 2) DESTROY FILE ✓
- ✓ 3) OPEN FILE ✓
- 4) CLOSE FILE ✓ DAVE
- 5) RETURN READ
- 6) RETURN WRITE
- ~~7) RETURN FILE TO FILE COPY ?~~
- ✓ 8) ATTACH BLOCK(S) ✓
- 9) DETACH BLOCK(S) ✓
- 10) PUT FILE SECTION IN MAP
- 11) DELETE MAP ENTRY
- ✓ 12) CREATE FILE DATA BLOCK ✓
- ✓ 13) DESTROY FILE DATA BLOCK ✓
- 14) SWAP OUT ALL ATTACHED BLOCKS
- 15) SWAP IN ALL ATTACHED BLOCKS
- 16) FREEZE
- 17) UN-FREEZE
- 18) MOVE BLOCK ← lock files in order of engine name magnitude

Local File Table

1/2/10

local file loader

ECS	UNIQUE NAME	FILE INDEX
#ATTACH BLOCKS	OPEN COUNT	ATTACH QUEUE

← frozen

FMR ADDR

end of file headers = zero word

attach queue

MAP	NON-FIN.	QUEUE LINK	DOS ADDR
MAP POINTER	FILE ADDR (BLOCK NUMBER)		

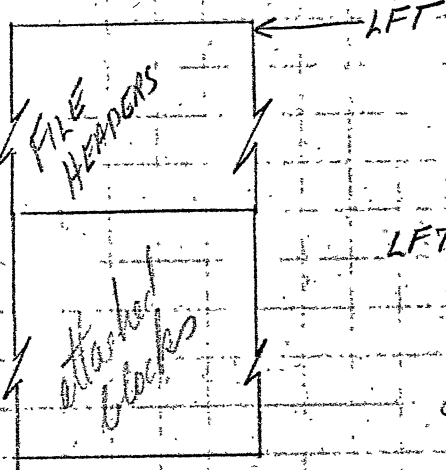
← MULTI-MAP

single map entry

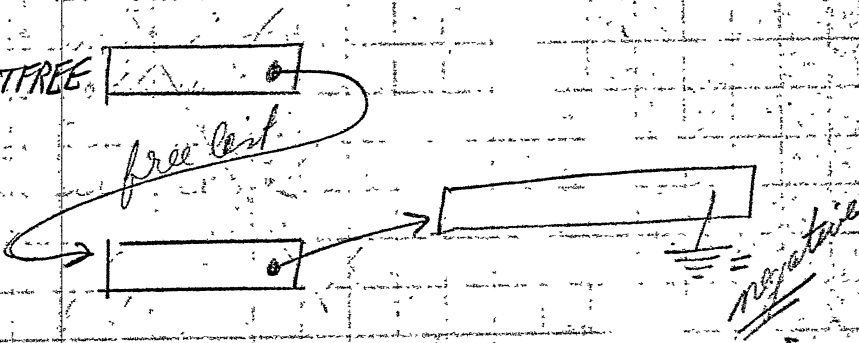
MAP POINTER →	MAP INDEX	CLASS CODE INDEX
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multi-MAP

MAP3	MAP2	MAP1
MULTI-MAP	MAP5	MAP4



LFTREE



negative

ATTACH QUEUE

ENTRY

CREATE FILE

OPEN
DAR

GET UNIQUE
NAME

NO ZERO LEVEL? YES

CONSTRUCT
FHR

- UNIQUE NAME
- SHAPE
- DATA BLK SIZE
- OPEN WRITE
- FIXED ECS SPACE
- DISK SPACE

CONSTRUCT
FHR

- UNIQUE NAME
- HEADER BLK SIZE
- SHAPE
- OPEN WRITE
- ZERO LEVEL
- FIXED ECS SPACE
- DISK SPACE

ACCOUNT
FIXED ECS
SPACE

ACCOUNT
DISK
SPACE

CREATE ECS
FILE

ZERO
LEVEL?

NO

YES

CREATE
DATA
BLOCK

COMPLETE
FHR

ALLOCATE FHR
& CHAIN TO HASH
TABLE

FILL IN
FHR

CREATE LFT.
HEADER

ZERO
LEVEL?

YES

CREATE LOCAL
ATTACHED BLK
RECORD

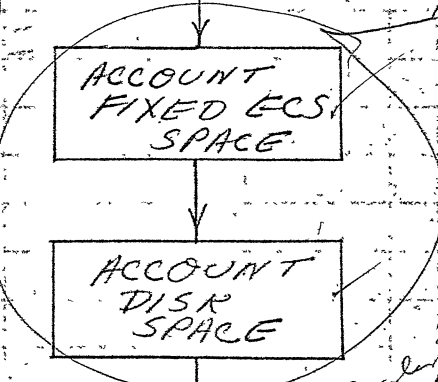
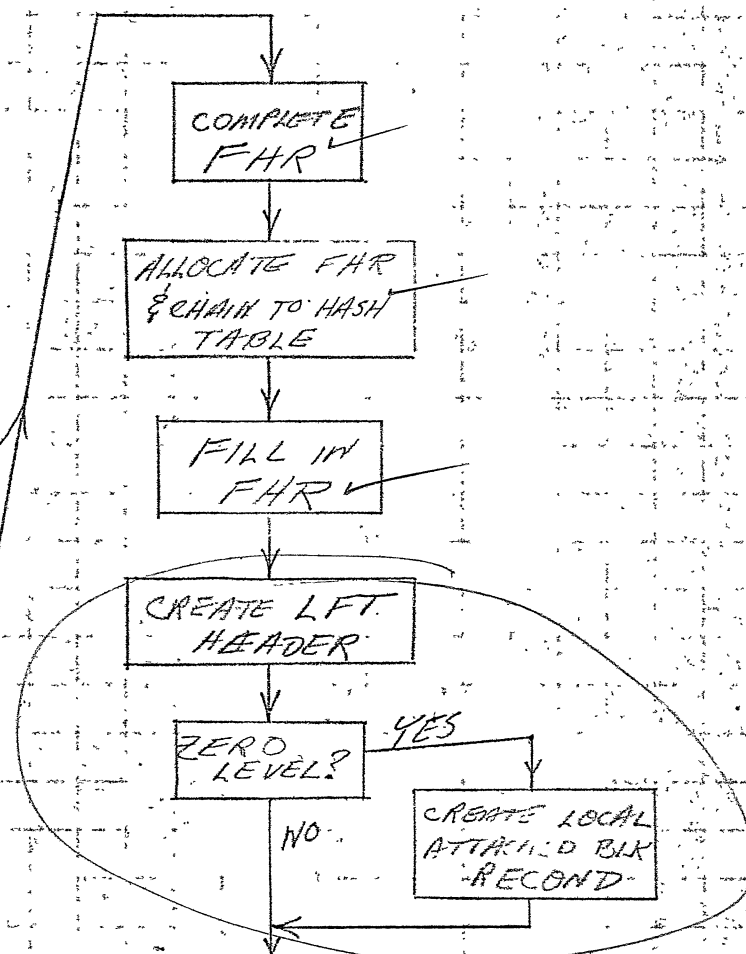
NO

WRITE HEADER
BLOCK
(RETURN DISK
ADDRESS)

RETURN
1) UNIQUE NAME & HDR BLK SIZE
2) WRITE CAPABILITY

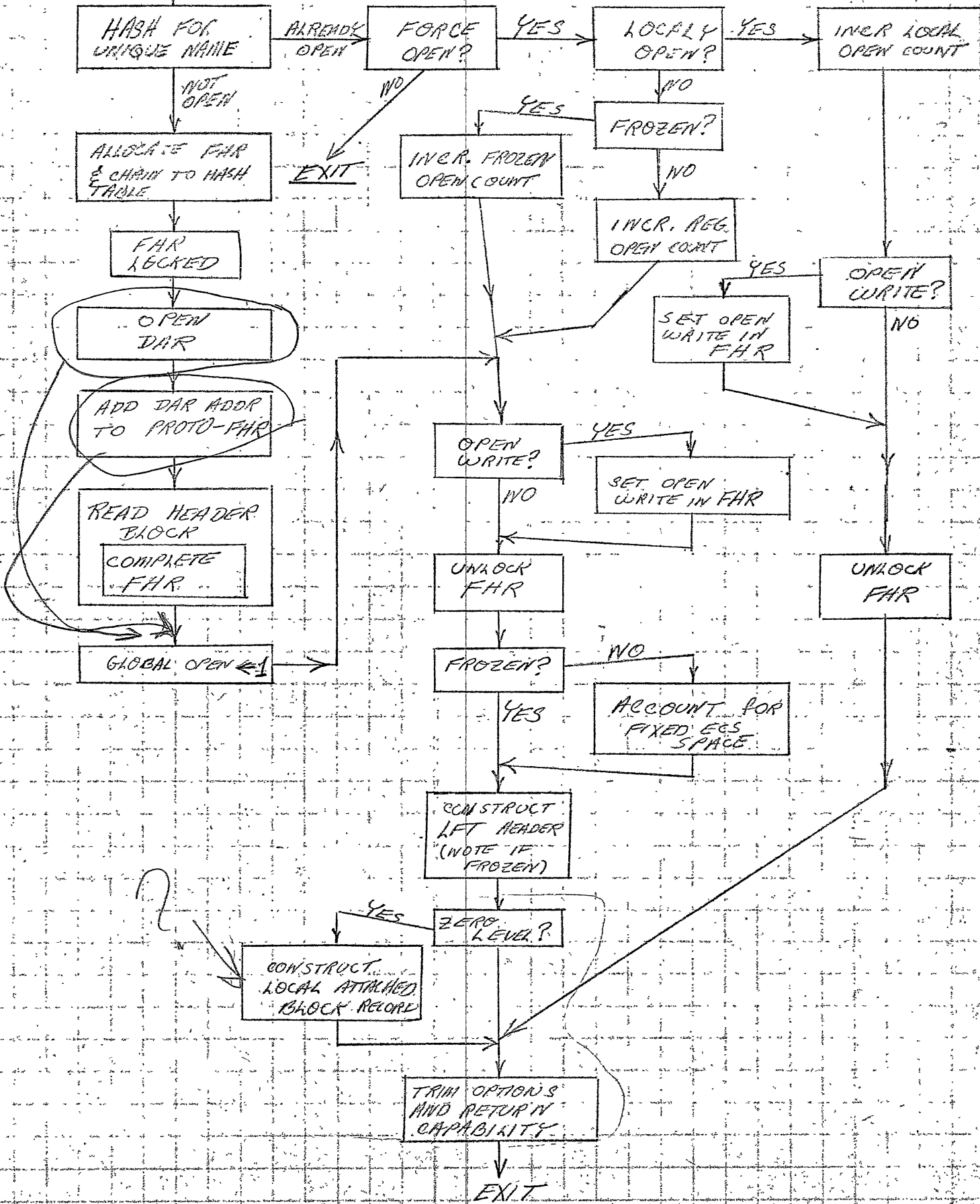
post to

create space



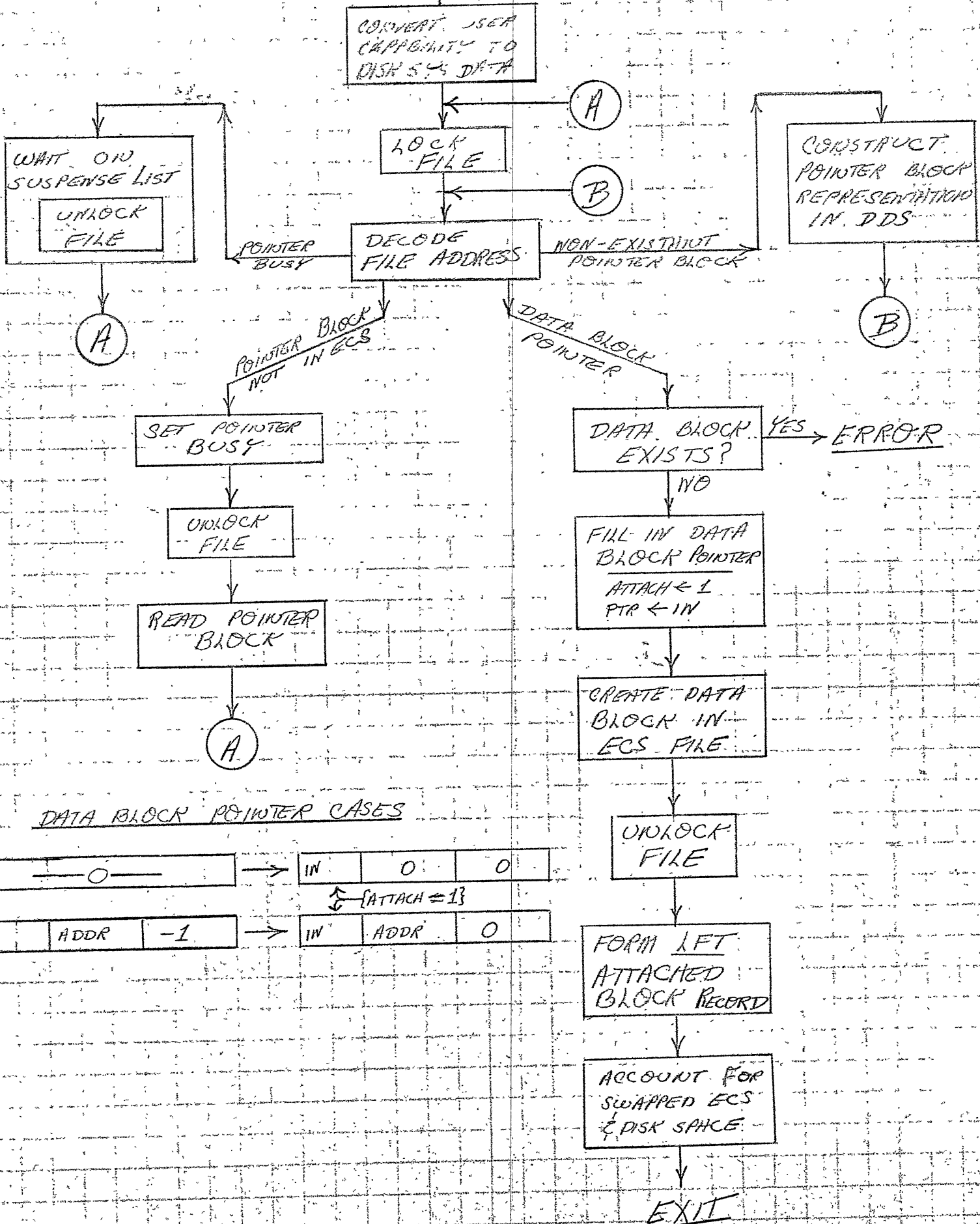
OPEN FILE

ENTRY

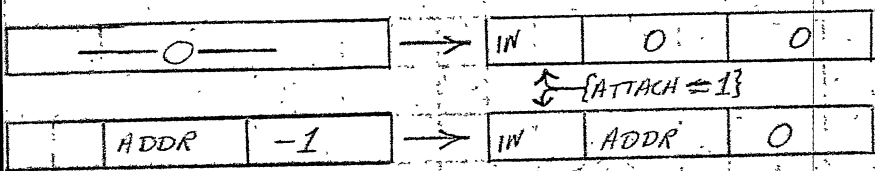


ENTRY

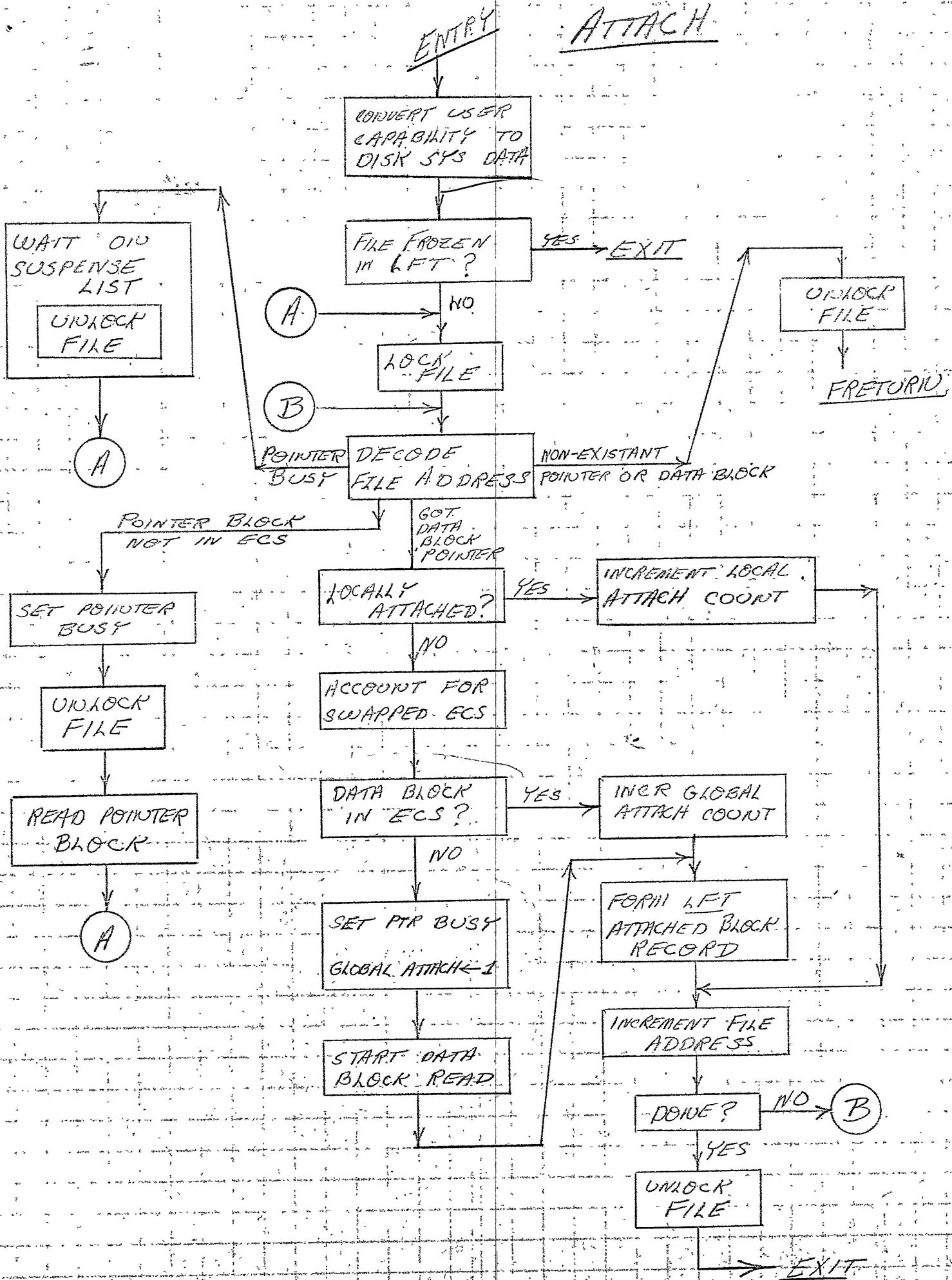
CREATE DATA BLOCK



DATA BLOCK POINTER CASES

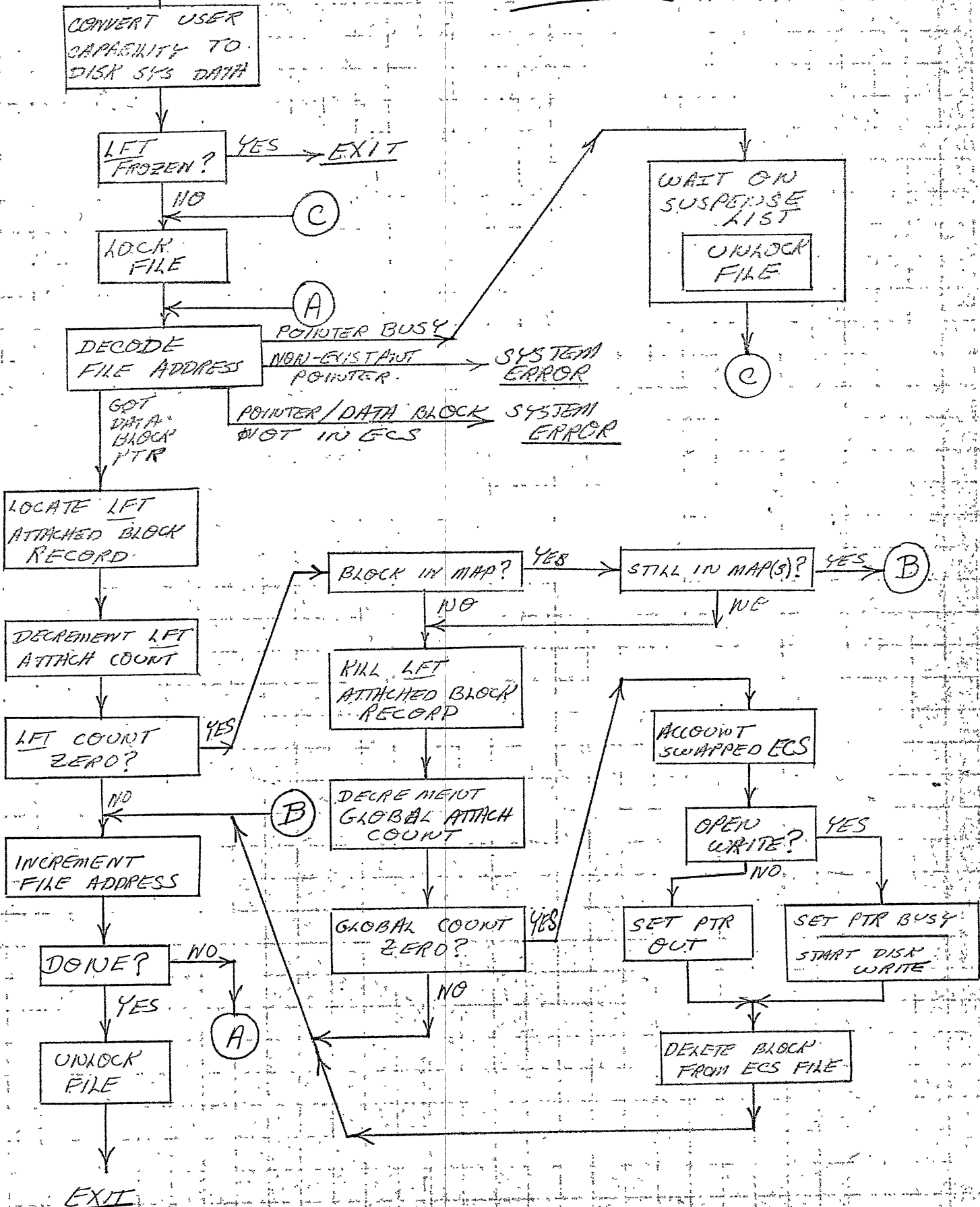


ATTACH



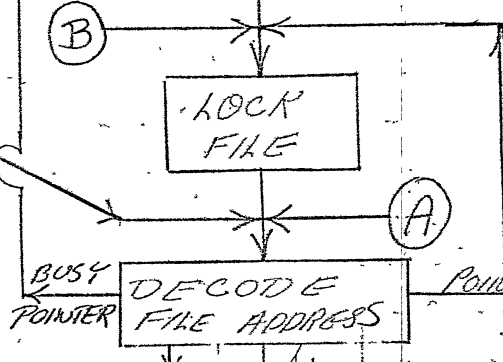
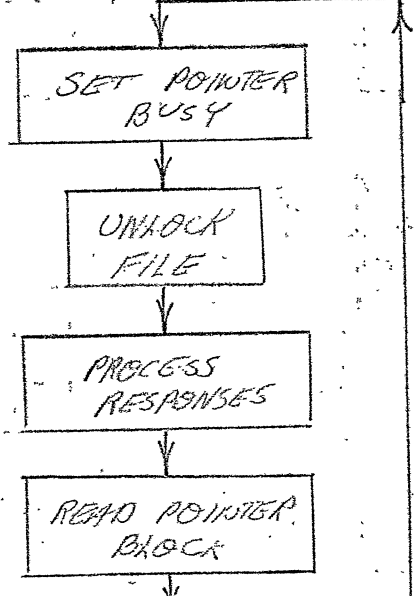
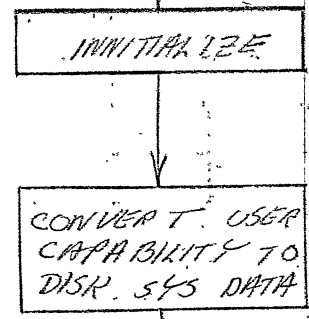
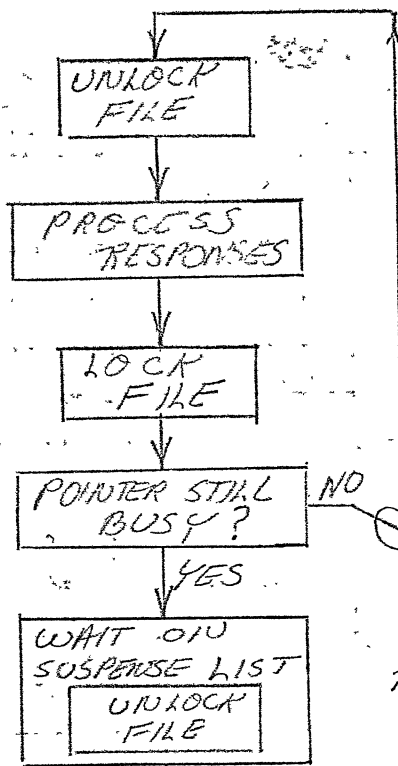
ENTRY

DETACH



FRETURN READ

ENTRY



POINTER BLOCK NOT IN ECS

DECODE FILE ADDRESS

DATA BLOCK IN?

SET PTR BUSY
ATTACH ← 1
INCR REQUEST CNT

START DATA BLOCK READ (w/ RESPONSE)

COPY BLOCK TO USER CORE

INCREMENT FILE ADDRESS

DONE?

UNLOCK FILE

PROCESS RESPONSES

EXIT

UNLOCK FILE

PROCESS RESPONSES

FRETURN

NON-EXISTANT DATA OR POINTER

GO DATA BLOCK POINTER

INVERSE BLOCK ENCOUNTERED?

B

A

B

A

FRETURN READ (PROCESS RESPONSES)
ENTRY

DISK CENTRAL

REQUEST COUNT EQUAL ZERO?

EXIT

REDUCE REQUEST COUNT

WAIT FOR RESPONSE

COPY DATA TO USER CORE

LOCK FILE

REDUCE ATTACH COUNT

ATTACH COUNT EQUAL ZERO?

NO

UNLOCK FILE

FILE OPEN/ WRITE?

NO

DELETE BLOCK FROM ECS FILE

INITIATE DATA BLOCK WRITE
DELETE BLOCK FROM ECS FILE

