HAINES AREA STREAM CHANNEL TYPE SURVEY

By

John Edgington
Jim Cariello
and
Chiska Derr

Regional Information Report[1] No.1J89-04

Alaska Department of Fish and Game
Division of Commercial Southeast Region
Juneau, Alaska

January 1989

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Haines Area Stream Channel Type Report

Introduction

Channel type classification is the standard survey method in current use by the US Forest Service throughout the Tongass National Forest to document stream resource identification and provide a basis for salmon habitat evaluation and protection. The Land Use Project within the Commercial Fisheries Division, Alaska Department of Fish and Game, has adopted the channel type survey method and is in the process of documenting state and private land areas so that one common stream resource data base will be available for all of Southeast.

This report presents the results of channel type maps prepared in response to concerns for adequate stream protection in the Haines State Forest. Although the State Forest lands were the main objective of this survey, all lands were mapped where aerial photographs were available and unmapped areas were surveyed via helicopter during field verification of preliminary channel maps.

Channel types marked on the map (Part 1) are a length of the stream that has similar physical characteristics caused by the hydrological and geomorphic processes that shape the stream. As stream resource managers learn the fundamentals of the channel type classifications, the channel map system will become a powerful tool for use in land use planning and habitat evaluations.

Channel types are classified into six dominant fluvial process groups as:

1. Water/sediment source input (A type).
2. Water/sediment transport (B type).
3. Water/sediment deposition (C type).
4. Glacial influence (D type).
5. Estuarine intertidal (E type).
6. Placid, slow moving waters (L type).

The Haines/Skagway area is dominated by the glacial D type channels. Productive salmonid rearing and spawning habitat is provided by the B type channels associated with the side channel and tributaries of the D-channel terrace.

The channel maps of the Haines area are contained in part 1 of this report. The maps are developed from color aerial photographs and field verified by visual inspection from a helicopter and by randomly sampling a representative portion of the channel types by measuring the stream channel at the sample point. The stream sample data comprises part 2 of this report. As an aid in understanding and interpreting the mapped channel types and sample data, a summary of channel differentia and channel type verification procedures comprises part 3; canopy type identification legend, part 4; and protection measures during land management by channel type, part 5.

As a result of channel sampling to verify the mapping of the Haines area, an additional 10.5 miles of anadromous salmon stream has been accepted for inclusion into the legal Catalog of Waters Important for Spawning, Rearing or migration of Anadromous Fishes.

PART 1

Channel Maps

SKAGWAY A-1, NW

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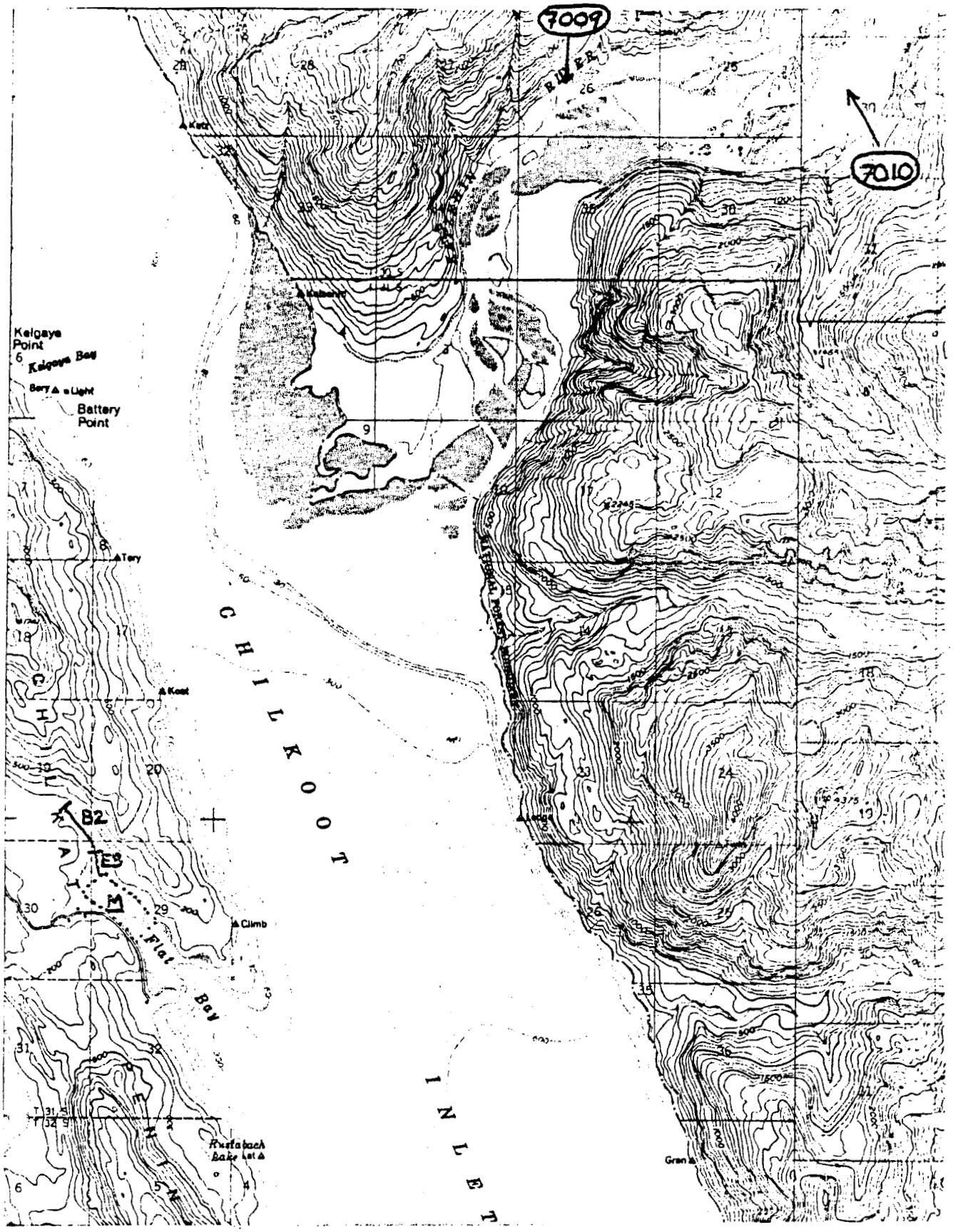

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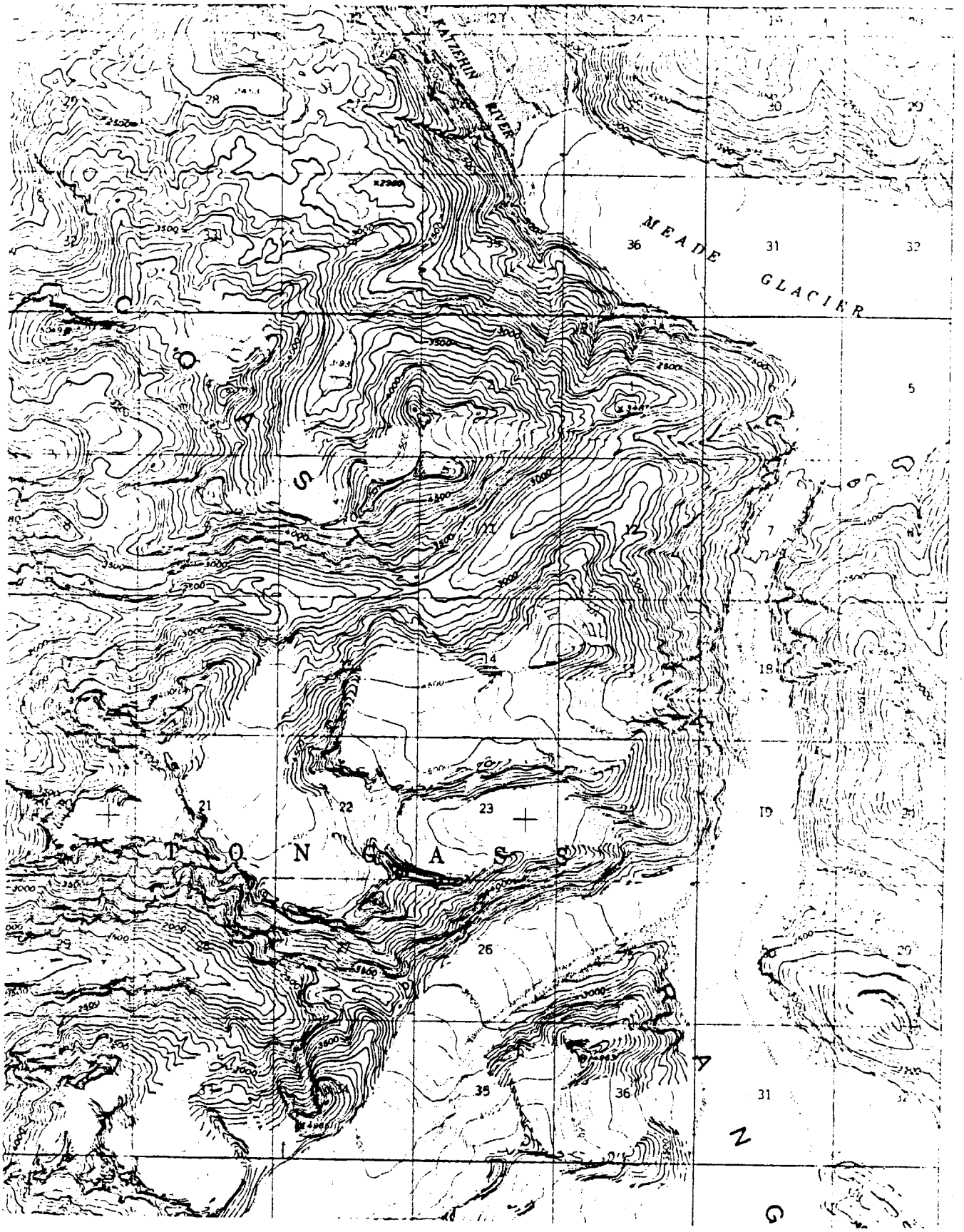
1 inch = 1 mile



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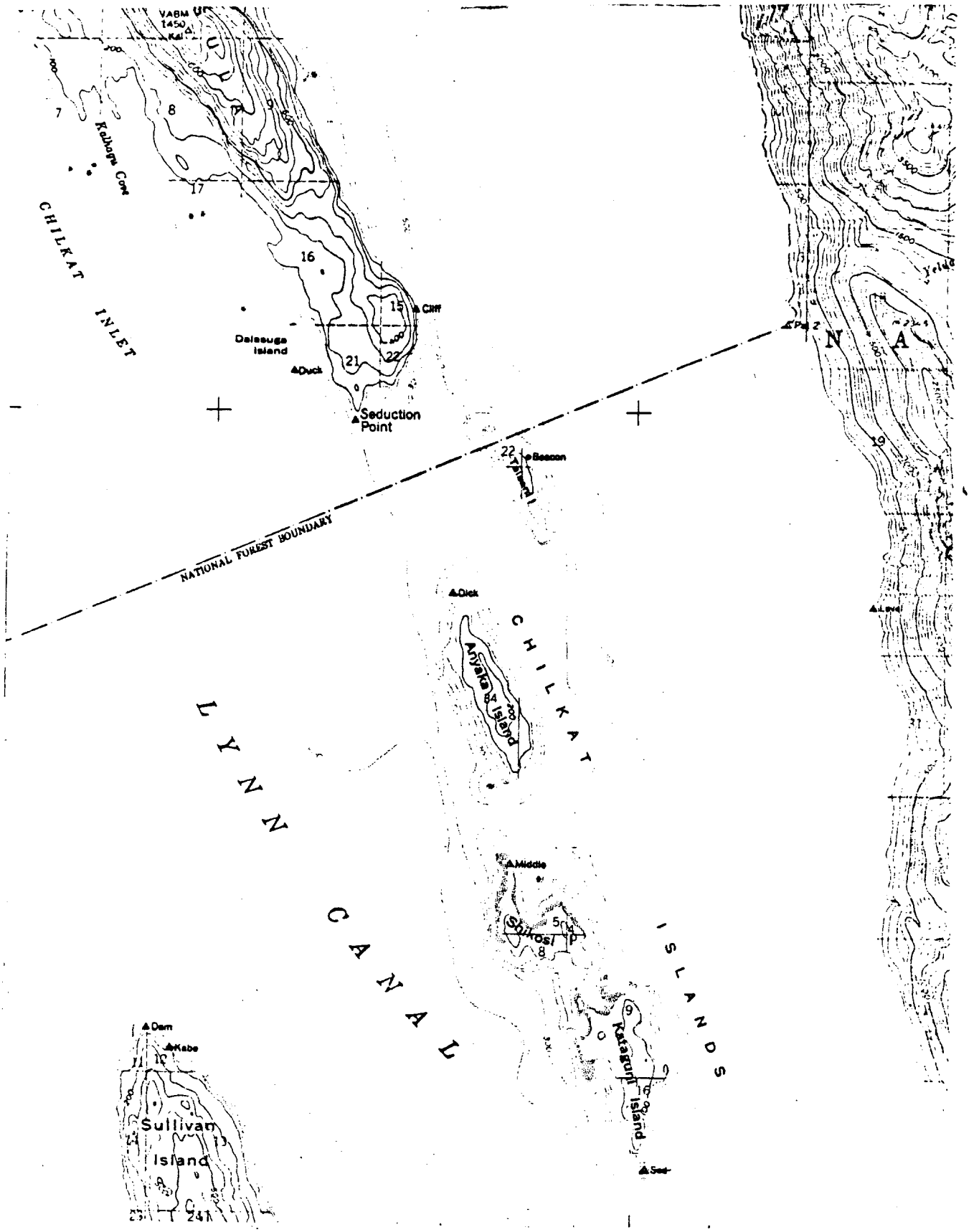

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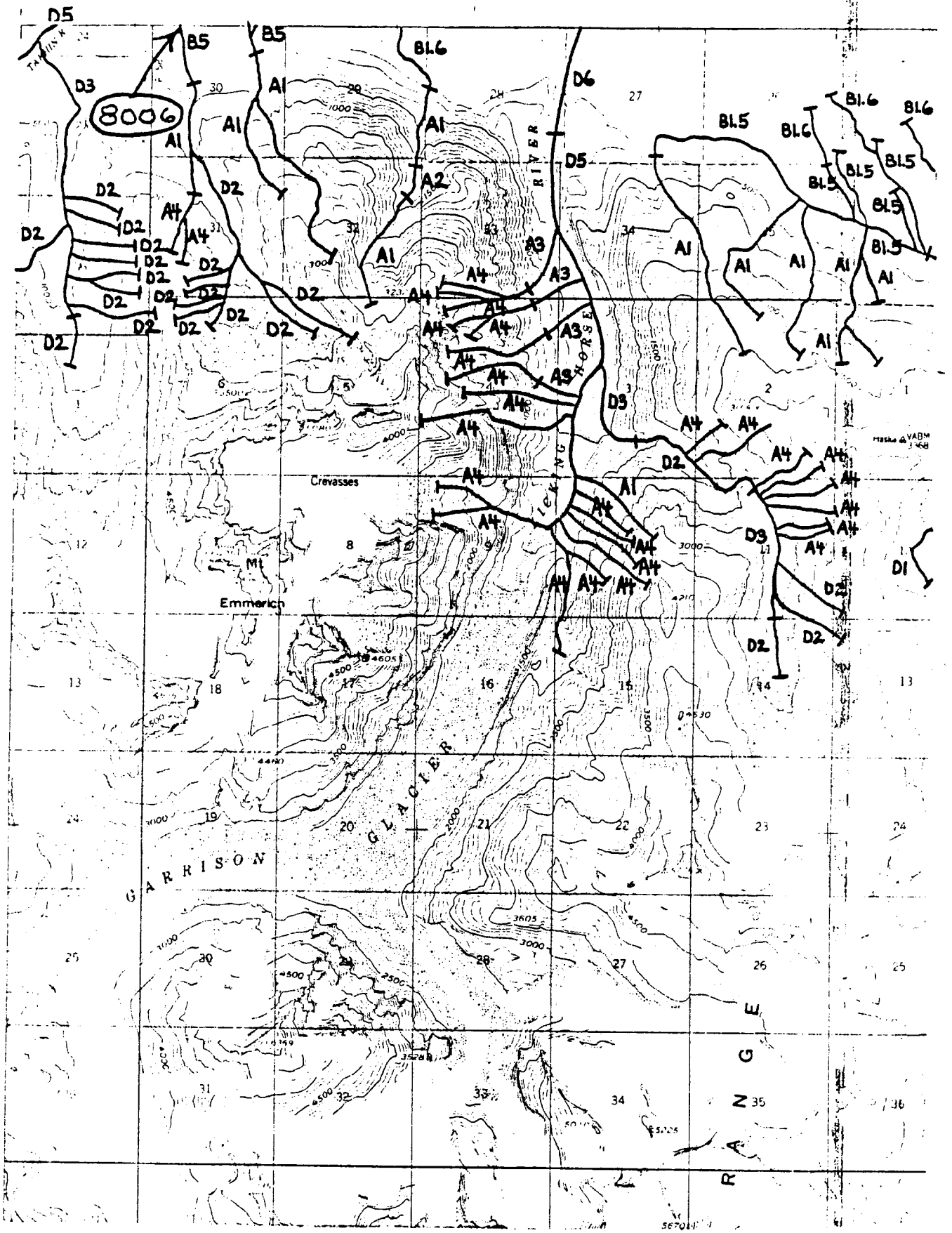

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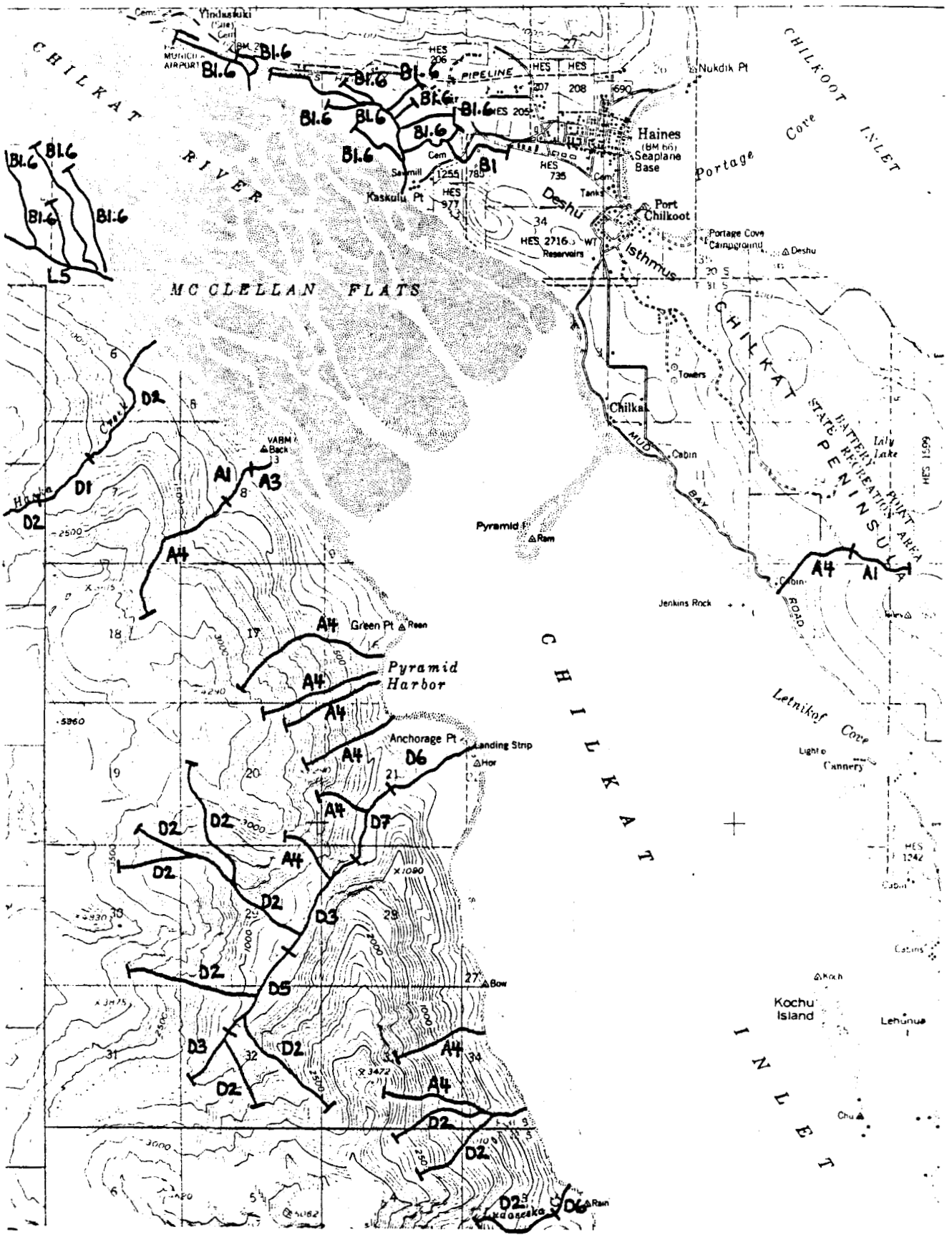

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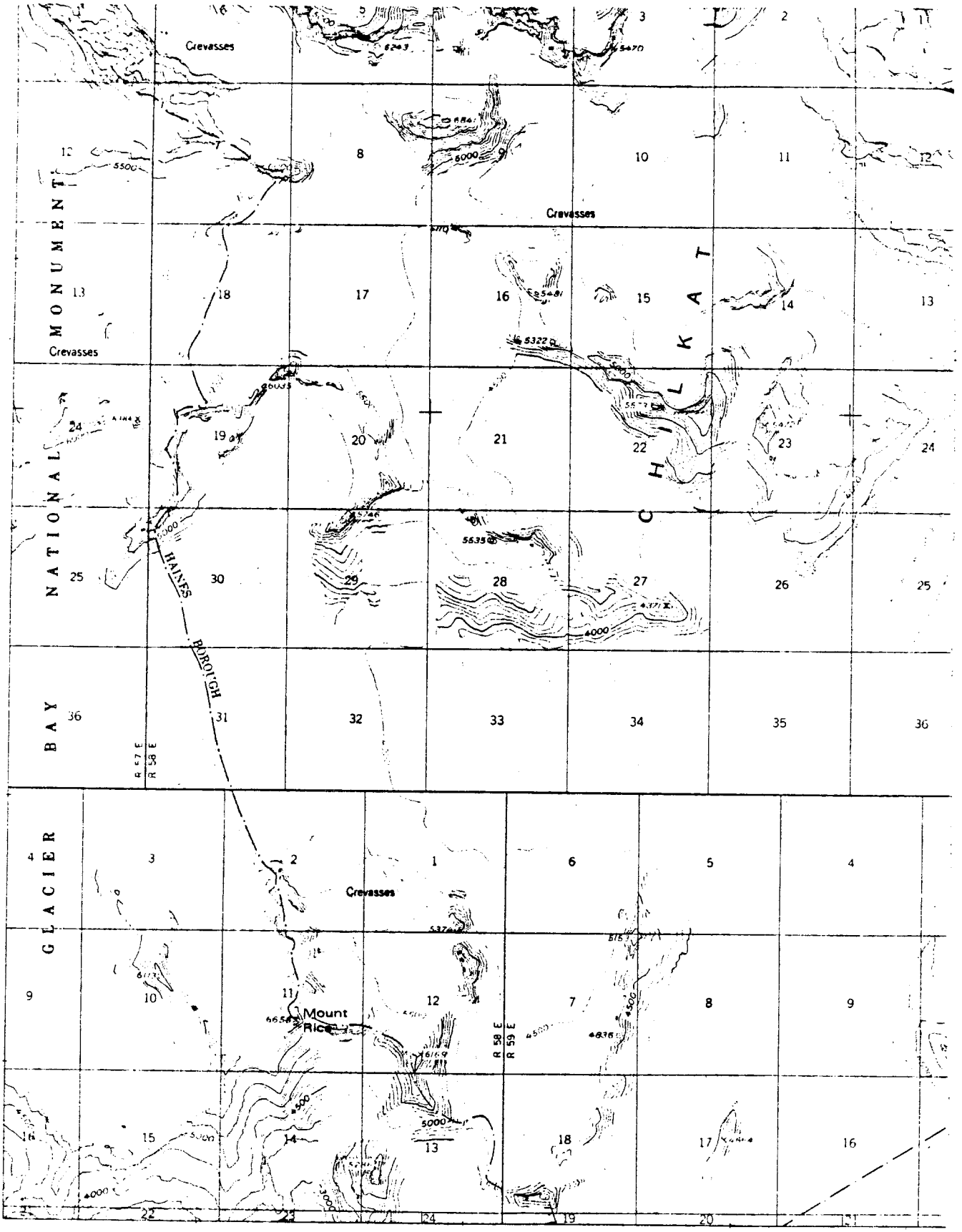

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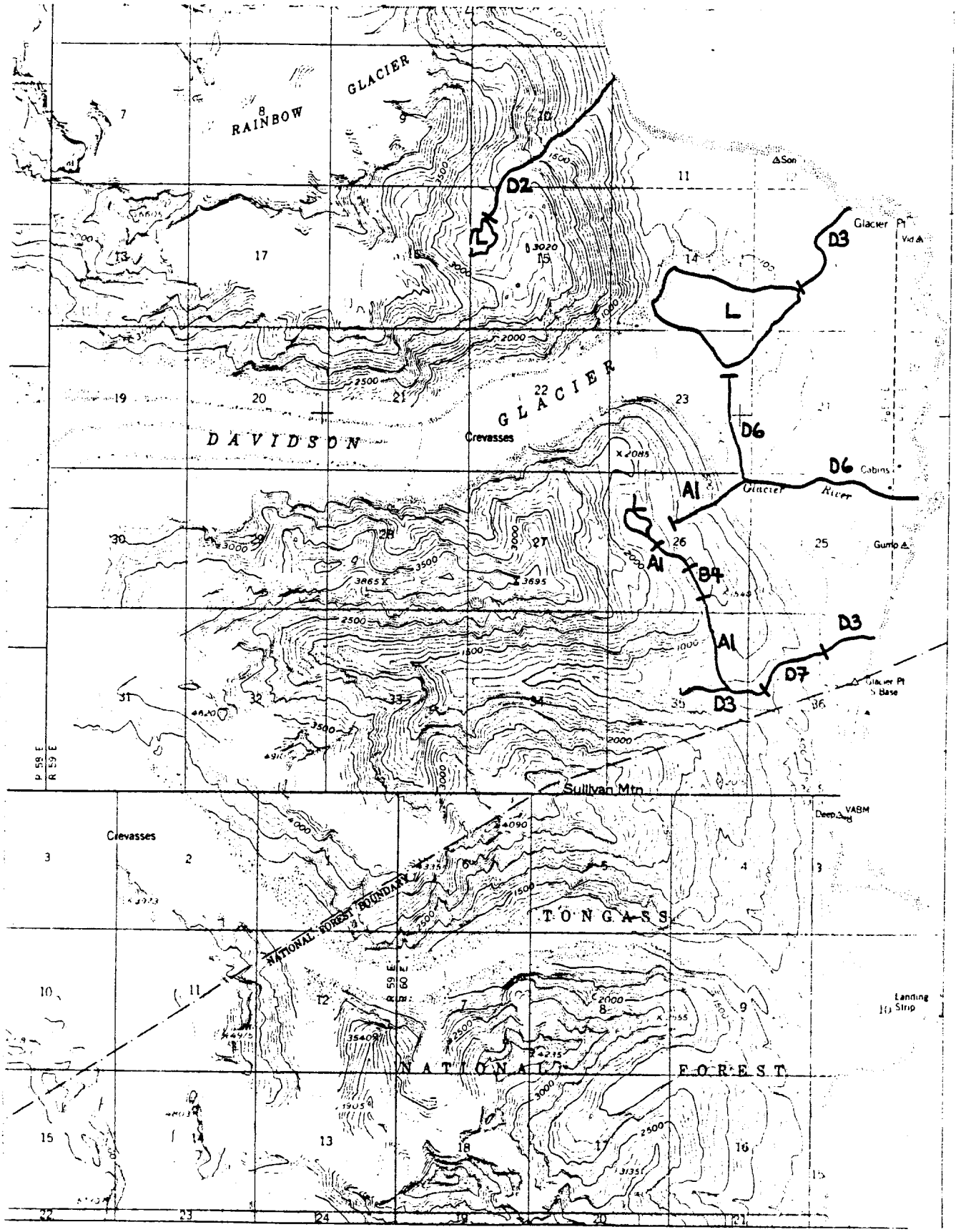

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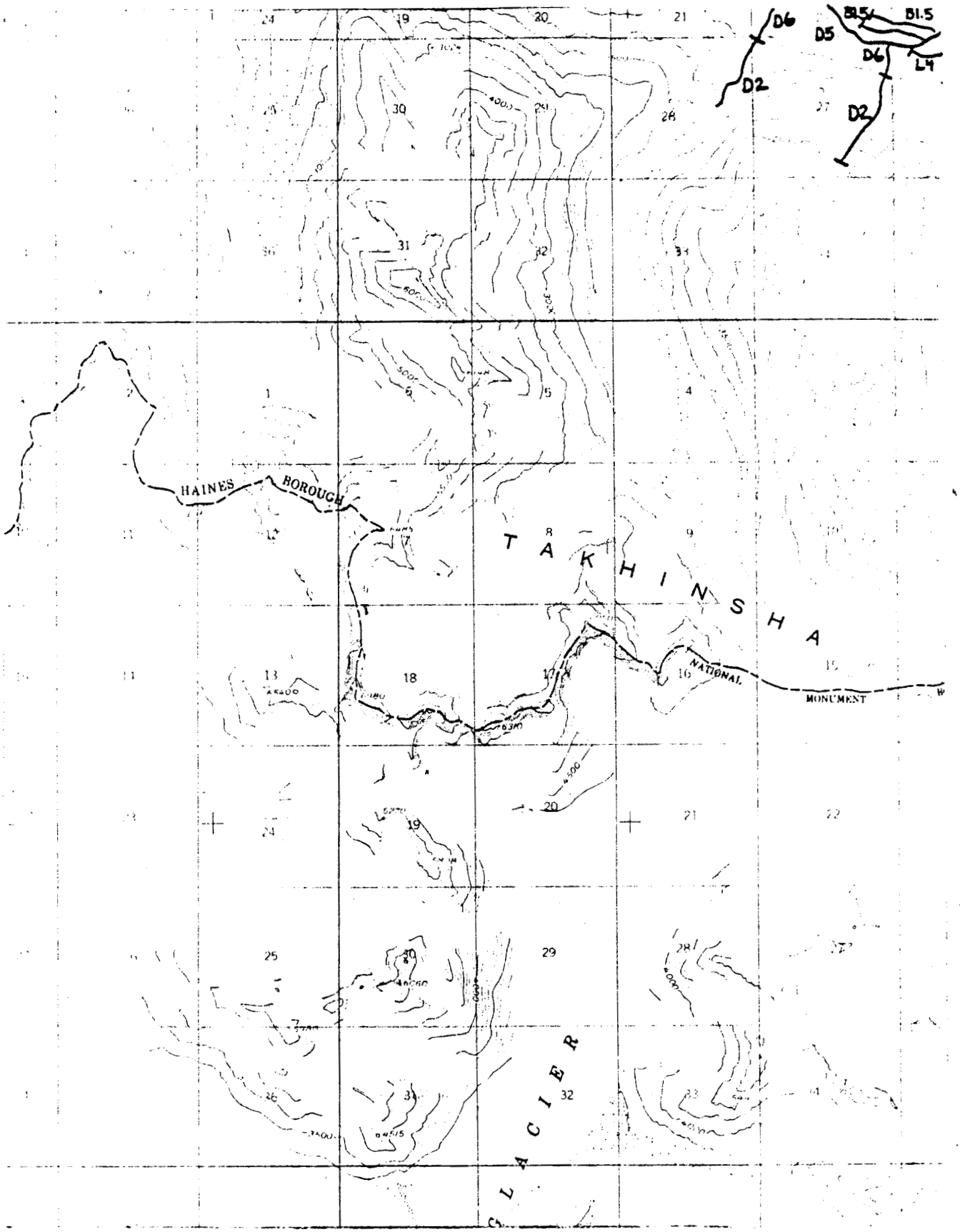

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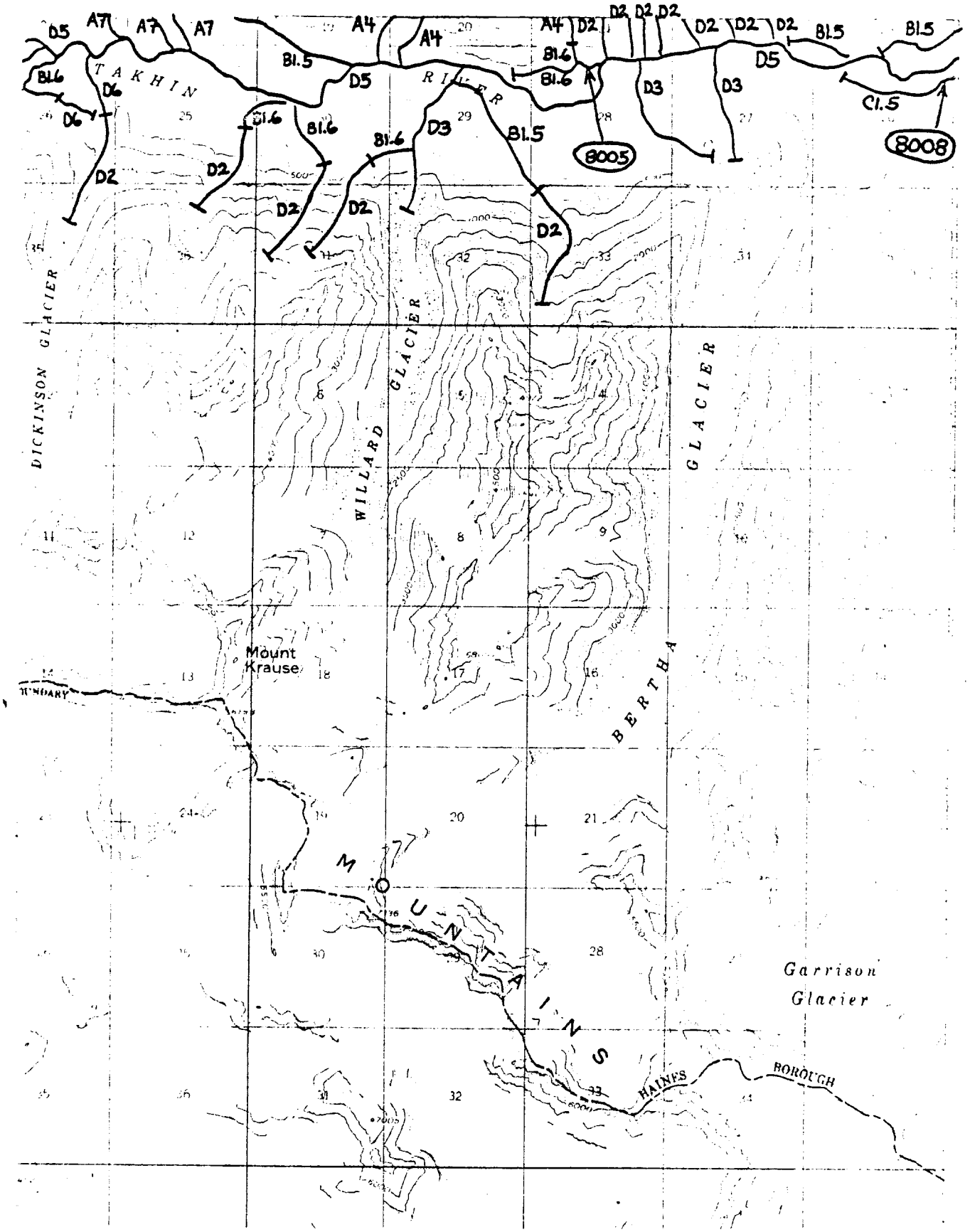

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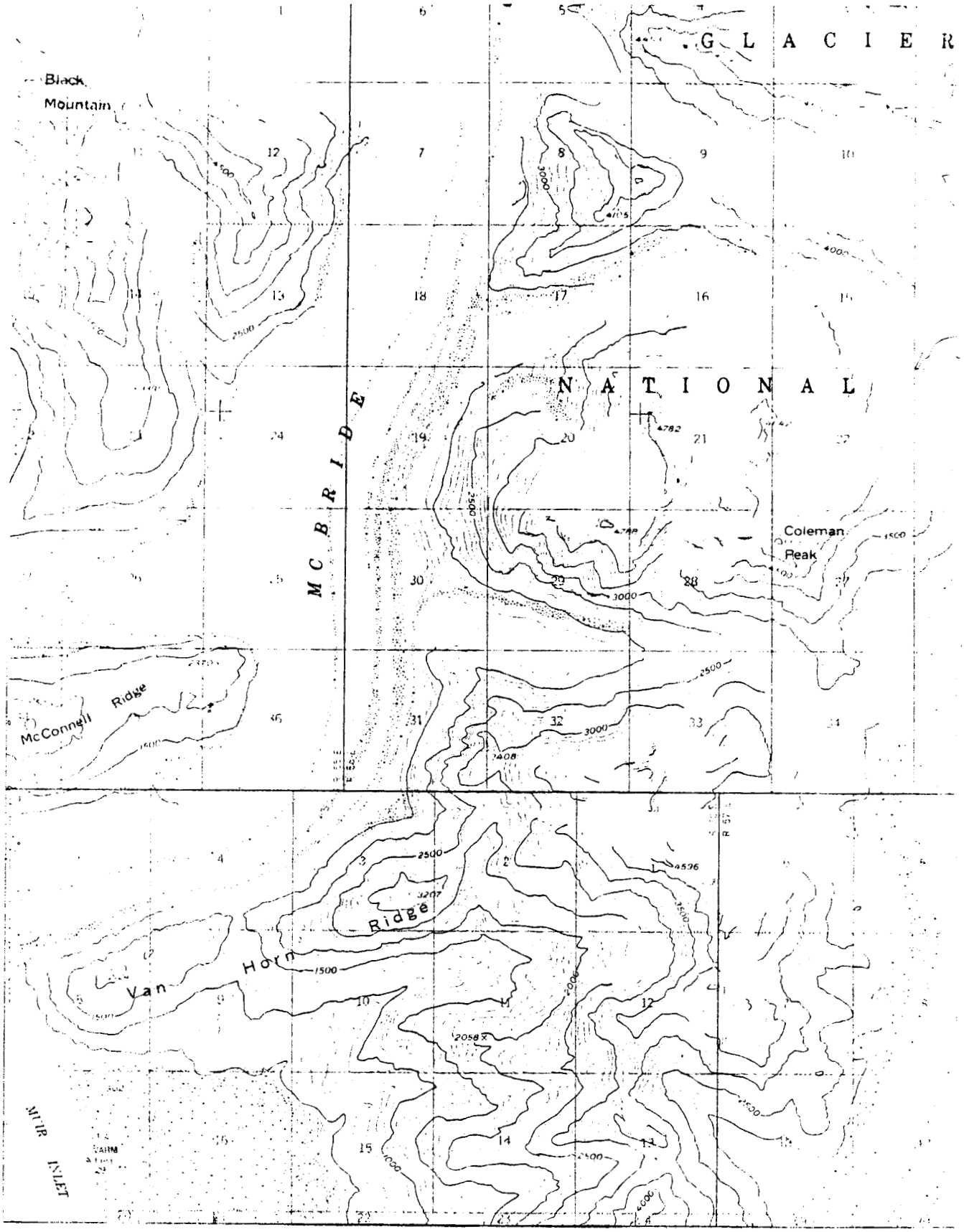

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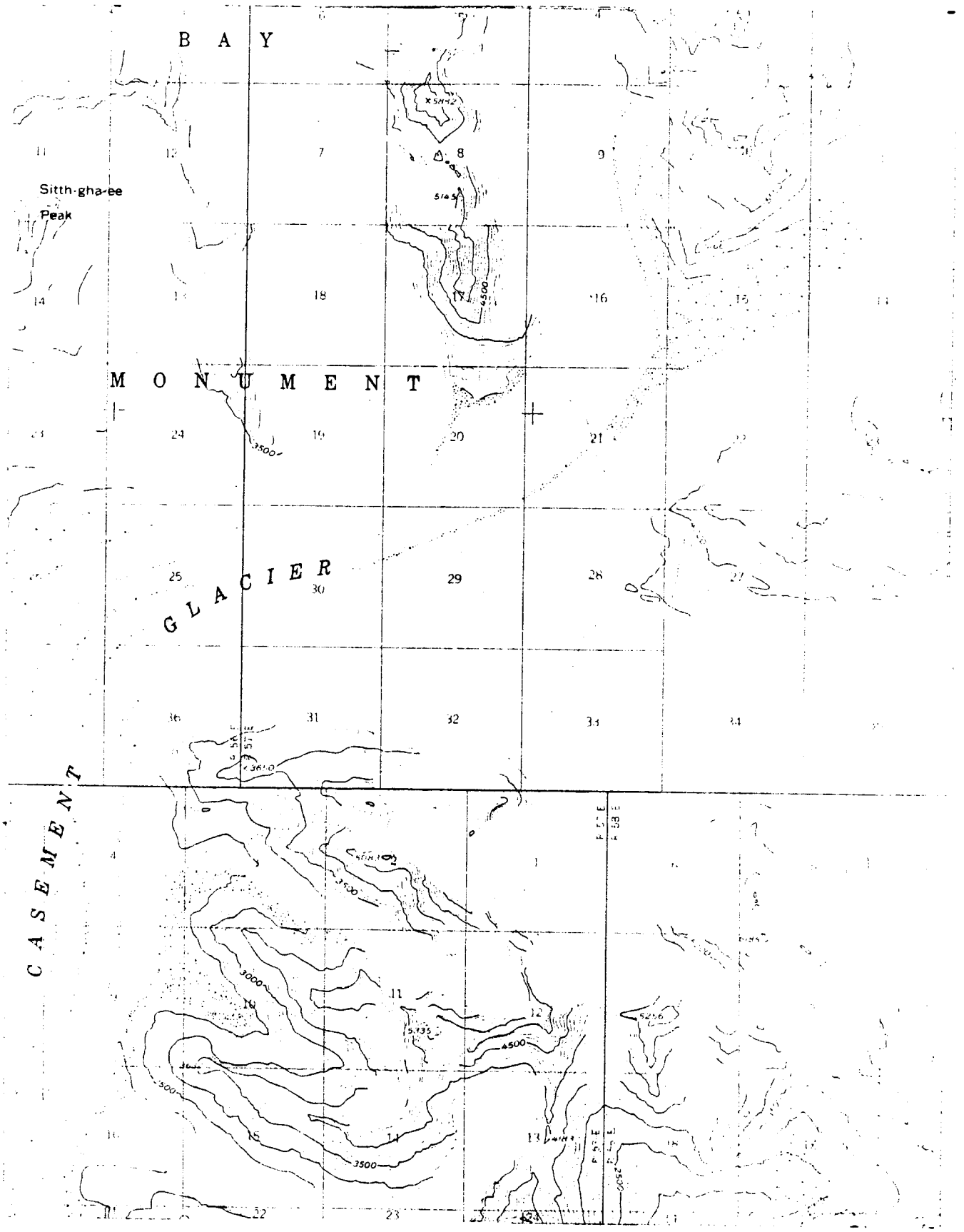

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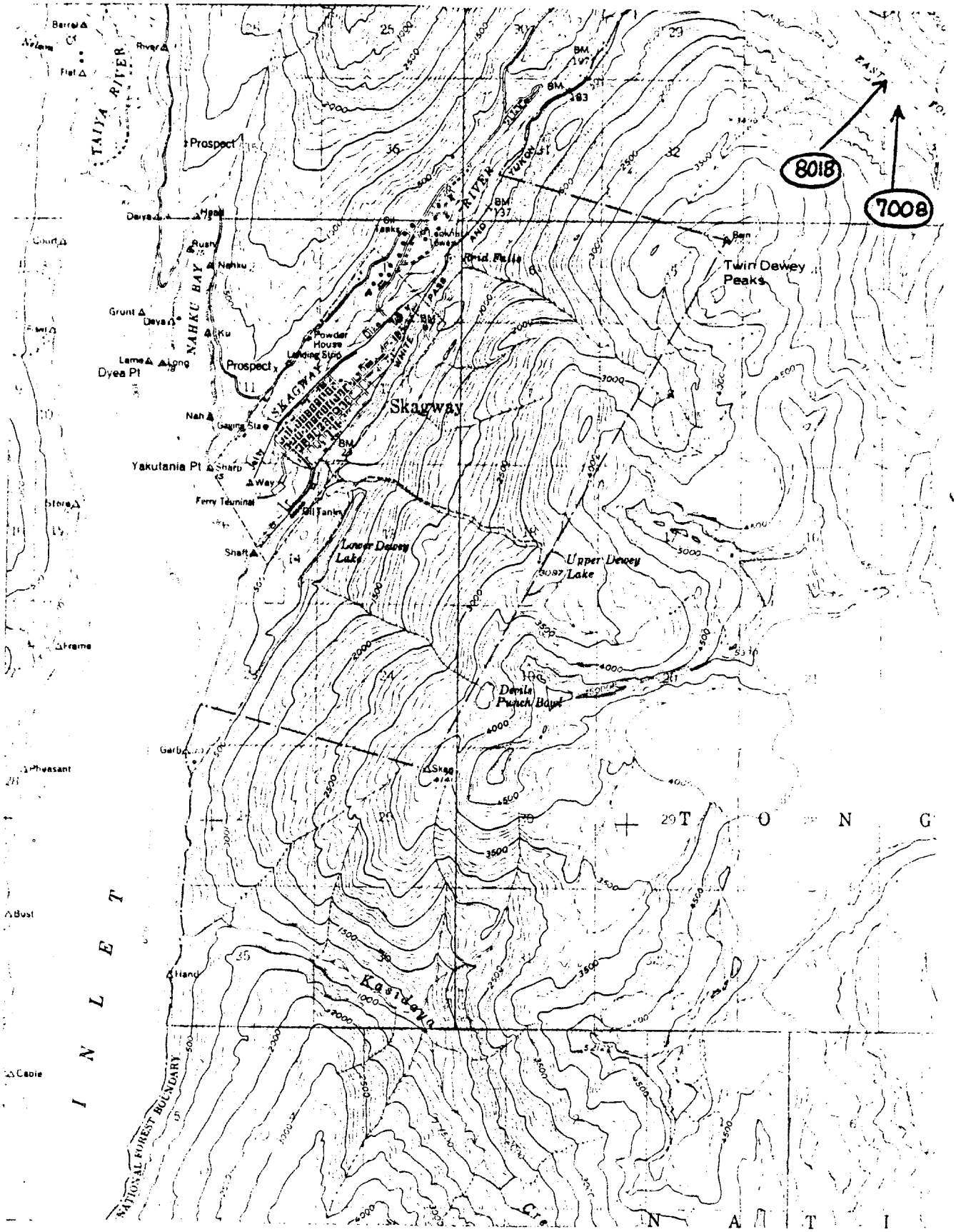

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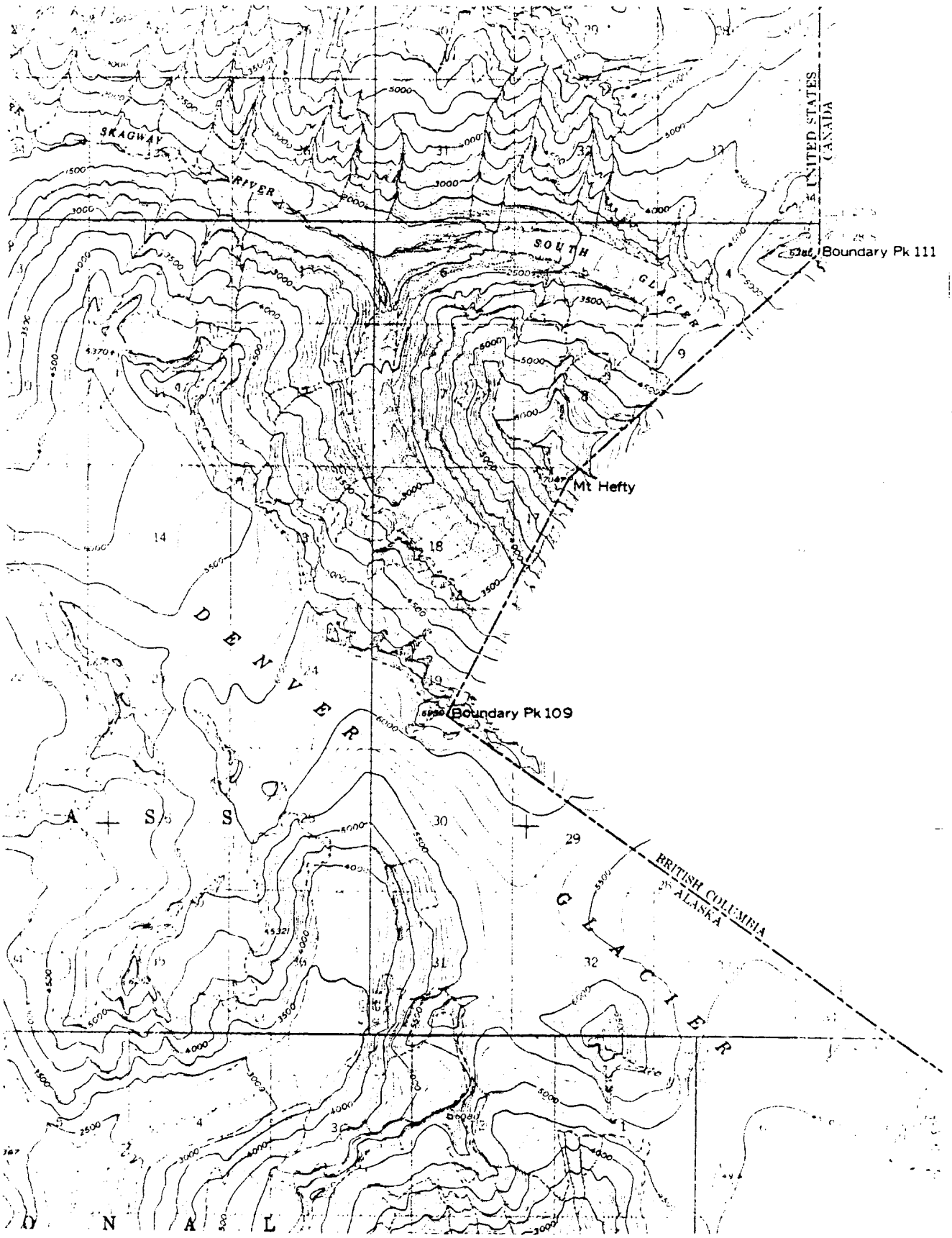

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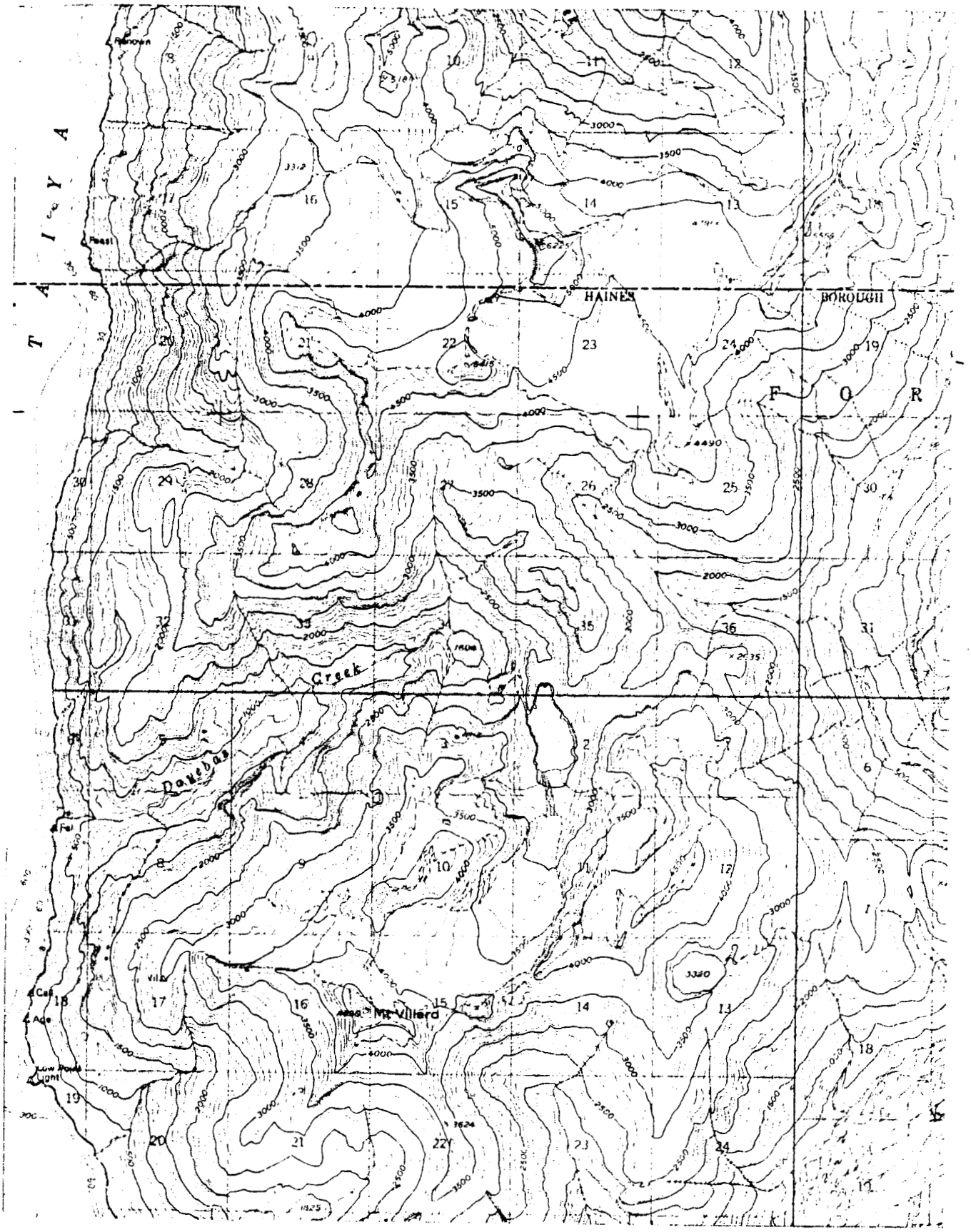

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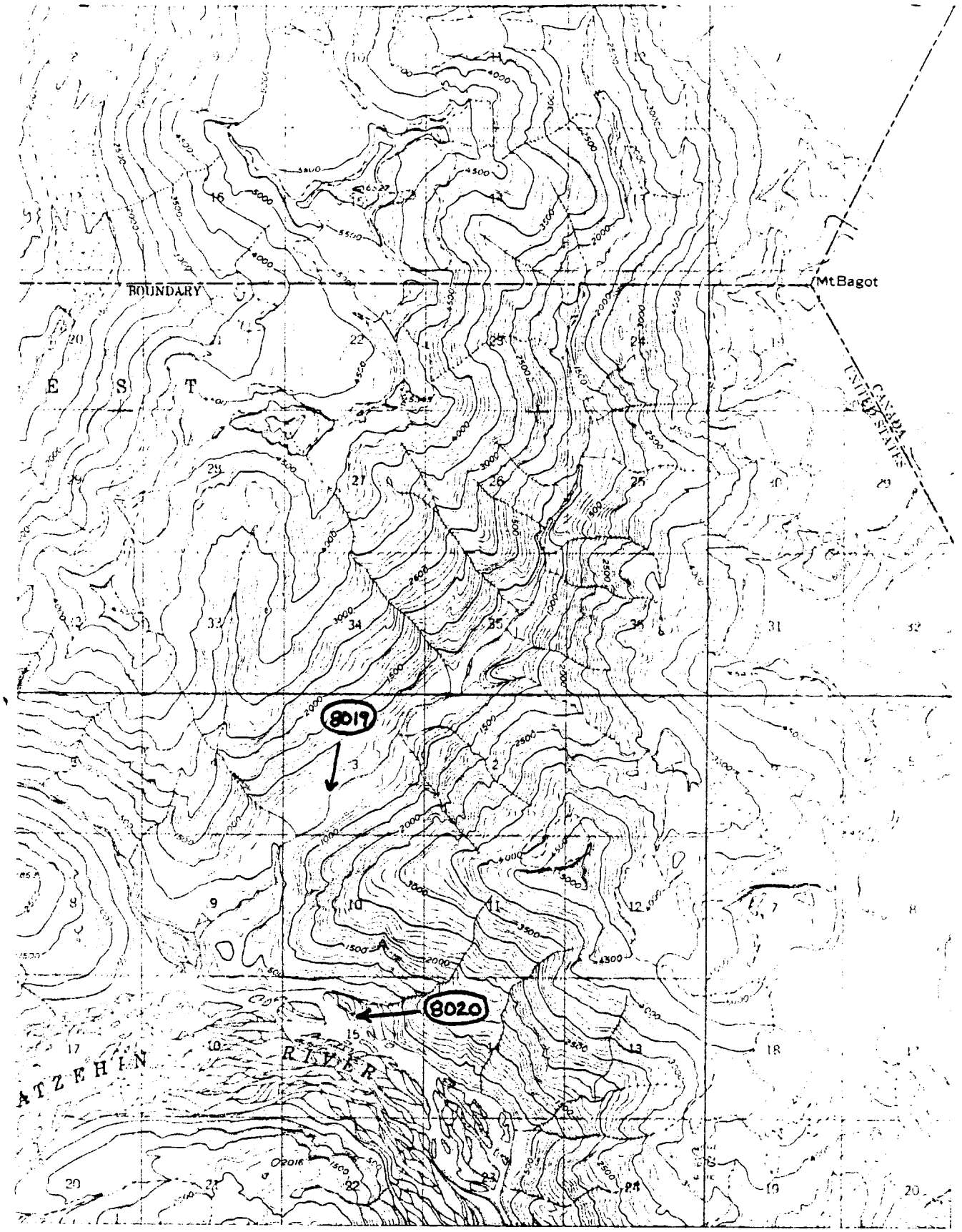

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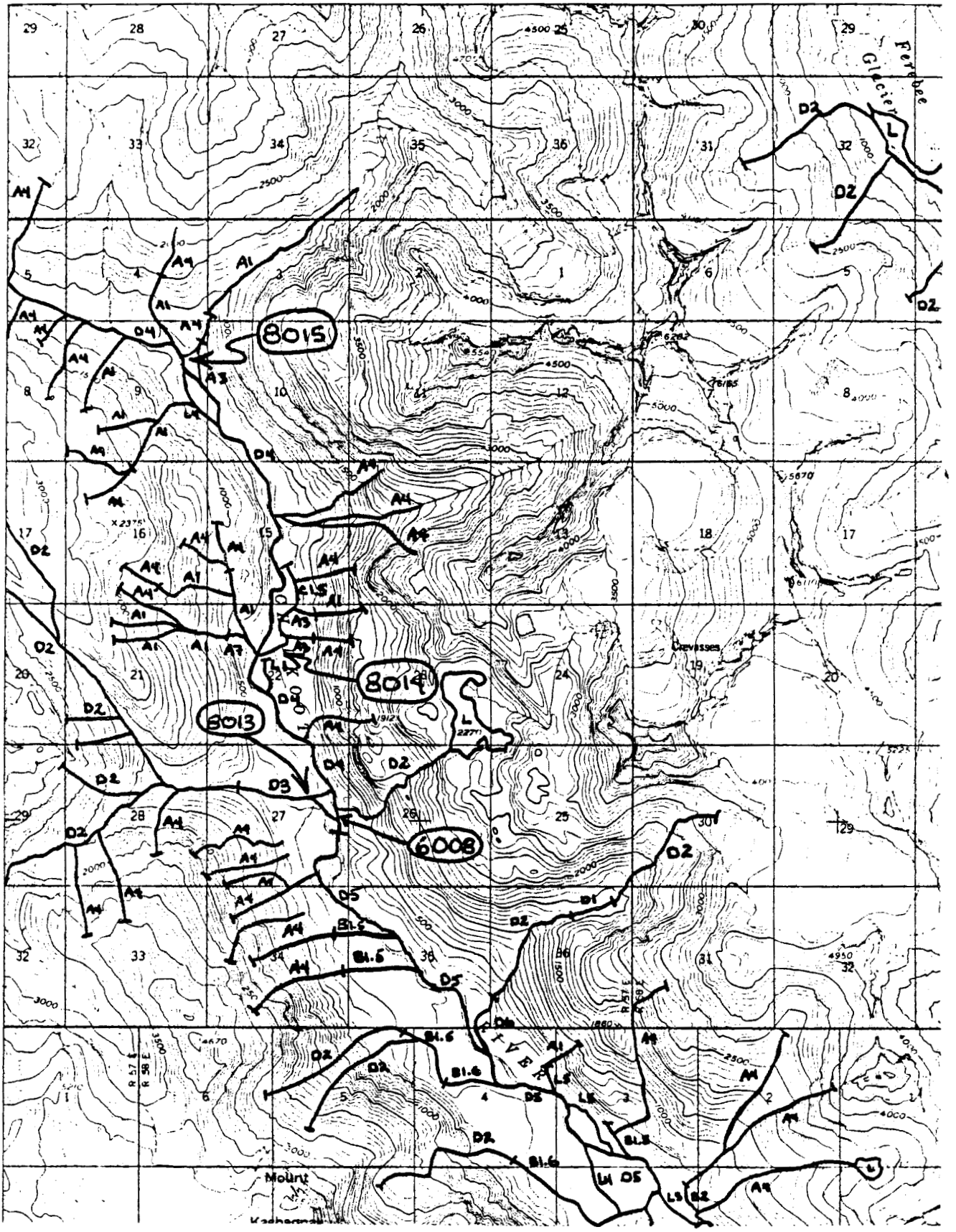

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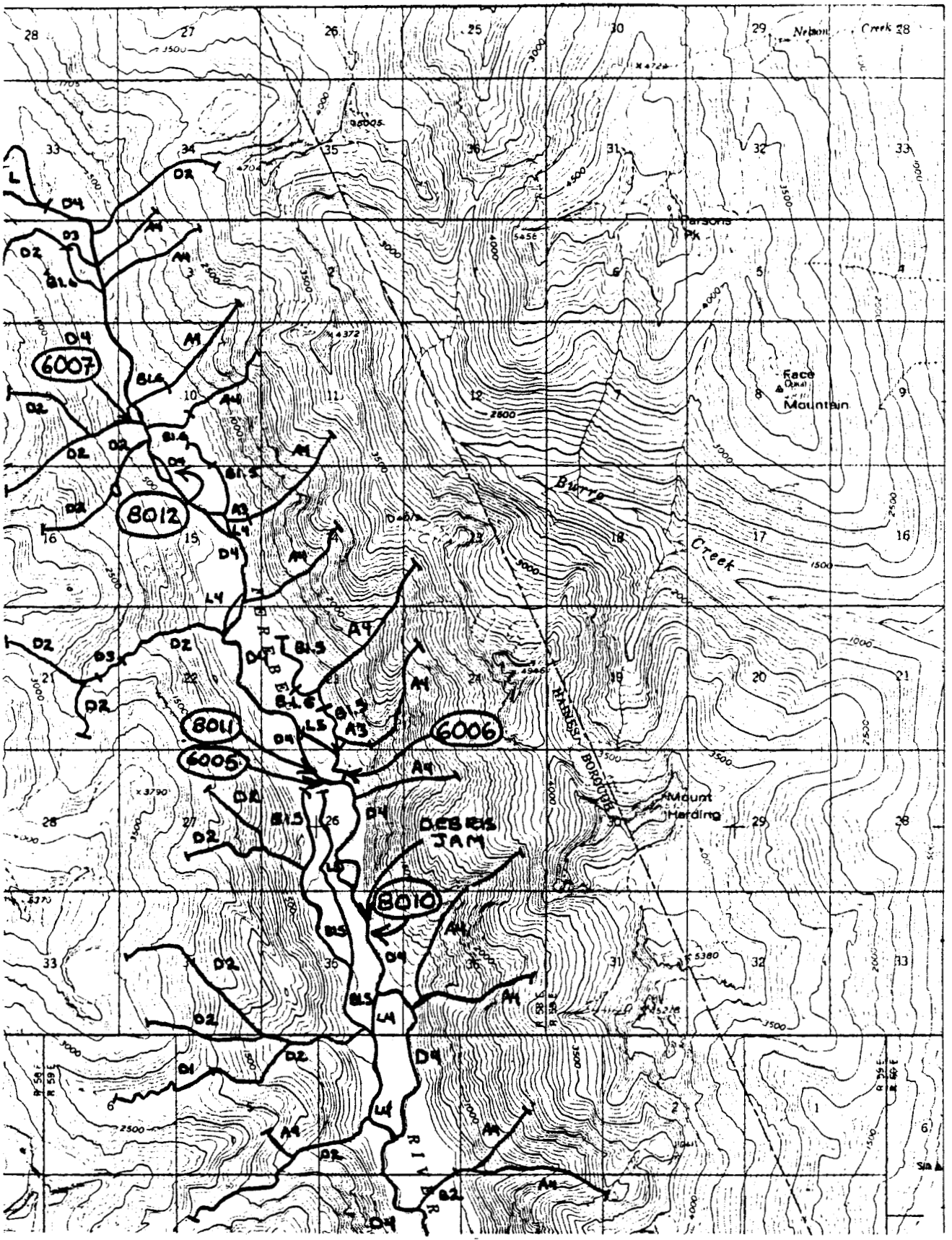

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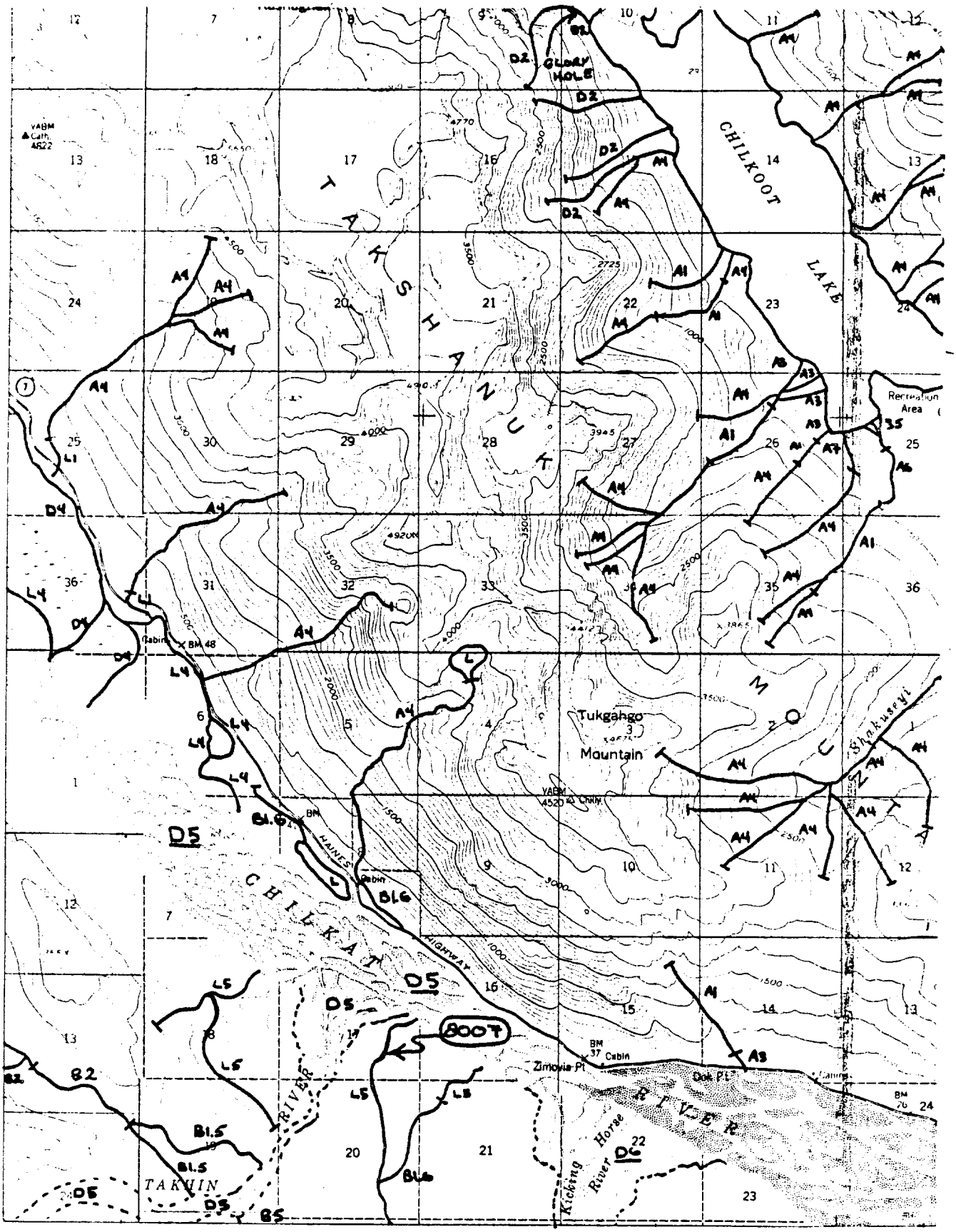

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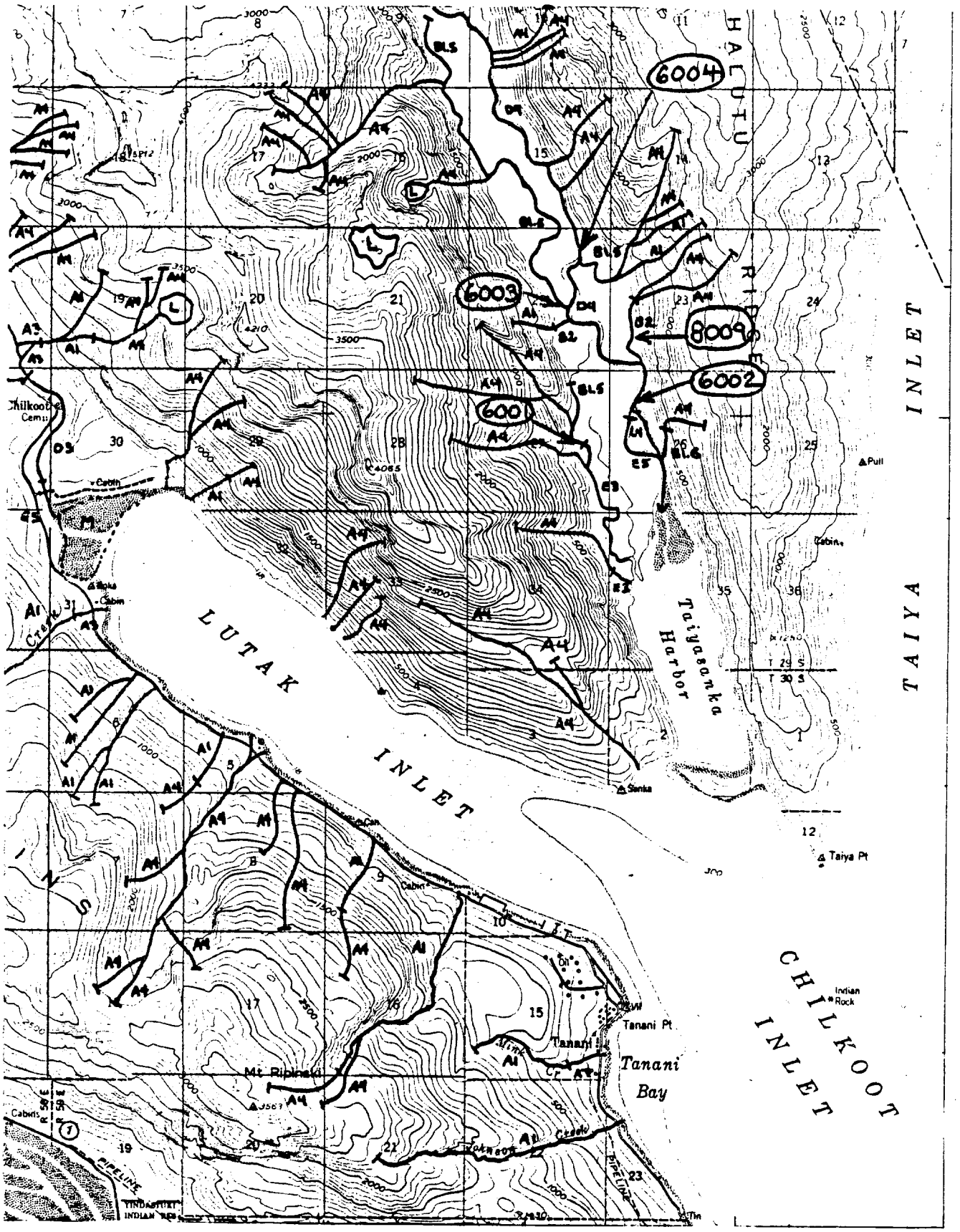

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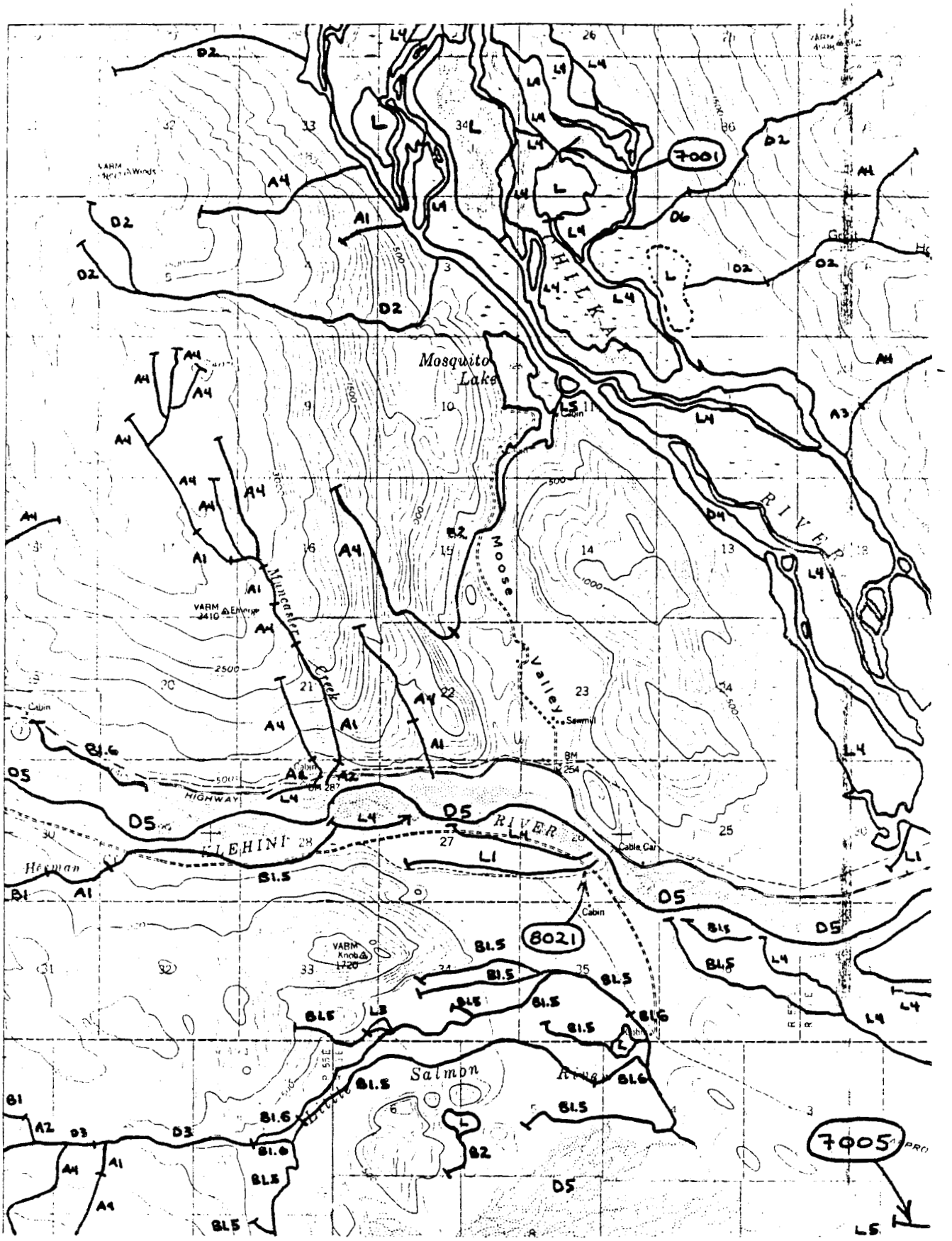

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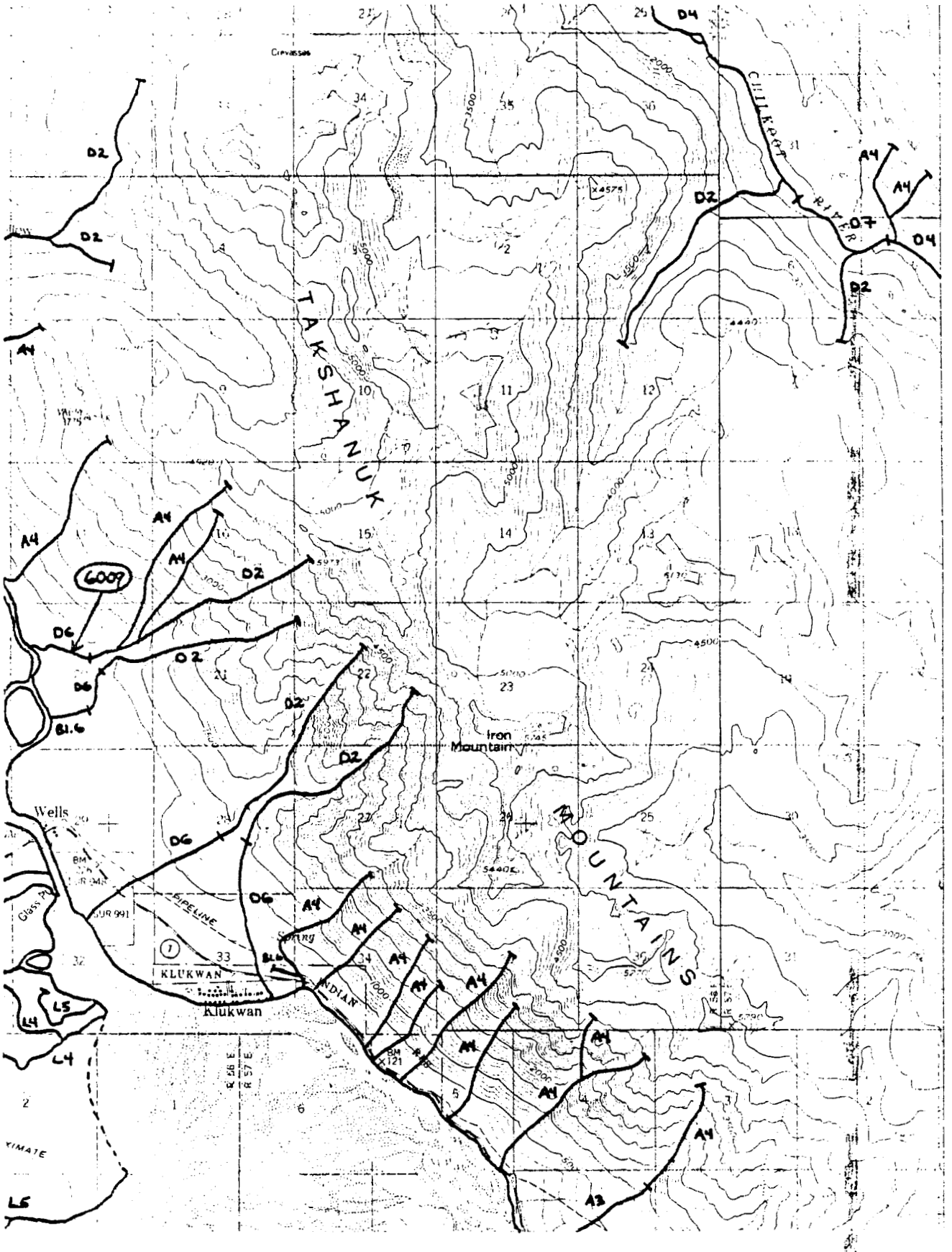

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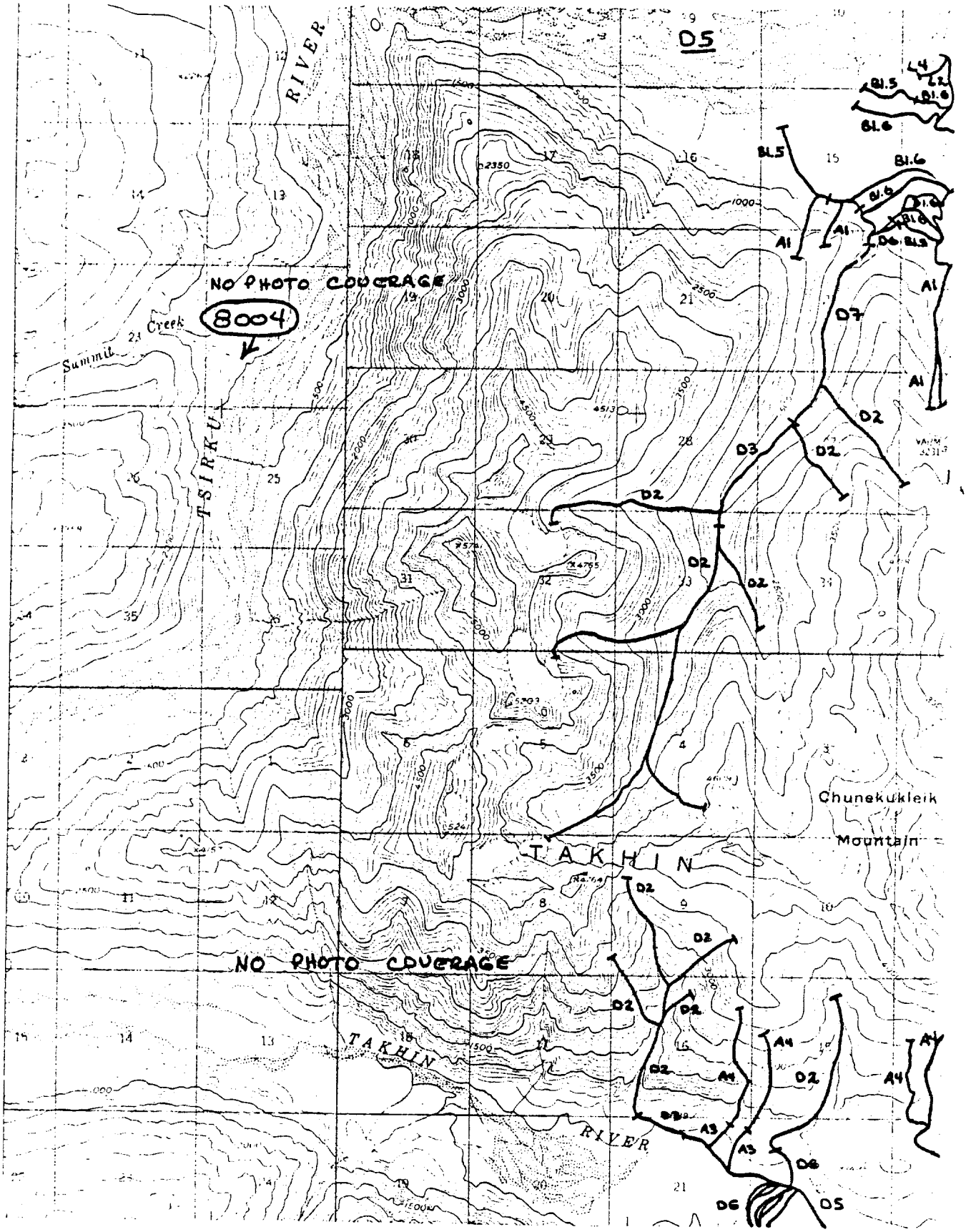

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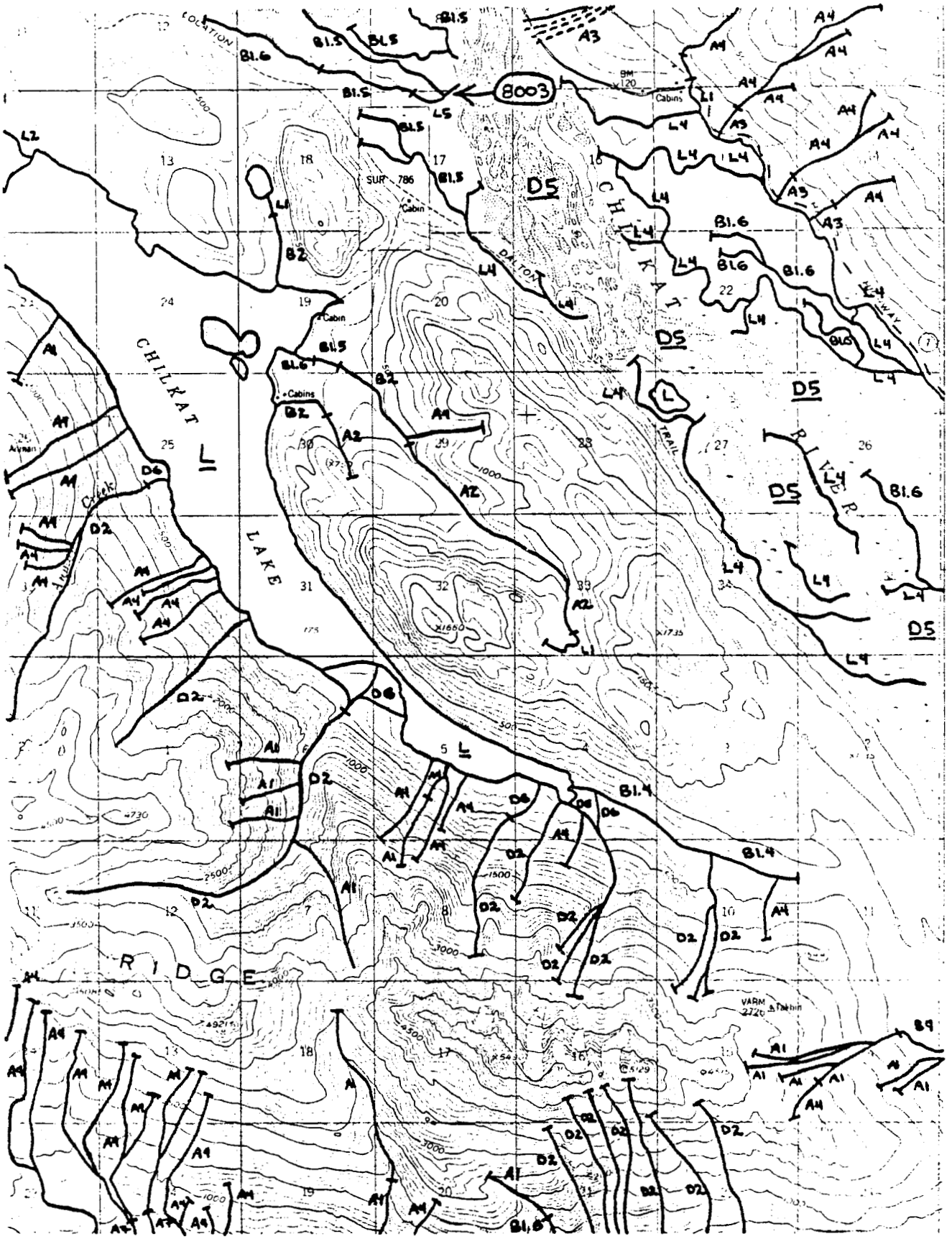

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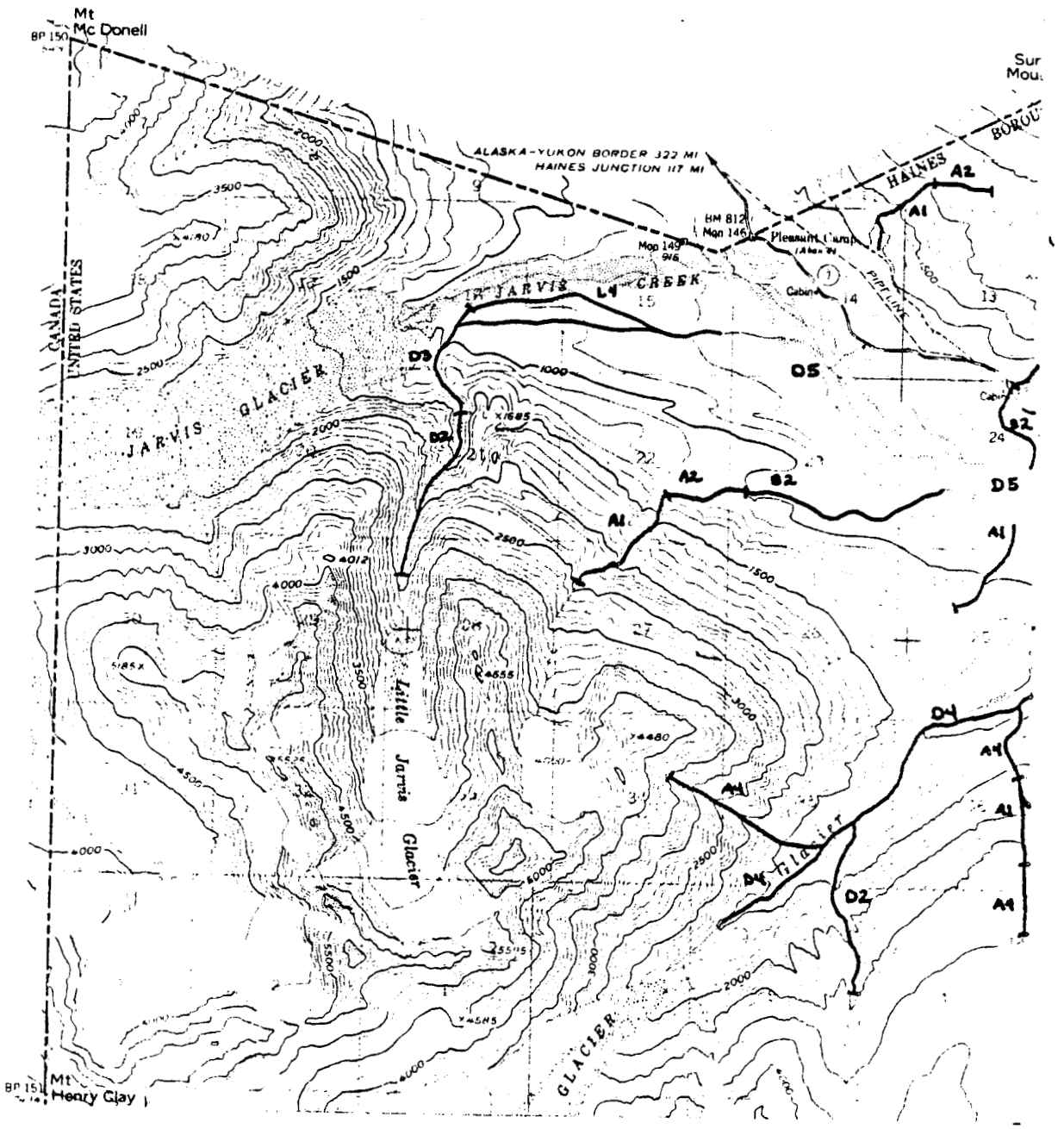

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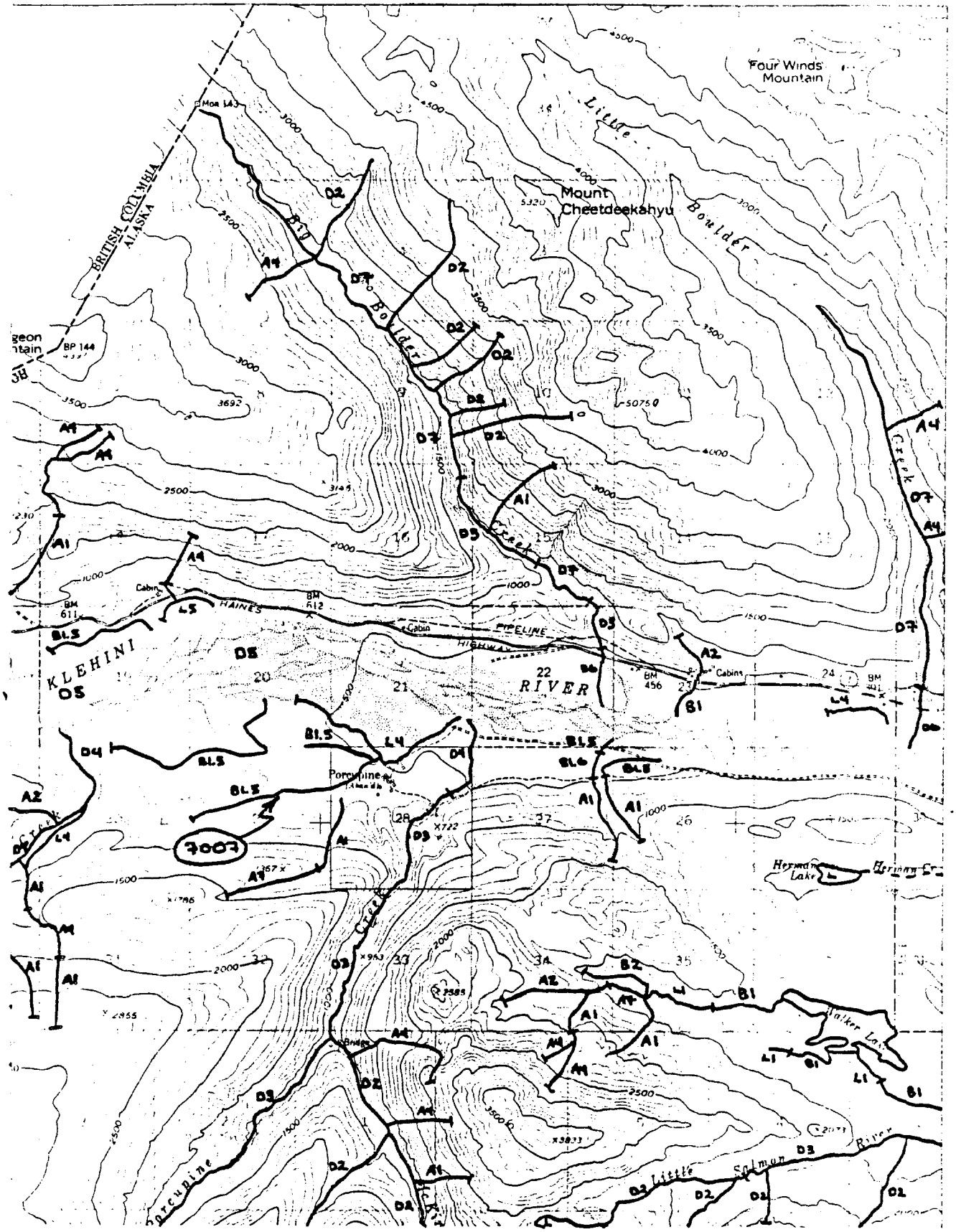

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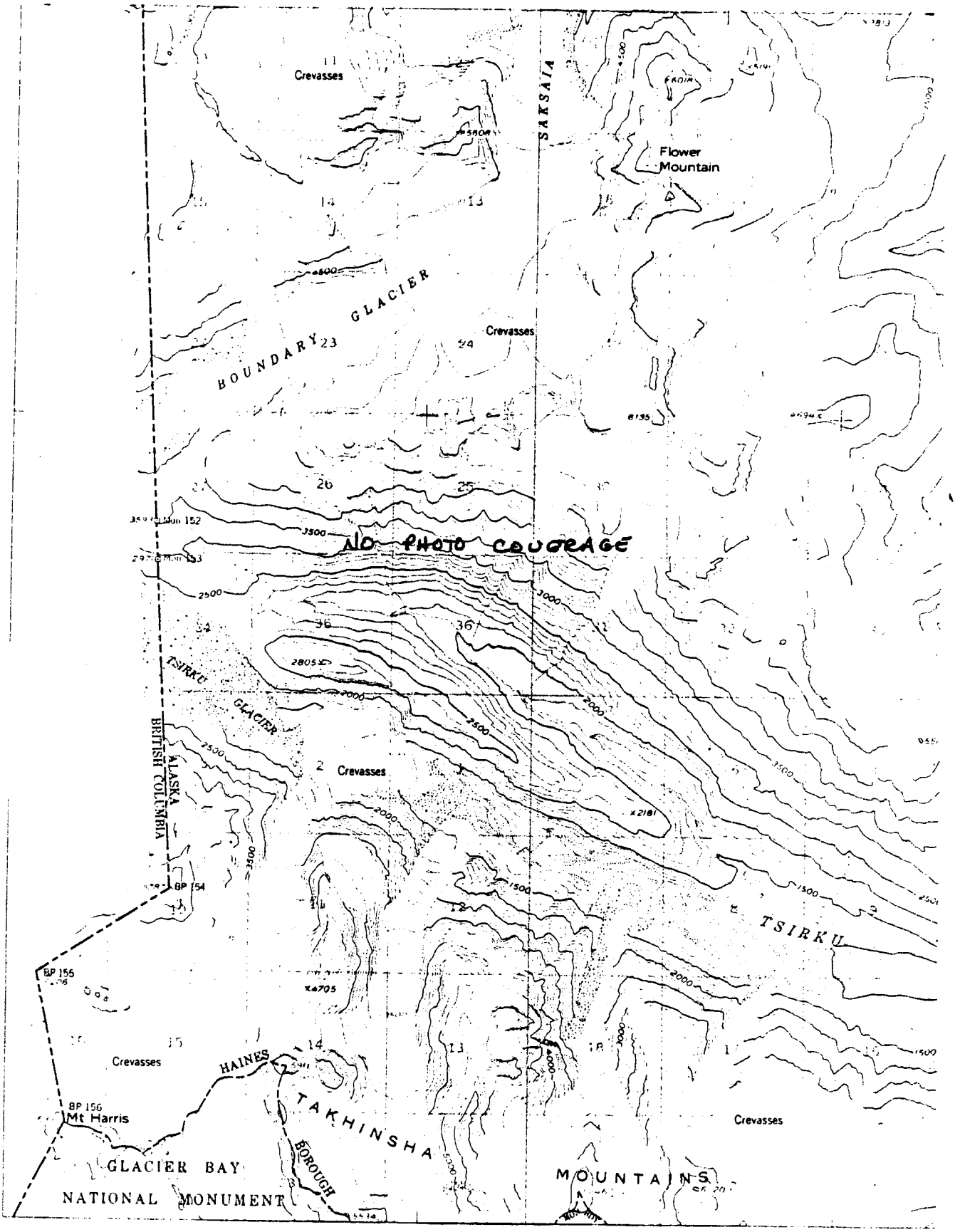

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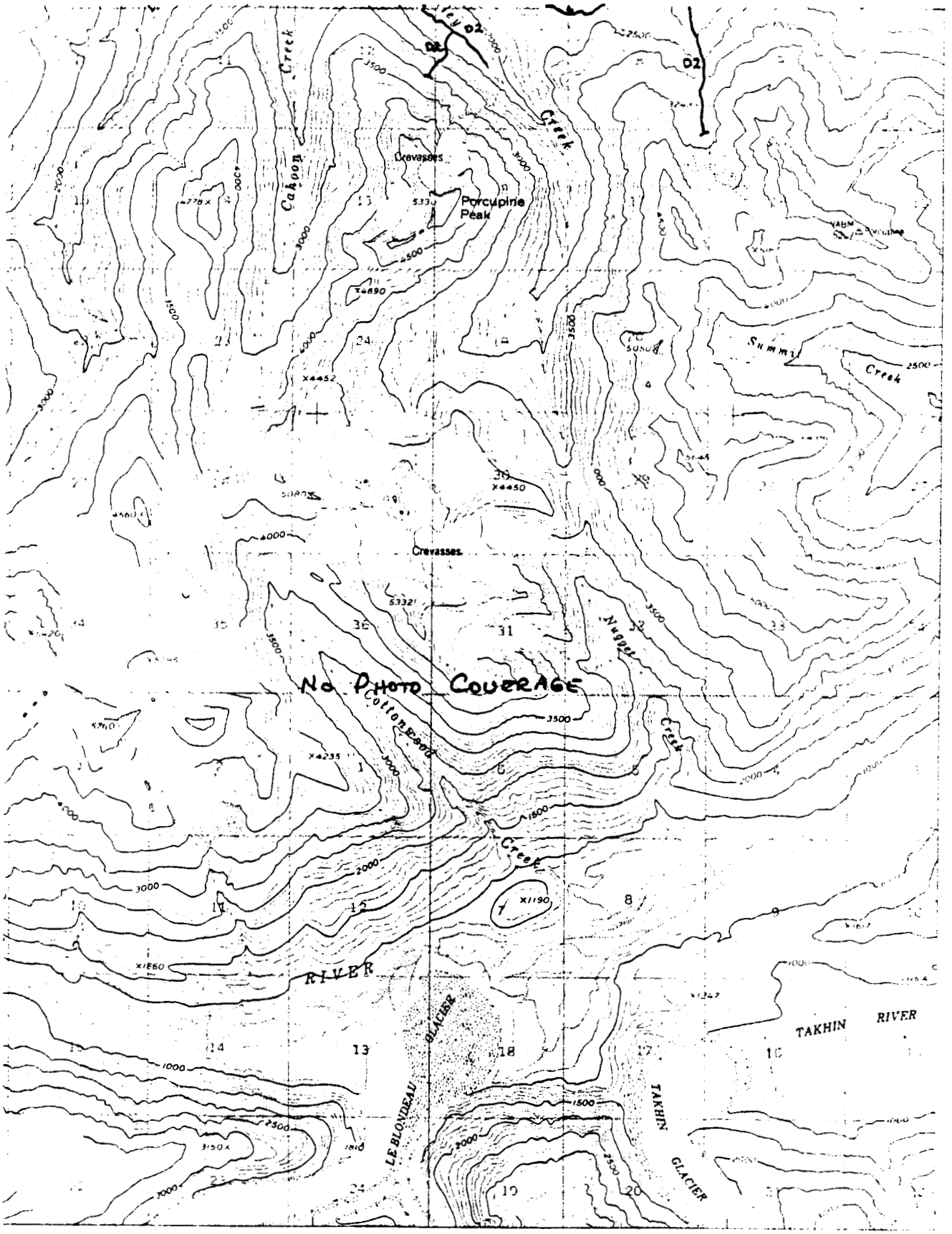

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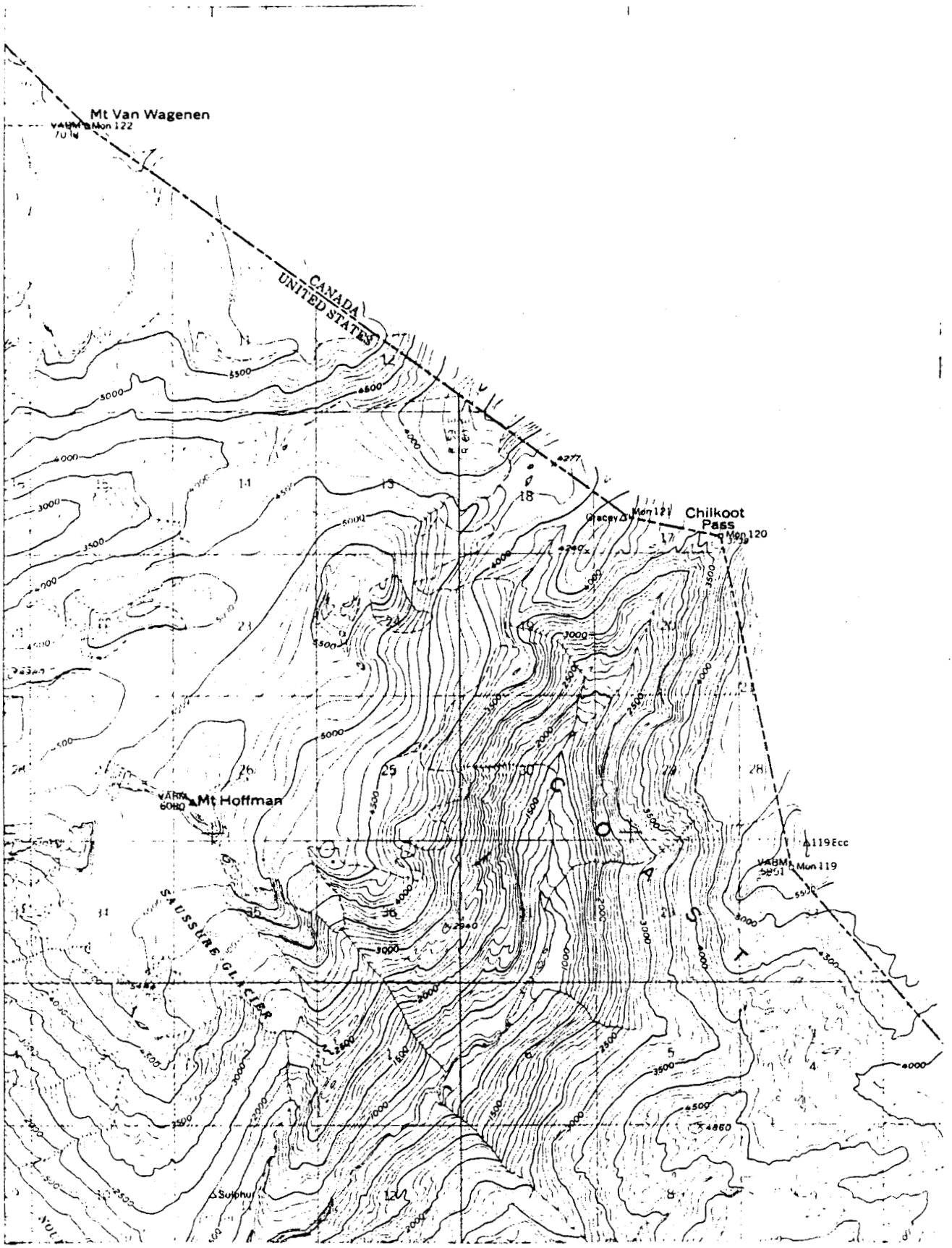

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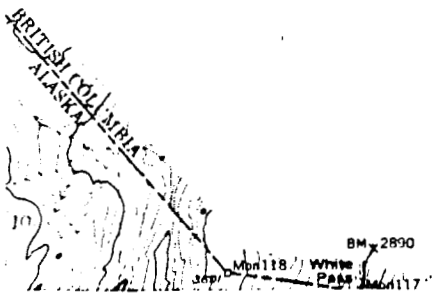

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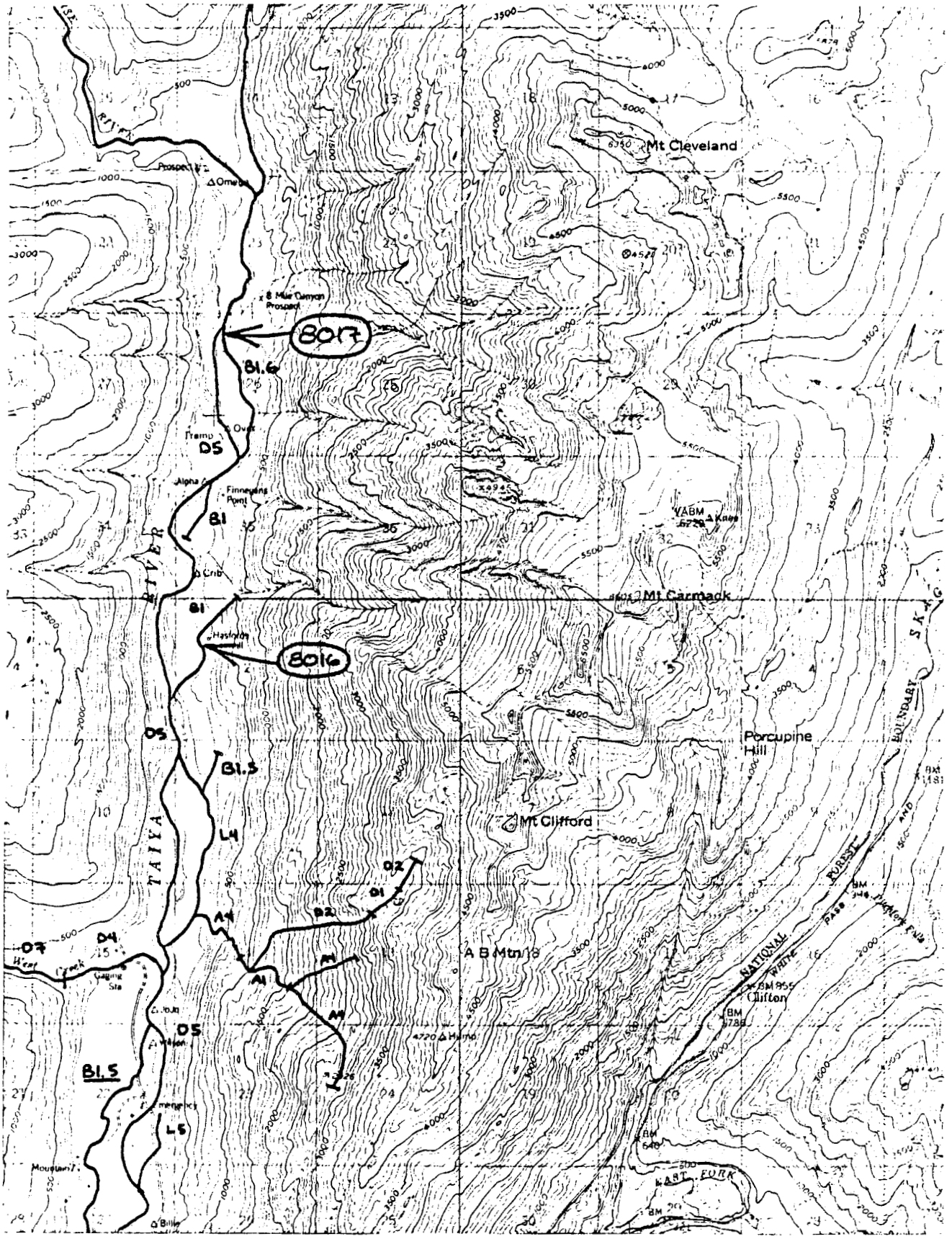

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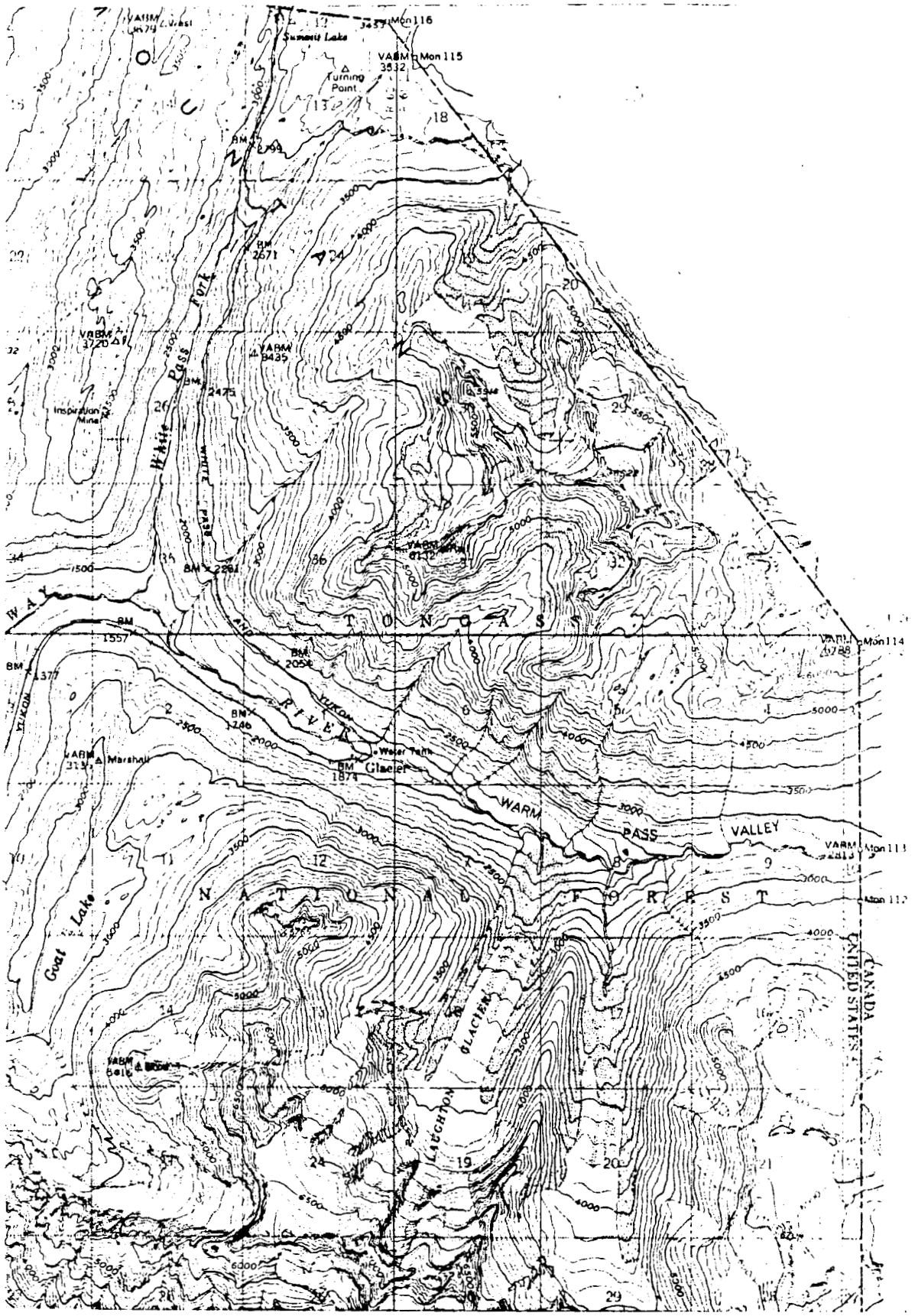

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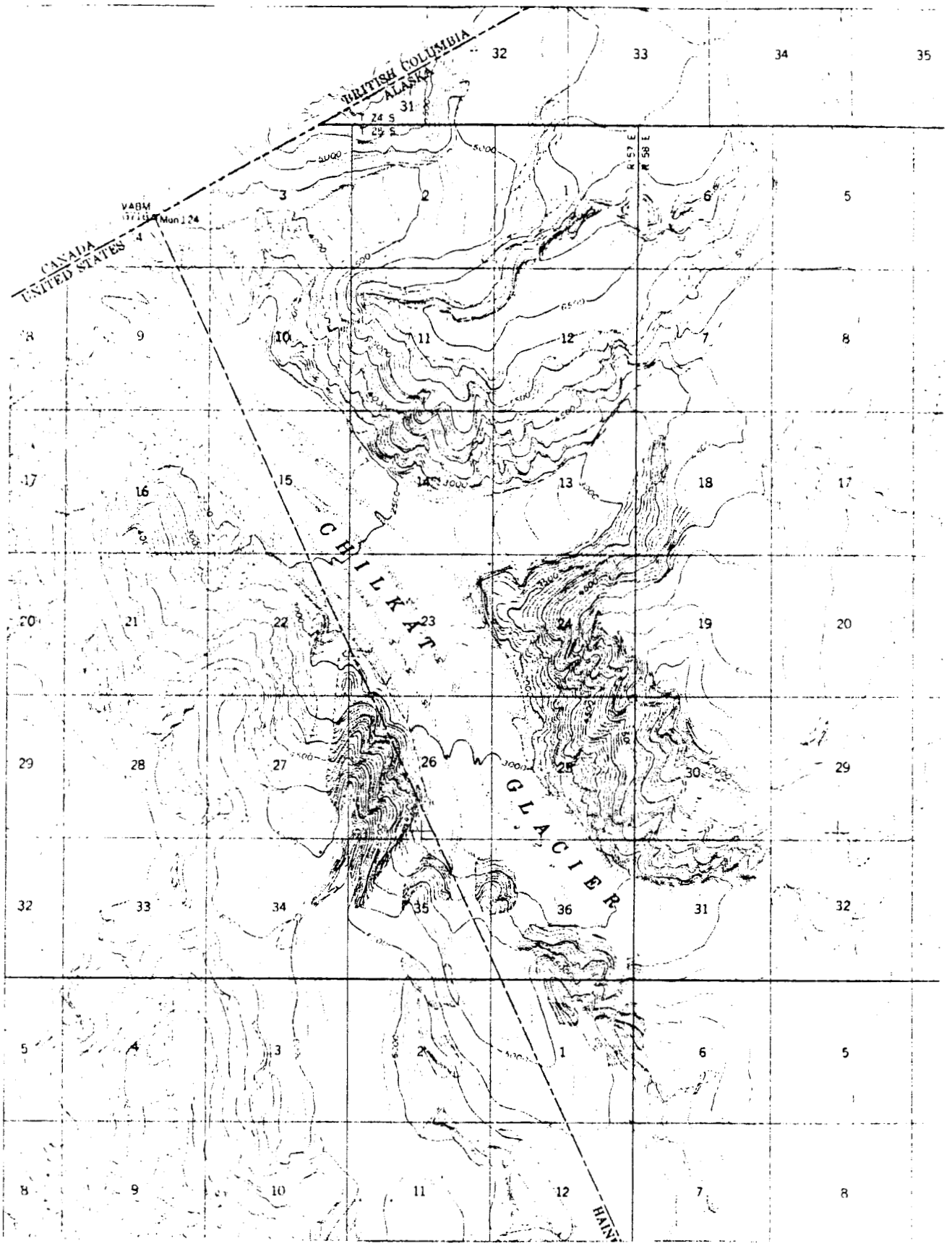

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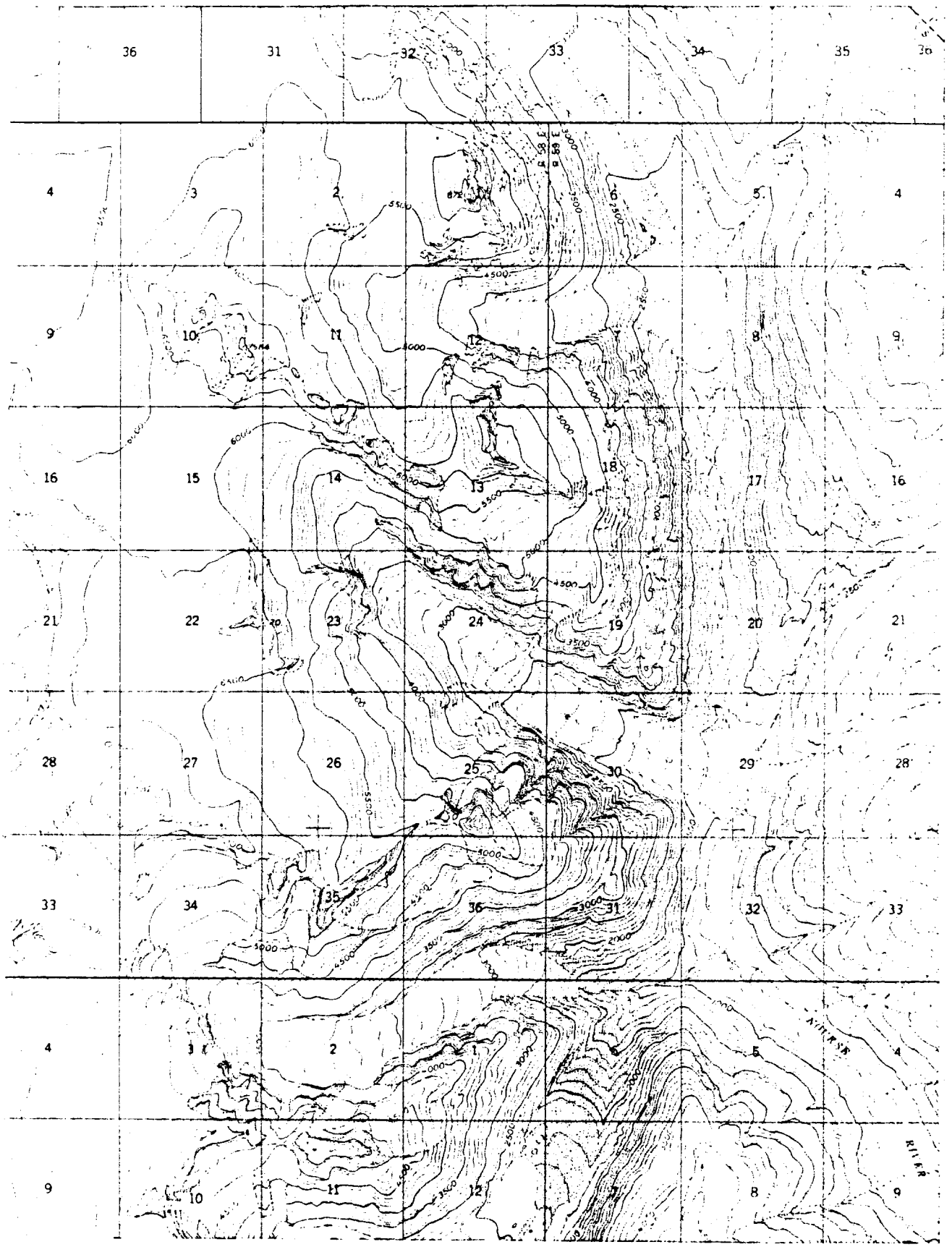

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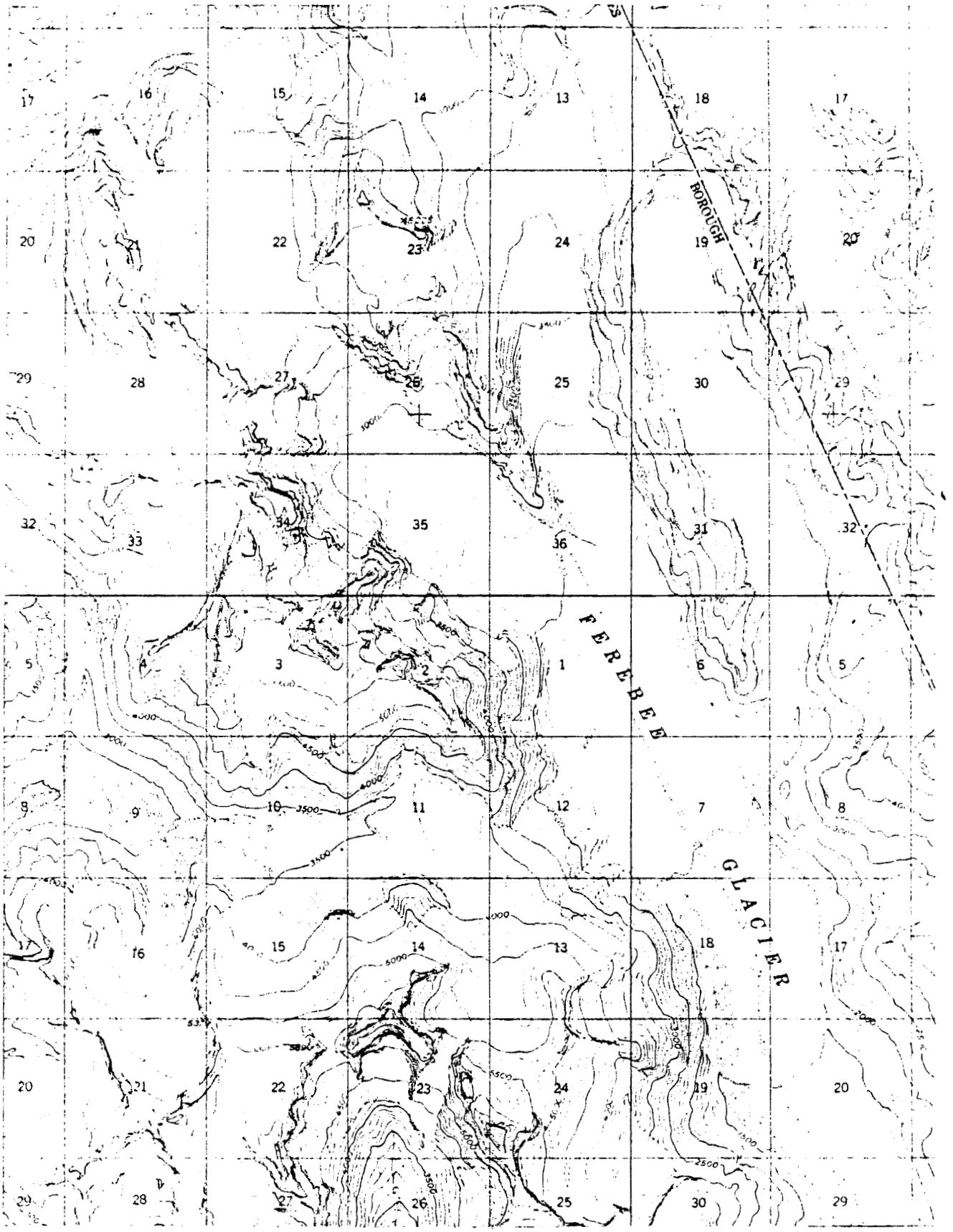

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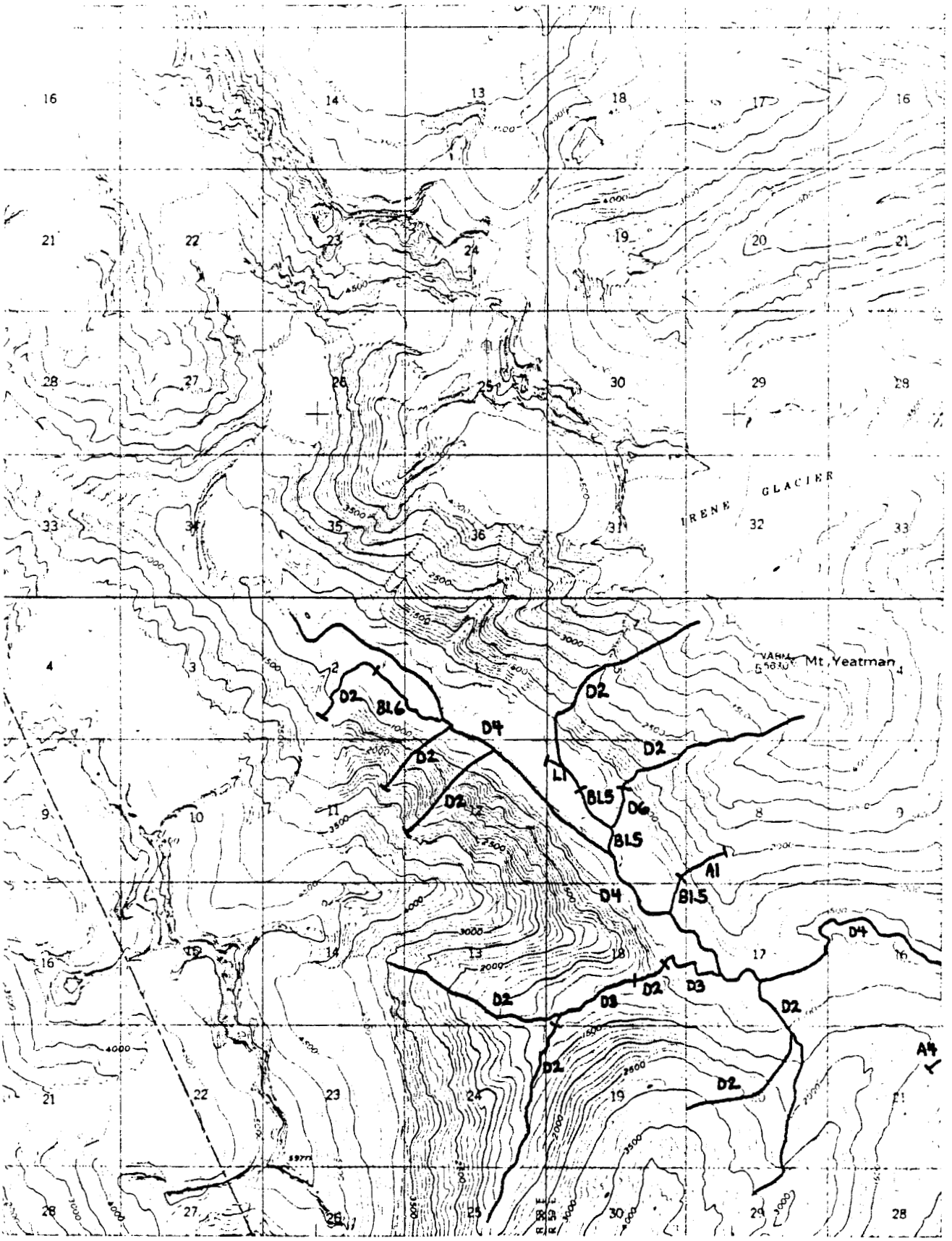

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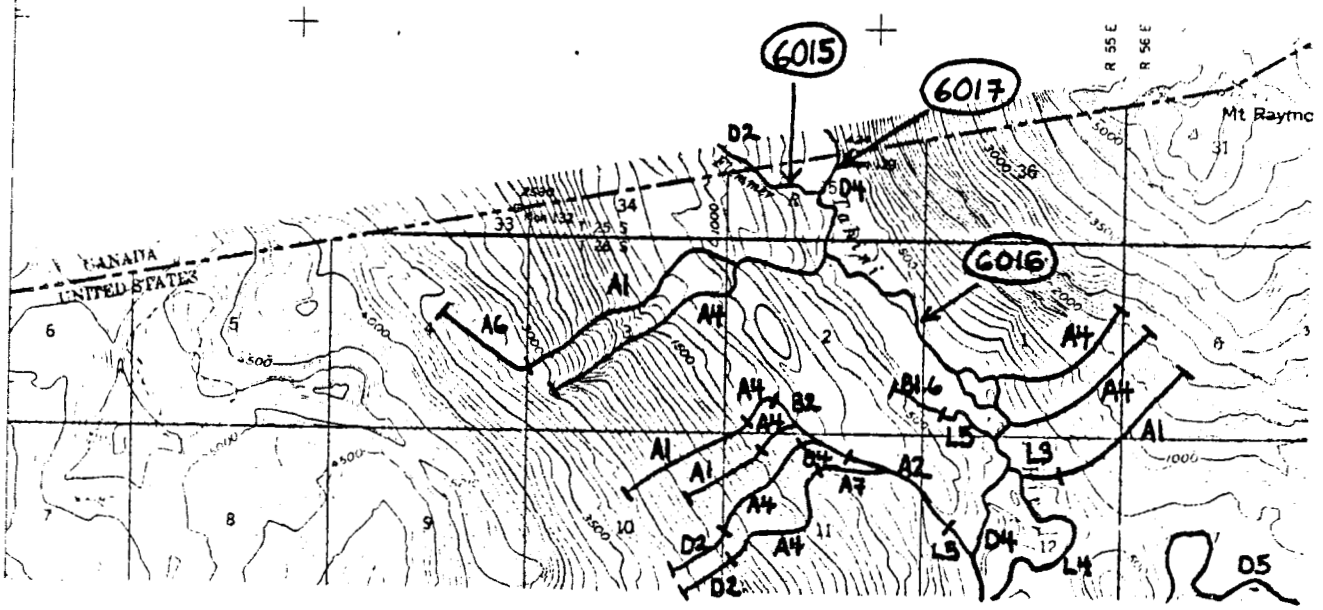

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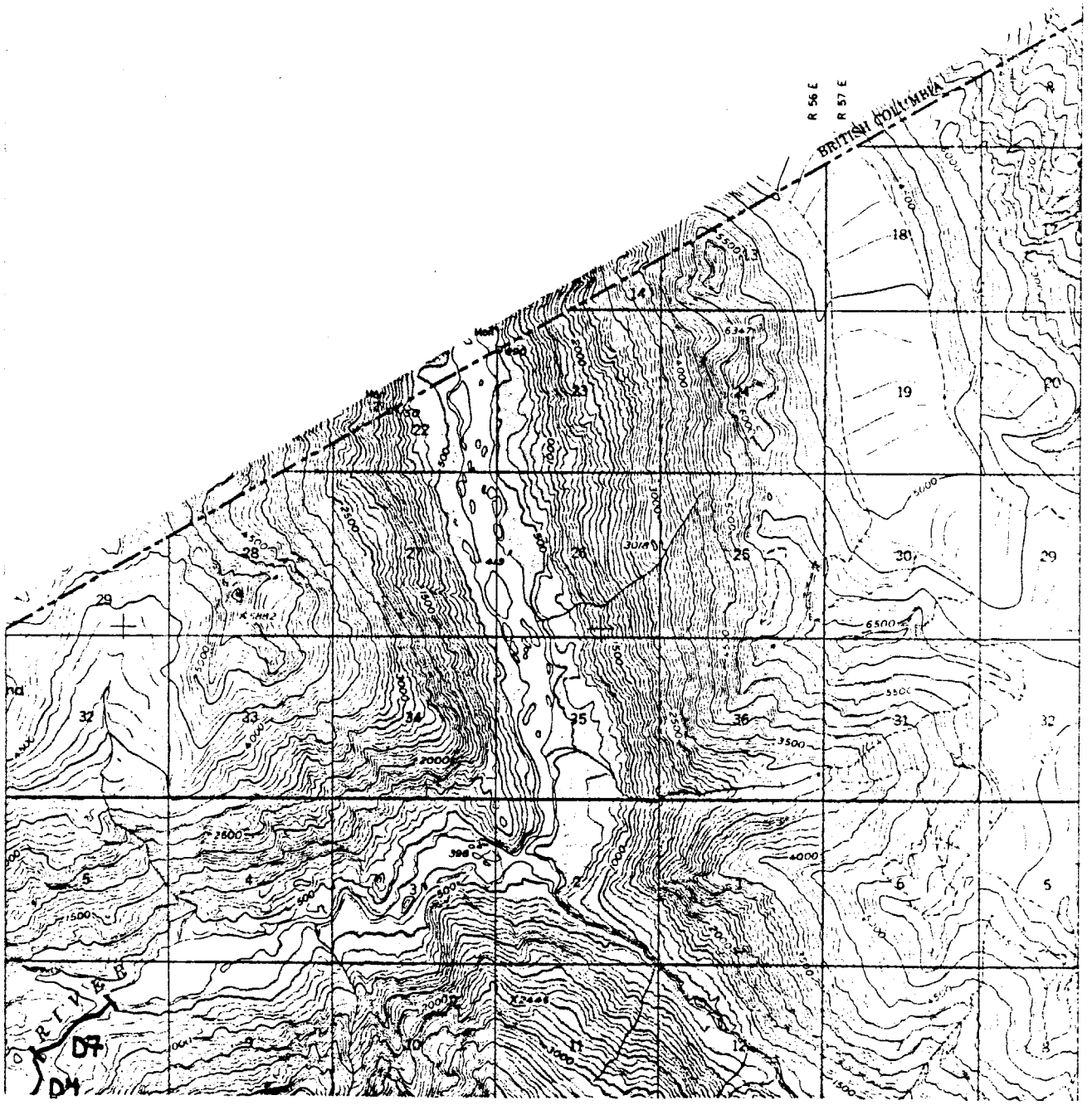

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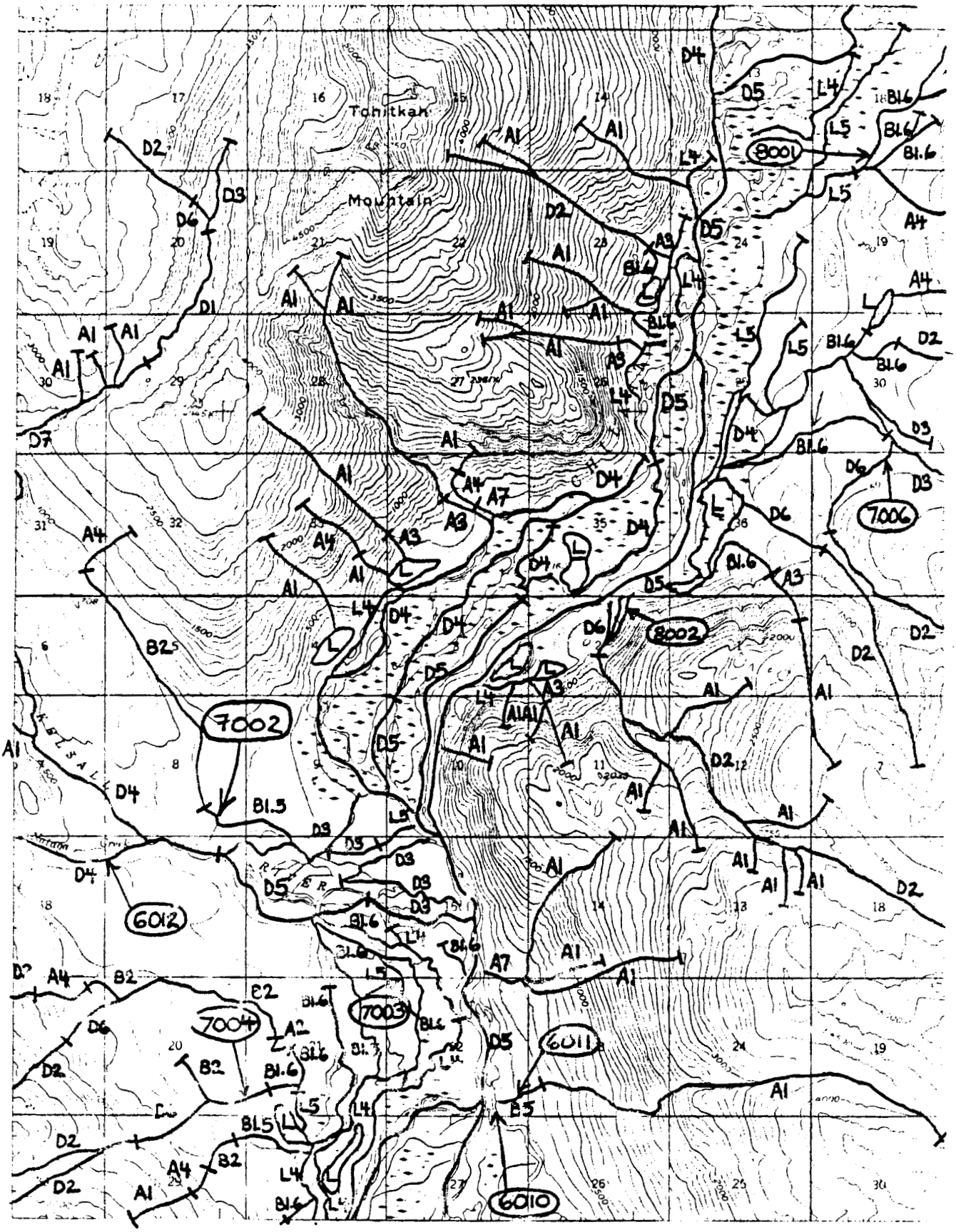

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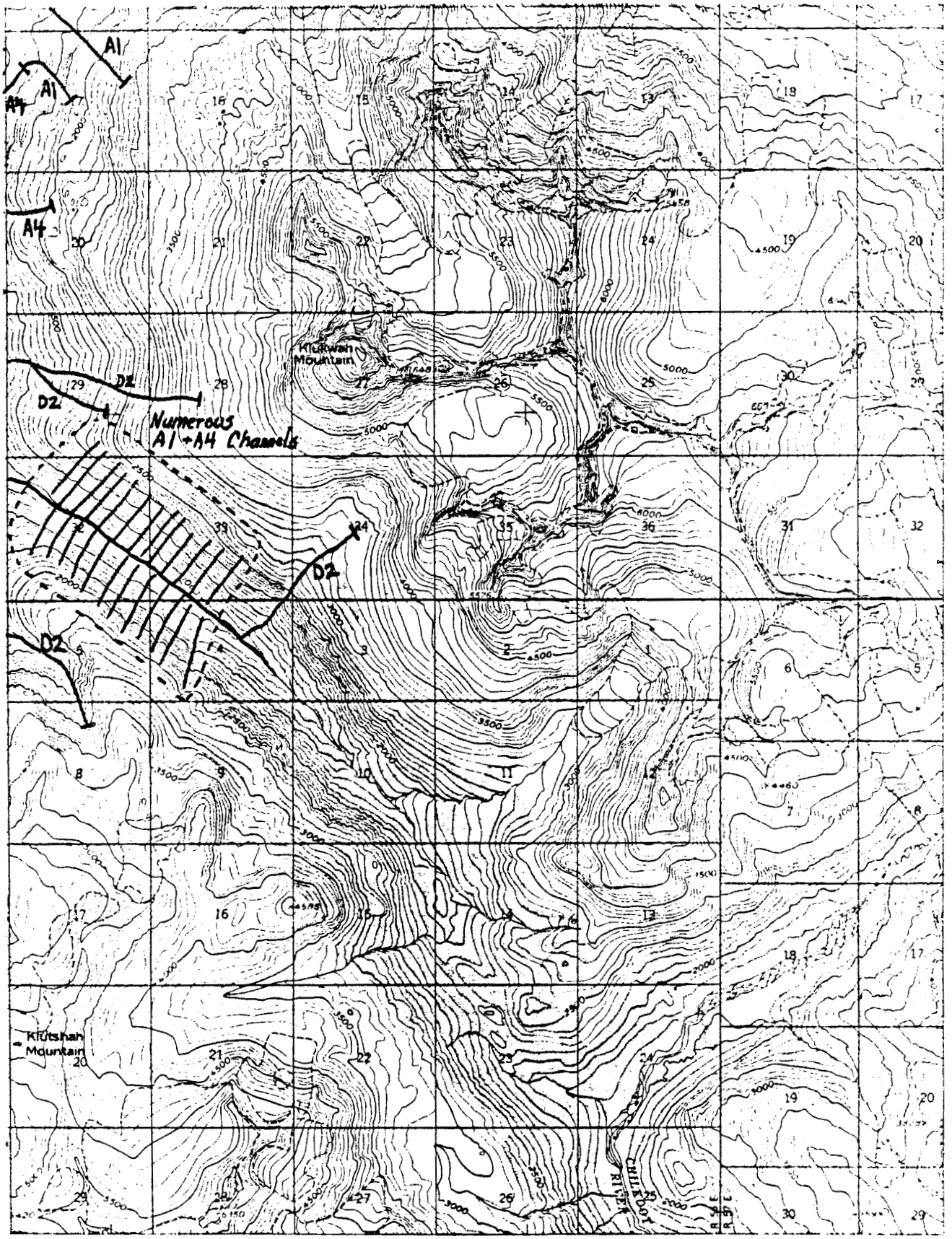

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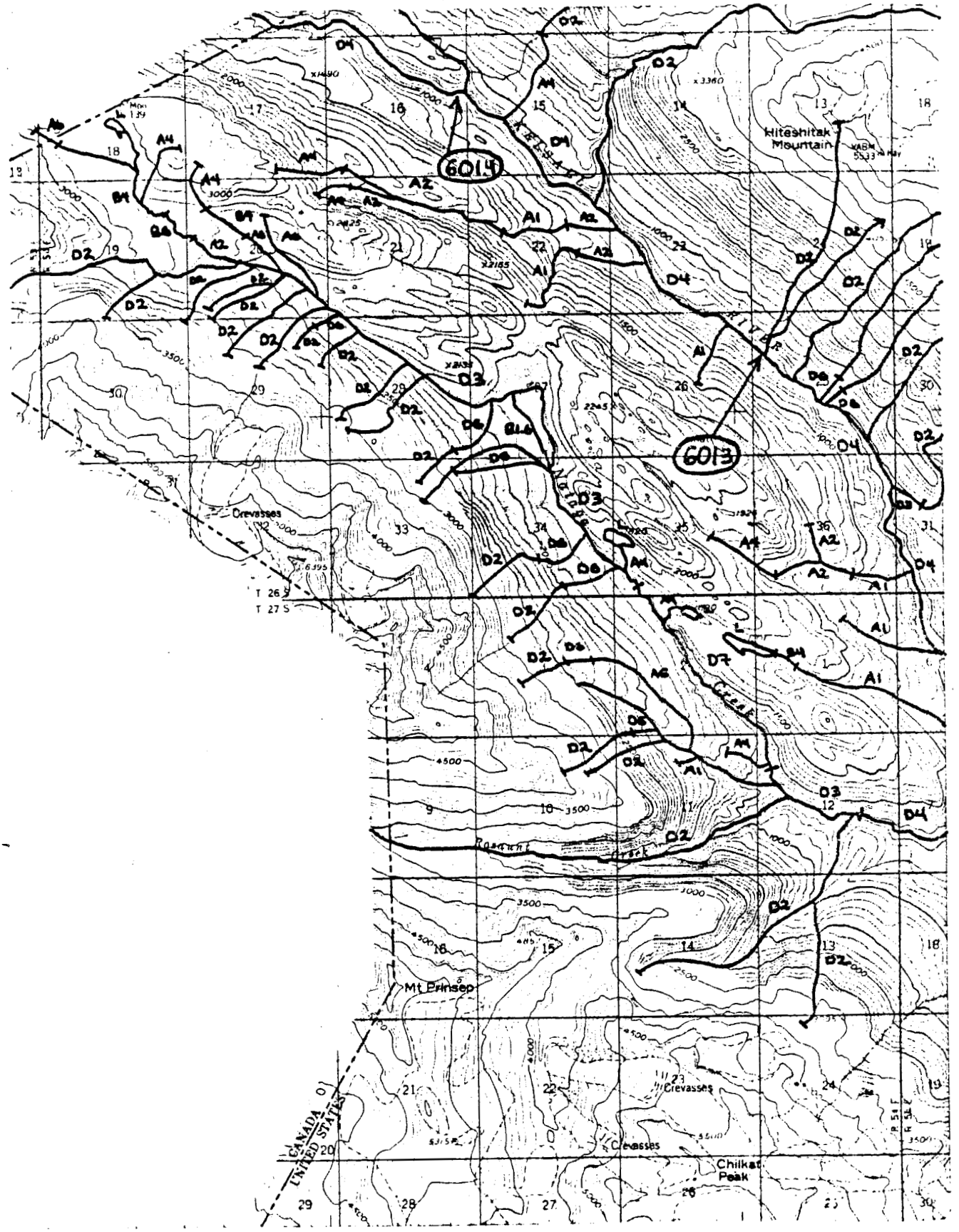

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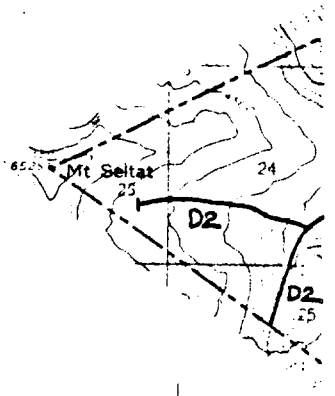

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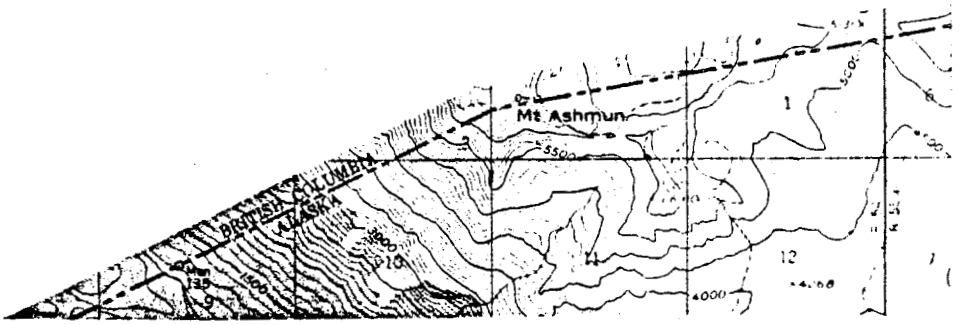
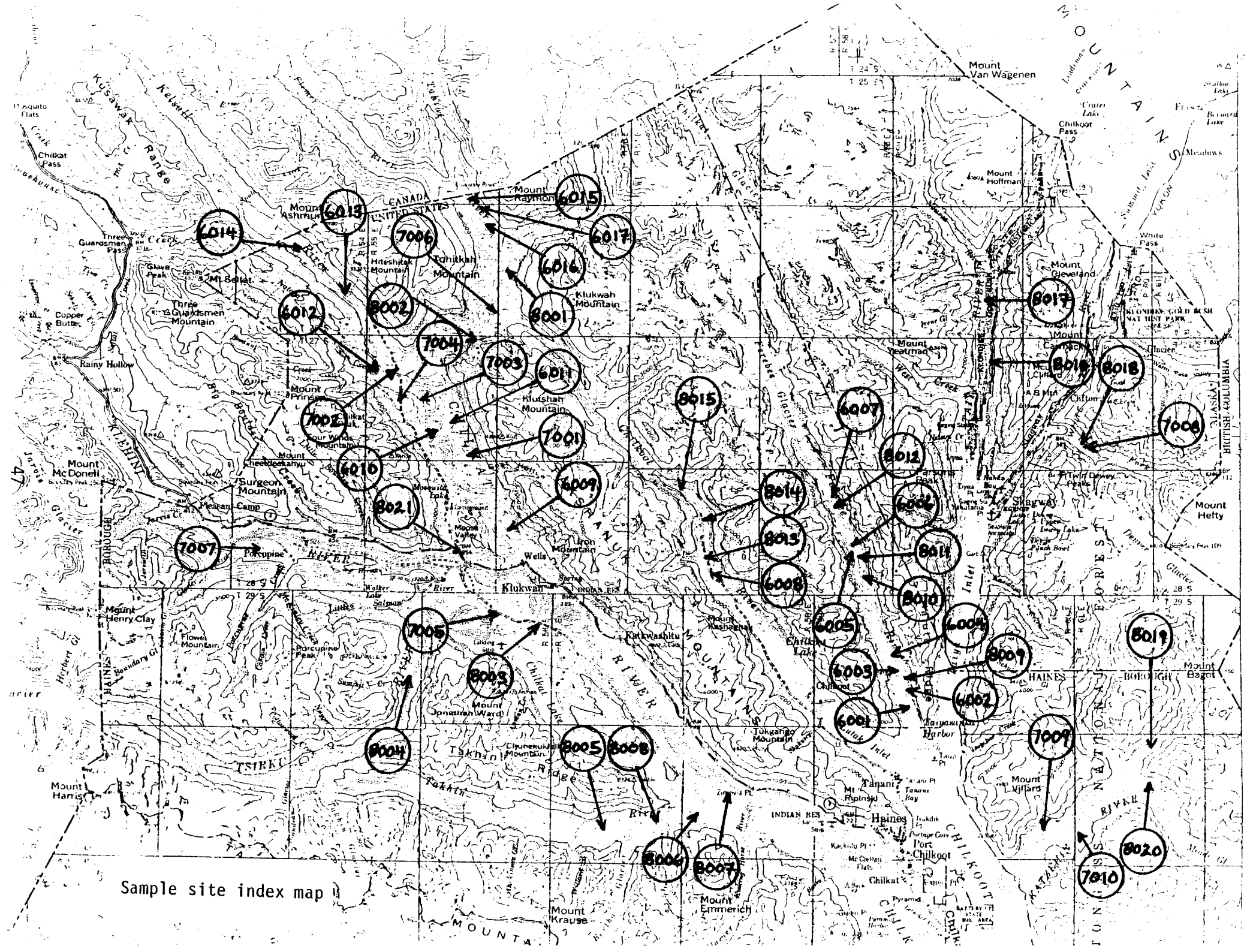


PART 2

Stream sample data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8017
8018
8016
7008
Mount Van Wagenen
Mount Hoffman
Mount Raymond
Mount Ashmun
Three Guardsmen Pass
Glave Peak
Mt Bellat
Three Guardsmen Mountain
Copper Butte
Rainy Hollow
Mount Prinsep
Four Winds Mountain
Mount Cheetleekahnu
Surgeon Mountain
Mount McDonell
Mearan Camp
Porcupine
Klukwan
Wells
Iron Mountain
Klutshah Mountain
Klukwah Mountain
Tdhitkah Mountain
Hiteshikak Mountain
Kusawak Range
Kelsatt
Chilkat Pass
Mount Henry Clay
Flower Mountain
Porcupine Peak
Mount Spencer Ward
Katkwashitu
Mount Kashagnak
Chilkat Lake
Tukgahgo Mountain
Chunekukhi Mountain
Takhin Ridge
Mount Harris
Mount Krause
Mount Emmerich
Mount Villard
Mount Bagot
Mount Hefty
Mount Cleveland
Mount Campbell
Mount Pearman
Chilkoot Pass
Crater Lake
Meadows
White Pass
Skagway
Dyea
Haines
Port Chilkoot
Chilkat
Tanani
Taiyanni Harbor
Chilkoot Inlet
Lynn Canal
Glacier Bay
CANADA
UNITED STATES
BRITISH COLUMBIA
ALASKA
YUKON
KLONDIKE GOLD RUSH NAT HIST PARK
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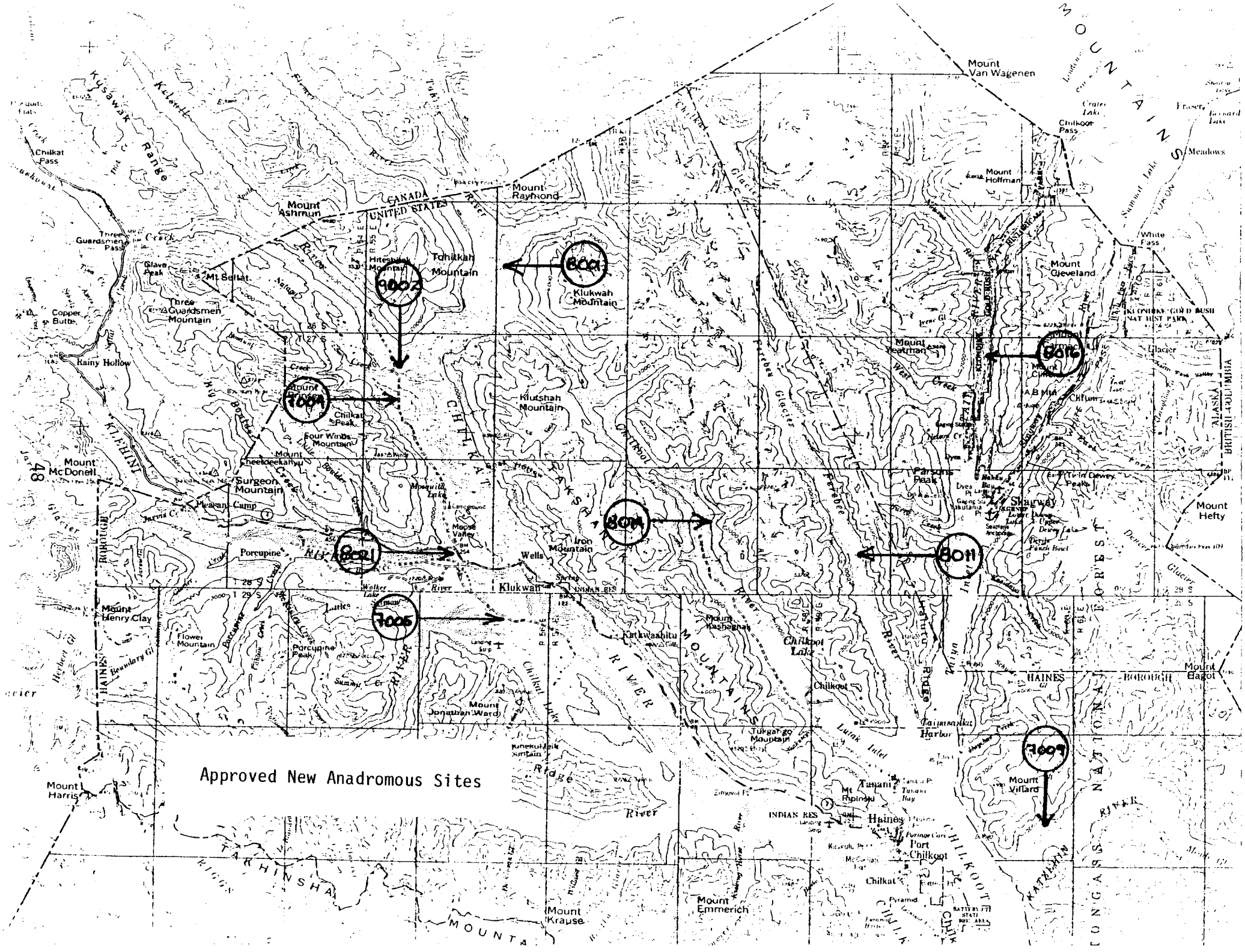
KLEHINI
RIVER
MOUNTAINS
Sample site index map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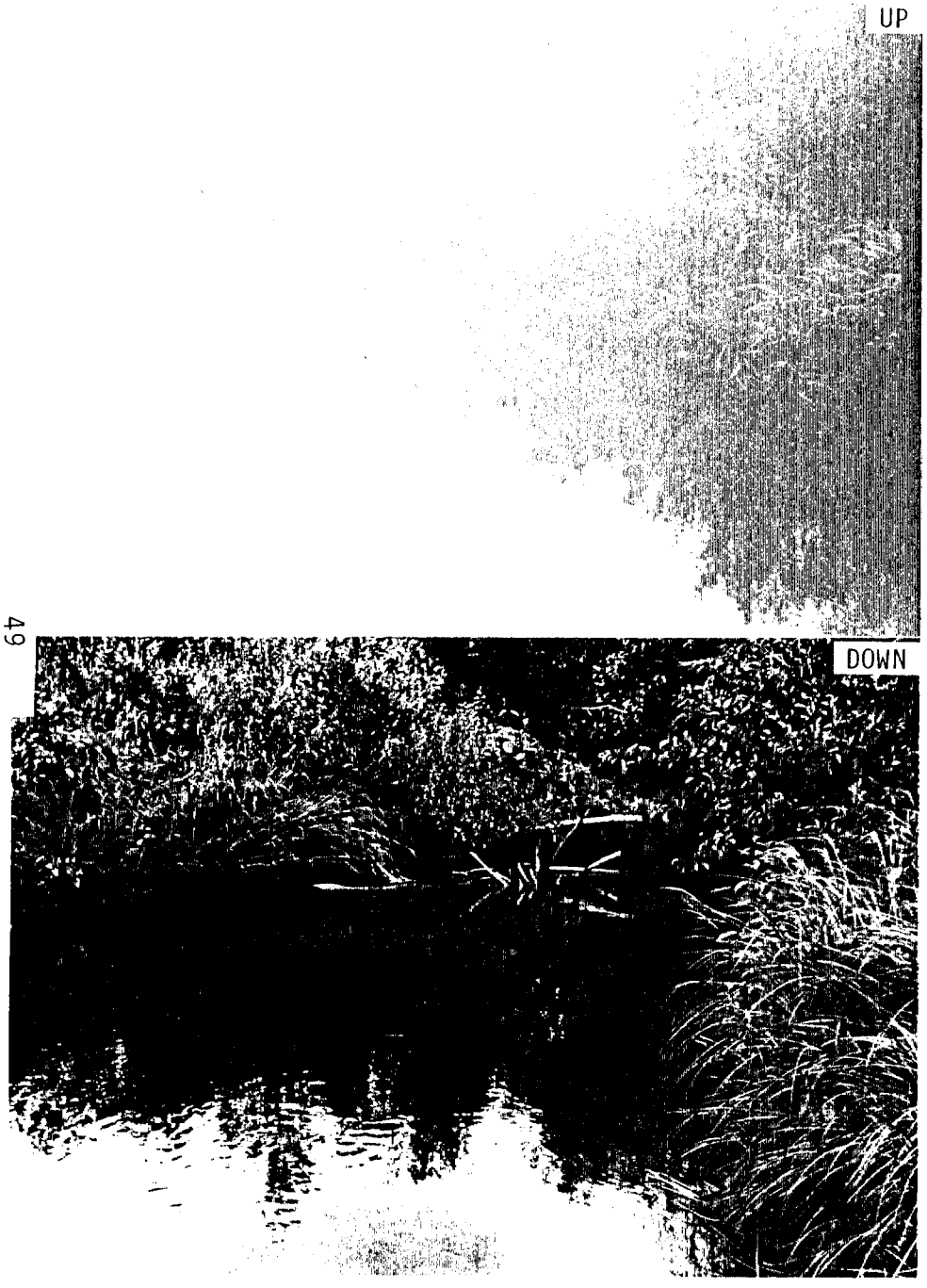
Klutshah Mountain
Iron Mountain
Mount Kashagnak
Surgeon Mountain
Four Winds Mountain
Three Guardsmen Mountain
Mt Seltat
Glave Peak
Chilkat Pass
Chilkoot Pass
Rainy Hollow
Copper Butte
Mount McDonell
Mount Henry Clay
Flower Mountain
Porcupine Peak
Porcupine
Klukwan
Katkwaahltu
Chilkoot Lake
Chilkoot
Tulgargo Mountain
Mount Jonathan Ward
Mount Krause
Mount Emmerich
Mount Harris
Mount Villard
Mount Hefty
Mount Bagot
Parsons Peak
Skagway
Haines
Port Chilkoot
Chilkat
Tanani
Mt Ripinski
Pleasant Camp
Moose Valley
Wells
Walker Lake
Chilkat Lake
Lutak Inlet
Taiyasanka Harbor
Meadows
White Pass
Fraser
Crater Lake
Summit Lake
Glacier
CANADA
UNITED STATES
CHILKAT MOUNTAINS
TAKSHANUK MOUNTAINS
KLEHINI
TAKHINSHA MOUNTAINS
HAINES BOROUGH
BOROUGH
ALASKA
BRITISH COLUMBIA
YUKON
KLONDIKE GOLD RUSH NAT HIST PARK
TONGASS NATIONAL FOREST
INDIAN RES
Kusawak Range
Chilkat River
Klehini River
Takhinsha River
Chilkoot River
Lutak Inlet
Ferebee Glacier
Glacier
Ridge
48



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/17   SITE: 8007    1/4 QUAD: SKG-B2-SW                *PRELIM CT:  B1.6  *
STREAM: CHILKAT RIVER TRIB                                        * FINAL CT:  L5    *
ADF&G:  115-32-10250-                                             ********************
AEROPHOTO YR:  78  FLT:  13   ROLL:   1    PHOTO: 023
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 18      WATER:  11.0 C.        AIR:  20.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 19      WEATHER: CLOUDY        TIME:  2:30

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2              PA#3
                        (meters)
R.BANK     64      B1      1-2   04-40%20-30%05-20%          -                  -
(distance)                             200'
L.BANK     64      B1      1-2   04-40%20-30%05-20%          -                  -
(distance)                             200'

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    10/30       -          -                 TRAP #1  2 SS,1 CO
L.BANK    10/30       -          -                 TRAP #2  0
                                                   TRAP #3  0
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      10 %   GRADIENT:          0.5  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      90 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %    BANKFULL WIDTH:   22.0 ft.
FINE GRAVEL:   65 % (4 MM TO 1 IN)    POOLS:    50 %   ACTIVE WIDTH:     15.0 ft.
   VFG/SAND:   10 % (<4 MM)                            AVG. POOL DEPTH:   2.0 ft.
  SILT/MUCK:   25 %                                    # POOLS:           0

                                  STREAM    GEOMETRY
                      *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                              N/A
BANKFULL DEPTH(FT):                        N/A
ACTIVE DEPTH(FT): *LEFT*                   N/A                  *RIGHT*

                      L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft     A-20                                        DIAMETER:          4 in.
10-25  ft     A-5                                         LENGTH:           10 ft.
25-50  ft                          NO L.O.D.              TRANSECT LENGTH:100 ft.
50-100 ft                          NO L.O.D.
>100   ft                          NO L.O.D.

COMMENTS:
Contains alot of submerged wood debris - mostly alder. Many cut banks.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/17   SITE: 8006     1/4 QUAD: SKG-A2-NW               *PRELIM CT:  B5    *
STREAM: TAKHIN RIVER TRIB                                         * FINAL CT:  B5    *
ADF&G:  115-32-10250-2007-3009                                    ********************
AEROPHOTO YR: 78   FLT: 12    ROLL: 2      PHOTO: 027
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 16      WATER:   9.0 C.        AIR:  14.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 17      WEATHER: CLOUDY        TIME:  1:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2              PA#3
                        (meters)
R.BANK     51      C2     1-2           351                  -                  -
(distance)                              200'
L.BANK     64      D1     <1     20-70%25-20%65-10%         -                  -
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK    50/10    150/3       -                TRAP #1  32 SS10 DV
L.BANK   200/0       -         -                TRAP #2  12 SS10 DV
                                                TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     20 %   GRADIENT:          0.5  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     80 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    5 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   15.0 ft.
FINE GRAVEL:   15 % (4 MM TO 1 IN)    POOLS:   50 %   ACTIVE WIDTH:      8.0 ft.
   VFG/SAND:   30 % (<4 MM)                           AVG. POOL DEPTH:   1.0 ft.
  SILT/MUCK:   50 %                                   # POOLS:          0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A.
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        N/A                     DIAMETER:        -   in.
10-25   ft                        N/A                     LENGTH:          -   ft.
25-50   ft                        N/A                     TRANSECT LENGTH:150  ft.
50-100  ft                        N/A
>100    ft                        N/A

COMMENTS:
-
```

CHANNEL TYPE VERIFICATION CARD

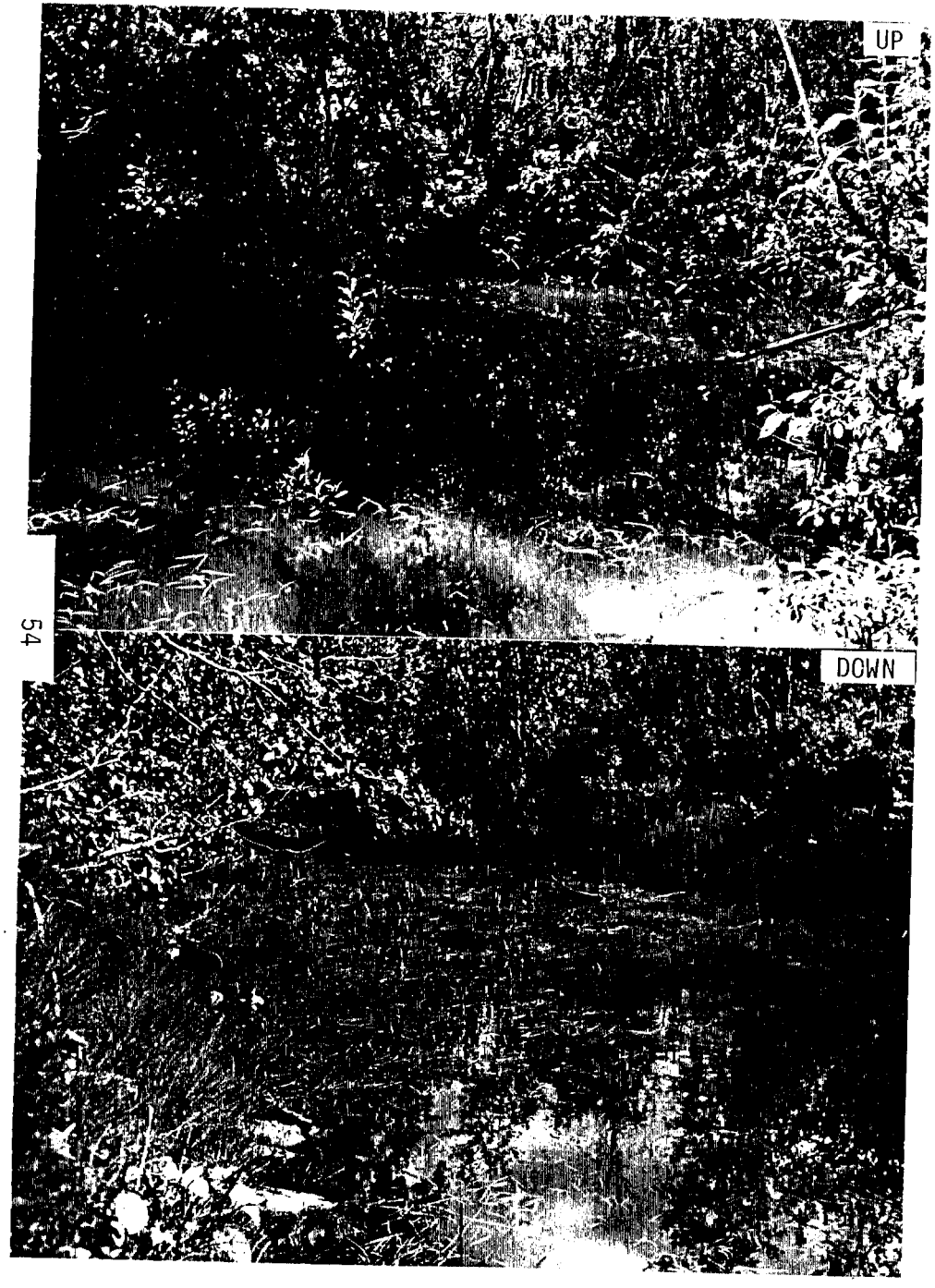
```
                                                                  ********************
DATE: 88/06/17   SITE: 8008    1/4 QUAD: SKG-A3-NE                *PRELIM CT:  -      *
STREAM: TAKHIN RIVER                                              * FINAL CT:  C1.5   *
ADF&G:  115-32-10250-2007-3010                                    ********************
AEROPHOTO YR: 78   FLT: 10    ROLL: 2      PHOTO: 004
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 801    PHOTO: 14     WATER:   4.5 C.      AIR:  14.0 C.
DOWNSTREAM   ROLL: 801    PHOTO: 15     WEATHER: CLOUDY      TIME: 12:00

   ADJACENT LANDFORM & VEGETATION:                          SITE DISTURBED: N
        LANDFORM CANOPY INCISION          PA#1                PA#2                PA#3
                          (meters)
R.BANK     53      -      <1              N/A                 N/A                 N/A
(distance)                                N/A
L.BANK     53      -      <1              N/A                 N/A                 N/A
(distance)                                N/A

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK     N/A       N/A       N/A                 TRAP #1  0
L.BANK     N/A       N/A       N/A                 TRAP #2  0
                                                   TRAP #3  0

        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          1.0  %
  LG RUBBLE:   40 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   15 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    5 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:    0.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:      0.0 ft.
   VFG/SAND:   20 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                  # POOLS:           0

                          STREAM    GEOMETRY
                   *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                  L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"   6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                       N/A                      DIAMETER:        -   in.
10-25  ft                       N/A                      LENGTH:          -   ft.
25-50  ft                       N/A                      TRANSECT LENGTH:300  ft.
50-100 ft                       N/A
>100   ft                       N/A

COMMENTS:
This may be an old off channel area. A pile of salmon bones were seen on the
bank.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/17   SITE: 8005    1/4 QUAD: SKG-A3-NE                *PRELIM CT:   -    *
STREAM: TAKHIN RIVER                                              * FINAL CT:  B1.6  *
ADF&G:  115-32-10250-2007-3010                                    ********************
AEROPHOTO YR: 78   FLT: 9     ROLL: 2      PHOTO: 005
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 12      WATER:   4.5 C.        AIR:  12.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 13      WEATHER: LIGHT RAIN    TIME: 11:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2                PA#3
                        (meters)
R.BANK     64      D1    1 - 2  20-80%,65-20%       25-50%,65-50%                -
(distance)                            20'                 180'
L.BANK     64      D1    1 - 2  20-50%,13-20%       20-60%,13-40%                -
(distance)                            20'                 180'

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30, min.)
          ft/%       ft/%       ft/%
R.BANK   200/20       -          -                 TRAP #1  0
L.BANK    30/20     170/3        -                 TRAP #2  0
                                                   TRAP #3  0
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     10 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     50 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)     GLIDE:   40 %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   20 % (1 TO 2.5 IN)     RIFFLE:  40 %   BANKFULL WIDTH:   25.0 ft.
FINE GRAVEL:   10 % (4 MM TO 1 IN)    POOLS:   20 %   ACTIVE WIDTH:     20.0 ft.
   VFG/SAND:   30 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   30 %                                   # POOLS:           0

                                STREAM    GEOMETRY
                      *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                *RIGHT*

                      L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                     NO L.O.D.                  DIAMETER:        -   in.
10-25   ft                     NO L.O.D.                  LENGTH:          -   ft.
25-50   ft                     NO L.O.D.                  TRANSECT LENGTH:150  ft.
50-100  ft                     NO L.O.D.
>100    ft                     NO L.O.D.

COMMENTS:
Willow dominates along the banks. Gas bubbles coming up from stream bottom. Some
usable ASA but heavy with sand.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/17   SITE: 8003    1/4 QUAD: SKG-B3-SE                *PRELIM CT:  L5    *
STREAM: MOOSE SKULL CREEK, CHILKAT R.                             * FINAL CT:  L5    *
ADF&G:  115-32-10250-                                             ********************
AEROPHOTO YR:  78  FLT:  13   ROLL:   1    PHOTO: 033
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO:          WATER:   6.5 C.        AIR:  11.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 09       WEATHER: OVERCAST      TIME:  9:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2                PA#3
                        (meters)
R.BANK     64      D1      1-2       25-60%,20-40%   CW-50%20-30%25-20%          -
(distance)                                30'                 170'
L.BANK     64      D1      1-2       25-60%,20-40%   CW-50%20-30%25-20%          -
(distance)                                30'                 170'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK   200/0        -         -                TRAP #1  0
L.BANK   200/0        -         -                TRAP #2  0
                                                 TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          0.2  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     20 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   30.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS: 100 %   ACTIVE WIDTH:     27.0 ft.
   VFG/SAND:   20 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   80 %                                   # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                 *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                      NO L.O.D.                 DIAMETER:         16 in.
10-25   ft                      NO L.O.D.                 LENGTH:           50 ft.
25-50   ft                A-1      A-2                    TRANSECT LENGTH:150 ft.
50-100  ft                      NO L.O.D.
>100    ft                      NO L.O.D.

COMMENTS:
Alder leaves thick on stream bottom - heavy with organic matter. Coho fry were
seen in off channel area too shallow to trap. Good ASA upstream.
```



CHANNEL TYPE VERIFICATION CARD

DATE: 88/06/16 SITE: 7005 1/4 QUAD: SKG-33-NW

*PRELIM CT: B2 *
* FINAL CT: L5 *

STREAM: TSIRKU RIVER TRIB
ADF&G: 115-32-10250-2067-
AEROPHOTO YR: 78 FLT: 11 ROLL: 1 PHOTO: 018
CAMERA PHOTO: PRINTS
UPSTREAM ROLL: 701 PHOTO: 09 WATER: 14.0 C. AIR: 17.0 C.
DOWNSTREAM ROLL: 701 PHOTO: 10 WEATHER: PARTLY CLOUDY TIME: 1:00

ADJACENT LANDFORM & VEGETATION: SITE DISTURBED: Y

	LANDFORM	CANOPY	INCISION (meters)	PA#1	PA#2	PA#3
R.BANK	64	D2	1-2	05-30%65-60%	-	-
(distance)				200'		
L.BANK	64	D2	1-2	05-30%65-60%	-	-
(distance)				200'		

SIDE SLOPE LENGTH AND ANGLE:

	ft/%	ft/%	ft/%
R.BANK	200/0	-	-
L.BANK	200/0	-	-

TRAP RESULTS:(30 min.)

TRAP #1 24 SS,1 DV
TRAP #2 14 SS,5 SB
TRAP #3 5 SS

SUBSTRATE:

BEDROCK:	0 %	(>3FT)
SM BOULDER:	0 %	(10 IN TO 3 FT)
LG RUBBLE:	0 %	(5 TO 10 IN)
SM RUBBLE:	0 %	(2.5 TO 5 IN)
CRS GRAVEL:	0 %	(1 TO 2.5 IN)
FINE GRAVEL:	0 %	(4 MM TO 1 IN)
VFG/SAND:	0 %	(<4 MM)
SILT/MUCK:	100 %	

ASA:	10 %
ARA:	60 %
GLIDE:	- %
RIFFLE:	- %
POOLS:	80 %

GRADIENT:	0.2 %
STREAM PATTERN:	SINGLE
BANK CONTROL:	ALLUVIUM
BANKFULL WIDTH:	22.0 ft.
ACTIVE WIDTH:	16.0 ft.
AVG. POOL DEPTH:	0.0 ft.
# POOLS:	0

STREAM GEOMETRY

BF *LB* **** **** **** **** **** *LB* *BF*

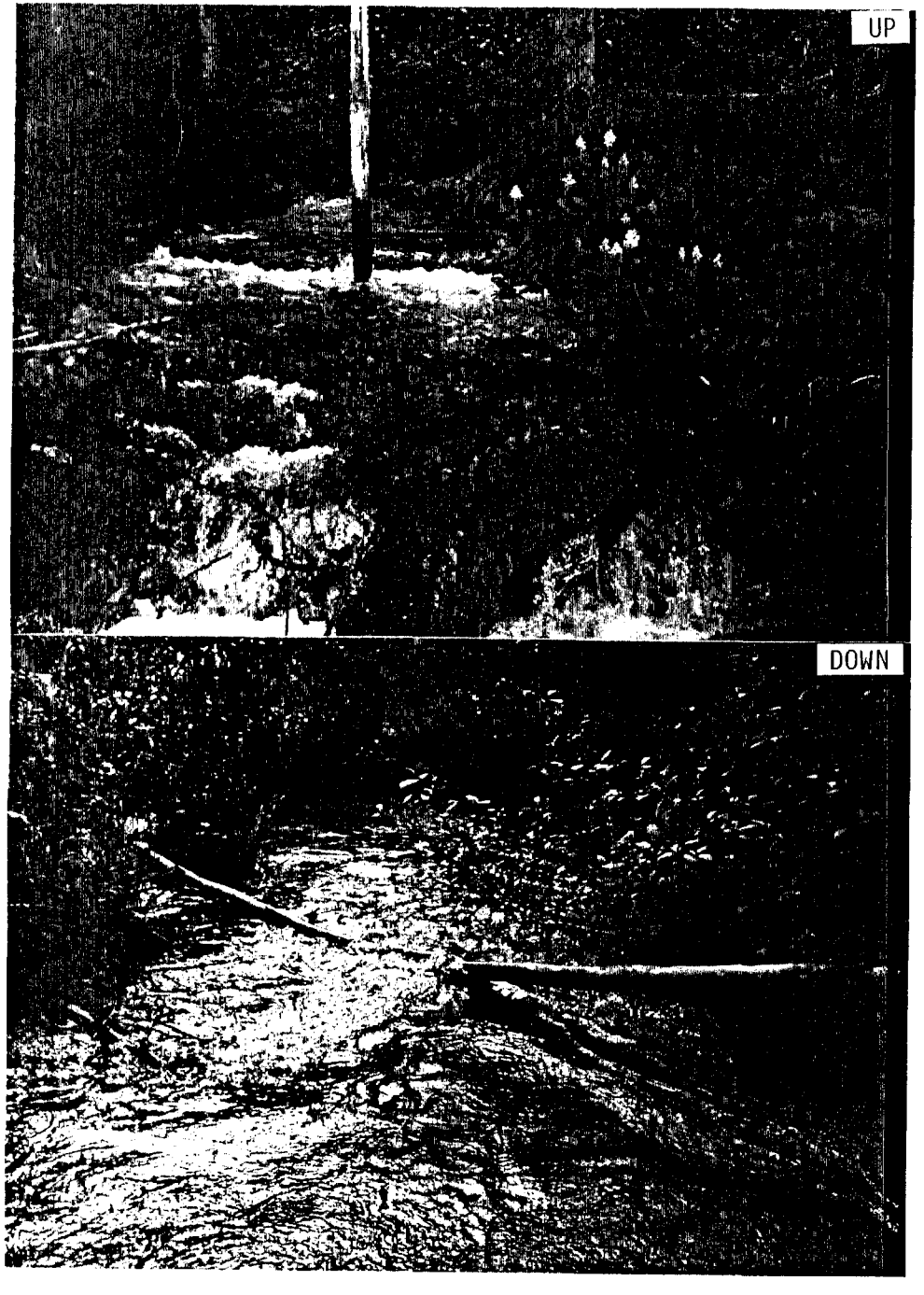
DISTANCE(FT):				N/A				
BANKFULL DEPTH(FT):				N/A				
ACTIVE DEPTH(FT):	*LEFT*			N/A				*RIGHT*

L.O.D. TALLEY (DIAMETER)

(LENGTH)	4 - 6"	6 - 12"	12 - 24"	24 - 36"	>36
< 10 ft			NO L.O.D.		
10-25 ft	A-7	A-1			
25-50 ft			NO L.O.D.		
50-100 ft			NO L.O.D.		
>100 ft			NO L.O.D.		

AVERAGE KEY PIECE
DIAMETER: 5 in.
LENGTH: 25 ft.
TRANSECT LENGTH: 300 ft.

COMMENTS:
Good ASA present at lower portion at confluence with Tsirku. Many young Coho were seen. Some evidence of upwelling water was seen.

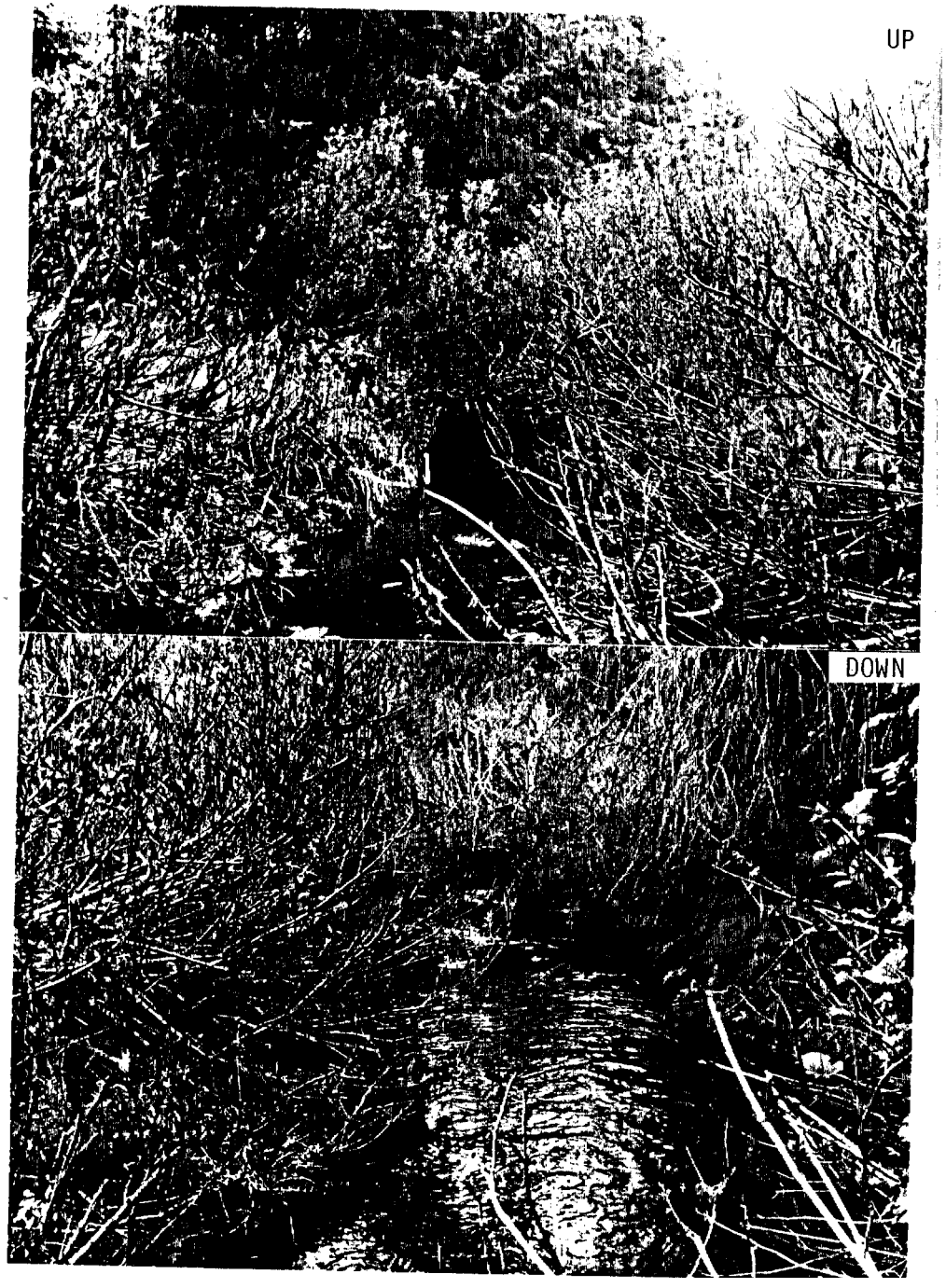


CHANNEL TYPE VERIFICATION CARD

```
                                                          ********************
DATE: 88/06/17   SITE: 8004    1/4 QUAD: SKG-B3-SW        *PRELIM CT:  -     *
STREAM: SUMMIT CREEK, TSIRKU RIVER                        * FINAL CT:  A3    *
ADF&G:  115-32-10250-2067-                                ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 10      WATER:   4.0 C.        AIR:  10.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 11      WEATHER: OVERCAST      TIME:  2:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     51      D2      <1           N/A               N/A               N/A
(distance)                              N/A
L.BANK     51      D2      <1           N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK   200/0       -         -                TRAP #1  -
L.BANK   200/0       -         -                TRAP #2  -
                                                TRAP #3  -
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      5 %   GRADIENT:          8.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   40 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   10.0 ft.
FINE GRAVEL:   40 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:      8.0 ft.
   VFG/SAND:   10 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                  # POOLS:           0

                          STREAM    GEOMETRY
                  *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                *RIGHT*

                  L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                      NO L.O.D.                DIAMETER:        -   in.
10-25   ft                      NO L.O.D.                LENGTH:          -   ft.
25-50   ft                      NO L.O.D.                TRANSECT LENGTH:150  ft.
50-100  ft                      NO L.O.D.
>100    ft                      NO L.O.D.

COMMENTS:
Well armored, flat substrate. No aerial photos available. Water too swift for
trapping.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/22   SITE: 8021    1/4 QUAD: SKG-B3-NW                *PRELIM CT:  B1    *
STREAM: SECRET CREEK, KLEHINI RIVER                               * FINAL CT:  L1    *
ADF&G:  115-32-10250-                                             ********************
AEROPHOTO YR:  78  FLT:  11   ROLL:   1    PHOTO: 022
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: --      WATER:  13.0 C.        AIR:   8.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 37      WEATHER: OVERCAST      TIME: 11:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     53      D1     <1        20-40% 25-40%          -                 -
(distance)                              200'
L.BANK     53      D1     <1        20-50% 65-25%          -                 -
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK    25/0     175/20      -                 TRAP #1  3 SS, 1 DV
L.BANK   200/0       -         -                 TRAP #2  14 SS,1 DV
                                                 TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          0.1  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:    100 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   20.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:  100 %   ACTIVE WIDTH:     15.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:  100 %                                   # POOLS:           0

                                STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                 *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                        N/A                     DIAMETER:        -   in.
10-25  ft                        N/A                     LENGTH:          -   ft.
25-50  ft                        N/A                     TRANSECT LENGTH:200  ft.
50-100 ft                        N/A
>100   ft                        N/A

COMMENTS:
Coho fry were fat and healthy. The channel was flooded from the backup of the
Klehini.
```



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/15   SITE: 7007    1/4 QUAD: SKG-B4-NE                *PRELIM CT:  B1.5  *
STREAM: KLEHINI RIVER TRIB                                        * FINAL CT:  B1.5  *
ADF&G:  115-32-10250-2017-                                        ********************
AEROPHOTO YR: 78   FLT: 3     ROLL: 1      PHOTO: 006
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 701    PHOTO: 14      WATER:   7.0 C.        AIR:  11.0 C.
DOWNSTREAM  ROLL: 701    PHOTO: 13      WEATHER: OVERCAST      TIME:  2:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: Y
        LANDFORM CANOPY INCISION        PA#1                PA#2              PA#3
                        (meters)
R.BANK     61       C2      <1     57-30%20-40%UMB-30        N/A                N/A
(distance)                                200'
L.BANK     61       C2      <1     57-20%20-20%UMB-50        N/A                N/A
(distance)                                200'

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    10/0       15/45     175/0                TRAP #1  0
L.BANK   200/0        N/A       N/A                 TRAP #2  0
                                                    TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      10 %   GRADIENT:          1.5  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      90 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    5 % (2.5 TO 5 IN)     GLIDE:  -   %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   20 % (1 TO 2.5 IN)     RIFFLE: -   %    BANKFULL WIDTH:    8.0 ft.
FINE GRAVEL:   60 % (4 MM TO 1 IN)    POOLS:    0 %    ACTIVE WIDTH:      5.0 ft.
   VFG/SAND:   10 % (<4 MM)                            AVG. POOL DEPTH:   1.0 ft.
  SILT/MUCK:    5 %                                   # POOLS:           0

                                STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                              N/A
BANKFULL DEPTH(FT):                        N/A
ACTIVE DEPTH(FT): *LEFT*                   N/A                  *RIGHT*

                     L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        NO L.O.D.              DIAMETER:          -  in.
10-25   ft                A-3       A-1                  LENGTH:            -  ft.
25-50   ft                        NO L.O.D.              TRANSECT LENGTH:100 ft.
50-100  ft                        NO L.O.D.
>100    ft                        NO L.O.D.

COMMENTS:
Logging upstream.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/07   SITE: 5009     1/4 QUAD: SKG-B3-NE               *PRELIM CT:  A3    *
STREAM: CHILKAT RIVER TRIB                                        * FINAL CT:  C6    *
ADF&G:  115-32-10250-2092                                         ********************
AEROPHOTO YR: 78   FLT: 1      ROLL: 14      PHOTO: 047
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 601     PHOTO: 24      WATER:                    AIR:
DOWNSTREAM   ROLL: 602     PHOTO: 01      WEATHER: -                TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION          PA#1              PA#2              PA#3
                         (meters)
R.BANK      52      C6      2-4           N/A               N/A               N/A
(distance)                                 N/A
L.BANK      52      C6      1-2           N/A               N/A               N/A
(distance)                                 N/A

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/0       -          -                 TRAP #1  -
L.BANK    100/0       -          -                 TRAP #2  -
                                                   TRAP #3  -
        SUBSTRATE:
    BEDROCK:     0 % (>3FT)
 SM BOULDER:    10 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          12.  %
  LG RUBBLE:    30 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    40 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:    ALLUVIUM
 CRS GRAVEL:    10 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   30.0 ft.
FINE GRAVEL:     5 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     24.0 ft.
   VFG/SAND:     5 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:     0 %                                   # POOLS:           0

                                  STREAM    GEOMETRY
                        *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        N/A                     DIAMETER:        -   in.
10-25   ft                        N/A                     LENGTH:          -   ft.
25-50   ft                        N/A                     TRANSECT LENGTH:  0  ft.
50-100  ft                        N/A
>100    ft                        N/A

COMMENTS:
-
```

DOWN

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/14   SITE: 7001    1/4 QUAD: SKG-B3-NW                *PRELIM CT:  L4    *
STREAM: CHILKAT RIVER TRIB                                        * FINAL CT:  L4    *
ADF&G:  115-32-10250                                              ********************
AEROPHOTO YR: 78   FLT: 13    ROLL: 1      PHOTO: 44
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 701    PHOTO: 01      WATER:   4.0 C.        AIR:  22.0 C.
DOWNSTREAM  ROLL: 701    PHOTO: 02      WEATHER: HIGH OVERCAST TIME: 11:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2              PA#3
                        (meters)
R.BANK     53      B2      <1    mixed forbes 100%          N/A                N/A
(distance)                              200'
L.BANK     53      B2      <1    mixed forbes 100%          N/A                N/A
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK   200/-2       N/A        N/A              TRAP #1  1 DV
L.BANK   200/-1       N/A        N/A              TRAP #2  0
                                                  TRAP #3  0
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     20 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  100 %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   50.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     50.0 ft.
   VFG/SAND:   50 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   30 %                                   # POOLS:           0

                          STREAM    GEOMETRY
                  *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                  L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft      E-1                E-1                   DIAMETER:          -  in.
10-25   ft      B-3                                      LENGTH:            -  ft.
25-50   ft                       NO L.O.D.               TRANSECT LENGTH:200 ft.
50-100  ft                       NO L.O.D.
>100    ft                       NO L.O.D.

COMMENTS:
Flooding, full channel.
```

CHANNEL TYPE VERIFICATION CARD

DATE: 87/05/07 SITE: 6010 1/4 QUAD: SKG-C3-SW
STREAM: CHILKAT RIVER SIDE CHANNEL
ADF&G: 115-32-10250
AEROPHOTO YR: 78 FLT: 1 ROLL: 14 PHOTO: 050
CAMERA PHOTO: PRINTS
UPSTREAM ROLL: 602 PHOTO: 05 WATER: AIR:
DOWNSTREAM ROLL: 602 PHOTO: 06 WEATHER: - TIME:

****
*PRELIM CT: D5 *
* FINAL CT: D5 *
****

ADJACENT LANDFORM & VEGETATION: SITE DISTURBED: N

	LANDFORM	CANOPY	INCISION (meters)	PA#1	PA#2	PA#3
R.BANK	53	D1	2-4	N/A	N/A	N/A
(distance)				N/A		
L.BANK	53	D1	1-2	N/A	N/A	N/A
(distance)				N/A		

SIDE SLOPE LENGTH AND ANGLE:

	ft/%	ft/%	ft/%
R.BANK	100/0	-	-
L.BANK	100/0	-	-

TRAP RESULTS:(30 min.)
TRAP #1 -
TRAP #2 -
TRAP #3 -

SUBSTRATE:

BEDROCK:	0 % (>3FT)				
SM BOULDER:	0 % (10 IN TO 3 FT)	ASA:	0 %	GRADIENT:	1.0 %
LG RUBBLE:	0 % (5 TO 10 IN)	ARA:	0 %	STREAM PATTERN:	BRAIDED
SM RUBBLE:	0 % (2.5 TO 5 IN)	GLIDE:	- %	BANK CONTROL:	ALLUVIUM
CRS GRAVEL:	0 % (1 TO 2.5 IN)	RIFFLE:	- %	BANKFULL WIDTH:	78.0 ft.
FINE GRAVEL:	0 % (4 MM TO 1 IN)	POOLS:	0 %	ACTIVE WIDTH:	36.0 ft.
VFG/SAND:	90 % (<4 MM)			AVG. POOL DEPTH:	0.0 ft.
SILT/MUCK:	10 %			# POOLS:	0

STREAM GEOMETRY

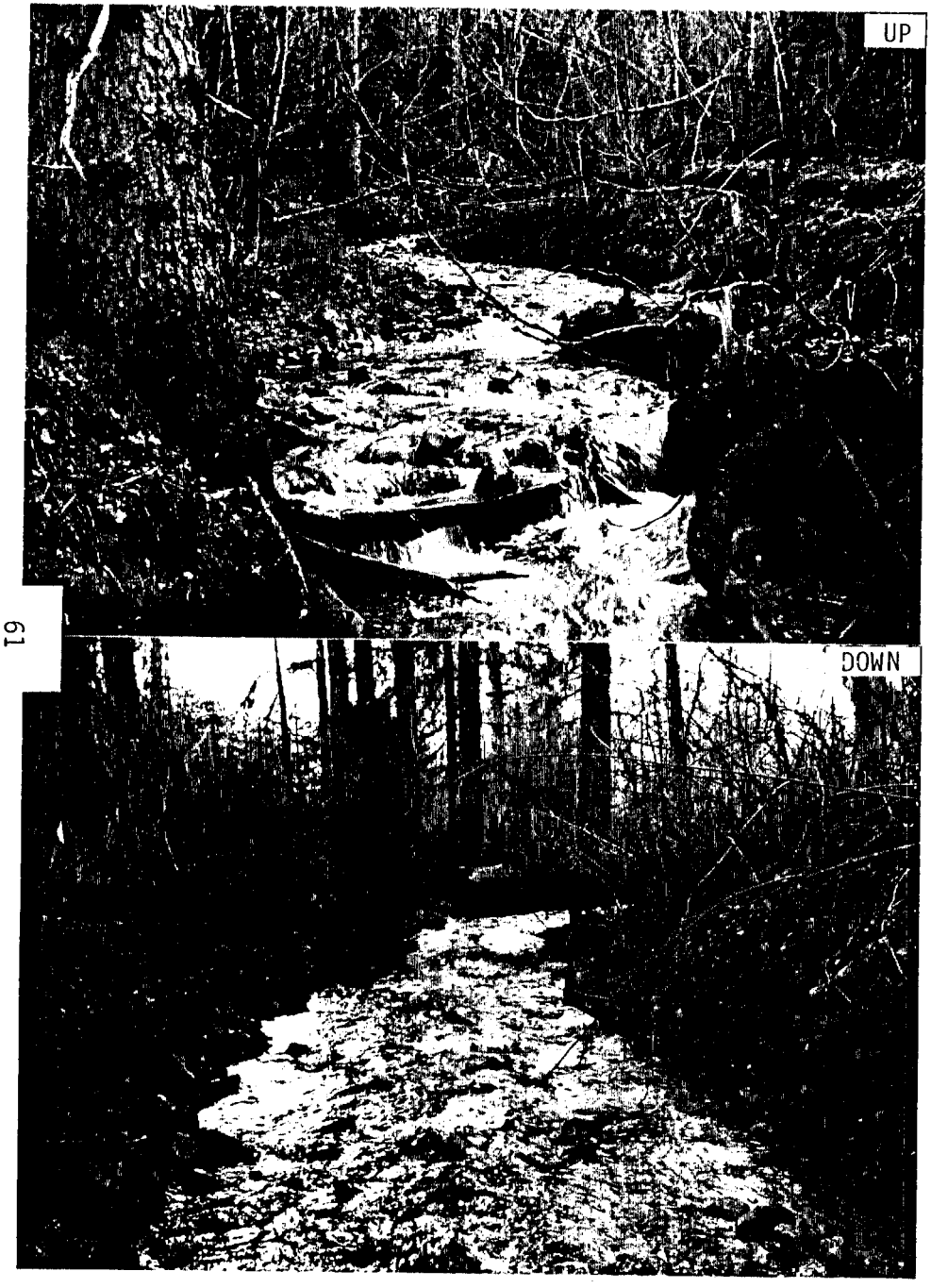
	BF	*LB*	****	****	****	****	****	*LB*	*BF*
DISTANCE(FT):					N/A				
BANKFULL DEPTH(FT):					N/A				
ACTIVE DEPTH(FT):	*LEFT*				N/A				*RIGHT*

L.O.D. TALLEY (DIAMETER)

(LENGTH)	4 - 6"	6 - 12"	12 - 24"	24 - 36"	>36
< 10 ft			N/A		
10-25 ft			N/A		
25-50 ft			N/A		
50-100 ft			N/A		
>100 ft			N/A		

AVERAGE KEY PIECE
DIAMETER: - in.
LENGTH: - ft.
TRANSECT LENGTH: 0 ft.

COMMENTS:
Coho and stickleback fry were seen in the main channel.

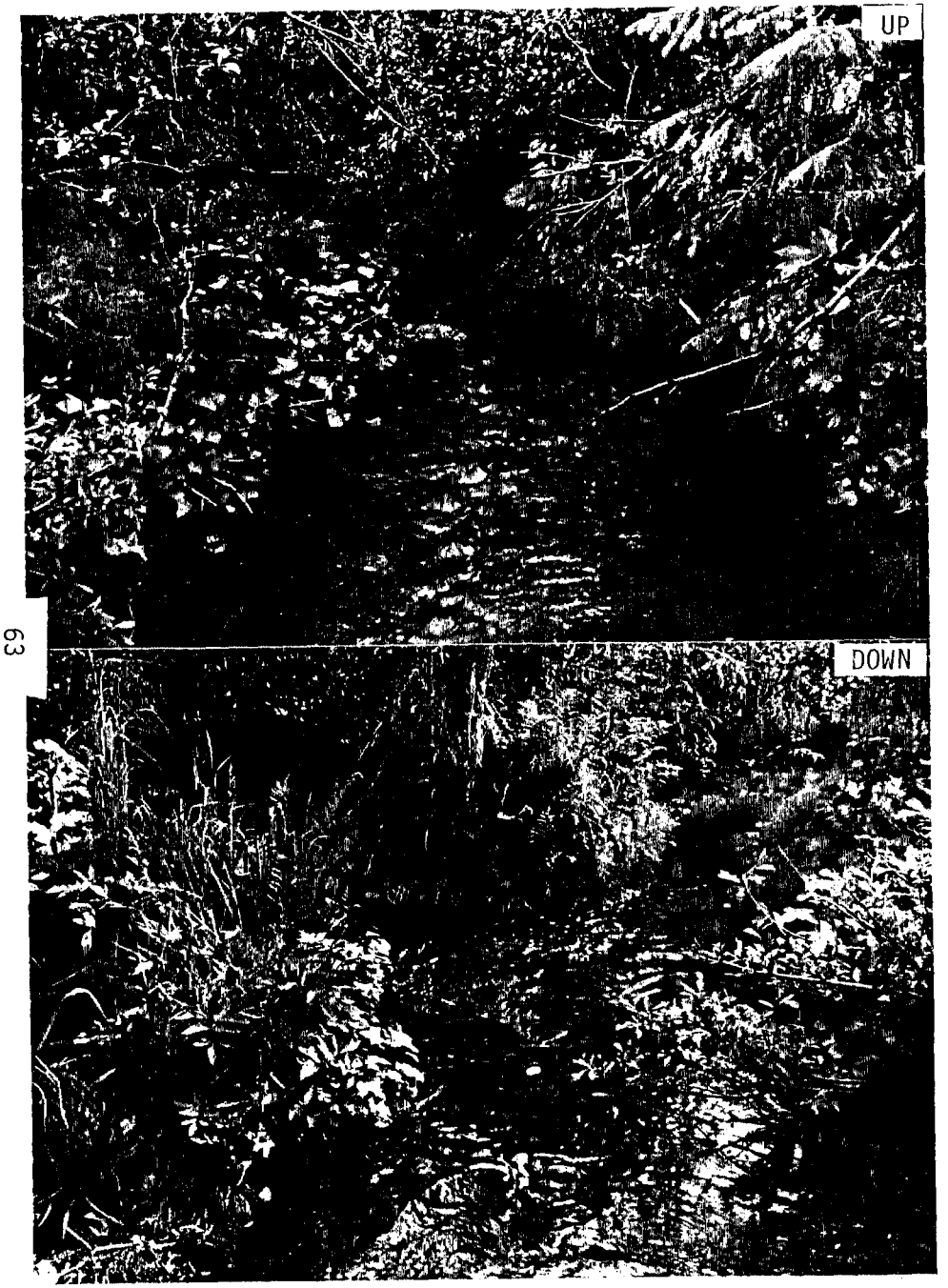


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/07   SITE: 6011     1/4 QUAD: SKG-C3-SW               *PRELIM CT:  B5    *
STREAM: CHILKAT RIVER TRIB                                        * FINAL CT:  B5    *
ADF&G:  115-32-10250-2140                                         ********************
AEROPHOTO YR: 78   FLT: 1      ROLL: 14      PHOTO: 050
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 602    PHOTO: 03      WATER:   4.0 C.        AIR:
DOWNSTREAM  ROLL: 602    PHOTO: 04      WEATHER: -             TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: Y
        LANDFORM CANOPY INCISION          PA#1              PA#2              PA#3
                        (meters)
R.BANK      52       D2      2-4          N/A               N/A               N/A
(distance)                                N/A
L.BANK      52       D2      2-4          N/A               N/A               N/A
(distance)                                N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/0        -          -              TRAP #1  -
L.BANK    100/0        -          -              TRAP #2  -
                                                  TRAP #3  -
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          4.0  %
  LG RUBBLE:   20 % (5 TO 10 IN)       ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   30 % (2.5 TO 5 IN)      GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   30 % (1 TO 2.5 IN)      RIFFLE: -   %   BANKFULL WIDTH:    6.0 ft.
FINE GRAVEL:   10 % (4 MM TO 1 IN)     POOLS:    0 %   ACTIVE WIDTH:      6.0 ft.
   VFG/SAND:   10 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                          STREAM    GEOMETRY
                  *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                *RIGHT*

                  L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                        N/A                     DIAMETER:        -   in.
10-25  ft                        N/A                     LENGTH:          -   ft.
25-50  ft                        N/A                     TRANSECT LENGTH:400  ft.
50-100 ft                        N/A
>100   ft                        N/A

COMMENTS:
Alluvial fan. Poor spruce, large cottonwood.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/14   SITE: 7003    1/4 QUAD: SKG-C3-SW                *PRELIM CT:  B1.6  *
STREAM: KELSALL R. FAN, CHILKAT R.                                * FINAL CT:  L5    *
ADF&G:  115-32-10250-                                             ********************
AEROPHOTO YR:  78  FLT:  14   ROLL:   1    PHOTO: 052
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 701    PHOTO: 05      WATER:   7.0 C.        AIR:  23.0 C.
DOWNSTREAM  ROLL: 701    PHOTO: 06      WEATHER: PARTLY CLOUDY TIME:  3:45

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2              PA#3
                        (meters)
R.BANK     53      D1     2-4   65-75% Rose-25%              -                  -
(distance)                             200'
L.BANK     53      D1     2-4   65-25%67-20%05-10%           -                  -
(distance)                             200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK   200/0        -          -                TRAP #1  0
L.BANK   200/0        -          -                TRAP #2  0
                                                  TRAP #3  1 SS

        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          0.2  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:    100 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   28.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     25.0 ft.
   VFG/SAND:   30 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   50 %                                   # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                          NO L.O.D.              DIAMETER:        -   in.
10-25  ft       A-14                                     LENGTH:          -   ft.
25-50  ft                          NO L.O.D.              TRANSECT LENGTH:100  ft.
50-100 ft                          NO L.O.D.
>100   ft                          NO L.O.D.

COMMENTS:
-
```



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/14   SITE: 7004    1/4 QUAD: SKG-C3-SW                *PRELIM CT:  B2    *
STREAM: CHILKAT R., SOUTH OF KELSALL                              * FINAL CT:  B2    *
ADF&G:  115-32-10250                                              ********************
AEROPHOTO YR:  78  FLT:  13   ROLL:   1    PHOTO: 047
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 701    PHOTO: 07     WATER:   8.0 C.        AIR:  22.0 C.
DOWNSTREAM  ROLL: 701    PHOTO: 08     WEATHER: PARTLY CLOUDY TIME:  4:45

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     53      D2     <1            820               -                 -
(distance)                              200'
L.BANK     53      D2     <1            820               -                 -
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK   200/0       -         -                 TRAP #1  2 SS
L.BANK   200/0       -         -                 TRAP #2  0
                                                 TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     60 %   GRADIENT:          3.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     30 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   60 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   13.4 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:   20 %   ACTIVE WIDTH:     10.1 ft.
   VFG/SAND:   10 % (<4 MM)                           AVG. POOL DEPTH:   0.8 ft.
  SILT/MUCK:   10 %                                   # POOLS:           4

                                STREAM    GEOMETRY
                   *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):        1.6  4.2  7.6 10.6 13.6          14.3 15.0
BANKFULL DEPTH(FT): 3.65 3.70 4.25 4.65 4.20          3.90 3.60
ACTIVE DEPTH(FT): *LEFT* N/A  0.63 1.05 0.57           N/A *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                        NO L.O.D.                DIAMETER:        -   in.
10-25  ft      A-3                                       LENGTH:          -   ft.
25-50  ft                        NO L.O.D.                TRANSECT LENGTH:100 ft.
50-100 ft                        NO L.O.D.
>100   ft                        NO L.O.D.

COMMENTS:
-
```

CHANNEL TYPE VERIFICATION CARD

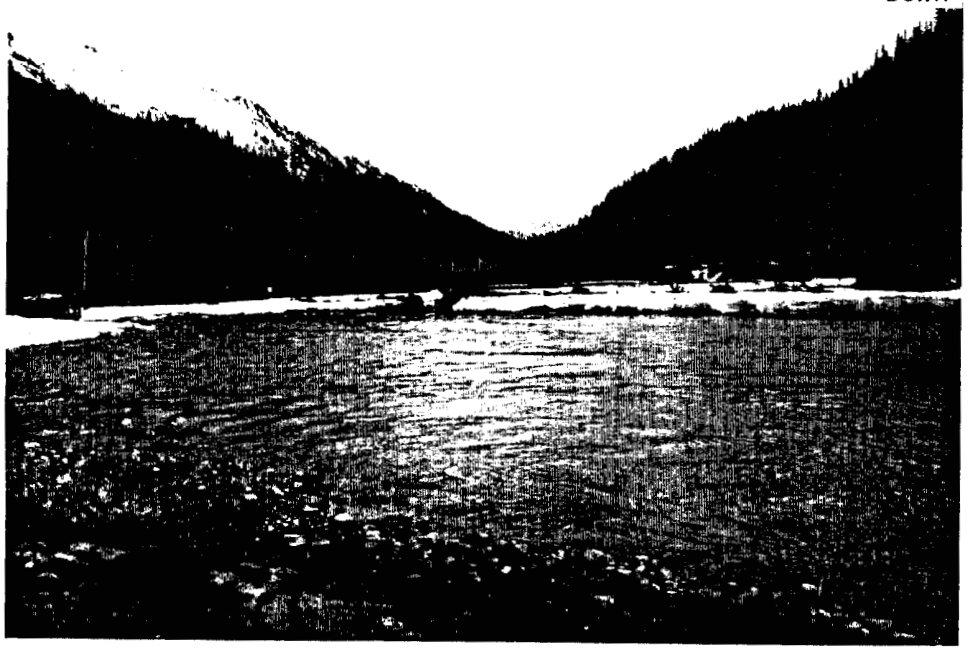
```
                                                                  ********************
DATE: 88/06/14   SITE: 7002    1/4 QUAD: SKG-C3-SW                *PRELIM CT:  B1    *
STREAM: STEELHEAD CREEK, KELSALL R.                               * FINAL CT:  B1.5  *
ADF&G:  115-32-10250-2143-                                        ********************
AEROPHOTO YR:  78  FLT:  14   ROLL:   1    PHOTO: 054
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 701    PHOTO: 03     WATER:   8.0 C.        AIR:  24.0 C.
DOWNSTREAM  ROLL: 701    PHOTO: 04     WEATHER: PARTLY CLOUDY TIME:  1:45

  ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: Y
       LANDFORM CANOPY INCISION        PA#1                PA#2              PA#3
                        (meters)
R.BANK     53      D2     <1            840                  -                 -
(distance)                              200'
L.BANK     53      D2     <1            840                  -                 -
(distance)                              200'

  SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK   200/0        -          -             TRAP #1  1 SH,1 DV
L.BANK   200/0        -          -             TRAP #2  1 SH,2 DV
                                               TRAP #3  0

       SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     40 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     45 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   15 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   15.9 ft.
FINE GRAVEL:   40 % (4 MM TO 1 IN)    POOLS:   10 %   ACTIVE WIDTH:     12.8 ft.
   VFG/SAND:   40 % (<4 MM)                           AVG. POOL DEPTH:  0.6 ft.
  SILT/MUCK:    5 %                                  # POOLS:          4

                                  STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):        19.3 18.0 15.4 12.4  9.4  6.4       4.2  3.4
BANKFULL DEPTH(FT): 3.25 4.77 4.95 4.60 4.97 4.75      4.40 3.10
ACTIVE DEPTH(FT): *LEFT* N/A  0.60 0.20 0.65 0.45       N/A *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                        NO L.O.D.                DIAMETER:        24 in.
10-25  ft      A-4                                       LENGTH:          50 ft.
25-50  ft                         B-2                     TRANSECT LENGTH:100 ft.
50-100 ft                        NO L.O.D.
>100   ft                        NO L.O.D.

COMMENTS:
The understory consisted of Cornus and Viburnum.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/07   SITE: 6012    1/4 QUAD: SKG-C3-SW                *PRELIM CT:  D4    *
STREAM: NATAGA CREEK                                              * FINAL CT:  D4    *
ADF&G:  115-32-10250-2143-3005                                    ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 14     PHOTO: 053
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 602    PHOTO: 11     WATER:                 AIR:
DOWNSTREAM  ROLL: 602    PHOTO: 12     WEATHER: -             TIME:

  ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: Y
       LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     53      D2     1-2          N/A               N/A               N/A
(distance)                             N/A
L.BANK     53      D2     1-2          N/A               N/A               N/A
(distance)                             N/A

  SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK   100/0      -         -                 TRAP #1  -
L.BANK   100/0      -         -                 TRAP #2  -
                                                TRAP #3  -

       SUBSTRATE:
   BEDROCK:    0 % (>3FT)
 SM BOULDER:   0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          2.0  %
  LG RUBBLE:  80 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:  10 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:  10 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   90.0 ft.
FINE GRAVEL:   0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     30.0 ft.
   VFG/SAND:   0 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   0 %                                    # POOLS:           0

                          STREAM    GEOMETRY
                  *SF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                  L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                          N/A                    DIAMETER:        -   in.
10-25  ft                         N/A                    LENGTH:          -   ft.
25-50  ft                         N/A                    TRANSECT LENGTH:  0  ft.
50-100 ft                         N/A
>100   ft                         N/A

COMMENTS:
-
```

UP

DOWN



CHANNEL TYPE VERIFICATION CARD

DATE: 87/05/07 SITE: 6013 1/4 QUAD: SKG-C4-SE
STREAM: KELSALL RIVER
ADF&G: 115-32-10250-2143
AEROPHOTO YR: 78 F 2 ROLL: 14 PHOTO: 006
CAMERA PHOTO: PRINTS
UPSTREAM ROLL: 60 PHOTO: 13 WATER: AIR:
DOWNSTREAM ROLL: 602 PHOTO: 14 WEATHER: - TIME:

****
*PRELIM CT: D4 *
* FINAL CT: D4 *
****

ADJACENT LANDFORM & VEGETATION: SITE DISTURBED: N

	LANDFORM	CANOPY	INCISION (meters)	PA#1	PA#2	PA#3
R.BANK	53	D2	2-4	N/A	N/A	N/A
(distance)				N/A		
L.BANK	53	D2	2-4	N/A	N/A	N/A
(distance)				N/A		

SIDE SLOPE LENGTH AND ANGLE:

	ft/%	ft/%	ft/%
R.BANK	100/>75	-	-
L.BANK	100/>75	-	-

TRAP RESULTS:(30 min.)

TRAP #1 -
TRAP #2 -
TRAP #3 -

SUBSTRATE:

BEDROCK:	0 % (>3FT)				
SM BOULDER:	5 % (10 IN TO 3 FT)	ASA:	0 %	GRADIENT:	1.5 %
LG RUBBLE:	30 % (5 TO 10 IN)	ARA:	0 %	STREAM PATTERN:	BRAIDED
SM RUBBLE:	30 % (2.5 TO 5 IN)	GLIDE:	- %	BANK CONTROL:	MIXED
CRS GRAVEL:	20 % (1 TO 2.5 IN)	RIFFLE:	- %	BANKFULL WIDTH:	141.0 ft.
FINE GRAVEL:	10 % (4 MM TO 1 IN)	POOLS:	0 %	ACTIVE WIDTH:	51.0 ft.
VFG/SAND:	5 % (<4 MM)			AVG. POOL DEPTH:	0.0 ft.
SILT/MUCK:	0 %			# POOLS:	0

STREAM GEOMETRY

BF *LB* **** **** **** **** **** *LB* *BF*

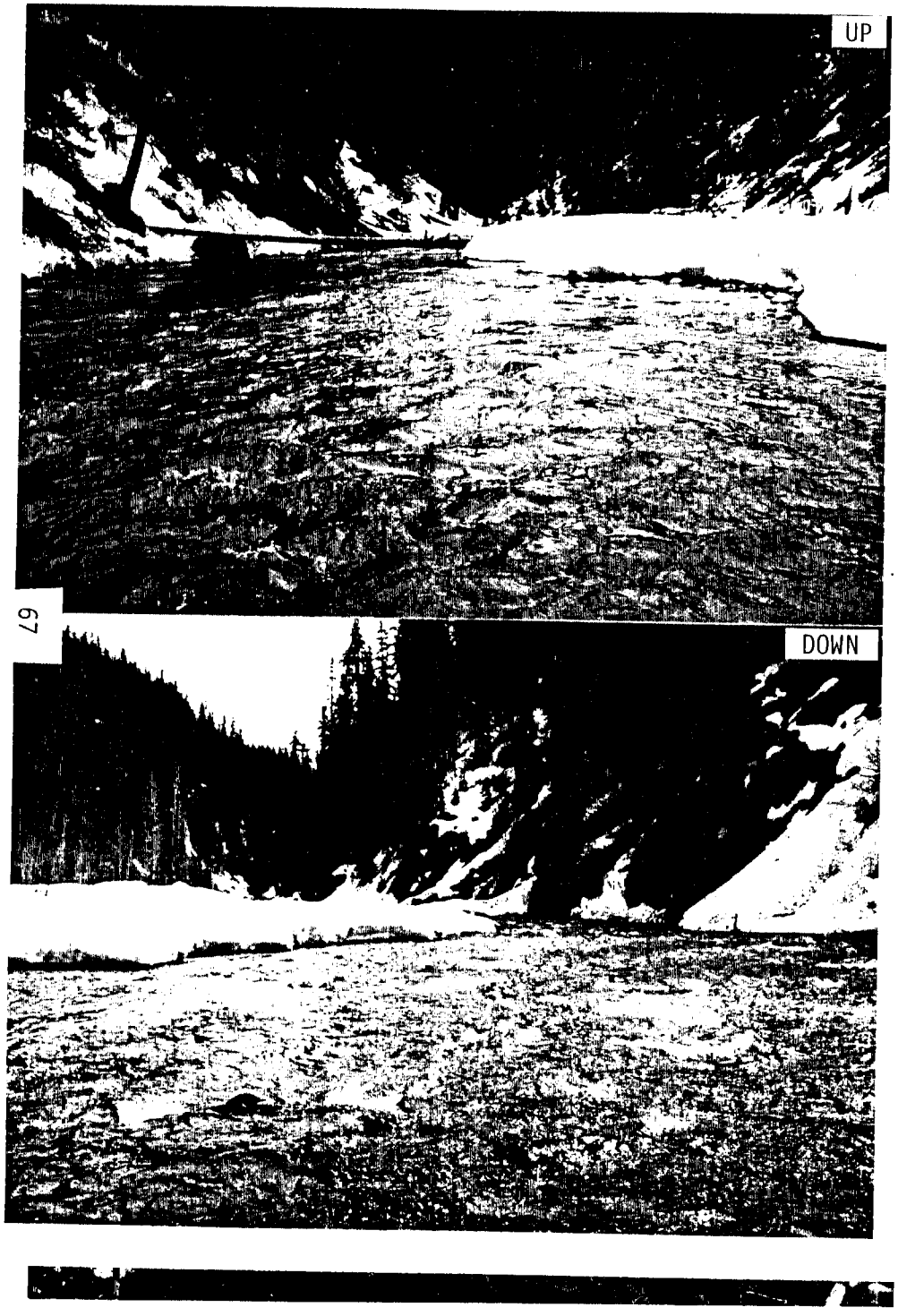
DISTANCE(FT):	N/A	
BANKFULL DEPTH(FT):	N/A	
ACTIVE DEPTH(FT): *LEFT*	N/A	*RIGHT*

L.O.D. TALLEY (DIAMETER)

(LENGTH)	4 - 6"	6 - 12"	12 - 24"	24 - 36"	>36
< 10 ft			N/A		
10-25 ft			N/A		
25-50 ft			N/A		
50-100 ft			N/A		
>100 ft			N/A		

AVERAGE KEY PIECE
DIAMETER: - in.
LENGTH: - ft.
TRANSECT LENGTH: 0 ft.

COMMENTS:
-



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/07   SITE: 6014    1/4 QUAD: SKG-C4-SE                *PRELIM CT:  D4    *
STREAM: KELSALL RIVER                                             * FINAL CT:  D4    *
ADF&G:  115-32-10250-2143                                         ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 14     PHOTO: 053
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 602    PHOTO: 09     WATER:                    AIR:
DOWNSTREAM   ROLL: 602    PHOTO: 10     WEATHER: -                TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: Y
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      51       C1     10-20       N/A               N/A               N/A
(distance)                              N/A
L.BANK      51       C1     10-20       N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/>75     -          -                TRAP #1  -
L.BANK    100/>75     -          -                TRAP #2  -
                                                   TRAP #3  -
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          1.0  %
  LG RUBBLE:   70 % (5 TO 10 IN)       ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)      GLIDE:  -   %   BANK CONTROL:   MIXED
 CRS GRAVEL:   10 % (1 TO 2.5 IN)      RIFFLE: -   %   BANKFULL WIDTH:   96.0 ft.
FINE GRAVEL:    5 % (4 MM TO 1 IN)     POOLS:    0 %   ACTIVE WIDTH:     93.0 ft.
   VFG/SAND:    5 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                    # POOLS:           0

                                  STREAM    GEOMETRY
                        *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                          N/A                   DIAMETER:        -   in.
10-25  ft                          N/A                   LENGTH:          -   ft.
25-50  ft                          N/A                   TRANSECT LENGTH:  0  ft.
50-100 ft                          N/A
>100   ft                          N/A

COMMENTS:
-
```

CHANNEL TYPE VERIFICATION CARD

DATE: 88/06/16 SITE: 8002 1/4 QUAD: SKG-C3-SW

*PRELIM CT: D6 *
* FINAL CT: D6 *

STREAM: UPPER CHILKAT TRIB.
ADF&G: 115-32-10250-2152
AEROPHOTO YR: 78 FLT: 22 ROLL: 1 PHOTO: 006
CAMERA PHOTO: PRINTS
UPSTREAM ROLL: 801 PHOTO: 06 WATER: 6.0 C. AIR: 14.0 C.
DOWNSTREAM ROLL: 801 PHOTO: 07 WEATHER: OVERCAST TIME: 11:00

ADJACENT LANDFORM & VEGETATION: SITE DISTURBED: N

	LANDFORM	CANOPY	INCISION (meters)	PA#1	PA#2	PA#3
R.BANK	52	B2	<1	20-70%,65-30%	-	-
(distance)				200'		
L.BANK	52	B2	<1	20-70%,65-30%	-	-
(distance)				200'		

SIDE SLOPE LENGTH AND ANGLE:

	ft/%	ft/%	ft/%
R.BANK	200/0	-	-
L.BANK	200/0	-	-

TRAP RESULTS:(30 min.)

TRAP #1 1 DV
TRAP #2 1 DV
TRAP #3 0

SUBSTRATE:

BEDROCK:	0 %	(>3FT)
SM BOULDER:	0 %	(10 IN TO 3 FT)
LG RUBBLE:	0 %	(5 TO 10 IN)
SM RUBBLE:	0 %	(2.5 TO 5 IN)
CRS GRAVEL:	10 %	(1 TO 2.5 IN)
FINE GRAVEL:	15 %	(4 MM TO 1 IN)
VFG/SAND:	55 %	(<4 MM)
SILT/MUCK:	30 %	

ASA:	30 %
ARA:	10 %
GLIDE:	- %
RIFFLE:	- %
POOLS:	10 %

GRADIENT:	3.0 %
STREAM PATTERN:	BRAIDED
BANK CONTROL:	ALLUVIUM
BANKFULL WIDTH:	6.0 ft.
ACTIVE WIDTH:	6.0 ft.
AVG. POOL DEPTH:	1.0 ft.
# POOLS:	3

STREAM GEOMETRY

	BF	*LB*	****	****	****	****	****	*LB*	*BF*
DISTANCE(FT):					N/A				
BANKFULL DEPTH(FT):					N/A				
ACTIVE DEPTH(FT):	*LEFT*				N/A				*RIGHT*

L.O.D. TALLEY (DIAMETER)

(LENGTH)	4 - 6"	6 - 12"	12 - 24"	24 - 36"	>36
< 10 ft			NO L.O.D.		
10-25 ft			NO L.O.D.		
25-50 ft			NO L.O.D.		
50-100 ft			NO L.O.D.		
>100 ft			NO L.O.D.		

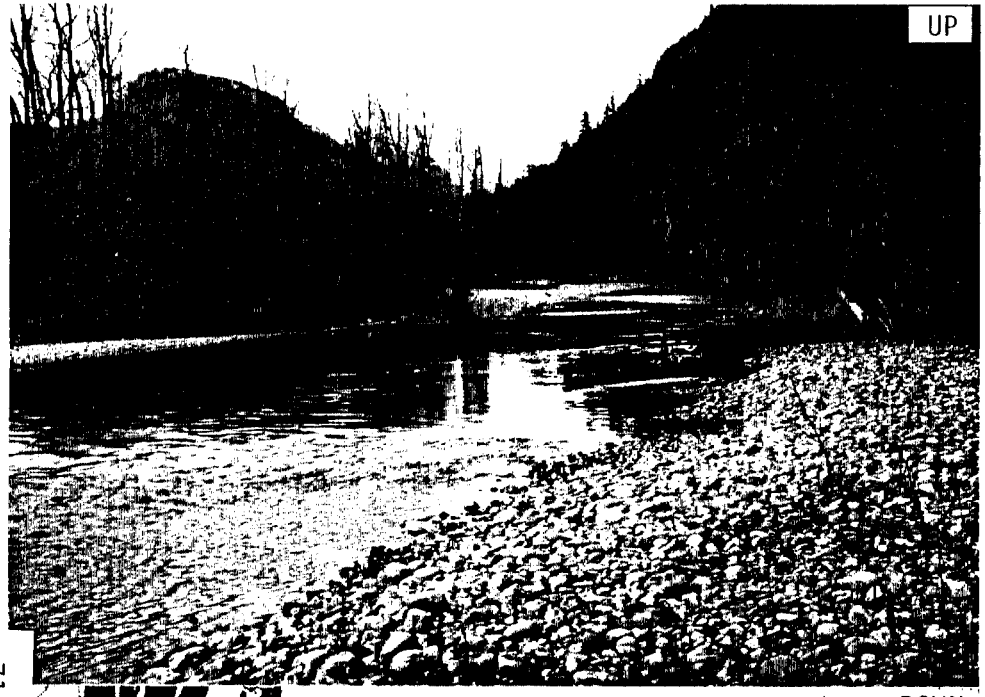
AVERAGE KEY PIECE

DIAMETER:	-	in.
LENGTH:	-	ft.
TRANSECT LENGTH:	120	ft.

COMMENTS:
Numerous channels like this were present on the alluvial fan. Flow stage was very high. Hard to assess ASA. Several hundred fry were present at mouth

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/16   SITE: 8001    1/4 QUAD: SKG-C3-SW                *PRELIM CT:  B1.6  *
STREAM: RED SLOUGH, CHILKAT RIVER                                 * FINAL CT:  B1.6  *
ADF&G:  115-32-10250-                                             ********************
AEROPHOTO YR:  78  FLT:  25   ROLL:   1    PHOTO: 005
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 04     WATER:   7.0 C.        AIR:  14.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 05     WEATHER: OVERCAST      TIME: 10:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     64      D2     1-2        6-50%15-50%       20-70%15-30%          -
(distance)                                30'               170'
L.BANK     64      D2     <1        20-60%15-40%          -                 -
(distance)                               200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    30/0       25/22     145/0              TRAP #1  0
L.BANK    10/30     190/0        -                TRAP #2  1 SS,1 DV
                                                  TRAP #3  1 SS
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     10 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     60 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   20 % (2.5 TO 5 IN)     GLIDE:  -  %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   20 % (1 TO 2.5 IN)     RIFFLE: -  %    BANKFULL WIDTH:   18.0 ft.
FINE GRAVEL:   10 % (4 MM TO 1 IN)    POOLS:   15 %   ACTIVE WIDTH:      15.6 ft.
   VFG/SAND:   40 % (<4 MM)                           AVG. POOL DEPTH:   1.6 ft.
  SILT/MUCK:   10 %                                   # POOLS:          10

                                STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):       00.0 00.8  3.0  6.0  9.0 12.0 15.0 17.0 18.2
BANKFULL DEPTH(FT): 2.25 3.00 4.25 4.85 5.20 4.85 4.75 3.30 2.80
ACTIVE DEPTH(FT): *LEFT* N/A  0.85 1.45 1.80 1.45 1.55  N/A *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                          E-1                   DIAMETER:        12 in.
10-25  ft   C-8,B-1    C-4,B-1     A-1                   LENGTH:          20 ft.
25-50  ft                        NO L.O.D.               TRANSECT LENGTH:120 ft.
50-100 ft                        NO L.O.D.
>100   ft                        NO L.O.D.

COMMENTS:
Series of glides and pools. Patches of birch present along bank. Forbes on right
bank were pyrola and bedstraw.
```



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/07   SITE: 6016    1/4 QUAD: SKG-C3-NW                *PRELIM CT:  C1    *
STREAM: TAHINI RIVER                                              * FINAL CT:  D4    *
ADF&G:  115-32-10250-2175                                         ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 24     PHOTO: 008
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 602    PHOTO: 20     WATER:   5.0 C.        AIR:
DOWNSTREAM   ROLL: 602    PHOTO: 21     WEATHER: -             TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2                PA#3
                        (meters)
R.BANK      53      D2      1-2         N/A                 N/A                 N/A
(distance)                              N/A
L.BANK      53      D2      1-2         N/A                 N/A                 N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/0       -          -               TRAP #1  1  DV
L.BANK    100/75      -          -               TRAP #2  0
                                                 TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     100 %   GRADIENT:          1.5  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:       0 %   STREAM PATTERN: BRAIDED
  SM RUBBLE:   80 % (2.5 TO 5 IN)     GLIDE:   -   %   BANK CONTROL:    MIXED
 CRS GRAVEL:   10 % (1 TO 2.5 IN)     RIFFLE:  -   %   BANKFULL WIDTH:  150.0 ft.
FINE GRAVEL:    5 % (4 MM TO 1 IN)    POOLS:     0 %   ACTIVE WIDTH:     60.0 ft.
   VFG/SAND:    5 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                    # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        N/A                     DIAMETER:        -   in.
10-25   ft                        N/A                     LENGTH:          -   ft.
25-50   ft                        N/A                     TRANSECT LENGTH:  0  ft.
50-100  ft                        N/A
>100    ft                        N/A

COMMENTS:
P/R ratio is 20/80. Pools are full of sand.
```

CHANNEL TYPE VERIFICATION CARD

DATE: 87/05/07 SITE: 6017 1/4 QUAD: SKG-C3-NW

STREAM: TAHINI RIVER

ADF&G: 115-32-10250-2175

AEROPHOTO YR: 78 FLT: 1 ROLL: 24 PHOTO: 008

CAMERA PHOTO: PRINTS

UPSTREAM ROLL: 602 PHOTO: 16

DOWNSTREAM ROLL: 602 PHOTO: 17

WATER: AIR:

WEATHER: - TIME:

```
*******************
*PRELIM CT:  C1   *
* FINAL CT:  D4   *
*******************
```

ADJACENT LANDFORM & VEGETATION: SITE DISTURBED: N

	LANDFORM	CANOPY	INCISION (meters)	PA#1	PA#2	PA#3
R.BANK	53	D2	2-4	N/A	N/A	N/A
(distance)				N/A		
L.BANK	53	D2	2-4	N/A	N/A	N/A
(distance)				N/A		

SIDE SLOPE LENGTH AND ANGLE:

	ft/%	ft/%	ft/%
R.BANK	100/20	-	-
L.BANK	100/20	-	-

TRAP RESULTS:(30 min.)

TRAP #1 -

TRAP #2 -

TRAP #3 -

SUBSTRATE:

BEDROCK:	0 %	(>3FT)
SM BOULDER:	20 %	(10 IN TO 3 FT)
LG RUBBLE:	10 %	(5 TO 10 IN)
SM RUBBLE:	10 %	(2.5 TO 5 IN)
CRS GRAVEL:	5 %	(1 TO 2.5 IN)
FINE GRAVEL:	5 %	(4 MM TO 1 IN)
VFG/SAND:	0 %	(<4 MM)
SILT/MUCK:	0 %	

ASA:	0 %
ARA:	0 %
GLIDE:	- %
RIFFLE:	- %
POOLS:	0 %

GRADIENT:	2.0 %
STREAM PATTERN:	BRAIDED
BANK CONTROL:	MIXED
BANKFULL WIDTH:	96.0 ft.
ACTIVE WIDTH:	24.0 ft.
AVG. POOL DEPTH:	0.0 ft.
# POOLS:	0

STREAM GEOMETRY

	BF	*LB*	****	****	****	****	****	*LB*	*BF*
DISTANCE(FT):					N/A				
BANKFULL DEPTH(FT):					N/A				
ACTIVE DEPTH(FT): *LEFT*					N/A				*RIGHT*

L.O.D. TALLEY (DIAMETER)

(LENGTH)	4 - 6"	6 - 12"	12 - 24"	24 - 36"	>36
< 10 ft			N/A		
10-25 ft			N/A		
25-50 ft			N/A		
50-100 ft			N/A		
>100 ft			N/A		

AVERAGE KEY PIECE

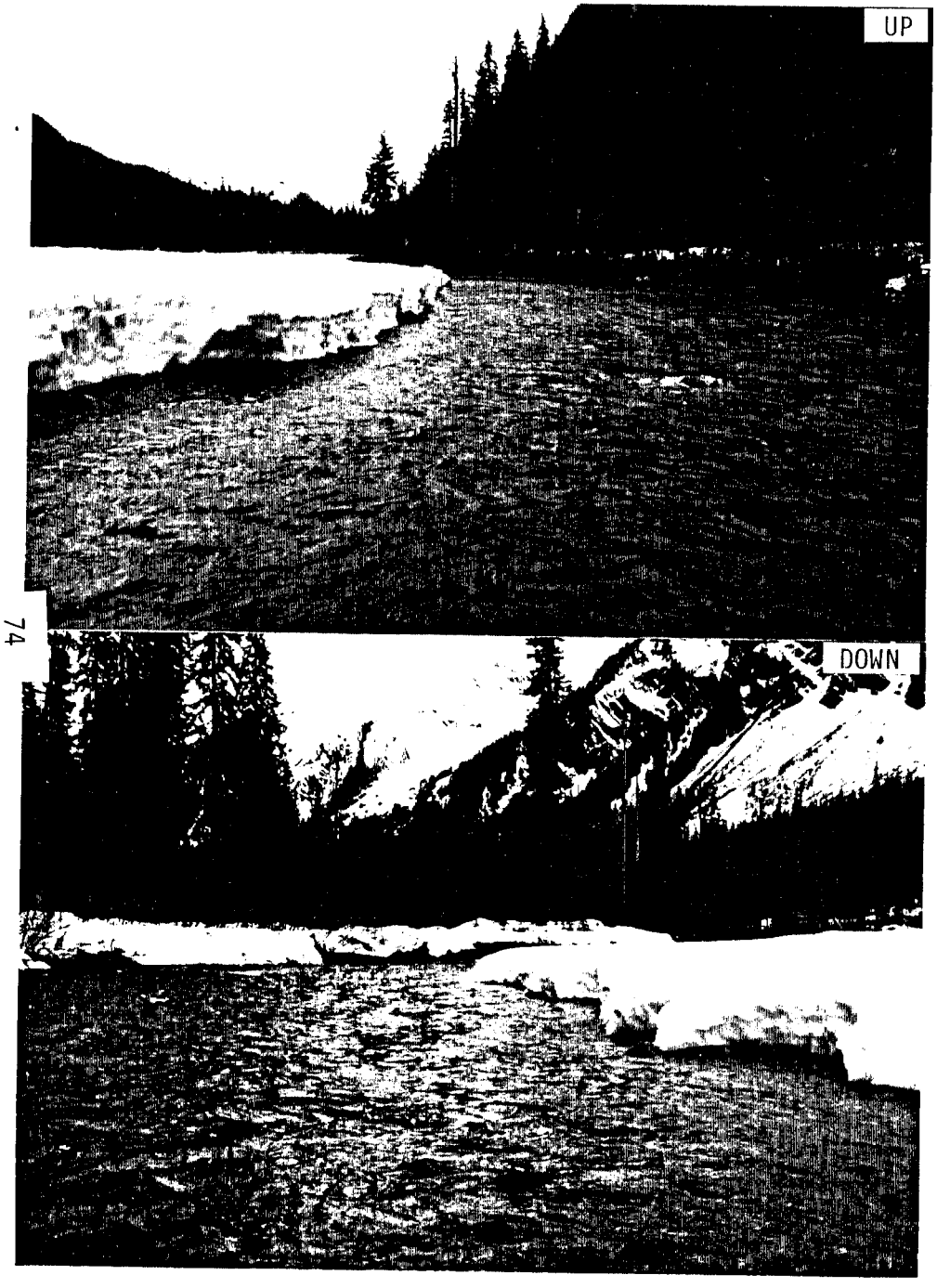
DIAMETER:	-	in.
LENGTH:	-	ft.
TRANSECT LENGTH:	0	ft.

COMMENTS:

-

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/07   SITE: 6015    1/4 QUAD: SKG-C3-NW                *PRELIM CT:  A4    *
STREAM: FLEMMER RIVER                                             * FINAL CT:  A2    *
ADF&G:  115-32-10250-2175-3009                                    ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 24     PHOTO: 008
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 602    PHOTO: 15     WATER:                    AIR:
DOWNSTREAM  ROLL: 602    PHOTO: 16     WEATHER: -                TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     35      C9     1-2           N/A               N/A               N/A
(distance)                              N/A
L.BANK     35      C9     1-2           N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK    15/0      85/50      -                 TRAP #1  -
L.BANK    85/0      15/50      -                 TRAP #2  -
                                                 TRAP #3  -
        SUBSTRATE:
    BEDROCK:   50 % (>3FT)
 SM BOULDER:   30 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          7.0  %
  LG RUBBLE:   20 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   BEDROCK
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   54.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     51.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                          STREAM    GEOMETRY
                  *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"   6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                      N/A                      DIAMETER:        -   in.
10-25   ft                      N/A                      LENGTH:          -   ft.
25-50   ft                      N/A                      TRANSECT LENGTH:  0  ft.
50-100  ft                      N/A
>100    ft                      N/A

COMMENTS:
-
```

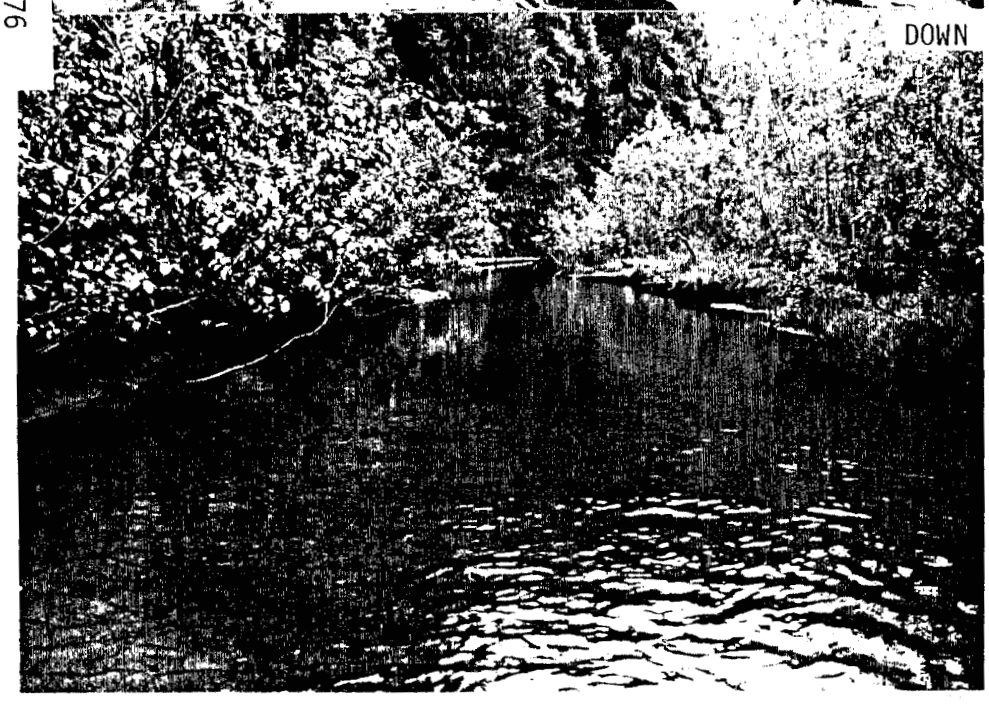


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/05/05   SITE: 6008    1/4 QUAD: SKG-B2-NW                *PRELIM CT:  D5    *
STREAM: CHILKOOT RIVER                                            * FINAL CT:  D4    *
ADF&G:  115-33-10200                                              ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 19     PHOTO: 018
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 601    PHOTO: 22     WATER:   4.0 C.        AIR:
DOWNSTREAM  ROLL: 601    PHOTO: 23     WEATHER: -             TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      53       C6      1-2        N/A               N/A               N/A
(distance)                              N/A
L.BANK      53       C6      1-2        N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/0        -          -              TRAP #1  0
L.BANK     30/0       70/50       -              TRAP #2  0
                                                 TRAP #3  0
         SUBSTRATE:
    BEDROCK:     0 % (>3FT)
 SM BOULDER:     0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          1.5  %
  LG RUBBLE:    20 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: BRAIDED
  SM RUBBLE:    10 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    30 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:  165.0 ft.
FINE GRAVEL:    20 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     57.0 ft.
   VFG/SAND:    20 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:     0 %                                   # POOLS:           0

                                  STREAM    GEOMETRY
                        *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                *RIGHT*

                        L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          B-4                   DIAMETER:        -   in.
10-25   ft                          B-4                   LENGTH:          -   ft.
25-50   ft                        NO L.O.D.               TRANSECT LENGTH:400  ft.
50-100  ft                        NO L.O.D.
>100    ft                        NO L.O.D.

COMMENTS:
-
```

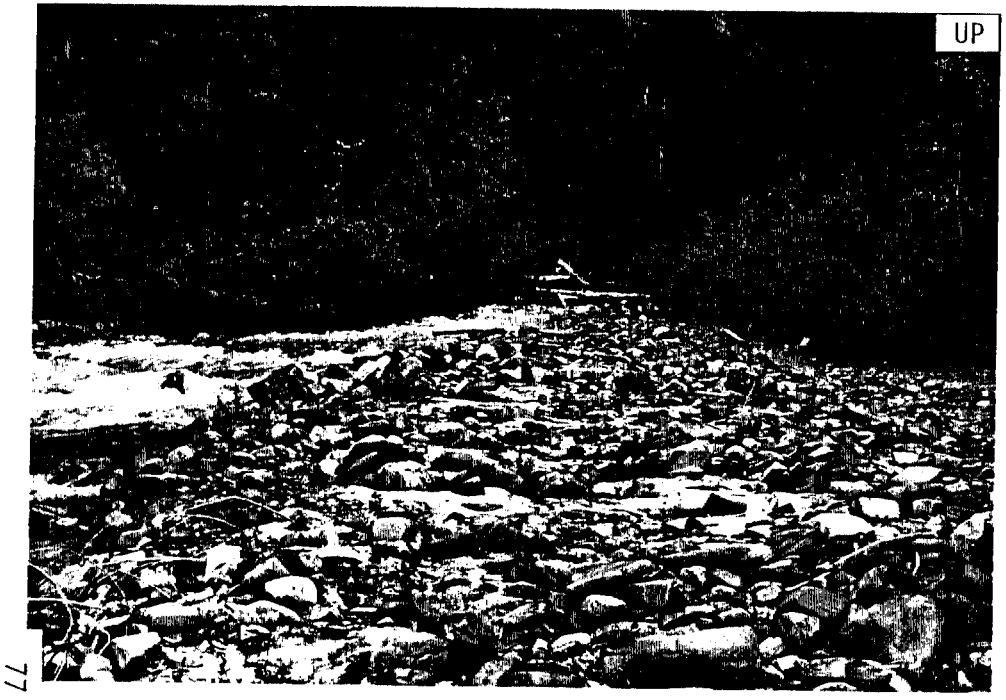
CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/20   SITE: 8013    1/4 QUAD: SKG-B2-NW                *PRELIM CT:  D3    *
STREAM: BROWN'S CREEK, CHILKOOT RIVER                             * FINAL CT:  D3    *
ADF&G:  115-33-0010-                                              ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 22      WATER:   3.0 C.        AIR:
DOWNSTREAM  ROLL: 801    PHOTO: 23      WEATHER: OVERCAST      TIME:  3:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0        -       -          N/A               N/A               N/A
(distance)                              N/A
L.BANK      0        -       -          N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK      N/A        N/A        N/A            TRAP #1  -
L.BANK      N/A        N/A        N/A            TRAP #2  -
                                                 TRAP #3  -
        SUBSTRATE:
    BEDROCK:    5 % (>3FT)
 SM BOULDER:   80 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          5.5  %
  LG RUBBLE:   15 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   42.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     32.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                              N/A
BANKFULL DEPTH(FT):                        N/A
ACTIVE DEPTH(FT): *LEFT*                   N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                   DIAMETER:        -   in.
10-25   ft                          N/A                   LENGTH:          -   ft.
25-50   ft                          N/A                   TRANSECT LENGTH:  0  ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
No place to set traps - too swift. Spruce along right bank has been logged. Site
possibly disturbed.
```



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/20   SITE: 8014    1/4 QUAD: SKG-B2-NW                *PRELIM CT:  L4    *
STREAM: CHILKOOT RIVER TRIB BY COX'S                              * FINAL CT:  C1.5  *
ADF&G:  115-33-0010-                                              ********************
AEROPHOTO YR:  78  FLT:  19   ROLL:   1    PHOTO: 020
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 24      WATER:   6.0 C.        AIR:  10.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 25      WEATHER: OVERCAST      TIME: 10:30

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: Y
        LANDFORM CANOPY INCISION        PA#1                PA#2                PA#3
                         (meters)
R.BANK      53      D2      <1          80-100%              -                   -
(distance)                               200'
L.BANK      51      C3      <1          35-100%             50-100%      50-60%55-30%35-10
(distance)                                 9'                 45'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    200/0        -          -              TRAP #1  19 DV
L.BANK     60/85     140/24      -              TRAP #2  1  DV
                                                 TRAP #3  2  SS
        SUBSTRATE:
   BEDROCK:    0 % (>3FT)
 SM BOULDER:   0 % (10 IN TO 3 FT)   ASA:     10 %   GRADIENT:          0.3  %
  LG RUBBLE:   0 % (5 TO 10 IN)      ARA:     40 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   5 % (2.5 TO 5 IN)     GLIDE:   -  %   BANK CONTROL:    ALLUVIUM
 CRS GRAVEL:  15 % (1 TO 2.5 IN)     RIFFLE:  -  %   BANKFULL WIDTH:   30.9 ft.
FINE GRAVEL:  15 % (4 MM TO 1 IN)    POOLS:   25 %   ACTIVE WIDTH:     26.0 ft.
   VFG/SAND:  50 % (<4 MM)                           AVG. POOL DEPTH:   1.6 ft.
  SILT/MUCK:  15 %                                   # POOLS:           9

                                  STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):        41.9 39.6 29.1 23.1 17.1 11.5  7.5  6.0  1.0
BANKFULL DEPTH(FT): 4.50 4.82 5.25 5.22 5.28 6.30 4.95 4.75 3.65
ACTIVE DEPTH(FT): *LEFT* N/A  0.40 0.40 0.45 1.45 0.00  N/A *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                      NO L.O.D.                 DIAMETER:          24 in.
10-25   ft                       B-2                      LENGTH:            25 ft.
25-50   ft                       A-5       B-3            TRANSECT LENGTH:220 ft.
50-100  ft                       A-1       B-1
>100    ft                      NO L.O.D.

COMMENTS:
Good riffle area at lower end of the sample. Debris is saw logs and slash. There
were thousands of newly emerged Cono and Dolly Varden fry.
```



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/20   SITE: 8015    1/4 QUAD: SKG-B2-NW                *PRELIM CT:  A3    *
STREAM: CHILKOOT RIVER TRIB                                       * FINAL CT:  A3    *
ADF&G:  115-33-0010-                                              ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 26      WATER:   4.0 C.        AIR:
DOWNSTREAM  ROLL: -      PHOTO: -       WEATHER: OVERCAST      TIME: 10:30

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0        -       -          N/A               N/A               N/A
(distance)                              N/A
L.BANK      0        -       -          N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK      N/A        N/A        N/A            TRAP #1  -
L.BANK      N/A        N/A        N/A            TRAP #2  -
                                                 TRAP #3  -
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:   30 % (10 IN TO 3 FT)   ASA:      5 %   GRADIENT:          7.0  %
  LG RUBBLE:   50 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:   20 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:    0.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:      0.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                                  STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                  DIAMETER:        -   in.
10-25   ft                          N/A                  LENGTH:          -   ft.
25-50   ft                          N/A                  TRANSECT LENGTH:  0  ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
No place to set traps.
```

CHANNEL TYPE VERIFICATION CARD

DATE: 87/05/05 SITE: 6001 1/4 QUAD: SKG-82-SE
STREAM: FEREBEE RIVER TRIB
ADF&G: 115-33-10600
AEROPHOTO YR: 78 FLT: 1 ROLL: 27 PHOTO: 006
CAMERA PHOTO: PRINTS
UPSTREAM ROLL: 601 PHOTO: 01 WATER: 3.0 C. AIR:
DOWNSTREAM ROLL: 601 PHOTO: 02 WEATHER: - TIME: 9:00

****
*PRELIM CT: B1.5 *
* FINAL CT: B1.5 *
****

ADJACENT LANDFORM & VEGETATION: SITE DISTURBED: N

	LANDFORM	CANOPY	INCISION (meters)	PA#1	PA#2	PA#3
R.BANK	53	B1	1-2	N/A	N/A	N/A
(distance)				N/A		
L.BANK	53	B1	1-2	N/A	N/A	N/A
(distance)				N/A		

SIDE SLOPE LENGTH AND ANGLE:

	ft/%	ft/%	ft/%
R.BANK	20/0	80/50	-
L.BANK	100/0	-	-

TRAP RESULTS:(30 min.)

TRAP #1 0
TRAP #2 0
TRAP #3 0

SUBSTRATE:

BEDROCK:	0 % (>3FT)				
SM BOULDER:	0 % (10 IN TO 3 FT)	ASA:	0 %	GRADIENT:	0.5 %
LG RUBBLE:	0 % (5 TO 10 IN)	ARA:	0 %	STREAM PATTERN:	SINGLE
SM RUBBLE:	0 % (2.5 TO 5 IN)	GLIDE:	- %	BANK CONTROL:	ALLUVIUM
CRS GRAVEL:	40 % (1 TO 2.5 IN)	RIFFLE:	- %	BANKFULL WIDTH:	12.0 ft.
FINE GRAVEL:	30 % (4 MM TO 1 IN)	POOLS:	0 %	ACTIVE WIDTH:	12.0 ft.
VFG/SAND:	20 % (<4 MM)			AVG. POOL DEPTH:	0.0 ft.
SILT/MUCK:	10 %			# POOLS:	0

STREAM GEOMETRY

BF *LB* **** **** **** **** **** *LB* *BF*

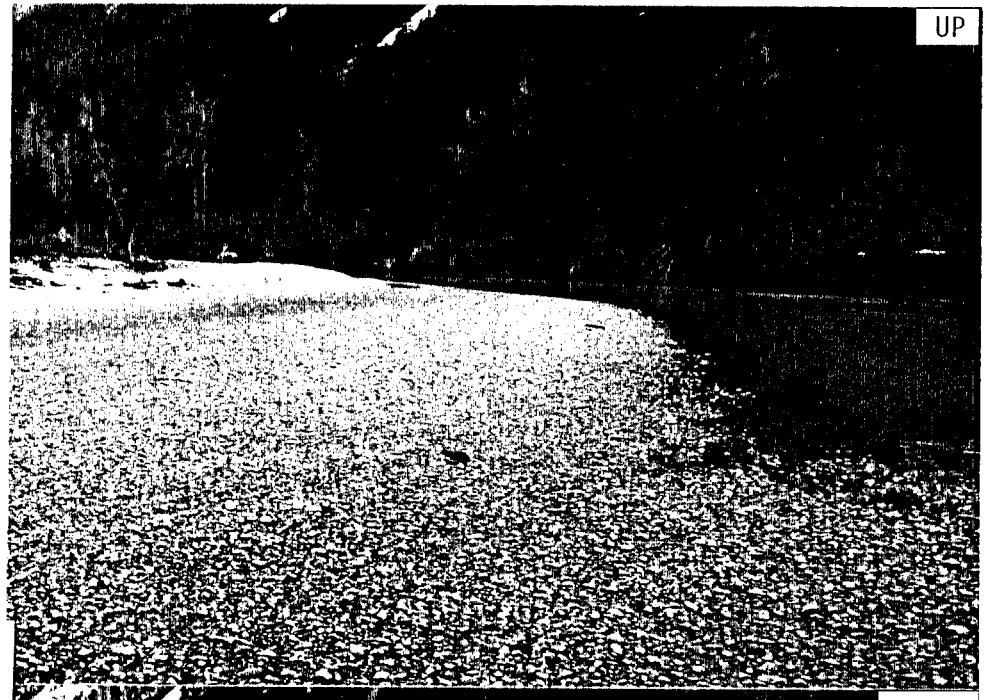
DISTANCE(FT):	N/A	
BANKFULL WIDTH(FT):	N/A	
ACTIVE DEPTH(FT): *LEFT*	N/A	*RIGHT*

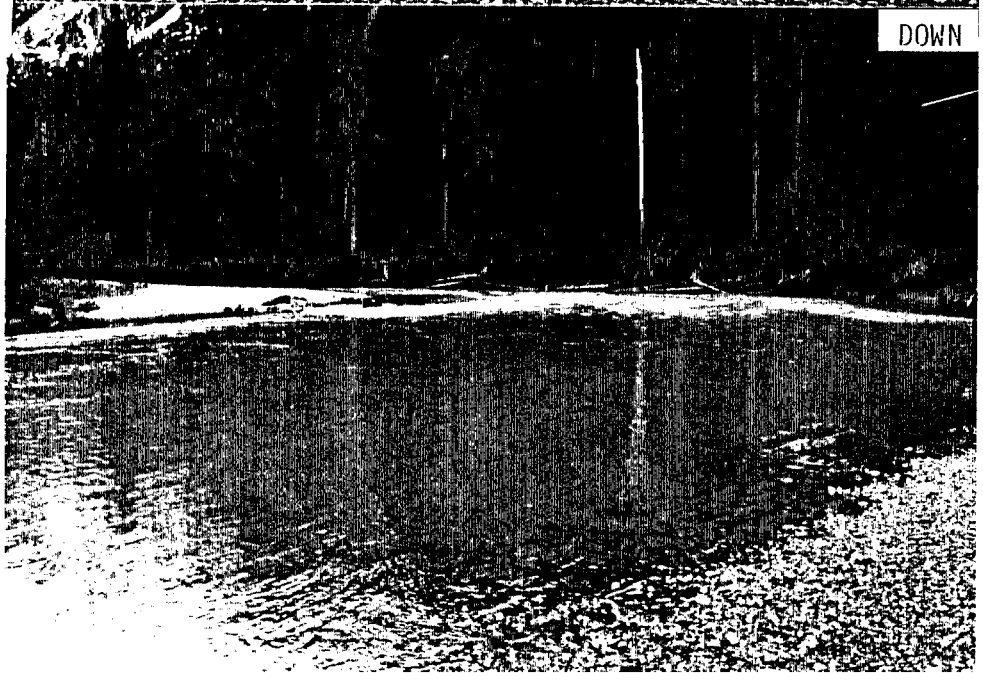
L.O.D. TALLEY (DIAMETER)

(LENGTH)	4 - 6"	6 - 12"	12 - 24"	24 - 36"	>36
< 10 ft	0-14				
10-25 ft			NO L.O.D.		
25-50 ft			NO L.O.D.		
50-100 ft			NO L.O.D.		
>100 ft			NO L.O.D.		

AVERAGE KEY PIECE
DIAMETER: - in.
LENGTH: - ft.
TRANSECT LENGTH:300 ft.

COMMENTS:
Moss present on bottom. Cut banks. Photos 601-3,4 were taken farther downstream.



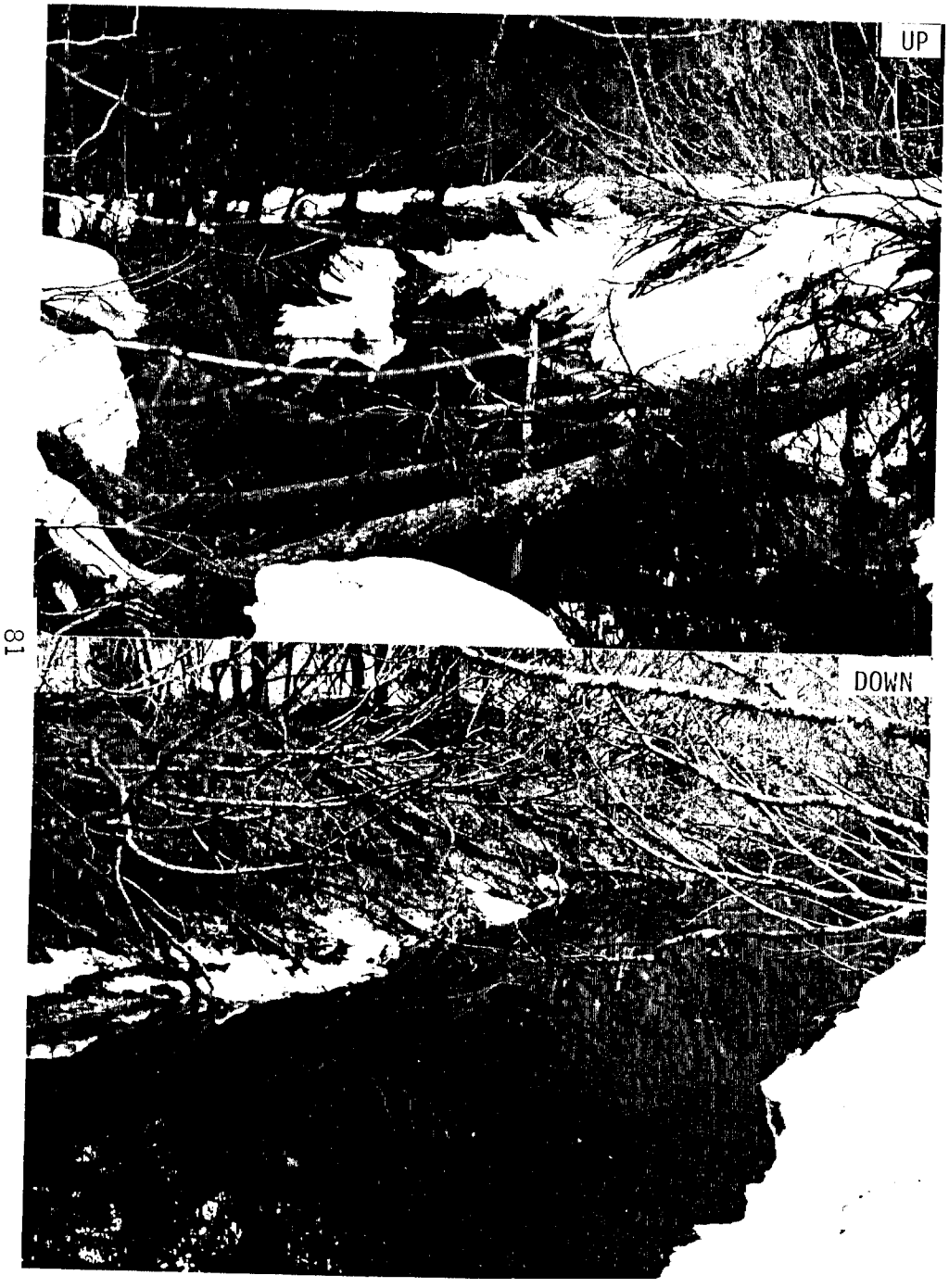


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 8 /05/05   SITE: 6002    1/4 QUAD: SKC-62-SE                *PRELIM CT:  04    *
STREAM: FEREBEE RIVER                                             * FINAL CT:  04    *
ADF&G:  115-33-10652                                              ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 27     PHOTO: 009
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 601    PHOTO: 06     WATER:   6.0 C.        AIR:
DOWNSTREAM  ROLL: 601    PHOTO: 05     WEATHER: -             TIME: 12:09

  ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION          PA#1              PA#2              PA#3
                          (meters)
R.BANK     53      D2      1-2            N/A               N/A               N/A
(distance)                                N/A
L.BANK     53      D2      1-2            N/A               N/A               N/A
(distance)                                N/A

  SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK   100/0       -          -                 TRAP #1  -
L.BANK   100/0       -          -                 TRAP #2  -
                                                  TRAP #3  -

      SUBSTRATE:
   BEDROCK:    0 % (>3FT)
 SM BOULDER:   0 % (10 IN TO 3 FT)   ASA:      80 %   GRADIENT:          1.0  %
  LG RUBBLE:   0 % (5 TO 10 IN)      ARA:      20 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   5 % (2.5 TO 5 IN)     GLIDE:   -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:  75 % (1 TO 2.5 IN)     RIFFLE:  -   %   BANKFULL WIDTH:   96.0 ft.
FINE GRAVEL:  10 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     63.0 ft.
   VFG/SAND:  10 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   0 %                                    # POOLS:           0

                          STREAM    GEOMETRY
                  *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                    L.O.D.  VALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                          B-4                    DIAMETER:        -   in.
10-25  ft                         C-4                    LENGTH:          -   ft.
25-50  ft                         A-5                    TRANSECT LENGTH(400) ft.
50-100 ft                        NO L.O.D.
>100   ft                        NO L.O.D.

COMMENTS:
Floodplain present.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/18   SITE: 8009    1/4 QUAD: SKG-B2-SE                *PRELIM CT:  B1.5  *
STREAM: FEREBEE RIVER TRIB                                        * FINAL CT:  B2    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 27    ROLL: 1      PHOTO: 007
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 20     WATER:   4.5 C.        AIR:  14.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 21     WEATHER: OVERCAST      TIME:  9:00

   ADJACENT LANDFORM & VEGETATION:                  SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     53      C2     1-2           351        hemlock 1.5 M.high          -
(distance)                               11'                189'
L.BANK     53      C2     1-2           351                330                352
(distance)                               13'                130'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK    11/40    189/0       -                 TRAP #1  0
L.BANK    13/22    130/0     57/120              TRAP #2  0
                                                 TRAP #3  0

        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      15 %   GRADIENT:          2.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      10 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)     GLIDE:   60  %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   20 % (1 TO 2.5 IN)     RIFFLE:  30  %   BANKFULL WIDTH:   15.0 ft.
FINE GRAVEL:   50 % (4 MM TO 1 IN)    POOLS:   10  %   ACTIVE WIDTH:     14.0 ft.
   VFG/SAND:   20 % (<4 MM)                            AVG. POOL DEPTH:   1.2 ft.
  SILT/MUCK:    0 %                                   # POOLS:           4

                                  STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):        21.0 20.4      17.8 14.8 11.8  8.8  6.4  5.8
BANKFULL DEPTH(FT): 3.23 4.70       5.10 4.80 4.90 5.60 5.50 3.64
ACTIVE DEPTH(FT): *LEFT* 0.20       0.60 0.26 0.30 1.00 0.90 *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                          NO L.O.D.              DIAMETER:        -   in.
10-25  ft   A-4  B-2     A-4        A-1                   LENGTH:          -   ft.
25-50  ft                          NO L.O.D.              TRANSECT LENGTH:150  ft.
50-100 ft                 A-1        A-2
>100   ft                          NO L.O.D.

COMMENTS:
Classic successional spruce canopy with uniform 1.5 M. hemlock understory.
```

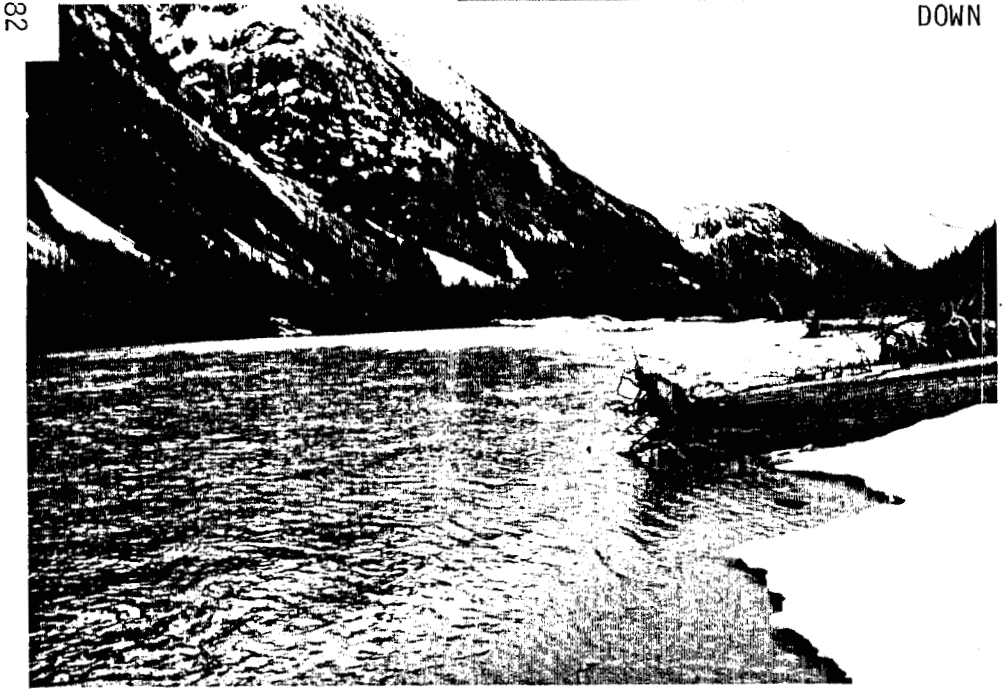


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/05   SITE: 6003    1/4 QUAD: SKG-32-SE                *PRELIM CT:  B1.5  *
STREAM: FEREBEE RIVER TRIB                                        * FINAL CT:  B1.5  *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 27     PHOTO: 013
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 601    PHOTO: 07     WATER:                  AIR:
DOWNSTREAM   ROLL: 601    PHOTO: 08     WEATHER: -              TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      53      D2      1-2         N/A               N/A               N/A
(distance)                              N/A
L.BANK      53      D2      1-2         N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/0       -          -                TRAP #1  -
L.BANK    100/0       -          -                TRAP #2  -
                                                  TRAP #3  -
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          0.5  %
  LG RUBBLE:    0 % (5 TO 10  IN)     ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5  IN)    GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5  IN)    RIFFLE: -   %   BANKFULL WIDTH:   12.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1  IN)   POOLS:    0 %   ACTIVE WIDTH:     12.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:  100 %                                   # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                          N/A                   DIAMETER:        -   in.
10-25  ft                          N/A                   LENGTH:          -   ft.
25-50  ft                          N/A                   TRANSECT LENGTH:  0  ft.
50-100 ft                          N/A
>100   ft                          N/A

COMMENTS:
Clay banks and bottom.
```

UP

DOWN

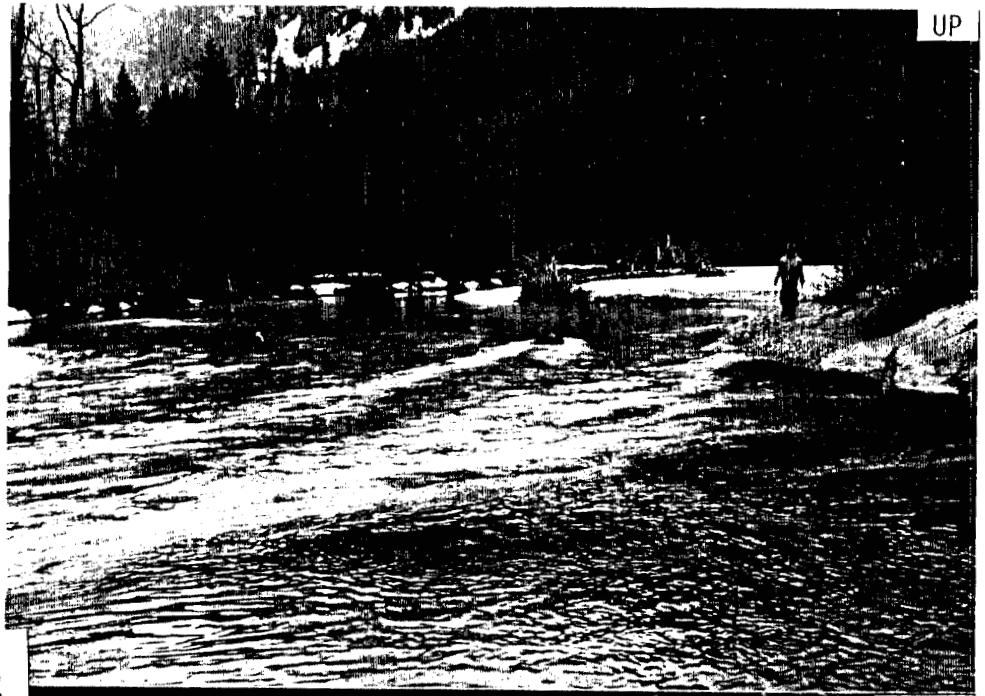


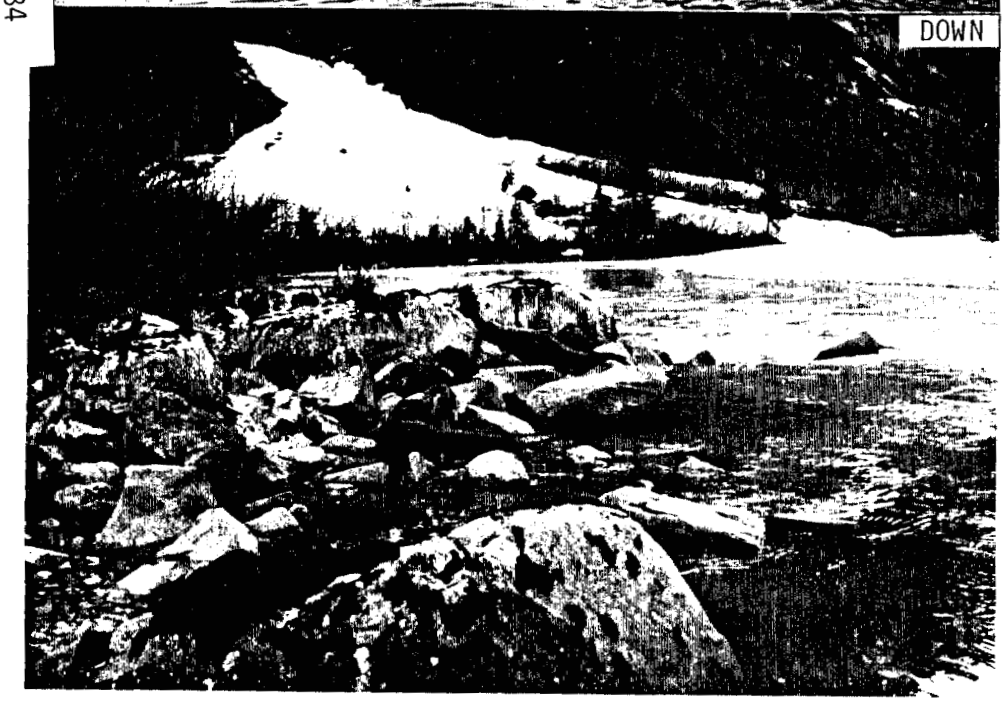
CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/05   SITE: 6004    1/4 QUAD: SKG-B2-SE                *PRELIM CT:  04    *
STREAM: FEREBEE RIVER                                             * FINAL CT:  04    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 27     PHOTO: 017
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 601    PHOTO: 18     WATER:                 AIR:
DOWNSTREAM  ROLL: 601    PHOTO: 17     WEATHER: -             TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                         (meters)
R.BANK     53      D2      2-4          N/A               N/A               N/A
(distance)                              N/A
L.BANK     53      D2      1-2          N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK   100/0        -          -                TRAP #1  -
L.BANK   100/0        -          -                TRAP #2  -
                                                  TRAP #3  -
        SUBSTRATE:
    BEDROCK:     0 % (>3FT)
 SM BOULDER:     0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          1.0  %
  LG RUBBLE:     0 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: BRAIDED
  SM RUBBLE:    80 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    10 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:  138.0 ft.
FINE GRAVEL:     5 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     63.0 ft.
   VFC/SAND:     5 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:     0 %                                   # POOLS:           0

                                  STREAM    GEOMETRY
                        *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                        L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                          N/A                    DIAMETER:        -   in.
10-25  ft                         N/A                    LENGTH:          -   ft.
25-50  ft                         N/A                    TRANSECT LENGTH:  0  ft.
50-100 ft                         N/A
>100   ft                         N/A

COMMENTS:
Substrate is getting larger. All riffle. Photo 601-19 was an extra upstream
photo.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/18   SITE: 8010     1/4 QUAD: SKG-B2-NE               *PRELIM CT:  04    *
STREAM: FEREBEE RIVER                                             * FINAL CT:  04    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 27    ROLL: 1      PHOTO: 013
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: -      PHOTO: -      WATER:   3.0 C.        AIR:  10.0 C.
DOWNSTREAM  ROLL: -      PHOTO: -      WEATHER: OVERCAST      TIME: 11:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0       -       -           N/A               N/A               N/A
(distance)                              N/A
L.BANK      0       -       -           N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK      N/A        N/A        N/A           TRAP #1  0
L.BANK      N/A        N/A        N/A           TRAP #2  0
                                                TRAP #3  2 DV
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          0.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:    0.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:      0.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                                STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                           N/A
BANKFULL DEPTH(FT):                     N/A
ACTIVE DEPTH(FT): *LEFT*                N/A                 *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        N/A                     DIAMETER:        -   in.
10-25   ft                        N/A                     LENGTH:          -   ft.
25-50   ft                        N/A                     TRANSECT LENGTH:  0  ft.
50-100  ft                        N/A
>100    ft                        N/A

COMMENTS:
Traps were set around a logjam.
```



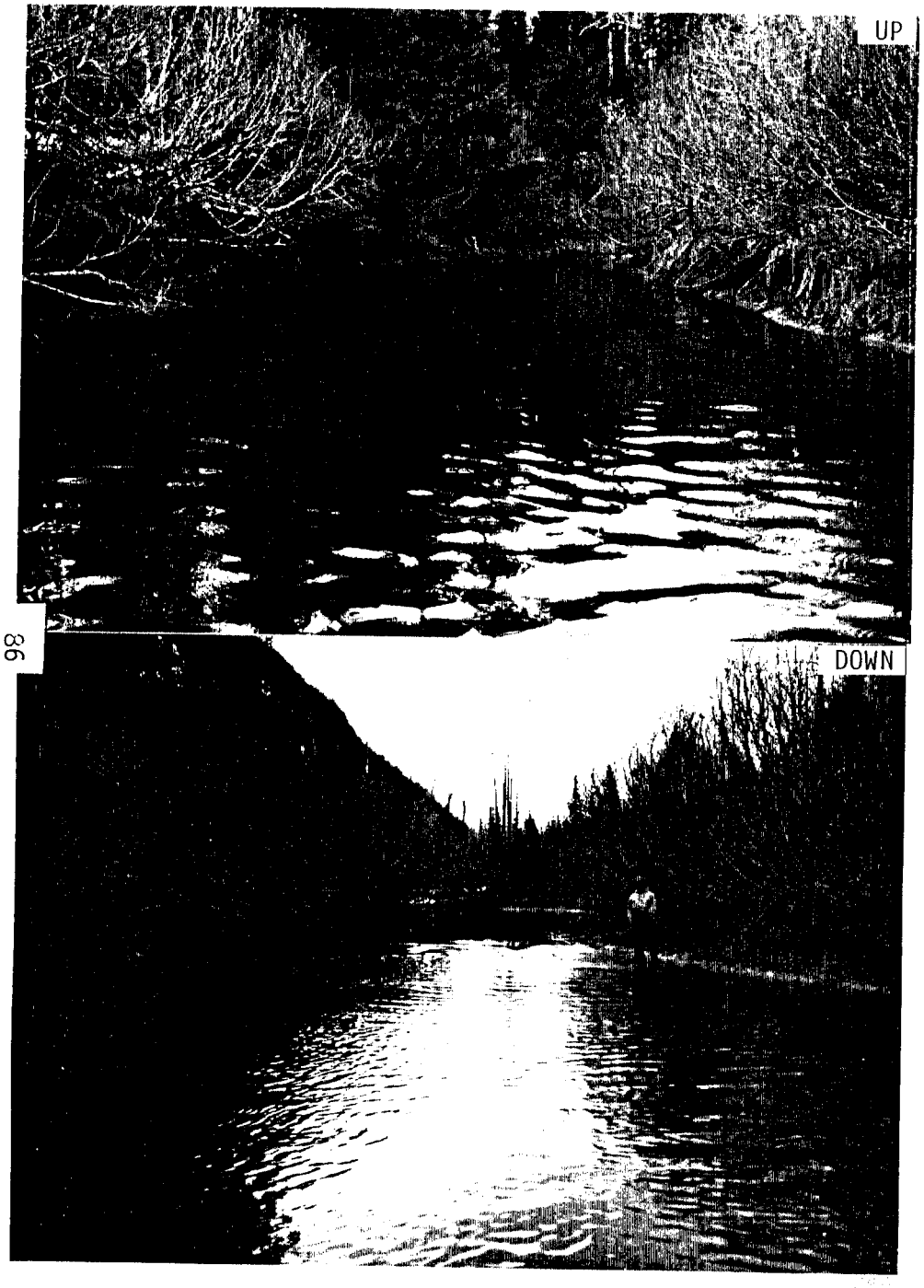


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/05   SITE: 6005    1/4 QUAD: SKG-B2-NE                *PRELIM CT:  D4    *
STREAM: FEREBEE RIVER                                             * FINAL CT:  D4    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 27     PHOTO: 014
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 601    PHOTO: 12     WATER:                    AIR:
DOWNSTREAM   ROLL: 601    PHOTO: 13     WEATHER: -                TIME:

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                PA#2                PA#3
                        (meters)
R.BANK      53      D2      1-2         N/A                 N/A                 N/A
(distance)                              N/A
L.BANK      53      D2      1-2         N/A                 N/A                 N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(3) min.)
          ft/%       ft/%       ft/%
R.BANK    100/0       -          -                 TRAP #1  0
L.BANK    100/0       -          -                 TRAP #2  3 SS,1 DV
                                                   TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   45 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:  100.0 ft.
FINE GRAVEL:   30 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     63.0 ft.
   VFG/SAND:   25 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                  # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                              N/A
BANKFULL DEPTH(FT):                        N/A
ACTIVE DEPTH(FT): *LEFT*                   N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                   DIAMETER:        -   in.
10-25   ft                          N/A                   LENGTH:          -   ft.
25-50   ft                          N/A                   TRANSECT LENGTH:  0  ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
-
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/16   SITE: 8011    1/4 QUAD: SKG-B2-NE                *PRELIM CT:  D4    *
STREAM: FEREBEE RIVER                                             * FINAL CT:  D4    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR:  78  FLT:  27   ROLL:   1    PHOTO: 014
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: -      PHOTO: -      WATER:   3.0 C.        AIR:  10.0 C.
DOWNSTREAM  ROLL: -      PHOTO: -      WEATHER: OVERCAST      TIME:  1:30

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0      -      -             N/A               N/A               N/A
(distance)                              N/A
L.BANK      0      -      -             N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK     N/A       N/A       N/A                TRAP #1  1 DV,2SS
L.BANK     N/A       N/A       N/A                TRAP #2  2 DV
                                                  TRAP #3  4 SS,5DV
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:   30 % (10 IN TO 3 FT)   ASA:      10 %   GRADIENT:          2.0  %
  LG RUBBLE:   30 % (5 TO 10 IN)      ARA:       5 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   20 % (2.5 TO 5 IN)     GLIDE:  -   %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    5 % (1 TO 2.5 IN)     RIFFLE: -   %    BANKFULL WIDTH:    0.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %    ACTIVE WIDTH:      0.0 ft.
   VFG/SAND:    0 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    5 %                                    # POOLS:           0

                                  STREAM    GEOMETRY
                        *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                        L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                   DIAMETER:        -   in.
10-25   ft                          N/A                   LENGTH:          -   ft.
25-50   ft                          N/A                   TRANSECT LENGTH:400  ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
Good ASA present in D4 in shallower water. Water was 10.5 C. in side channel.
Three seine hauls in mainstem caught 2 Coho and 1 Dolly Varden fry.
```

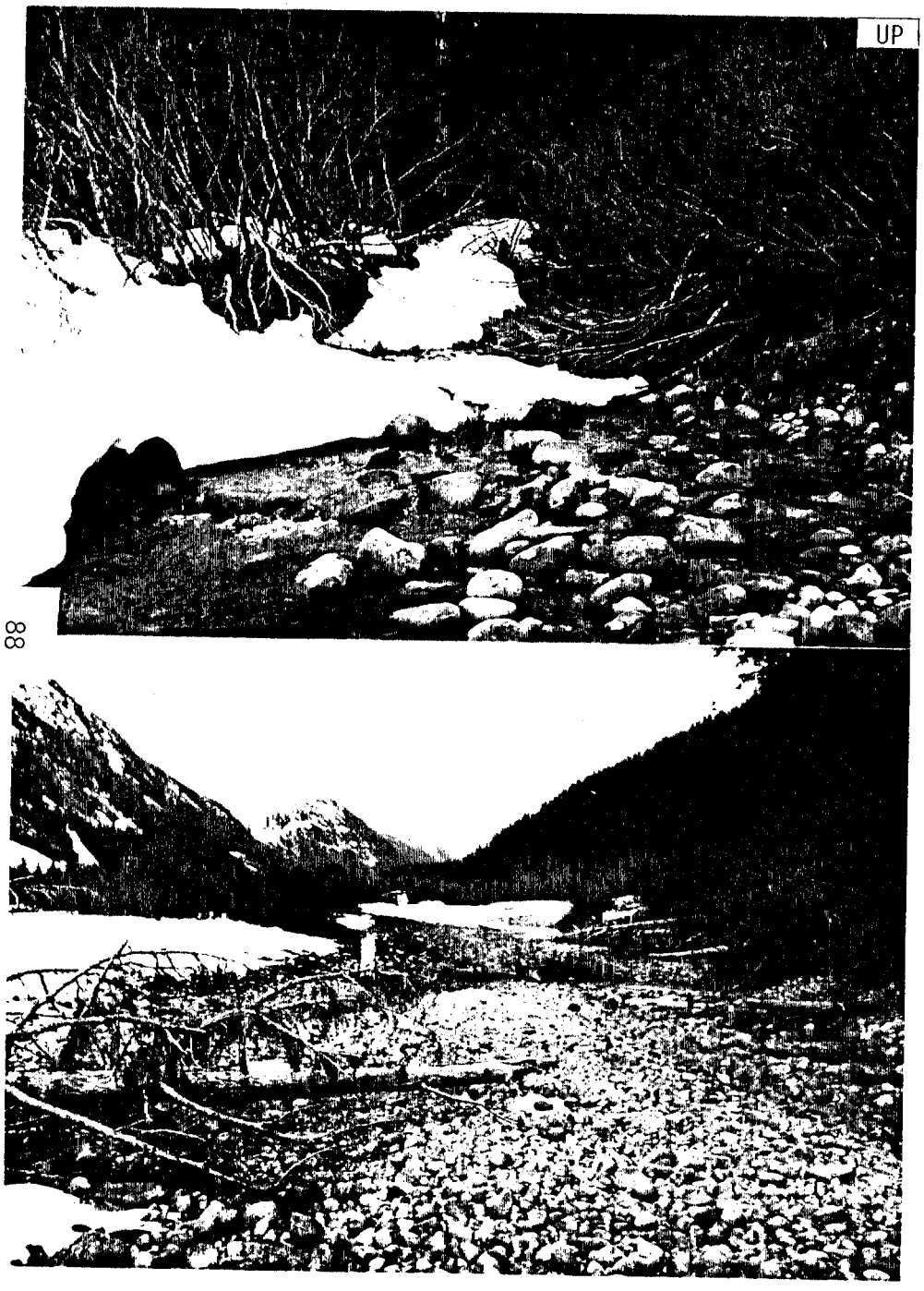


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/05   SITE: 6006    1/4 QUAD: SKG-B2-NE                *PRELIM CT:  L5    *
STREAM: FEREBEE RIVER TRIB                                        * FINAL CT:  L5    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 27     PHOTO: 014
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 601    PHOTO: 11     WATER:   4.0 C.        AIR:
DOWNSTREAM  ROLL: 601    PHOTO: 10     WEATHER: -             TIME:  1:39

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     53      D2      1-2          N/A               N/A               N/A
(distance)                              N/A
L.BANK     53      D2      1-2          N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK   100/0        -          -                TRAP #1  0
L.BANK   100/0        -          -                TRAP #2  0
                                                  TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      5 %   GRADIENT:          0.5  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     95 %   STREAM PATTERN: SINGLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   30.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     30.0 ft.
   VFG/SAND:   80 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   20 %                                   # POOLS:           0

                                STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                          N/A                    DIAMETER:        -   in.
10-25  ft                         N/A                    LENGTH:          -   ft.
25-50  ft                         N/A                    TRANSECT LENGTH:300  ft.
50-100 ft                         N/A
>100   ft                         N/A

COMMENTS:
Mud banks.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/18   SITE: 8012    1/4 QUAD: SKG-B2-NE                *PRELIM CT:  D4    *
STREAM: FEREBEE RIVER SIDE CHANNEL                                * FINAL CT:  D4    *
ADF&G:  115-33-10650                                              ********************
AEROPHOTO YR: 78   FLT: 27    ROLL: 1      PHOTO: 017
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: -      PHOTO: -      WATER:   3.0 C.        AIR:   8.0 C.
DOWNSTREAM  ROLL: -      PHOTO: -      WEATHER: OVERCAST      TIME:  3:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0       -       -           N/A               N/A               N/A
(distance)                              N/A               N/A               N/A
L.BANK      0       -       -           N/A               N/A               N/A
(distance)                              N/A               N/A               N/A

   SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK      N/A       N/A       N/A              TRAP #1  0
L.BANK      N/A       N/A       N/A              TRAP #2  2 DV
                                                 TRAP #3  7 DV
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          0.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:    0.0 ft.
FINE GRAVEL:    0 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:      0.0 ft.
   VFG/SAND:    0 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                                  STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                              N/A
BANKFULL DEPTH(FT):                        N/A
ACTIVE DEPTH(FT): *LEFT*                   N/A                  *RIGHT*

                     L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                        NO L.O.D.                DIAMETER:        -   in.
10-25  ft                       NO L.O.D.                LENGTH:          -   ft.
25-50  ft                       NO L.O.D.                TRANSECT LENGTH:  0 ft.
50-100 ft                       NO L.O.D.
>100   ft                       NO L.O.D.

COMMENTS:
Traps were set in a side channel off the D4.
```

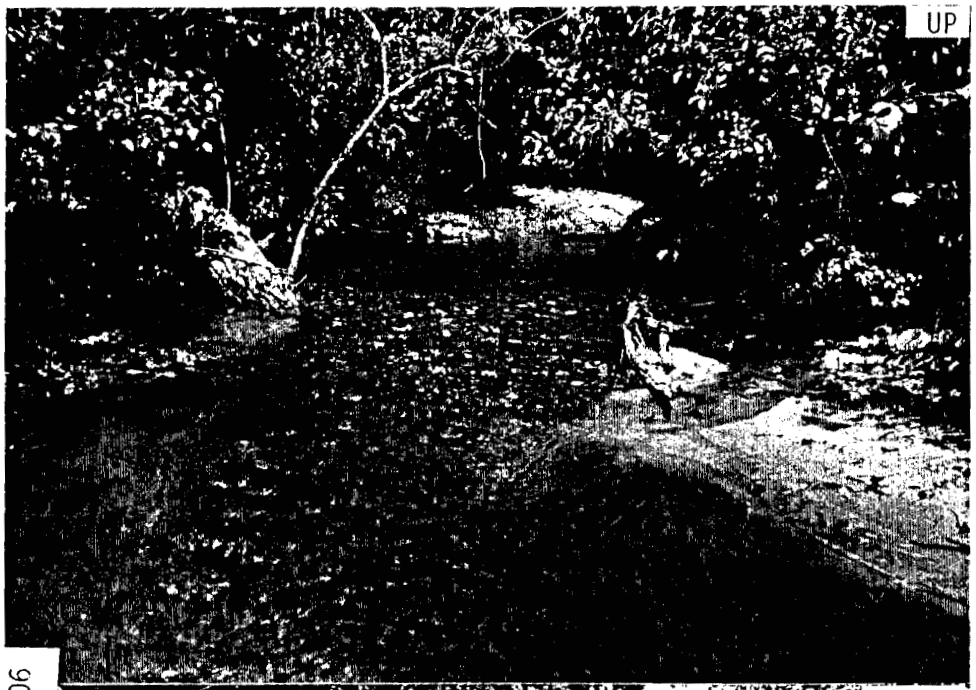


CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 87/05/05   SITE: 6007    1/4 QUAD: SKG-B2-NE                *PRELIM CT:  02    *
STREAM: FEREBEE RIVER TRIB                                        * FINAL CT:  02    *
ADF&G:  115-33-10650-                                             ********************
AEROPHOTO YR: 78   FLT: 1     ROLL: 27     PHOTO: 17
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 601    PHOTO: 20     WATER:   3.0 C.        AIR:
DOWNSTREAM  ROLL: -      PHOTO: -      WEATHER: -             TIME:  2:58

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      52      C9      1-2         N/A               N/A               N/A
(distance)                              N/A
L.BANK      52      C9      1-2         N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK    100/0       -          -                TRAP #1  -
L.BANK    100/0       -          -                TRAP #2  -
                                                  TRAP #3  -
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          6.0  %
  LG RUBBLE:   30 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   20 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:    ALLUVIUM
 CRS GRAVEL:   10 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:    6.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:      6.0 ft.
   VFG/SAND:   20 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                  # POOLS:           0

                                STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                   DIAMETER:        -   in.
10-25   ft                          N/A                   LENGTH:          -   ft.
25-50   ft                          N/A                   TRANSECT LENGTH:300 ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
Photo 601-21 taken of a side channel along the mainstem D5. Photo 601-22 taken
looking across the D5.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                          ********************
DATE: 88/06/20   SITE: 8015    1/4 QUAD: SKG-C1-SW        *PRELIM CT:  -     *
STREAM: SAWMILL CREEK, TAIYA RIVER                        * FINAL CT:  B1    *
ADF&G:  115-34-10230-                                     ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 27     WATER:   8.5 C.        AIR:  11.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 28     WEATHER: OVERCAST      TIME: 12:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0       -      -            N/A               N/A               N/A
(distance)                              N/A
L.BANK      0       -      -            N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK     N/A        N/A        N/A             TRAP #1  5 SS
L.BANK     N/A        N/A        N/A             TRAP #2  6 SS, 1 DV
                                                 TRAP #3  8 SS,12 DV

        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     10 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     60 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   40 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   12.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:   10 %   ACTIVE WIDTH:     10.0 ft.
   VFG/SAND:   20 % (<4 MM)                           AVG. POOL DEPTH:  0.0 ft.
  SILT/MUCK:   10 %                                   # POOLS:          0

                          STREAM    GEOMETRY
                  *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                 L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        N/A                     DIAMETER:        -   in.
10-25   ft                        N/A                     LENGTH:          -   ft.
25-50   ft                        N/A                     TRANSECT LENGTH:175 ft.
50-100  ft                        N/A
>100    ft                        N/A

COMMENTS:
Brown algae growth heavy in places. Trail/road goes through good gravel area
with high ASA.
```



CHANNEL TYPE VERIFICATION CARD

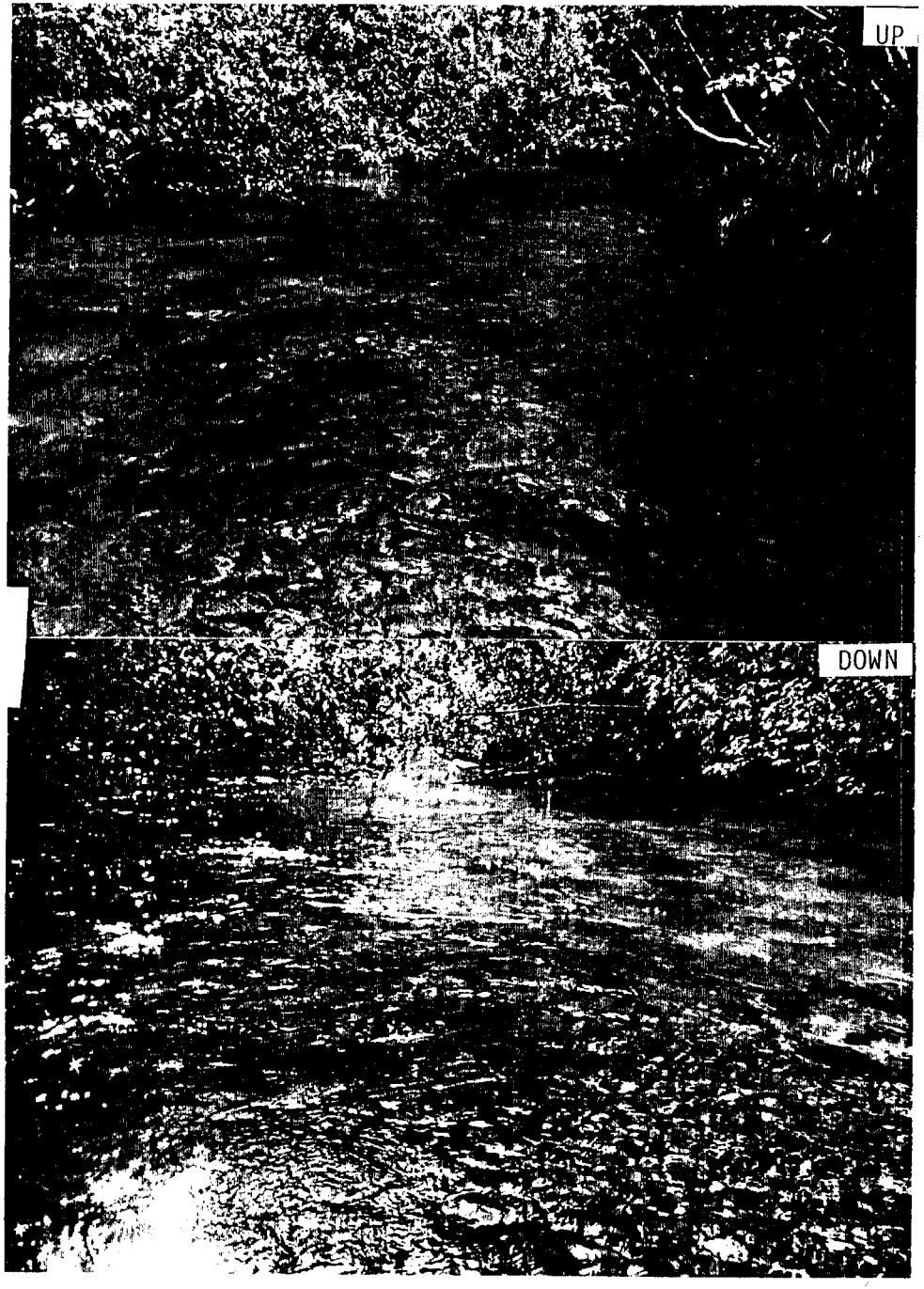
```
                                                                  ********************
DATE: 88/06/20   SITE: 8017    1/4 QUAD: SKG-C1-SW                *PRELIM CT:  -     *
STREAM: TAIYA RIVER TRIB                                          * FINAL CT:  81.6  *
ADF&G:  115-34-10230-                                             ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 29     WATER:   6.0 C.        AIR:  14.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 30     WEATHER: SUNNY         TIME:  1:30

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0      -      -             N/A               N/A               N/A
(distance)                              N/A
L.BANK      0      -      -             N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK     N/A        N/A        N/A             TRAP #1  0
L.BANK     N/A        N/A        N/A             TRAP #2  2 SS
                                                 TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      10 %   GRADIENT:          1.0  %
  LG RUBBLE:   10 % (5 TO 10 IN)      ARA:      60 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:   35 % (2.5 TO 5 IN)     GLIDE:  -   %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   20 % (1 TO 2.5 IN)     RIFFLE: -   %    BANKFULL WIDTH:   30.0 ft.
FINE GRAVEL:   15 % (4 MM TO 1 IN)    POOLS:    0 %    ACTIVE WIDTH:     15.0 ft.
   VFG/SAND:   10 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   10 %                                    # POOLS:           0

                              STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                          N/A
BANKFULL DEPTH(FT):                    N/A
ACTIVE DEPTH(FT): *LEFT*               N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH) , 4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        N/A                     DIAMETER:        -   in.
10-25   ft                        N/A                     LENGTH:          -   ft.
25-50   ft                        N/A                     TRANSECT LENGTH:150  ft.
50-100  ft                        N/A
>100    ft                        N/A

COMMENTS:
Good rearing area - limited spawning area. Numerous coho and dolly varden
swim-up fry were seen but too small for traps.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/20   SITE: 8018    1/4 QUAD: SKG-B1-NW                *PRELIM CT:  -     *
STREAM: EAST FORK, SKAGWAY RIVER                                  * FINAL CT:  D3    *
ADF&G:  115-34-10310                                              ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 31      WATER:   6.0 C.        AIR:  12.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 32      WEATHER: CLEAR         TIME:  3:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION          PA#1              PA#2              PA#3
                        (meters)
R.BANK      0       -       -             N/A               N/A               N/A
(distance)                                N/A
L.BANK      0       -       -             N/A               N/A               N/A
(distance)                                N/A

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK      N/A        N/A        N/A            TRAP #1  1 DV
L.BANK      N/A        N/A        N/A            TRAP #2  1 DV
                                                 TRAP #3  0

        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:   15 % (10 IN TO 3 FT)   ASA:      15 %   GRADIENT:          4.0  %
  LG RUBBLE:   35 % (5 TO 10 IN)      ARA:      15 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   30 % (2.5 TO 5 IN)     GLIDE:  -   %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   10 % (1 TO 2.5 IN)     RIFFLE: -   %    BANKFULL WIDTH:   25.0 ft.
FINE GRAVEL:    5 % (4 MM TO 1 IN)    POOLS:    0 %    ACTIVE WIDTH:     20.0 ft.
   VFG/SAND:    5 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                    # POOLS:           0

                                STREAM    GEOMETRY
                    *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                   DIAMETER:        -   in.
10-25   ft                          N/A                   LENGTH:          -   ft.
25-50   ft                          N/A                   TRANSECT LENGTH:  0  ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
This channel paralleled the main D3 channel.
```

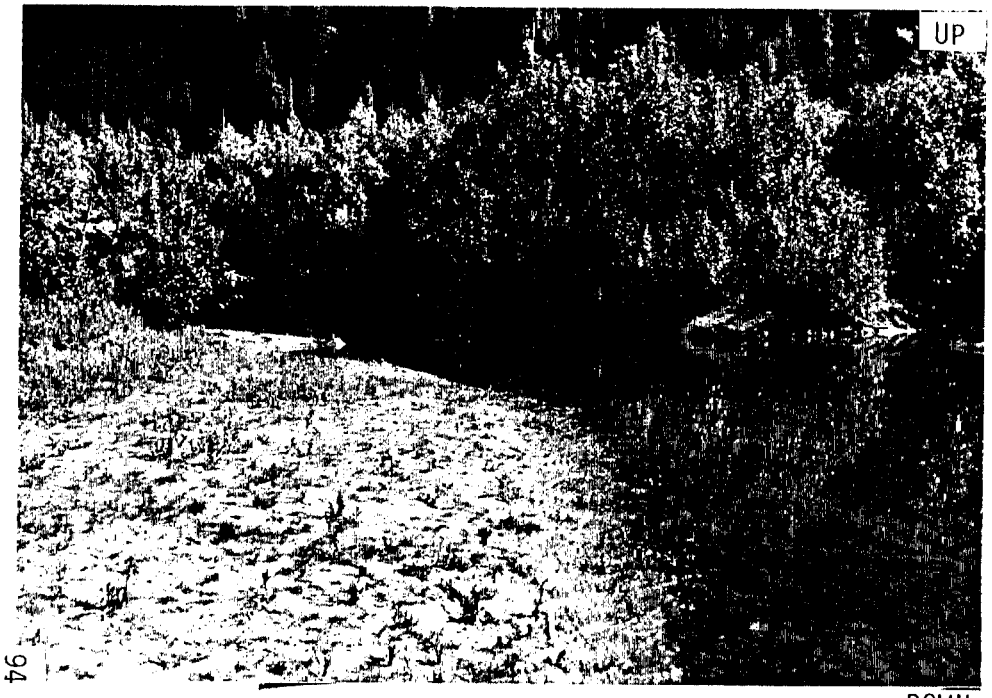
CHANNEL TYPE VERIFICATION CARD

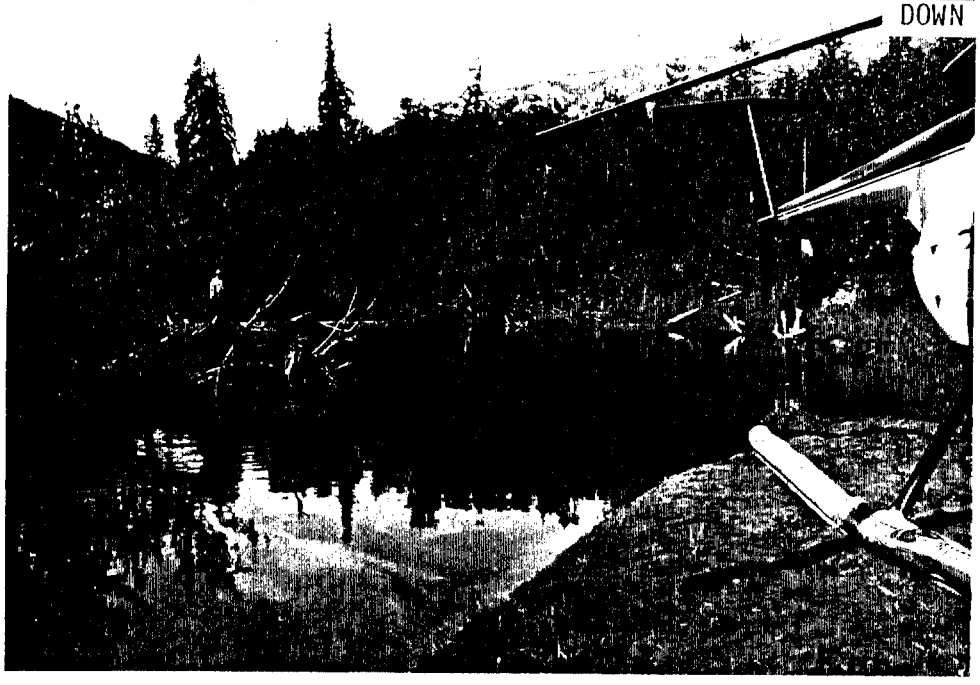
```
                                                                  ********************
DATE: 88/06/20   SITE: 7008    1/4 QUAD: SKG-31-NW                *PRELIM CT:  -     *
STREAM: EAST FORK, SKAGWAY RIVER                                  * FINAL CT:  D3    *
ADF&G:  115-34-10310-                                             ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 701    PHOTO: 18     WATER:   6.0 C.        AIR:  14.0 C.
DOWNSTREAM  ROLL: 701    PHOTO: 19     WEATHER: CLEAR         TIME:  3:00

   ADJACENT LANDFORM & VEGETATION:                          SITE DISTURBED: N
        LANDFORM CANOPY INCISION          PA#1                 PA#2                 PA#3
                        (meters)
R.BANK     64      D2     <1     oak fern/pyrola              N/A                  N/A
(distance)                                 200'
L.BANK     64      D2     <1              N/A                  N/A                  N/A
(distance)                                 N/A

   SIDE SLOPE LENGTH AND ANGLE:                          TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK     N/A        N/A        N/A                     TRAP #1  0
L.BANK     N/A        N/A        N/A                     TRAP #2  0
                                                         TRAP #3  0
        SUBSTRATE:
    BEDROCK:     5 % (>3FT)
 SM BOULDER:    10 % (10 IN TO 3 FT)   ASA:      0 %   GRADIENT:          4.0  %
  LG RUBBLE:    20 % (5 TO 10 IN)      ARA:      0 %   STREAM PATTERN: BRAIDED
  SM RUBBLE:    30 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:    MIXED
 CRS GRAVEL:    20 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:    0.0 ft.
FINE GRAVEL:     5 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     80.0 ft.
   VFG/SAND:    10 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:     0 %                                  # POOLS:           0

                                  STREAM    GEOMETRY
                      *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                        L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
< 10  ft                          N/A                     DIAMETER:        -   in.
10-25  ft                         N/A                     LENGTH:          -   ft.
25-50  ft                         N/A                     TRANSECT LENGTH:  0 ft.
50-100 ft                         N/A
>100   ft                         N/A

COMMENTS:
Off channel DV rearing.
```



CHANNEL TYPE VERIFICATION CARD

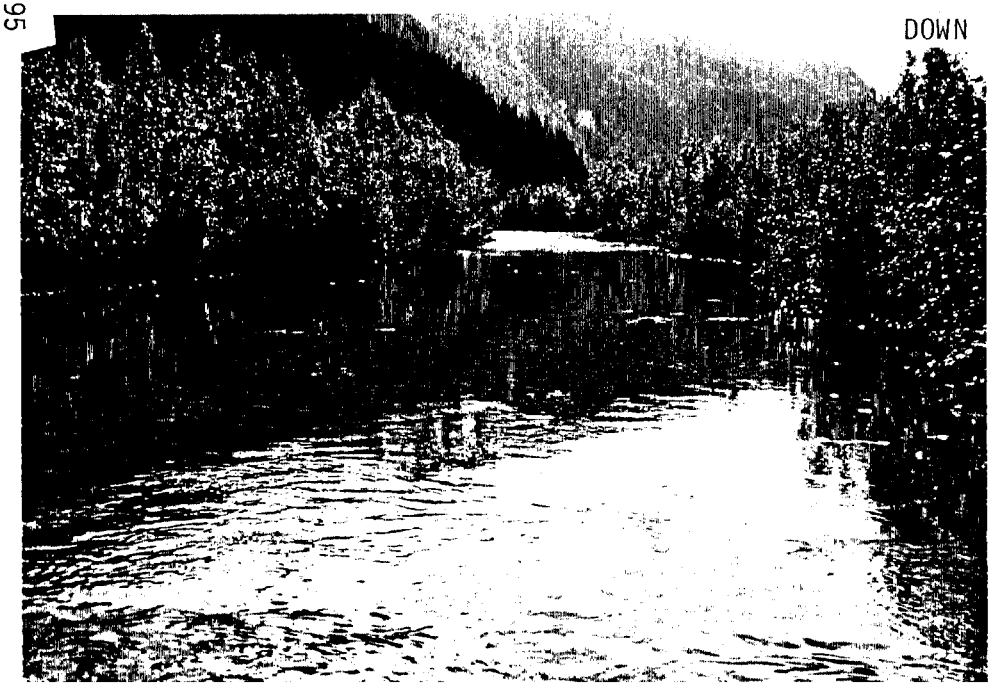
```
                                                                  ********************
DATE: 88/06/21   SITE: 7009     1/4 QUAD: SKG-A1-NW               *PRELIM CT:  -     *
STREAM: KATZEHIN RIVER TRIB                                       * FINAL CT:  C1.5  *
ADF&G: . 115-34-10700-                                            ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 33      WATER:   6.0 C.        AIR:  12.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 34      WEATHER: CLEAR         TIME:  4:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK     64      C2      <1        45-25%50-15%          -                 -
(distance)                              200'
L.BANK     64      C2      <1        85-30%81-10%          -                 -
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK    25/25    175/0        -                TRAP #1  3 SS,8 DV
L.BANK   200/0       -          -                TRAP #2  12 DV,2 SS
                                                  TRAP #3  1 DV
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:     40 %   GRADIENT:          1.0  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:     20 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)     GLIDE:   10 %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:   40 % (1 TO 2.5 IN)     RIFFLE:  80 %   BANKFULL WIDTH:   50.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:   10 %   ACTIVE WIDTH:     48.0 ft.
   VFG/SAND:   30 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                  # POOLS:           0

                                  STREAM    GEOMETRY
                      *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                              N/A
BANKFULL DEPTH(FT):                        N/A
ACTIVE DEPTH(FT): *LEFT*                   N/A                  *RIGHT*

                      L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft      A-1                  A-3                   DIAMETER:          12 in.
10-25  ft                B-1                 A-1          LENGTH:            50 ft.
25-50  ft                A-1       A-1                    TRANSECT LENGTH:200 ft.
50-100 ft                         B-1,E-2
>100   ft                         NO L.O.D.

COMMENTS:
Pink bones found on banks. Cono fry present in off channel area. Ferns are very
thick along both banks.
```





CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/21   SITE: 7010    1/4 QUAD: SKG-A1-NW                *PRELIM CT:  -     *
STREAM: KATZEHIN RIVER                                            * FINAL CT:  C1.6  *
ADF&G:  115-34-10700-                                             ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM     ROLL: 701    PHOTO: 26     WATER:   4.0 C.        AIR:  13.0 C.
DOWNSTREAM   ROLL: 701    PHOTO: 27     WEATHER: CLEAR         TIME: 11:00

   ADJACENT LANDFORM & VEGETATION:                          SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1                 PA#2              PA#3
                         (meters)
R.BANK     64      D2      1-2   20-30%25-30%65-40%          N/A               N/A
(distance)                              200'
L.BANK     64      D2      1-2   20-70%25-20%65-10%          N/A               N/A
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                    TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK     N/A        N/A        N/A                TRAP #1  0
L.BANK     N/A        N/A        N/A                TRAP #2  0
                                                    TRAP #3  0
        SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:    0 % (10 IN TO 3 FT)   ASA:      20 %   GRADIENT:          0.5  %
  LG RUBBLE:    0 % (5 TO 10 IN)      ARA:      60 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:    0 % (2.5 TO 5 IN)     GLIDE:    20 %   BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    0 % (1 TO 2.5 IN)     RIFFLE:   20 %   BANKFULL WIDTH:   50.0 ft.
FINE GRAVEL:   20 % (4 MM TO 1 IN)    POOLS:    60 %   ACTIVE WIDTH:     25.0 ft.
   VFG/SAND:   60 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:   20 %                                    # POOLS:           0

                                STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                    *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                          N/A                   DIAMETER:        -    in.
10-25   ft                          N/A                   LENGTH:          -    ft.
25-50   ft                          N/A                   TRANSECT LENGTH:100   ft.
50-100  ft                          N/A
>100    ft                          N/A

COMMENTS:
No rearing fish trapped. Extensive beaver activity.
```



CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/21   SITE: 8020    1/4 QUAD: SKG-B1-SE                *PRELIM CT:  -     *
STREAM: KATZEHIN RIVER SIDE CHANNEL                               * FINAL CT:  D4    *
ADF&G:  115-34-10700                                              ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: N/A    PHOTO: -       WATER:   6.0 C.        AIR:  11.0 C.
DOWNSTREAM  ROLL: 801    PHOTO: 36      WEATHER: CLEAR         TIME: 11:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      0       -       -           N/A               N/A               N/A
(distance)                              N/A
L.BANK      0       -       -           N/A               N/A               N/A
(distance)                              N/A

   SIDE SLOPE LENGTH AND ANGLE:                 TRAP RESULTS:(30 min.)
          ft/%      ft/%      ft/%
R.BANK      N/A       N/A       N/A             TRAP #1  0
L.BANK      N/A       N/A       N/A             TRAP #2  0
                                                TRAP #3  1 DV
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BCULDER:   10 % (10 IN TO 3 FT)   ASA:      40 %   GRADIENT:          1.0  %
  LG RUBBLE:   40 % (5 TO 10 IN)      ARA:      10 %   STREAM PATTERN: SINGLE
  SM RUBBLE:   30 % (2.5 TO 5 IN)     GLIDE:  -   %   BANK CONTROL:   MIXED
 CRS GRAVEL:   10 % (1 TO 2.5 IN)     RIFFLE: -   %   BANKFULL WIDTH:   50.0 ft.
FINE GRAVEL:    5 % (4 MM TO 1 IN)    POOLS:    0 %   ACTIVE WIDTH:     50.0 ft.
   VFG/SAND:    5 % (<4 MM)                           AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                   # POOLS:           0

                                STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                    L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10  ft                        NO L.O.D.                DIAMETER:        -   in.
10-25  ft                        NO L.O.D.                LENGTH:          -   ft.
25-50  ft                        NO L.O.D.                TRANSECT LENGTH:300  ft.
50-100 ft                        NO L.O.D.
>100   ft                        NO L.O.D.

COMMENTS:
Good ASA but lacking rearing area and cover.
```

CHANNEL TYPE VERIFICATION CARD

```
                                                                  ********************
DATE: 88/06/21   SITE: 8019   1/4 QUAD: SKG-B1-SE                 *PRELIM CT:  -     *
STREAM: KATZEHIN RIVER TRIB                                       * FINAL CT:  D4    *
ADF&G:  115-34-10700                                              ********************
AEROPHOTO YR: N/A  FLT: N/A   ROLL: N/A    PHOTO: N/A
CAMERA PHOTO: PRINTS
UPSTREAM    ROLL: 801    PHOTO: 35      WATER:   4.0 C.        AIR:  13.0 C.
DOWNSTREAM  ROLL: N/A    PHOTO: -       WEATHER: SUNNY         TIME: 10:00

   ADJACENT LANDFORM & VEGETATION:                    SITE DISTURBED: N
        LANDFORM CANOPY INCISION        PA#1              PA#2              PA#3
                        (meters)
R.BANK      53      D2      1-2         810               N/A               N/A
(distance)                              200'
L.BANK      53      D2      1-2         810               N/A               N/A
(distance)                              200'

   SIDE SLOPE LENGTH AND ANGLE:                  TRAP RESULTS:(30 min.)
          ft/%       ft/%       ft/%
R.BANK      N/A        N/A        N/A            TRAP #1  0
L.BANK      N/A        N/A        N/A            TRAP #2  0
                                                 TRAP #3  0
         SUBSTRATE:
    BEDROCK:    0 % (>3FT)
 SM BOULDER:   40 % (10 IN TO 3 FT)   ASA:      60 %   GRADIENT:          2.5  %
  LG RUBBLE:   40 % (5 TO 10 IN)      ARA:      10 %   STREAM PATTERN: MULTIPLE
  SM RUBBLE:   10 % (2.5 TO 5 IN)     GLIDE:  -   %    BANK CONTROL:   ALLUVIUM
 CRS GRAVEL:    5 % (1 TO 2.5 IN)     RIFFLE: -   %    BANKFULL WIDTH:  120.0 ft.
FINE GRAVEL:    5 % (4 MM TO 1 IN)    POOLS:    10 %   ACTIVE WIDTH:     55.0 ft.
   VFG/SAND:    0 % (<4 MM)                            AVG. POOL DEPTH:   0.0 ft.
  SILT/MUCK:    0 %                                    # POOLS:          0

                                  STREAM    GEOMETRY
                     *BF* *LB* **** **** **** **** **** *LB* *BF*
DISTANCE(FT):                                N/A
BANKFULL DEPTH(FT):                          N/A
ACTIVE DEPTH(FT): *LEFT*                     N/A                  *RIGHT*

                     L.O.D.  TALLEY (DIAMETER)
(LENGTH)   4 - 6"    6 - 12"   12 - 24"  24 - 36"  >36   AVERAGE KEY PIECE
<  10   ft                        NO L.O.D.              DIAMETER:        -   in.
10-25   ft                        NO L.O.D.              LENGTH:          -   ft.
25-50   ft                        NO L.O.D.              TRANSECT LENGTH:300  ft.
50-100  ft                        NO L.O.D.
>100    ft                        NO L.O.D.

COMMENTS:
6 DV were observed in a beaver pond along the right bank below the barrier
falls. Water temp. was 8.0 C. in beaver pond. Limited access to pond.
```

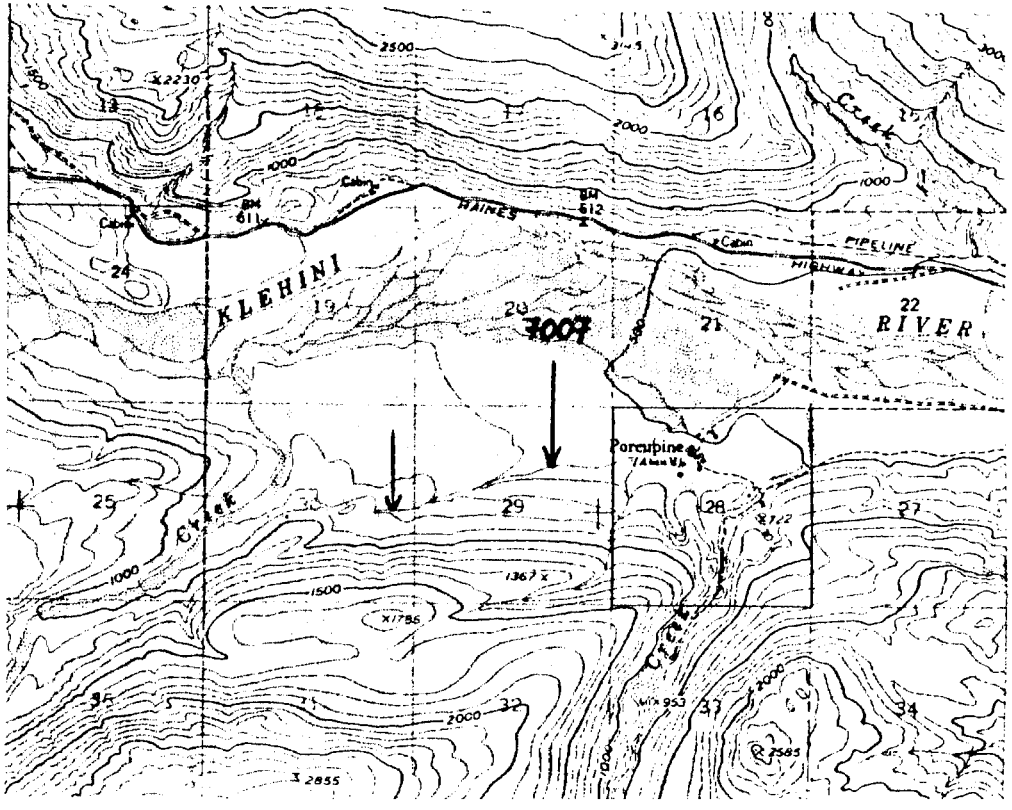
Lower end of Katzehin River

Upper end of Katzehin River

Tsirku River
(above Summit Creek)

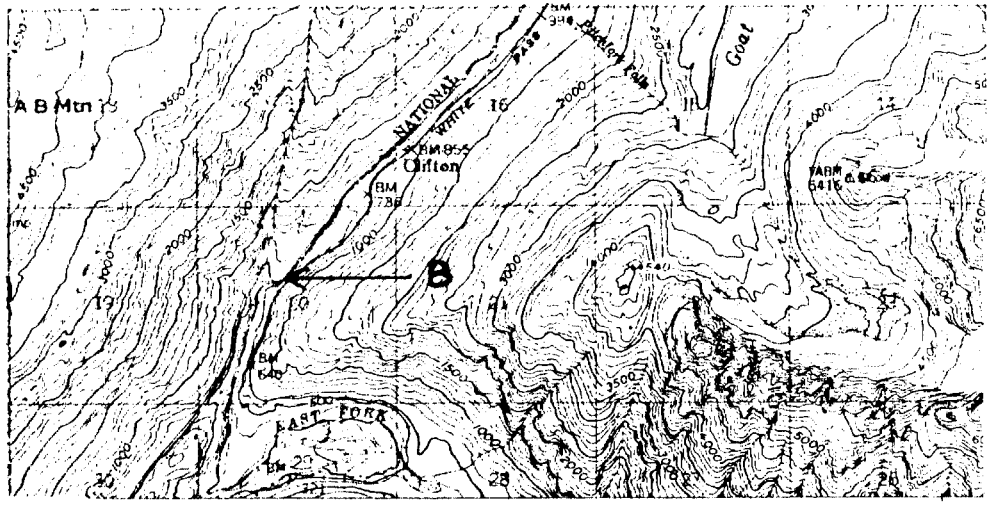
Katzehin River Delta

Taken in old clearcut above site #7007 on 115-32-10250-2017-3053.
Slash was left in stream in upper photo.
Arrow shows location of photos.



BELOW : Barrier falls on Skagway River.
See map for location.

The other photo was taken
upstream, looking up.



PART 3
CHANNEL TYPE VERIFICATION PROCEDURES

Field verification consists of sampling representative areas of a given channel type segment for the taxonomic unit differentia. The primary purpose of this sampling is to verify that channel type mapping, based on aerial photographic interpretation, is accurate. The secondary purpose of field verification is to characterize key physical features of channel type classification units by field data on representative stream segments. These data will help define class limits for channel type units.

Site selection: All verification sampling is performed using "representative" sites to characterize the physical properties of an entire channel type segment (hereafter referred to as "segment"). The term "site" refers to a short channel area which is a representative subset of the entire segment, and which is used as the sampling unit. The representative sample site is a channel area which has physical features that occur most frequently for the segment being sampled. These features, which are present or absent within the segment as a whole, have the same occurrence frequency in the site. The predominant range in physical dimensions that occurs for key features throughout the segment also occurs in a similar manner within the site. This site also demonstrates the same spatial patterns of features which occur over the entire segment. The site is not necessarily uniform in its physical characteristics. Rather, the variation in these characteristics occurs in an amount and pattern similar to that of the entire segment.

The representativeness of each site is determined before any data collection occurs. Sites which have been extensively disturbed by road construction, mining, recreation, or other developments are not to be sampled. Sites that are to be sampled which occur downstream of such developments should be noted as such on the data card. Site representativeness is first assessed by selecting "potential" sampling sites in the office prior to field work. In the field, each potential site is assessed by conducting a brief ground survey of several hundred meters of the segment to determine how well the potential site represents the segment. Only after site representativeness has been confirmed, does sampling begin.

The length of each sample site is to be the shorter distance of the following: 1) a two pool/riffle sequence; 2) 50 meters long if the channel bankfull width is less than 10 meters; or 3) 100 meters long if the channel bankfull width is greater than 10 meters. Sampling is to only occur at low flow stage, which is one-third or less of the bankfull stage.

Date:	Record as a six digit number using a year-month-day format
Site:	Record the four digit number assigned to each sampling site. (6000 series Edgington, 1987) (7000 series Edgington, 1988) (8000 series Cariello, 1988)
Quarter-Quad:	Record the name of the USGS quarter-quadrangle which covers the sample site. The name should be the same as that at the bottom right hand side of the USGS quad.

record 200 feet as the distance under PA #1

Plant Associations Used In Haines Area:

330	Sitka Spruce/Devils Club
351	Sitka Spruce/Devils Club - Alder

Vegetation Codes For Nonforest Plant Associations:

04	High Bush Cranberry
05	Red Osier Dogwood
13	Mixed Forb Grassland
15	Sedge and Sphagnum
20	Willow
21	Alpine Meadow
25	Sitka Alder
35	Salmonberry
50	Blueberry
55	Rusty Menziesia
57	Bunchberry Dogwood
65	Horsetail
67	Cow Parsnip
80	Clearcut
81	Wintergreen
85	Saxifrage
CW	Cottonwood
SP	Spruce

Site Disturbed: Record whether the site has been disturbed by management activities or catastrophic natural processes. "YES" is circled if a site has one or more of the following characteristics:

a. Any obvious tree falling (selection cutting or clearcutting) has occurred within 100 feet on at least one side of the channel either immediately adjacent to or immediately upstream of the site.

b. More than 25 percent of the upstream basin area is covered by second growth vegetation less than 30 years old.

c. Blowdown or mass erosion affects more than 30 percent of the entire segment. Upper bank sliding and debris torrents in headwater or tributary channels also qualify as site disturbance and should be noted.

If "YES" is circled, note in the COMMENTS what type of disturbance occurs.

Sideslope Length and Angle: Record the adjacent sideslope distances and angles for each stream bank, RIGHT and LEFT, along a 200 foot transect laid out perpendicular to the channel banks. Slope distances and angles are recorded along the transect at each significant change in slope. Slope distances are recorded opposite RIGHT and LEFT DISTANCE and slope angles opposite "ANGLE." Slopes may be recorded as either positive or negative, no sign will be assumed to be plus, an upward slope.

Trap Results: Minnow traps, baited with fish eggs, are set for a minimum of 30 minutes. When the site sample is completed, the fish are enumerated by species, and recorded by catch per trap.

Stream Gradient: Record the stream gradient. Gradient is measured over at least two pool/riffle (or glide/riffle) sequences.

The sampler stands at the water's edge and flags their eye height on a piece of overhanging vegetation. They then walk as far down the site as possible, keeping the flagging visible, and stand at the water's edge. The gradient is determined by sighting on the flagging with the clinometer while standing straight. This number is recorded to the nearest 0.5 percent.

Incision Depth: Record the appropriate incision depth class separately for each bank. The incision depth is the distance between the channel bottom and the top of the upper bank. In entranched channels, the streambank and the valley wall may coincide. Estimate a representative section of each bank using a range finder.

Substrate: Record the percentages of the substrate size classes opposite their respective names. Percentages should be totaled to check for possible calculation errors.

Channel Pattern: Record the relative proportion of channel patterns occurring over the entire sampling site length.

a. Single: Channels having one single channelway with a single thalweg that generally parallels the banks. Side channels or overflow areas cover less than 10 percent of the site bankfull width.

b. Multiple: Channels having more than one channelway or flow path occurring within the bankfull area which cover greater than 10 percent of the site bankfull width. These channels still have a single thalweg over most of their length, but the thalweg often has shorter meander wavelengths than the bankfull channel meander wavelength.

c. Braided: Channels having numerous flowpaths, discontinuous thalweg, and extensive bar and riffle development.

Bank Control: Choose a streambank composition which best typifies the entire segment. These are:

a. Bedrock: channels contained within rock walls or with extensive outcropping along the banks and bed (greater than 15 percent of the channel length).

b. Mixed: Channels contained within a mixture of colluvial, alluvial, and bedrock materials with consistent, but not extensive, bedrock occurrence within the banks or bed (2-15 percent of the channel length).

c. Alluvium: Channels cut into alluvium with only very infrequent bedrock occurrence in the banks and bed (less than two percent of the channel length).

Stream Geometry: Stream geometry measurements are taken along a cross-section that is located at a straight section of the site and that is representative of the widths and depths occurring within the site. Locate it away from local constrictions such as large woody debris accumulations, bedrock constrictions, or large boulder accumulations. If the above mentioned conditions cannot be located, notes to that effect should be recorded in the comment section.

Distinctive high water marks such as consistent exposures or raw bank material, significant breaks in slope on the banks and change from presence to absence of hydrophytic or disturbance vegetation are used to distinguish the mean annual high water level.

Bankfull Width and Depth. Record the bankfull width and depth. Bankfull width and depths are measured using a 100 ft. tape measure and a stadia rod.

Active Width: Active width is the width of the channel which contains water at the time of sampling.

Available Spawning Area (ASA): Record the percent of the active surface area which is ASA. This is a visual estimate that is made to the nearest 5%. Only "good" quality or better ASA is included in this estimate (do not include marginal habitat).

ASA is that area of the stream bottom used by the fish to

spawn. A hard and fast definition of gravel sizes or water velocities that go together to qualify as spawning gravel is not possible. Depending on what a stream has to offer, different gravel sizes and water velocities may be used as spawning gravels.

Size and Shape - Ideally, gravels should be well rounded and approximately 1.0 to 6.0 inches in diameter. However, the size of fish using the gravels must be considered. Small resident trout may prefer to spawn in gravels less than 1.0 inch in diameter, while large king salmon can successfully work gravels 8.0 to 10.0 inches in diameter. If the gravels are open enough, the eggs may settle into them without necessity of the fish moving the gravel.

Fine Sediment Content - Spawning gravels should contain little fine materials (less than 2.0 mm in size). When gravels with low fine content are dug into, the water passing over the site clears rapidly if it has been discolored by the digging. Gravels containing much fine material discolor the water when they are moved by a foot or shovel. In these areas, the water often takes several seconds to clear to its normal state, even in rapidly flowing areas.

Compaction - Spawning gravels are easily moved when field personnel walk on them. Gravels may be compacted due to shape (angular, flat, not rounded) or sedimentation (fines fill in interstices and form "solid" mass). Gravels that move very little when walked on and are hard to dig by hand are obviously difficult for salmonids to construct redds in, and often do not allow sufficient water to pass through the gravel interstices to permit good egg and alevin survival.

Water Flow - Intragravel water flows are only guessed at by field personnel looking at surface water flows, gravel fine content, and gravel compaction. Compacted gravels with large amounts of fines probably have very poor intragravel water flows, likewise gravels located at the bottom of a large deep pool. Conversely, areas with loose, easily worked gravel with little fine material in fast flowing sections of a stream probably have excellent intragravel water flows.

Available Rearing Area ARA:

Record the percent of the active surface area which is ARA. This is a visual estimate that is made to the nearest 5%.

Rearing area is that portion of the active stream channel that contains adequate food and cover for

sustaining juvenile salmonids. Good rearing area is most often identified by the presence of low flow velocities and significant amounts of cover such as undercut banks and large stable organic debris, and deepwater areas that juvenile salmonids can overwinter in. Proximity to riffle areas generally assumed to be food producing areas should also be considered. A shallow water, gravel bottom riffle with little instream cover (remember: depth is cover) exemplifies poor rearing habitat if it is not associated with areas that provide cover.

Record the percent of the active surface area which is pools. This is a visual estimate that is made to the nearest 5%.

A pool is a portion of the active stream channel with water deeper than that within the surrounding areas, and often with reduced current velocity, which is frequently usable by fish for resting and cover. Generally, the water surface gradient is lower (i.e. flatter) over the pool than that of the surrounding water area. The channel bottom at the downstream end of the pool is marked by a negative (i.e. upslope) gradient (Wester Division, American Fisheries Society,. 1985, Bayha and Gabreirsen, 1979).

Mean Pool Depth (P. Depth): Record the mean depth for all pools in the sample site. Use the same measurement units (i.e., feet or meters) used for STREAM GEOMETRY. Record this value to the nearest 0.1 m or 0.1 ft, as appropriate. This measurement is made by determining the mean depth for all pools in the sample site, and then determining the overall mean from these separate means.

Transect Distance: Record the length of the sample site in feet.

Average Key Piece Diameter: Record the modal diameter of the LOD key piece in inches. This size is determined by noting the diameter size class in the LOD Tally which has the greatest number of circled tally marks (see below for explanation).

Average Key Piece Length: Record the modal length of the LOD key piece in feet. This size is determined by noting the length size class in the LOD Tally which has the greatest number for circled tally marks (see below for explanation)

The LOD tally is a transect count of all large organic debris within the bankfull width of the channel. The transect is conducted over the entire site. The LOD is tallied by average diameter and total length of each piece. Minimum size tallied is 4 inches by 10 feet in

length unless it has a root wad attached. Clump association types are defined as follows:

"A": Single piece of LOD

"B": Loose association of debris, independent of the number of pieces, in which the pieces are not colinear in orientation or tightly packed and cemented together by smaller debris.

"C": Debris jam consisting of multiple pieces, generally colinear in orientation, which are usually cemented together by small debris.

"E": Any piece with a root wad attached in which the root wad is acting to anchor or stabilize the debris piece in the channel. If the root wad is not effective in stabilizing the piece, it is not considered an "E" type.

COMMENTS: Record any significant conditions or factors which may affect the data collected, or its interpretation. Observations to be noted include: high rainfall, rising water stage, extensive sedimentation or erosion, extensive blowdown or mass erosion, presence of anadromous fish, presence of possible fish passage barriers, land use conditions other than undisturbed, glacial till exposed in banks or bed, marine sediments exposed in banks or bed, beaver activity.

Code for Landforms

11 Rugged Mountain Summit Topography
12 Rounded Mountain Summits
13 Snow and Ice
31 Frequently Dissected, Deeply Incised Mountain Slopes
32 Frequently Dissected, Shallowly Incised Mountain Slopes
35 Infrequently Dissected, Smooth Mountain Slopes
36 Broken Mountain Slopes or Broken Hill Slopes
37 Mountain Slope Ravines
42 Rolling Hill Country
43 Frequently Dissected Hill Slopes
44 Infrequently Dissected, Smooth Hill Slopes
45 Karst Topograhy
51 Infrequently Dissected Foot Slopes
52 Frequently Dissected Foot Slopes and Alluvial Fans
53 Floodplains
54 Valley Bottom Gorges
61 Gently Sloping Lowlands
62 Flat Lowlands
63 Kettle and Kame Topography
64 Outburst Floodplains
65 Marine Terraces
71 Estuaries
72 Beaches and Dunes
73 Wave Cut Platforms and Rock Headlands
74 Uplifted beaches
82 Frequently Dissected Volcanic Cones
83 Infrequently Dissected Volcanic Cones
84 Small Volcanic Cones
85 Frequently Dissected Volcanic Plateaus
86 Infrequently Dissected Volcanic Plateaus
87 Frequently Dissected Volcanic Plains
88 Infrequently Dissected Volcanic Plains

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
A1 - Forested, steep mnt. slope channel	>15% Gradient <10 M Width Single channel C9, C7, C5, C1 B1, A1	Bedrock Transport Br, Bldr, Rubb	Small 30's, 40's, 10's >10 M; >100% <50 M Incision	Linear channel pattern, Very high gradient, V-notch
A2 - Forested, high grad upper valley channel	6 - 15% Gradient <10 M Width Single channel C5, C3, C1, B1	BR - Mixed Transport BR, Bldr, Rubb	Small - Moderate 30's, 40's >20 M; <100% <50 M Incision	A2 CT's associated w/ upper valley development
A3 - Forested, high gradient alluvial fan/cone channel	>6% @ Midpoint <10 M Width Single - Multiple C5, C3, C1, B1	Alluvial Transport/Storage C. Grv. - Rubb	Small - Moderate 52, 51 <2 M <2 M Incision	Minimum legnth is 200 M Poor flow containment, no side slope developmt.
A4 - Very high gradient, mountain slope cascade channel	>15% Gradient <10 M Width Single Channel	BR - Mixed Transport BR, Bldr, Rubb	Small 10, 20, 30, & 40's <10 M	Waterfalls & steep cascades very common

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
A5 - Lowland, high grad. incised muskeg channel	6 - 20% Gradient 6 - 20 M Width Single Channel C9, C5, C4	Bedrock Transport BR, Bldr, Rubb	Small - Moderate 60's, 40's, 36 6 - 20 M, >100% 6 - 20 M Incision	May appear in high elev headwaters, abrupt incision, containment excellent
A6 - High grad. shallow - moderate incision lowland, muskeg channel	6 - 15% Gradient <8 M Width Single Channel C4	BR - Mixed Transport BR, Bldr, Rubb	Small - Moderate 60's, 40's <6 M Side Slope <6 M Incision	Well contained w/ mod - shallow incision
A7 - High grad. shallow footslope channel	6 - 15% Gradient <10 M Width Single Channel C5 or better	BR - Mixed Transport Br, Bldr, Rubb	Small - Moderate 51, 52 <10 M Side Slope 1 - 10 M Incision	High grad, forested footslope channel
B1 - Small, lowland, low gradient alluvial forest channel	<2% Gradient <10 M Width Single - Multiple C3, C6, C5	Alluvial Depositional Sand - C. Grv	Small - Moderate 53, 61, 62 Short, shallow <2 M Incision	Beaver activity common on the B1 channel

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
B1.4 - Lowland non-forested low gradient channel	<2% Gradient <10 M Width Single Channel M1, M3	Alluvial Depositional Sand - C. Grv	Small - Moderate 53, 61, 62 Negligible <2 M Incision	B1.4 is a non-forested phase located in open meadows. Similar to L1 w/ sand/gravel bar develp.
B1.5 - Forested Yakutat Foreland channel	<2% Gradient <15 M Width Single Channel C1, C3 ?	Alluvial Depositional Sand - F. Grv.	Small - Moderate Yakutat Foreland Negligible <2 M Incision	Vegetation is Sitka spruce//Devils club & Sitka spruce/Devils club/ Vaccinium
B1.6 - Non-forested Yakutat Foreland	<2% Gradient <15 M Width Single Channel XXXX XXXXX	Alluvial Depostional Sand - C. Grv.	Small - Moderate Yakutat Foreland	Found on lowland (60's) Alder/willow & Willow/ salmonberry plant assoc.
B2 - Forested, moderate gradient, narrow valley channel	2 - 6% Gradient <10 M Width Single Channel C1, C3, C5	Alluvial - Mixed Transport - Deposit C.Grv - Rubb, S. Bldr	Small - Moderate 40, 50, 60 Short, shallow <5 M Incision	Floodplain terrace is at least 1X bankfull Channel is a small B2

Stream Name:	Record the stream name for the drainage basin containing the sample site.
ADF&G Number:	Record the ADF&G number for the stream segment as it appears in the ADF&G Anadromous Waters Catalog.
Aerial Photograph:	Record the year, flight line number, roll number, and photo number of the aerial photograph covering the site. The flight year is the last two digits of the year (1984 = 84). The line number is an alphanumeric two character label. The roll and photo numbers are one and three digit numbers, respectively.
Camera Photo:	Record the three digit upstream and downstream film roll number. To establish the roll number take one or two pictures of a sheet of paper with the roll identification number printed on it. The roll identification number is increased sequentially for each new roll of film. Record the two digit number of the upstream and downstream sample site photographs taken in the appropriate space. The number is taken from the camera counter.
Preliminary Channel Type:	Record the channel type assigned during premapping to the segment being sampled (taken from the aerial photo).
Final Channel Type:	Record the final channel type (determined after field verification and final correlation).
Water Temperature:	Record the water temperature in degrees celsius.
Air Temperature:	Record the air temperature in degrees celsius.
Weather:	Identify the weather conditions during the verification (for example, rain, sun).
Time:	Record the time of day the sample was taken.
Adjacent Landform:	Record the predominant landform for both the left and right banks over a minimum of 10 acres (except as noted below). If more than one distinct landform occurs along the site bank, record the landform occupying the greatest length of the site. Landforms are delineated using the R-10 Landform Legend. In the office, they are determined from the aerial photograph with the mapping box containing the site. To determining the 10 acre size on an aerial photo, consider an area contained within an imaginary rectangle in which the channel is one of the short sides and one of the long sides extends away from the channel a distance sufficient to contain 10 acres (0.25 inch by 1.0 inch area on 1:15.840 aerial photos).

Landforms are verified in the field by observing landform slope, relief, dissection, and landscape position characteristics.

The only exception to the 10 acre minimum size rule is when an alluvial floodplain or river terrace occurs directly adjacent to the channel. If the floodplain or river terrace averages greater that 30 feet (10 meters) in width, and is continuous along the bank, then record the respective landform as a floodplain. If the floodplain or river terrace is discontinuous, or averages less than 30 feet in width along the bank, note its presence in the "Comments," but ignore its presence for landform identification and consider the 10 acre area extending above the floodplain or river terrace.

Canopy Type: Record the predominant canopy type for both the left and right banks over a minimum of 5 acres. If more than one distinct canopy type occurs along a site, record the canopy type occupying the greatest length of the site. Canopy types are identified using the Tongass National Forest - Chatham Area Canopy Type Legend. The canopy type is determined in the office from the aerial photograph having the effective area containing the site. It is verified in the field by observing canopy crown closure, species composition, and site productivity characteristics.

Plant Associations and Vegetation: Record the predominant Plant Association (PA) or vegetation species occurring on the left and right banks, respectively. These classifications or identifications are made while doing the sideslope angle. Record the numeric code (see below), the percent of coverage each code provides, and the distance that community extends. The vegetative transect length is the same as that for side slope, 200'.

If the vegetation community is not an identified plant association, then record the predominant overstory, understory, and groundcover vegetation species using the appropriate numeric codes (see "Vegetation Codes for Nonforest Plant Associations"). For each species, record the following:

Specie: record the specie code.

Cover: record the canopy coverage in percent.

The subsequent columns are used to record any additional vegetation community breaks in the same fashion along the 200 foot transect. Record the distance from the channel where the breaks occur. If the vegetative community does not change between the stream and 200 feet of it, then

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
B3 - Forested, moderate gradient, upper valley	2 - 6% Gradient >10 M Width Single Channel C1, C3, C5, B2	Alluvial - Mixed Transport C. Gvr.- Rubb., S. Bldr	Moderate - Large 30, 40, 50, & 60's Variable <5 M Incision	Variable landform; active floodplain terraces present
B3.4 - High energy upper valley forest channel	2 - 6% Gradient >10 M Width Single Channel B1, A2	Alluvial - Mixed Transport C.Grv. - Rubb., S.Bldr	Moderate - Large 30, 40, 50, 60 Variable <3 M Incision	High energy, upper valley brush channel
B4 - Scrubby, moderate gradient channel	<6% Gradient <10 M Width Single Channel C4, Poor	BR - Mixed, Residuum Transport ?? BR, Rubb	Small - Mod 61, 62, 40 Short, Shallow <4 M Incision	Differ from B3 when > than 60% consists of non-forest canopy types
B5 - Forested, moderate gradient, alluvial fan channel	<7% Gradient <20 M Width Single - Multiple C1, C3, C6, >C5	Alluvial Depositional C. Grv., Rubb	Small 52, 53 Short, Shallow <2 M Incision	B5 is a transitional alluvial fan channel between high gradient A CT to Valley CT's

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
B6 - Moderate gradient, lowland muskeg chan.	2 - 6% Gradient <20 M Width Single Channel C4, C5	BR - Mixed Transport C. Grv. - BR	Small - Mod 60, 40, 51 4 - 20 M Side Slope 4 - 20 M Incision	The abruptly incised B6 chan. often follows BR fracture zones and may display linear or rectangular pattern
B7 - Deep gorge channel, brushy, moderate-high gradient	4 - 10% Gradient <15 M Width < 20 m Single Channel C9	BR Transport Rubb - BR	Mod - Large 54 >20 M, >70% >10 M Incision	Contains major falls. B7 is an abrupt deeply incised channel w/ very steep side slopes
C1 - Forested, lower valley, low grad channel	<2% Gradient 10 - 20 M Width Single - Multiple C3, C6, B1, B3, D1, M3	Alluvial Depositional F. Grv. - Rubb	Large 53, 40's, 60's Short - shallow <2 M Incision	Floodplain channel. Multiple channels & bar development common

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
C1.1 - Forested low gradient, high energy channel	<2% Gradient 10 -20 M Width Single - Multiple C3, C6, B1, B3, D1, M3	Alluvial Deposition - Transport F. Grv - Lg. Rubble	Large 53 Shallow - Deep	Includes forested & non-forest phases.
C1.3 - Kruzof Ash Phase (volcanic ash phase located on Kruzof Island)				
C1.4 - Non-forested Phase of C1 channel; Vegetation is M2, M3 or marginal stringers of C4, C8. Substrate are sandy.				
C1.5 - Yakutat Forelands Glacial Outwash, Forested Phase (old F1 channel) Vegetation consists of Sitka Spruce/Cottonwood/ Willow or Sitka Spruce/Devils Club/Vaccinium plant associations. Substrate is predominately sand and gravel.				
C1.6 - Yakutat Forelands Glacial Outwash, Non-forested Phase (old F2 channel) Vegetation consists of Willow/Sedge, Alder/Willow and Cottonwood/Alder plant associations. Stream gradient is low (<0.5%). Substrates are predominately sand and gravel.				
C2 - Lower valley or muskeg type landforms; low gradient, incised channel	<2% Gradient >10 M Width Single channel C5, C4, C8, C6, C1	Bedrock Transport C.Grv - BR	Large - Very Large 40's, 60's Steep, <20 M Variable	Meanders cannot exceed 1/2 bankful width Discontinuous 53 landforms can occur
C2.7 - Lower valley, low gradient, incised channel	<2% Gradient >7 M Width Single channel C5, C4, C8, C6, C1	Bedrock Deposition Rubb, Bldr, BR	Large - Very Large 40's, 60's Steep, <20 M Variable	Glide phase of C2

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
C3 - Forested, broad, low gradient, lower valley channel	<2% Gradient >20 M Width Single - Multiple C3, C6	Alluvial Depositional F. Grv - Rubb	Very Large 53 Flat, Variable <2 M Incision	
C3.1 - Broad, high energy phase, lower valley channel. Old C4 - incl. forest & non-forested phase	<2% Gradient >20 M Width Single - Braided B1, C3, C6	Alluvial Depositional C. Grv - S. Bldr	Very large 53 Flat, Variable <2 M Incision	Often times occurs where A1 CT's feed directly into low gradient valley bottom channels
C3.3 - Broad, low grad. lower valley, bedrock influenced channel	<2% Gradient >20 M Width Single - Multiple C6, C3	BR influenced Transport F. Grv - BR	Very Large 53 Flat, Variable	BR influenced phase, C2/C3 mix found as channel approaches salt water
C3.4 - Broad, placid, low gradient channel	<2% Gradient >20 M Gradient Single Channel C6, C3	Alluvial Depositional F. Grv - Rubb	Very Large 53 Flat, Variable	Non-forested, placid water phase of C3

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
C3.5 - Yakutat Foreland Glacial Outwash Forested Channel (Old F3)				
C3.6 - Yakutat Foreland Glacial Outwash Forested Channel (Old F4)				
C4 - Beach and sand dune channel	<0.5% Gradient >12 M Width Single - Multiple C6, B3	Alluvial Depositional Sand, F. Grv, Silt	Large - Very Large 72 Shallow <2 M Incision	Competing channels: B1.5 & L1
C4.4 - Non-forested Phase (Old G6)				
C5 - Confined narrow valley, forested channel	<8% Gradient 10 - 30 M Width Single channel C5, C3	Bedrock Transport - Deposition S. Rubb - BR	Large - Very Large 52, 51, 54, 30's >20 M, <70% 1 -75 M Incision	Channel occurs within narrow confining valley. Varied incision.
L1 - Low gradient, lowland muskeg channel with ponds or placid flow	<2% Gradient <10 M Width Single channel M1, M3	Alluvial Depositional Muck, Sand	Small 60's, 40's Flat, negligible <2 M Incision	

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
L1.4 - Scrub forest phase, lowland, low gradient, muskeg channel	<2% Gradient <10 M Width Single M1, M3, C4	Alluvial Depositional Muck, Sand	Small 60's, 40's Flat, negligible <2 M Incision	Canopy is scrubby and in narrow bands
L2 - Wide, low gradient deep water, muskeg channel	<2% Gradient >10 M Width Single channel M3, B2	Alluvial Depositional Muck, Sand	Large - Very Large 60's, 53, Nonglacial Flat, negligible <2 M Incision	Commonly associated with lake outlet or meadow area
L3 - Stable beaver dam, pond chain complex	<2% Gradient Varible Single channel B1, B2, C8, C4, M3	Alluvial Depositional Muck, Sand	Small 60's, 40's, 53 Flat, variable <2 M Incision	Series of Beaver ponds, often recognized on the aerial photo by a stand of dead trees
L4 - Glacial floodplain cut-off slough channel	<0.5% Gradient 5 - 10 M Width Multiple - Braided B1, B2, B3	Alluvial Depositional Gravel	Small 53, 64, Flat, negligible <2 M Incision	Mapped as connected side channels of lower valley glacial channels Active floodplain

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landform Side Slope Incision	Comments and Special Mapping Conventions
L5 - Glacier floodplain	<0.5% Gradient	Alluvial	Small	Floodplain backwater
backwater slough	5 - 10 M Width	Depositional	53. 6A	channel floodplain
channel	Single channel	Sand, mud	Flat, negligible	Main channel dominates
	B1, B2, B3		<5 M incision	flow regime in channel

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
E1 - Small substrate, large estuarine channel	<1% Gradient >10 M Width Single - Multiple E2, E3	Alluvial Depositional Sand - C. Grv	Large - Very Large 71 Flat, variable Shallow, 0 - 5M Incision	
E1.3 - Large substrate large esturine channel	<1% Gradient >10 M Width Single - Multiple E2, E3	Alluvial Depositional	Large - Very Large 71 Flat, variable Shallow, 0 - 5M Incision	Large substrate phase, typically no sedge/ grass area associated
E1.6 - Beach and dune estuarine channel (old E4 channel)	<1% Gradient >10 M Width Single - Multiple E2, E3	Alluvial Depositional Sand	Large - Very Large 72, 74 Flat, variable	Outer coastal area w/ sand and dune (22) and and uplifted beach (74) landforms
E2 - Small rocky estuarine channel	<0.5% Gradient <10 M Width Single Channel E2, E3	Alluvial Depositional C. Grv, - Rubb	Moderate - Large 71 Variable Shallow, <3 M	

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
E3 - Narrow, small substrate, estuarine channel	<1% Gradient <10 M Width Single channel E2, E3	Alluvial Depositional Sand - C. Grv	Moderate - Large 71 Flat, negligible Shallow, <3M Icision	Better quality habitat than the E2 channel
E5 - Broad braided glacial estuarine channel	<2% Gradient >20 M Width Multiple channel E1, E2, E3	Alluvial Depositional Sand	Moderate - Large 71 Shallow-Flat, variable Shallow, <3 M Incision	15% or greater of basin area covered by alpine glaciers or permanent snow fields
D1 - Low gradient cirque basin channel	<6% Gradient Width Variable Single - Braided A1, A2, B1	Alluvial Transport Grv - Rubb	Small 30's, 61 Shallow, Variable <2 M Incision	15% or greater of basin area covered by alpine glaciers or permanent snowfields.
D2 - Upper valley glacial torrent channel	>6% Gradient 6 - 15 M Width Single channel A1, B1, C9	Bedrock Transport Rubb - BR	Small - Moderate 10's, 30's Variable Variable	15% or greater of basin area covered by alpine glaciers or permanent snowfields

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
D3 - Moderate gradient, upper valley gradient channel	2 - 6% Gradient 15 -40 M Width Single - Braided B1, C6, D1	Alluvial Transport Rubb - Bldr	Moderate 53, 51, Glacial 50's Shallow, Variable Shallow - Moderate	15% or greater of basin area covered by alpine glaciers or permanent snow fields
D4 - Broad low gradient meandering glacial channel	<3% Gradient >20 M Width Single - Multiple B1, D1, D2, C9, C6	Alluvial, contained Depositional C. Grv - Rubb	Large - Very Large 53, Glacial Shallow, Variable Shallow - Moderate	15% or greater of basin area covered by alpine glaciers or permanent snow fields
D5 - Broad, braided lower valley low gradient glacial channel	<2% Gradient >60 M Width Braided Channel B1, D1, D2, C6 or no veg.	Alluvial Depositional Sand - C. Grv.	Large - Very Large 53, 64 Shallow Side Slope <2 M Incision	15% or greater of basin area covered by alpine glaciers or permanent snow fields
D6 - High gradient, glacial alluvial fan channel	<10% Gradient >20 M Width Single - Multiple B1 or no veg.	Alluvial Transport Rubb - Bldr	Small - Moderate 52, 51 - Fan Shallow Side Slope <5 M Incision	15% or greater of basin area covered by alpine glaciers or permanent snowfields

SUMMARY OF THE DIFFERENTIA USED TO MAP TONGASS NATIONAL FOREST CHANNEL TYPES

Channel Type Description	Gradient Width Pattern Vegetation	Control Process Substrate	Basin Area Landfrom Side Slope Incision	Comments and Special Mapping Conventions
B7 - Confined, high gradient (cascade) glacial channel	5 - 10% Gradient 20 - 30 M width Single channel B1, B2, C4, C6, C9	Bedrock Transport Rubble to bedrock	Large 30's, 40's, 52, 54 Steep Side Slope >20 M Incision	Mid to lower valley position; cascades and short falls readily visible

PART 4

CANOPY TYPE I.D. LEGEND

August, 1985

CANOPY TYPE		CANOPY CLOSURE	DOMINANT CROWN SIZE	CONCEPT
I.	ALPINE TUNDRA			
A1	Rock Outcrop	Non-forest (0-10%)	N/A	Sparsely vegetated rock and talus
A2	Alpine Meadow	Non-forest (0-10%)	N/A	High elevation alpine meadow
II.	SHRUBLANDS			
B1	Alder Shrublands	Non-forest (0-10%)	N/A	Dense thickets of alder with other upland pioneer shrub species (salmonberry, current, elderberry, devil's club).
B2	Willow Shrublands	Non-forest (0-10%)	N/A	Dense thickets of willow with or without wetland shrub species (myrica gale and crowberry)
B3	Shrubland/Muskeg Complex	Non-forest (0-10%)	N/A	Dense thickets of alder and willow complexed with muskeg. Found on recently deglaciated outwash plains.
III.	CONIFEROUS FOREST			
C1	Highly Productive Hemlock Forest	Closed (60-100%)	Large (35-45')	Highly productive western hemlock forests. Closed canopy. S.I. = 120-150.
C2	Early Successional Spruce Forest	Closed (60-100%)	Small (10-35')	Highly productive spruce forests undergoing primary succession following a recent geologic event (uplifted beaches, deglaciated outwash plains). Closed, even aged canopy. S.I. = 120-150.
C3	Climax Spruce Forest	Closed (60-100%)	Large (45'+)	Highly productive climax spruce forests found on alluvial fans and floodplains. Sites are somewhat stable with severe flooding restricted to overflow channels. Closed, multi aged canopy. S.I. = 150.

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C3	Climax Spruce Forest	Closed (60-100%)	Large (45'+)	Highly productive climax spruce forests found on alluvial fans and floodplains. Sites are somewhat stable with severe flooding restricted to overflow channels. Closed, multi aged canopy. S.I. = 150.

C4	Marginally Productive Coniferous Forests	Open (10-40%)	Small (10-25')	Marginally productive coniferous forest composed of hemlock, cedar, and spruce. Mountain hemlock dominates at high elevations. Open canopy. S.I. = 75-90.
C5	Moderately Productive Coniferous Forests	Moderate (40-70%)	Moderate (25-35')	Moderately productive hemlock forests. Cedar may be codominate. Mountain hemlock dominates at high elevations. Moderately closed canopy. S.I. = 90-120.
C6	Spruce Forest/ Alder Shrubland Complex	Open Mosaic (10-60%)	Large (45'+)	Productive spruce forests complexed with dense thickets of pioneer shrub species. Cottonwood may be codominate. Open canopies due to extensive flooding. S.I. = 150.
C7	Coniferous Forest/ Rock Outcrop Complex	Open Mosaic (40-60%)	Moderate (25-35')	Hemlock forests with moderate productivity and open canopies due to extensive rock outcropping. Pioneer shrub species occur only as inclusions. S.I. = 75-120.
C8	Coniferous Forest/ Muskeg Complex	Open Mosaic (10-40%)	Small (10-25')	Poorly productive coniferous forest complexed with muskeg or alpine meadow. May be composed of hemlocks, cedar and spruce. Mountain hemlock dominates at high elevations. S.I. = 75-90.
C9	Coniferous Forest/ Alder Shrubland Complex	Open Mosaic (10-60%)	Moderate (20-45')	Hemlock forests complexed with dense thickets of pioneer shrub species. Spruce stands are a common inclusion. Open canopies due to snow avalanche and mass wasting. S.I. = 90-150.
C15	*Highly Productive Coniferous Forest Complex	Mod-Closed (40-100%)	Mod-Large (25-45')	Highly productive western hemlock forests (C1) complexed with moderately productive hemlock and cedar forests (C5). Closure varies from closed to moderate. S.I. = 90-150.
C45	**Marginally Productive Coniferous Forest Complex	Mod-Open (10-60%)	Small-Mod (10-35')	Marginally productive coniferous forests (C4) complexed with moderately productive hemlock and cedar forests (C5). Closure varies from open to moderate. S.I. = 75-120.

IV.	DECIDUOUS FOREST			
D1	Deciduous Forest	Moderate (40-60%)	Moderate (10-35')	Early successional cottonwood and red alder forest found on floodplains and outwash plains.
D2	Deciduous/ Coniferous Forest Complex	Moderate (40-60%)	Moderate (10-35')	Early successional forests of spruce mixed with cottonwood and red alder. Found on floodplains and outwash plains.
V.	ESTUARINE MARSH			
E1	Sparsely Vegetated Mudflats	Non-forest (0%)	N/A	Sparsely vegetated mudflats exposed only at low tides. Dominated by eelgrass, beach asparagus, fucus, and unvegetated mud.
E2	Estuarine Sedge Marshland	Non-forest (0%)	N/A	Densely vegetated tidal marshes regularly inundated by high tides. Dominated by sedges and grasses.
E3	Mixed Forb Grassland	Non-forest (0%)	N/A	Densely vegetated beaches, dunes and tidal marshes which are only inundated by extremely high tides or salt spray. Dominated by several herbaceous species of grasses, sedges, and wildflowers.
VI.	MUSKEG			
M1	Sedge and Sphagnum Muskeg	Non-forest (0-10%)	N/A	Freshwater meadows dominated by Sphagnum mosses, sedges, and ericaceous shrubs. High water table.
M2	Myrica Gale Muskeg	Non-forest (0-10%)	N/A	Freshwater meadows dominated by myrica gale and sedge species. Is inundated by shallow freshwater.
M3	Scouring Rush Muskeg	Non-forest (0-10%)	N/A	Sparsely vegetated freshwater meadows dominated by scouring rush. Recently uplifted areas now only inundated by shallow freshwater.

* Regional addition mapped as C1n or C5o in Chatam Survey

** Regional addition mapped as C5v in Chatham Survey

PART 5

CHANNEL TYPING AS A PROTECTIVE TOOL FOR LAND MANAGERS

The study of channel types has progressed to the point where recommendations can be made for each specific site, based on its channel characteristics. (Marion et al, 1987.) When streams are grouped according to critical characteristics, such as gradient, substrate stability and adjacent side slope stability, it becomes apparent that certain channel types need much more stringent protective measures during logging and roading activities. Channel typing provides a powerful tool for land and stream managers. Based on the inherent characteristics of each channel type, managers can plan and implement development while taking the necessary protective measures to maintain optimal fish habitat. While much more study is needed, especially in the mainland type geomorphology, we present the minimum measures that should be taken to protect stream habitat, based on present knowledge of channel types.

Channel Types A1, A2, A4, A5, A6, A7, D2

These high gradient sediment transport channels are prone to landslides and debris dam washout. There is a severe risk of sideslope failure causing physical damage to downstream salmon spawning and rearing areas from sedimentation and bed scour. No logging within the natural sideslope should occur. When possible, split-yarding from the upper terminus of the bank slope away from the stream should be the logging practice. In some instances the value of the fish habitat may warrant the full suspension of the log across the stream channel. Where windfirm oldgrowth trees are not available, unmerchantable trees should be left standing. No limbed or bucked trees should be allowed within the bank slopes. Windthrown trees should not be salvaged unless prone to block the channel.

Roads, bridges and culverts should have specifications that minimize destabilization of the channel or sideslopes. Sediment traps should be constructed at the sides of bridge approaches so that sediment from road-side ditching can be contained, rather than drain directly into the stream.

Channel types B1, C1, C3, C4, D1

These channel types are characterized by having a floodplain and contain optimum salmon spawning and rearing habitats. No roads should be built into the floodplain. A 100 foot minimum windfirm buffer strip should be maintained on each bank of these types of channels.

Bridges and culverts need to be sized properly to avoid fish blockage and to prevent downstream bed and bank erosion due to increased water velocity if an undersized culvert is used.

Channel Types A3, B5, and D6

These channels are unique in that they are deep alluvial deposits at the sides of valleys and therefore naturally unstable.

These channels provide good spawning and rearing where sufficient large woody debris is supplied to the channel. A 100 foot minimum buffer strip should be maintained on these channels, with no salvage of windthrown trees.

Road, bridge and culvert standards must be adequate to prevent fish blockage to either adult or juvenile salmon. Culverts that are too small or improperly placed cause channel erosion and destabilization downstream.

Channel Types B2, B3

These channel types have mixed fluvial control that alternates between alluvial substrate and bedrock knickpoints. Where large woody debris is available, pool development and spawning gravel accumulation provides good rearing habitat for chum and coho salmon. A 100 foot minimum buffer strip should be maintained. Because of the combination of wood debris and the gradient of these channels, bridge and culvert design is critical to the stability of the channel. Road crossings should only occur in bedrock areas of the stream and avoid alluvial floodplain areas.

Channels B4, B6, and B7

These channels are situated in landforms with varying sideslope development which naturally provides good stream containment. No harvest should occur on the unstable slopes of the inner gorge, and a 30 foot minimum buffer strip from the terminus of the upper slope away from the stream should be maintained. The management objective for these channels is to maintain channel stability so that sedimentation impact in downstream habitat can be eliminated.

Channels C2 and C5

These channels are contained and have bedrock flow control. Maintain 100 foot minimum buffer strips. Where trees are taller than 100 feet, the buffer strip should extend out to a distance equaling the maximum tree height. No roading should be allowed within the slope of the upper banks.

Channels L, L1, L2, L3, L4, and L5

These placid lake type channels occur in lowland areas and in association with larger floodplains. Areas that contain these channels generally should not be logged or roaded. Areas of large lakes (5 acres or more) should maintain a 500 foot buffer strip around the lake.

Channels D3, D4, and D5

These large channels occur in generally unstable glacially influenced watershed whose banks are composed of loose material. These channels can be extremely important for migration of all five species of salmon. Rearing habitat is provided for king, sockeye and coho salmon during the winter where deep pools occur. A 300 foot buffer strip should be maintained and no logging in the floodplain should be allowed.

There are basic guidelines that can be recommended based on channel type alone. Each site should still be individually evaluated for stability and suitability and fish habitat should be carefully documented. Management practices can then proceed, with preliminary channel typing having alerted managers to special consideration for each stream site.

ACKNOWLEDGEMENTS

We express our appreciation to Representative Peter Goll for his continuing interest in stream resources. We thank Dan A. Marion and Stephan J. Paustien, both hydrologists with the US Forest Service, who developed and helped establish the channel type classification system throughout the Tongass Forest. Our study was facilitated by the generous loan of aerial photos from Roy Josephson, Department of Natural Resources, Haines, Alaska.

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