

Enclosure 10: Paleocurrent data, in Sherwood, K.W., and Amoco Oil Co., 1977 geologic field investigations, Point Lay area, North Slope, Alaska

Amoco Oil Co.

GMC DATA REPORT 445G

This GMC data report from the Amoco Heritage collection has been made available through funding from the FY2018 USGS National Geological and Geophysical Data Preservation Program, Grant Number G18AP00054. This project report is presented in its original format and has not been reviewed for technical content or for conformity to the editorial standards of DGGs. It should not be used or cited as reviewed data.

2019
State of Alaska
Department of Natural Resources
Division of Geological & Geophysical Surveys
GEOLOGIC MATERIALS CENTER



CF 800101-1
0001

DATALINK



9500000011535

CF 800101

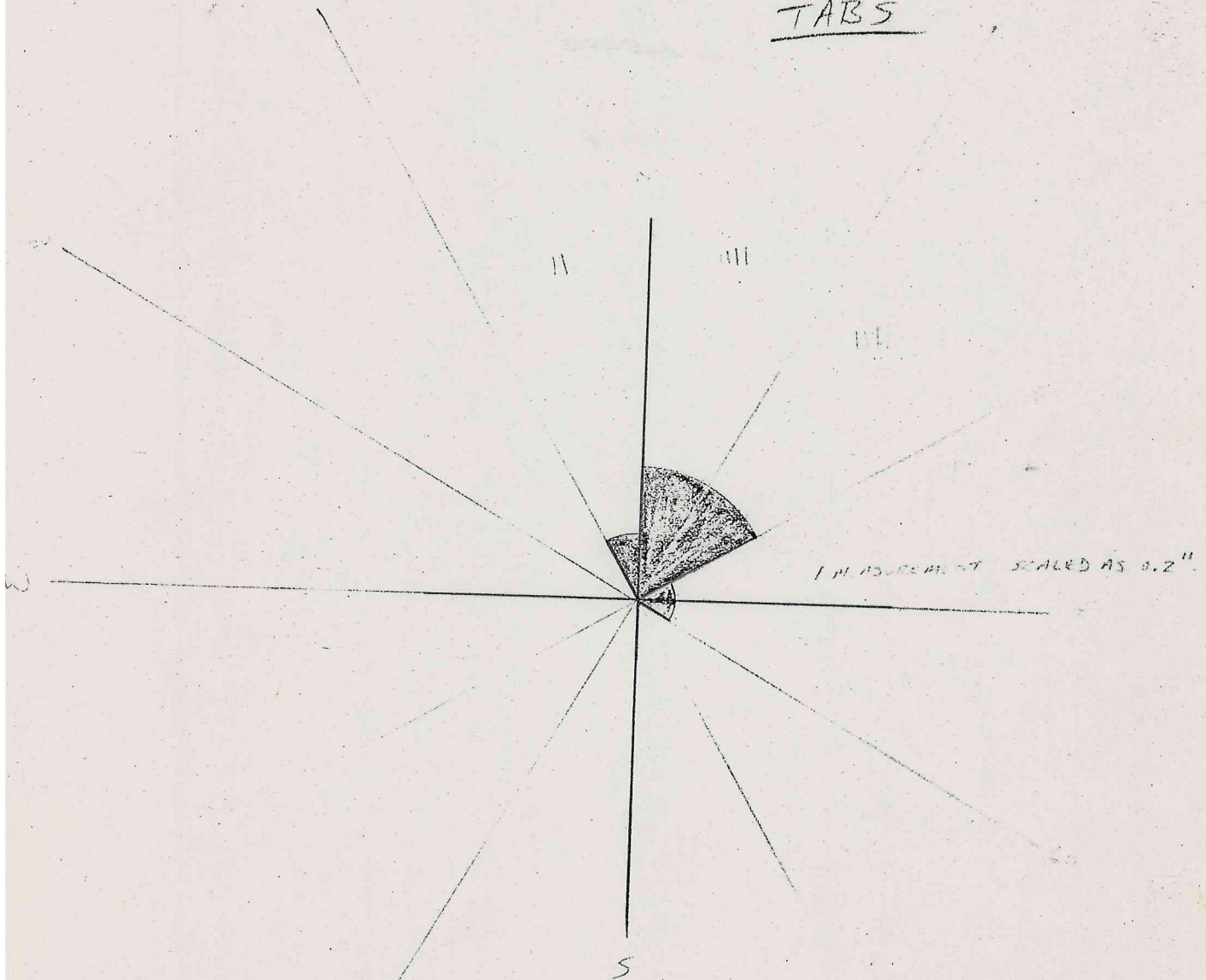
KW SHERWOOD

NORTH WEST FLANK OF
PITMECEA SYNCLINE.

$S_0 = N59E, 27SE$

$N = 12$

TABS



EASTERN TERMINUS OF
DUGOUT SYNCLINE

$S_0 = N61E, 10-24N$

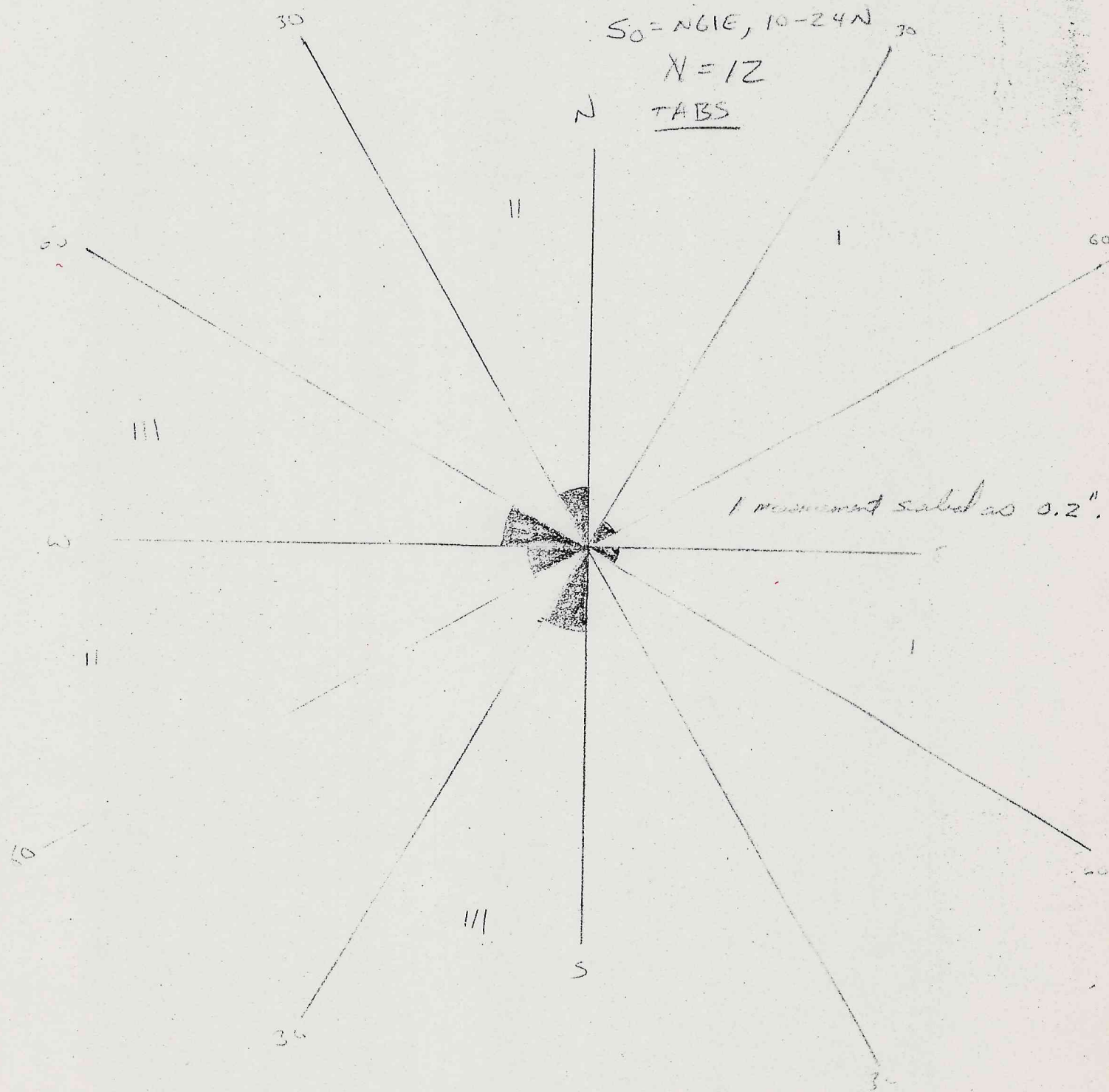
$N = 12$

TABS

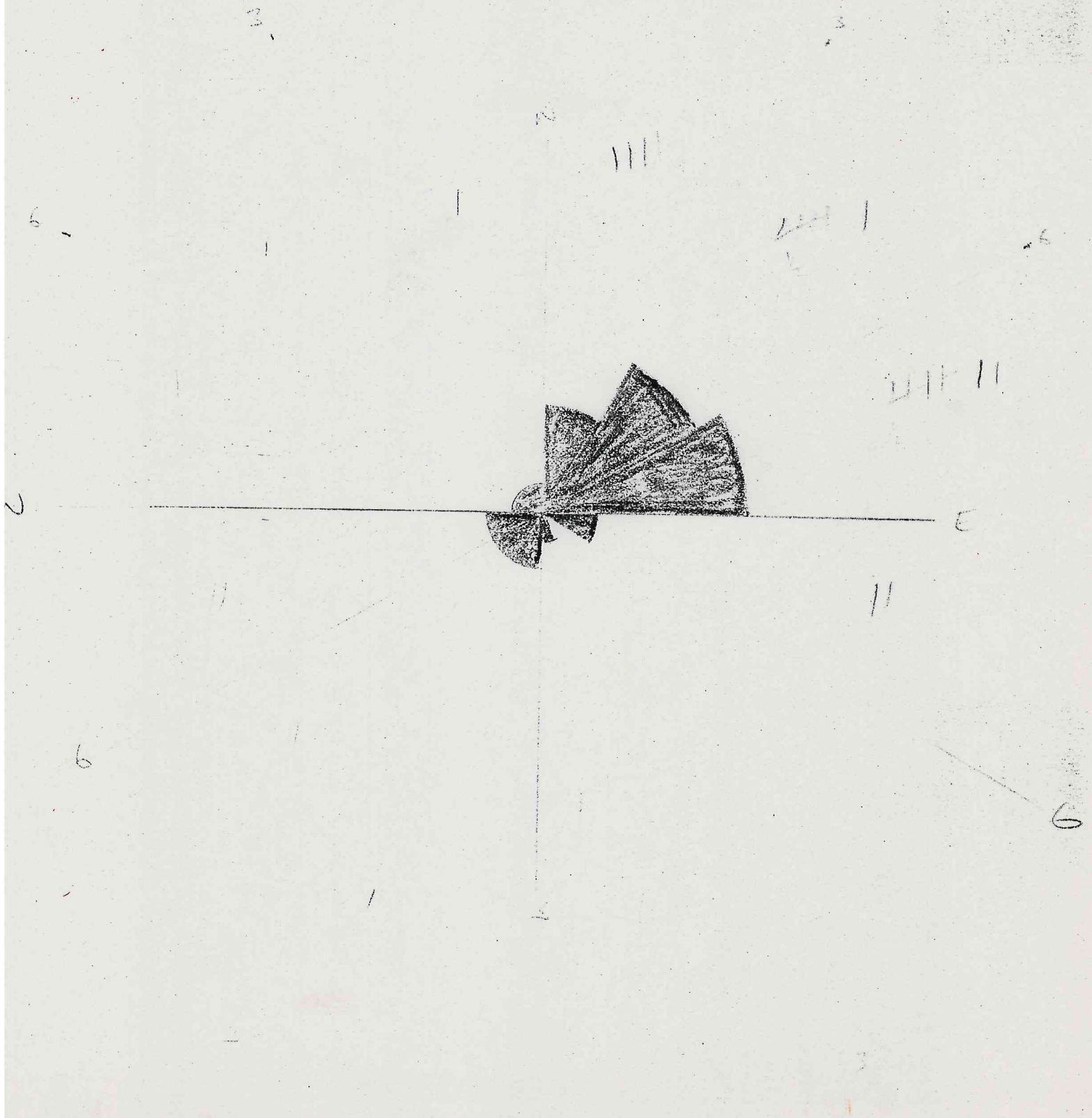
N

S

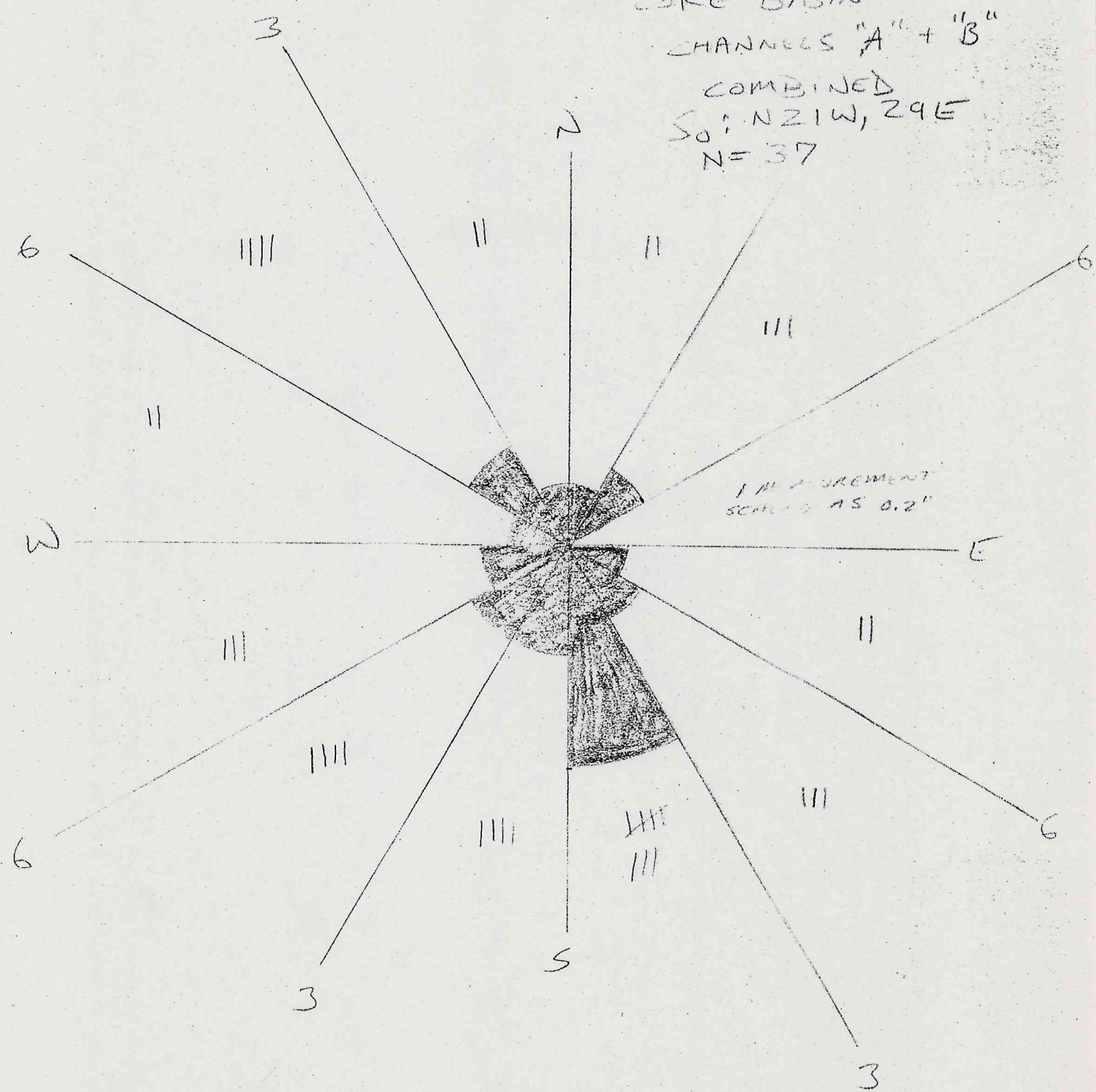
1 measurement satisfied as 0.2".



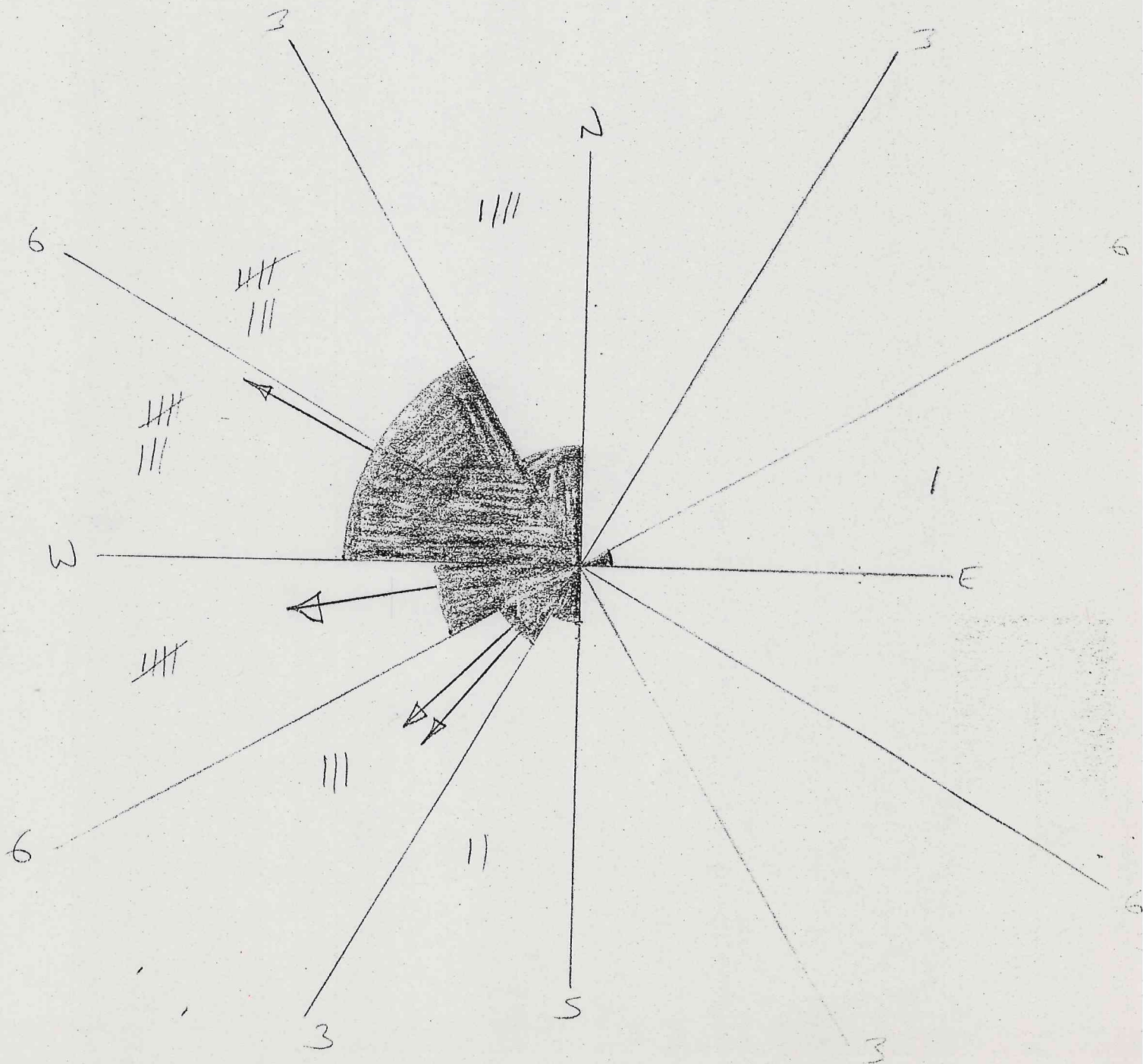
STOP # 5 - SOUTH
FLANK OF COKE BASIN
28 TABS, 2 TRASH AXES
N=30 S 1 N 52 E, 24 NW



WEST FLANK OF
COKE BASIN
CHANNELS "A" + "B"
COMBINED
S₀: N21W, 29E
N=37



STOP #4 ON
SOUTH FLANK OF
COKE BASIN
S₀: N57E, 23NW
TABS N = 32 (▲)
Ripple N = 4 (→)



19 August

CRU pictures

12/ #35 Small sand bar, W-13

14/ #1 Small sand bar W-13

13/ 1 Tidal creek at st. W-13

= #1 own camera

Own camera #2 interference visible

W-17B #9 down slope deformation feature

note abundant vegetation

? due to soil erosion while in line forming

10 Faded face visible

across from sample creek

2 beds "papering" feature

11 Another small pond

on 205000

17 W-17B

18, 19 W-17C 1st bed 2nd

19 ripples in 1st bed

20-21 Big boulders in pebble lag

19 August

Stop 1 W-13 location

Accretion faces mapped should
apparently be cut by channel near
top. Channel has usual sequence
of large scale trough below
with "papering" facies above.

Stop 2 Tidal creek & bridge
on Kilauea. W-17 n. loc.

Stop 3 (very ridge in center)

Stop 4 Big channel
Corwin Saltonk 10
Barron

CORRECTED
TRANSPORT DIRECTION

| | | | |
|---|------|---------|------|
| 1 | S41W | ripples | S40W |
| 2 | S47W | | S46W |
| 3 | N64W | | N62W |
| 4 | S78W | | S80W |

Large scale tabular cross beds.
 R. IRID TRANSDIR.

| | | |
|----|------------|------|
| 7 | N20E 37 NW | 578W |
| 8 | N46E 34 NW | N55W |
| 9 | N47E 37 NW | N56W |
| 10 | N64E 35 NW | N15W |
| 11 | N36E 20 NW | 525W |
| 12 | N20E 28 NW | 557W |
| 13 | N34E 28 NW | 573W |
| 14 | N53E 22 NW | N37W |
| 15 | N48E 36 NW | N48W |
| 16 | N45E 27 NW | 559W |
| 17 | N50E 33 NW | N46W |
| 18 | N40E 42 NW | N66W |
| 19 | N46E 35 NW | N62W |
| 20 | N38E 34 NW | N86W |
| 21 | N12E 32 NW | 556W |
| 22 | N36E 36 NW | N79W |
| 23 | N34E 42 NW | N75W |
| 24 | N38E 39 NW | N86W |
| 25 | N48E 33 NW | N61W |
| 26 | N50E 34 NW | N48W |
| 27 | N61E 29 NW | N16W |

Trough axis

| | | | |
|---|------|------|------|
| 5 | N25W | lump | N26W |
| 6 | S12W | 6° | 510W |

| | | | |
|----|------|-------|------|
| 28 | N58E | 20 NW | N25W |
| 29 | N40E | 40 NW | N67W |
| 30 | N31E | 30 NW | 578W |
| 31 | N58E | 28 NW | N28W |
| 32 | N51E | 37 NW | N48W |
| 33 | N30E | 28 NW | 567W |
| 34 | N70W | 22 NE | N82E |

Slighted strike

N45E 17 NW

Pass S. a Phong bedding

N58E 29 NW

N57E

23 NW

MORE TABS

N05E, 31 NW

552W

N52E, 50 NW

N42W

Stop 5 S. (and) W. (and) E. (and) N.

RESTORED TRANSPORT DIRECTION

| | | |
|------|-------|------------------|
| N15W | 22.5W | S17W |
| N70E | 27 NW | N36E |
| N55E | 23 NW | S51E |
| N10W | 22.5W | S21W |
| N34E | 26 NW | S65W |
| N75E | 19 NW | S56E |
| N40W | 37 NE | N77E |
| N67E | 36 NW | N02E |
| N77E | 44 NW | N07E |
| N78W | 42 NE | N12E |
| N85E | 48 NE | N16E |
| N65W | 41 NE | N54E |
| N42W | 59 NE | RESTORED 20, 50° |
| N53W | 21 NE | N81E |
| N88W | 41 NE | N32E |
| N12W | 15 SW | S01E |
| N38E | 25 NW | S47W |
| N21W | 36 NE | N39E |
| N62W | 44 NE | N56E |
| N26E | 27 NW | S56W |
| N75E | 22 NW | N75E |
| N36E | 27 NW | S64W |

| | | |
|----------------------------|-------|------------|
| N50W | 26NE | N85E |
| N55W | 30NE | N71E |
| N54W | 46NE | N60E |
| Trough mixed hand & plunge | | |
| N42W | 39 NW | N82W 29° N |
| Mixed irregular X-bedding | | |
| N85W | 34NE | N46E |
| N61E | 32 NW | N02W |
| N70W | 34NE | N63E |
| N75W | 24NE | N75E |

S. of outcrop

N52E 24° W

Stop 6 West side of Lake Park

N21W, 27E S. N25W, 25E

| | | |
|--------------------------|-------|------------------|
| Channel A (unconformity) | | |
| N25W | 32 NE | N42E |
| N46W | 21 NE | N69W |
| N48W | 22 NE | N61W |
| N85W | 35 NE | N41W |
| N27W | 32 NE | N23E |
| N23E | 24 NW | RESTORED 20, 30° |

(direction?)

RESTORED TRANSPORT DIRECTION

MASTER BEDDING 2. NGIE, 24-10 N
 DATA THROWN OUT IF RESTORATION EXCEEDED
 10° SEPARATION 100° APART - AVE

1/20/77 E end of Project
 TAKEN IN RESTORED TRANSPORT
 SYNCHRONOUS DIRECTION

Large scale low angle beds 12° S. Sets

| | | | | |
|---|------|------|------|------|
| 1 | N44W | 7NE | 564E | 219° |
| 2 | N30E | 21NW | 567W | |
| 3 | N60E | 23NW | | |
| 4 | N47W | 25SW | 513W | |
| 5 | N03W | 14SW | 524W | |
| 6 | N32E | 31NW | N88W | |
| 7 | N68E | 24NW | N10W | |

poss. S. N54E 24NW N84W
 poss. S. N54E

MEAS. 1/20/77

| | | | | |
|----|------|------|------|--|
| 8 | N61E | 24NW | N28W | |
| 9 | N32E | 21NW | 567W | |
| 10 | N75E | 24NW | N34E | |
| 11 | N50W | 11SW | 502W | |
| 12 | N36E | 32NW | N79W | |

REMARKS:
 RLS 278 in sandstone
 1/20/77
 2/20/77
 high cemented

CHANNEL B (Kink has low value)
 RESTORED TRANSPORT
 DIRECTION TO DIP 52

| | | | |
|----|-------|-------|------|
| 1 | N04E | 44°NW | |
| 2 | N35W | 28NE | N01E |
| 3 | N08E | 35NW | |
| 4 | N5W | 27NE | 501W |
| 5 | N2W | 29NE | 515E |
| 6 | N2W | 33NE | 535E |
| 7 | N27E | 38SE | 519E |
| 8 | N40E | 12SE | 544W |
| 9 | N20W | 8NE | 570W |
| 10 | N09E | 45SE | 548E |
| 11 | N58W | 23NE | N55W |
| 12 | N11W | 25NE | 513W |
| 13 | N10E | 23SW | 513N |
| 14 | N28W | 15NE | 577W |
| 15 | N03W | 16NW | 576W |
| 16 | N104E | 32SE | 222E |
| 17 | N10W | 30NE | N23W |
| 18 | N11W | 18NE | 559W |

"CHANNEL B"
 (FROM RWS NOTES)

Volume 5

(FROM KWS NOTE S)

MASTER BEDDING: N25W, 25E
STOP #6 WEST FLANK COKE BASIN

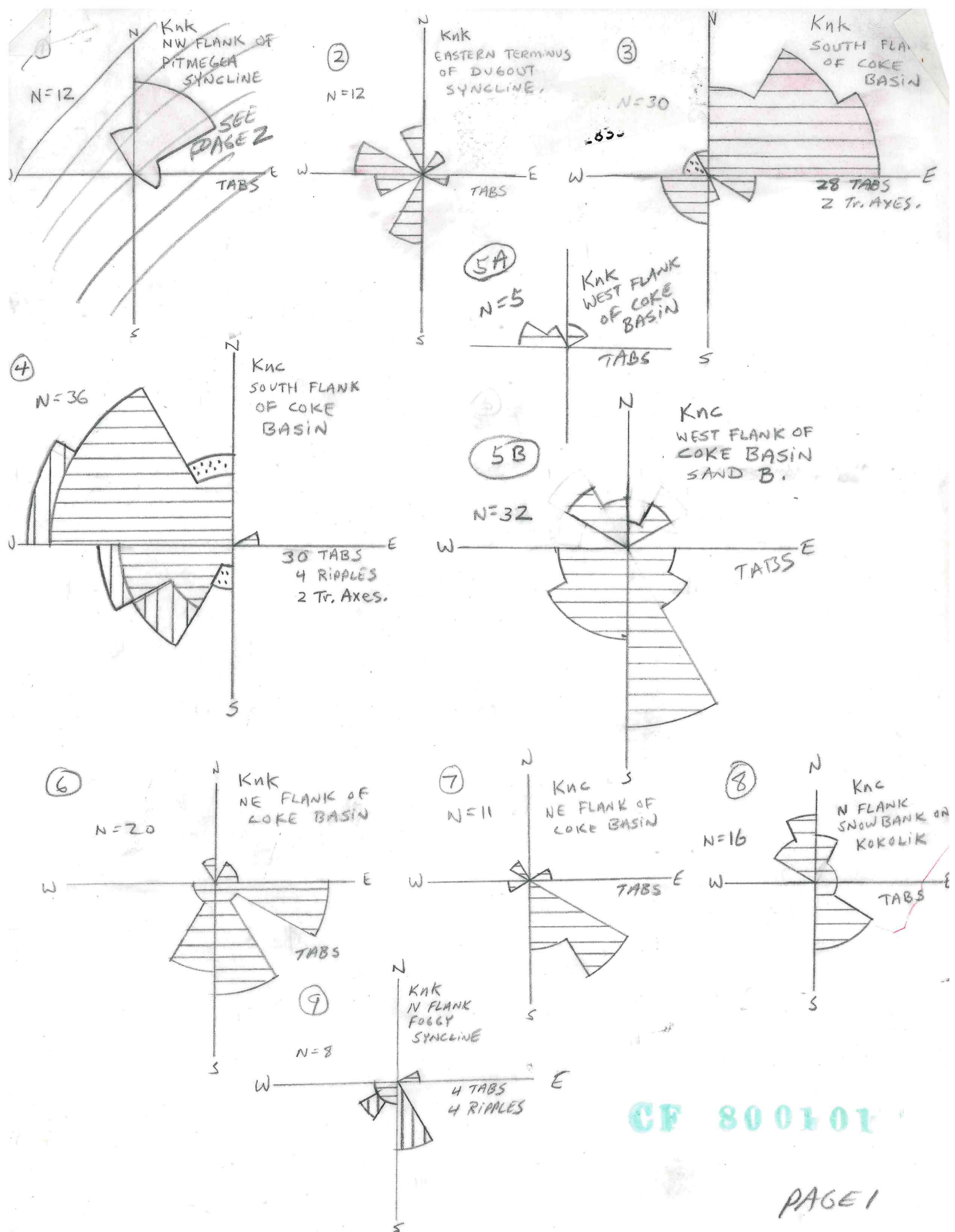
[illegible]

N57E, 27SE

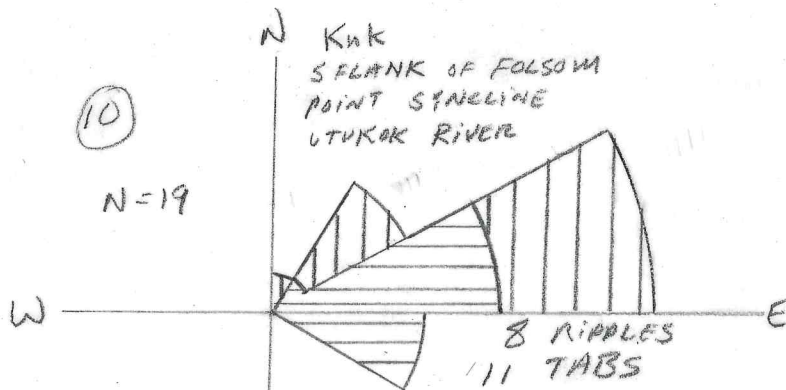
REMARKS: TRANSACT

MA 1946
BEDDING

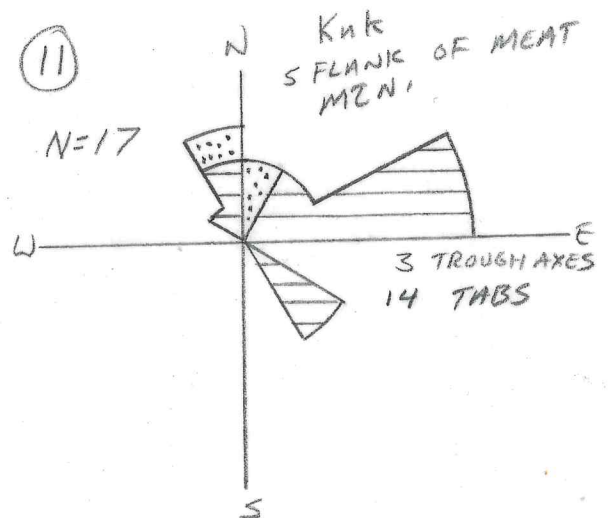
| | | DIRECTION |
|----|-------------------|-----------|
| 1 | N 01 W 40 N 14 NE | |
| 2 | N 5 W 25 NE | N 26 E |
| 3 | N 7 W 24 NE | N 24 E |
| 4 | N 49 W 23 NE | N 04 E |
| 5 | N 40 E 24 SE | N 32 E |
| 6 | N 9 E 34 NW | N 54 E |
| 7 | N 56 W 11 NE | N 13 W |
| 8 | N 7 W 30 NE | N 35 E |
| 9 | N 35 E 6 SE | N 26 W |
| 10 | N 55 E 27 SE | N 61 E |
| 11 | N 39 E 26 SE | N 48 E |
| 12 | N 2 E 36 SE | N 51 E |
| 13 | N 36 E 46 SE | N 75 E |
| 14 | N 29 W 28 NE | N 20 E |



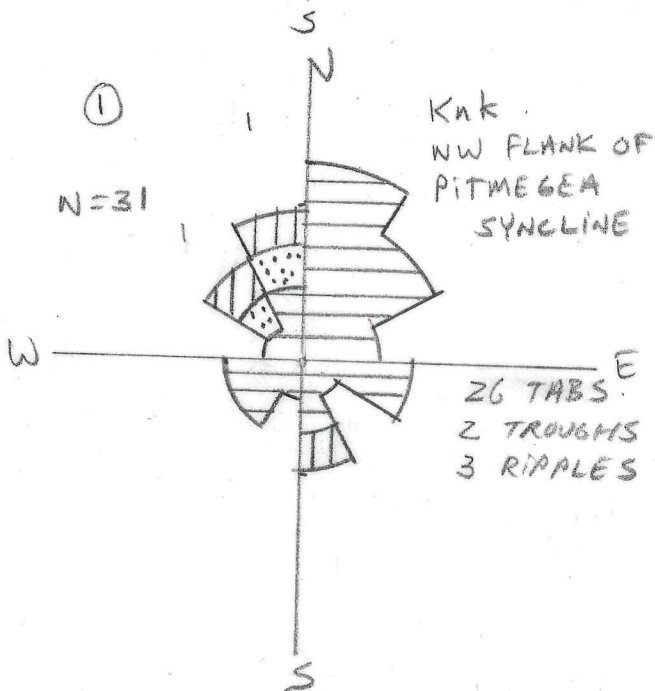
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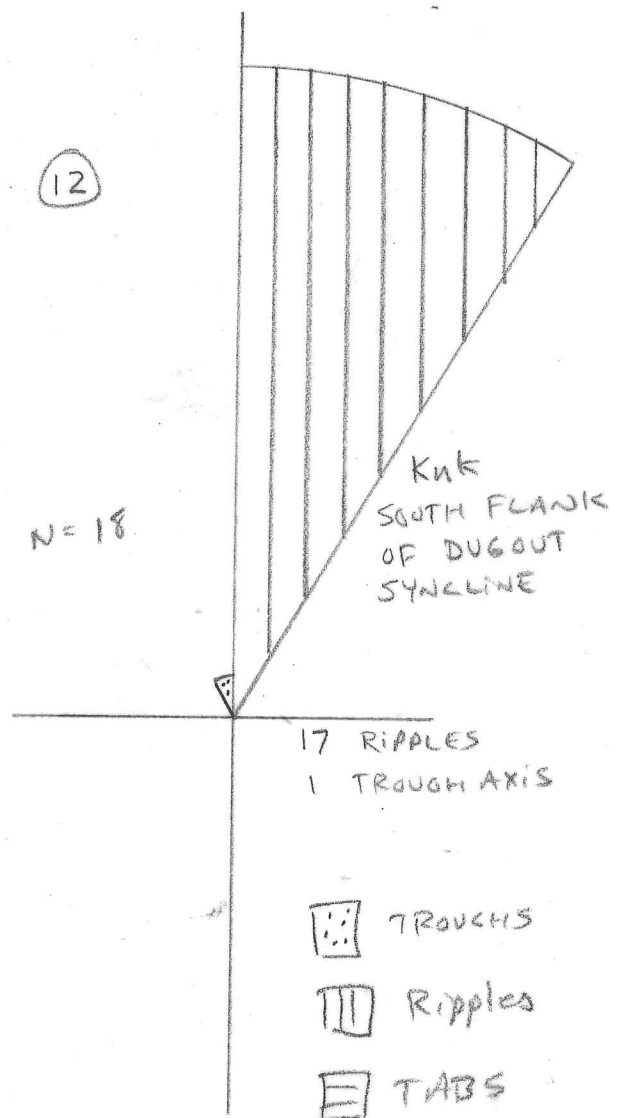
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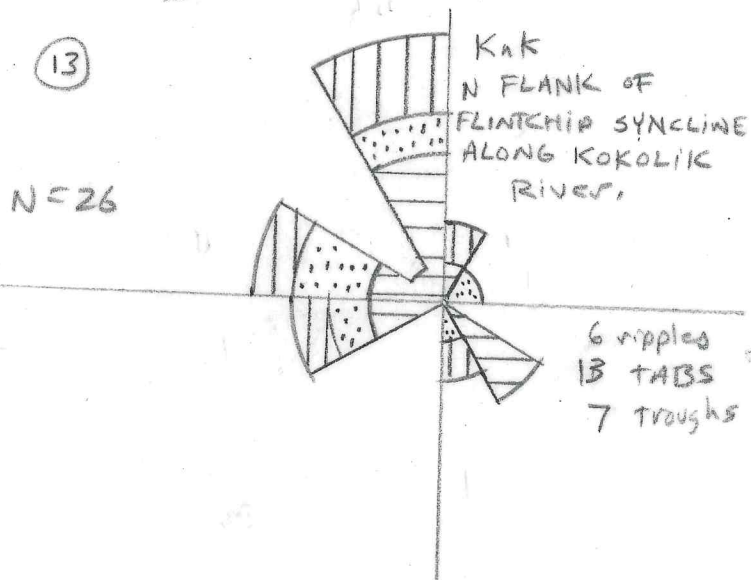
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(12)

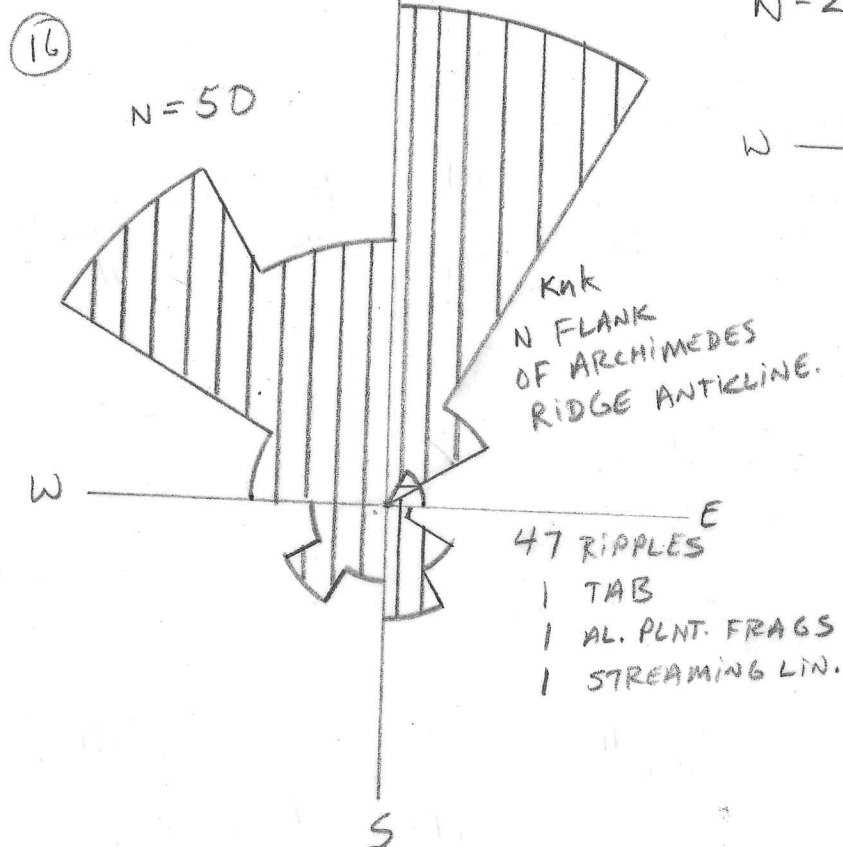
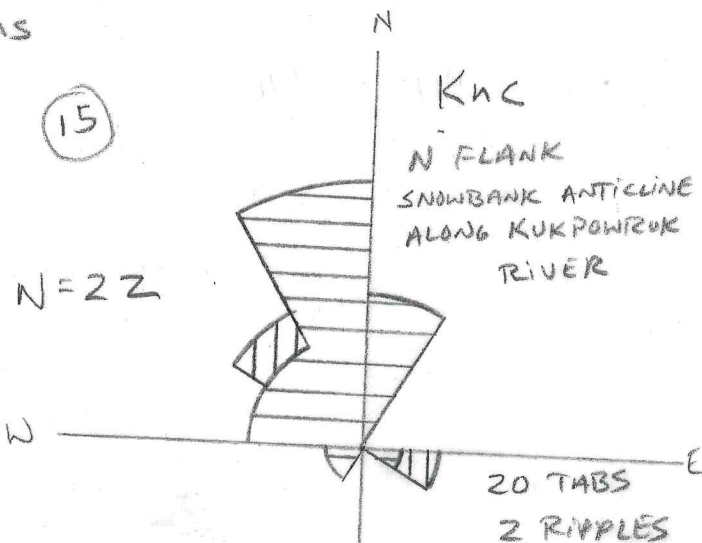
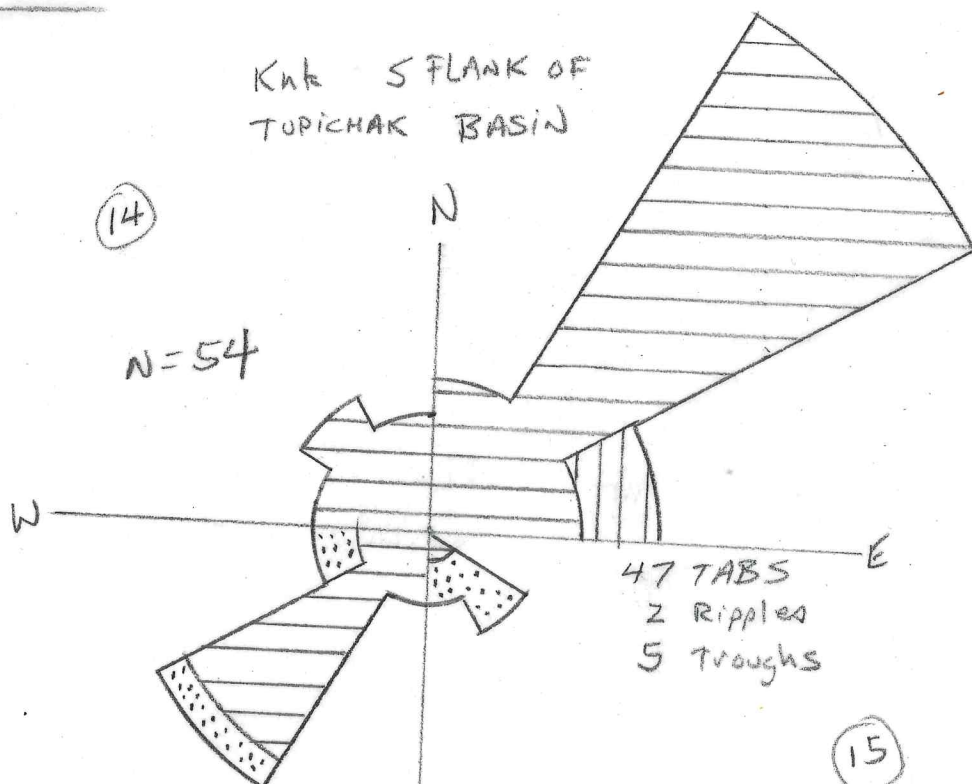






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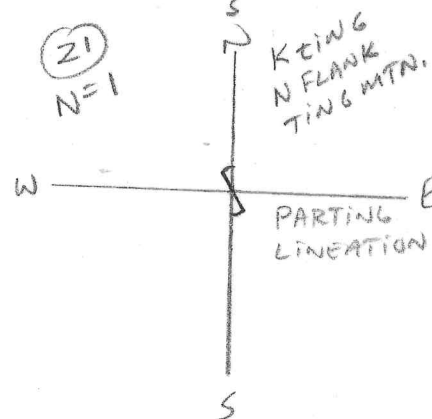
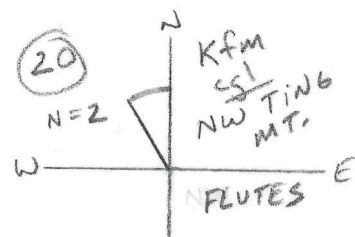
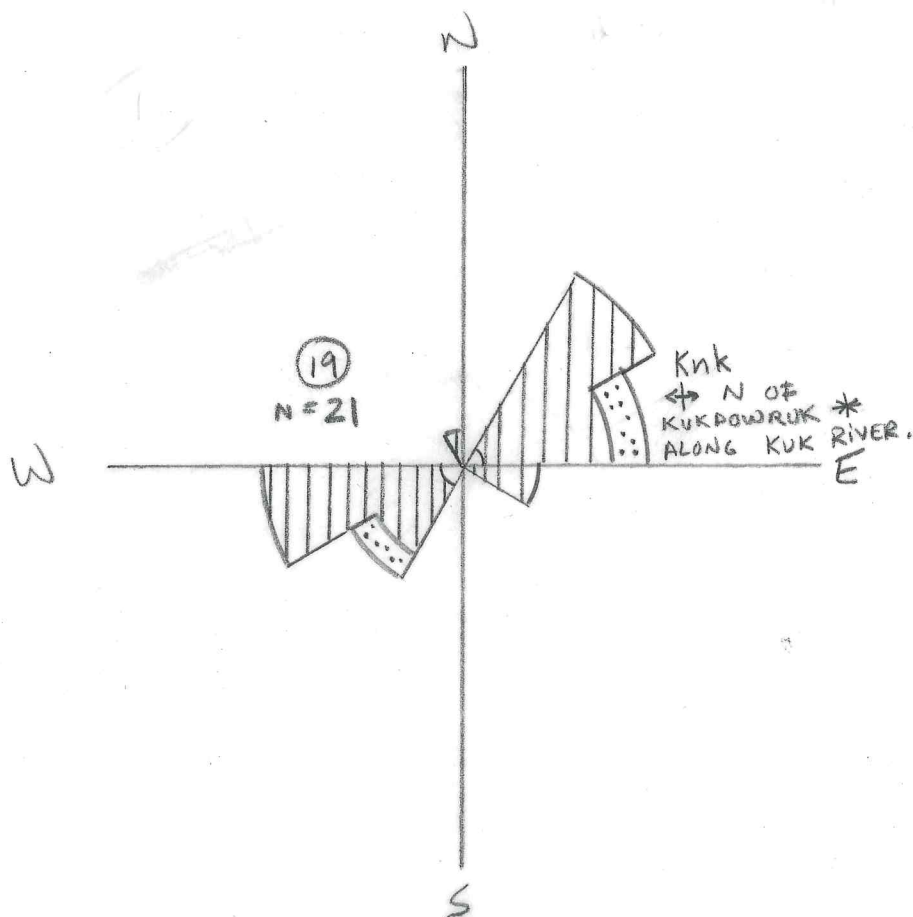
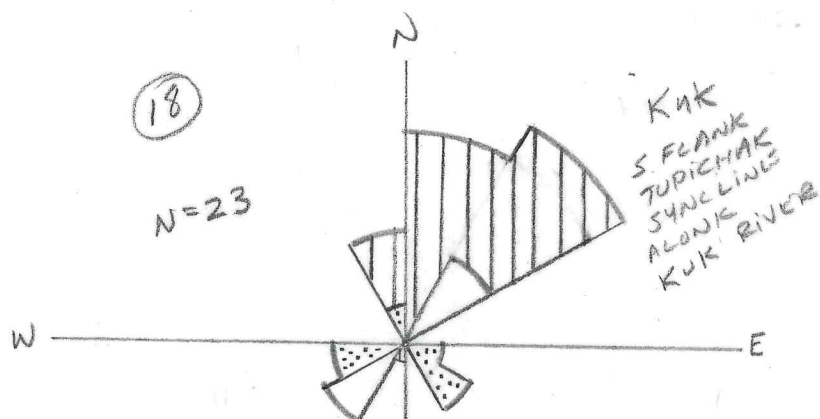
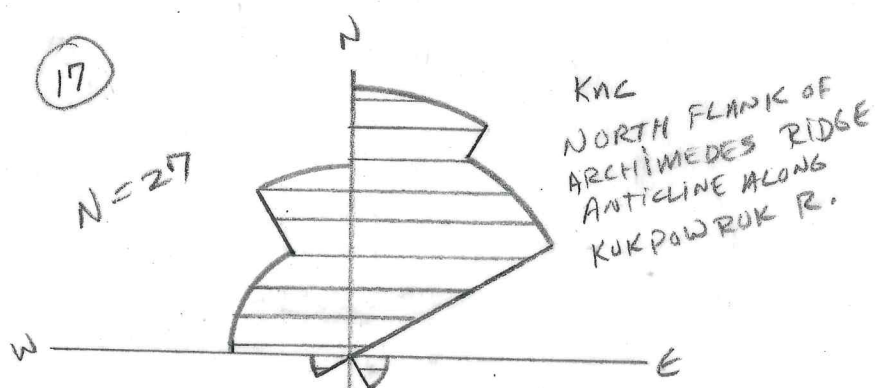


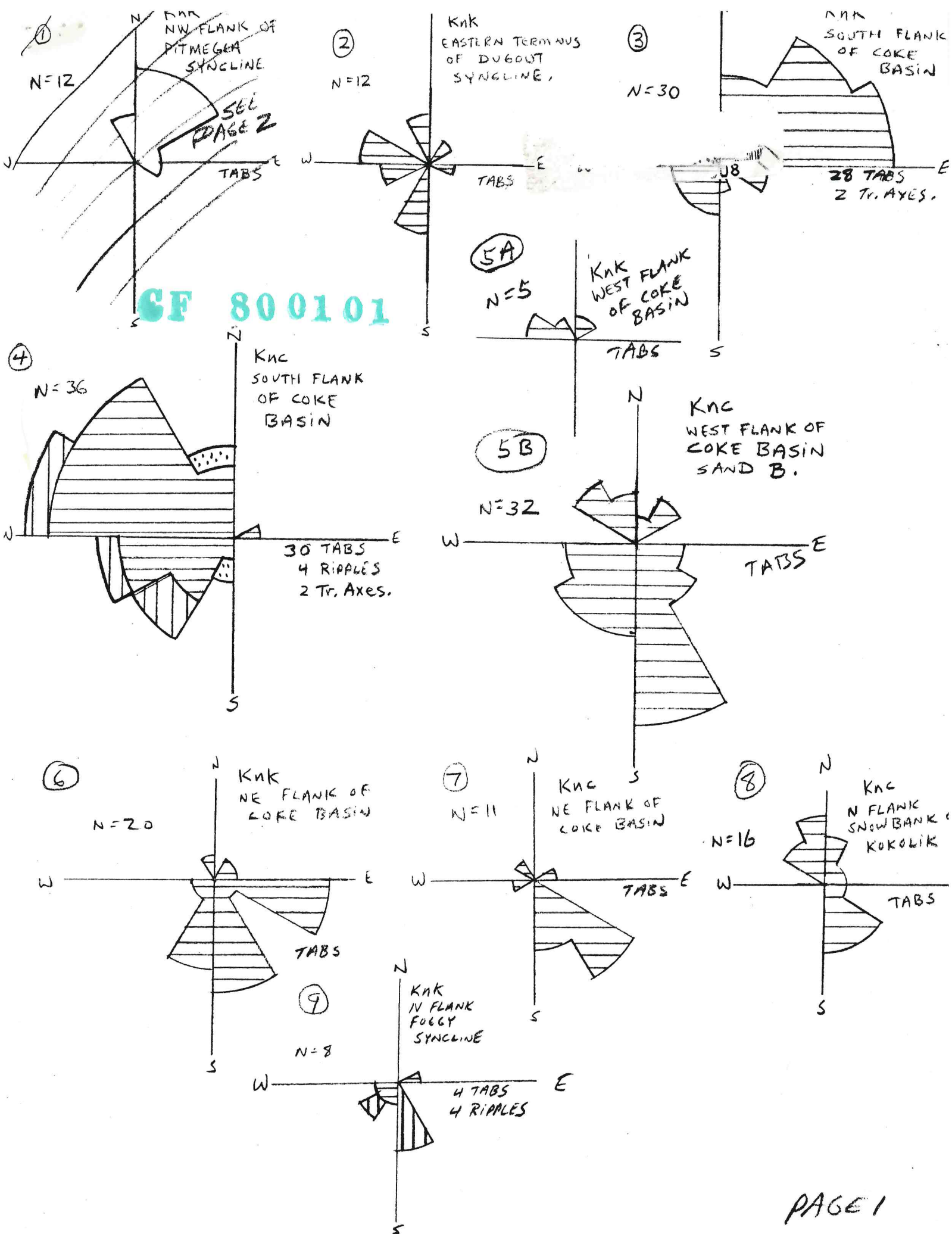
- TROUGHS
- RIPPLES
- TABS

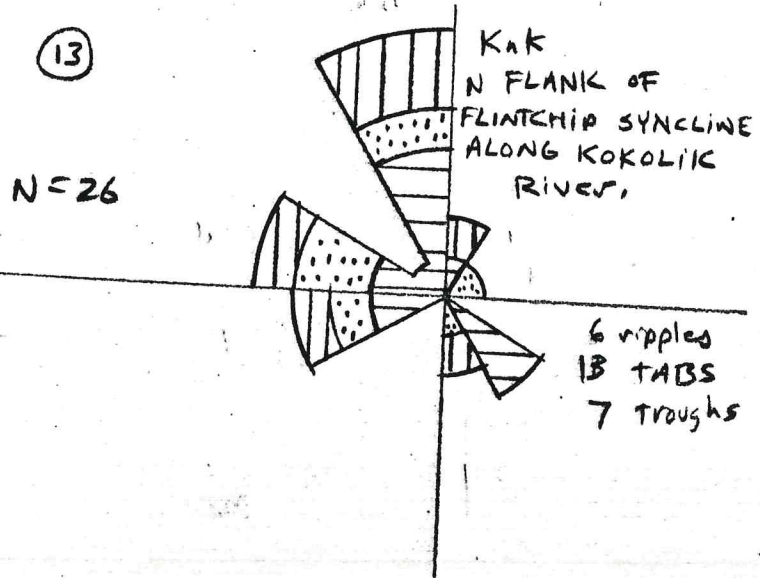
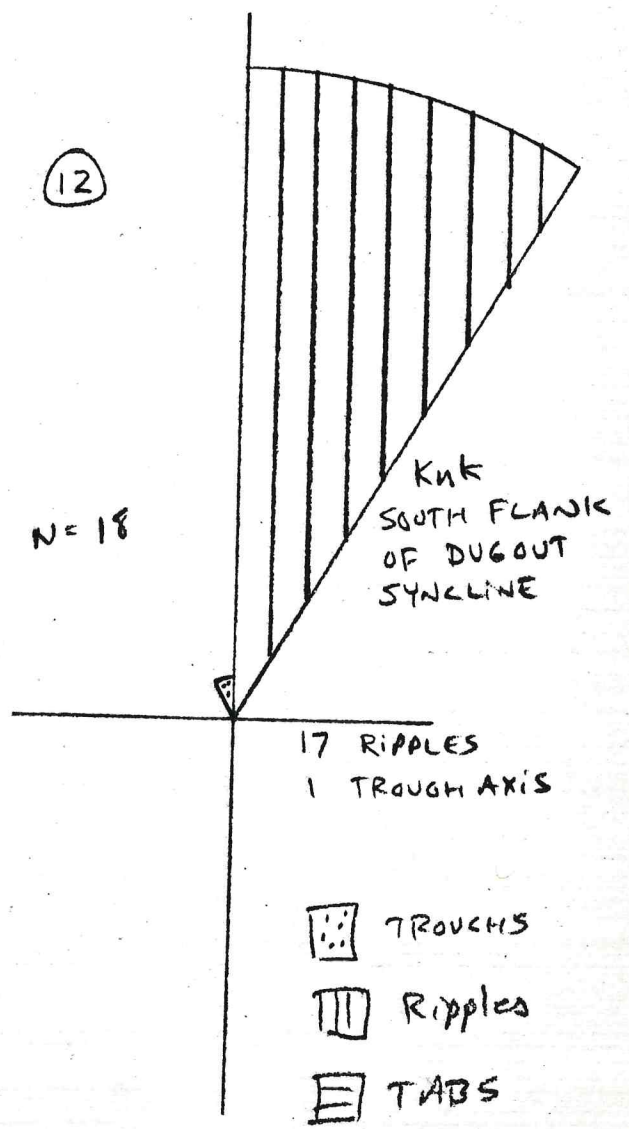
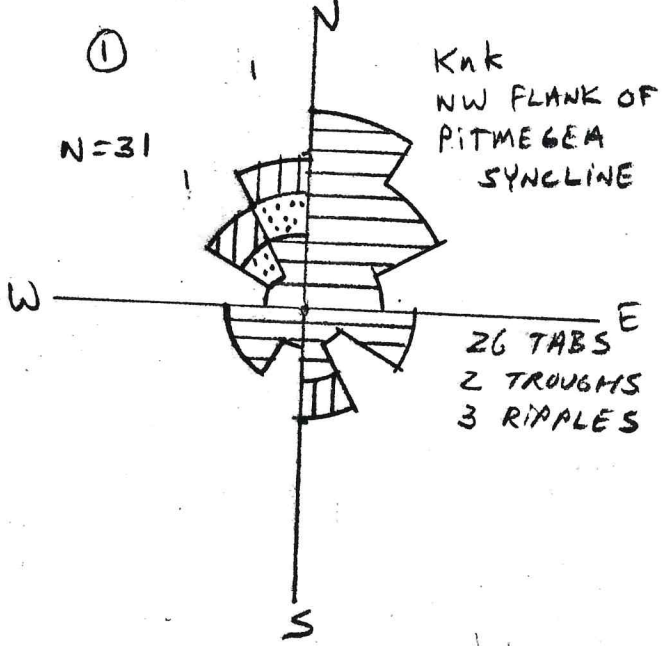
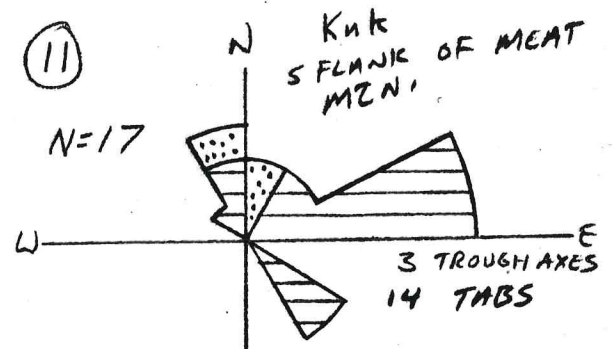
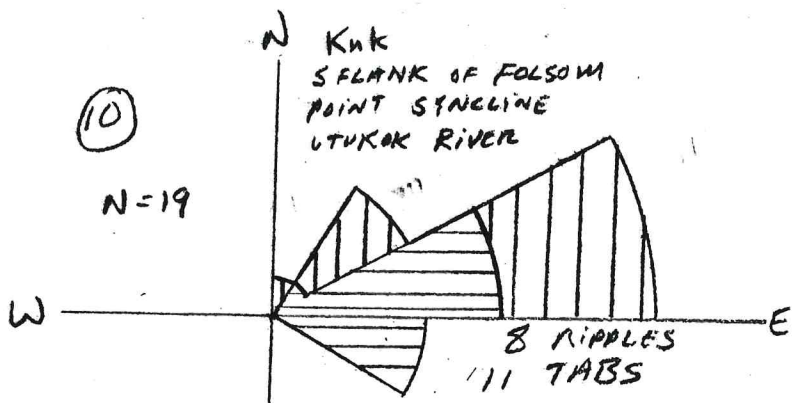
-  TROUGHS
-  RIPPLES
-  TABS






-  TROUGHS
-  RIPPLES
-  TABS
-  OTHER





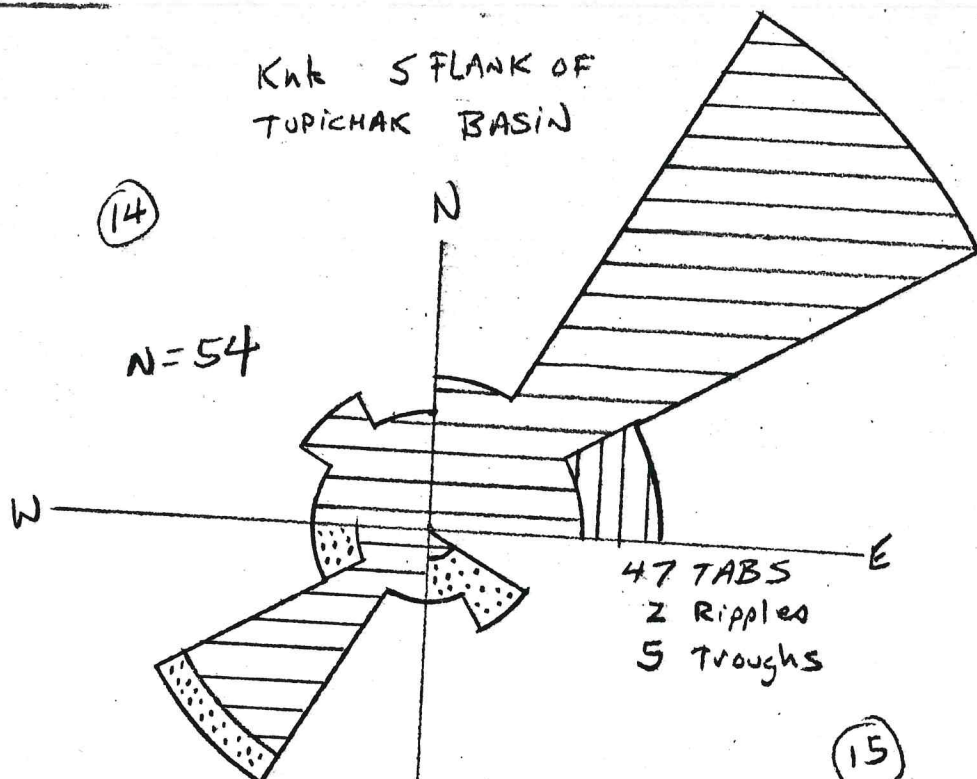


-  TROUGHS
-  RIPPLES
-  TABS

Knk S FLANK OF
TOPICHAK BASIN

(14)

N=54

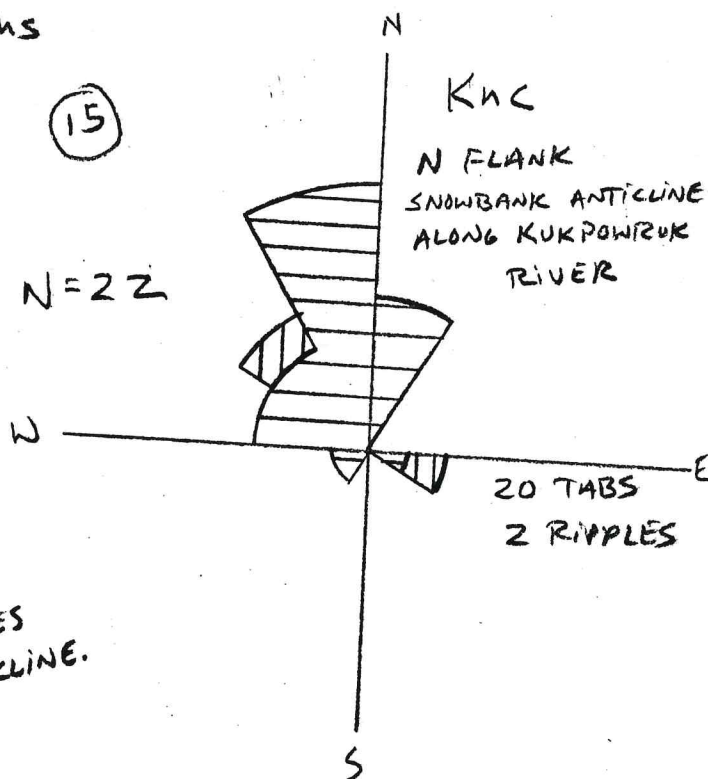


47 TABS
2 Ripples
5 Troughs

(15)

Knc
N FLANK
SNOWBANK ANTICLINE
ALONG KUKPOWIRUK
RIVER

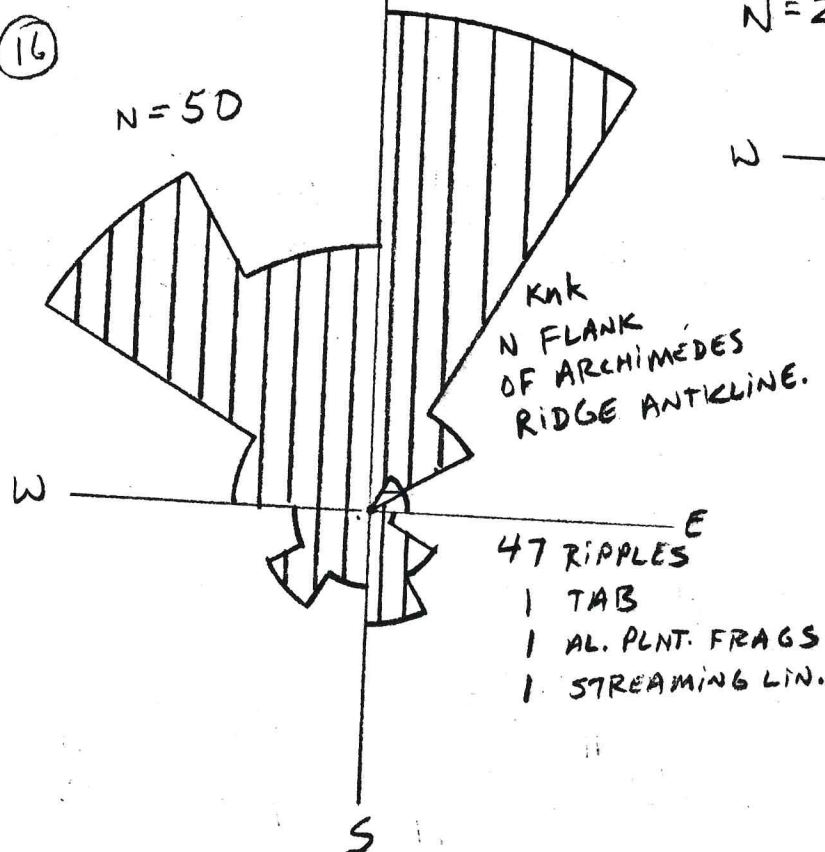
N=22







20 TABS
2 RIPPLES

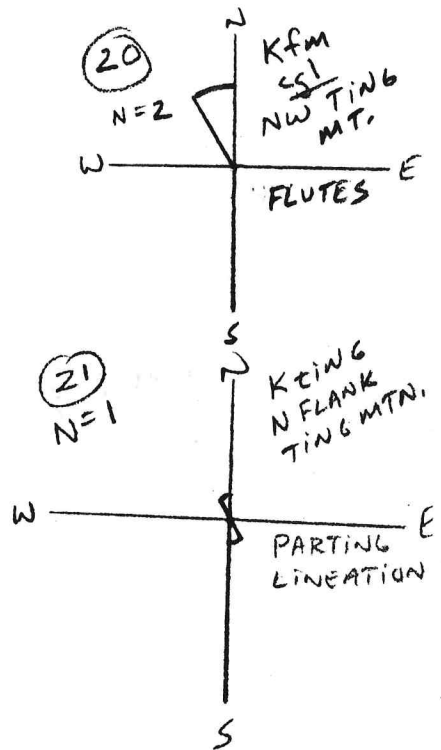
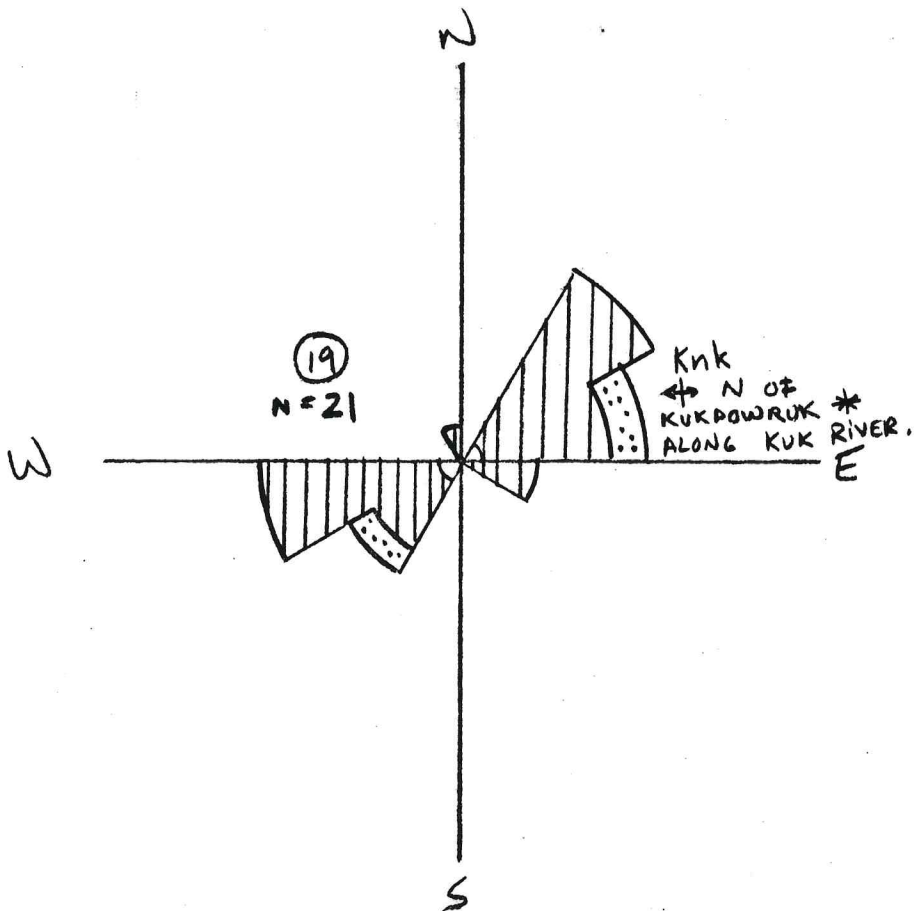
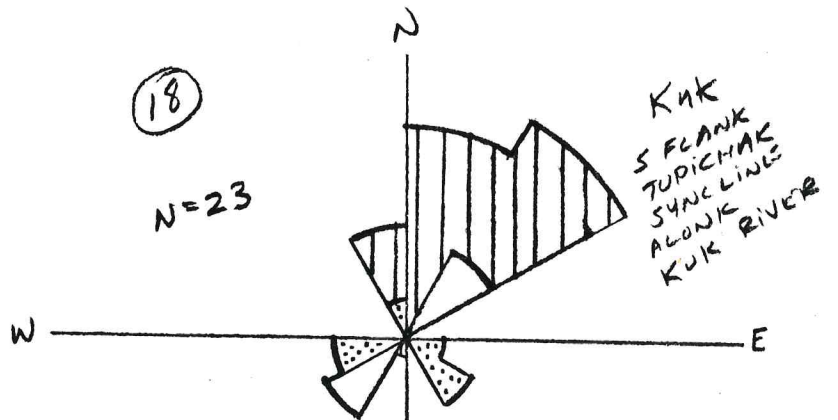
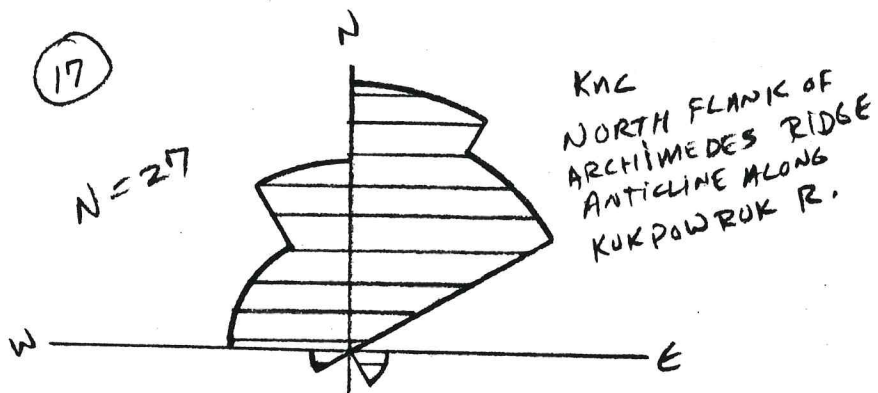
(16)

N=50



47 RIPPLES
1 TAB
1 AL. PLNT. FRAGS
1 STREAMING LIN.

-  TROUGHS
-  RIAPLOS
-  TABS
-  OTHER



DO NOT DESTROY THIS TICKET UNTIL WORK IS FINALIZED

AUTHOR:

Kirk Sherwood

ROOM NO.

2631

=====
This assignment has been completed by Sharon
Seidel and will be retained on Magnetic Card

No.

5E116

until *

Permanent

Any questions may be directed to me on Extension

No. 4068, Room 1928.

CF 800101

*PLEASE NOTIFY IF FURTHER RETENTION IS REQUIRED.

WORD PROCESSING CENTER

APPENDIX 1: PALEO CURRENT DATA

1. Formation: Kukpowruk

Locality: Northwest flank of Pitmegea Syncline, at map
Location: NW/4, NW/4, Sec. 19, T 8S,
R 50W, DeLong Mts. C-4.

Master Bedding: N59E, 27SE

Measured Section and Footage: W-20 @ 530', 2,580',
and 2,745'.

Data:

CF 800101

Attitude Tabular Cross-Beds

Restored Transport Direction

N05W, 25NE
N07W, 24NE
N49W, 23NE
N40E, 24SE
N09E, 34NW
N56W, 11NE
N07W, 30NE
N35E, 06SE
N55E, 27SE
N39E, 26SE
N02E, 36SE
N36E, 46SE
N29W, 28NE
N80E, 24SE
N60E, 34SE
N85E, 26SE
N50E, 37SE
N40E, 38SE
N86W, 23SW
N75E, 32SE
N72E, 37SE
N30W, 18NE
N40E, 04NW
N75E, 29SE
N35E, 32SE
N60E, 45SE
N46E, 40SE

N26E
N24E
N04E
N32E
Restores to 54° Dip.
N13W
N35E
N26W
N61E
N46E
N51E
S75E
N20E
N88W
S29E
S73W
S58E
S81E
S82W
S33W
S11W
N04E
N34W
S50W
N70E
S29E
S66E

Attitude Trough Cross-Beds

N52E, 19SE

N28W

Ripple Transport Direction

N24W
S22E
N50W

N26W
S22E
N49W

2. Formation: Kukpowruk

Locality: Eastern terminus of Dugout Syncline, at map
Location: NE/4, NW/4, SW/4, Sec. 25, T 7S,
R 50W, DeLong Mts. D-3.

Measured Section and Footage: NONE

Master Bedding: N61E, 10-24NW

Data:

Attitude Tabular Cross-BedsRestored Transport Direction

| | |
|------------|-----------------|
| N44W, 09NE | S64E |
| N30E, 21NW | S67W |
| N60E, 23NW | Bad Measurement |
| N47W, 25SW | S18W |
| N09W, 14SW | S24W |
| N32E, 31NW | N88W |
| N63E, 24NW | N10W |
| N54E, 24NW | N84W |
| N61E, 24NW | N28W |
| N32E, 21NW | S67W |
| N75E, 24NW | N34E |
| N50W, 11SW | S02W |
| N36E, 32NW | N79W |

3. Formation: KukpowrukLocality: South flank of Coke Basin, at mapLocation: NW/4, NW/4, Sec. 29, T 7S, R 47W,
DeLong Mts. D-2.Measured Section and Footage: NONEMaster Bedding: N52E, 24NW.Data:Attitude Tabular Cross-BedsRestored Transport Direction

| | |
|------------|----------------------|
| N15W, 22SW | S19W |
| N70E, 27NW | N36E |
| N55E, 23NW | S89E |
| N10W, 22SW | S21W |
| N34E, 26NW | S65W |
| N75E, 19NW | S86E |
| N40W, 37NE | N77E |
| N67E, 36NW | N02E |
| N77E, 44NW | N07E |
| N78W, 42NE | N12E |
| N85E, 48NE | N16E |
| N65E, 41NE | N54E |
| N42W, 59NE | Restores to 60° dip. |
| N53W, 21NE | N81E |
| N88W, 41NE | N32E |
| N12W, 15SW | S01E |
| N38E, 25NW | S47W |
| N89W, 36NE | N39E |
| N62W, 44NE | N56E |
| N26E, 27NW | S56W |
| N75E, 22NW | N75E |
| N36E, 27NW | S64W |
| N50W, 26NE | N85E |
| N55W, 30NE | N76E |
| N85W, 34NE | N46E |
| N61E, 32NW | N02W |
| N70W, 34NE | N63E |
| N75W, 24NE | N75E |

Trend of Trough Axes

| | |
|------|------|
| N42W | N42W |
| N82W | N80W |

4. Formation: CorwinLocality: South flank of Coke Basin at MapLocation: SW/4, NW/4, SE/4, Sec. 20, T 7S,
R47W, DeLong Mts. D-2.Measured Section and Footage: NONEMaster Bedding: N57E, 23NWData:

Attitude Tabular Cross-BedsRestored Transport Direction

| | |
|------------|------|
| N20E, 37NW | S78W |
| N46E, 34NW | N55W |
| N47E, 37NW | N56W |
| N64E, 35NW | N15W |
| N36E, 20NW | S25W |
| N20E, 28NW | S57W |
| N34E, 28NW | S73W |
| N53E, 28NW | N38W |
| N48E, 36NW | N48W |
| N45E, 27NW | S89W |
| N50E, 33NW | N46W |
| N40E, 42NW | N66W |
| N46E, 35NW | N62W |
| N38E, 34NW | N86W |
| N12E, 32NW | S56W |
| N36E, 36NW | N79W |
| N34E, 42NW | N75W |
| N38E, 34NW | N86W |
| N48E, 33NW | N61W |
| N50E, 34NW | N48W |
| N61E, 29NW | N16W |
| N58E, 26NW | N25W |
| N40E, 40NW | N67W |
| N31E, 30NW | S78W |
| N58E, 28NW | N28W |
| N51E, 37NW | N48W |
| N30E, 28NW | S69W |
| N70W, 22NE | N82E |
| N05E, 31NW | S52W |
| N52E, 50NW | N42W |

Ripples, Transport Trend

| | |
|------|------|
| S41W | S40W |
| S47W | S46W |
| N64W | N62W |
| S78W | S80W |

Trend, Trough Axes

| | |
|------|------|
| N25W | N26W |
| S12W | S10W |

5. Formation: Kukpowruk and Corwin (near contact)
Locality: West flank of Coke Basin at map
Location: NW/4 and SW/4 (Sand "A") and
NE/4 and SE/4 (Sand "B") of SE/4,
Sec. 20, T 7S, R 48W, DeLong
Mts. D-3.

Measured Section and Footage: NONE

Master Bedding: N21W, 29E

A. Data: Channel Sand "A" (Kukpowruk Formation)

Attitude Training Cross-BedsRestored Transport Direction

| | |
|------------|---------------------|
| N25W, 32NE | N42E |
| N46W, 21NE | N69W |
| N48W, 22NE | N61W |
| N85W, 35NE | N41W |
| N27W, 32NE | N28E |
| N23E, 24NW | Restores to 50° dip |

- B. Data: Channel Sand "B" (100' to 200' stratigraphically
above Sand "A" in Corwin Formation)

Attitude of Tabular Cross-BedsRestored Transport Direction

| | |
|------------|----------------------|
| N04E, 44NW | Restores to 70° Dip. |
| N35W, 32NE | N01E |
| N08E, 35NW | Restores to 60° Dip. |
| N05W, 24NE | S01W |
| N02W, 29NE | S15E |
| N02W, 33NE | S35E |
| N27E, 38SE | S19E |
| N44E, 12SE | S44W |
| N20W, 08NE | S70W |
| N09E, 45SE | S48E |
| N58W, 23NE | N55W |
| N11W, 25NE | S13W |
| N10E, 23SE | S13W |
| N28W, 15NE | S77W |
| N03W, 16NW | S76W |
| N04E, 37SE | S28E |
| N46W, 30NE | N23W |
| N61W, 18NE | S59W |
| N13W, 38E | S81E |
| N54W, 30NE | N32W |
| N30W, 38NE | N41E |
| N02E, 32E | S29E |
| N00E, 37E | S46E |

6. Formation: Kukpowruk

Locality: Northeast flank of Coke Basin at map
Location: NE/4, NW/4, NW/4, Sec. 4, T 7S,
R 47W (1st 14); and, SW/4, SE/4,
Sec. 29, T 6S, R47W, DeLong Mts.
D-2 (last 6).

Measured Section and Footage: W-26, @ 6750'.

Master Bedding: N38W, 17SW (1st 14); N53W, 23SW (last 6).

Data: Channelized sand body at 6750', studies at two
separate localities.

Attitude Tabular Cross-BedsRestored Transport Direction

| | |
|------------|------|
| N64W, 26SW | S05E |
| N74E, 19SE | S61E |
| N27E, 35SE | S79E |
| N35W, 24SW | S69W |
| N74W, 30S | S14E |
| N47W, 21S | S18W |
| N71W, 41S | S03W |
| N59W, 22S | S10E |
| N68W, 26S | S12E |
| N78W, 22S | S37E |
| N58W, 24S | S08W |
| N66W, 29S | S04E |
| N64W, 39S | S11W |
| N65E, 21SE | S87E |
| N52E, 22SE | N89E |
| N31W, 20SW | N24W |
| N74W, 08SW | N46E |
| N78W, 21SW | S87E |

Trough Cross-Bed

N05E, 16SE

N61E

7. Formation: Corwin

Locality: Northeast flank of Coke Basin at map

Location: SW/4, SE/4, NW/4, NE/4, Sec. 6,
T 7S, R47W, Delong Mts. D-2.

Measured Section and Footage: W-26, @ 8910' to 9020'.

Master Bedding: N65W, 12SW

Data:

Attitude Tabular Cross-Beds

Restored Transport Direction

N50W, 15SW
N12W, 14SW
N50E, 11SE
N88E, 22SE
N87W, 26SW
N85E, 21SE
N72E, 24SE
N75E, 25SE
N80E, 26SE
N74E, 19NW
N66E, 36SE

S76W
N45W
N86E
S25E
S14E
S30E
S42E
S40E
S31E
S55E
S42E

8. Formation: Corwin

Locality: North flank of Snowbank Anticline along
Kokolik River, at map

Location: Sec. 13, T 1S, R 40W, Utukok River
B-5.

Measured Section and Footage: W-24 @ 1,555' and 1,740'.

Master Bedding: N89E, 27NW (first 2) and N82E, 34N
(last 14).

Data:

Attitude Tabular Cross-Beds

Restored Transport Direction

N80E, 43NW
N42W, 05NE
N40W, 10NE
N45W, 26NE
N60W, 21NE
N64W, 27NE
N85E, 12SE
N82E, 48NW
N72E, 44NW
N61W, 15NE
N77E, 47NW
N86E, 49NW
N84E, 41NW
N68W, 40NE
N86E, 35NW
N81W, 49NE

N22W
S10E
S27E
S58E
S47E
S63E
S07E
N25W
N50W
S33E
N35W
N04E
N01E
N77E
N45E
N12W

9. Formation: Kukpowruk

Locality: North flank of Foggy Syncline in NW/4 of
Sec. 1, T 5S, R 37W and SW/4, Sec. 6, T
5S, R 36W, Utukok River A-3.

Measured Section and Footage: W-23 @ 30', 465' and 1,120'.

Master Bedding: N84E, 12SE (1st 6); N23W, 07SW (last 2).

Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| S14E | S14E |
| S19E | S19E |
| S04E | S04E |
| S35W | S35W |

Attitude Tabular Cross-Beds

| | |
|------------|------|
| N44W, 18NE | N88E |
| N62W, 17SW | S16W |
| N14W, 17SW | S67W |
| N18W, 15SW | S52W |

10. Formation: Kukpowruk
Locality: South flank of Folsom Point Syncline along Utukok River at map
Locations: Section 32, T 3S, R 37W, and Section 3, and 5, T 4S, R 37W, Utukok River Quad.
Measured Section and Footages: W-22 @ 140' to 160' and 420'.
Master Bedding: N55W, 07NE (1st 8); N48W, 16NE (last 11).
Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| N54E | N54E |
| N64E | N64E |
| N38E | N38E |
| N43E | N43E |
| N77E | N77E |
| N28E | N28E |
| N66E | N66E |
| N72E | N72E |

Attitude Tabular Cross-Beds

| | |
|------------|------|
| N35W, 19NE | N69E |
| N05W, 27NE | S81E |
| N08W, 28NE | S86E |
| N30W, 22NE | N89E |
| N14E, 18SE | S62E |
| N55W, 30NE | N62E |
| N41W, 32NE | N72E |
| N32W, 15NE | S86E |
| N74W, 20NE | N61E |
| N38W, 28NE | N78E |
| N33W, 19NE | N89E |

11. Formation: Kukpowruk
Locality: South flank of Meat Mountain at map
Location: Sections 17 and 20, T 6S, R 37W, Misheguk Mt. Quad.
Measured Section and Footages: W-21 @ 855', 1,210' and 2,260'.

Master Bedding: N80E, 10NW
Data:

Trough Axis Trend

N05E
N20W

Restored Transport Direction

N05E
N20W

Attitude Tabular Cross-Beds

N73E, 12NW
N66W, 06NE
N28W, 10NE
N05E, 14SE
N85E, 27N
N45W, 18NE
N67W, 21NE
N25W, 27NE
N17W, 29NE
N52W, 14NE
N38W, 17NE
N40W, 17NE
N04E, 14SE
N06E, 15NW

N19W
S52E
S60E
S49E
N01W
N71E
N40E
N82E
N88E
N79E
N80E
N31E
N61E
N48W

12. Formation: Kukpowruk
Locality: South flank of Dugout Syncline at map
Location: NW/4, Sec. 25 and SW/4 of Sec. 24;
T 7S, R51W, DeLong Mts. D-4.
Measured Section and Footages: W-19, @ 570' and 870'.
Master Bedding: N45W, 16NE
Data:

Ripple Transport Direction

N24E
N15E
N28E
N20E
N25E
N15E
N01E
N06E
N09E
N08E
N12E
N10E
N20E
N23E
N11E
N21E
N09E

Restored Transport Direction

N24E
N15E
N28E
N20E
N25E
N15E
N01E
N06E
N09E
N08E
N12E
N10E
N20E
N23E
N11E
N21E
N09E

Trend of Trough Axis

N30W

N30W

13. Formation: Kukpowruk
Locality: North flank of Flintchip Syncline, along
Kokolik River at map
Location: NE/4, Sec. 17, T 5S, R 42W, Utukok
River Quad.

Measured Section and Footages: W-18 @ 420'-480',
710', 940' and 1000'.
Master Bedding: N55E, 39SE (first 17); N75E, 26SE (last 12).
Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| S00E | S06E |
| N12W | N17W |
| N14W | N20W |
| N12E | N05E |
| S70W | S77W |

Attitude Tabular Cross-Beds

| | |
|------------|------|
| N75E, 32SE | S34E |
| N80E, 48SE | S35E |
| N70E, 05SE | N24W |
| N62E, 03SE | N23W |
| N63E, 39SE | S47E |
| N55W, 42SW | S81W |
| N74W, 33SW | S89W |
| N80E, 24SE | N62W |

Attitude Trough Cross-Beds

| | |
|------------|------|
| N27E, 67SE | S05E |
| N67E, 42SE | N41E |
| N74E, 40SE | N61E |
| N88E, 30NW | N09W |

Ripple Transport Direction

| | |
|------|------|
| N80W | N74W |
|------|------|

Attitude Trough Cross-Beds

| | |
|------------|------|
| N70W, 28SW | S81W |
| N84E, 24SE | N79W |
| N55W, 28SW | N87W |

Attitude Tabular Cross-Beds

| | |
|------------|-----------------------------------|
| N45W, 33SW | N89W |
| N42W, 10NE | N03E |
| N85W, 09NE | N09W |
| N65E, 13NW | N18W |
| N65W, 37NE | Restores to dip greater than 40°. |
| N40W, 34NE | Restores to dip greater than 40°. |
| N58W, 29NE | Restores to dip greater than 40°. |
| N25E, 24NW | N41W |

14. Formation: Kukpowruk
Locality: South flank of Tupichak Basin along Kokolik
River, at map
Location: NE/4, Sec. 1, T 7S, R 43W., DeLong
Mts. Quad.
Measured Section and Footages: Sections W-17A, W-17B
and W-17C @ 1,170',
1,430' and 2,390'.
Master Bedding: N28W, 18NE (first 39); N40W, 21NE (last 15).

Data:

Attitude Tabular Cross-Beds

N36W, 26NE
N60W, 35NE
N30W, 35NE
N41W, 36NE
N36W, 37NE
N80W, 35NE
N70E, 12NW
N35W, 25NE
N60W, 36NE
N47W, 18NE
N55W, 21NE
N30W, 35NE
N40W, 34NE
N24W, 32NE

Restored Transport Direction

N38E
N06E
N58E
N38E
N48E
N06E
N82W
N40E
N09E
N37W
N20W
N58E
N40E
N70E

Ripple Transport Direction

N70E
N75E

N69E
N74E

Attitude Tabular Cross-Beds

N15W, 20NE
N75E, 24NW
N85W, 30NE
N25E, 18NW
N43W, 13NE
N70E, 22NW
N15E, 15NW
N65W, 31NE
N55W, 22NE
N40W, 22NE
N54W, 18NE
N80E, 10SE
N50E, 11SE
N88E, 06SE
N87E, 11SE
N70E, 08SE
N62E, 00
N85E, 14SE

S38E
N56W
N31W
S88W
N80W
N62W
S82W
N05W
N17W
N13E
N42W
S36W
S20W
S46W
S35W
S39W
S59W
S31W

Attitude Large Scale Trough Cross-Beds

N65W, 14NE
N23W, 29NE
N30W, 23NE
N40W, 21NE
N25W, 27NE

S82W
S59E
S13E
S48W
S48E

Attitude Tabular Cross-Beds

N15W, 23NE
N24W, 29NE
N32W, 26NE
N35W, 28NE

N48E
N67E
N47E
N46E

15. Formation: Corwin
 Location: North flank of Snowbank Anticline along
 Kukpowruk River, at map
 Location: Sections 27, 28, and 21, T 1N,
 R 44W, Point Lay B-2 Quad.
 Measured Section and Footages: Section W-16 @ 815',
 860'-890', 1,020',
 Master Bedding: N60E, 68NW (first 1); N85W, 59NE (last 21).
 Data:

S86E

| | |
|------------|------|
| N90E, 64NE | N34W |
| N85E, 76NW | N25W |
| N85W, 79N | N06E |
| N85E, 74N | N27W |
| N80E, 60N | N86W |
| N89W, 70N | N14W |
| N84W, 69N | N13E |
| N88W, 68N | N08W |
| N83E, 74N | N13E |
| N90E, 74N | N09W |
| N80E, 66N | N64W |
| N86E, 70N | N32W |
| N50W, 74N | S86E |
| N86E, 53N | S58W |
| N80E, 71N | N47W |
| N85W, 68N | N02E |
| N76E, 66N | N68W |
| N80W, 72N | N18W |
| N84E, 78N | N25W |
| N88E, 54N | S62W |

N50W

16. Formation: Kukpowruk
 Locality: North flank of Archimedes Ridge Anticline
 along Kukpowruk River (type Section KNK),
 at map
 Location: Section 21, 22, 23, of T 2S, R 45W,
 Point Lay A-2 and B-2 Quads.

Measured Section and Footages: Section W-15 @ 110',
295', 475', 494', 705',
2,005', 2,090', 2,110',
2,170', 2,208', 2,248',
2,258', 2,285', 2,293',
2,503', 2,530'.

Master Bedding: N40E, 32NW, (1st 2); N35E, 23NW (2nd 2);
N20E, 32NW (5th); N31E, 21NW (6th);
N38E, 29NW (#7 - #20); N47E, 27NW
(#21 - #35); N48E, 23NW (#36 - #50)

Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| N72W | N61W |
| N60W | N55W |
| S45W | S59W |
| S35E | S46E |

Attitude Tabular Cross-Bed

| | |
|------------|------|
| N50E, 32NW | N34E |
|------------|------|

Ripple Transport Direction

| | |
|------|------|
| N82W | N80W |
| N40W | N42W |
| S00W | S04E |
| S80W | S84W |
| S70W | S74W |
| N15E | N12E |
| S55W | S57W |
| S41W | S40W |
| N05E | N02E |
| S10W | S06W |
| N47W | N48W |
| N75E | N78E |
| S20W | S18W |

Trend Streaming Lineation

| | |
|-----------|-----------|
| N65W-S65E | N64W-S64E |
|-----------|-----------|

Trend Aligned Plant Fragments

| | |
|-----------|-----------|
| N55W-S55E | N55W-S55E |
|-----------|-----------|

Ripple Transport Direction

| | |
|-----------|-----------|
| N05E | N02E |
| N20E | N14E |
| N20W | N22E |
| N45E | N44E |
| N30E | N28E |
| N10E | N07E |
| N05E | N02E |
| N10W | N14W |
| N10E | N07E |
| N45W | N45W |
| N40E | N40E |
| N60W-S60E | N58W-S58E |

S15E
S25E
N60E
N05E
N10W
N10W
N20W
N45W
N55W
N10W
N20E
N45W
N35W
N20E
N50W
N20W
N15W
N25E

S17E
S27E
N62E
N03E
N12W
N12W
N22W
N45W
N54W
N13W
N18E
N45W
N36W
N17E
N50W
N22W
N17W
N23E

17. Formation: Corwin
 Locality: North flank of Archimedes Ridge Anticline along
 Kukpowruk River, at map
 Location: Sections 21, 22, 23, of T 2S, R 45W,
 Point Lay A-2 and B-2 Quads.
 Measured Section and Footages:Section W-15, @ 2,550',
 2,565', 2,575', 2,582',
 2,597', 2,620'.
 Master Bedding: N48E, 23NW (first 14); N42E, 24NW (last 15).
 Data:

Attitude Tabular Cross-Beds

N62E, 17SE
N35E, 33NW
N65E, 34NW
N65E, 32NW
N68E, 25NW
N75E, 37NW
N54E, 22NW
N45E, 38NW
N47E, 30NW
N30E, 38NW
N45E, 13SE
N36E, 29NW
N35E, 27NW
N50E, 36NW
N55E, 38NW
N68E, 40NW
N68E, 13SW
N55E, 32NW
N40E, 31NW
N80E, 33NW
N68E, 46NW
N73E, 48NW
N90E, 36N
N53E, 43NW
N60E, 39NW
N75E, 28NW
N72E, 25NW
N60E, 26NW
N80E, 44NW

Restored Transport Direction

Restored dip greater than 40°.
N83W
N03E
N10E
N39E
N12E
Restored dip greater than 40°.
N43W
N29W
N83W
S48E
N72W
S88W
N31W
N10W
N06E
S78E
N02E
N42W
N34E
N03W
N03E
N37E
N27W
N07W
N44E
N52E
N35E
N15E

19. Formation: Kukpowruk
 Locality: On crest of Anticline north of Kukpowruk
 Syncline, along west bank of Kukpowruk River
 at map
 Location: NW/4, SE/4, NW/4, Sec. 14, T 3S,
 R45W, Point Lay A-2 Quad.
 Measured Section and Footages: W-13 @ 0'-10',
 120'-145'.
 Master Bedding: N00E, 12½ W; N25W, 08SW; N10W, 10SW.
 Data:

| <u>Trend of Trough Axis</u> | <u>Restored Transport Direction</u> |
|-----------------------------|-------------------------------------|
| N75E | N75E |

| <u>Trend of Aligned Plant Fragments</u> | |
|---|-------------|
| N41E | S41W - N41E |

| <u>Ripple Transport Direction</u> | |
|-----------------------------------|------|
| N60E | N60E |
| N50E | N50E |
| S89W | S89W |
| S52W | S52W |

| <u>Trend Streaming Lineations</u> | |
|-----------------------------------|-----------|
| S68W | N68E-S68W |
| S60W | N60E-S60W |

| <u>Ripple Transport Direction</u> | |
|-----------------------------------|------|
| N55E | N55E |
| N15W | N15W |
| N35E | N35E |
| N65E | N65E |
| S75E | N75E |
| S65E | S65E |
| N70E | N70E |
| N60E | N60E |
| S78W | S78W |
| S70W | S70W |
| S89W | S89W |
| S60W | S60W |

| <u>Trend of Trough Axis</u> | |
|-----------------------------|------|
| S40W | S40W |

20. Formation: Fortress Mountain Conglomerate
 Locality: Syncline northwest of Tingmerkpuuk Mountain
 in Sections 17 and 18, T 10S, R 45W.
 Measured Section and Footages: W-12 @ 318'.
 Master Bedding: N67E, 73SE (overturned).
 Data:

| <u>Flute Cast Transport Direction</u> | <u>Restored Transport Direction</u> |
|---------------------------------------|-------------------------------------|
| N50W (south to north) | N14W |
| N50W (south to north) | N14W |

21. Formation: "TING" Sand (Fortress Mountain?).
Locality: North flank of Tingmerkpuk Mountain, at
map location:
Measured Section and Footages: W-11 @
Master Bedding: N18W, 39SW
Data:

Parting Lineation

6° to S17E

Restored Transport Direction

S14E-N14W

APPENDIX 1: PALEO CURRENT DATA

1. Formation: Kukpowruk

Locality: Northwest flank of Pitmegea Syncline, at map
 Location: NW/4, NW/4, Sec. 19, T 8S,
 R 50W, DeLong Mts. C-4.

Master Bedding: N59E, 27SE

Measured Section and Footage: W-20 @ 530', 2,580',
 and 2,745'.

Data:

| <u>Attitude Tabular Cross-Beds</u> | <u>Restored Transport Direction</u> |
|------------------------------------|-------------------------------------|
| N05W, 25NE | N26E |
| N07W, 24NE | N24E |
| N49W, 23NE | N04E |
| N40E, 24SE | N32E |
| N09E, 34NW | Restores to 54° Dip. |
| N56W, 11NE | N13W |
| N07W, 30NE | N35E |
| N35E, 06SE | N26W |
| N55E, 27SE | N61E |
| N39E, 26SE | N46E |
| N02E, 36SE | N51E |
| N36E, 46SE | S75E |
| N29W, 28NE | N20E |
| N80E, 24SE | N88W |
| N60E, 34SE | S29E |
| N85E, 26SE | S73W |
| N50E, 37SE | S58E |
| N40E, 38SE | S81E |
| N86W, 23SW | S82W |
| N75E, 32SE | S33W |
| N72E, 37SE | S11W |
| N30W, 18NE | N04E |
| N40E, 04NW | N34W |
| N75E, 29SE | S50W |
| N35E, 32SE | N70E |
| N60E, 45SE | S29E |
| N46E, 40SE | S66E |

Attitude Trough Cross-Beds

| | |
|------------|------|
| N52E, 19SE | N28W |
|------------|------|

Ripple Transport Direction

| | |
|------|------|
| N24W | N26W |
| S22E | S22E |
| N50W | N49W |

2. Formation: Kukpowruk

Locality: Eastern terminus of Dugout Syncline, at map
 Location: NE/4, NW/4, SW/4, Sec. 25, T 7S,
 R 50W, DeLong Mts. D-3.

Measured Section and Footage: NONE

Master Bedding: N61E, 10-24NW

Data:

Attitude of Tabular Cross-BedsRestored Transport Direction

N04E, 44NW
N35W, 32NE
N08E, 35NW
N05W, 24NE
N02W, 29NE
N02W, 33NE
N27E, 38SE
N44E, 12SE
N20W, 08NE
N09E, 45SE
N58W, 23NE
N11W, 25NE
N10E, 23SE
N28W, 15NE
N03W, 16NW
N04E, 37SE
N46W, 30NE
N61W, 18NE
N13W, 38E
N54W, 30NE
N30W, 38NE
N02E, 32E
N00E, 37E

Restores to 70° Dip.
N01E
Restores to 60° Dip.
S01W
S15E
S35E
S19E
S44W
S70W
S48E
N55W
S13W
S13W
S77W
S76W
S28E
N23W
S59W
S81E
N32W
N41E
S29E
S46E

6. Formation: KukpowrukLocality: Northeast flank of Coke Basin at map

Location: ~~N~~^E/4, NW/4, NW/4, Sec. 4, T 7S,
R 47W (1st 14); and, SW/4, SE/4,
Sec. 29, T 6S, R47W, DeLong Mts.
D-2 (last 6).

Measured Section and Footage: W-26, @ 6750'.Master Bedding: N38W, 17SW (1st 14); N53W, 23SW (last 6).Data: Channelized sand body at 6750', studies at two
separate localities.Attitude Tabular Cross-BedsRestored Transport Direction

N64W, 26SW
N74E, 19SE
N27E, 35SE
N35W, 24SW
N74W, 30S
N47W, 21S
N71W, 41S
N59W, 22S
N68W, 26S
N78W, 22S
N58W, 24S
N66W, 29S
N64W, 39S
N65E, 21SE
N52E, 22SE
N31W, 20SW
N74W, 08SW
N78W, 21SW

S05E
S61E
S79E
S69W
S14E
S18W
S03W
S10E
S12E
S37E
S08W
S04E
S11W
S87E
N89E
N24W
N46E
S87E

Trough Cross-Bed

N05E, 16SE

N61E

7. Formation: Corwin

Locality: Northeast flank of Coke Basin at map

Location: SW/4, SE/4, NW/4, NE/4, Sec. 6,
T 7S, R47W, Delong Mts. D-2.

Measured Section and Footage: W-26, @ 8910' to 9020'.

Master Bedding: N65W, 12SW

Data:

Attitude Tabular Cross-Beds

Restored Transport Direction

N50W, 15SW
N12W, 14SW
N50E, 11SE
N88E, 22SE
N87W, 26SW
N85E, 21SE
N72E, 24SE
N75E, 25SE
N80E, 26SE
N74E, 19NW
N66E, 36SE

S76W
N45W
N86E
S25E
S14E
S30E
S42E
S40E
S31E
S55E
S42E

8. Formation: Corwin ^f

Locality: North flank of Snowbank Anticline along
Kokolik River, at map

Location: Sec. 13, T 1S, R 40W, Utukok River
B-5.

Measured Section and Footage: W-24 @ 1,555' and 1,740'.

Master Bedding: N89E, 27NW (first 2) and N82E, 34N
(last 14).

Data:

Attitude Tabular Cross-Beds

Restored Transport Direction

N80E, 43NW
N42W, 05NE
N40W, 10NE
N45W, 26NE
N60W, 21NE
N64W, 27NE
N85E, 12SE
N82E, 48NW
N72E, 44NW
N61W, 15NE
N77E, 47NW
N86E, 49NW
N84E, 41NW
N68W, 40NE
N86E, 35NW
N81W, 49NE

N22W
S10E
S27E
S58E
S47E
S63E
S07E
N25W
N50W
S33E
N35W
N04E
N01E
N77E
N45E
N12W

9. Formation: Kukpowruk

Locality: North flank of Foggy Syncline in NW/4 of
Sec. 1, T 5S, R 37W and SW/4, Sec. 6, T
5S, R 36W, Utokok River A-3.

Measured Section and Footage: W-23 @ 30', 465' and 1,120'.

Master Bedding: N84E, 12SE (1st 6); N23W, 07SW (last 2).
Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| S14E | S14E → |
| S19E | S19E → |
| S04E | S04E |
| S35W | S35W |

Attitude Tabular Cross-Beds

| | |
|------------|------|
| N44W, 18NE | N88E |
| N62W, 17SW | S16W |
| N14W, 17SW | S67W |
| N18W, 15SW | S52W |

10. Formation: Kukpowruk
Locality: South flank of Folsom Point Syncline along Utukok River at map
Locations: Section 32, T 3S, R 37W, and Section 3, and 5, T 4S, R 37W, Utokok River Quad.
Measured Section and Footages: W-22 @ 140' to 160' and 420'.
Master Bedding: N55W, 07NE (1st 8); N48W, 16NE (last 11).
Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| N54E | N54E |
| N64E | N64E |
| N38E | N38E |
| N43E | N43E |
| N77E | N77E |
| N28E | N28E |
| N66E | N66E |
| N72E | N72E |

Attitude Tabular Cross-Beds

| | |
|------------|------|
| N35W, 19NE | N69E |
| N05W, 27NE | S81E |
| N08W, 28NE | S86E |
| N30W, 22NE | N89E |
| N14E, 18SE | S62E |
| N55W, 30NE | N62E |
| N41W, 32NE | N72E |
| N32W, 15NE | S86E |
| N74W, 20NE | N61E |
| N38W, 28NE | N78E |
| N33W, 19NE | N89E |

11. Formation: Kukpowruk
Locality: South flank of Meat Mountain at map
Location: Sections 17 and 20, T 6S, R 37W, Misheguk Mt. Quad.
Measured Section and Footages: W-21 @ 855', 1,210' and 2,260'.

| | |
|------------|------|
| N40E, 12SE | S12W |
| N38W, 27NE | N39E |
| N30W, 19NE | N59E |
| N25W, 48NE | N65E |
| N36W, 26NE | N45E |
| N25E, 06SE | S38W |
| N28W, 37NE | N62E |
| N28W, 21SE | N57E |
| N22E, 21SE | S26E |
| N41W, 24NE | N37E |
| N32W, 37SW | N57E |

15. Formation: Corwin
 Location: North flank of Snowbank Anticline along
 Kukpowruk River, at map
 Location: Sections 27, 28, and 21, T 1N,
 R 44W, Point Lay B-2 Quad.
 Measured Section and Footages: Section W-16 @ 815',
 860'-890', 1,020',
 Master Bedding: N60E, 68NW (first 1); N85W, 59NE (last 21).
 Data:

| <u>Ripple Transport Direction</u> | <u>Restored Transport Direction</u> |
|-----------------------------------|-------------------------------------|
| N75E | S86E |

Attitude Tabular Cross-Beds

| | |
|------------|------|
| N90E, 64NE | N34W |
| N85E, 76NW | N25W |
| N85W, 79N | N06E |
| N85E, 74N | N27W |
| N80E, 60N | N86W |
| N89W, 70N | N14W |
| N84W, 69N | N13E |
| N88W, 68N | N08W |
| N83E, 74N | N13E |
| N90E, 74N | N09W |
| N80E, 66N | N64W |
| N86E, 70N | N32W |
| N50W, 74N | S86E |
| N86E, 53N | S58W |
| N80E, 71N | N47W |
| N85W, 68N | N02E |
| N76E, 66N | N68W |
| N80W, 72N | N18W |
| N84E, 78N | N25W |
| N88E, 54N | S62W |

| <u>Ripple Transport Direction</u> | |
|-----------------------------------|------|
| N65W | N50W |

16. Formation: Kukpowruk
 Locality: North flank of Archimedes Ridge Anticline
 along Kukpowruk River (type Section KNK),
 at map
 Location: Section 21, 22, 23, of T 2S, R 45W,
 Point lay A-2 and B-2 Quads.

L

18. Formation: Kukpowruk
 Locality: South flank of Tupichak Syncline along
 Kukpowruk River, at map
 Location: SW/4, SE/4, Sec. 10, T 6S, R 47W,
 De Long Mts. Quad.
 Measured Section and Footages: W-14 @ 195', 253',
 270' 290', and
 160'-180'.
 Master Bedding: N36W, 25NE
 Data:

| <u>Trend Parting Lineation</u> | <u>Restored Transport Direction</u> |
|---|-------------------------------------|
| S52W | N51E-S51W |
| <u>Trend Streaming Lineation</u> | |
| S51W | N51E-S51W |
| <u>Trend Aligned Plant Fragments</u> | |
| S38W | N40E-S40W |
| <u>Trend Orthogonal Bidirectional Ripples</u> | |
| S15W | S17W-N17E |
| <u>Ripple Transport Direction</u> | |
| N50E | N52E |
| N40E | N41E |
| N35E | N36E |
| <u>Trend Streaming Lineation</u> | |
| S40W | N41E-S41W |
| <u>Attitude Trough Cross-Beds</u> | |
| N08W, 34NE | S56E |
| N15E, 25NW | S80W |
| N35E, 19NW | S80W |
| N25W, 36NE | S89E |
| N45W, 27NE | N08W |
| N10W, 34NE | S56E |
| <u>Ripple Transport Direction</u> | |
| N40E | N41E |
| N15W | N14W |
| N20E | N22E |
| N10W | N09W |
| N15E | N17E |
| N25E | N27E |
| N18E | N19E |
| N10E | N11E |
| <u>Trend Streaming Lineation</u> | |
| S53W | S53W-N53E |

19. Formation: Kukpowruk
Locality: On crest of Anticline north of Kukpowruk Syncline, along west bank of Kukpowruk River at map
Location: NW/4, SE/4, NW/4, Sec. 14, T 3S, R45W, Point Lay A-2 Quad.
Measured Section and Footages: W-13 @ 0'-10', 120'-145'.
Master Bedding: N00E, 12½ W; N25W, 08SW; N10W, 10SW.
Data:

| <u>Trend of Trough Axis</u> | <u>Restored Transport Direction</u> |
|---|-------------------------------------|
| N75E | N75E |
| <u>Trend of Aligned Plant Fragments</u> | |
| N41E | S41W - N41E |
| <u>Ripple Transport Direction</u> | |
| N60E | N60E |
| N50E | N50E |
| S89W | S89W |
| S52W | S52W |
| <u>Trend Streaming Lineations</u> | |
| S68W | N68E-S68W |
| S60W | N60E-S60W |
| <u>Ripple Transport Direction</u> | |
| N55E | N55E |
| N15W | N15W |
| N35E | N35E |
| N65E | N65E |
| S75E | N75E |
| S65E | S65E |
| N70E | N70E |
| N60E | N60E |
| S78W | S78W |
| S70W | S70W |
| S89W | S89W |
| S60W | S60W |
| <u>Trend of Trough Axis</u> | |
| S40W | S40W |

20. Formation: Fortress Mountain Conglomerate
Locality: Syncline northwest of Tingmerkpu Mountain in Sections 17 and 18, T 10S, R 45W.
Measured Section and Footages: W-12 @ 318'.
Master Bedding: N67E, 73SE (overturned).
Data:

| <u>Flute Cast Transport Direction</u> | <u>Restored Transport Direction</u> |
|---------------------------------------|-------------------------------------|
| N50W (south to north) | N14W |
| N50W (south to north) | N14W |