

MILITARY GEN

ENGINEERS'
FIELD BOOK

No. 4031

Hollis

✓

#1

Stanley Shale (Contact between
T52° N50°W (Stanley & Jackfork))

40' N. Foothill Contact
T43° N 7°W

30' N. Thrust fault Apparently
to South displacement small. Dip on
North side 65° N 40° W.

25' N. Over turned fold to South.

20' N. T6° S 11 E. at crest of fold.
Stanley reappears at crest.

30' N T62° N 25° W.

10' N Stanley apparently reappears
fault plane thrusting from North.
Dip of rocks 40° N 5° W.

20' N Overturned fold, about 88° N 70° W.

35' N T22° S. 30° E.

15' N. of first fault another thrust
fault from N. in Jack fork.

①

✓
100' N. T30°N 30°W.

#2 (at County line Garland & Saline)
T50°N 30°W

#3 Possible True Stanley & Jack fork
Contact. Strike N. 30°W Dip may
be same as last.

#4 Shale containing Quartzite pebbles
T49°N 50°W possible major fault
between #3 & #4.

#5 Shale with Quartzite boulders,
T69°N 27°W

#6 Shale with large boulders
T35°N 15°W

#7 Shale & sand, several small
faults ~~causing~~ causing South dip
average dip 12° S. 40° E

~~100' N.~~ 100' N
T35.40° E

#8

Crossed Anticline slightly faulted
T48°N 32°W

#9 Shale & Sand

Small fault. ~~T62°W~~

T78°S 73°E

50' N Small Anticlinal fold
plunging N. 30°E @ 40°

20' N T35°N 12°W

#10 shale

T53°N 44°W

100' N Small fault apparently
through N.

✓ 35' N. T34°N 40°E.

#11

✓ T40°S 30°E

#12

✓ T55°N 71°W

MAP 46-173 →

354
183
537
78
615

approx. 500'
of faulted (mostly)
Atoka exposed below
thin, Bone not
exposed.

Hollis measured section
beginning 1/4 mi N. of Post Office.

0-50' Shale. T 65°N 30°W

Shale buff to light gray colored.
Clayey, few sandstone stringers
1-2" in thickness fine grained & dirty.
50'-55' Ss. fine grained Quartzite
interbedded gray shale.

55'-78' Shale, buff to light gray, silty,
few Ss. stringers less than 2" in thickness
78'-78.5' Ss. fine grained brownish
colored.

78.5'-84' Shale buff to gray, slightly
silty

84'-334' Covered interval apparently
shale.

334'-354' Interbedded Ss., siltstone,
shale, & Quartzite. Predominantly
shale, light gray to buff colored.

354'-537' Shale buff, red gray, numer-
ous ironstone concretions, somewhat
silty. Few thin quartzite particles.
predominantly gray shale. (bed somewhat
distorted)

537'-615' Probably shale, (covered interval)

615'-624' Shale, gray, not silty.

624'-634' Ss. Quartzite, fine grained, cut by quartz veins, some silt stone in upper part. Brown to dark brown.

634'-674' Alternating, almost seasonal like depositional rings. Ss. & silt stone, which sometimes grades into a few Ss. partings. Variation of less than 1/4" in thickness. Color light gray to brown. Whole interval highly crinulated & distorted. Upper 5' a few thin quartzite beds, less than a foot in thickness.

674'-704' Probable Ss. & Silt. alternating

704'-706' ~~Qz~~ Ss. quartzite, gray, fine gr.

706'-713' Ss., some Sh. interbedded brown.

713'-714' Ss. Quartzite, fine gr.

714'-730' Covered inter. Probable ~~alt.~~ alt. Ss. & Sh. essentially Sh.

730'-745' Interbedded, Ss. Silt. & Sh. essentially Sh. gray

745'-765' Sh. gray to black, some iron stone concretions.

765'-675' Essentially Ss., Quartzitic, fine gr. quite iron rich. Greatest thickness of individual bed 1 1/2' thick. Some Sh. & Silt.

675'-686' Sh. brown, buff, to green, silty.

686'-696' Ss, fine gr, some ~~of~~ beds silty, some
Sh. Over 80% Ss, T 57°N 17°W.

696'-711' ~~of~~ Gray to black Sh. Two thin
silty beds.

711'-741' Covered Into (partially) Ss. & Sh.
cut by several very small N.W.
trending faults. Small displacement.
Interval loss 30'.

741'-771' ~~Sh. gray.~~

~~741'~~ Sh. gray upper part few thin
silt & fine gr. Ss, Alt. Ss.

771'-793' Alt. beds Ss. & Sh. in equal
proportions none over 2' in thickness.
Sh. black to gray Ss. tan to gray.

793'-801' Ss. Massive fine gr. micaceous
tan to brown.

801'-825' Alt. thin Ss. & Sh. none over 1" thick
Ss. tan-brown fine gr. shale black-
gray T 65°N 5°E.

825'-849' Ss. Massive beds. fine-med. gr.
highly micaceous, brown colored.

849'-852' Sh. black. few thin Ss. less than
6" thick.

~~976-977~~
~~978-979~~
~~980-981~~
~~982-983~~
~~984-985~~
~~986-987~~
~~988-989~~
~~990-991~~
~~992-993~~
~~994-995~~
~~996-997~~
~~998-999~~

- 952' - 955' Massive ss. finely micaceous, fine gr. brown
- 955' - 970' Alt. ss. & sh. equal pro none thicker than 1'. Black ~~thin~~
- 970' - 995' T.C.M. 7'W. Prox. mostly ss. over 50%, 20% silt. s. rest thin gray to black sh.
- 995' - 998' ss. fine-med. gr. br. ss. somewhat porous.
- 998' - 1003' Sh. (black.) silt. s.
- 1003' - 1053' ss. fine-finely med. sh. inter. in middle.
- 1053' - 1062' Alt. brown, red to gray sh. with silt. s., some ss. none thicker than 6".
- 1062' - 1073' Sh. gray, few thin ss. partings over 95% sh.
- 1073' - 1076' ss. brown fine gr. micaceous.
- 1076' - 1095' Sh. gray-brown. over 90% sh. with few thin ss. & silt. s.
- 1095' - 1160' Ess. ss. brown, med. gr.
- 1060' - 1081' Alt. Black sh. & Brown ss. 70% sh.
- 1081' - 1220' Ess. ss. friable & porous. fine-to med gr. micaceous. Few thin clay sh. 70% ss.
- 1220' - 1260' Fossil ss. & sh. One ss. bed in middle of thick.

976
 69
 45

1572
870
702

- 1260²³⁸ - 1238 Ss. some Sls, & shales.
238 porous med. - fine gn. Ss. 60% Ss.
1238²³⁸ - 1264 60% Black Sh. - Ss. 2'-3' thick.
1264²³⁸ - 1282 Massive Ss. fine gn dense.
1282²³⁸ - 1307²³⁸ Fss. gray - black Sh. some
thin Ss. stringers, some 2' thick &
porous. 70% - 75% Sh. Upper part
more sand.
1307²³⁸ - 1482 Covered Int.
1482⁵⁷ - 1539⁵⁷ Fss. Ss. few thin Black Sh.
int. Ss. Drown med. gn. friable
& porous.
1539⁵⁷ - 1672⁵⁷ Amort. Ss. & Sh. Black &
brachy. no beds over 2' thick.
1672⁵⁷ - 1686⁵⁷ Ss. Finley - med. Drown
~~1686~~ TN 70W (Vertical dip)
1686⁵⁷ - 1731⁵⁷ Fss. Sh. some Ss. 65% Sh.
1731⁵⁷ - 1785⁵⁷ Fss. Ss. & Sls. some Sh.
60% Ss.
1785⁵⁷ - 1816⁵⁷ Mostly Sh. & Sls, some Ss.
1816⁵⁷ - 1866⁵⁷ Covered Int. Prob. coarse
Ss.
1866⁵⁷ - 1819⁵⁷ Fss. Ss. fine gn, some
fine gn to med. some black Sh.
1819⁵⁷ 70% Ss.



- 1919' - 1933 Ess. Sh. Brown to Gray
- 1933' - 1951 Ess. Ss. some Black Sh.
60% Ss. porous & friable in lower 10'
- 1951' - 1981 Ess. Black to gray Sh. with
about 30% Ss. No beds over 2' thick
- 1981' - 1998 Mass. Ss. somewhat porous,
some thin Sh. partings. 95% Ss.
fine to finely med. Porous & friable
some large mica flakes in part.
- 1998' - 2018 AH Ss. & Sh. Sh. beds 1'
Thick. Ss. beds, 3' thick 70% Sh.
- 2018' - 2047 Ess. Ss. some gray Sh. Ss.
fine gr. not to porous, 75% Ss.
- 2047' - 2006 Ess. Sh. gray to brown. 15% Ss.
at base. Upper part 30% Ss, no beds
2' thick. (Ss)
- 2006' - 2066 Ess. Ss. white to gray,
fine gr. not to porous. Some at
top slightly porous Ess. 70% Ss.
- 2066' - 2077 Ess. Sh. Black, somewhat.
- 2077' - 2018 Ss. mostly. Porous & top. in
fine gr.
- 2018' - 2033 Ess. Sh. gray to brown.
- 2033' - 2074 Thin bedded Ss. & Sh. Ss.
at about a por. Ss. fine gr.

2172 - Crossbedding. Extremely
crossbedded in upper part.
Some possibly concretionary
like structures. Some concretions
in upper shaley silt. s.

2174' - 2176 Quartzite Ss.

2176' - 2182 Sh.

2182' - 2197 Cover.

2197' - 2302 Ss. & Sh. 50% Ss.

2302' - 2336 Black Sh. with thin Ss.
Laminae

2336' - 2336' Int. Ss. some black Sh.
some Ss. beds 10' thick. Some
what porous & friable.

2336' - ~~2503~~ Interval represents about
55% Ss.

2503' - 2562 Ess. Sh. Upper part 50-50

2562' - 2585 Int. Ss. porous, friable, fine
gr.

2585' - 2725' Ess. Sh. over 90%

2725' - 3012 Ss. & Sh. 40% Ss. thickest
Ss. bed about 7' thick. Some
chert but no faulting

3012' - 3083 Covered Int.

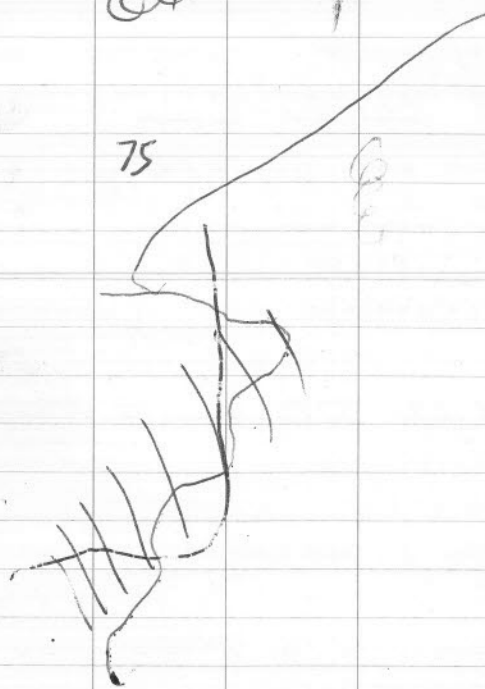
- ✓
- 3753' — 3856 Ss. & Sh. mostly Sh.
60% Sh.
- 3856 — 3881 Ess Ss. fine gr.
- 3881 — 3893 Ess. Sh. Black.
- 3293' — 3443 " Ss. friable & porous. Thick
bedded. Fine gr to finely med.
about 70% Ss. (Rock's Vertical S1N15W)
- 3443' — 3283 Ess. Sh. Black, 85% Sh.
- 3483' — 4873 " Ss. & Sls. not porous
on Friable. Upper part much
Sls. some Sh. some what porous &
much Ss. T54S17E. Rock's Vertical
- 3873' — 3963 Sh. 20% Ss.
- 3963' — 4953 Ess. Ss. Dip 68° N
- 4083' — 4061 Sh. Black
- 4061' — 4096 Ss.
- 4896' — 4480' Ess. Sh.

several

These part few points may represent
repetition of sec. due to faulting, folding
& on. they may represent cont. sec.
at most the repetition of sec. will
not be over 400'.

- 4190' - 4204 Ess. Ss.
- 4204' - 4225 Sh. & Ss. = por.
- 4225' - 4275 Ess. Ss. 70% Ss.
- 4275' - 4314 Covered
- 4314' - 4370 Ess. Ss. Somewhat por.
- 4370' - 4470 65% Ss.
- 4470' - 4543 Sh. 75%
- 4543' - 4584 Ss. 90% Porous, friable
fine gr.
- 4584' - 4619 = Amints. Black. Sh. & Fine
gr. Ss.
- 4619' - 4969 Alt. beds. of Ss. Sh. & Sls.
Thickest of Sh. 8'. Ss. 2'-3'.
55% 15% Sls.
- 4969' - 5049 Covered Int.
- 5049' - 5399 Alt. beds of Ss. & Sls. &
about 55% Sh.
- 5399' - 5427 Covered Int
- 5427' - 5557 Lower 50' Ss. Upper 50' Ess.
Sls. & Shale. Fault zone at
top (high angle fault 5' wide)
not much displacement. Maybe
30'.
- 5557' - 5612 Ess. Sls. Ss. near top.

75



- 5612-586 Covered Int.
- 55⁷⁵₅₈ - 5836 Alt. bds. Ss. & Sh. ~~(75°)~~
about 50-50. Terminated
(5720) by Fault. T 65°N 49°W (South Side)
T 72°N 70°E. Apparently a Tear
Fault.
- 5836-5936 Alt. Sh., Ss., & Sts. mostly
Ss.
- 5936 - ~~5977~~ Covered Int. (75°)
- ~~5977~~ - (70°) These rocks represent some
sequence of ~~the~~ last outcrops.
Possibly faulted in covered area.
- ~~5976~~ - Vertical beds strike S. 70° W.
- 5836¹⁰₁₈₀ - 6016 Ss. 60%. Some Sh. beds.
10'-12' thick. Some distortion &
crinulation
- 6016 - 6097 Covered Int.
- 6097²⁰₂₀ - 6817 Ss. & Sh. Lower 200' 50%
Ss. & Sh. Upper 220' 75% Sh.
- 6817 - 6818 Covered Int.
- 6818¹⁰₃₀ - 6848 Lower 100' 60% Sh.
Upper 130' 70% Ss. & Sts.
- 6848 - 6823 Covered Int.
T 80°N (88) ✓
- 6823⁷⁵₁₉₀ - 7A13 60% Sh.

46-175 →

187

de

1500
 1000
 500

$$\begin{array}{r} 7950' \\ \underline{200} \\ 8150' \end{array}$$

75°N70W - 8150 →

600
 500
 400

200

9096' - T81°N8°W

$$\begin{array}{r} 340 \quad 340 \\ \underline{63} \\ 403 \\ \underline{65} \\ 468 \\ \underline{82} \\ 550 \\ \underline{117} \\ 657 \end{array}$$

7743' - 7778' Covered Int.

7778' - 78165 70% Sh. 85% Ss.

7865' - 8050 Possibly fault.

8050' - 8250 Alt. Ss. 6 Sh. 60% Sh.
 T75°N70°W.

8250' - 8330' Covered Int.

8330' - 8317' 50% S.S. 8 Sh.

8317' - 8339' Covered Int.

8339' - ~~8377~~ ^{9190'} Lower 60' Ess. Sh. (70%)
 657' Next 50' Ss. Massive, Above that
~~4096~~ Sh. 8 Ss. 60% Sh.

~~8377~~ T81°N8°W - 9096

9096' - 9104 fault zone, small under
 8' thrust fault to No Fault Strike
 N. 80°E, (8' wide)

9104' - 9375' 55% Sh.

~~9096~~
 171

92

9651
15
9666

147
48
195
53
248
61
187
319

135' 61

10,401 - Dip 54° N.

106
77

100
70
60% Ss

9875' - 9894 55% Sh., 45% Ss. 80%

9894' - ~~9881~~ 55 80%
57 9866

9866' - 9801 70% Sh. 85% Ss.

9801' - 9862 70% Ss.

9862' - 9882 70% Sh.

9882' - 10017' 60% Ss.

10017' - 10021 65-70% Sh.

10,021' - 10,051 Covered Int.

10,051' - 10,828 AH. Ss. & Sh. 70% Sh.

10,828' - 10,898 Covered Int.

10,898' - 11,379 Partly exposed
381 probably 60% Sh.

11,379' - 11,544 Silt.

11,544' - 11,544 Covered.

11,544' - 11,820 60% Ss.

5G-24 →

Acne
typus

75
e
$$\begin{array}{r} 72 \\ 133 \\ \hline 195 \\ 210 \\ \hline 405 \end{array}$$

270

148

14,000 - T52°N4°E.

224
3114

* Last 1/2 mi. represents many small folds, & possible faults, which cause a repetition of section to some degree. Also next 1/2 mile same. This suggested that the sec. is approx. 1/2 as thick as measured.

✓
11,670' - 11,795 Over 90% Sh.

11,795' - 11,956 50% Ss.

~~11,956'~~
11,956' - 11,810 90% Sh.

11,810' - 12,315 65% Ss.

12,315' - 12,445 Covered Int.

12,445' - 12,815 Partly Exp. Ss & Sh.
60% Sh.

12,815' - 12,915 Covered.

12,915' - 13,005' 55% Sh.

13,005' - 13,449 Covered Int.

13,449' - 13,574 Ss. & Sh. 65% Sh.

13,574' - 13,879 Covered Int.

13,879' - 14,069 70% Sh.

T52°N4°E.
14,069' - 14,434 Covered Int.

14,334

17,215
 14,884

 2,326

30.8
 24.5

 6.2

34
 34
 61
 91

 286

100
 10

80'

✓
 14,334₇₅ - 14,909' 60% Sh.

14,909_{1,500} - 14,969 Covered Int.

14,989₈₀ - 18,969 Crossed small Anticline -
 into 80% Sh. Small Anticline, same
 fault to Neil plane 16'. 70' good
 size fault, dip on S. side 48° N 7° E
 dip on N. side 52° S. 20' to crest of
 next Anticline. Fault upthrown on N.

~~14,969~~ - side possibly causing Anticline
 at structure. Dip N. of Anticline
 about 83° N. Allowed about 125' for Anticline.

14,969_{1,800} - 15,255 Mostly Covered Int.

15,255_{1,500} - 15,385 80% Porous Ss.

15,385₁₀ - 15,395 Covered.

15,395₂₃₀ - 15,515 Upper 70' Ess. Sh. next
 Ess. Ss. at app. 200' mark, a
 3 1/2' bed of Coley Ss?

15,525₂₀₀ - 15,815 60% Sh.

15,715' - 16,095' ✓ Covered Int.

16,095' - 16,380' 20% Sh

16,380' - 17,090' Covered Int.

17,090' - 17,065' 65% Sh,

17,065' - 17,315' Covered Int.

17,315' 17,405' s & sh 30% ss

Estimated 200' to fault

contact, int. 2,500 to Nat.

370
550
75

#1) (Highway #7 N. of Hollis about 300 yds. S. of Post Office)

THICK Sh. sec. Extremely distorted, due to many faults. One large? over thrust fault at S. end of cut. Small drag folds associated with the faults. Average dip 64° S 7° W

#2)

Ss. & Sh. several ~~beds~~ breccia beds, series of 2 or more over-thrusts, causing overturns & irregularities in dips. Apparently frontal part of Fault Sheet in this area. Average 72° N 12° W

#3)

Ess. Sh. sec. represents part of previous map over thrust fault. Extremely chinkled, average dip 5° N. Probably frontal part of Fault lies 100 yds to N. Over thrust is apparently from S to SW?

#4)

75° N 4° W. 50' S. between these 2 points Fault? Anticline?
 72° S. 10° E

100 yds. S. of last point.
747°N 10°W

#5 ✓ D Dip Vertical St. S 82°E
(S. 82°E.)

6 ✓ T84°N 80°W Massive Ss. 60' +
30' S. Crest of Anticlinal thick
is overthrust about 30', dis-
placement, prob. not over 40' Vert.

Dip near crest 16° S. 8° W.
15' S. Dip 75° S 6° E. Anti. probably
caused by fault.

100' S. T52°N 33°W

#7 ✓

Many faults & Outcrops, much
dist. & circulation. Most faulting is
thrust faulting on is due to a major
thrust fault. No accurate dip can
be taken on this sec. although
Sh. to S. is dipping N. Average dip
is 67°N 22°W, with all the faulting
in this vicinity this may mean
nothing - Major breccia zone
along Fault plane which
apparently runs 15°N of W.

#

8. \downarrow T 84°N 17°W. Mass. Ss.

Around this immediate area
some conglomerate also course to
very coarse ss.

9 \downarrow T 55°S Ss.# 10 \downarrow T 86°S 10°E Sh.# 11 \downarrow T 75°N 20°W. Ss.# 12 \downarrow ?

North end of cut nearly flat
12nd ~~3~~ T 6°S 30°E several small
faults in cut, about 50' south.
About middle of sec. T 75°S 20°E.

South of dip sh. sec. possibly
faulted. This whole interval
somewhat distorted & warped.

13 \downarrow T 60°N 87°W. Directly above
this lower beds. is a low angle
thrust plane. Rocks dip
17° ~~30°~~ 40°E. May be contact
between Jehos Valley & Jackfork.
Apparently lateral gradation. OVER \rightarrow

80 yds. down road, Johns Valley
with quartzite boulders.

#14 ✓ T85°N5°W 25' Mass. Ss.

above 70' sh below

~~25' S. apparently major fault
causing Anticlinal like structure.~~

50's, T78°N5°W mostly sh,
some silt, some quartzite boulders
& large concretions, some 10' in length.

#15 ✓ T85°N

#16 ✓ Southern most rocks high
dip to N 20°W Mass. Ss. To N of this
20' 80' of Mass. fossiliferous,
slightly calcareous Ss. Approx. dip
60°S, 30°W. Apparently this may
be a fault contact between ~~them~~
them.

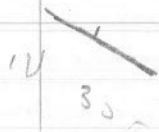
#17 T30°N10°E This represents
the N. Flank of a small Anti.
30' N. dip is to S. at a high
angle, about 70°. Apparently a
fault between last two dips.

Creek →

200' SW. of Creek.

OVER →

Directly across from (Sh) headcut



T 43°N 70°W

Rocky Creek Crossing

30' farther N. ~~at~~ fossiliferous, calcareous ss.
#18 Conglomeratic, fossiliferous ss. Dip undeterminable. Sh. nearby dipping ~~N.~~

#19 T 35°N 85°W

#20 T 88°N 35°W

Fault app. between last two dips.

#21 Dip 43°N. Hard dense ss. 150' from last outcrop. Strike 20°S, 5°E. Dip?

#22 T 65°S, 5°E. Mass. ss. one fossiliferous interval. Slightly conglomeratic. Contact between Jackfork & Johns Valley.

#23 T 57°N 8°W Tremendous ss. in sec possibly 80%. Some beds 30' thick.

21

24 ✓

T 78° 3' W

Vardanell Dam Site

- D-1 Vardanell dam site, 30' above base of Hartshorn. Top of Atoka
- D-2 \downarrow T 39°N 5°E (?) On unconformity surface between Hartshorn & Atoka. Hartshorn massive & may be 200' thick.
- D-3 \downarrow 100' Below Atoka & Hartshorn contact. ~~T 78°N 14°W~~
T 48°N 14°W
- D-4 \downarrow At Junction ISS on Hwy 23 about 3 mi. S. of Vardanell.
T 45°N 11°E.

D-5 \downarrow T 83°N 3°W 1/2 mi S. of Custer ville.

D-6 T 55°S 27°E 6/10 mile to top of hill.

D-7 T 78°S 5°E. (South of small thrust fault)

OVER (Back of following page)

Nimrod - 2/10

- 2A-1 \checkmark T 84°N 73°W ss. some sh.
- 2A-2 \checkmark T 62°S 3°W
- 2A-3 \checkmark T 72°S 7°E.
- 2A-4 \checkmark T 59°S 4°E, (On top of Hill)
some flow roll, very thin ss beds less than 2'. whole section probably 25% ss. Most of way down into at overthrust zone, thrust frame E. 60 yard zone. near curve.
- 2A-5 Round big curve, several small faults & minor faults. some striations (faults). material on end.
- 2A-6 several faults, small, between weir & bridge, also for block past bridge.

0-8 # 2/10 mi. \rightarrow S.

✓ T 62° S 12° E. 2. small thrust faults in sec.

~~0-8~~ ✓ T 65° N 5° W $1/2$ m E. of Burda.
C-7 Sth. S. some blocks. (fossils)

App'lth - ✓

72.4

72.4

73.8

75.5

~~Back Tracked~~ → 76.2

Back Tracked 76.6

77.7

#E-1 T 51°S 15°E. Approx. Shs Sls.

#E-2 T 38°S 32°E, Mass. Ss, with some black sh.

#E-3 T 37.5°S 6°E Ss. some black sh.

#E-4. T 42°S 12°E Ss, sh. A conglomeratic brecciated zone. Some fossils in conglomerate. Some fossils also in Ss.

#E-5 Ss, Sls. sec. highly exfoliated. App. some faulting some slickensides.

#E-6 T 69°S 4°E. Ss.

E-7 T 60°N 4°E

E-8 T 53°S 15°W. Mass. Ss. Sh. int. to S. Thrust fault zone. Some fault planes all exfoliated. Some large boulders.

77.8

✓

E-9 T $64^{\circ}S 8^{\circ}W$. Sh. one ss. bed,
(in western part of cut)

78.8 1.

E-10 T $38^{\circ}S 45^{\circ}E$. Sh. & sh. & ss.
Possibly along fault zone.
80 yds. E. Strike $73^{\circ}S 15^{\circ}E$.
Fault lies slightly N. of this
area.

79.1 3

E-11 T $18^{\circ}N 77^{\circ}E$ Between last
two points fault zone.

80.5 1.4

E-12 T $64^{\circ}S 5^{\circ}W$. Sh. few thin ss.

81.0 5

E-13 1 Faulted & dis-
torted, along major thrust fault
zone. Dip on one zone. $50^{\circ}N 50^{\circ}E$
probably means very little.

Hwy. "7" \rightarrow S

81.9 9

E-14 T $11^{\circ}N 27^{\circ}W$. To S. 50' of sh.
all faulted. Also 10' of ss. all faulted
shale ss. of it faulted. ss. dipping
 $82^{\circ}N 20^{\circ}W$. 100 yds. N at fork, more
faulting
to $3/10$ mile in fault zone, south

82.8 .9

E-15 T 28°N 20°E (Dip in Ss) Some faulting?

83.3 .5 →

E-16 T 26°N 15°W, last 1/2 mi. some faulting, few small boulders in str.

83.6 ↘

E-17 T 35°N 30°W

shaly laminated thin bedded sand, 30' above another thin zone

83.8 .2

E-18 T 55°SE Several faults through this interval, 50' S. Small fault zone. dip @ 25°N. 25°N

84.1 3

E-19 T 66°N 4°E No faulting evident through here.

about 200' left in measured section before fault zone.

Yermic off Hy. #7 at Nellis Rd. Junction.
94.7

E-20 T 78°S, 15°E Mostly str.

94.7
95.6 .9

96.3 .7

96.8 .5

97.1 .3

98.3 1.2

98.8 .5

98.9 .1

700.1 1.2

700.3 .2

701.8 1.5

702.0 .2

✓
E-21 T 60°N. 30°W.

E-22 T 87°N 27°E. sh. S17.5,

E-23 T 52°N 5°W.

E-24 T 35°N 5°W

E-25 T 42°N 75°E ss. S17.5,

E-26 T 84°S 37°E. Overturned.

E-27 T 72°N 12°W

E-28 T 60°N 15°W

E-29 -[?] T 57°N 22°W

E-30 T 30°N 60°W

T 74°N 15°W 40 yds. W. of last
outcrop. Evidently faulting between
last 2 points. ?

E-31 T 8°S. 25°W All bold ~~is~~
entirely & faulted.

702.0
703.5 1.5

704.2 .7

✓
E-32 32°N 22°W Atoka, interbedded ss. & sh. mostly sh. & silt. ss.
E-33 180°S 10°W. Fault contact between sh. & ss.

~~E-34~~ 167°N 40°W
E-34

some cs. material, which contain fossils.

Nim Rod Dam

N-1 T 40° S. 17° E. Mass. ss,
underlain by Sh. Thrust faulted,
60' N. Same sequence thrust
faulted. Angle of thrust
fault probably about 25° .

130' N. T 26° S 60° E Mass.
ss. Apparently same as last 2 ss. Prob.
Prob. represents Major thrust fault,
150 yds N. Mass. ss. Prob. same
as last. Underlain by Sh. prob. which
has been faulted. Degree of fault plane
is prob. less than 6° S. ss quiet course.

Ni-2 T 35° N 16° W Mass. ss. Some
small faulting in this inter. besides
main thrust fault. Prob. same ss.
as last. All these ss. blocks are
highly fractured & crumpled.

100 yds. T 57° N 30° E. Reverse fault
adjacent to it T 25° N 50° E. ~~below~~ this
mass. ss. is Sh. in the ~~main thrust fault~~
~~area~~ whole associated fault sys-
tems

N-3 Crumpled & distorted
average dip, 15° N 25° E. Prob. is
above major fault plane.

Nim Rod Dam

N-1

T 40's. 170° E. Mass. ss.
underlain by sh. Thrust faulted,
coll. same sequence thr-
ust faulted. Angle of thrust
fault probably about 25°.

130 M. T 26's 60° E. Mass.
ss. Apparently same as last 2 ss. Prob.

Prob represents Major thrust fault,
150 yds N. Mass. ss. Prob same
as last. Underlain by sh. prob. which
has been faulted. Degree of fault plane
is prob. less than 60's. ss. quite coarse.

N-2

T 350 N 160 W. Mass. ss. Some
small faulting in this inter. besides
main thrust fault. Prob. same ss.
as last. All these ss. blocks are
highly fractured & crumpled.
100 yds. T 150 N 30° E. Reverse fault
adjacent to it T 250 N 50° E. ~~Probably~~ this
mass. ss. is sh. in the main thrust fault
~~the whole associated fault sy-~~
stem

N-3

Crumpled & distorted
average dip. 15° N 25° E. Prob. is
above major fault plane.

Bigelow area

1. 1000' interval 5590 sand
T40° N 22° W.
1400
N 200 W
- #2. T55 S. 40° E ss.
- #3. T75° N 12° W ss.
- #4. T375 30° E ss. Fault between
last two points.
30' farther N. Dip is to N. about
30°. Maybe fault along creek.
- #5. Average dip about 88° N 12° W
some rocks dipping to S. One ~~high~~
angle reverse fault cutting sec.
- #6. T64° S 11° E This dip is appar-
ently overturned.
- #7. T62° N 18° W ~~cc~~ Apparently
between this point and last ~~point~~
point there is a thrust fault.
80' N rocks nearly on end

#8 T60°N32°W From last point
to this ess. sh. May be fault in
valley between last 2 points. ~~possibly~~
Small Igneous Sill, some large
flakes of mica possibly 5mm. in diam.
Main sill is 2' thick. Smaller sills above
one about 2" thick.

#9 T125°25'W Sill sec. 3 Probabi-
ly zone about 3 1/2' thick, couple
other zones about 2" thick. No
really large flakes of Mica. Very
black material here. Very brecciated.
100 yds up road possibly 3 high
L faults in sec. One possibly in 100'
of feet. Major fault ~~prob~~ probably
runs S. 70°E, 50' N from Major fault,
small arch trending N. 80°E. small
fault along crest likely. Dip on N.
flank, ~~22°E~~ ~~to~~ ~~the~~ ~~from~~ 8° to
horizontal. Dip on S. flank 22°E.

#10 T30°N12°W

- 11 T 48°N 4°W ✓
- 12 T 60°S ~~20~~ 11°E.
- 13 T 65°S 11°E°
- 14 T 35°S 35°E
- 15 T 44°S 23°E
- 16 T 75°S 8°W 800' + on - 75% Ss.
- 17 T 62°S 8°W Much Massive Ss.
some beds 25' thick, & 800'-900' sec.
exposed with 80-90% Ss.
- # 18 85% Sh. in Sec. several low
L thrust faults. The first fault at
N. end of cut contains rounded boulders
some 4-5' in diam. Also the fault at
S. end of cut contains large boulders.
one dip 60°S 14°E. (South end)
- # 19 T 42°S 25°E to S. is sec. 100 yds
to Copperas Gap. to ~~to~~ 1/2 mi. from Copp-
eas Gap. Ess. Sh. sed. highly distorted
& crinulated. At Copperas Gap some

1AA. Near Crest of Byo Metro
Anticline a few miles S. of Valoria
In rocks quiet similar to those at
Perryville Sec. prob. Stratigraphically
this is true. At one interesting sec.
600' ~~thick~~ - over 95% Ss. Above that
1" of uncons. clay (white), above that,
6"-8", sandy sh. slty. coal. Above
that 5" over clay. Above that 3"
coars Ss. Above that 2" of coal
plant debris in the somewhat shly.
med. gr. Ss. Some clay partings in
this zone.

✓
Cronis mapped fault. Sh. are
med. & probably constitute over
1500' of Sec.

20 T64°S4°E.

21 T53°S5°E

22 T24°N. 20°E.

23 T36°S. 5°E

24 ~~T55°W~~ T5°S. 3°W.

25 T12°S. 5°W. (On N. bank of
Ark. river on byway #9, ^{at} Merrillton)

26 Dip 24°S. On "top" of first
hill from river. (about 1 mi.)

BB-1 Casa Coal

9" Coal bed in road cut,
Ess. Sh. Sec. above & below in
Alakai overlain by Coaly muds.
T 22°N. 7°E.?

BB-2 Lower Coal 15" thick. 15'
of Sh. & Fossiliferous Ss. Approx.
T 60°N. 12°W. ? Overlain by 10' of
Continental Sh. Coalified mat.
with plant remains in it. Concret-
ionarity. Upper zone about 10' thick
with 3 or 4 coal seams about 2" thick
overlain by 15' Sh. some white. Over-
lain by Fossiliferous 3' of Concretionary Ss.
Overlain by Sh. pass. 30'. some white.

BB-3 1/4 mile from Adana
fossil. dense ss, in clay

#1-AP. Aplin-Casa Road.

Massive beds of Ataka Ss,
some probably 30' thick. One slt. s.
bed pinches out in sec. Some Ss.
has typical Sh. fragments. T 39°S
14°E. Ss. sec. about 200' thick.
Some example of Flow rolls on bottom
of some rocks. Ss. mostly med-gr.

#2-AP T 45°S. 9°E. Upper 80' sec. 30% Ss.
Lower 75', 95% Sh. Ss. Fine to finely
med. gr. Some examples of Flow
rolls.

#3-AP. T 52°S. ^{(12)W} 22°W. Ss.

#4-AP. T 59°S 27°E. 45% - 50% Ss.

#5-AP T 48°S. 14°E. 100' of Ess. Ss. sec.
Med. gr. Ss.

#6-AP. T 67°S 22°E Small thrust
Fault here on cut. Prob. 75% Sh. slt.
Displacement prob not over 15'.
possibly small arch.

#7 Ap.

T 60°E. 22°E. Mass. Ss. ✓

#8 Ap. T 86°N. 23°W. Ss. poss. calcareous
 Very, very, fossiliferous, particulate in
 Brachiopods. Mostly sh. sec. with
 these interbedded & fossiliferous ss.
 beds. Phos. spread out for 1/4 mi.
 App. on N. side of Casp. Anti. App.
 Anti. fold is faulted between
 last 2 points. This material is
 very coarse gr. Some almost conglom
 aritic. Mat. may extend almost 1 mi.

C-1 ✓

T 66°N. 11°W. Shts. 100'

C-2. see D-9

C-3

Coarse gr. Ss. ~~T 57° 05' W.~~
T 15°N. 18°W.

CH

Hartshorn sample, 150'
above base?

3 mi. on North of Danville →
Hyway #27.

E. Danville Sec. $E1 \rightarrow E2 \uparrow$
S.

E-1 ✓ T62°S 40°E At first big
curve on Mtn. → S. Sec. 50% Ss.

The 1000' below is mostly Sh. prob 85%
E-2 About 80 yds. around curve (S.)
one High angle fault, Displacement
from 20-40'

E-3 ✓ T30°S 42°E. 1/2 mi. → S. n
Ss. 100' Sh. sec below, mostly
Sh. below. This stone mostly Ss.

E-4 ✓ T240°N 85°E. 1/2 mi. from
top of mtn. mostly Sh. This cut meet
by Ss.

E-5 ✓ T38°N 85°E Large (300')
sec. of Ss. 1/2 mi. from last point,

E-6 ✓ T22°N 14°W One fault
zone. Apparently a S. reverse fault.
? Apparent fault in N. end of
cut. Possibly another S. rev. fault.
Sh. & Slt. S.

E-7 ✓ T74°N8°W. Ss. Sh
much examples of Flow rolls.
About 8 mi N. of Danville, possibly
not over a few, 2 or 3, thousand ft.
to the base of Herts.

E-8 ✓ T3°N30°W 500' ^{top -} below
Hertsborne, probably no major fault
between last 2 points.
(At top of Quarry)
mostly sh. some Ss. Ss. channel
deposits with flow rolls. Several
channel deposits in sh sec. causing
draped like structures.

E-8 ✓ T15°S20°E. (on Hwy 45 at
Yell & Conway Co. Line, on bridge
over Petti Jean Creek, S.H.S. prob.
less than 2000' below base of
Hertsborne. P

E-9 ✓ T7°N12°W. (Half way
down Petti Jean. - S. E. sh
fine Hertsborne contact. about
700'.

60 yds S. of Fault. Slt₂ Sh. is a
channel deposit on top of the
Sh. below. Sh. below exhibits
flow roll. Sh. contains some coal.

At Fault Zone, (30' wide.) Sh.
butting against Slt₂ ss. Total
displacement 400' possibly. Possibly
high angle reverse fault from S.