Volume

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R0367

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Eighth Standard Parallel South through
Rs. 21, 20, 19, 18, 17, and 16 E.

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OF THE SURVEY OF THE

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Of the ..... *Meridian,*

State of .....

EXECUTED BY

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capacity of U. S. Surveyor...., under instructions dated....., 191....,

by the United States Surveyor General to govern surveys included in

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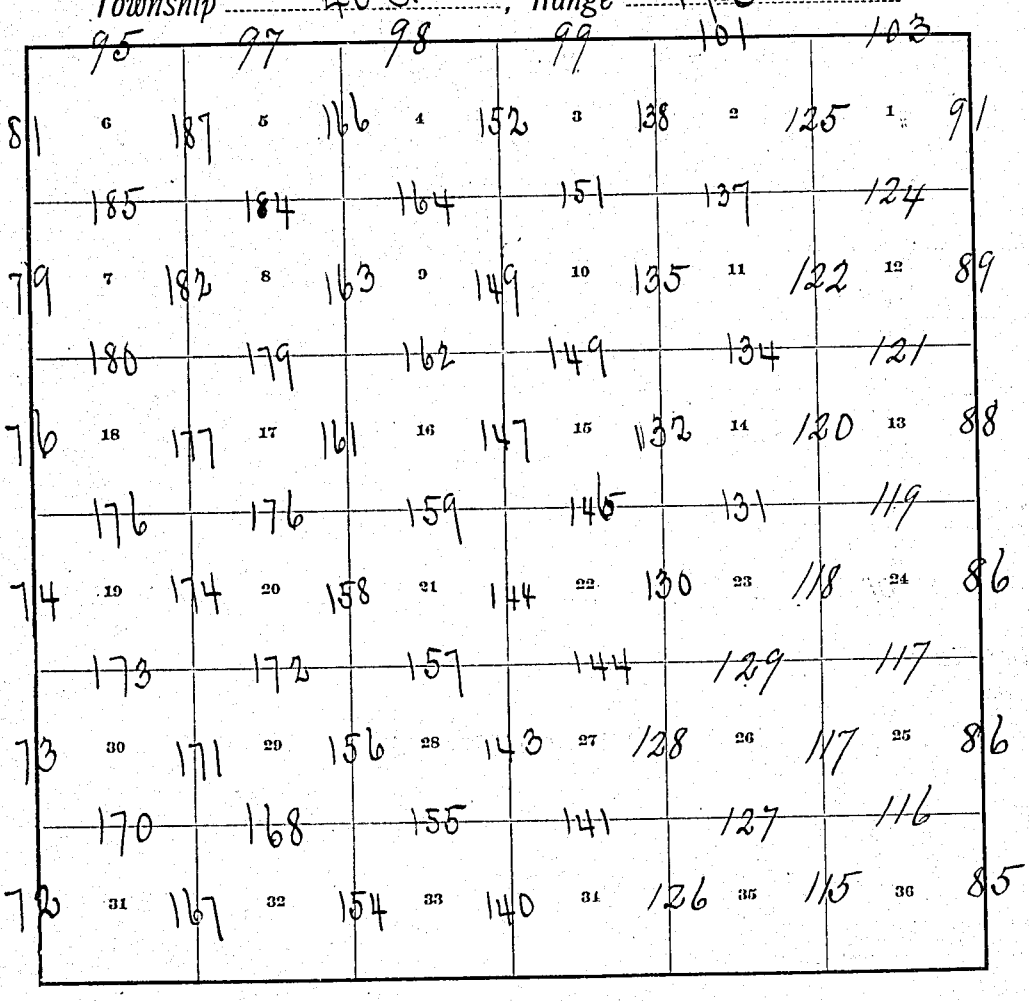

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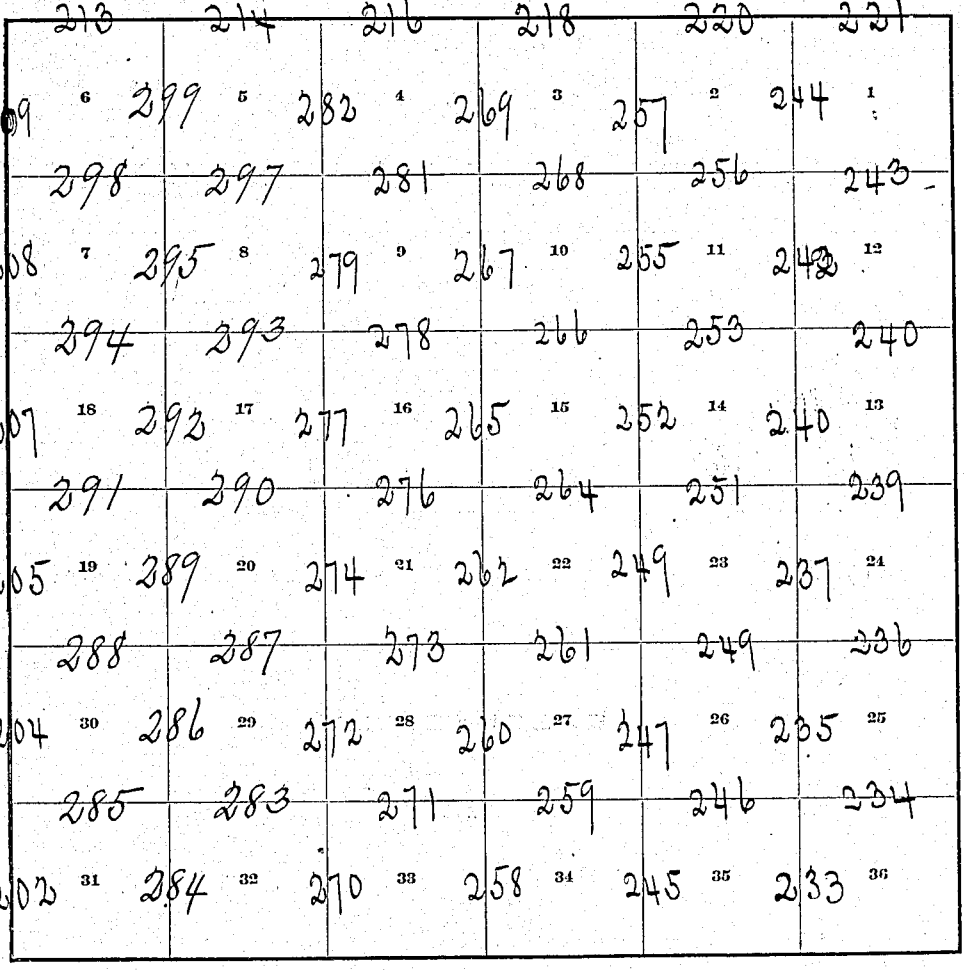

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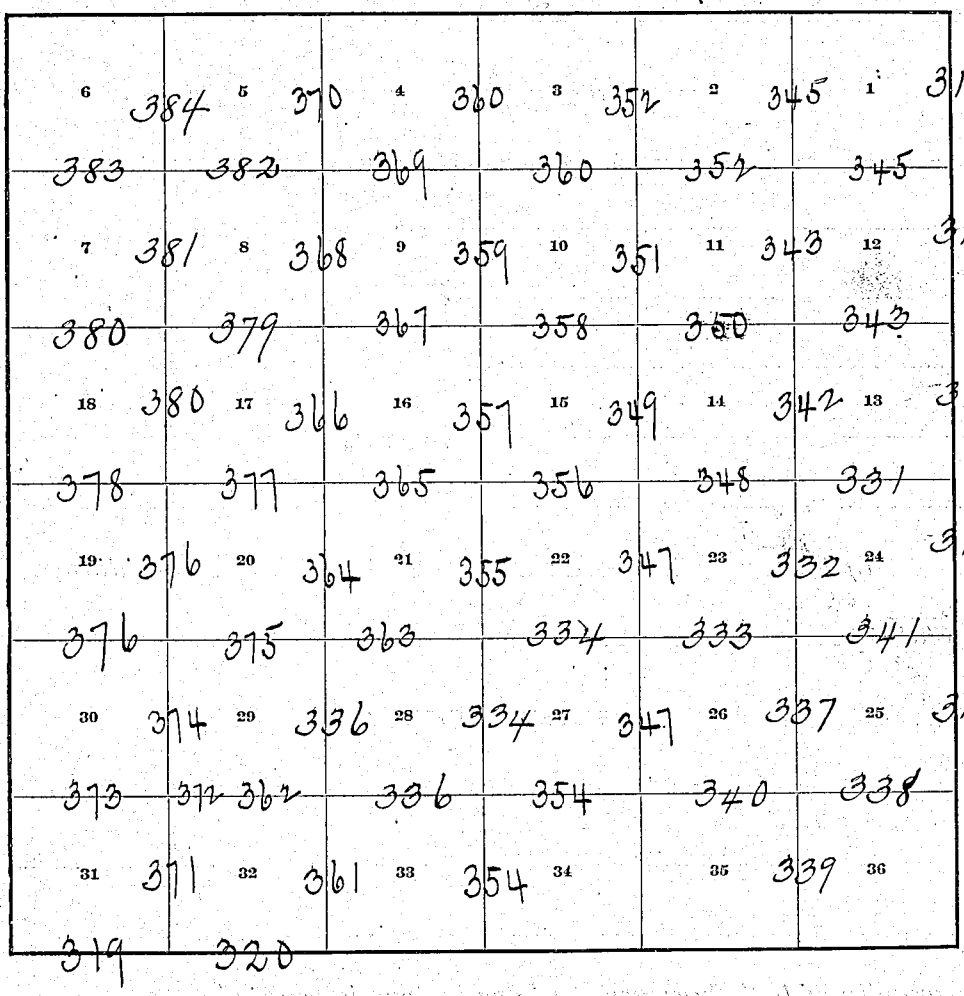

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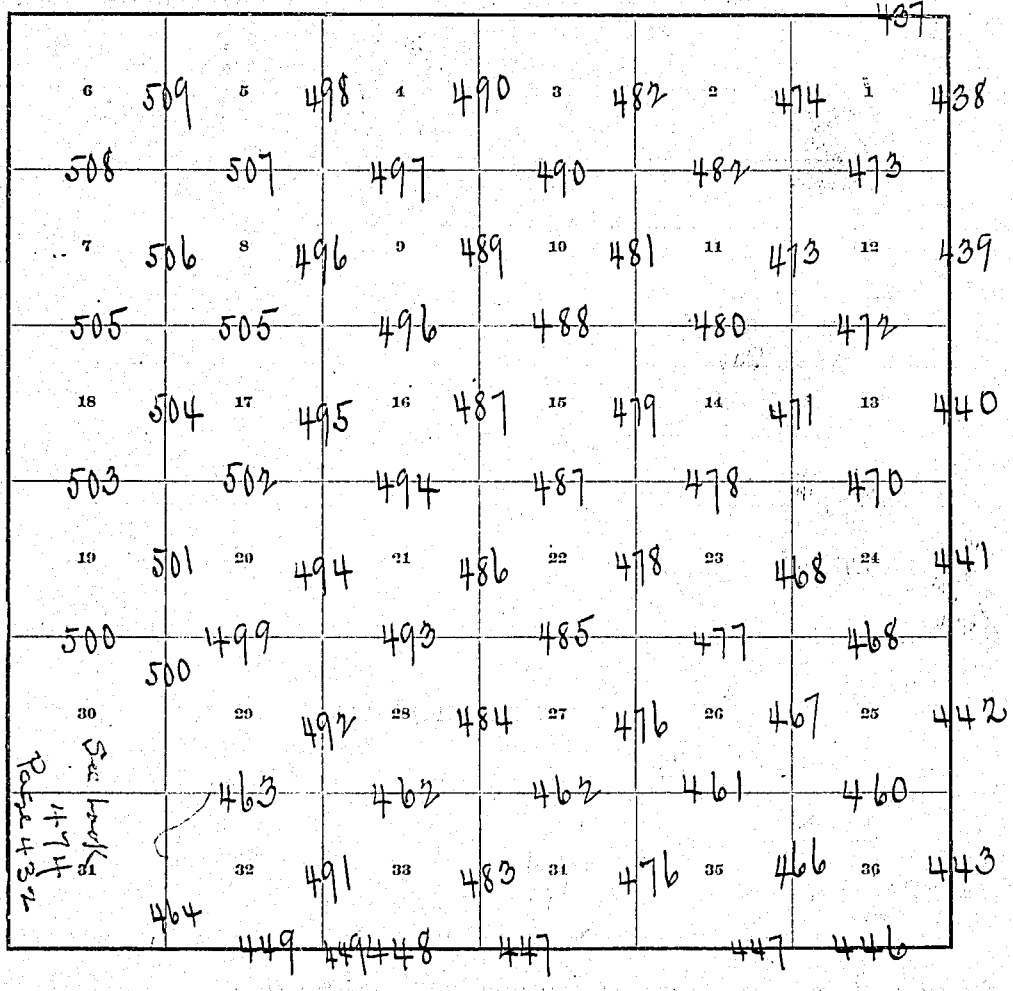

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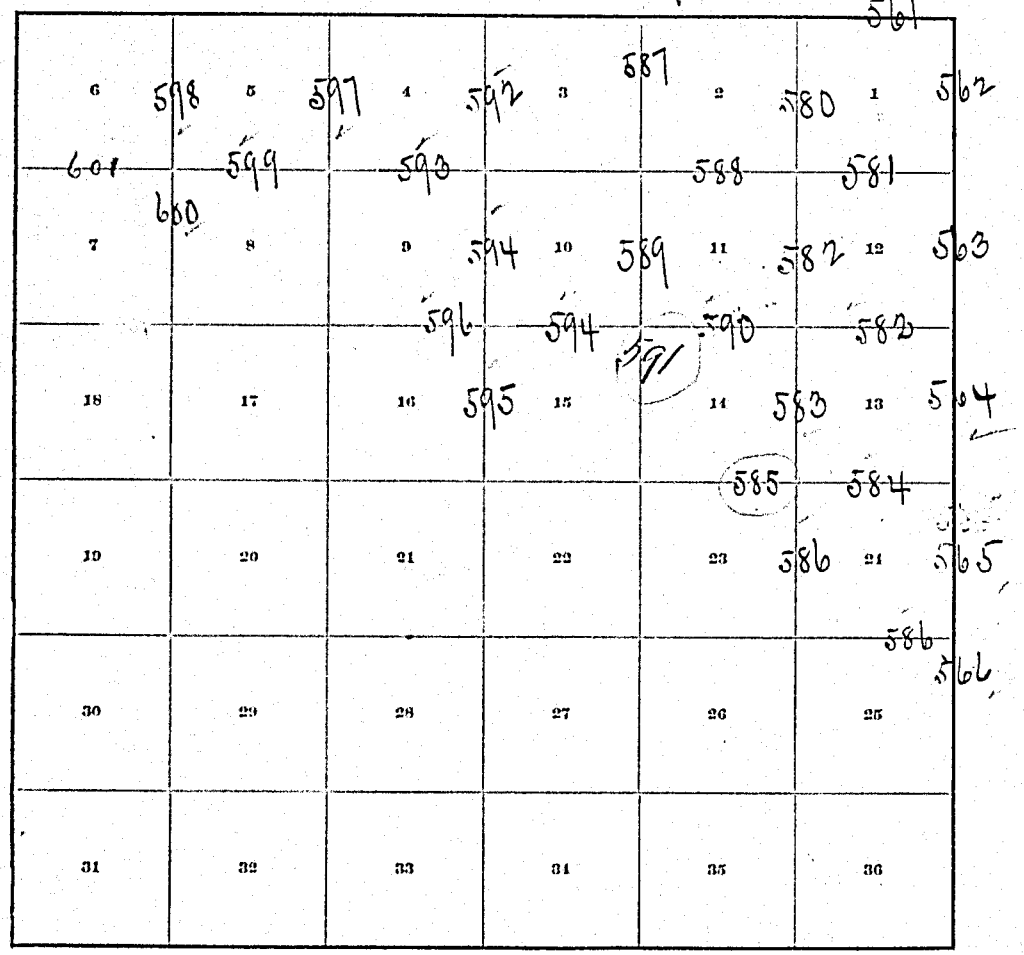

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FIELD NOTES

OF THE SURVEY OF THE

EIGHTH STANDARD PARALLEL SOUTH

THROUGH

RANGES [illegible]

of the Salt Lake Base and Meridian,

in the State of Utah,

AS SURVEYED BY

[illegible] United States Deputy Surveyor,

Under his Contract No. [illegible] dated February [illegible] 1909.

Survey commenced April [illegible] 1909

Survey completed April [illegible] 1909.

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NAMES AND DUTIES OF ASSISTANTS.

Ralph Gentry,	Chainman.
R.Harold Browne,	Chainman.
Louis H.Pohle,	Chainman.
Allan King,	Chainman.
W.F.McCandless,	Moundman.
John H.Hughes,	Moundman.
William Brookins	Axman.
Preslay C.Wills,	Axman.
James Brookins,	Flagman.

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Ralph Gently

We, Louis H. Pohle and Allan King

olemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the n upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that vill report the true distances to all notable objects, and the true lengths of all lines that we assist in suring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of

ghth Standard Parallel South through Ranges 21-20-19-18-17 t of the Salt Lake Base and Meridian in the State of Utah.

Ralph Gently, Chainman.

R. Harold Browne, Chainman.

cribed and sworn to before me this 1st day of April, 1909

Louis H. Pohle Chainman.

Allan King Chainman

A. S. Raflee

SEAL

my com Expires May 1st 1910

Notary Public

We, W. F. McCandless and John H. Hughes

emnly swear that we will well and truly perform the duties of moundmen in the establishment ners, according to the instructions given us, to the best of our skill and ability, in the survey of

th Standard Parallel South through Ranges 21-20-19-18-17-16 East- lt Lake Base & Meridian in the State of Utah

W. F. McCandless, Moundman.

John H. Hughes, Moundman.

ibed and sworn to before me this 1st y of April, 1909

A. S. Raflee

SEAL

my com Expires May 1st 1910

Notary Public

We, William Brookins and Preslay C. Wills

nnly swear that we will well and truly perform the duties of axmen in the establishment of corners er duties, according to instructions given us, to the best of our skill and ability, in the survey of

th Standard Parallel South through Ranges 21-20-19-18-17-16 East of the ke Base & Meridian in the State of Utah.

William Brookins, Axman.

Preslay C. Wills, Axman.

ed and sworn to before me this 1st of April, 1909

A. S. Raflee

SEAL

my comission Expires May 1st 1910

Notary Public

James Brookins, do solemnly swear that I will well and truly the duties of flagman according to instructions given me, to the best of my skill and ability, in the

The Eighth Standard Parallel South through Ranges 21-20-19-18-17 of the Salt Lake Base & Meridian in the State of Utah.

James Brookins, Flagman.

ed and sworn to before me this 1st of April, 1909

A. S. Raflee

SEAL

Notary Public

my com. Expires May 1st 1910

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Survey commenced April 1, 1909 and was executed with a W. and L. E. Gurley Light Mountain Transit, No. 47 with Solar attachment. The horizontal limb is provided with two double verniers placed opposite to each other reading to single minutes of arc- which is also the least count of the verniers of the latitude and declination arcs.

The instrument was examined, tested on the true Meridian at Salt Lake City, found correct, and was approved by the Surveyor General for Utah, Feby. 18, 1909.

I examinedthe adjustments of the Transit, and ccrrect the level and Collination errors, then to test the Solar apparatus by comparing its indications resulting from Solar observation made during a. m. and p. m. hours,-with a meridian determined by observation on Polaris, I proceeded as follows:

I begin at the Standard Witness Cor. on South Bdy. Sec. 31, T. 40 S. R. 21 E. which point is West 70.25 Chs. from Standard Cor. of Secs. 31 & 32 which is a sandstone 20 x 10 x 3 ins. set in a mound of stone marked W.C. 40 S. on N. face and 6 grooves on E. and W. faces.

At this point in latitude 37° 17'18"N. Longitude 109° 43' 08" W. I set off 37° 17' N. on lat. arc, 4° 35' N. on the decl. arc; At 3H 04 m. p. m. l. m. t. determine with the Solar a meridian and mark a point thereof on a stone firmly set in the ground 5 chs. South of my sta. (could not set point north as it falls in Butler, Wash).

At 6 h 45 M p. m. by my watch, which is correct l. m. t. I observe Polaris at western elongation in accordance with Manual of Instructions, and mark a point on the line thus determined, on a peg driven in the ground, 5 chs. S. of my station.

April 1, 1909.

ins.

April 2, at 7 h. a. m. l. m. t. I lay off the azimuth of Polaris 1° 29' to the west (looking south) and mark the Meridian thus determined by cutting a small groove in the stone set April 1, on which the meridian falls 0.3ins. East of the mark determined by the Solar.

At 8 h. 34 m. a. m. l. m. t. I set off 37° 17' N. on lat. arc. 4° 52' N. on the decl. arc. and mark a point on the meridian determined with the Solar by a cross on the stone already set 5 chs. S. of my station; this mark falls 0.4 ins. east of the meridian established by the Polaris observation.

The Solar apparatus by p. m. and a. m. observation, defines position for meridian respectively, about 16" west and 21" east of the meridian established by Polaris observation, therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 7 h. a. m. is N. 14° 30' W, the angle thus determined gives the mag. decl. 14° 30' E.

From the witness cor. already described, I return east on S. bdy. Sec. 31 at 30.24 fall 1 lk. south of S. 1/4 Cor. of Sec. 31 and at 70.24 chs. fall 2 lks. south of Cor. of Secs. 31 & 32 therefore this line is practically east & west.

From the Standard Witness Cor., above described, I lay off from the meridian established April 1st, an angle of 90° from south to west and run west on a tang on S. bdy. of Sec. 31, descend over Bluff into Butler, Wash.

3.00 Foot of bluff 165 ft. below Witness Cor.

3.80 CenterButler, Wash. water 6 ins. deep 15 lks. wide drains S. 35° W. ascend

4.10 Top of cut bank 20 ft. above Butler, Wash.

Thence level

5.85 Top of cut bank, descend into Wash.

Chains. EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 21 E.

6.10 Bottom of wash 20 ft. below top of bank

6.60 Bottom of wash west side Ascend

7.00 Top of bank 20 ft. above bottom from which 4 rooms of ancient cliff dwellers house about 10 x 12 br.S.60°W. 3.50 chs. Thence over level bottom land

7.60 Foot of sandstone bluff, brs. S.35°W. Thence rapid ascent over sandstone surface.

Difference between measurements of 9.75 chs. by two sets of chainmen 2 lks. Position of middle point by 1st set 9.76 chs. By 2nd set 9.74 chs. the mean of which is

9.75 Set an iron post 3 ft. long 3 ins. in diam. 24 ins. in the solid sandstone for Standard Cor. of Tps. 40 S. Rs. 20 & 21 E. marked on brass cap S.C.T.40 S in N. half, R. 20 E. S. 36 in N.W. and R 21 E S 31 in N.E. quadrants; raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor. Pits impracticable.

Cor. stands 150 ft. above Butler Wash

Land mountainous & broken

Soil sandy & rocky, 2nd & 4th rates

No timber,

Land mountainous & exceptionally difficult to survey.

9.75 chs.

West, on the tangent along S. boundary Sec. 36 over steep ascending sandstone surface, exceptionally difficult to survey.

1.45 Top of sandstone ledge 45 ft. above Tp. Cor. brs. S. 35° W. and N. 35° E. Thence over slightly ascending sandstone surface

20.05 Small wash, 3 ft. deep, 10 lks. wide, drains S. 60° E.

Difference between measurements of 40.00 chs. by two sets of chainmen 4 lks. position of middle point By 1st set 34.98 chs.; by 2nd set 40.02 chs.; the mean of which is

40.00 N. 0.2 lk. from the tangent.

Set an iron post 3 ft. long 1 in. diam. 26 ins. in the solid sandstone for Standard 1/4 Cor. marked on brass cap

S. 36 1/4 in N. half; raised mound of stone 2 ft. base 1 1/2 ft. high N. of Cor. Whence
A cedar 16 ins. diam. bears N. 49° 30' E. 96 lks. marked S.C.1/4 S 36 B.T. Cor. stands about 100 ft. above Tp. Cor.
Descending
80.00 Foot of sandstone ridge, brs. N.& S. Ascending
89.10 Top of ridge, brs. N. & S. about 100 ft. above foot
71.20 Then descend into swale 50 ft. below top, drains N.30°E.
Ascend
75.85 Top of spur projects N. 5 chs. 75 ft. above bottom of swale Descend abruptly.
Difference between measurements of 80.00 chs. by two sets of chainmen is 6 lks; position of middle point By 1st set 80.03 chs. By 2nd set 79.97 chs.; the mean of which is
80.00 N.0.81k. from the tangent.
Set an iron post 3 ft. long 3 ins. diam. 24 ins. in solid sandstone for Standard Cor. of Secs. 35 & 36 marked on brass cap T.40 S.S.35 in N.W. & R.20 E.S.36 in N.E. quadrants; raise mound of stone 3 ft. base, 2 1/2 ft. high N.E. of Cor. 4 ft. dist. (could not set in N. on account of sloping ground).
Cor. stands about 180 ft. below top of spur. Navajo spring bears N. 17° 50' E. 12.00 chs.
Land mountainous and rough
No soil, sandstone surface, possible extinct oil sand, 4th rate No timber
Land mountainous and exceptionally difficult to survey.
80.00 chs.

S. 89° 59' W. on the tangent S. of Sec.35.
Descend over rough red sandstone mountain to Comb Wash
4.00 Bottom of Comb Wash brs.S.35°W.150ft.below Standard Sec. Cor., then over level bottom. Leave sandstone surface
13.25 Road, brs. S. 15° W.
16.10 Center of water at Comb Wash 70 lks.wide 1 ft.deep, brs. S. 15° W.

Chains.	
20.00	Foot of sand ridge, brs. S. 15° W. Ascend Enter small shadscale undergrowth
23.30	Top of sand ridge 60 ft. above foot brs. N. & S. Descend.
25.65	Wash drains S. 60° E. 25 lks. wide 5 ft. deep 30 ft. below top
	Thence ascend
29.25	Top of wash brs. S. E. 50 ft. above wash
38.00	Descend from bench brs. S. E.
	Difference between measurements of 40 chs. by two sets of chainmen, 6 lks. position of middle point
	By 1st set, 39.97 chs.
	By 2nd set 40.03 chs; the mean of which is
40.00	N. 1.7 .. lks from tang.
	Set iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S. 35 1/4 in N. half; and raise a mound of stone 2 1/2 ft. base 2 ft. high north of corner.
	Pits impracticable
	This 1/4 Cor. is about 100 ft. above Comb Wash, descend
42.00	Wash, 10 lks wide 2 ft. deep, drains E. E. 30 ft. below Sec. Cor. ascend over broken surface
46.25	Top of small ridge, brs. S. E. 60 ft. above 1/4 Cor.
50.60	Wash 10 lks. wide, 2 ft. deep, drains S. E. 25 ft. below ridge, ascend over sand and limestone faces
59.75	Top of ridge, brs. N. & S. - about 70 ft. above wash-descend over stratas dipping about 26° 15' E.
61.50	Thence ascend over broken country
	Difference between measurements of 80. chs. by two sets of chainmen, 6 lks. position of middle point
	By 1st set 80.03 chs.
	By 2nd set 79.97 chs.; the mean of which is
80.00	N. 3. lks. from Tang.
	Set an iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 34 and 35 marked on brass cap T. 40 S. S. 34 in N. W. and R. 20 E.S35 in

Chains.	
	in N. E. quadrant; and raise a mound of stone 3 ft. base, 2 1/2 ft. high North of Cor.
	Pits impracticable.
	This Cor. is about 250,ft. above 1/4 Sec. Cor.
	Land mountainous and level
	Soil stony 4th rate
	No timber
	Land mountainous and exceptionally difficult to survey. 64.00 chs.
	S. 89° 58' W. on the tangent S. of Sec. 34 over rough ascending stony land through small shadscale, along north slope of wash. Up 1st anticlinal
6.50	Top of north bank of wash - 20 ft. above Sec. Cor.
	Thence along N. face of wash.
20.00	Center of wash 15 lks. wide 1 ft. deep, drains S. 80° E.
	Thence along wash
24.00	Leave wash - ascend
25.65	Top of ascent - descend into wash
29.60	Center of wash, drains S. E. 35 ft. below top, 20 lks. wide 3 ft. deep
	Thence along wash
34.00	Leave wash
36.40	Top of wash, bears S. 80° E
	Difference between measurements of 40 chs. by two sets of chainmen, is 6 lks. position of middle point
	By 1st set 40.03 chs.
	By 2nd set 39.97 chs; the mean of which is
40.00	N.4.7 lks. from tang.
	Set iron post 3 ft. lohg 1 in dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S. 34 1/4 in N. half and raise a mound of stone 2 1/2 ft. base 2 ft. high north of Cor.
	Pits impracticable
	This 1/4 Cor. is about 125 ft. above Sec. Cor.

Chains.	
41.75	Top of bunch, bears S. E. about 20 ft. above 1/4 Cor.
	Thence slight ascent over smooth bench
57.80	Foot of spur Ascend, Stratas more level
62.25	Top of spur projects about 4 chs. S. 60 ft. above foot, descend - Brs. N.E.
65.75	Foot of spur - Thence slight ascent over smooth bench brs. N. & S.
72.65	Wash 6 lks. wide 2 ft. deep, drains S.E.
	difference between measurements of 80 chs. by two sets of chainmen, 6 lks. position of middle point
	By 1st set 80.03 chs.
	By 2nd set 79.97 chs; the mean of which is
80.00	N.6.8lks. from tang.
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 33 and 34, marked T. 40 S. S. 33 in N W and R 20 E. S. 34 in N. E. quadrant; and raise a mound of stone 2 1/2 ft. base 2 ft. high N. of Cor.
	Pits impracticable
	100 ft. above 1/4 Sec. Cor.
	Land smooth, ascending land
	Soil gravelly and sandy, 3rd rate
	No timber

	April 2, At this Cor. I set off 4° 55' N. on the Decl. arc. and at 12 h, 4 m. l. m. t. observe the sun on the meridian, the resulting lat. is 37° 17' N.
	S. 89° 57' W. on the tangent S. of Sec. 33 over ascending bench land up E. slope 1st anticlinal
5.95	Top of mesa brs. N.E. & S.W. 110 ft. above Standard Sec. Cor., thence along nearly level mesa
36.00	Descend, bears N.W. & S.E.
	Difference between measurements of 40 chs. by two sets of chainmen, 2 lks. position of midle point.

By 1st set 40.01 chs.
By 2nd set 39.99 chs; the mean of which is
40.00 N.8.2lks. from tangent
Set iron post 3 ft. long 1 ins. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S.33 1/4 in N. half; and raise a mound of stone 2 1/2 ft. base 2 ft. high N. of Cor.
Pits impracticable
This Cor. is 90 ft. below top of mesa - thence slight descent.
49.94 Wash 15 lks. wide 1 ft. deep, drains S.W. 40 ft. below 1/4 Sec. Cor. - thence slight descent
63.00 Bottom of swale, drains S.E.
Difference between measurements of 80. chs. by two sets of chainmen, 2 lks. position of middle point
by 1st set 80.01 chs.
By 2nd set 79.99 chs.; the mean of which is
80.00 N. 12 lks. from tang.
Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 32 and 33 marked on brass cap T. 40 S. S. 32 in N.W. and R.20 E. S. 33 in N.E. quadrant; and raise a mound of stone 2 1/2 ft. base 2 ft. high N. of Cor.
Pits impracticable.
This Cor. is about same elevation of 1/4 Sec. Cor.
Land mountainous and level
Soil sandy & gravelly 3rd rate
No timber
Land mountainous 23 chs.

S. 89° 59' W. on the tangent S. of Sec. 32 over slight ascending bench land through small shadscale
14.20 Top of Mesa, brs. S.W. 30ft. above Sec. Cor.
Thence over level land
Difference between measurements of 40. chs. by two sets of chainmen, is 2 lks. position of middle point

Chains.	
	By 1st set 40.01 chs.
	By 2nd set 39.99 chs; the mean of whihh is
40.00	N.15.32lks. from tang.
	Set iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked S.32 1/4 in N. Half; and raise a mound of stone 2 1/2 ft. base 2 ft. high N. of Cor.
	Pits impracticable
	About 30 ft. higher than Sec. Cor., then slight descent.
61.60	Small wash, drains S. 60° W.
	12 lks. wide, 3 ft. deep
67.80	Small wash 15 lks. wide 3 ft. deep, drains S. 45° W
	No difference in measurements of 80 chs. by two sets of chainmen
80.00	N. 19 lks. from tang.
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 31 and 32, marked on brass cap T.40 S. S.31 in N.W.; and R.20 E. S.32 in N.E. quadrant; and raise a mound of stone 3 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	This Cor. about same elevation as 1/4 Cor.
	Land smooth mesa
	Soil sandy & gravelly, 3rd rate.
	No timber.

	S. 89° 55' W. on the tangent S. of Sec. 31 over nearly level land
13.03	Road, bears S.W.
18.40	Wash, drains S.W.
31.70	Wagon road, brs. S. 60° W.
	Difference between measurements of 40 chs. by two sets of chainmen is No difference
40.00	N.22.7 lks. from tang. about 20 ft. below Sec. Cor.
	Set iron post 3 ft. long 1 in. dia. 26 in. in the

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 20 E.

Chains.	
	ground for Standard 1/4 Cor. marked on brass cap S. 31 1/4 in N. half; and raised a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable
43.69	East bank wash, descend
44.58	Center of wash, drains S. 10 lks. wide 1 ft. deep 15 ft. below east bank
46.90	West bank of wash, 20 ft. above wash.
	Thence slight ascent up E. slope 1st anticlinal
	No difference in measurement of two sets of chainmen.
80.00	N. 27 lks. from tang.
	Set iron post 3 ft. long 3 in. dia. 24 ins. in the ground for Standard Cor. to Tps. 40 S. Rs. 19 and 20 E., marked on brass cap S.C. T. 40 S. in N. half, R. 19 E. S. 36 in N.W, and R 20 E. S. 31 in N.E. quadrant; and raise mound of stone 3 ft. base, 2 1/2 ft. high N. of Cor.
	Pits impracticable
	This Cor. is about 40 ft. above 1/4 Sec. Cor.
	A flat top butte brs. S. 34° 35' W
	Nipple butte brs. S. 80° 08' W
	Land smooth bench
	Soil sandy, 3rd rate
	No timber
	April 2, 1909.

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 19 E.
April 2, 1909.

At Standard Cor. to Tps. 40 S., R. 19 & 20 E. in Latitude 37° 17' 18" N. Longitude 109° 49' 38" W. at 6 h 39 m. p.m. by my watch, which is correct l. m. t. I observe Polaris at western elongation in accordance with instructions in the Manual, and mark the line thus determined, by a wooden stake driven in the ground 6 chs. N. of my station.

April 3, 1909 at 7 h 30 m. a. m. I turn off the

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 19 E.

Chains.	
	azimuth of Polaris 1° 29' to the east, and mark the meridian thus determined by driving a wooden stake firmly set in the ground east of the mark established last night; the magnetic bearing of said true meridian is N. 14° 35' W., which gives the magnetic declination 14° 35' E.
	I lay off from the meridian an angle of 90° from north to west, and run west on tang. S. of Sec. 36 over gradually descending land, through small shadscale over apex 1st anticlinal Course N.20°E.
	Difference between measurements of 40 chs. by two sets of chainmen, is 2 lks.-position of middle point.
	By 1st set 40.01 chs.
	By 2nd set 39.99 chs., the mean of which is
40.00	N.0.2 link from the tang.
	Set iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S. 36 1/4 in N. half; and raised a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	60 ft. below Tp. Cor.
	Continue gradual descent
	Difference between measurements of 80 chs. by two sets of chainmen, is 2 lks., position of middle point,
	By 1st set 79.99 chs.
	By 2nd set 80.01 chs.; the mean of which is
80.00	N.0.8 lk. from the tangent
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 35 and 36, marked on brass cap, T 40 S. S. 35 in N. W. and R.19 E, S. 36 in N.E. quadrant and raise a mound of stone 2 1/2 ft. base, 2 ft. high, N. of Cor.
	Pits impracticable.
	Nipple butte, bears S. 78° 25' W.
	Lone high peak brs. N. 55° 40' W.
	About 60 ft. below 1/4 Sec. Cor.

Chains.	
	Land smooth bench
	Soil sand & gravel, 3rd rate.
	No timber

	S. 89° 59' W. on the tang. S. of Sec. 35
	Over gradually descending bench land.
18.50	Edge of wash, heads 3 chs. N. flows S.
19.80	Center of wash 20 lks. wide, 50 ft. deep, drains S. 35° W. ascend
23.75	West edge of wash - (Rocked rimmed)
25.00	Descend down W. slope 1st anticlinal
	Difference between measurements of 40 chs. by two sets of chainmen, 2 lks.- position of middle point
	By 1st set 40.01 chs.
	By 2nd set 39.99 chs; the mean of which is
40.00	N. 1.7 lks. from tangent
	Set iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S. 35. 1/4 in N. half; and raise a mound of stone 3 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	This Cor. is about 40 ft. below Standard Sec. Cor. and about 20 ft. above Lime Creek
	Thence slight ascent to ridge
42.00	Top of sandy ridge 60 ft. above 1/4 Cor. brs. S.60° W.
56.00	Head wash S. 80° W
60.00	Thence along edge of wash - valley land, descend
69.00	More abrupt descent
71.00	Edge of valley, gradual descent, drainage is about S. 10° W
	Difference between measurements of 80 chains by two sets of chainmen is 4 lks., position of middle point
	By 1st set 79.98 Chs.
	By 2nd set 80.02 chs.; the mean of which is
80.00	N. 3 lks. from tang.
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 34 and 35, marked on

Chains.	
	brass cap T. 40 S. S. 34 in N.W., and R. 19 E. S. 35 in N.E. quadrant; and raise a mound of stone 3 ft. base, 2 1/2 ft. high N. of Cor.
	Pits impracticable.
	Wash 4 chs. N. drains W. into Lime Creek
	This Cor. is about 50 ft. below 1/4 Sec. Cor.
	Land smooth bench Vegetation shadscale
	Soil sandy & gravelly
	No timber
	S. 89° 58' W. on the Tang. S. of Sec. 34
	Over descending ridges & ravines, exceptionally difficult to survey, down W. slope 1st anticlinal
4.00	I Ch. south from bank of Lime Creek
	Thence along small ridge south of Lime Creek 3 chs. from S. bank of Lime Creek
21.43	Descend into Lime Creek
27.12	Center of Lime Creek 20 lks. wide, water 1/2 ft. deep- Drains south 100 ft. below Standard Sec. Cor. Ascend
32.00	Top of bank 125 ft. above Lime Creek, descend
34.46	Center of wash 30 lks. wide, drains S. about 30 ft. below top of bank - ascend
	Difference between measurements of 40 chs. by two sets of chainmen 4 lks. position of middle point
	By 1st set 40.02 Chs.,
	By 2nd set 39.98 Chs.; the mean of which is
40.00	N. 4.7 lks. from the tang.
	Set an iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. mkd., on brass cap S. 34. 1/4 in N. half; and raise a mound of stone 3 ft. base, 2 ft. high N. of Cor. which stands about 75 ft. above Lime Creek. Foot W. slope 1st anticlinal
	Pits impracticable. ascend
42.00	Top of sandy ridge 60 ft. above 1/4 Sec. Cor. brs. S. 60° E. descend Begin main synclinal brs. N. 20°E.
56.00	Head of wash, 12 lks. wide, 5 ft. deep

Chains.	
	drains S. 80° W - descend
69.00	Descent more abrupt
72.00	Edge of smooth bench - brs. N. & S.
	Descent more gradual
	Difference between measurements of 80 Chs. by two sets of chainmen is 6 lks. - position of middle point
	By 1st set 79.97 Chs.
	By 2nd set 80.03 Chs.; the mean of which is
80.00	N.6.8 lks. from the Tangent
	Set iron post 3 ft. long 3 ins. dia., 24 ins. in the ground for Standard Cor. of Secs. 33 and 34 marked on brass cap T 40 S. S. 33 in N.W., and R. 19 E. S. 34 in N.E. quadrant; and raise a mound of stone. 3 ft. base, 2 ft. high N. of cor.
	This Cor. is about 10 ft. above 1/4 Sec. Cor.
	Franklin Peak bears N. 10° 08' W.
	April 3. At this Cor. I set off 5° 18' N on the Decl. arc. and at 12h3m p.m. l.m.t. observe the sun on the meridian ; the resulting latitude is 37° 16' which is within 1' of the Correct Lat.
	Land mountainous and broken
	Soil sand & gravel, 3rd rate Vegetation shadscale
	No timber
	Land exceptionally difficult to survey. 80. Chs.
	S. 89° 57' W. on the Tang. S. of Sec. 33
	Over gradually descending land
4.61	West Fork of LimeCreek 30 ft. below Sec. Cor. drains S45° W. water 20 lks. wide 1/2 ft. deep. ascend.
12.00	West bank of wash, abrupt ascent
14.00	Top of bench 40 ft. above west fork Lime Creek, brs. N. & S.
16.00	Top of ascent, then descend over small ridges and ravines, exceptionally difficult to survey.
22.63	Center of wash, drains S. ascend
28.00	Over broken ridges and ravines. Average surface

Chains.	
	about level
	Difference between measurements of 40 chs. by two sets of chainmen, is 4 lks. position of middle point
	By 1st set 39.98 Chs.
	By 2nd set 40.02 Chs.; the mean of which is
40.00	N. 9.2 lks. from the tang.
	Set iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S. 33 1/4 in N. half; and raise a mound of stone 2 1/2 ft. base 2 ft. high N. of Cor.
	Pits impracticable
	This Cor. is about 30 ft. above Sec. Cor.
	Franklin Peak bears N. 4° 33' E.
	Thence over ascending bench land.
50.80	Top of small spur projects about 2 Chs. S. about 50 ft. above 1/4 Sec. Cor. descend -
51.70	Center of wash 20 lks. wide 4 ft. deep, drains S.
	Difference between measurements of 80 chs. by two sets of chainmen, is 6 lks. - position of middle point
	By 1st set 79.97 Chs.
	By 2nd set 80.03 Chs.; the mean ofwhich is
80.00	N. 12 lks. from the Tang.
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Sec. Cor. of Secs. 32 and 33 marked on brass cap T. 40 S. S. 32 in NW. and R. 19 E. S. 33 in N.E. quadrant; and raise a mound of stone 3 ft. base 2 ft. high N. of Cor.
	Pits impracticable.
	Land mountainous, rough and broken
	Soil sandy, - gravelly - 3rd rate. Vegetation shadscale
	No timber
	Land mountainous and exceptionally difficult to survey, 64 Chs.
	S. 89° 56 ' West on the Tangent S. of Sec. 32
	Over slightly descending land - through small shadscale
2.84	Center of wash, drains S. 75° E 3 lks. wide 5 ft. deep

Chains.	
	Road follows in wash, ascend
39.50	Small wash, 5 lks. wide, 2 ft. deep, drains N.
	Difference between measurements of 40 Chs. by two sets of chainmen 2 lks. position of middle point
	By 1st set. 40.01 Chs.
	By 2nd set 39.99 Chs.; the mean of which is
40.00	N.15.2 lks. from Tang.
	Set iron post 3 ft. long 1 in. dia. 36 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S.32 1/4 in N. half; and raise a mound of stone 3 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	75 ft. above Standard Sec. Cor.
	Thence along N. slope of smallbutte
56.50	Leave butte and descend slightly
64.34	Wagon Road, brs. N. 60° E
67.15	Wash 60 lks. wide, 4 ft. deep, drains S. ascend slightly
79.00	Begin slight descent to wash
	Difference between measurements by two sets of chainmen is 4 lks. - position of middle point.
	By 1st set 79.98 Chs.
	By 2nd set 80.02 Chs.; the mean of which is
80.00	N. 19 lks. from the Tang.
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 31 and 32 marked on brass cap T. 40 S. S.31 in N.W. and R. 19 E. S. 32 in N.E. quadrant; and raise a mound of stone 3 ft. base 2 ft. high N. of Cor. Cor. is about 15 ft. above 1/4 Sec. Cor. Pits impracticable.
	Land smooth and broken by washes
	Soil sandy and gravelly 3rd rate.
	No timber
	S. 89° 55' W. on Tangent S. of Sec. 31
	Over slightly ascending land through small shadscale
5.30	Small wash 60 lks. wide, 2 ft. deep, drains S. 45° E

Range.

	Ascend slightly
14.00	Top of small spur - 25 ft. high, brs. N. & S.
	Descend
24.00	Foot of spur, brs. N. & S. 20 ft. below top
25.56	Wash 10 lks. wide 1 ft. deep, drains S.
36.12	Wagon Road, brs. N. 30° W
	Difference between measurements of 40 chsins by two sets of chainmen, 4 lks. - position of middle point
	By 1st set 40.02 Chs
	By 2nd set 39.98 Chs.; the mean of which is
40.00	N. 22.7 lks. from the Tang.
	Set iron post 3 ft. long 1 in. dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S. 31 1/4 in N. half; and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable
	Corner stands 50 ft. above Sec. Cor.
	Wash 40 lks. wide, 2 ft. deep, drains S. E. and empties into main wash about 4 Chs. S.
47.64	Wash 15 lks. wide, 4 ft. deep, drains S. E.
55.00	Descend into wash
56.00	Junction of two washes 50 lks. wide 4 ft. deep, drains S. 80° E. One drains from N.W. and follows the other west.
64.00	Leave wash - Drains from N.W. to S.E.
69.10	Top of bank, bears S.E. Synclinal terminates Brs.S.5°E.
	Difference between measurements of 80 Chs. by two sets of chainmen 6 lks. - position of middle point
	By 1st Set 80.03 Chs.
	By 2nd Set 79.97 Chs.; the mean of which is
80.00	N. 27 lks. from Tang.
	Set iron post 3 ft. long, 3 ins. dia. 24 ins. in the ground for Standard Cor. of Tps. 40 S. RS. 18 and 19 E., marked on brass cap T. 40 S. in N. half, and R. 18 E. S. 36 in N.W. and R. 19 E. S. 31 in N.E. quadrant; and raise a mound of stae 3 ft. base, 2 1/2 ft. high

Range.

N. of Cor.

Pits impracticable.

This Cor. is about 75 ft. above 1/4 Sec. Cor.

Land ascending benches

Soil gravelly & sandy, 3rd rate

No timber.

Vegetation shadscale April 3, 1909.

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 18 E.

April 3, 1909.

At Standard Cor. to Tps. 40 S. Rs. 18 & 19 E. in Latitude 37° 17' 18" N. Longitude 109° 56' 10" W. at 6 h 36 m. p.m. by my watch, which is correct l. m. t. I observe Polaris at western elongation in accordance to instructions given in the Manual and marked the line thus determined by a stake driven in the ground 6 Chs. N. of my station.

April 4th, 1909 at 8h a. m. l. m. t. I turn off the azimuth of Polaris 1° 29' to the east and mark the meridian thus determined by driving a stake firmly in the ground east of the mark established last night; the magnetic bearing of said true meridian is N. 14° 35' W., which gives the magnetic declination of 14° 35' E.

I lay off from the meridian, an angle of 90° from north to west, and run west on temp. S. of Sec. 36 over slightly ascending land through small shadscale underbrush. Beginning Eastern slope 2nd anticlinal

16.45 Center of wash, 3 lks. wide, 40 ft. deep, drains S. 85 E.

21.63 Wagon road, bears S. 75° E

28.74 Wash, 10 lks. wide, 1 ft. deep, drains S. 80° E.

Difference between measurements of 40 Chs. by two sets of chainmen 2 lks., position of middle point.

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 18 E.

Chains.	
	By 1st set 39.99 Chs.
	By 2nd set 40.01 Chs.; the mean of which is
40.00	N.0.2 link from Tang.
	Set iron post 3 ft. long 1 in dia. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S.36 1/4 in N. half; and erect a mound of stone 3 1/2 ft. base, 2 ft. high N. of Cor.
	Pitsimpracticable.
	AshenherstOil Wells br.N.11° 23' E. 8.11 Chs.& S.12°9E.4 chs
	This 1/4 Cor. is about 120 ft. above Tp. Cor.
65.70	North end of small butte bearing S. E. 8 Chs. and N.E. 2 Chs. 2 Chs. wide.
73.50	Wash 10 lks. wide, 2 ft. deep, drains S.E.
	Difference between measurements of 80 Chs. by two sets of chainmen is 6 lks. - position of middle point
	By 1st set 79.97 Chs.
	By 2nd set 80.03 Chs.; mean of whibh is
80.00	N.0.8 lk. from Tang.
	Set iron post 3 ft. long, 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 35 and 36 marked on brass cap T. 40 S. S.35 in N.W. and R. 18 E. S.36 in N.E. quadrant; dig pits 24 x 18 x 12 ins., crosswise on each line, E and W., 3 ft. and N. of post 7 ft. dist.; and raise a mound of earth 4 ft. base, 2 ft. high N. of Cor.
	This Cor. is about 80 ft. above 1/4 Sec. Cor.
	Land ascending benches
	Soil sand and gravel, 3rd rate Vegetation shadscale
	No timber.
	S. 89° 59' W. on tangent S. of Sec. 35
	Over ascending bench land through small shadscale and cut by numerous washes, exceptionally difficult to survey
23.14	Begin descent into wash
24.80	Center of wash 10 lks. wide, 2 ft. deep, drains S.
	ascend.
26.20	Top of small spur, projects about 6 chs. S. 20° E.

Chains.	
	Descend
28.00	Center of wash 15 lks. wide, 4 ft. deep, drains S. 20° E ascend
30.90	West bank of wash
	Difference between measurements of 40 Chs. by two sets of chainmen 4 lks. - position of middle point:
	By 1st set 40.02 Chs.
	By 2nd set 39.98 Chs.; the mean of which is
40.00	N. 1.7 lks. from Tang.
	Set iron post 3 ft. long 1 in. dia. 26 ins. in solid rock for Standard 1/4 Sec. Cor. marked on brass cap S. 35 1/4 in N. half; and raised a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	This Cor. falls on top of ledge, bears S.E. and is about 95 ft. above Standard Sec. Cor. descend
42.45	Center of wash 20 lks. wide, 10 ft. deep, drains S.E. 20 ft. below 1/4 Sec. Cor.
50.75	West bank of wash - 20 ft. above bottom, thence nearly level
51.75	Begin descent into wash
55.25	Center of wash, 20 ft. below, 20 lks. wide, 10 ft. deep Part of descent drains N.E. ascend
60.75	Top of west bank - Then slight ascent
77.85	Small wash 5 lks. wide, 2 ft. deep, drains S.
	Difference between measurements of 80 Chs. by two sets of chainmen is 6 lks. - position of middle point
	By 1st set 79.97 Chs.
	By 2nd set 80.03 Chs.; the mean of which is
80.00	N. 3 lks. from Tang.
	Set iron post 3 ft. long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Secs. 34 and 35 marked on brass cap T. 40 S. S. 34 in N. W., and R. 18 E. S. 35 in N. E. quadrant; and raise mound of stone 3 ft. base, 2 ft. high North of Cor.
	Pits impracticable
	This Cor. is about 120 ft. above 1/4 Sec. Cor.
	Land mountainous, rough and broken by numerous

washes

Soil sandy & gravelly,, 3d rate . Vegetation shadscale.

No timber

Land mountainous & exceptionally difficult to survey

80.00 chs.

S. 89° 58' W. on the tangent S. of Sec. 34

Over ascending land through shadscale, some grass

28.10 Center of wash, 6 lks. wide 1 ft. deep, drains S.70° E.

Difference between measurements of 80.00 chs. by two sets of chainmen is 4 lks. position of middle point

By 1st set 39.98 chs.

By 2nd set 40.02 chs., the mean of which is

40.00 N.4.7 lks. from Tangent

Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for Standard 1/4 Sec. Cor. marked on brass cap S,34 1/4 in N. half; dig pits 18x18x12 ins. E.& W. of post 3 ft. dist., raise mound of earth 3 1/2 ft. base, 1 1/2 ft. high N. of Cor.

This Cor. is about 95 ft. above Sec. Cor.

49.40 Foot of bench, bears N. 20° W.

51.40 Top of bench, 60 ft. above ft. brs. N. 20° W.

Thence nearly level

54.24 Descend from bench, brs. N. 20° W.

56.00 Foot of bench, 40 ft. below top thence slight ascent

Difference between measurements of 80.00 chs. by two sets of chainmen is 2 lks.; the position of middle point

By 1st set 80.01 chs.

By 2nd set 79.99 chs., the mean of which is

80.00 N.6.8 lks. from the Tang.

Set an iron post 3 ft. long 3 ins. diam. 24 ins. in the ground for Standard Cor. of Secs. 33 & 34 marked on brass cap T. 40 S.S.33 in N.W. & R.18 E.S.34 in N.E. quadrants; raise a mound of stone 3 ft. base, 2 ft. high N. of Cor.

Pits impracticable.

This Cor. is about 130 ft. above 1/4 Sec. Cor.
Land ascending benches.
Soil sandy & gravelly, 3rd rate
No timber

April 4. At this Cor. I set off 5° 41' N. on the decl. arc. and at 12h 3m p.m. l.m.t. observe the sun on the meridian, the resulting latitude is 37° 18' or within 1' of the proper latitude.

S. 89° 57' W. on the tangent S. of Sec. 33
Over ascending land through shadscale and some grass
0.73 Center of wash, 1 chain wide, 3 ft. deep, drains S.60°E.
Ascend
9.90 East bank of wash
0.75 Center of wash, 20 ft. below top 15 lks. wide, 3 ft. deep, drains S. 80° E.
Thence ascend along south bank of wash
Difference between measurements of 40.00 chs. by two sets of chainmen is 6 lks. position of middle point
By 1st set 39.97 chs.
By 2nd set 40.03 chs.; the mean of which is
40.00 N.9.2 lks. from the tang.
Set an iron post 3 ft. long 1 in. diam. 26 ins. in the ground for Standard 1/4 Sec. Cor. markedon brass cap S. 33 1/4 in N. half; raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
This Cor. is about 65 ft. above Sec. Cor.
41.51 Set stone cor. 36 x 4 x 12 ins. 12 ins. in the ground for 110th Meridian marked 110° MER. and raise a mound of stone 4 ft. base, 4 ft. high West of Cor.
73.85 Wash, 10 lks. wide, 2 ft. deep, drains S. 70° E.
Difference between measurements of 80.00 chs. by two sets of chainmen 4 lks., position of middle point

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 18 E.

Chains.

By 1st set 80.02 chs.

By 2nd set 79.98 chs., the mean of which is

80.00 N.12 lks.from the tang.,

Set an iron post 3 ft.long, 3 ins.diam., 24 ins.in the ground, for standard cor.of secs.32 and 33, marked on brass cap T 40 S S 32 in NW., R. 18 E S 33 in NE.quadrant; and raise a mound of stone 3 ft.base, 2 ft.high N.of cor. Pits impracticable.

This cor.is about 140 ft.above $\frac{1}{4}$ sec.cor.

Land ascending over benches..

Soil, sandy and gravelly; 3rd rate; some grass.

No timber.

S.89° 56'W.on the tangent S.of sec.32,

Ascend over very steep mountain side, over slide rock and large boulders, exceptionally difficult to survey.

15.00 Foot of cliffs, 250 ft.above standard cor., bears N. and S.

I find it impossible to chain further.

To determine the distance to top of mesa, I triangulate as follows:-

Set a flag on top on tangent line, then measure a base N.0° 04'W. 24 chs.to a point, from which the flag bears S.37° 10'W.; from the flag the N.end of base bears N.37° 10'E.

Difference between measurements of 24 chs. on base line, by two sets of chainmen is 2 links position of middle point

By 1st set 23.99 chs.

By 2d set 24.01 chs.; the mean of which is 24 chs.

Therefore the distance is: tang. 37° 14' x base, or

1824

chains.	
	0.75996 x 24 equals 18.24 chs.
18.24	Top of Cedar Mesa, 600 ft.above bottom of cliffs, bears N. and S.
	Line triangulated passes over sand and limestone stratas interlain with oil sand stratas.
	Thence ascend over rough limestone surface and boulders; through cedar and pine timber.
35.70	Top of ascent, 150 ft.above top of cliff, bears N. & S.
	Thence slight ascent.
	Difference between measurements of 40.00 chs.by two sets of chainmen is 4 lks.; position of middle point
	By 1st set 40.02 chs.
	By 2d set 39.98 chs.; the mean of which is
40.00	N. 15.2 lks.from the tangent,
	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for standard $\frac{1}{4}$ sec.cor., marked S 32 $\frac{1}{4}$ in N. half; from which
	A pine 10 ins.dia., bears N.6° 45'W. 102 lks.dist. marked S C $\frac{1}{4}$ S 32 B T
	No other suitable bearing trees within limits; raise a mound of stone $2\frac{1}{2}$ ft.base, 2 ft.high N.of cor. Pits impracticable.
	This cor.is about 900 ft.above standard cor.
	Thence slight ascent.
48.00	Small wash, 5 lks.wide, 2 ft.deep, drains SW.
74.00	Leave cedar and pine timber.
	Enter sagebrush, bearing N. and S.
	Difference between measurements of 80.00 chs. by two sets of chainmen is 4 lks.; position of middle point
	By 1st set 79.98 chs.
	By 2nd set 80.02 chs.; the mean of which is

80.00 N. 19 lks. from the tangent

Set an iron post 3 ft. long, 3 ins. dia. 24 ins. in the ground for Standard Cor. of secs. 31 & 32, marked on brass cap T. 40 S. S. 31 in N. W. and R.15 E. S. 32 in N.E. Quadrant; and raise a mound of stone 2 1/2 ft base, 2 ft high N. of Cor.Cor. apex 2nd artificial brs.N.65°W & S.5°W.

Pits impracticable

This Cor. is 40 ft. above 1/4 sec cor

Land mountainous

Soil stony and loam - 1st & 4th rates

Timber - Pine and cedar on 55.76 chs.

Land mountainous and exceptionally difficult to survey

80. chs.

S. 89° 55' W on the tangent S. of sec. 31

Over slightly ascending land, through sagebrush

5.00 Enter scattering pine & cedar timber

6.80 Top of ascent, brs. N.W. & S.E. - about 20 ft. above sec cor.

Thence slight descent

7.50 Leave scattering pines & cedar timber

Difference between measurements of 40 chs. by two sets of chainmen 2 lks. position of middle point

By 1st set 39.99 chs.

By 2nd set 40.01 chs. the mean of which is

40.00 N.22.7 lks from the tangent,

Set an iron post 3 ft long 1 in dia. 16 ins. in the ground for Standard 1/4 sec.cor. marked on brass cap S31. 1/4 in N. half; and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.

Pits impracticable

This cor is about 35 ft. below ascent, thence through sagebrush

Difference between measurements of 80 chs. by two sets of chainmen in 4 lks., position of middle point

By 1st set 80.02 chs.

By 2nd set 79.98 chs., the mean of which is

Chains. EIGHTH STANDARD PARALLEL SOUTH THROUGH R. 18 E.

80.00 N. 27 from the tangent

Set an iron post 3 ft long 3 ins. dia. 24 ins. in the ground for Standard Cor. of Tps. 40 S. Rs. 17 and 18 E, marked on brass cap T. 40 S. in N. half, R. 17 E. S. 36 in N.W. and R. 18 E. S. 31 in N.E. quadrant; dig pits 30 x 24 x 12 ins. crosswise on each line E. and W. 4 ft., and N. of post, 8 ft. dist; and raise a mound of earth 5 ft. base, 2 1/2 ft high N. of Cor.

This cor. is about 30 ft. below 1/4 sec cor.

Land nearly level

Soil Loam, 1st rate

Timber Pine & cedar

Scattering timber on 2.50 chs

April 4"1900.

April 4th

At Standard corner to Tps. 40 S. R. 17 & 18 E in Latitude 37° 17' 18" N., Longitude 110° 02' 42" W, at 6 h 32 m.p.m. by my watch, which is correct, l.m.t. I observe Polaris on Western elongation in accordance with instructions given in the Manual and mark the line thus determined by a stake driven in the ground 6 chains North of my station.

April 5th, 1909 at 8 h a. m. l.m.t. I turn off the azimuth of Polaris 1° 29' to the East and mark the meridian thus determined by driving a stake firmly in the ground, east of the point established last night; the magnetic bearing of said true meridian being N. 14° 40' W, which gives the magnetic declination of 14° 40' E

I lay off from the meridian an angle of 90° from north to west and run west on tang. S. of sec. 36, over gently rolling mesa through sagebrush

32.00 Enter light growth of timber

Difference of measurements of 40 chs. by two sets of chainmen is 2 lks., position of middle point

By 1st set 40.01

By 2nd set 39.99, the mean of which is

40.00 N. D. 2 link from tangent

Set an iron post 1 in in dia. 3 ft. long 26 ins. in the ground for Standard 1/4 sec. cor, marked on brass cap S. 36. 1/4 in N. half Dig pits 18 x 18 x12 ins. E. and W. of post 3 ft. dist; and raise amound of earth 3 1/2 ft. base, 1 1/2 ft N. of Cor.

No trees suitable for marking within limits

Difference between measurements of 80 chs. by two sets of chainmen is 4 lks., position of middle point

By 1st set 80.02 chs.

By 2nd set 79.98 " The mean of which is

80.00 N. 0.81k from tangent

3 ft. long

Set an iron post 3 ins. dia. 24 ins. in the ground for

Standard Cor. of secs 35 and 36 marked on brass cap T. 40 S. S. 35 in N.W. and R. 17 E. S. 36 in N.E. quadrants. Dig pits 24 x 18 x 12 ins. crosswise on each line E. and W. 3 ft and N. of post 6 ft. dist. and raise a mound of earth 4 ft base 2 ft high N. of Cor.
A. Cedar tree 12 ins. in dia. bears N. 40° E 5 lks. dist. marked T. 40 S. R. 17 E. S. 36 B.T.
A Cedar tree 12 ins. in dia. bears N. 66° W. 73 lks. dist. marked T. 40 S. R. 17 E. S. 35 B.T.
Corner stands on rolling mesa about same level as 1/4 sec cor.
Land rolling with heavy undergrowth of sagebrush
Soil 1st rate
Timber, pine, pinon & cedar

S. 89° 59' W. on tangent S. of sec 35
Through dense timber
21.00 Leave timber, bears S. 40 E.
21.78 Top of mesa, bears S. 40 E.
Abrupt descent along S. side of point
30.49 Top of cliff, bears N 80° E
Descend abruptly
Difference of measurements of 40 chs. by 2 sets of chainmen is 4 lks. position of middle point by
By 1st set 39.98 chs
By 2nd set 40.02 " the mean of which is
40.00 N. 1.7 lks. from the tangent.
Point for corner falls on precipitious slope where it would be unsafe to establish the corner
46.54 Set iron post 1 in. dia. 3 ft. long 26 ins. in the ground for witness stand. 1/4 sec. cor. marked on brass cap W.C.S 35 1/4 in N. half raise a mound of stone 2.1/2 base 2 ft. high N. of Cor.
58.90 Descend abruptly,
Leave timber, bears N. 50° E

Chains. EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 17 E.

62.00 Bottom of wash, bears S. 50° W. Ascend

Difference of measurement of 80.00 chs. by two sets of chainmen 6 lks., position of middle point

By 1st set 79.97 By 2nd set 80.03, the mean of which is

80.00 N.3.1 lks. from the tang.

Set an iron post 3 ins. diam. 3 ft. long, 24 ins. in the ground for Standard Cor. of Secs. 34 and 35 marked on brass cap T. 40 S. S. 34 in N.W. & R 17 E. S. 35 in N.E. quadrant; raise mound of stone 2 ft. base, 1 1/2 ft. high N. of Cor. Cor. falls 30 ft. below top of mesa Pits impracticable.

A cross cut in the rock for a bearing object bears N. 34° 45' E. 15.2 lks. dist. marked T. 40 S. R. 17 E. S. 35 B.O

A cross cut in the rock for bearing object brs. N. 40° W. 14.8 lks. dist. mkd. T. 40 S. R. 17 E. S. 34 B.O.

Land very broken & rocky Soil 4th rate

Timber scattering pine & cedar.

Land mountainous and exceptionally difficult to survey

80.00 chs.

S. 89° 58' W. on tangent S. of Sec. 34

4.95 Top rim of Cedar Mesa. Descend abruptly onver sandstone and limestone ledges interlaid with oil sand stratas

No difference in measurement by two sets of chainmen

40.00 N.4.7 lks. from the tangent

Set iron post 1 in. diam. 3 ft. long in mound of stone & earth 3 ft. base 26 ins. high for Stand. 1/4 sec. cor., mkd. on brass cap S. 34 1/4 in N. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor. Pits impracticable Cor. falls about 500 ft. below Sec. Cor. Could not set post in the ground on account of solid stone.

62.25 Wagon road, bears S. 85° E. & N. 85° W.

69.45 Rim of Johns Canon, course N. & S.

Descend abruptly over lime and sandstone ledges interlaid with oil sand stratas

Difference between measurements of 80.00 chains by two sets of chainmen is 8 lks., position of middle point

Chains.	EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 17 E.
	by 1st set 80.04 chs.
	By 2nd set 79.96 chs., the mean of which is
80.00	N 6.8 lks. from the tangent
	Set an iron post 3 ins. in diam. 3 ft. long 18 ins. in the ground in mound of stone 2 ft. base 6 ins. high for Standard Cor. of Secs. 33 & 34 marked on brass cap T 40 S.S.33 in N.W. and R.17 E.S.34 in N.E. quadrant and raise a mound of stone 3 ft. base, 4 ft. high N. of Cor.
	Cor. falls about 500 ft. below 1/4 Sec. Cor.
	Pits impracticable .
	Land very broken & rocky Soil 4th rate
	Timber, some small scattering cedar & pinon
	Land rough, mountainous & exceptionally difficult to survey
	80.00 chs.
	S. 89° 57' W. on tangent S. of Sec. 33
	Descending rapidly into Johns Canon
18.16	Johns Canon channel, course S.W. 250 ft. below Cor.
	Stream of water 10 lks. wide, 2 ins. deep, tank of water with escaping gas bears S. 40°W. about 20 chs.. Ascend
31.92	Top of high point and descend abruptly
	Difference between measurements of 40.00 chs. by two sets of chainmen 2 lks. By 1st set 40.01 chs. By 2nd set 39.99 chs., the mean of which is
40.00	N.9.2 lks. from tangent, At point 350 ft. below top of cliff
	Set an iron post 1 in. diam. 3 ft. long 12 ins. in the ground for Standard 1/4 Sec. Cor. markedon brass cap S.33 1/4 in N.half; raise a mound of stones around Cor. & raise a mound of stone 3 ft. base 3 1/2 ft. high N. of Cor.
	Impossible to set post 26 ins. in the ground.
68.25	Cross wash flowing south 10 lks. wide 1 lk deep
72.00	Ft. of cliff 25 ft. high. Ascend over sandstone & limestone ledges
72.75	Top of cliff Ascend.
	Difference between measurements of 80.00 chains by the two sets of chainmen is 6 lks.; position of middle point

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGE 17 E.

Chains.	
	By 1st set 80.03 chs.
	By 2d set 79.97 chs.; the mean of which is
80.00	N.12 lks.from the tangent,
	Set an iron post 3 ft.long, 3 ins.dia., 18 ins.in the ground, to bed rock, for stand.cor.of secs.32 and33, mkd.on brass cap, T 40 S S 32 in NW., R17 E S 33 in NE. quadrants; raise a mound of stone 6 ins.high around post, and mound of stone 2 1/2 ft.base,3 1/2 high N. of cor. Corner falls on top of 50 ft.sandstone bluff, 50 ft. below rim on lower mesa.
	Land, mountainous; rough and broken.
	Soil, rocky; 4th rate.
	No timber, nor undergrowth, except light shadescale.
	Land mountainous, rough and broken; and exceptionally difficult to survey.

S.89° 56'W.on tangent S.of sec.32,

Over rough and broken land.

2.30	Top of mesa, bears N. and S.
5.00	Wagon road, bears NE and SW.
8.00	Foot of slope of point from cedar Mesa,bears NE. & SW.
24.50	Top of point from cedar Mesa, 300 ft.above bench, 400 ft. below top of mesa.
39.00	Foot of slope of cedar Point, bears N. and S.
No diff.	No difference between measurements of 40.00 chs.by two sets of chainmen.
40.00	N. 15.2 lks.from the tangent,
	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground for standard 1/4 sec.cor., mkd.on brass cap S 32 1/4 in N.half;and raise a mound of stone 2 1/2 ft. base 2 ft.high N.of cor.
41.00	Wagon road, bears N.10° W. and S.

EIGHTH STANDARD PARALLEL SOUTH, THROUGH RANGE 17 E.

ains.	
7.10	Edge of canon; abrupt descent.
0.50	Center of canon, 100 ft. deep, drains S.35° W. Ascend.
4.20	Opposite edge of canon and line follows break to river.
0.40	It is impossible to chain further on this line on account of vertical breaks to San Juan River, I offset as follows:
	North 3.00 chs. to offset line.
	Thence on offset line line S. 89°56'W. 9.60 chs.
	Thence South 2.81 chs. (there being no difference in measurement of 80.00 chs. two sets of chainmen.)
80.00	North 19 lks of tangent,
	Set an iron post 3 ft. long, 3 ins. dia., 12 ins. in the ground to bed rock, for stand. cor. of secs. 31 and 32 mkd. on brass cap, T 40 S S 31 in NW. and R 17 E S 32 in NE. quadrants; raise mound of stone 12 ins. high around post, and mound of stone 2 1/2 ft. base, 2 1/2 ft. high N. of cor. Pits impracticable
	Land, rocky, very broken surface.
	Soil, rocky; 3d rate.
	No timber. Undergrowth grass and desert brush.
	Mountainous land, exceptionally difficult to survey
	80.00 chs.

S.89° 55'W. on tangent S. of sec. 31,

Over rough and broken mountainous land.

It was necessary to run this line by offsets, on account of cliffs and rough broken land bordering on the San Juan River, as follows:

North 3.00 chs.

Thence S89° 55'W. 7.60 chs.

Thence North 5.75 chs., making 3.75 chs. to N.

Chains.	
	Thence S.89° 55'W. 32.40 chs.on parallel line to tang. There being no difference between measurements of 40.00 chs. by two sets of chainmen; therefore at
40.00	Run south E. 3.43 chs.to point on abrupt cliff above San Juan River,5.09 chs.N.of true point for Stand. 1/4 sec.cor.,
	Set an iron post 3 ft. long, 1 in.in dia., 12 ins.in the ground to bed rock, for witness cor.to Stand.1/4 sec. cor. mkd.on bras cap WC S31 1/4 in N.half; raise a mound of stone 14 ins.high around post, and mound of stone 2 1/2 ft.base, 2½ ft.high N.of cor.
	Continuing S.89° 55'W. on offset line 8.75 chsN.of the tangent line,
56.00	Thence south 8.75 chs.to tangent line.
57.00	Point of vertical bluff 1.50 chs.S., bears E.
58.80	Edge of vertical bluff bears N.70°W.1st. break 50 ft.
	Descend over sandstone and limestone ledges, interlaid with oil sand stratas from 1 ft.to 100 ft. in thickness to San Juan River.
60.00	Edge of 2d vertical bluff 60 ft.high, course N.80° W.
	Descend abruptly over a succession of bluffs.
63.40	Descend abruptly into San Juan River Canon.
67.00	To egde of 3d bluff, 40 ft.high,bears N. and S.20° E.
76.00	To edge of lower bluff, 150 ft.high bears S.20° E.
80.00	Point for Tp.corner falls on precipitous cliffs in San Juan River Canon, impossible to set cor. Desc.abruptly. No difference between measurements of 83.03 chs.by two sets of chainmen,
83.03	Right bank of San Juan River, bears NW. and SE.,flows NW.
	Set an iron post 3 ft.long, 3ins.dia., 12 ins.in the ground to bed rock for witness cor.of Tp.40 S., Rs.16 and 17 E. and meander cor.of frac'l sec. 1 T.41 S., R. 16 E., mkd.on brass cap W C S C T 40 S in N. half; R 16 E S 36 in NW.

ains.

R. 17 E S 31 in NE.

M C S 1 in SE.quadrants; and T 41 S R 16 E in S. half; and raise a mound of stone 12 ins.high around post and raise mound of stone 4 ft.base, 3 ft.high NE.of cor.

Land, mountainous; rough and broken.

Soil, rocky; 4th rate. No timber.

Mountainous land; exceptionally difficult to survey

83.03 chs.

April 5, 1909

GENERAL DESCRIPTION.

The 8th Stand.Par.South, Ranges 16 to 21 E. traverses a high plateau. The crosion has cut deep canons in this mesa; and being a stratafied formation with stratas harder at vanang intervals, the softer portions of the stratas have been carried away leaving mesas of different elevations in benchlike series. The canons, varying in depth up to several hundred feet, drain in a general southerly directoin into San Juan River, which is about 8 miles S.of Rs.18 and 19 E. and gradually flows NW.until it intersects the 8thStand.Par.S.R.16.E.

Along the cliffs and bordering the river danons there appear exposed the faces of the eroded sedimentary stratas of lime and red sandstone formation, all of a fossiliferous charactor.

Numerous oil sand stratas are found interlying the fossiliferous lenticular lime & red sandstone stratas the faces of which have been hermetically sealed by the solidifying of the oil residue. This is very prominent along the San Juan River in the western part where the line passes down from the lower mesa to its intersection with the river, and where line comes down from the Cedar Mesa and crosses John's Canon, but not so much so further East, and away from the river.

Cedar Mesa is covered here and there with scrub

cedar. pine & pinon timber of a very inferior quality.

Some grazing land is also found on some of the benches and openings on Cedar Mesa, and a few patches in Ranges 18 & 19 E. and Western portions of R. 20.E.

Escaping gas occurs in a natural tank of water in the bottom of the channel of John's Canon in the N.E. 1/4 Sec. 4 T. 41 S. R. 17 E. Conditions as here shown upon the faces of the limestone strata indicate that there has been a great gas action at one time. The gas now escaping is without doubt coming from the lower stratas, possibly Honaker oil sand, or the heavy strata of carboniferous state occuring about 300 feet above Honaker oil sand.

The southern lines of Secs.31 & 32 T. 40 S. R. 20 E.; also the southern line of Sec. 36 and most of Sec. 35, T. 40 S., R. 19 E. cross the 1st anticlinal which travels about N. 20° E. for about 2 miles. Thence swing to N. 45° W. and travels about S. 20° W. through T. 41 S. R. 19 E.

Beginning near the S. 1/4 Cor. of Sec. 34,T. 40 S. R. 19 E. and extending about N. 20° E. & S. 20°W. is the beginning, or eastern edge of the main synclinal The line crossing said synclinal for a distance of about 3 1/2 miles. Crossing this distance the stratas lie nearly on perfect level dipping slightly to the S.W. Beginning at the Standard Cor. of Secs. 31 and 36 T. 40 S. RR's. 18&19 E. the second anticlnal starts to ascend to its apex, which occurs along the S. Bdy. of Secs. 32 and 31, T. 40 S. R. 18 E. at which point its general course is N. 20° E. and S. 5° W. From this point West the 2nd anticlinal slopesvery gradually to the West for a distance beyond the limits of my survey about 10 miles, until the oil sands on the top of Cedar Mesa have reached the waters edge in the San Juan River At or near this point some nine years ago and near the

junction of Grand Gulch with the San Juan River an oil well was drilled by Mr. Goodridge and his associates in which was discovered oil within 300 feet in depth and in what appears to be the same oil sand oil co[illegible] occurring on the top of Cedar Mesa at Cedar point in Secs. 7 & 8, T. 41 S. R. 18 E.

The Ashenhurst oil wells are located in the S.E.1/4 of Sec. 36 T. 40 S. R. 18 E. and in the N.E. 1/4 of Sec. 1 T. 41 S., R. 18 E. No production has ever been made from these wells. I am informed that the two wells located in the S.E. 1/4 of Sec. 36 and N.E. 1/4 Sec.1 have penetrated the Goodridge oil sand and discovered the oil within 274 ft. of surface depth. At the well in the N.E. 1/4 of Sec. 1 there is standing a portable drilling rig. At the well nearer the E. line of the N.E. 1/4 of Sec. 1 there is standing a rotary drilling rig with which but little has been accomplished.

The two principal anticlnals heretofore mentioned extend in a N.E. and N.W. direction from the 8th Standard Par. South, at points designated and become a part of each other; about 2 or 3 miles N. of Secs. 3 & 4 T. 40 S., R. 19 E. and extend in a S.W. and S.E. direction from the 8th Stand. Par. South, and become a part of each other; about 1 ato 2 miles South the State line the 1st anticlinal crossing the State line near mile post 224 and 2nd crossing near mile post 218, thus forming a complete basin, the main synclinal of which extending about N.20° E. from mile post 221, a distance of about 22 miles.

There being no hydrostatic pressure in this oil field below the Goodridge oil sand accounts for the fact that no oil wells have yet been drilled in any part of the field that have not encountered the oil.

The high grade qaulity of the oil in all sands and

EIGHTH STANDARD PARALLEL SOUTH THROUGH RANGES

21,20,19,18,17 and 16 E.

the hermetically sealed faces of all oil sands wherever exposed together with the opportunity of measuring the logs of all wells along the river canon before drilling operations need be started and are of the best if not the best physical condition for geological study of the lower sedimentary states of any oil field in the United States, if not in the world, should make this oil field one of the most attractive for commercial investment of any in the United States.

April 5th, 1909.

Elmer E. Miller

U. S. Deputy Surveyor.

STATE OF UTAH)
(S.S.
COUNTY OF SAN JUAN)

I, A. L. Raplee, a Notary Public do hereby certify that Ralph Gentry, chainman, and R.Harold Browne, chainman, apneared before me on April 6" 1909, and signed and swored to the hereto attached final oath of Deputy Surveyor's assistants."

cribed and sworn to before me this 6
lay of APRIL, 1909

SEAL

A. L. Raplee
Notary Public

My com. Expires may 1st 1911

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FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E. Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Eighth Standard Parallel South, through Ranges 21, 20, 19, 18, 17 & 16 E. of the Salt Lake Base and Meridian, Utah, showing the respective capacities in which they acted:

Ralph Gentry, *Chainman.*

R. Harold Browne, *Chainman.*

, *Moundman.*

, *Moundman.*

, *Axman.*

, *Axman.*

, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E. Miller, United States Deputy Surveyor, in surveying all those parts or portions of the the Eighth Standard Parallel South, through Ranges 21, 20, 19, 18, 17 and 16 E. of the Salt Lake Base and meridian, State of Utah, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Utah.

Ralph Gentry, *Chainman.*

R. Harold Browne, *Chainman.*

, *Moundman.*

, *Moundman.*

, *Axman.*

, *Axman.*

, *Flagman.*

Subscribed and sworn to before me this 6th day of April, 1909.

A. L. Rafter

Notary Public.

SEAL

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y Commission expires May 1, 1910.

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, do
emnly swear that, in pursuance of a contract received from _____
ited States Surveyor General for _____, bearing date of the
_____ day of _____, 19 , I have well, faithfully, and truly, in my own
per person, and in strict conformity with the instructions furnished by the United States Surveyor
neral for _____, the Manual of Surveying Instructions, and the laws of the
ited States, surveyed all those parts or portions of _____
_____
_____
_____
_____
_____ of the _____
_____ meridian, in the _____ of _____, which are represented in the
regoing field notes as having been surveyed by me, and under my direction; and I do further solemnly
ear that all the corners of said survey have been established and perpetuated in strict accordance with
Manual of Surveying Instructions, and the special written instructions of the United States Surveyor
neral for _____ and in the specific manner described in the field notes, and that
foregoing are the original field notes of such survey.

_____
United States Deputy Surveyor.

scribed by said _____, and sworn to before me
this _____ day of _____, 19

_____

SEAL

_____

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

_____, 19

The foregoing field notes of the survey of _____
_____
_____
_____
_____
_____
_____
ecuted by _____
der his contract No. _____, dated _____, 19 , having been
efully examined, and the necessary corrections and explanations made, the said field notes, and the
veys they describe, are hereby approved.

_____
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____
_____, has been correctly copied from the original notes on file in this office.

_____
United States Surveyor General.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E. Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Eighth Standard Parallel South through Ranges 21-20-19-18-17-16 East of the Salt Lake Base and Meridian in the State of Utah; showing the respective capacities in which they acted:

Ralph Gentry, R. Harold Browne, Chainmen.
Louis H. Poble - Allan King, Chainmen.
John H. Hughes, Moundman.
W. F. McCandless, Moundman.
William Brookins, Axman.
Presley C. Mills, Axman.
James Brookins, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E. Miller, United States Deputy Surveyor, in surveying all those parts or portions of the the Eighth Standard Parallel South through Ranges 21-20-19-18-17-16 East of the Salt Lake Base and Meridian in the State of Utah of the ..... meridian, ... of ....., which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Utah.

Allan King, ~~Ralph Gentry~~, Chainman.
Louis H. Poble, R. Harold Browne, Chainman.
John H. Hughes, Moundman.
W. F. McCandless, Moundman.
Presley C. Mills, Axman.
William Brookins, Axman.
James Brookins, Flagman.

Subscribed and sworn to before me this 3rd day of May, 1909.

A. S. Keller
Notary Public

SEAL

My com. Expires May 1st 1910

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Elmer E Miller, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Thomas Hull, bearing date of the United States Surveyor General for Utah, 25th day of February, 1909, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Utah, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the Eight Standard Parallel South through Ranges 21-20-19-18-17-16 East of the Salt Lake Base and Meridian in the State of Utah.

~~of the~~ ~~meridian, in the~~ ~~of~~, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Elmer E. Miller
United States Deputy Surveyor.

Subscribed by said Elmer E Miller, and sworn to before me this 23rd day of April, 1910

Charles N. Bishop, Clerk
By Albert Trego
Deputy Clerk

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911.

The foregoing field notes of the survey of the Eighth Standard Parallel South through Ranges 21,20,19,18,17, and 16 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E.Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Thomas Hull
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____
United States Surveyor General.

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BOOK A-367
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APR 25 1907

FIELD NOTES

OF THE SURVEY OF THE

WEST, EAST, & NORTH BOUNDARIES

OF

TOWNSHIP NO. 40 SOUTH,

RANGE NO. 19 EAST,

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

Elmer E.Miller, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* February 25th, *190*

Survey commenced April 5th, *190*

Survey completed April 9th, *190*

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BOOK A-367

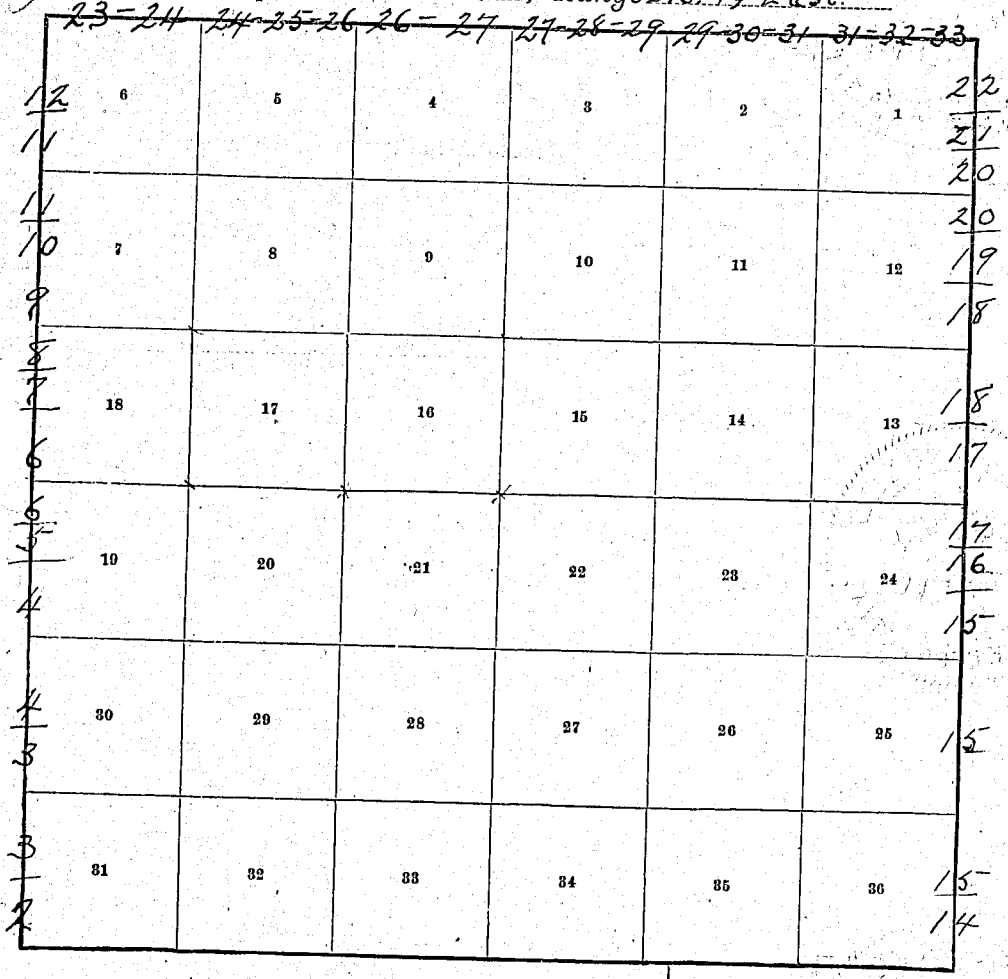
NAMES AND DUTIES OF ASSISTANTS.

Louis H.Pohle,	Chainman.
Allan King,	Chainman.
W.F.McCandless,	Moundman.
John H.Hughes,	Moundman.
William Brookins,	Axman.
Preslay C.Wills,	Axman.
James Brookins,	Flagman.

BOOK A-367

INDEX DIAGRAM.

Township No. 40 South, Range No. 19 East



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PRELIMINARY OATHS OF ASSISTANTS.

WE, Louis H. Pohle and Allan King

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of West, East and North Boundaries of Township No 40 South Range No. 19 East of Salt Lake Base and Meridian in the State of Utah

, Chainman.

, Chainman.

Subscribed and sworn to before me this 1st day of April, 1909

Louis H. Pohle Chainman
Allan King Chainman
A L Raphe
Notary Public
my com Expires May 1st 1910 in & for San J

SEAL

WE, W. F. McCondless and John H. Hughes

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of the West, East and North Boundaries of Township No. 40 South Range No. 19 East of the Salt Lake Base and Meridian in the State of Utah.

W. F. McCondless, Moundman.

John H. Hughes, Moundman.

Subscribed and sworn to before me this 1st day of April, 1909

A L Raphe
Notary Public
my com Expires May 1st 1910 in & for San J

SEAL

WE, William Brookins and Preslay C. Miller

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of West, East and North Boundaries of Township No. 40 South Range No. 19 East of Salt Lake Base and Meridian in the State of Utah.

William Brookins, Axman.

Preslay C. Miller, Axman.

Subscribed and sworn to before me this 1st day of April, 1909

A L Raphe
Notary Public
my com Expires May 1st 1910 in & for San J

SEAL

I, James Brookins, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the West, East and North Boundaries of Township No 40 South Range No 19 East of the Salt Lake Base and Meridian in the State of Utah

James Brookins, Flagman.

Subscribed and sworn to before me this 1st day of April, 1909

A L Raphe
Notary Public
in & for San Juan Co Utah
my com Expires May 1st 1910

SEAL

6—151

Survey commenced April 5th, 1909 and executed with a W. and L. E. Gurley Light Mountain Transit, No. 47 with solar attachment. The horizontal limb is provided with two double veniers placed opposite to each other, reading to single minutes of arc, which is also the least count of the veniers of the latitude and declination arcs.

The instrument was examined, tested on the true meridian at Salt Lake City, found correct, and was approved by the surveyor general for Utah, February 18th, 1909.

I examine the adjustments of the transit, and correct the level and collination errors; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during a. m. and p. m. hours, with a meridian determined by observations on Polaris, I proceed as follows:

At the Standard Cor. of Tps. 40 S., Rs. 18 & 19 E. heretofore described; lat. 37°17'18" N.; long. 109° 56' 10" W; I set off 6° 07' N. on the decl. arc; and 37° 17' N. on the lat. arc; and, at 3 h. 10 m. p. m. l. m. t. determine with the solar a meridian and mark at point thereof, on a stake firmly set in the ground 5 chs. N. of the Cor.

At 6 h. 27.5 m. p. m. by my watch, which is correct for l. m. t. I observe Polaris at western elongation, in accordance with Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground, 5 chs. N. of my station.

April 6th at 7 h. a. m. l. m. t., I lay off the azimuth of Polaris 1° 29' to the East, and mark the meridian thus determined driving a tack in the stake set April 5th on which the meridian falls 0.2 ins. east of the mark determined by the solar.

At 7 h. 45 m. a. m. l. m. t., I set off 6° 24' N. on the decl. arc; 37° 17' N. on the lat. arc; and mark a point in the meridian determined with the solar, by a tack on the stake already set 5 chs. N. of my station; this

Chains.	
	mark falls 0.3 ins. east of the meridian established by Polaris observation.
	The solar apparatus, by p. m. and a. m. observations, defines positions for meridians, respectively about 0' 11" west and 0' 16" east of the meridian established by the Polaris observations; therefore, I conclude that the adjustments of the instrument are satisfactory.
	The magnetic bearing of the true meridian, at 8 H. 15m. a.m. is N. 14° 30' W. the angle thus determined gives the mag. decl. 14°30' E.
	Thence I run North on true line bet. secs. 31 and 36 over slightly ascending land through small schadscale brush
3.00	Wood road, bears E. & W.
4.50	Wash 10 lks. wide, 3 ft. deep, drains E.
13.50	South bank of wash - thence steep descent to wash
14.75	Center of wash 60 ft. deep - drains S. 75° E. ascend
16.25	North bank of wash 60 ft. above bottom - Then slight ascent
25.45	South bank of wash
28.30	Center of wash 60 ft. below top 20 lks. wide 4 ft. deep, drains S. 30° E
	Thence slight ascent to divide between washes
29.00	Top of divide Descend
30.30	Center of wash - 30 lks. wide 4 ft. deep, drains S. 15° E. Ascend.
35.30	North bank of wash 60 ft. above bottom, drains S. 15° E.
	Thence sligh ascent over smooth mesa.
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 36 1/4 in W. and S. 31 in E. half and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of Cor.
	Pits impracticable
53.32	Wood road bears S. 30° E.
77.00	Foot of spur, projects about 5 chs. S. 75° E. Ascend
80.00	Top of spur & Cor. to Secs. 25, 30, 31 & 36

Set an iron post 3 ins. diameter 3 ft. long 24 ins. in the ground for Cor. to Secs. 25,30,31 & 36 marked on brass cap T. 40 S. in N. half, R. 18 E. S. 25 in N. W., R. 19 E. S. 30 in N. E., S. 36 in S. W. and S. 31 in S. E. quadrants, and raise a mound of stone 2 ft. base, 2.5 ft. high W. of Cor.

Pits impracticable.

This Cor. is 100 ft. above Sec. Cor.

Balance rock on top, peak 200 ft. high bears N. 28°57' W. 52.43 chs.

Land bench, broken by many gulches.

Soil sandy,& gravelly, 3rd rate.

No timber. Undergrowth,shadscale.

North on a true line between Secs. 25 & 30

Over steep descending ridge through small shadscale. underbrush, especially difficult to survey.

6.55 Foot of spur 40 ft. below top bears S. 75 E.

Thence over low rough ridges on N. slope of spur.

28.25 Wash 1.50 chs. wide, 5 ft. deep, drains S. E. 150 ft. below Sec. Cor.

Ascend.

36.75 Foot of spur 20 ft. above wash bears S. 75°E.

Ascend abruptly.

40.00 1/4 Sec. Cor. between Secs. 25 & 30.

Set iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 25 1/4 in W. and S. 30 in E. half and raise a mound of stone 2 ft. base, 1.5 ft. high W. of Cor.

Pits impracticable.

Balanced rock peak, bears N. 75° 25' W.

1/4 Cor. is 40 ft. above Sec. Cor.

49.30 Top of spur 100 ft. above 1/4 Sec. Cor. bears S. 75°E.

Descend.

58.25 Foot of spur, 130 ft. below top bears S. 75°E.

Thence gradual descent.

75.25 Wash 175 ft. below top of ridge 1.25 chs. wide 4 ft. deep drains S. 80°E.

Thence slight ascent.

80.00 Set iron post 3 ins. diameter 3 ft. long 24 ins. in the ground for Cor. to Secs. 19, 24, 25 & 30 marked on brass cap T. 40 S. in N. half, R. 18 E. S. 24 in N. W. R. 19 E. S. 19 in N. E. S. 25 in S. W. and S. 30 in S. E. quadrants and raise a mound of stone 3 ft. base, 2 ft. high W. of Cor.

Pits impracticable.

This Cor. is 20 ft. above wash and 120 ft. below 1/4 Sec. Cor.

Land rough, broken mesa,

Soil sandy, gravelly and stony, 4th rate.

No timber. Undergrowth, shadscale.

Land mountainous, rough and broken, and exceptionally difficult to survey. 80.00 chs.

Thence N. on true line between Secs. 19 & 24 over slightly descending land through small shadscale brush.

1.60 Wash 100 lks. wide, 4 ft. deep, drains S. E.

Ascend.

17.00 Foot of point projecting S. E. from Cedar Mesa, 30 ft. above Sec. Cor.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in

the ground for 1/4 Sec. Cor. marked on brasscap S. 24 1/4 in W. and S. 19 in E. half and raise a mound of stone 2 ft. base, 1.5 ft. high W. of Cor.
Pits impracticable.
Cor. stands 100 ft. above foot of ascent and 150 ft. above Sec. Cor.

42.00 Foot of perpendicular cliff of Cedar Mesa bears N. W. & S. E.

46.13 Top of mesa 250 ft. above foot bears N. W. & S. E.
Thence descend over very rough broken sandstone through scattering pine and cedar timber, exceptionally difficult to survey.

50.20 Top of wash.
Descend.

51.80 Center of wash 40 ft. deep drains S. E. and ascend.

52.30 Top of wash, 10 ft. above bottom.
Ascend.

59.07 Top of west side of point projecting S. E. from Cedar Mesa.

60.50 Foot of perpendicular cliff 200 ft. below top bears S. E. & N. W.
Thence steep descent over broken North slope of mountain, enter scattering pine & cedar timber.

68.00 Foot of cedar Mesa 450 ft. below top bears S. E. & N. W.
Thence over broken surface draining N. E.
Gradual descent.

80.00 Cor. of Secs. 13, 18, 19 & 24
Set iron post 3 ins. diameter 3 ft. long 24 ins. in the ground for Cor. of Secs. 13, 18, 19 & 24. marked o on brass cap T. 40 S. in N. half, R. 18 E., S. 13

in N. W. , R. 19 E. S. 13 in N. E., S. 24 in S. W., and S. 19 in S. E. quadrants, raise a mound of stone 3 ft. base, 2.5 ft. high W. of Cor.

Pits impracticable.

Whence

A pine 6 ins. diameter bears N. 48°25' W. 70 lks. dist. Marked T. 40 S. R. 18 E. S. 13 B. T.

A cedar 15 ins. diameter bears S. 47° W. 1.63 chs. dist. marked T. 40 S. R. 18 E. S. 24 B. T.

A cedar 7 ins. diameter bears N. 75°10' E. 33 lks. dist. marked T. 40 S. R. 19 E. S. 18 B. T.

A cedar 12 ins. diameter bears S. 37°15' E. 1.54 chs. dist. Marked T. 40 S. R. 19 E. S. 19 B. T.

This cor. is 535 ft. below top of mesa.

Land, mesa, rough sandstone, mountainous.

Soil sandy, gravelly and sandstone; 3d and 4th rates.

Mountainous land, 63.00 chs.

Land mountainous and exceptionally difficult to survey. 43.00 chs.

Scattering pine and cedar [illegible] chs.

Undergrowth, shadscale.

April 6" At this Cor. I set off 6°27' N. on the Declination arc. and at 12h02m p.m. l.m.t. I observe the sun on the meridian, the resulting Latitude is 37°20' or within one minute of the proper latitude.

Thence I run

N. on true line between Secs. 13 & 18.

Over gradually descending mountainous land through

Chains.	
	scattering cedar timber and small shadscale under - brush.
1.70	Wash, 15 lks. wide, 4 ft. deep, drains N. 30°E.
	Continue gradual descent.
8.50	Wash, 40 lks. wide, 15 ft. deep, drains E.
	Ascend.
12.00	Top of small spur between washes 20 ft. above wash.
	Descend.
15.00	Wash 30 lks. wide, 10 ft. deep drains S. 80°E.
	Ascend.
23.75	Foot of spur, bears S. 75°E.
	Ascend.
26.80	Top of spur 20 ft. above foot, and 35 ft. above wash.
	Descend.
29.00	Foot of spur, 20 ft. below top bears S. 75°E.
	Then slight descent.
40.00	Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 13 1/4 in W. and S. 18 in E. half and raise a mound of stone 3 ft. base, 2 ft. high W. of Cor.
	Pits impracticable.
	Whence
	A cedar 15 ins. diameter bears N. 69° W. 42 lks. dist. marked 1/4 S. 13 B. T.
	A cedar 18 ins. diameter bears S. 56°03' E. 90 lks. dist. marked 1/4 S. 18 B. T.
	This Cor. is 30 ft. below top of spur.
42.65	Wash 40 lks. wide 20 ft. deep drains S. 75°E.
	Thence gradual ascent.
54.75	Foot of abrupt ascent brs. S. E. up Cedar Mesa 50 ft. above 1/4 Sec. Cor.

62.50 Foot of perpendicular cliff 365 ft. above 1/4 Sec. Cor. Bears S. 60°E.

64.81 Top of cedar Mesa 610 ft. above 1/4 Sec. Cor. bears S. 60°E.

Thence descend over sandstone surface through scattering cedar and pine timber.

76.50 Top of gulch 50 ft. below top of mesa, course E.

Descend.

77.60 Center of gulch 40 ft. below top, drains E., 35 lks. wide.

Ascend.

80.00 Set an iron post 3 ins. diameter 3 ft. long 24 ins. in the ground for Cor. of Secs. 7, 12, 13 & 18. marked on brass cap T. 40 S. in N. half, R. 18 E. S. 12 in N. W., R. 19 E. S. 7 in N. E., S. 13 in S. W. and S. 18 in S. E. quadrants and raise a mound of stone 3 ft. base, 3.5 ft. high W. of Cor.

Pits impracticable.

Whence

A cedar 10 ins. diameter bears N. 36°45' E. 20 lks. dist. Marked T. 40 S. R. 19 E. S. 7 B. T.

A pine 7 ins. diameter bears N. 27°50' W. 1.27 chs. dist. marked T. 40 S. R. 18 E. S. 12 B. T.

A pine 14 ins. diameter bears S. 49°40' E. 1.25 chs. dist. Marked T. 40 S. R. 19 E. S. 18 B. T.

This Cor. is 20 ft. above wash.

Soil on east 29.00 chs. sandy and gravelly, 4th rate.

No soil on west 51.00 chs. Sandstone.

Land mountainous, 69.00 chs.

Scattering pine and cedar timber. 80.00 chs.

Undergrowth, shadscale.

April 6th at 3 h. 02 m. P.m. l.m.t. I set off 37°21' N. on Latitude arc. 6°31' N. on the Declination arc. and determine a meridian with the solar at Cor. to Secs. 7, 12, 13 & 18.

Thence I run

N. on true line between Secs. 7 & 12

Over ascending limestone surface through scattering cedar and pine timber.

5.75 Top of S. bank of canon 30 ft. above Sec. Cor.

Abrupt descent.

11.00 Center of gulch 150 ft. below top, course E.

Abrupt ascent.

17.75 North bank of gulch 125 ft. above bottom.

Thence ascend over sandstone ledges.

28.25 Top of spur of Cedar Mesa, bears E. 175 ft. above canon

Thence gradual descent.

38.25 Top of cliff 25 ft. below top of spur bears E. & W.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap S.12 1/4 in W. and S. 7 in E. half and raise a mound of stone 2 ft. base, 2 ft. high W. of Cor.

Pits impracticable.

Cor. stands 40 ft. below top of ledge.

Thence

A cedar 10 ins. diameter bears N. 49°40' E. 2.60 chs. dist. marked 1/4 S. 7 B. T.

A pine 6 ins. diameter bears S. 75°18' W. 59 lks. dist. Marked 1/4 S. 12 B. T.

Chains.	
	Thence gradual descent.
44.74	Top of ledge above gulch 50 ft. below 1/4 Sec. Cor. Bears E. & W.
	Descend.
46.00	Foot of ledge 150 ft. below top.
	Descend to wash.
57.50	Bottom of wash 225 ft. below top of ledge course E.
	Thence abrupt ascent.
67.00	Top of N. bank of wash 225 ft. above bottom, bears E. & W.
	Thence gradual ascent over sandstone.
75.00	S. bank of wash 75 ft. above top of N. bank, bears S. 65 E.
	Thence descend over small cliff 25 ft. high.
76.00	Top of cliff.
80.00	Set an iron post 3 ins. diameter 3 ft. long 24 ins. in the ground for Cor. to Secs. 1, 6, 7 & 12. Marked on brass cap T. 40 S. in N. half R. 19 E. S. 1 in N. W., R. 19 E. S. 6 in N. E. S. 12 in S. W. and S. 7 in S. E. quadrants and raise a mound of stone 3 ft. base, 2.5 ft. high W. of Cor.
	Pits impracticable.
	Whence
	A cedar 12 ins. diameter bears N. 81° 30' W. 34 lks. dist. Marked T. 40 S. R. 19 E. S. 1 B. T.
	A cedar 8 ins. diameter bears N. 87° 35' E. 1.01 chs. dist. Marked T. 40 S. R. 19 E. S. 6 B. T.
	A cedar 18 ins. diameter bears S. 50° E. 1.02 chs. dist. Marked T. 40 S. R. 19 E. S. 7 B. T.
	A pine 7 ins. diameter bears S. 13° 30' W. 95 lks. dist.

marked T 40 S R 18 E S 12 B.T.
This Cor. is 500 ft. below top of cliff
Land steep & mountainous
Soil stony, 4th rate
Timber, scattering cedars & pines
Land mountainous and exceptionally difficult to survey
80.00 chs.

N. between Secs. 1 & 6
Over rapidly descending land through scattering cedars & pines

14.75 Bottom of gulch 350 ft. below Sec. Cor. Course S. 30°E. 50 lks. wide, 6 f t. deep
Ascend point projecting from cedar mesa

15.80 Pack trail leading from Lime Creek to top of mesa bears S. 30° E.

29.00 Foot of E. end of perpendicular cliffprojecting from cedar mesa, bears S. 60° E. 300 ft. above gulch

29.27 Top of cliff 200 ft. above end of point, bears S. 60° E. 20 lks.
Thence descend over cliff

32.00 Foot of cliff 200 ft. below top
Thence rapid descent to gulch

40.00 Set iron post 3 ft. long 1 in. diam. 18 ins. in the ground in mound of stone 2.5 base, 8 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S 1 in W half & S 6 in E half. Impossible to set post 26 ins. in the ground. Pits impracticable.
A pine tree 12 ins. diam. bears N. 52° 35' W. 35 lks. dist marked 1/4 S 1 B.T.
A cedar tree 12 ins. diam. bears S. 89° 05' E 94 lks. dist. marked 1/4 S 6 B.T.

Chains. WEST BOUNDARY T. 40 S., R. 19 E.

49.40 West branch of Lime Creek 100 lks. wide 5 ft. deep, drains S.E. Water in holes

Thence ascend over rolling slide rock

80.00 Set an iron post 3 ins. diam. 3 ft. long 12 ins. in the ground and raise a mound of stone 2 1/2 ft. base, 1 ft. high around post (Could not set post deeper on account of rock), for Cor. to Tps. 39 & 40 S. Rgs. 18 & 19 E. marked on brass cap T 39 S in N. half R 18 E S 36 in N.W. R. 19 E S 31 in N.E. T 40 S in S.half, R 18 E S 1 in S.W. R 19 E S 6 in S.E. quadrants; raise a mound of stone 3 ft. base, 2 1/2 ft. high S. of Cor.

Pits impracticable.

Whence

A pine tree 8 in. diam. bears N. 78° 45' W. 37 lks. dist. marked T 39 S R 18 E S 36 B.T.

A cedar tree 14 ins. diam. bears N. 85° 05' E. 2.34 chs. dist. marked T 39 S R 19 E S 31 B.T.

A cedar tree 6 ins. diam. bears S. 64° 12' E. 81 lks. dist. marked T 40 S R 19 E S 6 B.T.

A cedar tree 12 ins. diam. bears S 3° 50' W. 1.67 chs. dist. marked T 40 S R 18 E S 1 B.T.

This Cor. is about 150 ft. above wash.

Land mountainous, rough and broken~

Soil, sand and rock, 4th rate

Timber, scattering cedars & pines

Land mountainous, covered with scattering cedar & pinon

80.00 chains. April 6, 1909.

GENERAL DESCRIPTION.

The land on both sides of the line through T. 40 S. Rgs. 18 & 19 E. except the first two miles beginning at Standard Cor. Sec. 36 and 31, which is of a flat rolling character and is commonly called the lower mesa, and is

cut by numerous gulches and canons. The last four miles is of a high flat mesa character, cut also by numerous deep gulches and canons. Some fair grazing land is available and along the faces of the gulches and canons there appear exposed the erroded sedimentary stratas of lime, red sandstone or red bed formation of a fossiliferous character.

There are also several oil sand stratas interlying the fossiliferous lime and red bed stratas. The faces of these oil sands have been hermetically sealed, as shown by the evidence of solidified oil residue appearing upon the exposed faces of the oil sands.

April 6" 1909.

Elmer E. Miller
U. S. Deputy Surveyor.

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Chains. EAST BOUNDARY T. 40 S., R. 19 E.

Survey commenced April 7th, 1909 and executed with a W. & L. E. Gurley Light Mountain Transit No. 47 with solar attachment; the horizontal limb having two double verniers placed opposite to each other and reading to single minute of arc.

The instrument was examined, tested on the true meridian at Sale Lake City, found correct, and was approved by the Surveyor General for Utah, Feb. 18, 1909.

April 7th, 1909.

I begin at Standard Corner of Tps. 40 S. Rs. 19 & 20 E., heretofore established by me, using the same meridian established by Polaris observation on April 2nd.

The magnetic declination at this cor. is 14° 45' E. at 8 a. m.

Thence I run

North on true line bet. secs. 31 and 36

Over gradually ascending mesa, through shadscale undergrowth.

20.00 Top of ascent, 30 ft. above stan. cor. for secs 31 and 36

Thence gradual descent.

40.00 Set iron post 1 in. dia. and 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S, 36 1/4 on W. and S, 31 on E, half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.

Cor. is 20 ft. above Stand. Cor. for secs. 31 & 36

Thence over slightly descending mesa, sloping W. and N.

80.00 Set an iron post 3 ins. dia. 3 ft. long 24 ins. in the ground for Cor. of Secs. 25, 30, 31 & 36 marked on brass cap T. 40 S. in N. half; R. 19 E. S. 25 in N.W. R. 20 E. S. 30 in N.E. and S.31 in S.E. and S.36 in S. W. quadrants; and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of Cor.

Pits impracticable.

Cor. is 50 ft. below 1/4 cor. bet. secs, 31 & 36

Land nearly level

Soil sandy, rocky, 2nd & 4th rates

No timber

Undergrowth of shadscale.

North on true line bet. Secs. 25 & 30

Over slightly descending mesa; through undergrowth.

28.60 Road, bears E. and W.

33.00 Small ravine, 50 lks. wide and 10 lks. deep

Drains W.

40.00 Set an iron post 1 in dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 25 1/4 in W. and S. 30 in E. half, and raise a mound of stone 2 ft base, 1 1/2 ft. high W. of Cor.

Pits impracticable.

Cor. is 50 ft. below cor. of secs. 25, 30, 31 and 36

Cor. falls on S. edge of small wash, draining N. 40° W.

S.W. cor. of S. end of bluff, 200 ft. high, bears N. 64° 07' E.

April 7th, 1909. At 9H 0m a.m. l.m.t. I set off 37° 18' N. on the lat. arc. 6° 47' N. on the decl. arc. and determine a true meridian with the solar at this 1/4 cor. Thence over gradually descending mesa

80.00 Set an iron post 3 ins. dia. 3 ft. long 24 ins. in the ground for Cor. of Secs. 19, 24, 25 & 30 markedon brass cap T. 40 S. in N. half, R. 19 E. S. 24 in N.W. R. 20 E.S 19 in N.E. S. 25 in S.W. and S. 30 in S.E. quadrants, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of Cor.

Pits impracticable

Cor. is 60 ft. below 1/4 Cor. bet. secs. 25 and 30

S.W. Cor. of S. end of bluff, 200 ft. high, bears S. 84° 24' E.

Land, level and rolling.

Soil sandy, 2nd rate

No timber

Undergrowth of shadscale and sagebrush

North bet secs. 19 and 24

Chains.	
	Descend into wash
3.93	Across wash, 20 lks. wide, 5 fts. deep, drains W.
	Thence ascend over broken ridges
16.00	Foot of bluff, 20 ft. above sec. cor, bears N. 60° E 10 chs. and S. 60° W. 4 chs.
	Thence abrupt ascent
21.30	Top of bluff, 250 ft. above ft., bears N. 60° E.
	Thence abrupt descent, along N. side of bluff
27.50	Head of swail, on N. side of bluff, 150 ft. below top of bluff
	Ascend spur Drains N.W.
31.50	Top of spur, 100 ft. below top of bluff, projects N.W. 60 chs. from main bluff
	Descend
37.00	Ft. of spur, 60 ft. below top, bears N.W.
40.00	Set an iron post 1 in dia. 3 ft. long 26 ins. in the ground for 1/4 sec cor. marked on brass cap S, 24 1/4 in W. and S. 19 in E. half, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.
	Cor. is 215 ft. below top of bluff
	Thence gradual descent
50.00	Cross dry wash, 30 ft. below 1/4 cor. bet secs. 19 and 24 12 lks. wide, 4 lks. deep.
	Drains N. 60° W
	Thence ascend over rolling mesa
68.00	W. end of spur, 40 ft. above wash, bears E.
	Descend over rolling hills.
80.00	Set an iron post 3 ins. dia. 3 ft. long, 24 ins. in the ground for Cor. of Secs. 13, 18, 19 & 24 marked on brass cap T. 40 S. in N. half, R. 19 E. S. 13 in N.W. R. 20 E. S. 18 in N.E., S. 24 in S.W. and S. 19 in S. E. quadrants; and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pit simpracticable.
	Cor. is 30 ft. above 1/4 Cor. of secs 19 and 24

Chains.	
	Land mountainous and rolling
	Soil, sandy and rocky, 2nd and 4th rates
	No timber
	Slight undergrowth of shadscale
	April 7th, 1909. At this sec. cor. I set off 6° 49' N. on the decl. arc. and at $0^h 2^m$ p.m l.m.t. observe the sun on the meridian, the resulting lat. is 37° 20'
	Northon true line bet. Secs. 13 & 18
	Over gradually descending land
9.42	Top of wash, 25 ft. below sec. cor, bears E. and W.
	Descend
10.31	Cross wash, heading 10 chs. E. 15 ft. below top 20 lks. wide, 5 Ft. deep Drains W.
	Thence run over rolling mesa
25.70	S.W. end of point projcting from Cedar Mesa, 75 ft. above sec. cor.
	Descend into wash
37.00	Cross wash, 25 ft. above sec. cor, 20 lks. wide, 6 Ft. deep, Drains W.
	Ascend.
40.00	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 Sec. Cor. markedon brass cap S. 13 1/4 in W. and S. 18 in E half, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.
	Cor. is 100 ft. above sec. cor. of secs. 13, 18, 19 and 24 on top of wash.
	Thence run along ft. of Cedar mesa.
54.25	Set flag, as I can see that it will be necessary to triangulate to top of Mesa
63.30	Center of wash, 30 lks. wide, 6 Ft. deep, heading 4 chs. N., Drains S.W.
	Thence steep ascent up Cedar Mesa.
67.25	Foot of ledges, 350 ft. above 1/4 sec. cor., bearing E. & W.
	[illegible]

Chains.	
68.78	To top of ledge or cedar Mesa, 500 ft. above 1/4 Sec. Cor. bearing E. & W.
	Thence gradual ascent over broken sandstone, through scattering Cedar and pine timber bears E.& W.
80.00	Set an iron post 3 ins. diameter 3 ft. long 24 ins. in the ground for Cor. of Secs: 7, 12, 13 & 18 marked on brass cap T. 40 S. in N. half, R: 19 E. S.12 in N. W. R. 20 E. S. 7 in N. E. and S. 13 in S. W. and S. 18 in S. E. quadrants, and raise a mound of stone 3 ft. base, 2 ft. high W. of Cor. Pits impracticable.
	This cor. is 30 ft. above top of ledge.
	A cedar 10 ins. diameter bears N. 64 30' E. 1.37 chs. dist. marked T. 40 S: R. 20 E. S. 7 B. T.
	A pine 12 ins. diameter bears N. 68 53' W. 1.46 chs. dist. marked T. 40 S. R. 19 E. S. 12 B. T.
	A cedar 8 ins. diameter bears S. 62 58' W. 3.83 chs. dist. marked T. 40 S. R. 19 E. S. 13 B. T.
	A pine 8 ins. diameter bears S. 44 20' E. 1.57 chs. dist. marked T. 40 S. R. 20 E. S. 18 B. T.
	Land, rolling and broken. Top of ledge.
	Soil on 40 chs. sandy and gravelly, 3rd rate.
	West 40 chs. rough and stony, 4th rate.
	Timber scattering cedars and pines, 11.22 chs.
	Land mountainous or covered with timber. 80.00 chs.

E. on the North between Secs. 7 & 12.

	Gradual ascent over sandstone surface through scattering cedar and pine timber.
29.00	Top of mesa, 100 ft. above Sec. Cor. bears E. & W.
	Thence slight descent over rough broken sandstone surface.
35.00	Leave sandstone and enter sandy loam bears E. & W.
40.00	Set an iron post 1 inch diameter 3 ft. long 26 ins. in

the ground for 1/4 Sec. Cor. marked on brass cap S. 12 1/4 in W. and S. 7 in E. half and raise a mound of stone 2 ft. base, 1.5 ft. high W. of Cor.

Pits impracticable. Whence

A pine 24 ins. diameter bears N. 88 30' E. 1.22 chs. dist. marked 1/4 S. 7 B. T.

A pine 10 ins. diameter bears S. 89 W. 1.58 chs. dist. marked 1/4 S. 12 B. T.

This Cor. is 75 ft. above Sec. Cor.

Thence gradual descent over sandy loam.

Timber becomes more dense.

65.50 Begin descent to gulch bears N. 75 E.

50 ft. below 1/4 Sec. Cor.

72.00 Top of S. bank of wash, 125 ft. below 1/4 Sec. Cor.

Descend.

77.65 Bottom of gulch, 40 ft. below S. bank course N. 75 E.

Ascend.

80.00 Set an iron post 3 ins. diameter, 3 ft. long 24 ins. in the ground for Cor. of Secs. 1,6,7 & 12 marked on brass cap T. 40 S. in N. half R. 19 E, S. 1 in N. W., R. 20 E. S. 6 in N. E. , S. 12 in S. W. and S. 7 in S. E. quadrants and raise a mound of stone 3 ft. base, 3 ft. high W. of Cor. Pits impracticable.

A pine 8 ins. diameter bears N. 5°E. 1.00 chs. dist. marked T. 40 S. R. 20 E. S. 6 B. T.

A pine 12 ins. diameter bears S. 69°10' E. 12 lks. dist. marked T. 40 S. R. 20 E. S. 7 B. T.

A pine 8 ins. diameter bears S. 14°30' W. 45 lks. dist. marked T. 40 S. R. 19 E. S. 12 B. T.

No other tree suitable within limits.

This Cor. is about 10 ft. above wash.

Land broken and rough.

Soil on portion, sandy, balance sandstone surface, 3d & 4th rate.

Timber cedar and pine. 80.00 chs.

Chains	
	Land, mountainous, covered with timber 80 chs.
	North on true line bet.secs.1 and 6,
	Up sandstone ledge; through cedar and pine timber.
0.02	Top of ledge, 20 ft.high. Then steep ascent.
2.00	Top of steep ascent, 40 ft.above sec.cor., bears E. & W.
	Thence slight ascent.
7.00	Begin descent, bears E. & W.
11.00	Top of S.bank of gulch. Descend.
15.15	Bottom of gulch, 75 ft.below S.bank 50 lks.wide, drains NE.
	Ascend sandstone spur, 75 ft.above gulch.
20.00	Top of sandstone spur, 30 ft.above gulch. Then over east end of spur, which is nearly level sandstone.
25.00	Descend over N.end of spur, over sandstone ledges.
29.00	N.foot of spur, 60 ft.below top.
	Thence descend over rolling land, broken by small washes.
37.25	Wash, 20 lks.wide, 3 ft.deep, bears N.30° E.
	Then slight ascent.
40.00	Set an iron post 1 in.dia., 3 ft.long, 26 ins.in ground for $\frac{1}{4}$ sec.cor., marked on brass cap S 1 $\frac{1}{4}$ in W. and S 6 in E.half; and raise a mound of stone 2 ft.base, 1$\frac{1}{2}$ ft. high W.of cor. Pits impracticable.
	A pine 10 ins.dia.bears S.51° 55'W. 67 lks.dist. marked $\frac{1}{4}$ S 1 B T
	No other bearing trees within limits.
	This $\frac{1}{4}$ sec.cor.is about 40 ft.below sec.cor.
	Thence slight ascent; through scattering cedars and pines.
48.00	Top of ascent, 20 ft.above $\frac{1}{4}$ sec.cor.
	Then slight descent and leave timber.
62.20	Wash, 20 lks.wide, 4 ft.deep, drains NE.

EAST BOUNDARY T. 40 S., R. 19 E.

Chains.

Thence over nearly level land.

76.50 S.bank of wash; enter pine and cedar timber, bears E. and W. Descend.

79.80 Center of wash, 40 ft.below S.bank, course E.

80.00 Set an iron post 3 ins.dia., 3 ft.long, 24 ins.in the ground, for cor.of Tps.39 and 40 S., Rs.19 and 20 E. marked on brass cap.

T 39 S in N.half
R 19 E S 36 in NW.
R 20 E S 31 in NE.
T 40 S in S.half,
R 19 E S 1 in SW.
R 20 E S 6 in SE.quadrants;and raise a mound of stone 2 ft.base, 1½ ft.high N.of cor.

Impossible to build mound S.of cor.,on account of sloping ground. This cor.about 50 ft.below ¼ sec.cor.

A pine 8 ins.dia.bears S.18°50'W. 69 lks.dist. marked T 40 S R 19 E S 1 B T

A cedar 8 ins.dia.bears S.35° 20'E. 69 lks.dist. marked T 40 S R 20 E S 6 B T

A cedar 16 ins.dia.bears N.49°15'E. 1.02 chs.dist. marked T 39 S R 20 E S 31 B T

A pine,20 ins.dia.bears N.37° 22'W. 1.22 chs.dist. marked T 39 S R 19 E S 36 B T

Land, mountainous, rough and broken.

Soil, sandy and gravelly; 4th rate.

Timber, cedar and pine.

Mountainous land 80.00 chs.

GENERAL DESCRIPTION.

The country lying E.& W.of the range line through T.40 S.,between Rs.19 and 20 E., is mostly of the general character as that passed through by the line.Some patches of grazing land are on either side of the line.

Along the faces of the gulches and canons there appear exposed the erroded sedimentary stratas of lime, red,

sandstone or red bed formation of a fossiliferous character. There are some oil sand stratas interlying the fossiliferous lime and red bed stratas which have become hermetically sealed with solidified oil residue which appears on the exposed faces of the oil sands in places The exposed sandstone surface on top of cedar mesa has been heretofore described.

The Township in R. 19 E. and the E. half of the Township of Range 20 E. should, at least, be subdivided.

April 7th, 1909.

Elmer C. Miller

U.S.Deputy Surveyor.

NORTH BOUNDARY T. 40 S., R. 19 E.

Chains. Survey commenced April 7, 1909, and executed with a W. and L.E.Gurley Light Mountain Transit No.47, with solar attachment. The horizontal limb is provided with two double verniers placed opposite to each other, reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

I examine the adjustments of the transit and correct the level and collimation errors; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during a.m. andp.m. hours with a meridian determined by observations on Polaris, I proceed as follows:

At the cor.of Tps.39 and 40 S., Rs.19 and 20 E., heretofore described; lat.37° 22' 30"" N.; long.109° 49' 38" W.,at 3 h.40m.p.m.l.m.t.I set off 6° 53'N. on the decl.arc; 37°23'N. on the lat.arc. and determine with the solar meridian and mark a point thereof on a stone firmly set in the ground 5 chs.N.of my station.

At 6 h. 20 m.p.m.l.m.t., I observe Polaris at western elongation, in accordance with Manual of Instructions, and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station.

April 7, 1909.

April 8: At 8a.m.l.m.t., I lay off the azimuth of Polaris 1° 29' to the east, and mark the meridian thus determined by drivingta tack in the stake set April 7, on which the meridian falls 0.2 ins.east of the mark determined by the solar.

At 8 h.02 m.a.m.l.m.t., I set off 7° 09'N. on the decl. arc; 37° 22' 30"N.on the lat.arc, and mark a point in the meridian determined with the solar, by a tack

Chains.	
	driven in the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.east of the meridian established by the Polaris observation.
	The solar apparatusby p.m.and a.m observations defines positions for meridians respectively about 0' 11" west and 0' 16" east of the meridian established by the Polaris observations; therefore I conclude that the adjustments of the instrument are satisfactory.
	The magnetic bearing of the true meridian at 8 h. 15 m. a.m., is N. 14° 30' W.; the angle thus determined gives the mag.decl.14° 30' E.
	Thence I run
	West on a random line along the N.bdy.of Tp. setting temp.1/4 sec. and sec.cors. at intervals of 40.00 80.00 chs.; and at 479.58chs.intersect the W.bdy.of the township 42 lks.N. of the corner of Tp.40 S., Rs.18 and 19E. heretofore described.
	The falling answers to a correction of 0° 03'S.per mile counting from the NE.cor.of the Tp.
	Therefore I run
	N.89°57'E. bet secs 6 and 31.
	Over rapidly ascending and broken land; through scattering pines and cedars; exceptionally difficult to survey.
3.00	Foot of nearly perpendicular cliffs, bearing S. 20° E. and N.20° W., 100 ft. above sec.cor.
7.10	Top of cliff, 500 ft.high, bears N. and S. Ascend over broken sandstone.
12.00	Edge of mesa, 75 ft.above top of cliff, bears N. and S. Pines and cedars become dense, bear S. 20° E. and N.20° W. Then slight ascent.
22.00	Top of ascent bears N. and S. Descend gently.
31.08	Edge of rough gulch bears N. and S.
	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the

Chains.	
	ground for witness cor.to 1/4 sec.cor, mkd. on brass cap W C 1/4 S 31 in N.half, and S 6 in S.half; and raise a mound of stone 2 ft.base, 1 1/2 ft.high N.of cor.
	A pine. 7 ins.dia.bears S.34° 05'W. 98lks.dist. mkd. W C 1/4 S6 B T
	A pine 6 ins.dia.bears N.84° 30'W. 60 lks. dist.mkd. W C 1/4 S 31 B T
	Point for 1/4 sec.cor.falls on steep ledge where it is impracticable to establish it.
	Descend abruptly over sandstone ledges; through scattering timber.
39.58	Point for 1/4 sec.cor., on steep ledge; cor.not set.
71.30	Bottom of rough gulch, course S.25° E. 800 ft.below top of mesa. Ascend over rough sandstone surface.
79.58	Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for cor.of secs.5,6,31, and 32, marked on brass cap, T 39 S in N. half, R 19E S 31 in NW., S 32 in NE., T 40 S in S.half, R 19 E S 6 in SW.and S 5 in SE.quadrants; and raise a mound of stone 3 ft.base, 2 1/2 ft. high W. of cor.Pits impracticable.
	A cedar 7 ins.dia.bears S.71° E. 224 lks.dist.,mkd. T 40 S R 19 E S 5 B T
	A cedar 10 ins.dia.bears N. 13° 30'E. 50lks.dist., mkd. T 39 S R 19 E S 32 B T
	No other bearing trees suitable, within limits.
	This corner is about 600 ft.above gulch.
	Land,steep and mountainous.
	Soil, none; bare sandstone; possibly extinct oil sand.
	Timber, cedar,pinon, and pine.
	Land, mountainous and exceptionally difficult to survey
	79.58 chs.
	April 8, 1909.

Chains	
	April 9, 1909: At 8 h. 0 m.a.m.l.m.t.I set off 37° 22' 30" N.on the lat.arc; 7° 31'N.on the decl.arc; and determine a meridian with the solar at the cor.of secs. 5,6,31, and 32. Thence I run
	N.89° 57'E.bet.secs.5 and 32,
	Ascending over rough sandstone; through scattering cedars and pines.
10.98	Top of mesa, bears S.11° E. and N.40° W. 250 ft.above sec.cor. Enter sandy soil, in places; cedars and pines become dense. Thence slight ascent.
19.37	Wash, 7 ft.deep, 20 lks.wide, course S.10° E.
29.59	Top of ascent bears N. and S. Thence slight descent.
36.54	Wash, 10 ft.deep, 30 lks.wide, drains S.45° E.
40.00	Set an iron post 1 in.dia., 3 ft.long, 26 ins.in the ground, for ¼ sec.cor., marked on brass cap S 32 ¼ in N. and S 5 in S.half; and raise a mound of stone 2 ft. base, 1½ ft.high N.of cor. Pits impracticable.
	A pine 8 ins.dia.bears S.53° 50'E. 48 lks.dist., mkd.¼ S 5 B T
	A pine 12 ins.dia.bears N.28° 35'W. 55 lks.dist., mkd.¼ S 32 B T
45.93	Small wash, 3 ft.deep, 15 lks.wide, course S.
48.00	Bottom of descent; then slight ascent.
53.52	Top of ascent, bears N. and S. Thence slight descent.
80.00	Set an iron post 3 ins.dia., 3 ft.long, 24 ins.in the ground for cor.of secs.4,5,32, and 33, marked on brass cap T 39 S in N.half, R 19 E S 32 in NW., S 33 in NE., T40 S in S.half, R 19 E S 5 in SW., and S 4 in SE. quadrants; and raise a mound of stone 3 ft.base, 2½ft high W.of cor.Pits impracticable!
	A cedar 8 ins.dia.bears S.70° 05'E. 39 lks.dist., mkd.T 40 S R 19 E S 4 B T
	A cedar 14 ins.dia.bears S.19° 40'W. 1.22 chs.dist. mkd.T 40 S R 19 E S 5 B T

Chains.

A pine 9 ins.dia.bears N.51° 20'W. 1.10 chs.dist.
mkd.T 39 S R 19 E S 32 B T

A cedar 10 ins.dia.bears N.32° 5'E. 46 lks.dist.
mkd.T 39 S R 19 E S 33 B T

This cor.is 50 ft.below top of ascent.

Land, mountainous.

Soil, sandy and rocky; 3d and 4th rates.

Timber, cedar, pines and pinons.

Land, mountainous with timber, and exceptionally difficult to survey 80.00 chs.

N.89° 57'E. bet.secs.4 and 33,

Descending gradually, over slightly broken surface; through dense cedars and pines.

8.00 Small wash, 15 lks.wide, 4 ft.deep, drains S.60° E.

25.25 Top of west bank of gulch, 15 ft.below sec.cor., drains S.60° E. Thence rapid descent.

39.24 Foot of ridge 15 ft.high, bears S.60° E.

Set an iron post 1 in.dia., 3 ft.long, 26 ins.in the ground, for witness cor.to ¼ sec.cor., marked on brass cap WC¼ S 33 in N.half, and S 4 in S.half, and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor.

A pine 7 ins.dia.bears S.42° E. 95 lks.dist., mkd. W C ¼ S 4 B T

A pine 17 ins.dia.bears N.32° 20'W. 1.22 chs. dist. mkd.W C ¼ S 33 B T

40.00 Point for ¼ sec.cor.falls on rough limestone where a permanent cor.could not be set. Thence rapid descent along NE.slope of mesa, 200 ft.below top .

63.00 Leave ledges, bear S.60° E. Descend over broken bottom land with sandstone outcroppings.

74.00 Top of SW.bank of Lime Creek, bears S.75° E. and NW.

Descend.

Chains.	
79.00	Lime Creek, water 4 ins. deep, 10 lks. wide, course E.
80.00	Cor. falls in Lime Cr. Course E.
	Thence N. 65 lks most suitable place for cor.
	Set an iron post 3 ins. dia. 3 ft. long 24 ins. in the ground for Witness Cor. for Cor. of Secs. 3, 4, 33 & 34 marked on brass cap W.C. T. 39 S. in N. half, R. 19 E, S. 33 in N.W. S, 34 in N.E., T. 40 S. in S. half R. 19 E. S. 4 in S.W. and S.3 in S.E. quadrants; and raise a mound of stone 3 ft. base, 3 ft. high W. of cor.
	Pits impracticable.
	A pine 20 ins. diam. brs. S. 68° E. 2.02 chs. dist. mkd. W.C. T. 40 S. R. 19 E. S. 3 B.T.
	A cottonwood 7 ins. diam. brs. S. 84° 50' W. 2.06 chs. dist. mkd. W.C. T. 40 S. R. 19 E. S. 4 B.T.
	A Cedar 24 ins. diam. brs. N. 38° 30' W. 2.48 chs. dist mkd. W.C. T. 39 S. R. 19 E. S. 33 B.T.
	A cedar 14 ins. diam. brs. N. 11° 30' E. 2.13 chs. dist. marked W.C. T. 39 S. R. 19 E. S. 34 B.T.
	This cor is on the N. bank of Lime Creek 125 ft. below 1/4 sec cor
	Land mountainous
	Soil sandy, & stony 3 & 4 rates
	Timber Cedar, Pine, Pinon and cottonwood
	Land mountainous, heavily timbered and exceptionally difficult to survey. 80.00 chs.
	N. 89° 57' E bet. secs. 3 and 34
	Along Lime Creek, through scattering cedars & pines
2.00	Leave Lime Creek, Course N. 50° E.
	Ascend
2.75	Top of spur 30 ft. above Creek
	Descend
6.70	Ravine, 20 ft. deep, 2.50 chs. wide, course N.
	Thence slight ascent
10.90	Top of ascent, Brs. N. & S.

Chains.	
	Gradual descent
16.50	W. bank of Lime Cr.
	Descend
20.15	Lime Creek 25 ft. below top, water 4 ins. deep 10 lks wide, course S.E.
	Ascend
21.75	E. bank Lime Creek 25 ft. above Creek
	Slight ascent
28.50	Top of ascent brs. S.E.
33.00	W. bank of Lime Creek
	Descend
34.00	Lime Creek, 255 ft. below bank, 10 lks. wide, course N. 15E E.
	Then slight ascent
35.75	Begin descent
36.40	Lime Creek, Course S. 60° E; 10 lks. wide.
	Ascend
37.50	E. bank of Lime Creek, 25 ft. above Creek, then gradual ascent over rough sandstone surface along S.W. slope of mountain
40.00	50 ft. above Lime Creek
	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec cor. marked on brass cap S 34 1/4 in N. and S. 3 in S. half and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor. Impracticable to raise mound of stone N. of cor. Pits impracticable.
	A cedar 5 ins. diam. brs. S. 32° 05' W 10 lks. dist. marked 1/4 S. 3 B.T.
	A pine 10 ins. diam. brs. N. 19° 30' W 42 lks. dist. marked 1/4 S. 34 B.T.
43.00	Over nearly level sandstone surface
52.50	Foot of abrupt ascent over rounding sandstone ledges brs. S. 25° E.
59.00	Top of spur, projecting about 8 chs. S. 150 ft. above 1/4 sec. cor.
	Thence descend along S. slope of Mt.
64.00	Foot of descent, brs. N. & S.

Chains	
	Begin ascent of slope to mesa.
68.00	Abrupt ascent over nearly perpendicular cliffs, bears N. and S.
73.25	Top of cliffs 200 ft. above foot. Ascend over broken sandstone ledges bears N. and S.
78.25	Top of mesa, bears S.65° E.
80.00	Set an iron post 3 ins. dia., 3 ft. long, 24 ins. in the ground, for cor. of secs. 2, 3, 34, and 35, marked on brass cap T 39 S in N. half, R 19 E S 34 in NW., R 19 E S 35 in NE., T 40 S in S. half, and R 19 E S 3 in SW. and R 19 E S 2 in SE. quadrants; and raise a mound of stone 2 ft. base, 1½ ft. high west of cor. Pits impracticable.
	Cor. about 600 ft. above ¼ sec. cor.
	A pine 6 ins. diam. bears S.44° 25'W. 69 lks. dist. marked T 40 S R 19 E S 3 B T
	A pine 7 ins. diam. bears N.66° 50'W. 1.59 chs. dist. marked T 39 S R 19 E S 34 B T
	A pine 10 ins. diam. bears N.84° 50 E. 1.34 chs. dist. marked T 39 S R 19 E S 35 B T
	A pinon 13 ins. dia. bears S.48° E. 1.82 chs. dist, marked T 40 S R 19 E S 2 B T
	Land, mountainous and covered with heavy timber.
	Soil, sand, gravel, and stone; 3d and 4th rates.
	Timber, cedar and pine.
	Land mountainous and covered with heavy timber, 80.00 chs.
	April 9: At this cor. I set off 7° 34'N. on the decl. arc; and at 12 h. 2 m. p.m. l.m.t., observe the sun on the meridian; the resulting lat. is 37° 22'N.

	N.89° 57'E. bet. secs. 2 and 35, over gradually ascending land; through pine and cedar timber, over sandstone outcropping.
36.00	Top of ascent, bears S.35° E. 75 ft. above sec. cor.

NORTH BOUNDARY T. 40 S., R. 19 E.

Chains. Then slight descent.

40.00 Set an iron post 1 in.dia., 3 ft.long, 26 ins.in the ground, for ¼ sec.cor., marked on brass cap S 35 ¼ in N. and S 2 in S.half, and raise a mound of stone 2 ft.base 1½ ft.high N.of cor. Pits impracticable. Whence

A cedar 5 ins.dia.bears S.50° E. 13 lks.dist., marked T 40 S R 19 E ¼ S 2 B T

A cedar 16 ins.dia.bears N.72°30'W. 2.39 chs.dist. marked ¼ S 35 B T

This cor.is 70 ft.above sec.cor.

53.25 Top of ledges bear SE. and N.25° W. 75 ft.below ¼ sec. cor. Then steep descent of sandstone ledges.

64.00 Foot of steep descent 200 ft.below top of ledges. Then slight descent over broken surface, bears SE.

74.00 Wash, 15 lks.wide, 4 ft.deep, drains N.75° E.

80.00 Set iron post 3 ins.dia., 3 ft.long, 24 ins.in the ground for cor.of secs.1,2,35, and 36 mkd.on brass cap T 39 S in N.half, R 19 E S 35 in NW., R 19 E S 36 in NE., T 40 S. in S.half, R 19 E S 2 in SW. and R 19 E S 1 in SE quadrant; raise a mound of stone 3 ft.base, 2½ ft.high N. of cor. Impracticable to raise mound W.of cor.

A pine 18 ins.dia.bears S.24° 48'E. 55 lks.dist., marked T 40 S R 19 E S 1 B T

A pine 16 ins.diam.bears S.11° 18'W. 75 lks.dist., marked T 40 S R 19 E S 2 B T

A cedar 30 ins.diam.bears N.89° W. 8 lks.dist., marked T 39 S R 19 E S 35B T

A cedar 24 ins.diam.bears N.52° 45'E. 70 lks.dist. marked T 39 S R 19 E S 36 B T

From this cor.a sandstone 12 x 12 x 6 ins.above mound of stone bears S.11° 30'E. 23.23 chs., marked on S.side U S L M on north side CIGARETT

Directly underneath is Cigarette Spring in a cavern 150 ft.E. & W. by 80 ft.north and south. Small stream flowing west, very pure and cold.

From the NW.portion of this canon is a dugway leading

to top of mesa, which is about 75 ft. above spring
Land mountainous with patches covered with dense scrub pine and cedar timber
Soil sandy, gravel 3rd & 4th rates
Land mountainous & covered with timber, exceptionally difficult to survey 80.00 chs.

Apr.9: At this Cor. at 3 h. 08 m p.m. l.m.t. I set off 37° 22'. 30" on lat. arc 7° 37' N. on the decl. arc and determine a meridian with the solar.

Thence I run N. 89° 57' E. bet. Secs. 1 & 36
Over nearly level land broken by small ridges and ravines, through dense growth of pine and cedar timber

4.80 Wash, 8 ft. deep, 30 lks. wide, course S.E.

7.50 Begin slight ascent, brs. S.E.

10.90 Recross wash, drains N. 60° E. 8 ft. deep, 30 lks. wide
Thence gradual ascent

23.60 Top of ascent 40 ft. above wash,
Thence over gentle valley land, drains S.E. with sandstone outcropping.

40.00 Set an iron post 1 in. diam. 3 ft. long, 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 36 1/4 in N. and S. 1 on S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
Pits impracticable
Whence
A pine 10 ins. diam. brs. S. 3° 40' W. 43 lks. dist. marked 1/4 S. 1 B.T.
A pine 18 ins. diam. brs. N. 23° 20' W. 1.05 lks. dist. marked 1/4 S. 36 B.T.
50 ft. above wash
Thence slight ascent over sandstone outcropping

48.00 Top of ascent, 20 ft. above 1/4 Sec. Cor. N. & S.

Chains.	
	Then slight descent
60.00	West bank of wash
	Descend
62.00	Wash, 4 ft. deep, 30 lks. wide, course N.E. 20 ft. below West bank
	Ascend
65.75	E. bank of wash, 20 ft. above wash
	Thence slight descent
77.00	Recross wash, 20 ft. deep, 1 ch. wide, course S. 80° E.
	Ascend
80.00	Cor. to Tps. 39 & 40 S., Rs. 19 and 20 E.
	Land mountainous with patches covered with dense growth of scrub timber.
	Soil sandy, 3rd rate & 4th rate
	Timber scrub cedar and pine
	Land mountainous and difficult to survey. 80.00 chs.
	April 9th.

BOUNDARIES OF T. 40 S., R. 19 E.

Latitudes, Departures and Closing Errors.

Line Den.	True Bearing	Dist.	LATITUDES North	LATITUDES South	DEPARTURES: East	DEPARTURES: West.
		chs.	chs.	chs.	chs.	chs.
6th Stan. Par. S.	West	480.00				480.00
W. Bdy. T.40 S. R.19 E.	North	480.00	480.00			
N.Bdy. T.40 S. R.19 E.	N.89°57'E.	479.58	0.42		479.58	
E.Bdy. T.40 S. R.19 E.	South	480.00		480.00		
Convergency					0.55	
	Totals		480.42	480.00	480.13	480.00
			480.00		480.00	
	Error in Latitude		0.42			
	Error in Departure				0.13	

GENERAL DESCRIPTION.

T. 40 S. R. 19 E. embraces lands of a general mesa character traversed by numerous canons bordered by sandstone ledges and cliffs. The mesas are largely covered with timber, such as scrub cedar, pinon and pine. A very small part of the land is valuable for grazing and the sandstone formations where exposed by the erosion show some indications of solidified oil residue.

The first and second anticlinal flexures heretofore described terminate and become part of each other about 2 to 3 miles North of the N. lines of Secs. 3 and 4.

April 9th, 1909.

Elmer E. Miller

U.S.Deputy Surveyor.

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FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the West East and North Boundaries of Township No 40 South Range No 19 East of the Salt Lake Base & Meridian in the State of Utah. showing the respective capacities in which they acted:

Louis H Pohle — Allan King, Chainman.

, Chainman.

W F McCandless, Moundman.

John H Hughes, Moundman.

Presley C Wills, Axman.

William Brookins, Axman.

James Brookins, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E Miller, United States Deputy Surveyor, in surveying all those parts or portions of the West East and North Boundaries of Township No. 40 South Range No 19 East of the Salt Lake Base and Meridian in the State of Utah ~~of the~~ ~~meridian~~, ~~of~~, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Utah

Allan King, Chainman.

Louis H. Pohle, Chainman.

John H Hughes, Moundman.

W. F. McCandless, Moundman.

Presley C Wills, Axman.

William Brookins, Axman.

James Brookins, Flagman.

Subscribed and sworn to before me this 3rd day of May, 1909

SEAL

A L Kahler
Notary Public
in and for San Juan Co Utah
My com Expires May 1st 1910

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Elmer E Miller, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Thomas Hull, United States Surveyor General for Utah, bearing date of the 25 day of February, 1909, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Utah, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the West, East and North Boundaries of Township No 40 South, Range No 19 East of the Salt Lake Base and Meridian in the State of Utah of the ~~meridian, in the~~ of, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Elmer E. Miller
United States Deputy Surveyor.

Subscribed by said Elmer E Miller, and sworn to before me this 23rd day of April, 1910

Charles N. Bishop, Clerk
By Allen Gregg
Deputy Clerk

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911 ~~190~~

The foregoing field notes of the survey of the West, East and North Boundaries of Township No. 40 South, Range No. 19 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Thomas Hull
United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____
United States Surveyor General

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BOOK A-367

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APR 25 1910

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION

OF

TOWNSHIP NO. 40 SOUTH,

RANGE NO. 19 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E. MILLER, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* February 25th, *1909.*

Survey commenced APRIL 10th, *1909,*

Survey completed APRIL 15th, *1909.*

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

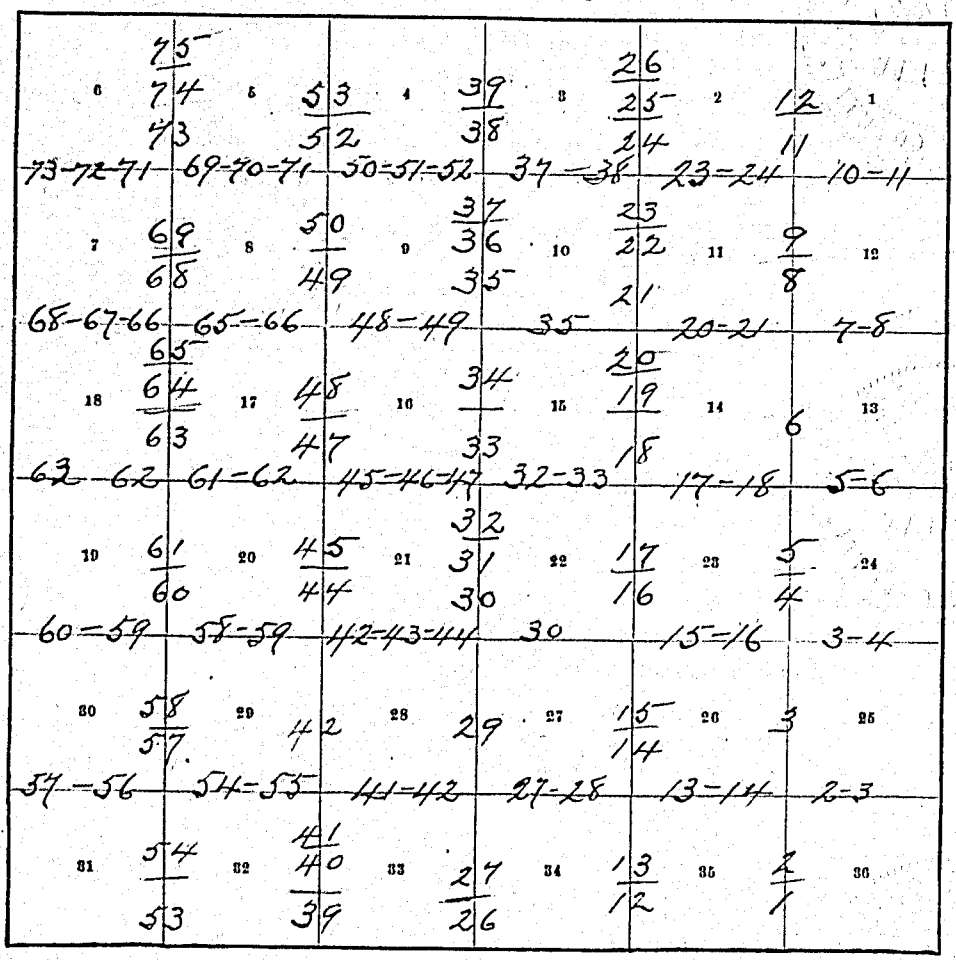
LOUIS H.POHLE,	CHAINMAN.
ALLAN KING,	CHAINMAN.
W.F.McCANDLESS,	MOUNDMAN.
JOHN H.HUGHES,	MOUNDMAN.
WILLIAM BROOKINS,	AXMAN.
PRESLAY C.WILLS,	AXMAN.
JAMES BROOKINS,	FLAGMAN.

6—151

BOOK A-367

INDEX DIAGRAM.

Township No. 40 South, Range No. 19 East.



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PRELIMINARY OATHS OF ASSISTANTS.

We, Louis H. Pohle and Allan King

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of Subdivision of Township No 40 South Rs 18 and 19 East of the Salt Lake Base and Meridian, Utah.

....., Chainman.

....., Chainman.

Subscribed and sworn to before me this 1st day of April 1909

Louis H. Pohle Chainman

Allan King Chainman

A. C. Rapley Notary Public

SEAL

my com Expires May 1st 1910

We, W. F. McCandless and John A. Hughes

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of Subdivision of Township No 40 South Rs. 18 and 19 East of the Salt Lake Base and Meridian, Utah

W. F. McCandless, Moundman.

John A. Hughes, Moundman.

Subscribed and sworn to before me this 1st day of April 1909

A. C. Rapley Notary Public

SEAL

my com Expires May 1st 1910

We, William Brookins and Burley C. Mills

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of Subdivision of Township No 40 South Rs. 18 and 19 East of the Salt Lake Base and Meridian, Utah

William Brookins, Axman.

Burley C. Mills, Axman.

Subscribed and sworn to before me this 1st day of April 1909

A. C. Rapley Notary Public

SEAL

my com Expires May 1st 1910

I, Carmen Brookins, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the Subdivision of Township No 40 South Rs. 18 and 19 East of the Salt Lake Base and Meridian, Utah.

Carmen Brookins, Flagman.

Subscribed and sworn to before me this 1st day of April 1909

A. C. Rapley Notary Public

SEAL

my com Expires May 1st 1910

4-01

Chains.	
	Survey commenced April 10, 1909, and executed with a W. & L.E. Gurley Light Mountain Transit, No. 47, with solar attachment. The horizontal limb is provided with two double verniers placed oppsite to each other, reading to single minutes of arc, which ia also the least count of the verniers of the latitude and declination arcs.
	The instrument was examined, tested on the true meridian ar SaltLake City, found correct, and was approved by the Surveyor General for Utah Feb. 18, 1909.
	I examine the adjustments of the transit and find them correct; and, as the soalr apparatus was correct on the N.bdy.of the township Apr.7 and 8, I deem it unnecessary to make the regular tests. To further satisfy myself however, I set my instrument on line at the cor.of secs.35 and 36 on the 8th Stand.Par.South, heretofore described; lat.37°17' 18" N.; long.109° 50'41" W., and set off 7° 53'N.on decl.arc, 37° 17' N.on the lat.arc; and at 8 h. 15 m.a.m.l.m.t. determine a true meridian with the solar.
	The tangent line bears S.89°59'W., which is correct.
	The magnetic bearing at this corner is 14° 45'E.
	Thence I run
	N. 0° 01'W. on true line bet.secs.35 and 36,
	Over slightly descending mesa; through shadscale undergrowth.
5.70	Center of small wash, 15 lks.wide, 5 ft. deep, drains W.
	Descend gradual down 1st anticlinal.
23.16	Top of wash, bears W. Descend.
26.07	Center of wash, 225 ft.below sec.cor., 30 lks.wide, 8 ft. deep, drains W.
	Ascend over broken surface.
40.00	Set an iron post 3 ft.long 1 in.in dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap S 35 1/4 in W. and S 36 in E.half; and raise a mound of stone2 1/2

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
	ft base, 2 ft.high W.of cor. Pits impracticable. Corner is on edge of small ravine draining S.60° W., 155 ft.below standcor.secs.35 and 36 and 75 ft. above wash.
45.30	Top of wash, 50 ft.above 1/4 sec.cor., bears W.
73.51	Wash 20 ft.wide, 5 ft.deep, drains S.80° W. Gradual descent.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.25,26,35, and 36, marked on brass cap T 40 SS 26 in NW.; R 19 E S 25 in NE.; S 35 in SW., and S 36 in SE.quadrants; dig pits 18 x 18x 12 ins.in each sec.5 1/2 ft.dist.; and raised a mound of earth 4 ft.base, 2 ft.high W.of cor.
	This corner is about 15 ft.above 1/4 sec.cor.
	Land, broken and level.
	Soil, sandy and rocky; 2d and 4th rates.
	No timber. Undergrowth shadscale.
	Mountainous, broken land 80.00 chs.
	East on random line bet.secs.25 and 36,
40.00	Set temp. 1/4 sec.cor.
79.96	Intersect E.bdy.of Tp.7 lks.S.of the cor.of secs. 25 30, 31, and 36, heretofore described. Thence I run S.89° 57'W.on a true line bet.secs.25 and 36,
	Over gradually descending mesa; through undergrowth.
39.98	Set an iron post 3 ft.long, 1 in.in. dia., 26 ins.in the ground, for 1/4 sec.cor., mkd.on brass cap S. 25 1/4 in N. and S 36 in S.half; and raise a mound of stone 2 1/2 ft. base, 2 ft. high N.of cor. Pits impracticable. Corner is 80 ft.below sec.cor.of secs. 25,30,31, and 36.
	Descend gradually.
48.00	Top of washh bears NW. and SE. Descend.
60.00	Cross wash 20 ft.below 1/4 sec.cor.,10 lks,wide,4 ft.

deep, drains N. 75° W

61.70 Recross wash, 10 lks. wide, 4 fts. deep, drains S.70°W.

Thence gradual ascent

79.96 The Cor. of Secs. 25, 26, 35 & 36

Cor. is 50 ft. below 1/4 Sec. Cor. bet. Secs. 25 & 36

Land nearly level

Soil sandy and rocky, 2nd and 4th rates.

No timber

Undergrowth shadscale

N. 0° 01' W. bet. Secs. 25 & 26

Over slightly descending mesa; through undergrowth.

40.00 Set an iron post 1 in diam.3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brasscap S. 26 1/4 in W. and S. 25 in E. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Pitsimpracticable.

79.20 Top of Box Canon, bears E. and W. Thence steep descent.

80.00 Set an iron post 2 ins. diam. 3 ft. long, 24 ins. in the ground for Cor. to Secs. 23, 24, 25 & 26 marked on brass cap T. 40 S.S 23 N.W. R 19 E S 24 in N.E. S 26 in S.W. and S 25 in S.E. quadrants, and raised a mound of stone 2 ft. base 1 1/2 ft. high W. of Cor. Pits impracticable.

Cor. is 30 ft. below 1/4 Sec. Cor. bet. Secs. 25 & 26 and 10 ft. below top rim of Box Canon

Land narly level

Soil sandy, 3rd rate

Undergrowth of shadscale

No timber

N. 89° 57' E. on random line bet. Secs. 24 and 25

40.00 Set temp. 1/4 Cor.

79.96 Intersect E. Bdy. of Tp. 3 lks. S. of Cor. of Secs. 19, 24, 25 & 30, heretofore described.

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.,
	Thence I run , through shadscale undergrowth
	S. 89° 56' W. on a true line bet. Secs. 24 and 25
	Gradual descent down 1st anticlinal heretofore described
39.98	Set an iron post 1 in. diam. 3 ft. long, 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S 24 1/4 in N. and S. 25 in S. half and raised a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Corner is 60 ft. below cor. of secs. 19, 24, 25 and 30.
42.00	Road bears NW. and SE.
67.00	S. bank of wash, 30 lks. wide, 9 ft. deep, drains N.75°W.
68.90	Road, bears N. and S.
69.00	Descend into Box Canon
79.96	The Cor. of Secs. 23, 24, 25 and 26
	Cor. is 50 ft. below 1/4 Sec. Cor. bet. Secs. 24 and 25
	Land nearly level
	Soil sandy, 3d rate
	Undergrowth of shadscale
	No timber
	N. 0° 01' W. bet. Secs. 23 and 24
	Descending into Box Canon; through undergrowth.
4.90	Bottom of Box Canon 70 ft. below Cor. of Secs. 23, 24,25 & 26 and heading 6 chs. E. Course W. Thence abrupt ascent
8.00	Top of Box Canon, 70 ft. above bottom, bears E. and W.
	Thence over slightly descending ground
13.58	Road, bears N. 60° W.
40.00	Set an iron post 1 in. diam. 3 ft. long, 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S 23 1/4 in W. and S 24 in E. half; dig pits 18 x 18 x 12 ins. N. and S. of post 3 ft. dist.; and raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high W. of Cor.
	Cor. is 70 ftt. above Cor. of Secs. 23, 24, 25 & 26
	Thence descend over rolling land.
50.00	Camp Chicago, 20 chs. W. perpetual spring of water
61.00	Road bears W. and SE.

Chains.	
62.65	Top of wash, bears W. Descend
63.81	Center of wash 40 ft. below top, 40 lks. wide, 6 ft. deep Drains W. Ascend
66.65	Top of wash, 40 ft. above bottom, bears W.
80.00	Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for Cor. of Secs. 13, 14, 23 & 24 marked on brass cap T. 40 S. S. 14 in N.W. R. 19 E. S. 13 in N.E. S. 23 in S.W. and S. 24 in S. E. quadrant; dig pits 18 x 18 x 12 ins. in each sec. 5 1/2 ft dist. and raised a mound of earth 4 ft. base 2 ft high W. of Cor.
	Cor. is 60 ft below 1/4 sec. cor. bet. secs. 23 and 24
	Land is broken
	Soil sandy and rocky 2d and 4th rates
	Undergrowth of shadscale
	No timber
	N. 89° 56' E on a random line bet. secs. 13 and 24
40.00	Set temp. 1/4 sec. cor.
79.98	Intersect E. bdy. of Tp. 9 lks. N. of cor. of secs. 13, 18, 19 and 24, heretofore described. Thence I run
	West on true line bet. secs. 13 and 24
	Over gradually descending ground down 1st anticlinal through undergrowth.
24.00	Cross wash 40 ft below cor. of secs. 13, 18, 19 and 24 15 lks. wide, 6 ft. deep
	Drains N. 30° W.
39.99	Set an iron post 1 in dia. 3 ft long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 13 1/4 in N. and S. 24 in S. half and raise a mound of stone 2 ft base 1 1/2 ft high N. of cor.
	Pits impracticable.
	Cor. is 100 ft below Cor. of secs. 13, 18, 19 and 24
43.30	Cross wash 30 lks wide, 8 ft. deep Drains S.
79.98	The cor. of secs. 13, 14, 23 and 24
	Cor. is 50 ft below 1/4 sec. cor. bet. secs. 13 and 24
	Land nearly level

Soil sandy and rocky 3d and 4th rates

Undergrowth of shadscale

No timber

April 10. At this cor of secs 13, 14, 23 and 24 I set off 7° 56' N. on the decl. arc. and at 0 h 2 m l.p.m.l.m.t. observe the sun on the meridian; the resulting lat. is 37° 20'

N. 0° 01' W. bet. secs. 13 and 14

Thence descend into Lime Creek; through undergrowth.

5.20 Lime Creek 30 ft below sec. cor, 10 lks. wide, clear water, 3 ins. deep, swift current, sandstone bottom, Course S. 30° W. Ascend over rolling surface.

39.00 Road bears N. 10° E. and S. 10° W.

40.00 Set an iron post 1 in. diam. 3 ft long, 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 14 1/4 in W, and S. 13 in E. half; dig pits 18 x 18 x 12 ins. N. and S. of post 3 ft dist. and raise a mound of earth 3 1/2 ft base, 1 1/2 ft high W. of corner.

Cor. is 50 ft. above sec. cor. Goodridge oil well 615 ft. deep at this Cor.

64.00 Ft. of Cedar Mesa, 40 ft above 1/4 sec. cor, bet secs. 13 and 14

Thence along foot of mesa, over low rolling ridges

80.00 Set an iron post 2 ins. dia. 3 ft. long 24, ins. in the ground for cor. to secs. 11, 12, 13 & 14 markedon brass cap T. 40 S, S. 11 in N.W. R. 19 E, S. 12 in N.E. S. 14 in S.W. and S 13 in S.E. quadrants and raise a mound of stone 2 ft base 1 1/2 ft high W. of Cor.

Pits impracticable.

Cor. is 60 ft. above 1/4 sec. cor, bet. secs. 13 and 14 and falls at foot of cedar mesa.

Land rough and broken

Soil sandy and rocky 3d and 4th rates

Undergrowth of shadscale

No timber

A Goodridge oil well bears S. 10° E. 12 chs. Depth unknown

Chains.	
	East on random line bet.secs.12 and 13,
26.00	To foot of point projecting S.from cedar mesa; impossible to pass over. Set temporary witness point; then offset as follows
	South 10.00 chs.
	Thence East on offset line 10.00 chs.
	Thence north 10.00 chs.to random line,
40.00	Set temp. 1/4 sec.cor.
80.00	Intersect E.bdy.of Tp. 20 lks.N.of corner of secs.7,12, 13 and 18 heretofore described.
	Thence I run
	N.89° 51'W. on a true line bet.secs.12 and 13,
	Ascending through scattering cedar and pines.
23.00	Top of mesa, 75 ft.above sec.cor.
	Descend over cliffs.
30.00	Foot of mesa, 250 ft.below top bears N. & S.
	Descend gradually.
33.50	Cross wash, 300 ft.below top of mesa, 30 lks.wide, 10 ft.deep, drains S.3° W.
	Thence gradual ascent.
40.00	Set an iron post 3 ft.long, 1 in.in diam. 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap S. 12.1/4 in.N.half, S 13 in S.half; and raise a mound of stone 2 ft. base, 1 1/2 ft.high N.of cor.
	Pits impracticable.
	A cedar 6 ins.in dia., bears N.37° W. 33 lks.dist. mkd. 1/4 S 12 B T
	A pine 8 ins.in dia.bears S.64° 13'E. 1.47 chs.dist. Corner is 1 mkd. 1/4 S 13 B T In E.slope of mesa.
	Corner is 100 ft. above wash on E. slope of mesa.
44.00	Foot of bluff of point projecting south from cedar mesa, which is impossible; to pass over I offset as follows:

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
	South 10.00 chs., then on the offset line
	N.89° 51'W. 10.00 chs.
	Thence north 10.00 chs. to true line,
54.00	Descend gradually into Lime Creek.
69.80	Lime Creek, 300 ft. below top of cedar mesa, 15 lks. wide, clear water. 1ft. deep, gentle current, gravelly bottom; course SE.
	Cut bank 6 ft. high.
	Ascend gradually.
77.34	Road bears S.28° W. and N.30°W..
80.00	The cor. of secs. 11,12,13, and 14.
	Corner is 75 ft. above Lime Creek.
	Land, mountainous and broken.
	Soil, rocky 4th rate, 10 chs.; balance sandy 3d rate.
	Timber, cedar and pine.
	Undergrowth, shadscale.
	Mountainous land 80.00 chs.

N.0° 01'W. between secs. 11 and 12,

Over bottom land.

4.59	Road bears S.20° E. and N.20° W.
10.67	Lime Creek, 20 ft. below cor. of secs. 11,12,13, and 14, 12 lks. wide, 1 ft. deep, clear water, gravelly bottom; gentle current, drains S.45° E.
24.00	Foot of cedar mesa..
	Ascend abruptly over rough and broken land.
27.50	Foot of ledge, 150 ft. above Lime Creek. To pass ledge I offset as follows:
	West 4.00 chs.; thence on offset line
	N.0° 01' W. 12.50 chs.
	Thence East 4.00 chs. to true line

Set an iron post 1 inch diameter 7 ft. long 20 ins. in the ground for 1/4 Sec. Cor. marked on brass cap T. 41 1/4 in N. and S. 19 in E. half and raise a mound of stone 2.5 ft. base, 2 ft. high E. of Cor. Pits impracticable. Cor. is 150 ft. above Lime Creek and falls at foot of bluff.

48.95 Top of cedar Mesa. 250 ft. above foot, bearing N. and E.

Enter timber, bears E. and W.

50.27 To flag on top of mesa which is 1.70 chs. N. of corn.

73.25 Wash, 50 lks. wide, 15 ft. deep course S. W.

Then slight ascent.

80.00 Set iron post 2 ins. diameter 7 ft. long 24 ins. in the ground for Cor. of Secs. 1, 2, 11 & 12. marked on brass cap T. 40 S. S. 2 in N. W. R. 19 E. S. 1 in N. W. S. 11 in S. W. and S. 12 in S. E. quadrants, and raise a round of stone 3 ft. base, 2 ft. high W. of Cor.

Pits impracticable. Thence

A pine 17 ins. diameter bears N. 27° 40' E. 80 lks. dist. marked T. 40 S. R. 19 E. S. 1 B. T.

A pine 18 ins. diameter bears N. 83° W. 52 lks. distant marked T. 40 S. R. 19 E. S. 2 B. T.

A pine 12 ins. diameter bears S. 22° 30' W. 87 lks. dist. marked T. 40 S. R. 19 E. S. 11 B. T.

A pine 10 ins. diameter bears S. 15° 45' E. 72 lks. dist. marked T. 40 S. R. 19 E. S. 12 B. T.

The sky is overcast and solar observations are impossible 3 h. 30 m. p. m.

Land mountainous, rough and broken.

Soil sandy and rocky. 3rd & 4th rate.

Timber - Cedar and pine.

Land mountainous, heavily timbered rough and broken, exceptionally difficult to survey. 80.00 chs.

Chains.	
	S. 89°51' E. on random line between Secs. 1 & 12.
40.00	Set temporary 1/4 Secs Cor.
80.02	Intersect Tp. line 2 lks. N. of cor. to secs. 1, 6, 7, & 12, heretofore described.
	Thence I run
	N. 89°50' W. on a true line between Secs. 1 & 12.
	Over ascending land through scattering cedars and pines.
0.60	Foot of ledge bears N. 80° E.
0.65	Top of ledge 15 ft. high. Thence ascend.
4.00	West bank of wash, bears N. E. & S. W.
	Slight ascent.
20.00	Gradual ascent over sandstone.
39.00	Top of ascent or ridge, bears N. & S.
	Thence down steep descent.
39.70	Foot of ridge. Set witness cor. for secs. 1 & 12 (as cor. falls on sandstone surface where I could not set an iron post).
	Set an iron post 1 inch. diameter 3 ft. long 26 ins. in the ground for witness 1/4 Sec. Cor. marked on brass cap W. C. in N. half S. 1 1/4 in N. and S. 12 in S. half and raise a mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable. Whence
	A pine 7 ins. diameter bears N. 32°50' W. 71lks. dist. marked W. C. 1/4 S. 1 B. T.
	A pine 8 ins. diameter bears S. 2°W. 22 lks. distant marked W. C. 1/4 S. 12 B. T.
	This Cor. is 2 ft. W. of cliff or spur. about 100 ft. above Sec. Cor.
40.01	Mark X 1/4 for exact point for 1/4 Sec. Cor.
	Thence slight descent.
76.15	Wash, 20 lks. wide, 3 ft. deep Course S. W. Ascend.
80.02	The cor. of secs. 1, 2, 11, and 12; about 100 ft. below 1/4 sec. cor.
	Land, rolling and broken.
	Soil, rocky; 3d and 4th rate.

Timber, scattering cedar and pine.

This cor. is about [illegible] from 1/4 Sec. Cor.

Thence I run N. 0°01' W. on a random line between Secs. 1 & 2.

40.00 Set temporary 1/4 Sec. Cor.

79.70 Intersect North Bdy. Tp. 18 lks. West of Cor. to Secs. 1,2,35 & 36, heretofore described.

Thence I run S. 0°07' W. on true line between Secs. 1 & 2 over slightly ascending land, through cedars and pine timber.

20.00 Begin steep ascent bears S. 80°E.

150 ft. above Sec. Cor.

23.60 Top of Cedar Mesa, 350 ft. above Sec. Cor. bears S. 80°E. Then slight ascent.

39.70 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 2 1/4 in W. and S. 1 in E. half and raise a mound of stone 2.5 ft. base, 2 ft. high W. of Cor.

Pits impracticable.

A pine 8 ins. diameter bears N. 55°E. 2.41 chs. distant. marked 1/4 S. 1 B. T.

A pine 6 ins. diameter bears S. 27°W. 76 lks. distant. marked 1/4 S. 2 B. T.

43.20 Descend over rough sandstone ledges, bears E. & W.

68.00 Foot of sandstone ledges, bears E. & W. 130 ft. below top of mesa.

Then slight descent to Cor.

79.70 Cor. to Secs. 1, 2, 11 & 12 150 ft. below top of mesa.
Land, rough and broken.
Soil, sandy and rocky; 3d and 4th rates. April 10" 1909.
Timber, cedar and pine.

April 10" 1909.

April 11, 1909:
From the Standard Cor. of Secs. 34 & 35 on S. bdy. of T. 40 S. R. 19 E. which has previously been described, I run

N. 0°01' W. between Secs. 34 & 35.

Over ridges and ravines, descend, through undergrowth.

4.00 Wash 40 ft. below, 60 lks. wide, 3 ft. deep

Drains N. 80° W. ascend.

6.00 West end of spur 20 ft. above wash. bears E.

Descend.

9.00 Wash 15 ft. below top of spur, Drains W. ascend.

12.00 Top of spur, 30 ft. above ravine, bears W. 12 chs. and E.

Descend.

16.80 S. bank of Lime Creek 8 ft. high. Bears S. 75° W.

18.00 Center of Lime Creek 50 ft. below Standard Cor. of Secs. 34 & 35. Clear water, 20 lks. wide, 4 ins. deep, rapid current, gravel bottom, Drains S. 75 W.

18.90 N. bank of Lime Creek 10 ft. high. Bears S. 75 W.

Ascend.

24.80 Top of spur, 80 ft. above Lime Creek. Bears S. W.

Thence over rolling land.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 34 1/4 in W. and S. 35 in E. half and raise a mound of stone 2.5 ft. base, 2 ft. high W. of Cor.

Pits impracticable.

Cor. is 40 ft. above Standard Cor. of Secs. 34 & 35

This Cor. stands on W. slope of Lime Creek.

Descend.

44.00 Lime Creek is about 1 chain E.

60.00 Descending along W. side of wash over rolling land

65.70 Wash ~~20xfxxxdxxx~~ 30 lks. wide, 3 ft. deep Drains S. 10 E.

Ascend over rolling land.

74.50 Top of wash, 80 ft. above wash bears S. 10 E. & N. 10 W.

80.00 Set an iron post 2 ins. diameter 3 ft. long 24 ins. in the ground for Cor. of Secs. 26, 27, 34 & 35 marked on brass cap T. 40 S. S. 27 in N. W., R. 19 E. S. 26 in N. E. S. 34 in S. W. and S. 35 in S. E. quadrants. Dig pits 18 x 18 x 12 ins. in each secs. 5.5 ft. distant, and raise a mound of earth 4 ft. base, 3 ft. high W. of Cor.

Setting Hen butte 300 ft. high brs. S. 58° 42' W. 22.10 chs.

High round pointed peak 325 ft. high, brs. N. 66 22' W. 32.60 chs. known as "Rooster Butte".

Land mountainous.

Soil rocky, 4th rate.

No timber.

Undergrowth of shadscale.

Land mountainous. 80.00 chs.

East on random line between Secs. 26 & 35.

40.00 Set temporary 1/4 Sec. Cor.

80.00 Intersect N. & S. line 3 lks. N. of Cor. of Secs. 25, 26, 35 & 36.

Thence I run, through shadscale undergrowth.

N. 89° 59' W. on a true line between Secs. 26 & 35

Gradual descent down W. slope, 1 st. Anti-Clinal.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 26 1/4 in N. & S. 35 in S. half and raise a mound of stone 2.5 ft. base, 2 ft. high N. of Cor.

Pits impracticable.

Cor. is 80 ft. below Sec. Cor.

Thence gradual descent.

54.70 E. bank of Lime Creek, about foot of 1st Anti-Clinal.

Descend.

60.00 Lime Creek, 150 ft. below top, 20 lks. wide, clear water 6 ins. deep, gentle current, gravel Bottom, drains S. 15 W.

Ascend.

73.60 Top of W. bank of Lime Creek, 100 ft. above Lime Creek, bears S. 30°W.

Thence gradual descent.

80.00 The Cor. of Secs. 26, 27, 34 & 35.

Cor. is 80 ft. below 1/4 Sec. Cor.

Land nearly level and broken.

Soil sandy and rocky, 2nd & 4th rate.

Undergrowth of shadscale.

No timber,

Land mountainous, 25.00 chs.

N. 0°01' W. between Secs. 26 & 27.

Slight ascent, through shadscale undergrowth.

18.14 16 ft. above Sec. Cor.

Thence slight descent.

25.70 N. W. bank of wash, bears S. E.

Descend over broken surface.

36.00 Dry creek 60 ft. below top of wash, 70 lks. wide, 4 ft. deep drains S. E. Cold spring bears N. 20°W. about 20 chs.

Ascend.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 27 1/4 in W. and S. 26 in E. half and raise a mound of stone 2.5 ft. base, 2 ft. high W. of Cor.

Pits impracticable.

Cor. is 15 ft. above wash. Ascend.

47.00 Road to Goodridge Oil Well, bears W. and NE.

49.56 Top of N. bank of W. fork Lime Creek 50 ft. above wash bears S. E. Thence slight ascent over rolling mesa.

70.00 Road to Goodridge Oil Well bears E. and W.

80.00 Set iron post 2 ins. diameter 3 ft. long 24 ins. in the ground for Cor. of Secs. 22, 23, 26 & 27. marked on brass cap T. 40 S. S. 22 in N. W. R, 19 E. S. 23 in N. E. S. 27 in S. W. and S. 26 in S. E. quadrants. Dig pits 18 x 18 x 12 ins. in each sec. 5.5 ft. distant and raise a mound of earth 4 ft. base, 2 ft. high W. of Cor. Pyramid Peak bears N. 16 37; E. 35.13 chs.; 6 chs. N. & S. and 6 chs. E. & W. 250 ft. high
Cor. is 60 ft. above 1/4 Sec. Cor.
Land level and mountainous.
Soil sandy and rocky, 2nd & 4th rate.
Undergrowth of shadscale.
No timber. Land mountainous. 40.00 chs.

April 11" 1909. At 10 h. a.m.l.m.t. I set off 37° 19' N. on the Latitude arc. and 8°17' N. on the Declination arc. and determine a true meridian with the solar at the Cor. of Secs. 22, 23, 26 & 27. Marked and Witnessed as heretofore described.
Thence I run
S. 89°59' E. on a random line between Secs. 23 & 26.
40.00 Set temporary 1/4 Sec. Cor.
79.90 Intersect N. & S. line 7 lks. S. of Secs. 23, 24, 25 & 26.
Thence I run
S. 89°58' W. on a true line between Secs. 23 & 26
Over level land.
9.20 E. bank of Lime Creek, bears S. 20° W.
Descend.
26.20 Center of Lime Creek, 100 ft. below top 20 lks. wide clear water, gentle current, 6 ins. deep, gravel bottom
Drains S. 20° E.

Ascend.

39.95 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap S. 23 1/4 in N. half and S. 26 in S. half and raise a mound of stone 2. 5 ft. base, 2 ft. high N. of Cor.
Pits impracticable.
Cor. is 80 ft. above Lime Creek on W. side.
Ascend.

40.50 Top of west bank of Lime Creek, 15 ft. above 1/4 Cor. bears S. 20 E. Thence slight descent.

67.00 Road to Goodridge Oil Wells bears NE. and SW.

79.90 The Cor. of Secs. 22, 23, 26 & 27 10 ft. below 1/4 cor.
Land mountainous and level. 30 chs. mountainous.
Soil sandy and rocky. 2nd & 4th rate.
Undergrowth of shadscale.
No timber.

N. 0°01' W. between Secs. 22 & 23.
Over rolling land; through shadscale undergrowth; ascend.

37.00 Wood Road bears NE. and SW.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 22 1/4 in W. half and S. 23 in E. half and raise a mound of stone 2 ft. base, 1.5 ft. high W. of Cor.
Pits impracticable.
Cor. is 30 ft. above Sec. Cor.
Slight ascent.

73.45 Small wash 15 lks. wide, 3 ft. deep. Drains S. W.
Ascend.

80.00 Set iron post 2 ins. diameter 3 ft. long 24 ins. in the ground for Cor. of Secs. 14, 15, 22 & 23. marked on brass cap,

T 40 S S 15 in NW.

Chains.

R 19 E S 14 in NE.

S 23 in SE., and

S 22 in SW.quadrants; dig pits 18 x 18 x 12 ins. in each section 5½ ft.dist.; and raise a mound of stone and earth 4 ft.base, 3 ft.high W.of cor.

Land, rolling and slightly broken.

Soil, sandy abd rocky; 2d and 4th rate.

Undergrowth shadscale.

No timber.

April 11; 1909: At this cor.I set off 8° 18' N.on the decl.arc; and at 0 h. 01 m.p.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 20'N.

N.89°58'E.on a random line bet.secs.14 and 23,

40.00 Set temp.¼ sec.cor.

79.94 Intersect N. and S.line 4 lks.N.of the cor.of secs.13, 14,23, and 24. Thence I run

West on a true line bet.secs.14 and 23,

Descending into Lime Creek; through shadscale undergrowth.

6.60 Lime Creek, 30 ft.below sec.cor., 15 lks.wide, clear water, 2 ins.deep, rapid current, limestone bottom; course SW. Ascend over broken surface.

19.00 Road to Goodridge Oil Wells, bears NE. and SW.

39.97 Set an iron post 1 in.diameter, 3 ft.long, 26 ins. in the ground, for ¼ sec.cor., marked on brass cap ¼ S 14 in N.half, and S 23 in S.half; and raise a mound of

Chains.	
	stone 2 ft.base, 1½ ft.high N.of cor.
	Pits impracticable.
	Ascend.
49.47	East foot of sandstone point 50 ft.above ¼ sec.cor., projects S.30° W. 20.00 chs.
	Thence rapid ascent.
53.50	Foot of perpendicular cliff 300 ft.above foot.
54.20	Top of cliff 200 ft.above foot bears S.30° W.
	Descend over W.side over perpendicular cliff.
54.70	West foot of cliff, 200 ft.below top.
	Rapid descent over boulders and rough surface.
68.50	West foot of sandstone point, 250 ft.below top of cliff.
	Descend over broken land.
73.00	Wash, 75 ft.below foot of point 20 lks.wide, 4 ft.deep, drains S.60° W.
	Ascend.
79.94	The cor.of secs.14,15,22, and 23.
	Land, mountainous and broken.
	Soil rocky; 4th rate.
	Undergrowth, chaparral.
	No timber.
	Land, mountainous and broken and exceptionally difficult to survey 79.94 chs
	N.0° 01'W.between secs.14 and 15,
	Over rough broken land; exceptionally difficult to survey.
	Gradual ascent.
1.60	Wash 10 ft.below sec.cor., 60 lks.wide, 4 ft.deep, course N.75°E. and S.75°W.

SUBDIVISION T 40 S., R. 19 E.

Chains.	
11.50	At this point I set a flag.
13.60	Foot of cedar mesa, 50 ft.above sec.cor., bears S.75° W., and N.75°E.
	Thence rapid ascent over very rough surface.
25.50	Foot of high cliff, bears S.75°W., 300 ft.above foot of mesa.
33.22	To top of cliff, 350 ft.above foot, bears S.75°W.
	Thence along E.side of ledge.
40.00	Set iron post 1 inch.diameter, 3 ft.long, 26 ins.in the ground, for ¼ sec.cor., marked on brass cap S 15 ¼ in W., and S 14 in E.half; and raised a mound of stone 2 ft.base, 1.5 ft.high W.of cor, Pits impracticable.
	Cor.stands on E.slope of sandstone ridge at foot of ledge, 15 ft.high 650 ft.above sec.cor.
50.50	Enter scattering cedar and pine.
56.00	Begin ascent over series of sandstone ledges, bears S. 15°W. & E.
68.00	Top of ascent, 100 ft.above foot.
	Thence over nearly level sandstone.
80.00	Set an iron post 2 ins.diameter, 3 ft.long, 24 ins.in the ground, for cor.of secs.10,11,14 & 15, marked on brass cap,
	T 40 S S 10 in NW.
	R 19 E S 11 in NE.
	S 15 in SW.,
	S 14 in SE.quadrants; and raise a mound of stone 2½ ft.base, 2 ft. high W.of cor. Pits impracticable. Cor.is 100 ft.above ¼ sec.cor.
	A cedar 6 ins.diameter bears N.6° 15'W. 33 lks. distant marked T 40 S R 19 E S 10 B T
	A pine 10 ins.diameter bears N.48° 25'E .1.97 chs. distant, marked T 40S R 19 E S 11 B T
	A pine 8 ins.diameter bears S.52° 05'E. 1.18 chs.

SUBDIVISION OF T.40 S., R.19 E.

Chains.	
	dist. marked T 40 S R.19 E. S 14 B T
	A pine 10 ins.diameter bears S.82° 33'W. 2.62 chs. dist., marked T 40 S R 19 E S 15 B T
	Land mountainous and very rough.
	Soil, rocky; 4th rate.
	Land 30 chs.a few scattering cedar and pine.
	Land mountainous, rough, broken, and exceptionally difficult to survey, 80.00 chs.

	April 11" 1909. At 2 h. 00 m.p.m.l.m.t. I set off 37° 21' on the latitude arc; 8° 20'N.on the declination arc; and determine a true meridian with the solar,at the cor. of secs.10,11,14, and 15. Thence I run
	East on random line between secs.11 & 14,
40.00	Set temp. ¼ sec.cor.
80.00	Intersect N.& S.line 9 lks.S.of cor.of secs.11,12,13, and 14.
	Thence I run
	S.89° 56'W.on a true line between secs.11 & 14.
	Rapid ascent.
	Cedar mesa.
6.50	Foot of perpendicular cliffs 100 ft .above sec.cor. bears N.& S.
13.20	Top of cliffs, 500 ft.above sec.cor.
	Thence gradual ascent over sandstone.
16.25	Top of ascent 500 ft.above sec.cor.
24.00	Descend over sandstone ledges; through scattering cedar and pines.
	Foot of ledge, bears N.60°E. & W., 75 ft.below top.
	Thence along foot of ledge.

Chains.	
29.00	Ascend over series of ledges, bears N.W.
40.00	Set an iron post 1 in dia. 3 ft long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S.11 1/4 in N. and S.14 in S.half and raise a mound of stone 2 ft base 1 1/2 ft high N. of Cor. Pits impracticable. Enter dense timber.
	Cor. stands on S.E. slope to true cor.
	A Pine 8 ins. diam. bears N. 81° 50' E.51 lks. dist. marked 1/4 S.11 B.T.
	A Pine 8 ins. diam bears S. 68° 40' E.1.60 chs. dist. marked 1/4 S.14 B.T.
	Thence ascend over series of ledges
49.50	Top of Lime Creek, Gulch, bears S. E. and N.W. 1.25, ft. above sec. cor.
	Thence gradual ascent through dense growth of timber
69.00	Top of aseent 1.50 ft. above 1/4 sec. cor, bears N. & S.
	Thence gradual descent
72.00	Leave dense growth of timber, descend over sandstone
80.00	The cor. of secs. 10, 11, 14 and 15
	Land mountainous and very rough,
	Soil rocky, 4th rate
	32 chs. of dense timber, Cedar and Pine
	Land mountainous, rough and exceptionally difficult to survey. 80.00 chs.

	N. 0° 01' W. bet. secs. 10 and 11
	Ascend over sandstone, through scattering timber, exceptionally difficult to survey
15.00	Top of ascent, 100 ft. above sec. cor. bears E. and W.
	Thence slight descent, through dense growth of timber
	Soil very thin with numerous outcroppings of sandstone
40.00	Set an iron post 1 in dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S.10 1/4 in W. and S.11 in E.half and raise a mound of stone 2 1/2 ft. base 2 ft. high W. of cor.
	Pits impracticable.

Cor. is 90 ft. above sec. cor.
A pine 10 ins. in diam. bears N. 69° 08' W. 69 lks. dist. marked 1/4 S. 10 B.T.
A Pine 8 ins. diam. bears S. 24° 50' E. 15 lks. dist. marked 1/4 S. 11 B.T.

55.10 S. top of Lime Creek, Gulch, 20 ft below 1/4 sec. cor, bears S. 60° E. and N. 60° W;
Rapid descent

59.00 Foot of rapid descent, leave dense growth of timber
Slight ascent sandstone spur

69.70 Top of spur, 20 ft. above ft. bears E. and W.
Rapid descent

75.00 Ft. of rapid descent 75 ft. below top
Enter timber
Thence gradual descent

80.00 Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for cor. of secs. 2, 3, 10 & 11 marked on brass cap T. 40 S. S. 3 in N.W. R. 19 E. S. 2 in N.E. S. 10 in S.W. and S. 11 in S.E. quadrants, and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor.
Pits impracticable.
Cor. stands on S. slope to Lime Creek
125 ft. below 1/4 sec. cor.
A Pine 6 ins. diam. bears N. 13° 04' E. 1.21 chs. dist. marked T. 40 S. R. 19 E. S. 2 B.T.
A. Pine 6 ins. diam. bears N. 25° 04' W. 1.37 chs. dist. marked T. 40 S. R. 19 E. S. 3 B.T.
A cedar, 8 ins. diam. bears S. 15° 05' W. 81 lks. dist. marked T. 40 S. R. 19 E. S. 10 B.T.
A Pine 8 ins. diam. bears S. 0° 36' E. 1.60 chs. blazed and scribed T. 40 S. R. 19 E. S. 11 B.T.
Land mountainous
Soil rocky, 4th rate
Dense growth of Pine & cedar
Land mountainous covered with dense timber and exception-

Chains.	
	ally difficult to survey 80.00 chs.
	N.89° 56'E. on a random line between secs.2 and 11.
40.00	Set temporary 1/4 sec.cor.
80.00	Intersect N. and S. line at the cor.of secs.1,2,11, and 12.
	Thence I run
	S.89° 56'W.on true line betweensecs.2 andll,
	Ascending spur over ridges and washes; through dense growth of timber ; exceptionally difficult.to survey.
4.00	Top of spur, 80° ft. above sec.cor., projects S. 8.00 chs.
	Descend.
8.00	Wash, 70 ft.below spur, course S.
	Ascend.
22.0	Top of spur, 75 ft.above wash, bears N. and S.
	Descend.
27.00	Foot of spur, 35 ft.below top.
	Descend gradually.
30.75	Top of side of Lime Creek Gulch, which boxes 6 chs.N. making a fall of 150 ft.
	Abrupt descent over ledges.
34.95	Lime Creek 250 ft.below top, 20 lks.wide, clear water 2 ins.deep, rapid current, gravel bottom, course S.
	Rapid ascent.
38.70	West rim of Lime C reek Gulch, 250 ft.above creek.
40.00	Set an iron post 3ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 2 in N.half, and S 11 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.
	Pits impracticable.

Chains.	
	Corner is 250 ft.above Lime Creek.
	A pine, 10ins.dia.bears N.47° 15'E. 53 lks.dist. marked 1/4 S 2 B T
	A Cedar 15 ins.dia.bears S.37° W. 83 lks.dist. marked 1/4 S 11 B T
	Thence slight ascent.
48.00	Begin ascent over series of sandstone ledges, bearing N. and S.
60.00	Top of ascent, 100 ft.above 1/4 sec.cor.
	Descend.
76.40	Wash, 100 ft.below top of ascent, 50 lks.wide, 5 ft. deep, course NE.
	Ascend.
80.00	The cor.of secs.2,3,10, and 11.
	Corner is 50 ft.above wash.
	Land, mountainous.
	Soil, rocky; 4th rate.
	Timber dense growth of pine and cedar.
	Mountainous land, exceptionally difficult to survey 80.00 chs.

	N.0° 01'W.on random line bet.secs. 2 and 3,
40.00	Set temp.1/4 sec.cor.
79.68	Intersect N.bdy.of Tp. 7 lks.W.of cor.of secs.2,3,34, and 35,heretofore described.
	Thence I run
	S.0°02'W. on a true line bet.secs.2 and 3,
	Over mountainous land.
0.90	Top of Lime Creek Gulch bears S.80° E. and N.80° W.
	Descend abruptly over a series of ledges.
4.75	Foot of rapid descent, 150 ft.below top of gulch.

	Thence gradual descent over very rough sandstones
19.00	Leave sandstone ledges
	Enter dense growth of timber, bears E. and W.
	Gradual descent over broken surface
32.00	2 chs. W. are falls in Lime Creek, 30 ft. high
38.18	Set an iron post 1 in dia. 3 ft. long 26 ins. in the ground for witness cor. to 1/4 sec. cor. marked on brass cap W.C. S. 3 1/4 in W. and S. 2 in E. half and raise a mound of stone 2 ft base 1 1/2 ft high W. of Cor.
	Pits impracticable.
	A Pine 20ins. diam. bears N. 64° E. 86 lks. blazed and scribed W.C. 1/4 S. 2 B.T.
	A Pine 6 ins. diam. bears N. 30° 25' W. 1.03 chs. blazed and scribed W.C. 1/4 S. 3 B.T.
39.18	Top of N. bank of Lime Creek, bears S. 10° E. and N. 10° W.
	Abrupt descent
39.68	Set sandstone 16 x 10 x 5, 11 ins. in the ground for 1/4 sec. cor. marked 1/4 S. on W. face and raised mound of stone 2 1/2 ft. base 2 ft. high W. of cor.
	Cor. stands on N. shore of Creek and is therefore unsafe; set stone corner in addition to witness cor.
	A cottonwood tree 30 ins. diam. bears S. 28° E. 59 lks. blazed and scribed 1/4 S. 2 B.T.
	A cottonwood tree 24 ins. diam. bears S. 23° 20' W. 23 lks. blazed and scribed 1/4 S 3 B.T.
40.68	Lime Creek, 40 ft. below top 7 lks. wide, clear water, 4 ins. deep gentle current, gravel bottom
	Course S. 10° E.
	Abrupt ascent
42.20	Top of S. bank of Lime Cr. 40 ft above Cr.
	Thence gradual ascent
56.50	Ft. of spur,
	Ascend
58.75	Top of spur, 20 ft. above ft. bears E. 10 chs.
	Descend
63.70	Wash, 20 ft. below spur, 30 lks wide, 5 ft. deep

Chains.	
	Course E
	Slight ascent
64.70	Descend into Wash
66.30	Wash, 25 lks. wide, 4 ft. deep, Course N. 75° E.
	Ascend
68.75	Top of S. side of wash, 30 ft. above wash, bears N. 75° E.
	Slight ascent
79.68	Cor. of secs. 2, 3, 10 and 11
	Land mountainous
	Soil rocky 4th rate
	Dense timber, pine & cedar
	Land mountainous, or heavily timbered 79.68 chs.
	April 11, 1909.

April 12, 1909.

From the Standard Corner of secs. 33 and 34 on S. bdy. of Tp. 40 S., R. 19 E., which has previously been described

	I run, through shadscale undergrowth.
	N. 0° 02' W. bet. secs. 33 and 34
	Slight descent into the West Fork of Lime Creek
5.80	S. bank of Creek,
	Descend
6.40	Center of W. Fork of Lime Creek, 5 ft. below S. bank
	15 lks. wide, 5 ft deep. Course S. 60° W.
	Abrupt ascent over ledge
7.00	N. bank of Creek, 35 ft. above bottom
	Thence gradual descent
14.88	Road, bears S. 25° W.
19.41	Road, bears E. and W.
19.50	S. bank of W. Fork of Lime Creek,
	Descend
20.00	Center of W. Fork of Lime Creek, 10 ft. below S. bank
	10 lks. wide, course E.

Chains.	
20.50	N. bank of Creek, 8 ft. above Creek
	Thence gradual ascent
37.60	Small wash, 6 ft. deep, 40 lks. wide, Course S.30° E,
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S.33 1/4 in W. and S.34 in E, half and raise a mound of stone 2 1/2 ft. base 2 ft high W. of Cor.
	Pits impracticable
	Cor. is 40 ft. above sec. cor.
	Thence slight descent
41.90	Small wash, 6 ft. deep 40 lks wide, Course S. 30° W.
	Thence gently ascent
59.20	Gradual descent into wash
70.00	Road, bears S. 60° W.
77.36	Wash, 20 ft. below top of descent, 25 lks. wide, 3 ft deep, Course W.
	Thence ascend
80.00	Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for cor. of Secs, 27, 28, 33 & 34 markedon brass cap T. 40 S. S. 28 in N.W. R. 19 E. S. 27 in N.E. S. 33 in S.W. & S.34 in S.E. quadrants, and raise a mound of stone 2 1/2 ft base, 2 ft high W. of Cor.
	Pits impracticable
	Cor. stands on N. slope of wash, and is 30 ft. above bottom
	Land slightly broken and rolling
	Soil sandy and rocky, 2nd and 4th rates
	Undergrowth of shadscale

April 12 At 8 h 45 m a.m., l.m.t. I lay off 37° 18' N. on the Lat. arc 8°38' N. on the decl. arc & determine a true meridian with the solar at the cor. of secs. 27, 28, 33 and 34. Mkd. & Witnessed as heretofore described.

Thence I run

East on random line bet. secs. 27 and 34

40.00 Set temp. 1/4 sec. cor.

Chains.	
80.00	Intersect N. and S. line 9 lks. N. of cor. secs. 26, 27, 34 and 35
	Thence I run
	N. 89° 56' W. on a true line bet. secs. 27 and 34
	Gentle ascent; through shadscale undergrowth.
5.00	Head of Box Canyon, 1.00 ch. wide, 40 ft. deep, Course S.
7.00	Road to Goodridge Oil Wells bears N. and S.
9.60	Small wash, 30 lks. wide, 2 ft. deep, Course S. 40° E.
18.00	E. Ft. of low pass, bet Setting Hen and High round pointed butte, brs. S. 15° E. and N. 15° W
	Ascend
22.00	Top of low pass, 40 ft. above ft. brs. S. 15° E. and N. 15° W
	Descend
25.50	W. ft. of low pass, 30 ft. below top
	Thence gentle descent
38.57	Wash, 15 ft. below ft. of low pass, 20 lks. wide, 3 ft. deep Course S. 30° W.
40.00	Set an iron post 1in dia. 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 27 1/4 in N. and S. 34 in S. half and raise a mound of stone 2 ft. base 1 1/2 ft. high N. of Cor.
	Pits impracticable
	Cor. is 85 ft. below top of low pass
	Thence gentle ascent
64.00	E. bank of wash, 20 ft. below 1/4 sec. cor., bears S. 40° W.
	Descend
69.42	Road, bears N. 10° E.
77.60	Center of wash, 30 ft. below bank, 15 lks. wide, 8 ft. deep Course S. 40° W.
	Ascend
78.62	W. bank of wash, 35 ft. above bottom
80.00	Cor. of secs 27, 28, 33 and 34, 30 ft. below 1/4 Sec. Cor.
	Land slightly broken
	Soil sandy and rocky, 2nd and 4th rates
	Undergrowth of shadscale No timber

Chains.	
	N. 0° 02' W. bet secs 27 and 28
	Ascend; through shadscale undergrowth.
6.00	Top of S. bank of wash, 20 ft. above sec. cor;
	Descend
9.63	Wash, 40 ft. below top, 20 lks. wide, 4 ft. deep
	Course S. 40° W. Ascend
12.91	N. bank of wash, 35 ft. above bottom, bears S. 40° W, and N. 40° E,
	Thence gentle descent
18.82	S. bank of W. fork of Lime Creek, bears S. 50° W;
	Descend
22.78	Center of W. fork of Lime Creek 45 ft. below top 15 lks. wide, clear water, gentle current, 6 ins. deep.
	Course S. 50° W, gentle ascent along W. bank
40.00	Set iron post 1 in. diam. 3 ft. long, 26 ins in the ground for 1/4 sec. cor, marked on brass cap S. 28 1/4 in W. and S. 27 in E. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.
	Pits impracticable.
	Cor. is 20 ft. above bottom, of Creek. Thence along S. bank of W. fork of Lime Creek. Slight ascent
71.50	Cross W. fork of Lime Creek, Course S. 5° E. 20 lks. wide.
	Slight ascent
80.00	Set iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for Cor. of Secs. 21, 22, 27 & 28 marked on brass cap T. 40 S. S. 21 in N.W. R. 19 E. S. 22 in N.E. S. 28 in S.W. and S. 27 in S.E. quadrant; dig pits 18 x 18 x 12 ins. in each sec. 5 1/2 ft. dist.; and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
	Cor. stands in bottom of W. fork of Lime Creek
	Butte 600 ft. high 10 chs. N. & S. & 10 chs. E. & W. Brs. S. 78° 25' W., known as "Franklin Butte".
	Land broken and rolling.
	Soil sandy, 2nd rate
	Undergrowth of shadscale
	No timber

Chains.	
	S. 89° 56' E. on a random line bet. secs. 22 and 27
40.00	Set temp. 1/4 sec. cor.
80.00	Intersect N. and S. line 5 1/2 lks. N. of cor. secs. 22, 23, 26 and 27
	Thence I run
	N. 89° 54' W. on a true line bet secs. 22 and 27
	Over rolling land; through shadscale undergrowth.
	Slight descent.
13.25	Wash, 10 ft. below sec. cor. 1 ch wide, 6 ft. deep, Course S. 20° W.
	Thence slight ascent
40.00	Set an iron post 1 in dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 22 1/4 in N. and S. 27 in S. half, and raise a mound of stone 2 1/2 ft. base 2 ft. high N. of Cor.
	Pits impracticable
	Cor. is same elevation as sec. cor.
	Thence slight ascent
41.00	Top of ascent, 5 ft. above 1/4 cor.
	Slight descent
53.65	Road, bears N. and S.
66.75	Top of S.E. bank of W. fork of Lime Creek, 30 ft. below 1/4 cor., bears S. 80° W.
	Thence descend along S.E. bank of Creek
80.00	The cor of secs 21, 22, 27 and 28;
	50 ft. below top of Creek
	Land rolling
	Soil sandy, with outcroppings of stone, 2nd rate; 4th rate
	Undergrowth of shadscale
	No timber
	N. 0° 02' W. bet. secs. 21 and 22
	Gentle descent into W. fork of Lime Creek, through undergrowth.
4.20	W. fork of Lime Creek, 15 ft. below sec. cor, 20 lks wide, clear water, 2 ins. deep, rapid current, rocky bottom, Course W.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
	Thence abrupt ascent.
6.40	Top of N.bank of creek, 90 ft.above cor., bears NW. and SW.
	Thence over level land.
15.60	Top of S.bank of W.fork of Lime Creek.
	Abrupt descent over ledge, bears E. and W.
16.60	West fork of Lime Creek, 50 ft.below top, 15 lks.wide, 4 ins.deep, clear water, rapid current, gravelly bottom, course E.
	Thence gradual ascent.
28.00	West fork of LimeCCreek, 25 lks.wide, clear water, 4 ins.deep, sandy bottom, gentle current, course S.40° W.
	Thence along creek.
37.50	Leave west fork of Lime Creek, drains S.
	Abrupt ascent over ledge.
38.00	Top of East bank of West fork of Lime Creek, 30 ft. above creek, bears S.5° E.
40.00	Set an iron post 3 ft.long, 1 in.diam., 26 ins.in the ground, for 1/4 sec.cor. marked on brass cap 1/4 S 21 in W.half, and S 22 in E.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.
	Pits impracticable.
	Corner is 30 ft.above West fork of Lime Creek on East bank.
	Thence over gently rolling land.
42.75	Road bears E. and W.
44.98	Butte, 600ft.high, bears S.28° 29' W., known as Franklin Butte.
80.00	Set an iron post 3 ft.long, 2 ins.diam., 24 ins.in the ground, for cor.of secs.15,16,21, and 22, marked on brass cap,
	T 40 S S 16 in NW.
	R 19 E S 15 in NE.

Chains.

S 21 in SW., and

S 22 in SE. quadrants; dig pits 18 x 18 x 12 ins. in each sec. 5 1/2 ft. dist.; and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Land, mountainous and rolling.

Soil, sandy and rocky; 2d and 4th rate.

Undergrowth, shadscale.

No timber.

Mountainous land 40.00 chs.

April 12, 1909: At this cor. I set off 8° 40' N. on the decl. arc; and at 0 h. 01 m. p.m. l.m.t., observe the sun on the meridian; the resulting lat. is 37° 20' N.

S. 89° 54' E. on a random line bet. secs. 15 and 22,

40.00 Set temp. 1/4 sec. cor.

79.96 Intersect N. and S. line 11 lks. S. of the cor. of secs. 14, 15, 22, and 23.

Thence I run

N. 89° 59' W. on a true line bet. secs. 15 and 22,

Gradually descending over broken surface; through shadscale undergrowth.

3.00 Wash, 10 ft. below sec. cor., 60 lks. wide, 4 ft. deep, course S. 75° W. Ascend over broken surface.

16.50 Wash, 20 lks. wide, 2 ft. deep, drains SE.

39.98 Set an iron post 3 ft. long, 1 in. diam. 26 ins. in the ground, for 1/4 sec. cor., marked on brass cap 1/4 S 15 in N. half, and S 22 in S. half; and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of cor.

Pits impracticable.

Cor. is 30 ft. above wash.

Thence slight ascent.

52.00 E. foot of sandstone point projecting from Cedar Mesa. 15 ft. above 1/4 Sec. Cor. Bears S. 15°W.

Rapid ascent, rough ground.

55.00 Foot of E. side of perpendicular cliff, 200 ft. above 1/4 Sec. Cor.

63.88 Top of sandstone point 250 ft. above foot of cliff. Bears S. 15 E.

Thence rapid descent over W. side of point over broken sandstone.

74.00 Top of perpendicular cliff 200 ft. high.

Thence rapid descent over very rough ground.

77.00 Foot of rapid descent 200 ft. below top of cliff.

Thence gentle descent, bears S. 15°E.

79.96 Cor. of Secs. 15, 16, 21 & 22, 50 ft. below foot of point.

Land mountainous and broken.

Soil rocky, 4th rate.

Undergrowth of shadscale.

No timber.

Land mountainous, rough and broken and exceptionally difficult to survey. 79.96 chs.

N. 0°02' W. between Secs. 15 & 16

gradual ascent over large boulders and very rough surface along W. slope of Cedar Mesa.

37.00 Foot of steep ascent, bears E. & W.

40.00 Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 16 1/4 in W. and S15 on E.half, and raise a mound of stone

2 ft. base, 1.5 ft. high W. of Cor.
Pits impracticable.
Cor. is 50 ft. above Sec.Cor. on W. slope of Cedar Mesa
Thence rapid ascent.

45.00 Foot of high cliff 125 ft. above 1/4 Sec. Cor. bears E. & W.

46.16 To top of cliff, 500 ft. above foot, Bears E. & W.
Thence descend over almost inaccessible sandstone ledges, bearing E. and W.

52.00 Foot of perpendicular cliff, 30 ft. high bears E.& W.
Thence along E. top of cliff.

72.00 Abrupt descent over ledges bears N. 75° W.

80.00 Set an iron post 2 ins. diameter 3 ft. long 24 ins. in the ground for Cor. to Secs. 9, 10, 15 & 16. Marked on brass cap T. 40 S. S. 9 in N. W. R. 19 E., S. 10 in N. E., S.16 in S. W. and S. 15 In S. E. quadrants.
Raise a mound of stone 2.5 ft. base, 2 ft. high W. of Cor. Pits impracticable.
Cor. stands at foot of descent at foot of ledge and back of large boulder.
Cor. is 125 ft. below top of ascent.
A pine 9 ins. diameter bears N. 31°30' W. 1.24 chs. blazed and scribed T. 40 S. R. 19 E. S. 9 B. T.
A pine 7 ins. diameter bears N. 45°30' E. 1.17 chs. blazed and scribed T. 40 S. R. 19 E. S.10 B. T.
A pine 7 ins. diameter bears S. 45°10' E. 50 lks. blazed and scribed T. 40 S. R. 19 E. S. 15 B. T.
No other trees within limits.
Land mountainous and rough.
Soil rocky, 4th rate.
A few scattering cedars and pines, the last 30 chs.
Land mountainous and rough. 80.00 chs.

Chains	
	April 12" 1909. At 2h.00 m.p.m.l.m.t. I set off 37° 21' N. on the latitude arc. 8°42' N. on the Declination arc and determine a true meridian with the solar at the Cor. of Secs. 9, 10, 15 & 16 Mkd. and Witnessed as heretofore described.
	Thence I run
	S.89°59' E. on random line between Secs. 10 & 15
40.00	NOTE: Point for 1/4 Sec. Cor. inaccessible.
80.02	Intersect N. and S. line 16 lks. S. of Cor. of Secs. 10 11, 14 & 15. Thence I run
	S.89° 54' W. on a true line between Secs. 10 & 15
	Ascending through cedar and pine timber
6.00	Top of small spur, 50 ft. above Sec. Cor. projects 4 chs. S. Thence slight descent.
31.33	Point for 1/4 sec.cor. will fall on cliffs therefore at this point I set a limestone 5 x 8 x 30 ins over a cross chiseled in the solid sandstone in mound of stone for Witness Cor. to 1/4 Sec. Cor. and on the N. face of stone mkd.WC¼ S 10; on S.face S 15; and raise a mound of stone 2.5 ft. base, 2 ft. high N. of Cor. Pits impracticable.
33.38	Top of cliff, bears N. 50°W. Descend.
35.00	Wash 25 lks. wide 4 ft. deep drains S.E. Ascend.
40.01	Point for 1/4 sec.cor. corner not set.
50.00	Foot of cliff, bears N. 50°W. Ascend.
50.54	Top of cliff 400 ft. above foot.
	Thence slight ascent.
77.00	Top of ledge bears . S. 75°W. Thence ascend.
80.02	Cor. to Secs. 9, 10, 15 & 16.
	Land rugged and broken
	Soil rocky 4th rate.
	Timber cedar and pine.
	Mountainous land 80.02 chs.
	N.0° 02'W. between Secs. 9 & 10
	Descend over sandstone.
2.50	Top of ledge, 20 ft. high Bears S. E.

SUBDIVISION T 40 S., R. 19 E.

Chains.	
2.60	Foot of ledge.
	Then slight descent through pine and cedar timber.
25.25	S. foot of spur, projects 1 ch. E. from mesa.
30.31	Top of spur, bears E. & W. 150 ft. above foot.
30.95	Abrupt descent over N. slope of spur.
35.00	N. foot of spur, 125 ft. below top.
	Then descend over broken sandstone.
40.00	Top of sandstone ledge 15 ft. high 150 ft. below top of spur.
	Set sandstone Cor. 25 x 10 x 6 ins. 19 ins. in the ground fro 1/4 Sec.Cor. Marked 1/4 S. 9 on W. and 1/4 S. 10 in in E. face and raise a mound of stone 2 ft. base base 1.5 ft. high W. of Cor.
	Pits impracticable.
	A cedar 12 ins. diameter bears N. 87° 30' W. 20 lks. distant. marked 1/4 S. 9 B T
	A pine 6 ins: diameter bears S. 81° 10' E. 1.60 chs. distant. Marked 1/4 S 10 B T
	Thence ascend over broken sandstone ledges.
	Timber more scattering.
47.50	Top of spur 75 ft. above 1/4 Sec. Cor. projects E.3 chs.
	Descend over sandstone ledges.
53.00	N. foot 60 ft. below top.
	Ascend over rough surface.
64.00	Top of spur 175 ft. above foot. Bears E. 6 chs.
	Thence rapid descent.
77.00	Foot of spur 175 ft. below top Bears E. & W.
80.00	Set an iron post 2 ins. diameter 3 ft. long 24 ins in the ground for Cor. of Secs. 3, 4, 9 & 10 marked on brass cap T 40 S S 4 in N.W., R. 19 E S 3 in N.E; S 9. in S W; and S 10 in S E quadrants and raise a mound of stone 2 ft. base, 1.5 ft. high W. of Cor.
	Pits impracticable.

SUBDIVISION T. 40 S. R. 19 E.

Chains	
	A pine 12 ins. diameter bears N. 62° 28' E. 4.12 chs dist. Marked T. 40 S. R. 19 E. S 3 B T
	A pine 9 ins. diameter bears S. 12° 45' E 1.11 chs. dist. Marked T. 40 S R 19 E S 10 B T
	A pine 5 ins. diameter bears S 64° 26' E 2.43 chs. dist. Marked T 40 S. R 19 E S 10 B T
	No other trees suitable whithin limits.
	Land mountainous and broken.
	Soil stony, 4th rate.
	Pine and cedar timber.
	Land mountainous and broken. 80.00 chs.

	N.89°54' E. on random line between Secs. 3 & 10
40.00	Set temp. 1/4 Sec.Cor.
80.08	Intersect N.& S.line 14 lks.S. of Cor. of Secs. 2, 3, 10 & 11.
	Thence I run S. 89°48' W. on true line between Secs. 3 & 10, over ascending land through pine and cedar timber.
0.85	Top of sandstone ledge, 20 ft. above foot. Bears N.80°E.
	Thence gradual ascent.
20.00	Thence rapid ascent.
29.35	Top of Lime Creek, drains from N. thence S.E.
	Thence ascend.
40.04	Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec.Cor. marked on brass cap S 3 1/4 in N. and S. 10 in S. half and raise a mound of stone 2 ft. base 1.5 ft. high N. of Cor.
	Pits impracticable.
	A pine 6 ins. diameter bears N. 60°20' E. 78 lks dist. marked 1/4 S 3 B T
	A pine 8 ins. diameter bears S. 41°30'E. 1.26 chs. dist. marked 1/4 S. 10 B T

SUBDIVISION T. 40 S. R. 19 E.

Chains.	
	Cor. stands 300 ft. above Sec. Cor.
	Thence over nearly level land.
42.00	Top of mesa bears S. 15° E.
	Descend.
58.30	W. foot of high sandstone ledge bears N. & S.
	Thence descend.
65.00	Wash, 30 lks. wide, 6 ft. deep. Drains S.E. 50 ft. below W. foot of sandstone ledge.
	Ascend.
80.08	Cor. to Secs. 3, 4, 9, and 10
	Land mountainous.
	Soil stony: 4th rate.
	Timber, pine and cedar.
	Land mountainous. 80.08 chs.

	N.0°02' W. on random line between Secs. 3 & 4
40.00	Set temp. 1/4 Sec.Cor.
79.69	Intersect N. bdy. of Tp. 11 lks. E of point for Cor. of Secs. 3,4, 33 & 34 Witness Corner of which is 65 lks North and heretofore described.
	Thence I run
	S.0°07' E. on true line between Secs. 3 & 4
	Along creek bottom
0.10	Leave Lime Creek. Course N. Thence ascend through cedar and pine.
1.20	S. bank of Lime Creek. Bears E. and W. 50 ft. above Creek.
	Thence ascend.
14.62	Top of mesa, bears N. 50° W. 500 ft. above Lime Creek
	Thence slight ascent.
20.69	Top of ascent, bears N. W. & S. E.
39.69	Point for 1/4 sec.cor falls on cliff impossible to set therefore at

Chains	
39.14	Set Witness cor. for 1/4 sec. cor. bet. secs 3 & 4
	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for witness 1/4 sec. cor. marked on brass cap W.C. S. 4 1/4 in W. and S. 3 in E. half and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.
	A pine 8 ins. diam. brs. S. 63° E. 59 lks. dist. marked W.C. 1/4 S. 3 B.T.
	A pine 10 ins. diam. brs. N. 26° 12' E. 1.30 chs. dist. marked W.C. 1/4 S. 3 B.T.
	A pine 14 ins. diam. brs. N. 16° 30' W. 3.33 chs. marked W.C. 1/4 S. 4 B.T.
	This cor. is about 500 ft. above sec. cor. and stands 8 ft. east from edge of cliff
39.69	Point for 1/4 sec. cor. on cliff impossible to set
44.75	Top of cliff, brs. S. 45° E. and N. 10° W.
	Descend over cliffs
52.69	Foot of ledge, brs. S.E.
	Descend 250 ft. below top of cliff
62.20	Wash, 40 lks. wide, 10 ft. deep, Course S. 60° E. 75 ft. below ft. of ledge
	Ascend
75.70	Top of east end of ledge, 50 ft. above wash
	Descend
79.69	Cor. to secs. 3, 4, 9 & 10
	Land mountainous
	Soil stony, 4th rate
	Timber, Pine & cedar
	Land mountainous 79.69 chs.
	April 12, 1909.

April 13.

From the Standard Cor. of secs. 32 & 33 on S. bdy. of Tp. 40 S., R. 19 E., which has previously been described I run

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.
	N. 0° 03' W. bet. secs. 32 & 33
	Over ridges and washes; through shadscale undergrowth.
	Ascend
1.00	Top of spur, 15 ft. above Stan. Cor., bears E. and W.
	Descend
11.40	Wash, 20 ft. below top of spur, 20 lks. wide, 3 ft. deep, Course S. 30° W.
	Thence along bottom of wash
22.00	Foot of spur
	Ascend
24.75	Top of spur, 20 ft. above ft., bears W. 6 chs.,
	Descend
28.00	Foot of spur, 20 ft. below top
	Thence slight descent
33.35	Wash, 15 lks. wide, 3 ft. deep, course W.
	Ascend
40.00	Set an iron post 1 in dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 32 1/4 in W. and S. 33 in E. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cpr.
	Pits impracticable.
	Cor. is 50 ft. above Standard Sec. Cor.
	Thence slight ascent
44.00	Foot of spur Ascend
46.50	Top of spur, 20 ft. above ft., bears E.
	Thence along W. side of low ridge
58.00	Wash, drains SE.
80.00	Set an iron post 2 ins. dia. 3 ft. long, 24 ins. in the ground for cor to secs. 28, 29, 32 & 33 marked on brass cap T. 40 S. S. 29 in N.W. R. 19 E. S. 28 in N.E. S. 32 in S.W. and S. 33 in S.E. quadrants, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cpr.
	Pits impracticable.
	Cor. is 60 ft. above 1/4 sec. cor.
	Land mountainous
	Soil rocky, 4th rate.

Chains.	
	Undergrowth of shadscale
	No timber
	Land mountainous 80.00 chs.
	E. on a random line bet. Secs. 28 & 33
40.00	Set temp. 1/4 Sec. Cor.
79.94	Intersect N. & S. line 3 lks. N. of cor. Secs. 27, 28, 33 & 34
	Thence I run, through shadscale undergrowth.
	N. 89° 59' W. on a true line bet. Secs. 28 & 33
	Over ridges and washes . Slight descent
3.90	E. bank of wash. Descend
5.80	Wash, 20 ft. below E. bank 15 lks. wide, 4 ft. deep,
	Course S. 15° W.
	Ascend spur
12.50	Top of spur, 15 ft. above wash, bears N. & S.
	Gradual descent into W. fork of Lime Creek
20.60	W. fork of Lime Creek, 120 ft. below Sec. Cor. 25 lks.
	wide, clear water, 2 ins. deep, gentle current, gravel
	bottom, course S. Abrupt ascent
22.00	Top of W. bank of Creek 20 ft. above bottom.
	Slight ascent
32.15	E. bank of wash, Descend
36.80	Wash, 30 ft. below E. bank 50 lks. wide, 6 ft. deep,
	Course S. 10° W.
	Slight ascent
39.97	Set an iron post 1 in. diam. 3 ft. long, 26 ins. in the
	ground for 1/4 Sec. Cor. marked on brass cap S. 28 1/4
	in N. and S. 33 in S. half and raise a mound of stone
	2 1/2 ft. base, 2 ft. high N. of Cor. Pits impracticable
	Cor. is 60 ft. below Sec. Cor.
	Thence gradual ascent
70.00	N. end of spur 70 ft. above 1/4 Sec. Cor. Descend
79.94	Cor. of Secs. 28, 29, 32 & 33
	15 ft. below N. end of spur

Chains. SUBDIVISIONS T. 40 S., R. 19 E.

Land mountainous
Soil sandy and rocky, 3d & 4th rates
Undergrowth of shadscale
No timber
Land mountainous 79.94 chs.

N. 0° 03' W. bet. Secs. 28 & 29
Over ridges and washes; through undergrowth.

12.15 Begin gradual descent into wash

22.60 Wash, 40 ft. below Sec. Cor. 30 lks. wide 6 ft. deep
Course N.E. Ascend spur

25.00 W. end of spur 20 ft. above wash, bears N. 30° E. Descend

27.40 Wash, 30 ft. below top of spur, 40 lks. wide 3 ft. deep
Course E. Ascend

32.70 Top of spur 40 ft. above wash, bears E. and W. Descend

40.00 Set an iron post 1 in. diam. 3 ft. long, 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S 29 1/4 in W. & S 28 in E. half; raise mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Pits impracticable.
Cor. is 25 ft. above Sec. Cor. in small ravine drains S. 60° E.
Thence ascend over low rolling ridges. Land broken.

80.00 Set an iron post 2 ins. diam. 3 ft. long, 24 ins. in the ground for Cor. of Secs. 20, 21, 28 & 29 marked on brass cap T. 40 S. S 20 in N.W. R. 19 E. S. 21 in N.E. S. 29 in S.W. and S 28 in S.E. quadrants, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Pits impracticable.
Cor. is 100 ft. above 1/4 Sec. Cor.
Land broken
Soil sandy, 2nd rate
Undergrowth of shadscale
No timber
Land mountainous 80.00 chs.

April 13. At 9 h. 30 m. a.m.l.m.t. I lay off 37° 19' N. on the lat. arc.; 9°00' N. on decl. arc. and determine

Chains.	
	a true meridian with the solar at the cor. of secs. 20, 21, 28 and 29. Mkd. and witnessed as heretofore described.
	Thence I run
	S. 89° 59' E, on a random line bet. secs. 21 and 28
40.00	Set temp. 1/4 sec. cor.
79.92	Intersect N. and S. line 3 lks. N. of secs. 21, 22, 27 and 28
	Thence I run
	N. 89° 58' W. on a true line bet. secs. 21 and 28
	Slight descent: through shadscale undergrowth.
4.80	W. fork of Lime Creek, 20 lks. wide, clear water 6 ins. deep, gentle current, gravel bottom, course S. 15° E
	Abrupt ascent
5.30	Top of W. bank of W. fork of Lime Creek, 75 ft. above cor.
	Thence slight ascent
28.00	Foot of N. end Franklin Butte, 30 ft. above corner.
	Abrupt ascent
28.45	Top of N. end of butte, 100 ft. above ft.
	Abrupt descent
32.00	W. ft. of butte, 125 ft. below top
	Thence gradual descent
39.96	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. markedon brass cap S. 21 1/4 in N. and S. 28 in S. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	Cor. is 100 ft. below ft. of butte
	Thence slight descent
51.50	Wash, 10 ft. deep, 75 ft. wide, heads 1 ch N. Course S.
64.00	Foot of large butte,
	Thence along S. foot of butte, over broken surface
79.92	Cor. of secs. 20, 21, 28 and 29
	Cor. is 20 ft. above 1/4 sec. cor.
	Land mountainous and slightly broken.

Chains.	
	Soil sandy and rocky, 3rd and 4th rates
	Undergrowth of shadscale
	No timber
	Land mountainous 79.92 chs.
	N. 0° 03' W. bet secs. 20 and 21
	Slight ascent; through shadscale undergrowth.
11.00	S.E. foot of impassable butte, 500 ft. high, bears E.& W.
	To get past butte I offset from Sec. Cor.
	E. 30.00 chs; then run on offset line N.0° 03' W.
38.50	Offset W. 30.00 chs. to true line
	At N.E. foot of perpendicular cliffs on N.E. side of butte
	Thence rapid descent
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S.20 1/4 in W. and S. 21 in E. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.
	Pits impracticable
	Cor. stands on N.E. slope of high butte, 200 ft. above ft. and 50 ft. below ft. of perpendicular cliffs,
	Thence rapid descent, over very rough surface,
46.75	N.E. ft. of butte, 200 ft. below 1/4 cor., bears N.W. and S.E.
	Thence gradual descent
56.00	Top of S. bank of wash, bears S. 60° E. Descend.
59.00	Road bears E. and W.
64.00	Wash, 25 ft. below S. bank 30 lks. wide, 3 ft. deep
	Course S. 60° E.
	Ascend
71.00	Top of N. bank, 25 ft. above bottom
	Thence over level land
80.00	Set an iron post 2 ins. dia. 3 ft. long, 24 ins. in the ground for cor. of secs. 16, 17, 20 & 21 markedon brass cap T, 40 S. S.17 in N.W. R. 19 E.S.16 in N.E. S.20 in

SUBDIVISION T. 40 S., R. 19 E.

Chains.

SW. and S 21 in SE.quadrants; and raise a mound of stone, 2 1/2 ft.base, 2 ft.high W.of cor.

Pits impracticable.

Corner is 200 ft.below 1/4 sec.cor.

Land, mountainous.

Soil, rocky; 4th rate.

Undergrowth, shadscale.

No timber.

Mountainous land 71.00 **chs.**

April 13, 1909: At this cor.I set off 9° 02'N.on the decl.arc; and at 12 M., l.m.t.observe the sun on the meridian; the resulting lat.is 37° 20'N.

S.89° 58'E.on a random line bet.secs.16 and 21,

40.00 Set temp. 1/4 sec.cor.

79.92 Intersect N. and S.line 3 lks.N.of the cor.of secs.15, 16,21, and 22. Thence I run

N.89° 57'W.on a true line bet.secs.16 and 21,

Over rough and broken land; exceptionally difficult to survey; gradually descending; through shadscale undergrowth.

8.10 Wash, 20 ft.below sec.cor., 25 lks.wide, 4 ft.deep, course S.15° E.

Ascend gently.

28.00 East foot of sandstone point, projecting S.from cedar mesa, 25 ft.above wash.

Ascend abruptly.

36.40 Foot of cliffs, 200 ft.high.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
	The top of cliff being almost inaccessible, and impracticable to set 1/4 sec.cor.post; therefore at this point
	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for witness cor.to 1/4 sec.cor., marked on brass cap W C 1/4 S 16 in N.half, and S 21 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.
	Pits impracticable.
	Corner is 250 ft.above foot of point.
	Ascend abruptly over cliffs.
37.00	Top of E.side of cliff, 200 ft.above foot, bears N. and S.
	Ascend gently over very rough surface.
39.96	Point for 1/4 sec.cor. falls on sandstone projecting south from Cedar Mesa, 500 ft.above foot of point; corner not set.
	Descend gently over rough sandstone surface.
42.90	West top of cliff,200 ft.high, 25 ft.below 1/4 sec.cor.
	Descend abruptly over cliff and rough broken surface.
48.00	West foot of point,300 ft.below foot of cliff bears N. and S.Descend gradually to West fork of Lime Creek.
69.50	West fork of Lime Creek,40 ft.below foot of point, 10 lks.wide, 3 ins.deep, clear water;course SE.✓ Ascend.

Chains.	
74.50	Top of bank of Creek, 30 ft. above Cr., bears S. & N.
	Thence over level land
79.92	Cor. of secs. 16, 17, 20 and 21
	Land mountainous
	Soil rocky, 4th rate
	Undergrowth of shadscale
	No timber
	Land mountainous and exceptionally difficult to survey 79.92 chs.
	The sky is overcast and solar observations are impossible.
	N. 0° 03' W bet. secs. 16 and 17
	Over level land
4.00	Road, bears S. 10° E.and N. 10° W.
25.00	Top pf W. bank of W. fork of Lime Creek, bears N. 30° W. and S. 30° E.
	Descend along W. side of Creek
40.00	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S.17 1/4 in W. and S. 16 inE. half, and raise amound of stone 2 1/2 ft. base, 2 ft. high W. of cor.
	Pits impracticable
	Cor. stands on W. slope to W. fork of Lime Cr., 20 ft. below top of bank
	A butte, 600 ft. high bears N. 67° 57' W.
	A cedar, 10 ins. in diam. bears N. 34° 50' E, 1.66 chs. dist. marked 1/4 S. 16 B.T.
	No other trees available within limits
	Thence enter scattering Cedar
	Descend
42.00	W. fork of Lime Creek, 20 ft. below 1/4 sec. cor.
	15 lks. wide, clear water, 4 ins. deep, rapid current, gravel bottom, course S. 75° E. Perpetual surface water
	Ascend

47.50 Top of E. bank of W. fork Lime Cr. 30 ft. above bottom, bears S. 75° E.

Descend

50.90 Wash, 25 ft. below 1/4 sec. cor., 20 lks. wide, 5 ft. deep, Course S.E.

Thence over level land

53.25 Recross wash, course S.W.

Ascend

62.93 Top of ascent, 20 ft. above wash, slight descent

80.00 Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for cor. of secs. 8, 9, 16 & 17 marked on brass cap T. 40 S., S. 8 in N.W., R. 19 E., S. 9 in N.E. S. 17 in S.W. and S. 16 in S.E. quadrants, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.

Pits impracticable.

Cor. is 25 ft. below top of W. bank of wash

A cedar 16 ins. diam. bears N. 58° 10' E. 1.11 chs. dist., marked T. 40 S. R. 19 E. S. 9 B.T.

A cedar 16 ins. diam. bears S. 40° 55' E. 1.02 chs. dist. marked T. 40 S. R. 19 E. S. 16 B.T.

A cedar 8 ins. diam. bears S. 44° 33' W. 2.45 chs. dist. blazed and scribed T. 40 S. R. 19 E. S. 17 B.T.

No other trees available within limits

Land mountainous

Soil rocky & sandy, 4th rate

Timber, pine and cedar

Land mountainous 80.00 chs.

S. 89° 57' E. on a random line between secs. 9 and 16

40.00 Set temp. 1/4 sec. cor.

79.99 Intersect N. & S. line at cor of secs. 9, 10, 15 and 16

Thence

N. 89° 57' W. on true line bet. secs. 9 & 16

Ascend abruptly

9.50 Top of gulch, bears N. & S.

Chains.	
	Thence over sandstone and through scattering timber.
24.00	Head of gulch drains S. E.
39.991/2	Edge of cliff Cor. not set.
40.18	Set an iron post 1 inch diameter 3 ft. long 12 ins. in the ground surrounded by mound of stone 14 ins. high for Witness Cor. to 1/4 Sec. Cor. marked on brass cap. W. C. S. 9 1/4 in N. and S. 16 in S. half and raise a mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Impossible to set stone 26 ins. in the ground on account of natural obstacles.
	Whence
	A pine tree 7 ins in diameter bears S. 63° 40' E. 69. lks. dist. marked W. C. 1/4 S. 16 B T
	A pine 6 ins. diameter bears N. 0° 40' W. 65 lks. dist. marked W. C. 1/4 S. 9 B T
	Thence over level broken sandstone.
44.50	Edge of cedar mesa bears N. & S.
	Descend.
49.84	Edge of second mesa, 50 ft. below first.
	Descend over almost pependicular cliff.
54.00	Foot of mesa, 600 ft. below top.
58.25	More gradual descent.
68.00	Edge of wash 25 ft. deep.
71.10	Center of wash, drains S. W. and
	Ascend over small washes.
79.99	Cor. Secs. 8,9, 16 & 17.
	Land mountainous.
	Soil rocky 4th rate.
	Timber scub cedar and pine.
	Land mountainous. 79.99 chs.

N. 0° 03' W. between Secs. 8 &9.

Over small washes.

SUBDIVISION T. 40 S. R. 19 E.

Chains.	
16.60	Edge of rolling mesa.
40.00	Set an iron post 1 inch diameter 3 ft. long 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 8. 1/4 on W. and S. 9 on E. half and raise mound of stone 2.5 ft. base, 2 ft. high W. of Cor. Pits impracticable.
48.00	Foot of cedar Mesa bears N.30° W. & S.30° E.
	Ascend.
51.50	Abrupt ascent.
55.00	Foot of almost perpendicular cliff, 500 ft. high.
64.70	Top of Cedar Mesa.
	Thence over sandstone ledges very rough.
72.00	Foot of cliff, 100 ft. high bears E. & W.
	Set an iron post 2 ins. diameter 3 ft. long 12 ins. in the ground surrounded by mound of stone 12 in. high for Witness Cor. of Secs. 4,5,8, &9 marked on brass cap W.C. on N. half,
	T. 40 S S 5 in N.W.
	R 19 E S 4in N.E.
	S 9 in S.E.
	S 8 in S.W.
	quadrants and raise a mound of stone 2.5 ft. base. 2 ft. high W. of Cor. Pits impracticable.
80.00	Point for true Cor. Secs. 4,5,8 and 9 falls on impossible cliffs Cor. not set.
	Land mountainous, rough and broken.
	Soil rocky and sandy, 3rd & 4th rate.
	No timber or undergrowth
	Land mountainous . . 80.00 chs.

Being unable to start at the true Cor. point of Secs. 4,5, 8 & 9, I began at the Witness Cor. of Secs. 4, 5,8, & 9 8.00 chs. S.0°03'E. of Cor. point and run S. 89° 57' E. on random line on an offset 8.00 chs. S. of line between Secs. 4 & 9.

Subdivision of T. 40 S., R. 19 E.

Chains.	
	Top of perpendicular bluff,
27.82	At this point I offset N.0° 03'W.8.00 chs.to the true line. Set temp. witness point, and continue S.89°57'E.on random line between secs.4 and 9,
40.00	Set temp.¼ sec.cor.
80.10	Intersect N. and S.line at the cor.of secs.3.4,9, and 10.
	Thence I run
	N.89° 57'W.on a true line between secs.4 and 9,
	Ascend abruptly; through cedar and pine timber.
7.90	Top of abrupt ascent, bears N. and S., 300 ft.above sec. corner.
	Ascend gradually.
17.00	Leave pine and cedar timber, bears N. and S.
40.05	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 4 on N.half; and S 9 on S.half; from which
	A pine 16 ins.dia.bears N.86° 10'W. 6.37 chs.dist. marked ¼ S 4 B T
	No other bearing trees within limits; raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.
46.00	Enter pine and cedar timber, bears N. and S.
46.25	Top of ascent bears N. and S.
	Begin gradual descent.
52.28	Top of perpendicular bluff bearing N.30° W. and S.10° W. overlooking deep canon draining south.
	Set a sandstone 18 x 12 x 8 ins., 12 ins.in the ground, for witness point, marked W P on N.face; and raise a mound of stone 2 ft.base, 1½ ft.high N.of cor.
	At this point, to cross deep canon, I offset as follows:
	South 8.00 chs.; thence on offset line N.89° 57'W.
	Descend abruptly over cliffs.

Subdivision of T. 40 S., R. 19 E.

Chains.	
72.00	Bottom of deep canon, draining S., 300 ft.below top of bluff.
	Ascend abruptly over cliffs.
80.10	The witness cor.of secs.4,5,8, and 9.
	Land, mountainous.
	Soil, rocky and sandy; 4th rate.
	Timber, cedar and pine on 51.10 chs.
	Mountainous land and exceptionally difficult to survey 80.10 chs.

	From true point for cor.of secs.4,5,8, and 9, I run N.0° 03'W.on a random line between secs.4 and 5,
40.00	Set temp.$\frac{1}{4}$ sec.cor.
79.90	Intersect N.bdy.of the Tp. 2 lks.W.of the cor.of secs. 4,5,32, and 33, heretofore described.
	Thence I run S.0° 02'E.on true line between secs.4 and 5,
	Descend over rough, broken country; through cedar and pine timber.
	Exceptionally difficult to survey.
10.00	Bottom of wash drains S.75° E., 150 ft.below sec.cor. 150 ft.wide, 20 ft.deep.
14.75	Bottom of wash, 100 ft.wide, 20 ft.deep,drains E.
	Thence over nearly level land.
20.00	Begin descent, bears E. and W.

Chains.	
39.90	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. markedon brass cap S.5 1/4 in.W. and S. 4 in E. half andraise a mound of stone 2 ft. base, 1 1/2 ft high W. of cor.
	Pits impracticable
	A pine 14 ins. diam. brs. S. 27° 16' E.46 lks. dist. marked 1/4 S.4 B.T.
	A cedar 24 ins. diam. brs. N. 50° 36' W.183 lks. dist. marked 1/4 S.5 B.T.
61.08	Begin perpendicular and almost impossible descent into deep gulch bears N.W. and S. E.
70.00	Bottom of deep gulch, drains S.E. 400 ft. below beginning of abrupt and precipitious descent
	Ascend abruptly over cliffs
79.90	To point for cor. of secs. 4, 5, 8 and 9
87.90	The Witness Cor. of secs. 4, 5, 8 and 9
	Land mountainous
	Soil rocky and stony, 4th rate
	Timber cedars and pines on 79.90 chs.
	Land mountainous & exceptionally difficult to survey 79.90 chs. April 13, 1909.

April 14, 1909.

From the Stan. Sec. Cor. of secs. 31 and 32 on S. bdy. of Tp. 40 S., R. 19 E., which has previously been described I run

N. 0° 03' W. bet secs. 31 and 32

Ascend through shadscale undergrowth.

3.25	N. bank of wash, 15 ft. above Stand. Sec. Cor. bears E. and W.
	Thence over level land
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. markedon brass cap S. 31 1/4 in W. and S. 32 in E. half and raise amound of stone 2 1/2 ft. base, 2 ft. high W. of cor.

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.,
	Pits impracticable
	Thence slight ascent
52.25	S. foot of ridge, bears E. and W. ascend over broken surface
57.72	Ravine, 1 chn. wide, 15 ft. deep, course S.E.
63.00	Top of ridge, 75 ft. above ft. bears E. and W.
	descend
74.00	N. foot of ridge, 50 ft. below top
	Thence slight descent
77.30	Wash, 40 lks. wide, 6 ft. deep, course E.
	Slight ascent
80.00	Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for cor. of secs. 29, 30, 31 & 32 marked on brass cap T. 40 S. S. 30 in N.W., R. 19 E. S. 29 in N.E. S. 31 in S.W. and S. 32 in S.E. quadrants, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.
	Cor. is 20 ft. below 1/4 sec. cor.
	Land mountainous and level
	Soil, sandy and rocky, 2nd rate and 4th rate
	Undergrowth of shadscale
	No timber
	Land mountainous, 31.00 chs.
	April 14. At 8 H a.m. l.m.t. I set off 37° 18' on the lat. arc.; 9° 21' N. on the decl. arc. and determine a meridian at the cor. of secs. 29, 30, 31 and 32
	Thence I run E. on a random line bet. secs. 29 and 32
40.00	Set temp. 1/4 sec. cor.
79.98	Intersect N. and S. line 3 lks. S. of cor of secs 28, 29, 32 and 33;
	Thence I run
	S. 89° 59' W. on a true line bet. secs. 29 and 32
	Over rolling mesa; through shadscale undergrowth.
4.00	E. bank of wash, bears N. and S.

Chains.	
	Descend
6.20	Wash, 30 ft. below E. bank, 20 lks. wide, 3 ft. deep
	Course S.
	Ascend
11.25	Top of W. bank of wash, 30 ft. above wash, bears N. and S.
	Slight ascent, over broken mesa
17.00	Ravine, 5 lks. wide 25 ft. deep, heads 4 chns. N.
	Course S. 60° E.
	Thence ascend
29.30	Top of ascent, 40 ft. above Sec.Cor.bears N. and S.
	Descend
31.75	Ft. of ascent, 30 ft. below top;
	Thence over broken surface
39.99	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap S. 29 1/4 in N. and S. 32 in S. half and raise a mound of stone 2 ft. base, 1 1/2 ft. high N. of Cor.
	Pits impracticable.
	Cor. is 50 ft. below sec. cor; and stands on E. bank of wash
40.25	Top of E. bank of wash, bears S. 15° E. and N. 15° W.
	Descend
41.00	Wash, 20 ft. below E. bank, 40 lks. wide, 5 ft. deep
	Course S. 15° E.;
	Thence gradual ascent over rolling mesa
65.30	Top of ascent, 30 ft. above 1/4 sec. cor.
	Descend
69.00	Wash, 50 lks. wide, 10 ft. deep, Course S.
	Thence slight ascent
79.98	Cor. of secs. 29, 30, 31 and 32 Cor. is 15 ft. above 1/4 Sec. Cor.
	Land rolling
	Soil sandy and rocky, 3rd and 4th rates
	Undergrowth of shadscale
	No timber.

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.
	W. on a random line bet. secs. 30 and 31
40.00	Set temp. 1/4 sec. cor
79.94	Intersect W. bdy. of the Tp. 1 lk N. of cor. of secs. 25, 30, 31 and 36, which has been previously desceibed;
	Thence I run
	E. on a true line bet. secs. 30 and 31
	Descend spur, through shadscale undergrowth.
3.00	Foot of spur, 60 ft. below top, bears S. 60° E. and N. 60° W.
	Thence very slight descent
25.20	Wash, 70 ft. below sec. cor. 1 chn. wide, 3 ft. deep
	Course S.E.
	Thence very slight ascent
35.40	Wash, 30 lks. wide, 10 ft. deep, course S. 15° E.
37.30	Foot of small spur, 60 ft. below sec. cor, bears S.W.
	Ascend
39.00	Top of spur, 20 ft. above ft. bears S.W. 1 chn.
	Descend
39.94	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. markedon brass cap S. 30 1/4 in N. and S. 31 in S. half, and raise amound of stone 2 ft. base, 1 1/2 ft. high N. of cor.
	Pits impracticable.
	Cor. is 60 ft. below sec. cor. and stands at E. ft. of small spur.
43.50	Foot of ridge, bears S. 30° E. and N. 75° W.
	Ascend
49.90	Top of ridge, 100 ft. above 1/4 sec. cor., bears S. 30° E. and N. 30° W.
	Descend
55.00	E. foot of ridge, 100 ft. below top, bears N. 30° W.
	Thence gradual descent
79.94	Cor. of secs. 29, 30, 31 and 32
	Cor. is 130 ft. below top of ridge
	Land mountainous and level
	Soil sandy & rocky, 2nd and 4th rates

Chains.	
	Undergrowth of shadscale
	No timber
	Land mountainous 20.70 chs.
	N. 0° 03' W. bet. secs. 29 and 30
	Over level land; through shadscale undergrowth.
16.00	Wash, 20 ft. deep, 3.50 chns. wide, course S.E.
	Thence slight ascent
37.80	S. foot of spur, bears E. and W.
	Ascend
40.00	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 30 1/4 in W. and S. 29 in E. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.
	Pits impracticable
	Cor. stands on top of spur, 40 ft. above ft. and 75 ft. above sec. cor. Spur bears W. 10 chns. and E.
	Descend spur
49.50	N. foot of spur, 40 ft. below top, bears E. and W.
50.25	Wash, 50 lks. wide, 3 ft. deep, course E.
	Thence gradual ascent
51.90	Road, bears E. and W.
72.70	S. foot of large butte, 100 ft. above 1/4 sec. cor, bears E. & W.
	Rapid ascent
78.00	N. foot of perpendicular cliffs, 300 ft. above 1/4 sec. cor. It being impossible to get on top of cliffs I set an iron post 2 ins. dia. 3 ft. long, 24 ins. in the ground for Witness Cor. to secs. 19, 20, 29 & 30, marked on brass cap W.C. in N. half. T. 40 S. S. 19 in N.W. R. 19 E., S. 20 in N.E., S. 30 in S.W. and S. 29 in S.E. quadrants, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.
	Land level and mountainous

Chains.	
	Soil sandy and rocky, 2nd and 4th rates
	Undergrowth of shadscale
	No timber
	Land mountainous 22.00 chs.
	N. 89° 59' E. on random line bet secs. 20 & 29
	From W. C. to secs. 19, 20, 29 and 30, I run
	N. 89° 59' E 20.00 chns. then offset
	N. 0° 03' W. 2. chs. to random line
	Thence N. 89° 59' E. on random line
40.00	Set temp. 1/4 sec. cor.
80.00	Intersect N. and S. line 3 lks. N. of cor. of secs. 20, 21, 28 and 29
	Thence I run
	West on a true line bet secs. 20 and 29;
	Slight descent; through shadscale undergrowth.
26.00	E. bank of wash, bears S.E. and N.W.
	Descend
27.95	Wash, 20 ft. below top, 20 lks. wide, 4 ft. deep,
	Course S.E.
	Ascend
28.85	W. bank of wash, 20 ft. above wash, bears S.E. and N.W.
	Thence slight ascent
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 20 1/4 in N. and S. 29 in S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of cor.
	Pits impracticable.
	Cor. is 25 ft. above sec. cor.
	Thence slight ascent, over broken surface
60.00	Foot of butte, 30 ft. above 1/4 sec. cor. bears N. and S.
	Rapid ascent
	Thence offset S. 0° 03' E. 2 chains;
	Thence run on offset line West
80.00	To witness cor. to cor. secs. 19, 20, 29, and 30.

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.
	Cor. is 300 ft. above 1/4 sec.cor.
	Land slightly broken and mountainous
	Soil sandy and rocky, 3rd and 4th rates
	Undergrowth of shadscale
	No timber
	Mountainous land 20.00 chs.
	Apr.14: At noon hour sky overcast;solar obs.impossible.
	West on random line between secs. 19 & 30
	From W.C. to secs. 19, 20, 29 and 30 I run
	W.13.08 Chs. then offset
	N. 0° 03' W, 2 chns. to random line
	Thence W. on a random line
40.00	Set temp. 1/4 sec. cor.
79.88	Intersect W. bdy. of Tp. 5 lks. N. of cor. of secs. 19, 24, 25 and 30, which has been previously described
	Thence I run
	N. 89° 58' E. on a true line bet. secs. 19 and 30
	Over rolling land; through shadscale.
1.75	Wash, 1 chn. wide, 5 ft. deep, course S.E.
21.65	Wash, 25 lks. wide, 4 ft. deep, course S.
23.50	W. foot of ridge, 20 ft. above sec.cor. bears S. 30° E.
	Ascend
37.75	Top of ridge, 90 ft. aboye ft. bears N. 15° W. and S. 15° E,
	Descend
39.88	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 19 1/4 in N. and S. 30 in S. half, and raise amound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	Cor. stands on E. slope of ridge, 60 ft. below top
42.00	Thence descend Foot of ridge, 25 ft. below 1/4 sec.cor, bears N. 30° W. and S. 30° E.
	Thence gradual descent
46.60	Wash, 30 ft. below 1/4 sec.cor., 30 lks. wide, 3 ft.

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.
	deep, course S. 20° E.
	Thence gradual ascent over broken surface
66.80	Foot of butte, 25 ft. above 1/4 sec. cor, bears N.W. and S.E.
	Rapid ascent
	Thence I offset S. 0°03' E. 2.00 chns.
	Then run on offset line N. 89° 58' E.
79.88	W.C. to secs. 19, 20, 29 and 30
	Cor. is 275 ft. above 1/4 sec. cor,
	Land rolling and mountainous
	Soil sandy and rocky, 3rd and 4th rates
	Undergrowth of shadscale
	No timber
	Mountainous land 31.58 chs.
	N. 0° 03' W. between secs. 19 & 20, over mountainous land,
	From W.C. to secs. 19, 20, 29 and 30 I offset
	E. 16.00 chns; thence run on offset line
	N. 0° 03' W. 9 chns. then offset W. 16. chns to true
	line bet secs 19 and 20 7.00 chs. N. of true point of
7.00	Cor. of Secs. 19, 20, 29 & 30
7.00	Ft. of perpendicular cliff on N.E. side of butte
	Thence rapid descent; through undergrowth.
12.25	Foot of butte, 300 ft. below ft. of cliff, bears E. & W.
	Thence descend over broken surface
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 19 1/4 in W. and S. 20 in E. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor.
	Pits impracticable.
	Cor. is 50 ft. below foot of butte
	A cedar 15 ins. diam. bears N. 39° 25' W. 1.12 chns. dist. marked 1/4 S. 19 B.T.
	A cedar, 20 ins. diam. bears N. 89° E. 1.53 chns. dist. marked S. 1/4 20 B.T.
	Thence slight descent

Chains.	
42.86	Wash, 15 ft. below 1/4 sec. cor., 30 lks. wide, 8 ft. deep, course E.
	There are a few cedars along wash
	Thence slight ascent
52.00	Foot of low ridge, bet. 2 buttes, 30 ft. above 1/4 sec. cor. bears N. 80° W. and S. 80° E.
	Rapid ascent
66.50	Top of ridge, 300 ft. above ft.
	Butte, 300 ft. high bears S. 65° E, 3.00 chns.
	Butte, 250 ft. high, bears N. 80° W. 12 chns.
	Thence rapid descent
74.00	N. foot of ridge, 250 ft. below top
	Thence gradual descent through scattering cedars
80.00	Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for Cor. of Secs. 17, 18, 19 & 20 markedon brass cap T. 40 S. S. 18 in N.W. R. 19 E, S. 17 in N.E. S. 19 in S.W. and 20 in S.E. quadrants and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.
	Cor. is 275 ft. below top of ridge
	W. end of flat top butte 500 ft. high bears S. 54° 43' W.
	A cedar 6 ins. diam. bears N. 31° 25' W, 38 lks. blazed and scribed T. 40 S, R. 19 E. S. 18 B.T.
	No other trees within limits
	Land mountainous
	Soil rocky, 4th rate
	A few scattering cedars
	Undergrowth of shadscale
	Landmountainous 80.00 chs.

April 14. At 3 h. p.m. l.m.t. I set off 37° 20' on the lat. arc. 9° 27' N. on the decl. arc. and determined a true meridian with the solar at the cor. of secs. 17, 18, 19 and 20. [illegible] heretofore described.

Thence I run

Chains.	SUBDIVISIONS T. 40 S/, R. 19 E.
	E. on a random line bet. secs. 17 and 20
40.00	Set temp. 1/4 sec. cor.
80.00	Intersect N. and S. line at cor. of secs 16, 17, 20 and 21
	Thence I run; through shadscale undergrowth.
	W. on a true line bet. secs. 17 and 20 over level land
22.40	Wash, 20 ft. deep, 2.50 chns. wide, course S.E.
40.00	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S.17 1/4 in N. and S. 20 in S. half, and raise a mound of stone 2 ft. base, 1 1/2 ft. high N. of cor.
	Pits impracticable.
	Cor. stands on E. bank of wash
	Descend
48.20	Wash, 30 ft. below 1/4 sec. cor. 25 lks. wide 5 ft. deep
	Course S. 15° E.
	Thence slight ascent
52.00	Top of ascent, 15 ft. above wash, Descend
57.00	Wash, 35 ft. below 1/4 sec. cor. 30 lks. wide, 10 ft. deep, CourseS.E.
	Thence gradual descent
80.00	Cor. of secs. 17, 18, 19 and 20, 20 ft. above 1/4 sec. cor
	Land broken,
	Soil sandy and rocky, 2nd and 4th rates
	Undergrowth of shadscale
	No timber
	S. 89° 58' W. on a random line bet. secs. 18 & 19
40.00	Set temp. 1/4 sec. cor.
79.74	Intersect W. bdy of Tp. 14 lks. N. of cor. of secs. 13, 18, 19 and 24, which has been previously described
	Thence I run; through shadscale undergrowth.
	N. 89° 52' E. on a true line bet. secs. 18 & 19
	Gradual descent through scattering cedars
24.75	Wash, 110 ft. below sec. cor.

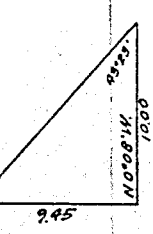
Chains.	
	75 lks. wide, 10 ft. deep, course S.E.
	Gradual ascent
30.00	Foot of ridge, 25 ft. above wash, bears N.W. and S.E.
	Leave cedars,
	Ascend
39.74	Set an iron post 1 in. dia. 3 ft. long; 26 ins. in the ground for 1/4 sec. cor. markedon brass cap S, 18 1/4 in N. and S, 19 in S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high, N. of Cor.
	Pits impracticable.
	Cor. stands on S.W. slope of ridge 60 ft. above ft.
	Ascend
42.00	Top of ridge, 30 ft. above 1/4 sec. cor., bears S. 47° E. and N. 47° W.
	Descend
49.50	Foot of ridge, 75 ft. below top, bears E. and N.W.
	Thence along N. foot of butte; 300 ft. high
62.00	Begin graduâl descent
79.74	Cor. of secs. 17, 18, 19 and 20,
	Cor. is 130 ft. below top of ridge
	Land mountainous and broken
	Soil sandy & rocky, 2nd and 4th rates
	Scattering cedars first 30 chns.
	Undergrowth of shadscale
	Land mountainous & broken 79.74 chs.
	April 14th, 1909.
	April 15th, Beginning at the cor, of sec. 17,18, 19 & 20
	I run N.0° 03' W bet. secs. 17 and 18
	Gradual descent; through shadscale undergrowth.
8.40	Wash, 25 ft. below sec. cor., 30 lks wide, 15 ft. deep
	Course E,
	There are a few scattering cedars along wash:
	Ascend spur.
13.00	Top of spur, 60 ft. above wash, bears E. and W.

Chains. SUBDIVISIONS T. 42O S., R. 19 E.

Chains.	
	Descend
20.30	Wash, 20 ft. below top of spur, 30 lks. wide, 10 ft. deep, course S.E.
	Ascend
24.00	Foot of S.E. end of high point, projecting S.E. from cedar mesa, 25 ft. above wash
	Gradual ascent
34.00	Begin very rapid ascent, over very rough surface
37.44	Top of S.E. end of point, 400 ft. above sec. cor. at foot cliff 300 ft. high, bears N. 35° W., about 10 chs. dist.
	Thence rapid descent over very rough surface
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 18 1/4 in W. and S. 17 in E. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.
	Pits impracticable.
	Cor. is 110 ft. below top of point
	A cedar, 14 ins. diam. bears N. 5° 15' E, 3.44 chns. dist. marked 1/4 S. 17 B.T.
	No other trees within limits
	Thence rapid descent
48.00	Foot of point 225 ft. below 1/4 sec. cor.
	Thence gradual descent through scattering cedars
60.00	Wash, 260 ft. below 1/4 sec. cor, 40 lks. wide, 6 ft. deep Course S. 30° E.
	Thence ascend small ridge over broken surface
76.65	Top of ridge, 80 ft. above wash, bears N. 60° W. and S 60° E.
	Descend
80.00	Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for cor. of secs. 7, 8, 17 & 18 marked on brass cap T. 40 S. S. 7 in N.W. R. 19 E. S. 8 in N.E. and S. 18 in S.W. and S. 17 in S.E. quadrants, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable.

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.
	Cor. is 40 ft. below top of ridge and stands at S.E. foot of butte 300 ft. high
	A pine tree 7 ins. in diam. bears N. 77° 36' W, 78 lks. dist. marked T. 40 S. R. 19 E, S. 7 B.T.
	A cedar 14 ins. diam. bears N. 10° 10' E, 59 lks. dist. blazed and scribed T. 40 S. R. 19 E. S. 8 B.T.
	A cedar 10 ins. diam. bears S. 9° 45' E, 1.33 chns. dist blazed and scribed T. 40 S. R. 19 E. S. 17 B.T.
	A cedar 14 ins. diam. bears S. 26° 20' W, 86 lks. dist. marked T. 40 S. R. 19 E. S. 18 B.T.
	Land mountainous
	Soil sandy and rocky, 2nd and 4th rates
	Scattering cedars last 40.00 chs.
	Undergrowth of shadscale
	Land mountainous 80.00 chs.
	April 15th at 9 h a.m. l.m.t. I set off 37° 21' on the lat. arc. 9° 43' N. on the decl. arc. and determine a meridian at the cor. of secs. 7, 8, 17 and 18
	Thence I run E. on a random line bet. secs. 8 and 17
40.00	Set temp. 1/4 sec. cor.
80.02	Intersect N. and S. line 10 lks. S. of cor. of secs. 8, 9, 16 and 17
	Thence I run
	S. 89° 56' W. on a true line bet. secs. 8 and 17
	Ascend out of wash; through shadscale undergrowth.
2.75	Top of W. bank of wash, 30 ft. above sec. cor., bears N. and S.
	Thence over level land
23.00	Top of bank of W. fork of Lime Creek, bears N. 80° W. and S. 80° E.
	Descend along N. slope
38.85	W. fork of Lime Creek, 50 ft. below top, 20 lks. wide, clear water, 3 ins. deep, gentle current, gravel bottom

Chains.	SUBDIVISIONS T. 40 S., R. 19 E.
	Course S. 15° E. Scattering cedars and pines along Creek.
40.01	Set an iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 8 1/4 in N. and S. 17 in S. half and raise a mound of stone 2 ft. base, 1 1/2 ft. high N. of cor.
	Pits impracticable
	A cedar 18 ins. diam. bears N. 36° 25' W. 1.49 chns. dist. blazed and scribed 1/4 S, 8 B.T.
	A cedar 12 ins. diam. bears S. 25° 10' E. 1.78 chs. dist. blazed and scribed 1/4 S, 17 B.T.
	Cor. stands in the bottom of W. fork of Lime Creek Gulch on W. shore of creek, 10 ft. above Creek
	Thence ascend through scattering cedars and pines
52.00	Top of S. bank of W. fork of Lime Creek, 50 ft. above creek, bears S. 60° E. and N.W.
	Thence along bank W. fork of Lime Creek
	Gradual ascent
80.02	Cor. of secs. 7, 8, 17 and 18
	Cor. is 150 ft. above 1/4 sec. cor.
	Land level and mountainous
	Soil sandy, 2nd rate
	Scattering cedars and pines, last 40 chns.
	Undergrowth of shadscale
	Land mountainous 40.00 chs.
	S. 89° 52' W. on a random line bet secs. 7 & 18
28.00	To foot of Cedar Mesa, which is impossible to chain, over
	To determine the dist. to top, I set a flag on line on top, then measured a base N. 0° 08' W. 10.00 chns. to a point from which the flag bears S. 43° 15' W, the N. end of the base bears N. 43° 15' E, therefore, the dist is
	Tan. 43° 23' X base or .945 X 10.00 = 9.45 chns.
	which makes 28.00 plus 9.45, equals



Chains.	
37.45	Top of cliff
40.00	It being impracticable to set cpr. here, it being on sandstone I mark a cross (X) for temp. ½ sec. cor.
79.66	I intersect W. bdy. of Tp. 14 lks. S. of cor. of secs. 7, 12, 13 and 18; heretofore described.
	Thence I run, through shadscale undergrowth.
	N. 89° 58' E. on a true line bet. secs. 7 and 18
	Ascend over sandstone surface, rough and broken
12.50	Top of ascent, 50 ft. above sec. cor., bears N.W. and S.E.;
	Thence slight descent, along N. foot of ridge, through cedars and pines
28.00	Begin descent over series of small sandstone ledges
39.66	Point for 1/4 sec. corner falls on ledge. Impracticable to set cor.
	Will set Witness Cor. to the east
42.20	Top of perpendicular cliffs, 100 ft. below sec. cor, bears N. 60° W. and S. 60° E,
	Abrupt descent,
	Leave timber
43.60	Ft. of cliff 125 ft. below top of cliff
	Thence overy rapid descent over series of ledges and very rough and broken surface.
49.30	Set iron post 1 in. dia. 3 ft. long, 26 ins. in the ground for Witness Corner to 1/4 sec. cor. marked on brass cap W.C. S. 7 1/4 in N. and S. 18 in S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N: of Cor.
	Pits impracticable.
	W.C. is 200 ft. below ft. of cliff at ft. of rapid descent Thence descend
55.00	Wash 150 ft. below W.C. 30 lks. wide 10 ft. deep, course S.E. Thence ascend S.E. end of butte
70.70	Top of S.E. end of butte at ft. of cliff 200 ft. high, 375 ft. above wash.
	Rapid descent

SUBDIVISIONS T. 40 S., R. 19 E.

Chains.	
76.10	Foot of rapid descent, 200 ft. below top
	Thence gradual descent
79.66	Cor. of secs. 7, 8, 17 and 18
	250 ft. below top of butte
	Land mountainous
	Soil rocky, 4th rate
	First 40 chs. Pine and cedar
	Undergrowth of shadscale
	Land mountainous 79.66 chs.
	N. 0° 03' W. bet secs. 7 and 8
	Ascend over mountainous land through scattering cedar timber, exceptionally difficult to survey
10.00	Top of spur, projects E. about 3 chs. dist. 15 ft. above sec. cor.
	Descend
13.35	Bottom of dry wash, 50 lks. wide, 6 ft. deep, drains S. 75° E. 75 ft. below top of spur
	Ascend
18.00	Begin more gradual ascent over broken surface, bears E. and W.
27.65	Top of E. end of spur, projects W. 210 ft. above bottom of dry wash
	Descend
36.00	Foot of spur, bears N. 60° W. and S. 60° E. 100 ft. below top of spur
	Descend gradually
40.00	Set an iron post 1 in. dia. 3 ft. long 26 ins. in the ground for 1/4 sec. cor. marked on brass cap S. 7 1/4 in W. and S. 8 in E. half, and raise a mound of stone 2 ft. base, 1 1/2 ft. high W. of cor.
	Pits impracticable
	A cedar 14 ins. diam. brs. N. 54° 55' W. 58 lks. dist. marked 1/4 S.7 B.T.
	A cedar 12 ins. dia. brs. N. 78° 05' E 2.07chs. dist.

SUBDIVISION T. 40 S., R. 19 E.

Chains	
	marked $\frac{1}{4}$ S 8 B T
46.75	Begin more abrupt descent into wash, bears N.45° W. and S.45° E.
47.50	Bottom of wash, 50 lks.wide, 10 ft.deep, drains S.45° E. 50 ft.below beginning of abrupt descent.
	Ascend abruptly.
48.00	Top of abrupt ascent, bears N.45° W. and S.45° E. 50 ft. above bottom of dry wash.
	Ascend gradually.
60.00	Begin abrupt and precipitous ascent over cliffs and boulders. Ascend bears N.80° W. and S.80° E.
	Leave scattering timber.
78.02	Top of spur and precipitous ascent, bears E. and W.,800 ft.above beginning of steep and precipitous ascent.
	Descend over sandstone cliffs and boulders.
80.00	Point for cor.of secs.5,6,7, and 8 falls on,solid sandstone; mark a cross (X) at exact point for sec.cor. marked on brass cap, T 40 S S 6 NW.; R 19 E S 5 NE; S 7 SW.; and S 8 SE.of cross, with 5 grooves S. and E.of cross; with mound of stone 2½ ft.base, 2 ft.high W.of cor.point.
	Impracticable to set iron post.
	Land mountainous.
	Soil, rocky and stony; 4th rate.
	Timber, scattering cedars.
	Mountainous land; exceptionally difficult to survey 80.00 chs.

April 15, 1909: At this cor.I set off 9° 45'N.on the decl.arc; and at 12 h. M.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 22' N.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
	N.89° 56'E.on random line bet.secs.5 and 8
40.00	Set temp. ¼ sec.cor.
68.00	Precipitous cliffs, to pass which I offset as follows: South 8.00 chs.; thence on offset line N.89° 56'E. 11.86 chs.to
79.86	Intersect N. and S.line at the witness cor.to cor.of secs.4,5,8, and 9. Thence I run on offset line S.89° 56'W.on true line bet.secs.5 and 8 Through cedar timber, over rough broken land; exceptionally difficult to survey; ascending.
11.86	At this point I offset north 8.00 chs.to true line. Set a sandstone 16 x 12 x 4 ins., 11 ins.in the ground, for witness cor.to cor.of secs.4,5,8, and 9; marked 5 notches on S. and 4 notches on E.edges; W C on NE.face; from which A pine 10 ins.dia.bears S.25° W. 1.23 chs.dist.mkd. W.C.T 40 S R 19 E S 8 B T A cedar 7 ins.dia.bears N.66° 45'W. 1.06 chs.dist. mkd.WC.T 40 S R 19 E S 5 B T Raise a mound of stone 2 ft.base, 1½ ft.high W.of cor. Edge of precipitous ascent bears NW. and SE., 200 ft. above cor. Continue ascent.
17.50	Top of ascent, bears N. and S.250 ft.above cor. Descend gradually.
19.00	Begin abrupt and precipitous descent, bears N. and S. over sandstone ledges.
25.01	Abrupt and almost impassable descent over cliff. bears N. and S.
35.86	Foot of abrupt descent, bears E. and W., 250 ft.below top.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
38.93	Set a sandstone 24 x 8 x 5 ins., 12 ins.in the ground, for ¼ sec.cor., marked S 5 ¼ on N.face; and raise a mound of stone 2 ft.base, 1½ ft.high N.of cor. Pits impracticable.
	Impracticable to set iron post at this point.
	A cedar 18 ins.dia.bears S.17° 50'W. 1.74 chs.dist. marked ¼ S 8 B T
	A cedar 6 ins.dia.bears N.88° 25'W. 3.54 chs.dist. marked ¼ S 5 B T
44.00	Begin more gradual descent, bears N. and S., 100 ft. below foot of abrupt descent.
54.00	Bottom of wash, 125 lks.wide, 5 ft.deep, drains S.30° E. 50 ft.below beginning of gradual descent.
	Ascend.
57.10	Begin more abrupt ascent, bears NW. and SE., 30 ft. above bottom of wash.
	Leave cedar, bearing N. and S.
73.86	Begin abrupt and almost impassable ascent over cliff bearing NW. and SE.
79.86	The cor.of secs.5,6,7, and 8.
	Land, mountainous, rough and broken.
	Soil, rocky and stone; 4th rate.
	Timber, cedars on 57.10 chs.
	Mountainous land, rough and broken and exceptionally difficult to survey 79.86 chs.

S.89° 58'W.on a random line bet.secs.6 and 7,

40.00	Set temp.¼ sec.cor.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
79.82	Intersect west boundary of township 3 lks.S.of the corner of secs.1,6,7, and 12, heretofore described.
	Thence I run
	N.89° 59'E.on a true line between secs.6 and 7,
	Descend abruptly over cliffs; through cedar timber.
22.80	Begin more gradual descent, bears NW. and SE., 400 ft. below section corner.
33.80	Bottom of west fork of Lime Creek, 14 lks.wide, 2 ins. deep, drains SE., 100 ft.below beginning of gradual descent.
	Ascend.
35.00	Trail bears NW. and SE.
35.80	Top of small spur, projecting SE.; 15 ft.above bottom of ravine.
	Descend.
39.82	Set an iron post 3 ft.long, 1 in.dia., 20 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 6 in N.half, S 7 in S.half and raise a mound of stone 3 ft. base, 1½ ft.high N.of cor.
	Pits impracticable.
	A cedar 16 ins.dia.bears N.57° E. 1.41 chs.dist.
	marked ¼ S 6 B T
	A cedar 18 ins.dia.bears S.2° 40'W. 60 lks.dist.
	marked ¼ S 7 B T
48.00	Begin more abrupt descent, bears N. and S., 75 ft.below beginning of descent.
51.20	Bottom of wash, 125 lks.wide, 5 ft.deep, drains SE., 30 ft.below beginning of abrupt descent.
	Ascend.
52.80	Begin more gradual ascent, bearing N. and S.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
57.30	Begin abrupt ascent, bears N. and S.
68.99	Foot of almost perpendicular cliff, bears N. and S.
	Begin precipitous and almost impassable ascent.
71.00	Top of precipitous and almost impassable ascent, bears N. and S.
	Ascend gradually 400 ft. above bottom of wash.
	Leave cedar timber, bears N. and S.
79.82	The cor. of secs. 5,6,7, and 8.
	Land, mountainous and broken and rough.
	Soil. rocky and stony; 4th rate.
	Timber, cedars.
	Mountainous land 79.82 chs.
	Exceptionally difficult to survey 79.82 chs.

N.0° 03'W. on random line bet. secs. 5 and 6,

40.00 Set temp. $\frac{1}{4}$ sec. cor.

79.71 Intersect N. bdy. of Tp. 9 lks. W. of the cor. of secs. 5,6, 31 and 32, heretofore described.

Thence I run

S.0° 01'W. on true line bet. secs. 5 and 6,

Descending gradually over rough broken country; through cedar and pine timber; exceptionally difficult to survey.

3.25 Begin precipitous and almost impassable descent, over cliffs, along NE. side of canon bears NW. & SE.

SUBDIVISION T. 40 S., R. 19 E.

Chains.	
3.70	Begin more gradual descent bears NW. and SE., 300 ft. below beginning of abrupt descent.
38.40	Foot of precipitous and almost impassable descent, bears NW. and SE., 150 ft.below beginning of gradual descent.
	Descend gradually.
39.71	Set an iron post 3 ft.long,1 in.dia., 26 ins.in the ground, for $\frac{1}{4}$ sec.cor., marked on brass cap $\frac{1}{4}$ S 6 in W.half; and S 5 in E.half; and raise a mound of stone 2 ft.base, $1\frac{1}{2}$ ft.high W.of cor. Pits impracticable.
	A pine tree 8 ins.dia.bears S.39° 25'E. 20 lks. dist., marked $\frac{1}{4}$ S 5 B T
	A pine 7 ins.dia.bears N.4° 20'W. 1.73 chs.dist. mkd.$\frac{1}{4}$ S 6 B T
52.00	Begin more abrupt descent bears NW. and SE.
54.70	Bottom of gulch drains SE., 50 ft.below beginning of abrupt descent.
	Ascend.
64.50	Begin more gradual ascent, bears NW. and SE.
66.20	Begin more abrupt and precipitous ascent,;bears NW. and SE.;over cliff.
74.89	Foot of bluff, bears NW. and SE., 250 ft.above beginning of abrupt ascent.
	Begin precipitous and almost impassable ascent.
	Leave cedar and pine timber, bears NW. and SE.
79.71	The cor.of secs.5,6,7, and 8.
	Land, mountainous, rough and broken.
	Soil, rocky and stony; 4th rate.
	Timber, cedar and pines on 74.89 chs.
	Mountainous land 79.71 chs.

Chains. SUBDIVISIONS T. 40 S., R. 19 E.,

Mountainous land, rough and broken and exceptionally difficult to survey 79.71 chs.

April 15th, 1909.

GENERAL DESCRIPTION.

The general configuration of the entire township is that of a high mesa or plateau deeply cut by erroeion culminating into numerous canons bordered by a shelf rock, capping of a harder crystaline nature than the underlying strata. The formation is all a fossiliferous sedimentary of the Jura-Trias or red bed period. The upper mesa lands are covered here and there with a scrubby kind of cedar, pinon and pine timber. Some patches of grazing land are to be found in the ravines and on some of the slopes. In parts of the township and along the bottoms of some gulches water is to be found.

Along the faces of the canons in several places oil sand stratas occur interlying the fossiliferous lime and red sandstone formations which has been hermetically sealed with the oil residue solidification which appears on the surface of the oil sand stratas.

At the 1/4 Sec. Cor. bet. Secs. 13 & 14 a Goodridge oil well said to be 615 ft. deep has been drilled. Oil was discovered in the Goodridge sand at about 274 ft. from the surface.

No casing was placed in this well except the short top piece. The well was started 8 ins. at surface, which would not admit of 8 in. casing being used and the well was apparently abandoned.

The water from the strata just above the Goodridge oil sand fills the hole to within 30 ft. of surface

At S. 10° E about 12 chs. from Sec. Cor. to Secs.

11, 12, 13 & 14 another Goodridge well was drilled; depth unknown, apparently quite shallow.

In the N.W. 1/4 Sec. 13 two other shallow wells were drilled by Mr. Goodridge to unknown depths after I had completed the survey at this point.

At Camp Chicago in the N.E. 1/4 Sec. 23 there is a perpetual spring of cold water coming from the stratas in the red bed formation.

In the N.E. 1/4 Sec. 27 cold spring is located coming from the same strata as that at Camp Chicago.

A road has been constructed to this spring; also a large mud tank much higher than the road to permit of wagon water tanks being loaded by gravity.

This spring has a perpetual flow from rock crevise of at least 25 miners ins. of exceptionally cold water. The water at this spring and at Camp Chicago is the best i in the entire field.

In the S.W. 1/4 of Sec. 16 a perpetual water seep occurs from an upper strata, but of a weaker flow in the dry season of the year, and is quite strong with alkali.

The main synclinal heretofore described enters the Township near the S.W. 1/4 of Sec. 34, and extends about N. 20°E to and slightly beyond the south line of Sec. 14 where the stratas begin to rise to the N., N.E. and N.W.

From the eastern edge of the main synclinal the stratas extend west on nearly a dead level to the western edge or Township line with scarcely any perceptible dip, if any, it is to the south or southwest.

On the timbered and sandy portions of the upper or cedar mesa there is considerable broken pottery of

prehistoric design and decoration.

An occassional cottonwood tree is found growing in edges of the bottom of the small canons along the different branches of Lime Creek.

Knowing that the red bed formation at a point about 25 to 35 miles directly west of this Township carried from 20¢ to 50¢ per yard in gold numerous panning and fire assay tests were made from the material found in numerous discovery pits dug in Secs. 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35 & 36 and in Sections 19, 20, 29, 30 & 31 in T. 40 S. R. 20 E.

The results of nearly all of said tests showed an approximate value of from 10¢ to 15¢ per yard in gold and black sand. Black sand estimated at $10.00 per ton.

Conservation reservoirs can be constructed in Secs. 11 & 12 where water ~~could~~ could be piped to hydraulic the above mentioned area and additional areas in T. 41 S., R. 19 E.

At a number of points on the lower mesa a splendid grade of limestone is exposed on the surface and is cut by the small canons.

The bare sandstone surface occurring on the upper mesa is in my opinion the oil sand from which an oil seep occurs near Grand Gulch, heretofore described.

There are no settlers in this township.

April 15th, 1909.

Emer E. Muller

U.S.Deputy Surveyor.

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Page

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by .....

....., United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of .....

.....

showing the respective capacities in which they acted:

For list of names and final oath of assistants see book "E" Tp. T. 40 S., R. 18 E. ....., *Chainman.*

....., *Chainman.*

....., *Moundman.*

....., *Moundman.*

....., *Axman.*

....., *Axman.*

....., *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted .....

....., United States Deputy Surveyor, in surveying all those parts or portions of the .....

.....

.....

..... of the .....

..... meridian, ... of ....., which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for .....

....., *Chainman.*

....., *Chainman.*

....., *Moundman.*

....., *Moundman.*

....., *Axman.*

....., *Axman.*

....., *Flagman.*

.....

Subscribed and sworn to before me this .....
day of ....., 190

.....

SEAL

.....

6—161

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from _____, bearing date of the United States Surveyor General for _____ day of _____, 190 , I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for _____, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of deputy see book "E" 2, 40 S., R. 18 E.

_____ of the _____ meridian, in the _____ of _____, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

_____

United States Deputy Surveyor.

Subscribed by said _____, and sworn to before me this _____ day of _____, 190

_____

_____

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL.

Salt Lake City, Utah June 19, 1911.

The foregoing field notes of the survey of the Subdivision of Township No. 40 South, Range No. 19 East of the Salt Lake Base and Meridian, Utah,

_____

_____

_____

_____

_____

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

_____

United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____

United States Surveyor General.

6—151

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Page

4—679.

FILED IN
APR 25 1910

BOOK A-367
"D"

FIELD NOTES

OF THE SURVEY OF THE

WEST AND NORTH BOUNDARIES

O F

TOWNSHIP NO. 40 SOUTH,

RANGE NO. 18 EAST,

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E. MILLER, *United States Deputy Surveyor,*

nder his Contract No. 305, *dated* February 25th, *190*9,

urvey commenced April 15th, *190*9,

urvey completed April 17th, *190*9.

6—161

BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

LOUIS H.POHLE, Chairman.

ALLAN KING, "

W.F.McCANDLESS, MOUNDMAN

JOHN H.HUGHES, "

WILLIAM BROOKINS, AXMAN,

PRESLAY C.WILLS, "

JAMES BROOKINS, FLAGMAN.

BOOK A-367

INDEX DIAGRAM.

Township No. 40 South, Range 18 East

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7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Meanders Page.....

BOOK A-367

PRELIMINARY OATHS OF ASSISTANTS.

WE, Louis H. Pohle and Allan King

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level th chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; th we will report the true distances to all notable objects, and the true lengths of all lines that we assist i measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey o the East and North Bdys. of Township No 40 S.R. 18 East of the Salt Lake Base and Meridian in the State of Utah

....., Chainman

....., Chainman

Subscribed and sworn to before me this 1st day of April, 1909

Louis H. Pohle Chainman

Allan King Chainman

A.S. Raplee Notary Public

SEAL

my com. Expires May 1st 1910

WE, W. H. McCandless and John H. Hughes

do solemnly swear that we will well and truly perform the duties of moundmen in the establishmen of corners, according to the instructions given us, to the best of our skill and ability, in the survey o the East and North Bdys. of T. No. 40 S.R. 18 E. of the Salt Lake Ba and Meridian in the State of Utah

W. H. McCandless, Moundman

John H. Hughes, Moundman

Subscribed and sworn to before me this 1st day of April, 1909

A.S. Raplee Notary Public

SEAL

my com. Expires May 1st 1910

WE, William Brookins and Presley C. Wills

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of the East and North Bdys of T. No 40 S.R. 18 E. of the Salt Lake Ba and Meridian in the State of Utah

William Brookins, Axman.

Presley C. Wills, Axman.

Subscribed and sworn to before me this 1st day of April, 1909

A.S. Raplee Notary Public

SEAL

my com. Expires May 10 1910

I, James Brookins, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of the East and North Boundaries of Township No 40 S.R. of the Salt Lake Base and Meridian in the State of Utah

James Brookins, Flagman.

Subscribed and sworn to before me this 1st day of April, 1909

A.S. Raplee Notary Public

SEAL

my com. Expires May 1st 1910

6—151

Survey commenced April 15, 1909, and executed with the instrument described in book "A" of this survey.

I examine the adjustments of the transit, and correct the level and collimation errors; then to test the solar apparatus, by comparing its indications, resulting from solar observations made during a.m.and p.m.hours, with a meridian determined by observations on Polaris, I proceed as follows:

At St. cor.of Tps.40 S., Rs.17 and 18 E., lati.37° 17' 18" N.; long.110° 02' 42" W., I set off 9° 49' N.on the decl.arc; 37° 17'N.on the lat.arc; and at 3 h. 50 m.p.m.l.m.t., determine with the solar a meridian and mark a point thereof on a stake firmly set in the ground 5 chs.N.of the cor.

At 11 h.51 m.p.m.l.m.t., I observe Polaris at lower culmination, in accordance with Manual of Instructions, and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins.E.of the point determined by the solar. April 15, 1909.

April 16: At 8 h. a.m.l.m.t.I set off 10° 04' N.on the decl.arc; 37° 17' 18" N.on the lat.arc; and mark a point in the meridian determined with the solar, by a tack driven in the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.east of the meridian established by Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 0' 11" W. and 0' 16" E.of the meridian established by the Polaris observations; therefore I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 8 h. 15 m.a.m.is N.14° 30'W.; the angle thus determined gives the mgg.decl.14° 30'E.

WEST BOUNDARY T. 40 S., R. 18 E.

Chains.	
	From the Stand: cor.of Tp.40 S., Rs.17 and 18 E., heretofore described, I run
	North bet.secs.31 and 36
	Over rolling mesa, covered with sagebrush.
6.25	Center of wash, 50 lks.wide, 5 ft.deep, drains west.
19.75	Leave sagebrush;enter dense cedar and pine timber.
24.00	Edge of level mesa. Descend gradually.
32.70	Edge of bluff. Descend abruptly.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, to bed rock, with mound of stone 14 ins.high around it, for 1/4 sec.cor., marked on brass cap 1/4 S 36 in W.half; S 31 in E.half; from which
	A pine 6 ins.dia.bears N.86° W. 51 lks.dist. mkd. 1/4 S 36 B T
	A pine 10 ins.dia.bears S.86° E. 97 lks.dist.mkd. 1/4 S 31 B T
	Raise mound of stone 3 ft.base, 2 1/2 ft.high W.of cor.
	Corner is 200 ft.below standard cor.to secs.31 and 36,
44.00	Center of wash, 4 chs.wide, 15 ft.deep, drains N.75° W. about 200 ft.below 1/4 sec.cor.
46.00	Foot of bluff; ascend abruptly.
59.33	Top of bluff, 75 lks.wide, projects E.6 chs.
	Descend abruptly.
66.30	Center of wash, 3 chs.wide, 150 ft.deep, drains West.
77.56	Top of bluff; ascend gradually over sandstone ledges, with scrub pine and cedar timber.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground to bed rock, in mound of stone 2 1/2 ft.base,

WEST BOUNDARY T. 40 S., R. 18 E.

Chains. 12 ins.high for cor.of secs.25,30,31, and 36, marked on brass cap,

T 40 S S 25 in NW.

R 18 E S 30 in NE.

R 17 E S 36 in SW.;

S 31 in SE.quadrants; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.

Pits impracticable.

A pine 7 ins.dia. bears S.65° 41'E. 65 lks.dist. mkd.T 40 S R 18 E S 31 B T

A pine 6 ins.dia.bears N.65° 40'E. 1.94 chs.dist. mkd.T 40 S R 18 E S 30 B T

A pine 12 ins.dia.bears S.79° 10'W. 1.43 chs.dist. mkd.T 40 S R 17 E S 36 B T

A pine 12 ins.dia.bears N.81° 15'W. 1.43 chs.dist. mkd.T 40 S R 17 E S 25 B T

Corner is about 150 ft.above 1/4 sec.cor.bet.secs.31 and 36.

Land 1st half mesa; 2d half badly broken.

Soil sandy and rocky; 2d and 4th rates.

Timber, cedar and pine.

Mountainous land 56.00 chs.

WEST BOUNDARY T. 40 S., R. 18 E.

Chains.	
	North bet.secs.25 and 30,
	Ascending over mountainous land.
3.00	Top of bluff.
	Descend abruptly into John's Canon, drains S.70° W.
24.00	Foot of bluff, about 750 ft.below top.
34.70	Wash, 30 lks.wide, 4 ft.deep, drains S.40° W.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 25 in W.half, and S 30 in E.half; dig pits 18 x 18 x 12 ins.N. and S.of post 3 ft.dist.; and raise a mound of earth 3 1/2 ft.base, 2 ft.high W.of cor.
43.00	The Norwood & Bluff City Oil Co.'s oil well bears west from this point about 18 chs.
53.65	Wash, 60 lks.wide, 5 ft.deep, drains S.80° W.
66.65	Bottom of main channel in John's Canon, 90 lks.wide, 8 ft.deep, bears S.20° W. Running water in places.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for cor.of secs.19,24, 25, and 30, marked on brass cap, T 40 S R 17 E S 24 in NW. R 18 E S 19 in NE. S 25 in SW., and S 30 in SE.quadrants; raise mound of stone 3 ft.base, 3 ft.high W.of cor.
	The first 24 chs.of this mile passes down over the

WEST BOUNDARY T. 40 S., R. 18 E.

Chains.	
	faces of sandstone and limestone benches of sedimentary fossiliferous stratas interlaid with oil sand stratas, ranging in thickness from 1 ft.to 50 ft. Said oil sand stratas' faces being slightly covered with a solidified petroleum residue.
	Land, mountainous and broken.
	Soil, sandy and stony; 3d and 4th rates.
	No timber.
	Mountainous land 80.00 chs.
	North between secs.19 and 24,
	Over mountainous land; [illegible].
15.00	Foot of steep ascent, over broken boulders out of John's Canon.
28.50	Foot of very steep cliff.
29.51	Top of rim of Cedar Mesa, 850 ft.above bottom of John's Canon, bears N.20° E.
	Thence over rolling mesa; through thick timber.
40.00	Set an iron post 3 ft.long, 1 in.dia., 14 ins.in the ground, to bed rock, with mound of stone 2 1/2 ft. base, 1 ft.high around it, for 1/4 sec.cor., marked on brass cap 1/4 S 24 in W.half, S 19 in E.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.

Chains. of cor. Pits impracticable.

A pinon pine, 9 ins.dia. bears N.73° 40'E.27 lks. dist., marked 1/4 S 19 B T

A pinon pine, 14 ins.dia.bears S.27° 45'W. 70 lks. dist., marked 1/4 S 24 B T

55.40 Small wash, 30 lks.wide, 3 ft.deep, drains E.

80.00 Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for cor.of secs.13,18,19, and 24, marked on brass cap,

T 40 S R 17 E S 13 in NW.

R 18 E S 18 in NE.

S 19 in SE.; and

S 24 in SW.quadrants; and raise a mound of stone 2 1/2 ft.base 2 ft.high W.of cor.

Pits impracticable.

A pinon pine 12 ins.dia.bears S.30° 15'E. 66 lks. dist., marked T 40 S R 18 E S 19 B T

A cedar 10 ins.dia.bears S.30° W. 71 lks.dist. marked T 40 S R 17 E S 24 B T

A pinon pine 10 ins.dia.bears N.48° 20'E. 98 lks. dist., marked T 40 S R 18 E S 18 B T

No other bearing trees within limits.

The second 15 chs.of this mile pass up and over the faces of sandstone and limestone benches of sedimentary fossiliferous stratas interlaid with oil sand stratas raning in thickness from 1 ft.to 50 ft. Said oil sand stratas beingslightly covered with a solidified petroleum residue.

Land, mountainous and rocky.

Chains. WEST BOUNDARY T. 40 S., R. 18 E.

Soil 3rd & 4th rates.
Timber, thick cedar & pinon
Land mountainous 29.51 chs.

North on true line bet. Secs. 13 & 18, over rolling land.

9.50 small wash 20 lks. wide, 5 ft. deep, drains N. 80° E.

36.75 Bottom of wash, 40 lks. wide, 8 ft. deep, drains N. 60° E.

40.00 Set iron post 3 ft. long, 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. markedon brass cap 1/4 S. 13 in W. half and S. 18 in E. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Pits impracticable. Whence

A cedar tree 6 ins. diam. bears S. 26° 55' W. 57 lks. marked 1/4 S. 13 B.T.

A cedar tree 10 ins. diam. bears N. 84° 45' E. 87 lks. marked 1/4 S. 18 B.T.

47.10 Wash, 35 lks. wide, 4 ft. deep, drains N. 60° E.

66.00 Wash 25 lks. wide, 4 ft. deep, drains N. 45° E.

80.00 Set iron post 3 ft. long, 3 ins. diam. 24 ins. in the ground for Cor. to Secs. 7, 12, 13 & 18 marked on brass cap in N. half T. 40 S. R. 17 E., S. 12 in N.W. R. 18 E. S. 7 in N.E. S. 13 in S.W. and S. 18 in S. E. quadrants, and raise amound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Pits impracticable.

Whence

A pinon tree 9 ins. diam. bears S. 84° 35' W. 20 lks. marked T. 40 S. R. 17 E. S. 13 B.T.

A pinon tree 10 ins. diam. bears S. 81° 55' E. 34 lks. marked T. 40 S. R. 18 E. S. 18 B.T.

A pinon tree 10 ins. diam. bears N. 33° 30' E. 57.5 lks. marked T. 40 S. R. 18 E. S. 7 B.T.

A pinon tree 7 ins. diam. bears N. 52° 30' W. 93 lks.

Chains. WEST BOUNDARY T. 40 S., R. 18 E.

marked T. 40 S. R. 17 E. S. 12 B.T.

Land rolling mesa

Soil 3d rate

Timber, thick cedars, pinons & pines

April 16: At the noon hour sky overcast solar obs. impossible

North on true line bet. Secs. 7 & 12

Descend

16.40 Bottom of gulch 6 chs. wide, 100 ft. deep, drains East, projects West about 6 chains.

18.00 Top of point, 7 chs. wide, projects 5 chs. East

25.00 Rim of gulch,

Descend rapidly

28.40 Bottom of gulch drains East

Ascend rapidly

32.00 Rim of gulch

38.20 Rim of gulch, bears N.W. & S.E. and descend

40.00 Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 12 in W. half and S. 7 in E. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. On account of natural obstacles impossible to set post 26 ins. in the ground.

A pinon tree 14 ins. diam. bears S. 87° 25' W. 74 lks. marked 1/4 S. 12 B.T.

A pinon tree 10 ins. diam. bears S. 47° 05' E. 36 lks. marked 1/4 S. 7 B.T.

Cor. falls equidistant bet. rim of mesa and gulch

41.30 Center of gulch 15 lks. wide, 5 ft. deep, drains S. 50° E.

44.50 Top of rim of gulch,

Thence level mesa

54.00 Bottom of wash 70 lks. wide, 6 ft. deep drains S. 45° E.

65.40 Wash, 20 lks. wide, 7 ft. deep, drains S. 30° E.

80.00 Set iron post 3 ft. long 3 ins. diam. 24 ins. in the

Chains. WEST BOUNDARY T. 40 S., R. 18 E.

ground for Cor. to Secs. 1, 6, 7 & 12 marked on brass cap in N. half T. 40 S., R. 17 E. S. 1 in N.W., R. 18 E. S. 6 in N.E., S. 7 in S.E. and S. 12 in S.W. quadrants; raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor.

Pits impracticable. Whence

A cedar tree 7 ins. diam. bears S. 74° W. 113 lks. marked T. 40 S. R. 17 E. S. 12 B.T.

A pinon tree 10 ins. diam. bears S. 30° 05' E. 67 lks. marked T. 40 S., R. 18 E. S. 7 B.T.

A pinon tree 6 ins. diam. bears N. 32° 55' E. 60 lks. marked T. 40 S., R. 18 E. S. 6 B.T.

A cedar tree 10 ins. diam. bears N. 31° 45' W. 295 lks. marked T. 40 S., R. 17 E., S. 1 B.T.

Land nearly all rolling mesa

Soil, sandy 3d rate

Timber, thick cedars & pinons & pines.

North on true line bet. Secs. 1 & 6 over rolling mesa

26.25 Wash, 1 chain wide, 12 ft. deep, drains N. 75° E.

40.00 Set iron post 3 ft. long, 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 1 in W. half & S. 6 in E. half Dug pits 18 x 18 x 12 ins. N. & S. of post. 3 ft. dist.; built mound of earth 3.5 ft. base, 1.5 ft. high W. of Cor. Whence

A pinon tree 11 ins. diam. bears S. 73° W. 58 lks. marked 1/4 S. 1 B.T.

A pinon tree 14 ins. diam. bears N. 58° 30' E. 1.10 chs. marked 1/4 S. 6 B.T.

67.50 Wash, 120 lks. wide 12 ft. deep, drains S. 85° E.

71.75 Wash, 1 ch. wide, 10 ft. deep, drains S. 80° E.

80.00 Set iron post 3 ft. long, 3 ins. diam. 12 ins. in the

Chains. WEST BOUNDARY T. 40 S., R. 18 E.,

ground in mound of stone 2.5 ft. base, 12 ins. high for Corner of Townships 39 and 40 South, Ranges 17 and 18 E. marked on brass cap in N. half T. 39 S.R 17E S36 in N.W., R. 18 E. S. 31 in N.E. R. 17 E. S. 1 in S.W. R. 18 E., S. 6 in S.E. quadrants and T.40 S. in S. half and erect mound of stone 3.5 ft. base, 2.5 ft. high S. of Cor. On account of natural obstacles, it was impossible to post 24 ins. in the ground.

A pinon tree 12 ins. diam. bears N. 21° 40' W. 93 lks. marked T. 39 S. R. 17 E. S. 36 B.T.

A pinon tree 10 ins. diam. bears S. 58° 20' W. 20 lks. marked T. 40 S., R. 17 E. S. 1 B.T.

A pinon tree 11 ins. diam. bears N. 72° 35' E. 47 lks. marked T. 39 S. R. 18 E. S. 31 B.T.

A pinon 12 ins. diam. bears S. 16° 25' E. 62 lks. marked T. 40 S., R. 18 E. S. 6.B.T.

Land rolling mesa

Soil, sandy, 3d rate

Timber, thick cedars, pinons & pines

Land exceptionally difficult to survey. 80.00 chs.

April 16, 1909.

GENERAL DESCRIPTION.

The Norwood & Bluff City Oil Co's. oil well located in the N.E. 1/4 of Sec. 25 T. 40 S., R. 17 E. would in my judgment produce 50 barrels per day if properly cased, shot and packed. This well on June 30 was 1320 ft. deep with only 270 ft. of casing. It has the only Standard Oil drilling rig in use in the entire field. Locally this is known as The Galloway Oil Well.

The range line in crossing John's Canon, both descending and ascending, passes over sandstone and limestone stratas of a sedimentary fossiliferous formation, mostly of the red bed or Jura Trias formation, said stratas

creating different benches and perpendicular cliffs from 15 to 20 feet & 400 and 600 feet in height. Said stratas ranging from 1 to 100 feet in thickness and are interlaid with oil sand stratas from a few inches to as much as 100 feet, the eroded faces of which being slightly covered with solidified petroleum residue.

The Township through which the range line passes is mostly of a rolling mesa character, some patches of grazing land on both sides of the line with patches of dense scrub cedar and pine timber.

April 16. 1909.

Elmer E. Miller

U.S. Deputy Surveyor.

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Chains. NORTH BOUNDARY T. 40 S., R. 18 E.

April 17, 1909. At 8 h. 00 m. a.m. l.m.t. I set off 37° 22' 31" Non lat. arc 10° 25' N. on declination arc. and determined the true meridian with the solar at the Cpr. of Tps. 39 & 40 S. Rgs. 18 & 19 E, heretofore described. Thence I run

West on a random line along the N. Bdy. of Tp. 40 S. R. 18 E. setting temporary 1/4 sec. and sec. cors. at intervals of 40 chs. and at 479.45 chs. I intersect the N. and S. line 72 lks. S. of the cor. of Tps. 39 and 40 S. Rs. 17 and 18 E., heretofore described.

The falling answers to a correction of 0° 05' or 12 lks. S. per mile, counting from the N.E. Cor. of the Township, Therefore, I run

S. 89° 55' E. bet. Secs. 6 & 31 marking and blazing true line, over rolling sandy mesa through dense pinon & cedar timber

19.15 Top of slight rise

Descend gradually

23.40 Foot of slope

32.71 Small wash, 24 lks. wide, 5 ft. deep, drains S. 45° W.

39.43 Set iron post 3 ft. long, 1in diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 31 in N. half and S. 6 in S. half, dig pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist. and raise mound of earth 3 1/2 ft. base 1 1/2 ft. high North of corner

Whence

A pine tree 8 ins. diam. bears N. 4° 10' W. 55 lks. marked 1/4 S. 31 B.T.

A cedar tree 10 ins. diam. bears S. 7° 10' E. 71 lks. marked 1/4 S 6 B.T

43.94 Top of rise and descend gradually

63.35 Small wash 24 lks. wide, 4 ft. deep, drains S. 45° E.

65.50 Leave timber,

Descend gradually

67.20 Top of rim of West side of W. branch of John's canon

Chains. NORTH BOUNDARY T. 40 S., R. 18 E.,

	350 ft. above bottom, bears N. & S.
	Cliff dwelling bears N. 75° E. on point of ridge W. of canon.
71.40	Bottom of branch of main gulch, bears S.E. & ascend
77.80	Top of bluff 90 ft. above Cor. to Secs. 5, 6, 31 & 32
79.43	Set iron post 3 ft. long 3 ins. diam. 12 ins. in the ground on rock in mound of stone 2.5 ft. base and 12 ins. high for Cor. of Secs. 5, 6, 31 & 32 marked on brass cap T. 39 S. S. 31 in N.W. R. 18 E. S. 32 in N.E. T. 40 S. S. 6 in S.W. and R. 18 E. S. 5 in S.E. quadrants and erect mound of stone 3 ft. base 2.5 ft. high West of Cor.
	Impossible to set post over 12 ins. in the ground.
	Whence
	A pine tree 11 ins. diam. bears S. 24° 20' E. 51 lks. marked T. 40 S. R. 18 E. S. 5 B. T.
	No other trees available
	Land rolling mesa mountainous land
	Soil sandy & rocky, 2nd & 3rd rates
	Timber scrubby cedar, pine & pinon
	No undergrowth
	Land mountainous 79.43 chs.
	S. 89° 55' E. bet. Secs. 5 & 32
	Descending rapidly
.70	Foot of cliff 40 ft. high
	Thence descend gradually
10.00	Bottom of 2nd W. branch of John's canon 350 ft. below Cedar Mesa, bears N. & S.
11.80	Top of steep sandstone cliff
16.57	East rim of canon, bears S.
20.40	Wash, 18 lks. wide, 4 ft. deep, drains S. 8° W.

NORTH BOUNDARY T. 40 S., R. 18 E.,

Chains.	
24.20	Wash 25 lks. wide 4 ft. deep, drains S. 60° W.
	Enter scattering timber
	Ascending gradually
28.60	Top of rise
	Descend gradually
30.90	Bottom of wash 18 lks. wide 4 ft. deep, drains S. 45° W.
	Enter dense timber
38.50	Top of rise
	Descend gradually
40.00	Set iron post 3 ft. long 1½ in. diam. 20 ins. in the ground in mound of stone 2 ft. base, 6 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 32 in N. half and S. 5 in S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable. On account of natural obstacles it was impossible to set post over 20 ins. in the ground.
	A pine tree 10 ins. diam. bears S. 28° E. 134.5 lks. marked 1/4 S. 5 B.T.
	A pine tree 10 ins. diam. bears N. 13° 18' W. 52 lks. marked 1/4 S. 32 B.T.
42.54	Bottom of small gulch 15 lks. wide, 6 ft. deep, drains S. 20° W.
45.10	Top of slight rise,
	Descend gradually
47.55	Small gulch, 20 lks. wide 9 ft. deep, drains S. 45° W.
48.90	Small gulch, 20 lks. wide, 7 ft. deep, drains S. 80° W.
56.80	Top of slight rise 20 ft. above gulch, pieces of broken pottery
61.00	Small wash, 40 lks. wide, 5 ft. deep, drains south
68.10	Top of slight rise
75.90	Small wash, 3 lks. wide, 4 ft. deep drains S. 30° E.
80.00	Set iron post 3 ft. long 3 ins. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 12 ins. high for

Chains.	NORTH BOUNDARY T. 40 S., R. 18 E.
	Cor. to Secs. 4, 5, 32 & 33 marked on brass cap T. 39 S. S. 32 in N.W. R. 18 E. S. 33 in N.E. T. 40 S. S. 5 in S.W. and R. 18 E. S. 4 in S.E. quadrants and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Impossible to set post over 12 ins. in the ground. Pits impracticable. Whence
	A pine tree 10 ins. diam. bears N. 56° W. 55 lks. marked T. 39 S, R. 18 E, S. 32 B.T.
	A pine tree 9 ins. in diam. bears N. 88° E, 29 lks. mkd. T. 39 S. R. 18 E. S. 33 B.T.
	A pine tree 5 ins. diam. bears S. 36° 20' E. 65 lks. mkd. T. 40 S. R. 18 E. S. 4 B.T.
	A pine tree 5 ins. diam. bears S. 48° 20' W. 119 lks. marked T. 40 S, R. 18 E. S. 5 B.T.
	Cor. sits on mesa at West rim of West branch of John's canon, bears S. 20° E.
	Land mountainous, high mesa land
	Soil 2nd & 3rd rates
	Timber, scrubby cedar, pinon and pine
	Land mountainous 80.00 chs.
	S. 89° 55' E. bet. Secs. 4 & 33
	Descending rapidly
7.80	Foot of steep bluff 200 ft. below mesa
	Continue descent
16.00	Bottom of W. branch of John's canon 420 ft. below mesa, drains S. 20° E.
	Thence ascend gradually
30.44	Top of rim of West branch of John's canon. There is a cliff dwelling near top and several small cliff dwellings on S. point of ridge under cliff, which bears S. 32° 15' E. 10.00 chs.
40.00	Set iron post 3 ft. long, 1 in. diam. 12 ins. in the

Chains.	
	ground on solid rock, in mound of stone 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 33 in N. & S. 4 in S. half and erect mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable
	Whence
	A pine tree 8 ins. diam. bears S. 20° 55' W. 115.8 lks. marked 1/4 S. 4 B.T.
	A pine tree 12 ins. diam. bears N. 77° 10' W. 52 lks. marked 1/4 S. 33 B.T.
	Thence descend rapidly
48.20	Bottom of gulch of John's canon, drains S. 20° W. 150 ft. below ridge
	Thence ascend rapidly
51.30	Top of sandstone ridge 120 ft. above bottom at end of point between John's canon and the East branch of John's canon junction 5 chs. south
	Descend gradually
61.60	Bottom of Gulch of E. branch of John's canon 5 lks. wide 35 ft. deep; drains SW.
	Ascend rapidly
62.50	Brink of main gulch of E. branch of John's Canon, bears S. 15° W.
	Descend
66.50	Bottom of gulch 120 ft. wide 12 ft. deep, drains SW.
72.40	Top of ridge, bears N. & S. 90 ft. below top of mesa
77.30	Bottom of gulch drains N. 50 ft. below Cor. to Secs. 3, 4, 33 & 34
80.00	Set iron post 3 ft. long 3 ins. diam. 12 ins. in the ground in mound of stone 2.5 ft. base and 12 ins. high for Cor. of Secs. 3, 4, 33 & 34 marked on brass cap T. 39 S. S. 33 in N.W. R. 18 E. S. 34 in N.E. T. 40 S. S. 4 in S.W. & R. 18 E. S. 3 in S.E. quadrants; and raise a mound of stone 2 1/2 ft. base, 2 ft. high

Chains.	NORTH BOUNDARY T. 40 S., R. 18 E.,
	W. of Cor. Impossible to set post over 12 ins. in ground. Pits impracticable. Whence
	A pine tree 6 ins. diam. bears S. 80° 15' W. 109 lks. marked T. 40 S. R. 18 E. S. 4 B.T.
	A pine tree 9 ins. diam. bears S. 18° 44' E. 11 lks. marked T. 40 S. R. 18 E. S. 3 B.T.
	A pine tree 5 ins. diam. bears S. 56° 30' E. 77.5 lks. marked T. 40 S. R. 18 E. S. 3 B.T.
	A pine 5 ins. diam. bears S. 20° 23' W. 112 lks. marked T. 40 S. R. 18 E. S. 4 B.T.
	Cor. is 150 ft. below mesa, & about 100 ft. above John's canon
	Land broken, rocky and mountainous
	Soil 4th rate
	Timber, scattering cedar, pinon & pine
	Land mountainous 80.00 chs.
	S. 89° 55' E. bet. Secs. 3 & 34 Descending.
5.10	Bottom of gulch, drains south.
	Thence along side of canon
8.90	West side of point
12.90	East edge of point 125 ft. above bottom of gulch
	Descend
18.60	Bottom of gulch, 1ch. wide, 250 ft. below rim, drains South
	Thence ascend rapidly over sandstone ledges
24.55	S.E. rim of E. branch of John's canon, bears N. & S.
33.00	Wash, 80 lks. wide, 5 ft. deep, drains S.W.
40.00	Set iron post 3 ft. long, 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 34 on N. half and S. 3 in S. half and erect a mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable Whence

NORTH BOUNDARY T. 40 S., R. 18 E.

Chains.	
	A pine tree 8 ins.dia. bears N.24° 30'E. 1.04 chs. dist., mkd. $\frac{1}{4}$ S 34 B T
	A pine tree 6 ins.diam. bears S.7° 30'E. 89 lks. dist., mkd. $\frac{1}{4}$ S 3 B T
47.50	Small gulch, drains north.
50.60	Small gulch, drains north.
54.70	Small gulch drains N.40° W. Enter thick timber.
68.30	Top of slope and apex of Second or Western Anticlinal.
71.50	Leave timber and enter sagebrush park.
76.00	Leave sagebrush and enter dense timber.
80.00	Set iron post 3 ft.long, 3 ins.diam., 24 ins.in the ground, for cor.to secs.2,3,34, and 35 marked on brass cap T 39 S S 34 in NW.; R 18 E S 35 in NE.; T 40 S S 3 in SW.; and R 18 E S 2 in SE.quadrants; and dig pits 18 x 18 x 12 ins.in each sec. $5\frac{1}{2}$ ft.dist.; and raise a mound of earth 4 ft.base, 2 ft.high W.of cor.; Whence
	A pinon 10 ins.dia.bears N.12°30'E.44 lks.dist. mkd.T 39 S R 18 E S 35 B T
	A pinon 18 ins.dia.bears S.15° 00'E. 91 lks.dist. mkd.T 40 S R 18 E S 2 B T
	A pinon 10 ins.diam.bears S.48°00'W. 85 lks.dist. mkd.T 40 S R 18 E S 3 B T
	A pinon 11 ins.dia.bears N.78° 00'W.109 lks.dist., mkd.T 39 S R 18 E S 34 B T
Land, rolling mesa, mountainous.	
Soil, rocky; 3d rate.	
Timber, cedar, pinon and pine.	
Mountainous land 80.00 chs.	

Apr.17: At this corner I set off 10° 28'N.on the decl. arc; and at 12 h. M., l.m.t.observe the sun on the meridian; the resulting lat.is 37° 23'N.

NORTH BOUNDARY T. 40 S., R. 18 E.

Chains.	
	S.89° 55'E.bet.secs.2 and 35,
	Through dense timber; ascending.
8.00	Top of slope. Descend gradually.
22.00	Small wash, drains S.35° E.
23.10	Top of low rise.
24.40	Small gulch, drains S.
36.00	Top of bank of gulch, 50 ft.above ¼ sec.cor., bears N. 75° E. and S.75° W.
40.00	The point for ¼ cor.falls on N.side of gulch bearing S.75° W.and is an unsafe position to set cor.
42.50	Top of bank of gulch, bears N.60° W. and S.60° E.
43.40	Set iron post 3 ft.long, 1 in.diam., 12 ins.in the ground in mound of stone 2½ ft.base, 14 ins.high for witness cor.to ¼ sec.cor., marked on brass cap W C ¼ S 35 in N.half, and S 2 in S.half; and erect mound of stone 2½ ft.base, 2 ft.high N.of cor.
	Impossible to set post over 12 ins.in the ground.
	A pine tree 12 ins.diam.bears S.53° 37'E. 180 lks. dist., marked W C ¼ S 2 B T
	A pine tree 6 ins.diam.bears N.88° E. 41 lks. dist. marked W C ¼ S 35 B T
49.00	Top of low rise. Descend gradually.
60.00	East edge of cedar mesa bears N. and S. Descend rapidly.
72.00	Foot of steep descent.
80.00	Set iron post 3 ft.long, 3 ins.diam., 12 ins.in the ground in mound of stone 2.5 ft.base, 12 ins.high, 12 lks.South of cor.point for witness cor.to secs.1,2,35 and 36, marked on brass cap W C in N. half, T 39 S S 35 in NW., R 18 E S 36 in NE., T 40 S S 2 in SW., and R 18 E S 1 in S.E. quadrants; and raise a mound of stone 3 ft.base, 2½ ft.high W.of cor.
	Impossible to set post over 12 ins.in the ground.
	A pine tree 9 ins.diam.bears N.62° 20'W. 70 lks., marked T 39 S R 18 E S 35 B T W C

NORTH BOUNDARY T. 40 S., R. 18 E.

Chains.	
	A pine tree 10 ins.diam.bears N.74° 10'E. 80 lks. marked T 39 S R 18 E S 36 B T W C
	A pine tree 6 ins.diam.bears S.48° 05'E. 45 lks. marked T 40 S R 18 E S 1 B T W C
	A pine tree 6 ins.diam.bears S.41°35'W. 20 lks., marked T 40 S R 18 E S 2 B T W C
	The cor.falls on the steep slope of sandstone ledge,15 ft.high bearing E. & W., where it would not stand, set W C 12 lks.S.on top of ledge.
	Cor.sits about 150 ft.above gulch to north.
	Land, broken, rocky and mountainous.
	Soil, 4th rate, rocky.
	Timber, cedar, pinon and pine, very thick on mesa.
	Land, mountainous 80.00 chs.
	S.89° 55'E.bet.secs.1 & 36,
	Descending diagonally over sandstone ledges, rough and broken, and exceptionally difficult to survey.
15.00	Top of bluff.
	Descend rapidly.
17.00	Wash, 75 ft.below bluff, 50 lks.wide, 10 ft.deep, drains S.80° E.
22.66	Top of bench.
	Descend rapidly.
28.20	Set iron post 3 ft.long, 1 in.diam., 12 ins.in the ground, on solid rock, in mound of stone 2.5 ft.base, 14 ins.high for W.C.$\frac{1}{4}$ sec.cor., marked on brass cap, T 39 S R 18 E S 36 in N.half, S 1 in S.half, W C $\frac{1}{4}$ at E.; and raise a mound of stone $2\frac{1}{2}$ ft.base, 2 ft.high N.of cor. Impossible to set post over 12 ins.in the ground.

NORTH BOUNDARY T 40 S R 18 E.

Chains. Pits impracticable.

Whence

A pine tree 6 ins.diam.bears N.35° 45'E. 49 lks., marked $\frac{1}{4}$ S 36 B T W C

A pinon tree 12 ins.diam.bears S.62° 30'W. 138 lks. marked $\frac{1}{4}$ S 1 B T W C

W.C.$\frac{1}{4}$ Cor.falls on a bench at top of cliff.

28.40 Top of cliff 150 ft.above foot bears N.60° E. and S.75° W.

Thence descending diagonally over very steep cliffs.

30.00 Foot of cliff, 400 ft.above wash.

Continue abrupt descent.

40.00 Impossible to set permanent $\frac{1}{4}$ sec.cor.at this point.

74.00 Branch of Lime Creek, 100 lks.wide, 5 ft.deep, drains SE.

There is some water in holes or tanks.

Thence ascend.

80.00 The corner to townships 39 and 40 South, Ranges 18 and 19 E.

Land, very mountainous, rocky & broken.

Soil, 4th rate.

Timber scattering cedar, pinon & pine.

Land mountainous, rough and broken and exceptionally difficult to survey 80.00 chs.

April 17, 1909.

TABLE OF LATITUDES AND DEPARTURES
T.40 S., R. 18 E.

Line Des.	Course	Dist.	Latitudes		Departures	
			North	South	East	West.
		chs.	chs.	chs.	chs.	chs.
W!Bdy.	South	480.00	.....	480.00	.....	.....
8th St.Par.S.	East	480.00	.....	.....	480.00	.....
E.Bdy.	North	480.00	480.00	.....	.....	.....
N.Bdy.	N.89°55'W.	479.43	0.70	.....	.....	479.43
Convergency						.55

Chains. NORTH BOUNDARY T. 40 S., R. 18 E.

	North	South	East	West
Totals	480.70	480.00	480.00	479.98
	480.00		479.98	
Errors in Lat.	.70			
	Errors in Dep.		0.02	

GENERAL DESCRIPTION.

The N. boundary of T. 40 S., R. 18 E. traverses land of a high mesa character. Some scrubby cedar, pinon and pine timber over the upper stretches. Some grazing land is found in patches over a small area of the township. Some oil sand stratas are to be found along the eroded sides of some of the canons where the fossiliferous limes and sandstone stratas appear.

April 17, 1909.

Elmer C. Fuller

U.S. Deputy Surveyor.

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FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E. Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the West and North Boundaries of T40 S.R. 18 E of the Salt Lake Base and Meridian in the State of Utah showing the respective capacities in which they acted:

, Chainman.

Louis H Pohle — Allan King, Chainman.

John H Hughes, Moundman.

W F McCandless, Moundman.

William Brookins, Axman.

Presley C. Wills, Axman.

James Brookins, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E. Miller, United States Deputy Surveyor, in surveying all those parts or portions of the West and North Boundaries of Township No. 40 South, Range 18 East of the Salt Lake Base and Meridian in the State of Utah ~~of the~~ ~~meridian,~~ ~~of~~, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Utah

Allan King, Chainman.

Louis H. Pohle, Chainman.

John H Hughes, Moundman.

W. F. McCandless, Moundman.

Presley C Wills, Axman.

William Brookins, Axman.

James Brookins, Flagman.

Subscribed and sworn to before me this 27th day of April, 1909

A. L. Kapler
Notary Public
my com. Expires May 1st 1910

SEAL

6—151

O.K.

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Elmer E. Miller, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Thomas Hull United States Surveyor General for Utah, bearing date of the 25th day of February, 1909, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Utah, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the West and North Boundaries of Township No 40 South of Range No. 18 East of the Salt Lake Base and Meridian in the State of Utah

~~of the~~ meridian, ~~in the~~ of, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Elmer E. Miller
United States Deputy Surveyor.

Subscribed by said Elmer E Miller, and sworn to before me this 23rd day of April, 1910

SEAL

Charles M. Bishop clerk
By Allen S. Gregg
Deputy clerk

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911 ~~190~~

The foregoing field notes of the survey of the West and North Boundaries of of Township No. 40 South, Range No. 18 East, of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Thomas Hull
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in ..... has been correctly copied from the original notes on file in this office.

United States Surveyor General.

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FILED
APR 25 1910

"E"
BOOK A-367

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION

OF

TOWNSHIP NO. 40 SOUTH,

RANGE NO. 18 EAST,

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* FEBRUARY 25th, *1909,*

Survey commenced APRIL 18th, *1909,*

Survey completed APRIL 23rd, *1909.*

6—151

BOOK A-367, 1

NAMES AND DUTIES OF ASSISTANTS.

LOUIS H.POHLE, CHAINMAN.

ALLAN KING, "

W.F.MCCANDLESS, MOUNDMAN.

JOHN H.HUGHES, "

WILLIAM BROCKINS, AXMAN.

PRESLAY C.WILLS, "

JAMES BROCKINS, FLAGMAN.

For preliminary affidavits see book "C" T. 40 S., R. 19 E.

BOOK A-367

INDEX DIAGRAM.

Township No. 40 South Range No. 18 East

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PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of

_____

_____, *Chainman.*

_____, *Chainman.*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of

_____

_____, *Moundman.*

_____, *Moundman.*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of

_____

_____, *Axman.*

_____, *Axman.*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of _____

_____, *Flagman.*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

SUBDIVISION OF T. 40 S., R. 18 E.

Survey commenced April 17, 1909, and executed with the instrument described in book "A" of this survey.

At the standard cor.of secs.35 and 36, T. 40 S., R. 18 E., heretofore described; lat.37°17'18" N.; long.109° 57'15" W., I set off 10° 32'N.on the decl.arc; 37° 17' N.on the lat.arc; and at 3 h. 40 m.p.m.l.m.t., determine with the solar a meridian, and mark a point thereof, on a stake firmly set in the ground, 5 chs. N.of the cor.

At 11 h. 43 m.p.m.l.m.t., I observe Polaris at lower culmination, in accordance with Manual of Instructions and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins.east of the mark determined by the solar.

April 17, 1909.

April 18: At 8 a.m.l.m.t., I set off 10° 46' N.on the decl.arc; 37° 17' N.on the lat.arc; and mark a point in the meridian determined with the solar, by a tack on the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.east of the meridian established by Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians,respectively about 0'11" W. and 0' 16" E.of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8 h. 15m. a.m.is N.14° 30'W.; the angle thus determined gives the mag.decl.14° 30'E.

Thence I run

N.0° 01'W.bet.secs.35 and 36,

Ascending gently; through small shadscale.

Chains.	
7.40	Wash 20 lks.wide, 5 ft.deep, course S.70° E.
18.57	Wood road, bears E. and W.
35.60	Wash, 15 lks.wide, 10 ft.deep, course S.75° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.on brass cap ¼ S 35 in W. half, S 36 in E.half; and raise a mound of stone 2 ft. 1½ ft.high W.of cor.Pits impracticable.Cor.is 15 ft. above sec.cor.
44.80	South bank of wash, bears E. Descend.
53.30	Center of wash,60 ft.below bank,course S.75° E. Ascend.
55.75	N.bank of wash,60 ft.above bottom. Ascend gently.
62.50	South bank of wash. Descend.
63.50	Center of wash, 10 ft.below bank,course S.60° E. Asc.
64.30	North bank of wash,10 ft.above bottom. Asc.gently.
75.20	Wash,15 ft.deep,15 lks.wide, course S.60° E.
78.00	Wash, 100 lks.wide,10 ft.deep, course S.75° E. Ascend.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.25,26,35, and 36, mkd.on brass cap T 40 S S 26 in NW.; R 18 E S 25 in NE.; S 35 in SW. and S 36 in SE.quadrants; and raise a mound of stone 3 ft.base, 2 ft.high W.of cor. Pits impracticable. This cor.55 ft.above ¼ sec.cor. Land, bench, cut by small washes. Soil, sandy and gravelly; 3rd rate. No timber.

East on random line bet.secs.25 and 36,

40.00	Set temp.¼ sec.cor.
79.98	Intersect N.bdy.of Tp.9 lks.N.of the cor.of secs.25,30, 31 and 36 heretofore described. Thence I run

N.89° 56'W.on a true line bet.secs.25 and 36,

Over steep ascending land.

6.30	Top of N.end of spur, bears N.15° W. 70 ft.above sec.cor.

SUBDIVISION T. 40 S., R. 18 E.

Chains	
13.00	Foot of spur, 100 ft.below top.
22.00	S.end of spur, projects N.
30.04	Road bears S.30° E. and N.30° W.
35.75	East bank of wash. Descend.
36.40	Center of wash,40 ft.below bank,course SE. Ascend.
38.20	West bank of wash. Descend gently.
39.99	Set an iron post 3 ft.long, 1 in.dia., 16 ins.in the ground, to bed rock; and raise a mound of earth and stone 2½ ft.base, 10 ins.high around it, for ¼ sec.cor. marked on brass cap ¼ S 25 in N.half, S 36 in S.half; and raise a mound of stone 2 ft.base, 1½ ft.high N.of cor.Pits impracticable. About 40 ft.below sec.cor. Balanced rock, with base 300 ft.high, with balanced rock on top bears N.23° E.
50.50	East bank of wash.
52.40	Center of wash, 20 ft.below bank,course SE. Ascend.
53.50	Road bears S.15° E.
63.00	West bank of wash, 20 ft.above bottom.
64.80	Wash, 15 lks.wide, 3 ft.deep, drains SE.
79.88	The cor.of secs.25,26,35, and 36, 85 ft.above ¼ sec.cor. Land, bench. Soil, sandy and gravelly; 3d rate. No timber.

N.0° 01'W.bet.secs.25 and 26,

Ascending, through small shadscale undergrowth.

7.50	S.bank of wash.
9.50	Center of wash, 15 ft.deep, course S.60° E. Ascend.
11.50	N.bank of wash, 15 ft.above bottom. Ascend gently.
15.35	S.bank of wash.
16.30	Center of wash,40 ft.below bank,course S.60° E. Ascend.
24.50	N.bank of wash, 35 ft.above bottom.

Chains.	
	Thence slight ascent.
39.25	Wash, 10 ins.wide, 2 ft.deep, drains S.75° E.
	Ascend.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, and raise a mound of stone 2½ ft .base, 14 ins. high ground post for ¼ sec.cor., marked on brass cap, ¼ S 26 in W.half, and S 25 in E. half; and raise a mound of stone 3 ft.base, 2 ft.high W.of cor. Pits impracticable. On account of natural obstacles, impossible to set post over 12 ins.in the ground.
44.20	Road, bears NW. and SE.
56.50	South bank of wash.
	Descend.
61.50	Wash, 30 ft.below bank, drains SE.
62.25	N.bank of wash, 30 ft.above bottom.
	Thence slight ascent.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.23,24,25, and 26, marked on brass cap, T 40 S S 23 in NW.; R 18 E S 24 in NE; S 26 in SW.; and S 25 in SE;quadrants; and raise a mound of stone 2 ft.base, 1½ ft.high W.of cor.
	Pits impracticable.
	Land, broken bench and mountainous.
	Soil, sandy; 3d rate.
	No timber.
	Mountainous land 80.00 chs.

S.89° 56'E.on random line bet.secs.24 and 25,

40.00	Set temp.¼ sec.cor.
79.84	Intersect East bdy.of Tp. at the cor.of secs.19,24,25, and 30, heretofore described.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
	Thence I run
	N. 89° 56' W. on a true line bet. secs. 24 & 25
	Over slightly ascending land
	Through samll shadscale underbrush
4.15	Wash, 50 lks. wide, 6 ft. deep, course S. 60° E.
39.97	Set an iron post 1 in. dia. 3 ft. long 12 ins. in the ground, raise mound of stone 2 1/2 ft. base, 14 ins. high around post for 1/4 sec. cor. marked on brass cap S. 24 1/4 in N. and S. 25 in S. half, and raise a mound of stone 2 ft. base, 1 1/2 ft. high N. of cor
	Impossible to set post over 12 ins. in the ground. This cor. is 100 ft. above sec. cor.
47.75	Foot of ridge, 20 ft. above 1/4 sec. cor, brs. S.E.
	Ascend
52.34	Top of ridge, 180 ft. above ft. brs. S. 25° E.
	Descend
60.00	Foot of ridge, 150 ft. below top
	gradual descent
71.92	Road, brs. S. 15° E,
73.45	E. edge of wash, where rim rock breaks off
74.50	Center of wash, 20 ft. deep, breaks off 25 lks.
	Course S. 20° E.
	Ascend
75.00	West rim of wash, 20 ft. above bottom
79.94	Cor. to secs. 23, 24, 25 & 26
	This cor is 175 ft. below top of ridge
	Land, broken, bench & mountainous
	Soil, sandy, 3rd rate
	No timber
	Shadscale underbrush
	Land mountainous 79.94 chs.
	N. 0° 01' W. bet. secs. 23 & 24
	Over slightly ascending land
14.50	Wash, 40 lks. wide, 4 ft. deep, course S. 30° E.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
	Thence follow along W. bank of wash
25.90	Road, brs. S. 30° E.
28.25	Leave wash - it bears off N. 15° 15' W.
40.00	Set an iron post 1 in. dia. 3 ft. long 12 ins. in the ground and raise a mound of stone 2 1/2 ft. base, 14 ins. high around post for 1/4 sec. cor. marked on brass cap S. 23 1/4 in W. and S. 24 in E. half and raise mound of stone 2 ft. base, 1 1/2 ft. high W. of cor. Pits impracticable. Impossible to set post over 12 ins. in ground. This cor. is 85 ft. above sec. cor.
	Thence rapid ascent up ridge
54.68	Top of ridge, brs. S. 52° E, 255 ft. above 1/4 sec. cor.
	Thence rapid descent
64.25	N. ft. of ridge, 250 ft. below top
	Enter scattering cedar & pine timber
76.25	Wash, drains S. 75° E. 50 lks. wide, 3 ft. deep 20 ft. below foot of ridge
	Slight ascent
80.00	Set an iron post 2 ins. dia. 3 ft. long 24 ins. in the ground for cor. of secs. 13, 14, 23 & 24 marked on brass cap T. 40 S. S. 14 in N.W. R. 18 E. S. 13 in N.E. S. 23 in S.W. and S. 24 in S.E. quadrants and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor
	Pits impracticable Whence
	A cedar tree 30 ins. diam. brs. N. 54° 03' E. 4.65 chs. mkd. T. 40 S. - R. 18 E. S. 13 B.T.
	A cedar tree 12 ins. diam. bears N. 55° 21' W. 3.33 chs. mkd. T. 40 S. R. 18 E. S. 14 B.T.
	A cedar 5 ins. diam. bears S. 50° 21' W. 75 lks. mkd. T. 40 S. R. 18 E, - S. 23 B.T.
	A cedar 10 ins. diam. bears S. 63° 22' E. 3.59 chs. mkd. T. 40 S. R. 18 E. S. 24 B.T.
	This cor is 260 ft. below top of ridge
	Land mountainous, rough and broken

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Soil, sandy and rocky; 3d rate.
	Timber; scrub cedar and pinon pine.
	Mountainous land 80.00 chs.
	April 18: At this cor.I set off 10° 49'N.on the decl. arc; and at 11 h. 59 m.a.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 20'N.
	S.89° 56'E.on random line bet.secs.13 and 24,
40.00	Set temp.$\frac{1}{4}$ sec.cor.
79.96	Intersect E.bdy.of Tp.5 lks.S.of the cor.of secs.13,18, 19, and 24, heretofore described. Thence I run N.89° 58'W.on true line bet.secs.13 and 24,
	Over mountainous land.
1.60	Small wash, 20 lks.wide, 8 ft.deep, drains N.30° E.
8.78	Foot of hill; ascend.
21.96	Top of cedar mesa.
39.98	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground to bed rock; and raise a mound of stone $2\frac{1}{2}$ ft. base, 14 ins.high around post for $\frac{1}{4}$ sec.cor., mkd.on brass cap S 13 $\frac{1}{4}$ in N.; and S 24 in S.half; dig pits 18 x 18 x 12 ins.E. and W.of post 3 ft.dist.; and raise a mound of earth $3\frac{1}{2}$ ft.base, $1\frac{1}{2}$ ft.high N.of cor.
40.08	Edge of cedar mesa; descend.
43.50	Foot of bluff, bears S.75° E.
64.90	Foot of slope.
73.10	Wash drains S.35° E. 35 lks.wide, 6 ft.deep.
79.96	The cor.of secs.13,14,23, and 24.
	Cedar mesa is 400 ft.above sec.corner.
	Land, mountainous and rocky; very broken.
	Soil, sandy; 3d rate.
	No timber.
	Mountainous land;exceptionally difficult to survey 79.96 chs.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	N.0° 01'W.bet.secs.13 and 14,
	Ascending slightly over mountainous land; through scattering cedars.
8.00	Wash, 30 lks.wide,6 ft.deep,drains E.Asc.gradually.
17.60	Foot of cedar mesa 40 ft.above sec.cor.bears S.60° E. and N.60°W. .Leave cedars; ascend rapidly.
37.50	Foot of bluff 470 ft.above sec.cor., bears SE.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground to bed rock; raise a mound of stone 2½ ft.base, 14 ins.high around post for ¼ sec.cor., mkd.on brass cap ¼ S 14 on W.half; S 13 on E.half; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable.
40.69	Top of bluff bears SE.
66.57	Top of cedar mesa, bears SE. and NW.
69.00	Foot of bluff.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.11,12,13, and 14, marked on brass cap T 40 S S 11 in NW.; R 18 E S 12 in NE.; S 13 in SE.; and S 14 in SW.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.
	A cedar 8 ins.dia.bears N.61° 50'W. 41 lks.dist. mkd.T 40 S R 18 E S 11 B T
	A cedar 18 ins.dia.bears S.46° 20'W. 14 lks.dist. mkd.T 40 S.R 18 E S 14 B T
	No other bearing trees within limits.
	Land, mountainous and rocky.
	Soil, rocky and sandy; 4th and 3d rates.
	Timber, scattering cedars.
	Mountainous land;exceptionally difficult to survey
	80.00 chs.

	S.89° 58'E.on random line bet.secs.12 and 13,
40.00	Set temp.¼ sec.cor.
80.02	Intersect E.bdy.of Tp.2 lks.N.of cor.of secs.7,12,13,

Chains.	
	and 18, heretofore described. Thence I run N. 89° 57' W. on true line bet. Secs. 12 & 13
	Ascending over sandstone through cedars
8.00	Top of wash, 20 ft. above sec. cor.
10.75	Center of wash, 50 ft. deep, drains S. 80° E.
13.00	Top of wash,
	Ascend over broken sandstone
21.00	Top of mesa
	Abrupt descent
24.00	Foot of bluff
34.00	Foot of abrupt descent 300 ft. below foot of bluff
40.01	Set iron post 3 ft. long, 1 in. in diam. 26 ins. in the ground for 1/4 cor. bet secs. 12 & 13, mkd. on brass cap 1/4 S. 12 on N. and S. 13 on S. halves, and raise a mound of stone 2 1/2 ft. base, 1 1/2 ft. high N. of cor. Whence
	A cedar tree 6 in. diam. blazed and scribed 1/4 S. 12 B.T. bears N. 37° W, 33 lks.
	A pine tree 8 ins. diam. blazed and scribed 1/4 S. 13 B.T. bears S. 64° 13' E, 1.47 chs.
	Cor. is 500 ft. below top of mesa
	Thence gradual descent
45.85	Wash, 20 ft. below 1/4 cor, 50 lks. wide, 6 ft. deep drains S. 60° E.
	Ascend up spur
54.09	Top of spur 150 f t. above wash, bears S.E.
	Descend
65.70	Wash, 115 ft. below top of spur, 1 chain wide, 10 ft. deep, drains S. 75° E.
	Thence rapid ascent up cedar mesa
80.02	The cor, to secs. 11, 12, 13 & 14, 275 ft. above wash
	Land mountainous, rough & broken
	Soil rocky, 4th rate
	Timber, scrubby cedar, Pine & pinon
	Land mountainous, rough, broken, and exceptionally difficult to survey 80.00 chs.

Chains.	
	N. 0° 01' W. bet. secs. 11 & 12.
	Rapid descent through scattering cedars over rough & mountainous land, exceptionally difficult to survey
10.60	Wash, 200 ft. below sec. cor. drains S. 60° E. 60 lks. wide 10 lks. deep
	Thence rapid ascent up cedar mesa
27.00	Foot of bluff, bears N. 75° W. 400 ft. above wash
27.41	Top of bluff 250 ft. above foot, bears S. 75° E.
	Gradually descend
36.71	Center of wash, 50 lks. wide, 40 ft. deep, drains S. 40° E.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 11 & 12 marked on brass cap 1/4 S. 11 on W. and S. 12 on E. halves, and erect mound of stone 2 1/2 ft. base, 2 1/2 ft. high on West of corner.
	Cor. is between a large boulder and foot of bluff 50 ft. high
	A sandstone boulder bears S. 52° W. 50 lks. dist. marked 1/4 S. 11 B.O.
	A cedar tree 10 in. diam. bears S. 50° E. 47 lks. marked 1/4 S. 12 B.T.
53.98	Top of bluff
	Gradually ascend over sandstone covered with scrub pine and cedar timber
66.15	Top of ridge,
	Gradually descend
80.00	Set iron post 3 ft. long 2 ins. in diam. 12 ins. in the ground in mound of stone and earth 2 1/2 ft. base, 12 ins. high for cor. to secs. 1, 2, 11 & 12 marked on brass cap T. 40 S. S. 2 in N.W. R. 18 E. S. 1 in N.E. S. 11 in S.W. and S. 12 in S.E. quadrants, and erect a mound of stone 3 1/2 ft. base, 2 1/2 ft. high on West of cor. Pits impracticable Whence
	A pine tree 16 ins. diam. bears S. 14°04' E. 53 lks.

SUBDIVISION T. 30 S., R. 18 E.

Chains.

marked T 40 S R 18 E S 12 B T

A pine 6 ins.dia.bears S.37° 20'W. 1.35 lks.dist.

marked T 40 S R 18 E S 11 B T

A pine 10 ins.dia.bears N.61° 10'W. 51 lks.dist.

marked T 40 S R 18 E S 2 B T

A pine 7 ins.dia.bears N.22° E. 21 lks.dist.

marked T 40 S R 18 E S 1 B T

Impossible to set post over 12 ins.in the ground.

Land, slightly descending to east.

Soil, rocky; 4th rate.

Timber, scrub pine and cedar.

Mountainous land, rough, broken and exceptionally difficult to survey 80.00 chs.

S'89° 57'E.on random line bet.secs.1 and 12,

40.00 Set temp.$\frac{1}{4}$ sec.cor.

79.96 Intersect E.bdy.of Tp.9 lks.N.of the cor.of secs.1,6,7 and 12, heretofore described. Thence I run

N.89° 53'W.on true line bet.secs.1 and 12,

Over broken mountainous land.

34.00 Center of wash, 20 lks.wide, 3 ft.deep, drains S.45° E.

36.00 Top of bluff bears NW. and SE.

39.98 Set an iron post 3 ft.long, 1 in.dia, 12 ins.in the ground to bed rock, raise mound of stone $2\frac{1}{2}$ ft.base,14 ins.high around it, for $\frac{1}{4}$ sec.cor., mkd.on brass cap $\frac{1}{4}$ S 1 in N.half; S 12 in S.half; and raise a mound of stone $2\frac{1}{2}$ ft.base, 2 ft.high N.of cor. Pits impracticable.

A pine 10 ins.dia.baars S.5° E. $5\frac{1}{2}$ lks.dist.

mkd.$\frac{1}{4}$ S 12 B T

A pine 6 ins.dia.bears N.1° 40'E. 1.64 chs.dist.

mkd.$\frac{1}{4}$ S 1 B T

Corner falls on ledge 25 ft.below top of ridge.

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
40.80	Top of bluff.
42.70	Opposite edge of bluff. Descend abruptly into canon.
49.70	Foot of bluff.
55.75	Center of gulch 25 lks.wide, 3 ft.deep, drains S.45° E.
67.85	Top of rim of canon, bears NW. and SE.
70.00	Top of gradual ascent.
76.30	Center of canon 3 chs.wide, 30 ft.deep, drains S.40° E.
79.96	The cor.of secs.1,2,11, and 12.
	Land,broken and rocky; mountainous. Soil, rocky; 4th rate. Timber,scattering pine and cedar. Mountainous land 79.96 chs.

N.0° 01'W.on random line bet.secs.1 and 2,

40.00	Set temp.$\frac{1}{4}$ sec.cor.
79.62	Intersect N.bdy.of Tp.12 lks.W.of the cor.of secs.1,2, 35 and 36, heretofore described. Thence I run

S.0° 04'W.on true line bet.secs.1 and 2,

Ascending gradually; through dense timber.

12.00	Top of ridge. Descend rapidly.
26.60	Top of bluff.
	Enter scattering timber.
39.62	Set an iron post 3 ft.long, 1 in. dia., 12 ins.in the ground to bed rock; and raise mound of stone 2½ ft. base, 14 ins.high around it for ½ sec.cor., mkd.on brass cap, ¼ S 2 on W.half, S 1 on E.half; and raise a mound of stone 2½ ft.base, 2 ft.high W of cor. Pits impracticable.

A pine 6 ins.dia.bears S.79° 30'W. 93 lks.dist.
mkd.¼ S 2 B T

A pine 12 ins.dia.bears N.42° 7'E. 1.82 chs.dist.
mkd.¼ S 1 B T

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Cor. is 500 ft. below Cor. of Secs. 1, 2, 11 & 12
41.50	Center of wash, 1.50 chs. wide 60 ft. deep drains E. 4 chs.
	Thence S. 45° E. Ascend.
44.56	Trail bears S. 45° E. to Camp Chicago
51.00	Top of bluff 1 ch. wide projects E. 8 chs. 50 ft. above wash.
52.00	Opposite edge of bluff and descend
55.75	Center of wash 50 lks. wide 6 ft. deep, drains S. 70°E. and ascend
59.60	Top of bluff projects E. 5 chs.
61.74	Opposite edge of bluff and descend
63.54	Center of wash 30 lks. wide 4 ft. deep, drains S. 30°E.
72.10	Top of bluff and descend.
78.10	Center of wash 10 lks. wide 2 ft. deep, drains S.30°E.
79.62	The cor. of secs. 1,2, 11 &12
	Land rough, rocky & mountainous.
	Soil rocky, 4th rate.
	Timber pine and cedar.
	Land mountainous, rough & exceptionally difficult to survey. 79.62 chs.
	April 18, 1909

April 19. 1909.

	From the standard corner of sec. 34 and 35 on the S. bdy. of the township, heretofore described,
	N.0°01' W. on true line bet.secs. 34 and 35
	Over rolling land
	Descend into wash
4.90	Wash 30 lks. wide, 10 ft. deep, drains S.30°E.
6.46	Top of wash
9.30	Top of wash bears E. and descend.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
10.40	Wash 10 lks: wide 30 ft. deep, drains E.
11.50	Top of wash
22.30	Wash 1 ch. wide 3 ft. deep drains E.
30.80	Top of wash bears E. rapid descent
31.80	Wash 1.25 chs. wide 35 ft. deep drains E. Ascend.
33.30	Top of wash thence slight ascent
40.00	Set iron post 3 ft. long 1 in. diam. 26 in. in the ground for 1/4 Cor. bet. Secs. 34 & 35 marked on brass cap 1/4 S. 34 on W. and S. 35 on E. half.
	Dig pits 18 x18x 12 ins. ~~3xft.~~ N. & S. of post 3 ft. dist. and erect mound of stone & earth 3 1/2 ft. base 1 1/2 ft. high W. of Cor.
45.00	Top of wash bears E.
	Descend.
47.50	Center of wash 30 ft. below top, drains S. 80° E. 20 lks. wide, 3 ft. deep
	Thence ascend
50.50	Top of wash 30 ft. above bottom
70.00	Wash 50 lks. wide 4 ft. deep, drains S. 75° E.
80.00	Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone 2 1/2 ft. base. 1ft. high for Cor. of Secs. 26,27, 34 & 35 marked on brass cap T. 40 S. S. 27 in N.W., R.18 E. S. 26 in N.E. S. 34 in S.W. & S 35 in S.E. quadrants, and
	Pits impracticable.
	Erect mound of stone 3 ft. base 2 1/2 ft. high W. of Cor.
	Cor. is 55 ft. above 1/4 Cor.
	First 40 chs. there are a few scattered cedars.
	Land rolling.
	Soil, sandy loam 2nd rate.
	Timber, scrubby cedars.

	East on random line between secs. 26 & 35
40.00	Set temporary 1/4 Sec. Cor.

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
79.98	Intersect N. & S. line 2 lks. S. of cor. to secs. 25, 26, 35 & 36
	Thence I run
	S. 89° 59' W. on true line bet. Secs. 26 & 35 slightly ascending
1.60	Wash, 1 ch. wide, 10 ft. deep, drains S. 75° E.
14.40	Wash, 20 lks. wide. 4 ft. deep, drains S. 80° E.
28.00	Top of wash, bears S. 60° E.
	Thence descend
29.60	Center of wash, 20 ft. below top 15 lks. wide, 1 ft. deep
32.50	Top of wash 20 ft. above bottom
39.99	Set iron post 3 ft. long 1 in diam. 12 ins. in the ground in mound of stone 2 1/2 ft. base 14 ins. high for 1/4 cor. bet. secs. 26 & 35 marked on brass cap 1/4 S. 26 on N. and S. 35 on S. half and
	erect mound of stone 2 1/2 ft. base, 2 ft. high north of cor. Impossible to set it over 12 ins. in the ground.
	Cor. is 100 ft. below cor. to secs. 25, 26, 35 & 36
	Thence gradual ascent
56.00	Top of large gulch, bears S. 42° E.
60.00	Center of wash, 100 ft. below top 20 lks. wide 2 ft. deep drains S. 35° E.
62.55	Top of wash, bears S. 35° E. 2 chs to where two washes meet
64.00	Top of wash,
	Rapid descent
64.60	Center of wash 60 ft. below E. bank 30 lks. wide, 3 ft. deep, drains S.E.
	Thence rapid ascent
72.00	Top of wash, bears S. 45° E.
79.98	The cor. to secs. 26, 27, 34 & 35
	Land rolling
	Soil 2nd rate; sandy loam.
	No timber

N. 0° 01' W. bet. secs. 26 & 27

Over slightly ascending mountainous land

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
8.70	Top of wash, bears S.E.
	Descend
15.60	Center of wash, 70 ft. below top 20 lks. wide 5 ft. drains S.E.
21.00	N. top of wash, bears S.E.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 26 & 27 marked on brass cap 1/4 S. 27 on W. and S. 26 on E. half and erect mound of stone 2 1/2 ft. base, 2 ft. high west of cor. Cor. is 50 ft. above sec. cor.
	Thence slight ascent
50.80	Wash 75 lks. wide, 10 ft. deep, drains S. 60° E.
	Thence ascend over rolling land
65.50	Foot of spur
	Ascend
66.60	Top of spur, bears E. 1 chain W. to cedar mesa
68.00	Foot of spur 25 ft. below top
75.70	Small wash, 30 lks. wide 4 ft. deep, drains S. 60° E.
80.00	Set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for cor. to secs. 22, 23, 26 & 27 marked on brass cap T. 40 S. S. 22 in N.W. R. 18 E. S. 23 in N.E. S. 26 in S.E. & S. 27 in S.W. quadrants; and erect mound of stone 3 1/2 ft. base, 3 ft. high to West of cor Whence
	A cedar tree 8 ins. diam. bears N. 58° 10' E. 1.24 chs. marked T. 40 S. R. 18 E. S. 23 B.T.
	A cedar tree 12 ins. in diam. bears S. 1° 10' E. 1.11 chs. marked T. 40 S. R. 18 E. S. 26 B.T.
	A cedar tree 18 ins. diam. bears N. 16° 50' W. 1.38 chs. marked T. 40 S. R. 18 E. S. 22 B.T.
	A cedar tree 20 ins. in diam. bears S. 34° 10' W. 1.35 chs. marked T. 40 S. R. 18 E. S. 27 B.T.
	Land rolling mountainous
	Soil 2nd rate and 4th rate; sandy loam and rocky.
	Last 10 chains a few scattering cedars
	Land mountainous 80.00 chs.

Chains.	
	N. 89° 59' E. on random line bet. Secs. 23 & 26
	Over slightly descending land broken with small washes
40.00	Set temporary 1/4 sec. cor.
80.02	Intersect N. & S. line 2 lks. N. of cor. to secs. 23, 24, 25 & 26
	Thence I run over broken mountainous land,
	West on a true line between secs. 23 and 26,
22.18	Wood raod, bears S.
23.80	Wash, 20 lks. wide, 2 ft. deep, drains S. 80° E.
36.00	Foot of spur, 100 ft. above sec. cor. bears N. and S.,
40.01	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 23 & 26 marked on brass cap 1/4 S. 23 on N. and S. 26 on S. half Erect mound of stone 2 1/2 ft. base, 2 ft. high N. of cor Pits impracticable. Cor. is 150 ft. above sec. cor. on E. slope of spur
41.50	Top of spur, bears S.E. 50 ft. above 1/4 cor.
52.00	Foot of spur, bears S. 60° E. 100 ft. below top
66.50	Top of wash, bears S.E.
67.80	Center of wash, 30 ft. above bottom
	Thence slight ascent
80.02	The cor. to secs. 22, 23, 26 & 27, 30 ft. above 1/4 cor.
	Land broken, mountainous
	Soil rocky and sandy, 3rd rate
	Last 20 chains a few scattering cedars
	Land mountainous 80.02 chs.

	April 19, 1909. At 9h 30 m. a.m. l.m.t. I set off 37° 19' N. on lat. arc. and 11°03' N. on decl. arc, and determine a meridian with the solar at the cor. of secs. 22, 23, 26 and 27.
	Thence I run N. 0°01' W between secs. 22 & 23
	Over rough & mountainous land, exceptionally difficult to survey
0.85	Wash, 20 lks. wide, 4 ft. deep, drains E.
	Thence slight descent

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.,
12.90	Wash, 50 lks. wide 4 ft. deep, drains S.E.
	Ascend gradually
20.00	Foot of cedar mesa, 30 ft. above sec. cor. Ascend
32.46	Foot of ledge 460 ft. above sec. cor. Ascend rapidly
34.21	Top of cedar mesa, bears S. 45° E. 860 ft. above sec. cor.
38.00	Top of bluff
	Gradual ascent
	Enter sparse growth of scrub pine or nearly bare sandstone
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone and earth 2 1/2 ft. base, 14 ins. high for 1/4 cor. bet. secs. 22 & 23 marked on brass cap 1/4 S. 22 on W. and S. 23 on E. half and erect mound of stone 2 1/2 ft. base, 3 ft. high W. of cor. Pits imp.
53.00	Top of level mesa
54.90	Edge of canon, abrupt descent
58.92	Top of branch of main wash
66.75	Center of wash 400 ft. below rim, drains E.
	Ascend abruptly
72.00	Top of point of ridge, projects E. 1 chain
	Descend abruptly
80.00	Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone and earth 2 ft. base 12 ins. high for cor. to secs. 14, 15, 22 & 23 marked on brass cap T. 40 S. S. 15 in N.W. R. 18 E. S. 14 in N.E. S. 23 in S.E. & S. 22 in S.W. quadrants; Erect mound of stone 3 1/2 ft. base, 2 1/2 ft. high west of cor. Pits impracticable
	A pine tree 10 ins. diam. bears S. 83° 30' W. 41 lks. marked T. 40 S. R. 18 E. S. 22 B.T.
	A pine tree 18 ins. diam. bears S. 54° 36' E. 27 lks. marked T. 40 S. R. 18 E. S. 23 B.T.
	A cedar tree 10 ins. diam. bears N. 75° 45' E. 1.18 chs. marked T. 40 S. R. 18 E. S. 14 B.T.
	A pine tree 14 ins. diam. bears N. 19° 30' W. 1.13 chs. marked T. 40 S. R. 18 E. S. 15 B.T.

Corner is 300 ft. below top of bluff

There is a cliff dwelling 4 chains N. 10° E. from this cor.

Impossible to set 1/4 sec. and sec. cor. posts over 12 ins. in ground.

Land mountainous and rocky

Soil 3rd & 4th rates; sandy and rocky.

Timber scattering pines & cedars on last 30 chains

Land mountainous and exceptionally difficult to survey

80.00 chs.

East , on a random line between secs. 14 & 23

40.00 Set temporary 1/4 sec. cor.

79.96 Intersect N. & S. line 9 lks. N. of cor. to secs. 13, 14, 23 & 24

Thence I run

N. 89° 56' W on true line bet. Secs. 14 & 23

Ascending slightly through scattering cedar trees

8.25 Wash, 40 lks. wide, 5 ft. deep, drains S. 70° E.

15.00 Foot of ridge 25 ft. above sec. cor. bears S.E.

Thence rapid ascent over broken surface,

leave cedar timber

28.00 Top of ridge, 470 ft. above sec. cor. at foot of bluff or point projecting S.E. from cedar mesa

Thence descent

39.98 Set iron post 3 ft. long 1 in. diam. 12 ins. in ground to bedrock, in mound of stone 2 1/2 ft. base 14 ins. ft. high for 1/4 cor. bet. secs. 14 & 23 marked on brass cap 1/4 S. 14 on N. and S. 23 on S. half Pits impracticable.

Erect mound of stone 2 1/2 ft. base, 2 ft. high N. of cor.

44.50 Descend into wash

48.00 Wash, 50 lks. wide, 20 ft. deep, drains S.E.

49.48 Foot of bluff, bears S. 15° E. 100 ft. above 1/4 cor.

April 19. At this point I set off 11°10' N. on the declination and at 11h 59m a.m. l.m.t. observe the sun on the meridian, the resulting latitude is 37° 20' N. which is correct from other data

SUBDIVISIONS T. 40 S., R. 18 E.,

Chains.	
	Abrupt ascent
61.17	Top of cedar mesa 500 ft. above foot of bluff
	Ascend rapidly over sandstone bluffs
64.52	Top of bluff projects South 8 chs.
67.06	Opposite edge of bluff and descend abruptly into canon
76.00	Center of wash, 20 lks. wide, 6 ft. deep, drains S. 35° E.
	Gradually ascend
79.96	The cor to secs. 14, 15, 22 & 23
	Land mountainous and rocky
	Soil 3rd & 4th rates; sandy and rocky.
	Timber a few scattering cedars
	Land mountainous and rocky 79.96 chs.
	N. 0° 01' W. bet. secs. 14 & 15
	Across bottom of canon
1.15	Center of wash, 30 lks. wide, 15 ft. deep, drains S. 35° E.
	very abrupt ascent
9.05	Top of bluff 300 ft. above sec. cor.
11.24	Enter pine & cedar timber
	Ascend gradually
22.45	Center of wash, 40 lks. wide 15 ft. deep drains S. 70° E.
26.55	Center of wash, 50 lks. wide, 10 ft. deep, drains East
	Ascend gradually through dense pine & cedar timber
32.35	Center of wash 40 lks. wide, 10 ft. deep, drains S. 20°E.
34.85	Center of wash, 40 lks. wide 8 ft. deep, drains S. 50°E.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 14 & 15 marked on brass cap 1/4 S.15 on W. and S.14 on E. half
	Dig pits 18 x 18 x 12 ins. 3 ft. N. & S. of cor. and build mound of earth 3 1/2 ft. base, 1 1/2 ft. high
	West of cor.
	1/4 cor. is 450 ft. above cor. of secs. 14, 15, 22 & 23
	Whence
	A cedar tree 10 ins. diam. bears S. 19° E. 19 lks. marked

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
	1/4 S. 14 B.T.
	a pine tree 10 ins. diam. bears N. 70° W. 1 ch. marked 1/4 S. 15 B.T.
44.30	Center of wash 30 lks. wide 6 ft. deep, drains E.
60.72	Center of wash, 25 lks. wide, 8 ft. deep, drains S.80°E.
64.00	Top of low ridge, gradually descend
68.15	Center of wash, 20 lks. wide 5 ft. deep, drains E.
72.55	Center of wash, 40 lks. wide, 10 ft. deep, drains E.
	Enter nearly bare sandstone with scrub pine & cedar trees
76.55	Center of wash, 30 lks. wide, 5 ft. deep, drains E.
80.00	Set iron post 3 ft. long 2 ins. dia. 12 ins. in ground to bed-rock, & in mound of stone 2 1/2 ft. base, 12 ins. high for Cor. of Secs. 10,11,14 & 15 marked on brass cap T.40 S. S. 10 in N.W., R.18 E. S.11 in N.E. S.14 in S.E. & S. 15 in S.W. quadrants and erect mound of stone 3 ft. base 2 1/2 ft. high W. of Cor. Whence
	A cedar tree 10 ins. diam. bears N. 55° E. 74 lks. marked T. 40 S. R. 18 E. S. 11 B.T.
	A pine tree 8 ins. diam. bears S. 52° E. 33 lks. marked T. 40 S., R. 18 E. S. 14 B.T.
	A pine tree 10 ins. diam. bears N.33°W.89 lks. mkd. T.40 S. R.18 E. S. 10 B.T.
	A pine tree 8 ins. diam. bears S. 56° W.44 lks. marked T. 40 S.R. 18 E. S. 15 B.T.
	Cor. is 400 ft. above Cor. of Secs. 14, 15, 22 & 23
	Land rolling and descending slightly
	Soil 9 ins. deep on solid sandstone, 4th rate
	Timber, pine and cedar
	Land mountainous, and exceptionally difficult to survey
	80.00 chs.

S.89° 56' E. on random line bet. secs. 11 and 14,

40.00	Set temporary 1/4 Sec. Cor.
80.04	Intersect N. & S. line 7 lks. S. of Cor. of Secs. 11, 12

Chains	SUBDIVISIONS T. 40 S., R. 18 E.
	13 & 14
	Thence I run
	N. 89° 59' W. on true line bet. Secs. 11 & 14
	Ascending rapidly
7.56	Top of bluff
18.55	Center of wash 10 lks. wide 2 ft. deep, drains S.10°W.
	Ascend
32.00	Top of ledge Descend abruptly
37.40	Center of wash, 30 lks. wide 10 ft. deep, drains S.10°W.
40.02	Set iron post 3 ft. long, 1 in. diam. 12 ins. in the ground in mound of stone 2 1/2 ft. base, 14 ins. high for 1/4 Cor. bet. Secs. 11 & 14 marked on brass cap 1/4 S. 11 on N. and S. 14 on S. half Erect mound of stone 3 1/2 ft. base, 2 1/2 ft. high N. of Cor. Whence
	A pine tree 8 ins. diam. bears S. 12°30' E. 24 lks. marked 1/4 S. 14 B.T.
	A bearing rock bears N. 65° 30' E. 12 lks. mkd. 1/4 S 11 B0.
	Impossible to set post over 12 ins. in the ground.
	Cor. is near edge of sandstone ledge 40 ft. high and 150 ft. below Cor. of Secs. 10, 11, 14 & 15
50.90	Top of ledge, line follows along ledge
53.80	Top of bluff Descend abruptly
61.50	Center of wash, 40 lks. wide, 4 ft. deep, drains South
64.00	Top of bluff, 50 ft. above wash, extends N. 50 lks.
65.00	Opposite edge of bluff. Descend abruptly
68.40	Center of wash 60 lks. wide 25 ft. deep, drains N.80° E.
76.00	Center of wash 30 lks. wide 6 ft. deep, drains S.45°E.
77.00	Top of bluff, bears S.E. & N.W.
80.04	The Cor. of Secs. 10, 11, 14 & 15
	Land broken, rocky & mountainous
	Soil 4th rate; rocky.
	Scattering growth of pinon & cedar trees
	Land mountainous rock & covered with timber
	80.04 chs.

SUBDIVISION T.40 S., R. 18 E.

Chains	
	N.0° 01'W.bet.secs.10 and 11,
	Over nearly bare sandstone with scattering growth of cedar and pinon pine.
7.60	Center of wash, 20 lks.wide, 3 ft.deep, drains E.
12.55	Edge of bluff.Descend abruptly into canon.
16.71	Center of wash, 15 lks.wide, 3 ft.deep, drains S.70° E.
	Wash is about 90 ft.below top of bluff.Ascend abruptly.
19.11	South edge of bluff.
20.35	Center of bluff; extends E.4 chs.
25.30	North edge of bluff. Descend abruptly.
27.85	Center of wash, 40 lks.wide, 15 ft.deep, drains S.80°E.
31.78	Edge of bluff, 60 ft.high.
34.78	Center of wash, 10 lks.wide, 3 ft.deep, drains E.
	Enter cedar and pinon timber.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 14 ins.high for 1/4 sec.cor.; marked on brass cap 1/4 S 10 on W. and S 11 on E.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.
	Impossible to set post over 12 ins.in the ground.
	A pine tree 10 ins.dia.bears S.32° E. 37 lks.dist. marked 1/4 S 11 B T
	A pine tree 16 ins.dia.bears S.72° 15'W. 99 lks. dist., mkd.1/4 S 10 B T
42.00	Center of wash,25 lks.wide, 4 ft.deep, drains S.15° W.
50.50	Center of wash,12 lks.wide, 3 ft.deep, drains S.60° E.
56.00	Top of [illegible] ridge. Descend gradually.
65.30	Center of wash,20 lks.wide,6 ft.deep, drains E.
79.90	Center of wash, 10 lks.wide, 6 ft.deep, drains E.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.2,3,10, and 11, marked on brass cap T 40 S S 3 in NW.; R 18 E S 2 in NE.; S 10 in SW.; and S 11 in SE.quadrants; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.

A pine tree 10 ins.dia.bears S.59° 30'W. 63 lks. dist., mkd.T 40 S R 18 E S 10 B T

A pine 10 ins.dia.bears N.20° W.61 lks.dist. mkd. T 40 S R 18 E S 3 B T

A pine 9 ins.dia. bears S.40° 30'E. 39 lks.dist. mkd.T 40 S R 18 E S 11 B T

A pine 7 ins.dia.bears N.37° E. 31 lks.dist. mkd. T 40 S R 18 E S 2 B T

Land, slopes gradually to southeast; mountainous, rough and broken.

Soil, sandy loam and rocky; 2d and 4th rates.

Timber, cedar and pinon pine.

Mountainous land, rough and broken; exceptionally difficult to survey, 80.00 chs.

S.89° 59'E.on a random line bet.secs.2 and 11,

40.00 Set temp. 1/4 sec.cor.

80.03 Intersect N. and S.line 5 lks.N.of the cor.of secs.1, 2,11, and 12.

Thence I run

N.89° 57'W.on a true line bet.secs.2 and 11,

Over broken land.

10.00 Center of wash, 30 lks.wide, 10 ft.deep, drains N.20° E.

13.77 Top of ridge.

Descend gradually.

19.75 Center of wash, 15 lks.wide, 2 ft.deep, drains S.15° W.

27.45 Center of wash, 15 lks.wide, 3 ft.deep, drains south.

37.15 Center of wash, 30 lks.wide, 4 ft.deep, drains south.

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
40.01½	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground ground in mound of stone 2 1/2 ft. base and 14 ins. high for 1/4 sec.cor. marked on brass cap 1/4 S.2. in north and S. 11 in south half and erect mound of stone 3 1/2 ft. base, 2 1/2 ft. high N. of cor.
	Impossible to set post over 12 ins. in the ground.
	A cedar tree 8 ins. Diam. bears North 13 lks. marked 1/4 S. 2 B T.
	A cedar tree 20 ins. diam. bears S.33°40'W. 39 lks. marked 1/4 S. 11 B T
44.30	Center of wash 30 lks. wide, 3 ft. deep drains S. 80°E.
50.80	Center of wash 10 lks. wide 2 ft. deep drains S.20°E.
54.75	Center of wash 15 lks. wide 4 ft. deep drains S.45°E.
60.00	Top of ridge.
76.60	Center of wash 10 lks. wide 3 ft. deep drains S.45°E.
80.03	The cor. to secs. 2,3, 10 & 11
	Land rolling, rocky rough and mountainous.
	Soil rocky 4th rate.
	Timber scattering pinon & cedar trees.
	Land mountainous rough and broken and exceptionally difficult to survey. 80.03 chs.

	N.0°01'W. on random line bet. Secs. 2 & 3
40.00	Set temp. 1/4 Sec.Cor.
79.71	Intersect N. bdy. of Tp. 14 lks.E. of Cor. to Secs.2, 3 34 & 35 heretofore described.
	Thence I run, over broken land, [illegible].
	S.0°07'E. on true line bet.secs. 2&3
8.20	Center of wash 10 lks. wide 3 ft. deep drains East.
16.65	Center of wash 15 lks. wide 2 ft. deep drains S.80°E.
22.80	Center of wash 30 lks. wide 4 ft. deep drains S.80°E.
29.75	Center of wash 10 lks. wide 3 ft. deep drains East.
35.10	Center of wash 15 lks. wide 3 ft. deep drains. N.80°E.
39.71	Set iron post 3 ft. long 1 in.diam 26 ins. in the ground for 1/4 cor.bet. secs. 2 & 3 marked on brass cap 1/4S

Chains.	SUBDIVISION T. 40 S., R. 13 E.
	3on W. and S. 2 on E.half and raise mound of stone
	2 1/2 ft. base, 2 ft. high W. of Cor. Whence
	A pine tree 6 ins. diam. bears S.68°18'E. 55 lks.marked 1/4 S. 2 B T
	A pine tree 14 ins. diam.bears N.36°35'W. 35 lks.marked 1/4 S. 3 B T
44.50	Center of wash 15 lks. wide, 5 ft. deep drains S.80°E.
49.90	Center of wash 15 lks. wide 3 ft. deep drains S.70°E.
53.50	Center of wash 20 lks. wide 6 ft. deep drains. East
58.55	Center of wash 10 lks. wide 5 ft. deep drains. East
63.00	Top of ridge.
67.40	Descend gradually
67.10	Center of wash 20 lks. wide, 4 ft. deep drains S.80°E.
77.40	Trail bears N.30°E.
79.71	The cor. to secs. 2, 3, 10 & 11
	Land descending to south and east.
	Soil 2nd rate; sandy loam.
	Timber cedar and pinon.
	Land dense scrub timber exceptionally difficult to survey
	79.71 chs.
	April 19, 1909
	April 20, 1909.
	I begin at Standard Cor.to Secs.33 & 34 on S,bdy.of tp. heretofore described, and run N.0° 02'W. bet.secs.33 and 34,
	Ascending slightly, land rolling.
26.80	Foot of spur, bear S.E. & N.W.
27.50	Top of spur bears S.E. 1.50 chs. N.W. 2.50 chs.
29.70	North foot of spur 25 ft.below top.
	Ascend gradually.
33.60	Small wash, 15 lks. wide 6ft.deep, drains S.30° E
40.00	Set iron post 3 ft. long 1 in.diam. 26 ins.in the ground for 1/4 cor.bet. secs. 33 & 34 marked on brass cap 1/4 S. 33 on W. and S. 34 on E. half and erect a mound of stone

Chains. SUBDIVISIONS T. 40 S., R. 18 E.,

Chains.	
	3 ft. base, 2 1/2 ft. high West of cor
	Cor. is on E. side of wash, 60 ft. above Standard Cor.
	Thence leave wash which drains South 30° E. and
	Ascend slightly
59.30	Wash, 30 lks. wide, 8 ft. deep, drains S. 75° E.
80.00	Set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for cor to secs. 27, 28, 33 & 34 marked on brass cap T. 40 S. S. 28 in N.W. R. 18 E. S. 27 in N.E. S. 33 in S.W. & S. 34 in S.E. quadrants, and erect mound of stone and earth 3 ft. base, 2 1/2 ft. high W. of cor.
	Pits impracticable
	Cor. is 80 ft. above 1/4 cor.
	Land rolling
	Soil, Sandy loam; 1st and 2d rate.
	No timber
	East on a random line bet. secs. 27 & 34
40.00	Set temporary 1/4 cor.
80.02	Intersect N. & S. line 2 lks. N. of cor. to secs. 26, 27, 34 & 35
	Thence I run
	N. 89° 59' W. on true line bet. secs. 27 & 34
	Over slightly ascending land
7.80	Wash, 50 lks. wide, 4 ft. deep, drains S. 60° E.
38.00	Top of wash, bears S.E. 75 ft. above sec. cor.
	Thence descend
40.01	Set iron post 3 ft. long, 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 27 & 34 marked on brass cap 1/4 S. 27 on N. and S. 34 on S. half and raise a mound of stone 2 1/2 ft base 2 ft. high N. of cor.
	Pits impracticable Whence
	A cedar tree 10 ins. diam. bears S. 23° 10' W. 2.63 chs. marked 1/4 S. 34 B.T.
	No other trees suitable for marking within limits

Chains. SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
	Cor. stands on E. side of wash 40 ft. above sec. cor.
41.50	Wash, 25 ft. below 1/4 cor. 25 lks. wide, 2 ft. deep, drains south
45.00	Top of spur, 25 ft. above wash, bears S.E.
	Then descend
47.80	Wash 30 lks. wide, 3 ft. deep, drains S. 50° E.
59.20	Top of ridge, 70 ft. above wash, bears S. 80° E.
80.02	The cor. to secs. 27, 28, 33 & 34
	Land rolling
	Soil, 2nd rate; sandy loam.
	Timber, a few scattering cedars.
	N. 0° 02' W. bet. secs. 27 & 28
	Over rolling land, ascending slightly
14.00	Wash, 20 lks. wide, 8 ft. deep, drains S. 75° E.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 27 & 28 marked on brass cap 1/4 S. 28 on W. and S. 27 on E. half and raise a mound of stone 2 1/2 ft. base 2 ft. high W. of cor.
	Pits impracticable Whence
	A cedar tree 15 ins. diam. bears N. 88° 22' W. 130 lks. marked 1/4 S. 28 B.T.
	A pinon tree 6 ins. diam. bears N. 30° 35' E. 26 lks. marked 1/4 S. 27 B.T.
55.00	Top of wash bars East,
	Descend
56.40	Center of wash, 30 lks. wide 8 ft. deep, drains S. 60° E.
	Thence gradual ascent up Cedar Mesa
68.00	Very rapid ascent 175 ft. above foot
71.00	Foot of ledge, S. 60° E.
	Ascend abruptly
80.00	Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone 2 1/2 ft. base, 12 ins. high for cor. of secs. 21, 22, 27, and 28, marked on brass cap,

SUBDIVISION OF T. 40 S., R. 18 E.

Chains.	
	T 40 S S 21 in NW.; R 18 E S 22 in NE.; S 27 in SE., and S 28 in SW.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.
	Impossible to set post over 12 ins.in the ground.
	Land, level and broken.
	Soil, sandy and rocky; 2d and 4th rate.
	Timber, scattering cedar and pine.
	S.89° 59'E.on random line bet.secs.22 and 27,
40.00	Set temp.¼ sec.cor.
80.08	Intersect N. and S.line at the cor.of secs.22.23,26, and 27. Thence I run
	N.89°59'W.on true line bet.secs.22 and 27,
	Over rough and broken mountainous land.
12.00	Rapid ascent, 100 ft.above cor.
17.44	Foot of steep cliff, bears N.15° E.
21.50	Top of point projecting SW.from cedar mesa 300 ft.above sec.cor.; descend rapidly over bare sandstone.
32.00	Foot of bluff, 400 ft.below point of mesa, continue to descend.
40.04	Point for ¼ sec.cor. falls on top of flat stone 12 x 6 x 8 ft., 4 ft.high. At exact point for ¼ sec.cor.I cut a cross (X); and it being impossible to set an iron post within 5 chains, I set a sandstone 14 x 9 x 5 ins. in mound of stone over cross for ¼ sec.cor. marked ¼ on N.face; and raise a mound of stone 2½ ft. base, 2 ft.high N.of cor.
[illegible]	A cedar 12 ins.dia.bears S.70° 03'E. 2.14 chs.dist. marked ¼ S 27 B T [illegible]
	No other bearing trees within limits.
44.25	Wash, 20 lks.wide, 6 ft.deep, drains SE., 125 ft.below ¼ sec.cor., and 600 ft.below top of cedar mesa.
	Thence ascend rapidly.

Subdivision [illegible], [illegible] S., R. [illegible] E.

Chains.	
[illegible]	Foot of ledge [illegible] ft. above wash, bears S. [illegible]° W.
	Continue to ascend rapidly over bare sandstone.
[illegible]	Top of abrupt ascent or ledge of bare sandstone, bearing N. [illegible]° W. and S. [illegible]° E., and extending about [illegible] chs. to the southeast and [illegible] chs. to the northwest. Ledge is about [illegible] ft. high forming one of the approaches to the mesa.
	Ascend rapidly.
[illegible]	Top of bluff.
[illegible]	Top of level bench, covered with scattering pine and cedar trees.
[illegible]	The [illegible] of secs. [illegible], [illegible], [illegible], and [illegible].
	Land, mountainous, very much broken and rocky.
	Soil, rocky, [illegible].
	Timber, sparsely scattering pinon and cedar.
	Mountainous land, rough, broken and exceptionally difficult to survey [illegible] chs.

[illegible]° [illegible], bet. secs. [illegible] and [illegible].

Ascending rapidly over broken sandstone.

[illegible] Top of cedar mesa; enter dense growth of pinon and cedar, in gravelly soil.

[illegible] Center of wash, [illegible] lks. wide, [illegible] ft. deep, drains [illegible]° E.

[illegible] Edge of gravelly soil; descend gradually.

[illegible] Center of wash, [illegible] lks. wide, [illegible] ft. deep, drains E.

[illegible] [illegible] post [illegible] ft. long, [illegible] ft. deep, [illegible] ins. in the ground, for [illegible] sec. cor., marked on brass cap [illegible] S [illegible] on W. and S [illegible] on [illegible], [illegible] ins. W. and [illegible] post [illegible] ft. dist., and [illegible] [illegible] [illegible] ft. base, [illegible] ft. high W. of cor.

[illegible] sec. cor. is about [illegible] ft. above sec. cor.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] S. [illegible]

SUBDIVISIONS T. 40 S., R. 18 E.

Chains. A cedar tree 20 ins.diam.bears N.12° 30'W. 73 lks. dist., marked ¼ S 21 B T

47.35 Center of wash, 3 lks.wide, 8 ft.deep, drains East.

57.65 Leave pine and cedar timber; enter sagebrush, bears S. 45° E.

63.25 Leave sagebrush and enter pine and cedar timber.

74.05 Top of ridge. Descend gradually.

75.00 Enter sagebrush flat, bears E. & W.

77.00 Leave sagebrush flat and enter timber.

80.00 Set iron post 3 ft.long, 2 ins.diam., 24 ins.in the ground, for cor.to secs.15,16,21, and 22, marked on brass cap T 40 S S 16 in NW.; R 18 E S 15 in NE.; S 21 in SW., and S 22 in SE.quadrants; whence

A cedar tree 16 ins.dia.bears N.36° 30'E. 82 lks. dist., mkd.T 40 S R 18 E S 15 B T

A cedar tree 12 ins.diam.bears S.70° 15'E. 24 lks. dist., mkd.T 40 S R 18 E S 22 B T

A cedar tree 10 ins.diam.bears N.29° W. 1.78 chs. dist., marked T 40 S R 18 E S 16 B T

A cedar tree 12 ins.diam.bears S.86° 30'W. 70 lks. dist., mkd.T 40 S R 18 E S 21 B T

Land, slightly rolling mesa.

Soil, sandy loam; 2nd rate.

Timber, pinon and cedar.

Land exceptionally difficult to survey 80.00 chs.

April 20: At this cor.I set off 11° 30'N.on declination arc, and observe the sun on the meridian at 11 h. 59 m.a.m.l.m.t.; the resulting lat.is 37° 20', which is correct from previous observations.

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
	S.89° 59'E.on random line bet.secs.15 and 22,
40.00	Set temporary ¼ sec.cor.
79.92	Intersect N. & S.line 8 lks.N.of cor.to secs.14,15,22 & 23. Tance I run N.89° 56'W.on true line bet.secs.15 & 22,
	Ascending rapidly, through thick cedar & pinon timber.
8.90	Top of bluff. Ascend gradually.
18.40	Edge of level mesa.
24.30	Center of wash, 30 lks.wide, 6 ft.deep, drains S.45° E.
32.00	Center of wash 15 lks.wide, 4 ft.deep, drains S. 1 ch.; thence E.
39.96	Set iron post 3 ft.long, 1 in.diam., 26 ins.in the ground for ¼ sec.cor., marked on brass cap ¼ S 15 in N.half, S 22 in S.half; and raise a mound of stone 2 ft.base, 1½ ft.high N.of cor. Pits impracticable.
	Whence
	A pine tree 10 ins.diam.bears N.25° 30'W. 53 lks. dist., mkd.¼ S 15 B T
	A cedar tree 12 ins.dia.bears N.61° 30'E. 77 lks. dist., mkd.¼ S 15 B T
	A pine tree 10 ins.dia.bears S.40° W. 32 lks.dist. mkd.¼ S 22 B T
54.10	Leave timber and enter sagebrush, bears S.65° E.
58.40	Small wash 3 lks. wide, 2 ft.deep, drains S.65° E.
71.00	Leave sagebrush and enter timber.
79.92	The cor.of secs.15,16,21, and 22.
	Land, rolling.
	Soil, sandy loam; 2nd rate.
	Timber, cedar & pinon.
	Land difficult to survey 79.92 chs.

N. 0° 02' W. bet. secs. 15 & 16.

Over gently rolling land, through thick Cedar & pinon timber.

4.25 Center of wash, 30 lks. wide, 8 ft. deep, drains East

Leave timber and enter sagebrush, bears N. 45° W.

12.75 Center of wash, 25 lks. wide, 3 ft. deep, drains S. 45° E.

20.00 Top of low ridge.

24.00 Center of wash, 10 lks. wide, 2 ft. deep, drains N. 45°W.

35.45 Center of wash, 30 lks. wide, 5 ft. deep, drains N. 40°W.

40.00 Set iron post 3 ft. long, 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 15 & 16 markedon brass cap 1/4 S.16 on W. and S.15 on E half of N. & S. center line Dig pits 18 x18 x 12 ins. N. & S. of post 3 ft. dist. raised mound of earth 3½ ft. base 1½ Ft. high W. of cor.

A cedar tree 12 ins. diam. bears S. 51° 50' W. 65 lks. marked 1/4 S.16 B.T.

A pine tree 10 ins. diam. bears S. 36° E. 1.04 chs. marked 1/4 S. 15 B.T.

44.00 Leave sagebrush and enter timber

Descend gradually

48.55 Center of wash, 20 lks. wide, 3 ft. deep, drains N. 40°W.

60.25 Center of wash, 40 lks. wide, 10 ft. deep, drains S. 45°W.

71.20 Edge of bluff

Descend abruptly into canon

76.00 Foot of bluff; bears E. and W.

Enter cedar & pinon timber

80.00 Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone 2 1/2 ft. base 12 ins. high for cor. to secs. 9, 10, 15 & 16 marked on brass cap T. 40 S. S. 9 in N.W. R. 18 E. S. 10 in N.E. S. 15 in S.E. and S 16 in S.W. quadrants, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor

Pitsimpracticable.

Impossible to set post over 12 ins. in the ground.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
	A pine tree 8 ins. diam. bears S. 45° 30' E. 2.42 chs. marked T. 40 S. R. 18 E. S. 15 B.T.
	A pine tree 12 ins. diam. bears N. 44° E. 1.70 chs. marked T. 40 S. R. 18 E. S. 10 B.T.
	A pine tree 16 ins. diam. bears N. 17° 30' W. 95 lks. marked T. 40 S. R. 18 E. S. 9 B.T.
	Corner is 500 ft. below 1/4 cor. and 300 ft. below top of bluff. No other suitable bearing trees within limits.
	Land rolling and broken.
	Soil 4th rate, rocky; and sandy 2d rate.
	Timber cedar & pinon Land mountainous and difficult to survey 80.00 chs.
	S. 89° 56' E. on random line bet. secs. 10 & 15
40.00	Set temporary 1/4 Sec. Cor.
80.02	Intersect N. & S. line 15 lks. N. of cor to secs. 10, 11, 14 & 15
	Thence I run
	N. 89° 50' W. on true line bet. secs. 10 & 15
	Ascend gradually through dense pinon & cedar timber
10.00	Edge of level mesa; bears SE. and NE.
32.00	Trail, bears N. and S.
34.00	Edge of mesa,
	Descend gradually
40.01	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. bet. secs. 10 & 15 markedon brass cap 1/4 S. 10 in N. half, and, S. 15 in S. half
	Whence
	A pine tree 9 ins. diam. bears S. 31° E. 66 lks. marked 1/4 S. 15 B.T.
	A pine tree 12 ins. diam. bears N. 30° W. 17 lks. marked 1/4 S. 10 B.T.
41.45	Center of wash, 20 lks. wide, 3 ft. deep, drains N. 50°W.
63.75	Edge of bluff

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Descend gradually.
70.40	Center of wash, 1.00 ch. wide 20 ft. deep, drains N.60°W.
79.00	Center of wash 1.00 ch. wide 20 ft. deep, drains North
80.02	The cor. to secs. 9, 10, 15 & 16
	Land E.3/4 gently rolling West 1/4 stony & rocky.
	Soil 2nd rate sandy; 4th rate rocky.
	Timber cedar and pinon.
	Land difficult to survey. 80.02 chs.

Apr. 20: At 2h. 59 m.p.m.l.m.t. I set off 37°21'N. on lat. arc. and 11°33'N. on decl.arc. and determine a meridian with the solar at the cor.of secs.9,10, 15 , and 16; Thence I run

N.0°02'W. bet. secs. 9&10

Over nearly bare sandstone with scattering cedar and pinon trees.

8.55	Center of wash 40 lks. wide, 10 ft. deep, drains West
14.70	Foot of bluff bears E. and W.
	Ascend rapidly.
24.25	Edge of bluff bears SE. and NW. Ascend gradually.
40.00	Set iron post 3 ft. long lin. diam. set 12 ins. in the ground in mound of stone 2 1/2 ft. base 14 ins.high for 1/4 cor. bet. secs. 9&10 mkd. on brass cap 1/4 S,9 on W. and S.10 on E. half and erect a mound of stone 3 1/2 ft.base, 3 ft. high W. of cor.

Pits impracticable.

Impossible to set post over 12 ins.in ground

A pine tree16 ins. diam.bears N.78°E.46lks. marked 1/4 S. 10 B T

A pine tree 12 ins. diam. bears S.83°30'W. 1.25 chs. marked 1/4 S. 9 B T

Cor. is about 325 ft. above cor. of secs. 9,10,15 &16

42.85	Top of ridge bears E. and W. Descend gradually.
47.95	Edge of bluff, bears E. and W.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Descend abruptly.
52.70	Foot of sandstone ledges.
63.25	Center of wash 60 lks. wide 15 ft. deep, drains.N.20°W.
67.05	Centerof wash 50 lks. wide 20 ft.deep drains S 70°W.
80.00	Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone 2 1/2 ft. base 12ins. high for cor.secs.3,4, 9&10 marked on brass cap T. 40 S. S. 4 on N.W. R.18E. S. 3 on N.E. S.9 on S.W. & S. 10 on S.E. quadrants, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor. Pits impracticable.
	Impossible to set post over 12 ins. in the ground.
	A pine tree 14 ins. diam. bears N.20°30'E. 93 lks. marked T. 40 S R 18 E. S. 3 B T
	A pine tree 14 ins. diam. bears N.81°10' W. 1.06 chs. marked T. 40 S R 18 E S 4 B T
	A pine tree 6 ins. diam. bears S.53°E 1.30 chs. marked T. 40 S. R. 18 E. S.10 B.T.
	A pine tree 14 ins. diam. bears S.25°30'W. 2.04 chs. marked T. 40 S.R. 18 E.S. 9 B.T.
	Cor. is about 300 ft. below 1/4 cor.bet. secs. 9&10
	Land mountainous.
	Soil rocky; 4th rate.
	Timber scattering cedar & pinon
	Land mountainous, exceptionally difficult to survey.
	80.00 chs.
	S.89°50'E. on random line bet. secs. 3 & 10
40.00	Set temp. 1/4 sec.cor.
79.92	Intersect N.& S. line 12 lks. N. of cor. to secs.2,3, 10 &11. Thence I run
	N.89°45'W. on true line bet. secs. 3 & 10
	Ascending gradually through scrub pine & cedar trees
10.00	Top of ridge. Descend gradually.
33.75	Center of wash 30 lks. wide, 3 ft. deep, drains S.45°W.

SUBDIVISION T. 40 S. R. 18 E.

Chains.	
39.96	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high marked on brass cap 1/4 S. 3 on N. & S. 10 on S. half and erect mound of stone 3 ft. base, 2.5 ft. high N. of cor. Pits impracticable.
	Impossible to set post over 12 ins. in the ground.
	A pine tree 20 ins. diam. bears S.13°E. 46 lks. marked 1/4 S. 10 B.T.
	A pine tree 10 ins. diam. bears N.34°E. 68 lks. marked
42.90	[illegible]
42.90	Edge of bluff. Descend abruptly.
59.36	Center of wash 20 lks. wide 10 ft. deep drains. N.45°W.
61.75	Center of wash 50 lks. wide 15 ft. deep drains S.45°W.
	Ascend abruptly
67.37	Top of ridge 140 ft. above wash, projects S. 2 chs
76.44	Opposite edge of ridge.
	Descend abruptly
	Line skirts N. edge of box canon 2 chs. from foot of bluff
79.92	The Cor. of secs. 3,4, 9 & 10
	Land broken & mountainous.
	Soil 4th rate, rocky; and 3rd rate, sandy
	Scattering pinons & cedars
	Land mountainous, rocky & covered with scattering timber
	79.92 chs.

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	N.0° 02' W. on random line bet. Secs. 3 & 4
40.00	Set temp. 1/4 Sec. Cor. of Secs.
79.83	Intersect N. bdy. of Tp. 19 lks. E. of Cor. of secs. 3, 4, 33 & 34, heretofore described.
	Thence I run
	S.0°10' E. on true line bet. secs. 3 & 4

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Ascending abruptly over sandstone ledges.
6.35	Top of bluff
20.20	Center of wash 10 lks. wide, 3 ft. deep, drains N.60°W.
24.00	Top of ridge bears N.W. & S.E.
39.83	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Cor. bet. Secs. 3 & 4 marked on brass cap 1/4 S 4on W. half and S. 3 on E. half; and erect mound of stone 3 ft. base 2.5 ft. high W. of Cor.
	Pits impracticable.
	Descend gradually over mesa covered with scattering cedar & pinon trees
50.40	Top of bluff
	Descend abruptly.
55.10	Foot of bluff
63.90	Center of wash 50 lks. wide 15 ft. deep drains S.45°W.
65.85	Center of wash 20 lks. wide 5 ft. deep drains S.45°W.
67.75	Top of sandstone ledge
71.75	Centerof wash 20 lks. wide 3 ft. deep drains S.70°W.
79'83	The Cor. to secs. 3,4, 9& 10
	Land broken & rocky.
	Soil rocky 4th rate.
	Timber scattering cedars & pinons.
	Land mountainous & difficult to survey. 79.83 chs.
	April 20th, 1909.

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April 21, 1909,

I begin at the Standard cor. of secs. 32 and 33 on the S. boundry of the township, heretofore described;

Thence I run

N.0° 03' W. on true line bet Secs. 32 & 33

Along east foot of cedar mesa.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
30.40	Top of ridge projecting from mesa, bears S, 60° E. 225 ft. above Standard Cor. to secs. 32 & 33
40.00	Set iron post 3 ft. long, 1 in diam. 26 ins. in the ground for 1/4 cor. to secs. 32 & 33 marked on brass cap 1/4 S. 32 on W. half and S. 33 on E. half and erect mound of stone 3 ft. base 2.5 ft. high W. of cor.
	Pits impracticable
74.00	Top of cedar mesa, bears N. 80° W. about 1000 ft. above Standard sec. cor.
75.44	Descend over edge of mesa
80.00	Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground on solid rock in mound of stone 2.5 ft. base 1.5 ft. high for cor. to secs. 28, 29, 32 & 33 marked on brass cap T. 40 S. S. 29 in N.W. R. 18 E. S. 28 in N.E. S. 32 in S.W. and S. 33 in S.E. quadrant and erect mound of stone 3 ft. base 3 ft. high W. of cor.
	Pits impracticable
	Cor. sits 50 ft. lower than mesa
	Land very broken and rocky
	Soil 4th rate; rocky.
	No timber
	Land mountainous 80.00 chs.
	East on a random line bet. secs. 28 & 33
40.00	Set temporary 1/4 sec. cor.
80.14	Intersect N. & S. line 19 lks. N. of cor. to secs. 27, 28, 33 & 34
	Thence I run, over rough and broken land;
	N. 89° 52' W. on a true line bet. secs. 28 & 33
6.00	Foot of spur 20 ft. above cor. bears S.E.
10.00	Top of spur, 135 ft. above sec. cor. bears South
	Thence along point projecting from Cedar Mesa
16.80	Spur projecting south
26.60	Top of bank of wash

Chains. SUBDIVISIONS T. 40 S., R. 18 E.

28.10 Center of wash, 20 lks. wide, 50 ft. deep, drains S.E.
Thence rapid ascent over broken small cliffs
30.70 Foot of steep ledge 170 ft. above wash, bears N. & S.
Enter oil sand stratas
34.90 Top of ledge, or cedar mesa, bears N. & S. 250.ft. above bottom
40.07 Set iron post 3 ft. long, 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high for 1/4 cor. bet. secs. 28 & 33 marked on brass cap 1/4 S.28 on N. half & S.33 on S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of cor.
Pits impracticable.
Impossible to set post over 12 ins. in the ground.
A pine tree 7 ins. diam. bears N. 77° W. 40 lks. marked 1/4 S. 28 B.T.
A cedar tree 8 ins. diam. bears S. 25° E, 1.22 chs. marked 1/4 S. 33 B.T.
Thence ascending gradually
80.14 The cor. to secs. 28, 29,, 32 & 33
Land rough and rocky
Soil 4th rate: rocky.
Timber, a few scattering cedars & pinons
Rough mountainous, timbered land 80.14 chs.

April 21. At this cor. I set off 37° 18' N. on lat. arc. and 11° 49' N. on decl. arc. and at 9 h. 10 m. a.m. l.m.t. determine a meridian with the solar Thence
I run. over mountainous land; according,
N. 0° 03' W. bet. secs. 28 & 29 on true line
5.30 Top of mesa, bears N. 30° E.
Thence through dense growth of cedar & pinon timber
35.20 Leave timber and enter sagebrush bears S. 70° E.
40.00 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 sec. cor. marked on brass cap 1/4 S. 29 in W.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.,
	half and S. 28 in E. half
	Dug pits 18 x 18 x 12 ins. N. & S. of post 3 ft. dist; built mound of earth 3.5 ft. base 1.5 high W. of cor. Pits impracticable
51.33	Begin slight descent
68.90	Top of deep wash, descend rapidly
80.00	Set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for cor. to secs. 20, 21, 28 & 29 marked on brass cap T. 40 S. Sec. 20 in N.W. R. 18 E. S. 21 in N.E. S. 28 in S.E. and S. 29 in S.W. quadrants,
	Dig pits 18 x 18 x 12 ins. in each section 5 1/2 ft. dist. from post and erect mound of stone & earth 4 ft. base 2 ft. high W. of cor.
	Cor. falls on S. edge of wash, 20 lks. wide, 4 ft. deep which drains West 200 ft. below level of mesa
	Land rolling
	Soil sandy, 2nd & 3rd rates
	Land mountainous 16.30 chs. heavily timbered 44.80 chs.
	S. 89° 52' E. on a random line bet. secs. 21 & 28
40.00	Set temporary 1/4 sec. cor.
80.14	Intersect N. & S. line 5 lks. S. of cor. to secs. 21, 22, 27 & 28
	Thence I run
	N. 89° 54' W. on true line bet. secs. 21 & 28
	Ascending abruptly over sandstone ledges
5.77	Top of rim of cedar mesa, bears N. & S. 150 ft. above cor. to secs. 21, 22, 27 & 28
8.57	Enter scattering timber
13.20	Line skirts top rim of cedar mesa, bears N. 60° W. & S. 70° E. Descend.
23.00	Enter dense growth of cedar & pinon timber
25.80	Wash, 35 lks. wide, 5 ft. deep, drains S. 20° E. Ascend.
34.05	Top of mesa, bears N. and S.
40.07	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked 1/4 S. 21 in N. half and S. 28 in S.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.,
	half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of cor.
	Pits impracticable
	Whence
	A cedar tree 12 ins. diam. bears S.10° E 69 lks. marked 1/4 S. 28 B.T. No other trees available
45.00	Top of low hill
47.45	Wash 20 lks. wide, 5 ft. deep, drains N. 70° W.
52.00	Leave thick and enter scattering timber
60.60	Top of rim of canon, bears N. 40° E.
	Descend abruptly
68.00	Foot of bluff, Descend gradually.
74.00	Small wash, drains NW.
80.14	The cor. to secs. 20, 21, 28 & 29
	Land cut with numerous washes
	Soil sandy & stony 3rd & 4th rates
	Land mountainous and timbered 80.14 chs.
	N. 0° 03' W. bet. secs. 20 & 21
0.30	Center of wash, 40 lks. wide, 6 ft. deep, drains West
4.40	Foot of bluff
	Ascend abruptly
11.79	Top of bluff, bears E. and W.
	Ascend gradually over mesa covered with dense growth of pinon & cedar timber
27.30	Edge of level mesa ; descend.
32.00	Center of wash, 30 lks. wide, 10 ft. deep, drains NW. Asc.
39.05	Edge of mesa, bears NW. and SE. ft. deep, drains N. 47° W.
40.00	Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground 1/4 Sec. Cor. markedon brass cap 1/4 S. 20 on W. half & S. 21 on E. half, and raise a mound of stone 2 1/2 ft. base 2 ft. high W. of cor.
	Pits impracticable.
	Whence

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
	A pine tree 12 ins.dia.bears S.9° E. 21 lks.d[illegible] marked ¼ S 21 B T
	A pine tree 10 ins.diam.bears S.52° 30'W. 63 lks. marked ¼ S 20 B T
	Cor.is about 50 ft.higher than cor.to secs.20,21, 28 & 29.
43.85	Edge of mesa, bears E. and W. Descend.
54.10	Center of wash, 20 lks.wide, 5 ft.deep, drains west.
58.00	Top of low ridge. Descend gradually.
69.65	Center of wash 15 lks.wide, 3 ft.deep, drains N.60° W.
78.50	Leave timber; enter sagebrush, bears S.45° E.
80.00	Set iron post 3 ft.long, 2 ins.diam., 24 ins.in the ground, for cor.to secs.16.17,20, & 21, marked on brasscap T 40 S S 17 in NW.; R 18 E S 16 in NE., S 21 in SE., and S 20 in SW.quadrants; and raise a mound of earth and stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable. Whence
	A pinon tree 12 ins.diam.bears N.12° E. 1.35 chs. dist., marked T 40 S R 18 E S 16 B T
	A pinon tree 14 ins.diam.bears N.39° W. 1.61 chs. dist., marked T 40 S R 18 E S 17 B T
	A cedar 14 ins.dia.bears S.80° W. 1.71 chs.dist. marked T 40 S R 18 E S 20 B T
	A pinon 16 ins.diam.bears S.2° E. 2.95 chs.dist. marked T 40 S R 18 E S 21 B T
	Corner is in NW.end of small sagebrush park 60 ft.below ¼ cor.
	Land slopes slightly to west.
	Soil, 2d rate, sandy; 4th rate, rocky.
	Timber, cedar & pinon.
	Land difficult to survey 80.00 chs.

SUBDIVISIONS T. 40 S., R. 18 E.

Chains.	
	April 21: At this cor.I set off 11° 51' N. on decl.arc; and at 11 h. 59 m.a.m.l.m.t., I observe the sun on the meridian; the resulting latitude is 37° 20', which is within 1 minute of the proper lat.
	S.89° 54'E. on random line bet.secs.16 & 21,
40.00	Set temporary ¼ sec.cor.
80.10	Intersect N. & S. line 12 lks.S.of cor.to secs.15,16,21 & 22.
	Thence I run
	N.89° 59'W.on true line bet.secs.16 & 21,
	Ascending gradually through thick cedar and pinon timber.
4.00	Leave timber & enter sagebrush, bears N.45° W.
10.00	Leave sagebrush & enter timber.
14.65	Leave timber and enter sagebrush, bears N.45° W.
17.85	Top of low ridge, bearing N. and S.
	Descend gradually.
29.90	Leave sagebrush and enter scattering timber bears N.
32.00	Enter sagebrush, bears N.
34.00	Center of wash, 20 lks.wide, 2 ft.deep, drains N.45° W.
40.05	Set iron post 3 ft.long, 1 in.diam.26 ins.in the ground for ¼ sec.cor., marked on brass cap ¼ S 16 in N.half, S 21 in S.half; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor.Pits impracticable.
	Whence
	A cedar 7 ins.dia.bears N.33° 30'W. 47 lks.dist., marked ½ S 16 B T
	A cedar 10 ins.dia.bears S.52° E. 77 lks. dist. marked ¼ S 21 B T
44.00	Center of wash, 20 lks.wide, 3 ft.deep, drains N.15°W.
56.35	Leave sagebrush and enter scattering pinon and cedar timber.
67.75	Center of wash, 15 lks.wide, 4 ft.deep, drains N.70° W.
72.00	Top of low ridge.
	Descend gradually.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
80.10	The cor. to secs. 16, 17, 20 & 21
	Soil sandy 2nd rate
	Timber, Cedar & pinon
	Land difficult to survey 80.10 chs.
	N. 0° 03' W. bet. secs. 16 & 17.
	Gradually descending through sagebrush
1.10	Leave sagebrush and enter thick cedar & pinon timber
7.65	Center of wash, 20 lks. wide and 3 ft. deep, drains S. 80° W.
18.00	Center of canon 4 chs. wide 60 ft. deep, drains S. 80° W.
20.00	N. edge of canon
	Ascend gradually through thick cedar and pinon timber
24.35	Center of wash, 10 lks. wide, 2 ft. deep, drains S. 40°W.
29.95	Center of wash, 8 lks. wide, 2 ft. deep, drains S.40°W.
34.00	Top of low ridge, bears E. & W.
	Descend gradually
38.65	Center of wash, 10 lks. wide, 2 ft. deep, drains N. 20° W.
40.00	Set iron post 3 ft. long, 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high for 1/4 Sec.Cor. marked 1/4 S. 17 in W. half and S. 16 in E. half and erect mound of stone 2.5 ft. base, 2.5 ft. high W. of cor.
	Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	A pine tree 10 ins. diam. bears N. 31° 33' E, 67 lks. marked 1/4 S. 16 B.T.
	A cedar tree 12 ins. diam. bears N. 68° W, 83 lks. marked 1/4 S.17 B.T.
	Descend gradually through scattering timber
46.65	Edge of bluff bears E. & W.
	Descend abruptly into canon
54.80	Foot of bluff, Valley covered with pine & cedar timber.
63.75	Center of wash 1.ch. wide, 15 ft.deep, drains West

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
67.80	Foot of bluff
	Ascend rapidly
80.00	Set iron post 3 ft. long, 2 ins. diam. 1 ft. in the ground on solid rock in mound of stone 2.5 ft. base 1. ft. high for cor. to secs. 8, 9, 16 & 17 marked on brass cap T. 40 S. S. 8 in N.W. R. 18 E. S. 9 in N.E. S. 16 in S.E. and S. 17 in S.W. quadrants and erect mound of stone 3 ft. base, 2.5 ft. high W. of cor.
	Pits impracticable.
	Cor. is about 50 ft. lower than 1/4 cor. bet. secs. 16 & 17
	Land broken and rocky
	Soil 3rd & 4th rates, rocky.
	Timber, Cedar & pinon.
	Land mountainous 80.00 chs.
	S. 89° 59' E on random line bet. secs. 9 & 16
40.00	Set temporary 1/4 sec. cor.
80.12	Intersect N. & S. line 7 lks. N. of cor. to secs. 9, 10, 15 & 16
	Thence I run
	N. 89° 56' W. on true line bet. secs. 9 & 16
	Along the south side of canon
7.20	Center of wash, 4 chs. wide, 20 ft. deep, drains North
	Thence ascend gradually over sandstone ledges
14.60	Top of ridge 75 ft. above cor. to secs. 9, 10, 15 & 16 bears N. & S.
	Thence descend rapidly over ledges through scattering timber
18.00	Center of wash, 3 chs. wide, 30 ft. deep, drains N. 70° W.
31.90	Top of rim, 275 ft. above cor. to secs. 9, 10, 15 & 16
39.61	Top of bluff, bears S.E. and descend rapidly
40.06	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high for

Chains. SUBDIVISIONS T. 40 S., R. 18 E.,

Chains.	
	1/4 Sec.Cor. marked 1/4 S. 9 on N. half and S. 16 on S. half and erect mound of stone 3 ft. base, 3 ft. high N. of cor. Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	A pine tree 13 ins. in diam. bears N. 53° E. 58 lks. marked 1/4 S. 9 B.T.
	A cedar tree 15 ins. diam. bears S. 4° E. 21 lks. marked 1/4 S. 16 B.T.
	Thence along south side of canon sloping north to 250 feet below
64.21	Rim of mesa bears N. 70° W.
	Enter timber
68.50	Leave timber
72.40	Rim of mesa, bears S. 40° E, and descend
80.12	The cor. to secs. 8, 9, 16 & 17
	Land very broken & rocky
	Soil 4th rate: rocky.
	Timber, cedar and pinon and pine
	Land mountainous 80.12 chs.
	NOTE: There are numerous cliff dwellings in the S.W. 1/4 of Sec. 9 and some in the N.W. 1/4 of Sec. 16, one in Sec. 16 of 38 rooms, partly 2 stories high:not seen from line.

	N. 0° 03' W. bet. secs. 8 & 9 Ascending over mountainous land.
2.00	Top of ridge., bears E. & W.
	Descend rapidly, whence a large spring or tank water hole containing about 100,000 gallons bears N. 18°47'E.
8.30	Bottom of bluff, enter valley covered with cedar & pinon trees
18.50	Top of rim of wash, 240 lks. wide, 150 ft. deep, drains west
20.80	Center of wash. drains West
	There is a large tank of water, about 40,000 gallons,

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.,
	in this gulch about 12 chs. East of line and below the cliff dwellings
22.90	North rim of wash
24.80	Top of spur, projects West 8 chs.
25.80.	Opposite side of spur.
26.94	Top of bluff above wash
29.24	Center of wash, 2 chs. wide, 100 ft. deep, drains S. 45° W.
	The large tank of water is in this gulch
31.20	North top of bluff above wash
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground on rock in mound of stone 2 1/2 ft. base 14 ins. high for 1/4 cor. markedon brass cap 1/4 S. 8 in. in west half & S. 9 in East half and erect mound of stone 3 ft. base, 2 1/2 ft. high W. of cor, whence
	A cross chiseled in solid rock bears N. 74° 25' W. 49.5 lks dist. marked 1/4 S. 8 B.O.
	A cross chiseled on solid rock bears N. 60° 15' E. 22.2 lks. dist. mkd. 1/4 S. 9 B.O.
	The large tank of water above named bears S. 70° 00'E.
	Cor. is at the foot of a sandstone ridge 150 ft. high
45.00	Top of ridge, projects S. 30° W. 10 chs.
48.35	North edge of ridge and descend rapidly
52.35	Bottom of steep slope
	Enter valley covered with cedar & pinon trees
71.30	S. edge of wash 2 chs. wide 50 ft. deep, drains N. 45°W.
80.00	Set iron post 3 ft. long 2 ins. diam. 15 ins. in the ground in mound of stone 2.5 ft. base 2 fts. high for cor. to secs. 4, 5, 8 & 9 marked on brass cap T. 40 S. S. 5 in N.W. R. 18 E. S. 4 in N.E. S. 8 in S.W. and S. 9 in S.E. quadrants, and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor. Pits impracticable.
	Impossible to set post overel5 ins. in the ground.
	A pinon tree 6 ins. diam. bears N. 7° 15' W, 126. lks.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	marked T. 40 S. R. 18 E. S. 5 B.T.
	A pinon tree 7 ins. diam. bears N. 77° 30' E. 40 lks. marked T. 40 S. R. 18 E. S. 4 B.T.
	A pinon tree 6 ins. diam. bears S. 45° 25' W. 80 lks. marked T. 40 S. R. 18 E. S. 8 B.T.
	No tree in sec. 9 within 5 chs.
	Land rocky and very broken, mountainous.
	Soil 4th rate, rocky.
	Timber, cedar and pinon, scattered.
	Land mountainous, rough, broken & timbered.
	80.00 chs.
	S. 89° 56' E on random line bet. secs. 4 and 9,
40.00	Set temp. 1/4 sec.cor.
80.02	Intersect N. and S. line 19 lks. S. of cor. to secs. 3, 4, 9, & 10
	Thence I run, over broken land; through timber.
	S. 89° 56' W. on true line bet. secs. 4 & 9
22.10	Foot of bluff, course S. 53° 30' W.
	Ascend abruptly.
24.23	Top of cliff, 250 ft. high course S. 55° 30' W.
	Ascend gradually through scattering timber
32.00	Top of ascent
38.76	Edge of cliff, course N. & S.
	Leave timber. descend abruptly
40.01	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. marked on brass cap 1/4 S. 4 in N. half & S. 9 in S. half, and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
43.45	Edge of percipitous cliff bears NE. and SW.

SUBDIVISION.T. 40.S., R. 18 E.

Chains.	
	Descend over exposed rock
45.50	Foot of cliff
	Thence over bench.
76.07	Edge of descent
	Descend abruptly
80.02	The cor. to secs. 4,5, 8 & 9
	Land very broken and rocky.
	Soil, rocky; 4th rate.
	Timber, cedar & pinon
	Land rough, broken & exceptionally difficult to survey
	80.02 chs.
	N.0°03'W. on random line bet. secs. 4 & 5
40.00	Set temp. 1/4 sec.cor.
79.73	Intersect N. bdy. of township 19 lks. W. of cor. to secs. 4,5, 32 &33, heretofore described
	Thence I run
	S.0°05' W. on true line bet. secs. 4 & 5
6.28	Small wash. 15 lks. wide 3 ft. deep drains E.
9.20	Begin ascending gradually, through thick timber
35.70	Top of low rise on mesa, bears E. & W.
39.73	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. cor. marked on brass cap 1/4 S. 5 in W. half & S.4 in E. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor.
	Impossible to set post over 12 ins. in the ground.
	Pits impracticable. Whence
	A pine tree 10 ins. diam. bears N.46°27'E. 45 lks. marked 1/4 S. 4 B.T.
	A cedar tree 14 ins. diam. bears S.69°55'W. 1.38 chs. marked 1/4 S. 5 B.T.
43.00	Top of cedar mesa, bears S. 70° W.
	Descend abruptly.

Page reversed

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
Sup. 782	for Cor. of Secs. 29, 30, 31, & 32 marked on brass cap T. 40 S. S. 30 in N. W., R. 18 E. S. 29 in N. E. S. 31 in S.W. & S. 32 in S.E. quadrants; raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor.
	Pits impracticable.
	Impossible to set post over 12 ins in the ground.
	Whence
	A pine tree 9 in. daim. bears S.75°W. 36 lks. marked T. 40 S. R. 18 E. S. 31 B.T.
	A pine 8rins. diam. bears N.31°W. 71 lks. marked T. 40 S. R. 18 E. S. 30 B.T.
	A pine 10 ins. diam. bears N.61° E. 1.09 chs. marked T. 40 S. R. 18 E. S. 29 B. T.
	A cedar 6 ins. diam. bears S.26° E. 89 lks. marked T. 40 S. R. 18 E. S. 32 B.T.
	Land gently rolling mesa.
	Soil sandy 2d rate.
	Timber cedar & pinon.
	East on random bet. secs. 29 & 32
40.00	Set temp. 1/4 sec.cor.
80.12	Intersect N. & S. line 19 lks. N. of Cor. of Secs.28,29 32 & 33
	Thence I run.
	N. 89° 52' W. on true line bet. Secs. 29 & 32
	Ascending rapidly over sandstone ledges interlaid with some oil sand stratas.
2.10	Rim of mesa 75 ft. above Cor. of Secs. 28, 29, 32, & 33 bears N. 30° W.
10.00	Leave scattering and enter thick cedar & pinon timber
16.90	Small wash, 20 lks. wide, drains S. 20° E.
40.06	Set iron post 3 ft. long 1 in. diam 26 ins. in the ground for 1/4 cor. marked on brass cap 1/4 S. 29 in N. half and S. 32 in S. half.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
56.30	Foot of bluffs.
72.30	North rim of John's canon
74.70	John's Creek or canon 40 lks. wide 125 ft. below rim
	drains S. 45° W.
	Running water in places, then sinks into sand
75.70	South rim of John's canon
79.73	The Cor. of secs. 4,5, 8&9
	Land rocky & very much broken
	Soil sand and rocky 2d & 4th rate.
	Timber cedar & pinon & pine.
	Land mountainous 79.73 chs.
	April 21, 1909.

April 22, 1909.

From the Standard Cor. of Secs. 31 & 32 S. Bdy. of Tp. heretofore described I run

N.0°03' W. bet secs. 31 & 32

Across sagebrush park bearing and draining northwest

40.00 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 31 in W. half and S. 32 in E. half and

Dig pits 18x18x 12 ins. [illegible] N. & S. of post 3 ft. dist. and raise mound of earth 3.5 ft. base, 1.5 ft. high W. of Cor.

49.70 Top of low hill, bears E. & W.

Enter scattering timber

52.00 Leave timber and enter sagebrush park.

72.60 Enter scatteing cedar & pinon timber

74.00 Top of low rise

Thence descend gradually

78.00 Enter thick cedar & pinon timber

80.00 Set iron post 3 ft. long, 2ins. diam. 12 ins. in the ground in mound of stone 2.5 ft. base 12 ins. high

Dig pits 18 x 18 x 12 ins. 3 ft. E. & W. of post, and erect mound of earth 3.5 ft. base, 1.5 ft. high N. of cor. Whence

A cedar tree 7 ins. diam. bears N. 13° E. 55 lks. marked 1/4 S. 29 B.T.

A cedar tree 12 ins. diam. bears S. 60° E. 90 lks. marked 1/4 S. 32 B.T.

47.10 Top of slight rise and descend gradually

68.75 Wash, 1 ch. wide 4 ft. deep, drains south

80.12 The cor. to secs. 29, 30, 31 & 32

Land gently rolling, except E. 2 chs.

Soil sandy loam, 2d rate.

Timber, cedar & pinon & pine

West on random line bet. secs. 30 & 31

40.00 Set temporary 1/4 sec. Cor.

79.94 Intersect West boundary of Tp. 7 lks. N. of cor. to secs. 25, 30, 31 & 36, heretofore described.

Thence I run, over mountainous land; ascending.

N. 89° 57' E. on true line bet. secs. 30 & 31

14.20 Top of rim of mesa, line runs just below rim to John's Canon

28.60 Top of rim of mesa, bears E. & W.

35.95 Center of small wash, 12 lks. wide, 3 ft. deep, drains N. 45° W.

39.94 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. markedon brass cap 1/4 S. 30 in N. half and S. 31 in S. half

Dig pits 18 x 18 x 12 ins. 3 ft. E. & W. of post, and built mound of earth 3.5 ft. base, 1.5 ft. high N. of cor. Whence

A pine tree 5 ins. in diam. bears S. 18° 30' E. 77 lks. marked 1/4 S. 31 B.T.

A pine tree 12 ins. diam. bears N. 15° E. 55 lks. marked 1/4 S. 30 B.T.

44.00 Leave thick timber and enter small sagebrush park

48.55 Leave sagebrush and enter timber

55.80 Top of low rise

79.94 The cor. of secs. 29, 30, 31 & 32

Land rolling, mountainous

Soil 2nd & 3rd rates; sandy and rocky.

Timber, cedar & pinon & pine

Land mountainous 79.94 chs.

April 22. At this cor. I set off 37° 18' N. on lat. arc. and 12° 9' N. on decl. arc. and at 8 h 40 m. a.m. l.m.t. determine a meridian with the solar N. 0° 03' W. bet. secs. 29 & 30 over cedar Mesa

7.34 Top of rim of mesa,

Thence descend gradually,

Leave timber

14.30 Bottom of cliffs.

22.00 Rim of gulch, bears N. 70° W.

Descend abruptly

32.00 Bottom of gulch, 450 ft. below mesa, bears N. 70° W.

40.00 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 cor. marked on brass cap 1/4 S. 30 in W. half and S. 29 in E. half and erect mound of stone 3 ft. base 2.5 ft. high W. of cor.

Pits impracticable

Whence

A pedar tree 15 ins. diam. bears S. 78° W. 1.35 chs. marked 1/4 S. 30 B.T.

A cedar tree 8 ins. diam. bears N. 43° E. 68 lks. marked 1/4 S. 29 B.T.

Chains.	SUBDIVISIONS T. 40 S., R. 18 E.
46.00	Foot of steep bluff
56.00	Top of bluff point, projects West 2 chs.
60.43	Rim of bluff, projects West 3 chs.
75.32	Top of bluff point projects West 2 chs.
77.17	Top of bluff,
	Descend abruptly
80.00	Set iron post 3 ft. long, 2 ins. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 12 ins. high for Cor. to secs. 19, 20, 29, 30 marked on brass cap T. 40 S. S.19 in N.W. R. 18 E. S. 20 in N.E. S. 29 in S.E. and S. 30 in S.W. quadrants, and erected mound of stone 3 ft. base & 2.5 ft. high W. of cor.
	Cor. falls about 200 ft. below top of cedar mesa
	Land much broken and rocky
	Soil 4th rate; rocky.
	Timber scattered cedar, Pinon & pine
	Land mountainous 80.00 chs.
	Impossible to set post over 12 ins. in the ground.
	S. 89° 52' E. on random line bet. secs. 20 & 29
40.00	Set temporary 1/4 Sec. Cor
80.14	Intersect N. & S. line 12 lks. N. of cor to secs. 20, 21 28 & 29
	Thence I run, over broken mountainous land.
	N. 89° 47' W. on true line bet. secs. 20 & 29.
15.35	Cross wash 20 lks. wide, 4 ft. deep, drains West
	Thence along N. edge of wash
28.00	Top of wash,
	Descend
30.00	Bottom of wash, 15 lks. wide, 50 ft. below top drains West
40.07	Set iron post 3 ft. long 1 inch diam. 12 ins. in the ground, in mound of stone 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. markedon brass cap 1/4 S. 20 in N. Half and S. 29 in S. half and erect mound of stone 2.5 ft. base

	1½ ft. high N. of cor. Pits impracticable.
	Impossible to set post over 12 ins. in the ground.
	Cor. falls on S. bank of wash, line follows generally down wash.
50.62	West rim of wash and edge of Cedar Mesa
72.00	Top of Cedar Mesa
77.41	Top of cliff and descend into John's canon
80.14	The cor. to secs. 19, 20, 29 & 30
	Land mountainous. Soil rocky; 4th rate. No timber.
	Mountainous land 80.14 chs.
	S. 89° 57' W. on a random line bet secs. 19 & 30
40.00	Set temporary 1/4 sec. cor.
79.87	Intersect W. boundary of Township 26 lks. N. of cor. to Secs. 19, 24, 25, and 30, heretofore described.
	Thence I run
	N. 89° 46' E on true line bet secs 19 & 30
8.50	Descending. Road, bears S.W.
13.00	Center of John's Creek, bed 2 chs. wide, drains S.W.
	There is a stream of water 5 lks. wide & 3 ins. deep
36.50	Top of spur, projects 2 chs. south
38.37	Foot of spur
39.87	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 19 in N. half & S. 30 in S. half. Erected mound of stone 2.5 ft. base & 2 ft. high N. of cor. Pits impracticable.
	Impossible to set post over 12 ins. in the ground.
	Cor. is 400 ft. lower than cor to secs. 19, 20, 29 & 30
52.05	Center of wash, 10 lks. wide, 3 ft. deep, drains S. 70°W.
64.00	Foot of mesa, bears N. & S. 350 ft. below sec. cor.
67.00	Head of small wash, 20 lks. wide, 5 ft. deep, drains S. 70° W.
79.87	The cor. to secs. 19, 20, 29 & 30
	Land broken and very rocky

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land 79.87 chs.
	Apr.22: At this cor.I set off 12° 12'N.on the decl.arc; and at 11 h. 59 m.a.m.l.m.t.,observe the sun on the meridian; the resulting lat.is 37° 19'N.
	N.0° 03'W.bet.secs.19 and 20,
	Descending abruptly over small sandstone ledges, interlaid with some oil sand stratas.
7.00	Bottom of gulch, drains S.80° W.
	Ascend abruptly.
17.20	Foot of very steep bluff. Ascend abruptly.
28.20	Top of bluff point, extends 10 chs.N.80° W. Descend.
33.83	Top of very steep bluff. Descend abruptly.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 14 ins.thigh for 1/4 sec.cor., marked on brass cap 1/4 S 19 in W. half and S 20 in E.half; and raise a mound of stone 3 ft.base, 2 1/2 ft.high W.of cor. Pits impracticable. Impossible to set post over 12 ins.in the ground.
	A cedar 14 ins.dia.bears S.88° E. 35 lks.dist. marked 1/4 S 20 B T
	A cedar 10 ins.dia.bears N.67° W. 8 lks.dist. marked 1/4 S 19 B T
	1/4 cor.is 50 ft.lower than sec.cor.
	Descend gradually.
53.20	Bottom of wash, 30 lks.wide, 4 ft.deep, drains S.80° W.
65.20	Top of point 100 ft.above bottom of wash, bears S.80° W. Descend.
80.00	Set iron post 3 ft.long, 2 ins.dia., 20 ins.in the ground, in mound of stone 2 ft.base, 4 ins.high for cor.

Chains.	
	of secs.17,18,19, and 20, marked on brass cap T 40 S S 18 in NW.; R 18 E S 17 in NE.; S 19 in SW.; and S 20 in SE.quadrants; and raise a mound of stone 3 ft. base 2 1/2 ft.high W.of cor. Pits impracticable.
	Impossible to set post over 20 ins.in the ground.
	A cedar 10 ins.dia.bears S.83° W. 77 lks.dist. marked T 40 S R 18 E S 19 B T
	A pinon pine 14 ins.dia.bears S.66° 30'E. 61 lks. dist., marked T 40 S R 18 E S 20 B T
	No other bearing trees within limits.
	Corner falls in bottom of valley 75 ft.below 1/4 sec. cor., on S.bank of wash 30 lks.wide, 8 ft.deep, drains S.85° W.
	Land, mountainous and broken.
	Soil, sandy and stony; 3d and 4th rates.
	Timber, scrubby cedar, pinon and pine.
	Mountainous land, covered with timber, 80.00 chs.
	S.89° 47'E.on a random line bet.secs.17 and 20,
40.00	Set temp.1/4 sec.cor.
79.84	Intersect N. and S.line 12 lks.S.of the cor.of secs.16, 17,20, and 21. Thence I run
	N.89° 52'W.on true line bet.secs.17 and 20,
	Through thick cedar and pine timber.
16.00	Small wash, 20 lks.wide, 3 ft.deep, drains N.30° W.
18.00	Rim of Cedar Mesa, bears S.70° W.
	Enter scattering timber.
21.90	Top of steep descent over sandstone ledges, interlaid with some oil sand strata.
39.92	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in thee ground in mound of stone 2 1/2 ft.base, 14 ins.high for 1/4 sec.cor., mkd.on brass cap 1/4 S 17 in N.half,S 20 in S.half; and raise a mound of stone 3 ft.base, 2 1/2

ft. high 4 ft. N. of cor.
Pits impracticable. Whence
A pinon tree 8 ins. in diam. bears N. 47° 30' W. 20 lks. marked 1/4 S. 17 B.T.
A pinon tree 12 ins. diam. bears S. 64° 55' W. 1.39 chs. marked 1/4 S. 20 B.T.
Cor. is about equidistant between top of mesa and deep canon to north
62.25 Top of bluff
Descend abruptly and leave timber
71.00 Top of bluff, Whence
A cliff dwelling across canon bears N. 19° 30' W. about 4 chs. and a cliff dwelling bears N. 11° 20' W. 6 chs
79.84 The cor. to secs. 17, 18, 19, 20
Land very much broken and roky, mountainous
Soil 4th rate; rocky.
Timber, cedar, pinon & pine
Land mountainous, rough & broken 79.84 chs.

S. 89° 46' W. on random line bet. secs. 18 & 19
40.00 Set temporary 1/4 Sec. Cor.
79.76 Intersect West bdy. of township 37 lks. S. of cor. to secs. 13, 18, 19 & 24, heretofore described.
Thence I run, over mountainous land,
S. 89° 58' E. on true line bet. secs. 18 & 19
15.10 Bottom of wash, 1 ch. wide 10 ft. deep, bears N. 10° E.
In thick cedar & pinon timber
30.90 Top of rim of W. side of John's canon, 700 ft. above bottom
34.60 Foot of very steep cliff,
Descend abruptly
39.76 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 18 in N.

	half and S. 19 in S. half and erect mound of stone
	3 ft. base, 2.5 ft. high N. of Cor.
	Pits impracticable Whence
	A cedar tree 18 ins. diam. bears S. 19° E. 49 lks. marked
	1/4 S. 19, B.T.
	A cedar tree 6 ins. diam. bears N. 9° W. 85 lks. marked
	1/4 S. 18 B.T.
	which is 200 ft. above Cor. to Secs. 17, 18, 19 & 20
49.40	Foot of bluffs
55.70	Bottom of wash 30 lks. wide, 7 ft. deep, drains S.
63.20	Bottom of John's canon 1.20 chs. wide, 9 ft. deep, drains
	S. 45° W.
79.76	The cor to secs. 17, 18, 19 & 20
	Land mountainous, very rocky and broken.
	Soil 4th rate ; rocky.
	Timber, cedar, pinon & pine
	Land mountainous, rough & broken 79.76 chs.
	April 22, 1909.

	April 23, 1909.
	N. 0° 03' W. bet. secs. 17 & 18
	Over large sandstone ridges, interlaid with occassional
	oil sand stratas
	Ascending over rough & mountainous land, exceptionally
	difficult to survey.
4.00	Bottom of canon, drains S. 80° W.
10.40	Top of rise,
	Descend gradually
25.50	Bottom of wash, 1 ch. wide, 8 ft. deep, drains S. 80° W. in John's Canon.
40.00	Set iron post 3 ft. long 1 inch diam. 20 ins. in the
	ground in mound of stone 2.5 ft. base, 6 ins. high for 1/4
	Sec. Cor. marked on brass cap 1/4 S. 18 on W. half & S. 17
	on E. half and erect mound of stone 3 ft. base 2.5 ft.
	high W. of cor. Impossible to set it 26 ins. in ground.
	Pits impracticable.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	Whence a cedar tree 8 ins. diam.. N.71° 30' E. 55 lks. mkd. 1/4 S. 17 B.T.
	A pine tree 5 ins. diam. bears N. 88° W. 78 lks. mkd. 1/4 S. 18 B.T.
	Thence across bottom of canon
75.05	Foot of very steep cliff. Ascend abruptly.
80.00	Set an iron post 3 ft. long 2ins. diam. 12 ins. in the ground to bed rock, in mound of stone 2.5 ft. base, 12 ins. high for Cor. of Secs. 7,8, 17 & 18 marked on brass cap T. 40 S. S. 7 in NW., R.18 E.S.8 in N.E S. 17 in S.E. and S. 18 in S.W. quadrants, and erect mound of stone 3 ft. base 2.5 ft. high W. of corner.
	Pits impracticable.
	Cor. falls on top of very steep cliff.
	Land very much broken and rocky.
	Soil rocky 4th rate.
	Timber, a few scattering cedars & pinons.
	Land mountainous, rough & broken, & exceptionally difficult to survey. 80.00 chs.

	S.89° 52' E. on random line bet. secs. 8 and 17
40.00	Set temp. 1/4 sec.cor.
79.96	Intersect N. & S. line 21 lks. N. of Cor. of Seds.8,9 16 & 17
	Thence I run N. 89°43' W. on true line bet. Secs. 8 &17
	Descending abruptly over large sandstone ledges, interlaid with oil sand stratas.
10.00	Bottom of wash, 20 lks. wide, 10 ft. deep, drains S.45°W.
19.95	Top of level sandstone ledge running parallel with main wash 10 chs. to S. of line and about 200 ft. below line about 300 ft. lower than top of ledge about 5 chs. to N.
39.98	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft base 14 ins.high

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	for 1/4 Sec.Cor. marked on brass cap 1/4 S. 8 on N. half & S. 17 on S. half and erect mound of stone 3 ft. base 2.5 ft. high N. of Cor.
	Pits impracticable.
	Impossible to set post over 12 ins. in the ground.
	A pine tree 12 ins. daim. bears S.43°W. 72 lks. mkd. 1/4 S. 17 B.T.
	A ceda r 8 ins. diam. bears. N. 26° E. 26 lks. mkd 1/4 S. 8 B.T.
50.00	Top of very steep cliff Descend abruptly
58.00	Bottom of wash in John's canon 450 ft. below top of mesa, drains South, stream 5 lks. wide, 3 ins. deep
	Thence ascend abruptly
79.96	The Cor. of Secs. 7,8, 17 & 18
	Land mountainous & very rocky
	Soil rocky 4th rate.
	Timber scattered cedar, pinon & pine.
	Land mountainous & exceptionally difficult to survey.
	79.96 chs.

	N.89°58' W. on random line bet Secs. 7 and 18
40.00	Set temp. 1/4 sec.cor.
79.65	Intersect W. boundary of Tp. 37 lks. N. of Cor. to Secs 7,12, 13 and 18 heretofore described.
	Thence I run, over mountainous land.
	N.89° 46' E. on true line bet. secs. 7 and 18
	Over sandy mesa, through scattering timber and sandstone ledges.
6.05	Top of canon
	Descend abruptly over sandstone ledges
16.00	Bottom of wash, 400 ft. below top, drains. S. 30° E.

Chains.	
	Thence ascend
27.30	Top point 275 ft. above wash, projects 12 chs. S. 45° E.
	Thence rapid descent over sandstone ledges, interlaid with oil sand stratas
39.65	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2. 5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 7 in N. half & S. 18 in S. half, and erect mound of stone 3.5 ft. base, 2. 5 ft. high N. of Cor. Impossible to set it over 12 ins. in the ground. Pits impracticable. Whence
	A pine tree 12 ins. diam. bears N. 23° W. 51 lks. marked 1/4 S. 7 B.T.
	A pine tree 14 ins. diam. bears S. 41° W. 82 lks. marked 1/4 S. 18 B.T.
43.30	Top of rim of canon,
	Descend abruptly
55.00	Bottom of canon, 300ft. below 1/4 Cor.
	Drains S. Ascend
63.00	Top of rim of canon 300 ft. above bottom.
	Ascend abruptly
76.00	Top of rock point projects S. 15° W. 15 chs.
79.65	The Cor. to Secs. 7, 8, 17 & 18
	Land mountainous and rocky
	Soil 4th rate; rocky.
	Timber, scattered cedar, pinon & pine
	Land mountainous, rough & exceptionally difficult to survey 79.65 chs.

April 23. At this Cor. I set off 37° 21' N. on Lat. arc and 12° 30' N. on decl. arc and at 9 h. 58 m a.m. l.m.t. I determine a meridian with the solar,

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N. 0° 03' W. bet secs 7 & 8

Chains. SUBDIVISIONS T. 40 S., R. 18 E.

Over rough broken mountainous land exceptionally difficult to survey

3.62 Top of rim of canon 600 ft. above bottom of wash

Thence over level sandy soil through scattering timber

11.80 Top of rim of gulch,

Descend abruptly

20.00 Bottom of gulch, 250 ft. below rim, drains S. 80° W.

30.50 Top of rim of point 12 chs. wide, projects West 6 chs.

40.00 Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground to bed rock in mound of stone 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 7 in W. half & S. 8 in E. half and erect a mound of stone 2.5 base 2 ft. high W. of Cor.

Pits impracticable.

Whence

A pinon tree 7 ins. diam. bears S. 53° 25' E. 1.18 chs. marked 1/4 S. 8 B.T.

A pinon tree 12 ins. diam. bears S. 75° 50' W. 1.07 chs. marked 1/4 S. 7 B.T.

Cor. falls on flat bench 4 chs. N. & S. & 3 chs. E. & W.

Thence descend abruptly over sandstone ledges

49.20 Bottom of gulch, 150 ft. below 1/4 Cor. drains S. 45° W.

58.00 Top of point 250 ft. above gulch, projects 18 chs. S. 45° W.

73.00 Top of rim of wash

Descend

80.00 Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 12 ins. high for Cor. to Secs. 5, 6, 7 & 8 marked on brass cap T. 40 S., S. 6 in N.W., R. 18 E. S. 5 in. N.E. S. 7 in S.W. and S. 8 in S.E. quadrants, and erect mound of stone 2.5 ft. base, 2.5 ft. high W. of Cor. Pits impracticable.

Impossible to set post over 12 ins. in the ground.

A pinon tree 10 ins. diam. bears N. 64° 10' E. 59 lks.

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
	marked T. 40 S. R. 18 E. S. 5 B.T.
	A pinon tree 8 ins. diam. bears S.87°W. 19 lks.
	marked T. 40 S.R. 18 E. S. 7 B.T.
	A cedar tree 12 ins. diam. bears S.47° 50'E. 18 lks.
	marked T. 40 S. R. 18 E. S 8 B.T.
	No tree to Sec. 6 within 5 chs.
	Cor. falls 15 lks. S. of gulch which drains S. 80° W.
	Land broken and rocky.
	Soil rocky; 4th rate.
	Timber scattering cedar & pinon.
	Land mountainous, rough & exceptionally difficult to survey. 80.00 chs.
	S.89° 43' E. on random line bet. Secs. 5 and 8
40.00	Set temp. 1/4 Sec.Cor.
80.00	Intersect N. and S. line at the Cor. of secs. 4,5,8&9
	Thence I run
	N.89°43'W. on true line bet. secs. 5 & 8
	Descending
2.00	Edge of John's Canon
4.00	Center of John's Canon 150 ft. below Sec.Cor. drains S. 45° W.
6.00	Wash rim of John's Canon
13.00	Top of bluff, projects South 4 chs.
	Descend abruptly
20.00	Center of wash 3 chs. wide 50 ft. deep drains South
31.93	Top of rim of mesa 500 ft. above Cor. of Secs.4,5,8&9
	Thence over mesa.
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft.base, 14 ins. high for 1/4 Sec.Cor. mkd. on brass cap 1/4 S. 5 in N. half & S. 8 in S. half and erect a mound of stone 3ft. base, 2.5 ft. high N. of Cor.

SUBDIVISION T. 40 S., R. 18 E.

Chains,	
	Impossible to set post 26 ins. in the ground.
	Pits impracticable. Whence
	Apine tree 11 ins. diam. bears S.44°10' W. 50 lks. marked 1/4 S. 8 B.T.
	A pinon tree 10 ins. diam. bears N.22° 20' W. 47 lks. marked 1/4 S. 5 B.T.
49.80	Top of rise
	Thence descend gradually
74.50	Rim of mesa
	Descend abruptly
80.00	The Cor. to Secs. 5,6, 7& 8
	Land, excepting mesa, broken and rocky, mountainous.
	Soil sandy and rocky; 3rd and 4th rate.
	Timber, scattering cedar, pinon & pine.
	Land mountainous, rough & exceptionally difficult to survey. 80.00 chs.

	S.89° 46' W. on random line bet. secs. 6 and 7
40.00	Set temp. 1/4 sec.cor.
79.56	Intersect West boundary of Tp. 19 lks. S. of Cor. to Secs. 1,6, 7 and 12 heretofore described.
	Thence I run
	N.89° 54' E. on true line bet. secs. 6 & 7
	Descending
	Through thick cedar & pinon timber.
2.80	Bottom of wash 40 lks. wide 10 ft. deep drains N.20°E.
16.15	Bottom of wash 1.50 chs. wide 5 ft. deep drains S.45°E.
28.80	Top of rim of canon
	Descend abruptly over sandstone ledges, interlaid with oil sand stratas.
39.30	Center of wash 20 lks. wide, 5 ft. deep drains S.10°E.

SUBDIVISION T. 40 S., R. 18 E.

Chains	
39.56	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 6 in N.half, and S 7 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.
	Pits impracticable.
	A pinon pine 9 ins.dia.bears N.22° 15'W. 56.5 lks. dist., marked 1/4 S 6 B T
	A pinon pine 11 ins.dia.bears S.3° 30'W. 29.5 lk s. dist., marked 1/4 S 7 B T
	Cor.falls 40 lks.E.of gulch, and 400 ft.below mesa.
48.00	Top of point projecting 12 chs.S.20° E. 4 chs. wide.
	Descend abruptly.
57.80	Bottom of wash, 1.50 chs.wide, 15 ft.deep, drains S.; contains water in holes, apparently from springs.
	Ascend rapidly over saddstone ledges.
78.50	Center of wash, 20 lks.wide, 3 ft.deep, drains S.80° W.
79.56	The cor.of secs.5,6,7, and 8.
	Land, mountainous.
	Soil, rocky and sandy; 3d and 4th rates.
	Timber, cedar and pine.
	Mountainous land; exceptionally difficult to survey
	79.56 chs.

N.0° 03;W.on random line bet.secs.5 and 6

40.00	Set temp.1/4 sec.cor.
79.73	Intersect N.bdy.of Tp. 34 lks.E.of the cor.of secs.5,6 31 and 32, heretofore described.
	Thence I run
	S.0° 18'E.on true line bet.secs.5 and 6,

SUBDIVISION T. 40 S., R. 18 E.

Chains.	
8.70	Bottom of wash, 1.50 chs.wide, 15 ft.deep, drains S.20° W.
26.00	Bottom of wash, 2 chs.wide, 2.5 ft.deep, drains S.45° W., 250 ft.below rim of mesa.
	Ascend abruptly.
35.50	Top of rim of point, projects 2 chs.S.45° W.
36.50	Opposite rim of point.
39.73	Set iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2.5 ft.base, 14 ins.high for 1/4 sec.cor., marked on brass cap 1/4 S 6 in W. half S 5 in E.half; and erect a mound of stone 2.5 ft.base 2 ft.high W.of cor.Pits impracticable.
	Impossible to set post over 12 ins.in the ground,
	A stationary rock bears N.64° 45'W. 36 lks.dist. marked 1/4 S 6 B O
	A stationary rock bears N.17° 30'E, 39 lks.dist. marked 1/4 S 5 B O
41.00	Top of rim of wash, 200 ft.above bottom, projects N. 50° E. 12 chs.
49.00	Bottom of wash, 30 lks.wide, 5 ft.deep, drains S.50°W.
54.00	Top of rim of wash.
65.00	Foot of bluff 150 ft.below rim.
	Ascend abruptly.
69.00	Top of rim of point, projects 3 chs.S.60° W.
71.00	Opposite edge of rim.
79.73	The cor.of secs.5,6,7, and 8.
	Land, mountainous; very much broken.
	Soil, rocky; 4th rate.
	Timber, scattering cedar and pinon pine.
	Mountainous land; exceptionally difficult to survey 79.73 chs.
	April 23, 1909.

SUBDIVISION T. 40 S. R. 18 E.

GENERAL DESCRIPTION.

There are numerous cliff dwellings in this Township, most of them in the canons draining West and South west from Cedar Mesa. Very few of them were close enough to the lines which I ran to admit of taking bearings to them.

Corn cobs, corn husks and corn silk,, perfectly preserved are found in a number of dwellings.

From the existing evidences of summer camps or residences it is probable that what are now sage brush parks were once fields which were cultivated by the inhabitants of the dwellings in the cliffs.

An abundance of broken pottery of prohistoric design and decoration are strewn around these mounds or remnants of camps or residences.

The township is a mountainous mesa country composed mostlyof the upper or Cedar Mesa, the lower mesa covering only the following Sections and parts of Secs: All of Secs. 33, 34, 35 & 36, 25 & 26 and parts of 24 & 23, 27 & 28, deeply cut by canons through the fossiliferous lime and sandstone stratas, leaving benches of varying elevations whose flat surfaces furnish some patches of grazing land.

On the faces of some of the oil stratas that have been cut by the erosion in the numerous canons, especially Johns Canon there appears a solidified oil residue, which, as the erosinn occurred, congealed, and prevented the oils from wasting. This congelation afterward solidified in which state it is now found and resulted in the hermetically sealed condition of the oil stratas of which mention will be made in the General Description of other Townships included in this survey.

The upper or Cedar Mesa on which some fairsoil is located is almost inaccessible. No water for irrigation

GENERAL DESCRIPTION Continued.

purposes can be obtained, even if the areas were of sufficient size to warrant the expenditure necessary.

The oils that may be contained in the various oil sand stratas heretofore mentioned cannot be developed from the surface of the upper or Cedar Mesa unless at enormous expense for road construction and water supply.

A five claim group however can be drilled at the foot of the upper or Cedar Mesa from the lower mesa and the majority of the group could extend back upon the upper mesa. Some scattering scrub cedar and pine timber occurs at the foot of the upper mesa.

That portion of the Township situated on the lower mesa heretofore described, would contain no oil in the Goodridge oil sand as thesand lays too close to the surface. The other sands however will without doubt be found to contain paying quantities of oil. The Honaker Oil Sand should be reached within 1460 feet in depth on any of the Secs. designated in theS.E. Cor. of Township. There are no settlers in the Tp.

Elmer C. Miller
U. S. Deputy Surveyor.

April 23, 1909.

April 27 1909.

NOTE. In this Township there were seen about 75 head of wild cattle.

About 15 head of deer were seen North of the north boundary on several occasions.

Elmer C. Miller
U.S.Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of Subdivision of Township 40 S. Rs 18 and 19 E. of Salt Lake Base and Meridian Utah showing the respective capacities in which they acted:

, Chainman.
Louis H Pohle Allan King, Chainman.
John H Hughes, Moundman.
W F McCandless, Moundman.
William Brookins, Axman.
Presley C Wills, Axman.
James Brookins, Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E Miller, United States Deputy Surveyor, in surveying all those parts or portions of the Subdivision of Township 40 S. Rs 18 and 19 E. of the Salt Lake Base and Meridian State of Utah ~~of the~~ ~~meridian,~~ ~~of~~, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Utah

Allan King, Chainman.
Louis H Pohle, Chainman.
John H Hughes, Moundman.
J W. F. McCandless, Moundman.
Presley C Wills, Axman.
William Brookins, Axman.
James Brookins, Flagman.

Subscribed and sworn to before me this 27th day of May, 1909

A S Raphe
Notary Public
My com Expires May 1st 1910

SEAL

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Elmer E. Miller, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Thomas Hull United States Surveyor General for Utah, bearing date of the 25th day of February, 1909, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Utah, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the Subdivisions of Township No 40 South, Ranges 18 and 19 East of the Salt Lake Base and Meridian in the State of Utah

~~of the~~ ~~meridian, in the~~ of , which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Elmer E. Miller
United States Deputy Surveyor

Subscribed by said Elmer E. Miller and sworn to before me this 23rd day of April, 1910

Charles N. Bishop Clerk
By Allen Trego Deputy Clerk

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911

The foregoing field notes of the survey of the Subdivision of Township No. 40 South, Range No. 18 East of the Salt Lake Base and Meridian, Utah

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Thomas Hull
United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in , has been correctly copied from the original notes on file in this office.

United States Surveyor General

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4—679.

FILED
APR 25 1910

BOOK A-367
"F"

m. S. B.

FIELD NOTES

OF THE SURVEY OF THE

EAST BOUNDARY & SOUTH BOUNDARY

O F

TOWNSHIP NO. 41 SOUTH

RANGE NO. 19 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

der his Contract No. 305, *dated* February 25th, *1909,*

rvey commenced APRIL 26th, *1909,*

rvey completed APRIL 29th, *1909.*

6—151

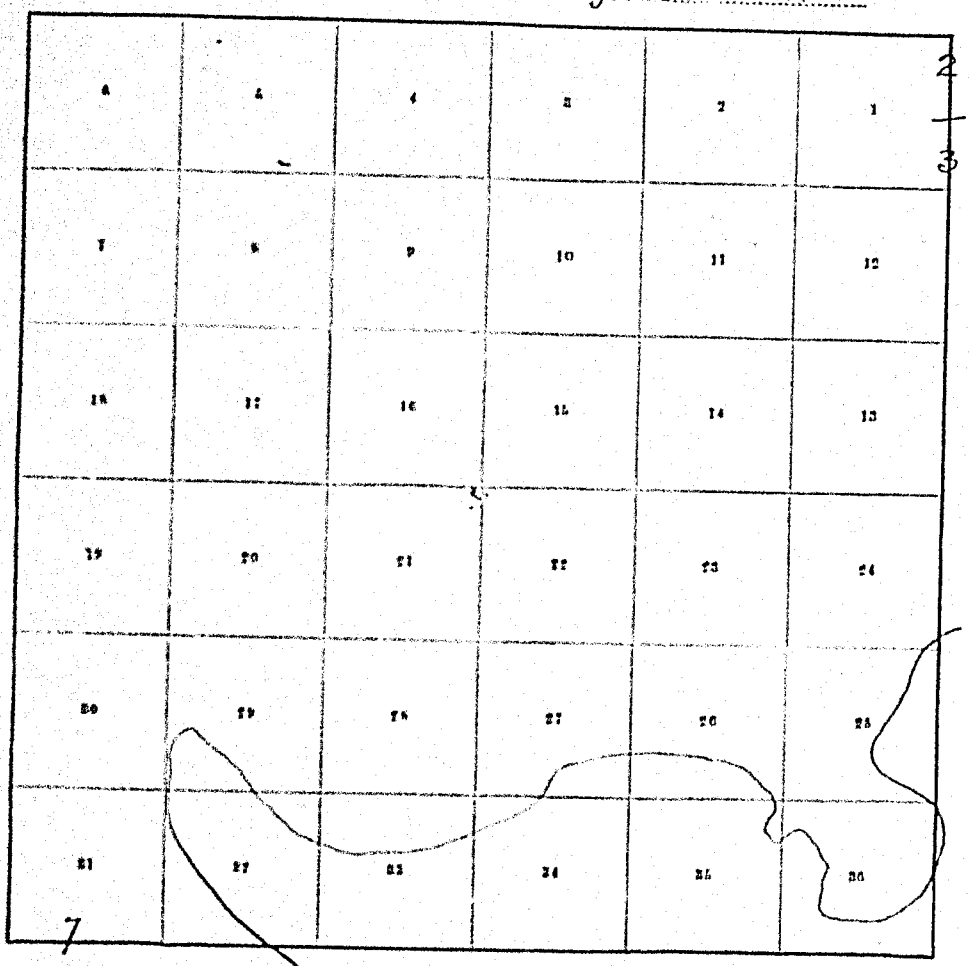
NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS,	CHAINMAN.
FRANK JACKSON,	MOUNDMAN.
WILLIAM W.RUBY,	MOUNDMAN.
ALBERT JONES,	FLAGMAN.

BOOK A-367

INDEX DIAGRAM.

Township No 11 South, Range No 19 East



Meanders Page

PRELIMINARY OATHS OF ASSISTANTS.

We, Allan King and Parley Wells

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of the E. and S. Bdys. T. 41 S. Rs. 18&19 E.; W. Bdy. T. 42 S., R. 19 E.; E. Bdys. Tps. 41 S., Ranges 16 and 17 E. of the Salt Lake Base and Meridian, Utah.

Allan King, Chainman

Parley L. Wells, Chainman

Subscribed and sworn to before me this 25th day of April, 1909

A. L. Rafter
Notary Public

SEAL

my com. Expires nov 15th 1910

We, Frank Jackson and William W. Ruby

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of the E. & S. Bdys. T. 41 S. Rs. 18&19 E.; W. Bdy. T. 42 S., R. 19 E.; E. Bdys. Tps. 41 Ranges 16 and 17 E. of the Salt Lake Base and Meridian, Utah.

Frank Jackson, Moundman

William W. Ruby, Moundman

Subscribed and sworn to before me this 25th day of April, 1909

A. L. Rafter
Notary Public

SEAL

my com. Expires May 15th 1910

We, _____ and _____

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey

_____, Axman

_____, Axman

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

I, Albert Jones, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of E. & S. Bdys. T. 41 S. Rs. 18 & 19 E.; W. Bdy. T. 42 S., R. 19 E.; E. Bdys. Tps. 41 S., Ranges 16, and 17 E. of the Salt Lake Base and Meridian, Utah.

Albert Jones, Flagman

Subscribed and sworn to before me this 25th day of April, 1909

A. L. Rafter
Notary Public

SEAL

My Comm. Expires May 15th 1910

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Chains. Survey commenced April 25, 1909, and executed with the instrument described in book "A" of this survey.
At the standard cor.of Tp. 40 S., Rs.19 and 20 W., heretofore described; lat.37° 17' 18" N.; long. 109° 49' 37" W., I set off 13° 15'N.on the decl.arc: 37° 17' N.on the lat.arc; and at 4 h. 10 m.p.m.l.m.t.,determine a meridian with the solar and mark a point thereof on a stake firmly set in the ground 5 chs.N.of the cor.
At 11 h. 12 m.p.m.l.m.t.I observe Polaris at lower culmintaion, in accordance with Manual of Instructions, and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station; this point falls 0.2 ins.E.of the mark determined by the solar.

April 25, 1909.

April 26: At 7 h. 50 m.a.m.l.m.t.I set off 13° 27'N. on the decl.arc; 37° 17'N.on the lat.arc; and mark a point in the meridian thus determined by a tack driven in the stake already set 5 chs.N.of my station: this mark falls 0.3 ins.E.of the meridian established by the Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians, respectively about 0' 11" west and 0' 16" east of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8 h. 15 m.a.m.is N.14° 30'W.; the angle thus determined gives the mag.decl.14° 30'E.

Thence I run

East on a true line along the 8th Standard Parallel South

8.17 Set an iron post 3 ft.long, 3 ins.dia. 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 1 [illegible] ft.high for closing cor.of tornship 41 South ranges 19 and 20

EAST BOUNDARY T. 41 S., R. 19 E.

Chains.	
	E. marked on brass cap T 40 S in N.; R 19 E S 36 in NW; R 20 E S 31 in NE.; R 19 E S 1 in SW.; R 20 E S 6 in SE.quadrants; and C C T 41 S on S.half; dig pits 30 x 24 x 12 ins.crosswise on each line 4 ft.E. and W. and S.of post 8 ft.dist.; and raise a mound of earth 5 ft. base, 2 1/2 ft.high S.of cor. Impossible to set post over 12 ins.in the ground. Thence I run
	South on true line bet.secs.1 and 6,
	By turning an angle off from tangent south of the 8th Stand.Parallel South
	Over slightly rolling land.
38.92	Wagon road bears NE. and SW.
40.00	Set an iron post 3 ft.long 1 in.dia.,12 ins.in ground to bedrock in mound of stone and earth 2.5 ft.base,12 ins. high for 1/4 sec.cor., mkd.on brass cap 1/4 S 1 in W.half and S 6 in E.half; dig pits 18 x 18 x 12 ins. N. and S.of post 3 ft.dist.; and raise a mound of stone and earth 3 1/2 ft.base, 2 1/2 ft.high W.of cor.
54.77	Center of wash, 12 lks.wide, 2 ft.deep, drains SW.
59.15	Road bears S.75° W. and N.75° E.
67.14	Top of wash, 40 ft.deep.
70.14	Center of wash, 40 lks.wide, 2 ft.deep, drains S.75° W.
71.14	Top of wash.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 16 ins.in the ground, in mound of stone and earth 2.5 ft.base, 8 ins. high, for cor.of secs.1,6,7, and 12, marked on brass cap T 41 S in N.half, R 19 E S 1 in NW., R 20 E S 6 in NE; S 12 in SW.; and S 7 in SE.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5 1/2 ft.dist.; and raise a mound of stone and earth 3 ft.base, 2 1/2 ft.high W.of cor.Impossible to set post over 16 ins.in the ground.
	Land, slightly rolling.
	Soil, rocky; 4th rate.
	No timber.

EAST BOUNDARY T. 41 S., R. 19 E.

Chains.	
	South between secs.7 and 12,
	Over brokem land; ascending.
0.50	Top of bench; descend into valley.
7.00	Wash, 10 lks.wide, drains E..
13.55	Wash, 12 lks.wide, 3 ft.deep,; drains W.
19.18	Wash, 12 lks.wide, 3 ft.deep, drains S.50° W.
20.00	Wash to west of line, drains S.
29.75	Center of wash 40 lks.wide, 4 ft.deep, drains E.
40.00	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 12 in W.half and S 7 in E.half; dig pits 18 x 18 x 12 ins. N. and S.of post 3 ft.dist.; and raise a mound of stone and earth 3 1/2 ft.base, 2 ft.high W.of cor..
44.79	Top of spur, projects 3. chs.SE. Descend.
53.18	Center of wash, 45 lks.wide, 3 ft.deep, drains SW.
61.99	Center of wash, 45 lks.wide, 4 ft.deep, drains SE.
63.60	Center of wash, 12 lks.wide, 3 ft.deep, drains E.
74.70	Center of wash, drains E.
77.49	Center of wash, 12 lks.wide, 5 ft.deep, drains N.70° E.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 15 ins.in the ground, in mound of stone and earth 2 1/2 ft.base, 9 ins high, for cor.of secs.7,12,13, and 18, marked on brass cap T 41 S in N.half; R 19 E S 12 in NW., R.20 E S 7 in NE.; S 13 in SW. and S 18 in SE.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5 1/2 ft.dist.; and raise a mound of stone and earth 3 ft.base, 2 1/2 ft.high W.of cor.Impossible to set post over 15 ins.in the ground.
	Land, rolling and cut by washes.
	Soil, rocky; 4th rate.
	No timber.
	Apr.26: At the noon hour sky overcast, solar observation impossible.

Chains	
	South bet.secs.13 and 18,
	Ascending.
13.00	Top of spur, projects E.2 chs.
17.08	Road bears E. and W.
27.50	Top of wash. Descend.
27.84	Side of wash, vertical drop.
29.84	Center of wash, 1 ch.wide, 80 ft.below top, drains E.
30.84	Opposite side of wash. Ascend.
34.00	Top of wash.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 13 in W.half; and S 18 in E.half; dig pits 18 x 18 x 12 ins.N. and S.of post 3 ft.dist.; and raise a mound of stone and earth 3 1/2 ft.base, 2 1/2 ft.high W.of cor.
	Thence over level table land.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground for cor.of secs.13,18,19, and 24, marked on brass cap T 41 S in N.half; R 19 E S 13 in NW.; R 20 E S 18 in NE.: R 19 E S 24 in SW.; and R 20 E S 19 in SE.quadrants; dig pits 18 x 18 x 12 ins.in each sec. 5 1/2 ft.dist.; and raise a mound of stone and earth 4 ft.base, 2 1/2 ft.high W.of cor.
	Land, rolling and cut by washes.
	Soil, sandy; 2d rate.
	Undergrowth shadscale.
	No timber.

	South between secs.19 and 24,
	Over slightly rolling table land.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 24 in W.half, S 19 in E.half; dig pits 18 x 18 x 12 ins. N. and S.of post 3 ft.dist.; and raise a mound of earth

EAST BOUNDARY T. 41 S., R. 19 E.

Chains.	
	3½ ft.base, 1½ ft.high Wood cor.
53.88	Point at top of bluff above river, bears NE. and SW. Descend abruptly.
75.03	Right bank of San Juan River, drains S.70° W.
	Set an iron post 3 ft.long, 3 ins.dia., 16 ins.in the ground, in mound of stone 2½ ft.base, 8 ins.high for meander cor.of frac'l secs.19 and 24, marked on brass cap T 41 S in N.half; R 19 E S 24 in NW.; R 20 E S 19 in NE.quadrants; and H C in S.half; and raised mound of stone 3 ft.base, 2½ ft.high N.of cor.Pits impracticable. Impossible to set post over 16 ins.in the ground.
	Land, mountainous and rolling mesa.
	Soil, sandy and rocky; 3d and 4th rates.
	No timber.
	Mountainous land, exceptionally difficult to survey,
	21.15 chs.
	April 26, 1909.

June 1, 1909: At 3 h. 12 m.p.m.l.m.t., I set off 37° 14'N.on lat. rc; 22° 05'N.on decl.arc; and determine a meridian with the solar at the meander cor.of frac'l secs.25 and 36, heretofore described,

To establish a portion of the E.bdy.of this Tp. in sec. 36, I proceed as follows:

From above meander cor.of secs.25 and 36 I run

S.37° 45'E. 2.80 chs.

Thence S.13° 15'E. 0.87 chs.to a point on E.bdy.of township, and right bank of San Juan River,

Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 12 ins.high, for Meander cor.of frac'l secs.31 and 36, marked on brass

EAST BOUNDARY T. 41 S., R. 19 E.

0.00 chains. cap M C T 41 S in N.; R 20 E S 31 in E.half; R 19 E S 36 in W.half; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.Impossible to set post over 12 ins.in the ground. Thence I run

South on E.bdy.of township,

5.48 Right bank of San Juan River.

Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone 3 ft.base, 12 ins.high for meander cor.of frac'l secs.31 and 36, mkd.on brass cap T 41 S in N.; R 20 E S 31 in E.half; R 19 E S 36 in W. half; and M C facing river; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Impossible to set post over 12 ins.in the ground.

Land, rough ledge of limestone.

Soil, rocky; 4th rate.

Mountainous land 5.48 chs.

June 1, 1909.

GENERAL DESCRIPTION.

The line along the E.bdy.of T. 41 S., R. 19 E. traverses a country of a bench mesa character; caused by the erosion of the different strata of the fossiliferous lines and red sandstone of varying hardnesses and resistances to eroding effects. The canons are cut deep generally draining into the San Juan River, which flows westerly through the southern part of the township to the west of the line.

Several oil bearing stratas are prominent along the San Juan River and the nearby canons.

Some grazing land is to be obtained on the different benches.

About three miles or the western portion of T. 41 S., R. 20 E. should be subdivided. Aside from the oil

and gold mineral values the lands have no other value except a small or infinitesimal value for grazing which is scarcely worth mentioning.

Elmer C. Miller

U.S.Deputy Surveyor.

June 1, 1909.

Volume
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Page

SOUTH BOUNDARY T. 41 S., R. 19 E.

Chains. April 29, 1909: At 9 h. 0 m.a.m.l.m.t., I set off 37° 12'N.on the lat.arc; 14° 25'N.on the decl.arc; and determine a meridian with the solar at the corner of Tps. 41 and 42 S., Rs.18 and 19 E., heretofore described.

Thence I run

East on a true line bet.secs. 6 and 31,

Descend gradually; through shadscale undergrowth.

20.90 Wash, 20 ft.deep, 2 chs.wide, heads 2 chs.NW. and drains SE.

32.00 Foot of anticlinal.

33.60 Center of wash, 1 ch.wide, 1 ft.deep, drains S.50° E.; Amphitheatre Gulch.

37.82 Allowing 2.18 chs.for convergency of meridian,

Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 31 in N.half and S 6 in S.half; dig pits 18 x 18 x 12 ins. E. and W.of post 3 ft.dist.; and raise a mound of earth 3 1/2 ft.base, 1 1/2 ft.high N.of cor.

Corner is 190 ft.below township corner.

39.60 Road bears NE. and SE.

44.15 Road bears N. and S.

70.70 Top of low hill, bears N.10° W. and S.10° E.

77.82 Set an iron post 3 ft.long, 3 ins.dia.,24 ins.in the ground, for cor.of secs.5,6,31, and 32, marked on brass cap T 41 S in N.half; R 19 E S 31 in NW.; R 19 E S 32 in NE.; S 6 in SW.; and S 5 in SE.quadrants; and T 42 S in S.half; dig pits 18 x 18 x 12 ins.in each sec.5 1/2 dist.; and raise a mound of earth 4 ft.base, 2 ft.high W.of cor.

Land, broken.

Soil, sandy and rocky; 3d and 4th rates.

No timber.

Undergrowth shadscale.

SOUTH BOUNDARY T. 41 S., R. 19 E.

Chains.	
	East on a true line bet.secs.5 and 32,
	Over rolling land.
11.42	Road bears S.30° E. and N.30° W.
12.15	Small wash 10 lks.wide, 1 ft.deep, drains S.30° E.
28.00	Foot of hill.
29.25	Top of low pass, 30 ft.above foot, bears N.30° W.and S.30° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 32 in N.half, and S 5 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.
	Descend gradually over rolling hills.
60.00	Foot of hill and enter river bottom, bears S.60° E.and N.60° W.
76.70	Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for meander cor.of frac'l sec.5 and 32, at high water mark on the right bank of the San Juan River; marked on brass cap T 41 S R 19 E S 32 in N.half; T 42 S R 19 E S 5 in S.half; M C in E.; dig pit 36 x 36 x 12 ins. W.of post 8 ft.dist.; and raise a mound of earth 4 ft.base, 2 ft.high W.of cor.
	Land, rolling.
	Soil, sandy and rocky; 2d and 4th rates.
	No timber. April 29, 1909.

GENERAL DESCRIPTION.

The land on the W.half mile of the line is very broken and rough. The flexures of the second anticlinal dip below the surface at a point about 5 chs.W.of the S.1/4 sec.cor.of sec.31. From this point on, the line crosses the main synclinal.

Note: See general description in notes of the subdivision of this township.

Elmer C. Fuller

U.S.Deputy Surveyor.

LATITUDES. DEPARTURES. AND CLOSING ERRORS.

ine Designated.	True Bearing	Distance	Latitudes		Departures.	
			North.	South.	East.	West.
		Chains.	chs.	chs.	chs.	chs.
orth Boundary.	East	477.28			477.28	
.bdy.To Cor.Secs.						
3,18,19 & 24	South	240.00		240.		
. bet.Secs.13&24	West	80.00				80.00
. bet.Secs.23&24	S.0° 01' E.	80.00		80.	.02	
. bet.Secs.23&26	West	80.00				80.00
. bet.Secs.22&27	West	80.00				80.00
. bet.Secs.27&28	S.0° 2' E.	80.00		80.	.05	
. bet.Secs.28&33	West	80.00				80.00
. bet.Secs.28&29	N.0° 03' W.	80.00	80.00		.07	.07
. bet.Secs.20&29	N.89° 55' W.	79.96	00.12			79.96
. bet.Secs.29&30	S.0° 03' E.	80.00		80.	.07	
. bet.Secs.31&32	S.0° 03' E.	80.00		80.	.07	
outh Boundary.	West.	77.82				77.82
est Boundary.	North.	480.00	480.00			
onvergency					.41	
otals			560.12	560.	477.90	477.85
			560.00		477.85	
rrors in Latitude			0.12		0.05 Errors in Departures.	

Elmer C. Miller

U.S.Deputy Surveyor.

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Page

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of _____

_____

showing the respective capacities in which they acted:

For list of names and final oath of assistants see book "O" ____, *Chainman.*
T. 41 S., R. 16 E.

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all those parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

Subscribed and sworn to before me this _____ day of _____, 190 }

_____

SEAL

_____

8—151

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, ... United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from ..... United States Surveyor General for ....., bearing date of the ..... day of ....., 190 , I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for ....., the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of .....

For final oath of deputy see book "O" T. 41 S., R. 19 E.

..... of the ..... meridian, in the ..... of ....., which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for ..... and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

United States Deputy Surveyor.

Subscribed by said ....., and sworn to before me this ..... day of ....., 190

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL.

Salt Lake City, Utah, June 19, 190

The foregoing field notes of the survey of the East and South Boundaries of Township No. 41 South, Range No. 19 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, 190 9, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in ....., has been correctly copied from the original notes on file in this office.

United States Surveyor General.

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4—679.

BOOK A-367

"G"

FILED
APR 25 1910
N.R.M.C.

M.B.

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISIONS

&

MEANDERS

OF

TOWNSHIP NO.41 SOUTH,

RANGE NO.19 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* FEBRUARY 25th, *190*9

Survey commenced APRIL 29th, *190*9.

Survey completed JUNE 5th, *190*9

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS,	CHAINMAN.
FRANK JACKSON,	MOUNDMAN.
WILLIAM W.RUBY,	MOUNDMAN.
ALBERT JONES,	FLAGMAN.

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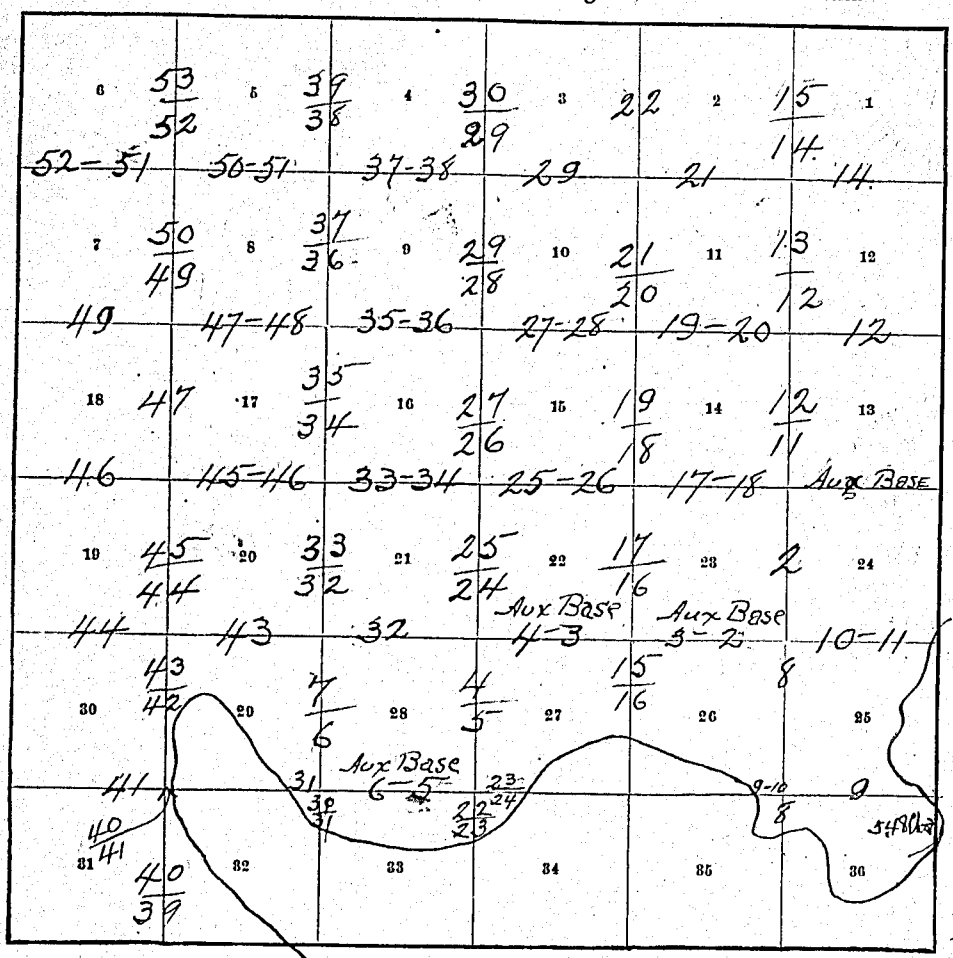
BOOK A-367

INDEX DIAGRAM.

Township No. 41 South, Range No. 19 East.



Meanders Pages Nos. 54-59 Inclusive

General description Pages 60 to 63 Inclusive

PRELIMINARY OATHS OF ASSISTANTS.

We, Allan King and Ruslay C. Wil[illegible]

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level [illegible] chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; [illegible] we will report the true distances to all notable objects, and the true lengths of all lines that we [illegible] measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey [illegible] the subdivision and meander lines of Tps. 41 and 42 S., R. 19 E.; Tps. 41 and 42 S., R. 18 E.; and Tp. 41 S., R. 17 E.; and the meander lines in Tp. 41 S., R. 16 E. of the Salt Lake Base and Meridian, Utah.

Allan King, Chainman

Ruslay C. Wills, Chainman

Subscribed and sworn to before me this 29th day of April, 1909

A. L. Rafen
Notary Public
in and for San Juan Co. Ut.

SEAL

my commission Expires May 1st 1910

We, Frank Jackson and William W. Ruby

do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey [illegible] the subdivision and meander lines of Tps. 41 and 42 S., R. 19 E.; Tps. 41 and 42 S., R. 18 E.; and Tp. 41 S., R. 17 E.; and the meander lines in Tp. 41 S., R. 16 E. of the Salt Lake Base and Meridian, Utah.

Frank Jackson, Moundman

William W. Ruby, Moundman

Subscribed and sworn to before me this 29th day of April, 1909

A. L. Rafen
Notary Public
in and for San Juan Co. Ut.

SEAL

my commission Expires May 1st 1910

We, ... and .....

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey [illegible]

..... Axman

..... Axman

Subscribed and sworn to before me this ..... day of ....., 190

SEAL

I, Albert Jones, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of subdivision and meander lines of Tps. 41 and 42 S. R. 19 E.; Tps. 41 and 42 S., R. 18 E.; and Tp. 41 S., R. 17 E.; and the meander lines in Tp. 41 S., R. 16 E. of the Salt Lake Base and Meridian, Utah.

Albert Jones, Flagman

Subscribed and sworn to before me this 29th day of April, 1909

A. L. Rafen
Notary Public
in and for San Juan Co. Ut.

SEAL

my commission Expires May 1st 1910

Subdivision T. 41 S., R. 19 E.

Survey commenced Apr.29, 1909, and executed with the instrument described in book "A" of this survey.

At the cor.of secs.13,18,19, and 24 on the E.bdy.of Tp. heretofore described; lat.37° 14' 41" N.; long.109° 49' 31" W., I set off 14° 30' N.on the decl.arc; 37° 15' N.on the lat.arc; and at 3 h. 37 m. p.m.l.m.t.,determine with the solar a meridian; and mark a point thereof on a stake firmly set in the ground 5 chs.N. of the cor.

At 10h.56 m.p.m.l.m.t., I observe Polaris at lower culmination, in accordance with Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins.E.of the mark determined by the solar.

April 29, 1909.

Apr.30: At 7 h. 45 m.a.m.l.m.t.I set off 14° 43' N.on the decl.arc; 37° 15' N.on the lat.arc; and mark a point in the meridian determined with the solar, by a tack driven in the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.E.of the meridian established by Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 0' 11" W. a and 0' 16" E.of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8 h. 15 m. a.m.is N.14° 30'W.; the angle thus determined gives the magnetic decl.14° 30'E.

Thence I run

West on true line bet.secs.13 and 24, on auxiliary base line,

Over rolling land.

Chains.	
19.30	Center of wash, drains N.
21.95	Center of wash drains N.20° W.
24.95	Center of wash, drains N.20° E.
40.00	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 13 in N.half, and S 24 in S.half; dig pits 18 x 18 x 12 ins. E. and W.of post 3 ft.dist., and raise a mound of earth 3½ ft.base, 1½ ft.high N.of cor.
41.05	Center of wash, 10 lks.wide, drains.N.4° E. Ascend.
47.67	Top of ridge, bears N.10° E.and S.10° W.
	Thence over level land.
52.00	Ascend over broken ridges.
69.38	Wash, drains N..
74.38	Wash, 12 lks.wide, 20 ft.deep, drains N.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 1 ft.high, for cor.of secs.13,14,23, and 24, marked on brass cap T 41 S S 14 in NW., R 19 E S 13 in NE.; S 23 in SW., and S 24 in SE.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5½ ft.dist.; and raise mound of stone and earth 3½ ft.base, 2½ ft.high W.of cor. Impossible to set post over 12 ins.in the ground. Land, rolling and level.
	Soil, sandy; 3d rate.
	No timber.

S.0° 01'E. bet.secs.23 and 24,

Over nearly level land.

10.70	Top of spur, projects 10 chs.E. Descend.
20.00	Center of wash, 12 lks.wide, 7 ft.deep, drains E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 23 in W.half, and S 24 in E.half; raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.

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Chains.	
	Corner is 30 ft.above sec.cor. ½ mile N.
80.00	Set iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.23,24,25, and 26, marked on brass cap T 41 S S 23 in NW.,R 19 E S 24 in NE.; S 25 in SE., and S 26 in SW.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5½ ft.dist.; and raise a mound of earth 4 ft.base, 2 ft.high W.of cor.
	Land, nearly level.
	Soil, rocky; 3d rate.
	Undergrowth shadscale and some bunch grass.
	No timber.

West on auxiliary base line bet.secs.23 and 26

	Over nearly level land.
9.70	Edge of level mesa, bearing N. and S.
14.25	Top of break to wash.
16.35	Center of wash, drains S.
22.40	Center of wash, drains S.40° W.
34.60	Top of spur, projects S.50 lks.
37.30	Center of wash, 60 lks.wide, drains S.40° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high, for ¼ sec.cor., marked on brass cap ¼ S 23 in N.half, S 26 in S.half; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	Cor.is 150 ft.above bottom of wash to E.
42.00	West top of break to wash; thence over tableland.
46.65	Top of bluff,300 ft.above wash,bears NW.and SE. Descend.
51.40	Center of wash, 5 lks.wide, 1 ft.deep, drains S.45° E.
58.00	Top of bluff, 300 ft.above wash, bears NE. and NW.Desc.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 12 ins.high,

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Chains. for cor.of secs.22,23,26, and 27, marked on brass cap T 41 S S 22 in NW., R 19 E S 23 in NE.; S 26 in SE., and S 27 in SW.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Impossible to set post over 12 ins.in the ground. Pits impracticable.

Land, broken and rocky.

Soil, rocky; 4th rate.

No timber. Undergrowth shadscale and some bunch grass.

West on auxiliary base line bet.secs.22 and 27,

Ascending over mountainous land.

0.60 Foot of bluff, bears S.15° W.; ascend.

10.60 Top of point of bluff, slopes south from N.

29.40 Foot of bluff, bears S.15° E.

40.00 Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 22 in N.half, S 27 in S.half; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor.Pits impracticable.

43.00 Wash, 10 lks.wide, 3 ft.deep, drains S.

52.80 Top of ridges or mesa, bears N. and S.,slopes W.

80.00 Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone 12 ins.high, for cor.of secs. 21,22,27, and 28, marked on brass cap T 41 S S 21 in NW.. R 19 E S 22 in NE., S 27 in SE., and S 28 in SW. quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.or cor.Pits impracticable.

Impossible to set post over 12 ins.in the ground.

Land, broken and rocky.

Soil, rocky; 4th rate.

No timber.

S.0° 02'E. bet.secs.27 and 28,

SUBDIVISION OF T.41 S., R. 19 E.

Chains	
	Descending over rolling land.
14.87	Center of wash, 20 lks.wide, 10 ft.deep, drains N.20°W.
	Ascend.
20.00	Top of wash, 70 ft.deep.
22.10	Center of wash, 30 lks.wide, drains W. Ascend.
28.40	Top of wash. Descend.
31.50	Center of wash, 30 lks.wide, 10 ft.deep, drains W.
34.00	Center of wash, 6 lks.wide, drains W. Ascend.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2 ft.base, 14 ins .high for $\frac{1}{4}$ sec.cor., marked on brass cap $\frac{1}{4}$ S 28 in W.half, and S 27 in E.half; and raise a mound of stone $2\frac{1}{2}$ ft.base, 2 ft.high W.of cor.Pits impracticable. Impossible to set post over 12 ins.in the ground.
48.00	Top of butte, 250 ft.above wash, bears SW. and NE.
61.20	Top of wash, bears E. and W. Descend.
67.30	Center of wash, 40 lks.wide, 14 ft.deep, drains W.Asc.
72.00	Top of wash, bears E. and W.
76.30	Top of wash, bears E. and W. Descend.
78.60	Wash, 30 lks.wide, 4 ft.deep, drains W.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone $2\frac{1}{2}$ ft.base, 12 ins.high, for cor.of secs.27,28,33, and 34, marked on brass cap, T 41 S S 28 in NW., R 19 E S 27 in NE., S 34 in SE., and S 33 in SW.quadrants; and raise a mound of stone $2\frac{1}{2}$ ft.base, 2 ft.high W.of cor.Pits impracticable. Impossible to set post over 12 ins.in the ground.
	Corner falls on south bank of wash.
	Land, broken and rocky.
	Soil, rocky; 4th rate.
	No timber. Undergrowth light growth of shadscale.
	Apr.30: At the noon hour sky overcast, solar obs.impossible.

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Chains. West on auxiliary base line bet.secs.28 and 33,

Over rolling land.

11.82 Top of ridge, bears NW. and SE. Descend.

26.97 Wash, drains N.85° W.

34.85 Top of ridge, bears N.80° W.

40.00 Wash,60 lks.wide,3 ft.deep, drains N.80° W.,unsafe position for ¼ sec.cor.; corner not set.

40.91 Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for witness ¼ sec.cor., marked on brass cap T 41 S R 19 E S 28 in N.half, S 33 in S.half; and WC ¼ E; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.

63.00 Top of ridge, bears N. and S. Descend.

80.00 Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.28,29,32, and 33, mkd.on brass cap T 41 S S 29 in NW.; R 19 E S 28 in NE.; S 32 in SW; and S 33 in SE.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.

Land, rolling.

Soil, rocky; 4th rate.

No timber.

N.0° 03'W.bet.secs.28 and 29,

Over mountainous land;exceptionally difficult to survey.

6.15 Center of Lime Creek,2 chs.wide,3 ft.deep,drains SW.

18.00 Center of Lime Creek,3 chs.wide,4 ft.deep,drains S.40°E.

38.75 Point for ¼ sec.cor.will fall in center of Lime Creek; therefore at this point,

Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 14 ins.high, for witness cor.to ¼ sec.cor.,. marked on brass cap, T 41 S R 19 E W C ¼ in N.half, S 28 in E.

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Chains.	
	and S 29 in W.; and raise amound of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.
40.00	Point for cor.falls in center of Lime Creek, 2 chs.wide, 3 ft.deep,draining W.Cor.not set.Thence along creek.
47.00	Center of Lime Creek, drains S.
48.50	Bank of Lime Creek.
60.65	Center of Lime Creek 170 lks.wide, 4 ft.deep, drains S. 60° E.
63.00	Top of bank of creek.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 12 ins.high, for cor.of secs.20,21,28, and 29, mkd.on brass cap T 41 S S 20 in NW.; R 19 E S 21 in NE.; S 28 in SE., and S 29 in SW.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	Land, mountainous, broken and rocky.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land, rough and broken; exceptionally difficult to survey, 80.00 chs.

From the cor.of secs.23,24,25, and 26 on auxiliary base line, I run

S.0° 01'E. bet.secs.25 and 26,

Ascending gently, over sandy table land.through undergrowth.

40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in ground in mound of stone and earth 2½ ft.base,, 14 ins.high for ¼ sec.cor., mkd.on brass cap ¼ S 26 in W.half,S 25 in E.half;raise a mound of stone 2½ ft.base, 2 ft. high W.of cor.Impossible to set post 26 ins.in ground.
55.00	Top of bluff above river. Desc.rapidly over sandstone

Chains.	
	and limestone ledges interlaid with oil sand stratas.
80.00	Point for cor.of secs.25,26,35, and 36 falls on ledges; inaccessible. Corner not set.
	Land, mountainous and level mesa.
	Soil, rocky;and sandy; 4th and 3d rates.
	No timber. Undergrowth shadscale and some grass.
	Mountainous land 25.00 chs.
	From point for cor.of secs.25,26,35 and 36, I run
	East on true line bet.secs.25 and 36,
	Ascending over sand and limestone ledges.
15.50	Wash, drains SW. Ascend.
89.80	Top of rocky slope from mesa, bears N.35° W. and S.48° E. Descend.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground,in mound of stone 2½ ft.base, 1½ ins.high for ¼ sec.cor., marked on brass cap ¼ S 25 in N.half; S 36 in S.half; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Impossible to set post over 12 ins.in the ground.
	Descend rapidly over sand and limestone ledges to San Juan River.
78.09	Right bank of San Juan River, drains SE.
	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of fractional secs.25 and 36, mkd.on brass cap T 41 S R 19 E S 25 in N.half; S 36 in

SUBDIVISION OF T. 41 S., R. 19 E.

Chains.

S. and M C at angle; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable.

Land, mountainous, rocky and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land, exceptionally difficult to survey

78.09 chs.

From point for cor.of secs.25,26,35, and 36,

S.0° 01'E.bet.secs.35 and 36,

Descending rapidly over sand and limestone ledges, interlaid with oil sand stratas.

8.47 Right bank of San Juan River, draining SW.

Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high for witness corner of secs.25,26,35, and 36 and meander cor.of frac'l secs.35 and 36, mkd.on brass cap T 41 S R 19 E W C in N.half, S 26 in NW., S 25 in NE., S 35 in SW., and S 36 in SE.quadrants, with M C in S. and raise a mound of stone 2½ ft.base, 2 ft.high N. of cor.Impossible to set post 24 ins.in ground.

This cor.is on top of vertical bluff on the right bank of San Juan River, 125 ft. perpendicular above river.

Land. broken and rocky; mountainous.

Chains.	
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land;exceptionally difficult to survey
	8.47 chs.
	As the San Juan River flows into sec.35 and will prevent me from running a line the full distance bet. secs.26 and 35, I therefore start at the point for cor.of secs.25,26,35, and 36, and run
	West bet.secs.26 and 35,
	Descending abruptly.
8.47	Right bank of San Juan River, drains N.
	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of frac'l secs.26 and 35, mkd.on brass cap T 41 S R 19 E in N.half; S 26 in N. and S 35 in S.half; and M C facing river; and raise a mound of stone 3 ft.base, 2½ ft.high E.of cor. Pits impracticable.
	Land, mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land 8.47 chs.

SUBDIVISION OF T. 41 S., R. 19 E.

Chains. From the cor. of secs. 23, 24, 25, and 26 on the auxiliary base line, I run

East on a true line bet. secs. 24 and 25,

Over nearly level mesa; through undergrowth.

40.00 Set an iron post 3 ft. long, 1 in. dia., 26 ins. in the ground, for ¼ sec. cor., marked on brass cap ¼ S 24 in N. half, and S 25 in S. half; and raise a mound of stone 2½ ft. base, 2 ft. high N. of cor. Pits impracticable.

47.35 Edge of mesa; descend rapidly over ledges to San Juan River.

78.22 Set iron post 3 ft. long, 1 in. dia., 26 ins. in the ground, for meander cor. of frac'l secs. 24 and 25 on right bank of river, draining SW.; marked brass cap T 41 S R 19 E S 24 in N.; S 25 in S. half; and M C at angle; and raise a mound of stone 2½ ft. base, 2 ft. high W. of cor. Pits impracticable.

Land, mountainous and level mesa.

Soil, sandy and rocky; 3d and 4th rates.

No timber.

Undergrowth shadscale.

Mountainous land, exceptionally difficult to survey

30.87 chs. April 30, 1909.

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	May 1, 1909: At 8 h. 6 m.a.m.l.m.t., I set off 37° 15'N. on lat.arc; 15° 1'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.13,14,23, and 24 on Auxiliary base line. Thence I run
	N.0° 01'W.bet.secs.13 and 14,
	Over broken land.
2.85	Center of wash, 20 lks.wide, 2 ft.deep,drains N.70° E.
13.00	Center of wash, 10 lks.wide, 2 ft.deep, drains NE.
21.00	Top of mound or table land, 40 ft.above wash.
38.10	Top of break to wash bears E. and W.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.on brass cap ¼ S 14 in W.half and S 13 in E.half; raise a mound of stone 2½ ft.base,2 ft.high W.of cor.Pits impracticable.Desc.
58.70	Center of wash, 20 lks.wide, 4 ft.deep, drains W.
60.40	Top of wash, 40 ft.above bottom.
68.00	Center of wash,12 lks.wide,2 ft.deep, drains W.
70.77	Road, bears E. and W.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 1 ft. high cor.of secs.11,12,13, and 14, marked on brass cap T 41 S S 11 in NW.;R 19 E S 12 in NE., S 14

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
	in S.W. and S. 13 in S.E. Quadrants.
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Pits impracticable. Impossible to set post 24 ins. in ground.
	Land broken by washes
	Soil 4th rate; rocky.
	Vegetation shadscale and scattering bunch grass.
	No timber.
	E. on a random line bet. Secs. 12 & 13
40.00	Set temporary 1/4 Sec. Cor.
79.98	Intersect E. Bdy. of Tp. 38 Lks. N. of Cor. of Secs. 7, 12, 13 & 18, heretofore described.
	Thence I run, over rolling land; through undergrowth N. 89° 48' W. on a true line bet. Secs. 12 & 13
6.90	Foot of ridge and ascend
23.42	Top of mesa
	Wash 1 ch. wide 30 ft. deep drains S. 45° E.
39.98	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 12. in N. half and S. 13 in S. half
	Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.
	Pits impracticable. Impossible to set post 26 ins. in ground.
54.55	Goodridge road to 3rd well bears S. 80° W.
79.98	The Cor. of Secs. 11, 12, 13 & 14
	Land rolling and rocky
	Soil 4th rate; rocky.
	Undergrowth shadscale & some grass
	No timber
	N. 0° 01' W. bet. Secs. 11 & 12; over broken land; through undergrowth.
2.93	Center of wash 18 lks. wide, 2 ft. deep, drains West
4.43	Center of wash 10 lks. wide 1 ft. deep, drains N. 75° W.

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

Chains.	
5.95	Top of break to wash.
11.20	Top of spur 25 ft. high, bears E. & W.
16.80	Road, bears N.W. & S.E.
21.00	Center of wash 15 lks. wide 2 ft. deep, drains N.W.
26.10	Top of spur, bears E. & W.; thence along top.
32.40	Descend spur, 50 ft. high bears E. & W.
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 11 in W. half S. 12 in E. half. Pits impracticable; Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor. Impossible to set post over 12 ins. in the ground.
43.10	Center of wash, 1 ch. wide, 4 ft. deep, drains W.
45.00	Top of wash
49.30	Top of spur, bears S. 40°W.
53.60	Wash, 40 lks. wide, 4 ft. deep, drains S. 40° W.
64.30	Wash, 30 lks. wide, 5 ft. deep, drains W.
67.08	Road, bears W. and E.; Bluff to Goodridge.
68.10	Top of spur, bears S. 40° W.
80.00	Set iron post 3 ft. long 2 ins. in diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 1. ft. high for Cor. of Secs. 1, 2, 11 & 12 marked on brass cap T. 41 S. S. 2 in N.W. R. 19 E. S. 1 in N.E., S. 12 in S.E. and S. 11 in S.W. quadrants Built mound of stone 2.5 ft. base, 1.5 ft. high W. of Cor. Pits impracticable. Impossible to set post over 12 ins. in the ground. Land much broken by washes & spurs Soil 4th rate; rocky vegetation shadscale & scattering grass No timber May 1: At this cor. I set off 15° 04' E. on decl. arc; and at 11 h. 57 m. a.m. l.m.t. observe the sun on the meridian; the resulting lat. is 37° 16' N.

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	S.89° 48' E. on random line bet. Secs. 1 & 12
40.00	Set temp. 1/4 sec.cor.
80.02	Intersect E. bdy. of Tp. 3 lks. S. of Cor. of Secs. 1, 6, 7 & 12, heretofore described.
	Thence I run; ascending through undergrowth.
	N.89° 49' W. on true line bet. Secs. 1 &12
10.00	Wash, drains SW.
33.94	Wagon road bears N.E. & S.W.
36.36	Top of bluff 60 ft. above 1/4 Sec. Cor.
40.01	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 1 in N. half and S. 12 in S. half
	Built mound of stone 2.5 ft. base, 1.5 ft. high N. of Cor.
	Pits impracticable.
	The line follows down a valley south of small gulch.
80.02	The Cor. of Secs. 1, 2, 11 & 12
	Land rolling
	Soil, sandy & rocky; 3d rate.
	Undergrowth shadscale and some grass
	NO timber.

	N.0° 01' W. bet. Secs. 1& 2, over broken land.
2.50	Center of wash 15 lks. wide 3 ft. deep, drains S.45°W.
6.80	Top of spur projects S.70°W. 25 ft. high
9.70	Center of wash 12 lks. wide, drains S. 70° W.
28.00	Foot of spur
29.00	Top of spur 40 ft. high projects 4 chs. W.
	Descend.
33.65	Foot of descent
36.00	Center of wash, drains S. 40° W. Ascend.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 1¼ ins.

Chains.	
	high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 2 in W. half and S. 1 in E. half
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Pits impracticable.
	Thence ascend gradually
44.20	Top of wash
44.60	Top of wash
	Descend
53.16	Foot of bluff
62.29	Center of wash 5 lks. wide 7 ft. deep, drains S. 60°W.
71.33	Top of break to wash. 100 ft. deep to gulch south
79.98	Intersect 8th Standard Parallel South 8.18 chs. E. of the the Standard Cor. of Secs. 35 & 36 heretofore described where I set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for Closing Cor. of Secs. 1 & 2 marked on brass cap T. 40 S. R. 19 E. and S. 35 and S. 36 with C.C. in N. half S. 1 and S.2. in S. half.
	Built mound of stone 3 ft. base 2.5 ft. high S. of Cor.
	Pits impracticable.
	Land broken and rocky.
	Soil rocky 4th rate.
	Vegetation shadscale and some grass.
	No timber.

May 1, 1909.

May 2. 1909. I set off 37° 14 N. on lat. arc and 15° 19' N. on decl. arc and at 7 h. 39 m.a.m.l.m.t. I determine a meridian with the solar a t Cor. of Secs. 22, 23, 26 & 27 on Auxiliary Base Line previously described.

Thence I run, over broken land

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	Described . . . . .
	Thence I run, over broken land.
	S.0° 01' E. bet Secs. 26 & 27.
8.00	Foot of steep descent
	Thence over level plateau
24.74	Edge of plateau
	Thence descend abruptly
39.00	Wash drains S.W.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 27 in W. half and S. 26 in E. half and raise mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor.
	Pits impracricable.
	Cor. sits on bank above wash
44.75	Top of bluff above San Juan River bears bears E. & W.
	And descend rapidly
52.14	Right bank of San Juan River, bears E. & W.
	Set iron post 3 ft. long, 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high for meander Cor. frac. Secs. 26 & 27. mkd. T41S R19E. In N. S27 in W. half S26 in E. half and M. C. at angle.
	Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable. Impossible to set post over 12 ins.
	Land broken and rocky.
	Soil, rocky 4th rate.
	Vegetation, shadscale and some little grass.
	No timber.
	Land mountainous, exceptionally difficult to survey
	52.14 chs.

From the Cor. of Secs. 22, 23, 26 and 27 on Auxiliary.

Base Line.

I ran, over mountainous land; through shadscale .

N.0° 01' W. bet. Secs. 22 & 23

7.74 Top of bank of wash, Thence over plateau.

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
40.00	Set iron post 3 ft. long 2 in . diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 22 in W. half and S. 23 in E. half
	Built mound of stone 2 1/2 ft. base 2 ft. high W. of Cor.
	Pits impracticable.
54.25	Top of spur, 60 ft. above foot
57.18	Foot of spur
	Thence descending gradually.
80.00	Set iron post 3 ft. long 2ins. diam. 12 ins. in the ground in mound of stone & earth 2½ ft. base, 1½ ft. high for Cor. of Secs. 14,15, 22 & 23 marked on brass cap T. 41 S.S. 15 in N.W. R. 19 E.S14 in N.E. S. 22 in S.W. and S. 23 in S.E. quadrants;
	Built mound of stone 2.5 ft. base. 2 ft. high W. of Cor.
	Pits impracticable
	Land limestone base plateau.
	Soil sandy & rocky; 3d rate.
	Vegetation shadscale & some grass
	No timber.
	Land mountainous 80.00 chs.

	W. on random line bet. Secs. 14 & 23
40.00	Set temp. 1/4 Sec. Cor.
80.04	Intersect N. & S. line 2 lks. S. of Cor. to Secs. 13,14., 23 & 24
	Thence I run, over broken land,
	S. 89° 59' W. on true line bet. Secs. 14 & 23
4.82	Wash, drains N. 60° E.
18.65	Foot of bluff
	Ascend rapidly
29.05	Top of bluff bears N. E.
	Descend rapidly

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.
40.02	Set iron post 3 ft. long 1 in. dia. 12 ins. in ground to bedrock in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 14 in N. half and S. 23 in S. half
	Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
42.00	Center of wash 60 ft. deep, drains N.
48.52	Top of spur projects N. 3 chs.
	Top of flat butte bears S. 10 chs. about 300 ft. high
67.00	Foot of bluff
70.09	Center of wash 18 lks. wide, drains N. 12° E.
80.04	The cor. of Secs. 14, 15, 22 & 23
	Land broken by spurs & washes
	Soil 4th rate; gravelly.
	Vegetation, shadscale & some grass
	No timber
	N. 0° 01' W. bet. secs. 14 & 15
	Descending over bare limestone mesa
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 sec. Cor. marked on brass cap 1/4 S. 15 in W. half and S. 14 in E. half
	Built mound of stone & earth 2.5 ft. base, 2 ft. high W. of Cor. Impossible to set post over 12 ins. in ground. Pits impracticable.
65.54	Road bears E. & W.
69.14	Center of wash 20 lks. wide 8 ft. deep, drains N. 60°W.
77.70	Wash 30 lks. wide, 40 ft. deep, drains N. 40° W.
80.00	Set iron post 3 ft. long, 2 ins. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 1. ft. high for Cor. of Secs. 10, 11, 14 & 15 markedon brass cap

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

T. 41 S. S. 10 in N.W., R. 19 E. S. 11 in N.E., S. 14 in S.E. & S. 15 in S.W. quadrants and raise a mpund of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Impossible to set post over 12 ins. in the ground. Land rolling and rocky.
soil 4th rate; rocky.
Vegetation shadscale & some grass
No timber.

May 2nd. At this Cor. I set off 15° 22' N. on decl. arc. and at 11 h. 57 m. a.m.l.m.t. I observe the sun on the meridian, the resulting lat. is 37° 16' N.

N. 89° 59' E. on a random line bet. Secs. 11 & 14

40.00 Set temporary 1/4 Sec. Cor.

80.02 Intersect N. & S. line 4 lks. S. of Cor. of Secs. 11, 12, 13 & 14

Thence I run, over rolling land, through undergrowth.
S. 89° 57' W. on true line bet. Secs. 11 & 14

2.60 Wash, 20 lks. wide 3 ft. deep, drains N. 40° W.
Ascend

11.70 Top of bench, bears N.W.
Thence gradual ascent

30.35 Top of spur, extends N. about 12 chs.

40.01 Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. markedon brass cap 1/4 S. 11 in N. half and S. 14 in S. half
Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor. Pits impracticable. Impossible to set post 26 ins. in ground Cor. sits on top of break to wash

42.70 Wash, 20 lks. wide 5 ft. deep, drains N. 30° W.
Ascend

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
49.40	Top of low point of ridge, bears N. 20° W.
51. 47	Wash. 30 lks. wide 3 ft. deep, drains N. 10° W.
80.02	The Cor. of Secs. 10, 11, 14 & 15
	Land rolling & rocky.
	Soil rocky 4th rate.
	Vegetation shadscale & some grass
	No timber.
	N.0° 01' W. bet. secs. 10 & 11: over rolling land, through undergrowth.
11.24	Center of wash 10 lks. wide 20 ft. deep, drains N.70°W.
17.00	Center of wash drains W. 40 lks. wide 25 ft. deep
17.40	Top of bank of wash
31.00	Top of break to wash, runs E. & W.
	Descend
34.25	Center of wash 1.50 chs. wide 50 ft. below top of break drains. W.
36.90	Top of bank of wash, runs E. & W.
40.00	Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground in mound of stone & earth 2 ft. base 6 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 10 in W. half & S. 11 in E. half
	Built mound of stone 2.5 ft. base 1.5 ft. high W. of Cor. Pits impracticable.
	Impossible to set post 26 ins. in ground
48.00	Road bears S. 60° E.
55.04	Road bears E. & W. from Bluff to Goodridge.
69.44	Center of wash 16 lks. wide 4 ft. deep drains W.
74.93	Center of wash 40 lks., 2 ft. deep drains S.W.
80.00	Set iron post 3 ft. long 2ins. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 12 ins. high for Cor. of Secs. 2,3, 10 & 11 marked on brass cap T. 41 S. S 3 in N.W. R. 19 E. S. 2 in N.E. S., 10 in S.W.&S. 11 in S.E. quadrants.
	Built mound of stone 2.5 ft. base, 2ft. high W. of Cor. Pits impracticable. Impossible to set post 24 ins. in ground

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	Lnad rolling & rocky.
	Soil rocky 4th rate.
	Vegetation shadscale and some grass.
	No timber.
	N.89° 57' E. on random line bet. secs. 2 & 11
40.00	Set temp. 1/4 sec.cor.
80.00	Intersect N. & S. line 12 lks. N. of Cor. of Secs. 1,2, 11, & 12
	Thence I run, over rolling land,
	N.89° 58' W. on true line bet. Secs. 2 & 11
8.00	Wash 10 lks, wide 2 ft. deep, drains S.70° W. to the main wash
21.65	Small wash drains S. 40° W. to maim wash.
31.40	Small wash drains S. 20° W.
37.60	Small wash drains S.
40.000	Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground in mound of stone & earth 2 ft. base 6 ins.high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 2 in N. half S. 11 in S. half raise mound of stone 2.5 ft. base 1.5 ft. high N. of Cor. Pits impracticable.
	Impossible to set post over 20 ins.in the ground.
45.00	Top of low rocky hill; bears N.20° E. and S.20° W.
74.75	Wash,10 lks.wide, 2 ft.deep, drains S.10° W.
80.00	The Cor. of Secs. 2,3, 10 & 11
	Land rolling.
	Soil rocky 4th rate.
	Undergrowth shadscale & some grass
	No timber.
	N.0°01' W. bet. Secs. 2 & 3
	Overlbroken land.
0.70	Small wash, projects SW.
12.82	Center of wash 7 lks.wide 2lks.deep, drains N.70°W.
17.00	Top of break to wash

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

19.70 Center of wash, drains S. 10° W.

21.22 Top of wash 25 ft. above bottom

30.20 Center of wash 6 lks. wide 3 ft. deep, drains S.W.

40.00 Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 sec. Cor. marked on brass cap 1/4 S. 3 in W. half & S. 2 in E. half
Built mound of stone & earth 2.5 ft. base, 2 ft. high W. of Cor. Impossible to set post over 12 ins. in ground.
Pits impracticable

41.17 Center of wash, 6 lks. wide 8 ft. deep, drains S.W.

52.00 Center of wash, 40 lks. wide 4 ft. deep, drains S. 20° W.

56.00 Center of wash 10 lks. wide 2 ft. deep, drains S. 60° W.

75.52 Center of wash 50 lks. wide 7 ft. deep, drains W.

78.10 Center of wash 40 lks. wide 6 ft. deep, drains W.

79.98 Intersect 8th Standard parallel South 8.07 chs. E. of St. cor. of secs. 34 and 35, heretofore described; Set an iron post 3 ft. long 2 ins. in diam. 24 ins. in the ground for the Closing Cor. of Secs. 2 & 3, T. 41 S. R. 19 E. mkd. C.C. T. 40 S. R 19 E in N. half, S. 34 in N.W., S. 35 in N.E. S. 3 in S.W., S. 2 in S.E. and Built mound of stone 3 ft. base, 2.5 ft. high S. of Cor.
Pitsimpracticable.
Land rolling and cut by washes.
Soil 4th rate; rocky.
Vegetation shadscale and some grass
No timber

May 2, 1909.

May 3, 1909. I set off 37° 13' N. on Lat. arc. and 15° 37' N on decl. arc and at 8 h.5 m. a.m.l.m.t. I determine a.m. meridian with the solar at

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.
	Cor. of Secs. 27, 28, 33 & 34 on the Auxiliary Base Line previously described
	Thence I run
	S. 0° 02' E. bet. Secs. 33 & 34
	Over broken mountainous country
9.29	Top of mesa above San Juan River
	Descend rapidly over sandstone and limestone stratas interlaid with oil sand stratas
16.35	Top of abrupt bluff
	Descend rapidly
27.31	Top of abrupt bluff
	Descend rapidly
34.54	Right bank San Juan River, drains N. 80° W.
	Set iron post 3 ft. long 1 in. diam. 24 ins. in the ground for meander Cor. of secs. 33 & 34 marked on brass cap T. 41 S. R. 19 E. in N. half, S. 33 in N.W. S. 34 in N.E. quadrants and M.C. between angle-lines.
	Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable
	Land badly broken by sand and limestone cliffs, mountain
	Soil 4th rate; rocky.
	very little vegetation
	No timber
	Land mountainous & broken 34.54 chs.
	Land mountainous, difficult to survey 34.54 chs.
	East on true line bet. Secs. 27 & 34; ascending,
17.00	Top of mesa
	Descend abruptly to river over lime and sandstone strata interlaid with oil sand stratas
33.02	Right bank of San Juan River drains SW.
	Set 1 in. iron post 3 ft. long, 1 in. diam. 26 ins. in

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

the ground for meander cor. of Secs. 27 & 34 marked on brass cap T. 41 S. R. 19 E. in N. half, S. 27 above and S. 34 below E. & W. line and M.C. at angle
Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
Pits impracticable.
Land broken and rocky, mountainous
Soil 4th rate; rocky.
No timber
Land mountainous, rough & broken 33.02 chs.

From the Cor. of Secs. 21, 22, 27 & 28 on the Auxiliary Base Line, previously described I ran
N. 0° 02' W. bet. secs. 21 & 22; over broken land.

9.20. Top of wash; descend.

19.25 Head of big wash, drains S. 65° W.

26.00 Center of wash 40 lks. wide, 20 ft. deep 75 ft. below top, drains W.

29.37 Top of wash. Thence along top.

34.70 Top of wash. Descend,

37.00 Center of wash, 1.50 chs. wide, 25 ft. deep, drains W.

38.71 Top of wash Descend;

40.00 Set iron post 3 ft. long 1 in. diam. 14 ins. in the ground in mound of stone & earth 2.5 ft. base, 1 ft. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 21 in W. half and S. 22 in E. half. Pits impracticable.
Impossible to set post over 14 ins. in the ground.
Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.

44.90 Center of wash 1.20 chs. wide, 25 ft. deep, drains W.

72.00 center of wash 8 lks. wide, drains N.W.

80.00 Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 12 ins. high for Cor. of Secs. 15, 16, 21 & 22 marked on brass cap T. 41 S. S. 16 in N.W. R. 19 E. S. 15 in N.E. S.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.
	21 in S.W. and S. 22 in S.E. quadrants
	Impossible to set post over 12 ins. in ground.
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Cor. is 1 ch. E. of wash, drains N.
	Land very much broken and rocky, mountainous
	Soil 4th rate; rocky.
	Vegetation, shadscale and some grass
	No timber
	Land mountainous, rough & broken 80.00 chs.
	E. on a random line bet. secs. 15 & 22
40.00	Set temporary 1/4 Sec. Cor.
80.10	Intersect N. & S. line 7 lks. N. of Cor. of Secs. 14, 15, 22 & 23
	Thence I run., over broken land; through undergrowth. N. 89° 57' W. on true line bet. Secs. 15 & 22
19.00	Center of wash 6 lks. wide 1 ft. deep, drains N. 20°W.
23.90	Center of wash 30 lks. wide, 25 ft. deep, drains N.
30.15	Center of wash 10 lks. wide 12 ft. deep Drains N.
33.75	Center of wash 12 lks. wide 2 ft. deep, drains N.10°W.
40.05	Set iron post 3 ft. long 1 in. diam 12 ins. in the ground in mound of stone 2.5 ft. base, 145 ins. high for 1/4 Sec. Cor. markedon brass cap 1/4 S. 15 in N. half and S. 22 in S. half
	Erect mound of stone 2.5 ft. base, 1.5 ft. high N. of Cor
	Pits impracticable. Impossible to set post over 12 ins. in ground.
40.20	Top of wash 50 ft. deep.
41.39	Center of wash, drains N. 15° W.
43.00	Top of mesa
58.00	Center of wash 70 ft. below top, drains N. 60° W.
60.00	Top of wash
39.30	Top of wash. Descend.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
71.15	Center of wash, drains N. 60° W.
72.40	Top of sandstone ridge
73.40	Center of wash, drains N.W.
80.10	The Cor. of Secs. 15, 16, 21 & 22
	Land broken & rocky
	Soil 4th rate; rocky.
	No timber
	Vegetation shadscale & some grass
	Land mountainous, difficult to survey 80.10 chs.

N.0° 02'W.bet.secs.15 and 16,

Over broken land; through undergrowth.

21.00	Center of wash 6 lks. wide 3 ft. deep, drains N.55°W.
30.80	Center of wash 60 lks. wide 20 ft. deep, drains N.45°W.
35.14	Center of wash 10 lks. wide 5 ft. deep, drains S. 45°W.
37.30	Top of wash
40.00	Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground in mound of stone & earth 2 ft. base, 6 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 16 in W. and S. 15 in E. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of Cor. Pits impracticable. Impossible to set post over 20 ins. in ground.
	Goodridge No. 3 oil well bears N. 65° 23' E. 7.00 chs. Supposed to be 120 ft. deep, appearance indicates that oil was discovered when sand was 1st penetrated No casing in well. The water pressure in the strata above the oil has driven back the oil and the water is now flowing out of well. The stratification here dipps west towards, synclinal about 20°
42.34	Road, bears S. 78° W. and N.78° E.
48.00	Center of wash 30 lks. wide 8 ft. deep, drains S. 70° W.
48.26	Top of wash
51.60	Foot of butte, bears E. and W. ft. deep, drains W.

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

Chains.	
71.00	Flag Butte bears S. 72° 37' W. about 12 chs.
80.00	Set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for Cor of Secs. 9, 10, 15 & 16 marked on brass cap T. 41 S., S. 9 in N.W. R. 19 E. S. 10 in N.E., S. 15 in S.E. & S. 16 in S.W. quadrants
	Dug pits 18 x 18 x 12 ins. in each sec. 5.5 ft. dist.
	Built mound of stone & earth 3.4 ft. base, 2.5 ft. high W. of Cor. Flag Butte bears S.32° 40' W. 20 chs.
	Land broken and rocky
	Soil 4th rate; rocky.
	Vegetation shadscale & some grass
	No timber
	May 3: At the noon hour sky overcast obs.for lat.impossi
	S. 89° 57' E. on a random line bet. Secs. 10 & 15
40.00	Set temporary 1/4 Sec. Cor.
79.98	Intersect N. & S. line 2 lks. N. of Cor. to Secs. 10, 11 14 & 15
	Thence I run, over broken land; through undergrowth.
	N. 89° 56' W. on true line bet. Secs. 10 & 15
1.32	Center of wash, 1 ch. wide 2 ft. deep, drains N. 70° W.
6.79	Center of wash, 20 lks. wide, 3 ft. deep, drains N.
20.00	Center of wash 3 lks. wide, drains N.
34.54	Center of wash, 12 lks. wide 2 ft. deep, drains N.20°W.
39.99	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 10 in N. half and S. 15 in S. half
	Dug pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist. raise mound of earth 3.5 ft. base 1.5 ft. high N. of Cor.
44.00	Center of wash 12 lks. wide, drains N.
52.50	Top of wash,
	Descend
56.00	Center of wash 40 ft. deep, drains N. 30°W.
57.92	Top of wash

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
77.08	Road, bears S. 10°E.
79.98	The Cor. of Secs. 9, 10, 15 & 16
	Land badly cut by washes
	Soil 4th rate; rocky.
	Vegetation shadscale and some grass
	No timber.
	Land mountainous, difficult to survey 79.98 chs.
	N. 0° 02' W. bet. secs. 9 & 10, over rolling land.
4.60	Center of wash 10 lks. wide 4 f t. deep, drains W.; road at N. of wash.
22.30	Road, bears S. 45° W. and N. 45° E.
22.84	Center of Lime Creek 2 chs. wide 4 ft. deep, 50 ft. below top. drains SW. Ascend.
31.51	Top of ascent.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 9 in W. half, S. 10 in E. half
	Dug pits 18 x 18 x 12 in N. & S. of post 3 ft. dist; raise mound of earth 3.5 ft. base, 1.5 ft. high W. of Cor.
58.62	Road, bears E. & W.; Bluff to Goodridge.
80.00	Set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for Cor. of Secs. 3, 4, 9 & 10 marked on brass cap T. 41 S. S. 4 in N.W.; R. 19 E. S. 3 in N.E., S. 9 in S.W. & S. 10 in S.E. quadrants
	Dug pits 18 x 18 x 12 ins. in each Sec. 5.5 ft. dist. raise mound oof earth 4 ft. base, 2 ft. high W. ef Cor.
	Land rolling
	Soil 4th rate ; rocky.
	Slight growth of shadscale
	No timber

Chains.	SUBDIVISIONS T. 41 S., R. 19 eE.
	S. 89° 56' E. on random line bet. Secs. 3 & 10
40.00	Set temporary 1/4 Sec. Cor.
80.06	Intersect N. & S. line 2 lks. N. of Cor. of Secs. 2, 3, 10 & 11. Thence I run
	Over rolling land; through scattering undergrowth.
	N. 89° 55' W. on true line bet. Secs. 3 & 10
2.28	Top of spur, projects W.; thence along top of spur.
12.00	Descend from spur.
16.00	Center of wash 30 lks. wide 40 ft. deep, drains S.
20.36	Top of wash
34.50	Top of wash
37.60	Center of wash, 40 lks. wide, 40 ft. deep, drains S. 20° W.
40.03	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S 3 in N. half, and S. 10 in S. half
	Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Impossible to set post over 12 ins. in the ground.
46.93	Top of bluff above Lime Creek
49.60	Center of Lime Creek 1.50 chs. wide, drains S.
50.20	Road, bears S. 10° E.
67.31	Top of butte, projects N. 4 chs. & S. 10 chs.
80.06	The Cor. of Secs. 3, 4, 9 & 10.
	Land rolling
	Soil 4th rate; rocky. Growth of shadscale
	No timber. Undergrowth scant growth of shadscale.
	N. 0° 02' W. on true line bet. secs. 3 and 4,
	Along bank, on a true line bet. Secs. 3 & 4
7.50	Center of creek 100 lks. wide, drains S. 80° W.
13.15	Center of creek 70 lks. wide, drains S. 40° E.
14.56	Road, bears S. 45° E.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
16.00	Top of wash
29.96	Center of wash 6 lks. wide, drains S. 70° W.
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of earth & stone 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 4 in W. half and S. 3 in E. half.
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Impossible to set post over 12 ins. in the ground.
	Thence slight ascent over rolling mesa
80.01	Intersect the 8th Standard parallel South 8.18 chs. E. of the Stand Cor. of secs. 33& 34, heretofore described, where I set an iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for Closing Cor. of Secs. 3 &n4 marked on brass cap C.C. T. 40 S. R. 19 E. on N. half, S. 33 in N.W. S. 34 in N.E. S. 3 in S.E., S. 4 in S.W. quadrants
	Built mound of stone 3 ft. base, 2.5 ft. high S. of Cor.
	Pits impracticable.
	Land rolling
	Soil 4th rate; rocky.
	Slight growth of shadscale, some grass
	No timber
	May 3, 1909.

May 4, 1909. I set off 37° 13' N. on lat. arc. and 15° 55' N. on decl. arc and at 7 h. 55 m. a.m. l.m.t. I determine a meridian with the solar at the Cor. of Secs. 28, 29, 32 & 33 on Auxiliary Base Line previously described.

Thence I run

S. 0° 03' E. on a true line bet. Secs. 32 & 33

0.80 Center of Lime Creek 1.20 chs. wide 3 ft. deep, drains E.

6.40 Center of Lime Creek 1.20 chs. wide, 7 ft. deep, drains S. 75° W.

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

Chains.	
14.58	Center of wash 20 lks. wide 3 ft. deep, drains S.45° W.
21.00	Right bank San Juan River, course N.W.
	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for meander cor. of Secs. 32 & 33 marked on brass cap T. 41 S., R. 19 E. in N. half, M.C. in angle of lines S. 32 in N.W. & S. 33 in N.E. quadrants
	Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
	Land broken, rocky & mountainous
	Soil 4th rate; rocky.
	No timber
	Land mountainous 21.00 chs.

I return to the Cor. of Secs. 28, 29, 32 & 33 on Auxiliary Base Line; and run

West on a true line bet. Secs. 29 & 32

7.15	E. bank of Lime Creek 15 ft. deep, drains S. 85° E.
8.12	W. bank of Lime Creek
14.30	Top of point of ridge, slopes south
23.55	Right bank San Juan River, course N.W.
	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for meander cor. of Secs. 29 & 32 marked on brass cap T. 41 S. R. 19 E., S. 29 in N. half; S. 32 in S. half and M.C. at angle of lines
	Built mound of stone 2.5 ft. base, 2 ft. high E. of Cor.
	Pits impracticable.
	Land mountainous, broken and rocky
	Soil 4th rate; rocky.
	Vegetation shadscale
	No timber
	Land mountainous, rough & broken 23.55 chs.

SUBDIVISIONS T. 41 S., R. 19 E.

Chains.	
	From the cor. of secs.20,21,28 and 29, I run
	East on a random line bet.secs.21 and 28,
40.00	Set temp.¼ sec.cor.
80.10	Intersect N. and S.line 7 lks.N.of the cor.of secs.21, 22,27, and 28. Thence I run
	N.89° 57'W.on a true line bet.secs.21 and 28,
	Ascending.
1.13	Top of small bench, bears N. and S. Descend .
8.61	Wash, 60 lks.wide, 10 ft.deep, drains S.80° W.
12.63	Top of ridge, 200 ft.high, projects S.75° W.
30.45	Wash 10 lks.wide, 4 ft.deep, drains N.45° W.
31.60	Same wash drains S.80° W.
40.05	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in ground to bedrock, in mound of stone 2½ ft.base 1½ ins.high, for ¼ sec.cor., mkd.on brass cap ¼ S 21 in N.half, S 28 in S.half; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.
80.10	The cor.of secs.20,21,28, and 29.
	Land, mountainous; very broken.
	Soil, rocky; 4th rate.
	No timber. Undergrowth shadscale.
	Mountainous land; exceptionally difficult to survey 80.10 chs.
	May 4: At this cor.I set off 15° 57'N. on decl.arc;

Chains.	
	and at 11 h. 57 m.a.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 14'N.
	N.0° 03'W.bet.secs.20 and 21,
	Along wash,
3.12	Center of wash, 50 lks.wide, 4 ft.deep, drains S.20° W.
40.00	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 20 in W.half, S 21 in E.half; and raise a mound of stone 2½ ft.base, 1½ ft.high W.of cor. Pits impracticable.
47.00	Center of wash 15 lks.wide, 6 ft.deep, heads 6 chs.W. and drains E. Ascend abruptly.
52.24	Top of ridge.
63.49	McMoran's oil well bears N.66° 50'W. about 53 chs.
74.19	Center of Lime Creek 2.50 chs.wide, 16 ft.deep, drains S.40° W. A perpetual seep of water occurs here; very strong with alkali.
76.00	Edge of Lime Creek.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 12 ins.high for cor.of secs.16,17,20, and 21, marked on brass cap T 41 S S 17 in NW., R 19 E S 16 in NE.; S 20 in SW.; and S 21 in SE.quadrants; and raise a mound

Chains.	
	of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.Impossible to set post 24 ins.in the ground.
	Land, mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land 80.00 chs.
	S.89° 57'E.on a random line bet.secs.16 and 21,
40.00	Set temp.¼ sec.cor.
80.06	Intersect N. and S.line 2 lks.N.of the cor.of secs.15, 16,21, and 22. Thence I run
	N.89° 56'W.on a true line bet.secs.16 and 21,
	Over very rough mountainous land; exceptionally difficult to survey.
0.75	Wash, drains N.
2.14	Top of small ridge, bears N.20° E.
6.06	Wash, drains N.
9.70	Foot of NE.point of ridge, bears S.75° W.
12.10	Top of above ridge.
27.90	Descend over broken sandstone ledges and sandy bottom.
40.03	Set an iron post 3 ft..ong, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.on brass cap ¼ S 16 in N.half, S 21 in S.half; and raise a mound of stone

Chains.	
	$2\frac{1}{2}$ ft.base, 2 ft.high N.of cor. Pits impracticable.
46.97	Lime Creek,2 chs.wide, 4 ft.deep, drains S.70° W.
64.80	Lime Creek 2.30 chs.wide, 3 ft.deep, course N.80° W.
75.76	Lime Creek 2 chs.wide, 4 ft.deep, course S.45° W.
80.06	The cor.of secs.16,17,20, and 21.
	Land; broken and very rocky.
	Soil, rocky; 4th rate.
	Lime Creek has water in holes from seeps,strong with alkali.
	Undergrowth, shadscale and some grass.
	No timber.
	Mountainous land, rough and exceptionally difficult to survey 80.06 chs.
	May 4, 1909.

May 5, 1909: At 8 h. 7 m.a.m.l.m.t.I set off 37° 15'N. on lat.arc;16°12'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.16,17,20, and 21. Thence I run

N.0° 03'W.bet.secs.16 and 17,

Over rolling mountainous land.

7.42	Road from Bluff to Goodridge, bears S.45° W.& N.45° E.

Chains. SUBDIVISIONS.T. 41 S., R. 19 E.,

Chains.	
32.64	Center of wash 30 lks. wide 3 ft. deep, drains S.60°W.
40.00	Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground in mound of stone & earth 2 ft. base 6 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 17 in W. half & S. 16 in E. half Built mound of stone & earth 2.5 ft. base, 2 ft. high W. of Cor. Impossible to set post 26 ins. in ground. Pits impracticable.
46.00	A Goodridge oil well bears W. about 26 chs.
46.82	Center of road, bears E. & W.
71.50	Center of wash 20 lks. wide 4 ft. deep, drains W.
80.00	Set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 12 ins. high for Cor. of Secs. 8, 9, 16 & 17 marked on brass cap T. 41 S. S. 8 in N.W., R. 19 E. S. 9 in N.E. S. 16 in S.E. and S. 17 in S.W. quadrants; raise a mound of stone 2 1/2 ft. base 2 ft. high W. of Cor. Pits impracticable. Impossible to set post over 12 ins. in ground. Land rolling & rocky Soil 4th rate; rocky. Vegetation shadscale and a little grass No timber Land mountainous 80.00 chs.

S. 89° 56' E. on a random line bet. Secs. 9 & 16

Over [illegible] land, [illegible]

survey

40.00	Set temporary 1/4 Sec. Cor.
80.08	Intersect N. & S. line 5 lks. S. of Cor. of Secs. 9, 10, 15 & 16 Thence I ran N. 89° 58' W. on a true line bet. Secs. 9 & 16 Over broken mountainous land; through scant undergrowth.
8.50	E. side of Lime Creek, course S.70° W.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
10.00.	Road, Bluff to Goodridge, in creek bottom, N. 70°E. & S. 70°W.
13.35	W. side of Lime Creek, course S. 70° W. and ascend .
20.90.	Top of sand ridge, bears N. and S.
24.20	Wash, drains S. to Lime Creek.
40.04	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 9 in N. half and S. 16 in S. half
	Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
43.20	Foot of bluff Ascend
50.00.	Foot of very steep cliff.
	Ascend abruptly .
56.40.	Top of sandstone ridge bears N. & S.
	Descend abruptly
63.00	Foot of bluff
80.08	The Cor. of Secs. 8, 9, 16 & 17
	Land mountainous, very much broken and rocky
	Soil 4th rate; rocky.
	No timber . Slight growth of shadscale.
	Land mountainous, much broken & exceptionally difficult survey 80.08 chs.

May 5:
At this Cor. I set off 16° 15' N. on decl. arc and at 11 h. 57 m. a.m. l.m.t. I observe the sun on the meridi the resulting lat. is 37° 16' N. which agrees with previous observations.

Thence I run
N. 0° 03' W. bet. Secs. 8 & 9
Over mountainous land

4.00	Foot of perpendicular bluff 150 ft. high Impassable.
	I deflect 90° to left and run S. 89° 57' W. 2.45 chs.
	Thence N. 0° 03' W. 4 chs. and deflect to right and run
8.00	N. 89° 57' E. 2.45 chs. to line

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

Thence I run
N. 0° 03' W.

40.00 Set iron post 3 f t. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 8 in W. half and S. 9 in E. half
Dug pits 18 x 18 x 12 ins. N. & S. of post 3 ft. dist.; and built mound of stone & earth 3 1/2 ft. base, 2 ft. high W. of Cor.

60.85 Center of wash 3 chs. wide 3 ft. deep, drains S. 40° W.

75.64 Top of butte, projects E. 6 chs. & W. 6 chs.

80.00 Set iron post 3 ft. long 2 ins. diam. 20 ins. in the ground in mound of stone & earth 2 ft. base, 4 ins. high for Cor. of Secs. 4, 5, 8 & 9 marked on brass cap T. 41 S., S. 5 in N.W., R. 19 E., S. 4 in N.E., S. 8 in S.W. & S. 9 in S.E. quadrants;
Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
Pits impracticable.
Land mountainous, broken & rocky
Soil 4th rate, rocky; 3d rate, sandy.
No timber
Land mountainous, rough & broken 80.00 chs.

S. 89° 58' E. on a random line bet. Secs. 4 & 9

40.00 Set temporary 1/4 Sec. Cor.

80.02 Intersect N. & S. line 5 lks. N. of Cor. of Secs. 3, 4, 9 & 10
Thence I run
N. 89° 56' W. on a true line bet. Secs. 4 & 9
Over rough mountainous land

2.56 Top of east bank of Lime Creek

5.56 Center West Fork Lime Cr. 2 chs. wide, and road course S. 50° W.

7.68 West side of West Fork of Lime Cr.

11.27 Road, bears S.

13.25 Center of wash 8 lks. wide, 3 ft. deep, drains S.

SUBDIVISIONS T. 41 S., R. 19 E.

Chains.	
26.00	Foot of bluff,
	Ascend rapidly about 100 ft.
28.00	Top of bluff and descend rapidly
30.00	Foot of bluff
40.01	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor marked on brass cap 1/4 S. 4 in N. half and S. 9 in S. half
	Built mound of stone & earth 3 ft. base, 2 ft. high N. of Cor.
64.20	Center of wash 20 lks. wide 2 ft. deep, drains S.
68.00	Center of wash 2 chs. wide, 2 ft. deep, drains S. 40° E.
80.02	The cor. of Secs. 4, 5, 8 & 9
	Land broken and rocky
	Soil 4th rate; rocky.
	vegetation shadscale and a little grass
	No timber
	Land mountainous 80.02 chs.
	N. 0° 03' W. bet. Secs. 4 & 5
	Over rough land
19.54	Top of spur over rolling mesa, about 30 ft. high
20.35	Foot of spur
31.46	Center of wash 50 lks. wide 5 ft. deep, drains S. 45° E.
38.36	Top of spur about 50 ft. high
40.00	Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground in mound of stone & earth 2 ft. base, 16 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 5 in W. half and S. 4 in E. half . Pits impracticable;
	Built mound of stne 2.5 ft. base, 2 ft. high W. of Cor.
	Impossible to set post over 20 ins. in the ground.
45.45	Center of wash 35 lks. wide 25 ft. deep, drains S.45°W.
51.27	Center of wash 20 lks. wide 8 ft. deep, drains W.
67.70	Center of wash 10 lks. wide 5 ft. deep, drains W.

Chains. SUBDIVISIONS T. 41 S., R. 19 E.

75.06 Road, bears N. 70° W.

79.99 Intersect the 8th Standard Parallel South 8.17 chs. E. of the Standard Cor. of Secs. 32 & 33, heretofore described.

Set iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for Closing Cor. of Secs. 4 & 5 Tp. 41 S., R. 19 E., marked on brass cap C.C. T. 40 S., R. 19 E. on N. S. 32 in N.W., S. 33 in N.E. S. 4 in S.E., S. 5 in S.W. quadrants

Built mound of stone 3 ft. base 2.5 ft. high S. of Cor.

Pits impracticable.

Land cut by spurs & washes

Soil 4th rate ; rocky.

Vegetation shadscale & a little grass

No timber

Land mountainous 79.99 chs.

May 5, 1909.

May 6, 1909.

I set off 37° 12' N. on lat. arc and 16° 29' N. on decl. arc. and at 8 h. 15 m. a.m. l.m.t. I determine the meridian with the solar at the cor. of Secs. 5, 6, 31 & 32, on the S.bdy. of Tp., heretofore described and run

N. 0° 03' W. bet. Secs. 31 & 32

Over rough mountainous land

Ascending gradually over rocky land

20.40 Junction of two roads running E. and S. 20° E. & N. 20° W.

40.00 Set iron post 3 ft. long 1 in. diam. 20 ins. in the ground, in mound of stone & earth 2 ft. base, 6 ins. high for 1/4 Sec. Cor. markedon brass cap 1/4 S. 31 in W.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.
	half and S. 32 in E. half.
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Impossible to set post over 20 ins. in the ground.
	Cor. sits on top of a low hill sloping S.W.
48.00	Top of ridge, bears S. 60° E.
	Descend rapidly
51.75	Center of canon 60 ft. deep, bears S. 70° E.
52.20	N. edge of canon
67.10	Top of canon above San Juan River, bears S. 20° E.
76.00	S. rim of canon, 100 ft. deep,
	Descend abruptly
78.00	Center of canon, course S. 75° E.
79.10	Top of point between canons, slopes S.E.
80.00	set iron post 3 ft. long 2 ins. diam. 12 ins. in the ground, on rock, in mound of stone 2.5 ft. base, 14 ins. high for Cor. of Secs. 29, 30, 31 & 32 marked on brass cap T. 41 S. S. 30 in N.W., R. 19 E. S. 29 in N.E., S. 31 in S.W. & S. 32 in S.E. quadrants
	Built mound of stone 3 ft. base, 2.5 ft. high W. of Cor.
	Pits impracticable
	Land 1st 40 chs. rolling; 2d 40 chs. broken and rocky.
	Soil, sandy loam and rocky; 3d and 4th rates, rate
	Vegetation shadscale & a little grass
	No timber
	Land mountainous, rough & broken, 40.00 chs.
	E. on a true line bet. Secs. 29 & 32, descending.
1.15	Right bank San Juan River, course S.
	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground on rock in mound of stone 2.5 ft. base, 14 ins. high for meander cor. of secs 29 & 32 marked on brass cap T. 41 S. R. 19 E. S. 29 in N. half S. 32 in S. half and M.C. at angles of lines. Impossible to set post over 12 ins. in the ground.

SUBDIVISION T. 4I S., R. 19 E.

Chains.	
	Build mound of stone 3 ft. base, 2.5 ft. high W. of Cor.
	Land broken.
	Soil rocky 4th rate.
	Some willows No timber.
	Land mountainous 1.15 chs.
	W. on random line bet. Secs. 30 & 31
40.00	Set temp. 1/4 Sec. Cor.
77.70	Intersect W. boundary of Tp. 12 lks. N. of Cor. of Secs. 25,30, 31 & 36, heretofore described.
	Thence I run N.89°55'E. on true line bet. Secs. 30 & 31
	Ascending over mountainous. land
34.00	Top of point of slope of ridge which projects N. 5 chs.
	Thence a gradual descent
37.70	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base 14ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 30 in N. half and S. 31 in S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor.
	Pits impracticable.
38.84	Road bears N.10° E.&S. 10°W., Bluff to Goodridge.
	Descend gradually.
71.50	Top of rim of canon bears S.20°W.
	Descend rapidly
77.70	The Cor. of Secs. 29, 30, 31 & 32
	Land mountainous rough & rocky
	Soil rocky 4th rate.
	Vegetation shadscale.
	No timber
	Land mountainous rough & difficult to survey 77.70 chs.

Chains.	
	May 6, 1909. At this Cor. I set off 16° 32' N. on decl. arc. and at 11 h. 57.m.a.m.l.m.t. I observe the sun on the meridian the resulting lat. is 37° 13' N.
	N.0° 03' W. bet. Secs. 29 & 30
	Line follows over slide rock and low ledges near base of bluffs above SanJuan River very rough & exceptionally difficult to survey.
27.75	Center of mouth of deep side canon 50 lks. wide bears S.70° E.
	Thence ascend precipitously.
37.05	Top of bluff bears N.20° W. & S.40° E.
40.00	Set iron post 3 ft. long 1 in. diam. 12ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 30 in W. half S. 29 in E. half.
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Pits impracticable.
	Impossible to set post over 12 ins. in the ground
	Mexican Hat bears S. 13° 40' E.
45.60	South edge of canon 60 ft. deep,
46.75	Center of canon drains S. 80° E.
47.50	North edge of canon
	Thence crossing over broken ridges
80.00	Set iron post 3ft. long 2ins. diam. 12 ins. in the ground on rock in mound of stone 2.5 ft. base 12ins. high for Cor. of Secs. 19, 20, 29 ,& 30 marked on brass cap T. 41 S. S. 19 in N.W. R. 19 E. S. 20 in N.E. S. 29 in S.E. and S. 30 in S.W. quadrants;
	Built mound of stone 3 ft. base 2.5 ft. high W. of Cor.
	Impossible to set post over 12 ins. in the ground

Chains. SUBDIVISIONS T. 41 S., R. 19 E.,

Pits impracticable

Land mountainous, rough & broken

Soil rocky, 4th rate

No timber or undergrowth

Land mountainous, rough & exceptionally difficult to survey 80.00 chs.

E. on a random line bet. Secs. 20 & 29

40.00 Set temporary 1/4 Sec. Cor.

79.96 Intersect N. & S. line 12 lks. N. of Cor. of Secs. 20, 21, 28 & 29

Thence I run

N. 89° 55' W. on true line bet. Secs. 20 & 29

Over rough mountainous land

1.96 Center of wash, 1.25 chs. wide 6 ft. deep, drains S.25°W.

Thence ascending gradually.

12.00 Center Lime Creek 2 chs. wide 10 ft. deep, drains S. 20°E.

39.98 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 20 in N. half and S. 29 in S. half

Built mound of stone 2.5 ft. base, 2 ft. high N. of Cor.

Pitsimpracticable.

54.60 Point whence Goodridge oil well bears N. 37° 35' E. about 30.33 chs.

79.96 The Cor. of Secs. 19, 20, 29 & 30

Land broken & rocky

Soil 4th rate; rocky.

Vegetation shadscale

No timber

Land mountainous 79.96 chs.

May 6, 1909.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
	May 7, 1909.
	S. 89° 55' W. on a random line bet. Secs. 19 &30
40.00	Set temporary 1/4 sec. Cor.
77.68	Intersect W. Bdy. of Tp. 21 lks. N. of Cor. of Secs.
	19, 24, 25 & 30, heretofore described.
	Thence I run
	N. 89° 46' E. ona true line bet. Secs. 19 & 30
	Over rough and mountainous land, exceptionally difficult
	to survey; through scant undergrowth.
37.68	Set iron post 3 ft. long 1 in. diam. 26 ins. in the
	ground for 1/4 Sec. Cor. markedon brass cap 1/4 S. 19
	in N. half and S. 30 in S. half;raise mound of stone 2 ft.base,1½ ft.high, N.of cor.
42.70	Top of sandstone butte 1 ch. long 50 lks. wide & 50 ft.
	high, bears N. & S.
67.90	Top of break
	Descend over smooth surface
74.63	Road, bears N. 60° E.and S.60°W.Bluff to Goodridge.
77.68	The Cor. of Secs. 19, 20, 29 & 30
	Land mountainous, broken & rocky
	Soil 4th rate, rocky.
	No timber ; slight growth of shadscale.
	Land mountainous, rough & broken & exceptionally
	difficult to survey 77.68 chs.
	May 7; At cor.secs.19,20,29&30 I set off 37° 14' N. on la
	arc. and 16° 47'N.on decl. arc and at 9 h. 25 m. a.m.
	l.m.t.& determined meridian with the solar.Thence I run
	N. 0° 03' W. bet. Secs. 19 & 20.
	Over mountainous land
2.20	Road bears N. 70° E.and S.70°W.,Bluff to Goodridge.
36.00	Center of wash 60 lks. wide 5 ft. deep, drains S. 70°E.
40.00	Set iron post 3 ft. long 1 in. diam. 26 ins. in the
	ground for 1/4 Sec. Cor. markedon brass cap 1/4 S. 19

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	in W. half and S. 2 0 in E. half
	Biult mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Pits impracticable.
52.54	Top of ridge bears E. 3 chs. 60 ft. high
	Descend gradually.
79.80	The point for the Cor. falls in the center of a wash where it cannot be perpetuated; therefore at this point
	Set iron post 3 ft. long 2ins. diam. 24 ins. in the ground for Witness Cor. of Secs. 17,18,19 & 20 marked on brass cap W.C. on North half T.41 S.S. 18 in N.W. R. 19 E. S 17 in N.E. S. 19 in S.W. and S. 20 in S.E. quadrants.
	Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
80.00	Falls in wash, 20 lks. wide, 2 ft. deep, course N.85°E.
80.00	Point for cor. of secs. 17,18, 19 and 20; Cor. not set'
	Land rocky and mountainous.
	Soil rocky 4th rate.
	Vegetation shadscale.
	No timber.
	Land mountainous & rocky 80.00 chs.

	S.89° 55' E. on random line bet. Secs. 17 & 20
40.00	Set temp. 1/4 Sec.Cor.
79.98	Intersect N. & S. line 7 lks. S. of Cor. of Secs. 16,17 20 & 21
	Thence I run
	N.89° 58' W. on a true line bet. Secs. 17 & 20
	Descending gradually through undergrowth
8.30	Wash 80 lks. wide 3 ft. deep drains S. road from Bluff to Goodridge in wash.
	Ascend gradually
39.99	Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec.Cor. marked on brass cap 1/4 S.17 in N. half and S. 20 in S. half

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	Built mound of stone 2.5 ft. base, 1.5 ft. high N. of Cor.
	Pits impracticable.
49.30	McMoran's oil well is 4 chs. N. of this point
56.82	Center of wash 50 lks. wide 6 ft. deep, drains N.70°E.
64.30	Center of wash 50 lks. wide 6 ft. deep, drains S.70°E.
66.32	Road bears S.70° E.
79.98	The Cor. of Secs. 17, 18, 19 & 20
	Land rolling and rocky
	Soil rocky 4th rate.
	Vegetation shadscale
	No timber.
	S. 89° 46' W. on arandom line bet. secs. 18 & 19
40.00	Set temp. 1/4 sec.cor.
77.50	Intersect W. bdy. of township 23 lks. S. of Cor. of Secs 13, 18, 19 and 24 heretfore described.
	Thence I run
	N.89° 56' E.on atrue line bet. secs. 18 & 19
	Ascending gradually over rolling land through undergrowt
37.50	Set iron post 3 ft. long 1 in. diam. 14 ins. in the ground in mound of stone & earth 2.5 ft. base 1 ft. hi high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 18 in N. half and S. 19 in S. half and raise a mound of stone 2 1/2 ft. base, 2 ft. high N. of Cor. Pits impracticable. Impossible to set it over 14 ins.in ground
42.80	Descent bears N.70° E.
69.70	Descent bears N.20° E.
77.50	Point for cor. secs. 17, 18, 19 and 20.
	Land rolling
	Soil rocky 4th rate.
	Undergrowth shadscale.
	No timber.
	May 7; Sky overcast observation for lat. impossible.

See P. 3

page transcribed

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
79.99	Intersect N. & S. line 7 lks. N. of Cor. of Secs. 8,9, 16 & 17
	Thence I run
	N.89° 55' W. on true line bet. Secs. 8& 17
	Over rolling mountainous land
2.73	Road bears S. 10° E.
6.60	Center of wash 150 lks. wide 15 ft. deep, drains. S. 10° E.
9.20	Road bears S. 15° E.
10.28	Road bears S. 20° E.
	Ascend gradually.
20.10	Top of bluff bears N. & S.
	Descend
22.90	Foot of bluff
39.995	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base 14ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 8 in N. half and S. 17 in S. half
	Built mound of stone 2. ft. base, 1½ ft. high N. of cor.
	Pits impracticable. Ascend.
	Impossible to set post over 12 ins. in the ground.
60.80	Top of bluff ; thence along top.
64.60	Top of bluff bears S. 15° E. and N.
	Descend gradually
72.60	Top of bluff 40 ft. above Sec. Cor. projects S. 1 ch.
	Descend steep slope
79.20	Wash 20 lks. wide 1 ft. deep drains S. 80°E.
79.99	The Cor. of Secs. 7,8, 17 & 18
	Land broken & rocky
	Soil rocky; 4th rate.
	Vegetation shadscale & a little grass
	No timber.
	Land mountainous, broken & rocky 79.99 chs.
	May 7, 1909.

SUBDIVISION T. 41 S., R. 19 E.

Chains.	
	N.0° 03' W. bet. secs. 17 & 18
	Over rolling mountainous land
1.88	Road to John's Canon, bears E. and W.
11.80	Road, bears S. 45° E.
15.10	Center of wash 50 lks. wide 4 ft. deep, drains S. 70° E.
38.30	The point for the 1/4 Sec. Cor. falling near the center of a wash 2 chs. wide & 10 ft. deep
	Set iron post 3 ft. long 1in.diam. 26 ins. in the ground for Witness 1/4 Sec. Cor. marked on brass cap W. C. 1/4 with T. 41 S. R.19 E. in N. S.18 in W. half S. 17 in E. half; raise mound of stone 2.5 ft. base, 2 ft. high W. of Cor.
	Cor. sets on top of S. bank of wash
	Pits impracticable.
40.00	Center of wash 2 chs. wide 10 ft. deep drains. S.70°E. point for 1/4 sec.cor., cor. not set.
60.00	Road bears S.30°E.
77.20	Top of low ridge bears S.40°E. & N. 30° W.
80.00	Set iron post 3 ft. long 2ins. diam. 12 ins. in the ground in mound of stone & earth 3 ft. base 12ins. high for Cor. of Secs. 7,8,17 & 18 marked on brass cap T.41 S.S. 7in N.W. R.19 E. S. 8 in N.E. S. 17 in S.E. and S. 18 in S.W. quadrants;
	Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
	Pits impracticable.
	Impossible to set post over 12 ins. in the ground
	Land rolling and rocky.
	Soil rocky 4th rate.
	Vegetation shadscale & a little grass
	No timber.
	Land mountainous 80.00 chs.
	S.89° 58! E. on random line bet. secs. 8 & 17
40.00	Set temp. 1/4 sec.cor.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
	May 8, 1909.
	I set off 37° 16' N. on lat. arc and 17° 02' N. on decl. arc. and at 7 h. 40 m. a.m. l.m.t. I determine a meridian with the solar at Cor of Secs. 7, 8, 17 & 18
	Thence I run
	S. 89° 56' W. on random line bet. Secs. 7 & 18
40.00	Set temporary 1/4 Sec. Cor.
77.45	Intersect W. Bdy. of Tp. 5 lks. N. of Cor. of Secs. 7, 12, 13 & 18, heretofore described.
	Thence I run N. 89° 54' E. on true line bet. Secs. 7 & 18
	Over rough mountainous land
37.45	Set iron post 3 ft. long 1 in. diam. 14 ins. in the ground in mound of stone & earth 2.5 ft. base, 1 ft. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 7 in N. half and S. 18 in S. half
	Dug pits 18 x 18 x 12 ins. E. & W. 3 ft. from post
	Built mound of stone 2.5 ft. base, 1.5 ft. high N. of Cor.
42.40	Center of wash 125 lks. wide 20 ft. deep, drains S.15°E.
53.25	Foot of hill
	Ascend gradually; through scant undergrowth.
68.60	Road, bears S. 20°E.
73.65	Top of low hill, bears S. 25°E.
77.45	The Cor. of Secs. 7, 8, 17 & 18
	Land rolling, mountainous & rocky
	Soil rocky; 4thrate ; very scant.
	vegetation shadscale
	No timber
	Land mountainous & rocky 77.45 chs.

	N. 0° 03 ' W. bet. Secs. 7 & 8
	Ascending gradually over low sandy ridges
	over mountainous land

Chains. SUBDIVISIONS T. 41 S., R. 19 E.,

11.50	Top of ridge, bears E.
40.00	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 7 in W. half and S. 8 in E. half
	Built mound of stone 2.5 ft. base, 1.5 ft. high W. of Cor
	Impossible to set post over 12 ins. in the ground.
60.65	Center of wash 75 lks. wide 3 ft. deep, drains N.45°E.
64.25	Center of wash 15 lks. wide 2 ft. deep, drains S. 50° E.
72.50	Road, bears S. 70° E.
73.64	Center of wash 60 lks. wide 8 ft. deep, drains E.
79.45	Road, bears S. 45°E.
80.00	Set iron post 3 ft. long 2 ins diam. 24 ins. in the ground for Cor. of Secs. 5, 6, 7 & 8 marked on brass cap T. 41 S., S. 6 in N.W., R. 19 E. S. 5 in N.E., S. 7 in S.W. and S. 8 in S.E. quadrants;
	Dug pits 18 x 18 x 12 in each Sec. 5.5 ft. dist. and built mound of earth 4 ft. base, 2 ft. high W. of Cor.
	Land rolling and rocky
	Soil 4th rate; rocky.
	No timber
	Vegetation shadscale and a little grass

	S. 89° 55' E. on random line bet. secs. 5 & 8
40.00	Set temporary 1/4 Sec. Cor.
79.98	Intersect N. & S. line 3 lks. N. of Cor. of Secs. 4, 5, 8 & 9
	Thence I run
	N. 89° 54' W. on true line bet. Secs. 5 & 8
	Over rolling mountainous land
	Descending gradually over low broken ridges

Chains. SUBDIVISIONS T. 41 S., R. 19 E.,

Chains.	
39.99	Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 5 in N. half and S. 8 in S. half
	Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.
	Impossible to set post over 12 ins. in the ground.
43.40	Top of point of ridge, projects S. 50 lks. 3 chs. wide
63.30	Top of bluff 40 ft. high bears S. and N.
	Thence descend
69.65	Foot of bluff
74.60	Center of wash 10 lks. wide; 6 ft. deep, drains S.15°E.
79.98	The Cor. of Secs. 5; 6, 7 & 8
	Land broken & rocky
	Soil 4th rate; rocky.
	Vegetation shadscale
	No timber
	Land mountainous & broken 79.98 chs.

May 8th, 1909.

At this Cor. I set off 17° 05' N. on decl. arc and at 11 h 57' a.m. l.m.t. I observe the sun on the meridian, the resulting lat. being 37° 16' which agrees with other observations

Thence I run

S. 89° 54' W. on random line bet. Secs. 6 & 7

40.00	Set temporary 1/4 Sec. Cor.
77.38	Intersect W. Bdy. of Tp. 12 lks. S. of Cor. of Secs. 1, 6, 7 & 12, heretofore described.

Thence I run

N. 89° 59' E. on true line bet. Secs. 6 & 7

Over rolling mountainous land

10.20	Foot of hill
14.30	Top of ridge 30 ft. high bears S. 40° W.

Chains. SUBDIVISIONS T. 41 S., R. 19 E.,

20.65 Center of wash 15 lks. wide 4 ft. deep, drains S.30°E.

37.38 Set iron post 3 ft. long 1 in. diam. 12 ins. in the ground in mound of stone & earth 2.5 ft. base, 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 6 in N. half and S. 7 in S. half

Built mound of stone 2.5 ft. base, 1.5 ft. high N. of Cor. Impossible to set post over 12 ins. in the ground. Pits impracticable.

43.80 Road, bears S. 15° W.

58.95 Center of wash 30 lks. wide 1 f t. deep, drains S. 70°E.

62.38 Road, bears S. 40°E.

65.40 Top of low sandy ridge 30 ft. high projects S. 60 lks

75.87 Center of wash 75 lks. wide 8 ft. deep, drains S. 30° E.

76.14 Road, bears S.E.

77.38 The Cor. of Secs. 5, 6, 7 & 8

Land rolling and sloping slightly to E.

Soil 4th rate; rocky.

Vegetation shadscale

No timber

Land mountainous m77.38 chs.

N. 0° 03' W. on true line bet. Secs. 5 & 6

Over rolling mountainous land

8.00 Edge of bluff 15 ft. high bears S. 45° E.

40.00 Set iron post 3 ft. long 1 in. diam. 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 6 in W. half and S. 5 in E. half

Built mound of stone 2.5 ft. base, 2 ft. high W. of Cor. Pits impracticable.

42.10 Top of low ridge, bears S. 60°W.

60.00 Stinking spring bears W. about 30 chs. from this point

64.45 Center of wash 60 lks. wide 10 ft. deep, drains S. 45°W.

Chains.	SUBDIVISIONS T. 41 S., R. 19 E.,
68.33	Road, bears S. 75° W.
80.01	Intersect 8th Standard Parallel South 8.16 chs. E. of the Standard Cor. of Secs. 31 & 32 heretofore described. Set an iron post 3 ft. long 2 ins. diam. 24 ins. in the ground for Closing Cor. of Secs. 5 & 6, T. 41 S., R. 19 E. marked on brass cap C.C. T. 40 S. R. 19 E. on N. half S. 31 in N.W., S. 32 in N.E., S. 5 in S.E. S. 6 in S.W. quadrants;
	Built mound of stone 2.5 ft. base, 2 ft. high S. of Cor.
	Land rolling
	Soil 4th rate; rocky.
	Vegetation shadscale & a little grass
	No timber
	Mountainous land 80.01 chs.
	May 8, 1909.

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Page

Meanders of the right bank of the San Juan river, down stream.

I commence at the Meander Cor. of fractional Secs. 24 & 19 on the E. bdy. of the Tp. which is an iron post 3 ft. long 3 ins. diameter. Marked and Witnessed as heretofore described.

At this Cor. June 1" 1909., I set off 37°14'N.on Latitude arc. 22°02' N. on Declination arc. and at 8 h. 10 m. a. m. l.m.t. I determine a meridian with the solar.

Thence I run with Meanders in Sec. 24

S. 19°45' W. 5.28 chs. To the Meander Cor. of fractional Secs. 24 & 25.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 5.28 chs.

Thence in Sec. 25

S. 19°45' W. 3.00 chs.

S. 16°45' W. 9.30 chs.

S. 45°45' W. 16.20 chs.

S. 22°15' W. 19.20 chs.

S. 14° 15' W. 24.70 chs.

S. 31°45' E. 11.90 chs.

S. 79°30' E. 21.70 chs.

S. 37°45' E. 1.50 chs. To the Meander Cor. of fractional Secs. 25 & 36.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 107.50 chs.

June 1: At this cor.I set off 22° 04'N.on decl.arc; and at 11 h.58 m.a.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 13'N.

MEANDERS OF T. 41 S. R. 19 E.

Thence in Sec. 36

S. 37°45' E. 2.80 chs.

S. 13°15' E. .87 chs. To Meander Cor. on the East lin of the township.

South 5.48 chs. To Meander Cor. on the East lin of the township. Right bank of San Juan river is 69 lks. east.

S. 15°15' W. 5.40 chs.

S. 25°15' W. 4.00 chs.

S. 31°45' W. 5.60 chs.

S. 46°45' W. 1.90 chs.

S. 58°45' W. 3.90 chs.

S. 70°15' W. 4.90 chs.

S. 81°15' W. 1.80 chs.

N. 88°30' W. 14.80 chs.

N. 81°00' W. 3.70 chs.

N. 73°45' W. 7.50 chs.

N. 67°00' W. 4.60 chs.

N. 50°15' W. 5.70 chs.

N. 36°15' W. 16.50 chs.

N. 87°45' W. 11.90 chs.

S. 64°15' W. 7.27 chs. Bank 100 ft. high. To the Meander Cor. of fractional Secs. 35 & 36.

Land rocky, very little sand.

Soil 4th rate; rocky.

No timber.

Land mountainous . Exceptionally difficult to survey.

78.67 chs.

Thence in Sec. 35.

S. 50°30' W. 9.30 chs. Bank 100 ft. high

S. 89°50' W. 1.60 chs. Bank 110 ft. high

N. 1°15' E. 14.39 chs. Bank 90 ft. high. To the Meander Cor. of fractional Secs. 26 & 35

MEANDERS OF T. 41 S. R. 19 E.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

Land mountainous and exceptionally difficult to survey.

25.39 chs. June 1" 1909.

June 2" 1909. At the Meander Cor. of fractional Secs. 26 & 35 I set off 37°12' N. on latitude arc. and 22°10' N. on Declination arc. and at 8 h. a.m.l.m.t. I determine a meridian with the solar.

Thence in Sec. 26.

N. 1°15' W. 4.43 chs. Bank 90 ft. high.

N. 24°15' W. 7.30 chs. " 70 " "

N. 45°30' W. 9.40 chs. " 40 " "

N. 85°00' W.39.00 chs. " 20 " "

N. 75°00' W. 8.00 chs. " 20 " "

N. 72°00' W.15.30 chs. " 15 " " To the Meander Cor. of fractional Secs. 26 & 27.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land mountainous and exceptionally difficult to survey.

83.43 chs, June 2" 1909.

June 3" 1909. At the Meander Cor. of fractional Secs. 26 & 27 I set off 37°12' N. on Latitude arc. 22°18' N. on Declination arc. and at 8 h. a. m. l.m.t. I determine a meridian with the solar.

Thence in Sec. 27.

S. 85°00' W. 20.30 chs. Bank 15 ft. high.

S. 59°30' W. 8.70 chs. "

S. 36°45' W. 10.60 chs.

S. 49°00' W. 15.90 chs.

S. 15°15' W. 8.85 chs. To the Meander Cor. of fractionalSecs. 27 & 34.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land mountainous and exceptionally difficult to survey.

58.35 chs.

Thence in Sec. 34

S. 15°15' W. 14.50 chs.

S. 32°15' W. 12.80 chs.

S. 47°15' W. 15.30 chs.

S. 86°00' W. 3.10 chs.

N. 84°24' W. 8.14 chs. To the Meander Cor. of fractal Secs. 33 & 34.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land mountainous and exceptionally difficult to survey

53.84 chs.

June 3: At the noon hour sky overcast, obs. for lat. impossible

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Thence in Sec. 33

N. 66°00' W. 7.10 chs.

S. 87°30' W. 12.90 "

N. 81°00' W. 9.70 "

S. 69°30' W. 4.90 "

S. 89°30' W. 25.30 "

N. 89°45' W. 18.00 "

N. 52°00' W. 11.60 "

N. 47°06' W. 5.26 " To the Meander Cor. of fractional Secs. 32 & 33.

Land rocky slope partially covered with sand.

Soil 4th rate. rocky.

No timber.

A few willows at edge of water.

MEANDERS OF T. 41 S., R. 19 E.

Land mountainous and exceptionally difficult to survey
85.06 chs.

June 3", 1909

June 4" 1909.

At the Meander Cor. of fractional Secs.32 and 33, I set off 37°13'N. on Latitude arc, and 22°25'N. on Declination arc and at 8h 15m a.m., l.m.t., determine a meridian with the solar.

Thence in Sec. 32

N. 54° 30'W.	8.00 chs.	Bank 15 ft.high
N. 42° 45'W.	2.60 chs.	On west bank of Lime Creek 1 chain wide, 10 ft.deep.
N. 56° 15'W.	11.90 chs.	Bank 15 ft.high.
N. 44° 15'W.	5.10 chs.	" " " "
N. 24° 29'W.	4.40 chs.	To the Meander Cor. of fractional Secs. 29 and 32.

Land, rocky slope partially covered with sand.

Soil, 4th rate; rocky.

No timber. A few willows at edge of water.

Land difficult to survey 32.00 chs.

June 4: At noon hour, sky overcast; obs. for lat.impossible.

Thence in Sec. 29.

N. 30°15'W.	28.20 chs.	Bank 20 ft.high
N. 13°45'W.	12.80 chs.	" " " "
N. 20°30'W.	11.10 chs.	" " " "
N. 68°30'W.	10.90 chs.	" " " "
S. 86°30'W.	7.60 chs.	" " " "
S. 57°30'W.	8.00 chs.	" " " "
S. 28°30'W.	4.10 chs.	" " " "
S. 16°45'W.	27.20 chs.	" " " "

MEANDERS OF T. 41 S., R. 19 E.

S. 2°19'E. 16.47 chs. Bank 20 ft.high. To the Meander Cor. of fractional Secs. 29 and 32.

Land, rocky slope partially covered with sand.

Soil, 4th rate; rocky.

No timber.

A few willows at edge of water.

Land difficult to survey, 136.37 chs.

June 4" 1909.

June 5" 1909.

At the Meander Cor. of fractional Secs. 29 and 32 I set off 37° 13'N. on Latitude arc, and 22°32'N. on Declination arc, and at 8h 15m a.m.,l.m.t., I determine a meridian with the solar.

Thence in Sec. 32

S. 7°45'E. 4.30 chs.

S. 12°15'E. 17.90 chs.

S. 41°00'E. 12.00 chs.

S. 33°45'E. 4.00 chs.

S. 42°15'E. 11.60 chs.

S. 56°15'E. 21.80 chs. 1 chain east from Raplee's house

S. 62°45'E. 21.80 chs.

S. 45°58'E. 21.79 chs. To the Meander Cor. of fractional Secs.5 and 32

Land 1st 30 chs. rocky. Remainder sandy river bottom, not exceeding 12 chs. wide.

Soil, 3rd and 4th rate; sandy and rocky.

No timber.

Willows and brush along edge of river. Sage brush and greasewood in bottom.

Land mountainous and difficult to survey. 30 chs.

June 5" 1909.

GENERAL DESCRIPTION.

The first Anti-Clinal and the Main Syn-Clinal traverse this township at about N. 20 E. and S. 20 W. The apex of the first Anti-Clinal crossing the San Juan river in Sec. 26 and at this point is about 450 to 500 feet higher in sea elevation, although the same geological elevation as the Main Syn-Clinal in Secs. 29 & 30 and travels on southerly as heretofore described. On its course to the north it passes out of the N. side of Sec. 1. The first Anti-Clinal is intersected by an easterly and westerly Syn-Clinal in the south portion of Sec. 1 and the North portion of Sec. 12.

This easterly and westerly Syn-Clinal traverses this township through Secs. 11, 10, 15, 16, 17 & 18 and on through T. 41 S. R. 18 E., through Secs. 13, 14, 15, 16 & 21, then Sec. 20 where it intersects the second Anti-Clinal.

Beginning on the south bdy. of township in Sec. 32 and traveling about N. 20 E. the main Syn-Clinal traverses through Secs. 32 & 29, gradually widening in its northerly course covering Secs. 20 & 21 Secs. 16 & 17 and the E. 1/2 Sec. 18, the west portion of Sec. 10 and all of Sec. 8 & 9, the E. 1/2 Sec. 7, the W. 1/2 Sec. 8, and all of Secs. 4,5 & 6 in its travel to the northward. There is a very gradual ascent from the southern edge of Sec. 32 of the stratas until the 8th Standard Parallel is reached where they become nearly level.

The eastern edge of the Syn-Clinal being the lowest geologically as well as seaelevation.

In the western half of Sec. 18 is located a dyke of Basaltic Schist (Igneous). This dyke is about 20 ft. wide on surface and extends about 1/4 mile north and 1/2 mile south of the point designated in the W. bdy. notes of this township. Dipping slightly to the Southwest in Sec. 29 T. 41 S. R. 20 E. there is a dyke 3 ft. wide standing perpendicular of the same material and no doubt

the same age of eruption.

Examination of the contact matter of both of these dykes disclosed a slickenside condition on the faces of the dyke formation in contact with the sedimentary formations through which they have passed,- the result being a perfect sealing of the fracture in the sedimentary. The action no doubt occurring very slowly, thus permitting the slickenside condition to form and it has no doubt prevented any waste of the oils from the oil-bearing stratas by being carried to unavailable depths. Along the edge of the Main Syn-Clinal in this township and directly in it has been drilled the following described oil wells:

In the S. W. 1/4 of the N. W. 1/4 of Sec. 15 is located a Goodridge well locally known as No. 3, said to be 120 feet deep, now producing an artesian flow of water about 3 ins. diameter. Indications show that some oil was encountered when the oil sand was first opened, however, no casing has been used except the top spud and the water pressure from the strata just above the oil sand is driving back the oil and damaging the oil strata.

A Goodridge well was drilled in the southeast 1/4 of Sec. 20, reports reached 200 ft. in depth, did not reach oil sand, resulted in a crooked hole and was abandoned. In the Northeast 1/4 of Sec. 17 an oil well was drilled to about 600 ft. in depth. Reported owners:- San Francisco and San Juan Oil Co. with Mr. Goodridge as Field Manager. This well at about 260 feet encountered the oil in the Goodridge Sand, went through said sand without casing. At time I left field reports stated new flues for the boiler had been ordered.

This well has an artesian flow of water which is seriously damaging the Goodridge Oil Sand strata owing to no casing having been placed in well to keep the water out

of the oil sand.

In the South - west 1/4 of Sec. 17 is located the W. McBran's oil well. This well was drilled about 24 inches into the Goodridge Sand and discovered the oil. The owners having no casing, plugged up the oil strata drilled into to prevent water from driving out the oil from sand until casing could be obtained. Since I left the field I have been informed that there is a light rig drilling near the South - east Cor. of Sec. 8 and another located near the center of Sec. 10. The last mentioned rig not having started drilling. Along the river's edge in Sec. 25 there are small sand and gravel bars very rich in black sand and placer gold, values ranging from 25¢ to $2.50 per yard. In Secs. 34 - 33, 29 & 32 there are several fairly wide placer bars, especially in Secs. 32 where the Raplee House is located. The first Anti - Clinal has not been lifted to as great a geological height as the second Anti - Clinal by about 500 feet. This condition has left the occasional oil seep sand, The Honaker Oil Spring sand and several others unnamed below the erosion in the river canon. Along Amphitheater Gulch in the South - west 1/4 of Sec. 31. the Goodridge Oil sand has been lifted on the rise to the Apex of the Second Anti - Clinal from 0 to about 100 feet above the surface at the bottom of the gulch.

The exposed oil sand shown is about twenty feet or more in thickness, the face of which has a very thick coating of solidified petroleum residue.

In Secs. 20 & 29 T. 41 S. R. 20 E. and where the first Anti-Clinal flexures have started on their dip to the South - east, the broken lime stone rocks show every indication of the oils having been on fire as the silicas have been partially fluxed, some of the rock throws off a strong odor of petroleum when broken.

In parts of this Township traversed by Lime Creek and along several of its branches, there are perpetual seeps or springs of water, very hard and very strong with alkali, especially in the dry season. In the eastern portion of the township several tests were made of surface earth taken from several discovery pits, and values in black sand and gold were found ranging from 10 to 15¢ per yard, water could be had to cover this section, except Flat Butte, from the head of the main branch of Lime Creek by a conservation system as mentioned in the general description of T. 40 S. R. 19 E.

There is no value that can be placed upon the land in this township except for the minerals of gold, coil and black sand that they contain.

For grazing the value is not worth mentioning. An occasional cotton wood tree occurs along Lime Creek and some of its branches.

Elmer E. Miller
U. S. Deputy Surveyor.

June 5th 1909.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by .....

....., United States Deputy Surveyor, to assist in running, measuring, and

king the lines and corners described in the foregoing field notes of the survey of .....

.....

wing the respective capacities in which they acted:

r list of names and final oath of assistants see book "P"..., *Chainman.*

P. 41 S., R. 16 E. ....., *Chainman.*

....., *Moundman.*

....., *Moundman.*

....., *Axman.*

....., *Axman.*

....., *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted .....

....., United States Deputy Surveyor, in surveying all

e parts or portions of the .....

.....

.....

..... of the .....

..... meridian, ... of ....., which are represented

he foregoing field notes as having been surveyed by him and under his direction; and that said survey been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the er monuments established, according to the instructions furnished by the United States Surveyor

eral for .....

....., *Chainman.*

....., *Chainman.*

....., *Moundman.*

....., *Moundman.*

....., *Axman.*

....., *Axman.*

....., *Flagman.*

.....

scribed and sworn to before me this .....
day of ....., 190

.....

SEAL

.....

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from _____ United States Surveyor General for _____, bearing date of t _____ day of _____, 190 , I have well, faithfully, and truly, in my ow proper person, and in strict conformity with the instructions furnished by the United States Surveyo General for _____, the Manual of Surveying Instructions, and the laws of th United States, surveyed all those parts or portions of _____

For final oath of deputy see book "P" T. 41 S., R. 16 E.

_____ of the _____ meridian, in the _____ of _____, which are represented in th foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnl swear that all the corners of said survey have been established and perpetuated in strict accordance wit the Manual of Surveying Instructions, and the special written instructions of the United States Surveyo General for _____ and in the specific manner described in the field notes, and th the foregoing are the original field notes of such survey.

_____

United States Deputy Surveyo

Subscribed by said _____, and sworn to before me this _____ day of _____, 190

_____

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah June 19, 1911

The foregoing field notes of the survey of the Subdivision and Meander lines of Township No. 41 South, Range No. 19 East, of the Salt Lake Base and Meridian, Utah

executed by Elmer E. Miller under his contract No. 305, dated February 25, 190 9, having bee critically examined, and the necessary corrections and explanations made, the said field notes, and th surveys they describe, are hereby approved.

_____

United States Surveyor Genera

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____

United States Surveyor Genera

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FILED
APR 25 1910

BOOK A-367
H.

M.B.

FIELD NOTES

OF THE SURVEY OF THE

WEST BOUNDARY

OF

TOWNSHIP NO. 42 SOUTH,

RANGE NO. 19 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E. MILLER, *United States Deputy Surveyor,*

nder his Contract No. 305, *dated* February 25th, *190*9.

urvey commenced MAY 28th, *190*9.

urvey completed MAY 29th, *190*9.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS,	CHAINMAN.
FRANK JACKSON,	MOUNDMAN.
WILLIAM W.RUBY	MOUNDMAN.
ALBERT JONES,	FLAGMAN.

For preliminary affidavits see book "F" T. 41 S., R. 19 E.

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Volume
#
R0367

BOOK A-367

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Meanders Page .....

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PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level t
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; th
we will report the true distances to all notable objects, and the true lengths of all lines that we assist
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey
_____

_____, *Chainma*

_____, *Chainma*

Subscribed and sworn to before me this _____
day of _____, 19

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of moundmen in the establishme
of corners, according to the instructions given us, to the best of our skill and ability, in the survey
_____

_____, *Moundma*

_____, *Moundma*

Subscribed and sworn to before me this _____
day of _____, 19

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corne
and other duties, according to instructions given us, to the best of our skill and ability, in the survey
_____

_____, *Axma*

_____, *Axma*

Subscribed and sworn to before me this _____
day of _____, 19

_____

SEAL

_____

I, _____, do solemnly swear that I will well and trul
perform the duties of flagman according to instructions given me, to the best of my skill and ability, in th
survey of _____

_____, *Flagma*

Subscribed and sworn to before me this _____
day of _____, 19

_____

SEAL

_____

Chains. Survey commenced May 28, 1909, and executed with the instrument described in book "A" of this survey.

At the cor.of.Tps. 41 and 42 S., Rs.18 and 19 E., heretofore described; lat.37° 12' 05" N.; long.109°56' 01" W., I set off 21° 30'N.on the decl.arc; 37° 12'N.on the lat.arc; and at 4 h. 17 m. p.m.l.m.t., determine with the solar a meridian; and mark a point thereof on a stake firmly set in the ground 5 chs.N.of the cor.

At 9 h. 2.5 m.p.m. l.m.t., I observe Polaris at lower culmination, in accordance with Manual of Instructions; and mark a point in the line thus determined on a peg. driven in the ground 5 chs.N.of my statio n. This point falls 0.2 ins.E.of the mark determined by the solar.

May 28, 1909.

May 29: At 7 h. 57 m.a.m.l .m.t.I set off 21° 36' N.on the decl.arc; 37° 12'05" N.on the lat.arc; and mark a point in the meridian determined with the solar by a tack driven in the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.E.of the meridian established by the Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 0' 11" W.and 0' 16" E.of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8 h. 15 m. a.m., is N.14° 30'W.; the angle thus determined gives the mag.decl.14° 30'E.

Thence I run

South bet.secs.1 and 6,

Descending gradually over broken sandstone ledges.

15.50 Foot of bluff: descend abruptly.

17.50 Top of bluff, 40 lks.wide, projects E. 1 ch.; thence descend.

Chains.	
	Western Investment Co.No.2 oil well bears S.37° 40'E. a about 24 chs.
26.00	Edge of box canon, 75 ft.deep; very abrupt descent.
27.00	Center of box canon, drains S.80° E. Very abrupt ascent.
28.00	South edge of box canon; line follows about 20 lks.W. of edge of bluff.
28.76	Edge of bluff above wash, bears S.45° E. Descend abruptly.
31.00	Center of wash,20 lks.wide,5 ft.deep,drains S.45° E. Ascend.
32.50	Top of bluff; descend gradually over sandstone ledges.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 1 in W.half; S 6 in E.half; raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor. Pits impracticable. Cor.75 ft.below Tp.cor. 1/2 mile N.
	Ascend gradually.
54.65	Top of ridge, 75 ft.high bears S.60° E. Descend gradually over broken sandstone ledges.
77.80	Wash, 10 lks.wide 2 ft.deep, drains S.50° E.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone and earth 2 1/2 ft.base, 12 ins.high, for cor.of secs.1,6,7, and 12, mkd.on brass cap T 42 S in N.half; R 18 E S 1 in NW.; R 19 E S 6 in NE.; S 12 in SW.; and S 7 in SE.quadrants; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor. Impossible to set post over 12 ins.in the ground. Pits impracticable.
	Land mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land, rough, broken and exceptionally difficult to survey, 80.00 chs.

WEST BOUNDARY T. 42 S., R. 19 E.

Chains.

South between secs.7 and 12,

Descending gradually over sandstone ledges.

10.00 Trail bears NW. and SE. [illegible] San Juan River, bears S.

16.85 Edge of bluff, 75 ft.above San Juan River, bears S.45° E.

19.90 Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for meander cor.of fracl secs.7 and 12, at high water line on right bank of San Juan River; marked brass cap T 42 S in N.half; R 18 E S 12 in NW. R 19 E S 7 in NE.quadrants; and M C S.of angle; raise mound of stone 2 1/2 ft.base, 2 ft.high N.of cor. Pits impracticable.

Land, rocky and much broken; mountainous.

Soil, rocky ; 4th rate.

No timber.

Mountainous land; exceptionally difficult to survey 19.00 chs.

May 29, 1909.

T. 42 S. R. 19 E.

GENERAL DESCRIPTION.

The W. Bdy. of T. 42 S. R. 19 E. traverses, slightly diagonal, the beginning of the eastern slope of the second Anti-Cline. The land gradually in places and quite precipitous in others, slopes towards the east S. E. until it reaches the lowest portion of the Syn-Cline.

There is no water except in the San Juan river.

No timber.

Some small patches of grazing land.

Soil mostly 4th rate.

May 29th 1909.

Omer C. Miller

U.S. Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and

rking the lines and corners described in the foregoing field notes of the survey of _____

_____

wing the respective capacities in which they acted:

r list of names and final oath of assistants see book "O", *Chainman.*

T. 41 S., R.16 E., *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all

se parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented

the foregoing field notes as having been surveyed by him and under his direction; and that said survey s been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the rner monuments established, according to the instructions furnished by the United States Surveyor neral for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

bscribed and sworn to before me this _____ day of _____, 190

_____

SEAL

_____

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, ..., United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from ..... United States Surveyor General for ....., bearing date of ..... day of ....., 190 , I have well, faithfully, and truly, in my o proper person, and in strict conformity with the instructions furnished by the United States Surve General for ....., the Manual of Surveying Instructions, and the laws of t United States, surveyed all those parts or portions of .....

For final oath of deputy see book "O" Tp. 41 S., R. 16 E.

..... of the ..... meridian, in the ..... of ....., which are represented in t foregoing field notes as having been surveyed by me, and under my direction; and I do further solem swear that all the corners of said survey have been established and perpetuated in strict accordance wi the Manual of Surveying Instructions, and the special written instructions of the United States Surve General for ..... and in the specific manner described in the field notes, and th the foregoing are the original field notes of such survey.

United States Deputy Surveyo

Subscribed by said ....., and sworn to before me this ..... day of ....., 190

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19 1911

The foregoing field notes of the survey of the West Boundary of Township No. 42 South, Range No. 19 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller

under his contract No. 305, dated February 25, 190 9, having bee critically examined, and the necessary corrections and explanations made, the said field notes, and th surveys they describe, are hereby approved.

United States Surveyor Genera

I certify that the foregoing transcript of the field notes of the above-described surveys in ....., has been correctly copied from the original notes on file in this office.

United States Surveyor Genera

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FILED
APR 25 1910

BOOK A-367
"I"

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION

&

MEANDERS

OF

TOWNSHIP NO. 42 SOUTH,

RANGE NO. 19 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E. MILLER, *United States Deputy Surveyor,*

nder his Contract No. 305, *dated* February 25th, *190* 9.

rvey commenced May 31st, *190* 9.

rvey completed June 7th, *190* 9.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS	CHAINMAN.
FRANK JACKSON	MOUNDMAN.
WILLIAM W.RUBY	MOUNDMAN
ALBERT JONES,	FLAGMAN.

For preliminary affidavits see book "G" T. 41 S., R. 19 E.

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INDEX DIAGRAM.

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Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level t
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; t
we will report the true distances to all notable objects, and the true lengths of all lines that we assist
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey

_____

_____, *Chainm*

_____, *Chainm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of moundmen in the establishm
of corners, according to the instructions given us, to the best of our skill and ability, in the surve

_____

_____, *Moundr*

_____, *Moundr*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of co
and other duties, according to instructions given us, to the best of our skill and ability, in the surv

_____

_____, *Ax*

_____, *Ax*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and
perform the duties of flagman according to instructions given me, to the best of my skill and ability, i
survey of _____

_____, *Flag*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

Chains. Survey commenced May 30, 1909, and executed with the instrument described in book "A" of this survey.

At the cor.of secs.5,6,31 and 32 on N.bdy.of the Tp.here-tofore described; lat.37° 12' 05" N.; long.109° 54' 57" W., I set off 21° 48'N.on the decl.arc; 37° 12' N.on the lat.arc; and at 4 h.00 m.p.m.l.m.t.determine with the solar a meridian and mark a point thereof on a stake firmly set in the ground 5 chs.N.of the cor.

At 8 h. 54.7 m.p.m.l.m.t., I observe Polaris at lower culmination, in accordance with Manual of Instructions, and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins.E.of the meridian determined by the solar. May 30, 1909.

May 31: At 8 a.m.l.m.t., I set off 21° 54' N.on the decl.arc; 37° 12'N.on the lat.arc; and mark a point in the meridian determined with the solar, by a tack driven in the stake already set 5 chs.N.of my station; this mark falls 0.5 ins.E.of the meridian established by Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 0' 11" W. and 0' 16" E. of the meridian established by Polaris observations.

The magnetic bearing of the true meridian at 8 h.15 m. a.m., is N. 14° 30'W.; the angle thus determined gives the mag.decl.14° 30'E.

Thence I run

S.0° 03'E. bet.secs.5 and 6.

Descending over rolling land.

21.00 Small wash drains S.50° E.

SUBDIVISION T. 42 S., R. 19 E.

Chains.	
25.50	The Western Investment Co. No.1 oil well 12.50 chs.E.
31.50	Small wash drains E. Near bottom synclinal bear N.20°E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground for 1/4 sec.cor., mkd.on brass cap 1/4 S 6 in W.half and S 5 in E.half; dig pits 18 x 18 x 12 ins. N. and S.of post 3 ft.dist.; and raiseaa mound of stone and earth 3 1/2 ft.base, 1/1/2 ft.high W.of cor.
49.27	Road and small wash bears N.45° E.
58.73	Top of ridge bears E. and W.
76.00	A Goodridge oil well 5.92 chs.W.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 16 ins.in the ground, in mound of stone 2 1/2 ft.base, 8 ins.high for cor.of secs.5,6,7, and 8, mkd.on brass cap T 42 S S 6 in NW.; R 19 E S 5 in NE.; S.7 in SW.; and S 8 in SE.quadrants; and raise a mound of stone 2 1/2 ft.base, 2 ft. high W.of cor.Pits impracticable. Impossible to set post over 16 ins.in the ground.
	Land, rolling.
	Soil, sandy and sandy loam; 1st and 2d rates.
	No timber. Undergrowth shadscale and grass.

East bet.secs.5 and 8,

Over broken and rocky land; through shadscale undergrowth

11.50	Wash drains S.
19.00	Foot of hill bears S.45° W.
22.65	Top of ridge bears S.40° W. Descend.
29.48	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 14 ins.high for meander cor.of frac'l secs.5 and 8 on right bank of San Juan River; mkd.on brass cap T 42 S R 19 E S5. in N.half; S 8 in S. half; M C at angle; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor. Pits impracticable. Impossible to set post over 12 ins.in ground.

SUBDIVISION OF T. 42 S., R. 19 E.

Chains.	
	Land, broken and rocky.
	Soil, rocky; 4th rate.
	No timber. Undergrowth shadscale.
	West on random line bet.secs.6 and 7,
40.00	Set temp. 1/4 sec.cor.
77.77	Intersect W.bdy.of Tp. 23 lks.S.of the cor.of secs.1,6, 7, and 12, heretofore described. Thence I run S.89° 50'E.on true line bet.secs.6 and 7,
	Over rolling land; through undergrowth.
3.50	Wash, drains S.20° E.
11.80	Wash, drains S.
14.00	Trail bears SW. and N.
20.00	Amphitheatre Gulch drains SE.
30.43	Wash drains S.45° E.
37.77	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., mkd.on brass cap 1/4 S 6 in N.half; S 7 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.Pits impracticable.
53.10	Top of ridge, bears S.20° W.
57.25	Wash, drains S.30° W.
60.20	Road bears S.40° W., near bottom synclinal bears N.20°E.
77.77	The cor.of secs.5,6,7, and 8.
	Land, rolling.
	Soil; rocky and sandy loam; 4th and 1st rates.
	No timber. Undergrowth shadscale and some grass.
	May 31:At noon hour,sky overcast;obs.for lat.impossible.
	S.0° 03'E. bet.secs.7 and 8,
	Over broken rocky land.
15.15	Top of rim of box canon, bears S.45° E.; heads about 6 chs.NW., 150 ft.deep.
26.80	Wash, 40 lks.wide, 2 ft.deep, drains S.40° E.

SUBDIVISION T. 42 S., R. 19 E.

Chains.	
37.25	South rim of canon.
37.85	A Goodridge oil well No.4, bears 85 lks.E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 14 ins.high, for 1/4 sec.cor., marked on brass cap 1/4 S 7 in W.half and S 8 in E.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor. Pits impracticable. Impossible to set post over 12 ins.in the ground.
52.50	Goodridge Oil Well No.1, 19 chs.W..
54.36	Top of bluff of San Juan River, bears S.10° W. Descend.
58.00	Goodridge Post Office 18 chs.W..
60.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of secs.7 and 8, on the right bank of San Juan River, marked on brass cap T 42 S R 19 E in N.half; S 7 in NW., S 8 in NE.quadrants and M C at intersection of angle line; dig pit 36 x 36 x 12 ins. north of post 8 ft.dist.; and raise mound of earth 4 ft.base, 2 ft.high N.of cor..
	Land, rolling, cut by box canon..
	Soil, sandy and rocky; 2d and 4th rates.
	Undergrowth shadscale and some grass.
	No timber.

In order to establish the line bet.frac'l secs.4 and 5 I begin at the meander cor.on the N.bdy.bet.secs.5 and 32, heretofore described, and run S.42° E.

4.93	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of secs.4 and 5 on the right bank of the San Juan River, marked on brass cap T 42 S R 19 E in N.half; S 4 in NE.; S 5 in NW. quadrants and M C at intersection of angle line; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.
	I return to the meander cor.on N.bdy.of Tp., between

SUBDIVISION T. 42 S., R. 19 E.

Chains.	
	Tl.secs.5 and 32, Thence I run
	S.0° 03'E.on offset line to .
	Over rough and broken land.
5.00	Foot of bluff 200 ft.high.
	Ascend rapidly.
20.00	North rim of top of bluff bears S.75° E.
30.00	East on offset 3.30 chs.to true line bet.frac'l secs. 4 and 5.
	Thence S.0° 03'E.
32.00.	South rim of top of bluff bears S.60° W.
40.00	Point for 1/4 sec.cor.falls on precipitous sandstone ledges; inaccessible; corner not set.
46.66	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander and witness $\frac{1}{4}$ cor.of frac'l secs.4 and 5, on the right bank of the San Juan River; marked on brass cap T 42 S R 19 E $\frac{1}{4}$ S 5 in.W.half;S4 in E.half; W C on W.half; and M C on S.; and raise a mound of stone 3 ft.base, 2 1/2 ft.high W.of cor. Pits impracticable.
	Land, mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Undergrowth, shadscale; little grass.
	Mountainous land; difficult to survey 46.66 chs.
	May 31, 1909.

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T. 42 S. R. 19 E.

MEANDER OF SAN JUAN RIVER - DOWN STREAM.

I commence at the Meander Cor. of fractional Secs. 5 & 32 on the N. Bdy. of the Tp. which is a 3 in. iron post 3 ft. long Mkd. and witnessed as heretofore described. At this Cor. on June 6" 1908, I set off 37° 12' N. on Latitude arc. 22° 39' N. or the Declination arc. and at 7 h. 55 m. a.m.l.m.t. determine a meridian with the solar.

Thence I run with the Meanders in Sec. 5, S. 42°00' E. 4.93 chs. to Meander Cor. of fractional Secs. 4 & 5.

Soil 3rd rate. Sandy.

No timber.

A few willows at edge of river.

Thence in Sec. 4

S. 42°00'E. 14.80 chs.

S. 65°15' E. 12.80 "

S. 40°45' E. 3.00 "

S. 19°45' E. 4.20 "

S. 4°00' W. 9.70 "

S. 47°30' W. 5.70 "

S. 83°30' W. 4.00 "

S. 72°30' W. 17.52 " To the Meander Cor. of fractional Secs. 4 & 5.

Land rocky slope to river with some sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land mountainous and difficult to survey. 71.72 chs.

Thence in Sec. 5.

S.72°30' W. 3.00 chs.

S.65°30' W. 21.50 "

S.49°15' W. 14.00 "

S.50°13' W. 22.77 " To the Meander Cor. of fractional Secs. 5 & 8.

Land rocky slope to river with some sand.

T. 42 S. R. 19 E.

MEANDERS OF SAN JUAN RIVER - DOWN STREAM.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Thence in Sec. 8.

S. 36°00' W. 12.70 chs.

S. 23°30' W. 33.10 "

S. 14°45' W. 12.50 " (At 7.50 chs. N. bank of gulch (30 lks. wide, 10 ft. deep drains

S. 36°19' W. 9.25 " To the Meander Cor. of fractional Secs. 7 & 8.

Land last 30 chs. sandy river bottom, remainder 37.15 chs. rocky slope to river.

Soil 2nd & 4th rate; sandy loam and rocky.

No timber.

Some willows at edge of water. June 6" 1909.

At this Cor. on June 7" 1909, I set off 37°11' N. on Latitude arc. and 22°45' N. on Declination arc. and at 7 h. 55 m. a.m.l.m.t. determine a meridian with the solar. Thence in Sec. 7

S. 57°15' W. 6.10 chs.

S. 58°00' W. 8.70 "

N. 76°00' W. 13.70 "

N. 63°00' W. 6.10 "

N. 52°45' W. 8.80 chs.

N. 21°00' W. 4.00 "

N. 28°15' W. 12.00 " (At this point Goodridge Oil See begins and extends for 10 chs. down river.

[illegible] " Bridge site across narrows, span should be 90 ft.

N. 50°45' W. 12.90 "

N. 62°00' W. 14.00 "

N. 53°40' W. 12.90 " To the Meander Cor. of fractional Secs. 7 & 12.

Land rocky slope partially covered with sand.

Soil 4th rate.

No timber. A few willows at edge of water.

Land difficult to survey. 66.68 chs. June 7" 1909.

T. 42 S. R. 19 E.

GENERAL DESCRIPTION.

This fractional Township covers practically all of the sump or lowest portion of the Main Syn-Clinal. The general sea elevation is the lowest of any part of my survey, especially in fractional Secs. 7 & 8. The geological elevation is not over 100ft. greater than the highest portion of the First or Second Anti-Clinals on the lower mesa. The Goodridge Oil Sand is encountered in fractional Sec. 5 S. E. Cor. Sec. 6 and in fractional Secs. 7 & 8 at 222 to 250 feet in depth from surface. This places the Honaker Oil Spring Sand at 1422 to 1450 feet below the surface, in these Secs. and the intermediate sands at their proportionate depths. The river flows in fractional Sec. 4 at the Western foot of the First Anti-Clinal and the Eastern foot of the Second Anti-Clinal begins near the N. 1/4 Sec. Cor. of Sec. 6 extends about S. 20 W.

The Goodridge Oil seep heretofore mentioned in Meander Notes, occurs at the river's edge in Sec. 7 . Owing to the extreme high water at the time that I visited this point I was unable to make any estimate as to the quantity of oil discharging into the river.

At this seep the oil is issuing from a porous white sand stone in the red beds formation overlain by a bed of dark drab fine grained limestone. The face of this white sand stone is covered by the congealed oil which has caught and held large portions of the floating sands in the river, thus preventing as copious a discharge or wasting of the oils as would at first be anticipated.

This oil sand covers the entire area of the field and wherever it has been encountered by the drill, especially where it has a covering of from 220 to 270 feet, oil has always been encountered; namely, at all of the wells drilled by Mr. Goodrdge, the McMoran Well and the Galloway Well; however, at the extreme top of the second Anti-Clinal, on the lower mesa near the river,

this oil sand reaches the surface and is barren, although it at one time contained large quantities of oil, as shown by the solidified petroleum residue upon the exposed faces.

In Sections 7 & 8 are located what are called No. 1 and No. 4 Goodridge Oil Wells. Both of these wells have encountered the oil in the Goodridge Sands. They have not been drilled through it or shot as stated by Mr. Goodridge; neither of these wells has been properly cased and packed, which has resulted in the waters of the upper stratas leaking into the well. In No. 1 the oil is about 100 feet deep on top of from 30 to 60 feet of water, the amount of water varying from time to time, showing that it is both leaking in the well as well as seeping out. In No. 2 the oil stands about 130 feet deep. In the Southeast Corner Section 6, the small oil drilling rig is located. About 100 feet had been drilled when I was last there. The depth attained was not sufficient to encounter the Goodridge Sand. Reports from there state that this well has since been drilled into the sand and opened the oil.

The Western Investment Co. Oil Wells.

No. 1, located on the Northwest 1/4 of Sec. 5 did not reach the Goodridge sand as it was only 170 feet deep.

No. 2, is located in the Northwest 1/4 of Sec. 6, attained a depth of 515 feet when the top crust or cap of the oil sand was penetrated, the oil flowed to the top of casing for several days before it was capped and ran down the gulch and stood in pools for several hundred feet.

This well was properly cased and packed to prevent the waters from getting into the oil stratas, and it is the only one that has been properly handled in this respect in the entire field.

T. 42 S. R. 19 E.

GENERAL DESCRIPTION.

The flexures of the second Anti-Clinal permitted the top of this well to bestarted below the Goodridge sand.

Located in the Scutheastern portion of fractional Sec. 7, is the town of Goodridge containing at time of my survey, one one-story shingle roof frame building about 25 x 30 feet, there were also two tents standing south of building about 10 x 12 and 12 x 14feet.

In the building Mr. Goodridge has been residing and conducting the U.S. post office, carrying mail to Bluff about twice weekly.

A town site has been platted as indicated by stakes upon the ground, but I was unable to obtain a copy of the plat.

Water for drilling and domestic purposes must be obtained from the San Juan river, either at the approach to the river at town of Goodridge or from near the Raplee House in Sec. 32 T. 41 S. R. 19 E.

The land contained in this township is strictly valuable only for the black sand, gold and petroleum oil mineral values.

The value for grazing is not worth mentioning.

June 7th 1909.

Elmer C. Miller
U.S.Deputy Surveyor.

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Page

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of _____

_____

showing the respective capacities in which they acted:

~~or list of names and final oath of assistants see book "P"~~, *Chainman.*

T. 41 S., R. 16 E.

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all or those parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented on the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

Subscribed and sworn to before me this _____ day of _____, 190 _____

SEAL

_____

_____

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from _____, United States Surveyor General for _____, bearing date of _____ day of _____, 190 , I have well, faithfully, and truly, in my proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for _____, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of deputy see book "P" T. 41 S., R. 16 E.

_____ of the _____ meridian, in the _____ of _____, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

_____

United States Deputy Surveyor

Subscribed by said _____, and sworn to before me this _____ day of _____, 190

_____

_____

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1

The foregoing field notes of the survey of the Subdivision and Meander lines Township No. 42 South, Range No. 19 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, 190 9, having been critically examined, and the necessary corrections and explanations made, the said field notes, and surveys they describe, are hereby approved.

_____

United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____

United States Surveyor General

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Page

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Page

4—679.

FILED
APR 25 1910

BOOK A-367

"J"

E.K.

FIELD NOTES

OF THE SURVEY OF THE

EAST AND SOUTH BOUNDARIES

O F

TOWNSHIP NO. 41 SOUTH,

RANGE NO. 18 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

nder his Contract No. 305, *dated* FEBRUARY 25th, *190* 9,

rvey commenced APRIL 28th, *190* 9,

rvey completed MAY 19th, *190* 9.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS,	CHAINMAN.
FRANK JACKSON,	MOUNDMAN.
WILLIAM W.RUBY,	MOUNDMAN.
ALBERT JONES,	FLAGMAN.

For preliminary affidavits see book "F" T. 41 S., R. 19 E.

BOOK A-367

INDEX DIAGRAM.

Township No 41 South, *Range* No 18 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level t
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; tl
we will report the true distances to all notable objects, and the true lengths of all lines that we assist
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey

_____

_____, *Chainm*

_____, *Chainm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of moundmen in the establishm
of corners, according to the instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Moundm*

_____, *Moundm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corn
and other duties, according to instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Axm*

_____, *Axm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and tr
perform the duties of flagman according to instructions given me, to the best of my skill and ability, in
survey of _____

_____, *Flagm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

EAST BOUNDARY T. 41 S., R. 18 E.

Chains. Survey commenced Apr.27. 1909, and executed with the instrument described in book "A" of this survey.

At the Stand.cor.of Tp.40 S., Rs.18 and 19 E.; lat.37° 17' 18" N.; long.109°56' 09" W., I set off 13° 53'N. on the decl.arc; 37° 17'N.on the lat.arc; and at 3 h. 50 m.p.m.l.m.t., determine with the solar a meridian and mark a point thereof on a stake firmly set in the ground 5 chs.N.of the cor.

At 11 h. 04 m.p.m.l.m.t., I observe Polaris at lower culmination, in accordance with the Manual of Instructions; and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins.E.of the meridian determined by the solar.

April 27, 1909.

April 28: At 8 a.m.l.m.t.I set off 14° 06' N.on the decl.arc; 37° 17'N.on the lat.arc; and mark a point in the meridian determined with the solar, by a tack driven in the stake already set 5 chs.N.of my station. This mark falls 0.3 ins.E.of the meridian established by Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 10" W. and 16" E.of the meridian established by Polaris obs.

The magnetic bearing of the true meridian at 8 h. 15 m. a.m. is N.14° 30'W.: the angle thus determined gives the magnetic declination 14° 30'E.

Thence I run

East along the Eighth Standard Parallel South, and at:

10.89 Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the

EAST BOUNDARY T. 41 S., R. 18 E.

Chains. ground for closing cor.of Tp.41 S., Rs.18 and 19 E., mkd.on brass cap T 40 S in N.half, R 18 E S 36 in NW. R 19 E S 31 in NE. C C on S., R 18 E S 1 in SW.; R19E S6 in SE.quadrants; T41S in S.half; dig pits 30x24x12ins. crosswise on each line E. and W. 4 ft.and S.of post 8 ft.dist.; and raise a mound of stone 5 ft.base, 2½ ft. high S.of cor.

From said closing cor. Tp.41 S., Rs.18 and 19 E. I run

South bet.secs.1 and 6,

Over nearly level land.

2.10 Cross wash, 15 lks.wide, 1 ft.deep, drains E.

7.70 Cross wash, 1 ch.wide, 10 ft.deep, drains E.

11.30 Wagon road bears N.80° W. and S.80° E.

17.15 Ashenhurst Oil Well No.2 about 2 chs.W.of this point.

20.00 Wagon road bears N.60° E. and S.60° W.

30.00 Foot of butte; begin ascent.

40.00 Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.¼ S 1 in W.half, S 6 in E. half; dig pits 18 x 18 x 12 ins.N.and S.of post 3 ft. dist.; and raise a mound of earth 3 ft.base, 2½ ft.hi high W.of cor.

Top of butte bears S.30° E. about 12 chs.

62.40 Foot of butte.

74.75 Wash, 1 ch.wide, 1 ft.deep, drains S.30° E.

80.00 Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, to bed rock, in mound of stone 2½ ft.base, 12 ins.high, for cor.of secs.1,6,7, and 12, mkd.on brass cap T 41 S in N.half; R 18 E S 1 in NW.; R 19 E S 6 in NE.; S 7 in SE; and S 12 in SW.quadrants; dig pits 18 x 18 x 12 ins. in each sec.5½ ft.dist.; and raise mound of earth 4 ft.base, 2½ ft.high W.of cor.

EAST BOUNDARY T. 41 S., R. 18 E.

Chains	
	Impossible to set post over 12 ins.in the ground.
	Land, broken and levl.
	Soil, sandy; 3d rate.
	No timber.
	Undergrowth desert brush and grass.
	South bet.secs.7 and 12,
	Over broken land; through scattering undergrowth.
12.85	Wash, 1 ch.wide, from bank to bank,drains SE.
16.70	Descend to wash.
21.30	Center of wash,40 lks.wide,1 ft.deep, drains SE.
22.30	Top of wash.
28.90	Descend into wash.
30.40	Center of wash, 20 ft.below top,drains N.80° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in ground to bed rock, in mound of stone and earth 2 1/2 ft.base, 14 ins.high for 1/4 sec.cor., marked on brass cap 1/4 S 12 in W.half and S 7 in E.half; and raise a mound of stone 2 1/2 ft.base, 1 1/2 ft.high W.of cor. Pits impracticable. Cor.falls on spur between two washes.
43.80	Wash, drains N.70° E.
46.70	Top of wash, 25 ft.above bottom.
55.35	Top of wash.
56.00	Wash, 10 ft.below top, 30 lks.wide, 1 ft.deep,drains S.80° E.
58.00	Top of wash.
62.00	Wash about 1 chain from bank to bank, 10 ft.deep, drains S.70° E.
80.00	Set iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone and earth 2 1/2 ft.base, 1 ft.high for cor.of secs.7,12,13, and 18, marked on brass cap T 41 S in N.half; R 18 E S 12 in NW.; R 19 E S 7 in NE; S 13 in SW.; and S 18 in SE.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5 1/2 ft.dist.; and raise a

EAST BOUNDARY T. 41 S., R. 18 E.

Chains.	
	mound of earth 4 ft.base, 2 1/2 ft.high W.of cor.
	Impdssible to set post over 12 ins.in the ground.
	Land, broken with washes.
	Soil, sandy; 3d rate.
	No timber. Scant growth of shadscale.
	South bet.secs.13 and 18,
	Over broken land, through undergrowth.
5.00	Foot of spur.
12.00	Top of spur, 100 ft.above foot;extends E.10 chs.and N. 70° W. 20 chs..
23.00	Foot of spur.
28.60	Descend into wash.
29.55	Center of wash 35 ft.below top, 50 lks.wide, 3 ft.deep; drains S.80° E.
30.65	Top of wash.
31.00	Basaltic schist dyke, 20 ft.wide, bears E. 13 chs.cour se N.7° W.
33.25	Wagon road bears S.80° E.
35.90	Descend into wash.
37.15	Wash,20 ft.below top,3 lks.wide,2 ft.deep,drains S.80°E.
38.65	Top of wash.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, to bed rock, in mound of stone and earth 2 1/2 ft.base, 14 ins. high for 1/4 sec.cor., mkd.on brass cap 1/4 S 13 in W.half; S 18 in E.half; dig pits 18 x 18 x 12 ins.N. and S.of post 3 ft.dist.;and raise a mound of earth 2 1/2 ft.base, 1 1/2 ft.high W.of cor.
44.50	Wash, 40 lks.wide, 2 ft .deep, drains N.60° E.
56.25	Descend into wash, 50 ft.below top.
58.30	Center of wash, 2 ft .deep, 30 lks.wide, drains E.
60.00	Top of wash.
74.50	Wagon road bears E. and W., Bluff to John's Canon.

EAST BOUNDARY T. 41 S., R. 18 E.

Chains.	
80.00	Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone and earth 2 1/2 ft .base, 1 [illegible] ft.high, for cor.of secs.13, 18, 19, and 24, marked on Brass cap T 41 S in N.half; R 18 E S 13 in NW.; R 19 E S 18 in NE.; S 19 in SE.; and S 24 in SW.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5 1/2 ft.dist.; and raise a mound of earth 4 ft.base, 3 ft.high W.of cor.Impossible to set post over 12 ins.in the ground.
	Land, broken with washes and a ridge.
	Soil, sandy and rocky; 3d rate.
	No timber. Undergrowth shadscale.
	Apr.28: At this cor.I set off 14° 8'N.on decl.arc;and at 11h.57 m.a.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 14'N.
	South bet.secs.19 and 24,
	Over broken land.
24.35	Wash 50 lks.wide, 1 ft.deep,drains E. Ascend.
29.86	Top of spur,40 ft.above wash,extends E.6 chs. and west to a ridge running N. and S.
39.50	Foot of spur.
40.00	Set an iron post 3 ft.long, 1 in.dia., 16 ins.in the ground, in mound of stone 2 1/2 ft.base, 10 ins.high for 1/4 sec.cor., marked on brass cap 1/4 S 24 in W. half, and S 19 in E.half; dig pits 18 x 18 x 12 ins.N. and S.of post 3 ft.dist.; and raise a mound of earth 2 1/2 ft.base, 2 ft.high W.of cor. Impossible to set post over 16 ins.in the ground.
55.50	Wash, 20 lks.wide, 1 ft.deep, drains E.
68.00	Foot of spur; ascend.
71.10	Top of spur, 50 ft.above foot extends E.about 10 chs. Thence run along side of spur,which extends S.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 14 ins.in the

EAST BOUNDARY T. 41 S., R. 18 E.

Chains.	
	ground, in mound of stone 2 1/2 ft.base, 10 ins.high for cor.of secs.19,24,25, and 30, marked on brass ca p T 41 S in N.half; R 18 E S 24 in NW.; R 19 E S 19 in NE S 30 in SE.; and S 25 in SW.quadrants;and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.
	Impossible to set post over 14 ins.in the ground.
	Cor.falls at E.foot of spur.
	Land,broken by washes and spurs.
	Soil, rocky; 3d rate.
	No timber. Undergrowth desert brush.
	South between secs.25 and 30,
	Along E.foot of spur.
12.00	Ridge bears off SW.
24.65	Small wash drains E. 10 lks.wide,1 ft.deep.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 14 ins.high for 1/4 sec.cor., mkd.on brass cap 1/4 S 25 in W.half and S 30 in E.half;and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.Impossible to set post over 12 ins.in the gruund.Cor.falls at N.foot of ridge,10 ft. below sec.cor. Pits impracticable.
46.35	Top of spur,80 ft.above foot.Thence along E.side of ridge
56.00	Top of spur,projecting E.20 chs.Descend gradually onto small spur,extending S.10° W.
79.90	Top of small spur; descend.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground for cor.of secs.25,30,31, and 36,marked on brass cap T 41 S in N.half;R18E S25 in NW.;R19E S30 in NE.;S 31 in SE.;and S36 in SW.quadrants;dig pits 18 x 18 x 12 ins.in each sec.5 1/2 ft.dist.;and raise a mound of earth 4 ft.base, 2 1/2 ft.high W.of cor. Cor.falls near foot of spur.
	Land,broken with small ridges.
	Soil, sandy;3d rate. No timber.

EAST BOUNDARY T. 41 S., R. 18 E.

Chains.	
	South on true line between secs.31 & 36,
	Over mountainous land.
13.72	Road bears S.80° E.
32.30	Top of large wash, drains W.to river.
	Thence along top of wash.
39.00	Leave top of wash.
40.00	Set iron post 3 ft.long, 1 inch diameter 12 ins.in the ground in mound of stone 2.5 ft.base, 14 ins.high for ¼ sec.cor., marked on brass cap ¼ S 36 in W.half and S 31 in E.half; dug pits 18 x 18 x 12 ins.N. & S.of post 3 ft.dist., erect mound of stone 2.5 ft.base, 2 ft.high W. of cor. Cor.falls about 1 chain E.of top of wash.
	Monument called Mexican Hat bears S.73° 54'E.
48.00	Descend into large wash (Amphitheatre Gulch) rough and broken. Exceptionally difficult to survey.
59.75	Center of wash 225 ft.below top, 30 lks.wide, 3 ft. deep, drains S.70° E.
72.00	Top of wash, 225 ft.above bottom.
74.60	Top of ridge. Begin descent, bears E. and S.10° W.
80.00	Set iron post 3 ft. long, 3 ins.diameter 18 ins.in the ground in mound of stone 2.5 ft.base, 6 ins.high for cor. to secs.31, 36, 1 & 6 Tps.41 and 42 S., Rs.18 & 19 E., marked on brass cap T 41 S in N.half; R 18 E S 36 in NW. R 19 E S 31 in NE.; R 18 E S 1 in SW. and R 19 E S 6 in SE.quadrants and T 42 S in S.half. Erected mound of stone 2 ft.base, 3 ft.high W.of cor. Impossible to set post over 18 ins.in the ground. Cor.falls on E.slope of ridge.
	Land, broken and rocky and mountainous.
	Soil, 4th rate; rocky.
	No timber.
	Land, rough, mountainous and exceptionally difficult to survey 32.00 chs.
	April 28, 1909.

EAST BOUNDARY T. 41 S., R. 18 E.

Line Designated	True Bearing	Distance	Latitudes North	Latitudes South	Departures East	Departures West
		chs.	chs.	chs.	chs.	chs.
8th Stand.Par.S.	East	477.27	.....	.....	477.27	.....
E.Bdy.T.41S R18E.	South	400.00	.....	400.00	.....	.....
W.Bet.secs.25 &36, 26 & 35,27 & 34, 28 & 33.	West	320.00	.....	.....	.....	320.00
N.bet.secs.28&29	N.0° 03'W.	80.00	80.00	.....	.....	.07
W.bet.secs.20 & 29	West	80.00	.....	.....	.....	80.00
N.bet.secs.19 & 20	N.0° 03'W.	80.00	80.00	.....	.....	.07
W.bet.secs.18 & 19	West	77.55	.....	.....	.....	77.55
N.on W.bdy.	North	240.00	240.00	.....	.....	.....
Convergency					.41	
T o t a l s			400.00	400.00	477.68	477.69
				400.00		477.68
Error in latitudes				.00		
Error in departures						.01

GENERAL DESCRIPTION.

The land on both sides of this line is cut by numerous washes with a general easterly flow. Along the line between secs.31 and 36 the line crosses Amphitheatre Gulch, in places fully 300 ft.deep. Apparently this gulch empties into the San Juan River at the elbow in sec.36, as the wall of the river at this point is eroded away nearly to the bottom of the present gulch, the face of which is hermetically sealed by solidification of the petroleum residue.

There is no water nearer than that mentioned in

EAST BOUNDARY T. 41 S. R. 18 E.

GENERAL DESCRIPTION. Continued,

Township 41 S. R. 18 and 19 E. in the Subdivisional notes and in the General Description.

April 28" 1909. Elmer C. Miller

U.S.Deputy Surveyor.

SOUTH BOUNDARY T. 41 S. R. 18 E.

Chains.	
	Survey commenced Apr.28, 1909.
	From the cor.of Tps.41 and 42 S., Rs.18 and 19 E. heretofore described, I run
	West bet.secs.1 and 36,
	Over broken land.
1.00	Top of ridge, bears N.10° E. about 2 chs.;thence west.
2.25	Opposite side of ridge, bears N.30° E. and S.40° W.
11.00	Foot of bluff; thence level.
14.00	Foot of same bluff, bears S.70° E.
18.50	Top of same bluff bears S.75° E. and N.75° W.
39.00	Foot of bluff bears N. and S.
40.00	Set iron post 3 ft.long, 1 in.dia., 15 ins.in the ground in mound of stone 2 1/2 ft.base, 11 ins.high for 1/4 sec.cor., marked on brass cap 1/4 S 36 on N.half, and S 1 on S.half; and raise a mound of stone 3 ft.base, 2 ft.high N.of cor. Impossible to set post over 15 ins.in the ground. Pits impracticable. Cor.at top of low bluff bears N. and S.
54.00	Edge of bluff bears SE.
54.90	Foot of bluff bears SE.
71.97	Top of bluff above San Juan River bears S.20° E. and N.25° W. Thence descending rapidly over a succession of sand and limestone ledges, bearing generally S.25° E. and N.25° W.
80.00	Set an iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 12 ins.high for cor.of secs.1,2,35, and 36, marked on brass cap T 41 S in N.half, R 18 E S 35 in NW.; R 18 E S 36 in NE. R 18 E S 1 in SE.; and R 18 E S 2 in SW.quadrants and T 42 S in S.; raise mound of stone 3 ft.base, 2 1/2 ft.high NW.of cor.5 ft.; the only suitable place for mound.Impossible to set post over 12 ins.in the ground.
	Land, very much broken and very rocky.
	Soil, rocky; 4th rate.
	No timber.

SOUTH BOUNDARY T. 41 S., R. 18 E.

Chains.	
	West on true line bet.secs.2 and 35,
	Over mountainous land.
5.62	Right bank of San Juan River, draining NW.
	Set iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone 2 1/2 ft.base, 12 ins. high for meander cor.of frac'l secs.2 and 35, marked on brass cap T 41 S R 18 E S 35 in N.; T 42 S R 18 E S 2 in S., and M C at angle; raise a mound of stone 3 ft. base, 2 1/2 ft.high E.of cor.Pits impracticable. Impossible to set post over 12 ins.in the ground.
	Land, broken and mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land 5.62 chs. Apr.28, 1909.

May 17, 1909:

From the cor.of secs.3,4,33, and 34, established from the auxiliary base line, and heretofore described, I run

	East on true line bet.secs.3 and 34,
	Over lime and sandstone ledges.
10.00	Begin steep ascent over lime and sandstone ledges.
25.94	Top of W.brink of canon of San Juan River bears S.10° E.
	Thence over mesa.
31.85	Top of brink of canon of San Juan River bears N. and S.
	Descend over sandstone ledges.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, to bed rock, in mound of stone 14 ins.high, for 1/4 sec.cor., marked on brass cap 1/4 S 34 in N. half, and S 3 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor. Pits impracticable. Cor.sets on bench.
44.50	Top of ledge bears N. and S. Descend precipitously over lime and sandstone and oil sand stratas.
51.90	The point for meander cor.falls at the foot of a per-

SOUTH BOUNDARY T. 41 S., R. 18 E.

Chains. pendicular cliff where the river at high water would destroy it; therefore I set a limestone 24x 12 x 6 ins. on a ledge 20 ft. above river, in mound of stone for meander cor. of frac'l secs. 3 and 34, marked M C on E. face, with 4 grooves on W. face; and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor.

There is a mesa from 3 to 5 chs. wide, which extends S. from this line into sec. 3 about 38 chs.

Land, mountainous; rough and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land; exceptionally difficult to survey 51.90 chs.

From the cor. of secs. 3, 4, 33, and 34, I run

West on true line bet. secs. 4 and 33,

Ascending gradually over sandstone ledges.

10.34 Top of low saddle of goose neck between the San Juan River to the east and to the west. There is a mesa of about 40 acres level with the main mesa to the SW. of this point in sec. 4. Thence descend rapidly.

14.80 Top of bluff; descend precipitously over sand and limstone ledges interlain with oil sand stratas.

21.70 Set an iron post 3 ft. long, 3 ins. dia., 24 ins. in the ground for meander cor. of secs. 4 and 33, marked on brass cap T 41 S R 18 E S 33 in N. half; T 42 S R 18 E S 4 in S. half and M C at angle of lines; raise a mound of stone 3 ft. base, 2 1/2 ft. high E. of cor. Pits impracticable.

Land, broken and rocky.

Soil, rocky; 4th rate.

No timber.

Mountainous land; exceptionally difficult to survey 21.70 chs.

May 17, 1909.

SOUTH BOUNDARY T. 41 S., R. 18 E.

May 19, 1909.

Chains. From the cor.of secs.4,5,32,. and 33, established from the auxiliary base line, and heretofore described, I run

East bet.secs.4 and 33,

Descending rapidly over sand and limestone ledges, interlain with oil sand strata.

4.98 Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground for meander cor.of secs.4 and 33 on the right bank of the San Juan River; marked on brass cap T 41 S R 18 E S 33 in N.half; T 42 S S 4 in S.half; M C at angle of lines; and raise a mound of stone 2 1/2 ft. base, 2 ft.high W.of cor.

Land, broken and mountainous.

Soil, rocky; 4th rate.

No timber.

Mountainous land 4.98 chs.

[illegible]: From the cor.of secs.4,5,32, and 33, I run

West bet.secs.5 and 32,

Ascending over sand and limestone ledges interlain with oil sand strata.

19.60 Top of ascent on point bearing S. Thence descend abruptly over sand and limestone ledges interlain with oil sand strata.

40.00 Point for 1/4 sec.cor. falls on sand and limestone ledges; inaccessible.

44.70 Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for meander and witness 1/4 sec.cor.of secs. 5 and 32, on the right bank of the San Juan River; marked on brass cap T 41 S R 18 E S 32 in N.half; W C 1/4 and T 42 S R 18 E S 5 in S.half; and M C at angle of lines; and raise a mound of stone 2 1/2 ft.

base, 2 ft.high E.of cor.Pits impracticable.

Land, broken and rocky; mountainous.

Soil, rocky; 4th rate.

Undergrowth scant shadscale.

No timber.

Mountainous land 44.70 chs.

May 19, 1909.

GENERAL DESCRIPTION.

The south boundary line of this township consists of broken pieces of line made by the exceptionally crooked condition of the San Juan River. The land traversed along the S.bdy.of sec.36 is a high mesa, which is the beginning, at about one-half mile east of the SE. cor.of township, of the rise to the west of the second anticlinal. The line thus passes down abd up over the canon of the San Juan River on its western course, passing over sand and limestone stratas, interlain with oil sand stratas, ranging in thickness rrom 1 to 100 ft.

The Mendenhall Oil Seep and the Honaker Oil Spring heretofore described, occur near this line.

Elmer C. Wells

May 19, 1909. U.S.Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and

ırking the lines and corners described in the foregoing field notes of the survey of _____

_____

›wing the respective capacities in which they acted:

r list of names and final oath of assistants see book "O" _____, *Chainman.*

Tp. 41 S., R. 16 E. _____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all

se parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented

he foregoing field notes as having been surveyed by him and under his direction; and that said survey been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the ıer monuments established, according to the instructions furnished by the United States Surveyor

ıeral for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

scribed and sworn to before me this _____

day of _____, 190

SEAL

_____

_____

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, solemnly swear that, in pursuance of a contract received from _____ United States Surveyor General for _____, bearing date of _____ day of _____, 190 , I have well, faithfully, and truly, in my o proper person, and in strict conformity with the instructions furnished by the United States Surve General for _____, the Manual of Surveying Instructions, and the laws of United States, surveyed all those parts or portions of _____

For final oath of deputy see book "O" T. 41 S., R. 16 E.

_____ of the _____ meridian, in the _____ of _____, which are represented in foregoing field notes as having been surveyed by me, and under my direction; and I do further solem swear that all the corners of said survey have been established and perpetuated in strict accordance w the Manual of Surveying Instructions, and the special written instructions of the United States Surve General for _____ and in the specific manner described in the field notes, and t the foregoing are the original field notes of such survey.

_____

United States Deputy Surve

Subscribed by said _____, and sworn to before me this _____ day of _____, 190

_____

_____

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19_____, 19

The foregoing field notes of the survey of The East and South Boundaries of Tp South, Range No. 18 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, _____, 190 9, having b critically examined, and the necessary corrections and explanations made, the said field notes, and surveys they describe, are hereby approved.

Thomas Hall

United States Surveyor Gene

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office

_____

United States Surveyor Gene

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4—679.

FILED
APR 25-1910

BOOK A-367
"K"

E&K

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION & MEANDER LINES

O F

TOWNSHIP NO. 41 SOUTH,

RANGE NO. 18 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

nder his Contract No. 305, *dated* FEBRUARY 25th, *190*9,

rvey commenced MAY 11th, *190*9,

rvey completed JUNE 20th, *190*9.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS,	CHAINMAN.
FRANK JACKSON,	MOUNDMAN.
WILLIAM W.RUBY,	MOUNDMAN.
ALBERT JONES,	FLAGMAN.

For preliminary affidavits see book "G" T. 41 S., R. 19 E.

BOOK A-367

INDEX DIAGRAM.

Township No 41 South, Range No 18 East

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Meanders Page.....

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PRELIMINARY OATHS OF ASSISTANTS.

We, _____ and _____
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will lev
chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same
we will report the true distances to all notable objects, and the true lengths of all lines that we as
measuring, to the best of our skill and ability, and in accordance with instructions given us, in the sur

_____

_____, *Chai*

_____, *Chai*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

We, _____ and _____
do solemnly swear that we will well and truly perform the duties of moundmen in the establis
of corners, according to the instructions given us, to the best of our skill and ability, in the su

_____

_____, *Moun*

_____, *Moun*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

We, _____ and _____
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of
and other duties, according to instructions given us, to the best of our skill and ability, in the su

_____

_____, *A*

_____, *A*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well an
perform the duties of flagman according to instructions given me, to the best of my skill and ability
survey of _____

_____, *Fl*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

Survey commenced May 11, 1909, and executed with the instrument described in book "A" of this survey.

Before proceeding with the Subdivision of T. 41 S., R. 18 E. I adjust the level and collimation errors; then to test the solar apparatus by comparing its indications resulting from solar observations made during a.m.and p.m.hours, with a meridian determined by observations on Polaris, I proceed as follows:

At the cor.of secs.25,30,31, and 36 on the E.bdy.of Tp. heretofore described; lat.37° 13'N.; long.109° 56' 01" W., I set off 37° 13'N.on lat.arc; 17° 54'N.on decl. arc; and at 3 h. 10 m.p.m.l.m.t.. I determine a meridian with the solar and mark a point thereof by a stone firmly set in the ground 5 chs.N.of the cor. cor.

May 11, 1909.

May 12: At 4 h. 12.3 m.a.m.l.m.t.I observe Polaris at eastern elongation in accordance with the Manual of Instructions and mark a point in the line thus determined, on a peg driven in the ground 5 chs.N.of my station.

At 8 h. 0 m.a.m.l.m.t.I lay off the azimuth of Polaris 1° 29' to the west, and mark the meridian thus determined, by cutting a small groove in the stone set May 11, on which the meridian falls 0.1 in.E.of the mark determined by the solar.

At 8 h. 45 m.a.m.l.m.t. I set off 37° 13'N.on the lat. arc; 18° 06'N.on decl.arc; and mark a point in the meridian determined with the solar, by a cross on the stone already set 5 chs.N.of my station; this mark falls 0.2 ins.E.of the meridian established by Polaris observation.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	The solar apparatus by p.m.and a.m.observations defines positions for meridians, respectively about 0' 5" W. and 0' 11" E.of the meridian established by Polaris observations; therefore, I conclude that the adjustments of the instrument are satisfactory.
	The magnetic bearing of the true meridian at 9 h. a.m. is N.14° 40'W.; the angle thus determined gives the mag.decl.14° 40' E.
	From said cor.secs.25,30,31, and 36 on E.bdy.of Tp. I run, over mountainous land.
	West bet.secs.25 and 36 on auxiliary base line,
4.00	Top of spur, 20 ft.high, extends 10 chs.S.
5.00	Foot of small spur.
9.05	Road bears N. & S.
11.00	Top of wash; descend gradually.
13.90	Center of wash, 30 ft.below top, 30 lks.wide, 1 ft.deep, heads 1 ch.N.and drains S.
17.15	Top of wash; thence along top.
19.20	Top of wash. Descend into Amphitheatre Gulch.
28.60	Center of Amphitheatre Gulch, 150 ft.below top., drains S.
40.00	Set iron post 3 ft.long, 1 in.diam., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 14 ins. high for ¼ sec.cor., marked on brass cap ¼ S 25 in N. half and S 36 in S.half; raise amound of stone 2½ ft. base, 2 ft.high N.of cor. Pits impracticable. Impossible to set post over 12 ins.in ground.
	Corner falls 75 ft. below bench above wash.
42.60	Top of break to wash; thence line follows bench.
68.00	Top of break to small wash.
73.00	Head of small wash drains SE.
80.00	Set iron post 3 ft.long, 2 ins.diam., 12 ins.in the ground, in mound of stone and earth 12 ins.high, for cor.of secs.25,26,35, and 36, marked on brass cap T 41

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	S S 26 in NW., R 18 E S 25 in NE; S 35 in SW; and S 36 in SE.quadrants; raise mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	Land, mountainous, broken and rocky.
	Soil, rocky; 4th rate.
	Undergrowth shadscale.
	No timber.
	Land, mountainous, rough and broken 80.00 chs.
	West on auxiliary base line bet.secs.26 and 35,
	Over rollingmesa, mountainous land.
21.00	Wash, drains S.
40.00	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground for ¼ sec.cor., marked on brass cap ¼ S 26 in N.half, S 35 in S.half; dug pits 18 x 18 x 12 ins.E. and W. of post 3 ft.dist.; raise a mound of earth 3½ ft.base 2½ ft.high N.of cor.
52.60	E.edge of canon, 200 ft.deep,; heads 15 chs.N.20° W.
58.20	Center of gulch of canon, drains S.20° E.
68.70	W.edge of canon; thence over nearly level mesa.
80.00	Set iron post 3 ft.long, 2 ins.diam., 15 ins.in the ground in mound of stone and earth 9 ins.high for cor.of secs.26,27,34, and 35, marked on brass cap, T 41 S S 27 in NW.; R 18 E S 26 in NE.; S 34 in SW.; and S 35 in SE.quadrants; raise mound of stone 2½ ft. base, 2 ft.high W.of cor. Pits impracticable.
	Impossible to set post over 15 ins.in ground.
	Land, mountainous and broken.
	Soil, sandy and rocky; 3d and 4th rate.
	No timber.
	Mountainous land, rough and broken, 80.00 chs.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	West on auxiliary base line between secs.27 and 34,
	Over level mesa.
24.00	Edge of canon, 100 ft.deep,heads 2 chs.N.
27.75	Center of canon drains south to river.
31.50	West edge of canon; thence over level mesa.
40.00	Set iron post 3 ft.long, 1 in.diam., 26 ins.in the ground, for $\frac{1}{4}$ sec.cor., marked on brass cap $\frac{1}{4}$ S 27 in N.half, S 34 in S.half; dug pits 18 x 18 x 12 ins. E. and W.of post 3 ft.dist.; and built mound of earth $3\frac{1}{2}$ ft.base, $1\frac{1}{2}$ ft.high N.of cor.
49.75	Top of bluff 20 ft.high, bears S.
	Thence over level mesa.
68.00	Foot of hill; ascend rapidly.
71.20	Top of mesa bears N. and S. Thence over level mesa.
78.30	Edge of mesa, bears N.10° W.
	Descend gradually.
80.00	Set iron post 3 ft.long, 2 ins.diam., 24 ins.in the ground, for cor.of secs.27,28,33, and 34, marked on brass cap T 41 S S 28 in NW., R 18 E S 27 in NE.; S 33 in SW., and S 34 in SE.quadrants; built mound of stone and earth $3\frac{1}{2}$ ft.base, $3\frac{1}{2}$ ft.high W.of cor. Pits impracticable.
	Land, nearly all level mesa.
	Soil, sandy; 3d rate.
	No timber.
	Vegetation shadscale and bunch grass.

	West on auxiliary base line bet.secs.28 and 33,
	Over gently rolling mesa.
40.00	Set iron post 3 ft.long, 1 in.diam., 26 ins.in the ground for $\frac{1}{4}$ sec.cor., marked on brass cap $\frac{1}{4}$ S 28 in N.half, S 33 in S.half; built mound of stone $2\frac{1}{2}$ ft. base, 2 ft.high N.of cor. Pits impracticable.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	Thence descend very gradually.
62.58	Wash, 20 lks.wide, 1 ft.deep, drains SE.
67.00	Top of gentle slope.
80.00	Set iron post 3 ft.long, 2 ins.diam., 24 ins.in the ground, for cor.of secs.28,29,32, and 33, marked on brass cap T 41 S S 29 in NW.; R 18 E S 28 in NE.; S 32 in SW.; and S 33 in SE.quadrants; built mound of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.
	Land, gently rolling mesa.
	Soil, sandy, 3d rate; rocky; 4th rate.
	No timber.
	Undergrowth shadscale and bunch grass.

West on true line bet.secs.29 and 32,

	Ascending, through undergrowth.
32.70	Top of bench; descend.
34.00	Foot of descent; thence over level ground.
40.00	Set an iron post 3 ft.long, 1 in.dia., 20 ins.in the ground, in mound of stone and earth 2½ ft.base, 6 ins.high for ¼ seccor., mkd.on brass cap ¼ S 29 in N.half and S 32 in S.half; and raise a mound of stone 2½ ft.base, 2 ft.high N.of cor.Pits impracticable.
	Impossible to set post over 20 ins.in the ground.
43.50	Top of canon of San Juan River bears N.20° E.
	Descend rapidly over a succession of sand and limestone ledges, interlain with numerous oil sand stratas, ranging in thickness from 1 to 100 ft.
45.50	Honaker Trail, course south.
64.00	Honaker Trail, course N.40° W.
66.00	Honaker Trail, course S.10° W.
68.87	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of frac'l secs.29 and 32, on

SUBDIVISION T. 41 S., R. 18 E.

Chains. the right bank of San Juan River; marked on brass cap T 41 S R 18 E S 29 in N.half; S 32 in S.half; and M C on the W.; raise a mound of stone 3 ft.base, 2½ ft.high E.of cor.Pits impracticable.

Land, 1st half mesa; 2d half rocky sandstone ledges.

Soil, sandy and rocky; 3d and 4th rates.

No timber.

Undergrowth shadscale and bunch grass.

Land, exceptionally difficult to survey 28.67 chs.

May 12: At this cor.I set off 18° 08'N.on decl.arc; and at 11 h.56 m.a.m.l.m.t., observe the sun on the meridian; the resulting lat.is 37° 13'N.

To establish the meander corners of frac'l secs.31 and 32, owing to the impassable character of the country, I set corners by traverse line along meanders of river, as follows:

From meander cor.of secs.29 and 32 I run

S.40° 13'W. 4.40 chs.

S.64° 15'W. 8.10 chs.

S.44° 30'W. 1.40 chs.

To obtain my westing I calculate the latitudes and departures as follows:

Course	Dist.	Latitudes N. chs.	Latitudes S. chs.	Departures E. chs.	Departures W. chs.
S.40°13'W.	4.40 chs.		3.36		2.84
S.64°15'W.	8.10 chs.		3.52		7.31
S.44° 30'W.	1.40 chs.		1.00		.98
					11.13

68.87 plus 11.13 equals 80.00.

Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground for meander cor.of frac'l secs.31 and 32, marked on brass cap T 41 S in N.half, R 18 E S 32 in E., S 31 in

SUBDIVISION T. 41 S., R. 18 E.

Chains.

in W., and M C at angle of lines; raise a mound of stone 2 ft.base, 1½ ft.high S.of cor.

Thence in sec.31,

S.44° 30'W. 2.10 chs.

S.17° 30'W. 4.70 chs.

S.29°30'E. 5.83 chs.

To obtain my southing I calculate the lats. and departures as follows:

Course	Dist.	Latitudes N.	Latitudes S.	Departures. E.	Departures. W.
	chs.	chs.	chs.	chs.	chs.
S.44°30'W.	2.10		1.50		1.47
S.17°30'W.	4.70		4.49		1.41
S.29°30'E.	5.83		5.07	2.88	
Totals			11.06	2.88	2.88

11.06 Southing,

Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of frac'l secs.31 and 32, mkd. on brass cap T 41 S in N., R 18 E S 32 in E., S 31 in W., and M C at angle of lines; raise mound of stones 3 ft.base, 2½ ft.high N.of cor.

Land, mountainous and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land; exceptionally difficult to survey 11.06 chs.

May 13: At 8 h. 04 m.a.m.l.m.t.I set off 37° 13'N.on lat.arc; 18° 20'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.25,26,35, and 36 on the auxiliary base line.

Thence I run

SUBDIVISION T. 41 S., R. 18 E.

Chains	
	S.0° 01'E.bet.secs.35 and 36,
	Ascending.
3.34	Top of bluff of San Juan River, bears E. and W.
	Thence descending rapidly over limestone and sandstone ledges interlain with numerous oil sand strates.
16.47	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.of N.half of secs.35 and 36; mkd.on brass cap T 41 S R 18 E in N.; S 35 in W.half S 36 in E.half, and M C at angle of lines; raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.
	This meander cor.is for the NE¼ sec.35 and the NW¼ of sec.36.
	From the cor.of secs.1,2,35, and 36 on S.bdy.of Tp., heretofore described, I run
	N.0° 01'W.bet.secs.35 and 36,
	Ascending over sandstone ledges.
14.20	Top of bluff above San Juan River, bears S.40° E.
20.35	Top of bluff above San Juan River bears S.50° W.
	Thence descending rapidly over sandstone ledges.
39.31	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for meander cor.for S.½ of secs.35 and 36, on right bank of San Juan River; mkd.on brass cap T 41 S R 18 E in N.half; S 35 in SW., and S 36 in SE.quadrants; M C at angle of the lines; raise mound of stone 2½ ft. base, 2 ft.high S.of cor.Pits impracticable.
	Land, very much broken and rocky; mountainous.
	Soil, rocky; 4th rate.
	Undergrowth shadscale. No timber.
	Mountainous and broken land; exceptionally difficult to survey 44.73 chs.

From the cor.of secs.25,26,35, and 36 on the auxiliary

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	base line, I run
	N.0° 01'W.bet.secs.25 and 26,
	Over rough broken mountainous land.
6.10	Top of bench.
8.50	Foot of bench, 30 ft.below top.
15.60	Wash, 15 lks.wide, drains NE.
23.50	Wash, 10 lks.wide, 1 ft.deep, drains E.
	Ascend.
25.00	Edge of bench 20 ft.high bears NW.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone and earth 2½ ft.base, 1½ ft. high for ¼ sec.cor., marked on brass cap ¼ S 26 in W. half, and S 25 in E.half; raise a mound of stone 2½ ft. base, 2 ft.high W.of cor.Pits impracticable.
	Cor.is 60 ft.below sec.cor.south.
	Impossible to set post over 12 ins.in the ground.
44.50	Top of wash; descend.
49.00	Center of wash, 100 ft.below top, 60 lks.wide, 2 ft. deep, drains S.80° E. Ascend.
56.00	Top of large wash.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone and earth 12 ins.high for cor.of secs.23.24.25, and 26, marked on brass cap T 41 S S 23 in NW.; R18 E S 24 in NE.; S 25 in SE., and S 26 in SW.quadrants; raise mound of stone 2½ ft.base 2 ft.high W.of cor.Pits impracticable.
	Corner is 85 ft.above ½ sec.cor., ½ mile south.
	Land, mountainous and cut by washes; rocky and broken.
	Soil, rocky; 4th rate.
	Undergrowth shadscale. No timber.
	Mountainous land, rough and broken, and exceptionally difficult to survey 80.00 chs.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	East on a random line bet.secs.24 and 25,
40.00	Set temp.$\frac{1}{2}$ sec.cor.
79.98	Intersect E.bdy.of Tp.9 lks.S.of the cor.of secs.19,24, 25 and 30, heretofore described.
	Thence I run
	S.89° 56'W.on true line bet.secs.24 and 25,
	Ascending over mountainous land.
13.46	Top of ridge bears NW. and SW.
34.00	Road bears N.10° W.
39.99	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for $\frac{1}{4}$ sec.cor., mkd.on brass cap $\frac{1}{4}$ S 24 in N. half; S 25 in S.half; and raise a mound of stone $2\frac{1}{2}$ ft. base, 2 ft.high N.of cor.Pits impracticable.
40.65	Top of wash.
42.55	Wash 40 lks.wide, drains SW; thence follow wash.
51.10	Wash, drains SE.; thence along wash.
61.50	Wash drains E.
	Ascend out of wash.
64.60	Top of wash 75 ft.above bottom.
79.98	The cor.of secs.23,24,25, and 26.
	Land, broken and rocky; mountainous.
	Soil rocky; 4th rate.
	Undergrowth, shadscale and some grass.
	No timber.
	Land, mountainous, rough and broken 79.98 chs.
	May 13: At the noon hour sky overcast; obs.for lat.impossible.

	N.0° 01'W.bet.secs.23 and 24,
	Over broken mesa; difficult to survey.
8.00	Top of wash.
12.00	Center of wash, 15 ft.below rim, and 50 ft.below top, 50 lks.wide, 2 ft.deep, drains E.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	Ascend.
12.50	Rim of large wash.
31.50	Wash, draining SE., heads about 8 chs.W., 10 lks.wide, 1 ft.deep, 35 ft.below top.
	Ascend.
36.00	Top of wash.
40.00	Falls on side of wash, 15 ft.below top,
	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for $\frac{1}{4}$ sec.cor., marked on brass cap $\frac{1}{4}$ S 23 in W.half; S 24 in E.half; and raise a mound of stone $3\frac{1}{2}$ ft.base, 2 ft.high W.of cor.
43.15	Center of wash, 25 ft.below top, 25 lks.wide, 1 ft.deep, drains SE.
	Ascend.
48.00	Top of wash.
63.07	Road, Bluff to John's Canon, bears E. and W.
65.30	Center of wash, 40 lks.wide, 2 ft.deep, drains from W. and 3 chs.below this point to SE.
68.50	Top of wash.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.13,14,23, and 24, mkd.on brass cap T 41 S S 14 in NW.; R 18 E S 13 in NE.; S 23 in SW. and S 24 in SE.quadrants; raise a mound of stone $2\frac{1}{2}$ ft.

Chains.	
	base, 2 ft.high W.of cor.Pits impracticable.
	Land, broken mesa and rocky; mountainous.
	Soil, rocky; 4th rate.
	Undergrowth, shadscale.
	No timber.
	Land, mountainous, rough, and difficult to survey 80.00 chs.
	N.89° 56'E.on a random line bet.secs.13 and 24,
40.00	Set temp.$\frac{1}{4}$ sec.cor.
79.96	Intersect E.bdy.of Tp.3 lks.N.of the cor.of secs.13,18, 19, and 24, heretofore described.
	Thence I run
	S.89° 57'W.on true line bet.secs.13 and 24,
	Ascending slightly over mesa; through undergrowth.
39.98	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for $\frac{1}{4}$ sec.cor., marked on brass cap $\frac{1}{4}$ S 1^3 in N.half; and S 24 in S.half; dig pits 18 x 18 x 12 ins. E. and W.of post 3 ft.dist.; and raise a mound of stone and earth $3\frac{1}{2}$ ft.base, $1\frac{1}{2}$ ft.high N.of cor.Pits impracticable.
56.10	Road from Bluff to John's Canon, bears N.70° E. and S. 70° W.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
60.00	North end of spur, bears S.
79.96	The cor.of secs.13,14,23, and 24.
	Land, rolling mesa.
	Soil, sandy loam; 2d and 3d rates.
	No timber. Undergrowth shadscale and bunch grass.
	May 13, 1909.

May 14, 1909: At 8 h. 30 m.a.m.l.m.t.I set off 37°15'N. on lat.arc; 18°35'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.13,14,23, and 24. Thence I run

N.0° 01'W.bet.secs.13 and 14,

Over rolling broken land;through underbrush.

20.00	Wash, 1 ch.wide, 2 ft.deep, drains S.80° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.on brass cap ¼ S 14 in W. half; S 13 in E.half; dig pits 18 x 18 x 12 ins.N. and S.of post 7 ft.dist.; and raise a mound of stone and earth 3½ ft.base, 2 ft.high W.of cor.
62.45	Road bears E. and W.
70.00	Wash 30 lks.wide, 25 ft.deep, drains E .
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.11,12,13, and 14, mkd.on brass

Chains.	
	cap T 41 S S 11 in NW.; R 18 E S 12 in NE.; S 13 in SE. and S 14 in SW.quadrants; dig pits 18 x 18 x 12 ins.in each sec.5½ ft.dist.; and raise a mound of earth and stone 4 ft.base, 2 ft.high W.of cor.
	Land, rolling mesa; cut by washes.
	Soil, sandy and rocky; 3d and 4th rates.
	No timber.
	Undergrowth shadscale and a little grass.
	N.89° 57'E.on a random line bet.secs.12 and 13,
40.00	Set temp.¼ sec.cor.
80.04	Intersect E.bdy.of Tp. 3 lks.S.of the cor.of secs.7,12, 13 and 18, heretofore described. Thence I run
	S.89° 56'W.on true line bet.secs.12 and 13,
	Over nearly level land; through undergrowth.
4.00	Foot of low hill; ascend.
7.20	Top of low hill bears N. and S. Descend gradually.
10.00	Foot of hill; thence ascend gently over level mesa.
40.02	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.on brass cap ¼ S 12 in N. half; S 13 in S.half; dig pits 18 x 18 x 12 ins.E. and W.of post 3 ft.dist.; and raise a mound of earth 3½ ft. base, 2 ft.high N.of cor.
80.04	The cor.of secs.11.12.13, and 14.
	Land, mostly level.
	Soil, sandy and rocky; 3d and 4th rate.
	No timber.

Chains. SUBDIVISION T. 41 S. R. 18 E.

	Vegetation shadscale and some grass.
	N. 0° 01' W. between Secs. 11 & 12
	Over broken land; through undergrowth.
3.50	Top of wash.
12.85	Wash 50 ft. below top. 25 lks. wide, 1 ft. deep. Drains E.
18.75	End of spur between two washes.
20.80	Center of wash 25 ft. below top, 10 lks. wide, 1 ft. deep Drains S. E.
22.00	Top of bank of wash.
35.55	Small wash 50 lks. wide, 1 ft. deep. Heads 3 chs. W. and drains E. 10 ft. deep below mesa level.
37.00	Top of wash.
40.00	Set iron post 3 ft. long 1 inch diameter 28 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 11 in W. half and S. 12 in E. half. Built mound of stone 2.5 ft. base 2 ft. high W. of Cor. Pits impracticable.
43.85	Center of wash, heads 3 chs. W. drains S. 60° E. 10 lks. wide 1 ft. deep. 10 ft. below top.
444.60	Top of wash.
65.80	Wash 1.50 chs. across. 10 ft. deep. Drains. E.
78.50	Top of wash.
80.00	Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. to Secs. 1, 2, 11 & 12. Marked on brass cap T. 41 S. S. 2 in N. W. R. 18 E., S. 1 in N. E. S. 11 in S. W. and S. 12 in S. E. quadrants. Built mound of stone 2.5 ft. base 2 ft. high W. of Cor. Pits impracticable. Land cut by washes. Soil 4th rate, rocky; sandy, 3d rate. No timber. Undergrowth, shadscale. May 14: At noon hour, sky ov ercast; solar obs. impossible.
	N. 89°56' E. on a random line between Secs. 1 & 12
40.00	Set temp. ½ sec. cor.

Chains. SUBDIVISION T. 41 S. R. 18 E.

Chains.	
80.10	Intersect E. bdy. of Tp. 5 lks. N. of the cor. of secs. 1,6,7 and 12, heretofore described. N. of Cor. to Secs. 1, 2, 11 & 12. Thence I run S. 89° 58' W. on true line between Secs. 1 & 12, over broken land; through undergrowth,
15.35	East side of wash. 50 ft. deep below mesa.
17.10	Center of wash 30 lks. wide, 2 ft. deep, drains S. 20° E.
19.00	West side of wash.
28.00	East side of wash 40 ft. below level.
29.40	Center of wash 40 lks. wide, 2 ft. deep. Drains S. 20° E.
31.00	West side of wash.
40.05	Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone and earth 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 1 in N. half and S. 12 in S. half. Pits impracticable. Built mound of stone 2.5 ft. base 2 ft. high N. of Cor. Impossible to set post over 12 ins. in the ground.
68.00	East side of wash 2 chs. wide, 40 ft. deep below mesa.
68.70	Center of wash drains S. 40° E.
70.00	West side of wash.
80.10	The Cor. to Secs. 1,2, 11 & 12
	Land mesa sloping gently to E. and cut by washes.
	Soil 4th rate, rocky; sandy, 3d rate.
	No timber.
	Vegetation shadscale and grass.

	N. 0° 01' W. on a true line between Secs. 1 & 2. Over broken land; through undergrowth.
2.00	Wash drains E. and heads about 12 chs. W.
6.00	Wash 25 lks. wide, 1 ft. deep. Drains S. 60° E. 20 ft. below mesa.
8.00	Head of wash. Drains N. 70° E.
9.60	Top of wash.
30.00	Top of wash and descend.
36.40	Center of wash 40 ft. below top. 25 lks. wide, 10 ft. deep. Drains S. 60° E. Thence ascend.

Chains.	SUBDIVISION T. 41 S. R. 18 E.
39.00	Top of wash.
40.00	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 2 in W. half and S. 1 in E. half. Built mound of stone 2.5 ft. base 2 ft. high W. of Cor. Pits impracticable.
47.50	Top of wash. Descend.
50.20	Center of wash 10 ft. below top, 10 lks. wide, 1 ft. deep Drains E. Thence ascend.
52.00	Top of wash. Descend.
65.85	Top of wash. Descend.
67.20	Center of wash 20 ft. below top 25 lks. wide. 1 ft. deep Drains E.
80.01	Intersect 8th Standard Paralell South 10.90 chs. east of the Standard Cor. of Secs. 35,&36 heretofore described. Set an iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Closing Cor. of Secs. 1 & 2 T. 41 S. R. 18 E. Marked on brass cap T. 40 S. R. 18 E. on N.,S.35 in N. W., S. 36 in N. E., S. 1 in S. E. and S. 2 in S. W. quadrants. C. C. above intersection of closing line T. 41 S. at bottom. Built mound of stone 3 ft. base 2.5 ft. high S. of Cor. Pits impracticable. Land gently rolling cut by washes. Soil 3rd & 4th rate; sandy and rocky. No timber. Vegetation shadscale and some grass. May 14, 1909.

May 15, 1909. 2nd Tier

I set off 37°13' N. on Latitude arc and 18°50' N. on Declinationarc and at 8 h. 26 m. a.m. l.m.t. I determine a meridian with the solar at the Cor. of Secs. 26, 27, 34 & 35. on the Auxiliary Base line previously

Chains. SUBDIVISION T. 41 S. R. 18 E.

described. Thence I run, over broken land, S. 0°01' E. between Secs. 34 & 35.

9.87 To top of canon of San Juan river bears E. & W. Thence descending rapidly over lime and sandstone ledges interlain with oilsand stratas.

29.21 Right bank of San Juan river.

Set iron post 3 ft. long 1 inch diam. 18 ins. in ground to bedrock, in mound of stone 2.5 ft. base 14 ins. high for Meander Cor. of Secs. 34 & 35. mkd. T41S R18E in N.; S34 in W. half, S 35 in E. half; M. C. at angle. Raise a mound of stone 3 ft. base, 2½ ft. high N. of cor.

Land broken and rocky.

Soil 4th rate; rocky.

No timber.

Land broken, rocky and exceptionally difficult to survey. 29.21 chs.

From the Cor. of Secs. 26, 27, 34 & 35 on the Auxiliary Base line I run, over broken land, N. 0° 01' W. between Secs. 26 & 27; through undergrowth.

1.90 Top of descent bears S. 70°E. and N. 70° W.

4.00 Foot of slope. Thence over level mesa.

34.00 Wash 30 lks. wide 1 ft. deep. Drains S. 35°E.

35.50 Top of bank of wash.

40.00 Set iron post 3 ft. long 1 inch diameter 36 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 27 in W. half and S. 26 in E. half.

Built mound of stone 2.5 ft. base 2.5 ft high W. of Cor. Pits impracticable.

56.00 Top of wash. Descend.

60.45 Center of wash. Drains E. Ascend.

65.45 Top of point between washes.

65.55 Top of break to wash. Descend.

66.00 Center of wash 50 lks. wide, 10 ft. deep. Drains S. 20°E.

Chains. SUBDIVISION T. 41 S. R. 18 E.

70.25 Top of wash.

80.00 Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. of Secs. 22, 23, 26 & 27. Marked on brass cap T. 41 S. S. 22 in N. W. R. 18 E., S. 23 in N. E., S. 26 in S. E. and S. 27 in S. W. quadrants. Built mound of stone 3 ft. base 2.5 ft. high W. of Cor. Pits impracticable.

Cor. falls in valley of wash.

Land rolling mesa cut by washes.

Soil 3rd & 4th rate; sandy and rocky.

No timber.

Vegetation shadscale and some bunch grass.

East on random line between Secs. 23 & 26.

40.00 Set temporary 1/4 Sec. Cor.

80.08 Intersect N. & S. line 19 lks. S. of Cor. to Secs. 23, 24, 25 & 26. Thence S. 89°52' W. on true line between Secs. 23 & 26, over gently rolling mesa, through undergrowth.

40.04 Set iron post 3 ft. long 1 inch dia. 12 ins. in ground to bedrock, in mound of stone and earth 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 23 in N. half, S. 26 in S. half.

Built mound of stone 2.5 ft. base 2 ft. high N. of Cor. Pits impracticable. Cor. sets near top of wash.

40.15 Top of wash. Descend.

46.50 Center of wash 60 lks. wide, 2 ft. deep. Drains S. 60°E.

51.75 Top of ascent out of wash.

55.00 Top of bench.

57.50 Foot of descent from bench.

80.08 The Cor. of Secs. 22, 23, 26 & 27.

Land rolling mesa, cut by washes.

Soil 3rd & 4th rate; sandy and rocky.

No timber.

Vegetation shadscale and some grass.

Chains. SUBDIVISION T. 41 S. R. 18 E.

May 15:

At this Cor. I set off 18°52' N. on Declination arc and at 11 h. 56m. 4" p. a.m. l.m.t. I observe the sun on the meridian, the Latitude resulting is 37°14' N. which agrees with other data.

N. 0°01' W. between Secs. 22 & 23.

Ascending gradually out of valley of wash; through undergrowth.

7.00	Top of wash. Descend.
11.75	Center of wash 10 lks. wide, 3 ft. deep. Drains N. 80°E.
13.00	Top of wash. N. side.
32.50	Top of wash. Descend.
39.15	Wash 30 lks. wide, 2 ft. deep. Drains E.
40.00	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 22 in W. half and S. 23 in E. half. Built mound of stone 2.5 ft. base 2 ft. high W. of Cor. Pits impracticable.
40.60	Top of bank of wash.
57.60	Top of wash. Descend.
66.05	Wash 30 lks. wide, 2 ft. deep. Drains N. 80°E. Ascend.
70.00	Top of wash.
73.62	Road bears N. 60°W. & S.60°E; Bluff to John's Canon.
80.00	Set iron post 3 ft. long 2 ins. diameter 12 ins. in the ground in mound of stone and earth 3.5 ft. base 2 ft. high for Cor. of Secs. 14, 15, 22 & 23. Marked on brass cap T. 41 S. S. 15 in N. W. R. 18 E., S. 14 in N. E., S. 22 in S. W. and S. 23 in S. E. quadrants and raise a mound of stone 2.5 ft. base 2 ft. high W. of Cor. Impossible to set post over 12 ins. in the ground. Land broken and cut by washes. Soil 3rd rate; sandy. No timber. Vegetation shadscale.

N. 89°52' E. on random line between Secs. 14 & 23.

Chains. SUBDIVISION T. 41 S. R. 18 E.

40.00 Set temporary 1/4 Sec. Cor.

80.04 Intersect N. & S. line 42 lks. N. of Cor. to Secs. 13, 14, 23 & 24. Thence I run N. 89°50' W. on true line between Secs. 14 & 23 over flat sandy ground.

19.40 Top of break to wash.

24.00 Center of wash 15 lks. wide, 3 ft. deep. Drains S. 40°E.

32.00 Top of wash.

40.02 Set iron post 3 ft. long 1 inch diameter 15 ins. in the ground in mound of stone and earth 2.5 ft. base 1½ ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 14 in N. half, S. 23 in S. half.

Built mound of stone 3.5 ft. base 3 ft. high N. of Cor. Impossible to set post over 15 ins. in the ground.

80.04 The Cor. of Secs. 14, 15, 22 & 23.

Land rolling mesa cut by wash.

Soil 3rd & 4th rate; sandy and rocky.

No timber.

Vegetation shadscale and a little grass.

May 15, 1909.

May 16, 1909.

I set off 37°15' N. on Latitude arc and 19°04' N. on Declination arc and at 8 h. 15 m. a.m.l.m.t. I determine the meridian with the solar at the Cor. of Secs. 14, 15, 22 & 23. Thence I run over broken land; through undergrowth.

N. 0°01' W. between Secs. 14 & 15.

8.00 Top of wash. Descend.

14.75 Wash 6 lks. wide, 2 ft. deep. Drains E. Ascend.

20.25 Top of wash.

22.50 Top of wash. Descend.

27.10 Wash 10 lks. wide, drains S. E.

34.90 Wash 20 lks. wide, 2 ft. deep. Drains. E.

40.00 Set iron post 3 ft. long 1 inch diameter 26 ins. in the

Chains. SUBDIVISION T. 41 S. R. 18 E.

ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 15 in W. half and S. 14 in E. half.
Built mound of stone 2.5 ft. base 2. ft. high W. of Cor.
Pits impracticable. Ascend gradually.

40.90 Top of break to wash south. Thence over mesa.

79.50 Top of bench.

80.00 Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. of Secs. 10,11, 14 & 15. Marked on brass cap T. 41 S. S. 10 in N. W. R. 18 E., S. 11 in N. E., S. 14 in S. E. and S. 15 in S. W. quadrants and raise a mound of stone 2.5 ft. base 2 ft. high W. of Cor.
Pits impracticable.
Land broken by washes.
Soil sandy. 3rd rate.
Vegetation shadscale and some grass.
No timber.
Land broken. 80.00 chs.

S. 89°50' E. on random line between Secs. 11 & 14.

40.00 Set temporary 1/4 Sec. Cor.

80.08 Intersect N. & S. line 39 lks. S. of Cor. to Secs. 11, 12, 13 & 14. Thence I run

S. 89°53' W. on true line between Secs. 11 & 14 over mesa rising gently to west; through undergrowth.

40.04 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 11 in N. half and S. 14 in S. half.
Dug pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist. built mound of earth 3.5 ft. base 1.5 ft. high N. of Cor.
Pits impracticable.

40.70 Top of break to wash.
54.00 Road bears NW. and SE.
58.60 Center of wash 1 ch. wide, 5 ft. deep. Drains S.E.
68.35 Top of break to wash.
75.30 Wagon road bears S. E. & N. W.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
80.08	The cor.of secs.10,11,14, and 15.
	Land, broken by washes.
	Soil, sandy and rocky; 3d and 4th rates.
	No timber.
	Undergrowth, shadscale and a little grass.
	N.0° 01'W.bet.secs.10 and 11,
	Over broken land; through undergrowth.
1.40	Foot of descent from bench, bears S.20° E. and N.20°W.
5.00	Road bears SE.
11.00	Wash, 10 lks.wide, 3 ft.deep, drains S.30° E.
33.10	Road bears SE. and NW.
34.70	Top of wash.
36.00	Center of wash, 60 lks.wide, 20 ft.deep, drains SE.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., marked on brass cap 1/4 S 10 in W.half; and S 11 in E.half; raise a mound of stone 2 1/2 ft.base, 1 1/2 ft. high W.of cor. Pits impracticable. Ascend.
41.00	Top of wash.
62.88	East bank of large wash, drains from west and from this point to SW.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.2,3,10, and 11, marked on brass cap T 41 S S 3 in NW., R 18 E S 2 in NE.; S 10 in SW. and S 11 in SE.quadrants; and raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor.
	Pits impracticable.
	Land, broken by washes.
	Soil, sandy and rocky; 3d and 4th rates.
	No timber. Undergrowth shadscale and grass.
	Land rough and broken 80.00 chs.
	May 16: At this cor.I set off 19° 06'N.on the decl.arc;

Chains.	
	and at 11 h. 56 m.a.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 16'N.
	N.89° 53'E.on random line bet.secs.2 and 11,
40.00	Set temp. 1/4 sec.cor.
80.10	Intersect N. and S.line 14 lks.N.of the cor.of secs.1, 2,11, and 12. Thence I run
	S.89° 59'W.on true line bet.secs.2 and 11,
	Over rolling land; through shadscale undergrowth.
40.05	Set an iron post 3 ft.long, 1 in.dia., 18 ins.in the ground, in mound of stone and earth 2 1/2 ft.base, 8 ins. high for 1/4 sec.cor., mkd.on brass cap 1/4 S 2 in N. half and S 11 in S.half; and raise a mound of stone 2 1/2 ft.base, 2 ft.high N.of cor.Pits impracticable. Impossible to set post over 18 ins.in the ground.
53.80	Top of bluff bears N. and S.
80.10	The cor.of secs.2,3,10, and 11.
	Land, rolling prairie.
	Soil, sandy; 3d rate.
	No timber. Undergrowth shadscale and some grass.
	N.0° 01'W.on true line bet.secs.2 and 3,
	Over gently rolling mesa.
31.76	Small wash 10 lks.wide, 1 ft.deep, drains N.70° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., mkd.on brass cap 1/4 S 3 in W.half; S 2 in E.half;dig pits 18x18x12 ins.N.& S.of post 3 ft.dist.;and raise a mound of earth 3 1/2 ft. base, 2 ft.high W.of cor. Cor.sets on S.bank of small wash,6 lks.wide, 6 ins.deep,which drains N.70° E.
61.70	Top of break to wash.
64.80	Center of wash, 15 lks.wide,1 ft.deep,drains E.Ascend.
67.55	Top of bench or mesa.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
80.01	Intersect 8th Stand.Par.S., 10.88 chs.E.of the St.cor. of secs.34 and 35, heretofore described; Set iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for closing cor.of secs.2 and 3, mkd.on brass cap C C T 40 S R 18 E in N.half, S 34 in NW., S 35 in NE; S 2 in SE., and S 3 in SW.quadrants; and T 41 S R 18 E in S.half; dig pits 24 x 18 x 12 ins.crosswise on each line E. and W. 3 ft.and S.of post 7 ft.dist.; raise mound of earth 4 ft.base, 2 ft.high S.of cor. Land, rolling mesa. Soil, sandy; 3d rate. No timber; undergrowth shadscale and some grass. May 16, 1909.
	May 17: At 8 a.m.l.m.t.I set off 37° 13'N.on the lat. arc; 19° 17'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.27,28,33, and 34,on auxiliary base line, heretofore described.Thence I run S.0° 02'E. bet.secs.33 and 34, Over rocky mesa.
16.00	N.foot of spur.
20.00	Top of W.end of spur, bears N.89° E. Descend.
23.50	Foot of spur.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base,14½ ins.high for ¼ sec.cor., mkd.on brass cap ¼ S 33 in W.half S 34 in E.half; raise a mound of stone 3 ft.base, 2½ ft.high W.of cor. Impossible to set post over 12 ins.in ground.
66.11	Top of canon of San Juan River, bears N.85° E. and S.85° W.about 2 chs.; thence NW. Descend rapidly over sand and limestone ledges interlain with oil sand strata.
80.00	Point for cor.of secs.3,4,33 and 34 on S.bdy.of town-

SUBDIVISIONS OF T. 41 S., R. 18 E.

Chains.	
	ship, and from which a portion of the S.bdy. of the Tp. bet.secs.4 and 33 and 3 and 34 will have to be established,
	Set iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 1½ ft.high for cor.of secs.3,4,33, and 34, marked on brass cap T 41 S S 33 in NW., R 18 E S 34 in NE.; T 42 S S 4 in SW.; and R 18 E S 3 in SE.quadrants; raise mound of stone 3 ft. base, 2½ ft.high W.of cor. Pits impracticable.
	Cor.falls on top of perpendicular sandstone ledge about 500 ft.above river.
	Land, 1st 66.11 chs.rocky mesa; balance rocky.
	Soil sandy and rocky; 3d and 4th rate.
	No timber.
	Land, exceptionally difficult to survey 19,90 chs.
	From the cor.of secs.27,28,33, and 34 I run N.0° 02'W. bet.secs.27 and 28,
	Over mountainous land; through undergrowth.
13.50	Top of break to wash; descend.
25.70	Wash,35 ft.below top,15 lks.wide,1 ft.deep, drains E. Ascend.
28.40	Top of break to wash.
37.55	Top of break to wash; descend.
40.00	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground for ¼ sec.cor., mkd.on brass cap ¼ S 28 in W. half, S 27 in E.half; raise mound of stone 2½ ft.base, 1½ ft.high W.of cor.Pits impracticable.
	Cor.falls about ½ distance up slope to wash, and is 50 ft.below sec.cor.½ mile south.
45.75	Center of wash, 40 ft.below top,25 lks.wide, 2 ft.deep, drains E.
	Ascend.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
53.15	Top of break to wash.
56.90	Center of wash, 30 ft.below top, 10 lks.wide, 1 ft.deep drains E.
59.40	Top of wash.
64.75	Small wash 1 ch.wide, 15 ft.deep,drains E.
68.00	Small wash 50 lks.wide, 5 ft..deep,drains E.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 20 ins.in the ground. in mound of stone and earth 2 ft.base, 4 ins. high for cor.of secs.21,22,27, and 28, marked on brass cap T 41 S S 21 in NW.; R 18 E S 22 in NE.; S 27 in SE. and S 28 in SW.quadrants. Cor.is 60 ft.above ¼ sec.cor. Raise mound of earth 4 ft.base, 2 ft.high W.of cor. Impossible to set post over 20 ins.in the ground. Land, broken mesa and mountainous. Soil, sandy; 3d rate. Undergrowth shadscale and bunch grass. No timber. Mountainous land 80.00 chs.

East on random line bet.secs.22 and 27,

40.00	Set temp.¼ sec.cor.
79.92	Intersect N. and S.line 25 lks.S.of the cor.of secs.22 23,26, and 27. Thence I run

S.89° 49'W.on true line bet.secs.22 and 27,

Over mountainous land; through undergrowth.

22.00	Top of slope; thence ascending slightly over mesa.
39.96	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., mkd.on brass cap ¼ S 22 in N. half; S 27 in S.half; dig pits 18 x 18 x 12 ins.E. and W.of post 3 ft.dist.; and raise a mound of stone covered with earth 3½ ft.base, 2 ft.high N.of cor.
79.92	The cor.of secs.21,22,27, and 28.

Land, mesa, gently gloping to east.

Chains.	
	Soil, sandy; 3d rate.
	No timber; undergrowth shadscale and some grass.
	May 17: At noon hour sky overcast; obs.for lat.impossible.
	N.0° 02'W. bet.secs.21 and 22,
	Over broken land; through scant undergrowth.
9.00	Small wash 2 chs from bank to bank, 10 ft.deep,drains E.
26.20	Wash, 3 chs.from bank to bank 70 ft.deep, drains N.80° E.
32.10	Small wash 2 chs.from bank to bank, 5 ft.deep, drains S.70° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 21 in W. half S 22 in E.half; dig pits 18 x 18 x 12 ins.N. and S. of post 3 ft.dist.; raise mound of earth 3½ ft.base, 1½ ft.high W.of cor.
60.62	Road bears E. and W.,from Bluff to John's Canon.
62.00	Top or break to wash; descend.
72.00	Center of wash, 60 ft.below top, 40 lks.wide, 2 ft.deep drains E.
80.00	Set an iron post 3 ft. long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.15,16,21, and 22, marked on brass cap T 41 S S 16 in NW.; R 18 E S 15 in NE.; S 21 in SW.;and S 22 in SE.quadrants;raise mound of stone 2½ ft.base, 2 ft.high W.of cor. Cor.falls on E.end of spur between two washes.
	Land, cut by washes and mountainous.
	Soil, sandy loam 1st and 2d rate.
	No timber; undergrowth slight growth of shadscale.
	Land, broken 80.00 chs.
	N.89° 49'E.on a random line bet.secs.15 and 22,

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
40.00	Set temp.1/4 sec.cor.
80.08	Intersect N. and S.line 12 lks.N.of cor.of secs.14,15 22, and 23. Thence I run
	S.89° 54'W.on true line bet.secs.15 and 22,
	Over rolling mesa; through undergrowth.
4.70	Wagon road bears SE.
11.65	Top of break to wash, bears NW. and SE. Descend.
21.40	Center of wash, 100 lks.wide, 5 ft.deep, drains SE.
39.30	Top of bluff of wash.
40.04	Set an iron post 3 ft.long, 1 in.dia., 16 ins.in the ground, in mound of stone and earth 2 1/2 ft.base, 10 ins.high for 1/4 sec.cor., marked on brass cap 1/4 S 15 in N.half; S 22 in S.half;raise mound of stone 3 1/2 ft.base, 2 1/2 ft.high N.of cor. Pits impracticable.
62.00	Raplee's stone house 12 ft.square, 5 chs.E.of line, 1 chain N.of gulch bears S.80° E.
73.00	Wash drains SE.
80.08	The cor.of secs.15,16,21, and 22.
	Land, rolling mesa cut by washes.
	Soil, 3d and 4th rate; sandy and rocky.
	Undergrowth shadscale and some grass.
	No timber.
	Land, broken 80.08 chs. May 17. 1909.

May 18, 1909:

N.0° 02'W.bet.secs.15 and 16,

Over broken land; through undergrowth.

4.25	Center of wash, 60 ft.below top, 10 lks.wide, 2 ft. deep, drains SE. Ascend.
9.00	Top of wash.
13.15	Top of break to large wash.
19.20	Center of wash, 80 ft.below top, 10 lks.wide, 2 ft.deep, drains S.80° E. Ascend.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
29.40	Top of wash.
33.00	Top of brdak to wash; descend.
38.15	Center of wash, 20 ft.below top, 10 lks.wide, 1 ft.deep, drains S.60° E. Ascend steep slope.
39.10	Top of wash.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., mkd.on brass cap 1/4 S 16 in W.half; S 15 in E.half, 05 ft.above cor.of secs.15,16, 21, and 22; raise a mound of stone 2 1/2 ft.base, 2 ft. high W.of cor.Pits impracticable.
51.80	Top of break to large wash.
61.00	Center of wash, 80 ft.below top, 25 lks.wide, 2 ft. deep, drains E.
75.50	East end of spur,between washes.
80.00	Set an iron post 3 ft.long, 2 ins.dia., 24 ins.in the ground, for cor.of secs.9,10,15, and 16, marked on brass cap T 41 S S 9 in NW.; R 18 E S 10 in NE.; S 15 in SE.; and S 16 in SW.quadrants; raise a mound of stone 2 1/2 ft.base, 2 ft.high W.of cor. Cor.falls 20 ft.below top of wash,at S.edge of small wash heading 10 chs.W.and drains SE.
	Land, broken by washes.
	Soil, sandy; 3d rate.
	No timber. Undergrowth shadscale.
	Mountainous land 80.00 chs.

May 18: At 9 h.15m.a.m.l.m.t.,I set off 37°16'N.on lat. arc;19° 31'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.9,10,15, and 16.

Thence I run

N.89°54'E.on random line bet.secs.10 and 15,

40.00	Set temp. 1/4 sec.cor.
80.12	Intersect N. and S.line 23 lks.N.of the cor.of secs.10,

Chains. SUBDIVISION T. 41 S. R. 18 E.

Chains.	
	11, 14 & 15. Thence I run
	N. 89°56' W. on true line between Secs. 10 & 15.
	Ascending through undergrowth.
0.40	Top of mesa, thence over nearly level mesa.
40.06	Set iron post 3 ft. long 1 inch diameter 28 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 10 in N. half and S. 15 in S. half.
	Dug pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist.
	Built mound of earth 3½ ft. base 2 ft. high N. of Cor.
	Pits impracticable.
44.06	East side of break to wash.
59.00	Center of wash. Drains S. 30 lks. wide, 2 ft. deep.
63.60	Top of wash.
68.00	E. side of break to wash.
73.00	Center of wash 100 ft. below mesa, 20 lks. wide 2 ft. deep. Drains S. 55°E.
80.12	The Cor. to Secs. 9, 10, 15 & 16.
	Land cut by washes.
	Soil 2nd & 3d rate; sandy and rocky.
	Vegetation shadscale and some grass. No timber.
	Land broken 80.12 chs.
	May 18: At noon hour sky overcast; obs. for lat. impossible.
	N. 0°02' W. between Secs. 9 & 10.
	Ascending from wash; through undergrowth.
4.00	Top of ascent from wash. Thence over mesa.
40.00	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S.9 in W. half and S. 10 in E. half.
	Dug pits 18 x 18 x 12 ins. N. & S. of post 3 ft. dist.
	Built mound of earth 3.5 ft. base 2 ft. high W. of Cor.
48.00	Top of break to wash.
54.45	Center of wash 25 ft. below top, 15 lks. wide, 2 ft. deep
	Drains S. 80°E. Thence ascend.
62.00	Top of wash.
80.00	Setiron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. to

Chains.	SUBDIVISION T. 41 S. R. 18 E.
	ground for Cor. to Secs. 3,4,9 & 10
	Marked on brass cap T. 41 S. S. 4 in N. W. R. 18 E.
	S. 3 in N. E.,S. 9 in S. W. and S. 10 in S. E. quadrants.
	Dug pits 18 x 18 x 12 ins. in each Sec. 5.5 ft. distant.
	Built mound of stone and earth 4 ft. base 2 ft. high
	W. of Cor.
	Land broken with washes.
	Soil sandy. 3rd rate.
	Vegetation shadscale and some grass.
	No timber.
	Land rough and broken. 80.00 chs.
	S. 89°56' E. on a random line between Secs. 3 & 10
40.00	Set temporary 1/4 Sec. Cor.
80.08	Intersect N. & S. line 14 lks. N. of Cor. of Secs. 2,3, 10 & 11. Thence I run, over broken land; through undergrowth.
	N. 89°50' W. on true line between Secs. 3 & 10.
39.50	Wash 20 lks. wide, 2 ft. deep, in hollow, drains S.45° E.
40.04	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 3 in N. half and S. 10 in S. half.
	Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.
	Pits impracticable.
80.08	The Cor to Secs. 3, 4, 9 & 10
	Land rolling mesa and cut by washes.
	Soil sandy 3rd rate.
	Vegetation shadscale and some grass.
	No timber.
	Land rough and broken. 80.08 chs.
	N. 0°02' W. on a true line between Secs. 3 & 4. Over level land; through undergrowth.
29.55	Top of break to wash.
32.75	Center of wash about 30 ft. below top, 70 lks. wide, 1 ft. deep. Drains E.

Chains. SUBDIVISION T. 41 S. R. 18 E.

40.00 Set iron post 3 ft. long 1 inch diameter 28 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 4 in W. half and S. 3 in E. half.

Built mound of stone 2.5 ft. base 2 ft. high S. of Cor.

Pits impracticable.

Cor. falls on the E. end of point between two washes.

44.90 Center of wash 30 ft. below top. 25 lks. wide 1 ft. deep. Drains S. E. Thence ascend.

56.00 Top of slope from wash.

79.98 Intersect 8th Standard Parallel South 10.89 chs. east of the St. Cor. of Secs. 33 and 34, heretofore described.

Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Closing Cor. of Secs. 3 & 4 T. 41 S. R. 18 E. Marked on brass cap T. 40 S. R. 18 E. in N. half, S. 33 in N. W., S. 34 in N. E., S. 3 in S. E. and S. 4 in S. W. quadrants. C.C. above intersection of closing line.

Built mound of stone 3 ft. base 2.5 ft. high S. of Cor.

Pits impracticable.

Land mostly level mesa broken by one large wash.

Soil sandy. 3rd rate.

No timber.

Vegetation light growth of shadscale.

May 18, 1909.

South of Auxiliary Base line. 4th Tier

May 19, 1909.

I set off 37°13' N. on Latitude arc and 19°44' N. on Declination arc and at 9 h, 6 m. a.m.l.m.t. I determine a meridian with the solar at the Cor. of Secs. 25, 29, 32 & 33. on the Auxiliary Base line previously described and ran over level land through undergrowth.

S. 0°03' E. between Secs. 32 & 33.

16.00 Rim about 10 ft. high bears E. & W.

38.00 Begin descent to San Juan river.

Chains. SUBDIVISION T. 41 S. R. 18 E.

40.00 Set iron post 3 ft. long 1 inch diameter 86 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 32 in W. half and S. 33 in E. half.
Built mound of stone 3 ft. base 2.5 ft. high W. of Cor.
Pits impracticable.
Cor. is 145 ft. below Secs. Cor. 1/2 mile N. and 70. ft. below rim.
Thence descend rapidly over sand and limestone ledges.

80.00 Set iron post 3 ft. long 3 ins. diameter 12 ins. in the ground in mound of stone and earth 2.5 ft. base 12 ins. high for Cor. of Secs. 4, 5, 32 & 33. Marked on brass cap T. 41 S. in N. half S. 32 in N. W., R. 18 E. S. 33 in N. E., T. 42 S. S. 5 in S. W. R. 18 E., S. 4 in S. E. quadrants. Impossible to set post 24 ins. in ground.
Built mound of stone 3 ft. base 2.5 ft. high W. of Cor.
Pits impracticable.
Cor. is about 5550 Ft. below 1/4 Cor. 1/2 mile N.
Land 1st half level, 2nd half steep descent to river.
Soil sandy. 3rd & 4th rate.
Vegetation slight growth of shadscale.
No timber.
Land mountainous and precipitous. 40.00 chs.

North of Auxiliary Base line.

From the Cor. of Secs. 28, 29, 32 & 33 on the Auxiliary Base line previously described, I run N. 0°03' W. between Secs. 28 & 29., over level land; through undergrowth.

4.90 Top of wash. 30 ft. above bottom.

13.40 Center of wash which heads about 12 chs. west. 40 ft. below top. 10lks. wide, 1 ft. deep. Drains E. Ascend.

25.00 Top of ascent out of wash.

27.25 Top of spur, 50 ft. above 1/4 Cor. N. This spur projects about 6 chs. E. Thence descend.

40.00 Set iron post 3 ft. long 1 inch diameter 26 ins. in the

Chains. SUBDIVISION T. 41 S. R. 18 E.

ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 29 in W. half and S. 28 in E. half.
Built mound of stone 2.5 ft. base 1.5 ft. high W. of Cor.
Pits impracticable.

42.40 Center of wash 50 ft. below top, 1 ch. wide, 1 ft. deep
Drains E. Thence ascend.

49.50 Top of wash.

80.00 Set iron post 3 ft. long 2 ins. diameter 20 ins. in the ground in mound of stone and earth 2 ft. base 4 ins. high for Cor. to Secs. 20, 21, 28 & 29. Marked on brass cap T. 41 S. S. 20 in N.W., R. 18 E. S. 21 in N. E., S. 28 in S. E. and S. 29 in S. W. quadrants.
Dug pits 18 x 18 x12 ins. in each Secs. 5.5 ft. dist.
Built mound of earth 2.5 ft. base 2. ft. high W. of Cor.
Cor. is 50 ft. above 1/4 Cor.
Land 1st half level, 2nd half broken and mountainous.
Soil sandy. 3rd & 4th rate.
Vegetation shadscale and some grass.
No timber.
Land mountainous and broken. 80.00 chs.

May 19: At noon hour sky overcast; obs. for lat. impossible.

East on a random line between Secs. 21 & 28.

40.00 Set temporary 1/4 Sec. Cor.

80.14 Intersect N. & S. line 5 lks. N. of Cor. to Secs. 21, 22, 27 & 28. Thence I run
N. 89° 58' W. on true line between Secs. 21 & 28.
Over level and unbroken mesa.

40.07 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 21 in N. half and and S. 28 in S. half.
Dug pits 18 x 18 x12 ins. E. & W. of post 3 ft. dist.
built mound of earth 3.5 ft. base 1.5 ft. high N. of Cor.

80.14 The Cor. of Secs. 20, 21, 28 & 29.

Land level.
Soil sandy. 3rd rate.
No timber.
Vegetation shadscale and some bunch grass.

N. 0°03' W. between Secs. 20 & 21. over rolling land, through undergrowth.

40.00 Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone and earth 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 20 in W. half and S. 21 in E. half.
Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
Cor. equals low point in slight easterly and westerly synclinal. Pits impracticable.

45.00 Road bears E. & W.; Bluff to John's Canon.

80.00 Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor of Secs. 16, 17, 20 & 21. Marked on brass cap T. 41 S. S. 17 in N. W., R. 18 E. S. 16 in N. E., S. 20 in S. W. and S. 21 in S. E. quadrants.
Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
Pits impracticable.

Land level.
Soil sandy. 3rd rate.
No timber.
Vegetation shadscale and some bunch grass.

E. 89°58' E. on random line between Secs. 16 & 21

40.00 Set temporary 1/4 Sec. Cor.

80.20 Intersect N. & S. line 12 lks. N. of Cor. of Secs. 15, 16, 21 & 22. Thence I run, through undergrowth, N. 89°53' W. on true line between Secs. 16 & 21. Ascend.

20.55 Top of break to wash.

25.00 Wash 15 lks. wide; 5 ft. deep. Drains S. E.

29.00 Top of wash.

40.10 Set iron post 3 ft. long 1 inch diameter 18 ins. in the

SUBDIVISION T.41 S., R. 18 E.

Chains	
	ground, in mound of stone and earth 2 1/2 ft.base, 6 ins. high for 1/4 sec.cor., marked on brass cap 1/4 S 16 in N.half, and S 21 in S.half; and raise a mound of stone 3 ft.base, 2 1/2 ft.high N.of cor. Pits impracticable. Impossible to set post over 18 ins.in the ground.
	Thence over rolling land.
80.20	The cor.of secs.16,17,20, and 21.
	Land, level and mountainous.
	Soil, sandy; 3d rate.
	No timber.
	Undergrowth shadscale and grass.
	Mountainous land 40.10 chs. May 19,1909:

May 20: At 8 h. 0 m.a.m.l.m.t.I set off 37° 15'N.on lat.arc; 19° 57'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.16,17,20, and 21.

Thence I run

N.0° 03'W.bet.secs.16 and 17,

Over broken land; through undergrowth.

19.00	Wash, 30 lks.wide, 1 ft.deep, drains S.70° E.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for 1/4 sec.cor., mkd.on brass cap 1/4 S 17 in W.half, S 16 in E.half; raise a mound of stone 2 1/2 ft.base, 2 ft.high E.of cor. Pits impracticable. Corner falls on E.bank of small wash which drains S.70° E.; hence mound of stone to E.
44.00	Center of wash, 10 lks.wide, 1 ft.deep, drains S.50°E.
80.00	Set iron post 3 ft.long, 2 ins.dia. 24 ins.in the ground for cor.of secs.8,9,16, and 17, marked on brass cap T 41 S S 8 in NW.; R 18 E S 9 in NE.; S 16 in SE.; and S 17 in SW.quadrants; raise a mound of stone 2 1/2 ft.base 2 ft.high W.of cor. Pits impracticable. Cor.sets on S.bank of a small wash.

SUBDIVISION T. 41 S., R. 18 E.

Chains.	
	Land, generally level; slightly broken by washes. Soil, sandy; 3d rate. Timber, scattering pine and pinon. Undergrowth shadscale and some grass.
	S.89° 53'E.on random line bet.secs.9 and 16,
40.00	Set temp.1/4 sec.cor.
80.22	Intersect N. and S.line 5 lks.N.of the cor of secs.9, 10,15, and 16. Thence I run
	N.89°51'W.on true line bet.secs.9 and 16,
	Ascending out of wash.
4.00	Top of wash.
11.54	E.side of wash.
16.00	Center of wash, 1 ch.wide, 2 ft.deep, drains SE.
20.80	West side of wash.
36.00	East side of wash.
40.11	Set iron post 3 ft.long, 1 in.dia., 26 ins.in the ground for 1/4 sec.cor., mkd.on brass cap 1/4 S 9 in N.half; S 16 in S.half; and raise a mound of stone 2 1/2 ft. 2 ft.high N.of cor. Pits impracticable.
49.50	Wash, 3 chs.wide, 50 ft.deep, drains SE.
60.00	West edge of wash.
80.22	The cor.of secs.8,9,16, and 17.
	Land.mountainous, rolling mesa,cut by washes.
	Soil, sandy and rocky; 3d and 4th rates.
	Undergrowth shadscale and some grass.
	Timber, scattering pine and cedar.
	Mountainous land 80.22 chs.
	May 20: At this cor.I set off 19°58'N.on decl.arc; and at 11 h.56 m.a.m.l.m.t.observe the sun on the meridian; the resulting lat.is 37° 16'N.
	N.0° 03'W. bet.secs.8 and 9,
	Over broken land.
0.10	W ash,8 lks.wide,1 ft.deep, drains N.80° E.
20.00	Wash 20 lks.wide, 1 ft.deep, drains E.

Chains. SUBDIVISION T. 41 S. R. 18 E.

40.00	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 8 in W. half and S. 9 in E. half.
	Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
	Pits impracticable.
77.00	Center of wash. 30 ft. below top. 15 lks. wide, 1 ft. deep. Drains E.
80.00	Set iron post 3 ft. long 2 ins. diameter 18 ins. in the ground in mound of earth and stone 2.5 ft. base 6 ins. high for Cor. of Secs. 4, 5, 8 & 9. Marked on brass cap T. 41 S. S. 5 in N. W., R. 18 E. S. 4 in N. E., S. 8 in S. W. and S. 9 in S. E. quadrants.
	Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
	Pits impracticable. Impossible to set post deeper.
	Land rolling and cut by small washes.
	Soil sandy. 3rd rate.
	Vegetation a few scattering cedar trees and shadscale.

S. 89°51' E. on random line between Secs. 4 & 9

40.00	Set temporary 1/4 Sec. Cor.
80.10	Intersect N. & S. line 7 lks. N. of Cor. of Secs. 3,4, 9 & 10. Thence I run
	N. 89°48' W. on true line between Secs. 4 & 9.
	over nearly level mesa; through undergrowth.
40.05	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 4 in N. half and S. 9 in S. half.
	Dug pits 18 x 18 x12 ins. E. & W. of post 3 ft. dist.
	Built mound of earth 3.5 ft. base 2 ft. high N. of Cor.
50.00	Begin gradual ascent.
80.10	The Cor. of Secs. 4, 5, 8, & 9.
	Land level.
	Soil sandy. 3rd rate.
	Vegetation shadscale and some grass.
	No timber.

N. 0°03' W. between Secs. 4 & 5.

To avoid a very high spur projecting from Cedar Mesa I offset East 8 chs. and ran over mountainous land N. 0°03' W. on offset line; through undergrowth.

16.00 End of spur to avoid which, we offset.

40.00 Point for 1/4 Sec. Cor. falls on inaccessible ledges and cliffs. It is impossible to set a Witness Cor. on line within the limits prescribed by the Manual of Instructions and the regulations governing the setting of iron post I therefore set the Witness Cor. on the offset line as follows:

Set iron ppost 3 ft. long 1 inch diameter 26 ins. in the ground for Witness Cor. to 1/4 Sec. Cor. Marked on brass cap T. 41 S. R. 18 E. in N. half, W. C. 1/4 S. 5 in S. W. and S. 4 in S. E. quadrant.

Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.

Pits impracticable.

57.88 Wash 25 lks. wide, 1 ft. deep. Drains E.

60.00 Ran west 8 chs. to line. Thence N. 0°03' W.

66.15 Cross wash 20 lks. wide, 1 ft. deep. Drains S. 80°E.

75.40 Wash 10 lks. wide, 2 ft. deep. Drains S. 70°E.

80.01 Intersect 8th Standard Paralell South, 10.90 chs. east of St. cor. of Secs. 32 and 33, heretofore described, where I set an iron post 3 ft. long 3 ins. diameter 24 ins. in the ground for Closing Cor. of Secs. 4 & 5 T. 41 S. R. 18 E. Marked on brass cap T. 40 S. R. 18 E. in N. half, S. 32 in N. W., S. 33 in N. E. S. 4 in S. E., S. 5 in S. W. quadrants. C.C. above intersection of closing line.

Built mound of stone 3 ft. base 2.5 ft. high S. of Cor.

Pits. impracticable.

Land rockyyand mountainous and cut by washes.

Soil 4th rate; rocky.

Subdivision T. 41 S., R. 18 E.

Chains. Vegetation shadscale.
Some scattering pine and pinon trees.
Land, mountainous and rough; exceptionally difficult to survey 80.01 chs. May 20, 1909.

May 21, 1909: At 8 h. 0 m.a.m.l.m.t.I set off 37° 14'N. on lat.arc; 20° 09'N.on decl.arc; and determine a meridian with the solar at the cor.of secs.20,21,28 and 29. Thence I run

West between secs.20 and 29 on auxiliary base line, Ascending over gently rolling mesa to apex of 2nd anticlinal; through undergrowth.

40.00 Set iron post 3 ft.long, 1 in.diam., 18 ins.in the ground, in mound of stone and earth 2½ ft.base, 8 ins. high for ¼ sec.cor., marked on brass cap ¼ S 20 in N. half and S 29 in S.half; raise mound of stone 2½ ft. 2 ft.high N.of cor. Pits impracticable. Impossible to set post over 18 ins.in the ground. Thence over apex 2nd anticlinal.

72.20 Top of canon of San Juan River bears NW. and SE. Second anticlinal begins slope to west; thence descend abruptly over sand and limestone ledges.

80.00 Set iron post 3 ft.long, 2 ins.diam., 24 ins.in the ground for cor.of secs.19,20,29, and 30, marked on brass cap T 41 S S 19 in NW., R 18 E S 20 in NE.; S 29 in SE.; and S 30 in SW.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.Pits impracticable.

Corner is 175 ft.below rim of canon.
Land 1st 72.20 chs. gently rolling mesa; balance rocky.
Soil, sandy and rocky; 3d and 4th rates.
Vegetation shadscale and grass.
No timber.

5th Tie

Subdivision T. 41 S., R. 18 E.

Chains.	
	West on random line bet.secs.19 & 30,
40.00	Set temporary ¼ sec.cor. limestone led
77.64	Intersect W.bdy.of T. 28 lks.N.of cor.of secs.19,24,25 and 30, heretofore described. Thence I run N.89° 48'E.on true line bet.secs.19 & 30
	Over mountainous land.
5.00	Top of rim of canon bears NW. and SE. Thence over mesa.
9.00	Top of rim of canon bears NNE. & SE. Descend rapidly, over lime and sandstone ledges.
37.64	Set a limestone 24 x 10 x 6 ins., 12 ins.in the ground, to bedrock; raise amound of stone 2½ ft.base, 6 ins. high around it for ¼ sec.cor., mkd.¼ S on N.face; and raise a mound of s one 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.
	Iron post could not have been made permanent.
	Corner stands about 3 chs.N.of San Juan River; thence ascending rapidly over sand and limestone ledges.
45.00	Wash drains S.
77.64	The cor.of secs.19,20,29, and 30.
	Land, very much broken, precipitous and rocky.
	Soil, 4th rate., rocky.
	Vegetation shadscale and a little grass.
	No timber.

From the cor.of secs.19,20,29, and 30 I run S.0° 03'E. bet.secs.29 and 30,

Descending over sand and limestone ledges,interlain with oilsand strata, from 1 to 100 ft.in thickness.

31.24	Right bank of San Juan River,
	Set an iron post 3 ft.long, 1 in.diam., 26 ins.in the ground for meander cor.of frac'l secs.29 and 30, mkd. on brass cap T 41 S R 18 E in N.half; S 30 in W., and S 29 in E.half; and M C on the side toward the

river and build mound of stone 2.5 ft. base 2 ft. high N. of Cor. Pits impracticable.
Land mountainous.
Soil rocky. 4th rate.
No timber.
Land mountainous. 31.24 chs.

From the Cor. of Secs. 19, 20 29 & 30 on the Auxiliary Base line I ran
N. 0° 03' W. between Secs. 19 & 20
Ascemding over sandstone and limestone ledges.
7.35 Top of canon of San Juan river bears N.W. & S. E.
Thence over gently rolling mesa.
40.00 Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground on rock in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 19 in W. half and S. 20 in E. half.
Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
Pits impracticable. Impossible to set post deeper.
Cor. falls 25 lks. west of sandstone ledge 12 ft. high and is 140 ft. above Sec. Cor. 1/2 mile south.
44.00 Western Terminus of slight easterly and westerly Synclinal.
46.57 Top of mesa bears S. 50° W. and N. 50° E. Descend.
53.20 Wash 20 ft. below top. 15 lks. wide, 1 ft. deep. Drains S. W. Thence ascend.
54.00 Top of wash.
64.67 Road bears E. & W. Bluff to John's Canon.
80.00 Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. of Secs. 17, 18, 19, & 20. Marked on brass cap T. 41 S. S. 18 in N. W. R, 18 E. S. 17 in N. E., S. 19 in S. W. and S. 20 in S. E. quadrants.
Built mound of stone 2.5 ft. base 1.5 ft. high W. of Cor.
Pits impracticable.

Cor. falls about 5 chs. S. of foot of slope to Cedar point.
Land except 1st 7.35 chs. rolling mesa cut by washes.
Soil 3rd & 4th rate. Sandy.
Vegetation shadscale and some bunch grass. No timber.
Mountainous land 7.35 chs.
May 21: At noon hour sky overcast, obs. for lat. impossible.

East on random line between Secs. 17 & 20.

40.00 Set temporary 1/4 Sec. Cor.

80.02 Intersect N. & S. line at Cor. of Secs. 16, 17, 20 & 21.

Thence I run West on true line between Secs. 17 & 20.
Over gently rolling land,

40.01 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 17 in N. half and S. 20 in S. half.
Dug pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist.
Built mound of earth 3.5 ft. base 2 ft. high N. of Cor.
Cor. falls about 16 chs. S. E. of base of slope from Cedar point and is 40 ft. above Cor. of Secs. 16, 17, 20 & 21. Cor. also equals Apex 2nd Anticlinal. Thence over apex 2nd Anticlinal.

69.25 Small wash 10 lks. wide 1 ft. deep. Drains S.

74.00 Top of spur 20 ft. above foot, bears S. 8 chs.

77.00 Foot of spur.

80.02 The Cor. of Secs. 17, 18, 19 & 20. Cor. is 40 ft. above 1/4 Cor. 1/2 mile E.
Western slope 2nd Anticlinal begins at this Cor.
Land E. half gently rolling. West half broken, rocky and mountainous.
Soil sandy loam; 1st and 2d rate.
Vegetation shadscale and grass.
No timber.
Land mountainous and broken. 40.00 chs.

Chains. SUBDIVISION T. 41 S. R. 13 E.

S. 89°48' W. on random line between Secs. 18 & 19.

40.00 Set temporary 1/4 Sec. Cor.,

77.55 Intersect W. bdy. of Tp. 28 lks. S. of point for Cor. secs. 13,18,19, and 24.
Thence I run E. on true line between Secs. 18 & 19.

Ascend abruptly.

3.50 Wash in bottom of canon, drains SW.

6.35 Set iron post 3 ft. long 2 ins. diameter 12 ins. in the ground on rock for Witness Cor. to Secs. 13, 18, 19 & 24. Marked on brass cap W. C. T. 41 S. in N. half R. 17 E. S. 13 in N. W., R. 18 E. S. 18 in N. E., R. 17 E. S. 24 in S. W. and R. 18 E. S. 19 in S. E. quadrants; raise mound of stone 14 ins. high around post.

Built mound of stone 3 ft. base 2.5 ft. high N. of Cor.

Pits impracticable. Impossible to set post deeper.

This W. C. sets on top of a perpendicular cliff 300 ft. high.

21.33 Top of steep ascent from river.

37.55 Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 18 in N. half and S. 19 in S. half. Pits impracticable.
Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.

55.95 Top of canon of San Juan river. Thence along edge of top of canon.

70.31 Road bears S. 30°E. and N. 30° W.

77.55 Cor. of Secs. 17, 18, 19 & 20.

Land broken and rocky and mountainous.

Soil 4th rate; rocky.

Vegetation shadscale and some grass in E. half.

No timber.

Land mountainous. 77.55 chs.

Impossible to set 1/4 sec. cor. over 12 ins. in ground.

May 21, 1909.

May 22, 1909.

I set off 37°15' N. on Latitude arc and 20°21' N. on Declination arc and at 8 h. 10 m. a.m.l.m.t. I determine

Chains. SUBDIVISION T. 41 S. R. 18 E.

the meridian at the Cor. of Secs. 17, 18, 19 & 20 and run

N. 0°03' W. between Secs. 17 & 18 parallel to Apex 2nd Anticlinal. Ascending over sand and limestone ledges and slide rock on slope south and west from Cedar point.

5.00 Begin ascent over slide rock.

40.00 Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 18 in W. half and S. 17 in E. half.

Built mound of stone 3 ft. base 2.5 ft. high W. of Cor.

Pits impracticable. Impossible to set post deeper.

Thence ascend abruptly over sand and limestone ledges.

67.10 Top of Cedar mesa bears S. 10° E. about 1000 ft. high

Thence over rolling bare oil sandstone through scattering timber.

80.00 Set iron post 3 ft. long 2 ins. diameter 12 ins. in the ground in mound of stone and earth 2.5 ft. base 1. ft. high for Cor. of Secs. 7,8,17 &18. Marked on brass cap T. 41 S. S. 7 in N. W., R. 18 E. S. 8 in N. E., S. 17 in S. E. and S. 18 in S. W. quadrants. Raised a mound of stone 2.5 ft. base 2 ft. high W. of Cor.

Pits impracticable. Impossible to set post deeper.

A pinon tree 12 ins. diameter bears N. 43°13' E. 94.5 lks. Marked T. 41 S. R. 18 E. S B. T.

A pinon tree 10 ins. diameter bears S. 74° 33' E. 237.5 lks. Marked T. 41 S. R. 18 E. S 17 B. T.

A pinon tree 12 ins. diameter bears S. 78°57' W. 125.5 lks. Marked T. 41 S. R. 18 E. S. 18 B. T.

A pinon tree 10 ins. diameter bears N. 36°43' W. 216.2 lks. Marked T. 41 S. R. 18 E. S. 7 B. T.

Land broken, rocky and mountainous.

Soil 4th rate; rocky.

Timber on mesa, scattering cedar and pinon pine.

Chains. SUBDIVISION T. 41 S. R. 18 E.

Land mountainous. 80.00 chs.

East on random line between Secs. 8 & 17.

40.00 Set temporary 1/4 Sec. Cor.

80.12 Intersect N. & S. line 19 lks. S. of Cor. of Secs. 8, 9, 16 & 17.

Thence I run S. 89° 52' W. on true line between Secs. 8 & 17. Ascending over slide rock lime and sandstone ledges.

40.06 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 8 in N. half and S. 17 in S. half.

Built mound of stone 3.5 ft. base 2.5 ft. high N. of Cor. Pits impracticable. Whence

Whence A pinon tree 12 ins. diameter bears N. 21° E. 30 lks. Marked 1/4 S 8 B T [illegible] W. S. [illegible] T.

A large sandstone rock bears S. 48° W. 45 lks. Marked 1/4 S. 17 B. C. Thence

Ascending rapidly over slide rock, sand and limestone ledges.

61.80 Top of cedar mesa about 1000 ft. above 1/4 Cor. bears N. & S. Enter scattering timber. and bare oil sand - stone surface.

80.12 The Cor. of Secs. 7,8,17 & 18

Land, except mesa, broken and rocky.

Soil 4th rate; rocky.

Timber - Cedar and pinon pine.

Land mountainous and excepticnally difficult to survey. 40.06 chs.

West on a random line between Secs. 7 & 18.

40.00 Set temporary 1/4 Sec. Cor.

77.40 Intersect W. bdy. of T. 21 lks. N. of Cor. of Secs. 7, 12, 13, & 18, heretofore described.

Chains. SUBDIVISION T. 41 S. R. 18 E.

Chains.	
	Thence I run
	N. 89°51' E. on true line between Secs. 7 & 18.
	descending over sand and limestone ledges.
8.00	Wash in canon 150 ft. below top, 15 lks. wide, 3 ft. deep
	Drains. S. Thence ascend out of canon.
14.00	Top of rim of canon bears S. 20°E. Thence over mesa.
20.00	Road to Bluff bears S. 45°E.
22.00	Begin ascent over slide rock.
34.00	Foot of very precipitous lime and sandstone cliff.
	Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground on rock in mound of stone 2.5 ft. base 14 ins. high for Witness 1/4.Sec. Cor. Marked cW.C. 1/4 S. 7 in N. half and S. 18 in S. half.
	Built mound of stone 2.5 ft. base 2 ft. high N. of Cor. Pits impracticable.
37.40	Falls on bare precipitous sandstone ledge. Not possible to set permanent Cor.
43.00	Top of precipitous ledge bears N. E. & S. W. Continue ascent.
67.53	Top of cedar mesa about 1000 ft. above lower mesa bears N. W. & S. E. Intersect surface of bare oil sandstone.
77.40	The Cor. of Secs. 7,8,17 & 18.
	Land broken.
	Soil 4th rate; rocky.
	Land mountainous. 77.40 chs.
	N. 0°03' W. between Secs. 7 & 8. Paralell to Apex 2nd Anticlinal.
	Ascending gradually through scattering timber.
14.80	Oil sandstone ledge 4 ft. highsbears E. & W. Leave bare oil sandstone surface.
25.00	Top of low sandy ridge bears E. & W.
35.45	Center of wash 10 lks. wide, 6 ft. deep. Drains E.
40.00	Set iron post 3 ft. long 1 inch diameter 26 ins. in the

Chains. SUBDIVISION T. 41 S. R. 18 E.

ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 7 in W. half ans S. 8 in E. half.

Dug pits 18 x 18 x 12 ins. N. & S. of post 3 ft. dist. built mound of earth 3.5 ft. base 2 ft. high W. of Cor.

A pine tree 5 ins. diameter bears S. 72° E. 33.5 lks. Marked 1/4 S. 8 B. T.

A pine tree 18 ins. diameter bears S. 64° W. 65 lks. Marked 1/4 S. 7 B. T.

57.00 Top of slight ascent. Cross rolling mesa.

62.25 Center of wash 8 lks. wide, 6 ft. deep. Drains E.

Ascend gradually and enter sage brush.

72.00 Leave timber and enter sage brush.

79.00 Leave sagebrush and enter timber.

80.00 Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. of Secs. 5,6,7 & 8. Marked on brass cap T. 41 S. S. 6 in N. W. R, 18 E. S. 5 in N. E. S. 7 in S. W. and S. 8 in S. E. quadrants. Raised a mound of stone 2.5 ft. base 2 ft. high W. of Cor.

Pits impracticable. Whence

A pinon tree 8 ins. diameter bears N. 39° 02' E. 146.2 Lks. Marked T. 41 S. R. 18 E. S. 5 B. T.

A cedar tree 12 ins. diameter bears S. 64° 58' E. 46 lks. Marked T. 41 S. R. 18 E. S. 8 B. T.

A cedar tree 12 ins. diameter bears S. 24° 17' W. 63.5 lks. Marked T. 41 S. R. 18 E. S. 7 B. T.

A cedar tree 12 ins. diameter bears N. 15° 43' W. 32 lks. Marked T. 41 S. R. 18 E. S. 6 B. T.

Land rolling mesa.

Soil 4th rate; rocky.

Timber - scattering cedar and pinon pine. Undergrowth sagebrush. Land difficult to survey. 80.00 chs.

May 22: At noon hour sky overcast; obs. for lat. impossible.

N. 89° 52' E, on a random line between Secs. 5 & 8

40.00 Set temporary 1/4 Sec. Cor.

Chains. SUBDIVISION T. 41 S. R. 18 E.

80.08 Intersect N. & S. line 9 lks. S. of Cor. of Secs. 4, 5, 8 & 9. Thence I run
S. 89° 48' W. on true line between Secs. 5 & 8. Desc.
3.00 Gulch 30 lks. wide, 10 ft. deep. Drains S. 35° E.
Ascend rapidly over slide rock and sandstone ledges.
17.00 About 10 chs. N. of this point are 3 cliff dwellings. each having 2 openings or doors.
26.00 Edge of cedar mesa bears S. 30° E. & N. 40° W. about 1000 ft. above Sec. Cor. to Secs. 4,5,8 & 9. Ascend gradually. Enter dense timber, bears NE. and SW.
33.00 Top of ascent and low hill bears S. 20° E.
40.04 Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground on rock in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 5 in N. half and S. 8 in S. half. Whence
A pinon tree 9 ins. diameter bears S. 78° 15' W. 20.5 lks. Marked T1/4 S. 8 B. T.
A pinon tree 6 ins. diameter bears N. 47° 15' E. 30.8 lks. Marked 1/4 S. 5 B. T.
Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.
Pits impracticable.
41.00 Small gulch 10 lks. wide 2 ft. deep. Drains S. 10° E.
60.00 Top of low hill and descend very gradually.
80.08 The Cor. of Secs. 5,8, 7 & 8.
Land rolling mesa.
Soil 3rd & 4th rate; sandy and rocky.
Dense timber cedar and pinon pine. 54.08chs.
Land mountainous. 26 chs.
Difficult to survey. 80.08 chs.

S. 89° 51' W. on a random line between Secs. 6 & 7.
40.00 Set temporary 1/4 Sec. Cor.
77.50 Intersect W. bdy. of T. 19 lks. S. of Cor. of Secs. 1, 6,7 & 12: heretofore described. Thence I run, over rolling mesa.

Chains. SUBDIVISION T. 41 S. R. 18 E.

	N. 89°59' E. on true line between Secs. 6 & 7.
13.00	Top of flat top plateau bears N. & S. Leave timber, scattering, enter sage brush.
33.50	Top of break of ascent and descend gradually.
37.50	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 6 in N. half and S. 7 in S. half.
	Dug pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist. built mound of earth 3.5 ft. base 1.5 ft. high N. of Cor.
44.00	Top of low sandy hill bears N. & S. and descend.
61.00	Small wash 7 lks. wide 1 ft. deep. Drains S. 20 E.
68.00	Top of low hill slopes south.
70.00	Small ravine 4 lks. wide 1 ft. deep. Drains S. E.
75.00	Enter scattering timber.
77.50	The Cor. of Secs. 5.6.7 & 8.
	Land rolling mesa.
	Soil 1st rate: sandy loam.
	Vegetation sage brush and scattering timber.
	on the east and west ends of line.
	N. 0°03' W. on true line between Secs. 5,& 6 parallel to Apex 2nd Anticlinal.
	Ascending gradually through dense cedar and pinon trees and some sage brush.
16.30	Top of low ridge, broken pottery on ridge.
24.35	Center of wash 5lks. wide, 6 ft. deep. Drains E.
28.35	Enter thin growth of cedar and pinon trees and sage brush.
40.00	Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. Marked on brass cap 1/4 S. 6 in W. half and S. 5 in E. half. Whence
	A pine tree 15 ins. diameter bears N. 17°23' W. 1.59 chs. Marked 1/4 S. 6 B. T.
	A pine tree 12 ins. diameter bears S. 56°30' E. 1.77 chs.

Chains. SUBDIVISION T. 41 S. R. 18 E.

Marked 1/4 S. 5 B. T.

Dug pits 18 x 18 x 12 ins. N. & S. of post 3 ft. dist.

built mound of earth 3.5 ft. base 1.5 ft. high E. of Cor.

41.64 Center of wash 5 lks. wide, 10 ft. deep between banks bears S. 50° E.

44.80 Leave timber and enter sage brush with scattering trees bears S. 60° E.

62.00 Top of low ridge. Descend gradually.

64.50 Wash drains S. 45° E.

76.00 Top of slight ascent. Enter timber.

80.02 Intersect 8th Standard Paralell South 10.89 chs. East of the Standard Cor. of Secs. 31 & 32 T. 40 S. R. 18 E., heretofore described.

Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Closing Cor. of Secs. 5 & 6 T. 41 S. R. 18 E.

Marked on brass cap T. 40 S. R. 18 E. in N. half S. 31 in N. W., S. 32 in N. E., S. 5 in S. E. and S. 6 in S. W. quadrants and C. C. above intersection of closing line

Whence

A pinon tree 8 ins. diameter bears S. 42° 05' E. 99 lks.

Marked T. 41 S. R. 18 E., S. 5 B. T. C. C.

A pinon tree 12 ins. diameter bears S. 72° 50' W. 53 lks.

Marked T. 41 S. R. 18 E. S. 6 B. T. C. C.

Land rolling mesa covered with scattering cedar and pinon timber or sage brush.

Soil 1st rate; sandy loam.

Land exceptionally difficult to survey. 80.02 chs.

May 22, 1909.

MEANDERS OF SAN JUAN RIVER

Through T. 41 S. R. 18 E.

Meander of San Juan River, Right Bank; down stream

I commence at the Meander Cor. of fractional Secs. 2 & 35 on the S. bdy. of the Tp. which is a 3 inch iron post mkd. and witnessed as heretofore described.

At this Cor. on June 11" 1909, I set off 77°10' E, on Latitude arc. 82°05' E. on Declination arc. and at 9 h. 15 m. a.m.l.m.t. I determine a meridian with the solar. Thence I run with the meanders in Sec. 35.

N. 40°30' W. 4.00 chs. Foot of bank 70 ft. high.

N. 31°00' W. 5.40 chs.

N. 20°00' W. 11.00 chs.

N. 25°15' W. 7.00 chs.

N. 10°30' W. 7.40 chs.

N. 8°45' W. 4.50 chs.

N. 5°15' W. 9.00 chs.

N. 10°15' E. 3.20 chs.

N. 29°45' E. 9.00 chs.

N. 40°00' E. 9.00 chs.

N. 65°15' E. 8.00 chs.

S. 89°00' E. 4.80 chs.

S. 87°10' E. 9.08 chs. To the Meander Cor. of fractional Secs. 35 & 36

Land scarcely any river bottom.

Land rocky slope to river. Some sand.

Soil 4th rate; rocky and sandy 3d rate.

Land, exceptionally difficult to survey 60.08 chs.

June 11: At noon hour sky overcast; obs. for lat. impossible.

Thence in Sec. 36.

N. 87°45' E. 5.00 chs.

N. 60°15' E. 5.00 chs.

N. 39°30' E. 9.00 chs.

N. 7°00' E. 4.80 chs.

N. 25°00' W. 8.40 chs.

N. 67°30' W. 8.00 chs.

West 5.10 chs. To the Meander Cor. of fractional Secs. 35 & 36.

Land rocky slope to river with some sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 45.10 chs.

June 11" 1909.

At this Cor. on June 12" 1909, I set off 37°12' N. on Latitude arc. 23°09' E. on Declination arc. and at 8 h. 15 m. a.m.l.m.t. I determine a meridian with the solar

Thence in Sec. 35

Atthis Cor. I check course to flag on line and find Course

N.	0°01' W.	courses correct.
S.	79°30' W.	18.70 chs.
S.	87°00' W.	16.90 "
S.	81°30' W.	4.80 "
S.	87°45' W.	26.40 "
S.	44°00' W.	8.60 "
S.	57°30' W.	3.90 "
S.	63°15' W.	5.00 "
S.	83°15' W.	3.30 chs.
N.	75°15' W.	4.00 "
N.	43°00' W.	4.90 "
N.	24°30' W.	8.00 "
N.	11°15' W.	9.80 "
N.	6°15' W.	19.90 "

N. 47°30' W. 11.37 1/2 chs. To the Meander Cor. of fractional Secs. 34 & 35.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 138.975 chs.

June 12: At this cor. I set off 23°10'N. on decl. arc; and at 11 h. 58m. a.m.l.m.t. observe the sun on the meridian; the resulting lat. is 37° 12'N.

MEANDERS OF SAN JUAN RIVER

Through T. 41 S. R. 18 E.

Thence in Sec. 34.

S. 85°15' W. 10.50 chs.

S. 54°00' W. 12.00 "

S. 30°30' W. 12.30 "

S. 7°30' W. 13.20 "

S. 0°03' W. 19.50 " At 12 chs. Vendenhall Oil Seep.

To the Meander Cor. of fractional Secs. 3 & 34.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 67.50 chs.

June 12" 1909.

For the next five miles of Meanders the river flows in T. 42 S. R. 18 E.

June 16, 1909: At M.C. of Secs. 4 and 33, I set off 37°12' N. on Latitude arc. 23°22' N. on Declination arc. and at 2 h. 4 m. p. m. l.m.t. I determine a meridian with the solar. Thence I run with the Meanders in Sec. 33

N. 46°30' W. 6.00 chs.

N. 3°15' W. 4.50 "

N. 38°45' W. 6.40 "

N. 81°15' W. 6.70 "

S. 77°45' W. 4.00 "

S. 70°00' W. 13.00 "

S. 73°00' W. 4.80 "

S. 84°15' W. 4.00 chs.

N. 69°30' W. 1.60 "

N. 87°45' W. 5.30 "

S. 69°00' W. 4.00 "

S. 45°00' W. 7.00 " Fenaker Oil Seep.

S. 22°45' W. 4.00 " To the Meander Cor. of fractional Secs. 33 & 4

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 71.30 chs.

For about a mile of Meanders the river flows in T. 42 S. R. 18 E. June 18" 1909.

June 18" 1909, at the Meander Cor. of fractional Secs. 5 & 32 I set off 37°12' N. on Latitude arc. 23°26' E. on Declination arc. and at 8 h. 10 m. a.m.l.m.t. I determine a meridian with the solar. Thence in Sec. 32

N. 33°45' W. 7.40 chs.

N. 42°45' W. 8.50 "

N. 35°15' W. 3.80 "

N. 24°15' W. 3.60 "

N. 22°15' W. 6.20 "

N. 3°00' E. 6.20 "

N. 18°30' E. 14.80 "

N. 33°30' W. 9.10 "

N. 52°15' W. 4.60 "

N. 77°45' W. 10.80 "

N. 62°30' W. 4.80 "

N. 29°30' W. 1.84 " To the Meander Cor. of fractional Secs. 31 & 32.

Land rocky patches covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water. in places.

Land exceptionally difficult to survey. 81.64 chs.

Thence in Sec. 31

N. 29°30'W. 5.83 chs.

N. 17°30'E. 4.70 "

MEANDERS OF SAN JUAN RIVER.

Through T. 41 S. R. 18 E.

Sec. 31.

N. 44° 30' E. 8.10 chs. To the Meander Cor. of fractional Secs. 31 & 32.

Land 1st rate, 10 chs., Remainder rocky slope 4th rate.

Soil sandy river bottom; 3d rate.

No timber.

A few willows at edge of water. 12.66 chs.

Thence in Sec. 32.

N. 44° 30' E. 1.40 chs.

N. 64° 15' E. 8.10 chs. Monaker Trail. Course S. 70° E.

N. 40° 13' E. 4.40 chs. To the Meander Cor. of fractional Secs. 29 & 32.

Land, to line of Sec. 31 rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water. 13.90 chs.

June 18" 1909.

At this Cor. on June 18" 1909. I set off 37° 13' N. on Latitude arc. and 23° 27' N. on Declination arc. and at 7 h. 55 m. a.m.l.m.t. I determine a meridian with the solar.

Thence in Sec. 29.

N. 29° 30' E. 24.80 chs. Occasional oil seep visible only
N. 21° 30' W. 11.40 " in extreme hot weather and very
N. 66° 00' W. 12.20 " low water, appears to come from
N. 40° 15' W. 4.70 " strata below river bottom.
N. 31° 45' W. 9.43 " To the Meander Cor. of fractional Secs. 29 & 30

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water. 62.53 chs.

June 19: At noon hour sky overcast; obs. for lat. impossible.

MEANDER OF SAN JUAN RIVER

Through T. 41 S. R. 18 E.

Thence in Sec. 30

N. 37°00' W. 24.70 chs.

N. 54°15' W. 17.50 chs.

S. 89°00' W. 14.40 chs.

S. 51°15' W. 20.50 chs.

S. 67°30' W. 18.70 chs.

S. 73°54' W. .85 chs. To the Meander Cor. of fractional Secs. 25 & 30.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows and hackberry trees at edge of water.

River flows in T. 41 S. R. 17 E. nearly a mile.

Land exceptionally difficult to survey. 96.65 chs.

June 19" 1909.

June 20" after completing Meanders in the S. E. 1/4 of Sec. 24 T. 41 S. R. 17 E., I continued with and completed Meanders in T. 41 S. R. 18 E. in fractional Sec. 19.

Thence I run with Meanders in Sec. 19

N. 34°00' E. 5.50 chs.

N. 22°15' E. 20.00 chs.

N. 31°45' W. 17.50 chs.

N. 71°45' W. 1.52 chs. To the Meander Cor. of Secs. 19 & 24.

Land rocky slope partially covered with sand.

Soil 4th rate.; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 44.52 chs.

June 30" 1909.

T. 41 S. R. 18 E.

GENERAL DESCRIPTION.

The N. W. Cor. of this township, is covered by cedar mesa, which at this point averages about 1000 ft. above the lower mesa especially in parts of Secs. 5,7,8,17 18 and all of Sec. 6. Parts of 5,6,& 7 are covered with dense and scattering scrub pine and cedars.

In the above mentioned sections there are numerous mounds or small hillocks on which are strewn large quantities of pottery of prehistoric design and decoration. The soil on the higher plateaus is 1st rate, along the rim or edge of the mesa and for several hundred feet back from rim the rock is bare, with no soil whatever, leaving exposed what appears to be an extinct oil sand with a milky-white color.

The western dip of the 2nd Anticlinal brings this same sand to the water's edge in the San Juan river about 11 miles west of my survey, where it is now seeping oil as heretofore mentioned.

In the western portion of Sec. 17 and the S. Western portion of Sec. 20 the 2nd Anticlinal has reached its highest elevation which is about 500 ft. higher in Geological as well as sea elevation, above the 1st Anticlinal heretofore mentioned.

From about the center of Secs. 8,17 & 20 the surface and the sedimentary stratas have a very gentle dip to the east towards the main Synclinal of about 125 ft. per mile especially along the east and west line between Secs. 16,-21, 15,-22, 14,-23,&13 & 24. Mendenhall oil seep. In the south - east 1/4 of Sec. 34 is located the Mendenhall oil seep heretofore mentioned. No actual seepage was visible owing to high water; however the odor of oil was perceptible and the dip of the Mendenhall oil sand strata in most places over 100 ft. in thickness would bring the bottom of said sand below the water's edge at this point.

T. 41 S. R. 18 E.

GENERAL DESCRIPTION. Continued.

Honaker Oil Spring.

The Honaker Spring is located at the river's edge in the South West 1/4 of Sec. 33, extending up and down the river for full 1000 ft.

At this spring there is a copious discharge only in the extreme hot weather. During the winter and early spring months but very little oil escapes from this spring, owing to the congealed condition of the face of the oil sand. The discharging oil has collected large quantities of the floating sands of the river and the petroleum residue with its parafine content has cemented the sands in places over three and four feet in thickness, thus assisting in preventing the oil from e wasting into the river. This sand containing oil burns freely creating a white flame when placed on the fire.

In order to make an estimate of the discharge from this spring I measured off with tape along the edge of the water 100 ft. and counted, with two assistants, the number of large amber colored bubbles of oil that came to the surface within that horizontal distance, and it was found that at least one large bubble of oil per second of time was discharging per 100 ft.

This experiment was tried at a most favorable time of the year, during the month of June, when the weather was extremely hot and the river had been very high just previously and had torn loose some of the coagulated oil and sand from the exposed face of the oil producing strata.

The same oil strata was found to be seeping oil at a point several hundred feet down the river on this same date and at a point about 30 feet above the water.

The geological depth between the top of the Goodridge Sand and the bottom of the Honaker Sand is 1197 feet.

T. 41 S.-R. 18 E.

GENERAL DESCRIPTION. Continued.

OCCASIONAL OIL SEEP.

This seep is located in the bottom of the river about 1/2 mile down the river below the foot of the Honaker Trail in the South West 1/4 of Sec. 29.

The oil seeping from this point is only visible in extreme hot weather and when the river is very low and seems to come through a small fracture in the lenticular lime stone strata, the top surface of which is visible at low water.

The Honaker Trail at which point the river canon is 1578 feet deep, built by placer gold prospectors some fifteen years ago, is the only place where supplies can be taken down by pack animals to river after leaving the Mendenhall Trail in Sec. 12 T. 42 S. R. 18 E. within the line of my survey.

The stratas exposed along this trail show at least 8 oil sands the faces of which have been hermetically sealed by the solidification of the petroleum residue. These oil sands interlay lenticular lime stone stratas containing marine organism all fossiliferous, also fossiliferous sandstone stratas, especially occuring at the edge of the rim of the river canon. The trail crosses and has been blasted out along one strata of carboniferous slate or black shale over 12 feet thick at this point which emits a very perceptible odor of petroleum when broken.

I have every reason to believe that the heretofore mentionedoil sands contain oil in paying quantities wherever they may be penetrated with the drill at distances ranging from 1/2 to one mile back from the rim of river canon or exposed edges of the oil sands.

Each oil sand strata is sealed by being overlain and underlain by a close grained lime stone strata which is impervious to the oil and which ranges from a few feet

GENERAL DESCRIPTION. Continued.

to over one hundred feet in thickness, thus causing said oil sand stratas to retain their individual oil content.

The only problematical proposition is the depth of the sedimentary formation below the deepest eroded points reached by the river within both the first and second Anti - Clinals before the metamorphic formation is reached.

Based upon my own observations in connection with Mr. F.V Haydens geological reports in Southwestern Colorado where some of these sedimentary formations have been raised to and exposed on the surface indicate that said sedimentary formation in this oil field extends to a total depth of at least 5,000 ft. which would still leave an approximate 2,500 feet of sedimentary formation below the lowest geological elevation eroded by the river and which I have no doubt contains oil sands that will prove fully as productive, if not a great deal more so, than any other sands heretofore mentioned.

Especially considering that the entire exposed sedimentary formation from the top of Cedar mesa down to the water's edge in the San Juan river, over 2,407 feet in thickness (determined by actual survey) is fossiliferous. There can be no doubt but that there are great quantities of oil contained within the lower stratas below the river within both Anti - Clinals. There being no hydrostatic pressure below the Goodridge Sand it is quite evident that each oil sand strata contains its original oil content regardless of where the sand is penetrated, thus accounting for the fact that the Galloway oil well in Sec. 25 T. 40 S. R. 17 E. has encountered the oil well up near the top of the 2nd Anti-Clinal and that the oil has also been encountered in the lowest sea elevation, In Portions of the main

GENERAL DESCRIPTION. Continued.

Syn-Clinal heretofore and hereafter described.

All oil seeps and The Honaker Oil Spring occur at four differentl geological horizons.

The Ashenhurst Oil wells, heretofore described in the N. E. 1/4 Sec. 1 are the only drilling operations thus far started in this township, although since leaving the field I have been informed that a No. 28 Star Machine is located in the N. W. 1/4 of Sec. 13, said machine being owned by The London San Juan Oil Co.

Wherever sand and gravel bars have collected especially in Secs. 32 - 31, 29 - 30 & 35 there is contained in the material a plastic sand that contains fine placer gold in quantities from 50¢ to $3.00 per yard, determined by numerous panning and fire assay tests.

In the Southeast 1/4 of Sec. 23 in a box canon forming one of the main branches of Amphitheatre Gulch is located the only perpetual spring of water within the township and is a very weak flow, would not afford water for over ten head of horses. Spring not seen from line.

To obtain water for oil drilling purposes it will be necessary to either haul from San Juan river at Mexican Hat in T. 41 S. R. 19 E. or construct conservation reservoirs. As the water in the San Juan river is unavailable owing to the depth of the canon. Scattering scrub pine and cedar timber occurs in Secs. 4 - 8, 9 - 17. Around the foot of the east slope of Cedar mesa patches of the best grass within my entire survey occur in Secs. 9 - 17, 16 - 20 & 21. I consider the lands in this township strictly valuable for their mineral content in gold and petroleum values. Some values for grazing might be considered but they are so infinitesimal that they are not worth considering. Water power sites for electrical generation are too numerous to mention occurring along the San Juan river. However, dam construc-

tion would be exceptionally hazardous owing to the narrow canon, the swift current of the river and the sudden rise of the water in the river during the spring and summer months. There are no settlers in this township.

June 20, 1909

Elmer C. Miller

U.S. Deputy Surveyor.

NOTE. In this and adjoining townships included in my contract I have stated that there was no grazing land worth mentioning. However, the Mormon residents of Bluff, Utah have been using the lower mesa sections for their Winter pasture only for a great many years; pasturing from 5,000 to 10,000 head of cattle here every Winter and driving them North to near the Blue Mountains every Spring on account of the drying up of the water. The cattle apparently live during the Winter principally on the shadscale brush heretofore mentioned.

June 20, 1909

Elmer C. Miller

U.S. Deputy Surveyor.

BOOK A-367

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of _____

_____

showing the respective capacities in which they acted:

For list of names and final oath of assistants see book "P"..., *Chainman.*

T. 41 S., R. 16 E. _____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all those parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented on the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

_____

_____

8–151

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surv
solemnly swear that, in pursuance of a contract received from _____
United States Surveyor General for _____ bearing date
_____ day of _____, 190 , I have well, faithfully, and truly, in
proper person, and in strict conformity with the instructions furnished by the United States Su
General for _____ the Manual of Surveying Instructions, and the laws
United States, surveyed all those parts or portions of _____
For final oath of deputy see book "P" T. 41 S., R. 16 E.

_____ of the _____
_____ meridian, in the _____ of _____, which are represented i
foregoing field notes as having been surveyed by me, and under my direction; and I do further sol
swear that all the corners of said survey have been established and perpetuated in strict accordance
the Manual of Surveying Instructions, and the special written instructions of the United States Sur
General for _____ and in the specific manner described in the field notes, and
the foregoing are the original field notes of such survey.

_____
United States Deputy Surv

Subscribed by said _____, and sworn to before me
this _____ day of _____, 190

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL.

Salt Lake City, Utah, June 19,

The foregoing field notes of the survey of the Subdivision and Meander lines
of Township No.41 South, Range No. 16 East of the Salt Lake Base a
Meridian, Utah.

_____

_____

_____

executed by Elmer E.Miller
under his contract No. 302, dated February 25, 1909, having
critically examined, and the necessary corrections and explanations made, the said field notes, an
surveys they describe, are hereby approved.

_____
United States Surveyor Ge

I certify that the foregoing transcript of the field notes of the above-described surveys in _____
_____ has been correctly copied from the original notes on file in this off

_____
United States Surveyor Ge

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Page

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Page

4—679.

BOOK A-367

"L"

FILED
APR 25 1910

m.B.

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION

AND

MEANDER LINES

OF

TOWNSHIP NO. 42 SOUTH,

RANGE NO. 18 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E. MILLER, *United States Deputy Surveyor,*

Under his Contract No. 205, *dated* FEBRUARY 25th, *1909,*

Survey commenced MAY 30th, *1909*

Survey completed JUNE 17th, *1909.*

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING, CHAINMAN.

PRESLAY C.WILLS, CHAINMAN.

FRANK JACKSON MOUNDMAN.

WILLIAM W.RUBY, MOUNDMAN.

ALBERT JONES, FLAGMAN.

For preliminary affidavits see book "G" T. 41 S., R. 19 E.

BOOK A-367

INDEX DIAGRAM.

Township No 42 South, *Range* No. 18 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level th chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; th we will report the true distances to all notable objects, and the true lengths of all lines that we assist measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey

_____

_____, *Chainma*

_____, *Chainma*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of moundmen in the establishm of corners, according to the instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Moundm*

_____, *Moundm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corn and other duties, according to instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Axm*

_____, *Axm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and t perform the duties of flagman according to instructions given me, to the best of my skill and ability, in survey of _____

_____, *Flagm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

SUBDIVISION T. 42 S., R. 18 E.

Survey commenced May 29, 1909, and executed with the instrument described in book "A" of this survey.

At the cor.of secs.1,6,7,and 12 on E.bdy.of Tp., heretofore described; lat.37° 11'N.; long.109°56'01" W., I set off 21° 39'N.on decl.arc; 37° 11'N.on lat.arc; and at 4 h. 15 m.p.m.l.m.t.,determine with the solar a meridian and mark a point thereof on a stake firmly set in the ground 5 chs.N.of the cor.

At 8 h. 58.6 m.p.m.l.m.t.I observe Polaris at lower culmination, in accordance with Manual of Instructions and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins. E.of the mark determined by the solar.

May 29, 1909.

May 30: At 8 a.m.l.m.t.I set off 21° 45'N.on the decl. arc; 37° 11'N. on the lat.arc; and mark a point in the meridian determined with the solar by a tack driven in the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.E.of the meridian established by Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 0' 11" W. and 0' 16" E.of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8 h. 15 m. a.m.is N.14° 30'W.; the angle thus determined gives the mag.decl.14° 30'E.

Thence I run

West on true line bet.secs.1 and 12,

Ascending gradually over broken sand and limestone ledges.

SUBDIVISION T. 42 S., R. 18 E.

Chains.

35.40 Top of hill bears SE. Descend gradually.

40.00 Set iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high for ¼ sec.cor., mkd.on brass cap ¼ S 1 in N.half, S 12 in S.half; raise a mound of stone 2½ ft.base, 2 ft.high N.of cor.Pits impracticable. Impossible to set it over 12 ins.in the ground.

Cor.is about 200 ft.above sec.cor. ½ mile E.

52.40 Top of canon of San Juan River, bears N.60° W. and S. 40° E.

59.60 Mendenhall Trail bears S.60° E. Desc.rapidly.

66.29 Set iron post 3 ft.long, 1 in.dia., 24 ins.in the ground for meander cor.of frac'ls secs.1 and 12, on right bank of San Juan River, mkd.on brass cap T 42 S R 18 E S 1 in N.; S 12 in S.half and M C at intersection of angle line; raise a mound of stone 2½ ft.base, 2 ft. high E.of cor.Pits impracticable.

Land, mountainous.

Soil, 4th rate; rocky.

No timber.

Mountainous land 66.29 chs.

From the meander cor.of frac'l secs.1 and 12, I offset North 4.00 chs. Thence I run

West on offset line

13.71 Set an iron post 3 ft.long, 1 in.dia., 24 ins.in the ground, for meander cor.of frac'l secs.1 and 2 on right bank of San Juan Rivermkd.on brass cap T 42 S R 18 E in N.; S 1 in E.half; and S 2 in W.half; M C at intersection of angle line; raise a mound of stone 2½ ft.base, 1½ ft.high N.of cor. Pits impracticable.

Land, mountainous.

Soil rocky; 4th rate. No timber.

Chains.	
	Mountainous land, difficult to survey 13.71 chs.
	Thence I run west on offset line bet.secs.2 and 11 Ascend.
6.00	Mendenhall stone cabin bears N. 2 chs. Ascend.
9.69	Thence south 4.00 chs.to true line, Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, to bed rock, with mound of stone 2 ft.base,14 ins.high around it, for meander cor.of frac'l secs.2 and 11 marked on brass cap T 42 S R 18 E S 2 in N. half, S 11 in S.half; and M C at angle; raise a mound of stone 2½ ft.base, 2 ft.high W.of cor.
	Thence west on true line, Ascend.
17.69	Foot of precipitous bluff. Ascend.
18.69	Top of bluff 100 ft.high.
22.69	West edge of bluff; descend over broken sand and limestone ledges.
29.18	Set an iron post 3 ft.long, 1 in.dia., 24 ins.in the ground, for meander cor.of frac'l secs.2 and 11 on right bank of San Juan River; mkd.on brass cap T 42 S R 18 E S 2 in N.half; S 11 in S.half; and M C at intersection of angle line; raise a mound of stone 2½ ft.base, 1½ ft.high E.of cor. Pits impracticable.
	Land, mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Land mountainous and difficult to survey 29.18 chs.
	I return to meander cor.of frac'l secs.1 and 2, and run N.0° 01'W. bet.secs.1 and 2,
	Over broken sand and limestone ledges; very difficult

SUBDIVISION T. 42 S., R. 18 E.

Chains:	
	to survey. Ascend.
3.00	Foot of bluff.
	Ascend.
4.50	Top of point projects N.45° E.
	Descend.
9.12	Set an iron post 3 ft.long, 1 in.dia., 24 ins.in the ground, for meander cor.of frac'l secs.1 and 2, on right bank of San Juan River; mkd.on brass cap T 42 S R 18 E in N.; S 1 in E.half; and S 2 in W.half; and M C at intersection of angle line; raise a mound of stone 2 ft.base, 1½ ft.high S.of cor. Pits impracticable.
	Land, mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land;difficult to survey 9.12 chs.

From cor.of secs.1,2,35, and 36 on N.bdy.of Tp., heretofore described, I run

S.0° 01'E.bet.secs.1 and 2,

Over sand and limestone ledges; exceptionally difficult to survey. Descend.

13.21 It being impossible to set iron post within 10 chs.on line, or within 5 chs.in any direction, as required by the Manual and special instructions, I

Set a limestone 24 x 10 x 8 ins.,18 ins.in the ground, for meander cor.of frac'ls secs.1 and 2 on right bank of San Juan River, marked S 1 on E.; S 2 on W.; and M C on S.face; with 1 grooves on E.; and raise a mound of stone 2½ ft.base, 1½ ft.high N.of cor. Pits impracticable.

Land, mountainous.

SUBDIVISION T. 42 S., R. 18 E.

Chains. Soil, rocky; 4th rate.

No timber.

Mountainous land; exceptionally difficult to survey

13.21 chs.

From cor.of frac'l secs.3, 4, 33, and 34, on N.bdy.of Tp., heretofore described, I run

S.0° 02'E. bet.secs.3 and 4,

Over sand and limestone ledges; exceptionally difficult to survey; and which are interlaid with oil sand stratas.

5.30 Set a limestone 24xc12 x 10 ins.on solid rock, in mound of stone 2½ ft.base, 1½ ft.high for meander cor.of fractional secs.3 and 4, mkd.on E.face S 3; on W.face S 4; and M C on S;3 grooves on E.face; and raise a mound of stone 2½ ft.base, 1½ ft.high N.of cor.Pits impracticable.

Impossible to set iron post within the limits prescribed in the special instructions governing the setting of iron posts.

Land, mountainous and broken.

Soil, rocky; 4th rate. No timber.

Mountainous land; exceptionally difficult to survey

5.30 chs.

Finding it impossible to set the S.¼ sec.cor.of sec.4, and the meander cor.of frac'l secs.4,5,8, and 9, especially in the southern portion of sec.4, from the surface or upper rim of the San Juan River Canon, as it is impossible to obtain a base line or any other means to measure the distance, I leave the setting

Chains. of these corners until the meanders are run; and set them by traverse line run for the meander survey.

From cor.of frac'l secs.4,5,32, and 33 on N1bdy.of Tp. heretofore described, I run

S.0° 03'E. bet.secs.4 and 5,

Over sand and limestone ledges; exceptionally difficult to survey; and which are interlaid with oil and sand stratas, ranging in thickness from 1 to 100 ft.

10.70 Set an iron post 3 ft.long, 1 in.dia., 24 ins.in the ground, for northern meander cor.of frac'l secs.4 and 5, marked on brass cap, T 42 S in N; R 18 E S 4 in E.half; S 5 in W.half; M C at angle; raise a mound of stone 2½ ft.base, 1½ ft.high N.of cor. Pits impracticable.

Land, mountainous and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land, exceptionally difficult to survey 10.70 chs.

May 30, 1909: At the noon hour sky overcast;obs.for lat. impossible.

June 14, 1909: To establish the meander cor.of frac'l secs.4 and 9, owing to condition heretofore mentioned, I begin at the meander cor.of frac'l secs.3 and 4,

Thence I run

S 81° 00'W. 6.50 chs.

S.43° 30'W. 8.00 chs.

S.30° 30'W. 10.10 chs.

Chains SUBDIVISION T. 42 S.R. 13 E.

S. 28°15' W. 6.30 chs.
S. 10°15' W. 8.00 chs.
S. 13°45' W. 2.60 chs.
S. 18°30' W. 8.10 chs.
S. 6°30' W. 14.60 chs.
S. 11°00' W. 6.20 chs.
S. 12°00' W. 15.30 chs.

TO obtain my southing and westing I calculate the Latitudes and Departures as follows:

Course	Distance	Latitudes		Departures	
		N.	S.	E.	W.
S. bet.Secs.	chs.		chs.		chs.
3 & 4	5.30		5.30		
S. 81°00' W.	6.50		1.02		6.42
S. 43°30' W.	8.00		5.80		5.51
S. 30°30' W.	10.10		8.70		5.13
S. 28°15' W.	6.30		5.55		2.98
S. 10°15' W.	8.00		7.87		1.42
S. 13°45' W.	2.60		2.53		.62
S. 18°30' W.	8.10		7.68		2.57
S. 6°30' W.	14.60		14.50		1.65
S. 11°00' W.	6.20		6.09		1.18
S. 12°00' W.	15.30		14.96		3.18
Total			80.00		30.66

Therefore the distance South is 80.00 chs. and it being impossible to set the S. 1/4 Cor. for Sec. 4 at 9.33 West of this point which is true point for 1/4 sec.cor.

80.00 Southing
72.71 South. Set limestone 24 x 12 x 10 ins. on solid rock in mound of stone 2.5 ft. base, 1.5 ft. high for Meander Cor. for fractional Secs. 4 & 9 and Witness 1/4 Cor. for fractional Secs. 4 and 9, mkd. W.C 1/4 on W.; MC with 3 grooves on E.; S 4 on N.; and 5 grooves on S.face Built mound of stone 2.5 ft. base, 1.5 ft. high W. of

Chains. SUBDIVISION T. 42 S. R. 18 E.

Cor. Pits impracticable.
Impossible to set iron post within the limits prescribed in the special instructions governing the setting of iron posts.
Land mountainous and broken.
Soil 4th rate; rocky.
No timber.
Land mountainous and exceptionally difficult to survey.
80.00 chs.

June 14" 1909.

June 15" 1909.
At this Cor. I turn from traverse line to station A. on top of river canon heretofore described, and find the course N. 16°41' E. I turn from A. to B. and find the angle to be 4°37', or the course from M. C. to B. N. 21°18' E.
At this Meander Cor. I erect a large flag to be observed from stations A. & B. on top of canon rim heretofore described.
To establish the remaining Meanders Cors. for fractional Secs. 4 & 9, I continue with Meanders in fractional Sec. 9.
Thence I run
S. 19°45' W. 7.83 chs:
S. 30°45' W. 2.50 chs.
S. 38°45' W. 3.70 chs.
S. 46°30' W. 2.80 chs.
S. 58°15' W. 3.20 chs.
S. 77°15' W. 2.60 chs.
N. 81°45' W. 3.50 chs.
N. 69°15' W. 4.00 chs.
N. 83°30' W. 10.10 chs.
N. 66°15' W. 4.00 chs.
N. 50°15' W. 6.00 chs.
N.37°30'W. 2.10 chs.
N.61°15'W. 2.30 chs.

SUBDIVISION T. 42 S., R. 18 E.

Chains

N.37°45'W. 6.70 chs.

To obtain my northing and westing I calculate the latitudes and departures as follows:

Course	Dist.	Latitudes, N.	Latitudes, S.	Departures, E.	Departures, W.
West bet.secs. 4 and 9	30.67 chs.	.....	.....	.....	30.67
S.19°45'W.	7.83	.....	7.37	.....	2.65
S.30°45'W.	2.50	.....	2.15	.....	1.28
S.38°45'W.	3.70	.....	2.89	.....	2.32
S.46°30'W.	2.80	.....	1.93	.....	2.03
S.58°15'W.	3.20	.....	1.68	.....	2.72
S.77°15'W.	2.60	.....	.57	.....	2.54
N.81°45'W.	3.50	.50	.....	.....	3.46
N.69°15'W.	4.00	1.42	.....	.....	3.74
N.83°30'W.	10.10	1.14	.....	.....	10.04
N.66°15'W.	4.00	1.61	.....	.....	3.66
N.50°15'W.	6.00	3.84	.....	.....	4.61
N.37°30'W.	2.10	1.67	.....	.....	1.28
N.61°15'W.	2.30	1.11	.....	.....	2.02
N.37°45'W.	6.70	5.30	.....	.....	4.10
T o t a l s		16.59	16.59		77.12

Therefore the westing is 77.12 chs.or 46.45 chs.from meander cor.of frac'l secs.4 and 9 on the east

46.45 Set limestone 24 x 14xx 8 ins. on rock in mound of stone 2½ ft.base, 1½ ft.high for meander cor.for frac'l secs.4 and 9, marked on N.face S 4, S 9 on S., M C on W., with 4 grooves on E., and 5 grooves on S.faces raise a mound of stone 2½ ft.base, 2 ft.high E.of cor. Pits impracticable.

Impossible to set iron post within the limits prescribed in the special instructions governing the setting of iron posts.

Land, mountainous and broken.

Soil, 4th rate; rocky.

SUBDIVISION T. 42 S., R. 18 E.

Chains. No timber.

Land exceptionally difficult to survey 46.45 chs.

To establish the southern meander cor.of trac'l secs.4 and 5 I continue with meanders in fractional sec.4.

Thence I run

N.26° 00'W. 4.17 chs.

N.23°45'W. 2.60 chs.

To obtain the northing and westing I calculate the latitudes and departures as follows:

Course	Dist. chs	Latitudes N. chs.	Latitudes S. chs.	Departures E. chs.	Departures W. chs.	
West	77.12	.....	.....	.....	77.12	77.12
N.26° 00'W.	4.17	3.75	.....	.....	1.83	
N.23°45'W.	2.60	2.38	.....	.....	1.05	
T o t a l s		6.13			80.00	

Therefore the distance west is 80.00 chs.from true cor. point of secs.3.4.9, and 10, and distance north 6.13 chs.from true cor.point of secs.4.5;8, and 9.

6.13 Set iron post 3 ft.long, 1 in.diam.26 ins.in the ground for meander cor.of fractional secs.4 and 5, marked on brass cap T 42 S in N.half, R 18 E S 4 in E.half, S 5 in W.half and M C at angle of lines; and raise a mound of stone 3 ft.base, 2½ ft.high N.of cor. Pits impracticable.

Land, mountainous and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land; exceptionally difficult to survey 5.08 chs.

June 15: At noon hour cloud obscured the sun; no obs. for lat.this day.

SUBDIVISION T. 42 S., R. 18 E.

Chains. June 16, 1909:

To establish meander cor.for fractional secs.4 and 5 on southern portion of line.

I continue with meander in fractional SE.portion sec.5.

N.23°45'W. 6.50 chs.

N.1° 30'W. 3.20 chs.

N.0°45'E. 2.40 chs.

N.14°15'E. 2.60 chs.

N.20°30'E. 4.00 chs.

N.30°45'E. 1.20 chs.

To obtain the northing and easting I calculate the latitudes and departures as follows:

Course	Dist.	Latitudes N.	Latitudes S.	Departures E.	Departures W.
	chs.	chs.	chs	chs.	chs.
North	6.13	6.13	.....	.....	.....
N.23°45'W.	6.50	5.95	.....	.....	2.62
N. 1°30'W.	3.20	3.20	.....	.....	.08
N. 0°45'E.	2.40	2.40	.....	.03	.....
N.14°15'E.	2.60	2.52	.....	.64	.....
N.20°30'E.	4.00	3.75	.....	1.40	.....
N.30°45'E.	1.20	1.03	.....	.61	.....
T o t a l s		24.98		2.68	2.70

24.98 Northing,

Set a limestone 24 x 8 x 10 ins.on rock in mound of stone for meander cor.of fractional secs.4 and 5, mkd. M C on N.; S 5 on W.; S 4 with 4 grooves on E. and 5 grooves on S.faces; raise a mound of stone 2½ ft.base 2 ft.high S.of cor. Pits impracticable.

Impossible to set iron post within the limits prescribed in the special instructions; nor to set stone in the ground.

Land, mountainous and broken.

Soil, 4th rate.; rocky.

SUBDIVISION T. 42 S., R. 18 E.

Chains. No timber.

Mountaincus land, difficult to survey 19.84 chs.

June 16, 1909

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#
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MEANDERS OF SAN JUAN RIVER.

THROUGH T. 42 S. R. 18 E.

Meanders of San Juan river. Down Stream.

I commence at the Meander Cor. of fractional Secs. 7 & 12 on the East Bdy. of the township, which is a .3 inch iron post marked and witnessed as heretofore described.

At this Cor. on June 8th 1909, I set off 37°11' N.on Latitude arc, 22°54' N.on the Declination arc and at 8 h. 20 m. a. m. l.m.t. I determine a meridian with the solar. Thence I ran with the Meanders in Sec, 12

N. 40°45' W. 5.60 chs.
N. 61°00' W. 8.00 chs.
S. 86°00' W. 8.30 chs.
S. 53°30' W. 6.30 chs.
S. 22°00' W. 15.80 chs.
S. 29°30' W. 3.00 chs.
S. 26°30' W. 8.00 chs.
S. 33°30' W. 3.20 chs.
S. 46°00' W. 4.00 chs.
S. 60°00' W. 3.80 chs.
N. 84°15' W. 3.60 chs.
N. 61°15' W. 4.70 chs.
N. 44°45' W. 1.60 chs.
N. 24°15' W. 3.30 chs.
N. 6°15' W. 4.00 chs.
N. 9°00' E. 8.00 chs.
N. 15°00' E. 4.90 chs.
N. 4°30' W. 8.00 chs.
N. 11°15' W. 4.50 chs.
N. 40°15' W. 8.00 chs.
N. 54°00' W. 8.00 chs.
N. 63°45' W. 1.70 chs.
N. 81°52' W. 1.09 chs. To the Meander Cor. of fractional Secs. 1 & 12.

Land rocky slope to river partially covered with sand.

Soil 4thrrate; rocky.
No timber.
A few willows at edge of water.
Land exceptionally difficult to survey. 127.40 chs.
June 8: At noon hour sky overcast; obs. for lat. impossible.

June 9, 1909. At the Meander Cor. of fractional Secs. 1 & 12. I set off 57°11' N. on Latitude arc, 22°56' N. on the Declination arc and at 8 h. a.m. l.m.t. I determine a meridian with the solar. Thence in Sec. 1
N. 65°00' W. 8.00 chs.
N. 84°50' W. 6.50 chs. To the Meander Cor. of fractional Secs. 1 & 12
Land rocky.
Soil 4th rate; rocky.
No timber.
Land exceptionally difficult to survey. 14.50 chs.

Thence in Sec. 2
West 5.50 chs.
S. 46°20' W. 5.79 chs. To the Meander Cor. of fractional Secs. 11 & 12.
Land rocky.
Soil 4th rate; rocky.
No timber.
Land exceptionally difficult to survey. 11.29 chs.

Thence in Sec. 11
S. 37°00' W. 22.40 chs.
S. 45°15' W. 4.10 chs.
N. 89°15' W. 3.90 chs.
N. 44°45' W. 4.00 chs.
N. 37°15' W. 1.20 chs.
N. 5°30' E. 11.56 chs.

Sec. 11

N. 30°15' E. 4.80 chs.

N. 37°30' E. 1.39 chs. To the Meander Cor. of fractional, Secs. 2 & 11

Land rocky slope to river.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land rocky narrow channel, exceptionally difficult to survey. 53.35 chs.

June 9: At noon hour sky overcast; obs. for lat. impossible.
Thence in Sec. 2.

N. 37°15' E. 5.90 chs.

N. 48°30' E. 2.40 chs.

N. 82°00' E. 4.90 chs.

N. 86°00' E. 15.10 chs.

N. 48°30' E. 7.90 chs. To the Meander Cor. of fractional Secs. 1 & 2.

Land rocky slope to river.

Soil 4th rate; rocky.

No timber.

Land rocky, narrow channel exceptionally difficult to survey. 34.20 chs.

Thence in Sec. 1

N. 48°30' E. 18.90 chs.

N. 38°30' E. 7.40 chs.

N. 42°45' E. 6.00 chs.

N. 35°15' E. 8.50 chs.

N. 0°15' W. 3.72 chs.

N. 37°15' W. 5.50 chs.

N. 62°30' W. 10.00 chs.

N. 67°15' W. 77.20 chs.

N. 59°00' W. 3.50 chs.

N. 51°00' W. 1.80 chs.

MEANDERS OF SAN JUAN RIVER

THROUGH T. 42 S. R. 15 E.

Sec. 1

N. 40°00' W. 4.20 chs.

N. 25°30' W. 2.70 chs. To the Meander Cor. of fractional Secs. 1 & 2.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land rocky and exceptionally difficult to survey.

79.42 chs.

June 9, 1909.

June 10, 1909

Thence in Sec. 2 [illegible],

At the Meander Cor. of fractional Secs. 1 & 2,

I set off 37°12'N on Latitude arc, 23° 01' N. on Declination arc and at 8 h. 15 m. a.m. l.m.t. I determine a meridian with the solar

N. 25° 30' W. 5.30 chs.

N. 26 30' W. 5.50 chs.

N. 14°15' W. 3.62 chs. To the Meander Cor. of fractional Secs. 2 & 35.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 14.42 chs.

For about 2 miles the river flows in T. 41 S. R. 18 E.

June 10th 1909.

June 13th 1909. At the Meander Cor. of fractional Secs. 3 & 34, I set off 37°12'N on Latitude arc, 23°13' N. on the Declination arc and at 8 h. 5 m. a.m.l.m.t. I determine a meridian with the solar

Thence in Sec. 3

S. 6°30' E. 6.00 chs.

S. 1°00' E. 9.60 chs.

MEANDERS OF SAN JUAN RIVER.

Through T. 42 S. R. 18 E.

S. 2°30' E. 7.00 chs.
S. 7°00' W. 6.40 "
S. 12°00' W. 8.00 "
S. 20°45' W. 17.90 "
S. 30°45' W. 3.50 "
S. 48°15' W. 3.40 "
S. 59°45' W. 2.10 "
S. 82°30' W. 2.50 "
S. 76°45' W. 5.10 "
N. 75°45' W. 7.00 "
N. 68°45' W. 2.50 "
N. 82°00' W. 7.80 "
N. 67°45' W. 8.00 "
N. 61°45' W. 3.60 "
N. 42°15' W. 2.20 "
N. 15°45' W. 2.80 "
N. 6°30' E. 4.00 "
N. 33°45' E. 11.80 "
N. 9°00' E. 12.00 "
N. 5°00' W. 5.90 "
N. 21°30' W. 6.10 "
N. 49°45' W. 9.30 " To the Meander Cor. of fractional Secs. 3 & 4.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 154.50 chs.

June 13" 1909.

At this Cor. on June 14" 1909, I set off 37°19' N. on Latitude arc. 23°16' N. on Declination arc. and at 8 h. 15 m. a.m.l.m.t. I determine a meridian with the solar. Thence in Sec. 4

S. 81°00' W. 6.50 chs.
S. 43°30' W. 8.00 "

MEANDERS OF SAN JUAN RIVER.

Through T. 42 S. R. 18 E.

S. 30°30' W. 10.10 chs.
S. 28°15' W. 6.30 "
S. 10°15' W. 8.00 "
S. 13°45' W. 2.60 "
S. 18°30' W. 9.10 "
S. 6°30' W. 14.60 "
S. 11°00' W. 6.20 "
S. 12°00' W. 15.30 " To the Meander Cor. of fractional Secs. 4 & 9.

Land rocky slope partially covered with sand.
Soil 4th rate; rocky.
No timber.
A few willows at edge of water.
Land exceptionally difficult to survey. 85.70 chs.

June 14" 1909.

June 15" 1909, at the Meander Cor. of fractional Secs. 4 & 9. I set off 37°11' E. on Latitude arc. 33°19' N. on the Declination arc. and at 8 h. 15 m. a.m.l.m.t. I determine a meridian with the solar. Thence in Sec. 9.

S. 19°45' W. 7.83 chs.
S. 30°45' W. 2.50 "
S. 39°45' W. 3.70 "
S. 46°30' W. 2.90 "
S. 58°15' W. 3.20 "
S. 77°15' W. 2.60 "
N. 81°45' W. 3.50 "
N. 69°15' W. 4.00 "
N. 83°30' W. 10.10 "
N. 66°15' W. 4.00 "
N. 50°15' W. 6.00 "
N. 37°30' W. 2.10 "
N. 61°15' W. 2.30 "
N. 37°45' W. 6.70 " To the Meander Cor. of fractional Secs. 4 & 9.

MEANDERS OF SAN JUAN RIVER.

Through T. 42 S. R. 18 E.

Land rocky slope partially covered with sand..
Soil 4th rate; rocky.
No timber.
A few willows at edge of water.
Land exceptionally difficult to survey. 61.33 chs.

Thence in Sec. 4
N. 26°00' W. 4.17 chs.
N. 23°45' W. 2.60 " To the Meander Cor. of fractional Secs. 4 & 5.
Land rocky slope partially covered with sand.
Soil 4th rate; rocky.
No timber.
Land exceptionally difficult to survey. 6.77 chs.

June 15" 1909.

At this Cor. on June 16" 1909, I set off 37°12' N. on Latitude arc. 23° 22' N. on Declination arc. and at 8 h. 10 m. a.m.l.m.t. I determine a meridian with the solar.
Thence in Sec. 5
N. 23°45' W. 6.50 chs.
N. 1°30' W. 3.20 "
N. 0°45' E. 2.40 "
N. 14° 15' E. 2.60 "
N. 20°30' E. 4.00 "
N. 30°45' E. 1.20 " To the Meander Cor. of fractional Secs. 4 & 5.
Land rocky slope narrow channel partly covered with sand.
Soil 4th rate.
No timber.
Land exceptionally difficult to survey. 19.90 chs.

Thence in Sec. 4.
N. 30°45' E. 13.70 chs.
N. 28°45' E. 4.15 "
N. 3° 15' W. 1.30 "

Property of Jay Gould.

Survey S. of S. W. 1/4 S.

S. [illegible] E. 7.50 chs.

S. [illegible] E. 4.00 "

S. [illegible] E. 7.00 "

S. [illegible] E. 4.00 "

S. [illegible] E. 2.50 "

S. [illegible] E. 5.00 "

S. [illegible] E. 20.00 "

S. [illegible] E. 2.00 "

S. [illegible] E. 8.00 "

S. [illegible] E. .00 " to the Eastern Cor. of Fractional Sec. 4 E.

Land mostly level nearly all covered with small Pine and Oak; sandy.

Land quite broken diagonally. W'ly and Nly.

No timber.

The N'ly & Flows about a mile in S. of S. W. 1/4 S.

June 12th 1879.

June 12th 1879, at the Eastern Cor. of fractional Sec. 4 E. I took up the line as run previously this day and find Bearing correct. Chains in Sec. 4.

S. [illegible] E. 7.50 chs.

S. [illegible] E. 8.00 "

S. [illegible] E. 4.00 " to the Eastern Cor. of fractional Sec. 4 E.

Land mostly level nearly all out with sand.

Soil and Pine Point.

No timber.

Land occasionally difficult to survey. W'ly and Nly.

June 12th 1879.

At this Cor. on June 12th 1879, I set off [illegible] S. on Eastern Cor. [illegible] S. on Quarter Sec. and at 2.50 chs. Intersected a meander line of the Lake.

Chains in Sec. 4.

S. [illegible] E. 4.00 chs.

S. [illegible] E. 4.00 "

S.62°45'W. 5.40 chs.

S.77°45'W. 2.70 chs.

N.84°00'W. 1.80 chs.

N.70°15'W. 1.50 chs.

N.53°00'W. 3.40 chs.

N.46°15'W. 16.50 chs.

N.49°30'W. 3.30 chs.

N.33°45'W. 11.40 chs. to the meander cor. of fractional secs. 5 and 32.

Land, rocky slope, very narrow channel, small patches of sand.

Soil, 4th rate; rocky; sandy 3d rate.

No timber.

Land exceptionally difficult to survey 62.20 chs.

June 17, 1909.

T. 42 S. R. 18 E.

GENERAL DESCRIPTION.

The surface area covering a portion of fractional secs. 1 & 12 and a very narrow strip in Section 3 are the only parts of this township on to which an oil drilling rig can be hauled or delivered, except at an enormous expense.

There is no place at which the river can be reached with pack animals except via the Mendenhall Trail.

There are numerous places on the very narrow sand and gravel bars where the gold placer workings have been conducted by the rocker process; some workings indicate that they have been conducted quite recently and that the values in placer gold and black sand per yard are equally as high as in other Townships heretofore described.

June 17" 1909.

Elmer E. Miller

U.S.Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of _____

_____

showing the respective capacities in which they acted:

For list of names and final oath of assistants see book "P" ..., *Chainman.*

T. 41 S., R. 16 E. ..., *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all those parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

Subscribed and sworn to before me this _____ day of _____, 190 }

_____

SEAL

_____

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, d
solemnly swear that, in pursuance of a contract received from _____
United States Surveyor General for _____, bearing date of th
_____ day of _____, 190 , I have well, faithfully, and truly, in my ow
proper person, and in strict conformity with the instructions furnished by the United States Surveyo
General for _____, the Manual of Surveying Instructions, and the laws of th
United States, surveyed all those parts or portions of _____
For final oath of deputy see book "P" T.41 S., R.16 E.
_____
_____
_____ of the _____
_____ meridian, in the _____ of _____, which are represented in th
foregoing field notes as having been surveyed by me, and under my direction; and I do further solemn
swear that all the corners of said survey have been established and perpetuated in strict accordance wi
the Manual of Surveying Instructions, and the special written instructions of the United States Survey
General for _____ and in the specific manner described in the field notes, and th
the foregoing are the original field notes of such survey.

_____
United States Deputy Survey

Subscribed by said _____, and sworn to before me
this _____ day of _____, 190

_____

SEAL

_____

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 190

The foregoing field notes of the survey of the Subdivision of Meander lines of
Township No. 42 South, Range No. 18 East of the Salt Lake Base and Me
ian, Utah,
_____
_____
_____
_____
executed by Elmer E. Miller
under his contract No. 305, dated February 25, 190 9, having b
critically examined, and the necessary corrections and explanations made, the said field notes, and
surveys they describe, are hereby approved.

Thomas Kell
United States Surveyor Gene

I certify that the foregoing transcript of the field notes of the above-described surveys in _____
_____, has been correctly copied from the original notes on file in this office

_____
United States Surveyor Gene

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BOOK A-367

"H"

FILED

APR 25 1910

FIELD NOTES

OF THE SURVEY OF THE

EAST BOUNDARY

OF

TOWNSHIP NO.41 SOUTH,

RANGE NO.17 EAST,

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* FEBRUARY 25th, 1909.

Survey commenced MAY 9th 1909.

Survey completed MAY 19th 1909.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING, CHAINMAN.

PRESLAY C. WILLS, CHAINMAN.

FRANK JACKSON, MOUNDMAN.

WILLIAM W. RUBY, MOUNDMAN.

ALBERT JONES, FLAGMAN.

For preliminary affidavits see book "F" T. 41 S., R. 19 E.

BOOK A-367

INDEX DIAGRAM.

Township No. 41 South, Range No. 17 East.

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Meanders Page.....

BOOK A 302.

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level th chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; th we will report the true distances to all notable objects, and the true lengths of all lines that we assist measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey

_____

_____, *Chainma*

_____, *Chainma*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of moundmen in the establishm of corners, according to the instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Moundm*

_____, *Moundm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of cor and other duties, according to instructions given us, to the best of our skill and ability, in the surve

_____

_____, *Axm*

_____, *Axm*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and t perform the duties of flagman according to instructions given me, to the best of my skill and ability, i survey of _____

_____, *Flagr*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

EAST BOUNDARY T. 41 S., R. 17 E.

Survey commenced May 9, 1909; and executed with the instrument described in book "A" of this survey.

At the standard cor.of Tp.40 S., Rs. 17 and 18 E. heretofore described; lat. 37° 17' 18" N.; long. 110° 02' 42" W., I set off 17° 24' N. on the decl.arc; 37° 17'N. on the lat. arc; and at 3h. 56 m.p.m.l.m.t. determine with the solar a meridian and mark a point therof, on a stake firmly set in the ground 5 chs. N. of the cor.

At 10 h. 17.1.m.p.m.l.m.t. I observe Polaris at lower culmination, in accordance with Manual of Instructions and mark a point in the line thus determined on a peg driven in the ground 5 chs. N.of my station. This point falls 0.2 ins. E.of the marked determined with the solar. May 9, 1909.

May 10: At 8 a.m.l.m.t. I set off 17° 34' N. on the decl. arc; 37°17'18" N. on lat.arc; and mark a point in the meridian determined with the solar by a tack driven in the stake already set 5 chs. N. of my station this mark falls 0.3 ins.E. of the meridian established by Polaris observation.

The solar apparatus by p.m. and a.m. observations.defines positions for meridians respectively about 0' 11" W. and 0'16" E.of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8h. 15m.a.m. is N.14° 30' W.; the angle thus determined gives the mag.decl. 14°30'E.

Thence I run

East along the 8th Stand.Par. South

Over rolling mesa.

Chains.	EAST BOUNDARY T. 41 S., R. 17E.
13.62	Set an iron post 3 ft. long, 3 ins. dia., 24 ins. in the ground, for closing cor. of Tp. 41 S., Rs. 17 and 18 E. marked on brass cap. C CT . 40 S in N.; R 17 E S 36 in NW.; R 18 E S 31 in N. E.; S 1 R 17 E in SW.; and R 18 E S 6 in SE. quadrants; dig pits 30 x 24x 12 ins. crosswise in each line E and W. 4 ft. and S. of post 8 ft. dist.; and raise a mound of earth 4 ft. base, 2 ft. high S. of cor.
	A cedar 12 ins. diam. bears S.65°E. 27 lks. dist. marked T 41 S R 18. E. S. 6. B. T.
	No other bearing trees within limits.
	Thence I run.
	South bet. secs. 1 and 6
	Over rolling mesa , covered with heavy sagebrush.
40.00	Set an iron post 3 ft. long, 1in. dia., 26 ins. in the ground, for 1/4 sec. cor., mkd. on brass cap 1/4 S 1 in W. half; S 6 in E. half; dig pits 18 x 18x 12 ins. N. and S. of post 3 ft. dist.; and raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high W. of Cor.
80.00	Set iron post 3 ft long 3 ins. dia., 24 ins. in the ground for cor. of secs. 1,6,7 and 12, marked on brass cap T 41 S i n N.; R 17 E S 1 in NW.; R 18 E S 6 in N E.; S 7 in SE.; and S 12 in SW. quadrants; dig pits 18x18 x12 ins. in each sec. 5 1/2 ft. dist.; and raise a mound of earth 4 ft. base, 2 ft. high W. of Cor.
	A cedar 12 ins. diam., bears S.65° E. 18 lks. dist. marked T 41 S R 18 E S 7 B T.
	No other bearing trees within limits.
	Land, rolling mesa.
	Soil, sandy loam; 1st rate.
	Timber, scattering cedar.
	Undergrowth large sagebrush.

EAST BOUNDARY T. 41 S., R. 17 E.

Chains.	
	South bet. secs. 7 and 12
	Over rolling mesa; through undergrowth.
5.00	Enter scattering pine and cedar timber.
39.50	Leave timber.
40.00	Set an iron post 3 ft. long, 1 in.dia. 12 ins.in the ground, in mound of stone 2 1/2 ft. base, 14 ins.high for 1/4 sec.cor.; mkd.on brass cap 1/4 S 12 in W.half; S 7 in E.half; and raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor. Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	A pine 12 ins.dia., bears N.21°E. 45lks.dist. mkd. 1/4 S 7 B T.
	A cross chiseled in solid rock, bears S.48°W. 45lks dist. mkd. 1/4 S 12 B O
41.65	Edge of cedar mesa bears S.60°W.
	Descend abruptly over very steep sandstone ledges, interlain with oilsand stratas about 1000 ft. above lower mesa. Leave undergrowth.
68.50	Foot of ledges; descend over slide rock.
71.85	Wagon road bears E. and W., Bluff to John's Canon.
79.64	Rim of canon bears S.45°E.
80.00	Set an iron post 3 ft. long 3ins. dia., 12 ins. in the ground to bed rock, with mound of stone 2 1/2 ft. base 1 ft.high around it, for cor.of secs. 7,12,13, and 18 mkd.on brass cap T 41 S in N.half; R17 E S 12 in NW.; R18 E S 7 in NE.; S 13 in SW.; and S 18 in SE.quadrants; and raise a mound of stone 4 ft. base, 2 ft.high W.of cor. Pits impracticable.
	Cor. is on a bench 10 ft.below rim of canon.
	Land, mountainous, broken and rocky.
	Soil, sandy loam; 1st and 4th rate.
	Undergrowth shadscale.
	Timber, scattering pine and cedar.
	Mountainous land. rough and broken 38.35 chs.

EAST BOUNDARY T. 41 S., R. 17 E.

Chains.	
	May 10: At the noon hour sky overcast, obs.for lat.impossible.
	South bet.secs.13 and 18,
	Descend over broken mountainous land.
11.00	Bottom of canon about 275 ft.deep, drains S.45° W.
20.40	South rim of canon.
26.50	Edge of lower mesa where descent to San Juan River begins.
40.00	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high for ¼ sec.cor., mkd.on brass cap ¼ S 13 in W.half; S 18 in E. half; raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable.
	Impossible to set post over 12 ins.in the ground.
	Corner is 20 ft.below cor.of secs.7,12,13, and 18.
43.00	Edge of ledge; thence descending.
66.19	Set iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground to bed rock, with mound of stone 2½ ft.base, 1 ft.high around it, for witness cor.to cor.of secs.13,18, 19, and 24; mkd.on brass cap W C T 41 S in N.half, R 17 E S 13 in NW.; R 18 E S 18 in NE.; S 19 in SE.; and S 24 in SW.quadrants; raise a mound of stone 3 ft.base, 3 ft.high W.of cor.Pits impracticable.
	Witness cor.sets on top of a nearly vertical bluff 400 ft.high to the north of the San Juan River.
80.00	Point for cor.of secs.13,18,19, and 24 falls in breaks of canyon; corner not set.
	Land, mountainous.
	Soil, sandy and rocky; 3d and 4th rates.
	No timber.
	Mountainous land 80.00 chs.

Chains.

South bet.secs.19 and 24,

Over rough, broken and mountainous land; exceptionally difficult to survey.

The San Juan River makes a bend into sec.19; and, in order to keep my alinement from the witness cor.of secs.13,18,19, and 24, I send a flag to the bank of the river this side of the bend,andnalso to the farther side of the bend and to point on ridge beyond.

8.00 Leave oil sand stratas.

9.50 Right bank of San Juan River bears N.72° W.

Set an iron post 3 ft.long, 3 ins.dia.24 ins.in the ground, for meander cor.of frac'l secs.19 and 24; mkd. on brass cap T 41 S in N.half; R 17 E S 24 in W.; R 18 E S 19 in E.; and M C at angle of lines.; raise a mound of stone 2½ ft. base, 2 ft.high N.of cor.

In order to establish the remainder of the E.bdy.of the township between secs.19 and 24, it will be necessary to traverse around bend or river to flags set in line, as it is impossible to obtain a base line or any other means to measure the distance; thence I run

S.71° 45'E. 1.52 chs.

S.31° 45'E. 17.50 chs.

S 22° 15'W. 20.00 chs.

S.34° 00'W. 5.50 chs. to flag on farther side of bend in river. To obtain my southing which is the distance across bend of river, I calculate the latitude and departures which are as follows:

Course	Distance	Latitudes		Departures	
	chs.	N. chs.	S. chs.	E. chs.	W. chs.
S.71°45'E.	1.52	.....	0.48	1.44	.....
S.31°45'E.	17.50		14.88	9.21	.....
S.22°15'W.	20.00		18.51		7.57
S.34°00'W.	5.50		4.56		3.08
Totals			38.43	10.65	10.65

Therefore the distance across the bend in the river is

EAST BOUNDARY T. 41 S., R. 17 E.

Chains.

38.43 chs., which makes

47.93 Right bank of San Juan River bears N.34° E.

Set an iron post 3 ft. long, 3 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high for W.C.to ¼ sec.cor.and M.C.,frac'l secs.19 & 24,mkd.on brass cap T 41 S W C ¼ in N.half; M C at angle; S 24 R 17 E on W.; and S 19 R 18 E on E.; and raise a mound of stone 2½ ft.base, 2 ft.high S.of post. Pits impracticable.Impossible to set post over 12 ins.in ground.

Ascend abruptly.

78.50 Flag on line and top of spur falling SW. Descend abruptly.

80.00 Set an iron post 3 ft. long, 3 ins.dia., 12 ins.in the ground in mound of stone 2½ ft.base, 12 ins.high for cor.of frac'l secs.19,24,25, and 30, mkd.on brass cap T 41 S in N.half;R17 E S 24 in NW.; R 18 E S 19 in NE.; S 25 in SW.; and S 30 in SE.quadrants; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable.

Impossible to set post over 12 ins.in the ground.

Land, mountainous, rough and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land, rough and broken, and exceptionally difficult to survey, 80.00 chs.

South bet.secs.25 and 30,

Descending rapidly over sandstone ledges.

22.00 Right bank of San Juan River bears SW.

Set iron post 3 ft.long, 3 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 1 ft.high for meander cor.of secs.25 and 30, mkd.on brass cap T 41

EAST BOUNDARY T. 41 S., R. 17 E.

Chains. S in N.half; R 17 E S 25 in W.; R 18 E S 30 in E.; and M C at angle of lines; raise a mound of stone 3 ft.base, 2½ ft.high W.C. cor.

Land, mountainous and broken.

Soil, sandy and rocky; 3d and 4th rate,

Mountainous land 22.00 chs.

GENERAL DESCRIPTION.

This township is rough and mountainous in nearly all of its parts. The east boundary, starting on cedar mesa, traverses about 1½ miles of the upper or Cedar Mesa; then descends rapidly about 1000 ft., and within three-fourths of a mile starts over the edges of deep canons leading to the San Juan River; thence down the river and up again to edge of top of lower mesa; thence to meander cor.on San Juan River.

The line after it starts down from the top of Cedar Mesa, and until it reaches the river at the last meander cor., passes over sand and limestone edges, interlaid with oil sand strata.

Note: See also general description in notes of the subdivision of this township.

May 10, 1909.

BOUNDARIES OF T. 41 S. R. 17 E.

LATITUDES. DEPARTURES AND CLOSING ERRORS.

Line Designated.	True Bearing.	Distance.	Latitude		Departure	
			North	South.	East.	Wes
		Chains	chains	chains	Chs.	Chs
N. bdy. 8th Standard Parelell S.	East.	240.00			240.00	
E. bdy. T.41.S.R.17E.	South.	240.00		240.00		
W. bet. Secs.13 & 24	S.89°57'W.	80.00		0.07		79.
N. bet. Secs.13 & 14	N. 0°01'W.	80.00	79.99			0.
W. bet. Secs.11 & 14	S.89°55'W.	80.12		0.11		80.
W. bet. Secs.10 & 15	S.89°52'W.	80.12		0.19		79.
N. bet. Secs. 9 & 10	N. 0°02'W.	80.00	79.95			.
W. bet. Secs. 3 & 4	N. 0°02' W.	80.00	79.95			.
Convergency					.22	
Totals			239.88	240.37	240.22	240.
Errors in Latitude				.49	.21	
Error in departure						

Elmer E. Miller
U.S. Dep. Surveyor

EAST BOUNDARY T. 41 S., R. 17 E.

Chains

S in N.half; R 17 E S 25 in W.; R 18 E S 30 in E.; and M C at angle of lines; raise a mound of stone 3 ft.base, 2½ ft.high, N. of cor.

Land, mountainous and broken.

Soil, sandy and rocky; 3d and 4th rate.

Mountainous land 22.00 chs.

GENERAL DESCRIPTION

This township is rough and mountainous in nearly all of its parts. The east boundary, starting on cedar mesa, traverses about 1½ miles of the upper or cedar mesa; then descends rapidly about 1000 ft. and within three-fourths of a mile starts over the edges of deep canons leading to the San Juan River; thence down the river and up again to edge of top of lower mesa; thence to meander cor. on San Juan River.

The line after it starts down from the top of cedar mesa, and until it reaches the river at the last meander cor., passes over sand and limestone ledges, interlaid with oil sand stratas.

Note: See also general description in notes of the subdivision of this township.

May 10, 1909.

BOUNDARIES OF T. 41 S., R. 17 E.

Latitudes, Departures, and Closing Errors

Line Designated	True Bearing	Distance	Latitudes		Departures	
		chs.	N. chs.	S. chs.	E. chs.	W. chs.
N.bdy.8th Standard Parallel S.	East	240.00	.....	.....	240.00	.....
E.bdy.T.41 S.R.17 E.	South	240.00	.....	240.00	.....	.....
W.bet.Secs.13 & 24	S.89°56'W.	80.00	.....	0.09	.....	80.00
N.bet.Secs.13 & 14	N. 0°01'W.	80.00	80.00	.....	.....	0.02
W.bet.Secs.11 & 14	S.89°55'W.	80.12	.....	0.11	.....	80.12
W.bet.Secs.10 & 15	S.89°48'W.	80.12	.....	0.28	.....	80.12
N.bet.Secs. 9 & 10	N. 0°02'W.	80.00	80.00	.....	.....	.05
N.bet.Secs. 3 & 4	N. 0°02'W.	80.00	80.00	.....	.....	.05
Convergency					0.22	
T o t a l s			240.00	240.48	240.22	240.36
				240.00		240.22
Error in latitude				.48		
Error in departure						.14

U. S. Deputy Surveyor

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of _____

_____

showing the respective capacities in which they acted:

For list of names and final oath of assistants see book "O", *Chainman.*

T. 41 S., R. 16 E., *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all those parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

Subscribed and sworn to before me this _____ day of _____, 190

_____

SEAL

_____

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from _____ United States Surveyor General for _____, bearing date of the _____ day of _____, 190 , I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for _____, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of deputy see book "O" T. 41 S., R. 16 E.

_____ of the _____ meridian, in the _____ of _____, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

_____

United States Deputy Surveyor.

Subscribed by said _____, and sworn to before me this _____ day of _____, 190

SEAL

_____

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911.

The foregoing field notes of the survey of the East Boundary of Township No. 41 South, Range No. 17 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Thomas Reed

United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____

United States Surveyor General.

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4—679.

BOOK A-367

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m.2.3.

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION

&

MEANDERS

OF

TOWNSHIP NO. 41 SOUTH,

RANGE NO.17 EAST

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

Under his Contract No. 395, *dated* FEBRUARY 25, *190*9,

Survey commenced MAY 24th, *190*9

Survey completed JUNE 26th, *190*9.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING, CHAINMAN.

PRESLAY C. WILLS, CHAINMAN.

FRANK JACKSON, MOUNDMAN.

WILLIAM W. RUBY, MOUNDMAN.

ALBERT JONES, FLAGMAN.

For preliminary affidavits see book "G" T. 41 S., R. 19 E.

BOOK A-367

INDEX DIAGRAM.

Township No 41 South, Range No 17 East

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*Meanders Page*_____

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____

do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey o

_____

_____, *Chainman*

_____, *Chainman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of moundmen in the establishmen of corners, according to the instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Moundman*

_____, *Moundman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____

do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corne and other duties, according to instructions given us, to the best of our skill and ability, in the survey

_____

_____, *Axman*

_____, *Axman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and tru perform the duties of flagman according to instructions given me, to the best of my skill and ability, in t survey of _____

_____, *Flagma*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

Chains. SUBDIVISION T. 41 S. R. 17 E.

Survey commenced May 24 1909 and executed with a W. & L. E. Gurley light mountain transit, No. 47 with solar attachment. The horizontal limb is provided with two double veniers placed opposite to each other, reading to single minutes of arc, which is also the least count of the veniers of the latitude and declination arcs.

The instrument was examined, tested on the true meridian at Salt Lake, found correct, and was approved by the surveyor general for Utah Feb. 18, 1909.

I examine the adjustments of the transit, and correct the level and collination errors; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made duringa, m. and p. m. hours, with a meridian determined by observations on Polaris, I proceed as follows:

At the standard Cor. of Secs. 35 & 36 T. 40 S. R. 17 E. latitude 37° 17" 18' longitude 110° 03' 48" W.; I set off 37° 17' N. on the latitude arc; 20° 47' N. on the decl. arc; and, at 2h. 40 m. p. m. L. m. t. determine with the solar a meridian and mark a point thereof, on a stake firmly set in the ground, 5chs, N. of the Cor. May 24, 1909.

May 25 At 3 h. 21.2 m. a. m. by my watch, which is correct L.m. t. I observe Polaris at eastern elongation, in accordance with Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground 5 chs. N. of my station.

May 25: At 7h. 30 m. a. m. l. m. t., I lay off the azimuth of Polaris 1° 29' to the west, and mark the meridian thus determined, by a tack on stake set for the solar observation yesterday p. m. on which the meridian falls 0.2 ins. west of the mark determined by the solar.

At 8 h. 10 m. l,m.t., I set off 37° 17' N. on the Latitude arc; 20° 55' N. on the declination arc; and mark a point in the meridian determined with the solar, by a tack on

Chains. SUBDIVISION T.41 S. R. 17 E.

the stake already set 5 chs. N. of my station; this mark falls 0.3 ins. east of the meridian established by the Polaris observation.

The solar apparatus, by p.m. and a.m. observations, defines positions for meridians, respectively about 10" west and 15" east of the meridian established by the Polaris observations; therefore I conlude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8 h. 15 m. a. m. is N. 14°40' W.; the angle thus determined gives the magnetic declination 14°40' E.from the Standard Cor. of Secs. 35 & 36 T. 40 S. R. 17 E.,heretofore described.

I run east on the 8th Standard Parallel south 13.62 chs.

13.62 Set an iron post 3 ft. long 3 ins. diameter 24 ins. in the ground for closing Cor. of Secs. 1 & 2 T. 41 S. R. 17 E. marked on brass cap T. 40 S. R. 17 E. in N. half S. 35 in N. W. S. 36 in N. E. S. 1 in S. E. and S. 2 in S. W. quadrants and C.C. over intersection of closing line. T. 41 S.RE.17 E. in S. half. Dug pits 24 x 18 x 12 ins. crosswise of each line. E. & W. 3 ft. and S. of post 7ft. distant and erect mound of earth 4 ft. base 2 ft. high S. of Cor.

Thence I run, over rolling mesa.

S. 0°01' E. between Secs. 1 & 2.

30.43 Top of deep wash descend rapidly.

40.00 Set in iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 2 in W. half and S. 1 in E. half.

Built mound of stone 2.5 ft. base 2 ft. high W. of Cor. Pits impracticable. Impossible to set post deeper.

49.00 Center of wash which heads about 8 chs. east & drains west 250 ft. below top.

61.00 Top of south side of wash . Thence over rolling land through thick Cedar and Pinon timber.

Chains. SUBDIVISION T.41 S. R. 17 E.

80.00 Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. to Secs. 1,2, 11 & 12.
Marked on brass cap T. 41 S. S. 2 in N. W.R. 17 E. S. 1 in N. E. S. 11 in S. W. & S. 12 in S. E. quadrants and raise a mound of stone 2 1/2 ft. base 2 ft. high W. of Cor. Pits impracticable, whence a pinon tree 6 ins. diameter bears N. 85°45' E. 82 lks. marked T. 41 S.R. 17 E. S. 1 B. T.
A Cedar tree 16 ins. diameter bears S. 48°30' E. 58 lks. marked T. 41 S. R. 17 E. S. 12 B. T.
A cedar tree 20 ins. diameter bears S. 37°30' W. 144 lks. marked T. 41 S. R. 17 E. S. 11 B. T.
A cedar tree 24 ins. diameter bears N. 21° 30' W. 167 lks. marked T. 41 S. R. 17 E. S. 2 B. T.
Land N. 30 chs. and S. 19 chs. rolling mesa, balance rocky and mountainous.
Soil sandy 3rd rate and 4th rate.
Timber on mesa Cedar and Pinon.
Land mountainous 50.97 chs.

East on a random line between Secs. 1 & 12 over

40.00 Set temporary 1/4 Sec. Cor.
79.97 Intersect. E. bdy. of T. 9 lks. S. of Cor. to Secs. 1, 6, 7 & 12, heretofore described.

Thence I run S. 89°56' W. on a true line between Secs. 1 & 12, over rolling mesa.

39.98 1/2 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 Sec. 1 in N. half and S. 12 in S. half.
Dug pits 18 x 18 x 12 ins. E. & W. of post 3 ft. dist. built mound of earth 3.5 ft. base 1.5 ft. high N. of Cor.
79.97 The Cor. of Secs. 1,2,11 & 12.
Land gently rolling mesa.
Soil 3rd rate.

Chains.	SUBDIVISON T. 41 S. R. 17 E.
	Vegetation Sage brush, some grass, a few trees.
	S. 0° 01' E. between Secs. 11 & 12.
	over rolling mesa.
14.93	Top of rim of Cedar mesa, bears N. 80° W. and about 4 chs. E. angles and bears S. 20° E. descend abruptly about 1000 ft. to lower mesa.
40.00	Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 11 in W. half and S. 12 in E. half.
	Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
	Pits impracticable. Impossible to set post over 12 ins. in ground.
45.00	Foot of bluffs bear S. 30° E. & N. 30° W.
61.63	Road to Bluff City from Johnts Canon, bears N. 10° E. & N. 10° W.
76.25	Rim of gulch 15 ft. deep bears N. 70° W.
77.00	Center of wash bears N. 70° W.
79.00	South rim of gulch.
80.00	Set iron post 3 ft. long 2 ins. diameter 12ins. in the ground in mound of stone 2.5 ft. base 1.5 ft high for Cor. of Secs. 11, 12, 13 & 14 marked on brass cap T. 41 S. S. 11 in N. W. R. 17 E. S. 12 in N. E.
	S. 13 in S. E. and S. 14 in S. W. quadrants.
	Built mound of stone 3 ft. base 2.5 ft high W. of Cor.
	Pits impracticable. Impossible to set post deeper.
	Cor. is about 1000 ft. below top of upper mesa.
	Land badly broken and rocky except on mesa.
	Soil 4th rate; rocky.
	Timber Cedar and Pinon on mesa only.
	Land mountainous and broken 66.07 chs.
	May 25: At noon hour sky overcast; obs. for lat. impossible.
	N. 89° 56' E. on random line between Secs. 12 & 13.
40.00	Set temporary 1/4 Sec. Cor.
79.96	Intersect. E. bdy. of T. 5 lks. N. of Cor. to Secs. 7,

Chains.	SUBDIVISION T. 41 S. R. 17 E.
	12, 13 & 18; heretofore described.
	Thence I run S. 89° 58' W. on true line between Secs. 12 & 13 descending abruptly into canon.
13.50	Canon heads about 10 chs. N. drains S.
23.00	Top of point between canons slopes S. 20° E.
36.00	Canon heads about 9 chs. N. drains S. E. ascend.
39.98	Set iron post 3 ft. long 1 in. diameter 12 ins. in the ground in mound of stone 2.5 ft. base 1.5 ft. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 12 in N. half & S. 13 in S. half. Impossible to set post deeper.
	Built mound of stone 2.5 ft. base 1.5 ft. high N. of Cor. Sec. Pits impracticable.
47.80	West rim of canon bears N. 50° E. ascend.
49.62	Road to Bluff City from John's Canon bears N. 60° E. Asc.
52.57	Foot of low red sandstone point.
58.60	Top of sandstone point bears S. 20° W.
61.90	West side of sandstone point.
66.25	Foot of slope.
74.75	Road to Bluff bears S. 25° E.
79.96	The Cor. of Secs. 11, 12, 13 & 14
	Land broken, rocky and mountainous.
	Soil 4th rate; rocky.
	Vegetation shadscale and grass. No timber
	Land mountainous 79.96 chs.
	S. 0° 01' E. between Secs. 13 & 14.
20.84	North rim of gulch 35 ft. deep bears S, 70° W.
23.25	Center of wash drains S. 70° W.
26.78	South rim of gulch.
29.50	Brink of canon of San Juan river. Begin descent rapidly over lime and sandstone, ledges interlain with odl sand strata from 1 ft. to 100 ft. in thickness.
40.00	Set iron post 3 ft. long 1 inch diameter 16 ins. in the ground in mound of stone 2.5 ft. base 1.5 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 14 in W. half

Chains.	SUBDIVISION T. 41 S. R. 17 E.
	and S. 13 in E. half.
	Built mound of stone 2.5 ft. base 2.5 ft. high W. of Cor.
	Pits impracticable.
	Cor. sets about 60 ft. below brink of canon.
43.46	Top of 2nd break to river, descent steep bluffs bears N. 80° W.
72.14	Top of 3rd break to river, descent very steep bluffs.
80.00	Set iron post 3 ft. long 2 ins. diameter 1 ft. in the ground on rock in mound of stone 2.5 ft. base 1 ft. high for Cor. to Secs. 13, 14, 23 & 24, marked on brass cap T. 41 S. S. 14 in N. W. R. 17 E. S. 13 in N. E., S. 23 in S. W. and S. 24 in S. E. quadrants.
	Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
	Pits impracticable. Impossible to set post deeper.
	Cor. sets at foot of main bluff of San Juan river about 60 ft. above the river and over 1200 ft. below top rim of lower mesa.
	Land very badly broken by bluffs.
	Soil 4th rate; rocky.
	Vegetation shadscale and some grass on first 43 chs.
	No timber.
	Land mountainous, rough and exceptionally difficult to survey. 80.00 chs.
	N. 89° 58' E. on a random line between Secs. 13 and 24.
40.00	Set temporary 1/4 Cor.
80.00	Intersect. N. & S. line 4 lks. S. of point for Cor. of Secs. 13, 18, 19, & 24, on E. bdy. of Tp. heretofore described.
	Thence I run, ascending rapidly over ledges.
	S. 89° 56 W. on a true line between Secs. 13 & 24
34.50	Top of cliff 200 ft. high descend rapidly over sand and limestone interlain with oil sand stratas.
40.00	Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground on solid rock, in mound of stone 2.5 ft. base

Chains.	
	14 ins.high for ¼ sec.cor., marked on brass cap ¼ S 13 in N.half, S 24 in S.half; and raise a mound of stone 3 ft.base, 2½ ft.high N.of cor.Pits impracticable. Impossible to set post over 12 ins.in the ground. Corner sets on bench about 25 ft.N.of the edge of vertical cliff.
	Ascend rapidly over sand and limestone ledges.
63.33	Top of point sloping south from main mesa to a small mesa to the southwest.
	Descend rapidly.
68.00	Top of very steep descent.
80.00	The cor.of secs.13,14,23, and 24.
	Land, rocky and very much broken.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land rough and exceptionally difficult to survey 80.00 chs.

West on a true line bet.secs.14 and 23,

Over mountainous land.

1.44	Set an iron post 3 ft.long, 1 in.diam., 12 ins.in the ground to bedrock, raise a mound of stone 2½ ft.base, 14 ins.high around post, for meander cor.of frac'l secs.14 and 23, marked on brass cap T 41 S R17E S14 in N.half; S 23 in S.half, and MC at angle of lines on the right bank of San Juan River; raise a mound of stone 2½ ft.base, 2 ft.high E.of cor.Pits impracticable.
	Land, mountainous.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land 1.44 chs.

From the cor.of secs.13,14,23, and 24, I run

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
	S.0° 01'E.bet.secs.23 and 24,
	Descending gradually.
13.30	Set iron post 3 ft.long, 1 in.dia., 12 ins.in the ground to bedrock, with mound of stone 2½ ft.base, 14 ins. high around it for meander cor.of secs.23 and 24 on right bank of San Juan River; mkd.on brass cap T41S R17E in N.half;S23 in SW. and S24 in SE.quadrants;and MC at intersection of meander line; raise mound of stone 3 ft.base, 2½ ft.high N.of cor.Pits impracticable.Impossible to set post over 12 ins.in ground.
	Ascend diagonally over sand and limestone ledges.
40.00	Set iron post 3 ft.long, 1 in.diam., 12 ins.in the ground,to bedrock,with mound of stone 2½ ft.base, 14 ins.high around it for ¼ sec.cor., mkd.on brass cap ¼ S 23 in W.half,S 24 in E.half;and raise a mound of stone 2 ft.base,[illegible] ft.high W.of cor.s.in the mound.
45.80	Top of mesa bears N.45°E.and S.65°W.
50.70	SE.edge of mesa bears NE. & SW.;descend diagonally and precipitously over sand and limestone ledges,interlain with oilsand stratas from 1 ft.to 100 ft.thick.
69.70	Top of steep descent to San Juan River.
77.80	Right bank of San Juan River, draining westerly. Set an iron post 3 ft.long,1 in.dia., 26 ins.in the ground, for meander cor.of secs.23 and 24; mkd.on brass cap T41S R17E in N.half;S23 in SW., and S24 in SE quadrant; and MC at intersection of lines;raise a mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable.
	Land,broken and rocky.
	Soil,4thrate; rocky.
	Undergrowth shadscale and some bunch grass on mesa.
	No timber.
	Mountainous land, rough and broken;exceptionally difficult to survey 77.80 chs.

From cor.of secs.19,24,25, and 30 on E.bdy.of Tp., heretofore described, I run

West on a true line bet.secs.24 and 25,

Descending rapidly over sand and limestone ledges,

Chains. SUBDIVISION T. 41 S. R. 17 E.

17.80 Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for meander Cor. of Sec. 24 & 25 marked on brass cap T. 41 S. R. 17 E. S. 24 in N. half S. 25 in S. half and M. C. at angle of lines. Impossible to set post deeper.
Built mound of stone 2.5 ft. base 2 ft. high E. of Cor.
Land broken and rocky.
Soil 4th rate; rocky.
Vegetation shadscale. No timber.
Land mountainous, rough and broken and exceptionally difficult to survey. 17.80 chs.

May 25, 1909.

May 26, 1909.
I set off 37° 17' N. on Latitude arc and 21° 6' N. on declination arc and at 8 h. 10 m. a.m. l.m.t. and determineda meridian with the solar at the standard Cor. of Secs. 34 & 35 T. 40 S. R. 17 E. heretofore described.
Ran east on 8th Standard Parallel south and at

13.62 Set iron ppost 3 ft. long 2 ins. diameter 24 ins. in the ground for closing Cor. of Secs. 2 & 3. T. 41 S. R. 17 E. marked on brass cap T. 40 S. R. 17 E. in N. half S. 34 in N. W. S. 35 in N. E. S. 2 in S. E. S. 3 in S. W. quadrants. C. C. over intersection of closing line and T. 41 S. R. 17 E. in S. half.
Built mound of stone 3 ft. base 2.5 ft high S. of Cor.
Pits impracticable.

From the closing Cor. of Secs. 2 & 3
I ran S. 0° 01' E. between Secs 2 & 3, over mesa.

4.23 South edge of Cedar mesa bears E. & W.
Thence descend rapidly over sand & limestone ledges.

18.00 Foot of ledges about 700 ft. below top of Cedar mesa.

Chains.	SUBDIVISION T. 41 S. R. 17 E.
	Thence descend over slide rock.
33.00	North rim of basin about 950 ft. below top of upper mesa descend gradually.
37.22	Road to Bluff from Johns Canon, bears S.45°E.& N.45°W.
40.00	Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 3 in W. half and S. 2 in E. half. Built mound of stone 3 ft. base 2.5 ft. high W. of Cor. Pits impracticable.
40.10	N. edge of a wash or canon 10 ft. deep
41.54	Center of wash 10 lks. wide 1 ft. deep bears S. 40° W. There is a seep or spring of permanent water up this wash and near the center of Sec. 2
42.38	South rim of wash.
44.15	Center of top of small knoll.
55.41	South rim of basin.
80.00	Set iron post 3 ft. long 2 ins. diameter 24 ins. in the ground for Cor. Secs. 2,3,10 & 11 markedon brass cap T. 41 S. S. 3 in N. W. R. 17 E. S. 2 in N. E. S. 10 in S. W. and S. 11 in S. E. quadrants. Dug pits 18 x 18 x 12 ins. in each Sec. 5.5 ft. from post and built mound of earth 4.5 ft. base 2 ft. high W. of Cor. Land mostly broken and rocky. Soil 3rd & 4th rates; rocky. Vegetation shadscale and bunch grass. No timber. Land mountainous and exceptionally difficult to survey 55.36 chs.
	East on a random line between Secs. 2 & 11.
40.00	Set temporary 1/4 Sec. Cor.
80.30	Intersect N. & S. line 7 lks. S. of Cor. to Secs. 1, 2, 11 & 12. Thence I run on true line S. 89° 57' W. between Secs.

Chains. SUBDIVISION T. 41 S. R. 17 E.

2 & 11, over mesa.

25.83 Top of Cedar mesa bears N. & S.

Thence descend rapidly over sand and limestone ledges.

39.25 Foot of cliffs, thence descend gradually over slide rock

40.15 Set iron post 3 ft. long 1 ins. diameter 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 2 in N. half and S. 11 in S. half.

Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.

Pits impracticable. Cor. is 800 ft. below Cedar mesa.

59.75 Foot of descent over slide rock and small ledges thence over rolling mesa.

72.00 Road to Bluff bears N. & S.

80.30 The Cor. of Secs. 2, 3, 10 & 11.

Land broken and rocky.
Soil sandy loam and rocky; 1st and 4th rates.
Timber, scattering cedar and pinon pine.
Vegetation on mesas shadscale and bunch grass.

Land mountainous and exceptionally difficult to survey.

54.47 chs.

May 26: At noon hour sky overcast; obs. for lat. impossible.

S. 0° 0.1' E. between Secs. 10 & 11; over mesa.

7.15 N. rim of small canon, trending 2 chs. E. descend.

8.31 Center of wash 10 ft. below rim, drains S. 80° W. ascend.

11.00 South rim of canon; thence over mesa.

40.00 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 10 in W. half & S. 11 in E. half.

Dug pits 18 x 18 x 12 ins N. & S. of post 3 ft. dist.

built mound of earth 3.5 ft. base 1.5 ft. high W. of Cor.

46.50 North rim of San Juan river. Descend rapidly over sand and limestone ledges.

80.00 Set iron post 3 ft. long 2 ins. diameter 12 ins. in the ground in mound of stone 2.5 ft. base 1 ft. high for Cor. of Secs. 10, 11, 14 & 15 marked on brass cap T. 41 S. S. 10 in N. W. R. 17 E. S. 11 in N. E. S. 14 in S.E. &

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S. 15 in S. W. quadrants.
Built mound of stone 3 ft. base 2.5 ft. high W. of Cor.
Pits impracticable.
Cor. sets about 400 ft. below 1/4 Sec. Cor. and rim of canon.
Land 1st half rolling mesa, 2nd half broken.
Soil ~~1st~~ & 4th rates: sandy loam and rocky.
Vegetation shadscale and bunch grass. No timber.
Land mountainous and exceptionally difficult to survey
33.50 chs.

N. 89° 57' E. on a random line between Secs. 11 & 14.

40.00 Set temporary 1/4 Sec. Cor.

80.12 Intersect N. & S. line 4 lks. S. of Cor. to Secs. 11, 12, 13 & 14

Thence I run S. 89° 55' W. on true line between Secs. 11 & 14, over broken land,

4.38 Rim of 1st break to canon of San Juan river bears N. 20° W. Descend gradually.

21.40 Edge of 2nd break to canon of river bears N. 20° W.

Thence descend rapidly over sand and limestone ledges.

40.06 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for 1/4 Sec. Cor. marked on brass cap 1/4 S. 11 in N. half and S. 14 in S. half.

Built mound of stone 2.5 ft. base 2 ft. high N. of Cor.
Pits impracticable.
Cor. sets about 400 ft. below top of mesa and rim of canon.

Thence over broken ledges about same general level.

80.12 The Cor. of Secs. 10, 11, 14 & 15

Land broken and rocky.
Soil 4th rate: rocky.
Vegetation shadscale. No timber.
Land mountainous and exceptionally difficult to survey
75.74 chs.

Chains. SUBDIVISION T. 41 S. R. 17 E.

S. 0° 01 E. between Secs. 14 & 15.
Descending rapidly over sand and limestone ledges.
1.22 Top of ledge above river.
7.74 Set iron post 3 ft. long 1 inch diameter 26 ins. in the ground for meander Cor. between Secs. 14 & 15 on right bank of San Juan river. marked on brass cap T. 41 S. R. 17 E. in N. half S. 14 in N. E. & S. 15 in N. W. quadrants and M. C. at angle of N. & S. and meander lines.
Built mound of stone 3 ft. base 2.5 ft. high N. of Cor.
Pits impracticable.
Land broken and rocky.
Soil 4th rate; rocky.
Vegetation shadscale. No.timber.
Land mountainous and exceptionally difficult to survey
7.74 chs. May 26, 1909.

May, 27, 1909.
I set off 37° 17' N. on Latitude arc and 21° 16' N. on declination arc and at 8 h. 15 m. a. m. l. m.t. I determined the meridian with the solar at the Standard Cor. of Secs. 33 & 34 T. 40 S. R. 17 E. previously described and ran east on the 8th Standard Paralell south and at
13.62 Set iron post 3 ft. long 2 ins. diameter 24 ins, in the ground for closing Cor. of Secs. 3 & 4 T. 41 S. R. 17 E. marked on brass cap T. 40 S. R. 17 E. in N. half S. 33 in N. W. S. 34 in N. E. S. 3 in S. E. and S. 4 in S. W. quadrants. C. C. over intersection of closing line and T. 41 S. R. 17 E. in S. half.
Built mound of stone 3 ft. base 2.5 ft. high S. of Cor.
Pits impracticable.

From the closing Cor. of Secs. 3 & 4 T. 41 S. R. 17 E.

Chains.	SUBDIVISION T. 41 S. R. 17 E.
	I ran S. 0°02' E. between Secs. 3 & 4, over mesa.
5.69	Road to Bluff bears S. 55°W. & N. 55°E., from John's Canon.
20.71	Road to Bluff bears S. 80°E. & NW.; from John's Canon.
33.32	Center of a small wash in a gulch 2 chs. wide 15 ft. deep which heads 1 ch. N. E. Drains S. 80°W.
40.00	Set iron post 3 ft. long 1 inch diameter 12 ins. in the ground in mound of stone 2.5 ft. base 14 ins. high for 1/4 Sec. Cor. marked on brass cap 1/4 S. 4 in W. half and S. 3 in E. half; raise mound of stone 2½ ft. base, 2 ft. high W. of cor. Impossible to set post deeper.
46.50	North rim of deep canon bears N. 80° E. descend.
67.65	Center of wash in canon 450 ft. deep drains S. 60°W.
	Thace ascend.
80.00	Set iron post 3 ft. long 2 ins. diameter 12 ins, in the ground in mound of stone 2.5 ft. base 1.5 ft. high for Cor. of Secs. 3,4, 9 & 10 marked on brass cap T. 41 S.S 4 in N. W. R. 17E S3 in N. E. S. 9 in S. W. and S. 10 in S. E. quadrants. Impossible to set post deeper.
	Built mound of stone 2.5 ft. base 2 ft. high W. of Cor.
	Pits impracticable.
	Land broken and rocky.
	Soil 4th rate; rocky.
	Vegetation shadscale and bunch grass. No timber.
	E. on random line between Secs 3 & 10
40.00	Set temporary 1/4 Sec. Cor.
80.02	Intersect N. & S. line 14 lks. S. of Cor. to Secs. 2,3,10 & 11.
	Thence I run S. 89°54' W. on true line between Secs. 3 & 10, over mesa.
16.30	East rim of small gulch 30 ft. deep. Descend.
22.00	Small wash in gulch drains S. 70°W. Ascend.
26.30	West rim of gulch.
33.50	East rim of small gulch 30 ft. deep. descend.
37.00	Bottom of gulch drains S. 20°W.
39.00	West rim of gulch.

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
40.01	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high for ¼ sec.cor., marked on brass cap ¼ S 3 in N.half, S 10 in S.half; and raise a mound of stone 2½ ft.base, 2 ft. high N.of cor. Pits impracticable. Impossible to set post over 12 ins.in the ground.
	Corner is on level of mesa.
42.60	Bgin descent into canon.
80.02	The cor.of secs.3,4,9 and 10.
	Land, rocky and broken.
	Soil, 4th rate., rocky.
	Vegetation shadscale and grass. No timber.
	Land difficult to survey 64 chs..

West on true line between secs. 4 and 9,

Descending rapidly over bare sandstone and limestone ledges.

36.70	Set limestone 25 x 14 x 7 ins.on a bare ledge in mound of stone 2½ ft.base, 1½ ft.high for meander cor.of secs.4 and 9 on the right bank of the San Juan River, marked M C on W.face, 5 grooves on S.face; raise a mound of stone 2½ ft.base, 2 ft.high E.of cor.Pits impracticable. It was not possible to set an iron post in the manner and within the distance required in the Manual of Instructions.
	Land, rocky and broken; mountainous.
	Soil, rocky; 4th rate. No vegetation.
	Mountainous land,exceptionally difficult to survey 36.70 chs.
	May 27: At the noon hour the sky overcast; solar observations impossible.

SUBDIVISION T.41 S., R. 17 E.

Chains.	
	S.0° 02'E.bet.secs.9 and 10,
	Over mountainous land.
7.45	Top of south rim of canon bears NE. and SW.
17.10	Top of rim of wash.
27.50	Center of wash, drains SW.
34.00	Cross point between washes, slopes SW.
40.00	Set an iron post 3 ft.long, 1 in.dia., 18 ins.in the ground, in mound of stone 2 ft.base,8 ins.high for ¼ sec.cor., mkd.on brass cap ¼ S 9 in W.half,S 10 in E.half; built mound of stone2½ ft.base, 2 ft. igh W.of cor. Pits impracticable.
43.80	Center of wash drains S.55° W.
51.10	Top of south rim of canon.Descend abruptly over bare sand and limestone ledges toward river.
80.00	Set a limestone 20 x 11 x 6 ins., on bare solid rock in mound of stone for cor.of secs.9,10,15, and 16; mkd.4 notches on S. and 3 notches on E.edges;raise mound of stone 3 ft.base,2½ ft.high W.of cor. Impossible to set iron post,within 10 chs.N.& S., or 5 chs.in any direction
	Land, very much broken and rocky; mountainous. Soil,4th rate;rocky. Vegetation a little shadscale. No timber. Mountainous land,exceptionally difficult to survey 80.00 chs.
	N.89°54'E.on random line bet.secs.10 and 15,
40.00	Set temp.¼ sec.cor.
80.12	Intersect N. and S.line 14 lks.S.of cor.of secs.10,11, 14 and 15. Thence I run
	S.89° 48'W.on true line bet.secs.10 and 15,
	Ascending abruptly over sandstone ledges.
24.50	Top of rim of canon, bears NE. and SW. Thence over mesa.
40.06	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 10 on N. half S 15 on S.half; raise amound of stone 3 ft.base,2½ ft.high N.of cor. Pits impracticable.
58.35	Top of rim of river canon bears S.15° W.; about 3 chs.N.

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
	curves to NW.and W.Descend abruptly.
80.12	The cor.of secs.9,10,15, and 16,
	Land, broken and rocky; except on mesa.
	Soil, 3d and 4th rate; sandy and rocky.
	Undergrowth shadscale and good grass on mesa.
	No timber.
	Mountainous land;exceptionally difficult to survey
	46.37 chs.
	S. 0° 02'E.bet.secs.15 and 16,
	Over broken sand and limestone ledges.
36.50	Top of ledge on a point sloping from the NE.;thence descend over bare sand and limestone ledges.
40.00	Set a limestone 22 x 14 x 7 ins.,on solid rock in mound of stone 14 ins.high for $\frac{1}{4}$ sec.cor., marked $\frac{1}{4}$ on W. face; and raise a mound of stone $2\frac{1}{2}$ ft.base, 2 ft. high W.of cor.Pits impracticable. Impossible to set stone in the ground.
	It is not possible to set an iron post as required by the Manual, within the required limits.
60.50	Set limestone 26 x 11 x 6 ins., on bare rock in mound of stone 18 ins .high for meander cor.of secs.15 and 16 on the right bank of the San Juan river, marked M C on S.face, with 3 grooves on E.face; raise a mound of stone 3 ft.base, $2\frac{1}{2}$ ft.high N.of cor. Pits impracticable.Impossible to set stone in the ground.
	It was not possible to set an iron post in the manner and within distance required in the Manual.
	Land, rocky and broken.
	Soil, rocky; 4th rate.
	No timber.
	Mountainous land,exceptionally difficult to survey
	60.50 chs.
	Cor.sets on edge of bare ledge of rock 15 ft.above river.

SUBDIVISION T. 41 S., R. 17 E.

Chains. From the cor. of secs. 9, 10, 15, and 16, I run

West on a true line bet. secs. 9 and 16,

Descending over bare sand and limestone ledges and slide rock.

24.00 Set a limestone 23 x 10 x 5 ins. on a bare rock in a mound of stone for meander cor. between secs. 9 and 16 on the right bank of the San Juan River, marked M C on W. face; 4 grooves on S. face; and raise a mound of stone 2½ ft. base, 2 ft. high E. of cor. Pits impracticable. Impossible to set stone in the ground.

The meander cor. sets on top of a bare ledge of rock on the right bank of San Juan River.

It was not possible to set an iron post in the manner and within the distance required by the Manual.

Land, rough and broken.

Soil, rocky; 4th rate.

No timber.

Mountainous land 24.00 chs.

May 27, 1909.

May 28, 1909: At 8 h. 20m. a.m. l.m.t. I set off 37°17'N. on lat. arc; 21° 26'N. on decl. arc; and determine a meridian with the solar at the standard cor. of secs. 32 and 33, T. 40 S., R. 17 E., heretofore described.

Thence I run

East along the 8th Standard Parallel South, and at

13.62 Set an iron post 3 ft. long, 2 ins. dia., 12 ins. in the ground in mound of stone 2½ ft. base, 12 ins. high for closing cor. of secs. 4 and 5 T 41 S R 17 E., marked on brass cap T 40 S R 17 E in N. half, S 32 in NW.; S 33 in NE.; S 4 in SE., and S 5 in SW. quadrants; C C over intersection of closing line and T 41 S R 17 E in S. half; and raise a mound of stone 2½ ft. base, 2 ft.

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
	high S.of cor. Impossible to set post over 12 ins.in the ground. Pits impracticable.
	Corner sets about 5 chs.SE.of top of rim of John's Canon.
	Thence I run
	S.0° 03'E.bet.secs.4 and 5,
	Descending rapidly over sand and limestone ledges.
5.00	Foot of ledges.
5.50	Center of Johns Canon channel, 100 lks.wide, stream 8 lks.wide, 4 ins.deep, flows SW.
	Thence ascend over point.
9.30	Top of point sloping N.30° W.
14.00	Cross Johns Canon channel flowing S.20° E.
17.00	Cross Johns Canon channel flowing S.80° W.Asc.rapidly.
40.00	Set an iron post 3 ft.long, 1 in.dia., 26 ins.in the ground, for ¼ sec.cor., marked on brass cap ¼ S 5 in W. half, S 4 in E.half; and raise a mound of stone 2½ ft. base, 2 ft.high W.of cor.Pits impracticable. Corner falls about 80 ft.below top of rim of Johns Canon.
44.10	Top of rim of Johns Canon bears NE. and SW.
51.40	Rim of canon of San Juan River bears E. and S.50° W.
	Descend rapidly over lime and sandstone ledges.
72.11	Set a limestone 22 x 14 x 6 ins. on a bare ledge in mound of stone 2½ ft.base 16 ins.high for meander cor. of secs.4 and 5, marked M C on S., 4 grooves on E.face, on right bank of San Juan River; raise mound of stone 2½ ft.base, 2 ft.high N.of cor. Pits impracticable. Impossible to set iron post.
	Land, broken and rocky.
	Soil, rocky; 4th rate.
	Vegetation shadscale and bunch grass. No timber.
	Mountainous land;exceptionally difficult to survey 72.11 chs.

May 28, 1909: I set off 37° 17'

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
	N.on lat.arc; 21° 27'N.on decl.arc; and at 10 h. 38 m. a.m.l.m.t., determine a meridian with the solar at the standard cor.of secs.31 and 32, T 40 S.R. 17 E. heretofore described. Thence I run
	East along the 8th Standard Parallel South, and at
13.62	Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 1 ft.high for closing cor.of secs.5 and 6 T. 41 S., R. 17 E., marked on brass cap T 40 S R 17 E in N.half; S 31 in NW.; S 32 in NE.; S 6 in SW., and S 5 in SE.quadrants; C C over intersection of closing line; with T 41 S R 17 E in S.half; raise a mound of stone 3 ft.base, 2½ ft.high S.of cor. Pits impracticable. Impossible to set post over 12 ins. in the ground. Corner sets on a bench about 4 ft.below rim of a canon draining to river.
	Thence I run
	S.0° 03'E.bet.secs.5 and 6,
	Descending into canon 200 ft.deep.
10.60	Wash 20 lks.wide, 2 ft.deep, drains S.50° W. Ascend.
21.50	Cross point sloping down from mesa to SW. Descend.
27.35	Wash 12 lks.wide, 1 ft.deep drains SW. Ascend.
36.00	Top of level limestone ledge, bears N.40° E.
	Point for ¼ sec.cor.falls on the slope of limestone ledge 30 ft.high, where it could not be set permanently; therefore at
39.84	Set an iron post 3 ft.long, 1 in.dia., 12 ins.deep, in a crack in the rock in mound of stone 2½ ft.base, 1½ ft. high for witness cor.to ¼ sec.cor., marked on brass cap, T 41 S R 17 E in N., W C ¼ S 6 on W.half; S 5 on E.half; and raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Corner sets on top of ledge bearing S.10° E.
40.00	Point for ¼ sec.cor.; corner not set.
56.80	Top of point sloping from mesa S.60° W.to river. Thence descend rapidly towards Johns Canon and San Juan River.

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
79.00	Foot of ledges and valley to Johns Canon.
80.00	Point for corner falls in Johns Canon channel. Set an iron post 3 ft.long, 2 ins.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 12 ins.high 50 lks.W.of true cor.point, for W.C.of secs.5,6,7, and 8, marked on brass cap W C T 41 S S 6 in NW.; R 17 E S 5 in NE.; S 7 in SW.; and S 8 in SE.quadrants; built mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable. Impossible to set post over 12 ins.in ground. Corner falls in valley of Johns Creek. Land, broken and rocky. Soil, 4th rate; rocky. No timber. Vegetation a little shadscale. Mountainous land; exceptionally difficult to survey 80.00 chs.
	East on a true line between secs.5 and 8, Cross Johns Canon channel, 100 lks.wide, 10 ft.deep, flows SW. Ascend rapidly over sandstone ledges.
18.95	Top of rim of Johns Canon, bears N. and S. Ascend slightly.
29.00	West edge of mesa, bears N. and S.
31.00	East edge of mesa, bears N. and S. Descend gradually.
32.50	Foot of descent. Thence over level ground.
39.05	Edge of canon of San Juan River bears S.25° W. Point for ¼ sec.cor. falls on the slope of a ledge 25 ft.high, where it could not be set permanently; so at
39.85	Set an iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 14 ins.high for witness ¼ sec.cor., mkd.on brass cap T 41 S R 17 E in N.; W C ¼ W.of center; S 5 in N., and S 8 in S.half; and raise a mound of stone 3 ft.base, 2½ ft .high N.of corner Pits impracticable.

SUBDIVISION T. 41 S., R. 17 E.

Chains.	
40.00	Point for ¼ sec.cor.corner not set.
	Thence descend over sandstone ledges.
65.65	Top of steep bluff, 150 ft.high, bears NW. and SE.
67.20	Set a limestone 25 x 11 x 7 ins. 16 ins.in the ground, for meander cor.of secs.5 and 8, mkd. M C on E., with 5 grooves on S.face; raise a mound of stone 2½ ft.base, 2 ft.high W.of cor. Pits impracticable. Impossible to set iron post within the limits prescribed by the Manual.
	Land, broken and rocky.
	Soil, rocky; 4th rate.
	Vegetation shadscale and grass. No timber.
	Mountainous land; exceptionally difficult to survey
	67.20 chs.

S.0° 03'E.between secs.7 and 8,

	Over broken sand and limestone ledges; ascending.
14.00	Cross point of ridge, slopes S.60° W.
21.00	Top of steep bluff bears E. and N.80° W.
	Thence descend rapidly.
33.50	Point for meander cor.falls at foot of a high bluff against which the river flows at high water; and would destroy corner; therefore I set a witness corner N.52° 30'W...9.70..chs.;
	An iron post 3 ft.long, 1 in.dia., 12 ins.in the ground, in mound of stone 2½ ft.base, 1 ft.high for witness cor. to meander cor.of secs.7 and 8, marked on brass cap T 41 S R 17 E in N.; S 7 in W.half and S 8 in E.half; with M C W C at angle of lines; raise a mound of stone 2½ ft. base, 2 ft.high N.of corner Pits impracticable.

Chains. SUBDIVISION T. 41 S. R. 17 E.

Land broken and rocky.
Soil 4th rate; rocky.
Vegetation little shadscale.
No timber.
Land mountainous and exceptionally difficult to survey
23.56 chs.

West on a true line between Secs. 6 & 7.
Descending over broken limestone ledges.

10.00 Top of point of ridge sloping S. W. and descend.

18.53 Set iron post 3 ft. long 1 inch diameter 1 ft. in the ground in mound of stone 2.5 ft. base 14 ins. high for Meander Cor. of Secs. 6 & 7. Marked on brass cap T. 41 S. R. 17 E. S. 6 in N. half, S. 7 in S. half and M. C. at angle of lines.
Built mound of stone 2. 5 ft. base 1.5 ft. high E. of Cor. Pits impracticable.
Land broken and rocky.
Soil 4th rate; rocky.
Vegetation little shadscale.
No timber.
Land mountainous and exceptionally difficult to survey.
18.53 chs.

May 28, 1909.

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Page

MEANDER OF SAN JUAN RIVER

THROUGH T. 41 S. R. 17 E.

Meander of the right bank of the San Juan river, down stream.

I commence at the Meander Cor. of fractional Secs. 25 & 30 on the E. bdy. of the Tp. an iron post 3 ins. diameter marked and witnessed as heretofore described.

At this Cor. June 20, I set off 37° 14' N. on the Latitude arc, 23° 27" N. on the Declination arc and at 7 h. 50 m. a.m.l.m.t. I determine a meridian with the solar.

Thence I run with Meanders in Sec. 25.

S. 82° W. 4.60 chs.

N. 75° 45' W. 3.40 chs.

N. 55° 00' W. 5.00 chs.

N. 17° 15' W. 19.80 chs. To the Meander Cor. of fractional Secs. 24 & 25.

Land rocky point, partially covered with sand from 0.0 to 4 or 5 ft. deep and some sandy clay in places.

Soil 4th rate; rocky.

No timber.

A few willows at the edge of water.

Land exceptionally difficult to survey. 32.80 chs.

Thence in Sec. 24

N. 17° 15' W. 6.38 chs.

N. 9° 00' W. 2.50 chs.

N. 7° 00' E. 10.00 chs.

N. 42° 00' E. 6.30 chs.

N. 40° 15' E. 2.90 chs.

N. 68° 15' E. 4.95 chs.

N. 57° 37' E. 9.49 chs. To the Meander Cor. between Secs. 19 & 24.

Land rocky slope to river partially covered with sand. Some sandy clay in places. Very rich in fine placer gold.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land broken and exceptionally difficult to survey 42.52 chs.

Meander of San Juan river

Through T. 41 S. R. 17 E.

June 20: At this cor. I set off 23°27'N. on decl. arc; and at 0 h. 01m. p.m. l.m.t. observe the sun on the meridian; the resulting lat. is 37° 15'N.

Thence in Sec. 24 from M. C. 9.50 chs. S. of Cor. of Secs. 13, 18, 19 & 24.

N. 71° 45' W. 26.10 chs.

S. 60°30' W. 24.10 chs.

S. 12°30' W. 16.30 chs.

S. 14°15' W. 28.50 chs.

S. 29°15' W. 8.20 chs.

S. 31° 15' W. 6.70 chs.

S. 38°45' W. 5.50 chs.

S. 56°00' W. 4.00 chs.

S. 74°45' W. 4.00 chs.

S. 88°30' W. 5.70 chs. To the Meander Cor. of fractional Secs. 23 & 24.

Land rocky slope to river partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 129.10 chs.

June 20". 1909.

I commence at the Meander Cor. of fractional Secs. 23 & 24. which is an iron post 3 ft. long 1 inch diameter heretofore described.

At this Cor. June 21, I set off 37°14' N." on the Latitude arc, 23° 28' N. on the Decliantion arc and at 8 h. a.m.l.m.t. I determine a meridian with the solar.

Thence I run with the Meanders in Sec. 23.

S. 88° 30' W. 6.20 chs.

S. 82° 15' W. 7.70 chs.

S. 84°45' W. 8.00 chs.

N. 72°00' W. 6.10 chs.

N. 53°00' W. 3.20 chs.

N. [illegible] W. [illegible] chs

MEANDERS OF SAN JUAN RIVER.

Through T. 41 S. R. 17 E.

N. 31°15' W. 11.00 chs.
N. 14°00' W. 6.70 "
N. 1°15' E. 6.20 "
N. 12°00' E. 2.10 "
N. 23°00' E. 8.80 "
N. 54°15' E. 9.10 "
N. 57°30' E. 20.00 "
N. 41°03' E. 14.20 " To the Meander Cor. of fractional Secs. 23 & 24

Land rocky slope partially covered with sand.
Soil 4th rate; rocky.
No timber.
A few willows at edge of water.
Land exceptionally difficult to survey. 109.30 chs.

Thence in Sec. 23.
N. 3°15' W. 14.80 chs.
N. 49°15' W. .80 " To the Meander Cor. of fractional Secs. 14 & 23.

Land rocky slope to river.
Some sand.
Soil 4th rate.
No timber.
Land difficult to survey. 15.60 chs.
June 21: Sky overcast; no obs.for lat.this day.

At this Cor. on June 22" 1909. I set off 37°15' N. on Latitude arc. 23°38' N. on Declination arc. and at 8.h. a.m.l.m.t. determine a meridian with the solar.

Thence in Sec. 14
N. 49°15' W. 34.20 chs.
N. 73°00' W. 21.40 "
N. 53°15' W. 4.00 "
N. 44°15' W. 4.00 "
N. 1°30' W. 3.20 "
N. 1°30' E. 9.40 "

MEANDERS OF SAN JUAN RIVER.

Through T. 41 S. R. 17 E.

N. 2°00' E. 17.50 chs.
N. 21°30' W. 10.40 "
N. 75°15' W. 12.60 "
S. 70°10' W. 12.71 " To the Meander Cor. of fractional Secs. 14 & 15.
Land rocky slope partially covered with sand.
Soil 4th rate; rocky.
No timber.
A few willows at edge of water.
Land exceptionally difficult to survey. 129.41 chs.

June 22" 1909.

I commence at the Meander Cor. of fractional Secs. 14 & 15 which is an iron post 3 ft. long 1 inch diameter heretofore described.
At this Cor. June 23" 1909, I set off 37°15' Ew on Latitude arc. 23°27' N. on Declination arc. and at 8 h. 15 m. a.m.l.m.t. determined meridian with the solar.
Thence I run with Meanders in Sec. 15.
S. 34°45' W. 4.70 chs.
S. 65°00' W. 16.00 "
S. 32°30' W. 18.30 "
S. 9°45' W. 29.10 "
S. 20°30' W. 7.40 "
S. 82°15' W. 3.50 "
S. 43°00' W. 5.30 "
S. 59°30' W. 2.00 "
S. 88°45' W. 2.50 "
N. 78°30' W. 13.70 "
N. 69°15' W. 4.90 "
N. 60°15' W. 13.00 "
N. 47°21' W. 7.40 " To the Meander Cor. of fractional Secs. 15 & 16.
Land rocky slope partially covered with sand.
Soil 4th rate; rocky.
No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 127.80 chs.

June 23: At noon hour sky overcast; obs. for lat. impossible.
Thence in Sec. 16

N. 64°15' W. 2.80 chs.

N. 16°45' E. 3.10 chs.

N. 8°30' E. 10.80 chs.

N. 24°45' W. 11.10 chs.

N. 17°15' W. 13.30 chs.

N. 30°15' W. 8.00 chs.

N. 34°45' W. 19.46 chs. To the Meander Cor. of fractional Secs. 9 & 16.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 68.56 chs.

June 23, 1909.

I commence at the Meander Cor. of fractional Secs. 9 & 16 which is ansstone 23 x 10 x 5 ins. Marked and witnessed as heretofore described.

At this Cor. June 24, I set off 37°16' on the Latitude arc, 23°27' N. on the Declination arc and at 8 h. 30 m. a.m.l.m.t, I determine a meridian with the solar.

Thence I ran with Meanders in Sec. 9

N. 34°45' W. 15.10 chs.

N. 32°15' W. 13.00 chs.

N. 28°00' W. 7.80 chs.

N. 23°15' E. 4.00 chs.

N. 61°30' E. 6.40 chs.

N. 72°45' E. 15.20 chs.

N. 30°00' E. 7.70 chs.

N. 00°30' W. 9.40 chs.

N. 34°00' W. 20.00 chs.

N. 53°30' W. 8.40 chs.

N. 49°30' W. 1.58 chs. To the Meander Cor. of fractional Secs. 4 & 9.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 108.58 chs.

June 24: At noon hour sky overcast; obs. for lat. impossible.
Thence in Sec. 4

N. 49°30' W. 18.18 chs.

N. 68°30' W. 9.20 chs.

N. 85°15' W. 8.00 chs.

S. 61°45' W. 11.40 chs.

S. 50°30' W. 3.95 chs. To the Meander Cor. of fractional Secs. 4 & 5.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 50.73 chs.

Thence in Sec. 5.

S. 58° W. 15.07 chs. To the Meander Cor. of fractional Secs. 5 & 8.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 15.07 chs.

June 24, 1909.

I commence at the Meander Cor. of fractional Secs. 5 & 8 which is a stone 25 x 11 x 7 ins. Marked and witnessed as heretofore described.

MEANDER OF SAN JUAN RIVER

THROUGH T. 41 S. R. 17 E.

At this Cor. June 25, I set off 37°16' on latitude arc 23°28' N, on the Declination arc and at 8 h. a.m. l.m.t. I determine a meridian with the solar. Thence I run with Meanders in Sec. 8.

S. 64°30' W. 15.00 chs.

S. 57°15' W. 6.80 chs.

S. 18°30' W. 3.40 chs.

S. 16°15' E. 4.60 chs.

S. 3°45' E. 3.20 chs.

S. 32°30' W. 3.20 chs.

S. 71°00' W. 4.00 chs.

N. 87°45' W. 6.50 chs.

N. 76°30' W. 8.00 chs.

N. 58°30' W. 4.00 chs.

N. 78°00' W. 6.50 chs.

S. 83°30' W. 7.80 chs.

S. 56°30' W. 3.50 chs.

S. 68°00' W. 4.00 chs.

S. 85°47' W. 4.48 chs. To point for meander cor. of fractional secs. 7 & 8

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 84.98 chs.

June 25: At noon hour sky overcast; obs. for lat. impossible. Thence in Sec. 7.

N. 65°00' W. 4.60 chs.

N. 42°15' W. 5.50 chs.

N. 43°00' W. 7.50 chs.

N. 44°15' W. 3.70 chs.

N. 36°00' W. 3.80 chs.

N. 14°45' W. 2.50 chs.

N. 0°15' E. 3.90 chs. To the Meander Cor. of frac-

tional Secs. 6 & 7.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

A few willows at edge of water.

Land exceptionally difficult to survey. 31.50 chs.

June 25, 1909.

I commence at ~~xxxxxx~~ Meander Cor. of fractional Secs. 6 & 7 which is an iron post 3 ft. long 1 inch diameter marked and witnessed as heretofore described.

At this Cor. June 26, I set off 37°18' on Latitude arc 23° 24½' N. on the Declination arc and at 8 h. 15 m. a.m. l.m.t. I determine a meridian with the solar.

Thence I run with Meanders in Sec. 6

N. 0°15' E. 6.10 chs.

N.15°15' W. .70 chs.

N.20°00' E. 11.80 chs.

N. 1°30' W. 5.20 chs.

N. 3°30' W. 6.00 chs.

N. 7°45' W. 11.20 chs.

N.30°00' W. 10.80 chs.

N.41°15' W. 4.60 chs.

N.52°00' W. 6.00 chs.

N.64°15' W. 4.80 chs.

N.50°30' W. 4.40 chs.

N.47°00' W. 8.60 chs.

N.64°00' W. 13.60 chs.

S.72°45' W. 17.60 chs.

N.87°30' W. 4.51 chs. To the Meander Cor. of fractional Sec. 1 & 6.

Land rocky slope partially covered with sand.

Soil 4th rate; rocky.

No timber.

Land exceptionally difficult to survey 115.91 chs.

MEANDER OF SAN JUAN RIVER

THROUGH T. 41 S. R. 17 E.

A few willows at edge of water.

Land exceptionally difficult to survey. 115.91 chs.

June 26, 1909.

Volume

#

R0367

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Page

T. 41 S. R. 17 E.

GENERAL DESCRIPTION.

The general configuration of the entire fractional township is that of high mesas or plateaus deeply cut by errosion culminating intonumerous very deep canons bordered by a shelf rock, capping of a harder cryataline nature than some of the underlying strata. The exposed geological formation is a fossiliferous sedimentary of the Jura - Trias or red - bed formation composing the surface and well down the cliffs of the upper mesas.

The Paleozoic or Carboniferous Devonion Silurian Periods with very thick beds of Lenticular and fossiliferous limestone containing marine organism compose the stratas below the lower mesa.

Very thick beds of fossiliferous sandstone, also beds of Carboniferous slate or black shale which emit a very perceptible odor of petroleum when broken occur along the exposed faces of the San Juan river canon as well as along the canons leading to it.

Escaping gas occurs in the N. W. 1/4 of Sec. 4 heretofore described. The Goodrich oil sand about 30 ft. in thickness with a light covering of the red-bed formation, some places with no covering, forms the upper rim of the San Juan river canon, the volatile particles having all disappeared and left the exposed faces of the sand covered with solidified petroleum residue.

At 1200 ft. perpendicular depth the Honaker oil sand is exposed along the San Juan river canon occurring in the eastern portion of the township about 70 ft. above the water in the river. At about 1000 ft. perpendicular below upper rim of river canon occurs the strata of blackshale heretofore mentioned.

Numerous stratas of unnamed oil sands occur between top of river canon and the water's edge especially in the eastern portion of the township which vary in thickness from 1 to 100 ft.

T. 41 S. R. 17 E.

There is one strata over 100 ft. thick of solid fossil shells, etc. occurring at about 500 ft. perpendicular below top of river canon. At about one mile east of township boundary occurs the Apex of the 2nd Anticlinal This Anticlinal has a dip to the west of about 75 to 100 ft. per mile and with the fall of the river about 20 ft. per mile the Honaker oil sand dips below the water in the river at its intersection with the 8th Standard Paralell in T. 41 S. R. 16 E.

A perpetual seep or spring of fair water is located near the center of Sec. 2.

This and the unavailable water in Johns Canon and the San Juan river is the only water in this township.

The small portion of the upper or cedar mesa contained in this township is covered with scattering scrubby cedar and pinon pine timber.

The best patches of grazing land found within my entire survey is found on the lower mesa between the canons leading to the river.

There are no settlers or inhabitants of any kind except oil drilling camps heretofore and hereinafter described.

The soil can nearly all be classed as 3rd and 4th rate.

There are some of the most beautiful stratas of limestone which would afford excellent building stone exposed on the surface in places and cut by the canons.

At several places along the road leading to Bluff are large blocks or slabs of rock on the faces of which the prehistoric inhabitants have cut their hieroglyphics.

Upon the upper mesa on the sandy knolls and elsewhere occur broken pieces of pottery mostly decorated.

Along the sloping bank of the San Juan river above and at the water's edge are deposits in different places of a sandy clay that has caught the very fine flour placer gold. This plastic sand I found upon exhaustive surface tests [illegible] and [illegible] by

T. 41 S. R. 17 E.

General Description, continued.

surface tests such as panning and assay to carry from 75¢ to $3.50 per yard in free gold. I consider the lands of this township valuable only for the gold and petroleum mineral values they contain. The value for grazing is so small that it is not worth considering.

June 20th. 1909

Elmer E. Miller

U. S. Deputy Surveyor.

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Page

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by _____

_____, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of _____

_____

showing the respective capacities in which they acted:

For list of names and final oath of assistants see book "P", *Chainman.*

T. 41 S., R. 16 E., *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted _____

_____, United States Deputy Surveyor, in surveying all those parts or portions of the _____

_____

_____

_____ of the _____

_____ meridian, _____ of _____, which are represented on the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for _____

_____, *Chainman.*

_____, *Chainman.*

_____, *Moundman.*

_____, *Moundman.*

_____, *Axman.*

_____, *Axman.*

_____, *Flagman.*

_____

Subscribed and sworn to before me this _____ day of _____, 190 }

_____

SEAL

_____

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FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, _____, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from _____ United States Surveyor General for _____, bearing date of the _____ day of _____, 190 , I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for _____, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of deputy see book "P" T. 41 S., R. 16 E.

_____ of the _____ meridian, in the _____ of _____, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

_____

United States Deputy Surveyor

Subscribed by said _____, and sworn to before me this _____ day of _____, 190

_____

SEAL

_____

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911

The foregoing field notes of the survey of the Subdivision and Meander lines of Township No. 41 South, Range No. 17 East of the Salt Lake Base and Meridian, Utah;

executed by Elmer E. Miller under his contract No. 305, dated February 25, 190 9, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

_____

United States Surveyor General

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

_____

United States Surveyor General

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Page

4—679.

FILED
APR 25 1910

"O"
BOOK A-367

M.S.C.

FIELD NOTES

OF THE SURVEY OF THE

EAST BOUNDARY

OF

TOWNSHIP NO. 41 SOUTH,

RANGE NO. 16 EAST,

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E. MILLER, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* February 25th, 1909.

Survey commenced June 26th, 1909

Survey completed June 27th, 1909.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING,	CHAINMAN.
PRESLAY C.WILLS,	CHAINMAN.
FRANK JACKSON,	MOUNDMAN.
WILLIAM W.RUBY,	MOUNDMAN.
ALBERT JONES,	FLAGMAN.

For preliminary affidavits see book "F" T. 41 S., R. 19 E.

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BOOK A-367

INDEX DIAGRAM.

Township No 41 South, *Range* No 16 East

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Meanders Page.....

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____
do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of

_____

_____, *Chainman*

_____, *Chainman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey o

_____

_____, *Moundman*

_____, *Moundman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

WE, _____ and _____
do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corner and other duties, according to instructions given us, to the best of our skill and ability, in the survey o

_____

_____, *Axman*

_____, *Axman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

I, _____, do solemnly swear that I will well and trul perform the duties of flagman according to instructions given me, to the best of my skill and ability, in th survey of _____

_____, *Flagman*

Subscribed and sworn to before me this _____
day of _____, 190

_____

SEAL

_____

EAST BOUNDARY OF T. 41 S., R. 16 E.

Survey commenced June 26, 1909, and executed with the instrument described in book "A" of this survey.

At the stand.cor.of secs.31 and 32, T.40 S., R. 17 E.; heretofore described; lat.37° 17' 18" N.; long.110° 08' 09" W., I set off 23° 23'N.on the decl.arc; 37° 17'N.on the lat.arc; and at 3 h. 42 m.p.m.l.m.t.determine with the solar a meridian and mark a point thereof on a stake firmly set in the ground 5 chs.N. of the corner.

At 7 h. 09.1 m.p.m.l.m.t., I observe Polaris at lower culmination, in accordance with Manual of Instructions and mark a point in the line thus determined on a peg driven in the ground 5 chs.N.of my station. This point falls 0.2 ins.E.of the mark determined by the solar.

June 26, 1909.

June 27: At 8 h. 03 m.a.m.l.m.t., I set off 23° 21' N. on the decl.arc; 37° 17'18" N.on the lat.arc; and mark a point in the line determined with the solar by a tack driven in the stake already set 5 chs.N.of my station; this mark falls 0.3 ins.E.of the meridian established by the Polaris observation.

The solar apparatus by p.m.and a.m.observations defines positions for meridians respectively about 0' 11" W. and 0' 16" E.of the meridian established by the Polaris observations.

The magnetic bearing of the true meridian at 8 h. 15 m.a.m.is N.14° 30'W.; the angle thus determined gives the mag.decl.14° 30'E.

Thence I run

West along the 8th Standard Parallel South;

Over mountainous land.

63.66 Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the

EAST BOUNDARY T. 41 S., R. 16 E.

Chains	
	ground, for closing cor.of Tp.41 S., Rs.16 and 17 E. marked on brass cap T 40 S in N.half; R 16 E S 36 in NW.; R 17 E S 31 in NE.; C C T 41 S in S.half; S 1 in SW; and S 6 in SE.quadrants; and raise a mound of stone 2 1/2 ft.base, 2 ft.high S.of cor.
	Thence I run
	South bet.secs.1 and 6,
	Over rough and broken land; exceptionally difficult to survey.
2.00	Edge of vertical cliff about 1150 ft.above San Juan River, course N.40° W.
	Set point on line on bottom and leave flag on top; Thence descend over sand and limestone stratas, interlain with stratas of oil sands.
11.60	Bottom of cliffs and right bank of San Juan River, Set an iron post 3 ft.long, 3 ins.dia., 24 ins.in the ground, for meander cor.of frac'l secs.1 and 6, marked on brass cap T 41 S in N.; R 16 E S 1 in W.half; R 17 E S 6 in E.half; and M C in S.; and raise a mound of stone 3 ft.base, 2 1/2 ft.high N.of cor.
	Land, mountainous; rough and broken.
	Soil, rocky; 4th rate.
	Mountainous land; rough and broken; and exceptionally difficult to survey.11.60 chs.
	June 27, 1909.

GENERAL DESCRIPTION.

See general description after meanders.

There are some narrow sand and gravel bars along the river that indicated values in black sand and gold; No tests were made however.

The oils contained in the sands below the river

and the gold and black sands are the only value that can be attached to the land in this fractional township.

June 27, 1909.

Elmer E. Miller

U.S.Deputy Surveyor.

Volume
#
R0367

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FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E. Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the E. and S. Bdys. T. 41 S., Rs. 18 & 19 E; W. Bdy. T. 42 S., R. 19 E.; E. Bdys. Tps. 41 S., Rs. 16, 17, and 17 E. of the Salt Lake Base and Meridian, Utah. showing the respective capacities in which they acted:

Allan King, *Chainman.*

Preslay C. Wills, *Chainman.*

Frank Jackson, *Moundman.*

William W. Ruby, *Moundman.*

, *Axman.*

, *Axman.*

Albert Jones, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E. Miller, United States Deputy Surveyor, in surveying all those parts or portions of the E. and S. Bdys. T. 41 S., Rs. 18 & 19 E; W. Bdy. T. 42 S., R. 19 E.; E. Bdys. Tps. 41 S., RS. 16, 17, and 17 E. of the Salt Lake Base and meridian, State of Utah, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for Utah

Allan King, *Chainman.*

Preslay C. Wills, *Chainman.*

Frank Jackson, *Moundman.*

William W. Ruby, *Moundman.*

, *Axman.*

, *Axman.*

Albert Jones, *Flagman.*

Subscribed and sworn to before me this 12th day of August, 1909

A. L. Rafler
Notary Public

SEAL

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my com. Expires May 1st 1910

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Elmer E. Miller, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Thomas Hull United States Surveyor General for Utah, bearing date of the 25th day of February, 1906, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Utah, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the E. and S. Bdys. T. 41 S. Rs. 18&19 E.; W. Bdy. T. 42 S., R. 19 E.; E. Bdys. Tps. 41 S., Rs. 16, 1[illegible]; and 17 E.

of the Salt Lake Base and meridian, in the State of Utah, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

in books F. H. J. M. & O.

Elmer E. Miller

United States Deputy Surveyor.

Subscribed by said Elmer E. Miller, and sworn to before me this 15th day of June, 1910

Charles M. Bishop, Clerk

By Albert Trego

Deputy Clerk

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911.

The foregoing field notes of the survey of the East Boundary of Township No. 41 South, Range No. 16 East of the Salt Lake Base and Meridian, Utah

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in [illegible], has been correctly copied from the original notes on file in this office.

United States Surveyor General.

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BOOK A-367

"P"

FILED
APR 25 1910

FIELD NOTES

OF THE SURVEY OF THE

MEANDER LINES

O F.

TOWNSHIP NO.41 SOUTH,

RANGE NO.16 EAST,

Of the SALT LAKE BASE AND *Meridian,*

IN THE STATE OF UTAH,

AS SURVEYED BY

ELMER E.MILLER, *United States Deputy Surveyor,*

Under his Contract No. 305, *dated* FEBRUARY 25th, *190* 9,

Survey commenced JUNE 27th, *190* 9,

Survey completed JUNE 27th, *190* 9.

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BOOK A-367

NAMES AND DUTIES OF ASSISTANTS.

ALLAN KING, CHAINMAN.

PRESLAY C.WILLS, CHAINMAN.

FRANK JACKSON, MOUNDMAN.

WILLIAM W.RUBY MOUNDMAN.

ALBERT JONES, FLAGMAN.

For preliminary affidavits see book "C" T. 41 S., R. 19 E.

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INDEX DIAGRAM.

Township No 41 South, Range No 16 East

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Meanders Page 1 and 2

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BOOK A-367

PRELIMINARY OATHS OF ASSISTANTS.

WE, _____ and _____ do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins, either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us, in the survey of

_____

_____, *Chainman.*

_____, *Chainman.*

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

WE, _____ and _____ do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of

_____

_____, *Moundman.*

_____, *Moundman.*

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

WE, _____ and _____ do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of

_____

_____, *Axman.*

_____, *Axman.*

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

I, _____, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability, in the survey of _____

_____, *Flagman.*

Subscribed and sworn to before me this _____ day of _____, 190

SEAL

MEANDERS T. 41 S., R. 16 E.

MEANDERS OF RIGHT BANK OF SAN JUAN RIVER

DOWN STREAM.

I commence at the meander cor.on E.bdy.of Tp., which is 3 inch iron post, marked and witnessed as heretofore described.

June 27, 1909: At 8 h. 18 m.a.m.l.m.t.I set off 37° 17' N.on latitude arc; 23° 21'N.on declination arc; and determine a meridian with the solar. Thence I run with meanders in sec.1,

N.87° 30'W. 7.03 chs.

N.81° 00'W. 5.50 chs.

N.52°15'W. 3.30 "

N.47° 45'W. 3.70 "

N.14° 45'W. 6.13 " To the meander cor.of fractional sec.1 on the 8th standard parallel.

Land, rocky slope.

Soil, rocky; 4th rate.

No timber.

Few willows.

Land, mountainous and difficult to survey 22.92 chs.

June 27, 1909.

BOUNDARIES T. 41 S., R. 16 E.

LATITUDES, DEPARTURES, AND CLOSING ERRORS.

Line Designated	True Bearing	Dist.	Latitudes N.	Latitudes S.	Departures E.	Departures W.
		chs.	chs.	chs.	chs.	chs.
8th Stand.Par.S.	East	19.37	.....	.....	19.37	.....
East Boundary	South	11.60	.....	11.60	.....	.....
	N.87°30'W.	7.03	.31	.....	.....	7.02
	N.81°00'W.	5.50	.86	.....	.....	5.43
	N.52°15'W.	3.30	2.02	.....	.....	2.61
	N.47°45'W.	3.70	2.49	.....	.....	2.74
	N.14°45'W.	6.13	5.93	.....	.....	1.56
	T o t a l s		11.61	11.60	19.37	19.36
			11.60		19.36	
Errors in latitudes and departures			.01		.01	

GENERAL DESCRIPTION.

With the single exception of about 2 chs.N. and S. and 1.50 chs.E. and W.of level mesa on the top of San Juan River Canyon, this township is composed wholly of a series of precipitous cliffs and bluffs approaching or leading down to the San Juan River; said cliffs and bluffs being composed of lime and sandstone interlaid with oil sand strata; being hermetically sealed by the solidification of the petroleum residue.

No timber or grass;Soil rocky, 4th rate. Exceptionally difficult to survey.

June 27, 1909.

Elmer E. Haller

U.S.Deputy Surveyor.

FINAL OATHS OF DEPUTY SURVEYOR AND HIS ASSISTANTS.

LIST OF NAMES.

A list of the names of the individuals employed by Elmer E. Miller, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of ~~the subdivision and meander lines of Tps. 41 and 42 S., R. 19 E.; Tps. 41 and 42 S., R. 18 E.; and Tp. 41 S., R. 17 E.; and the meanders in Tp. 41 S., R. 16 E. of~~ the Salt Lake Base and Meridian, Utah, showing the respective capacities in which they acted:

Allan King, *Chainman.* ×

Preslay C. Wills, *Chainman.*

Frank Jackson, *Moundman.*

William W. Ruby, *Moundman.*

, *Axman.*

, *Axman.*

Albert Jones, *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Elmer E. Miller, United States Deputy Surveyor, in surveying all those parts or portions of the subdivision and meander lines of Townships 41 and 42 South Range 19 East; townships 41 and 42 S., R. 18 E.; Township 41 S. R. 17 E.; and the meander lines in Township 41 S., R. 16 E. of the Salt Lake Base and meridian, State of Utah, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for

Allan King, *Chainman.* ×

Preslay C. Wills, *Chainman.*

William W. Ruby, *Moundman.*

Frank Jackson, *Moundman.*

, *Axman.*

, *Axman.*

Albert Jones, *Flagman.*

Subscribed and sworn to before me this 12th day of August, 1909

A. L. Raphe
Notary Public

SEAL

6-151

My com. Expires May 1st 1911

FINAL OATH OF UNITED STATES DEPUTY SURVEYOR.

I, Elmer E. Miller, United States Deputy Surveyor, do solemnly swear that, in pursuance of a contract received from Thomas Hull United States Surveyor General for Utah, bearing date of the 25th day of February, 1909, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for Utah, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the subdivision and meander lines of Townships 41 and 42 South, Ranges 18 and 19 East; Township 41 South Range 17 East; and the meander lines on Township 41 South, Range 16 East of the Salt Lake Base and meridian, in the State of Utah, which are represented in the foregoing field notes as in books G.I.K.L.N. and P. having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Elmer E. Miller
United States Deputy Surveyor.

Subscribed by said Elmer E. Miller, and sworn to before me this 15th day of June, 1910

Charles W. Bishop Clerk
By Albert Trego Deputy Clerk

SEAL

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, June 19, 1911

The foregoing field notes of the survey of the Meander lines of Township No. 41 South, Range No. 16 East of the Salt Lake Base and Meridian, Utah,

executed by Elmer E. Miller under his contract No. 305, dated February 25, 1909, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in ....., has been correctly copied from the original notes on file in this office.

United States Surveyor General.

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