

CUB RIVER CR 394 (1)

ENGINEERS  
FIELD BOOK

CUB RIVER BRIDGE  
CR -394 1

State Road Commission of Utah







2

+158  
+26<sup>21</sup>

P.T.

15-04<sup>5</sup>

65

353  
14-15<sup>9</sup>

+50

13-02<sup>7</sup>  
12-43<sup>3</sup>

64

304  
11-10<sup>7</sup>

+50

515  
9-28<sup>1</sup>

63

250  
8-25<sup>2</sup>+77<sup>4</sup>

P.I.

524  
6-32<sup>7</sup>

A 30-09 RT A

+50

6-32<sup>7</sup>

R 928.15

T 250.00

62

198  
5-00<sup>3</sup>

L 488.41

77.40

P.I. 62+77.80

+50

412  
3-27<sup>7</sup>

61

2-14<sup>5</sup>  
1-55<sup>5</sup>

+50

420  
0-22<sup>6</sup>+27<sup>4</sup>  
60+37<sup>8</sup>

P.C.

0-00

56+00

P.O.T.

Eng'r  
PartyDate  
Weather

2

65+15<sup>8</sup> P.T. 15° 04<sup>5</sup>

65-

+50

12° 59<sup>8</sup>

64-

11° 25<sup>9</sup>

+50

9° 51<sup>1</sup>

63-

8° 16<sup>9</sup>62+81<sup>8</sup> P.I.

+50

6° 42<sup>3</sup>

A 30° 09' dt

R= 909.89

T= 245.08

62

5° 07<sup>8</sup>

L= 478.88

+50

5° 33<sup>6</sup>

61-

10° 59<sup>3</sup>

+50

0° 25<sup>1</sup>60+36<sup>8</sup> P.C.54+95<sup>1</sup>



72

29-09<sup>2</sup>

+50

26-20<sup>7</sup>

71

23-32<sup>2</sup>

+50

20-43<sup>7</sup>

+05.91

P.1

A 65-00 RT cut.02

70

17-55<sup>1</sup> R 510.00

T 324.91

+50

15-06<sup>6</sup> L 578.58

P.1.70+05.91

69

11-18<sup>1</sup>

+50

9-29<sup>6</sup>

68

6-41<sup>1</sup>

+50

3-52<sup>5</sup>

67

1-04

66+81.0

P.C.

0-00



1850  
181122W

Eng'r  
Party

Date  
Weather

+57° Ah EQU.

+59.58 BK P.T.

32-30°

72+50

31-57°



+

4.1

-

Elev

4442.64

B.M.

7.48 4450.12'

53700

+50

54

+50

55

Eng'r  
Party

JRG  
NH  
JLH

Date 3-25-74  
Weather Fair

STK on P. Pole Lt Sta 55700

482

14

471

27

460

41

446

15

378

12.5

45

38

35

28

24

11.2

42

14

72

9

50

50

435

6.6

16

6.9

11

492

8.3

32

50

418

32

32

Canal

Bank







8

+      π      -  
4443.45

60

61

B.M

1.77

42.71 ✓

2.51

40.94

62

63

Eng'r  
PartyDate  
Weather

8

36.1	36.1	36.8	41.6	41.1	41.1	41.1	36.2	35.8
6.8	6.0	6.7	1.9	1.8	1.8	2.1	7.3	7.7
45		58	71	73	94	98	110	120
				50	50			Canal Bank

36.5	36.5	36.6	36.5	41.5	41.5	41.5	40.1	37.8
7.0	7.0	6.9	7.0	2.0	2.0	2.0	2.7	5.7
45		50	78	90	92	113	120	130
					50	50		CB

STK on Pole Rt 61725  
MKD 40.94

36.3	36.2	36.3	36.2	41.2	41.1	41.3	40.1
6.4	6.5	6.4	6.5	1.5	1.5	1.4	2.4
45		50	88	102	103	123	131
					50	50	CB

36.0	36.0	36.0	36.0	40.9	41.2	41.3	40.1	30.1
6.7	6.7	6.7	6.7	1.8	1.5	1.4	2.6	12.0
45		50	86	97	100	121	128	142
					50	50	CB	Edge water







+ T -

4445.69

66+80

+83 Top water

67+00 Top bank

+20 66" x 40' CMP

+36 E.O.

+50

Eng'r  
Party

Date  
Weather

26.9

18.8

29.1

15.8

37.6

40.1

41.9

42.4

42.1

38.1

8.1

5.0

3.8

3.3

3.6

7.0

4.5

5

14

28

26

50

50

Top

R.P.

Rap

37.1

32.4

14.0

13.3

10

30

R

R

42.6

3.1

37.0

38.1

42.8

42.9

42.1

41.7

41.1

36.7

36.2

8.7

6.8

2.9

2.8

3.0

4.0

4.6

9.0

9.5

4.5

2.4

1.2

6

15

23

42

50

EO

EO



+      +      -

4445.69

68 +00

+31

+50

69

+50

Eng'r  
Party

Date \_\_\_\_\_  
Weather \_\_\_\_\_

371	410	437	433	426	425	411	366	361	365
80	47	18	18	31	32	38	91	90	92
50	41	27	20		1	10	22	37	50
			EO		EO				

421  
10

431	451	451	435	428	482	365	351	351
23	06	06	23	29	49	92	98	10
45	38	31	9	4		9	27	50
		EO	EO					

441	461	471	451	447	380	361	320	371
13	+12	+14	04	10	77	90	87	84
59	50	42	20	14		7	16	50
Fen		EO	EO					

462	482	490	473	461	382	371	373	375
+05	+08	+33	+16	+07	75	80	84	82
44	56	46	24	16	3		13	50
Fen		EO	EO					



+      π      -

4445.69

70

7.25      38.44

12.54      50.98

+50

0.39      50.59

11.73      62.32

71

+50

0.93      61.39

12.22      73.61

Eng'r  
Party

Date \_\_\_\_\_  
Weather \_\_\_\_\_

577	518	501	497	482	379	373
+57	+61	+46	+40	55	78	84
61	47	22	17		12	50
Ken	EO	EO				

Top & 69+50

601	547	556	550	537	522	458	411	406
+93	+37	+46	+40	+24	+18	52	99	104
61	55	51	41	17	12		19	50
Ken			EO	EO				

598	587	568	578	580	569	557	453	466	398
25	36	55	45	43	54	66	179	217	225
50	45	41	38	30	9		28	50	60
Ken				EO	EO				

727	607	609	610	608	581	493	421	408
+100	19	4	13	75	47	130	207	215
50	29	26	21	EO	20	41	60	78
				EO		Ken		



+      π      -

4473.61

72

+50

P.T. +59<sup>58</sup> BK EQU.  
+57° AH

73

+50

B.M

3.08      70.53

Eng'r  
Party

Date \_\_\_\_\_  
Weather \_\_\_\_\_

Same	73 <sup>6</sup>	68 <sup>6</sup>	63 <sup>4</sup>	63 <sup>2</sup>	64 <sup>2</sup>	63 <sup>9</sup>	60 <sup>8</sup>	53 <sup>3</sup>	43 <sup>5</sup>
Slope	0 <sup>0</sup>	5 <sup>0</sup>	10 <sup>2</sup>	9 <sup>1</sup>	9 <sup>4</sup>	9 <sup>1</sup>	12 <sup>8</sup>	20 <sup>3</sup>	30 <sup>1</sup>
	70	39	28	20	14	9	30	47	78
				EO		EO		Fen	
	83 <sup>6</sup>	71 <sup>5</sup>	65 <sup>5</sup>	66 <sup>3</sup>	66 <sup>3</sup>	66 <sup>6</sup>	64 <sup>3</sup>	55 <sup>4</sup>	
	410 <sup>0</sup>	2 <sup>1</sup>	8 <sup>1</sup>	7 <sup>3</sup>	7 <sup>3</sup>	7 <sup>0</sup>	9 <sup>3</sup>	18 <sup>1</sup>	
	48	28	17	14	11	11	28	52	
					EO	EO		Fen	

67<sup>1</sup>  
15

69<sup>5</sup>  
4<sup>1</sup>

72<sup>1</sup>  
15

Hub 25 Lt 72+60



Power Pole Location

68+97 Pow. Pole 48 RT  
 68+05 Pow. Pole 47 Lt (Guy To South + W.)  
 66+05 Pow. Pole 30 RT  
 63+98 Pow. Pole 80 RT  
 61+29 Pow. Pole 85 RT  
 58+77 Pow Pole 31 RT  
 56+32 Pow. Pole 29 Lt (Guy To South)  
 54+98 Pow. Service Pole 35 RT  
 54+96 Power Pole 25 Lt

Eng'r  
PartyDate  
Weather



S.E. Cor Br.	4444.49
N.E. Cor "	4444.46
N.W. Cor "	4444.50
S.W. Cor "	4444.46

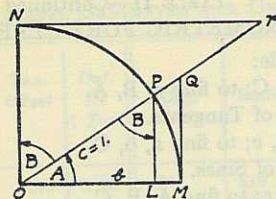


TABLE II

TRIGONOMETRIC FORMULAE

$$\angle A = \angle MOP \quad \angle B = \angle PON = \angle OPL$$

$$R = OB = c = 1$$

$$\sin A = \frac{a}{c} = \frac{a}{1} = a = \cos B = LP$$

$$\cos A = \frac{b}{c} = \frac{b}{1} = b = \sin B = OL$$

$$\tan A = \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ$$

$$\cot A = \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT$$

$$\sec A = \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ$$

$$\csc A = \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT$$

$$\text{vers } A = \frac{LM}{OP} = LM = \text{covers } B \neq$$

$$\text{covers } A = \frac{OP - LP}{OP} = OP - LP = \text{vers } B$$

$$\text{exsec } A = PQ = \text{coexsec } B$$

$$\text{coexsec } A = PT = \text{exsec } B$$

$$\sin \frac{1}{2}A = \sqrt{\frac{1 - \cos A}{2}} \quad \cos \frac{1}{2}A = \sqrt{\frac{1 + \cos A}{2}}$$

$$\sin 2A = 2 \sin A \cos A \quad \cos 2A = \cos^2 A - \sin^2 A$$

$$\text{Law of Sines} \quad \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$$\text{Law of Cosines} \quad c^2 = a^2 + b^2 - 2ab \cos C$$

$$\text{Law of Tangents} \quad \frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}$$



73338

53

65426.21  
10.37

65415.84 PT

4 88.41

60427.43 PC.

250

62177.43 P.I.

68197

48R

45.69

1.18

44.51