

Sterling Hwy MP 45-60 Rut Repair 2010.04.01

Sterling Hwy MP 45-60 Rut Repair

2010.04.01

Horizontal and Vertical Control

①

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①

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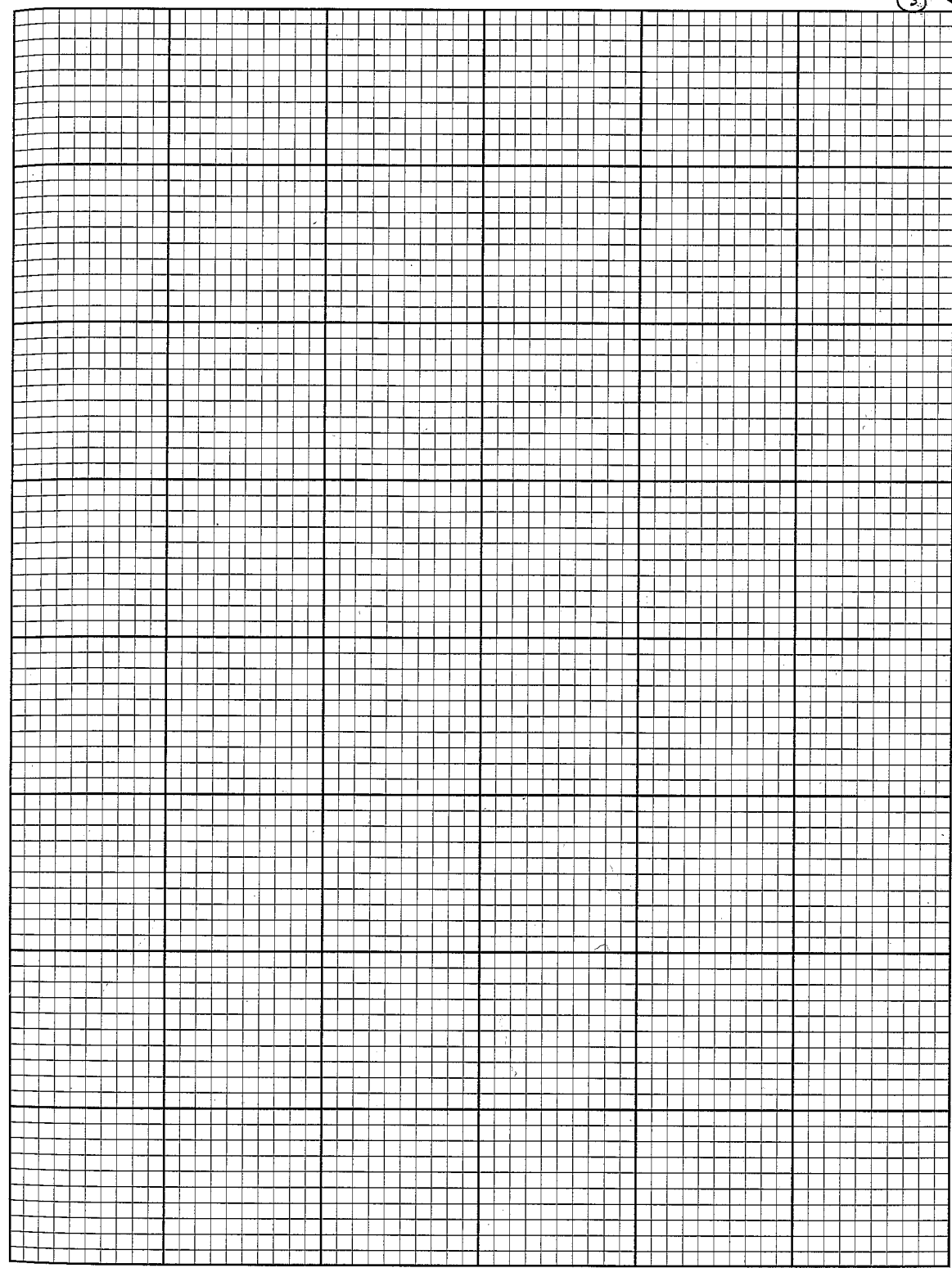
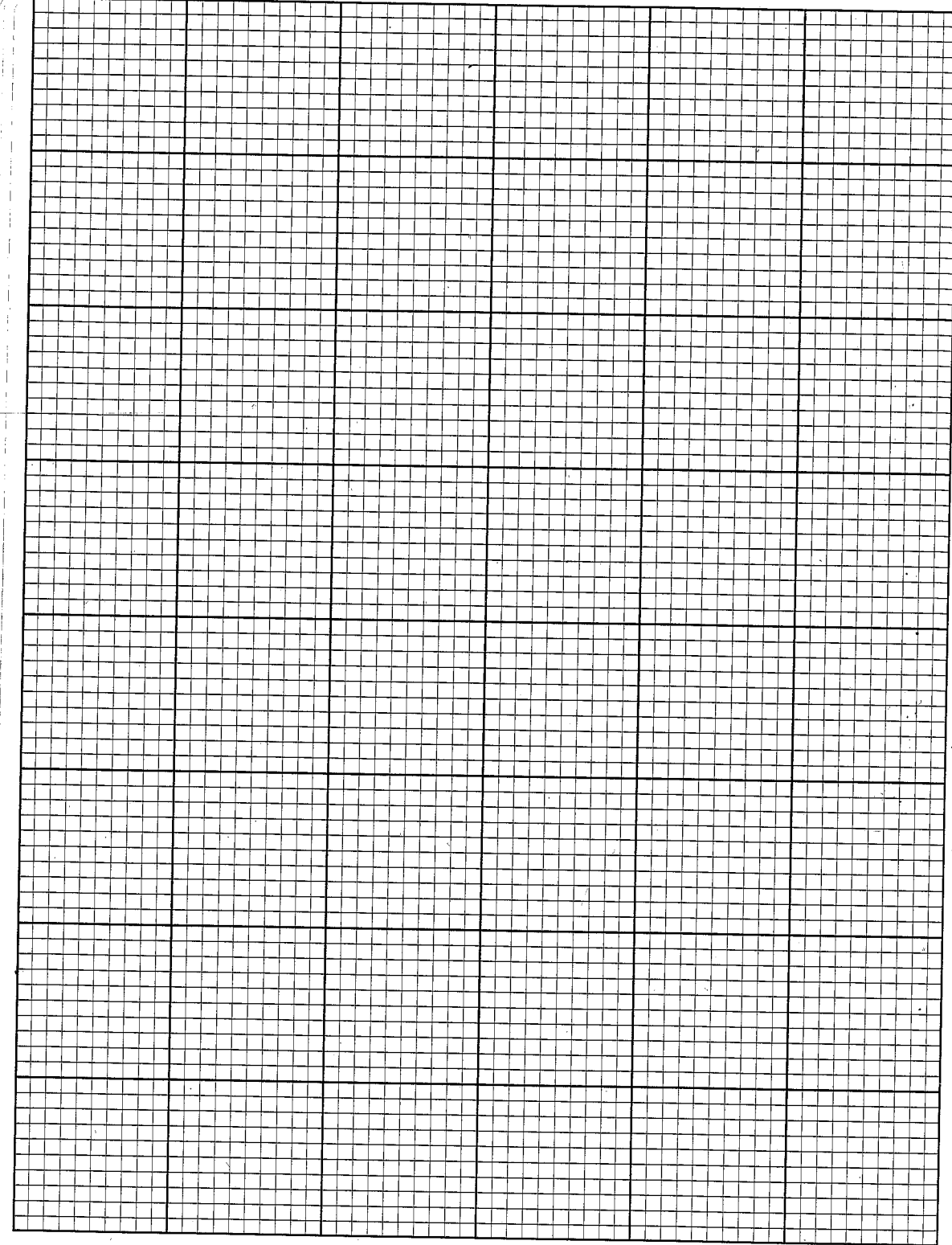
NOTES

HORIZONTAL CONTROL

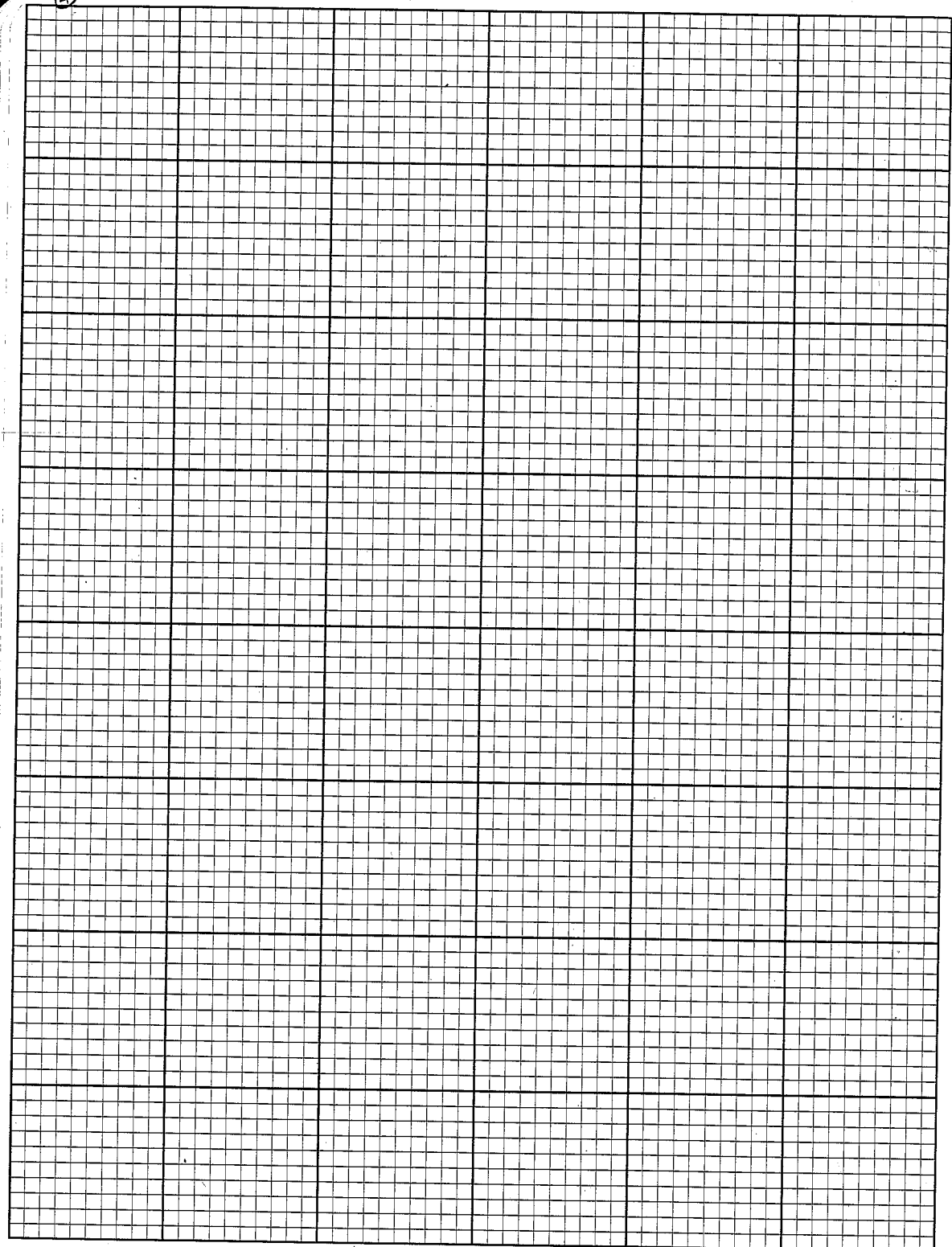
- ALL HORIZONTAL COORDINATES WERE DERIVED FROM PULSING GPS 52(551) + GPS 51(552) (LOCATED AT COOPER LANDING AIRPORT) TO STA 58 (LOCATED AT INTERSECTION OF SKINAK LAKE ROAD + STERLING HWY).
- THEN GPS 52 + STA 58 WERE USED AS BASES TO ESTABLISH HORIZONTAL COORDINATES FOR ALL CP ON PROJECT.

VERTICAL CONTROL

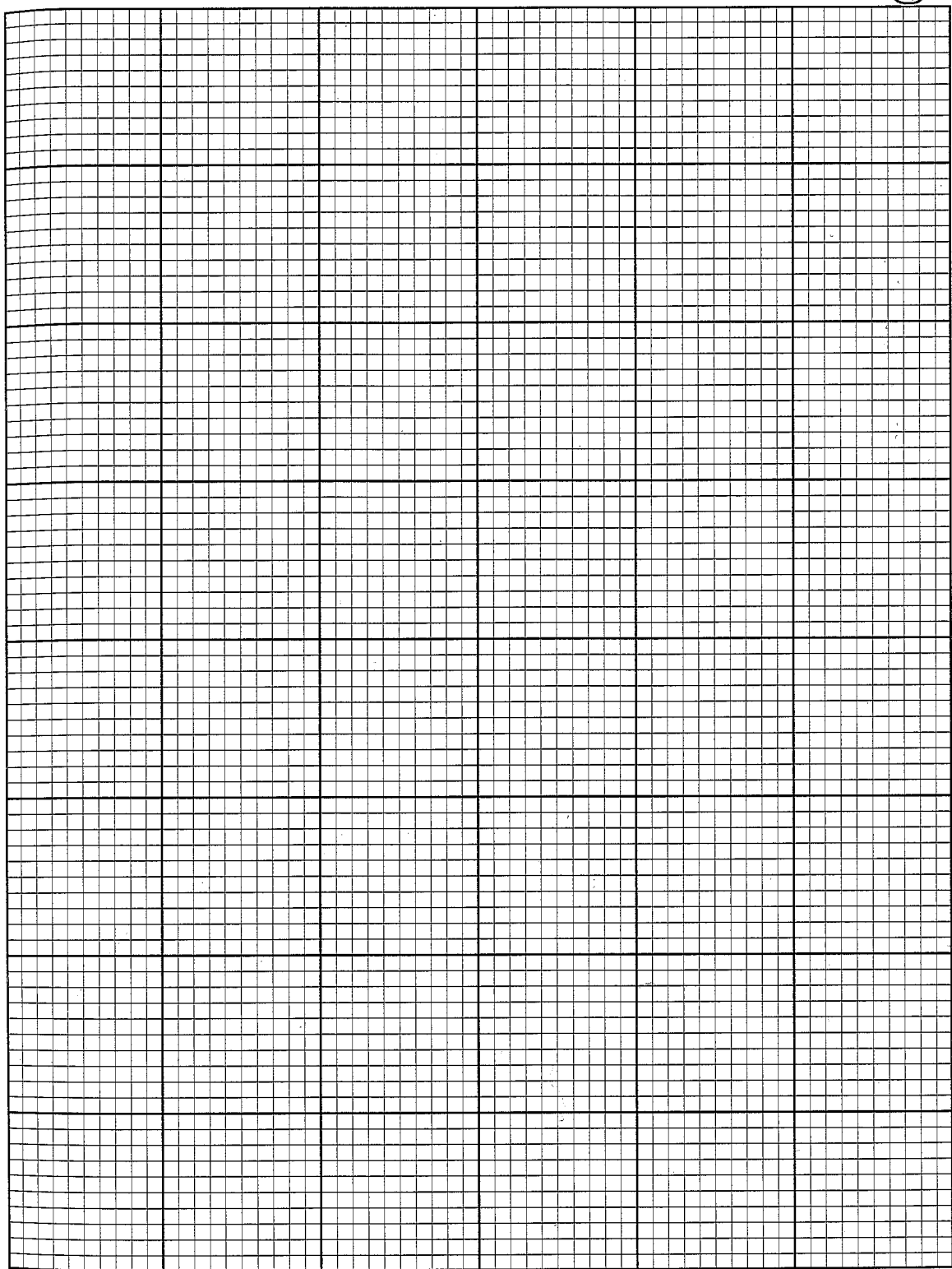
- ALL ELEVATIONS IN COOPER LANDING COMMUNITY ARE BASED ON EXISTING VERTICAL BENCHMARK U-77, A BRASS CAP SET VERTICALLY IN A ROCK FACE (LOCATED JUST EAST OF KENAI LAKE LODGE). U-77 HAS AN ELEVATION OF 462.81'.
- ALL OTHER ELEVATIONS ARE OPWS DERIVED USING GEOID 09.



2



4



⑤

UNIT

T

FTIM

START

STOP

Sterling Hwy MP 45-60

⑤

± 50°

M. CLOY

Control Ties + RPS

6-16-10

VARLEY
RIZENSKI

UNIT T FTM START STOP

11 #551 4.15'
GPS 52 1.265m 2:30 P 6:18p

12 #58 3.45'
STH 58.0 1.049m 1:53p 5:56p

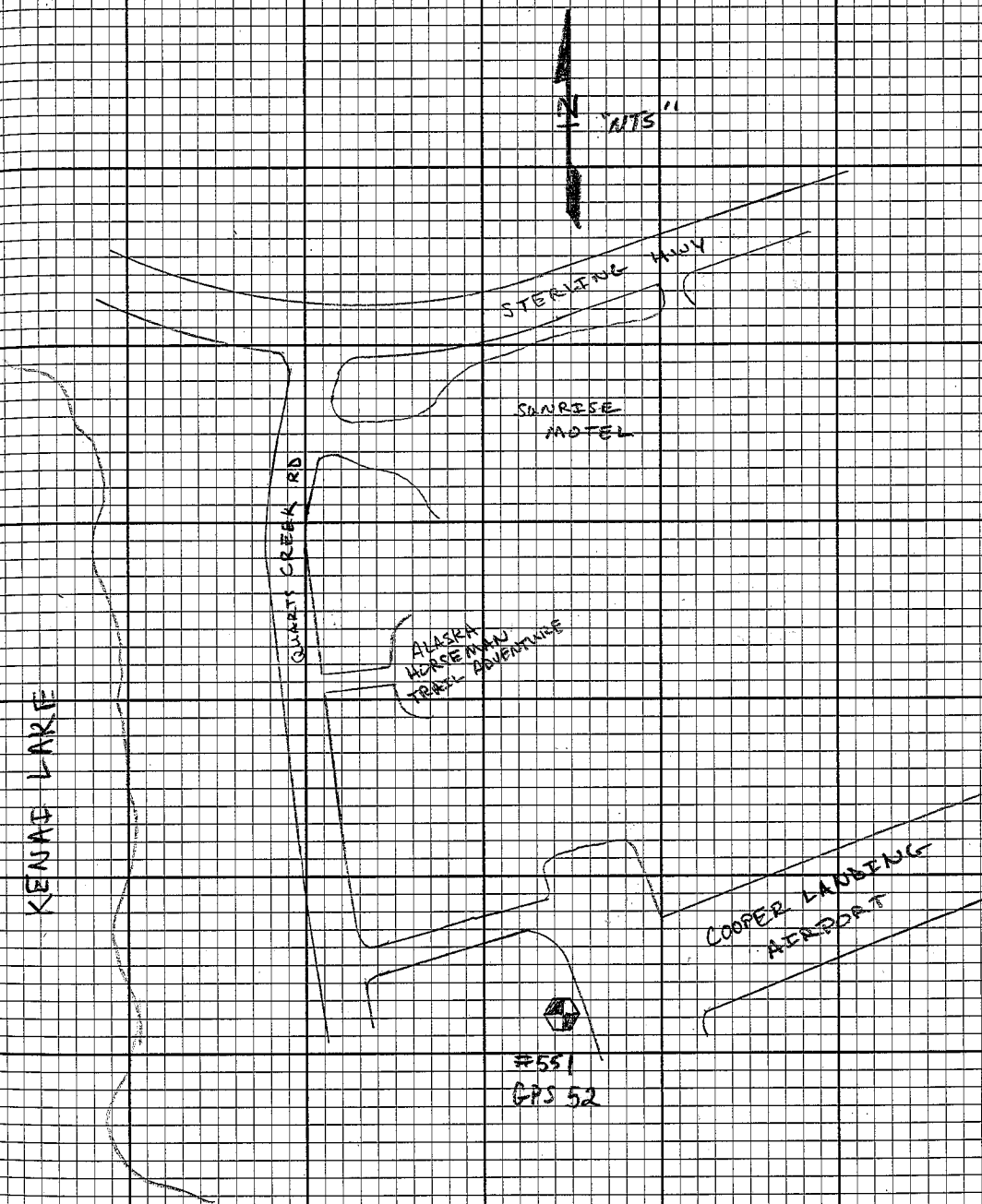
* SEE SKETCH PG. 7

Sterling Hwy Mp 45-60

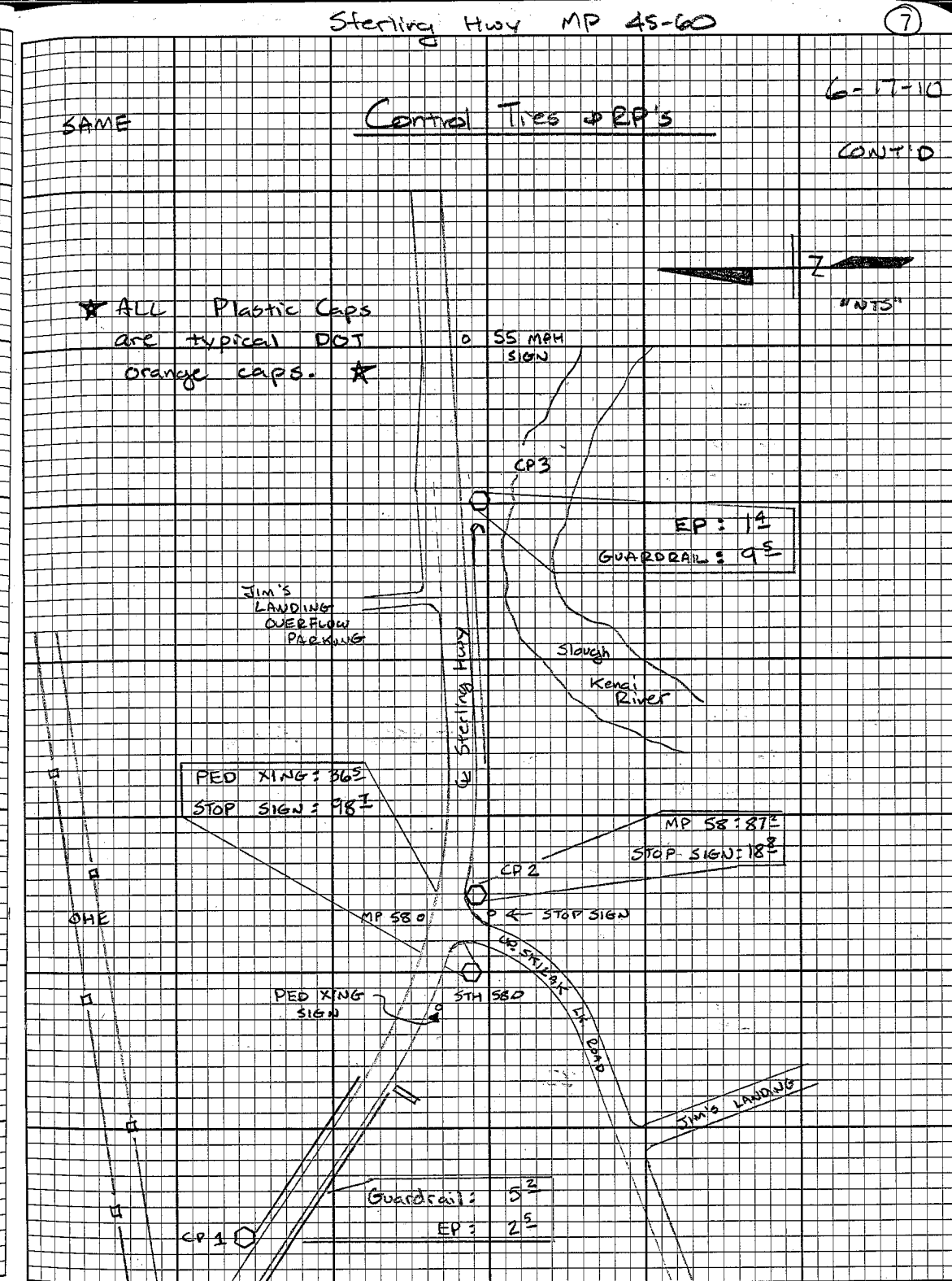
Control Ties + RP's

6-17-10

VARNEY
RUBINSTEIN



⑦ UNIT	T	FT/M	START	STOP
10	# 1	3.72'	9:46a	10:41a
STATIC ROVER	Set 5/8" x 24" Rdr/PC 103	1.134m		
9	# 2	4.06'	9:35a	10:33a
STATIC ROVER	Set 5/8" x 24" Rdr/PC 103	1.237m		
9	# 3	3.88'	10:37a	11:36a
STATIC ROVER	Set 5/8" x 24" Rdr/PC 103	1.183m		



⑧ UNIT T FTM START STOP

10 #4 4.20'
 STATIC ROVER Set 3/8" x 24"
 Rbr/PC 1.280m 10:53A 11:51A

9 #5 3.81'
 STATIC ROVER Set 3/8" x 24"
 Rbr/PC 1.59m 11:49A 12:53P

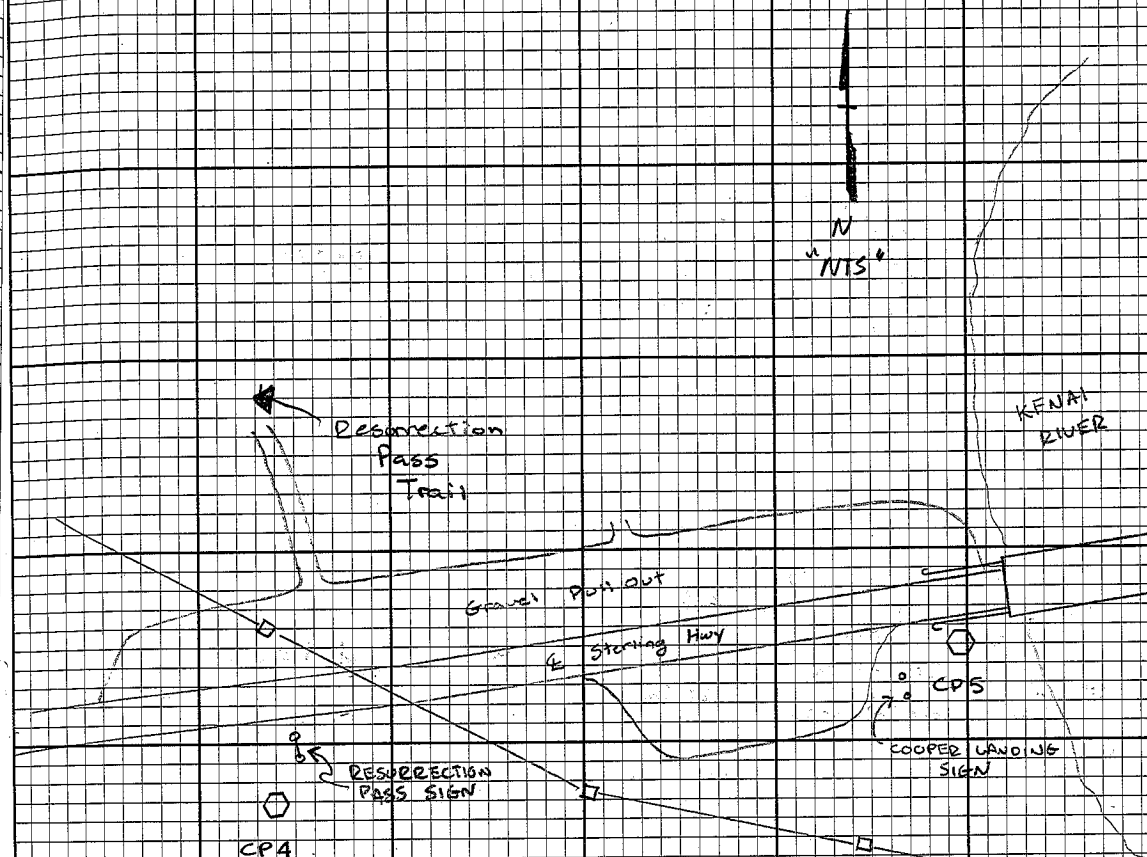
Sterling Hwy Mp. 45-60

SAME

Control Ties + RP's

6-17-10

CONT'D



CP 4 RP'S
 Recreation Pass Sign: 45°
 EP: 63°

CP 5 RP'S
 Guardrail post 5°
 Sign post 18°
 EP 10°

⑨ UNIT T FT/M START START STOP

10 #6 4.11' 11:56a 12:58p
 STATIC ROVER Set 3/8" x 24" Rdr PC 103 1.252m

10 #7 4.16' 1:08p 2:16p
 STATIC ROVER Set 3/8" x 24" Rdr PC 103 1.267m

Sterling Hwy MP 45-60

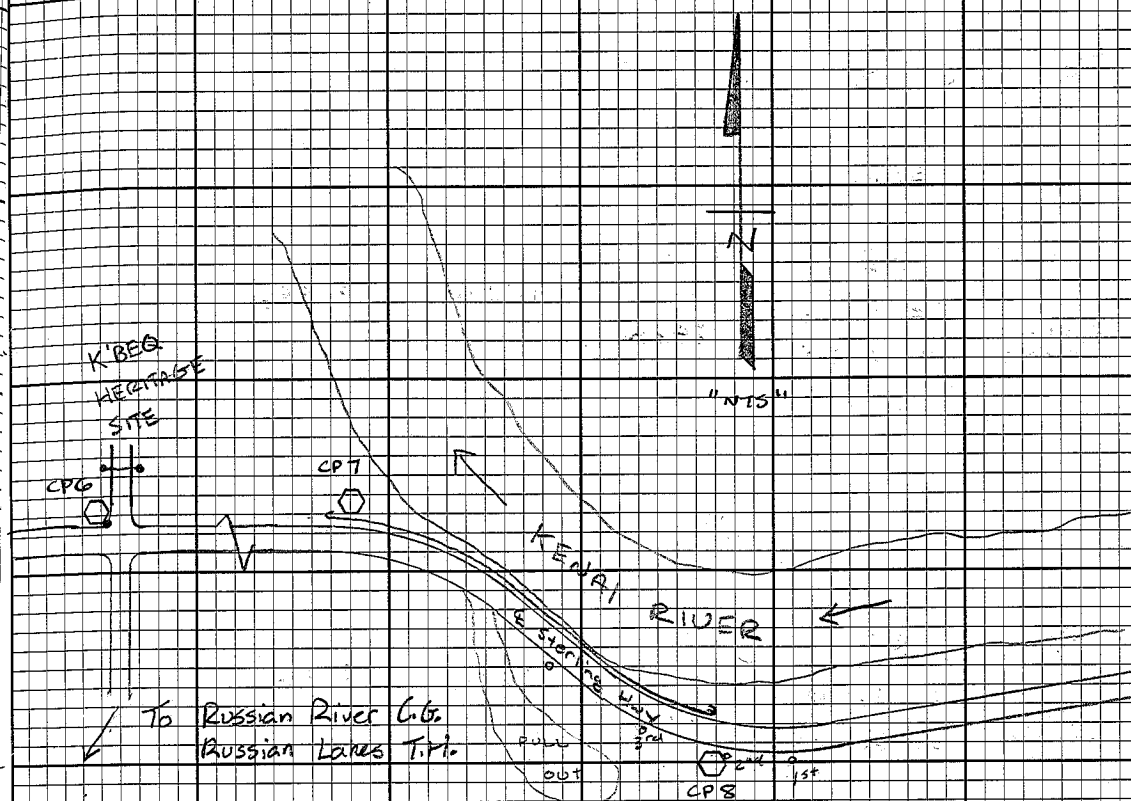
⑨

SAME

Control Ties & CP's

6-17-10

CONT'D



CP 6
 STOP SIGN: 5¹/₂
 EP: 6³/₄
 GATE POST: 53⁷/₈

CP 7
 CHEVRON SIGN: 33¹/₂
 EP: 6⁵/₈
 END GRAIL POST: 9³/₈

CP 8
 1st CHEVRON: 126³/₄
 2nd CHEVRON: 15³/₄
 EP: 5³/₄

9
STATIC
COVER

#8
Set 5/8" x 24"
Rdr/PC VOZ

4.06'
1.240m

1:12p 2:22p

9
STATIC
COVER

#9
Set 5/8" x 24"
Rdr/PC VOZ

3.93'
1.197m

2:32p 3:33p

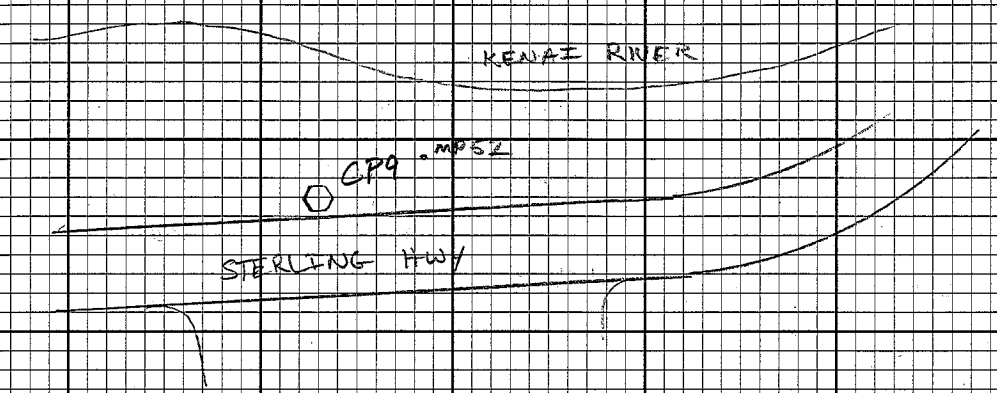
SAME

Control Ties + RP's

6-11-10
CONT'D



* see p.9 for sketch



GWINS

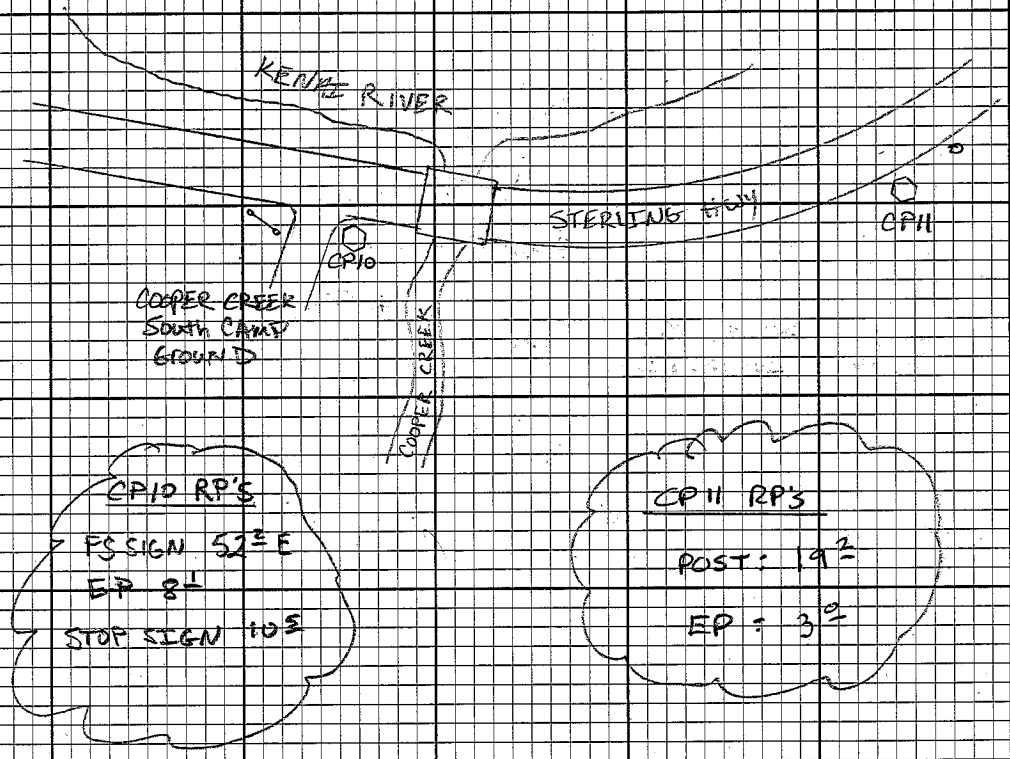
CP9 RPS
EP 36
MPS2 13'

10	#10	4.13'	2:40p	3:46p
STATIC ROVER	Set 5/8" x 24" Rbr/PC 10'	1.257m		
9	#11	4.28'	3:41p	4:34p
STATIC ROVER	Set 5/8" x 24" Rbr/PC 10'	1.303m		
10	#12	3.99'	3:55p	4:50p
STATIC ROVER	Set 5/8" x 24" Rbr/PC 10'	1.216m		
* see sketch p. 12				

SAME

CONTROL TIES + RP'S

6-17-10
CONT'D



9 #13 3.72'
 STATIC ROVER Set 3/8" x 24" 1.134m
 RDC/PCV 0° 4:43p 5:39p

10 #14 3.95'
 STATIC ROVER Set 5/8" x 24" 1.201m
 RDC/PCV 0° 4:55p 5:42p

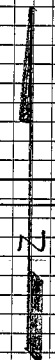
* SEE SKETCH PG 14

NAME

Control Ties & RP's

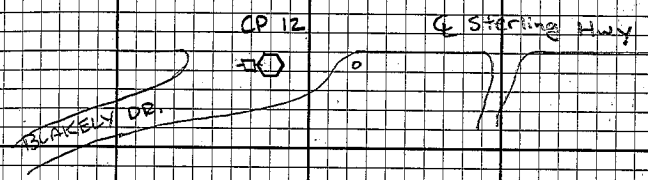
6-17-10

CONT'D



"JTS"

COOPER
LANDING
MUSEUM



CP 12 RP'S
 PP 12 3
 EP 12 2
 STOP SIGN 512

CP 13 RP'S
 EP 3 2
 MUSEUM SIGN 8 2

⑬ UNIT T FT/M START STOP

11 #551 4.20'
 STATIC GPS 52 1.280m
 BASE 8:29A 5:49P
 11:39A

12 #58 3.83'
 STATIC STH 58.0 1.166m
 BASE 8:52A 5:18P

Sterling Hwy MP 45-60

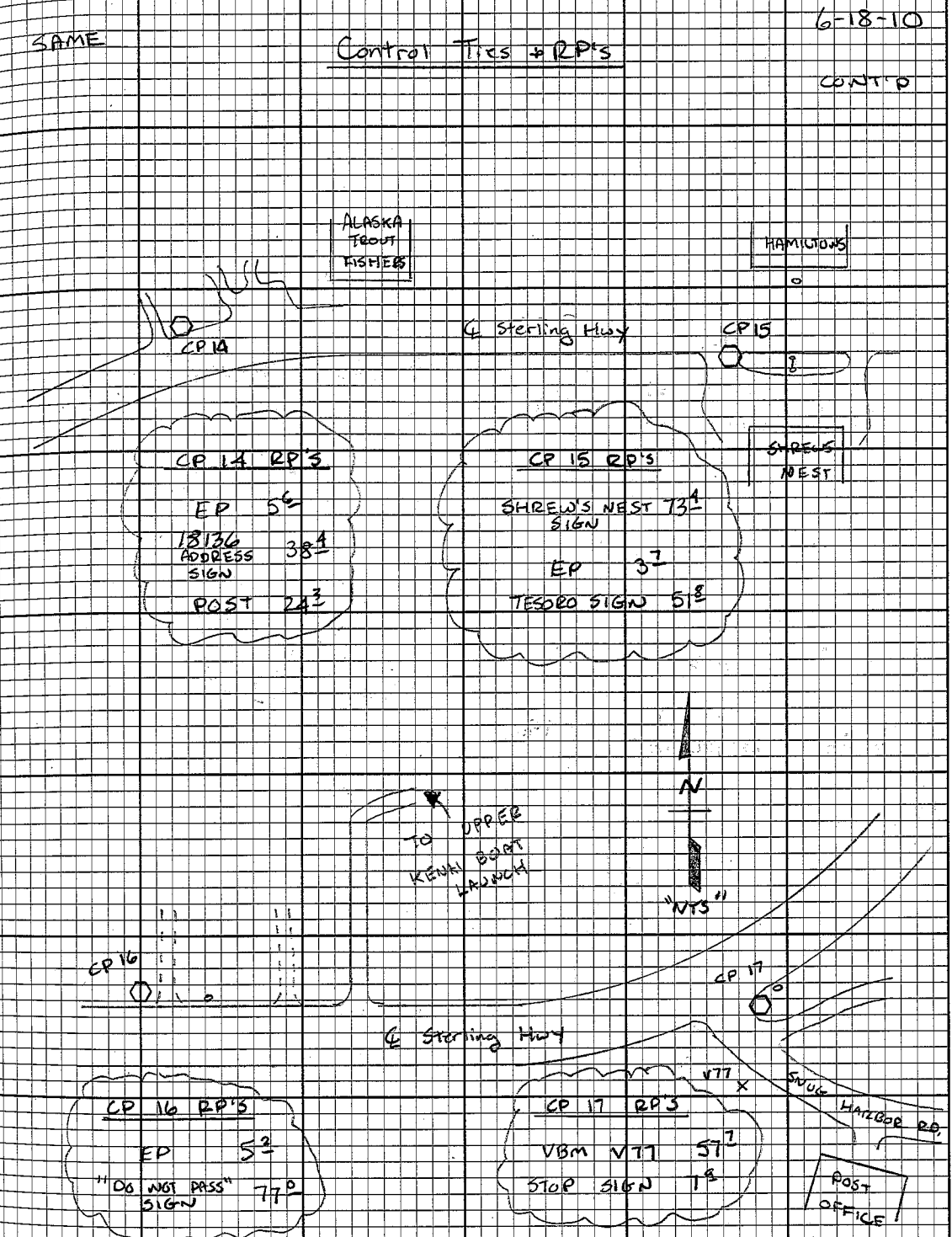
⑬

± 50°
 PARTLY
 SUNNY

Control Ties + RP's

6-18-10
 VARNEY
 RUCINSKI

10	#15	3.85'	9:12A	10:10A
STATIC COVER	Set 5/8" x 24" Rbr/PC VO ³	1.174m		
9	#16	3.67'	9:18A	10:19A
STATIC COVER	Set 5/8" x 24" Rbr/PC VO ³	1.115m		
10	#17	3.84'	10:15A	11:17A
STATIC COVER	Set 5/8" x 24" Rbr/PC VO ³	1.170m		



(13) UNIT T FTIM START STOP

9 #18 3.871
 STATIC ROVER Set 5/8" x 24" 10:23A 11:24A
 Rbx/PC ↓ 03 1.179m

10 #19 3.921
 STATIC ROVER Set 5/8" x 24" 11:21A 12:53P
 Rbx/PC ↓ 03 1.196m

Sterling Hwy MP 45-60

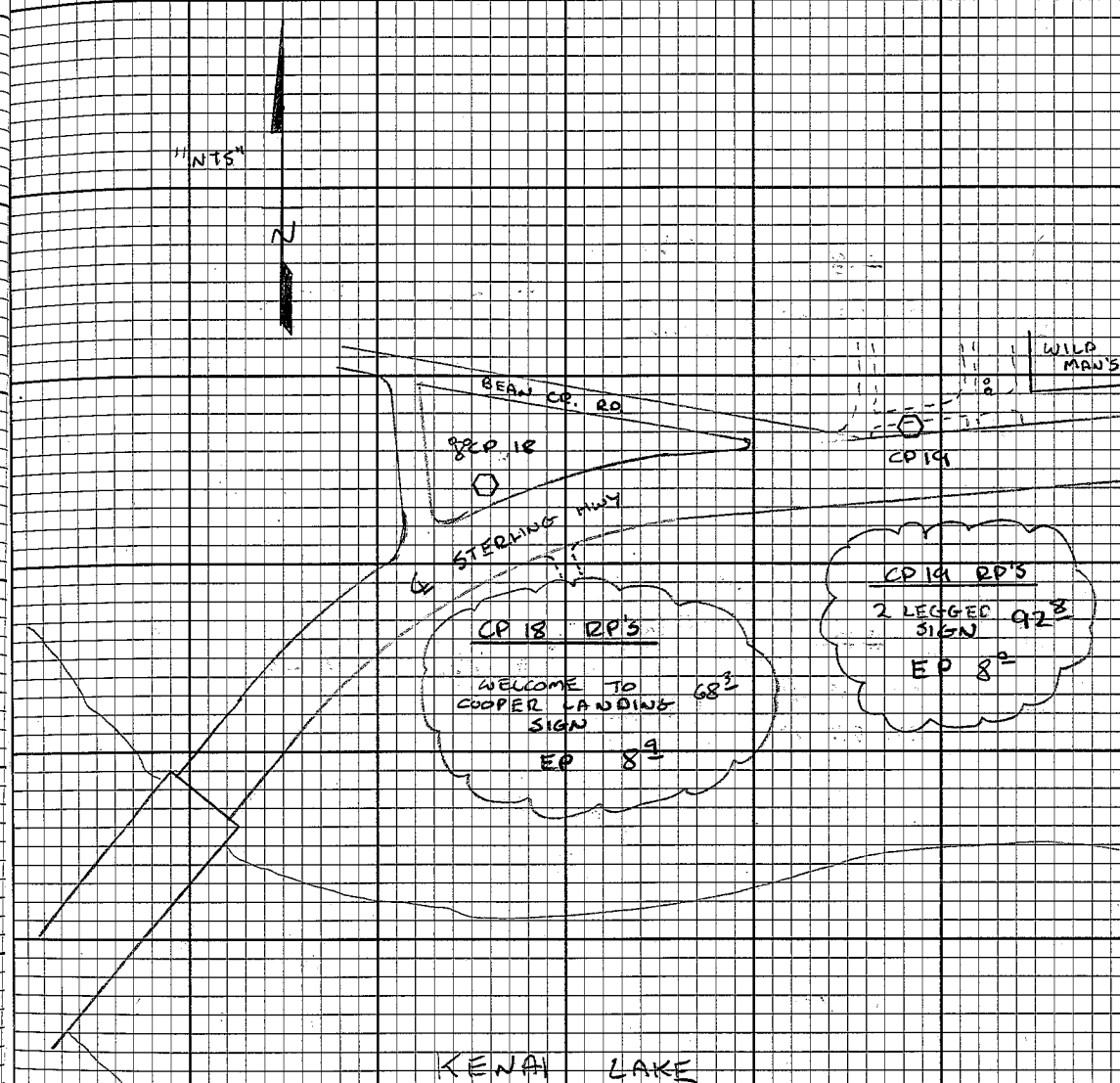
(15)

SAME

Control Ties + RP's

6-18-10

CONT'D



UNIT T E/M START STOP

9 #20 3.90'
STATIC ROVER Set 5/8" x 24" Rbf/PL ↓ 0.5 1.188m 11:29A 1:00P

10 #21 3.66'
STATIC ROVER Set 5/8" x 24" Rbf/PL ↓ 0.3 1.115m 12:57P 2:02P

9 #22 4.13'
STATIC ROVER Set 5/8" x 24" Rbf/PL ↓ 0.1 1.257m 1:04P 2:17P

Sterling Hwy MP 45-60

16

SAME

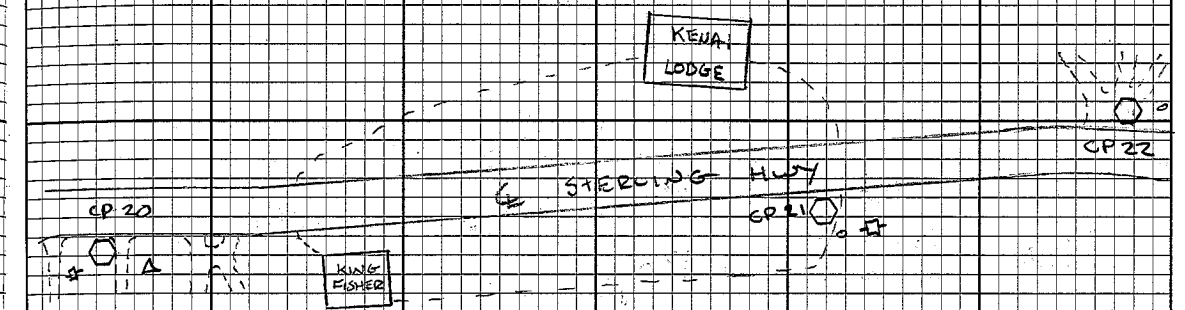
Control Ties & RP's

6-18-10

CONT'D

CP 20 RP'S
TELE PED 553
PP 674
(P242)

N
"NTS"



CP 21 RP'S
45 MPH 83
PP 237
EP 53

CP 22 RP'S
MP 41 605
EP 171

10 #23 3.70'
 STATIC ROVER Set 5/8" x 24" Rbr/PC 1.125m 2:07p 3:03p

9 #24 3.72'
 STATIC ROVER Set 5/8" x 24" Rbr/PC 1.132m 2:16p 3:08p

SAME

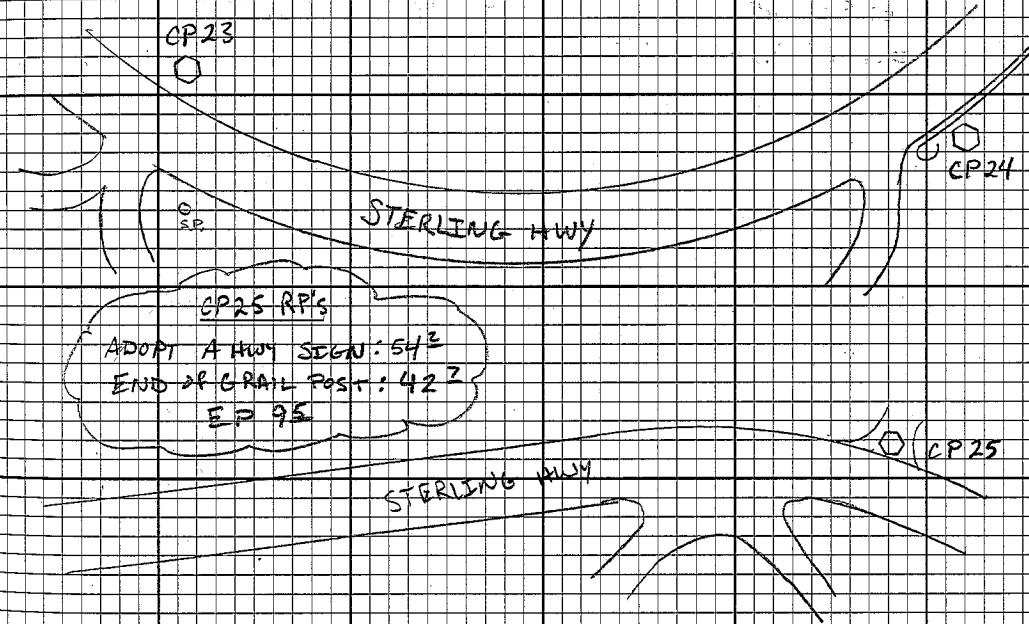
CONTROL TIES + RP'S

6-18-10
 CONT'D

N
 "NTS"

CP23 RP'S
 EP 154
 20057 664
 SIGN POST

CP24 RP'S
 END GRAEL 42
 POST
 EP 62



9 #25 4.06
 SET 5/8" x 24"
 Rbr/PC VOI 1.238m
 3:13p 4:13p

*SEE SKETCH PG-17

0 #26 4.22'
 SET 5/8" x 24"
 Rbr/PC VOI 1.287m
 3:18p

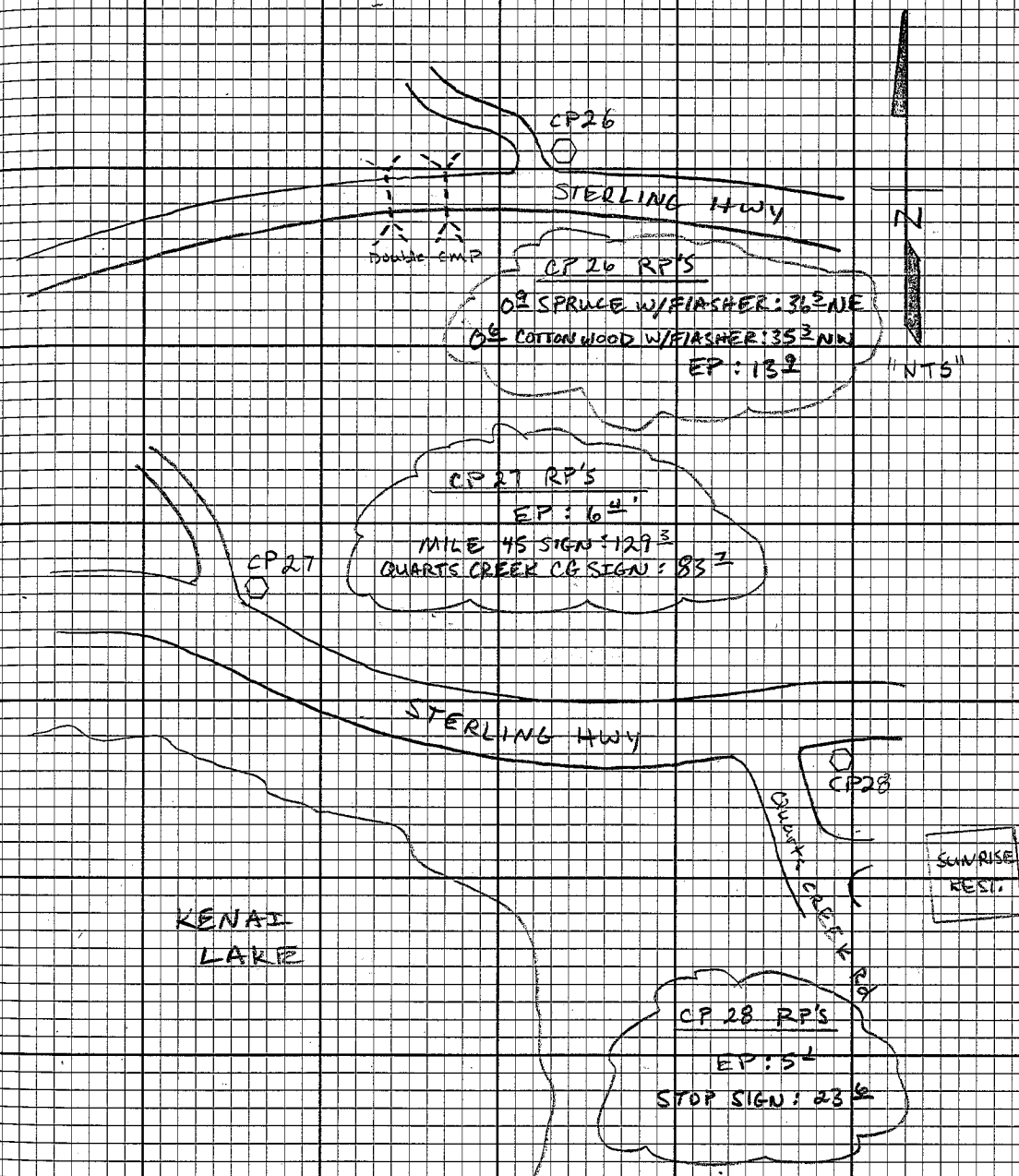
4:22p

9 #27 4.16'
 SET 5/8" x 24"
 Rbr/PC VOI 1.268m
 4:28p 5:40p

SAME

CONTROL TIES + RP'S

6-18-10
 CONT'D



19 UNIT π FT/M START STOP

12 #551 4.16'
 STATIC BASE GPS 52 1.209m 12:14p

11 #58 3.29'
 STATIC BASE 5TH 580 1.003m 12:40p
 2:23p

Sterling Hwy MP 45-60

19

$\pm 55^\circ$
 PARTLY
 SUNNY

Control Ties & RA's

6-20-10

VARNEY
 RUCINSKI

20 unit π FIM START STOP

10	#15	4.29'	2:43p	
STATIC ROVER		1.309m	12:59p	3:38p
			1:58p	
9	#16	3.94'		3:30p
STATIC ROVER		1.200m		
9	#17	4.31'	3:35p	
STATIC ROVER		1.314m		
10	#18	4.06'	3:48p	
STATIC ROVER		1.237m		

Sterling Hwy MP 45-60.

20

SAME

Control Ties & RPLs

6-20-10

CONT'D

* RE-TIE see p. 14 for sketch

* RE-TIE see p. 14 for sketch

* RE-TIE see p. 14 for sketch

* RE-TIE see p. 15 for sketch

(2)

UNIT

T

Film

START

STOP

10

#26

4.30'

STATIC
ROVER

SET 5/8" x 24"

Rdr/PC ↓ 05

1.310m

5.10p

6:00 P

RE-TIE

See p. 18 For sketch

9

#28

4.18'

STATIC
ROVER

Set 5/8" x 24"

Rdr/PC ↓ 03

1.274m

5.18p

6:09 P

* SEE SKETCH PG 18

Sterling Hwy MP 45-60

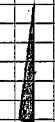
(2)

SAME

Control Ties & RP's

6-20-10

CONT'D



N



"NTS"

(22)

UNIT

A

FIM

START

STOP

11

#551

4.19'

8:00a 3:48p

STATIC
BASE

GPS 52

1.277m

12

#552

3.61'

8:06a 3:51p

STATIC
BASE

GPS 51

1.117m

9

#58

3.25

8:38a ?

STATIC
BASE

STM 58.0

0.991m

Sterling Hwy MP 45-60

(22)

6-21-10

VARNEY

RUCINSKI

Control Ties + RP's

* 58 did not turn on

(23) UNIT π FT/M START STOP

9	#551	4.29'	8:10A	1:14P
STATIC BASE	GPS 52	1.308m		
11	#552	4.11'	8:16A	1:18P
STATIC BASE	GPS 51	1.251m		
10	#9	4.12'	8:33A	12:59P
STATIC BASE	CP 9	1.253m		
12	#58	3.52'	8:47A	12:47P
STATIC BASE	STM 58.0	1.073m		

Sterling Hwy MP 45-60

(23)

$\pm 50^\circ$
M. CLOY

Control Ties

6-24-10

VARNEY
RUCINSKI

Old Coll. Err. = 2.4"
 New Coll. Err. 1.6"
 605 604 Line 100

ADJ. ELEV

MEAN ELEV

π

605

u-77

462.810'

CP 20

483.672'

483.67

USE

CP 19

469.297'

469.30

USE

604

469.917'

CP 19

469.298'

CP 20

483.670'

CP 21

456.068'

456.87

USE

6-21-10

Rucinski
 Varney

Line 100

605-604 Cont'd

A

ADJ
ELEVMEAN
ELEV

605

462.810'

604-603 Line 201

604

469.917'

CP 18

459.486'

459.49'

CP 17

454.920'

454.92'

603

454.366'

6-21-10

SAME

604-603 cont'd

A

HT

CP 17

454.920'

CP 18

459.487'

604

469.917'

6-21-10
Cont'd

Line 300
603 - 602

ADS
ELEV

MEANED
ELEV

↑

603

454.366' USE

CP 16

455.893'

455.89' USE

CP 15

487.757'

487.76' USE

602

468.094' USE

CP 15

487.757'

USE

CP 16

455.891'

USE

603

454.366'

6-22-10

Rucinski
Varney

29)

LEVEL LOOPS

LINE 400

602 - 601

A

ADJ
ELEV

MEANED
ELEV

602

468.094' USE

CP14

465.356' 465.36' USE

CP13

451.354' 451.36' USE

CP12

460.961' 460.96' USE

601

459.842' USE

CP12

460.961' USE

CP13

451.355' USE

STERLING Hwy MP45-60

29)

6-22-10
Cont'd

(30)

LEVEL LOOPS

602-601 cont'd

ADS
EVEN

K

CP14

465.358 USE

602

468.094 USE

STERLING HWY MP 45-60

(30)

6-22-10
cont'd

(31)

LEVEL LOOP

LINE 500

605-606ADJ
ELEVMEANED
ELEV

T

605

462.810'

CP 22

485.838'

485.84' USE

CP 23

491.582'

491.58' USE

606

489.463' USE

CP 23

491.582' USE

CP 22

485.838' USE

605

462.810' USE

STERLING HWY MP 45-60

(31)

6-22-10

Cont'd

(32)

LEVEL LOOP

LINE 100

606 - CP 25ADJ
ELEVMEANED
ELEV

TI

606

489.463'

CP 24

493.561'

493.56 ~~1156~~

CP 25

507.797'

507.80 ~~1156~~

CP 24

493.563

606

489.463'

STERLING HWY. MP 45-60

(32)

6-22-10

cont'd

STATION	BS	CP 11 → CP 10	
		FS	ELE.
CP 11	[0.381]		432.046'
		-2.63	
CP 10	[2.50]		429.035'
			429.041'
		0.50	
CP 11			432.035
		EOC = -0.011	
CP 7 → CP 6			
CP 7	[-0.602]		402.036'
		-1.098	
TP 1	[1.196]		
CP 6		-2.799	397.545'
			397.549'
	[-2.653]		
TP 1		1.340	
	[-1.310]		
CP 7		-0.817	402.028'
		EOC = -0.008	

CP 7 → CP 8				
STATION	BS	FS	ELE.	ADJ ELE
CP 7	[2.019]		402.036' 45	
TPI		-3.579		
CP 8	[0.623]	1.351	397.166'	397.159' 45
TPI	[1.443]	0.725		
CP 7	[-3.665]	1.938	402.051'	
ECC = +0.015				
CP 8 → CP 9				
CP 8	[1.787]		397.159' 45	
TPI		-0.422		
CP 9	[-1.444]	5.962	402.356'	402.356' 45
TPI	[6.068]	-1.333		
CP 8	[-0.087]	2.118	397.160'	
ECC = +0.001				

1	#551	4.45'	7:44A	
STATIC BASE	GPS 52	1.350m	3:02p	
		✓ @ 3:00p	not running	
2	#58	3.82'	8:20A	6:34p
STATIC BASE	STH 58.0	1.160m		

I 55°
P. CLOY

Control Tics + RP's

8-5-10
VARNEY
RUCINSKI

LEICA GPS
VIVA GS 15

3

#29

4.11'

8:39a

9:50a

STATIC
ROVER

Set 5/8" x 24"
Rdr/PC 10°

1.255m

4

#30

4.15'

8:50a

9:55a

STATIC
ROVER

Set 5/8" x 24"
Rdr/PC 10°

1.265m

~~3~~

~~#31~~

~~4.00'~~

~~10:35a~~

~~STATIC
ROVER~~

~~Set 5/8" x 24"
Rdr/PC 10°~~

~~1.218m~~

SAME

CONTROL TIES + RP'S

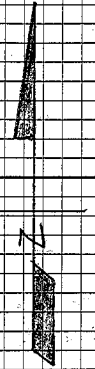
8-5-10

CONT'D

CP 29 RP'S

~ 60' from FULLER
CREAK

EP 22



"NTS"

FULLER CP

CP 29

STERLING HWY

CP 30

FULLER
LAKES
TRAIL HEAD

CP 30 RP'S

POST 10°

POST 41°

EP 51

3 #31
 STATIC ROVER
 Set 5/8" x 24"
 Rbr/PC VOE
 4.00'
 1.218m
 10:35A 12:05p

4 #32
 STATIC ROVER
 Set 5/8" x 24"
 Rbr/PC VOE
 4.16'
 1.268m
 10:49A 3:32p

3 #33
 STATIC ROVER
 Set 5/8" x 24"
 Rbr/PC VOE
 4.16'
 1.269m
 12:16p 3:30p

SAME

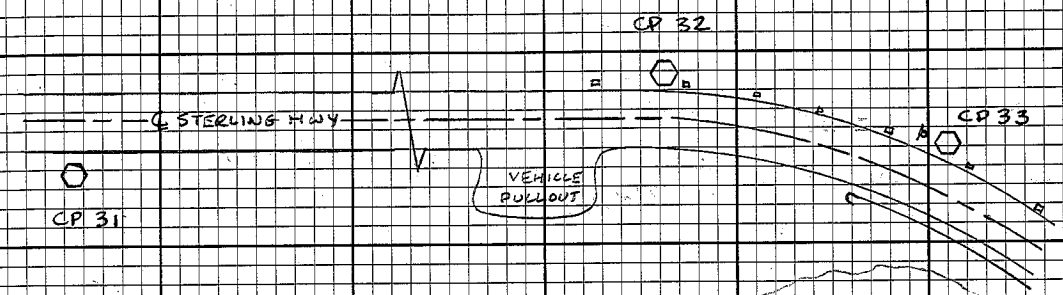
Control Ties + RP's

8-5-10

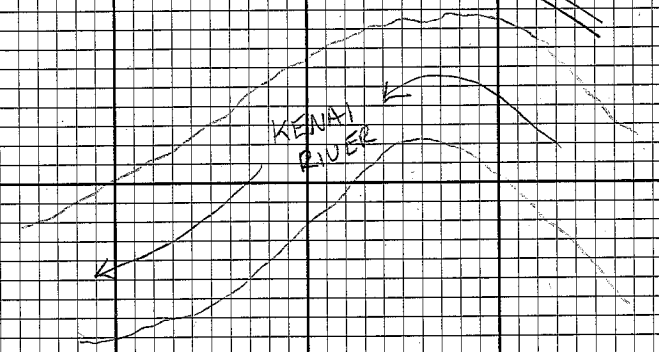
CONT'D

CP 32 RP's
 EP: 56'
 POST: 136'

CP 33 RP's
 EP: 71'
 SIGN: 3A6
 POST: 118'



CP 31 RP's
 N 2.1' EP
 S 21.5' 0.5' SPRUCE
 W/FLASHER



(38)

UNIT

T

FT/M

START

STOP

3

#34

4.26'

3:48p

5:07p

STATIC
ROVERSet 5/8" x 24"
RD/PC 402

1.298m

4

#35

4.31'

4:01p

5:11p

STATIC
ROVERSet 5/8" x 24"
RD/PC 402

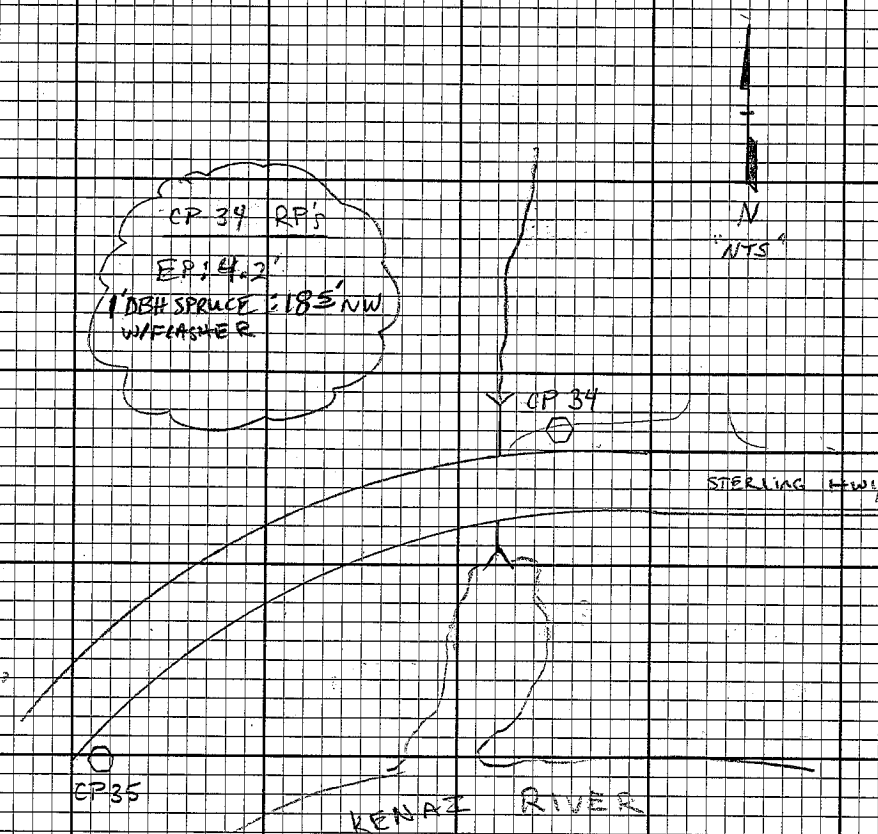
1.313m

STERLING HWY MP 45-60

(38)

SAME

Control Ties + RP's

8-5-10
CONT'D

CP 34 RPS
EP: 4.2'
1 DEH SPRUCE 185' NW
W/FLASHER

CP 34

STERLING HWY

KENAZ RIVER

CP 35

CP 35 RPS
50 MPH CURVE SIGN:
200' E
EP: 3 1/2'
NO PARKING SIGN: 88' SW

(39)

UNIT

T

FT/M

START

STOP

A

#36

4.10'

5:26p

6:17p

STATIC
ROVERSet 5/8" x 24"
Rbr/PC ↓ 0.5'

1.248m

3

#37

3.84'

5:31p

6:21p

STATIC
ROVERSet 5/8" x 24"
Rbr/PC ↓ 0.4'

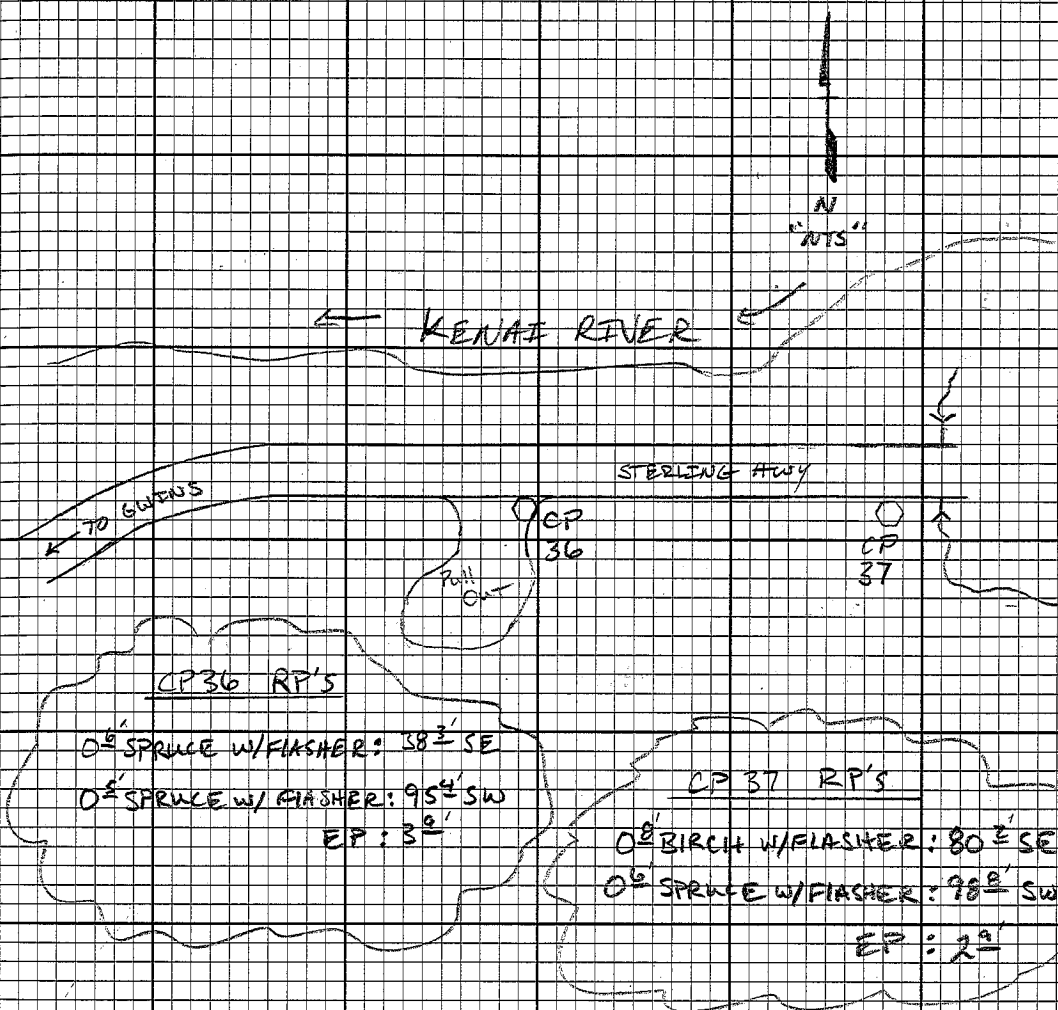
1.170m

STERLING HWY MP 45-60

(39)

SAME

CONTROL TIES + RP'S

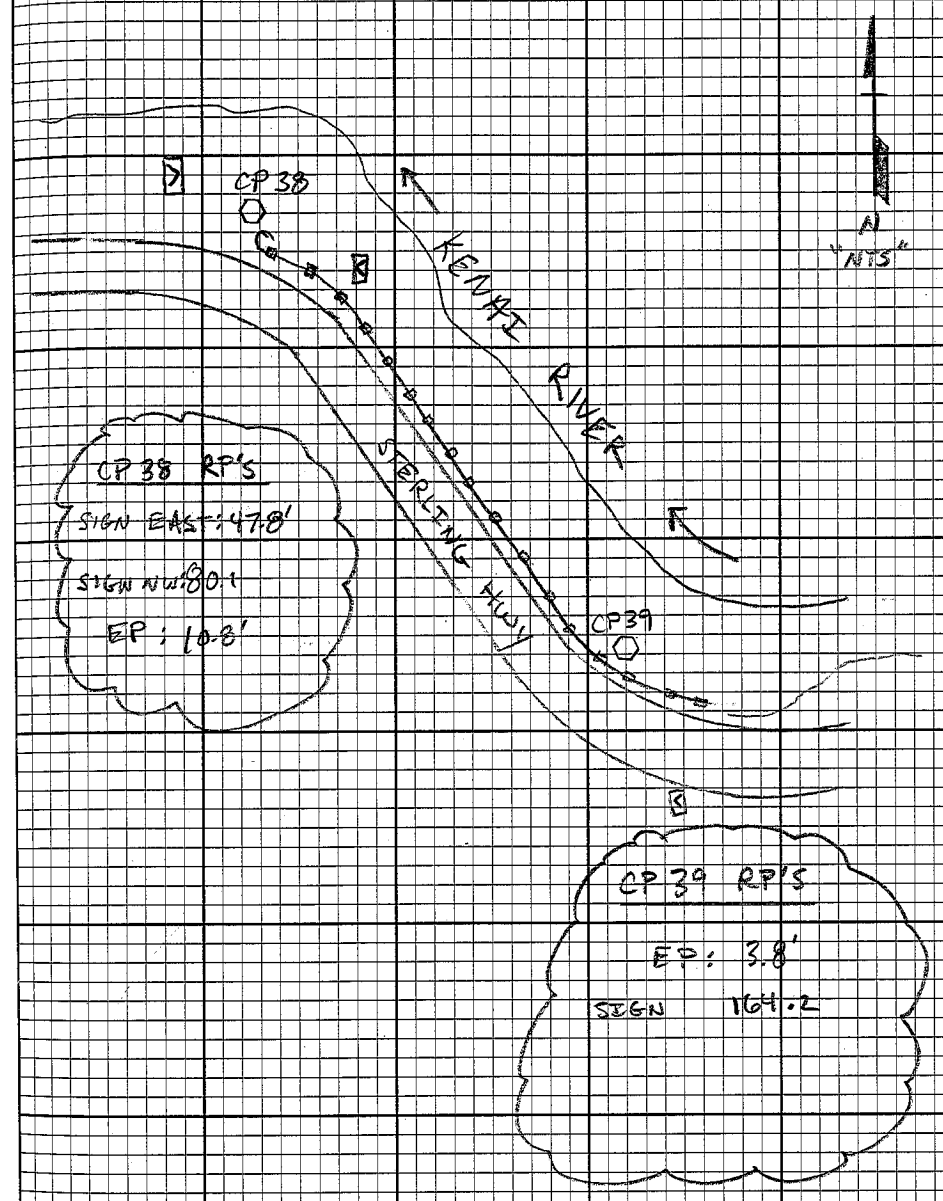
8-5-10
CONT'D

1
STATIC BASE
#551
GPS 52
4.41'
1.343m
9:51a
3:14p

2
STATIC BASE
#58
STW 58.0
3.78'
1.151m
10:28a
2:43p

Control Ties & RP's

8-6-10
VARNEY
RUCINSKI



①

UNIT T FT/M START STOP

3 #38 4.36' 10:05A 2:59P

STATIC
RIVER Set 5/8" x 24"
RBR/PC ↓ 0 1 1.328m

* SEE SKETCH PG. 40

4 #39 4.20' 10:11A 3:00P

STATIC
RIVER Set 5/8" x 24"
RBR/PC ↓ 0 2 1.278m

* SEE SKETCH PG. 40

STERLING HWY MP 45-60

(4)

SAME

Control Ties + R.P.'s

8-6-10

CONT'D

<u>STATION</u>	<u>BS</u>	<u>FS</u>	<u>ELE.</u>	<u>ADJ ELE</u>
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CP 5	<u>-4.257</u>		<u>387.621'</u> USE	
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CP 4	<u>2.823</u>	<u>2.936</u>	<u>394.814'</u>	<u>394.815'</u> USE
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CP 5		<u>-4.312</u>	<u>387.619'</u>	
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EOC = -0.002

CP 28 → CP 27

CP 28	<u>1.563</u>		<u>466.371'</u> USE	
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CP 27	<u>-3.609</u>	<u>-3.806</u>	<u>461.002'</u>	<u>461.004'</u> USE
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CP 28		<u>1.756</u>	<u>466.367'</u>	
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EOC = -0.004

8-7-10
RUCENSKI
JARNEY

<u>CP3 → CP2</u>				
<u>STATION</u>	<u>BS</u>	<u>FS</u>	<u>ELE.</u>	<u>ADJ ELE</u>
CP3	[0.556]		287.319'	USE
		1.278		
TP1	[3.929]			
		6.244		
CP2	[6.477]		299.426'	299.428' USE
		-3.802		
TP1	[1.352]			
		-0.481		
CP3			287.314'	
		EOC = -0.005		
<u>CP2 → CP1</u>				
CP2	[6.508]		299.428'	USE
		5.144		
TP1	[3.303]			
		9.764		
CP1	[9.908]		324.147'	324.146' USE
		-3.157		
TP1	[5.334]			
		-6.317		
CP2			299.431'	
		EOC = +0.003		

8-8-10
RUCINSKI
JARNEY

TRIG LOOP

CP 38 to CP 39

<u>π</u>	<u>BS</u>	<u>FS</u>	<u>ELEV.</u>	<u>ADJ. ELEV.</u>
38	[1.060]		446.92' ^{0.000} <u>WSL</u>	
		-0.100		
39	[0.166]		445.74' ^{0.000} <u>WSL</u>	445.74' ^{0.000} <u>WSL</u>
		1.332		
38			446.906'	

EOC = +0.006

55°F
SUNNY
FAN 41

9-13-10
RUCINSKI
BAND
SHORT

(45)

TRIC LOOP

CP 29 TO CP 30

<u>PI</u>	<u>BS</u>	<u>FS</u>	<u>ELEV.</u>	<u>Adj. ELEV.</u>
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29

[4.312]

318.57' HCL

TPI

[-2.806]

3.475

30

[2.824]

2.487

331.65'

331.65' USE

TPI

[3.371]

-2.467

29

-4.412

318.576'

EOC = +0.006

STERLING HWY MP 45-60

(45)

50°F

SUNNY

GUNDHI

9-14-10

RUCINSKI

BANDS

SHORT

CP 34 to CP 33

<u>π</u>	<u>BS</u>	<u>FS</u>	<u>ELEV</u>	<u>ADS ELEV.</u>
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34

2.799

355.57'

TP1

0.230

0.497

33

-0.966

-1.517

351.521'

351.51' $\frac{6.5}{100}$

TP1

0.473

0.777

34

2.810

355.601'

EOC = +0.051

53°F

CLEAR

6WV 41

9-15-10

RUCINSKI

SAUND

SHORT

(47)

TRIG LOOP

CP 33 to CP 32

<u>X</u>	<u>BS</u>	<u>FS</u>	<u>ELEV.</u>	<u>Adj. ELEV.</u>
33	-1.925	-0.432	351.51' 452	
TPI	0.262	-2.713		
32	-2.911	0.062	350.028' 350.03' 125	
TPI	-0.235	-1.723		
33			351.51'	
		EOC = 0.000'		

STERLING HWY MP 45-60

(47)

SAME

 9-15-10
 RUCINSKI
 BANN
 STORT

CP 32 to CP 31

<u>A</u>	<u>BS</u>	<u>FS</u>	<u>ELEV.</u>	<u>ADJ ELEV</u>
32	[4.222]	-4.427	<u>350.03'</u>	<u>350.03'</u>
TP1	[3.422]	-3.429		
TP2	[1.752]	-1.604		
TP3	[0.552]	-1.993		
TP4	[-0.803]	5.025		
31	[4.897]	-0.940	334.467'	<u>334.46'</u>
TP4	[-2.173]	0.370		
TP3	[-2.153]	1.193		
TP2	[-3.591]	3.271		
TP1	[-4.067]	4.590		
32			350.041'	
ECC = +0.011				

50°F

SUNNY

G.W. 41

9-16-10

RUCINSKI
BANK
SHORT

CP25 to CP26

<u>PI</u>	<u>BS</u>	<u>FS</u>	<u>ELEV.</u>	<u>ADJ ELEV</u>
25	[-9.487]	9.053	<u>507.80'</u> USE	
TP1	[-12.027]	8.414		
TP2	[-6.275]	7.938		
26	[8.323]	-5.913	561.014'	<u>561.02'</u> USE
TP2	[8.481]	-11.961		
TP1	[9.060]	-9.484	507.792'	
25		EOC--0.008		

SAME

 9-16-10
 CONT'D
 RUCINSKI
 BANNON
 SHORT

CP 36 TO CP 37

πBSFSELEV.ADJ. ELEV

36

[2.558]

421.36'

636

37

[1.933]

2.062

420.804

420.85'

636

36

2.451

421.382

EOC = 70.022

53°F

CLEAR

SUN 41

9-19-10

RUCINSKI

BANNON

SHORT