Book # 101-Dr #8

FISH SPAWING GROUNDS

Between White Bear and Bald Eagle Lakes

9-22-30

LEVELS OVER HUBS
ON SURVEY OF RAMSEY
COUNTY FISH SPAWNING GROUNDS
between White Bear and Bald Eagle Lakes.

	+	HI	−	Elev
B.M.	9.63	938.20		928.57
	9.43	945.04	2.59	935.61
	7.38	949.25	3.17	941.87
	0.66	945.19	4.72	944.53
	0.63	937.42	8.40	936.79
	5.24	934.04	8.62	928.80
B.M.			5.57	928.47

2-13-30 Beaton
Skoog 1un

spike in T.P. 151' No. of Bridge at Man-
Island.

spike in P.P. No. side Johnson Ave about 500'
No. of Lake Ave. Pole #339

Point	+	H.I.	−	Elev.
B.M.	1.03	929.50		928.47
⊙ #1			2.97	926.53
⊙ #2			1.93	927.57
⊙ #3			7.70	921.80
T.P.	6.12	927.92	7.70	921.80
" "	3.17	925.84	5.25	922.67
" "	4.04	925.44	4.44	921.40
" "			3.95	921.49
" "	3.74	924.81	4.37	921.07
" "	9.34	929.56	4.59	920.22
" "	9.69	938.44	0.81	928.75
" "	2.55	935.56	5.43	933.01
" "	5.20	930.57	10.19	925.37
			5.20	925.37
T.P.	3.70	932.24	2.03	928.54
B.M.			3.75	928.49

2-14-30 - Clear + Cold. 8 below
spike in P.P. No. side of Johnson Ave
about 500' No. of Lake Ave.

Top spike ⊙ 3
" " " 4
" " " 5
" " " 6
" " " 7
" " " 8
" " " 9
" " " 10
" 11
" 12
Top rail
same as point of Beg.

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.

Page.....Transit.....Obs.....Line.....

Date.....Rec.....

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle			Read. on Rod	Diff. of Elev.	Elevation above Datum
				Up + Down −	No. of Int. or Angle	Rod Equiv.			

Page 1 Transit 45311 Obs. Weber Line W.B. B.E. Flats.

Date 2-5-30 Rec. Beaton

OBJECT (931.5) 180° = North 90° = W 270° = E	Azimuth	Stadia X	Distance —	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
At ⊙ 1 H.I. = 5.00 at 1/4 Cor. 4 Corner. So. Line Sec 12 W.B. Twp.									
To M.C. #42 ? #2	270°-00'	—							
Chk. A2 Dome Point	51°10'								
To OR	230-12	660							
1 ℄ R.R. at Switch	51°16	204	~~204~~				4.5		✓ 927.0 ✓
2 N.W. Ice Ito	275°	107	~~107~~				5.7		✓ 25.8 ✓
3 ℄ tracks Spur.	267°	102	~~102~~				5.7		✓ 25.8 ✓
4 ℄ track main line	52°10'	103					4.5		✓ 27.0 ✓
5 Toe Slope Toe of Cut	59°15'	130					5.0		✓ 26.5 ✓
6 Shoulder Spur Fill	262-30	105					6.1		✓ 25.4 ✓
7 Top of Cut	61-0	168		+	1-10	+3.4	2.95	+0.5	✓ 32.0 ✓
8 Toe of spur fill	256-30	103					7.9		✓ 23.6 ✓
9 Toe Slope Main line Fill	237-15	110					8.7		✓ 22.8 ✓
10 Toe E Slope RW fence	74-15	125					7.2		✓ 24.3 ✓
11 South Shoulder Main Line	232-15	115					6.0		✓ 25.5 ✓
12 South bank ditch	82-15	90					8.2		✓ 23.3 ✓

Page 2 Transit Obs. Weber Line W. B. & B.E. Flats.

Date 2-5-30 Rec. Barton

OBJECT (931.5) At 01 Cont'd	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
13 bottom ditch at Angle West end N.E.	89.40	95					10.7	✓	920.8 ✓
14 bank ditch " " "	93-00	97					7.7	✓	23.8 ✓
15 ℄ track main line	228-15	123					4.8	✓	26.7 ✓
16 Gen Elev Flat	102-40	139					8.6	✓	22.9 ✓
17 W Shoulder Main line	225-45	122					5.2	✓	26.3 ✓
18 or slope " "	221-00	122					8.9	✓	22.6 ✓
19 Gen Elev Flat	102-50	255					9.0	✓	22.5 ✓
20 bank of ditch RR fence	208-20	138					8.8	✓	22.7 ✓
21 bottom ditch	206-36	145					11.3	✓	20.2 ✓
22 bank North side ditch	204-40	143					9.3	✓	22.2 ✓
23 Gen Elev edge of meadow & brush	126-50	495	✓				10.1	✓	21.4 ✓
24 Gen Elev Flats	194-50	215					10.5	✓	21.0 ✓
25 bank of ditch East	183-55	210					10.1	✓	21.4 ✓
26 Gen Elev East point of meadow & brush	144-30	695	✓				10.9	✓	20.6 ✓
27 ℄ N&S ditch	182-30	205					11.8	✓	19.7 ✓
28 W bank of ditch	181-20	210					10.2	✓	21.3 ✓
29 bank N&S ditch edge of meadow brush	118-45	540	✓				10.2	✓	21.3 ✓

Page 3 Transit Obs. Wolfer Line

Date 2-5-30 Rec. Beatty

	OBJECT (921.5) At Q1 Cont'd	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
30	℄ ditch N & S	118-45	540					10.8	✓	920.7 ✓
31	Gen Elev SE Cor Meadow	168-20	177	✓				9.7	✓	21.8 ✓
32	N.W. Cor Meadow Gen El	166-25	400	✓				11.0	✓	20.5 ✓
33	E bank N&S ditch	102-55	485					9.4	✓	22.1 ✓
34	℄ " " "	102-35	489					10.1	✓	21.4 ✓
35	Gen El. West Point edge meadow brush	148-35	470	✓				10.6	✓	20.9 ✓
36	℄ Intersection E.W. & N. ditch	89-35	470					10.4	✓	21.1 ✓
37	Edge meadow brush	152-15	520	✓				10.7	✓	20.8 ✓
38	Gen. Elev. N. Bank Ditch	90-25	465					8.2	✓	23.3 ✓
39	Edge of meadow & brush	166-40	540	✓				10.3	✓	21.2 ✓
40	Gen. Elev.	94-20	310					8.7	✓	22.8 ✓
41	Edge of meadow and brush	178-10	610	✓				9.7	✓	21.8 ✓
42	" " " "	127-00	185	✓				—	✓	✓
43	N. bank of E W ditch	91-00	310					8.2	✓	23.3 ✓
44	℄ of EW ditch	89-30	310					10.0	✓	21.5 ✓
45	N.E. Cor house	87-20	310					8.2	✓	23.3 ✓
46	Gen Elev	175-15	103					8.9	✓	22.6 ✓

Page 4 Transit Obs. Weber Line

Date 2-5-30 Rec. Beaton

	OBJECT (931.5)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At ⊙1 Cont'd									
47	N.E. Cor house	84-35	185					6.9	✓	924.6 ✓
48	Inter X N.W. & N. ditch bottom	188-10	90					11.1	✓	20.4 ✓
49	Toe of N Slope	76-40	190					5.8	✓	25.7 ✓
50	Top of mob	63-00	200					3.0	✓	28.5 ✓
51	℄ track W. end bridge	229-25	335					4.5	✓	27.0 ✓
52	℄ under bridge	229-25	350					9.3	✓	22.2 ✓
53	℄ track E end bridge	229-27	365					4.5	✓	27.0 ✓
54	RR fill between ⊙1 and ⊙2 is general and can be taken as shown by previous X section									
55	Between tracks	278-00	20					7.3	✓	24.2 ✓
56	Gen Elev.	238-10	352					8.6	✓	22.9 ✓
57	" "	248-00	355					8.3	✓	23.2 ✓
58	N.W. cor barn 20X68	257-45	385					7.8	✓	23.7 ✓
59	End Spur Track top of road fill	268-25	415					6.5	✓	25.0 ✓
60	℄ Pavement	268-30	474					3.3	✓	28.2 ✓
61	℄ Spur Track	266-25	360					6.4	✓	25.1 ✓
62	Gen Elev	258-35	240					8.4	✓	23.1 ✓

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Page 5 Transit Obs. Weber Line

Date 2-5-30 Rec. Beaton

	OBJECT (932.7)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At O2 H.I. 5.10									
	To O1 Back Site	230°-12'	-							
	Chk. Az dome point	51-03								
	To O3	98°-41'	490							
1	Flow line culv W. side road	360-15	325					9.4	✓	923.3 ✓
2	℄ Pavement	356-55	335					4.8	✓	27.9 ✓
3	Flow line culv E side road	354-50	342					7.6	✓	25.1 ✓
4	℄ track at ℄ pavement	229-10	260					3.8	✓	28.9 ✓
5	toe W. slope pavement	344-45	201					8.4	✓	24.3 ✓
6	℄ pavement	341-15	230					4.9	✓	27.8 ✓
7	Gen Elev Slots	364-25	150					8.8	✓	23.9 ✓
8	toe W. Slope pavement – end RR Sence	220-00	272					8.5	✓	24.2 ✓
9	℄ Road N. S. road (dirt)	216-05	372					3.2	✓	29.5 ✓
10	toe Slope Road	210-15	352					8.7	✓	24.0 ✓
11	℄ pavement	298-35	139					4.5	✓	28.2 ✓
12	toe slope pavement	299-35	116					7.9	✓	24.8 ✓
13	Gen El on E.W. Sence Slots	198-10	325					9.4	✓	23.3 ✓

Page 5 A Transit Obs. Weber Line

Date 2-5-30 Rec. Beaton

	OBJECT (932.7)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At OR Cont'd									
14	S toe slope RR. mainline	27-50	33					9.2	✓	923.5 ✓
15	Gen El cor fence EW. & N.S.	185-15	330					9.4	✓	23.3 ✓
16	℄ N.S. Road (dirt)	203-25	535					7.8	✓	24.9 ✓
17	℄ N.S. " "	198-55	655					7.6	✓	25.1 ✓
18	Gen Elev	239-30	138					9.2	✓	23.5 ✓
19	toe slope N.S. Road (dirt)	197-10	645					9.0	✓	23.7 ✓
20	Gen Elev (fence line)	196-10	640					7.5	✓	25.2 ✓
21	S. shoulder main line track	38-28	32					6.5	✓	26.2 ✓
22	℄ main line track	57-15	31					4.7	✓	28.0 ✓
23	Gen Elev Slots	190-35	625					9.3	✓	23.4 ✓
24	N. Shoulder mainline track	71-40	33					6.1	✓	26.6 ✓
25	toe N. Slope " " "	85-50	35					8.1	✓	24.6 ✓
26	R.W. Fence " " "	109-30	58					9.4	✓	23.3 ✓
27	Do N.S. fence line	183-55	605					9.5	✓	23.2 ✓
28	S. bank ditch	113-05	63					9.4	✓	23.3 ✓
29	bottom ditch	113-05	67					11.4	✓	21.3 ✓
30	N bank ditch	113-05	71					8.9	✓	23.8 ✓

Page 6 Transit Obs. Weber Line

Date 2-5-38 Rec. Beaton

	OBJECT 932.7	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.		Elevation above Datum	
	At 02 Cont'd											
31	E end of ditch S. bank SE ditch	214-50	220					9.3		✓	923.4	✓
32	bottom " " " "	213-50	222					10.9		✓	21.8	✓
33	N bank of ditch	212-55	224					9.0		✓	23.7	✓
34	toe Slope W. side pavement	214-55	340					8.8		✓	23.9	✓
35	℄ private drive (E.W.)	189-10	310					8.3		✓	24.4	✓
36	" " " "	182-20	335					7.2		✓	25.5	✓
37	Gen elev	191-30	215					9.5		✓	23.3	✓
38	toe Ritchie N.E. slope	181-55	540					7.9		✓	24.8	✓
39	End Row golden willows	180-00	290	✓				6.5		✓	26.2	✓
40	top of Ritchie Slope	172-15	350		+	2°20	+14.2	8.7	+5.5	✓	38.2	✓
41	End golden willows) beginning of Ritchie slope	162-20	116	✓				8.4		✓	24.3	✓
42	toe Ritchie slope	154-20	120					7.5		✓	25.2	✓
43	toe Ritchie Slope on tree line	131-30	74	✓				81		✓	24.6	✓
44	top " Slope	141-15	133		+	2°00	+4.6	1.7	+2.9	✓	35.6	✓
45	top of Ritchie hill	150-10	195		+	2°27	+8.4	2.0	+6.4	✓	39.1	✓
46	toe slope SE point hill	104-35	96					8.7		✓	24.0	✓
47	toe slope S.W. edge hill	113-55	202					7.4		✓	25.3	✓

Page 7 Transit Obs. [illegible] Line

Date 2-5-30 Rec. Beaten

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
932.7									
At ⊙ 2 Cont'd									
48 Gen. Elev Flats	87-35	220					9.6	✓	923.1 ✓
49 RR. fence & S bank ditch	59-50	312					9.8	✓	22.9 ✓
50 E ditch	61-25	313					12.5	✓	20.2 ✓
51 N. bank ditch	62-20	315					10.4	✓	22.3 ✓
52 S.E. cor orchard	111-00	280	✓				7.6	✓	25.1 ✓
53 Gen Elev	84-05	255					11.2	✓	21.5 ✓
926.7									
At ⊙ 3 HI 4.85									
to ⊙ 2 back site	98°41'	490							
Chk Az top point on NE RR semaphore	193°17'								
to ⊙ 4	206°40'	838							
1 tree line	258-30	173	✓				1.4	✓	25.3 ✓
2 End treeline & SW cor orchard	228-40	166	✓				2.1	✓	24.6 ✓
3 N.W. cor. orchard	224-20	245	✓	+	1°50	+7.8	2.2	+6.6 ✓	33.3 ✓
4 N.E. cor. orchard	243-30	300	✓	+	1°45	+9.1	2.5	+6.6 ✓	33.3 ✓

Page 8 Transit Obs. Weber Line W.B. & B.E. Flats

Date 2-5-30 Rec. Bedson

	OBJECT (926.7) At @ 3 Cont'd	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
5	W. side SE point of hill	273-00	310					2.6	✓	924.1 ✓
6	Top Ritchie hill	224-10	370		+	2°0	+12.9	3.8	+ 9.1	✓ 35.8 ✓
7	Top of slope W. side of hill	216-00	345		+	1°45	+10.5	2.7	+ 7.8	✓ 34.5 ✓
8	toe slope W. side hill	207-30	335					2.2		✓ 24.5 ✓
9	toe slope, hill (S.W.)	263-00	268					0.8		✓ 25.9 ✓
10	top Southend hill	263-20	385		+	2°0	+13.4	2.9	+10.5	✓ 37.2 ✓
11	top of Slope	249-50	354		+	2°10'	+13.4	2.8	+10.6	✓ 37.3 ✓
12	top of Ritchie hill	236-00	410		+	2°5'	+14.9	3.1	+11.8	✓ 38.5 ✓
13	Gen Elev top of hill	223-20	438		+	2°0	+15.3	5.2	+10.1	✓ 36.8 ✓
14	top of Slope N side hill	214-10	436		+	1°30'	+11.4	6.2	+5.2	✓ 31.9 ✓
15	Toe of Slope " " "	209-15	425					1.8		✓ 24.9 ✓
16	Cor EW & NS fence	204-15	590					3.8		✓ 22.9 ✓
17	E. bank N&S ditch	173-30	56					4.1		✓ 22.6 ✓
18	E ditch	165-50	58					6.9		✓ 19.8 ✓
19	W bank N&S ditch	159-45	62					4.7		✓ 22.0 ✓
20	Gen'l Elev flats on fence line	188-20	470					4.8		✓ 21.9 ✓
21	N&S ditch E bank	363-10	156					5.8		✓ 20.9 ✓

Page 9 Transit Obs. Nelson Line White Bear & Bald Eagle Flats

Date 2-5-30 Rec. Beaver

OBJECT (926.7)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
At ⊙ 3 Contd									
22 bottom N&S ditch	364-45	156					7.2	✓	919.5 ✓
23 W bank N&S ditch	367-15	158					6.0	✓	20.7 ✓
2-7-30 (927.8)									
At ⊙ 4 HI = 5.1	26°-40'								922.7
to ⊙ 3 back-site	~~206°40~~	836							
to top of R.R. semaphore N.W. ⊙ 4	(185-48)								
Chk. Az	172-25								
to ⊙ 5	189°48'	638.							
1 Fence cor N&E fence	54.42	462					5.4	✓	22.4 ✓
2 top of ditch	54.57	463					6.0	✓	21.8 ✓
3 bottom "	55-12	470					8.3	✓	19.5 ✓
4 top " "	55-32	475					6.0	✓	21.8 ✓
5 Edge meadow beg. brush	46-37	600	✓				6.1	✓	21.7 ✓
6 Gen Elev	58-27	570					6.5	✓	21.3 ✓
7 Edge meadow beg. brush	65-37	625	✓				6.8	✓	21.0 ✓
8 Gen Elev.	73-12	705					7.2	✓	20.6 ✓
9 N&S Fence line	77-42	385					6.2	✓	21.6 ✓

Page 10 Transit Obs. Line

Date 2-7-30 Rec.

9950
At 04 Cont'd (927.8)

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
10	E bank NQS ditch	77-52	388					7.2	✓	920.6 ✓
11	bottom " " " "	78-12	394					8.6	✓	19.2 ✓
12	W bank " " " "	78-12	398					6.5	✓	21.3 ✓
13	Fence Cor at intersection of	94-42	380					6.7	✓	21.1 ✓
14	S.E. bank NQS & EW ditch	100-02	385					7.1	✓	20.7 ✓
15	bottom " " " "	95-32	390					8.8	✓	19.0 ✓
16	N.W. bank " " " "	101-02	400					6.9	✓	20.9 ✓
17	S. bank E&W. ditch	98-47	510					6.8	✓	21.0 ✓
18	bottom " " "	98-67	512					8.9	✓	18.9 ✓
19	N bank " " "	96-57	515					6.8	✓	21.0 ✓
20	S.W. bank at intersection NQS & EW. ditch	99-12	396					6.5	✓	21.3 ✓
21	N.E. " " " " " " "	101-42	385					6.5	✓	21.3 ✓
22	Intersection of NQS & E fence	117-32	420					6.6	✓	21.2 ✓
23	N. bank of EW ditch	117-12	160					6.6	✓	21.2 ✓
24	bottom " " " "	116-02	158					8.5	✓	19.3 ✓
25	S. bank " " " "	113-12	155					5.8	✓	22.0 ✓
26	E bank of NQS ditch	117-22	425					7.0	✓	20.8 ✓

Page 11 Transit Obs. Line White Bear & Bald Eagle Lists

Date 2-7-30 Rec.

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
At 04 Cont'd (927.8)									
27 bottom of NDS ditch	117-12	430					8.9		918.9
28 W bank of NDS ditch	116.52	435					7.2		20.6
29 Fence cor EW & NS. fence also on fence line	309-42	190					4.7		23.1
30 Toe of north pt. Ritchie hill	327-12	132					3.7		24.1
31 Fence cor E.W. & NW fence	359-52	103					4.6		23.2
32 Gen'l Elev on EW fence	145.37	235					6.9		20.9
33 Gen Elev on NS "	60-42	175					5.4		22.4
34 Gen Elev	72.42	372					6.1		21.7
35 " " on EW fence	221-22	360					6.6		21.2
36 End of E.W. fence	236-12	345					6.1		21.7
37 Toe slope NE dirt road	238-02	365					6.1		21.7
38 ℄ N.E. dirt road	238.57	373					4.9		22.9
39 ℄ " " " "	312-12	433					2.7		25.1
40 Toe slope of road	313.42	420					4.0		23.8
41 Fence cor Fence follows Road	315-12	410					4.2		23.6
42 Gen Elev	322.07	366					4.9		22.9
43 Gen " on fence line	332-47	315					3.8		24.0

Page 12 Transit Obs. Line

Date 2-7-30 Rec.

OBJECT (927.8) At ⊙ 4 Cont'd	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
44 toe Ritchie slope	334-22	305					3.6		✓ 924.2 ✓
45 top " "	339-57	295		+	2°10'	+11.2	4.5	+6.7	✓ 34.5 ✓
46 Gen Elev top hill	349-12	280		+	2-27	+12.0	4.4	+7.6	✓ 35.4 ✓
47 top of slope	366-02	250		+	1-25	+6.2	3.2	+3.0	✓ 30.8 ✓
48 NE cor fence	258.32	295					3.9		✓ 23.9 ✓
49 S bank E&W ditch	258-42	315					4.9		✓ 22.9 ✓
50 bottom " " "	257-52	312					6.8		✓ 21.0 ✓
51 N bank " " "	257-02	317					4.9		✓ 22.9 ✓
52 ℄ Road on ditch line	258-22	329					3.7		✓ 24.1 ✓
53 S. bank E.W. ditch E side road	259-52	345					4.6		✓ 23.2 ✓
54 bottom " " " " " "	258-57	345					6.7		✓ 21.1 ✓
55 N. bank E.W. ditch " " "	258-12	345					4.9		✓ 22.9 ✓
56 Corner of fence S & E.	248-42	157					2.7		✓ 25.1 ✓
57 S. bank E.W. ditch	247-22	160					3.8		✓ 24.0 ✓
58 bottom " " "	245.12	161					7.0		✓ 20.8 ✓
59 N bank " " "	243-12	162					4.0		✓ 23.8 ✓
60 End of fence running E also S bank E.W. ditch	93-12	67					5.6		✓ 22.2 ✓

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.

Page 13 Transit ..... Obs. ..... Line .....

Date 2-7-30 ..... Rec. .....

	OBJECT (927.8)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
61	bottom E & W ditch	97-47	71					7.9	✓	919.9
62	N. bank " " "	96-42	76					5.8	✓	22.0 ✓
63	S.W. End of fence	23-37	260					4.5	✓	23.3 ✓
64	Gen Elev on fence	15-47	170					4.6	✓	23.2 ✓
65	toe slope NW cor hill	17-22	182					2.9	✓	24.9 ✓
66	top Slope " " " "	357-12	202		+	1-55	+6.8	2.0	+4.8 ✓	32.6 ✓
67	toe slope N. point of hill also fence line	336-42	120					3.3	✓	24.5 ✓
68	top " " " " "	346-57	170		+	2-07	+6.3	1.8	+4.5 ✓	32.3 ✓
69	top of hill at N point	346-22	212		+	2-30	+9.2	2.1	+7.1 ✓	34.9 ✓
70	toe slope NE point of hill	331-02	188					2.2	✓	25.6 ✓
71	top of hill NE " "	337-52	233		+	1-40	+6.8	2.1	+4.7 ✓	32.5 ✓
72	2 story stucco house 32×32 N.E. corner	357-42	401		+	2-25	+16.9	5.1	+11.8 ✓	39.6 ✓
73	N.E. cor barn 24×34	365-47	283		+	2-25	+11.9	7.4	+4.5 ✓	32.3 ✓
74	N.E. cor barn 30×30	365-52	325		+	2-25	+13.7	7.6	+6.1 ✓	33.9 ✓
75	Gen'l elev. top hill	354-57	345		+	2-10	+13.0	3.7	+9.3 ✓	37.1 ✓
76	Gen'l elev. flats	88-52	248					6.3	✓	21.5 ✓
77	Gen'l elev flats	78-32	89					5.7	✓	22.1 ✓

Page 14 Transit Obs. Line

Date 2-7-30 Rec.

	OBJECT (927.8) At ⊙ 4 Cont'd	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
78	Gen'l elev Slats	291-17	74					4.6	✓	923.2 ✓
79	" " "	281.07	200					3.5	✓	24.3 ✓
80	Gen. elev also fence line and toe slope of road	277-32	307					4.5	✓	23.3 ✓
81	℄ Road running N.E.	277-07	326					3.4	✓	24.4 ✓
82	E bank N&S ditch	140-12	585					7.1	✓	20.7 ✓
83	bottom " " "	139-42	590					8.8	✓	19.0
84	W bank " " "	139-12	595					7.6	✓	20.2 ✓
85	Intersection of N.E. road going East & road	240-12	368					4.8	✓	23.0 ✓
86	℄ of road to E	243.37	475					4.6	✓	23.2 ✓
87	Gen'l elev Slats	154-42	500					7.5	✓	20.3 ✓
88	" " "	182-32	460					6.8	✓	21.0 ✓
89	℄ Road going N.E	225-12	450					4.4	✓	23.4 ✓
90	toe slope road N.E	224.52	440					5.6	✓	22.2 ✓
91	Gen'l elev. Slats	204-27	515					5.9	✓	21.9 ✓
92	toe slope road N.E.	213-12	565					5.4	✓	22.4 ✓
93	℄ road N.E.	213-57	570					3.6	✓	24.2 ✓
94	Gen elev Slats	216-02	390					5.8	✓	22.0 ✓

Page 15 Transit 45311 Obs. Weber Line

Date 2-7-30 Rec. Beaton

	OBJECT (927.8)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At 04 Cont'd									
95	Gen'l elev flats	195-42	338					6.4	✓	921.4 ✓
96	℄ Road going N.E.	208.52	662					1.5	✓	26.3 ✓
97	toe slope road N.E.	207.32	665					2.8	✓	25.0 ✓
98	Gen'l elev flats	158-22	370					7.2	✓	20.6 ✓
99	" " "	203-12	630					2.5	✓	25.3 ✓
100	Gen elev flats	200.02	615					4.8	✓	23.0 ✓
101	" " "	187-22	590					6.3	✓	21.5 ✓
	(926.6)									
	At ⊙5 HI = 5.2									
	top of water tower (30.13)									
	Chk. 23. in village White Bear	165-1								
	to 04	189°48'	638							
	to 06	162°15'	727							
1	toe of slope - edge of S.lot	318.48	280					4.8	✓	21.8 ✓
2	Gen'l elev.	304-08	234					3.9	✓	22.7 ✓
3	" "	302-38	222					2.5	✓	24.1 ✓

Page 16 Transit Obs. Line

Date 2-7-30 Rec.

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At 05 Cont'd (926.6)									
4	top of Knoll	293.53	177					0.4	✓	926.2 ✓
5	toe of slope edge of slots	317.53	152					4.1	✓	22.5 ✓
6	" " " " "	292.23	91					4.4	✓	22.2 ✓
7	" " " " "	257.53	122					4.0	✓	22.6 ✓
8	" " " " "	233.53	150					4.2	✓	22.4 ✓
9	" " " " "	215.08	218					3.4	✓	23.2 ✓
10	" " " " "	204.58	260					3.6	✓	23.0 ✓
11	" " " " "	193.23	320					3.6	✓	23.0 ✓
12	" " " " "	184.23	388					3.6	✓	23.0 ✓
13	" " " " "	175.53	500					3.6	✓	23.0 ✓
14	" " " " "	168.53	610					3.9	✓	22.7 ✓
15	E bank of ditch	97.53	490					5.8	✓	20.8 ✓
16	℄ of ditch	97.53	495					7.6	✓	19.0
17	W bank of ditch	97.53	500					5.9	✓	20.7 ✓
18	toe of slope edge of slots	162.33	715					4.4	✓	22.2 ✓
19	top of " on R.R. R.O.W.	166.08	720					1.8	✓	24.8 ✓
20	Gen elev	102.13	335					6.0	✓	20.6 ✓

Page 17 Transit Obs. Line

Date 2-7-30 Rec.

	OBJECT (926.6)	Azimuth	Stadia	Distance	Intervals or Ver. Angle Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At 05 Cont'd									
21	top slope	171-38	630					1.0		925.6
22	Gen. elev.	122-03	124					5.5		21.1
23	top slope	179.23	535		+	0°-35	+5.5	3.6	+1.9	28.5
24	Gen elev	196-53	62					5.3		21.3
25	top slope	185.53	460		+	0°-30	+4.0	3.3	+0.7	27.3
26	" "	192.53	420		+	1°-00	+7.3	3.1	+4.2	30.8
27	top slope @ cor. house 30×36	205.43	330		+	1°-18	+7.5	2.6	+4.9	31.5
28	Gen. elev.	188-23	187					5.2		21.4
29	top slope	223.23	275		+	2°-00	+9.6	3.4	+6.2	32.8
30	Gen. elev.	144.43	228					5.3		21.3
31	top slope - [illegible]	242.08	240		+	1°-40	+7.0	3.2	+3.8	30.4
32	Beg of E.W. ditch	188-03	280					5.0		21.6
33	S bank of E.W. ditch	126-03	310					5.3		21.3
34	℄ " " " "	126.08	312					6.5		20.1
35	N bank " " " "	126-13	315					5.5		21.1
36	S.W. cor chicken coop 17×32	194.53	466		+	1°-10	+9.5	4.3	+5.2	31.8
37	Gen. elev.	113.53	432					5.4		21.2

Page 18 Transit Obs. Weber Line

Date 2-7-30 Rec. Beaton

	OBJECT (926.6) At O 5 Cont'd	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
38	Gen elev	166.43	408					5.4	✓	921.2 ✓
39	E bank of NQS ditch	110.23	515					5.2	✓	21.4 ✓
40	Gen elev	147.23	425					5.7	✓	20.9 ✓
41	℄ of NS ditch	110.13	520					7.5	✓	19.1
42	Gen elev	132.08	505					5.6	✓	21.0 ✓
43	W. bank of NQS ditch	110.08	525					5.4	✓	21.2 ✓
44	E bank " " " "	123.53	585					5.1	✓	21.5 ✓
45	℄ " " " "	123.38	588					8.2	✓	18.4
46	W bank " " " " with NS ditch	123.13	593					5.1	✓	21.5 ✓
47	S bank of EW ditch at intersx	102.33	494					5.6	✓	21.0 ✓
48	℄ " " " " " "	102.48	496					7.1	✓	19.5
49	N bank " " " " "	102.58	498					5.8	✓	20.8 ✓
50	Gen Elev of stots on ROW fence	149.38	718					5.4	✓	21.2 ✓
51	Gen Elev stots	149.48	580					5.7	✓	20.9 ✓

Page 19 Transit ..... Obs. Weber Line White Bear and Bald Eagle Flats

Date 2-8-30 Rec. Beatty

	OBJECT (926.5)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At ⊙6 H I = 5.05									
	to ⊙5 back-site	343°-15' ~~162°15'~~	727							
	to ⊙7	55°33'	784							
	Chk Az Water tower in Village of White Bear	(25-48) 12-26								
1	S bank of ditch-also RR-ROW fence	254.41	104					3.2		923.3
2	toe " " "	251-46	102					4.2		22.3
3	S bank of ditch	249-51	157					1.4		25.1
4	toe " " "	247.26	158					3.3		23.2
5	toe slope R.R. fill	243-06	160					2.6		23.9
6	top " " " "	237.06	162		+	1°-55'	+5.4	1.8	+3.6	30.1
7	R.R.-ROW fence	59-11	95					5.5		21.0
8	toe slope RR fill	72-36	95					5.6		20.9
9	top " " " "	85-21	99		+	3°-00'	+5.2	1.5	+3.7	30.2
10	bottom of intersect of NS & EW ditch at RR ROW	63-21	295					7.2		19.3
11	Toe slope RR fill	69-06	285					6.3		20.2
12	S.W. cor. intersect of NS & EW ditch	62-46	300					5.8		20.7
13	top slope RR fill	73-26	284		+	1-20	+6.6	3.4	+3.2	29.7

Page 20 Transit Obs. Line

Date 2-8-30 Rec.

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	926.5 At O6 Cont'd									
14	N.E. cor inter X of PNS & EW ditch also ROW fence	64-21	288					5.6		920.9
	926.2									
	At O7 HI = 5.15									
	Chk. Az. Semaphore in S.W. top of R.R.	52-45 39-23								
	to O6	55°33'	786							
	to O8	20°54'	674							
1	top slope RR fill	212-42	330		+	1-00	+5.8	2.6	+3.2	29.4
2	top " " " "	202-52	265		+	1-15	+5.8	2.3	+3.5	29.7
3	toe " " " "	214-57	310					4.6		21.6
4	flow line of RR fill culv under	204-25	250					6.4		19.8
5	E bank of ditch at culv	205-17	235					3.1		23.1
6	W. bank " " " "	203-42	248					2.9		23.3
7	N.E. bank of ditch at Δ pt	210-02	341					3.9		22.3
8	℄ ditch at angle point	210-02	235					6.1		20.1
9	W bank of ditch at Δ pt	210-02	228					4.4		21.8
10	N. bank of ditch also ROW fence E.W. ditch	219-02	205					4.2		21.5

Page 21 Transit Obs. Line

Date 2-8-30 Rec.

	OBJECT (926.2)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At 07 Cont'd									
11	℄ of EW ditch	219.52	300					6.1		920.1
12	S bank of EW ditch	220.42	298					4.9		21.3 ✓
13	N " of EW "	240.52	169					5.0		21.2 ✓
14	℄ " " " "	241.22	168					6.1		20.1
15	S bank " " " "	241.52	168					4.7		21.5 ✓
16	N.E. bank of ditch at Δ pt	246.42	400					5.3		20.9 ✓
17	bottom of ditch at Δ pt	246.42	397					6.6		19.6
18	SW bank ditch at Δ pt	246.52	392					5.5		20.7 ✓
19	Beg of brush edge of meadow	231.57	468	✓				5.3		20.9 ✓
20	W bank of N.S. ditch	263.12	365					4.7		21.5 ✓
21	℄ " " " "	262.37	367					5.9		20.3
22	E bank " " " " also brush line	262.37	369	✓				4.9		21.3 ✓
23	W bank of N&S ditch	280.47	368					5.1		21.1 ✓
24	℄ " " " "	280.47	369					6.7		19.5
25	E bank " " " " also brush line	280.47	370	✓				5.2		21.0 ✓
26	W " " " " "	307.22	455					6.1		20.1 ✓
27	℄ " " " "	307.22	457					7.3		18.9

Page 225 Transit Obs. Line

Date 2-8-30 Rec.

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At ⊙ 7 Cont'd (926.2) also brush line									
28	E bank of N&S ditch	307-17	459	✓				6.1	✓	920.1 ✓
29	N.W. bank of ditch at Δ pt	317-17	530					6.3	✓	19.9 ✓
30	bottom " " " " "	317-17	531					7.0	✓	19.2
31	SE bank " " " "	317-22	533					6.3	✓	19.9 ✓
32	Gen. elev. edge brush	317-17	500	✓				6.3	✓	19.9 ✓
33	" " " "	322-52	595	✓				6.2	✓	20.0 ✓
34	" " " "	329-27	673	✓				6.3	✓	19.9 ✓
35	" " N " "	336-07	615	✓				6.4	✓	19.8 ✓
36	Gen. elev. S edge hay field	34-32	544	✓				6.3	✓	19.9 ✓
37	" " " " " "	15-32	510	✓				6.3	✓	19.9 ✓
38	" " " " " "	35-12	558	✓				5.7	✓	20.5 ✓
39	edge hay field on N&S fence	46-27	620	✓				4.8	✓	21.4 ✓
	Continued at ⊙ 7 (926.2) 2-10-30									
	At ⊙ 7 H.I. = 5.15									
40	Δ in N.S. fence line	54-02	575					5.4	✓	20.8 ✓

Page 23 Transit Obs. Weber Line

Date 2-10-30 Rec. Bastow

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At ⊙ 7 (926.2)									
41	Δ in N.S. fence line	66-37	480					5.3		920.9
42	Fence corner ROW fence	73-42	395					5.1		21.1
43	Intersx of NS fence with highway	77.22	440					4.3		21.9
44	℄ field entrance at	77-32	360					4.6		21.6
45	℄ " " at pavement	83.52	435		+	1-05	+8.2	3.2	+5.0	31.2
46	Toe slope highway No 1	79-32	425					3.8		22.4
47	top of " " " ℄	73.52	500		+	1-00	+8.7	4.5	+4.2	30.4
48	Δ in E.W. ditch	74-37	380					5.2		21.0
49	Toe slope highway No 1	72.37	470					3.9		22.3
50	W bank ditch also fence line	70.07	432	this ditch parallels pavement				5.4		20.8
51	℄ of	69-59	430					7.1		19.1
52	E bank of ditch	69-47	428					5.5		20.7
53	top of highway No 1 ℄	65-37	565		+	0-50	+8.2	4.8	+3.4	29.6
54	Toe slope " also fence " "	63-42	540					4.5		21.7
55	W. bank of ditch	63-12	535	this ditch parallels pavement				5.1		21.1
56	℄ " "	63.07	533					6.0		20.2
57	E bank " "	63-07	530					5.0		21.2

Page 24 Transit Obs. Line

Date 2-10-30 Rec.

	OBJECT (9262) Cont'd At 07	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
58	S.W. cor ditch	61-37	523					5.1		921.1
59	bottom ditch at Inter X	61-22	515					6.9		19.3
60	S E cor. ditch	61-02	513					4.7		21.5
61	top highway No 1 ℄	59-32	640		+	0-40	+7.5	5.2	+2.3	28.5
62	toe slope E. " " also fence line	57-22	625					4.5		21.7
63	W bank ditch	55-27	605	this ditch parallels No. 1 highway				4.7		21.5
64	℄ of "	55-05	604					7.0		19.2
65	E. bank "	54-47	603					5.1		21.1
66	N.E. cor ditch at Inter X	51-37	662					4.6		21.6
67	S E cor " " "	51-17	670					5.1		21.1
68	bottom ditch " "	51-47	664					6.9		19.3
69	top headwall EAST culv under highway No 1	50-50	755					2.2		24.0
70	flow line culv. " " "	50-42	753					7.2		19.0
71	℄ top highway No 1 over Culv	53-27	743		+	0-35	+7.6	5.7	+1.9	28.1
72	top headwall WEST side No 1	56-02	740		+	0-38	+8.2	10.7	-2.5	23.7
73	flow line culv W end	56-02	741		+	0-38	+8.2	15.7	-7.5	18.7
74	N.E. cor ditch-Inter X	46-17	764					4.8		21.4

Page 25 Transit Obs. Line

Date 2-10-30 Rec.

	OBJECT (9262) Cont'd At O 7	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
75	N.W. cor ditch Intersect	48-02	764					4.8		921.4
76	bottom ditch Intersect	48-22	769					7.4		18.8
77	S.W. corner Shed 14X25	82-02	340					4.5		21.7
78	S.E. " " " "	83-37	327					4.4		21.8
79	toe slope highway No. 1 and R.R. Fill	86-57	402					2.5		23.7
80	top highway No. 1 &	87.02	437		+	1-00	+7.6	3.2	+4.2	30.4
81	top RR Fill	112.37	264		+	1-05	+5.0	1.3	+3.7	29.9
82	top RR Fill	136-12	302		+	1-25	+5.0	1.0	+4.0	30.2
83	toe slope RR Fill	108-22	248					4.2		22.0
84	" " " "	132.02	181					4.2		22.0
85	R.R. R.O.W. fence	104.52	235					3.8		22.4
86	" " "	128.37	165					4.0		22.2
87	Gen. elev. N bank of ditch E.W.	85-32	114					5.2		21.0
88	bottom of ditch	84.37	114					6.8		19.4
89	Gen. elev S. bank ditch	83.37	114					5.0		21.2
90	S.E. cor. barn 27X32	91.47	312					4.0		22.2
91	N bank of E.W. ditch	29.07	190					5.8		20.4

Page 26 Transit Obs. Line

Date 2-10-36 Rec.

	OBJECT (926.2) Cont'd #0 7	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
92	bottom of E.W. ditch	28.47	191					7.1		919.1
93	S. bank ditch	28.22	192					5.8		20.4 ✓
94	N. bank of EW ditch	78.32	206					5.3		20.9 ✓
95	bottom " " " "	77.37	206					6.6		19.6
96	S bank " " " "	77.42	206					5.4		20.8 ✓
97	N bank " " " "	12.47	322					6.5		19.7 ✓
98	bottom " " " "	12.42	322					7.6		18.6
99	S bank " " " "	12.37	325					6.4		19.8 ✓
100	Gen'l Elev Flats	46.52	258					5.8		20.4 ✓
101	" " "	8.17	424					6.3		19.9 ✓
102	N bank E.W. ditch	43.12	269					5.4		20.8 ✓
103	bottom " " "	42.52	270					6.9		19.3
104	S bank " " "	42.42	271					5.7		20.5 ✓
105	N. bank E.W. ditch edge hay field	5.57	505	✓				6.5		19.7 ✓
106	bottom " " "	5.56	508					7.5		18.7
107	S. bank ditch brg brush	5.55	510	✓				6.1		20.1 ✓
108	N bank of EW ditch	32.57	347					6.1		20.1 ✓

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Date 2-10-30 Rec.

	OBJECT (926.2)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum	
	Cont'd At O 7										
109	bottom E.W. ditch	32.47	350					7.4		918.8	
110	S. bank " " "	32.37	352					6.1		20.1	✓
111	Gen elev flats	26-22	440					6.1		20.1	✓
112	S bank ditch beg brush	353.32	538	✓				5.9		20.3	✓
113	bottom	353.32	535					7.5		18.7	
114	N bank ditch edge field hay	353.32	532	✓				6.3		19.9	✓
115	N bank ditch	23.37	520					6.1		20.1	✓
116	bottom ditch	23.37	522					7.3		18.9	
117	S. bank ditch	23.32	524					6.1		20.1	✓
118	Gen'l elev flats	353.22	436					6.5		19.7	✓
119	S. bank of E.W. ditch	37.52	570					5.9		20.3	✓
120	bottom " " " "	37.57	571					7.3		18.9	
121	N. bank " " " "	38.02	570					5.7		20.5	✓
122	S bank " " " "	353.07	340					6.5		19.7	✓
123	bottom " " " "	353.07	339					7.5		18.7	
124	N bank " " " "	353.07	337					6.6		19.6	✓
125	Gen'l elev flats	43.07	483					5.5		20.7	✓

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Date 2-10-30 Rec. .....

	OBJECT (926.2) Cont'd At 67	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
126	S. bank E.W. ditch	48.07	410					5.7		920.5
127	bottom " " "	48.07	410					7.5		18.7
128	N bank " " "	48-12	408					6.2		20.0
129	Gen'l elev Slots	351.42	235					6.0		20.2
130	S. bank of E.W. ditch	350.47	131					5.5		20.7
131	bottom " " " "	345.47	130					6.9		19.3
132	N bank " " " "	345.47	128					5.4		20.8
133	S. bank at W end ditch	51.52	375					5.6		20.6
134	bottom ditch at W. end	52.07	374					6.8		19.4
135	S. bank of EW ditch	173.12	25					5.0		21.2
136	bottom " " " "	173.12	27					6.1		20.1
137	N. bank " " " "	173.12	29					5.0		21.2
138	Gen'l elev Slots	63.22	342					5.6		20.6
139	R.R. R.O.W. fence	168.12	145					4.5		21.7
140	toe slope RR fill	166-27	167					4.8		21.4
141	top RR fill	166-27	192		+	1-25	+4.7	1.0	+3.7	29.9
142	" " " "	212.07	329		+	1-05	+6.2	2.5	+3.7	29.9

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.

Page 29 Transit Obs. Line

Date 2-10-30 Rec.

	OBJECT (926.2)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At O 7									
143	Toe slope R.R. fill	214.47	312					4.9		921.3
144	N bank E.W. ditch	243.32	229					5.0		21.2
145	bottom " " "	243.49	228					5.8		20.4
146	S bank " " "	244.07	230					4.9		21.3
147	R.R. R.O.W. fence	217.52	296					5.2		21.0
148	N. bank E.W. ditch	218-42	293	this ditch parallels R R track				5.2		21.0
149	bottom " " "	218-52	290					6.0		20.2
150	S bank " " "	219-27	291					5.2		21.0
151	Gen'l elev	265-22	222					5.0		21.2
152	E. end of E.W. ditch	277-52	287					5.2		21.0
153	bottom at E. end ditch	278-02	285					6.1		20.1
154	Gen'l elev: flats	302-22	310					5.6		20.6
155	N. bank of E.W. ditch	324.07	465					6.1		20.1
156	bottom " " " "	323.52	470					7.5		18.7
157	S bank " " " "	323.57	472					6.2		20.0
158	Gen'l elev flats	332.02	550					6.5		19.7
159	N bank E.W. ditch	335.57	620					6.4		19.8

Page 30 Transit Obs. Line

Date 2-10-30 Rec.

	OBJECT (926.2)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At ⊙ 7									
160	bottom of EW ditch	336.02	622					7.6		918.6
161	S. bank " " "	336.07	624					6.3		19.9 ✓
	(925.2)									
	At ⊙ 8 = 5.0									
	Chk. Az. top of R.R. Semaphore to W.	(94°-0) 80°37'								
	to ⊙ 7	20°54'	672							
	to ⊙ 9	61°09'	604							
1	W. bank of S.E. & N.W. ditch	82.58	285					4.3		20.9 ✓
2	bottom " " " " "	83.08	278					6.2		19.0
3	E bank " " " " "	83.08	272					4.0		21.2 ✓
4	N.E. cor. Δ pt. in S.E. & N.W. ditch	53.43	274					4.3		20.9 ✓
5	bottom ditch at Δ pt	53.18	280					6.1		19.1
6	S.W. cor. of Δ pt. in S.E. & N.W. ditch	53.08	288					4.5		20.7 ✓
7	ditch Interx EW. ditch with SE & NW ditch	60.08	276					6.2		19.0
8	S. bank of EW ditch	39.58	228					4.3		20.9 ✓
9	bottom " " " "	39.43	222					6.3		18.9

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Date 2-10-30 Rec.

OBJECT (925.2)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At ⊙ 8									
10 N bank of EW ditch	36.33	219					4.3		920.9
11 S. bank of EW ditch	45.43	202					4.8		20.4
12 bottom of EW ditch	46.08	201					5.2		20.0
13 N. bank of EW ditch fence end of	46.38	200					4.4		20.8
14 Gen'l elev on NW fence	68.38	169					4.3		20.9
15 S. bank of E.W. ditch	338.48	189					5.2		20.0
16 bottom " " " "	338.08	184					6.4		18.8
17 N. bank " " " "	337.13	178					5.1		20.1
18 S. bank of EW ditch	335.23	163					5.3		19.9
19 bottom " " " "	335.13	162					6.1		19.1
20 N. bank " " " "	334.38	159					5.1		20.1
21 S. bank of E.W. ditch	307.38	290					5.1		20.1
22 bottom " " " "	306.48	289					6.4		18.8
23 N bank " " " "	305.58	285					5.1		20.1
24 S bank of E.W. ditch	303.38	276					5.3		19.9
25 bottom " " " "	303.23	277					6.2		19.0
26 N bank " " " "	303.08	275					5.3		19.9

Page 32 Transit Obs. Line

Date 2-10-30 Rec.

	OBJECT (925.2) Cont'd At ⊙ 8	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum	
27	Gen'l elev. Slats	279.38	71					5.5		19.7	✓
28	" " "	273.58	225					5.4		19.8	✓
29	S. bank of E.W. ditch	297.33	387					5.2		20.0	✓
30	bottom " " " "	297.08	384					6.4		18.8	
31	N. bank " " " "	296.23	382					5.0		20.2	✓
32	S bank of E.W. ditch	294.53	375					5.1		20.1	✓
33	bottom " " " "	294.38	373					6.1		19.1	
34	N. bank " " " "	293.23	372					5.4		19.8	✓
35	Gen'l. elev. Slats	275.23	340					5.4		19.8	✓
36	S. bank of E.W. ditch	290.58	500					5.0		20.2	✓
37	bottom " " " "	290.33	500					6.3		18.9	
38	N bank " " " "	290.03	498					4.9		20.3	✓
39	~~S. bank of E.W. ditch~~	~~275.48~~	~~494~~		Omit			~~4.5~~			
40	E. end of E.W. ditch. S. bank	289.23	486					5.1		20.1	✓
41	bottom at end of E.W. ditch	289.21	480					5.4		19.6	
42	Gen'l elev. Slats	270.53	442					5.2		20.0	✓
43	Gen'l elev. Slats	279.53	545					5.0		20.2	✓

Page 33 Transit Obs. Weber Line

Date 2-11-30 Rec. Boston

OBJECT (925.2)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At 08									
44 Gen'l elev Slats	297.18	555					4.8		920.4
45 Gen'l elev Slats	306.43	630					4.4		20.8
46 Gen'l elev. Slats	312-18	435					5.2		20.0
47 Gen'l elev. Slats	327-33	547					4.8		20.4
48 Gen'l elev Slats	336.53	390					5.4		19.8
49 E bank of N.S. ditch	336.48	340					5.4		19.8
50 bottom " " " "	337.28	340					6.0		19.2
51 W bank " " " "	337.38	338					5.3		19.9
52 top at abrupt end of N.S. ditch	323.48	227					5.0		20.2
53 bottom " " " " "	325-08	226					5.8		19.4
54 Gen'l elev Slats	352.40	300					5.0		20.2
55 " " "	269.38	294					4.7		20.5
56 Gen'l elev Slats	26.20	331					4.3		20.9

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Date 2-10-30 Rec.

	OBJECT (933.7)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At ⊙ 9 HI = 4.9									
	Chk. Az. West vent on white barn (E.)	(269-23) 256-00								
	to ⊙ 8	61°09'	602							
	to ⊙ 10	340°30'	638							
1	Gen'l elev	218.39	457					12.5		✓921.2
2	℄ highway No 1	199-25	410					5.6		✓ 28.1
3	toe slope E. Toe highway No 1	202.40	412					9.2		✓ 24.5
4	bottom ditch at interx	206.45	440		−	0-45	-5.8	9.2	-15.0	✓ 18.7
5	W. bank of ditch S.T.H. No 1 parallelling	207.54	363		−	0-40	-4.2	7.8	-12.0	✓ 21.7
6	bottom " " "	208.14	364		−	0-45	-4.8	8.8	-13.6	✓ 20.1
7	E bank " " "	208.39	363		−	0-40	-4.2	7.8	-12.0	✓ 21.7
8	℄ highway No 1	197.24	190					5.3		✓ 28.4
9	toe slope S.T.H. No 1	205-14	190					9.3		✓ 24.4
10	△ pt. in E.W. ditch. heads to ditch = No 1	216.04	196		−	0-35	-2.0	11.0	-13.0	✓ 20.7
11	N. bank of ditch E.W. ditch	237.19	292		−	0-35	-3.0	9.4	-12.4	✓ 21.3
12	bottom " " " " "	237.49	290		−	0-45	-3.8	9.5	-13.3	✓ 20.4
13	S bank " " " " "	238.14	289		−	0-50	-4.2	8.4	-12.6	✓ 21.1

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Date 2-10-30 Rec.

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At ⊙ 9 (933.7)									
14	Gen'l elev. flats	259.40	244		−	0-40	-2.8	10.2	-13.0	✓920.7
15	Gen'l elev "	296.35	279		−	0-40	-3.2	10.4	-13.6	✓ 20.1
16	Gen'l elev "	313.50	162		−	0-35	-1.6	10.8	-12.4	✓ 21.3
17	℄ S.T.H. No 1	29.05	72					4.8		✓ 28.9
18	(E. toe) bottom ditch toe slope STH No 1	8-00	74					7.3		✓ 26.4
19	top of bank	4.50	75					6.4		✓ 27.3
20	Edge of flats	344.25	85					10.8		✓ 22.9
21	top of slope to flats	23-5	144					6.7		✓ 27.0
22	toe slope-edge flats	353-15	140					10.5		✓ 23.2
23	Gen'l elev. flats	328.40	155		−	0-35	-1.6	10.8	-12.4	✓ 21.3
24	top slope to flats	240	214					2.4		✓ 31.3
25	toe slope-edge brush	350-	205	✓				10.4		✓ 23.3
26	top slope to flats	354.40	287					2.8		✓ 30.9
27	toe slope-edge flat.	346.55	282					10.1		✓ 23.6
28	top slope to flats	347.40	380					1.3		✓ 32.4
29	toe slope edge flats	341.35	375					9.9		✓ 23.8
30	top slope to flats	344.35	455		+	0-45	+6.0	4.2	+1.8	✓ 35.5

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Date 2-11-30 Rec.

	OBJECT (933.7)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At 09									
31	top of slope x to W side road (flats)	342-10	550		+	0-40	+6.4	6.7	-0.3	✓933.4
32	toe of slope (top of slope road) to flats	337-20	566					9.4		✓24.3
33	℄ 20'E of W dirt road	342-10	565		+	0-40	+6.6	8.8	-2.2	✓31.5
34	℄ 20'E of W " "	336-25	590					7.5		✓26.2
35	toe slope ℄ 20' of road at Δ to S.	332-40	610					11.1		✓22.6
36	top dirt Rd. ℄ 20' wide	341-10	582					0.8		✓32.9
37	Gen'l elev	329-25	620					12.1		✓21.6
38	Gen'l elev edge hay field	329-	470	✓				12.5		✓21.2
39	Gen'l elev.	317-00	705					13.0		✓20.7
40	Gen'l. elev-edge brush	319-05	430	✓				12.8		✓20.9
41	" " " "	310-40	462	✓	−	0-35	-4.7	8.3	-13.0	✓20.7
42	" " " "	308-35	600	✓	−	0-30	-5.2	8.0	-13.2	✓20.5
43	" " " "	300-35	660	✓				13.3		✓20.4
44	" " " "	297-35	740	✓				13.2		✓20.5
45	E bank of N.S. ditch	289-25	700		−	0-20	-4.1	9.5	-13.6	✓20.1
46	bottom " " " "	289-25	697		−	0-20	-4.1	10.5	-14.6	✓19.1
47	W bank " " " "	289-25	695		−	0-20	-4.1	9.8	-13.9	✓19.8

Page 37 Transit Obs. Line

Date 2-10-30 Rec.

	OBJECT (933.7)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At ⊙ 9									
48	E bank of N & S ditch	279.55	640					13.5		920.2
49	bottom " " " "	" "	638					14.0		19.7
50	W bank " " " "	" "	636					13.0		20.7
51	Gen'l elev flats	292.25	580		−	0.30	−5.1	8.9	−14.0	19.7
52	" " "	280.10	564					13.0		20.7
53	" " "	295.35	440		−	0.30	−3.8	9.2	−13.0	20.7
54	" " "	281.05	410		−	0.30	−3.6	10.0	−13.6	20.1
55	" " "	300.15	287		−	0.50	−4.2	9.4	−13.6	20.1
56	" " "	282.0	250		−	1.00	−4.4	9.2	−13.6	20.1
57	" " "	297.25	144		−	1.15	−3.1	9.7	−12.8	20.9
58	" " "	279.55	140		−	1.30	−3.7	8.7	−12.4	21.3
	(934.0)									
	Continued At ⊙ 9	H.I. = 5.2								
	2-11-30									
59	top cut E side S.H. No. 1	10.30	155					5.9		928.1
60	" " " " " " " " "	10.30	160					3.5		30.5

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Date 2-11-30 Rec.

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	934.0 Cont'd At O 9									
61	top at E. side S.T.H. No 1	11-10	203					1.6		✓ 932.4
62	" " " " " " " "	10-30	322					0.7		✓ 33.3
63	N.E. cor house 14X20	4-35	283					0.9		✓ 33.1
64	N.W. cor shed 10X10	353-35	321					1.4		✓ 32.6
65	NE cor Garage 12X18	355-35	375		+	0-45	+4.9	4.9	0.0	✓ 34.0
66	N.E. cor house 24X20	1-00	396		+	0-20	+2.3	3.0	-0.7	✓ 33.3
	938.2									
	At O 10 HI = 5.2									
	Chk. Az. top R.R. Semaphore (184.25) to N.	171-02								
	to O 9	340°30'	638							
	to O 11	350°34'	384							
1	℄ 20' E.W. rd	115-38	138					4.1		✓ 34.1
2	℄ 20 E.W. rd at Δ to S	178-38	63					10.1		✓ 28.1
3	℄ 20' NS rd	227-10	71		−	8-30	−10.4	3.3	−13.7	✓ 24.5
4	℄ 20' NS rd	285-50	96		−	3-50	−6.4	7.5	−13.9	✓ 24.3

Page 39 Transit Obs. Weber Line W. B. & B.E. Ests.

Date 2-11-30 Rec. Barton

	OBJECT (938.2) Cont'd. At Q 10	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
5	℄ 20' Rd.	315.30	152		−	2-05	-5.5	6.7	-12.2	✓926.0
6	℄ 20 Rd	332.25	252		−	1-50	-8.1	5.3	-13.4	✓24.8
7	top slope to Rd. end of W. fence	335-55	232		−	1-35	-6.4	5.2	-11.6	✓26.6
8	top slope to Rd. end of W fence	331-50	192					9.7		✓28.5
	top slope to Rd	317-45	137					9.6		✓28.6
	toe slope W. edge Rd	281-10	75		−	2-35	-3.4	10.4	-13.8	✓24.4
9	" " " " "	219.15	55		−	3-40	-3.5	10.3	-13.8	✓24.4
10	top slope	322-15	39					6.9		✓31.3
11	top slope	332.45	112					6.8		✓31.4
12	top slope on E.W. fence	340.05	181					7.2		✓31.0
13	" " " " " "	344.15	220					9.4		✓28.8
14	N.E. corner barn 14X42	20-30	206					5.3		✓32.9
15	NW cor. garage 12X16	40-20	255					2.8		✓35.4
16	NE cor. out-house 4X4	42.25	238					2.6		✓35.6
17	N.E. cor. shed 6X8	44.35	246					3.0		✓35.2
18	SE cor. house 24X30	46-15	301					3.3		✓34.9
19	NW cor. shed 8X14	56-45	170					2.6		✓35.6

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Date 2-11-30 Rec.

	OBJECT 938.2 Con'd At 010	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.		Elevation above Datum
20	N.E. cor 12X18 garage	68-20	145					2.8		✓	935.4
21	N.W. cor 20X30 house	73-35	236					4.3		✓	33.9
22	NW cor 18X42 house	86-40	224					5.4		✓	32.8
23	SE cor 8X12 shed	75-30	138					2.7		✓	35.5
24	SE cor 4X4 out-house	82-40	134					2.8		✓	35.4
25	S.E. cor 12X20 garage	87-55	132					3.0		✓	35.2
26	S.W. cor 4X4 out-house	136-10	165					2.0		✓	36.2
27	SE cor 12X20 shed	135-50	195					2.4		✓	35.8
28	S.W. cor 18X32 house	119-0	282					5.9		✓	32.3
29	top hill (wooded) of 20' Rd S. top cut	124-30	80					3.4		✓	34.8
30	top hill (wooded)	47.00	93					3.2		✓	35.0
31	top hill "	28-00	155					4.2		✓	34.0
32	N.E. cor 24X34-2 st brick house	355-40	344					9.1		✓	29.1
33	toe slope E. side 21' Rd. edge Flats	319-50	211		−	1-35	−5.8	7.0	−12.8	✓	25.4
34	" " " " " "	295-10	133		−	1-45	−4.1	10.6	−14.7	✓	23.5
35	" " " " " "	259-45	95		−	3-45	−6.2	9.5	−15.7	✓	22.5
36	" " " " " "	227-45	90		−	4-00	−6.3	9.4	−15.7	✓	22.5

Page 111 Transit Obs. Line

Date 2-11-30 Rec.

	OBJECT (930.4)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	At O 11 HI = 5.0									
	Chk. Az. Top RR. Semaphore N.E.	195-50								
	To O 10	~~350°34'~~ 170°34'	384							
	To O 12	338-00	460							
1	S.E. cor. 24X35-1½ st. house	109.40	63					1.9		✓928.5
2	SE cor 16X20 shed	104-00	207		+	0-55	+3.3	1.0	+2.3	✓32.7
3	SE cor 20X32-1½ st. house	101.40	285		+	1-15	+6.2	3.4	+2.8	✓33.2
4	Top hill	103-15	195		+	1-25	+4.8	3.0	+1.8	✓32.2
5	Top hill	74-10	201		+	0-30	+1.8	2.0	−0.2	✓30.2
6	NW cor 12X16 garage	74.10	190		+	0-28	+1.5	1.9	−0.4	✓30.0
7	SE cor 5X6 out-house	79-15	177		+	0-55	+2.8	2.9	−0.1	✓30.3
8	N.E. cor. 24X36-1½ st. house	61-05	86					2.0		✓28.4
9	NE cor. 20X30-1 st. house	32.25	180					2.7		✓27.7
10	Fence on S. line. Sect.	24.00	238					4.1		✓26.3
11	Fence cor	10.10	220					4.8		✓25.6
12	Flow line W. end culv. under 20' Rd. (12" VIT)	6-05	227					8.7		✓21.7
13	℄ 20' Rd over culv	3.25	221					5.2		✓25.2

Page 42 Transit Obs. Line

Date 2-11-30 Rec.

	OBJECT (930.4) Cont'd At O 11	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
14	Flowline E. end culv. under Rd	0'-15	220					8.1		✓922.3
15	℄ 20' Rd	359.50	167					6.2		✓ 24.2
16	" " "	343.25	100					6.5		✓ 23.9
17	" " "	357.50	46					6.1		✓ 24.3
18	toe slope E. side 20' Rd edge flats	202.40	183					6.6		✓ 23.8
19	" " " " " " " "	231.00	87					7.6		✓ 22.8
20	" " " " " " " "	324.40	85					7.8		✓ 22.6
21	" " " " " " " "	357.35	203					7.0		✓ 23.4
22	toe slope hill	8.35	143					5.5		✓ 24.9
23	" " "	8.25	46					5.7		✓ 24.7
24	" " "	197.25	79					4.8		✓ 25.6
25	Gen'l. elev. flats	201.55	416					8.9		✓ 21.5
26	" " "	213.50	475					9.7		✓ 20.7
27	Gen'l elev-edge brush	221.40	555	✓				9.5		✓ 20.9
28	W bank N&S ditch	222.20	562					9.5		✓ 20.9
29	bottom " " "	222.25	565					10.5		✓ 19.9
30	E bank " " "	222.30	567					9.8		✓ 20.6

Page 43 Transit Obs. Line

Date 2-11-36 Rec.

OBJECT 930.4	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Con't'd At Q 11									
31 Gen'l elev edge brush	224.0	585	✓				9.7	✓	920.7
32 Gen'l. elev.	226.55	635					9.9	✓	20.5
33 " "	231.10	731					9.9	✓	20.5
34 " "	225.40	805					9.9	✓	20.5
35 Edge brush - Gen'l. elev.	218.15	793	✓				10.2	✓	20.2
36 " " " "	217.40	605	✓				10.0	✓	20.4
37 Edge brush - Gen'l. elev.	232.25	567	✓				9.7	✓	20.7
38 Gen'l. elev.	237.30	664					9.9	✓	20.5
39 Edge hay meadow Gen'l elev	242.45	782	✓				9.2	✓	21.2
40 " " " " "	249.45	572	✓				9.5	✓	20.9
41 Edge brush - Gen'l elev	247.35	500	✓				9.8	✓	20.6
42 Edge hay field. SE. cor brush	264.05	448	✓				8.9	✓	21.5
43 E bank of N.S. ditch	248.25	410					9.6	✓	20.8
44 bottom " " "	248.25	408					10.0	✓	20.4
45 W bank " " "	248.25	486					9.5	✓	20.9
46 Gen'l. elev. Slots	243.05	335					9.3	✓	21.1
47 Edge brush Gen'l. elev.	231.45	455	✓				10.0	✓	20.4

Page 44 Transit Obs. Line

Date 2-11-30 Rec.

930.4

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At B.M.									
48	Edge hay field N.W. cor brush	224.10	390	✓				9.3	✓	921.1
49	W. edge brush Gen'l elev.	230.40	261	✓				8.7	✓	21.7
50	S.W. cor brush Gen'l elev	257.15	160	✓				8.6	✓	21.8
51	Gen'l elev flats	283.25	275					8.7	✓	21.7
52	" " "	299.10	310					8.2	✓	22.2
53	N. bank E&W ditch	308.35	350					8.2	✓	22.2
54	bottom " " "	309.05	352					10.0	✓	20.4
55	S. bank " also EW fence " "	309.40	354					7.9	✓	22.5
56	Gen'l elev flats	311.55	216					8.5	✓	21.9
57	N bank E&W ditch	335.35	235					7.4	✓	23.0
58	bottom " " "	336.10	238					9.8	✓	20.6
59	S bank ditch also EW fence	336.35	242					7.5	✓	22.9
60	Fence cor. EW & NS fence	352.35	228					4.8	✓	25.6
61	E bank of NS. ditch	5-00	295	the ditch along				5.4	✓	25.0
62	bottom " "	5-20	294	E.W. Sect line jogs				7.7	✓	22.7
63	W bank " "	5-40	295	about 50' S. of W. end of culv.				5.7	✓	24.7

Page 45 Transit Obs. Weber Line W.B. & B.E. Flats

Date 2-11-30 Rec. Boston

	OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
		284-22	880							
	⊙11 to ⊙1	277-00	880							
		284-26								
								on ⊙1 from ⊙11-⊙2		
	2-14-30 930.5								216°46'	
	At ⊙12 H.I. = 5.1									
	Chk AB RR semaphore to N.E.	202-45								
	to ⊙ 11	338°00'	460							
	to ⊙ 1	253-11	710							
1	℄ 20' Rd	120-15	230					5.1		✓ 925.4
2	℄ " "	114-25	255					5.3		✓ 25.2
3	N. edge Rd top ditch	116.06	258					6.2		✓ 24.3
4	Bottom ditch	116-25	260					7.8		✓ 22.7
5	top ditch	116-50	262					6.2		✓ 24.3
6	Gen'l elev	123-36	282					5.5		✓ 25.0
7	℄ Rd.	115-50	372					4.6		✓ 25.9
8	Gen'l elev	117-55	355					5.1		✓ 25.4
9	SE cor 12X16 garage	121-10	400					4.8		✓ 26.5
10	SE cor 20X34 house	111-35	460					2.9		✓ 27.6

Page 46 Transit Obs. Line

Date 2-14-30 Rec.

	OBJECT 930.5 Cont'd At 0 12	Azimuth	Stadia	Distance	Intervals or Ver. Angle Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
11	SE cor 4X4 outhouse	118-05	390					3.9		✓ 926.6
12	℄ S.H. No 2 20' dit Rd	101-00	560					0.0		✓ 30.5
13	top slope	102-00	434					1.6		✓ 28.9
14	" "	95-00	428					1.0		✓ 29.5
15	" "	87-00	427					0.0		✓ 30.5
16	SE cor 18X24 house	82-30	370					0.0		✓ 30.5
17	Fence cor E & S fence	68-15	370					0.0		✓ 30.5
18	on E W fence line	63-20	315		+	0-55	+5.0	3.6	+1.4	✓ 31.9
19	Shot on slope N.S.	93-45	218					3.3		✓ 27.2
20	℄ N.S. 20' Rd	51-30	230					1.4		✓ 29.1
21	toe slope	88-15	292					5.5		✓ 25.0
22	" "	81-10	218					5.3		✓ 25.2
23	℄ N & S 20' Rd.	86-05	155					5.1		✓ 25.4
24	" " " " "	115-00	170					5.2		✓ 25.3
25	℄ Rd. at Inter X	126-30	232					5.0		✓ 25.5
26	Inter X N.S. & E fence	116-45	160					4.9		✓ 25.6
27	Shot on N.S. fence	138-00	207					5.2		✓ 25.3

Page 47 Transit Obs. Line

Date 2-14-30 Rec.

	OBJECT (930.5)	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
	Cont'd At 012									
28	top slope	145-00	136					3.5	✓	927.0
29	N.S. fence	85-35	144					4.8	✓	25.7
30	top slope fence line	152-00	82					3.0	✓	27.5
31	top slope	82-00	72					4.3	✓	26.2
32	toe slope	152-40	177					7.2	✓	23.3
33	toe slope edge Hdg	174-30	115					6.8	✓	23.7
34	top slope	44-15	120					1.7	✓	28.8
35	toe slope-fence line-edge Hdg	221-30	98					6.7	✓	23.8
36	N.E. cor 10X14 chix coop	25-30	130					2.8	✓	27.7
37	Inter X N&S & E&W fence	245-30	174					7.0	✓	23.5
38	N&S fence line	229-30	210					7.4	✓	23.1
39	Fence cor	219-00	255					8.0	✓	22.5
40	N.E. cor 17X18 chix coop	17-00	127					4.4	✓	26.1
41	Grnd elev	209-45	182					7.5	✓	23.0
42	top slope	32-40	130					1.8	✓	28.7
43	toe slope	6-00	108					6.4	✓	24.1
44	Grnd elev	238-30	227					7.5	✓	23.0

Page 48 Transit Obs. Line

Date 2-14-70 Rec.

	OBJECT 930.5 Cont'd At Q 12	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
45	Gen'l elev	320-00	141					7.4		✓ 923.1
46	Intersx fence	231-00	315					7.5		✓ 23.0
47	top slope	22-15	151					2.4		✓ 28.1
48		243-50	270					7.2		✓ 23.3
49	Toe slope	359-00	144					7.1		✓ 23.4
50	Fence cor	247-00	310					7.3		✓ 23.2
51	top slope N. side Rd fence line	9-45	228					2.1		✓ 28.4
52	℄ 20' dirt Rd	8-45	272					0.8		✓ 29.7
53	Intersx N.S. with RR ROW fence	275-35	315					6.8		✓ 23.7
54	Fence line RR fill toe slope	265-25	388					6.6		✓ 23.9
55	toe slope fence line N.S.	252-20	370					6.1		✓ 24.4
56	℄ 20 Rd	258-00	268					1.6		✓ 28.9
57	toe slope Rd fence	258-00	240					5.2		✓ 25.3
58	Intersx fences	240-00	295					7.4		✓ 23.1
59	RR ROW fence toe slope Rd.	343-05	241					6.7		✓ 23.8
60	S.W. cor garage 18 x 12	344-45	390					6.7		✓ 23.8
61	℄ 20' Rd and tracks	339-00	290					0.6		✓ 29.9

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Date 2-14-20 Rec.

OBJECT 930.5	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At ⊙ 12									
62 Top RR fill	339-00	276					1.5	✓	929.0
63 Toe RR fill N. slope	339-00	266					4.8	✓	25.7
64 RR. ROW fence	340-00	238					6.8	✓	23.7
65 ℄ RR. fill	315-25	294					2.0	✓	28.5
66 Toe N. slope RR fill	315-25	258					6.4	✓	24.1
67 RR ROW fence & NS fence	315-25	225					7.1	✓	23.4
68 ℄ track at crossing	268-20	443					2.8	✓	27.7
69 ℄ entrance or Rd.	261-01	400					4.6	✓	25.9
70 ℄ tracks	272-10	408					3.1	✓	27.4
71 ℄ Rd.	252-30	388					5.9	✓	24.6
72 Toe N slope RR fill	270-00	400					6.1	✓	24.4
73 Shot on NS fence	281-50	162					6.9	✓	23.6
74 Bottom hole	287-15	93					6.8	✓	23.7
75 Toe slope	314-45	25					6.3	✓	24.2
76 Bottom hole	340-15	161					7.1	✓	23.4
⊙ 12 to 1	253-11	710							

Page..... Transit..... Obs..... Line.....

Date..... Rec.....

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle			Read. on Rod	Diff. of Elev.	Elevation above Datum
				Up + Down −	No. of Int. or Angle	Rod Equiv.			

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.

Page.....Transit.....Obs.....Line.....

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OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle			Read. on Rod	Diff. of Elev.	Elevation above Datum
				Up + Down −	No. of Int. or Angle	Rod Equiv.			

Page..... Transit..... Obs..... Line.....

Date..... Rec.....

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle			Read. on Rod	Diff. of Elev.	Elevation above Datum
				Up + Down −	No. of Int. or Angle	Rod Equiv.			

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.

Page 1 Transit Obs. Weber Line White Bear and Bald Eagle Flats

Date 2-25-30 Rec. Beaton

OBJECT ~~931.7~~	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
At O4 - H.I. = 4.8	H.I. 927.5								922.7
Chk A3 top RR. semaphore to N.	185-48								
to O3	206-40								
to O4A	280-10	580							
℄ pavement at Inter'x with dirt Road Running N.	330-55	670		+	0-30	+5.8	4.8	+1.0	928.5 ~~922.7~~
Flow line N. end 24" Conc culv	323-55	575					2.5		925.0 ~~29.8~~
℄ pavement over culv.	323-00	610		+	0-35	+6.2	4.8	+1.4	28.9 ~~33.1~~
Flow line S. end 24" conc. culv.	322-30	625		+	0-15	+2.7	4.8	−2.1	25.4 ~~29.6~~
℄ pavement	311-00	595		+	0-40	+6.9	4.8	+2.1	29.6 ~~33.8~~
Begining fence	321-00	556					3.3		24.2 ~~29.4~~
toe N. slope	312-00	570					1.8		25.7 ~~29.9~~
Fence line	313-00	480					2.1		25.4 ~~29.6~~
Gen'l elev. on slope	304-00	504		+	0-20	+2.9	4.8	−1.9	25.6 ~~29.8~~
" " on slope	295-00	448					0.8		26.7 ~~30.9~~
Fence line	294-45	390					3.3		24.2 ~~29.4~~
Gen'l elev on slope	283-20	504		+	0-25	+3.6	4.8	−0.8	26.7 ~~30.9~~
Fence line	269-10	355					4.1		23.4 ~~27.6~~

Page 2 Transit Obs. Line

Date 2-25-30 Rec. 927.5

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At O 4									
toe Slope N.	281-45	500					3.8		23.7 ~~927.9~~
℄ ditch	259-50	360					6.8		20.7 ~~924.9~~
toe slope	284-45	445					3.6		23.9 ~~928.1~~
Gen'l elev	278-45	420					3.4		24.1 ~~928.3~~
fence cor.	246-10	392					6.0		21.5 ~~925.7~~
Gen'l elev	265-20	424					4.7		22.8 ~~927.0~~
" "	253-35	430					6.0		21.5 ~~925.7~~
E. end 10" m Tin culv - flow line	238-20	393					6.2		21.3 ~~925.5~~
W " " " " - " "	236-50	375					6.3		21.2 ~~925.4~~
toe E. slope dirt Rd.	230-30	456					5.8		21.7 ~~925.9~~
" " " " " & fence cor.	223-05	496					6.0		21.5 ~~925.7~~
" " " " " " " "	215-30	582					4.8		22.7 ~~926.9~~
Elev. on S. slope hill	210-30	665					1.4		26.1 ~~30.3~~
" " " " "	207-35	733		+	0-30	+6.4	4.8	+1.6	29.1 ~~33.3~~
" " " " " top cut E side of dirt Rd.	204-50	790		+	0-40	+9.20	4.8	+4.4	31.9 ~~36.1~~
Elev. on S slope hill	209-40	745		+	0-45	+9.8	4.8	+5.0	32.5 ~~36.7~~
" " S.W. " "	215-00	790		+	0-45	+10.0	4.8	+5.2	32.7 ~~36.9~~

Page 3 Transit Obs. Line

Date 2-25-30 Rec. 927.5

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At ⊙ 4									
Elev. on slope	215-15	660					0.0		927.5
top W. slope	222-00	700		+	0-55	+11.2	4.8	+6.4	33.9
Elev. on W. slope hill - on fence line	221-30	635		+	0-30	+5.5	4.8	+0.7	28.2
14'Wx26'E-CHix coop top W. slope hill - end fence - S.W. cor	226-55	700		+	1-10	+14.2	4.8	+9.4	36.9
toe S.W. slope hill	223-50	595					4.3		23.2
toe S. slope hill - on fence line	229-40	595					3.7		23.8
S.W. cor Barn 24'x24'	229-25	725		+	1-05	+13.6	4.8	+8.8	36.3
Elev. on S. slope hill - on fence line	232-45	660		+	0-25	+4.8	4.8	0.0	27.5
top S. slope	231-10	695		+	1-05	+13.0	4.8	+8.2	35.7
Fence cor. on S. slope hill	234-40	690		+	0-45	+9.0	4.8	+3.2	30.7
top slope - end fence	233-00	710		+	1-10	+14.4	4.8	+9.6	37.1
N.W cor. house 24'E.x36'S.	233-30	778		+	1-05	+14.8	4.8	+10.0	37.5
top slope	237-00	740		+	1-10	+15.0	4.8	+10.2	37.7
~~top slope~~									
toe S. slope hill	241-10	695					4.8		22.7
toe N. slope dirt Rd	245-50	710					5.6		21.9
" S slope hill	234-55	630					4.6		22.9

Page 4 Transit Obs. Line

Date 2-25-30 H.I. 927.5 Rec.

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
℄ dirt Rd	247-00	660					3.7		23.8
Gen'l elev.	237-50	585					5.7		21.8
toe N. slope dirt Rd.	242-25	515					6.2		21.3
Gen'l elev	234-45	490					5.8		21.7
931.8									
At Ø 4 A-HI = 4.9									
At Ø 4 A-Elev - 926.90									
Chk Az N. edge hse.	217-44								
to Ø 4		580							
℄ pavement	4-00	200					2.3		929.5
toe N slope pave fence line	5-40	170					3.6		28.2
℄ pavement	328-30	150					2.2		29.6
toe N. slope pave fence cor.		126					3.3		28.5
℄ pavement	283-10	212					2.1		29.7
toe N slope pavement	287-00	162					3.6		28.2

Page 5 Transit Obs. Weber Line

Date 2-25 Rec. Beaton

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At. 04 A									
℄ pavement	268-30	328					2.2		929.6
toe N. slope pavement	263-20	300					5.5		26.3
℄ pavement drive to N. at Intersect with	261-00	495					2.4		29.4
toe N. slope 12" tin culv pave W. end	257-55	488					7.1		24.7
℄ private drive	258-20	488					3.4		28.4
toe N. slope 12" tin culv pave E end	257-25	508					7.5		24.3
S.W. cor orchard	256-30	420					6.8		25.0
S.E. " "	255-10	475							
℄ private drive	235-15	495					0.0		31.8
Elev on W slope Knoll	242-00	415					4.9		26.9
End private drive	228-25	515					2.0		29.8
N.W. cor orchard	229-00	436					7.1		24.7
NE cor. orchard Top W. Knoll slope	233-50	475					0.4		31.4
SW. cor house 28' E x 34 N	236-05	508					0.0		31.8
Elev on W slope Knoll	221-00	497					5.8		26.0
Top W. slope Knoll Top S. cut on E W dirt Rd	221-00	540					1.5		30.3
℄ E & W dirt Rd	218-25	572					4.6		27.2

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Date 2-25-30 Rec.

OBJECT (931.8) Cont'd At O 4A	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
S.E. cor Shed 14' N x 36' W.	227-40	565					2.1		929.7
top of cut N side Rd. fence also	217-00	600					1.1		30.7
Δ in fence	206-15	500					4.6		27.2
℄ dirt Rd	208-00	465					6.6		25.2
End fence W	196-45	500		+	0-25	+3.6	4.8	-0.8	931.0
toe S slope Road	207-45	435					9.3		22.5
toe " " "	181-30	340					10.1		21.7
Gen'l elev toe W	212-20	405					9.5		22.3
E & W fence line	164-00	310					10.0		21.8
Gen'l elev toe W slope Knoll	234-00	398					8.7		21.4
Δ in N.S. fence	192-00	345					10.4		21.4
Gen'l elev toe N slope Knoll	246-00	365					7.9		23.9
" "	265-20	303					10.2		21.6
℄ ditch at Δ pt	244-30	340					9.4		22.4
Gen'l elev	223-15	280					9.8		22.0
Δ in ditch	260-00	342					8.6		23.2
E & W ditch	232-00	245							

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Date 7-25-30 Rec.

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle: Up + Down −	No. of Int. or Angle	Rod Equiv.	Read. on Rod	Diff. of Elev.	Elevation above Datum
Cont'd At O 4A									
Gen'l elev.	255-30	257					7.7		924.1
ditch at N&S fence line	203-00	180					11.0		20.8
Gen	255-00	170					7.0		24.8
toe N. slope to on fence	236-00	84					8.5		23.3
Elev on slope on fence	254-00	90					6.4		25.4
N&S fence line	301-00	80					4.9		26.9
Gen'l elev on slope to swamp	8-10	100					5.2		26.6
" " " " "	39-45	106					6.6		25.2
" " " " "	30-00	190					5.5		26.3

Page..... Transit..... Obs..... Line.....

Date..... Rec.....

OBJECT	Azimuth	Stadia	Distance	Intervals or Ver. Angle			Read. on Rod	Diff. of Elev.	Elevation above Datum
				Up + Down −	No. of Int. or Angle	Rod Equiv.			

VALUABLE

RETURN TO State Department of Drainage and Waters, St. Paul, Minn.