HIGHWAY #5

LEVEL BOOK

1870

5

Highway #5

KEUFFEL & ESSER CO.

DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.
NEW YORK.

CHICAGO. SAN FRANCISCO. ST LOUIS.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

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	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

Entered 1922 CRH

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2/21/13 Fall River Waterloo To Gilbertville

BM	3.74	503.74		500.00	✓
	For Water at 5th St Bridge				
	2.95	503.05	3.64	500.10	✓
	0.75	493.37	10.43	492.62	✓
			12.82	480.55	✓
#1	3.19	502.42	4.51	499.23	✓
#2	2.44	500.46	4.40	498.02	✓
#3	0.04	496.02	4.48	495.98	✓
#4	4.71	499.79	0.94	495.08	✓
#5	6.66	501.14	5.31	494.48	✓
#6	4.19	500.39	4.94	496.20	✓
#7	2.19	497.38	5.20	495.19	✓
WCF+N	BM		2.33	495.05	✓
#8	2.67	496.17	3.88	493.50	✓
#9	3.15	495.96	3.36	492.81	✓
#10	1.72	492.47	5.21	490.75	✓
#11	4.40	491.57	5.30	487.17	✓

Crossing I.C + WCF+N 4th + Water

Water 150' below 5th St Bridge

CGW + I.C. Crossing

Near 11th St at Switch

50' S of I.C + WCF+N on Lafayette St.

On WCF+N at Linden + Lafayette

At End Curve on Lafayette St.

Joint opp Signal Box on north Bell Junction

10893 WCF+N BM at School

At Pole marked 200

South of "Wolf"

Joint at End Bridge No Rail

		491.57			
	For Water at Brg		4.89	486.68	✓
#12	3.58	491.07	4.08	487.49	✓
#13	3.73	490.20	4.60	486.47	✓
#14	3.08	488.87	4.41	485.79	✓
#15	3.71	488.84	3.74	485.13	✓
#16	3.46	487.94	4.36	484.48	✓
#17	3.04	486.85	4.13	483.81	✓
#18	3.62	486.10	4.37	482.48	✓
#19	3.41	485.41	4.10	482.00	✓
#20 9:30 7/20/13	4.01	484.56	4.86	480.55	✓ ok to here
#21	4.35	484.03	4.88	479.68	
#22	3.03	483.13	3.83	480.10	
	#		4.19	479.91	
#23			3.27	479.86	
	1.57	481.43			
			5.2	476.2	
			12.65	468.78	

480.55
18.45 down to ice 468.23 at Elk Run Bridge
12.32 Fall to here

2 Pole East of Millendale
4th Pole East of Lake
N End Bridge south of Millendale tracks
4th Joint N of Crossing at Ryda

Rail at Crossing E&W Road River is to East

Opp N Bend in river
200' N of Track
Edge of River 400' from track

#23	2.91	482.77		479.86
#24	4.00	482.33	4.44	478.33
#25	2.12	479.66	4.79	477.54
~~#26~~				
			6.4	473.2
			11.8	467.8
T.P	0.26	474.72	5.20	474.46
	3.09	473.86	3.95	470.77
	3.60	469.31	8.15	465.77
			9.40	459.91

1st Joint ahead of Highway on North rail

Edge of Bank EBW 0.0

In Bank

Edge timber & N Edge corn field

On Low Bank

Water at Dam Site

480.55
459.91
20.64 Fall

B.M. LEVELS JULY 8-1913
Ind Ave to Dunbarton

	0.02	118.39'			118.37	MDEP. & IDAHO
M	2.29	107.82'	12.86	105.53'		
M	7.18	113.41'	1.59	106.23'		
			4.51		108.90'	B.M.#1 ON N.E. WING STEEL GIRDER CONCR. BRIDGE
M	5.71	118.94'	0.18	113.23'		6 OF BISHOPS AT E. END OF HAND RAIL
M	2.64	110.86'	10.72	108.22'		
M	5.50	114.00'	2.36		108.50	B.M.#2 ON N.W. WING STEEL GIRDER CONCR.
M	9.38	121.40'	1.98	112.02'		BRIDGE ¼ MI. W. OF BISHOPS - W. END HAND RAIL
M	11.51	132.71'	0.20	121.20'		
M	9.54	144.99'	0.26	132.45'		
M	12.68	154.43'	0.24	141.75'		
M	12.97	167.38'	0.02	154.41'		
M	0.02	154.94'	12.46	154.92'		
M	0.01	142.37'	12.58	142.36'		
M	0.19	129.70'	12.86	129.51'		
M	0.69	120.90'	9.49	120.21'		
M	12.74	122.70	10.99		109.96'	B.M.#3 ON N.W. WING STEEL GIRDER CONCR. BR.
			10.32		112.38'	¾ MI. E. - COR. OF WING & ABUT. ELK RUN
						B.M.4 E. END S. HAND RAIL - BR. 100' E. OF ABOVE

2.9
2203
.87

116.25

		122.70				
M.	9.02	130.79	0.93	121.77		
M	4.56	127.62	7.73	123.06		
M	-0.87	116.48	10.27	117.35		PM. W. END S. RAIL WOODEN BR. 3½ MI.
M	5.66	119.81	2.33	114.15		20 R W. END " " 3¾ "
M	9.91	129.36	0.36	119.45		
M	7.19	131.93	4.62	124.74		
M	5.48	136.19	1.22	130.71		
			2.31		133.88	B.M. #5 ON N.W. COR. E. WING CONCR. CULVERT
M	10.38	146.32	0.25	135.94		S. OF 4½ MI. INTERSECTION — LEVELS RUN
M	12.78	158.60	0.50	145.82		NORTH FROM HERE
M	11.19	169.14	0.65	157.95		
M	13.27	184.52	0.89	168.25		
M	11.64	194.81	1.35	180.17		
M	12.70	204.02	0.49	191.32		
M	1.82	198.86	6.98	197.04		
	1.83	195.30	10.55	193.47		
			6.60		188.70	B.M. #6 S.W. COR. W. WING CONCR. CULVERT 1+ MI.
	3.56	194.69	10.73	188.13		N. OF #5
			9.79		184.90	B.M. #7 N.W. COR W. " " " 1¼ " M.

		198.86				
M	0.10	186.59	12.37	186.49		
M	0.19	174.64	12.14	174.45		
M	0.66	162.46	12.84	161.80		
M	0.15	150.02	12.59	149.87		
M	4.15	145.72	8.45	141.57		
			2.27		143.45	M. RAIL G.W. DEWAR
M	12.29	156.75	1.26		144.46	B.M. - COTTONWOOD N.W. COR X ROADS DEWAR X
M	13.24	169.80	0.19	156.56		
M	11.85	181.64	0.01	169.79		
M	11.58	192.99	0.23	181.41		
M	0.92	186.49	7.42	185.57		
M	0.11	174.45	12.15	174.34		
M	10.20	172.10	12.55		161.90	B.M. #8 S.E. COR. E. WING COMCR. COLVERT 3/4 M. N. DEWAR
M	0.10	160.97	11.23	160.87		
M	12.22	168.14	5.05		155.92	B.M. #9 S.E. COR. E. WING COMCR. COLVERT 1 M. N. DEWAR
			2.30		165.84	B.M. #10 " " " " " " 1 1/4 " " "
M	12.49	179.95	0.68	167.46		
M	4.63	172.56	12.02	167.93		
			6.51		166.05	B.M. #11 S.W. " W. " " " 1 1/2 " " "

	172.56				
M	6.59	174.13	5.02	167.54	B.M. #12 ON COR. OF S.W. WING & W. ABUTMENT
M	11.68	185.61	0.20	173.93	OF STEEL GIRDER BRIDGE 1¾ MI. N. DENAR
JULY 9-1913					
M	7.24	192.85	0.00	185.61	B.M. NAIL IN POLE RT. 2ND N OF 2 MI. COR
N	5.30	196.34	1.81	191.04	
M	13.04	208.47	0.91	195.43	
N	10.88	206.52	12.83	195.64	
M	6.45	212.82	0.15	206.37	
			3.99	208.83	B.M. #13 ON E. END S. WING CONCR. CULVERT
N	12.65	215.87	9.60	203.22	3 MI. W. OF DUNKERTON - LEVELS TURN EAST
S	1.45	204.67			
			5.19	199.48	B.M. #14 ON E. END S. WING CONCR. CULVERT
M	11.15	226.56	0.46	215.41	2⅞ MI. W. OF DUNKERTON
N	12.45	238.71	0.30	226.26	
M	6.00	244.01	0.70	238.01	
			7.25	236.76	B.M. #15 W. END S. WING CONCR. CULVERT 2¼ MI.
N	3.22	242.56	4.67	239.34	W. OF DUNKERTON
M	1.65	232.45	11.76	230.80	
N	12.48	236.20	8.73	223.72	B.M. #16 S.W. COR. S.W. WING CONCR CULVERT 1⅞ MI. W. OF DUNKERTON

		236.20				
M	5.26	240.75	0.71	235.49		
M	0.14	228.46	12.43	228.32		
M	0.29	215.81	12.94	215.52		
M	2.81	209.45	9.17		206.64	B.M. #17 W. END S. WING CONCR. CULVERT 3/4 MI. W. DUNK
			3.35		206.10	B.M. #18
M	2.22	207.64	4.03	205.42		W. END S. CONCR WALL STEEL GIRDER BRIDGE
M	2.32	202.46	7.50	200.14		1/2 MI. W. DUNKERTON
M	5.24	204.40	3.30		199.16	B.M. ON N.E. END OF S.W. WING WALL BRIDGE AT
M	3.05	203.07	4.38	200.02		DUNKERTON - CRANE CREEK
M	9.93	212.12	0.88	202.19		
M	12.62	223.71	1.03	211.09		
M	13.13	236.25	0.59	223.12		
			2.15		234.10	B.M. SOFT MPLE. R. 1 MI. + N. OF DUNKERTON
N	10.50	245.82	0.93	235.32		IN FRONT OF J. J. STUMBAUGH'S.
N	1.37	234.64	12.55	233.27		
N	0.12	221.60	13.16	221.48		
	7.19	228.67				
			3.37		223.30	OLD B.M. SOFT MPLE R. 1 1/2 + MI. N. DUNKERTON

199.16
5.04
204.20
1.13
203.07 WATER TABLE - BANK

		224.60			
M	3.70	218.97	6.33	215.27	
M	12.96	225.28	6.65	212.32	
M	7.78	232.20	0.86	224.42	
			3.97		228.73

B.M. ON COTTONWOOD L. 2 1/4 MI. M. DUNKERTON

OPPOSITE OLIN S. GOFT'S

B.M. LEVELS WATERLOO TO LA PORTE CITY

	6.39	113.98			107.59	
	Av.	113.99				
	5.69	114.00			108.31	
M	1.35	108.84	6.50	107.49		
M	2.17	102.57	8.44	100.40		
M	2.18	98.20	6.55	96.02		
M	6.74	99.92	5.02	93.18		
M	4.58	101.17	3.33	96.59		
N	2.00	98.28	4.89	96.28		
M	6.38	96.70	7.96		90.32	B.M. #1 IN JCT. S.E. WING & E. ABUTMENT STEEL SPAN BRIDGE - 1 MI. + S.E. WATERLOO
M	4.94	97.25	4.39	92.31		
M	6.68	99.98	3.95	93.30		
N	13.18	107.95	5.21		94.77	B.M. #2 ON N.E. COR. E. WING CONCR. CULVERT 2 MI. + S.E. WATERLOO X ROADS
M	12.09	119.61	0.38	107.57		
N	13.27	132.63	0.25	119.36		
M	12.09	144.60	0.12	132.51		
N	6.36	150.41	0.55	144.05		
M	8.60	155.23	3.78	146.63		
N	0.49	142.90	12.82	142.41		
M	0.61	131.17	12.34	130.56		

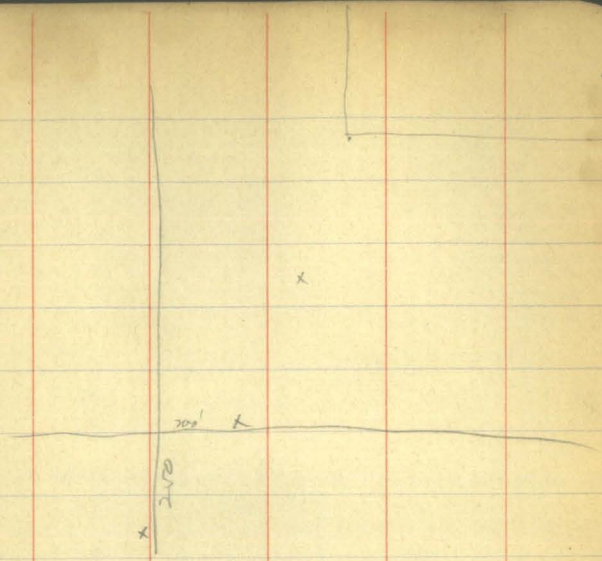
		131.17				
M	0.01	118.45	12.73	118.44		
M	0.31	106.33	12.43	106.02		
M	0.76	93.95	13.14	93.19		
JULY 12-13						
M	4.26	93.60	4.61		89.34	B.M. ON SOFT MAPLE S.E. COR. X ROADS 4 MI.
M	6.65	89.56	10.69	82.91		S.E. OF WATERLOO
M	3.13	88.23	4.46	85.10		
			5.05		83.18	B.M. ON COTTONWOOD N.W. COR X ROADS-
						WASHBURN
M	4.10	85.61	6.72	81.51		
M	6.37	82.11	9.87	75.74		ON WOODEN BR. ON S.E. COR. FLOOR ½ MI. S.E.
M	4.91	82.29	4.73	77.38		
M	7.67	82.70	7.26	75.03		
M	8.20	89.04	1.86	80.84		
M	1.40	81.44	9.60		80.04	B.M. NAIL IN POLE #2298
M	10.30	80.62	11.12	70.32		
			7.14		73.48	B.M. #3 JCT. S.E. WING WITH ABUT.-MILLERS
M	12.51	92.66	6.47	80.15		CREEK STEEL SPAN BRIDGE
M	3.17	84.10	11.73	80.93		
M	6.19	77.15	13.14	70.96		

		77.15				
			2.22		74.93	B.M. ON S. MAPLE S.E. COR X ROADS 1 MI. + S.
N	5.16	76.43	5.88	71.27		OF MILLERS CREEK X ROADS
N	3.98	75.59	4.82	71.61		
M	8.33	73.10	10.82		64.77	B.M. #4 ON S.E. COR. STEEL TRUSS PLANK BRIDGE
N	2.23	70.19	5.14	67.96		ON ROUND TOP BOLT HEAD - FASTENING TRUSS TO ABUT.
			3.70		66.49	2½ MI. S.E. MILLERS CREEK X ROADS
N	4.13	69.75	4.57	65.62		B.M. #5 ON E. END S. HEAD WALL CONCR. CULVERT 1 MI. N.W. LAPORTE
			4.80		64.95	B.M. #6 ON C. S. HEAD WALL CONCR CULV. ¾ MI. "
M	7.81	69.15	8.41	61.34		
						NAME PLATE S. HEADWALL
			5.85		63.30	B.M. #7 ON NEW STANDARD CULVERT ½ MI. "
N	4.40	65.45	8.10		61.05	B.M. #8 " CONCR. CULV. W. END S. HDWL. ½ MI. "
			3.75		61.70	B.M. #9 S.C.T. N.E. WING WITH BARREL X ROAD LAPORTE LIMITS
M	5.79	70.03	1.21	64.24		
N	3.22	71.25	2.00	68.03		
M	4.03	73.18	2.10	69.15		
N	4.49	70.10	7.57	65.61		
M			7.00	6[illegible]	63.10	ON S.E. WING E. END - GIRDER CONCR BR. N.E. PART OF LAPORTE CITY

Hutchinson Fall.

Levels taken in ditch

water at Big willow	10.46	110.46		100.00	
at Fence			9.25	101.21	✓
at Lone willow			9.05	101.41	✓
			8.64	101.82	✓
			8.60	101.86	✓
T.P.	8.35	110.31	8.50	101.96	✓
			7.35	102.96	✓
Fence fence East water			6.9	103.4	✓
			6.65	103.66	✓
North Corner of Property ~~6.0~~			6.0	104.3	✓
5			5.8	104.5	✓
			5.8	104.5	✓
T.P.	7.90	112.51	5.70	104.61	✓
			7.6	1049	✓
			7.6	104.9	✓
Pond edge			7.0	105.5	✓
Pond			7.5	105.0	✓
			7.1	105.4	✓



Clay on West
willow on East N + A line

E + H fence

H + B on North
willow on South

		112.51			
			7.1	105.4	✓
Almt 40 Line Eob			6.6	105.9	✓
TP	8.45	114.46	6.50	106.01	✓
			7.8	106.7	✓
			7.8	106.7	✓
Ditch			7.4	107.1	✓
Round Forest			6.3	108.2	✓
" to East			6.0	108.5	✓
D			7.2	107.3	✓
Side			5.9	108.6	✓
D			6.6	107.9	✓
Side			5.3	109.2	✓
D			6.3	108.2	✓
D			6.2	108.3	✓
D			6.2	108.3	✓
East Bridge			6.0	108.5	✓
	7.7	116.46	5.7	108.96	✓
West Branch			8.6	107.9	✓

4.3 ✓
1.3
3.00
12
1.8

2800
14

108.5
101.4
7.1

108.3
101.4
2.9

		116.46			
			8.2	108.3	✓
			8.3	108.2	✓
			7.6	108.9	✓
West Bridge			7.1	109.4	✓

Ind. Ave to Raymond + East to Jesup – LaPorte Road

Nov. 6-1913

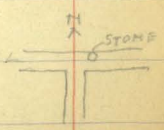
BARBER
BRAMOT
SLY

B	8.83	142.71		133.88	B.M. #5 -
B	10.29	152.14		0.86	141.85
S.	0.89	140.26		12.77	139.37 ON #4 M. END W. HEADWALL ½ M. S. - M OF SCHOOL
S B.M.				5.78	134.46
B.	9.64	144.03		5.87	134.39
S	13.12	156.91		0.24	143.79
B. B.M.				8.75	148.16 #3 COLV. C.E. WING - S. OF SCHOOL
B. B.M.				13.25	143.66 " " " " ¼ " " " SKEW CULV.
B	12.56	168.50		0.97	155.94
S.	12.81	181.03		0.28	168.22
B	8.16	188.91		0.28	180.75
B. B.M.				16.06	172.85 CULV. ⅝ MI. S. OF SCHOOL G.B. ON S.E. COR E. WING
S "				2.30	186.61 " #2 - NOT NUMBERED
B	13.18	201.38		0.71	188.20
B. B.M	6.86	203.36		5.88	196.50 2X2 #1 " " 1 MI. + S. OF SCHOOL
S.	0.31	190.84		12.83	190.53
B. B.M.				8.92	181.92 E. WEDGE CONCR. CARRIAGE BLOCK N. HO. ON EAST - N. OF
B.	0.52	178.43		12.93	177.91 RAYMOND 1909

		178.43			
S.	6.01	171.56		12.88	165.55
B.	0.65	159.31		12.90	158.66
S.	0.58	149.13		10.76	148.55
B.	1.36	137.82		12.67	136.46
S.	2.86	128.48		12.20	125.62
S. B.M.				9.84	118.64
B.	11.02	137.98		1.52	126.96
S.	9.02	146.05		0.95	137.03
B.	12.39	157.75		0.64	145.41
S	12.35	169.60		0.50	157.25
B	12.56	181.97		0.19	169.41
S	10.09	191.90		0.16	181.81
B.	11.58	203.32		0.16	191.74
S	12.62	215.64		0.30	203.02
B	1.38	204.82		12.20	203.44
S	0.46	192.94		12.34	192.48
B	11.33	198.33		5.94	187.00
S	10.95	209.10		0.18	198.15

G. M. WING CONCR. CULV. 1/8 MI. E. OF RAYMOND

		209.10				
B	0.22	205.75		3.57	205.53	
S	0.69	193.70		12.74	193.01	
B	3.41	184.42		12.69	181.01	
S	12.71	196.74		0.39	184.03	
B. B. M.				8.04	176.38	M.E. COR. DECK OF COMCR. DECK GIRDER-BR. AT FOOT OF
B	10.95	207.52		0.17	196.57	HANDRAIL ---- M. OF SEC 5-88-11 ¼ M. OF E. LINE
S	4.30	207.71		4.11	203.41	
B	1.20	196.15		12.76	194.95	
S	12.81	207.34		1.62	194.53	
B	4.50	210.94		0.90	206.44	
S	5.33	215.65		0.62	210.32	
B	6.73	219.81		2.57	213.08	
S B.M.	13.00	228.52		4.29	215.52	CR. M. WING, COMCR. CULV. BET. SECS. 3 & 10-88-13
B	12.75	240.95		0.32	228.20	ABOUT ½ MI. E. OF SCHOOL
S	1.04	229.51		12.48	228.47	
S	1.75	218.85		12.41	217.10	
B. B.M.				8.26	210.59	ON LARGE STONE N.E. COR. 1 M.E. OF SCHOOL
S	3.18	220.23		1.80	217.05	CUT WITH CHIZEL ON S.E. COR.



		220.23			
B. B.M.			3.36	216.87	ON S. MAPLE E. END OF ROW ABOUT ¼ MI. E. OF COR.
B	1.32	216.72	4.83	215.40	
S	1.10	209.89	7.93	208.79	
B.	1.04	198.31	12.62	197.27	
S	1.05	187.14	12.22	186.09	
S. B.M.			4.74	182.40	ON COR. COTTONWOOD - ROAD S. BET. 11 & 12 - 88 - 11
B	2.26	177.14	12.26	174.88	AT STONE SCHOOL
S	12.83	187.12	2.85	174.29	
S	12.83	199.91	0.04	187.08	
B. B.M.			1.08	198.83	
B.	11.08	210.70	0.29	199.62	ON COR. POST AT ROAD S. ½ MI. E. OF SCHOOL
S	7.16	217.73	0.13	210.57	
B	0.51	205.56	12.68	205.05	
		Nov. 7 - 1913			
B. B.M	10.00	203.35	12.21	193.35	ON POLE 1 MI. S. OF JESUP
	11.36	212.81	1.90	201.45	
	11.43	224.03	0.21	212.60	
B.M.	5.[illegible]	[illegible]	0.30	223.73	ON CARRIAGE BLOCK ¾ MI. S. OF JESUP — G.W. McGinnis
	0.28	219.29	5.02	219.01	

943' South of Stanley Point

This

Profile to level.

INDEPENDENCE AVE. - EAST FROM 4½ M. E OF W. LOO. BRANDT SLY

MAY 18-1914

21

	11.43	145.31		133.8	B.M. #5
	12.08	157.09	0.30	145.01	
	14.95	171.89	0.15	156.94	
	13.25	185.02	0.12	171.77	
	13.05	197.99	0.08	184.94	
B.M.	8.85	205.93	0.91	197.08	N. ROOT S. MAPLE S. - IN FRONT OF HO. 1ST TREE W OF ½ LINE
	12.75	213.82	4.86	201.07	
B.M.			6.34	207.48	N 36" COTTONWOOD STUMP N. - 1ST STUMP W. OF SEC. LINE 5½ MILE, W LOO.
	6.29	219.48	0.63	213.19	
B.M.	0.08	207.86	11.70	207.78	N. HEADWALL CONCR. CULV. JUST E. OF E. ½-¼ LINE
	-0.27	195.31	12.28	195.58	
	-0.22	181.91	13.18	182.13	
	1.20	169.96	13.15	168.76	
	12.87	171.94	10.89	159.07	
	12.34	184.23	0.05	171.89	
B.M.			4.27	179.96	E. HEADWALL CULV. S. SIDE X ROADS 6½ M. E. W. LOO.
	11.62	195.70	0.15	184.08	
	12.59	207.75	0.54	195.16	

		207.75			
	11.63	218.54		0.84	206.91
	6.36	224.25		0.65	217.89
B.M.				2.68	221.57	LONE ON ROOT 30" COTTONWOOD S. ON ½ LINE
	2.19	215.14		11.30	212.85
B.M.				2.01	213.13	E. HEADWALL CONC. CULV. UNDER DRIVE R. ON W ¼-½ LINE
	11.52	226.21		0.45	214.69
	4.68	230.39		0.50	225.71
B.M.				1.59	228.80	E. HEADWALL CULV. S. SIDE X ROADS 7½ MI. E. W 400.

JUNE 8 '16

			50 STATIONS	TILE GRADES	
	2.63	102.63			100.0
			8.00	94.63	
12			5.03	97.60	94.55
11			5.81	96.82	93.80
10	2.12	98.64	6.11	96.52	93.05
9			3.49	95.15	92.30
8			4.06	94.58	91.55
7			4.87	93.77	90.80
6			5.36	93.28	90.04
5			5.81	92.83	89.80
4			6.27	92.37	89.05
3 FH SIDE ROAD			6.30	92.34	89.30
			7.10	91.54	
2			8.03	90.61	88.05
1			9.70	88.94	86.70
0			10.63	88.01	85.40
BOTTOM 8 & 0			13.57	85.07	

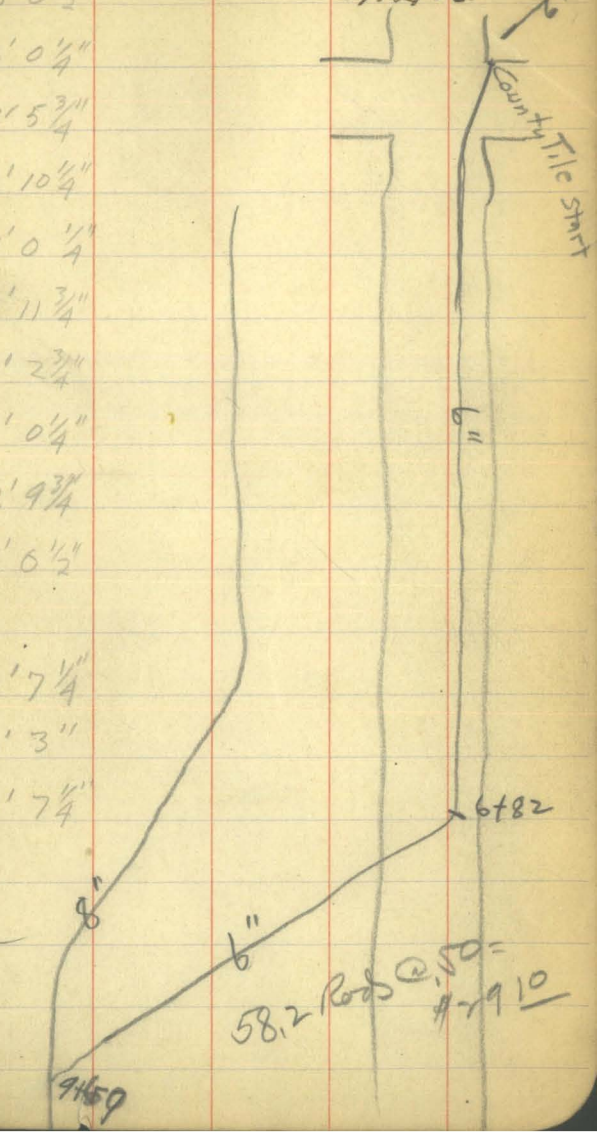
250
265
200
140
855 for 6" Dunbarton — 114 8" at Dunbar
104 beside 34 6" "
959
6 — 6" to return

C. F. DUKKERTON - BRINKER - BOPP

NEW WING WITH ABUT FROM 6" AT 12

INDEXED TO HERE 23
6/12/16.

3.05	3' 0½"	
3.02	3' 0¼"	
3.47	3' 5¾"	
2.85	2' 10¼"	
3.03	3' 0¼"	
2.97	2' 11¾"	
3.23	3' 2¾"	
3.03	3' 0¼"	
2.82	2' 9¾"	
3.04	3' 0½"	
10' ± E.		
2.61	2' 7¼"	
2.24	2' 3"	
2.61	2' 7¼"	



50 per Rod

58.2 Rods @ .50 = $29.10

$$\begin{array}{r} 165 \\ 60 \\ \hline 9900 \end{array}$$

3

8.67
4.00
12.67
9
13.67

1133
21
1425

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

MADE IN GERMANY.