

NAME National Ave. Extension

Class \_\_\_\_\_ Course \_\_\_\_\_ Party Beck #2

Alternate line "B" sta - 189+96.11 to = <sup>235+41.14</sup><sub>262+68.41</sub>

Profiles.

116

1897

- 116 -

116

# FIELD NOTES

No. 403P

ESPECIALLY ADAPTED  
TO THE USE OF  
ENGINEERING STUDENTS

---

EUGENE DIETZGEN Co.

MANUFACTURERS

DRAWING MATERIALS

MATHEMATICAL AND SURVEYING INSTRUMENTS

MEASURING TAPES

CHICAGO SAN FRANCISCO NEW YORK  
NEW ORLEANS PITTSBURGH

NATIONAL AVE. EXT.

Book #2

MICROFILMED

DEC 30 1964

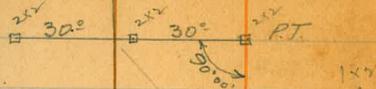
RETURN TO  
Watson, Valle & Gough, Inc.  
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San Diego, Calif.

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" Cross Sections	16-31
Line Change 69-75	12

Sta.	Dist	Angle Az.	Def.	Ties -
------	------	--------------	------	--------

209+98.54  
P.T.



207+34.00  
P.I.

148°54'  
297°29'

31°06' Lt.

207+34.00  
Set 2x2



204+55.74  
P.C.

$\Delta = 31^{\circ}06'$   
 $R = 1000$   
 $T = 278.26$   
 $L = 542.80$



747.12

202+19.43  
P.O.T.

180°00'

See Book #1 for ties -

189+96.11  
P.I.

"B" LINE.

— An Alternative Line —  
 Continued from Bk. #1, Pg. 20

Topog -  
~~Cont. P. 182 P. 11.~~

OK

Deflections -

205 = 1°16'  
 +50 = 2°42'  
 206 = 4°08'  
 +50 = 5°34'  
 207 = 7°00'  
 +50 = 8°26'  
 208 = 9°52'  
 +50 = 11°18'  
 209 = 12°43'  
 +50 = 14°09'  
 +98.54 = 15°33'

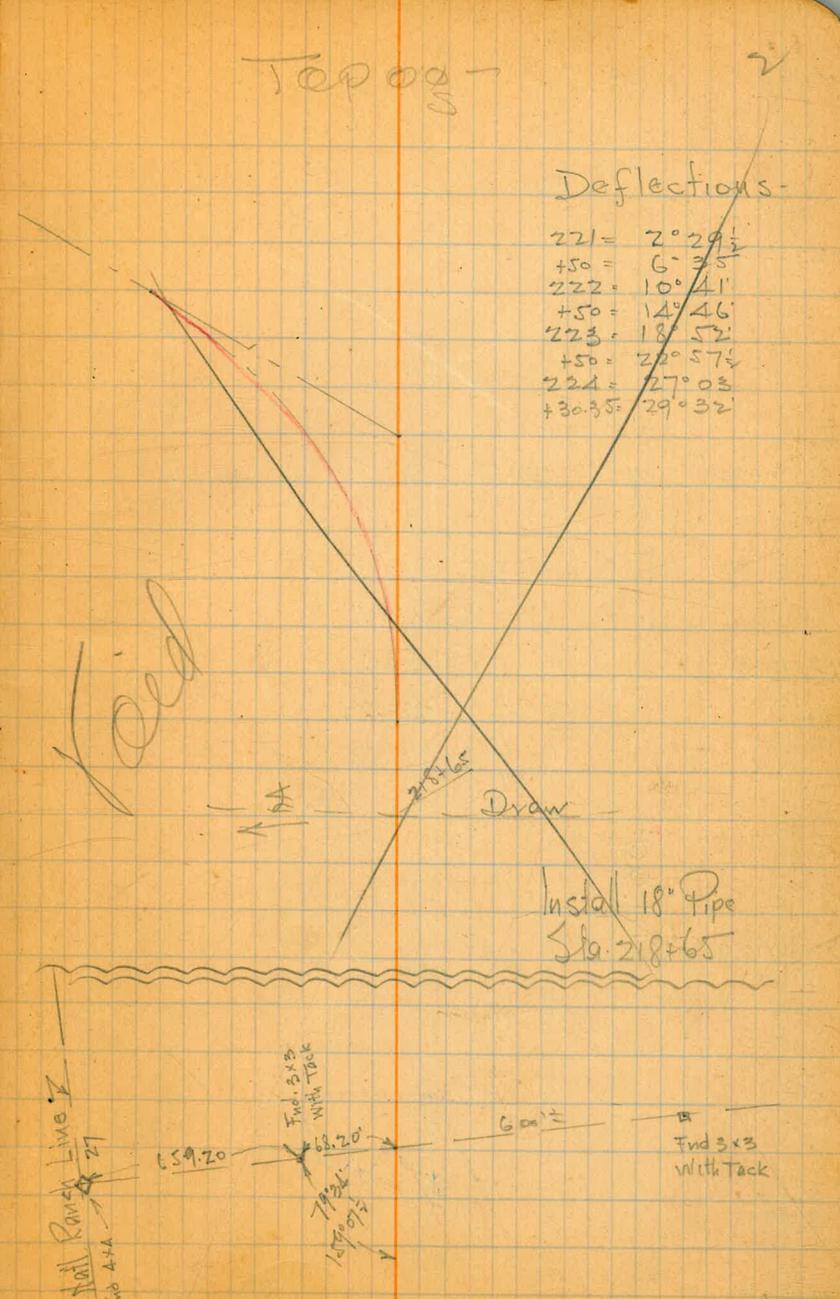
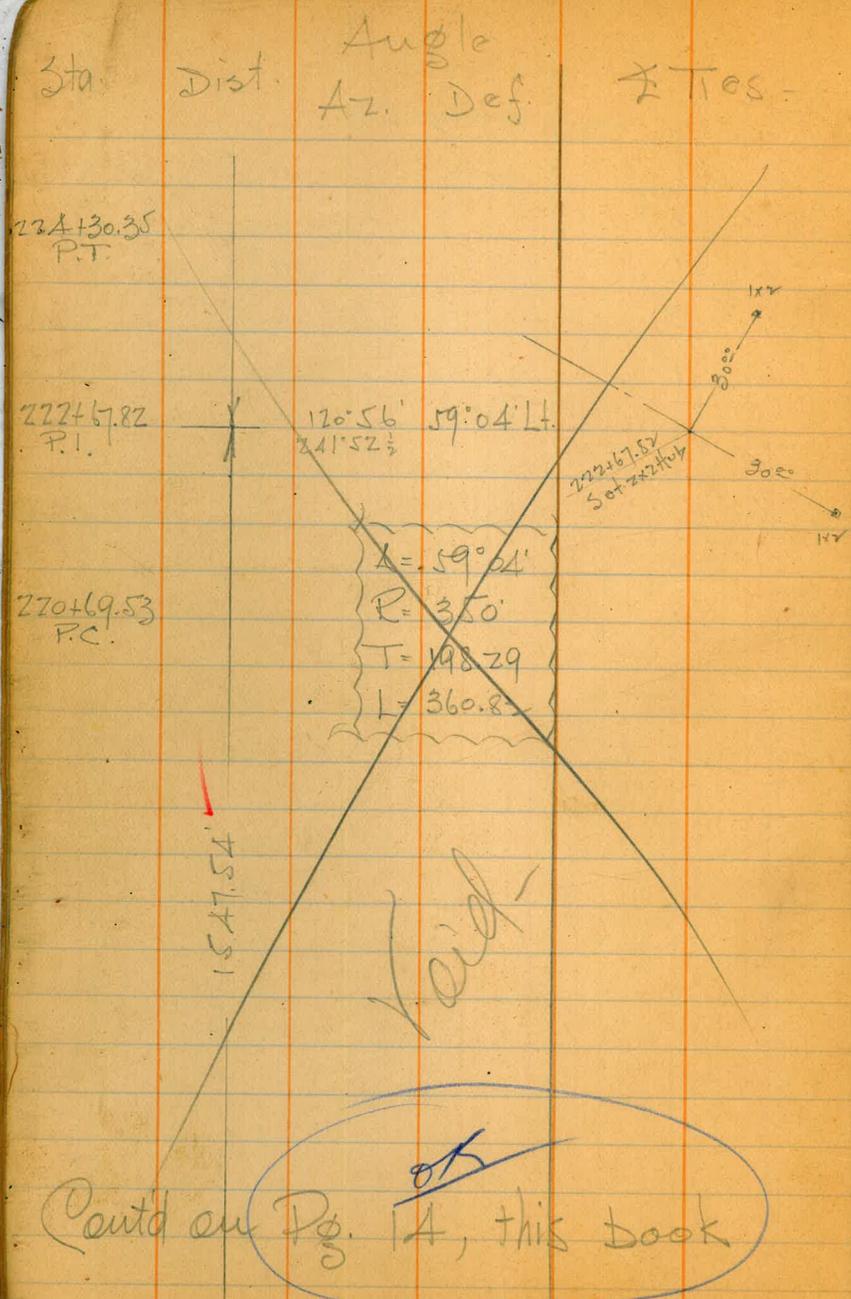
7/8/26

Coote

Clifton

Bunker Jr.

See Pg. 4 for Profile -



Sta. Dist. Angle- Az. Def. # Ties-

239460.16  
 232+68.40  
 235+41.19 =  
 P.T.

915.08

Cont'd in Bk #1, Pg. 23

Equation -

233141.05  
 P.I.

228° 15' 48° 15'

30°

A = 48° 15'  
 R = 500'  
 T = 223.97  
 L = 421.06

231+20.13  
 P.C.

1111.99

230+79.90  
 P.O.T.

226+01.06  
 P.O.T.

Void



Topog-

3

Deflections -

231+50 = 1° 42'  
 232 = 4° 34'  
 +50 = 7° 26'  
 233 = 10° 18'  
 +50 = 13° 10'  
 234 = 16° 02'  
 +50 = 18° 54'  
 235 = 21° 46'  
 +41.19 = 24° 07'

Note: -  
 See "A" Line for  
 tie to cor Lots  
 26 & 27

Void

Power Line  
 280'

225+90

SDCG & F.C.  
 200'

# PROFILE "B" LINE

4

BM#24  
+ HI - EL.  
2.51 163.41 160.90

30 Lt Sta. 206 A Line (2x2 Hub)

Station	HI	EL.
90+53.25	6.5	56.9
PC		
200	7.9	55.5
+15	7.1	56.3
+30	9.0	54.4
+50	9.4	54.0
201	13.4	50.0
+30	12.7	50.7
+50	9.9	53.5
+70	10.8	52.6
202	7.3	56.1
+30	7.6	55.8
+50	4.6	57.8
+75	6.9	56.5
+85	6.8	56.6
203	5.1	58.3
+10	5.2	58.2
+25	7.3	56.1
+50	6.8	56.6
204	7.4	56.0
+50	7.9	55.5

7/10/26  
Coote  
Clifton  
Bunker Jr.

See Pg. 1 for ~~5~~

463.41

204+83	6.7	56.7
205	7.5	55.9
+27	9.7	53.7
+40	8.7	54.7
+62	9.6	53.8
206	8.2	55.2
+50	8.1	55.3
+78	6.1	57.3
207	7.6	55.9

34m	6.79	456.62	✓
-----	------	--------	---

10.71 467.33

+50	10.0	53.4	57.4
208	9.7	53.7	57.6
+22	9.1	54.3	58.2
+50	5.8	57.6	61.8
+70	7.2	56.2	60.1
209	4.4	59.0	62.9
+14	3.2	60.2	64.1
+38	4.5	58.9	62.4
+50	3.4	60.0	63.9
+99	2.3	61.1	65.0
	2.25	465.08	✓

3.54 468.62

5

On 2x2 Hub P.I. Sta. 207. +34.00

57.3
57.5
52.1
56.4
54.0
56.8
58.0
56.7
57.8
58.9

On 2x2 Hub 209+98.54 P.T.

468.62

210+50	4.1	64.5
211	4.9	63.7
+25	7.5	61.1
+50	6.5	62.0
212	9.2	59.4
+50	9.2	59.4
213	9.2	59.4
+50	9.7	59.9
214	9.3	59.3
	9.28	459.34 ✓

Nail £ Sta. 214

2.45 461.79

+50	3.5	58.3
215	4.8	57.0
+50	5.7	56.1
216	7.4	54.4
+50	8.6	53.8
+75	7.6	54.2
217	10.2	51.6
+50	10.8	51.0
	10.79	451.00 ✓

Nail £ +50

1.32 452.32

218	2.8	49.5
+18	2.6	49.7

452.32

TYPE

218+50		67	46.6	
+79		44	47.9	
219		63	46.0	
+50		55	46.8	
+65		72	45.1	
220		54	46.9	40.8
+50		38	48.5	42.4
+70		17	50.6	44.5
		1.60	450.72	

18" Culvert

Centub # 220+69.53 P.C.

10.60 461.32

221		127	48.6	42.5
+26		89	52.4	46.3
+50		111	50.2	44.1
+78		71	54.2	46.1
222		86	52.7	46.6
+39		55	55.8	49.7
+64		81	53.2	47.1
223		39	57.4	51.3
Belu		3.20	458.12	

Centub # 222+67.89 P.I.

3.20 461.32

+18		59	55.4	49.3
+50		37	57.6	51.5
+80		25	60.8	54.7

	461.32		CITY E.
224		23	59.0
		1.61	459.71 ✓
	11.05	470.76	
+50		7.8	63.0
+76		9.7	61.1
225		8.0	62.8
+19		8.8	62.0
+40		6.2	64.6
+67		8.3	62.5
226		4.2	66.6
+26		5.2	65.6
+50		4.4	66.4
<del>227</del>		2.5	68.3
+34		4.2	66.6
+50		3.1	67.7
228		4.2	66.6
+50		1.7	69.1
		2.44	468.32 ✓
	397	474.29	
+65		2.5	69.8
229		4.5	67.8
+41		2.7	69.6

	472.29			CITY E
229+60		4.5	67.8	61.7
+230		4.1	68.2	62.1
+15		2.8	69.5	63.4
+50		5.2	67.1	61.0
+80		3.2	69.1	63.0
231		5.6	66.7	60.6
+20		5.3	67.0	60.9
+50		7.8	64.5	58.4
-232		13.2	59.1	53.0
		11.89	460.40	✓

	0.52 460.92			
+50		6.9	54.0	47.9
233		10.3	50.6	44.6
		10.27	450.65	✓

	0.93 451.58			
+20		11	50.5	44.4
+35		4.6	47.0	40.9
+50		4.6	47.0	40.9
234		9.1	42.5	36.4
+50		12.0	39.6	33.6
		11.95	439.63	

	38.4 443.45			
235		6.7	36.7	30.6
+41.19 =		9.7	33.7	27.6
232+68.40		6.08	437.37	437.42

Equation -

B to 50' Rt. 235+00 (2x2 Hub)

sta. Dist. Angle  
Az. Def

#Ties

Topog.

10

~~224+42.57  
P.T.~~

222+67.82  
P.I.

14°38' 65°22'11"  
130°43'

220+43.27  
P.C.

Sta. Dist. Angle Az. Def. Ties

69+34.09  
P.T.

~~Void~~

68+29.60  
P.I.

Y

138°07' 41°53' Lt.  
276°14'

67+14.79  
P.C.

1034.34

$L = 41°53'$   
 $R = 300'$   
 $T = 114.81'$   
 $L = 219.30'$

~~Void~~

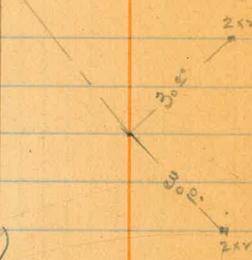
58+00  
P.I.

Y

Line Change

NAT'L AVE. EXTENSION.

Cont'd from Bk<sup>24</sup> #4, Pg. 5



Topog.

11

#

~~Void~~  
CAVE & Mc HATTON TR.

Deflections-

67+50 = 3°22'  
68 = 8°08'  
+50 = 12°54'  
69 = 17°41'  
+34.09 = 20°56'

~~Void~~

AS ALTURAS TR.

7/14/26  
Coote & Parry

#



Sta Dist Angle Az. Def X Ties

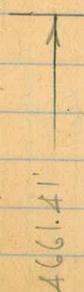
120+05.11  
P.I.

75+13.90  
~~75+15.56~~  
P.T.  
R.O.T.

73+43.70

~~74+18.53~~  
P.I.

~~72+48.33~~  
P.C.



~~Equation -~~

270°04' 90°04' Rt  
+180°08'

L = 90°04'  
R = 170'  
T = 170.20'  
L = 267.23'



Cont'd from FB 169 / 16

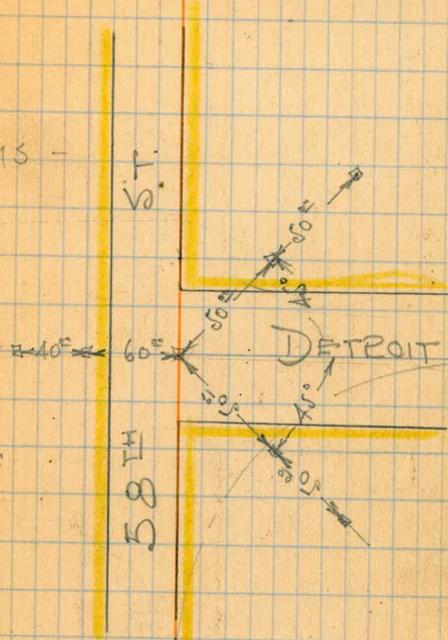
Topog-

12

Cont'd in BK #124 Pg. 7

Deflections -

72+50 = 0°17'  
+75 = 4°29'  
73 = 8°42'  
+25 = 12°55'  
+50 = 17°08'  
+75 = 21°20'  
74 = 25°33'  
+25 = 29°46'  
+50 = 33°59'  
+75 = 38°12'  
75 = 42°24'  
+15.16 = 45°02'



13

Sta. Dist. Angle Az. Def. Ties.

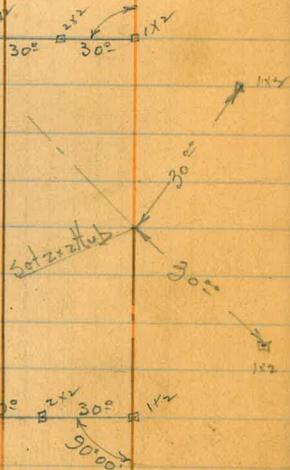
Topog.

14

1018.20 c7w.  
793.65

9/4/26  
Cote  
Dorval  
Clifton  
Todd

$\Delta = 65^{\circ}22'$   
 $R = 350'$   
 $T = 224.55'$   
 $L = 399.30'$



OK  
c7w

Deflections -

220+50 =  $0^{\circ}33'$   
221 +50 =  $4^{\circ}38'$   
222 +50 =  $8^{\circ}44'$   
223 +50 =  $12^{\circ}50'$   
224 +50 =  $16^{\circ}55'$   
225 +50 =  $21^{\circ}01'$   
226 +50 =  $25^{\circ}06'$   
227 +50 =  $29^{\circ}12'$   
228 +50 =  $32^{\circ}41'$

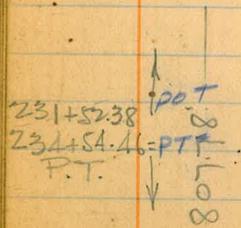
~~Sec Bk # 182 P 11~~  
~~For revised Alignment -~~

~~Cross Sec's Pg. 16~~

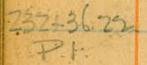
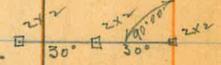
Cont'd from Pg. 1, this book.

Sta Dist Angle  
Az. Def. ± Ties

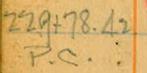
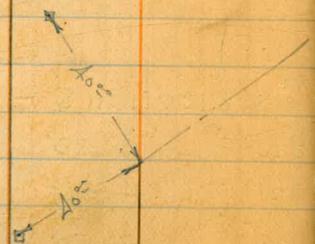
Continued in FB# 124, Pg. 23 OK



Equation



234° 33' 54° 33' P.  
109° 06 1/2



A = 54° 33'  
R = 500  
T = 257.80  
L = 476.04



10/8/20  
705.65  
07w

Deflections -

230	=	1° 14'
+50	=	4° 06'
231	=	6° 58'
+50	=	9° 50'
232	=	12° 42'
+50	=	15° 34'
233	=	18° 26'
+50	=	21° 17'
234	=	24° 09'
+50	=	27° 01'
+54.46	=	27° 16 1/2'

X Sec. "B" Line

Bl #21

3.05 463.95

199+83.35

200

9/7/26

Roote

Todd

Rodier

+15

+50

+78

+88

201

460.90

Lt.  
See Pg. 4

#1 = 463.9

Rt.

$\frac{456.8}{7.1}$   
 $\frac{30}{24}$

$\frac{456.9}{7.0}$   
 $\frac{24}{24}$

$\frac{456.4}{7.5}$   
 $\frac{24}{24}$

$\frac{458.3}{5.5}$   
 $\frac{15}{15}$

$\frac{457.3}{6.6}$   
 $\frac{30}{30}$

$\frac{454.2}{9.7}$   
 $\frac{30}{30}$

$\frac{455.5}{8.4}$   
 $\frac{24}{24}$

$\frac{456.7}{7.8}$   
 $\frac{30}{30}$

$\frac{452.8}{11.1}$   
 $\frac{30}{30}$

$\frac{455.9}{8.0}$   
 $\frac{24}{24}$

$\frac{457.2}{6.7}$   
 $\frac{10}{10}$

$\frac{456.5}{7.4}$   
 $\frac{30}{30}$

$\frac{452.0}{11.9}$   
 $\frac{30}{30}$

$\frac{454.1}{9.8}$   
 $\frac{24}{24}$

$\frac{454.3}{9.6}$   
 $\frac{18}{18}$

$\frac{456.5}{7.4}$   
 $\frac{30}{30}$

$\frac{451.4}{12.5}$   
 $\frac{30}{30}$

$\frac{450.7}{13.2}$   
 $\frac{20}{20}$

$\frac{451.7}{12.4}$   
 $\frac{24}{24}$

$\frac{451.4}{12.5}$   
 $\frac{6}{6}$

$\frac{455.3}{8.6}$   
 $\frac{15}{15}$

$\frac{455.5}{8.4}$   
 $\frac{30}{30}$

$\frac{450.9}{13.0}$   
 $\frac{30}{30}$

$\frac{449.8}{14.1}$   
 $\frac{25}{25}$

$\frac{451.0}{12.9}$   
 $\frac{24}{24}$

$\frac{451.9}{12.0}$   
 $\frac{8}{8}$

$\frac{453.6}{10.3}$   
 $\frac{15}{15}$

$\frac{454.3}{9.6}$   
 $\frac{30}{30}$

$\frac{448.7}{15.2}$   
 $\frac{30}{30}$

$\frac{450.8}{13.1}$   
 $\frac{24}{24}$

$\frac{451.8}{12.1}$   
 $\frac{13}{13}$

$\frac{454.0}{9.9}$   
 $\frac{30}{30}$

(X)

201+30

463.95

+40

+50

+65

+80

205

+20

+50

17

$\frac{448.6}{153}$	$\frac{451.4}{125}$	$\frac{452.3}{116}$	$\frac{454.4}{95}$
$\frac{30}{30}$	$\frac{30}{30}$	$\frac{30}{30}$	$\frac{30}{30}$

$\frac{449.7}{142}$	$\frac{451.6}{123}$	$\frac{452.3}{116}$	$\frac{452.0}{119}$	$\frac{453.1}{108}$	$\frac{454.5}{94}$	$\frac{455.1}{88}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{10}{10}$	$\frac{10}{10}$	$\frac{6}{6}$	$\frac{15}{15}$	$\frac{30}{30}$

$\frac{450.3}{136}$	$\frac{453.4}{105}$	$\frac{452.8}{111}$	$\frac{454.3}{95}$	$\frac{455.0}{89}$
$\frac{30}{30}$	$\frac{15}{15}$	$\frac{10}{10}$	$\frac{10}{10}$	$\frac{30}{30}$

$\frac{450.8}{131}$	$\frac{452.6}{113}$	$\frac{453.6}{103}$	$\frac{455.1}{88}$	$\frac{456.6}{73}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{10}{10}$	$\frac{23}{23}$	$\frac{30}{30}$

$\frac{451.9}{120}$	$\frac{452.1}{118}$	$\frac{453.5}{104}$	$\frac{456.0}{79}$	$\frac{456.0}{79}$	$\frac{457.0}{69}$
$\frac{30}{30}$	$\frac{28}{28}$	$\frac{10}{10}$	$\frac{10}{10}$	$\frac{22}{22}$	$\frac{30}{30}$

$\frac{453.5}{104}$	$\frac{453.6}{103}$	$\frac{456.0}{79}$	$\frac{457.2}{67}$
$\frac{30}{30}$	$\frac{15}{15}$	$\frac{10}{10}$	$\frac{30}{30}$

$\frac{453.1}{108}$	$\frac{453.9}{100}$	$\frac{455.6}{93}$	$\frac{457.1}{68}$	$\frac{459.1}{48}$
$\frac{30}{30}$	$\frac{17}{17}$	$\frac{10}{10}$	$\frac{15}{15}$	$\frac{30}{30}$

$\frac{455.6}{83}$	$\frac{454.8}{91}$	$\frac{458.2}{57}$	$\frac{458.7}{52}$	$\frac{458.7}{52}$	$\frac{457.2}{67}$	$\frac{457.2}{67}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{7}{7}$	$\frac{10}{10}$	$\frac{10}{10}$	$\frac{22}{22}$	$\frac{30}{30}$

(X)

46395

202+80

455.3 $\frac{8.6}{30}$ 456.3 $\frac{7.6}{30}$ 456.4 $\frac{7.5}{30}$ 

203

456.4 $\frac{7.5}{30}$ 456.5 $\frac{7.4}{15}$ 457.2 $\frac{6.7}{30}$ 456.6 $\frac{7.5}{20}$ 457.6 $\frac{6.3}{30}$ 

+15

458.8 $\frac{5.1}{30}$ 456.7 $\frac{7.2}{15}$ 457.4 $\frac{6.5}{30}$ 456.4 $\frac{7.5}{18}$ 457.7 $\frac{6.2}{30}$ 

+37

456.1 $\frac{7.8}{30}$ 455.9 $\frac{8.0}{30}$ 456.6 $\frac{7.3}{30}$ 

+80

458.5 $\frac{5.4}{30}$ 456.8 $\frac{7.1}{10}$ 457.1 $\frac{6.8}{30}$ 457.7 $\frac{6.2}{23}$ 456.8 $\frac{7.1}{30}$ 

20445

456.4 $\frac{7.5}{30}$ 455.9 $\frac{8.0}{30}$ 455.1 $\frac{8.8}{30}$ 

+46

458.4 $\frac{5.5}{30}$ 458.2 $\frac{5.5}{20}$ 456.4 $\frac{7.5}{10}$ 455.7 $\frac{8.2}{30}$ 454.9 $\frac{9.0}{30}$ 

+55-74

458.3 $\frac{5.6}{30}$ 458.5 $\frac{5.4}{23}$ 456.2 $\frac{7.7}{6}$ 455.8 $\frac{8.1}{30}$ 454.9 $\frac{9.0}{30}$ 

⊗

205

2639.5

+ 26

7.76 456.19

+ 40

767 463.86

+ 70

206

+ 19

+ 50

+ 70

19

455.2

8.7  
30

456.0

7.9  
15

455.9

8.0

455.0

8.9  
26

454.9

9.5  
30

455.7

8.7  
30

453.6

10.3

453.1

10.8  
23

453.9

9.0  
30

456.2

7.7  
30

455.2

8.7  
20

455.1

8.8

454.2

9.7  
10

451.6

12.3  
30

457.0

6.9  
30

457.0

6.9  
21

455.1

8.5  
7

454.0

9.9

452.9

11.0  
21

451.8

12.1  
30

456.9

7.5  
30

455.9

8.0  
23

455.3

8.6

454.2

9.7  
13

452.6

11.3  
30

457.9

6.0  
30

455.6

8.3  
15

456.2

7.7

456.6

7.3  
12

453.2

10.7  
30

456.2

7.7  
30

455.3

8.6

454.0

9.9  
30

458.2

5.7  
30

456.3

7.6  
15

456.8

7.1

453.7

10.2  
30

462.86

207+03

+23

+50

+87

208+14

+50

+77

209

6.08 462.90

1.04 462.82

$\frac{459.0}{4.9}$	$\frac{459.1}{4.8}$	$\frac{455.9}{8.0}$	$\frac{455.7}{8.2}$	$\frac{456.2}{7.7}$	$\frac{457.5}{6.4}$	$\frac{457.1}{6.8}$
$\frac{457.4}{6.5}$	$\frac{457.7}{6.2}$	$\frac{456.3}{7.6}$	$\frac{455.9}{8.0}$	$\frac{455.7}{8.2}$	$\frac{456.0}{7.9}$	
	$\frac{457.9}{6.0}$	$\frac{457.4}{6.5}$	$\frac{457.3}{6.6}$	$\frac{458.1}{5.8}$	$\frac{455.8}{8.1}$	
$\frac{461.2}{2.7}$	$\frac{460.4}{3.5}$	$\frac{458.8}{5.1}$	$\frac{457.2}{6.7}$	$\frac{456.9}{7.0}$	$\frac{455.7}{8.2}$	
		$\frac{459.3}{4.6}$	$\frac{457.8}{6.1}$	$\frac{457.7}{6.2}$	$\frac{459.3}{4.6}$	
$\frac{460.9}{3.0}$	$\frac{460.7}{3.5}$	$\frac{461.5}{2.4}$	$\frac{459.3}{4.6}$	$\frac{458.1}{5.5}$	$\frac{457.7}{6.2}$	
			$\frac{463.2}{0.7}$	$\frac{461.2}{2.7}$	$\frac{460.0}{3.9}$	$\frac{458.9}{5.0}$
$\frac{462.5}{6.4}$	$\frac{462.6}{6.3}$	$\frac{462.9}{6.0}$	$\frac{460.5}{8.4}$	$\frac{460.8}{8.1}$		

+

46890

209+20

+38

+80

210+36

+90

211+23

+16

212

$\frac{463.5}{5.4}$ <u>30</u>	$\frac{463.2}{5.7}$ <u>15</u>	$\frac{464.3}{4.6}$ <u>18</u>	$\frac{462.4}{6.5}$ <u>18</u>	$\frac{460.2}{8.7}$ <u>30</u>
$\frac{465.3}{3.6}$ <u>30</u>	$\frac{463.7}{5.2}$ <u>16</u>	$\frac{462.8}{6.1}$ <u>18</u>	$\frac{461.9}{7.5}$ <u>30</u>	
$\frac{465.5}{3.4}$ <u>30</u>	$\frac{465.1}{3.8}$ <u>30</u>	$\frac{462.7}{6.2}$ <u>30</u>		
$\frac{465.3}{3.6}$ <u>30</u>	$\frac{464.3}{4.6}$ <u>16</u>	$\frac{464.4}{4.5}$ <u>16</u>	$\frac{465.3}{3.6}$ <u>30</u>	
$\frac{464.5}{4.4}$ <u>30</u>	$\frac{463.8}{5.1}$ <u>18</u>	$\frac{464.1}{4.8}$ <u>18</u>	$\frac{462.3}{6.6}$ <u>18</u>	$\frac{461.5}{7.4}$ <u>30</u>
$\frac{463.7}{5.2}$ <u>30</u>	$\frac{462.4}{6.5}$ <u>16</u>	$\frac{461.2}{7.7}$ <u>18</u>	$\frac{459.8}{9.1}$ <u>30</u>	
$\frac{462.9}{6.0}$ <u>30</u>	$\frac{462.1}{6.8}$ <u>18</u>	$\frac{460.1}{8.8}$ <u>14</u>	$\frac{458.7}{10.2}$ <u>30</u>	
$\frac{462.4}{6.5}$ <u>30</u>	$\frac{459.4}{9.5}$ <u>18</u>	$\frac{458.4}{8.5}$ <u>30</u>		

212+50

168.90

+73

8.07 460.83

212

3.76 464.59

+50

5.29 459.30 - 459.34

214

+50

215

+50

$$\begin{array}{r} 462.1 \\ 6.8 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 459.5 \\ 9.1 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 458.4 \\ 10.5 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 457.9 \\ 11.0 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 461.8 \\ 7.1 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 460.3 \\ 8.6 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 456.3 \\ 12.6 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 461.9 \\ 2.7 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 460.5 \\ 4.1 \\ \hline 19 \end{array}$$

$$\begin{array}{r} 459.4 \\ 5.2 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 457.8 \\ 6.8 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 462.3 \\ 2.3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 459.9 \\ 4.7 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 457.0 \\ 7.6 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 462.1 \\ 2.5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 459.3 \\ 5.3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 457.1 \\ 7.5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 461.7 \\ 2.9 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 458.3 \\ 6.3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 456.4 \\ 8.2 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 459.1 \\ 5.5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 457.0 \\ 7.6 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 455.6 \\ 9.0 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 457.1 \\ 7.5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 456.0 \\ 8.6 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 454.3 \\ 10.3 \\ \hline 30 \end{array}$$

X

216

16159

7

+50

9.65 454.94

+75

1.38 456.32

217

+21

+43

+64

218+14

$\frac{455.9}{8.7}$ $\frac{30}{30}$	$\frac{454.3}{10.3}$ $\frac{30}{30}$	$\frac{453.4}{11.2}$ $\frac{30}{30}$
$\frac{453.3}{11.3}$ $\frac{30}{30}$	$\frac{453.1}{11.5}$ $\frac{30}{30}$	$\frac{452.5}{12.1}$ $\frac{30}{30}$

$n_1 = 456.3$

$\frac{451.9}{4.4}$ $\frac{30}{30}$	$\frac{451.9}{4.4}$ $\frac{16}{16}$	$\frac{454.1}{2.2}$ $\frac{30}{30}$	$\frac{454.9}{1.4}$ $\frac{13}{13}$	$\frac{453.0}{3.3}$ $\frac{30}{30}$
--	--	--	--	--

$\frac{451.1}{5.2}$ $\frac{30}{30}$	$\frac{451.5}{4.8}$ $\frac{30}{30}$	$\frac{452.6}{3.7}$ $\frac{15}{15}$	$\frac{452.1}{4.2}$ $\frac{30}{30}$
--	--	--	--

$\frac{452.5}{3.8}$ $\frac{30}{30}$	$\frac{450.8}{5.5}$ $\frac{17}{17}$	$\frac{450.7}{5.6}$ $\frac{30}{30}$	$\frac{451.9}{4.4}$ $\frac{11}{11}$	$\frac{453.8}{2.5}$ $\frac{25}{25}$	$\frac{453.5}{2.8}$ $\frac{30}{30}$
--	--	--	--	--	--

$\frac{450.4}{5.9}$ $\frac{30}{30}$	$\frac{450.4}{5.9}$ $\frac{30}{30}$	$\frac{450.0}{6.3}$ $\frac{30}{30}$
--	--	--

$\frac{449.5}{6.8}$ $\frac{30}{30}$	$\frac{449.4}{6.9}$ $\frac{23}{23}$	$\frac{451.5}{2.8}$ $\frac{8}{8}$	$\frac{451.0}{5.3}$ $\frac{30}{30}$	$\frac{451.5}{4.8}$ $\frac{8}{8}$	$\frac{452.3}{4.0}$ $\frac{20}{20}$	$\frac{451.3}{5.0}$ $\frac{30}{30}$
--	--	--------------------------------------	--	--------------------------------------	--	--

$\frac{447.4}{8.9}$ $\frac{30}{30}$	$\frac{447.8}{8.5}$ $\frac{15}{15}$	$\frac{449.8}{6.5}$ $\frac{7}{7}$	$\frac{450.2}{6.1}$ $\frac{7}{7}$	$\frac{448.8}{7.5}$ $\frac{30}{30}$
--	--	--------------------------------------	--------------------------------------	--

X

218+50

456.34

+77

219

+15

+50

+65

+85

220

8.91 454.95

10.28 446.04

24

$\frac{447.3}{90}$	$\frac{445.5}{108}$	$\frac{445.6}{10.7}$	$\frac{447.4}{89}$
$\frac{30}{30}$	$\frac{18}{18}$	$\frac{10.7}{10.7}$	$\frac{30}{30}$

$\frac{443.7}{12.6}$	$\frac{444.1}{12.2}$	$\frac{447.7}{86}$	$\frac{448.4}{79}$	$\frac{447.2}{9.1}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{86}{86}$	$\frac{79}{79}$	$\frac{30}{30}$

$\frac{444.0}{123}$	$\frac{445.8}{10.5}$	$\frac{446.3}{10.0}$
$\frac{30}{30}$	$\frac{10.5}{10.5}$	$\frac{30}{30}$

$\frac{444.7}{11.6}$	$\frac{444.9}{11.4}$	$\frac{446.5}{9.8}$	$\frac{448.5}{7.8}$	$\frac{447.5}{8.8}$
$\frac{30}{30}$	$\frac{9}{9}$	$\frac{9.8}{9.8}$	$\frac{16}{16}$	$\frac{30}{30}$

$\frac{443.7}{12.6}$	$\frac{446.6}{9.7}$	$\frac{446.9}{9.4}$	$\frac{445.9}{10.4}$	$\frac{446.7}{9.6}$
$\frac{30}{30}$	$\frac{6}{6}$	$\frac{9.4}{9.4}$	$\frac{17}{17}$	$\frac{30}{30}$

$\frac{444.0}{109}$	$\frac{445.1}{98}$	$\frac{446.4}{85}$
$\frac{30}{30}$	$\frac{98}{98}$	$\frac{30}{30}$

$\frac{445.8}{9.1}$	$\frac{445.4}{9.5}$	$\frac{446.7}{8.2}$	$\frac{448.1}{6.8}$	$\frac{447.3}{7.6}$	$\frac{448.6}{6.3}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{8.2}{8.2}$	$\frac{11}{11}$	$\frac{20}{20}$	$\frac{30}{30}$

$\frac{445.7}{9.4}$	$\frac{446.8}{8.1}$	$\frac{447.3}{7.6}$	$\frac{448.5}{6.4}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{20}{20}$	$\frac{30}{30}$

+

220+25

454.95

+43.27

\*

~~Line @ eng. in Bk# /15~~

+69

+95

221+29

+50

+80

222

10.60 163.82

1.75 153.20

25

~~445.5~~

~~9.4~~

~~30~~

~~448.6~~

~~6.3~~

~~7.1~~

~~450.3~~

~~1.6~~

~~15~~

~~450.3~~

~~4.0~~

~~30~~

~~445.8~~

~~0.1~~

~~30~~

~~447.8~~

~~7.1~~

~~15~~

~~448.5~~

~~6.4~~

~~30~~

~~449.6~~

~~5.3~~

~~30~~

~~446.6~~

~~8.3~~

~~30~~

~~450.9~~

~~4.0~~

~~11~~

~~457.0~~

~~3.9~~

~~19~~

~~448.7~~

~~6.2~~

~~30~~

~~449.4~~

~~5.5~~

~~30~~

~~446.7~~

~~8.2~~

~~30~~

~~448.0~~

~~6.8~~

~~16~~

~~448.3~~

~~6.6~~

~~30~~

~~450.0~~

~~4.9~~

~~30~~

~~447.5~~

~~7.4~~

~~30~~

~~451.5~~

~~3.4~~

~~11~~

~~452.8~~

~~2.1~~

~~15~~

~~452.4~~

~~2.5~~

~~30~~

~~451.3~~

~~3.6~~

~~30~~

~~449.4~~

~~6.8~~

~~30~~

~~447.9~~

~~7.0~~

~~27~~

~~449.7~~

~~5.2~~

~~30~~

~~451.7~~

~~3.2~~

~~30~~

~~450.5~~

~~4.4~~

~~30~~

~~453.0~~

~~1.9~~

~~13~~

~~451.9~~

~~3.0~~

~~17~~

~~454.5~~

~~0.4~~

~~30~~

~~450.8~~

~~4.1~~

~~30~~

~~451.1~~

~~3.8~~

~~30~~

~~450.0~~

~~4.9~~

~~24~~

~~451.3~~

~~3.6~~

~~7~~

~~452.3~~

~~2.6~~

~~17~~

~~454.1~~

~~8.8~~

~~30~~

~~455.5~~

~~10.6~~

~~30~~

OK

\*

711 = 463.8

26

463.82

2222+37

+67

+88

-223+16

+50

+75

224

+17

$\frac{451.2}{30}$	$\frac{451.7}{17}$	$\frac{455.3}{85}$	$\frac{455.7}{12}$	$\frac{453.7}{30}$
--------------------	--------------------	--------------------	--------------------	--------------------

$\frac{457.9}{30}$	$\frac{452.8}{110}$	$\frac{453.8}{30}$
--------------------	---------------------	--------------------

$\frac{452.0}{118}$	$\frac{455.3}{85}$	$\frac{455.4}{84}$	$\frac{454.9}{89}$	$\frac{458.7}{5.1}$
$\frac{30}{14}$	$\frac{9}{30}$			

$\frac{454.7}{94}$	$\frac{455.5}{83}$	$\frac{454.6}{92}$	$\frac{454.9}{89}$
$\frac{30}{21}$			$\frac{30}{30}$

$\frac{455.3}{85}$	$\frac{455.5}{83}$	$\frac{456.4}{74}$	$\frac{458.3}{55}$
$\frac{30}{11}$			$\frac{30}{30}$

$\frac{457.3}{65}$	$\frac{457.5}{63}$	$\frac{459.1}{47}$	$\frac{459.8}{40}$	$\frac{460.7}{3.1}$	$\frac{460.0}{38}$
$\frac{30}{13}$			$\frac{7}{20}$	$\frac{30}{30}$	

$\frac{457.7}{61}$	$\frac{460.3}{35}$	$\frac{459.0}{48}$	$\frac{459.6}{42}$
$\frac{30}{15}$		$\frac{30}{30}$	

$\frac{458.8}{50}$	$\frac{459.0}{48}$	$\frac{460.1}{37}$
$\frac{30}{30}$		$\frac{30}{30}$

+

222+43

463.82

B<sub>th</sub>

5.75 463.87

5.75 458.07 458.12

+80

8.78 470.74

1.91 461.96

225+05

+35

+64

+80

226

461.6	459.5	460.9	463.1	462.5
2.2	4.3	2.9	0.7	1.3
<u>30</u>	<u>10</u>	<u>20</u>	<u>20</u>	<u>30</u>

463.8

27

On P.I. Hub Sta 222+67.89 (See Pg. 7)

460.9	460.2	460.5	461.4
3.0	3.7	3.4	2.5
<u>30</u>	<u>16</u>	<u>30</u>	<u>30</u>

460.8	463.0	462.6	461.5	462.0
9.9	7.7	8.1	9.2	8.7
<u>30</u>	<u>9</u>	<u>7</u>	<u>7</u>	<u>30</u>

461.7	461.8	462.5
9.0	8.9	8.2
<u>30</u>	<u>30</u>	<u>30</u>

463.3	461.9	463.3	464.3	463.4
7.4	8.8	7.4	6.4	7.3
<u>30</u>	<u>10</u>	<u>9</u>	<u>9</u>	<u>30</u>

461.6	461.8	463.3	465.7
9.1	8.9	7.4	5.0
<u>30</u>	<u>15</u>	<u>30</u>	<u>30</u>

464.4	464.8	462.3	462.4	466.0
6.3	5.9	8.4	8.3	4.7
<u>30</u>	<u>24</u>	<u>12</u>	<u>30</u>	<u>30</u>

x

226+37

470.74

+61

227

+35

+55

228

+27

1.06 473.74

1.06 469.68

28

$\frac{462.4}{83}$	$\frac{463.3}{74}$	$\frac{465.4}{53}$	$\frac{465.0}{57}$	$\frac{465.6}{51}$
$\frac{30}{30}$	$\frac{21}{21}$	$\frac{22}{22}$	$\frac{30}{30}$	$\frac{30}{30}$
$\frac{464.6}{61}$	$\frac{465.2}{55}$	$\frac{465.5}{52}$	$\frac{464.3}{64}$	$\frac{465.7}{50}$
$\frac{30}{30}$	$\frac{26}{26}$	$\frac{12}{12}$	$\frac{13}{13}$	$\frac{30}{30}$
$\frac{465.7}{50}$	$\frac{464.7}{60}$	$\frac{465.1}{56}$	$\frac{466.9}{38}$	$\frac{466.9}{38}$
$\frac{30}{30}$	$\frac{13}{13}$	$\frac{14}{14}$	$\frac{28}{28}$	$\frac{30}{30}$
$\frac{464.9}{58}$	$\frac{465.1}{56}$	$\frac{467.2}{35}$	$\frac{468.3}{24}$	$\frac{466.9}{38}$
$\frac{30}{30}$	$\frac{17}{17}$	$\frac{8}{8}$	$\frac{28}{28}$	$\frac{30}{30}$
$\frac{466.2}{45}$	$\frac{467.3}{34}$	$\frac{466.7}{40}$	$\frac{466.2}{45}$	
$\frac{30}{30}$	$\frac{15}{15}$	$\frac{30}{30}$	$\frac{30}{30}$	
$\frac{466.4}{43}$	$\frac{466.2}{45}$	$\frac{466.4}{43}$		
$\frac{30}{30}$	$\frac{30}{30}$	$\frac{30}{30}$		
$\frac{467.6}{31}$	$\frac{468.9}{18}$	$\frac{467.9}{28}$	$\frac{466.5}{42}$	$\frac{467.1}{36}$
$\frac{30}{30}$	$\frac{17}{17}$	$\frac{10}{10}$	$\frac{30}{30}$	$\frac{30}{30}$

on Hub 228+80 P.O.T.

X

228+50

473.74

+80

229+00

+13

+30

+50

+78.42

230

29

$\frac{466.7}{7.0}$	$\frac{467.4}{6.3}$	$\frac{466.6}{7.1}$	$\frac{466.7}{7.0}$
$\frac{30}{30}$	$\frac{17}{17}$	$\frac{17}{17}$	$\frac{30}{30}$

$\frac{466.3}{7.4}$	$\frac{466.7}{7.0}$	$\frac{467.6}{6.1}$	$\frac{468.4}{5.3}$	$\frac{469.5}{4.2}$	$\frac{469.2}{4.5}$	$\frac{467.1}{6.6}$	$\frac{467.3}{6.4}$
$\frac{30}{30}$	$\frac{23}{23}$	$\frac{17}{17}$	$\frac{18}{18}$	$\frac{17}{17}$	$\frac{10}{10}$	$\frac{25}{25}$	$\frac{30}{30}$

$\frac{466.3}{7.4}$	$\frac{467.2}{6.5}$	$\frac{467.5}{6.2}$	$\frac{467.7}{6.0}$
$\frac{30}{30}$	$\frac{27}{27}$	$\frac{30}{30}$	$\frac{30}{30}$

$\frac{466.9}{6.8}$	$\frac{467.7}{6.0}$	$\frac{468.0}{5.7}$	$\frac{466.9}{6.8}$	$\frac{467.8}{5.9}$	$\frac{468.4}{5.3}$	$\frac{469.7}{4.0}$	$\frac{469.5}{4.5}$
$\frac{30}{30}$	$\frac{25}{25}$	$\frac{20}{20}$	$\frac{8}{8}$	$\frac{17}{17}$	$\frac{6}{6}$	$\frac{26}{26}$	$\frac{30}{30}$

$\frac{466.9}{6.8}$	$\frac{467.0}{6.7}$	$\frac{467.4}{6.3}$
$\frac{30}{30}$	$\frac{17}{17}$	$\frac{30}{30}$

$\frac{467.5}{6.7}$	$\frac{468.3}{5.4}$	$\frac{468.4}{5.3}$	$\frac{467.1}{6.6}$	$\frac{467.0}{6.7}$	$\frac{467.6}{6.1}$	$\frac{469.3}{4.4}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{15}{15}$	$\frac{17}{17}$	$\frac{6}{6}$	$\frac{13}{13}$	$\frac{30}{30}$

$\frac{468.4}{5.3}$	$\frac{467.1}{6.6}$	$\frac{466.8}{6.9}$	$\frac{468.1}{5.6}$	$\frac{469.1}{4.6}$	$\frac{469.8}{3.9}$	$\frac{469.3}{4.4}$
$\frac{30}{30}$	$\frac{20}{20}$	$\frac{15}{15}$	$\frac{17}{17}$	$\frac{12}{12}$	$\frac{25}{25}$	$\frac{30}{30}$

$\frac{467.0}{6.7}$	$\frac{466.8}{6.9}$	$\frac{467.3}{6.4}$	$\frac{467.4}{6.3}$
$\frac{30}{30}$	$\frac{25}{25}$	$\frac{17}{17}$	$\frac{30}{30}$

+

230+20

473.74

+50

+67

231

+35

+55

+82

232+10

0.71 467.89

11.56 467.18

$\frac{466.9}{6.8} \frac{467.2}{23} \frac{468.1}{56} \frac{468.2}{55} \frac{467.5}{6.2} \frac{468.8}{4.9} \frac{469.5}{4.2} \frac{469.5}{4.2}$   
 $\frac{30}{30} \frac{15}{15} \frac{10}{10} \frac{10}{10} \frac{25}{25} \frac{30}{30}$

$\frac{468.9}{4.8} \frac{467.1}{6.6} \frac{467.1}{6.6} \frac{468.2}{5.5} \frac{469.1}{4.8} \frac{469.2}{4.5} \frac{468.8}{4.9} \frac{467.8}{5.9}$   
 $\frac{30}{30} \frac{18}{18} \frac{10}{10} \frac{10}{10} \frac{8}{8} \frac{15}{15} \frac{20}{20} \frac{30}{30}$

$\frac{467.0}{6.7} \frac{467.4}{6.3} \frac{467.7}{6.0} \frac{467.9}{5.8} \frac{468.5}{5.2} \frac{468.5}{5.2}$   
 $\frac{30}{30} \frac{30}{30} \frac{8}{8} \frac{17}{17} \frac{25}{25} \frac{30}{30}$

$\frac{467.0}{6.7} \frac{468.1}{5.6} \frac{468.5}{5.2} \frac{468.3}{5.4} \frac{467.9}{5.8} \frac{467.0}{6.7} \frac{467.2}{6.5}$   
 $\frac{30}{30} \frac{17}{17} \frac{7}{7} \frac{10}{10} \frac{22}{22} \frac{30}{30}$

$\frac{467.2}{6.5} \frac{466.4}{7.3} \frac{466.2}{7.5} \frac{465.9}{7.8}$   
 $\frac{30}{30} \frac{19}{19} \frac{30}{30}$

$\frac{467.5}{6.2} \frac{466.5}{7.2} \frac{466.3}{7.4} \frac{466.6}{7.1} \frac{467.0}{6.7} \frac{467.0}{6.7}$   
 $\frac{30}{30} \frac{20}{20} \frac{15}{15} \frac{11}{11} \frac{30}{30}$

$\frac{466.6}{7.1} \frac{467.5}{6.2} \frac{467.3}{6.4} \frac{466.7}{7.0} \frac{465.1}{8.6} \frac{465.1}{8.6} \frac{465.4}{8.3}$   
 $\frac{30}{30} \frac{20}{20} \frac{12}{12} \frac{10}{10} \frac{15}{15} \frac{20}{20} \frac{30}{30}$

$\frac{460.7}{2.2} \frac{460.4}{2.8} \frac{460.5}{2.4} \frac{459.4}{3.5} \frac{459.3}{3.6} \frac{459.1}{3.8}$   
 $\frac{30}{30} \frac{20}{20} \frac{5}{5} \frac{10}{10} \frac{10}{10} \frac{30}{30}$

X

232+50

462.89

233

11.41 451.48

+40

1.02 452.50

234

+25

234+5446

231+52.88

10.48 448.02

2.23 441.25

B<sup>u</sup>#28

6.83 437.12 437.12

See Pg. 9

31

460.5

$\frac{24}{30}$

459.6

$\frac{33}{20}$

459.1

$\frac{38}{12}$

458.6

$\frac{43}{12}$

457.3

$\frac{56}{12}$

457.1

$\frac{55}{25}$

457.1

$\frac{58}{30}$

453.5

$\frac{94}{30}$

453.4

$\frac{95}{23}$

453.1

$\frac{98}{20}$

452.9

$\frac{100}{20}$

451.9

$\frac{110}{30}$

451.4

$\frac{11}{30}$

450.9

$\frac{16}{20}$

449.7

$\frac{28}{13}$

449.1

$\frac{34}{15}$

449.2

$\frac{33}{23}$

449.7

$\frac{28}{23}$

450.2

$\frac{23}{30}$

447.3

$\frac{7.2}{30}$

445.6

$\frac{6.9}{10}$

445.7

$\frac{6.8}{12}$

445.2

$\frac{7.3}{12}$

444.5

$\frac{8.0}{20}$

444.6

$\frac{7.9}{30}$

444.0

$\frac{8.5}{30}$

442.9

$\frac{9.6}{30}$

442.7

$\frac{9.8}{30}$

441.3

$\frac{11.4}{30}$

441.3

$\frac{11.2}{20}$

441.6

$\frac{10.9}{15}$

442.0

$\frac{10.5}{15}$

441.0

$\frac{11.5}{30}$

32

33

34

35

239+60.16  
232+68.40

691.76

223.92

915.68

u 19-04 W

48-15

u 10-49 W

84-20

u 95-09 W

32-45

02-41

RETURN TO  
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