

17

MONTHLY ESTIMATES
EXCAVATION.

LEVEL BOOK

380

W135

MICROFILMED

JAN

Barnett

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- Use #27 for Final -

1/21/21

Sub.
Fisher
Mixer

Excavation Est - East Tangent

R = 400 = 50 (56)

Nail in Rock
East of Center #3

2.7 1512.05 1509.39

(56)

00
-7
+96
20
24.4
31.7
36
43.2

(Platted from
Contours)

Last 10' = 1/4 to 1

(58)

00
- front row
+12
26
36
44
48
T.P.

13.0 24.4 0.70 11.38

Platted 1-31-21

24.4

(60) 413.2

00
+17.0
24
36
T.P.
00
+2.0
12.0
26.3
T.P.

13.0 34.0
12.7 46.0

(62)

12.8 55.0

(64)

00
-7.0
-12
-17 vert for 8'
+22

4.0 20.4 ✓
2.5 19.9 ✓
10.9 13.5 ✓
11.0 13.4 ✓
3.4 21.0 ✓
0.7 33.3 ✓
5.3 40.7 ✓
10.0 36.0 ✓
12.8 38.2 ✓
10.5 35.5 ✓
3.8 42.2

2.2 52.8
+1.8 56.8
+7.8 63.8
9.8 64.8
2.2 52.8

Platted 1-31-21

At 64325

64-325 5.3 96.9 1591.57 ✓

64-353 7.0 89.9

62-325 5.3 87.8 1582.52

62-338 8.0 79.8

60-300 5.3 76.8 1571.50

322.2 4.8 72.0 ✓

322.2 13.8 63.0 ✓

334 13.8 63.0 ✓

58-325 5.3 67.5 1562.15

58-338 5.3 62.2 ✓

62

6-62 5.3 1579.8 1579.8

28.6 3.0 76.5

60

60-400 13.2 66.6 ✓

26 13.0 66.8 ✓

79 4.4 71.2 13.0 66.8 ✓

32 9.5 61.7 ✓

Plotted 1-31-21

2/2/21

Contours West of
50 Radial LineContours above 1472 -
Abutments
Right Left Total

Contour	Right	Left	Total
1470	4703	6137	10444
1472			
1475	3600	5963	9563
1480	3203	5574	8777
1485	3090	5205	8295
1490	3054	4486	7540
1495	2921	4233	7154
1500	2893	4123	7016
1505	3052	4067	7119
1510	2485	3330	5815
1515	2060	2500	4560
1520	1760	1576	3336
1525	1576	108	1684
1530	1455		1455
1535			
1540	270		270
1545	156		156
1550	137		137
1555	00		00

figured E.F. Checked H.A.B.

13881.3

East Tangent

Cubic Yds.	Sections	End Area	Cubic Yds.
	50	2175	
1111.5	52	2778	1934.5
1698.2			2318.5
1580.8	54	3482	2409.6
1466.2			
1360.5	56	3024	2455.2
1312.0			
1308.8	58	3605	2596.3
1197.6			
960.6	60	3405	2124.1
731.1			
464.8	62	2330	1431.5
290.6			
	64	1535	
319.4			568.5
39.4	66	00	
27.1			
12.7			

Total for January
in East Tangent15738.2

Excavation Summary January 1921

Topog 00 to 1472	17917	class 1+2	
Topog 1472 To 1555	13881	3+4	
Sections East Tangent.	<u>15738</u>	3+4	
Total Excav. to Date	47536		
Sections + Overhang -	$\begin{array}{r} 1084 \\ 48620 \\ \hline \end{array}$		
Final Est. Class 1	10519	1	
Final Est. Class 2	$\begin{array}{r} 8481 \\ 19000 \\ \hline \end{array}$	2 1+2	

Est. Class 3 Dec	11699	E Tangent	
" " " Jan	<u>400</u>	Slide	
Total " " Jan -	12099		

48620	class 1-2-3-4
<u>19000</u>	class 1-2
29620	class 3+4
<u>12099</u>	class 3
17521	class 4

class 1 10519 Final

class 2 8481 Final

class 3 12099

class 4 17521

48620 total

2-21-24
Fisher
Mixer

Sections for Est. to
determine amount in each
batch

165 2586 1524.15

7.P. 2.56 2542 00 2586
Upstream Face = 00
4+34 60
00 Line

00 38 246 ✓
Top of Form 0.6 278 ✓
7.0 41 243 ✓
17.5 44 240 ✓
25.3 ② P 4.3 241

4+44 60
0+10

00 0.5 279 ✓
00 36 248 ✓
10 41 243 ✓
16 40 238 ✓
25.5 ① P 4.6 238 ✓
2

4+54 60
0+20

Plotted 2-21-24

00 39 245 ✓
7.0 33 4.2 242 ✓
27 113 4.4 240 ✓
26.3 216 4.6 238 ✓

2842

3.0
4+64 60

00 3.6 248 ✓
12 83 3.8 246 ✓
25.5 218 P 4.5 249 ✓

Bottom of Const. Form 3.3 251

00 4.0
4+74 60
7.0 33 8.5
13.0 8.3 10
16.5 11.8
26.7 230
4.4 240 ✓
4.2 242 ✓
4.1 243 ✓
4.7 237 ✓

48.5

00 4+83 10 3.8 246 ✓
11.0 73 3.7 247 ✓
19.0 153 4.2 242 ✓
26.5 230 ① P 4.2 242 ✓

Plotted 2-21-24

Top of Form 0.4 28.0 ✓
00 3.7 247 ✓
~~6.7 67~~ 3.7 247 ✓
17.4 18.7 4.1 243 ✓
2 252 218 4.2 242 ✓

57 27

~~5 25 505~~

4+86 87

2-21-21 sections to determine amount of yardage in each batch -

Elev. 251		2	321	
		217		
		10.4	253	
41	1.0 x 5.2 x 10.4		175	4.3
41	1.15 x 47.8 x 0.9		7.8	6
				14.8
				14.8
(42)	10.2 x 10 x 5.2			21.4
	0.04 25,90		25.86	
	40 - A = 0.0			
4+34	43 + 45 - 43 + 45			
47		4.00	21.9	4.3
00		4.00	21.9	00
230		4.5	21.4	7.0
	(43) 4+30			14.0
				14.0
43		4.0	21.9	22.0
00		3.8	22.1	
10		4.1	21.8	4.3
16		4.5	21.4	00
16		4.9	21.0	12.6
230		5.1	20.8	12.6
	(42) 4+20			21.5
4.25		3.9	22.0	
00		3.8	22.1	4.3
6.0		3.8	22.1	00
14.6		4.2	21.7	12.6
14.6		5.5	20.4	12.6
22.9		5.7	20.2	21.4

~~To be Copied~~ in
 25.90
 Elev. 251
 #13 Page 46

(41) 4+10	3.8	22.1	✓
	3.8	22.1	✓
	4.5	21.4	✓
	5.5	20.1	✓
	5.9	20.1	✓
(40) 4+00			
	3.8	22.1	✓
	3.8	22.1	✓
	3.7	22.2	✓
	4.5	21.4	✓
	5.5	20.1	✓
	5.9	20.0	✓
(39) 3+00			
	4.2	21.7	✓
	4.2	21.7	✓
	4.4	21.5	✓
	5.4	20.5	✓
	5.9	20.0	✓
3+81 + 5.2 3+84			
	4.3	21.6	
	4.3	21.6	
	4.4	21.5	
	5.9	20.0	
	6.1	19.8	

Feb 22 1971
 Bob Mixer
 Top of Concrete Sections for
 Check on Batches.

Form above
 T.P. Rock

4+86⁸⁷

DSF 3.7 front. 59 27.7

400 R 58 27.8

400-13 54 28.2

400-21.6 DSF 54 28.2

4+80

400+37.2 58 27.8

400 R 56 28.0

400-13 5.1 28.5

400-22.9 DSF 5.2 28.4

4+70

400+37.2 5.7 27.9

400 R 5.5 28.1

400-13 4.5 29.1

400-22.4 DSF 4.1 29.5

4+60

400+37.2 56 28.0

400 R 54 28.2

400-13 4.4 29.2

400-22.8 DSF 4.2 29.4

Top Concrete sections
 See pages 5 and 6.

7

4+50 1533.63

400+37.2 56 28.0

400 R 56 28.0

400-13 50 28.6

400-22.8 DSF 4.6 29.0

4+360

400+37.2 57 27.9

400 R 58 27.8

400-13 5.9 27.7

400-22.7 DSF 5.7 27.9

Subtract Offsets in forms.

Average width = 10
 " Depth 4.7
 " Length 10.4 } = 158 cu yds

Add. Average Width 10
 " Depth 6.4
 " Length 10.55 } = 250 cu yds

Handwritten red notes:
 134
 4+360
 13 page 48

Nail in File
New Co. Travel.

Block 2

817 3247 2430

3+84

400+38	54	271
" R	54	271
" - 13	48	277
" - 21.6	45	280.

3+90

400+38	58	267
" R	57	268
" - 10	57	268
" - 16	51	274
" - 21.7	48	277

4+00

400+38	61	264
" R	61	264
" - 13	56	269
" - 22.2	53	272

4+10

400+38	58	267
" R	57	268
" - 10	55	270
" - 22.6	51	274

4+20

400+38	55	270
400 R	55	270
400-13	52	273
400-22.8	50	275

4+30

400+38	54	271
" R	55	270
" - 10	54	271
" - 22.7	50	275

copied in Block B page 41

Subtract
 Width - 11
 Length - 10.4
 Height - 2.1

Add

$$.8 \times 6.8 \times 5.5 = 29.92$$

$$9 \times 15.4 \times 5.6 = 77.62$$

$$107.54 = 4 \text{ Cyls.}$$

2-28-21
Bub
Fisher
Mixer

Estimate # 13 February

At C 5 + 47 Sight East Tangent

Galley Pt
5 + 30 - 39

379 27.08

1523 29

Top of Cliff
426

62

00

124 14.4

+ 3

+20 34.6

+ 5

136 13.4

20

10.7 26.4

20

+92 35.4

35

+20 46.4

C 64

00

435

B 64

4.7 92.3

1588.64

425

7.8 84.5

417

17.8 74.5

417

25.8 66.5

4+07

4+0

25.8 66.5

00

46.5

395

43.5

378

53.0

Should hit slope -

Note Test Hole 6'-5" of 67

Top
352.5 slope

(67)

3.5 88.8

332.5
60 - Vent

60

vent down
38.0

58

58-325

Top of Bank 156215

335

59.0

338 vent 20'

54.0

338

37.0 ✓

344

30.0

vent to Toping

2-2-21

Bub
Fisher.Contours West of
50 Radial Line
— Topog —

Contours above 1472

Contour	Abutments.		Total End Area	Cubic Yds
	Right	Left		
1470	4703	6137	10444	1114.5
1472				
1475	3600	5963	9563	1698.2
1480	3203	5574	8777	1580.8
1485	3090	5205	8295	1466.2
1490	3054	4486	7540	1360.5
1495	2921	4233	7154	1312.0
1500	2893	4123	7016	1308.8
1505	3052	4067	7119	1197.6
1510	2485	3330	5815	960.6
1515	2060	2500	4560	731.1
1520	11760	1576	3336	464.8
1525	1576	108	1684	290.6
1530	1455		1455	
1535	~	~	~	319.4
1540	270		270	39.4
1545	156		156	271
1550	137		137	127
1555	60		60	
				13881.3

(see page 3)

10

3-1-21

East Tangent

Sections

End Area

Cu Yds

50	2180	1848.1
52	2810	2308.9
54	3424	2386.7
56	3020	2669.7
58	4188	3206.7
60	4470	2759.3
62	2980	1711.1
64	1640	607.4
66	00	
	February	
	Total for January = 17497.9	

#13

February Est.

P

Topog to Contour 1472 =	17919	✓
" " " 1472-1555	13881.3	✓
Section East of C 50	174979	✓
" in Bottom above 1465	813.3	✓
Overhang	270.0	✓
Total Excav.	50379.5	angds.

50380

Final Class - 1 + 2

19000

31380

Class 3 Estimate #12

12099

Class 4 " #13

19281

Total Excavation

Class 1 =	10519	✓
" 2 =	8481	✓
" 3 =	12099	✓
" 4 =	19281	✓
Total	<u>50380</u>	

3-28-31

Fisher
Mixfer.

March Estimate Concrete Elev

10.16 47.93 1537.77

T.P.

10.4

47.93

485

5.6

381

10

78

6.6

10.0

To

4.6

78

5150

4.7

6.6

5.0

99

54

7.0

5.0

11.4

11.0

108

T.P.

2.7

38.1

12.50

3543

5750 -
Transferred

BOOK 13
PAGE 51

5.2

4.7

4.5

6.7

7.6

9.3

T.P.

10.4

00

4993

5.3

3.7

2.3

5.2

3.3

2.0

485

5.3

3.7

2.4

March Excavation Estimate #14
Topog same as previous month

Topog to Contour 1472 = 17917.00

" 1472 to 1455 = 13881.30

Sections East of 50 line = 18149.50

" in Bottom above 1465 = 813.30

Overhang = 270.00

51031.10 ✓

Estimated Et. Rt. Abut

50.0 ✓

Total Etc for March = 51081.10

Total Class 1+2 = 51081.0 ✓

Class 3+4 = 37081 ✓

Class 3 for Feb = 12099

" 3 Additional for March = 300

Cl. 3 for March = 12399

Class 3+4 = 37081

Class 3 = 12399

Class 4 for March = 19682 ✓

Summary Estimate #14

Class 1 = 10519

" 2 = 8481

" 3 = 12399

" 4 = 19682

Total March = 51081 Co yds.

April Excavation Estimate #15

Topog Same as Previous Month -

Topog To Contour 1472	17917.0 ✓
Topog 1472 - 1555	13881.3
Section's East of 50 Line	18149.5
Section in Bottom above 1465	813.3
Over hang	270.0
	<hr/>
	51031.1
Estimated Ex. Rt Abut	March + April
	150.0
	<hr/>
	51181.1

	51181.1
Total Class 2 + 3	19000
Class 3 + 4	<hr/>
	32181.1

Class 3 Feb	12099
" " March	300
" " April	100
	<hr/>
Total Class 3 for April	12499

Class 3 + 4	32181.1
Class 3 --	<hr/>
	12499
Class 4 --	<hr/>
	19682.1

Summary Estimate #15

Class 1	10519
Class 2	8481
Class 3	12499
Class 4	19682
	<hr/>
Total yardage May 1st -	51181 cu yds

5-26-21

Bib
Fisher
Mixer

Excavation Estimate
May 1921

At 50-250 chained 45.95 = 50-295.95

At 54-250 - chained 45.13 = 54-295.13

At 52-250 - chained 50.0 = 52-300

50 line

50-250	0.70	1527.50	1526.80
52-295.95		2.6	<u>24.9</u>
303		7.2	20.3
T.P.	0.0	14.90	12.60 14.90
76 312		2.4	12.5
23.6 319		4.7	10.2
30 326		9.6	05.3
41 337		9.7	05.2
50 346		8.7	06.2
60 356		9.0	05.9
cutting wall face 8 1.5 377.5			

Platted
5-27-21

52 line
1574.90
cutting wall

18 389		9.0	05.9
29-345		7.0	07.9
T.P.	13.0	27.90	00 14.90
044 333		13	14.9
46 331		11.5	16.1

52 line
27.90

50.8	526.2	10.0	17.9
52.5	324.5	6.5	21.4
60.0		4.0	23.9
T.P.	130	40.70	0.2 27.70
317			
309		4.0	36.7
52300		4.0	<u>36.7</u>
T.P.	130	53.20	00 40.70
54-295.13		1.7	<u>52.0</u>
12 307		5.4	47.3
T.P.	00	40.70	13.0 40.70
23 318		8.3	32.4
30 325		11.5	29.2
T.P.	0.30	27.90	13.1 27.6
34 329			29.10
40.4 335.5		3.0	24.9
T.P.	0.10	75.0	13.00 14.90
51.4			
50 345		00	15.0
51.4 346.5		4.8	10.2
57.4 352.5		7.0	08.0
60.9 356.0		7.0	05.0

Platted 5-27-21

5-27-21

Hub
Fisher
Mixer

Points For Right About Sections

"D" May Estimate

At 18-414.23 Sight R.P. South-

Turn 90° chained 20' =

"D" 16-714.23 - Hub.

At "D" 1100-409.25 Sight South

chained - 7180 = D-1400-337.97

~~Hub~~ Nail in Derrick

At D 1400-409.25 chained North-

28.2 = ~~D~~ 1400 437.28 - Hub

At D 1400-437.28 Turned 90° - chained

20' East - D 1420-437.28 Hub

At D 1420-437.28 Sight D-1400-437.28

Turn 90° - chained 34.11 =

D 1420-403.67 Hub

At D 1436-335.20 Sight South

Turn 90° - chained 16.58 =

D 1420-335.20

(8.7)

327.2

D-1460-327 tom-works

5.27-21

Sub
Water

1207

17

622
498
1.24

8M

8.83 79.79 ✓ 1570.96

90.2 (324)

52.28

11.4 40.9 ✓

Dino Hob

335.70 7.49 72.30

95.0 314.2

1760 Line
Hand level

6.7 45.6 ✓

Dino 340 8.3 71.5

104 624

0.3 52.0 ✓

1400 347 1.5 75.3 1641423

5.4 57.0 ✓

T.P. 0.92 6759 13.12 66.67 50 409 77 54.7 ✓

HI (52.3)

1736-58 343.7 4.6 630 ✓

9 406

3.9 49.4 ✓

1736 58 335.70 1.80 ~~74.0~~ 65.8 ✓

10 404

4.2 48.1 ✓

T.P. 1.81 57.33 12.07 55.52

12 402 ✓

8.9 43.4 ✓

1460-327 3.63 53.70 ✓

19 395 ✓

12.5 39.8 ✓

332 5.7 51.6 ✓

27 387

11.2 41.1 ✓

339 5.8 51.5 ✓

40 374

15.9 36.4 ✓

4 of Tunnel 0120 58 11.17 52.28 1541.11

46 368

17.6 34.7

61 353

20.7 31.6

Hut 18-414 23 4.71 47.57

18 Line

18-408 4.3 48.0 ✓

402 13.0 39.3 ✓

(76.7) 337.5 17.8 34.0 ✓

76.7 20.8 31.5 ✓

83.0 331.2 18.8 33.5 ✓

84 330.2 16.7 35.6 ✓

B.M
16-468 10.95 83.89 1572.94

D1+36.58
412.16 10.68 73.21 Nail in Rock

41216=00 1736 58 Line

5 407 13.0 70.9
12 400 14.6 69.3
20.8 391.4 16.5 66.4

TP 3.62 82.97 4.54 79.35
D-1+20 403.67 6.69 81.25 Hub

10-44658 20.2 1599.79 1597.77
D 1+00 Nail 4+09.78 4.30 95.49 Nail

8-450 10.43 12.32 1601.89

D-0+60 418.42 4.18 08.14 Hub

6-47065 12.17 27.55 1615.38

D 0+20 425.73 0.60 26.95 Iron Pin

Concrete Est

May
East

34-36351

2.65 91.44

1488.7

91.44

0+0 Section

0+60

0 0

4.9

00

4.0

10

5.1

10

5.7

20

5.3

20

7.0

30

7.1

30

7.6

40

8.4

40

8.9

48

9.4

49

9.2

55.6

10.6

53

10.0

0+20

0+80

0 0

3.1

00

4.1

10

3.7

10

5.4

20

5.6

20

6.7

30

6.3

30

7.5

40

6.3

40

8.7

50.5

7.4

50

9.6

58.0

9.4

59

10.0

0+40

1+00

0 0

4.5

0 0

4.2

10

5.6

10

5.7

20

6.8

20

8.0

30

7.0

30

7.4

40

7.7

40

8.2

50

9.6

51

9.5

55

9.8

Transferred Book 13

Transferred Book 13

91.44

00

5.0

10

6.3

20

7.2

24

7.7

Transferred
Birth 13

34-263 5'

8.43 97.22 ✓

1488.29

2.22 1495.0

West -

00 Section

00	5.5
10	5.4
20	5.4
30	5.4
40	5.4
50	6.0
62	6.8

0+20

00	3.2
10	3.3
20	4.0
30	3.7
37	2.1
40	3.3
50	4.8
60	6.3
64	6.8

0+40

00	7.8
10	7.5
20	5.0
30	7.2
40	7.0
50	7.1
62	7.3

Transferred Book 13

21

0+60

00	8.2
10	7.0
20	8.5
30	9.4
40	9.0
50	9.7
64	11.2

0+80

00	4.3
10	5.0
20	4.9
30	6.2
40	7.5
50	9.7
61	12.0

0+90

11 AC	6.0
20	5.9
30	7.0
35 AC	7.6

70 AC

6.6

Transferred Book 13

5-31-21

Fisher
MixerRight Abutment Sections
May 1921 Estimate

22

1+20
3.35-20

0+83-00 Section

12.5 84.8 1572.30

1+00 Line

348 6.0 78.81

350 8.0 76.81

351

1736.55

335.70 2.0 67.8 65.801

1736

343 4.2 63.61

1736

346 12.3 55.51

350 16.0 51.81

357 18.0 49.81

360 21.0 46.81

370 22.0 45.81

378 23.0 44.81

383

1+20 line

345 8.8 59.01

349 11.5 56.31

352 14.8 53.01

365 15.0 52.81

375 8.0 59.81

67.8
1+00 line

351 1.2 66.61

359 5.5 62.31

369 5.0 62.81

373 3.5 64.31

379 0.0 67.81

384 + 8.0 75.81

390 + 8.0 75.81

7.7 1.00 55.8 13.0 54.8

1+36 line

383 6.0 49.81

390 4.0 51.81

390 1.0 54.81

395 + 2.0 57.51

402 + 1.0 56.81

0+200
Turner/

4.2 45.3 1541.11

1+160

4.03 3.0 47.31

390 4.5 40.81

380 6.0 39.31

367 13.0 37.31

352 13.5 31.81

344 6.2 39.11

16 line

14.5 30.8

143655 Nail

412.16

409

404

136 Line

6.0

79.2

6

73.211

8.9

70.31

9.5

69.71

D 14W

437.75

136-58

412.16

404

401

395

385

1420 line

8.0

81.2

73.211

31

78.11

x17.5

69.71

x9.5

71.61

x11.1

70.11

O 1400

409.75

402

395

1400

2.8

98.3

95.491

75

90.81

10.7

87.61

Plotted 5-31-21

June 1st

May 1921
Summary Excavation Estimate #16

Class 3+4 Rt Abut sections = 22174 { Topog given in April
Estimated Class 3+4

398.6 } = 18188 { 50% class 3 - 909.4 - 150 April 7594
150.0 } { 50% class 4 909.4

Class 3+4 Left Abut June 1st 18526.2

" " " " May 1st 18149.5

Excav. during May 376.7 { 25% class 3 = 94.0
75% class 4 = 282.7

Topog to Contour. 1472 17917.0

Topog to " 1473 { 1530 Rt Abut. 13482.7

By sections Bottom above 1465 813.3

Over hang 270.0 | 299

Class 3+4 Right Abut. 2217.4

" " " " Left " 18526.2

Yardage by Skips May 31 { Rt Abut 150 { 50% cl 3 75
Lt Abut. 245 { 25% cl 3 61.2
75% cl 4 183.7

53621.6

cl. 1. cl. 2 cl. 3 cl. 4 Total

Total in April 10519.8481 12499.0 19682.1 51181.1

Additional yardage 759.4 909.4

in May 94.0 282.7

75.0 75.0

61.2 183.8

Total in May. 10519.8 8481.2 13488.4 21133.0 53621.6

— June Est —

add - 29 cyds for
Under cut - West Tangent

6/28/21

60-
 60-319 ²⁸
 12
 vent 24' lower vent
 1-1/2 - 3 sort
 No change in 62 -

x
 54 Line
 54-29513
 91
 17.2
 20
 23.4 Dist
 52 Line
 52-300
 8.4
 10.7
 14.4
 16.4
 (150 Dist)

5.0 69.06 64.06
 6.7 62.41

5.2 569 ~~51.70~~

7.5 49.41
 11.7 45.21
 16.7 40.21

1.2 37.19 1536.70

1.6 36.31
 4.0 33.91
 14.7 23.21
 15.2 22.71

6/28/21

x
 234
 249
 T.P.

19.5
 23.5
 57.0
 curtain wall
 (26)

19.1
 30.2
 42.4
 50.0

curtain wall
 50
 44
 13.2
 26.6
 32.6
 43.7

54 Line

37.9

64 31.51
 7.3 30.6
 0.1 1525.5 12.5 25.4

52 Line

9.5 19.01
 12.0 13.51
 19.5 06.01

56 37.9
 from curtain wall

19.0 17.9
 18.7 06.5
 19.2
 06.81
 10.2 27.6
 15.3
 36.4
 1.5 24.2

58 Line
 curtain wall - 00

14.5 11.01
 6.5 19.01

50 Line

130 1518.0

150.5
 11.5 06.51
 12.5 05.51
 11.0 07.01
 13.0 05.01
 11.4 06.61
 12.2 05.81

26

6/28/21

50 Line
15182

48
~~57.3~~
66.4
T.P.
72.9

Platted

11.0 070'
11.8 082'
4.7 13.3'
4.7 13.3
6.5 19.8'
1.2 25.1'

411.93
72

66-429⁹⁶

20.0
25.0

69 = 40 Section

68 - Line

1.8 02.4 1600.60
156 86.8

66 Line

1.6 97.0 1595.41

78 89.2 ✓
23.8 69.2 ✓

A + 64-325

64-325
17.5
19.0

Platted 6-29-21

4.6 96.22 1591.631
5.8 90.41
8.3 87.91

66 Line

66-325

1.6 1604.2 160262
4.6 99.61
27.5 76.71

22.9 vert 101

30.0

68 - Line

68-360

6.0 13.59 1607.59 ✓

6.0 1607.9

1607.9

3.0

5.3

4.0 1611.9 1607.89

5.3

13.2 97.71

Platted
6/29/21

6/28/21 H1=4.98
 846 H2=5344
 Fisher
 Mixer

Red 5.24

At 26+00 sight C 7+20 for Zero Az Rk

48.44

5.24 53.44

1548.20

dist. Az - (64) Rod Vert Angle

Vert 10'

44.0 356-30 5.24 +5-23

43 3-10 5.24 +5-26

48.5 12-10 5.24 +9-15

Vert 50'

46 24-45 5.24 +10-16

64 44-0 5.24 +20-36

~~88~~ (66)

90 38-10 5.24 +24-27

82 29-30 5.24 +22-23

71 12-30 5.24 +20-21

74 1-30 5.24 +21-42

6'N-4' Higher -

0 (68)

92 2-20 5.24 +22-40

6'N 65 Higher

96 5-30 5.24 +25-0

96 16-45 5.24 +25-02

Cor Dist Diff in El

44.0 +4.1 54.3

43.0 +4.0 54.4

43.0 +7.1 55.3

44.5 +8.0 56.2

56.0 +21.0 69.2

74.0 +33.8 82.0

70.0 +26.7 76.9

62.0 +43.2 71.4

64.0 +25.4 73.6

78.0 34.7 80.9

79.0 36.8 85.0

79.0 36.8 85.0

Note all
 Elevations
 5 feet too
 high

June - Estimate #17

Excavation
Section East Tangent
End Area

Section	Area	Cu yds
50	2315	
52	3152	2024.8
54	3604	2502.2
56	3540	2645.9
58	4304	2905.2
60	4502	3261.5
62	2980	2771.1
64	1958	1828.9
66	1452	1263.0
68	964	894.8
70	110	178.5
69	00	
		<u>18526.2</u>
		18149.5
		376.7
		2570 cu yds = 376.7 = 2527
		75 cu yds = 376.7 = 94

June Estimate #7

Excavation
Section West Tangent
End Area

Section	Area	Cu yds
18	630	
20		6037
16	1000	
	23.42	967.2
	1736.5	
	1658	635.6
	1420	
	20	512.6
	1400	
	544	
	17	171.3
	0488	
	00	
		<u>2890.4</u>
		2217.4
		673.0

See page

30 for Summary

Excavation
August Estimate #19

Summary

Right Abut Same as June - July 2890.4
 Left " To Sept. 1. 26790.0
 " " " Aug 1 23274.3
 3515.7

Class 4 = 25% = 878.9
 Class 3 75% = 2636.8
 3515.7

Topog to Contour = 1472 17917.0
 Topog from Contour = 1472 { 1530 Rt
 sections in Bottom above 1465 { to 1650 Lt 13482.7
 Overhang 813.3
 299.0
 Class 3 + 4 Right Abut 2890.4
 Class 3 + 4 Left Abut. 26790.0
 August Total To Date. 62192.4

	class 1	class 2	class 3	class 4
Totals to August 1	10519	8481	16865.9	22810.5
Totals during August	00	00	26368	8789
Total Sept 1.	10519	8481	19502.7	23689.4

58676.7.
3515.7 Excavated during Aug.
 62192.4 Total To Sept 1. 1921

Excavation
September Est 20 -

Section	East Tangent Sections End Area	Left Abut Co. Yds
50	2315	
20'		2024.8
52	3152	
20		2623.7
54	3932	
		3188.9
56	4678	
		3690.4
58	5286	
		3782.2
60	4926	
		3394.1
62	4238	
		3037.0
64	3962	
		2815.5
66	3640	
		2077.8
68	1970	
		1111.1
70	1030	
		668.9
72	776	
		317.6
74+05	00	28732.0

Total - Sections 28732.0
Add 50 cyds 50
Total - East Tangent. 28782.0

Summary - Excav. to Oct 1st 1921

Rt Abut - Same as - July Aug - add - 7 cyds. 2890.4
7
2897.4
Left Abut to Oct 1st 28782.0
" " " Sept 1st 26790.0
Class 4. 1992.0
Topog to Contour. 1472
Topog from Contour 1472 } 1530 Rt Abut
C 50 = Lt Abut. 13482.7
Sections in bottom above 1465 813.3
Overhang 309.0
Class 3 + 4 Right Abut 2897.4
" 3 + 4 Left " 28782.0
64201.4

Classified Excav. to Oct 1 1921

Totals to Sept 1	Class 1	Class 2	Class 3	Class 4	
10519	8481	19502.7	23689.7	62192.4	
Totals during Sept	00	00	00	70	
			Overhang	1992.0	2009.0
				100	
Totals to Oct 1st	10519.0	8481.0	19502.7	25698.7	64201.4

4/2/22

Final Topog
above 1472 - to 1540
March Est. - #26

Sheet-1-

35

	West of 3+27 Cableway Division Pts South North		East of 3+27-C50 Cableway Division Point - 50-56 South North		56-62	Total End Area	Cubic Yds.
1472	1682	2625	3364	2773		10444	1111.5
1475	1530	2070	3192	2771		9563	1698.1
1480	1027	2176	2930	2644		8777	1580.8
1485	938	2152	2789	2416		8295	1466.2
1490	1014	2040	2485	2001		7540	
1477.5					2	2	1.1
1480			285.38+10		$\frac{36}{46}$	$\frac{36}{46}$	44.6
1485					382	382	53.3
1490			add to 905 Fig with 95		668	668	
1490	1014	2040	2485	2001	668	8208	1894.0
1495	1113	1808	2370	1878	1116	8285	
1488						00	1.1
1490						30	44.6
1495			add to 95 Fig with 1500.		452	452	
1490					54	54	53.3
1495					522	522	
1495	1113	1808	2370	1878	1638	9529	1894.0
1500		Total 2950	2276	1875	2495	11196	
1497.5							2.7
1500	Depression Control	$\frac{58+10}{2}$	X 2.5 =	+ 2.7			
1500		2950	2276	1875	2495	11196	2291.5
1505		3052	2137	1728	4058	13553	
1505					264	137	- 16.3
1507.5		$\frac{401 \times 2}{2}$					

Final Topog
above 1472 - 1510
March Est #26

	Left Abut - To 50 Line Cableway Division Pt.						
	50-56	56-62					
1505	3052	2538	1728	4058	2578	13954	11809.1
1510	2485	2150	1252	4980	3800	14667	2650.1
							<u>14459.1</u>
							<u>16.3</u>
							14443.3

Deduct 16.3

Total Sheet 1

Final Topog

Above 1510 - 1540 - 1595 -

total Left Abut.
To 50 Line
Right Abut Cableway Division Pt.

Sheet 2

	Left Abut - To 50 Line Right Abut Cableway Division Pt.						Sheet 2	Total End Area	Cubic Yds.
	50-56	56-62	62-70						
1508				00			00	4.3	
<u>1510</u>				116			116		
1510	2485	2150	1252	4980	3800	116	14783	2746.2	
1515	2060	1674	852	5518	4520	252	14876	2738.7	
1520	1780	1020	548	5888	4810	656	14702	2590.7	
<u>1525</u>	<u>1616</u>	<u>100</u>	<u>—</u>	<u>5704</u>	<u>5022</u>	<u>836</u>	<u>13278</u>		
1520	12							11.5	
<u>1525</u>	<u>112</u>								
1525	1728	100	—	5704	5022	836	13390	2414.2	
1530	1854	—	—	4442	5120	1268	12684	2268.0	
<u>1535</u>	<u>1614</u>	<u>—</u>	<u>—</u>	<u>3068</u>	<u>5320</u>	<u>1808</u>	<u>11810</u>		
1530	40							32.6	
<u>1535</u>	<u>312</u>								
1535	1926	—	—	3068	5320	1808	12122	2263.0	
<u>1540</u>	<u>2354</u>	<u>—</u>	<u>—</u>	<u>2080</u>	<u>5590</u>	<u>2294</u>	<u>12318</u>		

62 x 5 = 310 = 11.5 cu yds

$\frac{40 + 312}{2} \times 5 = 326$ cu yds +

Continued - see Page 37

Final Topog
above 1510-1540 - Left Abut. 1590

31

Right Abut Sections above 1540 -

1535
Contour. Left Abut

	<u>50-56</u>	<u>56-62</u>	<u>62-70</u>
1540	2080	5590	2294
1545	822	5840	2904
1550	88	5652	3330
1555		5074	3754
1560		4055	4174
1565		2688	4738
1570		1866	5338
1575			6854
1580			6318
1585			5412
1590			4552

Total on this sheet

Total
End Area Cubic Yds.

9964	1808.3
9566	1725.6
9070	1657.2
7828	1579.3
8229	1449.5
7426	1354.6
7204	1301.7
6854	1219.6
6318	1086.1
5412	922.6
4552	

29173.7

see Page 38
for Summary
March Est -

Summary March Est #26

Final Topog To Contour 1472	17917.0
Sections in bottom above 1465	813.3
Final Topog 1472 - 1510 - Sheet 1	14443.3
Final Topog 1510 - 1590	2917.37
Overhang below 1472	270.0
" above 1472	47.0
Sections Pt. Abut above 1540 ^(west of 018)	5729.4
Sections Left Abut above 1590 ^(East of 6+57)	3381.1
Total To March 1 st	71774.8
Class 1+2 Final	19000.0
Class 3 23073	52774.8
Feb Est. Class 4 28006	51079
	1695 =

Skip measurement: Class 3 935 yards
 " " Class 4 77 yards

Class 1	Class 2	Class 3	Class 4
10519	8481	23073	28006
		847	848
		935	77
		24855	28931

Final Class 1 =	10519
" Class 2	8481
Total Final - 1+2	19000

Quantities from Topog

50% Class 3 + 50% of Class 4 = $\begin{cases} 847 & \text{Class 3} \\ 848 & \text{Class 4} \end{cases}$

To March 1st

May 3 1922 Excavation Final- Sheet 4
 Bub Fisher 1412-1472 = Class 1+2
 Final Topog

Contour	Upstream	Center	Toe	End Area	Cu yds
1412		00		00	
1415		10		10	0.6
1420		22		22	3.0
1425		120		120	13.2
1428		619		619	41.1
1430		1311		1311	71.5
14275			185	185	26.2
1430			380	380	
1427.4	00			00	
1428	20			20	0.2
1430	335			335	13.2
1435	1913			1913	208.2
1430		1311	380	1691	417.7
1435		2820		2820	
1435	1913	2820		4733	
1440				7249	1109.4
1445				10415	1635.5
1450				13630	2226.4
1455				16853	2822.5
1455		2730		2730	
1457		2930		2930	2096
1455				14123	
1460				17660	2942.9
1465				22346	3704.3

Final Topog Excavation 39
 1412-1472 - Class 1+2

Contour	Right Abut	Left Abut	Total End Area	Cu yds
1465	3340	4905	8245	1730.5
1470	4307	6137	10444	
1472	3/5 of Total - 5' = 2/5 of 1852.5 =			741.0
1475			9563	
Topog Total Class 1+2				17917.0

Summary
 Class 1+2 - Cu yds -

Class 1+2 - Final Topog	17917.0
" 1 Sections above 1460	813.3
Over hang	270.0
Estimated Total Class 2 =	19000.3
Estimated Total Class 1 =	8481
	10519

5/3/22

Excavation Final -

Final Topog above 1472 - Sheet

Bub
Fisher
Contour.

Right Abut
Cableway
South North

Left Abut - 250 line
South North 50-56 56-62

Total
End Area

Cubic Yards

Contour	South	North	South	North	50-56	56-62	Total End Area	Cubic Yards
1472	1682	2625	3364	2773			10444	1111.5
1475	1530	2070	3192	2771			9563	1698.1
1480	1027	2176	2930	2694			8777	1580.8
1485	938	2152	2789	2416			8295	1466.2
1490	1014	2040	2485	2001			7540	
1477.5						2	2	
1480						36	36	1.8
1485						76	76	39.6
1490						382	382	97.2
1490						668	668	
1490	1014	2040	2485	2001	668		8208	1527.1
1495	1113	1808	2370	1878	1116		8285	
1488						00	00	1.1
1490						30	30	44.6
1495						452	452	
1490	1014	2040	2485	2001	54		54	53.3
1495	1113	1808	2370	1878	522		522	
1495	1113	1808	2370	1878	1638	45.2	9259	1894.0
1500		2950	2276	1875	2495	1600	11196	
1577.5		58+50	225	2.7 angle				+ 2.7
1500		2						
1500		2950	2276	1875	2495	1600	11196	
1505		3052	2137	1728	4058	2578	13553	2291.5
1505								
1507.2		401 x 2						
1505		3052	2538	1728	4058	2578	13954	2650.1
1510		2485	2150	1252	4980	3800	14667	14459.6

Total sheet 1 -
14443.3 = Total sheet 1 -
Deduct 16.3 = 14427.0

Bub
Fisher
5/3/22

Excavation - Final - Sheet.

Final contours above 1510 - 1575

above 199-

Right Abut.
Total

Left Abutment.
50-56

	Right Abut. Total	Left Abutment. 50-56	56-62	62-70			
1508			00			00	
<u>1510</u>			116			116	4.3
1510	2485	2150	1252	4980	3800	116	14783
1515	2060	1674	852	5518	4520	252	14876
1520	1780	1020	548	5888	4810	656	14702
<u>1525</u>	<u>1616</u>	<u>100</u>	<u>—</u>	<u>5704</u>	<u>5022</u>	<u>836</u>	<u>13278</u>
1520	12					12	
1525	112					112	11.5
			62 x 5 = 310 = 11.5 Cuyds				
1525	¹⁶¹⁶ 1728	100	—	5704	5022	836	13390
1530	1854	—	—	4442	5120	1268	12684
<u>1535</u>	<u>1614</u>	<u>—</u>	<u>—</u>	<u>3068</u>	<u>5320</u>	<u>1808</u>	<u>11810</u>
1530	40					40	
1535	312					312	32.6
			$\frac{40 + 312}{2} \times 5.0 = 32.6$				
1535	1926	—	—	3068	5320	1808	12122
<u>1540</u>	<u>2354</u>	<u>—</u>	<u>—</u>	<u>2080</u>	<u>5590</u>	<u>2294</u>	<u>12318</u>
1532	10						
1535	136						8.1
			$\frac{146}{2} \times 3 = 219 = 8.1$ Cuyds				
<u>1540</u>	<u>322</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>42.4</u>
			$\frac{458}{2} \times 5 = 1145 = 42.4$ Cuyds				
1540	2674	—	—	2080	5590	2294	12638
1545	3014	—	—	822	5840	2904	12580
1550	2760	—	—	88	5652	3330	11830
1555	2730	—	—	—	5074	3754	11558
1560	2840	—	—	—	4055	4174	11069

Continued Page 42

Continued page 42 -
only

Excavation Final
Final Contours 1510-1575

above 1472
Sheet 2

42

50-56 56-62 62-RC

1560	2840	—	—	—	4055	4174	11069	
<u>1565</u>	<u>3918</u>	- 82.R.C.			2688	4738	<u>11344</u>	2075.3
1565	36							
<u>1566</u>	<u>10</u>	18 x 1 = 18 =	0.7 cyds					
1565	46	23 x 4 = 92 =	3.4 cyds					
<u>1569</u>	<u>10</u>							
1565	4000				2688	4738	11426	
1570	4460				1866	5338	11664	2138.0
1575	4700					6854	11554	2149.8
							<u>30338.7</u>	
							4.1	
							<u>30334.6</u>	

Deduct $\frac{07}{34}$
4.1 cyds

Deduct
Total Sheet 2.

Bub
Fisher
5/3/22

Excavation Final above 1472
Sheet 3

Final Contours — 1575-1637-1642 —

Abutment

Contour	Right	Left		
1575	4700	6854	11554	2054.6
1580	4318	6318	10636	1834.8
1585	3768	5412	9180	1545.2
1590	2956	4552	7508	1275.2
1595	2280	3984	6264	1045.7
1600	1790	3340	5030	850.9
1605	1426	2734	4160	731.5
1610	1400	2340	3740	656.8
1615	1290	2064	3354	524.1
1620	714	1592	2306	363.0
1625	²⁰ ₄₇₀ 490	1124	1614	246.2
1630	315	730	1045	151.0
1635	140	446	586	5.2
1637	00		$\frac{140}{2} \times 2 = 140 =$	
1635		446	446	54.2
1640		140	140	5.2
1642		00	00	
Total Sheet 3 —				11343.6

Bub
Fisher

Final Excavation

5/3/22 ✓

Summary

Contour — above -1472

1472-1510 Sheet 1 14443.3

1510-1575 " 2 30334.6

1575-1642 " 3 11343.6

Final Class 1 + 2 -1472-1472 19000.3 This includes 270 cu yds Overhang
additional Overhang 50.0

Total Excavation Yardage = 75172.0

19000 Class 1 + 2

56172 = Class 3 + 4

53786 ~ " 3 + 4 March Est.

1193 } 2386 = Total Excavation during April

1193 } = 50% class 3 - 50% class 4

Class 1 Class 2 Class 3 Class 4 Total

March 10519 8481 24855 28931

April — — 1193 1193

Final 10519 8481 26048 30124 75172

Elevation of Coordinate Points⁶⁷

Reference Points

station	Elev.		station	Elev.
455 79" B Line			450' B B Line East Tangent	
12	1587.34		60	1568.41
14	1577.19		62	1579.43
16			64	1588.64
18	1557.81	out	66	1603.56
20	1545.11		68	1617.43
22	1534.73		70	1624.03
24	1525.20		74	1650.44
26	1503.85			
out	1488.45			
00t	1472.23		C Line	
out	1470.30	Under Water	- East Tangent	
out-0	1473.85		50	1522.70
out-2	1480.64		52	1526.16
44	1489.94	of	54	1534.24
46	1502.68		56	1544.97
48	1512.78		58	1553.97
50	~~~~~		60	1564.05
52-468"	1532.83		62	1573.18
54-468"	~~~~~		64	1581.76
450' Radius			66	1591.72
B Line East Tangent			68	1602.37
56	1550.34		70	1613.50
58	1559.53		72	1624.53

C Line ⁵⁹
 7+33.69 1630.89
 74 ⁰⁷ 1635.20
 B.M.
 about 7+60 1649.80

East Tangent
325' Line

60 1571.25
 62 1582.59
 64 1591.57
 66 1602.58
 68 1612.52
 70 1623.02
 72 1633.50

East Tangent
300' Line

60 1571.50
East Tangent
275' Line
 60 1567.79
 62 1579.68
 64 1588.49
 66 1600.42
 68 1614.82

275 Line
 70 1622.85
 72 1633.30

250 Line

38 1491.47 (71)
 40 1496.25
 42 1507.15
 44 1513.11
 46 1519.99
 48 1526.28
 50
 60 1568.21

Elevations of Coordinate
 Reference Points

6-470⁶⁵ 1615.38
 8-450 1601.89
 10-350 1576.97 Hub
 10-446⁵⁸ 1597.77 sewer joint
 B.M. 12-330 1570.96 Nail in stump
 12-426³² 1587.35 Nail in rock
 12-437⁰ 1588.38 Nail in rock
 12-455²⁹ 1587.34 Nail in rock
 12-502⁰⁹ 1600.83 Nail in rock
 14-417.92 1575.02 + on rock
 14-436.28 1574.94 + on rock
 14-455.79 1577.19 Hub.
 14-495¹⁰ 1588.91 Nail in Rock.
 R.P. & Outlet Tower 1581.45 Hub
 16-446.17 1567.82
 16-490.09 1577.99 Nail in stump
 B.M. 16-468 1572.94

18-411.29 1548.30 Hub
 18-438.09 1554.12 Hub
 18-470.25 1561.57 Nail in Rock
 18-488 1561.11 Hub.
 18-502.17 1564.95 Nail in Rock
 ± Tunnel 0+20.08 1541.11 Hub
 SW on Outlet Tower Top of Filling 1524.18 Nail
 SW on Outlet Tower Top of Filling 1524.30 Nail.

List of B.M.'s!

Harris B.M.	Iron Tin set in rock 40' south of Conveyor #2 Barrett Dam Datum.	1626.33
	End of "P" Line above Quarry road	1751.67
	Nail in rock west (cableway) 30'n-n-3700	1764.33
	Nail in 2x8 ^{7 1/2" dia} Northside Tunnel	1650.97
	Nail 10-446 ^{End steel pipe} Concrete Sewer Joint	1597.77
	Nail in Stump - 12 - 330	1570.96
	Nail in stump 16-468	1572.94
	S.W. Cor. Outlet Tower - Top of Fillet	1524.18
	NW Cor. " " " "	1524.30
	Old Engine base West side Cañon	1461.38
	Nail in Stump S.E. 112' of 52-468	1537.77
B.M.	Top of Plumb rock, 7' East 34-329	1472.82
	Nail near front face of Dam ^{For} Outlet Tower	1506.46
East Tangent	East Contr Joint #3 Nail in Rock	1509.38
B.M.	about 7+60 Hub.	1649.88
	50-295 ⁹⁵	1524.90
	52-300	1536.70
	54-295 ¹³	1552.00
	60-319 ²⁸	
	58-250	
	^{Hub} 58-304 ⁵⁹	

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope 1% to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance level estimate the difference in elevation between the side stake and slope stake by this amount if cut, elevate if fill. Add this amount to cut or fill at side stake to get up to cut at this point, and vice versa if right shoulder cut target. If it does not make the slight adjustment necessary.

TABLE No. 2.

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections. Degree of curve with a given L may be found by dividing tangent (or external), opposite L by given tangent (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

IMPROVED TABLES AND INFORMATION

$$\begin{array}{r} 25 \\ 18 \\ \hline 43 \end{array}$$

$$\begin{array}{r} 62 \\ 12 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 275 \\ 250 \\ \hline 525 \end{array}$$