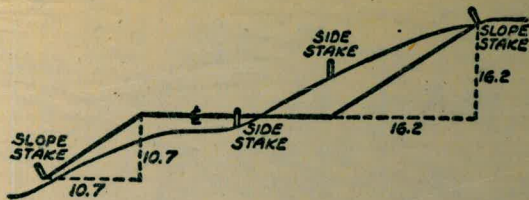


BLACK CANYON TUNNEL
GUNITE LINING DATA

W 845-H



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
SLOPE 1 TO 1. ROADWAY OF ANY WIDTH

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

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 from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

Received: 1200
2500

X
$$\begin{array}{r} 323 \\ \hline 360 \\ - 73 \\ \hline 287 \text{ Used.} \end{array}$$

4.00
4.00
3.00
4.00
4.00
4.00
4.00
4.40
5.20
8.40
5.00
3.50
5.00
3.00
7.00
4.50
1.50
4.00
8.00
1.50
2.00
1.00
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3.00
1 10.00
1 11.00
8.00
1 11.00
6.00
8.00
6.00
4.00
3.00

Chwick Used.

288.00 *

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE															
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°		
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46		
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68		
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90		
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14		
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39		
35°	.11	.22	.34	.47	.58	.69	.79	.81	.92	1.04	1.29	1.42	1.54	1.66		
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94		
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21		
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48		
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77		
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07		
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39		
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72		
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09		
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46		
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89		
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32		
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83		
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34		
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60		
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22		

FOR EXTERNALS ADD

Central Angle	DEGREE OF CURVE															
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°		
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020		
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051		
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083		
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135		
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188		
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264		
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341		
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445		
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550		
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700		
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851		
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.771	.845	.922	1.01		
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17		
75°	.095	.182	.286	.383	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39		
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62		
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91		
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20		
95°	.174	.350	.522	.706	.885	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58		
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96		
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96		
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32		

BLACK CANYON TUNNEL - GUNITE DATA.

THIS BOOK CONTAINS A RECORD OF DATA PERTAINING TO GUNITE LINING WORK BY THE F.W. CASE CORP. ON A SUB-CONTRACT BASIS FOR THE SHEA CO.

MR. GEORGE HARRIS IS PROJECT MANAGER FOR CASE CO. IN CHARGE OF GUNITE WORK.

NOTE: SHEA CO. IS PROVIDING THE CEMENT, WATER, LIGHTS, AIR PRESSURE, TRANSPORTATION OF MATERIAL WITHIN THE TUNNEL, ASSISTANCE IN MOVING REBOUND MATERIAL INTO OVERBREAK POCKETS IN INVERT OF TUNNEL, AND CLEANUP WORK NECESSARY TO PREPARE SURFACE FOR LINING.

CASE CORP. PROVIDES ALL EQUIPT. FOR MIXING AND PLACING GUNITE, AND THE SAND AND CALCIUM-CHLORIDE ADMIXTURE USED, AND WORKMEN TO DO ACTUAL WORK OF PLACING GUNITE.

D. Leonard.
Inspector in charge.

PERSONNEL OF F.W. CASE CO. - SUB. CONTR.

NAME:	JOB.	START:	QUIT:
E.G. VOLDEN	SUPT.	12-21	
R.J. WILSON	FOREMAN	"	
W.A. ROSS	NOZZLEMAN	"	
C. BOYD	GUN MAN.	"	
E. RAMSEY	OPERATOR	"	
DAN JAMES	TRUCK DRIVER	"	
S. SANCHEZ	LABORER	"	
D. ESPINOSA	"	"	
Y. ISLAS	"	12-22	
L. MENDOZA	WIREMAN-FINISHER FOREMAN.	"	
R. GRAHAM	NOZZLEMAN	1-4-54	
B. STIRLING	"	"	
C. VRELLAND	MIXER OPER.	"	
S. LUNAS	GUN MAN.	"	
R. MORONES	LABORER	"	
C. ERICKSON	"	"	
F. BEAMER	"	"	
F. ST. CLAIR	"	"	

EQUIPMENT USED BY F.W. CASE CO.

1- JAEGER MIXER.

1- RANSOME MIXER-GUN UNIT.

1- PICK-UP TRUCK FOR USE OF SUPT.

1- SKI LOADER, LE ROI.

1- SKI LOADER, FORD.

1- 5 TON FLAT RACK TRUCK FOR HAULING MATERIAL.

1- BATCH BIN.

1- WORTHINGTON COMPRESSOR, 500 C.F.M. CAPACITY.

2- STEEL WATER TANKS, 525 GALS. ± EACH.

1- AIR DRIVEN PISTON PUMP FOR WATER PRESSURE.

1- HOISTING FRAME.

500 L.F. AIR & MATERIAL HOSE, WITH NOZZLES.

500 L.F. WATER HOSE. 1"

L.F. AIR HOSE, 1", WITH BLON PIPE.

NOTE: PERSONNEL AND EQUIPMENT LISTED HEREIN IS FOR THE CASE CO. ONLY. SEE BOOKS MARKED "PERSONNEL #2" AND "EQUIPMENT" FOR SHER CO. RECORDS.

SAND IS FROM PIT OF MR. ARNALL AT LAKESIDE.
CEMENT IS FROM RIVERSIDE CEMENT CO. PLANT AT ORO GRANDE, CALIF.

DEC. 21, 53.

LEONARD } INSPECTORS.
VARNEY }

NO.	PERSONNEL:	HRS.	NO.	EQUIPMENT.	HRS.
1	PROJECT MGR.	8.0	2	PICK UP TRUCKS	16.0
1	SUPT.	8.0	1	FLAT BED TRUCK	8.0
1	FOREMAN	8.0	1	SKIP LOADER	8.0
1	NOZZLEMAN	8.0	1	AIR COMPRESSOR	2.0
2	OPERATORS	16.0			
1	MECHANIC	8.0			
1	TRUCK DRIVER	8.0			
2	LABORERS	16.0			

MATERIAL REC'D:
(DELIVERED DEC. 17)

12 YDS SAND (DEC. 18)
12 YDS. SAND. (DEC. 21)
1200 LBS CALCIUM CHLORIDE

MATERIAL USED.

NONE.

REMARKS: SETTING UP EQUIPMENT. MOVING MATERIAL INTO N. PORTAL. LACK OF WATER AT N. PORTAL PREVENTED WORK FROM GETTING UNDER WAY TODAY. STARTED COMPRESSOR AND BLEW DUST OFF ROCK IN N. REINFORCED SECT.

Y. ISLAS STARTED WORK AS LABORER TODAY.

LOUIS MENDOZA STARTED WORK AS A WIREMAN TODAY. ^{DEC. 23.}

SHIP LOADER USED TO MOVE EQUIPT. & MATERIAL AROUND.

NOTE: CALCIUM CHLORIDE IS PLACED IN WATER AT RATE OF 200 LBS. PER TANK FULL (500 GALS) OF WATER. WATER IN TANK IS AGITATED BY AIR PRESSURE FROM EXHAUST SIDE OF WATER PRESSURE PUMP.

TWO TEST CYLINDERS MADE LATE TODAY. BLOWN INTO $\frac{1}{2}$ " HARDWARE CLOTH. 6" DIA. X 12" HIGH.

DEC. 22, 53.

LEONARD } INSPECTORS.
VARNEY }

NO. PERSONNEL:	HRS:	NO. EQUIPT:	HRS:
SAME AS 12/21, EXCEPT:		2 PICK-UP TRUCKS	16.0
3 LABORERS	24.0	1 FLAT BED TRUCK	8.0
1 WIREMAN	8.0	1 COMPRESSOR	8.0
		1 MIXER-GUN	8.0
		1 SKI LOADER	8.0
		1 WATER PUMP	8.0

MATERIAL REC'D: 12 YDS. SAND.

MATERIAL PLACED: 192 SACKS CEMENT
(64 BATCHES, EACH 576 CU. FT. SAND.
3 SACKS CEMENT, 9 CU. FT. SAND) 400 LBS. CA. CL.

REMARKS: PLACING GUNITE IN FIRST 100 FT. OF N. END, USING 150 FT. HOSE. MATERIAL PLACED IN BANDS ABOUT 2' WIDE ALONG SPRINGLINE ON BOTH SIDES TO ANCHOR REINFORCING STEEL DOWN. MR. GERRICK INSPECTOR WORK AT NOON HOUR AND ORDERED GUNITE TO BE PLACED IN THIN LAYERS AROUND FULL PERIMETER, EXCEPT BOTTOM.

NOTE: ONE PICK UP TRUCK REMOVED FROM JOB
YESTERDAY, BY PROJECT MGR.

FLAT BED TRUCK USED TO HAUL CEMENT FROM
STORAGE AREA AT S. END TO N. PORTAL.

SKIP LOADER USED TO MOVE SAND TO MIXER.
L. MENDOZA STARTED PLACING GUIDE WIRES TODAY.

NOTE:
AIR PRESSURE IS 80 LBS. AT THE COMPRESSOR.
NO GAUGES ON GUN OR NOZZLE TO CHECK
PRESSURE THERE, AND NO GAUGE ON WATER PUMP.

REBOUND IS CAUGHT ON 4 SHEETS OF PLYWOOD
4' X 8' LAID ON TOP OF STEEL, EASY SHOVELING.
ONE LABORER MOVING REBOUND CONSTANTLY.

Dec. 23, 53.

LEONARD } INSPECTORS.
VARNEY }

No.	PERSONNEL.	HRS.	No.	EQUIPT.	HRS.
1	SUPT.	8.0	1	PICK UP TRUCK	8.0
1	FOREMAN	8.0	1	FLAT BED "	8.0
1	NOZZLEMAN	8.0	1	COMPRESSOR	8.0
2	OPERATORS	16.0	1	MIXER-GUN	8.0
1	TRUCK DRIVER	8.0	1	WATER PUMP	8.0
1	WIRE MAN	8.0	1	SKIP LOADER	1.0
3	LABORERS	24.0			

MATERIAL REC'D.

24 YDS. SAND.
2500 LBS. C.A.C.L.

MATERIAL PLACED:
(72 BATCHES)

216 SACKS CEMENT.
648 CUFT. SAND.
400 LBS. C.A.C.L.

REMARKS: PLACING MATERIAL THRU 150 FT. HOSE
IN FIRST 100 FT. \pm OF N. END. PLACING IN
THIN LAYERS OVER FULL CIRCUMFERENCE.
REBOUND BEING SHOVELED INTO HOLES ALONG
BOTH SIDES.

NOTE: PLANT SHUT DOWN AT 3 P.M. AND ALL HANDS CLEANED UP EQUIPT. AND HAULED OUT REBOUND UNTIL 5:30 P.M. THEN LEFT FOR 3-DAY WEEKEND. FOREMAN WILSON ABSENT TODAY; WIREMAN TOOK HIS PLACE WORKING WITH NOZZLEMAN.

NOTE: LEONARD WET DOWN THE GUNITE IN PLACE IN THE TUNNEL, ON SAT. DEC. 26, USING AN ELECT. SUMP PUMP AND 400 FT. OF 1" HOSE PROVIDED BY THE SNEA CO., BY PREVIOUS ARRANGEMENT.

REBOUND IS BEING SHOVELED INTO A WHEEL BORROW AND CARRIED FORWARD AND DUMPED IN CAR PASS HOLE, AND IN OVERBREAK HOLES. SOME REBOUND HARDENED BEFORE IT WAS USED, NEAR PORTAL, AND WAS PICKED OUT AND DUMPED OUTSIDE OF TUNNEL.

DEC. 24, 53.

LEONARD } INSPECTORS.
YARNEY }

No.	PERSONNEL	HRS.	No.	EQUIPT.	HRS.
1	SUPT.	8.0	1	PICKUP TRUCK	8.0
1	NOZZLEMAN	8.0	1	FLAT BED TRUCK	8.0
2	OPERATORS	16.0	1	AIR COMPRESSOR	8.0
1	TRUCK DRIVER	8.0	1	MIXER-GUN	8.0
1	WIREMAN	8.0	1	WATER PUMP	8.0
3	LABORERS	24.0			

MATERIAL REC'D.

18 YDS. SAND.

MATERIAL PLACED:
(67 BATCHES)

201 SACKS CEMENT
603 CU. FT. SAND.
300 LBS. C.A.C.L.

REMARKS: CONT'D LINING TOP & SIDES IN FIRST 100 FT. OF N. END, USING 150 FT. OF HOSE.

PLACED GUNITE IN BOTTOM, COVERING STEEL ABOUT 4" THICK FOR ABOUT 50 FT. FROM PORTAL. NO MATERIAL PLACED AROUND STEEL RING AT PORTAL, PENDING FINAL ADJUSTMENT.

DEC. 28, 53.

LEONARD } INSPECTORS.
YARNEY }

No.	PERSONNEL:	HRS:	No.	EQUIPT.	HRS:
1	SUPT.	8.0	1	PICKUP TRUCK	8.0
1	FOREMAN	8.0	1	FLAT BED "	8.0
1	NOZZLEMAN	8.0	1	COMPRESSOR	8.0
2	OPERATORS	16.0	1	MIXER-GUN	8.0
1	WIRE MAN	8.0	1	WATER PUMP	8.0
1	TRUCK DRIVER	8.0	150 FT. HOSE		8.0
3	LABORERS	24.0			

MATERIAL RECEIVED: 18 YDS. SAND.

MATERIAL PLACED: 192 BAGS CEMENT
(64 BATCHES) 576 CU. FT. SAND
400 LBS. C.A.C.L.

PLACING MATERIAL IN 125 FT. LENGTH NEXT
TO N. PORTAL, FILLING IN VOIDS AND WORKING
INSIDE OF STEEL LINE IN MOST PLACES.

WIRE MAN CONTINUED SETTING GUIDE WIRES.

REBOUND WHEELED FORWARD AHEAD OF WORK
AND PLACED IN BOTTOM OVERBREAK HOLES.

DELAYS: LACK OF WATER HELD UP WORK UNTIL 9 AM.

LIGHTS OUT OF ORDER 30 MINUTES AT 1:30 AM.

REMARKS: ONE TEST CYLINDER KNOCKED OVER
AFTER PLANT SHUT DOWN TONITE, BREAKING
BOTH ENDS OFF IT.

MR. HARRIS, WITH MR. F.W. CASE, PRES. AND
 MR. HARRY EAST, SECT.-TRES. OF F.W. CASE CORP.
 VISITED THE JOB TODAY FROM 10 A.M. TO 2 P.M.
 MR. HARRIS STAYED OVER IN RAMONA TONITE.

NOTE: TUNNEL SUPT. AND TWO MEN WORKED
 ON STEEL PLATE RING, TRYING TO TRUE IT UP
 TODAY. IT IS STILL OUT OF ROUND $\frac{1}{2}$ INCH \pm
 BUT CANNOT BE MADE ANY BETTER WITH
 OUT REMOVING FROM WORK.

DEC. 29, 53.

LEONARD } INSPECTORS.
 VARNEY }

No. PERSONNEL	HRS.	No. EQUIPT.	HRS.
1 PROJECT MGR.	6.0	1 PICKUP TRUCK	8.0
1 SUPT.	8.0	1 5 TON "	8.0
1 FOREMAN	8.0	1 COMPRESSOR	8.0
1 NOZZLEMAN	8.0	1 MIXER & GUN	8.0
2 OPERATORS	16.0	1 WATER PUMP	8.0
1 TRUCK DRIVER	8.0	150 FT. OF HOSE	8.0
1 WIRE MAN	8.0	50 FT. " "	2.0
3 LABORERS	24.0		

MATERIAL RECEIVED: 24 YDS. SAND.

MATERIAL PLACED: 183 SACKS CEMENT.
 (61 BATCHES) 549 CU. FT. SAND
 400 LBS. C.A. CL.

REMARKS: STILL WORKING IN FIRST 125 FT. \pm OF
 TUNNEL. BOTTOM LINED FOR ANOTHER 50 FT. OR
 SO TODAY, AS IT COULD NOT TAKE ANY MORE
 REBOUND. WIRE MAN CONTINUED PLACING
 GUIDE WIRES. ADDED 50 FT. OF HOSE TO LINE
 ABOUT 2 A.M.

REMARKS. MESSRS BEERMAN AND RANKIN INSPECTED THE WORK TODAY AND MR. RANKIN SAID THE GUNITE SHOULD BE PLACED IN THE BOTTOM FIRST, IN A LAYER THICK ENOUGH TO COMPLETELY ENCASE THE REINFORCING STEEL IN THE FIRST PASS OVER IT, THEN WORK UP THE SIDES, BRINGING MATERIAL INSIDE OF STEEL ALL THE WAY UP, AND PLACING THE ARCH GUNITE LAST, IN AS THICK LAYERS AS PRACTICABLE TO SUPPORT.

MR. BEERMAN ORDERED SHRINKAGE TESTS TO BE MADE OF THE SAND AND THE AMOUNTS TO BE ADJUSTED TO GIVE 3 CU. FT. OF DRY SAND PER SACK OF CEMENT.

I TOOK SAMPLES OF SAND FOR TESTING AND TOLD MIXER OPERATOR TO START ADDING ABOUT 1 CU. FT. OF WET SAND TO EACH BATCH PENDING OUTCOME OF BULKING TESTS.

DEC. 30, '53 LEONARD } INSPECTORS.
VARNEY }

NO. PERSONNEL.	HRS.	NO. EQUIPT.	HRS.
1 PROJECT MGR.	8.0	1 PICK UP TRUCK	8.0
1 SUPT.	8.0	1 5-TON "	8.0
1 FOREMAN	8.0	1 COMPRESSOR	8.0
1 HOZZLEMAN	8.0	1 MIXER & GUN	8.0
2 OPERATORS	16.0	1 WATER PUMP	8.0
1 WIREMAN	8.0	200 FT. HOSE	8.0
1 TRUCK DRIVER	8.0		
3 LABORERS	24.0		

MATERIAL RECEIVED: 36 YARDS SAND.

MATERIAL PLACED: 234 SACKS CEMENT
(78 BATCHES) 702 CU. FT. SAND.
400 LBS. CA. CL.

REMARKS: PLACED GUNITE AROUND STEEL PLATE RING AT N. PORTAL THIS MORNING AND FLASHED FACE OF CUT AROUND RING TO PREVENT ROCKS FROM SLIDING IN. STARTED A NEW SECTION OF WORK TODAY, PLACING BOTTOM FIRST, IN THICK LAYERS, AND WORKING UP BOTH SIDES.

SUMMARY OF MATERIAL PLACED THRU 12/31.

TOTAL NO OF BATCHES PLACED: 476 (7-9)
 " " " SACKS CEMENT: 1428 SACKS.
 " " CU. FT. SAND USED: 4284 CU. FT.
 " LBS. CALCIUM CHLORIDE USED: 2700 LBS.
 NO. CUBIC YARDS OF GUNITE PLACED: 175.1 Yds.
 NO. CUBIC YARDS ESTIMATED TO BE
 WITHIN PAY LINES, INCLUDING CAR
 PASS HOLE #16: 107.0 YDS.

P. Leonard.

NOTE: SOME REBOUND WAS REMOVED AND DUMPED
 OUTSIDE TODAY BECAUSE IT HAD TAKEN ITS
 INITIAL SET BEFORE BEING PICKED UP.
 LACK OF SUFFICIENT HELP IN MOVING
 REBOUND APPEARS TO BE A PROBLEM.

DEC. 31, '53

LEONARD } INSPECTORS.
 VARNEY }

NO. PERSONNEL.	HRS.	NO. EQUIPT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FOREMAN	8.0	1 5-TON "	8.0
1 NOZZLEMAN	8.0	1 COMPRESSOR	8.0
2 OPERATORS	16.0	1 MIXER-GON	8.0
1 WIRE MAN	8.0	1 WATER PUMP	8.0
1 TRUCK DRIVER	8.0	200 FT. HOSE	8.0
3 LABORERS	24.0		

MATERIAL REC'D.

18 YARDS SAND.

MATERIAL PLACED:

210 SACKS CEMENT.

(70 BATCHES)

630 CU. FT. SAND.

400 LBS. CA. CL.

REMARKS: CONTINUED PLACING GUNITE IN ABOUT
 175 FT. OF TUNNEL. FILLING IN ARCH ALONG
 ENTIRE LENGTH COVERED TO DATE. GUIDE
 WIRES ARE NOW ALL IN PLACE FOR NORTH END
 BUT SURFACE OF WORK HAS NOT BEEN BROUGHT
 TO FINISHED LINE AS YET IN ANY PLACE.

JAN. 4, 1954.

LEONARD } INSPECTORS.
VARNEY }

WEATHER: CLEAR, WARM:

NOTE: BOTTOM OF TUNNEL WAS COVERED WITH WATER TO ELEV. 1894.1 THIS MORNING, FROM STA. 148+10 TO S. PORTAL. 4 PUMPS WORKED ALL DAY PUMPING WATER BACK FROM WORK AREA.

NO. PERSONNEL	HRS.	NO. EQUIPT.	HRS.
1 PROJECT MGR.	8.0	2-PICKUP TRUCKS	16.0
1 SUPT.	8.0	1-5-TON "	8.0
2 FOREMAN	^{16.0} 8.0	1 COMPRESSOR	8.0
2 NOZZLEMEN	^{16.0} 24.0	2-MIXERS	10.0
4 OPERATORS	32.0	2-GUNS	10.0
1 TRUCK DRIVER	8.0	450' MAT. HOSE	10.0
1 FINISHER	8.0	2-NOZZLES	10.0
7 LABORERS	56.0	2-WATER PUMPS	10.0

SAND HAULED JAN. 1st, 2nd. AND TODAY-STOCKPILED.

USING 250' HOSE IN N. END. TWO MEN KEPT BUSY ALL DAY MOVING PEROUND AHEAD.

MOVED EQUIPT. IN TO END OF RAILS AT ABOUT STA. 149+75 AND STARTED PLACING MATERIAL ON SIDES AND OVERHEAD NEXT TO END OF N. REINFORCED SECTION.

MIXER LOCATED ON DUMP. GUN ON TRACKS NEXT TO WORK. 3-50 GAL. DRUMS ON FLAT CAR PROVIDES WATER SUPPLY, INSIDE TUNNEL.

MATERIAL REC'D. 102 YDS. SAND SINCE JAN. 1.

MATERIAL USED: N. END: 218 SACKS CEMENT.

(71 BATCHES-3; MIX) 639 CU. FT. SAND,
400 LBS. CA. CL.

" " ROCK SECT: 16 SACKS CEMENT
(4 BATCHES)
(4 SACKS PER BATCH) 48 CU. FT. SAND,
40 LBS. CA. CL. [±]

CONTINUED WORK IN N. REINFORCED SECTION.

STARTED WORK AT N. END OF ROCK SECTION AT 3:15 P.M. PLACED 2 CARLOADS OF MAT. BY 4:30 - VERY SLOW WORK.

WEATHER: CLEAR, WARM.

NOTE: USING ABOUT 20 LBS. CA. CL. PER 50 GALS. WATER.

TEST CYLINDERS MADE FROM ROCK SECTION PLANT TODAY.

HAULING IN ONE YARD OF MATERIAL AT A TRIP IN S. END. INSUFFICIENT AIR PRESSURE IN LOCOMOTIVE TO MOVE MORE THAN ONE CAR FULL AT ONE TIME. CONSIDERABLE TIME LOST WAITING FOR MATERIAL. DIRT IN WATER SUPPLY PLUGGED UP WATER JETS - LOST 1 HR.

JAN. 5, 52.

LEONARD } INSPECTORS.
VARNEY }

No.	PERSONNEL	HRS.	No.	EQUIPT.	HRS.
1	PROJECT MGR.	8.0	2	PICK UP TRUCKS	16.0
1	SUPT.	8.0	1	5-TON TRUCK	8.0
± 2	FOREMAN	8.0 16.0	1	COMPRESSOR	8.0
± 2	HOZZLEMEN	8.0 16.0	2	MIXERS	16.0
4	OPERATORS	32.0	2	GUNS	16.0
1	FINISHER	8.0	450'	MAT. HOSE	8.0
1	TRUCK DRIVER	8.0	2	SKID LOADERS	16.0
8	LABORERS	64.0	5	WATER PUMPS	24.0

REC'D. 18 YARDS SAND.

MATERIAL RECEIVED 32,300 LBS. CAL. CHLORIDE.

MATERIAL PLACED: N. END: 204 SACKS CEMENT.

(6 BATCHES - 3 SACKS EACH) 612 CU. FT. SAND.

400 LBS. CA. CL.

" " ROCK SECTION: 68 SACKS CEMENT.

(17 BATCHES - 4 SACKS EACH) 204 CU. FT. SAND

120 LBS. CA. CL. ±

CONTINUED WORK FROM BOTH ENDS; SOUTH END PLANT WORKING IN ROCK SECTION ONLY. N. END PLANT WORKING IN N. REINFORCED SECT.

JAN. 6, 54.

LEONARD } INSPECTORS.
VARNEY }

WEATHER: CLEAR, WARM.

MR. HARRIS, PROJ. MGR. LEFT AT NOON TODAY.

MECHANIC ON JOB ALL DAY SERVICING EQUIPMENT.

NOTE: PORTABLE COMPRESSOR, 365 CFM CAPACITY,
OWNED BY CASE CO. HOOKED UP IN TANDUM WITH
TWO SABA CO. COMPRESSORS AT S. PORTAL TO
INCREASE VOLUME OF AIR IN TUNNEL.

CONSIDERABLE REBOND WAS DUMPED OUTSIDE
OF TUNNEL TODAY - COULD NOT MOVE IT INTO
OVERBREAK HOLES ACCORDING TO GUNITE SUPT.
4:15 P.M.

NOTE: 28 BATCHES WERE MIXED AT S. PORTAL TODAY
BUT MIXER OPERATOR DUMPED LAST BATCH DOWN
THE DUMP WHEN IT COULD NOT BE HAULED INTO
TUNNEL BEFORE QUITTING TIME. NO PAY FOR
THIS BATCH OR FOR CEMENT USED IN IT. N.F.

GRADE PINS SET AT ROUGHLY 10' INTERVALS
IN 85 FT. OF ROCK SECTION TODAY. $\frac{1}{4}$ " PINS
ARE SET IN MOUNDS OF GUNITE ALONG Q AND
CUT OFF TO FINISH GRADE AFTER MATERIAL
SETS UP.

TEST CYLINDERS MADE IN ROCK SECTION TODAY.

MATERIAL WASTED: 4 SACKS CEMENT - SEE ABOVE.

NO. PERSONNEL:	MRS.	NO. EQUIPT.	MRS.
SAME AS 1-5-54, EXCEPT:		SAME AS 1-5-54	
1 PROJECT MGR,	4.0	AND, IN ADDITION	
1 MECHANIC	8.0	1-AIR COMPRESSOR - 8.	

DELAYS. COMPRESSOR DOWN UNTIL 9 A.M. AT N. END.
MATERIAL REC'D. 24 YARDS SAND.

MATERIAL PLACED: N. END: 210 SACKS CEMENT
(70 BATCHES - 3 SACKS EACH) 630 CU. FT. SAND
600 LBS. CA. CL.

ROCK SECTION: 108 SACKS CEMENT
(27 BATCHES - 4 SACKS EACH) 324 CU. FT. SAND.
240 LBS. CA. CL. *

CONTINUED WORKING FROM BOTH ENDS, WITH
PLANT AT N. PORTAL WORKING IN N. REINFORCED
SECTION, AND CREW INSIDE TUNNEL WORKING
IN ROCK SECTION FROM 148+00 - SOUTH.
WORK IN ROCK SECTION GOING SLOW DUE TO
TRANSPORTATION TROUBLES, AND EQUIPMENT
BREAKDOWNS.

WEATHER: CLEAR, WARM TO OVERCAST, P.M.
 INSTRUCTIONS GIVENE FLATTEN OUT
 INVERT RADIUS IN WIDE BOTTOM AREAS
 OF TUNNEL, MAINTAIN TRUE RADIUS
 IN CENTER AND IN NARROW AREAS.
 START PLACING HUNT'S PROCESS IN
 COMPLETED PORTIONS OF ROCK SECTION.

WORK IN N. END ADVANCED TO ABOUT 300'
 INSIDE PORTAL TODAY, WITH BOTTOM AND
 SIDES BEING PLACED FIRST. HOLES IN
 ARCH BEING FILLED AS RAPIDLY AS THE
 MATERIAL SETS UP.

WORK IN ROCK SECTION SPREAD UP TODAY,
 WITH ABOUT 125 FT. COMPLETED TO DATE.
 BOTTOM GRADE ESTABLISHED BY PINS SET
 AT ABOUT 6' INTERVALS, AND MATERIAL
 SCREEDED AND ROUGH TROWLER TO
 GRADE AS WORK PROGRESSSED.

JAN. 7, 54.

LEONARD } INSPECTORS.
 VARNEY }

NO.	PERSONNEL.	HRS.	NO. EQUIPT.	HRS.
1	SUPT.	8.0	1 PICK UP TRUCK	8.0
2	FOREMEN	16.0	1 5-TON "	8.0
2	NOZZLEMEN	16.0	2 COMPRESSORS	16.0
4	OPERATORS	32.0	2 MIXERS	16.0
1	FINISHER	8.0	2 GUNS	16.0
1	TRUCK DRIVER	8.0	2 SKIP LOADERS	16.0
8	LABORERS	64.0	3 WATER PUMPS	24.0

MATERIAL RECEIVED: 36 YARDS SAND.
 MATERIAL PLACED: N. END. 252 SACKS CEMENT.
 (84 BATCHES - 3 SACK MIX) 756 CU. FT. SAND
 500 LBS. C.A. CL.

" " ROCK SECTION:
 (43 BATCHES - 4 SACK MIX) 172 SACKS CEMENT.
 516 CU. FT. SAND.
 350 LBS. C.A. CL.

USING 325 FT. MATERIAL HOSE IN N. END.
 " 150 AND 100 FT. HOSE IN ROCK SECTION.

JAN. 8, 54.

LEONARD } INSPECTORS.
VARNEY }

WEATHER: CLOUDY - RAIN DURING LAST NIGHT.
NOTE: TESTED SAND SAMPLE OF MATERIAL
RECEIVED THIS A.M. AND HAD 18 TO 20 PERCENT
BULKING. TOLD MIXER OPER. TO ADD ANOTHER
 $\frac{1}{2}$ CU. FT. PER BATCH TODAY.

NOTE: RANDOM "C" SECT. WAS COMPLETED TO
STA. 149+19 AT END OF WORK YESTERDAY.

AT N. END 1" X 2" WIRE 3 FT. WIDE WAS PLACED
BENEATH STEEL IN ARCH IN AN ATTEMPT
TO HOLD UP THE ARCH GUNITE BETTER. NOT
VERY SATISFACTORY BECAUSE THE MATERIAL
BUILDS UP JUST ABOVE THE WIRE AND
LEAVES VOIDS ABOVE IT. WIRE EXTENDS
FROM STATION 146+22[±] TO 147+02[±]

PERSONNEL:
SAME AS 1-7.

EQUIPMENT.
SAME AS 1-7 EXCEPT:
DISCONTINUED USING \$65
AIR COMPRESSOR AT S. END.

MATERIAL RECEIVED: 30 YARDS SAND.

1 ROLL 1" X 2" X 36" WIDE MUSKRAT WIRE.

MATERIAL PLACED: N. END. 156 SACKS CEMENT.

USING 350 FT. OF HOSE. 468 CU. FT. SAND.

300 LBS. C.A. CL.

" " ROCK SECT. 104 SACKS CEMENT

USING 200 FT. OF HOSE 312 CU. FT. SAND.

200 LBS. C.A. CL.

DELAYS: RAILS LOST AT N. END - NO LIGHTS.

REMOVED 210 FT. TRACK IN "C" SECT. STARTED
GUNITING 11:15 A.M. HOSE PLUGGED - LOST $\frac{1}{2}$ HR.

INSTRUCTIONS GIVEN: FILL VOIDS BEHIND WIRE
PLACED IN ARCH OF N. REINFORCED SECTION
COMPLETELY, OR REMOVE WIRE NETTING.

WEATHER: CLEAR, COOL.

WORKING IN N. REINFORCED SECTION ONLY.
PLACING INVERT AND SIDES BETWEEN 147+50
AND 148+00. FILLING IN CAVITIES IN
ARCH FROM 146+22 TO 147+50±
FINISHER REMOVED MATERIAL LAYING
ON TOP OF WIRE MESH IN ARCH
AND CUT OUT SECTIONS OF MESH
BETWEEN STEEL BARS TO FACILITATE
PLACING OF MATERIAL IN VOIDS ABOVE
REINFORCING STEEL.

REGROUND CARRIED FORWARD AND PLACED
IN HOLES IN BOTTOM OF ROCK SECTION
BETWEEN STATIONS 149+25± AND 151+00±

NOTE: I ASKED THE SUPT. AGAIN TODAY TO
HAVE THE CEMENT IN PLACE WET DOWN
GOOD BEFORE LEAVING THE JOB TONIGHT.
HE SAID HE WOULD HAVE THE NOZZLEMAN
SPRAY IT AT END OF WORK TODAY.

JAN. 9, 54.
SATURDAY.

VARNEY } INSPECTORS.
WERT }

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 - SUPT.	8.0	1 - PICKUP TRUCK	8.0
1 - FOREMAN	8.0	1 - STON "	8.0
1 - NOZZLEMAN	8.0	1 - COMPRESSOR, 500	8.0
2 - OPERATORS	16.0	1 - MIXER	8.0
1 - FINISHER	8.0	1 - GUN	8.0
1 - TRACK DRIVER	8.0	2 - WATER PUMPS	8.0
4 - LABORERS	32.0	1 - SKI LOADER	1.0

MATERIAL REC'D.

³⁶
24 YARDS SAND.

MATERIAL PLACED: N. END: 123 SACKS CEMENT:
369 CU. FT. SAND
300 LBS. C.A. CL.

ADDING ABOUT 10% EXTRA SAND FOR BULKAGE.

DELAYS: LOST 1 HR. WAITING FOR POWDER SMOKE
TO CLEAR UP IN TUNNEL - 12:20 TO 1:30 P.M.
MIXER BROKE DOWN ABOUT 2:30 P.M. - PIN SHEARED
OFF ON SHAFT THAT RUNS CONVEYOR BELT.

JAN. 11, 54.

LEONARD
VARNEY } INSPECTORS.
WERT }

- WEATHER: CLEAR TO CLOUDY; RAIN AFTER 6 P.M.
- DELAYS: DAY SHIFT: LOST 1 HR. N. END AND
- 2 HRS. IN ROCK SECT. REPAIRING GUNS.
- NIGHT SHIFT: RAIN HALTED MIXER SEVERAL
- TIMES - 3 HRS. [±] LOST. GUN DOWN 1 HR. [±].
- * JAMES AND VRELLAND WORKED OVERTIME TONITE.

SAND SAMPLE TESTED 10-11% SHRINKAGE TONITE.
ADDING 1 CU. FT. TO EACH BATCH FOR SHRINKAGE.

DAY SHIFT CONTINUED WORKING IN BOTH ENDS.

- N. END BOTTOM AND SIDES ALL ROUGHED IN
- BUT TOP IS OPEN FOR 50 FT. [±] AND STILL
- HAS SOME VOIDS IN REMAINDER.

ROCK SECTION TOP AND SIDES IN TO ABOUT
STA. 150+75[±] BOTTOM REMAINS AT 149+19[±]

- NOTE: TOO MUCH REBOUND HAS BEEN DUMPED
- IN BOTTOM BETWEEN 149+19 AND 150+70[±]
- HAULED IN FROM N. END SAT. AND TODAY.
- MUST BE PICKED OUT AND REMOVED.
- TEST CYLINDERS MADE AT 150+50[±] TODAY.

PERSONNEL.	HRS.	EQUIPMENT	HRS.
1 PROJECT MGR.	4.0	1-PICKUP TRUCK	12.0
1 SUPT.	12.0	1-5-TON TRUCK	8.0
2 FOREMEN	16.0	1-500 COMPRESSOR	8.0
3 NOZZLEMEN	24.0	2 MIXERS	24.0
45 OPERATORS*	40.0	2 GUNS	24.0
1 FINISHER	16.80	3 WATER PUMPS	32.0
1 TRUCK DRIVER*	12.0	1 SKIP LOADER	2.0
13 LABORERS	104.0		

MATERIAL RECEIVED: 48 YARDS SAND.

MATERIAL PLACED: N. END: 171 SACKS CEMENT.

(57 BATCHES - 3s. MIX) 513 CU. FT. SAND.

USING 375 FT. HOSE. 500 LBS. C.A. CL.

ROCK SECT. - DAY: 168 SACKS CEMENT.

(42 BATCHES - 4s. MIX) 504 CU. FT. SAND.

USING 200 FT. HOSE. 800 LBS. C.A. CL.

ROCK SECT. - NITE: 72 SACKS CEMENT.

(18 BATCHES - 4s. MIX) 216 CU. FT. SAND

150 LBS. C.A. CL.

NOTE: ADDING 10% EXTRA SAND FOR BULKAGE.

JAN. 12, 54.

LEONARD }
 VARNEY } INSPECTORS.
 WERT }

WEATHER: CLEAR TO HEAVY RAIN STARTING 4 AM. ±

N.E. END: FLASHING IN FINISH COAT TO
 GUIDE WIRES FROM PORTAL, SOUTH. FILLING
 IN CAVITIES IN ARCH FROM PORTAL TO ABOUT
 STA. 146+20 - A DISTANCE OF 165 FT. ±

ROCK SECTION: CONTINUED PLACING TOP
 AND SIDES UP TO ABOUT STA. 151+35 ±

REMOVING SURPLUS REGRIND FROM FLOOR
 OF ROCK SECTION BETWEEN STA. 149+20
 TO 151+35 WITH A JACK HAMMER, PICKS
 SHOVELS AND WHEEL BARRROWS. LOADING IT IN
 MUCK CARS AND HAULING THE WORST OF IT
 TO THE DUMP. FRESH REGRIND STILL
 BEING DUMPED IN DEEP HOLES SOUTH OF
 STA. 152+00.

NIGHT SHIFT WORKED 6 MEN ON REMOVING
 REGRIND - HAULING OUT ABOUT 6 MUCK CARS
 FULL TO THE DUMP. NO GUNITE PLACED
BY NITE SHIFT.

CHECK LEVELS SHOW SUR. GRADE BETWEEN
 149+20 AND 151+35 TO BE FROM 2" TO 7" HIGH.

PERSONNEL	HRS.	EQUIPMENT.	HRS.
1-PROJECT MGR.	8.0	1-PICK UP TRUCK	8.0
1-SUPT.	8.0	1-5TON TRUCK	8.0
2-FOREMEN	16.0	1-500 COMPRESSOR	8.0
3-NOZZLEMEN	24.0	2-MIXERS	16.0
4 5 OPERATORS	32.0 ^{40.0}	2-GUNS	16.0
2 FINISHER	16.0 ^{16.0}	3-WATER PUMPS	24.0
1-TRUCK DRIVER	8.0	1-SKIP LOADER	2.0
10-LABORERS	80.0	1-JACK HAMMER	16.0

MATERIAL RECEIVED: 36 YARDS SAND.
 " PLACED: N. END: 105 SACKS CEMENT.
 (35 BATCHES - 3s. MIX.) 315 CU. FT. SAND.
 200 LBS. C.A. CL.
 ROCK SECTION: 136 SACKS CEMENT.
 (34 BATCHES - 4s. MIX.) 408 CU. FT. SAND.
 250 LBS. C.A. CL.

NOTE: 10% EXTRA SAND ADDED FOR BULKAGE.

WEATHER: OVERCAST TO CLEAR. NO RAIN.
ROAD TO N. PORTAL CLOSED DUE TO MUD.
EQUIPMENT AND CREW AT N. END DID NOT
WORK TODAY.

ROCK SECTION CREW LINING INVERT FROM
STA. 148+00, SOUTH, ON HIGHER GRADE
LINE. SEE NOTE BELOW.

SAND BULKING 10% - ADDING 1 CU. FT. PER BATCH.
FRED BEAMER, LABORER, WORKED 16 HRS. TODAY.

NOTE: RES. ENG. GRANTED PERMISSION TO
RAISE FINISH INVERT GRADE IN ROCK
SECTION FROM 0.0' TO .25' STARTING AT
STA. 148+00. THIS BRINGS THE GRADE
UP TO THE ORIGINAL PLAN GRADE, WITH
A SLOPE OF .0006, INSTEAD OF THE
LOWER REVISED GRADE. - RETURN TO THE
REVISED GRADE LINE WHERE EVER POSSIBLE.
THIS ACTION TAKEN TO UTILIZE ALL
REBOUND POSSIBLE IN THIS VICINITY.
NOTE: WASTED MATERIAL NOT SHOWN AS PLACED.

JAN. 13, 54. VARNEY & WERT - DAY.
INSPECTORS: LEONARD & HAGLUND - NITE.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 PROJECT MGR.	8.0	1 PICK-UP TRUCK	8.0
1 SUPT.	8.0	1 5-TON TRUCK	8.0
1 FOREMAN	8.0	1 MIXER	16.0
3 NOZZLEMEN	24.0	1 GUN	16.0
4 OPERATORS	32.0	1 SKIPLoader	16.0
1 FINISHER	8.0	1 WATER PUMP	16.0
1 TRUCK DRIVER	8.0	NO COMPRESSOR TIME.	
8 LABORERS	72.0		

MATERIAL RECEIVED: 30 YARDS SAND.
MATERIAL PLACED: N. END. NONE.

ROCK SECTION:	{	96 SACKS CEMENT
DAY SHIFT		288 CU. FT. SAND.
		NONE: C.A. CL.
NITE SHIFT.	{	76 SACKS CEMENT
		228 CU. FT. SAND
		150 LBS. C.A. CL.

MATERIAL WASTED. 16 SACKS CEMENT.
(4 BUCKETS DUMPED IN BOTTOM BY MOTORMAN.
ON NIGHT SHIFT, ABOUT 10 P.M. - NO REASON.

WEATHER: CLEAR, COOL - NITE COLD.

N. END: PLACED ABOUT 50 FT. OF ARCH, SHOOTING OVER PLYWOOD FORMS USED FOR TEMPORARY SUPPORT.

SECTIONS PLACED WERE STAGGERED WITH ABOUT 5 FT. BETWEEN EACH 8 FT. PIECE OF PLYWOOD.

PLACED FINISH COAT ON SIDES AND TOP NEAR PORTAL.

ROCK SECTION: PLACING BOTTOM TO FINISH GRADE LINE FROM STATION 149+90 TO 151+10, TOP AND SIDES TO 151+70 $\frac{1}{2}$

DELAYS: LOST 2 HRS TIME IN ROCK SECTION WITH PLUGGED MATERIAL HOSE THIS MORNING. SHUT DOWN AT 2 P.M. IN ROCK SECTION TO REMOVE RAILS AND MOVE PLANT SOUTH TO CAR PASS HOLE AT STA. 153+15

NOTE: DAY SHIFT DOES NOT USE C.A.C.L. IN WATER WHEN PLACING INVERT - SETS UP TOO FAST FOR FINISHER TO WORK IT OUT TO GRADE.

SAND BULKING 6% TO 7% AT 4:30 A.M.

JAN. 14, 54.

INSPECTORS:

VARNEY, WERT. - DAY.
LEONARD, HAGLUND - NITE.

PERSONNEL:	HRS.	EQUIPMENT.	HRS.
1 SUPT.	9.0	1 PICKUP TRUCK	8.0
2 FOREMEN	16.0	1 FLAT BED - STON	8.0
3 NOZZLEMEN	24.0	2 MIXERS	24.0
6 OPERATORS	48.0	2 GUNS	24.0
2 FINISHERS	16.0	3 WATER PUMPS	24.0
1 TRUCK DRIVER	8.0	1 500 COMPRESSOR	8.0
LABORERS		2 SNIP LOADERS	24.0

MATERIAL RECEIVED: 24 YARDS SAND.
MATERIAL PLACED: N. END: 105 SACKS CEMENT.
(35 BATCHES - 3s. MIX) 315 CU. FT. SAND.
200 LBS. C.A.C.L.

ROCK SECTION: DAY: 80 SACKS CEMENT.
(20 BATCHES - 4s. MIX) 240 CU. FT. SAND.
NO C.A.C.L.

ROCK SECTION: NITE: 120 SACKS CEMENT.
(30 BATCHES - 4s. MIX) 360 CU. FT. SAND.
200 LBS. C.A.C.L.

WEATHER: CLEAR, COOL - COLD AT NITE.

N. END ABOUT 50' OF ARCH PLACED, SHOOTING OVER PLYWOOD FORMS IN SHORT STRETCHES.

PLACED 1" x 2" RAT WIRE IN ARCH FROM 147+02 TO 148+00, TO HELP SUPPORT ARCH MATERIAL.

SHUT DOWN AT 3:30 P.M. TO REMOVE REBOUND.

ROCK SECTION: WORKING FROM ABOUT 151+00 TO 152+12, PLACING SIDES, ARCH AND BOTTOM.

GRADES SET BY VARNEY & WERT AT 8 A.M.

NITE SHIFT WORKED ON TOP AND SIDES UP TO STATION 152+74, BOTTOM COMPLETED TO 152+12.

NO INVERT PLACED TONITE, BUT GRADE PINS PLACED AT END OF SHIFT, TO BE CUT OFF TO GRADE MONDAY A.M.

CYLINDERS MADE TONITE, STA. 152+50±

SAND BULKING 11%.

JAN. 15, 54.

VARNEY-WERT, DAY.
INSPECTORS: LEONARD-MAGLUND-NITE.

PERSONNEL	HRS.	EQUIPMENT:	HRS.
1- SUPT.	8.0	1- PICK UP TRUCK	8.0
2- FOREMEN	16.0	1- STON "	8.0
3- HOZZLEMEN	24.0	1- 500 COMPRESSOR	8.0
6- OPERATORS	48.0	2- MIXERS	24.0
2- FINISHERS	16.0	2- GUNS	24.0
1- TRUCK DRIVER	8.0	3- WATER PUMPS	24.0
15- LABORERS	120.0	2- SKIP LOADERS	16.0

MATERIAL RECEIVED:	30 YARDS SAND
MATERIAL PLACED: N. END:	111 SACKS CEMENT.
(37 BATCHES - J.S. MIX)	333 ^{CU. FT.} YARDS SAND.
	200 LBS CA. CL.

ROCK SECTION: DAY:	156 SACKS CEMENT
	468 CU. FT. SAND.
	250 LBS. CA. CL.

" " NITE:	152 SACKS CEMENT.
	456 CU. FT. SAND.
	350 LBS. CA. CL.

WEATHER: RAIN - LIGHT TO HEAVY.

DELAYS: NO WORK ON DAY SHIFT EXCEPT
PLANT MAINTENANCE.

NIGHT SHIFT SHUT DOWN AT 10 P.M. TO MOVE
PLANT AND TRACKS. VERY HEAVY RAIN AFTER
11 P.M.

TEST CYLINDERS, ^{NOT} MADE AT END OF WORK.

BOTTOM PLACED TO STA 152+79[±] TONITE.

JAN. 18, 54

INSPECTORS: SAME AS 15TH.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 - SUPT.	8.0	1 PICK UP TRUCK	8.0
2 - FOREMEN	12.0	1 MIXER	6.0
2 - NOZZLEMEN	12.0	1 GUN	6.0
2 - OPERATORS	16.0	1 WATER PUMP	6.0
2 - FINISHERS	8.0		
5 - LABORERS	40.0		

MATERIAL RECEIVED:

(INCLUDES 6 YDS DEL. 16TH.)

24 YARDS SAND

MATERIAL PLACED: DAYS:

NONE - RAIN.

ROCK SECTION: NITE:

72 SACKS CEMENT.

(18 BATCHES - 4'S MIX.)

216 CU. FT. SAND.

150 LBS. CA. CL.

WEATHER: RAIN ALL DAY AND EVENING.

NO WORK AT N. END - ROAD IMPASSABLE.

PLACING EAST SIDE WALL AND HALF OF
ARCH FROM 152+80[±] TO ABOUT 154+30.

FINISHERS CLEANING UP BOTTOM.

NO WORK ON NITE SHIFT DUE TO RAIN.

NO TEST CYLINDERS MADE TODAY.

REMARKS: CHECKED INVERT GRADE FROM
148+00 TO 152+79, AS PLACED, AND FIND
IT TO BE WAVY, AND TO VARY FROM .09 LOW
TO .09 HIGH BASED ON .0006 SLOPE GRADE.

JAN. 19, 54.

INSPECTORS: SAME AS 15TH.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 - SUPT.	8.0	1 PICK UP TRUCK	8.0
1 - FOREMAN	8.0	1 MIXER.	6.0
1 - NOZZLEMAN	8.0	1 GUN	6.0
2 - OPERATORS	16.0	1 WATER PUMP	6.0
2 - FINISHERS	16.0		
1 - TRUCK DRIVER	8.0		
4 - LABORERS	32.0		

MATERIAL RECEIVED:	6 YDS. SAND.
MATERIAL PLACED: N. END.	NONE - NO WORK.
ROCK SECTION - DAY.	108 SACKS CEMENT.
	324 CU. FT. SAND.
	200 LBS. C.A.C.L.
NITE SHIFT: NO WORK.	NONE.

WEATHER: CLEARING, GROUND MUDDY.

DELAYS: TOO WET TO WORK OUTSIDE TODAY.

N. PORTAL ROAD IMPASSABLE, EXCEPT BY

BULLDOZER. SAND TOO WET TO USE.

NITE SHIFT SHUT MIXING PLANT DOWN

AT 9:30 AM. BECAUSE SAND WAS TOO WET.

WORK PERFORMED: DAY SHIFT SHUT DOWN EXCEPT
FOR 2 MEN WORKING 4 HRS CLEANING UP BOTTOM.

NITE SHIFT PLACED MATERIAL ALONG SIDES
AND TOP FROM 152+80 TO 154+00±

TEST CYLINDERS MADE ABOUT 10 P.M., 153+50.

GUN SHUT DOWN ABOUT 11:30 P.M., OUT OF

MATERIAL. LINE CLOGGED SEVERAL TIMES.

JAN. 20, '54

INSPECTORS: SAME.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FOREMAN	8.0	1 MIXER	5.0
2 NOZZLEMEN	12.0	1 GUN	7.0
2 OPERATORS	16.0	1 WATER PUMP	7.0
1 FINISHER	4.0		
5 LABORERS	40.0		

MATERIAL RECEIVED: 6 YDS. SAND.

MATERIAL PLACED: N. END. NONE.

ROCK SECTION: NITES: 56 SACKS CEMENT.

(14 BATCHES - 4'S MIX) 168 CU. FT. SAND.

100 LBS. C.A. CL.

DAY SHIFT NO WORK.

WEATHER: CLEAR - WARM DAY, COOL NITE.

DELAYS: NO WORK AT N. END EXCEPT MOVING
IN CEMENT. CREW IN L. A., RE BACK FRIDAY.

WORK PERFORMED: PLACING SIDES AND TOP
UP TO 154+30⁺ AND BOTTOM UP TO 153+32.

REMARKS: TOO MUCH REROUND ALONG SIDES
BETWEEN 153+20 AND 153+50; TOLD NITE
FOREMAN TO REMOVE IT BEFORE PLACING
FINISH LAYER IN BOTTOM, HERE.

GRADE PINS SET FROM 152+93 TO 153+45
TONITE.

TEST CYLINDERS MADE ON NITE SHIFT; 153+00⁺

SAND SAMPLE TESTED ABOUT 8% SHRINKAGE.

JAN. 21, '54

INSPECTORS: SAME.

PERSONNEL	HRS.	EQUIPMENT	HRS.
1 - SUPT.	8.0	1 - PICK UP TRUCK	8.0
1 - FOREMAN (NITE)	8.0	1 - MIXER	16.0
2 - NOZZLEMEN	16.0	1 - GUN	16.0
4 - OPERATORS	32.0	1 - WATER PUMP	16.0
1 - FINISHER	8.0		
10 - LABORERS	80.0		

MATERIAL REC'D.

30 YARDS SAND

MATERIAL PLACED: N. END.

NONE - NO WORK.

ROCK SECTION: DAY:

148 SACKS CEMENT.

(37 BATCHES X 4'S MIX)

444 CU. FT. SAND.

300 LBS. CA. CL.

ROCK SECTION: NITE:

152 SACKS CEMENT.

(38 BATCHES X 4'S MIX)

456 CU. FT. SAND

300 LBS. CA. CL.

WEATHER: CLE

DELAYS: NON

N-END: FLASHING

NEW NOZZLEMAN

SAND SHRINKAGE

ROCK SECTION: D

STA. 154+25[±]

TO CAR PASS

TRACKS TO STA

ROCK SECTION: N

AND EAST SIDE

ONE PASS OV

BOTTOM IS TO

MUCK FROM L

REMOVED BE

CAN BE PLAC

SACKS OF CEMENT PLACED IN ROCK SECTION THRU
JAN. 22. - 2,296 SACKS = 278.3 CU. YARDS CONCRETE.
BASED ON 675 L.F. COMPLETED, THIS IS 0.41 CU. YDS. L.F.

.16
.68
1.08
1.72
1.04
1.68
.72
1.36
.96
.76
.80
1.20
1.56
1.52
.72
1.08
.56
1.48
1.52
.80
1.56
22.96 *

OPEN SPOTS.

FT. HOSE.

UP TO

BACK

VED

OF TOP

MADE

155+10[±]

154+75;

ST RE

ERIAL

JAN. 22, '54

SAME INSPECTORS.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK-UP TRUCK	8.0
2 FOREMEN	16.0	1 5 TON "	8.0
3 NOZZLEMEN	24.0	1 500 COMPRESSOR	8.0
6 OPERATORS	48.0	2 MIXERS	24.0
2 FINISHERS	16.0	2 GUNS	24.0
14 LABORERS	112.0	3 WATER PUMPS	24.0

MATERIAL RECEIVED: 42 YARDS SAND.
 MATERIAL PLACED: N. END: 102 SACKS CEMENT.
 (34 BATCHES X 3'S MIX. 306 CU. FT. SAND.
 200 LBS. C.A. CL.

ROCK SECTION: DAYS: 80 SACKS CEMENT
 (20 BATCHES X 4'S MIX) 240 CU. FT. SAND.
 200 LBS. C.A. CL.

ROCK SECTION: NITES: 156 SACKS CEMENT
 (39 BATCHES, 4'S MIX) 468 CU. FT. SAND.
 400 LBS. C.A. CL.

LEONARD SET A WEEPER VALVE IN A
 FLOWING SPRING AT STA. 155+19[±], ON EAST
 TOE. USED 2 STREET ELLS TO RAISE VALVE
 ABOVE FLOOR LINE.

WEATHER: Clear, ...

DELAYS: NONE.

N. END: FLASHING ARCH AND FILLING IN OPEN SPOTS.

NEW NOZZLEMAN ON JOB TODAY. USING 400 FT. HOSE.

SAND SHRINKAGE TESTED ABOUT 7% TONITE.

ROCK SECTION: DAY SHIFT PLACED THE INVERT UP TO STA. 154+25[±] AND MOVED EQUIPMENT BACK TO CAR PASS HOLE AT 156+15 AND REMOVED TRACKS TO STA. 155+94[±]

ROCK SECTION: NITE SHIFT: COMPLETED HALF OF TOP AND EAST SIDE UP TO STA. 155+80 AND MADE ONE PASS OVER THE WEST SIDE TO STA. 155+10[±]

BOTTOM IS TOO HIGH BETWEEN 154+45 AND 154+75; MUCK FROM LAST PLANT SET-UP MUST BE REMOVED BEFORE FINISH INVERT MATERIAL CAN BE PLACED.

LEONARD SET A WEEPER VALVE IN A FLOWING SPRING AT STA. 155+19[±], ON EAST TOE. USED 2 STREET ELLS TO RAISE VALVE ABOVE FLOOR LINE.

JAN. 22, '54

SAME INSPECTORS.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK-UP TRUCK	8.0
2 FOREMEN	16.0	1 5 TON "	8.0
3 NOZZLEMEN	24.0	1 500 COMPRESSOR	8.0
6 OPERATORS	48.0	2 MIXERS	24.0
2 FINISHERS	16.0	2 GUNS	24.0
14 LABORERS	112.0	3 WATER PUMPS	24.0

MATERIAL RECEIVED: 42 YARDS SAND.

MATERIAL PLACED: N. END:
(34 BATCHES X 3's MIX. 102 SACKS CEMENT.
306 CU. FT. SAND.
200 LBS. CA. CL.

ROCK SECTION: DAYS: 80 SACKS CEMENT
(20 BATCHES X 4's MIX) 240 CU. FT. SAND.
200 LBS. CA. CL.

ROCK SECTION: NITES: 156 SACKS CEMENT
(39 BATCHES, 4's MIX) 468 CU. FT. SAND.
400 LBS. CA. CL.

WEATHER: CLEAR, COOL.
OVERHAULING EQUIPMENT.

WEATHER: HEAVY RAIN.

DELAYS: NO WORK DUE TO RAIN, EXCEPT
FOR 2 LABORERS ON NITE SHIFT CUTTING OUT
AND REMOVING REBOUND FROM FLOOR.

WEATHER: CLEAR, COOL.

DELAYS: NO WORK ON DAY SHIFT - SAND TOO WET.

WORK PERFORMED: TWO MEN ON DAY SHIFT WHEELING
REBOUND OUT THE N. END, FROM ROCK SECTION.

NITE SHIFT PLACED REMAINDER OF TOP AND
SIDES UP TO STA. 155+80⁺ THEN SHUT DOWN
TO REMOVE REBOUND FROM HIGH BOTTOM.

TEST CYLINDERS MADE ABOUT STA. 155+80 TONITE.
SAND TESTED 15% BULKING TONITE.

JAN. 23 '54
SATURDAY.

INSPECTOR: LEONARD
MAGLUND.

PERSONNEL.	HRS.	EQUIPMENT.	HRS.
2 OPERATORS	16.0	HAND TOOLS.	
2 LABORERS	16.0		

JAN. 25:

INSPECTORS:
WERT - DAY SHIFT.
LEONARD-MAGLUND-NITE.

PERSONNEL:	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 LABORERS	16.0	1 JACK HAMMER	8.0

JAN. 26, '54. INSPECTORS: LEONARD-MAGLUND-NITES.
VARNET-DAYS.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FOREMAN	8.0	1 MIXER	6.0
1 NOZZLEMAN	8.0	1 GUNITE GUN	7.0
2 OPERATORS	16.0	1 WATER PUMP	7.0
7 LABORERS	56.0	1 JACK HAMMER	8.0

MATERIAL RECEIVED: 42 YARDS SAND. (23RD. TO 26TH. INCL.)

" PLACED: ROCK SECT. 128 SACKS CEMENT
(NITE SHIFT: 32 BATCHES 384 CU. FT. SAND.
4 SACK MIX.) 300 LBS. C.A. CL. ±

WEATHER: CLEAR, WARM.

DELAYS: NO WORK AT N. PORTAL - NO CREW.

WORK PERFORMED: ROCK SECTION - DAY SHIFT.

PLACED INVERT UP TO STATION 155+78.

REMOVED EXCESS REBOUND OUT N. PORTAL.

GUN SHUT DOWN AT 2 P.M. AND PLANT MOVED
TO CAR PASS HOLE BETWEEN 157+50 AND 157+65.

TRACKS REMOVED TO 157+44.

NITE SHIFT COVERING TOP AND ^{EAST} SIDES UP
TO ABOUT 157+35, EAST SIDE ONLY.

TEST CYLINDERS, ^{NOT} MADE AT END OF WORK TONITE.
^{NO WIRE.}
SAND TESTED 10% BULKING TONITE.

INVERT GRADE PINS SET BY VARNEY & WERT
FROM 154+45 TO 155+80 TODAY.

MATERIAL IN BOTTOM, HIGH, BETWEEN 156+00
AND 156+30, TO BE REMOVED.

NOTE: SPRING AT 155+19, EAST TOE, FLOWING
STEADILY, ABOUT $\frac{1}{2}$ GAL. PER MIN. THRU VALVE.

JAN. 27, '54 { VARNEY, WERT - DAY.
INSPECTORS. { LEONARD, HASLUND - NITE.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK-UP TRUCK	8.0
1 FOREMAN	8.0	1 MIXER	13.0
2 NOZZLEMEN	16.0	1 GUNITE GUN	14.0
4 OPERATORS	32.0	1 WATER PUMP	14.0
1 FINISHER	8.0		
10 LABORERS	80.0		

MATERIAL RECEIVED: 18 YARDS SAND.
MATERIAL PLACED: DAYS 112 SACKS CEMENT.
ROCK SECTION: (28 BATCHES) 336 CU. FT. SAND.
200 LBS. C.A. CL.

" " NITES: 112 SACKS CEMENT
(28 BATCHES) 336 CU. FT. SAND.
300 LBS. C.A. CL.

NO MATERIAL PLACED IN N. END TODAY.

WEATHER: CLEAR - WARM.

DELAYS: NONE.

WORK PERFORMED: N. END. COMPLETED TOP AND SIDES EXCEPT FOR SMALL PATCHES TO BE REPAIRED BY FINISHER. 5 MEN WORKED 3 HRS. OVERTIME TONITE, REMOVING REBOUND FROM BOTTOM, IN PREPARATION TO PLACING INVERT.

ROCK SECTION: DAY SHIFT PLACED W. SIDE AND TOP UP TO STA. 157+12, AND CUT OUT HIGH MATERIAL FROM BOTTOM.

NITE SHIFT PLACED INVERT TO STA. 156+66 AND COMPLETED W. SIDE TO 157+35±.

JAN. 28, '54

INSPECTORS: SAME AS 1/27.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMAN	19.0	1 5-TON "	8.0
3 NOZZLEMEN	24.0	1 SKID LOADER	8.0
6 OPERATORS	51.0	2 MIXERS	24.0
2 FINISHERS	16.0	2 GONITE GUNS	24.0
13 LABORERS	113.0	3 WATER PUMPS	24.0
		1 AIR COMPRESSOR	8.0

MATERIAL RECEIVED: 24 YARDS SAND

MATERIAL PLACED: N. END: 129 SACKS CEMENT

(43 BATCHES x 3's MIX) 387 CU. FT. SAND.

300 LBS. CA. CL.

ROCK SECTION: DAYS: 160 SACKS CEMENT

(40 BATCHES x 4's MIX) 480 CU. FT. SAND.

300 LBS. CA. CL.

ROCK SECTION: NITES: 108 SACKS CEMENT.

324 CU. FT. SAND.

300 LBS. CA. CL.

SAND SHRINKAGE 12% TONITE.

WEATHER: CLEAR, WARM.

DELAYS: LOST 1 HR. AT N. PORTAL, GETTING EQUIPMENT STARTED. LOST ABOUT $\frac{1}{2}$ HR. ON NITE SHIFT - NO LIGHTS IN TUNNEL. WORK PERFORMED. N. END. COMPLETED INVERT ENTIRE 347 FT. LENGTH. WORKER ^{OVERTIME}/HR ROCK SECTION: DAYSHIFT: COMPLETE ARCH AND WEST SIDE TO 157+30 AND EAST SIDE TO 157+40 \pm . MOVED PLANT AHEAD TO CAR SIDING AREA AND TOOK UP TRACKS TO 158+64 ROCK SECTION - NITE SHIFT: FINISHED REMOVING TIES FROM FLOOR, AND LINED THE TOP AND W. SIDE UP TO STA. 158+55 AND LINED ABOUT 20 FT. MORE ON E. SIDE.

VARNY AND WERT SET GRADE PINS FROM 156+66 TO 157+20, ON A LEVEL GRADE AT ELEV. 1893.93 BOTTOM COMPLETED BY DAY SHIFT TO STA. 157+23.

SAND BULKING 8% TO TONITE.

JAN. 29, 54. INSPECTORS: SAME.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICKUP TRUCK	8.0
2 FOREMEN	17.0	1 FLAT BED TRUCK	8.0
3 HOZZLEMEN	25.0	2 MIXERS	24.0
6 OPERATORS	50.0	2 GUNITE GUNS	24.0
2 FINISHERS	17.0	3 WATER PUMPS	24.0
13 LABORERS	106.5	1 AIR COMPRESSOR	8.0

MATERIAL RECEIVED: 24 YARDS SAND.

MATERIAL PLACED: N. END: 150 SACKS CEMENT
(50 BATCHES X 3'S MIX, PER MARKS ON MIXER) 450 CU. FT. SAND.
300 LBS. CA. CL.

ROCK SECTION: DAYS: 112 SACKS CEMENT,
(28 BATCHES, 4'S MIX) 336 CU. FT. SAND.
(MATER AT 4:30 4772) 300 LBS. CA. CL.

ROCK SECTION: NITES: 108 SACKS CEMENT.
(27 BATCHES X 4'S MIX) 324 CU. FT. SAND.
(MATER AT 12:12 4799) 200 LBS. CA. CL.

MATERIAL SPOILED: 7 SACKS CEMENT UNDER WET SAND AT N. PORTAL.

MISC. ITEMS FOR JAN. ESTIMATE:

ITEM #2: EXCAVATION FOR 2 CUT-OFF

COLLARS AT S. PORTAL: 4.35 CW. YDS. = \$ 224.59

~~ITEM #5: BALANCE OF REINFORCING STEEL~~

~~IN N. END. COMPLETE IN DEC. ESTIMATE.~~

ITEM #6. CEMENT IN PLACE IN WORK:

5,050 SACKS = 1,262.5 BARRELS: 8,345.13

ITEM #7. GUNITE IN PORTAL AND N.

REINFORCED SECT. 131 CW. YDS. 6,848.06

(INCLUDING 4 YDS. IN CAR PASS HOLE.)

ITEM #8. GUNITE IN ROCK SECTION.

380^{1/2} CW. YARDS AT \$2.26 YD: 19,865.07

ITEM #9. 2" PIPE FOR GROUTING: 21 L.F. 81.48

ITEM #10. DRILLING GROUT HOLES: 22.9 L.F. 111.06

CHANGE ORDER #4; FORMWORKING AND

INSTALLING WEEPER VALVES: 25 AT \$13.15 EA. 328.75

TOTAL: ~~50,576.14~~
\$35,802.14

JAN. 30, 54. LEONARD.

RECAP OF CEMENT USED TO DATE:

TOTAL CEMENT RECEIVED: 7,000 SACKS:

CEMENT USED AT N. END - DEC. 21-31: 1,428 SACKS.

JANUARY:

CEMENT USED N. END: (TYPE "B" SECT.) 1,914 SACKS.

" " ROCK SECT. (TYPE "C" SECT.) 3,136 "

" LOST OFF TRAILER (CREDIT) 30 "

" SPOILED AT N. PORTAL: 7 "

" WASTED AT S. PORTAL: 20 "

TOTAL: 6,535 "

BALANCE ON HAND, JAN. 30: 465 "

7,000 "

NOTE: CEMENT ON HAND AT S. PORTAL ON
JAN. 30TH. COUNTED BY D. LEONARD, CITY
INSPECTOR AND ERNIE ARNESEN, OFFICE
MGR. FOR SNER CO.

CEMENT PAID FOR IN JAN. ESTIMATE = 5,050 SACKS.

FEB. 1, 1954:

INSPECTORS:

VARNEY-WERT: DAYS.
LEONARD-HAGLUND: NITES.

WEATHER: CLEAR, WARM, N. WIND TONITE.
NOTE: WENT ON 24-HOUR BASIS TODAY.
CONTRACTOR'S MEN WORK FROM 8 A.M. TO 4:30 P.M.
AND FROM 4:30 P.M. TO MIDNITE, AND FROM
MIDNITE TO 7:30 A.M., WITH $\frac{1}{2}$ HR. LUNCH.
INSPECTORS WORKING FROM 8^{A.M.} A.M. TO 8^{A.M.} A.M.
N. END: REMOVED EQUIPMENT AND STARTED
PLACING HUNT'S PROCESS ON FINISHED SURFACE.

CONTINUED PLACING LINING IN ROCK
SECTION UP TO 158+60. INVERT COMPLETED
TO STA.

VARNEY AND WERT SET GRADE PINS TO
STA. 157+83, ABOUT 1" ABOVE RANKIN'S REVISED
GRADE. LEONARD AND HAGLUND SET GRADES
TONITE FROM 157+89 TO 158+71, AND WENT
TO RANKIN'S REVISED GRADE AT 157+89.

NOTE: COUNTED SACKS OF CEMENT AT 6 A.M. TODAY
AND FOUND 138 SACKS OF GOOD CEMENT AND 5 SACKS
OF HARDENED CEMENT ON HAND AT S. END.

PERSONNEL:	HOURS:	EQUIPMENT:	HOURS:
1 PROJECT MGR.	10.0	1 PICKUP TRUCK	12.0
1 SUPT.	12.0	1 MIXER	21.0
1 FOREMAN	16.0*	1 GUNITE GUN	21.0
3 NOZZLEMEN	24.0	1 WATER PUMP	21.0
6 OPERATORS	56.0*		
12 LABORERS	112.0*		

NOTE: 4 MEN WORKED 16.0 HRS. EACH TONITE.

MATERIAL RECEIVED:	{ 18 YARDS ON JAN. 30TH.
	{ 24 YARDS SAND. FEB. 1.
MATERIAL PLACED: DAYS,	152 SACKS CEMENT.
(38 BATCHES X 4'S MIX)	456 CU. FT. SAND.
SWING SHIFT: (27 BATCHES)	108 SACKS CEMENT.
	324 CU. FT. SAND.
GRAVEYARD: (15 BATCHES)	60 SACKS CEMENT.
	180 CU. FT. SAND.
MOVED PLANT 5 A.M.	700 LBS. CA. CL.
SAND SHRINKAGE TONITE TESTED:	5%.

1/2

WEATHER: CLEAR, VERY WARM, DRY N. WIND.
 COMPLETED PLACING HUNT'S PROCESS ON
 FINISHED LINING IN N. REINFORCED SECTION.
 DAY SHIFT FINISHED MOVING PLANT BACK
 TO CAR PASS HOLE AT STA. 161+10 AND TAKING
 UP TRACKS TO 160+85[±] FINISHER REPAIRING
 BAD SPOTS IN TOP AND SIDES IN TYPE "C" SECT.
 LABORERS CLEANED UP LOOSE MATERIAL FROM
 FLOOR OF COMPLETED PORTION OF WORK.
 SWING SHIFT COMPLETED REPAIRS TO GUN
 AND STARTED WORK ON ARCH AND SIDES IN CAR
 SIDING AREA, MAKING MATERIAL THICKER IN
 CRUSH ZONE BETWEEN 158+50 AND 158+80.
 ARCH AND SIDES PLACED UP TO 160+80.

NOTE: METER REMOVED FROM MIXER BY VREELAND,
 SWING SHIFT OPERATOR - IT IS HIS PERSONAL PROPERTY.

FEB. 2, 54.

INSPECTORS:
 VARNEY-WERT: DAY.
 LEONARD: NITE.

PERSONNEL:	HOURS:	EQUIPMENT:	HOURS:
1 - SUPT.	8.0	1 PICK-UP TRUCK	8.0
2 - FOREMEN	16.0	1 CEMENT MIXER	11.0
3 - NOZZLEMEN	24.0	1 GUNITE GUN	11.0
6 - OPERATORS	48.0	1 WATER PUMP	11.0
2 - FINISHERS	16.0		
15 - LABORERS	120.0		

MATERIAL RECEIVED: 36 YARDS SAND.

MATERIAL PLACED IN ROCK SECTION:

DAY: 14 BATCHES.	} TOTAL:	225 SACKS CEMENT
SWING: 9 BATCHES.		684 CU. FT. SAND.
NITE: 34 BATCHES.		500 LBS. CA. CL.

DELAYS: MOVING PLANT 8 A.M. TO 11:30 A.M.
 GUNITE GUN BROKE DOWN 1:30 P.M., BACK
 IN USE AT 10⁴⁵ P.M. LOST 8¹/₂ HOURS.

SAND SHRINKAGE TESTED 8% TONITE.

5 SACKS CEMENT REJECTED - WET & HARDENED.
 THROWN IN DUMP AT S. END.

WEATHER: CLEAR, WARM, LOW HUMIDITY-10%.

DELAYS: NONE.

WORK PERFORMED: COMPLETED ARCH AND SIDES UP TO STA. 160+80. BOTTOM COMPLETED UP TO 160+18 AT 7:30 A.M. FEB. 4TH.

ERECTED A SAND BAG DIKE ACROSS BOTTOM AT ABOUT 159+00 TO HOLD SEEPAGE WATER OFF FINISH INVERT UNTIL IT HARDENS.

TEST CYLINDERS MADE P.A.M. FEB. 4TH., WHILE SHOOTING BOTTOM AT ABOUT 159+50.

GRADE PINS BETWEEN 158+60 AND 159+80 SET BY VARNEY AND WERT ON DAY SHIFT. PINS BETWEEN 159+85 AND 160+52³ SET BY LEONARD AND HAGLUND ON NITE SHIFT.

GRADE FROM STA. 159+00 RUNS LEVEL, AT ELEV. 1899.20 FOR 700 FT. TO STA. 166+00.

NOTE: GRAVEYARD SHIFT WILL NOT WORK FRIDAY NITE, BUT WILL START AT MIDNITE SUNDAY NITE.

FEB. 3, '54

PERSONNEL: HRS.

1 SUPT.

8.0

2 FOREMEN

16.0

2 NOZZLEMEN*

16.0

6 OPERATORS

48.0

2 FINISHERS

16.0

14 LABORERS*

120.0

*ONE MAN WORKED DOUBLE

WILSON ACTING NOZZLEMAN ON GRAVEYARD SHIFT.

MATERIAL RECEIVED:

MATERIAL PLACED: 14

DAY SHIFT: 37 BATCHES

SWING SHIFT: 33 BATCHES

NITE SHIFT: 37 BATCHES

TOTAL

ROCK SECTION:

425 SACKS CEMENT.

1284 CU. FT. SAND.

800 LBS. CA. CL.

SAND SHRINKAGE TESTED 11% TONITE.

USED 8 SACKS OF CEMENT FOR GROUT AT N. END TODAY.

INSPECTORS:

VARNEY, WERT - DAY.

LEONARD, HAGLUND - NITE.

EQUIPMENT: HRS.

1 PICK-UP TRUCK 8.0

1 MIXER 24.0

1 GUNITE GUN 24.0

1 WATER PUMP 24.0

1 SNIPLOADER* 8.0

*USED BY SHEA CO.

WEATHER: CLEAR, WARM, VERY LOW HUMIDITY.
WORK PERFORMED: DAY SHIFT COMPLETED
INVERT TO 160+52 BY 10:30 A.M. THEN MOVED
PLANT AND GUN BACK TO CAR HOLE AT 163+10
AND REMOVED RAILS TO 162+98, AND STARTED
GUNITING AGAIN AT 2:15 P.M.

SWING SHIFT: CONTINUED PLACING TOP AND EAST
SIDE UNTIL AIR PRESSURE WENT DOWN AT 10³⁰/₁₁.
CHANGED MOTOR ON GUN WHILE NEW COMPRESSOR
WAS MOVED INTO POSITION AND HOOKED UP.

STARTED USING CASE CO. COMPRESSOR AT MIDNITE.
NITE SHIFT WORKING ON TOP AND SIDES, UP TO
162+85; EAST SIDE COMPLETE. WEST SIDE 1 COAT.
CONSIDERABLE WATER IN WORK AREA TONITE,
COMING IN OVER FINISHED INVERT FROM LEANS
IN NORTHERN HALF OF TUNNEL. WATER 6" OR
MORE DEEP BEHIND SAND BAG DIKE AT 159+00±
TEST CYLINDERS MADE ON NITE SHIFT.

SAND BULKING TESTED 8% TONITE.

FEB. 4, 54.

SAME INSPECTORS.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMAN	16.0	1 MIXER	24.0
2 NOZZLEMEN	16.0	1 GUNITE GUN	24.0
6 OPERATORS	48.0	1 WATER PUMP	24.0
2 FINISHERS	16.0	1 SKI LOADER	8.0
15 LABORERS	120.0	(USED BY SHER CO. N. END)	
		1 COMPRESSOR	8.0

MATERIAL RECEIVED:	60 YARDS SAND.
MATERIAL PLACED IN ROCK SECTION - TYPE "C"	
DAY SHIFT: 19 BATCHES	TOTAL: 316 SACKS CEMENT. 948 CU. FT. SAND. 800 LBS. C.A.C.L.
SWING SHIFT: 28 BATCHES	
NITE SHIFT: 32 BATCHES	

DELAYS: 1¹/₂ HRS. LOST 10³⁰/₁₁ - MIDNITE, COMPRESSOR ^{DOWN.}
GUNITE GUN BROKE DOWN 3³⁰/₁₁ TO 5⁴⁵/₁₁: LOST 2¹/₄ HRS.
TUNNEL LIGHTS OUT: 2¹⁵/₁₁ P.M. TO 3¹⁰/₁₁ P.M. LOST 1 HR.
USED 4¹/₄ SACKS CEMENT TO COMPLETE
GROUTING N. END TODAY.

WEATHER: CLEAR, WARM.

WORK HOURS COVERED BY THIS REPORT: 8 AM. TO MID-NITE.
SIDES AND TOP COMPLETED TO STA. 162+85.

INVERT COMPLETED TO 162+06 BY MIDNITE.

GRADE PINS SET ON DAY SHIFT TO 161+80, AND
BY NITE SHIFT TO 162+75[±]. NOTE: PINS SET
TO GRADE WORK LOOSE AND SETTLE UNDER
WEIGHT OF SCREED BOARD, LEAVING AN
UNEVEN GRADE IN BOTTOM. FOUND SEVERAL
PINS THAT HAD SETTLED FROM .03' TO .21'

TONITE. RESET NEW PINS, DRIVING THEM DOWN
THRU THE GUNITE TO SOLID ROCK, THEN
CUTTING OFF THE TOPS TO GRADE.

TEST CYLINDERS MADE BY DAY SHIFT TODAY.

FEB. 5, '54

SAME INSPECTORS.

PERSONNEL	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICKUP TRUCK	8.0
1 FOREMAN	8.0	1 500 COMPRESSOR	16.0
2 NOZZLEMEN	16.0	1 MIXER	16.0
4 OPERATORS	32.0	1 GUNITE GUN	16.0
1 FINISHER	8.0	1 WATER PUMP	16.0
10 LABORERS	180.0		

MATERIAL RECEIVED: 36 YARDS SAND.

MATERIAL PLACED IN ROCK SECTION:

DAY SHIFT: 42 BATCHES	} TOTAL:	296 SACKS CEMENT:
SWING SHIFT: 32 "		888 CU. FT. SAND.
NITE SHIFT: NO WORK.		600 LBS. C.A. CL. [±]

SAND BULKING 11% TONITE. ADDING 10% EXTRA
SAND IN EACH BATCH, EVERY DAY, TO COMPENSATE
FOR BULKING.

NOTE: GROUT HOLES AT N. PORTAL PATCHED OVER
TODAY - COMPLETE.

WEATHER: CLEAR, WARM, VERY DRY.

NOTE: THE NITE SHIFT STARTED THE WEEK OFF AT MIDNITE, SUNDAY. WEEK ENDS MIDNITE, FRIDAY.

DELAYS: NONE.

INSTRUCTIONS GIVEN: SWEEP OUT N. REINFORCED SECTION AND CLEAN UP FECAL DEPOSIT FROM INVERT OF FINISHED ROCK SECTION NEAR N. END.

WORK PERFORMED: PLACED INVERT UP TO 162+65 AND MOVED PLANT TO BAR PASS HOLE AT 164+75 AND REMOVED TRACKS TO 164+48.

PLACING TOP AND SIDES UP TO STA 164+50±.

SWEEP OUT N. END TODAY AND CLEANED UP EXCREATION FROM INVERT.

USING SAND BAG DIKES TO HOLD WATER BACK FROM WORK AREA.

CORE HOLE #2 WAS PLUGGED BY GUNITE AND HAD TO BE CLEANED OUT FOR INSTALLATION OF A WEEPER VALVE IN SAME.

FEB. 8, '54. SAME INSPECTORS.

PERSONNEL.	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 AIR COMPRESSOR	24.0
3 NOZZLEMEN	24.0	1 MIXER	24.0
6 OPERATORS	48.0	1 GUNITE GUN	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
14 LABORERS	120.0		

NOTE: 1 LABORER WORKED BOTH NITE AND SWING SHIFTS.

MATERIAL RECEIVED: 54 ~~86~~ YARDS SAND.
30 " " FEB. 6TH.

MATERIAL PLACED IN ROCK SECTION TODAY:

NITE SHIFT: 24 WATCHES	} TOTAL:	412 SACKS CEMENT.
DAY " 33 "		1,236 CW. FT. SAND.
SWING " 46 "		800 LBS. C.A.C.L.

ADDING 10% SAND FOR BULKING.

SAND TESTED 6% SHRINKAGE TONITE.

WEATHER: CLEAR WARM TO COOL. NITE FOG.
 DELAYS: LOST $1\frac{1}{2}$ HRS. ON SWING SHIFT
 REPLACING GEAR IN GUNITE GUN.
 WORK PERFORMED: PLACED INVERT AND SIDES
 UP TO $164+25^{\pm}$ BY 2:30 P.M.
 MOVED PLANT AHEAD TO CAR HOLE AT $165+90$
 AND REMOVED RAILS, FROM 2:30 TO 4:30 P.M.
 SWING SHIFT PLACING TOP AND EAST SIDE TO
 STA. $165+65^{\pm}$; SHUT DOWN 9:45 A.M. - 11 $\frac{1}{2}$ P.M.
 WORKING ON GUN.

GRADES SET BY VARNEY AND WERT FROM
 $163+90$ TO $164+30^{\pm}$

TEST CYLINDERS MADE AT 4 A.M. TODAY
 FOR FEB. 8TH. AND AT 7 A.M. FOR FEB. 9TH.

NOTE: A TOTAL OF 35 WEEPER VALVES HAVE
 BEEN INSTALLED IN TUNNEL TO DATE, AND
~~NO MORE WILL BE PLACED UNLESS ADDED~~
~~AT A LATER DATE AFTER JOB IS COM-~~
~~PLETED BY SHER CO. SEE NOTE ON FEB. 10TH.~~

FEB. 9, '54

SAME INSPECTORS.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 GUNITE GUN	24.0
3 NOZZLE MEN	24.0	1 CEMENT MIXER	24.0
6 OPERATORS	48.0	1 AIR COMPRESSOR	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
14 LABORERS	112.0		

MATERIAL RECEIVED: 30 YARDS SAND.

MATERIAL PLACED IN ROCK SECTION.

NITE SHIFT, 39 BATCHES.	} TOTAL:	348 SACKS CEMENT
DAY " : 23 "		1044 CU. FT. SAND.
SWING " : 25 "		700 LBS. C.A. CL.

SAND TESTED 10% BULKING TONITE.

NOTE: COUNTED 591 SACKS OF CEMENT ON
 HAND AT MIDNITE, FEB. 9-10TH., INCLUDING
 TWO BROKEN SACKS.

WEATHER: CLEAR, WARM - NITE COOL, 46°

DELAYS: LOST 1½ HRS. ON NITE SHIFT; LIGHTS
OUT DUE TO SHORT IN LINE. LOST 6½ HRS. ON
NITE AND DAY SHIFTS DUE TO MOTOR BREAK
DOWNS ON GUNITE GUN.

WORK PERFORMED: PLACED TOP AND SIDES
TO 165+55 AND INVERT TO 165+50.

MOVED PLANT AHEAD TO STA. 167+40,
STARTING AT 10 P.M., AND REMOVED RAILS
TO 167+18. PUMPED OUT WATER AND TOOK
OUT WOOD PINS UP TO END OF TRACK.

VARNEY AND WERT SET GRADE PINS UP
TO 165+55 ON DAY SHIFT. LEONARD AND
HAGLUND CHECK SUB. GRADE AS TRIMMED
FROM 165+55 TO 167+15 - FOUND IT O.K.

SUB. CONTR. SUPT. SAID HE EXPECTS TO BE
THRU WITH ROCK SECTION BY MONDAY NITE,
FEB. 15TH., AND WISHES TO SHUT DOWN WHILE
STEEL IS BEING PLACED IN S. END.

TEST CYLINDERS MADE BY DAY SHIFT, TODAY.
TOOK CYLINDERS FOR JAG. THRU 8TH. TO DAY TODAY.

FEB. 10, 54.

SAME INSPECTORS.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1-500 COMPRESSOR	24.0
3 NOZZLEMEN	24.0	1 MIXER	24.0
6 OPERATORS	48.0	1 GUNITE GUN	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
14 LABORERS	112.0		

MATERIAL RECEIVED: 36 YARDS SAND.

MATERIAL PLACED IN ROCK SECTION.

NITE SHIFT: 13 BATCHES.	} TOTAL:	312 SACKS CEMENT
DAY " :40 "		936 CU. FT. SAND.
SWING " :25 "		600 LBS. CA. CL.

SAND TESTED 10% BULKING TONITE.

NOTE: FOUND SPRING AT WEST TOE, STA. 165+98,
TONITE, AFTER WATER PUMPED OUT. SET
WEEPER VALVE #36 IN VERTICAL POSITION IN
SAME, TO RELIEVE WATER WHEN INVERT PLACED.

WEATHER: CLEAR, WARM.

DELAYS: MIXER BROKE DOWN 2 HRS. ON SWING
SHIFT. ONE COMPRESSOR DOWN 1 HR. ON SWING
SHIFT - CHANGING FILTERS - SLIGHT SLOW UP.
WORK PERFORMED. NITE SHIFT COMPLETED
MOVING PLANT AT 1 A.M. AND STARTED TOP
AND EAST SIDE.

DAY SHIFT COMPLETED TOP AND BOTH SIDES
UP TO STA. 167+10, AND SET GRADE PINS.
SWING SHIFT PLACED INVERT FROM 165+50
TO 166+80 BETWEEN 6:45 P.M. AND MIDNITE.

WATER FROM SPRING IN BOTTOM AT 165+98
CAUSED SOME TROUBLE IN FINISHING INVERT.
TEST CYLINDERS MADE BY DAY SHIFT TODAY.

FEB. 11, '54

INSPECTORS:
WEAT - Mc DERMOTT - DAY,
LEONARD - HAGLUND - NITE.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK-UP TRUCK	8.0
2 FOREMEN	16.0	1 COMPRESSOR	24.0
3 NOZZLEMEN	24.0	1 MIXER	24.0
6 OPERATORS	48.0	1 GUNITE GUN	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
14 LABORERS	112.0		

MATERIAL RECEIVED. 6036 YARDS SAND.

MATERIAL PLACED IN ROCK SECTION.

NITE SHIFT: 35 BATCHES	} TOTAL:	500 SACKS CEMENT.
DAY " 48 "		1500 CU. FT. SAND.
SWING " 42 "		1,000 LBS. C.A.C.L.

SAND TESTED 11% BULKING TONITE.

SET WEEPER VALVE #97, IN PIN HOLE AT 168+14
TOP EAST SIDE - CONSTANT DRIP FROM THIN
QUARTZ VEIN.

WEATHER: CLEAR, COOL.

DELAYS: LOST $9\frac{1}{2}$ HRS. FROM 12:30 A.M. TO 2:30 A.M. FROM 6:30 A.M. TO 8 A.M.

WHEN GASKET BLEW OUT IN GUNITE GUN.

WORK PERFORMED: NITE SHIFT PLACED

INVERT UP TO 167+08 AT 1:30 A.M. THEN

SHUT DOWN AND MOVED PLANT AHEAD TO

CAR PASS HOLE AT 169+20 AND REMOVED

TRACKS TO 169+02. RESUMED GUNITING AT

4:30 A.M. ON TOP AND EAST SIDE.

DAY SHIFT CONTINUED WORKING TOP & SIDES.

SWING SHIFT COMPLETED TOP AND SIDES

UP TO ABOUT 168+85, AND SET PINS FOR

GRADE IN FLOOR. OPENED UP SOME OF THE

DIKES AND LET WATER RUN DOWN TO THE

PUMP FOR USE IN GUNITING.

NOTE: WEEPER VALVE #37 WAS SET BY DON

LEONARD ON THE NITE SHIFT, IN A LEAKING

PIN HOLE AT STA. 168+14, TOP, E. SIDE,

VALVE SET JUST AHEAD OF GUNITE WORK -

COULD NOT WAIT FOR SHER CO. MAN ON DAY SHIFT.

FEB. 12, '54
(LEGAL HOLIDAY)

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICKUP TRUCK	8.0
2 FOREMEN	16.0	1 AIR COMPRESSOR	24.0
3 HOZZLE MEN	24.0	1 MIXER	24.0
6 OPERATORS	48.0	1 GUNITE GUN	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
14 LABORERS	112.0		

MATERIAL RECEIVED: 60 YARDS SAND.

MATERIAL PLACED: IN ROCK SECTION.

NITE SHIFT: 19 BATCHES	} TOTAL:	316 SACKS CEMENT.
DAY " 35 "		948 CU. FT. SAND.
SWING " 25 "		600 LBS. CA. CL.

NOTE: NITE SHIFT MIXED 21 BATCHES, BUT DUMPED

1 CAR LOAD (2 BATCHES) IN BOTTOM OF TUNNEL

AT 1:30 A.M., WHEN READY TO MOVE PLANT.

NO PAY FOR THESE 2 BATCHES.

MATERIAL WASTED: 8 SACKS CEMENT, ABOVE.

INSPECTORS:
SAME AS FEB. 11TH.

WEATHER: CLEAR, COOL, MUDDY. RAINED SAT.
AND SUNDAY - ABOUT 2" FROM APPEARANCES.

DELAYS: NONE.

WORK PERFORMED: DAY SHIFT PLACED BOTTOM
TO ABOUT 168+00 AND COMPLETED LAST
15 FT. OF TOP AND SIDES UP TO END OF ROCK
SECTION (TYPE "C"). ERECTED TIMBER FORMS
12' LONG AT 170+80, TO SUPPORT ARCH MAT-
ERIAL IN HEAVY OVER BREAK AREA.

SWING SHIFT COMPLETED INVERT IN ROCK
SECTION ABOUT 10 P.M. AND MOVED PLANT
AHEAD TO ABOUT 170+40 AND STARTED WORK
IN "D" SECTION, FILLING IN OVERBREAK HOLES.

TEST CYLINDERS MADE BY DAY SHIFT TODAY.

NOTE: TIMBER FORMS CUT FROM OLD 2" X 12" PLANKS
AND BOLTED TOGETHER AT 2, WITH SPLICE PLATES
MADE OF $\frac{5}{8}$ " PLYWOOD, 6" X 36" FOR STIFFENERS ARE
BEING USED TO SUPPORT ARCH. CUT TO A 3' 8 $\frac{1}{2}$ "
RADIUS AND COVERED WITH 2" X 6" PLANKS. COVER
ARCH FROM A POINT 1 FT. ABOVE SPRINGLINE.

FEB. 15, '54

INSPECTORS: SAME.

PERSONNEL:	HRS.	EQUIPMENTS	HRS.
1 SUPT.	10.0	1 PICK UP TRUCK	10.0
2 FOREMEN	16.0	1 MIXER	16.0
2 NOZZLEMEN	16.0	1 GUNITE GUN	16.0
5 OPERATORS	40.0	1 COMPRESSOR	16.0
1 FINISHER	8.0	1 WATER PUMP	16.0
9 LABORERS	72.0	1 SHIP LOADER	16.0

MATERIAL RECEIVED:

24 YARDS FEB. 13.
12 YARDS SAND,
LUMBER FOR FORMS.

MATERIAL PLACED: ROCK SECTION, TYPE "C":

54 BATCHES:

216 SACKS CEMENT.
648 CU. FT. SAND.
400 LBS. C.A.C.L.

TYPE "D" SECTION:

14 BATCHES:

56 SACKS CEMENT
168 CU. FT. SAND.
100 LBS. C.A.C.L.

SAND TESTED 8% BULKING TONITE.

WEATHER: CLEAR, COOL.

DELAYS: NONE.

WORK PERFORMED: FILLING IN CAR SIDINGS AND
LARGE OVERBREAK HOLDS IN TYPE "D"
SECTION AT S. END. COMPLETED FILLING
SPACE OVER FORMS SET BETWEEN 170+79
AND 170+91.

NO TEST CYLINDERS MADE TODAY.

FEB. 16, '54

INSPECTORS:
SAME AS FEB. 11.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1-PICKUP TRUCK	8.0
2 FOREMEN	16.0	1 COMPRESSOR	24.0
3 NOZZLE MEN	24.0	1 MIXER	24.0
6 OPERATORS	48.0	1 GUNITE GUN	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
13 LABORERS	104.0	1 SKIPLoader	24.0

MATERIAL RECEIVED: 36 YARDS SAND.

MATERIAL PLACED IN TYPE "D" SECTION, S. END.

NITE SHIFT: 27 BATCHES:	} TOTAL:	340 SACKS CEMENT.
DAY " 26 "		1020 CU. FT. SAND.
SWING " 32 "		700 LBS. CA. CL.

SAND TESTED 8% BULKING TONITE.

WEATHER: CLEAR TO OVERCAST; RAIN 10:30 P.M.
DELAYS: GUNITE POT DOWN SEVERAL TIMES WITH
A CLOGGED MOTOR. SWING SHIFT SHUT DOWN 11 A.M.
TO REMOVE REBOUND.

WORK PERFORMED: FILLING IN OVERBREAK HOLES
IN SOUTH REINFORCED SECTION, SHOOTING OVER
WOODEN FORMS IN WORST PLACES. MATERIAL
KEPT OUTSIDE OF 3' 10" RADIUS. REMOVED
EXCESS REBOUND TO THE DUMP IN MUCK
CARS. 2½ CAR LOADS REMOVED AT END OF
SWING SHIFT.

TWO TEST CYLINDERS MADE ABOUT 6 A.M. TODAY
AND MARKED 2-16. TWO MORE MADE BY
DAY SHIFT MARKED 2-17.

REMOVED ABOUT 185 B.F. OF LOOSE LAGGING
FROM BEHIND STEEL RIBS BEFORE GUNITING
TOP AND SIDES.

FEB. 17, 54.

PERSONNEL:	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 AIR COMPRESSOR	24.0
3 NOZZLEMEN	24.0	1 MIXER	24.0
6 OPERATORS	48.0	1 GUNITE GUN	24.0
1 FINISHER	8.0	1 WATER PUMP	24.0
13 LABORERS	104.0	1 SKID LOADER	24.0

MATERIAL RECEIVED: 1418 YARDS SAND.

MATERIAL PLACED IN S. END, TYPE "D".

NITE SHIFT: 16 BATCHES.	} TOTAL:	200 SACKS CEMENT.
DAY SHIFT: 17 "		600 CU. FT. SAND.
SWING SHIFT: 17 "		400 LBS. C.A.C.L.

SAND TESTED 11% SHRINKAGE TODAY.

INSPECTORS:
SAME AS FEB. 11.

WEATHER: LIGHT RAIN, HEAVY AT TIMES.

DELAYS: MOISTURE IMPAIRED USE OF GUNITE GUN, CAUSING FREQUENT PLUGS.

WORK PERFORMED: FLASHED FACE OF APPROACH CUT ABOVE S. PORTAL TO HOLD IT IN PLACE WHEN FALSE PORTAL SHED IS REMOVED.

CONTINUED LINING INSIDE OF S. END BEHIND AND ABOVE STEEL RIBS. HEAVY RAIN AT 3:30 A.M.

SHUT DOWN AT 6 A.M. AND REMOVED ALL EQUIPMENT FROM INSIDE TUNNEL.

DISCONTINUED USE OF CASE CO. AIR COMPRESSOR AT 6 A.M. TODAY.

NO GUNITE WORK ON DAY OR SWING SHIFTS. HEAVY SHOWER AGAIN AT 7 A.M.

NOTE: NO MORE GUNITE WORK UNTIL FEB. 22, TO PERMIT PLACING OF REINFORCING STEEL.

FEB. 18.

INSPECTORS:
LEONARD HAGLUND.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.		1 PICK-UP TRUCK.	
1 FOREMAN	8.0	1 MIXER	6.0
1 HOZZLEMAN	8.0	1 GUNITE GUN	6.0
2 OPERATORS	16.0	1 WATER PUMP	6.0
4 LABORERS	32.0	1 COMPRESSOR	6.0

MATERIAL RECEIVED: NONE.

MATERIAL PLACED: IN AND AROUND S. PORTAL.

NITE SHIFT: 15 BATCHES: 60 SACKS CEMENT.
180 CU. FT. SAND.
100 LBS. CA. CL.

WEATHER: CLEAR, WARM, VERY LOW HUMIDITY.

DELAYS: NONE.

WORK PERFORMED: DAY SHIFT MOVED PORTABLE COMBINATION MIXER-GUN INTO POSITION ABOUT 30 FT. OUTSIDE OF S. PORTAL. LAID DOWN A WOODEN PLATFORM AND MOVED IN ABOUT 300 SACKS OF CEMENT FROM STORAGE AREA NEXT TO LINE AT STA. 178+00. MOVED IN SAND AND OTHER EQUIPMENT AND SET UP READY TO START WORK.

SWING SHIFT PLACED GUNITE IN LOWER EAST $\frac{1}{4}$ QUADRANT FROM STA. 169+00 TO 169+65, COVERING THE STEEL COMPLETELY ON THE FIRST PASS OVER IT. TWO MEN WORKED ALL SHIFT, REMOVING LOOSE MUCK FROM BENEATH STEEL, AHEAD OF GUNITE WORK. PERROUND IS BEING SHOVELED INTO DEEP HOLES ALONG WEST TOE, AS IT OCCURS.

TWO CYLINDERS MADE AT END OF WORK TONITE, MARKED 2-22.

FEB. 22, '54

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FOREMAN	8.0	1 FLAT BED TRUCK	8.0
2 NOZZLEMEN	16.0	1 MIXER-GUN	6.0
3 OPERATORS	24.0	1 WATER PUMP	6.0
1 FINISHER	8.0	1 SHIP LOADER	4.0
4 LABORERS	32.0	1 AIR COMPRESSOR	8.0

MATERIAL RECEIVED: 30 YARDS SAND.

MATERIAL PLACED IN S. END-TYPE "D" SECTION.

SWING SHIFT: 48 BATCHES \times 3's. 144 SACKS CEMENT
432 CU. FT. SAND.
300 LBS. CA. CL.

SAND SHRINKAGE TESTED 10% TONITE.

ADDING 10% SAND TO EACH BATCH FOR SHRINKAGE.

INSPECTORS:

WERT, McDERMOTT-DAYS.
LEONARD, HAGLUND-NITES.

WEATHER: CLEAR, WARM, VERY DRY.

DELAYS: DAY SHIFT LOST 45 MINUTES - MIXER DOWN.

WORK PERFORMED: PLACING MATERIAL IN BOTTOM AND UP BOTH SIDES TO ABOUT 45% ABOVE THE SPRINGLINE, FROM 169+00 TO 170+60. SHOVELING REBOUND INTO HOLES IN BOTTOM AHEAD OF WORK. FINISHER ON NITE SHIFT MOVED GUIDE WIRES FROM 1" TO 3" BETWEEN STA. 169+50± AND 171+00 IN ORDER TO EQUALIZE CEMENT COVER OVER STEEL AND GIVE A MINIMUM OF 4" COVER IN ALL PLACES.

SOME REBOUND THAT HAD TAKEN ITS INITIAL SET BEFORE BEING MOVED WAS SHOVELED UP INTO PILES ON FLOOR TO BE HAULED OUT OF THE TUNNEL FOR DISPOSAL.

FEB. 23, '54

INSPECTORS: SAME AS 2/22 EXCEPT LEONARD WORKED ALONE FROM 8 P.M. TO MIDNITE.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 Supt.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 MIXER-60H	24.0
3 NOZZLEMEN	24.0	1 WATER PUMP	24.0
5 OPERATORS	40.0	1 AIR COMPRESSOR	24.0
2 FINISHERS	16.0	1 FLAT BED TRUCK	24.0
12 LABORERS	96.0		

MATERIAL RECEIVED: 60 YARDS SAND.

MATERIAL PLACED IN S. END - TYPE "D" SECTION:

NITE SHIFT: 6 BATCHES	} TOTAL:	549 SACKS CEMENT.
DAY " : 54 "		1,647 CU. FT. SAND + 10%.
SWING " : 68 "		1,000 LBS. CA. CL.

3 SACKS CEMENT PER BATCH:

SAND TESTED 9% BULKING TONITE.

INSTRUCTIONS GIVEN: MOVE GUIDE WIRES TO GIVE A MINIMUM OF 4" COVER OVER STEEL - MOVE DIAGONALLY OPPOSITE WIRE SAME AMOUNT TO KEEP INSIDE DIAMETER AT 6'4"

WEATHER: CLEAR, HOT, VERY DRY.

PLACING INVERT UP TO 171+25, AND FILLING IN SIDES AND SHOOTING MATERIAL IN ARCH OVER 8' LONG PIECES OF PLYWOOD BRACED UP AGAINST REINFORCING STEEL.

DAY SHIFT DOWN FROM 3:45 TO 4:30 MOVING REBOUND. SWING SHIFT REMOVING REBOUND UNTIL 5:30 P.M. AND AGAIN 11 P.M. TO MIDNITE.

NO TEST CYLINDERS MADE TODAY.

NOTE: SNER CO. MECH. AND INSPECTOR LEONARD EXTENDED AIR VENT PIPE 60 FT. INTO TUNNEL AT 2 A.M. TO IMPROVE VENTILATION FOR MEN WORKING INSIDE. ALSO MOVED PLANKS IN TO MAKE A WALKWAY OVER STEEL IN ORDER TO REMOVE REBOUND IN WHEEL DORROWS.

FEB. 24, '54

INSPECTORS:
WERT - 176 DEANOTT - DAYS.
LEONARD - NITES.

PERSONNEL:	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICKUP TRUCK	8.0
2 FOREMEN	16.0	1 AIR COMPRESSOR	24.0
3 NOZZLEMEN	24.0	1 MIXER-GUN	24.0
6 OPERATORS	48.0	1 WATER PUMP	24.0
2 FINISHERS	16.0		
14 LABORERS	112.0		

MATERIAL RECEIVED 66 YARDS SAND.

MATERIAL PLACED IN S. END - TYPE "D" SECTION.

NITE SHIFTS 80 BATCHES	} TOTAL:	599 SACKS CEMENT
DAY " 58 "		1737 CU. FT. SAND.
SWING " 55 "		1100 LBS. C.A.C.L.

SAND TESTED 7% RULKING TONITE.

NOTE: TEMPERATURE IN WORK AREA OF TUNNEL WAS 88° AT 4 A.M. TODAY.

WEATHER: CLEAR, WARM; COOLER EVENING.

DELAYS: DAY SHIFT DOWN 2:45 - 4:30 P.M.
WITH BROKEN CHAIN ON MIXER.

WORK PERFORMED: SHOOTING INVERT AND
SIDES UP TO 171+49. PLACING ARCH OVER
PLYWOOD FORMS BRACED UP AGAINST STEEL
IN LARGE OVERBREAK HOLES BETWEEN
169+00 AND 170+00.

NITE SHIFT SHUT DOWN 2 A.M. TO 4:30 A.M. REMOVING
REBOUND. HARD MATERIAL WHEELED OUTSIDE
AND DUMPED IN APPROACH CUT.

DAY SHIFT DOWN 2:45 - 4:30 REMOVING REBOUND.

SWING SHIFT DOWN 6:45 TO 7:15 CHANGING HOSES
AND REMOVING REBOUND. TWO LABORERS ON
DAY SHIFT AND SWING SHIFT MOVING GOOD
REBOUND FORWARD INTO DEEP BOTTOM
BETWEEN 171+30 AND 171+80.

NO REBOUND TO BE ALLOWED IN BOTTOM FROM
171+80 TO S. PORTAL AT 172+32 PER ORDERS
OF CARL RANKIN, CONSULTING ENGINEER.

FEB. 25, '54

INSPECTORS:

SAME AS 2/24.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 FLAT BED TRUCK	8.0
3 NOZZLEMEN	24.0	1 AIR COMPRESSOR	24.0
6 OPERATORS	48.0	1 MIXER-GUN	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
15 LABORERS	120.0		

MATERIAL RECEIVED: 60 YARDS SAND.

NOTE: SAND FROM SANTEE PIT BEING SUBSTITUTED
FOR ARNELL'S SAND, DUE TO A BREAKDOWN AT
ARNELL'S PLANT TODAY. 4 LOADS DELIVERED TONITE.

MATERIAL PLACED: IN TYPE "D" SECTION, S. END.

NITE SHIFT: 41 BATCHES.	} TOTAL:	417 SACKS CEMENT
DAY SHIFT: 38 "		1,251 CU. FT. SAND.
SWING SHIFT: 60 "		800 LBS. C.A.C.L.

TEST CYLINDERS MADE AT 4:30 AM MARKED 2/24.

" " " " 8:30 P.M. " 2/25.

SAND TESTED 8% BULKING TONITE.

WEATHER: CLEAR, COOL.

WORK PERFORMED: INVERT COVERED OVER STEEL TO STA. 172+00. CONTINUED WORK ON SIDES AND TOP, SHOOTING TOP OVER PLYWOOD FORMS. WHEELING ALL REBOUND OUTSIDE AND DUMPING IT BEHIND 36" DRAIN LINE.

BOTH CUT OFF COLLARS LINED WITH GOOD MATERIAL TODAY AND TONITE. NO REBOUND LEFT IN EITHER COLLAR OR IN BOTTOM BETWEEN 171+80 AND S. PORTAL.

CUT OFF COLLARS ARE AT 171+86.7 AND 171+26.5, TO CENTER OF COLLARS.

S. PORTAL $\frac{3}{8}$ " PLATE STEEL RING SET TO CORRECT POSITION TODAY AND TIE BARS WELDED TO BOTH LONGITUDINAL AND TRANSVERSE STEEL, BEING SPOT-WELDED IN FOUR OR MORE PLACES ON EACH BAR. M. WOLSTENHOLME, SHEA CO. MECHANIC, DID THE WELDING.

FEB. 26, '54.

INSPECTORS:
SAME AS 2/24.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 5 TON TRUCK	8.0
3 NOZZLEMAN	24.0	1 MIXER-GUN	24.0
6 OPERATORS	48.0	1 AIR COMPRESSOR	24.0
2 FINISHERS	16.0	1 WATER PUMP	24.0
15 LABORERS	120.0		

MATERIAL RECEIVED: 42 YARDS SAND.

MATERIAL PLACED: IN TYPE "D" SECTION, S. END.		
NITE SHIFT: 58 BATCHES.	} TOTAL:	
DAY " 67 "		549 SACS CEMENT.
SWING " 58 "		1647 CU. FT. SAND.
		1100 LBS. CA. CL.

SAND SHRINKAGE TESTED 9% TONITE.
ADDING 10% OF SAND PER BATCH FOR SHRINKAGE.

PORTAL RING #6 TIE BARS WELDED TO OTHER STEEL AT NOON TODAY BY SHEA CO. MECHANIC.

WEATHER: CLEAR - WARM.

1 FOREMAN AND 2 LABORERS WORKING IN TUNNEL
ALL DAY, REMOVING REBOUND. 1 OPERATOR
DOING MAINTENANCE WORK ON EQUIPMENT.
1 FOREMAN, 1 OPERATOR AND 1 LABORER WORKED
4 HRS. LOADING UP TRUCK WITH EQUIPMENT
TO BE RETURNED TO L.A.

FEB. 27, '54
SATURDAY.

PERSONNEL:	HRS.	EQUIPMENT	HRS.
1 FOREMAN	8.0	1 ELECT. GENERATOR	8.0
1 FOREMAN	4.0	1 5TON TRUCK	4.0
2 OPERATORS	12.0		
3 LABORERS	20.0		

INSPECTOR:
LEONARD - 2½ HRS.

MATERIAL PLACED IN FEB.
ROCK SECTION, TYPE "C"

TOTALS: 3,692 SACKS CEMENT.
11,076 CU. FT. SAND + 10%
7,500 LBS. C.A.C.

TOTAL: 447.52 CU. YDS. GUNITE.

TYPE "D" SECTION - S. END.

TOTALS: 2,894 SACKS CEMENT.
8,682 CU. FT. SAND + 10%
5,600 LBS. C.A.C.

TOTAL: 350.78 CU. YARDS GUNITE.

NOTE: 10% OF SAND ADDED TO COMPENSATE FOR ROLLING.

MARCH 1, '54.

WEATHER: CLEAR, COOL.

INSTRUCTIONS RECEIVED FROM P. BEERMAN, THRU RES. ENG. TO REMOVE ALL LAGGING POSSIBLE BEFORE GUNITING THE ARCH IN.

SHEA CO. REMOVED A FEW PIECES OF LAGGING BETWEEN RIRS #20 TO #28 TODAY, AND INSPECTOR LEONARD REMOVED ABOUT 400 BOARD. FT. OF LAGGING TONITE, FROM BETWEEN RIRS #9 TO #13. ONLY 9 PCS. LEFT IN PLACE BETWEEN RIR #9 AND RIR #13.

CASE CO. CONTINUED PLACING SIDES AND ARCH TODAY, BRING THE MATERIAL OUT TO FINISH GRADE WIRES. TWO MEN ON EACH SHIFT WHEELING OUT REDOUND AND DUMPING IT BEHIND AND ON TOP OF 36" DRAIN LINE.

NOTE: DAY SHIFT INSPECTORS NOW WORKING 8 A.M. TO 4:30 P.M. NITE SHIFT INSPECTOR WORKING FROM 4:30 P.M. TO 12:30 A.M.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SOFT.	8.0	1 PICK UP TRUCK	8.0
1 FOREMAN	8.0	1 5 TON TRUCK	8.0
2 NOZZLEMEN	16.0	1 AIR COMPRESSOR	16.0
4 OPERATORS	32.0	1 MIXER-GUN	16.0
2 FINISHERS	16.0	1 WATER PUMP	16.0
9 LABORERS	72.0		

MATERIAL RECEIVED

24 YARDS ON FEB. 27-28.

30 YARDS SAND.

MATERIAL PLACED IN S. END

318 SACKS CEMENT.

DAY SHIFT: 58 BATCHES.

SWING SHIFT: 48 BATCHES.

TOTAL:

954 CU. FT. SAND.

600 LBS. CA. CL.

SAND TESTED 11% BULKING TONITE.

NOTE: WORKING ONLY TWO SHIFTS PLACING GUNITE, STARTING TODAY. THREE MEN WILL WORK ON GRAVEYARD SHIFT, REMOVING REDOUND.

NOTE: INSPECTOR WERT WAS ABSENT TODAY.

WEATHER: CLEAR, WARM.

SHER CO. FASTENED 11 PIECES OF ALUMINUM WIRE, ABOUT $\frac{1}{8}$ " DIA., ONTO THE REINFORCING STEEL, TO ACT AS GUIDE WIRES WHEN DRILLING GROUT HOLES, TO AVOID HITTING REINFORCING STEEL WITH THE DRILL.

CASE CO. CONTINUED LINING THE SOUTH REINFORCED SECTION TODAY, FINISHING THE SIDES AND TOP TO GUIDE WIRES FROM STA. 169+00 TO ABOUT 170+00, AND CONTINUED BUILDING UP THE SIDES AND ARCH TO 172+00, AND PLACED THE ROUGH INVERT OUT TO THE S. PORTAL AT 172+82, AND FILLED IN UNDER THE $\frac{3}{8}$ " PLATE RING, REMOVING ALL LAGGING FROM AROUND LOWER HALF OF RING, AS THE CEMENT WAS SHOT IN.

TWO MEN ON EACH SHIFT AND THREE ON GRAVEYARD SHIFT ENGAGED IN REMOVING REBOUND FROM TUNNEL AND DUMPING IT BEHIND STORM DRAIN LINE.

MARCH 2, '54

SAME INSPECTORS.

PERSONNEL.	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 AIR COMPRESSOR	16.0
2 NOZZLEMEN	16.0	1 MIXER-GUN	16.0
4 OPERATORS	32.0	1 WATER PUMP	16.0
2 FINISHERS	16.0	1 5-TON TRUCK	8.0
11 LABORERS	88.0		

MATERIAL RECEIVED: 24 YARDS SAND.

MATERIAL PLACED: S. END.	399 SACKS CEMENT.
DAY SHIFT: 66 BATCHES.	} TOTAL: 1,197 CU. FT. SAND. 800 LBS. C.A.C.L.
SWING SHIFT: 67 " "	

SAND TESTED 8% BULKING TONITE.

NOTE: SHER CO. REMOVED 52 R.F. OF LAGGING TODAY.
LEONARD REMOVED 88 R.F. OF R.R. TIES TONITE, FROM A HOLE IN ROOF ABOVE PISGS #25 AND #26.

WEATHER: CLEAR, COOL - CLOUDY AT NITE.

ERECTED PLYWOOD FORM UNDER STEEL IN ARCH BETWEEN RIMS 25 AND 26 AND FILLED IN CAVITY LEFT WHEN LAGGING WAS REMOVED LAST NITE. CONTINUED BRING SIDES AND ARCH OUT TO FINISH GUIDE WIRES. SWING SHIFT REMOVED REMAINING LAGGING FROM OVER PORTAL AND FILLED IN THE BALANCE OF THE ARCH ABOVE THE $\frac{3}{8}$ " PLATE RING.

CONTINUED WHEELING OUT PERROUND ON ALL THREE SHIFTS, ESTIMATED 40% OF MATERIAL SHOT INTO ARCH IS PERROUND.

CONTINUE PUMPING WATER OUT OF TUNNEL ON SWING SHIFT, EVERY NITE, RUNNING IT THRU 36" DRAIN LINE TO HELP REMOVE ACCUMULATED MUD FROM PIPE.

MR. BERGMAN VISITED THE WORK IN COMPANY WITH RESIDENT ENGINEER TODAY; NO COMMENT TO DAY SHIFT INSPECTOR RELATIVE TO THE WORK.

NOTE: NO TEST CYLINDERS MADE TODAY - OVERLOOKED.

MARCH 3, 54.

SAME INSPECTORS.

PERSONNEL.	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 5-TON TRUCK	8.0
2 NOZZLEMEN	16.0	1 AIR COMPRESSOR	16.0
4 OPERATORS	36.0*	1 MIXER-60H	16.0
2 FINISHERS	16.0	1 WATER PUMP	16.0
11 LABORERS	88.0		

* C. VAEELAND, MIXER OPER., WORKED 12 HRS TODAY.

MATERIAL RECEIVED: 48 YARDS SAND.

MATERIAL PLACED: S. END. 285 SACKS CEMENT.

DAY SHIFT: 46 BATCHES. 855 CU. FT. SAND.

SWING SHIFT: 49 BATCHES. 600 LBS. CA. CL.

NOTE: CASE CO. 5-TON TRUCK, AND DRIVER, USED TO HAUL 250 SACKS OF CEMENT TO THE JOB FROM SUTHERLAND DAM. RAN SHORT OF CEMENT HERE AND BORROWED 250 SACKS FROM BENT & DALEY.

WEATHER: CLEAR, COOL; FOG AT NITE.

WORK PERFORMED: PLACED TWO SETS OF FORMS UNDER REMAINING CAVITIES AND COMPLETED FILLING IN TOP. FINISHED LINING TOP AND SIDES TO FINISH GRADE WIRES. SAUT DOWN AT 11 A.M. TO GET LAST OF REBOUND OUT OF TUNNEL. GRAVEYARD SHIFT TONITE WILL FINISH WHEELING OUT REBOUND, AND BLOW DOWN ENTIRE LENGTH OF BOTTOM IN "D" SECTION WITH COMPRESSED AIR TO GET IT CLEAN, PREPARATORY TO PLACING FINAL INVERT TOMORROW. FROM 2" TO 3" OF BOTTOM REMAINS TO BE PLACED AND FACE OF PORTAL AND INSIDE OF PORTAL RING REMAINS TO BE FINISHED.

NOTE: IN SOME PLACES THE INSIDE DIAMETER IS ONLY SLIGHTLY OVER 6 FT., ESPECIALLY AT THE SPRINGLINE, BUT MEASURES THE PLANNED 6'4" ON DIAGONALS, AND VERTICAL. WHEN CHECKED TO TEMPLATE, IT SHOWS THE SIDES TO BE FLATTENED SOMEWHAT AT SPRINGLINE,

MARCH 4, 54.

SAME INSPECTORS.

PERSONNEL:	HRS.	EQUIPMENT.	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
2 FOREMEN	16.0	1 5TON TRUCK	8.0
2 NOZZLEMEN	16.0	1 AIR COMPRESSOR	16.0
2 FINISHERS	16.0	1 MIXER-GUN	15.0
4 OPERATORS	32.0	1 WATER PUMP	15.0
11 LABORERS	88.0		

MATERIAL RECEIVED: 24 YARDS SAND.

MATERIAL PLACED: S. END. 174 SACKS CEMENT.

DRY SIFT: 36 BATHNES	} TOTAL:	522 CU. FT. SAND.
SWING SIFT: 22 "		400 LBS. C.A.C.L.

SAND TESTED 8% SHRINKAGE TONITE.

NOTE: 4 TEST CYLINDERS MADE EARLY FORENOON - TWO MARKED 3-3 AND TWO MARKED 3-4.

WEATHER: CLEAR, WARM.

WORK PERFORMED: SET GRADE PINS IN BOTTOM ON
2, AND SHOT IN FINISH INVERT FULL LENGTH
OF TYPE "D" SECTION. LINED INSIDE OF PORTAL
RING, HOLDING MATERIAL BACK 8" ON INSIDE.
FLASHED FINISH COAT ON OUTSIDE FACE OF
PORTAL. GUNITE WORK COMPLETED AT 4⁴⁵ P.M.
FINISHER WORKED UNTIL 5:30 P.M.
TEST CYLINDERS SHOT AT 4:30 P.M.

FOLLOWING MATERIAL LEFT ON JOB AT END OF
WORK TODAY:

220 SACKS CEMENT - UNBROKEN.

73 - 100 LB. SACKS C.A.C.L.

ABOUT 5 YARDS SAND - SCATTERED.

MARCH 5, 54.

INSPECTORS:
LEONARD, WERT, AND
McDERMOTT ON DAY
SHIFT.

PERSONNEL:	HRS:	EQUIPMENT:	HRS:
1 PROJECT MGR.	4.0	1 PICK UP TRUCK	8.0
1 SOFT.	9.0	1 MIXER-GUN	8.0
2 FOREMEN	17.0	1 COMPRESSOR	8.0
2 NOZZLEMEN	13.0	1 WATER PUMP	8.0
3 OPERATORS	22.0		
1 FINISHER	9.0		
7 LABORERS	56.0		

NO MATERIAL RECEIVED TODAY.

MATERIAL PLACED: S. END: 141 SACKS CEMENT.

DAY SHIFT: 47 BATCHES. 423 CU. FT. SAND.

200 LBS. C.A.C.L.

NOTE: ONE FINISHER WILL BE ON JOB TOMORROW,
SPRAYING S. REINFORCED SECTION WITH HUNT'S
PROCESS FOR CURING.

SAT. MARCH 6.

NOTE: FINISHER WORKED 6 HRS. TODAY, SPRAYING
TYPE "D" SECTION WITH HUNT'S PROCESS.

MARCH 6, 54. LEONARD.

MATERIAL PLACED IN MARCH:

1ST.	918	SACKS	CEMENT.	
2ND.	399	"	"	
3RD.	285	"	"	
4TH.	174	"	"	
5TH.	<u>141</u>	"	"	159.63 CU. YDS. GUNITE.
	1317	"	"	TOTAL IN GUNITE.
	13	"	"	GROUT AT N. PORTAL.
	110	"	"	GROUT AT S. PORTAL.
	<u>2</u>	"	"	PATCHING WORK.

1,442 TOTAL SACKS CEMENT PLACED IN MARCH.

WEATHER: CLEAR, WARM.

WORK PERFORMED, CONT'D.

CASE CO. TRUCK USED TO RETURN
190 SACKS OF CEMENT TO DAM.

FINISHER PATCHED BAD SPOTS IN
TUNNEL, AND PATCHED SMALL HOLES WHERE
GUIDE WIRE PINS WERE CUT OUT IN S. END.

MARCH 8, 54 INSPECTOR: LEONARD.

PERSONNEL:	HRS.	EQUIPMENT:	HRS.
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FOREMAN	8.0	1 STON TRUCK	8.0
1 EQUIP. OPER.	8.0	1 SHIP LOADER	8.0
1 FINISHER	8.0		
4 LABORERS	32.0		

MATERIAL REMOVED: 70 SACKS CA. CL.
3 SACKS BROKEN, AND LEFT BEHIND AS WASTE.

WORK PERFORMED: CUTTING OUT WIRES THAT
WERE USED TO HOLD LIGHT LINES. REMOVED
SEVEN SAND BAG DIKES THAT HAD BEEN
USED TO HOLD SEEPAGE WATER BACK
FROM SUCCESSIVE SECTIONS OF THE
INVERT, DURING GUNITING.

LOADED OUT REMAINDER OF CHLORIDE
AND EQUIPMENT AND HAULED IT TO L.A.
TRUCK RETURNED FOR FINAL LOAD.

WEATHER: CLEAR, COOL.

WORK PERFORMED: CONT'D.

LOADED OUT LAST OF EQUIPMENT ON
5-TON TRUCK AND SHIPPED IT TO L.A.

MARCH 9, 54.

INSPECTOR: LEONARD.

PERSONNEL:	HRS:	EQUIPMENT:	HRS:
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FINISHER	8.0	1 JACK HAMMER	1.0
1 FOREMAN	8.0	1 SKIP LOADER	4.0
1 OPERATOR	8.0	1 5-TON TRUCK	8.0
4 LABORERS	32.0		

WORK PERFORMED: CONTINUED AND COMPLETED
REMOVING DIXES LEFT IN THE INVERT.
CHIPPED OUT ROUGH SPOTS AND CUT OUT
A HARDENED PILE OF REBOUND LEFT
AT END OF ROCK SECTION DURING
LINING WORK IN TYPE "D" SECTION.
REMOVED REMAINING LIGHT CABLE
EXCEPT FOR ABOUT 150 FT. BEING USED
BY SHERCO. GROUTING IN S. END.

SWEEP DOWN ENTIRE LENGTH OF ROCK
SECTION. FINISHER REMOVED RAGGED EDGE
AT TRANSITION POINT AT 169+00 AND
REPAIRED SPOT WITH FRESH CEMENT.

WEATHER: CLEAR TO CLOUDY & COOL.

NOTE: CASE CO. LEFT A BROKEN SECTION OF 2" MATERIAL HOSE, AND TWO PIECES OF WIRE REINFORCED PRESSURE HOSE BEHIND, AND SUPT. TOLD DAVE TOLMOSOFF, ONE OF HIS LABORERS, THAT HE COULD HAVE THIS EQUIPMENT IF HE WOULD HAUL IT AWAY.

MARCH 10, 54. INSPECTOR: LEONARD.

PERSONNEL:	HRS:	EQUIPMENT:	HRS:
1 SUPT.	8.0	1 PICK UP TRUCK	8.0
1 FINISHER	8.0	1 JACK HAMMER	2.0
2 LABORERS	16.0		

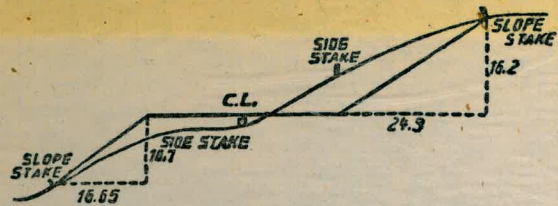
WORK PERFORMED: CUT OUT HARDENED REBOUND OUTSIDE OF S. PORTAL AND SHOVELED IT BACK AWAY FROM PORTAL. FINISHER PATCHED A ROUGH SPOT ON FACE OF PORTAL, BENEATH $\frac{3}{8}$ " PLATE RING WHERE REBOUND HAD TO BE CUT AWAY FROM FINISH FINISHED FACE.

SUPT. AND INSPECTOR WALKED THRU FULL LENGTH OF TUNNEL TO SEE IF ANY THING REMAINED TO BE PATCHED OR REMOVED. FOUND TUNNEL CLEAN, AND ALL REPAIR WORK COMPLETED.

CASE CO MEN FINISHED TODAY.

FINIS.

Don Leonard,
Inspector.



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1 1/2 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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