Docket No. SA-534

Exhibit No. 2-BB

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

EXCERPTS FROM NTSB_018-002
1948 CONSTRUCTION OF LINE 132

(4 Pages)

62-6224

PACIFIC GAS AND ELECTRIC COMPANY **COPY**

GMG 98015 September 18, 1948

95,000 feet of 30" pipeline, extension of main 132, north from Belmont and Canada Roads to Martin Sub-station, San Mateo County, Pacific Pipeline and Engineers Limited, and Stolte, Incorporated, a Joint Venture, Contractors

Progress for week ending September 18, 1948

	THIS WEEK	TOTAL TO DATE	PERCENT COMPLETE
Rights of way cleared	10,400	37,400	40%
Trenched	9,885	25,885	27
Welded	6,500	7,100	5
Backfilled	50	50	0
Total job progress			4%

Company men employed 3

Contractors men on job 28

Days worked this week 6 (10 hr. day)

Pipeline scheduled for completion, November 15, 1948

REMARKS: Contractor moved on job August 23, 1948. Work has been delayed by lack of rights of way. Right of way clearances for Crystal Springs development property was obtained Friday, September 17, but was too late to prevent moving equipment to a new location. The Crocker Estate and Jersey Farms properties are still not cleared.

Lowering of pipe into the trench was delayed during this past week when X-rays indicated small defects in three of the longitudinal seams. Investigation and additional X-rays showed the welding of the longitudinal seams to be acceptable and installation of the pipeline was resumed.

Jan 6, 1949

B/M. LINE 132 GM16 9801S- as of Jan 6, 1949

	San Jose Div.	S.F. Div.
30" O.D. Bare Pipe 30' Lts	—	5,250 Ft.
30" ✓ D.W. ✓ 30' ✓	36,567 Ft.	21,196 Ft.
30" ✓ ✓ ✓ 60' ✓	19,325 Ft.	10,687 Ft.
30" 20° Bends, Shop Mitred	2 ea	—
30" 30° ✓ ✓ ✓	4 ea	—
30" 90° Elbows, Welding	12 ea	15 ea
36" O.D. Pipe, Blk coated 3/8 Wall	104 Ft.	290 Ft.
2 3/8" O.D. S.W. Pipe-Stk.	113 Ft.	138 Ft.
2" Street Elbows	6 ea	2 ea
2" Welding Elbows	—	4 ea
16" C.I. Valve Cover	—	1 ea
30" x 24" Reducers, Conc. Weld.	1 ea	—
~~1/4" x 2" x 36" Straps, Steel~~	~~2 ea~~	—
~~1/2" x 15" Galv. Bolts w/4 Hvy Hex Nuts~~	~~4 ea~~	—

62-6218 2-49-150M

FOR INTER-DEPARTMENT USES

PACIFIC GAS AND ELECTRIC COMPANY

DIVISION OR DEPARTMENT General Construction, Gas

OUR FILE GM 98015 YOUR FILE December 11, 1948

SUBJECT: Pertinent Engineering Information

Total chained distance, 30-inch pipe	93,125' or 17.63 mi.
Total over bends and under bends less than 20°	492
Total side bends less than 20°	139
Total tube turns and mitered shop bends in terms of 90° bends	33
Over bends and under bends per mile	24.5
Side bends per mile	7.9
Percent of rock in total distance	24.7

TEST #1 - ON SKIDS

Length	= 1,616'
(Initial) Temp. (T1)	= 67.6° F. @ 10:00 a.m.
(Final) Temp. (T2)	= 76.0° F. @ 3:30 p.m.
Movement S. end	= 1 1/2"
Movement center	= None
Movement N. End	= 1 1/2"
Terrain	= Rolling

TEST #2 - ON SKIDS

Terrain	= Rolling
Length	= 3,720'
Initial Temp. (T1)	= 66° F. @ 9:00 a.m.
Final Temp. (T2)	= 66 1/2° F. @ 1:45 p.m.
Movement N. end	= 15/16"
Movement Center	= None
Movement S. end	= 13/16"

TEST #3 - CROTCHED

Terrain	= Rolling
Length	= 1,080'
Initial Temp. (T1)	= 69° F. @ 8:30 a.m.
Final Temp. (T2)	= 85° F. @ 2:00 p.m.
Movement N. end	= 1 1/2"
Movement center	= None
Movement S. end	= 1 1/2"

(c) Where the pipe used is of the electric welded longitudinal seam weld type, pipe shall be lined up so that the longitudinal welds on the abutting lengths are staggered. The welds shall be so placed as to be in the top quadrant of the installed sections and not less than 6" of the arc apart.

9. ANGLES 30" PIPE LINE

(a) The angles in the pipe line of 20° or greater will be made using portions of 90° weld ells having a center line radius of 30". The Company will furnish a stock of 30", 90° welding ells which Contractor shall machine cut with an oxy-acetylene cutting machine to the required angularity, care being taken that all cuts are made radially. Angle shall be cut straight (cutting tip perpendicular to surface of metal) then beveled for welding. Bevels shall be 30° with a 1/16" shoulder.

(b) For angles in the pipe line less than 20° mitered angle welds shall be made. All miters will be oxy-acetylene machine cut and then beveled for welding. Angles 6° to 20° will be fabricated by mitering one half ($\frac{1}{2}$) of the angularity on each pipe section. For angular deflections upto and including 5°, a single miter on one section of pipe will be allowed but care must be taken in aligning the abutting ends so the increase in the major diameter of the mitered end is equally distributed at the throat and apex of the resultant angle. All mitered angles shall be welded inside and out.

(c) After the abutting ends of the miter joint have been cut and beveled, Contractor shall use a power grinder on the beveled ends to insure exact fit and to remove any oxides or scale left from the cutting and not removed by the "chipping" operation.

(d) The use of an approved bending machine will be allowed in making angular deflections up to 20° subject to the provisions of paragraph 10 (c) following.

10. ANGLES 24" AND 20" PIPE LINE

(a) The angles in the 20" and 24" pipe line greater than 20° will be made using portions of 90° weld ells having a center line radius of 30" and 36" respectively. The Company will furnish a stock of 20" and 24", 90° welding ells, which Contractor shall machine cut with an oxy-acetylene cutting machine, to the required angularity, care being taken that all cuts are made radially and the ends properly beveled for welding.

(b) For angles in the pipe line of 20° or less, mitered welds shall be made. All miters will be oxy-acetylene machine cut and then beveled. Care shall be taken in cutting and fitting up the miter. Angles of 6° to 20° will be fabricated by mitering one half ($\frac{1}{2}$) of the angularity on each pipe section. For angles up to and including 5°, the mitering of a single joint will be allowed but care must be taken in aligning the abutting ends so the increase in the major diameter of the mitered end is equally distributed at the throat and apex of the resultant angle. All mitered angles shall be welded inside and out.

(c) After the abutting ends of the miter joint have been cut and beveled, Contractor shall use a power grinder on the beveled ends to insure exact fit and to remove any oxides or scale left from the cutting and not removed by the "chipping" operation.