

5800 tons
in 5 days

PROPOSED

PRG-CONOCO VCM SHIPLOADING FACILITIES

MAGNITUDE OF COST ESTIMATE

JUNE 11, 1969

CCR 000032931

**MAGNITUDE OF COST
ESTIMATE BASIS**

This proposal encompasses two (2) 60'-6" Hortonspheres (4600 tons VCM total effective capacity) to be located on the old river ship channel about 3500 feet south of the PPG Administration Building. Design is based on a 3000 GPM loading rate, or 5000 tons in approximately 8 hours.

Included is a dock; pile clusters; ship loading, vent and recovery piping; equipment; instrumentation and electrical power and lighting.

Off-battery items included are an electrical power supply via poles from Riverside Power House and a 2" underground nitrogen supply from Mercury Cell.

No transfer facilities from the VC Area are included.

BGS:sk

6/11/69

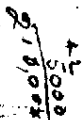
ESTIMATE OF COST

PITTSBURGH PLATE GLASS CO., CHEMICAL DIVISION
LAKE CHARLES, LOUISIANAEST. NO. _____
PROJECT NO. _____
DEPT. NO. _____
DWG. NO. _____
SHEET _____ OF _____
DATE June 11, 1969

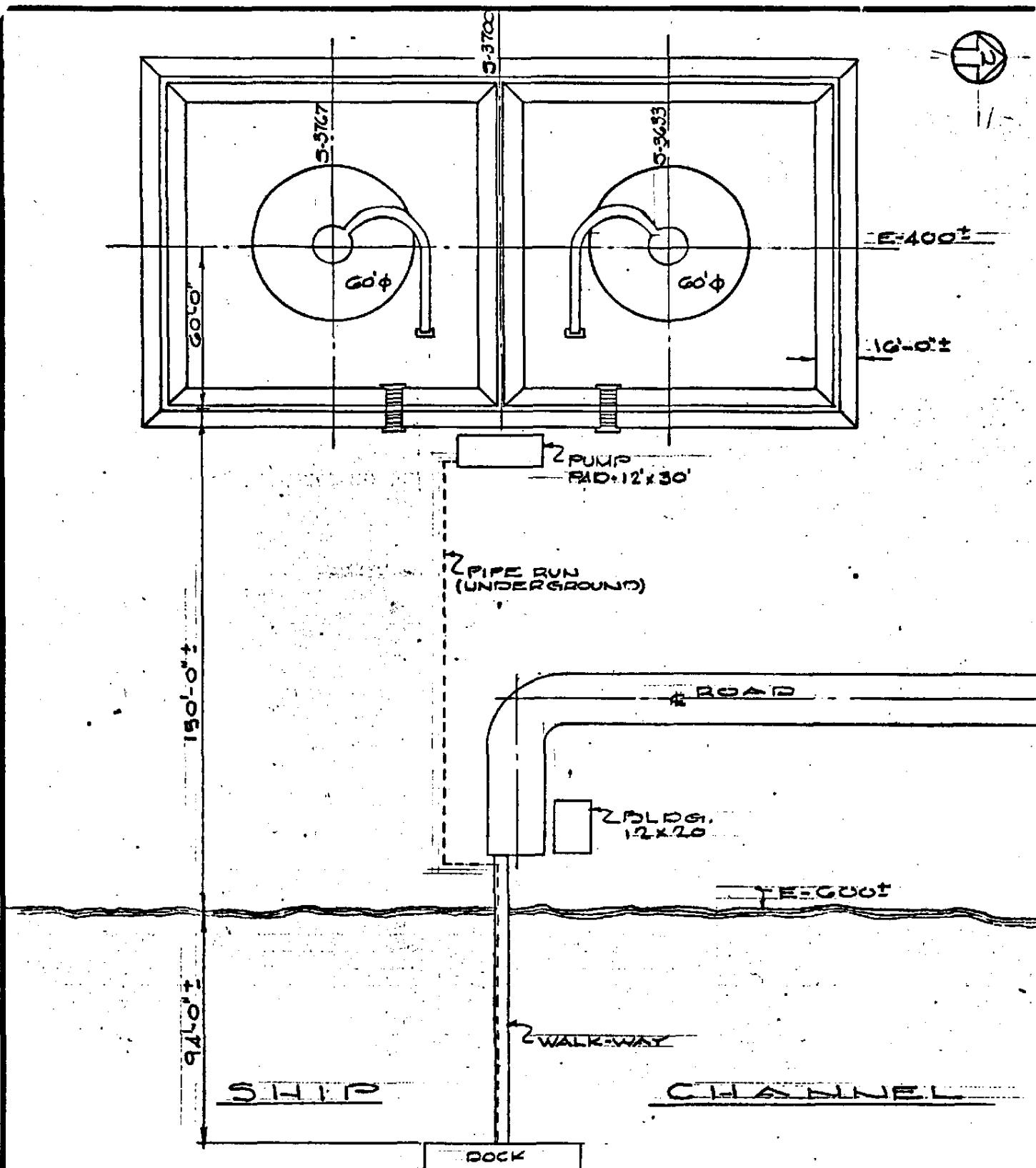
DESCRIPTION MAGNITUDE OF COST ESTIMATE

Proposed PPG-Conoco Combined VCM Shiploading Facilities

ITEM	QUANTITY	MATERIAL		LABOR		TOTAL COST
		UNIT	COST	UNIT	COST	
2 - 60'-6"Ø Hortonspheres incl. SRV, RD, Varec Gages, Albi-Clad Insulation			482,600		Contract +17,800	500,400
Concrete Foundations for Spheres and Pump Pad			145,000		Contract	145,000
Sphere Dikes incl. Drains			20,900		Contract + 1,800	22,700
Shiploading Facilities including: Loading, Vent and Equalizing Piping, Flame Arrestor, Pumps, Loading Hose, Excess Flow Valves, Filter, Cathodic Protection, Electrical, Instrumentation, Electrical Power from Riverside to Area, and U.G. Nitrogen Supply from Mercury Cell to Area			95,357		117,497	212,854
Recovery System including: Vent Compressor, Vent Condenser, Neutralizer, Phase Separators, Receiving Tank, Refrigeration Unit, Structural Steel, Insulation, Piping, Electrical and Instrumentation			48,106		11,695	59,801
Access Road and Site Preparation			16,400		Contract	16,400
Dredging			49,000		Contract	49,000
Dock, Mooring Pile Clusters, Deadmen and Dock Crane			66,300		Contract	66,300
Painting			9,000		8,800	17,800
Fire Protection			20,000		Contract	20,000
Construction Overhead					85,887	85,887
Expensed Items			19,053			19,053
Engineering					22,880	22,880
SUB-TOTAL			971,716		266,359	1,238,075
Contingency (10%)						123,807
SHEET TOTAL			CCR 000032933			1,361,882



SHEET 1 OF 1



CCR 000032935

PITTSBURGH PLATE GLASS COMPANY
CHEMICAL DIVISION **LAKE CHARLES, LOUISIANA**

TITLE PROPOSED PPG-CONOCO COMBINED VCM SHIP- LOADING FACILITIES PLOT-PLAN	DRAWN BY M. L.	DATE 6-5-69	SCALE 1" = 30'-0"	DWG. NO.
	CHECKED BY	DATE	CHARGE	
	APPROVED BY BCS	DATE 6-5-69	BILL OF MATERIAL	SHEET 1 OF 1

Alternates:

- ① Hold CB & I over while we sandblast, hydro. test, break w/ N₂, fill w/ product.
- ② hydro test, sandblast, N₂ pressure purge, fill w/ product.
- ③ Hold CB & I over, acid clean, hydro test, break w/ N₂, fill w/ product.
- ④ hydro. test, acid clean, N₂ pressure purge, fill w/ product.

Cost of Steps:

- ① Hold CB & I's test crew: \$1000.00 per day
- ② Sandblasting: \$5,200.00 & takes 8 days.
- ③ Acid clean: \$3,000.00 & takes 24 hours (one work day)
Note: 3000.00 includes acidizing all pipe
- ④ Pressure purge w/ N₂ = 10,000 & takes 8 hours.
- ⑤ Break w/ N₂ = \$600.00 - time nil.

Cost of Alternates:

- ① = CB & I (3,000.00), Sandblast (\$5,200.00) N₂ (600.00) = \$13,800.00
- ② = Sandblast (5,200.00) N₂ (10,000) = \$15,200.00
- ③ = CB & I (1000.00), acid clean (3000.00) N₂ (600.00) = \$4,600.00
- ④ = Acid clean (3000.00), N₂ (10,000) = \$13,000.00

CCR 000032936

J.D. BROWN

CONTINENTAL OIL COMPANY
CALCULATION SHEET

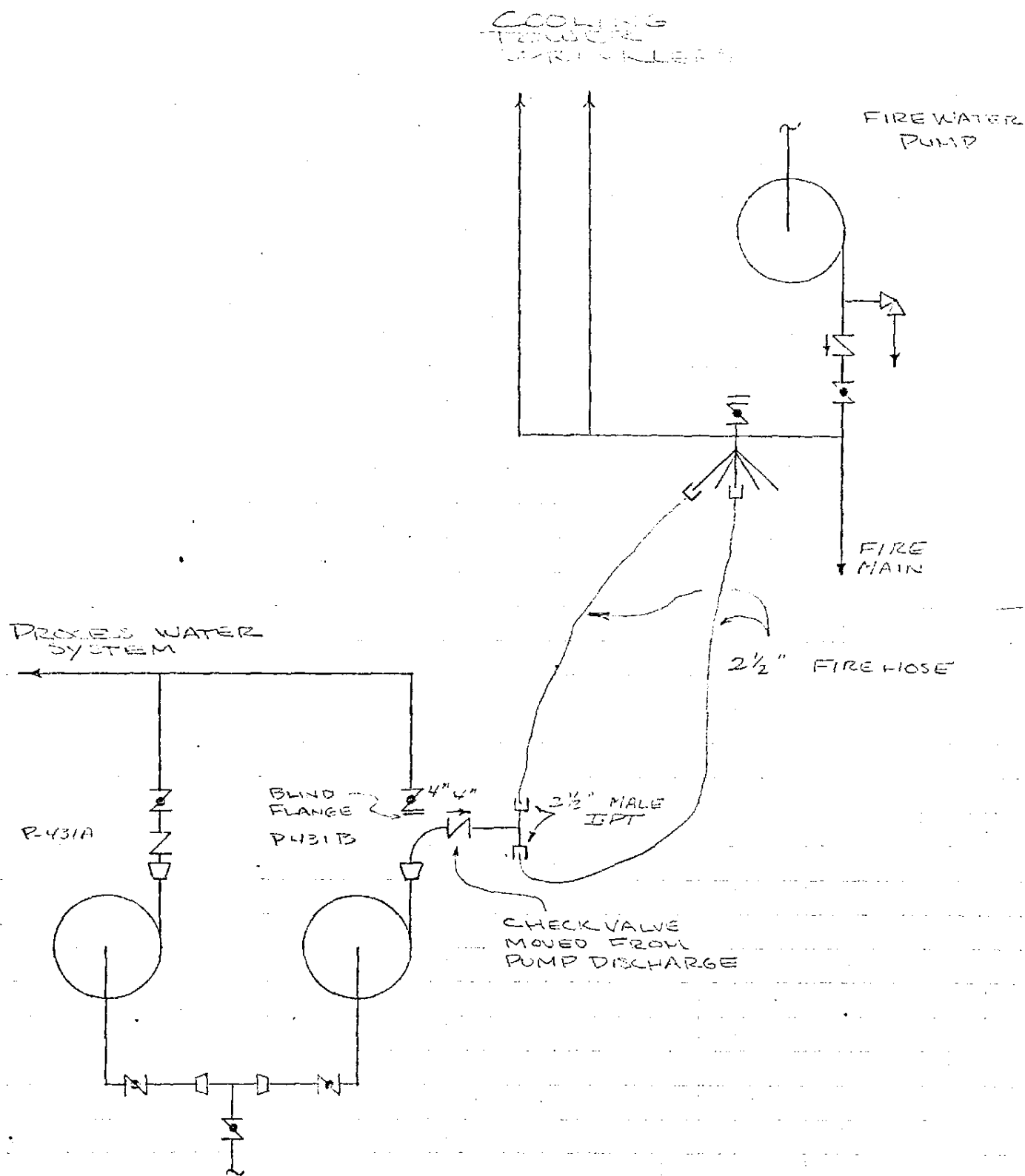
JOB NO.

DATE BY
6-25-71

NEW 69" SPHERE
CLEANING STUDY

FIELD

STATE



CCR 000032937

RWC

6-29-71

FIREWATER TIE-IN
FOR SPHERE HYDROTEST

Job - To Load a 24 MM lb VCM ship at dock
per DKP request 10/19/71

10/20/71

Need 80,000 BBL's of refry capacity = 24 MM lbs with
85% filled tanks

Two - 69' spheres or one 90" x 71' high tank

2 spheres would cost 600,000 each at dock = \$1.2 MM

without pumps, refry system, ect.

1 tank should cost $415(1.333) = \$553M$ plus piling - say \$650M

Piping + Refry on either about \$500M - assume 1.8 MM day fill rate -

\$1,150 M total plus 10% use = \$1265 M plus 10% Cont = \$1,392 M

If only a refry system on line at 1.8 MM/day - ~~cost~~

Would need 1000 gpm of VCM at 90°F to 8°F $\Delta t = 82°F$

Flow rate = $0.89(1000) \times 34(80)(24) = 10,688,544 \text{ lb/day}$

2.5 day loading time (min). - probably 3 days = 72 hrs.

$$\frac{.340}{.617} \times \frac{1}{2} = .308 \text{ sta/} 160^\circ\text{F}$$

$$\frac{.308 (10,688,000) 82^\circ}{12,000 \frac{\text{Btu}}{\text{ton}}} = \frac{22,495 \text{ tons refry/day}}{24} = 937 \text{ tons sta refry}$$

1000 ton refry machine needed, plus exchangers.

Need a ~~3000~~ exchanger of

Use -10°F Refry - $Ft = 3.10 \times 200,000 = \$620M$ in 1968

~~But~~ Use NH_3 refry system ~~expensive~~ - assume $\frac{3.0}{2.5} \text{ BHP/ton}$

3000 H.P. motor - need special substation \$85,000

$$620M \times 1.31 = \$12 \times 1.25 = 1015 \times 85 = 1000$$

$$\text{Plus Cost. for either} = 1.15 \times \frac{1100}{1400} = \frac{\$1265}{\$1.730}$$