



SOUTHWESTERN

INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

Formerly: CONSTRUCTION DIVISION, SOUTHWESTERN TRANSFER CO., INC.

1730 Bassett Ave.

P. O. Box 1611

El Paso, Texas 79948

(915) 532-3491

1330 South 26th Place

P. O. Box 20865

Phoenix, Arizona 85036

(602) 273-1371

527 Wyoming Blvd., S.E.

P. O. Box 8057

Albuquerque, New Mexico 87108

(505) 263-7691

LETTER OF TRANSMITTAL

TO: American Smelting And Refining Company
P. O. Box 1111
El Paso, Texas 79999

DATE: December 17, 1971

RE: Pipe Quotations

ATTENTION: Mr. J. W. English

SUBMITTAL NO.:

GENTLEMEN:

WE ARE SENDING YOU ☒ ATTACHED ☐ UNDER SEPARATE COVER VIA

THE FOLLOWING:

☐ SHOP DRAWINGS ☐ SAMPLES ☐ PLANS ☐ DESCRIPTIVE LITERATURE

☐ COPY OF LETTER DATED ☒ Pipe Quotations

COPIES	DATE	NO.	DESCRIPTION
1	12/15		El Paso Pipe & Supply
1	12/15		Grant Supply Company
1	12/15		Vinson Supply Company

THESE ARE TRANSMITTED FOR REASONS NOTED BELOW:

☒ REVIEW AND APPROVAL ☐ APPROVED AS SUBMITTED ☐ APPROVED AS NOTED

☐ DISAPPROVED ☐ AS REQUESTED ☐ FOR YOUR USE

☐ RESUBMIT COPIES FOR APPROVAL ☐ RETURN CORRECTED PRINTS

REMARKS: Verbally approved 12/16/71

PLAINTIFF'S EXHIBIT

ASA-1271

H. E. Wickes
Project Manager

ASARCO ELP 0008883

El Paso Pipe

Page 1 of 3 Pages

SOUTHWEST INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

CONSTRUCTION DIVISION

MATERIAL REQUISITION

JOB: ASARCO.

DATE: 12-11-71

MAFIA FOR 8" AP-N
ALTERING PIPING TO EXISTING SCHEMATIC

Rec'd - 1WKS

NO. PCS.	DESCRIPTION				
2	12" 150# S.O. flgs - R.F.			33.43 ea	6
10	8" 150# S.O. flgs - R.F.			10.37 ea	10
2	6" 150# S.O. flgs. R.F.			7.15 ea	14
6	8" 150# W.N. flgs.			15.62 ea	95
2	6" - - -			8.86 ea	17
2	8" Sch. 40 Weld tees -			30.14 ea	60
1	8x6" - - -			41.58 ea	41
6	8" Sch. 40 90° weld flgs -			16.63 ea	99
2	6" - - -			9.02 ea	18
3	2" 3000# F.S. scrd couplings.			2.82 ea	6
6	1" - - -			.89 ea	5
6	3/4" - - -			.59 ea	3
6	1/2" - - -			.54 ea	3
	(8" Sch 30 A-53 - in stock)			43.48 ea	
141	8" Sch 20 A-53 A or B Pipe (DEL 3 TO 4 WKS)			364.41 ea	535
21	6" Sch 40			332.40 ea	61

Grant
order 12-15-4
550-165
SOU

Grant Support

SOUTHWEST INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

CONSTRUCTION DIVISION

REQUISITION FOR MATERIAL

JOB: ASARCO
Temp. Inst. Air.

DATE: 12-16-71

100

Grant Supply
SOUTHWEST INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

CONSTRUCTION DIVISION

MATERIAL REQUISITION

JOB: ASARCO.DATE: 12-11-71

*Material for 8" AP-N
Altering Piping to existing conditions*

Rec'd - 10x

NO. PCS.	DESCRIPTION			
2	12" 150# S.O. flgs - R.F.	28 ⁰⁷	57 ⁷⁴	
10	8" 150# S.O. flgs - R.F.	89 ⁵	89 ⁵⁰	
2	6" 150# S.O. flgs. R.F.	6 ¹⁷	12 ²⁴	
6	8" 150# W.N. flgs.	12 ⁰⁹	80 ⁹⁴	
2	6" - - - -	7 ⁶⁵	15 ³⁰	
3	8" Sch. 40 Weld tees -	26 ⁰¹	52 ⁰²	
1	8x6" - - - -	35 ⁰¹	35 ⁹¹	
10	8" Sch. 40 90° weld flgs -	14 ³⁶	26 ¹²	
2	6" - - - -	7 ⁰⁷	15 ⁵⁸	
3	2" 3000# F.S. scrd Couplings	26 ⁰	7 ⁸²	
6	1" - - - -	32	4 ⁹²	
6	3/4" - - - -	54	3 ²⁴	
6	1/2" - - - -	49	2 ⁹⁴	
144 ²¹⁰	8" Sch 20 A-53 B Pipe	325 ⁰⁰ /c	525 ²⁶	
2142	6" Sch 40	324 ⁰⁰ /c	68 ²³	

1062 U. 1062

..

4

DATE: 12-11-71

[illegible]

SOUTHWEST INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

CONSTRUCTION DIVISION

MATERIAL REQUISITION

JOB: HSARCO
INSTALL 8" APN
TO EXIST. COMPRES

DATE: 12-11-71

[illegible]

Vinson -

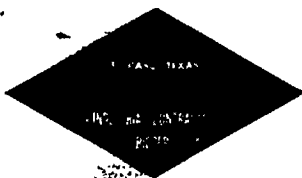
SOUTHWEST INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

CONSTRUCTION DIVISION

MATERIAL REQUISITION

JOB: ASARCO.DATE: 12-11-71MATERIAL FOR 8" AP-NAltering Piping to existing CompressorReq'd - 1 week

NO. PCS.	DESCRIPTION			
2	12" 150# S.O. flgs - R.F.	3647		7244
10	8" 150# S.O. flgs - R.F.	1132		11320
2	6" 150# S.O. flgs. R.F.	780		1560
6	8" 150# W.N. flgs. -	1704		10224
2	6" - - - -	967		1934
2	8" Sch 40 Weld tees -	3236		6472
1	8x6" - - -	4536		4536
6	8" Sch. 40 90° weld. fls -	1314		10884
2	6" - - - -	984		1968
3	2" 3000# F.S. scrd Couplings -	372		1116
6	1" - - - -	118		708
6	3/4" - - - -	78		468
6	1/2" - - - -	71		426
147	8" Sch 20 A-53 B Pipe -	357 3/4%		525.26
21	6" Sch 40	324 9%		68.23



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P. O. Box 1611

El Paso, Texas 79948

(915) 532-3491

1330 South 26th Place

P. O. Box 20865

Phoenix, Arizona 85036

(602) 273-1371

527 Wyoming Blvd., S.E.

P. O. Box 8057

Albuquerque, New Mexico 87108

(505) 273-7691

February 3, 1972*

American Smelting & Refining Company

P. O. Box 1111

El Paso, Texas 79999

Attn: Mr. J. W. English

Re: Converter Gas Acid Plant
Purchase of Bolts & Gaskets

Dear Sir,

The following is a comparison of prices quoted for the bolts and gaskets we need for the installation of piping on this project.

	<u>Gaskets</u>	<u>Bolts</u>	<u>TOTAL</u>
Grant Supply Company	515.27	1,750.05	2,265.32
Harrison Bolt & Nut Company	574.85	1,843.00	2,417.85
Anchor Bolt & Screw Co.	NQ	1,809.00	-
El Paso Bolt & Screw Co.	NQ	1,396.20	-
El Paso Pipe & Supply Co.	891.01	1,324.64	2,215.65

We believe to get the best delivery we should split the order giving the gaskets to Grant Supply Co. and the bolts to El Paso Pipe & Supply Company. The total being \$ 1,839.91, at a savings of \$ 375.74.

App'd 2/4/72
[Signature]

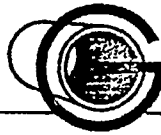
Very Truly Yours,

[Signature]
H. E. Wickes
Project Manager

HEW/wcs

ASARCO ELP 0008894

QUOTATION



GRANT SUPPLY COMPANY

PIPE • TUBES • VALVES • FITTINGS FOR INDUSTRY

• 2413 EAST 2ND
• P. O. BOX 4395

• ODESSA, TEXAS 79140
• PHONE (915) 332-8121

DATE January 21, 1972

Southwestern Industrial Contractors & Riggers, Inc.
P. O. Box 1611
El Paso, Texas 79948

SUBJECT Quotation

Your Request #.7

☐ ATTENTION: Mr. A. M. Clark

WE ARE PLEASED TO SUBMIT THE FOLLOWING QUOTATION FOR YOUR CONSIDERATION:

ITEM NO.	QUANTITY	DESCRIPTION	DELIVERY	UNIT PRICE	TOTAL PRI
1	52	2" 150# SPIROFLEX GASKETS		.63	32.7
2	15	2-1/2" DITTO		.70	10.50
3	20	3" DITTO		.86	17.2
4	78	4" DITTO		1.09	85.0
5	40	6" DITTO		1.57	62.8
6	40	8" DITTO		2.06	82.4
7	17	10" DITTO		2.84	48.2
8	20	12" DITTO		4.24	84.8
9	3	14" DITTO		4.75	14.2
10	6	2-1/2" 300# SPIROFLEX GASKETS		.87	5.2
11	3	3" DITTO		.97	2.9
12	10	4" DITTO		1.17	11.7
13	14	6" DITTO		1.90	26.6
14	8	2-1/2" 600# SPIROFLEX GASKETS		.87	6.9
15	1	3" DITTO		.97	.9
16	2	4" DITTO		1.17	2.3
17	4	6" DITTO		2.12	8.4

F.O.B. _____

TERMS _____

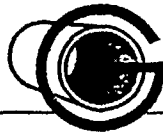
QUOTATION NUMBER _____

GRANT SUPPLY COMPANY

BY _____

ASARCO ELP 0008895

QUOTATION



GRANT SUPPLY COMPANY

PIPE • TUBES • VALVES • FITTINGS FOR INDUSTRY

• 2413 EAST 2ND
• P. O. BOX 4395

• ODESSA, TEXAS 79760
• PHONE (915) 332-8111

DATE _____

Southwestern Industrial Contractors & Riggers, Inc.

SUBJECT _____

Page # 2

WE ARE PLEASED TO SUBMIT THE FOLLOWING QUOTATION FOR YOUR CONSIDERATION:

ITEM NO.	QUANTITY	DESCRIPTION	DELIVERY	UNIT PRICE	TOTAL PRI
18	12	3" 150# F.F. ASBESTOS RING GASKETS		.15	1.80
19	8	4" DITTO		.21	1.68
20	4	6" DITTO		.28	1.12
21	4	8" DITTO		.40	1.60
22	2	10" DITTO		.54	1.08
23	2	12" DITTO		.80	1.60
24	2	14" DITTO		.95	1.90
25	2	6" 300# F.F. ASBESTOS RING GASKETS		.35	.70
26	2	4" 600# DITTO		.30	.60
27	208	5/8 x 3" B-1/2 STUDS W/2 2H NUTS EACH	39 54	23.02/C	515.27
28	60	5/8 x 3-1/4" DITTO	40 91	23.66/C	14.20
29	816	5/8 x 3-1/2" DITTO	42 37	24.33/C	198.53
30	400	3/4 x 3-3/4" DITTO	59 66	34.46/C	137.84
31	376	3/4 x 4" DITTO	61 70	35.40/C	133.10
32	80	3/4 x 4-1/4" DITTO	63 72	36.33/C	29.06
33	64	3/4 x 4-1/2" DITTO	65 76	37.27/C	23.89
34	176	3/4 x 4-3/4" DITTO	67 80	38.21/C	67.25

F.O.B. _____

GRANT SUPPLY COMPANY

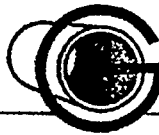
TERMS _____

QUOTATION NUMBER _____

BY _____

ASARCO ELP 0008896

QUOTATION



GRANT SUPPLY COMPANY

PIPE • TUBES • VALVES • FITTINGS FOR INDUSTRY

• 2413 EAST 2ND
• P. O. BOX 4395

• ODESSA, TEXAS 79700
• PHONE (915) 332-3333

DATE _____

Southwestern Industrial Contractors & Riggers, Inc.

SUBJECT _____

Page # 3

WE ARE PLEASED TO SUBMIT THE FOLLOWING QUOTATION FOR YOUR CONSIDERATION:

ITEM NO.	QUANTITY	DESCRIPTION	DELIVERY	UNIT PRICE	TOTAL PRICE
35	492	7/8 x 4-1/2" B-7 STUDS W/2 2 H NUTS EACH	8730	429 ⁵² 49.72/C	244.0
36	32	7/8 x 5-1/2" DITTO	9877	314 ¹ 54.78/C	17.5
37	60	1 x 5" DITTO	130.44	786 ⁴ 71.77/C	43.0
38	48	1 x 6-1/2" DITTO	155 ⁶²	747 ² 82.91/C	39.8
			SHIP IN 1 WK FROM Houston	1750.05	\$1,511.9
PLUS 4% TEXAS SALES TAX				70.00	60.4
GRAND TOTAL FOR THIS QUOTE				1820.05	\$1,572.4
DELIVERY - STOCK - 2 WEEKS					

F.O.B. Jobsite

TERMS 2% 10 DAYS NET 30

QUOTATION NUMBER 32-00

GRANT SUPPLY COMPANY

BY Eddie N. Brown-Sr

ASARCO ELP 0008897

HARRISON

BOLT & NUT COMPANY

MANUFACTURERS

AREA CODE 918
TE. 3-2345

6130 EAST 13TH STREET

TULSA, OKLAHOMA 74112

January 19, 1971

Southwestern Industrial Contractors
and Riggers, Inc.
Box 1611
El Paso, Texas 79948

RE: Quotation

Attention: Mr. Clark

Dear Sir:

We are pleased to submit our prices on your recent inquiry.

Will call in new prices

Stud Bolts to ASTM A 193 B7		W/2 Hex Nuts to ASTM 194 2H			
		C Net			
208	5/8 x 3	21.49	44.90	44.70	93.39
60	5/8 x 3-1/4	22.09	45.95	13.25	27.59
816	5/8 x 3-1/2	22.72	47.12	185.40	334.50
400	3/4 x 3-3/4	32.17	60.36	128.68	241.44
376	3/4 x 4	33.04	61.92	124.23	232.32
80	3/4 x 4-1/4	33.91	63.48	27.12	50.78
64	3/4 x 4-1/2	34.71	65.10	22.27	41.66
176	3/4 x 4-3/4	35.67	66.66	62.78	117.32
492	7/8 x 4-1/2	46.41	90.14	228.34	443.49
32	7/8 x 5-1/2	51.14	98.54	16.36	31.53
60	1 x 5	71.78	156.86	43.07	94.12
48	1 x 6-1/2	82.91	175.76	39.80	84.36

FOB TULSA

Approx 1-2 wks After Order

936.00

1843.00

-Will confirm by

Flexitallic Gaskets Style CG
304 Stainless Steel and Asb.
Ea Net

52	2" - 150#	.72	37.44
15	2-1/2 - 150#	.81	12.15
20	3" - 150#	.98	19.60
78	4" - 150#	1.22	95.16

ALL TYPES SHEET AND METAL GASKETS



ALLOY AND STAINLESS STEEL STUD BOLTS

ASARCO ELP 0008898

HARRISON

BOLT & NUT COMPANY

MANUFACTURERS

AREA CODE 918

838-9961



6130 EAST 13TH STREET



TULSA, OKLAHOMA 74112

Page 2
Southwestern Industrial Contractors
and Riggers, Inc

Flexitallic Gaskets Style CG			
		EA Net	
40	6" - 150#	1.76	70.40
40	8" - 150#	2.30	92.00
17	10" - 150#	3.18	54.06
20	12" - 150#	4.78	95.60
3	14" - 150#	5.36	16.08
6	2-1/2" - 300#	.98	5.88
3	3" - 300#	1.09	3.27
10	4" - 300#	1.33	13.30
14	6" - 300#	2.15	30.10
8	2-1/2" - 600#	.98	7.84
1	3" - 600#	1.09	1.09
2	4" - 600#	1.42	2.84
4	6" - 600#	2.41	9.64
			566.45

1/16 #1400 Asbestos Full face Gaskets			
		C Net	
12	3" - 150#	10.80	1.30
8	4" - 150#	14.68	1.17
4	6" - 150#	19.32	.77
4	8" - 150#	27.00	1.08
2	10" - 150#	36.80	.74
2	12" - 150#	54.40	1.09
2	14" - 150#	64.40	1.29
2	6" - 300#	24.20	.48
2	4" - 600#	24.20	.48
			8.40

1510.85

Thank you for your inquiry.

Sincerely,

HARRISON BOLT AND NUT CO.

W. F. Schick, Jr., Vice-Pres.

ALL TYPES SHEET AND METAL GASKETS



ALLOY AND STAINLESS STEEL STUD BOLTS

ASARCO ELP 0008899

HARRISON

BOLT & NUT COMPANY

MANUFACTURERS

AREA CODE 918
TE. 42345



6130 EAST 13TH STREET



TULSA, OKLAHOMA 74112

January 28, 1971

Southwestern Industrial Contractors
and Riggers, Inc.
Box 1611
El Paso, Texas 79948

Re: Quotation - the following
to be considered an addendum
to our quotation of 1-19-71.

Attention: Mr. Clark

Dear Sir;

We are pleased to submit our prices on your
recent inquiry.

Stud Bolts to ASTM A 193 B16

W/2 Hex Nuts to ASTM A 194 Grade 4

		C Net	
208	5/8 x 3	44.90	93.39
60	5/8 x 3-1/4	45.98	27.59
816	5/8 x 3-1/2	47.12	384.50
400	3/4 x 3-3/4	60.36	241.44
376	3/4 x 4	61.92	232.82
80	3/4 x 4-1/4	63.48	50.78
64	3/4 x 4-1/2	65.10	41.66
176	3/4 x 4-3/4	66.66	117.32
492	7/8 x 4-1/2	90.14	443.49
32	7/8 x 5-1/2	98.54	31.53
60	1 x 5	156.86	94.12
48	1 x 6-1/2	175.76	84.36

1843.00

Thank you for your inquiry.

Sincerely,

HARRISON BOLT AND NUT CO.

Tom Schick, Manager

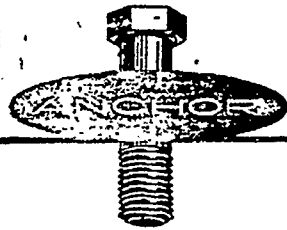
TS/jap

ALL TYPES SHEET AND METAL GASKETS



ALLOY & STAINLESS STEEL STUD BOLTS

ASARCO ELP 0008900



Bolt and Screw Company

103 N. DOTSY
FEDERAL 7-7305

P. O. BOX 908
ODESSA, TEXAS

"Your Threaded Fastener Specialty Company"

Southwestern Industrial Cont..
P.O. Box 1611
El Paso, Texas 79948

Date 1-18-72

Quotation No. 1000

Attn: A.M. Clark

Terms: 1% 10th Prox, 30 days net
FOB American Smelting & Refining Co.
El Paso, Texas
Shipment 10 days from receipt of order

QUANTITY	DESCRIPTION	PRICE PER HUNDRED	Net Price
208	5/8 X 3 ASTM A193 B-7 Studs with 2 ASTM A194 Grade 2-H Hex Nut Each.....	41.06 23.55	48.98 85.4
60	5/8 X 3 1/4 Ditto	42.12 24.15	14.49 25.2
816	5/8 X 3 1/2 Ditto	43.13 24.76	202.04 353.2
400	3/4 X 3 3/4 Ditto	61.52 35.14	140.56 246.4
376	3/4 X 4 Ditto	62.71 36.01	135.40 236.8
80	X 4 1/4 Ditto	64.46 36.87	29.50 51.5
64	X 4 1/2 Ditto	65.94 37.73	24.15 42.2
176	X 4 3/4 Ditto	67.42 38.59	67.92 118.4
492	7/8 X 4 1/2 Ditto	91.73 51.06	251.22 451.3
32	X 5 1/2 Ditto	99.75 55.72	17.83 31.9
60	1 X 5 Ditto	146.49 78.20	46.92 88.0
48	X 6 1/2 Ditto	125.22 89.15	42.79 79.3
Total Cost			1,021.80
Plus Texas State Sales			
Tax			40.87
Total Cost			\$1,064.72
			\$1,809.0
2165 1/2 X 4 hex nuts - ASTM 194		Tax	72.36
			\$1,881.36

All Quotations Subject to
Change After 10 Days

ANCHOR BOLT AND SCREW CO.

By: *VonRay Trotter*

QUOTATION

ASARCO ELP 0008901

EP 550

BOLTS - ALL SYSTEMS

Stud Bolts, USAI B16.5 ASTM 193 w/2 ea. Hex Nuts ASTM - A194

QTY	SIZE	PER C	TOTAL
208	5/8" x 3"	32.75	68.12
60	5/8" x 3-1/4"	29.95	17.97
816	5/8" x 3-1/2"	34.60	282.34
400	3/4" x 3-3/4"	48.40	193.60
376	3/4" x 4"	49.70	186.87
80	3/4" x 4-1/4"	51.00	40.80
64	3/4" x 4-1/2"	52.30	33.47
176	3/4" x 4-3/4"	53.65	94.42
492	7/8" x 4-1/2"	68.65	337.76
32	7/8" x 5-1/2"	76.45	24.46
60	1" x 5"	100.75	60.45
48	1" x 6-1/2"	116.55	55.94

TOTAL \$1396.20

El Paso Bolt & Screw Co.
7058 Alameda El Paso, Texas



SOUTHWESTERN

INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

Formerly: CONSTRUCTION DIVISION, SOUTHWESTERN TRANSFER CO., INC.

1730 Bassett Ave.

1330 South 26th Place

527 Wyoming Blvd., S.E.

P. O. Box 1611

P. O. Box 20865

P. O. Box 8057

El Paso, Texas 79948

Phoenix, Arizona 85036

Albuquerque, New Mexico 87108

(915) 532-3491

(602) 273-1371

(505) 265-7691

REQUEST FOR QUOTATION

REQUEST # 7

NOT AN ORDER

DATE: January 13, 1972

TO: El Paso Pipe and Supply
P.O. Box 9858
El Paso, Texas 79989

CUSTOMER: ASARCO

RECEIVED
JAN 1 * 1972

JOB TITLE: Converter Gas Acid Plant

To receive consideration:
3 copies of your
bid must be in our office
by January 21, 1972.

FOR SHIPMENT TO:
American Smelting & Refining Co.
El Paso, Texas

SHIPMENT REQUIRED BY: _____

Please submit firm Quotation on Items listed below subject to terms listed herein:

ITEM	QUANTITY	DESCRIPTION
		Gaskets & Bolts (See attached lists)
		QUOTE NO.: 32-IND.

Quotation must indicate unit price, extension, total, applicable taxes, terms of payment, FOB point, shipping point(s) and best delivery.

Quotation must be in accordance with plans and specifications submitted. Deviation or substitutions must be clearly stated in your Quotation.

SOUTHWESTERN INDUSTRIAL CONTRACTORS & RIGGERS, INC.

A. M. Clark
Project Supt.

ASARCO ELP 0008903

GASKETS - ALL SYSTEMS

QTY.	SIZE	DESCRIPTION		
52	2"	150# Type CG Flexitallic Gaskets-spiral wound 304	57.72	\$ 1.11/EA
15	2 1/2"	Ditto	18.60	\$ 1.24/EA
20	3"	Ditto	30.20	\$ 1.51/EA
78	4"	Ditto	147.42	\$ 1.89/EA
40	6"	Ditto	108.00	\$ 2.70/EA
40	8"	Ditto	142.60	\$ 3.55/EA
17	10"	Ditto	83.30	\$ 4.90/EA
20	12"	Ditto	147.50	\$ 7.35/EA
3	14"	Ditto	24.75	\$ 8.25/EA
6	2 1/2"	300# Type CG Flexitallic Gaskets-spiral wound 304	9.06	\$ 1.51/EA
3	3"	Ditto	5.04	\$ 1.68/EA
10	4"	Ditto	20.00	\$ 2.04/EA
14	6"	Ditto	40.00	\$ 3.30/EA
8	2 1/2"	600# Type CG Flexitallic Gaskets-spiral wound 304	12.08	\$ 1.51/EA
1	3"	Ditto	1.68	\$ 1.68/EA
2	4"	Ditto	2.36	\$ 2.18/EA
4	6"	Ditto	17.80	\$ 3.70/EA
12	3"	150# Full Face 1/16" Asbestos Gaskets	2.64	\$.22/EA
8	4"	Ditto	2.40	\$.30/EA
4	6"	Ditto	1.60	\$.40/EA
4	8"	Ditto	2.24	\$.56/EA
2	10"	Ditto	1.20	\$.76/EA
2	12"	Ditto	2.20	\$ 1.12/EA
2	14"	Ditto	2.60	\$ 1.33/EA
2	6"	300# Full Face 1/16" Asbestos Gaskets	1.00	\$.50/EA
2	4"	600# Full Face 1/16" Asbestos Gaskets		\$ 1.05/EA

Total 591.01

BOLTS - ALL SYSTEMS

Stud Bolts, USAI B16.5 ASTMA 193 w/2 ea. Hex Nuts ASTM - A194

QTY	SIZE		
208	5/8" x 3"	\$.31/EA	64.48
60	5/8" x 3-1/4"	\$.32/EA	19.20
816	5/8" x 3-1/2"	\$.32/EA	261.12
400	3/4" x 3-3/4"	\$.46/EA	184.00
376	3/4" x 4"	\$.47/EA	176.72
80	3/4" x 4-1/4"	\$.48/EA	38.40
64	3/4" x 4-1/2"	\$.50/EA	32.00
176	3/4" x 4-3/4"	\$.51/EA	90.76
492	7/8" x 4-1/2"	\$.66/EA	324.72
32	7/8" x 5-1/2"	\$.73/EA	23.36
60	1" x 5"	\$.96/EA	57.60
48	1" x 6-1/2"	\$ 1.11/EA	53.28

Total 1,320.64

TERMS: 2% 10 NET 30 DAYS

DELIVERY: STOCK - EL PASO & HOUSTON, TEXAS

F.O.B. POINT: AMERICAN SMELTING & REFINING

ALL ITEMS SUBJECT TO PRIOR SALE

FOR FURTHER INFORMATION CONCERNING THIS QUOTE, PLEASE CALL RICHARD McGRANE, R.M.


 TEMPLE C. SMITH

CONSTRUCTION SPECIFICATIONS
FOR
STEAM AUXILIARY EQUIPMENT AND PIPING
FOR
CONVERTER GAS ACID PLANT
EL PASO, TEXAS

Prepared by
Central Engineering Department
Design Section

Date November 17, 1971

By A. O. Marsh, Jr.
A. O. MARSH, Jr.
Chief Design Engineer

CONVERTER GAS ACID PLANT
CONSTRUCTION SPECIFICATIONS

Section on Steam Auxiliary Equipment and Piping

Scope

This section covers the installation of the following:

1. Steam auxiliary equipment.
2. All piping except in the Acid Plant proper.
3. Site clearance required for installing the above.
Electrical and instrumentation work related to the above equipment will be covered under separate specifications.

Drawings

The following drawings delineating the construction shall be a part of these specifications.

- EP-17785 Power House-Boiler & Compressor Room-Arrgt.
- EP-17787 Site Clearance
- EP-17789 General Arrgt. Deaerator Installation
- EP-17790 Pipe Rack Plan-Area A
- EP-17791 Pipe Rack Sections-Area A
- EP-17792 Oily Condensate Filters-Area B-Plans
- EP-17793 Oily Condensate Filters-Area B-Sections
- EP-17794 Deaerator Plan Above Grade-Area C
- EP-17795 Deaerator Plan Above Elev. 3792'-4 -Area C
- EP-17796 Deaerator Sections-Area C
- EP-17797 Air Compressor Plan Above Elev. 3792'-4 -Area D
- EP-17798 Dump Condenser-Plan Above Elev. 3773'-0 -Area E
- EP-17799 Power House-Schematic-Modifications

EP-17802 Dump Condenser Plan Above Elev. 3798' 7-1/4 -Area E
EP-17803 Dump Condenser Piping-Area E-Section A
EP-17804 Dump Condenser Piping-Area E-Sections ^{Sections} B & C
EP-17811 Steam Drums-Plan-Area F
EP-17812 Steam Drums-Section-Area F
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EP-17814 Boiler Plans-Above 3773'-0
EP-17815 Boiler Sections-Area G
EP-17816 Boiler Sections-Area G
EP-17817 Boiler Sections-Area G
EP-17818 Spray Chamber-Sections-Area H
EP-17819 Pipe Support Details
EP-17820 Pipe Support Details
EP-17821 Key Plan and General Notes
EP-17822 Air Compressor Plan Above Elev. 3773'-6 - Area D
EP-17823 Air Compressor Sections-Area D
EP-17824 Spray Chamber Piping Plans-Area H
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EP-17883 Spray Chamber Air Piping & Misc. Details
EP-17884 Spray Chamber Water Spray & Piping Arrgt.
EP-17885 Spray Chamber-Acid Spray Piping
EP-17886 Spray Chamber-Spray Piping & Controls-Schematic
EP-17944 Boiler Plan Above Elev. 3803'-0
EP-17945 Steam Trap Details-Sheet #1
EP-17946 Tagged Item List & Steam Trap Details-Sheet #2
Manufacturer drawings of equipment furnished by Asarco.
Drawings of existing installations pertinent to the work.

Work Conditions

The Contractor shall do the work herein described furnishing all labor, supervision, tools, equipment and personnel facilities. The Contractor shall furnish all materials except as hereinafter described.

The Contractor shall remove all demolished materials, equipment and debris to disposal areas designed by the Plant Engineer.

Equipment Furnished by Asarco

Asarco will furnish the following equipment as specified in the listed Asarco requisitions.

Air Compressor	Req. No. CE-71-EP-3
Dump Condenser	Req. No. CE-71-EP-4
Feedwater Pumps	Req. No. CE-71-EP-5
Deaerator	Req. No. CE-71-EP-6
Valves, Hoses & Nozzles for Spray Chamber	Req. No. CE-71-EP-9
Orifice Flanges	Req. No. CE-71-EP-22
Condensate Storage Pumps	Req. No. CE-71-EP-23
Boiler Check Valves	Req. No. CE-71-EP-24
Spray Chamber Pumps	On hand at Plant.
Motors and Motor Starters	Requisitions pending.

Exceptions and Changes

All exceptions or changes in these specifications or drawings shall be approved by the Asarco Project Engineer, and a written record maintained of all such exceptions and changes for submission to Asarco on completion of the project.

Site Clearance

The Contractor shall clear the site as shown on the drawings for the installation of equipment and piping. This will include the removal of abandoned equipment and piping, the relocation and repiping of existing equipment, and the relocation of piping.

Equipment

The Contractor shall install all equipment shown on the drawings furnishing all except as listed above, and shall furnish and install all supports, structures and foundations required for the satisfactory installation and operation of the equipment. Manufacturer's installation instructions shall be followed in detail.

Piping

The Contractor shall furnish all material and equipment, including valves, hangers, supports and insulation; and shall fabricate and install all piping, fittings, appurtenances and devices necessary for complete piping system ready for operation.

APPLICABLE PUBLICATIONS

All piping shall conform to local codes if they are governing, and to the NBFU fire prevention code, as it applies, and Factory Mutual Engineering Corporation Standards.

All welding shall conform to the requirements of the latest editions of the "American Standard Code for Pressure Piping" ANSI B 31.1a. Backup rings need not be used.

All material furnished and procedures followed in the fabrication and erection of the pipe, valves and associated equipment shall

conform to the latest edition of "American Standard Code for Pressure Piping" ANSI B 31.1 and B 31.1a.

MATERIALS AND WORKMANSHIP

General: Materials of construction, valving and specialties shall be as hereinafter described.

Piping Layout: Major piping shall be installed as shown on the drawings. Minor piping not shown on layout drawings shall be laid out in an orderly manner, grouping lines whenever possible and shall follow the diagrammatic layout shown on the drawings. Relocation in the field may be done only with the written consent of the Engineer. The installation shall be neat in appearance, and adequately supported. Every effort shall be made to locate piping and equipment which must be regularly serviced, inspected or tested so that this work may be done as easily as feasible. Lines shall slope in the direction of flow, a minimum of 1/8 inch per foot whenever possible, or as shown on the drawings. Pump piping arrangements shall be in accordance with the standard details shown on the drawings. Piping running through roofs, floors and walls shall pass through sleeves as follows:

Floor: Sleeves shall be of standard weight pipe, anchored in floor, flush at bottom and projecting one inch above finished floor, sized to allow 1/2 inch minimum clearance from pipe and insulation, if required.

Roof: Sleeves are to be made of galvanized sheet iron fastened to roof, and flashed with galvanized sheet metal.

Walls: Sleeves shall be of standard weight pipe, anchored in the wall and flush on each side of the wall. Sleeve shall provide 1/2 inch minimum clearance from pipe and insulation if required. Sleeves in exterior walls shall be filled with oakum and caulked after pipe is placed in sleeve.

Vertical pipelines, passing through concrete, shall be provided with adequate protection to prevent corrosion at point of contact of pipe with concrete. Headroom clearance of 7 ft. 0 in. shall generally be provided below all piping, insulation and appurtenances.

Supports, hangers, guides and anchors: The selection of support points shall be made to utilize existing structural steel where feasible. The Contractor shall furnish and erect all hangers, brackets, rods, clips, clamps, plates, channels and other parts required for a complete installation as well as all necessary miscellaneous iron which may be required to transfer hanger reactions to building steel. All rigid hangers shall be fitted with means of vertical adjustments and suitable locking means shall be provided. All tie rods shall be fitted with adjustment and locknuts. All welded hangers, supports, guide or other attachments shall be of material similar to the pipe, and shall be subject to the same welding procedure as the pipe. Welded attachments to structural steel shall be such as to allow welding along the flange. Welding across the flange will not be allowed. Precautions shall be taken in piping installation to prevent stresses in piping and overstressing of flange

bolting at valves and equipment. Cold springing shall be used in pipe fabrication as shown on the drawings.

Underground Piping: All pipe and fittings shall be carefully handled to avoid damage and shall be inspected for defects before being lowered into the trench. Special care shall be given to handling coated and/or lined pipe to avoid damage. Any damage to pipe, coating, or lining shall be repaired to the satisfaction of the Engineer before installation.

Trenching and Backfilling: The pipe trench shall be excavated along the alignment shown on the plans. Trenches shall be kept to a minimum workable width with trench walls vertical from the bottom of the trench to the top of the pipe. Suitable shoring timbering or sheeting shall be provided where necessary to support the sides of the trench prior to and during installation of the pipe. All shoring, timbering and sheeting shall be removed before backfilling. The open ends of the pipe shall be closed at the end of each day's work, and shall not be opened until work is resumed. After the pipe is laid on suitable fill in the trench, the line shall be backfilled, leaving only the field joints exposed so that the pipe will be protected until tested and accepted by the Engineer. In backfilling the trench around the lines, special care must be taken so as not to injure coatings or displace the pipe and to give it a solid bearing throughout its entire length. The remainder of the backfill above the pipe shall be sufficiently packed to prevent serious settlement. Open trenches across roadways or other areas to be paved shall be backfilled and compacted to a density at least equal to that of the surrounding earth. Sleeves made of steel

pipe shall be used for lines 12 inches and smaller crossing under truck roads and areas where concentrated loads may occur. In all cases, the sleeves shall be two nominal pipe sizes larger than the protected line except that minimum clearance between pipe and sleeve shall be 1-1/2 inches.

CLEANING AND TESTING

Testing and field inspection shall conform to USASI B 31.1 - 1955 and B 31.1a - 1965. All lines shall be thoroughly cleaned while disconnected from all equipment. All piping, except low pressure air, gas and vent lines, shall be tested at 1-1/2 times working pressure of line service. Low pressure air and gas lines shall be tested at 50 psi air and soapy water test.

Underground Pipe Covering

Underground pipe shall have a protective covering except as hereinafter specified, shall be mechanically applied in a factory or field plant especially equipped for the purpose. Specials and fittings that cannot be coated and wrapped mechanically shall have the protective coating applied by hand, preferably at the plant that applies the covering to the pipe. Joints shall be coated and wrapped by hand. Hand-coating and wrapping shall be done in a manner and with materials that will produce a covering equal in effectiveness to that of the mechanically applied covering. The coating work shall be thoroughly inspected, and any flaws or holidays found shall be repaired by the Contractor at no extra cost. The pipe covering shall consist of one of the following:

Coal-tar Coating and Wrapping: A coat of coal-tar primer, a coat of coal-tar enamel, a wrapper of coal-tar-saturated asbestos felt,

a second coat of coal-tar enamel, a second wrapper of coal-tar-saturated asbestos felt, where indicated, and a wrapper of kraft paper or a coat of water-resistant whitewash, applied in the order named and conforming to the requirements of AWWA Standard C203 in all respects as to materials, thickness, methods of application, tests, and handling, except that interior lining will not be required. Joints and fittings shall be coated and wrapped either in conformity with AWWA Standard C203 or with the materials specified in Federal Specification HH-T-30, applied in accordance with the manufacturer's recommendation.

Alternate No. 1:

Asphalt Coating and Wrapping: A coat of asphalt primer, a coat of hot asphalt enamel, an asphalt-saturated-felt or asphalt-saturated-glass wrapper completely bonded to the enamel applied in the order named and conforming to the requirements of the Asphalt Institute Specification M-1 in all respects as to materials, thickness, methods of application, tests and handling.

Alternate No. 2:

Extruded polyethylene sheath conforming to Federal Specification L-C-530 and of thicknesses not less than 54 mils. Fittings and joints shall be covered in the manner and with the materials recommended by the applier of the sheath.

Pipe Insulation

All pipes carrying liquids or gases in excess of 150° F. shall be insulated with a metal reinforced fiberglass blanket, Johns-Manville Thermobestos or equal covering all pipes, fittings and valves except as noted on drawings. Insulation shall be applied

in accordance with manufacturer's instructions. The insulation shall have a protective covering of 0.010" thickness stainless steel #304 sheet. Alternate insulation of equal or better insulating value may be used if approved by Owner's representative. Insulation thickness shall be as follows:

400# steam lines	2-1/2"
400" condensate lines	2"
150" condensate lines	1-1/2"
5# steam lines (6" dia. and larger)	1-1/2"
(5" dia. and smaller)	1"
low pressure condensate lines	1"
feed water lines (5" and larger)	1-1/2"
(4" and smaller)	1"

Pipe Painting and Coding

Interior pipe shall not be painted. Exterior non-insulated pipe exposed to the weather shall be given a primer and finish coat in accordance with the general specifications for painting exterior metal surfaces.

Content of piping systems shall be identified according to the Texas State color classification by a colored band completely encircling pipe, at least 8 inches in length (longer where necessary to accommodate full identification labels), painted on pipe or pipe covering in every location where identification labels are required.

Pipes which are concealed or in covered pipe trenches need not be identified.

Identification labels: Identification shall be accomplished by use of Brady "Quik-Labels" (mastic book) as manufactured by the

W. H. Brady Company, Seton Nameplate Corporation, or equal (stenciling is acceptable). Straight lines of pipe shall be identified at intervals of 20 feet and at least once in each room. Piping shall also be identified at a point approximately two feet from all turns, valves and upstream side of distributional fittings or branches. The lettered label, besides identifying the material, shall indicate unusual qualities of the pipe contents, i.e., hot, cold, pressure in pounds/square inch. On service piping, either liquid or air, apply black arrows of same height and with same background color as adjacent to identification labels to indicate direction of flow.

Application: Labels shall be applied to the pipe so that the lettering is in the most legible position. Lettering size shall be in accordance with standards specified in USASI A 13; however, the nearest manufacturer shall be acceptable. Pipes to be marked shall first be wiped clean of dirt, dust, grease and moisture. Apply label over color band, using pressure, so that it lies smooth and flat. Apply a brush coat of clear lacquer, after label has been applied to pipe, making sure edges of label are well covered.

Insulation of Equipment

The deaerator shall be insulated with 1-1/2" thick Johns-Manville Thermobestos block insulation and covered with 0.010 thick 304 stainless steel sheet all applied in accordance with manufacturer's instructions. Alternate insulation if of equal or better insulating value may be used if approved by Owner's representative.

Piping Schedule

<u>Code</u>	<u>Service</u>	<u>Pressure psig</u>	<u>Temperature °F</u>	<u>Material Specification</u>
<u>Water</u>				
WFH	Feedwater, high press.	760	230	M
WFL	Feedwater, low press.	25 or less	230	N
WCH	Condensate 400#	400	450	M
CH	Chemical Treatment, high pressure	760	amb.	M
WP	Plant Service	90	amb.	N
WM	Softener Makeup Water	90	amb.	N
WT	Cooling Tower	60	amb.	N
WCI	Condensate 150#	150	370	N
WCL	Condensate low press.	50	200	N
CH	Chemical Treatment, low pressure	90	amb.	N
WCO	Oily Condensate	25 or less	110	N
<u>Steam</u>				
SH	Steam 400#	425	680	M
SL	Steam 5#	5	240	N
<u>Air</u>				
AH	Soot Blower Air	500	amb.	M
AP	Plant Compressed Air	90	amb.	N
AI	Instrument Air	90	amb.	N
<u>Natural Gas</u>				
GH	High Pressure	100	amb.	N
GI	Intermediate Pressure	35	amb.	N
GL	Low Pressure 5# & less	5	amb.	N
<u>Acid</u>				
A	Concentrated Acid	90	amb.	N

Piping Material SpecificationsSpecification MNominal Rating

800 psig @ 300° F.

600 psig @ 700° F.

Pipe

Black, ASTM A-106 Grade B seamless, plain ends

2" and larger - schedule 40 except feedwater lines
schedule 80 feedwater lines

1-1/2" and smaller - schedule 80 all lines

Joints

2" and larger - butt weld

1-1/2" and smaller - socket weld

weld neck flanges next to flanged equipment

Flanges

600# pressure class, USASI B 16.5, ASTM A105 Grade II

1/4" raised face, weld neck

Bolting

Stud bolts USASI B 16.5, ASTM A193 and hex nuts ASTM A194

Gaskets

Spiral wound 304 stainless steel and asbestos for raised
face flanges, Flexitallic Style CG.

Fittings

2" and larger, schedule 40 and 80 to match pipe, butt
welding, USASI B 16.9, ASTM A234 WPB.

1-1/2" and smaller, 3000# socket weld

USASI B 16.11, ASTM A105, Grade II

Valves (Specification M - high pressure)
mfgr. listed or approved equal

<u>Dwg. Code</u>	<u>Type</u>	<u>Description</u>
V-36	Check	600#, steel, butt weld, piston lift, Edwards 690 Y
V-37	Check	600#, steel, flanged, piston lift, Edwards 690
V-42	Gate	2" and smaller, 800#, steel, flanged, Crane 3611XU
V-43	Gate	2" and smaller, 600#, steel, flanged, Crane 3615XU
V-46	Gate	2-1/2" and larger, 600#, steel, butt weld 8" and above integral bypass, Crane 76-1/2XU
V-47	Gate	2-1/2 and larger, 600#, steel, flanged, 8" and above integral bypass, Crane 76XU
V-51	Globe	2" and smaller, 800#, steel, socket weld Crane 3652XW
V-56	Globe	2-1/2" and larger, 600#, steel, butt weld, 8" and larger integral bypass, Edwards 616Y, 618Y
V-57	Globe	2-1/2" and larger, 600#, steel, flanged, 8" and larger integral bypass, Edwards 616, 618
V-58	Globe	2" and smaller, 600#, steel, flanged, Crane 3656XW
V-59	Globe	2-1/2" and larger, 600#, steel, butt weld, angle stop check, Edwards 605 Y

Specification N

Nominal Rating

150 psi @ 400° F. and lower

Pipe

14" and larger, schedule 10, black ASTM A53 seamless,
Grade A or B

8" through 12", schedule 20, black ASTM A53 seamless,
Grade A or B

6" and smaller, schedule 40, black ASTM A53 seamless,
Grade A or B

Pipe for underground service shall be coated and wrapped in
accordance with previous specifications.

Joints

2" and larger - butt weld

1-1/2" and smaller - socket weld

weld neck or slip on flanges next to flanged equipment

Flanges

150# pressure class, USASI B16.9, ASTM A234 WPB, weld neck
1/16" raised face, except that flat faced flanges
shall be used against flat faced valves or equipment.

Bolting

Stud bolts USASI B16.5, ASTM A193 and hex nuts ASTM A194

Gaskets

Spiral wound 304 stainless steel and asbestos,
Flexitallic Style CG

Fittings

2" and larger, schedule 40, butt weld ANSI B16.9, ASTM A234 WPB
1-1/2" and smaller, 2000#, malleable iron screwed fittings,
USASI B16.3

Valves (Specification N - intermediate and low pressure)

Mfgr. listed or approved equal

<u>Dwg. Code</u>	<u>Type</u>	<u>Description</u>
V-11	Ball	150# nodular iron, flanged, viton seats and seals, Crane Hiflex No. 81102
V-35	Check	2-1/2" and larger, 150#, steel, flanged, swing, Crane 147X
V-40	Gate	1-1/2" and smaller, 800#, steel, screwed, Crane 3607XU
V-42	Gate	2" and smaller, 800#, steel, socket weld, Crane 3611XU
V-45	Gate	2" and larger, 125#, iron, flanged, Crane 465-1/2
V-50	Globe	1-1/2" and smaller, 800#, steel, screwed Crane 3644 XU
V-51	Globe	2" and smaller, 800#, steel, socket weld, Crane 3652 XW
V-55	Globe	2" and larger, 150#, steel, flanged, Crane 143 XR
V-60	Plug	1-1/2" and smaller, 200#, semisteel, screwed lubricated, Nordstrom 114
V-61	Plug	2" and larger, 200#, semisteel, flanged lubricated, Nordstrom 115

Related Specifications

Construction in this section involving the following is covered by the general specifications:

Concrete
Structural Steel
Painting
Electrical

CONSTRUCTION SPECIFICATIONS
FOR
STEAM AUXILIARY EQUIPMENT AND PIPING
FOR
CONVERTER GAS ACID PLANT
EL PASO, TEXAS

Prepared by
Central Engineering Department
Design Section

Date November 17, 1971

By *A. O. Marsh, Jr.*
A. O. MARSH, Jr.
Chief Design Engineer

CONVERTER GAS ACID PLANT
CONSTRUCTION SPECIFICATIONS

Section on Steam Auxiliary Equipment and Piping

Scope

This section covers the installation of the following:

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Dump Condenser	Req. No. CE-71-EP-4
Feedwater Pumps	Req. No. CE-71-EP-5
Deaerator	Req. No. CE-71-EP-6
Valves, Hoses & Nozzles for Spray Chamber	Req. No. CE-71-EP-9
Orifice Flanges	Req. No. CE-71-EP-22
Condensate Storage Pumps	Req. No. CE-71-EP-23
Boiler Check Valves	Req. No. CE-71-EP-24
Spray Chamber Pumps	On hand at Plant.
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All exceptions or changes in these specifications or drawings shall be approved by the Asarco Project Engineer, and a written record maintained of all such exceptions and changes for submission to Asarco on completion of the project.

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MATERIALS AND WORKMANSHIP

General: Materials of construction, valving and specialties shall be as hereinafter described.

Piping Layout: Major piping shall be installed as shown on the drawings. Minor piping not shown on layout drawings shall be laid out in an orderly manner, grouping lines whenever possible and shall follow the diagrammatic layout shown on the drawings. Relocation in the field may be done only with the written consent of the Engineer. The installation shall be neat in appearance, and adequately supported. Every effort shall be made to locate piping and equipment which must be regularly serviced, inspected or tested so that this work may be done as easily as feasible. Lines shall slope in the direction of flow, a minimum of 1/8 inch per foot whenever possible, or as shown on the drawings. Pump piping arrangements shall be in accordance with the standard details shown on the drawings. Piping running through roofs, floors and walls shall pass through sleeves as follows:

Floor: Sleeves shall be of standard weight pipe, anchored in floor, flush at bottom and projecting one inch above finished floor, sized to allow 1/2 inch minimum clearance from pipe and insulation, if required.

Roof: Sleeves are to be made of galvanized sheet iron fastened to roof, and flashed with galvanized sheet metal.

Walls: Sleeves shall be of standard weight pipe, anchored in the wall and flush on each side of the wall. Sleeve shall provide 1/2 inch minimum clearance from pipe and insulation if required. Sleeves in exterior walls shall be filled with oakum and caulked after pipe is placed in sleeve.

Vertical pipelines, passing through concrete, shall be provided with adequate protection to prevent corrosion at point of contact of pipe with concrete. Headroom clearance of 7 ft. 0 in. shall generally be provided below all piping, insulation and appurtenances.

Supports, hangers, guides and anchors: The selection of support points shall be made to utilize existing structural steel where feasible. The Contractor shall furnish and erect all hangers, brackets, rods, clips, clamps, plates, channels and other parts required for a complete installation as well as all necessary miscellaneous iron which may be required to transfer hanger reactions to building steel. All rigid hangers shall be fitted with means of vertical adjustments and suitable locking means shall be provided. All tie rods shall be fitted with adjustment and locknuts. All welded hangers, supports, guide or other attachments shall be of material similar to the pipe, and shall be subject to the same welding procedure as the pipe. Welded attachments to structural steel shall be such as to allow welding along the flange. Welding across the flange will not be allowed. Precautions shall be taken in piping installation to prevent stresses in piping and overstressing of flange

bolting at valves and equipment. Cold springing shall be used in pipe fabrication as shown on the drawings.

Underground Piping: All pipe and fittings shall be carefully handled to avoid damage and shall be inspected for defects before being lowered into the trench. Special care shall be given to handling coated and/or lined pipe to avoid damage. Any damage to pipe, coating, or lining shall be repaired to the satisfaction of the Engineer before installation.

Trenching and Backfilling: The pipe trench shall be excavated along the alignment shown on the plans. Trenches shall be kept to a minimum workable width with trench walls vertical from the bottom of the trench to the top of the pipe. Suitable shoring, timbering or sheeting shall be provided where necessary to support the sides of the trench prior to and during installation of the pipe. All shoring, timbering and sheeting shall be removed before backfilling. The open ends of the pipe shall be closed at the end of each day's work, and shall not be opened until work is resumed. After the pipe is laid on suitable fill in the trench, the line shall be backfilled, leaving only the field joints exposed so that the pipe will be protected until tested and accepted by the Engineer. In backfilling the trench around the lines, special care must be taken so as not to injure coatings or displace the pipe and to give it a solid bearing throughout its entire length. The remainder of the backfill above the pipe shall be sufficiently packed to prevent serious settlement. Open trenches across roadways or other areas to be paved shall be backfilled and compacted to a density at least equal to that of the surrounding earth. Sleeves made of steel

pipe shall be used for lines 12 inches and smaller crossing under truck roads and areas where concentrated loads may occur. In all cases, the sleeves shall be two nominal pipe sizes larger than the protected line except that minimum clearance between pipe and sleeve shall be 1-1/2 inches.

CLEANING AND TESTING

Testing and field inspection shall conform to USASI B 31.1 - 1955 and B 31.1a - 1965. All lines shall be thoroughly cleaned while disconnected from all equipment. All piping, except low pressure air, gas and vent lines, shall be tested at 1-1/2 times working pressure of line service. Low pressure air and gas lines shall be tested at 50 psi air and soapy water test.

Underground Pipe Covering

Underground pipe shall have a protective covering except as hereinafter specified, shall be mechanically applied in a factory or field plant especially equipped for the purpose. Specials and fittings that cannot be coated and wrapped mechanically shall have the protective coating applied by hand, preferably at the plant that applies the covering to the pipe. Joints shall be coated and wrapped by hand. Hand-coating and wrapping shall be done in a manner and with materials that will produce a covering equal in effectiveness to that of the mechanically applied covering. The coating work shall be thoroughly inspected, and any flaws or holidays found shall be repaired by the Contractor at no extra cost. The pipe covering shall consist of one of the following:

Coal-tar Coating and Wrapping: A coat of coal-tar primer, a coat of coal-tar enamel, a wrapper of coal-tar-saturated asbestos felt,

a second coat of coal-tar enamel, a second wrapper of coal-tar-saturated asbestos felt, where indicated, and a wrapper of kraft paper or a coat of water-resistant whitewash, applied in the order named and conforming to the requirements of AWWA Standard C203 in all respects as to materials, thickness, methods of application, tests, and handling, except that interior lining will not be required. Joints and fittings shall be coated and wrapped either in conformity with AWWA Standard C203 or with the materials specified in Federal Specification HH-T-30, applied in accordance with the manufacturer's recommendation.

Alternate No. 1:

Asphalt Coating and Wrapping: A coat of asphalt primer, a coat of hot asphalt enamel, an asphalt-saturated-felt or asphalt-saturated-glass wrapper completely bonded to the enamel applied in the order named and conforming to the requirements of the Asphalt Institute Specification M-1 in all respects as to materials, thickness, methods of application, tests and handling.

Alternate No. 2:

Extruded polyethylene sheath conforming to Federal Specification L-C-530 and of thicknesses not less than 54 mils. Fittings and joints shall be covered in the manner and with the materials recommended by the applier of the sheath.

Pipe Insulation

All pipes carrying liquids or gases in excess of 150° F. shall be insulated with a metal reinforced fiberglass blanket, Johns-Manville Thermobestos or equal covering all pipes, fittings and valves except as noted on drawings. Insulation shall be applied

in accordance with manufacturer's instructions. The insulation shall have a protective covering of 0.010" thickness stainless steel #304 sheet. Alternate insulation of equal or better insulating value may be used if approved by Owner's representative.

Insulation thickness shall be as follows:

400# steam lines	2-1/2"
400" condensate lines	2"
150" condensate lines	1-1/2"
5# steam lines (6" dia. and larger)	1-1/2"
(5" dia. and smaller)	1"
low pressure condensate lines	1"
feed water lines (5" and larger)	1-1/2"
(4" and smaller)	1"

Pipe Painting and Coding

Interior pipe shall not be painted. Exterior non-insulated pipe exposed to the weather shall be given a primer and finish coat in accordance with the general specifications for painting exterior metal surfaces.

Content of piping systems shall be identified according to the Texas State color classification by a colored band completely encircling pipe, at least 8 inches in length (longer where necessary to accommodate full identification labels), painted on pipe or pipe covering in every location where identification labels are required.

Pipes which are concealed or in covered pipe trenches need not be identified.

Identification labels: Identification shall be accomplished by use of Brady "Quik-Labels" (mastic book) as manufactured by the

W. H. Brady Company, Seton Nameplate Corporation, or equal (stenciling is acceptable). Straight lines of pipe shall be identified at intervals of 20 feet and at least once in each room. Piping shall also be identified at a point approximately two feet from all turns, valves and upstream side of distributional fittings or branches. The lettered label, besides identifying the material, shall indicate unusual qualities of the pipe contents, i.e., hot, cold, pressure in pounds/square inch. On service piping, either liquid or air, apply black arrows of same height and with same background color as adjacent to identification labels to indicate direction of flow.

Application: Labels shall be applied to the pipe so that the lettering is in the most legible position. Lettering size shall be in accordance with standards specified in USASI A 13; however, the nearest manufacturer shall be acceptable. Pipes to be marked shall first be wiped clean of dirt, dust, grease and moisture. Apply label over color band, using pressure, so that it lies smooth and flat. Apply a brush coat of clear lacquer, after label has been applied to pipe, making sure edges of label are well covered.

Insulation of Equipment

The deaerator shall be insulated with 1-1/2" thick Johns-Manville Thermobestos block insulation and covered with 0.010 thick 304 stainless steel sheet all applied in accordance with manufacturer's instructions. Alternate insulation if of equal or better insulating value may be used if approved by Owner's representative.

Piping Schedule

<u>Code</u>	<u>Service</u>	<u>Pressure</u> <u>psig</u>	<u>Temperature</u> <u>°F</u>	<u>Material</u> <u>Specification</u>
	<u>Water</u>			
WFH	Feedwater, high press.	760	230	M
WFL	Feedwater, low press.	25 or less	230	N
WCH	Condensate 400#	400	450	M
CH	Chemical Treatment, high pressure	760	amb.	M
WP	Plant Service	90	amb.	N
WM	Softener Makeup Water	90	amb.	N
WT	Cooling Tower	60	amb.	N
WCI	Condensate 150#	150	370	N
WCL	Condensate low press.	50	200	N
CH	Chemical Treatment, low pressure	90	amb.	N
WCO	Oily Condensate	25 or less	110	N
	<u>Steam</u>			
SH	Steam 400#	425	680	M
SL	Steam 5#	5	240	N
	<u>Air</u>			
AH	Soot Blower Air	500	amb.	M
AP	Plant Compressed Air	90	amb.	N
AI	Instrument Air	90	amb.	N
	<u>Natural Gas</u>			
GH	High Pressure	100	amb.	N
GI	Intermediate Pressure	35	amb.	N
GL	Low Pressure 5# & less	5	amb.	N
	<u>Acid</u>			
A	Concentrated Acid	90	amb.	N

Piping Material SpecificationsSpecification MNominal Rating

800 psig @ 300° F.

600 psig @ 700° F.

Pipe

Black, ASTM A-106 Grade B seamless, plain ends

2" and larger - schedule 40 except feedwater lines
schedule 80 feedwater lines

1-1/2" and smaller - schedule 80 all lines

Joints

2" and larger - butt weld

1-1/2" and smaller - socket weld

weld neck flanges next to flanged equipment

Flanges

600# pressure class, USASI B 16.5, ASTM A105 Grade II

1/4" raised face, weld neck

Bolting

Stud bolts USASI B 16.5, ASTM A193 and hex nuts ASTM A194

Gaskets

Spiral wound 304 stainless steel and asbestos for raised
face flanges, Flexitallic Style CG.

Fittings

2" and larger, schedule 40 and 80 to match pipe, butt
welding, USASI B 16.9, ASTM A234 WPB.

1-1/2" and smaller, 3000# socket weld

USASI B 16.11, ASTM A105, Grade II

Valves (Specification M - high pressure)
mfgr. listed or approved equal

<u>Dwg. Code</u>	<u>Type</u>	<u>Description</u>
V-36	Check	600#, steel, butt weld, piston lift, Edwards 690 Y
V-37	Check	600#, steel, flanged, piston lift, Edwards 690
V-42	Gate	2" and smaller, 800#, steel, flanged, Crane 3611XU
V-43	Gate	2" and smaller, 600#, steel, flanged, Crane 3615XU
V-46	Gate	2-1/2" and larger, 600#, steel, butt weld 8" and above integral bypass, Crane 76-1/2XU
V-47	Gate	2-1/2 and larger, 600#, steel, flanged, 8" and above integral bypass, Crane 76XU
V-51	Globe	2" and smaller, 800#, steel, socket weld Crane 3652XW
V-56	Globe	2-1/2" and larger, 600#, steel, butt weld, 8" and larger integral bypass, Edwards 616Y, 618Y
V-57	Globe	2-1/2" and larger, 600#, steel, flanged, 8" and larger integral bypass, Edwards 616, 618
V-58	Globe	2" and smaller, 600#, steel, flanged, Crane 3656XW
V-59	Globe	2-1/2" and larger, 600#, steel, butt weld, angle stop check, Edwards 605 Y

Specification N

Nominal Rating

150 psi @ 400° F. and lower

Pipe

14" and larger, schedule 10, black ASTM A53 seamless,

Grade A or B

8" through 12", schedule 20, black ASTM A53 seamless,

Grade A or B

6" and smaller, schedule 40, black ASTM A53 seamless,

Grade A or B

Pipe for underground service shall be coated and wrapped in accordance with previous specifications.

Joints

2" and larger - butt weld

1-1/2" and smaller - socket weld

weld neck or slip on flanges next to flanged equipment

Flanges

150# pressure class, USASI B16.9, ASTM A234 WPB, weld neck

1/16" raised face, except that flat faced flanges

shall be used against flat faced valves or equipment.

Bolting

Stud bolts USASI B16.5, ASTM A193 and hex nuts ASTM A194

Gaskets

Spiral wound 304 stainless steel and asbestos,

Flexitallic Style CG

Fittings

2" and larger, schedule 40, butt weld ANSI B16.9, ASTM A234 WPI

1-1/2" and smaller, 2000#, malleable iron screwed fittings,

USASI B16.3

Valves (Specification N - intermediate and low pressure)

Mfgr. listed or approved equal

<u>Dwg. Code</u>	<u>Type</u>	<u>Description</u>
V-11	Ball	150# nodular iron, flanged, viton seats and seals, Crane Hiflex No. 81102
V-35	Check	2-1/2" and larger, 150#, steel, flanged, swing, Crane 147X
V-40	Gate	1-1/2" and smaller, 800#, steel, screwed, Crane 3607XU
V-42	Gate	2" and smaller, 800#, steel, socket weld, Crane 3611XU
V-45	Gate	2" and larger, 125#, iron, flanged, Crane 465-1/2
V-50	Globe	1-1/2" and smaller, 800#, steel, screwed Crane 3644 XU
V-51	Globe	2" and smaller, 800#, steel, socket weld, Crane 3652 XW
V-55	Globe	2" and larger, 150#, steel, flanged, Crane 143 XR
V-60	Plug	1-1/2" and smaller, 200#, semisteel, screwed lubricated, Nordstrom 114
V-61	Plug	2" and larger, 200#, semisteel, flanged lubricated, Nordstrom 115

Related Specifications

Construction in this section involving the following is covered by the general specifications:

Concrete
Structural Steel
Painting
Electrical



PACE INDUSTRIES

1081 SOUTH SECOND WEST • P. O. BOX 2605 • SALT LAKE CITY, UTAH 84110 • (801) 521-3740

January 31, 1972

American Smelting & Refining Co.
Salt Lake City, Utah

Attention: Mr. Bob Jones
Engineering Dept.

Re: El Paso, Texas Plant

Gentlemen:

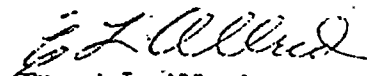
In line with previous discussions and with reference to your sketch submitted, we are pleased to offer for your consideration and evaluation the following bill of material for the water column and related items:

- 1 - RELIANCE W-350-X No-Alarm Column, per dwg. AB-13871
- 1 - RELIANCE #403-RS Gage Valves, per dwg. B-4882-9
- 1 - RELIANCE C-99 Gage Insert, per dwg. B-4366-8
- 1 - RELIANCE, set of 3 #GC-311 Try Cocks, per dwg. A-7480
- 1 - RELIANCE E-300 Wall Mount Eye-Hye complete with
Unitemp reservoir, 18" wall mount remote gage
with shutoff valves and Vizzene fluid, per
dwg. D-9082-2

Attached are 3 copies each of above drawings which have been CERTIFIED for your use. We request that when this equipment is ordered that one copy of each drawings be sent to us with the order and these should be marked as "approved" or "approved with changes as noted" as applicable.

Yours very truly,

PACE INDUSTRIES

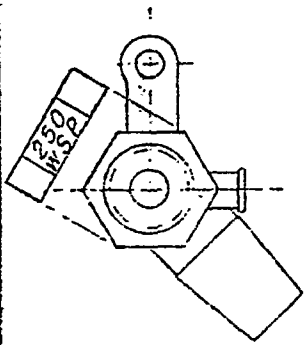

Ernest L. Allred

EIA:A
Encls.

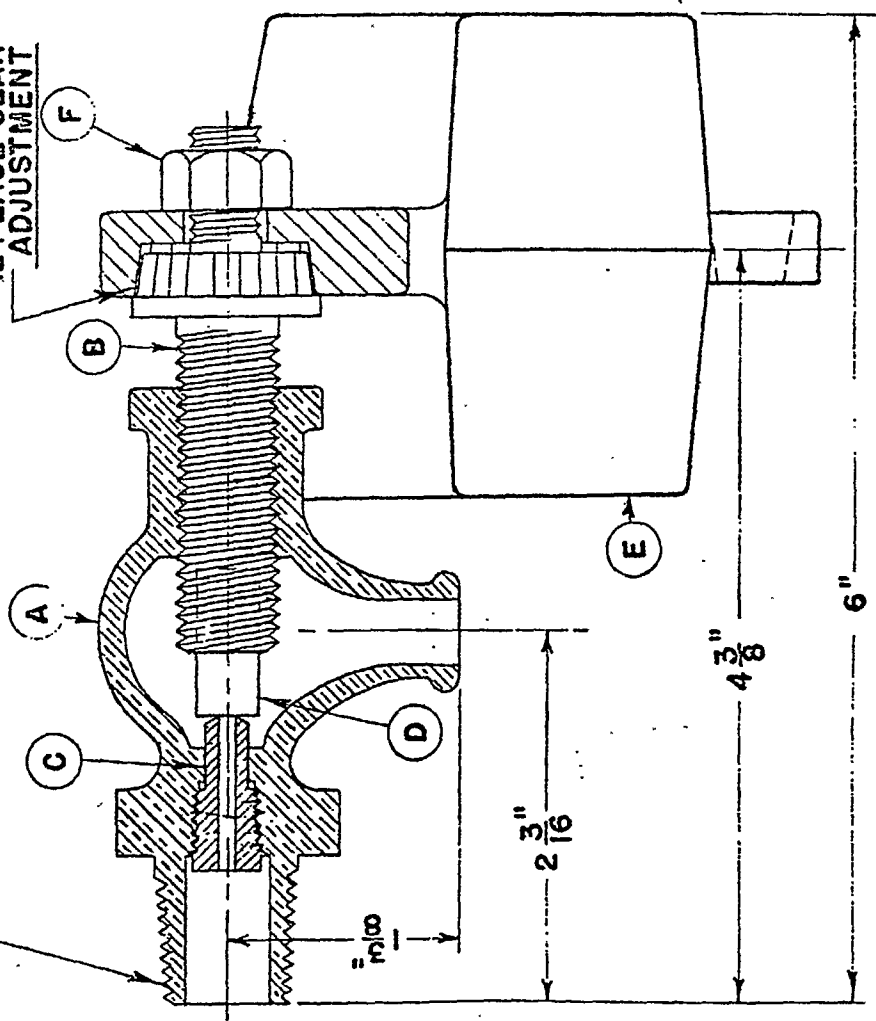
cc: Clark-Reliance Corp.
M. C. Parker

POWER PLANT AND INDUSTRIAL EQUIPMENT

ASARCO ELP 0008940



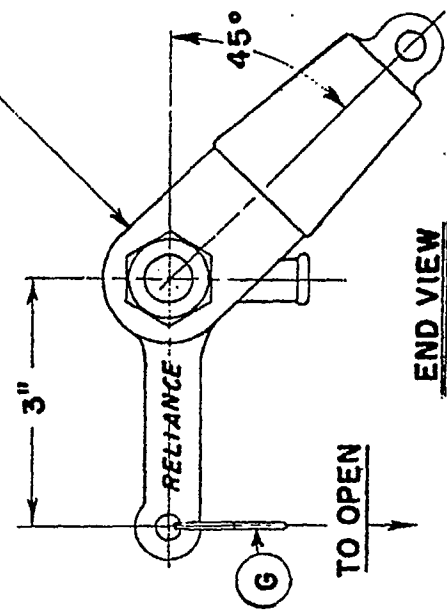
PART. NO. GC310 - 1" PIPE THREAD
 PART. NO. GC311 - 3/4" PIPE THREAD



BILL OF MATERIAL

ITEM	PART. NO.	QUAN.	DESCRIPTION	DWG. NO.
A	GC310-1	1	BODY-65-5-5-5 BRONZE-PAT. A-7372	A-7372
B	GC310-2	1	STEM-" " " " -PAT. NO. 2010	A-7481
C	GC310-3	1	SEAT 7/16" DIA. MONEL	A-7481
D	GC310-4	1	PENCIL-HARD COPPER	A-7481
E	GC310-5	1	WEIGHTED LEVER - CAST IRON	A-3599-1
F	PG4-4	1	HEX. STEEL NUT - 7/16"-14 TH'D	
G	BG403R-16	1	"S" HOOK - PLATED STEEL	
	GC311-1	1	3/4" THD. BODY-65-5-5-5 BRZ.-PAT. A-7372	A-7372

LEVER SHOWN IN
 CLOSED POSITION



END VIEW

THE CLARK-RELIANCE
 CLEVELAND, OHIO

NO. GC310 & GC311 GAGE COCK
 WITH WEIGHTED LEVER

SCALE- NONE DATE- 6-9-52

DRAWN BY- N.K.

TRACED BY-

NO. A-7480

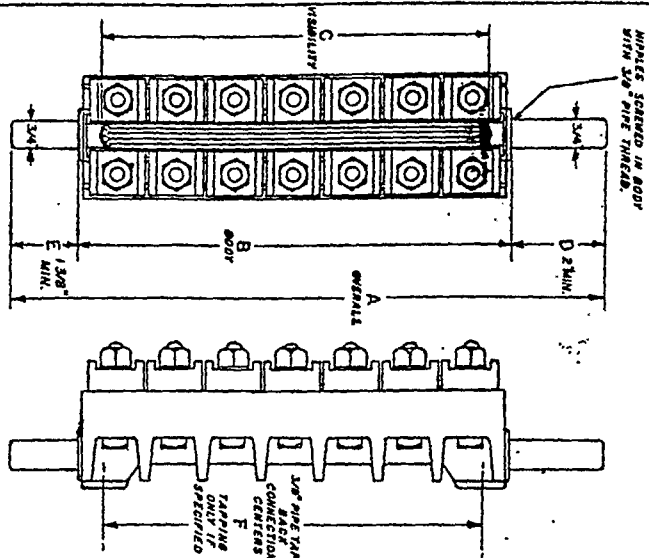


Fig. 1

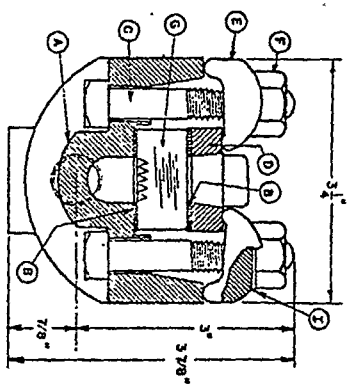


FIG. 3

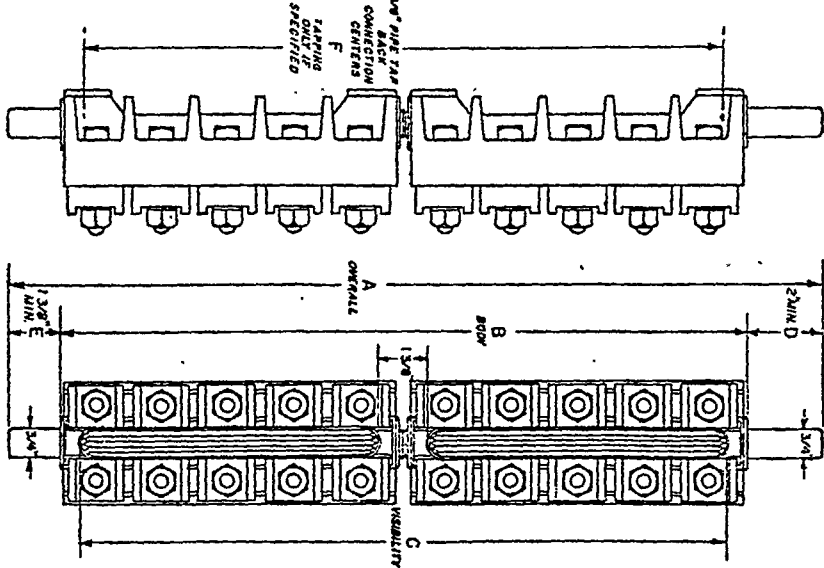


FIG. 2

BILL OF MATERIAL				
ITEM	PART NO.	NAME OF PART	MATERIAL	PIECES
A	PG-1-1	HOUSING	SEMI-STEEL	1
B	PG-3-1	GASKET 3/8" THICK	ASSBESTOS	2
C	PG-4-1	7/16"-1/4" SO. HD. BOLTS	STEEL	
D	PG-5-2	COVER PLATE	DUCTILE	
E	PG-6-6	CLAMPS, PAT. NO. 1892	IRON	1
F	PG-4-4	HEX. NUTS-7/16"-1/4"	DIE STEEL	
G	PG-4-6	REFLECT GLASS	STEEL, SEMI-FIN.	1
H	PG-4-11	NIPPLES	GLASS	1
I	PG-10-10	WASHERS 3/4" X 3/8" X 3/16"	STAINLESS STEEL	2

MFD. IN STANDARD SIZES

NO.	A	B	C	D	E	F	NET WEIGHTS
C4	7/16	5/16				6 1/2	11 LBS.
C5	9	7/8				7 3/4	10 1/2
C6	10 1/4	1 1/8				9	12 1/4
C7	11 3/8	1 1/4				10	14 1/8
C8	13	1 1/2				11 1/2	16 1/2
C9	15 1/4	1 3/4				13 1/2	19 1/2

SIZES AS USED WITH RELIANCE WATER GAGE VALVES

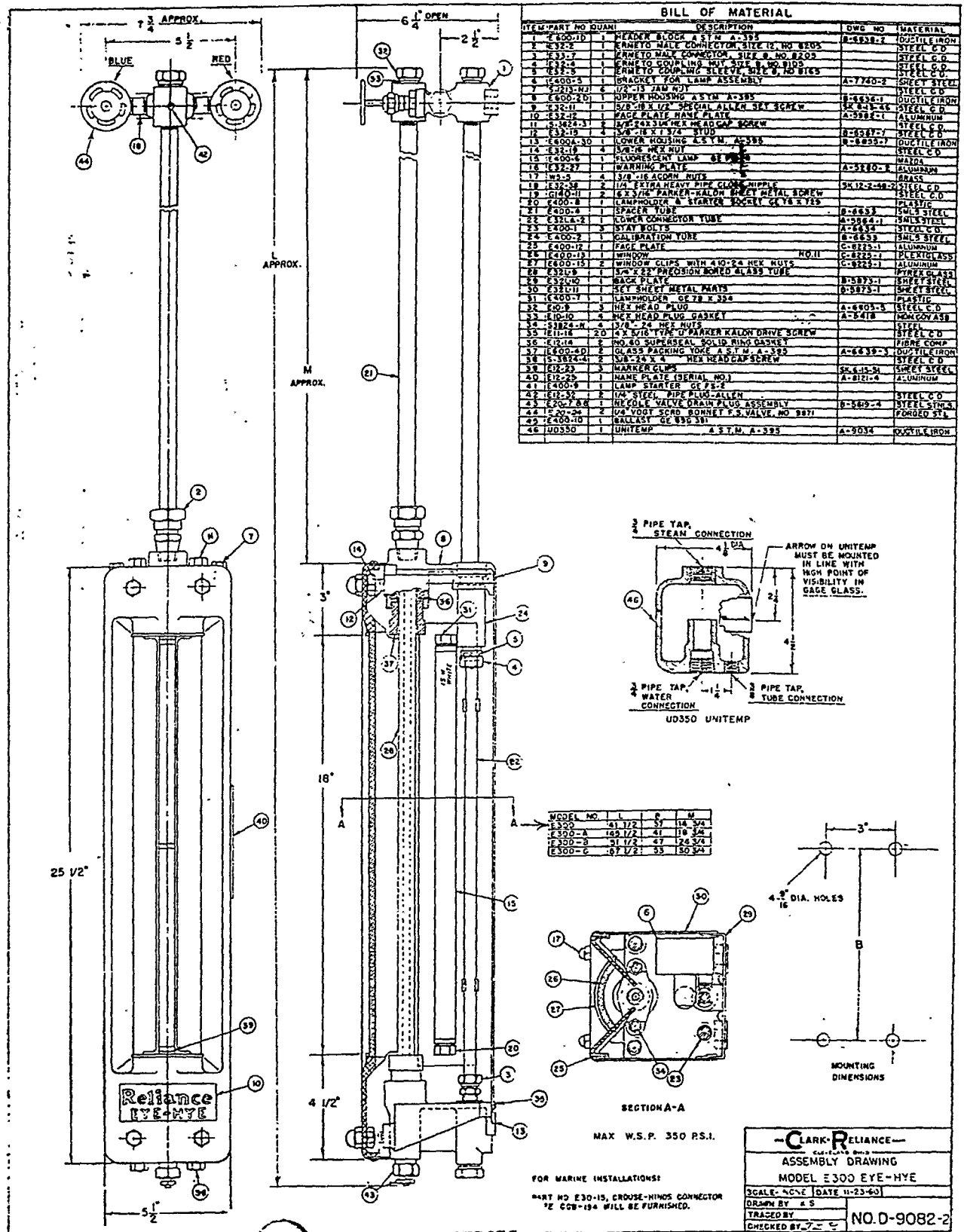
VERTICAL				TILT VIEW			
NO.	A	B	C	NO. OF PRISMATIC GAGE	TOP NIPPLE D. E.	BOTTOM NIPPLE D. E.	VERTICAL CENTERS
14	1	1	1	1	1	1	14
15	1	1	1	1	1	1	15
16	1	1	1	1	1	1	16
17	1	1	1	1	1	1	17
18	1	1	1	1	1	1	18
19	1	1	1	1	1	1	19
20	1	1	1	1	1	1	20
21	1	1	1	1	1	1	21
22	1	1	1	1	1	1	22
23	1	1	1	1	1	1	23
24	1	1	1	1	1	1	24
25	1	1	1	1	1	1	25
26	1	1	1	1	1	1	26
27	1	1	1	1	1	1	27
28	1	1	1	1	1	1	28
29	1	1	1	1	1	1	29
30	1	1	1	1	1	1	30

MFD. IN STANDARD SIZES

NO.	A	B	C	D	E	F	NET WEIGHTS
C4	16	14 7/8				14 5/8	22
C5	18 1/4	17 1/8				17	24
C6	20 1/4	19 1/8				19 1/2	26
C7	23	21 3/4				21 3/4	28
C8	26 1/4	24 7/8				24 7/8	30
C9	29 1/4	27 3/4				27 3/4	32

NOTE:
FOR STANDARD RELIANCE WATER GAGE VALVES
OVERALL "A" SHOULD BE 3/8" LESS THAN THE
WATER GAGE VALVE CENTERS.
"D" & "E" SHOW THE MINIMUM LENGTH
NIPPLES WHICH CAN BE USED WITH THESE VALVES.
W.S.P. 250 P.S.I. (STEAM SERVICE)

CLARK RELIANCE
RELIANCE "C" TYPE PRISMATIC
GLASS INSERTS
SOLE SOURCE
DRAWN BY: E.L.M.
CHECKED BY: E.L.M.
NO. B-4366-81

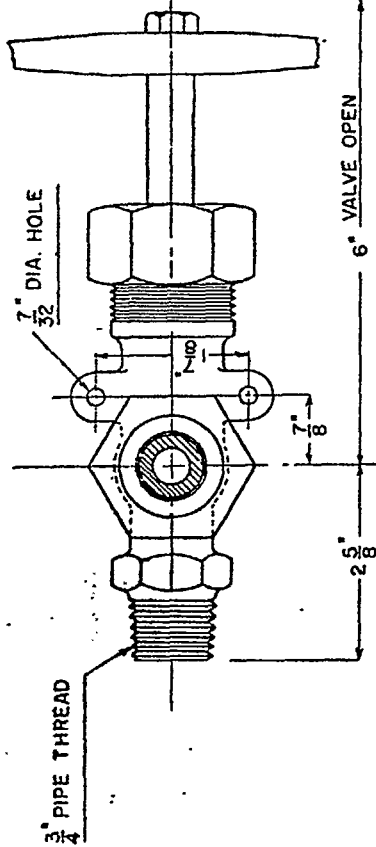


PACE INDUSTRIES
P.O. BOX 8311 BOISE, IDAHO 83707
PHONE (208) 375-9786

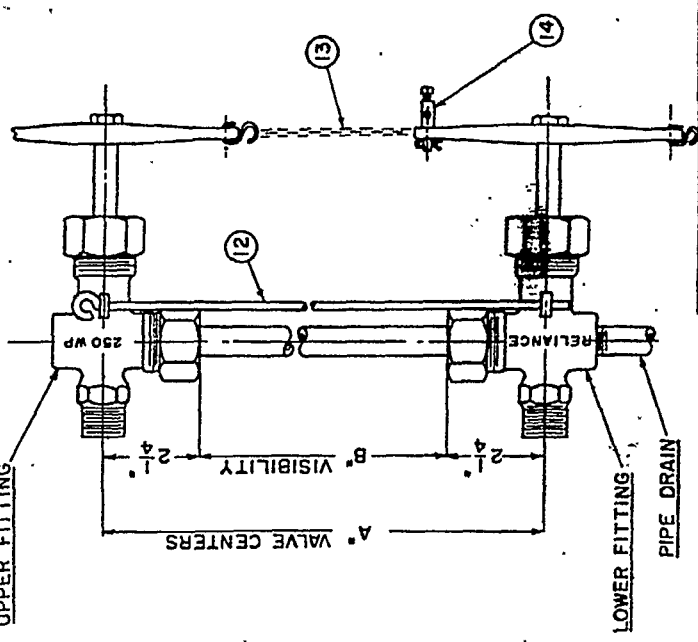
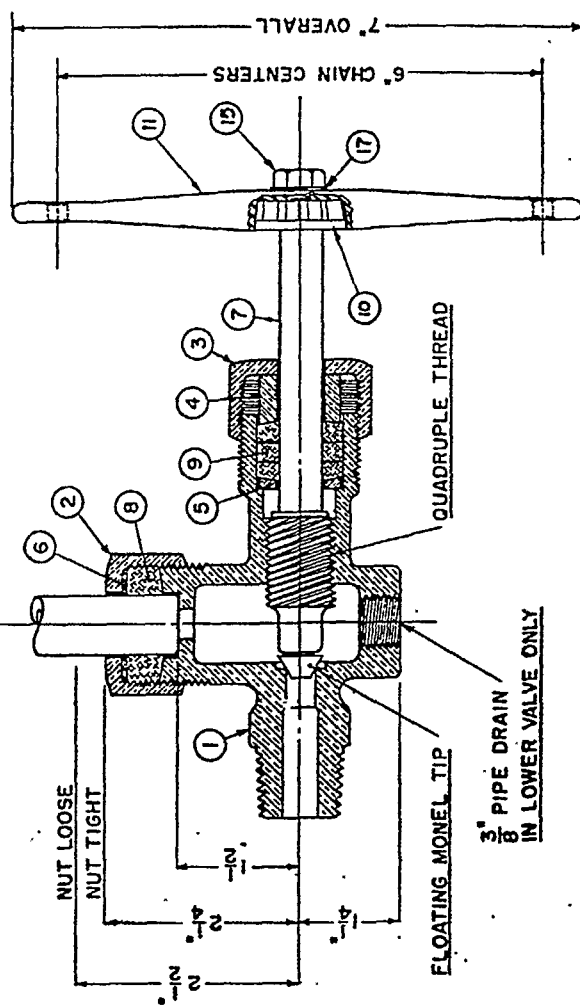
ASARCO ELP 0008943

BILL OF MATERIAL-PER SET

ITEM	PART NO.	QUAN.	DESCRIPTION	MATERIAL	OWG. NO.	FIG.
1	BG403R-1	1	VALVE BODY-LOWER. PAT. NO. 2,171, RED BRASS	SB-62	A-4716-3	
2	BG403R-2	2	GLASS PACKING NUT. PAT. NO. 2,171, RED BRASS	SB-62	A-4716-3	A
3	BG403R-3	2	STEM PACKING NUT. PAT. NO. 2,171, RED BRASS	SB-62	A-4716-3	A
4	BG403R-4	2	STEM PACKING GLAND	BRASS	A-4716-3	A
5	BG403R-5	2	STEM PACKING WASHER	STEEL	"	D
6	SG434-10	2	GLASS PACKING WASHER	STEEL	"	D
7	BG403RS-3	2	VALVE STEM. BRONZE. NAVY "M"	SB-61	A-713-5	
8	BG403R-8	2	GLASS PACKING 1-3/16" O.D. x 1/16" x 7/16"	RUBBER	B-9344-4	B
9	BG403R-9	6	STEM PACKING-SUPER-SEAL #1-1 1/4" O.D. x 5/16" L x 1/4"	"	B-9344-4	B
10	BG403RS-1	2	SPROCKET. IRON-BRONZE. SAE. 2B. SING.	"	A-7255-1	
11	BG403RS-2	2	LEVER. UPPER & LOWER. BRONZE. NAVY "M"	MALLORY	A-7255-2	
12		2	GUARD RODS-LENGTH = VALVE CENTERS + 1"	STEEL	C-4344-5	
13		10 FT.	CHAIN-12-5 FT. LGTHS. 1 & 3-5 HOOKS-PLATED	STEEL	"	
14		1	CHAIN FIXTURE	BRASS	A-3047	
15	BG403R-13	2	HEX HD. CAP SCREW 5/16"-18 x 3/4"	STEEL	"	
16		1 SET.	CHAIN HANDLES	ALUMINUM	A-8282	
17	BG403R-14	2	SHAKEPROOF LOCK WASHER 5/16"	STEEL	"	
18	BG403R-1A	1	VALVE BODY-UPPER. PAT. NO. 2,171, RED BRASS	SB-62	A-4716-3	

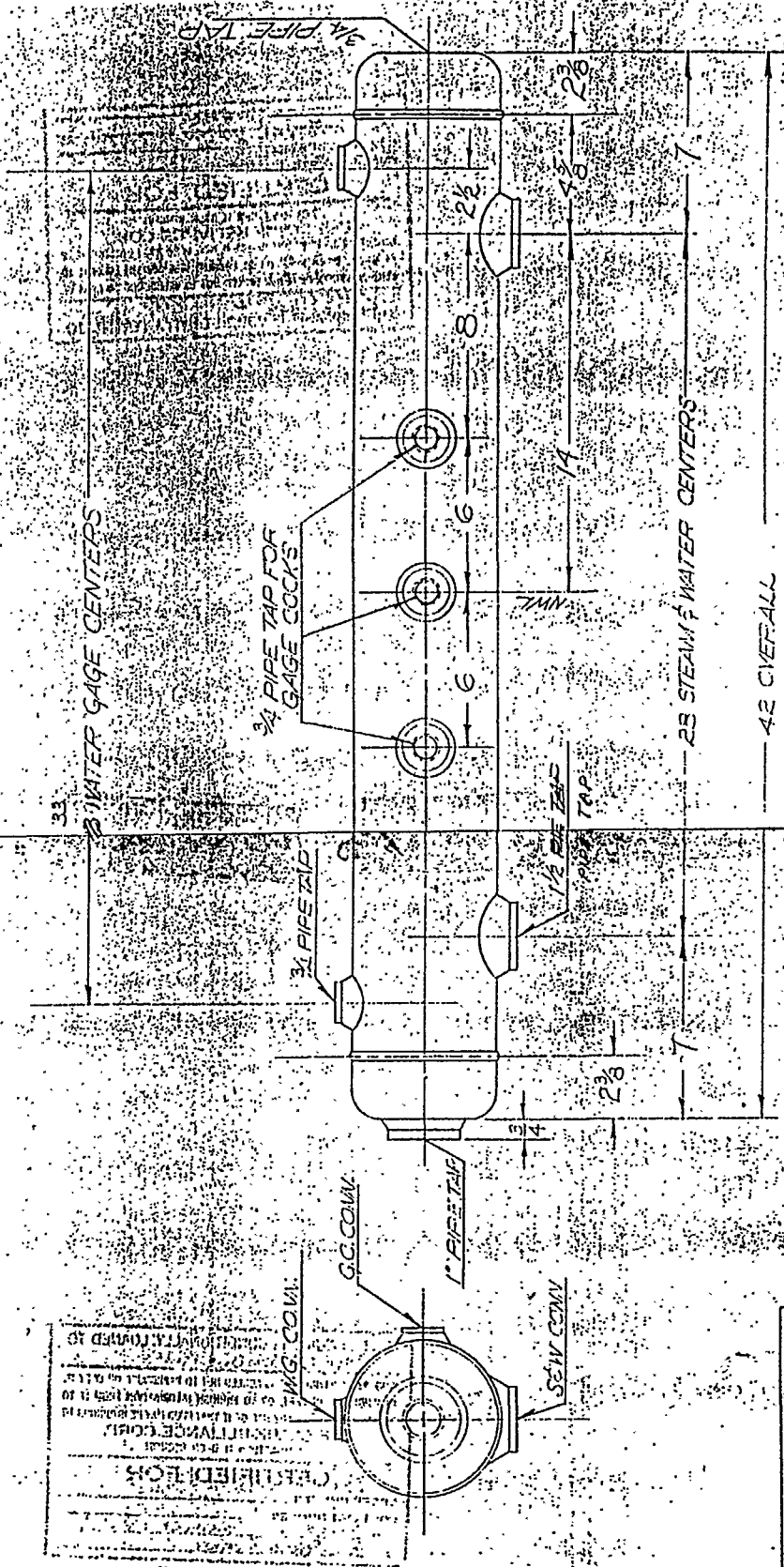
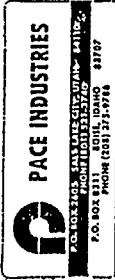


UPPER FITTING



-CARR-RELIANCE-
 RELIANCE STANDARD SCREWED
 BRONZE WATER GAGE VALVE
 CAT. NO. 403RS
 SCALE-FULL DATE-12-17-40 FILE-
 DRAWN BY-A.A.
 CHECKED BY-B.L. NO R-4000-C

MAXIMUM W. P. - 250 LBS. PER SQ. INCH
 B-VISIBLE GLASS-A" MINUS 1/8"
 GAGE GLASS OR OVERALL INSERT LENGTH = A" MINUS 3/4"



FINISH TUBING 3/4\"/>

THE CLARK-RELIANCE CORP. CLEVELAND, OHIO, U.S.A.		Material
W350X NC 41-42M	W34 EF 234.1V	
AP-13871	DATE 7-2-77	REV.

Rev.	Description	Date	By



SOUTHWESTERN

INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

Formerly: CONSTRUCTION DIVISION, SOUTHWESTERN TRANSFER CO., INC.

1730 Bassett Ave.

P. O. Box 1611

El Paso, Texas 79948

(915) 532-3491

1330 South 26th Place

P. O. Box 20865

Phoenix, Arizona 85036

(602) 273-1371

527 Wyoming Blvd., S.E.

P. O. Box 8057

Albuquerque, New Mexico 87108

(505) 265-7691

LETTER OF TRANSMITTAL

TO: American Smelting and Refining Co.
P.O. Box 1111
El Paso, Texas 79999

DATE: January 21, 1972

RE: Pneumatic Cylinder & Accessorie

ATTENTION: Mr. J. W. English
Project Engineer

SUBMITTAL NO.: _____

GENTLEMEN:

WE ARE SENDING YOU ☒ ATTACHED ☐ UNDER SEPARATE COVER VIA _____

THE FOLLOWING:

☐ SHOP DRAWINGS ☐ SAMPLES ☐ PLANS ☐ DESCRIPTIVE LITERATURE

☐ COPY OF LETTER DATED _____ ☒ Quotes

COPIES	DATE	NO.	DESCRIPTION
1			Quote - Tri-State Industrial Supply
1			Quote - Geo. S. Thompson

THESE ARE TRANSMITTED FOR REASONS NOTED BELOW:

☒ REVIEW AND APPROVAL ☐ APPROVED AS SUBMITTED ☐ APPROVED AS NOTED

☐ DISAPPROVED ☐ AS REQUESTED ☐ FOR YOUR USE

☐ RESUBMIT _____ COPIES FOR APPROVAL ☐ RETURN _____ CORRECTED PRINTS

REMARKS:

ASARCO ELP 0008946



SOUTHWESTERN

INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

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827 Wyoming Blvd., S.E.

P. O. Box 9057

Albuquerque, New Mexico 87108

(505) 265-7691

REQUEST FOR QUOTATION

NOT AN ORDER

DATE: January 7, 1972

TO: Tri-State Industrial Supply
5526 E. Paisano
El Paso, Texas
Attn: Mr. Miller

CUSTOMER: ASARCO

JOB TITLE: Converter Gas Acid Plant

To receive consideration:
3 copies of your
bid must be in our office
by January 14, 1972.

FOR SHIPMENT TO:
American Smelting and Refining Co.
El Paso, Texas

SHIPMENT REQUIRED BY: _____

Please submit firm Quotation on Items listed below subject to terms listed herein:

ITEM	QUANTITY	DESCRIPTION	Each	Total
		Quotation From: Tri-State SEE ATTACHED LIST:		
1	3	" " "	118.70	356.10
2	2	" " "	661.62	1323.24
3	3	" " "	661.62	1984.86
				3664.20
		Less 10%		366.42
				3297.78
		Plus 5% Tax STATE & City		164.89
				3462.67
		F.O.B. Chicago Net 30 Days; Payment Terms 8 Weeks Shipment For 450 Deg. F. Max.		

Quotation must indicate unit price, extension, total, applicable taxes, terms of payment, FOB point, shipping point(s) and best delivery.

Quotation must be in accordance with plans and specifications submitted. Deviation or substitutions must be clearly stated in your Quotation.

SOUTHWESTERN INDUSTRIAL CONTRACTORS & RIGGERS, INC.

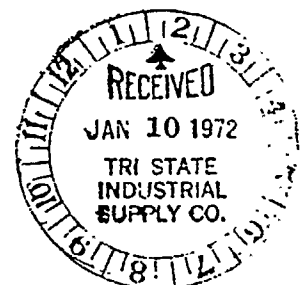
H. E. Wickes

Project Manager

ASARCO ELP 0008947

REQUEST FOR QUOTATION
NOT AN ORDER

<u>ITEM NO.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	3	Rex-Hanna 3.25" Bore, 18" Stroke, Head Trunion MTL, 1.00" Rod. Dia., Small male thread .75-16 w/rod clevis #V2, complete w/pin
2	2	Rex-Hanna Pneumatic cylinder, 8" bore, 25½" stroke w/5" rod extension, Cushioned both ends, cap fixed clevis, mounted MPI, Rod Dia. Code J (2" dia.), Rod end small male 1½ x 12" thread, suitable for 500 deg. F Ambient temperature, supplied w/protective boot. 450°F. Max
	2	Rex-Hanna Mounting Bracket #B3
	2	Rex-Hanna Rod Eye Item #Y5
	2	Rex-Hanna Pin 1.751" dia. x 5.88 lg. Item #P5
	2	Rex-Hanna Pin 1.001" dia. x 3.56 lg. Item #P3
3	3	Rex-Hanna Pneumatic cylinder, 8" bore, 25½" stroke w/5" rod extension, cushioned both ends, cap fixed clevis MPI, rod dia. code "J" (2" dia.) Rod end small male 1½ x 12" threaded, supply w/protective boot suitable for 500 deg. F Ambient temperature. 450°F. Max.
	3	Rex-Hanna Mounting bracket item #B3
	3	Rex-Hanna Rod Eye Item #Y5
	3	Rex-Hanna Pin 1.751" dia. x 5.88 lg. Item #P5
	3	Rex-Hanna Pin 1.001" dia. x 3.56 lg. Item #P3



OTHER LOCATIONS:
ODESSA, TEXAS
ALBUQUERQUE, NEW MEXICO
PHOENIX, ARIZONA
CHIHUAHUA, CHIH., MEXICO

PROPOSAL

Geo. S. Thomson Co., Inc.
Industrial Supplies

EL PASO, TEXAS 7999
3738 DURAZNO AVENUE
BOX 17
PHONE — 533-950
TELEX NO. 74-9438

DATE Jan. 13, 1972

PROPOSAL NO. 072-45

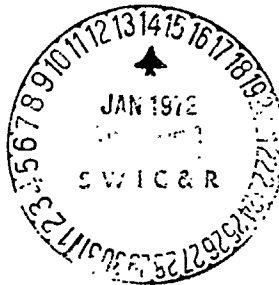
YOUR NO. _____

Southwestern Ind. Contractors & Riggers, Inc.
P. O. BOX 1611
El Paso, Texas 79948



Atten: Mr. H.E. Wickes

QUANTITY	MATERIAL	UNIT PRICE	EXTENSION
3	Wabco Powermaster Pneumatic Cylinder. 3-1/4" Bore w/18" stroke MTI-P.P. (Head Trunion Mount) 1" Rod, 3/4"/16 Thread J-80002 Clevis & Pin.	99.66/Ea.	298.98
5	Wabco Powermaster Pneumatic Cylinder. 8" Bore, 25-1/2" Stroke. W/5" Rod Extension, Model C-MPI-PP-C. MPI Fixed Clevis Mount, Cushions Both ends. 2" Dia. Rod W/ 1-1/2" Threads W/protective boat. Cylinder furnished with Viton Seals & 1" Diaphragm. NOTE: Viton Seals are suggested for temperature to 400°.	523.43	2,617.15
5	Mounting Brackets J-800033	17.68 Ea.	88.40
5	Rod Eye J 800013	24.35 Ea.	121.75
5	Pin J 800021	6.25 Ea.	31.25
			<u>3,157.53</u>



TERMS: Net 30

F.O.B.: Lexington, KY.

APPROXIMATE DATE OF SHIPMENT

4-6 Weeks

ORDERS, SALES AND DELIVERIES OF THE ABOVE OR ANY OTHER MERCHANDISE ARE SUBJECT TO THE TERMS AND CONDITIONS OF SALE PRINTED ON BOTH SIDES OF THIS INSTRUMENT. MAIL PAYMENTS TO GEO. S. THOMSON CO., INC., P. O. BOX 17, EL PASO, TEXAS.

IF THERE ARE ANY QUESTIONS REGARDING THIS PROPOSAL PLEASE CONTACT.

GEO. S. THOMSON CO., INC.

Don Cline

By Richard Atterbury

ASARCO ELP 0008949



SOUTHWESTERN

INDUSTRIAL CONTRACTORS AND RIGGERS, INC.

Formerly: CONSTRUCTION DIVISION, SOUTHWESTERN TRANSFER CO., INC.

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(505) 265-7691

January 21, 1972

American Smelting and Refining Co.
P.O. Box 1111
El Paso, Texas 79999

Attn: Mr. J. W. English
Project Engineer

Re: Pneumatic Cylinder & Accessories

Dear Sir,

Enclosed are two quotes for the above, shown on Dwg. EP-17764, 17889, 17890 for your approval to purchase. Although Rex-Hanna is approximately \$380.00 more than Westinghouse from Geo. S. Thompson, we would recommend that we use Rex-Hanna because of the temperature rating and Rex-Hanna was called out on the drawings.

Thanks,

Very truly yours,

H. E. Wickes
Project Manager

HEW/jm

P.S. I have been told that there will be an increase in price around the 15th of February, 1972, so to maintain this price we should get this on order before that time.

ASARCO ELP 0008950

WICAR - PIPING