

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967 Change Order Number 4

Subject: Pipe Insulation Date of Change Order: September 29, 1967

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (A) Authorized premium time for work performed on July 8, 1967, July 15, 1967 and July 22, 1967.

Increase - \$ 1,506.28

COST ACCOUNT NO. 7148-704-465.51

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 263,140.28 to \$ 264,646.56

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahr

Title Contr. & Sales Eng.

AUTHORIZED:

KALISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

EOP:prl

KEN 010762

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

DATE December 21, 1967

FROM E. O. Potts

E. O. Potts

COPIES TO See Distribution

AT Middletown, Ohio

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 5
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett
R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
Central File
Reading File

KEN 010763

INTER-OFFICE MEMORANDUM

TO
AT

Vern L. Frankson
H. W. Borneman

DATE

July 10, 1968

FROM

Donald K. Carlson

AT

Middletown

JOB NO.

7100

COPIES TO See Distribution

SUBJECT Sub-Contract No. 7100-1485 - Change Order No. 13
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

DKC:prl

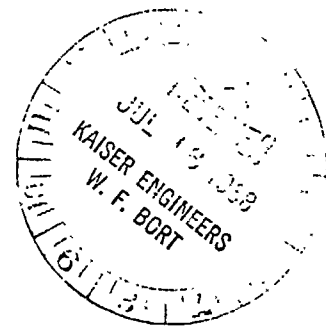
cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

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G. L. Roberts
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PLAINTIFF'S
EXHIBIT
KEN-126

KEN 010734

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7100-1485, dated: March 30, 1967 Change Order No. 13

Subject: Pipe Insulation Date of Change Order: May 27, 1968

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, the Sub-Contract Total Compensation is increased in accordance with the following described changes in The Work or corrections to the compensation previously set forth:

- (1) It is mutually understood and agreed that Sub-Contractor failed to allow for the cost of insulation materials for the fittings of the 165 lb. steam line as required by Special Provision No. 2 of Exhibit "E" (Item 1 of Exhibit "B" refers to insulation materials being furnished for straight-runs of piping only) and that a compensation lump sum increase is hereby granted. Sub-Contractor's Invoice No. 25964 dated February 8, 1968, in the amount of \$9,663.95 is not in accordance with the Sub-Contract, and is cancelled in its entirety.

Price Increase \$ 4,832.00

- (2) Additional costs incurred during delays beyond that which could reasonably be anticipated in obtaining Contractor-furnished insulation material for the 165 lb. steam line.

Price Increase \$ 2,070.00

- (3) Additional costs incurred during erecting of scaffolds, hoisting of materials and performance of other overhead work due to interference from operation by others of Electric Overhead Travelling Bridge Cranes to an extent beyond that which could reasonably be anticipated by the Sub-Contractor.

Price Increase \$ 10,062.50

- (4) Costs incurred that were not included in the unit prices because respective changes in the estimated quantity of high, inaccessible work and the estimated quantity of low, accessible work changed the ratio of the two types of work that was incorporated into the Sub-Contract unit prices.

Price Increase \$ 6,900.00

KEN 010735

DESCRIPTION OF CHANGE: Continued

- (5) Additional costs incurred because piping was released as ready for insulation work more intermittently (including numerous move-ins and move-outs in the same area) than the Sub-Contractor could reasonably anticipate.

Price Increase \$ 2,587.50

- (6) Over-time premium costs (plus 11% insurance and taxes) for installing insulation on 165 lb. steam line runouts and headers at night or on Saturdays because areas were inaccessible during regular working hours while bridge cranes were operating (straight-time costs, overhead and profit included in Sub-Contract unit prices). Work performed January 29 through February 1, 1968; February 5th, 6th, 8th, 10th, 12th, 19th, 24th, and 27th through 29th. (Reference: Sub-Contractor's letter of April 17, 1968)

Price Increase \$ 3,675.80

TOTAL LUMP SUM PRICE INCREASE THIS CHANGE ORDER. . . . \$ 30,127.80

It is mutually understood and agreed that the lump sum price increases stated above for Item No. (2) through (5) represent a full settlement of all of Sub-Contractor's claims summarized in Sub-Contractor's letter of February 16, 1968.

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 344,407.73 to \$ 374,535.53CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

AUTHORIZED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By

Paul C. Gahn
Paul C. Gahn

By

D. J. WolfTitle Contracting & Sales Engineer Title Vice President

DKC:prl

KEN 010736

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT H. W. Borneman

DATE June 13, 1968

FROM E. O. Potts

COPIES TO See Distribution

AT *E. O. Potts*
- Middletown

JOB NO. 7100

SUBJECT Sub-Contract No. 7100-1485 - Change Order No. 12
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
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R. J. Wolf
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R. D. Sahlberg
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KEN 010737

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7100-1485, dated: March 30, 1967 Change Order No. 12

Subject: Pipe Insulation Date of Change Order: May 6, 1968

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (1) Remove insulation, salvage, and replace with same if possible 14" - 16⁵/₈" over head steam line in the Hot Strip Mill. E.W.O. #7
ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 1,025.89
- (2) Insulate gas furnace exhaust duct as directed by Contractor.
ACCOUNT NO. 7148-501-610.51 INCREASE - \$ 162.70
- (3) Insulate 1/2" plant air line and instrument tube bundle in trench and up to pusher pulpit.
ACCOUNT NO. 7148-701-464.51 INCREASE - \$ 1,353.58
- (4) Insulate air drop lines to reduce noise.
(Clarifier Pump House)
ACCOUNT NO. 7106-701-464.51 INCREASE - \$ 1,693.96
- (5) Insulation rework in oil cellar (Hot Strip Mill.)
ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 805.88
- (6) Insulate blowdown piping for personnel protection at all bag houses.
ACCOUNT NO. 7148-704-765.51 INCREASE - \$ 1,210.27
- (7) Expose two (2) flanges on the water supply to two (2) condensate pumps so temporary start-up screens can be removed. Repair insulation damaged on steam inlet piping to steam turbines on condensate pumps.
ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 233.64

KEN 010738

DESCRIPTION OF CHANGE: Continued

- (8) Repairing and replacing torn-off pipe covering flanged valve and pipe covering at grating repair on air heater #1 boiler.
Repairing and replacing pipe covering at #1 I.D. fan turbine and grating repair. 5th Floor.
Repairing and replacing pipe covering on 165# steam at desuper heater. 3rd Floor.
Repair and recover damaged pipe covering at four (4) water pumps.
ACCOUNT NO. 7148-540-894.51 INCREASE - \$ 761.10
- (9) Repair of steam line and fittings to condensate turbine. 3rd Floor
Replace insulation of entire fuel oil heater at Boiler #3.
Repair on 20" - 10# steam line. 5th Floor
Replace and repair pipe covering at F.D. fan 5th Floor - #2 boiler.
Repair on F.D. Fan #1 boiler.
Replacing and furnishing insulation on fuel oil heater. Boiler #3
Repair of 4" steam and 8" exhaust lines from F.D. fan. Boiler #2
Replace and repair pipe covering on B. & W. pump.
Repair and replace 4" steam and 8" exhaust lines from F.D. fan. Boiler #2
ACCOUNT NO. 7148-540-894.51 INCREASE - \$ 1,888.82
- (10) Remove pipe covering at condensate steam turbine. 3rd Floor
Replace pipe covering near feedwater pumps.
Replace and repair pipe covering on 14" - 165# Steam supply at boiler #1
Replace and repair pipe covering on 10" - 425# steam supply. Boiler #1
Replace and repair pipe covering at condensate tanks. 3rd Floor
ACCOUNT NO. 7148-540-894.51 INCREASE - \$ 6,502.20
- TOTAL INCREASE. \$15,638.04

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 328,769.69 to \$ 344,407.73CHANGE IN COMPLETION DATE: None

KEN 010739

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

AUTHORIZED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)By /s/ Paul C. GahnBy /s/ D. A. DalyTitle Contr. & Sales Engr. Dept.Title Manager of Projects

EOP:prl

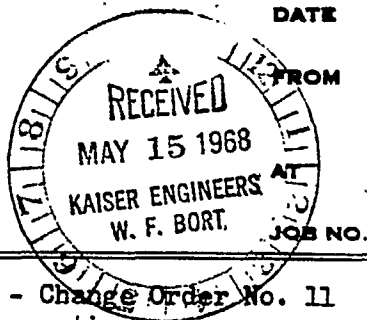
CONFIRMED COPY

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT H. W. Borneman

DATE May 10, 1968

COPIES TO See Distribution



E. O. Potts

Middletown

JOB NO. 7100

SUBJECT Sub-Contract No. 7100-1485 - Change Order No. 11
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachment

ARMCO

T. R. Foley (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett
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R. D. Sahlberg
Central File
Reading File

KEN 010741

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7100-1485, dated: March 28, 1967 Change Order No. 12
Subject: Pipe Insulation Date of Change Order April 23, 1968
Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio
Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- | | |
|---|----------------------|
| (1) 3/4" dia. x 1" thickness of insulation - steam condensate - 700 lin. ft. @ \$1.13/lin. ft.
ACCOUNT NO. 7148-704-465.51 | INCREASE - \$ 791.00 |
| (2) 6" dia. x 1" thickness of insulation - steam condensate - 100 lin. ft. @ \$2.30/lin. ft.
ACCOUNT NO. 7148-704-465.51 | INCREASE - \$ 230.00 |
| (3) 8" dia. x 1" thickness of insulation - steam condensate - 150 lin. ft. @ \$2.97/lin. ft.
ACCOUNT NO. 7148-704-465.51 ~ | INCREASE - \$ 445.50 |
| (4) 10" dia. x 1" thickness of insulation - steam condensate - 120 lin. ft. @ \$3.58/lin. ft.
ACCOUNT NO. 7148-704-465.51 | INCREASE - \$ 429.60 |
| TOTAL INCREASE. \$ <u>1,896.10</u> | |

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 326,873.59 to \$ 328,769.69

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Engr.

AUTHORIZED:

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

EOP:prl

KEN 010742

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

COPIES TO See Distribution

DATE January 18, 1968

FROM E. O. Potts

AT Middletown, Ohio

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 7
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
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H. C. Boucher (2)
E. J. Denner (2)
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B. Scott
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M. D. Wilson
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R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
Central File
Reading File

KEN 010743

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967, Change Order No. 7

Subject: Pipe Insulation Date of Change Order: January 12, 1968

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (A) Authorized premium time for work performed in accordance with Sub-Contractor's invoices attached:

<u>Invoice No.</u>	<u>Date</u>	<u>Amount</u>	<u>Account No.</u>
969	12-1-67	\$142.14	7148-540-460.51
970	12-1-67	\$538.75	7148-540-460.51
971	12-1-67	\$354.67	7148-540-460.51
972	12-1-67	\$228.24	7148-540-460.51
937	11-24-67	\$485.07	7148-704-465.51
938	11-24-67	\$312.08	7148-704-465.51
939	11-24-67	\$244.30	7148-704-465.51
968	12-1-67	\$570.93	7148-704-465.51

TOTAL INCREASE - \$ 2,876.18

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 287,140.47 to \$ 290,016.65

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the Terms and Conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

AUTHORIZED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Paul C. Gahn

By /s/ Vern L. Frankson

Title Contr. & Sales Eng. Dept.

Title Manager - Procurement

EOP:prl

KEN 010744

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

DATE January 15, 1968

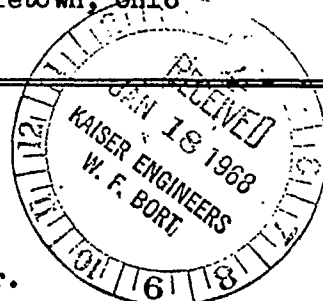
FROM E. O. Potts

COPIES TO See Distribution

AT Middletown, Ohio

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 6
Owens Corning Fiberglas Corporation



Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachments

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
E. J. Denner (2)
C. W. Graff
H. C. Boucher (2)
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B. Scott
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R. D. Sahlberg
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KEN 010745

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967 Change Order No. 6

Subject: Pipe Insulation Date of Change Order December 27, 1967

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

1. Remove and replace insulation of steam line at Column 57-D. ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 84.95
Sub-Contractor's Invoice #16158 dated November 14, 1967.
2. Remove and replace insulation at Columns 43, 43.20 and 43.30. ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 267.72
Sub-Contractor's Invoice #16156 dated November 14, 1967.
3. Remove and replace insulation on temporary 4" steam line at Column 1-C. INCREASE - \$ 93.45
ACCOUNT NO. 7148-704-894.51
Sub-Contractor's Invoice #16159 dated November 14, 1967.
4. Authorized premium time for work performed on November 4, 1967 and November 7, 1967. INCREASE - \$ 1,088.71
ACCOUNT NO. 7148-540-460.51
Sub-Contractor's Invoice #16157 dated November 14, 1967.
5. Authorized premium time for work performed on October 23, 1967 and October 28, 1967. INCREASE - \$ 1,059.08
ACCOUNT NO. 7148-540-460.51
Sub-Contractor's Invoice #16160 dated November 14, 1967.

TOTAL INCREASE ----- \$ 2,593.91

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 284,546.56 to \$ 287,140.47

CHANGE IN COMPLETION DATE: None

KEN 010746

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Eng. Dept.

AUTHORIZED:

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

EOP:prl

KEN 010747

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

DATE January 15, 1968

FROM E. O. Potts

E. O. Potts

COPIES TO See Distribution

AT Middletown, Ohio

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 6
Owens Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

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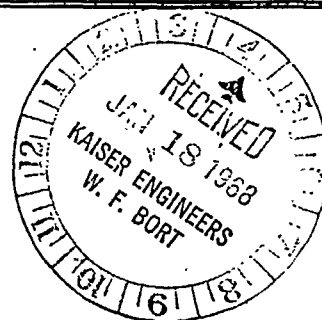
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ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

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KEN 010748

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967 Change Order No. 6

Subject: Pipe Insulation Date of Change Order December 27, 1967

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

1. Remove and replace insulation of steam line at Column 57-D. ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 84.95
Sub-Contractor's Invoice #16158 dated November 14, 1967.
2. Remove and replace insulation at Columns 43, 43.20 and 43.30. ACCOUNT NO. 7148-704-894.51 INCREASE - \$ 267.72
Sub-Contractor's Invoice #16156 dated November 14, 1967.
3. Remove and replace insulation on temporary 4" steam line at Column 1-C. INCREASE - \$ 93.45
ACCOUNT NO. 7148-704-894.51
Sub-Contractor's Invoice #16159 dated November 14, 1967.
4. Authorized premium time for work performed on November 4, 1967 and November 7, 1967. INCREASE - \$ 1,088.71
ACCOUNT NO. 7148-540-460.51
Sub-Contractor's Invoice #16157 dated November 14, 1967.
5. Authorized premium time for work performed on October 23, 1967 and October 28, 1967. INCREASE - \$ 1,059.08
ACCOUNT NO. 7148-540-460.51
Sub-Contractor's Invoice #16160 dated November 14, 1967.

TOTAL INCREASE ----- \$ 2,593.91

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 284,546.56 to \$ 287,140.47

CHANGE IN COMPLETION DATE: None

KEN 010749

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Eng. Dept.

AUTHORIZED:

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

EOP:prl

KEN 010750

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

DATE September 8, 1967

FROM E. O. Potts

COPIES TO See Distribution

AT Middletown

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 3
Owens Corning Fiberglas

Attached is a manually signed copy of subject Change Order
Conformed copies are being distributed.

EOP:prl

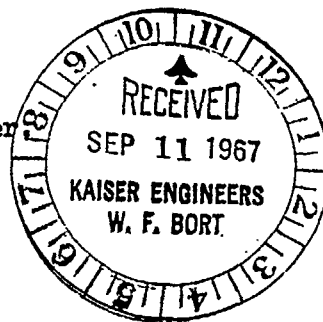
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ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
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KAISER

D. A. Daly
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H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
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R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
Central File
Reading File



KEN 010751

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated March 30, 1967 Change Order Number 3

Subject: Pipe Insulation Date of Change Order August 28, 1967

Location: Armco Steel Corporation - Middletown Works, Middletown, Ohio

Sub-Contractor: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (1) Insulate two (2) weld joints of ric-wil pipe. Insulate one (1) expansion pit. This work is located between anchor pit No. 47 and east side of hot strip mill.

Increase - \$ 98.15

Extra Work Order No. 1
COST ACCOUNT NO. 7148-704-465.51

- (2) Insulate one (1) weld joint and patches of ric-wil pipe. This work is located south of fuel oil pit No. 1.

Increase - \$ 82.06

Extra Work Order No. 2
COST ACCOUNT NO. 7148-704-465.51

- (3) Insulate 45' of 4" - 165# Temporary steam line. This work is located at columns 1 and 2, "C" line in the hot strip mill furnace aisle.

Increase - \$ 181.98

Extra Work Order No. 3
COST ACCOUNT NO. 7148-704-465.51

- (4) Remove all ric-wil insulation and replace with new for anchor pits #41, #33, #32 and #26. This work is located in the steelmaking area.

Increase - \$ 2,847.33

Extra Work Order No. 4
COST ACCOUNT NO. 7104-701-894.51

- (5) Remove all ric-wil insulation, salvage and replace with same for steam expansion pit No. 29.

Increase - \$ 641.89

Extra Work Order No. 5
COST ACCOUNT NO. 7104-701-894.51

- (6) Remove all ric-wil insulation, salvage and replace with same for steam expansion Pit No. 33.

Increase - \$ 339.37

Extra Work Order No. 6
COST ACCOUNT NO. 7104-701-894.51

TOTAL INCREASE ----- \$ 4,190.78

Owens Corning Fiberglas

-2-

Sub-Contract No. 7148-1485
(C.O. #3)

REFERENCE: Sub-Contractor's Invoices No. 15713, No. 15714, No. 15710,
No. 15715, No. 15711, and No. 15712 all dated August 2, 1967.

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 278,949.50 to \$ 283,140.28

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the Terms and Conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

AUTHORIZED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Paul C. Gahn

By /s/ Vern L. Frankson

Title Contracting & Sales Engineer

Title Manager - Procurement

EOP:prl

KEN 010753

INTER-OFFICE MEMORANDUM

TO Vern L. Franksen
AT W. M. Schuck

DATE February 28, 1968

FROM Donald K. Carlson

DK Carlson

COPIES TO See Distribution

AT Middletown

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 8
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

DKC:prl

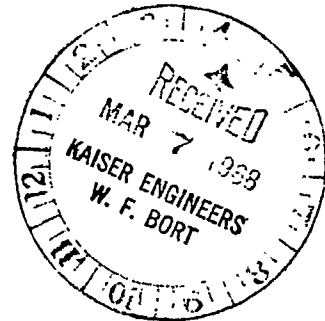
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ARMCO

F. W. Barnes
F. U. Fanning
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
J. L. Geiger
C. R. Schwalen
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett
R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
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KEN 010754

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967, Change Order No. 8

Subject: Insulation of Slab Mill & Soaking Pit Piping Date of Change Order February 13, 1968

Location: South Area, Middletown Works, Armco Steel Corporation

Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall furnish all labor, supervision, materials, supplies, transportation, tools, services, equipment, and rigging necessary to insulate the following additional piping systems for the lump sum prices shown; all in strict accordance with the amendments contained herein to Exhibit "A" and Exhibit "E":

- | | |
|---|-------------------------------|
| (1) 165 p.s.i. Steam Service System for Slab Mill.
ACCOUNT NO. 7146-704-465. | LUMP SUM PRICE - \$ 11,730.00 |
| (2) 50 p.s.i. Steam Service System for Slab Mill.
ACCOUNT NO. 7146-704-465. | LUMP SUM PRICE - \$ 3,925.00 |
| (3) 165 p.s.i. Steam Service System for Soaking Pits.
ACCOUNT NO. 7143-704-465 | LUMP SUM PRICE - \$ 7,695.00 |
| (4) Fuel Oil "Bundle" System for Soaking Pits.
ACCOUNT NO. 7143-708-465 | LUMP SUM PRICE - \$ 5,369.00 |

TOTAL LUMP SUM PRICE INCREASE. \$ 28,719.00

It is mutually understood and agreed that the following specifications and drawings are hereby incorporated into the list of "Plans, Drawings and/or Specifications" - Exhibit "A":

1. Armco Steel Standard Insulation Specification No. ACS - 400 - 35.
2. Kaiser Engineers Slab Mill & Soaking Pits Piping Insulation Specification No. 7146 (5-4), dated January 9, 1968, and Addendum No. 1 dated January 18, 1968.

3. Contractor's Drawings:

SLAB MILL

<u>Drawing No.</u>	<u>Rev.</u>	<u>Description</u>
631140	5	Pump Room Piping Arrangement
631141	3	Pump Room Piping Arrangement
631142	6	Pump Room Piping Arrangement
631144	4	Oil Skimmer Piping Details
631145	4	Oil Skimmer Piping Details
631146	4	Oil Skimmer Piping Details
631147	3	Pump Room Heating and Ventilating
631151	5	Office Heating and Ventilating
631160	0	Steam Flow Diagram
631562	6	Basement Oil Lube Piping
631575	8	Scarfig Machine High and Low Pressure Piping
631576	6	Scarfig Machine High and Low Pressure Piping
631595	2	Steam Mains Plot Plan
631597	5	Scarfer and Mill Low Pressure Details
631598	4	Scarfer and Mill Low Pressure Details
631609	9	Service Piping Plan and Sections
631610	7	Service Piping Plan and Sections
631615	4	Steam Supply Header in Trusses
631616	6	Steam Supply Header in Trusses
631634	5	Basement Services
631635	8	Basement Services
631636	8	Basement Services
631638	3	Basement Services
631641	4	Basement Services
631642	4	Basement Services
631656	2	Sump Pumps and Steam Syphons
631659	2	Sump Pumps and Steam Syphons
631662	4	Steam to Air Filtration Unit
631667	6	Steam Anchors and Support

SOAKING PITS

637031	1	Steam Flow Diagram
637654	1	Service Piping Arrangement
637655	X10	Service Piping Arrangement
637656	X10	Service Piping Arrangement
637658	5	Service Piping Details
637659	X4	Service Piping Details
637660	2	Service Piping Details
637671	1	Steam Sump

It is mutually understood and agreed that the following modifications or clarifications are hereby incorporated into the "Special Provisions" - Exhibit "E" and apply to Change Order No. 8:

- (A) Sub-Contractor shall furnish the necessary insulation materials for fittings, valves, etc., insulating cement for closing laps, sizing (lagging adhesive and preparation for painting by others), tie wires, bends, expansion joints, insulation supports, and all other materials, as required for proper installation thereof, and as directed by the Contractor, for the Slab Mill and Soaking Pit piping systems referred to herein.
- (B) The systems referred to herein include:
 - 1. Steam systems and sub-systems, including supply and return headers, risers, service drops, steam tracers valve boxes, and where required, condensate returns, and other miscellaneous systems.
 - 2. Fuel oil supply, fuel oil return, and the steam tracer (for maintaining fuel oil at 125° F), insulated as a "bundle".
- (C) Contractor, Sub-Contractor, and others will be working in the areas involved in this work and these areas will be congested. In this connection, storage space adjacent to the work site will be limited and such storage must be closely coordinated with the Contractor.
- (D) Sub-Contractor shall provide all required off-loading, handling, hoisting, material and equipment protection, to include weather protection for material in outside storage, rigging, scaffolding, picks, ladders, and all other equipment necessary for the proper installation of the work.
- (E) It is anticipated that Sub-Contractor can commence field work on a specified portion of The Work when this Change Order is awarded, and that subsequent work will be scheduled intermittently by Contractor with several "move-ins" required. The work will proceed on several systems concurrently, as programmed by Contractor, and Sub-Contractor shall "man" the work in accordance with priorities established by such programming. Completion dates for systems and/or sub-systems will be established by Contractor as required by the testing and operating schedules agreed to by Owner. In this connection, close coordination with Contractor shall be required of Sub-Contractor in order to achieve a realistic work sequence to meet such dates. Completion date for the work described in this Change Order is scheduled for July 17, 1968.

- (F) Work on 3" - 165# steam service drops for Item #3, Soaking Pits, along column line "Y", terminates at valve at elev. 140'-0" as shown on Drawing No. 637658, Rev. 5, Detail No. 3/637655,56.
- (G) Work on fuel oil bundle service drops for Item #4, Soaking Pits, along column line "Y", terminates at valve at elev. 140'-0" as shown on Drawing No. 637658, Rev. 5, Detail No. 3/637655,56.
- (H) Work on fuel oil bundle for Item #4, Soaking Pits, begins inside building line near column point "Y-2.5" at termination of 16 $\frac{1}{2}$ " diam. conduit. Work in fuel oil pipe pit is not included in this Change Order.
- (I) Steam condensate piping shall be covered for personnel protection only. (Within 7'0" of floors and platforms) Insulation of flash tanks is deleted.

It is mutually understood and agreed that due to the increase in scope of this Sub-Contract and to avoid any possible conflict with Owner's cost accounting system (project number prefixes) this Sub-Contract is hereby changed from the number designation "7148-1485" to "7100-1485", and shall be so designated in all subsequent correspondence, and payment reports.

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 290,016.65 to \$ 318,735.65

CHANGE IN COMPLETION DATE: July 17, 1968, for the work described herein and March 29, 1968, for all other Sub-Contract work; the latter change pursuant to Article 15 of the General Terms and Conditions.

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Eng. Dept.

AUTHORIZED:

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Robert E. Bernard

Title Vice - President

DKC:prl

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

DATE March 1, 1968

FROM E. O. Potts

COPIES TO See Distribution

AT Middletown

JOB NO. 7100

SUBJECT Sub-Contract No. 7100-1485 - Change Order No. 9
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

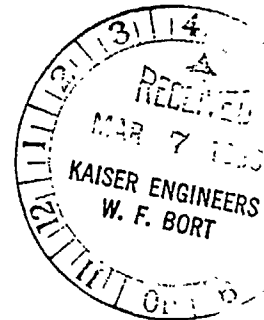
cc - with attachment

ARMCO

J. W. Neumann (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett
R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
Central File
Reading File



KEN 010759

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7100-1485 dated: March 30, 1967 Change Order No. 9

Subject: Pipe Insulation Date of Change Order February 22, 1968

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (A) Install insulation required for steam, condensate and fuel oil piping at fuel oil tanks above ground, in pipe tunnel under slab yard and in Fuel Oil Pit No. 1.

ACCOUNT NO. 7148-518-465.51

INCREASE - \$ 1,655.00

REFERENCE: Sub-Contractor's letter dated January 17, 1968.

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 318,735.65 to \$ 320,390.65

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Eng.

AUTHORIZED:

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

EOP:prl

KEN 010760

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

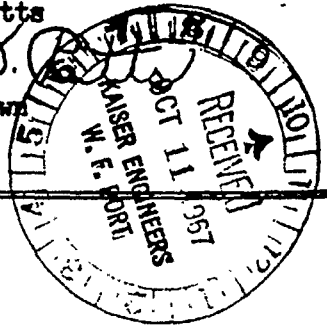
DATE October 6, 1967

FROM E. O. Potts

COPIES TO See Distribution

AT Middletown

JOB NO. 7148



SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 4
Owens Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett
R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
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KEN 010761

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967 Change Order Number 4

Subject: Pipe Insulation Date of Change Order: September 29, 1967

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (A) Authorized premium time for work performed on July 8, 1967, July 15, 1967 and July 22, 1967.

Increase - \$ 1,506.28

COST ACCOUNT NO. 7148-704-565.51

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 283,120.28 to \$ 284,626.56

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Eng.

AUTHORIZED:

Kaiser Engineers, Inc.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

EOP:prl

KEN 010762

INTER-OFFICE MEMORANDUM

TO
AT

Vern L. Frankson
W. M. Schuck

DATE December 21, 1967

FROM E. O. Potts

E. O. Potts

AT Middletown, Ohio

COPIES TO See Distribution

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485 - Change Order No. 5
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOP:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett
R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
Central File
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KEN 010763

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7148-1485, dated: March 30, 1967, Change Order No. 5

Subject: Pipe Insulation Date of Change Order December 7, 1967

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (A) Delete insulation work required for S.E.P. #39, for new underground fuel system located west of new 86" Strip Mill.
(This work performed by others).

DECREASE - (\$100.00)

ACCOUNT NO. 7148-518-465.51

REFERENCE: Sub-Contractor's letter dated October 24, 1967.

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 284,646.56 to \$ 284,546.56

CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

AUTHORIZED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Paul C. Gahn

By /s/ Vern L. Frankson

Title Contr. & Sales Eng. Dept.

Title Manager - Procurement

EOP:prl

KEN 010764

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck
G. W. Graff (2)
H. C. Boucher (3)

DATE August 2, 1967

FROM

S. S. Spangenberg
S. S. Spangenberg

COPIES TO

See Distribution

AT

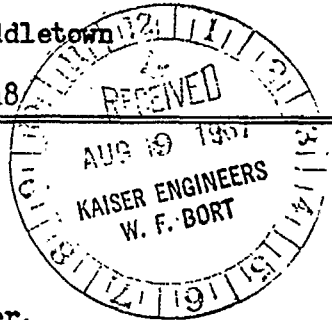
Middletown

JOB NO.

7148

SUBJECT

Owens Corning Fiberglas - Change Order No. 2
Sub-Contract No. 7148-1485



Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

SSS:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
E. J. Denner
J. Mainier
S. Ustel
B. Scott
A. L. Gordon
C. Billings
F. N. Norton
M. D. Wilson
S. M. Lyon
L. J. Gillett - Oakland
R. J. Minarcini - Oakland
~~W. F. Bort~~ - Oakland
R. D. Sahlberg - Butler
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Reading File

KEN 010765

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

SUB-CONTRACT NO. 7148-1485 DATED: March 30, 1967 CHANGE ORDER NO. 2

SUBJECT Pipe Insulation DATE OF CHANGE ORDER July 24, 1967

LOCATION: Armco Steel Corporation - Middletown Works, Middletown, Ohio

SUB-CONTRACTOR: Owens Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

COMPENSATION:

The Contractor having directed the Sub-Contractor to perform extra work not included in the original scope of this Sub-Contract hereby warrants additional compensation for items of work in amounts as follows:

1. Furnish Labor Only to insulate three (3) weld joints and two (2) S. E. P.'s in 16" Diameter Line all located within Hot Strip Mill between column lines C & E.

- (a) All material to be furnished by Ric-Wil.
- (b) All patching of damaged Ric-Wil casing - by others.
- (c) Sealing of weld joints - by others.

LUMP SUM PRICE - \$525.00

2. Furnish Labor Only to insulate sixty-eight (68) weld joints, sixteen (16) steam expansion pits and five (5) expansion joints in anchor pits. Material to be furnished by Ric-Wil. Also, furnish labor and material to insulate pipe and fittings in six (6) anchor pits and two (2) steam valve pits.

Includes:

16" line from South end of new strip mill to steam valve pit No. 3, 10" line from steam valve pit No. 3 to anchor pit PH-3 and 12" line from steam valve pit No. 3 to anchor pit No. 56 at pickle line. All as shown on Ric-Wil Drawing No. 6315 - sheets #7, #8 and #9.

Excludes:

- (1) Line from roll shop to pickle line at top of sheet #7
- (2) All patching of damaged Ric-Wil casing - by others.
- (3) Sealing of weld joints. By others.

LUMP SUM PRICE:

16" Diam. Line	\$ 1,700.00
10" Diam. Line	\$ 400.00
12" Diam. Line	\$ 4,750.00
TOTAL	\$ 6,850.00

KEN 010766

3. Furnish Labor Only to insulate one hundred and thirty-five (135) weld joints and S. E. P. No. 39 for new fuel oil system located West of new 86" strip mill. Work limited to piping shown on Ric-Wil Drawings D-7447, #1 and #2, D-7498 and B-6549. All material to be furnished by Ric-Wil.

Exclude: (1) All patching of damaged Ric-Wil casing - by others.
(2) Sealing of weld joints - by others.

LUMP SUM PRICE \$ 3,375.00

TOTAL NET INCREASE THIS CHANGE ORDER - \$ 10,750.00

INTERNAL ACCOUNTING INFORMATION:

COST ACCOUNT NUMBERS:	7104-710-465.51	\$ 4,750.00
	7148-704-465.51	\$ 2,625.00
	7148-518-465.51	<u>\$ 3,375.00</u>
	TOTAL	\$ 10,750.00

CHANGE IN COMPENSATION	Total Estimated Amount Increased From \$268,199.50
	<u>To \$278,949.50</u>

CHANGE IN COMPLETION DATE None

EXCEPT AS HEREIN EXPRESSLY MODIFIED, SAID SUB-CONTRACT AS HERETOFORE AMENDED AND ALL THE TERMS AND CONDITIONS THEREOF SHALL REMAIN UNALTERED AND IN FULL FORCE AND EFFECT AND SHALL APPLY TO ALL THE WORK PERFORMED HEREUNDER.

ACCEPTED:

AUTHORIZED:

OWENS CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Paul C. Gahn

By /s/ D. A. Daly

Title Contr. & Sales Eng.

Title Project Manager

SSS:prl

KEN 010767

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

SUB-CONTRACT 7148-1485 DATED: March 30, 1967 CHANGE ORDER NO. One

SUBJECT Insulation DATE OF CHANGE ORDER May 2, 1967

LOCATION: Hot Strip Mill and Boiler House - Armco Steel Corporation -
Middletown Works, Middletown, Ohio

SUB-CONTRACTOR: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

For all Type "B" (Calcium silicate) insulation in the Hot Strip Mill, in lieu of specified 6-ounce canvas with field sizing, substitute glas cloth jacketing with factory applied sizing.

For all pipe insulation in the Waste Heat Boiler House, in lieu of specified 8-ounce canvas with field sizing, substitute glas cloth jacketing with factory applied sizing.

In the event the factory is unable to provide either of the above substitutions, the original specifications will apply.

Also, the 165# steam line insulation already purchased by Contractor on a separate order will be installed as originally specified except those sizes which require field application of jacketing shall receive pre-sized glas cloth.

REFERENCES: Sub-Contractor's letters of April 21, 1967 and April 26, 1967.

CHANGE IN COMPENSATION None

CHANGE IN COMPLETION DATE None

EXCEPT AS HEREIN EXPRESSLY MODIFIED, SAID SUB-CONTRACT AS HERETOFORE AMENDED AND ALL THE TERMS AND CONDITIONS THEREOF SHALL REMAIN UNALTERED AND IN FULL FORCE AND EFFECT AND SHALL APPLY TO ALL THE WORK PERFORMED HEREUNDER.

ACCEPTED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)

By /s/ Paul C. Gahn

Title Contr. & Sales Engineer

AUTHORIZED:

KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)

By /s/ Vern L. Frankson

Title Manager - Procurement

KEN 010768

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
AT W. M. Schuck

DATE March 28, 1968

FROM E. O. Potts

E. O. Potts

COPIES TO See Distribution

AT Middletown, Ohio

JOB NO. 7100

SUBJECT Sub-Contract No. 7100-1485 - Change Order No. 10
Owens-Corning Fiberglas Corporation

Attached is a manually signed copy of subject Change Order.
Conformed copies are being distributed.

EOF:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
P. R. Smith
J. S. Lotz
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. W. Graff
H. C. Boucher (2)
E. J. Denner (2)
S. Ustel
B. Scott
A. L. Gordon
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M. D. Wilson
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L. J. Gillett
R. J. Wolf
~~W. F. Bort~~
R. D. Sahlberg
Central File
Reading File

KEN 010769

DEVIATIONS FROM OR ADDITIONS TO SUB-CONTRACT AND SPECIFICATIONS

Sub-Contract No. 7100-1485, dated: March 30, 1967 Change Order No. 10

Subject: Pipe Insulation Date of Change Order March 19, 1968

Location: Armco Steel Corporation - Middletown Works - Middletown, Ohio

Sub-Contractor: Owens-Corning Fiberglas Corporation
2987 Exon Drive
Cincinnati, Ohio 45241

DESCRIPTION OF CHANGE: Pursuant to the provisions of Article 8 of the General Terms and Conditions, Sub-Contractor shall perform The Work in accordance with the following changes:

- (A) Remove, salvage and re-insulate pusher drive and west flume on lube oil #4, so electric heat tracers can be installed.
ACCOUNT NO. 7148-441-894.51 INCREASE - \$ 4,426.24
Sub-Contractor's Invoice #25934 dated January 24, 1968.
- (B) Insulate twenty-seven (27) weld joints in 12" - 165# steam line between roll shop and pickle line as shown on ric-wil drawing #0315, sheet #7. Insulate two (2) additional weld joints in 16" - 425# steam line (not shown on drawings). Remove and re-insulate S.E.P. #41 on ric-wil line east of the hot strip mill. E.W.O. #8
ACCOUNT NO. 7104-710-464.51 INCREASE - \$ 1,137.42
Sub-Contractor's Invoice #25937 dated January 24, 1968.
- (C) Insulate 1½" condensate line from fuel oil heaters approximately one (1) ft. beyond the steam trap. E.W.O. #10
ACCOUNT NO. 7148-704-465.51 INCREASE - \$ 91.63
Sub-Contractor's Invoice #25935 dated January 24, 1968
- (D) Insulate the furnace cooling water bypass manifold located south west of the clarifier pump house. E.W.O. #11
ACCOUNT NO. 7148-514-464.51 INCREASE - \$ 398.74
Sub-Contractor's Invoice #25936 dated January 24, 1968.
- (E) Insulate water line going into the slab yard #1 pulpit. Insulate pipe and an additional valve on lube oil #4 near storage tank. E.W.O. #9
ACCOUNT NO. 7148-441-894.51 INCREASE - \$ 250.91
Sub-Contractor's Invoice #25945 dated February 7, 1968

KEN 010770

DESCRIPTION OF CHANGE: Continued

(F) Insulate duct work from air conditioning unit
to pulpit in slab yard. E.W.O. #14
ACCOUNT NO. 7148-281-430.51
Sub-Contractor's letter dated
January 30, 1968

INCREASE - \$ 178.00

TOTAL INCREASE. \$ 6,482.94

CHANGE IN COMPENSATION: Total estimated amount increased from:

\$ 320,390.65 to \$ 326,873.59CHANGE IN COMPLETION DATE: None

Except as herein expressly modified, said Sub-Contract as heretofore amended and all the terms and conditions thereof shall remain unaltered and in full force and effect and shall apply to all the work performed hereunder.

ACCEPTED:

OWENS-CORNING FIBERGLAS CORPORATION
(Sub-Contractor)By /s/ Paul C. GahnTitle Contr. & Sales Eng. Dept.

AUTHORIZED:

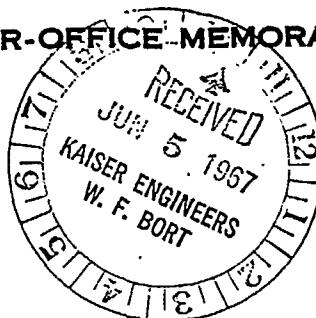
KAISER ENGINEERS, INC.
Agent for Armco Steel Corporation
(Contractor)By /s/ Vern L. FranksonTitle Manager - Procurement

ECP:prl

KEN 010771

INTER-OFFICE MEMORANDUM

TO Vern L. Frankson
 AT W. M. Schuck
 C. W. Graff
 H. C. Boucher (3)
 COPIES TO See Distribution



DATE June 1, 1967
 FROM Donald K. Carlson
Don Carlson
 AT Middletown

JOB NO. 7148

SUBJECT Sub-Contract No. 7148-1485
 Owens-Corning Fiberglas Corporation, for
 Insulation

Attached are the only pages that have been revised since my transmittal letter of April 17, 1967. Also attached is a conformed copy of the signature page. Copies are being distributed of complete manually signed documents.
 DKC:prl

cc - with attachment

ARMCO

F. W. Barnes (2)
 P. R. Smith
 J. S. Lotz
 Reading File

KAISER

D. A. Daly
 G. L. Roberts
 E. J. Denner
 W. Woodcock
 S. Ustel
 B. Scott
 A. L. Gordon
 C. Billings
 F. N. Norton
 M. D. Wilson
 S. M. Lyon
 L. J. Gillett - Oakland
 R. J. Minarcini - Oakland
~~W. F. Bort - Oakland~~
 R. D. Sahlberg - Butler
 Central File
 Reading File

inserted / others destroyed

KEN 010772

INTER-OFFICE MEMORANDUM

TO L. J. Gillett
AT Oakland, California

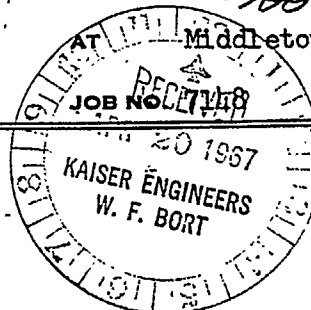
DATE April 17, 1967

FROM Donald K. Carlson

COPIES TO See Distribution *W/A (tentative copy)*

Don Carlson
Middletown, Ohio

SUBJECT Sub-Contract No. 7148-1485
Owens-Corning Fiberglas Corporation
Piping & Equipment Insulation
Estimated Price: \$268,199.50



Attached for legal review and management signature are five (5) copies of subject Sub-Contract, as well as an additional copy for you to retain in your files.

Also attached:

Wire of Award dated March 30, 1967

Fully Approved Recommendation dated March 28, 1967

Owens-Corning Proposal on signed K.E. Form dated February 20, 1967

The Contract is identical to Proposal documents with the following necessary changes and appropriate improvements:

- (1) Item I of Compensation supersedes Annex "B" (lump sum for Boiler House Piping and Equipment)
- (2) We have re-organized Compensation Annex "A" because Sub-Contracts Engineer, Mr. Carl Gilmer, has slightly changed quantities of piping insulation. He has also established quantities for metal jacketing of piping, and for insulation of Equipment and Vessels. The latter item is now shown as a new Section X rather than being shown in the next-to-last column of Piping Sections I - IX. There was no definitive basis for this item being included in any piping schedules since there is no relationship between areas of equipment insulation to lineal feet or area of piping insulation, jacketing, etc. Relatively small quantities of three new piping items have been established by Mr. Gilmer and the attached supplementary proposal of April 13, 1967, confirms these three pricing items. In order to confirm the mutual understanding of how the estimated total price was calculated, we have explained in Special Provision No. 11, Mr. Gilmer's estimates and allowances, and the various categories of unit prices where no quantities were inserted.
- (3) The Sub-Contractor requested that Special Provision No. 12 be inserted and we have agreed. This is same billing agreement as on several other contracts of this type. Insulation material must be ordered about eight (8) weeks in advance of need so that completion schedule can be met

ARMCO

W. M. Schuck
P. R. Smith
J. Lotz
F. Barnes
Reading File

KAISER

D. A. Daly
G. L. Roberts
C. Gilmer
J. O'Donnell
Vern L. Frankson
C. W. Graff
H. C. Boucher
S. Ustel
L. H. Kash
A. L. Gordon
F. P. Kennedy
F. N. Norton
M. D. Wilson
S. M. Lyon
R. J. Minarcini - Oakland
W. F. Bort - Oakland

R. D. Sahlberg - Butler
Central File
Reading File

KEN 010773

SUB-CONTRACT

Sub-Contract No. 7148-1485
March 30, 1967

This Sub-Contract is made pursuant to a Contract between Armco Steel Corporation (hereinafter called "Owner"), and Kaiser Engineers, Inc. (hereinafter called "Contractor"), Agent for Armco Steel Corporation, whereby Contractor agreed with Owner to furnish engineering, construction and other services relating to the expansion and modernization program at Owner's Middletown Works, Middletown, Ohio.

Contractor and Owens-Corning Fiberglas Corporation (hereinafter called "Sub-Contractor") hereby agree that the following work shall be performed by Sub-Contractor for the compensation and upon the terms and conditions hereinafter set forth on Face Sheets "A" and "B" of the Sub-Contract and including Articles 1 through 37 of the General Terms and Conditions attached to and made a part of this Sub-Contract.

WORK TO BE PERFORMED: Furnish all labor, supervision, material, supplies, transportation, tools, services, equipment and rigging necessary to install only the Owner-furnished insulation for the 165 p.s.i. steam service, and to furnish and install other insulating materials, field-applied metal jacketing, and weather-proofing required for the 165 p.s.i. steam service, and to furnish and install insulation, metal jacketing, weather-proofing and anti-sweat protection on piping, vessels and machinery, where required, on all service systems, all in strict accordance with, or to be inferred from, Exhibit "A", all such work being hereinafter sometimes called "The Work".

PLANS, DRAWINGS AND/OR SPECIFICATIONS: Attached hereto as Exhibit "A" and by this reference made a part hereof.

ITEMS TO BE SUPPLIED BY CONTRACTOR: As per list attached hereto marked Exhibit "B", and by this reference made a part hereof.

LOCATION OF WORK: New Hot Strip Mill and Waste Heat Boiler House in South Area of Owner's Middletown Works, Middletown, Ohio.

WORK TO COMMENCE: As of the date of this Sub-Contract, with field work to commence on date specified in Contractor's Notice to Proceed to be issued to Sub-Contractor.

WORK TO BE COMPLETED: Time is of the essence of this Sub-Contract, and all work shall be completed by Sub-Contractor as soon as due diligence and good practice will permit, but in no event later than November 3, 1967, or such extended completion date as may be applicable in accordance with and pursuant to the provisions of Article 15 hereof.

FACE SHEET "A"

KEN 010774

COMPENSATION ANNEX "A"Section I: Steam @ 0# - Type "B" Insulation

UNIT PRICES

Pipe Size	Insul. Depth	Price of Insul. per lin. ft.	Estd. Lgth.-Am't. ft. / \$	Price of Anti-sweat per lin. ft.	Price of Weather-proofing per lin. ft.	Metal Jacketing per sq. ft.	Estimated Metal Jacket. Area-Am't. sq. ft. / \$
1/2"	1 1/2"	\$1.43	80'/\$ 114.40	\$ 1.13	\$.96	\$1.14	40/\$ 45.60
1"	1 1/2"	\$1.53	80'/\$ 122.40	\$ 1.19	\$1.10	\$1.02	40/\$ 40.80
2"	2"	\$2.26	80'/\$ 180.80	\$ 1.76	\$1.59	\$.78	40/\$ 31.20
2 1/2"	2"	\$2.38	80'/\$ 190.40	\$ 1.83	\$1.83	\$.72	40/\$ 28.80
4"	2 1/2"	\$3.45	200'/\$ 690.00	\$ 3.23	\$2.30	\$.60	100/\$ 60.00
6"	2 1/2"	\$4.15	100'/\$ 415.00	\$ 4.20	\$2.48	\$.58	50/\$ 29.00
8"	2 1/2"	\$4.77	100'/\$ 477.00	\$ 4.65	\$2.93	\$.58	50/\$ 29.00
12"	3"	\$8.43	100'/\$ 843.00	\$10.20	\$3.96	\$.58	50/\$ 29.00
14"	3"	\$9.50	200'/\$1,900.00	\$10.75	\$4.18	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$4,933.00\$351.40Section II: Steam @ 50# - Type "B" Insulation

3/4"	1 1/2"	\$1.44	200'/\$ 288.00	\$ 1.15	\$.96	\$1.14	100/\$114.00
1"	1 1/2"	\$1.53	300'/\$ 459.00	\$ 1.19	\$1.10	\$1.02	100/\$102.00
1 1/4"	1 1/2"	\$1.60	300'/\$ 480.00	\$ 1.23	\$1.19	\$.96	100/\$ 96.00
1 1/2"	1 1/2"	\$1.65	400'/\$ 660.00	\$ 1.28	\$1.19	\$.96	100/\$ 96.00
2"	2"	\$2.25	1200'/\$2,700.00	\$ 1.76	\$1.59	\$.78	100/\$ 78.00
3"	2"	\$2.48	200'/\$ 496.00	\$ 1.93	\$1.83	\$.72	100/\$ 72.00
4"	2 1/2"	\$3.45	100'/\$ 345.00	\$ 3.23	\$2.30	\$.60	100/\$ 60.00
8"	2 1/2"	\$4.77	100'/\$ 477.00	\$ 4.65	\$2.93	\$.58	100/\$ 58.00
12"	3"	\$8.44	100'/\$ 844.00	\$10.20	\$3.96	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$6,749.00\$734.00

KEN 010776

COMPENSATION ANNEX "A"Section III: Steam @ 165# - Type "B" Insulation

UNIT PRICES

Pipe Size	Insul. Depth	Price to Install Owner furnished Insul.	Estimated Lgth.-Am't. ft. / \$	Anti-Sweat Insul. per lin. ft.	Weather-proofing per lin. ft.	Metal Jacketing per sq. ft.	Estimated Metal Jacket. Area-Am't. sq. ft. / \$
1/2"	1 1/2"	\$.93	1800'/\$1,674.00	\$ 1.13	\$.96	\$1.14	200/\$228.00
3/4"	1 1/2"	\$.93	1500'/\$1,395.00	\$ 1.15	\$.96	\$1.14	200/\$228.00
1"	1 1/2"	\$.99	5200'/\$5,148.00	\$ 1.19	\$1.10	\$1.02	200/\$204.00
1 1/4"	1 1/2"	\$1.02	600'/\$ 612.00	\$ 1.23	\$1.19	\$.96	100/\$ 96.00
1 1/2"	1 1/2"	\$1.02	7000'/\$7,140.00	\$ 1.28	\$1.19	\$.96	100/\$ 96.00
2"	2"	\$1.20	6480'/\$7,776.00	\$ 1.76	\$1.59	\$.78	100/\$ 78.00
3"	2"	\$1.28	3500'/\$4,480.00	\$ 1.94	\$1.83	\$.72	100/\$ 72.00
4"	2 1/2"	\$1.55	2400'/\$3,720.00	\$ 3.23	\$2.30	\$.60	100/\$ 60.00
6"	2 1/2"	\$1.76	120'/\$ 211.20	\$ 4.20	\$2.48	\$.58	50/\$ 29.00
8"	2 1/2"	\$2.09	600'/\$1,254.00	\$ 4.65	\$2.93	\$.58	100/\$ 58.00
12"	3"	\$4.11	1200'/\$4,932.00	\$10.20	\$3.96	\$.58	100/\$ 58.00
14"	3"	\$4.66	1800'/\$8,388.00	\$10.74	\$4.18	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$46,730.20\$1,265.00

For any footages of insulation for the above pipe service required in excess of amount furnished by Contractor/Owner (quantities shown in 4th column above), the following Unit Prices will apply (all Sub-Contract prices except those in 3rd & 4th columns above encompass "furnishing and installing"):

Pipe Size	Insul. X Depth	Unit Price	Estimated Lgth.-Am't. ft. / \$	Pipe Size	Insul. X Depth	Unit Price	Estimated Lgth.-Am't. ft. / \$
1/2"	X 1 1/2"	\$1.43	200'/\$ 286.00	3"	X 2"	\$2.48	350'/\$ 868.00
3/4"	X 1 1/2"	\$1.45	200'/\$ 290.00	4"	X 2 1/2"	\$3.45	240'/\$ 828.00
1"	X 1 1/2"	\$1.53	200'/\$ 306.00	6"	X 2 1/2"	\$4.15	0 0
1 1/4"	X 1 1/2"	\$1.59	100'/\$ 159.00	8"	X 2 1/2"	\$4.77	160'/\$ 763.20
1 1/2"	X 1 1/2"	\$1.55	700'/\$1,155.00	12"	X 3"	\$8.43	0 0
2"	X 2"	\$2.25	568'/\$1,503.00	14"	X 3"	\$9.50	200'/\$1,900.00

ESTIMATED TOTAL PRICE

\$3,629.00\$4,359.20

KEN 010777

COMPENSATION ANNEX "A"Section IV: Steam @ 280# - Type "B" Insulation

UNIT PRICES

Pipe Size	Insul. Depth	Price of Insul. per lin. ft.	Estimated Lgth.-Am't. ft./-\$	Anti-sweat Insul. per Lin. ft.	Weather-proofing per Lin. ft.	Metal Jacketing per sq. ft.	Estimated Metal Jacket. Area-Am't. sq. ft. / \$
3/4"	2 1/2"	\$ 2.75	120'/\$ 330.00	\$ 2.30	\$1.59	\$.77	100/\$ 77.00
1"	2 1/2"	\$ 2.83	500'/\$1,415.00	\$ 2.40	\$1.59	\$.77	100/\$ 77.00
1 1/2"	2 1/2"	\$ 3.04	200'/\$ 608.00	\$ 2.53	\$1.83	\$.70	100/\$ 70.00
3"	3"	\$ 4.02	200'/\$ 804.00	\$ 3.35	\$2.30	\$.64	100/\$ 64.00
4"	3"	\$ 4.50	500'/\$2,250.00	\$ 3.76	\$2.57	\$.58	100/\$ 58.00
6"	3"	\$ 5.50	100'/\$ 550.00	\$ 4.59	\$2.68	\$.58	100/\$ 58.00
10"	3 1/2"	\$10.68	100'/\$1,068.00	\$ 7.96	\$3.76	\$.58	100/\$ 58.00
14"	4"	\$14.46	100'/\$1,446.00	\$13.20	\$4.62	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$8,471.00\$520.00Section V: Steam @ 425# - Type "B" Insulation

1/2"	2 1/2"	\$ 2.72	600'/\$1,632.00	\$ 2.27	\$1.59	\$.77	100/\$ 77.00
3/4"	2 1/2"	\$ 2.75	200'/\$ 550.00	\$ 2.30	\$1.59	\$.77	100/\$ 77.00
1"	2 1/2"	\$ 2.83	500'/\$1,415.00	\$ 2.40	\$1.59	\$.77	100/\$ 77.00
1 1/4"	2 1/2"	\$ 2.87	100'/\$ 287.00	\$ 2.43	\$1.59	\$.77	100/\$ 77.00
1 1/2"	2 1/2"	\$ 3.05	300'/\$ 915.00	\$ 2.53	\$1.83	\$.70	100/\$ 70.00
2"	2 1/2"	\$ 3.14	800'/\$2,512.00	\$ 2.60	\$1.83	\$.70	100/\$ 70.00
3"	3"	\$ 4.02	200'/\$ 804.00	\$ 3.35	\$2.30	\$.64	100/\$ 64.00
4"	3"	\$ 4.49	100'/\$ 449.00	\$ 3.76	\$2.57	\$.58	100/\$ 58.00
6"	3"	\$ 5.50	100'/\$ 550.00	\$ 4.70	\$2.68	\$.58	100/\$ 58.00
10"	3 1/2"	\$10.68	100'/\$1,068.00	\$ 7.96	\$3.76	\$.58	100/\$ 58.00

KEN 010778

COMPENSATION ANNEX "A"Section V: Steam @ 425# - Type "B" Insulation - (continued)

Pipe Size	Insul. Depth	Price of Insul. per lin. ft.	Estimated Lgth.-Am't. ft./ \$	Anti-sweat Insul. per Lin. ft.	Weather-proofing per Lin. ft.	Metal Jacketing per sq. ft.	Estimated Metal Jacket. Area-Am't. sq. ft./ \$
12"	4"	\$13.18	100'/\$1,318.00	\$12.00	\$4.39	\$.58	100/\$ 58.00
14"	4"	\$14.46	100'/\$1,446.00	\$13.20	\$4.62	\$.58	100/\$ 58.00
16"	4½"	\$17.20	200'/\$3,440.00	\$15.75	\$5.26	\$.58	100/\$ 58.00
24"	4½"	\$23.60	120'/\$2,832.00	\$20.96	\$6.88	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$19,218.00\$918.00Section VI: Steam Condensate - Type "B" Insulation

½"	1"	\$ 1.08	1200'/\$1,296.00	\$.80	\$.69	\$1.49	100/\$149.00
1"	1"	\$ 1.17	1800'/\$2,106.00	\$.85	\$.84	\$1.26	100/\$126.00
1½"	1"	\$ 1.28	1800'/\$2,304.00	\$.99	\$.96	\$1.14	100/\$114.00
2"	1"	\$ 1.40	3600'/\$5,040.00	\$ 1.02	\$1.10	\$1.02	100/\$102.00
3"	1"	\$ 1.59	1400'/\$2,226.00	\$ 1.12	\$1.37	\$.86	100/\$ 86.00
12"	1"	\$ 4.40	20'/\$ 88.00	\$ 3.52	\$3.37	\$.58	0/0
16"	1½"	\$ 7.50	100'/\$ 750.00	\$ 6.48	\$3.96	\$.58	100/\$ 58.00
24"	1½"	\$10.95	40'/\$ 438.00	\$ 9.43	\$5.63	\$.58	0/0

ESTIMATED TOTAL PRICE

\$14,248.00\$635.00

KEN 010779

COMPENSATION ANNEX "A"Section VII: Lube Oil & Mergoil - Type "G" Insulation

UNIT PRICES							
Pipe Size	Insul. Depth	Price of Insul. per lin. ft.	Estimated Lgth.-Am't. ft. / \$	Price of Anti-sweat per lin. ft.	Price of Weather-proofing per lin. ft.	Metal Jacketing per sq. ft.	Estimated Metal Jacket. Area-Am't. sq. ft. / \$
1/2"	1"	\$.84	350'/\$ 294.00	\$.80	\$.69	\$1.49	100/\$149.00
3/4"	1"	\$.86	800'/\$ 688.00	\$.84	\$.69	\$1.49	500/\$745.00
1"	1"	\$.88	900'/\$ 792.00	\$.87	\$.84	\$1.26	100/\$126.00
1 1/4"	1"	\$.92	200'/\$ 184.00	\$.90	\$.84	\$1.26	100/\$126.00
1 1/2"	1"	\$1.01	900'/\$ 909.00	\$.99	\$.96	\$1.14	100/\$114.00
2"	1"	\$1.05	900'/\$ 945.00	\$1.02	\$1.10	\$1.02	100/\$102.00
2 1/2"	1"	\$1.10	60'/\$ 66.00	\$1.09	\$1.19	\$.96	50/\$ 48.00
3"	1"	\$1.15	2600'/\$2,990.00	\$1.12	\$1.37	\$.86	100/\$ 86.00
4"	1"	\$1.38	5000'/\$6,900.00	\$1.34	\$1.59	\$.78	100/\$ 78.00
6"	1"	\$1.80	4000'/\$7,200.00	\$1.73	\$2.06	\$.64	100/\$ 64.00
8"	1"	\$2.26	1700'/\$3,842.00	\$2.23	\$2.57	\$.58	100/\$ 58.00
10"	1"	\$2.75	752'/\$2,068.00	\$2.69	\$2.68	\$.58	100/\$ 58.00
12"	1"	\$3.20	125'/\$ 400.00	\$3.15	\$3.19	\$.58	100/\$ 58.00
16"	1 1/2"	\$6.62	200'/\$1,324.00	\$6.48	\$3.96	\$.58	100/\$ 58.00
20"	1 1/2"	\$8.17	200'/\$1,634.00	\$7.96	\$4.78	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$30,236.00\$1,928.00Section VIII: Fuel Oil - Type "G" Insulation

1/2"	1 1/2"	\$1.10	600'/\$ 660.00	\$1.13	\$.96	\$1.14	100/\$114.00
3/4"	1 1/2"	\$1.14	200'/\$ 228.00	\$1.15	\$.96	\$1.14	100/\$114.00
1"	1 1/2"	\$1.17	200'/\$ 234.00	\$1.19	\$1.10	\$1.02	100/\$102.00
1 1/2"	1 1/2"	\$1.32	300'/\$ 396.00	\$1.28	\$1.19	\$.96	100/\$ 96.00
2"	1 1/2"	\$1.37	1200'/\$1,644.00	\$1.37	\$1.37	\$.86	100/\$ 86.00
3"	1 1/2"	\$1.52	100'/\$ 152.00	\$1.50	\$1.59	\$.78	50/\$ 39.00
4"	1 1/2"	\$1.72	200'/\$ 344.00	\$1.69	\$1.83	\$.72	100/\$ 72.00
6"	1 1/2"	\$2.15	300'/\$ 645.00	\$2.12	\$2.30	\$.60	100/\$ 60.00
8"	1 1/2"	\$2.56	100'/\$ 256.00	\$2.50	\$2.48	\$.58	100/\$ 58.00
10"	1 1/2"	\$3.15	500'/\$1,575.00	\$3.04	\$2.93	\$.58	100/\$ 58.00

ESTIMATED TOTAL PRICE

\$6,134.00\$799.00

KEN 010780

COMPENSATION ANNEX "A"Section IX: Service 0° - 300 F.° Miscellaneous Systems. Insul. as required

Pipe Size	Insul. Depth	Price of Insul. per lin. ft.	Estimated Lgth.-Am't. ft. / \$	Price of Anti-sweat per lin. ft.	Price of Weather-proofing per lin. ft.	Metal Jacketing per sq. ft.	Estimated Metal Jacket Area-Am't. sq. ft./\$
1/2"	1"	\$.80	0	\$.80	\$.69	\$1.49	0
3/4"	1"	\$.84	0	\$.84	\$.69	\$1.49	0
1"	1"	\$.86	0	\$.86	\$.84	\$1.26	0
1 1/4"	1"	\$.90	0	\$.90	\$.84	\$1.26	0
1 1/2"	1"	\$.99	0	\$.99	\$.96	\$1.14	0
2"	1"	\$1.03	0	\$1.03	\$1.10	\$1.02	0
3"	1"	\$1.12	0	\$1.12	\$1.37	\$.86	0
4"	1"	\$1.34	0	\$1.34	\$1.59	\$.78	0
6"	1"	\$1.73	0	\$1.73	\$2.06	\$.64	0
8"	1"	\$2.23	0	\$2.23	\$2.57	\$.58	0
10"	1"	\$2.69	0	\$2.69	\$2.68	\$.58	0
12"	1"	\$3.15	0	\$3.15	\$3.19	\$.58	0
14"	1"	\$3.59	0	\$3.59	\$3.37	\$.58	0

ESTIMATED TOTAL PRICE

-0--0-

COMPENSATION ANNEX "A"Section X: Insulation of Equipment, Vessels and Machinery(cross-referenced to types of insulation per Sections I through IX)

PRICES PER SQUARE FOOT:

Insul. Depth	*Price per sq. ft.	Est. sq. ft.	Est. total price	Sections IV & V	Sections VI & IX	Sections VII & VIII
1"	\$2.55	0	0	-	\$3.06	\$2.59
1½"	\$3.12	1,650	\$5,148.00	-	\$3.18	\$2.65
2"	\$3.24	200	\$ 628.00	-	-	-
2½"	\$3.35	100	\$ 335.00	\$4.36	-	-
3"	\$3.47	50	\$ 173.50	\$4.48	-	-
3½"	\$4.60	0	0	\$4.60	-	-
4"	\$4.72	0	0	\$4.72	-	-
4½"	\$4.83	0	0	\$4.83	-	-

ESTIMATED TOTAL PRICE

\$5,281.50

* Sections I, II & III

KEN 010782

EXHIBIT "A"PLANS, DRAWINGS AND/OR SPECIFICATIONS

The following specifications and drawings are hereby incorporated:

1. Kaiser Engineers Hot Strip Mill Specification No. 7148 (5-5),
"Piping and Equipment Insulation" dated January 27, 1967.
2. Dravo Corporation Specification (#M822-CF17), "Hot Strip Mill
 Waste Heat Boilers - Thermal Insulation", dated January 27, 1967,
 (Add. No. 1 correction on page 1).
3. Contractor's Drawings (subject to revision as design progresses):

601308	601431	601555	601708
601325	601436	601556	601724
601342	601437	601575	601727
601350	601440	601584	601730
601356	601451	601595	601731
601358	601454	601598	601732
601359	601476	601603	601733
601363	601514	601604	601767
601364	601515	601622	601771
601366	601516	601623	601810
601371	601523	601625	601818
601383	601524	601655	601819
601384	601527	601656	625603
601390	601529	601685	629971
601395	601534	601686	629977
601396	601539	601687	629979
601399	601541	601688	629984
601405	601543	601689	629990
601415	601544	601690	629991
601416	601545	601691	629992
601420	601548	601692	629998
601421	601550	601699	629999
601423	601551	601700	630000
601424	601554	601703	630004

4. Dravo Corporation Drawings (Waste Heat Boiler House):

<u>Number</u>	<u>Rev.</u>	<u>Number</u>	<u>Rev.</u>	<u>Number</u>	<u>Rev.</u>	<u>Number</u>	<u>Rev.</u>
624177	3	624190	3	624236	2	624252	5
624178	2	624191	3	624237	4	624255	2
624179	3	624203	4	624238	2	624260	3
624180	3	624205	3	624239	5	624261	2
624181	3	624206	2	624240	5	624262	2
624182	3	624207	3	624241	5	624265	3
624183	3	624210	2	624242		624273	1
624184	3	624214	2	624243	4	624274	1
624185	3	624232	3	624244	4	624275	1
624186	3	624233	4	624246	3	624276	1
624188	3	624234	3	624247	4	624277	
624189	3	624235	5	624249	4	624278	

5. Manufacturers' drawings of Turbines in Waste Heat Boiler House:

<u>Drawing No.</u>	<u>Manufacture</u>	<u>Service</u>	<u>Number of Turbines</u>
C-10075	Terry Steam Turbine Co.	Service Water, Pump Driver	1
C-10078	Terry Steam Turbine Co.	Emerg. Make-up Water, Pump Drive	1
IE106100	Worthington Corp.	I. D. Fan Drive	3
IE106133	Worthington Corp.	F. D. Fan Drive	3
LD106808	Worthington Corp.	Boiler Feed, Pump Drive	2
RY147493	Worthington Corp.	Condensate Supply Pump	1
X619824	Elliott Co.	Emergency Generator	1

6. Manufacturers' drawings of Tanks and/or Equipment in Waste Heat Boiler House:

<u>Drawing No.</u>	<u>Manufacture</u>	<u>Description</u>
150107	Cochrane Division	Flash Tanks
150189	Cochrane Division	Flash Tank
0186A25	Stacey Mfg. Co.	Condensate Tank
F148142A	Cochrane Division	Jet Tray Deaerator

EXHIBIT "B"ITEMS TO BE SUPPLIED BY THE CONTRACTOR

1. The following pre-formed, single layer, calcium silicate, with 6 or 8 ounce factory applied canvas jacketed insulation for straight run pipe in steam service of 165 pounds at 500°F. will be furnished, at the Contractor's warehouse, to Sub-Contractor:

<u>Pipe Size</u>	<u>Lineal Feet</u>	<u>Thickness</u>
14"	1,800	3"
12"	1,200	3"
8"	660	2½"
6"	120	2½"
4"	2,400	2½"
3"	3,500	2"
2"	6,480	2"
1½"	7,000	1½"
1¼"	600	1½"
1"	5,200	1½"
¾"	1,500	1½"
½"	1,800	1½"

2. Electrical power, 440 volt 3 phase, 110 volt single phase at Contractor's distribution panels.
3. Potable water at area or areas designated by Contractor.
4. Sanitary facilities as located by Contractor.
5. Water required for the work at points designated by the Contractor.
6. Furnish and Install in the Waste Heat Boiler House (through Babcock & Wilcox Company and/or other sub-contractors to Contractor/Owner):
 - (a) Insulation and lagging of Boilers #1, #2 and #3 and all vessels and equipment furnished by Babcock & Wilcox.
 - (b) Insulation of all ducts, stacks, and breeching.
 - (c) Insulation and lagging of all forced and induced draft fans.
7. Furnish Insulation and lagging materials for the twelve (12) turbines listed under Item No. 4 of Exhibit "A" (Installation of Insulation by Sub-Contractor).

EXHIBIT "C"

GENERAL WORK SCHEDULE

1. It is anticipated that Sub-Contractor can commence field work on/or about April 17, 1967, and that subsequent work will be scheduled by Contractor as the systems or parts thereof are released for insulating.
2. It is further contemplated that the work will proceed on several systems concurrently, as programmed by Contractor, and Sub-Contractor shall "man" the work in accordance with priorities established by such programming. In this connection, it is assumed that the work will proceed intermittently, with several move-ins required prior to completion.
3. Completion dates for systems and/or sub-systems will be established by Contractor as required by the testing and operating schedules agreed to by Owner. In this connection, close coordination with Contractor shall be required of Sub-Contractor in order to achieve a realistic work sequence to meet such dates.
4. Completion date for the work is scheduled for November 3, 1967.

EXHIBIT "E"

SPECIAL PROVISIONS

1. The following Special Provisions (1a, 1b, 1c and 1d) relate to Compensation Item No. 1 - Lump Sum Amount for Waste Heat Boiler House Insulation:

- (a) It is mutually understood and agreed that the perimeter of the Waste Heat Boiler House agrees with the limits of the Dravo Corporation design contract as set forth on Dravo drawings incorporated in Exhibit "A" hereof, with the following exception:

The note on Dravo Drawing No. 624178 pertaining to the design perimeter of Elevation 154'0" conflicts with the elevations of the insulation work shown on Dravo Drawing Numbers 624240 and 624241. This conflict is hereby resolved by directing, by this reference, that the latter two drawings govern except that the 2" Fuel Oil Return from the Slab Furnace shown on Drawing Number 624240 is not to be insulated under this Sub-Contract.

- (b) It is mutually understood and agreed that the first fourteen (14) drawings listed under Item No. 4 of Exhibit "A", Drawing Number 624177 through Number 624191 are "General Arrangements", for reference only, and that dimensions of the work within the Waste Heat Boiler House are shown on the Dravo drawings listed under Item No. 4; also Item No. 5 and 6 of Exhibit "A"; as amended herein.
- (c) It is mutually understood and agreed that The Work includes furnishing and installing insulation on the three (3) Fuel Oil Heaters, Type No. 14-10-3K30, manufactured by the American Schack Co., and shown on Contractor's Drawing No. 624238 (624183 for reference only).
- (d) It is mutually understood and agreed that Item No. 2 of Exhibit "A", the Dravo Insulation Specification, is hereby modified as follows:

Wherever manufacturers are named in the Dravo Specification, these shall be construed as a reference and guide to other manufacturers' equivalent products. The Sub-Contractor is restricted to furnishing insulation which is manufactured by one of the manufacturers named in Kaiser Engineers Specification No. 7148 (5-5) which is Item No. 1 of Exhibit "A".

2. The following Special Provisions (2a, 2b, 2c, 2d and 2e) relate to Compensation Item No. 2 - Estimated Amount for Hot Strip Mill Insulation, other than Boiler House, per Unit Prices of Compensation Annex "A", Sheet Nos. One through Seven:

2. continued:

- (a) It is mutually understood and agreed that it is the primary intent under Compensation Item No. 2 that Sub-Contractor shall install on the 165# Steam Line the quantity of Owner-furnished piping insulation set forth in Item No. 1 of Exhibit "B" hereof, and shall furnish and install all necessary insulation materials for fittings, valves, etc., insulating cement for closing laps, sizing (lagging adhesive and preparation for painting by others), tie wires, bands expansion joints, insulation supports, metal jacketing, and all other materials, as required for proper installation thereof. It is further intent of this Sub-Contract that Sub-Contractor shall furnish and install all other insulation, anti-sweat protection, metal jacketing, weather-proofing, and personnel protection for systems requiring such materials, all as shown on the drawings, as described herein, and as directed by the Contractor, for the Hot Strip Mill and its ancillary facilities.
- (b) It is mutually understood and agreed that the drawings and Annex "A" furnished herewith are for the express purpose of generally describing the systems involved, illustrating conditions at the various elevations giving details pertinent to the work and information required to develop a unit price. They are in no way to be construed as being the extent of the work or limiting the work. The Sub-Contractor will be furnished drawings approved for construction as they become available.
- (c) It is mutually understood and agreed that the systems referred to herein include, but are not limited to, (1), steam systems and sub-systems, 0 p.s.i., 10 p.s.i., 50 p.s.i., 165 p.s.i., 280 p.s.i. and 425 p.s.i., including supply and return headers, risers, service drops, steam tracers, valve boxes, heat-exchangers, traps, and where required, condensate returns, flash-tanks, condensate tanks, emergency water storage tanks, deaerator tanks, steam atomizing piping, and other miscellaneous systems; (2), Lube oil systems and sub-systems, where indicated, including lube screw-downs, pedestals, service drops, headers and risers, reducing stations, and storage tanks; (3), Mergoil systems and sub-systems, where indicated except in the oil cellars, including supply and return lines, branch-feeders, pumps and by-passes, headers, risers, and service drops; (4), Fuel oil systems and sub-systems, where indicated, including supply and return headers and utility drops; and (5), All other systems in which the operating temperatures of that particular service approach the dew-point, resulting in a condensation problem--such systems to receive anti-sweat protection only in the areas designated by Contractor.

2. continued:

- (d) It is mutually understood and agreed that measurement for payment will be per lineal foot for pipe insulation, weather-proofing, and anti-sweat protection and per square foot for insulation on equipment and vessels and for metal jacketing, complete and in place, in accordance with the specifications and drawings. Linear measurements will be made along the center line of straight runs and over the insulation outside of all bends, and will include all insulated valves, flanges, tees, ells, and other fittings. Metal jacketing will be measured per square foot, in place, without allowance for laps. The area of pipe jacketing will be the product of the measured circumference of the finished jacketing and the linear measurement thereof, taken as above. Measurements of area will be made over the outside of the insulation on vessels and equipment and will exclude all uninsulated areas in excess of one square foot. In addition to the linear measurements above, the following table of equivalence for insulated fittings and valves will be allowed:

Each pair of flanges - 3 feet

Each mitered ell-exclusive of flanges - 2 feet - preformed
ells shall be
used, where
practicable.

Each Tee-exclusive of flanges - 2 feet

Each cross-exclusive of flanges - 2 feet

Each valve-exclusive of flanges - 2 feet

Each valve bonnet - 3 feet

Bends exceeding radius of long radius ell - 1.5 times the
linear measurement.

- (e) It is mutually understood and agreed that the Estimated Amount of \$170,749.50 for Compensation Item No. 2 was derived as follows:

("Sections" referred to are shown on Compensation Annex "A"
pages One through Seven):

- | | |
|---|--------------|
| (1) Sub-total of 4th Column of Section III (Install Owner-furnished Pipe Insulation for 165# Steam) | \$ 46,730.20 |
| (2) Sub-total of schedule at bottom of page 2 - Section III (Furnish & Install Pipe Insulation for 165# steam) | \$ 8,058.20 |
| (3) Total of Sub-totals of 4th Column of Sections I, II and IV through VIII (Furnish & Install Pipe Insulation) | \$ 89,989.00 |
| (4) Total of Sub-totals of 8th Column of Sections I through VIII (Furnish & Install Metal-Jacketing) | \$ 7,150.40 |
| (5) Sub-total of 4th Column of Section I (Furnish & Install Insulation on Equipment, Vessels and Machinery) | \$ 6,284.50 |

2(e) continued:

(6) Allowance for Section IX (no specific quantities or Sub-totals estimated for any column)	\$ 5,298.30
(7) Allowance for table of equivalence in Special Provision No. 2 (d) of Exhibit "E" (flanges, ells, tees, crosses, valves and bonnets, and bends) - approximately 5% of (1), (2) and (3)	\$ 7,238.90
TOTAL ESTIMATED AMOUNT	<u>\$170,749.50</u>

The above Total Estimated Amount does not reflect estimated total prices or allowances for the following categories of Unit Prices shown under Compensation Annex "A", but which Unit Prices are nonetheless applicable to whatever quantities are developed from approved for construction drawings to be issued pursuant to Special Provision No. 2a:

- (a) Anti-Sweat Insulation (quantity presently indeterminable but will be relatively insignificant)
- (b) Weather-Proofing (quantity presently indeterminable but will be small amount)
- (c) Insulation of Equipment, Vessels and Machinery in accordance with Sections IV through IX

Contractor does not guarantee the accuracy of any of its estimated quantities or allowances, and Sub-Contractor agrees not to plead misunderstanding or deception because of any such inaccuracy. It is mutually agreed that the Unit Prices are firm and not subject to adjustment irrespective of variations between actual quantities and estimated quantities.

- 3. It is mutually understood and agreed that Contractor and other sub-contractors, will be working in the areas involved in this work and that these areas will be congested. In this connection, storage space adjacent to the work site will be limited and such storage must be closely coordinated with Contractor.
- 4. It is mutually understood and agreed that Sub-Contractor will provide all required off-loading, handling, hoisting, material and equipment protection, to include weather protection for material in outside storage, rigging, scaffolding, picks, ladders, and all other equipment necessary for the proper installation of the work.
- 5. It is mutually understood and agreed that "the value of work done and materials furnished by Sub-Contractor" as referred to in Article 18 "Terms of Payment" of the Sub-Contract General Terms and Conditions shall be construed to include the actual purchase cost of materials required under the Sub-Contract which are delivered and unloaded by Sub-Contractor during each month irrespective of whether the material is installed in such month.

Subcontracts - Middletown

Job #6471

RETURN TO

KAISER ENGINEERS

RECORDS CENTER

BOX 3023

REQUEST 19625

KEN 010733

126

1407-1492

KEN 010732