

**PLAINTIFF'S
EXHIBIT**

ARO-197

ENGINEERING REPORT

PROJECT 7105

WATER DISTRIBUTION SYSTEM

MIDDLETOWN WORKS

JANUARY 16, 1967

KAISER ENGINEERS, INC.

REPORT NO. 7105-4

REVISION NO. 1

PREPARED BY	<u>E. O. Johnson</u>	<u>1/16/67</u>
	E. O. JOHNSON	DATE
	KAISER PROJECT ENGINEER	
APPROVED BY	<u>F. X. KAST</u>	<u>1/16/67</u>
	F. X. KAST	DATE
	KAISER ENGINEERING MANAGER	
APPROVED BY	<u>Louis Boehm</u>	<u>1/16/67</u>
	L. BOEHM	DATE
	ARMCO PROJECT ENGINEER	
APPROVED BY	<u>H. F. Hansell</u>	<u>1/18/67</u>
	H. F. HANSELL	DATE
	ARMCO TASK FORCE CHAIRMAN	
APPROVED BY	<u>L. R. Larson</u>	<u>1/18/67</u>
	L. R. LARSON	DATE
	ARMCO PROJECT MANAGER	

PROJ. SECT.	CONSTR. DETAIL
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723

STEAM

This project section will include all costs for purchase and installation of all process steam and condensate piping within the Water Treatment Plant battery limits, including steam tracing.

Steam and condensate for comfort heating of the various enclosures will be included in the appropriate number in the 200 series of Project sections.

Ditching and backfill will be included in Project Section No. 730.

Cathodic protection will be included in Project Section No. 731.

460

Piping

725

AIR

This project section will include all costs for purchase and installation of Air Piping for water treating facilities as follows:

1. The piping will start at the new air compressor in the existing No. 2 Boiler House and feed to water treatment equipment.
2. All instrument air piping to air sets (at which point tube work will be instrumentation) will be included here.

Air compressor and equipment will be included in Project Section No. 425.

Ditching and backfill will be included in Project Section No. 730.

Cathodic protection will be included in Project Section No. 731.

460

Piping

Armco Steel Corporation

LOCATION: Middletown Works

PROJECT: Water Distribution System

CONTRACTOR: Kaiser Engineers, Inc.

DATE: January 16, 1967

PROJECT NO.: 7305-4

ESTIMATE NO.: 05-4A

SHEET: 41 OF 46

BY: A

NOTED: 46

COST ACCOUNT	DESCRIPTION	QUANTITY	UNIT PRICE			LABOR MAN-HOURS	LABOR	BURDEN	EQUIPT. USAGE	MATERIAL	SUB-CONTRACT	ENGINEERED EQUIPMENT	TOTAL
			L	EU	M								
	"C" WATER TREATMENT PLANT												
700	PIPING (Continued)												
723	STEAM												
460	Piping												
	Purchase Pipe and Fittings	3			DRAYO								
	Purchase Valves	3			"								
	Pipe Fabrication	3			"								
	Pipe Installation	3			McGRATH								
	Pipe Insulation	3			"								
	Pipe Hangers and Supports	3			"								
	Total 460 Piping												
	TOTAL - STEAM												140,500
725	AIR												
460	Piping												
	Purchase Pipe and Fittings	3			McGRATH								
	Purchase Valves	3			DRAYO								
	Pipe Fabrication	3			McGRATH								
	Pipe Installation	3			"								
	Pipe Insulation	3			"								
	Pipe Hangers and Supports	3			McGRATH								
	Total 460 Piping												
	TOTAL - AIR												11,300
	TOTAL												

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COST ACCOUNT DESC.	DESCRIPTION	QUANTITY			UNIT PRICE			LABOR MAN- HOURS	LABOR	BURDEN	EQUIPT. USAGE	MATERIAL	SUB- CONTRACT	ENGINEERED EQUIPMENT	TOTAL
		L	EU	SC	L	EU	SC								
	"C" WATER TREATMENT PLANT														
700	PIPING (Continued)														
727	BRINE PIPING														
460	Piping														
	Purchase Pipe and Fittings	1/2	DRAYO												
	Purchase Valves	1/2	"												
	Pipe Fabrication	1/2	"												
	Pipe Installation	1/2	MCGRAW												
	Pipe Insulation	1/2	"												
	Pipe Hangers and Supports	1/2	"												
	Total 460 Piping														
	TOTAL - BRINE PIPING														
728	CHEMICAL FEED PIPING														
460	Piping														
	Purchase Pipe and Fittings	1/2	MCGRAW												
	Purchase Valves	1/2	DRAYO												
	Pipe Fabrication	1/2	DRAYO												
	Pipe Installation	1/2	MCGRAW												
	Pipe Insulation	1/2	"												
	Pipe Hangers and Supports	1/2	MCGRAW												
	Total 460 Piping														
	TOTAL - CHEMICAL FEED PIPING														
729	PAINTING, COLOR CODING AND TAGGING														
366	Painting														
450	Color Coding and Tagging														
	TOTAL - PAINTING, COLOR CODING AND TAGGING														
	TOTAL														

H-4002 - REV. 11-65