

TITLE II COST ESTIMATE

UTILITY BUILDING A AND HEAT TRANSFER SYSTEMS, LABORATORY AREA

SUMMARY

	<u>Cost, Dollars</u>	* <u>Total Cost, Dollars</u>
UTILITY BUILDING A		
Architectural - Structural	\$ 38,900	
**Mechanical - HVAC	104,600	
***Electrical	12,700	
Fire Alarm & Communication System	<u>4,900</u>	
		<u>\$261,100</u>
HEAT TRANSFER SYSTEMS		
Structural	14,900	
Cooling Tower	32,000	
Mechanical Heat Transfer	150,700	
Electrical	<u>32,400</u>	
		<u>230,000</u>
		<u>\$391,100</u>

Notes:

- * Contractors overhead and profit included. Cost of construction management included. Contingency and cost of ED&I not included.
- ** Water chillers and associated equipment (cost \$72,200) to be purchased under a separate contract in future, not included in this cost estimate. (See attached "Equipment Installation Schedule")
- *** Electrical power (526 kva) distribution and controls (cost \$48,300) for equipment to be installed in future, not included in this cost estimate.

TITLE II COST ESTIMATE DETAILS

UTILITY BUILDING A, ACCOUNT NO. 523

	<u>Units</u>	<u>Unit Cost, Dollars</u>	<u>Cost Dollars</u>	<u>Total Cost, Dollars</u>
Architectural - Structural				
Earthwork	250 CY	4.76	1,190	
Concrete - Reinf. - Forms	114 CY	76.66	8,740	
Structural Steel	21 Tons	378.00	7,940	
Misc. Iron L.S.			3,300	
Metal Sash - Glazed	120 SF	3.00	360	
Metal Wall Facing	3,100 SF	.82	2,540	
Metal Roof Decking	3,720 SF	.77	2,860	
Roofing and Rigid Board	3,720 SF	.41	1,520	
Sheet Metal and Louvers L.S.			4,120	
Metal Doors - Hardware L.S.			1,660	
Concrete Block Wall	900 SFF.	1.79	1,610	
Painting - Caulking L.S.			3,060	
				<u>38,900</u>
Mechanical - HVAC				
Boilers, Assoc. Eq. & Base	2		32,200	
Air Compr., Assoc. Eq. & Base	2		23,100	
Fuel Oil St. Tanks & Supports	2		4,300	
Diesel Gener., Silencer & Base	1		19,800	
Plumbing			1,200	
Roof Ventilators			2,000	
Proc. Piping, Valves, Fittings, etc.			22,000	
				<u>104,600</u>

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	Unit	Cost	Total
Units	Cost, Dollars	Dollars	Cost, Dollars
Electrical			
Lighting & Recept. (15 kva)		4,800	
Equipm. Loads (116.5 kva)		77,000	
Grounding		700	
			<u>12,700</u>
Fire Alarm & Communic. Systems			
		4,900	
			<u>4,900</u>
Utility Building A, Total Cost			<u><u>\$290,100</u></u>

Note: Site administration and construction management are included.
Contingency and ED&I not included.

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TITLE II COST ESTIMATE DETAILS

HEAT TRANSFER SYSTEMS, LABORATORY AREA, ACCOUNT NO. 673

	<u>Units</u>	<u>Unit Cost, Dollars</u>	<u>Cost Dollars</u>	<u>Total Cost, Dollars</u>
Structural				
Pumps & Eq. Supports & Slab			4,200	
Cooling Tower - Concrete & Steel			10,700	
				<u>14,900</u>
Cooling Tower				
Structure	1		28,300	
Sprinkler System	1		3,700	
				<u>32,000</u>
Mechanical - Heat Transfer				
Heat Exchangers	2		35,100	
Deionizer	1		12,700	
Chlorinator, pH Controller	1 ea.		3,400	
Storage Tank	1		6,700	
Compression Tank	1		8,200	
Sump Screen	4		3,300	
Pumps	7		19,500	
Filters	3		6,200	
Proc. Piping, Valves, Cntrs, etc.			55,600	
				<u>150,700</u>
Electrical				
Lighting & Recept.			800	
Equipment Loads (50115 kva)			31,000	
Grounding			600	
				<u>32,400</u>
				<u><u>\$230,000</u></u>
Heat Transfer Systems, Total Cost				

Note: Site administration and construction management are included.
 Contingency and ED&I not included.

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EQUIPMENT INSTALLATION SCHEDULE

Purchase orders will specify delivery at times to permit installation under contracts for work on the buildings as indicated.

<u>Equipment Items</u>	<u>Buildings</u>
Boiler #1	Utility Building A
Boiler #2	Central Laboratory
Air Compressor #1	Utility Building A
Air Receiver	Utility Building A
Aftercooler	Utility Building A
H. W. Pump #1	Utility Building A
H. W. Pump #2	Utility Building A
Diesel Generator	Utility Building A
Water Chiller #1	Admin. - Engrg. Building
Water Chiller #2	Central Laboratory
Chilled Water Pump #1	Admin. - Engrg. Building
Chilled Water Pump #2	Admin. - Engrg. Building
Air Compressor #2	Central Laboratory

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