

MEMORANDUM

1053-135053-015

October 9, 2008

TO: DAN LAFFITTE, PORTLAND

FROM: DON GORDON, SAN DIEGO

SUBJECT: COLUMBIA BOULEVARD WASTEWATER TREATMENT PLANT DIGESTER
EXPANSION
60-PERCENT DESIGN COMPLETION
BASIS OF ESTIMATE OF PROBABLE CONSTRUCTION COST

The Basis of Estimate Report for the subject project is attached. Please call me if you have questions or need additional information.

DG:ua

Attachments
Summary Estimate
Detailed Estimate

cc: J. L. Matthews, Jacksonville

BASIS OF ESTIMATE REPORT

COLUMBIA BOULEVARD WASTEWATER TREATMENT PLANT DIGESTER EXPANSION

Introduction

Brown and Caldwell (BC) is pleased to present this estimate of probable construction cost (estimate) prepared for the Columbia Boulevard Wastewater Treatment Plant (CBWTP) Digester Expansion, Portland, Oregon.

Summary

This Basis of Estimate contains the following information:

- Scope of work
- Background of this estimate
- Class of estimate
- Estimating methodology
- Direct cost development
- Indirect cost development
- Bidding assumptions
- Estimating assumptions
- Estimating exclusions
- Allowances for known but undefined work
- Contractor and other estimate markups

Scope of Work

The basis of this estimate is an expansion of the existing digester complex at the City of Portland's Columbia Boulevard Wastewater Treatment Plant. The work includes the construction of two new digesters (Digester 9 and 10), construction of a new control building, minor demolition of existing features, and miscellaneous site work.

Background of this Estimate

The attached estimate of probable construction cost is based on documents dated September 2008, received by the estimating department. These documents are described as 60 percent complete based on the current design progression, additional or updated scope and/or quantities, and ongoing discussions with the project design team. Further information can be found in the detailed estimate reports.

Class of Estimate

In accordance with the Association for the Advancement of Cost Engineering International (AACE) criteria, this is a Class 2 estimate. A Class 2 estimate is defined as a Design Baseline Estimate or Control Estimate. Typically, engineering is from 30 percent to 70 percent complete. Class 2 Estimates are used to monitor design progression, evaluate design decisions and form the base work for the Class 1 Final Control Estimate.

Expected accuracy for Class 2 estimates typically ranges from -15 percent to +20 percent, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. In unusual circumstances, ranges could exceed those shown.

Estimating Methodology

This estimate was prepared using quantity take-offs, vendor quotes, and equipment pricing furnished either by the design team or by the estimator. The estimate includes direct labor costs, including a shift differential if applicable, and anticipated productivity adjustments to labor, and equipment. Where possible, estimates for work anticipated to be performed by specialty subcontractors have been used.

Construction labor crew and equipment hours were calculated from production rates contained in documents and electronic databases published by R.S. Means, Mechanical Contractors Association (MCA), National Electrical Contractors Association (NECA), and Rental Rate Blue Book for Construction Equipment (Blue Book).

This estimate was prepared using BC's estimating system, which consists of a Windows-based commercial estimating software engine using BC's material and labor database, historical project data, the latest vendor and material cost information, and other costs specific to the locale of the project.

Direct Cost Development

Costs associated with the General Provisions and the Special Provisions of the construction documents, which are collectively referred to as Contractor General Conditions (CGC), were based on the estimator's interpretation of the contract documents. The estimates for CGCs are divided into two groups: a time-related group (e.g., field personnel), and non-time-related group (e.g., bonds and insurance). Labor burdens such as health and welfare, vacation, union benefits, payroll taxes, and workers compensation insurance are included in the labor rates. No trade discounts were considered.

Indirect Cost Development

Local sales tax has been applied to material and equipment rentals. A percentage allowance for contractor's home office expense has been included in the overall rate markups. The rate is standard for this type of heavy construction and is based on typical percentages outlined in Means Heavy Construction Cost Data, 2008.

The contractor's cost for builders risk, general liability, and vehicle insurance has been included in this estimate. Based on historical data, this is typically two to four percent of the overall construction contract amount. These indirect costs have been included in this estimate as a percentage of the gross cost, and are added to the net totals after the net markups have been applied to the appropriate items.

Bidding Assumptions

The following bidding assumptions were considered in the development of this estimate.

Bidders must hold a valid, current Oregon Contractor's license, applicable to the type of project.

Bidders will develop estimates with a competitive approach to material pricing and labor productivity, and will not include allowances for changes, extra work, unforeseen conditions, or any other unplanned costs.

Estimated costs are based on a minimum of four bidders. Actual bid prices may increase for fewer bidders or decrease for a greater number of bidders.

Bidders will account for General Provisions and Special Provisions of the contract documents and will perform all work except that which will be performed by traditional specialty subcontractors as identified here:

- Electrical
- Miscellaneous metalwork
- Thermal/moisture proofing
- HVAC systems
- Painting
- Plumbing
- Ground stabilization and piling

Estimating Assumptions

As the design progresses through different completion stages, it is customary for the estimator to make assumptions to account for details that may not be evident from the documents. The following assumptions were used in the development of this estimate.

1. Contractor performs the work during normal daylight hours, nominally 7 a.m. to 5 p.m., Monday through Friday, in an 8-hour shift. No allowance has been made for additional shift work or weekend work.
2. Contractor has complete access for lay-down areas and mobile equipment.
3. Equipment rental rates are based on verifiable pricing from the local project area rental yards, Blue Book rates, and rates contained in the estimating database.
4. Contractor markup is based on conventionally accepted values that have been adjusted for project-area economic factors.
5. Major equipment costs are based on both vendor supplied price quotes obtained by the project design team and/or estimators, and on historical pricing of like equipment.
6. Process equipment vendor training using vendors' standard Operations and Maintenance (O&M) material, is included in the purchase price of major equipment items where so stated in that quotation.
7. Bulk material quantities are based on manual quantity take-offs that have been entered into the estimating program.
8. There is sufficient electrical power to feed the specified equipment. The local power company will supply power and transformers suitable for this facility.
9. Dewatering will not be required on this project.
10. Foundation excavation/preparation for Digester 9, Digester 10, and the new control building will be a mass excavation and will include injection grouting, (7 foot centers x 18 feet deep), adjacent to exist digesters, stone columns, (7 foot centers x 18 feet deep), under remainder of excavation, double row of stone columns under new digester footings.
11. Additional foundation preparation for the deep tank drain pump room will consist of sheet piling and a 4.5 foot thick tremie plug.
12. Export of excess dirt will be hauled to a site within 20 miles of the project, and a tipping fee of \$75 per 20 cubic yard load will be charged at the disposal site.
13. Reinforcement for structural concrete where not detailed is in conformance with General Structural Note C5 on Sheet S001.

14. Digester 9 and 10 are located in an area that is presently paved. Removal and replacement of pavement is included in the estimate.
15. Digesters include T-lok liner for the top and upper 4 feet of the walls and columns.
16. 12-inch overflow (OF) site piping is System 2, HDPE.
17. Scum pump is 4x4 vbelt side by side drive, 15hp with an 1800rpm motor.
18. Heat exchanger pumps are v-belt type at 100-hp and 1800rpm motor.
19. The two hot water circulation pumps are being removed and replaced. The two new pumps are 6x8 and 30-hp.
20. ELEC-AC1 has 15 tons of cooling capacity.
21. Standpipe is 30" stainless steel.
22. Electrical and instrumentation costs are assumed to be 25 percent of the overall net project cost based on historical data. This percentage allowance recognizes items not shown on the documents, but described in Majid Habibi's email to Butch Matthews dated September 24, 2008.

Estimating Exclusions

The following estimating exclusions were assumed in the development of this estimate.

1. Hazardous materials remediation and/or disposal.
2. O&M costs for the project with the exception of the vendor supplied O&M manuals.
3. Utility agency costs for incoming power modifications.
4. Permits beyond those normally needed for the type of project and project conditions unless otherwise noted.

Allowances for Known but Undefined Work

The following allowances were made in the development of this estimate.

1. Architectural signage
2. Roof drains
3. Replace the existing 6" HRR-S with 8"
4. Plant Water
5. Electrical and instrumentation

Contractor and Other Estimate Markups

Contractor markup is based on conventionally accepted values which have been adjusted for project-area economic factors. Estimate markups are shown in Table 1.

Item	Rate, percent
Prime Contractor	
Labor (employer payroll burden)	18
Materials and process equipment	15

Table 1. Estimate Markups, October 2008

Item	Rate, percent
Equipment (construction-related)	15
Subcontractor	5
Startup, Training, O&M	2
Vehicle Insurance (Builder's Risk, Liability, covered in Agency Wrap Insurance)	.85
Material Shipping and Handling	4
Worker's Travel Subsistence	1
Subcontractor Markups	Same as Prime
Escalation to Midpoint of Construction	9
Contingency	20
Building Permit	1.5
Performance Bond	1
Payment Bond	1

Labor Markup. The labor rates used in the estimate were derived chiefly from the latest published State Prevailing Wage Rates. These rates include costs beyond raw labor for such items as Payroll Tax and Insurance (PT&I), FICA, and Workers Compensation Insurance. In addition to these markups, the General Contractor (GC) typically adds a percentage to each raw labor dollar to cover overhead and profit, payroll and accounting costs, additional insurance, retirement, 401k contributions, and sick leave/vacation cost.

This project will be included in an agency sponsored Wrap Up insurance program. A 10-percent discount is applied to the net labor cost for this project to approximate the workers compensation cost component of this estimate that will be provided under the agency's insurance program.

Materials and Process Equipment Markup. This markup consists of the additional cost the contractor must bear beyond the raw dollar amount for material and process equipment. This includes shop drawing preparation, submittal and/or re-submittal cost, purchasing and scheduling materials and equipment, accounting charges including invoicing and payment, inspection of received goods, receiving, storage, overhead and profit.

Equipment (Construction) Markup. This markup consists of the costs associated with operating the construction equipment used in the project. Most GCs will rent rather than own the equipment and then charge each project for its equipment cost. The equipment rental cost does not include fuel, delivery and pick-up charges, additional insurance requirements on rental equipment, accounting costs related to home office receiving invoices and payment. However, the crew rates used in the estimate do account for the equipment rental cost. Occasionally, larger contractors will have some or all of the equipment needed for the job, but in order to recoup their initial purchasing cost they will charge the project an internal rate for

equipment use which is similar to the rental cost of equipment. The GC will apply an overhead and profit percentage to each individual piece of equipment whether rented or owned.

Subcontractor Markup. This markup consists of the GC's costs for subcontractors who perform work on the site. This includes costs associated with shop drawings, review of subcontractor's submittals, scheduling of subcontractor work, inspections, processing of payment requests, home office accounting, and overhead and profit on subcontracts.

Contractor Startup, Training, and O&M Manuals. This cost markup is often confused with either vendor startup or owner startup. It is the cost the GC incurs on the project beyond the vendor startup and owner startup costs. The GC generally will have project personnel assigned to facilitate the installation, testing, startup, and O&M Manual preparation for equipment that is put into operation by either the vendor or owner. These project personnel often include an electrician, pipe fitter or millwright, and/or I&E technician. These personnel are not included in the basic crew makeup to install the equipment but are there to assist and trouble shoot the startup and proper running of the equipment. The GC also incurs a cost for startup for such things as consumables (oil, fuel, filters, etc.), startup drawings and schedules, startup meetings, and coordination with the plant personnel in other areas of the plant operation.

Builders Risk, Liability, and Vehicle Insurance. This percentage comprises all three items. There are many factors which make up this percentage, including the contractor's track record for claims in each of the categories. Another factor affecting insurance rates has been a dramatic price increase across the country over the past several years due to domestic and foreign influences. Consequently, in the construction industry we have observed a range of 0.5 to 1 percent for Builders Risk Insurance, 1 to 1.25 percent for General Liability Insurance, and 0.85 to 1 percent for Vehicle Insurance. Many factors affect each area of insurance, including project complexity, and contractor's requirements and history. Instead of using numbers from a select few contractors, we believe it is more prudent to use a combined 2.85 percent to better reflect the general costs across the country. Consequently, the actual cost could be higher or lower based on the bidder, region, insurance climate, and on the contractor's insurability at the time the project is bid. To recognize this project will be included in an agency sponsored Wrap Up insurance program, auto liability is the only insurance component included in this estimate.

Material Shipping and Handling. This can range from 2 percent to 6 percent, and is based on the type of project, material makeup of the project, and the region and location of the project. Material shipping and handling covers delivery costs from vendors, unloading costs (and in some instances loading and shipment back to vendors for rebuilt equipment), site paper work, and inspection of materials prior to unloading at the project site. BC typically adjusts this percentage by the amount of materials and whether vendors have included shipping costs in the quotes that were used to prepare the estimate. This cost also includes the GC's cost to obtain local supplies, e.g., oil, gaskets, and bolts that may be missing from the equipment or materials shipped.

Escalation to Midpoint for Labor, Materials and Subcontractors. In addition to contingency, it is customary for projects that will be built over several years to include an escalation to midpoint of anticipated construction to account for the future escalation of labor, material, and equipment costs beyond values at the time the estimate is prepared. For this project the anticipated rate of escalation is 5 percent per annum.

This project can reasonably be constructed within 24 months, exclusive of unusual weather or site conditions delays. Construction is anticipated to start June 1 2009, and complete May 1, 2011. The escalation factors used in this estimate are calculated from the date the estimate is finalized to the anticipated midpoint of construction at approximately 20 months from the date of this estimate.

Construction Contingency. The contingency factor covers unforeseen conditions, area economic factors, and general project complexity. This contingency is used to account for those factors that can not be addressed in each of the labor and/or material installation costs. Based on industry standards, completeness of the project documents, project complexity, the current design stage, and area factors, construction contingency can range from 10 percent to 50 percent.

Range of Accuracy. The amount of contingency in the estimate should not be confused with the accuracy of the estimate. The Expected Accuracy Range defines the window within which the bids are expected to fall based on the project complexity, information available during the estimate process, outside influences (wage rates, material, bidding climate), and includes a level of contingency appropriate to the project definition at the time the estimate was prepared. It is important to understand that AACEI, notes on its ranges of accuracy that,

“The state of process technology and availability of applicable reference cost data affect the range markedly. The +/- value [of the ranges] represents typical percentage variation of actual costs from the cost estimate after application of contingency (typically at a 50 percent level of confidence) for given scope.”

While a 50-percent level of confidence in the contingency may seem broad, typically this results in a 90-percent confidence that the actual cost will fall within the bounds of the low and high ranges.

The caution here is that these estimates are not what are often referred to as “bid quality,” i.e., estimates prepared by contractors who are receiving competitive bids from subcontractors, equipment vendors, and materials suppliers. In general, we receive reasonable budget values from those willing to provide quotations.

Performance and Payment Bonds. Based on historical and industry data, this can range from 0.75 percent to 1.25 percent of the project total. There are several contributing factors including such items as size of the project, regional costs, contractor’s historical record on similar projects, complexity, and current bonding limits. BC uses 1 percent for each bond which we have determined to be reasonable for most heavy construction projects.

**CBWTP DIGESTER EXPANSION
60% DESIGN STAGE**

Project Number:: 135053-015-159
Client:: City of Portland, Oregon
Estimator(s):: D. Gordon, D. Orsinelli, J. Warford
Estimating Office:: San Diego, Walnut Creek
Estimate Issue Number:: 01
Estimate Original Issue Date:: September 30, 2008
Estimate Revision Number::
Estimate Revision Date::
BC Project Manager:: Dan Laffitte
Estimate QA/QC Reviewer:: Bob Ferguson
Estimate QA/QC Date:: September 29, 2008

PROJECT LOCATION / PROCESS AREA

1100 - Contractor General Conditions
1101 - Site Work
1102 - Demolition
1103 - Digester 9
1104 - Digester 10
1105 - Digester Control Building
1110 - Soil Improvements - Digesters and Control Building

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

10/9/2008
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City of Portland, Oregon

Description	Grand Total
--- Base Estimate ---	27,508,349
<i>1100 - Contractor General Conditions</i>	
01 - GENERAL REQUIREMENTS	1,197,767
<i>1100 - Contractor General Conditions Total</i>	<i>1,197,767</i>
<i>1101 - Site Work</i>	
01 - GENERAL REQUIREMENTS	8,351
02 - SITE CONSTRUCTION	2,894,314
15 - MECHANICAL	76,775
<i>1101 - Site Work Total</i>	<i>2,979,440</i>
<i>1102 - Demolition</i>	
02 - SITE CONSTRUCTION	41,641
<i>1102 - Demolition Total</i>	<i>41,641</i>
<i>1103 - Digester 9</i>	
01 - GENERAL REQUIREMENTS	21,753
02 - SITE CONSTRUCTION	247,702
03 - CONCRETE	2,363,215
05 - METALS	390,398
07 - THERMAL/MOIST PROTECTION	298,456
09 - FINISHES	4,334
11 - EQUIPMENT	952,098
15 - MECHANICAL	546,426
16 - ELECTRICAL	1,294,010
<i>1103 - Digester 9 Total</i>	<i>6,118,393</i>
<i>1104 - Digester 10</i>	
01 - GENERAL REQUIREMENTS	21,753
02 - SITE CONSTRUCTION	247,702
03 - CONCRETE	2,363,215
05 - METALS	372,790
07 - THERMAL/MOIST PROTECTION	298,456
09 - FINISHES	4,334
11 - EQUIPMENT	952,098
15 - MECHANICAL	446,278
16 - ELECTRICAL	1,294,010
<i>1104 - Digester 10 Total</i>	<i>6,000,637</i>
<i>1105 - Digester Control Building</i>	
01 - GENERAL REQUIREMENTS	23,281
02 - SITE CONSTRUCTION	218,898

CBWTP DIGESTER EXPANSION
 60% DESIGN STAGE

10/9/2008
 3:03PM

City of Portland, Oregon

Description	Grand Total
03 - CONCRETE	2,295,123
04 - MASONRY	21,214
05 - METALS	328,742
07 - THERMAL/MOIST PROTECTION	269,314
08 - DOORS and WINDOWS	43,774
09 - FINISHES	158,869
10 - SPECIALTIES	23,112
11 - EQUIPMENT	1,654,679
15 - MECHANICAL	1,862,846
16 - ELECTRICAL	2,588,020
17 - INSTRUMENTATION	6,975
<i>1105 - Digester Control Building Total</i>	<i>9,494,847</i>
<i>1110 - Soil Improvements - Digesters and Control Building</i>	
02 - SITE CONSTRUCTION	1,675,624
<i>1110 - Soil Improvements - Digesters and Control Building Total</i>	<i>1,675,624</i>

**CBWTP DIGESTER EXPANSION
60% DESIGN STAGE**

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1110 - Soil Improvements - Digesters and Control Building

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
--- Base Estimate ---												
1100 - Contractor General Conditions					464,929		110,457	675	146,548	59,400		782,009
01 - GENERAL REQUIREMENTS												
01020 - Scheduling												
0020	Scheduling, cost control, computer-update, micro, incl plots	24.0	each							37,200	1,550.0	each 37,200
01030 - Photographs												
0010	Photographs 8" x 10", 4 shots, 2 prints ea, std mounting	24.0	set			45.00	1,080				45.0	set 1,080
01050 - Contractors Operations												
0010	Field personnel clerk	104.0	week	704.00	73,216						704.0	week 73,216
0020	Field personnel, field engineer	35.0	week	1,540.00	53,900						1,540.0	week 53,900
0040	Field personnel, project manager	35.0	week	2,420.00	84,700						2,420.0	week 84,700
0050	Field personnel, superintendent	104.0	week	1,980.00	205,920						1,980.0	week 205,920
0060	Field personnel, health and safety engineer	16.0	week	1,815.00	29,040						1,815.0	week 29,040
01060 - Temporary Power												
0020	Temporary pwr equip (pro-rated per job), svce, ovhd feed, 3 use, 200 A	1.0	each	517.32	517	752.60	753				1,269.9	each 1,270
01160 - Office												
0010	Office trailer, furnished, no hookups, 50' x 12', rent per month	24.0	each			750.00	18,000				750.0	each 18,000
0010	Office trailer, furnished, no hookups, 50' x 12', rent per month	24.0	each			750.00	18,000				750.0	each 18,000
0020	Office trailer, for air conditioning, rent per month, add	24.0	each			125.00	3,000				125.0	each 3,000
0020	Office trailer, for air conditioning, rent per month, add	24.0	each			125.00	3,000				125.0	each 3,000
0030	Office, trailer, furnished, for delivery, add per mile	100.0	mile			3.25	325				3.3	mile 325
0030	Office, trailer, furnished, for delivery, add per mile	100.0	mile			3.25	325				3.3	mile 325
0040	Office, storage boxes, 28' x 10', rent per month	24.0	each			250.00	6,000				250.0	each 6,000
0040	Office, storage boxes, 28' x 10', rent per month	24.0	each			250.00	6,000				250.0	each 6,000
01170 - Field office expense												
0010	Field office expense, office equipment rental	24.0	mo			300.00	7,200				300.0	mo 7,200
0010	Field office expense, office equipment rental	24.0	mo			300.00	7,200				300.0	mo 7,200
0020	Field office expense, office supplies	24.0	mo			200.00	4,800				200.0	mo 4,800
0020	Field office expense, office supplies	24.0	mo			200.00	4,800				200.0	mo 4,800
0030	Field office expense, telephone bill, avg bill/month incl long dist	24.0	mo			450.00	10,800				450.0	mo 10,800
0030	Field office expense, telephone bill, avg bill/month incl long dist	24.0	mo			450.00	10,800				450.0	mo 10,800
0040	Field office expense, field office lights & HVAC	24.0	mo			165.00	3,960				165.0	mo 3,960
0040	Field office expense, field office lights & HVAC	24.0	mo			165.00	3,960				165.0	mo 3,960
0050	Field subcontract, utility underground locating service	0.5	week					675			1,350.0	week 675
0060	Field office expense, small tool allowance	24.0	each							7,200	300.0	each 7,200

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
01200 - General equipment rental												
0300	Rent toilet portable chemical	24.0	mo						4,666		194.4	4,666
0300	Rent toilet portable chemical	24.0	mo						4,666		194.4	4,666
0401	Rent truck pickup 3/4 ton 2 wheel drive - Field Engineer	24.0	mo						34,560		1,440.0	34,560
0402	Rent truck pickup 3/4 ton 2 wheel drive - Project Manager	8.0	mo						11,520		1,440.0	11,520
0403	Rent truck pickup 3/4 ton 2 wheel drive - Superintendent	8.0	mo						11,520		1,440.0	11,520
01210 - Lifting and hoisting equi												
0070	Rent crane self-propelled, 4x4 telescoping boom 12-1/2 ton	146.0	day						78,110		535.0	78,110
01230 - Final Clean Up												
0010	Cleanup, floor area, continuous, per day	100.0	msf	31.29	3,129	1.75	175		488		37.9	3,792
0020	Cleanup, floor area, final	100.0	msf	65.31	6,531	2.79	279		1,018		78.3	7,828
01240 - As-Built Drawings												
0011	As - Built Drawings, Medium Project	1.0	lsum							15,000	15,000.0	15,000
01250 - Surveying												
0010	Surveying, crew for building layout, 2 person crew	8.0	day	997.00	7,976						997.0	7,976
GENERAL REQUIREMENTS Total					464,929		110,457	675	146,548	59,400		782,009

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
1101 - Site Work					847,743		235,417	10,000	673,624	167,894		1,934,678	
01 - GENERAL REQUIREMENTS													
01200 - General equipment rental													
0330	Rent trench box, 3000 lbs 6'x 8'	15.0	day						875		58.3	day	875
01280 - Design development													
0010	Storm water plan, allowance	1.0	lsum							5,000	5,000.0	lsum	5,000
GENERAL REQUIREMENTS Total									875	5,000			5,875
02 - SITE CONSTRUCTION													
02060 - Site demolition													
0170	Site dml, pavement removal, bituminous roads, 3" thick	100.0	sqyd	2.97	297				145		4.4	sqyd	442
02160 - Rubbish handling													
9998	Dump Charge, tipping fee, dirt, \$75/20 cy load (30 ton)	42,719.0	ton							106,798	2.5	ton	106,798
9998	Dump Charge, tipping fee, dirt, \$75/20 cy load (30 ton)	624.8	ton							1,562	2.5	ton	1,562
9998	Dump Charge, tipping fee, dirt, \$75/20 cy load (30 ton)	654.0	ton							1,635	2.5	ton	1,635
9998	Dump Charge, tipping fee, dirt, \$75/20 cy load (30 ton)	12.4	ton							31	2.5	ton	31
9999	Dump Charge, typical urban city, fees only, bldg constr mat'ls	436.0	ton							14,388	33.0	ton	14,388
02170 - Saw cutting													
0010	Saw cutting, asphalt, up to 3" deep	600.0	lnft	0.81	483	0.30	180		215		1.5	lnft	878
02280 - Sheet piling													
0030	Sheet piling, stl, no wales, 15' exc, 22 PSF, left in place	20.8	ton	347.10	7,220	1,000.00	20,800		6,194		1,644.9	ton	34,214
0140	Sheet piling, steel, no wales, 20' excav., drive, extract & salvage	4,000.0	sqft	5.86	23,451	6.56	26,226		20,119		17.4	sqft	69,796
0170	Sheet piling, steel, rent steel sheet piling and wales, first month	54.0	ton			240.24	12,973				240.2	ton	12,973
0180	Sheet piling, steel, rent steel sheet piling and wales, per added mo	108.0	ton			24.02	2,595				24.0	ton	2,595
02310 - Fine grade													
0030	Fine grade, grade subgrade for base course, roadways	2,111.0	sqyd	0.24	507				322		0.4	sqyd	828
02320 - Backfill													
0020	Backfill, by hand, no compaction, heavy soil - Planters - Dig. 9	46.0	cuyd	34.14	1,570						34.1	cuyd	1,570
0020	Backfill, by hand, no compaction, heavy soil - Planters - Dig. 10	46.0	cuyd	34.14	1,570						34.1	cuyd	1,570
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	39,509.0	cuyd	0.72	28,571				46,834		1.9	cuyd	75,404
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	45.3	cuyd	0.72	33				54		1.9	cuyd	86
0040	Backfill, dozer backfilling, trench, up to 300' haul, no compaction	569.0	cuyd	0.72	411				674		1.9	cuyd	1,086
02340 - Bedding													
0010	Bedding, crushed stone 3/4" to 1/2"	2,919.0	cuyd	7.85	22,909	32.00	93,408		5,531		41.7	cuyd	121,848
0010	Bedding, crushed stone 3/4" to 1/2"	313.0	cuyd	7.85	2,456	32.03	10,026		593		41.8	cuyd	13,076
02360 - Compaction													

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0030	Compaction, vibratory plate, 8" lifts, common fill	627.6	cuyd	1.88	1,178				189		2.2 cuyd	1,367
0030	Compaction, vibratory plate, 8" lifts, common fill	35,276.0	cuyd	1.88	66,234				10,611		2.2 cuyd	76,844
0030	Compaction, vibratory plate, 8" lifts, common fill	19.4	cuyd	1.88	36				6		2.2 cuyd	42
0030	Compaction, vibratory plate, 8" lifts, common fill	40.8	cuyd	1.88	77				12		2.2 cuyd	89
0030	Compaction, vibratory plate, 8" lifts, common fill	64.0	cuyd	1.88	120				19		2.2 cuyd	139
0030	Compaction, vibratory plate, 8" lifts, common fill	512.0	cuyd	1.88	961				154		2.2 cuyd	1,115
0040	Compaction, vibratory plate, 8" lifts, select fill	2,510.6	cuyd	1.74	4,365				699		2.0 cuyd	5,064
0040	Compaction, vibratory plate, 8" lifts, select fill	269.0	cuyd	1.74	468				75		2.0 cuyd	543
02420 - Excavating, structural												
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	60,700.0	cuyd	6.26	380,028				271,491		10.7 cuyd	651,519
0040	Excavating, structural, mach excav, com earth, hyd backhoe, 1-1/2 CY b	369.4	cuyd	6.26	2,313				1,652		10.7 cuyd	3,965
02450 - Excavating, trench												
0010	Excavate trench, cont ftg, no sht or dewtrg, 4'-6" D, 1-1/2 CY hyd bac	804.0	cuyd	1.67	1,342				959		2.9 cuyd	2,300
02460 - Hauling												
0040	Hauling, LCY, 5 MI RT, 3 lds/hr, to Offsite Stockpile	19,755.0	cuyd	1.32	26,016				30,916		2.9 cuyd	56,932
0040	Hauling, LCY, 5 MI RT, 3 lds/hr, from Offsite Stockpile	19,755.0	cuyd	1.32	26,016				30,916		2.9 cuyd	56,932
0060	Hauling, LCY, no loading, 20 c.y dump truck, 40 MI RT, 0.25 lds/hr	416.5	cuyd	6.07	2,527				3,003		13.3 cuyd	5,529
0060	Hauling, LCY, no loading, 20 c.y dump truck, 40 MI RT, 0.25 lds/hr	436.0	cuyd	6.07	2,645				3,143		13.3 cuyd	5,788
0060	Hauling, LCY, no loading, 20 c.y dump truck, 40 MI RT, 0.25 lds/hr	8.3	cuyd	6.07	50				60		13.3 cuyd	110
0060	Hauling, LCY, no loading, 20 c.y dump truck, 40 MI RT, 0.25 lds/hr	28,479.0	cuyd	6.07	172,762				205,302		13.3 cuyd	378,064
0900	Loading Trucks, F.E. Loader, 3 C.Y.	28,479.0	cuyd	0.67	19,027				11,248		1.1 cuyd	30,275
0900	Loading Trucks, F.E. Loader, 3 C.Y.	416.5	cuyd	0.67	278				164		1.1 cuyd	443
0900	Loading Trucks, F.E. Loader, 3 C.Y.	436.0	cuyd	0.67	291				172		1.1 cuyd	463
0900	Loading Trucks, F.E. Loader, 3 C.Y.	8.3	cuyd	0.67	6				3		1.1 cuyd	9
0900	Loading Trucks, F.E. Loader, 3 C.Y. to Offsite Stockpile	19,755.0	cuyd	0.67	13,198				7,802		1.1 cuyd	21,001
0900	Loading Trucks, F.E. Loader, 3 C.Y. from Offsite Stockpile	19,755.0	cuyd	0.67	13,198				7,802		1.1 cuyd	21,001
02490 - Erosion control												
0040	Erosion control, silt fence, polypropylene, 3' high	500.0	lnft	0.79	395	0.34	170				1.1 lnft	565
0040	Erosion control, silt fence, polypropylene, 3' high - remove	500.0	lnft	0.79	395						0.8 lnft	395
0060	Erosion control, hay bales, staked	500.0	lnft	1.25	624	2.25	1,125		6		3.5 lnft	1,755
02570 - Catch basins or manholes												
0010	CB or manholes, conc, precast, Area Drain	3.0	each	197.54	593	250.00	750		95		479.1 each	1,437
0020	CB or manholes, conc, precast, 4' ID, 6' deep	8.0	each	539.95	4,320	1,050.00	8,400		691		1,676.3 each	13,410
0250	Catch bsns or manholes, frs and covs, hvy traffic, 24" diam, 400 lb.	8.0	each	150.94	1,207	260.00	2,080		292		447.4 each	3,579
02600 - Base course												
0020	Base course, large areas, crushed 3/4" stone, compacted to 6" deep	2,111.0	sqyd	0.69	1,451	6.01	12,687		1,477		7.4 sqyd	15,615

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
02610 - Asphaltic concrete pavement												
0020	Asphaltic conc pavement, and lg paved areas, binder course, 2" thick	2,111.0	sqyd	0.70	1,473	3.42	7,220		783		4.5	9,476
0070	Asphaltic conc pavement, and lg paved areas, wearing course, 2" thick	2,111.0	sqyd	0.77	1,627	5.02	10,597		855		6.2	13,080
0110	Asphaltic conc pavement, pavement replacement over trench, 4" thick	100.0	sqyd	33.45	3,345	10.65	1,065		185		46.0	4,595
02780 - Retaining walls												
0420	Retaining walls, planters, segment ret wall, 3' high - Digester 9	762.0	sf	1.97	1,501	10.45	7,963		267		12.8	9,731
0420	Retaining walls, planters, segment ret wall, 3' high - Digester 10	762.0	sf	1.97	1,501	10.45	7,963		267		12.8	9,731
02840 - Landscaping												
0050	Landscaping Allowance, dec. boulders, lighting, misc.	1.0	lsum					10,000			10,000.0	10,000
0260	Mulch, stone mulch, hand spread, pea gravel - Planters - Dig. 9	10.0	cuyd	41.57	416	58.00	580				99.6	996
0260	Mulch, stone mulch, hand spread, pea gravel - Planters - Dig. 10	10.0	cuyd	41.57	416	58.00	580				99.6	996
SITE CONSTRUCTION Total					841,880		227,388	10,000	671,996	124,414		1,875,677
15 - MECHANICAL												
15010 - Misc. Mechanical												
9971	2.5" Piping (Conceptual) - Temporary WN	520.0	lnft							9,620	18.5	9,620
9974	6" Piping (Conceptual) - Temporary CS	520.0	lnft							28,860	55.5	28,860
15060 - Pipe,hdpe butt fusn jnts												
0050	Piping, HDPE butt fusion jts, SDR 21, 12" dia (OF)	400.0	lnft	7.67	3,070	12.28	4,913		754		21.8	8,737
15130 - Pipe,drn,cor hdp typ s												
0020	Piping,drain/sewage, corr HDPE type s, no excv/bckfill, w/gasket, 6" d	50.0	lnft	3.13	157	1.97	98				5.1	255
0030	Piping,drain/sewage, corr HDPE type s, no excv/bckfill, w/gasket, 8" d	800.0	lnft	3.30	2,637	3.77	3,018				7.1	5,656
MECHANICAL Total					5,864		8,029		754	38,480		53,127

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
1102 - Demolition					13,557		165		13,206			26,928
02 - SITE CONSTRUCTION												
02060 - Site demolition												
0290	Site dml, pipe removal, no excavation, 6" dia - CS	520.0	Inft	6.73	3,498				845	8.4	Inft	4,343
0300	Site dml, pipe removal, no excavation, 2.5" dia WN	520.0	Inft	5.26	2,733				660	6.5	Inft	3,393
B0171	Site dml, pavement removal, cold milling, 1" to 3", 5,000 to 10,000 sy	5,689.0	sqyd	0.47	2,668				6,744	1.7	sqyd	9,412
02170 - Saw cutting												
0010	Saw cutting, asphalt, up to 3" deep	550.0	Inft	0.81	443	0.30	165		197	1.5	Inft	805
02460 - Hauling												
0060	Hauling, LCY, no loading, 20 c.y dump truck, 40 MI RT, 0.25 lds/hr	626.0	cuyd	6.07	3,798				4,513	13.3	cuyd	8,310
0900	Loading Trucks, F.E. Loader, 3 C.Y.	626.0	cuyd	0.67	418				247	1.1	cuyd	665
SITE CONSTRUCTION Total					13,557		165		13,206			26,928

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
1103 - Digester 9					905,891		1,921,544	1,058,180	42,502			3,928,117
01 - GENERAL REQUIREMENTS												
01090 - Scaffolding												
0800	Scaffold,h.d. shoring for suspended slab forms,fl area,to 14'-8" H, 1	91.6	csf	103.25	9,458	45.63	4,179				148.9	13,637
0800	Scaffold,h.d. shoring for suspended slab forms,fl area,to 14'-8" H, 1	2.8	csf	103.25	293	45.63	129				148.9	422
GENERAL REQUIREMENTS Total					9,751		4,309					14,060
02 - SITE CONSTRUCTION												
02590 - Membrane lining systems												
0020	Membrane lining, T-lock liner	10,302.0	sqft					169,983			16.5	169,983
02660 - Sidwks,drivwys,& patios												
0060	Precast concrete, splash block	4.0	each	2.50	10	6.01	24				8.5	34
SITE CONSTRUCTION Total					10		24	169,983				170,017
03 - CONCRETE												
03040 - Fip,elevated slabs												
0010	Forms in place, elev slab, flat plate plywd, to 15' high	9,160.4	sqft	5.28	48,353	4.53	41,455				9.8	89,809
0010	Forms in place, elev slab, flat plate plywd, to 15' high	283.6	sqft	5.28	1,497	4.53	1,283				9.8	2,780
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	1,164.5	sfca	8.63	10,049	1.62	1,883				10.2	11,932
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	101.0	sfca	8.63	872	1.62	163				10.2	1,035
03090 - Forms place, slab grade												
0030	Forms in place, SOG, edge forms, over 12", wood	2,022.0	sfca	5.06	10,223	2.63	5,308				7.7	15,531
0030	Forms in place, SOG, edge forms, over 12", wood	277.6	sfca	5.06	1,404	2.63	729				7.7	2,132
03110 - Forms in place, walls												
0080	Forms in place, walls, job built plyform, 8-16' high	15,984.4	sfca	7.96	127,192	2.28	36,421				10.2	163,612
0080	Forms in place, walls, job built plyform, 8-16' high	11,155.8	sfca	7.96	88,769	2.28	25,418				10.2	114,188
0080	Forms in place, walls, job built plyform, 8-16' high	513.7	sfca	7.96	4,088	2.28	1,170				10.2	5,258
03120 - Waterstop												
0020	Waterstop, PVC, ribbed 3/16" thick, 6" wide	333.0	lnft	3.20	1,067	1.58	525				4.8	1,592
0020	Waterstop, PVC, ribbed 3/16" thick, 6" wide	333.0	lnft	3.20	1,067	1.58	525				4.8	1,592
03130 - Reinforcing in place												
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	86.5	ton	661.41	57,239	1,250.00	108,177				1,911.4	165,416
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	1.0	ton	661.41	678	1,250.00	1,282				1,911.4	1,960
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	14.5	ton	639.36	9,274	1,250.00	18,131				1,889.4	27,405
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	98.8	ton	639.36	63,147	1,250.00	123,458				1,889.4	186,605
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	44.0	ton	639.36	28,121	1,250.00	54,978				1,889.4	83,098
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	9.9	ton	639.36	6,343	1,250.00	12,401				1,889.4	18,743

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	1.4	ton	639.36	895	1,250.00	1,750				1,889.4	2,644
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	18,408.4	lb	1.32	24,341	2.49	45,837				3.8	70,178
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	866.8	lb	1.32	1,146	2.49	2,158				3.8	3,305
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	7,233.7	lb	1.32	9,565	2.49	18,012				3.8	27,577
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	865.9	lb	1.32	1,145	2.49	2,156				3.8	3,301
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	487.1	lb	1.32	644	2.49	1,213				3.8	1,857
0200	Reinforcing in place, unloading & sorting, add to above	23.7	ton	33.47	794				186		41.3	979
0200	Reinforcing in place, unloading & sorting, add to above	98.8	ton	33.47	3,306				773		41.3	4,079
0200	Reinforcing in place, unloading & sorting, add to above	44.0	ton	33.47	1,472				344		41.3	1,816
0200	Reinforcing in place, unloading & sorting, add to above	10.4	ton	33.47	347				81		41.3	428
0200	Reinforcing in place, unloading & sorting, add to above	90.2	ton	33.47	3,018				706		41.3	3,723
0200	Reinforcing in place, unloading & sorting, add to above	1.8	ton	33.47	61				14		41.3	76
0200	Reinforcing in place, unloading & sorting, add to above	1.3	ton	33.47	42				10		41.3	52
0210	Reinforcing in place, crane cost for handling, add to above	23.7	ton	95.63	2,267				530		118.0	2,798
0210	Reinforcing in place, crane cost for handling, add to above	98.8	ton	95.63	9,445				2,209		118.0	11,654
0210	Reinforcing in place, crane cost for handling, add to above	44.0	ton	95.63	4,206				984		118.0	5,190
0210	Reinforcing in place, crane cost for handling, add to above	10.4	ton	95.63	990				232		118.0	1,222
0210	Reinforcing in place, crane cost for handling, add to above	90.2	ton	95.63	8,622				2,017		118.0	10,638
0210	Reinforcing in place, crane cost for handling, add to above	1.8	ton	95.63	175				41		118.0	216
0210	Reinforcing in place, crane cost for handling, add to above	1.3	ton	95.63	121				28		118.0	150
03150 - Concrete, ready mix												
0010	Concrete, ready mix, regular weight, 2000 psi	2.0	cuyd			117.00	232				117.0	232
0030	Concrete, ready mix, regular weight, 4000 psi	363.3	cuyd			125.00	45,417				125.0	45,417
0030	Concrete, ready mix, regular weight, 4000 psi	592.0	cuyd			125.00	74,000				125.0	74,000
0030	Concrete, ready mix, regular weight, 4000 psi	413.2	cuyd			125.00	51,650				125.0	51,650
0030	Concrete, ready mix, regular weight, 4000 psi	237.9	cuyd			125.00	29,735				125.0	29,735
0030	Concrete, ready mix, regular weight, 4000 psi	1,009.0	cuyd			125.00	126,125				125.0	126,125
0030	Concrete, ready mix, regular weight, 4000 psi	14.3	cuyd			125.00	1,784				125.0	1,784
0030	Concrete, ready mix, regular weight, 4000 psi	15.8	cuyd			125.00	1,969				125.0	1,969
03170 - Placing concrete												
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	1,009.0	cuyd	20.01	20,194				4,885		24.9	25,079
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	15.8	cuyd	20.01	315				76		24.9	392
0080	Placing conc, incl vib, footings, continuous, pumped	2.0	cuyd	21.35	42				10		26.5	53
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	363.3	cuyd	17.31	6,288				1,521		21.5	7,810
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	237.9	cuyd	17.31	4,117				996		21.5	5,113
0130	Placing conc, incl vib, walls, 8" thick, pumped	592.0	cuyd	32.02	18,957				4,586		39.8	23,544

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0130	Placing conc, incl vib, walls, 8" thick, pumped	413.2	cuyd	32.02	13,231				3,201		39.8	cuyd	16,431
0130	Placing conc, incl vib, walls, 8" thick, pumped	14.3	cuyd	32.02	457				111		39.8	cuyd	567
03180 - Finishing floors													
0030	Finishing floors, monolithic, screed, float & broom finish	3,270.0	sqft	0.71	2,328						0.7	sqft	2,328
0030	Finishing floors, monolithic, screed, float & broom finish	8,563.7	sqft	0.71	6,098						0.7	sqft	6,098
0030	Finishing floors, monolithic, screed, float & broom finish	9,160.4	sqft	0.71	6,522						0.7	sqft	6,522
0030	Finishing floors, monolithic, screed, float & broom finish	283.6	sqft	0.71	202						0.7	sqft	202
03190 - Finishing walls													
0010	Finishing walls, break ties & patch voids	15,984.4	sqft	0.83	13,272	0.03	504				0.9	sqft	13,776
0010	Finishing walls, break ties & patch voids	11,155.8	sqft	0.83	9,263	0.03	351				0.9	sqft	9,614
0010	Finishing walls, break ties & patch voids	513.7	sqft	0.83	427	0.03	16				0.9	sqft	443
0020	Finishing walls, carborundum rub, wet rub	596.2	sqft	2.56	1,528	0.03	19				2.6	sqft	1,547
03220 - Curing													
0010	Curing, sprayed membrane curing compound	2.5	csf	7.91	20	5.83	15				13.7	csf	34
CONCRETE Total					635,247		836,249		23,542				1,495,038
05 - METALS													
05010 - Misc Metals													
0120	Stainless steel plate, 3/4" - 3' dia Access Hatch	4.0	ea	1,269.15	5,077	12,000.00	48,000		79		13,288.9	ea	53,156
0120	Stainless steel plate, 3/4" - Manway Hatch	2.0	ea	1,269.15	2,538	12,000.00	24,000		40		13,288.9	ea	26,578
0120	Stainless steel plate, 3/4" - Mixer Mounts	4.0	ea	2,115.26	8,461	20,000.00	80,000		527		22,246.9	ea	88,988
0120	Stainless steel plate, 3/4" - 5' dia Gas Dome Hatch	1.0	ea	2,115.26	2,115	20,000.00	20,000		132		22,246.9	ea	22,247
05060 - Pipe support framing													
0030	Pipe support, framing, 15.1 to 20#/L.F.	12,000.0	lb	0.44	5,299	1.36	16,279		330		1.8	lb	21,908
05080 - Railings, industrial													
0120	Railing, pipe, aluminum, 3 rail, clear anodized	400.0	lnft	15.44	6,175	45.95	18,382		384		62.4	lnft	24,942
05270 - Stair													
0010	Stair, steel, saf nosing, stl strg, grating trd & pipe rail, 3'-6" W	10.0	risr	60.44	604	261.00	2,610		38		325.2	risr	3,252
METALS Total					30,270		209,271		1,529				241,070
07 - THERMAL/MOIST PROTECTION													
07020 - Elastomeric waterproofing													
0010	Elastomeric waterproofing, acrylic rubber, fluid applied, 20 mils thic	11,762.0	sqft	1.15	13,525	1.74	20,513				2.9	sqft	34,038
0990	Elastomeric waterproofing, neoprene sheets, nylon reinf. , 120 mills thk	785.4	sqft	1.53	1,204	3.40	2,670				4.9	sqft	3,875
07080 - Roof deck insulation													
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	9,161.0	sqft	0.48	4,389	0.65	5,955				1.1	sqft	10,344
07090 - Extrr inslt finish system													

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0200	Steel siding, 22 ga galv, 2" insul, baked enamel exterior	7,720.0	sqft	2.02	15,581	10.00	77,200		3,271		12.4	sqft	96,051
07200 - Elastomeric roofing													
0010	Elastomeric rfg, acrylic rubber, fluid applied, 50 mils thick, reinfor	9,161.0	sqft	1.44	13,157	2.94	26,933		1,260		4.5	sqft	41,350
07230 - Downspouts													
0040	Downspouts, aluminum 3" x 4", .024" thick, enameled	100.0	lnft	3.53	353	3.49	349				7.0	lnft	702
THERMAL/MOIST PROTECTION Total					48,209		133,620		4,530				186,359
09 - FINISHES													
09000 - B & C Div 9 Coating Systems													
0020	Coatings & paints, B & C coating system B-1	1,500.0	sqft	0.58	869	1.23	1,849				1.8	sqft	2,718
FINISHES Total					869		1,849						2,718
11 - EQUIPMENT													
11010 - Process Equipment													
0010	Hatch - emergency relief	1.0	each	1,900.00	1,900	21,000.00	21,000		195		23,095.0	each	23,095
0570do	Site Gauge, Sludge Overflow, 12"	2.0	each	431.08	862	19,900.00	39,800		54		20,358.3	each	40,717
mxr0531	Mixer, roof mounted draft tube 13,500 gpm 20-hp (DIG9-MIX1:4)	4.0	Each	3,449.00	13,796	119,100.00	476,400		7,600		124,449.0	Each	497,796
viv0534	Valve, Pressure Relief 6", Dual valve incl flame trp & 3-way_ (DIG9.PVR-VLV1)	1.0	Each	1,724.47	1,724	20,375.53	20,376				22,100.0	Each	22,100
EQUIPMENT Total					18,283		557,576		7,849				583,708
15 - MECHANICAL													
15010 - Misc. Mechanical													
0130	Pipe drain connection	1.0	each	179.62	180	204.25	204				383.9	each	384
0320	piping, sample port, w/ ball valve,fitting, cap.complete	6.0	each	359.23	2,155	320.97	1,926				680.2	each	4,081
0320	Sample port, 8"	5.0	each	520.00	2,600	700.00	3,500				1,220.0	each	6,100
15031 - DIP Fittings													
0380	Piping, water dist, DI, cement lined, CL 50, 3" dia. mj x mj wall pipe	1.0	each	148.13	148	80.25	80		38		266.4	each	266
0400	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 8" dia	6.0	each	35.92	216	374.37	2,246				410.3	each	2,462
0440	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 6" dia	10.0	each	35.92	359	275.27	2,753				311.2	each	3,112
0470	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 16" dia	1.0	each	108.35	108	828.03	828				936.4	each	936
15075 - Distribution connection													
0010	Connection, 3"	2.0	each	233.98	468	145.90	292		81		420.3	each	841
0020	Connection, 6"	4.0	each	421.17	1,685	322.08	1,288		291		816.1	each	3,264
15135 - Pipe hangers and supports													
0955	Pipe hgrs and supports, rolls, chair, CS with CI roll, 6" pipe size	100.0	each	10.84	1,084	60.50	6,050				71.3	each	7,134
15190 - Pipe, steel													
0370	Pipe,stl,widd, sch. 40, on yoke & roll hgrs, 10' o.c., bl, 3" dia	12.0	lnft	25.40	305	7.19	86		16		33.9	lnft	407
0390	Pipe,stl,widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk,4" dia	351.0	lnft	29.52	10,360	10.42	3,657		531		41.4	lnft	14,549

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0410	Pipe, stl, wldd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 6" dia	382.0	lnft	46.30	17,687	22.16	8,466		594		70.0	26,747
0440	Pipe, stl, wldd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 12" dia	48.0	lnft	87.73	4,211	44.85	2,153		141		135.5	6,505
15195 - Pipe, steel, fittings												
0055	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 3"	4.0	each	109.21	437	42.00	168				151.2	605
0065	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 4"	20.0	each	182.01	3,640	78.00	1,560				260.0	5,200
0075	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 6"	32.0	each	238.12	7,620	215.00	6,880				453.1	14,500
0095	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 12"	8.0	each	2,643.97	21,152	256.78	2,054		515		2,965.1	23,721
0320	Pipe, steel fittings, CI, standard weight, black, tee, straight, 12"	4.0	each	650.07	2,600	1,126.32	4,505				1,776.4	7,106
0535	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 4"	2.0	each	121.34	243	138.89	278				260.2	520
0545	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 6"	2.0	each	208.36	417	231.10	462				439.5	879
0560	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 18"	1.0	each	468.80	469	1,943.33	1,943				2,412.1	2,412
1465	Steel ftg, 150# MI, black, tee, straight, 4"	2.0	each	273.02	546	130.00	260				403.0	806
1475	Steel ftg, 150# MI, black, tee, straight, 6"	8.0	each	416.71	3,334	410.00	3,280				826.7	6,614
15200 - Pipe, steel, fittings												
0080	Stl ftg, gskt & bolt set, 150#, 6" pipe	14.0	each	95.80	1,341	13.55	190				109.3	1,531
0090	Stl ftg, gskt & bolt set, 150#, 8" pipe	12.0	each	114.96	1,379	14.45	173				129.4	1,553
0110	Stl ftg, gskt & bolt set, 150#, 12" pipe	1.0	each	273.70	274	32.00	32				305.7	306
0400	Pipe, st ftngs, flanged unions, 125 LB, bk, 6" pipe size	4.0	each	87.73	351	284.00	1,136				371.7	1,487
0700	Stl ftg, weld-on flg, fst, slip-on, 150 lb flg, wld frt&back, 6" pipe	14.0	each	277.81	3,889	33.50	469		131		320.6	4,489
0710	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 8" pipe	12.0	each	333.37	4,000	52.00	624		134		396.6	4,759
0730	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 12" pipe	1.0	each	555.62	556	131.00	131		19		705.3	705
15205 - Pipe, grv-jnt st fit valvs												
1070	Pipe, grvd-jt, st cplg, rgd style, ptd, 3" dia	4.0	each	16.30	65	18.32	73				34.6	138
1080	Pipe, grvd-jt, st cplg, rgd style, ptd, 4" dia	34.0	each	21.84	743	25.97	883				47.8	1,626
1100	Pipe, grvd-jt, st cplg, rgd style, ptd, 6" dia	34.0	each	33.34	1,133	44.97	1,529				78.3	2,662
15212 - STAINLESS STEEL PIPE/FITTINGS, TYPE 316												
0120	Standpipe, SS, A778, 30" dia	1.0	ea	2,175.66	2,176	10,955.75	10,956		112		13,242.9	13,243
0140	Pipe, SS, A778, weld, Sched. 10S, type 316L, 3" dia.	64.0	lnft	18.43	1,179	28.07	1,796		60		47.4	3,036
0140	Pipe, SS, A778, weld, Sched. 10S, type 316L, 3" dia.	48.0	lnft	18.43	885	28.07	1,347		45		47.4	2,277
0170	Pipe, SS, A778, weld, Sched. 10S, type 316L, 8" dia.	30.0	lnft	35.49	1,065	92.16	2,765		55		129.5	3,884
0190	Pipe, SS, A778, weld, Sched. 10S, type 316L, 12" dia.	246.0	lnft	50.51	12,425	159.11	39,141		637		212.2	52,203
0200	Pipe, SS, A778, weld, Sched. 10S, type 316L, 14" dia.	34.0	lnft	61.43	2,089	187.36	6,370		107		251.9	8,566
15217 - Stainless Steel Pipe Fittings - Type 316												
1060	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90<elb, smooth flow, 3"	2.0	each	431.37	863	54.60	109		44		508.1	1,016
1060	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90<elb, smooth flow, 3"	1.0	each	431.37	431	54.60	55		22		508.1	508
1110	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90<elb, smooth flow, 12"	8.0	each	1,209.47	9,676	1,170.00	9,360		496		2,441.5	19,532

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
1120	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90<elb, smooth flow,14"	3.0	each	1,594.43	4,783	738.82	2,216		245		2,415.0	7,245
2290	Fittings, SS, A774, butt weld jt, type 316L,Sched. 10S, Tee, 12"	2.0	each	1,823.08	3,646	943.75	1,888		187		2,860.3	5,721
2300	Fittings, SS, A774, butt weld jt, type 316L,Sched. 10S, Tee, 14"	2.0	each	2,395.74	4,791	940.78	1,882		246		3,459.3	6,919
5290	Fittings, SS, butt weld jt, type 316L, Stub Ends, 8"	12.0	each	496.21	5,955	189.94	2,279		305		711.6	8,539
15265 - Multipurpose valves												
0160	Valve, slab pressure relief, 4"	16.0	each	143.69	2,299	228.50	3,656				372.2	5,955
15280 - Valves, plug												
0050	Valves, semi-steel, lubricated plug valve, threaded, 200 psi, 1.5" pip	1.0	each	52.25	52	110.00	110				162.3	162
0080	Valves, semi-steel, lubricated plug valve, threaded, 200 psi, 3" pipe	1.0	each	242.68	243	245.00	245				487.7	488
0140	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 6" pipe	6.0	each	555.62	3,334	650.00	3,900				1,205.6	7,234
0290	Valves, 3-way, lubricated plug valve, flanged, 200 psi, 6" pipe	1.0	each	520.89	521	1,435.61	1,436				1,956.5	1,957
15290 - Valves, stainless steel												
0880	Valves, stainless steel, butterfly, 150 lb., flanged, 8" size	3.0	each	1,458.49	4,375	4,551.95	13,656				6,010.4	18,031
15330 - Flexible connectors												
305	Flex Ring Joint, 12"	16.0	each	156.27	2,500	845.64	13,530				1,001.9	16,031
15400 - Drains												
0420	Drains-scppr flr, oblique strn-CI, 6"x7" top, 2", 3"&4" pipe size	4.0	each	68.25	273	147.15	589				215.4	862
15715 - Piping, testing												
0040	Nondestructive hydraulic pressure test	1.0	each	2,060.52	2,061	1,200.00	1,200				3,260.5	3,261
0120	Hydrotest Digester Tank	1.0	each	1,877.58	1,878						1,877.6	1,878
MECHANICAL Total					163,254		178,646		5,052			346,952
16 - ELECTRICAL												
16195 - Electrical & Instrument												
0101	Electrical/Instrumentation	1.0	lsum					888,197			888,197.0	888,197
ELECTRICAL Total								888,197				888,197

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
1104 - Digester 10					875,746		1,878,765	1,058,180	41,039			3,853,730
01 - GENERAL REQUIREMENTS												
01090 - Scaffolding												
0800	Scaffold,h.d. shoring for suspended slab forms,fl area,to 14'-8" H, 1	91.6	csf	103.25	9,458	45.63	4,179				148.9	13,637
0800	Scaffold,h.d. shoring for suspended slab forms,fl area,to 14'-8" H, 1	2.8	csf	103.25	293	45.63	129				148.9	422
GENERAL REQUIREMENTS Total					9,751		4,309					14,060
02 - SITE CONSTRUCTION												
02590 - Membrane lining systems												
0020	Membrane lining, T-lock liner	10,302.0	sqft					169,983			16.5	169,983
02660 - Sidwks,drivwys,& patios												
0060	Precast concrete, splash block	4.0	each	2.50	10	6.01	24				8.5	34
SITE CONSTRUCTION Total					10		24	169,983				170,017
03 - CONCRETE												
03040 - Fip,elevated slabs												
0010	Forms in place, elev slab, flat plate plywd, to 15' high	9,160.4	sqft	5.28	48,353	4.53	41,455				9.8	89,809
0010	Forms in place, elev slab, flat plate plywd, to 15' high	283.6	sqft	5.28	1,497	4.53	1,283				9.8	2,780
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	1,164.5	sfca	8.63	10,049	1.62	1,883				10.2	11,932
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	101.0	sfca	8.63	872	1.62	163				10.2	1,035
03090 - Forms place, slab grade												
0030	Forms in place, SOG, edge forms, over 12", wood	2,022.0	sfca	5.06	10,223	2.63	5,308				7.7	15,531
0030	Forms in place, SOG, edge forms, over 12", wood	277.6	sfca	5.06	1,404	2.63	729				7.7	2,132
03110 - Forms in place, walls												
0080	Forms in place, walls, job built plyform, 8-16' high	15,984.4	sfca	7.96	127,192	2.28	36,421				10.2	163,612
0080	Forms in place, walls, job built plyform, 8-16' high	11,155.8	sfca	7.96	88,769	2.28	25,418				10.2	114,188
0080	Forms in place, walls, job built plyform, 8-16' high	513.7	sfca	7.96	4,088	2.28	1,170				10.2	5,258
03120 - Waterstop												
0020	Waterstop, PVC, ribbed 3/16" thick, 6" wide	333.0	lnft	3.20	1,067	1.58	525				4.8	1,592
0020	Waterstop, PVC, ribbed 3/16" thick, 6" wide	333.0	lnft	3.20	1,067	1.58	525				4.8	1,592
03130 - Reinforcing in place												
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	86.5	ton	661.41	57,239	1,250.00	108,177				1,911.4	165,416
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	1.0	ton	661.41	678	1,250.00	1,282				1,911.4	1,960
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	14.5	ton	639.36	9,274	1,250.00	18,131				1,889.4	27,405
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	98.8	ton	639.36	63,147	1,250.00	123,458				1,889.4	186,605
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	44.0	ton	639.36	28,121	1,250.00	54,978				1,889.4	83,098
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	9.9	ton	639.36	6,343	1,250.00	12,401				1,889.4	18,743

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0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	1.4	ton	639.36	895	1,250.00	1,750				1,889.4	2,644
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	18,408.4	lb	1.32	24,341	2.49	45,837				3.8	70,178
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	866.8	lb	1.32	1,146	2.49	2,158				3.8	3,305
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	7,233.7	lb	1.32	9,565	2.49	18,012				3.8	27,577
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	865.9	lb	1.32	1,145	2.49	2,156				3.8	3,301
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	487.1	lb	1.32	644	2.49	1,213				3.8	1,857
0200	Reinforcing in place, unloading & sorting, add to above	23.7	ton	33.47	794				186		41.3	979
0200	Reinforcing in place, unloading & sorting, add to above	98.8	ton	33.47	3,306				773		41.3	4,079
0200	Reinforcing in place, unloading & sorting, add to above	44.0	ton	33.47	1,472				344		41.3	1,816
0200	Reinforcing in place, unloading & sorting, add to above	10.4	ton	33.47	347				81		41.3	428
0200	Reinforcing in place, unloading & sorting, add to above	90.2	ton	33.47	3,018				706		41.3	3,723
0200	Reinforcing in place, unloading & sorting, add to above	1.8	ton	33.47	61				14		41.3	76
0200	Reinforcing in place, unloading & sorting, add to above	1.3	ton	33.47	42				10		41.3	52
0210	Reinforcing in place, crane cost for handling, add to above	23.7	ton	95.63	2,267				530		118.0	2,798
0210	Reinforcing in place, crane cost for handling, add to above	98.8	ton	95.63	9,445				2,209		118.0	11,654
0210	Reinforcing in place, crane cost for handling, add to above	44.0	ton	95.63	4,206				984		118.0	5,190
0210	Reinforcing in place, crane cost for handling, add to above	10.4	ton	95.63	990				232		118.0	1,222
0210	Reinforcing in place, crane cost for handling, add to above	90.2	ton	95.63	8,622				2,017		118.0	10,638
0210	Reinforcing in place, crane cost for handling, add to above	1.8	ton	95.63	175				41		118.0	216
0210	Reinforcing in place, crane cost for handling, add to above	1.3	ton	95.63	121				28		118.0	150
03150 - Concrete, ready mix												
0010	Concrete, ready mix, regular weight, 2000 psi	2.0	cuyd			117.00	232				117.0	232
0030	Concrete, ready mix, regular weight, 4000 psi	363.3	cuyd			125.00	45,417				125.0	45,417
0030	Concrete, ready mix, regular weight, 4000 psi	592.0	cuyd			125.00	74,000				125.0	74,000
0030	Concrete, ready mix, regular weight, 4000 psi	413.2	cuyd			125.00	51,650				125.0	51,650
0030	Concrete, ready mix, regular weight, 4000 psi	237.9	cuyd			125.00	29,735				125.0	29,735
0030	Concrete, ready mix, regular weight, 4000 psi	1,009.0	cuyd			125.00	126,125				125.0	126,125
0030	Concrete, ready mix, regular weight, 4000 psi	14.3	cuyd			125.00	1,784				125.0	1,784
0030	Concrete, ready mix, regular weight, 4000 psi	15.8	cuyd			125.00	1,969				125.0	1,969
03170 - Placing concrete												
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	1,009.0	cuyd	20.01	20,194				4,885		24.9	25,079
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	15.8	cuyd	20.01	315				76		24.9	392
0080	Placing conc, incl vib, footings, continuous, pumped	2.0	cuyd	21.35	42				10		26.5	53
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	363.3	cuyd	17.31	6,288				1,521		21.5	7,810
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	237.9	cuyd	17.31	4,117				996		21.5	5,113
0130	Placing conc, incl vib, walls, 8" thick, pumped	592.0	cuyd	32.02	18,957				4,586		39.8	23,544

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0130	Placing conc, incl vib, walls, 8" thick, pumped	413.2	cuyd	32.02	13,231				3,201		39.8	cuyd	16,431
0130	Placing conc, incl vib, walls, 8" thick, pumped	14.3	cuyd	32.02	457				111		39.8	cuyd	567
03180 - Finishing floors													
0030	Finishing floors, monolithic, screed, float & broom finish	3,270.0	sqft	0.71	2,328						0.7	sqft	2,328
0030	Finishing floors, monolithic, screed, float & broom finish	8,563.7	sqft	0.71	6,098						0.7	sqft	6,098
0030	Finishing floors, monolithic, screed, float & broom finish	9,160.4	sqft	0.71	6,522						0.7	sqft	6,522
0030	Finishing floors, monolithic, screed, float & broom finish	283.6	sqft	0.71	202						0.7	sqft	202
03190 - Finishing walls													
0010	Finishing walls, break ties & patch voids	15,984.4	sqft	0.83	13,272	0.03	504				0.9	sqft	13,776
0010	Finishing walls, break ties & patch voids	11,155.8	sqft	0.83	9,263	0.03	351				0.9	sqft	9,614
0010	Finishing walls, break ties & patch voids	513.7	sqft	0.83	427	0.03	16				0.9	sqft	443
0020	Finishing walls, carborundum rub, wet rub	596.2	sqft	2.56	1,528	0.03	19				2.6	sqft	1,547
03220 - Curing													
0010	Curing, sprayed membrane curing compound	2.5	csf	7.91	20	5.83	15				13.7	csf	34
CONCRETE Total					635,247		836,249		23,542				1,495,038
05 - METALS													
05010 - Misc Metals													
0120	Stainless steel plate, 3/4" - 3' dia Access Hatch	4.0	ea	1,269.15	5,077	12,000.00	48,000		79		13,288.9	ea	53,156
0120	Stainless steel plate, 3/4" - Manway Hatch	2.0	ea	1,269.15	2,538	12,000.00	24,000		40		13,288.9	ea	26,578
0120	Stainless steel plate, 3/4" - Mixer Mounts	4.0	ea	2,115.26	8,461	20,000.00	80,000		527		22,246.9	ea	88,988
0120	Stainless steel plate, 3/4" - Gas Dome Hatch	61.0	sqft	34.30	2,092	327.87	20,000		130		364.3	sqft	22,222
05060 - Pipe support framing													
0030	Pipe support, framing, 15.1 to 20#/L.F.	6,000.0	lb	0.44	2,649	1.36	8,140		165		1.8	lb	10,954
05080 - Railings, industrial													
0120	Railing, pipe, aluminum, 3 rail, clear anodized	400.0	lnft	15.44	6,175	45.95	18,382		384		62.4	lnft	24,942
05270 - Stair													
0010	Stair, steel, saf nosing, stl strg, grating trd & pipe rail, 3'-6" W	10.0	risr	60.44	604	261.00	2,610		38		325.2	risr	3,252
METALS Total					27,597		201,132		1,362				230,091
07 - THERMAL/MOIST PROTECTION													
07020 - Elastomeric waterproofing													
0010	Elastomeric waterproofing, acrylic rubber, fluid applied, 20 mils thic	11,762.0	sqft	1.15	13,525	1.74	20,513				2.9	sqft	34,038
0990	Elastomeric waterproofing, neoprene sheets, nylon reinf. , 120 mills thk	785.4	sqft	1.53	1,204	3.40	2,670				4.9	sqft	3,875
07080 - Roof deck insulation													
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	9,161.0	sqft	0.48	4,389	0.65	5,955				1.1	sqft	10,344
07090 - Extrr inslt finish system													

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0200	Steel siding, 22 ga galv, 2" insul, baked enamel exterior	7,720.0	sqft	2.02	15,581	10.00	77,200		3,271		12.4	sqft	96,051
07200 - Elastomeric roofing													
0010	Elastomeric rfg, acrylic rubber, fluid applied, 50 mils thick, reinfor	9,161.0	sqft	1.44	13,157	2.94	26,933		1,260		4.5	sqft	41,350
07230 - Downspouts													
0040	Downspouts, aluminum 3" x 4", .024" thick, enameled	100.0	lnft	3.53	353	3.49	349				7.0	lnft	702
THERMAL/MOIST PROTECTION Total					48,209		133,620		4,530				186,359
09 - FINISHES													
09000 - B & C Div 9 Coating Systems													
0020	Coatings & paints, B & C coating system B-1	1,500.0	sqft	0.58	869	1.23	1,849				1.8	sqft	2,718
FINISHES Total					869		1,849						2,718
11 - EQUIPMENT													
11010 - Process Equipment													
0010	Hatch - emergency relief	1.0	each	1,900.00	1,900	21,000.00	21,000		195		23,095.0	each	23,095
0570do	Site Gauge, Sludge Overflow, 12"	2.0	each	431.08	862	19,900.00	39,800		54		20,358.3	each	40,717
mxr0531	Mixer, roof mounted draft tube 13,500 gpm 20-hp (DIG10-MIX1:4)	4.0	Each	3,449.00	13,796	119,100.00	476,400		7,600		124,449.0	Each	497,796
viv0534	Valve, Pres. Relief 6", Dual vlv incl flame trp&3-way _ (DIG10.PVR-VLV2)	1.0	Each	1,724.47	1,724	20,375.53	20,376				22,100.0	Each	22,100
EQUIPMENT Total					18,283		557,576		7,849				583,708
15 - MECHANICAL													
15010 - Misc. Mechanical													
0130	Pipe drain connection	1.0	each	179.62	180	204.25	204				383.9	each	384
0320	Sample port, 8"	5.0	each	520.00	2,600	700.00	3,500				1,220.0	each	6,100
15031 - DIP Fittings													
0380	Piping, water dist, DI, cement lined, CL 50, 3" dia. mj x mj wall pipe	1.0	each	148.13	148	80.25	80		38		266.4	each	266
0400	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 8" dia	7.0	each	35.92	251	374.37	2,621				410.3	each	2,872
0440	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 6" dia	6.0	each	35.92	216	275.27	1,652				311.2	each	1,867
0470	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 16" dia	4.0	each	108.35	433	828.03	3,312				936.4	each	3,745
15075 - Distribution connection													
0010	Connection, 3"	2.0	each	233.98	468	145.90	292		81		420.3	each	841
0020	Connection, 6"	4.0	each	421.17	1,685	322.08	1,288		291		816.1	each	3,264
15135 - Pipe hangers and supports													
0955	Pipe hgrs and supports, rolls, chair, CS with CI roll, 6" pipe size	50.0	each	10.84	542	60.50	3,025				71.3	each	3,567
15190 - Pipe, steel													
0340	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 1-1/2" dia	48.0	lnft	14.37	690	4.50	216		35		19.6	lnft	941
0370	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., bl, 3" dia	64.0	lnft	25.40	1,625	7.19	460		83		33.9	lnft	2,169
0410	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 6" dia	102.0	lnft	46.30	4,723	22.16	2,260		159		70.0	lnft	7,142

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60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0440	Pipe, stl, wldd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 12" dia	30.0	lnft	87.73	2,632	44.85	1,345		88		135.5	4,066
0450	Pipe, stl, wldd, sch. 40, (no hgrs incl for 14" dia & up), blk, 14" dia	34.0	lnft	111.12	3,778	44.85	1,525		127		159.7	5,430
15195 - Pipe, steel, fittings												
0040	Pipe, steel ftngs, CI, std weight, black, 90< elb, straight, 1-1/2"	1.0	each	54.60	55	6.85	7				61.5	61
0055	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 3"	2.0	each	109.21	218	42.00	84				151.2	302
0075	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 6"	16.0	each	238.12	3,810	215.00	3,440				453.1	7,250
0085	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 8"	1.0	each	277.81	278	525.00	525				802.8	803
0090	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 14"	3.0	each	385.46	1,156	272.25	817				657.7	1,973
0095	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 12"	14.0	each	2,643.97	37,016	256.78	3,595		901		2,965.1	41,512
0305	Pipe, steel fittings, CI, standard weight, black, tee, straight, 14"	2.0	each	662.57	1,325	1,313.06	2,626				1,975.6	3,951
0320	Pipe, steel fittings, CI, standard weight, black, tee, straight, 12"	6.0	each	650.07	3,900	1,126.32	6,758				1,776.4	10,658
0535	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 4"	2.0	each	121.34	243	138.89	278				260.2	520
0545	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 6"	2.0	each	208.36	417	231.10	462				439.5	879
0560	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 18"	1.0	each	468.80	469	1,943.33	1,943				2,412.1	2,412
1475	Steel ftg, 150# MI, black, tee, straight, 6"	4.0	each	416.71	1,667	410.00	1,640				826.7	3,307
15200 - Pipe, steel, fittings												
0080	Stl ftg, gskt & bolt set, 150#, 6" pipe	14.0	each	95.80	1,341	13.55	190				109.3	1,531
0090	Stl ftg, gskt & bolt set, 150#, 8" pipe	12.0	each	114.96	1,379	14.45	173				129.4	1,553
0110	Stl ftg, gskt & bolt set, 150#, 12" pipe	1.0	each	273.70	274	32.00	32				305.7	306
0700	Stl ftg, weld-on flg, fst, slip-on, 150 lb flg, wld frt&back, 6" pipe	14.0	each	277.81	3,889	33.50	469		131		320.6	4,489
0710	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 8" pipe	12.0	each	333.37	4,000	52.00	624		134		396.6	4,759
0730	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 12" pipe	1.0	each	555.62	556	131.00	131		19		705.3	705
15205 - Pipe, grv-jnt st fit valvs												
1130	Pipe, grvd-jt, st cplg, rgd style, ptd, 12" dia	72.0	each	52.09	3,750	142.28	10,244				194.4	13,994
15212 - STAINLESS STEEL PIPE/FITTINGS, TYPE 316												
0120	Standpipe, SS, A778, 30" dia	1.0	ea	2,175.66	2,176	10,955.75	10,956		112		13,242.9	13,243
0190	Pipe, SS, A778, weld, Sched. 10S, type 316L, 12" dia.	139.0	lnft	50.51	7,021	159.11	22,116		360		212.2	29,497
15217 - Stainless Steel Pipe Fittings - Type 316												
1110	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90<elb, smooth flow, 12"	4.0	each	1,209.47	4,838	1,170.00	4,680		248		2,441.5	9,766
1240	Fittings, SS, A774, Fitting, Union, 12"	4.0	each	1,219.03	4,876	1,040.70	4,163		250		2,322.2	9,289
1240	Fittings, SS, A774, Fitting, End cap, 18"	1.0	each	2,681.86	2,682	2,289.54	2,290		137		5,108.9	5,109
2290	Fittings, SS, A774, butt weld jt, type 316L, Sched. 10S, Tee, 12"	6.0	each	1,823.08	10,938	943.75	5,663		561		2,860.3	17,162
15265 - Multipurpose valves												
0160	Valve, slab pressure relief, 4"	16.0	each	143.69	2,299	228.50	3,656				372.2	5,955
15280 - Valves, plug												
0050	Valves, semi-steel, lubricated plug valve, threaded, 200 psi, 1.5" pip	1.0	each	52.25	52	110.00	110				162.3	162

CBWTP DIGESTER EXPANSION
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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0080	Valves, semi-steel, lubricated plug valve, threaded, 200 psi, 3" pipe	1.0	each	242.68	243	245.00	245				487.7	each	488
0140	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 6" pipe	6.0	each	555.62	3,334	650.00	3,900				1,205.6	each	7,234
0290	Valves, 3-way, lubricated plug valve, flanged, 200 psi, 6" pipe	1.0	each	520.89	521	1,435.61	1,436				1,956.5	each	1,957
15290 - Valves, stainless steel													
0880	Valves, stainless steel, butterfly, 150 lb., flanged, 8" size	3.0	each	1,458.49	4,375	4,551.95	13,656				6,010.4	each	18,031
15330 - Flexible connectors													
305	Flex Ring Joint, 12"	16.0	each	156.27	2,500	845.64	13,530				1,001.9	each	16,031
15400 - Drains													
0420	Drains-scppr flr, oblique strn-cl, 6"x7" top, 2", 3"&4" pipe size	4.0	each	68.25	273	147.15	589				215.4	each	862
15715 - Piping, testing													
0040	Nondestructive hydraulic pressure test	1.0	each	2,060.52	2,061	1,200.00	1,200				3,260.5	each	3,261
0120	Hydrotest Digester Tank	1.0	each	1,877.58	1,878						1,877.6	each	1,878
MECHANICAL Total					135,781		144,007		3,755				283,543
16 - ELECTRICAL													
16195 - Electrical & Instrument													
0101	Electrical/Instrumentation	1.0	lsum					888,197			888,197.0	lsum	888,197
ELECTRICAL Total								888,197					888,197

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
1105 - Digester Control Building					1,659,917		2,581,980	1,776,394	52,062	70,000		6,140,354
01 - GENERAL REQUIREMENTS												
01090 - Scaffolding												
0790	Scaffold,h.d. shoring for suspended slab forms,fl area to 8'-2" H, 3 u	10.5	csf	51.62	542	10.45	110				62.1	652
0790	Scaffold,h.d. shoring for suspended slab forms,fl area to 8'-2" H, 3 u	1.4	csf	51.62	74	10.45	15				62.1	89
0790	Scaffold,h.d. shoring for suspended slab forms,fl area to 8'-2" H, 3 u	1.0	csf	51.62	52	10.45	10				62.1	62
0820	Scaffold,h.d. shoring for suspended slab forms,fl area,to 14'-8" H, 3	108.6	csf	103.25	11,210	15.28	1,659				118.5	12,869
0820	Scaffold,h.d. shoring for suspended slab forms,fl area,to 14'-8" H, 3	13.5	csf	103.25	1,391	15.28	206				118.5	1,596
GENERAL REQUIREMENTS Total					13,269		2,000					15,269
02 - SITE CONSTRUCTION												
02080 - Cutout demolition												
0060	Cutout dml, conc, walls, bar reinforced, over 6 CF	240.0	cuft	34.82	8,357				868		38.4	9,224
02460 - Hauling												
0060	Hauling, LCY, no loading, 20 c.y dump truck, 40 MI RT, 0.25 lds/hr	9.0	cuyd	6.07	55				65		13.3	119
0900	Loading Trucks, F.E. Loader, 3 C.Y.	9.0	cuyd	0.67	6				4		1.1	10
02820 - Parking barriers												
0040	Pipe bollards, steel, concrete filled/painted, 8' L x 4' D hole, 8" di	10.0	each	78.49	785	455.46	4,555		190		552.9	5,529
02840 - Landscaping												
0350	Green Roof - lining, soil, amendments,landscape - complete	10,000.0	sqft	6.60	66,000	5.40	54,000		5,000		12.5	125,000
SITE CONSTRUCTION Total					75,202		58,555		6,126			139,882
03 - CONCRETE												
03040 - Fip,elevated slabs												
0010	Forms in place, elev slab, flat plate plywd, to 15' high	1,049.8	sqft	5.28	5,541	4.53	4,751				9.8	10,292
0010	Forms in place, elev slab, flat plate plywd, to 15' high	10,857.6	sqft	5.28	57,312	4.53	49,136				9.8	106,448
0010	Forms in place, elev slab, flat plate plywd, to 15' high	1,346.9	sqft	5.28	7,110	4.53	6,095				9.8	13,205
0010	Forms in place, elev slab, flat plate plywd, to 15' high	144.0	sqft	5.28	760	4.53	652				9.8	1,412
0010	Forms in place, elev slab, flat plate plywd, to 15' high	100.0	sqft	5.28	528	4.53	453				9.8	980
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	129.6	sfca	8.63	1,118	1.62	210				10.2	1,328
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	416.8	sfca	8.63	3,597	1.62	674				10.2	4,271
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	146.8	sfca	8.63	1,267	1.62	237				10.2	1,504
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	48.0	sfca	8.63	414	1.62	78				10.2	492
0050	Forms in place, elev slab, curb forms, wood, 6"-12" high	50.0	sfca	8.63	432	1.62	81				10.2	512
03050 - Fip,equipment foundations												
0010	Forms in place, equipment foundations	176.4	sfca	14.67	2,588	2.68	472				17.4	3,061
03090 - Forms place, slab grade												

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0030	Forms in place, SOG, edge forms, over 12", wood	518.4	sfca	5.06	2,621	2.63	1,361				7.7	3,982
0030	Forms in place, SOG, edge forms, over 12", wood	248.0	sfca	5.06	1,254	2.63	651				7.7	1,905
0030	Forms in place, SOG, edge forms, over 12", wood	1,513.6	sfca	5.06	7,653	2.63	3,973				7.7	11,626
03100 - Forms in place, stairs												
0010	Forms in place, stairs, (slant length x width)	240.0	sqft	16.15	3,875	6.20	1,487				22.3	5,362
03110 - Forms in place, walls												
0080	Forms in place, walls, job built plyform, 8-16' high	3,420.0	sfca	7.96	27,214	2.28	7,792				10.2	35,006
0080	Forms in place, walls, job built plyform, 8-16' high	19,800.0	sfca	7.96	157,553	2.28	45,114				10.2	202,668
0080	Forms in place, walls, job built plyform, 8-16' high	864.0	sfca	7.96	6,875	2.28	1,969				10.2	8,844
0080	Forms in place, walls, job built plyform, 8-16' high	7,040.0	sfca	7.96	56,019	2.28	16,041				10.2	72,060
0080	Forms in place, walls, job built plyform, 8-16' high	2,430.0	sfca	7.96	19,336	2.28	5,537				10.2	24,873
03120 - Waterstop												
0020	Waterstop, PVC, ribbed 3/16" thick, 6" wide	190.0	lnft	3.20	609	1.58	299				4.8	908
0020	Waterstop, PVC, ribbed 3/16" thick, 6" wide	550.0	lnft	3.20	1,762	1.58	867				4.8	2,629
0030	Waterstop, PVC, ribbed, w/center bulb, 3/16" thick, 9" wide	129.6	lnft	3.44	446	12.97	1,681				16.4	2,127
0030	Waterstop, PVC, ribbed, w/center bulb, 3/16" thick, 9" wide	62.0	lnft	3.44	213	12.97	804				16.4	1,017
0030	Waterstop, PVC, ribbed, w/center bulb, 3/16" thick, 9" wide	378.4	lnft	3.44	1,302	12.97	4,907				16.4	6,210
0030	Waterstop, PVC, ribbed, w/center bulb, 3/16" thick, 9" wide	129.6	lnft	3.44	446	12.97	1,681				16.4	2,127
0030	Waterstop, PVC, ribbed, w/center bulb, 3/16" thick, 9" wide	416.8	lnft	3.44	1,434	12.97	5,405				16.4	6,840
03130 - Reinforcing in place												
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	2.5	ton	661.41	1,630	1,250.00	3,081				1,911.4	4,712
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	25.2	ton	661.41	16,683	1,250.00	31,529				1,911.4	48,212
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	3.2	ton	661.41	2,127	1,250.00	4,019				1,911.4	6,145
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	8.8	ton	661.41	5,820	1,250.00	11,000				1,911.4	16,820
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	0.4	ton	661.41	238	1,250.00	450				1,911.4	687
0050	Reinforcing in place, A615 Gr 60, elevated slabs, #4 to #7	0.3	ton	661.41	172	1,250.00	324				1,911.4	496
0070	Reinforcing in place, A615 Gr 60, slab on grade, #3 to #7	0.6	ton	833.95	486	1,250.00	728				2,083.9	1,214
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	3.6	ton	639.36	2,312	1,250.00	4,521				1,889.4	6,833
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	0.8	ton	639.36	527	1,250.00	1,030				1,889.4	1,556
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	4.2	ton	639.36	2,667	1,250.00	5,215				1,889.4	7,882
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	30.4	ton	639.36	19,435	1,250.00	37,997				1,889.4	57,433
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	23.5	ton	639.36	15,011	1,250.00	29,348				1,889.4	44,359
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	1.0	ton	639.36	668	1,250.00	1,305				1,889.4	1,973
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	8.3	ton	639.36	5,323	1,250.00	10,406				1,889.4	15,729
0080	Reinforcing in place, A615 Gr 60, walls, #3 to #7	2.9	ton	639.36	1,862	1,250.00	3,640				1,889.4	5,501
0110	Reinforcing in place, A615 Gr 60, dowels, 2' long, deformed, #5	238.0	each	2.20	525	1.39	331				3.6	856

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	893.0	lb	1.32	1,181	2.49	2,223				3.8 lb	3,404
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	351.8	lb	1.32	465	2.49	876				3.8 lb	1,341
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	1,659.9	lb	1.32	2,195	2.49	4,133				3.8 lb	6,328
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	2,597.7	lb	1.32	3,435	2.49	6,468				3.8 lb	9,903
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	608.6	lb	1.32	805	2.49	1,515				3.8 lb	2,320
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	4,905.9	lb	1.32	6,487	2.49	12,216				3.8 lb	18,703
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	1,936.5	lb	1.32	2,561	2.49	4,822				3.8 lb	7,383
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	700.8	lb	1.32	927	2.49	1,745				3.8 lb	2,672
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	2,545.2	lb	1.32	3,365	2.49	6,337				3.8 lb	9,703
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	700.8	lb	1.32	927	2.49	1,745				3.8 lb	2,672
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	2,360.7	lb	1.32	3,122	2.49	5,878				3.8 lb	9,000
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	239.8	lb	1.32	317	2.49	597				3.8 lb	914
0130	Reinforcing in place, A615 Gr 60, dowels, longer and heavier dowels	387.3	lb	1.32	512	2.49	964				3.8 lb	1,477
0170	Reinforcing in place, dowel caps, 5" long, 1/2" to 3/4" diameter	92.0	each	1.20	110	1.67	154				2.9 each	264
0200	Reinforcing in place, unloading & sorting, add to above	4.1	ton	33.47	136				32		41.3 ton	168
0200	Reinforcing in place, unloading & sorting, add to above	1.0	ton	33.47	33				8		41.3 ton	41
0200	Reinforcing in place, unloading & sorting, add to above	5.0	ton	33.47	167				39		41.3 ton	207
0200	Reinforcing in place, unloading & sorting, add to above	31.7	ton	33.47	1,061				248		41.3 ton	1,309
0200	Reinforcing in place, unloading & sorting, add to above	2.8	ton	33.47	93				22		41.3 ton	114
0200	Reinforcing in place, unloading & sorting, add to above	25.9	ton	33.47	868				203		41.3 ton	1,071
0200	Reinforcing in place, unloading & sorting, add to above	26.2	ton	33.47	877				205		41.3 ton	1,082
0200	Reinforcing in place, unloading & sorting, add to above	1.4	ton	33.47	47				11		41.3 ton	58
0200	Reinforcing in place, unloading & sorting, add to above	9.6	ton	33.47	321				75		41.3 ton	396
0200	Reinforcing in place, unloading & sorting, add to above	3.6	ton	33.47	119				28		41.3 ton	147
0200	Reinforcing in place, unloading & sorting, add to above	8.8	ton	33.47	295				69		41.3 ton	363
0200	Reinforcing in place, unloading & sorting, add to above	4.1	ton	33.47	137				32		41.3 ton	169
0200	Reinforcing in place, unloading & sorting, add to above	0.5	ton	33.47	16				4		41.3 ton	20
0200	Reinforcing in place, unloading & sorting, add to above	0.5	ton	33.47	15				4		41.3 ton	19
0200	Reinforcing in place, unloading & sorting, add to above	0.9	ton	33.47	29				7		41.3 ton	35
0210	Reinforcing in place, crane cost for handling, add to above	4.1	ton	95.63	389				91		118.0 ton	479
0210	Reinforcing in place, crane cost for handling, add to above	1.0	ton	95.63	96				22		118.0 ton	118
0210	Reinforcing in place, crane cost for handling, add to above	5.0	ton	95.63	478				112		118.0 ton	590
0210	Reinforcing in place, crane cost for handling, add to above	31.7	ton	95.63	3,031				709		118.0 ton	3,740
0210	Reinforcing in place, crane cost for handling, add to above	2.8	ton	95.63	265				62		118.0 ton	327
0210	Reinforcing in place, crane cost for handling, add to above	25.9	ton	95.63	2,480				580		118.0 ton	3,060
0210	Reinforcing in place, crane cost for handling, add to above	26.2	ton	95.63	2,505				586		118.0 ton	3,091

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0210	Reinforcing in place, crane cost for handling, add to above	1.4	ton	95.63	133				31		118.0	165
0210	Reinforcing in place, crane cost for handling, add to above	9.6	ton	95.63	918				215		118.0	1,132
0210	Reinforcing in place, crane cost for handling, add to above	3.6	ton	95.63	341				80		118.0	421
0210	Reinforcing in place, crane cost for handling, add to above	8.8	ton	95.63	842				197		118.0	1,038
0210	Reinforcing in place, crane cost for handling, add to above	4.1	ton	95.63	391				92		118.0	483
0210	Reinforcing in place, crane cost for handling, add to above	0.5	ton	95.63	46				11		118.0	57
0210	Reinforcing in place, crane cost for handling, add to above	0.5	ton	95.63	43				10		118.0	53
0210	Reinforcing in place, crane cost for handling, add to above	0.9	ton	95.63	82				19		118.0	101
03150 - Concrete, ready mix												
0030	Concrete, ready mix, regular weight, 4000 psi	155.5	cuyd			125.00	19,440				125.0	19,440
0030	Concrete, ready mix, regular weight, 4000 psi	33.8	cuyd			125.00	4,222				125.0	4,222
0030	Concrete, ready mix, regular weight, 4000 psi	73.9	cuyd			125.00	9,236				125.0	9,236
0030	Concrete, ready mix, regular weight, 4000 psi	1,325.8	cuyd			125.00	165,725				125.0	165,725
0030	Concrete, ready mix, regular weight, 4000 psi	38.9	cuyd			125.00	4,860				125.0	4,860
0030	Concrete, ready mix, regular weight, 4000 psi	427.8	cuyd			125.00	53,472				125.0	53,472
0030	Concrete, ready mix, regular weight, 4000 psi	402.1	cuyd			125.00	50,267				125.0	50,267
0030	Concrete, ready mix, regular weight, 4000 psi	16.0	cuyd			125.00	2,000				125.0	2,000
0030	Concrete, ready mix, regular weight, 4000 psi	152.1	cuyd			125.00	19,012				125.0	19,012
0030	Concrete, ready mix, regular weight, 4000 psi	49.9	cuyd			125.00	6,236				125.0	6,236
0030	Concrete, ready mix, regular weight, 4000 psi	106.7	cuyd			125.00	13,333				125.0	13,333
0030	Concrete, ready mix, regular weight, 4000 psi	45.0	cuyd			125.00	5,625				125.0	5,625
0030	Concrete, ready mix, regular weight, 4000 psi	5.3	cuyd			125.00	667				125.0	667
0030	Concrete, ready mix, regular weight, 4000 psi	3.7	cuyd			125.00	463				125.0	463
0030	Concrete in place - green roof perimeter wall allowance	220.0	lnft	31.18	6,860	31.83	7,002				63.0	13,862
0030	Concrete, ready mix, regular weight, 4000 psi	7.3	cuyd			125.00	907				125.0	907
03160 - Concrete in place												
0080	Concrete in place, beams,	40.0	cuyd	737.87	29,515	303.96	12,158		1,921		1,089.8	43,594
0110	Concrete in place, columns, square, 24" x 24"	18.0	cuyd	814.53	14,661	377.40	6,793		954		1,244.9	22,409
03170 - Placing concrete												
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	38.9	cuyd	20.01	778				188		24.9	966
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	402.1	cuyd	20.01	8,048				1,947		24.9	9,995
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	49.9	cuyd	20.01	998				242		24.9	1,240
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	106.7	cuyd	20.01	2,135				516		24.9	2,651
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	5.3	cuyd	20.01	107				26		24.9	133
0060	Placing conc, incl vib, elev slab, 6" to 10" thick, pumped	3.7	cuyd	20.01	74				18		24.9	92
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	155.5	cuyd	17.31	2,692				651		21.5	3,343

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	33.8	cuyd	17.31	585				141		21.5	726
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	1,325.8	cuyd	17.31	22,947				5,551		21.5	28,498
0120	Placing conc, incl vib, slab on grade, slab over 6" thick, pumped	7.3	cuyd	17.31	126				30		21.5	156
0130	Placing conc, incl vib, walls, 8" thick, pumped	73.9	cuyd	32.02	2,366				572		39.8	2,938
0130	Placing conc, incl vib, walls, 8" thick, pumped	427.8	cuyd	32.02	13,698				3,314		39.8	17,012
0130	Placing conc, incl vib, walls, 8" thick, pumped	16.0	cuyd	32.02	512				124		39.8	636
0130	Placing conc, incl vib, walls, 8" thick, pumped	152.1	cuyd	32.02	4,870				1,178		39.8	6,049
0130	Placing conc, incl vib, walls, 8" thick, pumped	45.0	cuyd	32.02	1,441				349		39.8	1,790
03180 - Finishing floors												
0010	Finishing slabs, break ties, forms & patch voids	240.0	sqft	1.40	336	0.03	7				1.4	344
0030	Finishing floors, monolithic, screed, float & broom finish	1,049.8	sqft	0.71	747						0.7	747
0030	Finishing floors, monolithic, screed, float & broom finish	228.0	sqft	0.71	162						0.7	162
0030	Finishing floors, monolithic, screed, float & broom finish	8,949.2	sqft	0.71	6,372						0.7	6,372
0030	Finishing floors, monolithic, screed, float & broom finish	1,049.8	sqft	0.71	747						0.7	747
0030	Finishing floors, monolithic, screed, float & broom finish	10,857.6	sqft	0.71	7,731						0.7	7,731
0030	Finishing floors, monolithic, screed, float & broom finish	1,346.9	sqft	0.71	959						0.7	959
0030	Finishing floors, monolithic, screed, float & broom finish	144.0	sqft	0.71	103						0.7	103
0030	Finishing floors, monolithic, screed, float & broom finish	100.0	sqft	0.71	71						0.7	71
0070	Finishing floors, stair finish, steel trowel finish	240.0	sqft	2.24	538						2.2	538
03190 - Finishing walls												
0010	Finishing walls, break ties & patch voids	1,710.0	sqft	0.83	1,420	0.03	54				0.9	1,474
0010	Finishing walls, break ties & patch voids	9,900.0	sqft	0.83	8,220	0.03	312				0.9	8,532
0010	Finishing walls, break ties & patch voids	864.0	sqft	0.83	717	0.03	27				0.9	745
0010	Finishing walls, break ties & patch voids	7,040.0	sqft	0.83	5,846	0.03	222				0.9	6,067
0010	Finishing walls, break ties & patch voids	2,430.0	sqft	0.83	2,018	0.03	77				0.9	2,094
0010	Finishing walls, break ties & patch voids	176.4	sqft	0.83	146	0.03	6				0.9	152
0020	Finishing walls, carborundum rub, wet rub	1,931.7	sqft	2.56	4,950	0.03	61				2.6	5,011
0020	Finishing walls, carborundum rub, wet rub	10,541.7	sqft	2.56	27,016	0.03	332				2.6	27,348
0020	Finishing walls, carborundum rub, wet rub	888.0	sqft	2.56	2,276	0.03	28				2.6	2,304
0020	Finishing walls, carborundum rub, wet rub	7,226.7	sqft	2.56	18,520	0.03	228				2.6	18,748
0020	Finishing walls, carborundum rub, wet rub	2,511.0	sqft	2.56	6,435	0.03	79				2.6	6,514
0020	Finishing walls, carborundum rub, wet rub	176.4	sqft	2.56	452	0.03	6				2.6	458
0050	Finishing walls, sandblast, heavy penetration	280.0	sqft	3.39	950	0.54	150				3.9	1,100
03220 - Curing												
0010	Curing, sprayed membrane curing compound	2.4	csf	7.91	19	5.83	14				13.7	33
CONCRETE Total					696,592		740,025		21,525			1,458,142

CBWTP DIGESTER EXPANSION
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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
04 - MASONRY													
04050 - Concrct block,high strngth													
0030	CMU, high strength, no scaf, reinf, 5000 psi, 8" x 16" x 8" thk	960.0	sqft	5.88	5,645	3.58	3,437				9.5	sqft	9,081
04090 - Grouting													
0030	Grouting, concrete block cores, solid, 8" thk, pumped, 0.258 CF/SF	960.0	sqft	2.48	2,386	1.09	1,046		221		3.8	sqft	3,653
04110 - Reinforcing													
0010	Reinforcing, steel bars A615, placed horiz, #3 & #4 bars	320.6	lb	1.05	335	0.45	144				1.5	lb	480
0030	Reinforcing, steel bars A615, placed vertical, #3 & #4 bars	160.3	lb	1.34	216	0.45	72				1.8	lb	288
0110	Joint reinforcing, ladder, 9 ga sides/ties, 8" wall, mill galv	4.8	clf	18.82	90	12.20	59				31.0	clf	149
04120 - Wall ties													
0120	Wall tie, cavity wall, Z type, galvanized, 6" long, 1/4" diam.	0.0	c	44.81	1	41.50	1				86.3	c	3
MASONRY Total					8,673		4,759		221				13,653
05 - METALS													
05010 - Misc Metals													
0010	Pump mounting base plate, complete w/ anchor bolts, 4 sf	12.0	each	589.54	7,075	875.37	10,504				1,464.9	each	17,579
0090	Stainless Steel plate, 316 ss, with machined slots and anchor bolts	143.0	sqft	5.90	843	20.84	2,980				26.7	sqft	3,823
05020 - Welding structural													
0060	Welding, continuous fillet, 3 passes, 3/8" thick, 0.5#/L.F.	86.0	lnft	18.92	1,627	0.99	85		377		24.3	lnft	2,089
0060	Welding, continuous fillet, 3 passes, 3/8" thick, 0.5#/L.F.	8.0	lnft	18.92	151	0.99	8		35		24.3	lnft	194
05040 - Structural steel members													
0010	Stri st mbrs,com WF sizes,spans 10'-45',incl bltd conns&erect,W 6x9	352.0	lnft	5.89	2,072	10.25	3,609		915		18.7	lnft	6,596
0010	Stri st mbrs,com WF sizes,spans 10'-45',incl bltd conns&erect,W 6x9	39.0	lnft	5.89	230	10.25	400		101		18.7	lnft	731
05050 - Lightweight framing													
0110	Lightweight framing, angle, field fab, 3" x 3" x 3/8"	173.0	lnft	28.06	4,854	4.52	782		400		34.9	lnft	6,035
0110	Lightweight framing, angle, field fab, 3" x 3" x 3/8"	16.9	lnft	28.06	473	4.52	76		39		34.9	lnft	589
0550	Lightweight framing, 2" x 4" steel studs	2,400.0	lnft	0.77	1,859	0.71	1,704				1.5	lnft	3,563
0550	Lightweight framing, 2" x 4" steel studs	882.0	lnft	0.77	683	0.71	626				1.5	lnft	1,309
0560	Lightweight framing, 2" x 4" steel top & bottom channel	320.0	lnft	0.77	248	0.75	240				1.5	lnft	488
0560	Lightweight framing, 2" x 4" steel top & bottom channel	196.0	lnft	0.77	152	0.75	147				1.5	lnft	299
05060 - Pipe support framing													
0030	Pipe support, framing, 15.1 to 20#/L.F.	31,000.0	lb	0.44	13,688	1.36	42,055		852		1.8	lb	56,595
05080 - Railings, industrial													
0120	Railing, pipe, aluminum, 3 rail, clear anodized	60.0	lnft	15.44	926	45.95	2,757		58		62.4	lnft	3,741
0120	Railing, pipe, aluminum, 3 rail, clear anodized	94.0	lnft	15.44	1,451	45.95	4,320		90		62.4	lnft	5,861
0120	Railing, pipe, aluminum, 3 rail, clear anodized	15.0	lnft	15.44	232	45.95	689		14		62.4	lnft	935

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
05090 - Floor grating, aluminum												
0010	Floor grating, aluminum, up to 300 SF, 1.5" x 1/8" bar	344.0	sqft	3.02	1,040	12.10	4,162		65		15.3	5,267
0010	Floor grating, aluminum, up to 300 SF, 1.5" x 1/8" bar	28.0	sqft	3.02	85	12.10	339		5		15.3	429
0020	Floor grtg,brg bars @1-3/16" OC,xbar @4" OC,1-1/2"x1/8",over 300 SF	640.0	sqft	2.12	1,354	9.30	5,952		84		11.5	7,390
05120 - Grating frame												
0010	Grating frame aluminum, for gratings 1" to 1-1/2" deep	176.0	lnft	7.37	1,297	7.80	1,373				15.2	2,670
0010	Grating frame aluminum, for gratings 1" to 1-1/2" deep	180.0	lnft	7.37	1,327	7.80	1,404				15.2	2,731
0010	Grating frame aluminum, for gratings 1" to 1-1/2" deep	23.0	lnft	7.37	170	7.80	179				15.2	349
05150 - Plates												
0110	Plates, steel, 3/8" smooth	173.0	sqft			17.30	2,993				17.3	2,993
0110	Plates, steel, 3/8" smooth	16.9	sqft			17.30	292				17.3	292
05270 - Stair												
0010	Stair, steel, saf nosing, stl strg, grating trd & pipe rail, 3'-6" W	32.0	risr	60.44	1,934	261.00	8,352		120		325.2	10,406
0010	Stair, steel, saf nosing, stl strg, grating trd & pipe rail, 3'-6" W	12.0	risr	60.44	725	261.00	3,132		45		325.2	3,902
0020	Stair, stl, sfty nsg, stl stringers, grtg trd, pipe ring, 4'-0" wide	46.0	risr	70.51	3,243	340.00	15,640		202		414.9	19,085
0140	Stair, indl ships ladder, 3' W, grtg treads, 2 line pipe rail, alum	14.0	risr	70.51	987	229.00	3,206		61		303.9	4,255
05290 - Anchor bolts												
0090	Anchor bolts, J-type, incl nut, washer, 1" dia, 24" long	84.0	each	37.17	3,122	9.94	835				47.1	3,957
05310 - Drilling												
0050	Drilling, layout, no anchor, 4" deep, 1/2" dia, conc/brick walls/floor	692.0	each	9.29	6,430	0.68	471				10.0	6,901
0050	Drilling, layout, no anchor, 4" deep, 1/2" dia, conc/brick walls/floor	67.5	each	9.29	627	0.68	46				10.0	673
0070	Drilling, layout, no anchor, 4" deep, 5/8" dia, conc/brick walls/floor	238.0	each	9.68	2,304	1.08	257				10.8	2,561
0090	Drilling, layout, no anchor, 4" deep, 3/4" dia, conc/brick walls/flr	92.0	each	10.32	950	1.20	110				11.5	1,060
0100	Drilling, layout, no anchor, addl inch, 3/4" dia, conc/brick walls/flr	736.0	each	2.11	1,554	1.20	883				3.3	2,437
05320 - Expansion anchors												
0100	Expansion anchors, self drilling, steel, 1/2" dia bolt	692.0	each	23.23	16,076	2.63	1,821				25.9	17,897
0100	Expansion anchors, self drilling, steel, 1/2" dia bolt	67.5	each	23.23	1,568	2.63	178				25.9	1,746
					81,357		122,607		3,466			207,430
METALS Total												
07 - THERMAL/MOIST PROTECTION												
07030 - Membrane waterproofing												
0040	Membrane waterproofing, polyethylene, 10 mils-underslab	11,000.0	sqft	1.34	14,757	0.14	1,542		1,507		1.6	17,805
07070 - Wall cing insl, non-rigid												
0020	Wall/ceiling insul, fbgl, kraft faced, batt/blkt,3.5" thk,R11,15" W	3,200.0	sqft	0.29	929	0.37	1,184				0.7	2,113
0020	Wall/ceiling insul, fbgl, kraft faced, batt/blkt,3.5" thk,R11,15" W	1,176.0	sqft	0.29	341	0.37	435				0.7	777
07080 - Roof deck insulation												

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	10,000.0	sqft	0.48	4,791	0.65	6,500				1.1 sqft	11,291
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	10,000.0	sqft	0.48	4,791	0.65	6,500				1.1 sqft	11,291
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	1,350.0	sqft	0.48	647	0.65	878				1.1 sqft	1,524
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	244.0	sqft	0.48	117	0.65	159				1.1 sqft	276
0030	Roof deck insul., fiberboard high density, 1-1/2" thick R3.8	120.0	sqft	0.48	57	0.65	78				1.1 sqft	135
07200 - Elastomeric roofing												
0010	Elastomeric rfg, acrylic rubber, fluid applied, 50 mils thick, reinfor	1,350.0	sqft	1.44	1,939	2.94	3,969		186		4.5 sqft	6,094
0010	Elastomeric rfg, acrylic rubber, fluid applied, 50 mils thick, reinfor	244.0	sqft	1.44	350	2.94	717		34		4.5 sqft	1,101
0010	Elastomeric rfg, acrylic rubber, fluid applied, 50 mils thick, reinfor	120.0	sqft	1.44	172	2.94	353		17		4.5 sqft	542
0900	EPDM rfg, 60 mil, fully adhered with adhesive	10,000.0	sqft	0.66	6,632	10.20	102,000		635		10.9 sqft	109,267
07220 - Flashing												
0040	Flashing, aluminum, mill finish, .032" thick - parapet flashing	320.0	sqft	3.41	1,090	1.18	378				4.6 sqft	1,467
07280 - Expansion joint												
0210	Expansion joint, polyethylene bellows, with galvanized angle flanges	490.0	lnft	3.83	1,878	4.40	2,156				8.2 lnft	4,034
THERMAL/MOIST PROTECTION Total					38,492		126,848		2,378			167,717
08 - DOORS and WINDOWS												
08010 - Steel doors												
0040	Coml st doors, fl, full pnl, 3'-0" x 7'-0" - "A" label 3hr Fire	2.0	each	54.66	109	500.00	1,000				554.7 each	1,109
0100	Coml st doors, insulated, 1-3/4" thk, full pnl, 18 Ga., 3'-0" x 7'-0"	2.0	each	61.95	124	385.00	770				446.9 each	894
0140	Coml st doors, insulated, 1-3/4" thk, half gl, 18 Ga., 3'-0" x 7'-0"	6.0	each	58.08	348	565.00	3,390				623.1 each	3,738
08030 - Door frames												
0010	Door frs,st chans W/ahr&bar stops,6" chan @ 8.2#/LF,3'x7' dr,wt 150#	2.0	each	162.71	325	171.00	342		20		343.8 each	688
0020	Door frs,st chans W/ahr&bar stops,8" chan @ 11.5#/LF,6'x8' dr,wt 275#	3.0	each	235.03	705	315.00	945		44		564.7 each	1,694
0020	Door frs,st chans W/ahr&bar stops,8" chan @ 11.5#/LF,6'x8' dr,wt 275#	1.0	each	235.03	235	315.00	315		15		564.7 each	565
08060 - Floor, industrial												
0050	Floor, industrial, steel 300 psf L.L., dbl leaf, 8' x 6' opg, 645#	2.0	opng	419.18	838	4,488.28	8,977				4,907.5 opng	9,815
08150 - Bolts, flush												
0010	Bolts flush, std, concealed	3.0	each	66.37	199	20.00	60				86.4 each	259
08160 - Door closer												
0010	Door closer rack & pinion	6.0	each	71.48	429	134.00	804				205.5 each	1,233
0010	Door closer rack & pinion	2.0	each	71.48	143	134.00	268				205.5 each	411
0010	Door closer rack & pinion	2.0	each	71.48	143	134.00	268				205.5 each	411
08170 - Doorstops												
0010	Doorstops, holder & bumper, floor or wall	6.0	each	14.52	87	31.50	189				46.0 each	276
0010	Doorstops, holder & bumper, floor or wall	2.0	each	14.52	29	31.50	63				46.0 each	92

Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0010	Doorstops, holder & bumper, floor or wall	2.0	each	14.52	29	31.50	63				46.0	each	92
08180 - Hinges													
0030	Hinges, full mortise, avg. freq., steel base, 5" x 5", usp	9.0	pr			36.00	324				36.0	pr	324
0030	Hinges, full mortise, avg. freq., steel base, 5" x 5", usp	3.0	pr			36.00	108				36.0	pr	108
0030	Hinges, full mortise, avg. freq., steel base, 5" x 5", usp	3.0	pr			36.00	108				36.0	pr	108
08190 - Kick plate													
0010	Kick plate, 6" high, for 3' door, sst	6.0	each	30.97	186	28.00	168				59.0	each	354
0010	Kick plate, 6" high, for 3' door, sst	2.0	each	30.97	62	28.00	56				59.0	each	118
0010	Kick plate, 6" high, for 3' door, sst	2.0	each	30.97	62	28.00	56				59.0	each	118
08200 - Lockset													
0080	Lockset, heavy duty with sectional trim, keyed, single cyl function	3.0	each	46.46	139	187.00	561				233.5	each	700
0080	Lockset, heavy duty with sectional trim, keyed, single cyl function	2.0	each	46.46	93	187.00	374				233.5	each	467
08210 - Mortise lockset													
0010	Mortise lockst, comm., wrt knbs & full esc trim, non-keyed, pass, min	2.0	each	51.62	103	162.00	324				213.6	each	427
08220 - Weatherstripping													
0010	Weatherstripping, metal frame, spring type, bronze, 3' x 7" door	6.0	opng	154.87	929	26.74	160				181.6	opng	1,090
0010	Weatherstripping, metal frame, spring type, bronze, 3' x 7" door	2.0	opng	154.87	310	26.74	53				181.6	opng	363
0010	Weatherstripping, metal frame, spring type, bronze, 3' x 7" door	2.0	opng	154.87	310	26.74	53				181.6	opng	363
08230 - Threshold													
0020	Threshold, bronze	18.0	lnft	7.74	139	32.00	576				39.7	lnft	715
0020	Threshold, bronze	6.0	lnft	7.74	46	32.00	192				39.7	lnft	238
0020	Threshold, bronze	6.0	lnft	7.74	46	32.00	192				39.7	lnft	238
08250 - Wire glass													
0020	Wire glass, polished wire, 1/4" thick, diamond, clear	6.0	sqft	7.10	43	16.95	102				24.0	sqft	144
0020	Wire glass, polished wire, 1/4" thick, diamond, clear	4.0	sqft	7.10	28	16.95	68				24.0	sqft	96
DOORS and WINDOWS Total					6,242		20,929		79			27,250	
09 - FINISHES													
09000 - B & C Div 9 Coating Systems													
0020	Coatings & paints, B & C coating system B-1	11,000.0	sqft	0.58	6,371	1.23	13,558				1.8	sqft	19,929
0030	Coatings & paints, B & C coating system E-3	33,610.0	sqft	0.38	12,866	0.86	28,905				1.2	sqft	41,771
0090	Coatings & paints, B & C coating system EP-1	344.0	sqft	0.72	247	0.47	162				1.2	sqft	409
0090	Coatings & paints, B & C coating system EP-1	28.0	sqft	0.72	20	0.47	13				1.2	sqft	33
0140	Coatings & paints, B & C coating system L-1	19,200.0	sqft	0.72	13,806	0.25	4,800				1.0	sqft	18,606
0140	Coatings & paints, B & C coating system L-1	7,056.0	sqft	0.72	5,074	0.25	1,764				1.0	sqft	6,838
09100 - Drywall													

CBWTP DIGESTER EXPANSION
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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
0040	Drywall,gyp plasbd,nailed/scrd to std,5/8"thk,on wl,fire res,taped&fin	6,400.0	sqft	0.96	6,163	0.43	2,752				1.4 sqft	8,915
0040	Drywall,gyp plasbd,nailed/scrd to std,5/8"thk,on wl,fire res,taped&fin	2,352.0	sqft	0.96	2,265	0.43	1,011				1.4 sqft	3,276
09150 - Resilient flooring												
0010	Resilient, base, cove, rbr or vinyl, .080" thick, std colors, 4" hi	320.0	lnft	1.35	430	0.70	224				2.0 lnft	654
0010	Resilient, base, cove, rbr or vinyl, .080" thick, std colors, 4" hi	196.0	lnft	1.35	264	0.70	137				2.0 lnft	401
FINISHES Total					47,505		53,326					100,831
10 - SPECIALTIES												
10020 - Canopies												
0050	Awnings, entry/walkway, peak, incl frame	4.0	each	500.00	2,000	1,500.00	6,000				2,000.0 each	8,000
10040 - Exterior signage												
0010	Architectural signage - Allowance	1.0	each	1,393.85	1,394	5,000.00	5,000				6,393.8 each	6,394
SPECIALTIES Total					3,394		11,000					14,394
11 - EQUIPMENT												
11010 - Process Equipment												
grn0531	Grinder, inline. 950 gpm - 5-hp (DIG9/10.CIRC-GNDR1)	2.0	Each	2,800.00	5,600	43,754.00	87,508		760		46,934.0 Each	93,868
h-e0531	Heat Exchanger, Spiral 4.4 MMBTUH (DIG9/10-HX1)	2.0	Each	5,400.00	10,800	55,000.00	110,000		1,100		60,950.0 Each	121,900
hvc0531	Heat Pump Unit. (ELEC-AC1)	1.0	Each	2,730.19	2,730	8,727.22	8,727				11,457.4 Each	11,457
hvc0532	Air Handling Unit. 25-hp (AHU5)	1.0	Each	4,167.13	4,167	42,342.30	42,342				46,509.4 Each	46,509
hvc0533	Exhaust Fan. 10,350cfm @ .75 in h2o & 5-hp (EXH-VENT13/14)	2.0	Each	544.02	1,088	1,475.00	2,950				2,019.0 Each	4,038
hvc0534	Exhaust Fan. 14,000cfm (TU-21105)	1.0	Each	598.42	598	1,575.00	1,575				2,173.4 Each	2,173
pmp0531	Pmp,recessed impeller,4"x4"-v-belt,500 gpm@27-ft&15-hp(DIG9/10.SCUM.SUPRS-PMP1)	2.0	Each	2,800.00	5,600	37,045.00	74,090		560		40,125.0 Each	80,250
pmp0532	Pmp,Sludge,recessed impeller,v-belt.6"x6",950-gpm@63-ft&60-hp(DIG9/10.CIRC-PMP1)	2.0	Each	3,300.00	6,600	48,160.00	96,320		980		51,950.0 Each	103,900
pmp0533	Pmp,Sludge Transfer, prog. cavity,500-gpm@100psi&100-hp mtr(DIG9/10.TRANS-PMP1/2)	4.0	Each	8,413.76	33,655	69,772.68	279,091		2,134		78,720.0 Each	314,880
pmp0534	Pmp,Recessed impeller,8" Disch.,1500-gpm@82-ft&125-hp(TANK.DRAIN.PUMP2)	1.0	Each	6,400.00	6,400	63,500.00	63,500		630		70,530.0 Each	70,530
pmp0536	Pmp,Cent. End Suction,6"x6"-Water,510-gpm@60-ft&15-hp(DIG9/10.HX1.WTR-PMP1)	2.0	Each	3,623.59	7,247	5,517.51	11,035				9,141.1 Each	18,282
pmp0537	Pmp, centrifugal. End suction. 6"x8" 30-hp (DIG9/10.HRS.CIRC-PMP1/2)	2.0	Each	5,435.38	10,871	8,276.27	16,553				13,711.6 Each	27,423
pmp0538	Pmp,sump,submersible,4"Disch,100-gpm@30-ft&15-hp(SUMP3-PMP1/2)	2.0	Each	718.47	1,437	3,315.81	6,632				4,034.3 Each	8,069
trp0531	Trap, gas sedimentation. _ (DIG9/10.GAS.SED-TRAP1)	2.0	Each	294.77	590	3,269.13	6,538				3,563.9 Each	7,128
viv0531	Valve, Hopper, Plug, 12" dia. SOV pneu actuated _ (DIG9-hop-viv1:4)	4.0	Each	879.00	3,516	7,250.00	29,000				8,129.0 Each	32,516
viv0531	Valve, Hopper, Plug, 12" dia. SOV pneu act _ (DIG10-HOP-VLV1:4)	4.0	Each	879.00	3,516	7,250.00	29,000				8,129.0 Each	32,516
viv0532	Valve, 8" dia, Plug, SOV operated pneu actuated _ (DIG9/10-PS-VLV1)	2.0	Each	625.00	1,250	6,250.00	12,500				6,875.0 Each	13,750
viv0533	Valve, 6" dia, Plug, SOV operated pneu act _ (DIG9/10.TWAS-VLV1)	2.0	Each	525.00	1,050	5,200.00	10,400				5,725.0 Each	11,450
viv0535	Valve, Gate. Temp Control.Pneu Act. 4" _ (DIG9/10.HX1.HRS-VLV1)	2.0	Each	425.00	850	4,900.00	9,800				5,325.0 Each	10,650
viv0536	Valve, Gate. Temp Control.Pneu Act. 2.5" _ (DIG9/10.HX1.HRR-VLV1)	2.0	Each	347.00	694	4,100.00	8,200				4,447.0 Each	8,894
EQUIPMENT Total					108,259		905,761		6,164			1,020,184

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
15 - MECHANICAL												
15010 - Misc. Mechanical												
0010	Mechanical Allowance - Replace existing 6" HRR/S piping with 8"	1.0	Isum							45,000	45,000.0	45,000
0010	Mechanical Allowance - Plant Water	1.0	Isum							25,000	25,000.0	25,000
0070	Kam-lok, quick disconnect, w/cap, 2", stainless steel	2.0	each	89.81	180	262.61	525				352.4	705
0090	Pipe drain connection	11.0	each	107.77	1,185	113.80	1,252				221.6	2,437
0150	Utility stations, w/valve, hose, rack, hydrant, signage	12.0	each	305.35	3,664	371.37	4,456				676.7	8,121
0440	Seal water stations, complete	4.0	each	449.04	1,796	583.58	2,334				1,032.6	4,131
15030 - Pipe,watr dstr,ductl iron												
0010	Piping Allowance - Green Roof drain	1.0	Isum	2,435.04	2,435	2,907.65	2,908		657		6,000.0	6,000
15031 - DIP Fittings												
0370	Piping, water dist, DI, cement lined, CL 50, 4" dia. mj x mj wall pipe	4.0	each	148.13	593	101.26	405		152		287.4	1,150
0380	Piping, water dist, DI, cement lined, CL 50, 3" dia. mj x mj wall pipe	1.0	each	148.13	148	80.25	80		38		266.4	266
0380	Piping, water dist, DI, cement lined, CL 50, 3" dia. mj x mj wall pipe	1.0	each	148.13	148	80.25	80		38		266.4	266
0400	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 8" dia	3.0	each	35.92	108	374.37	1,123				410.3	1,231
0400	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 8" dia	2.0	each	35.92	72	374.37	749				410.3	821
0400	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 4" dia	4.0	each	17.96	72	187.19	749				205.1	821
0440	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 6" dia	2.0	each	35.92	72	275.27	551				311.2	622
0470	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 12" dia	10.0	each	108.35	1,083	828.03	8,280				936.4	9,364
0470	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 16" dia	1.0	each	108.35	108	828.03	828				936.4	936
0470	Piping, wall pipe,DI, cement lined, CL 50, 3' L, mech jt, 16" dia	5.0	each	108.35	542	828.03	4,140				936.4	4,682
15055 - Pipe,watr dstr,plyv chlrd												
0230	Piping, water dist, PVC, press pipe, class 200, SDR 21, 4"	194.0	Inft	4.09	793	2.62	509				6.7	1,302
0250	Piping, water dist, PVC, press pipe, class 200, SDR 21, 8"	259.0	Inft	5.88	1,522	8.98	2,325				14.9	3,847
0390	Piping, water dist, PVC, press pipe, CL200, SDR 21 elbow, 90<, 4"	4.0	each	52.24	209	20.23	81				72.5	290
0410	Piping, water dist, PVC, press pipe, CL200, SDR 21 elbow, 90<, 8"	28.0	each	134.33	3,761	66.55	1,863				200.9	5,625
15070 - Pipe,copper												
0020	Piping, tubing, type K, 1" diameter	30.0	Inft	3.41	102	4.57	137				8.0	239
0150	Piping, fittings, brass, 1" diameter	2.0	each	35.92	72	29.00	58				64.9	130
15075 - Distribution connection												
0010	Connection, 3"	1.0	each	233.98	234	145.90	146		40		420.3	420
0010	Connection, 4"	2.0	each	233.98	468	145.90	292		81		420.3	841
0020	Connection, 6"	2.0	each	421.17	842	322.08	644		146		816.1	1,632
0020	Connection, 8"	3.0	each	421.17	1,264	322.08	966		218		816.1	2,448
0020	Connection, 12"	1.0	each	421.17	421	322.08	322		73		816.1	816
15095 - Pipe,drng&sewg,plyv chlrd												

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0110	Piping, drainage & sewage, PVC, tees, 4" diam	4.0	each	104.40	418	3.88	16				108.3	each	433
15135 - Pipe hangers and supports													
0955	Pipe hgrs and supports, rolls, chair, CS with CI roll, 6" pipe size	260.0	each	10.84	2,820	60.50	15,730				71.3	each	18,550
15150 - Pipe, cast iron													
0140	Pipe, CI, soil, on hgrs 5' OC, push-on gskt jts 10' OC, 4" dia	80.0	lnft	19.16	1,533	9.97	798				29.1	lnft	2,331
0180	Pipe, CI, soil, on hgrs 5' OC, push-on gskt jts 10' OC, 8" dia	80.0	lnft	37.08	2,967	26.25	2,100				63.3	lnft	5,067
15155 - Pipe, cast iron, fittings													
0120	CI ftg, svce wt, hub & spigot, lead & oakum jt, long sweep, 90<,4"	9.0	each	84.01	756	29.18	263				113.2	each	1,019
0140	CI ftg, svce wt, hub & spigot, lead & oakum jt, long sweep, 90<,8"	8.0	each	209.01	1,672	134.22	1,074				343.2	each	2,746
0370	CI ftg, svce wt, hub & spigot, lead & oakum jt, san T, 4"	4.0	each	136.51	546	28.50	114				165.0	each	660
15190 - Pipe, steel													
0320	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 1" dia	140.0	lnft	11.74	1,644	3.43	481		84		15.8	lnft	2,209
0340	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 1-1/2" dia	180.0	lnft	14.37	2,586	4.50	811		133		19.6	lnft	3,530
0360	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., bl, 2-1/2" dia	160.0	lnft	23.24	3,718	6.66	1,066		191		31.1	lnft	4,974
0370	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., bl, 3" dia	32.0	lnft	25.40	813	7.19	230		42		33.9	lnft	1,085
0390	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 4" dia	738.0	lnft	29.52	21,783	10.42	7,690		1,116		41.4	lnft	30,589
0410	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 6" dia	1,266.0	lnft	46.30	58,617	22.16	28,056		1,968		70.0	lnft	88,642
0430	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 10" dia	288.0	lnft	69.45	20,002	56.72	16,334		672		128.5	lnft	37,008
0440	Pipe, stl, widd, sch. 40, on yoke & roll hgrs, 10' o.c., blk, 12" dia	559.0	lnft	87.73	49,040	44.85	25,069		1,647		135.5	lnft	75,756
15195 - Pipe, steel, fittings													
0030	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 1"	14.0	each	44.21	619	3.50	49				47.7	each	668
0040	Pipe, steel ftngs, CI, std weight, black, 90< elb, straight, 1-1/2"	28.0	each	54.60	1,529	6.85	192				61.5	each	1,721
0050	Pipe, steel ftngs, CI, std weight, black, 90< elb, straight, 2-1/2"	12.0	each	78.01	936	25.50	306				103.5	each	1,242
0055	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 3"	2.0	each	109.21	218	42.00	84				151.2	each	302
0065	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 4"	74.0	each	182.01	13,469	78.00	5,772				260.0	each	19,241
0075	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 6"	134.0	each	238.12	31,908	215.00	28,810				453.1	each	60,718
0080	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 10"	16.0	each	385.46	6,167	341.34	5,461				726.8	each	11,629
0085	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 8"	38.0	each	277.81	10,557	525.00	19,950				802.8	each	30,507
0095	Pipe, steel ftngs, CI, standard weight, black, 90< elb, straight, 12"	8.0	each	2,643.97	21,152	256.78	2,054		515		2,965.1	each	23,721
0255	Pipe, steel fittings, CI, standard weight, black, tee, straight, 1"	8.0	each	71.85	575	4.58	37				76.4	each	611
0265	Pipe, steel ftngs, CI, standard weight, black, tee, straight, 1-1/2"	14.0	each	84.01	1,176	10.85	152				94.9	each	1,328
0275	Pipe, steel ftngs, CI, standard weight, black, tee, straight, 2-1/2"	4.0	each	121.34	485	39.50	158				160.8	each	643
0320	Pipe, steel fittings, CI, standard weight, black, tee, straight, 12"	6.0	each	650.07	3,900	1,126.32	6,758				1,776.4	each	10,658
0325	Pipe, steel fittings, CI, standard weight, black, tee, straight, 10"x8"	10.0	each	650.07	6,501	825.83	8,258				1,475.9	each	14,759
0535	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 4"	8.0	each	121.34	971	138.89	1,111				260.2	each	2,082
0545	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 6"	2.0	each	208.36	417	231.10	462				439.5	each	879

CBWTP DIGESTER EXPANSION
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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0550	Pipe, steel fittings, CI, standard weight, black, reducer, ecc, 8"	12.0	each	238.12	2,857	863.70	10,364				1,101.8	each	13,222
1465	Steel ftg, 150# MI, black, tee, straight, 4"	15.0	each	273.02	4,095	130.00	1,950				403.0	each	6,045
1475	Steel ftg, 150# MI, black, tee, straight, 6"	26.0	each	416.71	10,835	410.00	10,660				826.7	each	21,495
1475	Steel ftg, 150# MI, black, tee, straight, 8"	31.0	each	416.71	12,918	410.00	12,710				826.7	each	25,628
15200 - Pipe, steel, fittings													
0010	Stl ftg, gasket and bolt set, 150#, 1/2" thru 1.5" pipe	16.0	each	28.74	460	2.71	43				31.4	each	503
0030	Pipe, st ftngs, gskt & bolt set, 150#, 2-1/2" pipe size	12.0	each	47.90	575	4.58	55				52.5	each	630
0040	Stl ftg, gskt & bolt set, 150#, 3" pipe	1.0	each	52.25	52	4.80	5				57.1	each	57
0060	Stl ftg, gskt & bolt set, 150#, 4" pipe	93.0	each	71.85	6,682	8.70	809				80.5	each	7,491
0080	Stl ftg, gskt & bolt set, 150#, 6" pipe	82.0	each	95.80	7,855	13.55	1,111				109.3	each	8,966
0090	Stl ftg, gskt & bolt set, 150#, 8" pipe	44.0	each	114.96	5,058	14.45	636				129.4	each	5,694
0100	Stl ftg, gskt & bolt set, 150#, 10" pipe	10.0	each	127.73	1,277	30.00	300				157.7	each	1,577
0110	Stl ftg, gskt & bolt set, 150#, 12" pipe	16.0	each	273.70	4,379	32.00	512				305.7	each	4,891
0140	Pipe, st ftngs, gskt & bolt set, 150#, 18" pipe size	1.0	each	212.88	213	83.00	83				295.9	each	296
0630	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 1-1/2" pipe	16.0	each	72.80	1,165	11.60	186		60		88.1	each	1,410
0650	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 2-1/2" pipe	12.0	each	109.21	1,310	20.00	240		67		134.8	each	1,618
0660	Stl ftg, weld-on flg, fst, slip-on, 150 lb flg, wld fr&back, 3" pipe	1.0	each	121.34	121	16.80	17		6		144.4	each	144
0680	Stl ftg, weld-on flg, fst, slip-on, 150 lb flg, wld fr&back, 4" pipe	43.0	each	182.01	7,827	22.00	946		401		213.3	each	9,174
0700	Stl ftg, weld-on flg, fst, slip-on, 150 lb flg, wld fr&back, 6" pipe	82.0	each	277.81	22,780	33.50	2,747		765		320.6	each	26,292
0710	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 8" pipe	44.0	each	333.37	14,668	52.00	2,288		493		396.6	each	17,449
0720	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 10" pipe	2.0	each	416.71	833	88.50	177		28		519.2	each	1,038
0730	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 12" pipe	16.0	each	555.62	8,890	131.00	2,096		299		705.3	each	11,284
0750	Pipe, st ftng, flg, FS, slip-on, 150 LB flg, wld frt&back, 18" pipe	1.0	each	926.03	926	264.00	264		31		1,221.1	each	1,221
15205 - Pipe, grv-jnt st fit valvs													
1040	Pipe, grvd-jt, st cplg, rgd style, ptd, 1-1/2" dia	16.0	each	8.58	137	13.29	213				21.9	each	350
1060	Pipe, grvd-jt, st cplg, rgd style, ptd, 2-1/2" dia	40.0	each	13.65	546	15.70	628				29.4	each	1,174
1070	Pipe, grvd-jt, st cplg, rgd style, ptd, 3" dia	2.0	each	16.30	33	18.32	37				34.6	each	69
1080	Pipe, grvd-jt, st cplg, rgd style, ptd, 4" dia	175.0	each	21.84	3,822	25.97	4,545				47.8	each	8,367
1100	Pipe, grvd-jt, st cplg, rgd style, ptd, 6" dia	386.0	each	33.34	12,868	44.97	17,357				78.3	each	30,225
1110	Pipe, grvd-jt, st cplg, rgd style, ptd, 8" dia	188.0	each	39.69	7,461	71.14	13,374				110.8	each	20,835
1120	Pipe, grvd-jt, st cplg, rgd style, ptd, 10" dia	74.0	each	47.62	3,524	127.51	9,436				175.1	each	12,960
1130	Pipe, grvd-jt, st cplg, rgd style, ptd, 12" dia	42.0	each	52.09	2,188	142.28	5,976				194.4	each	8,163
15212 - STAINLESS STEEL PIPE/FITTINGS, TYPE 316													
0190	Pipe, SS, A778, weld, Sched. 10S, type 316L, 12" dia.	50.0	lnft	50.51	2,525	159.11	7,956		129		212.2	lnft	10,610
0200	Pipe, SS, A778, weld, Sched. 10S, type 316L, 14" dia.	32.0	lnft	61.43	1,966	187.36	5,996		101		251.9	lnft	8,062
0210	Pipe, SS, A778, weld, Sched. 10S, type 316L, 16" dia.	64.0	lnft	68.25	4,368	215.10	13,766		224		286.9	lnft	18,359

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
0220	Pipe, SS, A778, weld, Sched. 10S, type 316L, 18" dia.	87.0	lnft	75.76	6,591	246.85	21,476		338		326.5	lnft	28,405
15217 - Stainless Steel Pipe Fittings - Type 316													
1110	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90-elb, smooth flow,12"	2.0	each	1,209.47	2,419	1,170.00	2,340		124		2,441.5	each	4,883
1130	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90-elb, smooth flow,16"	2.0	each	1,845.61	3,691	963.53	1,927		189		2,903.7	each	5,807
1140	Fittings, SS, A774, butt weld jt, type 316L, sched. 5S, 90-elb, smooth flow,18"	4.0	each	2,088.59	8,354	1,362.04	5,448		428		3,557.7	each	14,231
2320	Fittings, SS, A774, butt weld jt, type 316L,Sched. 10S, Tee, 18"	1.0	each	3,111.73	3,112	1,430.68	1,431		159		4,701.9	each	4,702
3480	Fittings, SS, A774, butt weld jt, type 316L, sched. 40S, Ecc. Red, 14"x12"	2.0	each	1,911.88	3,824	549.92	1,100		193		2,558.1	each	5,116
3480	Fittings, SS, A774, butt weld jt, type 316L, sched. 40S, Ecc. Red, 14"x12"	2.0	each	1,911.88	3,824	549.92	1,100		193		2,558.1	each	5,116
5340	Fittings, SS, butt weld jt, type 316L, Stub Ends, 18"	1.0	each	1,292.74	1,293	1,130.59	1,131		66		2,489.6	each	2,490
15240 - Pipe, plastic, fittings													
1040	PVC, hi impact/pressure, sched 80, tee, 8"	32.0	each	268.85	8,603	215.00	6,880				483.8	each	15,483
15255 - Valves, iron body													
0120	Valves, iron body, butterfly, lug type, gear operated, 3" size, 200 lb	2.0	each	136.51	273	210.00	420				346.5	each	693
0130	Valves, iron body, butterfly, lug type, 200 PSI, gear operated, 4"	4.0	each	218.41	874	239.00	956				457.4	each	1,830
0160	Valves, iron body, butterfly, lug type, 200 PSI, gear operated, 8"	2.0	each	406.29	813	425.00	850				831.3	each	1,663
1450	Valves, iron body, swing check, 125 lb, flanged, 4" size	2.0	each	364.03	728	350.00	700				714.0	each	1,428
1460	Valves, iron body, swing check, 125 lb, flanged, 6" size	10.0	each	555.62	5,556	605.00	6,050				1,160.6	each	11,606
1470	Valves, iron body, swing check, 125 lb, flanged, 8" size	4.0	each	666.74	2,667	1,125.00	4,500				1,791.7	each	7,167
15280 - Valves, plug													
0050	Valves, semi-steel, lubricated plug valve, threaded, 200 psi, 1.5" pip	12.0	each	52.25	627	110.00	1,320				162.3	each	1,947
0120	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 4" pipe	2.0	each	364.03	728	350.00	700				714.0	each	1,428
0140	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 6" pipe	22.0	each	555.62	12,224	650.00	14,300				1,205.6	each	26,524
0150	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 8" pipe	11.0	each	666.74	7,334	1,175.00	12,925				1,841.7	each	20,259
0160	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 10" pipe	17.0	each	757.66	12,880	1,950.00	33,150				2,707.7	each	46,030
0170	Valves, semi-steel, lubricated plug valve, flanged, 200 psi, 12" pipe	1.0	each	980.50	980	2,975.00	2,975				3,955.5	each	3,955
15285 - Valves, steel													
1300	Ball valve, steel, 150 lb, flanged, 4" size	2.0	each	364.03	728	484.37	969				848.4	each	1,697
15320 - Expansion joints													
0420	Bellows w/intl sleeves & ext covers, sst, 150 lb, figd ends, 6" dia	4.0	each	333.37	1,333	700.30	2,801				1,033.7	each	4,135
0430	Bellows w/intl sleeves & ext covers, sst, 150 lb, figd ends, 8" dia	4.0	each	370.41	1,482	840.36	3,361				1,210.8	each	4,843
15330 - Flexible connectors													
301	Connectors, Equipment Connection, 4"	4.0	each	161.66	647	1,146.00	4,584				1,307.7	each	5,231
302	Connectors, Equipment Connection, 6"	10.0	each	233.50	2,335	1,368.00	13,680				1,601.5	each	16,015
303	Connectors, Equipment Connection, 8"	2.0	each	233.50	467	1,678.00	3,356				1,911.5	each	3,823
304	Connectors, Equipment Connection, 10"	2.0	each	312.53	625	2,390.00	4,780				2,702.5	each	5,405
305	Flex Ring Joint, 12"	8.0	each	156.27	1,250	845.64	6,765				1,001.9	each	8,015

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
15385 - Backflow preventer													
0040	Backflow pvntr,auto, 2 gate v, tst cocks, dbl chk, thd, 2"	1.0	each	82.11	82	925.00	925				1,007.1	each	1,007
15395 - Cleanout:													
0030	Drains, 4" AD	8.0	each	143.69	1,150	411.40	3,291				555.1	each	4,441
0030	Cleanouts, flr type, rnd top, xtra hvy dty, 4" pipe size	15.0	each	143.69	2,155	401.50	6,023				545.2	each	8,178
15400 - Drains													
0040	Drains, flr, medium dty, C.I., D flange, 7" dia top, 2"	19.0	each	91.01	1,729	114.51	2,176				205.5	each	3,905
0100	Drains, flr, x-hvy dty, C.I., 15" antitilt, 4"	16.0	each	136.51	2,184	321.20	5,139				457.7	each	7,323
0100	Drains, flr, x-hvy dty, C.I., 15" antitilt, 8" pipe size	2.0	each	136.51	273	1,034.00	2,068				1,170.5	each	2,341
15480 - Sinks													
0150	Sinks, W/faucets & dr, kit, cntr top, P.E. on C.I., 42"x21" dbl bowl	1.0	each	227.52	228	480.00	480				707.5	each	708
15505 - Water heaters													
0440	Water heaters, point of use, com (ashrae energy std. 90), 30 gallon	1.0	each	249.90	250	945.40	945				1,195.3	each	1,195
15660 - Ductwork													
0110	Duct, fab rect, incl ftg, galv stl, 2,000 to 5,000 LB	4,800.0	lb	5.21	24,993	0.50	2,400				5.7	lb	27,393
15690 - Registers													
0220	Registers,air sply,clg/wall,OB dmp,r,alum,adj curved face bars,24" x 24	23.0	each	44.89	1,032	121.00	2,783				165.9	each	3,815
15715 - Piping, testing													
0040	Nondestructive hydraulic pressure test	1.0	each	3,090.78	3,091	1,800.00	1,800				4,890.8	each	4,891
	MECHANICAL Total				580,034		532,734		12,105	70,000			1,194,874
16 - ELECTRICAL													
16195 - Electrical & Instrument													
0101	Electrical/Instrumentation	1.0	lsum					1,776,394			1,776,394.0	lsum	1,776,394
	ELECTRICAL Total							1,776,394					1,776,394
17 - INSTRUMENTATION													
17080 - FLOW INSTRUMENTS													
0030	Mag Meters, 4"	1.0	each	898.09	898	3,436.04	3,436				4,334.1	each	4,334
	INSTRUMENTATION Total				898		3,436						4,334

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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total	
	1110 - Soil Improvements - Digesters and Control Building				250,886		321,376	483,210	42,650			1,098,122	
	02 - SITE CONSTRUCTION												
	02270 - Grouting, pressure												
0050	Grouting, pressure, Type III	17,658.0	cuft	13.76	242,996	18.20	321,376		39,617		34.2	cuft	603,989
	02380 - Drilling only												
0010	Drilling only, 2" hole for grout injection	2,052.0	Inft	3.85	7,890				3,033		5.3	Inft	10,923
	02540 - Piles												
0990	Piles, stone columns, 36" round, 18' long	14,868.0	vlf					483,210			32.5	vlf	483,210
	SITE CONSTRUCTION Total				250,886		321,376	483,210	42,650			1,098,122	

CBWTP DIGESTER EXPANSION
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Item	Item Description	Quantity	Unit	Labor \$/Unit	Labor Amount	Materials \$/Unit	Material Amount	Subs Amount	Equip Amount	Other Amount	Total Price Per Unit	Grand Total
					5,018,670		7,049,703	4,386,639	1,011,632	297,294		17,763,937
	Grand Total											

CBWTP DIGESTER EXPANSION
60% DESIGN STAGE

Category	Percent	Amount	Hours
Labor	28.25 %	5,018,670	79,734.3
Material	39.69 %	7,049,703	
Equipment	5.69 %	1,011,632	19,168.1
Subcontractor	24.69 %	4,386,639	
Other	1.67 %	297,294	
Net Costs		17,763,937	
Wrap Ins. Workers Comp Discount	-10.00 %	-501,867	
Labor Mark-up	18.00 %	903,361	
Material Mark-up	15.00 %	1,057,455	
Subcontractor Mark-up	5.00 %	219,332	
Equipment Mark-up	15.00 %	151,745	
Material Shipping & Handling	4.00 %	281,988	
Worker's Travel/Subsistence	1.00 %	50,187	
Escalation to Midpoint	9.00 %	1,598,754	
Start-up, training, O & M	2.00 %	430,498	
Subtotal		21,955,390	
Construction Contingency	20.00 %	4,391,078	
Subtotal		26,346,468	
Building Permits	1.50 %	395,197	
Subtotal		26,741,665	
Auto Ins. - Only	0.85 %	227,304	
Subtotal		26,968,969	
Performance Bond	1.00 %	269,690	
Subtotal		27,238,659	
Payment Bond	1.00 %	269,690	
Subtotal		27,508,349	
Total Estimate		27,508,349	