

CONCEPTUAL COST PLAN

for

University of Washington
Regional Bio-Containment Lab
Seattle, Washington, United States

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CONTENTS

	Page Nos.
Basis of Cost Plan	1
Inclusions	3
Exclusions	5
Overall Summary	6
Lab Building Component Summary	8
Sitework Component Summary	21
Comparison Summary	24

BASIS OF COST PLAN

<u>Cost Plan Prepared From</u>	Dated	Received
Conceptual Drawings	12/08/04	12/08/04
Design Narratives		
Discussions with the Project Architect and Engineers		

BASIS OF COST PLAN

Conditions of Construction

The pricing is based on the following general conditions of construction

A start date of February 2007

A construction period of 20 months

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor will have full access to the site at all hours

INCLUSIONS

The project consists of a 56,520 square foot lab building on the University of Washington Campus. The three level building is built with concrete foundations, vertical structure, and floor and roof structure. For the purposes of this estimate, appropriate allowances have been made using data from similar building types on the university campus. Much of the exterior envelope and interior construction composition has been determined using data from the nearby Genomics and Bioengineering buildings. Allowances for specific items and systems have been included to account for the specific characteristics of this building that have been defined at the stage of design.

INCLUSIONS

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 4 bidders for all items of subcontracted work and 6-7 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon's best judgement as professional construction consultant familiar with the construction industry. However, Davis Langdon cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

EXCLUSIONS

- Owner supplied and installed furniture, fixtures and equipment
- Loose furniture and equipment except as specifically identified
- Audio visual equipment
- Hazardous material handling, disposal and abatement
- Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
- Design, testing, inspection or construction management fees
- Architectural and design fees
- Scope change and post contract contingencies
- Assessments, taxes, finance, legal and development charges
- Environmental impact mitigation
- Builder's risk, project wrap-up and other owner provided insurance program
- Land and easement acquisition
- Cost escalation beyond a start date of February 2007

OVERALL SUMMARY

	Gross Floor Area	\$ / SF	\$x1,000
Lab Building	56,520 SF	734.36	41,506
TOTAL Building Construction Cost	56,520 SF	734.36	41,506
Sitework			2,422
TOTAL Building & Sitework Construction Cost	<i>February 2007</i>		43,928
Preconstruction Services			350
WSST	8.8%		3,896
GUARANTEED CONSTRUCTION COST	<i>February 2007</i>		48,174

Please refer to the Inclusions and Exclusions sections of this report

LAB BUILDING AREAS & CONTROL QUANTITIES

Areas

	SF	SF	SF
Enclosed Areas			
Basement	10,225		
First Floor	22,800		
Second Floor	22,800		
Penthouse	458		
 SUBTOTAL, Enclosed Area	<hr/>	56,283	
 Covered area	473		
 SUBTOTAL, Covered Area @ ½ Value	<hr/>	237	
 TOTAL GROSS FLOOR AREA		<hr/>	56,520

Control Quantities

			Ratio to Gross Area
Number of stories (x1,000)	3	EA	0.053
Gross Area	56,520	SF	1.000
Enclosed Area	56,283	SF	0.996
Covered Area	473	SF	0.008
Footprint Area	22,800	SF	0.403
Volume	919,328	CF	16.266
Basement Volume	163,600	CF	2.895
Gross Wall Area	39,046	SF	0.691
Retaining Wall Area	9,655	SF	0.171
Finished Wall Area	29,391	SF	0.520
Windows or Glazing Area	19.42%	7,582 SF	0.134
Roof Area - Flat		22,800 SF	0.403
Interior Partition Length		6,051 LF	0.107
Finished Area		50,007 SF	0.885
Elevators (x10,000)		2 EA	0.354
Plumbing Fixtures (x1,000)		55 EA	0.973

LAB BUILDING COMPONENT SUMMARY

		Gross Area:	56,520 SF	
			\$/SF	\$x1,000
1. Foundations			11.68	660
2. Vertical Structure			22.42	1,267
3. Floor & Roof Structures			43.21	2,442
4. Exterior Cladding			40.78	2,305
5. Roofing, Waterproofing & Skylights			7.59	429
Shell (1-5)			125.68	7,104
6. Interior Partitions, Doors & Glazing			32.45	1,834
7. Floor, Wall & Ceiling Finishes			17.60	995
Interiors (6-7)			50.06	2,829
8. Function Equipment & Specialties			75.29	4,255
9. Stairs & Vertical Transportation			6.50	368
Equipment & Vertical Transportation (8-9)			81.79	4,623
10. Plumbing Systems			53.86	3,044
11. Heating, Ventilating & Air Conditioning			133.33	7,536
12. Electric Lighting, Power & Communications			74.74	4,224
13. Fire Protection Systems			4.08	231
Mechanical & Electrical (10-13)			266.00	15,034
Total Building Construction (1-13)			523.53	29,590
14. Site Preparation & Demolition			0.00	0
15. Site Paving, Structures & Landscaping			0.00	0
16. Utilities on Site			0.00	0
Total Site Construction (14-16)			0.00	0
TOTAL BUILDING & SITE (1-16)			523.53	29,590
Estimating Contingency	12.00%		62.82	3,551
Escalation to Start Date	10.36%		54.26	3,067
Bid Contingency	1.50%		7.85	444
Subcontractor Bonds	1.00%		5.24	296
MACC Contingency	2.50%		16.34	924
Reimbursable Expenses	2.00%		13.07	739
MAXIMUM ALLOWABLE CONSTRUCTION COST (MACC)			683.12	38,610
Specified Fixed General Conditions	3.50%		23.91	1,351
GC/CM Fee	4.00%		27.32	1,544
TOTAL CONSTRUCTION COST		February 2007	734.36	41,506

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
1. Foundations				
Excavation				
Mass excavation	14,391	CY	8.00	115,128
Haul away excess spoils	14,111	CY	12.00	169,332
Fill				
Backfill with native soil	3,026	CY	12.00	36,312
Shoring sides of excavation				
Shoring sides of excavation - soldier piles with lagging and tiebacks	1,926	SF	40.00	77,040
Reinforced concrete including excavation				
Spread footings				
Structural excavation	611	CY	15.00	9,165
Fine grade	1,890	SF	0.75	1,418
Subbase	70	CY	30.00	2,100
Formwork	3,078	SF	8.00	24,624
Reinforcing steel, assume 45#/CY	9,945	LB	0.90	8,951
Concrete, 4000psi	221	CY	135.00	29,835
Spray cure	1,890	SF	1.00	1,890
Haul away excess spoils	611	CY	12.00	7,332
Structural backfill	331	CY	25.00	8,275
Strip footings at perimeter walls				
Structural excavation	831	CY	15.00	12,465
Fine grade	4,224	SF	0.75	3,168
Subbase	156	CY	30.00	4,680
Formwork	3,168	SF	8.00	25,344
Reinforcing steel, assume 60#/CY	14,760	LB	0.90	13,284
Concrete, 4000psi	246	CY	135.00	33,210
Spray cure	4,224	SF	1.00	4,224
Haul away excess spoils	831	CY	12.00	9,972
Structural backfill	428	CY	25.00	10,700
Strip footings at interior basement walls				
Structural excavation	78	CY	15.00	1,170
Fine grade	842	SF	0.75	632
Subbase	16	CY	30.00	480
Formwork	842	SF	8.00	6,736
Reinforcing steel, assume 75#/CY	2,475	LB	0.90	2,228
Concrete, 4000psi	33	CY	135.00	4,455
Spray cure	842	SF	1.00	842
Haul away excess spoils	78	CY	12.00	936
Structural backfill	30	CY	25.00	750
Elevator pit walls and slab with sump pit	2	EA	10,000.00	20,000
Subsurface drainage				
Allow for perimeter drainage	544	LF	25.00	13,600
				660,276

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
2. Vertical Structure				
Columns and pilasters				
Cast-in-place concrete columns				
Formwork	13,440	SF	9.00	120,960
Reinforcing steel, assume 350#/CY	70,000	LB	0.90	63,000
Concrete, 5000psi	200	CY	170.00	34,000
Point & patch	13,440	SF	0.50	6,720
Loadbearing walls				
Cast-in-place concrete loadbearing and shear walls, 12" thick				
Formwork	23,514	SF	9.00	211,626
Blockouts for openings	3,791	SF	8.00	30,328
Reinforcing steel	81,231	LB	0.90	73,108
Boundary zone reinforcing steel at flush pilasters, assume 350#/CY	9,839	LB	0.90	8,855
Concrete, 5000psi	466	CY	145.00	67,570
Point & patch	23,514	SF	0.50	11,757
Cast-in-place concrete loadbearing and shear walls, 18" thick				
Formwork	17,718	SF	9.00	159,462
Blockouts for openings	3,791	SF	8.00	30,328
Reinforcing steel	83,296	LB	0.90	74,966
Boundary zone reinforcing steel at flush pilasters, assume 350#/CY	12,833	LB	0.90	11,550
Concrete, 5000psi	527	CY	145.00	76,415
Point & patch	17,718	SF	0.50	8,859
Retaining walls				
Shotcrete walls at perimeter retaining walls, 18" thick				
Reinforcing steel	18,109	LB	0.90	16,298
Boundary zone reinforcing steel at flush pilasters, assume 350#/CY	933	LB	0.90	840
Shotcrete, 5000psi	1,926	SF	28.00	53,928
Trowel finish	1,926	SF	1.50	2,889
Cast-in-place concrete retaining walls, 8" thick				
Formwork	15,296	SF	9.00	137,664
Reinforcing steel	36,694	LB	0.90	33,025
Concrete, 5000psi	202	CY	145.00	29,290
Point & patch	7,648	SF	0.50	3,824
				1,267,262

3. Floor and Roof Structure

Floor on grade

Slab on grade at basement, 6" thick

Subbase	189	CY	25.00	4,725
Fine grade	10,225	SF	0.15	1,534
Vapor barrier	10,225	SF	0.40	4,090
Edge form	711	LF	6.00	4,266
Reinforcing steel, assume #5s @ 12" oc ew	24,529	LB	0.90	22,076

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Concrete, 4000psi	199	CY	120.00	23,880
Wet trowel finish	10,225	SF	0.35	3,579
Spray cure and protect	10,225	SF	0.15	1,534
Expansion joints	10,225	SF	0.10	1,023
Slab on grade at first floor, 6" thick				
Subbase	233	CY	25.00	5,825
Fine grade	12,575	SF	0.15	1,886
Vapor barrier	12,575	SF	0.40	5,030
Edge form	512	LF	6.00	3,072
Reinforcing steel, assume #5s @ 12" oc ew	30,166	LB	0.90	27,149
Concrete, 4000psi	245	CY	120.00	29,400
Wet trowel finish	12,575	SF	0.35	4,401
Spray cure and protect	12,575	SF	0.15	1,886
Expansion joints	12,575	SF	0.10	1,258
Allow for equipment pads	22,800	SF	0.50	11,400
Suspended floors				
Cast in place concrete suspended slabs and beams, 5" thick				
Shoring	35,375	SF	3.50	123,813
Formwork to soffits	35,375	SF	4.50	159,188
Formwork to sides	13,812	SF	8.00	110,496
Reinforcing steel, assume 9#/SF	318,375	LB	0.90	286,538
Concrete, 4000psi	1,175	CY	130.00	152,750
Wet trowel finish	35,375	SF	0.35	12,381
Spray cure and protect	35,375	SF	0.15	5,306
Point & patch soffits and sides	49,187	SF	0.25	12,297
Expansion joints	35,375	SF	0.10	3,538
Construction joints	35,375	SF	0.10	3,538
Penetrations	35,375	SF	0.50	17,688
Allow for transfer beams, down turn beams and cantilevered slabs	35,375	SF	2.00	70,750
Flat roofs				
Cast in place concrete suspended slabs and beams, 5" thick				
Shoring	22,800	SF	3.50	79,800
Formwork to soffits	22,800	SF	4.50	102,600
Formwork to sides	7,388	SF	8.00	59,104
Reinforcing steel, assume 9#/SF	205,200	LB	0.90	184,680
Concrete, 4000psi	658	CY	130.00	85,540
Wet trowel finish	22,800	SF	0.35	7,980
Spray cure and protect	22,800	SF	0.15	3,420
Point & patch soffits and sides	30,188	SF	0.25	7,547
Expansion joints	22,800	SF	0.10	2,280
Construction joints	22,800	SF	0.10	2,280
Penetrations	22,800	SF	0.65	14,820
Allow for transfer beams, down turn beams and cantilevered slabs	33,881	SF	2.00	67,762

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Miscellaneous				
Allow for miscellaneous metals	56,250	SF	1.00	56,250
Allow for interstitial space catwalks, assume 10% of total SF	21,720	SF	30.00	651,600
				2,441,957

4. Exterior Cladding

Applied exterior finishes				
Brick veneer	15,129	SF	45.00	680,805
Precast	6,185	SF	55.00	340,175
Prefabricated cladding panels				
Metal siding	1,446	SF	50.00	72,300
Windows and glazing				
Curtain wall	2,217	SF	75.00	166,275
Fixed windows & doors	3,919	SF	50.00	195,950
Operable windows	1,446	SF	45.00	65,070
Premium for blast resistance to first floor glazing	3,791	SF	50.00	189,550
Exterior doors, frames and hardware				
Storefront doors, pairs	1	EA	5,000.00	5,000
Allow for access doors, singles	2	EA	1,500.00	3,000
Allow for garage overhead coiling door	3	EA	15,000.00	45,000
Extra over for door security hardware	1	LS	7,500.00	7,500
Fascias, bands, screens and trim etc.				
Allow for miscellaneous bands, screens and trims	39,046	SF	3.00	117,138
Allow for miscellaneous vertical returns	39,046	SF	5.00	195,230
Allow for entry canopies	1	LS	35,000.00	35,000
Allow for metal louvers	1	LS	25,000.00	25,000
Soffits				
Allow for miscellaneous soffits and horizontal returns	1	LS	20,000.00	20,000
Balustrades, parapets and screens				
Allow for finish to back side of parapet walls	2,028	SF	15.00	30,420
Mechanical screens	4,464	SF	25.00	111,600
				2,305,013

5. Roofing, Waterproofing & Skylights

Waterproofing slabs				
Waterproofing to basement level slab on grade	9,655	SF	3.50	33,793
Waterproofing walls below grade				
Waterproofing to retaining walls	10,225	SF	5.00	51,125

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Insulation				
Rigid roof insulation	22,800	SF	2.50	57,000
Roofing				
Roofing membrane	22,800	SF	6.00	136,800
Roof or deck traffic surface				
Allow for walkway pads	1	LS	5,000.00	5,000
Roofing upstands and sheetmetal				
Allow for sheetmetal flashings and copings	22,800	SF	1.50	34,200
Allow for roof rough carpentry	22,800	SF	0.25	5,700
Roof access and ventilation				
Allow for roof access hatch and ladder	2	EA	3,500.00	7,000
Caulking and sealants				
Miscellaneous caulking	56,250	SF	0.50	28,125
Miscellaneous sealants	56,250	SF	0.75	42,188
Miscellaneous firestopping	56,250	SF	0.50	28,125
				429,055

6. Interior Partitions, Doors & Glazing

Concrete, block or brick walls				
Concrete masonry unit walls	7,687	SF	18.00	138,366
Partition framing and cores				
Sheetmetal partitions to				
Furred walls	2,062	SF	2.50	5,155
Standard partitions	41,592	SF	3.50	145,572
Fire rated partitions	43,067	SF	4.00	172,268
Shaft wall partitions	6,986	SF	5.00	34,930
Plumbing walls	3,225	SF	5.00	16,125
Partition surfacing				
Gypsum wall board, taped and sanded	84,577	SF	2.00	169,154
Gypsum wall board underlayment	2,485	SF	1.75	4,349
Gypsum wall board, taped and sanded, type X	93,120	SF	2.25	209,520
Gypsum wall board underlayment, type X	93,120	SF	2.00	186,240
Cement backerboard	2,440	SF	3.50	8,540
Shaft wall liner	6,986	SF	3.50	24,451
Sound insulation				
Sound attenuation blankets	94,870	SF	1.00	94,870
Caulking sound partitions	10,897	LF	2.50	27,243
Window walls and borrowed lights				
Allow for interior glazing	56,250	SF	0.25	14,063
Allow for bullet resistant interior glazing at security	1	LS	20,000.00	20,000

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Interior doors, frames and hardware				
Hollow metal doors and frames				
Single, fire rated	5	EA	1,400.00	7,000
Pairs, fire rated	16	EA	2,300.00	36,800
Pairs, fire rated, two-way	8	EA	2,700.00	21,600
Wood doors and frames				
Single	76	EA	1,600.00	121,600
Single, fire rated	53	EA	1,800.00	95,400
Single and half, fire rated	4	EA	2,600.00	10,400
Pairs, fire rated	6	EA	2,800.00	16,800
Stainless steel doors and frames				
Single	3	EA	5,000.00	15,000
Pairs	2	EA	8,000.00	16,000
APR Doors	4	EA	20,000.00	80,000
Allowance for sally port	1	LS	15,000.00	15,000
Allowance for special doors	1	LS	10,000.00	10,000
Allowance for special hardware				
Vision panels	48	EA	250.00	12,000
Magnetic hold open	10	EA	100.00	1,000
Power operated	2	EA	3,000.00	6,000
Card reader	15	EA	500.00	7,500
Electric lock	10	EA	600.00	6,000
Electric panic hardware	1	EA	1,000.00	1,000
Miscellaneous				
Allow for miscellaneous rough carpentry	56,250	SF	1.50	84,375
				1,834,320

7. Floor, Wall & Ceiling Finishes

Floors				
Sealed concrete	12,064	SF	1.00	12,064
VCT	14,264	SF	3.50	49,924
Carpet	7,089	SF	4.00	28,356
Ceramic tile	1,591	SF	10.00	15,910
Resinous flooring	14,538	SF	9.00	130,842
Walk off mat	248	SF	15.00	3,720
Bases or skirting, etc.				
Rubber base	7,246	LF	3.00	21,738
Ceramic tile base	611	LF	10.00	6,110
Epoxy base	3,584	LF	8.00	28,672
Wood base	2,085	LF	10.00	20,850
Walls				
Paint to gypsum wall board	134,737	SF	0.65	87,579
Epoxy paint	42,960	SF	1.50	64,440
Tackable wall panels	2,085	SF	20.00	41,700
Ceramic wall tile wainscot	2,440	SF	12.00	29,280
Special wall finishes	1	LS	25,000.00	25,000
Premium coating at Aerobiology	1	LS	50,000.00	50,000

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Column furring and finish				
Painted gypsum board column furring	4,680	SF	7.50	35,100
Ceilings				
Exposed ceilings	9,756	SF		
Paint to exposed ceilings	2,336	SF	1.25	2,920
Paint to gypsum board ceilings and soffits	19,930	SF	1.00	19,930
Acoustical ceiling tile	14,290	SF	2.50	35,725
Acoustical ceiling tile - washable	14,538	SF	3.50	50,883
Gypsum board ceilings	1,591	SF	6.00	9,546
Gypsum board soffits				
Vertical soffits	11,056	SF	7.00	77,392
Horizontal soffits	7,283	SF	6.50	47,340
Special ceiling finishes	1	LS	100,000.00	100,000
				995,021

8. Function Equipment & Specialties

Protective guards, barriers and bumpers				
Corner guards and wall rails	56,250	SF	0.20	11,250
Prefabricated compartments and accessories				
Toilet partitions				
Standard	12	EA	1,000.00	12,000
ADA compliant	10	EA	1,100.00	11,000
Urinal screens	1	EA	400.00	400
Toilet accessories	4	EA	500.00	2,000
Shower accessories	8	EA	500.00	4,000
Grab bars	10	EA	150.00	1,500
Mirrors	15	EA	350.00	5,250
Cabinets and countertops				
Restroom vanities	41	LF	125.00	5,125
Office cabinetry				
Base cabinets with countertop and backsplash	56	LF	250.00	14,000
Wall cabinets	33	LF	175.00	5,775
Work surface	36	LF	125.00	4,500
Lab casework				
Plastic laminate casework				
Base cabinets with epoxy countertop and backsplash	677	LF	325.00	220,025
Wall cabinets	370	LF	200.00	74,000
Shelving	181	LF	225.00	40,725
Stainless steel				
Base cabinets with countertop	25	LF	600.00	15,000
Shelving	19	LF	400.00	7,600
Chalkboards, insignia and graphics, etc.				
Allow for code signage	56,250	SF	0.15	8,438
Allow for identification signage	56,250	SF	0.35	19,688
Allow for chalkboards and whiteboards	56,250	SF	0.25	14,063

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Allow for tack boards and peg boards	56,250	SF	0.50	28,125
Allow for bulletin boards and directories	56,250	SF	0.20	11,250
Light and vision control				
Allow for sunshades	2,217	SF	10.00	22,170
Allow for operable blinds	5,365	SF	5.00	26,825
Conveying & powered mechanical equipment				
Allow for loading dock equipment	1	LS	30,000.00	30,000
Amenities and convenience items				
Allow for fire extinguisher and cabinets	19	EA	400.00	7,600
Allow for projection screens	56,250	SF	0.20	11,250
Allow for lockers	94	EA	350.00	32,900
Special use equipment of all types				
Lab equipment				
Lab sinks	52	EA	750.00	39,000
Lab outlets	158	EA	85.00	13,430
Chemical fume hoods, 6'	8	EA	9,000.00	72,000
Radioisotope chemical fume hoods, 6'	1	EA	12,000.00	12,000
Bio-safety cabinets, 6'	56	EA	12,500.00	700,000
B3 w/centrifuge, 4' (OFCI)	6	EA	2,500.00	15,000
Glasswasher	1	EA	75,000.00	75,000
Glassware dryer	1	EA	30,000.00	30,000
Cold rooms	220	SF	400.00	88,000
Warm rooms	120	SF	400.00	48,000
7 liter fermentors	1	EA	50,000.00	50,000
Bioreactors	1	EA	500,000.00	500,000
Lyophilizer	2	EA	100,000.00	200,000
Autoclaves	6	EA	95,000.00	570,000
Rack autoclave w/bioseal	1	EA	250,000.00	250,000
Cage rack washer	1	EA	110,000.00	110,000
Steam gun sets	2	EA	2,000.00	4,000
Cage and bottle washers	2	EA	75,000.00	150,000
Tunnel washers	1	EA	230,000.00	230,000
Bedding filler dispenser	1	EA	30,000.00	30,000
Bedding dispenser	1	EA	30,000.00	30,000
Chlori-flush station	1	EA	5,000.00	5,000
Bottle filler station	1	EA	65,000.00	65,000
Sterile fill unit	1	EA	50,000.00	50,000
Class 100 clean room allowance	180	SF	1,000.00	180,000
Sterile pass-throughs	3	EA	10,000.00	30,000
Small capacity tissue digesters (OFCI)	2	EA	1,500.00	3,000
Ventilated cage racks (OFCI)	16	EA	1,000.00	16,000
Animal isolation cubicles (OFCI)	8	EA	1,500.00	12,000
Controlled substance safe	1	EA	15,000.00	15,000
Commercial clothes dryer	1	EA	750.00	750
Commercial clothes washer	2	EA	750.00	1,500
Horizontal laminar flow cabinet, 6'	1	EA	10,000.00	10,000
Veterinary services equipment and table	1	LS	4,000.00	4,000
				4,255,138

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
9. Stairs & Vertical Transportation				
Pedestrian and wheelchair ramps Allow for wheelchair ramp	1	LS	10,000.00	10,000
Staircase flights - floor to floor Allow for circulation stairs	7	FLT	12,500.00	87,500
Elevators				
Allow for passenger elevators	3	STP	40,000.00	120,000
Allow for service elevator	3	STP	50,000.00	150,000
				367,500
10. Plumbing Systems				
Sanitary fixtures and connection piping Plumbing fixtures	55	EA	1,000.00	55,000
Institutional fixtures - installation and local connection only Lab sinks, cup sinks, eyewash & showers	74	EA	400.00	29,600
Sanitary waste, vent and service piping				
Floor drains and sinks	41	EA	350.00	14,350
Rough-in to plumbing fixtures	55	EA	5,500.00	302,500
Water treatment, storage and circulation				
Steam to HW heaters	2	EA	20,000.00	40,000
Expansion tanks	2	EA	1,000.00	2,000
Circulation pumps	4	EA	3,000.00	12,000
Water softener	1	EA	15,000.00	15,000
Laboratory & industrial process services				
Laboratory air compressor, dryer and filter station	1	EA	100,000.00	100,000
Alkaline digester package	100	LB	500.00	50,000
Waste water treatment package	4,000	GAL	250.00	1,000,000
Laboratory air piping	56,250	SF	1.50	84,094
Industrial H&CW piping, incl tempered water, rough-in to lab fixtures	74	EA	5,450.00	403,300
Carbon dioxide piping	56,250	SF	0.26	14,625
Lab services connections to biosafety cabinets etc	65	EA	1,000.00	65,000
Valves and specialties	1	LS	100,000.00	100,000
Pipe rack	56,250	SF	0.65	36,563
Acid waste and vent				
Acid waste, vent and fittings; polypropylene, rough-in to lab sinks etc.	74	EA	3,000.00	222,000
Surface water drainage				
Roof and overflow drains	46	EA	280.00	12,880
Drain piping	1,656	LF	30.00	49,680
Sump pumps	1	EA	15,000.00	15,000

Item Description	Quantity	Unit	Rate	Total
Gas and fuel oil storage and piping				
Fuel oil bulk storage tank; above ground, including all ancillaries	7,500	GAL	18.00	135,000
First fill of fuel oil	7,500	GAL	2.50	18,750
Fuel oil piping; single wall	400	LF	35.00	14,000
Leak detection system	1	LS	5,000.00	5,000
Natural gas piping	56,250	SF	2.28	127,969
Test and sterilize	1	LS	120,000.00	120,000
				3,044,310

11. Heating, Ventilation & Air Conditioning

Heat generation and chilling				
Gas fired steam boilers & ancillaries	15,000	LBS/HR	7.50	112,500
Steam to HHW heaters	3	EA	15,000.00	45,000
Chilled water system chiller; water cooled	600	TN	400.00	240,000
Process chilled water system chiller; water cooled	50	TN	450.00	22,500
Chilled water system cooling tower	650	TN	120.00	78,000
Waste water treatment heat exchanger	1	EA	9,000.00	9,000
Chemical treatment	1	EA	10,000.00	10,000
Thermal storage and circulation pumps				
Dearator boiler feed package	1	LS	8,000.00	8,000
Circulating pumps; HHW, <= 200gpm	2	EA	4,500.00	9,000
Circulating pumps; CHW; <=400 gpm	4	EA	4,800.00	19,200
Condenser water pumps; <=600 gpm	4	EA	3,500.00	14,000
Waste water treatment cooling pumps; <=450gpm	1	EA	6,000.00	6,000
VFD	95	HP	250.00	23,750
Condensate return/pump receiver unit	1	EA	15,000.00	15,000
Vibration isolation	11	EA	1,000.00	11,000
Piping, fittings, valves and insulation				
HHW piping, fittings, valves and insulation	56,250	SF	3.80	213,750
CHW piping, fittings, valves and insulation	56,250	SF	1.50	84,375
Process chilled water piping	1	LS	75,000.00	75,000
Steam piping, fittings, valves and insulation	56,250	SF	3.50	196,875
Condenser water piping	150	LF	200.00	30,000
Air handling equipment				
Custom air handling units; PACE quality	72,460	CFM	17.00	1,231,820
Heat recovery system including coils, pumps, piping and controls	1	LS	25,000.00	25,000
Office air handling units	15,200	CFM	4.10	62,320
VAV units with reheat	38	EA	900.00	34,200
Humidifiers	1	LS	<i>Included with AHU</i>	
Phoenix/butterfly air valves including control connection	1	LS	<i>Included with Controls</i>	
Sound attenuation	87,660	CFM	0.35	30,681
Local fan coil units for data rooms etc.	1	LS	17,500.00	17,500

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Air distribution and return				
Galvanized steel ductwork	112,000	LB	5.85	655,200
Stainless steel laboratory exhaust duct	84,500	LB	13.00	1,098,500
Generator exhaust	100	LF	250.00	25,000
Dampers; volume	327	EA	125.00	40,875
Dampers; fire/smoke	30	EA	1,500.00	45,000
Diffusers and return air grilles				
Diffusers, registers and grilles	327	EA	150.00	49,050
HEPA filter banks	52,730	CFM	20.00	1,054,600
Barrier supply HEPA filters	6	EA	1,500.00	9,000
Controls, instrumentation and balancing				
DDC control system including laboratory controls	56,250	SF	24.50	1,378,125
Independent exhaust ventilation				
Corrosion resistant exhaust fan with exhaust stack	72,460	CFM	3.15	228,249
Variable speed drives	190	HP	250.00	47,500
Miscellaneous fans	1	LS	30,000.00	30,000
Testing and balancing				
Testing and balancing	2,000	HR	75.00	150,000
Commissioning	1	LS	100,000.00	100,000
				7,535,570

12. Electrical Lighting, Power & Communication

Main service and distribution etc.				
Transformer substations	3,000	KVA	95.00	285,000
Distribution switchboards and connections	2,500	AMP	50.00	125,000
Motor control centers	2	EA	40,000.00	80,000
Distribution panelboards	7,500	AMP	13.00	97,500
Stepdown transformers	1,200	KVA	90.00	108,000
Feeder conduit and wire	1	LS	105,000.00	105,000
Emergency or uninterrupted power				
Emergency generator, switchboard, ATS, transformers, MCC and feeders	1,500	KW	560.00	840,000
Machine and equipment power				
Connections and switches	56,250	SF	1.95	109,688
User convenience power				
Panelboards, feeders and receptacles including conduit and wire	1,143	EA	350.00	400,050
Lighting				
Panelboards, feeders and fixtures including conduit and wire and switching	1,725	EA	450.00	776,250

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Lighting and power specialties				
Grounding system	1	LS	45,000.00	45,000
Lighting controls	1	LS	90,000.00	90,000
Clocks system	1	LS	5,000.00	5,000
Telephone and communications systems				
Telephone/data outlets including conduit and cable	56,250	SF	4.50	253,125
Cable trays	56,250	SF	0.55	30,938
AV/CATV conduit system	56,250	SF	0.25	14,063
Alarm and security systems				
Fire alarm control panel, annunciator and devices	56,250	SF	5.50	309,375
Security system allowance - raceways and devices	1	LS	550,000.00	550,000
				4,223,988

13. Fire Protection Systems

Fire sprinkler systems - complete				
Automatic wet sprinkler system	77,970	SF	2.70	210,519
Premium for dry pipe / preaction in ABSL-3 spaces	1	LS	20,000.00	20,000
				230,519

SITWORK COMPONENT SUMMARY

		Gross Area: 85,000 SF	
		\$/SF	\$x1,000
14. Site Preparation & Demolition		2.87	244
15. Site Paving, Structures & Landscaping		7.15	608
16. Utilities on Site		10.35	880
TOTAL BUILDING & SITE (1-16)		20.38	1,732
Estimating Contingency	12.00%	2.45	208
Escalation to Start Date	10.36%	2.12	180
Bid Contingency	1.50%	0.26	22
Subcontractor Bonds	1.00%	0.31	26
MACC Contingency	2.50%	0.51	43
Reimbursable Expenses	2.00%	0.46	39
MAXIMUM ALLOWABLE CONSTRUCTION COST (MACC)		26.47	2,250
Specified Fixed General Conditions	3.50%	0.93	79
GC/CM Fee	4.00%	1.09	93
TOTAL CONSTRUCTION COST		28.50	2,422
		<i>February 2007</i>	

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
14. Site Preparation & Building Demolition				
Demolition of buildings and structures				
Demolition of existing brick buildings	9,932	SF	10.00	99,320
Demolition of existing wood framed buildings	2,036	SF	7.50	15,270
Site protective construction				
Allow for erosion control	85,000	SF	0.15	12,750
Allow for temporary construction	85,000	SF	0.25	21,250
Site clearing and grading				
Allow for site clearing and grub	85,000	SF	0.20	17,000
Allow for site rough grade	85,000	SF	0.75	63,750
Cutting and drilling				
Allow for miscellaneous site sawcutting	1	LS	3,500.00	3,500
Selective demolition and removal				
Allow for miscellaneous site paving removal	7,500	SF	1.00	7,500
Allow for miscellaneous tree removal	1	LS	2,500.00	2,500
Allow for miscellaneous site furnishings removal	1	LS	1,500.00	1,500
				244,340
15. Site Paving, Structures & Landscaping				
Vehicular paving and curbs				
Allow for loading dock access and turnaround	5,000	SF	5.00	25,000
Pedestrian paving				
Allow for sidewalk and curb replacement	7,500	SF	5.00	37,500
Allow for site hardscape	12,425	SF	8.00	99,400
Structures and water features, etc.				
Allow for site structures	1	LS	50,000.00	50,000
Perimeter security structures and fencing	1	LS	125,000.00	125,000
Drainage				
Allow for site drainage	24,925	SF	0.75	18,694
Lighting and power specialties				
Allow for site lighting	49,700	SF	1.00	49,700
Landscape planting and maintenance				
Allow for site softscape	37,275	SF	3.50	130,463
Irrigation				
Allow for irrigation	37,275	SF	1.00	37,275

<i>Item Description</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Fencing and miscellaneous accessories Allow for miscellaneous site furnishings	1	LS	35,000.00	35,000
				608,031

16. Utilities on Site

Water mains - domestic and fire				
Underground piping	200	LF	80.00	16,000
Valves and specialties	1	LS	5,000.00	5,000
Fire hydrants	2	EA	1,500.00	3,000
Connections to existing	2	EA	1,000.00	2,000
Drainage				
Storm drainage including catchbasins etc	700	LF	100.00	70,000
Connections to existing	3	EA	1,000.00	3,000
Sewer	100	LF	80.00	8,000
Manholes	1	EA	3,000.00	3,000
Connections to existing	1	EA	1,000.00	1,000
Add for sewer on-site storage / lift station	1	LS	500,000.00	500,000
Central heating				
Central steam piping, valves & insulation	400	LF	120.00	48,000
Natural gas				
Underground piping	200	LF	80.00	16,000
Electrical				
Electrical main	200	LF	150.00	30,000
Telephone and signal systems				
Data/communications	200	LF	250.00	50,000
Utility tunnel extension	50	LF	2,500.00	125,000
				880,000

COMPARISON SUMMARY

	Conceptual Cost Plan		Pre-Design Cost Plan 9.27.04		Difference +/-	
	56,520 SF		122,000 SF		-65,481 SF	
	\$/SF	\$x1,000	\$/SF	\$x1,000	\$/SF	\$x1,000
1. Foundations	11.68	660	15.18	1,852	(3.50)	(1,192)
2. Vertical Structure	22.42	1,267	13.68	1,668	8.74	(401)
3. Floor & Roof Structures	43.21	2,442	30.28	3,694	12.93	(1,252)
4. Exterior Cladding	40.78	2,305	25.04	3,055	15.74	(750)
5. Roofing & Waterproofing	7.59	429	5.73	699	1.86	(270)
Shell (1-5)	125.68	7,104	89.90	10,968	35.78	(3,864)
6. Interior Partitions, Doors & Glazing	32.45	1,834	22.03	2,688	10.42	(853)
7. Floor, Wall & Ceiling Finishes	17.60	995	13.01	1,588	4.59	(593)
Interiors (6-7)	50.06	2,829	35.04	4,275	15.02	(1,446)
8. Function Equipment & Specialties	75.29	4,255	56.04	6,837	19.25	(2,582)
9. Stairs & Vertical Transportation	6.50	368	5.14	628	1.36	(260)
Equipment & Vertical Transportation (8-9)	81.79	4,623	61.18	7,464	20.61	(2,842)
10. Plumbing Systems	53.86	3,044	45.68	5,573	8.18	(2,529)
11. Heating, Ventilating & Air Conditioning	133.33	7,536	62.12	7,578	71.21	(43)
12. Electric Lighting, Power & Communications	74.74	4,224	50.14	6,117	24.60	(1,893)
13. Fire Protection Systems	4.08	231	3.50	427	0.58	(196)
Mechanical & Electrical (10-13)	266.00	15,034	161.44	19,695	104.56	(4,661)
Total Building Construction (1-13)	523.53	29,590	347.56	42,403	175.97	(12,813)
14. Site Preparation & Demolition	4.32	244	0.76	93	3.56	151
15. Site Paving, Structures & Landscaping	10.76	608	8.02	979	2.74	(371)
16. Utilities on Site	15.57	880	4.07	496	11.50	384
Total Site Construction (14-16)	30.65	1,732	12.85	1,568	17.80	164
TOTAL BUILDING & SITE (1-16)	554.19	31,322	360.41	43,971	193.78	(12,648)
Estimating Contingency	66.50	3,759	72.08	8,794	(5.58)	(5,035)
Escalation to Start Date	57.44	3,247	25.36	3,094	32.08	153
Bid Contingency	8.24	466	0.00	0	8.24	466
Subcontractor Bonds	5.70	322	4.33	528	1.37	(206)
MACC Contingency	17.10	967	12.52	1,528	4.58	(561)
Reimbursable Expenses	13.76	778	9.82	1,198	3.94	(420)
PLANNED CONSTRUCTION COST	722.94	40,860	484.53	59,113	238.41	(18,252)
Specified Fixed General Conditions	25.31	1,430	27.80	3,392	(2.49)	(1,962)
GC/CM Fee	28.97	1,637	17.82	2,174	11.15	(537)
RECOMMENDED BUDGET	777.22	43,928	530.15	64,679	247.07	(20,751)