

NATIONAL ACCELERATOR LABORATORY  
RESEARCH SUPPORT BUILDING

Stanford  
California

60% CDR

COST ESTIMATE - RECONCILED

April 29th, 2009



111 Pine Street  
Suite 1315  
San Francisco  
CA, 94111

SLAC NAL  
Palo Alto  
California





**OVERALL SUMMARY**

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**OVERALL SUMMARY**

	<b>Area</b>	<b>Cost</b>	<b>Cost/SF</b>	<b>Comment</b>
New Office Building	66,686 SF	\$38,237,137	\$573	
<b>TOTAL</b>	<b>66,686 GSF</b>	<b>\$38,237,137</b>	<b>\$573</b>	

**KEY CRITERIA**

**AREA TABULATION**

Floor	Area	Perimeter	Height	Comment
Level 1	20,755	683	15.00	
Level 2	21,120	677	14.00	
Level 3	21,061	677	14.00	
Roof Mechanical	3,750	350	10.00	
<b>TOTAL</b>	<b>66,686 GSF</b>	<b>683 LF</b>	<b>53.00 LF</b>	

**BUILDING CRITERIA**

Building Footprint	20,755 SF	Roof Area	21,120 SF
Total Site Area	73,984 SF	Façade Area	32,701 SF
Net Site Area	53,229 SF	Site Perimeter	1,104 LF
Planned Occupancy	355 HC		

**BUILDING METRICS [un-escalated]**

Skin to Floor Ratio	49.04 %	Area / Occupant	188 GSF / HC
Glazed Skin %	23 %	Partition Length / GSF	0.10 LF / GSF
Building Cost / GSF	573 \$ / GSF	Building Cost / Occupant	107,710 \$ / HC
Sitework Cost / Site Area	58 \$ / SF		

**CONSTRUCTION SCHEDULE**

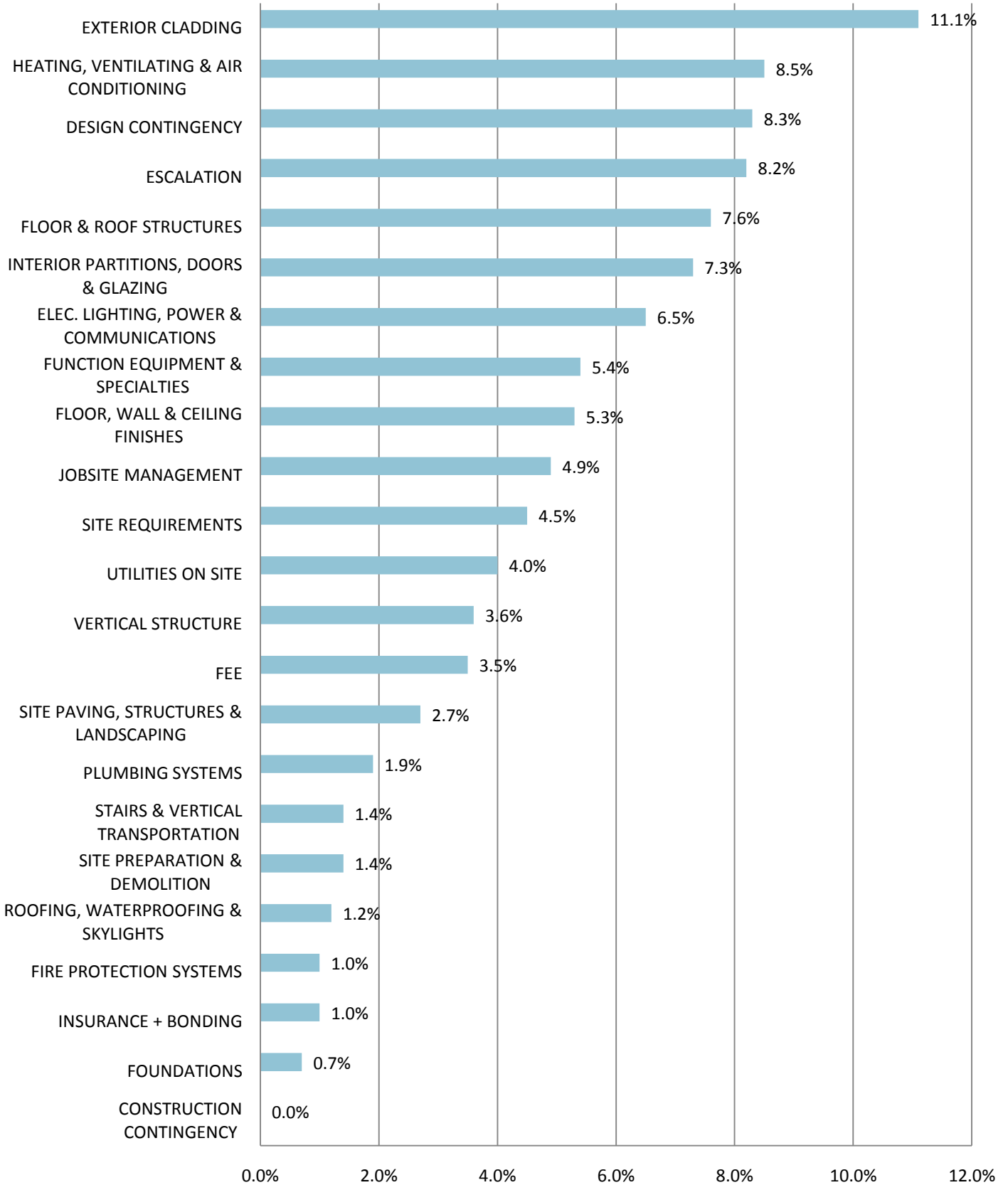
Construction Start Date	Apr-11	Construction End Date	Dec-12
Mid-date of Construction	Feb-12	Construction Duration	20 months
Escalation Period	38 months		

**BUILDING COMPONENT SUMMARY**

**GSF :** 66,686

SECTION	%	TOTAL	\$ / SF	COMMENTS
1 FOUNDATIONS	1.0%	254,016	3.81	
2 VERTICAL STRUCTURE	5.2%	1,374,994	20.62	
3 FLOOR & ROOF STRUCTURES	11.0%	2,913,191	43.69	
4 EXTERIOR CLADDING	15.9%	4,225,622	63.37	
5 ROOFING, WATERPROOFING & SKYLIGHTS	1.7%	462,667	6.94	
<b>SHELL (1-5)</b>	<b>34.7%</b>	<b>9,230,490</b>	<b>138.42</b>	
6 INTERIOR PARTITIONS, DOORS & GLAZING	10.5%	2,793,915	41.90	
7 FLOOR, WALL & CEILING FINISHES	7.6%	2,018,847	30.27	
<b>INTERIORS (6-7)</b>	<b>18.1%</b>	<b>4,812,762</b>	<b>72.17</b>	
8 FUNCTION EQUIPMENT & SPECIALTIES	7.8%	2,069,532	31.03	
9 STAIRS & VERTICAL TRANSPORTATION	2.1%	549,000	8.23	
<b>EQUIPMENT &amp; VERTICAL TRANSPORTATION (8-9)</b>	<b>9.8%</b>	<b>2,618,532</b>	<b>39.27</b>	
10 PLUMBING SYSTEMS	2.7%	707,785	10.61	
11 HEATING, VENTILATING & AIR CONDITIONING	12.2%	3,245,972	48.68	
12 ELEC. LIGHTING, POWER & COMMUNICATIONS	9.4%	2,502,859	37.53	
13 FIRE PROTECTION SYSTEMS	1.5%	396,773	5.95	
<b>MECHANICAL &amp; ELECTRICAL (10-13)</b>	<b>25.8%</b>	<b>6,853,389</b>	<b>102.77</b>	
<b>TOTAL BUILDING CONSTRUCTION (1-13)</b>		<b>23,515,173</b>	<b>352.63</b>	
14 SITE PREPARATION & DEMOLITION	2.0%	536,645	8.05	
15 SITE PAVING, STRUCTURES & LANDSCAPING	3.8%	1,015,867	15.23	
16 UTILITIES ON SITE	5.8%	1,530,212	22.95	
<b>TOTAL SITE CONSTRUCTION</b>	<b>11.6%</b>	<b>3,082,724</b>	<b>46.23</b>	
<b>TOTAL BUILDING &amp; SITE</b>		<b>26,597,897</b>	<b>398.85</b>	
SITE REQUIREMENTS	6.5%	1,728,863	25.93	\$86,443 per month
JOBSITE MANAGEMENT	7.0%	1,861,853	27.92	\$93,093 per month
INSURANCE + BONDING	1.5%	398,968	5.98	
FEE	5.0%	1,329,895	19.94	
<b>PLANNED CONSTRUCTION COST</b>		<b>31,917,476</b>	<b>478.62</b>	
DESIGN CONTINGENCY	10.0%	3,191,748	47.86	
CONSTRUCTION CONTINGENCY				Excluded
ESCALATION	9.8%	3,127,913	46.91	Assume start date April 2011
<b>RECOMMENDED BUDGET</b>		<b>38,237,137</b>	<b>573.39</b>	total add-ons 43.76%

## Cost Distribution



**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1	<u>Standard Foundations</u>					
2	<u>Pad Footings</u>					subtotal \$23,110, \$367 / cy
3	Concrete	63	CY	220.00	13,860	inc. 10% over pour
4	Formwork, top 1'6"	312	LF	12.00	3,744	
5	Rebar	2,746	LB	1.00	2,746	
6	Excavation	67	CY	25.00	1,675	
7	Backfill	4	CY	20.00	80	
8	Dispose excavated material on-site	67	CY	15.00	1,005	
9						
10	<u>Strip Footings</u>					subtotal \$210,906, \$459 / cy
11	Concrete	459	CY	220.00	100,980	inc. 10% over pour
12	Formwork, top 1'6"	920	LF	12.00	11,040	
13	Rebar	84,216	LB	1.00	84,216	
14	Excavation	477	CY	15.00	7,155	
15	Backfill	18	CY	20.00	360	
16	Dispose excavated material on-site	477	CY	15.00	7,155	
17						
18	<u>Other Foundations</u>					
19	Elevator pit	1	EA	20,000.00	20,000	
20						
21						
22	<b>FOUNDATIONS</b>				<b>254,016</b>	<b>\$3.81 / SF</b>
23						
24	<u>Floor Construction</u>					12.46 lb / sf
25	<u>Steel Frame</u>					
26	Columns	441,945	LB	1.65	729,209	
27	Allow for bolts, plates, connections	66,292	LB	1.65	109,382	
28	Base plates	43	EA	1,100.00	47,300	
29						
30	<u>Roof Construction</u>					11.78 lb / sf
31	<u>Steel Frame</u>					
32	Columns	237,261	LB	1.65	391,481	
33	Allow for bolts, plates, connections	35,589	LB	1.65	58,722	
34	Special column	43	LF	500.00	21,500	
35	Braced frames	6	EA	2,000.00	12,000	
36	Base plates	12	EA	450.00	5,400	at penthouse
37						
38	<b>VERTICAL STRUCTURE</b>				<b>1,374,994</b>	<b>\$20.62 / SF</b>
39						
40	<u>Slab On Grade - 8" thick</u>					subtotal \$437,836, \$20 / sf
41	Concrete	675	CY	300.00	202,500	inc. 5% over pour
42	Formwork	2,275	LF	12.00	27,300	
43	Rebar	105,121	LB	1.00	105,121	
44	Excavation	903	CY	12.00	10,836	
45	2" Gravel	140	CY	45.00	6,300	
46	Vapor barrier	22,283	SF	0.60	13,370	
47	2" Sand	140	CY	45.00	6,300	
48	Concrete curbs, allow	706	LF	35.00	24,710	
49	Dispose excavated material on-site	903	CY	15.00	13,545	
50	Finish to slab	22,283	SF	1.25	27,854	
51						
52	<u>Floor Construction</u>					14.84 lb / sf
53	Beams	526,186	LB	1.65	868,207	
54	Allow for bolts, plates, connections	78,928	LB	1.65	130,231	
55	Moment connections	100	EA	1,200.00	120,000	
56	18 GA 3" metal deck	40,789	SF	4.25	173,353	
57	3 1/2" concrete fill to metal deck, reinforced	40,789	SF	5.15	210,063	NWC 3 1/2"
58	Slab edge closure	1,928	LF	15.00	28,920	
59	Forming small openings in deck	60	EA	100.00	6,000	allowance
60	Forming medium openings in deck	20	EA	200.00	4,000	allowance
61						
62	<u>Roof Construction</u>					13.42 lb / sf
63	Beams	226,439	LB	1.65	373,624	
64	Allow for bolts, plates, connections	33,966	LB	1.65	56,044	
65	Moment connections	50	EA	1,200.00	60,000	
66	Premium for architectural quality	8,749	LB	2.35	20,560	
67	18 GA 3" metal deck	19,409	SF	4.25	82,488	



**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
68	18 GA 2" metal deck	3,750	SF	4.00	15,000	
69	3 1/2" concrete fill to metal deck, reinforced	15,055	SF	5.15	77,533	NWC 3 1/2"
70	4 1/2" concrete fill to metal deck, reinforced	4,354	SF	6.95	30,260	NWC 4 1/2"
71	Slab edge closure	950	LF	15.00	14,250	
72	Forming small openings in deck	30	EA	100.00	3,000	allowance
73	Forming medium openings in deck	10	EA	200.00	2,000	allowance
74	6" concrete housekeeping pad for HVAC unit	156	SF	12.00	1,872	
75	Formwork	50	LF	12.00	600	
76	Allow for forming balcony at 2nd floor	635	SF	60.00	38,100	
77	Allow for structural supports to lobby glazing	2,275	SF	70.00	159,250	
78						
79						
<b>80</b>	<b>FLOOR &amp; ROOF STRUCTURES</b>				<b>2,913,191</b>	<b>\$43.69 / SF</b>
81						
82	<u>Exterior Walls</u>					subtotal \$926,652, \$58 / sf
83	Terracotta cavity wall system	7,795	SF	80.00	623,600	
84	Perforated metal roof screen	2,832	SF	25.00	70,800	
85	Painted steel C channel	1,052	LF	75.00	78,900	
86	Finish / cladding to u/side and edge of balcony	735	SF	80.00	58,800	
87	Wall capping	760	LF	40.00	30,400	
88	Flashings	1,520	LF	20.00	30,400	
89	Allow for caulking and sealants	33,752	SF	1.00	33,752	
90	Allow for canopy over green roof	1,435	SF	75.00	107,625	
91						
92	<u>Exterior Windows</u>					subtotal \$2,436,610, \$37 / sf
93	Low-E clear glass curtain wall	16,538	SF	105.00	1,736,490	
94	Spandrel glazing panels	5,772	SF	110.00	634,920	
95	Clerestorey glazing	815	SF	80.00	65,200	
96						
97	<u>Sunshade / Vertical Fins / Canopies</u>					subtotal \$448,940, \$8 / sf
98	Terracotta sunshades	3,064	LF	85.00	260,440	South side only
99	Horizontal sunshade/lightshelf	377	LF	500.00	188,500	South side only
100	Vertical wood fins	812	LF	60.00	48,720	West side only
101	Vertical mullion fins	817	LF	75.00	61,275	North side only
102	Entry awning at lobby	63	SF	300.00	18,900	
103						
104	<u>Exterior Doors</u>					subtotal \$68,400, \$1 / sf
105	Glazed entrance door, double	5	PR	8,000.00	40,000	
106	Glazed door single	2	EA	3,200.00	6,400	
107	HM double door	5	PR	4,000.00	20,000	
108	HM single door	1	EA	2,000.00	2,000	
109						
110	<u>Exterior Balustrading and Screens</u>					subtotal \$108,500, \$2 / sf
111	Glazed balustrading at balcony	55	LF	500.00	27,500	
112	Glazed screen at green roof, 6' high	90	LF	900.00	81,000	
113						
114						
<b>115</b>	<b>EXTERIOR CLADDING</b>				<b>4,225,622</b>	<b>\$63.37 / SF</b>
116						
117	<u>Roof Coverings</u>					subtotal \$356,927, \$18 / sf
118	Roof covering system including insulation	19,639	SF	13.50	265,127	
119	Roof flashings	2,600	LF	20.00	52,000	
120	Roof walk pads	1,000	SF	5.00	5,000	allowance
121	Green roof	580	SF	60.00	34,800	
122						
123	<u>Roof Openings</u>					
124	Allow for forming + flashing roof penetrations	1	LS	10,000.00	10,000	
125						
126	<u>Waterproofing</u>					
127	Waterproofing balcony	635	SF	12.00	7,620	
128	Waterproofing at green roof	810	SF	12.00	9,720	allowance
129						
130	<u>Skylights</u>					
131	Skylight, including secondary framing	560	SF	140.00	78,400	
132						
133						
<b>134</b>	<b>ROOFING, WATERPROOFING &amp; SKYLIGHTS</b>				<b>462,667</b>	<b>\$6.94 / SF</b>

**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
135						
136	<u>Partitions</u>					subtotal \$1,434,695, \$21 / sf
137	Interior partitions, 4" metal stud, gyproc	47,257	SF	11.50	543,456	
138	Interior partitions, 6" metal stud, gyp, insulation	28,700	SF	14.00	401,800	
139	Interior partitions, 6" metal stud, 2 layers gyp, insulation	7,905	SF	17.00	134,385	
140	Shaftwall at elevator	2,384	SF	17.00	40,528	
141	Plumbing wall	1,125	SF	18.00	20,250	
142	Seal head of partition with insulation	2,910	LF	6.00	17,460	allowance
143	Furring around columns	10,707	SF	8.00	85,656	
144	Furring to interior face of exterior walls	13,567	SF	7.00	94,969	
145	Form vertical soffit at skylight	276	LF	80.00	22,080	
146	Form bulkhead above glazed screens	594	LF	40.00	23,760	
147	Insulation to exterior walls	13,567	SF	1.50	20,351	
148	Allow for blocking and bracing within walls	1	LS	10,000.00	10,000	allowance
149	Caulking and sealants	1	LS	20,000.00	20,000	allowance
150						
151	<u>Interior Doors</u>					subtotal \$479,900, \$7 / sf
152	Interior glazed doors, single	24	EA	2,000.00	48,000	
153	Interior wood doors, single	214	EA	1,800.00	385,200	
154	Interior HM doors, single	12	EA	1,650.00	19,800	
155	Interior wood doors, double	1	EA	3,600.00	3,600	
156	Interior HM doors, double	1	EA	3,300.00	3,300	
157	Allow for security hardware	1	LS	20,000.00	20,000	
158						
159	<u>Interior Glazing</u>					subtotal \$544,520, \$8 / sf
160	Glazed screens at conference rooms	8,242	SF	60.00	494,520	
161	Allow for interior glazed screens, sidelites	1,000	SF	50.00	50,000	allowance
162	Allow for clerestory glazing at offices	3,240	SF	60.00	194,400	allowance
162						
163	<u>Interior Balustrading</u>					subtotal \$140,400, \$2 / sf
164	Glazed balustrading	312	LF	450.00	140,400	
165						
166						
167	<b>INTERIOR PARTITIONS, DOORS &amp; GLAZING</b>				<b>2,793,915</b>	<b>\$41.9 / SF</b>
168						
169	<u>Wall Finishes</u>					subtotal \$628,447, \$9 / sf
170	Paint to walls	142,487	SF	1.00	142,487	
171	Allow for touch up	1	LS	20,000.00	20,000	allowance
172	Ceramic tile to restrooms	2,560	SF	16.00	40,960	
173	Allow for acoustical wall panels	5,000	SF	25.00	125,000	allowance
174	Allow for specialty wall finishes	6,000	SF	50.00	300,000	allowance
175						
176	<u>Floor Finishes</u>					subtotal \$534,518, \$8 / sf
177	Sealed concrete	1,200	SF	2.00	2,400	electrical rooms
178	Allow for carpet tile/VCT to general areas	61,096	SF	5.00	305,480	
179	Stone floor to lobby, atrium and balcony	2,109	SF	70.00	147,630	lobby, atrium, balcony
180	Ceramic toilet to restrooms	2,281	SF	16.00	36,496	
181	Stone base	17	LF	70.00	1,190	lobby
182	Resilient base	14,249	LF	2.90	41,322	
183						
184	<u>Ceiling Finishes</u>					subtotal \$797,430, \$12 / sf
185	Gypsum board ceilings	4,000	SF	11.00	44,000	allowance
186	Gypsum board soffits	1,000	LF	40.00	40,000	allowance
187	ACT suspended ceiling system	62,686	SF	5.00	313,430	
188	Allow for specialty ceiling finishes	10,000	SF	40.00	400,000	allowance
189						
190	<u>Miscellaneous Finishes</u>					
191	Allow for miscellaneous painting	66,686	SF	0.60	40,012	allowance
192	Allow for transitions and thresholds	1	LS	10,000.00	10,000	allowance
193						
194	<u>Stair Finishes</u>					
195	Finish to treads	320	SF	8.00	2,560	allowance
196	Slip resistant stair nosing	840	LF	7.00	5,880	allowance
197						
198						
199	<b>FLOOR, WALL &amp; CEILING FINISHES</b>				<b>2,018,847</b>	<b>\$30.27 / SF</b>

**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
200						
201	<u>Fittings</u>					subtotal \$501,869, \$8 / sf
202	Ladder at elevator pit	1	EA	2,500.00	2,500	
203	Allow for recessed fire extinguisher cabinets	20	EA	500.00	10,000	
204	Toilet cubicles, regular	12	EA	1,200.00	14,400	
205	Toilet cubicles, disabled	6	EA	1,200.00	7,200	
206	Shower cubicle and door	2	EA	1,500.00	3,000	
207	Grab bars, 36"	6	EA	165.00	990	
208	Grab bars, 42"	6	EA	185.00	1,110	
209	Shower grab bars, 48", L shape	2	EA	295.00	590	
210	Toilet tissue dispenser	18	EA	55.00	990	
211	Toilet seat cover dispenser	18	EA	185.00	3,330	
212	Coat hooks	18	EA	28.00	504	
213	Soap dispenser	14	EA	75.00	1,050	
214	Mirrors	180	SF	35.00	6,300	
215	Paper towel dispenser	8	EA	120.00	960	
216	Lockers	8	EA	300.00	2,400	
217	Allow for horizontal blinds at windows	25,780	SF	4.00	103,120	
218	Allow for whiteboards and marker boards	1	LS	30,000.00	30,000	allowance
219	Allow for interior code signage	66,686	SF	0.35	23,340	allowance
220	Allow for interior signage	66,686	SF	0.60	40,012	allowance
221	Miscellaneous metals	66,686	SF	2.00	133,372	allowance
222	Miscellaneous specialties	66,686	SF	0.75	50,015	allowance
223	Rough carpentry	66,686	SF	1.00	66,686	allowance
224						
225	<u>Fixed Furnishings</u>					subtotal \$156,103, \$2 / sf
226	Vanity units	53	LF	200.00	10,600	
227	Base unit and counter	81	LF	350.00	28,350	
228	Wall unit	31	LF	280.00	8,680	
229	Library stacks, double	107	LF	450.00	48,150	
230	Library stacks, single	23	LF	260.00	5,980	
231	Library reception desk	8	LF	500.00	4,000	
232	Counter at atrium	30	LF	400.00	12,000	
233	Allow for miscellaneous shelving	1	LS	5,000.00	5,000	
234	Allow for miscellaneous casework	66,686	SF	0.50	33,343	allowance
235						
236	<u>Moveable Furnishings</u>					subtotal \$1,330,380, \$20 / sf
237	Library table	1	EA	1,800.00	1,800	
238	Atrium tables	8	EA	300.00	2,400	
239	Collaboration tables	6	EA	300.00	1,800	
240	Media room table	3	EA	400.00	1,200	
241	Conference room table, 6'	6	EA	1,250.00	7,500	
242	Conference room table, 10'	6	EA	2,000.00	12,000	
243	Conference room table, 15'	3	EA	3,000.00	9,000	
244	Office desk systems	205	EA	1,000.00	205,000	
245	Conference room chairs	546	EA	400.00	218,400	
246	Office chairs	62	EA	280.00	17,360	
247	Atrium chairs	16	EA	250.00	4,000	
248	Atrium armchairs	8	EA	800.00	6,400	
249	Atrium bar chairs	3	EA	280.00	840	
250	Collaboration chairs	12	EA	250.00	3,000	
251	Library chairs	9	EA	250.00	2,250	
252	Workstations, 7'6"x7'6"	96	EA	5,000.00	480,000	bulk order
253	Workstation chairs	96	EA	250.00	24,000	
254	Allow for miscellaneous furnishings	66,686	SF	5.00	333,430	allowance
255						
256	<u>Equipment</u>					subtotal \$81,180, \$1 / sf
257	Refrigerator	6	EA	2,000.00	12,000	
258	Allow for projector screens	15	EA	1,500.00	22,500	
259	Allow for installing OSCI equipment	66,686	SF	0.20	13,337	allowance
260	Allow for miscellaneous CSCI equipment	66,686	SF	0.50	33,343	allowance
261						
262	<b>FUNCTION EQUIPMENT &amp; SPECIALTIES</b>				<b>2,069,532</b>	<b>\$31.03 / SF</b>

**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
263						
264	<u>Stair Construction</u>					subtotal \$275,000, \$4 / sf
265	Pre-engineered steel stair with concrete filled pans and railings	5	FLT	25,000.00	125,000	
266	Atrium stairs and landings	2	FLT	40,000.00	80,000	
267	Glass balustrading at atrium stairs	140	LF	500.00	70,000	
268						
269	<u>Elevators + Lifts</u>					subtotal \$274,000, \$4 / sf
270	Elevator, 3 stop	2	EA	125,000.00	250,000	3,500lb hydraulic
271	Allow for cab fit-out	2	EA	12,000.00	24,000	allowance
272						
273	<u>Escalators + Moving Walkways</u>					
274						
275	<u>Other Conveying Systems</u>					
276						
277						
278	<b>STAIRS &amp; VERTICAL TRANSPORTATION</b>				<b>549,000</b>	<b>\$8.23 / SF</b>
279						
280	<u>Sanitary fixtures</u>					subtotal \$104,300, \$2 / sf
281	Fixtures, including local connection pipework	45				
282	Waterclosets	18	EA	2,200.00	39,600	
283	Urinals	3	EA	1,200.00	3,600	
284	Lavatories	18	EA	1,800.00	32,400	
285	Service sinks	3	EA	2,300.00	6,900	
286	Pantry sink	1	EA	1,200.00	1,200	
287	Showers	2	EA	4,000.00	8,000	
288	Sensors	36	EA	350.00	12,600	
289						
290	<u>Sanitary and domestic water</u>					subtotal \$243,000, \$4 / sf
291	Rough-in for fixtures, including sanitary waste, vent, domestic hot/cold water, insulation	45	EA	5,000.00	225,000	
292	Water metering	1	EA	2,000.00	2,000	
293	Reduce pressure backflow preventers - 2"	1	LS	6,000.00	6,000	
294	Condensate drainage	1	LS	10,000.00	10,000	
295						
296	<u>Water treatment and circulation</u>					subtotal \$14,000, \$ / sf
297	Gas-fired water heater	1	EA	12,000.00	12,000	
298	Expansion tank	1	EA	600.00	600	
299	Circulation pump	1	EA	800.00	800	
300	Electric water heater point of use	1	EA	600.00	600	
301						
302	<u>Gas distribution</u>	1	LS	15,000.00	15,000	
303						
304	<u>Roof water drainage</u>	66,686	SF	3.00	200,058	
305						
306	Reclaim water system and irrigation	1	LS	50,000.00	50,000	
307						
308	<u>Other Plumbing Systems</u>					subtotal \$81,427, \$1 / sf
309	LEED Commissioning assistance	1	LS	12,527.16	12,527	2%
310	Miscellaneous plumbing	1	LS	18,790.74	18,791	Testing, Sterlization, flushing
311	Firestopping/core drilling	1	LS	6,263.58	6,264	
312	Project requirements (coordination, shop dwg, detailing, project management, material handling, security badging)	1	LS	43,845.06	43,845	
313						
314						
315	<b>PLUMBING SYSTEMS</b>				<b>707,785</b>	<b>\$10.61 / SF</b>
316						
317	<u>Heating/Cooling Generating Systems</u>					subtotal \$53,300, \$1 / sf
318	Gas fired boilers, 520 MBH	2	EA	10,400.00	20,800	
319	Cooling tower, 90 tons	1	EA	18,000.00	18,000	
320	Chilled water heat exchanger	1	EA	12,000.00	12,000	
321	Non-chemical water treatment and seperator	1	LS	2,500.00	2,500	

**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
322						
323	<u>Circulation pumps</u>					subtotal \$58,500, \$1 / sf
324	Air seperators	2	EA	2,000.00	4,000	
325	Expansion tanks	2	EA	600.00	1,200	
326	Heated hot water pumps, 2hp	2	EA	2,500.00	5,000	
327	Chilled water pumps, 5hp	4	EA	3,000.00	12,000	
328	Thermal storage pumps, 5hp	2	EA	3,000.00	6,000	
329	Variable frequency drives	34	HP	450.00	15,300	
330	Vibration isolation	1	LS	15,000.00	15,000	
331						
332	<u>Distribution Systems</u>					subtotal \$235,700, \$4 / sf
333	Heated hot water piping	600	LF	50.00	30,000	
334	Valves and specialties					
335	Pumps	2	EA	800.00	1,600	
336	AHU	1	EA	2,000.00	2,000	
337	Boiler	2	EA	1,600.00	3,200	
338	Insulation	600	LF	12.00	7,200	
339						
340	Chilled water piping	2,000	LF	60.00	120,000	
341	Valves and specialties					
342	Pumps	4	EA	800.00	3,200	
343	AHU	1	EA	2,000.00	2,000	
344	Storage tank	2	EA	12,000.00	24,000	
345	Cooling tower	1	EA	5,000.00	5,000	
346	Chilled beams	30	EA	450.00	13,500	
347	Insulation	2,000	LF	12.00	24,000	
348						
349	<u>Terminal + Packaged Units</u>					subtotal \$1,100,575, \$17 / sf
350	Air handling unit, 36,000 cfm including sf,rf,cc, hc and filters	1	EA	234,000.00	234,000	
351	Dadanco 2-pipe active chilled beams (4' and 8')	33,343	SF	25.00	833,575	50% Ceiling coverage
352	Fan coil units	3	EA	5,000.00	15,000	
353	Sound attnution	36,000	CFM	0.50	18,000	
354						
355	<u>Air distribution and return</u>					subtotal \$839,406, \$13 / sf
356	Galvanized sheet metal ductwork,	43,346	LBS	13.50	585,171	
357	Flexible ductwork	3,335	LF	13.00	43,355	
358	Volume dampers	667	EA	60.00	40,020	
359	Combination fire/smoke dampers	8	EA	2,500.00	20,000	
360	Motorized dampers	1	LS	40,000.00	40,000	
361	Duct insulation	33,343	SF	2.80	93,360	
362	Acoustical lining	5,000	SF	3.50	17,500	
363						
364	<u>Diffusers, registers and grilles</u>					
365	Standard diffusers/grilles	66,686	SF	3.00	200,058	
366						
367	<u>Control + Instrumentation</u>					
368	Direct digital controls systems					subtotal \$280,750, \$4 / sf
369	Boiler	8	PTS	1,500.00	12,000	
370	Cooling tower	16	PTS	1,500.00	24,000	
371	Chilled water storage tank and heat exchanger	24	PTS	1,500.00	36,000	
372	Pumps	12	PTS	1,500.00	18,000	
373	Air handling unit	25	PTS	1,500.00	37,500	
374	Fan coil units	12	PTS	1,500.00	18,000	
375	Active chilled beams	60	PTS	1,500.00	90,000	
376	Exhaust fans	6	PTS	1,500.00	9,000	
377	CO2 sensors	15	PTS	750.00	11,250	
378	Operable windows	1	LS	25,000.00	25,000	
379						
380	<u>Systems Testing + Balancing</u>					subtotal \$99,900, \$2 / sf
381	Boiler	16	HR	135.00	2,160	
382	Cooling tower	20	HR	135.00	2,700	
383	Chilled water storage tank and heat exchanger	24	HR	135.00	3,240	
384	Pumps	16	HR	135.00	2,160	
385	Air handling unit	32	HR	135.00	4,320	
386	Active chilled beams	120	HR	135.00	16,200	
387	Diffusers, registers and grilles	334	HR	135.00	45,090	
388	Dryside	124	HR	135.00	16,740	

**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
389	Wetside	35	HR	135.00	4,725	
390	Exhaust fans	4	HR	135.00	540	
391	CO2 sensors	15	HR	135.00	2,025	
392						
393	<u>Exhaust system</u>					subtotal \$30,000, \$ / sf
394	Galvanized sheet metal ductwork,	2,000	LBS	13.50	27,000	
395	Toilet exhaust fans	3,000	CFM	1.00	3,000	
396						
397	<u>Other HVAC Systems</u>					subtotal \$347,783, \$5 / sf
398	LEED Commissioning assistance (Fundamental/Enhanced)	1	LS	86,945.67	86,946	3%
399	Seismic, vibration, acoustical	1	LS	28,981.89	28,982	1%
400	Firestopping/core drilling	1	LS	28,981.89	28,982	1%
401	Project requirements (coordination, shop dwg, detailing, project management, material handling, security badging)	1	LS	202,873.23	202,873	7%
402						
403						
404	<b>HEATING, VENTILATING &amp; AIR CONDITIONING</b>				<b>3,245,972</b>	<b>\$48.68 / SF</b>
405						
406	<u>Electrical Service + Distribution</u>					subtotal \$355,217, \$5 / sf
407	Main switchboard, 480/277V, 1600 Amp	1	EA	34,800.00	34,800	
408	480/277V panels, breakers, feeders	6	EA	8,500.00	51,000	
409	Transformers, feeders, K-4	2	EA	15,000.00	30,000	
410	208/120V distribution panels	2	EA	19,000.00	38,000	
411	208/120V panels, breakers, feeders	10	EA	8,500.00	85,000	
412	Grounding	66,686	SF	0.40	26,674	
413	Connect boilers	2	EA	1,200.00	2,400	
414	Connect hot water pumps	2	EA	1,750.00	3,500	
415	Connect chilled water pumps	4	EA	1,750.00	7,000	
416	Connect cooling tower	1	EA	6,500.00	6,500	
417	Connect misc pumps	2	EA	1,750.00	3,500	
418	Connect air handling units	1	EA	3,500.00	3,500	
419	Connect chiller	1	EA	15,000.00	15,000	
420	Connect elevators	2	EA	7,500.00	15,000	
421	Misc HVAC connections	66,686	SF	0.50	33,343	
422	Emergency generator					excluded - N/A
423	Central UPS					excluded - N/A
424						
425	<u>Lighting + Branch Wiring</u>					subtotal \$818,155, \$12 / sf
426	Supply, install light fixtures	1,100	EA	475.00	522,500	
427	Exit lights	36	EA	250.00	9,000	
428	Premium for lobby lighting	1	LS	15,000.00	15,000	
429	Battery packs, integral to fixtures	275	EA	130.00	35,750	
430	Wall packs	12	EA	750.00	9,000	
431	Lighting back boxes	916	EA	26.00	23,816	
432	Lighting conduit, wire	14,300	LF	7.92	113,256	
433	Occupancy sensors	90	EA	321.00	28,890	
434	Conference room dimming	6	EA	2,000.00	12,000	
435	Low voltage relay panels	3	EA	5,200.00	15,600	
436	Misc. lighting controls	66,686	SF	0.50	33,343	
437						
438	<u>User Convenience Power</u>					subtotal \$252,976, \$4 / sf
439	Convenience outlets, conduit, wire	750	EA	205.00	153,750	
440	Connections to modular furniture	24	EA	650.00	15,600	
441	Gfi receptacles	12	EA	220.00	2,640	
442	WP gfi outlets	12	EA	400.00	4,800	
443	Floor outlets	20	EA	475.00	9,500	
444	Misc. equipment connections	66,686	SF	1.00	66,686	
445						
446	<u>Communications + Security</u>					subtotal \$388,437, \$6 / sf
447	<u>Telephone/data</u>					
448	Outlet boxes, conduit to accessible ceiling space, allow	350	EA	100.00	35,000	
449	Jacks, allow 3/drop avg.	1,050	EA	17.00	17,850	
450	Horizontal cable	157,000	LF	1.25	196,250	

**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
451	Cable tagging, testing	1	LS	16,000.00	16,000	
452	Racks, patch panels, terminations etc.	1	LS	36,000.00	36,000	
453	Riser/backbone conduits, cables	1	LS	25,000.00	25,000	
454	Cable tray	1,400	LF	35.00	49,000	
455	Misc. infrastructure, J-hooks etc.	66,686	SF	0.20	13,337	
456						
457	<u>Fire Alarm</u>					
458	Devices, control panels, etc.	66,686	SF	4.00	266,744	
459						
460	<u>CATV</u>					
461	Outlets with cable	20	EA	380.00	7,600	
462	Head end	1	LS	7,500.00	7,500	
463						
464	<u>Security</u>					
465	Conduit, boxes	66,686	SF	0.50	33,343	
466	Devices, control panels, cabling	66,686	SF	1.50	100,029	
467						
468	<u>Audio/Visual</u>					
469	Conduit, boxes, cabling	66,686	SF	1.25	83,358	
470						
471	<u>Misc.</u>					subtotal \$189,500, \$3 / sf
472	Seismic bracing	1	LS	50,000.00	50,000	
473	Testing, commissioning	1	LS	55,000.00	55,000	
474	Fire stop	1	LS	7,500.00	7,500	
475	Coordination, documentation	1	LS	55,000.00	55,000	
476	Start-up	1	LS	22,000.00	22,000	
477						
478	<u>CCTV</u>					excluded - N/A
479						
480	<u>Clocks</u>					excluded - N/A
481						
482	<u>Paging</u>					excluded - N/A
483						
484						
485	<b>ELEC. LIGHTING, POWER &amp; COMMUNICATIONS</b>				<b>2,502,859</b>	<b>\$37.53 / SF</b>
486						
487	<u>Sprinklers</u>					
488	Automatic wet sprinkler system	66,686	SF	5.50	366,773	
489	Standpipes	1	LS	30,000.00	30,000	
490						
491						
492	<b>FIRE PROTECTION SYSTEMS</b>				<b>396,773</b>	<b>\$5.95 / SF</b>
493						
494	<u>Building Elements Demolition</u>					
495	Demolish and remove (E) trailer structures	20,190	SF	14.50	292,755	
496						
497	<u>Hazardous Components Abatement</u>					
498	Allow for hazardous abatement of (E) structures	20,190	SF	6.00	121,140	
499						
500	<u>Site Clearing</u>					
501	Allow for clearing (E) site	53,794	SF	0.30	16,138	
502	Allow for site survey	1	LS	12,000.00	12,000	
503						
504	<u>Site Demolition + Relocations</u>					
505	Allow for site demolition	53,794	LS	0.50	26,897	
506						
507	<u>Site Earthwork</u>					
508	Allow for site earthwork, cut and fill as required	2,740	CY	15.00	41,100	
509	Allow for fine grading	53,229	SF	0.50	26,615	
510						
511						
512	<b>SITE PREPARATION &amp; DEMOLITION</b>				<b>536,645</b>	<b>\$8.05 / SF</b>



**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
513						
514	<u>Roadways</u>					
515	Allow for patching and repairs to (E) roadway	1	LS	25,000.00	25,000	
516						
517	<u>Parking Lots</u>					subtotal \$259,401, \$4 / sf
518	New asphalt paving	11,358	SF	4.00	45,432	
519	New precast pavers	11,358	SF	15.00	170,370	
519	New curb	1,182	LF	25.00	29,550	
520	Striping	83	EA	18.00	1,494	
521	Allow for road markings	1	LS	2,500.00	2,500	
522	Allow for road/parking signs	1	LS	3,000.00	3,000	
523	Wheel stops	83	EA	85.00	7,055	
524						
525	<u>Pedestrian Paving</u>					subtotal \$307,546, \$5 / sf
526	New concrete paving	14,164	SF	15.00	212,460	
527	Formwork at paving edge	2,388	LF	8.00	19,104	
528	Expansion joint at junction with building	188	LF	8.00	1,504	
529	Pebble border at building edge	970	SF	8.00	7,760	
530	Flat curb	1,669	LF	22.00	36,718	
531	Allow for steps, ramps	1	LS	30,000.00	30,000	
532						
533	<u>Site Development</u>					subtotal \$56,200, \$1 / sf
534	Site furniture	1	LS	50,000.00	50,000	
535	Bike racks	1	EA	1,200.00	1,200	
536	Allow for miscellaneous site features, fixtures	1	LS	5,000.00	5,000	allowance
537						
538	<u>Landscaping</u>					subtotal \$367,720, \$6 / sf
539	Allow for new trees	60	EA	600.00	36,000	
540	Allow for landscaping, irrigation	16,586	SF	20.00	331,720	
541						
542						
543	<b>SITE PAVING, STRUCTURES &amp; LANDSCAPING</b>				<b>1,015,867</b>	<b>\$15.23 / SF</b>
544						
545	<u>Demolition</u>					subtotal \$106,705, \$2 / sf
546	Remove (E) HWS&R	742	LF	20.00	14,840	
547	Remove (E) CHW	151	LF	20.00	3,020	
548	Remove (E) DW	129	LF	20.00	2,580	
549	Remove (E) SD	611	LF	35.00	21,385	
550	Remove (E) SD manholes	4	EA	200.00	800	
551	Remove (E) SS	536	LF	35.00	18,760	
552	Remove (E) SS manholes	1	EA	200.00	200	
553	Remove (E) elec & communication conduit	1,504	LF	15.00	22,560	
554	Remove (E) elec & communication conduit	1,504	LF	15.00	22,560	
555						
556	<u>Water Supply</u>					subtotal \$29,300, \$ / sf
557	2" Domestic Water	100	LF	38.00	3,800	allowance
558	6" Fire Water	100	LF	45.00	4,500	allowance
559	Double detector check	1	EA	6,000.00	6,000	allowance
560	Hydrant	2	EA	6,000.00	12,000	allowance
561	Connection to existing	1	LS	3,000.00	3,000	allowance
562						
563	<u>Sanitary Sewer</u>					subtotal \$77,006, \$1 / sf
564	10" SDR-26	350	LF	58.00	20,300	
565	8" SDR-26	277	LF	48.00	13,296	
566	6" SDR-26	105	LF	42.00	4,410	
567	Manhole	6	EA	6,000.00	36,000	
568	Connection to existing	1	LS	3,000.00	3,000	
569						
570	<u>Storm Sewer</u>					subtotal \$155,534, \$2 / sf
571	24"- SDR-35	609	LF	108.00	65,772	
572	12"- SDR-35	259	LF	58.00	15,022	
573	6" SDR-35	220	LF	42.00	9,240	
574	Catchbasins	5	EA	2,500.00	12,500	
575	Manhole	6	EA	8,000.00	48,000	
576	Connection to existing	1	LS	5,000.00	5,000	



**ESTIMATE DETAIL**

**GSF :** 66,686

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
577						
578	<u>Heating Distribution</u>					
579	Heated hot water, preinsulated direct bury,3"	750	LF	75.00	56,250	allowance -relocated
580	Connection to existing	1	LS	3,000.00	3,000	
581						
582	<u>Cooling Distribution</u>					
583	Chilled water, preinsulated direct bury, 4"	750	LF	90.00	67,500	allowance
584	Connection to existing	1	LS	3,000.00	3,000	
585	Chilled water storage tank, 100,000 gallons, fiberglass belowgrade, incl. connections	1	EA	750,000.00	750,000	
586						
587	<u>Gas</u>					
588	Gas supply pipe, 4"	1,000	LF	40.00	40,000	allowance
589	Connection to existing	1	LS	2,000.00	2,000	
590						
591	<u>Electrical Site Utilities</u>					
592	Incoming power duct bank, allow 300ft	250	LF	250.00	62,500	
593						
594	<u>Site Lighting</u>					subtotal \$67,780, \$1 / sf
595	Pole lights in Parking lots	6	EA	2,500.00	15,000	
596	Pole bases	6	EA	380.00	2,280	
597	Conduit, wire, trenching	600	LF	17.50	10,500	
598	Misc. landscape lighting	1	LS	35,000.00	35,000	
599	Exterior lighting controls	1	LS	5,000.00	5,000	
600						
601	<u>Site Communications + Security</u>					
602	Communications duct banks	160	LF	60.23	9,637	Incoming cabling by SLAC
603	Reroute existing communications duct banks	1	ALW	100,000.00	100,000	
604						
605	<u>Other Site Systems + Equipment</u>					
606						
607						
608	<b>UTILITIES ON SITE</b>				<b>1,530,212</b>	<b>\$22.95 / SF</b>