

The Downtown Family YMCA

Detroit, MI



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Department of Architectural Engineering
Construction Management
Technical Report 2
October 31, 2005

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Executive Summary

This technical assignment, in comparison to the first, will give the reader a more detailed look at the schedule of the project and places a focus on estimates of different building systems. Careful evaluation this data will help in the understanding of the key features of the project that affect project execution.

The first item that will be presented is the detailed schedule. This schedule has included more activities so that it is easier to visualize how large tasks are executed (by showing more activities) and so that it is easier to assign activities by trade.

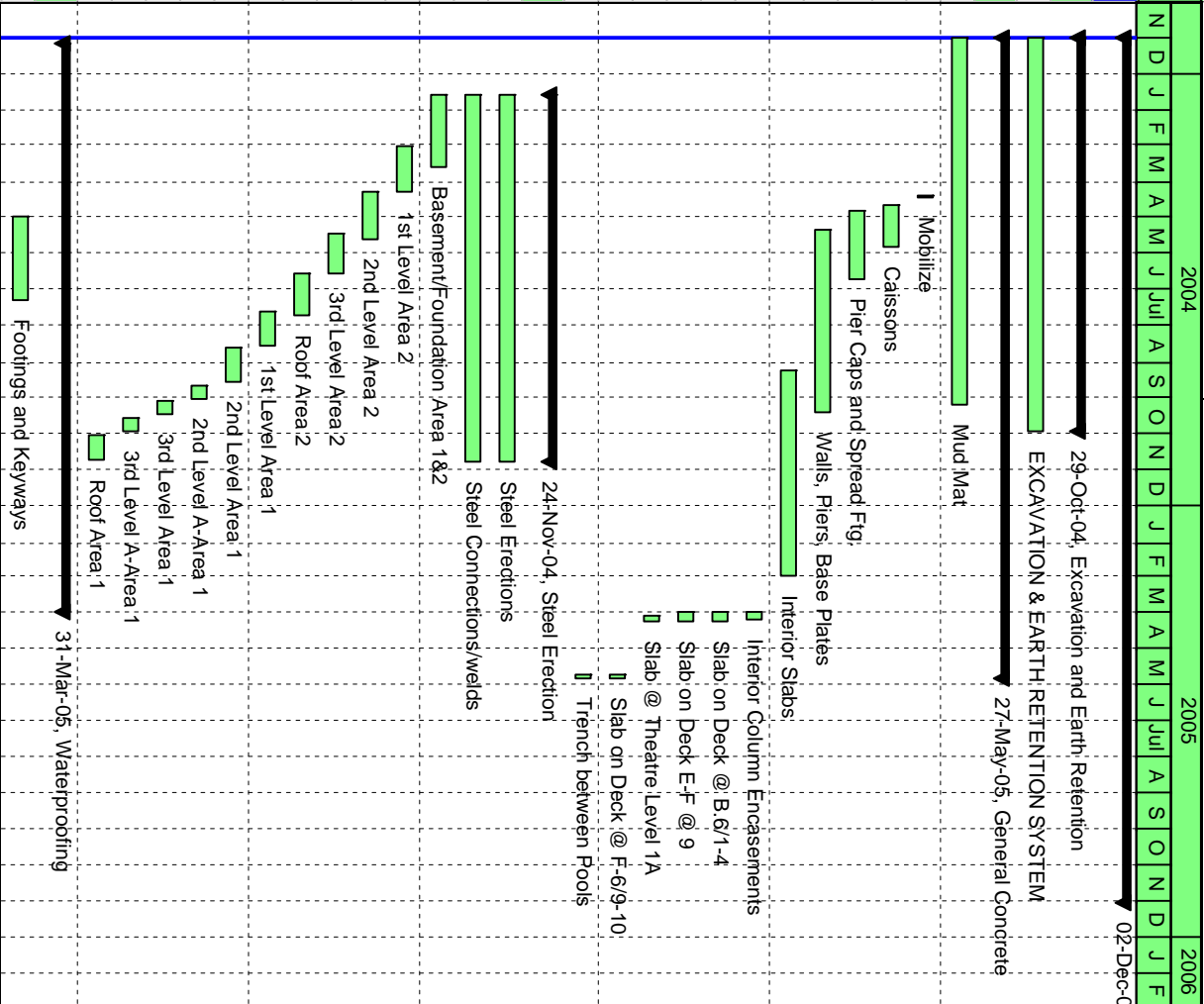
The next item is a drawing of the site layout. It is in larger scale and includes more items such as: location of construction trailer, location of temporary power, location of utilities, location(s) and types of cranes etc. The drawing provided shows the site during the steel erection phase.

For the assemblies estimate, the exterior shell/enclosure was analyzed. It is mainly composed of glass, metal panels and masonry. A rough (square foot) estimate of different areas/surfaces were taken and then combined with data from the RS Means catalog, an estimate was produced.

The detailed structural systems estimate was calculated using ICE2000 software. This estimate included: foundations, steel members, decking, and roofing. This part of the report is lengthy due to that it was broken down into sections (Basement, First floor, etc.), but there is also an overall summary at the end of the section. As you can see in the summary for any of the reports, there was a 20% overall overhead included.

The general conditions estimate takes a look at some of the key and important things that are required on the jobsite such as: trailer rental, cost of utilities, temporary fencing etc. Instead of using the RS Means catalog to come up with an estimate of the CM and designer's fee, I looked at actual project data to present specific dollar amounts.

Activity ID	Activity Name	Original Duration	Start	Finish
Detailed Project Schedule				
Excavation and Earth R...		510	01-Dec-03	02-Dec-05
1	EXCAVATION & EARTH...	240	01-Dec-03	29-Oct-04
General Concrete		380	01-Dec-03	27-May-05
15	Mud Mat	223	01-Dec-03	06-Oct-04
11	Mobilize	2	12-Apr-04*	13-Apr-04
12	Caissons	26	20-Apr-04	25-May-04
13	Pier Caps and Spread Fig.	42	26-Apr-04	22-Jun-04
14	Walls, Piers, Base Plates	110	12-May-04	12-Oct-04
16	Interior Slabs	126	07-Sep-04*	01-Mar-05
18	Interior Column Encasem..	5	01-Apr-05	07-Apr-05
19	Slab on Deck @ B.6/1-4	6	01-Apr-05	08-Apr-05
20	Slab on Deck E-F @ 9	6	01-Apr-05	08-Apr-05
17	Slab @ Theatre Level 1A	5	04-Apr-05	08-Apr-05
21	Slab on Deck @ F-6/9-10	5	23-May-05	27-May-05
22	Trench between Pools	5	23-May-05	27-May-05
Steel Erection		220	19-Jan-04	24-Nov-04
30	Steel Erections	223	19-Jan-04	24-Nov-04
31	Steel Connections/welds	223	19-Jan-04	24-Nov-04
32	Basement/Foundation Ar...	45	19-Jan-04	19-Mar-04
33	1st Level Area 2	30	01-Mar-04	09-Apr-04
34	2nd Level Area 2	30	09-Apr-04	20-May-04
35	3rd Level Area 2	25	14-May-04	18-Jun-04
36	Roof Area 2	25	18-Jun-04	23-Jul-04
37	1st Level Area 1	20	20-Jul-04	17-Aug-04
38	2nd Level Area 1	21	20-Aug-04	17-Sep-04
38 a	2nd Level A-Area 1	10	20-Sep-04	01-Oct-04
39	3rd Level Area 1	10	04-Oct-04	15-Oct-04
39a	3rd Level A-Area 1	10	18-Oct-04	29-Oct-04
40	Roof Area 1	15	01-Nov-04	22-Nov-04
Waterproofing		335	05-Dec-03	31-Mar-05
51	Footings and Keyways	51	30-Apr-04	09-Jul-04



█ Actual Work █ Critical Remaining Work █ Summary
█ Remaining Work ◆ Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	2004												2005												2006											
					N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F								
52	Walls and Elevator Pit	84	29-Jun-04	22-Oct-04	[Gantt bar from Jun 29, 2004 to Oct 22, 2004]																																			
Horizontal Basement Floor					[Gantt bar from Jun 29, 2004 to Mar 31, 2005]																																			
54	Area 2	318	05-Dec-03	31-Mar-05	[Gantt bar from Dec 5, 2003 to Mar 31, 2005]																																			
55	Area 1	5	12-Oct-04	18-Oct-04	[Gantt bar from Oct 12, 2004 to Oct 18, 2004]																																			
56	Slab on Deck @ B.6/1-4	4	28-Mar-05	31-Mar-05	[Gantt bar from Mar 28, 2005 to Mar 31, 2005]																																			
57	Slab on Deck E-F @ 9	4	28-Mar-05	31-Mar-05	[Gantt bar from Mar 28, 2005 to Mar 31, 2005]																																			
MEP Rough In					[Gantt bar from Apr 29, 2004 to Mar 21, 2005]																																			
101	Temporary Lighting	7	29-Apr-04	07-May-04	[Gantt bar from Apr 29, 2004 to May 7, 2004]																																			
104	Electric risers/feeders	28	02-Jul-04	10-Aug-04	[Gantt bar from Jul 2, 2004 to Aug 10, 2004]																																			
103	Duct Mains	97	20-Jul-04	01-Dec-04	[Gantt bar from Jul 20, 2004 to Dec 1, 2004]																																			
102	HVAC Pipe Mains	69	26-Jul-04	28-Oct-04	[Gantt bar from Jul 26, 2004 to Oct 28, 2004]																																			
106	HVAC Pipe Branches	68	13-Aug-04	17-Nov-04	[Gantt bar from Aug 13, 2004 to Nov 17, 2004]																																			
127	Elec Rm panels & equip...	79	16-Aug-04	03-Dec-04	[Gantt bar from Aug 16, 2004 to Dec 3, 2004]																																			
107	Duct insulation	62	01-Oct-04	27-Dec-04	[Gantt bar from Oct 1, 2004 to Dec 27, 2004]																																			
105	Install VAV Boxes	23	04-Oct-04	04-Nov-04	[Gantt bar from Oct 4, 2004 to Nov 4, 2004]																																			
117	Pipe insulation	24	15-Dec-04	18-Jan-05	[Gantt bar from Dec 15, 2004 to Jan 18, 2005]																																			
137	Ceiling Grid	15	24-Jan-05	11-Feb-05	[Gantt bar from Jan 24, 2005 to Feb 11, 2005]																																			
167	Light Fixtures	21	08-Feb-05	08-Mar-05	[Gantt bar from Feb 8, 2005 to Mar 8, 2005]																																			
177	Clean up & Punchout	10	08-Mar-05	21-Mar-05	[Gantt bar from Mar 8, 2005 to Mar 21, 2005]																																			
Fireproofing					[Gantt bar from Sep 17, 2004 to Nov 26, 2004]																																			
60	FIREPROOFING	51	17-Sep-04	26-Nov-04	[Gantt bar from Sep 17, 2004 to Nov 26, 2004]																																			
Exterior Closure					[Gantt bar from Sep 17, 2004 to Jul 01, 2005]																																			
65	EXTERIOR CLOSURE	206	17-Sep-04	01-Jul-05	[Gantt bar from Sep 17, 2004 to Jul 1, 2005]																																			
Area 2 & Area 1					[Gantt bar from Sep 17, 2004 to Jul 01, 2005]																																			
71	Masonry-All Elevations	206	17-Sep-04	01-Jul-05	[Gantt bar from Sep 17, 2004 to Jul 1, 2005]																																			
72	Exterior Wall Framing- Al...	57	11-Oct-04	28-Dec-04	[Gantt bar from Oct 11, 2004 to Dec 28, 2004]																																			
73	Exterior Gypsum Board- ...	80	20-Oct-04	08-Feb-05	[Gantt bar from Oct 20, 2004 to Feb 8, 2005]																																			
74	Metal Wall Panels MP1- ...	43	29-Dec-04	25-Feb-05	[Gantt bar from Dec 29, 2004 to Feb 25, 2005]																																			
75	Complete Exterior Door F..	96	17-Feb-05	30-Jun-05	[Gantt bar from Feb 17, 2005 to Jun 30, 2005]																																			
76	Stone- All elevations	17	22-Feb-05	16-Mar-05	[Gantt bar from Feb 22, 2005 to Mar 16, 2005]																																			
77	Aluminum Frames- All el...	92	24-Feb-05	01-Jul-05	[Gantt bar from Feb 24, 2005 to Jul 1, 2005]																																			
78	Metal Wall Panels MP1 ...	15	28-Feb-05	18-Mar-05	[Gantt bar from Feb 28, 2005 to Mar 18, 2005]																																			
79	Glazing- All elevations	78	15-Mar-05	01-Jul-05	[Gantt bar from Mar 15, 2005 to Jul 1, 2005]																																			

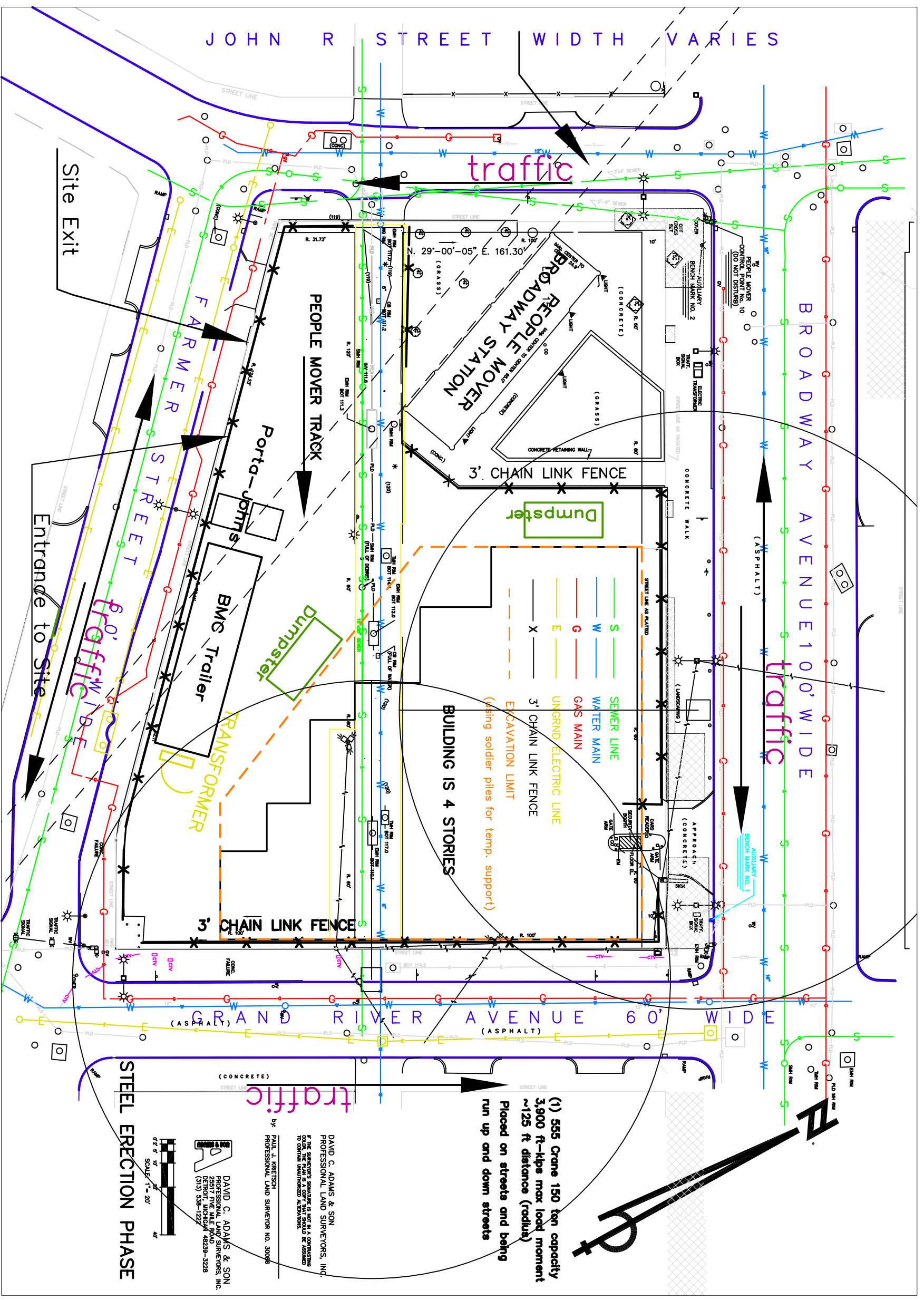
█ Actual Work █ Critical Remaining Work █ Summary
█ Remaining Work ◆ Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	2004												2005												2006											
					N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F								
80	Metal Wall Panels MP2	65	01-Apr-05	30-Jun-05																																				
Natorium																																								
130	NATORIUM	264	20-Sep-04	22-Sep-05																																				
131	excavate	15	20-Sep-04	08-Oct-04																																				
132	underground piping	27	30-Sep-04	05-Nov-04																																				
135	form walls/ite wall steel	24	09-Nov-04	10-Dec-04																																				
136	place walls	3	10-Dec-04	14-Dec-04																																				
139	backfill	13	20-Dec-04	05-Jan-05																																				
140	surge tank piping	3	03-Jan-05	05-Jan-05																																				
141	mudmat	1	20-Jan-05	20-Jan-05																																				
142	place slab around pool	22	28-Jan-05	28-Feb-05																																				
143	erect scaffold	15	28-Feb-05	18-Mar-05																																				
144	hvac o/h rough in	10	15-Mar-05	28-Mar-05																																				
145	filtration plumbing	24	15-Mar-05	15-Apr-05																																				
146	electrical o/h rough in	10	29-Mar-05	11-Apr-05																																				
147	install vapor retarder at p...	5	04-Apr-05	08-Apr-05																																				
148	add stud wall at perimeter	5	05-Apr-05	11-Apr-05																																				
149	metal stud framing	36	12-Apr-05	31-May-05																																				
150	light fixtures	26	12-Apr-05	17-May-05																																				
151	interior masonry	25	13-Apr-05	17-May-05																																				
152	install drywall	28	13-May-05	21-Jun-05																																				
153	overhead inspection	2	16-May-05	17-May-05																																				
156	hvac finish	3	07-Jun-05	09-Jun-05																																				
155	painting	3	22-Jun-05	24-Jun-05																																				
157	remove scaffold	3	05-Jul-05	07-Jul-05																																				
158	deck imbeds	5	08-Jul-05	14-Jul-05																																				
159	sealer at masonry	2	08-Jul-05	11-Jul-05																																				
160	trench drains	10	08-Jul-05	21-Jul-05																																				
161	ceramic tile for pool	25	15-Jul-05	18-Aug-05																																				
162	ceramic tile at pool deck f..	25	29-Jul-05	01-Sep-05																																				
164	bondcoote/plaster pool	4	12-Sep-05	15-Sep-05																																				
165	start up	3	16-Sep-05	20-Sep-05																																				
Elevators																																								

Actual Work
 Critical Remaining Work
 Milestone
 Summary

Activity ID	Activity Name	Original Duration	Start	Finish	2004												2005					2006										
					N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
171	Metal Studs	16	08-Mar-05	29-Mar-05																												
172	Electrical in wall Rough In	21	08-Mar-05	05-Apr-05																												
173	Plumbing Rough In	21	08-Mar-05	05-Apr-05																												
174	Interior Masonry	10	16-Mar-05	29-Mar-05																												
175	Drywall	38	18-Apr-05	08-Jun-05																												
176	Ceiling Grid	5	09-Jun-05	15-Jun-05																												
178	MEP Finish	2	16-Jun-05	17-Jun-05																												
179	Ceiling Tile	3	20-Jul-05	22-Jul-05																												
180	Flooring	7	03-Aug-05	11-Aug-05																												
Area 2 Level 1					163												01-Mar-05					18-Oct-05										
281	Owner go/no go	1	01-Mar-05	01-Mar-05																												
282	Change Docs Due from ...	1	09-May-05	09-May-05																												
283	HVAC VAV Rough In	10	06-Jul-05	19-Jul-05																												
284	Electrical In Wall Rough In	10	13-Jul-05	26-Jul-05																												
285	Ceiling Grid	5	13-Sep-05	19-Sep-05																												
286	MEP Finish	3	20-Sep-05	22-Sep-05																												
287	Light Fixtures	7	20-Sep-05	28-Sep-05																												
288	Ceiling Tile	3	30-Sep-05	04-Oct-05																												
289	Punchlist	10	05-Oct-05	18-Oct-05																												
Area 1 Level 2A					101												13-Apr-05					02-Sep-05										
a 211	Interior Masonry	10	13-Apr-05	26-Apr-05																												
a 212	Plumbing Rough In	2	27-Apr-05	28-Apr-05																												
a 213	HVAC VAV Rough In	5	27-Apr-05	03-May-05																												
a 214	Electrical In Wall Rough In	5	27-Apr-05	03-May-05																												
a 215	Drywall and Finish	19	17-May-05	10-Jun-05																												
a 216	Ceiling Grid	5	07-Jun-05	13-Jun-05																												
a 217	Drywall Ceilings and Finish	10	09-Jun-05	22-Jun-05																												
a 218	MEP Finish	2	23-Jun-05	24-Jun-05																												
a 219	MEP Above Ceiling Inspe..	1	30-Jun-05	30-Jun-05																												
a 220	Ceiling Tile	3	01-Jul-05	05-Jul-05																												
a 221	Flooring	10	22-Aug-05	02-Sep-05																												
Area 1 Level 2					152												27-Apr-05					01-Dec-05										
a 231	Interior masonry	15	27-Apr-05	17-May-05																												

Actual Work
 Critical Remaining Work
 Remaining Work
 ◆ ◆ Milestone
 ▼ Summary



(1) 555 Crane 150 ton capacity
 3,900 ft-kips max load moment
 ~125 ft distance (radius)
 Placed on streets and being
 run up and down streets

DAVID C. ADAMS & SON
 PROFESSIONAL LAND SURVEYORS, INC.
 2800 W. WATSON BLVD.
 DETROIT, MICHIGAN 48239-3228
 (313) 539-1222

PAUL J. KRZEMSKI
 PROFESSIONAL LAND SURVEYOR NO. 30095

DAVID C. ADAMS & SON
 PROFESSIONAL LAND SURVEYORS, INC.
 2800 W. WATSON BLVD.
 DETROIT, MICHIGAN 48239-3228
 (313) 539-1222

SCALE: 1" = 20'

STEEL ERECTION PHASE

Exterior Shell Estimate

NORTH ELEVATION

Material	Location	Amt (SF)	Total Amt (SF)
Glass	Cantilevered - Aerobic	1540	8479.5
	Gym	2993	
	Pool	589.5	
	Square shape	336	
	Lobby	1833	
	Above cantilever level	1188	
Metal Panel	4th Level - Roof units	1350	1350
Brick	Square shape (msnry)	1225	1225

EAST ELEVATION

Material	Location	Amt (SF)	Total Amt (SF)
Glass	Pool Area	280	2980
	Child Care Area	900	
	Office Level	1800	
Metal Panel	Gym/Stair Area	8160	9060
	4th Level - Roof units	900	
Brick	Pool Area (msnry)	820	820

SOUTH ELEVATION

Material	Location	Amt (SF)	Total Amt (SF)
Glass	Office Area	2058	5790
	Track/Gym/Pool Area	3532	
	Locker Area	200	
Metal Panel	Cantilevered - Aerobic	1710	6414
	Front - Lobby	1072.5	
	Roof units Area	2407.5	
	Track/Gym/Pool Area	1224	
Brick	Lobby (msry)	630	2538
	Stairwell (msry)	1508	
	Locker Area	400	

WEST ELEVATION

Material	Location	Amt (SF)	Total Amt (SF)
Glass	Pool Area	480	2230
	Cantilevered - Aerobic	550	
	Lobby	1200	
Metal Panel	Gym/Pool Area	1800	4350
	Stair Area	1625	
	Cantilevered - Aerobic	925	
Brick	Stairs (msry)	1525	5455
	Locker Area	330	
	Theatre (msry)	3250	
	Square Shape (msry)	350	

	Amount In Square Feet
Total Glass	19479.5
Total Metal	21174
Total Masonry	10038

FACE BRICK	BACKUP MASONRY	BACKUP THICKNESS (IN.)	BACKUP CORE FILL	COST PER SF		
				MAT.	INST.	TOTAL
Standard	Conc. Block	8	Perlite	6.55	17.2	23.75

Total Cost for all Brick/Masonry	\$238,402.50
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METAL SIDING PANEL	COST PER SF		
	MAT.	INST.	TOTAL
Metal siding aluminum panel, corrugated, .032" thick, natural	2.06	3.04	5.10

Total Cost for all Metal Siding	\$107,987.40
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CURTAIN WALL PANELS	COST PER SF		
	MAT.	INST.	TOTAL
Spandrel glass, panels, 3/8" plate glass, 1" thick	19.50	6.65	26.15

Total Cost for all Curtain Wall Panels	\$509,388.93
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GLAZED DOORS, STEEL OR ALUMINUM						
MATERIALS	TYPE	DOORS	SPECIFICATION	COST PER OPNG		
				MAT.	INST.	TOTAL
Alum. & Glass	w/transom	narrow stile	w/ panic hrdwre	1,475	900	2,375
	revolving	stock design	average	21,100	3,650	24,750

4 Alum. & Glass	\$9,500.00
1 Revolving	\$24,750.00

STEEL DOORS

MATERIALS	TYPE	DOORS	SPECIFICATION	COST PER OPNG		
				MAT.	INST.	TOTAL
Steel 18 Ga.	Hollow Metal	1 door w/ frame	no lable	965	241	1,206

5 Hollow Metal	\$6,030.00
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TOTAL EXTERIOR SHELL ESTIMATE	\$896,059
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Estimate Detail - Standard Construction Project

Detail - Without Taxes and Insurance

Estimator :
Project Size : 0 sqft

ItemCode	Description	Quantity	UM	Lab.Unit	Mat.Unit	Eqp.Unit	Sub.Unit	Eqp.Rent.Unit	Temp.Mat.Unit	Other Unit	Tot.UnitCost	TotalCost
02316.334	FINE GRADE SLAB ON GRADE	1,485.00	SQFT	0.3237							0.324	480.69
02315.100	BASEMENT EXCAVATION	30.00	CUYD	2.6331		1.950					4.583	137.49
03110.701	FLOOR EDGE FORMS	572.00	LNFT	3.0729	0.851						3.924	2,244.70
03110.200	SLAB ON GRADE EDGE FORMS	90.00	LNFT	2.3048	1.152						3.457	311.11
03210.109	SOG REBAR	238.08	CWT	32.3636	26.750						59.114	14,073.48
03210.155	PIER REBAR	1,048.47	CWT	23.7333	26.750						50.483	52,930.14
03210.109	SOG REBAR	19.84	CWT	32.3636	26.750						59.114	1,172.79
03220.012	6x6 W2.9/W2.9 MESH	87.45	SQS	23.1663	15.000						38.166	3,337.64
03310.350	**CONC IN SLAB ON GRADE**		****									
03310.375	4000 PSI DIRECT	150.19	CUYD	11.0090	56.000						67.009	10,063.76
03310.750	**CONCRETE IN PIERS**		****									
03310.751	3000 PSI DIRECT	1,263.73	CUYD	16.0131	55.000						71.013	89,741.50
03315.976	* SOG AREA *	9,435.00	SQFT									
03313.135	CONCRETE @ SLAB ON GRADE	27.50	CUYD	10.8440	55.000						65.844	1,810.71
03350.130	MACHINE TROWEL FINISH	9,435.00	SQFT	0.3304							0.330	3,117.32
03350.131	POINT & PATCH	90.00	SQFT	0.1102	0.013						0.123	11.07
03390.010	PROTECT & CURE	7,950.00	SQFT	0.1102	0.019						0.129	1,028.73
03390.010	PROTECT & CURE	1,485.00	SQFT	0.1102	0.019						0.129	192.16
Total Estimate												\$180,653

Estimate Summary										Bid date #####
Standard Construction Project										
Management Computer Controls, Inc.										
5350 Poplar Avenue, Suite 600										0 sqft
Memphis										
TN										
		Labor	Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals	
Direct costs										
	%									
	Base labor	\$47,675	\$116,459	\$59	\$0	\$0	\$0	\$0	\$164,192	
	Labor burden 0.00%	\$0							\$0	
	Labor fringes	\$16,461							\$16,461	
	Labor manhours	2,301								
	Material sales tax 0.00%		\$0						\$0	
	Equipment Surcharge 0.00%			\$0					\$0	
	Temporary material markup 0.00%					\$0			\$0	
	Equipment rental markup 0.00%						\$0		\$0	
	Other markup 0.00%							\$0	\$0	
Gross cost		\$47,675	\$116,459	\$59	\$0	\$0	\$0	\$0	\$180,653	
	Gross receipts tax 0.00%								\$0	
	Builder's risk insurance 0.00%								\$0	
	Overall									
	Overhead 20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
		\$36,131	\$0	\$0	\$0	\$0	\$0	\$0	\$36,131	
	Profit 0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Subcontract bond 0.00%								\$0	
	Performance bond	\$0							\$0	
	Miscellaneous 1 0.00%								\$0	
	Miscellaneous 2 0.00%								\$0	
Total										\$216,784
Cut/Add										\$0
Project total										#####

Estimate Detail - Standard Construction Project

Detail - Without Taxes and Insurance

Estimator :
Project Size : sqft

ItemCode	Description	Quantity	UM	Lab.Unit	Mat.Unit	Eqp.Unit	Sub.Unit	Eqp.Rent.Unit	Temp.Mat.Unit	Other Unit	Tot.UnitCost	TotalCost
03220.012	6x6 W2.9/W2.9 MESH	96.86	SQS	23.1663	15.000						38.166	3,696.60
03311.700	**CONC IN SLAB OVER MTL DECK**		****									
03311.725	4000 PSI DIRECT	115.50	CUYD	14.6787	56.000						70.679	8,163.23
03315.991	* SLAB OVER METAL DECK AREA *	8,805.00	SQFT									
05129.101	STEEL BEAMS		****									
05129.102	I BEAMS	378.14	CWT	28.7300	35.000	5.000					68.730	25,989.56
05129.105	TEES	4.37	CWT	38.3067	35.000	10.000					83.307	364.26
05129.121	STEEL COLUMNS		****									
05129.122	I SHAPES	2,233.95	CWT	28.7300	35.000	5.000					68.730	153,539.38
05129.990	* STRUCTURAL STEEL WEIGHT *	130.82	TONS									
05310.018	2" METAL DECK	8,805.00	SQFT	0.4445	0.870						1.315	11,577.69
Total Estimate												\$203,331

Estimate Summary										Bid date #####
Standard Construction Project										
Management Computer Controls, Inc.										
5350 Poplar Avenue, Suite 600										
Memphis										
TN										
		Labor	Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals	
Direct costs										
	%									
Base labor		\$48,529	\$107,161	\$13,104	\$0	\$0	\$0	\$0	\$168,794	
Labor burden	0.00%	\$0							\$0	
Labor fringes		\$34,537							\$34,537	
Labor manhours		2,643								
Material sales tax	0.00%		\$0						\$0	
Equipment Surcharge	0.00%			\$0					\$0	
Temporary material markup	0.00%					\$0			\$0	
Equipment rental markup	0.00%						\$0		\$0	
Other markup	0.00%							\$0	\$0	
Gross cost		\$48,529	\$107,161	\$13,104	\$0	\$0	\$0	\$0	\$203,331	
Gross receipts tax	0.00%								\$0	
Builder's risk insurance	0.00%								\$0	
Overall										
Overhead	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
		\$40,666	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,666
Profit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract bond	0.00%								\$0	
Performance bond		\$0							\$0	
Miscellaneous 1	0.00%								\$0	
Miscellaneous 2	0.00%								\$0	
Total									\$243,997	
Cut/Add									\$0	
Project total									#####	

Estimate Detail - Standard Construction Project

Detail - Without Taxes and Insurance

Estimator :
Project Size : sqft

ItemCode	Description	Quantity	UM	Lab.Unit	Mat.Unit	Eqp.Unit	Sub.Unit	Eqp.Rent.Unit	Temp.Mat.Unit	Other Unit	Tot.UnitCost	TotalCost
03220.012	6x6 W2.9/W2.9 MESH	166.16	SQS	23.1663	15.000						38.166	6,341.52
03311.700	**CONC IN SLAB OVER MTL DECK**		****									
03311.730	4000 PSI W/PUMP	198.14	CUYD	12.5997	56.000	5.280					73.880	14,638.27
03315.991	* SLAB OVER METAL DECK AREA *	15,105.00	SQFT									
05129.101	STEEL BEAMS		****									
05129.102	I BEAMS	911.84	CWT	28.7300	35.000	5.000					68.730	62,670.76
05129.105	TEES	4.40	CWT	38.3067	35.000	10.000					83.307	366.55
05129.121	STEEL COLUMNS		****									
05129.122	I SHAPES	84.26	CWT	28.7300	35.000	5.000					68.730	5,791.19
05129.161	TRUSSES		****									
05129.165	TEES	328.86	CWT	38.3067	35.000	5.000					78.307	25,751.94
05129.990	* STRUCTURAL STEEL WEIGHT *	66.47	TONS									
05310.018	2" METAL DECK	15,105.00	SQFT	0.4445	0.870						1.315	19,861.56
Total Estimate												\$135,422

Estimate Summary										Bid date #####
Standard Construction Project										
Management Computer Controls, Inc.										
5350 Poplar Avenue, Suite 600										sqft
Memphis										
TN										
		Labor	Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals	
Direct costs	%									
Base labor		\$32,607	\$73,263	\$7,715	\$0	\$0	\$0	\$0	\$113,585	
Labor burden	0.00%	\$0							\$0	
Labor fringes		\$21,836							\$21,836	
Labor manhours		1,776								
Material sales tax	0.00%		\$0						\$0	
Equipment Surcharge	0.00%			\$0					\$0	
Temporary material markup	0.00%					\$0			\$0	
Equipment rental markup	0.00%						\$0		\$0	
Other markup	0.00%							\$0	\$0	
Gross cost		\$32,607	\$73,263	\$7,715	\$0	\$0	\$0	\$0	\$135,422	
Gross receipts tax	0.00%								\$0	
Builder's risk insurance	0.00%								\$0	
	Overall									
Overhead	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
		\$27,084	\$0	\$0	\$0	\$0	\$0	\$0	\$27,084	
Profit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Subcontract bond	0.00%								\$0	
Performance bond		\$0							\$0	
Miscellaneous 1	0.00%								\$0	
Miscellaneous 2	0.00%								\$0	
Total									\$162,506	
Cut/Add									\$0	
Project total									#####	

Estimate Detail - Standard Construction Project

Detail - Without Taxes and Insurance

Estimator :
Project Size : sqft

ItemCode	Description	Quantity	UM	Lab.Unit	Mat.Unit	Eqp.Unit	Sub.Unit	Eqp.Rent.Unit	Temp.Mat.Unit	Other Unit	Tot.UnitCost	TotalCost
03111.800		12,288.00	EACH									
03220.012	6x6 W2.9/W2.9 MESH	62.37	SQS	23.1663	15.000						38.166	2,380.43
03311.700	**CONC IN SLAB OVER MTL DECK**		****									
03311.730	4000 PSI W/PUMP	74.38	CUYD	12.5997	56.000	5.280					73.880	5,494.80
03315.991	* SLAB OVER METAL DECK AREA *	5,670.00	SQFT									
05129.101	STEEL BEAMS		****									
05129.102	I BEAMS	291.98	CWT	28.7300	35.000	5.000					68.730	20,067.79
05129.990	* STRUCTURAL STEEL WEIGHT *	14.60	TONS									
05310.018	2" METAL DECK	5,670.00	SQFT	0.4445	0.870						1.315	7,455.48
	Total Estimate											\$35,399

Estimate Summary										Bid date #####
Standard Construction Project										
Management Computer Controls, Inc.										
5350 Poplar Avenue, Suite 600										sqft
Memphis										
TN										
		Labor	Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals	
Direct costs	%									
Base labor		\$8,137	\$20,255	\$1,853	\$0	\$0	\$0	\$0	\$30,245	
Labor burden	0.00%	\$0							\$0	
Labor fringes		\$5,153							\$5,153	
Labor manhours		443								
Material sales tax	0.00%		\$0						\$0	
Equipment Surcharge	0.00%			\$0					\$0	
Temporary material markup	0.00%					\$0			\$0	
Equipment rental markup	0.00%						\$0		\$0	
Other markup	0.00%							\$0	\$0	
Gross cost		\$8,137	\$20,255	\$1,853	\$0	\$0	\$0	\$0	\$35,399	
Gross receipts tax	0.00%								\$0	
Builder's risk insurance	0.00%								\$0	
	Overall									
Overhead	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
		\$7,080	\$0	\$0	\$0	\$0	\$0	\$0	\$7,080	
Profit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Subcontract bond	0.00%								\$0	
Performance bond		\$0							\$0	
Miscellaneous 1	0.00%								\$0	
Miscellaneous 2	0.00%								\$0	
Total									\$42,478	
Cut/Add									\$0	
Project total									\$42,478	

Estimate Detail - Standard Construction Project

Detail - Without Taxes and Insurance Indirect Costs are Spread

Estimator :
Project Size : sqft

ItemCode	Description	Quantity	UM	Lab.Unit	Mat.Unit	Eqp.Unit	Sub.Unit	Eqp.Rent.Unit	Temp.Mat.Unit	Other Unit	Tot.UnitCost	TotalCost
05129.101	STEEL BEAMS		****									
05129.102	1 BEAMS	565.88	CWT	28.7300	35.000	5.000					82.476	46,671.52
05129.103	CHANNELS	20.35	CWT	28.7300	35.000	8.000					86.076	1,751.82
05129.161	TRUSSES		****									
05129.165	TEES	791.82	CWT	38.3067	35.000	5.000					93.968	74,405.77
05129.990	* STRUCTURAL STEEL WEIGHT *	68.90	TONS									
07220.013	2" FIBER BD ROOF INSULATION	15,892.50	SQFT	0.6416	0.666						1.569	24,929.61
07309.900	* ROOF AREA *	15,892.50	SQFT									
07530.030	3 PLY MEMBRANE ROOFING	158.93	SQS	34.9800	37.875						87.426	13,894.22
Total Estimate												\$161,653

Estimate Summary										Bid date #####
Standard Construction Project										
Management Computer Controls, Inc.										
5350 Poplar Avenue, Suite 600										sqft
Memphis										
TN										
			Labor	Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals
Direct costs	%									
Base labor			\$37,385	\$64,829	\$6,951	\$0	\$0	\$0	\$0	\$109,165
Labor burden	0.00%		\$0							\$0
Labor fringes			\$25,545							\$25,545
Labor manhours			2,108							
Material sales tax	0.00%			\$0						\$0
Equipment Surcharge	0.00%				\$0					\$0
Temporary material markup	0.00%						\$0			\$0
Equipment rental markup	0.00%							\$0		\$0
Other markup	0.00%								\$0	\$0
Gross cost			\$37,385	\$64,829	\$6,951	\$0	\$0	\$0	\$0	\$134,711
Gross receipts tax	0.00%									\$0
Builder's risk insurance	0.00%									\$0
Overall										
Overhead	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			\$26,942	\$0	\$0	\$0	\$0	\$0	\$0	\$26,942
Profit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract bond	0.00%									\$0
Performance bond			\$0							\$0
Miscellaneous 1	0.00%									\$0
Miscellaneous 2	0.00%									\$0
Total										\$161,653
Cut/Add										\$0
Project total										#####

Estimate Detail - Standard Construction Project

Detail - Without Taxes and Insurance Indirect Costs are Spread

Estimator :
Project Size : 0 sqft

ItemCode	Description	Quantity	UM	Lab.Unit	Mat.Unit	Eqp.Unit	Sub.Unit	Eqp.Rent.Unit	Temp.Mat.Unit	Other Unit	Tot.UnitCost	TotalCost
02316.334	FINE GRADE SLAB ON GRADE	1,485.00	SQFT	0.3237							0.388	576.83
02315.100	BASEMENT EXCAVATION	30.00	CUYD	2.6331		1.950					5.500	164.99
03110.701	FLOOR EDGE FORMS	572.00	LNFT	3.0729	0.851						4.709	2,693.64
03111.800		12,288.00	EACH									
03110.200	SLAB ON GRADE EDGE FORMS	90.00	LNFT	2.3048	1.152						4.148	373.33
03210.109	SOG REBAR	238.08	CWT	32.3636	26.750						70.936	16,888.18
03210.155	PIER REBAR	1,048.47	CWT	23.7333	26.750						60.580	63,516.17
03210.109	SOG REBAR	19.84	CWT	32.3636	26.750						70.936	1,407.35
03220.012	6x6 W2.9/W2.9 MESH	412.83	SQS	23.1663	15.000						45.800	18,907.43
03310.350	**CONC IN SLAB ON GRADE**		****									
03310.375	4000 PSI DIRECT	150.19	CUYD	11.0090	56.000						80.411	12,076.51
03310.750	**CONCRETE IN PIERS**		****									
03310.751	3000 PSI DIRECT	1,263.73	CUYD	16.0131	55.000						85.216	107,689.80
03311.700	**CONC IN SLAB OVER MTL DECK**		****									
03311.725	4000 PSI DIRECT	115.50	CUYD	14.6787	56.000						84.814	9,795.87
03311.730	4000 PSI W/PUMP	272.51	CUYD	12.5997	56.000	5.280					88.656	24,159.69
03315.976	* SOG AREA *	9,435.00	SQFT									
03315.991	* SLAB OVER METAL DECK AREA *	29,580.00	SQFT									
03313.135	CONCRETE @ SLAB ON GRADE	27.50	CUYD	10.8440	55.000						79.013	2,172.85
03350.130	MACHINE TROWEL FINISH	9,435.00	SQFT	0.3304							0.396	3,740.79
03350.131	POINT & PATCH	90.00	SQFT	0.1102	0.013						0.148	13.28
03390.010	PROTECT & CURE	7,950.00	SQFT	0.1102	0.019						0.155	1,234.48
03390.010	PROTECT & CURE	1,485.00	SQFT	0.1102	0.019						0.155	230.59
05129.101	STEEL BEAMS		****									
05129.102	I BEAMS	2,147.84	CWT	28.7300	35.000	5.000					82.476	177,145.25
05129.103	CHANNELS	20.35	CWT	28.7300	35.000	8.000					86.076	1,751.82
05129.105	TEES	8.77	CWT	38.3067	35.000	10.000					99.968	876.97
05129.121	STEEL COLUMNS		****									
05129.122	I SHAPES	2,318.21	CWT	28.7300	35.000	5.000					82.476	191,196.69
05129.161	TRUSSES		****									
05129.165	TEES	1,120.68	CWT	38.3067	35.000	5.000					93.968	105,308.10
05129.990	* STRUCTURAL STEEL WEIGHT *	280.79	TONS									
05310.018	2" METAL DECK	29,580.00	SQFT	0.4445	0.870						1.578	46,673.69
07220.013	2" FIBER BD ROOF INSULATION	15,892.50	SQFT	0.6416	0.666						1.569	24,929.61
07309.900	* ROOF AREA *	15,892.50	SQFT									
07530.030	3 PLY MEMBRANE ROOFING	158.93	SQS	34.9800	37.875						87.426	13,894.22
	Total Estimate											\$827,418

Estimate Summary										Bid date #####						
Standard Construction Project																
Management Computer Controls, Inc.																
5350 Poplar Avenue, Suite 600										0 sqft						
Memphis																
TN																
										Totals						
										Material	Equipment	Subcontract	Temp Matl	Equip Rental	Other	Totals
Direct costs	%															
Base labor		\$174,334	\$381,967	\$29,682	\$0	\$0	\$0	\$0	\$585,982							
Labor burden	0.00%	\$0							\$0							
Labor fringes		\$103,533							\$103,533							
Labor manhours		9,270														
Material sales tax	0.00%	\$0							\$0							
Equipment Surcharge	0.00%			\$0					\$0							
Temporary material markup	0.00%				\$0				\$0							
Equipment rental markup	0.00%					\$0			\$0							
Other markup	0.00%						\$0		\$0							
Gross cost		\$174,334	\$381,967	\$29,682	\$0	\$0	\$0	\$0	\$689,515							
Gross receipts tax	0.00%								\$0							
Builder's risk insurance	0.00%								\$0							
	Overall															
Overhead	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%								
		\$137,903	\$0	\$0	\$0	\$0	\$0	\$0	\$137,903							
Profit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%								
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0							
Subcontract bond	0.00%								\$0							
Performance bond		\$0							\$0							
Miscellaneous 1	0.00%								\$0							
Miscellaneous 2	0.00%								\$0							
Total									\$827,418							
Cut/Add									\$0							
Project total									#####							

Structural Estimate - Bay/Area 2

TOTAL AREA = 15,105 SF

BASEMENT - FOUNDATION

SOG-2	6" thick	#4 @ 12" EW	1,485 SF	
SOG-1	5" thick	6x6 W2.9xW2.9 wwf	7,950 SF	
Drilled Piers	107'	7-#8 vert. reinf	3' dia	qty: 47
Formed Pier	11'	8-#8 vert. reinf & dowel	28"x28"	qty: 15

FIRST LEVEL - FOUNDATION

Slab On Metal Deck

CS-1	5.25" thick		8,805 SF
	*3.25" conc	4000 psi	
	*2"deck	20 gage metal fl dk	
		6x6 W2.9xW2.9 wwf	

Steel Beams

Type	Qty	Beam Length (ft)	Wt/LF	Weight (lbs)
W12X14	18	16.5	14	4158
	6	10	14	840
	10	20	14	2800
W12X26	2	33	26	1716
W14X22	30	21	22	13860
W18X40	3	20	40	2400
W24X55	4	20	55	4400
W16X31	10	20	31	6200
W16X36	2	20	36	1440
WT6X26.5	1	16.5	26.5	437.25

Total lbs	38251.25
Total tons	19.1

Columns

Type	Qty	Column height (ft)	Wt/LF	Weight (lbs)
W12X96	5	72	96	34560
W12X65	14	32	65	29120
W12X96	1	72	96	6912
W12X96	3	58	96	16704
W12X53	14	32	53	23744
W12X53	4	18	53	3816
W12X79	3	32	79	7584
W14X109	1	79	109	8611
W14X109	1	75	109	8175
W14X109	1	84	109	9156
W14X109	1	92	109	10028
W14X109	3	92	109	30084
W14X90	2	58	90	10440
W12X65	1	72	65	4680
W12X65	1	58	65	3770
W12X65	1	58	65	3770

Total lbs	211154
Total tons	105.6

SECOND LEVEL

Slab On Metal Deck

CS-1	5.25" thick		15,105 SF
	>>3.25" conc	4000 psi	
	>>2"deck	20 gage metal fl dk 6x6 W2.9xW2.9 wwf	

Columns				
Type	Qty	Column height (ft)	Wt/LF	Weight (lbs)
W12X26	6	41	26	6396
W12X35	1	58	35	2030

Steel Beams				
Type	Qty	Beam Length (ft)	Wt/LF	Weight(lbs)
W14X30	11	16.5	30	5445
W14X22	11	16.5	22	3993
W16X26	1	16.5	26	429
W16X31	31	21	31	20181
W16X36	36	21	36	27216
W14X22	27	10	22	5940
W18X40	2	20	40	1600
W16X31	1	20	31	620
W21X44	2	20	44	1760
W24X68	1	20	68	1360
W10X22	4	15	22	1320
W24X55	18	20	55	19800
W24X76	1	20	76	1520
WT5X11	4	10	11	440
SF-1*	16	10	29	4640
T-1**	9	63	58	32886

Total lbs	137576
Total tons	68.8

*Sway Frames - similar to truss - top&bottom members: W8X18 and WT5X11

**Truss (T-1) - top and bottom chords: W10X33 and WT19X25

THIRD LEVEL (elevated track)

Slab On Metal Deck			
CS-1	5.25" thick	4000 psi	2625 SF
	>>3.25" conc		
	>>2"deck		
		20 gage metal fl dk	
		6x6 W2.9xW2.9 wwf	

Steel Beams				
Type	Qty	Beam Length (ft)	Wt/LF	Weight (lbs)
W12X19	5	26	19	2470
W12X19	2	13.5	19	513
W10X12	2	10	12	240
W10X12	4	21	12	1008
W10X12	2	15	12	360
W10X14	7	11.5	14	1127
W21X44	1	10	44	440
W21X44	1	20	44	880
W18X35	2	20	35	1400
W12X14	4	7.5	14	420
W12X14	24	20	14	6720
W14X22	1	20	22	440
W18X40	1	20	40	800
W30X99	2	20	99	3960
W12X19	1	20	19	380
W10X12***	67	10	12	8040

Total lbs	29198
Total tons	14.6

***10 feet is the approx/avg. length, it is the members used for the curves around the track

ROOF LEVEL

RD-2	1.5" thick	Vulcraft Acoustical Decking	Area total:	15,892.5 SF
		195' x 81.5' (w/ vapor barrier)		

Beams				
Type	Qty	Beam Length (sf)	Wt/LF	Weight (lbs)
W14X22	8	23	22	4048
MC12X10.6	9	20	10.6	1908
MC12X10.6	1	12	10.6	127.2
W12X22	6	20	22	2640
W12X19	3	20	19	1140
W12X19	2	30	19	1140
W12X16	1	30	16	480
W12X22	15	20	22	6600
W12X16	15	20	16	4800
W12X26	15	20	26	7800
W12X22	12	20	22	5280
W12X16	6	20	16	1920
W12X14	3	20	14	840
W12X19	3	20	19	1140
W12X22	2	20	22	880
W12X22	1	40	22	880
W12X19	2	20	19	760
W12X35	2	40	35	2800
W12X26	2	20	26	1040
W12X30	1	20	30	600
W12X16	2	20	16	640
W21X62	9	20	62	11160

Total lbs	58623.2
Total tons	29.3

Trusses				
Type	Qty	Truss Length (ft)	Wt/LF	Weight (lbs)
T-3A	1	79.5	101	8029.5
T-3B	1	79.5	101	8029.5
T-3C	1	79.5	101	8029.5
T-3	3	79.5	101	24088.5
T-2A	1	79.5	78	6201
T-2B	1	79.5	78	6201
T-2C	1	79.5	78	6201
T-2	2	79.5	78	12402

Total lbs	79182
Total tons	39.6

Area 2 Total Tons	277.0
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FOR A COMPLETE REPORT OF THE ESTIMATED COSTS OF AREA 2
LOOK AT THE REPORT SUMMARIES

General Conditions Estimate

Total Building Area: 101,730SF
 Facility Site: 2 Acres

PROJECT COMPONENTS	Cost:
New YMCA Facility	\$19,675,232.00
New YMCA Facility Site Items (Per Acre)	\$1,059,500.00
SUBTOTAL	\$20,734,732.00

CONTINGENCIES	Cost:
Design (1.5% of Components)	\$311,021.00
Construction contingency (5% of Components)	\$1,036,737.00

PRECONSTRUCTION SERVICES/CM GENERAL CONDITIONS	Cost:
1 Lump Sum	\$2,961,200.00

TOTAL	\$25,043,690.00
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CM FEE	Cost:
3% of TOTAL	\$751,311.00

SMITHGROUP Design Fees	Cost:
1 LUMP SUM	\$1,850,000.00

Professional Consultant	Crew	Daily Output	Labor Hours	Unit	2005 Bare Costs				Total Incl O&P
					Mat.	Labor	Equip.	Total	
SURVEYING Conventional, topographical, minimum	A-7	3.3	7.273	Acre	16.3	269	18.4	303.7	475

Temporary Utilities	Crew	Daily Output	Labor Hours	Unit	2005 Bare Costs				Total Incl O&P
					Mat.	Labor	Equip.	Total	
Heat, incl. fuel and operation, per week, 12 hrs. per day	1 Skwk	100	0.08	csf flr	6.25	2.79		9.04	11.45
Lighting, incl. sevice lamps, wiring & outlets, minimum	1 Elec	34	0.235	csf flr	2.32	9.6		11.92	17.3
Power for temp lighting only, per month, min/month 6.6 kwh								0.75	1.18

Construction Facilities	Crew	Daily Output	Labor Hours	Unit	2005 Bare Costs				Total Incl O&P
					Mat.	Labor	Equip.	Total	
OFFICE 50' x 10' Rent per month	2 Skwk	0.6	26.667	Ea.	254			254	280
FIELD OFFICE EXPENSE Field office expenxe, office eqpt rental avg.				Month	143			143	157
Office supplies, avg				Month	85			85	93.5
Telephone Bill				Month	204			204	224
Field office lights & HVAC				Month	98			98	108

Equipment Rental	Unit	Hourly Oper. Cost	Rent Per Day	Rent Per Week	Rent Per Month	Crew Eqpt Cost/Day
Excavator, diesel hydraulic, crawler mounted, 2.5 C.Y. capacity	Ea.	55.75	1,275	3,845	11,500	1,215
Truck, dump, tandem, 12 ton payload	Ea.	20.45	272	815	2,450	326.6
Lifting and Hoisting Equipment Rental						
Crawler mounted, lattice boom, .5 CY, 165 ton capacity, 60' boom	Ea.	92.2	2,175	6,560	19,700	2,050

Barriers and Enclosures	Crew	Daily Output	Labor Hours	Unit	2005 Bare Costs				Total Incl O&P
					Mat.	Labor	Equip.	Total	
TEMPORARY FENCING Chain link, 11 ga, 5' high	2 clab	400	0.04	LF	4.65	1.07		5.72	6.85

Crew Number	Bare costs		Incl. subs O&P		Cost/Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
A-7						
1 Chief of Party	42.9	343.2	69.05	552.4	36.92	59.75
1 Instrument Man	34.85	278.8	57	456		
2 Rodmen/Chainmen	33	264	53.2	425.6		
1 Laser/Transit Level		60.75		66.85	2.53	2.78
24 L.H., Daily Totals		946.75		1500.85	39.45	62.53

Components, Contingencies, Services and Fees	\$27,645,001.00
Surveying	\$950.00
Heat (3 yrs-approx 156 weeks) @ 5 CSF	\$8,931.00
Lighting @ 5 CSF - trailer dim.	\$86.50
Power for lighting @ 24 mos.	\$28.32
Office trailer rental @ 24 mos.	\$6,720.00
Field expenses @ 24 mos.	\$13,980.00
Barriers - Fencing @ 900 LF	\$6,165.00
Grand Total	\$27,681,861.82