Mercy Medical Center
Replacement Clinical Tower
Baltimore, Maryland

Nicole C Jenkins
Construction Management
Dr. David Riley
November 2,2007
Technical Assignment 2

Mercy

In care of the sick, great tenderness above all things.
- Catherine McAuley, Founder, Sisters of Mercy

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Dr. David Riley

Replacement Clinical Tower

Contents

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Executive Summary

The purpose of the cost anaylsis was to get a general scheme of the costs as well as provide a clear picture of the overall projects schedule. The analysis included the creation of a detailed project schedule, a site plan layout, an assemblies estimate, a detailed structural estimate, and a general conditions estimate. The analysis provided as better understanding of different systems cost contribution and their effect on scheduling.

Key finding include:

- Time dependent Tasks
    - Curtain Wall Procurement- In order to keep the building construction on schedule, the curtain wall procurement should be monitored closely.
- Site Plan Layout
    - Downtown congestion will cause issues with existing buildings, as well as transportation downtown. To create an efficient site, contractors must coordinate with the hospital as well as city officials to ensure both parties are content.

Detailed Project Schedule

See Appendix A for detailed project schedule

Key Dates

Early Bid Documents-Demo, S&S, Excavation	06/08/07
File for Foundations/ Excavation Permit	06/18/07
Design Development Drawings	07/16/07
Garage Demolition Begins	9/28/07
Submit Early RFP Contractor Recommendations	10/08/07
Submit Early DD Estimate/ GMP based on DD documents	10/08/07
Verizon pull cables, splice, terminate	12/27/07
Electric pull cables, splice, terminate	12/28/07
S&S begins at location of old Pleasant street Garage	02/26/08
100% Construction Documents	3/03/08
Receive Building permit	04/28/08
Caissons Begin	05/13/08
Concrete Foundation Walls Begin	07/08/08
Fit-out/MEP on level 5 begins	04/21/09
Temporary Roofing on Level 9 completes	05/18/09
Concrete Roof Level Completes	08/31/09
Project Substantial Completion w/o weather contingency	08/31/10

Schedule Outline

Preconstruction

Duration: May 03, 2007-June 6, 2008

Key Activities

- Utility Relocation
- Garage Demolition
- Excavation
- Demolition of existing caissons

Construction

Duration: *May 13, 2008- December 21, 2010* (with weather contingency)

Key Activities

Substructure

- Foundation Walls
- CMU backup Walls

Exterior

- Brick Veneer
- Curtain wall

Interior

- Fit-out/MEP
- MEP Penthouse
- Commissioning

Key Aspects of Schedule

The schedule of the project utilizes both a compressed schedule and a schedule with accelerated activities. This helps creates better efficiency on the project, and creates a buffer zone for any site issues such as weather conditions, unforeseen site conditions, and issues with material delivery. The curtain wall procurement could pose the most risk for the schedule. For the curtain wall construction to begin, the contractor needs to ensure that materials are available and will arrive on-time. The long time-period for the curtain wall procurement can be attributed to the amount of curtain wall being procured.

Garage Demolition

The demolition began during late September. The garage was previously used for the Mercy Medical Center parking; the site will be the location of the replacement tower. The demolition takes a total of 110 days; the process involves the actual implosion of the garage as well as the clearing out of debris from the demolition.

Foundation Walls

Foundation wall construction begins on August 12, 2008 and ends on August 31, 2009. The size of the foundation walls decreases with the height if the building, so the duration for construction of each decreases as well. This also explains why the backup wall construction begins as the foundation walls decrease.

Potential Project Delays

The most likely project delays will pertain to weather and material delivery. A majority of the construction phase is done during the summer months of the year (i.e. June, July, and August).The initial construction of the foundation walls takes place during the months of January and February. This could pose a threat to the curing process of the foundation walls. The cast-in-place system could have difficultly setting in cold temperatures, which could delay the entire construction process. Another possible delay could come from potential material delays, any delay of materials will cause the project to fall behind schedule.

The detailed schedule is provided in Appendix A.

Site Plan

The site of the project gives way to multiple issues during construction. The replacement tower is located centrally in Baltimore city, which poses problems with material delivery, storage space, as well as pedestrian safety and access to adjacent buildings. This requires detailed planning for all phases of construction. The building envelope phase requires that adequate space is provided for cranes, storage and on site trailers. Fencing for the project needs to provide a safety barrier between pedestrians and hospital patients and the actual construction site. A new emergency entrance and ambulance drop –off will be established in order to keep the course of the existing hospital efficient. The downtown area of Baltimore, may slow down the delivery of various materials for the building envelope. Establishing an appropriate time for delivery, i. e. after the rush hour or before rush hour, will increase the efficiency of the project. Material storage will be located on the east side of the building, along with the trailers to allow for an easy drop-off for delivery trucks. Two cranes will be used to cover the entire building footprint. The key goal of the site plan is to create a flowing plan which minimally disturbs the flow the existing city. The site layout plan is provided in Appendix B, based on the building envelope phase.

Assemblies Estimate

The exterior of the building will consist of modular brick with a 2-inch airspace for insulation. The 8-inch normal weight concrete block behind the insulation, will be sprayed with bituminous damp proofing. This system will be located in the Central Utility Plant exterior wall, and the connecting corridor adjacent to loading dock area. In addition the masonry will include wire reinforcement Class B2 galvanized plates and wire assemblies.*

The curtain wall is a custom pre-fabricated and pre-glazed unitized equalized curtain wall system. A 2 ½" to 3" wide by 8" exposed mullion aluminum framing is to be provided. The curtain wall includes a combination of insulated vision glass and insulated spandrel glass panels. This assembly is to be located at all exterior windows. *

*Excerpt from Technical 1

The assembly estimate for the building comes to $2,584,871.234. This value is obtained through RS Means Cost Works 2007, and uses a location factor of.979. A detailed breakdown is provided in Appendix C.

Building Envelope System			
Type	**Quantity**	**$/SF**	**Total**
Curtain wall	**73,858**	$19.57	**$1,445,401.06**
Brick Veneer	**41,681**	$15.04	**$626,882.24**
Metal Panel	**39,449**	$4.89	**$192,905.61**
Concrete	**41,681**	$8.09	**$337,199.29**
Bituminous waterproofing	**41,681**	$0.91	**$37,929.71**
TOTAL	**-**	**-**	**$2,640,317.91**
Location Factor	$2,640,317.91	0.979	**2584871.234**
TOTALS			$2,584,871.234

Table 1. Summary of 2007 R.S. Means Assemblies Estimate for Replacement Clinical Tower

The assemblies cost is mostly located in the curtain wall and the brick veneer. The contractor should pay close attention to the higher cost items, to ensure no additional costs are accrued due to inefficiency.

Detailed structural Estimate

Structural Framing

The structural Frame is a reinforced concrete, cast-in-place system. The interior columns will be 30” square; the exterior will be 24” square. The columns for the upper levels will be 24” square and the lower levels will be 36” square.

The structural estimate includes columns, a beam and joist floor system, and foundation concrete. All pricing was obtained from RS means Cost Works 2007. A breakdown of the estimate is provided in Appendix D.

Description	Equipment	Labor	Material	Quantity	Unit	Unit Price	Cost
Foundation Concrete	-	**$36.00**	**$99.00**	**39,000**	LF	$135	$5,265,000
Columns	**$22.34**	**$179.56**	**$201.96**	**20,625**	CY	$403.88	$8,330,025
Beams	**-**	**$9.85**	**$108**	**5,304**	CY	$117.85	$625,076.4
Joists	-	**$10.35**	**$8.85**	2,040	CY	$19.2	$39,168
Wire mesh	**-**	**$19.07**	**$20.44**	**39,000**	SF	$39.51	$1,540,890
TOTAL							$15,800,159.4

Table 2. Summary of 2007 R.S. Means Detailed Structural Estimate for Replacement Clinical Tower

Based on atypical floor structural estimate, the total structural costs for the building comes to $15,800,159.4. When the location factor of .979 is applied to the total costs, the amount totals to $15,468,356.05.

General Conditions Estimate

The general conditions estimate provides a basic understanding of what the general contractor considers when beginning a project. The cost analysis included Staffing and Labor, office support, temporary utilities Bonds/Insurance. The estimate is substantially lower than the actual value. The reason for this is due to the equipment costs not being accounted for, as well as the staffing costs of the Architect, and additional consultants. The insurance, performance bond and fee, were estimated based on the square footage estimate calculated in Technical assignment 1. Percentages were applied based on the requirements of the building. A breakdown of the general conditions costs is provided in Appendix E.

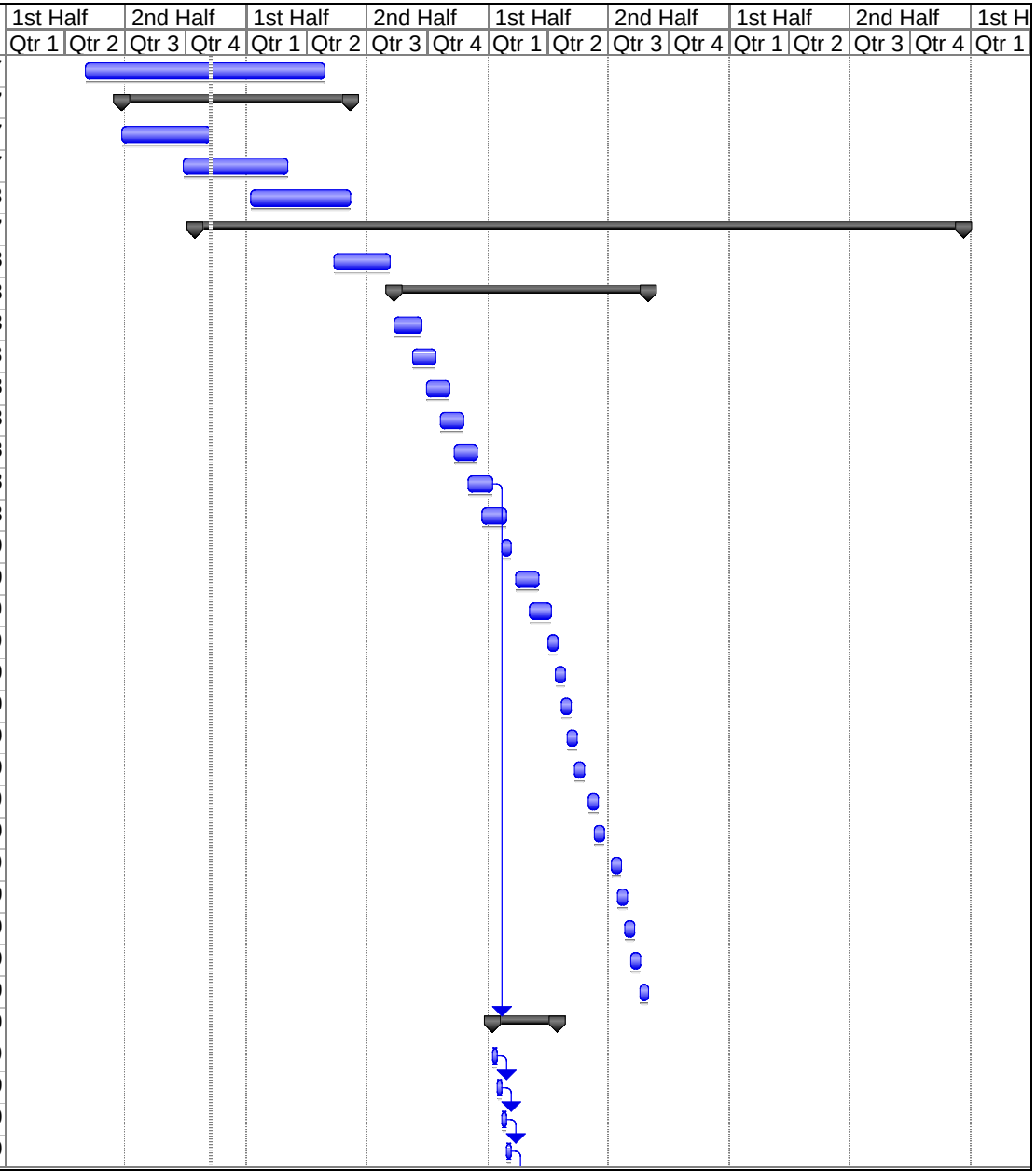
General Conditions	
Staffing	$1,024,920
Office Support	$44,861
Temporary Utilities	$50,963.22
Bonds/Insurance/Fees	$2,036,459
TOTAL	**$3,442,539.3**

Table 3. Summary of 2007 R.S. Means General Conditions Estimate for Replacement Clinical Tower

Appendix A

Detailed Schedule

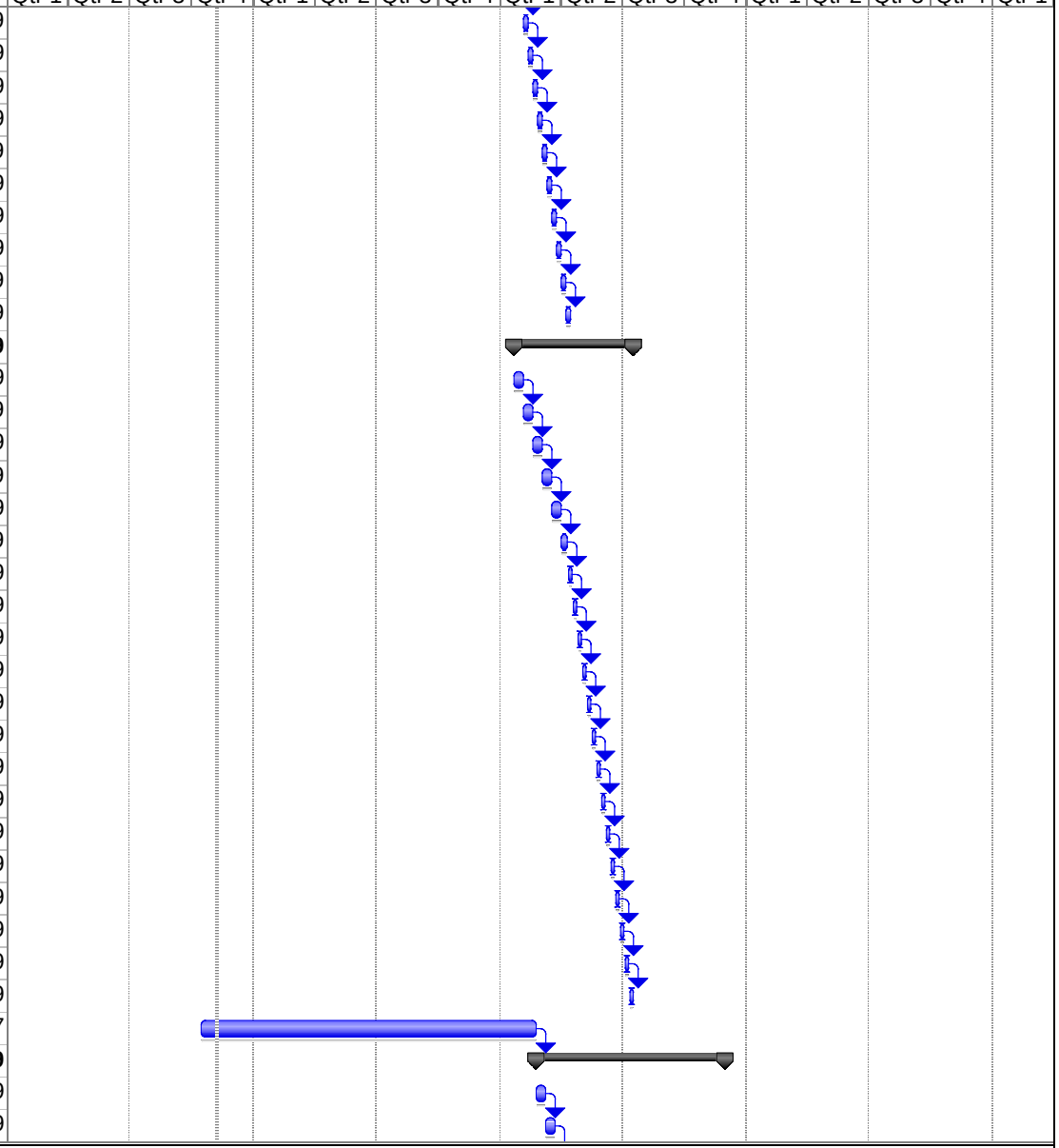
ID	Task Name	Duration	Start
1	Permitting	258 days	Thu 5/3/07
2	**Preconstruction**	**248 days**	**Wed 6/27/07**
3	Utility Relocation	96 days	Wed 6/27/07
4	Garage Demolition	112 days	Fri 9/28/07
5	Excavation	109 days	Tue 1/8/08
6	**Construction**	**831 days**	**Tue 10/16/07**
7	Caissons	61 days	Tue 5/13/08
8	**Concrete Foundation Wal**	**275 days**	**Tue 8/12/08**
9	Level 1	30 days	Tue 8/12/08
10	Level 2	25 days	Tue 9/9/08
11	Lobby Level	25 days	Tue 9/30/08
12	Level 4	25 days	Tue 10/21/08
13	Level 5	25 days	Tue 11/11/08
14	Level 6	27 days	Tue 12/2/08
15	Level 7	27 days	Tue 12/23/08
16	Level 8	10 days	Thu 1/22/09
17	Level 9	25 days	Thu 2/12/09
18	Level 10	23 days	Thu 3/5/09
19	Level 11	11 days	Thu 4/2/09
20	Level 12	11 days	Mon 4/13/09
21	Level 14	11 days	Wed 4/22/09
22	Level 15	11 days	Fri 5/1/09
23	Level 16	11 days	Tue 5/12/09
24	Level 17	11 days	Tue 6/2/09
25	Level 18	11 days	Thu 6/11/09
26	Level 19	11 days	Tue 7/7/09
27	Level 20	11 days	Thu 7/16/09
28	Level 21	11 days	Mon 7/27/09
29	Level 22	11 days	Wed 8/5/09
30	Roof Level	9 days	Wed 8/19/09
31	**CMU back up walls**	**70 days**	**Thu 1/8/09**
32	Level 1	5 days	Thu 1/8/09
33	Level 2	5 days	Thu 1/15/09
34	Lobby Level	5 days	Thu 1/22/09
35	Level 4	5 days	Thu 1/29/09



Project: Project1.mpp
Date: Wed 11/7/07

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

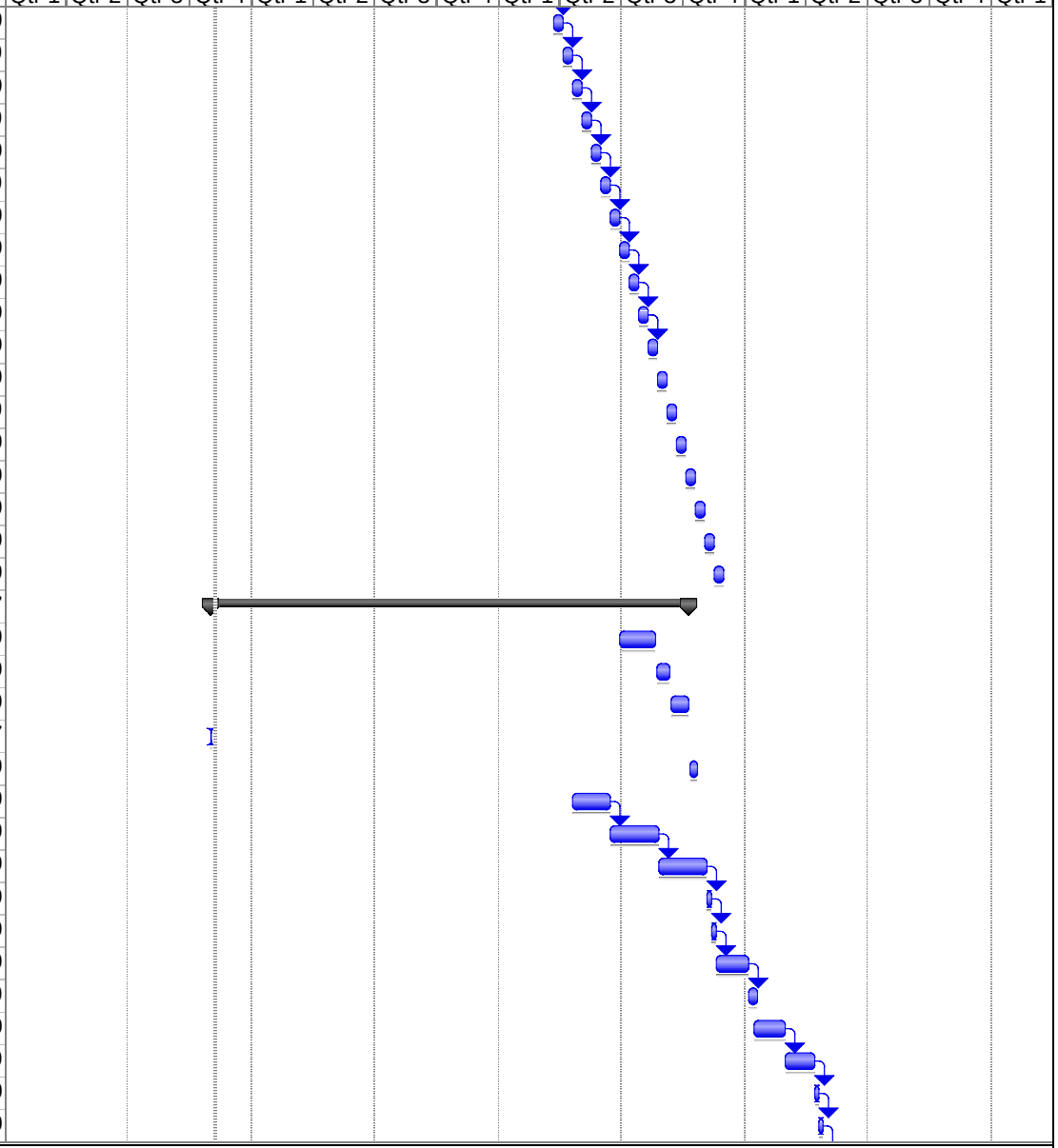
ID	Task Name	Duration	Start
36	Level 5	5 days	Thu 2/5/09
37	Level 6	5 days	Thu 2/12/09
38	Level 7	5 days	Thu 2/19/09
39	Level 8&9	5 days	Thu 2/26/09
40	Level 10&11	5 days	Thu 3/5/09
41	Level 12&14	5 days	Thu 3/12/09
42	Level 15&16	5 days	Thu 3/19/09
43	Level 17&18	5 days	Thu 3/26/09
44	Level 19&20	5 days	Thu 4/2/09
45	Level 21&22	5 days	Thu 4/9/09
46	**Brick Veneer**	**127 days**	**Thu 1/22/09**
47	Level 1	10 days	Thu 1/22/09
48	Level 2	10 days	Thu 2/5/09
49	Level 3	10 days	Thu 2/19/09
50	Level 4	10 days	Thu 3/5/09
51	Level 6	10 days	Thu 3/19/09
52	Level 7	7 days	Thu 4/2/09
53	Level 8	5 days	Mon 4/13/09
54	Level 9	5 days	Mon 4/20/09
55	Level 10	5 days	Mon 4/27/09
56	Level 11	5 days	Mon 5/4/09
57	Level 12	5 days	Mon 5/11/09
58	Level 14	5 days	Mon 5/18/09
59	Level 15	5 days	Mon 5/25/09
60	Level 16	5 days	Mon 6/1/09
61	Level 17	5 days	Mon 6/8/09
62	Level 18	5 days	Mon 6/15/09
63	Level 19	5 days	Mon 6/22/09
64	Level 20	5 days	Mon 6/29/09
65	Level 21	5 days	Mon 7/6/09
66	Level 22	5 days	Mon 7/13/09
67	Curtain Wall Procurement	355 days	Tue 10/16/07
68	**Curtain Wall**	**200 days**	**Tue 2/24/09**
69	Level 1	10 days	Tue 2/24/09
70	Level 2	10 days	Tue 3/10/09



Project: Project1.mpp
Date: Wed 11/7/07

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

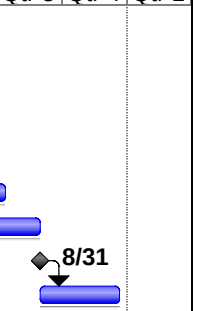
ID	Task Name	Duration	Start
71	Lobby Level	10 days	Tue 3/24/09
72	Level 4	10 days	Tue 4/7/09
73	Level 5	10 days	Tue 4/21/09
74	Level 6	10 days	Tue 5/5/09
75	Level 7	10 days	Tue 5/19/09
76	Level 8	10 days	Tue 6/2/09
77	Level 9	10 days	Tue 6/16/09
78	Level 10	10 days	Tue 6/30/09
79	Level 11	10 days	Tue 7/14/09
80	Level 12	10 days	Tue 7/28/09
81	Level 14	10 days	Tue 8/11/09
82	Level 15	10 days	Tue 8/25/09
84	Level 16	10 days	Tue 9/8/09
86	Level 17	10 days	Tue 9/22/09
89	Level 18	10 days	Tue 10/6/09
90	Level 19	10 days	Tue 10/20/09
92	Level 20	10 days	Tue 11/3/09
95	Level 21	10 days	Tue 11/17/09
97	**Fit-Out MEP**	**506 days?**	**Fri 11/2/07**
101	Ground Level	39 days	Tue 6/30/09
103	Level 1	15 days	Mon 8/24/09
106	Level 2	20 days	Mon 9/14/09
108	Level Lobby	1 day?	Fri 11/2/07
111	Level 4	9 days	Mon 10/12/09
112	Level 5	40 days	Tue 4/21/09
113	Level 6	52 days	Tue 6/16/09
114	Level 7	51 days	Thu 8/27/09
115	Level 8	5 days	Fri 11/6/09
116	Level 9	5 days	Fri 11/13/09
117	Level 10	34 days	Fri 11/20/09
118	Level 11	6 days	Thu 1/7/10
119	Level 12	32 days	Fri 1/15/10
120	Level 14	32 days	Tue 3/2/10
121	Level 15	4 days	Thu 4/15/10
122	Level 16	4 days	Wed 4/21/10



Project: Project1.mpp
Date: Wed 11/7/07

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

ID	Task Name	Duration	Start
123	Level 17	4 days	Tue 4/27/10
124	Level 18	4 days	Mon 5/3/10
125	Level 19	10 days	Fri 5/7/10
126	Level 20	10 days	Fri 5/21/10
127	Level 21	15 days	Fri 6/4/10
128	MEP Penthouse	222 days	Mon 9/7/09
129	Commissioning	90 days	Wed 4/28/10
130	Project Substantantial Com	1 day	Tue 8/31/10
131	Schedule/Weather Contingc	80 days	Wed 9/1/10

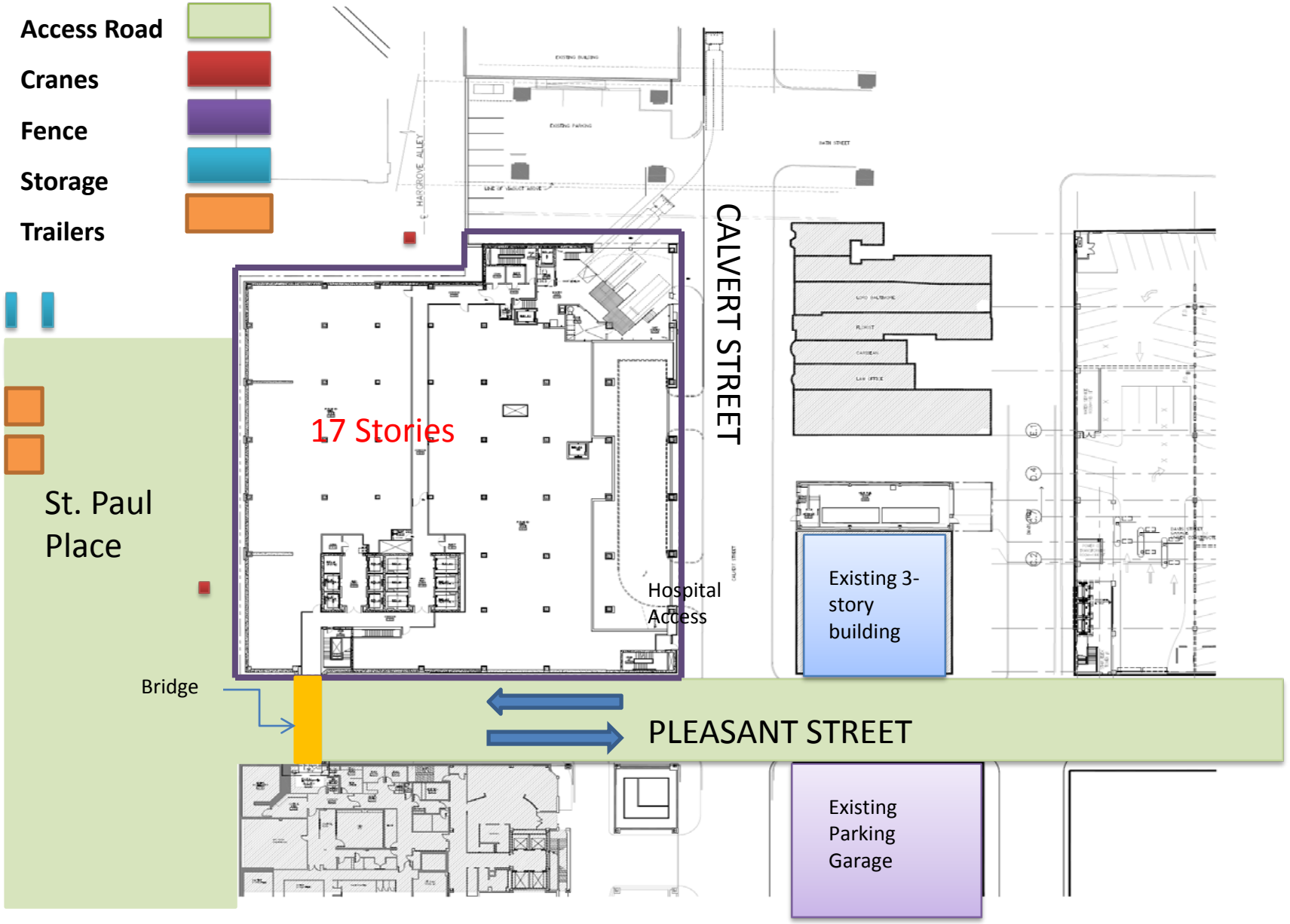


Project: Project1.mpp
Date: Wed 11/7/07

Task	Milestone	External Tasks	
Split	Summary	External Milestone	
Progress	Project Summary	Deadline	

Appendix B

Site Layout



Replacement Clinical Tower, Baltimore
Maryland- Building Envelope Phase

Appendix C

Assembly Estimate

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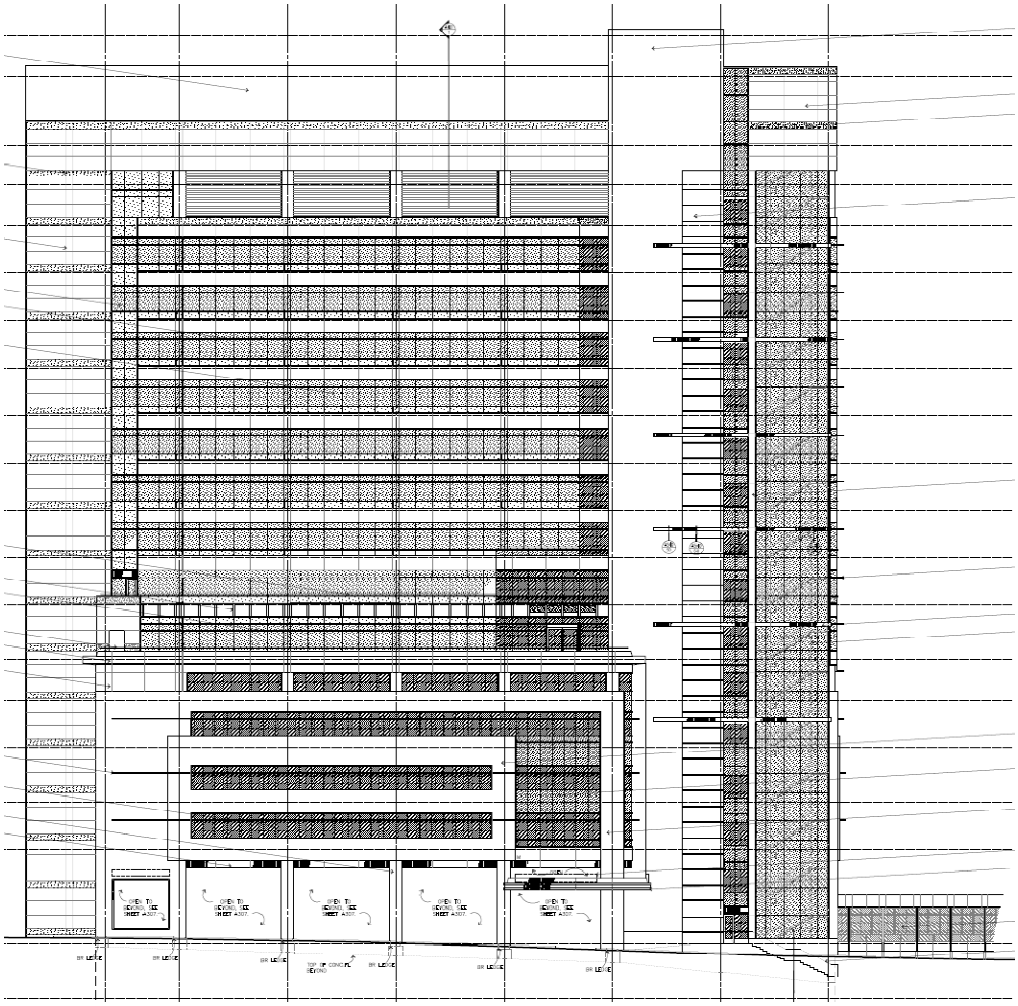

Exterior West Elevation

Type	Quantity	$/SF	Total
Curtain wall	**16,170**	$19.57	**$316,446.90**
Brick Veneer	**12,696**	$15.04	**$190,947.84**
Metal Panel	**6,904**	$4.89	**$33,760.56**
Concrete 8-inch normal	**12,696**	$8.09	**$102,710.64**
Bituminous waterproofing	**12,696**	$0.91	**$11,553.36**
TOTAL			**$655,419.30**

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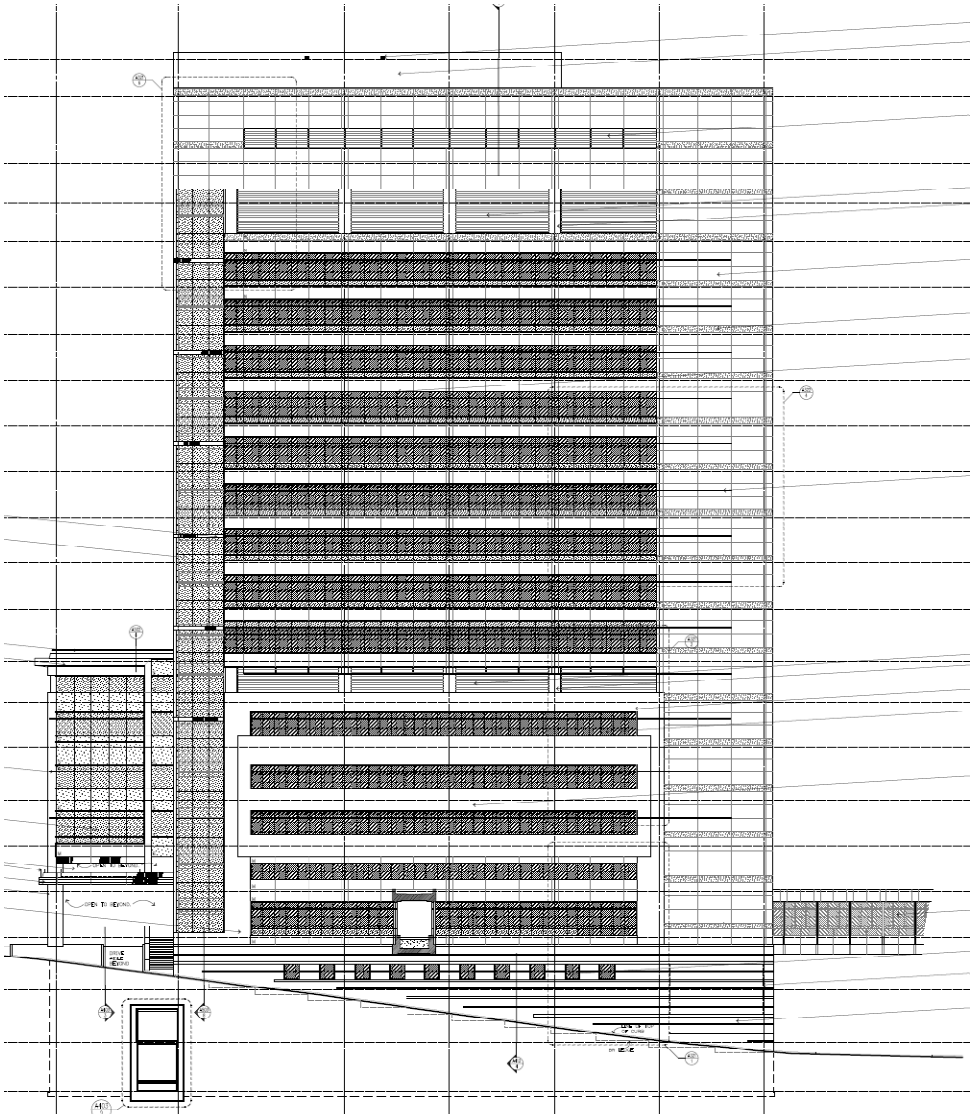

Exterior Elevation South

Type	Quantity(SF)	$/SF	Total
Curtain wall	**19,598**	$19.57	**$383,532.86**
Brick Veneer	**3500**	$15.04	**$52,640**
Metal Panel	**12,725**	$4.89	**$62,225.25**
Concrete 8-inch normal	**3,500**	$8.09	**$28,315.00**
Bituminous waterproofing	**3,500**	$0.91	**$3,185.00**
TOTAL			**$529,898.11**

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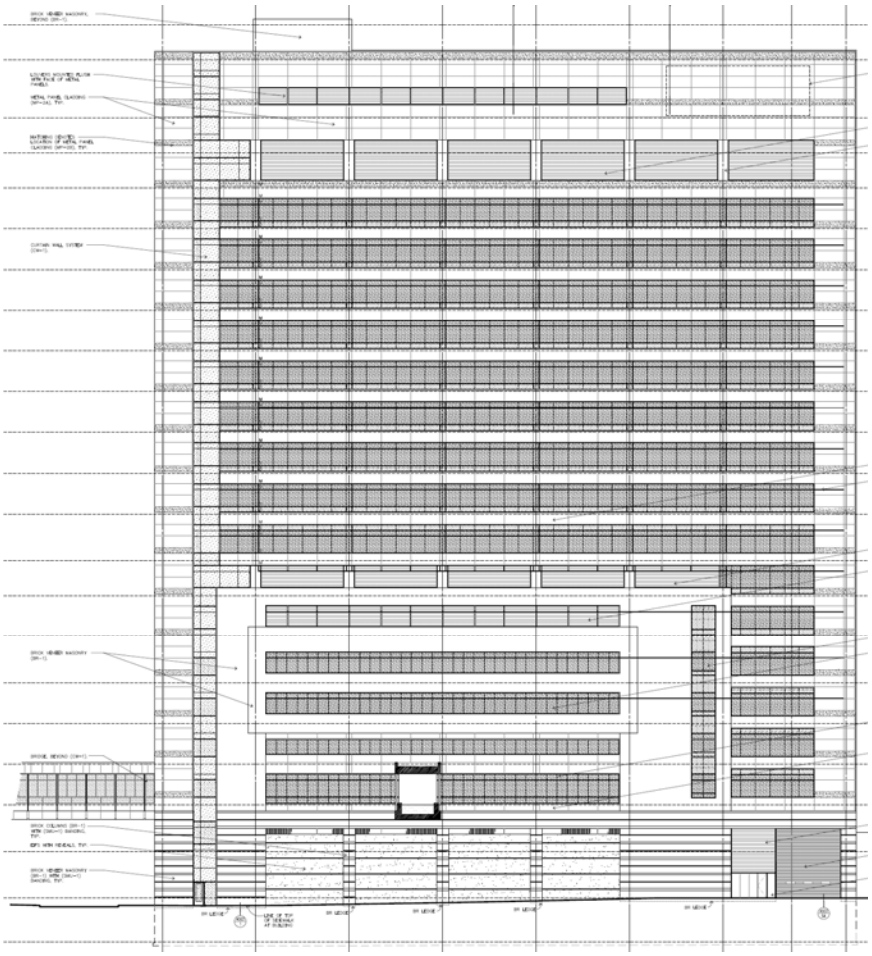
Replacement Clinical Tower



Exterior Elevation East

Type	Quantity	$/SF	Total
Curtain wall	**26,080**	$19.57	**$510,385.60**
Brick Veneer	**5,200**	$15.04	**$78,208**
Metal Panel	**12,060**	$4.89	**$58,973.40**
Concrete 8-inch normal	**5,200**	$8.09	**$42,068.00**
Bituminous waterproofing	**5,200**	$0.91	**$4,732.00**
TOTAL			**$694,367**

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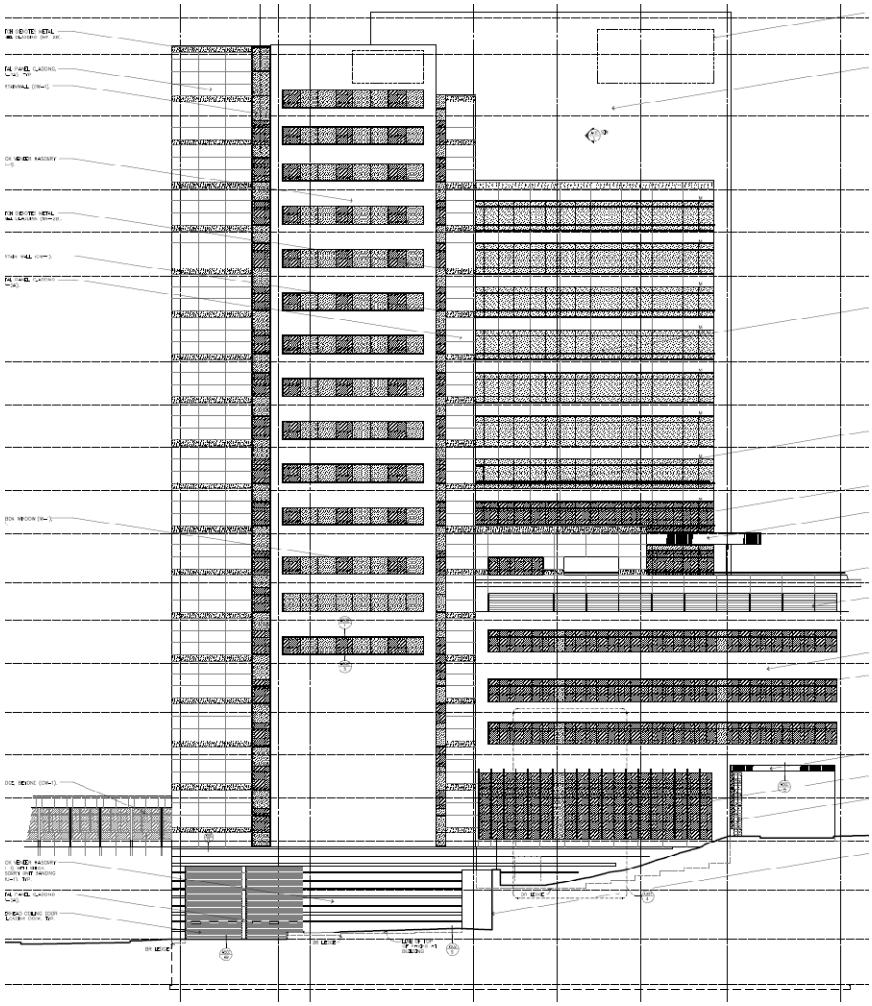

Exterior Elevation North

Type	Quantity	$/SF	Total
Curtain wall	**12,010**	$19.57	**$235,035.70**
Brick Veneer	**20,285**	$15.04	**$305,086.40**
Metal Panel	**7,760**	$4.89	**$37,946.40**
Concrete 8-inch normal	**20,285**	$8.09	**$164,105.65**
Bituminous waterproofing	**20,285**	$0.91	**$18,459.35**
TOTAL			**$760,633.5**

Appendix D

Detailed Structural Takeoff

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Replacement Clinical Tower

These calculations are based on a typical floor layout. They applied to all 17 stories of the facility.

Columns

Columns	Quantity	Length (Feet)	CY
30X30	9	9	2700
24X24	3	9	576
16X32	2	9	341.3333333
28X28	2	9	522.6666667
36X36	1	9	432
34X42	5	9	2380
34X34	12	9	4624
32X32	4	9	1365.333333
40X40	1	9	533.3333333
34X38	4	9	1722.666667
38X38	11	9	5294.666667
20X20	1	9	133.3333333
TOTAL			**20625.33333**
TOTAL(Rounded)			**20,625 CY**

Beams

Beam	Length	Width	Depth	Top Bars	Bottom Bars	Stirrups	CY
1B1	32	30	21	-	-	#4	5.18518519
1B2	32	30	21	-	-	#4	5.18518519
1B3	32	30	21	-	-	#4	5.18518519
1B4	32	30	21	-	-	#4	5.18518519
1B5	22	30	21	-	-	#4	3.56481481
1B6	32	30	21	-	-	#4	5.18518519
1B7	32	30	21	-	-	#4	5.18518519
1B8	32	30	21	-	-	#4	5.18518519
1B9	32	30	21	-	-	#4	5.18518519
1B10	22	30	21	-	-	#4	3.56481481
1B11	32	30	21	-	-	#4	5.18518519

1B12	32	30	21	-	-	#4	5.18518519
1B13	32	30	21	-	-	#4	5.18518519
1B14	32	30	21	-	-	#4	5.18518519
1B15	22	30	21	-	-	#4	3.56481481
1B16	32	36	21	-	-	#4	6.22222222
1B17	32	36	21	-	-	#4	6.22222222
1B18	32	36	21	-	-	#4	6.22222222
1B19	32	36	21	-	-	#4	6.22222222
1B20	32	36	21	-	-	#4	6.22222222
1B21	32	36	21	-	-	#4	6.22222222
1B22	32	36	21	-	-	#4	6.22222222
1B23	32	39	21	-	-	#4	6.74074074
1B24	32	39	21	-	-	#4	6.74074074
1B25	32	39	21	-	-	#4	6.74074074
1B26	32	39	21	-	-	#4	6.74074074
1B27	32	39	21	-	-	#4	6.74074074
1B28	37.16	14	21	-	-	#4	2.79388148
1B29	28.5	14	21	-	-	#4	2.14277778
1B30	27.16	14	21	-	-	#4	2.04202963
1B31	27.16	14	21	-	-	#4	2.04202963
1B32	32	14	21	-	-	#4	2.40592593
1B33	37.16	40	21	-	-	#4	8.02036667
1B34	27.16	14	21	-	-	#4	2.04202963
1B35	27.16	14	21	-	-	#4	2.04202963
1B36	32	14	21	-	-	#4	2.40592593
1B37	20	24	21	-	-	#4	2.59259259
1B38	32	16	21	-	-	#4	2.75851852
1B39	20	18	21	-	-	#4	1.94444444
1B40	20	18	21	-	-	#4	1.94444444
1B41	37.16	14	21	-	-	#4	2.79388148
1B42	28.5	14	21	-	-	#4	2.14277778
1B43	27.16	14	21	-	-	#4	2.04202963
1B44	27.16	14	21	-	-	#4	2.04202963
1B45	32	14	21	-	-	#4	2.40592593
1B46	37.16	14	21	-	-	#4	2.79388148

1B47	28.5	14	21	-	-	#4	2.14277778
1B48	37.16	14	21	-	-	#4	2.79388148
1B49	27.16	14	21	-	-	#4	2.04202963
1B50	32	14	21	-	-	#4	2.40592593
1B51	13.5	42	21	-	-	#4	3.0625
1B52	13	16	21	-	-	#4	1.12064815
1B53	13	28	21	-	-	#4	1.96324074
1B54	13	16	21	-	-	#4	1.12317593
1B55	13	14	36	-	-	#4	1.67555556
1B56	13	14	21	-	-	#4	0.97740741
1B57	23	14	21	-	-	#4	1.72925926
1B58	37.16	25	21	-	-	#4	5.00971852
1B59	32	24	21	-	-	#4	4.14814815
1B60	5.5	24	21	-	-	#4	0.71296296
1B61	13.5	52	48	-	-	#4	8.66
1B62	13	54	48	-	-	#4	8.66666667
1B63	13	54	48	-	-	#4	8.66666667
1B64	5.5	24	21	-	-	#4	0.71296296
1B65	13	25	21	-	-	#4	1.75259259
1B66	6	16	21	-	-	#4	0.51722222
1B67	50.75	40	21	-	-	#4	10.9535417
1B68	50.75	34	21	-	-	#4	9.30886574
1B69	32	34	21	-	-	#4	3.79555556
1B70	13	25	36	-	-	#4	3.00921111
1B71	13	23	21	-	-	#4	1.60935185
1B72	32	23	21	-	-	#4	3.97392593
1B73	32	16	30	-	-	#4	3.94074074
1B74	32	16	30	-	-	#4	3.94074074
1B75	32	16	30	-	-	#4	3.94074074
1B76	32	16	30	-	-	#4	3.94074074
1B77	32	39	36	-	-	#4	3.94074074
TOTAL(round)							312 CY

Nicole C. Jenkins

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Joists

Joists	Length	Width	Top Bars	Bottom Bars	CY
J1	10	21	2#9	2#6	1.62037
J2	10	21	2#9	2#6	1.62037
J3	10	21	2#7	2#6	1.62037
J4	10	21	2#8	2#6	1.62037
J5	10	21	2#8	2#6	1.62037
J6	10	21	2#8	2#6	1.62037
J7	10	21	2#8	2#6	1.62037
J8	10	21	2#8	2#6	1.62037
J9	10	21	2#8	2#6	1.62037
J10	10	21	2#8	2#6	1.62037
J11	10	21	2#8	2#6	1.62037
J12	10	21	2#8	2#6	1.62037
J13	10	21	2#8	2#6	1.62037
J14	10	21	2#8	2#6	1.62037
J15	10	21	2#8	2#6	1.62037
J16	10	21	2#8	2#6	1.944444
J17	10	25	2#8	2#6	1.944444
J18	10	25	2#8	2#6	1.944444
J19	10	25	2#8	2#6	1.944444
J20	10	25	2#8	2#6	1.944444
J21	10	25	2#8	2#6	1.944444
J22	10	25	2#8	2#6	1.944444
J23	10	25	2#8	2#6	2.106481
J24	10	25	2#8	2#6	2.106481
J25	10	25	2#8	2#6	2.106481
J26	10	25	2#8	2#6	2.106481
J27	10	25	2#8	2#6	2.106481
J28	10	25	2#8	2#6	0.751852
J29	10	25	2#8	2#6	0.751852
J30	10	25	2#8	2#6	0.751852
J31	10	25	2#8	2#6	0.751852
J32	10	25	2#8	2#6	0.751852

J33	10	25	2#8	2#6	2.158333
J34	10	25	2#8	2#6	0.751852
J35	10	25	2#8	2#6	0.751852
J36	10	25	2#8	2#6	0.751852
J37	10	25	2#8	2#6	1.296296
J38	10	25	2#8	2#6	0.862037
J39	10	25	2#8	2#6	0.972222
J40	10	25	2#8	2#6	0.972222
J41	10	25	2#8	2#6	0.751852
J42	10	25	2#8	2#6	0.751852
J43	10	21	2#8	2#6	0.751852
J44	10	21	2#8	2#6	0.751852
J45	10	21	2#8	2#6	0.751852
J46	10	21	2#8	2#6	0.751852
J47	10	21	2#8	2#6	0.751852
J48	10	21	2#8	2#6	0.751852
J49	10	21	2#8	2#6	0.751852
J50	10	21	2#8	2#6	0.751852
J51	10	21	2#8	2#6	2.268519
J52	10	21	2#8	2#6	0.862037
J53	10	21	2#8	2#6	1.510185
J54	10	21	2#8	2#6	0.863981
J55	10	36	2#8	2#6	1.288889
J56	10	21	2#8	2#6	0.751852
J57	10	21	2#8	2#6	0.751852
J58	10	21	2#8	2#6	1.348148
J59	10	21	2#8	2#6	1.296296
J60	10	21	2#8	2#6	1.296296
J61	10	48	2#8	2#6	6.414815
J62	10	48	2#8	2#6	6.666667
J63	10	48	2#8	2#6	6.666667
J64	10	21	2#8	2#6	1.296296
J65	10	21	2#8	2#6	1.348148
J66	10	21	2#8	2#6	0.862037
J67	10	21	2#8	2#6	2.158333

J68	10	21	2#8	2#6	1.834259
J69	10	21	2#8	2#6	1.186111
J70	10	36	2#8	2#6	2.314778
J71	10	21	2#8	2#6	1.237963
J72	10	21	2#8	2#6	1.241852
J73	10	30	2#8	2#6	1.231481
J74	10	30	2#8	2#6	1.231481
J75	10	30	2#8	2#6	1.231481
J76	10	30	2#8	2#6	1.231481
J77	10	36	2#8	2#6	1.231481
					119.8669
TOTAL					**120 CY**

Appendix E

General Conditions Estimate

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Replacement Clinical Tower

Staffing

Position	Weeks	Unit Price/Week	Unit Price/Year	Total Price
Project Manager	216	$ 1,775.00	92,300	$383,400
Superintendent	216	$ 1,650.00	85,800	$356,400
Field Engineer	216	$ 350.00	18,200	$75,600
Timekeeper	216	$ 970.00	50,440	$209,520
TOTAL				**$1,024,920***

- The value obtained for staffing does not include total staffing costs.

Office Support

Materials	Months	Unit Price/Month	Unit Price/Year	Total Price	Quantity of Each	Total
Trailers	42	$ 207.23	2486.76	8703.66	-	-
Office Supplies	42	$ 97.95	1175.4	4113.9	-	-
Telephone	42	$ 216.51	2598.12	9093.42	-	-
Storage	42	$ 78.36	940.32	3291.12	5	16455.6
Office Equipment	42	$ 154.65	1855.8	6495.3	-	-
TOTAL						**$44,861.88**

Temporary Utilities

Item	Months	Price/Month	Total
Power	42	$1000	$ 42,000
Lighting	42	$113.47	$4,763.22
Toilets	42	$100	$4,200
TOTAL			**$50,963.22**

Based on the Square footage estimate, the Insurance, bond and fee were determined. The following assumptions were made:

- The performance bond percentage used was a maximum value of 1.5%
- All Risk Insurance :.25%

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Replacement Clinical Tower

Bond/Insurance

Item	Percentage (%)	Total
Bonds	1.5	$1,990,110
Insurance	.25	$33,1685.08
TOTAL		$2,321,795.08