



American Speech - Language - Hearing Association

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AtSite Real Estate

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American Speech-Language Hearing Association National Headquarters  
Rockville, MD  
October 30, 2006  
Technical Report 2

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## Executive Summary

This technical assignment provides deeper insight into the American Speech Language – Hearing Association Headquarters located in Rockville, MD. In this assignment the project will be analyzed from a detailed project schedule, a greater in depth site plan, and multiple estimates including an assemblies, detailed structural, and general conditions estimate. All of these items will allow individuals to become more familiar with the project and understand the importance of the execution of each of these assignments and how greatly they can affect the project.

The ASHA is a highly interesting project in that so much relies on the schedule as well as the materials selected and used throughout the project. The ASHA has already sold their old headquarters and are now back renting, therefore, the schedule is crucial. If the project were to go over the allotted schedule the ASHA would not only be losing money on the project itself, but would be forced to continue to pay rent until the building was finally completed. A mistake with the schedule could cost the ASHA a lot of money and cause much aggravation and animosity.

The ASHA is also attempting to reach a LEED rating and therefore in the assemblies estimate the skin of the building is essential in helping with the overall rating of the building. The materials for the façade were chosen not simply for their attractive demeanor, but also because each material will help the ASHA attain the silver LEED rating they are so greatly attempting to reach.

The ASHA is not simply an interesting building architecturally with its unique materials, and design, but also because of all that remains essential for the success of the project. The structural system is quite complicated due to the interesting design, and it intertwines a mix of steel and concrete, while remaining green. The ASHA provides many interesting opportunities all involving the overall importance of the owner and the project itself.

## **Detailed Project Schedule**

The project schedule consists of 199 tasks each of which is nearly essential to the project and its overall success. The schedule is actually broken down into key elements occurring on the construction site. It begins with the notice to proceed and then is followed by the site work that must occur. The other essential tasks follow in their legitimate order beginning with the structure of concrete and steel and finally ending with final testing and punch lists. Please see appendix A for the detailed project schedule.



## Site Layout Planning

The advantage to having the project be found in Rockville, MD is that there is very little or no concern for site congestion. Although the site has little to worry about with congestion of other buildings due to the speed of the project it is essential to have the site laid out properly to conserve the most space throughout the project.

While setting up the site one of the essential aspects was having the sediment pond immediately set up. The pond then had a pipe run to it so that any rain water that could have ruined the site due to the water tables was avoided. It was also decided that two different cranes would be used throughout the project which was essential to the sequencing. The project would begin with a tower crane to help with the C.I.P. and formwork. Once the site work was completed the crane would be disassembled and removed from the site and a mobile crane would then enter the site. The mobile crane simply allows for better mobility and for more lifts to occur in a day. The building is not very high, but it is quite long and oddly shaped. Therefore, a tower crane may have difficulty with some of the lifts while a mobile crane could simply move to the most convenient location and continue with the lift.

Although there are no surrounding buildings, the building footprint, stockpiling, and pond all require a lot of the land. The land on the project is the only available place to store machines, workers need to park, and trailers needed to be placed. Access to the site became an essential concern. Trucks and other equipment needed to easily be able to leave the main road enter the site, drop off or pick up the necessary items and leave again. The main access road then became a simply u at the beginning of the site that could be easily accessed and parking was available just off to the side for both workers and machinery that would allow them all to be off and out of the way of construction.

The trailers and temporary utilities were then placed near the road that way workers and subs could easily access the trailers and they were close enough to the site that it was easy to observe what was occurring on the site. Although the site is large the same rules apply on the importance on conserving space and maintaining easy access are essential to every slight plan. A site layout plan can be observed in appendix B.

## Assemblies Estimate

The skin of the ASHA National Headquarters is so interesting that it has become the focus of this assemblies estimate. All of the values for the estimate were obtained from the Cost Works program. The façade is so interesting because the building looks different from every angle. The façade consists of seven different types of glass, three different types of pre-cast concrete, and a metal paneling system that simply helps aesthetics. The façade facing the road consists primarily of glass mostly a spandrel glass, but each type of glass and pre-cast is actually used on the front of the building, and a bending shape in the glass is also presented. On the eastern and western sides slightly less glass is used however an interesting mix of the pre-cast panels is used to create a completely different but astonishing affect. The pre-cast is three different colors very much like the glass simply to provide even greater contrast in the building. Below is a general summary of the overall costs of the façade, but appendix C will provide a much more detailed explanation.

Façade	Cost
North	827401.72
South	849324.98
East	483020.96
West	652152.8
Total	2952647

## Detailed Structural Estimate

A detailed estimate was performed for the structural system. This included, the footings, S.O.G, the concrete structural system on the sub-levels, the steel frame on the upper levels, as well as the remaining slabs with rebar and metal decks. The actual detailed estimate can be viewed in the appendix once again.

After completing the estimate it was highly obvious that while steel is generally more expensive, due to the large amounts of concrete and reinforcing used in the lower levels as well as the concrete structural columns, the concrete actually manages to be slightly more expensive. The structural system for this building is highly interesting since the building is neither completely concrete nor steel. Instead just as the system begins to peak the concrete columns are then replaced with steel columns and beams for the remaining structural system. All estimates again were used from the Cost Works program as well as multiple websites to confirm the overall cost of one ton of steel. The detailed estimate can be viewed in the appendix D.

## General Conditions Estimate

The general conditions estimate is being calculated to understand what further costs a GC must take into consideration outside of the job when they are preparing to begin a project. Small items such as paper in the office can run up a heavy bill and it is in these general conditions that these concerns are addressed. Below is a table of the general overview of the calculations however a more precise estimate can again be seen in appendix E. Again all estimates were taken from the Cost Works program.

<b>General Cost</b>	<b>Expense</b>
Staffing	890400
Office Support	18300
Temporary Utilities	2182.8
Bonds & Fees	1209800
General	88079
<b>Total</b>	2208761.8

## Appendix A:





ID	Task Name	Duration	Start	Finish	4, '05		Nov 6, '05			Jan 29, '06		Apr 23, '06		Jul 16, '06			Oct 8, '06		Dec 31, '06		Mar 25, '07			Jun 17, '07		Sep 9, '07		Dec 2, '0
					S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F	T	S	W	S		
24	Cut West Road & South Lc	11 days?	Tue 12/26/06	Tue 1/9/07																								
25	Install South Parking Lot C	10 days?	Wed 1/10/07	Tue 1/23/07																								
26	Install Parking Lot & West I	5 days?	Wed 1/24/07	Tue 1/30/07																								
27	Complete Site Utilities	11 days?	Wed 6/14/06	Tue 6/27/06																								
28	Waterproof Over Top of Ga	21 days?	Wed 6/28/06	Wed 7/26/06																								
29	Complete Grading of Site	10 days?	Thu 7/20/06	Wed 8/2/06																								
30	Complete Curb & Gutter	15 days?	Thu 8/3/06	Wed 8/23/06																								
31	Install Sidewalks	11 days?	Thu 8/24/06	Thu 9/7/06																								
32	Concrete Pavers	9 days?	Mon 9/11/06	Thu 9/21/06																								
33	Asphalt	4 days?	Mon 9/25/06	Thu 9/28/06																								
34	Lanscaping/Irrigation	19 days?	Mon 10/2/06	Thu 10/26/06																								
35	<b>Concrete</b>	<b>95 days?</b>	<b>Wed 8/23/06</b>	<b>Tue 1/2/07</b>																								
36	Layout/Tower Crane Found	3 days?	Wed 8/23/06	Fri 8/25/06																								
37	Footings K to P	21 days?	Thu 8/24/06	Thu 9/21/06																								
38	Footings F to K	12 days?	Fri 8/25/06	Mon 9/11/06																								
39	Footings C to F	10 days?	Mon 8/28/06	Fri 9/8/06																								
40	Building Permit	8 days?	Wed 8/30/06	Fri 9/8/06																								
41	Erect Tower Crane	2 days?	Wed 8/30/06	Thu 8/31/06																								
42	Walls - 3 to 9	10 days?	Fri 9/8/06	Thu 9/21/06																								
43	Footings - P to R	9 days?	Mon 9/11/06	Thu 9/21/06																								
44	Footings - R to V	9 days?	Mon 9/11/06	Thu 9/21/06																								
45	Install Underslab Piping	13 days?	Mon 9/11/06	Wed 9/27/06																								
46	Walls - 3 to 1 on C	8 days?	Tue 9/12/06	Thu 9/21/06																								

Project: extended schedule.mpp Date: Tue 11/28/06	Task		Progress		Summary		External Tasks		Deadline	
	Split		Milestone		Project Summary		External Milestone			

ID	Task Name	Duration	Start	Finish	4, '05		Nov 6, '05			Jan 29, '06		Apr 23, '06		Jul 16, '06		Oct 8, '06		Dec 31, '06		Mar 25, '07			Jun 17, '07		Sep 9, '07		Dec 2, '0
					S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	
47	Walls - C to G on 1	4 days?	Wed 9/20/06	Mon 9/25/06																							
48	Walls - E.1 to J.1 on 9	2 days?	Wed 9/20/06	Thu 9/21/06																							
49	Walls - J.1 to M.1 on 9	3 days?	Wed 9/20/06	Fri 9/22/06																							
50	Walls - G to L on 1	3 days?	Mon 9/25/06	Wed 9/27/06																							
51	Walls - M.1 to P	3 days?	Mon 9/25/06	Wed 9/27/06																							
52	Walls - L to P on 1	3 days?	Wed 9/27/06	Fri 9/29/06																							
53	SOG - Pour #1 - J to C	3 days?	Thu 9/28/06	Mon 10/2/06																							
54	Walls - P to S on .5	3 days?	Fri 9/29/06	Tue 10/3/06																							
55	Walls - S to V on .5	3 days?	Tue 10/3/06	Thu 10/5/06																							
56	Walls - 6 to 4.2 on V	3 days?	Thu 10/5/06	Mon 10/9/06																							
57	Walls - 4.2 to .5 on V	3 days?	Mon 10/9/06	Wed 10/11/06																							
58	SOG - Pour #2 - J.9 to M.9	7 days?	Mon 10/9/06	Tue 10/17/06																							
59	B1 - Pour #1	11 days?	Wed 10/11/06	Wed 10/25/06																							
60	SOG - Pour #3 - P to S	7 days?	Mon 10/16/06	Tue 10/24/06																							
61	B1 - Pour #2	8 days?	Thu 10/19/06	Mon 10/30/06																							
62	SOG - Pour #4 - S to V	7 days?	Mon 10/23/06	Tue 10/31/06																							
63	B1 - Pour #3	9 days?	Wed 10/25/06	Mon 11/6/06																							
64	B1 - SOG	7 days?	Tue 10/31/06	Wed 11/8/06																							
65	B2 Poured Out	0 days	Tue 10/31/06	Tue 10/31/06																							
66	B1 - Pour #4	8 days?	Thu 11/2/06	Mon 11/13/06																							
67	Plaza - Pour #1	10 days?	Thu 11/9/06	Wed 11/22/06																							
68	B1 Poured Out	0 days	Mon 11/13/06	Mon 11/13/06																							
69	Plaza - Pour #2	12 days?	Thu 11/16/06	Fri 12/1/06																							

Project: extended schedule.mpp  
Date: Tue 11/28/06

Task  Progress  Summary  External Tasks  Deadline 

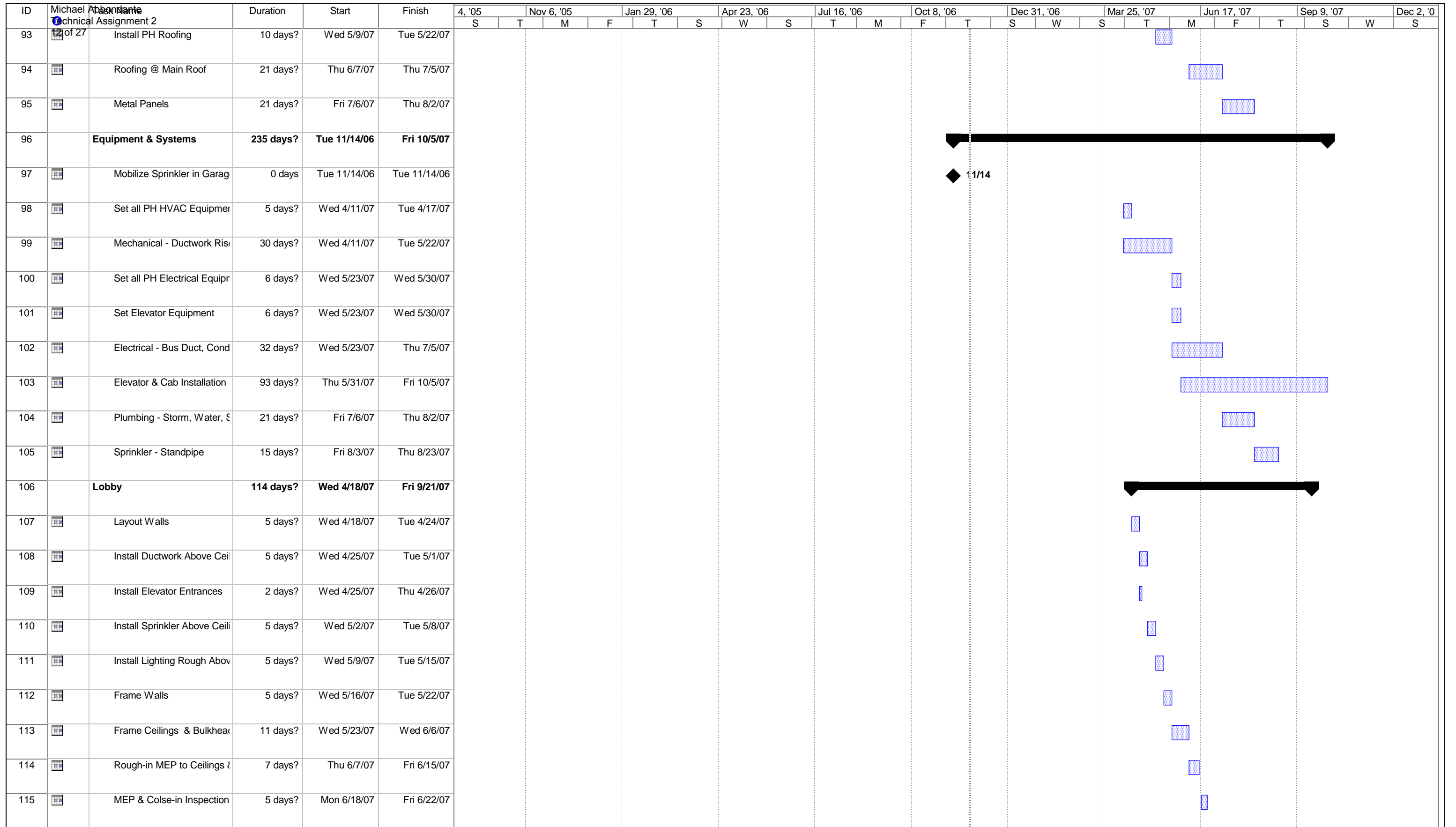
Split  Milestone  Project Summary  External Milestone 



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					S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F	T	S	W	S		
70	Plaza - Pour #3	10 days?	Mon 11/27/06	Fri 12/8/06																								
71	Plaza - Pour # 4	10 days?	Mon 12/4/06	Fri 12/15/06																								
72	Plaza - Pour #5	10 days?	Mon 12/11/06	Fri 12/22/06																								
73	Plaza Poured Out	0 days	Fri 12/22/06	Fri 12/22/06																								
74	Backfill Building	6 days?	Tue 12/26/06	Tue 1/2/07																								
75	<b>Steel &amp; SOMD</b>	<b>75 days?</b>	<b>Wed 1/3/07</b>	<b>Tue 4/17/07</b>																								
76	Steel Second & Third Floor	20 days?	Wed 1/3/07	Tue 1/30/07																								
77	Install Deck, Angle, Studs -	13 days?	Wed 1/31/07	Fri 2/16/07																								
78	Steel Fourth & Fifth Floors	15 days?	Wed 1/31/07	Tue 2/20/07																								
79	Install Deck, Angle, Studs -	13 days?	Wed 2/21/07	Fri 3/9/07																								
80	Steel at Roof & Penthouse	20 days?	Wed 2/21/07	Tue 3/20/07																								
81	Pour 3rd Deck	2 days?	Wed 2/21/07	Thu 2/22/07																								
82	Install Steel Stair #1	20 days?	Wed 2/21/07	Tue 3/20/07																								
83	Pour 4th Deck	2 days?	Mon 3/12/07	Tue 3/13/07																								
84	Pour 5th Deck	2 days?	Wed 3/14/07	Thu 3/15/07																								
85	Install Deck, Angle, Studs -	8 days?	Wed 3/21/07	Fri 3/30/07																								
86	Install Steel Stair #2	20 days?	Wed 3/21/07	Tue 4/17/07																								
87	Pour Penthouse	2 days?	Mon 4/2/07	Tue 4/3/07																								
88	Complete Concrete Pours	0 days	Tue 4/3/07	Tue 4/3/07																								
89	<b>Façade &amp; Roof</b>	<b>98 days?</b>	<b>Wed 4/4/07</b>	<b>Thu 8/16/07</b>																								
90	Precast	51 days?	Wed 4/4/07	Wed 6/13/07																								
91	Metal Stud Framing/Sheatf	25 days?	Wed 4/4/07	Tue 5/8/07																								
92	Install Curtinwall, Ribbon W	83 days?	Wed 4/25/07	Thu 8/16/07																								

Project: extended schedule.mpp  
Date: Tue 11/28/06

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



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

ID	Task Name	Duration	Start	Finish	4, '05		Nov 6, '05			Jan 29, '06		Apr 23, '06			Jul 16, '06			Oct 8, '06		Dec 31, '06		Mar 25, '07			Jun 17, '07		Sep 9, '07		Dec 2, '0
					S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F	T	S	W	S			
116	Technical Assignment 2 Hang Drywall Ceilings, Wa	5 days?	Fri 7/6/07	Thu 7/12/07																									
117	Finish Drywall	10 days?	Mon 7/16/07	Thu 7/26/07																									
118	Install Terrazzo Flooring &	10 days?	Fri 7/27/07	Thu 8/9/07																									
119	Finish Paint	5 days?	Fri 8/10/07	Thu 8/16/07																									
120	Install Millwork Panels	16 days?	Fri 8/17/07	Fri 9/7/07																									
121	Install Glass Panels	5 days?	Mon 9/10/07	Fri 9/14/07																									
122	Final Touchup of all Finishe	5 days?	Mon 9/17/07	Fri 9/21/07																									
123	Complete Main Lobby	0 days	Fri 9/21/07	Fri 9/21/07																									
124	<b>Plaza Level</b>	<b>57 days?</b>	<b>Thu 6/14/07</b>	<b>Thu 8/30/07</b>																									
125	Fames Cores	5 days?	Thu 6/14/07	Wed 6/20/07																									
126	Rough-in / Close-in	5 days?	Thu 6/21/07	Wed 6/27/07																									
127	Hang & Finish Drywall	11 days?	Thu 6/28/07	Thu 7/12/07																									
128	Frame Ceilings	5 days?	Fri 7/13/07	Thu 7/19/07																									
129	Hang Drywall Ceilings	5 days?	Sat 7/21/07	Thu 7/26/07																									
130	Finish Drywall Ceilings	5 days?	Fri 7/27/07	Thu 8/2/07																									
131	Bathroom Tile	5 days?	Fri 8/3/07	Thu 8/9/07																									
132	Bathroom Paint	5 days?	Fri 8/10/07	Thu 8/16/07																									
133	Bathroom Fixtures & Partiti	5 days?	Fri 8/17/07	Thu 8/23/07																									
134	Perimeter Fire Caulk & Frai	7 days?	Fri 8/17/07	Mon 8/27/07																									
135	Accessories & Trim	5 days?	Fri 8/24/07	Thu 8/30/07																									
136	Complete Plaza Level	0 days	Thu 8/30/07	Thu 8/30/07																									
137	<b>2nd Floor</b>	<b>58 days?</b>	<b>Thu 6/21/07</b>	<b>Fri 9/7/07</b>																									
138	Fames Cores	5 days?	Thu 6/21/07	Wed 6/27/07																									

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Date: Tue 11/28/06

Task  Progress  Summary  External Tasks  Deadline 

Split  Milestone  Project Summary  External Milestone 












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Task Progress Summary External Tasks Deadline

Split Milestone Project Summary External Milestone

ID	Task Name	Duration	Start	Finish	4, '05		Nov 6, '05			Jan 29, '06		Apr 23, '06			Jul 16, '06			Oct 8, '06		Dec 31, '06		Mar 25, '07			Jun 17, '07		Sep 9, '07		Dec 2, '0
					S	T	M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F	T	S	W	S			
162	Complete 3rd Floor	0 days	Mon 9/17/07	Mon 9/17/07																								◆ 9/17	
163	<b>4th Floor</b>	<b>60 days?</b>	<b>Fri 7/6/07</b>	<b>Wed 9/26/07</b>																									
164	Fames Cores	5 days?	Fri 7/6/07	Thu 7/12/07																									
165	Rough-in / Close-in	5 days?	Fri 7/13/07	Thu 7/19/07																									
166	Hang & Finish Drywall	10 days?	Sat 7/21/07	Thu 8/2/07																									
167	Frame Ceilings	5 days?	Fri 8/3/07	Thu 8/9/07																									
168	Hang Drywall Ceilings	5 days?	Fri 8/10/07	Thu 8/16/07																									
169	Finish Drywall Ceilings	5 days?	Fri 8/17/07	Thu 8/23/07																									
170	Bathroom Tile	5 days?	Fri 8/24/07	Thu 8/30/07																									
171	Bathroom Paint	6 days?	Fri 8/31/07	Fri 9/7/07																									
172	Bathroom Fixtures & Partiti	5 days?	Mon 9/10/07	Fri 9/14/07																									
173	Perimeter Fire Caulk & Frai	5 days?	Mon 9/17/07	Fri 9/21/07																									
174	Accessories & Trim	7 days?	Tue 9/18/07	Wed 9/26/07																									
175	Complete 4th Floor	0 days	Wed 9/26/07	Wed 9/26/07																								◆ 9/26	
176	<b>5th Floor</b>	<b>62 days?</b>	<b>Fri 7/13/07</b>	<b>Fri 10/5/07</b>																									
177	Fames Cores	5 days?	Fri 7/13/07	Thu 7/19/07																									
178	Rough-in / Close-in	5 days?	Sat 7/21/07	Thu 7/26/07																									
179	Hang & Finish Drywall	10 days?	Fri 7/27/07	Thu 8/9/07																									
180	Frame Ceilings	5 days?	Fri 8/10/07	Thu 8/16/07																									
181	Hang Drywall Ceilings	5 days?	Fri 8/17/07	Thu 8/23/07																									
182	Finish Drywall Ceilings	5 days?	Fri 8/24/07	Thu 8/30/07																									
183	Bathroom Tile	6 days?	Fri 8/31/07	Fri 9/7/07																									
184	Bathroom Paint	5 days?	Mon 9/10/07	Fri 9/14/07																									

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Task		Progress		Summary		External Tasks		Deadline	
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## Appendix B:

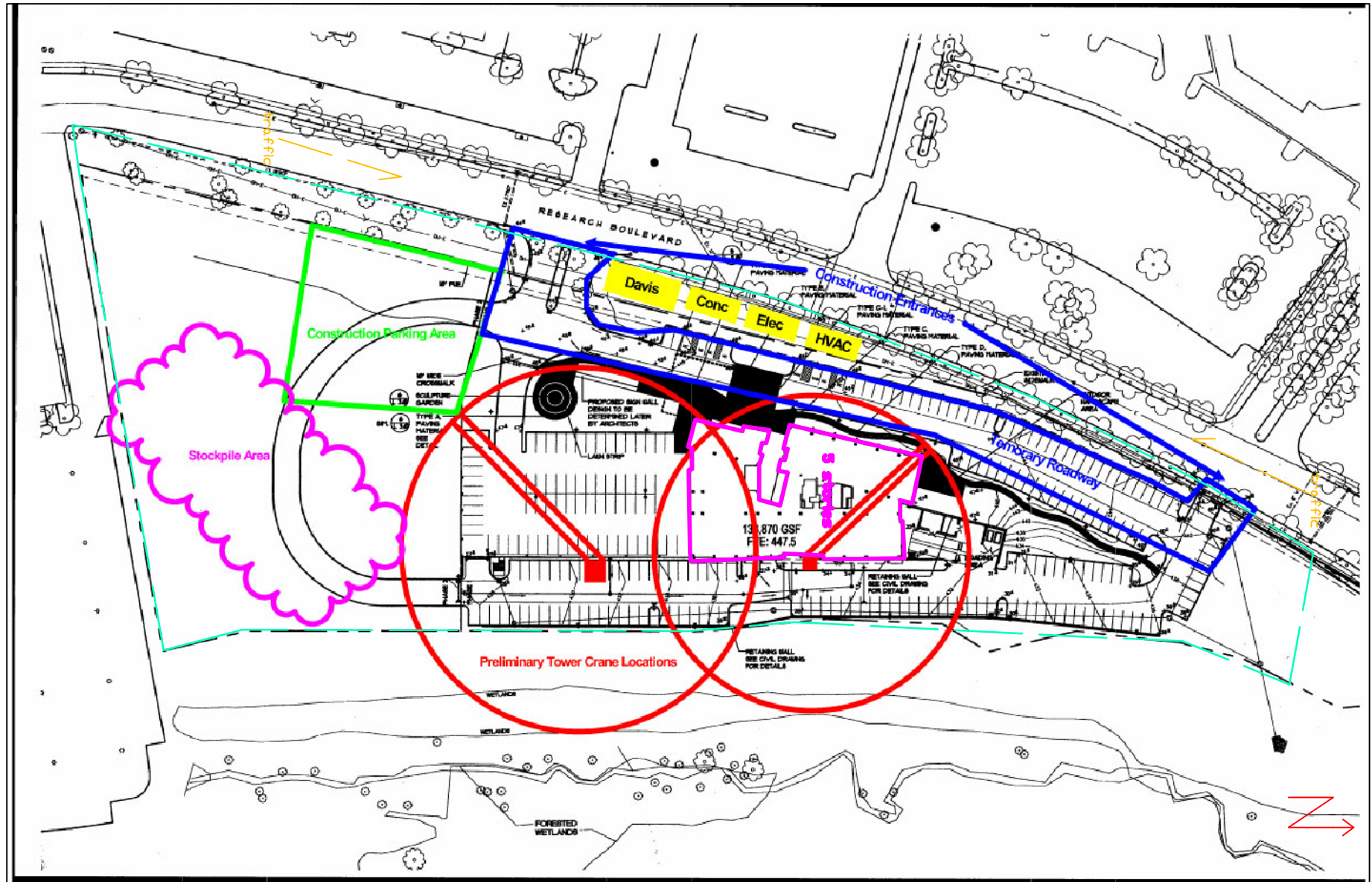


American Speech - Language - Hearing Association

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AtSite Real Estate





ASHA National HQ
Site Layout
Oct. 6, 2006
Michael Abbondante



## Appendix C:



<b>North Elevation</b>			
<b>Material</b>	<b>Sq. Ft.</b>	<b>Cost/Sq. Ft.</b>	<b>Total Cost</b>
MP-1	3084	23	70932
GL-9	1344	18.25	24528
GL-8	13464	16.23	218520.72
GL-4T	360	7.25	2610
GL-4	1208	5.7	6885.6
GL-3	3024	19.5	58968
GL-2	0	18.4	0
GL-1	10368	16.35	169516.8
PCC-3	6376.4	21.5	137092.6
PCC-2	4620	23.43	108246.6
PCC-1	1260	23.89	30101.4
			827401.72

<b>South Elevation</b>			
<b>Material</b>	<b>Sq. Ft.</b>	<b>Cost/Sq. Ft.</b>	<b>Total Cost</b>
MP-1	624	23	14352
GL-9	2536	18.25	46282
GL-8	4336	16.23	70373.28
GL-4T	0	7.25	0
GL-4	0	5.7	0
GL-3	4101	19.5	79969.5
GL-2	6984	18.4	128505.6
GL-1	15384	16.35	251528.4
PCC-3	1940	21.5	41710
PCC-2	7960	23.43	186502.8
PCC-1	1260	23.89	30101.4
			849324.98

<b>East Elevation</b>			
<b>Material</b>	<b>Sq. Ft.</b>	<b>Cost/Sq. Ft.</b>	<b>Total Cost</b>
MP-1	1144	23	26312
GL-9	1560	18.25	28470
GL-8	3024	16.23	49079.52
GL-4T	0	7.25	0
GL-4	0	5.7	0
GL-3	1492	19.5	29094
GL-2	2900	18.4	53360
GL-1	2720	16.35	44472
PCC-3	0	21.5	0
PCC-2	4668	23.43	109371.24
PCC-1	5980	23.89	142862.2
			483020.96

<b>West Elevation</b>			
<b>Material</b>	<b>Sq. Ft.</b>	<b>Cost/Sq. Ft.</b>	<b>Total Cost</b>
MP-1	5120	23	117760
GL-9	5900	18.25	107675
GL-8	9080	16.23	147368.4
GL-4T	0	7.25	0

GL-4	0	5.7	0
GL-3	1160	19.5	22620
GL-2	2780	18.4	51152
GL-1	1008	16.35	16480.8
PCC-3	0	21.5	0
PCC-2	3360	23.43	78724.8
PCC-1	4620	23.89	110371.8
			652152.8
			<b>Total Cost:</b>
			<b>2952647</b>

## Appendix D:



American Speech - Language - Hearing Association

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AtSite Real Estate

<b>Concrete Slabs</b>			
<b>Depth</b>	<b>Strength</b>	<b>Location</b>	<b>Cu. Yards</b>
6"	3500	B2	468.85
4"	5000	B1	459.3
4"	5000	Plaza	226.4
4"	5000	2	254.39
4"	5000	3,4,5	280.6*3
			<b>Total</b>
			1785.49

<b>Footings</b>			
<b>Depth</b>	<b>Strength</b>	<b>Location</b>	<b>Cu. Yards</b>
2'8"	3000	1	22.66
2'4"	3000	2	12.79
2'4"	3000	3	5.76
3'6"	3000	4,5,6	5.76
3'	3000	7	85.39
			30.69
			<b>Total</b>
			157.29

<b>Columns (concrete)</b>			
<b>Size</b>	<b>Amount</b>	<b>Length</b>	<b>Cu. Yards</b>
18x30	189	10'	262.5
24x21	20	10'	25.9
18x24	10	10'	12.5
30x30	2	10'	1
			<b>Total</b>
			300.46

<b>Columns (steel)</b>				
<b>Size</b>	<b>Amount</b>	<b>Length</b>	<b>L.F.</b>	<b>Cost</b>
12x58	20	15'		
	40	13.5'	840	13398
12x65	5	15'		
	10	13.5'	210	3,757
12x53	2	15'		
	22	13.5'	327	4766
14x90	6	15'		
	12	13.5'	252	6237
14x82	4	15'		

	8	13.5'	168	3788.4
14x132	1	15'	15	544.5
14x99	1	15'	15	408.3
14x74	1	15'	15	305.25
12x72	4	15'		
	8	13.5'	168	3326
12x45	2	15'		
	3	13.5'	70.5	872.4
12x80	72	13.5'	972	21384
14x43	18	13.5'	243	2873.4
14x53	24	13.5'	324	4722
14x48	12	13.5'	162	2138.4
14x68	12	13.5'	162	3029.4
14x61	15	13.5'	220	3690.5
				<b>Total</b>

Decks		
16-18 Guage	Location	S.F.
	B1	37206
	Plaza	18343.8
	2	20606.25
	3,4,5	22727.49
		<b>Total</b>
		98882.49

Reinforcement		
WWF	Location	S.F.
	B2	25318
<b>Rebar</b>		<b>Tons</b>
		150

Forms			
Location	Perimeter	Depth	S.F.
B2	1197	6"	598.5
B1	1031	4"	343.663
Plaza	1017	4"	338.999
2	676	4"	225.333
3,4,5	668	4"	667.99
			<b>Total</b>
			2174.48

468.85	3.31E+10	ormal weigh					C.Y.	\$38,445.70	\$0.00	\$0.00	\$38,445.70	\$42,196.50	Union	2005
1,785.50	3.31E+10	ormal weigh					C.Y.	\$160,695.00	\$0.00	\$0.00	\$160,695.00	\$176,764.50	Union	2005
157.29	3.31E+10	ormal weigh					C.Y.	\$12,740.49	\$0.00	\$0.00	\$12,740.49	\$13,998.81	Union	2005
300.46	3.31E+10	ormal weigh					C.Y.	\$25,238.64	\$0.00	\$0.00	\$25,238.64	\$27,792.55	Union	2005
98,882.49	5.31E+10	bits, galvaniz	E4	1,350	0.024		S.F.	\$805,892.29	\$89,983.07	\$5,932.95	\$901,808.31	\$1,053,098.52	Union	2005
25,318.00	3.22E+10	W 2.9 x W	2 Rodm	29	0.552		C.S.F.	\$835,494.00	\$531,678.00	\$0.00	\$1,367,172.00	\$1,784,919.00	Union	2005
2,174.48	3.11E+10	od, 12" wid	C2	275	0.175		SFCA	\$3,979.30	\$12,611.98	\$0.00	\$16,591.28	\$24,028.00	Union	2005
150	3.21E+10	, #8 to #18,	4 Rodm	3.6	8.889		Ton	\$108,000.00	\$50,250.00	\$0.00	\$158,250.00	\$202,500.00	Union	2005
								0	0	0	0	0		
		Totals						\$1,990,485.42	\$684,523.05	\$5,932.95	\$2,680,941.42	\$3,325,297.88		

75237.3\*

\*plus cost of tons of steel: assumed \$550/ton from outside source

**Total Structural Est.**  
 2065722.72

# Appendix E:





**Staffing**

Position	Months/Year	Salary/Week	Price/Month	Amount/Year	Amount Over Job Period
Project Manager	12	2875	11500	138000	276000
Assistant Project Manager	12	2525	10100	121200	242400
Superintendent	12	2325	9300	111600	223200
Field Engineer	12	1550	6200	74400	148800
					890400

**Office Support**

Material	Desc.	Cost/Month	Amount/Year	Amount Over Job Period
Trailer	Rented 32'x8'	180	2160	4320
Office Equipment Rental avg.	n/a	157	1884	3768
Office Supplies	n/a	93.5	1122	2244
Telephone	n/a	224	2688	5376
Field Office Lights & HVAC	n/a	108	1296	2592
				18300

**Temporary Utilities**

Material	Desc.	Cost/Month	Amount/Year	Amount Over Job Period
Heat	inclu. Fuel and operation for 12hrs	11.25	135	270
Lighting	inclu. Service lamps wiring & outlets	16.8	201.6	403.2
Power for Job Duration	inclu. Elevator etc.	51.5	618	1236
Toilet	Portable Chemical	11.4	136.8	273.6
				2182.8

**Bonds & Fees**

Option	Desc.	%	Amount Over Job Period
Permit	General	1	230000
Performance Bond	For Buildings	2	460000
Insurance	Builders Risk, standard	0.24	55200
	Public Liability, average	2.02	464600
			1209800

**General**

Rented Material	Desc.	Cost	Cost on Site
Dumpster	2 Recycling Dumpsters	450/ Month	10800
20T Crane	n/a	5800/Month	46400
Tower Crane	150' Boom	2625/Month	7875
Fence	3408L.F. 6' High	6.75/L.F.	23004
			88079

<b>Total GC Cost:</b>
2208761.8