The Pennsylvania State University
5th Year Thesis

Technical Assignment Two

Cost and Schedule Analysis

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Construction Management
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2175 K Street NW
Washington DC
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2175 K Street NW, Washington DC

FOX ARCHITECTS

Project Team

Owner	Minshall Stewart Properties
Construction Manager	Appian Realty Advisors
Architect	FOX Architects
Civil Engineer	Vika
Structural Engineer	Rathgeber/Goss Associates
MEP Engineer	META Engineers
General Contractor	James G. Davis Construction

Project Specifications

Building Function	Class A Office Building
Construction Type	Occupied Renovation
Building Size	173,551 sqft (33,691 sqft new)
Number of Stories Above	11 stories (8 existing, 3 new)
Number of Stories Below	3 stories below grade parking
Construction Dates	February '07 to March '11
Project Delivery Method	CM Agent with GC
Building Cost	$15,500,000

Architecture

2175 K Street NW is located on the North Side of K Street at 22nd Street and Washington Circle. The eight-story structure was built in 1981. Currently, it is 108,000 gross square feet. Through the use of Transfer Development Rights, the building will be increased in height by three floors. This vertical addition will increase the existing gross square footage by 37,500 square feet.

The new 22nd and K Street façades will be a unitized glass and metal curtain wall system. A state-of-the-art solar louver system will screen the existing façade and provides passive solar shading to the new façade; while simultaneously knitting the entire building together. A new glass corner overlooking Washington Circle spans floors 2 through 11, blending the new and the old systems together.

Structure

The foundation consists of existing 48"x48"x24" footers, several of which underwent minor expansions to support the new loads imposed by the additional structure above. The existing building consists of cast in place concrete. Whereas the new structure is structural steel with lightweight slab on deck. Several columns within the existing building were reinforced with steel jackets or carbon fiber to support the additional loads imposed by the new steel structure.

Mechanical

The mechanical system for this project consists of a main cooling tower that services a self contained unit on each floor used for the conditioning of the tenant spaces. To condition the core of the building, a closed loop with VAV's was utilized. The new floors, 9 through 11, and existing Level 8 will be controlled by a new BAS system. The existing floors, B1 through 7, will be controlled by the existing pneumatic system. As tenant floors turnover, the owner will upgrade the entire building to run off of the new BAS system.

Electrical

The electrical service for the new construction enters at 2,000A and is distributed on a 208Y/120V system. The existing building has two 6,000A feeds. The existing switchgear was replaced with new switchgear that has the capacity to feed panels on Levels B3 through 11. A new backup generator was installed to service the whole building.

Lighting

The lighting is operated on a 120V system and uses energy efficient fluorescent lamps with electronic ballasts. The base building did not include common areas on the new floors. Lighting design and installation will be part of the tenant fit out.

Sustainability

This building is trying to obtain LEED EB. To help in this matter, a passive solar shading system was implemented. Another sustainable feature to this project is the use of a green roof. Such a roof is being installed on a portion of the ninth floor.

Timothy Conroy

Construction Management

http://www.engr.psu.edu/ae/thesis/portfolios/2010/tmc5014

Executive Summary

Technical assignment two focuses on key features of the project 2175 K Street NW Washington DC. The areas of emphasis are the project schedule, site layout planning, a detailed structural estimate, and a general conditions estimate. Additionally, the outcomes of the 2009 PACE Roundtable are summarized.

The first area of emphasis is the detailed project schedule. This can be found starting on page five and in Appendix A. The drawing preparation for the project began back in early February 2007 and proceeded to bid the following year. The total duration of the project, from preconstruction to closeout, is 810 calendar days or 162 weeks. The notice to proceed was given on May 27, 2008. When analyzing the project schedule, a few areas stood out when comparing each category of the schedule to the total duration. First, preconstruction on the project spanned from February 2, 2007 to October 1, 2008, which equates to a duration of 434 days. This process was lengthened due to issues securing financing and finalizing the design for the project. Next, submittals were started on May 27, 2008 and were not completed until September 28, 2009. Similarly, mobilization spanned from August 1, 2008 until December 19, 2009. The project is scheduled to enter the closeout phase in December 2009 with the first substantial completion date on December 18, 2009 and the second on March 11, 2010. The final inspections are scheduled to begin on March 2, 2010 and conclude March 11, 2010.

The next area of focus for technical assignment two is site layout planning. More information on this topic can be found on page seven with plans on pages 26, 27, and 28. This project was confined by several neighboring buildings on the north and east sides. On the remaining two sides, 22nd and K Streets only added to the limit on available space on the project. To promote an efficient site, every square foot of available space needed to be used to its full potential, there could be no wasted space. To help accomplish this, the existing level eight was used for a majority of project support facilities from offices to material storage. Some storage space was available on the B1 level but was limited.

Subsequently, a detailed structural estimate was performed on the projects structural steel framing and supporting facets. The final cost associated with the structural system of the building was determined to be approximately $1,110,000. Structural wide flange beams made up nearly 60% of this number or $660,500. Consequently, the steel wide flange columns added roughly $88,000 or 8%. Additionally, the composite metal decking and roof decking accounted for an additional $49,600 or 4.5%. More information on this section can be found on page eleven and in Appendix C.

Finally, the general conditions estimate determined that nearly $16,500 would be spent weekly on this project. The general conditions estimate established a total of $1,468,000 would be spent on activities that directly support the construction of the project. The major contributing factor is associated with the supervision and project management staff, which accounted for nearly 60% of the total or $713,000.

The final area of focus included within this report is a discussion regarding the present critical industry issues brought up at the 2009 PACE Roundtable. Additionally, proposed research topics are discussed within which include relevant industry contacts who could potentially aid in such research.

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A. Detailed Project Schedule

The drawing preparation for 2175 K Street began in early February and proceeded to bid in the following year. This process took much longer than anticipated by the owner due to several impeding factors. Davis quickly began the submittal process in April '08 with the award of the subcontracts, which was followed by submittal preparation, approval, and fabrication. After a few changes to the construction documents, Davis then mobilized in August of the same year.

The work began with the improvements to the existing cellar levels, followed by preparation work to the existing façade and roof. After which, work on the new steel structure was started. This phase is primarily composed of framing and pouring the concrete piers from which the load imposed by the new steel structure and live load associated with the floor area will be transferred into the existing structure. To ensure the existing structure will be able to carry the newly imposed loads, steel jackets or carbon fiber reinforcing was incorporated. Column reinforcing used varied by location.

Subsequently, after the steel structure was complete and the associated lightweight concrete on metal deck, work began preparing the existing elevator machine room for construction. To begin work on the existing elevator machine room, the new penthouse and new elevator machine room needed to be watertight. While this was ongoing, the work on the new façade began, starting on level nine and working to level eleven. Once the penthouse was dry, work could begin on installing the equipment needed to take the building off the outdated HVAC system and turn it over to the new system.

Simultaneously, once the new elevator machine room was dry, work began on extending the existing elevator shaft up to the new EMR. This work started with elevator number one then two and finally three, always maintaining two operational elevators for tenant use. The proper phasing and timely completion of these activities was of the utmost importance to the owner. To accomplish this task safely, much work had go into place. The shaft under construction was required to be isolated from the other two to prevent debris and other hazards from entering the occupied shafts. Additionally, any work that affected all three elevators needed to be done after hours while a trained operator was in control of the elevator's movement. Because of this, a great deal of effort was expended to consolidate the number of events where all three elevators were being worked on. These activities primarily occurred in the existing elevator pits.

Concurrently, with the previously mentioned areas, work on the building core and perimeter was started. This category involves the installation of ductwork, electrical conduit, plumbing, fire suppression, etc. Additionally, the elevator shaft construction is included within this category. For reasons pertaining to workflow, the elevator shaft was discussed above. Furthermore, wall framing, drywall, ceiling construction, restroom construction, doors & hardware, and a number of other actives are included in this category.

Work on the cores of the building began on the tenth floor, then moved up to the eleventh, then down to the eight, and finished on the ninth. This was done to allow enough time for the new EMR to be completed prior to demolishing the existing one. Additionally, the project field offices were initially located on the eight floor and were to be relocated when work on the eight floor was scheduled to begin. Once this happened, the offices and other support items were relocated to the B1 level.

Next, work began on the first floor, beginning with the storefront system and composite metal panels, followed by the construction of the new main lobby. The work on the northwest corner of the building needed to be completed prior to work starting in the main lobby. This was due to the main entrance of the building being relocated to the entrance located at said corner while the lobby entrance was closed due to construction activities.

This project is on track to be completed in March 2011, with demobilization finishing in November 2009 and closeout to start in December. This project has two substantial completion dates. The first is to be at the completion of the second elevator and the second is to be at the completion of the third elevator.

For reference, the detailed project schedule can be found in Appendix A at the end of this document.

The intent of the following table is to be a quick synopsis of the project schedule for 2175 K Street. It contains the key features from the Primavera P6 schedule but in a condensed format. Included in the table are the categories of construction activities, the start and finish dates, the duration, and most importantly, the percent of total duration. This percent compares the duration of the category to the sum total of all the category durations. To draw attention to the top five categories based upon duration, they have been highlighted in yellow and are in bold font.

2175 K Street, NW
Project Schedule Duration Comparison

Category	Start	Finish	Duration	Percent of Total Duration
Preconstruction	**02-Feb-07**	**01-Oct-08**	**434**	**16%**
Submittals	**27-May-08**	**28-Sep-09**	**350**	**13%**
Contract Changes	03-Nov-08	31-Mar-09	107	4%
Mobilization	**01-Aug-08**	**19-Dec-09**	**361**	**13%**
Cellar and Existing Levels	03-Nov-08	12-Oct-09	246	9%
New Structure	08-Dec-08	31-Aug-09	191	7%
Façade and Roof	**24-Nov-08**	**09-Dec-09**	**273**	**10%**
Penthouse	13-Apr-09	21-Jul-09	72	3%
Elevators	**19-Mar-09**	**04-Mar-10**	**251**	**9%**
First Floor	17-Jun-09	15-Dec-09	130	5%
Core and Perimeter	08-Apr-09	12-Nov-09	157	6%
Project Completion	20-Jun-09	11-Mar-10	189	7%
			2761	**Total Days**
Project Total	**02-Feb-07**	**11-Mar-10**	**810**	**Callendar Days**
			162	**Weeks**
General Conditions	**01-Aug-08**	**11-Mar-10**	**420**	**Callendar Days**
			84	**Weeks**

Table A.1 Project Schedule Duration Comparison

The purpose of this table is to quickly emphasize the key contributors to the overall length of the schedule by comparing the duration of each construction category to the total duration of the project. This way, the reader can quickly see areas of greatest emphasis. This becomes critical when attempting to accelerate the project schedule. To make the key contributing factors more apparent, the top five categories, based upon duration, have been highlighted in yellow and are in bold font.

B. *Site Layout Planning*

Site Layout Summary

As mentioned in the previous technical report, the project is located on the north side of K Street at 22nd Street and Washington Circle. The neighboring buildings consist of a residential building to the north, a commercial building to the east, K Street to the south, and 22nd Street to the West. For reference, a vicinity map is inserted below.

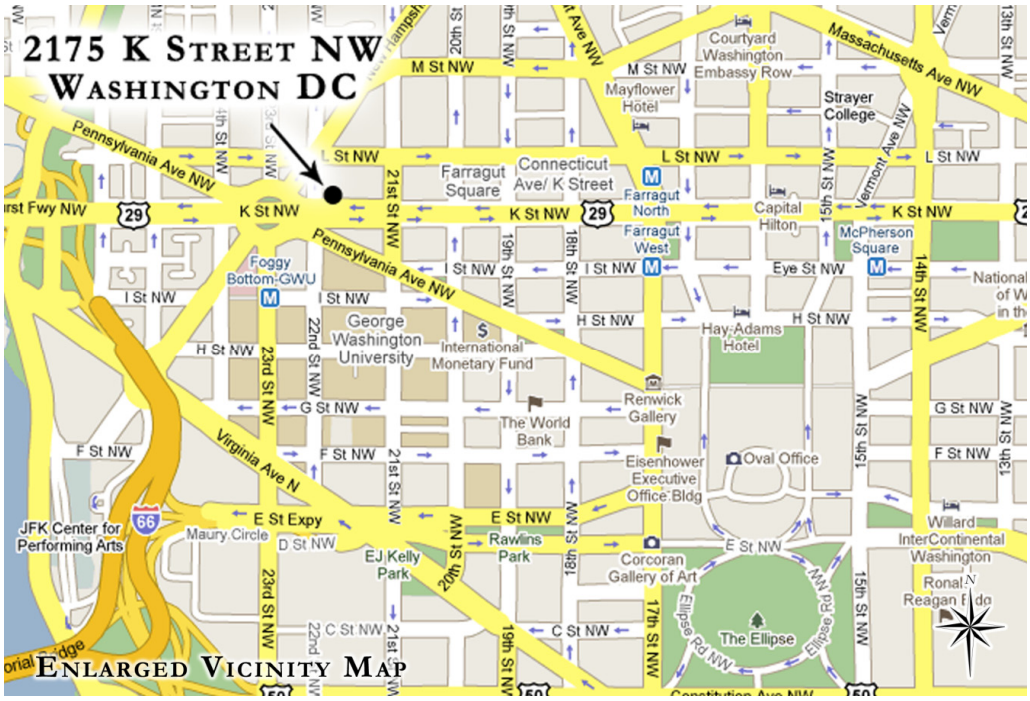


Figure B.1 Project Vicinity Map

Site Layout Plan (*All Phases of Construction)*

A site layout and logistics plan was created for 2175 K Street as a means of maintaining a safe and efficient site for construction and the tenants of the occupied portion of the building. This site plan can be found in Appendix B at the end of this document or a larger version can be found on the 2175 K Street thesis website under Technical Assignments, Technical Assignment Two.

Several key aspects of this site make it more challenging to maintain a safe and efficient working environment, which will be outlined, in the following paragraphs. The most important aspect to all

construction sites is safety. Where this project differs from the normal construction project where the key focus is on the construction worker and the pedestrians moving around the site, on this project, the previously mentioned concerns still exist but there was an additional party that had to be protected.

First, this project enforces a safety plan, developed by DAVIS, which is more stringent in comparison to the standard OSHA requirements. A prime example of this is according to DAVIS' safety plan, hardhats and safety glasses are to be worn at all times. Where this differs from OSHA is OSHA only requires hardhat and safety glasses until the area of construction in which a worker is performing his or her work has a finished ceiling.

Concerning the tenants of the occupied portion of the building, the project team has to maintain a safe point of entry into the building at all times. This was accomplished by utilizing a covered walkway with access to several points of entry. Additionally, for those workers who do not enter the building from the street, the access to the parking garage and the parking spaces within, have to remain available at all times. To accomplish this, the point of entry into the garage has to be free of construction vehicles at all times. For this reason, DAVIS filed for a permit to allow them to close one of the two lanes of K Street on the south side of the building. Because of this decision, the point of entry remains open and the closed lane allows for a variety of activities to utilize the space. Several examples of how this space could be used might be for dumpsters, laydown area, construction parking, crane pick location etc. Based upon the attached site plan, this area was used for all of the previously mentioned items.

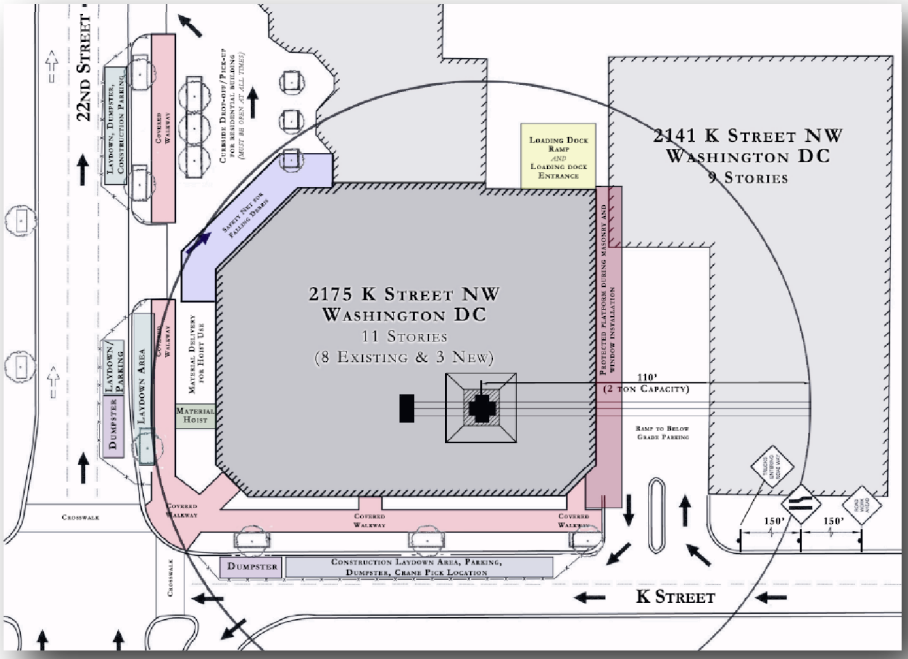


Figure B.2 Site Layout Plan

Finally, with respect to the pedestrians traversing the site, covered walkways and safety nets were used to protect them from falling debris. Along K Street and 22nd Street, in accordance with DC regulations, a covered walkway was constructed with plywood and 2" x 4" dimension lumber and safety signs were posted. Regarding the covered walkway running along 22nd street, there is a break

in the protection to allow construction materials to enter the site and move to the hoist whereby they would be distributed throughout the project. To maintain the safety of the pedestrians, when materials are being delivered, construction workers block the covered walkway to prevent injury. Once the material is safely on site, the construction workers will free the pedestrians to move about freely. Additionally, to protect the tenant of the neighboring building, a safety net was installed to catch any falling debris off the northwest corner of the building. This net is to remain in place throughout the duration of the project.

Pertaining to the vehicular traffic entering the below grade parking structure, a safety platform will be used during masonry construction on the west façade to prevent any damage or loss of life due to falling debris.

The loading dock on the north side of the building is to remain operational until construction on it is to begin. The construction in this area had to be completed prior to the start date of the tenant contractor's contract as to allow the tenant in the existing floors to vacate the building. The scope of work for this location primarily entailed renovating the ramp to allow larger trucks to access the space. To achieve this, a number of structural beams had to be moved and the loading dock to be extended outward.

The crane used on this project was a 2-ton tower crane with a modified base to allow it to sit atop four existing columns. As previously mentioned the maximum lifting capacity was two tons and the crane had a reach of 110 feet. The location of the crane is based upon the location of a future elevator shaft serving levels nine through eleven. The location of this tenant elevator shaft resulted in less patchwork needing to be completed at the point when the crane was to be removed. The only place where this patchwork was needed was on the roof level. Based upon the location of the tenant elevator shaft, the crane could still reach all areas of the site. Special attention had to be given to the patios of the northern residential tower when lifting over the rooftop patios.

The material hoist was strategically located on the west side of the building where it was possible to deliver material and distribute it throughout the project. No other location on the site is conducive for such a task.

To gain more space for tasks such as waste removal, laydown and/or storage, the right lane of 22nd street was partially closed as indicated on the attached site plan. Additional storage area was located on the roof of the covered walkway. As a result, the covered walkway had to be constructed in a way that would allow it to carry the load imposed by the stored material.

The site layout plan shown in Appendix B is very similar to the one used by the general contractor on the project. Due to the space constraints, there are very few possible altercation that could be made.

Site Workflow Plan

In addition to the Site Layout Plan, two workflow plans have been created to show how material, work in progress, and subsequently trash flows throughout the various floor plans. Located in Appendix B, after the Site Layout Plan, are such diagrams. The first of two plans attached is level 8 followed by level 9. Level 9 is representative of levels 10 & 11 with the exception of the partial roof covering level 8 located on north side of level 9 closest to the neighboring residential building.

In general, the material enters the designated level and is distributed throughout. The material entering the floors is indicated by the gray arrows and moves from the material hoist located at the southwest corner and flows in both directions surrounding the core of the building and meets at the northeast corner. This was done to maximize the efficiency of the workers. The flow of work is typically counterclockwise as indicated by the black arrows.

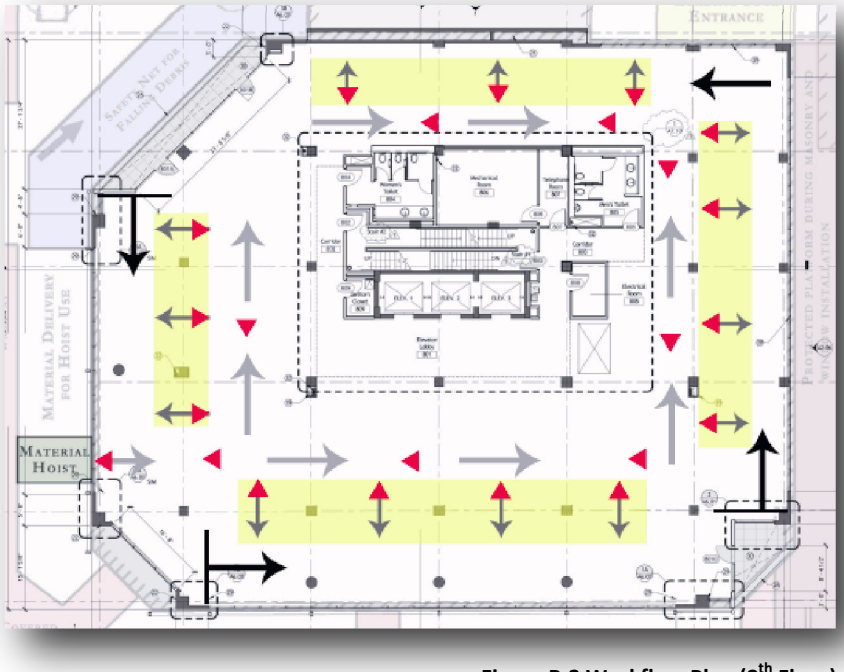


Figure B.3 Workflow Plan (8th Floor)

To maintain a clean site to help mitigate safety risks, the trash flowed in the opposite direction as the material. Therefore, the trash flowed from the northeast corner and moved toward the southwest corner where the hoist is located. This is indicated on the plan by the red triangles.

The work in the core of the building generally followed behind the work on the facade. This can also be seen when referencing the attached detailed project schedule located in Appendix A.

Moving onto levels nine through roof, the workflow is very similar to the workflow as indicated in the previous few paragraphs. The key difference is on the north wall; as mentioned above, there is a portion of the roof that begins on the ninth floor thereby changing the flow of material on the floor. On this façade, scaffolding was erected on the ninth floor roof to create a working platform from which work was done.

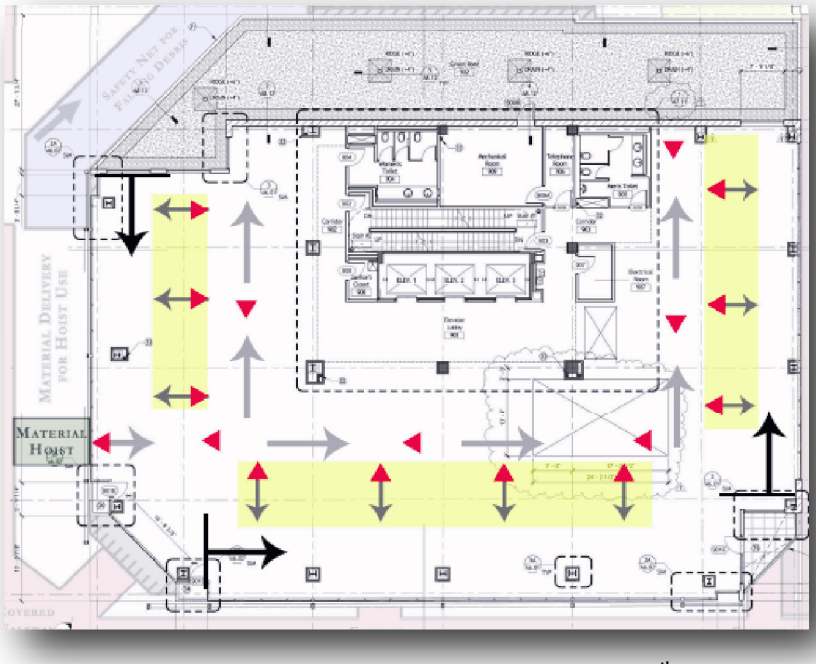


Figure B.4 Workflow Plan (9th Floor – Roof)

Please reference Appendix B for a visual representation of what was described in this section.

C. *Detailed Structural Systems Estimate*

To become more familiar with the 2175 K Street project, a detailed structural estimate was performed. Included in this estimate is the structural steel and structural concrete with all supporting facets. Because this project is not conducive for a modular takeoff, a total system takeoff was performed. In other words, each beam, column, slab etc. was counted and noted in an excel spreadsheet. The following paragraphs will summarize the findings of the detailed structural estimate. The exact spreadsheets can be found in Appendix C of this document.

The table below was designed to highlight the major components of the estimate. The item name and associated quantity, units, and costs are broken down to show adequate detail. As with the other tables within this report, the top five contributing items are highlighted in yellow and are bold. This was done to indicate the major contributors to the overall price of the structural system.

2175 K Street, NW

Detailed Structural Esimate - Price Breakdown

Item	Quantity	Units	Total Material	Waste 10%	Total Labor	Equipment	Subtotal	Overhead 10%	Profit 5%	Total O&P 15%	Cost per Unit	Percent of Total
Steel Framing												
Columns (Wide Flange)	20	Ton	**$60,000.00**	**$6,000.00**	**$6,900.00**	**$3,640.00**	**$76,540.00**	$7,654.00	$3,827.00	$88,021.00	$4,401.05	**7.9%**
Columns (HSS)	9	Ea.	$1,215.00	$121.50	$135.00	$96.00	$1,567.50	$156.75	$78.38	$1,802.63	$200.29	0.2%
Beams	134	Ton	**$488,546.44**	**$48,854.64**	**$23,139.32**	**$20,178.06**	**$580,718.46**	$53,186.38	$26,593.19	$660,498.03	$4,929.09	**59.5%**
Shear Studs	5700	Ea.	$3,990.00	$399.00	$4,617.00	**$2,223.00**	$11,229.00	$1,083.00	$541.50	$12,853.50	$2.26	1.2%
Structural Concrete												
Columns (inc. Rebar)	8.00	C.Y.	$848.00	$84.80	$184.08	$104.40	$1,221.28	$11,099.01	$5,549.51	$17,869.80	$2,233.73	1.6%
Forms	433	SFCA	$7,720.00	$772.00	$4,520.00	$432.00	$13,444.00	$0.00	$0.00	$13,444.00	$31.05	1.2%
Connections	8800	Ea.	**$19,096.00**	**$1,909.60**	**$28,600.00**	$0.00	**$49,605.60**	$0.00	$0.00	$49,605.60	$5.64	**4.5%**
Decking	30712	S.F.	**$96,016.83**	**$9,601.68**	**$13,744.84**	**$1,228.47**	**$120,591.82**	$12,059.18	$6,029.59	$138,680.59	$4.52	**12.5%**
Slabs												
Concrete	303.00	C.Y.	**$55,175.68**	**$5,517.57**	$0.00	$0.00	**$60,693.24**	$6,069.32	$3,034.66	$69,797.23	$230.35	**6.3%**
Welded Wire Fabric	30712	C.S.F.	$6,274.46	$627.45	$4,370.01	$0.00	$11,271.92	$1,127.19	$563.60	$12,962.71	$0.42	1.2%
Placement	303.00	C.Y.	$0.00	$0.00	**$6,572.07**	**$3,579.62**	$10,151.68	$1,015.17	$507.58	$11,674.44	$38.53	1.1%
Finishing	32438	S.F.	$0.00	$0.00	$3,963.26	$0.00	$3,963.26	$396.33	$198.16	$4,557.75	$0.14	0.4%
Concrete Piers												
Concrete	5	C.Y.	$912.35	$91.24	$116.00	$65.25	$1,184.84	$118.48	$59.24	$1,362.56	$272.51	0.1%
Forms	239	SFCA	$595.11	$59.51	$1,529.60	$0.00	$2,184.22	$218.42	$109.21	$2,511.85	$10.51	0.2%
Rebar	0.367	Ton	$568.21	$56.82	$348.26	$0.00	$973.29	$97.33	$48.66	$1,119.28	$3,053.25	0.1%
Base Plates	38.0	S.F.	$3,128.00	$312.80	$0.00	$0.00	$3,440.80	$344.08	$172.04	$3,956.92	$104.13	0.4%
Anchor Rods	76.000	Ea.	$323.32	$32.33	$386.68	$0.00	$742.33	$74.23	$37.12	$853.68	$11.23	0.1%
Existing Columns												
Steel Plate Reinforcement	140.000	S.F.	$10,640.00	$1,064.00	$0.00	$0.00	$11,704.00	$1,170.40	$585.20	$13,459.60	$96.14	1.2%
Footing Expansion												
Concrete	21.00	C.Y.	$2,226.00	$222.60	$703.50	$255.15	$3,407.25	$340.73	$170.36	$3,918.34	$186.59	0.4%
Rebar	0.2058	Ton	$318.99	$31.90	$195.51	$0.00	$546.40	$54.64	$27.32	$628.36	$3,053.25	0.1%
		Totals	$757,594.39	$75,759.44	$100,025.12	$31,801.94	$889,421.45	$96,264.65	$48,132.33	$1,109,577.87		

Table C.1 Detailed Structural Estimate - Price Breakdown

As shown in the above table, a ten percent waste factor was used to accommodate the inevitable waste of materials on the project. This percentage was determined based on RS Means Costworks,

an online database of unit cost for various aspects of construction. This website was also used to collect pricing data shown in excel spreadsheets located in Appendix C.

To calculate the wide flange columns, the following steps were performed. The total number and type of columns were either counted on the construction drawings or exported from Revit. Subsequently, the type of column was noted which lead to the weight per linear foot. This was the case because the majority of the columns on the project were wide flange columns. Additionally, the length of the member was also noted. Next, the cost data was located in RS Means Costworks and noted accordingly. Finally, based upon the unit cost found in Costworks, in the case of wide flange steel columns the units were linear feet, the total cost was tabulated. These costs included material, labor, and equipment. Not all three costs were required by each item within the estimate. As previously noted, a ten percent waste factor was added to the overall material cost. This percentage was based upon the RS Means Costworks' suggestion of ten percent for most projects. This project is typical in the complexity therefore ten percent was deemed adequate.

A similar procedure was used to calculate the costs for all items shown in the above table. To see more detail on any or all of the above line items, please refer to the attached spreadsheets located in Appendix C.

As previously mentioned, the five largest contributing items are as follows, in order of increasing value:

Total Material Cost (before waste):

1. Structural Beams ($488,545)
2. Metal Decking ($96,017)
3. Wide Flange Columns ($60,000)
4. Concrete Slabs ($55,176)
5. Connections ($19,096)

With regards to structural beams, its seems logical that this item would rank number one with respect to material costs because there are large number of beams when compared to columns or other areas of construction. Additionally, the connections between the beams and columns were expected to be costly because with a larger number of beams and columns, there would be a large number of connections. With respect to Metal Decking and Concrete Slabs, it only seems fitting that the metal deck would be a larger value than the cost of the concrete. This is primarily attributed to the type of metal deck and concrete slab assembly. On this project, composite metal deck was used and the concrete serves as the means for resisting compression, which concrete is designed to do. Thereby the use of rebar is no longer needed. This is the reason why rebar does not show up under the Slab category in the above summary table. Similarly, because there is no rebar in the slab on composite metal deck, the cost of welded wire fabric is relatively high.

One item, for which the estimate is incomplete, is the existing column reinforcing. The material takeoff was extrapolated from Costworks based upon a steel plate at 1" thick and the area was measured. The labor was not calculated because Costworks does not have pricing on the method of reinforcing used on these columns.

A similar comparison could be done with respect to total labor cost. Again, similar to material cost, structural beams hold the highest percentage of labor cost and composite metal decking is ranked second. It was surprising to find the placement of concrete as low in the rankings as it was. This is understandable based upon the limited areas in which concrete was used and the relatively low cubic yardage needed for this project. If this were a cast in place concrete structure, it would be expected that the placement of concrete would hold the highest percentage of labor cost.

On the other hand, when examining equipment costs, structural beams maintain the top percentage but concrete placement comes in at the second highest percentage. In this instance, the summary table is a bit deceiving. To arrive at the previously stated conclusion, the equipment cost associated with the placement of the structural concrete columns needs to be added to the equipment cost associated with slab concrete placement. This was attributed to the crane required to perform this work. For this reason, footing expansion was not included in this total because the method of placement for the slabs and columns was crane and bucket whereas the footings required a pump truck for placement.

With respect to the overall cost of the structural system for this project, the cost of structural beams equaled nearly 60% ($660,498) and the next closest item was composite decking which equaled 12.5% ($138,681). This presents the possibility of future analysis to compare the structural system used on this project and using a cast-in-place concrete system.

A number of assumptions needed to be made while completing the detailed structural estimate. First, as mentioned above was a waste factor, which was determined to be ten percent. Second, for casting the concrete columns and concrete piers, one time use formwork was assumed based on the limited number of applications. Additionally, if Costworks did not have pricing for an item, a price was extrapolated based upon two comparable items. Finally, with respect to connections between column to beam and beam to beam, a typical connection was calculated and extrapolated over the total number of connections.

Based upon the total cost of the structural system and the previously mentioned assumptions, the structural estimate described above is within 2% of the GMP budget for the project.

Lessons Learned

To complete the above detailed structural analysis, a partial Revit model was utilized and the contract drawings were used to supplement the missing detail in the model. This was deemed a viable strategy because the architect used the Revit model to create the construction set of drawings.

Many problems were encountered when trying to figure out what was included in the model and what needed to be located in the drawings. In hindsight, without a complete model, it would be suggested to not use the model and primarily focus on the drawings. This simple fact could create a great deal of error in the estimate by missing some items and possibly double counting others. To lessen the potential error, the model was used very cautiously and much effort was spent validating the schedules that were exported from Revit.

D. General Conditions Estimate

An estimate was compiled to represent the general conditions on the 2175 K Street site. A summary of this general conditions estimate is located in the tables below. More detail is available in Appendix D at the end of this document.

The estimate is comprised of the following areas:

- permitting
- supervision and management teams salaries
- general conditions
- miscellaneous labor
- courier fees
- a dump truck driver
- DAVIS equipment/vehicle rental
- temporary facilities
- punch list / warrantee

Sales tax is included for the DC area on all applicable material. Additionally, insurance and employee benefits are included in the grand total. The grand total, as shown below, comes out to $1,467,112. A detailed cost comparison is outlined on the next few pages.

The table below is designed to show a price comparison between the various items included in the estimate as well as shows the percentage of each item with respect to both the subtotal and the total for each category. These categories are material and labor. To highlight the largest contributing factors, they have been highlighted in yellow and the font is bold.

Going into more detail, the percentage located in the “Percent of Subtotal” beside each item compares that items material or labor cost respectively with the subtotal for that category. Similarly, the percentage located in the “Percent of Total” compares the total for that item with respect to the total for that category. The only difference between the subtotal and total is the addition of the insurance and employee benefits on the labor cost.

The category "DAVIS rentals" is the primary contributing factor in relation to the total material cost. This cost is $177,442, which computes to 74.6% of the total cost of material. Included in this line

item is vehicle rental, field office equipment, etc. The largest contributing factor for the cost of this line item is the project manager's vehicle and the cost associated with it.

On the other hand, the supervision and project management line item is the largest percentage with respect to the total labor costs for the project. This line item costs $712,626, which computes to almost 90% of the subtotal and almost 58% of the total cost associated with labor costs. The reason for the decrease in the percentage when going from subtotal to total is due to the addition of insurance and employee benefits. This number is within reason because typically the staffing cost on a project is the primary factor in the cost of general conditions.

2175 K Street, NW
Contractor General Conditions
(Price Comparison - Percentage)

Category/Activity	Total Material Cost	Percent of Subtotal	Percent of Total	Total Labor Cost	Percent of Subtotal	Percent of Total
Permit	$ -	-	-	$ -	-	-
Supervision & Project Management	$ -	-	-	$ 712,625.72	**89.86%**	**57.97%**
General Conditions	$ 8,581.61	3.61%	3.61%	$ -	-	-
Miscellaneous Labor	$ -	-	-	$ 43,206.00	5.45%	3.51%
Courier	$ -	-	-	$ 6,992.92	0.88%	0.57%
Dump Truck - Driver	$ -	-	-	$ 3,496.46	0.44%	0.28%
Rentals (DAVIS)	$ 177,441.96	**74.59%**	**74.59%**	$ -	-	-
Temporary Facilities	$ 25,723.69	10.81%	10.81%	$ -	-	-
Safety	$ 25,128.34	10.56%	10.56%	$ 24,277.50	3.06%	1.98%
Punch List / Warrantee	$ 1,000.00	0.42%	0.42%	$ 2,457.00	0.31%	0.20%
SUBTOTAL	$ 237,875.60		16.21%	$ 793,055.60		54.06%
TOTALS	$ 237,875.60		16.21%	$ 1,229,236.18		83.79%
GENERAL CONDITIONS GRAND TOTAL	$1,467,112					

Table D.1 General Conditions Price Comparison - Percentage

The next table shows the relation between each line item and the associated cost per week over the duration of the specific activity. As shown in the below table, the total weekly material cost comes out to $2,673 and the total weekly labor cost is $13,812. Similarly, in comparison to the last table, with respect to materials, "DAVIS rentals" has the highest weekly cost equaling $1,994. Additionally, with respect to material, supervision and project management equates to $8,007 per week. This amount is over four times the highest weekly cost concerning material. This fact reinforces the statement above regarding staffing being the largest cost associated with general conditions. The total general conditions, when compared to the duration of the project, come out to $16,484 per week.

2175 K Street, NW
Contractor General Conditions
(Price Comparison - Cost per Week)

Category/Activity	Quantity	Total Material Cost	Cost per Week	Total Labor Cost	Cost per Week
Permit	0	$ -	-	$ -	-
Supervision & Project Management	89	$ -	-	$ 712,625.72	$ 8,007
General Conditions	89	$ 8,581.61	$ 96	$ -	-
Miscellaneous Labor	69	$ -	-	$ 43,206.00	$ 626
Courier	56	$ -	-	$ 6,992.92	$ 125
Dump Truck - Driver	3	$ -	-	$ 3,496.46	$ 1,249
Rentals (DAVIS)	89	$ 177,441.96	$ 1,994	$ -	-
Temporary Facilities	69	$ 25,723.69	$ 371	$ -	-
Safety	69	$ 25,128.34	$ 362	$ 24,277.50	$ 350
Punch List / Warrantee	3	$ 1,000.00	$ 400	$ 2,457.00	$ 983
SUBTOTAL	89	$ 237,875.60	$ 2,673	$ 793,055.60	$ 8,911
TOTALS	89	$ 237,875.60	$ 2,673	$ 1,229,236.18	$ 13,812
GENERAL CONDITIONS GRAND TOTAL		$1,467,112			*$16,484*

Table D.2 General Conditions Price Comparison - Cost per Week

The total general conditions, when compared to the duration of the project, come out to $16,484 per week. To calculate this amount, the maximum duration was used, in the case of 2175 K Street, this duration is eighty-nine weeks. This duration differs slightly from the one calculated in the project schedule because the project team is involved before the site is mobilized. The duration found in the detailed project schedule section was calculated from mobilization to the completion of the closeout phase.

E. Critical Industry

The 18th Annual PACE Roundtable held at the Penn Stater Conference Center located at The Pennsylvania State University on October 15, 2009 presented a variety of critical industry issues related to the construction industry. The theme of the roundtable discussion was "Creating Opportunities."

The PACE Roundtable creates a venue for industry members and students to convene and discuss current industry issues and trends. To start the day, a panel of industry got together to discuss the current state of construction. During this panel discussion, there were several reoccurring trends. Several industry members mentioned, in some way, Building Information Modeling (BIM) and the

challenges associated with BIM implementation. Additionally, energy efficiency and sustainability was a major topic of discussion. Simultaneously, the proverbial elephant in the room was the current state of the economy with respect to the construction industry.

Subsequently, the group dispersed into three separate rooms, each working toward a different goal. The sessions were broken down into two parts, the first spanning sixty minutes and the second spanning thirty minutes. The three breakout sessions had the following topics of discussion: "Energy and the Construction Industry", "Business and Networking", and "BIM Executive Planning."

With respect to the Energy and the Construction Industry session, the goal was to first define the causes that are driving the importance of the discussion, second define general categories where energy plays a key role, and third discuss areas that could most benefit from further research into the respective topics. In other words, help students currently working on their senior thesis to define areas of study to focus their attention on.

What was found to be the most surprising was how extensive the list of reasons why the discussion on energy is so critical. Additionally, the willingness of the industry members present in the group to help the students brainstorm and determine worthwhile research topics was extremely gratifying. As a result, many of the students walked away from this discussion with ideas of research topics that are relevant to their senior thesis and for those who did not ask for assistance, they, at the very least, got to hear a wide variety of topics unearthed through the conversations between the other students and industry members.

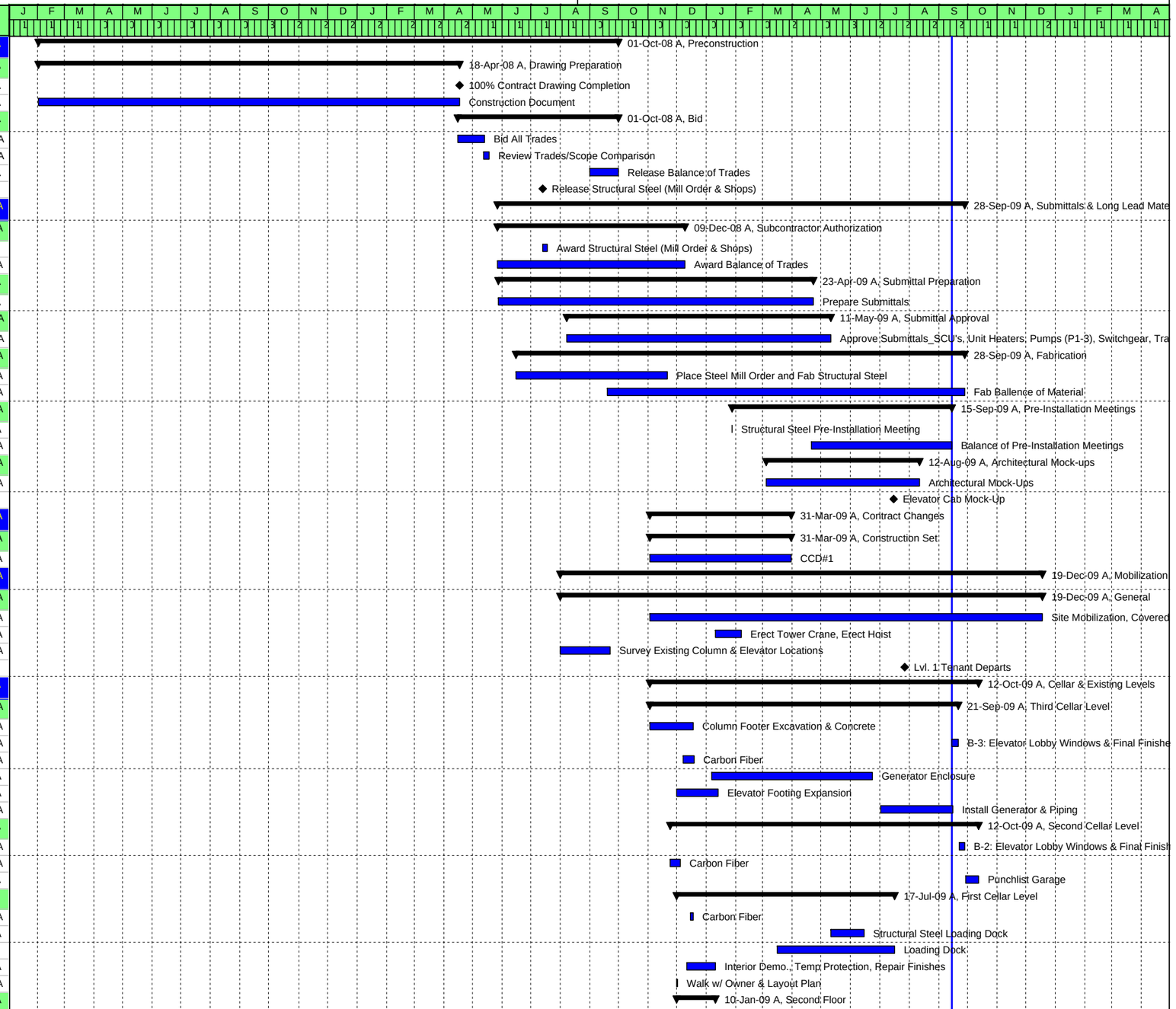
Consequently, several research topic ideas presented themselves as being worth further research. First, many projects enter the construction phase without any end goals of LEED certification; then in the midst of construction, the owner decides to pursue a LEED certification and subsequently invests a great deal of money in the project to do so. One topic of further research could involve specific areas of focus for the owner if they should choose to pursue a LEED certification midway through the construction process or after the project reaches the point in which the decisions no longer have a great deal of bearing on the price of the outcome. Additionally, the implementation of LED lighting in retrofit application could prove beneficial to the building energy consumption and subsequently the building performance and operation cost. Furthermore, energy conservation could be accomplished by utilizing a solar collection system. A passive system, for example an evacuated tube solar water heater, could be used or an active system, for example a photovoltaic array, or a combination of them both could be used to attain the desired energy conservation. With respect to the photovoltaic array, several systems could be explored in terms of products and/or financing. Another area of interest would be to study the possibility for the tenants of the building to be able to monitor their company's energy usage and establish a shared saving plan for those who can reduce their electrical demand. This topic might be more difficult to study but the outcomes could be quite substantial.

Several key contacts were made with industry members with experience with the above research topics. First, general question could be directed to Dr. David Riley. With respect to the LED retrofit

lighting, Jeremy Sibert from Hensel Phelps could be contacted with questions with regard to installation or other facets dealing with construction. If any question were to arise on the topic of BIM or the implementation of such a process, Craig Dubler or Dr. John Messner both are involved with the BIM research initiative Penn State is involved with. Additionally, Jim Salvino from Clark Construction Group has a great deal of field experience with the implementation of BIM and the common pitfalls associated with it. Furthermore, if any question should arise regarding mechanical equipment, several contacts were made that could prove useful. These contacts are, from McClure Company, Daniel Kerr and Alyssa Adams and, from Southland Industries, Mark Kosin. Finally, the "construction management" discussion board, or other such discussion boards, could prove to be an invaluable resource for getting a question before a large audience.

Appendix A – Detailed Project Schedule

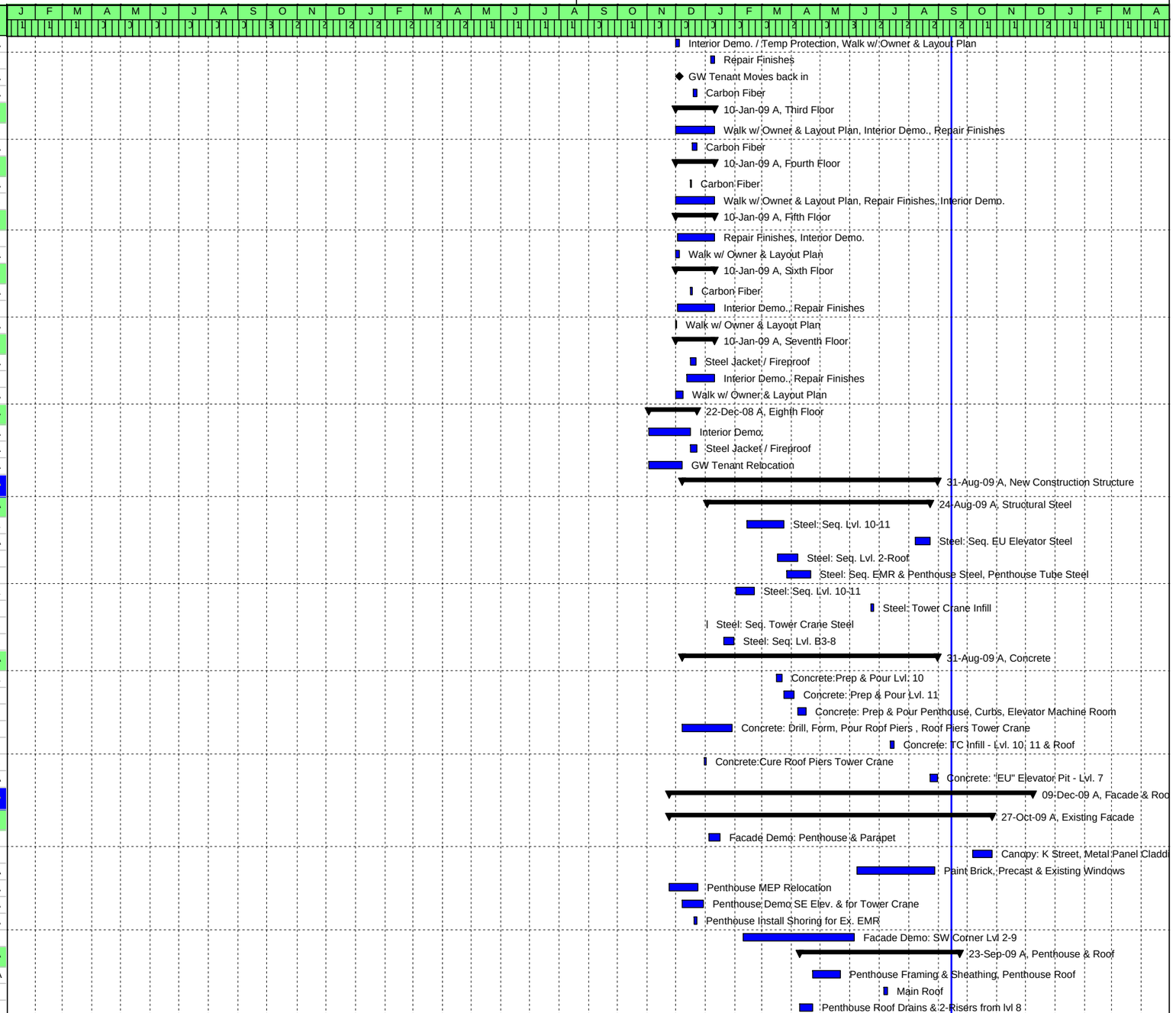
Activity ID	Activity Name	Actual Duration	Start	Finish
Preconstruction		433	02-Feb-07 A	01-Oct-08 A
Drawing Preparation		315	02-Feb-07 A	18-Apr-08 A
PC043	100% Contract Drawing Completion	0		18-Apr-08 A
PC053	Construction Document	308	02-Feb-07 A	18-Apr-08 A
Bid		120	16-Apr-08 A	01-Oct-08 A
B010	Bid All Trades	20	16-Apr-08 A	13-May-08 A
B020	Review Trades/Scope Comparison	4	13-May-08 A	19-May-08 A
B060	Release Balance of Trades	21	01-Sep-08 A	01-Oct-08 A
B050	Release Structural Steel (Mill Order & Shops)	0		14-Jul-08 A
Submittals & Long Lead Material/Equipment		349	27-May-08 A	28-Sep-09 A
Subcontractor Authorization		141	27-May-08 A	09-Dec-08 A
A020	Award Structural Steel (Mill Order & Shops)	5	14-Jul-08 A	18-Jul-08 A
A030	Award Balance of Trades	137	27-May-08 A	09-Dec-08 A
Submittal Preparation		236	28-May-08 A	23-Apr-09 A
SP040	Prepare Submittals	230	28-May-08 A	23-Apr-09 A
Submittal Approval		196	08-Aug-08 A	11-May-09 A
SA060	Approve Submittals_SCU's, Unit Heaters, Pumps (P1-3), Switchgear, ...	191	08-Aug-08 A	11-May-09 A
Fabrication		335	16-Jun-08 A	28-Sep-09 A
F010	Place Steel Mill Order and Fab Structural Steel	112	16-Jun-08 A	21-Nov-08 A
F020	Fab Ballence of Material	259	19-Sep-08 A	28-Sep-09 A
Pre-Installation Meetings		164	28-Jan-09 A	15-Sep-09 A
PM010	Structural Steel Pre-Installation Meeting	0	28-Jan-09 A	28-Jan-09 A
PM020	Balance of Pre-Installation Meetings	102	21-Apr-09 A	15-Sep-09 A
Architectural Mock-ups		114	05-Mar-09 A	12-Aug-09 A
AM010	Architectural Mock-Ups	112	05-Mar-09 A	12-Aug-09 A
AM040	Elevator Cab Mock-Up	0		16-Jul-09 A
Contract Changes		106	03-Nov-08 A	31-Mar-09 A
Construction Set		106	03-Nov-08 A	31-Mar-09 A
CCD1-	CCD#1	102	03-Nov-08 A	31-Mar-09 A
Mobilization		361	01-Aug-08 A	19-Dec-09 A
General		361	01-Aug-08 A	19-Dec-09 A
M020	Site Mobilization, Covered Walkways	286	03-Nov-08 A	19-Dec-09 A
M060	Erect Tower Crane, Erect Hoist	27	10-Jan-09 A	06-Feb-09 A
M010	Survey Existing Column & Elevator Locations	35	01-Aug-08 A	22-Sep-08 A
M070	Lvl. 1 Tenant Departs	0	27-Jul-09 A	
Cellar & Existing Levels		246	03-Nov-08 A	12-Oct-09 A
Third Cellar Level		231	03-Nov-08 A	21-Sep-09 A
B3-020	Column Footer Excavation & Concrete	27	03-Nov-08 A	18-Dec-08 A
B3-200	B-3: Elevator Lobby Windows & Final Finishes	5	15-Sep-09 A	21-Sep-09 A
B3-030	Carbon Fiber	9	08-Dec-08 A	19-Dec-08 A
B3-060	Generator Enclosure	107	07-Jan-09 A	24-Jun-09 A
B3-070	Elevator Footing Expansion	26	01-Dec-08 A	13-Jan-09 A
B3-075	Install Generator & Piping	52	02-Jul-09 A	15-Sep-09 A
Second Cellar Level		231	24-Nov-08 A	12-Oct-09 A
B2-200	B-2: Elevator Lobby Windows & Final Finishes	5	22-Sep-09 A	28-Sep-09 A
B2-020	Carbon Fiber	7	24-Nov-08 A	05-Dec-08 A
B2-210	Punchlist Garage	10	29-Sep-09 A	12-Oct-09 A
First Cellar Level		164	01-Dec-08 A	17-Jul-09 A
B1-020	Carbon Fiber	4	15-Dec-08 A	18-Dec-08 A
B1-080	Structural Steel Loading Dock	24	11-May-09 A	15-Jun-09 A
B1-070	Loading Dock	104	16-Mar-09 A	17-Jul-09 A
B1-010	Interior Demo., Temp Protection, Repair Finishes	20	11-Dec-08 A	10-Jan-09 A
B1-005	Walk w/ Owner & Layout Plan	1	01-Dec-08 A	02-Dec-08 A
Second Floor		30	01-Dec-08 A	10-Jan-09 A



Critical Remaining Work | Summary | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Actual Duration	Start	Finish
E2-030	Interior Demo. / Temp Protection, Walk w/ Owner & Layout Plan	4	01-Dec-08 A	05-Dec-08 A
E2-050	Repair Finishes	3	07-Jan-09 A	10-Jan-09 A
E2-060	GW Tenant Moves back in	0		05-Dec-08 A
E2-040	Carbon Fiber	2	19-Dec-08 A	23-Dec-08 A
Third Floor		30	01-Dec-08 A	10-Jan-09 A
E3-005	Walk w/ Owner & Layout Plan, Interior Demo., Repair Finishes	28	01-Dec-08 A	10-Jan-09 A
E3-030	Carbon Fiber	3	18-Dec-08 A	22-Dec-08 A
Fourth Floor		30	01-Dec-08 A	10-Jan-09 A
E4-015	Carbon Fiber	2	16-Dec-08 A	17-Dec-08 A
E4-005	Walk w/ Owner & Layout Plan, Repair Finishes, Interior Demo.	28	01-Dec-08 A	10-Jan-09 A
Fifth Floor		30	01-Dec-08 A	10-Jan-09 A
E5-030	Repair Finishes, Interior Demo.	26	03-Dec-08 A	10-Jan-09 A
E5-005	Walk w/ Owner & Layout Plan	4	01-Dec-08 A	05-Dec-08 A
Sixth Floor		30	01-Dec-08 A	10-Jan-09 A
E6-040	Carbon Fiber	3	16-Dec-08 A	18-Dec-08 A
E6-020	Interior Demo., Repair Finishes	26	03-Dec-08 A	10-Jan-09 A
E6-010	Walk w/ Owner & Layout Plan	1	01-Dec-08 A	02-Dec-08 A
Seventh Floor		30	01-Dec-08 A	10-Jan-09 A
E7-020	Steel Jacket / Fireproof	4	16-Dec-08 A	22-Dec-08 A
E7-010	Interior Demo., Repair Finishes	19	12-Dec-08 A	10-Jan-09 A
E7-005	Walk w/ Owner & Layout Plan	6	01-Dec-08 A	09-Dec-08 A
Eighth Floor		36	03-Nov-08 A	22-Dec-08 A
E8-005	Interior Demo.	29	03-Nov-08 A	16-Dec-08 A
E8-020	Steel Jacket / Fireproof	5	16-Dec-08 A	22-Dec-08 A
E8-010	GW Tenant Relocation	23	03-Nov-08 A	08-Dec-08 A
New Construction Structure		190	08-Dec-08 A	31-Aug-09 A
Structural Steel		165	03-Jan-09 A	24-Aug-09 A
S020	Steel: Seq. Lvl. 10-11	23	13-Feb-09 A	24-Mar-09 A
S105	Steel: Seq. EU Elevator Steel	9	08-Aug-09 A	24-Aug-09 A
S030	Steel: Seq. Lvl. 2-Roof	15	17-Mar-09 A	07-Apr-09 A
S060	Steel: Seq. EMR & Penthouse Steel, Penthouse Tube Steel	16	27-Mar-09 A	21-Apr-09 A
S010	Steel: Seq. Lvl. 10-11	12	02-Feb-09 A	21-Feb-09 A
S110	Steel: Tower Crane Infill	3	23-Jun-09 A	26-Jun-09 A
S001	Steel: Seq. Tower Crane Steel	0	03-Jan-09 A	03-Jan-09 A
S003	Steel: Seq. Lvl. B3-8	7	20-Jan-09 A	31-Jan-09 A
Concrete		190	08-Dec-08 A	31-Aug-09 A
C025	Concrete:Prep & Pour Lvl. 10	5	16-Mar-09 A	22-Mar-09 A
C040	Concrete: Prep & Pour Lvl. 11	10	24-Mar-09 A	04-Apr-09 A
C080	Concrete: Prep & Pour Penthouse, Curbs, Elevator Machine Room	7	07-Apr-09 A	16-Apr-09 A
C010	Concrete: Drill, Form, Pour Roof Piers , Roof Piers Tower Crane	31	08-Dec-08 A	29-Jan-09 A
C100	Concrete: TC Infill - Lvl. 10, 11 & Roof	4	13-Jul-09 A	17-Jul-09 A
C006	Concrete:Cure Roof Piers Tower Crane	2	31-Dec-08 A	02-Jan-09 A
C090	Concrete: "EU" Elevator Pit - Lvl. 7	5	24-Aug-09 A	31-Aug-09 A
Facade & Roof		272	24-Nov-08 A	09-Dec-09 A
Existing Facade		242	24-Nov-08 A	27-Oct-09 A
EF010	Facade Demo: Penthouse & Parapet	7	05-Jan-09 A	16-Jan-09 A
EF050	Canopy: K Street, Metal Panel Cladding	15	07-Oct-09 A	27-Oct-09 A
EF040	Paint Brick, Precast & Existing Windows	58	08-Jun-09 A	28-Aug-09 A
EF070	Penthouse MEP Relocation	18	24-Nov-08 A	23-Dec-08 A
EF065	Penthouse Demo SE Elev. & for Tower Crane	14	08-Dec-08 A	30-Dec-08 A
EF060	Penthouse Install Shoring for Ex. EMR	1	20-Dec-08 A	23-Dec-08 A
EF015	Facade Demo: SW Corner Lvl 2-9	76	09-Feb-09 A	05-Jun-09 A
Penthouse & Roof		120	09-Apr-09 A	23-Sep-09 A
PH030	Penthouse Framing & Sheathing, Penthouse Roof	20	23-Apr-09 A	22-May-09 A
PH100	Main Roof	4	06-Jul-09 A	10-Jul-09 A
PH005	Penthouse Roof Drains & 2-Risers from lvl 8	9	09-Apr-09 A	22-Apr-09 A

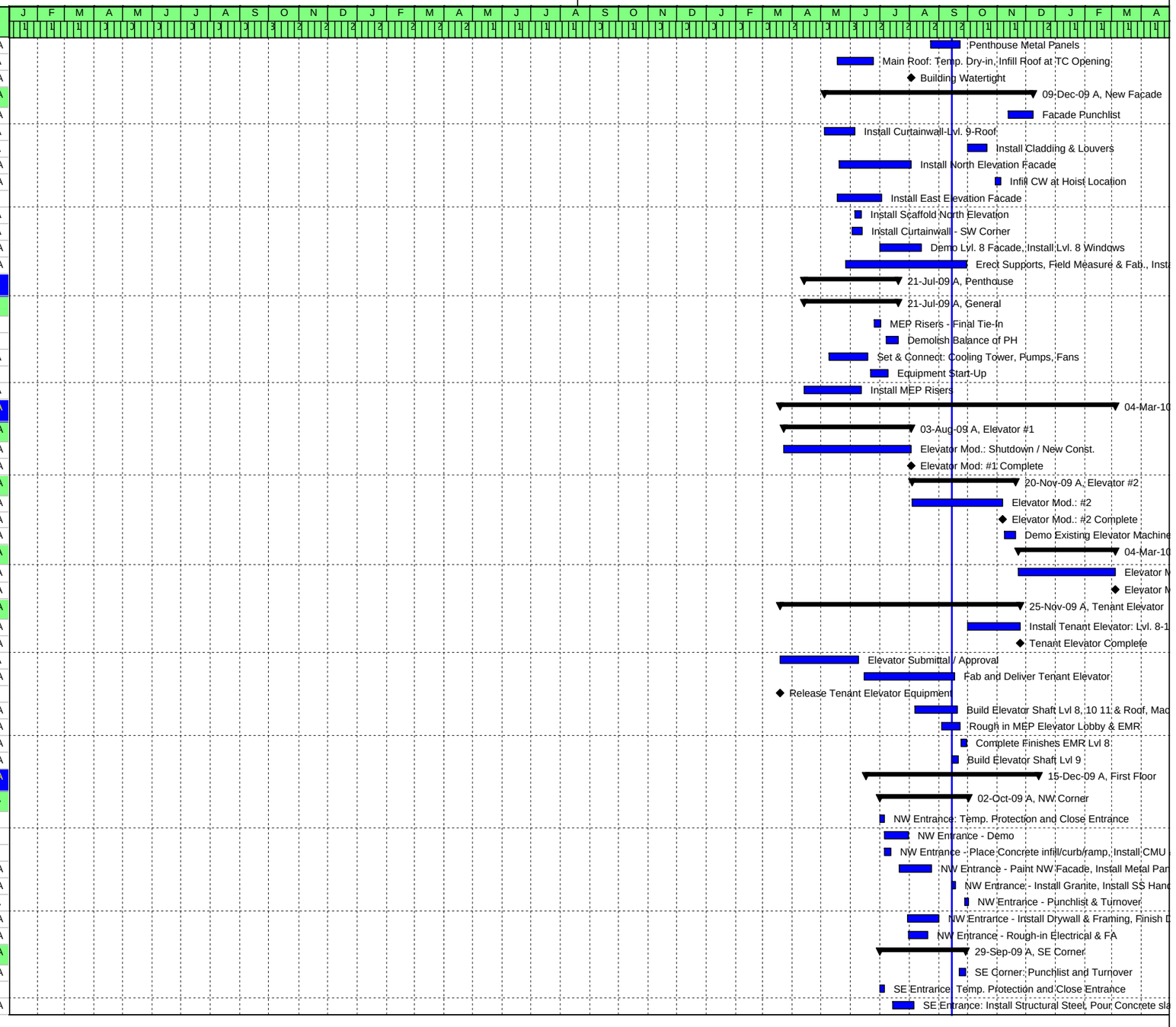


Critical Remaining Work ▼ Summary

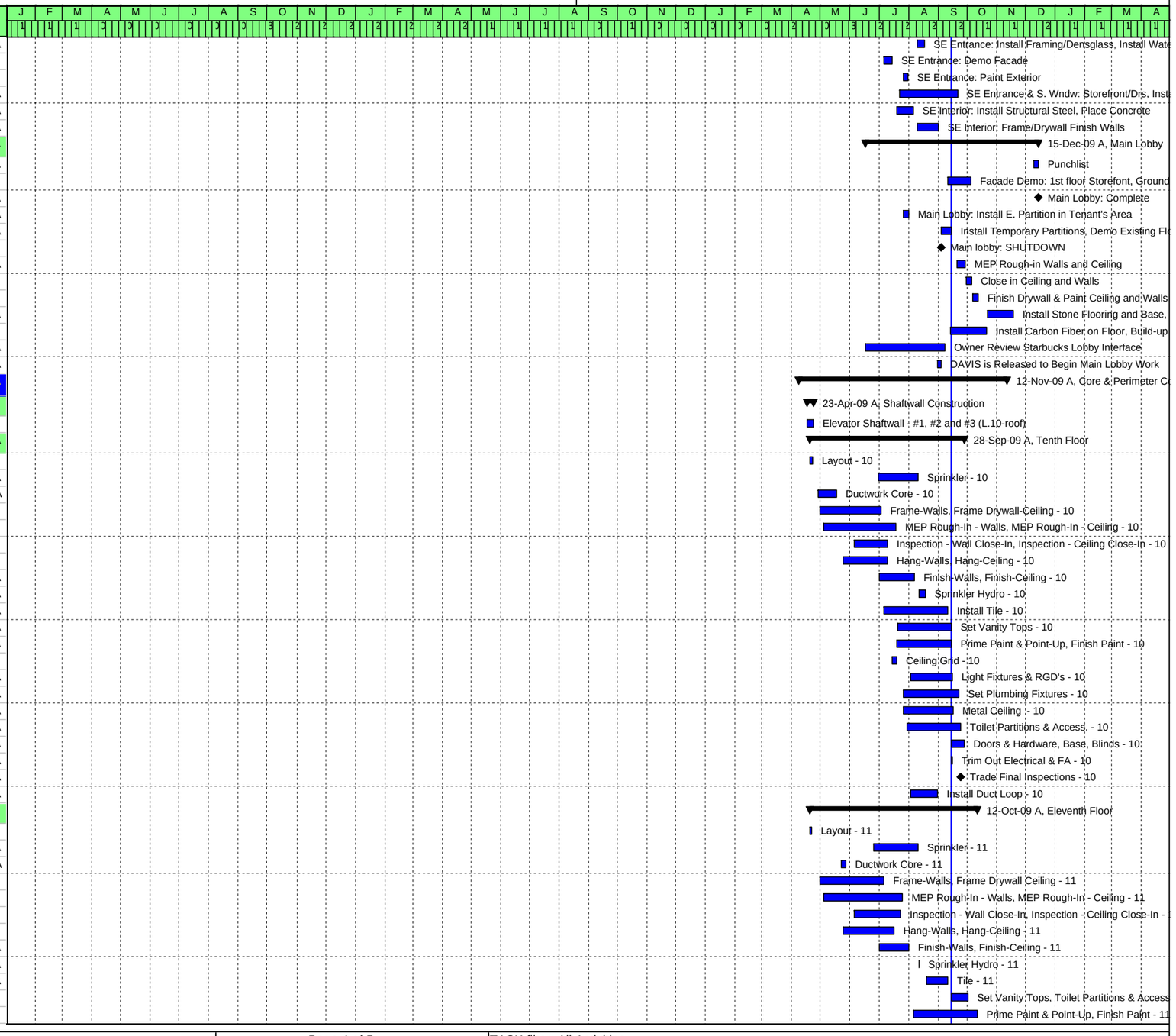
Remaining Work ◆ Milestone

TASK filter: All Activities

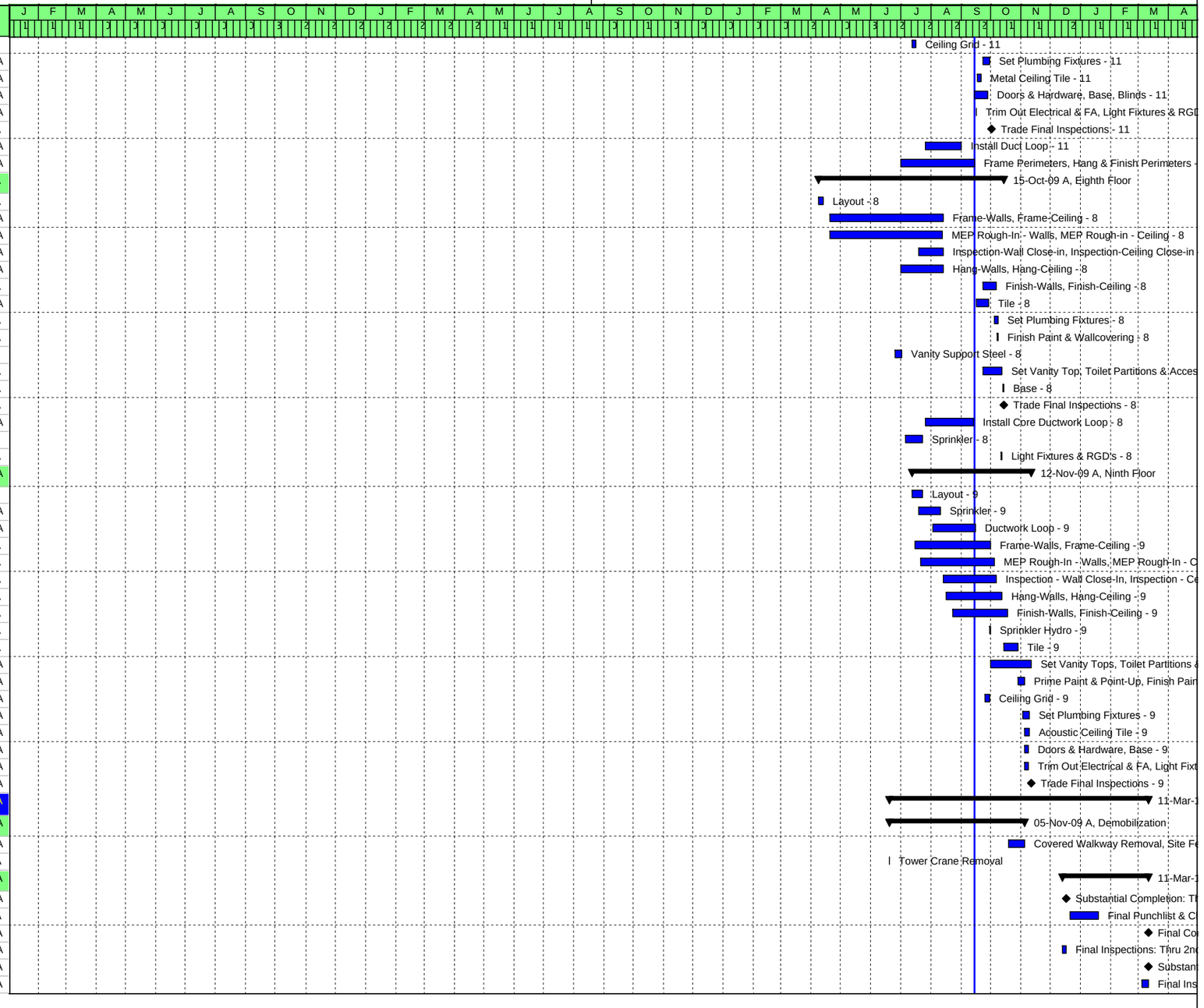
Activity ID	Activity Name	Actual Duration	Start	Finish
PH040	Penthouse Metal Panels	20	24-Aug-09 A	23-Sep-09 A
PH110	Main Roof: Temp. Dry-in, Infill Roof at TC Opening	27	18-May-09 A	25-Jun-09 A
PH140	Building Watertight	0		03-Aug-09 A
New Facade		157	04-May-09 A	09-Dec-09 A
NF050	Facade Punchlist	14	13-Nov-09 A	09-Dec-09 A
NF020	Install Curtainwall-Lvl. 9-Roof	22	04-May-09 A	05-Jun-09 A
NF030	Install Cladding & Louvers	14	01-Oct-09 A	22-Oct-09 A
NF060	Install North Elevation Facade	51	20-May-09 A	03-Aug-09 A
NF070	Infill CW at Hoist Location	4	30-Oct-09 A	05-Nov-09 A
NF110	Install East Elevation Facade	33	18-May-09 A	03-Jul-09 A
NF055	Install Scaffold North Elevation	5	05-Jun-09 A	12-Jun-09 A
NF040	Install Curtainwall - SW Corner	9	02-Jun-09 A	13-Jun-09 A
NF005	Demo Lvl. 8 Facade, Install Lvl. 8 Windows	31	01-Jul-09 A	14-Aug-09 A
NF150	Erect Supports, Field Measure & Fab., Install Vertical Louver	88	27-May-09 A	30-Sep-09 A
Penthouse		71	13-Apr-09 A	21-Jul-09 A
General		71	13-Apr-09 A	21-Jul-09 A
PH070	MEP Risers - Final Tie-In	6	26-Jun-09 A	02-Jul-09 A
PH090	Demolish Balance of PH	9	08-Jul-09 A	21-Jul-09 A
PH050	Set & Connect: Cooling Tower, Pumps, Fans	28	09-May-09 A	19-Jun-09 A
PH060	Equipment Start-Up	13	22-Jun-09 A	10-Jul-09 A
PH130	Install MEP Risers	43	13-Apr-09 A	12-Jun-09 A
Elevators		251	19-Mar-09 A	04-Mar-10 A
Elevator #1		95	23-Mar-09 A	03-Aug-09 A
EL010	Elevator Mod.: Shutdown / New Const.	93	23-Mar-09 A	03-Aug-09 A
EL025	Elevator Mod: #1 Complete	0		03-Aug-09 A
Elevator #2		79	04-Aug-09 A	20-Nov-09 A
EL030	Elevator Mod.: #2	68	04-Aug-09 A	06-Nov-09 A
EL035	Elevator Mod.: #2 Complete	0		06-Nov-09 A
EL055	Demo Existing Elevator Machine Room	10	09-Nov-09 A	20-Nov-09 A
Elevator #3		74	23-Nov-09 A	04-Mar-10 A
EL040	Elevator Mod.: #3	70	23-Nov-09 A	04-Mar-10 A
EL045	Elevator Mod.: #3 Complete	0		04-Mar-10 A
Tenant Elevator		180	19-Mar-09 A	25-Nov-09 A
EL190	Install Tenant Elevator: Lvl. 8-11	40	01-Oct-09 A	25-Nov-09 A
EL200	Tenant Elevator Complete	0		25-Nov-09 A
EL100	Elevator Submittal / Approval	57	19-Mar-09 A	09-Jun-09 A
EL130	Fab and Deliver Tenant Elevator	67	15-Jun-09 A	17-Sep-09 A
EL099	Release Tenant Elevator Equipment	0	19-Mar-09 A	
EL140	Build Elevator Shaft Lvl 8, 10 11 & Roof, Machine Room Lvl. 8	30	07-Aug-09 A	21-Sep-09 A
EL160	Rough in MEP Elevator Lobby & EMR	13	04-Sep-09 A	23-Sep-09 A
EL170	Complete Finishes EMR Lvl 8	5	24-Sep-09 A	30-Sep-09 A
EL180	Build Elevator Shaft Lvl 9	5	15-Sep-09 A	21-Sep-09 A
First Floor		129	17-Jun-09 A	15-Dec-09 A
NW Corner		67	01-Jul-09 A	02-Oct-09 A
L1-001	NW Entrance: Temp. Protection and Close Entrance	2	01-Jul-09 A	06-Jul-09 A
L1-005	NW Entrance - Demo	19	06-Jul-09 A	31-Jul-09 A
L1-015	NW Entrance - Place Concrete infill/curb/ramp, Install CMU & Patch B...	5	06-Jul-09 A	13-Jul-09 A
L1-020	NW Entrance - Paint NW Facade, Install Metal Panels, Storefront Entr...	25	21-Jul-09 A	25-Aug-09 A
L1-060	NW Entrance - Install Granite, Install SS Handrails	4	15-Sep-09 A	18-Sep-09 A
L1-199	NW Entrance - Punchlist & Turnover	4	28-Sep-09 A	02-Oct-09 A
L1-035	NW Entrance - Install Drywall & Framing, Finish Drywall & Paint, Insta...	23	30-Jul-09 A	01-Sep-09 A
L1-030	NW Entrance - Rough-in Electrical & FA	15	31-Jul-09 A	21-Aug-09 A
SE Corner		64	01-Jul-09 A	29-Sep-09 A
L1-299	SE Corner: Punchlist and Turnover	4	23-Sep-09 A	29-Sep-09 A
L1-200	SE Entrance: Temp. Protection and Close Entrance	2	01-Jul-09 A	06-Jul-09 A
L1-210	SE Entrance: Install Structural Steel, Pour Concrete slab/SOD & Curb	16	15-Jul-09 A	06-Aug-09 A



Activity ID	Activity Name	Actual Duration	Start	Finish
L1-225	SE Entrance: Install Framing/Densglass, Install Waterproofing/Air bar...	6	10-Aug-09 A	18-Aug-09 A
L1-205	SE Entrance: Demo Facade	7	06-Jul-09 A	15-Jul-09 A
L1-245	SE Entrance: Paint Exterior	4	27-Jul-09 A	31-Jul-09 A
L1-227	SE Entrance & S. Wndw: Storefront/Drs, Install brick, Install Metal Wa...	42	23-Jul-09 A	22-Sep-09 A
L1-255	SE Interior: Install Structural Steel, Place Concrete	13	20-Jul-09 A	06-Aug-09 A
L1-265	SE Interior: Frame/Drywall Finish Walls	17	10-Aug-09 A	01-Sep-09 A
Main Lobby		129	17-Jun-09 A	15-Dec-09 A
L1-595	Punchlist	3	10-Dec-09 A	15-Dec-09 A
L1-520	Facade Demo: 1st floor Storefont, Ground Floor Storefront Entrance ...	15	11-Sep-09 A	05-Oct-09 A
L1-599	Main Lobby: Complete	0		15-Dec-09 A
L1-500	Main Lobby: Install E. Partition in Tenant's Area	5	27-Jul-09 A	01-Aug-09 A
L1-505	Install Temporary Partitions, Demo Existing Floor, Walls & Ceiling	6	04-Sep-09 A	15-Sep-09 A
L1-501	Main lobby: SHUTDOWN	0	04-Sep-09 A	
L1-528	MEP Rough-in Walls and Ceiling	6	21-Sep-09 A	29-Sep-09 A
L1-530	Close in Ceiling and Walls	4	30-Sep-09 A	06-Oct-09 A
L1-535	Finish Drywall & Paint Ceiling and Walls	4	07-Oct-09 A	13-Oct-09 A
L1-545	Install Stone Flooring and Base, Install Millwork, Install Vestibule and ...	20	22-Oct-09 A	18-Nov-09 A
L1-512	Install Carbon Fiber on Floor, Build-up Flooring Insul/Plywood	28	14-Sep-09 A	21-Oct-09 A
DSC-0	Owner Review Starbucks Lobby Interface	57	17-Jun-09 A	08-Sep-09 A
DSC-0	DAVIS is Released to Begin Main Lobby Work	5	31-Aug-09 A	04-Sep-09 A
Core & Perimeter Construction		156	08-Apr-09 A	12-Nov-09 A
Shaftwall Construction		5	17-Apr-09 A	23-Apr-09 A
SF010	Elevator Shaftwall - #1, #2 and #3 (L.10-roof)	5	17-Apr-09 A	23-Apr-09 A
Tenth Floor		115	20-Apr-09 A	28-Sep-09 A
L10-010	Layout - 10	3	20-Apr-09 A	22-Apr-09 A
L10-020	Sprinkler - 10	29	30-Jun-09 A	11-Aug-09 A
L10-030	Ductwork Core - 10	13	29-Apr-09 A	18-May-09 A
L10-040	Frame-Walls, Frame Drywall-Ceiling - 10	44	01-May-09 A	03-Jul-09 A
L10-050	MEP Rough-In - Walls, MEP Rough-In - Ceiling - 10	53	04-May-09 A	19-Jul-09 A
L10-060	Inspection - Wall Close-In, Inspection - Ceiling Close-In - 10	24	05-Jun-09 A	10-Jul-09 A
L10-070	Hang-Walls, Hang-Ceiling - 10	32	25-May-09 A	10-Jul-09 A
L10-080	Finish-Walls, Finish-Ceiling - 10	26	01-Jul-09 A	07-Aug-09 A
L10-110	Sprinkler Hydro - 10	5	12-Aug-09 A	18-Aug-09 A
L10-160	Install Tile - 10	48	06-Jul-09 A	11-Sep-09 A
L10-170	Set Vanity Tops - 10	39	21-Jul-09 A	15-Sep-09 A
L10-180	Prime Paint & Point-Up, Finish Paint - 10	40	20-Jul-09 A	15-Sep-09 A
L10-100	Ceiling Grid - 10	3	15-Jul-09 A	20-Jul-09 A
L10-210	Light Fixtures & RGD's - 10	31	03-Aug-09 A	16-Sep-09 A
L10-200	Set Plumbing Fixtures - 10	41	27-Jul-09 A	23-Sep-09 A
L10-220	Metal Ceiling - 10	37	27-Jul-09 A	17-Sep-09 A
L10-250	Toilet Partitions & Access. - 10	40	30-Jul-09 A	25-Sep-09 A
L10-230	Doors & Hardware, Base, Blinds - 10	9	15-Sep-09 A	28-Sep-09 A
L10-240	Trim Out Electrical & FA - 10	1	15-Sep-09 A	15-Sep-09 A
L10-280	Trade Final Inspections - 10	0		25-Sep-09 A
L10-290	Install Duct Loop - 10	20	03-Aug-09 A	31-Aug-09 A
Eleventh Floor		125	20-Apr-09 A	12-Oct-09 A
L11-010	Layout - 11	2	20-Apr-09 A	22-Apr-09 A
L11-020	Sprinkler - 11	31	26-Jun-09 A	11-Aug-09 A
L11-030	Ductwork Core - 11	2	22-May-09 A	27-May-09 A
L11-040	Frame-Walls, Frame Drywall Ceiling - 11	44	01-May-09 A	06-Jul-09 A
L11-050	MEP Rough-In - Walls, MEP Rough-In - Ceiling - 11	58	04-May-09 A	26-Jul-09 A
L11-060	Inspection - Wall Close-In, Inspection - Ceiling Close-In - 11	34	05-Jun-09 A	24-Jul-09 A
L11-070	Hang-Walls, Hang-Ceiling - 11	37	25-May-09 A	17-Jul-09 A
L11-080	Finish-Walls, Finish-Ceiling - 11	22	01-Jul-09 A	01-Aug-09 A
L11-120	Sprinkler Hydro - 11	0	12-Aug-09 A	12-Aug-09 A
L11-160	Tile - 11	15	20-Aug-09 A	11-Sep-09 A
L11-170	Set Vanity Tops, Toilet Partitions & Accessories - 11	13	15-Sep-09 A	02-Oct-09 A
L11-180	Prime Paint & Point-Up, Finish Paint - 11	46	06-Aug-09 A	12-Oct-09 A



Activity ID	Activity Name	Actual Duration	Start	Finish
L11-105	Ceiling Grid - 11	4	13-Jul-09 A	17-Jul-09 A
L11-200	Set Plumbing Fixtures - 11	4	24-Sep-09 A	30-Sep-09 A
L11-220	Metal Ceiling Tile - 11	2	18-Sep-09 A	22-Sep-09 A
L11-230	Doors & Hardware, Base, Blinds - 11	9	15-Sep-09 A	28-Sep-09 A
L11-240	Trim Out Electrical & FA, Light Fixtures & RGD's - 11	1	16-Sep-09 A	16-Sep-09 A
L11-270	Trade Final Inspections - 11	0		02-Oct-09 A
L11-280	Install Duct Loop - 11	26	27-Jul-09 A	01-Sep-09 A
L11-095	Frame Perimeters, Hang & Finish Perimeters - 11	52	01-Jul-09 A	15-Sep-09 A
Eighth Floor		136	08-Apr-09 A	15-Oct-09 A
L8-010	Layout - 8	3	08-Apr-09 A	13-Apr-09 A
L8-050	Frame-Walls, Frame-Ceiling - 8	82	20-Apr-09 A	14-Aug-09 A
L8-020	MEP Rough-In - Walls, MEP Rough-in - Ceiling - 8	81	20-Apr-09 A	13-Aug-09 A
L8-060	Inspection-Wall Close-in, Inspection-Ceiling Close-in - 8	19	20-Jul-09 A	14-Aug-09 A
L8-080	Hang-Walls, Hang-Ceiling - 8	31	01-Jul-09 A	14-Aug-09 A
L8-090	Finish-Walls, Finish-Ceiling - 8	9	24-Sep-09 A	07-Oct-09 A
L8-150	Tile - 8	10	16-Sep-09 A	29-Sep-09 A
L8-170	Set Plumbing Fixtures - 8	4	05-Oct-09 A	09-Oct-09 A
L8-180	Finish Paint & Wallcovering - 8	1	08-Oct-09 A	09-Oct-09 A
L8-070	Vanity Support Steel - 8	4	26-Jun-09 A	02-Jul-09 A
L8-160	Set Vanity Top, Toilet Partitions & Accessories - 8	13	24-Sep-09 A	13-Oct-09 A
L8-210	Base - 8	1	14-Oct-09 A	15-Oct-09 A
L8-230	Trade Final Inspections - 8	0		15-Oct-09 A
L8-030	Install Core Ductwork Loop - 8	34	27-Jul-09 A	14-Sep-09 A
L8-040	Sprinkler - 8	14	06-Jul-09 A	24-Jul-09 A
L8-200	Light Fixtures & RGD's - 8	1	12-Oct-09 A	13-Oct-09 A
Ninth Floor		88	13-Jul-09 A	12-Nov-09 A
L9-010	Layout - 9	9	13-Jul-09 A	24-Jul-09 A
L9-020	Sprinkler - 9	16	20-Jul-09 A	11-Aug-09 A
L9-030	Ductwork Loop - 9	31	03-Aug-09 A	15-Sep-09 A
L9-040	Frame-Walls, Frame-Ceiling - 9	54	16-Jul-09 A	01-Oct-09 A
L9-050	MEP Rough-In - Walls, MEP Rough-In - Ceiling - 9	52	22-Jul-09 A	05-Oct-09 A
L9-060	Inspection - Wall Close-In, Inspection - Ceiling Close-In - 9	37	14-Aug-09 A	07-Oct-09 A
L9-070	Hang-Walls, Hang-Ceiling - 9	40	17-Aug-09 A	13-Oct-09 A
L9-080	Finish-Walls, Finish-Ceiling - 9	39	24-Aug-09 A	19-Oct-09 A
L9-110	Sprinkler Hydro - 9	1	30-Sep-09 A	01-Oct-09 A
L9-160	Tile - 9	10	15-Oct-09 A	29-Oct-09 A
L9-170	Set Vanity Tops, Toilet Partitions & Accessories - 9	29	01-Oct-09 A	12-Nov-09 A
L9-180	Prime Paint & Point-Up, Finish Paint & Wallcovering - 9	5	29-Oct-09 A	05-Nov-09 A
L9-100	Ceiling Grid - 9	3	25-Sep-09 A	30-Sep-09 A
L9-200	Set Plumbing Fixtures - 9	5	03-Nov-09 A	10-Nov-09 A
L9-220	Acoustic Ceiling Tile - 9	3	05-Nov-09 A	10-Nov-09 A
L9-230	Doors & Hardware, Base - 9	2	05-Nov-09 A	09-Nov-09 A
L9-240	Trim Out Electrical & FA, Light Fixtures & RGD's - 9	2	05-Nov-09 A	09-Nov-09 A
L9-280	Trade Final Inspections - 9	0		12-Nov-09 A
Project Completion		189	20-Jun-09 A	11-Mar-10 A
Demobilization		98	20-Jun-09 A	05-Nov-09 A
PC020	Covered Walkway Removal, Site Fence Removal, Personnel/Material...	12	20-Oct-09 A	05-Nov-09 A
PC010	Tower Crane Removal	0	20-Jun-09 A	20-Jun-09 A
Closeout		64	14-Dec-09 A	11-Mar-10 A
PC060	Substantial Completion: Thru 2nd Elev. Mod.	0		18-Dec-09 A
PC070	Final Punchlist & Close-out Documents	19	21-Dec-09 A	19-Jan-10 A
PC100	Final Completion	0		11-Mar-10 A
PC090	Final Inspections: Thru 2nd Elev. Mod.	4	14-Dec-09 A	18-Dec-09 A
PC095	Substantial Completion: Through Final Elev. Mod.	0		11-Mar-10 A
PC085	Final Inspections: Thru Final Elev. Mod. (Letter of Core & Shell Compl...	5	05-Mar-10 A	11-Mar-10 A



Critical Remaining Work | Summary | Remaining Work | Milestone

TASK filter: All Activities

Appendix B – Site Layout Planning

Sheet Notes:

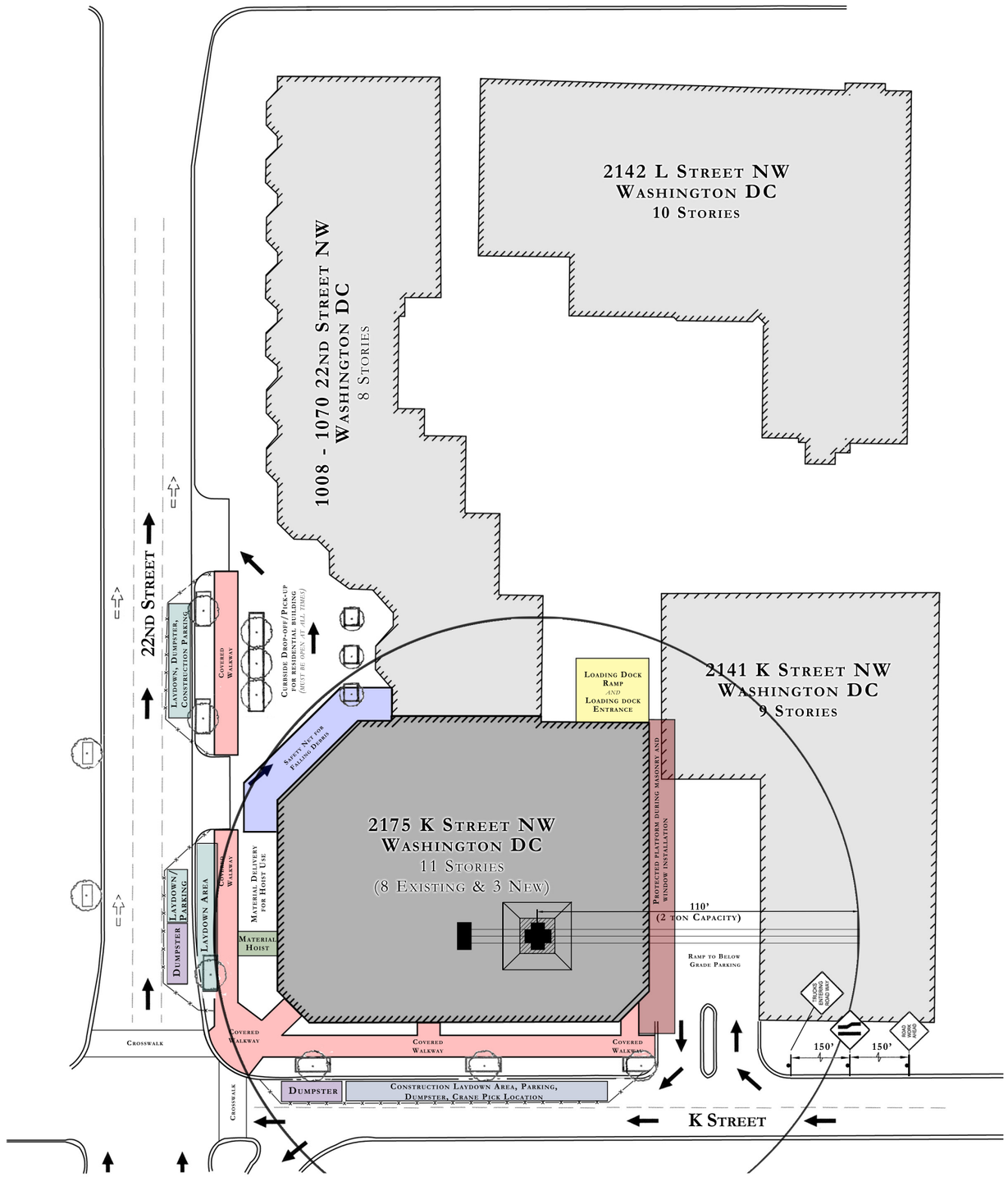
1. All existing utilities are to remain
2. Project contains no new utilities
3. Construction activities are to use existing service
4. Telecommunication was not shown on utilities plan
5. No temporary lighting
6. All temporary facilities are located on level 8 unless otherwise noted
7. DAVIS office is to be located on level 8 until demolition is scheduled to begin, at which time the office is to relocate to the B1 level
8. All subcontractor offices are to be located on level 8 until demolition is scheduled to begin, at which time the offices are to relocate to the B1 level to a location designated by DAVIS
9. Tool trailers are to remain on level 8 until new levels are completed
10. Existing transformer is to remain
11. Temporary Toilets will be located one on each floor (Levels 8, 9, 10, 11, and roof)
12. Roof of covered walkways will be utilized for staging and material storage
13. Loading dock entrance from north side of 2141 K Street and down east side of building to K Street

Drawing Key

—×—×— Site Fence

⟵ Normal Traffic

<⇆> Restricted Traffic
(4:00 PM - 9:00 AM)



Site Utilization Plan (All Phases of Construction)

Scale: NTS

Drawing By:
Timothy Conroy

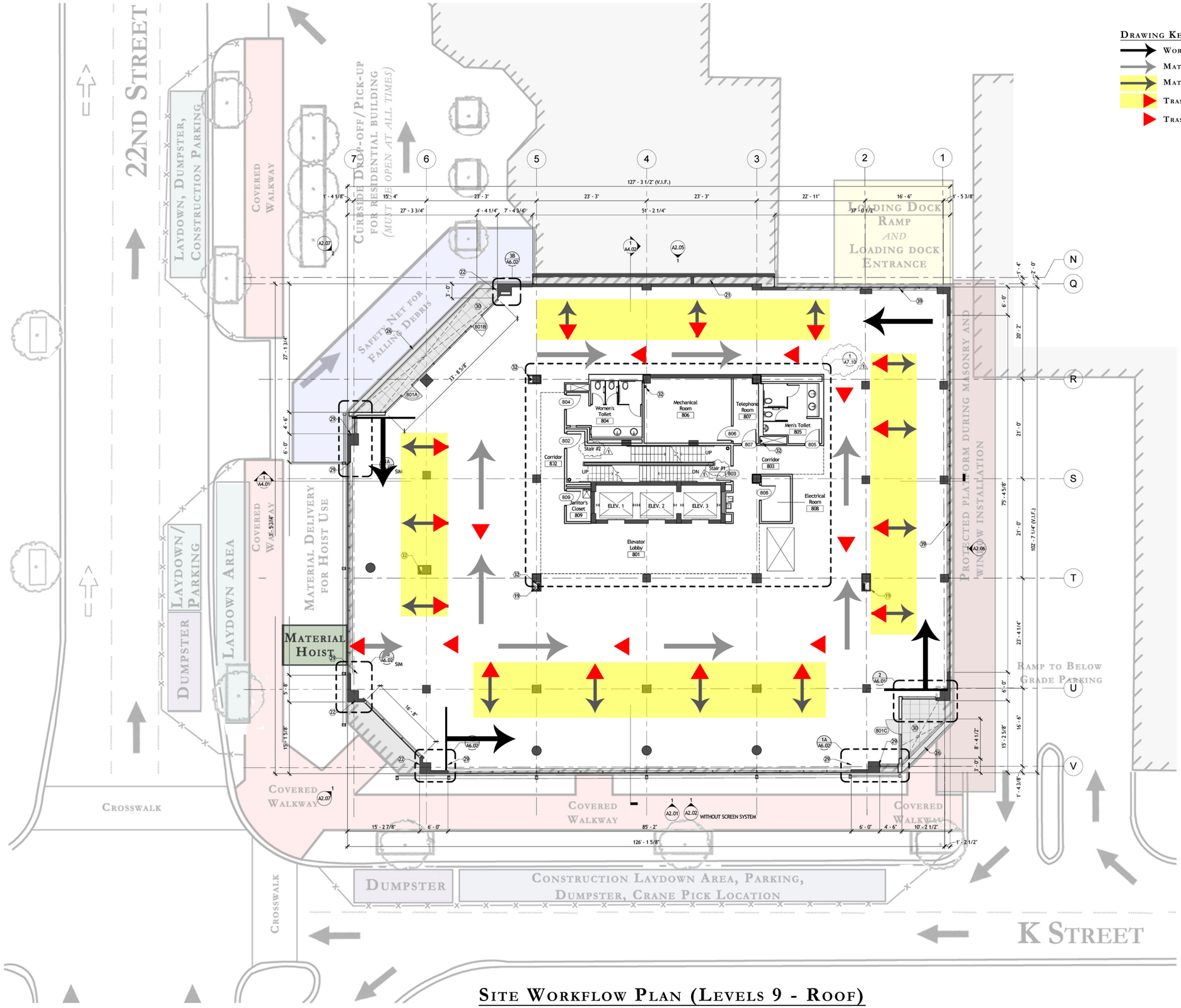
Date:
21 October 2009

PROJECT:
2175 K Street, NW
Washington, DC 20037

Drawn By: Timothy Conroy
Date: 1 October 2009

DRAWING TITLE:
Site Utilization Plan

G-01



Drawing Key

- Work Direction
- Material Flow
- Material Storage
- Trash Leaving Storage
- Trash Flow

Site Workflow Plan (Levels 9 - Roof)

Scale: NTS

Drawing By: Timothy Conroy

Date: 21 October 2009

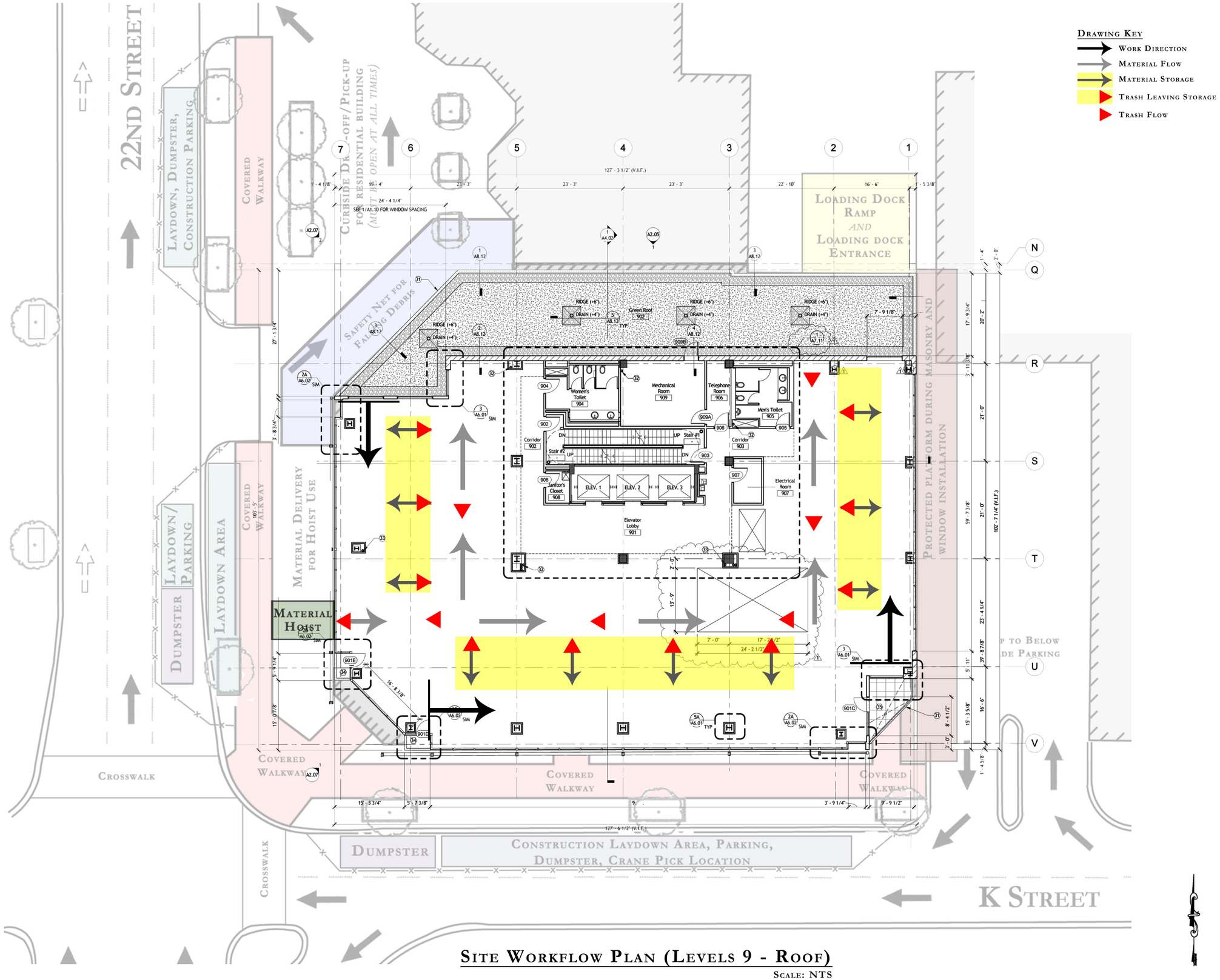
Project: 2175 K Street, NW
Washington, DC 20037

Drawn By: Timothy Conroy

Date: 1 October 2009

Drawing Title: Site Workflow Plan

G-02



Site Workflow Plan (Levels 9 - Roof)

Scale: NTS

Drawing Key

- Work Direction
- Material Flow
- Material Storage
- Trash Leaving Storage
- Trash Flow

Drawing By:
Timothy Conroy

Date:
21 October 2009

Project:
2175 K Street, NW
Washington, DC 20037

Drawn By: Timothy Conroy
Date: 1 October 2009

Drawing Title:
Site Workflow Plan

G-03

Appendix C – Detailed Structural Systems Estimate

Structural Column Schedule

Structural Column Schedule																		Overhead	Profit													
Base Level	Top Level	Family	Type	Length		Weight			Dimensions					Concrete																		
								Width	Depth	SFCA		Area	Volume	4000 psi	Radius	Unit	Crew	Output	Labor Hours	Material	Labor	Equipment			Total			Overhead	Profit		Total O&P	
				(ft)		(lbs)		(in)	(in)	(ft^2)		(ft^2)	(C.Y.)	(C.Y.)	(in)								Cost	Material	Labor	Equipment	Subtotal	10%	5%			
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	16x24	4		-		16	24	26.67		2.67	0.395		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	16x24	4		-		16	24	26.67		2.67	0.395		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	16x24	4		-		16	24	26.67		2.67	0.395		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	16x24	4		-		16	24	26.67	107	2.67	0.395		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	20 x 20	4		-		20	20	26.67		2.78	0.412		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	20 x 20	4		-		20	20	26.67		2.78	0.412		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	20 x 20	4		-		20	20	26.67		2.78	0.412		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	20 x 20	4		-		20	20	26.67		2.78	0.412		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	20 x 20	4		-		20	20	26.67	134	2.78	0.412		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	24 x 24	4		-		24	24	32		4	0.593		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	24 x 24	4		-		24	24	32		4	0.593		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	24 x 24	4		-		24	24	32		4	0.593		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	24 x 24	4		-		24	24	32		4	0.593		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	24 x 24	4		-		24	24	32		4	0.593		-																	
Existing Roof Level	Existing Roof Level	Concrete-Rectangular-Column	24 x 24	4		-		24	24	32	192	4	0.593	8.0	-	C.Y.	C14A	14.15	14.13	$965.00	$565.00	$54.00	$1,584.00	$7,720.00	$4,520.00	$432.00	$12,672.00	$158.40	$79.20	$1,821.60	$14,572.80	
											433																					
																								$7,720.00	**$4,520.00**	**$432.00**	**$12,672.00**				**$14,572.80**	
														8.0		C.Y.				$106.00	$23.01	$13.05	$142.06	$848.00	$184.08	$104.40	$1,136.48	$14.21	$7.10	$163.37	$1,306.95	
																								$848.00	**$184.08**	**$104.40**	**$1,136.48**				**$1,306.95**	
Roof Level	Penthouse Roof	HSS-Hollow Structural Section-Col	HSS5X5X.250	18.672		-		-	-			-	-		-																	
Roof Level	Penthouse Roof	HSS-Hollow Structural Section-Col	HSS5X5X.250	17.192		-		-	-			-	-		-																	
Roof Level	Penthouse Roof	HSS-Hollow Structural Section-Col	HSS5X5X.250	17.192		-		-	-			-	-		-																	
Roof Level	Elevator Machine Roo	HSS-Hollow Structural Section-Col	HSS5X5X.250	5.167		-		-	-			-	-		-																	
Roof Level	Elevator Machine Roo	HSS-Hollow Structural Section-Col	HSS5X5X.250	5.167	6	-		-	-			-	-		-																	
Roof Level	Penthouse Roof	HSS-Hollow Structural Section-Col	HSS6X6X.500	17.192		-		-	-			-	-		-																	
Roof Level	Elevator Machine Roo	HSS-Hollow Structural Section-Col	HSS6X6X.500	3.5		-		-	-			-	-		-																	
Roof Level	Elevator Machine Roo	HSS-Hollow Structural Section-Col	HSS6X6X.500	5	3	-		-	-			-	-		-	Ea.	E2	54	1.037	405	45	32	$482.00	$1,215.00	$135.00	$96.00	$1,446.00	$48.20	$24.10	$554.30	$1,662.90	Not in RS Means
					9																											
																								$1,215.00	**$135.00**	**$96.00**	**$1,446.00**				**$1,662.90**	
10. Level	Penthouse Roof	W-Wide Flange-Column	W10X33	40.234		33	1327.722	-	-			-	-		-																	
10. Level	Roof Level	W-Wide Flange-Column	W10X33	20.229		33	667.557	-	-			-	-		-																	
10. Level	Roof Level	W-Wide Flange-Column	W10X33	20.229		33	667.557	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X33	35		33	1155	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X33	34.729		33	1146.057	-	-			-	-		-	L.F.	E2	550	0.102	54.5	4.43	3.17										
Roof Level	Roof Level	W-Wide Flange-Column	W10X33	0.271	150.7	33	8.943	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Existing Roof Level	Roof Level	W-Wide Flange-Column	**W10X39**	35		39	1365	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X39	35	70	39	1365	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
10. Level	Penthouse Roof	W-Wide Flange-Column	**W10X45**	40.234		45	1810.53	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X45	35		45	1575	-	-			-	-		-																	
Roof Level	Penthouse Roof	W-Wide Flange-Column	W10X45	18.067	93.3	45	813.015	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Existing Roof Level	Roof Level	W-Wide Flange-Column	**W10X49**	35		49	1715	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X49	35		49	1715	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X49	35		49	1715	-	-			-	-		-	L.F.	E2	550	0.102	81	4.43	3.17										
Existing Roof Level	Roof Level	W-Wide Flange-Column	W10X49	35	140	49	1715	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	Not in RS Means
Roof Level	Penthouse Roof	W-Wide Flange-Column	**W10X68**	18.067		68	1228.556	-	-			-	-		-																	
Roof Level	Penthouse Roof	W-Wide Flange-Column	W10X68	18.067	36.13	68	1228.556	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Existing Roof Level	Roof Level	W-Wide Flange-Column	**W12X106**	35	35	06	210	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Existing Roof Level	Roof Level	W-Wide Flange-Column	**W12X120**	35		20	700	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W12X120	35		20	700	-	-			-	-		-																	
Existing Roof Level	Roof Level	W-Wide Flange-Column	W12X120	35		20	700	-	-			-	-		-																	
Existing Roof Level	Penthouse Roof	W-Wide Flange-Column	W12X120	53.234		20	1064.68	-	-			-	-		-																	
Existing Roof Level	Penthouse Roof	W-Wide Flange-Column	W12X120	53.234		20	1064.68	-	-			-	-		-																	
Existing Roof Level	Penthouse Roof	W-Wide Flange-Column	W12X120	53.234	264.7	20	1064.68	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
10. Level	Penthouse Roof	W-Wide Flange-Column	**W12X96**	40.234		96	3862.464	-	-			-	-		-																	
10. Level	Penthouse Roof	W-Wide Flange-Column	W12X96	40.234		96	3862.464	-	-			-	-		-																	
10. Level	Penthouse Roof	W-Wide Flange-Column	W12X96	40.234	120.7	96	3862.464	-	-			-	-		-								$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
							20									Ton	E5	10.3	7.767	3000	345	182	$3,527.00	$60,000.00	$6,900.00	$3,640.00	$70,540.00	$352.70	$176.35	$4,056.05	$81,121.00	
																								$60,000.00	**$6,900.00**	**$3,640.00**	**$70,540.00**				**$81,121.00**	

Structural Framing Schedule

Structural Framing Schedule

Reference Level	Family	Type		Length		per linear foot (lbs)	Weight (lbs)	Total (lbs)	Total (tons)	Unit	Crew	Output	Labor Hours	Material	Labor	Equipment	Total Cost	Total Material	Total Labor	Total Equipment	Subtotal	Overhead 10%	Profit 5%	Total O&P 15%	Note
10. Level	HSS-Hollow Structural Section	**HSS12X3-1/2X.375**		28.603		N/A	0														$ -			$ -	
11 Level	HSS-Hollow Structural Section	HSS12X3-1/2X.375		28.656		N/A	0														$ -			$ -	
Existing Roof Level	HSS-Hollow Structural Section	HSS12X3-1/2X.375		27.505	8	N/A	0			Ea.	E2						$0.00	$0.00	$0.00	$0.00	$ -	$0.00	$0.00	$0.00	$ -	
10. Level	HSS-Hollow Structural Section	**HSS4X4X.25**		2.743		N/A	0														$ -			$ -	
10. Level	HSS-Hollow Structural Section	HSS4X4X.25		5.412		N/A	0														$ -			$ -	
10. Level	HSS-Hollow Structural Section	HSS4X4X.25		2.884		N/A	0														$ -			$ -	
10. Level	HSS-Hollow Structural Section	HSS4X4X.25		5.39		N/A	0														$ -			$ -	
11 Level	HSS-Hollow Structural Section	HSS4X4X.25		2.743		N/A	0														$ -			$ -	
11 Level	HSS-Hollow Structural Section	HSS4X4X.25		5.429		N/A	0														$ -			$ -	
11 Level	HSS-Hollow Structural Section	HSS4X4X.25		2.884		N/A	0														$ -			$ -	
11 Level	HSS-Hollow Structural Section	HSS4X4X.25		5.39		N/A	0														$ -			$ -	
Roof Level	HSS-Hollow Structural Section	HSS4X4X.25		2.743		N/A	0														$ -			$ -	
Roof Level	HSS-Hollow Structural Section	HSS4X4X.25		5.412		N/A	0														$ -			$ -	
Roof Level	HSS-Hollow Structural Section	HSS4X4X.25		2.884		N/A	0														$ -			$ -	
Roof Level	HSS-Hollow Structural Section	HSS4X4X.25		5.39	5	N/A	0			Ea.	E2	58	0.966	248	42	30	$320.00	$1,240.00	$210.00	$150.00	**$ 1,600.00**	$32.00	$16.00	$368.00	**$ 1,840.00**	
9 Level	W-Wide Flange	**W14X22**	**W14 14**	8.083333333	8.083333333	22																			
9 Level	W-Wide Flange	**W16x31**	**W16 16**	9.715573981		31	301.1827934																		
9 Level	W-Wide Flange	W16x31	**W16 16**	21		31	651																		
9 Level	W-Wide Flange	W16x31	**W16 16**	23.25	53.96557398	31	720.75	1672.932793	0.836466397	L.F.	E2	900	0.062	$51.00	$2.71	$1.93	$55.64	$2,752.24	$146.25	$104.15	**$ 3,002.64**	$5.56	$2.78	$63.99	**$ 3,453.04**	
9 Level	W-Wide Flange	**W18x119**	**W18 18**	11.83333333	11.83333333	19	224.8333333	224.8333333	0.112416667	L.F.	E5			197	3.97	2.11	$203.08	$2,331.17	$46.98	$24.97	**$ 2,403.11**	$20.31	$10.15	$233.54	**$ 2,763.58**	
9 Level	W-Wide Flange	**W18x175**	**W18 18**	15.33333333	15.33333333	75	1150	1150	0.575	L.F.	E5			289	4.21	2.23	$295.44	$4,431.33	$64.55	$34.19	**$ 4,530.08**	$29.54	$14.77	$339.76	**$ 5,209.59**	
9 Level	W-Wide Flange	**W18x35**	**W18 18**	24.20833333		35	847.2916667																		
9 Level	W-Wide Flange	W18x35	**W18 18**	21	45.20833333	35	735	1582.291667	0.791145833	L.F.	E5	960	0.083	58	3.67	1.95	$63.62	$2,622.08	$165.91	$88.16	**$ 2,876.15**	$6.36	$3.18	$73.16	**$ 3,307.58**	
9 Level	W-Wide Flange	**W18x50**	**W18 18**	21		50	1050																		
9 Level	W-Wide Flange	W18x50	**W18 18**	23.25		50	1162.5																		
9 Level	W-Wide Flange	W18x50	**W18 18**	23.25	67.5	50	1162.5	3375	1.6875	L.F.	E5	912	0.088	82.5	3.87	2.06	$88.43	$5,568.75	$261.23	$139.05	**$ 5,969.03**	$8.84	$4.42	$101.69	**$ 6,864.38**	
9 Level	W-Wide Flange	**W18x55**	**W18 18**	23	23	55	1265	1265	0.6325					91	3.87	2.06	$96.93	$2,093.00	$89.01	$47.38	**$ 2,229.39**	$9.69	$4.85	$111.47	**$ 2,563.80**	
9 Level	W-Wide Flange	**W18x65**	**W18 18**	23.25		65	1511.25																		
9 Level	W-Wide Flange	W18x65	**W18 18**	23		65	1495																		
9 Level	W-Wide Flange	W18x65	**W18 18**	23	69.25	65	1495	4501.25	2.250625			900	0.089	107	3.92	2.08	$113.00	$7,409.75	$271.46	$144.04	**$ 7,825.25**	$11.30	$5.65	$129.95	**$ 8,999.04**	
9 Level	W-Wide Flange	**W18x71**	**W18 18**	11.66666667	11.66666667	71	828.3333333	828.3333333	0.414166667					125	3.92	2.08	$131.00	$1,458.33	$45.73	$24.27	**$ 1,528.33**	$13.10	$6.55	$150.65	**$ 1,757.58**	
9 Level	W-Wide Flange	**W18x97**	**W18 18**	14.5	14.5	97	1406.5	1406.5	0.70325					175	3.92	2.08	$181.00	$2,537.50	$56.84	$30.16	**$ 2,624.50**	$18.10	$9.05	$208.15	**$ 3,018.18**	
10. Level	W-Wide Flange1	**W12X14**	**W12 12**	7.114		14	99.596														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	7.125		14	99.75														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	13.031		14	182.434														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	10.772		14	150.808														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	7.117		14	99.638														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	11.686		14	163.604														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	5.927		14	82.978														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	23.248		14	325.472														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	14.646		14	205.044														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	5.083		14	71.162														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	17.84		14	249.76														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	5.815		14	81.41														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	7.125		14	99.75														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	10.001		14	140.014														$ -			$ -	
10. Level	W-Wide Flange1	W12X14	**W12 12**	7.008		14	98.112														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	7.114		14	99.596														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	7.114		14	99.596														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	10.719		14	150.066														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	7.117		14	99.638														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	10.719		14	150.066														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	7.117		14	99.638														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	11.686		14	163.604														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	5.927		14	82.978														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	23.248		14	325.472														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	14.646		14	205.044														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	5.047		14	70.658														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	17.84		14	249.76														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	5.815		14	81.41														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	7.125		14	99.75														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	10.016		14	140.224														$ -			$ -	
11 Level	W-Wide Flange1	W12X14	**W12 12**	7.008		14	98.112														$ -			$ -	
Penthouse Roof	W-Wide Flange1	W12X14	**W12 12**	10.667		14	149.338														$ -			$ -	
Penthouse Roof	W-Wide Flange1	W12X14	**W12 12**	10.667		14	149.338														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	7.114		14	99.596														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	7.125		14	99.75														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	12.064		14	168.896														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	10.764		14	150.696														$ -			$ -	
Roof Level	W-Wide Flange1	W12X14	**W12 12**	7.117		14	99.638														$ -			$ -	

Structural Framing Schedule

Roof Level	W-Wide Flange1	W12X14	W12 12	10.764		14	150.696													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	7.117		14	99.638													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	11.686		14	163.604													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	5.927		14	82.978													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	5.047		14	70.658													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	17.84		14	249.76													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	5.815		14	81.41													$ -				$ -	
Roof Level	W-Wide Flange1	W12X14	W12 12	7.125	550.972	14	99.75	7713.608	3.856804	L.F.	E2	880	0.064	$26.50	$2.77	$1.98	$31.25	$14,600.76	$1,526.19	$1,090.92	**$ 17,217.88**	$3.13	$1.56	$35.94	**$ 19,800.56**	*Not in RS Means*
10. Level	W-Wide Flange	**W12X16**	W12 12	23.241		16	371.856													$ -				$ -	
10. Level	W-Wide Flange	W12X16	W12 12	23.26		16	372.16													$ -				$ -	
10. Level	W-Wide Flange	W12X16	W12 12	5.881		16	94.096													$ -				$ -	
11 Level	W-Wide Flange	W12X16	W12 12	23.241		16	371.856													$ -				$ -	
11 Level	W-Wide Flange	W12X16	W12 12	23.26		16	372.16													$ -				$ -	
11 Level	W-Wide Flange	W12X16	W12 12	5.881		16	94.096													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	23.248		16	371.968													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	14.646		16	234.336													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	5.881		16	94.096													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	10.001		16	160.016													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	10.001		16	160.016													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	10.292		16	164.672													$ -				$ -	
Roof Level	W-Wide Flange	W12X16	W12 12	10.292	189.125	16	164.672	3026	1.513	L.F.	E2	880	0.064	$26.50	$2.77	$1.98	$31.25	$5,011.81	$523.88	$374.47	**$ 5,910.16**	$3.13	$1.56	$35.94	**$ 6,796.68**	
10. Level	W-Wide Flange1	**W12X19**	W12 12	16.639		19	316.141													$ -				$ -	
10. Level	W-Wide Flange1	W12X19	W12 12	16.639		19	316.141													$ -				$ -	
11 Level	W-Wide Flange1	W12X19	W12 12	16.639		19	316.141													$ -				$ -	
11 Level	W-Wide Flange1	W12X19	W12 12	16.639		19	316.141													$ -				$ -	
Roof Level	W-Wide Flange1	W12X19	W12 12	16.639		19	316.141													$ -				$ -	
Roof Level	W-Wide Flange1	W12X19	W12 12	24.488		19	465.272													$ -				$ -	
Roof Level	W-Wide Flange1	W12X19	W12 12	13.279		19	252.301													$ -				$ -	
Roof Level	W-Wide Flange1	W12X19	W12 12	11.177	132.139	19	212.363	2510.641	1.2553205	L.F.	E2	880	0.064	$36.50	$2.77	$1.98	$41.25	$4,823.07	$366.03	$261.64	**$ 5,450.73**	$4.13	$2.06	$47.44	**$ 6,268.34**	*Not in RS Means*
10. Level	W-Wide Flange1	**W14X22**	W14 14	26.344		22	579.568													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	19.083		22	419.826													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	19.083		22	419.826													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	27.311		22	600.842													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	29.532		22	649.704													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	27.311		22	600.842													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	28.603		22	629.266													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	24.488		22	538.736													$ -				$ -	
10. Level	W-Wide Flange1	W14X22	W14 14	13.281		22	292.182													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	27.321		22	601.062													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	19.083		22	419.826													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	19.083		22	419.826													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	28.656		22	630.432													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	29.532		22	649.704													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	27.31		22	600.82													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	28.656		22	630.432													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	24.489		22	538.758													$ -				$ -	
11 Level	W-Wide Flange1	W14X22	W14 14	13.279		22	292.138													$ -				$ -	
Penthouse Roof	W-Wide Flange1	W14X22	W14 14	20.833		22	458.326													$ -				$ -	
Penthouse Roof	W-Wide Flange1	W14X22	W14 14	21.29		22	468.38													$ -				$ -	
Penthouse Roof	W-Wide Flange1	W14X22	W14 14	20.833		22	458.326													$ -				$ -	
Penthouse Roof	W-Wide Flange1	W14X22	W14 14	21.29		22	468.38													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	27.311		22	600.842													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	19.083		22	419.826													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	28.611		22	629.442													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	29.532		22	649.704													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	27.311		22	600.842													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	23.253		22	511.566													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	16.133		22	354.926													$ -				$ -	
Roof Level	W-Wide Flange1	W14X22	W14 14	29.532		22	649.704													$ -				$ -	
TOS @ Penthouse	W-Wide Flange1	W14X22	W14 14	19.083	736.54	22	419.826	16203.88	8.10194	L.F.	E2	990	0.057	$43.00	$2.46	$1.76	$47.22	$31,671.22	$1,811.89	$1,296.31	**$ 34,779.42**	$4.72	$2.36	$54.30	**$ 39,996.33**	*Not in RS Means*
10. Level	W-Wide Flange1	**W16X26**	W16 16	28.603		26	743.678													$ -				$ -	
10. Level	W-Wide Flange1	W16X26	W16 16	23.253		26	604.578													$ -				$ -	
11 Level	W-Wide Flange1	W16X26	W16 16	28.656		26	745.056													$ -				$ -	
11 Level	W-Wide Flange1	W16X26	W16 16	23.253		26	604.578													$ -				$ -	
Roof Level	W-Wide Flange1	W16X26	W16 16	28.611		26	743.886													$ -				$ -	
Roof Level	W-Wide Flange1	W16X26	W16 16	28.611		26	743.886													$ -				$ -	
Roof Level	W-Wide Flange1	W16X26	W16 16	23.241		26	604.266													$ -				$ -	
Roof Level	W-Wide Flange1	W16X26	W16 16	23.26		26	604.76													$ -				$ -	
Roof Level	W-Wide Flange1	W16X26	W16 16	28.611		26	743.886													$ -				$ -	
Roof Level	W-Wide Flange1	W16X26	W16 16	21.333	257.432	26	554.658	6693.232	3.346616	L.F.	E2	1000	0.056	$43.00	$2.44	$1.74	$47.18	$11,069.58	$628.13	$447.93	**$ 12,145.64**	$4.72	$2.36	$54.26	**$ 13,967.49**	
10. Level	W-Wide Flange1	**W16X31**	W16 16	23.25		31	720.75													$ -				$ -	
10. Level	W-Wide Flange1	W16X31	W16 16	22.752		31	705.312													$ -				$ -	
10. Level	W-Wide Flange1	W16X31	W16 16	35.097		31	1088.007													$ -				$ -	
11 Level	W-Wide Flange1	W16X31	W16 16	23.25		31	720.75													$ -				$ -	
11 Level	W-Wide Flange1	W16X31	W16 16	22.752		31	705.312													$ -				$ -	
Cellar	W-Wide Flange1	W16X31	W16 16	35.097	162.198	31	1088.007	5028.138	2.514069	L.F.	E2	900	0.062	$51.00	$2.71	$1.93	$55.64	$8,272.10	$439.56	$313.04	**$ 9,024.70**	$5.56	$2.78	$63.99	**$ 10,378.40**	
10. Level	W-Wide Flange1	**W18X35**	W18 18	36.696		35	1284.36													$ -				$ -	
10. Level	W-Wide Flange1	W18X35	W18 18	36.682		35	1283.87													$ -				$ -	
10. Level	W-Wide Flange1	W18X35	W18 18	36.628		35	1281.98													$ -				$ -	
10. Level	W-Wide Flange1	W18X35	W18 18	36.628		35	1281.98													$ -				$ -	
10. Level	W-Wide Flange1	W18X35	W18 18	20.002		35	700.07													$ -				$ -	
10. Level	W-Wide Flange1	W18X35	W18 18	20.583		35	720.405													$ -				$ -	
10. Level	W-Wide Flange1	W18X35	W18 18	23.247		35	813.645													$ -				$ -	

Structural Framing Schedule

10. Level	W-Wide Flange1	W18X35	W18 18	22.752		35	796.32														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	36.696		35	1284.36														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	36.682		35	1283.87														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	36.628		35	1281.98														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	36.628		35	1281.98														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	20.002		35	700.07														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	20.583		35	720.405														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	23.247		35	813.645														$ -				$ -
11 Level	W-Wide Flange1	W18X35	W18 18	22.752		35	796.32														$ -				$ -
Penthouse Roof	W-Wide Flange1	W18X35	W18 18	21.333		35	746.655														$ -				$ -
Penthouse Roof	W-Wide Flange1	W18X35	W18 18	23.258		35	814.03														$ -				$ -
Penthouse Roof	W-Wide Flange1	W18X35	W18 18	21.333		35	746.655														$ -				$ -
Penthouse Roof	W-Wide Flange1	W18X35	W18 18	23.241		35	813.435														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	36.669		35	1283.415														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	36.696		35	1284.36														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	36.682		35	1283.87														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	36.628		35	1281.98														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	36.628		35	1281.98														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	20.002		35	700.07														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	20.583		35	720.405														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	22.752		35	796.32														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	36.597		35	1280.895														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	35.097		35	1228.395														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	35.097		35	1228.395														$ -				$ -
Roof Level	W-Wide Flange1	W18X35	W18 18	35.097	944.129	35	1228.395	33044.515	16.5222575	L.F.	E5	960	0.083	$58.00	$3.67	$1.95	$63.62	$54,759.48	$3,464.95	$1,841.05	**$ 60,065.49**	$6.36	$3.18	$73.16	**$ 69,075.31**
10. Level	W-Wide Flange1	**W18X40**	W18 18	23.258		40	930.32														$ -				$ -
10. Level	W-Wide Flange1	W18X40	W18 18	23.241		40	929.64														$ -				$ -
10. Level	W-Wide Flange1	W18X40	W18 18	37.98		40	1519.2														$ -				$ -
10. Level	W-Wide Flange1	W18X40	W18 18	37.98		40	1519.2														$ -				$ -
11 Level	W-Wide Flange1	W18X40	W18 18	23.258		40	930.32														$ -				$ -
11 Level	W-Wide Flange1	W18X40	W18 18	23.241		40	929.64														$ -				$ -
11 Level	W-Wide Flange1	W18X40	W18 18	37.98		40	1519.2														$ -				$ -
11 Level	W-Wide Flange1	W18X40	W18 18	37.98		40	1519.2														$ -				$ -
Roof Level	W-Wide Flange1	W18X40	W18 18	22.752		40	910.08														$ -				$ -
Roof Level	W-Wide Flange1	W18X40	W18 18	37.98		40	1519.2														$ -				$ -
Roof Level	W-Wide Flange1	W18X40	W18 18	37.98		40	1519.2														$ -				$ -
Roof Level	W-Wide Flange1	W18X40	W18 18	27.15	370.78	40	1086	14831.2	7.4156	L.F.	E5	960	0.083	$66.00	$3.67	$1.95	$71.62	$24,471.48	$1,360.76	$723.02	**$ 26,555.26**	$7.16	$3.58	$82.36	**$ 30,538.55**
10. Level	W-Wide Flange1	**W18X46**	W18 18	39.554		46	1819.484														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	39.609		46	1822.014														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	39.52		46	1817.92														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	39.485		46	1816.31														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	39.458		46	1815.068														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	35.097		46	1614.462														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	39.422		46	1813.412														$ -				$ -
10. Level	W-Wide Flange1	W18X46	W18 18	39.581		46	1820.726														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.554		46	1819.484														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.609		46	1822.014														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.521		46	1817.966														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.485		46	1816.31														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.458		46	1815.068														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	35.097		46	1614.462														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.422		46	1813.412														$ -				$ -
11 Level	W-Wide Flange1	W18X46	W18 18	39.581	623.453	46	1820.726	28678.838	14.339419	L.F.	E5	960	0.083	$76.00	$3.67	$1.95	$81.62	$47,382.43	$2,288.07	$1,215.73	**$ 50,886.23**	$8.16	$4.08	$93.86	**$ 58,519.17**
10. Level	W-Wide Flange	**W18X50**	W18 18	35.097		50	1754.85														$ -				$ -
10. Level	W-Wide Flange	W18X50	W18 18	35.097		50	1754.85														$ -				$ -
11 Level	W-Wide Flange	W18X50	W18 18	35.097		50	1754.85														$ -				$ -
11 Level	W-Wide Flange	W18X50	W18 18	35.097		50	1754.85														$ -				$ -
Roof Level	W-Wide Flange	W18X50	W18 18	35.097	175.485	50	1754.85	8774.25	4.387125	L.F.	E5	912	0.088	$82.50	$3.87	$2.06	$88.43	$14,477.51	$679.13	$361.50	**$ 15,518.14**	$8.84	$4.42	$101.69	**$ 17,845.86**
10. Level	W-Wide Flange1	**W21X44**	W21 21	24.642		44	1084.248														$ -				$ -
10. Level	W-Wide Flange1	W21X44	W21 21	39.636		44	1743.984														$ -				$ -
10. Level	W-Wide Flange1	W21X44	W21 21	21.76		44	957.44														$ -				$ -
10. Level	W-Wide Flange1	W21X44	W21 21	27.15		44	1194.6														$ -				$ -
11 Level	W-Wide Flange1	W21X44	W21 21	24.642		44	1084.248														$ -				$ -
11 Level	W-Wide Flange1	W21X44	W21 21	39.636		44	1743.984														$ -				$ -
11 Level	W-Wide Flange1	W21X44	W21 21	21.76		44	957.44														$ -				$ -
11 Level	W-Wide Flange1	W21X44	W21 21	27.15		44	1194.6														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X44	W21 21	23.241		44	1022.604														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X44	W21 21	21.29		44	936.76														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X44	W21 21	20.833		44	916.652														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X44	W21 21	23.258		44	1023.352														$ -				$ -
Roof Level	W-Wide Flange1	W21X44	W21 21	24.642		44	1084.248														$ -				$ -
Roof Level	W-Wide Flange1	W21X44	W21 21	39.609		44	1742.796														$ -				$ -
Roof Level	W-Wide Flange1	W21X44	W21 21	23.25		44	1023														$ -				$ -
Roof Level	W-Wide Flange1	W21X44	W21 21	21.76		44	957.44														$ -				$ -
Roof Level	W-Wide Flange1	W21X44	W21 21	39.581	463.84	44	1741.564	20408.96	10.20448	L.F.	E5	1064	0.075	$72.50	$3.32	$1.76	$77.58	$33,628.40	$1,539.95	$816.36	**$ 35,984.71**	$7.76	$3.88	$89.22	**$ 41,382.41**
10. Level	W-Wide Flange1	**W21X50**	W21 21	36.667		50	1833.35														$ -				$ -
10. Level	W-Wide Flange1	W21X50	W21 21	31.056		50	1552.8														$ -				$ -
11 Level	W-Wide Flange1	W21X50	W21 21	36.669		50	1833.45														$ -				$ -
11 Level	W-Wide Flange1	W21X50	W21 21	31.056		50	1552.8														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X50	W21 21	42.123		50	2106.15														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X50	W21 21	42.123		50	2106.15														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X50	W21 21	42.123		50	2106.15														$ -				$ -
Penthouse Roof	W-Wide Flange1	W21X50	W21 21	42.123		50	2106.15														$ -				$ -

Structural Framing Schedule

Roof Level	W-Wide Flange1	W21X50	**W21 21**	39.636		50	1981.8														$ -				$ -	
Roof Level	W-Wide Flange1	W21X50	**W21 21**	23.247		50	1162.35														$ -				$ -	
Roof Level	W-Wide Flange1	W21X50	**W21 21**	31.056	397.879	50	1552.8	19893.95	9.946975	L.F.	E5	1064	0.075	$82.50	$3.32	$1.76	$87.58	$32,825.02	$1,320.96	$700.27	**$ 34,846.24**	$8.76	$4.38	$100.72	**$ 40,073.18**	
Roof Level	W-Wide Flange	**W21X57**	**W21 21**	19.083		57	1087.731														$ -				$ -	
Roof Level	W-Wide Flange	W21X57	**W21 21**	19.083	38.166	57	1087.731	2175.462	1.087731	L.F.	E5	1036	0.077	$102.00	$3.41	$1.81	$107.22	$3,892.93	$130.15	$69.08	**$ 4,092.16**	$10.72	$5.36	$123.30	**$ 4,705.98**	*Not in RS Means*
10. Level	W-Wide Flange1	**W21X62**	**W21 21**	36.597		62	2269.014														$ -				$ -	
11 Level	W-Wide Flange1	W21X62	**W21 21**	36.597		62	2269.014														$ -				$ -	
Roof Level	W-Wide Flange1	W21X62	**W21 21**	23.241	96.435	62	1440.942	5978.97	2.989485	L.F.	E5	1036	0.077	$102.00	$3.41	$1.81	$107.22	$9,836.37	$328.84	$174.55	**$ 10,339.76**	$10.72	$5.36	$123.30	**$ 11,890.72**	
10. Level	W-Wide Flange	**W24X103**	**W24 24**	20.833		03	62.499														$ -				$ -	
10. Level	W-Wide Flange	W24X103	**W24 24**	21.002		03	63.006														$ -				$ -	
10. Level	W-Wide Flange	W24X103	**W24 24**	23.241		03	69.723														$ -				$ -	
10. Level	W-Wide Flange	W24X103	**W24 24**	23.258		03	69.774														$ -				$ -	
Roof Level	W-Wide Flange	W24X103	**W24 24**	39.422	127.756	03	118.266	383.268	0.191634	L.F.	E5	1050	0.076	$172.00	$3.36	$1.79	$177.15	$21,974.03	$429.26	$228.68	**$ 22,631.98**	$17.72	$8.86	$203.72	**$ 26,026.77**	*Not in RS Means*
Roof Level	W-Wide Flange	**W24X117**	**W24 24**	39.485	39.485	17	671.245	671.245	0.3356225	L.F.	E5	1050	0.076	$193.00	$3.36	$1.79	$198.15	$7,620.61	$132.67	$70.68	**$ 7,823.95**	$19.82	$9.91	$227.87	**$ 8,997.55**	
Roof Level	W-Wide Flange	**W24X176**	**W24 24**	23.258	23.258	76	1767.608	1767.608	0.883804	L.F.	E5	1050	0.076	$241.00	$3.36	$1.79	$246.15	$5,605.18	$78.15	$41.63	**$ 5,724.96**	$24.62	$12.31	$283.07	**$ 6,583.70**	*Not in RS Means*
Roof Level	W-Wide Flange1	**W24X55**	**W24 24**	20.833		55	1145.815														$ -				$ -	
Roof Level	W-Wide Flange1	W24X55	**W24 24**	21.01		55	1155.55														$ -				$ -	
Roof Level	W-Wide Flange1	W24X55	**W24 24**	20.833		55	1145.815														$ -				$ -	
Roof Level	W-Wide Flange1	W24X55	**W24 24**	21.002		55	1155.11														$ -				$ -	
Roof Level	W-Wide Flange1	W24X55	**W24 24**	23.258		55	1279.19														$ -				$ -	
Roof Level	W-Wide Flange1	W24X55	**W24 24**	27.311		55	1502.105														$ -				$ -	
Roof Level	W-Wide Flange1	W24X55	**W24 24**	27.311	161.558	55	1502.105	8885.69	4.442845	L.F.	E5	1110	0.072	$91.00	$3.18	$1.69	$95.87	$14,701.78	$513.75	$273.03	**$ 15,488.57**	$9.59	$4.79	$110.25	**$ 17,811.85**	
Roof Level	W-Wide Flange	**W24X68**	**W24 24**	36.543		68	2484.924														$ -				$ -	
Roof Level	W-Wide Flange	W24X68	**W24 24**	36.625	73.168	68	2490.5	4975.424	2.487712	L.F.	E5	1110	0.072	$112.00	$3.18	$1.69	$116.87	$8,194.82	$232.67	$123.65	**$ 8,551.14**	$11.69	$5.84	$134.40	**$ 9,833.82**	
Roof Level	W-Wide Flange	**W24X76**	**W24 24**	39.52		76	3003.52														$ -				$ -	
Roof Level	W-Wide Flange1	W24X76	**W24 24**	39.513	79.033	76	3002.988	6006.508	3.003254	L.F.	E5	1110	0.072	$125.00	$3.18	$1.69	$129.87	$9,879.13	$251.32	$133.57	**$ 10,264.02**	$12.99	$6.49	$149.35	**$ 11,803.62**	
10. Level	W-Wide Flange	**W24X84**	**W24 24**	20.833		84	1749.972														$ -				$ -	
10. Level	W-Wide Flange	W24X84	**W24 24**	21.01		84	1764.84														$ -				$ -	
11 Level	W-Wide Flange	W24X84	**W24 24**	20.833		84	1749.972														$ -				$ -	
11 Level	W-Wide Flange	W24X84	**W24 24**	21.01		84	1764.84														$ -				$ -	
11 Level	W-Wide Flange	W24X84	**W24 24**	20.833		84	1749.972														$ -				$ -	
11 Level	W-Wide Flange	W24X84	**W24 24**	21.002		84	1764.168														$ -				$ -	
11 Level	W-Wide Flange	W24X84	**W24 24**	23.241		84	1952.244														$ -				$ -	
11 Level	W-Wide Flange	W24X84	**W24 24**	23.258	172.02	84	1953.672	14449.68	7.22484	L.F.	E5	1080	0.074	$139.00	$3.27	$1.74	$144.01	$23,910.78	$562.51	$299.31	**$ 24,772.60**	$14.40	$7.20	$165.61	**$ 28,488.49**	
10. Level	W-Wide Flange1	**W27X84**	**W27 27**	36.543		84	3069.612														$ -				$ -	
10. Level	W-Wide Flange1	W27X84	**W27 27**	36.625		84	3076.5														$ -				$ -	
11 Level	W-Wide Flange1	W27X84	**W27 27**	36.543		84	3069.612														$ -				$ -	
11 Level	W-Wide Flange1	W27X84	**W27 27**	36.625	146.336	84	3076.5	12292.224	6.146112	L.F.	E5	1190	0.067	$139.00	$2.96	$1.58	$143.54	$20,340.70	$433.15	$231.21	**$ 21,005.07**	$14.35	$7.18	$165.07	**$ 24,155.83**	
Roof Level	W-Wide Flange	**W30X99**	**W30 30**	27.311	27.311	99	2703.789	2703.789	1.3518945	L.F.	E5	1200	0.067	$163.00	$2.94	$1.56	$167.50	$4,451.69	$80.29	$42.61	**$ 4,574.59**	$16.75	$8.38	$192.63	**$ 5,260.78**	
Roof Level	W-Wide Flange	**W33X118**	**W33 33**	23.241	23.241	18	418.338	418.338	0.209169	L.F.	E5	1176	0.680	$195.00	$3.00	$1.59	$199.59	$4,532.00	$69.72	$36.95	**$ 4,638.67**	$19.96	$9.98	$229.53	**$ 5,334.47**	
10. Level	W-Wide Flange	**W8X10**	**W8X 8**	2.579		10	25.79														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.756		10	27.56														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.333		10	23.33														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.705		10	27.05														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.592		10	25.92														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.342		10	23.42														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.633		10	26.33														$ -				$ -	
10. Level	W-Wide Flange	W8X10	**W8X 8**	2.647		10	26.47														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.579		10	25.79														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.756		10	27.56														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.333		10	23.33														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.705		10	27.05														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.592		10	25.92														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.342		10	23.42														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.633		10	26.33														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	2.647		10	26.47														$ -				$ -	
11 Level	W-Wide Flange	W8X10	**W8X 8**	1.368		10	13.68														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.579		10	25.79														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.756		10	27.56														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.333		10	23.33														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.884		10	28.84														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.705		10	27.05														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.592		10	25.92														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.342		10	23.42														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.633		10	26.33														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	2.647		10	26.47														$ -				$ -	
Roof Level	W-Wide Flange	W8X10	**W8X 8**	1.368	99.105	10	13.68	991.05	0.495525	L.F.	E2	600	0.093	$16.50	$4.06	$2.90	$23.46	$1,635.23	$402.37	$287.40	**$ 2,325.00**	$2.35	$1.17	$26.98	**$ 2,673.75**	
10. Level	W-Wide Flange	**W8X15**	**W8X 8**	8		15	120														$ -				$ -	
10. Level	W-Wide Flange	W8X15	**W8X 8**	8		15	120														$ -				$ -	
11 Level	W-Wide Flange	W8X15	**W8X 8**	8		15	120														$ -				$ -	
11 Level	W-Wide Flange	W8X15	**W8X 8**	8		15	120														$ -				$ -	
Roof Level	W-Wide Flange	W8X15	**W8X 8**	8		15	120														$ -				$ -	

Structural Framing Schedule

Roof Level	W-Wide Flange	W8X15	**W8X 8**	8		15	120														$ -				$ -
Roof Level	W-Wide Flange	W8X15	**W8X 8**	6.361		15	95.415														$ -				$ -
Roof Level	W-Wide Flange	W8X15	**W8X 8**	6.361		15	95.415														$ -				$ -
Roof Level	W-Wide Flange	W8X15	**W8X 8**	6.361	67.083	15	95.415	1006.245	0.5031225	L.F.	E2	600	0.093	$25.00	$4.06	$2.90	$31.96	$1,677.08	$272.36	$194.54	**$ 2,143.97**	$3.20	$1.60	$36.75	**$ 2,465.57**
Main Lobby	W-Wide Flange	**W18x35**	**W18 18**	23.198		35	811.9270833																		
Main Lobby	W-Wide Flange	W18x35	**W18 18**	23.198		35	811.9270833																		
Main Lobby	W-Wide Flange	W18x35	**W18 18**	23.198		35	811.9270833																		
Main Lobby	W-Wide Flange	W18x35	**W18 18**	23.198		35	811.9270833																		
Main Lobby	W-Wide Flange	W18x35	**W18 18**	23.198	115.990	35	811.9270833	4059.635417	2.029817708	L.F.	E5	960	0.083	$58.00	$3.67	$1.95	$63.62	$6,727.40	$425.68	$226.18	**$ 7,379.26**	$6.36	$3.18	$73.16	**$ 8,486.15**
Main Lobby	W-Wide Flange	**W18x60**	**W18 18**	23.25		60	1395																		
Main Lobby	W-Wide Flange	W18x60	**W18 18**	23.25	46.5	60	1395	2790	1.395	0	E5	900	0.089	$107.00	$3.92	$2.08	$113.00	$4,975.50	$182.28	$96.72	**$ 5,254.50**	$11.30	$5.65	$129.95	**$ 6,042.68**
Main Lobby	W-Wide Flange	**W18x55**	**W18 18**	23.25		55	1278.75																		
Main Lobby	W-Wide Flange	W18x55	**W18 18**	23.25	46.5	55	1278.75	2557.5	1.27875	L.F.	E5	912	0.088	$91.00	$3.87	$2.06	$96.93	$4,231.50	$179.96	$95.79	**$ 4,507.25**	$9.69	$4.85	$111.47	**$ 5,183.33**
8 Level	W-Wide Flange	**W16x31**	**W16 16**	6.416666667		31	198.9166667																		
8 Level	W-Wide Flange	W16x31	**W16 16**	6.416666667		31	198.9166667																		
8 Level	W-Wide Flange	W16x31	**W16 16**	10.5	23.33333333	31	325.5	723.3333333	0.361666667	L.F.	E2	900	0.062	$51.00	$2.71	$1.93	$55.64	$1,190.00	$63.23	$45.03	**$ 1,298.27**	$5.56	$2.78	$63.99	**$ 1,493.01**
8 Level	W-Wide Flange	**W16x26**	**W16 16**	10.5		26	273																		
8 Level	W-Wide Flange	W16x26	**W16 16**	10.5		26	273																		
8 Level	W-Wide Flange	W16x26	**W16 16**	3.166666667		26	82.33333333																		
8 Level	W-Wide Flange	W16x26	**W16 16**	3.25	27.41666667	26	84.5	712.8333333	0.356416667	L.F.	E2	1000	0.056	$43.00	$2.44	$1.74	$47.18	$1,178.92	$66.90	$47.71	**$ 1,293.52**	$4.72	$2.36	$54.26	**$ 1,487.55**
CT Support	W-Wide Flange	**W12x49**	**W12 12**	29		49	1421																		
CT Support	W-Wide Flange	W12x49	**W12 12**	29	58	49	1421	2842	1.421	L.F.	E2	750	0.075	$82.50	$3.25	$2.32	$88.07	$4,785.00	$188.50	$134.56	**$ 5,108.06**	$8.81	$4.40	$101.28	**$ 5,874.27**
CT Support	W-Wide Flange	**W8x10**	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4		10	40																		
CT Support	W-Wide Flange	W8x10	**W8x 8**	4	32	10	40	320	0.16	L.F.	E2	600	0.093	$16.50	$4.06	$209.00	$229.56	$528.00	$129.92	$6,688.00	**$ 7,345.92**	$22.96	$11.48	$263.99	**$ 8,447.81**
CT Support	W-Wide Flange	**W12x14**	**W12 12**	18.5		14	259																		
CT Support	W-Wide Flange	W12x14	**W12 12**	18.5	37	14	259	518	0.259	L.F.	E2	880	0.064	$26.50	$2.77	$1.98	$31.25	$980.50	$102.49	$73.26	**$ 1,156.25**	$3.13	$1.56	$35.94	**$ 1,329.69**
CT Support	W-Wide Flange	**W12x26**	**W12 12**	18.5		26	481																		
CT Support	W-Wide Flange	W12x26	**W12 12**	18.5		26	481																		
CT Support	W-Wide Flange	W12x26	**W12 12**	10.5		26	273																		
CT Support	W-Wide Flange	W12x26	**W12 12**	10.5	58	26	273	1508	0.754	L.F.	E2	880	0.064	$43.00	$2.77	$1.98	$47.75	$2,494.00	$160.66	$114.84	**$ 2,769.50**	$4.78	$2.39	$54.91	**$ 3,184.93**
Loading Dock	W-Wide Flange	**W18x65**	**W18 18**	20.208	20.208	65	1313.541667	1313.541667	0.656770833	L.F.	E5	900	0.089	$107.00	$3.92	$2.08	$113.00	$2,162.29	$79.22	$42.03	**$ 2,283.54**	$11.30	$5.65	$129.95	**$ 2,626.07**
Loading Dock	W-Wide Flange	**W18x35**	**W18 18**	16.5		35	577.5																		
Loading Dock	W-Wide Flange	W18x35	**W18 18**	16.5		35	577.5																		
Loading Dock	W-Wide Flange	W18x35	**W18 18**	16.5		35	577.5																		
Loading Dock	W-Wide Flange	W18x35	**W18 18**	16.5		35	577.5																		
Loading Dock	W-Wide Flange	W18x35	**W18 18**	9	75	35	315	2625	1.3125	L.F.	E5	960	0.083	$58.00	$3.67	$1.95	$63.62	$4,350.00	$275.25	$146.25	**$ 4,771.50**	$6.36	$3.18	$73.16	**$ 5,487.23**
Loading Dock	W-Wide Flange	**W18x46**	**W18 18**	16.5	16.5	46	759	759	0.3795	L.F.	E5	960	0.083	$76.00	$3.67	$1.95	$81.62	$1,254.00	$60.56	$32.18	**$ 1,346.73**	$8.16	$4.08	$93.86	**$ 1,548.74**
	Most Common Size	8		6632.335574	6511.267574		245518.8541	245518.8541	134									**$488,546.44**	**$23,139.32**	**$20,178.06**	**$531,863.81**				**$611,643.39**
		440																							
							122.7594271																		

				Connections								Total							
				Unit	Crew	Output	Labor Hours	Material	Labor	Equipment						Overhead	Profit	Total O&P	
Number of Members	Number of Bolts per connection	Modifier	Total								Cost	Material	Labor	Equipment	Subtotal	10%	5%	15%	
440	10	2	8800	Ea.	1Sswk	110	0.73	2.17	3.25	0	$5.42	$19,096.00	$28,600.00	$0.00	**$ 47,696.00**	$0.54	$0.27	$6.23	**$ 54,850.40**

Asumed typical connection with 3/4" x 6" bolt

Shear Stud Schedule

Level	Number		Unit	Crew	Output	Labor Hours	Material	Labor	Equipment	Total Cost	Material	Labor	Equipment	Subtotal	Overhead 10%	Profit 5%	Total O&P	
Cellar Levels	2165	2165	Ea.	E10	990	0.016	$0.70	$0.81	$0.39	$1.90	$1,515.50	$1,753.65	$844.35	$4,113.50	$0.19	$0.10	$2.19	$4,730.53
Loading Dock	40	40	Ea.	E10	990	0.016	$0.70	$0.81	$0.39	$1.90	$28.00	$32.40	$15.60	$76.00	$0.19	$0.10	$2.19	$87.40
8. Level	68	68	Ea.	E10	990	0.016	$0.70	$0.81	$0.39	$1.90	$47.60	$55.08	$26.52	$129.20	$0.19	$0.10	$2.19	$148.58
10. Level	710	1432	Ea.	E10	990	0.016	$0.70	$0.81	$0.39	$1.90	$1,002.40	$1,159.92	$558.48	$2,720.80	$0.19	$0.10	$2.19	$3,128.92
	630																	
	92																	
11. Level	638	1338	Ea.	E10	990	0.016	0.7	0.81	0.39	$1.90	$936.60	$1,083.78	$521.82	$2,542.20	$0.19	$0.10	$2.19	$2,923.53
	562																	
	138																	
Penthouse	490	490	Ea.	E10	990	0.016	0.7	0.81	0.39	$1.90	$343.00	$396.90	$191.10	$931.00	$0.19	$0.10	$2.19	$1,070.65
EMR	167	167	Ea.	E10	990	0.016	0.7	0.81	0.39	$1.90	$116.90	$135.27	$65.13	$317.30	$0.19	$0.10	$2.19	$364.90
	3535										$3,990.00	$4,617.00	$2,223.00	$10,830.00				$12,454.50

Metal Deck Schedule

Floor Schedule

Level	Area (SF)	Perimeter	Structural Usage	Slab Thickness (in)	Volume	Decking Type	Unit	Crew	Output	Labor Hours	Material	Labor	Equipment	Total Cost	Total Material	Total Labor	Total Equipment	Total Subtotal	Overhead 10%	Profit 5%		Total O&P
10. Level	9299.53	519.701	Composite Metal Deck	4.25	121.98	2" 18 Gauge	S.F	E4	3380	0.009	$3.29	$0.47	$0.04	$3.80	$30,595.45	$4,370.78	$371.98	$35,338.21	$0.38	$0.19	$4.37	$40,638.95
11. Level	9155.04	519.779	Composite Metal Deck	4.25	120.09	2" 18 Gauge	S.F	E4	3380	0.009	$3.29	$0.47	$0.04	$3.80	$30,120.08	$4,302.87	$366.20	$34,789.15	$0.38	$0.19	$4.37	$40,007.52
Roof	7840.28	530.645	Roof Deck	0	0.00	3" 20 Gauge	S.F	E4	4170	0.008	$2.78	$0.40	$0.04	$3.22	$21,795.98	$3,136.11	$313.61	$25,245.70	$0.32	$0.16	$3.70	$29,032.56
Penthouse	1803.31	261.488	Composite Metal Deck	4.25	23.65	2" 18 Gauge	S.F	E4	3380	0.009	$3.29	$0.47	$0.04	$3.80	$5,932.89	$847.56	$72.13	$6,852.58	$0.38	$0.19	$4.37	$7,880.46
Elevator Machine Room	601.37	99.552	Composite Metal Deck	4.25	7.89	2" 18 Gauge	S.F	E4	3380	0.009	$3.29	$0.47	$0.04	$3.80	$1,978.51	$282.64	$24.05	$2,285.21	$0.38	$0.19	$4.37	$2,627.99
Penthouse Roof	2012.2	179.725	Roof Deck	0	0.00	3" 20 Gauge	S.F	E4	4170	0.008	$2.78	$0.40	$0.04	$3.22	$5,593.92	$804.88	$80.49	$6,479.28	$0.32	$0.16	$3.70	$7,451.18
	30712				274										**$96,016.83**	**$13,744.84**	**$1,228.47**	**$110,990.14**				**$127,638.66**

Existing Footing Expansion Schedule

	Existing Footing				Enlarged Footing					Material	Labor	Equipment		Total				Overhead	Profit	Total O&P	
Column	Width	Length	Height	Volume	Width	Length	Height	Volume	Difference				Cost	Material	Labor	Equipment	Subtotal	10%	5%		
S-7	4.33	4.33	2.50	46.94	4.33	6.33	3.50	96.06	1.82												
T-3	5.33	5.33	2.50	71.11	5.33	7.33	3.50	136.89	2.44												
T-5	5.00	5.00	2.33	58.33	5.00	7.00	3.33	116.67	2.16												
V-2	3.67	3.67	2.00	26.89	5.67	5.67	3.33	107.04	2.97												
V-3	3.67	3.67	3.00	40.33	5.67	5.67	3.50	112.39	2.67												
V-4	4.00	4.00	3.00	48.00	6.00	6.00	3.50	126.00	2.89												
V-5	3.67	3.67	3.00	40.33	5.67	5.67	3.50	112.39	2.67												
V-6	3.67	3.67	2.00	26.89	5.67	5.67	3.33	107.04	2.97												
									21.00	$106.00	$33.50	$12.15	$151.65	$2,226.00	$703.50	$255.15	$3,184.65	$15.17	$7.58	$174.40	$3,662.35
														$ 2,226.00	$ 703.50	$ 255.15	$ 3,184.65				$ 3,662.35

			Rebar						Material	Labor	Equipment		Total				Overhead	Profit	Total O&P	
Column	Width	Length	Quantity	Number	Weight	Quantity	Number	Weight				Cost	Material	Labor	Equipment	Subtotal	10%	5%		
S-7	4.33	4.33	4	5	18.07867	4	7	35.43												
T-3	5.33	5.33	4	5	22.25067	4	7	43.61												
T-5	5.00	5.00	4	5	20.86	4	7	40.88												
V-2	3.67	3.67	4	5	15.29733	4	7	29.98												
V-3	3.67	3.67	4	5	15.29733	4	7	29.98												
V-4	4.00	4.00	4	5	16.688	4	7	32.70												
V-5	3.67	3.67	4	5	15.29733	4	7	29.98												
V-6	3.67	3.67	4	5	15.29733	4	7	29.98												
		139.0667			272.53							$2,500.00	$318.99	$195.51	$0.00	$514.50	$250.00	$125.00	$2,875.00	$591.68
					411.60	lbs	1550	950	0	$2,500.00	$318.99	$195.51	$0.00	$514.50	$250.00	$125.00	$2,875.00	$591.68		
					0.2058															

Existing Column Reinforcing

Existing Column Reinforcing

Number of Columns	Width (in)	Height (ft)	Number of Sides	Area (ft^2)	Units	Material	Labor	Equipment	Cost	Material	Labor	Equipment	Subtotal	Overhead 10%	Profit 5%	Total O&P	
5	14	12	2	140	S.F.	$76.00	$0.00	$0.00	$76.00	$10,640.00	$0.00	$0.00	$10,640.00	$7.60	$3.80	$87.40	$12,236.00
				1660	S.F.	$76.00	$0.00	$0.00	$76.00	$126,160.00	$0.00	$0.00	$126,160.00	$0.00	$0.00	$76.00	$126,160.00

Concrete Pier Schedule

		Dimensions			Vertical Reinforcement		Ties	
Mark	Quantity	Width	Length	Height	Quantity	Number	Quantity	Number
P-1	4	14	18	12	4	7	4	3
P-2	7	18	18	12	6	7	4	3
P-3	7	24	24	30	8	6	2	3
P-4	2	20	22	30	8	6	2	3
P-5	1	12	22	0	6	7	4	3

				Rebar																	
		Vertical				Ties												Overhead	Profit	Total O&P	
Mark	Quantity	Extension	Length	Total	Number	Length	Total	Number	Unit	Material	Labor	Equipment	Cost	Material	Labor	Equipment	Subtotal	10%	5%		
P-1	4	12	2	32	7	4	64	3													
P-2	7	12	2	84	7	4.67	130.666667	3													
P-3	7	10	3.33	186.6667	6	6.67	93.3333333	3													
P-4	2	10	3.33	53.33333	6	5.67	22.6666667	3													
P-5	1	12	1	6	7	4.33	17.3333333	3													
			#6	240	L.F.		#3	328	L.F.												
			#7	122	L.F.		#3	0.061664	Ton												
			#6	0.18024	Ton																
			#7	0.124684	Ton																
								Total Rebar	0.366588	Ton	1550	950	0	$2,500.00	$568.21	$348.26	$0.00	$916.47	$250.00	$125.00	$2,875.00	$1,053.94

Concrete (Material and Placement)

		Dimensions				Units	Material	Labor	Equipment						Overhead	Profit	Total O&P	
Mark	Quantity	Width	Length	Height	Volume					Cost	Material	Labor	Equipment	Subtotal	10%	5%		
P-1	4	14	18	12	0.25925926													
P-2	7	18	18	12	0.58333333													
P-3	7	24	24	30	2.59259259													
P-4	2	20	22	30	0.56584362													
P-5	1	12	22	0	0													
					5	C.Y.	$182.47	$23.20	$13.05	$218.72	$912.35	$116.00	$65.25	$1,093.60	$91.24	$45.62	$355.57	$1,777.86

Concrete (Material and Placement)

		Dimensions				Units	Material	Labor	Equipment						Overhead	Profit	Total O&P	
Mark	Quantity	Width	Length	Height	SFCA					Cost	Material	Labor	Equipment	Subtotal	10%	5%		
P-1	4	14	18	12	21.3333333													
P-2	7	18	18	12	42													
P-3	7	24	24	30	140													
P-4	2	20	22	30	35													
P-5	1	12	22	0	0													
					239	SFCA	$2.49	$6.40	$0.00	$8.89	$595.11	$1,529.60	$0.00	$2,124.71	$0.89	$0.44	$10.22	$2,443.42

Column Base Plate Schedule

Column Base Plate Schedule

Mark	Quantity	Bast Plate Size Width	Length	Thickness	Area	Anchor Rod No	Size	Length	Total
BP-1	4	12	16	1.25	5.333333333	4	0.75	9	16
BP-2	2	14	14	1	2.722222222	4	0.75	9	8
BP-3	3	14	14	1.25	4.083333333	4	0.75	9	12
BP-4	6	20	20	1.5	16.66666667	4	1	16	24
BP-5	1	16	18	1.25	2	4	0.75	9	4
BP-6	0	15	15	1	0	4	0.75	9	0
BP-7	1	16	12	1	1.333333333	4	0.75	9	4
BP-8	2	16	18	1.5	4	4	1	16	8
	19								
				1	4.055555556				
				1.25	11.41666667				
				1.5	20.66666667				

Thickness	Area	Total	Units	Material	Labor	Equipment	Cost	Material	Labor	Equipment	Subtotal	Overhead 10%	Profit 5%	Total O&P	
1	5		S.F.	$61.00	$0.00	$0.00	$61.00	$305.00	$0.00	$0.00	$305.00	$6.10	$3.05	$70.15	$350.75
1.25	12			$76.00	$0.00	$0.00	$76.00	$912.00	$0.00	$0.00	$912.00	$7.60	$3.80	$87.40	$1,048.80
1.5	21			$91.00	$0.00	$0.00	$91.00	$1,911.00	$0.00	$0.00	$1,911.00	$9.10	$4.55	$104.65	$2,197.65
	38														
								$3,128.00	**$0.00**	**$0.00**	**$3,128.00**				**$3,597.20**

Size	Total	Units	Material	Labor	Equipment	Cost	Material	Labor	Equipment	Subtotal	Overhead 10%	Profit 5%	Total O&P	
0.75	44	Ea.	$2.33	$4.57	$0.00	$6.90	$102.52	$201.08	$0.00	$303.60	$0.69	$0.35	$7.94	$349.14
1	32		$6.90	$5.80	$0.00	$12.70	$220.80	$185.60	$0.00	$406.40	$1.27	$0.64	$14.61	$467.36
	76													
							$323.32	**$386.68**	**$0.00**	**$710.00**				**$816.50**

Appendix D – General Conditions Estimate

Category/Activity	Quantity	Unit	Material Rate	Material Cost	Labor Rate	Labor Cost	Total Material Cost	Total Labor Cost
Rentals (DAVIS)								
Pickup truck (sup't)	65	Wks	$ 325	$ 21,125	$ -	$ -		
Courier vehicle	178	Hrs	$ 26	$ 4,628	$ -	$ -		
Dump truck	178	Hrs	$ 28	$ 4,984	$ -	$ -		
Field office trailer	16	Mos	$ 425	$ 6,800	$ -	$ -		
Storage/change house trailer	16	Mos	$ 200	$ 3,200	$ -	$ -		
Industrial vacuum	2	Ls	$ 400	$ 800	$ -	$ -		
Surveying instruments	2	Mos	$ 162	$ 374	$ -	$ -		
Two way radios	7	Mos	$ 445	$ 3,115	$ -	$ -		
Gang box	16	Mos	$ 150	$ 2,400	$ -	$ -		
Vehicle (Sr. PM)	89	Wks	$ 163	$ 14,463	$ -	$ -		
Vehicle (Proj. Manager)	89	Wks	$ 325	$ 28,925	$ -	$ -		
Pickup truck (Layout Engineer)	10	Wks	$ 81	$ 813	$ -	$ -		
Vehicle Allowance	1	Ls	$ 2,500	$ 2,500	$ -	$ -		
Cell Phone	14,854	Hrs	$ 2	$ 34,164	$ -	$ -		
Computer/Supporting Systems	16	Mos	$ 2,000	$ 32,000	$ -	$ -		
Copier/Fax	16	Mos	$ 469	$ 7,504	$ -	$ -		
Subtotal			$	167,794	$	-		
Sales tax	5.75	%	$	9,648	$	-		
			$	177,442	$	-	**$ 177,442**	**$ -**
Temporary Facilities								
Field telephone								
Equipment Hookup	1	Ls	$ 1,000	$ 1,000	$ -	$ -		
Calling Plan	16	Mos	$ 450	$ 7,200	$ -	$ -		
Temporary protection	JOB COST		$ -	JOB COST	$ -	$ -		
Parking Meter Rental	JOB COST		$ 60	JOB COST	$ -	$ -		
Field Office Set-up	1	Ls	$ 8,000	$ 8,000	$ -	$ -		
Field office expense	65	Wks	$ 125	$ 8,125	$ -	$ -		
Subtotal			$	24,325	$	-		
Sales tax	5.75	%	$	1,399	$	-		
			$	25,724	$	-	**$ 25,724**	**$ -**
Safety								
Health and Environment Controls	16	Mos	$ 528.75	$ 8,460	$ -	$ -		
Protection and Life Safety Equip.	10	Ctns	$ 618.64	$ 6,186	$ -	$ -		
Fire Protection and Prevention	20	Ea	$ 60.81	$ 1,216	$ -	$ -		
Sign, Signals and Barricades	JOB COST		$ -	$ -	$ -	$ -		
Material Storage and Disposal	65	Wks	$ -	$ -	$ 261.19	$ 16,978		
Temporary Heat	JOB COST		$ -	$ -	$ -	$ -		
Personal Protection - Site	JOB COST		$ -	$ -	$ -	$ -		
Personal Protection - Building	2,400	Lf	$ 3.29	$ 7,900	$ 3.04	$ 7,300		
Scaffolding	JOB COST		$ -	$ -	$ -	$ -		
Excavation and Trenching	N/A		$ -	$ -	$ -	$ -		
Subtotal			$	23,762	$	24,278		
Sales tax	5.75	%	$	1,366	$	1,396		
			$	25,128	$	24,278	**$ 25,128**	**$ 24,278**
Punch List / Warrantee	100	Hrs	$ 10	$ 1,000	$ 25	$ 2,457	**$ 1,000**	**$ 2,457**
Page Two Subtotal							**$ 229,294**	**$ 26,735**

Category/Activity	Quantity	Unit	Material Rate	Material Cost	Labor Rate	Labor Cost	Total Material Cost	Total Labor Cost
Rentals (DAVIS)								
Pickup truck (sup't)	65	Wks	$ 325	$ 21,125	$ -	$ -		
Courier vehicle	178	Hrs	$ 26	$ 4,628	$ -	$ -		
Dump truck	178	Hrs	$ 28	$ 4,984	$ -	$ -		
Field office trailer	16	Mos	$ 425	$ 6,800	$ -	$ -		
Storage/change house trailer	16	Mos	$ 200	$ 3,200	$ -	$ -		
Industrial vacuum	2	Ls	$ 400	$ 800	$ -	$ -		
Surveying instruments	2	Mos	$ 162	$ 374	$ -	$ -		
Two way radios	7	Mos	$ 445	$ 3,115	$ -	$ -		
Gang box	16	Mos	$ 150	$ 2,400	$ -	$ -		
Vehicle (Sr. PM)	89	Wks	$ 163	$ 14,463	$ -	$ -		
Vehicle (Proj. Manager)	89	Wks	$ 325	$ 28,925	$ -	$ -		
Pickup truck (Layout Engineer)	10	Wks	$ 81	$ 813	$ -	$ -		
Vehicle Allowance	1	Ls	$ 2,500	$ 2,500	$ -	$ -		
Cell Phone	14,854	Hrs	$ 2	$ 34,164	$ -	$ -		
Computer/Supporting Systems	16	Mos	$ 2,000	$ 32,000	$ -	$ -		
Copier/Fax	16	Mos	$ 469	$ 7,504	$ -	$ -		
Subtotal			$	167,794	$	-		
Sales tax	5.75	%	$	9,648	$	-		
			$	177,442	$	-	**$ 177,442**	**$ -**
Temporary Facilities								
Field telephone								
Equipment Hookup	1	Ls	$ 1,000	$ 1,000	$ -	$ -		
Calling Plan	16	Mos	$ 450	$ 7,200	$ -	$ -		
Temporary protection	JOB COST		$ -	JOB COST	$ -	$ -		
Parking Meter Rental	JOB COST		$ 60	JOB COST	$ -	$ -		
Field Office Set-up	1	Ls	$ 8,000	$ 8,000	$ -	$ -		
Field office expense	65	Wks	$ 125	$ 8,125	$ -	$ -		
Subtotal			$	24,325	$	-		
Sales tax	5.75	%	$	1,399	$	-		
			$	25,724	$	-	**$ 25,724**	**$ -**
Safety								
Health and Environment Controls	16	Mos	$ 528.75	$ 8,460	$ -	$ -		
Protection and Life Safety Equip.	10	Ctns	$ 618.64	$ 6,186	$ -	$ -		
Fire Protection and Prevention	20	Ea	$ 60.81	$ 1,216	$ -	$ -		
Sign, Signals and Barricades	JOB COST		$ -	$ -	$ -	$ -		
Material Storage and Disposal	65	Wks	$ -	$ -	$ 261.19	$ 16,978		
Temporary Heat	JOB COST		$ -	$ -	$ -	$ -		
Personal Protection - Site	JOB COST		$ -	$ -	$ -	$ -		
Personal Protection - Building	2,400	Lf	$ 3.29	$ 7,900	$ 3.04	$ 7,300		
Scaffolding	JOB COST		$ -	$ -	$ -	$ -		
Excavation and Trenching	N/A		$ -	$ -	$ -	$ -		
Subtotal			$	23,762	$	24,278		
Sales tax	5.75	%	$	1,366	$	1,396		
			$	25,128	$	24,278	**$ 25,128**	**$ 24,278**
Punch List / Warrantee	100	Hrs	$ 10	$ 1,000	$ 25	$ 2,457	**$ 1,000**	**$ 2,457**
Page Two Subtotal							**$ 229,294**	**$ 26,735**

2175 K Street, NW

Contractor General Conditions

(Estimate Summary)

Category/Activity	Quantity	Unit	Material Rate	Material Cost	Labor Rate	Labor Cost	Total Material Cost	Total Labor Cost
Page One Subtotal (Permit, Management Team, General Conditions, Misc. Labor, Courier, Dump Truck)							$ 8,582	$ 766,321
Page Two Subtotal (DAVIS Rentals, Temporary Facilities, Punch List / Warrantee)							$ 229,294	$ 26,735
SUBTOTAL							$ 237,876	$ 793,056
Insurances & employee benefits	55	%					$ -	$ 436,181
Total general conditions							$ 237,876	$ 1,229,236
GENERAL CONDITIONS GRAND TOTAL							$	1,467,112

2175 K Street, NW

Contractor General Conditions

(Price Comparison - Percentage)

Category/Activity	Total Material Cost	Percent of Subtotal	Percent of Total	Total Labor Cost	Percent of Subtotal	Percent of Total
Permit	$ -	-	-	$ -	-	-
Supervision & Project Management	$ -	-	-	$ 712,625.72	**89.86%**	**57.97%**
General Conditions	$ 8,581.61	3.61%	3.61%	$ -	-	-
Miscellaneous Labor	$ -	-	-	$ 43,206.00	5.45%	3.51%
Courier	$ -	-	-	$ 6,992.92	0.88%	0.57%
Dump Truck - Driver	$ -	-	-	$ 3,496.46	0.44%	0.28%
Rentals (DAVIS)	$ 177,441.96	**74.59%**	**74.59%**	$ -	-	-
Temporary Facilities	$ 25,723.69	10.81%	10.81%	$ -	-	-
Safety	$ 25,128.34	10.56%	10.56%	$ 24,277.50	3.06%	1.98%
Punch List / Warrantee	$ 1,000.00	0.42%	0.42%	$ 2,457.00	0.31%	0.20%
SUBTOTAL	$ 237,875.60		16.21%	$ 793,055.60		54.06%
TOTALS	$ 237,875.60		16.21%	$ 1,229,236.18		83.79%
GENERAL CONDITIONS GRAND TOTAL	**$1,467,112**					

2175 K Street, NW

Contractor General Conditions

(Price Comparison - Cost per Week)

Category/Activity	Quantity	Total Material Cost	Cost per Week	Total Labor Cost	Cost per Week
Permit	0	$ -	-	$ -	-
Supervision & Project Management	89	$ -	-	$ 712,625.72	**$ 8,007**
General Conditions	89	$ 8,581.61	$ 96	$ -	-
Miscellaneous Labor	69	$ -	-	$ 43,206.00	$ 626
Courier	56	$ -	-	$ 6,992.92	$ 125
Dump Truck - Driver	3	$ -	-	$ 3,496.46	$ 1,249
Rentals (DAVIS)	89	$ 177,441.96	**$ 1,994**	$ -	-
Temporary Facilities	69	$ 25,723.69	$ 371	$ -	-
Safety	69	$ 25,128.34	$ 362	$ 24,277.50	$ 350
Punch List / Warrantee	3	$ 1,000.00	$ 400	$ 2,457.00	$ 983
SUBTOTAL	89	$ 237,875.60	$ 2,673	$ 793,055.60	$ 8,911
TOTALS	89	$ 237,875.60	$ 2,673	$ 1,229,236.18	$ 13,812
GENERAL CONDITIONS GRAND TOTAL		**$1,467,112**			***$16,484***