

WASHINGTON DC AREA

MULTI-USE HIGH RISE



TECHNICAL REPORT 2

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SECTION I: EXECUTIVE SUMMARY

Technical report two provides a thorough analysis of a site layout plan, detailed project schedule, general conditions summary, detailed structural systems estimate, assemblies MEP estimate, three constructability challenges, and a LEED evaluation for the Multi-Use High Rise project in the Washington DC area.

The site layout plan shows the site layout for the excavation, superstructure, and finish phase. Each phase is unique in its detail and approach to bring the project as orderly and efficient as possible. Each phase shows unique placement of important equipment and spaces throughout the duration of the project.

The detailed project schedule shows a more depth look at durations and sequencing of work. This details the scope of work from procurement and initial site work through to enclosure and finishes. The schedule shows a logical critical path and detailed sequencing of work. The overall project is set to take a few days over two years from notice to proceed to substantial completion.

The general conditions estimate shows a breakdown of all general conditions used throughout the project. This includes project management, equipment and facilities, temporary utilities, and insurance, permits and bonds. The general conditions total for the Multi-Use High Rise comes to \$4,131,858.75.

The detailed structural estimate shows the total cost of the structural system. The structural system consists of concrete column footings, columns, beams, and slabs. Each concrete entity is required to have reinforcing and formwork. A quantity takeoff of the concrete used, reinforcing used, and formwork make up the detailed estimate, giving us a total structural cost of \$7,666,552.44.

The assemblies MEP estimate is a cost estimate of all factors making up mechanical, electrical and plumbing systems. This is not a detailed estimate. The assemblies MEP estimate comes to \$3,563,211.00 for the Multi-Use High Rise project.

This project, as well as all projects, has had plenty of constructability issue. In this report, the issues being discussed include how the general contractor is dealing with significant and frequent changes in the construction drawings, difficult and collaborative MEP coordination, and how to deal with a duct bank is encroaching into the garage at a specific column line. These challenges are addressed and solutions are provided.

The Multi-Use High Rise project is LEED accredited, receiving 28 LEED credit points throughout the duration of the project. This report will discuss where the project is receiving points and ways to ensure the points are attained.

SECTION II: SITE LAYOUT

The site layout for the Multi-Use High Rise is broken into three key phases: Excavation, Superstructure, and Finish. These three phases make up the majority of the construction process for this project.

Excavation Phase

During the excavation phase, the construction entrance is installed, sediment and erosion control is installed, dewatering is set up, and overhead protection is installed. The demolition of existing buildings, hardscape, and concrete is all done during the excavation phase, as well. Soldier beams, bracket piles and caissons are also installed to the site, as well as cutting and lagging. The excavation phase site layout plan, shown in Appendix A: Site Layout Plan shows the property line established and security fencing installed. There are two dumpsters placed in strategic locations on either side of the site, and laydown/staging areas and overhead protection is established. General contractor trailers are also put in place at a strategic location, away from the project site itself.

Superstructure Phase

During the superstructure phase, the foundation and structure is being constructed. Slab on grade, slab on deck, concrete columns, and concrete beams are all being installed to the Underground Parking Garage, Building 1 and Building 2. The superstructure phase site layout plan, shown in Appendix A: Site Layout Plan shows everything from the excavation phase, with some additional equipment placement. The construction entrance has moved. Three placing booms are shown throughout the site, and additional dumpsters are included.

Finish Phase

During the finish phase, the building enclosure, rough-ins, and interior finishes are being performed for Building 1 and Building 2. The finish phase, shown in Appendix A: Site Layout Plan, it is set up similar to the superstructure phase, with a few exceptions. There are several trash chutes and hoists incorporated to the site for cleanup. The tower cranes are now gone during this phase.

The site layout plan is important because it allows for a safe and organized jobsite. Overhead protection and security fencing is the most important safety measures for all phases of construction. Only certain materials are stored for each phase, depending on the work being performed at the time. The site layout plan is a key factor to completing the project in a smooth, efficient manner.

SECTION III: DETAILED PROJECT SCHEDULE

The Multi-Use High Rise project began construction efforts on July 24, 2012, when notice to proceed was initiated. Substantial completion of this project is set for July 29, 2014. The total project duration is going to be 735 days, which is slightly over two years of construction.

Table 1 shows an overview of the project schedule, including preconstruction through to project closeout. The project schedule overview shows the major items by phasing. The phases in which this project is completed in is as follows:

- Preconstruction
- Procurement
- Initial Site Work
- Foundation & Structure
- Enclosure
- Rough-In
- Finishes
- Project Closeout

**Please refer to Appendix A for the Detailed Project Schedule*

	Duration	Start Date	Finish Date
Notice To Proceed	-	07/24/2012	-
Preconstruction	110 Days	07/24/2012	12/24/2012
Procurement	277 Days	07/24/2012	08/14/2013
MEP Coordination	277 Days	07/24/2012	08/14/2013
Initial Site Work	120 Days	08/06/2012	01/18/2013
Foundation & Structure	152 Days	12/28/2012	07/29/2013
Garage	109 Days	12/28/2012	05/29/2013
Building 1	99 Days	05/14/2013	09/27/2013
Building 2	51 Days	05/20/2013	07/29/2013
Enclosure	250 Days	07/30/2013	07/14/2014
Building 1	250 Days	07/30/2013	07/14/2014
Building 2	93 Days	06/28/2013	11/05/2013
Rough-In	167 Days	07/05/2013	02/24/2014
Garage	167 Days	07/05/2013	02/24/2014
Building 1	151 Days	07/09/2013	02/04/2014
Building 2	122 Days	07/09/2013	12/25/2013
Finishes	244 Days	07/18/2013	06/24/2014
Garage	133 Days	07/18/2013	01/20/2012
Building 1	179 Days	10/17/2013	06/24/2014
Building 2	133 Days	11/29/2013	06/03/2014
Project Closeout	201 Days	10/01/2013	07/08/2014
Substantial Completion	-	-	07/29/2014
Total	735 Days	07/24/2012	07/29/2014

*Table 1: Project Schedule Overview**

The preconstruction phase is set to take roughly 110 days, being completed from 07/24/2012 to 12/24/2012. During the preconstruction phase, the detailed schedule shows critical 3rd party structures meetings taking place, as well as sheeting and shoring permits being obtained. Due to project activity requirements, other permitting was not included on this schedule, but was taken in account of the overall project duration. This includes right-of-way, demolition, overhead protection, survey excavation for footing to grade, plat for footing to grade, footing to grade, and building permits were obtained. While the preconstruction phase is being performed, project procurement is also completed. Procurement is set to take 277 days lasting from 07/24/2012 to 08/14/2013. Procurement includes initiating quality control, safety, sediment & erosion control, storm water management, and other plans. It also includes MEP coordination, which will be done for both Building 1 and Building 2 starting with the ground floor working all the way to the 10th floor. Once preconstruction and procurement have been complete, it is time to begin construction.

Initial site work is the first step in construction for the Multi-Use High Rise. Initial site work will last 120 days from 08/06/2012 to 01/25/2013. Initial site work includes mobilization and demolition of existing buildings as well as site excavation. Mobilization and demolition only take 23 days, while excavation takes roughly three months. Included in excavation is the installation of soldier beams, bracket piles, and caissons, and cutting and lagging to each of the 1st, 2nd, and subgrade tiers. Following the initial site work, it is time for the foundation and structure to be constructed.

The foundations and structure phase includes the foundation for the underground parking garage, as well as structure for the garage, Building 1 and Building 2. This phase is a substantial phase for the project, lasting 150 days from 12/28/2012 to 07/29/2013. The first step in this phase is laying out the foundation for the Underground Parking Garage's Level P2 slab on grade 1. A tower crane is erected in place for the duration of the phase. Level P2 uses slab-on-grade totaling in at seven slabs. The typical procedure for each slab on grade is as follows:

- Form, reinforce, and pour slab walls
- Initial backfill performed
- Underground plumbing and electric rough in
- Stone backfill performed
- Termite and moisture control performed
- The slab is prepped and then poured.

Once Level P2's foundation is poured, the rest of the structure for the underground garage, Building 1 and Building 2 may be complete. The underground garage uses concrete columns and beams, and concrete slab on deck for Level P2 and the Ground Floor. Buildings 1 and 2 also use concrete columns and beams, and a concrete slab on

deck for floors 3 through to the roof. Once the buildings foundation and structure is complete, the building enclosure and rough- may begin being constructed.

The building enclosure is the longest phase of the project, lasting 250 days from 07/30/2013 to 07/14/2014. This phase is separated between Building 1 and Building 2, working simultaneously. Building 1 constructs enclosure for 10 floors, including the roof. Building 2 constructs enclosure for 6 floors, including the roof. The typical procedure for constructing each floor's building enclosure includes removing reshores, installing masonry angles, constructing exterior metal framing, sheathing and Tyvec, setting window receptors, installing scaffolding, installing masonry veneer and exterior glazing. While the building enclosure is being completed, rough-ins is also done. Rough-ins takes about 170 days, lasting from 07/05/2013 to 02/24/2014. A typical floor's rough in includes interior layout, interior framing, interior wall installation, mechanical, plumbing, sprinkler and electrical riser installation, and overhead MEP work. This is done for Level P2, Level P1, and Ground Floor through Roof for both Building 1 and 2. Following building enclosure and rough-ins, interior finishes are performed.

Interior finishes take approximately 244 days, being done from 07/18/2013 to 06/24/2014. The garage Level P2 and P1 are finished first, following is Building 1 and Building 2 coincided. After interior finishes are complete, Building 1 and Building 2 commissioning and closeout is performed. Project closeout lasts about 200 days from 10/01/2013 to 07/08/2014.

Once the project is complete, a walkthrough is performed, a final punch list is complete and the final completion brings the building to substantial completion. The project schedule for the Multi-Use High Rise takes lots of coordination from phase to phase by each specific area of work. With great coordination, the project is able to be complete in a reasonably accurate time. If all goes as planned, the project will be complete 07/29/2014.

SECTION IV: GENERAL CONDITIONS ESTIMATE

A general conditions estimate was performed from the RSMeans CostWorks database. The summary cost of all the categories is \$4,131,858.75, as seen in *Appendix A. Figure A* shows the summary breakdown of all general conditions costs. The general conditions are broken down into four subgroups: Jobsite Management, Equipment and Facilities, Temporary Utilities, and Insurance, Permits, and Bonds.

General Conditions Summary		
General Breakdown	Cost/Week	Total Cost
Jobsite Management	\$ 27,913.15	\$ 2,930,881.25
Equipment & Facilities	\$ 2,668.10	\$ 280,150.00
Temporary Utilities	\$ 2,869.79	\$ 301,327.50
Insurance, Permits, & Bonds	\$ 5,900.00	\$ 619,500.00
Total	\$ 39,351.04	\$ 4,131,858.75

Figure A: General Conditions Summary

Jobsite management totals at \$2,930,881.25 total cost, with a weekly cost of \$27,913.15. This cost includes all general contractor staffing throughout the duration of the project. In this project, a vice president, project manager, senior superintendent, project engineer, quality control manager, quality assistant, and senior safety supervisor remain staffed for the duration. An additional project engineer is added halfway through the project. An assistant superintendent, a quality assistant, and a safety supervisor remain staffed for 75% of the project duration. Finally, an additional assistant superintendent is added for the final quarter of construction.

Equipment and facilities total at \$280,150.00 total cost, and a weekly cost of \$2,668.10. This cost includes documentation, overnight delivery, construction signage, field office set-up, field office rental, printers/copiers, office survey/layout equipment, minor tools/equipment, weekly housekeeping, safety equipment, fire extinguishers and other miscellaneous expenses.

Temporary facilities totals at \$301,327.5 total cost, and a weekly cost of \$2,869.79. This cost includes early, middle and late power, power install, potable water, phone/internet hookup/service, temporary toilets, and dumpsters.

Insurance, permits, and bonds totals at \$619,500.00 total cost, and a weekly cost of \$5,900.00. This cost includes all permits, the certificate of occupancy, commercial general liability, builder's risk insurance, and payment and performance bonds.

SECTION V: DETAILED STRUCTURAL SYSTEMS ESTIMATE

A quantity takeoff of the detailed structural system was performed in order to reach a final estimate for the project. All estimate costs were taken from RSMeans CostData. The entire structure of the Multi-Use High Rise building is cast-in-place concrete. The column footings, columns, beams, and slabs are all cast-in-place-concrete. **Figure B** shows the detailed estimate for the structural system. To complete the estimate, takeoffs were performed for formwork, reinforcing, and concrete. Footings, columns, beams, and slabs all needed formwork, which was taken off to complete the estimate. Reinforcing is broken down into the different sizes used throughout the footings, columns, beams, and slabs. All quantities are shown in **Appendix D: Detailed Structural Estimate**, and were taken directly from the structural drawings.

DETAILED STRUCTURAL ESTIMATE									
Item	QTY	Unit	Mat'l \$/Unit	Mat'l Total	Labor \$/Unit	Labor Total	Equip't \$/Unit	Equip't Total	Total Cost
FORMWORK									
Footings	1265.7	SFCA	\$ 2.97	\$ 3,759.13	\$ 9.30	\$ 11,771.01	\$ -	\$ -	\$ 15,530.14
Columns	14647	SFCA	\$ 2.97	\$ 43,501.59	\$ 9.30	\$ 136,217.10	\$ -	\$ -	\$ 179,718.69
Beams	8913.17	SFCA	\$ 2.97	\$ 26,472.11	\$ 9.30	\$ 82,892.48	\$ -	\$ -	\$ 109,364.60
Slabs		SFCA	\$ 2.97		\$ 9.30	\$ -	\$ -		
REINFORCING									
#3	38.04	TON	\$ 1,000.00	\$ 38,040.00	\$ 550.00	\$ 20,922.00	\$ -	\$ -	\$ 58,962.00
#5	34.79	TON	\$ 1,000.00	\$ 34,790.00	\$ 550.00	\$ 19,134.50	\$ -	\$ -	\$ 53,924.50
#7	0.291	TON	\$ 1,000.00	\$ 291.00	\$ 550.00	\$ 160.05	\$ -	\$ -	\$ 451.05
#8	44.64	TON	\$ 1,000.00	\$ 44,640.00	\$ 445.00	\$ 19,864.80	\$ -	\$ -	\$ 64,504.80
#9	222.39	TON	\$ 1,000.00	\$ 222,390.00	\$ 445.00	\$ 98,963.55	\$ -	\$ -	\$ 321,353.55
#10	53.78	TON	\$ 1,000.00	\$ 53,780.00	\$ 445.00	\$ 23,932.10	\$ -	\$ -	\$ 77,712.10
#12	1.07	TON	\$ 1,000.00	\$ 1,070.00	\$ 445.00	\$ 476.15	\$ -	\$ -	\$ 1,546.15
CONCRETE									
Column Footings	1469.52	CY	\$ 112.00	\$ 164,586.24	\$ 73.00	\$ 107,274.96	\$ -	\$ -	\$ 271,861.20
Columns	24720.89	CY	\$ 112.00	\$ 2,768,739.68	\$ 73.00	\$ 1,804,624.97	\$ -	\$ -	\$ 4,573,364.65
Reinforced Beams	9632.69	CY	\$ 112.00	\$ 1,078,861.28	\$ 73.00	\$ 703,186.37	\$ -	\$ -	\$ 1,782,047.65
Slab on Grade	8432.12	CY	\$ 1.88	\$ 15,852.39	\$ 0.88	\$ 7,420.27	\$ -	\$ -	\$ 23,272.65
Slab on Deck	48166.2	CY	\$ 1.88	\$ 90,552.46	\$ 0.88	\$ 42,386.26	\$ -	\$ -	\$ 132,938.71
TOTAL COST				\$ 4,587,325.88		\$ 3,079,226.56		\$ -	\$ 7,666,552.44

Figure B: Detailed Structural Estimate

* See Appendix D: Detailed Structural Estimate for quantity takeoffs

There are several different types of column footers and columns used throughout the project, each differing in size and reinforcing type. Same goes for beams, differing in size and reinforcing from one to another. The slab on grade and slab on deck is 4000 psi normal strength concrete, at 5” in diameter. Various sizes of reinforcing bar is incorporated, differing for each structure it is included in.

After completing the quantity take off and configuring cost data, the structural system of the Multi-Use High Rise will cost roughly \$7,666,552.44.

SECTION VI: ASSEMBLIES MEP ESTIMATE

An assemblies MEP estimate was performed on the Multi-Use High Rise project. This estimate gives us an idea of the cost of the mechanical, electrical, and plumbing costs. *Figure C* shows us a breakdown of the individual systems and the total cost of entire MEP system.

MEP Assemblies Estimate Summary	
System	Cost
Mechanical	\$ 1,304,725.00
Electrical	\$ 1,160,450.00
Plumbing	\$ 1,098,036.00
Total	\$ 3,563,211.00

Figure C: MEP Estimate Summary

**See Appendix: Assemblies MEP Estimate for full estimate detail*

The assemblies estimate is not a detailed estimate, but gives us a reasonable look at what the total cost will become. In the Multi-Use High Rise project the total MEP assemblies cost is set to be \$3,563,211.00.

SECTION VII: CONSTRUCTABILITY CHALLENGES

It is inevitable to complete an extensive construction project without running into several constructability issues. The Multi-Use High Rise, along with most construction projects I history, have had its fair share of challenges faced and overcome. This particular report will be discussing challenges regarding drawing changes, MEP coordination, and duct bank issues.

Drawing Changes

The drawings for the Multi-Use High Rise have been along for several years prior to the July 24th notice to proceed date. This project started out as condominiums in Building 1 and Building 2, then was changed to apartments. In this switch, and through the value engineering process, there have been significant changes. There have been over 20 construction change directives over the last year of the project, including changes in the electrical equipment, doors, windows, most of the interior finishes, etc. The big challenge being faced is trying to continue with construction efforts while significant changes are being done to the drawings every week.

In order to keep up and overcome this challenge, four superintendents are utilized to manage the site. These superintendents hold weekly meetings with all subcontractor foremen and distribute eight week look ahead schedules on a weekly basis. To deal with discrepancies in the drawings and field issues, request for interpretations to the architect and design team are sent frequently. So frequently, over 400 RFI's to date have been sent. The office insures all subcontractors, superintendents have the most up to date information, it insures all RFI's, submittals, and current set drawings are file to protocol, and a drawing/sketch log is kept. Without the extra work from superintendents and office employees, the continuing changes in drawings will cause the project to be very difficult to complete or even fail.

MEP Coordination

Coordination for the Multi-Use High Rise is very important; KNI Engineering is utilized to create coordination drawings with the MEP and sprinkler subcontractors. This coordination is a floor by floor effort by all parties to try to coordinate the locations of sleeves in the slabs and locations of overhead work, KNI Engineering hosts weekly "GoTo Meetings" online via conference call every Friday morning, allowing subcontractors, the general contractor, and the architect/design team to come up with solutions to various issues in coordination. An example of a coordination issue that has come up includes duct running into sprinkler pipes.

Coordinating MEP design using KNI Engineering helps the overall quality of the project because issues are being spotted ahead of time and drawings are created for the subcontractors to work with. The amount of issues that come up when the work is actually being installed, which would potentially lead to schedule delays, is being limited. There are over 50 apartment types, most of

which do not stack floor to floor, leading to even more coordination issues with the MEP and sprinkler system than there would be on a rectangular building. Keeping up with all the drawing changes and coordination has helped the project continue to proceed in a smooth manner.

Duct Bank

During excavation for the Multi-Use High Rise, a duct bank that runs along Irving Street was discovered, encroaching into the garage at column line 11. As a result, the foundation wall along Irvin Street has changed, which is shown by **Figure D**.

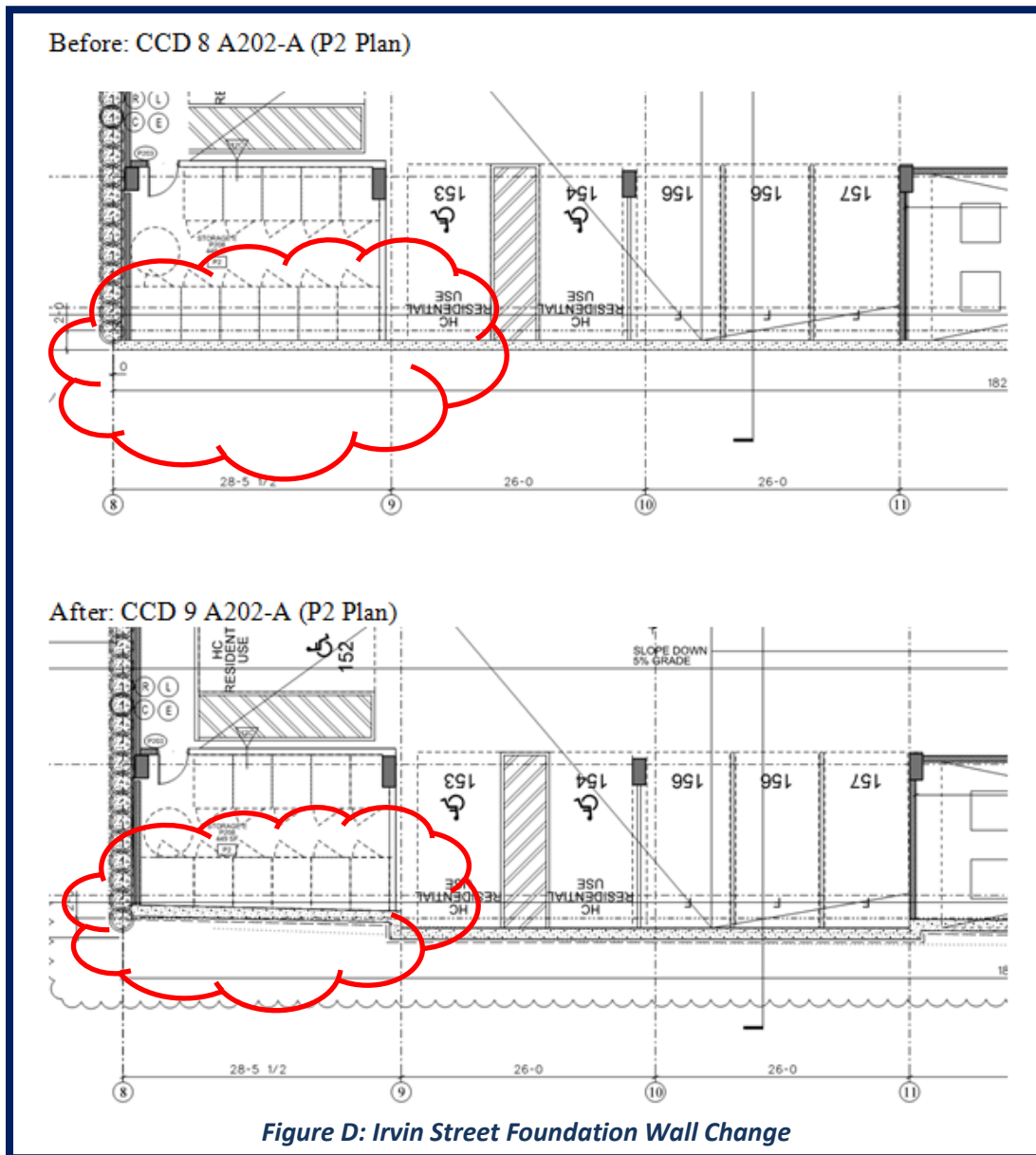


Figure D: Irvin Street Foundation Wall Change

To deal with the duct bank, the owner, architect, general contractor, and waterproofing, concrete, and excavation support subcontractors had to work together to come up with how to support and work around the duct bank. The solution was to hang it and have special waterproofing details. This also impacted excavation efforts because piles were required to be drilled right next to the duct bank, leading to sequencing of the excavation plan and adding time and costs.

Challenges are faced on a daily basis at the Multi-Use High Rise construction project, but being able to interpret the challenge, come up with a solution and implementing the solution allows this project to remain on track and keep its quality.

SECTION VIII: LEED EVALUATION

A thorough LEED evaluation was performed on the Multi-Use High Rise, giving the project a LEED Certification. 28 of the possible 69 LEED credits were achieved during this project. The LEED certification is broken down into six categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and Innovative & Design Process, which the project scored multiple points in each category to achieve certification. View the attached **LEED-NC Version 2.2 Registered Project Checklist** and **LEED NCv2.2 ScoreCard attached in Appendix ??**

Sustainable Site

Sustainable sites credits encourage building project strategies that minimize impact on ecosystems and water resources. In order to qualify for any points in this category, the site must incorporate erosion and sediment control measures. The following summarize all nine points the Multi-Use High Rise was awarded due to site sustainability:

- One point is awarded because the site is not located more than 5' above 100 year flood plain and does not fall on farmland, within 100' of wetland, or within 50' of a body of water.
- One point is awarded because the site is located on a previously developed site and is within ½ mile of 10 basic community services.
- One point is awarded because the site is located within 0.1 mile of WMATA metro public transportation stop.
- One point is awarded because 92 bicycle parking spots are provided.
- One point is awarded because dedicated parking spots for low emitting/fuel efficient vehicles are provided.
- One point is awarded because the amount of parking spaces provided does not exceed the amount of parking spaces required by zoning.
- One point is awarded because the provided open space is equal to building footprint.
- One point is awarded because 100% of parking is provided underground.
- One point is awarded because of a green roof.

Water Efficiency

Water efficiency credits promote smarter use of water, inside and out, to reduce potable water consumption. The following summarize the point the Multi-Use High Rise was awarded due to water efficiency:

- One point is awarded because plumbing fixtures will be chosen to meet 20% water use reduction.

Energy & Atmosphere

Energy and atmosphere credits promote better building energy performance through innovative strategies. In order to qualify for any points in this category, the site must engage in 3rd party commissioning, develop envelope, HVAC, and lighting systems compliant with ASHRAE 90.1-2004, and all water source HPs must be specified. The following summarize the point the Multi-Use High Rise was awarded due to energy performance:

- One point is awarded because 3rd party commissioning authority was engaged.

Materials & Resources

Materials and resources encourage using sustainable building materials and reducing waste. In order to qualify for points in this category, the site must designate specific space to support building recycling efforts on floors and loading dock. The following summarize all four points the Multi-Use High Rise was awarded due to energy performance:

- Two points are awarded because a waste hauler will sort off site and recycle majority of construction waste, diverting waste from landfills.
- One point is awarded because high recycled content building materials are used throughout.
- One point is awarded because building materials are extracted, harvested, and manufactured within 500 miles of site.

Indoor Environmental Quality

Indoor environmental quality credits promote better indoor air quality and access to daylight and views. In order to qualify for points in this category, the site must design outside air to meet/exceed ASHRAE 62.1-2004 and adopt no smoking policy within 25' of the building. The following summarize all eight points the Multi-Use High Rise was awarded due to indoor environment quality:

- One point is awarded because the HVAC system is protected during construction and absorptive materials are properly stored.
- One point is awarded because low VOC adhesives and sealants are used.
- One point is awarded because low VOC interior paints, stains, varnishes, and coatings are used.
- One point is awarded because only CRI IAQ Green label plus certified carpets are used for all carpets, with low VOC adhesives.
- One point is awarded because lighting controls are provided for 90% of building occupants and for all shared use spaces.
- One point is awarded because comfort controls are provided for 50% of occupants and for all shared use spaces.
- One point is awarded because HVAC systems meet ASHRAE 55-2004.

- One point is awarded because design envelope and interior spaces view outside for 90% of occupied areas.

Innovative & Design Process

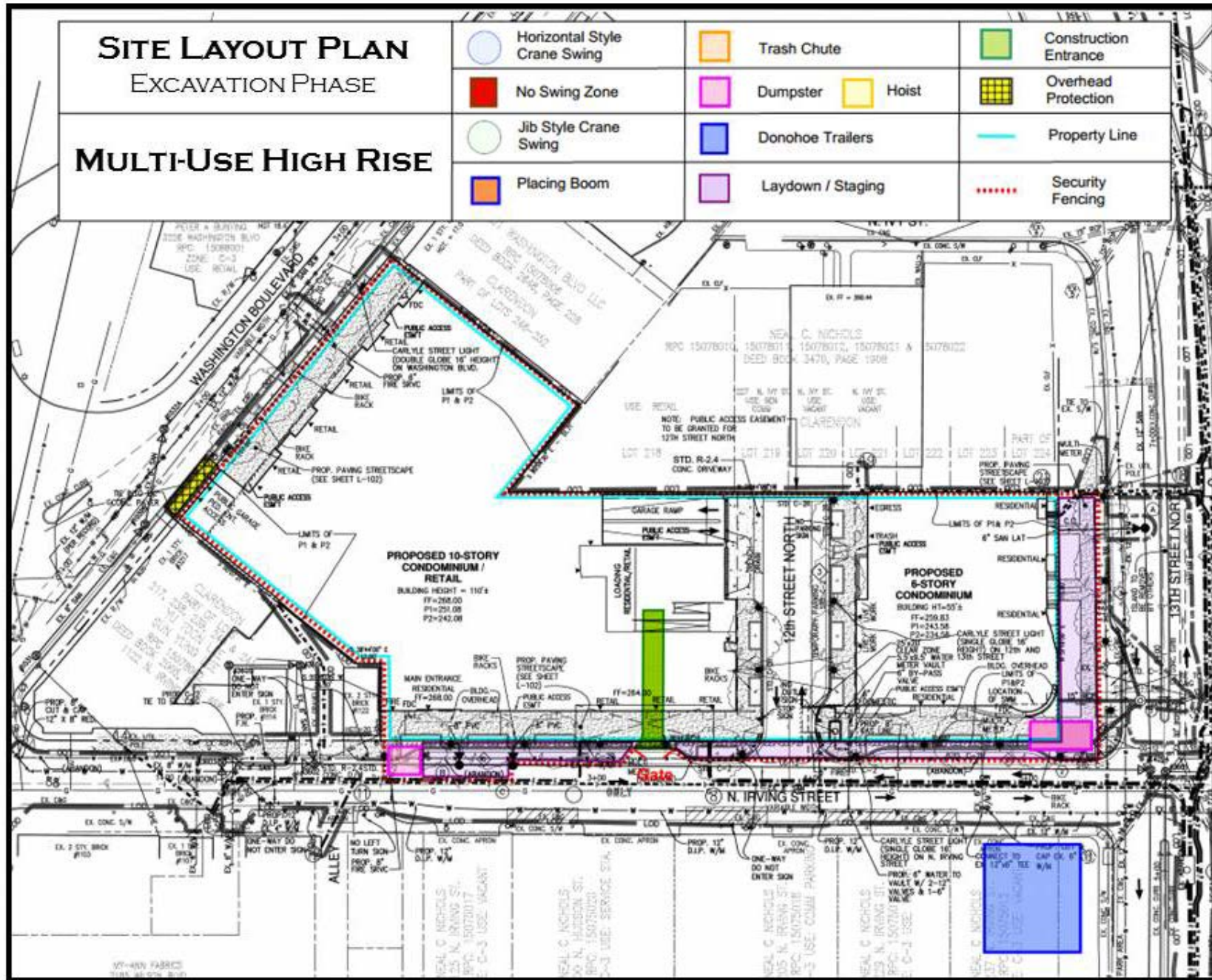
Innovative in design is a bonus category that addresses sustainable building expertise as well as design measures not covered in the five LEED credit categories. The following summarize all five points the Multi-Use High Rise was awarded due to innovative design:

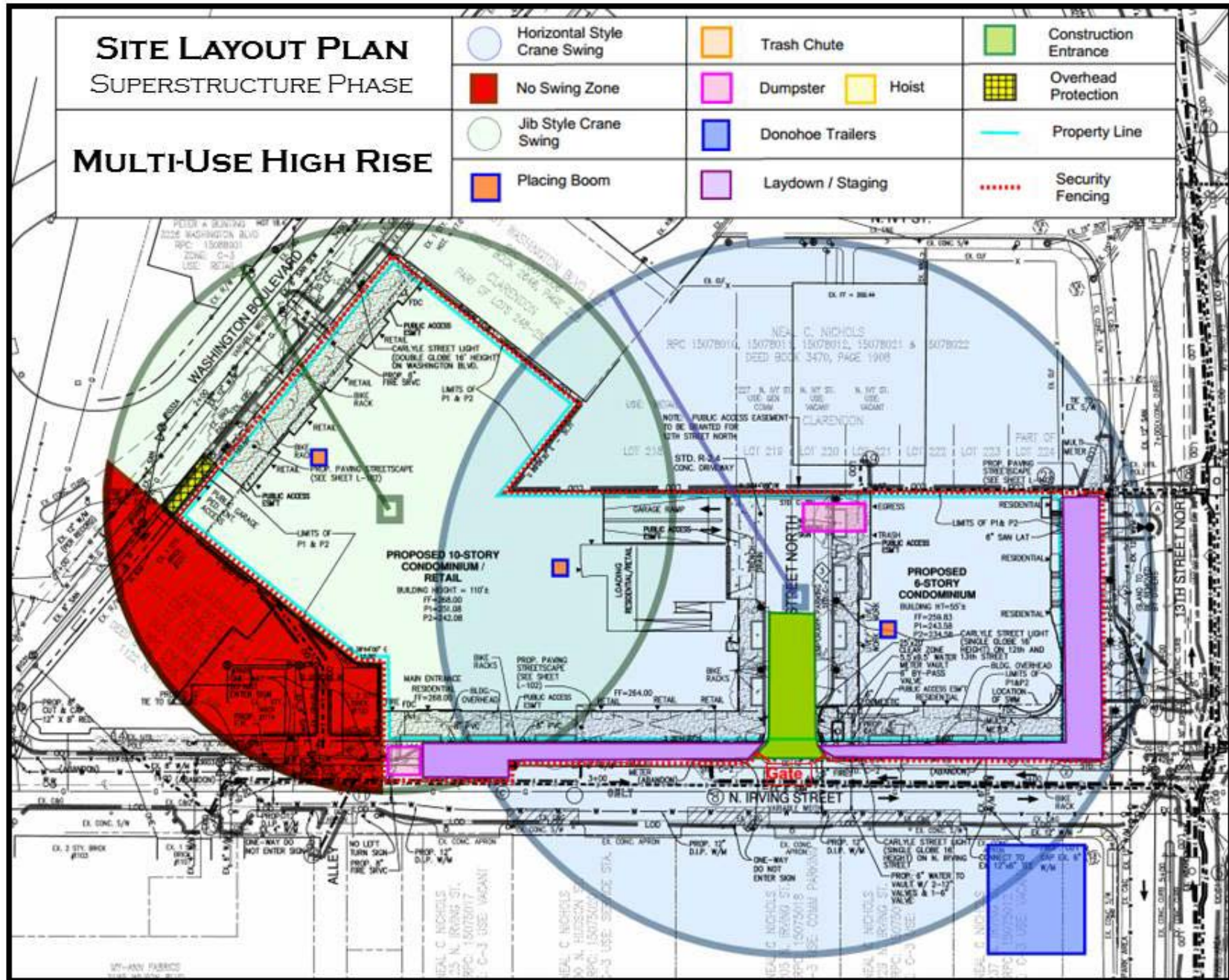
- One point is awarded because of signage locations.
- One point is awarded because of 100% underground parking provided.
- One point is awarded because of energy star lighting and appliances.
- One point is awarded because low mercury lamps in exterior and interior fluorescent lamps are used.
- One point is awarded because a LEED AP consultant is used.

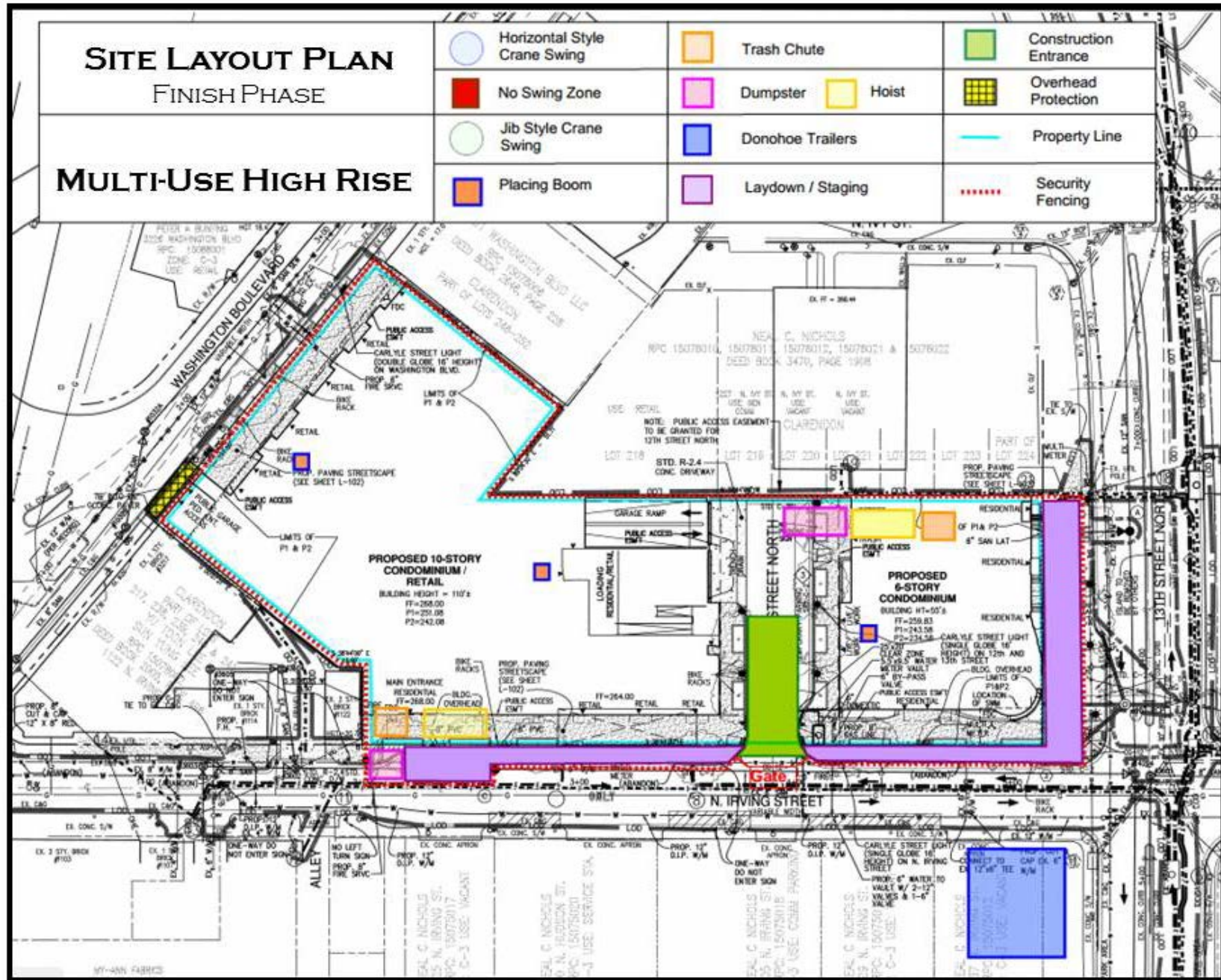
APPENDIX A: SITE LAYOUT

The following items are found in Appendix A: Site Layout:

- Excavation Phase Site Layout
- Superstructure Phase Site Layout
- Finish Phase Site Layout







MULTI-USE HIGH RISE

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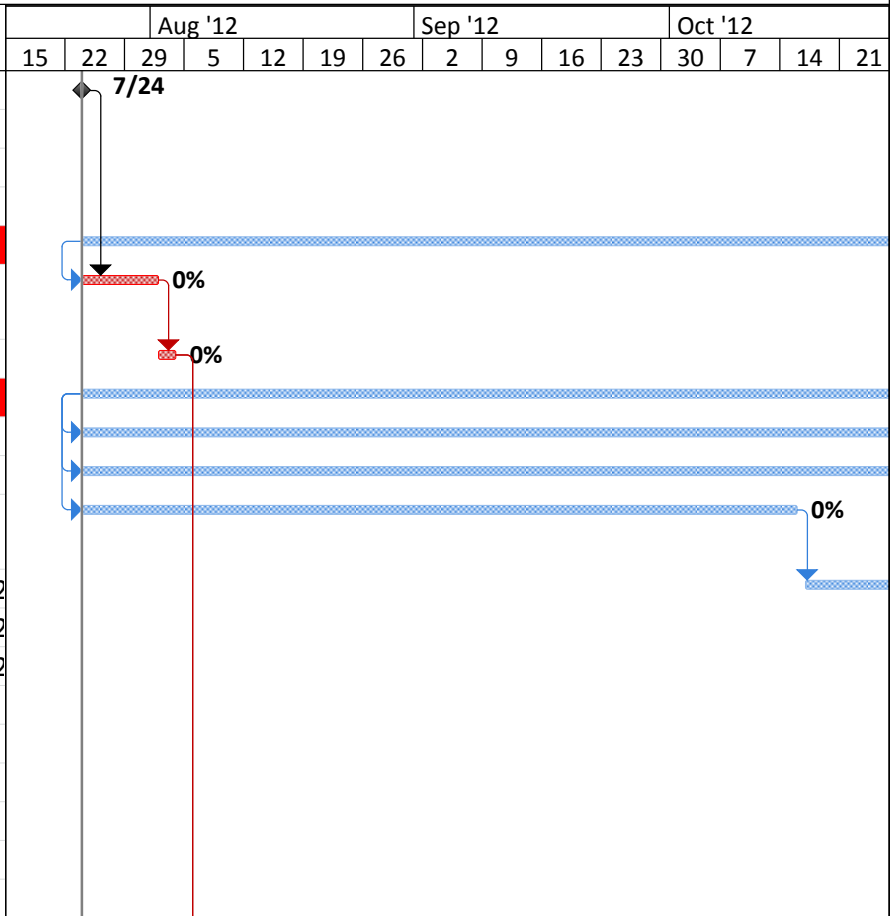
APPENDIX B: DETAILED PROJECT SCHEDULE

The following items are found in Appendix B: Detailed Project Schedule:

- Detailed Project Schedule

Detailed Schedule

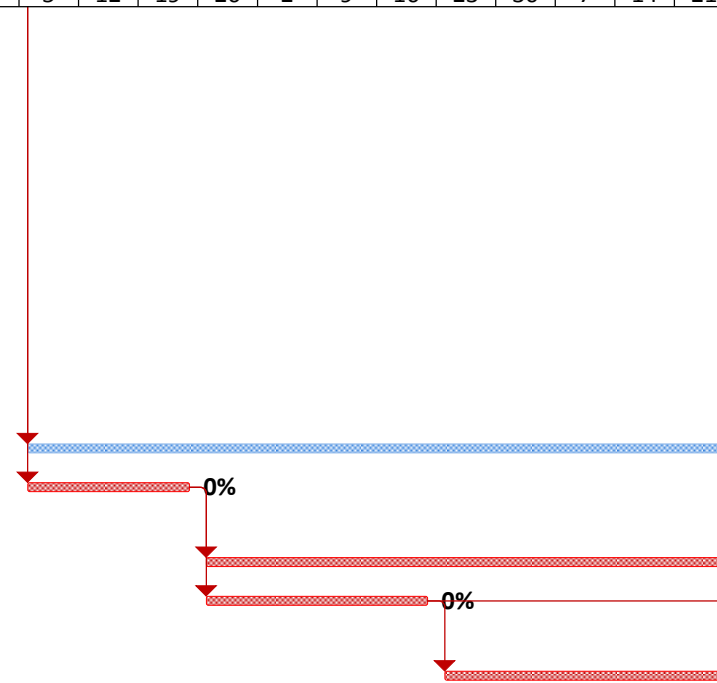
ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
1	Notice To Proceed	0 days	Tue 7/24/12															
2	Substantial Completion	0 days	Tue 7/29/14															
3	Final Punchlist	25 days	Wed 6/25/14															
4	Final Completion	0 days	Tue 7/29/14															
5	PRECONSTRUCTION	110 days	Tue 7/24/12															
6	3rd Party Critical Structures Meeting	7 days	Tue 7/24/12															
7	Sheeting/Shoring Permit	2 days	Thu 8/2/12															
8	Procurement	277 days	Tue 7/24/12															
9	Procurement	175 days	Tue 7/24/12															
10	MEP Coordination	277 days	Tue 7/24/12															
11	Award MEP Contracts/Begin Coordination	60 days	Tue 7/24/12															
12	MEP Coord: Ground FL	20 days	Wed 10/17/12															
13	F/D Materials: Ground FL	10 days	Wed 11/14/12															
14	MEP Coord: 2nd FL	20 days	Wed 11/14/12															
15	F/D Materials: 2nd FL	10 days	Fri 12/14/12															
16	MEP Coord: 3rd FL	20 days	Fri 12/14/12															
17	F/D Materials:3rd FL	10 days	Tue 1/15/13															
18	MEP Coord: 4th FL	20 days	Tue 1/15/13															
19	F/D Materials:4th FL	10 days	Tue 2/12/13															
20	MEP Coord: 5th FL	20 days	Tue 2/12/13															



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12			
				15	22	29	5	12	19	26	2	9	16	23	30	7	14
21	F/D Materials: 5th FL	10 days	Tue 3/12/13														
22	MEP Coord: 6th FL	20 days	Tue 3/12/13														
23	F/D Materials: 6th FL	10 days	Tue 4/9/13														
24	MEP Coord: 7th FL	20 days	Tue 4/9/13														
25	F/D Materials: 7th FL	10 days	Tue 5/7/13														
26	MEP Coord: 8th FL	20 days	Tue 5/7/13														
27	F/D Materials: 8th FL	10 days	Wed 6/5/13														
28	MEP Coord: 9th FL	20 days	Wed 6/5/13														
29	F/D Materials: 9th FL	10 days	Wed 7/3/13														
30	MEP Coord: 10th FL	20 days	Wed 7/3/13														
31	F/D Materials: 10th FL	10 days	Thu 8/1/13														
32	INITIAL SITEWORK	120 days	Mon 8/6/12														
33	Site Mobilization/Demolition	15 days	Mon 8/6/12														
34	Excavation	89 days	Mon 8/27/12														
35	Soldier Beams/Brackets/Piles/Caissons	20 days	Mon 8/27/12														
36	Cut/Lag to 1st Tier	33 days	Mon 9/24/12														
37	Cut/Lag to 2nd Tier	37 days	Wed 10/31/12														
38	Cut/Lag to Subgrade	31 days	Tue 11/27/12														
39	FOUNDATION & STRUCTURE	152 days	Fri 12/28/12														
40	GARAGE	109 days	Fri 12/28/12														



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
41	Level P2 SOG 1	30 days	Fri 12/28/12															
42	<i>Layout Foundadion</i>	2 days	Fri 12/28/12															
43	<i>FRP Tower Crane 1 Foundation</i>	5 days	Fri 12/28/12															
44	<i>Cure Tower Crane Foundation</i>	7 days	Mon 1/7/13															
45	<i>Erect Tower Crane 1</i>	5 days	Wed 1/16/13															
46	<i>FRP Walls</i>	10 days	Wed 1/23/13															
47	Level P2 SOG 2	3 days	Fri 2/8/13															
48	Level P2 SOG 3	5 days	Thu 2/14/13															
49	Level P2 SOG 4	5 days	Fri 2/22/13															
50	Level P2 SOG 5	3 days	Fri 3/1/13															
51	Level P2 SOG 6	7 days	Thu 3/7/13															
52	Level P2 SOG 7	18 days	Thu 3/21/13															
53	<i>FRP Walls</i>	5 days	Thu 3/21/13															
54	<i>Initial Backfill</i>	2 days	Thu 3/28/13															
55	<i>U/G Plumbing R/I</i>	4 days	Mon 4/1/13															
56	<i>U/G Electric R/I</i>	4 days	Mon 4/1/13															
57	<i>Stone Backfill</i>	2 days	Mon 4/8/13															
58	<i>Termite/Moisture Control</i>	1 day	Thu 4/11/13															
59	<i>Prep Slab</i>	3 days	Fri 4/12/13															
60	<i>Pour Slab</i>	1 day	Thu 4/18/13															

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Critical Progress		Baseline		External Tasks	
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Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
61	Level P1 SOD A-Ramp	46 days	Fri 3/8/13															
62	<i>Frame Deck</i>	4 days	Fri 3/8/13															
63	<i>Reinforce Deck</i>	3 days	Mon 3/18/13															
64	<i>Pour Deck</i>	1 day	Fri 3/22/13															
65	<i>FRP Columns/Walls</i>	4 days	Mon 3/25/13															
66	Ground FL SOD A-I	36 days	Mon 4/15/13															
67	BUILDING 1	99 days	Tue 5/14/13															
68	2nd FL SOD A-C	20 days	Tue 5/14/13															
69	<i>Frame Deck</i>	2 days	Tue 5/14/13															
70	<i>Inslab Electric R/I</i>	2 days	Thu 5/16/13															
71	<i>Inslab Plumbing R/I</i>	2 days	Thu 5/16/13															
72	<i>Reinforce Deck</i>	2 days	Mon 5/20/13															
73	<i>Pour Deck</i>	1 day	Wed 5/22/13															
74	<i>Cure Deck</i>	3 days	Thu 5/23/13															
75	<i>FRP Columns</i>	2 days	Fri 5/24/13															
76	3rd-Roof SOD A	74 days	Tue 6/4/13															
77	3rd FL-Roof SOD B	79 days	Tue 6/11/13															
78	BUILDING 2	51 days	Mon 5/20/13															
79	2nd FL-Roof SOD	51 days	Mon 5/20/13															
80	Enclosure	88 days	Tue 7/30/13															
81	BUILDING 1	250 days	Tue 7/30/13															
82	Ground FL	147 days	Tue 7/30/13															

Critical		Finish-only		Manual Summary	
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Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
83	Remove Reshores	2 days	Tue 7/30/13															
84	Install Masonry Angle	5 days	Thu 8/1/13															
85	Exterior Metal Framing	5 days	Thu 8/8/13															
86	Exterior Sheathing/Tyvec	5 days	Thu 8/15/13															
87	Set Window Receptors	5 days	Thu 8/22/13															
88	Install Scaffolding	5 days	Thu 8/29/13															
89	Masonry Veneer	8 days	Thu 9/5/13															
90	Exterior Glazing	5 days	Tue 9/17/13															
91	2nd FL-Roof	265 days	Tue 7/30/13															
92	BUILDING 2	93 days	Fri 6/28/13															
93	Ground-Roof	93 days	Fri 6/28/13															
94	ROUGH-IN	167 days	Fri 7/5/13															
95	GARAGE	167 days	Fri 7/5/13															
96	Level P2	167 days	Fri 7/5/13															
97	Level P1	117 days	Tue 7/16/13															
98	BUILDING 1	151 days	Tue 7/9/13															
99	Ground FL	71 days	Tue 7/9/13															
100	Layout Interior	2 days	Thu 7/11/13															
101	Frame Interior	5 days	Thu 7/18/13															
102	HTF Interior Priority Walls	5 days	Thu 7/25/13															
103	Mechanical Risers	5 days	Thu 7/25/13															
104	Pluming Risers	5 days	Thu 7/25/13															

Critical		Finish-only		Manual Summary	
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Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
105	<i>Sprinkler Risers</i>	5 days	Thu 7/25/13															
106	<i>Electrical Risers</i>	5 days	Thu 8/1/13															
107	<i>OH Mechanical R/I</i>	10 days	Thu 8/15/13															
108	<i>OH Plumbing R/I</i>	8 days	Thu 8/29/13															
109	<i>OH Sprinkler R/I</i>	8 days	Thu 8/29/13															
110	<i>OH Fire Alarm R/I</i>	8 days	Thu 8/29/13															
111	<i>OH Electrical R/I</i>	11 days	Thu 8/29/13															
112	2nd FL-10th FL	144 days	Thu 7/18/13															
113	BUILDING 2	122 days	Tue 7/9/13															
114	Ground-Roof	122 days	Tue 7/9/13															
115	FINISHES	244 days	Thu 7/18/13															
116	GARAGE	133 days	Thu 7/18/13															
117	Level P2	128 days	Thu 7/18/13															
118	<i>Install Doors & Hardware</i>	2 days	Thu 7/18/13															
119	<i>Prime & point Up</i>	4 days	Mon 7/22/13															
120	<i>Instal GRD's</i>	2 days	Fri 7/26/13															
121	<i>1st Finish Paint</i>	5 days	Thu 7/25/13															
122	<i>Install MEP Trim</i>	89 days	Mon 8/5/13															
123	<i>Stripping</i>	2 days	Fri 12/6/13															
124	<i>2nd Finish Paint</i>	3 days	Tue 12/24/13															
125	<i>Install Misc Accessories</i>	4 days	Fri 12/27/13															
126	<i>Signage</i>	3 days	Fri 1/3/14															

Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12			
				15	22	29	5	12	19	26	2	9	16	23	30	7	14
127	<i>Touch Up Paint</i>	4 days	Wed 1/8/14														
128	<i>Final Clean</i>	5 days	Tue 1/14/14														
129	Level P1	124 days	Thu 7/25/13														
130	BUILDING 1	179 days	Thu 10/17/13														
131	Ground FL (Lobby/Fitness)	104 days	Thu 10/17/13														
132	<i>Insulation</i>	5 days	Thu 10/17/13														
133	<i>Insulation Inspection</i>	2 days	Thu 10/24/13														
134	<i>Hang Drywall</i>	5 days	Mon 10/28/13														
135	<i>Finish Drywall</i>	5 days	Mon 11/4/13														
136	<i>Sand/PointUp Drywall</i>	3 days	Mon 11/11/13														
137	<i>Knock Down Ceiling Finish</i>	3 days	Thu 11/14/13														
138	<i>Prime & 1st Coat Paint</i>	3 days	Tue 11/19/13														
139	<i>Interior Doors/Trim</i>	7 days	Fri 11/22/13														
140	<i>Set/Connect HVAC</i>	7 days	Fri 11/22/13														
141	<i>Interior Store Front</i>	9 days	Fri 11/22/13														
142	<i>Plumbing Fixtures/Small Appliances</i>	5 days	Thu 12/5/13														
143	<i>MEP Trimout</i>	13 days	Thu 12/5/13														
144	<i>2nd Coat Paint</i>	6 days	Tue 12/24/13														
145	<i>FirePlace</i>	6 days	Wed 1/1/14														
146	<i>Water Feature</i>	6 days	Wed 1/1/14														
147	<i>Stone Walls</i>	16 days	Wed 1/1/14														

Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
148	Rough Clean	3 days	Thu 1/23/14															
149	Athletic Flooring	5 days	Tue 1/28/14															
150	Carpet Flooring	3 days	Tue 2/4/14															
151	DCC QC Inspection / Punchout	7 days	Fri 2/7/14															
152	Final Clean - Turnover	18 days	Tue 2/18/14															
153	2nd FL	101 days	Fri 11/22/13															
154	Insulation	3 days	Fri 11/22/13															
155	Insulation Inspection	4 days	Wed 11/27/13															
156	Hang Drywall	5 days	Tue 12/3/13															
157	Finish Drywall	5 days	Tue 12/10/13															
158	Sand/PointUp Drywall	3 days	Tue 12/17/13															
159	Knock Down Ceiling Finish	3 days	Fri 12/20/13															
160	Prime & 1st Coat Paint	3 days	Thu 12/26/13															
161	Ceramic Tile	6 days	Tue 12/31/13															
162	Interior Doors/Trim	6 days	Tue 12/31/13															
163	Set/Connect HVAC	6 days	Tue 12/31/13															
164	Set Vanities	5 days	Wed 1/8/14															
165	Kitchen Cabinets	5 days	Wed 1/15/14															
166	Countertops	5 days	Wed 1/22/14															
167	Plumbing Fixtures/Small Appliances	5 days	Wed 1/29/14															

Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

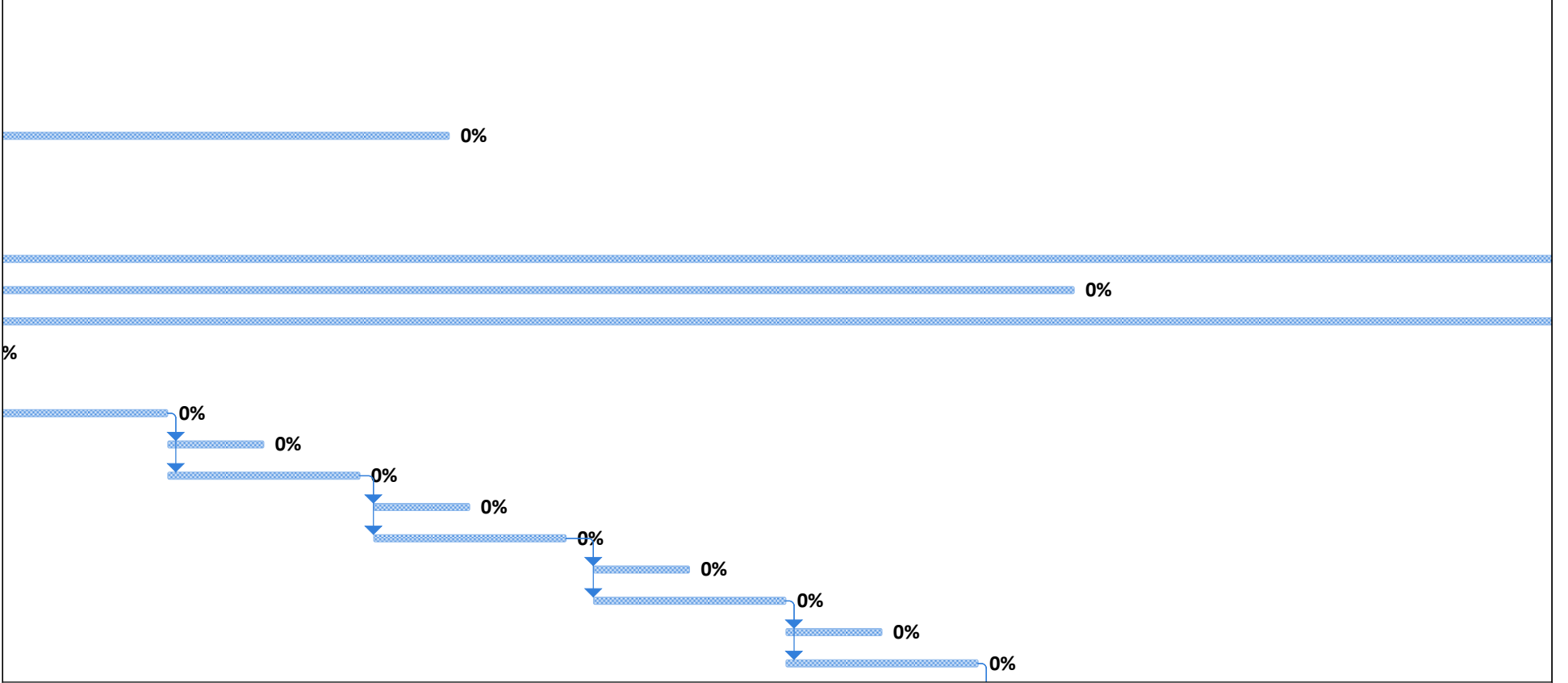
Detailed Schedule

ID	Task Name	Duration	Start	Aug '12					Sep '12					Oct '12				
				15	22	29	5	12	19	26	2	9	16	23	30	7	14	21
168	MEP Trimout	12 days	Wed 1/29/14															
169	Rough Clean	3 days	Fri 2/14/14															
170	2nd Coat Paint	5 days	Wed 2/19/14															
171	Vinyl Flooring	5 days	Wed 2/26/14															
172	Carpet Flooring	3 days	Wed 3/5/14															
173	DCC QC Inspection / Punchout	7 days	Mon 3/10/14															
174	Final Clean / Punchlist	13 days	Wed 3/19/14															
175	3rd FL - 10th FL	150 days	Fri 11/29/13															
176	Retail	25 days	Fri 7/19/13															
177	Interior Metal Framing	7 days	Thu 7/25/13															
178	Install Storefront	15 days	Thu 7/25/13															
179	Mechanical Fitout	5 days	Thu 8/15/13															
180	Electrical R/I	7 days	Thu 8/22/13															
181	Electrical Trim	5 days	Mon 9/2/13															
182	Owner Walk	2 days	Mon 9/9/13															
183	BUILDING 2	133 days	Fri 11/29/13															
184	Ground FL - Roof	133 days	Fri 11/29/13															
185	COMMISSIONING/CLOSEOUT	201 days	Tue 10/1/13															
186	Building 1	156 days	Tue 12/3/13															
187	Building 2	153 days	Tue 10/1/13															

Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
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Start-only		Summary		Deadline	

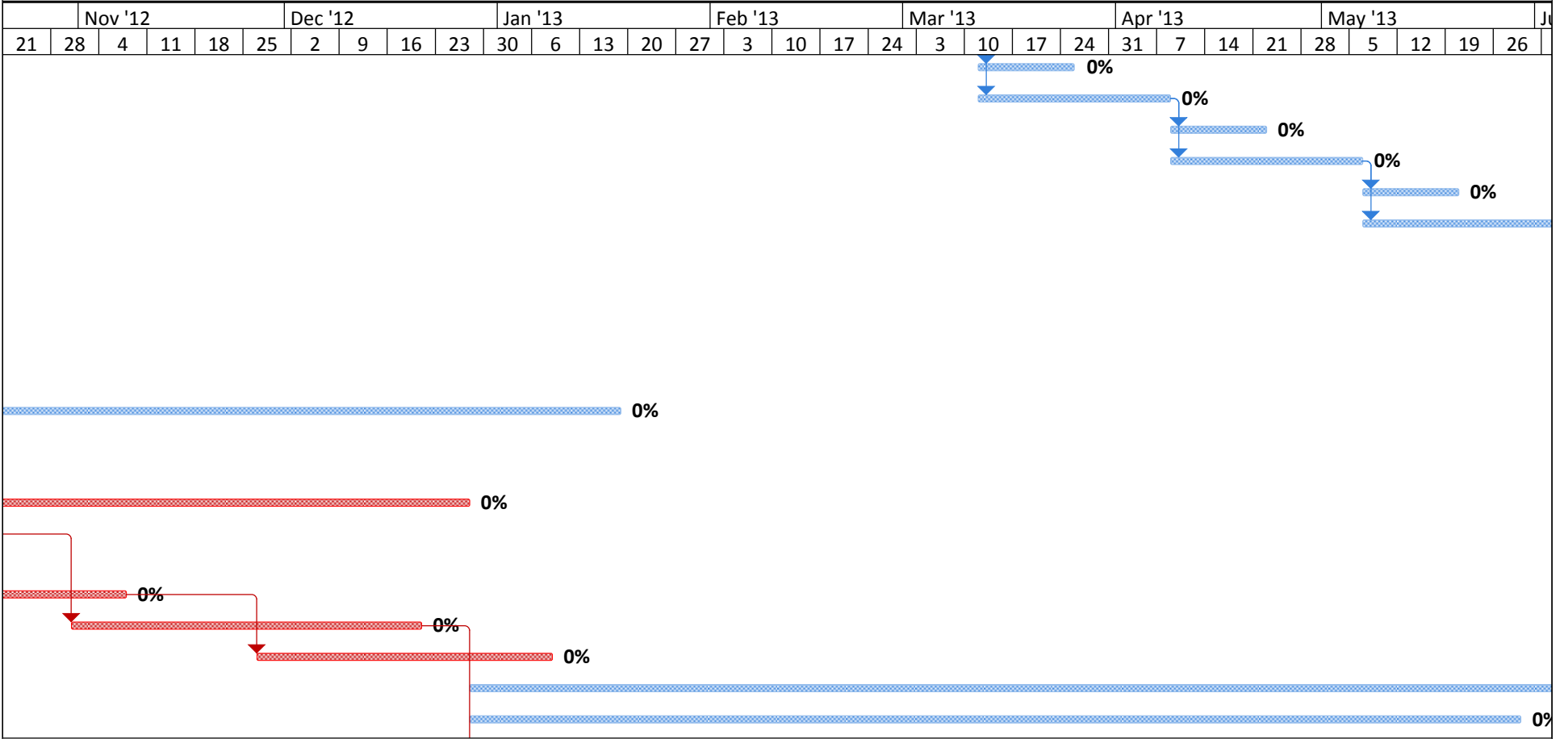
Detailed Schedule

Nov '12				Dec '12					Jan '13					Feb '13					Mar '13					Apr '13				May '13				J
21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	5	12	19	26	



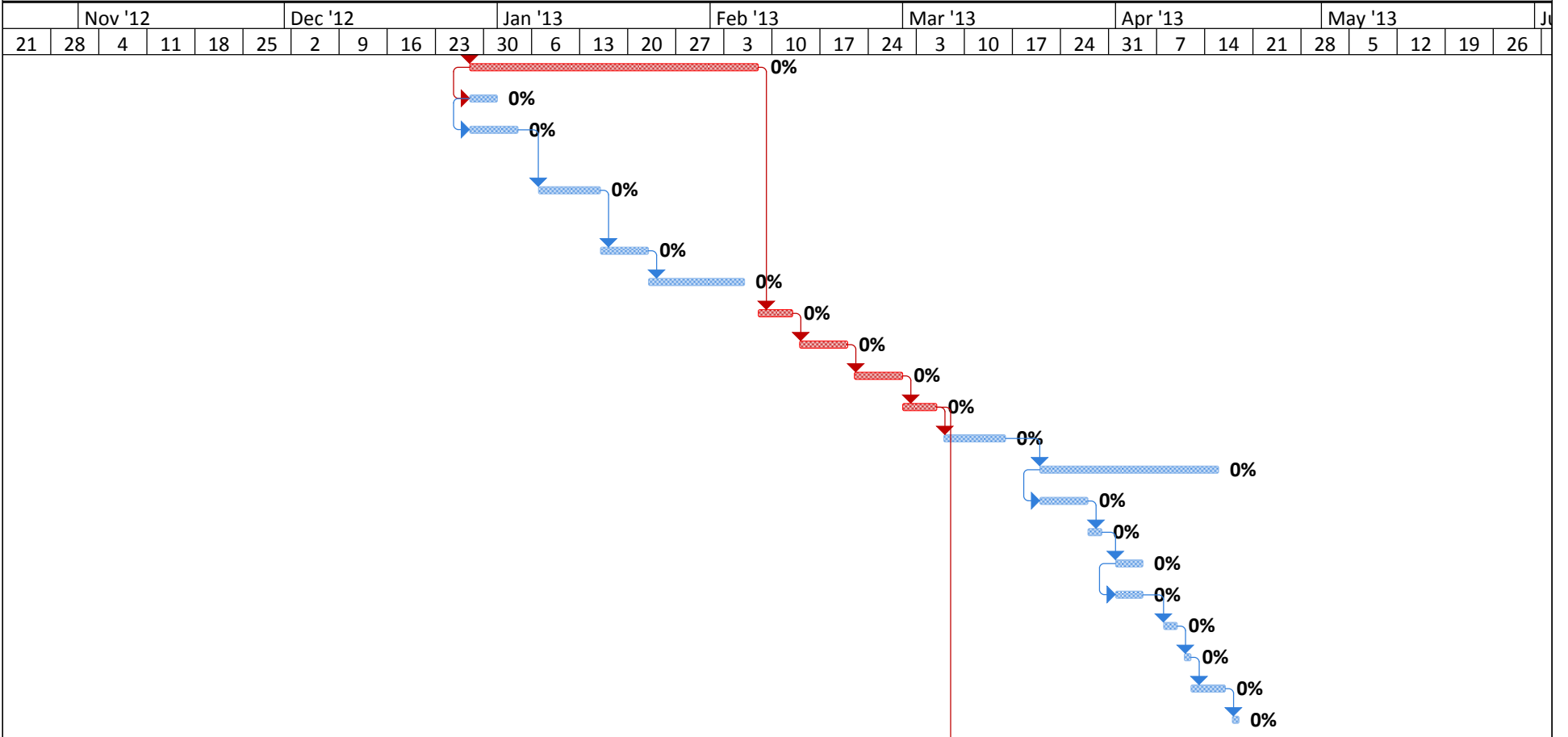
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Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



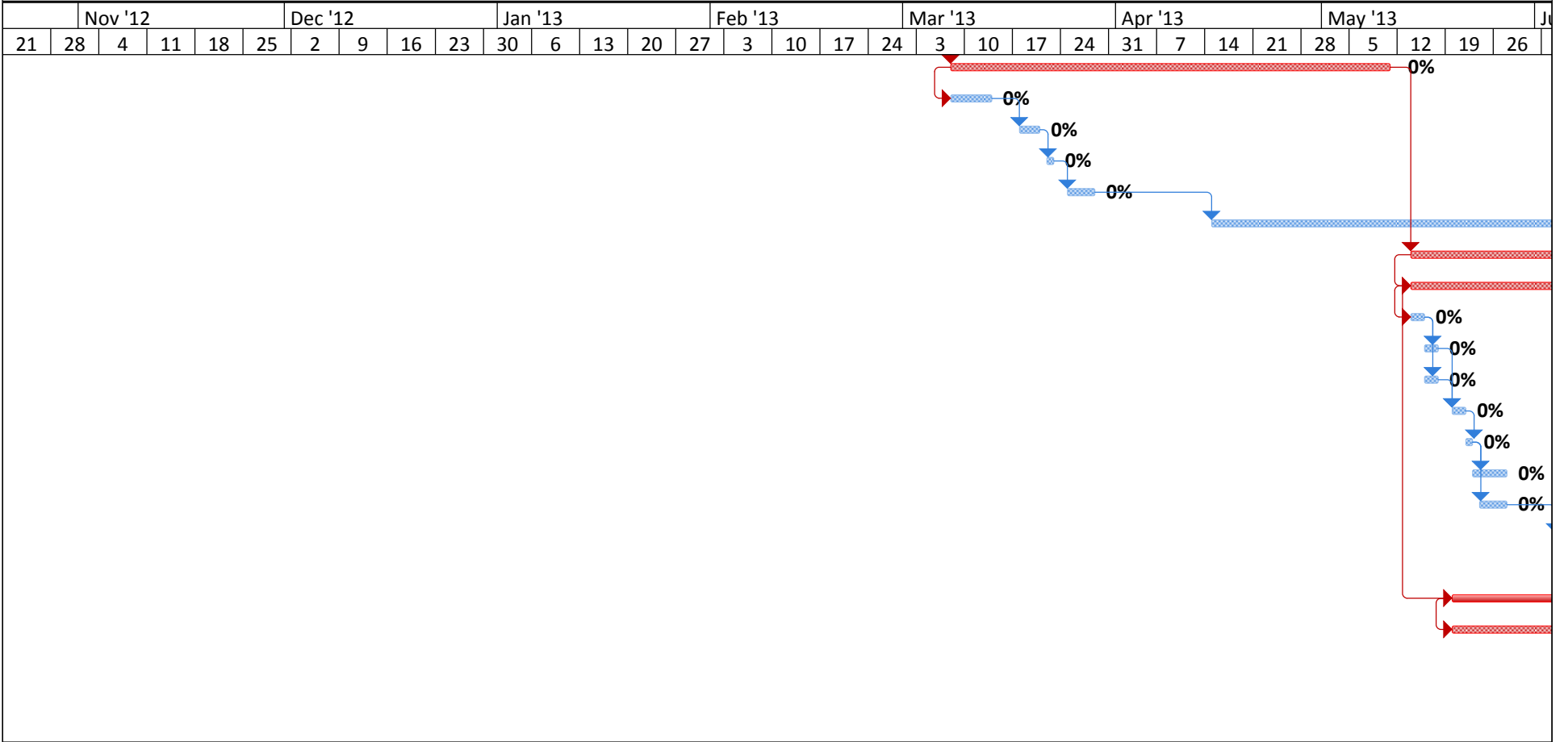
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Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
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Detailed Schedule



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
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Detailed Schedule



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
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Detailed Schedule

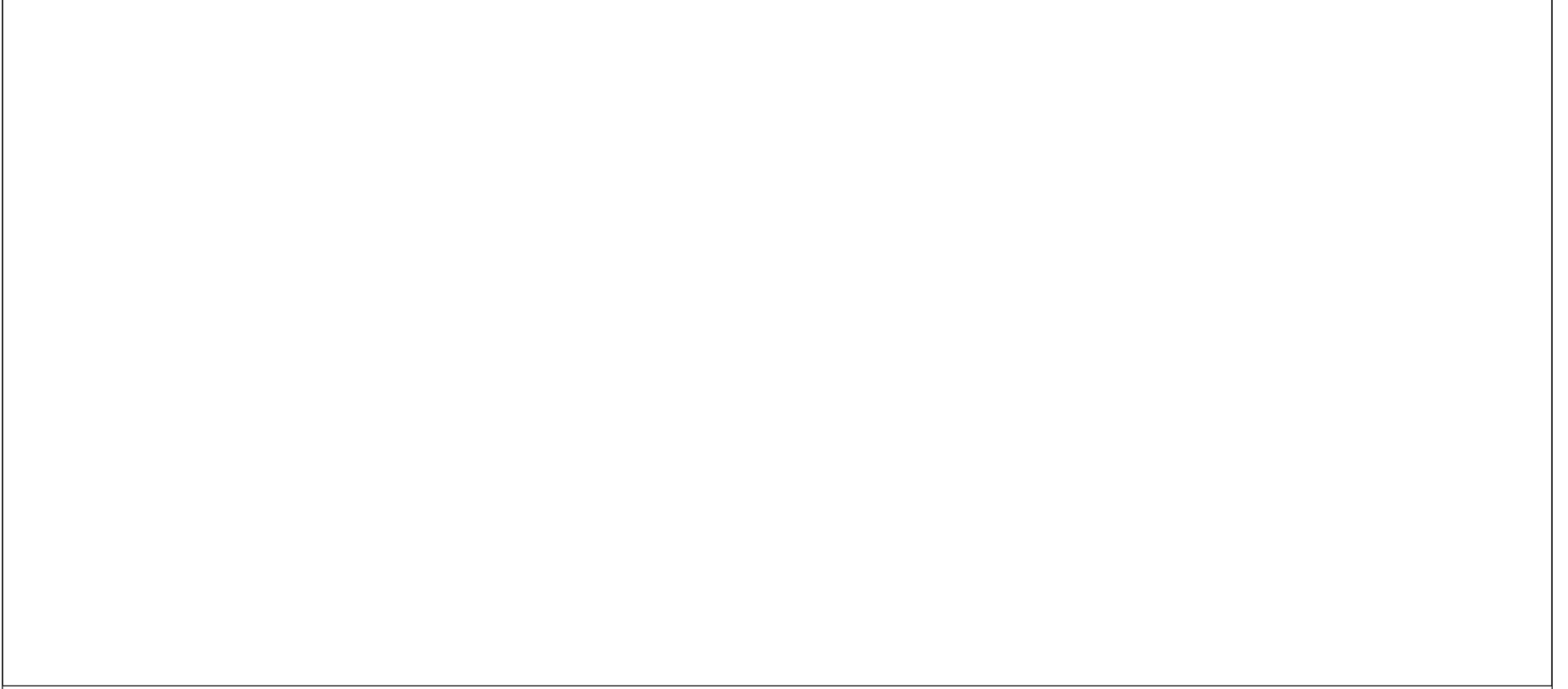
Nov '12				Dec '12				Jan '13				Feb '13				Mar '13				Apr '13				May '13				J				
21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	5	12	19	26	



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

Nov '12				Dec '12				Jan '13				Feb '13				Mar '13				Apr '13				May '13				J				
21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	5	12	19	26	



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
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Detailed Schedule

Nov '12				Dec '12				Jan '13				Feb '13				Mar '13				Apr '13				May '13				J				
21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	5	12	19	26	



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Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

Nov '12				Dec '12				Jan '13				Feb '13				Mar '13				Apr '13				May '13				J				
21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	5	12	19	26	



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

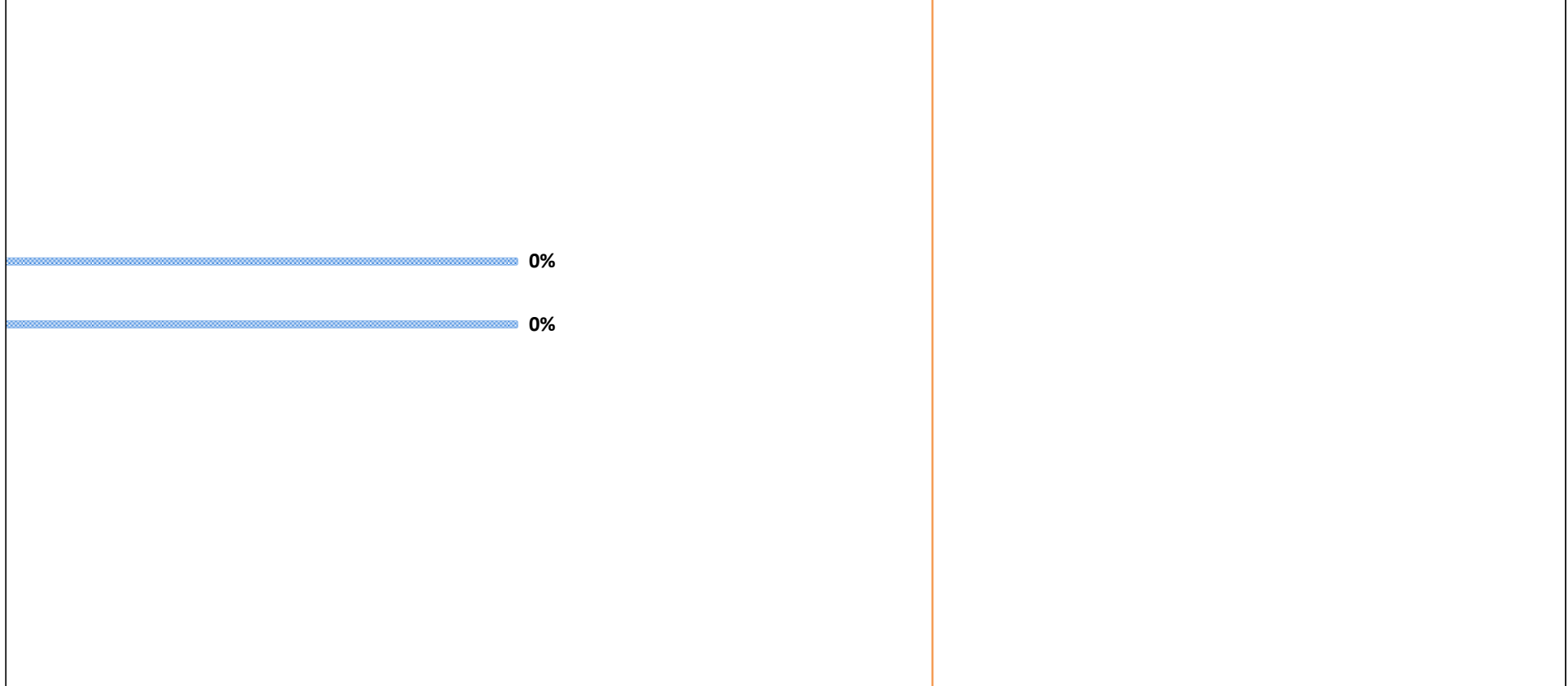
Nov '12			Dec '12				Jan '13				Feb '13				Mar '13				Apr '13				May '13				J					
21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	5	12	19	26	



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
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Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

Jun '13				Jul '13				Aug '13				Sep '13				Oct '13				Nov '13				Dec '13				Jan '14			
2	9	16	23	30	7	14	21	28	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
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Detailed Schedule

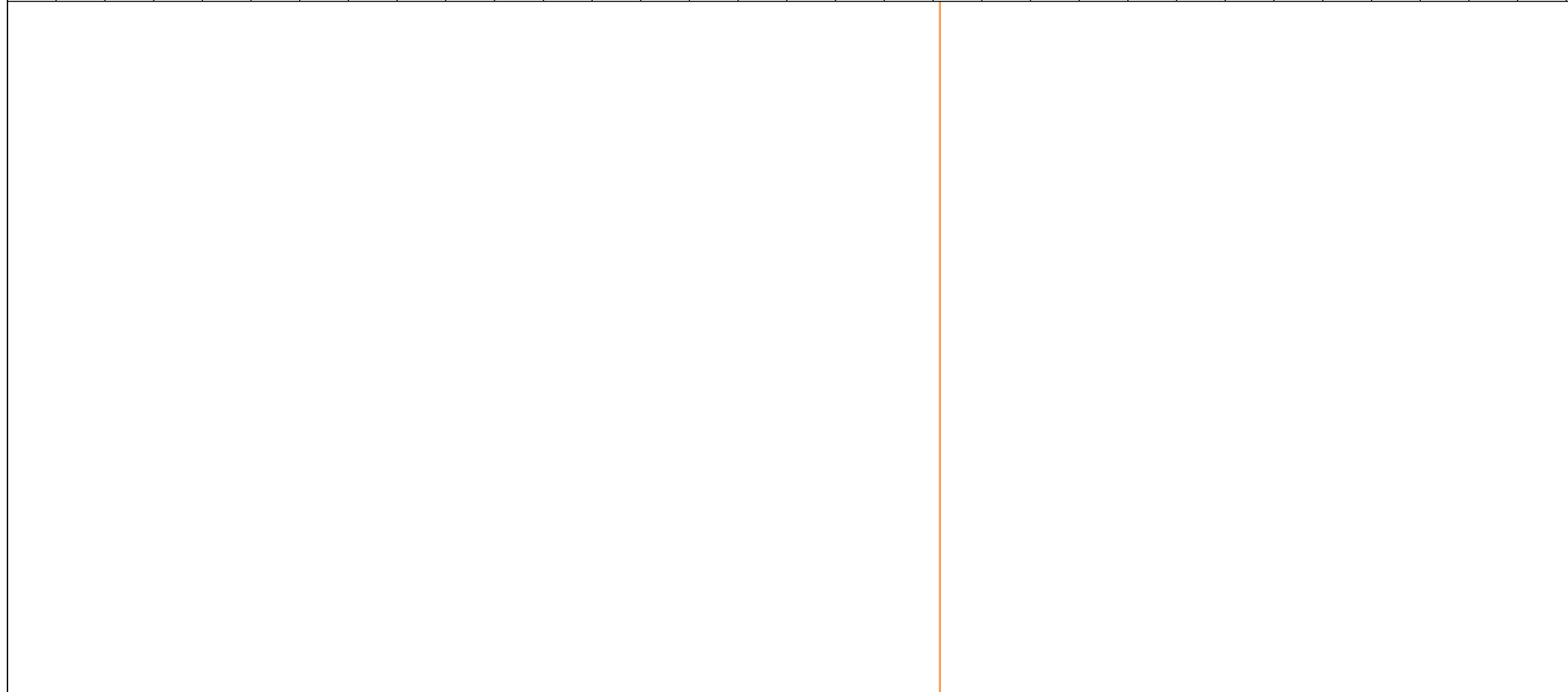
Jun '13				Jul '13				Aug '13				Sep '13				Oct '13				Nov '13				Dec '13				Jan '14			
2	9	16	23	30	7	14	21	28	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

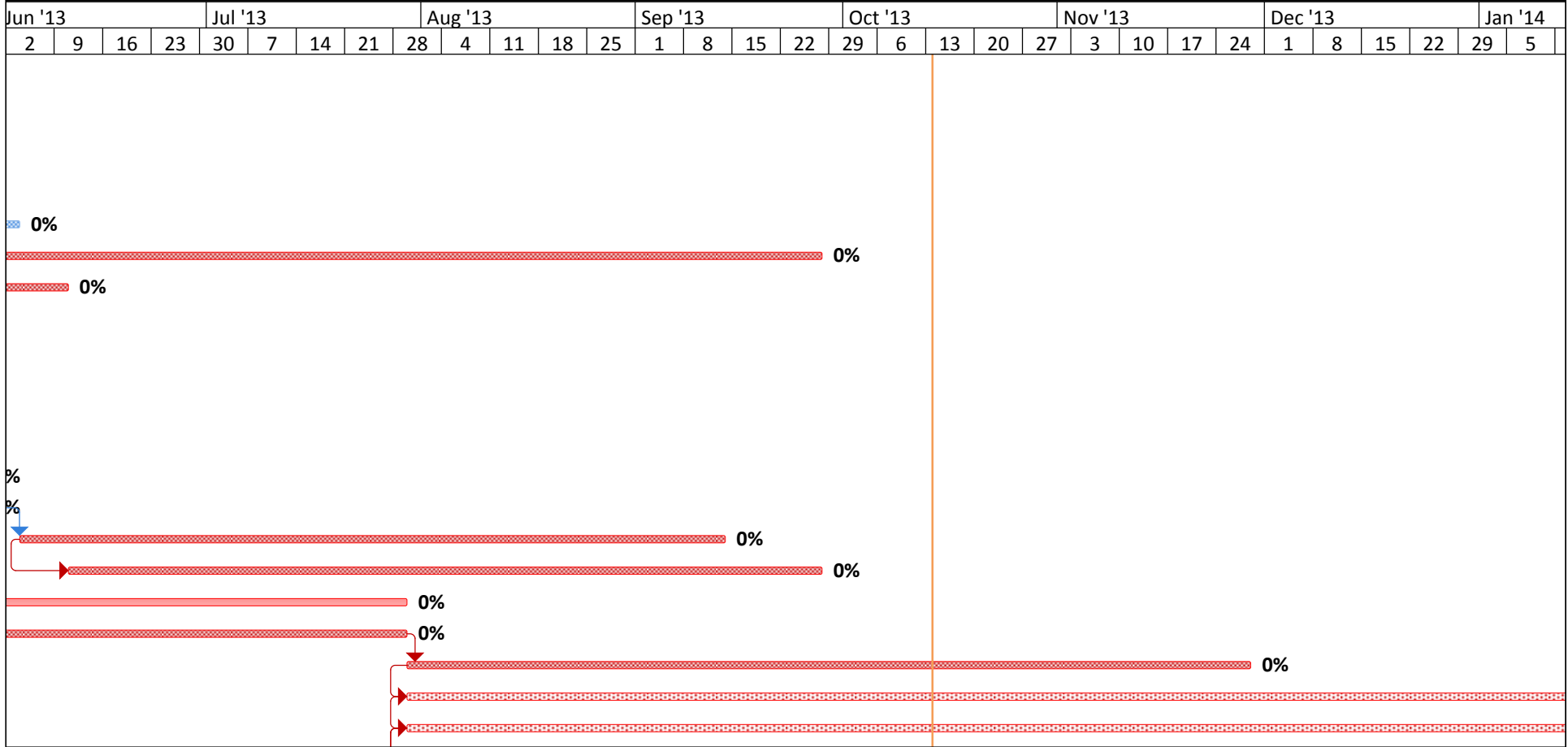
Detailed Schedule

Jun '13				Jul '13				Aug '13				Sep '13				Oct '13				Nov '13				Dec '13				Jan '14			
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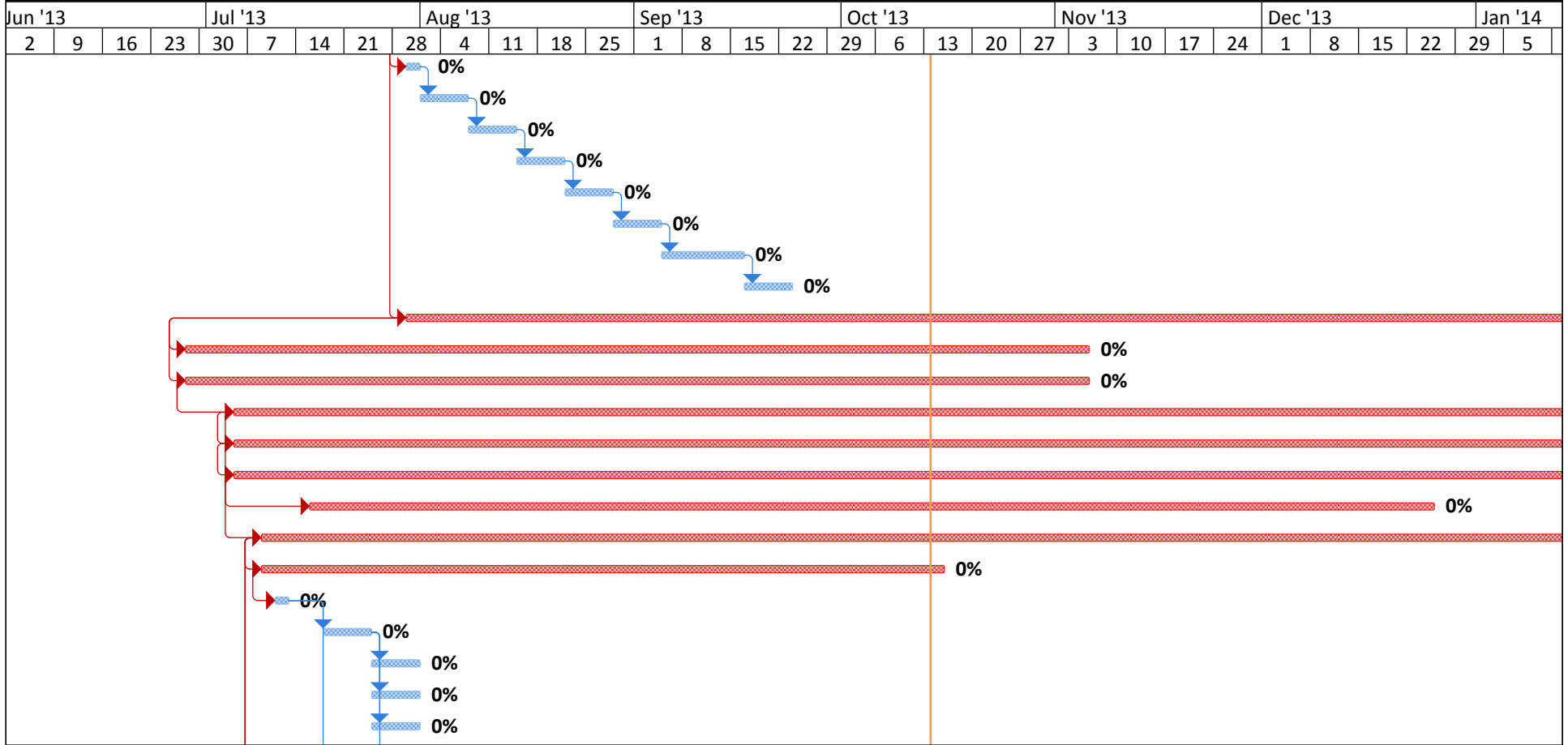
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Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



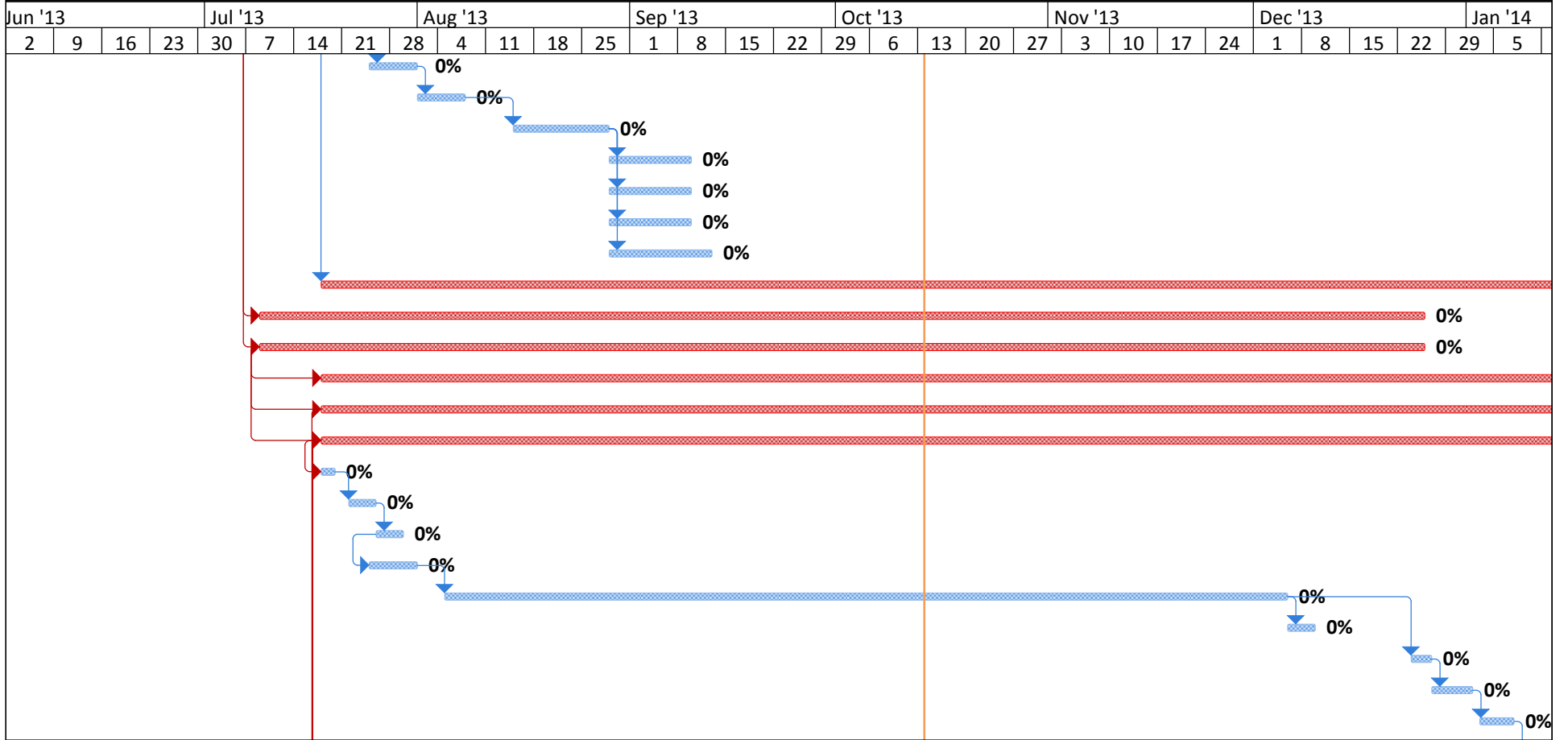
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Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



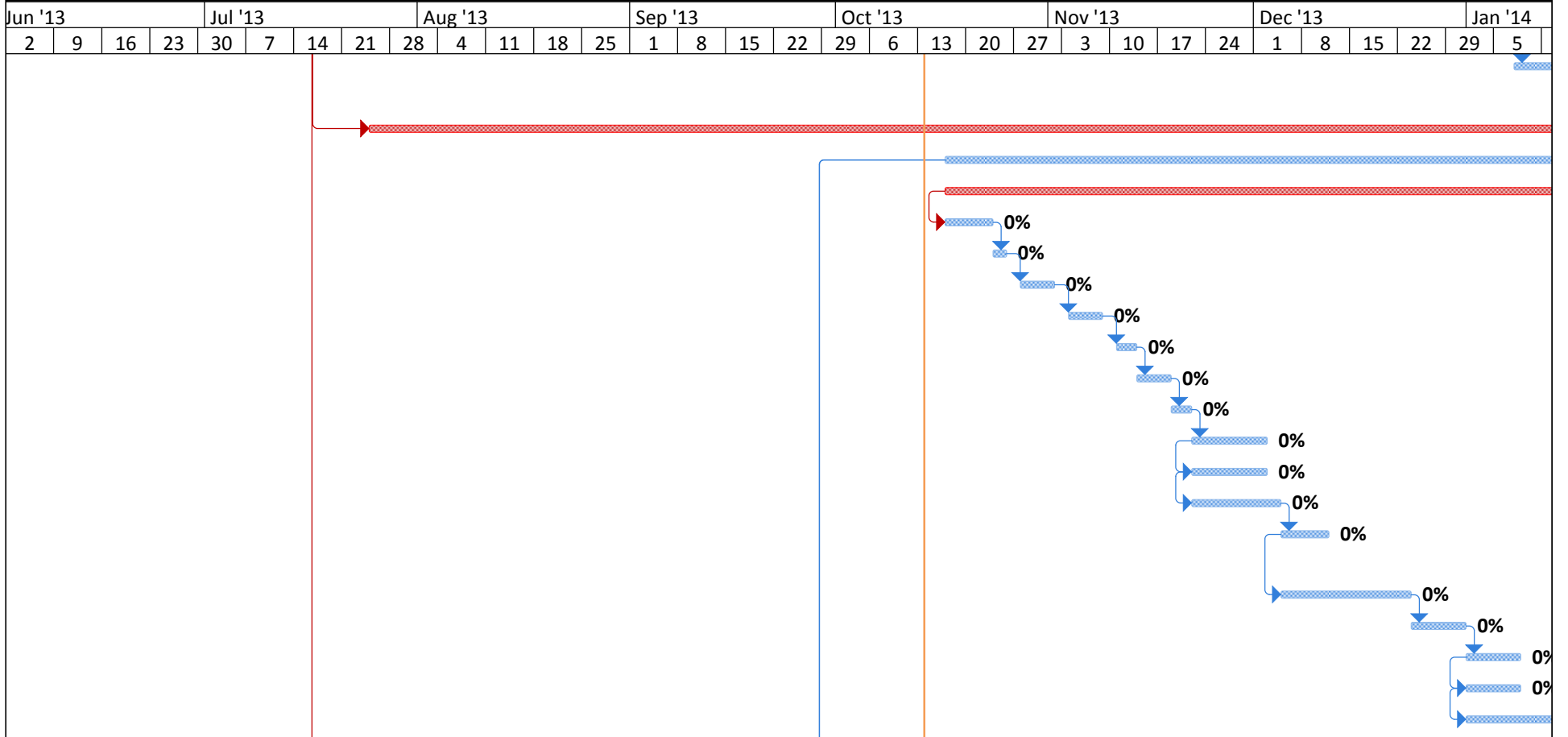
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Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



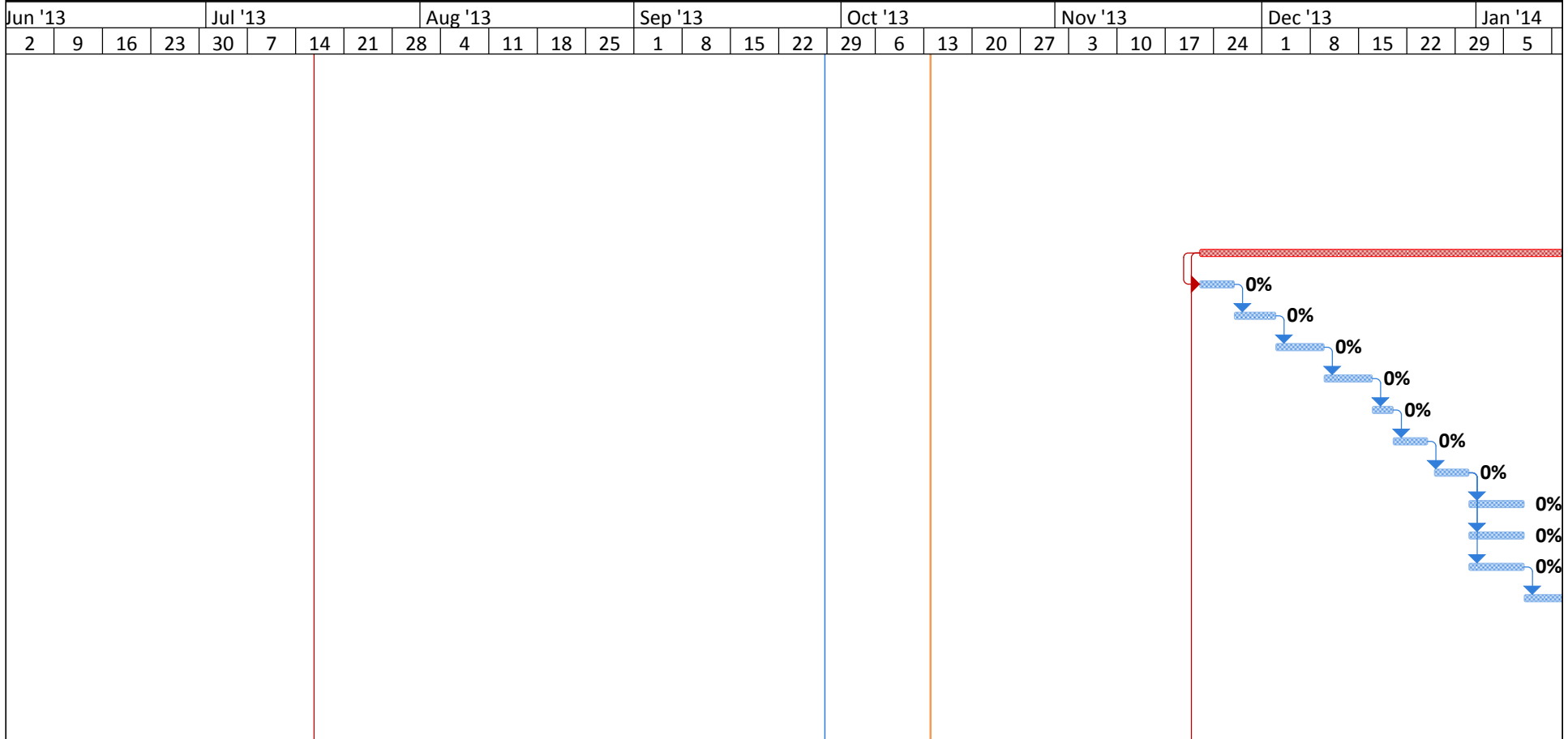
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Start-only		Summary		Deadline	

Detailed Schedule



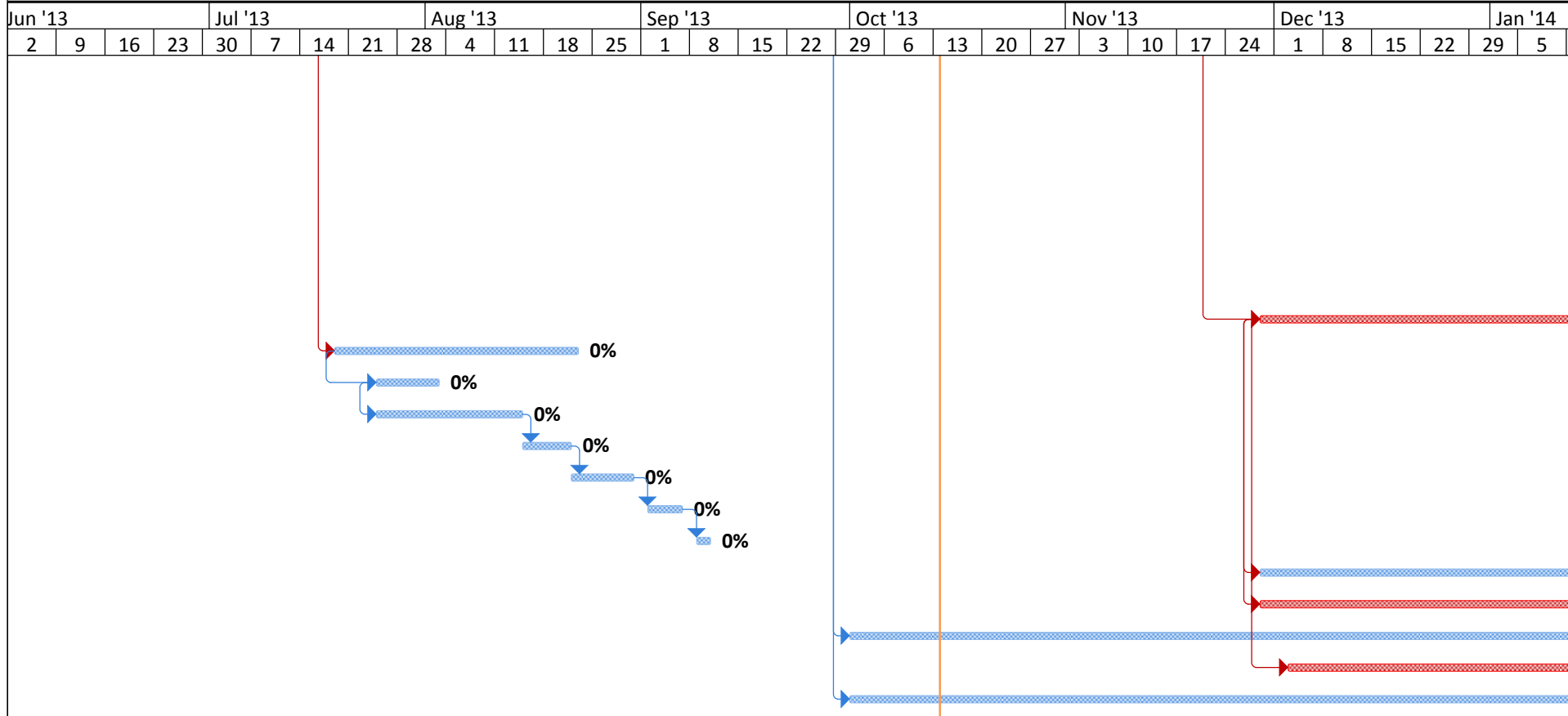
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Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
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Start-only		Summary		Deadline	

Detailed Schedule















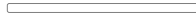









			Feb '14				Mar '14				Apr '14				May '14				Jun '14				Jul '14				Aug '14				
12	19	26	2	9	16	23	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
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Start-only		Summary		Deadline	















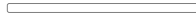









Detailed Schedule

Feb '14			Mar '14				Apr '14				May '14				Jun '14				Jul '14				Aug '14								
12	19	26	2	9	16	23	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17

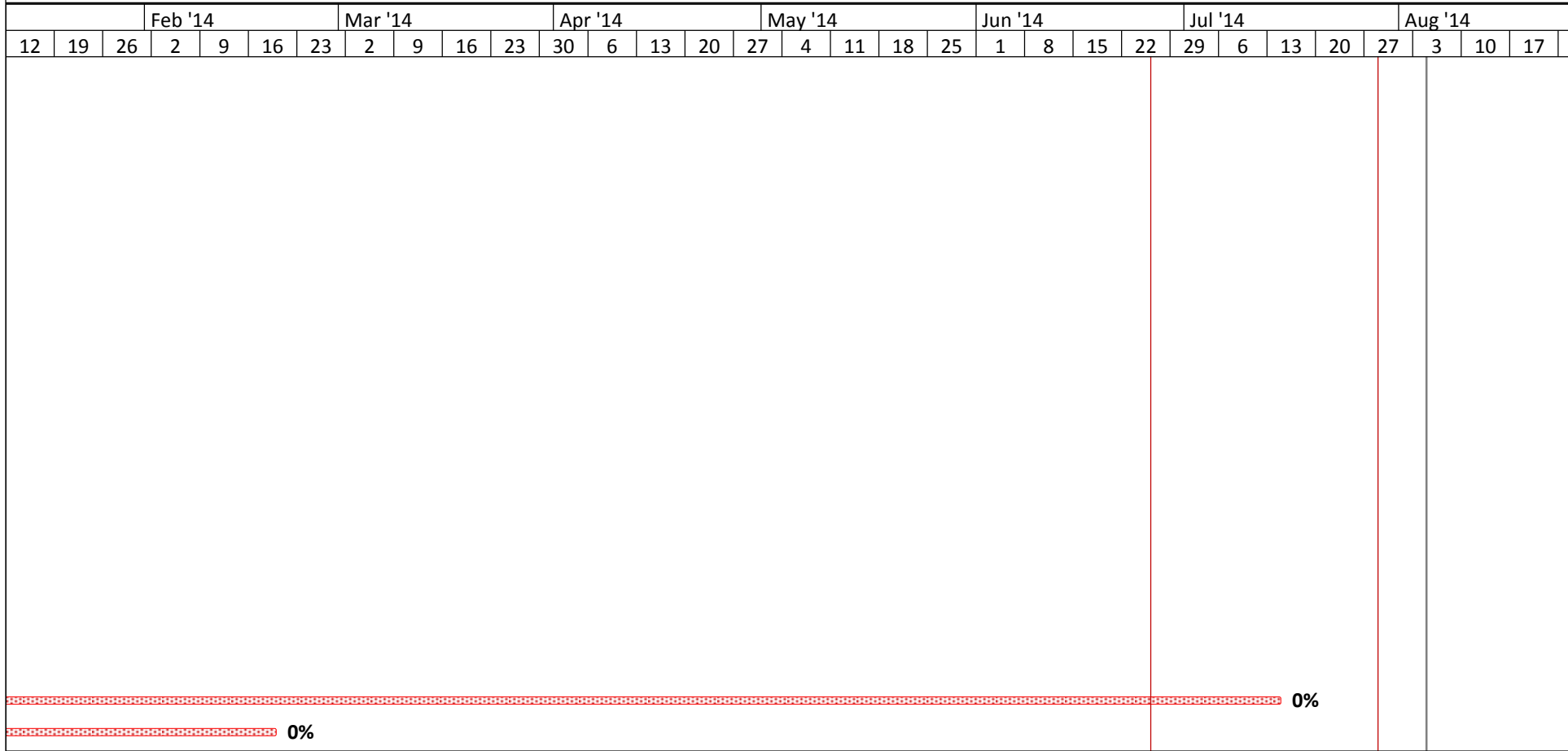
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Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule

Feb '14			Mar '14				Apr '14				May '14				Jun '14				Jul '14				Aug '14								
12	19	26	2	9	16	23	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17

Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



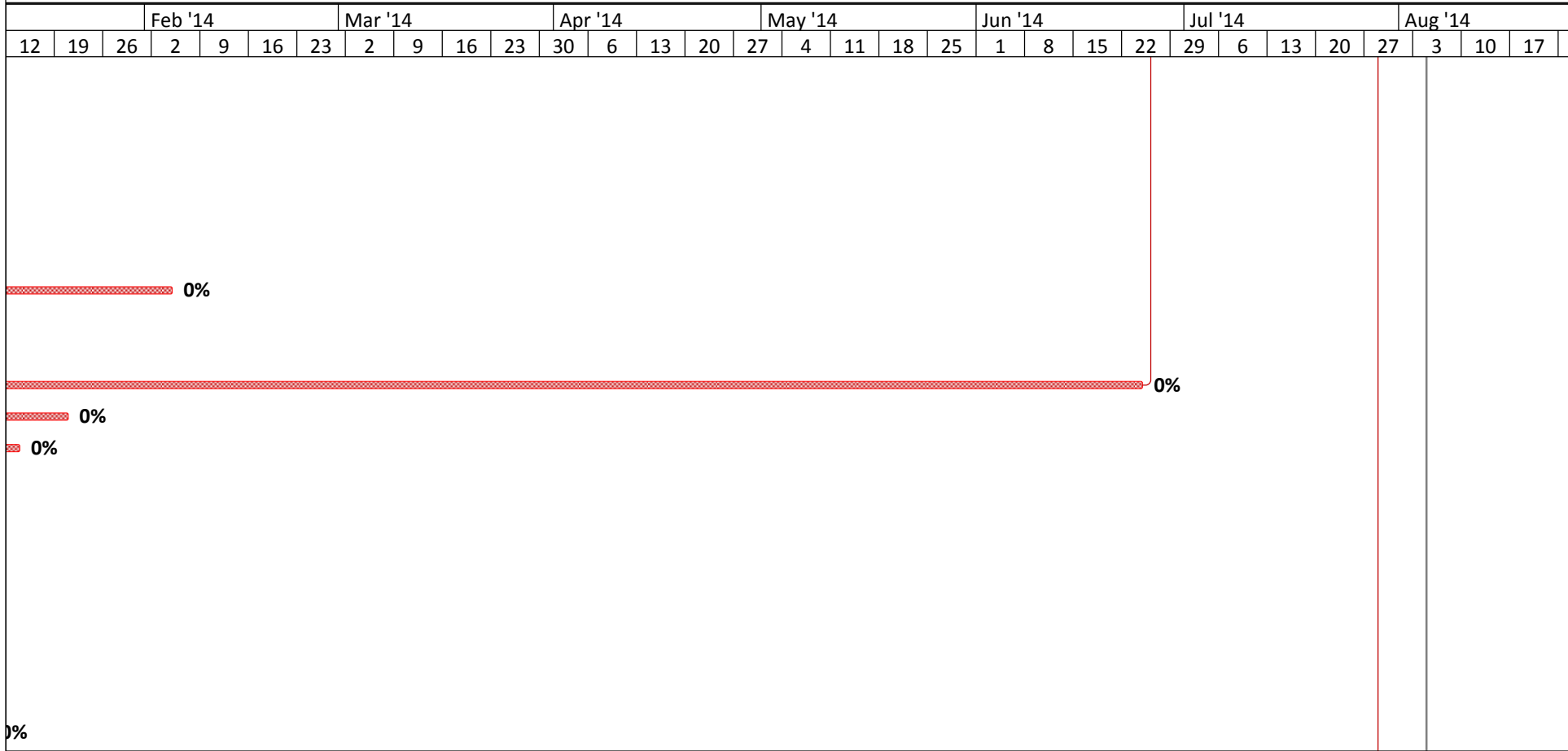
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



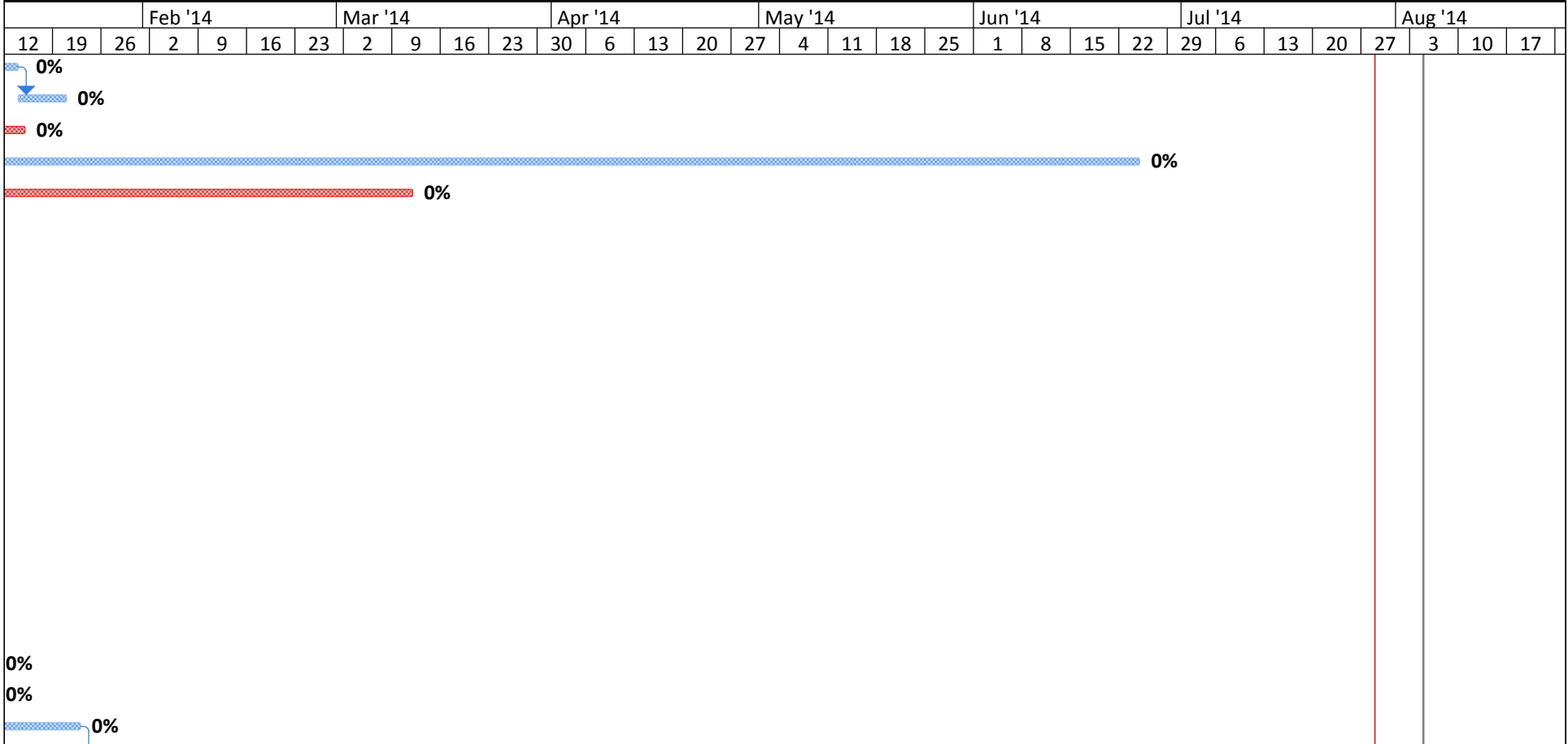
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Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



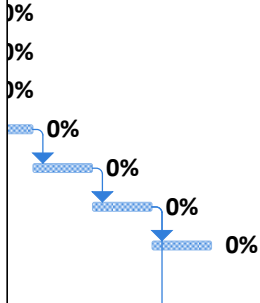
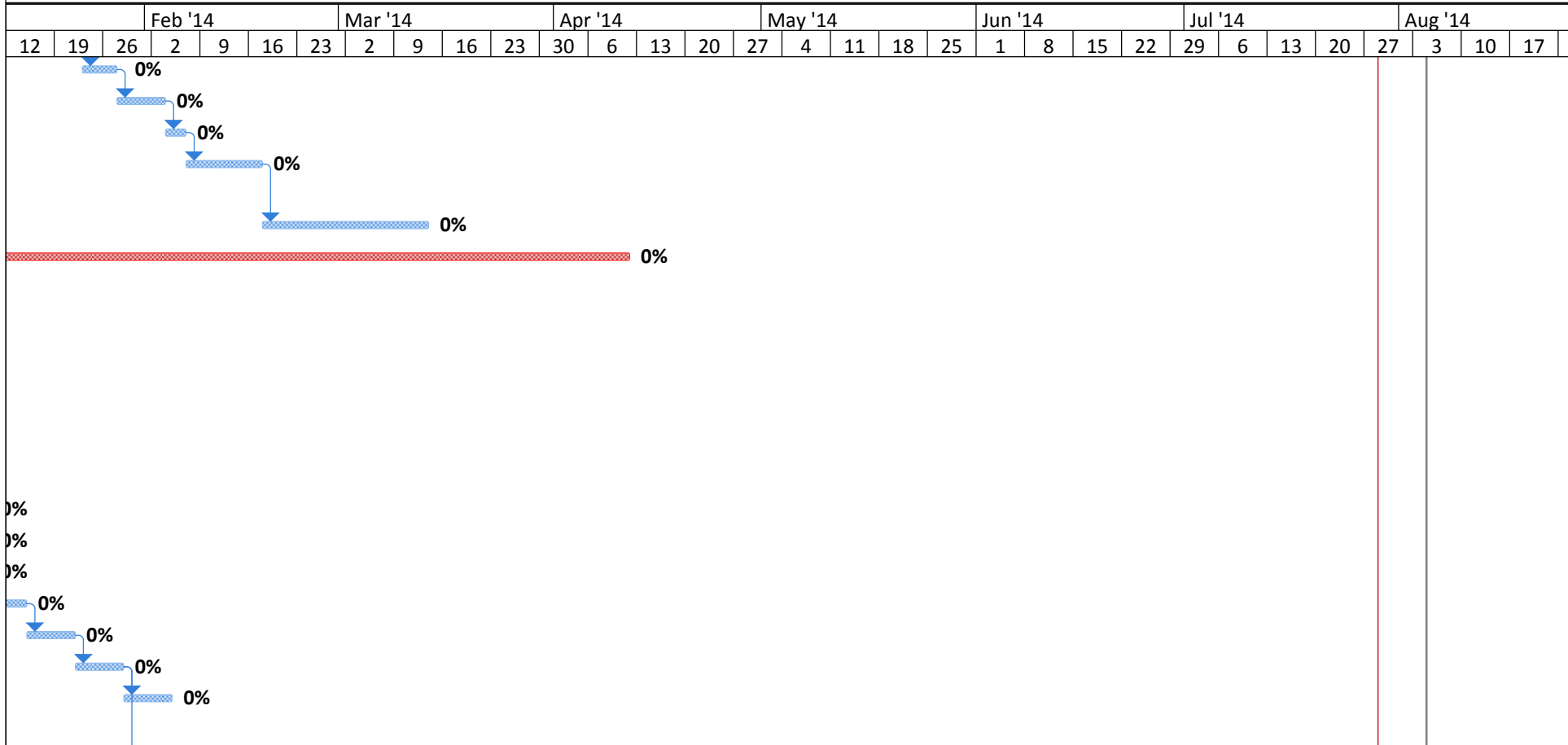
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Critical Split		Duration-only		Project Summary	
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Task		Baseline Split		External Milestone	
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Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



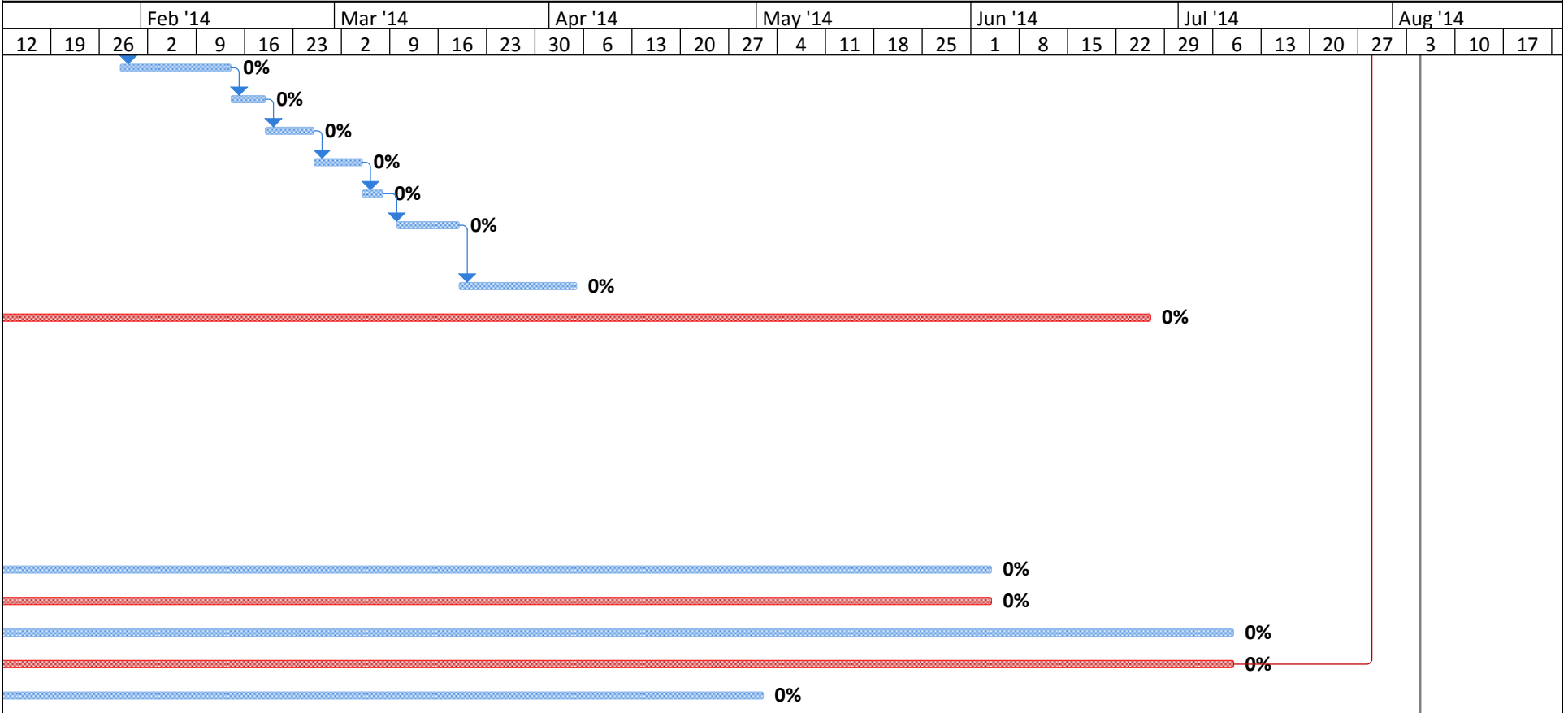
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Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

Detailed Schedule



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
Task		Baseline Split		External Milestone	
Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
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Detailed Schedule



Critical		Finish-only		Manual Summary	
Critical Split		Duration-only		Project Summary	
Critical Progress		Baseline		External Tasks	
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Split		Baseline Milestone		Inactive Task	
Task Progress		Milestone		Inactive Milestone	
Manual Task		Summary Progress		Inactive Summary	
Start-only		Summary		Deadline	

APPENDIX C: GENERAL CONDITIONS ESTIMATE

The following items are found in Appendix C: General Conditions Estimate:

- General Conditions Summary
- General Conditions Details

General Conditions Summary		
General Breakdown	Cost/Week	Total Cost
Jobsite Management	\$ 27,913.15	\$ 2,930,881.25
Equipment & Facilities	\$ 2,668.10	\$ 280,150.00
Temporary Utilities	\$ 2,869.79	\$ 301,327.50
Insurance, Permits, & Bonds	\$ 5,900.00	\$ 619,500.00
Total	\$ 39,351.04	\$ 4,131,858.75

Jobsite Management				
Title	Weeks	Cost/Week	Total Cost	
Vice President	105	\$ 3,930.00	\$ 412,650.00	
Senior Project Manager	105	\$ 3,275.00	\$ 343,875.00	
Senior Superintendent	105	\$ 3,275.00	\$ 343,875.00	
Project Engineer	105	\$ 1,875.00	\$ 196,875.00	
Project Engineer	52.5	\$ 1,875.00	\$ 98,437.50	
Assistant Superintendent	78.5	\$ 3,025.00	\$ 237,462.50	
Assistant Superintendent	26.25	\$ 3,025.00	\$ 79,406.25	
Quality Control Manager	105	\$ 3,275.00	\$ 343,875.00	
Quality Assistant	105	\$ 2,025.00	\$ 212,625.00	
Quality Assistant	78.5	\$ 2,025.00	\$ 158,962.50	
Senior Safety Supervisor	105	\$ 3,275.00	\$ 343,875.00	
Safety Supervisor	78.5	\$ 2,025.00	\$ 158,962.50	
Total			\$ 2,930,881.25	

Equipment & Facilities				
Item	Quantity	Unit	Cost/Unit	Total Cost
Documentation	1	Ls	\$ 30,000.00	\$ 30,000.00
Overnight Delivery	24.5	Mo	\$ 700.00	\$ 17,150.00
Construction Signage	1	Ls	\$ 6,500.00	\$ 6,500.00
Field Office Set-Up	1	Mo	\$ 2,500.00	\$ 2,500.00
Field Office Rental	24.5	Mo	\$ 1,000.00	\$ 24,500.00
Printer/Copier	24.5	Mo	\$ 500.00	\$ 12,250.00
Office Survey/Layout Equipment	24.5	Mo	\$ 700.00	\$ 17,150.00
Minor Tools & Equipment	24.5	Mo	\$ 1,600.00	\$ 39,200.00
Housekeeping	105	Wk	\$ 780.00	\$ 81,900.00
Safety Equipment	24.5	Mo	\$ 200.00	\$ 4,900.00
Fire Extinguishers	24.5	Mo	\$ 250.00	\$ 6,125.00
Miscellaneous Expenses	24.5	Mo	\$ 1,550.00	\$ 37,975.00
			Total	\$ 280,150.00

Temporary Utilities				
Item	Quantity	Unit	Cost/Unit	Total Cost
Early Power	8.085	Mo	\$ 2,000.00	\$ 16,170.00
Middle Power	8.085	Mo	\$ 9,500.00	\$ 76,807.50
Late Power	8.085	Mo	\$ 15,000.00	\$ 121,275.00
Power Install	1	Ls	\$ 50,000.00	\$ 50,000.00
Potable Water	24.5	Mo	\$ 200.00	\$ 4,900.00
Phone/Internet Hookup	1	Ls	\$ 2,500.00	\$ 2,500.00
Phone/Internet Service	24.5	Mo	\$ 150.00	\$ 3,675.00
Temporary Toilets	24.5	Mo	\$ 1,000.00	\$ 24,500.00
Dumpsters	3	Ld	\$ 500.00	\$ 1,500.00
			Total	\$ 301,327.50

Insurance, Permits, & Bonding		
Item	Value	Total
Permits		\$ 2,500.00
Certificate of Occupancy		\$ 1,000.00
Comercial General Liability	.4% Total Contract	\$ 176,000.00
Builder's Risk Insurance	.25% Total Contract	\$ 110,000.00
Payment & Performance Bond	.75% Total Contract	\$ 330,000.00
	Total	\$ 619,500.00

APPENDIX D: DETAILED STRUCTURAL ESTIMATE

The following items are found in Appendix D: Detailed Structural Estimate:

- Detailed Structural Estimate
- Concrete Formwork Takeoff
- Beam Formwork Takeoff
- Footing Reinforcing Takeoff
- Column Reinforcing Takeoff
- Beam Reinforcing Takeoff
- Column Takeoff
- Beam Takeoff
- Slab Takeoff

DETAILED STRUCTURAL ESTIMATE									
Item	QTY	Unit	Mat'l \$/Unit	Mat'l Total	Labor \$/Unit	Labor Total	Equip't \$/Unit	Equip't Total	Total Cost
FORMWORK									
Footings	1265.7	SFCA	\$ 2.97	\$ 3,759.13	\$ 9.30	\$ 11,771.01	\$ -	\$ -	\$ 15,530.14
Columns	14647	SFCA	\$ 2.97	\$ 43,501.59	\$ 9.30	\$ 136,217.10	\$ -	\$ -	\$ 179,718.69
Beams	8913.17	SFCA	\$ 2.97	\$ 26,472.11	\$ 9.30	\$ 82,892.48	\$ -	\$ -	\$ 109,364.60
Slabs		SFCA	\$ 2.97		\$ 9.30	\$ -	\$ -		
REINFORCING									
#3	38.04	TON	\$ 1,000.00	\$ 38,040.00	\$ 550.00	\$ 20,922.00	\$ -	\$ -	\$ 58,962.00
#5	34.79	TON	\$ 1,000.00	\$ 34,790.00	\$ 550.00	\$ 19,134.50	\$ -	\$ -	\$ 53,924.50
#7	0.291	TON	\$ 1,000.00	\$ 291.00	\$ 550.00	\$ 160.05	\$ -	\$ -	\$ 451.05
#8	44.64	TON	\$ 1,000.00	\$ 44,640.00	\$ 445.00	\$ 19,864.80	\$ -	\$ -	\$ 64,504.80
#9	222.39	TON	\$ 1,000.00	\$ 222,390.00	\$ 445.00	\$ 98,963.55	\$ -	\$ -	\$ 321,353.55
#10	53.78	TON	\$ 1,000.00	\$ 53,780.00	\$ 445.00	\$ 23,932.10	\$ -	\$ -	\$ 77,712.10
#12	1.07	TON	\$ 1,000.00	\$ 1,070.00	\$ 445.00	\$ 476.15	\$ -	\$ -	\$ 1,546.15
CONCRETE									
Column Footings	1469.52	CY	\$ 112.00	\$ 164,586.24	\$ 73.00	\$ 107,274.96	\$ -	\$ -	\$ 271,861.20
Columns	24720.89	CY	\$ 112.00	\$ 2,768,739.68	\$ 73.00	\$ 1,804,624.97	\$ -	\$ -	\$ 4,573,364.65
Reinforced Beams	9632.69	CY	\$ 112.00	\$ 1,078,861.28	\$ 73.00	\$ 703,186.37	\$ -	\$ -	\$ 1,782,047.65
Slab on Grade	8432.12	CY	\$ 1.88	\$ 15,852.39	\$ 0.88	\$ 7,420.27	\$ -	\$ -	\$ 23,272.65
Slab on Deck	48166.2	CY	\$ 1.88	\$ 90,552.46	\$ 0.88	\$ 42,386.26	\$ -	\$ -	\$ 132,938.71
TOTAL COST				\$ 4,587,325.88		\$ 3,079,226.56		\$ -	\$ 7,666,552.44

COLUMN FORMWORK														
	Column Footing							Column						
#	Dpth (in)	Dpth (ft)	Lgth (ft)	Wdth	SF (lgth)	SF (wdth)	SF	St.	Ht	Lgth	Wdth	SF (lgth)	SF (wdth)	SFCA
101	24	2.0	1.5	5	3.0	10.0	26.0	4	60	12	28	720	1680	4800
102	24	2.0	3.5	7	7.0	14.0	42.0	4	60	20	20	1200	1200	4800
103								4	60	20	20	1200	1200	4800
104								4	60	20	20	1200	1200	4800
105								4	60	20	20	1200	1200	4800
106								4	60	20	20	1200	1200	4800
107	24	2.0	1.5	5	3.0	10.0	26.0	4	60	20	20	1200	1200	4800
108	24	2.0	1.5	5	3.0	10.0	26.0	11	165	16	28	2640	4620	14520
109	24	2.0	7	7	14.0	14.0	56.0	2	30	12	28	360	840	2400
110	32	2.7	12	12	32.0	32.0	128.0	11	165	16	28	2640	4620	14520
111	36	3.0	24	15	72.0	45.0	234.0	11	165	16	28	2640	4620	14520
112	36	3.0	24	15	72.0	45.0	234.0	11	165	16	28	2640	4620	14520
113	36	3.0	24	15	72.0	45.0	234.0	11	165	16	28	2640	4620	14520
114	36	3.0	24	15	72.0	45.0	234.0	11	165	16	28	2640	4620	14520
115	24	2.0	1.5	5	3.0	10.0	26.0	12	180	16	28	2880	5040	15840
116	36	3.0	12	12	36.0	36.0	144.0	12	180	16	28	2880	5040	15840
117								12	180	16	28	2880	5040	15840
118								12	180	16	28	2880	5040	15840
119								12	180	16	28	2880	5040	15840
120								12	180	16	28	2880	5040	15840
122	24	2.0	1.5	5	3.0	10.0	26.0	10	150	16	28	2400	4200	13200
123	26	2.2	10	10	21.7	21.7	86.7	11	165	20	20	3300	3300	13200
124	34	2.8	8	14	22.7	39.7	124.7	2	30	16	28	480	840	2640
125	26	2.2	10	10	21.7	21.7	86.7	2	30	16	28	480	840	2640
126	34	2.8	8	14	22.7	39.7	124.7	2	30	16	28	480	840	2640
127	44	3.7	10	16.5	36.7	60.5	194.3	2	30	16	28	480	840	2640
128	44	3.7	13	11	47.7	40.3	176.0	12	180	16	28	2880	5040	15840
129	44	3.7	10.5	20	38.5	73.3	223.7	12	180	16	28	2880	5040	15840
130	24	2.0	7	7	14.0	14.0	56.0	2	30	12	28	360	840	2400
131	36	3.0	12	15	36.0	45.0	162.0	10	150	16	28	2400	4200	13200
132	36	3.0	12	15	36.0	45.0	162.0	12	180	16	28	2880	5040	15840
133	36	3.0	12	15	36.0	45.0	162.0	12	180	16	28	2880	5040	15840
134	36	3.0	12	16	36.0	48.0	168.0	11	165	16	28	2640	4620	14520
135	36	3.0	12	17	36.0	51.0	174.0	11	165	16	28	2640	4620	14520
136	36	3.0	12	18	36.0	54.0	180.0	11	165	16	28	2640	4620	14520
137								12	180	16	28	2880	5040	15840
138								12	180	16	28	2880	5040	15840

139	24	2.0	1.5	5	3.0	10.0	26.0	3	45	12	28	540	1260	3600
140	32	2.7	10	20	26.7	53.3	160.0	12	180	16	28	2880	5040	15840
141								12	180	16	28	2880	5040	15840
142	36	3.0	13	13	39.0	39.0	156.0	12	180	12	28	2160	5040	14400
143	38	3.2	14	14	44.3	44.3	177.3	11	165	12	28	1980	4620	13200
144	38	3.2	14	14	44.3	44.3	177.3	11	165	12	28	1980	4620	13200
145	38	3.2	14	14	44.3	44.3	177.3	11	165	16	28	2640	4620	14520
146	38	3.2	14	14	44.3	44.3	177.3	11	165	16	28	2640	4620	14520
147	24	2.0	1.5	5	3.0	10.0	26.0	11	165	16	28	2640	4620	14520
148	24	2.0	1.5	5	3.0	10.0	26.0	3	45	16	28	720	1260	3960
149	24	2.0	1.5	5	3.0	10.0	26.0	3	45	16	28	720	1260	3960
150	30	2.5	10	12	25.0	30.0	110.0	12	180	12	28	2160	5040	14400
151								12	180	12	28	2160	5040	14400
154	24	2.0	9	9	18.0	18.0	72.0	1	15	16	28	240	420	1320
155	24	2.0	1.5	5	3.0	10.0	26.0	1	15	16	28	240	420	1320
156	24	2.0	1.5	5	3.0	10.0	26.0	1	15	16	28	240	420	1320
157	24	2.0	1.5	5	3.0	10.0	26.0	1	15	16	28	240	420	1320
158								12	180	16	28	2880	5040	15840
159	24	2.0	1.5	5	3.0	10.0	26.0	12	180	16	28	2880	5040	15840
160	26	2.2	18	20	39.0	43.3	164.7	13	195	12	28	2340	5460	15600
161								13	195	12	28	2340	5460	15600
162	36	3.0	12	16	36.0	48.0	168.0	13	195	12	28	2340	5460	15600
163	40	3.3	14	14	46.7	46.7	186.7	13	195	16	28	3120	5460	17160
164								10	150	12	28	1800	4200	12000
165								10	150	16	28	2400	4200	13200
166	38	3.2	14	14	44.3	44.3	177.3	9	135	16	28	2160	3780	11880
167	42	3.5	15	15	52.5	52.5	210.0	10	150	12	28	1800	4200	12000
167B	30	2.5	11	11	27.5	27.5	110.0	11	165	12	28	1980	4620	13200
168	36	3.0	13	13	39.0	39.0	156.0	11	165	12	28	1980	4620	13200
169	30	2.5	11	11	27.5	27.5	110.0	9	135	16	28	2160	3780	11880
170	24	2.0	1.5	5	3.0	10.0	26.0	3	45	12	28	540	1260	3600
171	38	3.2	14	14	44.3	44.3	177.3	6	90	16	28	1440	2520	7920
172	42	3.5	15	15	52.5	52.5	210.0	3	45	16	28	720	1260	3960
173	32	2.7	18	16.5	48.0	44.0	184.0	6	90	16	28	1440	2520	7920
174								3	45	16	28	720	1260	3960
175	32	2.7	12	9	32.0	24.0	112.0	3	45	16	28	720	1260	3960
176								9	135	16	28	2160	3780	11880
177	24	2.0	1.5	5	3.0	10.0	26.0	9	135	16	28	2160	3780	11880
178	38	3.2	14	14	44.3	44.3	177.3	9	135	16	28	2160	3780	11880
179	38	3.2	13	13	41.2	41.2	164.7	9	135	16	28	2160	3780	11880

180	32	2.7	14	16	37.3	42.7	160.0	1	15	16	28	240	420	1320
181								3	45	16	28	720	1260	3960
182	28	2.3	10.5	10.5	24.5	24.5	98.0	3	45	16	28	720	1260	3960
183	24	2.0	1.5	5	3.0	10.0	26.0	1	15	16	28	240	420	1320
184	24	2.0	1.5	5	3.0	10.0	26.0	3	45	16	28	720	1260	3960
185	24	2.0	1.5	5	3.0	10.0	26.0	3	45	16	28	720	1260	3960
186	32	2.7	15	18	40.0	48.0	176.0	10	150	16	28	2400	4200	13200
187								10	150	12	28	1800	4200	12000
188	36	3.0	13	13	39.0	39.0	156.0	9	135	12	28	1620	3780	10800
190	32	2.7	23	13	61.3	34.7	192.0	9	135	16	28	2160	3780	11880
191								9	135	16	28	2160	3780	11880
192								3	45	16	28	720	1260	3960
193								4	60	16	28	960	1680	5280
194	26	2.2	15	9	32.5	19.5	104.0	2	30	16	28	480	840	2640
195								3	45	16	28	720	1260	3960
196	24	2.0	1.5	5	3.0	10.0	26.0	3	45	16	28	720	1260	3960
197	26	2.2	10	10	21.7	21.7	86.7	8	120	16	28	1920	3360	10560
198	26	2.2	10	10	21.7	21.7	86.7	8	120	16	28	1920	3360	10560
200								5	75	16	28	1200	2100	6600
201	26	2.2	10	10	21.7	21.7	86.7	7	105	16	28	1680	2940	9240
202	30	2.5	11	11	27.5	27.5	110.0	3	45	16	28	720	1260	3960
203	36	3.0	12	16	36.0	48.0	168.0	4	60	16	28	960	1680	5280
205	26	2.2	15	9	32.5	19.5	104.0	2	30	16	28	480	840	2640
206								3	45	16	28	720	1260	3960
207	24	2.0	1.5	5	3.0	10.0	26.0	3	45	16	28	720	1260	3960
208	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
209	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
209a	26	2.2	10	10	21.7	21.7	86.7	2	30	16	28	480	840	2640
210	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
211	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
212	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
213	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
213a	26	2.2	10	10	21.7	21.7	86.7	2	30	16	28	480	840	2640
214	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
215	32	2.7	12	12	32.0	32.0	128.0	2	30	16	28	480	840	2640
216	32	2.7	12	12	32.0	32.0	128.0	7	105	16	28	1680	2940	9240
216	31	2.6	12	12	31.0	31.0	124.0	8	120	16	28	1920	3360	10560
217	36	3.0	13	13	39.0	39.0	156.0	8	120	16	28	1920	3360	10560
218	26	2.2	15	9	32.5	19.5	104.0	8	120	16	28	1920	3360	10560
219								8	120	16	28	1920	3360	10560

220	26	2.2	15	9	32.5	19.5	104.0	8	120	16	28	1920	3360	10560
221								8	120	16	28	1920	3360	10560
222	36	3.0	13	13	39.0	39.0	156.0	8	120	16	28	1920	3360	10560
223	26	2.2	15	9	32.5	19.5	104.0	9	135	12	28	1620	3780	10800
224								9	135	12	28	1620	3780	10800
225	24	2.0	8	8	16.0	16.0	64.0	9	135	12	28	1620	3780	10800
226	26	2.2	15	9	32.5	19.5	104.0	9	135	12	28	1620	3780	10800
227								9	135	12	28	1620	3780	10800
229	26	2.2	15	9	32.5	19.5	104.0	9	135	12	28	1620	3780	10800
230								9	135	12	28	1620	3780	10800
231	24	2.0	1.5	5	3.0	10.0	26.0	8	120	12	28	1440	3360	9600
233	36	3.0	13	13	39.0	39.0	156.0	8	120	16	28	1920	3360	10560
234	26	2.2	15	9	32.5	19.5	104.0	9	135	16	28	2160	3780	11880
235		0.0			0.0	0.0	-	8	120	12	28	1440	3360	9600
236	26	2.2	15	9	32.5	19.5	104.0	9	135	12	28	1620	3780	10800
237								9	135	12	28	1620	3780	10800
238	26	2.2	15	9	32.5	19.5	104.0	9	135	12	28	1620	3780	10800
239								9	135	12	28	1620	3780	10800
240	24	2.0	1.5	5	3.0	10.0	26.0	9	135	12	28	1620	3780	10800
241	26	2.2	15	9	32.5	19.5	104.0	8	120	16	28	1920	3360	10560
242	26	2.2	15	9	32.5	19.5	104.0	8	120	16	28	1920	3360	10560
243	26	2.2	15	9	32.5	19.5	104.0	8	120	16	28	1920	3360	10560
244	34	2.8	15	8	42.5	22.7	130.3	8	120	16	28	1920	3360	10560
245	32	2.7	4.5	6	12.0	16.0	56.0	2	30	16	28	480	840	2640
246	24	2.0	1.5	5	3.0	10.0	26.0	8	120	16	28	1920	3360	10560
247	32	2.7	6	4.5	16.0	12.0	56.0	2	30	16	28	480	840	2640
248	24	2.0	1.5	5	3.0	10.0	26.0	8	120	16	28	1920	3360	10560
249	24	2.0	1.5	5	3.0	10.0	26.0	7	105	16	28	1680	2940	9240
250	26	2.2	15	9	32.5	19.5	104.0	7	105	16	28	1680	2940	9240
251	26	2.2	15	9	32.5	19.5	104.0	7	105	16	28	1680	2940	9240
252	24		1.5	5	0.0	0.0		7	105	16	28	47040	2940	99960
TOT							12,655.7							1464720

BEAM FORMWORK								
	Width (in)	Width (ft)	Depth (in)	Depth (ft)	Length (ft)	SF (width)	SF (length)	SFCA
Level P1								
PB1	12	1.0	16	1.3	60	1.3	80.0	106.7
PB2	16	1.3	16	1.3	10	1.8	13.3	23.7
PB2A	16	1.3	16	1.3	12	1.8	16.0	28.44
PB3	24	2.0	24	2.0	10	4.0	20.0	80
PB3RC	24	2.0	24	2.0	10	4.0	20.0	80
PB4	34	2.8	16	1.3	10	3.8	13.3	50.37
PB4A	34	2.8	16	1.3	10	3.8	13.3	50.37
PB5	12	1.0	16	1.3	12	1.3	16.0	21.33
PB6	12	1.0	28	2.3	10	2.3	23.3	54.44
PB7	16	1.3	16	1.3	15	1.8	20.0	35.56
PB8	20	1.7	28	2.3	18	3.9	42.0	163.3
PB9	12	1.0	16	1.3	40	1.3	53.3	71.11
PB10	16	1.3	16	1.3	45	1.8	60.0	106.7
PB11	12	1.0	16	1.3	8	1.3	10.7	14.22
PB12	12	1.0	16	1.3	10	1.3	13.3	17.78
PB12A	8	0.7	16	1.3	10	0.9	13.3	11.85
PB13	12	1.0	16	1.3	10	1.3	13.3	17.78
PB14	12	1.0	16	1.3	15	1.3	20.0	26.67
PB15	28	2.3	24	2.0	10	4.7	20.0	93.33
PB16	20	1.7	24	2.0	10	3.3	20.0	66.67
PB17	28	2.3	36	3.0	10	7.0	30.0	210
PB18	28	2.3	36	3.0	10	7.0	30.0	210
PB18LC	28	2.3	36	3.0	10	7.0	30.0	210
PB19	28	2.3	48	4.0	10	9.3	40.0	373.3
PB20	28	2.3	48	4.0	10	9.3	40.0	373.3
PB20LC	28	2.3	48	4.0	10	9.3	40.0	373.3
PB21	16	1.3	54	4.5	10	6.0	45.0	270
PB22	12	1.0	24	2.0	20	2.0	40.0	80
PB23	12	1.0	24	2.0	20	2.0	40.0	80
PB23RC	12	1.0	24	2.0	10	2.0	20.0	40
PB24	12	1.0	24	2.0	15	2.0	30.0	60
PB24LC	12	1.0	24	2.0	10	2.0	20.0	40
PB25	12	1.0	24	2.0	10	2.0	20.0	40
PB25LC	12	1.0	24	2.0	5	2.0	10.0	20
PB26	18	1.5	36	3.0	5	4.5	15.0	67.5
PB26LC	18	1.5	20	1.7	10	2.5	16.7	41.67
PB27	12	1.0	16	1.3	10	1.3	13.3	17.78
PB28	20	1.7	16	1.3	20	2.2	26.7	59.26
PB29	24	2.0	16	1.3	10	2.7	13.3	35.56
PB30	12	1.0	16	1.3	15	1.3	20.0	26.67
PB31	14	1.2	14	1.2	15	1.4	17.5	23.82
PB32	12	1.0	14	1.2	15	1.2	17.5	20.42
PB33	12	1.0	24	2.0	10	2.0	20.0	40
PB34	12	1.0	24	2.0	10	2.0	20.0	40
PB34LC	12	1.0	24	2.0	10	2.0	20.0	40
1ST FLOOR								
B1	12	1.0	30	2.5	60	2.5	150.0	375
B1A	18	1.5	30	2.5	10	3.8	25.0	93.75
B1B	18	1.5	30	2.5	12	3.8	30.0	112.5
B2	12	1.0	18	1.5	10	1.5	15.0	22.5
B2R	12	1.0	18	1.5	10	1.5	15.0	22.5
B3	12	1.0	18	1.5	10	1.5	15.0	22.5

B4	12	1.0	18	1.5	10	1.5	15.0	22.5
B4R	12	1.0	18	1.5	12	1.5	18.0	27
B5	12	1.0	18	1.5	10	1.5	15.0	22.5
B6	12	1.0	18	1.5	15	1.5	22.5	33.75
B7	12	1.0	18	1.5	18	1.5	27.0	40.5
B8	12	1.0	30	2.5	40	2.5	100.0	250
B10	12	1.0	16	1.3	45	1.3	60.0	80
B11	20	1.7	16	1.3	8	2.2	10.7	23.7
B12	16	1.3	20	1.7	10	2.2	16.7	37.04
B12A	16	1.3	20	1.7	10	2.2	16.7	37.04
B13	12	1.0	20	1.7	10	1.7	16.7	27.78
B15	12	1.0	16	1.3	15	1.3	20.0	26.67
B15A	16	1.3	16	1.3	10	1.8	13.3	23.7
B15B	16	1.3	20	1.7	10	2.2	16.7	37.04
B18	16	1.3	36	3.0	10	4.0	30.0	120
B18A	12	1.0	28	2.3	10	2.3	23.3	54.44
B19	18	1.5	28	2.3	10	3.5	23.3	81.67
B22	18	1.5	36	3.0	10	4.5	30.0	135
B23	18	1.5	36	3.0	10	4.5	30.0	135
B24	16	1.3	36	3.0	10	4.0	30.0	120
B25	28	2.3	85	7.1	10	16.5	70.8	1171
B26	16	1.3	36	3.0	20	4.0	60.0	240
B27	16	1.3	28	2.3	20	3.1	46.7	145.2
B28	16	1.3	28	2.3	10	3.1	23.3	72.59
B29	16	1.3	62	5.2	15	6.9	77.5	533.9
B30	16	1.3	62	5.2	10	6.9	51.7	355.9
B30LC	16	1.3	62	5.2	10	6.9	51.7	355.9
B31	16	1.3	62	5.2	5	6.9	25.8	178
B32	16	1.3	62	5.2	5	6.9	25.8	178
B32A	20	1.7	62	5.2	10	8.6	51.7	444.9
B33	20	1.7	66	5.5	10	9.2	55.0	504.2
B34	16	1.3	66	5.5	20	7.3	110.0	806.7
B35	18	1.5	24	2.0	10	3.0	20.0	60
B36	16	1.3	32	2.7	15	3.6	40.0	142.2
B37	16	1.3	52	4.3	15	5.8	65.0	375.6
B37LC	16	1.3	34	2.8	15	3.8	42.5	160.6
B38	16	1.3	66	5.5	10	7.3	55.0	403.3
B38LC	16	1.3	60	5.0	10	6.7	50.0	333.3
B39	16	1.3	42	3.5	10	4.7	35.0	163.3
B40	28	2.3	42	3.5	60	8.2	210.0	1715
B41	28	2.3	48	4.0	10	9.3	40.0	373.3
B42	28	2.3	48	4.0	12	9.3	48.0	448
B43	28	2.3	36	3.0	10	7.0	30.0	210
B43A	16	1.3	40	3.3	10	4.4	33.3	148.1
B44	16	1.3	76	6.3	10	8.4	63.3	534.8
B45	16	1.3	76	6.3	10	8.4	63.3	534.8
B46	28	2.3	36	3.0	12	7.0	36.0	252
B47	28	2.3	36	3.0	10	7.0	30.0	210
B48	16	1.3	37	3.1	15	4.1	46.3	190.1
B49	16	1.3	37	3.1	18	4.1	55.5	228.2
B50	16	1.3	98	8.2	40	10.9	326.7	3557
B51	16	1.3	74	6.2	45	8.2	277.5	2282
B52	16	1.3	76	6.3	8	8.4	50.7	427.9
B53	16	1.3	74	6.2	10	8.2	61.7	507
B54	16	1.3	76	6.3	10	8.4	63.3	534.8

B56	16	1.3	30	2.5	10	3.3	25.0	83.33
B57	12	1.0	60	5.0	15	5.0	75.0	375
B58	16	1.3	30	2.5	10	3.3	25.0	83.33
B59	16	1.3	40	3.3	10	4.4	33.3	148.1
B60	16	1.3	30	2.5	10	3.3	25.0	83.33
B61	16	1.3	60	5.0	10	6.7	50.0	333.3
B61LC	16	1.3	75	6.3	10	8.3	62.5	520.8
B62	16	1.3	32	2.7	10	3.6	26.7	94.81
B63	16	1.3	46	3.8	10	5.1	38.3	195.9
B64	16	1.3	46	3.8	10	5.1	38.3	195.9
B65	12	1.0	60	5.0	10	5.0	50.0	250
B66	12	1.0	60	5.0	20	5.0	100.0	500
B68	12	1.0	16	1.3	20	1.3	26.7	35.56
B68A	12	1.0	16	1.3	10	1.3	13.3	17.78
B69	16	1.3	30	2.5	15	3.3	37.5	125
B70	16	1.3	30	2.5	10	3.3	25.0	83.33
B71	16	1.3	32	2.7	10	3.6	26.7	94.81
B73	16	1.3	30	2.5	5	3.3	12.5	41.67
B74	12	1.0	36	3.0	5	3.0	15.0	45
B75	12	1.0	30	2.5	10	2.5	25.0	62.5
TOTAL								28044
(multiplier for remaining beams)								3
GRAND TOTAL								84131

FOOTING REINFORCING												
Mark	Description		Dimensions				Perpendicular Rebar			Parralel Rebar		
			Lgth (ft)	Wdth (ft)	Dpth (ft)	SF	#	QTY	LF	#	QTY	LF
101	5#7 / 7#8		1.5	5	2.0	7.5	7	5.0	7.5	8	7.0	35.0
102	7#8 / 9#8		3.5	7	2.0	24.5	8	7.0	24.5	9	8.0	56.0
103	#9@12" Spacing	TOP	24	15	3.0	360.0	9	15.0	360.0	9	15.0	225.0
	#10@12" Spacing	BOTTOM	24	15	3.0	360.0	10	15.0	360.0	10	15.0	225.0
104	#9@12" Spacing	TOP	24	15	3.0	360.0	9	15.0	360.0	9	15.0	225.0
	#10@12" Spacing	BOTTOM	24	15	3.0	360.0	10	15.0	360.0	10	15.0	225.0
105	#9@12" Spacing	TOP	24	15	3.0	360.0	9	15.0	360.0	9	15.0	225.0
	#10@12" Spacing	BOTTOM	24	15	3.0	360.0	10	15.0	360.0	10	15.0	225.0
106	#9@12" Spacing	TOP	24	15	3.0	360.0	9	15.0	360.0	9	15.0	225.0
	#10@12" Spacing	BOTTOM	24	15	3.0	360.0	10	15.0	360.0	10	15.0	225.0
107	5#7 / 7#8		1.5	5	2.0	7.5	7	5.0	7.5	8	7.0	35.0
108	5#7 / 7#8		1.5	5	2.0	7.5	7	5.0	7.5	8	7.0	35.0
109	7#8		7	7	2.0	49.0	8	7.0	49.0	8	7.0	49.0
110	12#10		12	12	2.7	144.0	12	10.0	120.0	10	12.0	144.0
111	Included w/ 103											
112	Included w/ 104											
113	Included w/ 105											
114	Included w/ 106											
115	5#7 / #7@8		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
116	#5@12" Spacing	TOP	12	12	3.0	144.0	5	12.0	144.0	5	12.0	144.0
	#10@10" Spacing	BOTTOM	12	12	3.0	144.0	10	10.0	120.0	10	10.0	120.0
117	NOT USED											
118	NOT USED											
119	NOT USED											
120	NOT USED											
121	NOT USED											
122	5#7 / #7@8		1.5	5	2.7	7.5	7	5.0	7.5	7	3.3	16.7
123	10#9		10	10	3.7	100.0	9	10.0	100.0	9	10.0	100.0
124	#10@10" Spacing		8	14	3.7	112.0	10	11.7	93.3	10	11.7	163.4
125	10#9		10	10	3.7	100.0	9	10.0	100.0	9	8.3	83.3
126	#10@10		8	14	2.0	112.0	10	11.7	93.3	10	8.3	116.2
127	#9@8" Spacing		10	16.5	3.0	165.0	9	11.0	110.0	9	6.7	110.1
128	#9@8" Spacing / #10@8" Spacing		13	11	3.0	143.0	9	8.7	112.7	10	8.7	95.4
129	#8@12" Spacing		10.5	20	3.0	210.0	8	20.0	210.0	8	10.5	210.0
130	7#8		7	7	3.0	49.0	8	7.0	49.0	8	7.0	49.0
131	#10@10" Spacing		12	15	3.0	180.0	10	12.5	150.0	10	10.0	150.0
132	#10@10" Spacing		12	15	3.0	180.0	10	12.5	150.0	10	10.0	150.0
133	#10@10" Spacing		12	15	2.0	180.0	10	12.5	150.0	10	10.0	150.0
134	#10@11" Spacing		12	16	2.0	192.0	10	14.6	175.2	10	11.0	176.0
135	#10@12" Spacing		12	17	2.0	204.0	10	17.0	204.0	10	12.0	204.0
136	#10@13" Spacing		12	18	3.0	216.0	10	19.5	234.0	10	13.0	234.0
137	NOT USED											
138	NOT USED											
139	5#7 / #7@8		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
140	#8@12" Spacing	TOP	10	20	3.0	200.0	8	10.0	100.0	8	20.0	400.0
	#10@8" Spacing	BOTTOM	10	20	3.0	200.0	8	13.3	10.0	8	6.7	134.0
141	#10@8" Spacing		10	20	3.0	200.0	10	6.7	66.7	10	13.3	266.7
142	13#10		13	13	3.0	169.0	10	13.0	169.0	10	13.0	169.0
143	14#10		14	14	2.0	196.0	10	14.0	196.0	10	14.0	196.0
144	14#10		14	14	2.0	196.0	10	14.0	196.0	10	14.0	196.0
145	14#10		14	14	2.0	196.0	10	14.0	196.0	10	14.0	196.0
146	14#10		14	14	3.0	196.0	10	14.0	196.0	10	14.0	196.0

147	5#7 / #7@8		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
148	5#7 / #7@8		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
149	5#7 / #7@8		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
150	#9@12" Spacing	TOP	10	12	2.0	120.0	9	10.0	100.0	9	12.0	144.0
	#10@12" Spacing	BOTTOM	10	12	2.0	120.0	10	10.0	100.0	10	12.0	144.0
151	NOT USED											
152	NOT USED											
153	NOT USED											
154	9#9		9	9	3.0	81.0	9	9.0	81.0	9	9.0	81.0
155	5#7 / #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0
156	5#7 / #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0
157	5#7 / #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0
158	NOT USED											
159	5#7 / #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
160	#8@12" Spacing	TOP	18	20	2.0	360.0	8	20.0	360.0	8	18.0	360.0
	#8@12" Spacing	BOTTOM	18	20	2.0	360.0	8	20.0	360.0	8	18.0	360.0
161	NOT USED											
162	#10@10" Spacing		12	16	3.0	192.0	10	10.0	120.0	10	13.3	213.3
163	14#10		14	14	3.0	196.0	10	11.7	163.2	10	11.6	162.4
164	NOT USED											
165	NOT USED											
166	14#10		14	14	3.0	196.0	10	14.0	196.0	14	10.0	140.0
167	15#10		15	15	2.0	225.0	10	15.0	225.0	15	10.0	150.0
167b	11#9		11	11	3.0	121.0	10	15.0	165.0	15	10.0	110.0
168	#12@10" Spacing		13	13	4.0	169.0	12	10.8	140.4	12	10.8	140.4
169	11#9		11	11	3.0	121.0	9	11.0	121.0	9	11.0	121.0
170	5#7 / #7@8" Spacing		1.5	5	2.0	7.5	5	7.0	10.5	7	1.0	5.0
171	14#10		14	14	3.0	196.0	10	14.0	196.0	10	14.0	196.0
172	15#10		15	15	2.0	225.0	10	15.0	225.0	10	14.0	210.0
173	#5@12" Spacing	TOP	18	16.5	2.0	297.0	5	16.5	297.0	5	18.0	297.0
	#9@12" Spacing	BOTTOM	18	16.5	2.0	297.0	9	16.5	297.0	9	18.0	297.0
174	NOT USED											
175	#5@12" Spacing	TOP	12	9	3.0	108.0	5	9.0	108.0	5	9.0	81.0
	#9@12" Spacing	BOTTOM	12	9	3.0	108.0	5	12.0	144.0	5	12.0	108.0
176	NOT USED											
177	5#7 / #7@8" Spacing		1.5	5	3.0	7.5	5	7.0	10.5	7	3.3	16.5
178	14#10		14	14	3.0	196.0	10	14.0	196.0	10	14.0	196.0
179	13#10		13	13	2.0	169.0	10	13.0	169.0	10	13.0	169.0
180	#5@12" Spacing / #9@12" Spacing		14	16	2.0	224.0	5	16.0	224.0	9	14.0	224.0
181	NOT USED											
182	11#9		10.5	10.5	3.0	110.3	9	11.0	115.5	9	11.0	115.5
183	5#7 / #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
184	5#7 / #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
185	5#7 / #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
186	#9@12" Spacing	TOP	15	18	3.0	270.0	9	18.0	270.0	9	15.0	270.0
	#9@12" Spacing	BOTTOM	15	18	3.0	270.0	9	18.0	270.0	9	15.0	270.0
187	NOT USED											
188	13#10		13	13	2.0	169.0	10	13.0	169.0	10	13.0	169.0
189	NOT USED											
190	#9@12" Spacing / #6@12" Spacing	TOP	23	13	2.0	299.0	9	13.0	299.0	9	23.0	299.0
	#9@12" Spacing / #10@10" Spacing	BOTTOM	23	13	2.0	299.0	9	13.0	299.0	10	19.2	249.1
191	NOT USED											
192	NOT USED											
193	NOT USED											
194	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	15.0	135.0

195	NOT USED											
196	5#7 / #7@8" Spacing		1.5	5	2.0	7.5	5	7.0	10.5	7	1.0	5.0
197	10#9		10	10	2.0	100.0	9	10.0	100.0	9	10.0	100.0
198	10#9		10	10	3.0	100.0	9	10.0	100.0	9	10.0	100.0
199	NOT USED											
200	NOT USED											
201	10#9		10	10	3.0	100.0	9	10.0	100.0	9	10.0	100.0
202	11#9		11	11	2.0	121.0	9	11.0	121.0	9	11.0	121.0
203	#10@10" Spacing		12	16	3.0	192.0	10	13.3	159.6	10	10.0	160.0
205	#5@12" Spacing / #9@12" Spacing		15	9	3.0	135.0	5	9.0	135.0	9	15.0	135.0
206	NOT USED											
207	5#7 / #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
208	12#10		12	12	3.0	144.0	10	12.0	144.0	10	12.0	144.0
209	12#10		12	12	3.0	144.0	10	12.0	144.0	10	12.0	144.0
209a	10#9		10	10	3.0	100.0	9	10.0	100.0	9	10.0	100.0
210	12#10		12	12	2.0	144.0	10	12.0	144.0	10	12.0	144.0
211	12#11		12	12	3.0	144.0	11	12.0	144.0	11	12.0	144.0
212	12#10		12	12	3.0	144.0	10	12.0	144.0	10	12.0	144.0
213	12#10		12	12	3.0	144.0	10	12.0	144.0	10	12.0	144.0
213a	10#9		10	10	2.0	100.0	9	10.0	100.0	9	10.0	100.0
214	12#10		12	12	3.0	144.0	10	12.0	144.0	10	12.0	144.0
215	12#10		12	12	2.0	144.0	10	12.0	144.0	10	12.0	144.0
216	10#10		12	12	2.0	144.0	10	10.0	120.0	10	10.0	120.0
216	10#10		12	12	2.0	144.0	10	10.0	120.0	10	10.0	120.0
217	13#10		13	13	2.0	169.0	10	13.0	169.0	10	13.0	169.0
218	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	5	15.0	135.0
219	NOT USED											
220	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	5	15.0	135.0
221	NOT USED											
222	13#10		13	13	2.0	169.0	10	13.0	169.0	10	13.0	169.0
223	#5@12" Spacing / #9@12" Spacing		15	9	3.0	135.0	5	15.0	225.0	9	12.0	108.0
224	NOT USED											
225	8#8		8	8	2.0	64.0	8	8.0	64.0	8	8.0	64.0
226	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	5.0	45.0
227	NOT USED											
228	NOT USED											
229	#5@12" Spacing / #9@12" Spacing		15	9	3.0	135.0	5	9.0	135.0	9	15.0	135.0
230	NOT USED											
231	5#7, #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0
232	NOT USED											
233	13#10		13	13	2.0	169.0	10	13.0	169.0	10	13.0	169.0
234	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	15.0	135.0
235	NOT USED											
236	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	15.0	135.0
237	NOT USED											
238	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	15.0	135.0
239	NOT USED											
240	5#7, #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
241	#5@12" Spacing / #9@12" Spacing		15	9	3.0	135.0	5	9.0	135.0	9	5.0	45.0
242	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	5.0	45.0
243	#5@12" Spacing / #9@12" Spacing		15	9	3.0	135.0	5	9.0	135.0	9	5.0	45.0
244	#10@10" Spacing		15	8	2.0	120.0	10	12.5	187.5	10	6.7	53.4
245	#9@12" Spacing		4.5	6	2.0	27.0	9	6.0	27.0	9	4.5	27.0
246	5#7, #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0
247	#9@12" Spacing		6	4.5	2.0	27.0	9	4.5	27.0	9	6.0	27.0

248	5#7, #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0
249	5#7, #7@8" Spacing		1.5	5	3.0	7.5	7	5.0	7.5	7	1.0	5.0
250	#5@12" Spacing / #9@12" Spacing		15	9	3.0	135.0	5	9.0	135.0	9	15.0	135.0
251	#5@12" Spacing / #9@12" Spacing		15	9	2.0	135.0	5	9.0	135.0	9	15.0	135.0
252	5#7, #7@8" Spacing		1.5	5	2.0	7.5	7	5.0	7.5	7	1.0	5.0

COLUMN REINFORCING									
Floor	Length (in)	Width (in)	Description	Vertical Reinforcing			Ties		
				#	QTY	LF	#	QTY	LF
Column 101									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
2nd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 102									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 103									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 104									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 105									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 106									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 107									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 108									
P2	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
3rd	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
4th	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
5th	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
6th	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
7th	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
8th	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
9th	16	28	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 109									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 110									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 111									
P2	16	32	12#10 / #3@16" Spacing	10	12	180	3	11.25	135

3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 124									
P2	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
P1	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
Column 125									
P2	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
P1	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
Column 126									
P2	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
P1	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
Column 127									
P2	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
P1	16	28	10#9 / #3@16" Spacing	9	10	150	3	11.25	135
Column 128									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
10th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Main Roof	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 129									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
10th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Main Roof	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 130									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 131									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 132									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135

1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
2nd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 149									
P2	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
P1	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
1st	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
2nd	20	20	8#8 / #3@16" Spacing	8	8	120	3	11.25	135
Column 150									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
10th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Main Roof	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 151									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
10th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Main Roof	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 152 - NOT USED									
Column 153 - NOT USED									
Column 154									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 155									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 156									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 157									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 158									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135

4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
Column 159									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
2nd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
3rd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
4th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
5th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
6th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
7th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
8th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
9th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
10th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 160									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
2nd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
3rd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
4th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
5th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
6th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
7th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
8th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
9th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
10th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 161									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
2nd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
3rd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
4th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
5th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
6th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
7th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
8th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
9th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
10th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 162									
P2	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
P1	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
1st	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
2nd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
3rd	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
4th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
5th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
6th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
7th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
8th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
9th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
10th	12	28	8#8 / #3@12" Spacing	8	8	120	3	15	180
Column 163									
P2	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
P1	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
1st	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
2nd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
3rd	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135

4th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
5th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
6th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
7th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
8th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135
9th	16	28	8#9 / #3@16" Spacing	9	8	120	3	11.25	135

BEAM REINFORCING												
Beam Mark	Width	Depth	Length	Reinforcing				Stirrups				lbs
				#	QTY	LF	Ton	#	QTY	LF		
Level P1												
PB1	12	16	60	5	9	540	0.2816	3	2.0004	120.024		
PB2	16	16	10	5	12	120	0.0626	3	2.0004	20.004		
PB2A	16	16	12	5	12	144	0.0751	3	2.6672	32.0064		
PB3	24	24	10	5	18	180	0.0939	3	2.6672	26.672		
PB3RC	24	24	10	5	18	180	0.0939	3	4.0008	40.008		
PB4	34	16	10	5	25.5	255	0.133	3	4.0008	40.008		
PB4A	34	16	10	5	25.5	255	0.133	3	5.6678	56.678		
PB5	12	16	12	5	9	108	0.0563	3	5.6678	68.0136		
PB6	12	28	10	5	9	90	0.0469	3	2.0004	20.004		
PB7	16	16	15	5	12	180	0.0939	3	2.0004	30.006		
PB8	20	28	18	5	15	270	0.1408	3	2.6672	48.0096		
PB9	12	16	40	5	9	360	0.1877	3	3.334	133.36		
PB10	16	16	45	5	12	540	0.2816	3	2.0004	90.018		
PB11	12	16	8	5	9	72	0.0375	3	2.6672	21.3376		
PB12	12	16	10	5	9	90	0.0469	3	2.0004	20.004		
PB12A	8	16	10	5	6	60	0.0313	3	2.0004	20.004		
PB13	12	16	10	5	9	90	0.0469	3	1.3336	13.336		
PB14	12	16	15	5	9	135	0.0704	3	2.0004	30.006		
PB15	28	24	10	5	21	210	0.1095	3	2.0004	20.004		
PB16	20	24	10	5	15	150	0.0782	3	4.6676	46.676		
PB17	28	36	10	5	21	210	0.1095	3	3.334	33.34		
PB18	28	36	10	5	21	210	0.1095	3	4.6676	46.676		
PB18LC	28	36	10	5	21	210	0.1095	3	4.6676	46.676		
PB19	28	48	10	5	21	210	0.1095	3	4.6676	46.676		
PB20	28	48	10	5	21	210	0.1095	3	4.6676	46.676		
PB20LC	28	48	10	5	21	210	0.1095	3	4.6676	46.676		
PB21	16	54	10	5	12	120	0.0626	3	4.6676	46.676		
PB22	12	24	20	5	9	180	0.0939	3	2.6672	53.344		
PB23	12	24	20	5	9	180	0.0939	3	2.0004	40.008		
PB23RC	12	24	10	5	9	90	0.0469	3	2.0004	20.004		
PB24	12	24	15	5	9	135	0.0704	3	2.0004	30.006		
PB24LC	12	24	10	5	9	90	0.0469	3	2.0004	20.004		
PB25	12	24	10	5	9	90	0.0469	3	2.0004	20.004		
PB25LC	12	24	5	5	9	45	0.0235	3	2.0004	10.002		
PB26	18	36	5	5	13.5	67.5	0.0352	3	2.0004	10.002		
PB26LC	18	20	10	5	13.5	135	0.0704	3	3.0006	30.006		
PB27	12	16	10	5	9	90	0.0469	3	3.0006	30.006		
PB28	20	16	20	5	15	300	0.1565	3	2.0004	40.008		
PB29	24	16	10	5	18	180	0.0939	3	3.334	33.34		
PB30	12	16	15	5	9	135	0.0704	3	4.0008	60.012		
PB31	14	14	15	5	10.5	157.5	0.0821	3	2.0004	30.006		
PB32	12	14	15	5	9	135	0.0704	3	2.3338	35.007		
PB33	12	24	10	5	9	90	0.0469	3	2.0004	20.004		
PB34	12	24	10	5	9	90	0.0469	3	2.0004	20.004		
PB34LC	12	24	10	5	9	90	0.0469	3	2.0004	20.004		
1ST FLOOR												
B1	12	30	60	5	9			3				
B1A	18	30	10	5	13.5	135	0.0704	3	2.0004	20.004		
B1B	18	30	12	5	13.5	162	0.0845	3	3.0006	36.0072		
B2	12	18	10	5	9	90	0.0469	3	3.0006	30.006		
B2R	12	18	10	5	9	90	0.0469	3	2.0004	20.004		

B3	12	18	10	5	9	90	0.0469	3	2.0004	20.004
B4	12	18	10	5	9	90	0.0469	3	2.0004	20.004
B4R	12	18	12	5	9	108	0.0563	3	2.0004	24.0048
B5	12	18	10	5	9	90	0.0469	3	2.0004	20.004
B6	12	18	15	5	9	135	0.0704	3	2.0004	30.006
B7	12	18	18	5	9	162	0.0845	3	2.0004	36.0072
B8	12	30	40	5	9	360	0.1877	3	2.0004	80.016
B10	12	16	45	5	9	405	0.2112	3	2.0004	90.018
B11	20	16	8	5	15	120	0.0626	3	2.0004	16.0032
B12	16	20	10	5	12	120	0.0626	3	3.334	33.34
B12A	16	20	10	5	12	120	0.0626	3	2.6672	26.672
B13	12	20	10	5	9	90	0.0469	3	2.6672	26.672
B15	12	16	15	5	9	135	0.0704	3	2.0004	30.006
B15A	16	16	10	5	12	120	0.0626	3	2.0004	20.004
B15B	16	20	10	5	12	120	0.0626	3	2.6672	26.672
B18	16	36	10	5	12	120	0.0626	3	2.6672	26.672
B18A	12	28	10	5	9	90	0.0469	3	2.6672	26.672
B19	18	28	10	5	13.5	135	0.0704	3	2.0004	20.004
B22	18	36	10	5	13.5	135	0.0704	3	3.0006	30.006
B23	18	36	10	5	13.5	135	0.0704	3	3.0006	30.006
B24	16	36	10	5	12	120	0.0626	3	3.0006	30.006
B25	28	85	10	5	21	210	0.1095	3	2.6672	26.672
B26	16	36	20	5	12	240	0.1252	3	4.6676	93.352
B27	16	28	20	5	12	240	0.1252	3	2.6672	53.344
B28	16	28	10	5	12	120	0.0626	3	2.6672	26.672
B29	16	62	15	5	12	180	0.0939	3	2.6672	40.008
B30	16	62	10	5	12	120	0.0626	3	2.6672	26.672
B30LC	16	62	10	5	12	120	0.0626	3	2.6672	26.672
B31	16	62	5	5	12	60	0.0313	3	2.6672	13.336
B32	16	62	5	5	12	60	0.0313	3	2.6672	13.336
B32A	20	62	10	5	15	150	0.0782	3	2.6672	26.672
B33	20	66	10	5	15	150	0.0782	3	3.334	33.34
B34	16	66	20	5	12	240	0.1252	3	3.334	66.68
B35	18	24	10	5	13.5	135	0.0704	3	2.6672	26.672
B36	16	32	15	5	12	180	0.0939	3	3.0006	45.009
B37	16	52	15	5	12	180	0.0939	3	2.6672	40.008
B37LC	16	34	15	5	12	180	0.0939	3	2.6672	40.008
B38	16	66	10	5	12	120	0.0626	3	2.6672	26.672
B38LC	16	60	10	5	12	120	0.0626	3	2.6672	26.672
B39	16	42	10	5	12	120	0.0626	3	2.6672	26.672
B40	28	42	60	5	21	1260	0.6571	3	2.6672	160.032
B41	28	48	10	5	21	210	0.1095	3	4.6676	46.676
B42	28	48	12	5	21	252	0.1314	3	4.6676	56.0112
B43	28	36	10	5	21	210	0.1095	3	4.6676	46.676
B43A	16	40	10	5	12	120	0.0626	3	4.6676	46.676
B44	16	76	10	5	12	120	0.0626	3	2.6672	26.672
B45	16	76	10	5	12	120	0.0626	3	2.6672	26.672
B46	28	36	12	5	21	252	0.1314	3	2.6672	32.0064
B47	28	36	10	5	21	210	0.1095	3	4.6676	46.676
B48	16	37	15	5	12	180	0.0939	3	4.6676	70.014
B49	16	37	18	5	12	216	0.1126	3	2.6672	48.0096
B50	16	98	40	5	12	480	0.2503	3	2.6672	106.688
B51	16	74	45	5	12	540	0.2816	3	2.6672	120.024
B52	16	76	8	5	12	96	0.0501	3	2.6672	21.3376
B53	16	74	10	5	12	120	0.0626	3	2.6672	26.672

B54	16	76	10	5	12	120	0.0626	3	2.6672	26.672	
B56	16	30	10	5	12	120	0.0626	3	2.6672	26.672	
B57	12	60	15	5	9	135	0.0704	3	2.6672	40.008	
B58	16	30	10	5	12	120	0.0626	3	2.0004	20.004	
B59	16	40	10	5	12	120	0.0626	3	2.6672	26.672	
B60	16	30	10	5	12	120	0.0626	3	2.6672	26.672	
B61	16	60	10	5	12	120	0.0626	3	2.6672	26.672	
B61LC	16	75	10	5	12	120	0.0626	3	2.6672	26.672	
B62	16	32	10	5	12	120	0.0626	3	2.6672	26.672	
B63	16	46	10	5	12	120	0.0626	3	2.6672	26.672	
B64	16	46	10	5	12	120	0.0626	3	2.6672	26.672	
B65	12	60	10	5	9	90	0.0469	3	2.6672	26.672	
B66	12	60	20	5	9	180	0.0939	3	2.0004	40.008	
B68	12	16	20	5	9	180	0.0939	3	2.0004	40.008	
B68A	12	16	10	5	9	90	0.0469	3	2.0004	20.004	
B69	16	30	15	5	12	180	0.0939	3	2.0004	30.006	
B70	16	30	10	5	12	120	0.0626	3	2.6672	26.672	
B71	16	32	10	5	12	120	0.0626	3	2.6672	26.672	
B73	16	30	5	5	12	60	0.0313	3	2.6672	13.336	
B74	12	36	5	5	9	45	0.0235	3	2.6672	13.336	
B75	12	30	10	5	9	90	0.0469	3	2.0004	20.004	
TOTAL						20967	10.934			4616.2564	
mutiplier for remaining floors						3	0.0016			3	
GRAND TOTAL						62901	32.803			13848.7692	2.6

COLUMN/COLUMN FOOTING CONCRETETAKE OFF									
Column Mark	Column Footing				Columns				
	Depth (in)	Length	Width	CF	Stories	Height	Length	Width	CF
101	24	1.5	5	15	4	60	12	28	20160
102	24	3.5	7	49	4	60	20	20	24000
103	Not Used				4	60	20	20	24000
104	Not Used				4	60	20	20	24000
105	Not Used				4	60	20	20	24000
106	Not Used				4	60	20	20	24000
107	24	1.5	5	15	4	60	20	20	24000
108	24	1.5	5	15	11	165	16	28	73920
109	24	7	7	98	2	30	12	28	10080
110	32	12	12	384	11	165	16	28	73920
103/111	36	24	15	1080	11	165	16	28	73920
104/112	36	24	15	1080	11	165	16	28	73920
105/113	36	24	15	1080	11	165	16	28	73920
106/114	36	24	15	1080	11	165	16	28	73920
115	24	1.5	5	15	12	180	16	28	80640
116	36	12	12	432	12	180	16	28	80640
117	Not Used				12	180	16	28	80640
118	Not Used				12	180	16	28	80640
119	Not Used				12	180	16	28	80640
120	Not Used				12	180	16	28	80640
121	Not Used				Not Used				
122	24	1.5	5	15	10	150	16	28	67200
123	26	10	10	216.6667	11	165	20	20	66000
124	34	8	14	317.3333	2	30	16	28	13440
125	26	10	10	216.6667	2	30	16	28	13440
126	34	8	14	317.3333	2	30	16	28	13440
127	44	10	16.5	605	2	30	16	28	13440
128	44	13	11	524.3333	12	180	16	28	80640
129	44	10.5	20	770	12	180	16	28	80640
130	24	7	7	98	2	30	12	28	10080
131	36	12	15	540	10	150	16	28	67200
132	36	12	15	540	12	180	16	28	80640
133	36	12	15	540	12	180	16	28	80640
134	36	12	16	576	11	165	16	28	73920
135	36	12	17	612	11	165	16	28	73920
136	36	12	18	648	11	165	16	28	73920
137	Not Used				12	180	16	28	80640
138	Not Used				12	180	16	28	80640
139	24	1.5	5	15	3	45	12	28	15120
140	32	10	20	533.3333	12	180	16	28	80640
141	Not Used				12	180	16	28	80640
142	36	13	13	507	12	180	12	28	60480
143	38	14	14	620.6667	11	165	12	28	55440
144	38	14	14	620.6667	11	165	12	28	55440
145	38	14	14	620.6667	11	165	16	28	73920
146	38	14	14	620.6667	11	165	16	28	73920
147	24	1.5	5	15	11	165	16	28	73920
148	24	1.5	5	15	3	45	16	28	20160
149	24	1.5	5	15	3	45	16	28	20160

150	30	10	12	300	12	180	12	28	60480
151	Not Used				12	180	12	28	60480
152	Not Used				Not Used				
153	Not Used				Not Used				
154	24	9	9	162	1	15	16	28	6720
155	24	1.5	5	15	1	15	16	28	6720
156	24	1.5	5	15	1	15	16	28	6720
157	24	1.5	5	15	1	15	16	28	6720
158	Not Used				12	180	16	28	80640
159	24	1.5	5	15	12	180	16	28	80640
160	26	18	20	780	13	195	12	28	65520
161	Not Used				13	195	12	28	65520
162	36	12	16	576	13	195	12	28	65520
163	40	14	14	653.3333	13	195	16	28	87360
164	Not Used				10	150	12	28	50400
165	Not Used				10	150	16	28	67200
166	38	14	14	620.6667	9	135	16	28	60480
167	42	15	15	787.5	10	150	12	28	50400
167B	30	11	11	302.5	11	165	12	28	55440
168	36	13	13	507	11	165	12	28	55440
169	30	11	11	302.5	9	135	16	28	60480
170	24	1.5	5	15	3	45	12	28	15120
171	38	14	14	620.6667	6	90	16	28	40320
172	42	15	15	787.5	3	45	16	28	20160
173	32	18	16.5	792	6	90	16	28	40320
174	Not Used				3	45	16	28	20160
175	32	12	9	288	3	45	16	28	20160
176	Not Used				9	135	16	28	60480
177	24	1.5	5	15	9	135	16	28	60480
178	38	14	14	620.6667	9	135	16	28	60480
179	38	13	13	535.1667	9	135	16	28	60480
180	32	14	16	597.3333	1	15	16	28	6720
181	Not Used				3	45	16	28	20160
182	28	10.5	10.5	257.25	3	45	16	28	20160
183	24	1.5	5	15	1	15	16	28	6720
184	24	1.5	5	15	3	45	16	28	20160
185	24	1.5	5	15	3	45	16	28	20160
186	32	15	18	720	10	150	16	28	67200
187	Not Used				10	150	12	28	50400
188	36	13	13	507	9	135	12	28	45360
189	Not Used				Not Used				
190	32	23	13	797.3333	9	135	16	28	60480
191	Not Used				9	135	16	28	60480
192	Not Used				3	45	16	28	20160
193	Not Used				4	60	16	28	26880
194	26	15	9	292.5	2	30	16	28	13440
195	Not Used				3	45	16	28	20160
196	24	1.5	5	15	3	45	16	28	20160
197	26	10	10	216.6667	8	120	16	28	53760
198	26	10	10	216.6667	8	120	16	28	53760
199	Not Used				Not Used				
200	Not Used				5	75	16	28	33600

201	26	10	10	216.6667	7	105	16	28	47040
202	30	11	11	302.5	3	45	16	28	20160
203	36	12	16	576	4	60	16	28	26880
205	26	15	9	292.5	2	30	16	28	13440
206	Not Used				3	45	16	28	20160
207	24	1.5	5	15	3	45	16	28	20160
208	32	12	12	384	2	30	16	28	13440
209	32	12	12	384	2	30	16	28	13440
209a	26	10	10	216.6667	2	30	16	28	13440
210	32	12	12	384	2	30	16	28	13440
211	32	12	12	384	2	30	16	28	13440
212	32	12	12	384	2	30	16	28	13440
213	32	12	12	384	2	30	16	28	13440
213a	26	10	10	216.6667	2	30	16	28	13440
214	32	12	12	384	2	30	16	28	13440
215	32	12	12	384	2	30	16	28	13440
216	32	12	12	384	7	105	16	28	47040
216	31	12	12	372	8	120	16	28	53760
217	36	13	13	507	8	120	16	28	53760
218	26	15	9	292.5	8	120	16	28	53760
219	Not Used				8	120	16	28	53760
220	26	15	9	292.5	8	120	16	28	53760
221	Not Used				8	120	16	28	53760
222	36	13	13	507	8	120	16	28	53760
223	26	15	9	292.5	9	135	12	28	45360
224	Not Used				9	135	12	28	45360
225	24	8	8	128	9	135	12	28	45360
226	26	15	9	292.5	9	135	12	28	45360
227	Not Used				9	135	12	28	45360
228				0	Not Used				
229	26	15	9	292.5	9	135	12	28	45360
230	Not Used				9	135	12	28	45360
231	24	1.5	5	15	8	120	12	28	40320
232				0	Not Used				
233	36	13	13	507	8	120	16	28	53760
234	26	15	9	292.5	9	135	16	28	60480
235				0	8	120	12	28	40320
236	26	15	9	292.5	9	135	12	28	45360
237	Not Used				9	135	12	28	45360
238	26	15	9	292.5	9	135	12	28	45360
239	Not Used				9	135	12	28	45360
240	24	1.5	5	15	9	135	12	28	45360
241	26	15	9	292.5	8	120	16	28	53760
242	26	15	9	292.5	8	120	16	28	53760
243	26	15	9	292.5	8	120	16	28	53760
244	34	15	8	340	8	120	16	28	53760
245	32	4.5	6	72	2	30	16	28	13440
246	24	1.5	5	15	8	120	16	28	53760
247	32	6	4.5	72	2	30	16	28	13440
248	24	1.5	5	15	8	120	16	28	53760
249	24	1.5	5	15	7	105	16	28	47040
250	26	15	9	292.5	7	105	16	28	47040

251	26	15	9	292.5	7	105	16	28	47040
252	24	1.5	5	15	7	105	16	28	47040
Total				39542.08					6674640

REINFORCED BEAM CONCRETE				
Mark	Width (in)	Depth (in)	Length	CF
Level P1				
PB1	12	16	60	11520
PB2	16	16	10	2560
PB2A	16	16	12	3072
PB3	24	24	10	5760
PB3RC	24	24	10	5760
PB4	34	16	10	5440
PB4A	34	16	10	5440
PB5	12	16	12	2304
PB6	12	28	10	3360
PB7	16	16	15	3840
PB8	20	28	18	10080
PB9	12	16	40	7680
PB10	16	16	45	11520
PB11	12	16	8	1536
PB12	12	16	10	1920
PB12A	8	16	10	1280
PB13	12	16	10	1920
PB14	12	16	15	2880
PB15	28	24	10	6720
PB16	20	24	10	4800
PB17	28	36	10	10080
PB18	28	36	10	10080
PB18LC	28	36	10	10080
PB19	28	48	10	13440
PB20	28	48	10	13440
PB20LC	28	48	10	13440
PB21	16	54	10	8640
PB22	12	24	20	5760
PB23	12	24	20	5760
PB23RC	12	24	10	2880
PB24	12	24	15	4320
PB24LC	12	24	10	2880
PB25	12	24	10	2880
PB25LC	12	24	5	1440
PB26	18	36	5	3240
PB26LC	18	20	10	3600
PB27	12	16	10	1920
PB28	20	16	20	6400
PB29	24	16	10	3840
PB30	12	16	15	2880
PB31	14	14	15	2940
PB32	12	14	15	2520
PB33	12	24	10	2880
PB34	12	24	10	2880
PB34LC	12	24	10	2880
Total				240492
1ST Floor				
B1	12	30	60	21600
B1A	18	30	10	5400

B1B	18	30	12	6480
B2	12	18	10	2160
B2R	12	18	10	2160
B3	12	18	10	2160
B4	12	18	10	2160
B4R	12	18	12	2592
B5	12	18	10	2160
B6	12	18	15	3240
B7	12	18	18	3888
B8	12	30	40	14400
B10	12	16	45	8640
B11	20	16	8	2560
B12	16	20	10	3200
B12A	16	20	10	3200
B13	12	20	10	2400
B15	12	16	15	2880
B15A	16	16	10	2560
B15B	16	20	10	3200
B18	16	36	10	5760
B18A	12	28	10	3360
B19	18	28	10	5040
B22	18	36	10	6480
B23	18	36	10	6480
B24	16	36	10	5760
B25	28	85	10	23800
B26	16	36	20	11520
B27	16	28	20	8960
B28	16	28	10	4480
B29	16	62	15	14880
B30	16	62	10	9920
B30LC	16	62	10	9920
B31	16	62	5	4960
B32	16	62	5	4960
B32A	20	62	10	12400
B33	20	66	10	13200
B34	16	66	20	21120
B35	18	24	10	4320
B36	16	32	15	7680
B37	16	52	15	12480
B37LC	16	34	15	8160
B38	16	66	10	10560
B38LC	16	60	10	9600
B39	16	42	10	6720
B40	28	42	60	70560
B41	28	48	10	13440
B42	28	48	12	16128
B43	28	36	10	10080
B43A	16	40	10	6400
B44	16	76	10	12160
B45	16	76	10	12160
B46	28	36	12	12096
B47	28	36	10	10080

B48	16	37	15	8880
B49	16	37	18	10656
B50	16	98	40	62720
B51	16	74	45	53280
B52	16	76	8	9728
B53	16	74	10	11840
B54	16	76	10	12160
B56	16	30	10	4800
B57	12	60	15	10800
B58	16	30	10	4800
B59	16	40	10	6400
B60	16	30	10	4800
B61	16	60	10	9600
B61LC	16	75	10	12000
B62	16	32	10	5120
B63	16	46	10	7360
B64	16	46	10	7360
B65	12	60	10	7200
B66	12	60	20	14400
B68	12	16	20	3840
B68A	12	16	10	1920
B69	16	30	15	7200
B70	16	30	10	4800
B71	16	32	10	5120
B73	16	30	5	2400
B74	12	36	5	2160
B75	12	30	10	3600
Total				787608
Multiplier for 2nd Fl/typical/roof beams)				3
Grand Total				2362824

CONCRETE SLAB'S				
Location	SF	Thickness	CF	CY
Slab On Grade				
Level P2	45579	5	227895	8432.115
Slab on Deck				
Level P1	45579	5	227895	8432.115
B1: 1st Floor	13423	5	67115	2483.255
B2: 1st Floor	13423	5	67115	2483.255
B1: 2nd Floor	13423	5	67115	2483.255
B2: 2nd Floor	13423	5	67115	2483.255
B1: 3rd Floor	13423	5	67115	2483.255
B2: 3rd Floor	13423	5	67115	2483.255
B1:4th Floor	13423	5	67115	2483.255
B2: 4th Floor	13423	5	67115	2483.255
B1: 5th Floor	13423	5	67115	2483.255
B2: 5th Floor	13423	5	67115	2483.255
B1: 6th Floor	13423	5	67115	2483.255
B2: 6th Floor	13423	5	67115	2483.255
B1: 7th Floor	13423	5	67115	2483.255
B1: 8th Floor	13423	5	67115	2483.255
B1: 9th Floor	13423	5	67115	2483.255
B1: 10th Floor	13423	5	67115	2483.255
TOTAL			1529630	56596.31

TOTAL		
FORMWORK		
Footings	12655.7	SF
Columns	1464720	SF
Beams	89131.17	SF
Total Formwork	1566506.87	SF
REINFORCING		
#3	202353.77	LF
#5	66720.5	LF
#7	284.5	LF
#8	33437.5	LF
#9	130818.07	LF
#10	24995.6	LF
#12	400.8	LF
Total Reinforcing	459010.74	LF
CONCRETE		
Column Footings	1469.52	CY
Columns	247208.89	CY
Reinforced Beams	96322.69	CY
Slab on Grade	8432.12	CY
Slab on Deck	48166.2	CY
Total Concrete	401599.42	CY

APPENDIX E: ASSEMBLIES MEP ESTIMATE

The following items are found in Appendix E: Assemblies MEP Estimate:

- MEP Assemblies Estimate

MEP Assemble Estimate								
	QTY	Units	Size	Material \$/Unit	Material Total	Installation \$/Unit	Installation Total	Total
Mechanical Distribution System								
Garage Fans	3	Ea	13,800 CFM	\$ 11,600.00	\$ 34,800.00	\$ 47,900.00	\$ 143,700.00	\$ 178,500.00
Stair Air Pressure Fans	2	Ea	8500 CFM	\$ 10,800.00	\$ 21,600.00	\$ 41,700.00	\$ 83,400.00	\$ 105,000.00
Ceiling Mounted Exhaust Fans	3	Ea	500 CFM	\$ 2,650.00	\$ 7,950.00	\$ 2,850.00	\$ 8,550.00	\$ 16,500.00
Exhaust Fan	4	Ea	200 CFM	\$ 2,900.00	\$ 11,600.00	\$ 1,800.00	\$ 7,200.00	\$ 18,800.00
Exhaust Fan	5	Ea	400 CFM	\$ 3,225.00	\$ 16,125.00	\$ 2,475.00	\$ 12,375.00	\$ 28,500.00
Exhaust Fan	4	Ea	600 CFM	\$ 3,625.00	\$ 14,500.00	\$ 3,375.00	\$ 13,500.00	\$ 28,000.00
Exhaust Fan	2	Ea	800 CFM	\$ 3,825.00	\$ 7,650.00	\$ 3,875.00	\$ 7,750.00	\$ 15,400.00
Exhaust Fan	4	Ea	1000 CFM	\$ 4,125.00	\$ 16,500.00	\$ 4,350.00	\$ 17,400.00	\$ 33,900.00
Exhaust Fan	4	Ea	1250 CFM	\$ 4,700.00	\$ 18,800.00	\$ 5,450.00	\$ 21,800.00	\$ 40,600.00
Exhaust Fan	1	Ea	10000 CFM	\$ 130,000.00	\$ 130,000.00	\$ 41,700.00	\$ 41,700.00	\$ 171,700.00
Air Flow Regulator	5	Ea	25 CFM	\$ 2,000.00	\$ 10,000.00	\$ 500.00	\$ 2,500.00	\$ 12,500.00
AC Units	3	Ea	2 Ton	\$ 2,050.00	\$ 6,150.00	\$ 525.00	\$ 1,575.00	\$ 7,725.00
100% OA Unit	1	Ea	21000 CFM	\$ 220,000.00	\$ 220,000.00	\$ 41,500.00	\$ 41,500.00	\$ 261,500.00
Heat Pump	1	Ea	1.5 ton	\$ 2,600.00	\$ 2,600.00	\$ 1,525.00	\$ 1,525.00	\$ 4,125.00
Heat Pump	4	Ea	2 ton	\$ 3,525.00	\$ 14,100.00	\$ 1,825.00	\$ 7,300.00	\$ 21,400.00
Heat Pump	3	Ea	3 ton	\$ 3,725.00	\$ 11,175.00	\$ 1,950.00	\$ 5,850.00	\$ 17,025.00
Heat Pump	2	Ea	3.5 ton	\$ 4,025.00	\$ 8,050.00	\$ 2,000.00	\$ 4,000.00	\$ 12,050.00
100% OA Roof Unit	2	Ea	15,000 CFM	\$ 100,000.00	\$ 200,000.00	\$ 25,000.00	\$ 50,000.00	\$ 250,000.00
100% OA Roof Unit	1	Ea	10,000 CFM	\$ 69,500.00	\$ 69,500.00	\$ 12,000.00	\$ 12,000.00	\$ 81,500.00
MECHANICAL SYSTEM TOTAL					\$ 821,100.00		\$ 483,625.00	\$ 1,304,725.00
Electrical Distribution System								
High Voltage Cable	7500	LF	25 kV	\$ 40.50	\$ 303,750.00	\$ 32.50	\$ 243,750.00	\$ 547,500.00
3P/4W 600 A	3	Ea	600 A	\$ 11,900.00	\$ 35,700.00	\$ 8,550.00	\$ 25,650.00	\$ 61,350.00
Switchboards	4	Ea	2500 A	\$ 42,500.00	\$ 170,000.00	\$ 8,300.00	\$ 33,200.00	\$ 203,200.00
Panel	8	Ea	100 A	\$ 3,475.00	\$ 27,800.00	\$ 3,825.00	\$ 30,600.00	\$ 58,400.00
Panel	4	Ea	400 A	\$ 17,800.00	\$ 71,200.00	\$ 13,000.00	\$ 52,000.00	\$ 123,200.00
Panel	3	Ea	800 A	\$ 36,200.00	\$ 108,600.00	\$ 19,400.00	\$ 58,200.00	\$ 166,800.00
ELECTRICAL TOTAL					\$ 717,050.00		\$ 443,400.00	\$ 1,160,450.00
Plumbing Distribution System								
Water Heater Units	3	Ea	960 gph	\$ 60,000.00	\$ 180,000.00	\$ 3,050.00	\$ 9,150.00	\$ 189,150.00
Domestic Water Heat Pump	2	Ea	Ton	\$ 19,200.00	\$ 38,400.00	\$ 6,799.00	\$ 13,598.00	\$ 51,998.00

Sump Pump	4	Ea	2500 GPM	\$ 41,000.00	\$ 164,000.00	\$ 14,972.00	\$ 59,888.00	\$ 223,888.00
Dry Sprinkler System	150000	SF	Steel Pipe	\$ 2.28	\$ 342,000.00	\$ 1.94	\$ 291,000.00	\$ 633,000.00
PLUMBING SYSTEM TOTAL					\$ 724,400.00		\$ 373,636.00	\$ 1,098,036.00
GRAND TOTAL					\$ 2,262,550.00		\$ 1,300,661.00	\$ 3,563,211.00

APPENDIX F: CONSTRUCTABILITY CHALLENGES

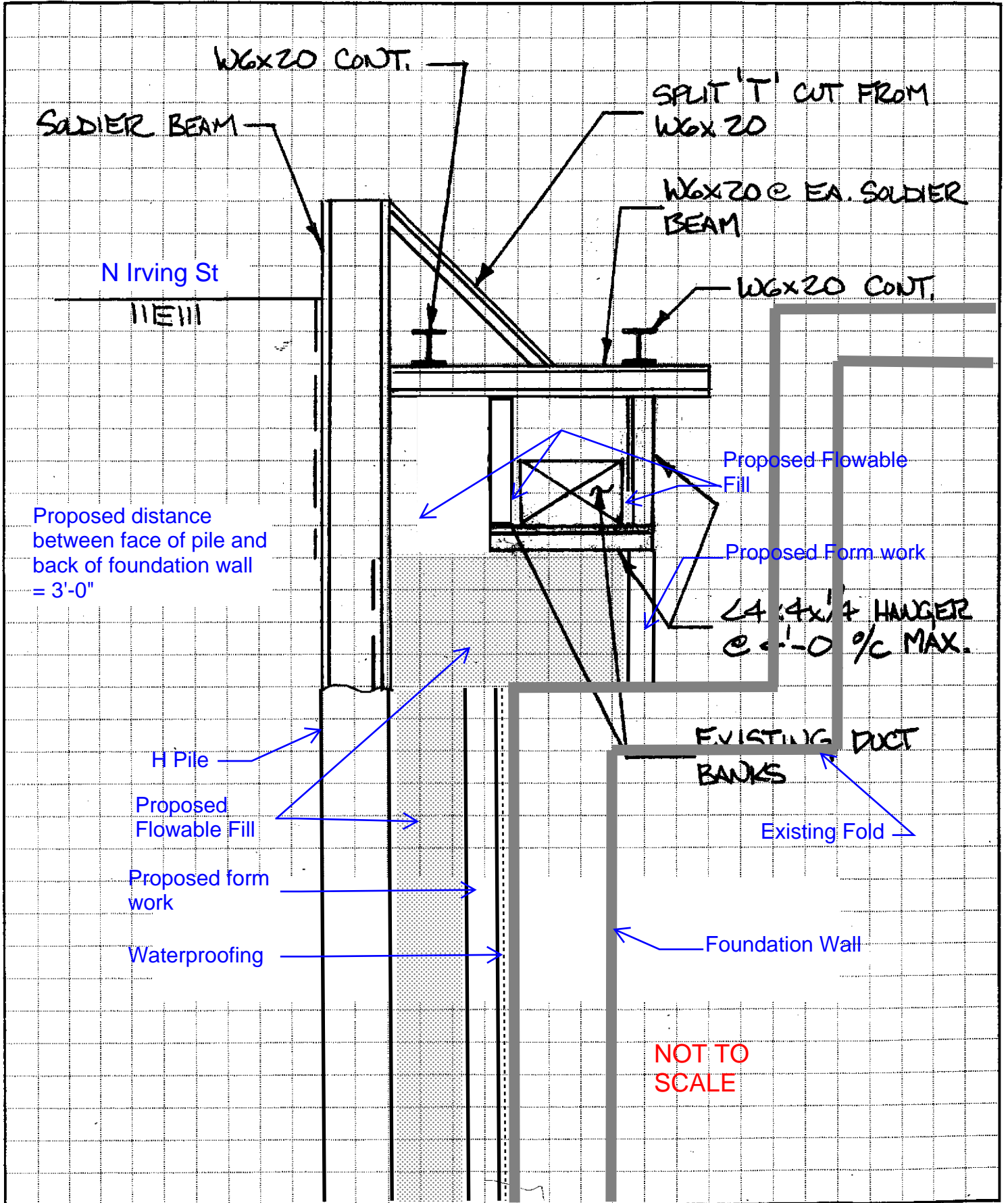
The following items are found in Appendix G: Constructability Challenges:

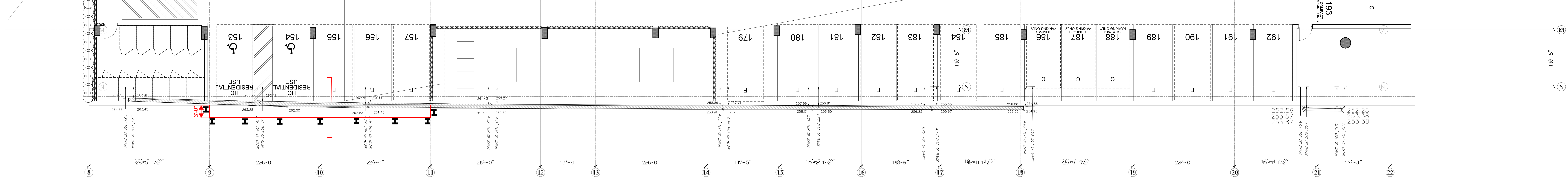
- Duct Bank Sketches

SUPERIOR/MORONEY BROTHERS, INC.
8230 Old Courthouse Road, Suite 400
VIENNA, VA 22182
(703) 848-2727 Fax (703) 848-2729

JOB 1200 N. IRVING STREET
SHEET NO. OPTION A OF _____
CALCULATED BY P.M. DATE 8-24-2012
CHECKED BY _____ DATE REV. 8-29-2012

SCALE





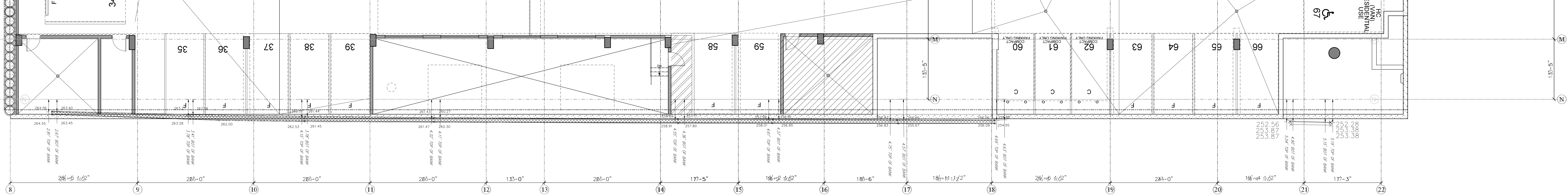
INFORMATION ONLY

Duct bank overlay: Parking level P2 Scale: 1'-0" = 1 1/2"
9/12/1012

ESOCOFF & ASSOCIATES architects

Suite 800
1150 Seventeenth Street NW
Washington DC 20036

202 682 1600
Fax 202 682 1672
architects@esocoff.com



INFORMATION ONLY

Duct bank overlay: Parking level P1 Scale: 1'-0" = 1 1/2"
 9/12/1012

ESOCOFF & ASSOCIATES | architects

Suite 800 202 682 1600
 1150 Seventeenth Street NW Fax 202 682 1672
 Washington DC 20036 architects@esocoff.com

APPENDIX G: LEED EVALUATION

The following items are found in Appendix VI: LEED Evaluation:

- LEED-NC Version 2.2 Registered Project Checklist
- LEED NCv2.2 ScoreCard



LEED-NC

LEED-NC Version 2.2 Registered Project Checklist

Multi-Use High Rise

Yes ? No

9 5 Sustainable Sites 14 Points

Y				Prereq 1	Construction Activity Pollution Prevention	Required
1				Credit 1	Site Selection	1
1				Credit 2	Development Density & Community Connectivity	1
			1	Credit 3	Brownfield Redevelopment	1
1				Credit 4.1	Alternative Transportation, Public Transportation Access	1
1				Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1
1				Credit 4.3	Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles	1
1				Credit 4.4	Alternative Transportation, Parking Capacity	1
			1	Credit 5.1	Site Development, Protect or Restore Habitat	1
1				Credit 5.2	Site Development, Maximize Open Space	1
			1	Credit 6.1	Stormwater Design, Quantity Control	1
			1	Credit 6.2	Stormwater Design, Quality Control	1
1				Credit 7.1	Heat Island Effect, Non-Roof	1
1				Credit 7.2	Heat Island Effect, Roof	1
			1	Credit 8	Light Pollution Reduction	1

Yes ? No

1 1 3 Water Efficiency 5 Points

	1			Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1
			1	Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1
			1	Credit 2	Innovative Wastewater Technologies	1
1				Credit 3.1	Water Use Reduction, 20% Reduction	1
			1	Credit 3.2	Water Use Reduction, 30% Reduction	1

Yes ? No

1 1 13 Energy & Atmosphere 17 Points

Y				Prereq 1	Fundamental Commissioning of the Building Energy Systems	Required
Y				Prereq 2	Minimum Energy Performance	Required
Y				Prereq 3	Fundamental Refrigerant Management	Required
			10	Credit 1	Optimize Energy Performance	1 to 10
			1	Credit 2	On-Site Renewable Energy	1 to 3
1				Credit 3	Enhanced Commissioning	1
			1	Credit 4	Enhanced Refrigerant Management	1
			1	Credit 5	Measurement & Verification	1
	1			Credit 6	Green Power	1

continued...

Yes ? No

4 2 7 Materials & Resources 13 Points

Y				Prereq 1	Storage & Collection of Recyclables	Required
			1	Credit 1.1	Building Reuse, Maintain 75% of Existing Walls, Floors & Roof	1
			1	Credit 1.2	Building Reuse, Maintain 100% of Existing Walls, Floors & Roof	1
			1	Credit 1.3	Building Reuse, Maintain 50% of Interior Non-Structural Elements	1

1		
1		
		1
		1
1		
	1	
1		
	1	
		1
		1

Credit 2.1	Construction Waste Management , Divert 50% from Disposal	1
Credit 2.2	Construction Waste Management , Divert 75% from Disposal	1
Credit 3.1	Materials Reuse , 5%	1
Credit 3.2	Materials Reuse , 10%	1
Credit 4.1	Recycled Content , 10% (post-consumer + ½ pre-consumer)	1
Credit 4.2	Recycled Content , 20% (post-consumer + ½ pre-consumer)	1
Credit 5.1	Regional Materials , 10% Extracted, Processed & Manufactured Regionally	1
Credit 5.2	Regional Materials , 20% Extracted, Processed & Manufactured Regionally	1
Credit 6	Rapidly Renewable Materials	1
Credit 7	Certified Wood	1

Yes ? No

8	1	6
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Indoor Environmental Quality

15 Points

Y		
Y		
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		1
1		
		1
1		
1		
1		
		1
		1
1		
1		
1		
	1	
		1
1		

Prereq 1	Minimum IAQ Performance	Required
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
Credit 1	Outdoor Air Delivery Monitoring	1
Credit 2	Increased Ventilation	1
Credit 3.1	Construction IAQ Management Plan , During Construction	1
Credit 3.2	Construction IAQ Management Plan , Before Occupancy	1
Credit 4.1	Low-Emitting Materials , Adhesives & Sealants	1
Credit 4.2	Low-Emitting Materials , Paints & Coatings	1
Credit 4.3	Low-Emitting Materials , Carpet Systems	1
Credit 4.4	Low-Emitting Materials , Composite Wood & Agrifiber Products	1
Credit 5	Indoor Chemical & Pollutant Source Control	1
Credit 6.1	Controllability of Systems , Lighting	1
Credit 6.2	Controllability of Systems , Thermal Comfort	1
Credit 7.1	Thermal Comfort , Design	1
Credit 7.2	Thermal Comfort , Verification	1
Credit 8.1	Daylight & Views , Daylight 75% of Spaces	1
Credit 8.2	Daylight & Views , Views for 90% of Spaces	1

Yes ? No

5		
---	--	--

Innovation & Design Process

5 Points

1		
1		
1		
1		
1		

Credit 1.1	Innovation in Design : Education Program	1
Credit 1.2	Innovation in Design : Energy Star Appliances	1
Credit 1.3	Innovation in Design : Low Mercury Lamps	1
Credit 1.4	Innovation in Design : Heat Island Effect, Non-Roof: 100% Underground Parking	1
Credit 2	LEED® Accredited Professional	1

Yes ? No

28	5	34
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Project Totals (pre-certification estimates)

69 Points

Certified 26-32 points Silver 33-38 points Gold 39-51 points Platinum 52-69 points

Multi-Use High Rise: LEED NCv2.2 ScoreCard
Project Status 95% GMP + Addendum Set

69	Possible					Summarized Description of Action Required	Status
	28	27	33	36			
						Sustainable Sites	
	Y	Y	Y	Y	Prereq 1	Construction Activity Pollution Prevention	Incorporate erosion and sedimentation control measures into site construction. Soil and erosion control details are shown in the drawings. Specs are included. SDK ESC spec is used.
1	1	1	1	1	Credit 1	Site Selection	Do not develop flood prone sites, farmland, wetland, or endangered species refuge. Site is not located more than 5' above 100 year flood plain and does not fall on farmland, within 100' of wetlands, or within 50' of a water body.
1	1	1	1	1	Credit 2	Development Density & Community Connectivity	Develop on a previously developed with within an area with min density of 60,000sqft/acre OR develop within 1/2 mile of residential area and within 1/2 mile of 10 community services. Site is located on a previously developed site and is within 1/2 mile of 10 basic services.
1	0	0	0	0	Credit 3	Brownfield Redevelopment	Develop EPA or State designated Brownfield site. Site does not qualify
1	1	1	1	1	Credit 4.1	Alt. Transportation, Public Transportation Access	Develop site within 1/4 of two bus lines or within 1/2 mile of rail station. Site located within 0.1 mi of WMATA metro stop (Clarendon).
1	1	1	1	1	Credit 4.2	Alt Transportation, Bicycle Storage & Changing Rooms	Provide bike racks for 5% of population and showers for 0.5% of the full time equivalent (FTE) occupants. Bike spots req'd: 32 Bike spots provided: 84 spots for residential, 8 spots for retail (shown in code calcs) Residential bike storage and retail bike rack details are shown in dwgs.
1	1	1	1	1	Credit 4.3	Alt Transportation, Low Emitting & Fuel Efficient Vehicles	Provide low-emitting/ fuel-efficient vehicles for 3% FTE occupants or provide 5% of total parking as preferred parking for fuel efficient vehicles or install alternative-fuel refueling stations for 3% of total parking. Dedicated parking spots for low emitting/fuel efficient vehicles are shown in parking plan.
1	1	1	1	1	Credit 4.4	Alt Transportation, Parking Capacity	Do not exceed code/zone allowed minimum parking capacity and provide preferred parking for carpools totaling 5% of total parking or add no new parking. Parking Required (as per zoning) = 230 Parking Provided = 230
1	0	0	0	0	Credit 5.1	Site Development, Protect or Restore Open Space	Limit site disturbance to 40' from building, 10' beyond walkways, 15' beyond roadways and 25' beyond permeable surfaces OR restore predeveloped sites. Total Site area = 51,696 SF Open space (planted with native and adaptive species) req'd - 25,850 SF Open space provided - 13,708 SF (native & adaptive vegetation not included) Green roof does not contain native and adaptive vegetation, hence will not qualify. Credit not achievable.
1	1	1	1	1	Credit 5.2	Site Development, Maximize Open Space	Exceed zone open space requirement by 25% or provide open space equal to building footprint No open space required by zoning. Total Site area = 51,696 SF Green roof - 17083 sf (50.1%) Roof pedestrian oriented open space = 17356.6 (33%) Current layout meets credit intent due to accessible roof space.
1	0	0	0	0	Credit 6.1	Stormwater Design, Quantity Control	Employ storm retention ponds/tanks OR pervious paving AND/OR veg. roof reducing run-off so post development rate and quantity is less than or equal to predevelopment. Feed cooling tower with captured storm water or use as irrigation water make-up Site is previously developed and is >50% impervious. Dwgs show SW runoff calcs for 10 yr storm event. SW runoff qty is reduced to >25% by combination of green roof and SW reuse for irrigation. Credit not achievable as SW cistern is removed due to VE efforts.
1	0	0	0	0	Credit 6.2	Stormwater Design, Quality Control	Employ storm retention ponds/tanks OR pervious paving AND/OR veg. roof. & filtration for ALL site runoff Dwgs show 73% of site treated. Type of treatment is not specified in dwgs. Credit not achievable due to limitations in capturing all SW runoff.

Multi-Use High Rise: LEED NCv2.2 ScoreCard
Project Status 95% GMP + Addendum Set

69	Possible					Summarized Description of Action Required	Status
	28	27	33	36			
1	1	1	1	1	Credit 7.1	Heat Island Effect, Non-Roof Shade parking OR 50% under cover and utilize high reflective materials for hardscape.	100% of parking is provided underground.
1	1	1	1	1	Credit 7.2	Heat Island Effect, Roof Specify high albedo AND/OR veg. roof for 75% of roof area.	Total Roof Area = 38,383 sf Green Roof Area = 17,083 SF (50.1%) Green roof specs are included in Addendum.
1	0	0	0	0	Credit 8	Light Pollution Reduction Design muted exterior lighting (< 1.5 fc) with cut off fixtures and no up lighting.	Credit is not being pursued.
Water Efficiency							
1	0	0	1	1	Credit 1.1	Water Efficient Landscaping, Reduce by 50% Specify drip irrigation AND/OR use captured storm water for irrigation.	Landscape plan does not include any native/adaptive species. Permanent and temporary drip irrigation systems are used. Hose bib locations are indicated in Arch dwgs. Arch and plumbing dwgs show location of SW vault and irrigation management system. Irrigation system spec is 328400 but control details are not included in the spec or on dwgs. ADDENDUM 6: Irrigation system is drip tube, but no rain gauges or moisture sensors are specified. 2/14 - SW cistern has been eliminated. Credit can only be pursued with drip irrigation, moisture sensors, rain gauge sensors.
1	0	0	0	0	Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation Install no irrigation OR use captured storm water (tanks or pond) for all irrigation.	2/14 - SW cistern has been eliminated. Credit cannot be achieved.
1	0	0	0	0	Credit 2	Innovative Wastewater Technologies Use waterless urinals AND/OR gray water system	Not achievable by project
1	1	0	1	1	Credit 3.1	Water Use Reduction, 20% Reduction Specify 1.6 gpf or less water closets, 1.0 or gpf or less urinals, 2.0 gpm shower heads, and .5 gpm lavatory faucet aerators.	Plumbing fixtures will be chosen to meet 20% water use reduction.
1	0	0	0	0	Credit 3.2	Water Use Reduction, 30% Reduction Specify 1.6 gpf or less water closets, 0.5 or gpf urinals OR waterless , 1.5 gpm shower heads, and .5 gpm lavatory faucet aerators	Credit is a low possibility to achieve and will not be pursued.
Energy & Atmosphere							
	Y	Y	Y	Y	Prereq 1	Fundamental Commissioning of the Building Energy Systems Engage a 3rd party commissioning authority.	ADDENDUM 6: Has correct 019100 and customized 230800
	Y	Y	Y	Y	Prereq 2	Minimum Energy Performance Design envelop, HVAC, and lighting at or below ASHRAE 90.1-2004	Dwgs donot reference MEP system design to be complaint with ASHRAE 90.1-2004. Spec section 23 81 46 - WSHp references to ASHRAE 90.1 2004. Initial energy modeling performed by Summit show to meet ASHRAE 90.1-2004 standard.

Multi-Use High Rise: LEED NCv2.2 ScoreCard
Project Status 95% GMP + Addendum Set

69	Possible							Summarized Description of Action Required	Status
	28	27	33	36					
	Y	Y	Y	Y		Prereq 3	Fundamental Refrigerant Management	Specify HCFC or HFC refrigerants in chillers.	Dwgs and specs indicates all Water Source HPs to be Florida HPs using R410A.
10	0	0	0	0		Credit 1	Optimize Energy Performance	Design envelop, HVAC, and lighting below ASHRAE 90.1-2004 by 10-45%	Energy model results based on GMP set results in 4 points (23%) May lose points if domestic water preheat/heat recovery system and other VE items are adopted. 6/08 - Credit not achievable due to system design changes.
3	0	0	0	0		Credit 2.1	On-Site Renewable Energy , 2.5%, 7.5%, 12.5%	Employ renewable energy such as photovoltaic to offset building energy costs.	GMP set: Only renewable appears to be solar powered garden lights. DHW to be pre-heated using water source heat pumps. Credit not likely to achieve.
1	1	1	1	1		Credit 3	Enhanced Commissioning	Engage a 3rd party commissioning authority.	ADDENDUM 6: Has correct 019100 and customized 230800. Also, blower door tests now in TAB spec.
1	0	0	0	0		Credit 4	Enhanced Refrigerant Management	Specify HFC or non chlorine based refrigerants in chillers.	Specs indicate all water source HPs to be Florida HPs using R410A. 6/08 - Credit not achievable due to system design changes.
1	0	0	0	0		Credit 5	Measurement & Verification	Incorporate enhanced BAS energy use monitoring and reporting services.	ADD 6: Added main water, electric, and natural gas meter interfaces as well as retail electric sub-meter and points for possible future retail gas meters. Apartments each have own electric meter and billing. Only need to add the automatic monthly reporting to move this to "In Design" 6/08 - Credit not achievable due to system design changes.
1	0	0	1	1		Credit 6	Green Power	By 35% or building power from grid source green power suppliers.	Green power not currently purchased or committed to for the base building by the owner as yet.
Materials & Resources									
	Y	Y	Y	Y		Prereq 1	Storage & Collection of Recyclables	Designate specific space to support building recycling efforts on floors and loading dock.	Arch drawings show recycle room (approx. 180sf) on P2 level and trash collection rooms on every floor.
3	0	0	0	0		Credit 1.1	Building Reuse , Maintain 75%, 95% of Existing Shell, 50% of interior	Reuse existing building structure and shell elements.	Credit not applicable for the project.
1	1	1	1	1		Credit 2.1	Construction Waste Management , Divert 50%	Use waste hauler that will sort off site and recycle majority of construction waste, diverting waste from landfills.	CWM plan specs are included in the set. SDK template spec is used.
1	1	1	1	1		Credit 2.2	Construction Waste Management , Divert 75%	Use waste hauler that will sort off site and recycle majority of construction waste, diverting waste from landfills.	CWM plan specs are included in the set. SDK template spec is used. SDK attempted to contacted demolition contractor (12/06) but project was not yet awarded.
2	0	0	0	0		Credit 3.1	Materials Reuse , 5%, 10%	Use salvaged materials (lights, doors, hardware, seating, flooring, etc)	Credit not applicable for the project.

Multi-Use High Rise: LEED NCv2.2 ScoreCard
Project Status 95% GMP + Addendum Set

Possible	4.1 Commitment (DEFINITE)	As-Is OR Easy to Capture	Moderate but Anticipated	Difficult but Possible		Summarized Description of Action Required	Status
69	28	27	33	36			
1	1	1	1	1	Credit 4.1	Recycled Content , 10% (post-consumer + 1/2 pre-consumer) Specify building materials with high recycled content (gyp, ceiling, carpet, etc)	Finish schedule in Arch dwgs show finishes with recycled content. Payment requisition spec requires material+labor cost breakdown for LEED specified items only. Product specs indicate recycled content language and submittal requirements. Gypsum product options have very low recycled content. Post tensioned concrete, precast concrete, roof accessories, toilet accessories & walk off mat specs do include recycled content product and submittal requirements. Refer Material Matrix for products spec'd with recycled content.
1	0	0	1	1	Credit 4.2	Recycled Content , 20% (post-consumer + 1/2 pre-consumer) Specify building materials with high recycled content (gyp, ceiling, carpet, etc)	Finish schedule in Arch dwgs show finishes with recycled content. Payment requisition spec requires material+labor cost breakdown for LEED specified items only. Product specs indicate recycled content language and submittal requirements. Gypsum product
1	1	1	1	1	Credit 5.1	Local/Regional Materials , 10% Extracted/Harvest/Manufactured Specify building materials which are extracted, harvested, and manufactured from local (500miles) sources.	Payment requisition spec requires material+labor cost breakdown for LEED specified items only. Product specs indicate regional material content language and submittal requirements. Post tensioned concrete, precast concrete, roof accessories, wood doors, manufactured casework & walk off mat specs Refer Material Matrix for products spec'd under regional material credit
1	0	0	1	1	Credit 5.2	Local/Regional Materials , 20% Extracted/Harvest/Manufactured Specify building materials which are extracted, harvested, and manufactured from local (500miles) sources.	Payment requisition spec requires material+labor cost breakdown for LEED specified items only. Product specs indicate regional material content language and submittal requirements. Post tensioned concrete, precast concrete, roof accessories, wood doors, manufactured casework & walk off mat specs Refer Material Matrix for products spec'd under regional material credit
1	0	0	0	1	Credit 6	Rapidly Renewable Materials , 2.5% Specify wheat based doors/counters/core, bamboo/cork floors/ cotton insulation, etc.	Payment requisition spec requires material+labor cost breakdown for LEED specified items only. Product specs indicate rapidly renewable material language and submittal requirements. Gypsum Sheathing and Thermal Insulation product options donot meet requirement. All glass entrance specs indicate credit req. but doesnot indicate products meeting the criteria. Refer Material Matrix for products spec'd with rapidly renewable material content

Multi-Use High Rise: LEED NCv2.2 ScoreCard
Project Status 95% GMP + Addendum Set

Possible	4.1 Commitment (DEFINITE)	As-Is OR Easy to Capture	Moderate but Anticipated	Difficult but Possible			Summarized Description of Action Required	Status
69	28	27	33	36				
1	0	0	0	1	Credit 7	Certified Wood	Specify FSC certified wood for the majority of wood used on the project.	Certified wood is spec'd for temporary and permanent wood materials. Product specs and submittals requirements are included in specs. Refer Material Matrix for products spec'd with certified wood. Credit is a low probability to achieve.
Indoor Environmental Quality								
	Y	Y	Y	Y	Prereq 1	Minimum IAQ Performance	Design outside air to meet/exceed ASHRAE 62.1-2004	ADDENDUM 6: Engr will meet ASHRAE 62.1-04
	Y	Y	Y	Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control	Adopt no smoking policy and no smoking within 25' of the building.	Dwg A710 show all unit entry doors are weather stripped. Section 08 71 00 include weatherstripping specs. Dwg A701, detail 17 shows wall penetration and outlet details indicate sealant. Section 07 84 00 include smoke seals and gasket specs. Mech dwgs show units provided with outside air directly. Dwg M101 indicates units to be maintained at -ve pressure related to corridors. ADDENDUM 6 TAB spec now includes Blower Door testing.
1	0	0	0	0	Credit 1	Outdoor Air Delivery Method	Implement CO2 monitoring and CO2 based ventilation control.	Credit not being pursued.
1	0	0	0	0	Credit 2	Increased Ventilation	Increase ventilation rates to at least 30% above that as required by ASHRAE 62.1-2004	Credit not being pursued.
1	1	1	1	1	Credit 3.1	Construction IAQ Management Plan, During Construction	Protect HVAC system during construction and properly store absorptive materials. Spec 95% efficient filters.	Construction IAQ specs are included. SDK template spec is adopted. MERV 8 filters will be specified for use during and post construction phase.
1	0	0	0	0	Credit 3.2	Construction IAQ Management Plan, Before Occupancy	Flush building w/100% OA for 2 wks OR conduct post construction, pre occupancy air testing.	Construction IAQ specs are included. Building flushout and air testing, as an alternate, are included in the specs. Credit not being pursued due to schedule constraints.
1	1	1	1	1	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	Specify low VOC adhesives and sealants in all trades (Arch, MEP)	Adhesive and Sealant product specs will show allowable VOC limits
1	1	1	1	1	Credit 4.2	Low-Emitting Materials, Paints & Coatings	Specify low VOC interior paints, stains, varnishes, and coatings.	Paints and coating product specs indicate allowable VOC limits.
1	1	1	1	1	Credit 4.3	Low-Emitting Materials, Carpet Systems	Specify only CRI IAQ Green label plus certified carpets for ALL carpets. Specify low VOC carpet adhesive.	Carpet and carpet pad specs include Green Label Plus certification requirement.
1	0	0	0	1	Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Products	Specify low composite wood and agrifiber products containing no-urea formaldehyde resins. (Arch, MEP)	Spec sections include product and submittal requirements for no-urea formaldehyde composite wood.

Multi-Use High Rise: LEED NCv2.2 ScoreCard
Project Status 95% GMP + Addendum Set

Possible	4.1 Commitment (DEFINITE)					69	28	27	33	36	Summarized Description of Action Required	Status
	As-Is OR Easy to Capture	Moderate but Anticipated	Difficult but Possible									
1	0	0	0	0	0	Credit 5	Indoor Chemical & Pollutant Source Control	Install permanent entryway walk off systems, direct exhaust janitor/copy/fax areas and employ deck to deck partitions.	Credit not achievable.			
1	1	1	1	1	1	Credit 6.1	Controllability of Systems, Lighting	Provide lighting controls for 90% of building occupants and for all shared use spaces.	Individual lighting controls in units will qualify for the credit.			
1	1	1	1	1	1	Credit 6.2	Controllability of Systems, Thermal Comfort	Provide comfort control for 50% of occupants and for all shared use spaces.	Drawings indicate that individual thermostats are provided in all units. Mechanical specs show thermostat control specs. Individual thermostat controls in units qualify for the credit.			
1	1	1	1	1	1	Credit 7.1	Thermal Comfort, Design	Design HVAC system to meet ASHRAE 55-2004.	Proposed HVAC system design will meet ASHRAE 55-2004 reqs.			
1	0	0	1	1	1	Credit 7.2	Thermal Comfort, Verification	Develop thermal comfort survey for building occupants and corrective action procedure.	Requirement not yet developed.			
1	0	0	0	0	0	Credit 8.1	Daylight & Views, Daylight 75% of Spaces	Design envelop and interior spaces for 2% day lighting in 75% of occupied areas.	Current unit designs will not meet requirements. Credit not achievable.			
1	1	1	1	1	1	Credit 8.2	Daylight & Views, Views for 90% of Spaces	Design envelop and interior spaces for views outside for 90% of occupied areas.	Current unit designs DO meet requirements			
Innovation & Design Process												
1	1	1	1	1	1	Credit 1.1	Innovation in Design: Education Program		Dwgs indicate any proposed signage locations.			
1	1	1	1	1	1	Credit 1.2	Innovation in Design: 100% Underground parking		Dwgs indicate 100% underground parking provided.			
1	1	1	1	1	1	Credit 1.3	Innovation in Design: Energy Star Lighting and Appliances		Fixture and Appliance schedule shows energy star items.			
1	1	1	1	1	1	Credit 1.4	Innovation in Design: Low Mercury Lamps		Specs include requirements for low Hg lamps in exterior and interior Fluorescent lamps.			
1	1	1	1	1	1	Credit 2	LEED™ Accredited Professional	Have LEED AP on design team OR as consultant.	SDK qualifies as LEED AP consultant			

