

ARCHITECTURAL ENGINEERING SENIOR THESIS

George Mason University Student Union Building I

Fairfax, VA

Technical Assignment II

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Construction Management

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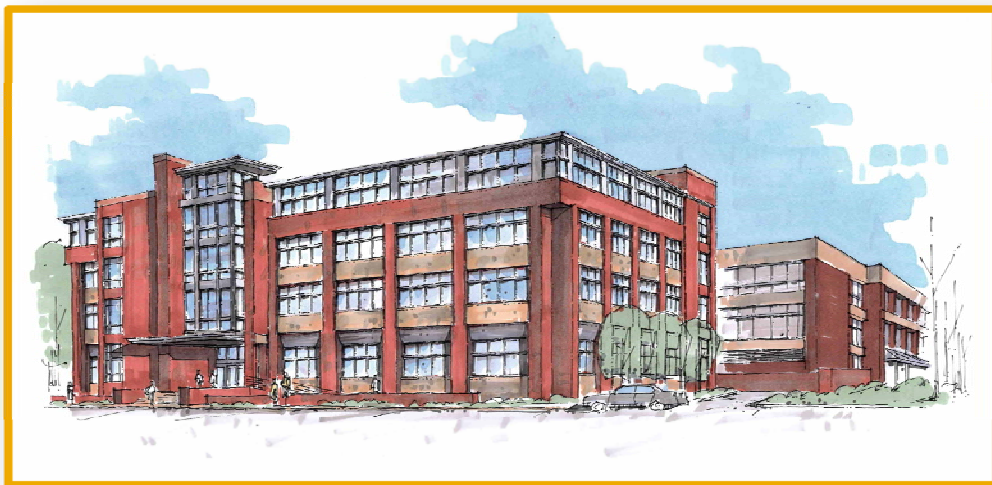


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Executive Summary

Technical Assignment II will delve further into the construction techniques use on the George Mason University Student Union Building I project in Fairfax, VA. This report will take an in-depth look at the key features that affect the project execution, mainly scheduling attributes and key building costs. This report includes the following sections:

- Detailed Project Schedule
- Site Layout Planning
- Detailed Structural Systems Estimate
- General Conditions Estimate
- Critical Industry Issues

The detailed project schedule is focused on the major construction sequence of the project. The schedule is comprised of 183 activities. The schedule shows construction beginning on April 23, 2009 with the start up of procurement and obtaining certificate of occupancy on July 30, 2010. This schedule only incorporates the work on the four story addition to the Student Union Building I. It does not include the mechanical renovation work on the existing Student Union Building.

The site planning layout will show the critical phases of construction for the GMU SUB I project. This will include Site Work, Substructure, Superstructure, and Finishes. This layout is very crucial to the GMU project. As stated before the site is very small and will be very rather congested during some of these phases.

The detailed structural steel and general conditions estimate were derived from RS Means and industry costs from Hess Construction + Engineering Services. The detailed structural system totaled \$1,948,973.98 and included all structural steel beams, columns, metal decking, concrete slabs, and Geopier foundations for the project. The detailed general conditions estimate totaled \$1,176,392.64 or 6.70% of the total building cost.

Finally, this technical report includes a summary of the PACE Roundtable meeting that took place on October 115, 2009. This event discussed the numerous issues facing the industry regarding the Economy, BIM and Sustainability. The Pace Roundtable Meeting revealed many potential research items for the Technical Assignment III.

Detailed Project Schedule

Please See Detailed Project Schedule in Appendix Page # 1

| Detailed Project Schedule Summary | |
|---|--------------------|
| Description | Finish Date |
| Notice To Proceed | 8/12/09 |
| Site Mobilization/Pre-Construction/ Site Security | 9/1/09 |
| Site Excavation & Foundation Work | 10/1/09 |
| MEP Below Grade | 9/29/09 |
| Structural Frame | 12/10/09 |
| Concrete Slab on Grade & Decks | 12/10/09 |
| MEP Risers | 12/8/09 |
| Exterior Skin | 2/9/10 |
| MEP Main Distribution/ Equipment Installation | 3/5/10 |
| Roofing | 12/14/09 |
| Interior Rough-Ins/Finishes | 6/2/10 |
| Building Commissioning | 6/30/10 |
| Building Addition Substantial Completion | 7/1/10 |
| University FF&E Installation | 7/21/10 |
| Occupancy of Addition | 7/30/10 |

The detailed project schedule for Technical Assignment II, was based off the project schedule summary from Technical Assignment I. The detailed schedule is broken down into more comprehensive activities to understand the work sequencing for the GMU Sub I project.

To understand the detailing and locations of activities, please see the Structural Steel Phasing Plan (Appendix Page #5) and Work diagrams will provide a general plan in which the work will progress throughout the project.



As mentioned previously, due to the fact that the GMU SUB I site is so compact. It is imperative to coordinate with the trades to keep a steady work flow throughout the project. If coordination is not a priority for this project a deceleration may result in congestion from the stacking of trades.

The durations of some of the activities have changed since the project schedule summary in Technical Assignment I, causing a shift in the project completion date. As of this schedule the completion date has been moved back from July 19, 2010 to July 30, 2010. One of the changes came in the MEP Below Grade work. After the project started, there was an additional of work resulting in the installation of more primary and secondary duct banks. This directly affected the substantial completion date. Also, while breaking down the exterior skin activity the duration increased by eight days. This is a potential research topic when thinking about certain materials and their effects on the schedule.

One of the most important portions of this schedule is the structural steel. The structural steel erection will be performed by Phoenix Steel Erectors out of Haymarket, Virginia. Jim Larson, Owner of Phoenix Steel Erectors and 2nd Vice President of the Steel Erectors Association of America, stated that this project is a fairly "cleaned" framed project in the sense that there is some repetition and the framing is relatively "square". Phoenix expects to average approximately 30 crane lifts a day. This takes into account separate unloading

time for the steel, joists and deck. Included in the crane lifts will be columns, beams, spandrel frames, joist bundles and deck bundles.

Currently the longest construction activity on the schedule is the interior rough-in and finishes. This activity includes rough-in and finishes for floors one through four. This activity as a whole is slated for 81 days. This is a day more than the previous project schedule summary in the Technical Assignment I. On the interior of the Student Union Building Project there is some repetitive construction in the sense of offices, conference rooms and classrooms.

Currently, this schedule proposes the George Mason University Student Union Building I project to obtain certificate of occupancy on July 30, 2010. Based on the original, estimated completion date of July 2010, this is a fairly accurate representation of the schedule.

Site Layout Planning

Please See Site Layout Planning in Appendix Page #6

The site layout plans were generated on AutoCAD. These diagrams will display crucial logistics for the George Mason University Student Union Building I. The Hess Construction + Engineering Services trailer will be outside of the site fencing on a small concrete courtyard next to the existing Student Union Building. This site logistics plan will look at the following sequences: foundations, structural steel, and enclosure. In the aforementioned sequences the site perimeter/fencing will remain the same. With the general tightness of the site, one way traffic will be unable to attain. Electric to the trailers will be connected to the existing Student Union Building through the Electrical Doghouse shown on the site plans.

Foundation Site Plan

Please See Foundation Site Layout Planning in Appendix Page #6

The first Geopiers that will be installed are on the Northeast and Southeast (As shown with Purple Arrows in Foundation Site Plan). The reason these Geopiers need to be installed first is because Hess Construction and Engineering Services has to maintain the Emergency Exits in the Existing Student Union Building. These Geopiers will be installed before the new emergency exits and overhead protected walkways are installed to allow the construction of these particular items. The Geopiers will the progress on the Northeast to Northwest portion of the site (Red North Geopier Progression Arrow) and then move to the South portion of the site maintaining an East to West direction (Red South Geopier Progression Arrow). The installation of the Geopiers will be conducted by GeoStructures, Inc. GeoStructures performs the drilling of the Geopiers using an excavator with a drilling attachment. The aggregate used will be dumped into the drilled holes using a skid steer. Any concrete that needs to be placed can be directly place from a concrete truck.

Superstructure Site Plan

Please See Superstructure Site Layout Planning in Appendix Page #7

Phoenix Steel Erectors will be using a 40 ton P & H truck crane with approximately 160' of lattice boom. The crane will be within the footprint between C to F and 1 to 6 lines as coordinated with Hess Construction+ Engineering Services. The crane will set up on its own outriggers on suitable bearing pressure substrate as provided by Hess. The crane will not travel over underground utilities, but enter the building footprint over the front (East) column line C.

Please refer to the Structural Steel Phasing Plan in Appendix Page #5 for the referenced column lines.

This site plan will be similar when the slabs are being poured. The pouring method the site will be utilizing a concrete pump truck.

Enclosure

Please See Enclosure Site Layout Planning in Appendix Page #8

Like the Geopier installation, the exterior progression will be in a similar manner. The sequence will move in a Northeast to Northwest (Column Line Q to B) manner wrapping around the Northwest corner of the Student Union Building addition. The enclosure of the building will then progress from Column Line 18 to 8. Next, the sequence will move in a Southeast to Southwest (Column Line Q to B) manner. Once again the enclosure sequence will wrap around the Southwest corner moving from Column Line 1 to 8. The main reason for the relocation of work to the Southeast corner of the building is because of the phasing of the steel (Please see the Structural Steel Phasing Plan in Appendix Page #5). Even though the site is extremely tight, there is ample room for scaffolding, both climbing and standard, to perform various tasks on floors two through four.

Detailed Structural Systems Estimate

Please See Detailed Structural Systems Estimate in Appendix Page #9

| Structural Systems Estimate Summary | |
|-------------------------------------|------------------------|
| Description | Cost Totals |
| 03 Concrete (CIP) | \$ 836,215.16 |
| Concrete | \$ 799,148.51 |
| WWF | \$ 37,066.65 |
| 05 Steel | \$ 1,087,190.46 |
| Beams and Girders | \$ 552,710.49 |
| Columns | \$ 302,508.30 |
| Joists | \$ 30,807.41 |
| Steel Decking | \$ 201,164.26 |
| 31 Earthwork | |
| Caissons | \$ 178,571.25 |
| Subtotal | \$ 2,101,976.88 |
| Location Factor (Fairfax, VA) | 0.93 |
| Time Factor | 0.997 |
| Total | \$ 1,948,973.98 |

This detailed structural systems estimate includes the estimates for the Geopiers, structural steel beams, structural columns, slab on grade, slab on metal deck, and roof slab. All sizes and quantities taken from structural drawings unless otherwise noted. The R.S. Means from 2008 offers the material, labor, and equipment cost data. As seen above in the structural systems estimate summary, the costs have been adjusted for time and location.

The steel estimate was taken in two locations to accommodate the entire building. The first location was a bay in between the columns 1-9 and B-E. The second location was taken in between the columns 2-15 and G-Q.

Please see Foundation/First Floor Structural Plan in Appendix Page #14

Assumptions

Foundations and Slabs:

- Estimate excludes soil excavation/removal and miscellaneous metals
- 5% waste factor for concrete

Structural Steel:

- Pricing for wide flange beams, wide flange columns, and K-Series joists were rounded up to the closest member size in RS Means 2008.

Based on my findings from Technical Assignment I in which the structural steel was estimated at \$1,250,000. This estimate of \$1,087,190.46 seems very reasonable. With items such as shear studs on the beams and girders, anchor bolts, and steel plates. The concrete estimate of \$836,215.16 seems a bit high for this specific project. This is could be a possible research topic for cost savings for a future Technical Assignment. Finally, based on the number of geopiers and the depths and diameter that they will be drilled, the estimate of \$178,571.25 seems fairly accurate.

General Conditions Estimate

Please See General Conditions Estimate in Appendix Page #15

| General Conditions Estimate Summary | |
|--|------------------------|
| Description | Cost Totals |
| Project Personnel | \$ 642,840.00 |
| Field Office Support | \$ 56,980.50 |
| Temp. Facilities/Fences/Controls | \$ 28,871.00 |
| Temp. Utilities | \$ 101,750.00 |
| Safety | \$ 17,500.00 |
| Clean-Up | \$ 128,475.06 |
| Travel | \$ 34,090.00 |
| Tools | \$ 78,975.00 |
| Quality Control | \$ 25,198.00 |
| Material Handling | \$ 2,050.00 |
| Consultant/Professional Services | \$ 20,265.00 |
| Permits | \$ 44,000.00 |
| Commissioning | \$ 87,750.00 |
| Subtotal | \$ 1,268,744.56 |
| Location Factor (Fairfax, VA) | 0.93 |
| Time Factor (2008 to 2009) | 0.997 |
| Total | \$ 1,176,392.64 |
| Percent of Project Cost | 6.70% |

The General Conditions Estimate for the George Mason University Student Union Building I project was prepared by using 2008 RS Means and industry costs from Hess Construction + Engineering Services. The estimate includes the cost for the site personnel, including the Project Manager, Assistant Project Manager, Superintendent, Assistant Superintendent, Project Executive, Estimation, and Accountant. These personnel costs were also derived from 2008 RS Means. The General Conditions Estimate Summary Table (above) shows a breakdown of all the main General Conditions for the GMU Project. As seen above the location factor of 0.93 for Fairfax, Virginia and the current construction time factor of 0.997 are taken into account.

The total cost of the GMU SUB I General Conditions is estimated at \$ 1,176,392.64. This value seems reasonable, but rather conservative. RS Means does often use conservative numbers when producing their cost data. As shown in the above graph, the breakdown of each individual cost is seems conservative for the most part. The commissioning, tools and cleanup costs of the project are elevated. When developing a General Conditions Estimate, cost savings is one of the ultimate objectives. These three costs are probably the first place to look at for cost savings.

Critical Industry Issues

On October 15, 2009 the 18th Annual PACE Roundtable was held at the Penn Stater Hotel and Conference Center. The event was marked with several discussions on leading concerns and issues in the construction industry. The first discussion was an industry led discussion on the State of Construction. This discussion was followed by two breakout sessions with the following topics: Energy and the Construction Industry – How changing green building energy performance requirements will affect future projects; Business and Networking – Expanding your circles, relationships and opportunities; and BIM Execution Planning – Putting BIM to Work. I chose to attend the BIM Execution Planning Session because the George Mason University Student Union Building I is utilizing BIM in the design and coordination process of the project, specifically the building. Following the breakout sessions, there were two more discussions. The first being a student panel discussion of the Communication Patterns of the Now Generation and second was a group discussion of Continuous Personal Growth. Below you will find an overview of all the sessions including a detailed synopsis of the BIM Executive Planning Breakout Session.

State of Construction

Industry Panel:

John Becketl – The Pennsylvania State University – Office of the Physical Plant

Jim Salvino – Clark Construction Group

Scott Mull – Barton Malow Company

Jeremy Sibert – Hensel Phelps

Mike Arnold – Zelmanople

This discussion was about the current state of the construction industry. The aforementioned industry panel discussed their observations about the impact of the recession and what their companies have done to move forward. One of the main points that were stated in this discussion was creating diversification through work of varying sizes and making sure their companies' workforce can handle the sizes. These companies are striving for efficiency in house to stay ahead of the competition. Some of the items that these companies suggested for profitability in a recession were identifying your A-List employees by making these individuals the core of your company and identifying your A-List clients as well. This recession will also force companies to forge new relationships. It was stated that this recession may also bring out the best in some technologies such as BIM, Punchlist Processing Programs, and other construction management programs i.e. Prolog. Many of these companies are embracing new technologies for their own diversification. As seen from this discussion, these companies are not only embracing the future in certain technologies but also going back to basics for diversification.

BIM Executive Planning

Key Contact - Jim Salvino – Clark Construction Group

Issues concerning BIM:

- Who is responsible
 - From Day One
 - Throughout the Project

- Who will coordinate
- Getting all the Subcontractors on Board
 - Benefit as a team
 - Do the subcontractors have the workforce
- Educate the young BIM professional
 - Designers do not know construction
 - Designers do not get into the little details
 - Common Sense Predates Technology
- Scale BIM to the specific job
 - Project complexity – model complexity
 - Some projects may simply not need to use BIM
- Risk Analysis for the Job and Design Team
 - Mapping out the process
 - Who all needs to be involved subcontractor wise
- Who pays for BIM
 - Who sees the savings
 - Are we in a position to ask the owner to pay for this
 - It is difficult to assess a value for this process and the cost savings
 - Biggest savings is in the Time and Scheduling
 - Better savings down the line
- Owner Role in BIM
 - Is it our company policy
 - Does the owner require it
 - How many owners know what they are requiring
 - Turnover to the Owner – Is it just sitting in an O & M Manual
 - Owner Education
- Model Quality Control

Energy and the Construction Industry

Summary of Issues:

- Environment
- Supply and Demand
- Deregulation
- Effects of Distributed Products
- Energy Security
- Stimulus Package
- Interest of Owners and Life Cycle Cost Analysis
- Low Energy is Performed Overtime
- Systems and Materials

Business and Networking

Key Contact – Chris Smith – Benchmark Construction Company

Summary of Issues:

- Shifts in Delivery Systems
 - Negotiated to Hard Bid – Better Deal

- Relationship with Owner
- Put Yourself in a Better in a Better Position
 - Joint Venture
 - Expand Geography
 - Expand Different Market
 - Team with Competitor
- Techniques for developing relationships
 - Chase Clients, Not Projects
 - Identify Trends
 - Demonstrate Performance
 - Become Close with Design Team
 - Become Familiar with New Subcontractors
- Integrated Project Delivery (IPD)
- Partner Interactions
 - Why would an owner select a certain General Contractor
 - Why would an GC select a certain subcontractor

Communication Patterns of the Now Generation

Students discussed different forms of communication and their effectiveness in the construction industry.

Summary of Issues:

- If there are three or more emails, pick up the phone and get the problem resolved
- Legal issues with email/Twitter
- Information that is too readily available
 - Phone going off in meeting, compromises the meeting productivity
 - Work/Life Balance
- Other Communication Devices
 - Linked In
 - Skype
 - Cisco
- Forms of Communication that are traceable
- Expectations through Emails from Superior – Requests not always complete

Research Potential

The PACE Roundtable Discussion really allowed me to see the crucial issues in today's construction industry. After hearing the industry's input on these issues, I feel there are a couple of topics that I will be further analyzing for the third technical assignment. I will consider to further research constructability, scheduling and cost analysis specific for the George Mason University Student Union Building I project. These ideas include:

- The use of BIM and 4-Dimensional Modeling for Site Coordination
- Owner Education in the BIM Process
- The use of Social Networking Medias such as Twitter for Building Projects

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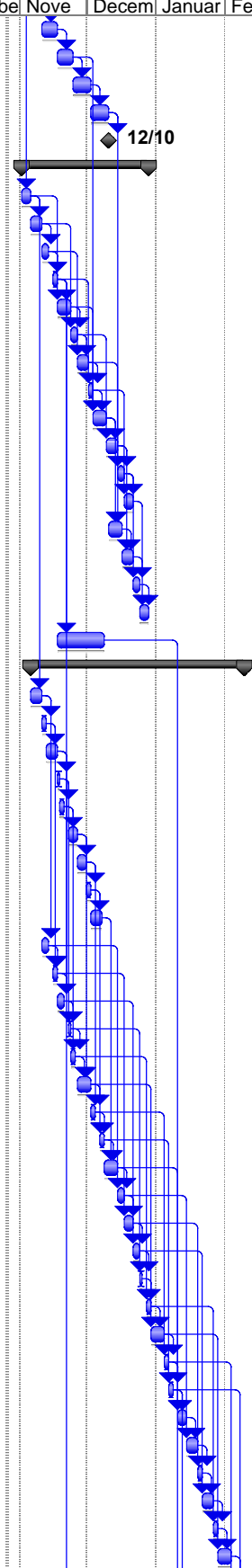
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| ID | Task Name | Duration | Start | Finish | Predecessor | Decem | Januar | Febru | March | April | May | June | July | August | Septe | Octobe | Nove | Decem | Januar | Febru | March | April | May | June | July | August |
|----|--|-----------------|--------------------|---------------------|-------------|-------|--------|-------|-------|-------|-----|------|------|--------|-------|--------|------|-------|--------|-------|-------|-------|-----|------|------|--------|
| 1 | STUDENT UNION BUILDING I | 396 days | Fri 1/23/09 | Fri 7/30/10 | | | | | | | | | | | | | | | | | | | | | | |
| 2 | BCOM BUILDING APPROVAL | 175 days | Fri 3/20/09 | Thu 11/19/09 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Schematic Design (incl. BCOM Submission) | 28 days | Fri 3/20/09 | Tue 4/28/09 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Preliminary Design (100% DD) (incl. BCOM Submission) | 54 days | Fri 5/1/09 | Wed 7/15/09 | 3 | | | | | | | | | | | | | | | | | | | | | |
| 5 | Working Drawings (100% CD) (incl. BCOM Submission & Re-subn) | 49 days | Thu 6/25/09 | Tue 9/1/09 | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Working Drawing Comments II from BCOM & Re-submission | 34 days | Wed 9/2/09 | Mon 10/19/09 | 5 | | | | | | | | | | | | | | | | | | | | | |
| 7 | Meeting with BCOM to present re-submission | 2 days | Tue 10/20/09 | Wed 10/21/09 | 6 | | | | | | | | | | | | | | | | | | | | | |
| 8 | Working Drawings Approval | 4 wks | Thu 10/22/09 | Wed 11/18/09 | 7 | | | | | | | | | | | | | | | | | | | | | |
| 9 | Building Permit Issued | 1 day | Thu 11/19/09 | Thu 11/19/09 | 8 | | | | | | | | | | | | | | | | | | | | | |
| 10 | SITE PLAN, FOUNDATION, SUPERSTRUCTURE APPROVALS | 184 days | Fri 1/23/09 | Wed 10/7/09 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Site Plan Completion | 30 days | Fri 1/23/09 | Thu 3/5/09 | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Geotechnical Study/Utility Verification | 15 days | Fri 3/6/09 | Thu 3/26/09 | 11 | | | | | | | | | | | | | | | | | | | | | |
| 13 | Verification of infrastructure with Building Design | 30 days | Fri 3/27/09 | Thu 5/7/09 | 12 | | | | | | | | | | | | | | | | | | | | | |
| 14 | Submission for Water, Sewer, Storm, E&S, Grading | 2 wks | Fri 5/8/09 | Thu 5/21/09 | 13 | | | | | | | | | | | | | | | | | | | | | |
| 15 | Site Plan Approval | 4 wks | Thu 7/16/09 | Wed 8/12/09 | 14 | | | | | | | | | | | | | | | | | | | | | |
| 16 | Foundation Permit Approval | 4 wks | Thu 8/13/09 | Wed 9/9/09 | 15 | | | | | | | | | | | | | | | | | | | | | |
| 17 | Superstructure Permit Approval | 4 wks | Thu 9/10/09 | Wed 10/7/09 | 16 | | | | | | | | | | | | | | | | | | | | | |
| 18 | CONSTRUCTION | 332 days | Thu 4/23/09 | Fri 7/30/10 | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Procurement | 80 days | Thu 4/23/09 | Wed 8/12/09 | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Long Lead Equipment Procurement | 80 days | Thu 4/23/09 | Wed 8/12/09 | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Notice To Proceed | 0 days | Wed 8/12/09 | Wed 8/12/09 | 15 | | | | | | | | | | | | | | | | | | | | | |
| 22 | Site Mobilization/ Pre-Construction/ Site Security | 14 days | Thu 8/13/09 | Tue 9/1/09 | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Layout LOD | 1 day | Thu 8/13/09 | Thu 8/13/09 | 21 | | | | | | | | | | | | | | | | | | | | | |
| 24 | Construction Fence | 5 days | Fri 8/14/09 | Thu 8/20/09 | 23 | | | | | | | | | | | | | | | | | | | | | |
| 25 | Initial Sediment and Erosion Control | 2 days | Fri 8/21/09 | Mon 8/24/09 | 24 | | | | | | | | | | | | | | | | | | | | | |
| 26 | Site Clearing (Trees) at South Parking Lot | 2 days | Tue 8/25/09 | Wed 8/26/09 | 25 | | | | | | | | | | | | | | | | | | | | | |
| 27 | Site Clearing (Trees) at North Parking Lot | 2 days | Thu 8/27/09 | Fri 8/28/09 | 26 | | | | | | | | | | | | | | | | | | | | | |
| 28 | Grading at North Parking Lot | 1 day | Mon 8/31/09 | Mon 8/31/09 | 27 | | | | | | | | | | | | | | | | | | | | | |
| 29 | Grading at South Parking Lot | 1 day | Tue 9/1/09 | Tue 9/1/09 | 28 | | | | | | | | | | | | | | | | | | | | | |
| 30 | Site Excavation & Foundation Work | 26 days | Thu 8/27/09 | Thu 10/1/09 | | | | | | | | | | | | | | | | | | | | | | |
| 31 | HTW Tunnel (Selective Site Demo) | 1 day | Thu 8/27/09 | Thu 8/27/09 | 26 | | | | | | | | | | | | | | | | | | | | | |
| 32 | HTW Tunnel (Excav Bottom Slab) | 2 days | Fri 8/28/09 | Mon 8/31/09 | 31 | | | | | | | | | | | | | | | | | | | | | |
| 33 | HTW Tunnel (FRP Bottom Slab/Sides) | 4 days | Tue 9/1/09 | Fri 9/4/09 | 32 | | | | | | | | | | | | | | | | | | | | | |
| 34 | HTW Tunnel (Install HTW Piping) | 5 days | Mon 9/7/09 | Fri 9/11/09 | 33 | | | | | | | | | | | | | | | | | | | | | |
| 35 | HTW Tunnel (Test HTW Piping) | 1 day | Mon 9/14/09 | Mon 9/14/09 | 34 | | | | | | | | | | | | | | | | | | | | | |
| 36 | HTW Tunnel (Clean & Flush HTW Piping) | 1 day | Tue 9/15/09 | Tue 9/15/09 | 35 | | | | | | | | | | | | | | | | | | | | | |
| 37 | HTW Tunnel (Insulate HTW Piping) | 1 day | Wed 9/16/09 | Wed 9/16/09 | 36 | | | | | | | | | | | | | | | | | | | | | |
| 38 | Loading Dock (Selective Demo) | 2 days | Fri 8/28/09 | Mon 8/31/09 | 31 | | | | | | | | | | | | | | | | | | | | | |
| 39 | Drill/Reinforce/Fill Geopiers (Line H and K) | 1 day | Tue 9/1/09 | Tue 9/1/09 | 38 | | | | | | | | | | | | | | | | | | | | | |
| 40 | Construct Loading Dock | 10 days | Wed 9/2/09 | Tue 9/15/09 | 39 | | | | | | | | | | | | | | | | | | | | | |
| 41 | Existing Parking Lot (Selective Site Demo) | 2 days | Wed 9/16/09 | Thu 9/17/09 | 40 | | | | | | | | | | | | | | | | | | | | | |
| 42 | Drill/Reinforce/Fill Geopiers | 10 days | Fri 9/18/09 | Thu 10/1/09 | 41 | | | | | | | | | | | | | | | | | | | | | |
| 43 | MEP Below Grade | 22 days | Mon 8/31/09 | Tue 9/29/09 | | | | | | | | | | | | | | | | | | | | | | |
| 44 | Power Relocate (Mark/Layout) | 1 day | Mon 8/31/09 | Mon 8/31/09 | 27 | | | | | | | | | | | | | | | | | | | | | |
| 45 | Power Relocate (Install New Primary Ductbank) | 10 days | Tue 9/1/09 | Mon 9/14/09 | 44 | | | | | | | | | | | | | | | | | | | | | |
| 46 | Power Relocate (Install New Secondary Ductbank) | 6 days | Tue 9/15/09 | Tue 9/22/09 | 45 | | | | | | | | | | | | | | | | | | | | | |
| 47 | Power Relocate (Set Transformer Pad) | 1 day | Wed 9/23/09 | Wed 9/23/09 | 46 | | | | | | | | | | | | | | | | | | | | | |
| 48 | Power Relocate (Pull Primary Cable) | 2 days | Tue 9/15/09 | Wed 9/16/09 | 45 | | | | | | | | | | | | | | | | | | | | | |
| 49 | Power Relocate (Pull Secondary Cables) | 2 days | Wed 9/23/09 | Thu 9/24/09 | 46 | | | | | | | | | | | | | | | | | | | | | |
| 50 | Power Relocate (Set Transformer) | 1 day | Fri 9/25/09 | Fri 9/25/09 | 49,47 | | | | | | | | | | | | | | | | | | | | | |
| 51 | U/G Plumbing (R/I) | 8 days | Fri 9/18/09 | Tue 9/29/09 | 41 | | | | | | | | | | | | | | | | | | | | | |
| 52 | Structural Frame | 46 days | Thu 10/8/09 | Thu 12/10/09 | | | | | | | | | | | | | | | | | | | | | | |
| 53 | Erect Phase 1 Beams and Columns | 5 days | Thu 10/8/09 | Wed 10/14/09 | 42,17 | | | | | | | | | | | | | | | | | | | | | |
| 54 | Erect Phase 2 Beams and Columns | 7 days | Thu 10/15/09 | Fri 10/23/09 | 53 | | | | | | | | | | | | | | | | | | | | | |
| 55 | Erect Phase 3 Beams and Columns | 5 days | Mon 10/26/09 | Fri 10/30/09 | 54 | | | | | | | | | | | | | | | | | | | | | |
| 56 | Erect Phase 4 Beams and Columns | 7 days | Mon 11/2/09 | Tue 11/10/09 | 55 | | | | | | | | | | | | | | | | | | | | | |

Project: GMU SUB I:Tech 1
Date: Mon 10/26/09

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

| ID | Task Name | Duration | Start | Finish | Predecessor | Decem | Januar | Febru | March | April | May | June | July | August | Septe | October | Nove | Decem | Januar | Febru | March | April | May | June | July | August | |
|-----|---|----------------|---------------------|---------------------|-------------|-------|--------|-------|-------|-------|-----|------|------|--------|-------|---------|------|-------|--------|-------|-------|-------|-----|------|------|--------|--|
| 57 | Erect Phase 5 Beams and Columns | 5 days | Wed 11/11/09 | Tue 11/17/09 | 56 | | | | | | | | | | | | | | | | | | | | | | |
| 58 | Erect Phase 6 Beams and Columns | 5 days | Wed 11/18/09 | Tue 11/24/09 | 57 | | | | | | | | | | | | | | | | | | | | | | |
| 59 | Erect Phase 7 Beams and Columns | 6 days | Wed 11/25/09 | Wed 12/2/09 | 58 | | | | | | | | | | | | | | | | | | | | | | |
| 60 | Erect Phase 8 Beams and Columns | 6 days | Thu 12/3/09 | Thu 12/10/09 | 59 | | | | | | | | | | | | | | | | | | | | | | |
| 61 | Topping Out | 0 days | Thu 12/10/09 | Thu 12/10/09 | 60 | | | | | | | | | | | | | | | | | | | | | | |
| 62 | Concrete Slab on Grade & Decks | 41 days | Mon 11/2/09 | Mon 12/28/09 | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | Prep/Pour SOG (Northeast) | 4 days | Mon 11/2/09 | Thu 11/5/09 | 55 | | | | | | | | | | | | | | | | | | | | | | |
| 64 | Prep/Pour LV 2 - Metal Deck (Northeast) | 3 days | Fri 11/6/09 | Tue 11/10/09 | 63 | | | | | | | | | | | | | | | | | | | | | | |
| 65 | Prep/Pour LV 3 - Metal Deck (Northeast) | 3 days | Wed 11/11/09 | Fri 11/13/09 | 64 | | | | | | | | | | | | | | | | | | | | | | |
| 66 | Roof - Metal Deck (Northeast) | 2 days | Mon 11/16/09 | Tue 11/17/09 | 65 | | | | | | | | | | | | | | | | | | | | | | |
| 67 | Prep/Pour SOG (Northwest) | 4 days | Wed 11/18/09 | Mon 11/23/09 | 66,63 | | | | | | | | | | | | | | | | | | | | | | |
| 68 | Prep/Pour LV 2 - Metal Deck (Northwest) | 3 days | Tue 11/24/09 | Thu 11/26/09 | 67,64 | | | | | | | | | | | | | | | | | | | | | | |
| 69 | Prep/Pour LV 3 - Metal Deck (Northwest) | 3 days | Fri 11/27/09 | Tue 12/1/09 | 68,65 | | | | | | | | | | | | | | | | | | | | | | |
| 70 | Roof - Metal Deck (Northwest) | 2 days | Wed 12/2/09 | Thu 12/3/09 | 69,66 | | | | | | | | | | | | | | | | | | | | | | |
| 71 | Prep/Pour SOG (Southeast) | 4 days | Fri 12/4/09 | Wed 12/9/09 | 70,58,67 | | | | | | | | | | | | | | | | | | | | | | |
| 72 | Prep/Pour LV 2 - Metal Deck (Southeast) | 3 days | Thu 12/10/09 | Mon 12/14/09 | 71,68 | | | | | | | | | | | | | | | | | | | | | | |
| 73 | Prep/Pour LV 3 - Metal Deck (Southeast) | 3 days | Tue 12/15/09 | Thu 12/17/09 | 72,69 | | | | | | | | | | | | | | | | | | | | | | |
| 74 | Roof - Metal Deck (Southeast) | 2 days | Fri 12/18/09 | Mon 12/21/09 | 73,70 | | | | | | | | | | | | | | | | | | | | | | |
| 75 | Prep/Pour SOG (Southwest) | 4 days | Fri 12/11/09 | Wed 12/16/09 | 60,71 | | | | | | | | | | | | | | | | | | | | | | |
| 76 | Prep/Pour LV 2 - Metal Deck (Southwest) | 3 days | Thu 12/17/09 | Mon 12/21/09 | 75,72 | | | | | | | | | | | | | | | | | | | | | | |
| 77 | Prep/Pour LV 3 - Metal Deck (Southwest) | 3 days | Tue 12/22/09 | Thu 12/24/09 | 76,73 | | | | | | | | | | | | | | | | | | | | | | |
| 78 | Roof - Metal Deck (Southwest) | 2 days | Fri 12/25/09 | Mon 12/28/09 | 77,74 | | | | | | | | | | | | | | | | | | | | | | |
| 79 | MEP Risers | 15 days | Wed 11/18/09 | Tue 12/8/09 | 66 | | | | | | | | | | | | | | | | | | | | | | |
| 80 | Exterior Skin | 68 days | Fri 11/6/09 | Tue 2/9/10 | | | | | | | | | | | | | | | | | | | | | | | |
| 81 | Perimeter Masonry Wall (Northeast) | 3 days | Fri 11/6/09 | Tue 11/10/09 | 63 | | | | | | | | | | | | | | | | | | | | | | |
| 82 | Light Gauge Framing (Northeast) | 2 days | Wed 11/11/09 | Thu 11/12/09 | 81 | | | | | | | | | | | | | | | | | | | | | | |
| 83 | Exterior Wall Insulation/Sheathing (Northeast) | 3 days | Fri 11/13/09 | Tue 11/17/09 | 82 | | | | | | | | | | | | | | | | | | | | | | |
| 84 | Hang Exterior Doors (Northeast) | 1 day | Wed 11/18/09 | Wed 11/18/09 | 83 | | | | | | | | | | | | | | | | | | | | | | |
| 85 | Exterior Wall Vapor Barrier (Northeast) | 2 days | Thu 11/19/09 | Fri 11/20/09 | 84 | | | | | | | | | | | | | | | | | | | | | | |
| 86 | Brick Veneer (Northeast) | 4 days | Mon 11/23/09 | Thu 11/26/09 | 85 | | | | | | | | | | | | | | | | | | | | | | |
| 87 | Frame Curtain Walls (Northeast) | 2 days | Fri 11/27/09 | Mon 11/30/09 | 86 | | | | | | | | | | | | | | | | | | | | | | |
| 88 | Glass & Glaze Windows/Curtain Walls (Northeast) | 2 days | Tue 12/1/09 | Wed 12/2/09 | 87 | | | | | | | | | | | | | | | | | | | | | | |
| 89 | Stair Masonry (Northwest) | 3 days | Thu 12/3/09 | Mon 12/7/09 | 88 | | | | | | | | | | | | | | | | | | | | | | |
| 90 | Perimeter Masonry Wall (Northwest) | 3 days | Wed 11/11/09 | Fri 11/13/09 | 81 | | | | | | | | | | | | | | | | | | | | | | |
| 91 | Light Gauge Framing (Northwest) | 2 days | Mon 11/16/09 | Tue 11/17/09 | 82,90 | | | | | | | | | | | | | | | | | | | | | | |
| 92 | Exterior Wall Insulation/Sheathing (Northwest) | 3 days | Wed 11/18/09 | Fri 11/20/09 | 83,91 | | | | | | | | | | | | | | | | | | | | | | |
| 93 | Hang Exterior Doors (Northwest) | 1 day | Mon 11/23/09 | Mon 11/23/09 | 84,92 | | | | | | | | | | | | | | | | | | | | | | |
| 94 | Exterior Wall Vapor Barrier (Northwest) | 2 days | Tue 11/24/09 | Wed 11/25/09 | 85,93 | | | | | | | | | | | | | | | | | | | | | | |
| 95 | Brick Veneer (Northwest) | 4 days | Fri 11/27/09 | Wed 12/2/09 | 86,94 | | | | | | | | | | | | | | | | | | | | | | |
| 96 | Frame Curtain Walls (Northwest) | 2 days | Thu 12/3/09 | Fri 12/4/09 | 87,95 | | | | | | | | | | | | | | | | | | | | | | |
| 97 | Glass & Glaze Windows/Curtain Walls (Northwest) | 2 days | Mon 12/7/09 | Tue 12/8/09 | 88,96 | | | | | | | | | | | | | | | | | | | | | | |
| 98 | Elevator Stair Masonry (Southeast) | 4 days | Wed 12/9/09 | Mon 12/14/09 | 89,97 | | | | | | | | | | | | | | | | | | | | | | |
| 99 | Perimeter Masonry Wall (Southeast) | 3 days | Tue 12/15/09 | Thu 12/17/09 | 90,98 | | | | | | | | | | | | | | | | | | | | | | |
| 100 | Light Gauge Framing (Southeast) | 2 days | Fri 12/18/09 | Mon 12/21/09 | 91,99 | | | | | | | | | | | | | | | | | | | | | | |
| 101 | Exterior Wall Insulation/Sheathing (Southeast) | 3 days | Tue 12/22/09 | Thu 12/24/09 | 92,100 | | | | | | | | | | | | | | | | | | | | | | |
| 102 | Hang Exterior Doors (Southeast) | 1 day | Fri 12/25/09 | Fri 12/25/09 | 93,101 | | | | | | | | | | | | | | | | | | | | | | |
| 103 | Exterior Wall Vapor Barrier (Southeast) | 2 days | Mon 12/28/09 | Tue 12/29/09 | 94,102 | | | | | | | | | | | | | | | | | | | | | | |
| 104 | Brick Veneer (Southeast) | 4 days | Wed 12/30/09 | Mon 1/4/10 | 95,103 | | | | | | | | | | | | | | | | | | | | | | |
| 105 | Frame Curtain Walls (Southeast) | 2 days | Tue 1/5/10 | Wed 1/6/10 | 96,104 | | | | | | | | | | | | | | | | | | | | | | |
| 106 | Glass & Glaze Windows/Curtain Walls (Southeast) | 2 days | Thu 1/7/10 | Fri 1/8/10 | 97,105 | | | | | | | | | | | | | | | | | | | | | | |
| 107 | Elevator Stair Masonry (Southwest) | 4 days | Mon 1/11/10 | Thu 1/14/10 | 98,106 | | | | | | | | | | | | | | | | | | | | | | |
| 108 | Perimeter Masonry Wall (Southwest) | 3 days | Fri 1/15/10 | Tue 1/19/10 | 99,107 | | | | | | | | | | | | | | | | | | | | | | |
| 109 | Light Gauge Framing (Southwest) | 2 days | Wed 1/20/10 | Thu 1/21/10 | 100,108 | | | | | | | | | | | | | | | | | | | | | | |
| 110 | Exterior Wall Insulation/Sheathing (Southwest) | 3 days | Fri 1/22/10 | Tue 1/26/10 | 101,109 | | | | | | | | | | | | | | | | | | | | | | |
| 111 | Exterior Wall Vapor Barrier (Southwest) | 2 days | Wed 1/27/10 | Thu 1/28/10 | 103,110 | | | | | | | | | | | | | | | | | | | | | | |
| 112 | Brick Veneer (Southwest) | 4 days | Fri 1/29/10 | Wed 2/3/10 | 104,111 | | | | | | | | | | | | | | | | | | | | | | |

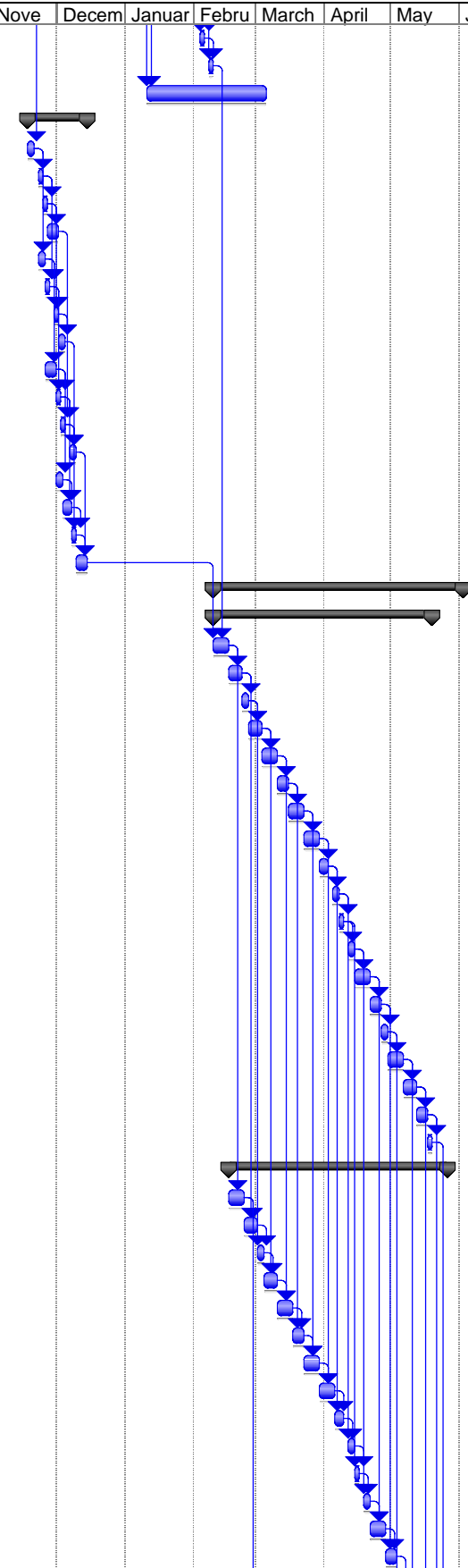


Project: GMU SUB I:Tech 1
Date: Mon 10/26/09

Task Progress Summary External Tasks Deadline

Split Milestone Project Summary External Milestone

| ID | Task Name | Duration | Start | Finish | Predecessors | Decem | Januar | Febru | March | April | May | June | July | August | Septe | Octobe | Nove | Decem | Januar | Febru | March | April | May | June | July | August |
|-----|--|----------------|---------------------|---------------------|---------------|-------|--------|-------|-------|-------|-----|------|------|--------|-------|--------|------|-------|--------|-------|-------|-------|-----|------|------|--------|
| 113 | Frame Curtain Walls (Southwest) | 2 days | Thu 2/4/10 | Fri 2/5/10 | 105,112 | | | | | | | | | | | | | | | | | | | | | |
| 114 | Glass & Glaze Windows/Curtain Walls (Southwest) | 2 days | Mon 2/8/10 | Tue 2/9/10 | 106,113 | | | | | | | | | | | | | | | | | | | | | |
| 115 | MEP Main Distribution/ Equipment Installation | 40 days | Mon 1/11/10 | Fri 3/5/10 | 79,106 | | | | | | | | | | | | | | | | | | | | | |
| 116 | Roofing | 19 days | Wed 11/18/09 | Mon 12/14/09 | | | | | | | | | | | | | | | | | | | | | | |
| 117 | Roof Blocking (Northeast) | 3 days | Wed 11/18/09 | Fri 11/20/09 | 66 | | | | | | | | | | | | | | | | | | | | | |
| 118 | Built Up Roofing (Northeast) | 2 days | Mon 11/23/09 | Tue 11/24/09 | 117 | | | | | | | | | | | | | | | | | | | | | |
| 119 | Roof Sheathing/Vapor Barrier (Northeast) | 2 days | Wed 11/25/09 | Thu 11/26/09 | 118 | | | | | | | | | | | | | | | | | | | | | |
| 120 | Roof Trimout (Northeast) | 3 days | Fri 11/27/09 | Tue 12/1/09 | 119 | | | | | | | | | | | | | | | | | | | | | |
| 121 | Roof Blocking (Northwest) | 3 days | Mon 11/23/09 | Wed 11/25/09 | 117 | | | | | | | | | | | | | | | | | | | | | |
| 122 | Built Up Roofing (Northwest) | 2 days | Thu 11/26/09 | Fri 11/27/09 | 121,118 | | | | | | | | | | | | | | | | | | | | | |
| 123 | Roof Sheathing/Vapor Barrier (Northwest) | 2 days | Mon 11/30/09 | Tue 12/1/09 | 122,119 | | | | | | | | | | | | | | | | | | | | | |
| 124 | Roof Trimout (Northwest) | 3 days | Wed 12/2/09 | Fri 12/4/09 | 123,120 | | | | | | | | | | | | | | | | | | | | | |
| 125 | Roof Blocking (Southeast) | 3 days | Thu 11/26/09 | Mon 11/30/09 | 121 | | | | | | | | | | | | | | | | | | | | | |
| 126 | Built Up Roofing (Southeast) | 2 days | Tue 12/1/09 | Wed 12/2/09 | 125,122 | | | | | | | | | | | | | | | | | | | | | |
| 127 | Roof Sheathing/Vapor Barrier (Southeast) | 2 days | Thu 12/3/09 | Fri 12/4/09 | 126,123 | | | | | | | | | | | | | | | | | | | | | |
| 128 | Roof Trimout (Southeast) | 3 days | Mon 12/7/09 | Wed 12/9/09 | 127,124 | | | | | | | | | | | | | | | | | | | | | |
| 129 | Roof Blocking (Southwest) | 3 days | Tue 12/1/09 | Thu 12/3/09 | 125 | | | | | | | | | | | | | | | | | | | | | |
| 130 | Built Up Roofing (Southwest) | 2 days | Fri 12/4/09 | Mon 12/7/09 | 129,126 | | | | | | | | | | | | | | | | | | | | | |
| 131 | Roof Sheathing/Vapor Barrier (Southwest) | 2 days | Tue 12/8/09 | Wed 12/9/09 | 130,127 | | | | | | | | | | | | | | | | | | | | | |
| 132 | Roof Trimout (Southwest) | 3 days | Thu 12/10/09 | Mon 12/14/09 | 131,128 | | | | | | | | | | | | | | | | | | | | | |
| 133 | Interior Rough-Ins/Finishes | 81 days | Wed 2/10/10 | Wed 6/2/10 | | | | | | | | | | | | | | | | | | | | | | |
| 134 | LV 1 Interior Rough-Ins/Finishes | 71 days | Wed 2/10/10 | Wed 5/19/10 | | | | | | | | | | | | | | | | | | | | | | |
| 135 | LV 1 Interior CMU Walls | 5 days | Wed 2/10/10 | Tue 2/16/10 | 132,114 | | | | | | | | | | | | | | | | | | | | | |
| 136 | LV 1 Plumbing R/I Walls | 4 days | Wed 2/17/10 | Mon 2/22/10 | 135 | | | | | | | | | | | | | | | | | | | | | |
| 137 | LV 1 Ceiling Conduit | 3 days | Tue 2/23/10 | Thu 2/25/10 | 136 | | | | | | | | | | | | | | | | | | | | | |
| 138 | LV 1 Mech Piping | 4 days | Fri 2/26/10 | Wed 3/3/10 | 137 | | | | | | | | | | | | | | | | | | | | | |
| 139 | LV 1 Plumbing R/I Ceiling | 5 days | Thu 3/4/10 | Wed 3/10/10 | 138 | | | | | | | | | | | | | | | | | | | | | |
| 140 | LV 1 Pull Wire | 3 days | Thu 3/11/10 | Mon 3/15/10 | 139 | | | | | | | | | | | | | | | | | | | | | |
| 141 | LV 1 Sprinkler R/I | 5 days | Tue 3/16/10 | Mon 3/22/10 | 140 | | | | | | | | | | | | | | | | | | | | | |
| 142 | LV 1 Prime/First Coat Paint | 5 days | Tue 3/23/10 | Mon 3/29/10 | 141 | | | | | | | | | | | | | | | | | | | | | |
| 143 | LV 1 Drop Ceilings Grid | 4 days | Tue 3/30/10 | Fri 4/2/10 | 142 | | | | | | | | | | | | | | | | | | | | | |
| 144 | LV 1 HVAC Drops | 3 days | Mon 4/5/10 | Wed 4/7/10 | 143 | | | | | | | | | | | | | | | | | | | | | |
| 145 | LV 1 Sprinkler Drops | 2 days | Thu 4/8/10 | Fri 4/9/10 | 144 | | | | | | | | | | | | | | | | | | | | | |
| 146 | LV 1 Electrical Switches/Plugs | 3 days | Mon 4/12/10 | Wed 4/14/10 | 145 | | | | | | | | | | | | | | | | | | | | | |
| 147 | LV 1 Light Fixtures | 5 days | Thu 4/15/10 | Wed 4/21/10 | 146 | | | | | | | | | | | | | | | | | | | | | |
| 148 | LV 1 Flooring | 3 days | Thu 4/22/10 | Mon 4/26/10 | 147 | | | | | | | | | | | | | | | | | | | | | |
| 149 | LV 1 Plumbing Fixtures | 3 days | Tue 4/27/10 | Thu 4/29/10 | 148 | | | | | | | | | | | | | | | | | | | | | |
| 150 | LV 1 Final Paint | 5 days | Fri 4/30/10 | Thu 5/6/10 | 149 | | | | | | | | | | | | | | | | | | | | | |
| 151 | LV 1 Millwork | 4 days | Fri 5/7/10 | Wed 5/12/10 | 150 | | | | | | | | | | | | | | | | | | | | | |
| 152 | LV 1 Ceiling Tile | 3 days | Thu 5/13/10 | Mon 5/17/10 | 151 | | | | | | | | | | | | | | | | | | | | | |
| 153 | LV 1 Hang Doors | 2 days | Tue 5/18/10 | Wed 5/19/10 | 152 | | | | | | | | | | | | | | | | | | | | | |
| 154 | LV 2 Interior Rough-Ins/Finish | 71 days | Wed 2/17/10 | Wed 5/26/10 | | | | | | | | | | | | | | | | | | | | | | |
| 155 | LV 2 Interior CMU Walls | 5 days | Wed 2/17/10 | Tue 2/23/10 | 135 | | | | | | | | | | | | | | | | | | | | | |
| 156 | LV 2 Plumbing R/I Walls | 4 days | Wed 2/24/10 | Mon 3/1/10 | 136,155 | | | | | | | | | | | | | | | | | | | | | |
| 157 | LV 2 Ceiling Conduit | 3 days | Tue 3/2/10 | Thu 3/4/10 | 137,156 | | | | | | | | | | | | | | | | | | | | | |
| 158 | LV 2 Mech Piping | 4 days | Fri 3/5/10 | Wed 3/10/10 | 138,157 | | | | | | | | | | | | | | | | | | | | | |
| 159 | LV 2 Plumbing R/I Ceiling | 5 days | Thu 3/11/10 | Wed 3/17/10 | 139,158 | | | | | | | | | | | | | | | | | | | | | |
| 160 | LV 2 Pull Wire | 3 days | Thu 3/18/10 | Mon 3/22/10 | 140,159 | | | | | | | | | | | | | | | | | | | | | |
| 161 | LV 2 Sprinkler R/I | 5 days | Tue 3/23/10 | Mon 3/29/10 | 141,160 | | | | | | | | | | | | | | | | | | | | | |
| 162 | LV 2 Prime/First Coat Paint | 5 days | Tue 3/30/10 | Mon 4/5/10 | 142,161 | | | | | | | | | | | | | | | | | | | | | |
| 163 | LV 2 Drop Ceilings Grid | 4 days | Tue 4/6/10 | Fri 4/9/10 | 143,162 | | | | | | | | | | | | | | | | | | | | | |
| 164 | LV 2 HVAC Drops | 3 days | Mon 4/12/10 | Wed 4/14/10 | 144,163 | | | | | | | | | | | | | | | | | | | | | |
| 165 | LV 2 Sprinkler Drops | 2 days | Thu 4/15/10 | Fri 4/16/10 | 145,164 | | | | | | | | | | | | | | | | | | | | | |
| 166 | LV 2 Electrical Switches/Plugs | 3 days | Mon 4/19/10 | Wed 4/21/10 | 146,165 | | | | | | | | | | | | | | | | | | | | | |
| 167 | LV 2 Light Fixtures | 5 days | Thu 4/22/10 | Wed 4/28/10 | 147,166 | | | | | | | | | | | | | | | | | | | | | |
| 168 | LV 2 Flooring | 3 days | Thu 4/29/10 | Mon 5/3/10 | 148,167 | | | | | | | | | | | | | | | | | | | | | |

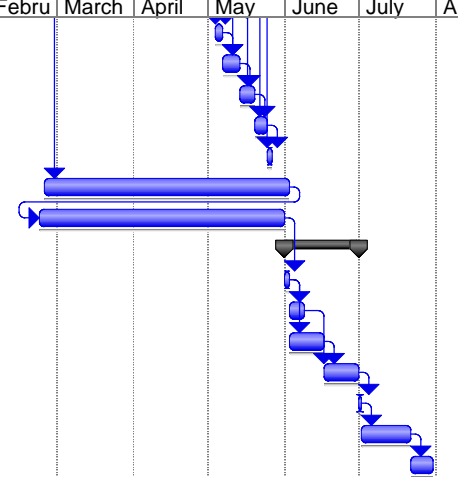


Project: GMU SUB I:Tech 1
Date: Mon 10/26/09

Task: Progress: Summary: External Tasks: Deadline:

Split: Milestone: Project Summary: External Milestone:

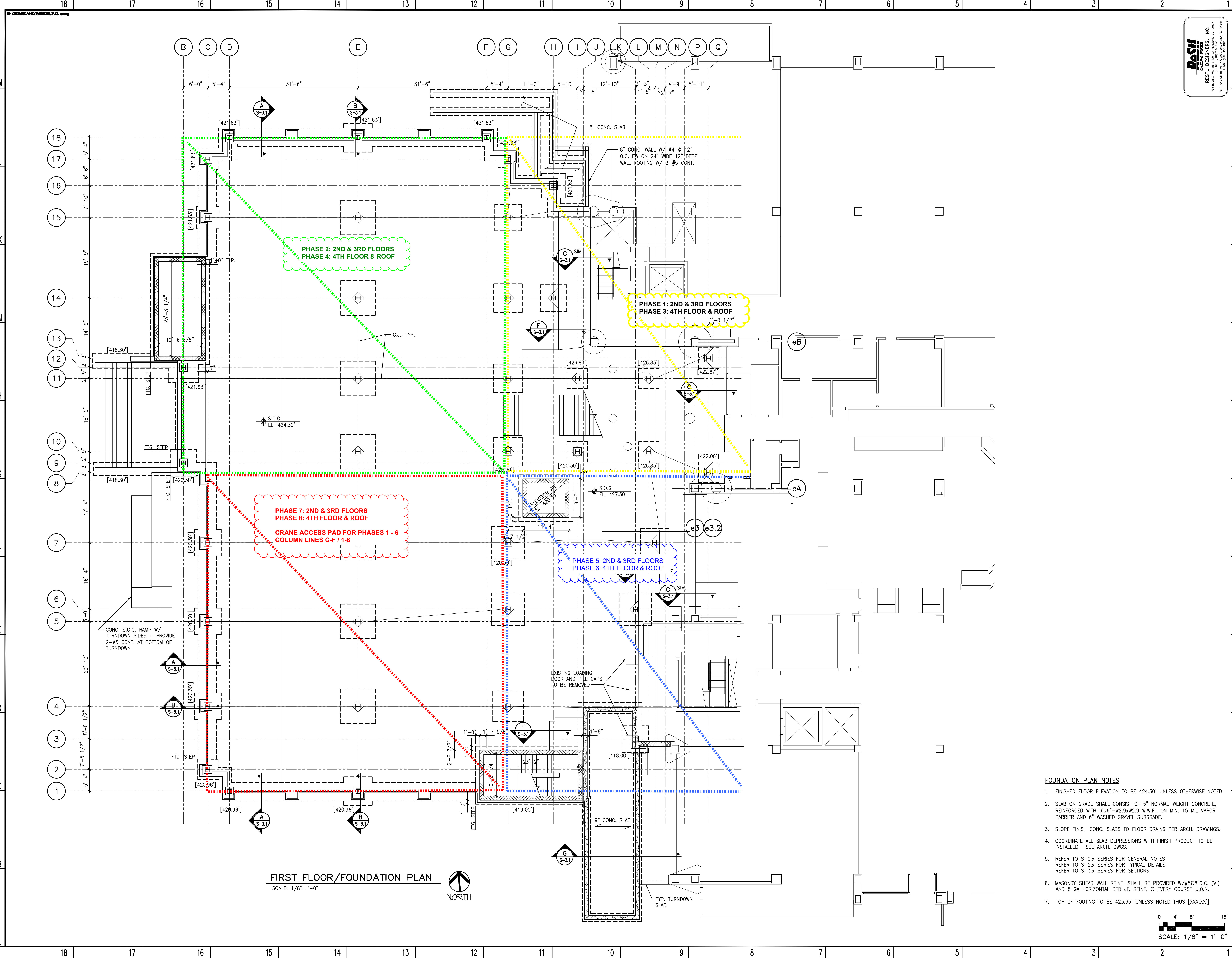
| ID | Task Name | Duration | Start | Finish | Predecess | Decem | Januar | Febru | March | April | May | June | July | August | Septe | October | Nove | Decem | Januar | Febru | March | April | May | June | July | August |
|-----|---|----------------|--------------------|--------------------|-----------------|-------|--------|-------|-------|-------|-----|------|------|--------|-------|---------|------|-------|--------|-------|-------|-------|-----|------|------|--------|
| 169 | LV 2 Plumbing Fixtures | 3 days | Tue 5/4/10 | Thu 5/6/10 | 149,168 | | | | | | | | | | | | | | | | | | | | | |
| 170 | LV 2 Final Paint | 5 days | Fri 5/7/10 | Thu 5/13/10 | 150,169 | | | | | | | | | | | | | | | | | | | | | |
| 171 | LV 2 Millwork | 4 days | Fri 5/14/10 | Wed 5/19/10 | 151,170 | | | | | | | | | | | | | | | | | | | | | |
| 172 | LV 2 Ceiling Tile | 3 days | Thu 5/20/10 | Mon 5/24/10 | 152,171 | | | | | | | | | | | | | | | | | | | | | |
| 173 | LV 2 Hang Doors | 2 days | Tue 5/25/10 | Wed 5/26/10 | 153,172 | | | | | | | | | | | | | | | | | | | | | |
| 174 | LV 3 Interior Rough-Ins/Finish | 71 days | Wed 2/24/10 | Wed 6/2/10 | 155 | | | | | | | | | | | | | | | | | | | | | |
| 175 | LV 4 Interior Rough-Ins/Finish | 71 days | Mon 2/22/10 | Mon 5/31/10 | 174FS-73 | | | | | | | | | | | | | | | | | | | | | |
| 176 | Building Commissioning | 22 days | Tue 6/1/10 | Wed 6/30/10 | | | | | | | | | | | | | | | | | | | | | | |
| 177 | Final Clean-Up | 2 days | Tue 6/1/10 | Wed 6/2/10 | 175 | | | | | | | | | | | | | | | | | | | | | |
| 178 | Punchlist | 4 days | Thu 6/3/10 | Tue 6/8/10 | 177 | | | | | | | | | | | | | | | | | | | | | |
| 179 | Final Inspections | 10 days | Thu 6/3/10 | Wed 6/16/10 | 177 | | | | | | | | | | | | | | | | | | | | | |
| 180 | Punchlist Corrections | 10 days | Thu 6/17/10 | Wed 6/30/10 | 178,179 | | | | | | | | | | | | | | | | | | | | | |
| 181 | Building Addition Substantial Completion | 1 day | Thu 7/1/10 | Thu 7/1/10 | 180 | | | | | | | | | | | | | | | | | | | | | |
| 182 | University FF&E Installation | 14 days | Fri 7/2/10 | Wed 7/21/10 | 181 | | | | | | | | | | | | | | | | | | | | | |
| 183 | Occupancy of Addition | 7 days | Thu 7/22/10 | Fri 7/30/10 | 182 | | | | | | | | | | | | | | | | | | | | | |



Project: GMU SUB I:Tech 1
Date: Mon 10/26/09

Task Progress Summary External Tasks Deadline

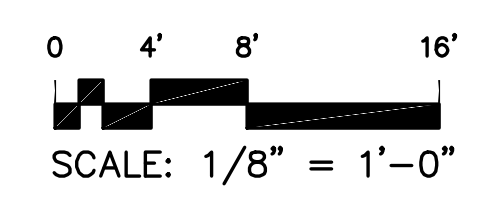
Split Milestone Project Summary External Milestone



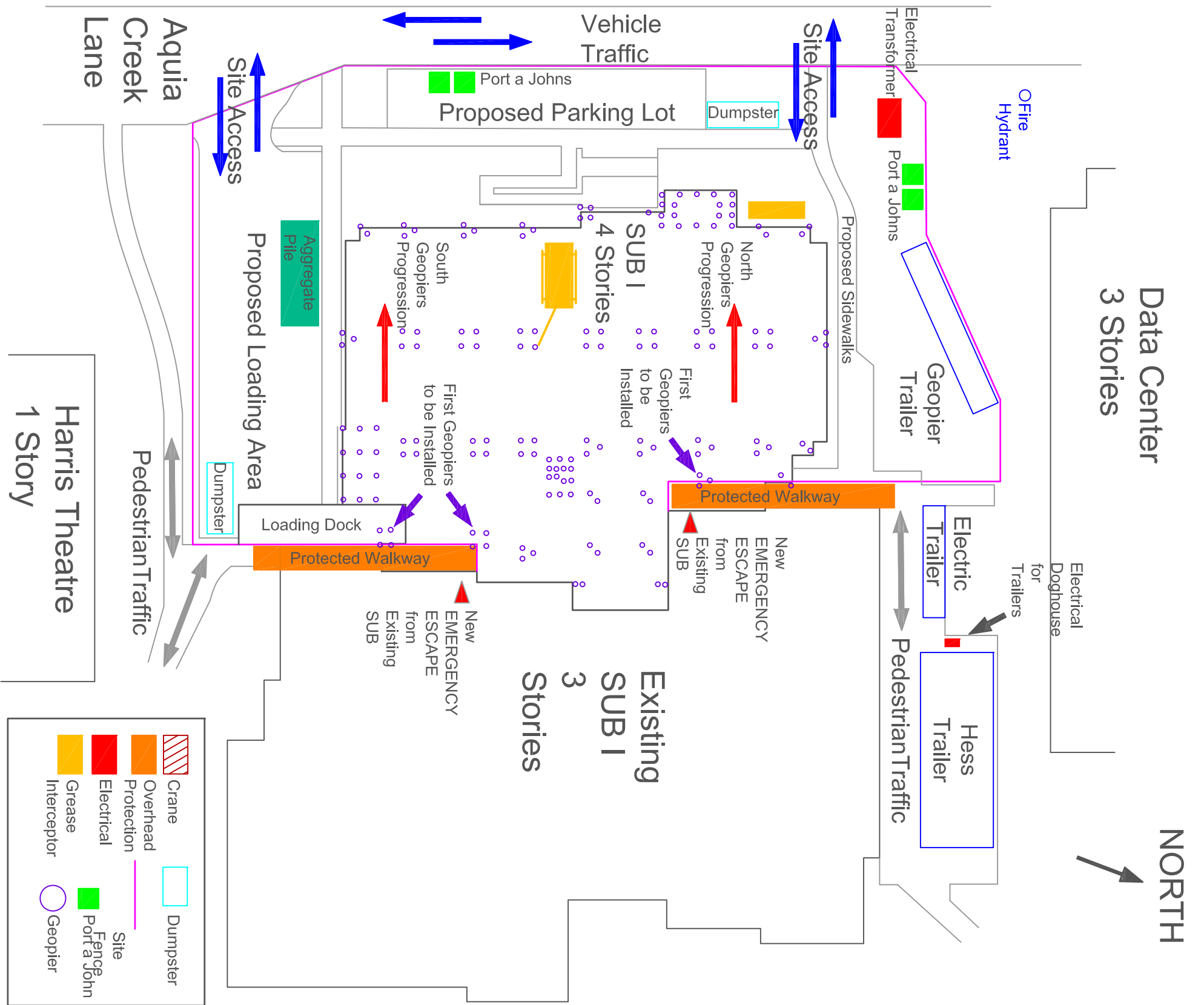
FIRST FLOOR/FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

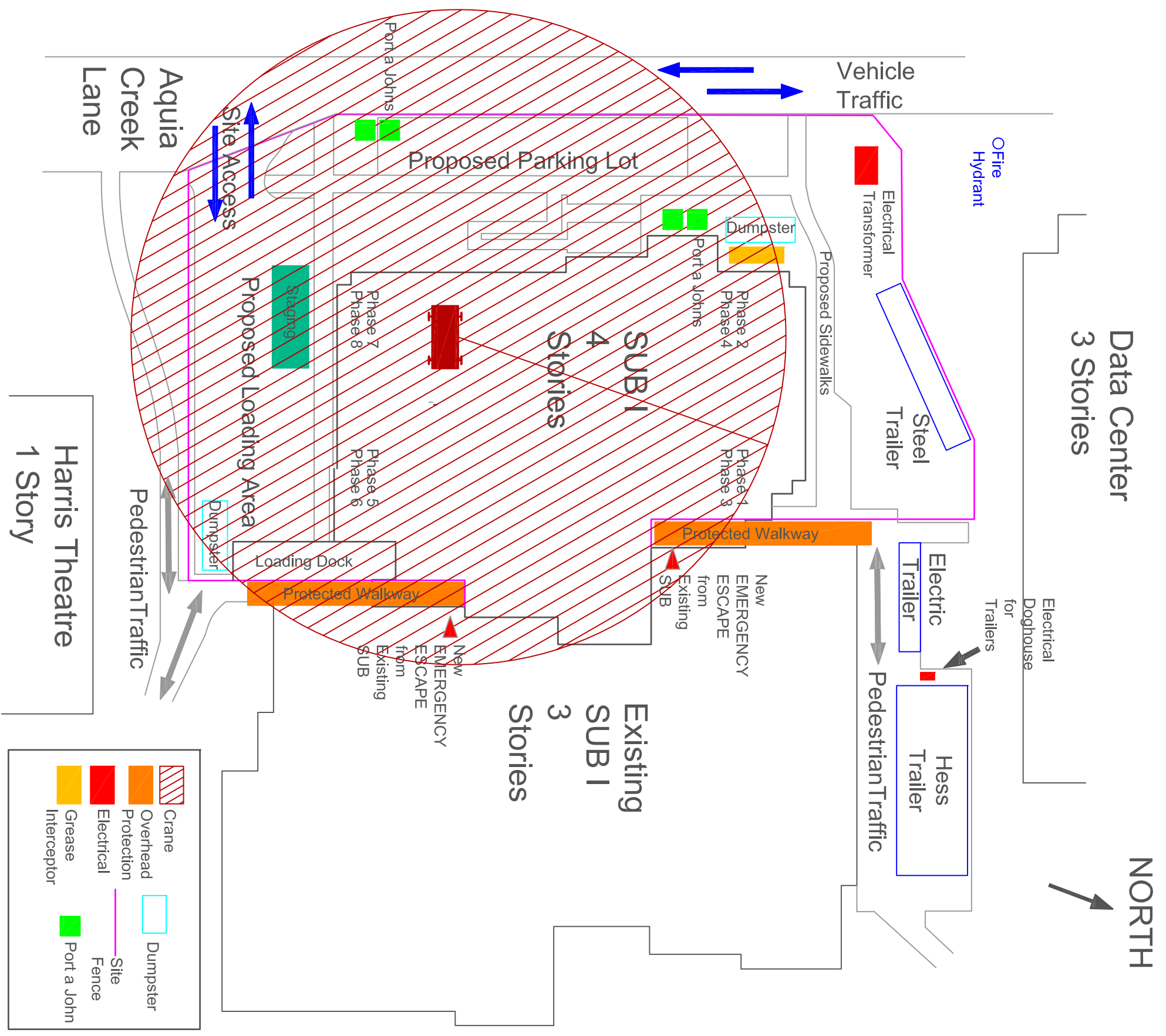


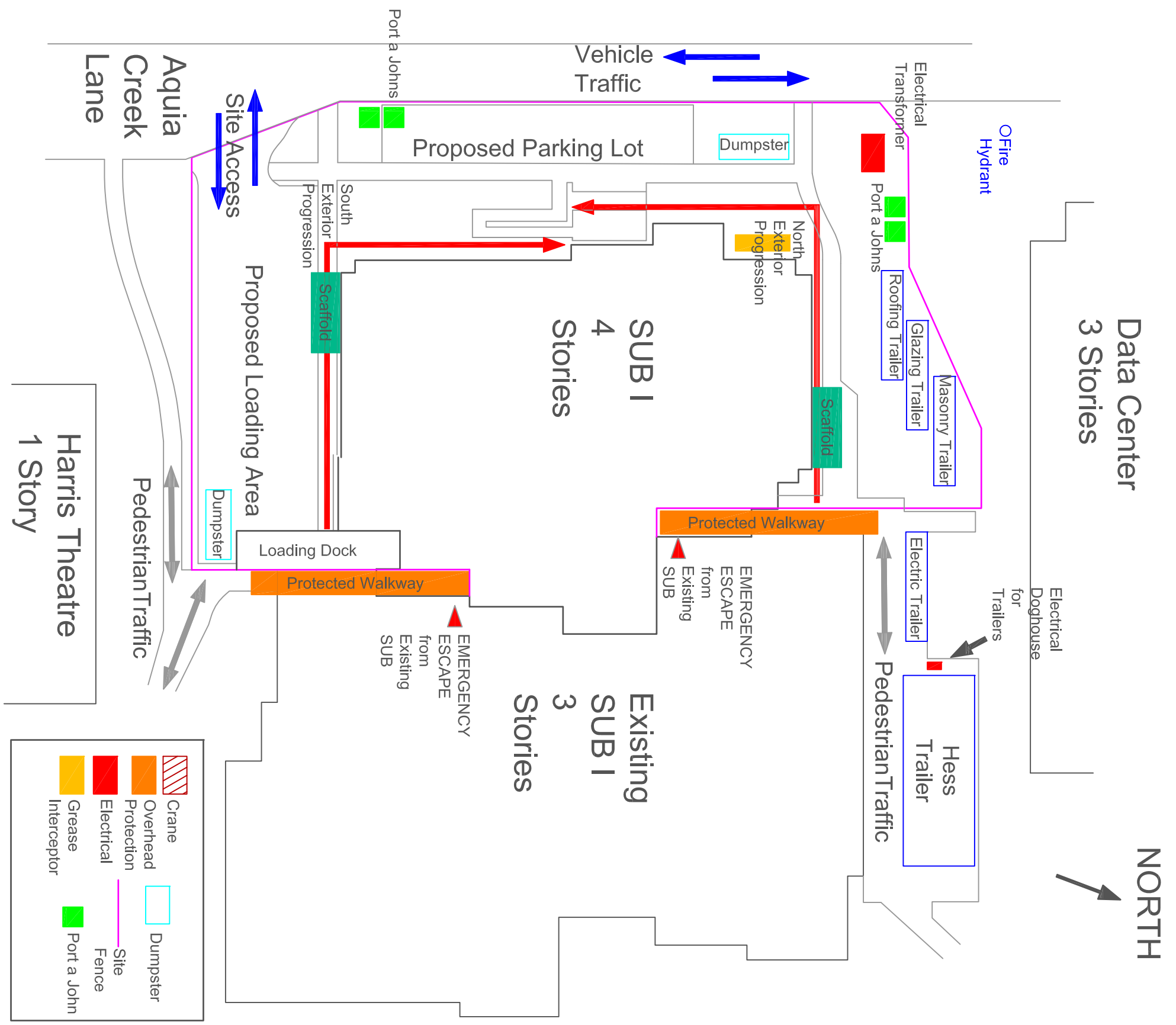
- FOUNDATION PLAN NOTES**
1. FINISHED FLOOR ELEVATION TO BE 424.30' UNLESS OTHERWISE NOTED
 2. SLAB ON GRADE SHALL CONSIST OF 5" NORMAL-WEIGHT CONCRETE, REINFORCED WITH 6"x6"-W2.9xW2.9 W.W.F., ON MIN. 15 MIL VAPOR BARRIER AND 6" WASHED GRAVEL SUBGRADE.
 3. SLOPE FINISH CONC. SLABS TO FLOOR DRAINS PER ARCH. DRAWINGS.
 4. COORDINATE ALL SLAB DEPRESSIONS WITH FINISH PRODUCT TO BE INSTALLED. SEE ARCH. DWGS.
 5. REFER TO S-0.x SERIES FOR GENERAL NOTES
REFER TO S-2.x SERIES FOR TYPICAL DETAILS.
REFER TO S-3.x SERIES FOR SECTIONS
 6. MASONRY SHEAR WALL REINF. SHALL BE PROVIDED W/#5@8"O.C. (V.) AND 8 GA HORIZONTAL BED JT. REINF. @ EVERY COURSE U.O.N.
 7. TOP OF FOOTING TO BE 423.63' UNLESS NOTED THUS [xxx.xx']



| DATE | DESCRIPTION |
|---------|-------------|
| 4/22/09 | FINDN PKG |
| | |
| | |
| | |
| | |
| | |
| | |







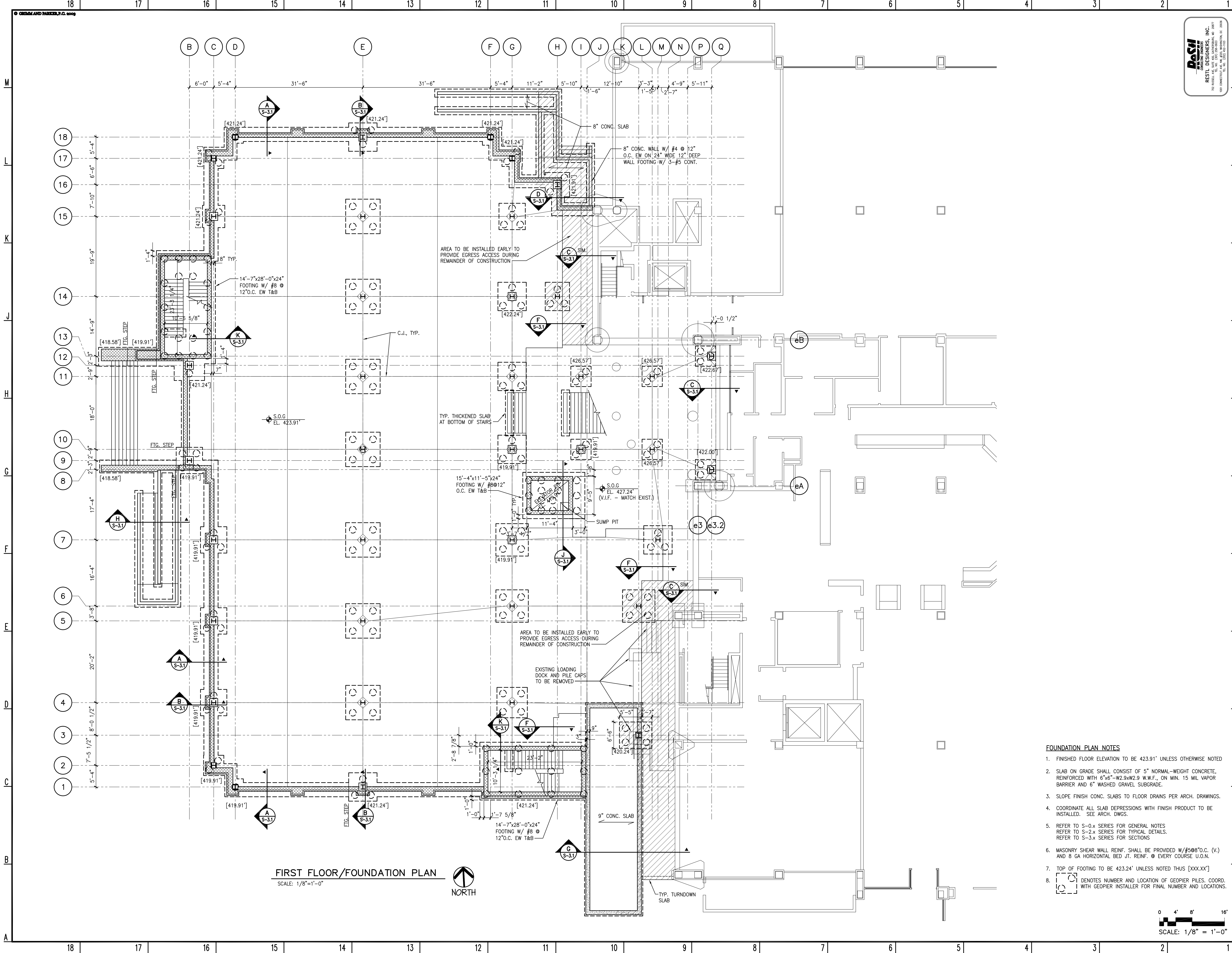
| Detailed Structural Systems Estimate | | | | |
|--|-------|-----------|------------|--------------|
| GMU SUB I | | | | |
| Construction Duration Start: June 2009 - Finish: July 2010 | | | | |
| 03 Concrete (CIP) | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| 3,500 psi (SOG) Normal Weight | CY | 294.93983 | \$103.00 | \$30,378.80 |
| 4,000 psi (SOD) Normal Weight | CY | 7252.5444 | \$106.00 | \$768,769.71 |
| WWF 6x6 - W2.9xW2.9 | CSF | 182.02 | \$43.50 | \$7,917.87 |
| WWF 6x6 - W2.9xW2.10 | CSF | 534.84 | \$54.50 | \$29,148.78 |
| Concrete Subtotal | | | | \$799,148.51 |
| WWF Subtotal | | | | \$37,066.65 |
| Concrete Total | | | | \$836,215.16 |
| Notes: 4,000 psi Light Weight Concrete Not Represented - Used 4,000 psi Normal | | | | |
| 05 Steel | | | | |
| Estimate taken from Bay Col. 1-9/B-E | | | | |
| Structural Steel Beams | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| W16x26 | LF | 31.5 | \$35.41 | \$1,115.42 |
| W18x35 | LF | 36.833 | \$47.80 | \$1,760.62 |
| W21x44 | LF | 257.831 | \$57.79 | \$14,900.05 |
| W21x93 | LF | 42.833 | \$118.09 | \$5,058.15 |
| Structural Steel Beams Subtotal | | | | \$22,834.23 |
| 4 Similar Bays | | | | 4 |
| 3 Similar Floors | | | | 3 |
| Structural Steel Beams Subtotal | | | | \$274,010.82 |
| Structural Steel Girders | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| W12x22 | LF | 5.333 | \$30.94 | \$165.00 |
| W14x26 | LF | 15.5 | \$35.45 | \$549.48 |
| W16x31 | LF | 20.833 | \$41.84 | \$871.65 |
| W18x35 | LF | 38.917 | \$47.80 | \$1,860.23 |
| W21x44 | LF | 61 | \$57.79 | \$3,525.19 |
| W21x50 | LF | 22.333 | \$57.79 | \$1,290.62 |
| Structural Steel Girders Subtotal | | | | \$8,262.18 |
| 4 Similar Bays | | | | 4 |
| 3 Similar Floors | | | | 3 |
| Structural Steel Girders Subtotal | | | | \$99,146.13 |
| Note: W12x19 Not Represented in RS Means - Used W12x22 | | | | |
| Note: W14x22 Not Represented in RS Means - Used W14x26 | | | | |

| Structural Steel Columns | | | | |
|---|-------|---------|------------|--------------|
| Description | Notes | Unit | Unit Price | Amount |
| W10x45 | LF | 30.96 | \$58.29 | \$1,804.66 |
| W10x68 | LF | 123.84 | \$86.47 | \$10,708.44 |
| W10x112 | LF | 30.96 | \$140.07 | \$4,336.57 |
| W12x87 | LF | 92.88 | \$108.97 | \$10,121.13 |
| W12x120 | LF | 30.96 | \$149.07 | \$4,615.21 |
| Structural Steel Columns Subtotal | | | | \$31,586.01 |
| 4 Similar Bays | | | | 4 |
| 2 Tier Columns | | | | 2 |
| Structural Steel Columns Subtotal | | | | \$252,688.09 |
| Note: 2 Tier Columns | | | | |
| Note: W10x33 Not Represented in RS Means - Used W10x45 | | | | |
| Note: W10x49 Not Represented in RS Means - Used W10x68 | | | | |
| Note: W10x54 Not Represented in RS Means - Used W10x68 | | | | |
| Note: W10x60 Not Represented in RS Means - Used W10x68 | | | | |
| Note: W10x77 Not Represented in RS Means - Used W10x112 | | | | |
| Note: W12x96 Not Represented in RS Means - Used W12x120 | | | | |
| Estimate taken from Bay Col. 2-15/G-Q | | | | |
| Structural Steel Beams | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| W8x10 | LF | 14 | \$18.62 | \$260.68 |
| W12x14 | LF | 18.5 | \$21.39 | \$395.72 |
| W12x22 | LF | 270.25 | \$30.94 | \$8,361.54 |
| W16x31 | LF | 138.332 | \$41.84 | \$5,787.81 |
| W16x40 | LF | 38.583 | \$53.80 | \$2,075.77 |
| W18x35 | LF | 18.5 | \$47.80 | \$884.30 |
| W18x76 | LF | 43.333 | \$97.66 | \$4,231.90 |
| W21x50 | LF | 18.5 | \$65.29 | \$1,207.87 |
| W21x68 | LF | 43.333 | \$87.41 | \$3,787.74 |
| Structural Steel Beams Subtotal | | | | \$26,993.31 |
| 3 Similar Floors | | | | 3 |
| Structural Steel Beams Subtotal | | | | \$80,979.93 |
| Note: W16x36 Not Represented in RS Means - Used W16x40 | | | | |
| Note: W12x19 Not Represented in RS Means - Used W12x22 | | | | |
| Structural Steel Girders | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| W12x22 | LF | 75.75 | \$30.94 | \$2,343.71 |
| W14x26 | LF | 33.917 | \$35.45 | \$1,202.36 |
| W16x26 | LF | 94.792 | \$35.41 | \$3,356.58 |
| W18x35 | LF | 28 | \$47.80 | \$1,338.40 |
| W21x68 | LF | 31.875 | \$87.41 | \$2,786.19 |
| Structural Steel Girders Subtotal | | | | \$11,027.24 |
| 3 Similar Floors | | | | 3 |
| Structural Steel Girders Subtotal | | | | \$33,081.72 |
| Note: W12x19 Not Represented in RS Means - Used W12x22 | | | | |
| Note: W14x22 Not Represented in RS Means - Used W14x26 | | | | |

| Structural Steel Columns | | | | |
|--|-------|---------|------------|-------------|
| Description | Notes | Unit | Unit Price | Amount |
| W10x45 | LF | 185.76 | \$58.29 | \$10,827.95 |
| W10x68 | LF | 123.84 | \$86.47 | \$10,708.44 |
| W12x87 | LF | 30.96 | \$108.97 | \$3,373.71 |
| Structural Steel Columns Subtotal | | | | \$24,910.11 |
| 2 Tier Columns | | | | 2 |
| Structural Steel Columns Subtotal | | | | \$49,820.21 |
| Note: 2 Tier Columns | | | | |
| Note: W10x33 Not Represented in RS Means - Used W10x45 | | | | |
| Note: W10x49 Not Represented in RS Means - Used W10x68 | | | | |
| Note: W10x60 Not Represented in RS Means - Used W10x68 | | | | |
| Note: W12x65 Not Represented in RS Means - Used W12x87 | | | | |
| Estimate taken from Bay Col. 1-10/B-E 4th Floor | | | | |
| Steel Joist Framing | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| 24K10 | LF | 184.165 | \$12.07 | \$2,222.87 |
| 26K6 | LF | 73.666 | \$10.22 | \$752.87 |
| 26K10 | LF | 257.831 | \$12.62 | \$3,253.83 |
| Structural Steel Beams Subtotal | | | | \$6,229.57 |
| 4 Similar Bays | | | | 4 |
| Structural Steel Beams Subtotal | | | | \$24,918.26 |
| Note: 24K7 Not Represented in RS Means - Used 24K10 | | | | |
| Note: 26K7 Not Represented in RS Means - Used 26K10 | | | | |
| Structural Steel Beams 4th Floor | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| W8x10 | LF | 10.66 | \$18.62 | \$198.49 |
| W12x14 | LF | 15.5 | \$21.39 | \$331.55 |
| W14x26 | LF | 59.75 | \$35.45 | \$2,118.14 |
| W16x26 | LF | 56.166 | \$35.41 | \$1,988.84 |
| W16x31 | LF | 64 | \$41.84 | \$2,677.76 |
| W18x35 | LF | 36.833 | \$47.80 | \$1,760.62 |
| W21x50 | LF | 36.833 | \$57.79 | \$2,128.58 |
| Structural Steel Girders Subtotal | | | | \$11,203.97 |
| 4 Similar Bays | | | | 4 |
| Structural Steel Girders Subtotal | | | | \$44,815.86 |
| Note: W14x22 Not Represented in RS Means - Used W14x26 | | | | |
| Note: W21x48 Not Represented in RS Means - Used W21x50 | | | | |

| Estimate taken from Bay Col. 3-16/G-Q 4th Floor | | | | |
|--|-------|---------|------------|----------------|
| Steel Joist Framing | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| 10K1 | LF | 42.667 | \$8.14 | \$347.31 |
| 12K3 | LF | 62.683 | \$7.79 | \$488.30 |
| 14K3 | LF | 18.6 | \$8.01 | \$148.99 |
| 16K3 | LF | 210.534 | \$7.66 | \$1,612.69 |
| 22K5 | LF | 62.66 | \$9.17 | \$574.59 |
| 22K9 | LF | 93.99 | \$11.02 | \$1,035.77 |
| 24K6 | LF | 59 | \$9.57 | \$564.63 |
| 26K10 | LF | 88.5 | \$12.62 | \$1,116.87 |
| Structural Steel Beams Subtotal | | | | \$5,889.15 |
| Note: 12K1 Not Represented in RS Means - Used 12K3 | | | | |
| Note: 14K1 Not Represented in RS Means - Used 14K3 | | | | |
| Note: 16K1 Not Represented in RS Means - Used 16K3 | | | | |
| Note: 22K6 Not Represented in RS Means - Used 22K9 | | | | |
| Note: 24K4 Not Represented in RS Means - Used 24K6 | | | | |
| Note: 24K7 Not Represented in RS Means - Used 24K10 | | | | |
| Note: 26K7 Not Represented in RS Means - Used 26K10 | | | | |
| Structural Steel Beams and Girders 4th Floor | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| W8x10 | LF | 119.501 | \$18.62 | \$2,225.11 |
| W10x12 | LF | 53.766 | \$21.02 | \$1,130.16 |
| W12x14 | LF | 16.333 | \$21.39 | \$349.36 |
| W12x22 | LF | 68.75 | \$30.94 | \$2,127.13 |
| W14x26 | LF | 23 | \$35.45 | \$815.35 |
| W16x26 | LF | 120.441 | \$35.41 | \$4,264.82 |
| W18x40 | LF | 59.875 | \$53.80 | \$3,221.28 |
| W24x55 | LF | 43.33 | \$71.09 | \$3,080.33 |
| W24x62 | LF | 43.33 | \$79.91 | \$3,462.50 |
| Structural Steel Beams and Girders Subtotal | | | | \$20,676.03 |
| Note: W12x16 Not Represented in RS Means - Used W12x22 | | | | |
| Note: W12x19 Not Represented in RS Means - Used W12x22 | | | | |
| Note: W14x22 Not Represented in RS Means - Used W14x26 | | | | |
| Note: W21x48 Not Represented in RS Means - Used W21x50 | | | | |
| Composite Steel Floor Decking | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| 2" 18ga. 50-500 squares | SF | 53,284 | \$3.15 | \$167,844.60 |
| Composite Steel Floor Decking Subtotal | | | | \$167,844.60 |
| Steel Roof Decking | | | | |
| Description | Notes | Unit | Unit Price | Amount |
| 1-1/2" 20ga. 50-500 squares | SF | 17,818 | \$1.87 | \$33,319.66 |
| Steel Roof Decking Subtotal | | | | \$33,319.66 |
| Steel Totals | | | | |
| Steel Beams and Girders Subtotal | | | | \$552,710.49 |
| Steel Columns Subtotal | | | | \$302,508.30 |
| Steel Joists Subtotal | | | | \$30,807.41 |
| Steel Deck Subtotal | | | | \$201,164.26 |
| Structural Steel Subtotal | | | | \$1,087,190.46 |

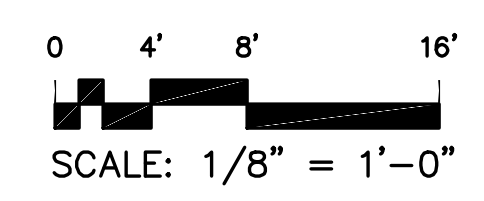
| 31 Caissons (Geopiers) | | | | |
|--|-------|------|------------|----------------|
| Description | Notes | Unit | Unit Price | Amount |
| 30" Dia. Machine Drilled Caisson 25' Depth | VLf | 3575 | \$49.95 | \$178,571.25 |
| Geopier Subtotal | | | | \$178,571.25 |
| Note: Geopier not represented in RS Means - Used Caisson Pricing | | | | |
| Subtotal | | | | \$2,101,976.88 |
| Location Factor (Fairfax, VA) | | | | 0.93 |
| Time Factor | | | | 0.997 |
| Detailed Structural Systems Total | | | | \$1,948,973.98 |



FIRST FLOOR/FOUNDATION PLAN
SCALE: 1/8"=1'-0"



- FOUNDATION PLAN NOTES**
1. FINISHED FLOOR ELEVATION TO BE 423.91' UNLESS OTHERWISE NOTED
 2. SLAB ON GRADE SHALL CONSIST OF 5" NORMAL-WEIGHT CONCRETE, REINFORCED WITH 6"x6"-W2.9xW2.9 W.W.F., ON MIN. 15 MIL VAPOR BARRIER AND 6" WASHED GRAVEL SUBGRADE.
 3. SLOPE FINISH CONC. SLABS TO FLOOR DRAINS PER ARCH. DRAWINGS.
 4. COORDINATE ALL SLAB DEPRESSIONS WITH FINISH PRODUCT TO BE INSTALLED. SEE ARCH. DWGS.
 5. REFER TO S-0.x SERIES FOR GENERAL NOTES
REFER TO S-2.x SERIES FOR TYPICAL DETAILS.
REFER TO S-3.x SERIES FOR SECTIONS
 6. MASONRY SHEAR WALL REINF. SHALL BE PROVIDED W/#5@8"O.C. (V.) AND 8 GA HORIZONTAL BED JT. REINF. @ EVERY COURSE U.O.N.
 7. TOP OF FOOTING TO BE 423.24' UNLESS NOTED THUS [xxx.xx']
 8. DENOTES NUMBER AND LOCATION OF GEOPIER PILES. COORD. WITH GEOPIER INSTALLER FOR FINAL NUMBER AND LOCATIONS.



Restl
RESTL DESIGNERS, INC.
700 HOBBSVILLE RD., SUITE 200
FAIRFAX, VA 22031
TEL: 703-993-9100
FAX: 703-993-9100

FESS
ARCHITECTS

MTW
ARCHITECTS

17760 Baltaville Drive
Suite 600
Calverton, MD 20705
Tel 301-595-1000
Fax 301-595-0089

1395 Beverly Road
Suite 105
Madison, VA 22684
Tel 703-993-9100
Fax 703-993-9755

GRIMM + PARKER
ARCHITECTS

GP# 20901

FOUNDATION/FIRST FLOOR PLAN
GEORGE MASON UNIVERSITY SUB 1 : VA PC 247-17485
FAIRFAX, VA

| DATE | DESCRIPTION |
|---------|---------------|
| 4/22/09 | FNDR PKG |
| 6/3/09 | STEEL PRICING |
| | |
| | |
| | |

S-11

06/15/2009 BC0M
PADA/Site Submission
© GRIMM + PARKER, P.C.

| General Conditions Estimate | | | | | |
|--|-----------------|----------|--------------|-------------|--------------|
| GMU SUB I | | | | | |
| Construction Duration Start: June 2009 - Finish: July 2010 | | | | | |
| Project Personnel | Notes | Duration | Unit | Unit Price | Amount |
| Project Executive | Per Week | 26 | 1 | \$2,100.00 | \$54,600.00 |
| Project Manager | Per Week | 78 | 1 | \$1,850.00 | \$144,300.00 |
| Asst. Project Manager | Per Week | 56 | 1 | \$1,600.00 | \$89,600.00 |
| Project Engineer | Per Week | 60 | 1 | \$1,300.00 | \$78,000.00 |
| General Superintendent | Per Week | 78 | 1 | \$1,700.00 | \$132,600.00 |
| Asst. Superintendent | Per Week | 56 | 1 | \$1,550.00 | \$86,800.00 |
| Estimator | Per Week | 78 | 1 | \$365.00 | \$28,470.00 |
| Accounting | Per Week | 78 | 1 | \$365.00 | \$28,470.00 |
| Project Personnel Subtotal | | | | | \$642,840.00 |
| | | | | | |
| Field Office Support | Notes | Duration | Unit | Unit Price | Amount |
| Office Trailer | Rent Per Month | 13 | 2 | \$375.00 | \$9,750.00 |
| Field Office Light/HVAC | Per Month | 13 | 2 | \$110.00 | \$2,860.00 |
| Furniture | LS | 1 | 1 | \$12,000.00 | \$12,000.00 |
| Storage Boxes | Rent Per Month | 13 | 1 | \$73.50 | \$955.50 |
| Postage/Delivery | LS | 1 | 1 | \$5,000.00 | \$5,000.00 |
| Office Equipment | Per Month | 13 | 1 | \$150.00 | \$1,950.00 |
| Office Supplies | Per Month | 13 | 1 | \$95.00 | \$1,235.00 |
| Telephone | Per Month | 13 | 1 | \$210.00 | \$2,730.00 |
| Photography | LS | 1 | 1 | \$3,500.00 | \$3,500.00 |
| Printing | LS | 1 | 1 | \$17,000.00 | \$17,000.00 |
| Field Office Support Subtotal | | | | | \$56,980.50 |
| | | | | | |
| Temp. Facilities/Fences/Controls | Notes | Duration | Unit | Unit Price | Amount |
| Temp Toilet | Per Month | 56 | 2 | \$168.00 | \$18,816.00 |
| Temp Fence | LF | 1 | 1,500 | \$3.58 | \$5,370.00 |
| Job Signage | SF | 1 | 150 | \$17.90 | \$2,685.00 |
| Drinking Water | LS | 1 | 1 | \$2,000.00 | \$2,000.00 |
| Temp. Facilities/Fences/Controls Subtotal | | | | | \$28,871.00 |
| | | | | | |
| Temp. Utilities | Notes | Duration | Unit | Unit Price | Amount |
| Temp. Heat | CSF Floor/Month | 1 | 2,500 | \$13.50 | \$33,750.00 |
| Temp. Electric | CSF Floor | 1 | 2,500 | \$27.20 | \$68,000.00 |
| Temp. Utilities Subtotal | | | | | \$101,750.00 |
| | | | | | |
| Safety | Notes | Duration | Unit | Unit Price | Amount |
| Safety | LS | 1 | 1 | \$17,500.00 | \$17,500.00 |
| Safety Subtotal | | | | | \$17,500.00 |
| | | | | | |
| Clean-Up | Notes | Duration | Unit | Unit Price | Amount |
| Periodic Clean-Up | MSF | 13 | 65.38 | \$26.07 | \$22,158.61 |
| Road Clean-Up | MSF | 13 | 1.2 | \$26.07 | \$406.69 |
| Final Clean-Up | JOB | 1 | \$17,550,000 | 0.30% | \$52,650.00 |
| 30 CY Dumpsters | Per Week | 56 | 1 | \$900.00 | \$50,400.00 |
| 18" Diameter Trash Chutes | LF | 1 | 45 | \$63.55 | \$2,859.75 |
| Clean-Up Subtotal | | | | | \$128,475.06 |
| | | | | | |

| Travel | Notes | Duration | Unit | Unit Price | Amount |
|--|-------------------------|----------|--------------|-------------|----------------|
| Travel | LS | 1 | 1 | \$10,000.00 | \$10,000.00 |
| Fuel Costs | 30 miles to 4 employees | 365 | 120 | \$0.55 | \$24,090.00 |
| Travel Subtotal | | | | | \$34,090.00 |
| | | | | | |
| Tools | Notes | Duration | Unit | Unit Price | Amount |
| Small Tools | JOB | 1 | \$17,550,000 | 0.45% | \$78,975.00 |
| Small Tools Subtotal | | | | | \$78,975.00 |
| | | | | | |
| Quality Control | Notes | Duration | Unit | Unit Price | Amount |
| Steel Building | Project | 1 | 1 | \$14,818.00 | \$14,818.00 |
| Concrete Testing | Each | 30 | 1 | \$136.00 | \$4,080.00 |
| Earthwork Inspection | Per Day | 30 | 1 | \$210.00 | \$6,300.00 |
| Quality Control Subtotal | | | | | \$25,198.00 |
| | | | | | |
| Material Handling | Notes | Duration | Unit | Unit Price | Amount |
| Hoist | Each | 1 | 1 | \$2,050.00 | \$2,050.00 |
| Material Handling Subtotal | | | | | \$2,050.00 |
| | | | | | |
| Consultant/Professional Services | Notes | Duration | Unit | Unit Price | Amount |
| LEED | LS | 1 | 1 | \$15,000.00 | \$15,000.00 |
| Scheduling | JOB | 1 | \$17,550,000 | 0.03% | \$5,265.00 |
| Consultant/Professional Services Subtotal | | | | | \$20,265.00 |
| | | | | | |
| Permits | Notes | Duration | Unit | Unit Price | Amount |
| Water & Sewer Permit | LS | 1 | 1 | \$44,000.00 | \$44,000.00 |
| Permits Subtotal | | | | | \$44,000.00 |
| | | | | | |
| Commissioning | Notes | Duration | Unit | Unit Price | Amount |
| Commissioning | JOB | 1 | \$17,550,000 | 0.50% | \$87,750.00 |
| Commissioning Subtotal | | | | | \$87,750.00 |
| Subtotal | | | | | \$1,268,744.56 |
| Location Factor (Fairfax, VA) | | | | | 0.93 |
| Time Factor 2009 | | | | | 0.997 |
| Total | | | | | \$1,176,392.64 |
| Percent of Project Cost | | | | | 6.70% |
| Construction Cost - http://enr.construction.com/economics/default.asp - 100-0.03 = 99.7% | | | | | |