

Tech Assignment 2

University Medical Center of Princeton

Plainsboro Road, Township of Plainsboro, New Jersey



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Chris Magent
10/28/2009



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Executive Summary

The University Medical Center is a three year project with 5 phases of construction, one being a renovation. The site plans show the work for three phases, foundation, superstructure, and finish. The foundation shows the limits on excavation, the superstructure showing the placements of the cranes, and the finish showing scaffolding and hoisting areas. The structural system is to cost \$9,678,898.46 for both the steel and concrete. The general conditions on the project are estimated to be \$26,084,125.50 which includes personnel, temporary utilities/facilities, insurance and bonds, and general requirements. I also went to PACE roundtable where industry professionals discussed the challenges the industry faces today with the economy and how to get a competitive edge in winning projects due to this economy.

Detailed Project Schedule

This project is broken up into 5 phases. The first phase is the Central Utility Plant (CUP), second phase is the Diagnostic and Testing building (D&T), third phase is the west side of the Bed Tower (BTW), fourth phase being the east side of the Bed Tower (BTE), and the fifth and last phase is the renovation of Building #2 (Bldg. #2). According to the schedule the construction on the University Medical Center of Princeton is to begin on March 5, 2009 and the final completion is set for March 6, 2012. Most of the phasing of the work for the first four phases follows the same routine of installing the MEP from the first floor up except for the basements being the only exception due to equipment being located in basement. The only exception to this would be the phasing of the work for the renovation of Building #2, because Building #2 is mostly interior renovation all work will be done from the top floors down. From viewing this schedule you can tell that from the five phases that a lot of activities overlap and that congestion on site could be a potential problem with all of the work going on at one specific time. To view the project schedule please take a look at the appendix to view detailed project schedule for the Princeton Medical Center of Princeton.

Site Layout Planning

Site Plans are drawn out for three different critical phases of construction being foundation, superstructure, and finish phase. All of the site plans show site boundaries, traffic flow, entrance roads and parking areas. They also all show the locations of the dumpster, CM and Subcontractor trailer, portable toilets, and temporary power generators that are used on site. There is also no excavation, foundation work, superstructure, or finishing to the exterior of Building #2 which is interior renovation. Also the site fences are placed outside Building #2 since it is still to be in used when construction starts. All site plans can be seen in the Appendix.

The first site plan is for foundation and excavation. The areas of work are blue and labeled with the process of work going from the upper left to lower right. This follows the process of foundation and excavation being done from CUP to D&T to BTW and finally BTE. It should also be noted that there is no need for setback with the excavation since the support of excavation will be steel piles with wood lagging.

The second site plan is for the superstructure focusing on the erection on steel on the Bed Tower. There are two cranes being used one is a Manitowoc 999 (200 ton) and the second is a truck type crane (140 ton). It is my assumption that the truck type crane is used to place steel for the CUP and D&T building.

The third site plan is the finish and shows where scaffolding is need around the buildings (south face of Bed Tower does not need scaffolding due to it being a glass curtain wall system). It also shows where the two temporary hoists are set up and loading docks.

Detailed Structural Systems Estimate

The structural system consists of a steel superstructure and a cast in place concrete structure. The takeoff is focused mainly on the bed tower with the total cost steel and concrete coming out to be \$9,678,898.46. All of the cost are from RSMeans cost data 2009, and the steel and concrete takeoff where both done by hand. Please view appendix for complete breakdown of the structural systems estimate.

There are a few assumptions for the concrete estimate. The first the aside from the elevated slabs that are place with crane and bucket the rest of the concrete is placed with a direct chute not over 6" deep. There is also different strength of concrete for the footings and walls, slab on grade and slab on metal deck. 3,000 psi is to be used for spread footing, strip footing, retaining walls, and foundation walls. 3,500 psi is to be used for slab on grade and 4,000 psi for slab on metal deck.

General Conditions Estimate

General conditions estimate was done using RSMeans cost data 2009. The general conditions estimate is broken down in to 4 subcategories, personnel, temporary utilities/facilities, insurance and bonds, and general requirements. The total general conditions cost is \$26,084,125.50 where personnel cost is \$5,305,985.00, temporary utilities/facilities cost is \$242,496.00, insurance and bonds is \$16,435,200.00, and general requirements is \$4,100,444.50. If going by schedule the project is to take 3 years, 36 month, or 148 weeks to complete. With the personnel the project executive is only on the job 75% of the time. Temporary Utilities/Facilities the office trailer is assumed to be 32'x8' and the portable toilets are chemical. The insurance and bonds use the maximum percentage for the job. General requirements there are two cranes a crawler crane (200 ton, 70' boom) and a truck mounted mobile crane (150 ton, 18' radius). The dumpster is 30 C.Y. 10 ton capacity, fence chain rented 6' high, and temporary access roads that are 4" deep. Please view the complete general conditions estimate in appendix for more details.

Critical Industry Issues

I would first like to start off by saying that the PACE roundtable was very interesting and very enjoyable in understanding what is going on in the industry today. I must say that I would love to see more of these kinds of events to socialize with cooperate members and understand what is going on with the industry.

One of the first topics that were discussed at the PACE roundtable was the affect that the economy is have on the construction industry. The key idea that came for this is that with the limit amount of projects that are coming out and the down turning of the economy more companies are looking at BIM for competitive edge and sustainable design for cost savings on energy.

During the break-out session I went to the business and networking break-out session where we talked a lot about the delivery methods used now in this economy, the uses of joint ventures, and competitive edges for winning bids. The main thing that I thought was interesting though was about networking and how to get a complete edge when going after a project. Some of the key facts were that a bid interview can make or break your bid, by showing enthusiasm and strong interest in a project can go a long way in winning a bid. Another point was building a relationship with architects so that they may potentially but in a good word for your firm with the owner on a project. I also realized that the uses of joint ventures in the construction industry are use for competitive edge in bidding. For example there is a hospital project in town X, construction company A is familiar with the geographies of

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town X but does not know much about building hospitals, construction company B is used to building hospitals but is not familiar with the geographical area of town X, the two companies will form a joint venture to create a competitive edge.

From the PACE roundtable I learned a lot of information that I will use in the future when I graduate. I would also like to say again that the roundtable was very interesting and really enjoyed going to it.

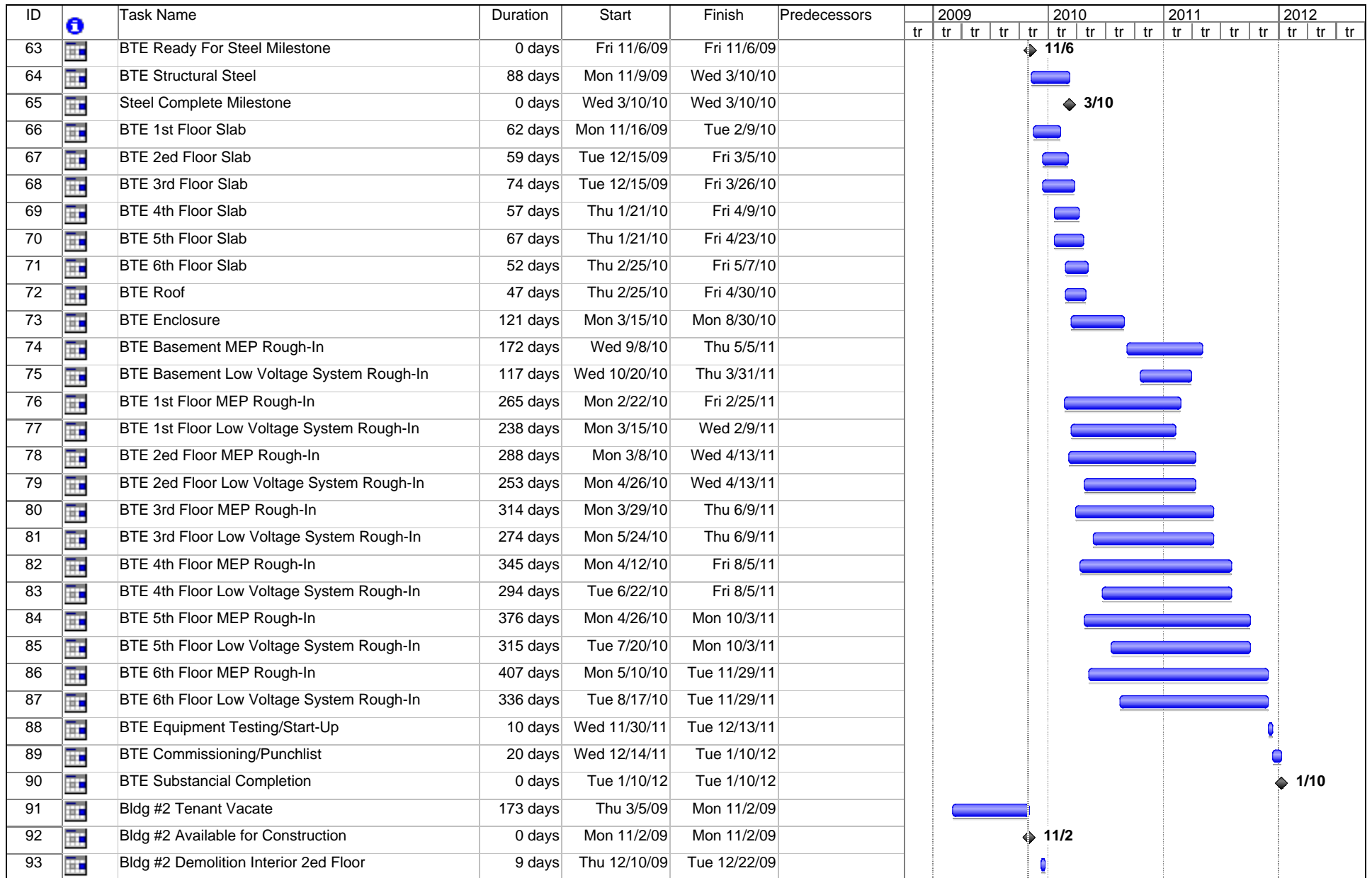
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ID	Task Name	Duration	Start	Finish	Predecessors	2009				2010				2011				2012			
						tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr
1	Notice to Proceed	0 days	Thu 3/5/09	Thu 3/5/09		◆ 3/5															
2	Site Clearing/Soil Erosion Measures	10 days	Thu 3/5/09	Wed 3/18/09		■															
3	Cup Bulk Excavation	30 days	Thu 3/5/09	Wed 4/15/09		■															
4	CUP Foundation	52 days	Thu 4/30/09	Fri 7/10/09		■															
5	CUP Ready For Steel Milestone	0 days	Fri 7/10/09	Fri 7/10/09		◆ 7/10															
6	CUP Structural Steel	15 days	Fri 7/10/09	Thu 7/30/09		■															
7	CUP 1st Floor Slab	31 days	Mon 8/3/09	Mon 9/14/09		■															
8	CUP Roofing	15 days	Mon 8/17/09	Fri 9/4/09		■															
9	CUP Enclosure	47 days	Mon 8/17/09	Tue 10/20/09		■															
10	CUP Enclosure Milestone	0 days	Tue 10/20/09	Tue 10/20/09		◆ 10/20															
11	CUP Rough-In	123 days	Tue 10/6/09	Thu 3/25/10		■															
12	CUP Equipment Testing/Start-Up	56 days	Fri 3/26/10	Fri 6/11/10		■															
13	CUP Commissioning/Punchlist	30 days	Mon 6/14/10	Fri 7/23/10		■															
14	CUP Substantial Completion	0 days	Fri 7/23/10	Fri 7/23/10		◆ 7/23															
15	D&T Bulk Excavation	15 days	Thu 4/23/09	Wed 5/13/09		■															
16	D&T Foundation	55 days	Fri 5/29/09	Thu 8/13/09		■															
17	D&T Ready for Steel Milestone	0 days	Thu 8/13/09	Thu 8/13/09		◆ 8/13															
18	D&T Structural Steel	46 days	Fri 8/14/09	Fri 10/16/09		■															
19	D&T 1st Floor Slab	33 days	Mon 10/12/09	Wed 11/25/09		■															
20	D&T 2ed Floor Slab	73 days	Mon 10/19/09	Wed 1/27/10		■															
21	D&T Roofing	22 days	Tue 12/15/09	Wed 1/13/10		■															
22	D&T Enclosure	101 days	Mon 11/9/09	Mon 3/29/10		■															
23	D&T Enclosure Milestone	0 days	Mon 3/29/10	Mon 3/29/10		◆ 3/29															
24	D&T Basement MEP Rough-In	219 days	Tue 3/30/10	Fri 1/28/11		■															
25	D&T Basement Low Voltage System Rough-In	197 days	Tue 3/30/10	Wed 12/29/10		■															
26	D&T 1st Floor MEP Rough-In	255 days	Fri 11/27/09	Thu 11/18/10		■															
27	D&T 1st Low Voltage System Rough-In	209 days	Thu 12/31/09	Tue 10/19/10		■															
28	D&T 2ed Floor MEP Rough-In	240 days	Thu 1/28/10	Wed 12/29/10		■															
29	D&T 2ed Low Voltage System Rough-In	197 days	Tue 3/2/10	Wed 12/1/10		■															
30	D&T Equipment Testing/Start-Up	30 days	Mon 1/31/11	Fri 3/11/11		■															
31	D&T Commissioning/Punchlist	217 days	Mon 3/14/11	Tue 1/10/12		■															

Project: Detailed Schedule.mpp Date: Tue 10/27/09	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	










ID	Task Name	Duration	Start	Finish	Predecessors	2009				2010				2011				2012		
						tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr
32	D&T Substantial Completion	0 days	Tue 1/10/12	Tue 1/10/12																1/10
33	BT Bulk Excavation	16 days	Thu 5/14/09	Thu 6/4/09																
34	BTW Foundation	81 days	Fri 6/5/09	Fri 9/25/09																
35	BTW Ready For Steel Milestone	0 days	Fri 9/25/09	Fri 9/25/09																
36	BTW Structural Steel	88 days	Mon 9/28/09	Wed 1/27/10																
37	BTW 1st Floor Slab	75 days	Mon 10/12/09	Fri 1/22/10																
38	BTW 2ed Floor Slab	75 days	Mon 11/16/09	Fri 2/26/10																
39	BTW 3rd Floor Slab	85 days	Mon 11/16/09	Fri 3/12/10																
40	BTW 4th Floor Slab	74 days	Tue 12/22/09	Fri 4/2/10																
41	BTW 5th Floor Slab	84 days	Tue 12/22/09	Fri 4/16/10																
42	BTW 6th Floor Slab	67 days	Thu 1/28/10	Fri 4/30/10																
43	BTW Roof	62 days	Thu 1/28/10	Fri 4/23/10																
44	BTW Enclosure	166 days	Mon 3/8/10	Mon 10/25/10																
45	BTW Basement MEP Rough-In	153 days	Tue 8/31/10	Thu 3/31/11																
46	BTW Basement Low Voltage System Rough-In	117 days	Wed 9/22/10	Thu 3/3/11																
47	BTW 1st Floor MEP Rough-In	248 days	Mon 1/25/10	Wed 1/5/11																
48	BTW 1st Floor Low Voltage System Rough-In	233 days	Mon 2/15/10	Wed 1/5/11																
49	BTW 2ed Floor MEP Rough-In	273 days	Mon 3/1/10	Wed 3/16/11																
50	BTW 2ed Floor Low Voltage System Rough-In	243 days	Mon 4/12/10	Wed 3/16/11																
51	BTW 3rd Floor MEP Rough-In	303 days	Mon 3/15/10	Wed 5/11/11																
52	BTW 3rd Floor Low Voltage System Rough-In	263 days	Mon 5/10/10	Wed 5/11/11																
53	BTW 4th Floor MEP Rough-In	330 days	Mon 4/5/10	Fri 7/8/11																
54	BTW 4th Floor Low Voltage System Rough-In	262 days	Tue 6/8/10	Wed 6/8/11																
55	BTW 5th Floor MEP Rough-In	360 days	Mon 4/19/10	Fri 9/2/11																
56	BTW 5th Floor Low Voltage System Rough-In	304 days	Tue 7/6/10	Fri 9/2/11																
57	BTW 6th Floor MEP Rough-In	391 days	Mon 5/3/10	Mon 10/31/11																
58	BTW 6th Floor Low Voltage System Rough-In	325 days	Tue 8/3/10	Mon 10/31/11																
59	BTW Equipment Testing/Start-Up	10 days	Tue 11/1/11	Mon 11/14/11																
60	BTW Commissioning/Punchlist	41 days	Tue 11/15/11	Tue 1/10/12																
61	BTW Substantial Completion	0 days	Tue 1/10/12	Tue 1/10/12																
62	BTE Foundation	106 days?	Fri 6/12/09	Fri 11/6/09																

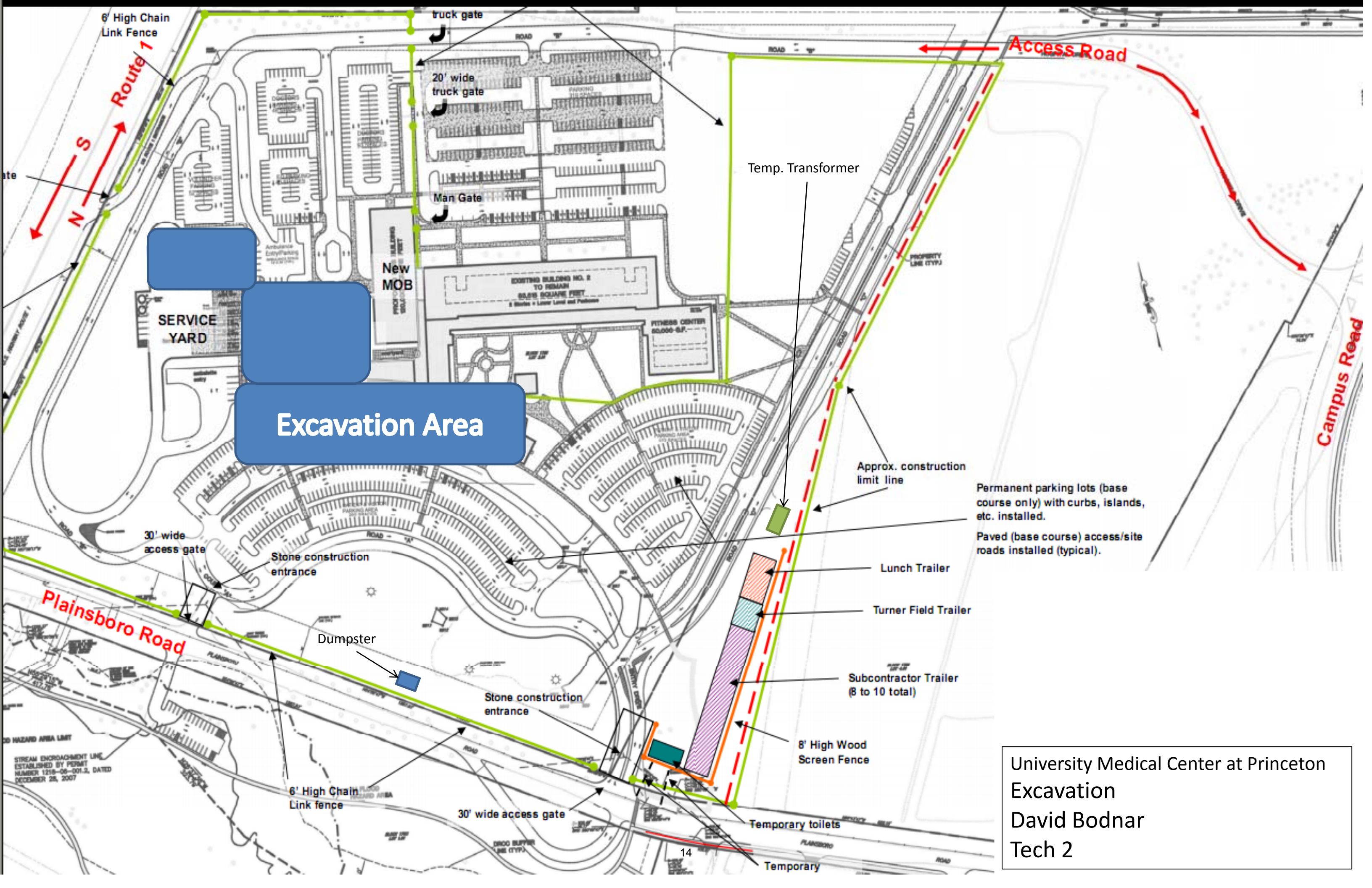
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	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	



Project: Detailed Schedule.mpp Date: Tue 10/27/09	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	

ID	Task Name	Duration	Start	Finish	Predecessors	2009				2010				2011				2012			
						tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr	tr
94	Bldg #2 Demolition Interior 1st Floor	53 days	Tue 11/3/09	Thu 1/14/10																	
95	Bldg #2 Demolition Interior Basement	50 days	Fri 1/15/10	Thu 3/25/10																	
96	Bldg #2 Enclosure Renovation	97 days	Wed 12/16/09	Thu 4/29/10																	
97	Bldg #2 Basement MEP Rough-In	76 days	Fri 4/2/10	Fri 7/16/10																	
98	Bldg #2 1st Floor MEP Rough-In	205 days	Fri 1/22/10	Thu 11/4/10																	
99	Bldg #2 1st Floor Low Voltage System Rough-In	170 days	Fri 2/19/10	Thu 10/14/10																	
100	Bldg #2 2ed Floor MEP Rough-In	178 days	Tue 1/5/10	Thu 9/9/10																	
101	Bldg #2 2ed Floor Low Voltage System Rough-In	152 days	Tue 2/2/10	Wed 9/1/10																	
102	Bldg #2 Equipment Testing/Start-Up	32 days	Fri 7/16/10	Mon 8/30/10																	
103	Bldg #2 Commissioning/Punchlist	80 days	Mon 8/30/10	Fri 12/17/10																	
104	Bldg #2 Substantial Completion	0 days	Fri 12/17/10	Fri 12/17/10																	
105	Final Commissioning/Punchlist All Buildings	40 days	Wed 1/11/12	Tue 3/6/12																	
106	Project Final Completion	0 days	Tue 3/6/12	Tue 3/6/12																	

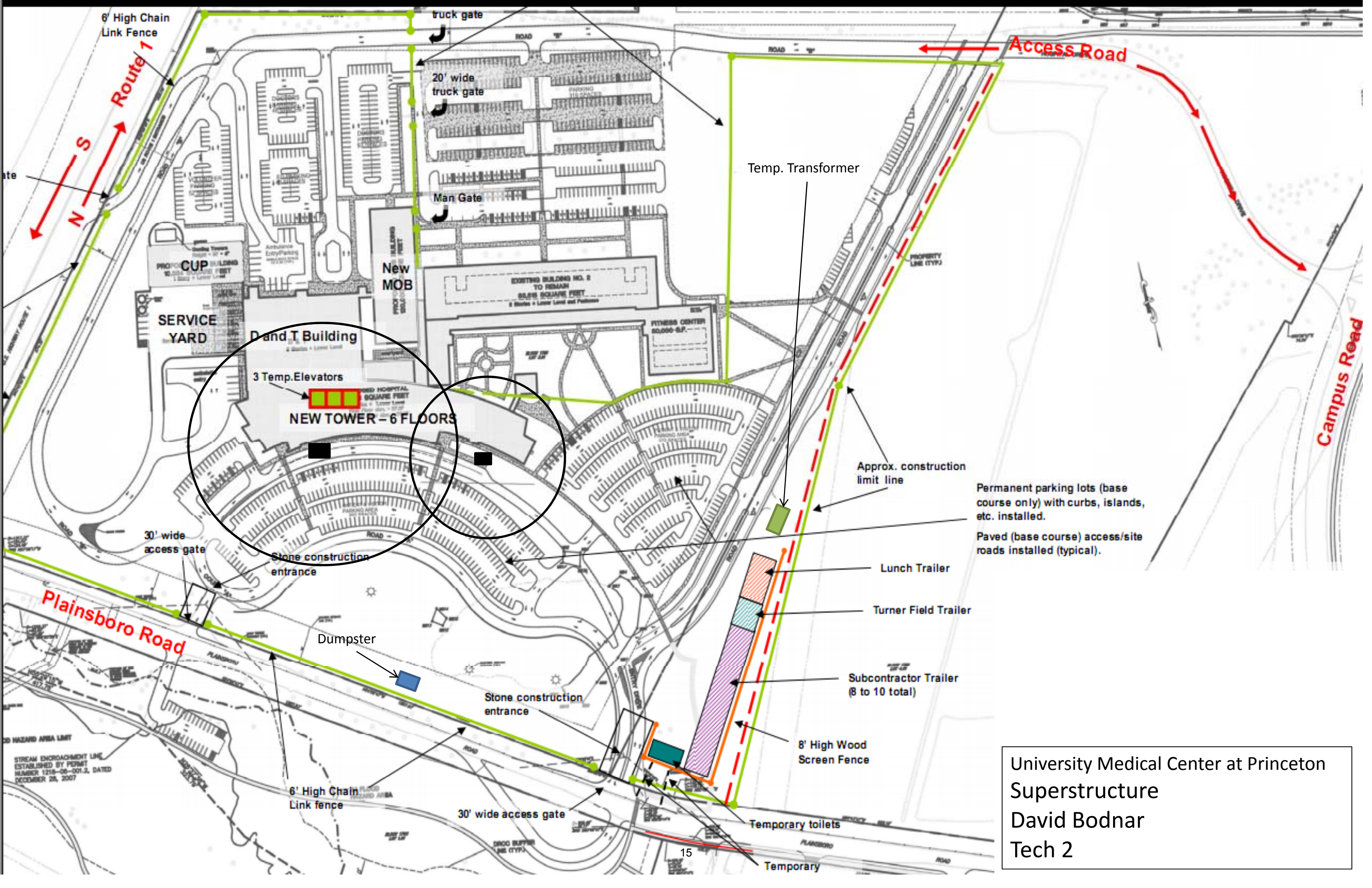
Project: Detailed Schedule.mpp Date: Tue 10/27/09	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	



Excavation Area

Permanent parking lots (base course only) with curbs, islands, etc. installed.
 Paved (base course) access/site roads installed (typical).

University Medical Center at Princeton
 Excavation
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 Tech 2



University Medical Center at Princeton
 Superstructure
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 Tech 2

Permanent parking lots (base course only) with curbs, islands, etc. installed.
 Paved (base course) access/site roads installed (typical).

Approx. construction limit line

Lunch Trailer
 Turner Field Trailer
 Subcontractor Trailer (8 to 10 total)

8' High Wood Screen Fence

Temporary toilets
 Temporary

Temp. Transformer

Man Gate

20' wide truck gate

truck gate

3 Temp. Elevators

NEW TOWER - 6 FLOORS

SERVICE YARD

D and T Building

New MOB

CUP BUILDING

PROF. CUP

6' High Chain Link Fence

6' High Chain Link Fence

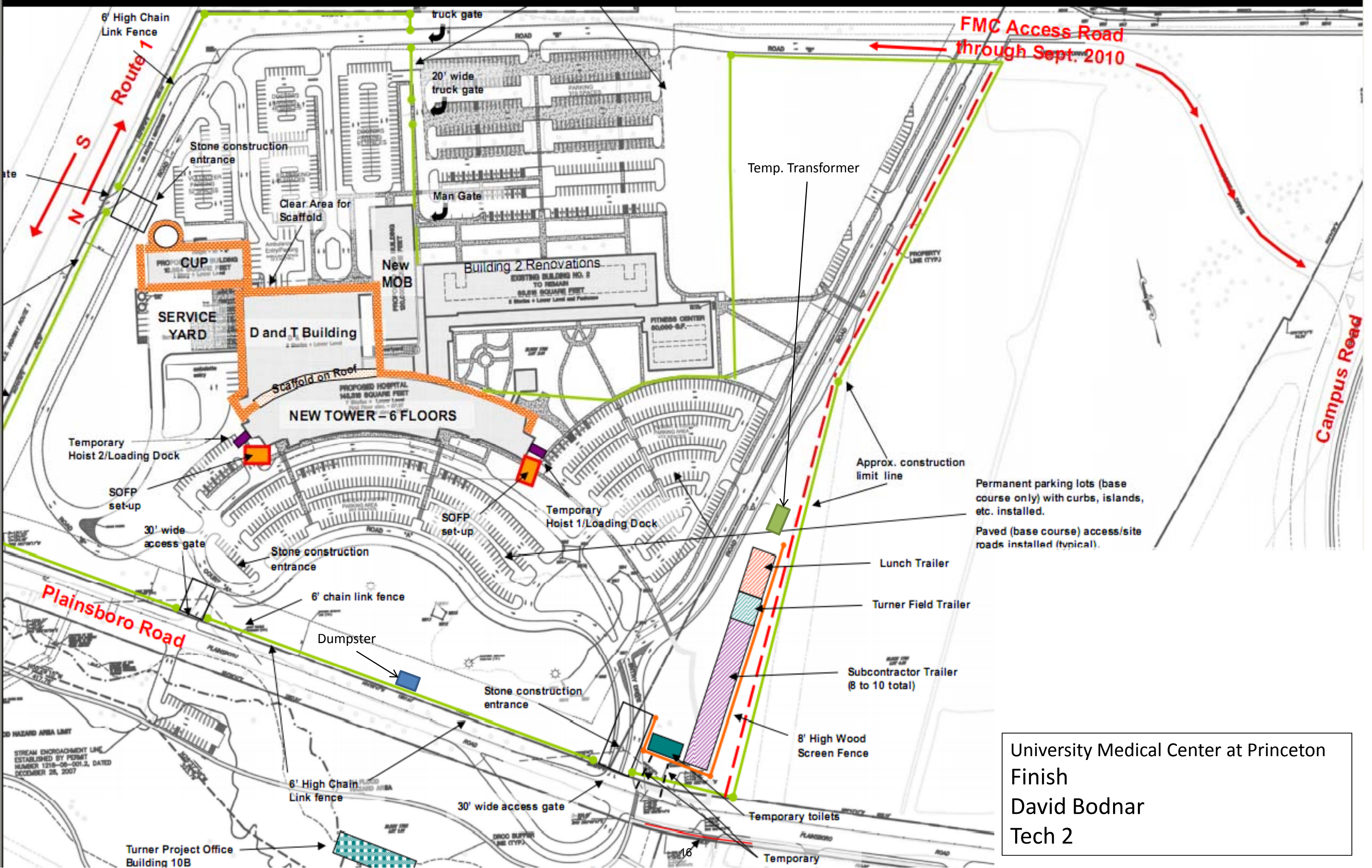
Route 1

N S

Plainsboro Road

Access Road

Campus Road



University Medical Center at Princeton
 Finish
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 Tech 2

Structural Systems Estimate										
Steel										
Columns	Quantity	Units	Materials Cost	Materials Total	Labor Cost	Labor Total	Equipment Cost	Equipment Total	Total	
W12x72	264	L.F.	\$82.50	\$21,780.00	\$2.36	\$623.04	\$1.69	\$446.16	\$22,849.20	
W14x82	156	L.F.	\$122.00	\$19,032.00	\$2.48	\$386.88	\$1.77	\$276.12	\$19,695.00	
W14x90	1,144	L.F.	\$122.00	\$139,568.00	\$2.48	\$2,837.12	\$1.77	\$2,024.88	\$144,430.00	
W145x99	572	L.F.	\$122.00	\$69,784.00	\$2.48	\$1,418.56	\$1.77	\$1,012.44	\$72,215.00	
W14x109	416	L.F.	\$122.00	\$50,752.00	\$2.48	\$1,031.68	\$1.77	\$736.32	\$52,520.00	
W14X120	156	L.F.	\$198.00	\$30,888.00	\$2.54	\$396.24	\$1.81	\$282.36	\$31,566.60	
W14X132	1,456	L.F.	\$198.00	\$288,288.00	\$2.54	\$3,698.24	\$1.81	\$2,635.36	\$294,621.60	
W14X136	52	L.F.	\$198.00	\$10,296.00	\$2.54	\$132.08	\$1.81	\$94.12	\$10,522.20	
W14X145	1,690	L.F.	\$198.00	\$334,620.00	\$2.54	\$4,292.60	\$1.81	\$3,058.90	\$341,971.50	
W14X159	338	L.F.	\$198.00	\$66,924.00	\$2.54	\$858.52	\$1.81	\$611.78	\$68,394.30	
W14X176	702	L.F.	\$290.00	\$203,580.00	\$2.67	\$1,874.34	\$1.91	\$1,340.82	\$206,795.16	
W14X193	182	L.F.	\$290.00	\$52,780.00	\$2.67	\$485.94	\$1.91	\$347.62	\$53,613.56	
W14X211	78	L.F.	\$290.00	\$22,620.00	\$2.67	\$208.26	\$1.91	\$148.98	\$22,977.24	
W14X311	754	L.F.	\$290.00	\$218,660.00	\$2.67	\$2,013.18	\$1.91	\$1,440.14	\$222,113.32	
W14X347	442	L.F.	\$290.00	\$128,180.00	\$2.67	\$1,180.14	\$1.91	\$844.22	\$130,204.36	
Beams								Total Columns	\$1,694,489.04	
W8X40	434	L.F.	\$51.00	\$22,134.00	\$4.43	\$1,922.62	\$3.17	\$1,375.78	\$25,432.40	
W12x19	9,882	L.F.	\$26.50	\$261,873.00	\$2.77	\$27,373.14	\$1.98	\$19,566.36	\$308,812.50	
W12X26	270	L.F.	\$43.00	\$11,610.00	\$2.77	\$747.90	\$1.98	\$534.60	\$12,892.50	
W12X40	126	L.F.	\$43.00	\$5,418.00	\$2.77	\$349.02	\$1.98	\$249.48	\$6,016.50	
W14X22	396	L.F.	\$43.00	\$17,028.00	\$2.46	\$974.16	\$1.76	\$696.96	\$18,699.12	
W16X26	23,994	L.F.	\$43.00	\$1,031,742.00	\$2.44	\$58,545.36	\$1.74	\$41,749.56	\$1,132,036.92	
W16X31	1,798	L.F.	\$51.00	\$91,698.00	\$2.71	\$4,872.58	\$1.93	\$3,470.14	\$100,040.72	
W18X35	2,666	L.F.	\$58.00	\$154,628.00	\$3.67	\$9,784.22	\$1.95	\$5,198.70	\$169,610.92	
W18X40	805	L.F.	\$66.00	\$53,130.00	\$3.67	\$2,954.35	\$1.95	\$1,569.75	\$57,654.10	
W21X44	8,897	L.F.	\$72.50	\$645,032.50	\$3.32	\$29,538.04	\$1.76	\$15,658.72	\$690,229.26	
W21X50	1,302	L.F.	\$82.50	\$107,415.00	\$3.32	\$4,322.64	\$1.76	\$2,291.52	\$114,029.16	
W21X55	217	L.F.	\$82.50	\$17,902.50	\$3.32	\$720.44	\$1.76	\$381.92	\$19,004.86	
W24X55	8,232	L.F.	\$91.00	\$749,112.00	\$3.18	\$26,177.76	\$1.69	\$13,912.08	\$789,201.84	
W24X62	259	L.F.	\$102.00	\$26,418.00	\$3.18	\$823.62	\$1.69	\$437.71	\$27,679.33	
W24X68	1,519	L.F.	\$112.00	\$170,128.00	\$3.18	\$4,830.42	\$1.69	\$2,567.11	\$177,525.53	
W27X54	252	L.F.	\$155.00	\$39,060.00	\$2.96	\$745.92	\$1.58	\$398.16	\$40,204.08	
W27X84	1,302	L.F.	\$155.00	\$201,810.00	\$2.96	\$3,853.92	\$1.58	\$2,057.16	\$207,721.08	
W30X99	280	L.F.	\$163.00	\$45,640.00	\$2.94	\$823.20	\$1.56	\$436.80	\$46,900.00	
Metal Decking								Total Beams	\$3,943,690.82	
3" deep 20 gauge	492,000	S.F.	\$4.12	\$2,027,040.00	\$0.43	\$211,560.00	\$0.04	\$19,680.00	\$2,258,280.00	
								Total Metal Decking	\$2,258,280.00	
Concrete										
Foundation										
Spread Footing	2,980	C.Y.	\$101.00	\$300,980.00	\$13.20	\$39,336.00	\$0.43	\$1,281.40	\$341,597.40	
Strip Footing	1,840	C.Y.	\$101.00	\$185,840.00	\$13.20	\$24,288.00	\$0.43	\$791.20	\$210,919.20	
Retaining Walls	2,520	C.Y.	\$101.00	\$254,520.00	\$15.85	\$39,942.00	\$0.52	\$1,310.40	\$295,772.40	
Foundation Walls	80	C.Y.	\$101.00	\$8,080.00	\$15.85	\$1,268.00	\$0.52	\$41.60	\$9,389.60	
Floors								Foundation Total	\$857,678.60	
Slab on Grade	1,600	C.Y.	\$104.00	\$166,400.00	\$14.40	\$23,040.00	\$0.47	\$752.00	\$190,192.00	
Slab on Metal Deck	5,080	C.Y.	\$106.00	\$538,480.00	\$26.00	\$132,080.00	\$12.60	\$64,008.00	\$734,568.00	
								Floors Total	\$924,760.00	
								Total Structure	\$9,678,898.46	

General Conditions Estimate						
Personnel		Number of Staff	Weeks of Job	Cost per Week	Total Cost	
	Projec Excutive	1	111	\$2,175.00	\$241,425.00	
	Sr. Project Manager	1	148	\$2,175.00	\$321,900.00	
	Project Engineer	1	148	\$1,350.00	\$199,800.00	
	Project Superintendent	1	148	\$2,025.00	\$299,700.00	
	Accountant	1	148	\$380.00	\$56,240.00	
	Assistant Engineers	6	148	\$1,165.00	\$1,034,520.00	
	Assistant Superintendents	12	148	\$1,775.00	\$3,152,400.00	
					Total Personnel Cost	\$5,305,985.00
Temporary Utilities/Facilities		Amount	Units	Cost per Unit	Total Cost	
	Trailers	1	Ea.	\$200.00	\$7,200.00	
	Office Equipment	1	Month	\$155.00	\$5,580.00	
	Office Supplies	1	Month	\$85.00	\$3,060.00	
	Telephone	1	Month	\$80.00	\$2,880.00	
	Light & HVAC	1	Month	\$150.00	\$5,400.00	
	Portable Toilets	6	Ea.	\$171.00	\$36,936.00	
	Storage boxes	1	Ea.	\$5,040.00	\$181,440.00	
					Total Cost	\$242,496.00
Insurance and Bonds			Contract Amount	% of Contracte	Total Cost	
	Insurance		\$321,000,000.00	0.62%	\$1,990,200.00	
	Permits		\$321,000,000.00	2.00%	\$6,420,000.00	
	Bonds		\$321,000,000.00	2.50%	\$8,025,000.00	
					Total Cost	\$16,435,200.00
General Requirements		Frenquency	Duration	Cost per Unit	Total Cost	
	Crawler Crane	Mouth	8	\$21,300.00	\$170,400.00	
	Mobil Crane	Mouth	9	\$19,000.00	\$171,000.00	
	Material Hoist	Mouth	36	\$10,200.00	\$367,200.00	
	Dumpster	Weeks	148	\$1,000.00	\$148,000.00	
	Signage	S.F.	100	\$21.00	\$2,100.00	
	Final Clean	Job	\$321,000,000.00	1.00%	\$3,210,000.00	
	Temporary Road	S.F.	450	\$7.61	\$3,424.50	
	Temporary Fenceing	L.F.	3,000	\$9.44	\$28,320.00	
					Total Cost	\$4,100,444.50
					Total GC Cost	\$26,084,125.50