Tech Assignment 1

University Medical Center of Princeton

Plainsboro Road, Township of Plainsboro, New Jersey

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10/5/2009

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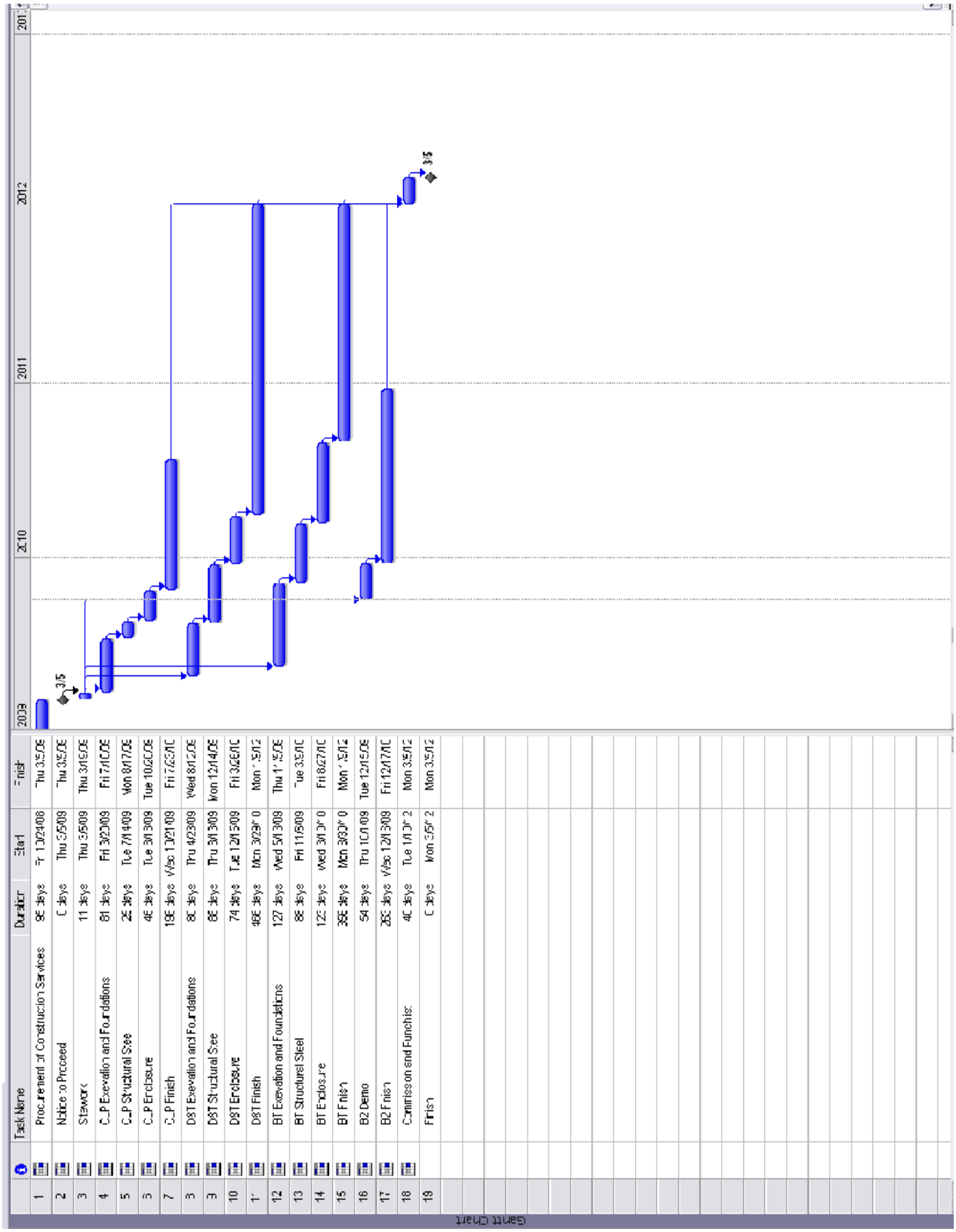
Executive Summary

The University Medical Center of Princeton is a new hospital project by Princeton HealthCare System. It is being constructed by Turner Construction for a GMP of $321 million on the existing FMC Facility in Plainsboro Township. The notice to proceed on the new hospital is March 5, 2009 and the building should be completed March 5, 2012. The construction process will consist of 5 phases with one being a renovation of current Building #2 on site.

The new hospital is using cast in place concrete for foundations and structural steel for the structure and the exterior of the building will have a curtain wall system and masonry system. Demolition will be done to the interior of Building #2 and existing buildings on site.

Project schedule summary is a breakdown of the major phases of the project, and a buildings systems summary was incorporated to understand the important components of the building. A cost estimate was done on D4 and RS Means to take a look at the square foot cost. Research was done in looking into an existing conditions site plan showing traffic flow and building footprint, and a look into local conditions for the proper foundation to use in relation to the geotechnical report. A study was done on the client to understand the importance of this building and there major goals in the construction of this building. Last a study and research was done on the delivery method and staffing plan to understand the communication line and role players in the construction process on the new University Medical Center of Princeton

Project Schedule Summary



	Task Name	Duration	Start	Finish
1	Procurement of Construction Services	9[illegible] days	Fr 1/30/09	Thu 3/5/09
2	Notice to Proceed	0 days	Thu 2/5/09	Thu 3/5/09
3	Siteworks	11 days	Thu 2/5/09	Thu 3/19/09
4	C_P Excavation and Foundations	81 days	Fri 3/20/09	Fri 7/10/09
5	C_P Structural Steel	2[illegible] days	Tue 7/14/09	Mon 8/17/09
6	C_P Enclosure	4[illegible] days	Tue 3/17/09	Tue 10/6/09
7	C_P Finish	19[illegible] days	Wed 1/21/09	Fri 7/23/10
8	D&T Excavation and Foundations	8[illegible] days	Thu 4/23/09	Wed 8/12/09
9	D&T Structural Steel	8[illegible] days	Thu 3/19/09	Mon 12/14/09
10	D&T Enclosure	74 days	Tue 12/15/09	Fri 3/26/10
11	D&T Finish	46[illegible] days	Mon 3/29/10	Mon [illegible]/1/12
12	BT Excavation and Foundations	127 days	Wed 5/13/09	Thu 11/5/09
13	BT Structural Steel	8[illegible] days	Fri 11/6/09	Tue 3/2/10
14	BT Enclosure	12[illegible] days	Wed 3/3/10	Fri 8/27/10
15	BT Finish	35[illegible] days	Mon 3/29/10	Mon [illegible]/1/12
16	B2 Demo	54 days	Thu 1/21/10	Tue 12/14/10
17	B2 Finish	25[illegible] days	Wed 12/16/09	Fri 12/17/10
18	Commissioning and Punchlist	4[illegible] days	Tue 1/19/10	Mon 3/22/12
19	Finish	0 days	Mon 3/5/12	Mon 3/5/12

Foundation:

The foundation of the building on all stages outside of the renovation to building #2 will consist of using cast in place concrete. After the footing is excavated, cast in place concrete will be use to create the footings and the foundation walls. The foundations will be done in four phases with the Central Utility Plant being first, Diagnostics & Testing Building second, Bed Tower West third and last Bed Tower East. All four phases fallow the same procedure of footing excavation, prep and pour footings, prep and pour foundation walls, survey anchor bolts, and last cure foundation walls.

Structural:

The structural system of the project is structural steel frame with composite steel decking for slabs. After the structural steel was placed the stairs where put in place and then the composite steel decking was added. The phasing of the structural system was the same as the foundation.

Finish:

The finishing of the building started with mechanical system being installed in the ceiling with sprinkler mains fallowing. After that plumbing, electrical and the sprinkler mains fallowed. The partitions where not completed till after all of the MEP was in place and HVAC inspected, the only exception being the door frames since they were installed after the sprinkler mains. The low voltage systems would begin most of their work after the partition framing when the cable trays where installed. The work for the finish was phased just as it was for the foundation and structure the only difference is that Building #2 is included because of interior renovation. After substantial completion punch list and commissioning is done on all 5 phases of the building.

Building Systems Summary

Yes	No	Work Scope
X		Demolition Required
X		Structural Steel Frame
X		Cast in Place Concrete
	X	Precast Concrete
X		Mechanical System
X		Masonry
X		Curtain Wall
X		Support of Excavation

Demolition:

There is demolition of two buildings on site, and demolition is required inside Building 2 for interior renovation which will include the removal of MEP, roofing on 1st, 2nd, and roof, and interior. Demolition will require a refrigerant recovery technician to remove refrigerant from site. Demolition is to be done from the top floors down. All materials that are not to be reused or recycled must be hauled off site to an EPA-approved landfill.

Structural Steel Frame:

The construction of the structural steel framing is to be type 2, simple framing with composite steel decking for slabs. Most structural steel is to be W shaped with high-strength bolts, nuts, and washers and a shear connection. For the bed tower there are two cranes erecting the structural steel. The first one is a Manitowoc 999 (200 ton) and the second one is a truck type crane (140 ton).

Cast in Place Concrete:

Cast in Place Concrete is going to be used for the footings, foundation walls, slabs on grade, and suspended slabs. Forms for the concrete should be exterior-grade plywood panels. The concrete should be placed with crane and bucket.

Mechanical System:

The mechanical system consist of 17 air handling units, 5 in the basement of west and east M.E.P. room, 2 on the 2ed floor of D and T M.E.P. room, 3 in the penthouse, and 8 on the roof of the tower building. Of the 17 air handling units 11 of them are 100% outside air systems to keep fresh outdoor air circulating into the hospital. The other 6 used a mix of outdoor and indoor air because they are in none critical areas like offices, basements, est. Fire suppression

system is a standpipe sprinkler with fire hose stations in stairwells of every floor with full cover of floor.

Electrical System:

The electrical system is a dry type transformer with 480/277v, 3Ø, 4w+G primary for power for mechanical systems and lighting and a 108/120V, 3Ø, 4w+G secondary for power and appliances. The emergency generator is a diesel engine generator.

Masonry:

Masonry is a basic veneer with ties and anchors used for exterior. The scaffolding is metal pole like scaffolding.

Curtain Wall:

The curtain wall system consists of aluminum windows, metal insulated panels and sunshades, the windows are also insulating glass. The curtain wall is a major component in the south entrance of the new building as you can see below.

Support of Excavation:

Excavation will be supported with steel piles and wood lagging with nominal rough thickness of 3 inches. Dewatering systems is to be placed on an as need bases to protect excavation and surrounding environment. All of this is temporary and removed from site when finished or not need anymore.

Project Cost Evaluation

Construction Cost (CC)

$276,000,000.00 CC cost
$276,000,000.00 / 1,676,200 SF = $164.66 per SF

Total Project Cost (TC)

$321,000,000.00 TC cost
$321,000,000.00 / 1,676,200 SF = $191.51 per SF

Building Systems Cost

Building = 1,676,200sqft

Items	Cost	Cost/SF
General Conditions	$17,500,000.00	$10.44
General Requirements	$7,500,000.00	$4.47
Foundation and Slab Concrete	$15,000,000.00	$8.95
Steel Structure and Deck	$20,000,000.00	$11.93
Pluming	$20,000,000.00	$11.93
BMS and Fire Alarm	$6,000,000.00	$3.58
HVAC Ductwork	$17,000,000.00	$10.41
HVAC Piping	$20,000,000.00	$11.93
HVAC Equipment	$15,000,000.00	$8.95
Light Fixtures	$5,000,000.00	$2.98
Electrical	$28,000,000.00	$16.70
Fire Protection	$4,000,000.00	$2.39
Site work, Site Lighting, Landscaping	$20,000,000.00	$11.93

D4 Cost

$107,901,867.00 CC cost
$107,901,867.00/1,676,200 SF = $64.37 per SF
See Appendix

Square Foot Estimate

Building Area
209,525 SF x 7 stories = 1,466,675 SF
1,466,675 SF + 209,525 SF (Basement) = 1,676,200 SF

From RM Means (*See Appendix*)
Face Brick with Structural Facing Tile (Steel Frame)
1,466,675 SF x $267.35 per SF = $392,115,561.25
209,525 SF x $33.95 per SF = $7,113,373.75 (Basement)
$392,115,561.25 + $7,113,373.75 (Basement) = $399,228,935

Perimeter Adjustment
1,500 LF of building – 866 LF = 634 LF / 100 = 6 LF
6 LF x $2.30 per 100 LF = $13.80 per SF
$13.80 per SF x 1,676,200 SF = $23,131,560

Additives

Standard Call Station	$164 each x 238 beds = $40,222
Mortuary Refrigerator (6 Capacity)	$24,500 each x 1 = $24,500
Sterilizer Double Door Steam	$213,500 each x 1 = $213,500

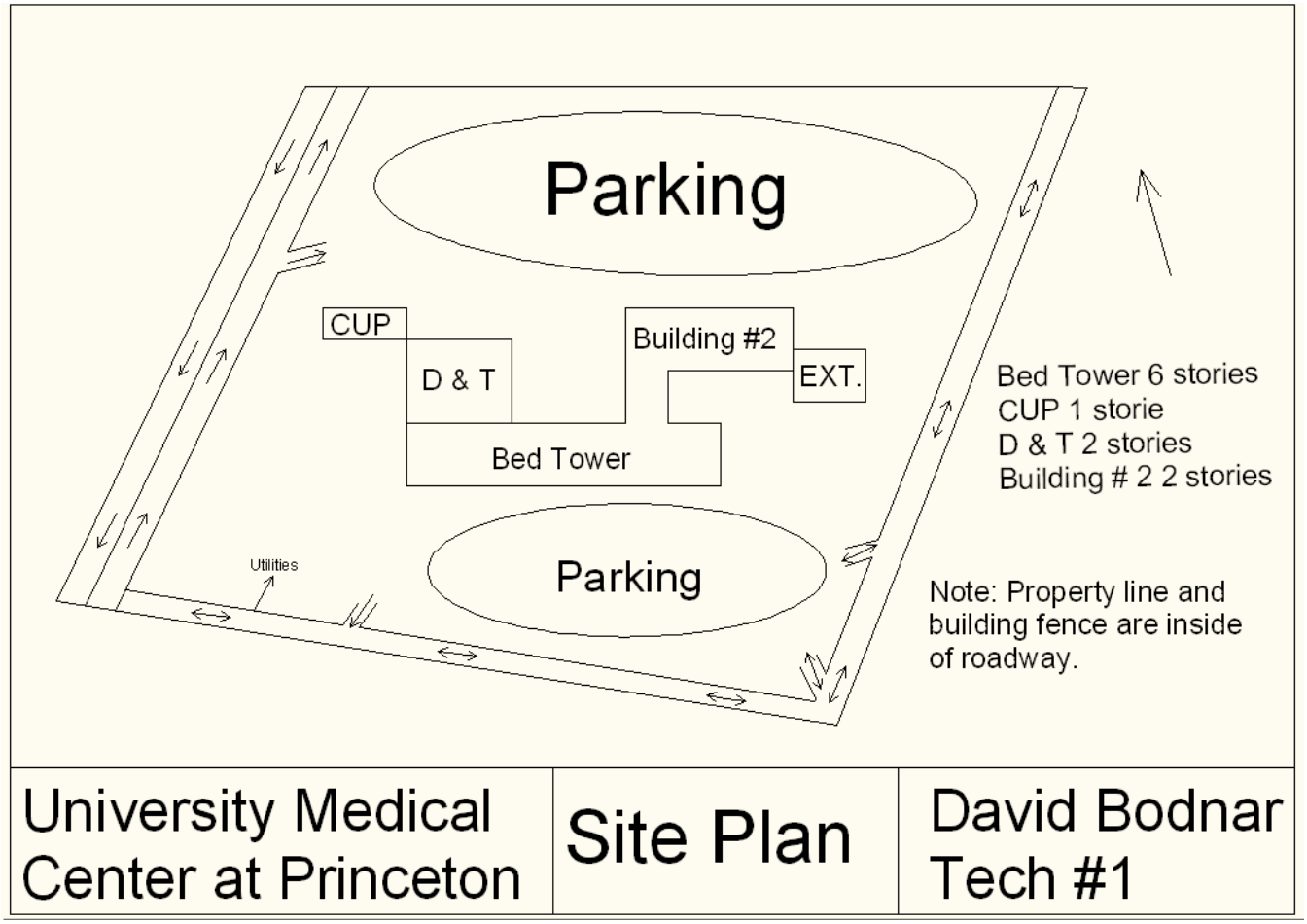
Additives = $278,222

Location Factor
Use Trenton, NJ since it is the closet city to the building.
($399,228,935 + $23,131,560 + $278,222) x 1.07 = $422,638,717.00

$422,638,717.00 TC cost
$422,638,717.00 / 1,676,200 SF = $252.14 per SF

After doing the Square Foot estimate and the D4 estimate I noticed that there is a noticeable difference in the cost of the building. With the Square Foot I know that the renovation of Building #2 was not accounted for. It is my understanding that the renovation of Building #2 is a significant cost saving. With the D4 estimate it is my assumption that the advance technology going into the new University Medical Center of Princeton was not take account for since University Medical Center of Princeton is a state of the art facility. Also D4 cost estimate might not have taken in the account of demolition of the current buildings on site.

Site Plan of Existing Conditions



The site is right off of two major highways with traffic flowing like shown in the site plan. Since the site is surrounded by two major highways there is hardly any pedestrian traffic. This is a remote site and there are no adjacent buildings around by the site. Also the property line and building fence will go around the inside part of the roadways around the building.

Local Conditions

The site of the new University Medical Center of Princeton will be built on a new site that will be redeveloped. The site that is being redeveloped is the FML facility in Plainsboro Township, NJ. For the new hospital all of the existing building except for Building #2 will be removed to build the new hospital. Below is an existing aerial view of the site. It should be noted that the building to the right is Building #2.

Because of the large site are there should be no problem for parking on the site for construction.

According to the Geological Map of New Jersey the native soil of the area is a surface layer of sandy silts and silty sands with a bedrock of sandstone and shale bedrock that has a depth ranging from anywhere for 5 to 50 feet in the area. On this site it was found that the bedrock was at a depths ranging from 6 to 18 feet. It should also be noted that groundwater on the site was encountered around a depths of 15 to 19 feet. According to the geotechnical report it is suggested that the building be constructed on shallow foundations and that groundwater should not have an effect on the shallow foundation.

The local area has recycling centers that could be used to recycle waste from the site. Although the project is not going for an LEED rating it is still taking into account some LEED green design with the building.

Client Information

Princeton HealthCare System is the owner of the University Medical Center of Princeton. This project is a relocation project for new space for more advanced medical service, better access for patience, and overall more room for growing community. Another major reason for relocation is so that there is no disruption during the construction process since the old hospital would still be in used during the construction of the new hospital. Since this is a relocation project the only sequencing that the owner had to worry about is with Building #2. Building #2 will still be in used when construction starts and renovation will not begin till after nine month after the noticed to proceed date. I should also be noted that the owner is saving tremendous amount of money renovating Building # 2.

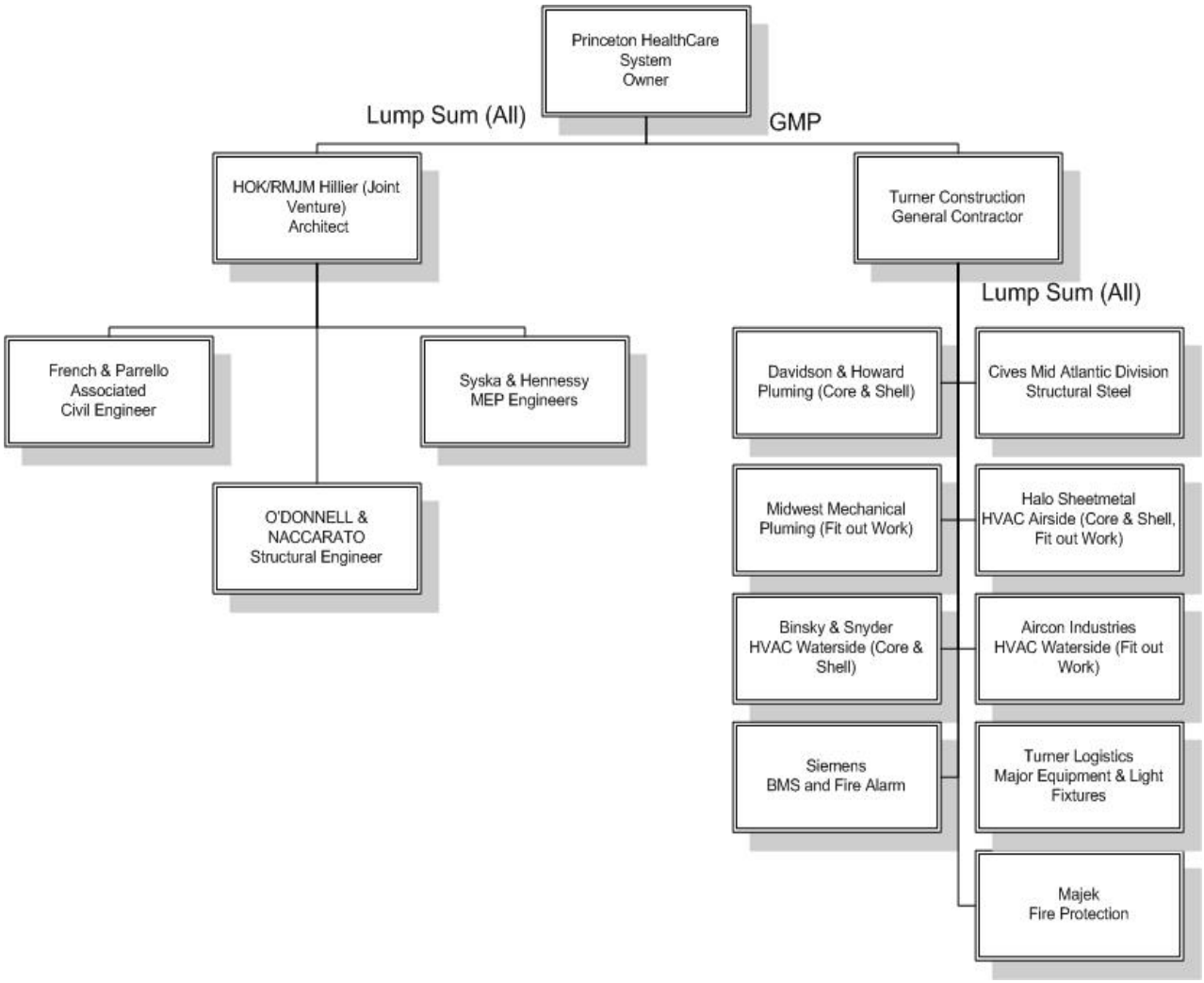
Princeton HealthCare System
Redefining Care.

According to the Princeton HealthCare System their project mission for the University Medical Center of Princeton is

"Princeton HealthCare System will bring together compassion, clinical expertise and technology to provide outstanding care and value to the community we serve. By creating a culture of excellence among those who serve our patients, we will ensure that each patient has the best possible experience. We will create and maintain a safe, state-of-the-art teaching and healing environment that is visually pleasing, sophisticated and ecologically responsible."

Overall Princeton HealthCare System is hoping to develop a state-of-the art medical center that is top in the country for patient satisfaction, technology, and overall patient services. From my observation of looking into the Princeton HealthCare System I fell that these goals are most important aspects of the project for the Princeton HealthCare System.

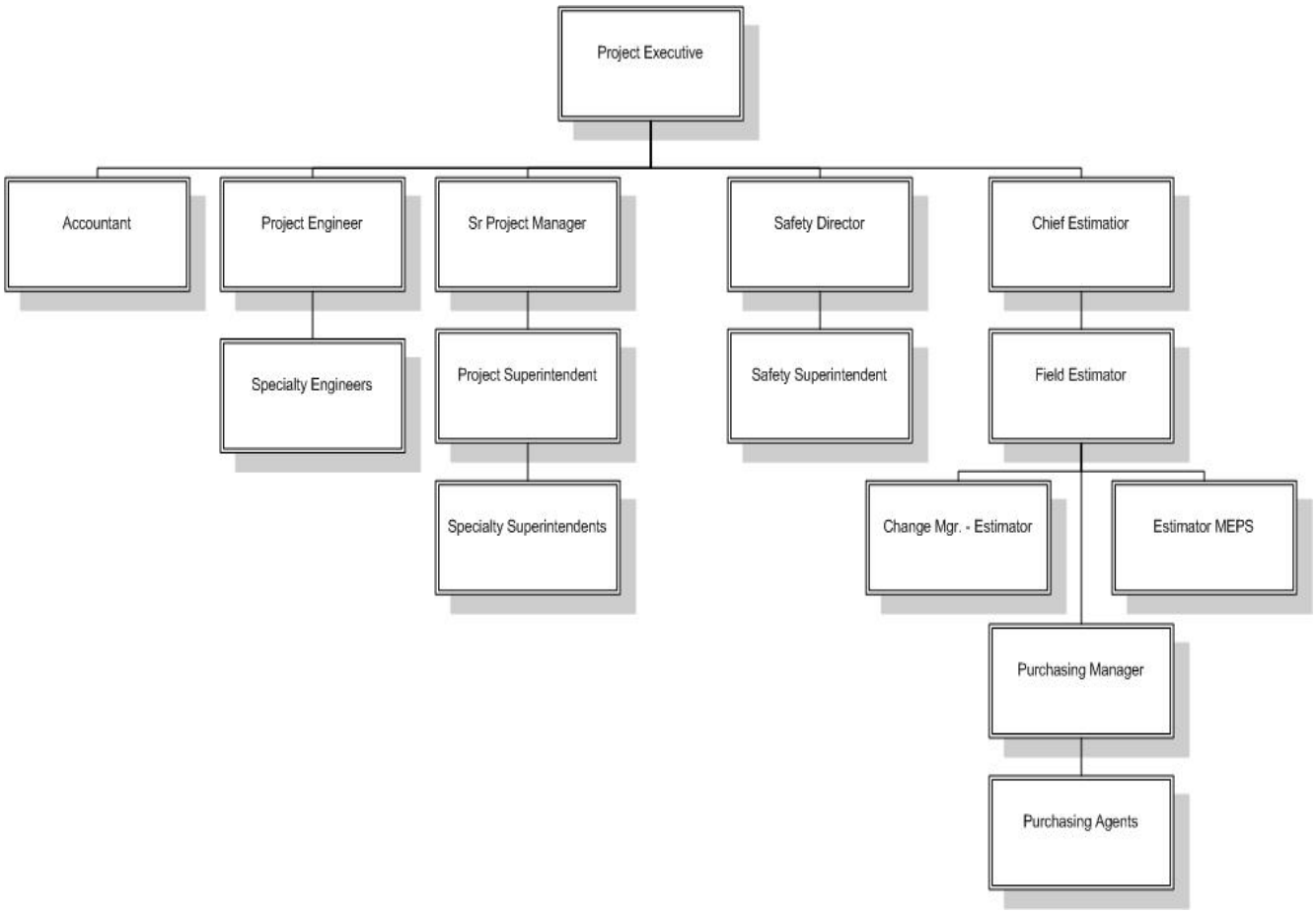
Project Delivery System



The project delivery system for the University Medical Center of Princeton is a traditional design-bid-build method. The owner holds a GMP contract with the Turner who is the General Contractor; because this is a traditional design-bid-build delivery method all of the Subcontractor's contracts are held by the General Contractor. The advantages of using this method is that Princeton HealthCare Systems can have a set price before construction starts and allows the owner to not have to be actively involved in the construction on a day to day bases because the General Contractor is responsible for the work of the Subcontractors. Contractors where selected on a lowest bid and the MEP has been split between core and shell and fit out with the HVAC being broken down even father to sheet metal ductwork and fans from HVAC piping. On the project Turner holds a builder's risk and liability insurance with the

Subcontractors holding liability insurance. Turner also has a performance bond and serenity bond.

Staffing Plan



For the staffing plan on the project the Project Executive sees over the whole project but the Sr. Project Manager is on the site at all times. The Project Superintendent on the job looks over trade specific Superintendents, like Structural Superintendent, Interior Superintendent, MEP Superintendent, Mechanical Superintendent, and ets. The trade specific Superintendents are only on the site when they are needed. The Project Engineer also has trade specific engineers that are on site as need for their specific trade. The Purchasing Manager has eight Purchasing Agents the work under him to.

D4 Cost

Sunday, October 4, 2009 Page 1

Statement of Probable Cost

University Medical Center of Prince - Mar 2008 - NJ - Trenton

Prepared By:

Fax:
Building Sq. Size: 209524
Bid Date:
No. of floors: 6
No. of buildings:
Project Height:
1st Floor Height:
1st Floor Size:

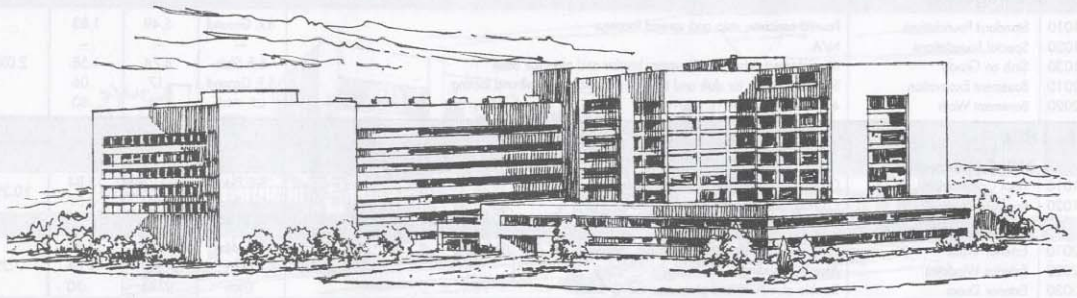
Prepared For:

Fax:
Site Sq. Size: 1563160
Building use: Medical
Foundation:
Exterior Walls:
Interior Walls:
Roof Type:
Floor Type:
Project Type:

Division		Percent	Sq. Cost	Amount
00	Bidding Requirements	0.97	5.00	1,047,020
	Bidding Requirements	0.97	5.00	1,047,020
01	General Requirements	6.14	31.63	6,627,192
	General Requirements	6.14	31.63	6,627,192
02	Site Work	5.55	28.58	5,988,785
	Site Work	5.55	28.58	5,988,785
03	Concrete	7.22	37.16	7,785,569
	Concrete	7.22	37.16	7,785,569
04	Masonry	1.90	9.80	2,054,184
	Masonry	1.90	9.80	2,054,184
05	Metals	5.53	28.48	5,967,231
	Metals	5.53	28.48	5,967,231
06	Wood & Plastics	1.90	9.77	2,046,734
	Wood & Plastics	1.90	9.77	2,046,734
07	Thermal & Moisture Protection	3.36	17.32	3,629,460
	Thermal & Moisture Protection	3.36	17.32	3,629,460
08	Doors & Windows	5.04	25.96	5,439,971
	Doors & Windows	5.04	25.96	5,439,971
09	Finishes	8.97	46.18	9,675,792
	Finishes	8.97	46.18	9,675,792
10	Specialties	0.75	3.84	805,528
	Specialties	0.75	3.84	805,528
11	Equipment	1.51	7.76	1,625,295
	Equipment	1.51	7.76	1,625,295
12	Furnishings	1.28	6.57	1,376,802
	Furnishings	1.28	6.57	1,376,802
13	Special Construction	0.49	2.50	524,730
	Special Construction	0.49	2.50	524,730
14	Conveying Systems	1.46	7.54	1,579,703
	Conveying Systems	1.46	7.54	1,579,703
15	Mechanical	21.08	108.55	22,743,055
	Mechanical	21.08	108.55	22,743,055
16	Electrical	11.69	60.20	12,614,381
	Electrical	11.69	60.20	12,614,381
21	Fire Suppression	0.70	3.62	758,303
	Fire Suppression	0.70	3.62	758,303

Square Foot Data

COMMERCIAL/INDUSTRIAL/ INSTITUTIONAL | **M.340** | **Hospital, 4-8 Story**



Costs per square foot of floor area

Exterior Wall	S.F. Area	100000	125000	150000	175000	200000	225000	250000	275000	300000
	L.F. Perimeter	594	705	816	783	866	950	1033	1116	1200
Face Brick with Structural Facing Tile	Steel Frame	280.75	277.00	274.45	268.85	267.35	266.20	265.20	264.40	263.85
	R/Conc. Frame	281.35	277.50	274.85	269.25	267.70	266.50	265.50	264.70	264.10
Face Brick with Concrete Block Back-up	Steel Frame	275.25	271.65	269.25	264.45	263.05	262.00	261.10	260.30	259.75
	R/Conc. Frame	276.00	272.40	269.95	265.15	263.75	262.70	261.80	261.05	260.50
Precast Concrete Panels With Exposed Aggregate	Steel Frame	276.05	272.40	269.95	265.00	263.65	262.55	261.60	260.85	260.30
	R/Conc. Frame	276.80	273.15	270.70	265.75	264.35	263.25	262.30	261.60	261.00
Perimeter Adj., Add or Deduct	Per 100 L.F.	4.65	3.70	3.10	2.60	2.30	2.00	1.85	1.75	1.50
Story Hgt. Adj., Add or Deduct	Per 1 Ft.	2.10	1.90	1.90	1.55	1.45	1.40	1.45	1.45	1.35
For Basement, add $33.95 per square foot of basement area										

The above costs were calculated using the basic specifications shown on the facing page. These costs should be adjusted where necessary for design alternatives and owner's requirements. Reported completed project costs, for this type of structure, range from $164.90 to $402.10 per S.F.

Common additives

Description	Unit	$ Cost
Cabinets, Base, door units, metal	L.F.	256
Drawer units	L.F.	505
Tall storage cabinets, 7' high, open	L.F.	480
With doors	L.F.	565
Wall, metal 12-1/2" deep, open	L.F.	192
With doors	L.F.	345
Closed Circuit TV (Patient monitoring)		
One station camera & monitor	Each	1850
For additional camera add	Each	1000
For automatic iris for low light add	Each	2600
Hubbard Tank, with accessories		
Stainless steel, 125 GPM 45 psi	Each	27,600
For electric hoist, add	Each	3000
Mortuary Refrigerator, End operated		
2 capacity	Each	13,600
6 capacity	Each	24,500

Description	Unit	$ Cost
Nurses Call Station		
Single bedside call station	Each	310
Ceiling speaker station	Each	143
Emergency call station	Each	192
Pillow speaker	Each	296
Double bedside call station	Each	385
Duty station	Each	325
Standard call button	Each	169
Master control station for 20 stations	Each	6025
Sound System		
Amplifier, 250 watts	Each	2350
Speaker, ceiling or wall	Each	191
Trumpet	Each	365
Station, Dietary with ice	Each	16,800
Sterilizers		
Single door, steam	Each	166,000
Double door, steam	Each	213,500
Portable, counter top, steam	Each	3975 - 6225
Gas	Each	41,200
Automatic washer/sterilizer	Each	57,000

150

Important: See the Reference Section for Location Factors

Model costs calculated for a 6 story building with 12′ story height and 200,000 square feet of floor area

Hospital, 4-8 Story

				Unit	Unit Cost	Cost Per S.F.	% Of Sub-Total
A. SUBSTRUCTURE							
1010	Standard Foundations	Poured concrete; strip and spread footings		S.F. Ground	14.46	2.41	
1020	Special Foundations	N/A		–	–	–	
1030	Slab on Grade	4" reinforced concrete with vapor barrier and granular base		S.F. Slab	7.29	1.22	2.0%
2010	Basement Excavation	Site preparation for slab and trench for foundation wall and footing		S.F. Ground	.17	.03	
2020	Basement Walls	4′ foundation wall		L.F. Wall	78	.34	
B. SHELL							
	B10 Superstructure						
1010	Floor Construction	Concrete slab with metal deck and beams, steel columns		S.F. Floor	23.48	19.57	10.9%
1020	Roof Construction	Metal deck, open web steel joists, beams, interior columns		S.F. Roof	10.44	1.74	
	B20 Exterior Enclosure						
2010	Exterior Walls	Face brick and structural facing tile	*70% of wall*	S.F. Wall	43.99	9.60	
2020	Exterior Windows	Aluminum sliding	*30% of wall*	Each	552	3.45	7.0%
2030	Exterior Doors	Double aluminum and glass and sliding doors		Each	5115	.72	
	B30 Roofing						
3010	Roof Coverings	Built-up tar and gravel with flashing; perlite/EPS composite insulation		S.F. Roof	7.14	1.19	0.6%
3020	Roof Openings	Roof hatches		S.F. Roof	.18	.03	
C. INTERIORS							
1010	Partitions	Gypsum board on metal studs with sound deadening board	*9 S.F. Floor/L.F. Partition*	S.F. Partition	7.71	8.57	
1020	Interior Doors	Single leaf hollow metal	*90 S.F. Floor/Door*	Each	904	10.03	
1030	Fittings	Hospital curtains		S.F. Floor	.95	.95	
2010	Stair Construction	Concrete filled metal pan		Flight	12,650	1.64	23.6%
3010	Wall Finishes	40% vinyl wall covering, 35% ceramic tile, 25% epoxy coating		S.F. Surface	3.36	7.47	
3020	Floor Finishes	60% vinyl tile, 20% ceramic, 20% terrazzo		S.F. Floor	10.20	10.20	
3030	Ceiling Finishes	Plaster on suspended metal lath		S.F. Ceiling	7.44	7.44	
D. SERVICES							
	D10 Conveying						
1010	Elevators & Lifts	Six geared hospital elevators		Each	215,333	6.46	3.3%
1020	Escalators & Moving Walks	N/A		–	–	–	
	D20 Plumbing						
2010	Plumbing Fixtures	Kitchen, toilet and service fixtures, supply and drainage	*1 Fixture/416S.F. Floor*	Each	4489	10.79	
2020	Domestic Water Distribution	Electric water heater		S.F. Floor	6.81	6.81	9.2%
2040	Rain Water Drainage	Roof drains		S.F. Floor	3.06	.51	
	D30 HVAC						
3010	Energy Supply	Oil fired hot water, wall fin radiation		S.F. Floor	4.01	4.01	
3020	Heat Generating Systems	Hot water boilers, steam boiler for services		Each	30,475	.38	
3030	Cooling Generating Systems	Chilled water units		S.F. Floor	2.70	2.70	17.8%
3050	Terminal & Package Units	N/A		–	–	–	
3090	Other HVAC Sys. & Equipment	Conditioned air with reheat, operating room air curtains		S.F. Floor	27.78	27.78	
	D40 Fire Protection						
4010	Sprinklers	Wet pipe sprinkler system		S.F. Floor	2.29	2.29	1.4%
4020	Standpipes	Standpipe		S.F. Floor	.49	.49	
	D50 Electrical						
5010	Electrical Service/Distribution	4000 ampere service, panel board and feeders		S.F. Floor	4.17	4.17	
5020	Lighting & Branch Wiring	High efficiency hospital grade light fixtures, receptacles, switches, A.C. and misc. power		S.F. Floor	18.32	18.32	14.7%
5030	Communications & Security	Addressable alarm systems, internet wiring, communications system, emergency lighting		S.F. Floor	2.20	2.20	
5090	Other Electrical Systems	Emergency generator, 800 kW with fuel tank, uninterruptible power supply		S.F. Floor	4.17	4.17	
E. EQUIPMENT & FURNISHINGS							
1010	Commercial Equipment	N/A		–	–	–	
1020	Institutional Equipment	Medical gases, curtain partitions		S.F. Floor	14.75	14.75	9.4 %
1030	Vehicular Equipment	N/A		–	–	–	
2020	Other Equipment	Patient wall systems		S.F. Floor	3.78	3.78	
F. SPECIAL CONSTRUCTION							
1020	Integrated Construction	N/A		–	–	–	0.0 %
1040	Special Facilities	N/A		–	–	–	
G. BUILDING SITEWORK		**N/A**					
					Sub-Total	196.21	**100%**
	CONTRACTOR FEES (General Requirements: 10%, Overhead: 5%, Profit: 10%)				25%	49.07	
	ARCHITECT FEES				9%	22.07	
					Total Building Cost	**267.35**	

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Location Factors

STATE/ZIP	CITY	Residential	Commercial
MINNESOTA (CONT'd)			
559	Rochester	1.03	1.01
560	Mankato	1.01	.99
561	Windom	.82	.88
562	Willmar	.83	.90
563	St. Cloud	1.06	1.05
564	Brainerd	.96	.97
565	Detroit Lakes	.95	.96
566	Bemidji	.94	.97
567	Thief River Falls	.94	.95
MISSISSIPPI			
386	Clarksdale	.78	.81
387	Greenville	.84	.88
388	Tupelo	.79	.83
389	Greenwood	.80	.82
390-392	Jackson	.85	.87
393	Meridian	.83	.86
394	Laurel	.80	.84
395	Biloxi	.82	.83
396	Mccomb	.77	.81
397	Columbus	.78	.82
MISSOURI			
630-631	St. Louis	1.03	1.03
633	Bowling Green	.95	.94
634	Hannibal	.86	.89
635	Kirksville	.80	.88
636	Flat River	.94	.95
637	Cape Girardeau	.88	.94
638	Sikeston	.82	.88
639	Poplar Bluff	.83	.88
640-641	Kansas City	1.03	1.02
644-645	St. Joseph	.93	.95
646	Chillicothe	.87	.84
647	Harrisonville	.96	.96
648	Joplin	.83	.85
650-651	Jefferson City	.87	.92
652	Columbia	.87	.93
653	Sedalia	.85	.90
654-655	Rolla	.87	.85
656-658	Springfield	.87	.89
MONTANA			
590-591	Billings	.88	.90
592	Wolf Point	.84	.89
593	Miles City	.86	.88
594	Great Falls	.89	.91
595	Havre	.82	.89
596	Helena	.88	.90
597	Butte	.87	.90
598	Missoula	.85	.88
599	Kalispell	.83	.87
NEBRASKA			
680-681	Omaha	.91	.91
683-685	Lincoln	.87	.89
686	Columbus	.87	.88
687	Norfolk	.91	.90
688	Grand Island	.92	.91
689	Hastings	.93	.92
690	Mccook	.85	.88
691	North Platte	.92	.92
692	Valentine	.85	.88
693	Alliance	.85	.87
NEVADA			
889-891	Las Vegas	1.03	1.06
893	Ely	.85	.88
894-895	Reno	.93	.97
897	Carson City	.94	.97
898	Elko	.91	.90
NEW HAMPSHIRE			
030	Nashua	.94	.94
031	Manchester	.94	.94
032-033	Concord	.92	.92
034	Keene	.75	.78
035	Littleton	.81	.81
036	Charleston	.74	.76
037	Claremont	.75	.76
038	Portsmouth	.93	.94

STATE/ZIP	CITY	Residential	Commercial
NEW JERSEY			
070-071	Newark	1.12	1.10
072	Elizabeth	1.14	1.08
073	Jersey City	1.10	1.08
074-075	Paterson	1.11	1.09
076	Hackensack	1.10	1.08
077	Long Branch	1.11	1.07
078	Dover	1.11	1.08
079	Summit	1.11	1.08
080,083	Vineland	1.08	1.05
081	Camden	1.09	1.06
082,084	Atlantic City	1.11	1.05
085-086	Trenton	1.10	1.07
087	Point Pleasant	1.09	1.07
088-089	New Brunswick	1.11	1.08
NEW MEXICO			
870-872	Albuquerque	.85	.90
873	Gallup	.85	.90
874	Farmington	.85	.90
875	Santa Fe	.86	.91
877	Las Vegas	.85	.89
878	Socorro	.85	.89
879	Truth/Consequences	.84	.87
880	Las Cruces	.83	.85
881	Clovis	.85	.88
882	Roswell	.85	.89
883	Carrizozo	.85	.90
884	Tucumcari	.86	.89
NEW YORK			
100-102	New York	1.37	1.31
103	Staten Island	1.31	1.27
104	Bronx	1.33	1.26
105	Mount Vernon	1.14	1.14
106	White Plains	1.17	1.14
107	Yonkers	1.18	1.17
108	New Rochelle	1.18	1.14
109	Suffern	1.13	1.09
110	Queens	1.31	1.27
111	Long Island City	1.34	1.28
112	Brooklyn	1.35	1.28
113	Flushing	1.33	1.28
114	Jamaica	1.33	1.27
115,117,118	Hicksville	1.20	1.20
116	Far Rockaway	1.32	1.28
119	Riverhead	1.21	1.21
120-122	Albany	.94	.96
123	Schenectady	.95	.97
124	Kingston	1.02	1.06
125-126	Poughkeepsie	1.19	1.12
127	Monticello	1.04	1.06
128	Glens Falls	.88	.92
129	Plattsburgh	.92	.92
130-132	Syracuse	.96	.96
133-135	Utica	.94	.94
136	Watertown	.93	.96
137-139	Binghamton	.93	.93
140-142	Buffalo	1.04	1.02
143	Niagara Falls	1.00	.99
144-146	Rochester	.96	.97
147	Jamestown	.87	.90
148-149	Elmira	.85	.91
NORTH CAROLINA			
270,272-274	Greensboro	.83	.79
271	Winston-Salem	.83	.79
275-276	Raleigh	.84	.80
277	Durham	.83	.80
278	Rocky Mount	.73	.74
279	Elizabeth City	.75	.75
280	Gastonia	.84	.78
281-282	Charlotte	.85	.80
283	Fayetteville	.82	.81
284	Wilmington	.81	.77
285	Kinston	.74	.73
286	Hickory	.78	.75
287-288	Asheville	.81	.78
289	Murphy	.73	.71
NORTH DAKOTA			
580-581	Fargo	.78	.85
582	Grand Forks	.75	.82
583	Devils Lake	.78	.82
584	Jamestown	.73	.79
585	Bismarck	.78	.85