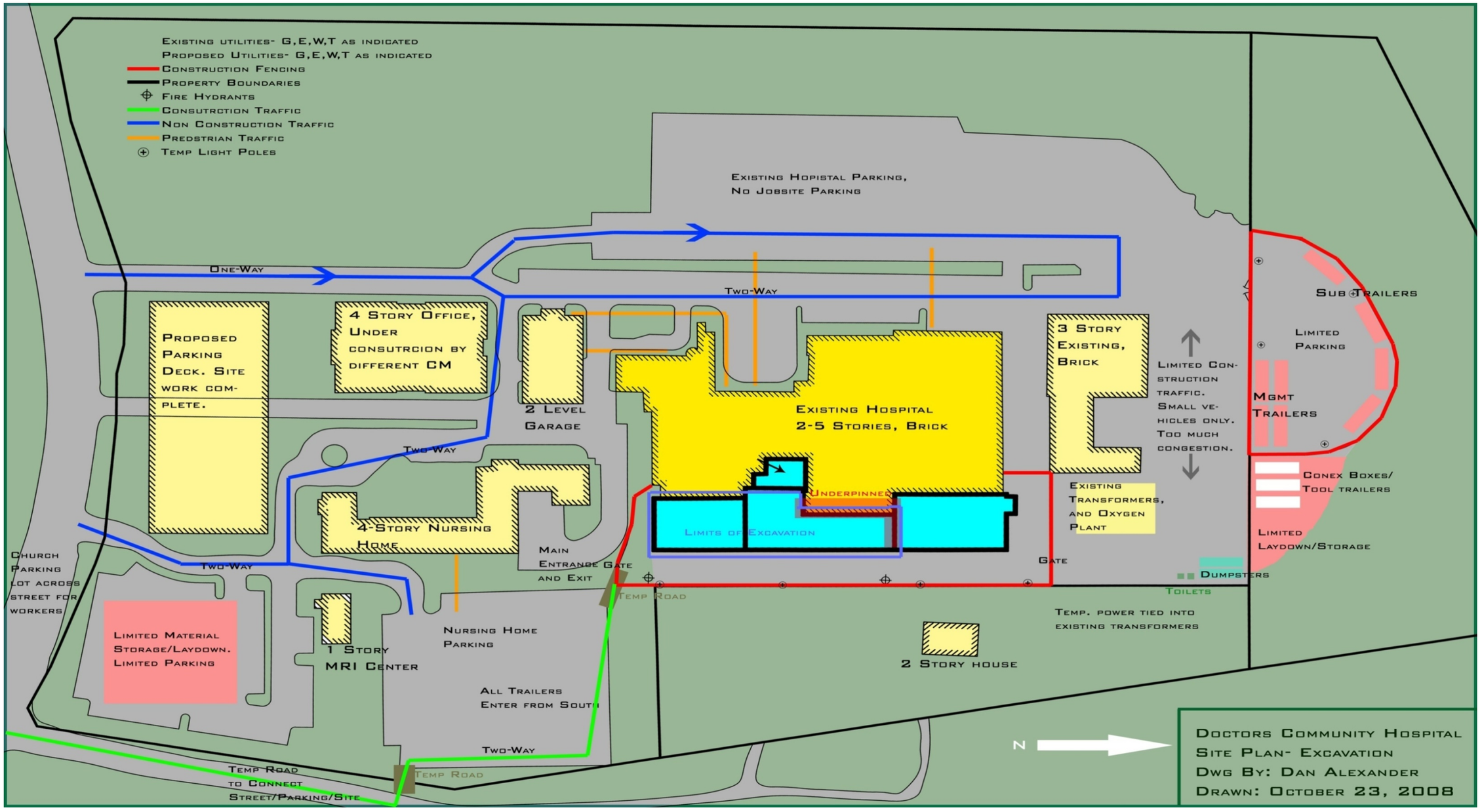
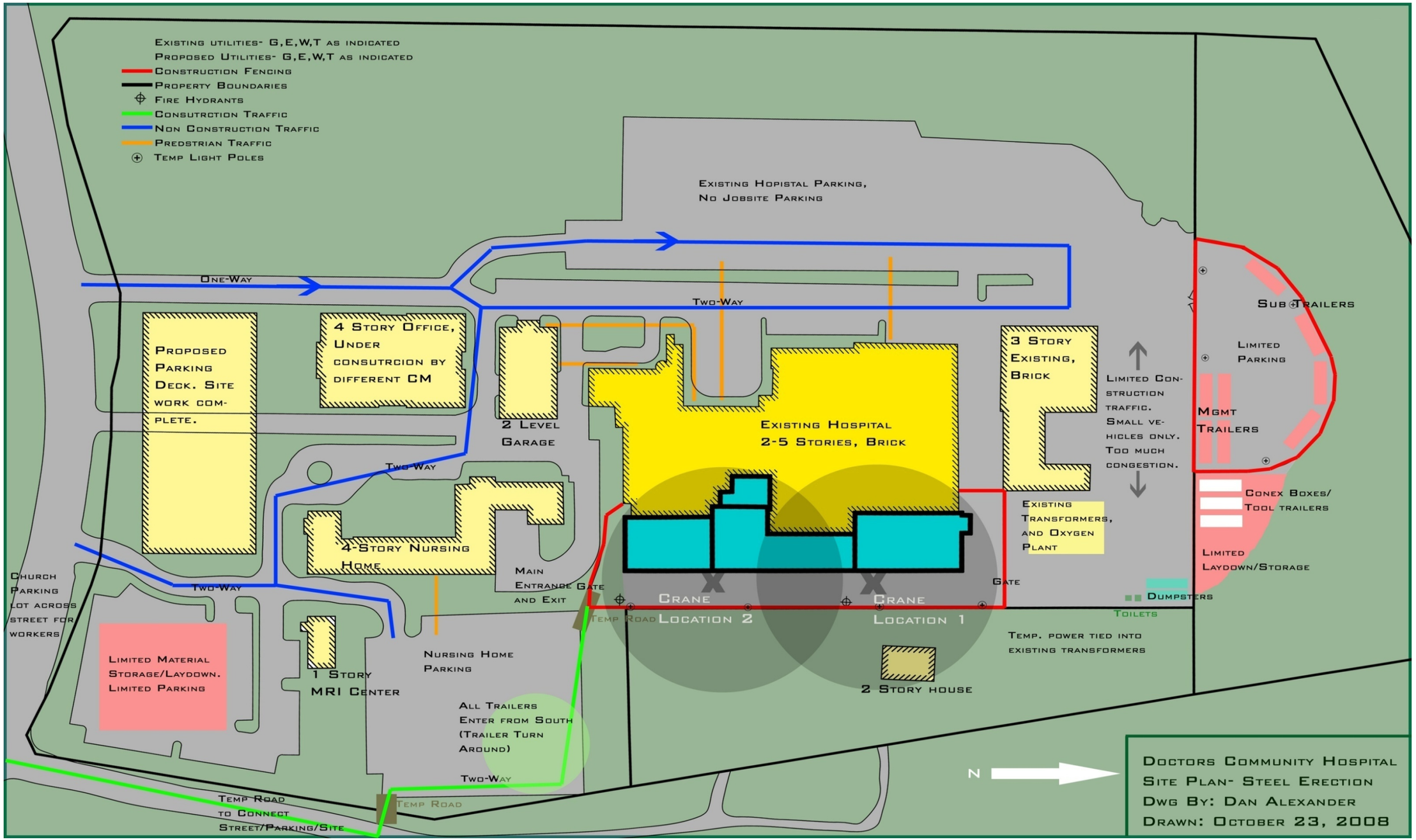
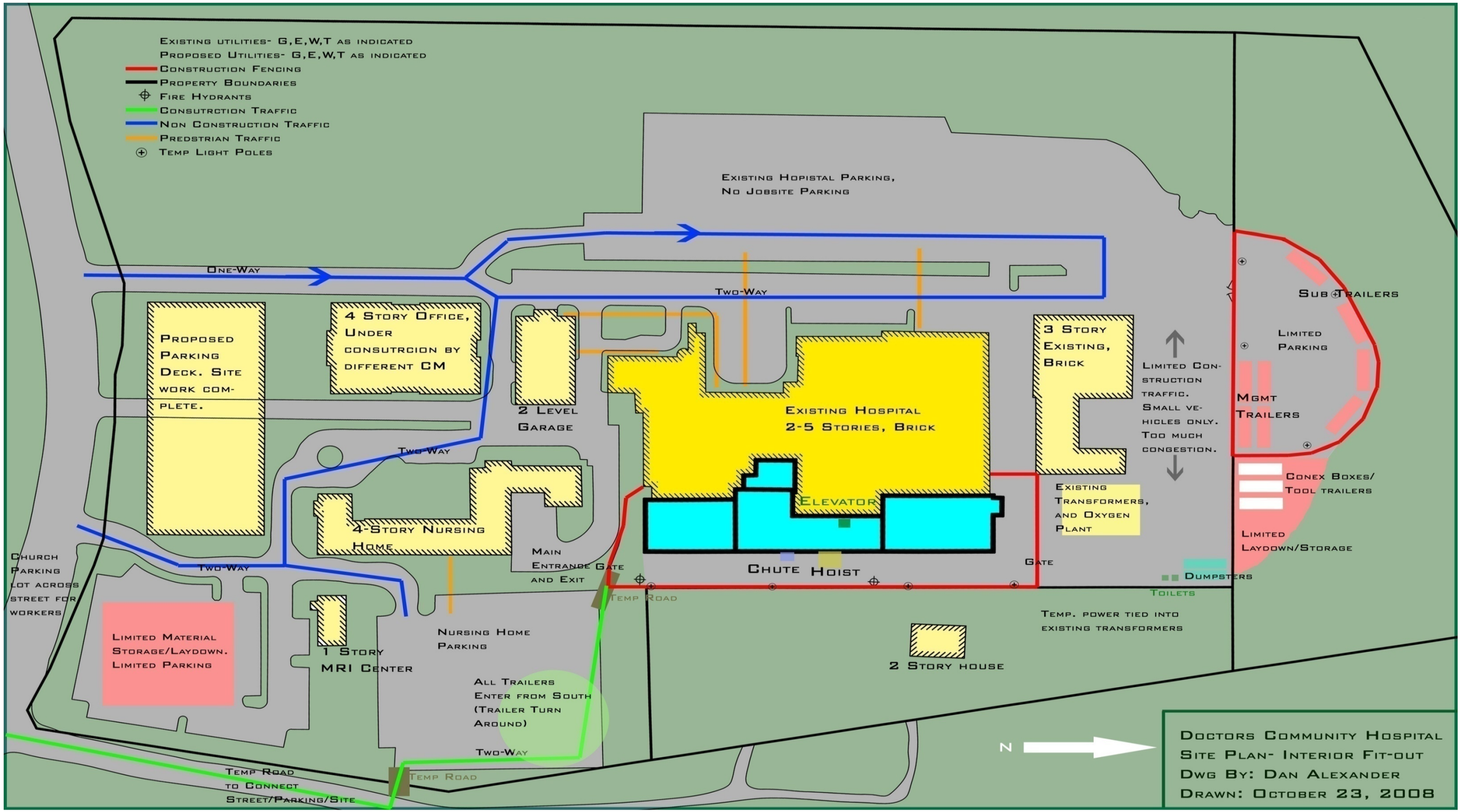
APPENDIX I | SITE LAYOUT PLANS




Existing utilities- G,E,W,T as indicated
Proposed Utilities- G,E,W,T as indicated
Construction Fencing
Property Boundaries
Fire Hydrants
Consutrction Traffic
Non Construction Traffic
Predstrian Traffic
Temp Light Poles
Existing Hopistal Parking,
No Jobsite Parking
One-Way
Two-Way
Proposed Parking Deck. Site work com-plete.
4 Story Office, Under consutrcion by different CM
2 Level Garage
Two-Way
4-Story Nursing Home
Main Entrance Gate and Exit
Church Parking lot across street for workers
Two-Way
Limited Material Storage/Laydown. Limited Parking
1 Story MRI Center
Nursing Home Parking
All Trailers Enter from South (Trailer Turn Around)
Two-Way
Temp Road to Connect Street/Parking/Site
Temp Road
Existing Hospital 2-5 Stories, Brick
Crane Location 2
Crane Location 1
Temp Road
2 Story house
3 Story Existing, Brick
Limited Con-struction traffic. Small ve-hicles only. Too much congestion.
Existing Transformers, and Oxygen Plant
Gate
Temp. power tied into existing transformers
Sub Trailers
Limited Parking
Mgmt Trailers
Conex Boxes/ Tool trailers
Limited Laydown/Storage
Dumpsters
Toilets
N
Doctors Community Hospital
Site Plan- Steel Erection
Dwg By: Dan Alexander
Drawn: October 23, 2008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Property Boundaries
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Consutrction Traffic
Non Construction Traffic
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Two-Way
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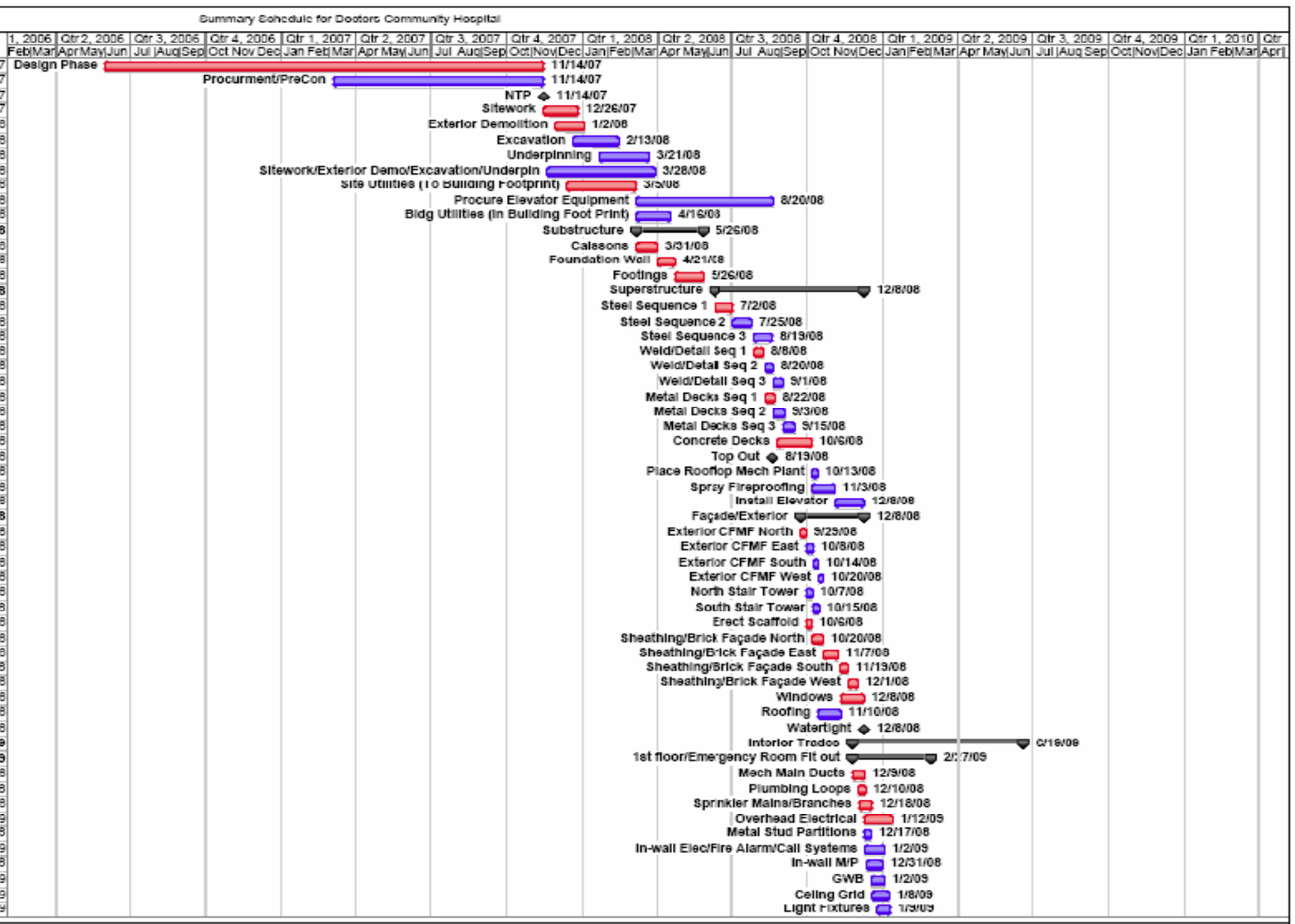
Limited Material Storage/Laydown. Limited Parking
1 Story MRI Center
Nursing Home Parking
All Trailers Enter from South (Trailer Turn Around)
Two-Way
Temp Road to Connect Street/Parking/Site
Temp Road
Existing Hospital 2-5 Stories, Brick
Elevator
Chute Hoist
Temp Road
3 Story Existing, Brick
Limited Con-struction traffic. Small ve-hicles only. Too much congestion.
Existing Transformers, and Oxygen Plant
Gate
Dumpsters
Toilets
Temp. power tied into existing transformers
2 Story house
Sub Trailers
Limited Parking
Mgmt Trailers
Conex Boxes/ Tool trailers
Limited Laydown/Storage
N
Doctors Community Hospital
Site Plan- Interior Fit-out
Dwg By: Dan Alexander
Drawn: October 23, 2008

APPENDIX II | CPM SCHEDULE

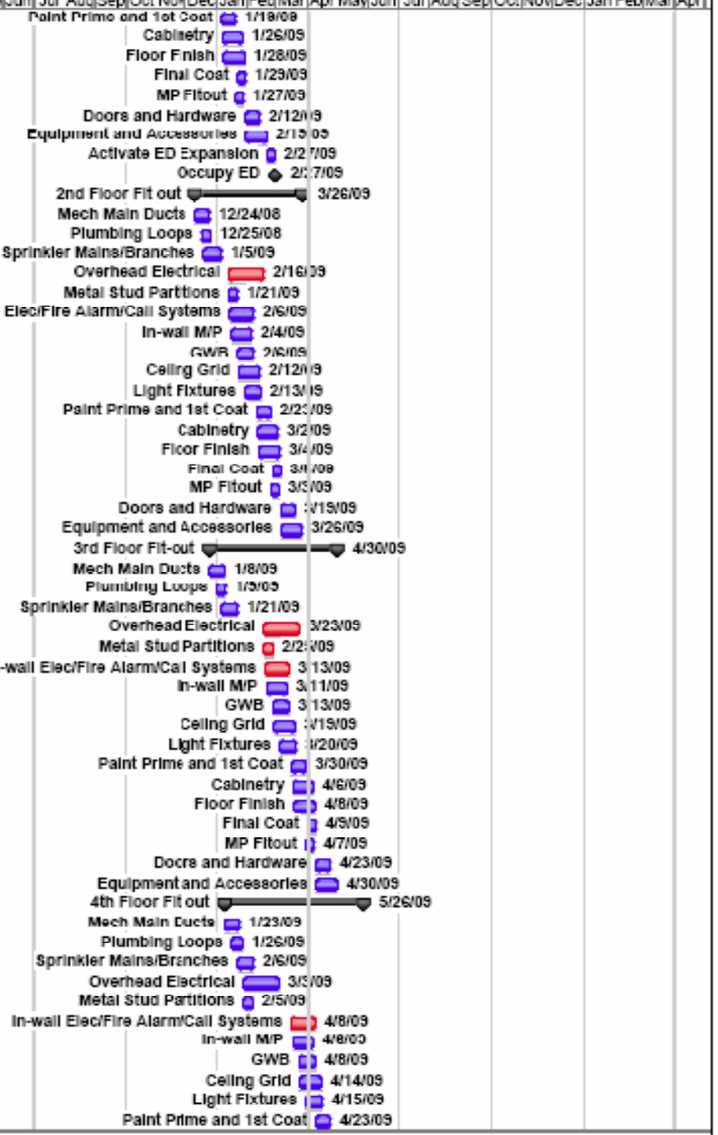
Summary Schedule for Doctors Community Hospital

ID	Task Name	Duration	Start	Finish
1	Design Phase	380 days	Thu 6/1/06	Wed 11/14/07
2	Procurment/PreCon	183 days	Mon 3/5/07	Wed 11/14/07
3	NTP	0 days	Wed 11/14/07	Wed 11/14/07
4	Sitework	30 days	Thu 11/15/07	Wed 12/26/07
5	Exterior Demolition	25 days	Thu 11/29/07	Wed 1/2/08
6	Excavation	40 days	Thu 12/20/07	Wed 2/13/08
7	Underpinning	45 days	Mon 1/21/08	Fri 3/21/08
8	Sitework/Exterior Demo/Excavation/Underpin	95 days	Mon 11/19/07	Fri 3/28/08
9	Site Utilities (To Building Footprint)	60 days	Thu 12/13/07	Wed 3/5/08
10	Procure Elevator Equipment	120 days	Thu 3/6/08	Wed 8/20/08
11	Bldg Utilities (In Building Foot Print)	30 days	Thu 3/6/08	Wed 4/16/08
12	**Substructure**	**58 days**	**Thu 3/6/08**	**Mon 5/26/08**
13	Caissons	18 days	Thu 3/6/08	Mon 3/31/08
14	Foundation Wall	16 days	Tue 4/1/08	Mon 4/21/08
15	Footings	25 days	Tue 4/22/08	Mon 5/26/08
16	**Superstructure**	**130 days**	**Tue 6/10/08**	**Mon 12/8/08**
17	Steel Sequence 1	17 days	Tue 6/10/08	Wed 7/2/08
18	Steel Sequence 2	17 days	Thu 7/3/08	Fri 7/25/08
19	Steel Sequence 3	17 days	Mon 7/28/08	Tue 8/19/08
20	Weld/Detail Seq 1	9 days	Tue 7/29/08	Fri 8/8/08
21	Weld/Detail Seq 2	8 days	Mon 8/11/08	Wed 8/20/08
22	Weld/Detail Seq 3	8 days	Thu 8/21/08	Mon 9/1/08
23	Metal Decks Seq 1	10 days	Mon 8/11/08	Fri 8/22/08
24	Metal Decks Seq 2	10 days	Thu 8/21/08	Wed 9/3/08
25	Metal Decks Seq 3	10 days	Tue 9/2/08	Mon 9/15/08
26	Concrete Decks	30 days	Tue 8/26/08	Mon 10/6/08
27	Top Out	0 days	Tue 8/19/08	Tue 8/19/08
28	Place Rooftop Mech Plant	5 days	Tue 10/7/08	Mon 10/13/08
29	Spray Fireproofing	20 days	Tue 10/7/08	Mon 11/3/08
30	Install Elevator	25 days	Tue 11/4/08	Mon 12/8/08
31	**Façade/Exterior**	**55 days**	**Tue 9/23/08**	**Mon 12/8/08**
32	Exterior CFMF North	5 days	Tue 9/23/08	Mon 9/29/08
33	Exterior CFMF East	7 days	Tue 9/30/08	Wed 10/8/08
34	Exterior CFMF South	4 days	Thu 10/9/08	Tue 10/14/08
35	Exterior CFMF West	4 days	Wed 10/15/08	Mon 10/20/08
36	North Stair Tower	6 days	Tue 9/30/08	Tue 10/7/08
37	South Stair Tower	6 days	Wed 10/8/08	Wed 10/15/08
38	Erect Scaffold	5 days	Tue 9/30/08	Mon 10/6/08
39	Sheathing/Brick Façade North	10 days	Tue 10/7/08	Mon 10/20/08
40	Sheathing/Brick Façade East	14 days	Tue 10/21/08	Fri 11/7/08
41	Sheathing/Brick Façade South	8 days	Mon 11/10/08	Wed 11/19/08
42	Sheathing/Brick Façade West	8 days	Thu 11/20/08	Mon 12/1/08
43	Windows	20 days	Tue 11/11/08	Mon 12/8/08
44	Roofing	20 days	Tue 10/14/08	Mon 11/10/08
45	Watertight	0 days	Mon 12/8/08	Mon 12/8/08
46	**Interior Trades**	**149 days**	**Tue 11/25/08**	**Fri 6/19/09**
47	**1st floor/Emergency Room Fit out**	**69 days**	**Tue 11/25/08**	**Fri 2/27/09**
48	Mech Main Ducts	11 days	Tue 11/25/08	Tue 12/9/08
49	Plumbing Loops	7 days	Tue 12/2/08	Wed 12/10/08
50	Sprinkler Mains/Branches	12 days	Wed 12/3/08	Thu 12/18/08
51	Overhead Electrical	25 days	Tue 12/9/08	Mon 1/12/09
52	Metal Stud Partitions	7 days	Tue 12/9/08	Wed 12/17/08
53	In-wall Elec/Fire Alarm/Call Systems	18 days	Wed 12/10/08	Fri 1/2/09
54	In-wall M/P	14 days	Fri 12/12/08	Wed 12/31/08
55	GWB	12 days	Thu 12/18/08	Fri 1/2/09
56	Ceiling Grid	15 days	Fri 12/19/08	Thu 1/8/09
57	Light Fixtures	12 days	Thu 12/25/08	Fri 1/9/09



Summary Schedule for Doctors Community Hospital

ID	Task Name	Duration	Start	Finish
58	Paint Prime and 1st Coat	10 days	Tue 1/6/09	Mon 1/19/09
59	Cabinetry	14 days	Wed 1/7/09	Mon 1/26/09
60	Floor Finish	15 days	Thu 1/8/09	Wed 1/28/09
61	Final Coat	6 days	Thu 1/22/09	Thu 1/29/09
62	MP Fitout	6 days	Tue 1/20/09	Tue 1/27/09
63	Doors and Hardware	10 days	Fri 1/30/09	Thu 2/12/09
64	Equipment and Accessories	15 days	Fri 1/30/09	Thu 2/19/09
65	Activate ED Expansion	6 days	Fri 2/20/09	Fri 2/27/09
66	Occupy ED	0 days	Fri 2/27/09	Fri 2/27/09
67	**2nd Floor Fit out**	**77 days**	**Wed 12/10/08**	**Thu 3/26/09**
68	Mech Main Ducts	11 days	Wed 12/10/08	Wed 12/24/08
69	Plumbing Loops	7 days	Wed 12/17/08	Thu 12/25/08
70	Sprinkler Mains/Branches	12 days	Fri 12/19/08	Mon 1/5/09
71	Overhead Electrical	25 days	Tue 1/13/09	Mon 2/16/09
72	Metal Stud Partitions	7 days	Tue 1/13/09	Wed 1/21/09
73	In-wall Elec/Fire Alarm/Call Systems	18 days	Wed 1/14/09	Fri 2/6/09
74	In-wall M/P	14 days	Fri 1/16/09	Wed 2/4/09
75	GWB	12 days	Thu 1/22/09	Fri 2/6/09
76	Ceiling Grid	15 days	Fri 1/23/09	Thu 2/12/09
77	Light Fixtures	12 days	Thu 1/29/09	Fri 2/13/09
78	Paint Prime and 1st Coat	10 days	Tue 2/10/09	Mon 2/23/09
79	Cabinetry	14 days	Wed 2/11/09	Mon 3/2/09
80	Floor Finish	15 days	Thu 2/12/09	Wed 3/4/09
81	Final Coat	6 days	Thu 2/26/09	Thu 3/5/09
82	MP Fitout	6 days	Tue 2/24/09	Tue 3/3/09
83	Doors and Hardware	10 days	Fri 3/6/09	Thu 3/19/09
84	Equipment and Accessories	15 days	Fri 3/6/09	Thu 3/26/09
85	**3rd Floor Fit-out**	**91 days**	**Thu 12/25/08**	**Thu 4/30/09**
86	Mech Main Ducts	11 days	Thu 12/25/08	Thu 1/8/09
87	Plumbing Loops	7 days	Thu 1/1/09	Fri 1/9/09
88	Sprinkler Mains/Branches	12 days	Tue 1/6/09	Wed 1/21/09
89	Overhead Electrical	25 days	Tue 2/17/09	Mon 3/23/09
90	Metal Stud Partitions	7 days	Tue 2/17/09	Wed 2/25/09
91	In-wall Elec/Fire Alarm/Call Systems	18 days	Wed 2/18/09	Fri 3/13/09
92	In-wall M/P	14 days	Fri 2/20/09	Wed 3/11/09
93	GWB	12 days	Thu 2/26/09	Fri 3/13/09
94	Ceiling Grid	15 days	Fri 2/27/09	Thu 3/19/09
95	Light Fixtures	12 days	Thu 3/5/09	Fri 3/20/09
96	Paint Prime and 1st Coat	10 days	Tue 3/17/09	Mon 3/30/09
97	Cabinetry	14 days	Wed 3/18/09	Mon 4/6/09
98	Floor Finish	15 days	Thu 3/19/09	Wed 4/8/09
99	Final Coat	6 days	Thu 4/2/09	Thu 4/9/09
100	MP Fitout	6 days	Tue 3/31/09	Tue 4/7/09
101	Doors and Hardware	10 days	Fri 4/10/09	Thu 4/23/09
102	Equipment and Accessories	15 days	Fri 4/10/09	Thu 4/30/09
103	**4th Floor Fit out**	**98 days**	**Fri 1/9/09**	**Tue 5/26/09**
104	Mech Main Ducts	11 days	Fri 1/9/09	Fri 1/23/09
105	Plumbing Loops	7 days	Fri 1/16/09	Mon 1/26/09
106	Sprinkler Mains/Branches	12 days	Thu 1/22/09	Fri 2/6/09
107	Overhead Electrical	25 days	Wed 1/28/09	Tue 3/3/09
108	Metal Stud Partitions	7 days	Wed 1/28/09	Thu 2/5/09
109	In-wall Elec/Fire Alarm/Call Systems	18 days	Mon 3/16/09	Wed 4/8/09
110	In-wall M/P	14 days	Wed 3/18/09	Mon 4/6/09
111	GWB	12 days	Tue 3/24/09	Wed 4/8/09
112	Ceiling Grid	15 days	Wed 3/25/09	Tue 4/14/09
113	Light Fixtures	12 days	Tue 3/31/09	Wed 4/15/09
114	Paint Prime and 1st Coat	10 days	Fri 4/10/09	Thu 4/23/09



Project: DetailSched(New)
Date: Wed 4/1/09

Task | Critical Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress | Split | External Tasks | Project Summary | Group By Summary | Deadline

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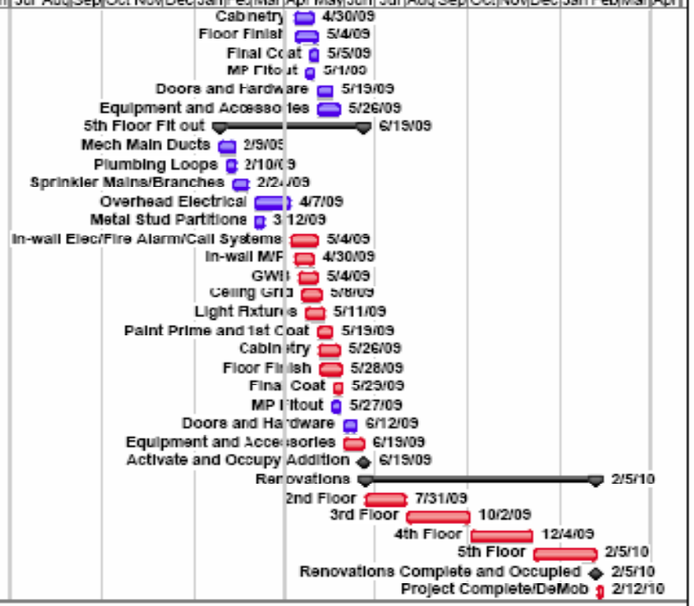
Summary Schedule for Doctors Community Hospital

ID	Task Name	Duration	Start	Finish
115	Cabinetry	14 days	Mon 4/13/09	Thu 4/30/09
116	Floor Finish	15 days	Tue 4/14/09	Mon 5/4/09
117	Final Coat	6 days	Tue 4/28/09	Tue 5/5/09
118	MP Fitout	6 days	Fri 4/24/09	Fri 5/1/09
119	Doors and Hardware	10 days	Wed 5/6/09	Tue 5/19/09
120	Equipment and Accessories	15 days	Wed 5/6/09	Tue 5/26/09
121	**5th Floor Fit out**	**105 days**	**Mon 1/26/09**	**Fri 6/19/09**
122	Mech Main Ducts	11 days	Mon 1/26/09	Mon 2/9/09
123	Plumbing Loops	7 days	Mon 2/2/09	Tue 2/10/09
124	Sprinkler Mains/Branches	12 days	Mon 2/9/09	Tue 2/24/09
125	Overhead Electrical	25 days	Wed 3/4/09	Tue 4/7/09
126	Metal Stud Partitions	7 days	Wed 3/4/09	Thu 3/12/09
127	In-wall Elec/Fire Alarm/Call Systems	18 days	Thu 4/9/09	Mon 5/4/09
128	In-wall M/P	14 days	Mon 4/13/09	Thu 4/30/09
129	GWB	12 days	Fri 4/17/09	Mon 5/4/09
130	Ceiling Grid	15 days	Mon 4/20/09	Fri 5/8/09
131	Light Fixtures	12 days	Fri 4/24/09	Mon 5/11/09
132	Paint Prime and 1st Coat	10 days	Wed 5/6/09	Tue 5/19/09
133	Cabinetry	14 days	Thu 5/7/09	Tue 5/26/09
134	Floor Finish	15 days	Fri 5/8/09	Thu 5/28/09
135	Final Coat	6 days	Fri 5/22/09	Fri 5/29/09
136	MP Fitout	6 days	Wed 5/20/09	Wed 5/27/09
137	Doors and Hardware	10 days	Mon 6/1/09	Fri 6/12/09
138	Equipment and Accessories	15 days	Mon 6/1/09	Fri 6/19/09
139	Activate and Occupy Addition	0 days	Fri 6/19/09	Fri 6/19/09
140	**Renovations**	**165 days**	**Mon 6/22/09**	**Fri 2/5/10**
141	2nd Floor	30 days	Mon 6/22/09	Fri 7/31/09
142	3rd Floor	45 days	Mon 8/3/09	Fri 10/2/09
143	4th Floor	45 days	Mon 10/5/09	Fri 12/4/09
144	5th Floor	45 days	Mon 12/7/09	Fri 2/5/10
145	Renovations Complete and Occupied	0 days	Fri 2/5/10	Fri 2/5/10
146	Project Complete/DeMob	5 days	Mon 2/8/10	Fri 2/12/10



Project: DetailSched(New)
Date: Wed 4/1/09

Task	Milestone	Rolled Up Critical Task	Split	Group By Summary
Critical Task	Summary	Rolled Up Milestone	External Tasks	Deadline
Progress	Rolled Up Task	Rolled Up Progress	Project Summary	

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APPENDIX III | DETAILED ESTIMATE BREAKDOWNS

TABLE 20-DETAILED BREAKDOWN OF GENERAL CONDITIONS ESTIMATE

General Conditions Estimate

Total Project Weeks	119
Total Project Months	27

Personnel	% of time on Project	Total Billable Weeks	Cost per Week	Total Cost
Project Executive	50%	59.5	$ 2,100	$ 124,950
Project Manager	100%	119	$ 1,850	$ 220,150
Assistant Project Manager	100%	119	$ 1,600	$ 190,400
Field Engineer	100%	119	$ 1,125	$ 133,875
General Superintendent	70%	83.3	$ 1,800	$ 149,940
Assistant Superintendent	100%	119	$ 1,600	$ 190,400
Office Manager	100%	119	$ 800	$ 95,200
Category Total				**$ 1,104,915**

Utilities/Facilities	Frequency	Duration	Cost/Unit Time	Total Cost
Electric/Water	Monthly	27	500	$ 13,500
Internet	Monthy	27	$ 300	$ 8,100
Porta Johns	Weekly	119	$ 60	$ 7,140
Telephone	Monthly	27	$ 600	$ 16,200
Trailer Set up	Lump Sum	-	-	$ 10,000
Trailers	Monthly	27	$ 750	$ 20,250
Utilities Hook Up	Lump Sum	-	-	$ 15,000
Category Total				**$ 90,190**

Site Office Support	Frequency	Duration	Cost/Unit Time	Total Cost
Cell phone and Nextel	Monthly	27	$ 300	$ 8,100
Computers	Lump Sum	-	-	$ 10,000
Janitorial service for trailer	Monthly	27	$ 200	$ 5,400
Job Travel	Monthly	27	$ 250	$ 6,750
Job vehicle fuel/maintenance	Monthly	27	$ 400	$ 10,800
Job Vehicle/Auto Allowance	Monthly	27	$ 1,000	$ 27,000
Office Furniture	Lump Sum	-	-	$ 5,000
Office Supplies	Monthly	27	$ 400	$ 10,800
Postage and Shipping	Monthly	27	$ 300	$ 8,100
Category Total				**$ 91,950**

General Conditions Estimate (Cont)

General Requirements	Frequency	Duration	Cost/Unit Time	Total Cost
Bid Set Repro Costs/Distribution	Lump Sum	-	-	$ 25,000
Copiers and Supplies	Monthly	27	$ 600	$ 16,200
Dumpsters	Weekly	119	$ 650	$ 77,350
Final Clean	Lump Sum	-	-	$ 20,000
Material Hoist	Weekly	21	$ 1,780	$ 37,380
Mock-up (Patient Room)	Lump Sum	-	-	$ 45,000
Safety and First Aid	Monthly	27	$ 1,200	$ 32,400
Signage	Lump Sum	-	-	$ 10,000
Snow Removal	Lump Sum	-	-	$ 25,000
Survey and Layout	Lump Sum	-	-	$ 35,000
Temp Fence	Monthly	27	$ 550	$ 14,850
Temp Ladders/Stairs/Ramps	Lump Sum	-	-	$ 30,000
Temp Roads	Lump Sum	-	-	$ 50,000
Trash Chute	Weekly	22	$ 550	$ 12,100
Category Total				**$ 430,280**
General Conditions Total				**$ 1,717,335**

TABLE 21-DETAILED STRUCTURAL ESTIMATE

Detailed Structural Estimate								
Steel								
		Quantity	**Unit**	**Material**	**Labor**	**Equipment**	**Total Unit Cost**	**Total**
Columns								
	HSS6X6X5/16	13	EA	$ 297.00	$ 43.50	$ 29.00	$ 369.50	$ 4,803.50
	W10X49	39	LF	$ 54.50	$ 2.27	$ 1.52	$ 58.29	$ 2,273.31
	W12X106	52	LF	$ 140.00	$ 2.55	$ 1.68	$ 144.23	$ 7,499.96
	W12X136	84	LF	$ 150.00	$ 2.55	$ 1.68	$ 154.23	$ 12,955.32
	W12X170	68	LF	$ 230.00	$ 2.57	$ 1.72	$ 234.29	$ 15,931.72
	W12X40	135	LF	$ 57.00	$ 2.27	$ 1.52	$ 60.79	$ 8,206.65
	W12X53	239	LF	$ 63.00	$ 2.27	$ 1.52	$ 66.79	$ 15,962.81
	W12X58	26	LF	$ 68.00	$ 2.30	$ 1.52	$ 71.82	$ 1,867.32
	W12X65	660	LF	$ 77.00	$ 2.32	$ 1.54	$ 80.86	$ 53,367.60
	W12X72	68	LF	$ 84.00	$ 2.35	$ 1.56	$ 87.91	$ 5,977.88
	W12X79	106	LF	$ 93.00	$ 2.35	$ 1.57	$ 96.92	$ 10,273.52
	W12X87	262	LF	$ 105.00	$ 2.38	$ 1.59	$ 108.97	$ 28,550.14
	W8X31	1480	LF	$ 37.50	$ 2.17	$ 1.45	$ 41.12	$ 60,857.60
	W8X35	226	LF	$ 42.00	$ 2.19	$ 1.47	$ 45.66	$ 10,319.16
	W8X40	216	LF	$ 49.00	$ 2.24	$ 1.49	$ 52.73	$ 11,389.68
	W8X48	169	LF	$ 58.00	$ 2.27	$ 1.52	$ 61.79	$ 10,442.51
	W8X58	93	LF	$ 68.00	$ 2.32	$ 1.55	$ 71.87	$ 6,683.91
	W8X67	282	LF	$ 81.00	$ 2.38	$ 1.59	$ 84.97	$ 23,961.54
Beams								
	W10X12	335.07	LF	$ 14.50	$ 3.91	$ 2.61	$ 21.02	$ 7,043.17
	W12X14	718.6	LF	$ 16.95	$ 2.66	$ 1.78	$ 21.39	$ 15,370.85
	W12X19	2361.84	LF	$ 24.00	$ 2.66	$ 1.87	$ 28.53	$ 67,383.30
	W12X22	159.1	LF	$ 26.50	$ 2.66	$ 1.87	$ 31.03	$ 4,936.87
	W12X30	180.22	LF	$ 35.00	$ 2.76	$ 1.90	$ 39.66	$ 7,147.53
	W12X35	709.25	LF	$ 42.50	$ 2.89	$ 1.93	$ 47.32	$ 33,561.71
	W12X40	280.05	LF	$ 48.00	$ 2.93	$ 1.97	$ 52.90	$ 14,814.65
	W14X22	6816.6	LF	$ 28.50	$ 2.35	$ 1.55	$ 32.40	$ 220,857.84
	W14X26	126.82	LF	$ 31.50	$ 2.37	$ 1.58	$ 35.45	$ 4,495.77
	W16X26	2097.62	LF	$ 31.50	$ 2.37	$ 1.58	$ 35.45	$ 74,360.63
	W16X31	97.76	LF	$ 37.50	$ 2.60	$ 1.74	$ 41.84	$ 4,090.28
	W16X36	1273.93	LF	$ 44.50	$ 2.87	$ 1.90	$ 49.27	$ 62,766.53
	W16X40	516.18	LF	$ 48.50	$ 2.93	$ 1.96	$ 53.39	$ 27,558.85
	W18X35	44.76	LF	$ 42.50	$ 3.53	$ 1.77	$ 47.80	$ 2,139.53
	W18X40	130.67	LF	$ 48.50	$ 3.53	$ 1.77	$ 53.80	$ 7,030.05
	W18X50	195	LF	$ 60.50	$ 3.72	$ 1.86	$ 66.08	$ 12,885.60
	W21X44	52	LF	$ 53.00	$ 3.19	$ 1.60	$ 57.79	$ 3,005.08
	W21X50	26	LF	$ 60.50	$ 3.19	$ 1.60	$ 65.29	$ 1,697.54
	W21X57	168	LF	$ 69.00	$ 3.24	$ 1.62	$ 73.86	$ 12,408.48
	W21X68	281.5	LF	$ 82.50	$ 3.27	$ 1.64	$ 87.41	$ 24,605.92
	W24X68	56	LF	$ 82.50	$ 3.06	$ 1.53	$ 87.09	$ 4,877.04
	W24X76	55.5	LF	$ 92.00	$ 3.06	$ 1.53	$ 96.59	$ 5,360.75
	W24X94	29.5	LF	$ 114.00	$ 3.14	$ 1.57	$ 118.71	$ 3,501.95
	W8X15	34.68	LF	$ 18.15	$ 3.81	$ 2.61	$ 24.57	$ 852.09
	W8X18	15	LF	$ 21.00	$ 3.84	$ 2.63	$ 27.47	$ 412.05
Metal Deck								
	1 1/2" 18 Gauge	67861	SF	$ 1.36	$ 0.32	$ 0.03	$ 1.71	$ 116,042.31
						Steel Total		**$ 1,030,530.47**

Detailed Structural Estimate (Cont)

Concrete

		Quantity	Unit	Material	Labor	Equipment	Total Unit Cost	Total
Foundations								
	Spread Footings (1-5 CY)	367	CY	$ 192.00	$ 95.50	$ 0.57	$ 288.07	$ 105,721.69
	Caissons	550	VLF	$ 56.50	$ 57.50	$ 66.00	$ 180.00	$ 99,000.00
	Grade Wall	10	CY	$ 228.00	$ 279.00	$ 27.50	$ 534.50	$ 5,345.00
Floors								
	Slab on Grade (6")	17423	SF	$ 1.95	$ 0.75	$ 0.01	$ 2.71	$ 47,216.33
	Concrete on Metal Deck (6")	67861	SF	$ 2.02	$ 0.73	$ 0.28	$ 3.03	$ 205,618.83
	6x6 WWF Reinforcing	852.84	CSF	$ 29.00	$ 25.50	$ -	$ 54.50	$ 46,479.78
						Concrete Total		**$ 509,381.63**

STRUCTURAL TOTAL:	**$**	**1,539,912.10**

APPENDIX IV | PROCESS MODEL

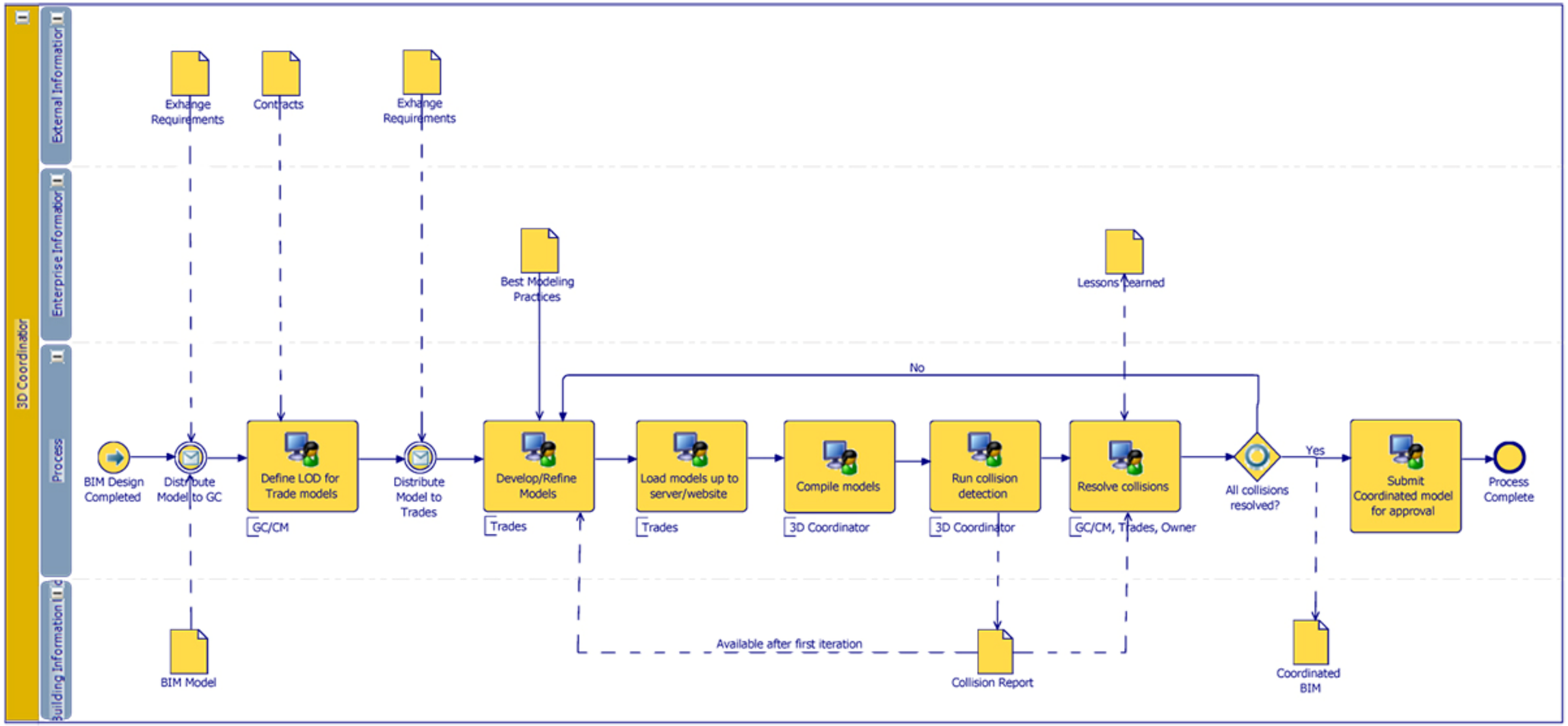


TABLE 22-EXPLANATION OF TASKS AS DEFINED IN PROCESS MODEL

Task Name	Explanation of Task and Related Data Objects
Define LOD for Trade Models	A level of detail must be defined in order for trades to accurately model the systems in order for 3D coordination to be effective. This stage will define what must be modeled. Some items that are typical question marks on whether to be included are: • Hangers, pipe supports, sleeves? • Conduits? • Pipe/Duct insulation? • Metal deck detail? According to Leicht and Messner, four main factors weigh into the determination for the level of detail: • Interaction with other systems • Sequence of Installation • Prefabrication Components • Layout considerations and density of systems Contracts- External information that will impact the contract language in the trades agreement (risk allocation, intellectual property licensure, etc.) and definitions for the LOD necessary for each trade.
Develop/Refine Models	This task consists of the actual work done to create the model. Time will be spent here by the trades or their consultants actually developing the 3D models to be used for coordination. Typically, this will consist of developing the model for one area of the building at a time. Best Modeling Practices- This data object represents enterprise information in the form of lessons learned and best ways to represent information in the 3D model. It will impact how trades/consultants will model the necessary information.
Load Models up to server/website	An FTP server or website should be maintained by the coordination leader in order to facilitate the transfer of the model files which can become quite large. Typically, e-mail will not have sufficient space for these files to be sent as attachments. Each trade will be responsible to upload their model for a given area by a specific date as determined by the coordinator. Files should be uploaded in a compatible format with the software that will be used for collision detection.

Compile Models	The leader for the 3D coordination will assemble the models into one file/file set in order to run the collision detection.
Run Collision Detection	The 3D coordinator will run the collision detection to find all conflicts between the models. At this point, the 3D coordinator can remove false positives depending on LODs that were previously determined. At the conclusion of this activity, a collision report will be outputted and distributed to the trades.
Resolve Collisions	Decisions will be made by the necessary participants to resolve each clash. Coordination issues will be resolved based on trade inputs. Design issues will result in RFI's. Clashes resulting from LOD (Leicht and Messner, 2008) The steps to resolve the collisions will be determined on a project or company level.
Submit Coordinated Model for Approval	The coordinated model is submitted back to designers for final approval.

TABLE 23-EXPLANATION OF EVENTS AS DEFINED IN PROCESS MODEL

Event Name	Explanation of Event and Related Data Objects
BIM Design Complete	This is the start to the 3D coordination process. The designers have completed the overall design intent for the project.
Distribute Model to GC	A transfer based event, in which the model is sent to the GC or CM on the project. Exchange Requirements- These must be defined by the project team and will determine what file formats will be used on the project to complete the 3D coordination. This is information that can be defined from an external resource that is not taken from either the model or internal enterprise information. BIM Model-Data taken from the BIM model (in this case the model itself) is an information input for this task.
Distribute Model to Trades	Another transfer based event, in which the model is sent to the trades in order for them to begin their work with actually creating the model for their specific trade. Trades to be included will be defined at the project specific level. Exchange Requirements- Requirements for transfer will be determined in order to define the necessary file formats to be distributed to the trades, and also the formats that they will return to the coordination leader.

APPENDIX V | TAKE-OFF DATA

TABLE 24-REVIT TAKE OFF OF EXTERIOR WALL AREA

Family	Family and Type	Area	Unit
Basic Wall	Basic Wall: For SF Take-Off	1064	SF
Basic Wall	Basic Wall: For SF Take-Off	205	SF
Basic Wall	Basic Wall: For SF Take-Off	9072	SF
Basic Wall	Basic Wall: For SF Take-Off	3817	SF
Basic Wall	Basic Wall: For SF Take-Off	3807	SF
Basic Wall	Basic Wall: For SF Take-Off	4680	SF
Basic Wall	Basic Wall: For SF Take-Off	1725	SF
Basic Wall	Basic Wall: For SF Take-Off	560	SF
Basic Wall	Basic Wall: For SF Take-Off	1040	SF
Basic Wall	Basic Wall: For SF Take-Off	5207	SF
Basic Wall	Basic Wall: For SF Take-Off	600	SF
Basic Wall	Basic Wall: For SF Take-Off	2335	SF
Basic Wall	Basic Wall: For SF Take-Off	1015	SF
Basic Wall	Basic Wall: For SF Take-Off	1015	SF
Basic Wall	Basic Wall: For SF Take-Off	420	SF
Basic Wall	Basic Wall: For SF Take-Off	1315	SF
	Total	**37877**	**SF**
	Non Precast Façade Area	**750**	**SF**
	Net Total Precast Area	**37127**	**SF**

APPENDIX VI | DETAILED STRUCTURAL CALCULATIONS

Exterior Beam:

Live Load Reduction:

$$LL_r = LL(.25 + \frac{15}{\sqrt{K_{LL} * A_t}})$$

$$LL_r = 100 \text{ psf } (.25 + \frac{15}{\sqrt{2 * 288\ sf}})$$

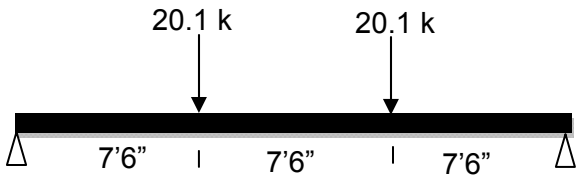
$$LL_r = 100 \text{ psf } (.875) \quad (.875 > .4 \ \therefore OK)$$

$$\boldsymbol{LL_r = 87.5 \text{ psf}}$$

Beam Shear and Moment Calculations:

$$1.2D + 1.6L = 1.2(58) + 1.6(87.5) = 209.6 \text{ psf}$$

$$209.6 \text{ psf} * 7'6\text{*}12'10" = 20.1 \text{ kips as point loads on Edge beam}$$



$$Support\ Reactions = 20.1 \text{ k by symmetry inspection}$$

$$\therefore V_{max} = 20.1 \text{ k}$$

$$M_u = V_{max} * Spacing \text{ (for simply supported beam and point loads)}$$

$$M_u = (20.16 \text{ k}) * 7'6"$$

$$\boldsymbol{M_u = 151.2 \text{ kip ft}}$$

Load due to Exterior Brick Façade:

Brick weight: 42 psf Story Height: 13'

$$Distributed\ load = DL\ Saftey\ factor * Sq.Ft.Unit\ Weight * Story\ Height$$

$$Distributed\ load = 1.2 * 42 \text{ psf} * 13'$$

$$Distributed\ load = .655 \text{ klf}$$

For simply supported beam with distributed load :

$$M_{max} = \frac{(Dist.Load * Beam\ Length^2)}{8}$$

$$M_{max} = \frac{(.65 * 22.5^2)}{8}$$

$$\boldsymbol{M_{max} = 41.2\ \text{kip ft}}$$

Exterior Column:

$$KL = 1 * 13 = 13\ for\ column\ sizing\ from\ AISC\ steel\ manual$$

Live Load Reduction for Calc 1:

$$LL_r = LL\left(.25 + \frac{15}{\sqrt{K_{LL} * A_t}}\right)$$

$$LL_r = 100\left(.25 + \frac{15}{\sqrt{4 * (288 * 3)}}\right)$$

$$LL_r = 100(.5)\ \ .5 > .4\ \therefore OK$$

$$\boldsymbol{LL_r = 50\ \text{psf}}$$

Axial Loading Calculations for W8x35:

$$1.2D + 1.6L = 1.2(58) + 1.6(50) = 149.6\ \text{psf}$$

$$Axial\ Load = Tributary\ Area * Load\ per\ sq.ft.$$

$$Axial\ Load = \left(288\frac{\text{sf}}{\text{floor}} * 3\ \text{floors}\right) * 149.6\ \text{psf}$$

$$\boldsymbol{Axial\ Load = 129.2\ \text{kips}\ (\text{excluding facade})}$$

$$Axial\ Load_{facade} = \left(292.5\frac{\text{sf}}{\text{story}} * 3\ \text{stories}\right) * 65\ \text{psf}$$

$$\boldsymbol{Axial\ Load_{facade} = 57\ \text{kips}}$$

$$\boldsymbol{Total\ Axial\ Load = P_u = 186.2\ \text{kips}}$$

$$\boldsymbol{\Phi_c P_n = 300\ \text{kips} > 186.2\ \text{kips} = P_u}$$

Live Load Reduction for Calc 2:

$$LL_r = LL\left(.25 + \frac{15}{\sqrt{K_{LL} * A_t}}\right)$$

$$LL_r = 100\left(.25 + \frac{15}{\sqrt{4 * (288 * 5)}}\right)$$

$$LL_r = 100(.44) \;\; .44 > .4 \;\; \therefore OK$$

$$\boldsymbol{LL_r = 44 \text{ psf}}$$

Axial Loading Calculations for W8x58:

$$1.2D + 1.6L = 1.2(58) + 1.6(44) = 140 \text{ psf}$$

$$Axial\ Load = Tributary\ Area * Load\ per\ sq.ft.$$

$$Axial\ Load = \left(288 \frac{\text{sf}}{\text{floor}} * 5 \text{ floors}\right) * 140 \text{ psf}$$

$$\boldsymbol{Axial\ Load = 201.6 \text{ kips (excluding facade)}}$$

$$Axial\ Load_{facade} = \left(292.5 \frac{\text{sf}}{\text{story}} * 5 \text{ stories}\right) * 65 \text{ psf}$$

$$\boldsymbol{Axial\ Load_{facade} = 95.1 \text{ kips}}$$

$$\boldsymbol{Total\ Axial\ Load = \ P_u = 296.7 \text{ kips}}$$

$$\boldsymbol{\Phi_c P_n = 514 \text{ kips} > 296.7 \text{ kips} = P_u}$$