Pershing Hill Elementary School

Fort Meade, MD



Technical Report 2 Cost and Schedule Analysis

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Executive Summary

This report examines the project schedule, site layout, structural and general conditions costs for construction of Pershing Hill Elementary School. In addition this report summarizes the critical industry issues that were discussed at the Annual PACE Roundtable. Construction of Pershing Hill Elementary School is divided into three areas. The first contractor on site is the abatement contractor, who started abatement of the existing school in July of 2009, and substantial completion is scheduled for February of 2011. Three site plans were developed for the different phases of construction. No ramps were needed during excavation, and a movable crane will be used for steel erection.

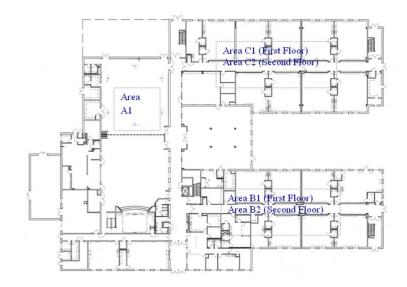
The structural system estimate using a typical bay came in around 21% higher than the value of the actual bid packages for concrete and structural steel. While the fact that the contracts were awarded to the low bidders contributed to the difference, the economy was the primary cause. My general conditions estimate found the general conditions to be 12.7% which is an appropriate estimate considering all the work the construction manager is responsible for on this project.

The PACE Roundtable contained a morning session featuring an industry panel, three breakout sessions, and an afternoon session highlighted by a student panel. I chose to attend the "Energy and the Building Industry" breakout session where different renewable energy options including solar and geothermal were discussed, along with the state and federal initiatives for incorporating renewable energy into a project.

Detailed Project Schedule

A detailed project schedule broken down by trade can be found in Appendix A. Because this is a multiple prime project, the activities were divided among the trades according to which bid package is responsible for that activity. There are 15 prime contractors on this project that are responsible for: sitework, abatement, demolition, concrete, masonry, steel, general works, roofing, windows, kitchen equipment, casework, technical wiring, mechanical (both plumbing and HVAC), fire protection, and electrical work. The first contractor on site is the abatement contractor, who started abatement of the existing school in July of 2009, and substantial completion is scheduled for February of 2011.

The schedule references "Area A," "Area B," and "Area C." These are three areas that the building was divided into for construction. Area A contains the gym and cafeteria. Areas B and C primarily contain classrooms, although Area C also contains the media room. A figure showing how the three areas are divided is provided below. In general work follows the sequence B, A, C as described in Tech 1.



Site Layout Planning

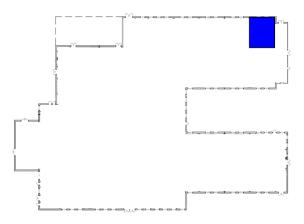
Scale site plans were developed for the excavation, superstructure, and finish phases of the project. These plans can be found in Appendix B. The construction manager (Jacobs) is onsite during all phases of construction, but the number of specialty contractors varies depending on the phase. During excavation, the site work contractor is present, as well as the contractors responsible for temporary utilities. As the project progresses, more contractors arrive at the site as the project progresses and the building is ready for them to start. In addition the staffing of the contractors changes according to how much work they need to do during that phase. As a result, the number of site trailers varies during the different phases, as well as the number of support facilities (tool trailers, portable toilets, etc...). Due to the extent of excavation on this project, no ramps are needed, as only the areas surrounding the footers and foundation walls will be excavated from the building footprint. No ramps will be needed for the sediment basins, as those have sloped earth sides that will be planted with grasses.

For steel erection, a movable crane will be used. This crane will have four different locations during the three different phases of the erection. Because of the size of area A (which includes the gym and cafeteria) two different locations were needed. All four locations are shown on the superstructure drawing, with a lay down area for that phase which allows the crane to reach the steel and the location on the building.

During the final phases of construction the west sediment basin is filled in and graded over. Since the north-western area of the site fence would need to be taken out to install the pavement, it would make sense to turn it into a second site gate to allow easier site access.

Detailed Structural Systems Estimate

For the detailed structural systems estimate a typical bay was selected from area C. Once that bay was examined, the resulting quantities were extrapolated to find an estimate for the entire building. All costs were taken from RS Means, and the data from RS means can be found in Appendix C. It was assumed for items which RS Means chose not to report a labor, material, or equipment cost those items did not contribute to additional labor, equipment, or material costs. For the concrete formwork, four uses were assumed. Since RS Means reported costs for 4" thick and 6" thick slab on grade, and the slab in the typical bay is 5", interpolation was used. Interpolation was used in all instances where the exact number for this project was between two reported numbers. For the structural elements that were shared between two or more bays, only half of the quantity for the element was used (to avoid it being counted twice when extrapolated). A diagram showing the area used for a typical bay is shown below.



The excel spreadsheet with the quantities and costs can be found on the following page.

Trade	Description	ltem	Materials	Labor	Equipment	Cost (Total; Inc. O&P)	Qty.	Unit	Total
	5" Thick Slab on Grade	Concrete	\$124.00	\$47.25	\$0.36	\$211.50	13.7	C.Y.	\$2,889
	Wall Footing	Concrete	\$147.00	\$89.50	\$0.54	\$300.00	10.6	C.Y.	\$3,183
	Slab on Grade Formwork	Formwork	\$0.92	\$4.41		\$7.85	19.8	S.F.C.A.	\$155
	Footing Formwork	Formwork	\$2.42	\$2.50		\$6.55	154.4	S.F.C.A.	\$1,011
Concrete	Finish Slab on Grade	Manual Screed and Bull Float		\$0.22		\$0.22	882.4	S.F.	\$194
	Elevated Slab	Concrete	\$294.00	\$267.00	\$24.50	\$765.00	10.8	C.Y.	\$8,250
	Elevated Slab Formwork	Formwork	\$3.26	\$3.73		\$9.40	49.3	S.F.	\$463
	Subtota	i l	\$6,976.44	\$5,325.71	\$274.87				\$16,146
	Extrapolated Across	Entire Building	\$344,552.82	\$263,026.53	\$13,575.35				\$797,421.15
	With Location Fa	actor (.93)	\$320,434.12	\$244,614.67	\$12,625.07				\$741,601.67
	Masonry Pier 1 (x4)	Masonry	\$3.73	\$3.58		\$9.55	66.0	S.F.	\$630
	Masonry Pier 19 (x2)	Masonry	\$3.73	\$3.58		\$9.55	52.8	S.F.	\$504
	Brick Veneer	Masonry	\$5.65	\$6.75		\$13.75	670.0	S.F.	\$9,213
	Concrete Block	CMU and Grout	\$2.37	\$3.76		\$6.13	670.0	S.F.	\$4,107
2.2	Safety Net	Building Exterior	\$1.59	A	7	\$1.75	186.3	S.F.	\$326
Masonry	Scaffolding	Building Exterior		\$120.00		\$186.00	1.9	C.S.F.	\$346
	Forklift	Forklift		\$1,550.00	\$2,225.00	\$4,800.00	0.1	Month	\$583
	Subtota	I	\$4,228.62	\$4,947.80	\$0.00				\$15,710
	Extrapolated Across	Entire Building	\$208,843.42	\$244,362.31	\$0.00				\$775,868.20
	With Location Fa	actor (.93)	\$194,224.38	\$227,256.94	\$0.00				\$721,557.43
	Structural Members	W10x15	\$25.00	\$4.06	\$2.90	\$37.00	51.3	L.F.	\$1,896
	Structural Members	W14x22	\$43.00	\$2.46	\$1.76	\$53.00	7.5	L.F.	\$398
	Structural Members	W16x26	\$43.00	\$2.44	\$1.74	\$53.00	29.5	L.F.	\$1,563
	Open Web Joist	16K6	\$8.25	\$1.96	\$1.12	\$13.70	29.7	L.F.	\$406
	Open Web Joist	20K5	\$8.20	\$1.76	\$1.00	\$13.15	353.0	L.F.	\$4,641
	Open Web Joist	18KCS2	\$9.40	\$1.76	\$1.00	\$14.50	163.1	L.F.	\$2,365
	Structural Members	W21x62	\$102.00	\$3.41	\$1.81	\$121.00	14.9	L.F.	\$1,800
	Bearing Plate BP 1(x3)	1/2" Thick Plate	\$30.50			\$33.50	0.2	S.F.	\$8
Steel	Bearing Plate BP 6	3/4" Thick Plate	\$46.00			\$50.50	0.2	S.F.	\$8
	Lentel L1 (x2)	W8x21	\$34.50	\$4.06	\$2.90	\$48.00	10.0	L.F.	\$480
	C5 Column (x2)	HSS 9"x5"x1/2"	\$65.50	\$2.39	\$1.71	\$78.50	20.0	L.F.	\$1,570
	C6 Column (x2)	HSS 9"x5"x3/8"	\$65.50	\$2.39	\$1.71	\$78.50	15.0	L.F.	\$1,178
	Floor Decking	Floor Decking	\$2.97	\$0.38	\$0.04	\$3.98	882.4	S.F.	\$3,512
	Roof Decking	Roof Decking	\$2.18	\$0.34	\$0.03	\$3.03	882.4	S.F.	\$2,674
	Subtota	i –	\$16,258.00	\$2,075.21	\$939.98				\$22,499
	Extrapolated Across	Entire Building	\$802,950.88	\$102,490.69	\$46,423.84				\$1,111,178.95
1 1	With Location Fa	actor (.93)	\$746,744.32	\$95,316.34	\$43,174.17				\$1,033,396.42

As can be seen from the table above, the total estimated cost for the concrete portion of the structural system is \$741,602. The total estimated cost for the masonry portion is \$721,557 and the total estimated cost for the steel portion is \$1,033,396. Comparing the estimated cost of the structural masonry to the actual value of the bid package yields no useful information, as the bid package contained several non-structural elements that increased the cost. However, it is possible to compare the estimates to the actual bid values for the concrete and structural steel bid packages.

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When comparing the cost of my estimates to the cost of the actual bid packages, my estimate comes in high. This is expected due to Pershing Hill Elementary School being a low bid project with multiple bidders, and the current economy. While I estimated a cost of \$741,601 for the concrete bid package the accepted bid was \$612,350 representing a difference of 21%. While I estimated a cost of \$1,033,396 for the structural steel the accepted bid was \$853,200, also representing a difference of 21%. While I would expect my estimate to be higher because this is a low bid project, I wouldn't have expected it to be higher by that magnitude if I hadn't previously talked to the project manager from the construction manager (Jacobs).

When I received the information on the cost of the bid packages, Mr. Nigudkar informed me that the bids received were much lower than he and his team had expected based on similar projects due to the economy. As an example, he pointed to Freetown Elementary School which was bid out 2 years ago. Its size and design were very similar to Pershing Hill Elementary School, it was for the same owner (Anne Arundel County Public Schools), and the work was performed by many of the same contractors. Mr Nigudkar informed me that when Freetown Elementary School was bid out, the total cost for the bid packages was \$17.4 million. Since the total cost for the bid packages on Pershing Hill Elementary School is \$13.3 million, this represents a 24% decrease from Freetown Elementary School two years ago. Mr. Nigudkar felt the economy was the primary cause for this decrease, and noted that when Pershing Hill Elementary School was bid out they had only expected the cost to be around 5% lower than that of Freetown Elementary School.

General Conditions Estimate

A general conditions estimate was developed for this project that includes all project and staffing costs. Because staffing costs and CM fees are proprietary; averages for the appropriate job titles from RS Means were used for staffing costs, and an average of the CM fee for a \$10,000,000 project was taken from RS Means and extrapolated. Costs for aerial photos (required per the contract documents), testing, temporary utilities, trailer rental, field office expenses, and temporary fencing were also taken from RS Means.

Although RS Means provides the cost for individual tests, it is impossible to accurately predict how many of each test will be needed on this particular job as that number can increase due to a variety of conditions. Additional concrete pours, being required to redo any area, soil conditions requiring undercutting, or having a prior test fail would all require additional testing. Therefore the minimum and maximum amount of a \$10,000,000 building was averaged, and extrapolated to arrive at a likely cost for this building. RS Means data for the general conditions estimate can be found in Appendix D.

For most items that require periodic payment throughout the project, total project duration of 88 weeks (20 months) was used. This corresponds to the date from which the abatement starts (6/10/09) to the date of substantial completion (2/17/11). Because this team plans to keep an assistant superintendent on site during punch list activities (but not other project team members) 2 months (9 weeks) were added for punch list activities and project closeout to the relevant activities.

For the site fence, it is possible to rent or buy a fence. To find which is more economical, 20 month duration was used. The cost for a 6' high fence in RS Means is \$5.45 for up to 12 months. Since the 20 month duration is 2 "up to twelve month" units, the cost of renting is \$10.90 per L.F. Since the cost of buying is \$11.15 per L.F. it is more economical to rent the site fence for this project. When calculating the amount of fence needed, a waste factor of 10% was used.

As can be seen from the chart below, when the location factor was taken into account, the total estimated general conditions were \$1,694,443. This represents 12.7% of the total project costs. When I corresponded with the project manager he said "assume the CM fee and general conditions to be around 12%" so I feel this is a reasonable number.

		Cost	Quantity	Unit	Total
	Project Manager	\$2975	88	week	\$261,800
	Superintendent	\$2750	88	week	\$242,000
Staffing	Assistant Super.	\$2475	97	week	\$240,075
	Project Engineer	\$1800	88	week	\$158,400
	Clerk	\$590	88	week	\$51,920
CM Fee		4.6		% of Project	\$614,384
Aerial Photos	8" x 10" Color	\$1592	6	Set	\$9,552
Testing		\$55965	1	project	\$55,965
	Heating	\$35	872	CSF Flr	\$30,084
Tomporony Litilition	Lighting	\$29.4	872	CSF Flr	\$25,659
Temporary Utilities	Temp. Power	\$86	872	CSF Flr	\$75,297
	Trailer Rental	\$310	22	month	\$6,820
	Office Equipment	\$171	22	month	\$3,762
Field Office Evenence	Office Supplies	\$94	22	month	\$2,057
Field Office Expenses	Telephone bill	\$88	22	month	\$1,936
	Lights and HVAC	\$165	22	month	\$3,630
Temporary Fencing	6' High Fence	\$10.9	3545	L.F.	\$38,641
Estimated Cost	\$1,821,982	Location Factor	0.93	Total Cost	\$1,694,443

Critical Industry Issues

During the PACE Roundtable Meeting I attended the "Energy and the Building Industry" breakout sessions. I was surprised that the discussion started as broadly as it did, and still ended up narrowing down to specific buildings by the afternoon session. I think the more general discussion about different types of energy, the problems with the current energy use, and the reasons to explore alternatives was helpful in framing the specific discussions in the afternoon session. Without that discussion beforehand, a lot of the conversation in the afternoon session could have been sidetracked and wouldn't have been as heavily focused on the different types of systems that could be implemented in specific types of buildings.

I found the discussions about the different types of systems to be very helpful. Joseph Hirsch discussed the fact that his thesis project (also an elementary school) is using a geothermal MEP system. This was very interesting to me as my thesis building does not employ a geothermal system and Michael Arnold mentioned in the opening session that the schools he is working on are tending to move towards LEED certification, geothermal systems, and energy modeling. Since some school systems are moving in that direction, I think that is an analysis that could prove interesting for my project.

At lunch I talked briefly with Mr. Arnold, and I feel that his experience in school construction could be helpful for my project. Since he is working on geothermal school projects, if I decide to pursue that topic for my analysis talking to him about the construction issues involved would be especially beneficial. At the Roundtable Meeting Mr. Arnold mentioned a class that his company was developing to help familiarize their employees with geotechnical

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work, since they were seeing more of it. Mr. Arnold emailed me after the meeting saying that the course should be complete by the end of November at which time I should email him. Although it would likely be too late by that point to incorporate any information from that course into Tech 3, it could prove to be valuable background research for my Final Proposal.

Another system that was mentioned in the afternoon "Energy and the Building Industry" session was a cylindrical solar panel. This was brought up by Ilie Javier, who mentioned that it was used by the solar decathlon team. The trade name of the specific system was Solyndra. I did not know anything about Solyndra prior to this session; but its website's claim that it "enables its customers to realize significant savings on installation costs" is very promising, as one of the chief challenges to adopting solar energy is the high upfront costs.

A reoccurring theme was the federal and state incentives for green energy as well as solar incentives, which help to defray the additional upfront costs. Dsire.org, which turned out to be http://www.dsireusa.org/ was mentioned near the end of the session as a good website for finding the applicable incentives for a particular state. If I decide to pursue adding an active solar system as one of my proposals, dsireusa.org could be helpful in accounting for the applicable incentives and Solyndra's system might prove to be more economical than traditional systems making it easier to recoup the upfront costs.

Financial analysis was also discussed in this session. While grant money and incentives were the focus of this subject, calculating lifecycle costs was also discussed. A representative from McClour informed us that schools, as institutional owners, tend to be interested in a 10-15 year look forward. This will be important to keep in mind for any financial analysis when deciding if it is likely to be adapted.

In addition to the breakout sessions there was a morning session highlighted by an industry panel and an afternoon session highlighted by a student panel. In the morning session the industry panel topic was the state of the construction industry. Representatives talked about how the economic downturn has affected their companies, as well as how it has changed what they are seeing in the industry

In the afternoon session, in addition to the student panel, summaries of the the other breakout sessions were presented. I was surprised to hear that owners are moving towards more bid work. The justification given was that owners perceive they can get a better price by bidding the jobs out. Since the downturn has caused more companies to look outside their traditional specialty areas, and into new types of construction, it would make more sense that owners would get a better price (because there are more bidders than in a good economy). However, I would be weary as an owner if the contractors on my job had little experience with similar buildings. The "Business and Networking" session talked about addressing this issue through joint venture projects, which allow a company to build its resume in a particular area.

The third breakout session was focused on "BIM Executive Planning." The summery of the session focused on how to get everyone on board, the owner's role in BIM, the legal issues in model transfer, and the value of BIM verses the project delivery method. I was not surprised to hear that design-build projects benefit most from building integration modeling, but wonder how much of that is due to the contractor getting involved (and using BIM) earlier in the project.

The student panel focused on "Communication Patterns of the Now Generation" which the industry representatives felt was a misnomer. The industry member's feedback focused on the strong use of email as opposed to traditional methods of communication, namely telephone calls. The main complaint the industry members had was that email was used for urgent items, when it does not facilitate an immediate response. Although everyone seemed to harmonize on the point that certain communication methods are more appropriate for certain tasks, little discussion was given to how to select the best method. Instead the student panel seemed to conclude that experience and clear communication of expectations by supervisors will best allow someone to decide; while the industry members in the audience seemed to feel that an overreliance on email was the primary fault.

I feel that the PACE Roundtable was a good opportunity, and the contacts I made will help me as I continue my thesis project. I particularly enjoyed the chance to hear what the industry members thought of my generation's communication patterns, and have to admit that I much prefer email to phone calls. Before the student panel discussion I did not consider any negatives to email, so that was enlightening.

Appendix A

Detailed Project Schedule

			Page 1					
4	Deadline	y Q	Project Summary		1	Progress		
¢	External Tasks	Ì	Milestone Summary			Task Split	Pershing Hill Elementary School Tech 2 Detailed Project Schedule	ech
	_		Mon 12/28/09	Wed 11/25/09	24 days		Area C Concrete Footings	39
0			Wed 5/19/10	Tue 4/27/10	17 days		1	1
	•		Wed 1/13/10	Wed 1/6/10	6 days		1	1
	P		Tue 1/5/10	Wed 12/30/09	5 days			
	ļ		Tue 12/29/09	Wed 12/9/09	15 days			35
		Ĵ	Thu 11/19/09	Tue 10/20/09	23 days		-	34
	9		Thu 1/28/10	Wed 1/20/10	7 days		Area A Slab Repair	33
	P		Tue 1/19/10	Wed 1/13/10	5 days		Area A Slabe Cure Period	32
	Ĵ		Tue 1/12/10	Thu 12/10/09	24 days		Area A Slab on Grage	31
	۴		Wed 12/9/09	Mon 11/9/09	23 days		Area A Concrete Footings	30
		ļ	Tue 11/3/09	Wed 9/23/09	30 days		Fabricate and Deliver Rebar	29
		ļ	Mon 9/21/09	Tue 8/4/09	35 days		Submittals and Review	28
			Wed 6/10/09 I	Wed 6/10/09	1 day?		Concrete Contractor	27
			Tue 9/15/09	Wed 8/5/09	30 days		Building Demolition	26
			Mon 7/20/09	Tue 7/7/09	10 days		Submittals	25
			Wed 6/10/09 I	Wed 6/10/09	1 day?		- 1	24
		•	Tue 8/4/09	Mon 7/20/09	12 days		Phase 2 Building Abatement	23
			Thu 7/30/09	Mon 7/6/09	19 days			
			Tue 6/23/09	Wed 6/10/09	10 days		Submittals	21
			Wed 6/10/09 I	Wed 6/10/09	1 day?			20
C			Thu 10/14/10	Fri 9/24/10	15 days			19
-			Thu 9/23/10	Tue 9/21/10	3 days		Seeding	\$
			Tue 9/14/10	Wed 9/8/10	5 days		Soft Play Areas	17
5			Tue 9/7/10	Thu 9/2/10	4 days		Install Asphalt Walks	16
Ç			Wed 9/1/10	Fri 8/6/10	19 days		Install Curb, Gutter, and Sidewalk	15
			Man 12/21/09	Tue 12/8/09	10 days		Install Temp Roads	44
	2	Ĩ	Mon 12/7/09	Tue 10/20/09	35 days	ities		13
		2	Man 10/19/09	Thu 10/15/09	3 days	ners	Set Control Hubs and Building Corners	12
		5	Wed 11/4/09	Thu 10/15/09	15 days	Pad	Settlement Period at North Side of Pad	1
		ļ	Wed 10/14/09	Thu 9/17/09	20 days			10
			Mon 9/21/09	Tue 9/8/09	10 days		Complete Site Grading	ø
		P	Mon 9/7/09	Tue 9/1/09	5 days		Strip Topsoi and Stockpile	œ
		P	Mon 8/31/09	Tue 8/25/09	5 days		Site Demolition	7
		P	Mon 8/24/09	Tue 8/11/09	10 days		Clearing and Grubbing	თ
		•	Wed 7/22/09	Thu 7/16/09	5 days		Construction Fencingq	cn
			Fri 7/31/09	Thu 7/16/09	12 days		Install Sediment Traps	4
		5	Wed 7/15/09	Mon 7/13/09	3 days		Stone Construction Entrances	ω
			Fri 9/4/09	Tue 7/7/09	44 days		Submittals	N
			Wed 6/10/09 I	Wed 6/10/09	1 day?		Sitework Contractor	-
Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb	Dec Jan Feb Mar /	un Jul Aug Sep Oct Nov	L					i

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	Deadline		Project Summary			Progress		
	External Milestone 🔶	<pre></pre>	Summary			Split	Pershing Hill Elementary School Tech 2 Detailed Project Schedule	Fech
P	External Tasks	\$	Milestone			Task		
			Thu 10/7/10	Thu 9/30/10	6 days		Area A Doors and Hardware	78
e			Wed 9/29/10	Tue 9/21/10	7 days		Area A VCT	
~			Mon 9/20/10	Fri 9/17/10	2 days		Area A Drop Ceiling Tiles	76
			Fri 8/20/10	Mon 8/16/10	5 days		Basketball Eackboards in Gym	
			Fri 8/13/10	Mon 8/2/10	10 days		Area A Paint Second Finish Coat	
6			Tue 7/20/10	Mon 7/12/10	7 days		Area A Ceiling Grid	
D			Thu 7/8/10	Fri 6/18/10	15 days	Coat	Area A Paint Prime and First Finish Coat	72
0			Mon 9/5/10	Tue 8/24/10	10 days		Aluminum Entrance Canopies	71
			Mon 4/26/10	Fri 4/16/10	7 days		Area A Architectural Louvers	70
			Mon 10/19/09	Mon 8/3/09	56 days		Submittals and Review	69
			Wed 6/10/09 I	Wed 6/10/09	1 day?		General Works Contractor	68
			Thu 7/29/10	Tue 7/27/10	3 days	ipports	Area C Second Floor CMU Wall Supports	67
5°			Thu 6/17/10	Tue 6/15/10	3 days	orts	Area C First Floor CMU Wall Supports	66
0			Mon 7/26/10	Fri 7/2/10	17 days		Area C Roof Joist and Metal Deck	65
			Tue 5/18/10	Thu 4/29/10	14 days		Area C Structural Steel	64
			Fri 5/14/10	Wed 5/12/10	3 days		Area B CMU Wall Supports	ഓ
			Tue 6/15/10	Mon 6/7/10	7 days		Area B Roof Joist and Metal Deck	62
			Tue 4/20/10	Tue 3/30/10	16 days		Area B Structural Steel	61
			Tue 3/16/10	Mon 2/1/10	32 days		Area A Roof Joists and Metal Deck	
			Wed 1/27/10	Thu 10/1/09	85 days		Fabricate and Deliver	59
			Thu 11/12/09	Mon 8/3/09	74 days		Submittals and Review	28
			Wed 6/10/09 I	Wed 6/10/09	1 day?		Steel Contractor	57
			Fri 8/7/09	Wed 7/22/09	13 days		Area C Interior CMU Walls-Foor 2	56
			Mon 6/23/10	Wed 6/9/10	14 days		Area C Interior CMU Walls-Foor 1	55
			Wed 7/22/09	Thu 7/2/09	15 days		Area C Exterior Brick Veneer	54
			Thu 5/27/10	Tue 3/30/10	43 days		Area C CMU Bearing Walls	ង
			Tue 5/25/10	Wed 5/5/10	15 days		Area B Interior CMU Walls	52
0			Fri 6/25/10	Mon 5/31/10	20 days		Area B Exterior Brick Veneer	Ω,
ļ			Tue 5/4/10	Mon 3/1/10	47 days		Area B CMU Bearing Walls	50
			Tue 6/1/10	Mon 4/12/10	37 days		Area A Interior CMU Walls	49
r.	,0		Fri 4/9/10	Wed 3/17/10	18 days		Area A Exterior Brick Veneer	48
	ļ		Fri 2/26/10	Thu 12/24/09	47 days		Area A CMU Bearing Walls	47
		•	Thu 12/3/09	Fri 11/13/09	15 days		Area A CMU at Concrete Footings	46
			Tue 9/29/09	Mon 8/3/09	42 days		Submittals and Review	45
			Wed 6/10/09 I	Wed 6/10/09	1 day?		Masonry Contractor	44
	1		Thu 6/24/10	Mon 5/31/10	19 days		Area C Pour Slab on Deck	43
	0		Fri 3/5/10	Thu 2/25/10	7 days		Area C Slab Repair	42
	P		Wed 2/24/10	Thu 2/18/10	5 days		Area C Slabe Cure Period	4
	•		Wed 2/17/10	Tue 2/9/10	7 days		Area C Slab on Grage	40
Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr Mav Jun Jul Aug Sep Oct Nov Dec Jan Feb	Dec Jan Feb Mar A	Jul Aug Sep Oct Nov		Start	Duration		lask Name	5

	Deadline 🕂 🕀		Project Summary		1	Progress		
	External Milestone 🗇		Summary			Split	Pershing Hill Elementary School Tech 2 Detailed Project Schedule	ech
	External Tasks	٠	Milestone		1	Task		1
-			Mon 8/23/10	Thu 8/12/10	8 days		7 Area C Roof Dry-In	117
0			Wed 7/21/10	Wed 7/14/10	6 days	loam	116 Area C Roof Dry-In above Media Room	16
			Mon 7/12/10	Wed 6/30/10	9 days		115 Area B Roof Dry-In	σ
0			Mon 2/7/11	Tue 1/18/11	15 days		114 Install Parapet Coping	14
			Fri 9/10/10	Fri 8/6/10	26 days		113 Fabricate Parapet Coping	ΰ
	5		Thu 4/15/10	Mon 4/12/10	4 days	ea)	112 Area A Roof Dry-In (Remaining Area)	12
	•	22111	Wed 3/10/10	Tue 3/2/10	7 days	ria	111 Area A Roof Dry-In at Gym/Cafeteria	1
		0	Wed 9/30/09	Tue 9/1/09	22 days		110 Submittals	10
			Wed 6/10/09 I	Wed 6/10/09	1 day?		109 Roofing Contractor	8
			Thu 1/20/11	Wed 1/12/11	7 days		108 Area C Doors and Hardware-FI 2	8
P			Tue 1/11/11	Mon 1/3/11	7 days		7 Area CVCT-FI 2	107
P			Fri 12/31/10	Wed 12/29/10	3 days		106 Area C Drop Ceiling Tiles-FI 2	ອ
9			Wed 11/10/10	Fri 11/5/10	4 days	11 22	105 Area C Paint Second Finish Coat-FI 2	ũ
Ĩ			Fri 10/29/10	Mon 10/25/10	5 days		104 Area C Ceiling Grid-Fi 2	4
			Fri 10/22/10	Tue 10/19/10	4 days	h Coat-FI 2	103 Area C Paint Prime and First Finish Coat-FI 2	ω
p			Mon 10/18/10	Fni 10/1/10	12 days		102 Area C Drywall-Floor 2	N
0			Wed 1/12/11	Fri 12/31/10	9 days		101 Area C Doors and Hardware-FI 1	Ξ
		1111	Wed 12/29/10	Fri 12/17/10	9 days		100 Area C VCT-FI 1	ō
F			Thu 12/16/10	Tue 12/14/10	3 days		Area C Drop Ceiling Tiles-FI 1	99
0		2012	Fri 10/15/10	Tue 10/12/10	4 days	11	Area C Paint Second Finish Coat-FI 1	
57			Tue 10/12/10	Wed 10/6/10	5 days		Area C Ceiling Grid-F 1	97
P			Tue 10/5/10	Tue 9/28/10	6 days	h Coat-FI 1	Area C Paint Prime and First Finish Coat-FI 1	96
ļ			Mon 9/27/10	Fri 9/10/10	12 days		Area C Drywall-Floor 1	95
			Thu 11/25/10	Thu 11/18/10	6 days		Area B Doors and Hardware-FI 2	94
P			Wed 11/17/10	Mon 11/8/10	8 days			8
4			Fri 11/5/10	Thu 11/4/10	2 days		Area B Drop Ceiling Tiles-FI 2	92
0			Wed 9/29/10	Thu 9/16/10	10 days		Elevator Installation	9
7			Fri 9/17/10	Thu 9/16/10	2 days	12	Area B Paint Second Finish Coat-FI 2	90
-			Tue 9/7/10	Fri 9/3/10	3 days			89
F			Thu 9/2/10	Mon 8/30/10	4 days	Coat-FI 2		8
9			Fri 8/27/10	Thu 8/12/10	12 days			87
			Wed 11/3/10	Wed 10/27/10	6 days		Area B Doors and Hardware-FI 1	86
P			Tue 10/25/10	Fri 10/15/10	3 days		Area B VCT-FI 1	8
p			Thu 10/14/10	Wed 10/13/10	2 days		Area B Drop Ceiling Tiles-FI 1	40
,			Thu 8/25/10	Wed 8/25/10	2 days	91	- 1	- 1
.			Wed 8/15/10	Thu 8/12/10	5 days			82
2			Wed 8/11/10	Fri 8/6/10	4 days	Coat-FI 1		- 1
9			Thu 8/5/10	Wed 7/21/10	12 days			80
	from the state of the state	And the fact the	Tue 8/24/10	Mon 8/16/10	7 days		Areas B & C Architectural Louvers	79
lin lil Aug Sen Oct Nov Dec Jan Eeb Mar Ang May Jun Jul Aug Sen Oct Nov Dec Jan Eeb	Dec Ian Feh Mar Anr Mav	III AIIN Sen Oct Nov	In	-				

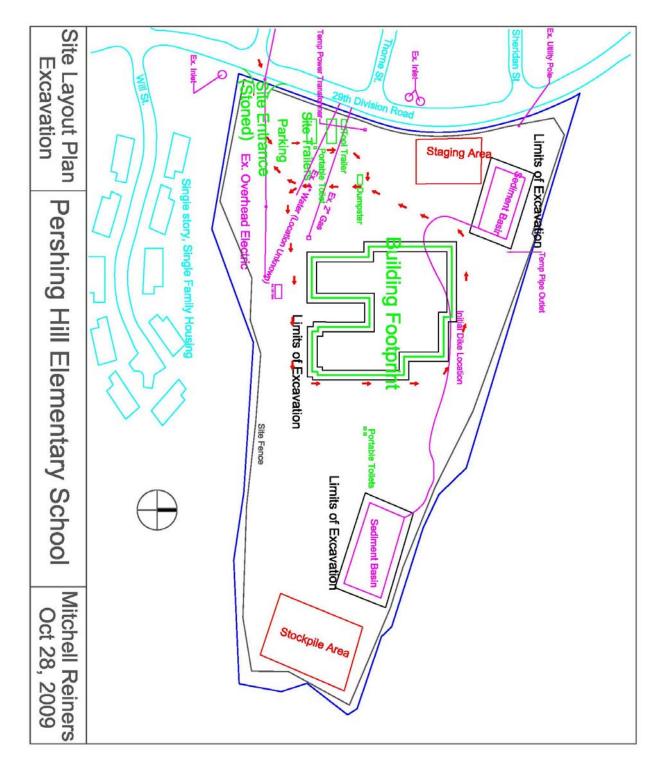
0 ⁴⁹	External Tasks External Milestone 🗇 Deadline 🕀		3					
	nal Milestone 🗇			Project Summary			Progress	
<u>مر • ا</u>	nal Tasks	Extern	ĺ	Summary			Split	Pershing Hill Elementary School Tech 2 Detailed Project Schedule
•		Extern	۵	Milestone			Task	
				Tue 2/23/10	Fri 1/8/10	33 days		156 Area C Coordinated Drawings-FI 2
				Mon 1/4/10	Thu 11/19/09	33 days		155 Area C Coordinated Drawings-FI 1
				Mon 1/4/10	Thu 11/19/09	33 days		154 Area B Coordinated Drawings-FI 2
•		Ļ	1	Wed 11/15/09	ROVG/OL UOM	33 days		153 Area B Coordinated Drawings-FI 1
				ED/T/UT UNI	MON 8/3/US	44 days		152 Area A Coordinated Urawings
				COLOCIE DAM		exen c+		
•]	T south part	Mon 8/3/00	43 dave		Pooffon Submittals and Deview
•					Wied 6/10/09	1 1407		150 Mechanical Contractor
				Wed 12/8/10	Wed 11/17/10	16 days		149 Area C Termination and Testing
<mark>مر ۵</mark>		_		Tue 11/16/10	Thu 11/11/10	4 days		148 Area C Wall Mounted Devices-Fi 2
			-	Thu 10/21/10	Wed 10/13/10	7 days		147 Area C Pull Data/ Voice Wiring-FI 2
• [_		Fri 10/29/10	Tue 10/26/10	4 days		146 Area C Wall Mounted Devices-Fi 1
C				Thu 9/30/10	Wed 9/22/10	7 days		145 Area C Pull Data/ Voice Wiring-FI 1
				Man 10/11/10	Fri 9/24/10	12 days		144 Area B Termination and Testing
P				Thu 9/23/10	Mon 9/20/10	4 days		143 Area B Wall Mounted Devices-FI 2
-				Wed 9/1/10	Tue 8/24/10	7 days		142 Area B Full Data/ Voice Wiring-FI 2
•				Wed 9/1/10	Fri 8/27/10	4 days		141 Area B Wall Mounted Devices-FI 1
				Tue 8/10/10	Mon 8/2/10	7 days		140 Area B Pull Data/ Voice Wiring-FI 1
-				Mon 8/30/10	Fri 8/20/10	7 days		139 Area A Termination and Testing
£				Thu 8/19/10	Mon 8/16/10	4 days		138 Area A Wall Mounted Devices
				Mon 6/23/10	Fri 6/18/10	7 days		137 Area A Pull Data/Voice Wiring
				Wed 6/10/09 I	Wed 6/10/09	1 day?		136 Technical Wiring
0				Wed 11/24/10	Thu 11/11/10	10 days		135 Area C Basework-FI 2
				Mon 11/8/10	Tue 10/26/10	10 days		
				Fri 10/1/10	Mon 9/20/10	10 days		133 Area B Basework-FI 2
				Thu 9/9/10	Fri 8/27/10	10 days		132 Area B Basework-FI 1
				Thu 8/19/10	Mon 8/16/10	4 days		131 Area A Casework
				Wed 6/10/09 I	Wed 6/10/09	1 day?		130 Casework Contractor
				Wed 10/27/10	Thu 10/21/10	5 days		129 Health Department Inspection
P				Wed 10/20/10	Thu 10/14/10	5 days		128 Install Kilchen Equipment
				Wed 9/15/10	Thu 9/9/10	5 days		127 Install MEP Hook-Ups
				Wed 7/7/10	Fri 6/25/10	9 days		126 Walk-In Installed
				Thu 10/22/09	Tue 9/1/09	38 days		125 Submittals and Review
				Wed 6/10/09 I	Wed 6/10/09	1 day?		124 Kitchen Equipment Contractor
D				Fri 8/13/10	Fri 7/30/10	11 days	1	123 Area C Exterior Window Installlation
				Tue 7/20/10	Thu 7/8/10	9 days		122 Area B Exterior Window Installation
				Fri 4/23/10	Fri 4/16/10	6 days		121 Area A Exterior Window Installation
	•••			Tue 1/26/10	Fri 10/23/09	68 days		120 Fab and Deliver Exterior Windows
				Thu 10/22/09	Tue 9/1/09	38 days		119 Submittals and Review
	_			Wed 6/10/09 I	Wed 6/10/09	1 day?		118 Windows Contractor
Aay Jun Jul Aug Sep Oct Nov Dec Jan Feb	Jan Feb Mar Apr M	Nov Dec Ja	Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Au	nnru Juu	URIC	Duration		Lask Name

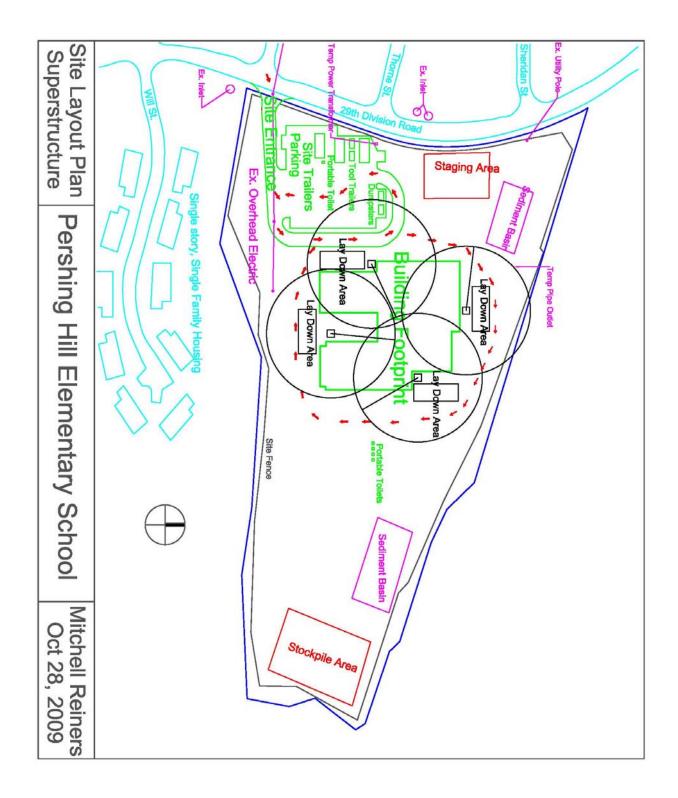
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		\$	Deadline	Į	Î	Project Summary			Progress	
		•	External Milestone 🗇	Į	ĺ	Summary			Split	Pershing Hill Elementary School Tech 2 Detailed Project Schedule
			External Tasks		\$	Milestone			Task	
		-				Fri 7/30/10	Wed 7/21/10	8 days		195 Area A Sprinkler Drops and Heads
						Tue 6/3/10	Tue 6/1/10	6 days		194 Area A Sprinkler Rough-In
		•				Tue 4/5/10	Wed 11/4/09	110 days		193 FS Coordinated Drawings
						Wed 6/10/09 I	Wed 6/10/09	1 day?		192 Fire Protection Contractor
						Mon 2/7/11	Wed 1/26/11	9 days		191 Area C Testing and Balancing-Fl 2
H						Wed 11/10/10	Wed 11/10/10	1 day		190 Area C Final Ceiling Inspection-FI 2
						Tue 10/5/10	Wed 9/29/10	5 days	ion-FI 2	189 Area C Mech and Plumbing Insulation-FI 2
P						Tue 9/28/10	Thu 9/9/10	14 days	-In FI 2	188 Area C Mech and Plumbing Rough-In FI 2
						Tue 9/14/10	Tue 8/24/10	16 days		187 Area C Ductwork-FI 2
0						Fri 1/28/11	Fri 1/14/11	11 days		186 Area C Testing and Balancing-FI 1
Ţ						Tue 10/25/10	Tue 10/26/10	1 day	-	185 Area C Final Ceiling Inspection-FI 1
6						Tue 9/14/10	Tue 9/7/10	6 days	ion-FI 1	184 Area C Mech and Plumbing Insulation-FI 1
	-					Mon 9/5/10	Tue 8/10/10	20 days	-In FI 1	183 Area C Mech and Plumbing Rough-In FI 1
	P					Mon 8/23/10	Tue 7/27/10	20 days		182 Area C Ductwork-FI 1
						Tue 1/25/10	Thu 1/7/10	14 days		181 Area C Underground Plumbing
0						Mon 12/13/10	Thu 12/2/10	8 days		180 Area B Testing and Balancing-FI 2
I						Tue 9/21/10	Tue 9/21/10	1 day		179 Area B Final Ceiling Inspection-FI 2
						Fri 8/13/10	Tue 8/10/10	4 days	ion-FI 2	178 Area B Mech and Plumbing Insulation-FI 2
<u>P</u>	.0					Mon 8/9/10	Thu 7/22/10	13 days	-In FI 2	177 Area B Mech and Plumbing Rough-In FI 2
	ņ					Wed 7/28/10	Fri 7/9/10	14 days		176 Area B Ductwork-FI 2
10						Wed 11/17/10	Mon 11/8/10	8 days		175 Area B Testing and Balancing-FI 1
						Fri 8/27/10	Fri 8/27/10	1 day	_	174 Area B Final Ceiling Inspection-FI 1
						Mon 7/12/10	Wed 7/7/10	4 days	ion-FI 1	173 Area B Mech and Plumbing Insulation-FI 1
	1					Tue 6/15/10	Tue 5/25/10	16 days	-In FI 1	172 Area B Mech and Plumbing Rough-In FI 1
	0	_				Fri 5/28/10	Tue 5/11/10	14 days		171 Area B Ductwork-FI 1
						Mon 12/7/09	Fri 11/20/09	12 days		170 Area B Underground Plumbing
						Man 10/25/10	Wed 10/13/10	9 days		169 Area A Testing and Balancing
	I					Fri 8/5/10	Fri 8/6/10	1 day		168 Area A Final Ceiling Inspection
						Tue 6/1/10	Wed 5/26/10	5 days	ulation	167 Area A OH Mech and Plumbing Insulation
	e					Mon 6/7/10	Tue 5/25/10	10 days		166 Boiler Inspection
-	J					Tue 5/25/10	Thu 4/29/10	19 days		165 Area A Rough-In
	Ų			*****		Fri 5/21/10	Mon 4/19/10	25 days		164 Boiler Room
		C				Fri 4/16/10	Tue 4/6/10	9 days	ria	163 Plumbing Insulation in Gym/Cafeteria
		P	•			Mon 4/5/10	Thu 3/25/10	8 days	ym/Cafeteria	162 Overhead Plumbing Rough-In at Gym/Cafeteria
			P			Wed 3/24/10	Thu 3/11/10	10 days		161 Area A Ductwork at Gym/Cafeteria
						Wed 12/23/09	Thu 12/10/09	10 days		160 Area A Underground Plumbing
		•	-			Fri 4/23/10	Mon 4/19/10	5 days		159 Set Gas Meter and Exterior Chiller
						Wed 12/16/09	Wed 11/25/09	16 days		158 Gas and Domestic Water Services
					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Tue 12/15/09	Thu 10/1/09	54 days		157 Fabricate and Deliver Equipment
2010 2011 Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb	May Jun Jul A	AD' N	2010 Jan Feb Mar	Sep Oct Nov D	Jul Aug	Finish	Start	Duration		ID Task Name

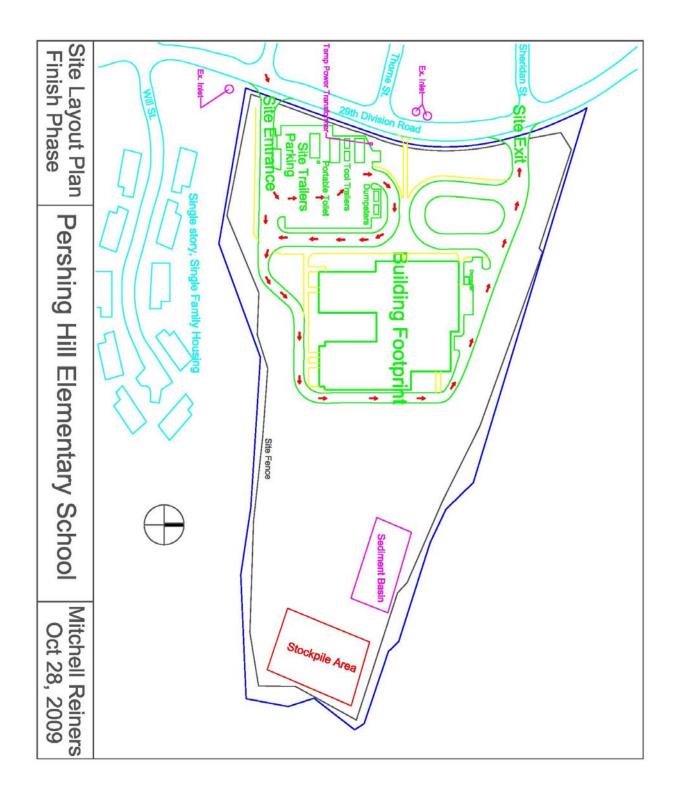
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ary C Deadline 💠	Project Summary			Progress	
	Summary			Split	Tech 2 Detailed Project Schedule
External Tasks	Milestone			Task	
	Thu 2/17/11	Thu 2/17/11	1 day		230 Obtain Use and Occupancy Permit
	Wed 2/16/11	Mon 2/7/11	8 days		229 Final Building Inspection
I	Wed 6/10/09 I	Wed 6/10/09	1 day?		228 Al Project Team Members
	Thu 11/4/10	Mon 11/1/10	4 days		227 Area C Drop Lights FI 2
	Fri 10/3/10	Fri 9/24/10	11 days	FI 2	226 Area C Pull Power/ Lighting Wiring FI 2
	Thu 9/23/10	Thu 9/9/10	11 days		225 Area C Electrical Rough-In FI-2
	Tue 10/19/10	Wed 10/13/10	5 days		224 Area C Drop Lights FI 1
	Thu 9/9/10	Mon 8/30/10	9 days	91	223 Area C Pull Power/ Lighting Wiring FI 1
	Fri 8/27/10	Tue 8/10/10	14 days		222 Area C Electrical Rough-In FI-1
	Thu 2/4/10	Tue 2/2/10	3 days		221 Area C Underslab Electrical
	Wed 9/15/10	Mon 9/13/10	3 days		220 Area B Drop Lights FI 2
	Wed 8/11/10	Wed 8/4/10	6 days	FI2	219 Area B Pull Power/ Lighting Wiring FI 2
P	Tue 8/3/10	Thu 7/22/10	9 days		218 Area B Electrical Rough-In FI-2
	Mon 8/30/10	Wed 8/25/10	4 days		217 Area B Drop Lights FI 1
	Mon 7/26/10	Mon 7/19/10	6 days	71	216 Area B Pull Power/ Lighting Wiring FI 1
	Wed 6/9/10	Tue 5/25/10	12 days		215 Area B Electrical Rough-In FI-1
	Wed 12/16/09	Mon 12/14/09	3 days		214 Area B Underslab Electrica
	Fri 7/30/10	Wed 7/21/10	8 days		213 Area A Drop Lights
	Tue 6/8/10	Fri 5/21/10	13 days		212 Area A Full Power/ Lighting Wiring
0	Thu 5/20/10	Thu 4/22/10	21 days		211 Area A Electrical Rough-In
	Fri 1/1/10	Wed 12/30/09	3 days		210 Area A Underslab Electrica
	Mon 12/7/09	Thu 12/3/09	3 days	Tic .	209 Underslab Electrical al Gym/Cafeteria
	Mon 11/9/09	Tue 10/20/09	15 days		208 Site Temporary Lighting and Power
	Tue 12/29/09	Wed 9/30/09	65 days		207 Fab and Deliver Equipment
	Tue 3/16/10	Mon 10/5/09	117 days	The second s	206 Coordinated Drawings
0	Tue 9/29/09	Mon 8/3/09	42 days		205 Submittals and Review
I	Wed 6/10/09 I	Wed 6/10/09	1 day?		204 Electrical Contractor
	Thu 11/4/10	Mon 11/1/10	4 days	FF-2	203 Area C Sprinkler Drops and Heads FI-2
	Thu 9/23/10	Thu 9/16/10	6 days		202 Area C Sprinkler Rough-In FI-2
	Man 10/18/10	Wed 10/13/10	4 days	7	201 Area C Sprinkler Drops and Heads FI-1
	Wed 9/1/10	Tue 8/24/10	7 days		200 Area C Sprinkler Rough-In FI-1
	Thu 9/16/10	Mon 9/13/10	4 days	F-2	199 Area B Sprinkler Drops and Heads FI-2
	Thu 8/5/10	Thu 7/29/10	6 days		198 Area B Sprinkler Rough-In FI-2
524	Tue 8/24/10	Thu 8/19/10	4 days	프	197 Area B Sprinkler Drops and Heads FI-1
	Tue 6/8/10	Tue 6/1/10	6 days		196 Area B Sprinkler Rough-In FI-1
2010 2011 Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb	Finish	Start	Duration		ID Task Name

Appendix B

Scale Site Plans







Appendix C

RS Means 2009 Data for Structural System Estimate

01	54 09 - Protection Equipment	dia dia 4		200	and the second of			R.C.		S. Carlos
		SALING COLORING	Daily	Labor-			2009 Bo	ire Costs		Total
01 5	4 09.60 Safety Nets	Crew	Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
0100	Polypropylene, 6" mesh	15 160			S.F.	1.59			1.59	1.75
0200	Small mesh debris nets, 1/4" & 3/4" mesh, stock sizes					.74		dar te st	.74	.81
0220	Combined 4" mesh and 1/4" mesh, stock sizes					2.05			2.05	2.26
0300	Monthly rental, 4" mesh, stock sizes, 1st month					.50			.50	.55
0320	2nd month rental					.25			.25	.28
0340	Maximum rental/year				4	1.15			1.15	1.27
01	54 16 - Temporary Hoists							Senter 1.1		1917 - 1982
_	4 16.50 Weekly Forklift Crew									-
0010	WEEKLY FORKLIFT CREW			See. It	Ne de					
0100	All-terrain forklift, 45' lift, 35' reach, 9000 lb: capacity	A-3P	.20	40	Month		1,550	2,225	3,775	4,800
	54 19 – Temporary Cranes					Shellas.				61.001
	4 19.50 Daily Crane Crews	S. P.Levis	Places and	Tar Turk	1051/21		ette oppassio	Red grander		ENCOLUMENT
0100	DAILY CRANE CREWS for small jobs, portal to portal	1.011	,	0	De		940	1.005	19/5	1/05
0100	12-ton truck-mounted hydraulic crane	A-3H	1	8	Day	al and a set	340	1,025	1,365	1,625
0200	25-ton 40-ton	A-31	1	8			340 340	1,050	1,390	1,650
0300	40-100 55-ton	A-3J A-3K	1	14	2. 7.	Solution and the	540 635	1,050 1,625	1,390 2,260	1,675 2,750
)400	80-ton	A-3K	1	16			635	1,850	2,280	2,750
)600	100-ton	A-SL A-3M	1	16			635	2,525	3,160	3,750
	4 19.60 Monthly Tower Crane Crew	Aom	1	10	4	1	003	2,323	0,100	0,150
0010	MONTHLY TOWER CRANE CREW, Excludes concrete footing	-								a starteger
0100	Static tower crane, 130' high, 106' jib, 6200 lb. capaccity	A-3N	.05	176	Month		7,500	22,500	30,000	36,000
01	54 23 - Temporary Scaffolding and Platfor	ms	The state			The states		1711 2 1		
Contraction of the local division of the loc	4 23.60 Pump Staging		roand be rear	Secolary 11 175	Contraction of			2		0 () () () () () () () () () () () () ()
010	PUMP STAGING, Aluminum R015423-	20	-	1954	The state	Same and	and the second second	Section 1		the state
0200	24' long pole section, buy			S. S.	Eo.	415			415	460
0300	18' long pole section, buy					325			325	355
0400	12' long pole section, buy		ALC: NOT			218	ene ava	におんと	218	240
1500	6' long pole section, buy		1			115	Chevral of Date		115	126
0600	6' long splice joint section, buy					85.50			85.50	94
0700	Pump jack, buy					139			139	153
900	Foldable brace, buy					56.50			56.50	62.50
000	Workbench/back safety rail support, buy	SET	194%	記述	12 22	73.50			73.50	81
100	Scaffolding planks/workbench, 14" wide x 24' long, buy	6.			13.	680		Cardian and	680	750
200	Plank end safety rail, buy	1				370			370	405
250	Safety net, 22' long, buy	101 NO1	1		-	335	in the set		335	365
300	System in place, 50' working height, per use based on 50 uses	2 Carp	84.80	.189	C.S.F.	6.40	7.55		13.95	18.75
400	100 uses		84.80			3.21	7.55		10.76	15.25
500	150 uses		84.80	.189	+	2.15	7.55		9.70	14.05
	4 23.70 Scaffolding		1					Manager Int		
010	Nor5 ILC	10	111111		Carl Ch	The state of the				
0015	Steel tube, regular, no plank, labor only to erect & dismantle	N.	12.03		1		19 mars			
090	Building exterior, wall face, 1 to 5 stories, 6'-4" x 5' frames	3 Carp	and the second	3	C.S.F.		120		120	186
200	6 to 12 stories	4 Corp		4	13 04		160		160	248
301	13 to 20 stories	5 Clab		5			158		158	245
460	Building interior, wall face area, up to 16' high	3 Carp		2			80		80	124
560	16' to 40' high		10	2.400	*		96		96	149
800	Building interior floor area, up to 30' high	+	150	.160	C.C.F.	Owner and the	6.40	TRATIL PLANT	6.40	9.90
	Over 30' high	4 Carp	160	.200		Penel Dial	8		8	12.40
900	Complete system for face of walls, no plank; material only rent/mo				C.S.F.	35.50	THE R. LAND CO.		35.50	39

	-2007	11 Concrete Forming	crete Fo	rmir	19		A CONTRACTOR OF				
F	-1200-110			Crew	Daily	Labor- Hours	Unit	Material	2009 Bare Costs Labor Equipme	ent Total	Total Incl 0&P
		13.35 Forms In Place, Elevated Slabs 20' to 35' high ceilings, 4 use		(-2	435	.110	S.F.	5.95	4.29	10.24	13.20
- 22	2350	Floor slab hung from steel beams, 1 use		1.	485	.099	11	3.58	3.85	7.43	9.90
-72	3000	2 use			535	.090		3.09	3.49	6.58	8.80
	3050	2 use			550	.087		2.92	3.39	6.31	8.45
-2	3100	3 use 4 use		1	565	.085		2.84	3.30	6.14	8.20
-16	3150	Floor slab, with 1-way joist pans, 1 use			415	.116		6.50	4.50	11	14.15
-	3500	2 use	Traine and		445	.108		4.33	4.20	8.53	11.25
큟	3550	3 use	1-12-12-11		475	.101		3.61	3.93	7.54	10.10
	3600	4 use	Statements of the	Dollo The	500	.096		3.26	3.73	6.99	9.4
	3650	With 2-way joist domes, 1 use			405	.119		6.25	4.61	10.86	14
3	4500	2 use			450	.107		4.09	4.15	8.24	10.9
	4520	3 use			460	.104		3.38	4.06	7.44	10
	4530	4 use	CARLES IN	80 FR	470	.102		3.02	3.97	6.99	9.4
1	4550	Box out for slab openings, over 16" deep, 1 use			190	.253	SFCA	5	9.80	14.80	21
	5000	2 use			240	.200	"	2.75	7.80	10.55	15.1
I	5050	Shallow slob box outs, to 10 S.F.		a subscreen	42	1.143	Ea.	9.50	44.50	54	79.5
ł	5500	Over 10 S.F. (use perimeter)		-	600	.080	LF.	1.27	3.11	4.38	6.2
l	5550 6000	Bulkhead forms for slab, with keyway, 1 use, 2 piece			500	.096		2.30	3.73	6.03	8.3
	6100	3 piece (see also edge forms)		4	460	.104		2.36	4.06	6.42	8.9
A CAN LONG	6200	Slab bulkhead form, 4-1/2" high, exp metal, w/ keyway & stakes	G	GI	1200	.027		2.78	1.01	3.79	4.6
1	6210	5-1/2" high	G	the state	1100	.029	(Abb	3.23	1.10	4.33	5.2
1	6215	7-1/2" high	G		960	.033		4.26	1.26	5.52	6.6
	6220	9-1/2" high	G	PL	840	.038	+	4.84	1.44	6.28	7.5
	6500	Curb forms, wood, 6" to 12" high, on elevated slabs, 1 use		12/8	180	.178	SFCA	1.27	6.75	8.02	11.8
ľ	6550	2 use		TT	205	.156		.70	5.90	6.60	9.9
	6600	3 use			220	.145		.51	5.50	6.01	9.1
	6650	4 use			225	.142	+	.41	5.40	5.81	8.8
	7000	Edge forms to 6" high, on elevated slab, 4 use			500	.064	L.E.	.17	2.42	2.59	3.9
	7500	Depressed area forms to 12" high, 4 use			300	.107		1.12	4.04	5.16	
	7550	12" to 24" high, 4 use		1-1-	175	.183		1.52	6.90	8.42	
	8000	Perimeter deck and rail for elevated slabs, straight			90	.356		13.70	13.45	27.15	And a state of the
	8050	Curved			65	.492		18.75	18.65	37.40	
	8500	Void forms, round fiber, 3" diameter-	G		450	.071		.97	2.69	3.66	1
	8550	4" diameter	G		425	.075		1.44	2.85	4.29	14
	8600	6" diameter -	G		400	.080		2.25	3.03	5.28	
	8650	8" diameter	G		375	.085		3.85	3.23	7.08	and the second second second
	8700	10" diameter	G	111	350	.091	0.8	2.40	3.46	5.86	and the second second
	8750	12" diameter	G	1 +	300	.107	-	3.05	4.04	7.09	9.
	03 1	1 13.40 Forms In Place, Equipment Foundation	15				1	-		trace land	CHRANCE S
	0010	FORMS IN PLACE, EQUIPMENT FOUNDATIONS	R031113-40	And the	-				and the second second		-
	0020	1 use		C-2				and the second sec	11.65	15.25	
	0050	2 use	R031113-60		190			1.98	9.80	11.78	
	0100	3 use			200		1	1.44	9.35	10.79	the ball of the second second
	0150	4 use		+	205	.234	7	1.17	9.10	10.27	15.
	03 1	1 13.45 Forms In Place, Footings	and the second		_						-
	0010	FORMS IN PLACE, FOOTINGS	R031113-40)				the set			PER .
	0020	- Continuous wall, plywood, 1 use	December 1 and 10	GI	375	.085	SFCA		3.23	10.68	
	0050	2 use	R031113-60) [440	.073		4.10		6.85	
	0100	3 use			470	.068	10	2.98		5.50	
	0150	4 use			485	.066	1 7	2.42		4.93	
	0500	Dowel supports for footings or beams, 1 use			500	.064	L.F.	.65	2.42	3.0	
	1000	Integral starter wall, to 4" high, 1 use			400	.080		.78	3.03	3.8	1 5

-	11 Concrete Forming	crete For	min	g						and in
340		1		Daily	Labor-			2009 Bare Costs	Total	Total Incl O8
03 1	13.65 Forms in Place, Slab On Grade	WARD PROPERTY OF DRAW		Output	.149	Unit SFCA	Material 2.83	Labor Equipment 5.65	8.48	11
- 2000	Curb forms, wood, 6" to 12" high, on graue, 1 use		C-1	215 250	.147	AUTC	1.57	4.85	6.42	9
2050	2 use			265	.120		1.13	4.57	5.70	8
2100	3 use			205	.116	22	.92	4.41	5.33	ALCO I
2150	4 use			600	.053	L.F.	.38	2.02	2.40	3
_ 3000	Edge forms, wood, 4 use, on grade, to 6" high			435	.074	SFCA	.74	2.79	3.53	4
-3050	7" to 12" high			300	.107	L.F.	.56	4.04	4.60	
3500	For depressed slabs, 4 use, to 12" high			175	.183		.76	6.90	7.66	1
3550	To 24" high	All and a second of	Se an	200	.160	125 856	.63	6.05	6.68	10
4000	For slab blockouts, to 12" high, 1 use To 24" high, 1 use			120	.267		.80	10.10	10.90	1
4050	Plastic (extruded), to 6" high, multiple use, on grade		1	800	.040	-	5.50	1.51	7.01	
4100	Plastic (extruded), to 6 migh, multiple use, on grude		Y	000	.010					
5000	Screed, 24 ga. metal key joint, see Div. 03 15 05.25		(-1	900	.036	L.F.	.68	1.35	2.03	
5020	Wood, incl. wood stakes, 1" x 3" 2" x 4"		1	900	.036	"	.63	1.35	1.98	
5050	Trench forms in floor, wood, 1 use			160	.200	SFCA	1.48	7.55	9.03	1
6000				175	.183		.81	6.90	7.71	1
6050	and the second	HCC64.	8 6 26	180	.178		.59	6.75	7.34	1
6100		And Standard		185	.173	-	.48	6.55	7.03	1
6150	101 1 1 (m 100 101)	G	-	240	.133		.84	5.05	5.89	1.1.1
8760	1 13.85 Forms in Place, Walls									
		R031113-10	and a	1	1	4.5%	Real Providence			
0010		KUJIIIJIU	(-2	24	2	Eo.	21.50	78	99.50	14
0100	Contract of the second state of the second	R031113-40	"	280	.171	L.F.	1.78	6.65	8.43	
015	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	NUOTITU HU								
025		R031113-60	(-2	240	.200	SFCA	1.87	7.80	9.67	
. 030		ROUTTIOOO		275	.175		1.03	6.80	7.83	
035				300	.160	4	.75	6.20	6.95	
050			4	265	.181	L.F.	1.68	7.05	8.73	
060	the second se	G	(-1	1000	.032		4.26	1.21	5.47	
061		G		800	.040)	4.84	1.51	6.35	
062		G	+	525	.061	1. S.	5.80	2.31	8.11	
070	D Buttress, to 8' high, 1 use		(-2	350	.137	-	Land and the state	5.35	12.40	101-01-01
075	D 2 use			430	.112		3.89	4.34	8.23	
080	0 3 use			460			2.83	4.06	6.89	
085				480		C	2.33	3.89	14.40	1
100	0 Corbel or haunch, to 12" wide, add to wall forms, 1 use	and the second se		150		- in the second second	1.95	12.45	14.40	
105				170		28.1.1.1.1.2.2	1.07	11	12.07	
11(175	54 (A. 1990)	12012201	.78	10.65	11.43	140.000
115				180		10 C	.63	10.35 5.05	7.67	Sector 1
200				370				4.29	5.90	and the second second
20				435			1.61	3.77	4.94	1
21				495			.95	3.70	4.65	-1
21			11	505			9.40	6.65	16.05	- 1
24			1	280			1.34		6.74	And the second second
24				34			.96		5.94	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
25			4	375			.70		5.51	Sec. and
25	1 000			23			2.71		10.66	
27			4	23			1.49		7.94	
27	2 030			31			1.08		7.03	
28	0.050			33			.88		6.5	
28	1 630			182			2.72		3.7	
30	00 For architectural finish, add			/ 182	.00.	0 7	2.12	1.00		

05 :	30 Cast-In-Place Concrete	revete							Sec. Sec.		
03 30	53 - Miscellaneous Cast-In-Place Cor	in the second	Dail	ly Lab			Aaterial	2009 Bare C Labor Ea	osts uipment	Total	Total Incl O&P
03 30 5	3.40 Concrete in Place	Crew C-14A	Outp	out Ho 82 11.	urs Unit 223 C.Y.	_	910	450	43	1,403	1,750
1040	Maximum reinforcing	GI4A		97 9.		1	350	380	36.50	766.50	1,025
1100	Columns, round, tied, 12" diameter, minimum reinforcing			27 13.		and the second	670	525	50	1,245	1,625
1120	Average reinforcing		1.00	11 16.			1,100	660	63	1,823	2,300
1140	Maximum reinforcing			49 6.			315	255	24.50	594.50	765
1200	16" diameter, minimum reinforcing		1.000	12 10			635	420	40	1,095	1,400
1220	Average reinforcing	a training the second		77 14		1.50	1,025	580	55.50	1,660.50	2,100
1240	Maximum reinforcing			.04 4.			315	195	18.60	528.60	670
1300	20" diameter, minimum reinforcing		and the second	.05 8.	A VICTOR DUNING		610	335	32	977	1,225
1320	Average reinforcing			.01 11			1,025	470	45	1,540	1,900
1340	Maximum reinforcing			.85 3		CALC P.C.	294	155	14.75	463.75	580
1400	24" diameter, minimum reinforcing			.05 3			620	296	28	944	1,175
1420	Average reinforcing			3.29 10			1,000	440	42	1,482	1,825
1440	Maximum reinforcing		1000	5.04 2			310	107	10.20	427.20	520
1500	36" diameter, minimum reinforcing	THE REAL PROPERTY OF		7.49 5		13	595	214	20.50	829.50	1,025
1520	Average reinforcing			2.84 8			990	350	33.50	1,373.50	1,675
1540	Maximum reinforcing	▼ (-14		B.45 5			299	216	19.85	534.85	685
1900	Elevated slabs, flat slab with drops, 125 psf Sup. Load, 20' span			0.99 4		100	340	163	14.95	517.95	645
1950	30' span	State of the second		0.24	The loss of the loss of the loss of	and C	278	275	25	578	765
2100	Flat plate, 125 psf Sup. Load, 15' span			9.60			300	168	15.40	483.40	610
2150	25' span			7.07	3212221		267	225	20.50	512.50	665
2300	Waffle canst., 30" domes, 125 psf Sup. Load, 20' span			4.07			255	189	17.30	461.30	595
2350	30' span One way joists, 30'' pans, 125 psf Sup. Load, 15' span	127.10	2	7.38	7.597		297	305	28	630	830
2500		14 14	3	31.15	6.677	1	294	267	24.50	585.50	765
2550	25' span One way beam & slab, 125 psf Sup. Load, 15' span				10.102		305	405	37	747	1,000
2700			2	28.36	7.334		297	294	27	618	810
2750	25' span Two way beam & slab, 125 psf Sup. Load, 15' span	Concer 1	1	24.04	8.652		296	345	32	673	900
2900			4 3	35.87	5.799	7	256	232	21.50	509.50	665
2950	25' span Elevated slabs including finish, not										1
3100	including forms or reinforcing								000000000	2.39	2.9
3110	Regular concrete, 4" slab	(-8	2613		S.F.	1.36	.75	.28	\$1.7 M	ALL ALL
3150	6" slab	Lunda Carlos	10.11	2585	.022	1	2.01	.76	.29		
3250	2-1/2" thick floor fill			2685	.021		.87	.73	.29	A State of States	100 Carlos (1997)
3300	Lightweight, 110# per C.F., 2-1/2" thick floor fill			2585	.022	959	1.17	.76	.27	And the late of the local day	10 million 10 million
3400	Cellular concrete, 1-5/8" fill, under 5000 S.F.			2000	.028		.78	.99		N 832	SI - 535
3400	Over 10,000 S.F.			2200	.025		./5	.90	.02		
3500	Add per floor for 3 to 6 stories high			31800	1.000			.08		1	S 1 1
3520	For 7 to 20 stories high	STATISTICS CONTRACT	*	21200	A set of the set of th	₩ Ea.	58	42	.50		-
- 3540	Equipment pad, 3' x 3' x 6" thick	G	14H	45	1.067 1.600	1	84	63	.8		Statistics of the
3550	4' x 4' x 6" thick			30	2.667	E C	140	105	1.4	Sandress	4 320
3560				18 14	3.429	and the	188	135	1.8		
3570		E States	The .	8	6	-	395	236	3.2		
3580	8' x 8' x 10" thick		1	5	°		655	380	5.2		20 1,300
3590	$10' \times 10' \times 12''$ thick		*		4	¢Y.		153	.9		
3800	1 1 1 1 1 1	1	C-14C	43	2.605	C.L.	221	99.5		321.	10 400
3825			1	43	1.493		198	57	*** () () () () () () () () ()	255.	
3850	Over 5 C.Y.		C-14L		2.400		120	89.5		210.	
3900	Footings, strip, 18" x 9", unreinforced		C-14C				157	122		74 279.	
3920	18" x 9", reinforced		C-14L				117	79.5	0	58 197	
3925	5 20" x 10", unreinforced		(-140				147	107		64 254	
3930) 20" x 10", reinforced		(-14)				116	65		47 181	
393	5 24" x 12", unreinforced		(-14)				147	89.5	50	54 237	.04 30

03 30 5 3945				Daily	Labor-			2009 Ba	re cosis		Total
	a An Concrete in Place	G		Output		Unit	Material	Labor	Equipment	Total	Incl O&P
3942 1	33.40 Concrete In Place	(·	-14L	70	1.371	C.Y.	113	51	.37	164.37	203
3950	36" x 12", reinforced	C	14C	60	1.867		141	71.50	.43	212.93	266
4000	Foundation mat, under 10 C.Y.		in starter of	38.67	to sol divertime		255	111	.67	366.67	455
4000	Over 20 C.Y.	No. Contraction	Warner	56.40	1 - C - C - C - C - C - C - C - C - C -	(en t	218	76	.46	294.46	360
4200	Wall, free-standing, 8" thick, 8' high	C-	205.214	45.83	12.000		195	173	16.65	384.65	500
4250	14' high		1	27.26	0.0000000		251	291	28	570	760 400
4260	12" thick, 8' high			64.32	1.223		175	124	11.90	310.90	400 540
4270	14' high			40.01	100000		191	199	19.10 9.55	409.10 275.05	345
4300	15" thick, 8' high	COLUMN A STATE		80.02	174 S. S. S.	a lai	166	99.50	14.90	335.90	440
4350	12' high			51.26	and the second s		166	155	14.70	369.65	480
4500	18' high			48.85		*	191	163	A STRATE AND A STRATE	431.78	535
4520	Handicap access ramp, tailing both sides, 3' wide	G	-14H	14.58		LF.	300	130	1.78	431.70	580
4525	5' wide	97979	Sal		3.928		310	155	2.12	534.03	690
4530	With 6" curb and rails both sides, 3' wide			8.55	5.614		310	221	3.03	577.55	750
4535	5' wide	-	*	7.31	6.566	*	315	259 57	3.55	184.43	230
4650	Slab on grade, not including finish, 4" thick	0	-14E	60.75	1.449	С.Ү.	12/	37.50	.43	158.79	193
4700	6" thick	STREET, STREET	1.000	92	.957	00000	121	07.50	.27	130.77	175
4751	Slab on grade, incl. troweled finish, not incl. forms		140	2105	.021	S.F.	1.35	.76	.01	2.12	2.
4760	or reinforcing, over 10,000 S.F., 4" thick	·	-14F	3425 3350	.021	5.F.	1.35	.78	.01	2.76	3
4820	6" thick			3184	.021		2.70	.82	.01	3.53	4
4840	8" thick	PLANE COL	200		.025	EPPS	4.04	.96	.01	5.01	5
4900	12" thick			2734	.028		5.10	1.04	.01	6.15	7
4950	15" thick	1	4	2505	.029	4	5.10	1.04	.01	0.15	
5000	Sleb on grade, incl. textured finish, not incl. forms			0070	.019	S.F.	1.31	.70	.01	2.02	2
5001	or reinforcing, 4" thick	CONCUPACION OF	C-146	2873 2590	.022	э. г .	2.05	.70	.01	2.83	3
5010	6" thick	Sec. 1		2320	.022		2.68	.86	.01	3.55	4
5020	8" thick		The second	2320	.024	4	2.00	.00		0.00	Note:
5200	Lift slab in place above the foundation, incl. forms,		(-148	2113	.098	S.E.	7.45	3.94	.36	11.75	14
5210	reinforcing, concrete and columns, minimum	Selection of the	CT4D	1650	.126	5.1.	8,15	5.05		13.66	17
5250	Average		1	1500	.139	1	8.85	5.55		14.91	18
5300	Maximum Liebenside work min industries arread finite only		A	1300	.107		0.05	5155			
5500	Lightweight, ready mix, including screed finish only,										
5510 5550	not including forms or reinforcing 1:4 for structural roof decks*		C-14B	260	.800	C.Y.	138	32	2.94	172.94	205
1		Contraction of the second	C-14F	92	.783		143	28.50		171.78	COLUMN TO A
5600 5650	1:6 for ground slab with radiant heat	Phillippine (Child	C-14B		.800	P.L.	132	32	2.94	166.94	1211-722-85
5700	1:3:2 with sand aggregate, roof deck Ground slab	となる可能につい	C-14F		.673		132	24.50		1 156.74	10020600
5900	Pile caps, incl. forms and reinf., sq. or rect., under 5 C.Y	Concerning and the second second	6-140	- Troopener	0.22384		172	79	.48	251.48	315
5950	Over 10 C.Y.	1	1	75	1.493	1 1 1	167	57	.34	224.34	273
6000	Triangular or hexagonal, under 5 C.Y.			53	2.113		127	81	.49	208.49	267
6050	Over 10 C.Y.		-	85	1.318		152	50.50	.30	202.80	24
6200	Retaining walls, gravity, 4' high see Div. 32 32 13.10	1232303	C-14D	66.20	3.021		153	120	11.55	284.55	1000
6250	10' high		F	125			146	63.50		215.60	
6300	Cantilever, level backfill loading, 8' high	Sale -		70	2.857		175	113	10.90	298.90	-
6350	16' high	125	-	91	2.198	3 -	166	87.50	8.40	261.90	
6800	Stairs, not including safety treads, free standing, 3'-6" wide		C-14H	83	.578	LF Nose	6.20	23	.31	29.51	
6850	Cast on ground			125	.384	"	5	15.10		20.31	
7000	Stair landings, free standing			200	.240	S.F.	5.25	9.4		14.83	
7050	Cast on ground		7	475	.101	"	4	3.91	B .05	8.03	3 1
	san ai Baain										

	35 Concrete Finishing 5 29 – Tooled Concrete Finishing										
		Crew	Daily	Labo t Hour		nit	Naterial	2009 Bar Labor	re Costs Equipment	Total	Total Incl O&
03 35	29.30 Finishing Floors FINISHING FLOORS	CIEW	ouipu							Store and	
0020	Manual screed finish	C-10	4800	.00	5 S	i.F.		.18	Constant 1	.18	
0100	Manual screed and bull float		4000	.00	6			.22	(ALAS	.22	
0125	Manual screed, bull float, manual float	at in	2000	.01	2			.43		.43	
0150	Manual screed, bull float, manual float & broom finish	Contraction and Contract	1850	.01	3			.47		.47	
0200	Manual screed, bull float, manual float, manual steel trowel		1265	.01	9			.68		.68	۱
0250	Manual screed, bull float, machine float & trowel (walk-behind)	C-10C	1715	.01	4			.50	.02	.52	
0300	Power screed, bull float, machine float & trowel (walk-behind)	C-10D	2400	.01	0			.36	.05	.41	Concession of
0350	Power screed, bull float, machine float & trowel (ride-on)	C-10E	4000			al the		.22	.06	.28	1000
0400	Integral topping and finish, using 1:1:2 mix, 3/16" thick	C-10B	1000	.04	0		.10	1.37	.24	1.71	
0450	1/2" thick		950	.04	2		.26	1.44	.25	1.95	and the
0500	3/4" thick		850	.04	17		.39	1.61	.28	2.28	
0600	1" thick	and the second	750	.05	3		.52	1.83	.32	2.67	
0800	Granolithic topping, laid after, 1:1:1-1/2 mix, 1/2" thick		590	.06	58		.29	2.32	.41	3.02	
0820	3/4" thick		580	.06	59		.43	2.36	.41	3.20	
0850	1" thick		575	.07	70		.57	2.38	.42	3.37	
0950	2" thick		500	.08	30		1.15	2.74	.48	4.37	
1200	Heavy duty, 1:1:2, 3/4" thick, preshrunk, gray, 20 MSF		320	.13	25		.73	4.29	.75	5.77	
1300	100 MSF		380	.10	05		.39	3.61	.63	4.63	H.
1600	Exposed local aggregate finish, minimum	1 Cef	62	.0	13		.22	.49		.71	
1650	Moximum		46	5 .0	17	i	.66	.66		1.32	
1800	Floor abrasives, .25 psf, aluminum oxide		850		09		.44	.36		.80	
1850	Silicon carbide		85		09		.61	.36		.97	1
	Floor hardeners, metallic, light service, .50 psf, add		85		09		.51	.36		.87	
2000	Medium service, .75 psf	NERSE STREET	75		11	12	.76	.41		1.17	
2050	Heavy service, 1.0 psf		65		12		1.01	.47		1.48	H ()
2100	Extra heavy, 1.5 psf		57		14		1.52	.53		2.05	
2150	Non-metallic, light service, .50 psf		85		109		.23	.36		.59	
2300		12.22-03.00 A	75		11	in preserve	.34	.41	-	.75	1
2350	Medium service, .75 psf		65		012		.45	.47		.92	
2400	Heavy service, 1.00 psf		57		014	4	.68	.53		1.21	
2450	Extra heavy, 1.50 psf	4		5		4					1
2800	Trap rock wearing surface for monolithic floors	C-10	B 12	50 0)32	S.F.	.03	1.10	.19	1.32	2
2810	2.0 psf	1 Ce		10000	006		.43	.24		.67	1
3000	Floor coloring, dusted on, minimum (0.6 psf), add to above	1.05	62	Sector 1	013	+	.71	.49	Contraction of the second	1.20	(215 B)SC
3050	Maximum (1.0 psf), add to above	THE REAL PROPERTY.	02			Lb.	.71	and the second	A CONTRACTOR	.7	The state of the state of the
3100	Colored powder only	C-10	B 59	20 0	068	S.F.	4.86	2.3	2 .41	7.5	States and
3600	1/2" topping using 0.6 psf powdered color	"	59		068	1	5.15	2.3		7.8	
3650	1/2" topping using 1.0 psf powdered color	1 Ce			004		.17	.10		.3	
3800	Dustproofing, solvent-based, 1 coat				006		.61	.2		.8	- 1
3850	2 coats	ANALIZATARA			005	SE HA	.15	A REAL PROPERTY AND ADDRESS		.3	
4000	Epoxy-bosed, 1 coot		000		005		.15			.4	1111111111
4050	2 coats				029			1.1	Contraction of the second	1.1	C. Barris
4400	Stair finish, float	That has been			040			1.5		1.5	Seal Contraction
4500	Steel trowel finish	ASSOCIATION OF			040	12296	.44			2.4	1000
4600	Silicon carbide finish, .25 psf	3		JU .	000	7	.44	2.0			-
03 3	5 29.35 Control Joints, Saw Cut						Participation	1.00.50	a faile and the	Name and America	
0010	CONTROL JOINTS, SAW CUT								S. Standard		
0100		and he	-		000	1.	67	-	.05	,	15
0120		C-2			800.	L.F.	.07				52
0140	1-1/2" depth				.009		.10		.01		
0160	2" depth				.010		.13		.01		50 05
1200	Clean out control joint of debris	G	18 6	000	.001	. 7).)5		L)

	05	23.95 Wall Plugs	Crew	Daily Output	Labor- Hours	Unit	Material	2009 Bare Costs Labor Equipn		Total Incl 08
001	0	VALL PLUGS (for nailing to brickwork) 26 ga., golvanized, plain Wood filled	1 Bric	10.50 10.50	.762 .762	C "	31 104	31 31	62 135	
00:	-	Di din see lan di san								
0	4	21 Clay Unit Masonry								
0	2	1 13 – Brick Masonry	E. Friday	1151		High Ra				1.35
04	21	13.13 Brick Veneer Masonry	1.	17	14.5 12.64	10/07/100		A CARLES AND	EN LOUIS AND	terre alle
00	10 1	BRICK VENEER MASONRY, T.L. lots, excl. scaff., grout & reinforcing R042110-20	Test an	E Stra				By Like Links		
00	15	Material casts incl. 3% brick and 25% mortar waste					FOF	000	1 505	2.07
00	20	Standard, select common, 4" x 2-2/3" x 8" (6.75/S.F.)	D-8		26.667	M.	535.	990	1,525	2,07
00	50	Red, 4" x 2-2/3" x 8", running bond		and the second second	26.667	11111	840	990	1,830	2,42
010	00	Full header every 6th course (7.88/S.F.) R042110-50	orest of the second	1.151.022	27.586		840	1,025	1,865	2,47 2,52
01	- A.	English, full header every 2nd course (10.13/S.F.)		1.	28.571 28.571		835 840	1,050	1,005	2,52
02		Flemish, alternate header every course (9.00/S.F.)		1.000	27.586		840	1,025	1,865	2,47
02		Flemish, alt, header every 6th course (7.13/S.F.)	the state		28.571	PSI SIA	835	1,025	1,885	2,52
03		Full headers throughout (13.50/S.F.)			29.630		835	1,100	1,935	2,60
03		Rowlock course (13.50/S.F.)		Contraction of the second	28.571		845	1,050	1,895	2,52
04	- P	Rowlock stretcher (4.50/S.F.)			28.571		840	1,050	1,890	2,52
04		Soldier course (6.75/S.F.)			30.769	22470	845	1,150	1,995	2,65
05		Sailor course (4.50/S.F.)	111	1.50	26.667		840	990	1,830	2,42
06		Buff or gray face, running bond, (6.75/S.F.) Glazed face, 4" x 2-2/3" x 8", running bond	1.1		28.571		1,725	1,050	2,775	3,50
07		Full header every 6th course (7.88/S.F.)			29.630		1,650	1,100	2,750	3,50
07					30.769		1,775	1,150	2,925	3,67
10		Jumbo, 6" x 4" x 12",(3.00/S.F.) Norman, 4" x 2-2/3" x 12" (4.50/S.F.)			27.586		1,100	1,025	2,125	2,77
10 11		Norwegian, 4" x 3-1/5" x 12" (4.50/5.1.7)			28.571		1,150	1,050	2,200	2,85
11		Economy, 4" x 4" x 8" (4.50 per S.E.)			28.571		940	1,050	1,990	2,62
12		Engineer, 4" x 3-1 /5" x 8", (5.63/S.E.)		1.45	27.586		615	1,025	1,640	2,22
12		Romon, 4" x 2" x 12", (6.00/S.E.)	11		26.667		980	990	1,970	2,57
13		S.C.R. 6" x 2·2/3" x 12" (4.50/S.F.)	11		28.571		1,175	1,050	2,225	2,90
13		Utility, 4" x 4" x 12" (3.00/S.E.)	11		29.630		1,500	1,100	2,600	3,32
13		For less than truck load lots, add	and the				15	In and the	15	
14		For battered walls, add				BENY AL		30%		
	50	For corbels, add						75%		
	00	For curved walls, add			和一派		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	30%		
	50	For pits and trenches, deduct	1					20%		
19	99	Alternate method of figuring by square foot								
20	00	Standard, sel. common, 4" x 2-2/3" x 8", (6.75/S.F.)	D-8	230	.174	S.F.	3.60	6.45	10.05	
	20	Standard, red, 4" x 2-2/3" x 8", running bond (6.75/SF)	11	220	.182		5.65	6.75	12.40	-
	50	Full header every 6th course (7.88/S.F.)		185	.216		.6.60	8.05	14.65	
	00	English, full header every 2nd course (10.13/S.F.)		140	.286	No the	8.50	10.60	19.10	f fi
	50	Flemish, alternate header every course (9.00/S.F.)		150	.267	1	7.55	9.90	17.45	
	00	Flemish, alt. header every 6th course (7.13/S.F.)	to a	205	.195	FR	6	7.25	13.25	
	50	Full headers throughout (13.50/S.F.)		105	.381		11.30	14.15	25.45	
	00	Rowlock course (13.50/S.F.)		100	.400		11.30	14.85	26.15	
	50	Rowlock stretcher (4.50/S.F.)		310	.129		3.80	4.79	8.59	
	00	Soldier course (6.75/S.F.)		200	.200		5.65	7.45	13.10	
	50	Sailor course (4.50/S.F.)		290			3.80	5.15	8.95	
	00	Buff or gray face, running bond, (6.75/S.F.)		220			6	6.75	12.75	
27	00	Glazed face brick, running band	1 -	210	.190		11.15	7.10	18.25	

04	22 10 - Concrete Masonry Units	State of the	時期	調査者		NEM COLES			
04.9	2 10.14 Concrete Block, Back-Up	Crew	Daily Outpu		Unit	Material	2009 Ba Labor	re Costs Equipment	1
1100	6" thick	D-8	430	.093	S.F.	2.25	3.46	Equipment	Dell'H
1150	8" thick		395	.101		2.37	3.76		
1200	10" thick		320	.125		3.18	4.65		
1250	12" thick	D-9	300	.160		3.59	5.80		14.2
	2 10.16 Concrete Block, Bond Beam		000	1.100	4	0.07	5.00		
0010	CONCRETE BLOCK, BOND BEAM, C90, 2000 psi	de la companya de la	ATTER	1.1538	E SHARE		and the second	San Contain	NS-
0020	Not including grout or reinforcing	Salar Bar							
0125	Regular block, 6" thick	D-8	584	.068	L.F.	2.21	2.55		
0130	8" high, 8" thick	"	565	.000	L.).	2.51	2.63		
0150	12" thick	D-9	510	.071	國性國語	3.43	up - or provide	Contraction of the second	
0525	Lightweight, 6" thick	D-9 D-8	592	.074		2.53	3.42 2.51		
0530	8" high, 8" thick	U-0	575	.060		3.06	1.200.00		
0550	12" thick	D-9	5/5	.070		20203	2.59		
2000	Including grout and 2 #5 bars	0-9	520	.092	*	4.12	3.35	ATTERNO CONTRACTO	
2100	and a start where the second		200	100	1.5	r	1.05	No.	
	Regular block, 8" high, 8" thick 12" thick	D-8	300	.133	L.F.	5.15	4.95		
2150		D-9	250	.192		6.60	7		
2500	 Jightweight, 8" high, 8" thick 	D-8	305	.131	15-218	5.70	4.87		AL.
2550	12" thick	D-9	255	.188	*	7.30	6.85		_
	2 10.18 Concrete Block, Column								
0010	CONCRETE BLOCK, COLUMN or pilaster	and the second second	the second			The set	E Prese		
0050	Including vertical reinforcing (4-#4 bars) and grout	the state of the state		1	Siles .				
0160	1 piece unit, 16" x 16"	D-1	26	.615	V.L.F.	18.65	22.50		
0170	2 piece ugits, 16" x 20"		24	.667		24.50	24		
0180	20" x 20"		22	.727		35.50	26.50		
0190	22" x 24"		18	.889		49.50	32.50		
0200	20" x 32"	*	14	1.143	*	53.50	41.50		_
04 2	2 10.19 Concrete Block, Insulation Inserts			100000000					
0010	CONCRETE BLOCK, INSULATION INSERTS	dissilie field		AL CLAS			(Alternational)		
0100	Styrofoam, plant installed, add to block prices		KEE				and the second		
0200	8" x 16" units, 6" thick				S.F.	1.81			
0250	8" thick					1.81			
0300	10" thick					2.13			
0350	12" thick	· · · ·				2.24			4
0500	8" x 8" units, 8" thick					1.49			
0550	12" thick			I., 1	4	1.81			
04 22	2 10.23 Concrete Block, Decorative								
0010	CONCRETE BLOCK, DECORATIVE, (90, 2000 psi	Carlos - Later		事業の		Contract of B	1.1.1	ater Catality	1
0020	Embossed, simulated brick face	States Bash				State of the	and the second		
0100	8" x 16" units, 4" thick	D-8	400	.100	S.F.	3.51	3.72		N
0200	8" thick		340	.118	1 - Ten	4.83	4.37		
0250	12" thick		300	.133		6.35	4.95	NEADOLT MARTINE	
0400	Embossed both sides	1							
0500	8" thick	D-8	300	.133	S.F.	5.40	4.95		
0550	12" thick		275	.145	"	6.85	5.40		
1000	Fluted high strength	STATISTICS STATISTICS	a des	in the second			These of	CMR HARE	
1100	8" x 16" x 4" thick, flutes 1 side,	D-8	345	.116	S.F.	4.16	4.31	220 Carton	
1150	Flutes 2 sides		335	.119		5.05	4.44		
1200	8" thick			.133		6.55	4.95		
1250	For special colors, add	*	000	.100.		.55	4.75	STATISTICS IN CONTRACT	
1400	Deep grooved, smooth face				*	.91			
1450	8" x 16" x 4" thick	D-8	345	.116	S.F.	2.71	4.31	10	
1500	8" thick	U-0	300	.133	э.г. "	4.67	4.95		
UUCI	O HINCK		000	.100	-	4.07	4.75		

all section is	22 10 - Concrete Masonry Units		Daily	Labor-		的问题世代中国代表的问题。 1999年1月1日日的代表目的	0000.0	The second		1850
04 2	2 10.23 Concrete Block, Decorative	Crew	Output	Hours	Unit	Materia	2009 Ba Labor	re Costs Equipment	Total	
8300	6" thick, hollow	0-8	310	.129	S.F	3.49	4.79	cquipment	8.28	-"
8350	8" thick, hollow	+	290	.138	.+	4.73	5.15		9.88	
8500	For stacked bond, add		1				26%		1.00	
8550	For high rise construction, odd per story	D-8	67.80	.590	M.S.F.		22	CHANER OF	22	
8600	For scored block, add			1.25		10%	7		A Marson	
8650	For honed or ground face, per face, add				Ea.	.38	Star Level		.38	
8700	For honed or ground end, per end, add				M	2.98			2.98	
8750	For bullnose block, add			1.0000000		10%	and the second section of	COLUMN ADDRESS	CALL CONTRACTOR OF STREET, STRE	Barts'
8800	For special color, add					13%	_			
04 2	2 10.24 Concrete Block, Exterior									-
0010	CONCRETE BLOCK, EXTERIOR, C90, 2000 psi	New York Constant	and and	1996 Barris	STATES			State State		15
0020	Reinforced alt courses, tooled joints 2 sides									
0100	Normal weight, 8" x 16" x 6" thick	D-8	395	.101	S.F.	2.49	3.76		6.25	
0200	8" thick		360	.111		3.65	4.13		7.78	
0250	- 10" thick	*	290	.138		4.27	5.15		9.42	
0300	12" thick	D-9	250	.192		4.52	7		11.52	
0500	Lightweight, 8" x 16" x 6" thick	D-8	450	.089		2.75	3.30		6.05	
0600	8" thick		430	.093		3.67	3.46		7.13	
0650	10" thick		395	.101		4.31	3.76		8.07	麗
0700	12" thick	D-9	350	.137		6.30	4.98		11.28	
04 22	2 10.26 Concrete Block Foundation Wall				0.1543				Concercitation	
0010	CONCRETE BLOCK FOUNDATION WALL, C90 / C145	and the second second				THE REAL	100	Bour Bie		
0050	Normal-weight, cut joints, horiz joint reinf, no vert reinf									
0200	Hollow, 8" x 16" x 6" thick	D-8	455	.088	S.F.	2.56	3.27		5.83	
0250	8" thick		425	.094		2.68	3.50		6.18	
0300	10" thick		350	.114		3.49	4.25		7.74	
0350	12" thick	D-9	300	.160		3.91	5.80		9.71	
0500	Solid, 8" x 16" block, 6" thick	D-8	440	.091		2.55	3.38		5.93	
0550	8" thick	н	415	.096		3.73	3.58		7.31	
0600	12" thick	D-9	350	.137	*	5.40	4.98		10.38	11
	2 10.28 Concrete Block, High Strength		1.1.1.1							
0010	CONCRETE BLOCK, HIGH STRENGTH				-	Barry H		In the lot	Shipping	
0050	Hollow, reinforced alternate courses, 8" x 16" units 3500 psi, 4" thick			001			0.00			
0250	6" thick	D-8	440	.091	S.F.	2.15	3.38		5.53	
0250	6" mick	average and the	395	.101	10152	2.41	3.76		6.17	
0350	3° thick	→ D-9	360 250	.111		3.57	4.13		7.70	
0500	5000 psi, 4" thick	D-9	440	.192		4.40	7		11.40	
0550	6" thick	0-0	395	.091		2.39	3.38		5.77	
0600	8" thick	and the second second	360	.101	Real	4.05	3.76 4.13	aloue stipe securio	6.75 8.18	Files
0650	12" thick	₩ D-9	300	.160		6	5.80		0.10	
1000	For 75% solid block, add	LAN .	000	.100	Y	30%	5.00	er sole alle	11.00	
1050	For 100% solid block, add			2.2		50%			all the lat	
	10.30 Concrete Block, Interlocking			1	and states of	9910		avar apple of a	A PARTY NAMES OF	1000
0010	CONCRETE BLOCK, INTERLOCKING			1		and p			The Party	5.2
0100	Not including grout or reinforcing	PLEI PERSONAL SPE			1980					
0200	8" x 16" units, 2,000 psi, 8" thick	D-1	245	.065	S.F.	2.69	2.37	Star Start	5.06	
0300	12" thick		220	.003	1	3.98	2.64	a bia se la la	6.62	
0350	16" thick		185	.086		6	3.14		9.14	
0400	Including grout & reinforcing, 8" thick	D-4	245	.131		7.60	4.70	.52	12.82	
0450	12" thick		220	.145		9.20	5.25	.58	15.03	
0500	16" thick	-		.173	4	11.55	6.20	.69	18.44	
8		1					3-4-17	.07	10.44	_

OF	12 Structural Steel Framin 12 23 – Structural Steel for Buildings			il inter				IC Charles			14
A Carl Street	2 23.05 Canopy Framing		Crew	Daily Output	Labor- Hours	Unit	Material	2009 Bare Labor E	Costs quipment	Total	Inc
0010	CANOPY FRAMING	in the second							ないない		
0020	6" and 8" members, shop fabricated	G	E-4	3000	.011	Lb.	1.80	.48	.04	2.32	27
05 1	2 23.10 Ceiling Supports										
0010	CEILING SUPPORTS					5 8 A		Statistics &		Specific State	
1000	Entrance door/folding partition supports, shop fabricated	G	E-4	60	.533	LE	30	24	2.23	56.23	
1100	Linear accelerator door supports	G		14	2.286		137	103	9.60	249.60	
1200	Lintels or shelf angles, hung, exterior hot dipped galv.	G		267	.120		20.50	5.40	.50	26.40	
1250	Two coats primer paint instead of galv.	G		267	.120	*	17.75	5.40	.50	23.65	
1400	Monitor support, ceiling hung, expansion bolted	G		4	8	Ea.	475	360	33.50	868.50	1,
1450	Hung from pre-set inserts	G		6	5.333		510	241	22.50	773.50	1,
1600	Motor supports for overhead doors	G		4	8	-	242	360	33.50	635.50	
1700	Partition support for heavy folding partitions, without pocket	G	國國	24	1.333	L.F.	68.50	60.50	5.60	134.60	
1750	Supports at pocket only	G		12	2.667		137	121	11,15	269.15	
2000	Rolling grilles & fire door supports	G	LE SS	34	.941	-	58.50	42.50	3.94	104.94	
2100	Spider-leg light supports, expansion bolted to ceiling slab	G		8	4	Ea.	195	181 .	16.75	392.75	
2150	Hung from pre-set inserts	G		12	2.667	"	210	121	11.15	342.15	
2400	Toilet partition support	G		36	.889	L.F.	68.50	40	3.72	112.22	
2500	X-ray travel gantry support	G	+	12	2.667	"	234	121	11.15	366.15	
	2 23.15 Columns, Lightweight										
		617 120	1.11	E CON	1. Care	15.2.3	Reption of the second				
0010	COLUMNS, LIGHTWEIGHT		F-2	780	.072	LF.	6.10	3.13	2.23	11.46	
1000	Lightweight units (Ially), 3-1/2" diameter		1.7	900	.062	"	8.95	2.71	1.93	13.59	
1050	4" diameter	G		700	.002	Eo.	33	2.11	1.70	33	
5800	Adjustable jack post, 8' maximum height, 2-3/4" diameter	G				//	53	ALCO PROPERTY.	STANSACE THE	53	
5850	4" diameter				-	1	50				-
05 1	2 23.17 Columns, Structural				1	-	a constant		MERCENT	THE REAL PROPERTY OF	2.67
0010	COLUMNS, STRUCTURAL R051	223-10			-	和此					
0015	Made from recycled materials					E ST					
0020	Shop fab'd for 100-tan, 1-2 story project, bolted connections				15.75	NO.					
0800	Steel, concrete filled, extra strong pipe, 3-1/2" diameter		E-2	660	.085	L.F.	49.50	3.70	2.64	55.84	an
0830	4" diameter			780	.072		55	3.13	2.23	60.36	
0890	5" diameter			1020	.055		65.50	2.39	1.71	69.60	
	6" diameter			1200	.047		87	2.03	1.45	90.48	
0930	8" diameter		+	1100	.051	*	87	2.22	1.58	90.80	-
0930 0940	0 didition		. 7			Lb.	.40	See an og	La la t	.40	1250
	For galvanizing, add		Y		1.1.2		1.50	.38		1.88	
0940	For galvanizing, add		1 Sswk	945	.008		10000 - 1 Critical			1.76	世紀の
0940 1100	For galvanizing, add For web ties, angles, etc., add per added Ib.	G		945 16000	1411195	N 7 2 1 1 1 1 2	1.50	.15	.11		201
0940 1100 1300	For galvanizing, add For web ties, angles, etc., add per added Ib. Steel pipe, extra strong, no concrete, 3" to 5" diameter	G	1 Sswk		0.004 0.004	•	10000 - 1 Critical	.17	.12	1.79	12000
0940 1100 1300 1500	For galvaniziñg, add For web ties, angles, etc., add per added Ib. Steel pipe, extra strang, no concrete, 3" to 5" diameter 6" to 12" diameter	G	1 Sswk	16000 14000 60	.004	•	1.50	.17 40.50	.12 29	254.50	
0940 1100 1300 1500 1600	For galvaniziñg, add For web ties, angles, etc., add per added Ib. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0"	G G G	1 Sswk	16000 14000	0 .004 .004 .933 .966	Ea.	1.50 1.50 185 270	.17 40.50 42	.12 29 30	254.50 342	
0940 1100 1300 1500 1600 1700	For galvanizing, add For web ties, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0"	GGGG	1 Sswk	16000 14000 60	0 .004 .004 .933 .966 1.037	Ea.	1.50 1.50 185 270 515	.17 40.50 42 45	.12 29 30 32	254.50 342 592	
0940 1100 1300 1500 1600 1700 1750 1800	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0"	GGGGG	1 Sswk	16000 14000 60 58	0 .004 .004 .933 .966	Ea.	1.50 1.50 185 270	.17 40.50 42	.12 29 30 32 35	254.50 342 592 994	
0940 1100 1300 1500 1600 1700 1750 1800 1850	For galvanizing, add For web ties, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0"	GGGGGG	1 Sswk	16000 14000 60 58 54	0 .004 .004 .933 .966 1.037	Ea.	1.50 1.50 185 270 515	.17 40.50 42 45	.12 29 30 32	254.50 342 592	170
0940 1100 1300 1500 1600 1700 1750 1800 1850 1900	For galvanizing, add For web ties, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0"	GGGGG	1 Sswk	16000 14000 60 58 54 50	0 .004 .004 .933 .966 1.037 1.120	Ea.	1.50 1.50 185 270 515 910	.17 40.50 42 45 49	.12 29 30 32 35	254.50 342 592 994	170
0940 1100 1300 1500 1600 1700 1750 1800 1800 1850 1900	For galvanizing, add For web ties, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0"	GGGGGG	1 Sswk	16000 14000 60 58 54 50 48 45) .004 .004 .933 .966 1.037 1.120 1.167	Ea.	1.50 1.50 185 270 515 910 1,325	.17 40.50 42 45 49 51	.12 29 30 32 35 36.50	254.50 342 592 994 1,412.50	Res State
0940 1100 1300 1500 1600 1700 1750 1800 1850 1900 1950 3300	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" 5tructural tubing, square, A500GrB, 4" to 6" square, light section	GGGGGGGGGGG	1 Sswk	16000 14000 60 58 54 50 48 45) .004 .004 .933 .966 1.037 1.120 1.167 1.244 0 .005	Ea.	1.50 1.50 185 270 515 910 1,325 1,775	.17 40.50 42 45 49 51 54	.12 29 30 32 35 36.50 38.50	254.50 342 592 994 1,412.50 1,867.50	The second second
0940 1100 1300 1500 1600 1700 1750 1800 1850 1850 1950 3300 3600	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" 5tructural tubing, square, ASOOGRB, 4" to 6" square, light section Heavy section		1 Sswk	16000 14000 60 58 54 50 48 45 11270) .004 .004 .933 .966 1.037 1.120 1.167 1.244 0 .005	Ea.	1.50 1.50 185 270 515 910 1,325 1,775 1.50	,17 40.50 42 45 49 51 54 .22	.12 29 30 32 35 36.50 38.50 .15	254.50 342 592 994 1,412.50 1,867.50 1.87	
0940 1100 1300 1500 1750 1750 1800 1850 1900 1950 3300 3600 4000	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" 5tructural tubing, square, ASOOGRB, 4" to 6" square, light section Heavy section Concrete filled, add		1 Sswk	16000 14000 60 58 54 50 48 45 11270) .004 .004 .933 .966 1.037 1.120 1.167 1.244 0 .005	Ea. , , , , , , , , , , , , , , , , , , ,	1.50 1.50 185 270 515 910 1,325 1,775 1.50 1.50	,17 40.50 42 45 49 51 54 .22	.12 29 30 32 35 36.50 38.50 .15	254.50 342 592 994 1,412.50 1,867.50 1.87 1.63	
0940 1100 1300 1500 1700 1750 1800 1850 1950 3300 3600 4000 4500	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" Structural tubing, square, ASOUGRB, 4" to 6" square, light section Heavy section Concrete filled, add Structural tubing, sq. 4" x 4" x 1/4" x 12'-0"		1 Sswk F-2	16000 14000 60 58 54 50 48 45 11270 32000 58) .004) .004 .933 .966 1.037 1.120 1.167 1.244 0 .005 0 .002 .966	€ c.	1.50 1.50 185 270 515 910 1,325 1,775 1,50 1.50 1.50 4.04	.17 40.50 42 45 49 51 54 .22 .08	.12 29 30 32 35 36.50 38.50 .15 .05	254.50 342 592 994 1,412.50 1,867.50 1.87 1.63 4.04	
09400 11000 15000 16000 17500 17500 18500 18500 19500 33000 36000 45500 45500	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" Structural tubing, square, ASOUGRB, 4" to 6" square, light section Heavy section Concrete filled, add Structural tubing, sq, 4" x 4" x 1/4" x 12'-0" 6" x 6" x 1/4" x 12'-0"		1 Sswk F-2	16000 14000 60 58 54 50 48 45 11270 32000 58 54) .004 .004 .933 .966 1.037 1.120 1.167 1.244 0 .005 0 .002 .966 1.037	Ea.	1.50 1.50 185 270 515 910 1,325 1,775 1.50 1.50 4.04 248	17 40.50 42 45 49 51 54 .22 .08 42	12 29 30 32 35 36.50 38.50 .15 .05	254.50 342 592 994 1,412.50 1,867.50 1.87 1.63 4.04 320	
0940 11000 15000 16000 1700 17500 18000 17500 18500 19500 33000 33000 45500 45500 46000	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" Structural tubing, square, ASOUGRB, 4" to 6" square, light section Heavy section Concrete filled, add Structural tubing, sq, 4" x 4" x 1/4" x 12'-0" 6" x 6" x 1/4" x 12'-0" 8" x 8" x 3/8" x 14'-0"		1 Sswk F-2	16000 14000 60 58 54 50 48 45 11270 32000 58 54 54 50) .004 .004 .933 .966 1.037 1.120 1.167 1.244 0 .005 0 .002 .966 1.037 1.120	Ea. Ea. L.F. Eo. 7 D	1.50 1.50 185 270 515 910 1,325 1,775 1.50 1.50 4.04 248 405 880	17 40.50 42 45 49 51 54 .22 .08 42 45	.12 29 30 32 35 36.50 38.50 .15 .05 30 32 35	254.50 342 592 994 1,412,50 1,867.50 1.87 1.63 4.04 320 482	
09400 11000 15000 16000 17500 17500 18500 18500 19500 33000 36000 45500 45500	For galvanizing, add For web fies, angles, etc., add per added lb. Steel pipe, extra strong, no concrete, 3" to 5" diameter 6" to 12" diameter Steel pipe, extra strong, no concrete, 3" diameter x 12'-0" 4" diameter x 12'-0" 6" diameter x 12'-0" 8" diameter x 14'-0" 10" diameter x 16'-0" 12" diameter x 18'-0" 5tructural tubing, square, A500GrB, 4" to 6" square, light section Heavy section Concrete filled, add Structural tubing, sq. 4" x 4" x 1/4" x 12'-0" 6" x 6" x 1/4" x 12'-0" 8" x 8" x 3/8" x 14'-0" 10" x 10" x 1/2" x 16'-0"		1 Sswk F-2	16000 14000 60 58 54 50 48 45 11270 32000 58 54) .004) .004 .933 .966 1.037 1.120 1.167 1.244 0 .005 0 .002 .966 1.037 1.120 1.167	Ea.	1.50 1.50 185 270 515 910 1,325 1,775 1.50 1.50 4.04 248 405	.17 40.50 42 45 49 51 54 .22 .08 42 45 49	.12 29 30 32 35 36.50 38.50 .15 .05 30 32	254.50 342 592 994 1,412.50 1,867.50 1.87 1.63 4.04 320 482 964	

03	12 Structural Steel F	lings									
	THE REAL PROPERTY OF THE PROPERTY OF THE REAL PROPE		Crew	Daily Output	Labor-	Unit	Material	2009 Ba Labor	re Costs Equipment	Total	Tota Incl O
05 19	23.45 Lintels 500 to 2,000 lb.	A Cash and	LIEW	ouipui	110015	Lb.	.45	LUDOI	- doibinout	.45	inci o
0950	Over 2,000 lb.					4	.40			.40	
1000	Steel angles, 3-1/2" x 3", 1/4" thick, 2'-6" long	G	1 Bric	47	.170	Ea.	16.20	6.90		23.10	2
2000	Steel drigles, 3 / 2 / 0 / 7	G	-	26	.308		29	12.45		41.45	5
2100	4" x 3-1/2", 1/4" thick, 5'-0" long	G		21	.381		37	15.45		52.45	é
2600	9'-0" long	G	+	12	.667	*	67	27		94	1
2700	23.60 Pipe Support Framing										
	PIPE SUPPORT FRAMING	and the second		S. out	No. Con			Shine and	Astal 1		
CONFIGURE ST	Under 10#/L.F., shop fabricated	G	E-4	3900	.008	Lb.	2.01	.37	.03	2.41	
0020	10.1 to 15#/L.F.	G		4300	.007		1.98	.34	.03	2.35	
0200	15.1 to 20#/L.F.	G		4800	.007	5	1.95	.30	.03	2.28	
0600	Over 20#/L.F.	G	*	5400	.006	-	1.92	.27	.02	2.21	
0000	23.65 Plates	/	e a compositione de la compositi				1 Contractor				
0010	PLATES	R051223-80						Trans and			
0015	Made from recycled materials					A THE R					
0020	Far connections & stiffener plates, shop fabricated	Supposed the state			100	90.70					
0050	1/8" thick (5.1 Lb./S.F.)	G				S.F.	7.65			7.65	
0100	1/4" thick (10.2 Lb./S.F.)	G					15.30			15.30	
0300	3/8" thick (15.3 Lb./S.F.)	G					23			23	
0400	1/2" thick (20.4 Lb./S.F.)	G					30.50		-	30.50	
0450	3/4" thick (30.6 Lb./S.F.)	G		1			46			46	
0500	1" thick (40.8 Lb.S.F.)	G				*	61			61	
2000	Steel plate, warehouse prices, no shop fabrication			Ano.		1	11.00			11.20	iles.
2100	1/4" thick (10.2 Lb./S.F.)	G	0.01	Per se al	A. C. M.	S.F.	11.20	KORD (AREA	Brien, sei el	11.20	an a
	2 23.70 Stressed Skin Steel Roof and Cei	ing System		147.00	10.00	10.010	PROVINCE OF	and the state for the	POPULATION I	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Res la
0010	STRESSED SKIN STEEL ROOF & CEILING SYSTEM			1100			10	0.10	1.51	15.63	
0020	Double panel flat roof, spans to 100'	G	E-2	1150	.049	S.F.	12	2.12	1.51	23.85	
0100	Double panel convex roof, spans to 200'	G		960	.058		19.50	2.54	2.29	35.50	
0200	Double panel arched roof, spans to 300'	G	*	760	.074	4	30	3.21	6,67	35.50	机干加
	2 23.75 Structural Steel Members		1	And other	Patrick.	100020	Line to a	Mestly St	(12. C
0010	STRUCTURAL STEEL MEMBERS	R051223-10	See.	A.E.			12211		Not and a		12
0015	Made from recycled materials		1.5			1.00			Chief Street		1
0020	Shop fab'd for 100-ton, 1-2 story project, bolted connections				000	1	14.05	101	2.00	21,81	
0100	W6x9	G	E-2	600	.093	LF.	14.85	4.06	2.90	31.96	Bil gr
0120	x 15	G		600	.093		33	4.06	2.90	31.76	1
0300	× 20 ~	G		600 600	.073		16.50	4.06	2.90	23.46	
0320	x 15	G		600	.073		25	4.06	2.90	31.96	
0350	x 13	G	RES S	600	.073	-	34.50	4.06	2.90	41.46	1
0360	x 24	G		550	.102	1001101	39.50	4.43	1.65% 与他的原则	47.10	
0370	x 24 x 28	G		550	1200-00002		46	4.43	Contraction of the second second	53.60	
0500	x 31	G		550	.102		51	4.43		58.60	1000
0520	x 35	G		550	.102		58	4.43	and a second poly one of a	65.60	
0540	x 48	G		550	.102		79	4.43		86.60	
	W 10 x 12	G		600	.093		19.80	4.06		26.76	
0600	x 15	G		600	.093		25	4.06	2.90		
0600 0620	x 22	G		600	.093		36.50	4.06	2.90	43.46	
0600 0620 0700		G		600	.093	STOCK .	43	4.06		49.96	5
0600 0620 0700 0720	x 26		14	550		1. A.	54.50	4.43			
0600 0620 0700 0720 0740	1	G			100		81	4.43	3.17	88.60)
0600 0620 0700 0720 0740 0900	x 26	G		550	.102						
0600 0620 0700 0720 0740	× 26 × 33	G G G		550 880			26.50 36.50	2.77	1.98		5

	2 Structural Steel I	Framing									
Characteristic Services	23 - Structural Steel for Buil	amgs	Crew		Labor- Hours	Unit	Material	2009 Bare C Labor Eq	uipment	Total	Tota Incl O
1500	.75 Structural Steel Members	G	E-2	880	.064	L.F.	43	2.77	1.98	47.75	54
1520	x 35	G		810	.069		58	3.01	2.15	63.16	7
1560	x 50	G	See of	750	.075		82.50	3.25	2.32	88.07	11:
Contraction and the second	x 58	G		750	.075		95.50	3.25	2.32	101.07	14
1700	x 72	G		640	.088		119	3.81	2.72	150.53	16
1740	x 87	G		640	.088		144	3.81	1.76	47.22	5
1900	W 14 x 26	G		990	.057		43 49.50	2.40	1.93	54.14	6
2100	x 30	G		900	.062		1	3.01	2.15	61.16	6
2300	x 34	G		810	.069		56	3.01	2.15	76.16	8
2320	x 43	G	-	810	.069	1000	87.50	3.05	2.18	92.73	10
2340	x 53	G		800	.070		122	3.03	2.29	127.50	14
2360	x 74	G		760	.074		149	3.30	2.35	154.65	17
2380	x 90	G	1 Sale	740	.076		147	3.39	2.42	203.81	22
2500	x 120	G G	275	1000	.078	Store and	43	2.44	1.74	47.18	5
2700	W 16 x 26	G		900	.050		51	2.71	1.93	55.64	6
2900	x 31	G		800	.070		66	3.05	2.18	71.23	8
3100	x 40	G		800	.070		82.50	3.05	2.18	87.73	9
3120	x 50	G	-	760	.074	-	111	3.21	2.29	116.50	13
3140	x.67	G	E-5	THE REPORT	.083	0.000	58	3.67	1.95	63.62	1
3300	W 18 x 35	G	T	960	.083	10010	66	3.67	1.95	71.62	1
3500	x 40	G		960	.083	10000	76	3.67	1.95	81.62	-
3520	x 46	G	State of	912	.088	110000000000000000000000000000000000000	82.50	3.87	2.06	88.43	1
3700	x 50 x 55	G		912	.088	3	91	3.87	2.06	96.93	1
3900	x 65	G		900	.089	7	107	3.92	2.08	113	1
3920	x 76	G		900	.089	į	125	3.92	2.08	131	1
3940	x 76 x 86	G		900	.08	9	142	3.92	2.08	148	1
3960	x 106	G		900	.08	9	175	3.92	2.08	181	2
3980 4100	W 21 x 44	G		106	4 .07	5	72.50	3.32	1.76	77.58	1000
4300	x 50	G		106	4 .07	5	82.50	3.32	1.76	87.58	Contraction of the local division of the loc
4500	x 62	G		103	6 .07	7	102	3.41	1.81	107.22	1
4700	x 68	G		103			112	3.41	1.81	117.22 142.41	
4720	x 83	G		100	St. 2232		137	3.53	1.88 1.88	142.41	
4740	x 93	G		100		and service	153	3.53 3.53	1.88	172.41	1
4760	x 101	G		100	Ed. 9 1163	243 2423	167	3.53	1.88	206.41	Sec. IV.
4780	x 122	G		100	31.11	1111111	201	3.18	1.69	95.87	S 19571
4900	W 24 x 55	G		111	S. 1. 23	CHEE BUILDING	102	3.18	1.69	106.87	2853
5100	x 62	G		11	10.1	292.000.00	112	3.18	1.69	116.87	The state of the s
5300	x 68	G	-	1 10 0 0 0	10 .07		125	3.18	1.69	129.87	1
5500	x 76	G		10			139	3.27	1.74	144.0	1
5700	x 84	6		10			155	3.27	1.74	160.0	
5720	x 94				50 .0	- second second	172	3.36	1.79	177.1	5
5740	x 104	(10		100 Mar 11	193	3.36	1.79	198.1	5
5760	x 117	(10		76	241	3.36	1.79		1.146.00
5780	x 146				90 .0	Contract of the	139	2.96	1.58		
5800	W 27 x 84 x 94		3		90 .0		155	2.96	1.58		
5900			3			70	188	3.07	1.63		
5920	x 114 x 146		G		50 .0		241	3.07			
5940	x 146 x 161		G			070	266	3.07		all a state of the	
5960	W 30 x 99		G)67	163	2.94			
6100	w 30 x 99 x 108		G)67	178	2.94			
6300 6500	x 116		G		60 .0	069	191	3.04	1 1.62	195.0	66

05	21 Steel Joist Framing	200		Lands	0						
	CALCULATION OF A DESCRIPTION OF A DESCRI	18		Daily	Labor-	Frank		2009 Bare	Costs	States and the second	Tota
05 21	16.50 Longspan Joists		Crew	Output		Unit	' Material	Labor	Equipment	Total	Ind Of
2320	28LHU6, 16 LD/LF	G	E-7	1800	.044	LF.	18.05	1.96	1.12	21.13	2
2340	28LH11, 25 Lb/LF	G		1800	.044		28	1.96	1.12	31.08	3
2360	32LH08, 17 Lb/LF	G		1800	.044		19.20	1.96	1.12	22.28	2
2380	32LH13, 30 Lb/LF	G		1800	.044		34	1.96	1.12	37.08	4
2400	36LH09, 21 Lb/LF	G		1800	.044		23.50	1.96	1.12	26.58	3
2420	36LH14, 36 Lb/LF	G		1800	.044		40.50	1.96	1.12	43.58	4
2440	40LH10, 21 Lb/LF	G		2200	.036		23.50	1.60	.91	26.01	3
2460	40LH15, 36 Lb/LF	G	1000	2200	.036		40.50	1.60	.91	43.01	4
2480	44LH11, 22 Lb/LF	G		2200	.036		25	1.60	.91	27.51	3
2500	44LH16, 42 Lb/LF	G		2200	.036		47.50	1.60	.91	50.01	5
2520	48LH11, 22 Lb/LF	G		2200	.036		25	1.60	.91	27.51	3
2540	48LH16, 42 Lb/LF	G	+	2200	.036	*	47.50	1.60	.91	50.01	5
2600	For less than 40-ton job lots		antine.	15.10							
2602	For 30 to 39 tons, add		10 mil				10%				
2604	20 to 29 tons, add		1.154				20%				
2606	10 to 19 tons, add						30%				
2607	5 to 9 tons, add						50%	25%			
2608	1 to 4 tons, odd						75%	50%			
2609	Less than 1 ton, add						100%	100%			
6000	For welded cross bridging, add		1	1				30%			
05 2	1 19 - Open Web Steel Joist Fram	ing	No. 10				AND		建立合作	BH	
	19.10 Open Web Joists										
	OPEN WEB JOISTS		12 M			2.11				國王法司	
0015	Made from recycled materials				-	-berly	日本の中華				
0020	K series, 40-ton lots, horiz. bridging, spans to 30', shop primer, mir		E-7	15	5.333	Ton	1,825	235	134	2,194	2,55
0050	Averoge	G		12	6.667		2,050	294	167	2,511	2,95
0080	Maximum	G		9	8.889	4	2,450	390	223	3,063	3,62
0130	8K1, 5.1 Lb/LF	G		1200	.067	L.F.	5.20	2.94	1.67	9.81	
0140	10K1, 5.0 Lb/LF	G		1200	.067		5.10	2.94	1.67	9.71	1
0160	12K3, 5.7 Lb/LF	G	-	1500	.053	Delas	5.80	2.35	1.34	9.49	AVIC 1
0180	14K3, 6.0 Lb/LF	G		1500	.053		6.10	2.35	1.34	9.79	
0200	16K3, 6.3 Lb/LF 💡	G		1800	.044		6.40	1.96	1.12	9.48	
0220	16K6, 8.1 Lb/LF /	G		1800	.044		8.25	1.96	1,12	11.33	
0240	18K5, 7.7 Lb/LF	G		2000	.040	目的地址	7.85	1.76	1	10.61	ER.W.
0260	18K9, 10.2 Lb/LF	G		2000	.040	*	10.40	1.76	110	13.16	
0410 0440	Span 30' to 50', minimum	G		17	4.706	Ton	1,775	208	118	2,101	2,4
0440	Average CN	G		17	4.706		2,000	208 355	118 201	2,326 2,681	2,7
0500	Maximum	G	SEARCH	10	8	*	2,125	1.76	201	10.96	J,1.
0520	20K5, 8.2 Lb/LF			2000	Providence in	L.F.	THE P. P. CO. NUMBER	1.76	ALL WALLS	13.56	E.
0540	20K9, 10.8 Lb/LF	G		2000	.040		10.80	1.76		11.56	
0560	22K5, 8.8 Lb/LF	G		2000			8.80	1.76	P	14.06	125-2217 1-1-
0580	22K9, 11.3 Lb/LF		1000	2000	Carl Contraction		, 11.30	Contraction of the local division of the loc	States and the second second	and the second second	Mar di
0600	24K6, 9.7 Lb/LF	G		2200	.036		9.70	1.60	.91	12.21 15.61	
0620	24K10, 13.1 Lb/LF	G		2200	.036		13.10	1.60	.91 .91	13.11	
0640	26K6, 10.6 Lb/LF	G		2200	.036		10.60			16.31	
0660	26K10, 13.8 Lb/LF	G	de la	2200		hele	13.80	1.60	.91		
0680	28K8, 12.7 Lb/LF	G	P.F.	2400		1	12.70	1.47	.84	15.01	
0700	28K12, 17.1 Lb/LF			2400			17.10	1.47	.84	19.41	
0720	30K8, 13.2 Lb/LF	G		2400		1	13.20	1.47	.84	15.51	- #
0800	30K12, 17.6 Lb/LF	G	4	2400	.033	4	17.60	1.47	.84	19.91	1
0802	For less than 40-ton job lots						1.09/				
0002	For 30 to 39 tons, add	La hances	-	1	-	1.2 martin	10%				

05	21 Steel Joist Framing										Service -
05 21	19 - Open Web Steel Joist Frami	ng								and the second	1000
05 21	19.10 Open Web Joists		Crew	Daily Output	Labor- Hours	Unit	Material	2009 Bare Labor E	Costs Equipment	Total	
0804	20 to 29 tons, add						20%				
0806	10 to 19 tons, add	STREET, STORES			antick Party	MELETINAL	30%	orev	CTURY CO. MILE	STORIES & LAN	
0807	5 to 9 tons, add	CALL HELL					50%	25% 50%			
8080	1 to 4 tons, add					3	75%	50% 100%			Contraction of the local division of the loc
0809	Less than 1 ton, odd						100%	100%		(Barrista)	No.
1010	CS series, 40-ton job lots, horizontal bridging, shop primer		67	15	5.333	Ton	1,875	235	134	2,244	ľ
1020	Spans to 30', minimum	G	E-7	15 12	6.667	1	2,100	294	167	2,561	-
1040	Average			9	8.889		2,475	390	223	3,088	
1060	Maximum	G		1200		♥ LE	7.85	2.94	1.67	12.46	
1100	10CS2, 7.5 Lb/LF	G	1000	1200	.067	L.F.	8.35	2.35	1.34	12.04	-
1120	12С52, 8.0 Њ/СЕ	G		1500	.053		8.35	2.35	1.34	12.04	
1140	14CS2, 8.0Lb/LF	G		1800	.055		8.90	1.96	1.12	11.98	
1160	16CS2, 8.5 Lb/LF	G	ALC: NOT	1800	.044		15.15	1.96	1.12	18.23	0
1180	16CS4, 14.5 Lb/LF	G		2000	.044	ALC: NOT	9.40	1.76	1	12.16	-
1200	18CS2, 9.0 Lb/LF	G		2000	.040		15.70	1.76	1	18.46	
1220	18C54, 15.0 Lb/LF	G		2000	.040		9.95	1.76	1	12.71	
1240	20CS2, 9.5 Lb/LF	G		2000	.040		17.25	1.76	1	20.01	
1260	20CS4, 16.5 Lb/LF 22CS2, 10.0 Lb/LF	G	SPACE.	2000	.040	NU IN	10.45	1.76	1	13.21	
1280	the set of	G		2000	12.1		17.25	1.76	1	20.01	
1300	22CS4, 16.5 Lb/LF	G		2200			10.45	1.60	.91	12.96	,
1320	24CS2, 10.0 Lb/LF	G		2200			17.25	1.60	.91	19.76	,
1340	24CS4, 16.5 Lb/LF 26CS2, 10.0 Lb/LF	G	and and and	2200		1700 bis	10.45	1.60	.91	12.96	5
1360	26CS4, 16.5 Lb/LF	G		2200			17.25	1.60	.91	19.76	5
1380	28CS2, 10.5 Lb/LF	G		2400			11	1.47	.84	13.31	ł
1400 1420	28CS4, 16.5 Lb/LF	G		2400			17.25	1.47	.84	19.56	5
1440	30CS2, 11.0 Lb/LF	G	1979 3	2400	.033		11.50	1.47	.84	13.81	
1460	30CS4, 16.5 Lb/LF	G	-	2400	.033	*	17.25	1.47	.84	19.56	5
1500	For less than 40-ton job lots						1.1.1				
1502	For 30 to 39 tons, add					1. Sala	10%				
1504	20 to 29 tons, add						20%				
1506	10 to 19 tons, add						30%				
1507	5 to 9 tons, add						50%	25%			
1508	1 to 4 tons, add					A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWNE	75%	50%	and the second second	THE REAL PROPERTY IN COMPANY	
1509	Less than 1 ton, add						100%	100%			
6200	For shop prime paint other than mfrs. standard, add						20%			44.5	
6300	For bottom chord extensions, add per chord	G			.050	Ea.	44.50	2.03		11.0	
6400	Individual steel bearing plate, 6" x 6" x 1/4" with Hook 23 - Steel Joist Girder Framing	G	1 Br	ic 160	.000			2.00	A CONTRACT	a contraction of the	
05 2	23.50 Joist Girders								1		
0010	JOIST GIRDERS		1200						1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		
0015	Made from recycled materials								105	0.010	
7000	Joist girders, 40-ton job lots, shop primer, minimum	G	E					235	125	2,210	
7020	Average	G		13		and the second	2,050	271	144	2,465	
7040	Maximum	G		11	7.27	3 🔻	2,150	320	170	2,640	
7100	For less than 40-ton jab lots						1001				
7102	For 30 to 39 tons, add						10%				
7104	20 to 29 tons, add						20%	hone			
7106	10 to 19 tons, add						30%	1000			
7107	5 to 9 tons, add		-			- Alle	50%	25%		The second	
7108	1 to 4 tons, add						75%	50%			
7109	Less than 1 ton, add						100%	100%			Į

	1 Steel Joist Framing Steel Joist Girder Framing			Da	ily Lab	OF.		Constant of		2009 Bare	Costs	- Frank Line		otal
-			Crew		put Ho		Unit	Materi	1.1	ibor E	quipment	Toto		10&P
1 23	.50 Joist Girders Trasses, 40-ton job lots, shop fabricated WT chords, shop primer, average	G	E-5	1		73	Ton	6,67	75	320	170	1.1	7,165	8,100
T	Trusses, 40-ton job lots, shop toblicated in clience, shop party of			1										
	For less than 40-ton job lots								10%					
	For 30 to 39 tons, add 20 to 29 tons, add			1				in an and the	20%	and contract	HEREALS A. P.	-	IN A THE	· 10000
	20 to 29 tors, add	100		a pic	1	100		March 1	30%	0501		C. La Carte		and the second second
	5 to 9 tons, add								50%	25% 50%			1. I.B	
	1 to 4 tons, add			2				A COLORADO	75%	100%		T. ALLE		As A
	Less than 1 ton, add					1.1		E.	00%	100%		- Silver	語いない	
	31 Steel Decking													
	3 - Steel Floor Decking		to the second			and the second			a state			S BER		Sec. 14
31 1	3.50 Floor Decking	E 100	Profession of	Ref -	a superior	North L	CATE-	- mar .	12	and and the				
0 FI	OOR DECKING	100-10			1. Land			1.1				- Suber	N- E	
5	IL L from regular materials	G	E	4	3600	.009	S.F.		3.54	.40	.0	4	3.98	4.65
10	Open decking, 3" deep, wide rib, 22 gauge, galvanized, under 50 squares	G	1	1000	0.0000000000	.008	2 AL		2.83	.38	.0	4	3.25	3.84
0	50-500 squares	G	12.5	allow No	4000	.008		- Incore	2.55	.36	.0		2.94	3.48
50	over 500 squares	G		1.1	3400	.009			4.12	.43	.0		4.59	5.35
00	20 gauge, under 50 squares	G			3600	.009			3.30	.40)4	3.74	4.39
50	50-500 squares	G			3800	.008			2.97	.38)4	3.39	3.98
60	over 500 squares	G	1		3200	.010		1 a	5.35	.45		04	5.84	6.70 5.50
00	18 gauge, under 50 squares 50-500 squares	G			3400	.009			4.26	.43		04	4.73 4.28	4.98
50	aver 500 squares	G		1	3600	.009			3.84	.40	ADD	04 04	7.57	8.65
60	16 gauge, under 50 squares	G			3000	.011			7.05	.48	and a state of the	04	6.09	7.05
50	50-500 squares	G			3200	.010			5.60	.45		.04	5.52	6.35
560	over 500 squares	G			3400	.009			5.05	.54		.05	7.19	8.25
700	4-1/2" deep, long span roof, over 50 squares, 20 gauge	G			2700	.012			6.60 8.50	.59		.05	9.14	10.45
800	18 gauge	G			2460	.013		1.100.00	6.35	.6		.06	7.03	8.15
900	16 gauge	G			2350	.014			12.15	7		.07	12.94	14.75
100	6" deep, long span, 18 gauge				1930	.018	-0. KA		9.10	.7		.07	9.92	11.40
200	16 gauge	G			1860				11.70	.7	and the second s	.07	12.55	14.35
300	14 gauge	G		1112	1690	1			13.35	.8	6	.08	14.29	16.30
500	7-1/2" deep, long span, 18 gauge	G			1590		100		10	9	1	.08	10.99	12.70
1600	16 gauge	0		1	1490			+	12.90	.9	7	.09	13.96	16
4700 4800	14 gauge -			4		1			2%		- Carlotter	C'internation	1.74	1,91
5000	For painted instead of galvanized, deduct For acoustical perforated, with fiberglass, add					13		5.E.	1.74			00	1.74	3.39
5200	Non-cellular composite deck, galv., 2" deep, 22 gauge		3	E-4	3860		1.		2.44		37	.03	2.84 3.15	Status and Additional Street of
5300	20 gauge	0	G		3600				2.71		40	.04 .04	3.15	
5400	18 gauge		G		3380		and the second second	1	3.43		43	.04	4.79	Contraction of Contraction of
5500	16 gauge		G		3200				4.30		45 45	.04	3.15	3
5700	3" deep, galv., 22 gauge		G		320				2.66		45	.04	3.50	
5800	20 gauge		G		300				3.65		51	.05	4.21	1
5900	18 gauge CN		G	1	285			dank	4.89	And and a second second	.54	.05	5.48	
6000	16 gauge	aller of	G	Y	270	0.0	12	4 1.	4.07	ATR.	31			
AF	31 23 - Steel Roof Decking				al Prop	T				14.5	1	- 172		100 00 00 00 00 00 00 00 00 00 00 00 00
05 3	1 23.50 Roof Decking			1		-	1	the state		H2 14	- Ner		1	121 8
0010	HOUT DECKING													1. 1
2100	made nom recycled malenals		G	E-	4 45	0. 00	007	S.F	2.58	3	.32	.03	2.9	3 3.4
2100	Open type, galv., 1-1/2" deep wide rib, 22 gauge, under 50 squares		a	E.	4 40		507	5.1.	2.54	1.2.1				

015 24	1 23 - Steel Roof Decking			Daily	Labor-			2009 Bare	Costs	A Martine Contractor
	23.50 Roof Decking		Crew		Hours	Unit	Material 2	Labor .30	Equipment .03	Total 2.33
2200	50-500 squares CN	G	E-4	4900 5100	.007	S.F.	1.85	.28	.03	2.10
2400	Over 500 squares	G					3.03	.20	.03	3.4
2600	20 gauge, under 50 squares			3865	.008		2.42	.35	.03	2.8
2650	50-500 squares	G		4170			2.42	.34	.03	2.5
2700	Over 500 squares	G	Service and	4300	.007	10.010	3.91	.34	.03	4.3
2900	18 gauge, under 50 squares	G		3800 4100	.008		3.13	.35	.04	3.5
2950	50-500 squares	G		4100	.008		2.82	.34	.03	3.1
3000	Over 500 squares	G		3700	.007		5.25	.34	.04	5.6
3050	16 gauge, under 50 squares	G	SOLED'	4000	.007		4.21	.36	.03	4.6
3060	50-500 squares	G		4000	.008		3.79	.34	.03	4.1
3100	Over 500 squares	G	*	4200	.000		.04		.00	.0
3150	For intermediate rib instead of wide rib, deduct	G					.79			.7
3160	For narrow rib instead of wide rib, add		Safety and		1. SA	V.		CREW SAL	March 1	george and
Designation	11 33 - Steel Form Decking		法的现在	2.61이 많은			00.000	A MERCINA STATE		State of the second
05 31	33.50 Form Decking FORM DECKING	13400	1998	1.668	i stat	12 day	a desired	Service Service	State of the second	
0015	Made from recycled materials									
6100	Slab form, steel, 28 gauge, 9/16" deep, uncoated	G	E-4	4000	.008	S.F.	1.72	.36	.03	2.1
6200	Galynnized	G	1	4000	.008		1.52	.36	.03	1.
6220	24 gauge, 1" deep, uncoated	G		3900	.008		1.87	.37	.03	2.
6240	Galvanized	G		3900	.008		2.20	.37	.03	2.
6300	24 gouge, 1-5/16" deep, uncoated	G		3800	.008		1.99	.38	.04	2.
6400	Galvonized	G		3800	.008		2.34	.38	.04	2.
6500	22 gauge, 1-5/16" deep, uncoated	G		3700	.009		2.50	.39	.04	2.
6600	Galvanized	G		3700	.009		2.55	.39	.04	2.
6700	22 gauge, 2" deep uncoated	G		3600	.009		3.28	.40	.04	3.
6800	Galvanized	G	4	3600	.009	-	3.22	.40	.04	3.
7000	Sheet metal edge closure form, 12" wide with 2 bends, galv						1			
7100	18 gauge	G	E-14	360	.022	L.F.	5.30	1.04	.37	6.
7200	16 gauge	G	"	360	.022	"	7.20	1.04	.37	8.
05 05 3 0010	35 Raceway Decking A 35 13 - Steel Cellular Decking 5 13.50 Cellular Decking CELLULAR DECKING	ssem	DII	25						
0015	Made from recycled materials Cellular units, galv, 2" deep, 20-20 gauge, over 15 squares	G	E-4	1460	.022	S.F.	10.20	.99	.09	11
0200	18-20 gauge			1420			11.60	1.02	.09	12
0250	18-18 gauge	G	and the second se	1390		1	11.95	1.04	.10	13
0300	16-18 gauge	G		1360			14.20	1.06	.10	
0340	16-16 gauge	G		1330		1	15.85	1.09	.10	17
0400	3" deep, galvanized, 20-20 gauge	G		1375			11.25	1.05	.10	12
0500	18-20 gauge	G		1350		1.1.1.1.1	13.60	1.07	.10	
0600	18-18 gauge	G		1290			13.55		.10	
0700	16-18 gauge	G		1230			15.25			
0800	16-16 gauge	G		1150	.028		16.65	1.26		
1000	4-1/2" deep, galvanized, 20-18 gauge	G	1	1100	.029		15.70			
	18-18 gauge	G]	1040	.031		15.60			
1100		10	1	980	.033		17.55	1.48	.14	1
1100 1200	16-18 gauge	G		700	.000		19.15			2

Appendix D

RS Means 2009 Data for General Conditions Estimate

01	1 31 - Professional Consultants						Le State		A TANK A STATE		
					Labor-	11.5	المتر وحمال		lare Costs	Tetel	Total
010	31.10 Architectural Fees	RC11110-10	Crew	Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
020	For new construction	KUTTTTO-TO							他的思想		
060	Minimum					Project			Part and		4.90%
090	Maximum		12.18		allen -	Carriellas				adar ta bar	16%
0100	For alteration work, to \$500,000, add to new construction fee		ALCOLULA	and the second	No. P. St. St. St. Co.	1929-1922	et deale for contra			Service and the others	50%
0150	Over \$500,000, add to new construction fee										25%
2000	For "Greening" of building	G				-					3%
	31.20 Construction Management Fees			1	!				×.		1
010	CONSTRUCTION MANAGEMENT FEES	New Yorking Pr	S. Series	- Ales	and the			-	Part New		a hash
020	\$1,000,000 job, minimum		in the second	and and a second		Project					4.50%
050	Maximum								Section and a		7.50%
300	\$50,000,000 job, minimum								1 Parts		2.50%
350	Maximum	AND NO. OF STREET, STRE		-		V	Contra Little Process				4%
1 1	31.30 Engineering Fees										
010	ENGINEERING FEES	RC11110-30	or ic		AS REAL	and the		S. Constanting		and the second	
0020	Educational planning consultant, minimum.					Project			1430		.50%
100	Maximum										2.50%
200	Electrical, minimum		100	Hall Bar	tight.	Contrct	2010				4.10%
300	Maximum										10.10%
)400	Elevator & conveying systems, minimum										2.50%
)500	Maximum										5%
600	Food service & kitchen equipment, minimum						-				8%
700	Maximum			Exer in			NOTE NO.				12%
0080	Landscaping & site development, minimum		12.2	123			E. Beating				2.50%
900	Maximum						ins fit				6%
000	Mechanical (olumbing & HVAC), minimum		The second	17-19			Activity 1				4.10%
100	Maximum					7					10.10%
200	Structural, minimum					Project					1%
300	Maximum						A				2.50%
000	Consultant, using DOE software energy analysis, small bldg, min					SF Flr.	anarona		-		.25
010	Maximum										.45
020	Medium bulcing, minimum						A Street				.15
1030	Maximum			R.C.					1.		.35
040	Large building, minimum	Contraction of the second		1. Start	12 V.			and attend			.05
	Maximum 31.50 Models					W	1				.25
010	MODELS	Contraction in the	10000	L'ANDERED	120403	1	a contract of	2119.50	International	HEL PROVIDENCE	El Marcine de
020	Cardboard & paper, 1 building, minimum		100		are-table		700		A SOLAR	the	770
050	Maximum			(Although		Eu.	1,600			700	770
100	2 buildings, minimum					1.2	935		Transfer 20	935	1,750
150	Maximum		o tale	ACRESSED.	10.10	1011 1011	2,125	23.945 (Printley)	and a strange and	2,125	2,325
200	Plexiglass and meral, basic layout					₩ SF Flr.	.06				
210	Including equipment and personnel		10 To 10			л п. "	.31			.06	.07
300	Site plan loyout, minimum					Ea.	,350			1,350	.34 1,475
350	Maximum					EU.	2,250		Interested	2,250	2,475
_	31.75 Renderings			5		2.0.1	21230			2,230	2,113
010	RENDERINGS Color, matted, 20" x 30", eye level,			1.4.5	100				the second	an anna	1546
020	1 building, minimum					Ea.	1,950			1,950	2,150
050	Average					.d.	2,775			2,775	3,075
100	Maximum						4,450			4,450	4,900
000	5 buildings, minimum						3,900			4,430	4,300
100	Maximum						7,300			7,800	4,200

Maximum R013113-50 0200 Allrisk type, minimum 0200 Allrisk type, minimum 0250 Maximum 0250 Maximum 0200 Centractor's equipment floarer, minimum 0450 Maximum 0460 Public liability, average 0460 Public liability, average 0800 Workers' compensation & employer's liability, average 0850 by trade, corpentry, general 0900 Clerical 1000 Electrical 1000 Electrical 1000 Extraordion 1000 Extraordion 1001 Glazing	.UT	21 61 - Cost Indexes	ALL C	Ser Cont	(recip)				S States	an a
0010 MATERAL INDEX (letterac) for over 930 dig code locations in the U.S. and Cancol, minimum (ExtextHown, N) Means and the extension of the extension o	01 2	1 61.50 Material Index	(rew		Labor- Hours	Unit	Material		ent Total	
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0 Density, set of 3 86 95	50	S O INVOLUTION										
00 70	50					to.						
0 Extraction, individual tests on sample 136 150	50 00 20	Denciny set of 3							86	95		

735 740 750 750 750 750 750 750 750 750 750 75	50 Testing Soil density, nuclear method, ASTM D2922 Sand core method ASTM D1556 Moisture content, ASTM D12216 Parmeability test, double ring infiltrometer Parmeability test, double ring infiltrometer Parmeability, vor. or constant head, undist, ASTM D 2434 Recomposed P octor compaction, 4" standard mold, ASTM D 698 6" modified mold Shear tests, triaxial, minimum Maximum Direct shear, minimum Maximum achiniq Roofing Welding ord-satuctive metal testing, dye penetrant Magnetic particle Radingraphy Ultrosonic Velding cortification, minimum Maximum ord-satuctive metal testing, dye penetrant Magnetic particle Radingraphy Ultrosonic felding certification, minimum Maximum		Output	Hours	Unit Eo.	, Motorial	Labor	Equipment	Totel 35 27 9 500 227 250 123 68 409 516 318 409 210 268 244 257 310 310 450	Incl 08P 38.67 30.17 10 550 250 275 355 450 450 261 275 256 263 341 341 495
740 750 750 780 800 850 700 750 750 750 750 750 750 820 N 840 880 880 900 880 900 880 900 880 900 800 8	Sand core method ASTM D1556 Moisture content, ASTM D12216 Parmeability test, dcuble ring infiltrometer Parmeability, var. or constant head, undist., ASTM D 2434 Recompacted P octor compaction, 4" standard mold, ASTM D 698 6" modified mold Shear tests, triaxial, minimum Maximum Direct shaar, minimum, ASTM D 3080 Maximum echnkhan for Inspertion, per day, continwark Rolling Roofing Welding orr-destructive metal testing, dye penetrant Magnetic particle Radiography Ultrosonic Kelding continuum								27 9 500 227 250 123 68 409 545 318 409 210 268 244 257 310 310 310	30 17 10 550 250 275 135 75 450 6C0 350 450 231 255 256 283 341 341 495
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850 700 750 100 150 300 550 750 750 750 750 820 820 840 880 880 880 9000 W 100 9000 U 500 510 600 610 700 710	Recompacted Proctor compaction, 4" standard mold, ASTM D 698 6" molified mold Shear rests, triaxial, minimum Maximum Direct shear, minimum, ASTM D 3080 Maximum echnichon for inspertion, per day, earthwork Rolling Roofing Welding on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultroscnic Kelding certification, minimum Maximum								250 123 68 409 545 318 409 210 268 244 257 310 310 310	275 : 135 75 450 600 350 450 231 295 256 283 341 341 495
700	P octor compaction, 4" standard mold, ASTM D 698 6" molified mold Shear rests, triaxial, minimum Maximum Direct shear, minimum, ASTM D 3080 Maximum echnicha for inspertion, per day, earthwork Rolling Roofing Welding on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultroscnic Velding certification, minimum Maximum								123 68 409 545 318 409 210 268 244 257 310 310 310	135 75 450 600 350 450 231 295 256 283 341 341 495
950 100 150 550 550 750 750 750 820 820 820 820 840 880 880 880 9000 400 5000 510 600 610 700 710	6* molified mold Shear rests, triaxial, minimum Maximum Direct shoar, minimum, ASTM D 3080 Maximum echnicho far inspertion, per day, earthwork Rolling Roofing Welding on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultroscnic Velding certification, minimum Maximum								68 409 545 318 409 210 268 244 257 310 310 450	75 450 600 350 450 231 295 256 283 341 341 495
100 150 150 550 770 820 840 880 880 880 000 W 100 000 U 500 510 600 610 700 710	Shear rests, triaxial, minimum Maximum Direct shaar, minimum, ASTM D 3080 Maximum echnichan far inspertion, per day, earthwork Rolling Roofing Welding on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultroscnic /elding certification, minimum Maximum								409 545 318 409 210 268 244 257 310 310 450	450 6C0 350 450 231 295 256 283 341 341 341 495
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350 TF 550 TF 650 750 770 820 N 820 N 840 880 0 880 0 000 W 100 0 000 U 500 510 600 610 700 710	Maximum exhicing for inspection, per day, continuork Rolting Roofing Welding on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultrosonic /elding certification, minimum Maximum								409 210 268 244 257 310 310 450	450 231 295 256 283 341 341 341 495
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450 750 790 820 N 840 880 900 W 100 900 W 900 W 500 510 600 610 700 710	Balting Roofing Welding an-destructive metal testing, dye penetrant Magnetic particle Radiography Ultroscnic felding certification, minimum Maximum								268 244 257 310 310 450	295 256 283 341 341 495
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790 820 N 8840 8860 8880 9000 W 1000 W 1000 9000 W 1000 W 1000 9000 W 1000 9000 W 1000 W 1000 9000 W 1000 W 1000 W 1000 9000 W 1000 W 1000 W 1000 W 1000 W 1000 W 10000 W 1000 W 10000 W 1000 W 1000 W 1000 W 1000 W 1000 W 100	Welding on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultrascnic Velding certification, minimum Maximum								257 310 310 450	283 341 341 495
820 N 840 860 880 000 W 100 000 U 500 510 600 610 700 710	on-destructive metal testing, dye penetrant Magnetic particle Radiography Ultrascnic /elding certification, minimum Maximum								310 310 450	341 341 495
840 860 880 100 000 W 500 510 600 610 700 710	Magnetic particle Radiography Ultrascnic /elding certification, minimum Maximum				Doy				310 450	341 495
860 880 000 W 100 000 U 500 510 600 610 700 710	Radiography Ultrosonic /elding certification, minimum Maximum								450	495
880 000 W 100 000 U 500 510 600 610 700 710	Ultrosonic Velding certification, minimum Maximum					17.22 A 11.2 A 1	Statistics St	CARD IN		Contraction of the second
000 W 100 U 500 U 510 600 610 700 710	felding certification, minimum Maximum					THE PARTY NEWS	PROVINCE STREET			
100 U 500 U 510 600 610 700 710	Maximum				*		5.5 H H H		309	340
000 U 500 510 600 610 700 710				32.2	Fo.		P. S. C. L. L. L.	1 OCH AND	91	100
500 510 600 610 700 710	nderatound storode tank								250	275
510 600 610 700 710					6				435	478
600 610 700 710	Volumetric tightness test ,<-12,000 gol				Ea.				613	675
610 700 710	<=30,000 gal Vadose zone (soil gas) sampling, 10-40 samples, min.	a Berry			Dau	INTRODUCTION		MUSERCON	1,364	1,500
700 710	Vaadse zone (son gas) sampling, 10-40 samples, min. Maximum				Day	A Sale		1957.54	2,273	2,500
710	Ground water menitoring inc. drilling 3 wells, min.				Total	Lava M			4,545	5,000
	Maximum				10101	15 2 11			6,364	7,000
	rav concrete slabs	11/2			E	1. 50			182	200
	hermographic testing, for bldg envelope heat loss, average 2,000 S.F.				Ea.				102	500
)1 5	1 Temporary Utilities 3 – Temporary Electricity									
1 51 13.	80 Temporary Utilities		ALC: NO							
Contraction of the second seco	PORARY UTILITIES							See 23	143.1	1115.2
	eat, incl. fuel and operation, per week, 12 hrs. per day	1 Skwk	1.	and the second second	CSF Flr	A REAL PROPERTY AND A REAL	3.27		30.27	34.50
200	24 hrs. per day	Second Second	60	.133	1.1	52	5.45	and the second	57.45	66
	ighting, incl. service lumps, wiring & outlets, minimum	1 Elec	1.1.1.1.1.1	.235		2.63	11.05	STATISTICS .	13.68	19.35
360	Maximum		17	.471		5.70	22		27.70	39.50
400 P 450	ower for temp lighting only, ser month, min/month 6.6 KWH Maximum/month 23.6 KWH								./5 2.85	.83

Maximum

Toilet, portable, see Equip. Rental 01 54 33 in Reference Section

	52 13 - Field Offices and Sheds	A STATE OF A STATE OF	Daily	Labor-	NO TIN		2009 Bo	ra Costs		Toto
01 55	2 13.20 Office and Storage Space	Crew		Hours	Unit	Material	Labor	Equipment	Total	Incl 0
0010	OFFICE AND STORAGE SPACE	ineral and service		N. Star	1007					
(020	Trailer, furnished, no hookups, 20' x 8', buy	2 Skwk	1	16	Fn.	8,200	655		8.855	10,000
0250	Rent per month			Les-m		163			163	179
0300	32' x 8', buy	2 Skwk	.70	22.857		12,200	935	a har the	13,135	15,000
0350	Rent per month					200			200	220
0400	50' x 10', buy	2 Skwk	.60	26.667		23,200	1,100		24,300	27,300
0450	Rent per month					281			281	310
0500	50' x 12', buy	2 Skwk	.50	32		27,900	1,300		29,200	32,700
0550	Rent per month	Aller Ant	11110			375			375	41(
0700	For air conditioning, rent per month, add	Chine and			*	41			41	- 4!
0080	Far delivery, add per mile				Mile	4.50			4.50	
1000	Portable buildings, prefab, on skids, economy, 8' x 8'	2 Curp	265	.060	S.F.	85	2.41		87.41	97
1100	Deluxe, 8' x 12'		150	.107	"	95	4.26		99.26	112
1200	Storuge boxes, 201 x 81, boy	2 Skwk	1.80	8.887	Ea.	4,675	365		5,040	5,700
1250	Rent per month					72			72	7
1300	40' x 8', buy	2 Skwk	1.40	11.429		6,400	465		6,865	7,77
1350	Rent per month		No.	17150	+	99			99	10
5000	Air supported structures, see Div. 13 31 13.13									1
01 5	2 13.40 Field Office Expense									
0010	FIELD OFFICE EXPENSE	Contract free	1162	12-3	2010-0	2.765.284	estistical			
0100	Cffice equipment rental overage			F.ek	Month	155			155	17
0120	Office supplies, average	1995 103			11	85			85	9
0125	Office trailer rental, see Div. 01 52 13:20			D.						2
0140	Telephone bill; avc. bill/month incl. long dist.	a seat of the seat of the			Month	80			80	8
0160	Lights & HVAC					150			150	16
	54 09 - Protection Equipment				hts.)		din an in			10-
	4 09.50 Personnel Protective Equipment									1.1.1.1
0010	PERSONNEL PROTECTIVE EQUIPMENT					En tas	blaine s	a start	a state	
0010 0015	PERSONNEL PROTECTIVE EQUIPMENT Hozardous waste protection	9.5								
0010 0015 0020	PERSONNEL PROTECTIVE EQUIPMENT Hezardous waste protection Respirator mask only, full face, silicone				Eu.	223			223	24
0010 0015 0020 0030	PERSONNEL PROTECTIVE EQUIPMENT Hozardous waste protection Respirator mask only, full lace, silicone Holf face, silicone				Eu.	33			33	3
0010 0015 0020 0030 0040	PERSONNEL PROTECTIVE EQUIPMENT Hozardous waste protection Respirator mask only, full lace, silicone Holf face, silicone Respirator cartridges, 2 rea [°] d/mcsk, dust or asbestos				Ea.	33 5.30			33 5.30	3
0010 0015 0020 0030 0040 0050	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vcpor				Eu.	33 5.30 4.69			33 5.30 4.69	3
0010 0015 0020 0030 0040 0050 0060	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vcpor Combinction vcpor and dust				Eu.	33 5.30 4.69 9.70			33 5.30 4.69 9.70	3
0010 0015 0020 0030 0040 0050 0060 0100	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vcpor Combinction vcpor and dust Errergency escape breathing cpparatus, 5 min				Eu.	33 5.30 4.69 9.70 465			33 5.30 4.69 9.70 465	3 51
0010 0015 0020 0030 0040 0050 0060 0100 0110	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing opparatus, 5 min 10 min				Eu.	33 5.30 4.69 9.70 465 500			33 5.30 4.69 9.70 465 500	3 1 51 55
0010 0015 0020 0030 0040 0050 0060 0100 0110 0150	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vcpor Combinction vcpor and dust Errergency escape breathing cpparatus, 5 min 10 min Se f contained breathing apparatus with full face piece, 30 min				Eo.	33 5.30 4.69 9.70 465 500 1,750			33 5.30 4.69 9.70 465 500 1,750	3 1 51 55 1,92
0010 0015 0020 0030 0040 0050 0060 0100 0110 0150 0160	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing apparatus, 5 min 10 min Se f contained breathing apparatus with full face piece, 30 min 60 min				Eu.	33 5.30 4.69 9.70 465 500 1,750 2,925			33 5.30 4.69 9.70 465 500 1,750 2,925	3 1 51 55 1,92 3,22
0010 0015 0020 0030 0040 0050 0060 0100 0110 0150 0160 0200	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing apparatus, 5 min 10 min Se f contained breathing apparatus with full face piece, 30 min 60 min Encopsoluting suits, limited use, level A				Eu.	33 5.30 4.69 9.70 465 500 1,750 2,925 905			33 5.30 4.69 9.70 465 500 1,750 7,925 905	3 1 51 55 1,92 3,22 99
0010 0015 0020 0030 0040 0050 0060 0100 0110 0150 0160 0200 0210	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing apparatus, 5 min 10 min Se f contained breathing apparatus with full face piece, 30 min 60 min Encapsulating suits, limited use, level A Level B					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270	3 51 55 1,22 3,22 99 29
0010 0015 0020 0030 0040 0050 0060 0100 0110 0150 0150 0160 0200 0210 0300	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing apparatus, 5 min 10 min Se f contained breathing apparatus with full face piece, 30 min 60 min Encapsolating suits, limited use, level A Level B Over boots, latex				Eu. Pr.	33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35	3 51 55 1,92 3,22 99 29
0010 0015 0020 0030 0040 0050 0100 0100 0150 0150 0160 0200 0210 0310	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing opparatus, 5 min 10 min Se f contained breathing opparatus with full face piece, 30 min 60 min Encopsoluting suits, limited use, level A Level B Over boots, latex PVC					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50	3 1 51 55 1,92 3,27 99 29 29
0010 0015 0020 0030 0040 0050 0100 0100 0110 0150 0160 0200 0210 0320	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator mask only, full lace, silicone Holf face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vcpor Combinetion vcpor and dust Errergency escape breathing opparatus, 5 min 10 min Se f contained breathing opparatus with full face piece, 30 min 60 min Errapsolating suits, limited use, level A Level B Over boots, latex P/C Neoprene					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35	3 1 51 55 1,92 3,27 99 29 29
0010 0015 0020 0030 0040 0050 0100 0100 0110 0150 0160 0200 0210 0300 0310 0320 0400	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator musk only, full lace, silicone Half face, silicone Respirator cartridges, 2 rea ^r d/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing opparatus, 5 min 10 min Se f contained breathing opparatus with full face piece, 30 min 60 min Encopsoluting suits, limited use, level A Level B Over boots, latex PVC					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50	3 1 51 55 1,92 3,27 99 29 29
0010 0015 0020 0030 0040 0050 0100 0100 0110 0150 0160 0200 0210 0320	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator mask only, full lace, silicone Holf face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vcpor Combinetion vcpor and dust Errergency escape breathing opparatus, 5 min 10 min Se f contained breathing opparatus with full face piece, 30 min 60 min Errapsolating suits, limited use, level A Level B Over boots, latex P/C Neoprene					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50 41.50			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50 41.50	3 1 51 55 1,92 3,22 99 29 29 29 29 29 29 29 29 29 29 29 2
0010 0015 0020 0030 0040 0050 0100 0110 0150 0160 0200 0210 0320 0320 0400 0410 01 5	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator mask only, full lace, silicone Holf face, silicone Respirator cartridges, 2 rea'd/mcsk, dust or asbestos Chemical vopor Combination vopor and dust Errergency escape breathing opparatus, 5 min 10 min Se f contained breathing opparatus with full face piece, 30 min 60 min Encapsolating suits, limited use, level A Level B Over boats, latex PVC Neoprene Gloves, nitrile/PVC Neoprene coated 4 09.60 Safety Nets					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50 41.50 21			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50 41.50 21	3 11 51 55 1,92 3,22 99 29 29 29
0010 0015 0020 0030 0040 0050 0100 0110 0150 0160 0200 0210 0320 0320 0400 0410 01 5	PERSONNEL PROTECTIVE EQUIPMENT Hczardous waste protection Respirator mask only, full lace, silicone Half face, silicone Respirator cartridges, 2 red'd/mcsk, dust or asbestos Chemical vcpor Combination vcpor and dust Errergency escape breathing opparatus, 5 min 10 min Se f contained breathing apparatus with full face piece, 30 min 60 min Encapsulating suits, limited use, level A Level B Over toots, latex P/C Neoprene Gloves, nitrile/PVC Neoprene Gloves, nitrile/PVC Neoprene cocted					33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50 41.50 21			33 5.30 4.69 9.70 465 500 1,750 2,925 905 270 6.35 21.50 41.50 21	3 1 51 55 1,22 3,27 99 29 29 29 29 29 29 29 29 29 29 29 29

20	23 - Temporary Barricades		Daih	y La	bor-	AS-H		2009 Bare Costs	V		otal 1 0&P
16 0	3.10 Barricades	Crew	Outp	out Ho	ours l	Init	Material 4,99	Labor Equipme 32	nt Total 36.9		10&P 55
0 4	5' high, 3 ral @ 2' x 8", fixed	2 Carp	20	1.000	300 533	L.F.	4.99	21.50	25.0	1000	37.50
	Movable		30	-	10.00	Eo.	435		435	1	480
	Stock units, 6' high, 8' wide, pluin, buy		i.	1997		ru.	525	AT CALL AND A MARKED	525	T	580
1	With reflective tape, buy			1		1		-			
	Break-a-way 3" PVC pipe barricade					Eo.	305		305		335
	with 3 eo. 1' x 4' reflectorized panels, buy					11	72		72	-	79
	Plywood with steel legs, 32" wide	DESCRIPTION	RS?	312			122		122	Constraint.	134
	Telescoping Christmas tree, 9' high, 5 flags, buy		1.	1			8.40	16 道气 3		.40	9.25
	Treffic canes, PVC, 18" high	Carlos P.S.	SL.	Sel.		+	14.20		STRUMP STRUCT	20	15.65
0	28" high Guardrail, whoden, 3" high, 1" x 6", on 2" x 4" posts	2 Car	20	2000	.080	LE	1.02	3.20		.03	6.10 8.35
0	2" x 6", on 4" x 4" posts	"	16	65	.097		2.16	3.87		.03	21.50
0	Portable motal with base pads, buy						19.75	1.07		.57	4.40
0	Typical installation, assume 10 reuses	2 Car	p 60	00	.027	V	2.50	1.07	25		27.50
0	Borricade tape, polyethylene, 7 mil, 3" wide x 500' long rol		-	7000	man	Ea.	25	PARTY TO HEADER	anten -	1 alle	AL CONTRACT
0	Barricades, see Div. 01 54 33.40		1		1000	1. T. (1. 1.	A CONTRACTOR OF	the second		100	ar su
5	6 26 - Temporary Fencing		(1V));		and the state of the	711-77	Della State	The second second	and the second second		
56	26.50 Temporary Fencing	Sarah Sarah	1				and the second		And States		and and a second
	TEMPORARY FENCING	2 Ck	b 4	400	.040	L.F.	7.25	1.26		8.51	9.95
20	Chain link, 11 ga, 5' High	2 percent	100.00	300	.053	1	7.75	1.69		7.44	11.15
)(C	6' high Rented chain link, 6' high, to 1000' (up to 12 ma.)		10106	400	.040		2.69	1.26		3.95	4.92
50	Over 1000' (up to 12 mc.)	A REAL PROPERTY AND INC.	1	300	.053		2.59	1.69		4.28	5.45
50	Plywood, pointed, 2" x 4" frome, 4' high	1-4		135	.178		5.05	6.80		18.20	23.50
00	4" x 4" frome, 8' high	"		110	.218		9.85	8.35		6.25	20.50
00	Wire mesh on 4" x 4" posts, 4" high	2 G		100	.160		9.85	6.40		23.05	29
60	8' hinh	r	1	80	.200	1	15.05	8	the states of th	.0.03	
1 5	66 29 - Temporary Protective Walkwa	ys.	and the	and the second	1013	e est			(1993) 1993 1993	-	- A
1 56	29.50 Protection		-		1	12.5	Sec. 18	1.3.5			
10	PROTECTION		an	75	.107	Treat	d 4.16	4.25		8.42	11.15
)20	Stair tread, 2" x 12" planks, 1 use	in the	ah	65	.123		1.39	COLUMN TO THE REAL OF		5.31	9.10
100	Exterior plywood, 1/2" thick, 1 use	A GURAN		60	.133	10 million (1997)	2.49	and the second states and		7.84	- 11
200	3/4" thick, 1 use	A PROMINE	100	350	.023					1.60	2.18
200	Sidewalks, 2" x 12" planks, 2 uses Exterior plywood, 2 uses, 1/2" thick			750	.011	11	.23			.66	.91
300	Extensi plywood, 2 uses, 17.2 mick			650	.012		.34			.83	1.13
400 500	3/4" thick		+	600	.013		4	2 .53	Canal Contraction	.95	1.29
	56 32 - Temporary Security	and the second				1525				- 1	
	6 32.50 Watchman							A CONTRACTOR OF	Carlos Annos	1.0.2	1.500.059
010	WATCHMAN				11			来的社会		25	27.5
020	Service, monthly basis, uniformed person, minimum	CE COL			127	H	1000		and a second	45.45	50
100						1		No.		31	34
200										54.55	60
0300	Moximum					We	ek.			290	319
0500							17			370	429
0600						6	c.			,364	1,500
0800							"		2	,/27	3,000
3900	Maximum	1									