

Pearland Recreation Center and Natatorium Pearland, Texas



Technical Report #1

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Section 1: Executive Summary

This technical report contains an analysis of the Pearland Recreation Center and Natatorium project. The analysis looks at the current design and related construction management aspects, including the project schedule, building systems, cost estimate, site plan, and local conditions. It also addresses the organization and characteristics of the project team.

The Pearland Recreation Center and Natatorium project is located at 4141 Bailey Road in Pearland, Texas; a suburb 15 miles south of Houston, Texas. It is being developed through a joint venture between the City of Pearland and the Pearland Independent School District to serve the Pearland community.

The \$17 million project began design in March 2007 and construction is scheduled for completion in May 2010. The project, designed by PBK and constructed by EMJ Corporation, is using a design-bid-build delivery method.

The 63,300 square foot recreation center houses a competition gym, indoor running track, racquetball courts, weight room, aerobics room, dance room, locker rooms, administrative offices, and other multi-purpose rooms.

The 41,000 square foot natatorium features a state of the art 25-yard X 50-meter competition pool with two (2) 1-meter and two (2) 3-meter diving boards. There is also a 4-lane 25-yard therapeutic pool with a handicap access ramp.

Section 2: Project Schedule

The project schedule for the Pearland Recreation Center and Natatorium begins with commencement of design on March 1, 2007 and ends with substantial completion on May 12, 2010.

After site work is completed, the recreation center will be constructed separately from the natatorium. While they are one building, the structural systems and building features of the two portions are completely different so separate construction of the two building sections seems most efficient. Through each phase of construction, the recreation center will generally precede construction of the natatorium.

Site Work:

The site work activity contains all work done for site preparation as well as for the parking lot, which will be constructed at the beginning of the project to allow for a cleaner construction site.

Foundations:

The foundations in the natatorium will commence once the excavation has been completed for the swimming pools. This excavation will be performed while the foundations are being constructed on the recreation center.

Structural:

The structural system in the recreation center is very simple and does not have anything important to note. The natatorium has 14 large glulam beams that will span the swimming pools. The structural system in the natatorium will begin after the recreation center's structural system has been completed and will be constructed by a separate contractor due to the glulam material.

Finishes:

The finishes in the recreation center again don't have anything unique to note, however the natatorium must have the interior finishes completed prior to beginning the swimming pool finishes (tiles, etc.) in order to avoid damage to the expensive work that will be put in place in the swimming pool.

The project schedule for this project is relatively simple. The key item to notice when viewing the schedule is the separation in construction of the two (recreation center and natatorium) portions of the building. See Appendix 1 for the complete project summary schedule.

Section 3: Building Systems Summary

This section summarizes the building systems in the Pearland Recreation Center and Natatorium. The building's systems are very typical. There are no LEED/Green objectives for this project so there are no sustainable systems.

Demolition:

No demolition was required.

Excavation:

The site is at an elevation of 14' above sea level. It was necessary to excavate to about 14' for the foundations. For this reason it was necessary to dewater the site. This was done using well points throughout the site. Excavation was done with a 1:1 layback so no temporary support was needed.

Structural Framing System:

The Recreation center has a structural steel frame. The columns are all tube steel while the beams are W-sections with k-series joists supporting 18ga galvanized 1-1/2" deep non-composite floor decking and 22ga galvanized 1-1/2" deep Type "B" steel non-composite roof decking. All connections between W-sections are bolted and the connections to the tube steel are welded connections. The steel was erected using a 50-Ton and 80-Ton Truck Crane.

The Natatorium has glulam columns supporting glulam purlins which support a 3" wood deck. The glulam system was erected using a 100-Ton and 75-Ton Truck Crane.

Cast-In Place Concrete:

The only cast-in-place concrete on this project was the slabs and foundations. The foundation consisted of spread footings on drilled piers. The footings used stick-built forms and were poured with a pump truck. There is a 5" thick reinforced concrete slab-on-grade with a vapor barrier that extends throughout the entire building foundation. There is also a 3" thick concrete slab on WWF on the elevated slabs. The slab-on-grade was placed using a pump truck in 4 different pours. The elevated slabs at the second level and the roof were each poured in 3 pours.

Precast Concrete:

There is no precast concrete on this project.

Mechanical System:

The recreation center is serviced by five (5) mechanical rooms located as shown below in Figures 3.1 and 3.2:

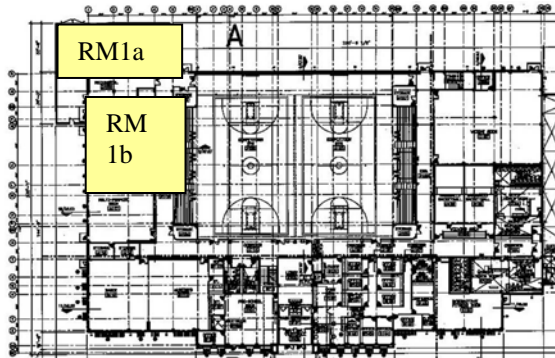


Fig.3.1 Rec Center 1st Floor Mechanical Room Locations

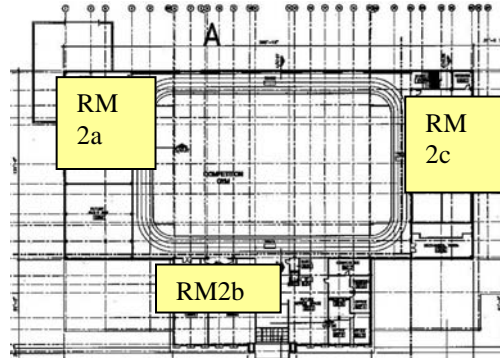


Fig. 3.2 Rec Center 2nd Floor Mechanical Room Locations

The Natatorium is serviced by two (2) mechanical rooms as shown below in Figures 3.3 and 3.4:

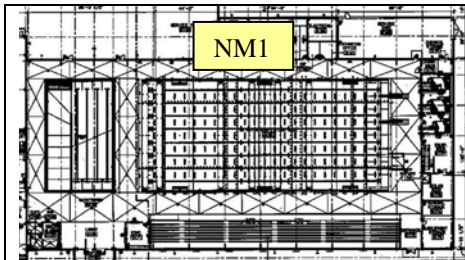


Fig. 3.3 Natatorium 1st Floor Mechanical Room Location

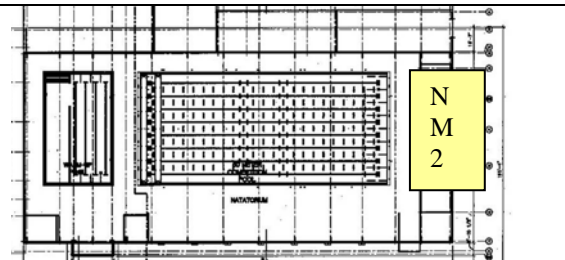


Fig. 3.4 Natatorium 2nd Floor Mechanical Room Location

Location	Item
RM1a	Two (2) Air Cooled Chillers
RM1b	Four (4) End Suction Pumps
RM2a	Two (2) Air Handling Units, Two (2) Boilers, and One (1) End Suction Pump
RM2b	Three (3) Air Handling Units
RM2c	Four (4) Air Handling Units
NM1	One (1) Air Handling Unit and One (1) Condenser
NM2	Two (2) Air Handling Units

Air is distributed throughout the building using rectangular and flex duct. There is then a Constant Air Volume Terminal in each room.

Fire Suppression System:

The building has a Wet Pipe Pre-Action Fire Sprinkler System that is to be installed to a performance spec of:

Public Spaces, Classrooms, and Offices: 0.10 GPM/SF over the most remote 1,500 SF.

Mechanical Rooms, Storage Areas, and Service Areas: 0.15 GPM/SF over 1,500 SF.

Electrical System:

The electrical system for the Pearland Recreation Center and Natatorium has a 3000A building supply with a 600A Surface Mounted Distribution Panel. There is also a 400 KW emergency back-up generator for the building.

Masonry:

The entire building has an 8" horizontally reinforced non-load bearing CMU enclosure. There is reinforcing at 16" on-center. There is also a bond beam every 8' (12-courses of block).

Attached to the CMU is a face brick veneer connected by masonry ties every 4-courses of CMU. Between the CMU and face brick there is 1 ½ inch rigid insulation and an air space. Additionally, the CMU has a damp proofing applied to it.

Curtain Wall:

There are no curtain walls in this building.

Section 4: Project Cost Estimate

Actual Cost:

Total Actual Building Construction Cost: \$15,137,233
 Actual Building Construction Cost/SF: \$144.00/SF
 Total Project Cost: \$16,901,509
 Project Cost/SF: \$160.79

By System:

System	Total Cost (\$)	Cost/SF (\$)
Structural Steel (Erection Included)	\$1,054,385	\$5.8
Cast-In Place Concrete	\$1,166,021	\$11.09
Masonry	\$1,223,500	\$11.64
HVAC	\$1,907,000	\$18.14
Electrical	\$41,936	\$0.40
Plumbing	\$499,027	\$4.75
Fire Protection	\$195,450	\$1.86
Elevators	\$41,936	\$0.40
Roofing	\$609,900	\$5.81

NOTE: For confidentiality purposes the actual estimate has not been posted.

Estimated Cost:

The estimated cost for the project was created using D4Profiler and RS Means SF Cost Data. D4Profiler takes real cost data from similar past projects and modifies it to meet the specified building requirements.

D4Profiler had a very similar project, a recreation center with a large natatorium, just outside of Cincinnati, Ohio. This project was almost the exact same size as well the Pearland project as well. The cost was within 1% of the actual cost. This cost was the total project cost, not just the construction cost. This total project cost estimate is included in Appendix 2.

Obtaining an RS Means estimate was more difficult. A separate cost estimate was obtained for the recreation center (using the 'Gymnasium' building type in RS Means) and the natatorium (using the 'Swimming Pool, Enclosed' building type in RS Means). A problem that arose was that the cost data provided in RS Means was for projects much smaller than the Pearland project. To account for this it was necessary to extrapolate the table values. The cost estimates for these two portions were then combined to obtain a total building cost. This price was again within 1% of the actual cost. This estimate is only for construction costs and is included in Appendix 3 with all the calculations that were performed.

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These estimates are shown in the table below.

Method	Total Cost (\$)	Cost/SF (\$)	Price Includes:
D4Cost	\$16,786,542	\$159.87	Total Project Cost
RS Means SF Data	\$15,043,887	\$143.28	Construction Cost

Section 5: Site Plan

The extents of the project site are shown on the below site layout by the magenta shading. The project is located in a relatively unpopulated area. The closest structure is a one-story elementary school about 50 feet to the north of the project site as shown below. Entrance to the site is from Bailey Road on the south side of the site. Electric, gas, and water utility connections are also shown on the north side of the building. Immediately adjacent to the north side of the building is where the crane(s) will be located.

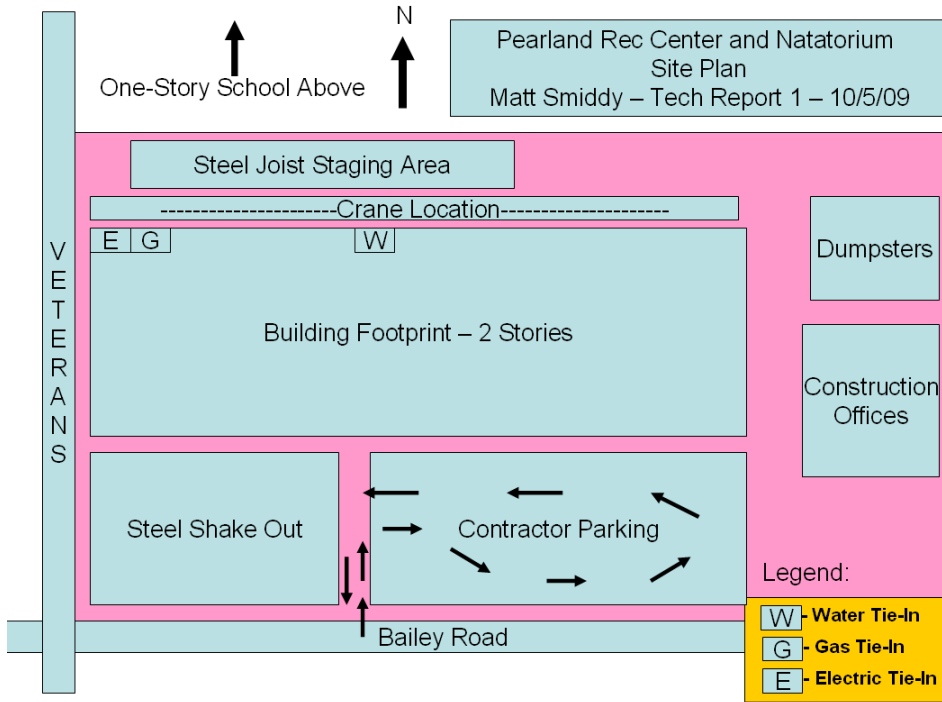


Figure 5.1 Site Layout

Section 6: Local Conditions

Labor:

The project site is located in a suburb of Houston, TX; the 4th largest city in the US. This location enables easy access to a diversely skilled labor force. For this reason labor availability will not be a problem.

Weather:

Houston, TX has a warm and mild climate. While winter weather will not be an issue, there is the potential for tropical weather to affect the project during the fall months. Additionally, since the project is located in a region that is prone to tropical weather, there will be more stringent building codes and inspections.

Geography:

The project is located on a 7-acre plot of land in an unpopulated suburb of Houston, Texas. There is ample area for construction lay down and parking.

The project site is at a very low elevation (+14'). Because of the low site elevation, ground water will be a serious consideration during excavation. It will be necessary to de-water the site during all excavation activities.

Sustainability:

Sustainable construction practices are not predominant in the Houston area. It is uncommon for construction projects to apply sustainable practices such as construction material recycling, etc.

Section 7: Client Information

Pearland Recreation Center and Natatorium is being built to promote recreation and economic activity in Pearland, Texas. The project is being funded by the City of Pearland, Pearland Independent School District, and the Pearland Economic Development Organization as shown below in the table below:

Party	Amount Contributed	Source of Funding
City of Pearland, Texas	\$13 Million	Tax Revenue
Pearland Independent School District	\$3.5 Million and 7-acre building site	School Bond
Pearland Economic Development Organization	\$1.5 Million	Tax Revenue

The City of Pearland identified a recreation center and natatorium as 'high' priority in their 2005 master plan. At the same time, Pearland Independent School District recognized a need for a natatorium for their school. The two parties decided to come together to build a joint project. The Pearland Economic Development Organization also recognized the potential economic impacts this project could have on local businesses through additional visitors to the Pearland area. A similar facility nearby, University of Houston's Recreation Center, currently has to turn away requests for facility use due to overbooking, so this new facility could have a significant economical impact on the community.

The master plan called for a project that would be able to serve the community for many years to come. To meet this goal, the project was flexibly designed to meet any potential changes in regulations. For example the competition pool was designed to be 55 meters long with (2) 2.5 meter wide bulkheads so should regulation pool length change, the facility could easily be modified to meet this new requirement.

The only project deadline is to have the natatorium completed before the start of school in Fall 2010. At this time the project should be completed in June 2010, so this will not be an issue. Currently the project does not have a phased completion and there are no intentions to implement one at this time.

Section 8: Project Delivery System

A design-bid-build delivery system is being used on the Pearland Recreation Center and Natatorium project. The City of Pearland, Pearland Independent School District, and Pearland Economic Development Organization are building the project as a joint-venture, however all contracts for the project are held by the City of Pearland. The City of Pearland has hired PBK as the architect and EMJ Corporation as the construction manager for the project.

PBK has selected sub consultants to assist in designing the project. The primary consultants are shown in Figure 8.1. The only designer contract held with the City of Pearland is a lump sum Professional Design contract, with payments distributed as shown in the below table.

Deliverable	% of Lump Sum
Schematic Design	15%
Complete Design	15%
Construction Documents	20%
Contractor Procurement	25%
Construction Service	25%

EMJ was selected as general contractor through a 'Best Value' selection method. The City of Pearland considered items such as cost, schedule history, references, and proposed specialty contractors during this selection process. EMJ contracted specialty contractors to perform all the work on site. They hold lump sum contracts with all their subs as shown in Figure 8.1. A complete list of specialty contractors on the project is available in Appendix 4

The project design was essentially completed prior to contractor selection, so the design-bid-build delivery method with a lump sum contract is appropriate for this project.

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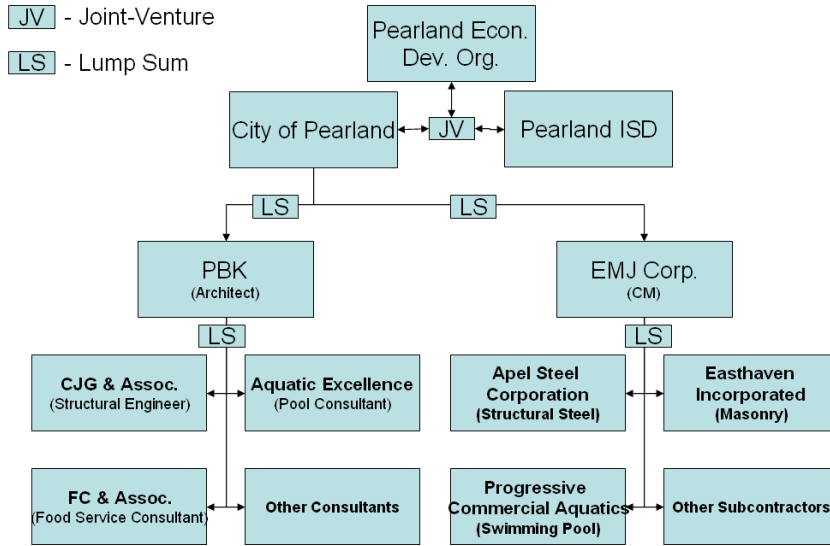


Figure 8.1 – Project Team Organizational Chart

The City of Pearland required the following insurance to be held by the contractors and design professionals on the project:

- Worker’s Compensation as per Texas State Requirements
- Commercial General Liability Insurance:
 - \$1,000,000 for each occurrence
 - \$2,000,000 general aggregate limit
 - \$2,000,000 product-completed operations aggregate limit
 - \$1,000,000 personal and advertising injury limit
- Auto liability insurance coverage of \$1,000,000
- Employer’s liability insurance coverage of \$1,000,000 per accident or disease
- Umbrella liability insurance coverage of \$5,000,000
- Professional liability insurance coverage of \$1,000,000.
- Builder’s risk insurance in equivalence to total repair and replacement charges of every incident.

Project Team Contacts:

City of Pearland – Andrea Brinkley – Project Manager
 EMJ Corporation – Scott Stoltz – Project Manager
 EMJ Corporation – Kevin Huff – Project Engineer
 EMJ Corporation – Phillip Crissman – Project Superintendent
 PBK – Van Franks – Principle

Section 9: Staffing Plan

The CM (EMJ Corp) project team for the Pearland Recreation Center and Natatorium project consists of a Vice-President in Charge, a Project Manager, a Project Engineer, a Superintendent, and an Assistant Superintendent.

The Vice-President in Charge, Project Manager, and Project Engineer work from the EMJ home office in Dallas, TX and visit the project site about twice a month. The Superintendent and Assistant Superintendent are on-site in Pearland, TX at all times.

The Project Engineer, Superintendent, and Assistant Superintendent work full time on the project while the Project Manager and Vice-President in Charge are both part time on the project and over see other projects as well. Figure 9.1 shows the organization of the staff on this project.

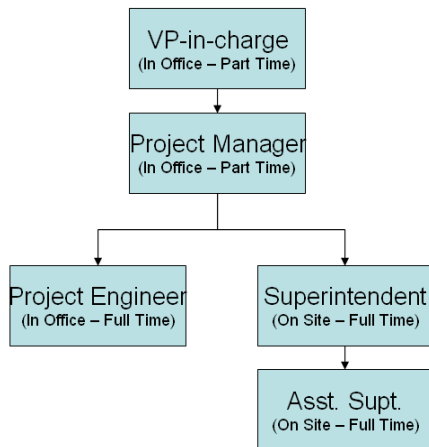
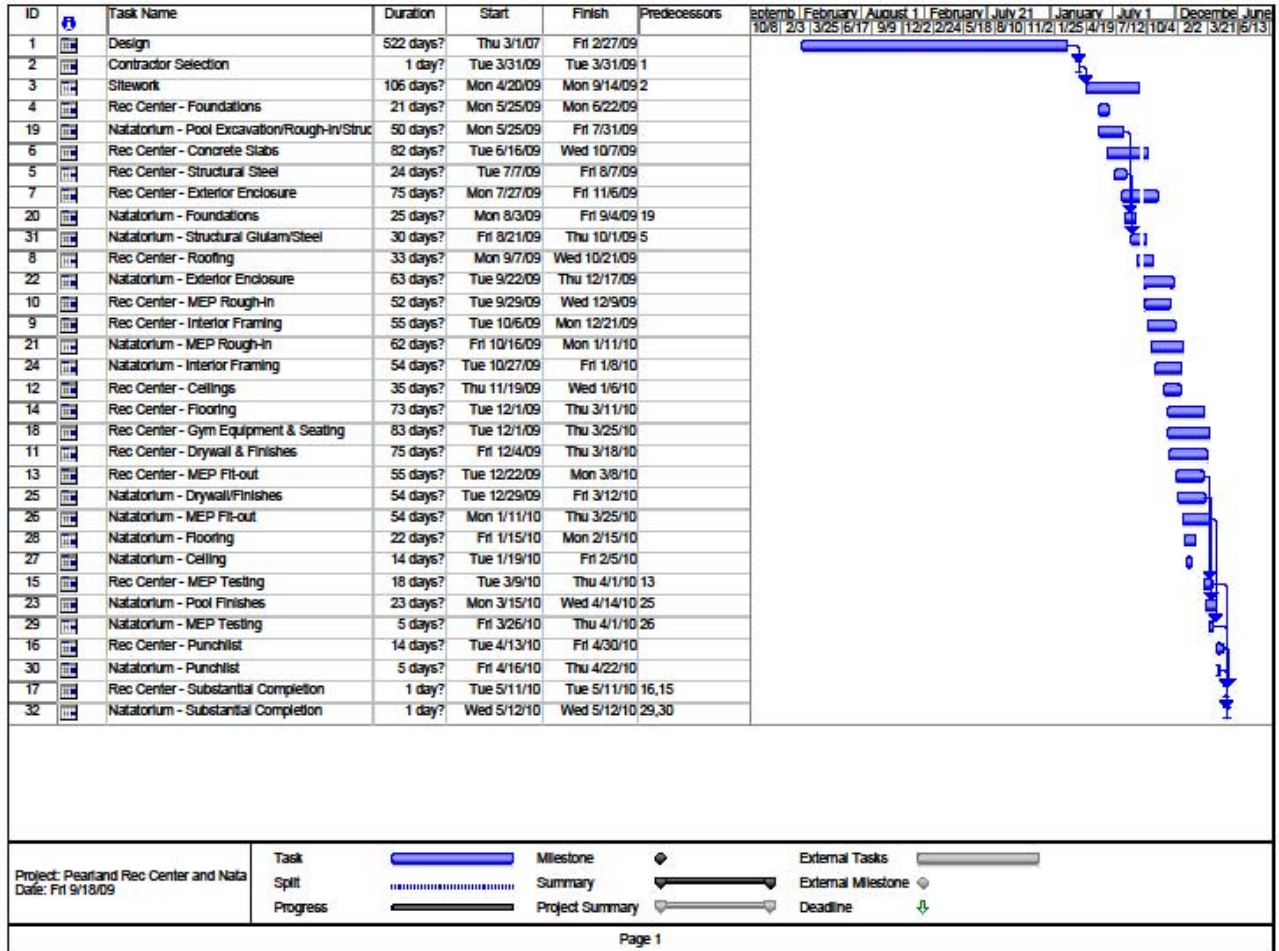


Figure 9.1 CM Organizational Chart

Appendix 1

Project Summary Schedule

Project Summary Schedule



Appendix 2

Parametric Cost Estimate

Parametric Cost Estimate – D4Profiler

Wednesday, September 16, 2009

Statement of Probable Cost

Page 1

Pearland Natatorium - Aug 2009 - TX - Houston				
Prepared By:		Prepared For:		
Moody/Nolan, Ltd. + HOK 1776 East Broad Street Columbus, OH 43203 Fax:				
Building Sq. Size: 150943		Site Sq. Size: 418176		
Bid Date: 6/1/2009		Building use: Recreational		
No. of floors: 2		Foundation: CON		
No. of buildings: 1		Exterior Walls: MAS		
Project Height: 52		Interior Walls: GYP		
1st Floor Height: 16		Roof Type: MET		
1st Floor Size: 90000		Floor Type: TER		
		Project Type: NEW		
Division		Percent	Sq. Cost	Amount
00	Bidding Requirements	2.48	2.58	389,439
	Bidding Requirements	2.48	2.58	389,439
03	Concrete	5.10	5.30	800,197
	Concrete	5.10	5.30	800,197
04	Masonry	17.25	17.95	2,709,962
	Masonry	17.25	17.95	2,709,962
05	Metals	15.96	16.60	2,506,241
	Metals	15.96	16.60	2,506,241
06	Wood & Plastics	0.60	0.62	93,806
	Wood & Plastics	0.60	0.62	93,806
07	Thermal & Moisture Protection	8.21	8.54	1,288,653
	Thermal & Moisture Protection	8.21	8.54	1,288,653
08	Doors & Windows	3.03	3.15	475,665
	Doors & Windows	3.03	3.15	475,665
09	Finishes	7.29	7.59	1,145,575
	Finishes	7.29	7.59	1,145,575
10	Specialties	0.82	0.85	128,865
	Specialties	0.82	0.85	128,865
11	Equipment	0.36	0.38	56,852
	Equipment	0.36	0.38	56,852
12	Furnishings	0.39	0.41	61,590
	Furnishings	0.39	0.41	61,590
13	Special Construction	12.39	12.89	1,945,298
	Special Construction	12.39	12.89	1,945,298
14	Conveying Systems	0.36	0.37	55,905
	Elevators	0.36	0.37	55,905
15	Mechanical	16.54	17.21	2,598,132
	Mechanical	16.54	17.21	2,598,132
16	Electrical	9.23	9.60	1,449,261
	Electrical	9.23	9.60	1,449,261
Total Building Costs		100.00	104.05	15,705,442
02	Site Work	100.00	2.59	1,081,100
	Site Work	100.00	2.59	1,081,100
Total Non-Building Costs		100.00	2.59	1,081,100
Total Project Costs		-	-	16,786,542

Appendix 3

RS Means Cost Estimate

RS Means Data for Natatorium

COMMERCIAL/INDUSTRIAL/INSTITUTIONAL **M.650** **Swimming Pool, Enclosed**



Handwritten notes: 180' x 70' x 0.88 x 1.52' and 4,817

Costs per square foot of floor area

Exterior Wall	S.F. Area	10000	16000	20000	22000	24000	26000	28000	30000	32000
	L.F. Perimeter	420	510	600	640	680	726	776	826	876
Form Brick with Concrete Block Backup	Wood Trim	254.75	311.15	363.70	366.65	369.65	372.25	374.90	377.60	380.35
	Finish Carp.	271.15	246.25	241.10	233.70	225.00	215.20	204.55	193.60	182.55
Wood Siding or Pine	Wood Trim	229.00	214.70	210.65	207.15	203.80	200.55	197.45	194.45	191.50
Precast Concrete Panel	Finish Carp.	641.40	701.20	759.40	815.65	870.10	922.80	973.85	1023.20	1070.85
Formic	Wood Trim	228.00	215.75	212.25	208.65	205.20	201.90	198.70	195.60	192.60
	Finish Carp.	248.20	238.10	234.65	231.15	227.80	224.55	221.40	218.35	215.35
Perimeter Cap, Add or Deduct	Per 100 L.F.	16.70	16.40	16.15	15.90	15.65	15.45	15.20	15.00	14.80
Entry High Cap, Add or Deduct	Per 100 L.F.	12.10	12.00	11.90	11.80	11.70	11.60	11.50	11.40	11.30

for Basement add \$23.95 per square foot of basement area

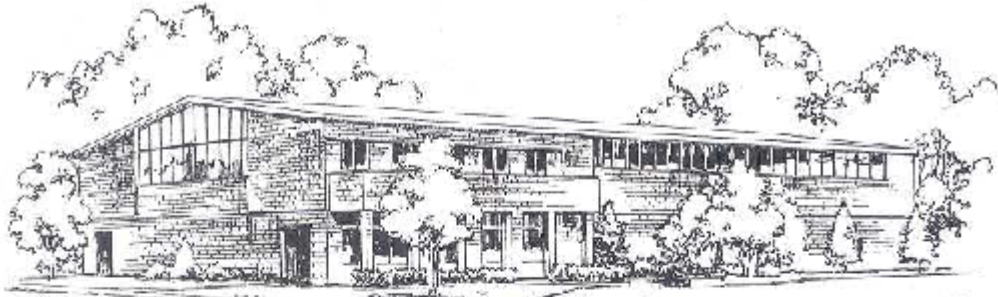
The above costs were tabulated using the basic specifications shown on the listing page. If these are unusual or if special items are necessary for design alternatives and owner's requirements, separate completed proposal books for this type of structure, range from \$108.00 to \$353.70 per S.F.

Common additives

Description	Qty	Unit	\$ Cost	Description	Unit	\$ Cost
Roachbar, telescoping, iron, all				Truss, prefabricated, complete		
To 10' in		Each	114-140	8' x 4'	Each	31.00
To 20' in		Each	134-198	8' x 6'	Each	42.50
To 30' in		Each	142-300	8' x 8'	Each	56.00
To power hoist, 25' and		Each	45.30-71.50	8' x 10'	Each	71.00
Emergency lighting, 25' with battery operated lead battery		Each	232	10' x 12'	Each	92.00
Truss, aluminum		Each	825	Sound System		
Truss, steel, single for 60' or 72'		Opening	191-310	Amplifier, 250 watts	Each	20.00
21' or 60' or 72' (steel)		Opening	115-161	Speaker, ceiling or wall	Each	5.00
51' or box truss		Opening	45-81.00	Trumpet	Each	38.00
Truss, wood, for, single or double		L.F.	21	Steel Coll. Complete, to 140 C.F.	Each	200.00
Pole, 1/2" x 1/2"		Each	61.50	To 300 C.F.	Each	260.00
Pool Equipment				To 500 C.F.	Each	525.00
Diving board, 3 meter		Each	12,800	To 1000 C.F.	Each	750.00
1 meter		Each	5400			
Diving board, 6 aluminum		Each	3700			
Floorgate		Each	30.00			
Hoop and chair, 1 seat		Each	81.00			
Pommel		Each	36.00			
Light, underwater, 12 volt, 30 watt		Each	3.00			

RS Means Data for Recreation Center

COMMERCIAL/INDUSTRIAL/INSTITUTIONAL **M.310** **Gymnasium**



156,9810.88 = 132.86

Costs per square foot of floor area

	S.F. Area	12000	16000	20000	25000	30000	35000	40000	45000	50000
		440	520	600	700	758	780	841	910	979
Exterior Wall	Lam. Wood Veneer	154.00	147.75	143.85	140.35	135.00	131.10	127.00	121.45	116.20
Exterior Wall	Concrete Block	144.40	137.75	132.70	129.30	123.00	119.05	115.30	109.75	104.50
	Exterior Wall Veneer	180.75	171.00	163.15	156.40	148.55	142.90	137.40	131.95	126.50
Exterior Wall Veneer	Concrete Block Veneer	152.15	145.40	139.95	135.55	129.20	125.25	121.50	115.95	111.70
	Exterior Wall Veneer	142.50	135.75	130.30	126.90	120.60	116.65	112.90	107.35	102.10
Interior Wall	Exterior Wall Veneer	142.50	135.75	130.30	126.90	120.60	116.65	112.90	107.35	102.10
	Exterior Wall Veneer	142.50	135.75	130.30	126.90	120.60	116.65	112.90	107.35	102.10
Interior Wall	Acoustic Ceiling	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Interior Wall	Acoustic Ceiling	0.50	0.50	0.50	0.70	1.00	1.00	0.50	0.50	1.00

63,300

Acoustic - Not Applicable

The above costs were estimated using the basic specifications shown on the basis page. These costs should be adjusted where necessary for design alternatives and owner's requirements. Reported completed project costs in the type of structure range from \$73.05 to \$116.00 per S.F.

Common additives

Description	Unit	\$ Cost	Description	Unit	\$ Cost
Becker's (H&S) paint, normal	Sq. Yd.	115 - 160	Waters, Seal, single line, 6" x 72"	100 yds	120 - 310
6-15 gal	Sq. Yd.	215 - 263	2 line, 50' x 72" long	100 yds	107 - 141
16-27 gal	Sq. Yd.	249 - 307	3 line, cast color	100 yds	65 - 83.30
21-32 gal	Sq. Yd.	45.50 - 71.50	Load bench, 200 lbs capacity only	LF	21
For power operation, e.t.d.	Sq. Yd.	45.50 - 71.50	Refractory steel pipe	Each	53.50
Gym Divider Curtain, Mesh top	S.F.	11.00	Sound Saver	Each	2.00
Manual collapse	S.F.	11.00	Supplies, 250 wdb	Each	1.91
Gym Mat	S.F.	3.25	Quarter, chiling a wall	Each	3.62
2" x 4" x 1/2" in. covered	S.F.	6.05	Temper	Each	3.62
2" x 4" x 1/2" in. w/pegs	S.F.	9.65	Emergency lighting, 25 watt, battery operated	Each	2.82
Flashed top	S.F.	6.65	Load battery	Each	8.02
Concrete	Sq. Yd.	117.5 - 139.5	Normal expansion	Each	8.02
Reinforcing steel	Sq. Yd.	117.5 - 139.5			
Reinforcing steel	Sq. Yd.	117.5 - 139.5			
Spring up, wall e.t.d.	Sq. Yd.	117.5 - 139.5			

Continued from the Reference Section for Itemization Factor

Data for Estimate Location Adjustment

Location Factors				Location Factors			
STATE/ZIP	CITY	Residential	Commercial	STATE/ZIP	CITY	Residential	Commercial
NORTH DAKOTA (CONT'D)				PENNSYLVANIA (CONT'D)			
556	Dickinson	76	84	190191	Philadelphia	116	112
557	Minot	81	74	193	West Chester	110	107
558	Wahpet	76	82	191	Marksboro	119	116
				195195	Roadster	97	96
OHIO				Puerto Rico			
430-432	Columbus	80	75	000	San Juan	78	81
434	Marion	89	84				
434-436	Toledo	100	91				
437-438	Zanesville	88	89				
435	Starkville	83	90				
441	Lorain	88	86				
441	Cincinnati	101	100				
44-441	Arena	88	86				
444-441	Youngstown	86	84				
445-447	Darien	83	82				
445-449	Warren	83	81				
450	Harrison	82	82				
451-452	Garfield	82	81				
451-454	Deer	81	81				
455	Spring Hill	84	83				
455	Chillicothe	84	83				
457	Albion	87	88				
458	Lima	81	82				
OKLAHOMA							
730-731	Oklahoma City	79	83				
731	Norman	88	81				
735	Lawton	80	83				
735	Okmulgee	80	82				
737	Ada	80	82				
738	Woodward	76	80				
738	Claremore	87	79				
740-741	Tulsa	77	80				
745	Moore	81	82				
744	Midwest City	81	84				
746	Ada	81	82				
746	Broken Arrow	81	80				
747	Okemune	81	80				
748	Shawnee	81	80				
749	Claremore	87	81				
OFFICER							
941-947	Portland	80	80				
947	East	81	80				
947	East	80	80				
945	Marion	85	80				
946	Bismarck	85	80				
947	Leitch	80	80				
948	Leitch	85	82				
949	Leitch	85	82				
PENNSYLVANIA							
170-172	Pittsburgh	86	88				
173	West Chester	85	86				
174	Harrisburg	80	84				
176	Red Bank	85	85				
176	Greensburg	84	86				
177	Lebanon	84	85				
178	DuBois	84	84				
179	Johnstown	84	84				
180	DuBois	84	84				
181	New Castle	81	85				
182	Frederick	81	85				
183	Gettysburg	81	85				
184-185	York	81	85				
184	York	81	85				
187	York	81	85				
189	State College	80	85				
189	Wellsboro	80	85				
190-191	Harrisburg	84	85				
192	Cambridge	88	81				
193-194	York	81	85				
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Calculations for RS Means Estimate

Natatorium RS Means Calculations

41,817 SF

Extrapolation

$$y(x^*) = y_{k-1} + \frac{x^k - x^{k-1}}{x^k - x^{k-1}} (y_k - y_{k-1})$$

$$\text{Cost} = 198 + \frac{41,817 - 30,000}{32,000 - 30,000} (195 - 198) = 186.27 \times 0.88 = 158.64$$

Rec. Center

63,300 SF

$$\text{Cost} = 155.55 + \frac{63,300 - 45,000}{50,000 - 45,000} (154.30 - 155.55) = 150.98 \times 0.88 = 132.86$$

Total:

$$158.64 \times 41,817 + 132.86(63,300) =$$

$$\text{Total} = \$15,043,887$$

$$\$/\text{SF} = \$143.28$$

Appendix 4

Specialty Contractor List

Specialty Contractor List

**SUBCONTRACTORS AND SUPPLIERS
RECREATION CENTER & NATATORIUM
PEARLAND, TX
#5085**

PROJ. EST.: LOU ARRIETA
 PROJ. MGR.: SCOTT STOLTZ
 PROJ. ASST.: MATT LUNA
 SUPERINT.: PHILLIP CRISSMAN

JUNE 30, 2009

SUBCTR	CO NAME	CO ADDRESS	CITY STATE ZIP	CONT F NAME	CONT L NAME	PHONE	FAX	SUBCD
0000-1 OWNER	City of Pearland							0000-1
0000-2 ARCHITECT	PBK Architects							0000-2
0000-3 STRUCTURAL ENGINEER								0000-3
0000-4 MEP ENGINEER								0000-4
0000-5 JOBSITE	EMJ Corporation	4141 Bailey Road	Pearland, TX 77584	Phillip	Crissman			0000-5
5085-0107-030100-00 CONCRETE	MCM Commercial Concrete, Inc.	9518 Grant Road	Houston, TX 77070	Matt	Mabry	713-466-7670	713-466-7683	030100-00
5085-0118-034713-00 CONCRETE DECK	G.L. Nettles, Inc.	41229 Park 290 Drive	Waller, TX 77484	Bryan	Batchman	936-372-9020	936-372-9032	034713-00
5085-0124-042000-00 MASONRY	Easthaven Incorporated	8723 Easthaven Dr.	Houston, TX 77075	Tommy	Grantland	713-944-5361	713-944-2815	042000-00
5085-0101-050000-00 STRUCTURAL STEEL	Apel Steel Corporation	2345 Second Avenue N.W.	Cullman, AL 35058	Hank	Apel	256-730-6280	256-730-6304	050000-00
5085-0105-061800-00 WOOD ROOF DECKING	R.M. Rodgers, Inc.	6352 Akder Drive	Houston, TX 77081-4404	Max	Rodgers	713-666-2229	713-666-2516	061800-00
5085-0144-062200-00 MILLWORK	Victoria Cabinetworks, a subsidiary of Roth Construction, Inc.	2002 Delmar Drive	Victoria, TX 77901	Casey	Roth	361-578-0263	361-578-1271	062200-00
5085-0122-072450-00 LATH & PLASTER	Kenyon Plastering of Texas, Inc.	3401 West 11 th Street	Houston, TX 77008	Patrick	Troy	832-673-6404	832-673-0406	072450-00
5085-0125-075000-00 ROOFING	Admiral Roofing and Sheet Metal, LLC	14521 Old Katy Rd. #224	Houston, TX 77079	E. Eugene	Lauver	281-372-1250	281-372-1252	075000-00
5085-0152-075000-01 ROOFING	Threadgill Sheet Metal Works, Inc.	17515A Huffmeister	Cypress, TX 77429	Wayne	Threadgill	281-373-0016	281-373-0010	075000-01

Pearland Recreation Center and Natatorium – Tech Report #1

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RECREATION CENTER & NATATORIUM
PEARLAND, TX
#5085**

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JUNE 30, 2009

5085-0150-078100-00 FIREPROOFING	Alpha Insulation & Waterproofing, Inc.	787 Bradfield Rd.	Houston, TX 77060	David	Wright	281-999-7000	281-999-7005	078100-00
5085-0147-079200-00 WATERPROOFING/SEALANTS	Century Roofing L.L.C.	4411 Airline	Houston, TX 77022	Mike	Martin	713-697-8288	713-697-8299	079200-00
5085-0111-081100-00 HOLLOW METAL DOORS/WOOD DOORS/FINISH HARDWARE	Piper-Weatherford Co. Distributor – Architectural Specialties	165 Tecon Cove	Buda, TX 78610	Tom	Buyers	512-420-0726	512-420-9367	081100-00
5085-0134-083323-00 OVERHEAD DOORS	ABC Steel Products Co., Inc. dba ABC Doors	5100 South Willow	Houston, TX 77035	Bob	Casson	713-729-9700	713-729-8611	083323-00
5085-0126-084000-00 STOREFRONT	Ranger Specialized Glass, Inc.	19031 Aldine Westfield	Houston, TX 77073	Omar	Maalouf	281-821-3777	281-821-3785	084000-00
5085-0142-090600-00 DRYWALL/ CARPENTRY	PC Unlimited, Inc.	211-E Randon Dyer Road	Rosenberg, TX 77471	Josef	Poncik	281-344-1900	281-344-1922	090600-00
5085-0123-093000-00 CERAMIC TILE	ASA Carlton, Inc.	5224 Palmero Court, Suite 200	Buford, GA 30518	Scott	Hester	770-945-2195	770-945-5640	093000-00
5085-0118-096433-00 GYM FLOOR/ RAQUETBALL COURT/ SCOREBOARD SYSTEM	Jellison Inc., dba Jelco	1109 Regal Row	Austin, TX 78748	Don	Jellison	800-366-8306	512-282-4070	096433-00
5085-0148-096433-01 EPOXY FLOOR	Polymer Systems, Inc.	17320 E. State Hwy 29	Buchanan Dam, TX 78609	Carl	Taylor	512-793-6575	512-793-2779	096433-00
5085-0146-096500-00 TILE/BASE/CARPET	Marek Brothers Systems, Inc.	2115 Judiway	Houston, TX 77018	Mike	Holland	713-881-2626	713-881-8540	096500-00
5085-0143-099113-00 PAINTING	Zaxon Commercial Painting, LLC	2116 Kyle Circle	Heath, TX 75032	Bryan	Jobe	214-538-2911	214-206-1146	099113-00
5085-0149-100610-13 SIGN WORK	Atlas Sign Services, Inc.	6411 Airline Drive	Houston, TX 77076	Michael	Johnson	713-899-1121	713-899-2211	100610-13
5085-0112-101100-00 BULLETIN BOARDS, ACCORDIAN	Klinger Specialties Direct, Inc.	2611 Couch	Houston, TX 77008	Benny	Castro	713-861-4213	713-861-4471	101100-00

Pearland Recreation Center and Natatorium – Tech Report #1

**SUBCONTRACTORS AND SUPPLIERS
RECREATION CENTER & NATATORIUM
PEARLAND, TX
#5085**

PROJ. EST.: LOU ARRIETA
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PROJ. ASST.: MATT LUNA
SUPERINT.: PHILLIP CRISSMAN

JUNE 30, 2009

DOORS, POSTER CASE, SWINSUIT DRYER								
5085-0119-102113-00 TOILET/DRESSING/ SHOWER COMPARTMENTS	Victoria Builder Supply Company, Inc.	5301 N. John Stockbauer	Victoria, TX 77904	Dan	Gorfido	361-572-8929	361-572-8992	102113-00
5085-0127-102813-00 TOILET ACCESSORIES	Tri-Tech Building Products LLC	4301 Founder's Way Drive, Suite C	Chattanooga, TN 37416	Ted	Wilkes, Jr.	423-892-7307	423-822-4736	102813-00
5085-0138-105100-00 BENCHES/ LOCKERS/ SHELVING	Silicon Valley Shelving & Equipment Co., Inc.	18522 Bridoon	Cypress, TX 77433	Michael	Lacey	281-550-8975	281-550-9980	105100-00
5085-0117-107313-00 FLAGPOLES	Assoc. Bldrs Specialties, Inc. Dba Kronberg's Flags & Flagpoles	7106 Mapleridge	Houston, TX 77081	Jeff	Gifford-Weaver	713-661-9222	713-661-7022	107313-00
5085-0133-107310-00 ALUMINUM CANOPIES	Luebe-Jones, Inc. dba Avadek	9201 Winkler	Houston, TX 77017	Will	Sims	713-944-0988	713-944-5815	107313-00
5085-0132-107313-01 ALUMINUM SUN SCREENS	Sign and Awning Services, Inc.	4711 Vermont	Fort Worth, TX 76115	Todd	Price	817-926-7270	817-926-7311	107313-01
5085-0141-114000-00 STAINLESS STEEL	Classic Stainless, Inc.	4330 Bronze Way	Dallas, TX 75237	Gus	Macias	214-467-8700	214-467-8705	114000-00
5085-0136-114000-01 RESIDENTIAL EQUIPMENT	Manna Distributors, Inc.	8708 West Park	Houston, TX 77063	Alan	Nahman	713-977-3318	713-789-7513	114000-01
5085-0140-114000-02 KITCHEN EQUIPMENT	Alliance Food Equipment Corp.	2225 E. Beltline Rd.	Carrollton, TX 75006	Al	Berger	972-820-8352	972-820-8021	114000-02
5085-0113-115213-00 GYMNASIUM EQUIPMENT	Game Court Services, Inc.	10901 Circle Drive	Austin, TX 78738	David	Henderson	512-394-0461	512-394-0480	115213-00
5085-0121-115213-00 PROJECTOR	Daersed Enterprises dba	3645 Fredricksburg Rd.	San Antonio, TX 78201	G'Anna	Parkey	210-732-9327	210-732-9347	115213-00

Pearland Recreation Center and Natatorium – Tech Report #1

SUBCONTRACTORS AND SUPPLIERS RECREATION CENTER & NATATORIUM PEARLAND, TX #5085

PROJ. EST.: LOU ARRIETA
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SUPERINT.: PHILLIP CRISSMAN

JUNE 30, 2009

SCREENS	Southwest Décor							
5085-0120-122000-00 HORIZONTAL BLINDS	Longhorn Blinds of Austin, LLC	4201 S. Congress Ave., #312	Austin, TX 78745	Ron	Newhouse	512-447-5496	512-707-7315	122000-00
5085-0115-131100-00 SWIMMING POOL	Progressive Commercial Aquatics, Inc.	2510 Farrell Road	Houston, TX 77073	Tim	Phelps	281-982-0212	281-443-1524	131100-00
5085-0137-133416-00 ALUMINUM BLEACHERS	Southern Bleacher Company, Inc.	801 Fifth Street	Graham, TX 76450	Jim	McCain	800-433-0912	940-549-1365	133416-00
5085-0106-142000-00 ELEVATOR	ThyssenKrupp Elevator Corporation	14820 Tomball Pkwy., Suite 190	Houston, TX 77086	Adam	Meyer	713-289-0289	713-896-4660	142000-00
5085-0109-211300-00 FIRE PROTECTION	Firecheck of Texas, Inc.	11500 N. 10 th Street	McAllen, TX 78504-0222	Hal	Wychoopen	956-383-3473	956-380-3473	211300-00
5085-0139-212000-00 FIRE EXTINGUISHERS/ CABINETS	PBJ Specialties	7800 Bissonnet Street, Suite 350	Houston, TX 77074	Scott	Harmon	713-774-5701	713-774-5717	212000-00
5085-0110-221000-00 PLUMBING	Johnston Commercial Plumbing, LLC	800 Wilcrest Dr., Suite 150	Houston, TX 77042	Michael	Johnston	713-532-4202	713-532-9906	221000-00
5085-0108-230000-00 HVAC	Fort Bend Mechanical, LTD	13625 Stafford Road	Stafford, TX 77477	Pete	Medford	281-403-4822	281-403-4823	230000-00
5085-0104-280000-00 SITE/BUILDING ELECTRIC	Quinco Electrical of Dallas, Inc.	3016 W. Story Rd.	Irving, TX 75038	Richard	Cavazos	972-258-9105	972-258-9107	280000-00
5085-0129-272000-00 ALARM/ VIDEO/ SECURITY CAMERA	NetVersant Solutions, LLC	9750 W. Sam Houston Parkway N., Suite 100	Houston, TX 77064	Steven	Davis	832-487-1973	832-487-1901	272000-00
5085-0131-280000-00 SOUND SYSTEM	FireTron, Inc.	10101A Stafford Centre Dr.	Stafford, TX 77477	Richard	Phillips	281-499-1500	281-499-3711	280000-00
5085-0130-283100-00 FIRE ALARM/ TELEPHONE	Wilson Fire Equipment & Service Company, Inc.	7303 Empire Central Drive	Houston, TX 77040	Waylan	Gandy	832-310-2469	832-310-2569	283100-00
5085-0102-310800-00	W.T. Byler Co.,	15203 Lillija Road	Houston, TX	Jeremy	Perkins	281-445-2070	281-445-4356	310800-00

SUBCONTRACTORS AND SUPPLIERS RECREATION CENTER & NATATORIUM PEARLAND, TX #5085

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JUNE 30, 2009

EARTHWORK/ ASPHALT PAVING	L.P.		77080-5299					
5085-0145-313118-00 SOIL POISONING	Aroco Pest Management, L.L.C.	4321 Pepperbush	Fort Worth, TX 76137	Ron	Muse	817-920-5950	817-847-5754	313118-00
5085-0135-321723-00 PAVEMENT MARKINGS	Arkansas Line Marking, Inc.	10524 Dreher Road	Little Rock, AR 72206	Michael	Griffin	501-888-5052	501-888-1080	321723-00
5085-0151-323100-00 FENCING	Foster Fence LTD	16700 Old Hwy 90 East	Houston, TX 77049	Daniel	Greak	281-456-7273	281-456-0221	323100-00
5085-0114-329000-00 LANDSCAPE & IRRIGATION	Site Landscape Development LLC	762 E. Business 121	Lewisville, TX 75057	Kirk	Boyd	972-221-2205	972-221-2208	329000-00
5085-0103-334000-00 WATER/SEWER	Joslin Construction Company, Inc.	21518 West Wallis	Porter, TX 77385	Ray	Joslin	281-354-5840	281-354-5840	334000-00