THOMAS HACKER
ARCHITECTS INC.

MEETING NOTES

Date : September 20, 2005

Project : MBNMS Visitor Center

Author : Jane M. Barker

Job No. : 0418

Re : **Alternative Project Budget Options**

Present :
Ceil Cirillo
Stacia Fletcher
Dawn Hayes
Brian Percy
Bennett Burns
Thomas Hacker
Will Dann
Jane Barker

cc :
Attendees
File

Items : ▪

A two-day workshop was conducted to discuss target goals for project costs for the MBNMS Visitor at the offices of Thomas Hacker Architects, Inc., on September 6th and 7th , 2005. Representatives from the City of Santa Cruz, Monterey Bay National Marine Sanctuary, Thomas Hacker Architects, Walker Macy and Davis Langdon were present to participate.

The workshop focused on four topics: soft cost budget, construction cost assumption, site improvement scope and alternative program concepts for alternative budgets. The work previously completed in the Pre-Design Report/Detailed Program Requirements dated 8 April 2005 was not modified but utilized as a basis for comparison and identified as the $10.1 Million project.

Soft Cost Budget Review

1. A detailed breakdown was developed to describe the potential preliminary soft cost expenses not currently accounted for in the direct construction cost estimate. These costs include professional fees, permit and application expenses, furniture and equipment allowances, and construction contingencies. Attached is a summary of those cost as related to the three total project budgets of $10.1 million, $6.5 million and $4.25 million. Allowances were identified for the Gift Shop tenant improvement, design model for future fund-raising and public review process expenses but were not included in the soft cost budgets.

2. During the Pre-Design Phase a soft cost allowance was estimated at 35% of the direct construction costs. The typical range for soft costs is from 35 to 55%. In reviewing the potential preliminary soft cost for the three budget amounts, the range varied between 40 to 46%. The percentage of soft cost typically increases as the budget amounts decreased due to fixed project costs and allowances.

Construction Cost Assumption Review

3. Cost comparisons were made among six projects located in California and Washington State. The projects varied in location, size and time of construction. A factor was applied to the each component cost to adjust for current construction values and premiums for construction in Santa Cruz based on historical data. The current value cost per square foot for the Visitor Center is $333. The construction estimate is escalated to July 2007 and is valued at $380/sf. The range in adjusted costs is from $310/sf to $395/sf based on complexity of program. Attached is a summary of the projects compared.

4. Based on this data, the consensus was that the cost assumptions made for the MBNMS Visitor Center were in align with the scope and quality expectations of the MBNMS and the City of Santa Cruz. A value was established of $380/sf based on escalation to July 2007 and utilized for evaluation of direct building construction cost to square feet of program development.

Site Improvement Scope Review

5. An incremental analysis was conducted on the Site and Building Direct Construction Costs to evaluate potential target goals for the reduced budget amounts of $6.5 million and $4.25 million. The site work development was evaluated for potential reduction or elimination of scope that would not significantly compromise the MBNMS program or quality of the visitor's experience. Attached are a revised Site Design Narrative and Site Concept Diagram. Site scope revisions included reduction of site clearing and grading, elimination of landscape restoration for off-site areas, elimination of amphitheater and associated retaining and seat walls, reduction in plaza area south of railroad crossing, elimination of granite pavers and electric bicycle charging station.

6. In evaluating areas to reduce site scope, three options were developed. Option One eliminated all site work south of the railroad crossing and site restoration outside the property site boundaries. Option Two reduced the scope of work south of the railroad crossing but extended unit pavers to the intersection of Pacific Avenue and Beach Street and included lawn and irrigation on the existing parking lot. Option Two A is similar to Option Two but included structured base under the lawn area for fire truck access south of the railroad crossing. Attached is a cost summary of the three site options.

Building Concepts for Alternative Budgets

7. Based on previous discussions regarding soft cost budgets, construction cost assumptions and site improvement scope, a building construction budget was identified for the reduced budget options. Attached is a summary of the total project cost options as defined by the various site options. Due to the extreme cost reduction for the $4.25 million budget, only Site Option One was evaluated for this budget amount.

8. The staff of the Monterey Bay National Marine Sanctuary previously evaluated the existing program areas as defined in the Pre-Design Report/DPR and identified potential program reductions to meet the $6.5 million and $4.25 million budgets. The MBNMS staff and the City of Santa Cruz representative agreed that the reduced program required to achieve the $4.25 million budget would not be a wise use of City-owned land and would not accomplish the MBNMS program mission. Their recommendation was not to proceed with a project of this size. No program relationship diagram was developed for this budget option.

9. The building program defined as Option CI in the MBNMS Funding Options memorandum was selected to best accommodate the MBNMS programmatic needs within the $6.5 million total project cost budget. This program reduces the total program by 3,070 nsf or approximately by 30% of the original program. The Exhibit area is reduced by 2,000 nsf, the classroom is reduced by 200 nsf, the gift shop is reduced by 200 nsf and the office area is reduced by 410 nsf.

10. A program relationship diagram was developed based on the Option CI program. The design goals identified were to maintain a visible connection to the Monterey Bay, create a building massing which provides an identity for the Visitor Center within the community, allow for flexibility in exhibit space configuration, provide street access and interaction through location of retail and public spaces directly adjacent to street and sidewalks, allow for separate and controllable access to the classroom/public meeting room, maintain and enhance views of the historic Howe Truss Bridge, and improve and define safe access across the existing railroad crossing.

11. Two program relationship diagrams were developed showing the potential distribution of program elements. The first floor would include a public lobby and restrooms, gift shop, classroom, administrative offices and building support areas. The classroom would have direct access to an exterior plaza providing overflow space and views of the Howe Truss bridge. The exhibit areas would be located on the second floor with views of the Monterey Bay from the exhibit floor and adjacent exterior decks. These diagrams were developed to test the program within the square footage parameters and are the basis for future architectural design exploration.

Attachments:

1. Preliminary Project Cost Estimate Worksheet
2. Control Quantities and Component Cost Summary
3. Building Comparison Narrative
4. Site Design Narrative
5. Revised Site Design Concept
6. Site Work Options Conceptual Cost Plan
7. Total Project Cost Options
8. MBNMS Funding Options Program Reduction Summary
9 Program Relationship Diagram – Option 1
10. Program Relationship Diagram – Option 2

NOTE: Attention Attendees! Please review these notes carefully as they will form the basis of future work on this project. If you feel that anything is incorrect or incomplete, please call the author at 503·227·1254.

MBNMS Visitor Center
Santa Cruz, California

Preliminary Project Cost Estimate Worksheet

THA #0418
September 20, 2005

Total Project Cost Budgets (w/o exhibits):		**$10.1 Million**	**$6.5 Million**	**$4.25 Million**
Total Direct Construction Cost:		(Inflation to 07/07)		
Building Cost		**$6,416,000**	**$3,854,000**	**$2,376,500**
Site Improvement		**$1,048,000**	**$693,000**	**$573,000**
Total:		**$7,464,000**	**$4,547,000**	**$2,949,500**
Additional Project Soft Costs:				
Project Management	Varies	$149,280	$136,410	$117,980
Professional Fees - Basic Services	10%	$750,000	$500,170	$353,940
Professional Fees - Add. Consultants + Expenses	8%	$597,500	$363,760	$235,960
Survey, Soils Investigations	Allow.	$30,000	$30,000	$30,000
Traffic Study	Allow.	$6,000	$6,000	$6,000
Amendment for Depot Park Master Plan	Allow.	$8,000	$8,000	$8,000
NEPA Review	NA	$0	$0	$0
Special Inspections	0.50%	$32,080	$19,270	$11,883
Commissioning/Testing	$1/sf	$16,170	$10,652	$6,727
Railroad Modifications Review	Allow.	$10,000	$6,500	$4,500
Legal Fees related to PUC Approval	0.50%	$37,320	$22,735	$14,748
Insurance/Builders Risk/Performance Bonds	3%	$223,920	$136,410	$88,485
Fund Raising Costs	NA	$0	$0	$0
2% for Art	2%	$149,280	$90,940	$58,990
Utility Costs during Construction (General Condition)	NA	$0	$0	$0
Furnishings	Allow.	$95,000	$60,800	$39,900
A/V Equipment/Telecommunications	$4/sf	$64,680	$42,608	$26,908
Security System	0.10%	$6,416	$3,854	$2,377
Storage and Moving Costs	Allow.	$1,000	$1,000	$1,000
Plan Check Fees - Building & Planning	Calc.	$15,804	$11,055	$7,077
Plan Check Fees - Public Works	Flat	$500	$500	$500
Application Fees	Flat	$180	$180	$180
Building Permit	0.50%	$13,623	$8,636	$5,454
Energy Review	Flat	$460	$460	$460
Fire & Life Safety Review	20%	$2,366	$1,727	$1,091
Seismic Motion	0.02%	$551	$363	$229
General Plan Maintenance Fee	0.54%	$14,609	$9,327	$5,890
Special Use Permit	Flat	$1,473	$1,473	$1,473
Fire Alarm/Sprinkler Fees	Allow.	$6,400	$4,100	$2,700
Utility Connection Fees	Allow.	$32,080	$19,270	$11,883
Design Permit	Calc.	$4,916	$3,238	$2,045
Coastal Permit	Flat	$547	$547	$547
Sign Permit	Flat	$233	$233	$233
Traffic Impact Fee	Trips	$111,873	$74,386	$46,977
CEQA Negative Declaration	Flat	$1,518	$1,518	$1,518
Construction Phase Contingency	7.50%	$559,800	$341,025	$221,213
Soft Cost Contingency	5%	$51,814	$35,610	$25,288
Subtotal:		**$2,995,392**	**$1,952,757**	**$1,342,153**
Total Estimated Project Costs:		**$10,459,392**	**$6,499,757**	**$4,291,653**
Percentage of Hard Cost to Soft Cost		40%	43%	46%

Items not include:

Tenant Furnishings for Gift Shop	Allow.	$30,000
Design Model Allowance	Allow.	$15,000
Public Review Process	Allow.	$10,000

Gross Square Foot Estimate for Calculations	16,170 sf	10,652 sf	6,727 sf

Analysis of Construction Costs of: **CONTROL QUANTITIES AND COMPONENT COST SUMMARY**

		Cabrillo Marine Aquarium		WWU Shannon Point		UC Santa Barbara									
Component		Master Plan Implementation		Marine Education Center		Marine Sciences Research		CSU Channel Islands							
Name:		Laboratory Building		Building		Base Bid - Building		Science Building		Turtle Bay Center		UCSC Seymour Marine		Monterey Bay National Marine	
Location:		San Pedro, California		Anacortes, Washington		Santa Barbara, California		Camarillo, California		Redding, California		Discovery Center		Sanctuaary	
Report Date:		01/22/01		10/13/04		12/07/01		01/31/02		12/04/00		Santa Cruz, California		Santa Cruz, California	
Project Number:		0168-6167		0278-7207		0168-6511		0168-6611		0148-4407		2nd Quarter 1999		08/24/05	
Cost Version:		Construction Document Cost Estimate		Construction Documents Cost Plan		90% Construction Documents Cost Estimate		Construction Documents Cost Estimate		Schematic Design Cost Plan				0278-7368	
														Conceptual Design Cost Plan	
CONTROL QUANTITIES	**UNIT**	Quantity	Ratio	Quantity	Ratio	Quantity	Ratio	Quantity	Ratio	Quantity	Ratio	Quantity	Ratio	Quantity	Ratio
Gross Area	SF	14,999	1.000	12,719	1.000	62,006	1.000	32,976	1.000	37,502	1.000	20,092	1.000	16,865	1.000
TOTAL (w/adjustments)			**237.78**		**219.30**		**267.81**		**252.57**		**210.95**		**208.31**		**333.22**
Adjustment Factors															
Cumulative Adjustment Factor - Includes adjustment to San Francisco location, and to present time. Seymour Center time adjustment only.			136.33%		128.75%		134.33%		141.46%		141.04%		50.00%		
TOTAL (w/adjustments)			**324.16**		**282.36**		**359.76**		**357.30**		**297.54**		**312.47**		**333.22**
Santa Cruz Location Adjustment Premium			10%		10%		10%		10%		10%				
TOTAL (w/adjustments)			**356.58**		**310.60**		**395.73**		**393.03**		**327.29**		**312.47**		**333.22**

Note: The UCSC Seymour Marine Discovery Center was not a Davis Langdon cost planning project. It is included here, brought to present dollars, for an additional comparison.

Architect
MBT Architecture 206-749-9299

WWU Shannon Point ***Construction Documents Cost Plan***
Marine Education Center ***October 13, 2004***
Anacortes, Washington ***0278-7207.410***

INCLUSIONS

The project consists of construction of a new 12,719 square foot research building at the Shannon Point Marine Research Center.

The building will have a concrete and wood framed super structure with cast in place concrete foundations.

The exterior closure will include storefront, punched windows, cedar siding and architecturally finished concrete walls.

The roofs will be finished with built-up roofing and flashings.

The interior construction will include wood partitions, balustrades, insulation, gypsum wall board, and wood doors and frames.

Finishes will include carpet, ceramic tile, sealed concrete, epoxy, rubber base, paint to walls, acoustical ceiling tiles and gypsum board ceilings.

Equipment includes toilet accessories and partitions, office casework, lab casework, signage, projection screens, fire extinguishers and lab equipment.

Vertical transportation includes one stair and one, three-stop elevator.

Plumbing included plumbing fixtures, domestic cold and hot water, waste, vent and gas piping. Lab fixtures are discharge into the sanitary waste system but are supplies by isolated lab cold and hot water. Hot water is generated from heat exchanger type water heaters (2).

HVAC includes air handling units, supply, exhaust air ductwork. Heat is provided to the building by a condensing boiler. Heating hot water is pumped to coils in the AHUs, reheat coils in the duct and fin tube heaters. Hot water heaters and unit heater should be added. Control laboratory valves are phoenix type but connected to DDC. Air is exhausted by general and lab exhaust fans. Controls are DDC.

Electrical includes main distribution, service, emergency, user convenience, lighting, telephone, communication, alarm and security systems. Add alternates.

Fire protection is by wet sprinkler system.

Sitework includes site grading, protection, tree removal, gravel paving, landscaping and irrigation.

Architect
Barton Phelps and Associates 323-934-8615

Cabrillo Marine Aquarium DLA 0168-6167
Master Plan Implementation January 22, 2001
San Pedro, California

INCLUSIONS

The project consists of the construction of a new two story laboratory building, a new single story gift shop building incorporating a walled garage area for outreach vehicles, a new single story washroom building and siteworks.

Laboratory
The foundations to the new building are a reinforced concrete mat slab design incorporating column and elevator pit footings and including sump pits and subsurface drainage.

The vertical structure includes steel pipe, wide flange columns and steel tube bracing.
On the first floor a 4" topping slab is layed on the mat slab. Suspended floors comprise steel deck with a concrete infill supported by structural steel framing. The roof area is a combination of structural steel and glu-laminated beams with wood tongued and grooved decking and plywood. Exterior walls are metal stud framing, batt insulation and sheathed on the outer face with plywood and on the inner face gypsum board. The external finish is painted stucco with areas of galvanized steel corrugated siding. Windows are aluminum framed glazed with the doors being a combination of wood, aluminum glazed, fiberglass, aluminum roll up and aluminum glazed segmented garage door. On the east elevation there is a fiberglass architectural screen. Soffits are either plywood with stucco or exposed timbers with a clear seal.

The roof covering is an insulated 4-ply system with aggregate ballast. Areas of pitched roof are covered with a standing seam metal roofing system. Also included are parapet caps, wall flashings, gutters, roof access hatch and caulking and sealants.

Interior partitions comprise insulated steel stud framing with gypsum board sheathing both sides. Doors are a combination of wood and aluminum.

The floor finishes include carpet, ceramic tile, linoleum and sealed concrete. Bases are wood, ceramic tiles, coved linoleum, rubber and concrete. Walls are painted gypsum board, and ceramic tile. Ceiling finishes include gypsum board painted or with an acoustic spray finish, acoustic tile, clear sealer/paint to exposed timbers.

Functional equipment and specialities include restroom partitions and accessories, shelving, single and two level water tables, base and wall cabinets and window shades. Also included are allowances for markerboards, signage and fire extinguisher cabinets.

Staircases comprising metal pan with concrete infill. The elevator is an hydraulic 2-stop.

Quantities and costs for the life support systems are provided by Enartic.

Plumbing includes sanitary fixtures, waste, vent and service pipework, floor drains, hose bibbs, water heating equipment and circulation, sump pump, roof drainage and natural gas.

Cabrillo Marine Aquarium DLA 0168-6167

HVAC includes laboratory process chillers, boilers, pipework distribution and circulation, packaged air handling units, terminal boxes with reheat coils, unit and radiant heaters, air

distribution and return systems, building management controls, test and balance and exhaust ventilation.

Electrical includes main, emergency, machine, equipment and user convenience power, lighting, telephone/data (conduit only), fire alarm systems and perimeter security only.

Fire protection includes automatic wet sprinkler system - complete.

Gift Shop
The foundations to the new building are a reinforced concrete matt slab design, including subsurface drainage.

The vertical structure is limited to steel pipe columns at the south of the building.
Both the flat and the pitched roofs are formed using wood framing sheathed with plywood.

Exterior walls are timber stud framing, Batt insulation and sheathed on the outer face with plywood and on the inner face gypsum board. The external finish is painted stucco with areas of galvanized steel corrugated siding. Windows are aluminum framed glazed with the doors being a combination of aluminum glazed, fiberglass and chainlink to the outreach garage. On the south elevation there is a galvanized plate sign with cutout lettering mounted to the external wall. Soffits are plywood with stucco finish.

The roof covering is an insulated 4-ply system with aggregate ballast. Areas of pitched roof are covered with a standing seam metal roofing system. Also included are parapet caps, wall flashings, gutters, roof access hatch and caulking and sealants.

Interior partitions comprise insulated timber stud framing with gypsum board sheathing both sides. Doors are a combination of wood and fiberglass.

The floor finishes include carpet, linoleum and sealed concrete. Bases are coved linoleum and rubber. Walls are painted gypsum board with a stucco finish to the inside walls of the outreach garage area. Ceiling finishes include gypsum board painted, acoustic tile or clear sealer/paint to exposed timbers.

Functional equipment and specialities include restroom accessories and shelving. Also included are allowances for signage and fire extinguisher cabinets.

Plumbing includes sanitary fixtures, waste, vent and service pipework, floor drains, hose bibbs, water heating equipment and circulation, roof drainage and natural gas.

HVAC includes pipework distribution and circulation, packaged air handling units, unit heaters, air distribution and return systems, building management controls, test and balance and exhaust ventilation.

Cabrillo Marine Aquarium DLA 0168-6167

Electrical includes machine, equipment and user convenience power, lighting, telephone/data (conduit only), fire alarm systems and perimeter security only.

Fire protection includes automatic wet sprinkler system - complete.

Washroom

The single story building is constructed in a similar manner to the gift shop. However both the external and internal partitions of the washroom are steel stud. The roof structure is formed using glu-laminated beams and the external and internal doors are fiberglass. Floor finishes and bases are ceramic tile or linoleum with wall finishes limited to ceramic tile or painted gypsum board. The ceiling are either painted gypsum board or clear sealer to exposed timbers.

Plumbing includes sanitary fixtures, waste, vent and service pipework, floor drains, hose bibbs, water heating equipment and circulation, roof drainage and natural gas.

The mechanical ventilation sytem is limited to ductwork, test and balance and exhaust fans.

Electrical includes machine, equipment and user convenience power, lighting, fire alarm systems and security (conduit only).

Fire protection includes automatic wet sprinkler system - complete.

Siteworks

Include the demolition of a number of structures, hard and soft landscape areas. Certain areas of paving are to be carefully uplifted, layed aside and relayed as directed.

In addition the existing fire road and handicapped parking will be relocated together with the reconfiguration of the existing Department of Recreation and Parks maintenance yard. Two new courtyard areas will be developed adjacent to the new buildings.

Quantities and cost for soft landscaping are provided by Melendrez Babalas Associates.

Site utilities include domestic and fire water, sea water, gas, sewer, electrical mains feeder conduit only, telecommunications/signals feeder conduit only, new pump connection and trade demolition.

Architect
Zimmer Gunsul Frasca Partnership 213-617-1901

Marine Sciences Research Building **DLA 0168-6511**
University of California, Santa Barbara **December 7, 2001**
Santa Barbara, California

INCLUSIONS

The project consists of a new 62,006 gross square feet Marine Sciences Research Building comprising four floors.

The costs included within this report cover construction cost only, calculated at current pricing levels with an allowance for inflation calculated at 4% per year, assuming a midpoint of construction of February 2003.

Foundations include reinforced concrete wall footings, grade beams, column bases, mat slab, and elevator pit, and an allowance for dewatering. Vertical structure includes reinforced concrete columns, tube steel columns and cross bracing, reinforced concrete loadbearing and shear walls, and sprayed fireproofing to steelwork.

Floor and roof structures include a reinforced concrete slab on grade, reinforced concrete beams and flat slabs, metal deck with lightweight concrete topping, structural steel roof framing, concrete equipment pad, sunscreen and canopy framing, and an allowance for miscellaneous metals and carpentry.

Exterior cladding includes wall framing, furring and insulation, concrete masonry unit planter walls, metal lath and cement plaster, acrylic finish coat, architectural finish to concrete walls, water repellant coating to concrete walls, wire mesh panels, gypsum board lining to interior of exterior wall, paint, aluminum windows, transoms, and curtainwall, aluminum glazed doors, hollow metal doors and frames, painted metal sunscreens, and prefinished metal canopy, an allowance for signage, precast concrete sills and window surrounds, cement plaster soffits, and balustrades and handrails. Roofing and waterproofing includes waterproofing to exterior balconies, terraces, planter boxes, and elevator pits, rigid insulation, built-up PVC single ply roof, pedestal paver system, concrete topping slab at walkways, an allowance for roof top walkway pads, roofing upstands and sheetmetal, roof hatches, an allowance for caulking and sealants. Interior partitions include partition framing and cores, partition surfacing, batt insulation, caulking sound partitions, interior glazing, and interior doors, frames, and hardware.

Floors finishes include polyurea and resinous coatings, concrete sealer, carpet, ceramic tile, and vinyl composition tile. Bases include ceramic tile, polyurea, resinous, and resilient base. Walls include polyurea coatings and ceramic tile. Columns receive metal furring and gypsum board surfacing. Ceilings include suspended acoustic ceiling tile, painted gypsum board ceilings, paint to exposed ceilings, and gypsum board bulkheads and light coves.

Function equipment and specialties include wall and corner guards, prefabricated compartments and accessories, shelving and millwork, cabinets and countertops, chalkboards, insignia, and graphics, horizontal louver blinds, plastic strip curtain, projection screens, entrance mats and frames, metal lockers, fire extinguisher cabinets, safety tie backs at roof, auditorium seating, and

Marine Sciences Research Building DLA 0168-6511

laboratory equipment including fume hoods, sterilizer, environmental controlled rooms, overhead service carrier, adjustable tables, laboratory sinks, drying racks, umbilicals, emergency eyewashes and showers, snorkels, gas cylinder restraints, and laboratory outlet fittings.

Stairs and vertical transportation includes steps or short flights, staircase flights, elevator pit and roof access ladders, and geared traction passenger and freight elevators.

Plumbing includes seawater connection to existing campus supply, sanitary and institutional fixtures, floor drains and sinks, hose bibbs, seawater equipment connections, water heating equipment and circulation, laboratory air generation equipment and circulation, laboratory gas, industrial hot and cold water, acid/seawater waste and vent systems. Natural gas and roof drainage.

Heating, ventilation and air conditioning includes chilling equipment, hot water generation equipment, thermal expansion compensation and circulation, chilled, process chilled water, hot and condenser water distribution, (83,000 cfm) air handling capacity, fan-coil units, VAV boxes, sound attenuation, air distribution and return systems, including specialty stainless steel exhaust ductwork (vertical riser exhaust ducts only), building and laboratory management/pressurization controls and unit exhaust ventilation equipment.

Electrical includes normal power, emergency power, machine, equipment and user convenience power, lighting, telephone/data, MATV and audio/visual - conduit only, fire alarm and security (conduit only).

Fire protection includes automatic wet sprinkler system - complete.

Architect
Bobrow Thomas and Associates 310-208-7017

Science Building **DLA 0168-6611**
California State University Channel Islands **January 31, 2002**
Camarillo, California

INCLUSIONS

The project consists of a new science building, of approximately 32,976 gross square feet, on the campus of California State University Channel Islands and associated sitework.

Foundations include over-excavation and fill, reinforced concrete column bases, wall footings and an elevator pit. Vertical structure includes tube steel columns and tube steel shear bracing. Floor and roof structure includes reinforced concrete slab on grade, steel framing, steel joists framing, metal decking, lightweight concrete, steel framing for walkways, light gage steel framing and miscellaneous metals and rough carpentry.

Exterior cladding includes metal stud framing, batt insulation, firesafing, cement plaster with metal lath, painted gypsum board to interior side of exterior wall, steel frames and insulated glazing, steel glazed doors, metal doors, cement plaster with metal lath to underside of soffit, canopy framing, trellis and metal railings.

Roofing and waterproofing include waterproofing to walkway, rigid insulation, batt insulation, clay tile roofing, built-up roofing, walkway pavers, roof pavers, skylight, miscellaneous sheetmetal, caulking and sealants.

Interior partitions include metal stud framing, chase wall framing, shaft wall framing, painted gypsum board, shaft liner, batt insulation, folding partitions, metal railings with glass panels and interior doors.

Interior finishes include floors of ceramic tile, vinyl composition tile, carpeting, sheet vinyl flooring and concrete tile. Bases of rubber, concrete tile, vinyl coved tile and ceramic tile. Walls of paint, medium density fibre board with stain finish, ceramic tile and integral cement plaster. Ceilings of painted gypsum board, acoustical tile, open wired grid, paint exposed and bulkheads.

Function equipment includes toilet partitions, toilet and bathroom accessories, grab bars, mirrors, janitor's shelf and mop rack, miscellaneous shelving, base cabinets, wall cabinets, countertops, interior signage, markerboards, window shades, fire extinguishers and cabinets, projection screens, fume hoods, cup and laboratory sinks, outlet fittings, emergency eyewash/shower, kitchen appliances, auditorium seatings, access flooring and benches.

Vertical transportation includes exterior and interior metal stairs, roof access ladder, elevator pit ladder, and a passenger hydraulic elevator.

Plumbing includes sanitary and institutional fixtures, floor drains and sinks, hose bibbs, hot water heating equipment, laboratory process air equipment and distribution, laboratory pipework systems including wastes and vent, roof drainage, gas and testing.

Science Building DLA 0168-6611

HVAC includes centralized air-cooled chilled water generation equipment, heat exchanger fed from steam-loop, hydronic pipework systems, (38,300 CFM) air handling unit capacity, fan-coil units, VAV boxes, with reheat coils, sound attenuation, ceiling fans and convector heaters, air distribution and return, specialty exhaust systems, building management and laboratory controls and unit ventilation equipment.

Electrical includes normal machine equipment and user convenience power, lighting, telephone/data, audio/visual (conduit only), MATV, fire alarm and security (conduit only).

Fire protection includes automatic wet sprinklers system - complete.

Site preparation is included in a separate budget.

Site development includes allowances for asphalt paving, concrete paving, concrete curb and gutters, concrete steps, concrete ramp, landscaping and maintenance, miscellaneous walls, and miscellaneous accessories.

Site utilities include steam, domestic and fire water, gas, sewer, electrical power and communications/signals.

Architect
Bohlin Cywinski Jackson 206-256-0862

Turtle Bay Center DLA 00/4407
Redding, California

No inclusions in report

Site Design Narrative

September 20, 2005

Site Goals

The modified site plan is intended to present a strategy for reducing overall project costs without compromising the mission or primary goals of the facility. It is important that site improvements provide a welcoming setting for the MBNMS Visitor Center that accommodates crowds of visitors, responds to site constraints and creates an educational setting for a range of community functions. Site improvements should also represent a model for environmentally sensitive development by restoring degraded areas with native plantings and utilizing green construction strategies to the greatest extent possible.

The following objectives were used to guide site development in the original plans and these objectives still remain important:

- Incorporate the entire site as part of the exhibit.
- Provide for strong pedestrian and bicycle connections to the waterfront area, Depot Park and Neary Lagoons.
- Create a flexible plaza space that can be adapted to many possible functions.
- Maximize view opportunities toward the Howe Russ Bridge.
- Incorporate environmentally sustainable materials and strategies in site development.

Conceptual Site Plan

In order to create an overall project that could be constructed for approximately $6.5 million, several significant cuts have been undertaken in the site plan. The intent was to first examine areas of reduction that would not compromise the program or quality of visitor experience significantly, or that could be phased in over time. Specific areas targeted for scope reduction include:

- Eliminate a significant portion of the site work south of the railroad. The plaza would remain to connect visitors to the Wharf, but the amphitheater walls, paths and native plant garden would be eliminated. After removal of the existing parking lot, the area would be seeded as an open lawn area. This strategy would allow the foreground view of the new visitor center to be cleaned up and left as an open space for the community.
- Eliminate the granite paver bands in the plaza.
- Reduce the area of planting and irrigation by eliminating site improvements in the City owned parcels near the Howe Truss Bridge. This also reduces the area for clearing and fine grading. These parcels were targeted to be restored with native plantings in earlier plans.
- Eliminate the bicycle charging station
- Reduce the extent of site lighting.

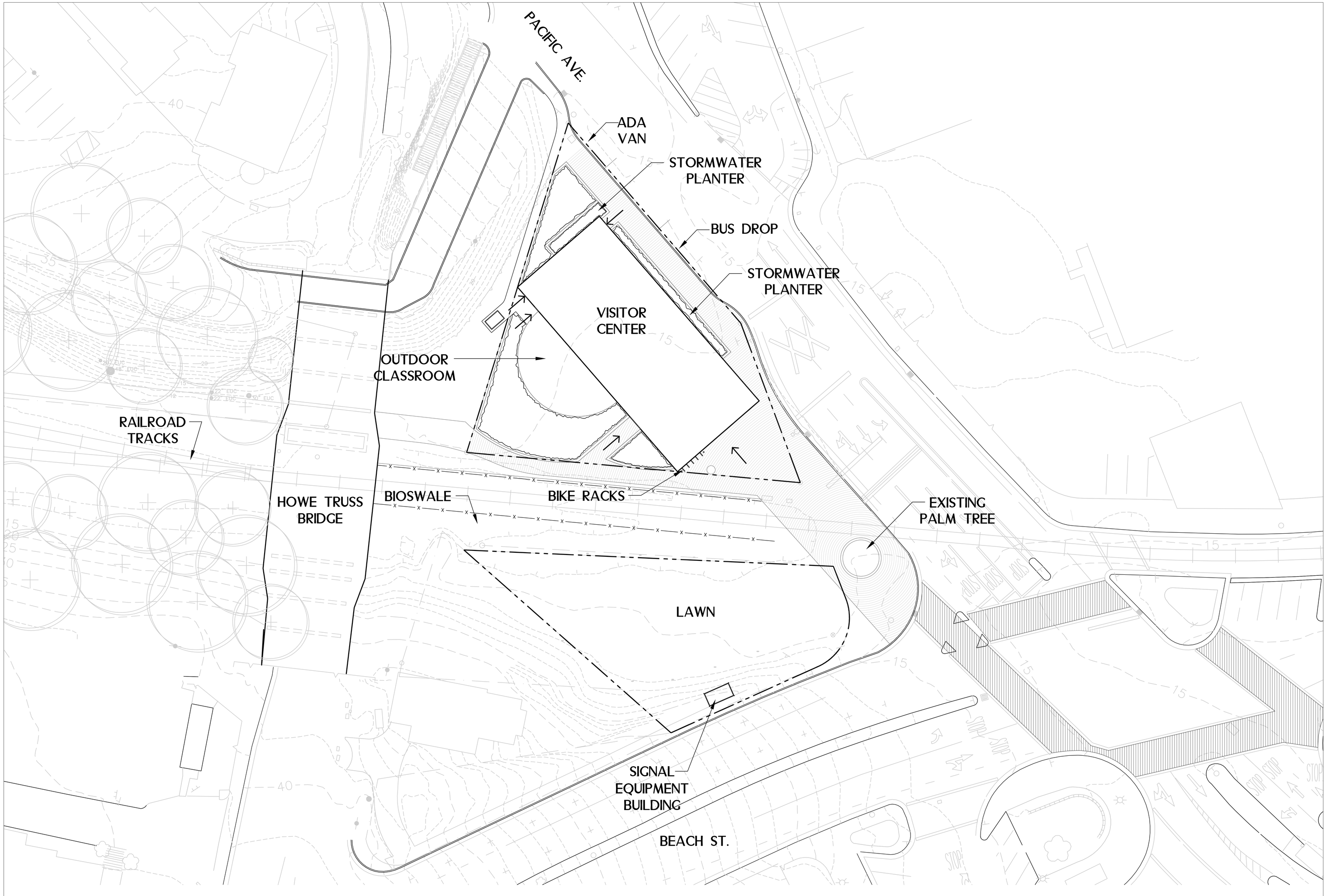
The reduced footprint and simplified form of MBNMS Visitor Center will allow it to fit comfortably on the north side of the railroad while minimizing visual obstruction of the Howe Truss Bridge. View orientation to the Marine Sanctuary will be maintained. A large south-facing

plaza will still flow out of the building, providing a generous area for visitors arriving in groups or queuing up for special events. It is expected that a strong flow of visitors will walk to the site from the Wharf and Boardwalk areas and the plaza has been extended south of the railroad to receive this flow. The one existing tree on the site – a lone palm has been integrated in to the plaza design and serves as a towering beacon.

School groups visiting the Center by bus will be allowed to drop off at a designated spot on Pacific Avenue. One ADA van space has been provided at this location as well. During off-hours this bus zone will be used for service vehicles for garbage collection, recycling and other maintenance needs. New curbs and sidewalks will be constructed along Pacific Avenue.

The reduced footprint of the building offers a new opportunity for an outdoor classroom space to be placed southwest of the classroom. This protected outdoor space will extend offerings for building programming. Stormwater planters will still be incorporated adjacent to the building to collect and treat roof runoff and provide an educational amenity.

South of the railroad, the existing parking lot and trash pickup will be removed, regraded and seeded in lawn. The open portion of the lawn will not be structured to support fire or other emergency vehicles. If additional structure is needed to allow fire access on the south side an additional allowance of $13,000 will be needed.



REVISED SITE DESIGN CONCEPT

SEPTEMBER 19, 2005

SCALE: 1"=16'

NATIONAL MARINE SANCTUARIES — MONTEREY BAY

CITY OF SANTA CRUZ

WALKER·MACY
111 Southwest Oak Street, Suite 200, Portland, OR, (503) 228-3122

THOMAS HACKER ARCHITECTS INC.

OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
Visitor Center	16,865 SF	380.44	6,416
TOTAL Building Construction	16,873 SF	380.27	6,416
Sitework; Option 1; No work beyond railroad tracks			531
TOTAL Building & Sitework Construction	***January 2007***		***6,947***
Sitework Option 2; Add Alternate adds lawn and pavers past railroad tracks			162
Sitework Option 2A; Add Alternate additionally adds gravel base for fire trucks			177

SITEWORK COMPONENT SUMMARY OPTION 1

		Gross Area:	**33,887 SF**	
			$/SF	$x1,000
14.	Site Preparation & Demolition		1.89	64
15.	Site Paving, Structures & Landscaping		6.90	234
16.	Utilities on Site		1.53	52
TOTAL BUILDING & SITE (1-16)			**10.32**	**350**
	General Conditions	10.00%	1.03	35
	Contractor's Overhead & Profit or Fee	5.00%	0.56	19
PLANNED CONSTRUCTION COST		***September 2005***	**11.91**	**404**
	Contingency for Development of Design	15.00%	1.80	61
	Escalation	14.17%	1.95	66
RECOMMENDED BUDGET		***January 2007***	**15.66**	**531**

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Demolition of buildings and structures				
Miscellaneous structures removal and clean-up	1	LS	10,000.00	10,000
Site protective construction				
Construction fence	4,800	LF	1.50	7,200
Temporary building finishes protection	16,865	SF	1.00	16,865
Traffic control; part of GC's				
Continuous cleaning; part of GC's				
Hoisting; part of GC's				
Site clearing and grading				
Clear and grub site	49,887	SF	0.25	12,472
Delete area of south	(16,000)	SF	0.25	(4,000)
Fine grading of site	49,887	SF	0.20	9,977
Delete area of south	(16,000)	SF	0.20	(3,200)
Export soil from proposed paver and lawn areas	467	CY	18.00	8,406
Delete area of south	(353)	CY	18.00	(6,354)
Gravel under pavers and lawn; 18" for vehicular load	764	CY	32.00	24,448
Delete area of south	(672)	CY	32.00	(21,504)
Cutting and drilling				
Curb and gutter along Pacific Ave	450	LF	7.50	3,375
Asphalt paving; inc removal	1,296	LF	1.50	1,944
Selective demolition and removal				
Sidewalk along Pacific Avenue	1,520	SF	3.00	4,560
				64,189
15. Site Paving, Structures & Landscaping				
Site Lighting				
Site lighting allowance	1	LS	15,000.00	15,000
Site Electrical				

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Railroad safety lighting and controls; allow for new and consolidate to one location; excludes passing gate	1	LS	25,000.00	25,000
Storm drainage				
Underground piping, connections, and specialties	1	LS	8,500.00	8,500
Storm water collection and storage system	1	LS	21,000.00	21,000
Vehicular paving and curbs				
New concrete curb with gutter	450	LF	22.00	9,900
Street asphalt paving; allowance	1,296	SF	7.50	9,720
Street patching allowance	1	LS	5,000.00	5,000
Pavers curbing	302	LF	10.00	3,020
Pedestrian paving				
Concrete paving	1,119	SF	10.00	11,190
Outdoor classroom concrete paving	1,232	SF	7.00	8,624
Asphalt paving	432	SF	6.00	2,592
Unit concrete pavers	5,000	SF	12.00	60,000
Structures and water features, etc.				
Storm water planters; allowance	140	LF	150.00	21,000
Drainage				
Allowance for site drainage	8,000	SF	0.50	4,000
Landscape planting and maintenance				
Allowance for trees	5	EA	675.00	3,375
Allowance for shrubs and groundcover	2,649	SF	4.25	11,258
Topsoil includes tilling	98	CY	22.50	2,205
Irrigation				
Irrigation allowance	2,649	SF	1.75	4,636

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Fencing and miscellaneous accessories				
Bicycle racks; allow	5	EA	750.00	3,750
Benches; allow	2	EA	1,000.00	2,000
Trash containers; allow	2	EA	500.00	1,000
Ash cans; allow	2	EA	500.00	1,000
				233,770

16. Utilities on Site

Water mains - domestic and fire				
Underground piping; <=8"	200	LF	70.00	14,000
Valves and specialties, including PIV and fire dept. pump truck connection	1	LS	7,500.00	7,500
Gas and fuel oil storage and piping				
Natural gas piping, valves, specialties and connections	1	LS	3,500.00	3,500
Sewer piping				
Underground pipe and connections	1	LS	5,000.00	5,000
Electrical main service				
Underground conduit, wire, vault, and grounding	1	LS	15,000.00	15,000
Telephone and communications systems				
Underground conduit and wire	80	LF	85.00	6,800
				51,800

SITEWORK COMPONENT SUMMARY OPTION 2

		Gross Area:	**36,887 SF**	
			$/SF	$x1,000
14.	Site Preparation & Demolition		1.98	73
15.	Site Paving, Structures & Landscaping		9.00	332
16.	Utilities on Site		1.40	52
TOTAL BUILDING & SITE (1-16)			**12.39**	***457***
	General Conditions	10.00%	1.25	46
	Contractor's Overhead & Profit or Fee	5.00%	0.68	25
PLANNED CONSTRUCTION COST		***September 2005***	**14.31**	**528**
	Contingency for Development of Design	15.00%	2.14	79
	Escalation	14.17%	2.33	86
RECOMMENDED BUDGET		***January 2007***	**18.78**	**693**

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Demolition of buildings and structures				
Miscellaneous structures removal and clean-up	1	LS	10,000.00	10,000
Site protective construction				
Construction fence	4,800	LF	1.50	7,200
Temporary building finishes protection	16,865	SF	1.00	16,865
Traffic control; part of GC's				
Continuous cleaning; part of GC's				
Hoisting; part of GC's				
Site clearing and grading				
Clear and grub site	49,887	SF	0.25	12,472
Delete area of south	(13,000)	SF	0.25	(3,250)
Fine grading of site	49,887	SF	0.20	9,977
Delete area of south	(13,000)	SF	0.20	(2,600)
Export soil from proposed paver and lawn areas	467	CY	18.00	8,406
Delete area of south	(280)	CY	18.00	(5,040)
Gravel under pavers and lawn; 18" for vehicular load	764	CY	32.00	24,448
Delete area of south	(482)	CY	32.00	(15,424)
Cutting and drilling				
Curb and gutter along Pacific Ave	450	LF	7.50	3,375
Asphalt paving; inc removal	1,296	LF	1.50	1,944
Selective demolition and removal				
Sidewalk along Pacific Avenue	1,520	SF	3.00	4,560
				72,933
15. Site Paving, Structures & Landscaping				
Site Lighting				
Site lighting allowance	1	LS	18,500.00	18,500
Site Electrical				

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Railroad safety lighting and controls; allow for new and consolidate to one location; excludes passing gate	1	LS	25,000.00	25,000
Storm drainage				
Underground piping, connections, and specialties	1	LS	8,500.00	8,500
Storm water collection and storage system	1	LS	21,000.00	21,000
Vehicular paving and curbs				
New concrete curb with gutter	450	LF	22.00	9,900
Street asphalt paving; allowance	1,296	SF	7.50	9,720
Street patching allowance	1	LS	5,000.00	5,000
Pavers curbing	302	LF	10.00	3,020
Pedestrian paving				
Concrete paving	1,119	SF	10.00	11,190
Outdoor classroom pavers	1,232	SF	12.00	14,784
Asphalt paving	432	SF	6.00	2,592
Unit concrete pavers	8,000	SF	12.00	96,000
Rubber railroad track crossing	1	LS	10,000.00	10,000
Structures and water features, etc.				
Information kiosk; allow	1	LS	5,000.00	5,000
Storm water planters; allowance	140	LF	150.00	21,000
Drainage				
Railroad water mediation allowance	1	LS	10,000.00	10,000
Allowance for site drainage	8,000	SF	0.50	4,000
Allowance for Bioswale	1	LS	5,000.00	5,000
Landscape planting and maintenance				
Allowance for trees	5	EA	675.00	3,375
Allowance for shrubs and groundcover	2,649	SF	4.25	11,258
Topsoil includes tilling	223	CY	22.50	5,018
Lawn south of railroad tracks	9,426	SF	1.00	9,426
Irrigation				
Irrigation allowance	12,075	SF	1.25	15,094

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Fencing and miscellaneous accessories				
Bicycle racks; allow	5	EA	750.00	3,750
Benches; allow	2	EA	1,000.00	2,000
Trash containers; allow	2	EA	500.00	1,000
Ash cans; allow	2	EA	500.00	1,000
				332,127

16. Utilities on Site

Water mains - domestic and fire				
Underground piping; <=8"	200	LF	70.00	14,000
Valves and specialties, including PIV and fire dept. pump truck connection	1	LS	7,500.00	7,500
Gas and fuel oil storage and piping				
Natural gas piping, valves, specialties and connections	1	LS	3,500.00	3,500
Sewer piping				
Underground pipe and connections	1	LS	5,000.00	5,000
Electrical main service				
Underground conduit, wire, vault, and grounding	1	LS	15,000.00	15,000
Telephone and communications systems				
Underground conduit and wire	80	LF	85.00	6,800
				51,800

SITEWORK COMPONENT SUMMARY OPTION 2A

		Gross Area:	**36,887 SF**	
			$/SF	$x1,000
14. Site Preparation & Demolition			2.22	82
15. Site Paving, Structures & Landscaping			9.00	332
16. Utilities on Site			1.40	52
TOTAL BUILDING & SITE (1-16)			***12.63***	***466***
General Conditions	10.00%		1.27	47
Contractor's Overhead & Profit or Fee	5.00%		0.70	26
PLANNED CONSTRUCTION COST	***September 2005***		**14.61**	**539**
Contingency for Development of Design	15.00%		2.20	81
Escalation	14.17%		2.39	88
RECOMMENDED BUDGET	***January 2007***		**19.19**	**708**

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Demolition of buildings and structures				
Miscellaneous structures removal and clean-up	1	LS	10,000.00	10,000
Site protective construction				
Construction fence	4,800	LF	1.50	7,200
Temporary building finishes protection	16,865	SF	1.00	16,865
Traffic control; part of GC's				
Continuous cleaning; part of GC's				
Hoisting; part of GC's				
Site clearing and grading				
Clear and grub site	49,887	SF	0.25	12,472
Delete area of south	(13,000)	SF	0.25	(3,250)
Fine grading of site	49,887	SF	0.20	9,977
Delete area of south	(13,000)	SF	0.20	(2,600)
Export soil from proposed paver and lawn areas	467	CY	18.00	8,406
Delete area of south	(169)	CY	18.00	(3,042)
Gravel under pavers and lawn; 18" for vehicular load	764	CY	32.00	24,448
Delete area of south	(260)	CY	32.00	(8,320)
Cutting and drilling				
Curb and gutter along Pacific Ave	450	LF	7.50	3,375
Asphalt paving; inc removal	1,296	LF	1.50	1,944
Selective demolition and removal				
Sidewalk along Pacific Avenue	1,520	SF	3.00	4,560
				82,035
15. Site Paving, Structures & Landscaping				
Site Lighting				
Site lighting allowance	1	LS	18,500.00	18,500
Site Electrical				

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Railroad safety lighting and controls; allow for new and consolidate to one location; excludes passing gate	1	LS	25,000.00	25,000
Storm drainage				
Underground piping, connections, and specialties	1	LS	8,500.00	8,500
Storm water collection and storage system	1	LS	21,000.00	21,000
Vehicular paving and curbs				
New concrete curb with gutter	450	LF	22.00	9,900
Street asphalt paving; allowance	1,296	SF	7.50	9,720
Street patching allowance	1	LS	5,000.00	5,000
Pavers curbing	302	LF	10.00	3,020
Pedestrian paving				
Concrete paving	1,119	SF	10.00	11,190
Outdoor classroom pavers	1,232	SF	12.00	14,784
Asphalt paving	432	SF	6.00	2,592
Unit concrete pavers	8,000	SF	12.00	96,000
Rubber railroad track crossing	1	LS	10,000.00	10,000
Structures and water features, etc.				
Information kiosk; allow	1	LS	5,000.00	5,000
Storm water planters; allowance	140	LF	150.00	21,000
Drainage				
Railroad water mediation allowance	1	LS	10,000.00	10,000
Allowance for site drainage	8,000	SF	0.50	4,000
Allowance for Bioswale	1	LS	5,000.00	5,000
Landscape planting and maintenance				
Allowance for trees	5	EA	675.00	3,375
Allowance for shrubs and groundcover	2,649	SF	4.25	11,258
Topsoil includes tilling	223	CY	22.50	5,018
Lawn south of railroad tracks	9,426	SF	1.00	9,426
Irrigation				
Irrigation allowance	12,075	SF	1.25	15,094

Item Description	*Quantity*	*Unit*	*Rate*	*Total*

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Fencing and miscellaneous accessories				
Bicycle racks; allow	5	EA	750.00	3,750
Benches; allow	2	EA	1,000.00	2,000
Trash containers; allow	2	EA	500.00	1,000
Ash cans; allow	2	EA	500.00	1,000
				332,127

16. Utilities on Site

Water mains - domestic and fire				
Underground piping; <=8"	200	LF	70.00	14,000
Valves and specialties, including PIV and fire dept. pump truck connection	1	LS	7,500.00	7,500
Gas and fuel oil storage and piping				
Natural gas piping, valves, specialties and connections	1	LS	3,500.00	3,500
Sewer piping				
Underground pipe and connections	1	LS	5,000.00	5,000
Electrical main service				
Underground conduit, wire, vault, and grounding	1	LS	15,000.00	15,000
Telephone and communications systems				
Underground conduit and wire	80	LF	85.00	6,800
				51,800

MBNMS Visitor Center
Santa Cruz, California

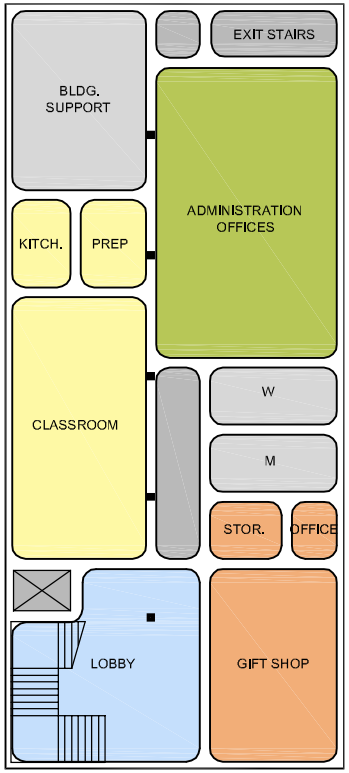
Total Project Cost Options

September 20, 2005

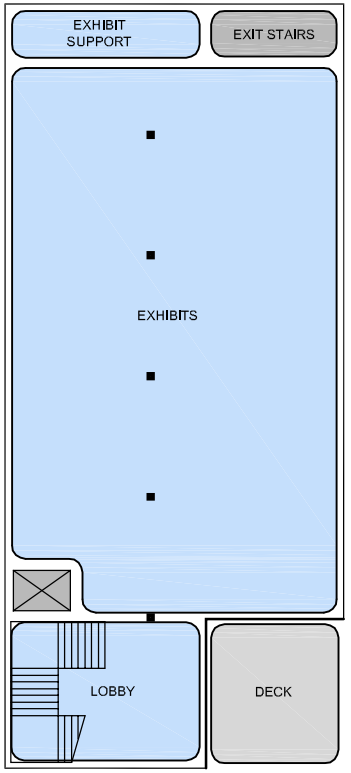
	$10.1 Million	**$6.5 Million**			**$4.25 Million**
		Site Option 1	Site Option 2	Site Option 2A	Site Option 1
Total Project Cost Budget	$10,460,000 (a)	$6,500,000	$6,500,000	$6,500,000	$4,250,000
Soft Cost Budget	$2,996,000	$1,953,000	$1,953,000	$1,953,000	$1,342,000
Sub-Total	**$7,464,000**	**$4,547,000**	**$4,547,000**	**$4,547,000**	**$2,908,000**
Site Cost	$1,048,000	$531,000	$693,000 (b)	$708,000	$531,000
Sub-Total	**$6,416,000**	**$4,016,000**	**$3,854,000**	**$3,839,000**	**$2,377,000**
Divide budget by bldg cost per SF	$380	$380	$380	$380	$380
Total GSF of Program Area	16,884	10,568	10,142	10,103	6,255
Efficiency Factor	0.66	0.66	0.66	0.66	0.66
Total NSF of Program Area	11,144	6,975	6,694 (c)	6,668	4,128 (d)

(a) Due to the increase in Soft Cost Budget, the total project cost has exceed the budget by $360,000
(b) Site Option 2 was the selected as the preferred option to monitor project costs for the $6.5 Million Budget.
(c) The calculated NSF of program area is approx. 336 sf less than the amount identified in Option C1 of the MBNMS Funding Options Program Reduction.
(d) The calculated NSF of program area is approx. 312 sf less than the amount identified in Option D1 of the MBNMS Funding Options Program Reduction.

	Program			Option B1			Option C1			Option D1		
Space	**Area (NSF)**	**Quantity**	**Total**	**Area (NSF)**	**Quantity**	**Total**	**Area (NSF)**	**Quantity**	**Total**	**Area (NSF)**	**Quantity**	**Total**
Exhibits												
Lobby	500	1	500	400	1	400	400	1	400	200	1	200
Introduction to MBNMS	1,200	1	1,200	1,000	1	1,000	800	1	800	700	1	700
Resource Exhibits	1,150	1	1,150	750	1	750	600	1	600	500	1	500
Land & Sea Connection Exhibits	2,000	1	2,000	1,500	1	1,500	1,500	1	1,500	1,300	1	1,300
Research Exhibits	1,150	1	1,150	750	1	750	600	1	600	500	1	500
Exhibit Maintenance	150	0	0	120	1	120	120	1	120	80	1	80
		Subtotal:	**6,000**		Subtotal:	**4,520**		Subtotal:	**4,020**		Subtotal:	**3,280**
Classrooms												
Classroom/Multi-purpose Room	1,000	1	1,000	1,000	1	1,000	800	1	800	0	0	0
Prep Room/Storage	200	1	200	150	1	150	150	1	150	0	0	0
Storage	150	1	150	0	1	0	0	1	0	0	0	0
Catering Kitchen	160	1	160	120	1	120	120	1	120	0	0	0
		Subtotal:	**1,510**		Subtotal:	**1,270**		Subtotal:	**1,070**		Subtotal:	**0**
Gift shop												
Bookstore / Gift Shop	800	1	800	800	1	800	600	1	600	400	1	400
Storage for Bookstore / Gift Shop	120	1	120	120	1	120	120	1	120	120	1	120
Bookstore Office	120	1	120	80	1	80	80	1	80	0	1	0
		Subtotal:	**1,040**		Subtotal:	**1,000**		Subtotal:	**800**		Subtotal:	**520**
Administration												
Reception/Open Office	80	6	480	80	6	480	80	6	480	250	1	250
Education Staff Offices	120	2	240	120	1	120	120	1	120	0	1	0
Conference Rm.	200	1	200	100	1	100	100	1	100	0	1	0
Kitchenette	70	1	70	0	1	0	0	1	0	0	1	0
Copier/Printer Room	150	1	150	100	1	100	100	1	100	50	1	50
Staff Restroom	50	1	50	50	1	50	50	1	50	50	1	50
Storage	120	1	120	50	1	50	50	1	50	50	1	50
		Subtotal:	**1,310**		Subtotal:	**900**		Subtotal:	**900**		Subtotal:	**400**
Restrooms												
M/W Restrooms	120	2	**240**	120	2	**240**	120	2	**240**	120	2	**240**
Total NSF:			**10,100**			**7,930**			**7,030**			**4,440**
Net to Gross Area			5,203			4,085			3,622			2,287
Total GSF:			**15,303**			**12,015**			**10,652**			**6,727**
Efficiency			**0.66**			**0.66**			**0.66**			**0.66**



FIRST FLOOR

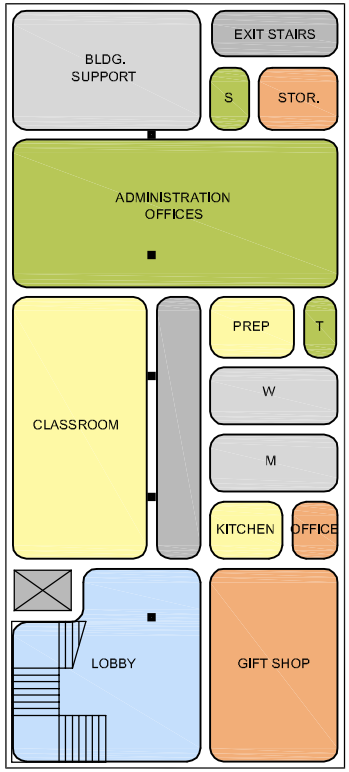


SECOND FLOOR

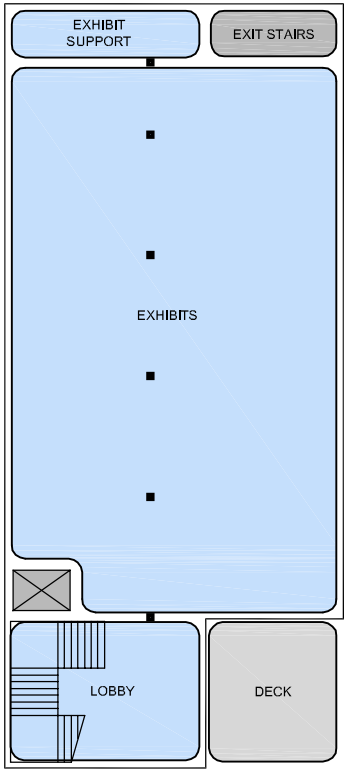
PROGRAM RELATIONSHIP DIAGRAM - Option 1

0' 5' 10' 20'

September 20, 2005



FIRST FLOOR



SECOND FLOOR

PROGRAM RELATIONSHIP DIAGRAM - Option 2

0' 5' 10' 20'

September 20, 2005