

ARROYO STUDENT HOUSING PROJECT  
DETAILED PROJECT PROGRAM  
ADDENDUM

AUGUST 2004



**UNIVERSITY OF CALIFORNIA, RIVERSIDE**

**Addendum**

**A**

## A.1 ADDENDUM SUMMARY



The DPP was completed in early 2004, meeting criteria established for the project including budget, planning and conceptual design intent and neighborhood concerns and agreements. Since that time several campuses have been requested by the Office of the President to review projects which have “podium parking” as a component of the project. In the case of the University of California, Riverside, the UCR LRDP (Draft) and other

documents such as the Strategic Plan for Housing have podium parking as a basic part of the planning framework. However, it was important to consider the options to the project if the podium parking component was eliminated.

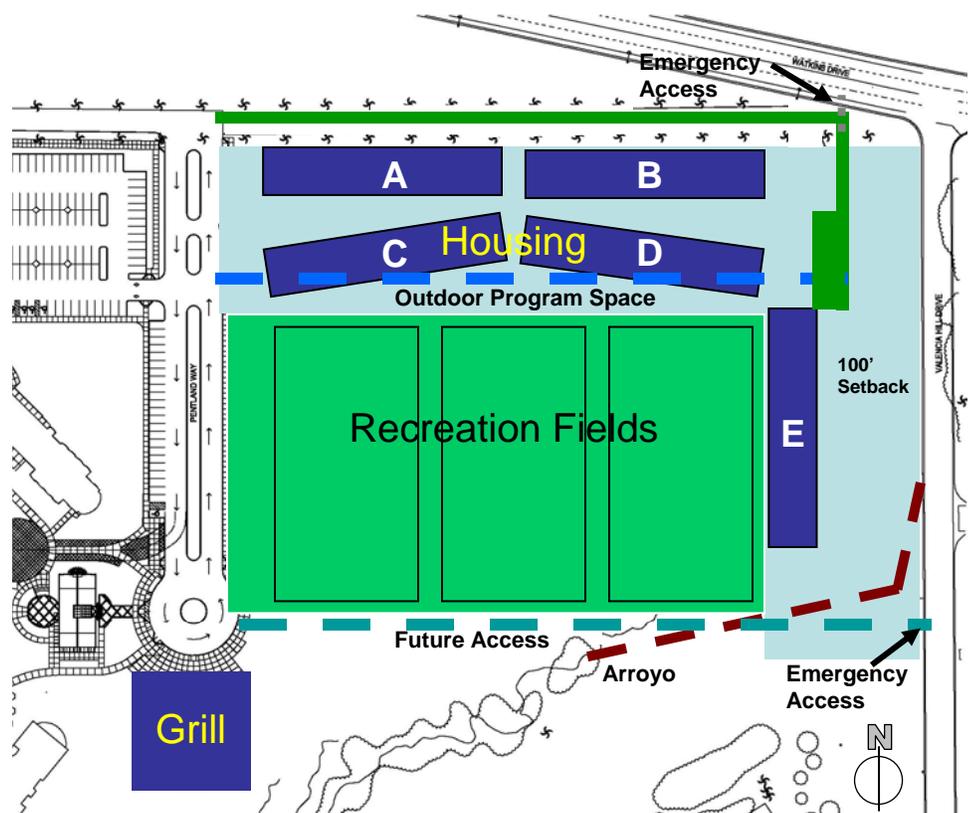
The consultant team was instructed to amend the DPP to eliminate the podium parking element from the project. All other elements of the project were to remain constant.



While developing the amendment to the DPP, the consultant team provided UC Riverside additional information that enabled the University to develop a housing comparison matrix of similar and current projects in the UC System. The comparison revealed that with podium parking, as currently configured, the project cost per square foot was in line with and in some cases below other projects. Additionally, an analysis of the site prepared by the consultant team demonstrated the negative impact to the program and project budget should surface or structured parking be entertained for this site.

Working with the UCR project management team, the consultant team brought forth a new option for the Arroyo Student Housing project that removed parking from the program without materially changing the scheme, including the programmatic spaces previously developed. Again, the guiding principles to the amendment process included the following goals:

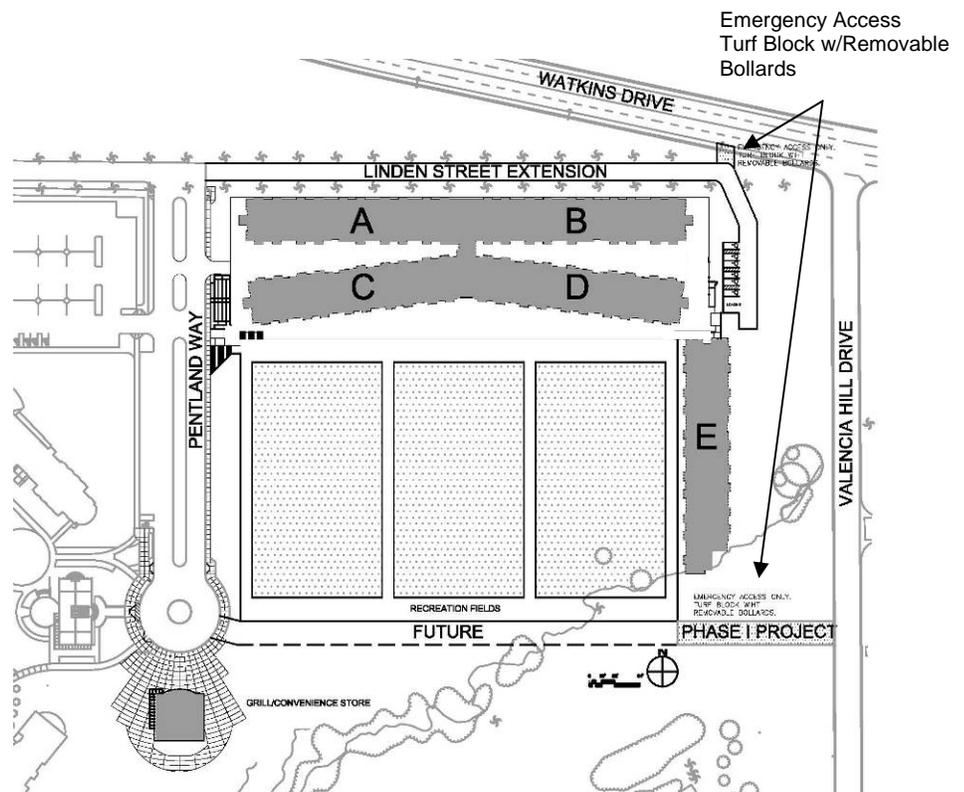
1. Maintain the existing space program and number of beds
2. Maintain the approved site plan and concepts
3. Maintain the approved room by room plans and unit plans
4. Maintain the developed net to gross ratio
5. Maintain the character of the planning and design concepts
6. Maintain the site and infrastructure assumptions as developed
7. Maintain the Grill/Convenience Store as developed
8. Maintain the Recreation Fields location as developed
9. Maintain the outdoor program area adjacent to the recreation fields



**Diagram A-1:** Previously approved site concept to be maintained

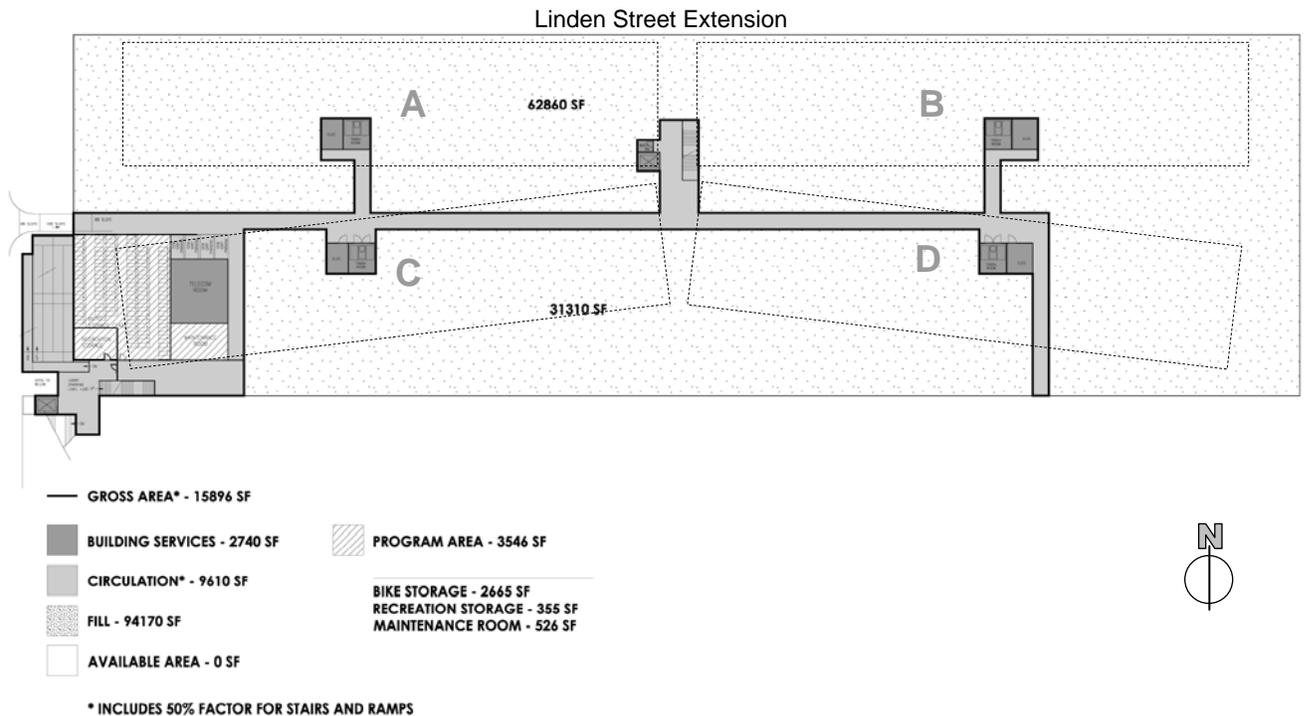
Through several in-house work sessions and discussions with the University, the consultant team was able to highlight the design issues created by removing the parking from the program. Some of these issues were as follows:

1. The removal of the structured podium requires building the foundations for the housing on grade.
2. The existing programmatic space in the parking garage would need to be accounted for in the new scheme.
3. The existing trash and electrical rooms (accounted for as part of gross square feet) need to be maintained at the same level in order to maintain unit and building configuration plans.
4. There will be a change in the cut and fill requirements.
5. There will not be a substantial grade change from the previous option.
6. No change will be anticipated to any program functions of the previously approved scheme.
7. There will be no change to the Grill/Convenience Store, Recreation Fields or Building E.
8. Vertical transportation systems need to be generally maintained to allow for the same circulation patterns previously developed and approved.



**Diagram A-2: Site Concept Plan**

## A.2 DEVELOPED OPTION



**Diagram A-3:** Option (diagrammatic) of below grade layout

This option has been developed as the most cost effective approach to the removal of the parking component from the program. This concept will not significantly change the program already developed in the final DPP for the Arroyo Student Housing project completed in December 2003. The only anticipated change to the current program will occur at the lower level with the removal of the parking component. All existing functions are anticipated to remain in a lower level basement area located at the western edge of the site.

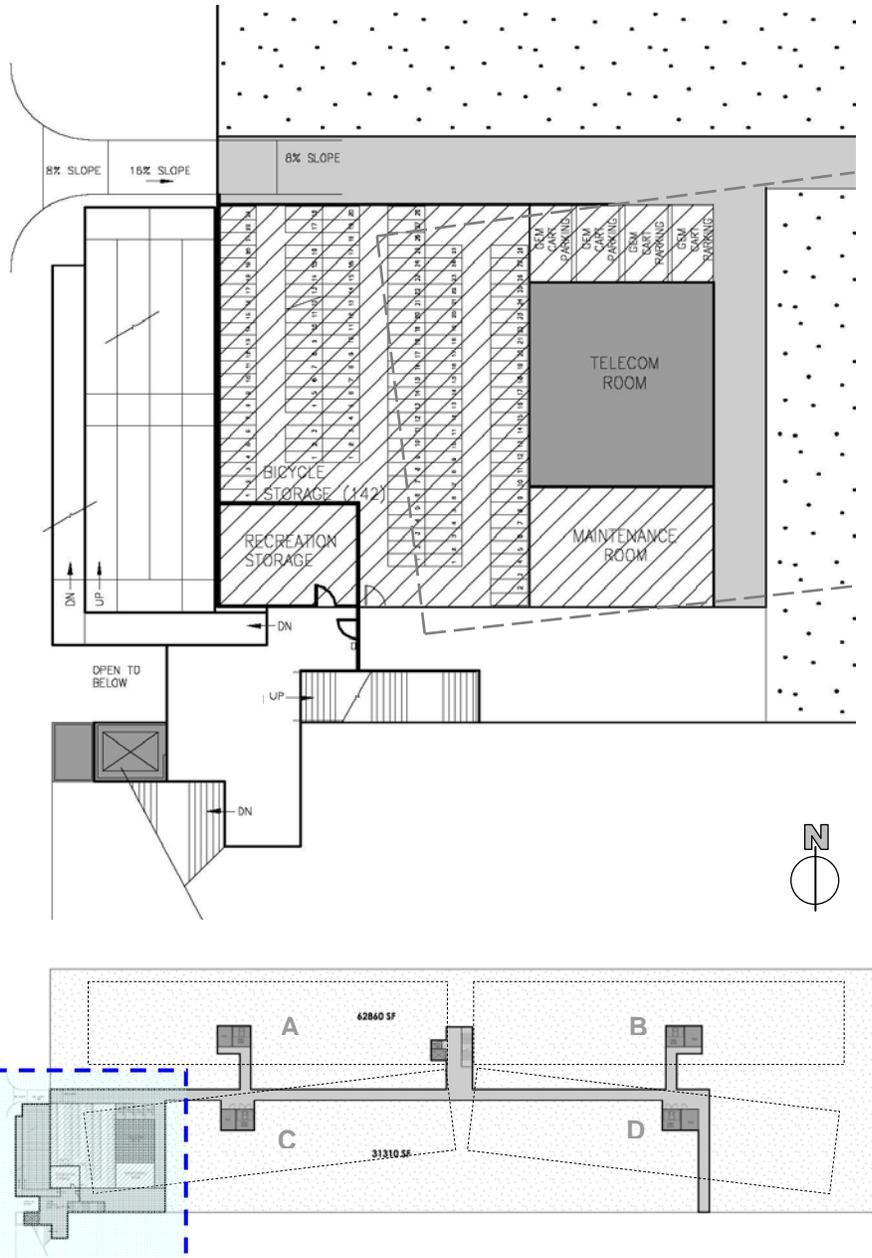
Conceptually, the plan works in much the same way as the previously approved scheme. The addition of the tunnels connecting the trash and electrical rooms provides not only for these functions but also for service and maintenance access. Connection at this level also allows for ease of access to the units on upper floors (for moving furniture and equipment) as the central elevator connects to this level.

|              | NET            | GROSS          | EFFICIENCY             |
|--------------|----------------|----------------|------------------------|
| Lower Level  | 3,546          | 15,896         | 22.3%                  |
| 1st Floor    | 46,332         | 58,085         | 79.8% <i>Unchanged</i> |
| 2nd Floor    | 46,725         | 59,367         | 78.7% <i>Unchanged</i> |
| 3rd Floor    | 46,712         | 59,399         | 78.6% <i>Unchanged</i> |
| Building E   | 24,117         | 30,547         | 79.0% <i>Unchanged</i> |
| <b>TOTAL</b> | <b>167,432</b> | <b>223,294</b> | <b>75.0% 508 BEDS</b>  |

Student life issues such the outdoor programmatic space adjacent to the recreation fields will not change. Access to this area is available from the ground level of all buildings, the central circulation node in between buildings A, B, C and D, and from the circulation node on the west side of the development. Issues pertaining to light and noise mitigation have not been affected by the change in option. Both light and noise issues have been contained as discussed in the original DPP. The proposed layout is diagrammatic and will require further design analysis in later stages of this project.

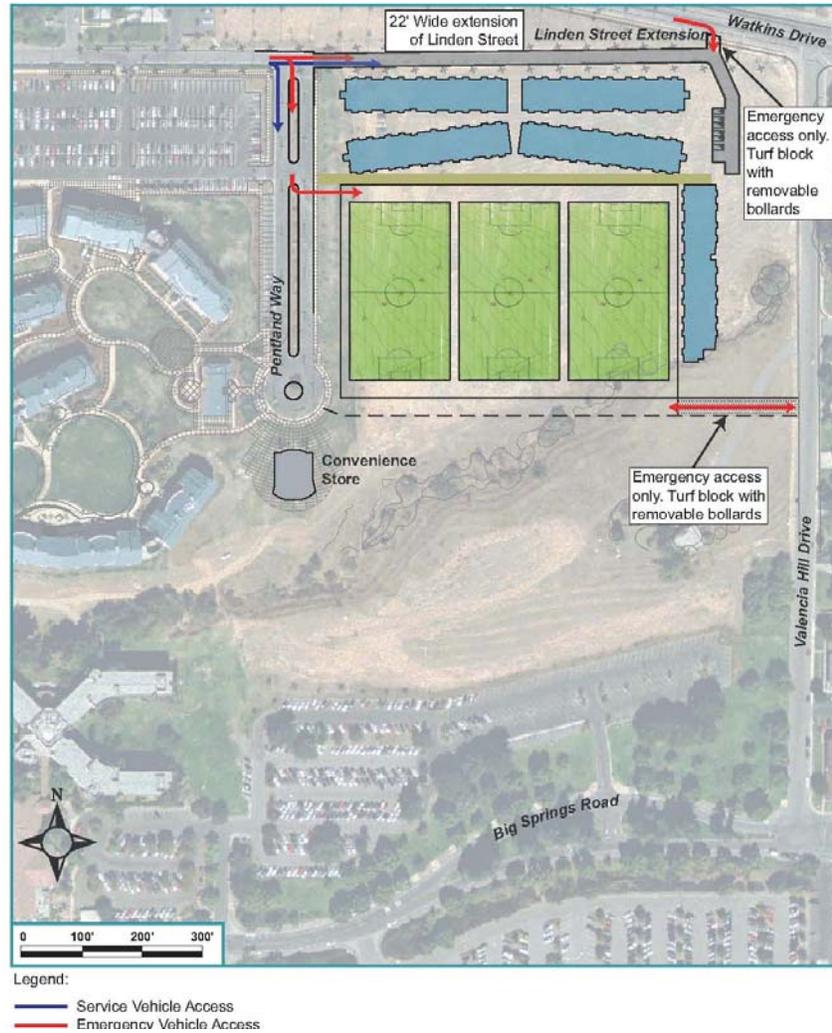
It is important, however, to note that some components/systems and concepts developed in the DPP should be addressed in light of this change and selection of the new option. Some of these changes are:

1. Parking is no longer a part of the program.
2. The location and layout of the program spaces which include bike storage, recreation storage, maintenance and gem cart parking locations have been revised. The sizes will remain as programmed. Further design refinement in terms of location and function will occur in future design stages.
3. Engineering systems design criteria have been revised to reflect the approved scheme and will be further refined during future design stages.



**Diagram A-4:** Program Area at Basement Level (diagrammatic) below grade

The concept represented above is diagrammatic in nature. The ultimate plan could allow for the required programmatic spaces and the majority of tunnels to be located within or beneath the floor plate of the buildings above. The accessible ramping system (currently shown on the west) and the ultimate location on site should also be further developed with the goal of meeting the required ADA guidelines.



**Diagram A-5:** Access and Circulation

### Access and Circulation

As previously developed, primary vehicular access to the site shall be provided from Linden Street and Pentland Way. Diagram A-5 illustrates the general roadway arrangement for the site and vehicular circulation patterns. Linden Street will be extended to the east along the alignment of the existing palm trees. The Linden Street extension will serve as a service and emergency access roadway. Linden Street will not connect to either Watkins Drive or Valencia Hill Drive. The roadway will turn to the south at the east end of the project site, extending approximately 500 feet along on the east side of the site. The roadway will end in a parking area with hammerhead turning of adequate dimension to accommodate service vehicles. Traffic volumes will be minimal on this roadway. A width of 22 feet would be adequate to permit vehicles traveling in opposite directions to pass, or for a vehicle to pass another stopped vehicle.

A landscaped buffer zone will separate the roadway from Valencia Hill Drive. This buffer zone will be 100 feet wide, measured from face of

curb on the west side of Valencia Hill Drive to face of curb on the east side of the Linden Street extension. Two points of secondary access for emergency vehicles only will be provided between the new road and Valencia Hill Drive near the southeast corner of the site and from Watkins drive at the Northeast corner of the site. These access routes must consist of a drivable surface with removable bollards. Dimensions, materials and curb details must meet local code requirements or be approved by the Fire Marshal.

As illustrated in the Strategic Plan for Housing, the campus network of community paths shall be extended into the project site. The principal connections will be to the south and east, including pathways between the residential buildings and the athletic fields.



## **A.3 SYSTEMS DESIGN CRITERIA**

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With the elimination of the parking structure/podium, some minor aspects of the engineering systems concepts will need to be revised to support the new program. Most significant is the structural system, as the proposed scheme removes the podium upon which the housing structures were to be built. Plumbing, fire protection and electrical will also require some adjustments. The new systems concepts are further described below.

### **A.3.1 Structural**

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The UCR Arroyo housing complex is a cluster of buildings located on the Arroyo site to the east of the campus. The four northern buildings (A, B, C and D) are envisaged as three story structures grouped around a central circulation tower and linked by exposed bridges. There will be some discreet storage and plant rooms beneath the ground floor accessed by a series of tunnel hallways.

#### **Gravity Framing**

The structures will all be building Type 5; Occupancy Group R. The floor to floor height within the housing units will be 9'. Potential construction materials for this building category are concrete, steel, masonry and wood.

Wood is currently the preferred system and has been used as the basis for the cost estimate. Where there is a tunnel hallway or storage room beneath the apartment buildings the below grade sub structure would be concrete retaining walls with a concrete top slab. This slab would tie into the slab on grade. Options for the construction of this slab include post tensioned slab, two-way spanning concrete slab, one way spanning slab and beams, and ribbed slabs. These alternatives should be reviewed for overall thickness, ease of coordination with services, interface with plywood shear wall anchorage and future flexibility.

A comparable steel system would utilize wide flange beam and column and girder sections with lightweight concrete fill on metal deck for the suspended slabs. Shear studs on the beams and girders would ensure composite action with the structural slab thus maximizing the performance of the steel elements and creating a rigid diaphragm for the transference of lateral loads. The final orientation of the beams and girders would be selected to suit the services distribution and ceiling height limitations.

The equivalent concrete superstructure system would be post tensioned slab, two-way spanning concrete slab, one way spanning slab and beams, or ribbed slabs.

When comparing the merits of the different materials and framing systems consideration should be given to the building mass and configuration, floor to floor and overall building heights, associated

foundation requirements, ease of integration of services, relative costs and ease and speed of construction.

### **Foundation**

A site-specific geotechnical investigation has not been performed as of this date. This should include an assessment of both shallow and deep foundation systems and basic design parameters for each. Any potential geological hazards should be identified; basic soil conditions including groundwater information provided and fill requirements for the fill beneath the building specified.

The Geotechnical report for an adjacent site titled "Geotechnical Investigation – Undergraduate Housing Expansion 2 – University of California, Riverside, California. Prepared for University of California, Riverside Job No 00523-3 by CHJ Inc. is available. This indicates that the soil is comprised of both old and young alluvial materials and fill. The foundation recommendations include removing the fill and younger alluvial soils, replacing these with a compacted fill capable of supporting conventional pad footings and slab on grade.

If shallow foundations are used consideration will need to be given to surcharging the tunnel hallway and underground storage retaining walls under the building and at the adjacent road and housing. Deep foundation options using straight shafted and belled drilled piers should also be evaluated. However consideration will need to be given to the spacing of the drilled piers to ensure that they maintain proper separation whilst still aligning with the main structural grid.

The final foundation scheme will be designed to suit the soil conditions and the gravity and lateral framing schemes. At the lateral frames resultant uplift forces may develop depending on the layout of the frames and the magnitude of the lateral demand. Uplift resisting elements should be provided or a system that results in negligible resultant uplift adopted.

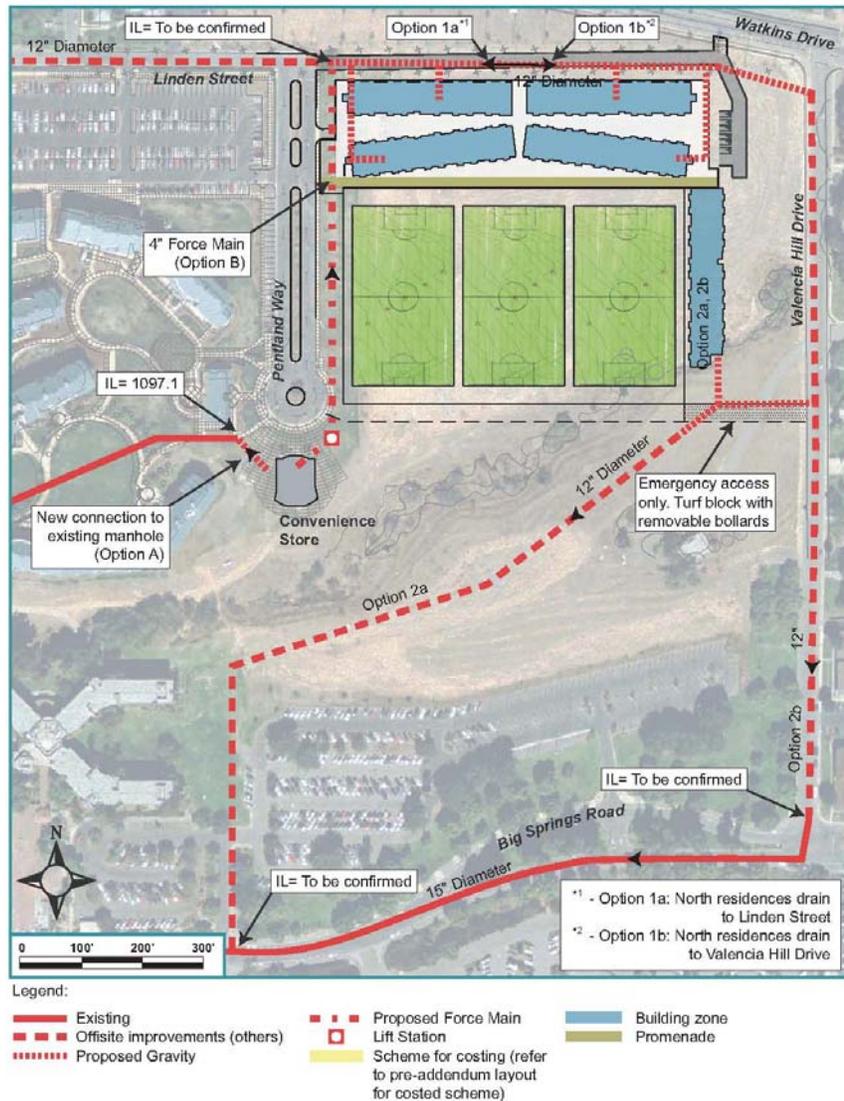
### A.3.2 Plumbing



**Diagram A-6:** Domestic Water Layout

The UCR Arroyo housing complex consists of buildings A, B, C, D and E located on the Arroyo site to the east of the campus. Buildings A, B, C and D, are envisaged as three story courtyard structures and building E as a two story structure. The structures will be linked by piazza walkways overlooking the new recreation fields. The plumbing & fire protection systems will be designed in accordance with the current codes and the campus design guidelines.





**Diagram A-8: Sanitary Sewer Layout**

**Sanitary Sewer**

**Existing Conditions**

Refer to the University of California, Riverside, East Campus Infrastructure Detailed Project Program, Bechard Long & Associates Inc, June 2002 for a full description of the existing campus-wide system.

This document notes that:

- The existing 8" "F" line is on the south side of Linden Street, and is in good condition.
- The existing 8" "G" line on the north of Linden Street is in very poor condition, but has adequate slope.
- Project SS-22 recommends that the "G" line be replaced with a 12" line, and then continued east to serve the new buildings.

### **Proposed Connections**

The preferred Sanitary Sewer connection is a tie in to a new main line extension along Valencia Hill Drive that will provide a gravity connection to the Big Springs Road 15" sewer. The alternative 12" diameter main line upgrade along Linden at Pentland Way (the Linden Extension) is not a preferred option. Refer to Option 1a in Diagram A-8 (North residences drain to Linden Street) and preferred Option 1b in Diagram A-8 (North residences drain to Valencia Hill Drive).

The gravity connection to the Big Springs Road sewer will occur via either:

- The southern bank of the Arroyo, before turning south to Big Springs Road adjacent to the Convenience Store (Option 2a), or via
- The main line extension up the length of Valencia Hills Drive (Option 2b). This second option being the preferred option.

\*The capacity of the Big Springs Road sewer is unknown as of the date of publication and should be confirmed when this scheme is progressed.

The preferable connection for the Convenience Store is to the existing Pentland Hills development sewer, providing there is spare capacity available (Option A). The nearest manhole to the store in the Pentland Hills development has an invert elevation of 1097.1 feet, at a ground level of approximately 1108 feet; therefore a connection is physically possible. It is not known whether the Pentland Hills sewer has spare capacity, which should be confirmed.

If a connection to the Pentland Hills sewer proves unacceptable, a connection could be made to the Linden Street sewer along the western edge of the recreation fields. If invert elevations preclude a gravity connection, a lift station would be required (Option B – scheme for costing).

All sewer designs will be subject to approval by the University and the City of Riverside.

Refer to P.108 of the University of California, Riverside Campus Design Guidelines, 1996 for typical Sanitary Sewer System design requirements.

### **Sanitary waste and Vent System**

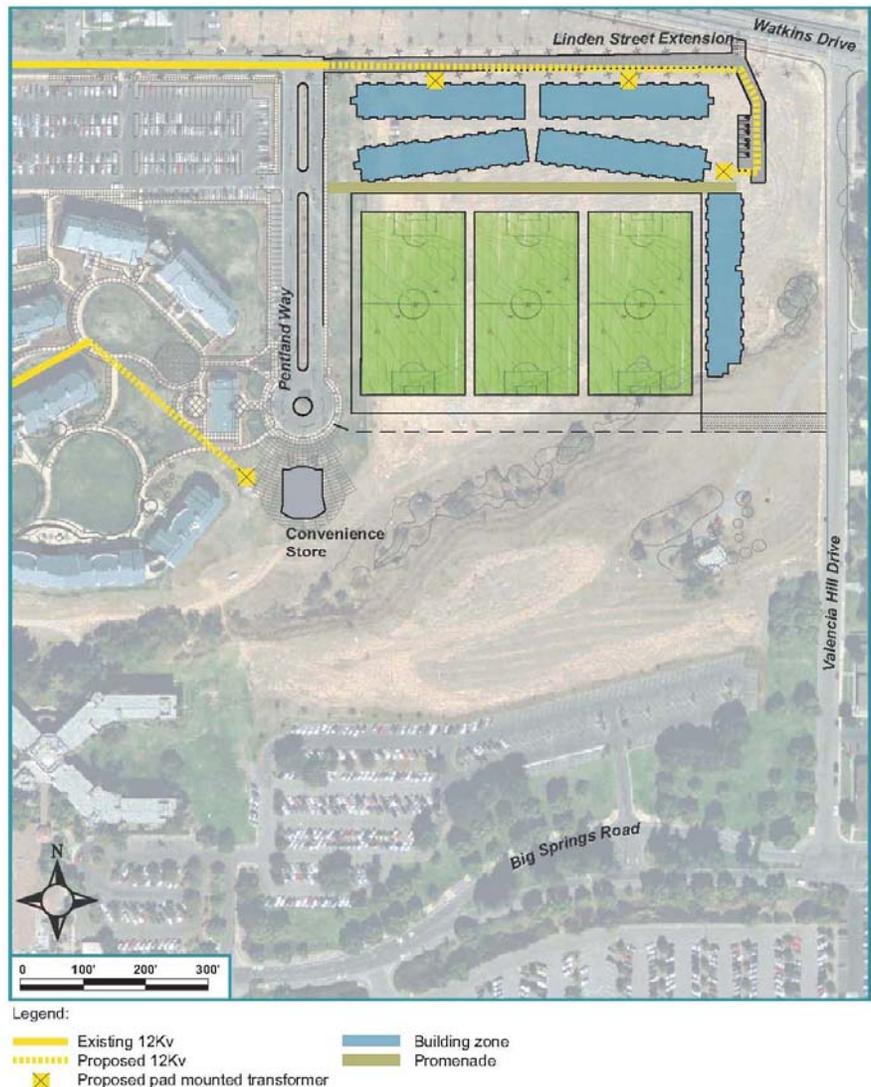
The sanitary waste and vent system shall be sized based on Tables 7-3 and 7-5 of the latest edition of the California Plumbing Code. It shall be routed to 5'-0" outside of the building and connected to the Campus main sewer extension along Linden Street or Valencia Hills Drive. Refer to the Infrastructure Improvement Paragraphs for further detail. Final connection to the sewer mains shall be provided under the Civil Engineer's scope of work.

### **Fire Protection System**

The fire protection system shall be based on the latest edition of the National Fire Protection Association (NFPA) Pamphlet No. 13, the California Building Code and California Fire Code.

The entire building shall be protected by an automatic sprinkler system. The system shall be hydraulically protected, based on the current water pressure and performance flow test acquired from the Campus water system. The minimum rate of water application (density) shall be 0.10 GPM per square foot for Light Hazard, over the most remote 1,500 square feet.

### A.3.3 Electrical



**Diagram A-9:** Electrical Layout

#### Electrical System

Each housing building will have a main electrical room containing the main 480/277V, 3-phase, 4-wire switchboard and distribution boards. Dry-type step-down transformers will be provided to obtain 208/120V power. The main electrical room will be positioned as close as possible to the campus service connection point (transformer location).

The building power distribution will be at 277/480V and 120/208V via cable feeders in conduits and will be distributed as follows:

- 480V, 3-phase, 3-wire for all motor loads one horsepower and larger.
- 277V and 120V, 1-phase for fluorescent lighting and HID fixtures.

- 208V, single phase or 3-phase for special equipment.
- 120V, single phase for receptacle outlets and motors smaller than 3/4-horsepower
- No facility will be provided for power system other than 277/480V and 120/208V AC, 3-phase, 4-wire, 60 Hz.

In each building the branch electrical rooms (or closets) on each floor shall be vertically stacking. The number of electrical rooms (or closets) will depend on the building layout and size of the floor. The requirement for electrical room ventilation will be evaluated during the design phase. Each electrical room will have a 277/480V distribution board and feeders will be provided to service motor loads and general area lighting. A 120/208V distribution board will also be provided and will feed individual apartment single-phase panelboards. Each apartment panelboards will be metered. The apartment panelboards serve all electrical loads within the apartment.

Distribution of power within the building areas is to be via a conduit and wire system.

Power outlets equally spaced at appropriate locations around the recreational field will provide power for outdoor program activities.

### A.3.4 Natural Gas



Diagram A-10: Natural Gas Layout

#### Natural Gas System

Natural gas service is provided by Southern California Gas at a pressure of 25 psi. The distribution system within the Campus is at 5 psi. Each building will be provided with an individual gas meter assembly comprising of gas meter, gas pressure regulator, gas shut-off valve and gas seismic valve. The gas pressure will be reduced to 8" W.C. The natural gas system shall be sized based on Table 12-3 of the latest edition of the California Plumbing Code.

## A.4 REVISION NOTES TO THE ORIGINAL DPP

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The following lists the revisions that should be considered to the original DPP in light of the removal of parking from the program.

1. Page 2-2, second paragraph: change “parking structure” to “basement”.
2. Page 2-3, first paragraph: revise second sentence to read “Buildings A, B, C, and D along Linden Street extension are proposed to be three stories high and built on structured fill”.
3. Page 2-5, diagram 2.2-1: revise diagram; remove circulation east
4. Page 2-6, diagram 2.3-1: revise diagram removing eastern circulation node and deleting reference to a parking structure
5. Page 2-8, section 2.7.1: revise program removing heading “Parking” and moving gem cart parking into “Apartment Support Spaces” heading.
6. Page 2-10, section 2.7.5: revise program summary removing “parking”.
7. Page 2-11, Budget Summary: revise budget summary removing the term parking from the table.
8. Page 3-5, diagrams 3.2-1, 3.2-3, 3.2-3, and 3.2-4: revise diagrams removing the word “parking”.
9. Page 3-6, diagram 3.2-5: revise diagram removing the word “parking”.
10. Page 4-2, bullets: revise bullet list removing the goal of a parking ratio requirement
11. Page 4-16. section 4.3.3: revise section removing parking requirement
12. Page 4-16, diagram 4.3.3-1: revise diagram removing parking and showing basement
13. Page 4-17, diagrams 4.3.3-2 and 4.3.3-3: revise diagram removing parking and showing basement
14. Page 4-19, diagram 4.3.5-1: revise diagram removing east end circulation node
15. Page 4-15, section 4.3.13: delete section
16. Pages 4-26 to 4-29, section 4.4.1: revise section removing reference to parking; revise structural considerations to reflect new scheme
17. Pages 4-33 to 4-36, section 4.4.3: revise section removing reference to parking; revise electrical considerations to reflect new scheme
18. Pages 4-36 to 4-38, section 4.4.4: revise section removing reference to parking; revise plumbing considerations to reflect new scheme
19. Page 5-2; section 5.2.1: revise section removing reference to parking and podium
20. Page 5-4; section 5.2.3: delete section
21. Pages 5-5 to 5-6; diagrams 5.2.4 -1, 5.2.4-2, 5.2.4-3, 5.2.4-4 and section 5.2.4: revise diagrams removing reference to basement parking; revise section remove reference to parking
22. Page 5-11 to 5-12; section 5.2.10: revise section
23. Page 6-3; section 6.2.1: revise section removing reference to parking and replace with basement
24. Page 6-4; section 6.3.2: revise section removing reference to parking garage and replace with basement

## **A.5 BUDGET**

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The revised budget has been developed after numerous work sessions and discussions furthering the development of the option.

**DETAIL PROJECT PROGRAM COST MODEL (REVISED SCHEME)**

for

**East Campus Arroyo Housing  
University of California, Riverside  
Riverside, California**

RATCLIFF Architecture  
5856 Doyle Street  
Emeryville, California 94608

Tel: (510) 652-1972  
Fax: (510) 655-6654

May 20, 2004

**DAVIS LANGDON ADAMSON**  
CONSTRUCTION COST PLANNING AND MANAGEMENT

301 Arizona Avenue  
Suite 301  
Santa Monica  
California 90401  
Tel: 310.393.9411  
Fax: 310.393.7493  
[www.dladamson.com](http://www.dladamson.com)

**East Campus Arroyo Housing  
University of California, Riverside  
Riverside, California**

*Detail Project Program Cost Model (Revised Scheme)  
May 20, 2004  
0168-7005.110*

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**DAVIS LANGDON ADAMSON**

**East Campus Arroyo Housing  
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***BASIS OF COST MODEL (REVISED SCHEME)***

Cost Model (Revised Scheme) Prepared From

Draft DPP information

Discussions with the Project Architect and Engineers

Conditions of Construction

The pricing is based on the following general conditions of construction

A start date of February 2006

A construction period of 17 months

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor will have full access to the site at regular construction hours

**East Campus Arroyo Housing  
University of California, Riverside  
Riverside, California**

*Detail Project Program Cost Model (Revised Scheme)  
May 20, 2004  
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### **INCLUSIONS**

The project consists of the development of the East Campus Arroyo student housing complex, which includes the following:

1. An apartment complex that includes 113 EA 4 bedroom units, 24 EA 2 bedroom unit, 5EA 1 bedroom units, 4 EA studio units stacked in a combination on two story and three story buildings, a lower level support functions and circulation. The total gross square feet for the apartments is 223,294SF of Type V construction. The typical construction includes reinforced concrete foundations and slab on grade, wood framed floor and roof structures with gypcrete topping on floors, exterior finish of stucco with integral color finish, aluminum framed insulated sliding windows with low-e, entry doors, and stucco soffits. Roofing includes concrete tile over R-30 batt insulation, and allowances for miscellaneous sheetmetal work and caulking and sealants. Interior construction includes wood framed partitions with painted gypsum board lining, wood doors and frames, carpet and sheet vinyl flooring, resilient rubber bases and painted gypsum board ceilings. Function equipment includes bathroom accessories, built-in cabinets and countertops, window blinds, fire extinguisher cabinets, mail boxes and kitchen appliances. Plumbing includes sanitary fixtures, waste, vent and domestic hot and cold water, laundry, kitchen equipment connections, water heating equipment, roof drainage and natural gas. HVAC includes an air to air heat pump system. Electrical includes normal, machine, equipment and user convenience power, lighting, telephone/data, fire alarm and security. Fire protection includes automatic wet sprinkler systems - complete.
2. A Grill/Retail/Convenience building that includes a single story building with a gross square feet of approximately 4,129SF.
3. Sitework and Infrastructure include site clearance, cut to reduce levels, rough grading and an allowance to fill the Arroyo, asphalt paving to roads and parking, reinforced concrete walks, and an allowance for landscaping, irrigation and site furniture. Site utilities include site drainage, domestic and fire water, sewer, gas, electrical mains power, telecommunications/signals (conduit only), trade demolition, removal, protection of existing utilities.
4. Recreation Fields include preparation and turf, irrigation, lighting and an allowance for site utilities to approximately 198,000SF.

**East Campus Arroyo Housing  
University of California, Riverside  
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*Detail Project Program Cost Model (Revised Scheme)  
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### *INCLUSIONS*

#### *BIDDING PROCESS - MARKET CONDITIONS*

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 4 bidders for all items of subcontracted work and 6-7 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon Adamson has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon Adamson's best judgement as professional construction consultant familiar with the construction industry. However, Davis Langdon Adamson cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

**East Campus Arroyo Housing  
University of California, Riverside  
Riverside, California**

*Detail Project Program Cost Model (Revised Scheme)  
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**EXCLUSIONS**

- Owner supplied and installed furniture, fixtures and equipment
- Loose furniture and equipment except as specifically identified
- Audio visual equipment
- Hazardous material handling, disposal and abatement
- Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
- Design, testing, inspection or construction management fees
- Architectural and design fees
- Scope change and post contract contingencies
- Assessments, taxes, finance, legal and development charges
- Environmental impact mitigation
- Builder's risk, project wrap-up and other owner provided insurance program
- Land and easement acquisition
- Cost escalation beyond a construction midpoint of October 2006
- Utility connection charges and fees
- Emergency power (excepting exit lighting battery back-up)
- Public address
- CCTV surveillance cameras and monitoring
- Site telecommunications/signals cabling
- HV equipment and cabling
- Major utility relocations
- Storm water containment
- Refrigerators

**East Campus Arroyo Housing  
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*OVERALL SUMMARY*

|  | Gross Floor Area    | \$ / SF | \$x1,000             |
|--|---------------------|---------|----------------------|
| Apartment Complex  | 223,294 SF          | 150.08  | 33,512               |
| Grill/Retail/Convenience                                 | 4,129 SF            | 324.45  | 1,340                |
| Sitework and Infrastructure                              | 322,990 SF          | 18.78   | 6,064                |
| Recreation fields  | 198,000 SF          | 11.42   | 2,261                |
| <b><i>TOTAL Building &amp; Sitework Construction</i></b> |                     |         | <b><i>43,178</i></b> |
|  | <i>May 2004</i>     |         |                      |
| Escalation at 4.00% per annum                            | 9.91%               |         | 4,279                |
| <b><i>TOTAL Building &amp; Sitework Construction</i></b> |                     |         | <b><i>47,457</i></b> |
|  | <i>October 2006</i> |         |                      |
| Telecommunications work by campus                        |                     |         | 350                  |
| <b><i>GRAND TOTAL</i></b>                                |                     |         | <b><i>47,807</i></b> |

**NOTE:**

This cost model is predicated on the assumption that the entire scope of works included in this summary will be included in the scope of works and no section will be excluded.

East Campus Arroyo Housing  
University of California, Riverside  
Riverside, California

Detail Project Program Cost Model (Revised Scheme)  
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*APARTMENT COMPLEX SUMMARY*

|   |                |                   |               | \$x1,000      |
|---|----------------|-------------------|---------------|---------------|
| Apartments *                              |                | 207,398 SF        | 145.67        | 30,212        |
| 3EA Studio A at 365ASF                    | 1,095          |                   |               |               |
| 1EA Studio B at 392ASF                    | 392            |                   |               |               |
| 5EA 1 Bedroom at 472ASF                   | 2,360          |                   |               |               |
| 24EA 1 Bedroom at 755ASF                  | 18,120         |                   |               |               |
| 113EA 4 Bedroom at 1,214ASF               | 137,182        |                   |               |               |
|   | <u>159,149</u> |                   |               |               |
| Communal Functions                        | 4,235          |                   |               |               |
| Support Functions                         | 502            |                   |               |               |
|   | <u>163,886</u> |                   |               |               |
| Efficiency 79%                            | 43,512         |                   |               |               |
|   | <u>207,398</u> |                   |               |               |
| Lower Level Support Functions/Circulation |                | 15,896 SF         | 207.63        | 3,301         |
| <b>TOTAL - APARTMENT COMPLEX</b>          |                | <b>223,294 SF</b> | <b>150.08</b> | <b>33,512</b> |

Notes:

- \* To arrive at an average cost for the apartments, detailed costs were developed for (3) four-bed roomed units stacked in a three story configuration (see page 8). This cost was then applied to the total gross floor area for apartment within the overall program.

**East Campus Arroyo Housing DPP, UCR** *Detail Project Program Cost Model (Revised Scheme)*  
**Apartments - \$/SF Calculation** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

**APARTMENTS - \$/SF CALCULATION AREAS & CONTROL QUANTITIES**

**Areas**

|                                  | SF    | SF                          | SF           |
|----------------------------------|-------|-----------------------------|--------------|
| Enclosed Areas                   |       |                             |              |
| Apartments - \$/SF Calculation   | 5,026 |                             |              |
| SUBTOTAL, Enclosed Area          |       | <u>5,026</u>                |              |
| Covered area                     |       |                             |              |
| SUBTOTAL, Covered Area @ ½ Value |       | <u>                    </u> |              |
| <b>TOTAL GROSS FLOOR AREA</b>    |       |                             | <u>5,026</u> |

**Control Quantities**

|                            |        |        | Ratio to<br>Gross Area |
|----------------------------|--------|--------|------------------------|
| Number of stories (x1,000) | 3      | EA     | 0.597                  |
| Gross Area                 | 5,026  | SF     | 1.000                  |
| Enclosed Area              | 5,026  | SF     | 1.000                  |
| Footprint Area             | 1,675  | SF     | 0.333                  |
| Volume                     | 50,260 | CF     | 10.000                 |
| Gross Wall Area            | 5,277  | SF     | 1.050                  |
| Windows or Glazing Area    | 12.00% | 633 SF | 0.126                  |
| Roof Area - Total          | 1,675  | SF     | 0.333                  |
| Interior Partition Length  | 469    | LF     | 0.093                  |
| Plumbing Fixtures (x1,000) | 27     | EA     | 5.372                  |
| HVAC                       | 3,150  | CFM    | 0.627                  |
| Electrical Load            | 50     | KW     | 9.948                  |

**East Campus Arroyo Housing DPP, UCR Detail Project Program Cost Model (Revised Scheme)**  
**Apartments - \$/SF Calculation** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

**APARTMENTS - \$/SF CALCULATION COMPONENT SUMMARY**

|  | Gross Area:     | 5,026 SF      |            |
|--|-----------------|---------------|------------|
|  |                 | \$/SF         | \$x1,000   |
| 1. Foundations                                       |                 | 2.67          | 13         |
| 2. Vertical Structure                                |                 | 4.60          | 23         |
| 3. Floor & Roof Structures                           |                 | 12.38         | 62         |
| 4. Exterior Cladding                                 |                 | 24.92         | 125        |
| 5. Roofing, Waterproofing & Skylights                |                 | 3.16          | 16         |
| <i>Shell (1-5)</i>                                   |                 | 47.73         | 240        |
| 6. Interior Partitions, Doors & Glazing              |                 | 11.13         | 56         |
| 7. Floor, Wall & Ceiling Finishes                    |                 | 5.91          | 30         |
| <i>Interiors (6-7)</i>                               |                 | 17.04         | 86         |
| 8. Function Equipment & Specialties                  |                 | 7.31          | 37         |
| 9. Stairs & Vertical Transportation                  |                 | 2.00          | 10         |
| <i>Equipment &amp; Vertical Transportation (8-9)</i> |                 | 9.31          | 47         |
| 10. Plumbing Systems                                 |                 | 11.55         | 58         |
| 11. Heating, Ventilating & Air Conditioning          |                 | 13.50         | 68         |
| 12. Electric Lighting, Power & Communications        |                 | 16.68         | 84         |
| 13. Fire Protection Systems                          |                 | 2.00          | 10         |
| <i>Mechanical &amp; Electrical (10-13)</i>           |                 | 43.73         | 220        |
| <b>Total Building Construction (1-13)</b>            |                 | <b>117.81</b> | <b>592</b> |
| 14. Site Preparation & Demolition                    |                 | 0.00          | 0          |
| 15. Site Paving, Structures & Landscaping            |                 | 0.00          | 0          |
| 16. Utilities on Site                                |                 | 0.00          | 0          |
| <b>Total Site Construction (14-16)</b>               |                 | <b>0.00</b>   | <b>0</b>   |
| <b>TOTAL BUILDING &amp; SITE (1-16)</b>              |                 | <b>117.81</b> | <b>592</b> |
| General Conditions                                   | 8.00%           | 9.35          | 47         |
| Contractor's Overhead & Profit or Fee                | 4.00%           | 5.17          | 26         |
| <b>PLANNED CONSTRUCTION COST</b>                     |                 | <b>132.33</b> | <b>665</b> |
| Contingency for Development of Design                | 10.00%          | 13.33         | 67         |
| Escalation is carried on the Overall Summary         |                 | 0.00          | 0          |
| <b>RECOMMENDED BUDGET</b>                            | <i>May 2004</i> | <b>145.67</b> | <b>732</b> |



**East Campus Arroyo Housing DPP, UCR**    *Detail Project Program Cost Model (Revised Scheme)*  
**Apartments - \$/SF Calculation**    *May 20, 2004*  
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| <i>Item Description</i>  | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i> |
|--|-----------------|-------------|-------------|--------------|
| Interior finish to exterior walls<br>Gypsum board with paint finish          | 4,644           | SF          | 2.50        | 11,610       |
| Windows, glazing and louvers<br>Aluminum windows, dual glazed sliders, low-e | 633             | SF          | 40.00       | 25,320       |
| Exterior doors, frames and hardware<br>Entry door and frame                  | 3               | EA          | 700.00      | 2,100        |
| Fascias, bands, screens and trim, etc<br>Allowance for sunscreens            | 1               | LS          | 9,000.00    | 9,000        |
| Soffits<br>Stucco with integral color finish                                 | 277             | SF          | 10.00       | 2,770        |
| Balustrades<br>Walkway railing   | 115             | LF          | 145.00      | 16,675       |
|  |                 |             |             | 125,227      |

**5. Roofing, Waterproofing & Skylights**

|  |       |    |      |        |
|--|-------|----|------|--------|
| Insulation<br>R-30 batt insulation   | 1,675 | SF | 0.85 | 1,424  |
| Roofing<br>Concrete tile   | 1,675 | SF | 6.00 | 10,050 |
| Roof or deck surfaces<br>Walkway waterproof surfacing  | 348   | SF | 5.00 | 1,740  |
| Roofing upstands and sheetmetal<br>Metal flashings, gutters and downspouts,<br>miscellaneous sheetmetal work | 1,675 | SF | 0.85 | 1,424  |
| Caulking and sealants<br>Miscellaneous caulking and sealants   | 5,026 | SF | 0.25 | 1,257  |
|  |       |    |      | 15,894 |



**East Campus Arroyo Housing DPP, UCR**    *Detail Project Program Cost Model (Revised Scheme)*  
**Apartments - \$/SF Calculation**    *May 20, 2004*  
**Riverside, California**    *0168-7005.110*

| <i>Item Description</i>                                    | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i>  |
|--|-----------------|-------------|-------------|---------------|
| <b>Cabinets and countertops</b>                            |                 |             |             |               |
| Plastic laminate countertop                                |                 |             |             |               |
| 2'-0" wide - kitchen                                       | 57              | LF          | 55.00       | 3,135         |
| 1'0" wide - breakfast counter                              | 21              | SF          | 45.00       | 945           |
| Pre-manufactured plastic lavatory countertop               |                 |             |             |               |
| 2'-6" long   | 3               | EA          | 165.00      | 495           |
| 3'-0" long   | 3               | EA          | 200.00      | 600           |
| 4'-5" long   | 6               | EA          | 300.00      | 1,800         |
| Base cabinets including door pulls and hardware            |                 |             |             |               |
| Kitchen  | 57              | LF          | 100.00      | 5,700         |
| Bathroom   | 44              | LF          | 100.00      | 4,400         |
| Overhead wall cabinet including door pulls and hardware    | 81              | LF          | 95.00       | 7,695         |
| Broom cabinet  | 3               | EA          | 200.00      | 600           |
| <b>Light control and vision equipment</b>                  |                 |             |             |               |
| Window blinds  | 633             | SF          | 2.00        | 1,266         |
| <b>Amenities and convenience items</b>                     |                 |             |             |               |
| Allowance for fire extinguisher cabinets, mail boxes, etc. | 5,026           | SF          | 0.50        | 2,513         |
| <b>Kitchen appliances</b>                                  |                 |             |             |               |
| Gas oven / range cook top                                  | 3               | EA          | 500.00      | 1,500         |
| Dishwasher   | 3               | EA          | 350.00      | 1,050         |
| Garbage disposer   | 3               | EA          | 150.00      | 450           |
| Refrigerator   |                 |             |             | excluded      |
| Microwave  | 3               | EA          | 250.00      | 750           |
|  |                 |             |             | <b>36,739</b> |
| <b><u>9. Stairs &amp; Vertical Transportation</u></b>      |                 |             |             |               |
| <b>Staircase flights and elevators</b>                     |                 |             |             |               |
| Pro-rata allowance   | 5,026           | SF          | 2.00        | 10,052        |
|  |                 |             |             | <b>10,052</b> |



**East Campus Arroyo Housing DPP, UCR**    *Detail Project Program Cost Model (Revised Scheme)*  
**Apartments - \$/SF Calculation**    *May 20, 2004*  
**Riverside, California**    *0168-7005.110*

| <i>Item Description</i>  | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i>  |
|--|-----------------|-------------|-------------|---------------|
| <b><u>12. Electrical Lighting, Power &amp; Communication</u></b>                                   |                 |             |             |               |
| Main service and distribution<br>Including main switchboard, distribution<br>equipment and cabling | 5,026           | SF          | 2.50        | 12,565        |
| Emergency and uninterrupted power  |                 |             |             | Excluded      |
| Machine and equipment power  |                 |             |             |               |
| Unit connections   | 6               | EA          | 350.00      | 2,100         |
| Miscellaneous connections, < 150 A   | 1               | LS          | 1,500.00    | 1,500         |
| User convenience power<br>Including unit panelboards, feeders and user<br>convenience outlets      | 5,026           | SF          | 2.50        | 12,565        |
| Lighting<br>Light fixtures and switches including conduit and<br>wire                              | 5,026           | SF          | 3.50        | 17,591        |
| Lighting and power specialties   |                 |             |             |               |
| Grounding  | 1               | LS          | 550.00      | 550           |
| Lighting control system  | 1               | LS          | 550.00      | 550           |
| Telephone and communications systems   |                 |             |             |               |
| Telephone/data outlets, including conduit and<br>Cable TV, outlets                                 | 5,026           | SF          | 2.50        | 12,565        |
|  | 15              | EA          | 350.00      | 5,250         |
| Alarm and security systems   |                 |             |             |               |
| Fire alarm systems   | 5,026           | SF          | 2.50        | 12,565        |
| Security   | 5,026           | SF          | 1.20        | 6,031         |
|  |                 |             |             | <b>83,832</b> |
| <b><u>13. Fire Protection Systems</u></b>  |                 |             |             |               |
| Automatic wet sprinkler system - complete  | 5,026           | SF          | 2.00        | 10,052        |
|  |                 |             |             | <b>10,052</b> |

**East Campus Arroyo Housing DPP, UCR *Detail Project Program Cost Model (Revised Scheme)***  
**Grill/Retail/Convenience** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

**GRILL/RETAIL/CONVENIENCE AREAS & CONTROL QUANTITIES**

**Areas**

|                                  | SF    | SF                | SF           |
|----------------------------------|-------|-------------------|--------------|
| Enclosed Areas                   |       |                   |              |
| Grill/Retail/Convenience         | 4,129 |                   |              |
| SUBTOTAL, Enclosed Area          |       | <u>4,129</u>      |              |
| Covered area                     |       |                   |              |
| SUBTOTAL, Covered Area @ ½ Value |       | <u>          </u> |              |
| <b>TOTAL GROSS FLOOR AREA</b>    |       |                   | <u>4,129</u> |

**Control Quantities**

|                            |        |          | Ratio to<br>Gross Area |
|----------------------------|--------|----------|------------------------|
| Number of stories (x1,000) | 1      | EA       | 0.242                  |
| Gross Area                 | 4,129  | SF       | 1.000                  |
| Enclosed Area              | 4,129  | SF       | 1.000                  |
| Covered Area               | 0      | SF       | 0.000                  |
| Footprint Area             | 4,129  | SF       | 1.000                  |
| Gross Wall Area            | 3,023  | SF       | 0.732                  |
| Windows or Glazing Area    | 25.01% | 756 SF   | 0.183                  |
| Roof Area - Total          |        | 4,129 SF | 1.000                  |



**East Campus Arroyo Housing DPP, UCR Detail Project Program Cost Model (Revised Scheme)**  
**Grill/Retail/Convenience** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

| <i>Item Description</i>   | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i> |
|---|-----------------|-------------|-------------|--------------|
| <b><u>1. Foundations</u></b>  |                 |             |             |              |
| Reinforced concrete including excavation<br>Wall footings and column bases    | 3,953           | SF          | 8.00        | 31,624       |
|   |                 |             |             | 31,624       |
| <b><u>2. Vertical Structure</u></b>   |                 |             |             |              |
| Columns and pilasters<br>Wood posts   | 3,953           | SF          | 3.50        | 13,836       |
| Shear bracing<br>Plywood sheathing  | 3,023           | SF          | 2.00        | 6,046        |
|   |                 |             |             | 19,882       |
| <b><u>3. Floor and Roof Structure</u></b>                                     |                 |             |             |              |
| Floor at lowest level<br>Reinforced concrete slab on grade, 6" thick          | 3,953           | SF          | 5.50        | 21,742       |
| Pitched roofs<br>Wood trusses / rafters, blocking, plywood                    | 3,953           | SF          | 10.00       | 39,530       |
|   |                 |             |             | 61,272       |
| <b><u>4. Exterior Cladding</u></b>  |                 |             |             |              |
| Wall framing, furring and insulation<br>Wood stud framing and batt insulation | 3,023           | SF          | 3.25        | 9,825        |
| Applied exterior finish<br>Stucco with integral color finish                  | 2,267           | SF          | 8.00        | 18,136       |
| Interior finish to exterior walls<br>Gypsum board with paint finish           | 2,267           | SF          | 2.50        | 5,668        |

**East Campus Arroyo Housing DPP, UCR** *Detail Project Program Cost Model (Revised Scheme)*  
**Grill/Retail/Convenience** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

| <i>Item Description</i>             | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i> |
|-------------------------------------|-----------------|-------------|-------------|--------------|
| Windows, glazing and louvers        |                 |             |             |              |
| Aluminum storefronts                | 756             | SF          | 45.00       | 34,020       |
| Exterior doors, frames and hardware |                 |             |             |              |
| Aluminum entry doors                | 1               | EA          | 6,000.00    | 6,000        |
| Hollow metal doors, single          | 4               | EA          | 1,300.00    | 5,200        |
| Soffits                             |                 |             |             |              |
| Stucco with integral color finish   | 791             | SF          | 10.00       | 7,910        |
|                                     |                 |             |             | 86,758       |

**5. Roofing, Waterproofing & Skylights**

|  |       |    |       |        |
|--|-------|----|-------|--------|
| Insulation   |       |    |       |        |
| R-30 batt insulation   | 3,953 | SF | 0.85  | 3,360  |
| Roofing  |       |    |       |        |
| Standing seam metal roofing  | 3,953 | SF | 15.00 | 59,295 |
| Roofing upstands and sheetmetal  |       |    |       |        |
| Metal flashings, gutters and downspouts, miscellaneous sheetmetal work | 3,953 | SF | 1.00  | 3,953  |
| Caulking and sealants  |       |    |       |        |
| Miscellaneous caulking and sealants                                    | 3,953 | SF | 0.50  | 1,977  |
|  |       |    |       | 68,585 |

**6. Interior Partitions, Doors & Glazing**

|  |       |    |      |        |
|--|-------|----|------|--------|
| Partition and doors  |       |    |      |        |
| Wood stud framing with painted gypsum board lining, hollow metal doors in hollow metal | 3,953 | SF | 9.00 | 35,577 |
|  |       |    |      | 35,577 |

**East Campus Arroyo Housing DPP, UCR** *Detail Project Program Cost Model (Revised Scheme)*  
**Grill/Retail/Convenience** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

| <i>Item Description</i>  | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i> |
|--|-----------------|-------------|-------------|--------------|
| <b><u>7. Floor, Wall &amp; Ceiling Finishes</u></b>  |                 |             |             |              |
| Floors   |                 |             |             |              |
| Sheet vinyl  | 3,953           | SF          | 3.50        | 13,836       |
| Bases  |                 |             |             |              |
| Resilient rubber   | 3,953           | LF          | 0.25        | 988          |
| Walls  |                 |             |             |              |
| Ceramic tiles in wet areas   | 3,953           | SF          | 2.50        | 9,883        |
| Ceilings   |                 |             |             |              |
| Gypsum board with paint finish   | 3,953           | SF          | 6.00        | 23,718       |
|  |                 |             |             | 48,424       |
| <b><u>8. Function Equipment &amp; Specialties</u></b>  |                 |             |             |              |
| General building equipment   |                 |             |             |              |
| Toilet partitions and accessories, code signage, fire extinguishers and cabinets, markerboards and tackboards, window blinds | 3,953           | SF          | 3.50        | 13,836       |
| Shelving and millwork  |                 |             |             |              |
| Storage shelving, adjustable shelving, miscellaneous wood trim   | 1               | LS          | 30,000.00   | 30,000       |
| Cabinets and countertops   |                 |             |             |              |
| Built-in plastic laminate cabinets and countertops   | 3,953           | SF          | 3.50        | 13,836       |
| Special use equipment  |                 |             |             |              |
| Food services equipment  | 1               | LS          | 474,000.00  | 474,000      |
| Miscellaneous equipment  | 1               | LS          | 20,000.00   | 20,000       |
|  |                 |             |             | 551,671      |
| <b><u>9. Stairs &amp; Vertical Transportation</u></b>  |                 |             |             |              |
|  |                 |             |             | 0            |

**East Campus Arroyo Housing DPP, UCR** *Detail Project Program Cost Model (Revised Scheme)*  
**Grill/Retail/Convenience** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

| <i>Item Description</i>  | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i> |
|--|-----------------|-------------|-------------|--------------|
| <b><u>10. Plumbing Systems</u></b>   |                 |             |             |              |
| Including sanitary fixtures, waste, vent and domestic water pipework, water heating equipment, gas and roof drainage       | 3,953           | SF          | 6.50        | 25,695       |
|  |                 |             |             | 25,695       |
| <b><u>11. Heating, Ventilation &amp; Air Conditioning</u></b>  |                 |             |             |              |
| Including packaged (gas-electric) roof-mounted air handling units, air distribution systems, controls and unit ventilation | 3,953           | SF          | 18.50       | 73,131       |
|  |                 |             |             | 73,131       |
| <b><u>12. Electrical Lighting, Power &amp; Communication</u></b>   |                 |             |             |              |
| Including mains power, machine, equipment and user convenience power, lighting, telephone/data, fire alarm and security    | 3,953           | SF          | 18.00       | 71,154       |
|  |                 |             |             | 71,154       |
| <b><u>13. Fire Protection Systems</u></b>  |                 |             |             |              |
| Automatic wet sprinkler system - complete  | 3,953           | SF          | 2.50        | 9,883        |
|  |                 |             |             | 9,883        |



**East Campus Arroyo Housing DPP, UCR    *Detail Project Program Cost Model (Revised Scheme)***  
**Sitework and Infrastructure** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

| <i>APARTMENTS SITEWORK COMPONENT SUMMARY</i>   |        |  | \$x1,000        |
|--|--------|--|-----------------|
| 14. Site Preparation & Demolition              |        |  | 1,035           |
| 15. Site Paving, Structures & Landscaping      |        |  | 1,797           |
| 16. Utilities on Site                          |        |  | 1,860           |
| <b><i>Total Site Construction (14-16)</i></b>  |        |  | <b>4,693</b>    |
| <b><i>TOTAL BUILDING &amp; SITE (1-16)</i></b> |        |  | <b>4,693</b>    |
| General Conditions                             | 8.00%  |  | 375             |
| Contractor's Overhead & Profit or Fee          | 4.00%  |  | 203             |
| <b><i>PLANNED CONSTRUCTION COST</i></b>        |        |  | <b>5,271</b>    |
| Contingency for Development of Design          | 10.00% |  | 527             |
| Escalation is carried on the Overall Summary   |        |  | 0               |
| <b><i>RECOMMENDED BUDGET</i></b>               |        |  | <b>5,798</b>    |
|  |        |  | <i>May 2004</i> |

| <i>GRILL SITEWORK COMPONENT SUMMARY</i>        |        |  | \$x1,000        |
|--|--------|--|-----------------|
| 14. Site Preparation & Demolition              |        |  | 43              |
| 15. Site Paving, Structures & Landscaping      |        |  | 98              |
| 16. Utilities on Site                          |        |  | 74              |
| <b><i>Total Site Construction (14-16)</i></b>  |        |  | <b>215</b>      |
| <b><i>TOTAL BUILDING &amp; SITE (1-16)</i></b> |        |  | <b>215</b>      |
| General Conditions                             | 8.00%  |  | 17              |
| Contractor's Overhead & Profit or Fee          | 4.00%  |  | 9               |
| <b><i>PLANNED CONSTRUCTION COST</i></b>        |        |  | <b>242</b>      |
| Contingency for Development of Design          | 10.00% |  | 24              |
| Escalation is carried on the Overall Summary   |        |  | 0               |
| <b><i>RECOMMENDED BUDGET</i></b>               |        |  | <b>266</b>      |
|  |        |  | <i>May 2004</i> |





**East Campus Arroyo Housing DPP, UCR** *Detail Project Program Cost Model (Revised Scheme)*  
**Recreation fields** *May 20, 2004*  
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**RECREATION FIELDS COMPONENT SUMMARY**

|  |        | Gross Area: 198,000 SF |              |
|--|--------|------------------------|--------------|
|  |        | \$/SF                  | \$x1,000     |
| 14. Site Preparation & Demolition            |        | 1.28                   | 254          |
| 15. Site Paving, Structures & Landscaping    |        | 7.71                   | 1,526        |
| 16. Utilities on Site                        |        | 0.25                   | 50           |
| <b>Total Site Construction (14-16)</b>       |        | <b>9.24</b>            | <b>1,830</b> |
| <b>TOTAL BUILDING &amp; SITE (1-16)</b>      |        | <b>9.24</b>            | <b>1,830</b> |
| General Conditions                           | 8.00%  | 0.74                   | 146          |
| Contractor's Overhead & Profit or Fee        | 4.00%  | 0.40                   | 79           |
| <b>PLANNED CONSTRUCTION COST</b>             |        | <b>10.38</b>           | <b>2,055</b> |
| Contingency for Development of Design        | 10.00% | 1.04                   | 206          |
| Escalation is carried on the Overall Summary |        | 0.00                   | 0            |
| <b>RECOMMENDED BUDGET</b>                    |        | <b>11.42</b>           | <b>2,261</b> |
|  |        | <i>May 2004</i>        |              |

**East Campus Arroyo Housing DPP, UCR**    *Detail Project Program Cost Model (Revised Scheme)*  
**Recreation fields**    *May 20, 2004*  
**Riverside, California**    *0168-7005.110*

| <i>Item Description</i>  | <i>Quantity</i> | <i>Unit</i> | <i>Rate</i> | <i>Total</i>     |
|--|-----------------|-------------|-------------|------------------|
| <b><u>14. Site Preparation &amp; Building Demolition</u></b>                             |                 |             |             |                  |
| Site clearing and grading  |                 |             |             |                  |
| Clear site and rough grading to reduce levels -<br>(cut and fill to Arroyo included with | 198,000         | SF          | 0.50        | 99,000           |
| Fill to Arroyo with excavated material   | 31,000          | CY          | 5.00        | 155,000          |
|  |                 |             |             | <b>254,000</b>   |
| <b><u>15. Site Paving, Structures &amp; Landscaping</u></b>                              |                 |             |             |                  |
| Landscape planting and maintenance   |                 |             |             |                  |
| Sand layer, 6"   | 198,000         | SF          | 0.65        | 128,700          |
| Topsoil 4", fertilizer and fine grading  | 198,000         | SF          | 0.65        | 128,700          |
| Bullseye turf  | 198,000         | SF          | 0.55        | 108,900          |
| Landscaping, irrigation and site furniture   | 48,275          | SF          | 5.00        | 241,375          |
| Rehabilitation to the fill area of the Arroyo -<br>Allowance                             | 111,000         | SF          | 2.50        | 277,500          |
| Site drainage, including culvert extension   | 169,653         | SF          | 1.25        | 212,066          |
| Structures   |                 |             |             |                  |
| Retaining wall, average 6' high  | 200             | LF          | 285.00      | 57,000           |
| Irrigation   |                 |             |             |                  |
| Irrigation to recreation fields  | 198,000         | SF          | 0.50        | 99,000           |
| Lighting   |                 |             |             |                  |
| Sport lighting to recreation fields, 30' candles<br>minimum                              | 198,000         | SF          | 1.38        | 273,240          |
|  |                 |             |             | <b>1,526,481</b> |
| <b><u>16. Utilities on Site</u></b>  |                 |             |             |                  |
| Site utilities   |                 |             |             |                  |
| Site utilities   | 1               | LS          | 50,000.00   | 50,000           |
|  |                 |             |             | <b>50,000</b>    |

**East Campus Arroyo Housing DPP, UCR** *Detail Project Program Cost Model (Revised Scheme)*  
**Apartment - Lower Level** *May 20, 2004*  
**Riverside, California** *0168-7005.110*

**APARTMENT - LOWER LEVEL COMPONENT SUMMARY**

|  | <b>Gross Area: 15,896 SF</b> |                 |              |
|--|------------------------------|-----------------|--------------|
|  | <b>\$/SF</b>                 | <b>\$x1,000</b> |              |
| 1. Foundations                                       | 16.00                        | 254             |              |
| 2. Vertical Structure                                | 68.00                        | 1,081           |              |
| 3. Floor & Roof Structures                           | 22.00                        | 350             |              |
| 4. Exterior Cladding                                 | 12.00                        | 191             |              |
| 5. Roofing, Waterproofing & Skylights                | 4.00                         | 64              |              |
| <i>Shell (1-5)</i>                                   | 122.00                       | 1,939           |              |
| 6. Interior Partitions, Doors & Glazing              | 12.00                        | 191             |              |
| 7. Floor, Wall & Ceiling Finishes                    | 13.00                        | 207             |              |
| <i>Interiors (6-7)</i>                               | 25.00                        | 397             |              |
| 8. Function Equipment & Specialties                  | 3.50                         | 56              |              |
| 9. Stairs & Vertical Transportation                  | 2.06                         | 33              |              |
| <i>Equipment &amp; Vertical Transportation (8-9)</i> | 5.56                         | 88              |              |
| 10. Plumbing Systems                                 | 2.00                         | 32              |              |
| 11. Heating, Ventilating & Air Conditioning          | 5.00                         | 79              |              |
| 12. Electric Lighting, Power & Communications        | 6.00                         | 95              |              |
| 13. Fire Protection Systems                          | 2.50                         | 40              |              |
| <i>Mechanical &amp; Electrical (10-13)</i>           | 15.50                        | 246             |              |
| <b>Total Building Construction (1-13)</b>            | <b>168.06</b>                | <b>2,672</b>    |              |
| 14. Site Preparation & Demolition                    | 0.00                         | 0               |              |
| 15. Site Paving, Structures & Landscaping            | 0.00                         | 0               |              |
| 16. Utilities on Site                                | 0.00                         | 0               |              |
| <b>Total Site Construction (14-16)</b>               | <b>0.00</b>                  | <b>0</b>        |              |
| <b>TOTAL BUILDING &amp; SITE (1-16)</b>              | <b>168.06</b>                | <b>2,672</b>    |              |
| General Conditions                                   | 8.00%                        | 13.46           | 214          |
| Contractor's Overhead & Profit or Fee                | 4.00%                        | 7.23            | 115          |
| <b>PLANNED CONSTRUCTION COST</b>                     |                              | <b>188.76</b>   | <b>3,001</b> |
| Contingency for Development of Design                | 10.00%                       | 18.87           | 300          |
| Escalation is carried on the Overall Summary         | 0.00%                        |                 | 0            |
| <b>RECOMMENDED BUDGET</b>                            | <i>May 2004</i>              | <b>207.63</b>   | <b>3,301</b> |

