



# **Project Cost Estimation**

**October 2005**

Prepared For:

**Pima Association of Governments  
Regional Transportation Authority**

**PAG Contract No. RTA-002  
URS Project No. 23444462**

Prepared By:

**URS**



October 10, 2005

Tim Ahrens  
Manager  
Regional Transportation Authority  
Pima Association of Governments  
177 N. Church Avenue, Suite 405  
Tucson, Arizona 85701

Re: Project Cost Estimation Report

Dear Mr. Ahrens:

We are pleased to submit this summary report that contains the Phase II project cost estimates for the projects proposed as part of the Pima Association of Governments (PAG) Regional Transportation Authority (RTA) Plan. These recommended roadway improvements represent the primary element of the plan that will be considered for adoption by the voters of Pima County in May 2006.

This report consists of the project cost summary tables; the first table summarizes all projects (38) evaluated. The estimated costs in this table are provided for six categories:

- Construction Cost
- Right-of-Way
- Construction Management
- Planning and Engineering
- Environmental Mitigation
- Public Art

Additionally, an individual summary table is included for each of the 38 projects with the key assumptions indicated. The detailed project descriptions on which these estimates are based are those presented in the RTA "Key Corridors" document distributed July 7, 2005, for public comment. We are also submitting under separate cover one set of 200-scale project displays that consist of a project layout on an aerial photo base with project features including right-of-way limits and striping shown for each project. Each of these products is also provided in electronic format.

If you have any questions or need additional information regarding this report, please contact Thomas Monchak at 602-648-2372.

Sincerely,

URS Corporation

Thomas M. Monchak, P.E.  
Project Manager

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Project Design Concept Displays  
(under separate cover)

## **BACKGROUND**

The project cost estimates presented in this report were developed by building upon previous work done for the Pima Association of Governments (PAG) Regional Transportation Authority (RTA) in May 2005 that included preparation of the planning level project design concepts, descriptions and cost estimates. The cost estimates for potential projects were updated and/or refined to reflect the present day construction marketplace in Pima County.

Research was conducted by interviewing local and state agency representatives as well as construction industry representatives in order to determine the cause of the recent trend of cost increases seen in competitive project bidding. Local and state agency representatives also provided bid tabulations of recent projects, which were used to establish unit costs that represent the current bidding climate. The construction industry representatives provided their perspective and indicated that the cost increases are related to increased demand for key materials including cement, steel, asphalt and aggregates. Additionally, recent fuel cost increases have affected the cost of delivering materials to construction sites as well as earthwork tasks.

Our research also included obtaining all previous reports and studies that have been completed for potential PAG RTA projects. In a few cases some design work had been completed that proved useful in compiling the updated cost estimates.

## **APPROACH**

Each project concept was laid out on CADD to include the features and number of lanes described in the “Key Corridors” document dated July 7, 2005, that was produced for public review and comment. Quantities were generated for pavement, bridges, box culverts, walls, curb & gutter, sidewalks, utilities, traffic elements, removals, etc. and applied to the present day estimated unit costs to calculate subtotals for all items. A 10% allowance for mobilization and a 15% construction contingency item were added to compute the total estimated construction cost.

Additional costs including: 15% for construction management, 15% for planning and engineering and 1% for public art were calculated based on the construction cost total. Environmental mitigation costs were estimated on a project specific basis based on the project’s jurisdictional requirements.

Right-of-way costs were based on the estimated area of property acquisition requirements determined from the project layout. Unit costs were applied by Pima County and City of Tucson staff for residential and commercial properties to compute the total cost of purchasing the estimated real estate required for each project.

The total estimated cost for each project is the sum of the construction, construction management, planning and engineering, public art, environmental mitigation, and right-of-way estimated costs.

**SUMMARY OF RESULTS**  
**COST ANALYSIS FOR RTA PROPOSED ROADWAY IMPROVEMENTS**

October 10, 2005

PROPOSED PROJECT	CONSTRUCTION COST	PUBLIC ART (1%)	CONSTRUCTION MANAGEMENT	ENGINEERING & PLANNING	ENVIRONMENTAL MITIGATION	ROW	TOTAL PROJECT COST
1 22nd Street, Camino Seco to Houghton Road	\$10,871,000	\$108,710	\$1,630,650	\$1,630,650	\$123,000	\$750,000	\$15,114,000
2 22nd Street, I-10 to Tucson Boulevard	\$78,177,000	\$781,770	\$11,726,550	\$11,726,550	\$620,500	\$15,500,000	\$118,532,400
3 Barraza/Aviation Parkway, Palo Verde to I-10	\$99,334,000	\$993,340	\$14,900,100	\$14,900,100	\$271,000	\$47,537,200	\$177,935,740
4 Broadway Boulevard, Euclid Avenue to Country Club Road	\$23,218,000	\$232,180	\$3,482,700	\$3,482,700	\$645,000	\$43,700,000	\$74,760,600
5 Broadway Boulevard, Camino Seco to Houghton Road	\$12,122,000	\$121,220	\$1,818,300	\$1,818,300	\$157,000	\$50,000	\$16,086,800
6 Downtown Links, I-10 to Broadway Boulevard	\$66,056,000	\$660,560	\$9,908,400	\$9,908,400	\$279,500	\$6,300,000	\$93,112,860
7 El Camino de Manana, Tangerine Road to Linda Vista Road	\$10,424,000	\$104,240	\$1,563,600	\$1,563,600	\$398,000	\$2,800,000	\$16,853,440
8 First Avenue, Orange Grove Road to Ina Road	\$5,890,000	\$58,900	\$883,500	\$883,500	\$112,500	\$150,000	\$7,978,400
9 First Avenue, River Road to Grant Road	\$35,181,000	\$351,810	\$5,277,150	\$5,277,150	\$485,500	\$32,800,000	\$79,372,610
10 Grant Road, Oracle Road to Swan Road	\$53,015,000	\$530,150	\$7,952,250	\$7,952,250	\$685,000	\$105,300,000	\$175,434,650
11 Harrison Road, Golf Links to Irvington	\$20,191,000	\$201,910	\$3,028,650	\$3,028,650	\$119,000	\$15,000	\$26,584,210
12 Houghton Road, I-10 to Tanque Verde Road	\$149,175,000	\$1,491,750	\$22,376,250	\$22,376,250	\$486,000	\$1,600,000	\$197,505,300
12a Houghton Road, Dawn Road to I-10	\$8,416,000	\$84,160	\$1,262,400	\$1,262,400	\$380,000	\$18,000	\$11,423,000
13 Irvington Road, Ajo Road to Mission Road	\$26,830,000	\$268,300	\$4,024,500	\$4,024,500	\$224,000	\$1,600,000	\$36,971,300
14 Kolb Road Connection With Sabino Canyon Road	\$7,598,000	\$75,980	\$1,139,700	\$1,139,700	\$97,000	\$10,000	\$10,060,380
15 La Canada Drive, Calle Concordia to River Road	\$34,251,000	\$342,510	\$5,137,650	\$5,137,650	\$151,500	\$700,000	\$45,720,300
16 La Cholla Boulevard, Tangerine Road to Magee Road	\$38,386,000	\$383,860	\$5,757,900	\$5,757,900	\$147,500	\$2,600,000	\$53,033,160
17 La Cholla Boulevard, River Road to Ruthrauff Road	\$12,157,000	\$121,570	\$1,823,550	\$1,823,550	\$150,500	\$200,000	\$16,276,170
18 Magee/Cortaro Farms Road, Thornydale Road to La Canada Drive	\$26,683,000	\$266,830	\$4,002,450	\$4,002,450	\$186,500	\$1,400,000	\$36,541,230
19 Magee Road, La Canada Drive to Oracle Road	\$7,792,000	\$77,920	\$1,168,800	\$1,168,800	\$110,500	\$180,000	\$10,498,020
20 Railroad Overpass at Ina Road	\$43,420,000	\$434,200	\$6,513,000	\$6,513,000	\$342,500	\$2,200,000	\$59,422,700
21 Railroad Overpass at Ruthrauff Road	\$38,649,000	\$386,490	\$5,797,350	\$5,797,350	\$410,000	\$13,400,000	\$64,440,190
22 Railroad Underpass at Grant Road	\$24,124,000	\$241,240	\$3,618,600	\$3,618,600	\$355,000	\$8,600,000	\$40,557,440
23 Railroad Underpass at Speedway Boulevard	\$18,063,000	\$180,630	\$2,709,450	\$2,709,450	\$436,000	\$5,400,000	\$29,498,530
24 Sahuarita Road, La Canada Drive to Country Club Road	\$33,225,000	\$332,250	\$4,983,750	\$4,983,750	\$111,000	\$1,100,000	\$44,735,750
25 Silverbell Road, Ina Road to Grant Road	\$40,331,000	\$403,310	\$6,049,650	\$6,049,650	\$622,000	\$8,500,000	\$61,955,610
26 Speedway Boulevard, Camino Seco to Houghton Road	\$13,985,000	\$139,850	\$2,097,750	\$2,097,750	\$143,000	\$350,000	\$18,813,400
27 Sunset Road, Silverbell Road to River Road (Grade Separate UPRR)	\$42,267,000	\$422,670	\$6,340,050	\$6,340,050	\$406,500	\$750,000	\$56,526,270
27a Sunset Road, Silverbell Road to I-10	\$10,349,000	\$103,490	\$1,552,350	\$1,552,350	\$129,500	\$550,000	\$14,236,690
27b Sunset Road, Silverbell Road to River Road (At-Grade UPRR Crossing)	\$18,022,000	\$180,220	\$2,703,300	\$2,703,300	\$466,500	\$750,000	\$24,825,320
28 Tangerine Road, I-10 to La Canada Drive	\$58,631,000	\$586,310	\$8,794,650	\$8,794,650	\$696,000	\$3,500,000	\$81,002,610
29 Tanque Verde Road, Catalina Highway to Houghton Road	\$10,114,000	\$101,140	\$1,517,100	\$1,517,100	\$107,000	\$750,000	\$14,106,300
30 Twin Peaks Road, Silverbell to Linda Vista (Including I-10 TI)	\$59,593,000	\$595,930	\$7,773,000	\$4,660,000	\$691,500	\$4,250,000	\$69,653,430
31 Valencia Road, Ajo Way to Mark Road	\$31,231,000	\$312,310	\$4,684,650	\$4,684,650	\$224,000	\$450,000	\$41,586,610
32 Valencia Road, Kolb Road to Houghton Road	\$28,413,000	\$284,130	\$4,261,950	\$4,261,950	\$830,000	\$200,000	\$38,251,000
33 Valencia Road, I-19 to Alvernon Road (Controlled Access Only)	\$10,000,000	-	-	-	-	-	\$10,000,000
33a Valencia Road, Alvernon to Kolb Road (Improvements)	\$38,437,000	\$384,370	\$5,765,550	\$5,765,550	\$372,500	\$400,000	\$51,124,970
34 Wilmot Road, I-10 to Sahuarita Road	\$30,891,000	\$308,910	\$4,633,650	\$4,633,650	\$213,000	\$900,000	\$41,580,210
<b>*TOTALS =</b>	<b>\$1,247,141,000</b>	<b>\$12,371,410</b>	<b>\$184,405,200</b>	<b>\$181,292,200</b>	<b>\$11,789,500</b>	<b>\$313,960,200</b>	<b>\$1,943,049,590</b>

\* Totals Do Not Include Projects 27a & 27b

RTA PROJECT ENVIRONMENTAL FACTORS

October 12, 2005

PROJECT	AGENCY	Total	Hazardous materials				Native Plant Preservation Plan	Eligible, Pending or Designated Historic District	Cultural & Archeology	Threatened & Endangered Species	Clean Water Act 404/401	Watercourse Amenities, Safety & Habitat	AZPDES & Stormwater Pollution Prevention Plan	Traffic Noise and Mitigation Analysis	EA (FHWA), EAMR (Pima Co) or ADOT ROW Encroachment Permit	Change of Access Report											
			Residential lead/asbestos (\$1500)	# Phase I \$2,000 Each	# Phase II \$5,000 Each																						
Kolb Road Connection to Sabino	City of Tucson	\$ 97,000	0	0	2	4000	2	10000	Y	5000	N	Y	40000	Y	5000	Y	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
Tanque Verde (Catalina to Houghton)	City of Tucson	\$ 107,000	0	0	3	6000	2	10000	Y	8000	N	Y	40000	Y	5000	Y	15000	Y	3000	Y	5000	Y	15000	N	0	N	0
Harrison Road (Golf Links to Irvington)	City of Tucson	\$ 119,000	0	0	3	6000	2	10000	Y	5000	N	Y	60000	Y	5000	Y	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
22nd Street (Camino Seco to Houghton)	City of Tucson	\$ 123,000	0	0	6	12000	4	20000	Y	8000	N	Y	45000	Y	5000	Y	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
Speedway (Camino Seco to Houghton)	City of Tucson	\$ 143,000	0	0	10	20000	8	40000	Y	5000	N	Y	40000	Y	5000	Y	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
Broadway (Camino Seco to Houghton)	City of Tucson	\$ 157,000	0	0	12	24000	10	50000	Y	5000	N	Y	35000	Y	5000	Y	15000	Y	3000	Y	5000	Y	15000	N	0	N	0
Wilmot South Extension	City of Tucson	\$ 213,000	0	0	6	12000	4	20000	Y	10000	N	Y	125000	Y	5000	Y	30000	Y	3000	Y	8000	N	0	N	0	N	0
Barraza/Aviation East	City of Tucson	\$ 271,000	2	3000	30	60000	25	125000	Y	5000	N	Y	40000	Y	5000	Y	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
Downtown Links	City of Tucson	\$ 279,500	6	9000	20	40000	18	90000	Y	2500	Y	Y	100000	Y	5000	Y	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
I-10/Grant TI	City of Tucson	\$ 355,000	0	0	5	10000	4	20000	Y	5000	N	Y	25000	N	0	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000		
Houghton Road (I-10 to Dawn Road)	City of Tucson	\$ 380,000	0	0	1	2000	1	5000	Y	5000	N	Y	60000	Y	5000	Y	15000	Y	3000	Y	5000	N	0	EA-FHWA	200000	Y	80000
I-10/Ruthrauff TI	City of Tucson	\$ 410,000	0	0	10	20000	10	50000	N	0	N	Y	45000	N	0	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000		
I-10/Speedway TI	City of Tucson	\$ 436,000	10	15000	8	16000	6	30000	N	0	Y	Y	80000	N	0	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000		
First Avenue (River to Grant)	City of Tucson	\$ 485,500	30	45000	50	100000	40	200000	Y	2500	N	Y	100000	N	5000	Rillito	15000	Y	3000	Y	5000	Y	10000	N	0	N	0
Houghton Road (I-10 to Tanque Verde)	City of Tucson	\$ 486,000	0	0	10	20000	8	40000	Y	8000	N	Y	80000	Y	5000	Y	30000	Y	3000	Y	5000	Y	15000	EA-FHWA	200000	Y	80000
22nd Street (I-10 to Tucson)	City of Tucson	\$ 620,500	45	67500	50	100000	40	200000	N	0	Y	Y	200000	Y	5000	Y	15000	Y	3000	Y	5000	Y	25000	N	0	N	0
Broadway (Euclid to Country Club)	City of Tucson	\$ 645,000	50	75000	50	100000	40	200000	N	0	Y	Y	250000	N	0	N	0	Y	5000	Y	15000	N	0	N	0	N	0
Grant Road (Oracle to Swan)	City of Tucson	\$ 685,000	150	225000	35	70000	25	125000	N	0	Y	Y	250000	N	0	N	0	Y	5000	Y	10000	N	0	N	0	N	0
Magee (La Cañada to Oracle)	Pima County	\$ 110,500	0	0	4	8000	2	10000	Y	2500	N	Y	20000	Y	5000	N	0	Y	5000	Y	10000	EAMR	50000	N	0	N	0
First Avenue (Orange Grove to Ina)	Pima County	\$ 112,500	0	0	0	0	0	0	Y	2500	N	Y	25000	Y	5000	Y	15000	N	0	Y	5000	Y	10000	EAMR	50000	N	0
Valencia Road (Kolb to Houghton)	Pima County	\$ 142,500	0	0	5	10000	3	15000	Y	2500	N	Y	30000	Y	5000	Y	15000	N	0	Y	5000	Y	10000	EAMR	50000	N	0
La Cholla (Tangerine to Magee)	Pima County	\$ 147,500	0	0	0	0	0	0	Y	2500	N	Y	60000	Y	5000	CDO	15000	N	0	Y	5000	Y	10000	EAMR	50000	N	0
La Cholla (River to Ruthrauff)	Pima County	\$ 150,500	0	0	4	8000	3	15000	Y	2500	N	Y	40000	Y	5000	Rillito	15000	N	0	Y	5000	Y	10000	EAMR	50000	N	0
La Cañada (Calle Concordia to River)	Pima County	\$ 151,500	2	3000	4	8000	3	15000	Y	2500	N	Y	30000	Y	5000	Y	15000	N	0	Y	8000	Y	15000	EAMR	50000	N	0
Magee/Cortaro Farms (Thornysdale to La Cañada)	Pima County	\$ 186,500	0	0	2	4000	2	10000	Y	2500	N	Y	80000	Y	5000	CDO	15000	N	0	Y	5000	Y	15000	EAMR	50000	N	0
Irvington (Ajo to Mission)	Pima County	\$ 191,000	0	0	3	6000	2	10000	Y	5000	N	Y	60000	Y	5000	Y	15000	N	0	Y	5000	Y	10000	EA-BLM	75000	N	0
Valencia Road (Camino de Oeste to Camino DLT)	Pima County	\$ 191,500	0	0	12	24000	10	50000	Y	2500	N	Y	30000	Y	5000	Y	15000	N	0	Y	5000	Y	10000	EAMR	50000	N	0
Valencia Road (Ajo to Mark)	Pima County	\$ 224,000	0	0	3	6000	2	10000	Y	5000	N	Y	100000	Y	8000	Y	30000	N	0	Y	5000	Y	10000	EAMR	50000	N	0
I-10/Ina Road TI	Pima County	\$ 342,500	0	0	5	10000	3	15000	Y	2500	N	Y	15000	Y	5000	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000		
Valencia Road (Alvernon to Kolb)	Pima County	\$ 372,500	0	0	5	10000	3	15000	Y	2500	N	Y	30000	Y	5000	Y	15000	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000
Silverbell Road (Ina to Grant)	Pima County	\$ 622,000	1	1500	5	10000	4	20000	Y	2500	N	Y	500000	Y	5000	Y	15000	N	0	Y	8000	Y	10000	EAMR	50000	N	0
Sunset Road (Silverbell to I-10)	Town of Marana	\$ 129,500	0	0	0	0	0	0	Y	2500	N	Y	80000	Y	5000	Santa C	25000	N	0	Y	5000	N	0	ROW	12000	N	0
Camino de Mañana	Town of Marana	\$ 398,000	0	0	0	0	0	0	Y	5000	N	Y	350000	Y	8000	Y	30000	N	0	Y	5000	N	0	N	0	N	0
Sunset Road (I-10 to River Road))	Town of Marana	\$ 406,500	0	0	2	4000	1	5000	Y	2500	N	Y	80000	Y	5000	Rillito	15000	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000
Sunset Road (Silverbell to River)	Town of Marana	\$ 466,500	0	0	2	4000	1	5000	Y	2500	N	Y	125000	Y	5000	Y	30000	N	0	Y	5000	Y	10000	EA-FHWA	200000	Y	80000
I-10/Twin Peaks TI	Town of Marana	\$ 691,500	1	1500	10	20000	8	40000	Y	5000	N	Y	500000	Y	5000	Santa C	25000	N	0	Y	5000	Y	10000	N	0	Y	80000
Tangerine (I-10 to La Cañada)	Town of Marana	\$ 696,000	0	0	1	2000	1	5000	Y	8000	N	Y	350000	Y	8000	Y	25000	N	0	Y	8000	Y	10000	EA-FHWA	200000	Y	80000
Sahuarita Road ( La Cañada to Country Club)	Town of Sahuarita	\$ 111,000	0	0	2	4000	1	5000	Y	5000	N	Y	60000	Y	5000	Santa C	15000	N	0	Y	5000	N	0	ROW	12000	N	0

Environmental assumptions:

These projects have been estimated in current dollars.

Residential structures requiring demolition are assumed to require lead and asbestos investigation prior to demolition. Commercial structures are assumed to require a Phase II assessment.

If a project is located within a historic district and properties are to be acquired, it is assumed that historic building inventories would be completed on each structure (per FHWA, Pima County, and COT requirements).

The cost of archeological clearance was based on the length of the project and whether the project is located near major watercourses or known sites, and the number of structures that would require historic building inventories.

Threatened and endangered species surveys and archeological surveys were assumed to be required for any project that requires Clean Water Act 404 permitting.

Clean Water Act 404 permit costs were based on the number and size of the watercourses.

WASH ordinance compliance applied only to COT projects. Some reports may contain duplicate information (NPPP and WASH, etc.) and could be combined to produce cost savings; however, these reports were considered separately to produce conservative cost estimates.

**22nd Street, Camino Seco to Houghton Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$252,778	\$252,778
Pavement	L.Sum	1	\$1,676,993	\$1,676,993
Drainage	L.Sum	1	\$2,005,731	\$2,005,731
Sidewalk	SF	67,375	\$4	\$269,500
Curb & Gutter	L.Ft.	24,500	\$15	\$367,500
Signing & Marking	L.Sum	1	\$71,402	\$71,402
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$1,706,250	\$1,706,250
Street Lights	L.sum	1	\$85,008	\$85,008
Screen Walls	SF	9,170	\$20	\$183,400
Landscaping & Aesthetics	L.Sum	1	\$150,000	\$150,000
Construction Survey	L.Sum	1	\$125,000	\$125,000
Other Items	L.Sum	1	\$650,000	\$650,000
Maintenance Of Traffic	L.Sum	1	\$650,000	\$650,000
Mobilization 10%	L.Sum	1	\$859,356	\$859,356
			<b>15% Construction Contingency =</b>	\$1,417,938
			<b>Total Estimated Construction Cost =</b>	\$10,871,000
			<b>Public Art 1% =</b>	\$108,710
			<b>15% Construction Management =</b>	\$1,630,650
			<b>15% Engineering and Planning =</b>	\$1,630,650
			<b>Environmental Mitigation =</b>	\$123,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$750,000
			<b>Total Project Cost =</b>	\$15,114,000

**Assumptions:**

- \*120' Min. ROW
- \*4-Lane Urban Section With Raised Landscaped Median (Camino Seco to Old Spanish Trail)
- \*3-Lane Rural Section (Old Spanish Trail to Houghton)
- \*Project Length = 2.15 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Houghton Intersection Is Not Included In This Project
- \*Approximate Construction Cost/Mile = \$5,288,000



**22nd Street**

Assumptions: Average Exst Pavement 40' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	40	11,375	455,000	50,556	\$5	\$252,778
					Total =	\$252,778

**22nd Street**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 62' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	62	11375	705,250	78,361	\$21.40	\$1,676,993

**Total**      \$1,676,993

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**



**22nd Street**

Assumptions: Continuous Sidewalk (both sides) Camino Seco to Old Spanish Trail

Item	Width	Length	SF
Sidewalk	5.5	12,250	67,375

**22nd Street**

Assumptions: Continuous Curb & Gutter (both sides & median) Camino Seco to Old Spanish Trail

Item	Length	C & G	LF
Curb and Gutter	6,125	4	24,500

**22nd Street - Camino Seco to Old Spanish Trail**

Assumptions: Standard Striping for a Four Lane Roadway, Two Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 1.15 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$12,144
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$1,518
Intersection Striping	LF	2,000	4,000	\$0.50	\$2,000	\$2,000
Signs	Each	20	0	\$600.00	\$12,000	\$13,800
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$9,660
					<b>Lump Sum =</b>	<b>\$39,122</b>

**22nd Street**

Assumptions: Two Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
Signalized Intersections	2	\$200,000	\$400,000

**22nd Street**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	11,375	\$150	\$1,706,250



**22nd Street**

Assumptions: Street Lighting Both Sides of Street, Camino Seco to Old Spanish Trail  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$73,920</b>
			<b>1.15 Miles =</b>	<b>\$85,008</b>

**22nd Street**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	1,310	9,170

**22nd Street, I-10 to Tucson Boulevard  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$3,959,833	\$3,959,833
Pavement	L.Sum	1	\$3,064,362	\$3,064,362
Drainage	L.Sum	1	\$1,983,696	\$1,983,696
Sidewalk	SF	136,290	\$4	\$545,160
Curb & Gutter	L.Ft.	49,560	\$15	\$743,400
Signing & Marking	L.Sum	1	\$98,076	\$98,076
Traffic Signals	L.Sum	1	\$1,800,000	\$1,800,000
Utilities	L.Sum	1	\$4,125,000	\$4,125,000
Street Lights	L.sum	1	\$230,630	\$230,630
Screen Walls	SF	21,175	\$20	\$423,500
UPRR Grade Separation	L.Sum	1	\$3,495,000	\$3,495,000
22nd Street/Barraza Interchange	L.Sum	1	\$29,581,100	\$29,581,100
Landscaping & Aesthetics	L.Sum	1	\$1,000,000	\$1,000,000
Construction Survey	L.Sum	1	\$750,000	\$750,000
Other Items	L.Sum	1	\$5,500,000	\$5,500,000
Maintenance Of Traffic	L.Sum	1	\$4,500,000	\$4,500,000
Mobilization 10%	L.Sum	1	\$6,179,976	\$6,179,976
			<b>15% Construction Contingency =</b>	\$10,196,960
			<b>Total Estimated Construction Cost =</b>	\$78,177,000
			<b>Public Art 1% =</b>	\$781,770
			<b>15% Construction Management =</b>	\$11,726,550
			<b>15% Engineering and Planning =</b>	\$11,726,550
			<b>Environmental Mitigation =</b>	\$620,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$15,500,000
			<b>Total Project Cost =</b>	\$118,532,400

**Assumptions:**

- \*130' Min ROW
- \*6-Lane Section With Raised Landscaped Median
- \*Project Length = 2.6 Miles (Not Including The 22nd St/Barraza Connection Ramp)
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Approximate Construction Cost/Mile = \$30,100,000
- \*Kino Parkway Grade Separation Not Included In Cost

**22nd Street**

Assumptions: Average Exst Pavement 70' Width for Length of Project

Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	70	12,390	867,300	96,367	\$5	\$481,833
Misc Removals		12,390			\$200	\$2,478,000
Bridge/Wall Removal (RR/Barraza Overpass)						\$1,000,000
					Total =	\$3,959,833

**22nd Street**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 100' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	100	12390	1,239,000	137,667	\$21.40	\$2,946,181
Frontage Roads	14	3,550	49,700	5,522	\$21.40	\$118,180
<b>Total</b>						<b>\$3,064,362</b>

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

<b>Price/SY =</b>	<b>\$21.40</b>
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**22nd Street**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$762,960
		<b>2.6 Miles =</b>		\$1,983,696

**22nd Street**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	24,780	136,290

**22nd Street**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	12,390	4	49,560



**22nd Street**

Assumptions: Standard Striping for a Six Lane Roadway, Nine Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 2.6 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$27,456
Four 4" Dashed Lane Stripes	LF	5,280	6,600	\$0.50	\$3,300	\$8,580
Intersection Striping	LF	2,000	18,000	\$0.50	\$9,000	\$9,000
Signs	Each	20	0	\$600.00	\$12,000	\$31,200
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$21,840
					<b>Lump Sum =</b>	<b>\$98,076</b>

**22nd Street**

Assumptions: Nine Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
Signalized Intersections	9	\$200,000	\$1,800,000

**22nd Street**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	13,750	\$300	\$4,125,000

**22nd Street**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$88,704</b>
			<b>2.6 Miles =</b>	<b>\$230,630</b>

**22nd Street**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	3,025	21,175

**UPRR Spur Grade Separation**

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Borrow	C.Y.	105,000	\$7	\$735,000
Bridge	SF	19,800	\$100	\$1,980,000
Retaining Wallls	SF	26,000	\$30	\$780,000
			<b>Total Cost =</b>	<b>\$3,495,000</b>

**22nd Street/Barraza Interchange**

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Borrow	C.Y.	160,000	\$7	\$1,120,000
Bridge (2nd Level)	SF	190,770	\$100	\$19,077,000
Bridge (3rd Level)	SF	52,000	\$115	\$5,980,000
Retaining Wallls	SF	61,550	\$30	\$1,846,500
Quad-Guard Attenuator	EACH	4	\$35,000	\$140,000
PCCP	SY	15,000	\$75	\$1,125,000
Concrete Barrier	LF	5,440	\$40	\$217,600
Signing/Marking	L.Sum	1	\$75,000	\$75,000
			<b>Total Cost =</b>	<b>\$29,581,100</b>

**Barraza/Aviation Parkway, Palo Verde to I-10  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$2,751,342	\$2,751,342
Borrow	C.Y.	1,371,884	\$6	\$8,231,307
Excavation	C.Y.	395,200	\$5	\$1,976,000
Pavement	L.Sum	1	\$8,773,338	\$8,773,338
Drainage	L.Sum	1	\$8,568,041	\$8,568,041
Sidewalk	SF	33,000	\$4	\$132,000
Curb & Gutter	L.Ft.	196,502	\$15	\$2,947,530
Signing & Marking	L.Sum	1	\$156,515	\$156,515
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$2,985,000	\$2,985,000
Street Lighting	L.Sum	1	\$2,063,445	\$2,063,445
Retaining Walls	SF	75,802	\$40	\$3,032,080
Roadway Bridges	SF	224,147	\$80	\$17,931,760
Landscaping & Aesthetics	L.Sum	1	\$4,430,000	\$4,430,000
Construction Survey	L.Sum	1	\$2,215,000	\$2,215,000
Other Items	L.Sum	1	\$4,430,000	\$4,430,000
Maintenance Of Traffic	L.Sum	1	\$4,430,000	\$4,430,000
Mobilization 10%	L.Sum	1	\$7,525,336	\$7,525,336
			<b>20% Construction Contingency =</b>	\$16,555,739
			<b>Total Estimated Construction Cost =</b>	\$99,334,000
			<b>Public Art 1% =</b>	\$993,340
			<b>15% Construction Management =</b>	\$14,900,100
			<b>15% Engineering and Planning =</b>	\$14,900,100
			<b>Environmental Mitigation =</b>	\$271,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$47,537,200
			<b>Total Project Cost =</b>	\$177,935,740

**Assumptions:**

- \*Alvernon 6-Lane Section With Raised Landscaped Median Grade Separated with a SPUI at New Golf Links/Palo Verde
- \*Alvernon Bridge over the UPRR will be partially reconstructed
- \*Directional ramps are single lane at the Alvernon/Golf Links/Palo Verde end and dual Lane at the Valencia TI
- \*Aviation is a 4-lane section with extra wide multi use lanes that can be adapted to 6-lane
- \*This is a two dimensional concept only, due to the numerous unknowns a 20% contingency was used.



**(A) East Barraza/Aviation**

Assumptions: Areas Measured in Microstation

Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Exst Retaining Walls Aver. Height = 12'

<b>Item</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal - Asphalt</b>	1,235,000	137,222	\$2	\$274,444
<b>Pavement Removal - PCCP</b>	74,000	8,222	\$4	\$32,889
<b>Remove Exst Bridge (Aviation over canal)</b>	7,845	872	\$75	\$65,375
<b>Remove Exst Bridge (SPUI @ alvernon)</b>	7,900	878	\$75	\$65,833
<b>Remove Exst Bridge (flyover ramp)</b>	11,672	1,297	\$75	\$97,267
<b>Remove Exst Bridge (Alvernon over canal)</b>	3,972	441	\$75	\$33,100
<b>Remove Exst Bridge (Alvernon over 2-lane)</b>	17,467	1,941	\$75	\$145,558
<b>Remove Exst Bridge (Alvernon over RR)</b>	34,025	3,781	\$75	\$283,542
<b>Remove Exst Retaining Walls</b>	12,000	1,333	\$40	\$53,333
<b>Remove Detour (LF)</b>	5000	555.5555556	\$100	\$500,000
<b>Misc Removals (LF)</b>	12000	1333.333333	\$100	\$1,200,000
			Total =	\$2,751,342

**(A) East Barraza/Aviation**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB & 6" PCCP, 4"AB  
Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
AC - All roadways and Ramps	3,689,578	409,953	\$21	\$8,773,338
	0	0	\$21	\$0
			<b>Total =</b>	<b>\$8,773,338</b>

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

**Price/SY = \$21.40**

Concrete Pvmt Price/SY			
4" AC	0	\$11	\$0
Load Trans Dowel	0	\$60	\$0
6" PCCP	0	\$40	\$0
		Total =	\$0
		<b>Price/SY =</b>	<b>#DIV/0!</b>

**(A) East Barraza/Aviation**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
			<b>Construction Cost per Mile =</b>	<b>\$762,960</b>
		<b>0.38 Miles New Drainage Structures=</b>		<b>\$8,568,041</b>

**(A) East Barraza/Aviation**

Assumptions: Sidewalk (both sides) around SPU and Commercial Area

Item	Width	Length	SF
Sidewalk	5.5	3,000	33,000

**(A) East Barraza/Aviation**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter - Aviation	25,544	4	102,176
Curb and Gutter - Palo Verde/Golf Links	6268	4	25,072
Curb and Gutter - Alvernon	7159	4	28,636
Ramps: Curb and Gutter - WB G.L. to EB Aviation	7572	2	15,144
Ramps: Curb and Gutter - WB Aviation to EB G.L.	4000	2	8,000
Ramps: Curb and Gutter - WB G.L. to WB Aviation	7174	2	14,348
Ramps: Curb and Gutter - EB Aviation to EB G.L.	1563	2	3,126
		<b>TOTAL</b>	<b>196,502</b>

**(A) East Barraza/Aviation**

Assumptions: Standard Striping for a Six Lane Roadway, Signalized SPUI with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount
<b>Striping:</b>	<b>Mile</b>				
Four 4" Lane Stripes	LF	59,280	59,280	\$0.50	\$29,640
Four 4" Dashed Lane Stripes	LF	38,971	9,743	\$0.50	\$4,871
Intersection Striping	LF	336	1,008	\$0.50	\$504
Signs	Each	225	0	\$540.00	\$121,500
				<b>Lump Sum =</b>	<b>\$156,515</b>

**(A) East Barraza/Aviation**

Assumptions: New Signal at Alvernon and Golf Links/Palo Verde SPUI

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals at Main	1	\$200,000	\$200,000
		<b>TOTAL =</b>	\$200,000

**(A) East Barraza/Aviation**

Assumptions: Adjust/Relocate all Utilities for identified areas

Assume no Utilities in I-10

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	19,900	\$150	\$2,985,000





**(A) East Barraza/Aviation**

Assumptions: New Retaining Walls will be constructed at the back of sidewalk

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
643	18	11,574
712	16	11,392
521	6	3,126
250	14	3,500
370	16	5,920
370	16	5,920
160	14	2,240
1,250	14	17,500
145	14	2,030
900	14	12,600
	<b>Total SF =</b>	<b>75,802</b>

**(A) East Barraza/Aviation**

Assumptions: Areas Measured in Microstation

Item	Width	Length	SF
<b>New Bridges</b>			
Aviation over canal @ Palo Verde =	0	0	9,616
EB Aviation to EB Golf Links #1			16,480
EB Aviation to EB Golf Links #2			4,425
EB Aviation to EB Golf Links #3			3,285
WB Golf Links to WB Aviation #1			8,616
WB Golf Links to WB Aviation #2			10,020
WB Golf Links to EB Aviation			10,242
Alvernon over Canal =	0	0	14,326
Alvernon NB Ramp over Canal =			3,118
Alvernon SB Ramp over Canal =			6,287
Alvernon Over Golf Links/Palo Verde			20,384
Alvernon over Aviation			43,880
Alvernon over RR			37,009
WB Aviation to WB Valencia #1			13,345
WB Aviation to WB Valencia #2			10,875
WB Valencia to EB Aviation			12,239
		<b>Total Roadway Bridge=</b>	224,147

**(A) East Barraza/Aviation**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length

Assumed No Excavation Areas

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	90	59,280	5,335,200	9	48,016,800	1,778,400		
Excavation	90	59,280	5,335,200	2	10,670,400	395,200	\$4	\$1,580,800
Drainage Excavation			50,920	6	305,520	11,316	\$5	\$56,578
Borrow						1,371,884	\$6.0	\$8,231,307
							Total =	\$9,868,684

**Broadway Boulevard, Euclid Avenue to Country Club Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$3,412,778	\$3,412,778
Pavement	L.Sum	1	\$3,002,061	\$3,002,061
Drainage	L.Sum	1	\$1,505,661	\$1,505,661
Sidewalk	SF	111,100	\$4	\$444,400
Curb & Gutter	L.Ft.	40,400	\$15	\$606,000
Signing & Marking	L.Sum	1	\$83,521	\$83,521
Traffic Signals	L.Sum	1	\$1,600,000	\$1,600,000
Utilities	L.Sum	1	\$3,030,000	\$3,030,000
Street Lights	L.sum	1	\$169,425	\$169,425
Screen Walls	SF	7,525	\$20	\$150,500
Landscaping & Aesthetics	L.Sum	1	\$1,000,000	1,000,000
Construction Survey	L.Sum	1	\$350,000	350,000
Other Items	L.Sum	1	\$1,500,000	1,500,000
Maintenance Of Traffic	L.Sum	1	\$1,500,000	1,500,000
Mobilization 10%	L.Sum	1	\$1,835,435	\$1,835,435
			<b>15% Construction Contingency =</b>	\$3,028,467
			<b>Total Estimated Construction Cost =</b>	\$23,218,000
			<b>Public Art 1% =</b>	\$232,180
			<b>15% Construction Management =</b>	\$3,482,700
			<b>15% Engineering and Planning =</b>	\$3,482,700
			<b>Environmental Mitigation =</b>	\$645,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$43,700,000
			<b>Total Project Cost =</b>	\$74,760,600

**Assumptions:**

- \*150' Min. ROW
- \*8-Lane Section With Raised Landscaped Median
- \*Project Length = 1.91 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Approximate Construction Cost/Mile = \$13,000,000

**Broadway - Euclid to Country Club**

Assumptions: Average Exst Pavement 70' Width for Length of Project

Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	70	10,100	707,000	78,556	\$5	\$392,778
Misc Removals		10,100			\$200	\$2,020,000
Bridge/Wall Removal						\$1,000,000
					Total =	\$3,412,778

**Broadway - Euclid to Country Club**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 125' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	125	10100	1,262,500	140,278	\$21.40	\$3,002,061

**Total**      \$3,002,061

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**

**Broadway - Euclid to Country Club**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,769	\$80	\$141,504
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$788,304
		<b>1.91 Miles =</b>		\$1,505,661



**Broadway - Euclid to Country Club**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	20,200	111,100

**Broadway - Euclid to Country Club**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	10,100	4	40,400

**Broadway - Euclid to Country Club**

Assumptions: Standard Striping for a eight Lane Roadway, Eight Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 1.91 Miles
<b>Striping:</b>	<b>Mile</b>					
Six 4" Lane Stripes	LF	5,280	31,680	\$0.50	\$15,840	\$30,254
Four 4" Dashed Lane Stripes	LF	5,280	6,600	\$0.50	\$3,300	\$6,303
Intersection Striping	LF	2,000	16,000	\$0.50	\$8,000	\$8,000
Signs	Each	20	0	\$600.00	\$12,000	\$22,920
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$16,044
					<b>Lump Sum =</b>	<b>\$83,521</b>

**Broadway - Euclid to Country Club**

Assumptions: Eight Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
Signalized Intersections	8	\$200,000	\$1,600,000

**Broadway - Euclid to Country Club**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	10,100	\$300	\$3,030,000



**Broadway - Euclid to Country Club**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	1,075	7,525

**Broadway Boulevard, Camino Seco to Houghton Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$267,889	\$267,889
Pavement	L.Sum	1	\$2,006,566	\$2,006,566
Drainage	L.Sum	1	\$1,667,318	\$1,667,318
Sidewalk	SF	132,605	\$4	\$530,420
Curb & Gutter	L.Ft.	48,220	\$15	\$723,300
Signing & Marking	L.Sum	1	\$74,598	\$74,598
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$1,808,250	\$1,808,250
Street Lights	L.sum	1	\$168,538	\$168,538
Screen Walls	SF	13,055	\$20	\$261,100
Landscaping & Aesthetics	L.Sum	1	\$175,000	\$175,000
Construction Survey	L.Sum	1	\$150,000	\$150,000
Other Items	L.Sum	1	\$775,000	\$775,000
Maintenance Of Traffic	L.Sum	1	\$775,000	\$775,000
Mobilization 10%	L.Sum	1	\$958,298	\$958,298
			<b>15% Construction Contingency =</b>	\$1,581,192
			<b>Total Estimated Construction Cost =</b>	\$12,122,000
			<b>Public Art 1% =</b>	\$121,220
			<b>15% Construction Management =</b>	\$1,818,300
			<b>15% Engineering and Planning =</b>	\$1,818,300
			<b>Environmental Mitigation =</b>	\$157,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$50,000
			<b>Total Project Cost =</b>	\$16,086,800

**Assumptions:**

- \*120' Min. ROW
- \*4-Lane Section With Raised Landscaped Median
- \*Project Length = 2.28 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Harrison and Houghton Intersections Are Not Included In This Project
- \*Approximate Construction Cost/Mile = \$5,600,000



**Broadway**

Assumptions: Average Exst Pavement 40' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	40	12,055	482,200	53,578	\$5	\$267,889
					Total =	\$267,889

**Broadway**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC &amp; 4" AB

Average Pavement Width = 70' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	70	12055	843,850	93,761	\$21.40	\$2,006,566

**Total**      \$2,006,566

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**

**Broadway**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,056	\$80	\$84,480
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		<b>\$731,280</b>
		<b>2.28 Miles =</b>		<b>\$1,667,318</b>

**Broadway**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	24,110	132,605

**Broadway**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	12,055	4	48,220

**Broadway**

Assumptions: Standard Striping for a Four Lane Roadway, One Signalized Intersection with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 2.28 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$24,077
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$3,010
Intersection Striping	LF	2,000	2,000	\$0.50	\$1,000	\$1,000
Signs	Each	20	0	\$600.00	\$12,000	\$27,360
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$19,152
					<b>Lump Sum =</b>	<b>\$74,598</b>

**Broadway**

Assumptions: One Exst Signalized Intersection to Remain Signalized

Item	Each	Unit Price	Extended Amount
Signalized Intersections	1	\$200,000	\$200,000

**Broadway**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	12,055	\$150	\$1,808,250





**Broadway**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	1,865	13,055

**Downtown Links, I-10 to Broadway Boulevard  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,770,890	\$1,770,890
Excavation	C.Y.	117,226	\$5	\$586,132
Pavement	L.Sum	1	\$1,434,248	\$1,434,248
Drainage	L.Sum	1	\$22,723,115	\$22,723,115
Sidewalk	SF	66,407	\$4	\$265,628
Curb & Gutter	L.Ft.	30,330	\$15	\$454,950
Signing & Marking	L.Sum	1	\$65,700	\$65,700
Traffic Signals	L.Sum	1	\$1,000,000	\$1,000,000
Utilities	L.Sum	1	\$2,240,000	\$2,240,000
Street Lighting	L.Sum	1	\$389,537	\$389,537
Retaining Walls	SF	62,000	\$40	\$2,480,000
Roadway Bridges	SF	9,850	\$80	\$788,000
Railroad Bridges (Main Track & Temp Shoofly)	SF	10,625	\$120	\$1,275,000
Railroad Shoofly	L.Sum	1	\$3,200,000	\$3,200,000
Landscaping & Aesthetics	L.Sum	1	\$3,870,000	\$3,870,000
Construction Survey	L.Sum	1	\$1,935,000	\$1,935,000
Other Items	L.Sum	1	\$3,870,000	\$3,870,000
Maintenance Of Traffic	L.Sum	1	\$3,870,000	\$3,870,000
Mobilization 10%	L.Sum	1	\$5,221,820	\$5,221,820
			<b>15% Construction Contingency =</b>	\$8,616,003
			<b>Total Estimated Construction Cost =</b>	\$66,056,000
			<b>Public Art 1% =</b>	\$660,560
			<b>15% Construction Management =</b>	\$9,908,400
			<b>15% Engineering and Planning =</b>	\$9,908,400
			<b>Environmental Mitigation =</b>	\$279,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$6,300,000
			<b>Total Project Cost =</b>	\$93,112,860

**Assumptions:**

\*6th Street 4-Lane Section With Raised Landscaped Median Grade Separated under the Railroad

\*Aviation 4-Lane Section Undivided

\*Drainage Estimate Includes Cost for Tucson Arroyo CBC Realignment

\*A Two Track Railroad Shoofly will be required to construct new railroad bridge including a temporary bridge

**Downtown Links**

Assumptions: Measured in Microstation

Misc Removals; Curb &amp; Gutter, Sidewalk, Inlets, etc. at \$100/LF

Item	SF	SY	Unit Cost	Extended Amount
<b>Pavement Removal - Asphalt</b>	411,604	45,734	\$2	\$91,468
<b>Remove Railroad Shoofly Bridge</b>	2,630	292	\$100	\$29,222
<b>Remove Shoofly (LF)</b>	5300		\$100	\$530,000
<b>Misc Removals (LF)</b>	11202		\$100	\$1,120,200
			Total =	\$1,770,890

Pavement Removal - Asphalt	Width	Length	SF
6th Street =	52	3,963	206,076
9th Avenue =	52	864	44,928
7th Avenue =	50	460	23,000
8th Street =	50	140	7,000
Stone - North of 6th =	62	250	15,500
Stone - South of 6th =	45	110	4,950
Church - North of 6th =	40	130	5,200
Church - South of 6th =	60	170	10,200
Aviation - South of Broadway =	54	185	9,990
Northbound Aviation to Broadway =	52	1,630	84,760
		<b>Total =</b>	<b>411,604</b>

**Downtown Links**

Assumptions: Excavation on 6th St. & Stone (North & South of 6th)

Fill on Aviation - 6th to Broadway (Aver Fill = 4')

Fill on 9th Avenue

**Excavation**

Location	Aver. End Area	Length	CF
6th Street	950	1,430	1,358,500
Stone - North of 6th	470	270	126,900
Stone - South of 6th	65	120	7,800
			<b>Total =</b>

**Fill**

Location	Aver. End Area	Length	CF
9th Avenue	500	730	365,000
			<b>Total =</b>

**Summary**

Item	Width (Average)	Length	SF
Fill - 6th to Broadway	60	3,600	216,000
Fill 9th Avenue			
Excavation			
Drainage Excavation (See Drainage)			
Total Excavation			
Borrow			

<b>CY</b>
50,315
4,700
289
<b>55,304</b>

<b>CY</b>
13,519
<b>13,519</b>

Depth (Average)	CF	CY	Unit Cost	Extended Amount
4	864,000	32,000		
		13,519		
		55,304	\$4	\$221,215
		61,923	\$5	\$309,613
		117,226		
		-71,708	\$5.5	-\$394,393
			Total =	\$136,435

**Downtown Links**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB & 6" PCCP, 4"AB  
 Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
AC - 6th St., Stone & Aviation North of Broadway	488,865	54,318	\$21	\$1,162,458
AC - Aviation South of Broadway	103,800	11,533	\$21	\$246,823
AC - 9th Ave. North of 6th St.	10,500	1,167	\$21	\$24,968
AC - 9th Ave. South of 6th St.	11,500	1,278	\$21	\$27,346
			<b>Total =</b>	<b>\$1,434,248</b>

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

**Price/SY = \$21.40**

Concrete Pvmt Price/SY			
4" AC	54,318	\$11	\$597,502
Load Trans Dowel	0	\$60	\$0
6" PCCP	54,318	\$40	\$2,172,733
		<b>Total =</b>	<b>\$2,770,235</b>
		<b>Price/SY =</b>	<b>\$51.00</b>

**Downtown Links**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole  
 New 78" RCP to Drain Low Spot Under the RR to the Santa Cruz

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$0	\$0
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
			<b>Construction Cost per Mile =</b>	\$234,960

2.12 Miles New Drainage Structures= \$498,115  
 DCR Tucson Arroyo CBC Realignment Estimate = \$22,225,000  
**Total Drainage = \$22,723,115**

Drainage Ex for Earthwork	Miles	Total Length	Width	Depth	CY
Arroyo CBC Realignment	1.5	7,920	14	15	61,600
24" Laterals	0.3	436	4	5	323
				<b>Toatl Drainage Ex =</b>	<b>61,923</b>



**Downtown Links**

Assumptions: Continuous Sidewalk (both sides)

<b>Location</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>
6th Street	5.5	3,963	43,593
9th Avenue	5.5	864	9,504
Stone	5.5	460	5,060
Aviation - 6th Street to 8th Street	5.5	750	8,250
		Total =	66,407

**Downtown Links**

Assumptions: Continuous Curb &amp; Gutter (both sides &amp; median) 6th Street

Continuous Curb &amp; Gutter (Outside Only) All Other Roadways

<b>Item</b>	<b>Length</b>	<b>C &amp; G</b>	<b>LF</b>
6th Street	3,963	4	15,852
All Other Roadways	7,239	2	14,478
Aviation Medians at Broadway	1,200	2	2,400
			30,330

**Downtown Links**

Assumptions: Standard Striping for a Four Lane Roadway, Three Signalized Intersections with 12" Stop Bars and Crosswalks  
Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
Assume 20 Signs/Mile & Stop Signs @ Cross Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount
<b>Striping:</b>	<b>Mile</b>				
Four 4" Lane Stripes	LF	11,200	44,800	\$0.50	\$22,400
Four 4" Dashed Lane Stripes	LF	10,350	10,350	\$0.50	\$3,300
Intersection Striping	LF	45	135	\$0.50	\$13,000
Signs	Each	40	0	\$540.00	\$21,600
Stop Signs (Total Crossroads)	Each	10	0	\$540.00	\$5,400
				<b>Lump Sum =</b>	<b>\$65,700</b>

**Downtown Links**

Assumptions: New Signals at 6th/Granada, 6th St/Stone, 6th St/Aviation & Aviation/Broadway

Half Signals Needed at 6th St Connections East & West (Count as One Signal)

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals	5	\$200,000	\$1,000,000
		<b>Total =</b>	\$1,000,000

**Downtown Links**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	11,200	\$200	\$2,240,000

**Downtown Links**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$183,744</b>
			<b>2.12 Miles =</b>	<b>\$389,537</b>

**Speedway Under RR**

Assumptions: New Retaining Walls will be constructed at the back of sidewalk along 6th Street & 9th Avenue

Location	Length	Aver. Height	SF
6th Street	3,000	15	45,000
9th Avenue	1,000	17	17,000
		<b>Total SF =</b>	<b>62,000</b>

**Ruthrauff over RR**

Assumptions: New Railroad Bridge and Temporary Railroad Shoofly Bridge

New Bridge on 9th Avenue over 6th Street and UPRR

New Bridge on Aviation over 6th Avenue

Item	Width	Length	SF
<b>New Bridges</b>			
9th Avenue =	30	130	3,900
Aviation over 6th Ave.	70	85	5,950
RR Bridge =	40	200	8,000
RR Shoofly Bridge =	35	75	2,625
	<b>Total Roadway Bridge=</b>		9,850
	<b>Total Railroad Bridge=</b>		10,625



**El Camino De Manana, Tangerine Road to Linda Vista Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$340,000	\$340,000
Earthwork	L.Sum	1	\$337,500	\$337,500
Pavement	L.Sum	1	\$1,500,000	\$1,500,000
Drainage	L.Sum	1	\$2,500,000	\$2,500,000
Signing & Marking	L.Sum	1	\$262,500	\$262,500
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Landscaping & Aesthetics	L.Sum	1	\$900,000	\$900,000
Utilities	L.Sum	1	\$500,000	\$500,000
Construction Survey	L.Sum	1	\$300,000	\$300,000
Other Items	L.Sum	1	\$700,000	\$700,000
Maintenance Of Traffic	L.Sum	1	\$700,000	\$700,000
Mobilization 10%	L.Sum	1	\$824,000	\$824,000
			<b>15% Construction Contingency =</b>	\$1,359,600
			<b>Total Estimated Construction Cost =</b>	\$10,424,000
			<b>Public Art 1% =</b>	\$104,240
			<b>15% Construction Management =</b>	\$1,563,600
			<b>15% Engineering and Planning =</b>	\$1,563,600
			<b>Environmental Mitigation =</b>	\$398,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$2,800,000
			<b>Total Project Cost =</b>	\$16,853,440

**Assumptions:**

- \*Dove Mountain Extension South of Tangerine Road
- \*Project Limits Taken From Twin Peaks T.I. Match Point (North of Linda Vista) To Tangerine
- \*2-Lane Rural From Twin Peaks T.I. Match Point (North of Linda Vista) To Tangerine
- \*150' ROW From Twin Peaks T.I. Match Point (North of Linda Vista) To Tangerine
- \*Drainage Estimate Assumes a 4-Lane Urban Section
- \*Project Length = 3.13 Miles
- \*Approximate Construction Cost/Mile = \$3,500,000

**El Camino De Manana**

	<u>Clear &amp; Grub</u>	<u>Str. &amp; Obstr.</u>	<u>Total</u>
Town of Marana Estimate (4-Lane Section)=	\$250,000	\$90,000	\$340,000

**El Camino De Manana**

	<u>Ex.</u>	<u>Borrow</u>	<u>Total</u>
Town of Marana Estimate (4-Lane Section)=	\$120,000	\$330,000	\$450,000
Assume 3/4 Earthwork For a 2-Lane Section=			\$337,500

**El Camino De Manana**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item		SF (From Quants Drawing)	SY	Price/SY =	Extended Amount	For Estimate
Pavement		619,000	68,778	\$21.40	\$1,471,902	\$1,500,000

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**El Camino De Manana**

Town of Marana Estimate (4-Lane Section)= Drainage Subtotal  
\$2,500,000

**El Camino De Manana**

	<u>Sign. &amp; Mark. Subtotal</u>
Town of Marana Estimate (4-Lane Section)=	\$350,000
Assume 3/4 Signing & Marking For a 2-Lane Section=	\$262,500

El Camino De Manana

New Signal Manana/Dove Mountain/Tangerine Intersection  
\$200,000

**El Camino De Manana**

	<u>Price/Mile</u>	<u>Approx. # Miles</u>	<u>Total</u>
Landscaping/Aesthetics	\$300,000	3	\$900,000



**El Camino De Manana**

	<u>SF (From Quants Drawing)</u>	<u>**Approx. \$/SF</u>	<u>Total</u>	<u>Amt. Used For Estimate</u>
ROW	\$1,930,050	2.5	\$4,825,125	\$5,000,000

\*\* Assumes No Developer Contribution

**First Avenue, Orange Grove Road to Ina Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$142,778	\$142,778
Pavement	L.Sum	1	\$330,762	\$330,762
Drainage	L.Sum	1	\$715,488	\$715,488
Sidewalk	SF	56,540	\$4	\$226,160
Curb & Gutter	L.Ft.	20,560	\$15	\$308,400
Signing & Marking	L.Sum	1	\$31,812	\$31,812
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$771,000	\$771,000
Street Lights	L.sum	1	\$71,702	\$71,702
Screen Walls	SF	45,395	\$20	\$907,900
Landscaping & Aesthetics	L.Sum	1	\$75,000	\$75,000
Construction Survey	L.Sum	1	\$75,000	\$75,000
Other Items	L.Sum	1	\$400,000	\$400,000
Maintenance Of Traffic	L.Sum	1	\$400,000	\$400,000
Mobilization 10%	L.Sum	1	\$465,600	\$465,600
			<b>15% Construction Contingency =</b>	\$768,240
			<b>Total Estimated Construction Cost =</b>	\$5,890,000
			<b>Public Art 1% =</b>	\$58,900
			<b>15% Construction Management =</b>	\$883,500
			<b>15% Engineering and Planning =</b>	\$883,500
			<b>Environmental Mitigation =</b>	\$112,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$150,000
			<b>Total Project Cost =</b>	\$7,978,400

**Assumptions:**

- \*140'-150' Existing ROW
- \*4-Lane Urban Section With Raised Landscaped Median
- \*Project Length = 0.97 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Approximate Construction Cost/Mile = \$6,000,000

**First Avenue**

Assumptions: Average Exst Pavement 50' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	50	5,140	257,000	28,556	\$5	\$142,778
					Total =	\$142,778

**First Avenue**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 65' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	65	2140	139,100	15,456	\$21.40	\$330,762

**Total**      \$330,762

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**



**First Avenue**

Assumptions: Continuous Sidewalk (both sides)

Item	Width	Length	SF
Sidewalk	5.5	10,280	56,540

**First Avenue**

Assumptions: Continuous Curb & Gutter (both sides & median)

Item	Length	C & G	LF
Curb and Gutter	5,140	4	20,560

**First Avenue**

Assumptions: Standard Striping for a Four Lane Roadway, 0.5 Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 0.97 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$10,243
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$1,280
Intersection Striping	LF	2,000	1,000	\$0.50	\$500	\$500
Signs	Each	20	0	\$600.00	\$12,000	\$11,640
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$8,148
					<b>Lump Sum =</b>	<b>\$31,812</b>



**First Avenue**

Assumptions: One Signalized Intersections

Item	Each	Unit Price	Extended Amount
Signalized Intersections	1	\$200,000	\$200,000

**First Avenue**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	5,140	\$150	\$771,000

**First Avenue**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
		<b>Construction Cost per Mile =</b>		\$73,920
		<b>0.97 Miles =</b>		\$71,702

**First Avenue**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	6,485	45,395

**First Avenue, River Road to Grant Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$3,819,667	\$3,819,667
Pavement	SY	181,889	\$21	\$3,892,574
Drainage	L.Sum	1	\$2,560,149	\$2,560,149
Sidewalk	SF	180,070	\$4	\$720,280
Curb & Gutter	L.Ft.	65,480	\$15	\$982,200
Signing & Marking	L.Sum	1	\$112,882	\$112,882
Traffic Signals	L.Sum	1	\$1,600,000	\$1,600,000
Utilities	L.Sum	1	\$4,911,000	\$4,911,000
Street Lighting	L.Sum	1	\$274,982	\$274,982
Screen Walls	SF	19,600	\$20	\$392,000
Bridge Widening	SF	25,568	\$80	\$2,045,440
Landscaping & Aesthetics	L.Sum	1	\$1,000,000	\$1,000,000
Construction Survey	L.Sum	1	\$500,000	\$500,000
Other Items	L.Sum	1	\$2,500,000	\$2,500,000
Maintenance Of Traffic	L.Sum	1	\$2,500,000	\$2,500,000
Mobilization 10%	L.Sum	1	\$2,781,117	\$2,781,117
			<b>15% Construction Contingency =</b>	\$4,588,844
			<b>Total Estimated Construction Cost =</b>	\$35,181,000
			<b>Public Art 1% =</b>	\$351,810
			<b>15% Construction Management =</b>	\$5,277,150
			<b>15% Engineering and Planning =</b>	\$5,277,150
			<b>Environmental Mitigation =</b>	\$485,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$32,800,000
			<b>Total Project Cost =</b>	\$79,372,610

**Assumptions:**

- \*Project Limits Taken From River Road To Grant Road
- \*6-Lane Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 3.1 Miles
- \*Intersection Improvements at Grant Not Included In This Estimate (Included in the Grant Project)
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Approximate Construction Cost/Mile = \$12,000,000

**First Avenue**

Assumptions: Average Exst Pavement 70' Width for Length of Project  
Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	60	16,370	982,200	109,133	\$5	\$545,667
Misc Removals		16,370			\$200	\$3,274,000
					Total =	\$3,819,667

**First Avenue**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 100' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Pavement	100	16,370	1,637,000	181,889	\$21.40	\$3,892,574

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**First Avenue**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	32,740	180,070

**First Avenue**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	16,370	4	65,480

**First Avenue**

Assumptions: Standard Striping for a Six Lane Roadway, Thirteen Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.1 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$32,736
Four 4" Dashed Lane Stripes	LF	5,280	6,600	\$0.50	\$3,300	\$10,230
Intersection Striping	LF	2,000	26,000	\$0.50	\$13,000	\$13,000
Signs	Each	20	0	\$540.00	\$10,800	\$33,480
Stop Signs (Total Crossroads)	Each	14	0	\$540.00	\$7,560	\$23,436
					<b>Lump Sum =</b>	<b>\$112,882</b>

**First Avenue**

Assumptions: Thirteen Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	8	\$200,000	\$1,600,000

**First Avenue**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	16,370	\$300	\$4,911,000

**First Avenue**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$88,704</b>
			<b>3.1 Miles =</b>	<b>\$274,982</b>

**First Avenue**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Screen Wall	7	2,800	19,600

**First Avenue**

Assumptions: Widen Exst Bridge 34' (Both Sides)

Item	Width	Length	SF
<b>Bridge Widening</b>			
Northbound =	34	376	12,784
Southbound =	34	376	12,784
		<b>Total =</b>	25,568



**First Avenue**

Assumptions: New 6'x 8' x138' Concrete Box Culvert

<b>Item</b>	<b>Unit</b>	<b>Length</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	2.468	138	341	\$450.00	\$153,263
Reinforcing Steel (LB/FT) =	403.000	138	55,614	\$0.75	\$41,711
				<b>Lump Sum =</b>	<b>\$194,973</b>

**Grant Road, Oracle Road to Swan Road  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$6,306,667	\$6,306,667
Pavement:	SY	293,333	\$21	\$6,277,578
Drainage:	L.Sum	1	\$3,814,800	\$3,814,800
Sidewalk	SF	290,400	\$4	\$1,161,600
Curb & Gutter	L.Ft.	105,600	\$15	\$1,584,000
Signing & Marking	L.Sum	1	\$180,600	\$180,600
Traffic Signals	L.Sum	1	\$2,600,000	\$2,600,000
Utilities	L.Sum	1	\$7,920,000	\$7,920,000
Street Lighting	L.Sum	1	\$443,520	\$443,520
Screen Walls	SF	108,500	\$20	\$2,170,000
Landscaping & Aesthetics	L.Sum	1	\$1,500,000	\$1,500,000
Construction Survey	L.Sum	1	\$750,000	\$750,000
Other Items	L.Sum	1	\$3,600,000	\$3,600,000
Maintenance Of Traffic	L.Sum	1	\$3,600,000	\$3,600,000
Mobilization 10%	L.Sum	1	\$4,190,876	\$4,190,876
			<b>15% Construction Contingency =</b>	\$6,914,946
			<b>Total Estimated Construction Cost =</b>	\$53,015,000
			<b>1% Public Art =</b>	\$530,150
			<b>15% Construction Management =</b>	\$7,952,250
			<b>15% Engineering and Planning =</b>	\$7,952,250
			<b>Environmental Mitigation =</b>	\$685,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$105,300,000
			<b>Total Project Cost =</b>	\$175,434,650

**Assumptions:**

- \*Project Limits Taken From Oracle Road To Swan Road
- \*6-Lane Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 5.12 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Approximate Construction Cost/Mile = \$11,200,000

**Grant Road**

Assumptions: Average Exst Pavement 70' Width for Length of Project  
Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	70	26,400	1,848,000	205,333	\$5	\$1,026,667
<b>Misc Removals</b>		26,400			\$200	\$5,280,000
					Total =	\$6,306,667

**Grant Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 100' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Pavement	100	26,400	2,640,000	293,333	\$21.40	\$6,277,578

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Grant Road**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	52,800	290,400

**Grant Road**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	26,400	4	105,600

**Grant Road**

Assumptions: Standard Striping for a Six Lane Roadway, Thirteen Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For Five Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$52,800
Four 4" Dashed Lane Stripes	LF	5,280	6,600	\$0.50	\$3,300	\$16,500
Intersection Striping	LF	3,000	39,000	\$0.50	\$19,500	\$19,500
Signs	Each	20	0	\$540.00	\$10,800	\$54,000
Stop Signs (Total Crossroads)	Each	14	0	\$540.00	\$7,560	\$37,800
					<b>Lump Sum =</b>	<b>\$180,600</b>



**Grant Road**

Assumptions: Thirteen Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	13	\$200,000	\$2,600,000

**Grant Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	26,400	\$300	\$7,920,000

**Grant Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$88,704</b>
			<b>5 Miles =</b>	<b>\$443,520</b>

**Grant Road**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Screen Wall	7	15,500	108,500

Harrison Road, Golf Links to Irvington  
DRAFT - COST ESTIMATE

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$714,875	\$714,875
Borrow	C.Y.	39,993	\$6	\$239,956
Excavation	C.Y.	40,437	\$5	\$202,185
Pavement	L.Sum	1	\$1,736,699	\$1,736,699
Drainage	L.Sum	1	\$1,525,920	\$1,525,920
Sidewalk	SF	113,179	\$4	\$452,716
Curb & Gutter	L.Ft.	41,156	\$15	\$617,340
Signing & Marking	L.Sum	1	\$28,539	\$28,539
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$1,028,900	\$1,028,900
Street Lighting	L.Sum	1	\$364,248	\$364,248
Retaining Walls	SF	0	\$40	\$0
Roadway Bridges	SF	56,500	\$80	\$4,520,000
Landscaping & Aesthetics	L.Sum	1	\$1,180,000	\$1,180,000
Construction Survey	L.Sum	1	\$590,000	\$590,000
Other Items	L.Sum	1	\$1,180,000	\$1,180,000
Maintenance Of Traffic	L.Sum	1	\$1,180,000	\$1,180,000
Mobilization 10%	L.Sum	1	\$1,596,138	\$1,596,138
			<b>15% Construction Contingency =</b>	\$2,633,627
			<b>Total Estimated Construction Cost =</b>	\$20,191,000
			<b>Public Art 1% =</b>	\$201,910
			<b>15% Construction Management =</b>	\$3,028,650
			<b>15% Engineering and Planning =</b>	\$3,028,650
			<b>Environmental Mitigation =</b>	\$119,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$15,000
			<b>Total Project Cost =</b>	\$26,584,210

**Assumptions:**

- \*4-Lane Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 2 Miles
- \*New Bridge Structure Over The Pantano Wash
- \*Approximate Construction Cost/Mile = \$10,100,000

**Harrison-Golf Links to Irvington**

Assumptions: Areas Measured in Microstation

Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Exst Retaining Walls Aver. Height = 12'

<b>Item</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal - Asphalt</b>	516,936	57,437	\$2	\$114,875
<b>Pavement Removal - PCCP</b>	0	0	\$4	\$0
<b>Remove Exst Retaining Walls</b>	0	0	\$40	\$0
<b>Remove Detour (LF)</b>	1000	111.1111111	\$100	\$100,000
<b>Misc Removals (LF)</b>	5000	555.5555556	\$100	\$500,000
			Total =	\$714,875

**Harrison-Golf Links to Irvington**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length

Assumed No Excavation Areas

<b>Item</b>	<b>Width (Average)</b>	<b>Length</b>	<b>SF</b>	<b>Depth (Average)</b>	<b>CF</b>	<b>CY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Fill</b>	106	10,300	1,091,800	2	2,183,600	80,874		
<b>Excavation</b>	106	10,300	1,091,800	1	1,091,800	40,437	\$4	\$161,748
<b>Drainage Excavation</b>			2,000	6	12,000	444	\$5	\$2,222
<b>Borrow</b>						39,993	\$6.0	\$239,956
							Total =	\$403,926

**Harrison-Golf Links to Irvington**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB & 6" PCCP, 4"AB  
 Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
AC - All roadways and Ramps	730,359	81,151	\$21	\$1,736,699
	0	0	\$21	\$0
			<b>Total =</b>	<b>\$1,736,699</b>

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

**Price/SY = \$21.40**

Concrete Pvmt Price/SY			
4" AC	0	\$11	\$0
Load Trans Dowel	0	\$60	\$0
6" PCCP	0	\$40	\$0
		Total =	\$0
		<b>Price/SY =</b>	<b>#DIV/0!</b>



**Harrison-Golf Links to Irvington**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$762,960
		<b>2.00 Miles New Drainage Structures=</b>		\$1,525,920

**Harrison-Golf Links to Irvington**

Assumptions: Sidewalk (both sides) around SPU and Commercial Area

Item	Width	Length	SF
Sidewalk	5.5	10,289	113,179

**Harrison-Golf Links to Irvington**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

<b>Item</b>	<b>Length</b>	<b>C &amp; G</b>	<b>LF</b>
<b>Curb and Gutter - Aviation</b>	10,289	4	41,156
		<b>TOTAL</b>	<b>41,156</b>

**Harrison-Golf Links to Irvington**

Assumptions: Standard Striping for a Six Lane Roadway, Signalized SPUI with 12" Stop Bars and Crosswalks  
 Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
 Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
 Assume 20 Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount
<b>Striping:</b>	<b>Mile</b>				
Four 4" Lane Stripes	LF	10,298	10,298	\$0.50	\$5,149
Four 4" Dashed Lane Stripes	LF	10,289	2,572	\$0.50	\$1,286
Intersection Striping	LF	336	1,008	\$0.50	\$504
Signs	Each	40	0	\$540.00	\$21,600
				<b>Lump Sum =</b>	<b>\$28,539</b>

**Harrison-Golf Links to Irvington**

Assumptions: New Signal at Alvernon and Golf Links/Palo Verde SPUI

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals at Irvington & Stella	2	\$200,000	\$400,000
		<b>TOTAL =</b>	\$400,000

**Harrison-Golf Links to Irvington**

Assumptions: Adjust/Relocate all Utilities for identified areas

Assume no Utilities in I-10

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	10,289	\$100	\$1,028,900

**Harrison-Golf Links to Irvington**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,290	\$6	\$61,740
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$182,124</b>
			<b>2.00 Miles =</b>	<b>\$364,248</b>

**Harrison-Golf Links to Irvington**

Assumptions: New Retaining Walls will be constructed at the back of sidewalk

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
0	6	0
	<b>Total SF =</b>	<b>0</b>



**Harrison-Golf Links to Irvington**

Assumptions: Areas Measured in Microstation

Item	Width	Length	SF
<b>New Bridges</b>			
Harrison over pantano =	0	0	56,500
	<b>Total Roadway Bridge=</b>		56,500

**Houghton Road, I-10 to Tanque Verde Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$3,100,000	\$3,100,000
Pavement	L.Sum	1	\$14,876,552	\$14,876,552
Drainage	L.Sum	1	\$12,480,808	\$12,480,808
Sidewalk	SF	780,285	\$4	\$3,121,140
Curb & Gutter	L.Ft.	283,740	\$15	\$4,256,100
Signing & Marking	L.Sum	1	\$455,924	\$455,924
Traffic Signals	L.Sum	1	\$2,800,000	\$2,800,000
Utilities	L.Sum	1	\$4,610,775	\$4,610,775
Street Lights	L.sum	1	\$990,528	\$990,528
Screen Walls	SF	44,940	\$20	\$898,800
Bridges	SF	109,450	\$100	\$10,945,000
I-10 Traffic Interchange	L.Sum	1	\$11,269,200	\$11,269,200
I-10 Directional Ramp	L.Sum	1	\$17,575,500	\$17,575,500
UPRR Grade Separation	L.Sum	1	\$13,044,500	\$13,044,500
Landscaping & Aesthetics	L.Sum	1	\$2,500,000	\$2,500,000
Construction Survey	L.Sum	1	\$2,000,000	\$2,000,000
Other Items	L.Sum	1	\$10,000,000	\$10,000,000
Maintenance Of Traffic	L.Sum	1	\$3,000,000	\$3,000,000
Mobilization 10%	L.Sum	1	\$11,792,483	\$11,792,483
			<b>15% Construction Contingency =</b>	\$19,457,596
			<b>Total Estimated Construction Cost =</b>	\$149,175,000
			<b>Public Art 1% =</b>	\$1,491,750
			<b>15% Construction Management =</b>	\$22,376,250
			<b>15% Engineering and Planning =</b>	\$22,376,250
			<b>Environmental Mitigation =</b>	\$486,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$1,600,000
			<b>Total Project Cost =</b>	\$197,505,300

**Assumptions:**

\*150' Min ROW

\*4-Lane Section With Raised Landscaped Median (I-10 to Old Vail Road)

\*6-Lane Section With Raised Landscaped Median (Old Vail Road to Golf Links Road)

\*4-Lane Section With Raised Landscaped Median (Golf Links Road to Tanque Verde)

\*Project Length = 13.4 Miles

\*7' Screen Walls Were Included Across the Residential Parcels

\*Approximate Construction Cost/Mile = \$11,000,000

\*Bridges Include Houghton over Pantano Wash, Agua Caliente Wash and Tanque Verde Creek

**Houghton Road**

Quantities based on AMEC Corridor Study

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal				354,682	\$5	\$1,773,410
Bridge Removal (I-10)						\$1,500,000
Bridge Removal (UPRR)						\$1,500,000
Bridge Removal (Pantano Wash)						\$100,000
					Total =	\$3,100,000

**Houghton Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width Includes Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
I-10 to Old Vail Road	75	10500	787,500	87,500	\$21.40	\$1,872,573
Old Vail Road to Golf Links Road	100	37550	3,755,000	417,222	\$21.40	\$8,928,903
Golf Links Road to Tanque Verde	75	22850	1,713,750	190,417	\$21.40	\$4,075,075
			6,256,250	695,139	<b>Total</b>	\$14,876,552

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

<b>Price/SY =</b>	<b>\$21.40</b>
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**Houghton Road**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
<b>Construction Cost per Mile =</b>				<b>\$762,960</b>
<b>13.4 Miles =</b>				<b>\$10,223,664</b>

**New 6'x 6' Concrete Box Culverts (1-Barrel)**

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	0.802	285	229	\$450.00	\$102,857
Reinforcing Steel (LB/FT) =	137.800	285	39,273	\$0.75	\$29,455
<b>Subtotal Cost per Culvert=</b>					<b>\$132,311</b>
<b>Total =</b>					<b>\$132,311</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$6,616</b>

**New 6'x 6' Concrete Box Culverts (2-Barrel)**

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	1.394	530	739	\$450.00	\$332,469
Reinforcing Steel (LB/FT) =	203.300	530	107,749	\$0.75	\$80,812
<b>Subtotal Cost per Culvert=</b>					<b>\$413,281</b>
<b>Total =</b>					<b>\$413,281</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$20,664</b>

**New 6'x 6' Concrete Box Culverts (3-Barrel)**

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	1.984	950	1,885	\$450.00	\$848,160
Reinforcing Steel (LB/FT) =	277.800	950	263,910	\$0.75	\$197,933
<b>Subtotal Cost per Culvert=</b>					<b>\$1,046,093</b>
<b>Total =</b>					<b>\$1,046,093</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$52,305</b>

**New 6'x 6' Concrete Box Culverts (5-Barrel)**

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	3.163	320	1,012	\$450.00	\$455,472
Reinforcing Steel (LB/FT) =	427.100	320	136,672	\$0.75	\$102,504
<b>Subtotal Cost per Culvert=</b>					<b>\$557,976</b>
<b>Total =</b>					<b>\$557,976</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$27,899</b>

**New 6'x 6' Concrete Box Culverts (6-Barrel)**

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	3.752	135	507	\$450.00	\$227,934
Reinforcing Steel (LB/FT) =	498.800	135	67,338	\$0.75	\$50,504
<b>Subtotal Cost per Culvert=</b>					<b>\$278,438</b>
<b>Total =</b>					<b>\$278,438</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$0</b>

**Drainage Total = \$12,480,808**

**Houghton Road**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	141,870	780,285

**Houghton Road**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	70,935	4	283,740

**Houghton Road**

Assumptions: Standard Striping for a Four Lane Roadway (I-10 to Old Vail and Golf Links to Tanque Verde)

Standard Striping for a Six Lane Roadway (Old Vail to Golf Links)

Fourteen Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 13.4 Miles
<b>4-Lane Striping:</b>						
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$8,316
<b>6-Lane Striping:</b>						
Four 4" Dashed Lane Stripes	LF	5,280	5,280	\$0.50	\$2,640	\$18,744
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$141,504
Intersection Striping	LF	2,000	28,000	\$0.50	\$14,000	\$14,000
Signs	Each	20		\$600.00	\$12,000	\$160,800
Stop Signs (Total Crossroads)	Each	14		\$600.00	\$8,400	\$112,560
					<b>Lump Sum =</b>	<b>\$455,924</b>



Houghton Road

Item	Each	Unit Price	Extended Amount
Signalized Intersections	14	\$200,000	\$2,800,000

**Houghton Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	70,935	\$65	\$4,610,775

**Houghton Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	\$73,920
			<b>13.4 Miles =</b>	\$990,528

**Houghton Road**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	6,420	44,940

**Houghton Road**

<b>Item</b>	<b>Width/Height</b>	<b>Length</b>	<b>SF</b>
Pantano Wash	130	390	50,700
Tanque Verde Creek	50	1,125	56,250
Agua Caliente Wash	50	50	2,500

Total Bridge Area = 109,450

**Houghton Road, Dawn Road to I-10  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$147,333	\$147,333
Pavement	L.Sum	1	\$1,819,071	\$1,819,071
Drainage	L.Sum	1	\$1,757,916	\$1,757,916
Sidewalk	SF	112,200	\$4	\$448,800
Curb & Gutter	L.Ft.	40,800	\$15	\$612,000
Signing & Marking	L.Sum	1	\$62,300	\$62,300
Traffic Signals	L.Sum	1	\$0	\$0
Utilities	L.Sum	1	\$663,000	\$663,000
Street Lights	L.sum	1	\$142,666	\$142,666
Landscaping & Aesthetics	L.Sum	1	\$150,000	\$150,000
Construction Survey	L.Sum	1	\$100,000	\$100,000
Other Items	L.Sum	1	\$600,000	\$600,000
Maintenance Of Traffic	L.Sum	1	\$150,000	\$150,000
Mobilization 10%	L.Sum	1	\$665,309	\$665,309
			<b>15% Construction Contingency =</b>	\$1,097,759
			<b>Total Estimated Construction Cost =</b>	\$8,416,000
			<b>Public Art 1% =</b>	\$84,160
			<b>15% Construction Management =</b>	\$1,262,400
			<b>15% Engineering and Planning =</b>	\$1,262,400
			<b>Environmental Mitigation =</b>	\$380,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$18,000
			<b>Total Project Cost =</b>	\$11,423,000

**Assumptions:**

- \*150' Min ROW
- \*4-Lane Section With Raised Landscaped Median (Dawn Road to I-10)
- \*Project Length = 1.93 Miles
- \*Approximate Construction Cost/Mile = \$4,000,000

Houghton Road

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	26	10,200	265,200	29,467	\$5	\$147,333

**Houghton Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width Includes Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Dawn Road I-10	75	10200	765,000	85,000	\$21.40	\$1,819,071

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Houghton Road**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	20,400	112,200

**Houghton Road**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	10,200	4	40,800

**Houghton Road**

Assumptions: Standard Striping for a Four Lane Roadway

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 1.93 Miles
<b>4-Lane Striping:</b>						
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$2,548
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$20,381
Signs	Each	20		\$600.00	\$12,000	\$23,160
Stop Signs (Total Crossroads)	Each	14		\$600.00	\$8,400	\$16,212
					<b>Lump Sum =</b>	<b>\$62,300</b>

Houghton Road

Item	Each	Unit Price	Extended Amount
Signalized Intersections	0	\$200,000	\$0

**Houghton Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	10,200	\$65	\$663,000

**Houghton Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$73,920</b>
			<b>1.93 Miles =</b>	<b>\$142,666</b>

**Irvington Road - Ajo Road to Mission Road  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$976,000	\$976,000
Earthwork	L.Sum	1	\$705,986	\$705,986
Pavement	L.Sum	1	\$4,275,411	\$4,275,411
Drainage	L.Sum	1	\$5,578,853	\$5,578,853
Sidewalk	SF	31,900	\$4	\$127,600
Curb & Gutter	L.Ft.	116,000	\$15	\$1,740,000
Signing & Marking	L.Sum	1	\$432,735	\$432,735
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$1,450,000	\$1,450,000
Street Lighting	L.Sum	1	\$522,720	\$522,720
Landscaping & Aesthetics	L.Sum	1	\$1,600,000	\$1,600,000
Construction Survey	L.Sum	1	\$400,000	\$400,000
Other Items	L.Sum	1	\$1,600,000	\$1,600,000
Maintenance Of Traffic	L.Sum	1	\$1,600,000	\$1,600,000
Mobilization 10%	L.Sum	1	\$2,120,930	\$2,120,930
			<b>15% Construction Contingency =</b>	\$3,499,535
			<b>Total Estimated Construction Cost =</b>	\$26,830,000
			<b>Public Art 1% =</b>	\$268,300
			<b>15% Construction Management =</b>	\$4,024,500
			<b>15% Engineering and Planning =</b>	\$4,024,500
			<b>Environmental Mitigation =</b>	\$224,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$1,600,000
			<b>Total Project Cost =</b>	\$36,971,300

**Assumptions:**

- \*Project Limits Taken From Ajo Road To Mission
- \*4-Lane Urban Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 5.5 Miles
- \*Project Cost/Mile = \$4,900,000



**Irvington Road**

Assumptions: Average Exst Pavement 30' Width from Sunset Blvd to Mission = 23,760'

Misc Removals; Clear & Grub, etc. - Entire length of project = 29,000

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	30	23,760	712,800	79,200	\$5	\$396,000
<b>Misc Removals</b>		29,000			\$20	\$580,000
					Total =	\$976,000

**Irvington Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Assumed No Excavation Areas

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	60	29,000	1,740,000	2	3,480,000	128,889		
Excavation			0	0	0	0	\$4	\$0
Drainage Excavation			26,128	6	156,768	5,806	\$5	\$29,031
Borrow						123,083	\$5.5	\$676,955
							Total =	\$705,986

**Irvington Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Pavement	62	29,000	1,798,000	199,778	\$21.40	\$4,275,411

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Irvington Road**

Assumptions: Continuous Sidewalk (both sides) for 29,000ft

Item	Width	Length	SF
Sidewalk	5.5	5,800	31,900

**Irvington Road**

Assumptions: Continuous C&G (both sides) for 28,170ft

Item	Length	C & G	LF
Curb and Gutter	29,000	4	116,000

**Irvington Road**

Assumptions: Standard Striping for a Four Lane Roadway , Four Intersections with 12" Stop Bars and Crosswalks  
 Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
 Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
 Assume 20 Signs/Mile & 24 Stop Signs @ Side Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 5.5 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	29,000	116,000	\$0.50	\$58,000	\$319,000
Two 4" Dashed Lane Stripes	LF	29,000	14,500	\$0.50	\$7,250	\$39,875
Intersection Striping	LF	1,000	3,000	\$0.50	\$1,500	\$1,500
Signs	Each	20	0	\$540.00	\$10,800	\$59,400
Stop Signs (Total Crossroads)	Each	24	0	\$540.00	\$12,960	\$12,960
					<b>Total=</b>	<b>\$432,735</b>

**Irvington Road**

Assumptions: One Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	1	\$200,000	\$200,000



**Irvington Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	29,000	\$50	\$1,450,000

**Irvington Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$95,040</b>
			<b>5.5 Miles =</b>	<b>\$522,720</b>

**Irvington**

	<u>SF</u>	<u>**Approx. \$/SF</u>	<u>Total</u>
ROW	\$800,000	2	\$1,600,000

\*\* Assumes No Developer Contribution

**Kolb Road Connection With Sabino Canyon Road  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$43,222	\$43,222
Earthwork	L.Sum	1	\$92,978	\$92,978
Pavement	L.Sum	1	\$708,605	\$708,605
Drainage	L.Sum	1	\$579,850	\$579,850
Sidewalk	SF	22,000	\$4	\$88,000
Curb & Gutter	L.Ft.	16,000	\$15	\$240,000
Signing & Marking	L.Sum	1	\$82,158	\$82,158
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$50,000	\$50,000
Street Lighting	L.Sum	1	\$72,230	\$72,230
Bridge	SF	26,550	\$80	\$2,124,000
Landscaping & Aesthetics	L.Sum	1	\$450,000	\$450,000
Construction Survey	L.Sum	1	\$400,000	\$400,000
Other Items	L.Sum	1	\$450,000	\$450,000
Maintenance Of Traffic	L.Sum	1	\$225,000	\$225,000
Mobilization 10%	L.Sum	1	\$600,604	\$600,604
			<b>15% Construction Contingency =</b>	\$990,997
			<b>Total Estimated Construction Cost =</b>	\$7,598,000
			<b>Public Art 1% =</b>	\$75,980
			<b>15% Construction Management =</b>	\$1,139,700
			<b>15% Engineering and Planning =</b>	\$1,139,700
			<b>Environmental Mitigation =</b>	\$97,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$10,000
			<b>Total Project Cost =</b>	\$10,060,380

**Assumptions:**

- \*Project Limits Taken From Existing Kolb to Tanque Verde
- \*4-Lane Urban Section With Raised Landscaped Median
- \*150' Min. ROW - Existing City/County Property
- \*Project Length = 0.76 Miles
- \*Cost per Mile = \$5,270,000

**Kolb Road**

Assumptions: Remove Existing Median and Pvmt for New Intersection - Areas taken from Microstation  
Misc Removals; Clear & Grub, etc.

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal			5,800	644	\$5	\$3,222
Misc Removals		4,000			\$10	\$40,000
					Total =	\$43,222

**Kolb Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Assumed No Excavation Areas

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	60	4,000	240,000	2	480,000	17,778		
Excavation			0	0	0	0	\$4	\$0
Drainage Excavation			43,200	6	259,200	9,600	\$5	\$48,000
Borrow						8,178	\$5.5	\$44,978
							Total =	\$92,978

**Kolb Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	Ave Width	Length	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	NA	NA	298,000	33,111	\$21.40	\$708,605

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Kolb Road**

Assumptions: Continuous Sidewalk (both sides) for 4,000ft

Item	Width	Length	SF
Sidewalk	5.5	4,000	22,000

**Kolb Road**

Assumptions: Continuous C&G (both sides & median) for 4,000ft

Item	Length	C & G	LF
Curb and Gutter	4,000	4	16,000

**Kolb Road**

Assumptions: Standard Striping for a Four Lane Roadway , Four Intersections with 12" Stop Bars and Crosswalks  
 Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
 Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
 Assume 20 Signs/Mile & 5 Stop Signs @ Side Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.96 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	4,000	16,000	\$0.50	\$8,000	\$31,680
Two 4" Dashed Lane Stripes	LF	4,000	2,000	\$0.50	\$1,000	\$3,960
Intersection Striping	LF	2,500	7,500	\$0.50	\$3,750	\$3,750
Signs	Each	15	0	\$540.00	\$8,100	\$32,076
Stop Signs (Total Crossroads)	Each	5	0	\$540.00	\$2,700	\$10,692
					<b>Total=</b>	<b>\$82,158</b>

**Kolb Road**

Assumptions: Two Signalized Intersections (Kolb/Kolb & Kolb/Tanque Verde)

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	2	\$200,000	\$400,000

**Kolb Road**

Assumptions: Adjust/Relocate Utilities on Existing Tanque Verde and Kolb

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	1,000	\$50	\$50,000

**Kolb Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	\$95,040
			<b>0.76 Miles =</b>	\$72,230

**First Avenue**

Assumptions: New Bridge over Pantano Wash

Area Measure in Microstation

Item	Area
Bridge Area =	26,550

**La Canada Drive, Calle Concordia to River Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$607,667	\$607,667
Pavement	L.Sum	1	\$4,226,486	\$4,226,486
Drainage	L.Sum	1	\$4,936,070	\$4,936,070
Sidewalk	SF	300,795	\$4	\$1,203,180
Curb & Gutter	L.Ft.	109,380	\$15	\$1,640,700
Signing & Marking	L.Sum	1	\$172,210	\$172,210
Traffic Signals	L.Sum	1	\$1,000,000	\$1,000,000
Utilities	L.Sum	1	\$4,101,750	\$4,101,750
Street Lights	L.sum	1	\$382,906	\$382,906
Screen Walls	SF	145,250	\$20	\$2,905,000
Landscaping & Aesthetics	L.Sum	1	\$500,000	\$500,000
Construction Survey	L.Sum	1	\$400,000	\$400,000
Other Items	L.Sum	1	\$2,500,000	\$2,500,000
Maintenance Of Traffic	L.Sum	1	\$2,500,000	\$2,500,000
Mobilization 10%	L.Sum	1	\$2,707,597	\$2,707,597
			<b>15% Construction Contingency =</b>	\$4,467,535
			<b>Total Estimated Construction Cost =</b>	\$34,251,000
			<b>Public Art 1% =</b>	\$342,510
			<b>15% Construction Management =</b>	\$5,137,650
			<b>15% Engineering and Planning =</b>	\$5,137,650
			<b>Environmental Mitigation =</b>	\$151,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$700,000
			<b>Total Project Cost =</b>	\$45,720,300

**Assumptions:**

- \*150' Min. ROW
- \*4-Lane Urban Section With Raised Landscaped Median
- \*Project Length = 5.18 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Approximate Construction Cost/Mile = \$5,500,000



**La Canada Drive**

Assumptions: Average Exst Pavement 40' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	40	27,345	1,093,800	121,533	\$5	\$607,667
					Total =	\$607,667

**La Canada Drive**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 65' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	65	27345	1,777,425	197,492	\$21.40	\$4,226,486

**Total**      \$4,226,486

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**



**La Canada Drive**

Assumptions: Continuous Sidewalk (both sides)

Item	Width	Length	SF
Sidewalk	5.5	54,690	300,795

**La Canada Drive**

Assumptions: Continuous Curb & Gutter (both sides & median)

Item	Length	C & G	LF
Curb and Gutter	27,345	4	109,380

**La Canada Drive**

Assumptions: Standard Striping for a Four Lane Roadway, Five Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 5.18 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$54,701
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$6,838
Intersection Striping	LF	2,000	10,000	\$0.50	\$5,000	\$5,000
Signs	Each	20	0	\$600.00	\$12,000	\$62,160
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$43,512
					<b>Lump Sum =</b>	<b>\$172,210</b>

**La Canada Drive**

Assumptions: Five Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	5	\$200,000	\$1,000,000

**La Canada Drive**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	27,345	\$150	\$4,101,750





**La Canada Drive**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	20,750	145,250

**La Cholla Boulevard, Tangerine Road to Magee Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$5,949,667	\$5,949,667
Earthwork	L.Sum	1	\$1,225,364	\$1,225,364
Pavement	SY	206,197	\$21	\$4,412,780
Drainage	L.Sum	1	\$3,430,483	\$3,430,483
Sidewalk	SF	302,060	\$4	\$1,208,240
Curb & Gutter	L.Ft.	110,000	\$15	\$1,650,000
Signing & Marking	L.Sum	1	\$116,536	\$116,536
Traffic Signals	L.Sum	1	\$600,000	\$600,000
Utilities	L.Sum	1	\$1,373,000	\$1,373,000
Bridge	SF	48,830	\$80	\$3,906,400
Retaining Walls	SF	4,650	\$37	\$172,050
Landscaping & Aesthetics	L.Sum	1	\$1,500,000	\$1,500,000
Construction Survey	L.Sum	1	\$300,000	\$300,000
Other Items	L.Sum	1	\$2,700,000	\$2,700,000
Maintenance Of Traffic	L.Sum	1	\$1,800,000	\$1,800,000
Mobilization 10%	L.Sum	1	\$3,034,452	\$3,034,452
			<b>15% Construction Contingency =</b>	\$5,006,846
			<b>Total Estimated Construction Cost =</b>	\$38,386,000
			<b>Public Art 1% =</b>	\$383,860
			<b>15% Construction Management =</b>	\$5,757,900
			<b>15% Engineering and Planning =</b>	\$5,757,900
			<b>Environmental Mitigation =</b>	\$147,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$2,600,000
			<b>Total Project Cost =</b>	\$53,033,160

**Assumptions:**

- \*Project Limits Taken From Just North Of Tangerine Road To Magee Road
- \*4-Lane Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 5.2 Miles
- \*New Bridge Across The CDO Wash
- \*Approximate Construction Cost/Mile = \$7,400,000

**La Cholla Blvd**

Assumptions: Average Exst Pavement 70' Width for Length of Project  
Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

<b>Item</b>	<b>Width (Average)</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	30	27,460	823,800	91,533	\$5	\$457,667
<b>Misc Removals</b>		27,460			\$200	\$5,492,000
					Total =	\$5,949,667

**La Cholla Blvd**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length

Excavation Areas Assumed In a Couple of Locations Between Overton and Lambert - SF Taken From Quants Drawing

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	114	27,460	3,130,440	2	6,260,880	231,884		
Excavation			150,000	6	900,000	33,333	\$4	\$133,333
Borrow						198,551	\$5.5	\$1,092,031
							Total =	\$1,225,364

**La Cholla Blvd**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	1,855,770	206,197	\$21.40	\$4,412,780

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**La Cholla Blvd**

**Storm Drain System:**

Assumptions: Aver 24" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
		<b>Per/Mile</b>		
Pipe	LF	5,280	\$80	\$422,400
Pipe - Laterals	LF	1,135	\$80	\$90,816
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$632,016
		<b>5.2 Miles =</b>		<b>\$3,286,483</b>

**Cross Drainage:**

Assumptions: New 42" Cross Drainage Pipes

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
42" Pipe	LF	1,440	\$100	\$144,000.00
		<b>Construction Cost =</b>		<b>\$144,000.00</b>

**DRAINAGE TOTAL = \$3,430,483**

**La Cholla Blvd**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Project Length	Sidewalk Length	SF
Sidewalk	5.5	27,460	54,920	302,060



**La Cholla Blvd**

Assumptions: Continuous Curb & Gutter (both sides) Vert. Curb in median) full length of Project

<b>Item</b>	<b>Length (From Quants Drawing)</b>
<b>Curb and Gutter</b>	110,000

**La Cholla Blvd**

Assumptions: Standard Striping for a Four Lane Roadway, Four Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 15 General Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 5.2 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$54,912
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$6,864
Intersection Striping	LF	2,000	8,000	\$0.50	\$4,000	\$4,000
Signs	Each	15	0	\$540.00	\$8,100	\$42,120
Stop Signs (Total Crossroads)	Each	16	0	\$540.00	\$8,640	\$8,640
					<b>Lump Sum =</b>	<b>\$116,536</b>

**La Cholla Blvd**

Assumptions: New Signals at Lambert & Overton

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals	2	\$200,000	\$400,000
Modify Exist. Signals	2	\$100,000	\$200,000
<b>TOTAL =</b>			<b>\$600,000</b>

**La Cholla Blvd**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	27,460	\$50	\$1,373,000

La Cholla Blvd

ITEM	Length	Height (Average)	SF
MSE WALL	930	5	4,650

**La Cholla Blvd**

<b>New Bridge Structure</b>	<b>Width</b>	<b>Length</b>	<b>SF (From Quants Drawing</b>
La Cholla/CDO Wash	-	-	48,830

La Cholla Blvd

ITEM	SF (From Quants Drawing)	**Approx. \$/SF	Total	Amt. Used For Estimate
ROW	1,333,920	1.5	\$2,000,880	\$2,000,000

\*\* Assumes No Developer Contribution

**La Cholla Boulevard, River Road to Ruthrauff Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$353,750	\$353,750
Earthwork	L.Sum	1	\$270,148	\$270,148
Pavement	SY	48,133	\$21	\$1,030,093
Drainage	L.Sum	1	\$575,135	\$575,135
Sidewalk	SF	52,855	\$4	\$211,420
Curb & Gutter	L.Ft.	19,220	\$15	\$288,300
Signing & Marking	L.Sum	1	\$31,023	\$31,023
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$480,500	\$480,500
Bridge	SF	49,000	\$80	\$3,920,000
Landscaping & Aesthetics	L.Sum	1	\$300,000	\$300,000
Construction Survey	L.Sum	1	\$150,000	\$150,000
Other Items	L.Sum	1	\$800,000	\$800,000
Maintenance Of Traffic	L.Sum	1	\$800,000	\$800,000
Mobilization 10%	L.Sum	1	\$961,037	\$961,037
			<b>15% Construction Contingency =</b>	\$1,585,711
			<b>Total Estimated Construction Cost =</b>	\$12,157,000
			<b>Public Art 1% =</b>	\$121,570
			<b>15% Construction Management =</b>	\$1,823,550
			<b>15% Engineering and Planning =</b>	\$1,823,550
			<b>Environmental Mitigation =</b>	\$150,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$200,000
			<b>Total Project Cost =</b>	\$16,276,170

**Assumptions:**

- \*Project Limits Taken From River Road To Just South of Ruthrauff Road
- \*6-Lane Section With Raised Landscaped Median
- \*150' Existing ROW
- \*Project Length = 0.91 Miles
- \*New Bridge Across The Rillito River
- \*Approximate Construction Cost/Mile = \$13,500,000



**La Cholla Blvd**

Assumptions: Average Exst Pavement 70' Width for Length of Project  
Misc Removals; at \$50/LF

<b>Item</b>	<b>Width (Average)</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	NA	NA	204,300	22,700	\$5	\$113,500
<b>Bridge Removal</b>		NA	17,500	1,944	\$30	\$58,333
<b>Misc Removals</b>		4,805			\$50	\$240,250
					Total =	\$353,750

**La Cholla Blvd**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
No Excavation Areas Assumed

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	138	4,805	663,090	2	1,326,180	49,118		
Excavation			0	6	0	0	\$4	\$0
Borrow						49,118	\$5.5	\$270,148
							Total =	\$270,148

**La Cholla Blvd**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	433,200	48,133	\$21.40	\$1,030,093

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**La Cholla Blvd**

**Storm Drain System:**

Assumptions: Aver 24" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
		<b>Per/Mile</b>		
Pipe	LF	5,280	\$80	\$422,400
Pipe - Laterals	LF	1,135	\$80	\$90,816
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$632,016

**0.91 Miles = \$575,135**

**DRAINAGE TOTAL = \$575,135**

**La Cholla Blvd**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Project Length	Sidewalk Length	SF
Sidewalk	5.5	4,805	9,610	52,855

**La Cholla Blvd**

Assumptions: Continuous C&G (both sides) for project length

Item	Length	C & G	LF
Curb and Gutter	4,805	4	19,220

**La Cholla Blvd**

Assumptions: Standard Striping for a Six Lane Roadway, Three Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 15 General Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 0.91 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$9,610
Four 4" Dashed Lane Stripes	LF	5,280	5,280	\$0.50	\$2,640	\$2,402
Intersection Striping	LF	2,000	6,000	\$0.50	\$3,000	\$3,000
Signs	Each	15	0	\$540.00	\$8,100	\$7,371
Stop Signs (Total Crossroads)	Each	16	0	\$540.00	\$8,640	\$8,640
					<b>Lump Sum =</b>	<b>\$31,023</b>

**La Cholla Blvd**

Assumptions: Signal Modifications at River & Ruthrauff

New Signal At Curtis Road

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals	1	\$200,000	\$200,000
Modify Exist. Signals	2	\$100,000	\$200,000
<b>TOTAL =</b>			<b>\$400,000</b>



**La Cholla Blvd**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
Utility Adjustment:	4,805	\$100	\$480,500

**La Cholla Blvd**

Assumptions: New Structure - no widening assumed

<b>New Bridge Structure</b>	<b>Width</b>	<b>Length</b>	<b>SF (From Quants Drawing</b>
La Cholla/Rillito River	-	-	49,000

La Cholla Blvd

ITEM	SF (From Quants Drawing)	**Approx. \$/SF	Total	Amt. Used For Estimate
ROW	1,333,920	1.5	\$2,000,880	\$2,000,000

\*\* Assumes No Developer Contribution

**Magee/Cortaro Farms Road, Thornydale Road to La Canada Drive  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$2,398,611	\$2,398,611
Earthwork	L.Sum	1	\$877,233	\$877,233
Pavement	SY	164,367	\$21	\$3,517,584
Drainage	L.Sum	1	\$3,102,801	\$3,102,801
Sidewalk	SF	219,450	\$4	\$877,800
Curb & Gutter	L.Ft.	79,800	\$15	\$1,197,000
Signing & Marking	L.Sum	1	\$97,124	\$97,124
Traffic Signals	L.Sum	1	\$600,000	\$600,000
Utilities	L.Sum	1	\$1,995,000	\$1,995,000
Bridge	SF	18,500	\$80	\$1,480,000
Landscaping & Aesthetics	L.Sum	1	\$1,200,000	\$1,200,000
Construction Survey	L.Sum	1	\$350,000	\$350,000
Other Items	L.Sum	1	\$1,700,000	\$1,700,000
Maintenance Of Traffic	L.Sum	1	\$1,700,000	\$1,700,000
Mobilization 10%	L.Sum	1	\$2,109,315	\$2,109,315
			<b>15% Construction Contingency =</b>	\$3,480,370
			<b>Total Estimated Construction Cost =</b>	\$26,683,000
			<b>Public Art 1% =</b>	\$266,830
			<b>15% Construction Management =</b>	\$4,002,450
			<b>15% Engineering and Planning =</b>	\$4,002,450
			<b>Environmental Mitigation Cost =</b>	\$186,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$1,400,000
			<b>Total Project Cost =</b>	\$36,541,230

**Assumptions:**

\*4-Lane Section With Raised Landscaped Median

\*150' Min. ROW

\*Project Length = 3.8 Miles

\*Magee/La Cholla Signalized Intersection Based On Eliminating The North Intersection

\*New Bridge For EB Traffic Parallel To Exist. CDO Wash Bridge

\*Approximate Construction Cost/Mile = \$7,000,000

Magee/Cortaro Farms/La Cholla

Item	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal (From Quants Drawing)	19,950	726,500	80,722	\$5	\$403,611
Misc Removals	19,950			\$100	\$1,995,000
				Total =	\$2,398,611

**Magee/Cortaro Farms/La Cholla**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length

Excavation Areas Assumed In a Couple of Locations North and South of the Cortaro/Shannon - SF Taken From Quants Drawing

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	114	19,950	2,274,300	2	4,548,600	168,467		
Excavation			296,000	3	888,000	32,889	\$4	\$131,556
Borrow						135,578	\$5.5	\$745,678
							Total =	\$877,233

**Magee/Cortaro Farms/La Cholla**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	1,479,300	164,367	\$21.40	\$3,517,584

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Magee/Cortaro Farms/La Cholla**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Project Length	Sidewalk Length	SF
Sidewalk	5.5	19,950	39,900	219,450

**Magee/Cortaro Farms/La Cholla**

Assumptions: Continuous Curb & Gutter (both sides) (Vert. Curb in median) full length of Project

Item	Length (From Quants Drawing)
Curb and Gutter	79,800

**Magee/Cortaro Farms/La Cholla**

Assumptions: Standard Striping for a Four Lane Roadway, Five Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 15 General Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.8 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$40,128
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$5,016
Intersection Striping	LF	2,000	10,000	\$0.50	\$5,000	\$5,000
Signs	Each	15	0	\$540.00	\$8,100	\$30,780
Stop Signs (Total Crossroads)	Each	30	0	\$540.00	\$16,200	\$16,200
					<b>Lump Sum =</b>	<b>\$97,124</b>

**Magee/Cortaro Farms/La Cholla**

Assumptions: New Signal At The New Magee/La Cholla Intersection Configuration

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals	1	\$200,000	\$200,000
Modify Exist. Signals	4	\$100,000	\$400,000
<b>TOTAL =</b>			<b>\$600,000</b>

**Magee/Cortaro Farms/La Cholla**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	19,950	\$100	\$1,995,000

**Magee/Cortaro Farms/La Cholla**

<b>New Bridge Structure</b>	<b>Width</b>	<b>Length</b>	<b>SF (From Quants Drawing</b>
Cortaro/CDO Wash	-	-	18,500

**Magee/Cortaro Farms/La Cholla**

<b>ITEM</b>	<b>SF (From Quants Drawing)</b>	<b>**Approx. \$/SF</b>	<b>Total</b>	<b>Amt. Used For Estimate</b>
ROW	102,000	10	\$1,020,000	\$1,000,000

\*\* Assumes No Developer Contribution

**Magee Road, La Canada Drive to Oracle Road  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$806,514	\$806,514
Earthwork	L.Sum	1	\$429,427	\$429,427
Pavement	SY	55,222	\$21	\$1,181,802
Drainage	L.Sum	1	\$786,419	\$786,419
Sidewalk	SF	70,620	\$4	\$282,480
Curb & Gutter	L.Ft.	26,500	\$15	\$397,500
Signing & Marking	L.Sum	1	\$43,796	\$43,796
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$642,000	\$642,000
Landscaping & Aesthetics	L.Sum	1	\$300,000	\$300,000
Construction Survey	L.Sum	1	\$90,000	\$90,000
Other Items	L.Sum	1	\$500,000	\$500,000
Maintenance Of Traffic	L.Sum	1	\$500,000	\$500,000
Mobilization 10%	L.Sum	1	\$615,994	\$615,994
			<b>15% Construction Contingency =</b>	\$1,016,390
			<b>Total Estimated Construction Cost =</b>	\$7,792,000
			<b>Public Art 1% =</b>	\$77,920
			<b>15% Construction Management =</b>	\$1,168,800
			<b>15% Engineering and Planning =</b>	\$1,168,800
			<b>Environmental Mitigation Cost =</b>	\$110,500
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$180,000
			<b>Total Project Cost =</b>	\$10,498,020

**Assumptions:**

\*4-Lane Section With Raised Landscaped Median

\*150' Min ROW

\*Project Length = 1.2 Miles

\*The Magee/La Canada Signal Modification Cost Is Included In the Magee\_Thornycroft To La Canada Estimate

\*Approximate Construction Cost/Mile = \$6,500,000



Magee

Item	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal (From Quants Drawing)	NA	296,125	32,903	\$5	\$164,514
Misc Removals	6,420			\$100	\$642,000
				Total =	\$806,514

**Magee**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Excavation Width Based on Misc. ditch grading

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	114	6,420	731,880	3	2,195,640	81,320		
Excavation	50	6,420	321,000	1	321,000	11,889	\$4	\$47,556
Borrow						69,431	\$5.5	\$381,871
							Total =	\$429,427

**Magee**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item			SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement			497,000	55,222	\$21.40	\$1,181,802

Price/SY							
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount	
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64	
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43	

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Magee**

**Storm Drain System:**

Assumptions: Aver 24" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
		<b>Per/Mile</b>		
Pipe	LF	5,280	\$80	\$422,400
Pipe - Laterals	LF	1,135	\$80	\$90,816
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$632,016
		<b>1.2 Miles =</b>		<b>\$758,419</b>

**Cross Drainage:**

Assumptions: New 42" Cross Drainage Pipes

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
42" Pipe	LF	280	\$100	\$28,000.00
		<b>Construction Cost =</b>		<b>\$28,000.00</b>

**DRAINAGE TOTAL = \$786,419**

**Magee**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Project Length	Sidewalk Length	SF
Sidewalk	5.5	6,420	12,840	70,620

**Magee**

Assumptions: Continuous Curb & Gutter (both sides) (Vert. Curb in median) full length of Project

Item	Length (From Quants Drawing)
Curb and Gutter	26,500

**Magee**

Assumptions: Standard Striping for a Four Lane Roadway, Two Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 15 General Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 1.2 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$12,672
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$1,584
Intersection Striping	LF	2,000	4,000	\$0.50	\$2,000	\$2,000
Signs	Each	15	0	\$540.00	\$8,100	\$9,720
Stop Signs (Total Crossroads)	Each	33	0	\$540.00	\$17,820	\$17,820
					<b>Lump Sum =</b>	<b>\$43,796</b>

**Magee**

Assumptions: No New Signals

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals	0	\$200,000	\$0
Modify Exist. Signals	2	\$100,000	\$200,000
<b>TOTAL =</b>			<b>\$200,000</b>



**Magee**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	6,420	\$100	\$642,000

**Magee**

<b>ITEM</b>	<b>SF (From Quants Drawing)</b>	<b>**Approx. \$/SF</b>	<b>Total</b>	<b>Amt. Used For Estimate</b>
ROW	12,300	2.5	\$30,750	\$31,000

\*\* Assumes No Developer Contribution

**Railroad Overpass at Ina Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,284,700	\$1,284,700
Excavation	C.Y.	228,148	\$5	\$1,140,741
Borrow	C.Y.	283,556	\$6	\$1,701,333
Pavement	L.Sum	1	\$4,939,131	\$4,939,131
Drainage	L.Sum	1	\$1,297,032	\$1,297,032
Sidewalk	SF	19,635	\$4	\$78,540
Curb & Gutter	L.Ft.	45,480	\$15	\$682,200
Signing & Marking	L.Sum	1	\$350,000	\$350,000
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$490,000	\$490,000
Street Lighting	L.Sum	1	\$1,000,000	\$1,000,000
Concrete Median Barrier	L.Ft.	3,000	\$50	\$150,000
Retaining Walls	SF	146,190	\$36	\$5,262,840
Bridges	SF	70,592	\$80	\$5,647,360
Landscaping & Aesthetics	L.Sum	1	\$1,000,000	\$1,000,000
Construction Survey	L.Sum	1	\$500,000	\$500,000
Other Items	L.Sum	1	\$2,600,000	\$2,600,000
Maintenance Of Traffic	L.Sum	1	\$1,800,000	\$1,800,000
Mobilization 10%	L.Sum	1	\$3,032,388	\$3,032,388
			<b>15% Construction Contingency =</b>	\$5,663,440
			<b>Total Estimated Construction Cost =</b>	\$43,420,000
			<b>Public Art 1% =</b>	\$434,200
			<b>15% Construction Management =</b>	\$6,513,000
			<b>15% Engineering and Planning =</b>	\$6,513,000
			<b>Environmental Mitigation =</b>	\$342,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$2,200,000
			<b>Total Project Cost =</b>	\$59,422,700

**Assumptions:**

- \*Project Similar to ADOT Project I-10 Reconstruction - Ruthrauff to Prince
- \*Ina 6-Lane Section With Raised Landscaped Median Grade Separated over the Railroad and I-10
- \*Lower I-10 to Grade
- \*Raise Frontage Roads to Intersect with Ina
- \*Landscaping & Aesthetics Based on Approx. 5% of Quantitative Items
- \*Construction Survey Based on Approx. 2% of Quantitative Items

**Ina over RR**

Assumptions: Average Exst Pavement Width = I-10 112', Ina 90', Frontage Rds 40', Ramps 22', Camino De Oeste 30'  
 Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal - Ina (Asphalt)	90	3,010	270,900	30,100	\$2	\$60,200
Pavement Removal - I-10 (Asphalt)	112	3,000	336,000	37,333	\$2	\$74,667
Pavement Removal - EBFR (PCCP)	40	1,725	69,000	7,667	\$4	\$30,667
Pavement Removal - EBFR (Asphalt)	40	600	24,000	2,667	\$2	\$5,333
Pavement Removal - WBF (PCCP)	40	820	32,800	3,644	\$4	\$14,578
Pavement Removal - WBF (Asphalt)	40	1,460	58,400	6,489	\$2	\$12,978
Pavement Removal - Ramp B (Asphalt)	22	530	11,660	1,296	\$2	\$2,591
Pavement Removal - Ramp D (Asphalt)	22	730	16,060	1,784	\$2	\$3,569
Pavement Removal - Camino De Oeste (AC)	30	370	11,100	1,233	\$2	\$2,467
Remove Exst Bridge	116	190	22,040	2,449	\$60	\$146,933
Misc Removals		12,245			\$100	\$1,224,500
					<b>Total =</b>	<b>\$1,284,700</b>

**Ina over RR**

Assumptions: Excavation from I-10 will be used for fill areas

<b>Excavation</b>				
<b>Location</b>	<b>Aver. End Area</b>	<b>Length</b>	<b>CF</b>	<b>CY</b>
EB I-10 Mainline	1,100	2,800	3,080,000	114,074
WB I-10 Mainline	1,100	2,800	3,080,000	114,074
<b>Total =</b>				<b>228,148</b>

<b>Fill</b>				
<b>Location</b>	<b>Aver. End Area</b>	<b>Length</b>	<b>CF</b>	<b>CY</b>
Westbound Frontage Road	1,800	2,400	4,320,000	160,000
Eastbound Frontage Road	1,500	2,400	3,600,000	133,333
Ina (East)	2,500	1,200	3,000,000	111,111
Ina (West)	2,000	1,100	2,200,000	81,481
<b>Total =</b>				<b>485,926</b>

Fill =	485926
<b>Excavation =</b>	<b>228148</b>
Difference =	257778
10% Shrink =	25778
<b>Borrow =</b>	<b>283556</b>

**Ina over RR**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

\*\*Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
PCCP - I-10 Mainline	426,000	47,333	\$53	\$2,510,000
PCCP - Westbound Frontage Road	113,981	12,665	\$53	\$671,578
PCCP - Eastbound Frontage Road	187,207	20,801	\$53	\$1,103,027
AC - Ina (East)	135,488	15,054	\$21	\$322,173
AC - Ina (West)	139,769	15,530	\$21	\$332,353
			<b>Total =</b>	<b>\$4,939,131</b>

Flexible Pavement Price/SY	CF/SY	LB/CF	LBs/SY	Tons/SY	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

<b>Price/SY =</b>	<b>\$21.40</b>
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Concrete Pvmt Price/SY	SY	Cost/SY	Extended Amount
4" AC	47,333	\$11	\$520,667
Load Trans Dowel	1600	\$60	\$96,000
14" PCCP	47,333	\$40	\$1,893,333
		Total =	\$2,510,000
		<b>Price/SY =</b>	<b>\$53.03</b>



**Ina over RR**

Assumptions: Continuous Sidewalk on Ina (both sides)

Item	Width	Length	SF
Sidewalk	5.5	3,570	19,635



**Ina over RR**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

<b>Item</b>	<b>Length</b>	<b>C &amp; G</b>	<b>LF</b>
<b>Curb and Gutter - Ina</b>	3,570	4	14,280
<b>Curb and Gutter - I-10</b>	3,000	4	12,000
<b>Curb and Gutter - WBFR</b>	2,400	4	9,600
<b>Curb and Gutter - EBFR</b>	2,400	4	9,600
		<b>Total =</b>	<b>45,480</b>

**Ina over RR**

**Ina Road (0.95miles)**

Assumptions: Standard Striping for a 6 Lane Roadway, Two Signalized Intersections with 12" Stop Bars and Crosswalks  
 Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
 Assume 20 Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 0.95 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$10,032
Two 4" Dashed Lane Stripes	LF	5,280	10,560	\$0.50	\$5,280	\$5,016
Intersection Striping	LF	2,000	4,000	\$0.50	\$2,000	\$2,000
Signs	Each	20	0	\$540.00	\$10,800	\$10,260
Stop Signs (Total Crossroads)	Each	10	0	\$540.00	\$5,400	\$5,130
					<b>Total=</b>	<b>\$32,438</b>

Assumptions: Signing and Striping On I-10, Ramps, and Frontage Roads will be similar to ADOT Project I-10, Ruthrauff to Prince

Similar Project I-10, Ruthrauff to Prince	Signs	Marking
	\$100,000	\$14,860
	\$12,000	\$6,170
	\$63,000	\$5,410
	\$18,000	\$4,800
	\$15,000	\$1,290
	\$15,300	\$16,660
	\$44,000	\$1,290
<b>Total =</b>	<b>\$267,300</b>	<b>\$50,480</b>
		<b>\$317,780</b>

use

Project Total For Signing & Marking = 

\$350,218	\$350,000
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**Ina over RR**

Assumptions: Two Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	2	\$200,000	<b>\$400,000</b>

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**Ina over RR**

Assumptions: Adjust/Relocate all Utilities for Length of Project

No Private Utility Agency Contribution

Assume no Utilities in I-10

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Utility Adjustment:</b>	9,000	\$70	<b>\$630,000</b>

<b>Estimated UPRR Contribution =</b>	<b>\$140,000</b>
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**Utility Total = \$490,000**

**Ina over RR**

Assumptions: Similar to ADOT Project I-10, Ruthrauff to Prince

<b>I-10 Ruthrauff to Prince =</b>	<b>\$1,000,000</b>
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**Ina over RR**

Assumptions: Median Barrier Along Entire Length of I-10

<b>Item</b>	<b>Length</b>
Concrete Median Barrier	<b>3,000</b>

**Ina over RR**

Assumptions: Similar to ADOT Project I-10, Ruthrauff to Prince

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
1,140	15	17,100
850	12	10,200
870	12	10,440
700	10	7,000
1,000	12	12,000
1,100	15	16,500
800	10	8,000
850	15	12,750
1,200	15	18,000
700	14	9,800
1,100	14	15,400
750	12	9,000
<b>Total SF =</b>		<b>146,190</b>

**Ina over RR**

Assumptions: New bidges over I-10 and the UPRR

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>
<b>Ina Bridge Over I-10 =</b>	152	328	49,856
<b>Ina Bridge Over UPRR =</b>	162	128	20,736
		<b>Total =</b>	<b>70,592</b>



**Ina over RR**

Assumptions: Other typical bid tab items not included in the quantified items

<b>Item</b>	<b>% of Cost</b>
Structural Excavation	0.2
Furnish Water	3.0
Slotted Drain	1.5
Misc. Pipes/End Sections	1.5
Misc. Striping Items (Primers, etc.)	0.2
Misc. Electrical (VMS, ITS, Ramp Metering, etc.)	1.0
Access Control Fence (Chain Link)	0.1
Guardrail/Transitions/End Treatments	0.3
Misc. Paving (Gore, Median, etc.)	0.6
SWPPP Items	1.0
Pedestrian Railings	0.6
<b>Total =</b>	<b>10.0</b>

Quantified Items Total = \$25,923,877      Use \$26,000,000  
Other Items (10%) Total = \$2,600,000

**Railroad Overpass at Ruthrauff Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,283,044	\$1,283,044
Excavation	C.Y.	251,778	\$5	\$1,258,889
Borrow	C.Y.	283,433	\$6	\$1,700,600
Pavement	L.Sum	1	\$5,193,100	\$5,193,100
Drainage	L.Sum	1	\$1,297,032	\$1,297,032
Sidewalk	SF	33,000	\$4	\$132,000
Curb & Gutter	L.Ft.	45,480	\$15	\$682,200
Signing & Marking	L.Sum	1	\$350,000	\$350,000
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$630,000	\$630,000
Street Lighting	L.Sum	1	\$1,000,000	\$1,000,000
Concrete Median Barrier	L.Ft.	3,000	\$50	\$150,000
Retaining Walls	SF	148,000	\$36	\$5,328,000
Bridge	SF	70,592	\$80	\$5,647,360
Landscaping & Aesthetics	L.Sum	1	\$1,000,000	\$1,000,000
Construction Survey	L.Sum	1	\$500,000	\$500,000
Other Items	L.Sum	1	\$2,600,000	\$2,600,000
Maintenance Of Traffic	L.Sum	1	\$1,800,000	\$1,800,000
Mobilization 10%	L.Sum	1	\$2,655,222	\$2,655,222
			<b>15% Construction Contingency =</b>	\$5,041,117
			<b>Total Estimated Construction Cost =</b>	\$38,649,000
			<b>Public Art 1% =</b>	\$386,490
			<b>15% Construction Management =</b>	\$5,797,350
			<b>15% Engineering and Planning =</b>	\$5,797,350
			<b>Environmental Mitigation =</b>	\$410,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$13,400,000
			<b>Total Project Cost =</b>	\$64,440,190

**Assumptions:**

- \*Project Similar to ADOT Project I-10 Reconstruction - Ruthrauff to Prince
- \*In a 6-Lane Section With Raised Landscaped Median Grade Separated over the Railroad and I-10
- \*Lower I-10 to Grade
- \*Raise Frontage Roads to Intersect with Ruthrauff

**Ruthrauff over RR**

Assumptions: Average Exst Pavement Width = I-10 112', Ruthrauff, Frontage Roads, Ramps, Sidestreets and Drives Measured in Microstation  
 Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal - Asphalt			423,198	47,022	\$2	\$94,044
Pavement Removal - I-10 (Asphalt)	112	3,090	346,080	38,453	\$2	\$76,907
Pavement Removal - PCCP			116,647	12,961	\$4	\$51,843
Remove Exst Bridge	120	180	21,600	2,400	\$60	\$144,000
Misc Removals		11,890			\$100	\$1,189,000
					Total =	\$1,283,044

Prince 30% Estimate

- 50000
- 25000
- 150000
- 10000
- 1250
- 61250
- 93800
- 69160
- 99530
- 718610
- 142530
- 15000
- 15000
- 18850
- 15250
- 15480
- 10800
- 5070

**\$1,516,580**

**Ruthrauff over RR**

Assumptions: Excavation from I-10 will be used for fill areas

**Excavation**

<b>Location</b>	<b>Aver. End Area</b>	<b>Length</b>	<b>CF</b>	<b>CY</b>
EB I-10 Mainline	1,100	3,090	3,399,000	125,889
WB I-10 Mainline	1,100	3,090	3,399,000	125,889
			<b>Total =</b>	<b>251,778</b>

**Fill**

<b>Location</b>	<b>Aver. End Area</b>	<b>Length</b>	<b>CF</b>	<b>CY</b>
Westbound Frontage Road	1,800	2,400	4,320,000	160,000
Eastbound Frontage Road	1,500	2,400	3,600,000	133,333
Ina (East)	2,500	1,200	3,000,000	111,111
Ina (West)	2,000	1,200	2,400,000	88,889
Davis Ave	400	460	184,000	6,815
Highway Dr	400	440	176,000	6,519
Drive (NW)	150	200	30,000	1,111
Drive (SW)	150	300	45,000	1,667
			<b>Total =</b>	<b>509,444</b>

Fill =	509444
Excavation =	251778
Difference =	257667
10% Shrink =	25767
<b>Borrow =</b>	<b>283433</b>

**Ruthrauff over RR**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB  
 Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
PCCP - I-10 Mainline	426,000	47,333	\$53	\$2,510,000
PCCP - Westbound Frontage Road	139,400	15,489	\$53	\$821,347
PCCP - Eastbound Frontage Road	178,400	19,822	\$53	\$1,051,136
AC - Ruthrauff (East)	182,500	20,278	\$21	\$433,961
AC - Ruthrauff (West)	158,400	17,600	\$21	\$376,655
<b>Total =</b>				<b>\$5,193,100</b>

**Price/SY**

	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

**Price/SY = \$21.40**

**Concrete Pmnt Price/SY**

4" AC	47,333	11	\$520,667
Load Trans Dowel	1600	60	\$96,000
14" PCCP	47,333	40	\$1,893,333
		Total =	\$2,510,000
		<b>Price/SY =</b>	<b>\$53.03</b>



**Ruthrauff over RR**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	6,000	33,000

**Ruthrauff over RR**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

<b>Item</b>	<b>Length</b>	<b>C &amp; G</b>	<b>LF</b>
<b>Curb and Gutter - Ina</b>	3,570	4	14,280
<b>Curb and Gutter - I-10</b>	3,000	4	12,000
<b>Curb and Gutter - WBFR</b>	2,400	4	9,600
<b>Curb and Gutter - EBFR</b>	2,400	4	9,600

45,480



**Ruthrauff over RR**

Assumptions: Signing and Striping will be similar to ADOT Project I-10, Ruthrauff to Prince

<b>Similar Project I-10, Ruthrauff to Prince</b>	<b>Signs</b>	<b>Marking</b>		
	\$100,000	\$14,860		
	\$12,000	\$6,170		
	\$63,000	\$5,410		
	\$18,000	\$4,800		
	\$5,500	\$2,130		
	\$4,500	\$16,660		
	\$15,000	\$1,290		
	\$15,300	\$16,660		
	\$44,000	\$1,290		
<b>Total =</b>	<b>\$277,300</b>	<b>\$69,270</b>	<b>\$346,570</b>	<b>\$350,000.00</b>

**Ruthrauff over RR**

Assumptions: Two Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
Signalized Intersections	2	\$200,000	\$400,000

I-10 Ruthrauff to Prince = \$765,000

**Ruthrauff over RR**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Assume no Utilities in I-10

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	9,000	\$70	\$630,000

**Ruthruaff over RR**

Assumptions: Median Barrier Along Entire Length of I-10

Concrete Median Barrier	3,000
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**Ruthrauff over RR**

Assumptions: Similar to ADOT Project I-10, Ruthrauff to Prince

<b>I-10 Ruthrauff to Prince =</b>	<b>\$1,000,000</b>
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**Ruthrauff over RR**

Assumptions: Similar to ADOT Project I-10, Ruthrauff to Prince

<b>Item</b>	<b>SF</b>
<b>Retaining Walls I-10, Ruthrauff to Prince</b>	148,000

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
1,140	15	17,100
530	12	6,360
870	12	10,440
300	8	2,400
360	12	4,320
770	15	11,550
450	6	2,700
850	15	12,750
810	15	12,150
250	14	3,500
670	14	9,380
590	12	7,080
320	6	1,920
	<b>Total SF =</b>	<b>101,650</b>

**Ruthrauff over RR**

Assumptions: Widen Exst Bridge 34' (Both Sides)

Item	Width	Length	SF
<b>New Bridges</b>			
I-10 =	152	328	49,856
RR =	162	128	20,736
		<b>Total =</b>	70,592

**Railroad Underpass at Grant Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,120,041	\$1,120,041
Excavation	C.Y.	21,047	\$5	\$105,236
Pavement	L.Sum	1	\$1,386,578	\$1,386,578
Drainage	L.Sum	1	\$2,425,436	\$2,425,436
Sidewalk	SF	31,900	\$4	\$127,600
Curb & Gutter	L.Ft.	11,600	\$15	\$174,000
Signing & Marking	L.Sum	1	\$26,390	\$26,390
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$290,000	\$290,000
Street Lighting	L.Sum	1	\$64,624	\$64,624
Retaining Walls	SF	21,300	\$40	\$852,000
Roadway Bridges	SF	17,892	\$80	\$1,431,360
Railroad Bridges (Main Track & Temp Shoofly)	SF	17,892	\$120	\$2,147,040
Railroad Shoofly	L.Sum	1	\$3,200,000	\$3,200,000
Landscaping & Aesthetics	L.Sum	1	\$1,520,000	\$1,520,000
Construction Survey	L.Sum	1	\$760,000	\$760,000
Other Items	L.Sum	1	\$1,520,000	\$1,520,000
Maintenance Of Traffic	L.Sum	1	\$1,520,000	\$1,520,000
Mobilization 10%	L.Sum	1	\$1,907,030	\$1,907,030
			<b>15% Construction Contingency =</b>	\$3,146,600
			<b>Total Estimated Construction Cost =</b>	\$24,124,000
			<b>Public Art 1% =</b>	\$241,240
			<b>15% Construction Management =</b>	\$3,618,600
			<b>15% Engineering and Planning =</b>	\$3,618,600
			<b>Environmental Mitigation =</b>	\$355,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$8,600,000
			<b>Total Project Cost =</b>	\$40,557,440

**Assumptions:**

- \*Grant 6-Lane Section With Raised Landscaped Median Grade Separated under the Railroad and I-10
- \*I-10 Bridges will be reconstructed by ADOT prior to Grant being widened and will accommodate the new Grant section
- \*Dual left turns will be provided for the Frontage Roads
- \*A railroad shoofly will be required to construct new railroad bridge including a temporary bridge



**Grant Under RR**

Assumptions: Areas Measured in Microstation

Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

Exst Retaining Walls Aver. Height = 12'

<b>Item</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal - Asphalt</b>	22,914	2,546	\$2	\$5,092
<b>Pavement Removal - PCCP</b>	146,385	16,265	\$4	\$65,060
<b>Remove Exst Railroad Bridge</b>	6,000	667	\$100	\$66,667
<b>Remove Railroad Shoofly Bridge</b>	7,940	882	\$100	\$88,222
<b>Remove Exst Retaining Walls</b>	10,800	1,200	\$40	\$48,000
<b>Remove Shoofly (LF)</b>	5570		\$100	\$557,000
<b>Misc Removals (LF)</b>	2900		\$100	\$290,000
			Total =	\$1,120,041

**Grant Under RR**

Assumptions: Excavation Behind Exst Walls - Aver Height = 12'

There is no fill on this Project

**Excavation**

<b>Location</b>	<b>Area</b>	<b>Aver Height</b>	<b>CF</b>	<b>CY</b>
North Side of Grant	32,100	12	385,200	14,267
South Side of Grant	15,256	12	183,072	6,780
			<b>Total =</b>	<b>21,047</b>

**Grant Under RR**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB & 6" PCCP, 4"AB  
 Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
PCCP - Grant	200,654	22,295	\$51	\$1,137,039
AC - Grant (East of RR)	33,470	3,719	\$21	\$79,587
AC - Grant (West of RR)	71,472	7,941	\$21	\$169,951
			<b>Total =</b>	<b>\$1,386,578</b>

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

**Price/SY = \$21.40**

Concrete Pvmt Price/SY			
4" AC	22,295	\$11	\$245,244
Load Trans Dowel	0	\$60	\$0
6" PCCP	22,295	\$40	\$891,796
		Total =	\$1,137,039
		<b>Price/SY =</b>	<b>\$51.00</b>

**Grant Under RR**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole-Aver Length 120'

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,584	\$80	\$126,720
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$773,520
		<b>0.55 Miles New Drainage Structures=</b>		\$425,436
Reconstruct Pump Station	L.Sum			\$2,000,000
		<b>Total Drainage =</b>		\$2,425,436

**Grant Under RR**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	5,800	31,900

**Grant Under RR**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	2,900	4	11,600

**Grant Under RR**

Assumptions: Standard Striping for a Six Lane Roadway, Thirteen Signalized Intersections with 12" Stop Bars and Crosswalks  
Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
Assume 20 Signs/Mile & Stop Signs @ Cross Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount
<b>Striping:</b>	<b>Mile</b>				
Four 4" Lane Stripes	LF	2,900	2,900	\$0.50	\$1,450
Four 4" Dashed Lane Stripes	LF	2,900	725	\$0.50	\$3,300
Intersection Striping	LF	1,350	4,050	\$0.50	\$13,000
Signs	Each	11	0	\$540.00	\$5,940
Stop Signs (Total Crossroads)	Each	5	0	\$540.00	\$2,700
				<b>Lump Sum =</b>	<b>\$26,390</b>

**Grant Under RR**

Assumptions: New Signals at Frontage Roads

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals at Frontage Roads	2	\$200,000	\$400,000
	<b>I-10 Ruthrauff to Prince =</b>		<b>\$400,000</b>



**Grant Under RR**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Assume no Utilities in I-10

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	2,900	\$100	\$290,000

**Grant Under RR**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	12	\$200	\$2,400
Remove Exst Light Foundations	Each	12	\$500	\$6,000
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	12	\$500	\$6,000
Pull Boxes	Each	12	\$300	\$3,600
			<b>Construction Cost per Mile =</b>	<b>\$170,064</b>
			<b>0.38 Miles =</b>	<b>\$64,624</b>

**Grant Under RR**

Assumptions: New Retaining Walls will be constructed at the back of sidewalk

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
955	12	11,460
820	12	9,840
	<b>Total SF =</b>	<b>21,300</b>

**Grant Under RR**

Assumptions: New Railroad Bridge and Temporary Railroad Shoofly Bridge  
Area Measured in Microstation

Item	SF
<b>New Bridges</b>	
Railroad Bridge =	9,952
Railroad Shoofly Bridge =	7,940
	17,892

**Railroad Underpass at Speedway Boulevard  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,099,620	\$1,099,620
Excavation	C.Y.	14,222	\$5	\$71,111
Pavement	L.Sum	1	\$1,106,296	\$1,106,296
Drainage	L.Sum	1	\$939,925	\$939,925
Sidewalk	SF	21,780	\$4	\$87,120
Curb & Gutter	L.Ft.	7,920	\$15	\$118,800
Signing & Marking	L.Sum	1	\$24,850	\$24,850
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$198,000	\$198,000
Street Lighting	L.Sum	1	\$69,823	\$69,823
Retaining Walls	SF	23,040	\$40	\$921,600
Roadway Bridges	SF	9,200	\$80	\$736,000
Railroad Bridges (Main Track & Temp Shoofly)	SF	13,300	\$120	\$1,596,000
Railroad Shoofly	L.Sum	1	\$3,200,000	\$3,200,000
Landscaping & Aesthetics	L.Sum	1	\$1,060,000	\$1,060,000
Construction Survey	L.Sum	1	\$530,000	\$530,000
Other Items	L.Sum	1	\$1,060,000	\$1,060,000
Maintenance Of Traffic	L.Sum	1	\$1,060,000	\$1,060,000
Mobilization 10%	L.Sum	1	\$1,427,915	\$1,427,915
			<b>15% Construction Contingency =</b>	\$2,356,059
			<b>Total Estimated Construction Cost =</b>	\$18,063,000
			<b>Public Art 1% =</b>	\$180,630
			<b>15% Construction Management =</b>	\$2,709,450
			<b>15% Engineering and Planning =</b>	\$2,709,450
			<b>Environmental Mitigation =</b>	\$436,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$5,400,000
			<b>Total Project Cost =</b>	\$29,498,530

**Assumptions:**

- \*Speedway 6-Lane Section With Raised Landscaped Median Grade Separated under the Railroad and I-10
- \*A New Drainage Facility will be required to drain the low point under the RR to the Santa Cruz
- \*I-10 Bridges will be reconstructed by ADOT prior to Speedway being widened and will accommodate the new Speedway sec
- \*Frontage road access will be reconstructed, including two new bridges
- \*A Two Track Railroad Shoofly will be required to construct new railroad bridge including a temporary bridge

**Speedway Under RR**

Assumptions: Areas Measured in Microstation

Misc Removals; Curb &amp; Gutter, Sidewalk, Inlets, etc. at \$100/LF

Exst Retaining Walls Aver. Height = 12'

<b>Item</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal - Asphalt</b>	131,100	14,567	\$2	\$29,133
<b>Pavement Removal - PCCP</b>	87,820	9,758	\$4	\$39,031
<b>Remove Exst Railroad Bridge</b>	5,700	633	\$100	\$63,333
<b>Remove Railroad Shoofly Bridge</b>	4,760	529	\$100	\$52,889
<b>Remove Exst Bridge (West)</b>	3,670	408	\$75	\$30,583
<b>Remove Exst Bridge (East)</b>	3,030	337	\$75	\$25,250
<b>Remove Exst Retaining Walls</b>	23,040	2,560	\$40	\$102,400
<b>Remove Shoofly (LF)</b>	5600		\$100	\$560,000
<b>Misc Removals (LF)</b>	1970		\$100	\$197,000
			Total =	\$1,099,620

**Speedway Under RR**

Assumptions: Excavation Behind Exst Walls - Aver Height = 10'

There is no fill on this Project

**Excavation**

<b>Location</b>	<b>Aver. End Area</b>	<b>Length</b>	<b>CF</b>	<b>CY</b>
North Side of Speedway	200	1,000	200,000	7,407
South Side of Speedway	200	920	184,000	6,815
			<b>Total =</b>	<b>14,222</b>

**Speedway Under RR**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB & 6" PCCP, 4"AB  
 Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
PCCP - Westbound Speedway	162,000	18,000	\$51	\$918,000
AC - Speedway (East of RR)	65,404	7,267	\$21	\$155,522
AC - Speedway (West of RR)	13,783	1,531	\$21	\$32,774
			<b>Total =</b>	<b>\$1,106,296</b>

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

**Price/SY = \$21.40**

Concrete Pvmt Price/SY			
4" AC	18,000	\$11	\$198,000
Load Trans Dowel	0	\$60	\$0
6" PCCP	18,000	\$40	\$720,000
		Total =	\$918,000
		<b>Price/SY =</b>	<b>\$51.00</b>



**Speedway Under RR**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole  
 New 78" RCP to Drain Low Spot Under the RR to the Santa Cruz

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		\$762,960
		<b>0.38 Miles New Drainage Structures=</b>		\$289,925
78" Pipe	LF	1,300	\$500	\$650,000
			<b>Total =</b>	<b>\$939,925</b>

**Speedway Under RR**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	1,980	21,780

**Speedway Under RR**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter - Speedway	1,980	4	7,920

**Speedway Under RR**

Assumptions: Standard Striping for a Six Lane Roadway, Thirteen Signalized Intersections with 12" Stop Bars and Crosswalks  
Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
Assume 20 Signs/Mile & Stop Signs @ Cross Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount
<b>Striping:</b>	<b>Mile</b>				
Four 4" Lane Stripes	LF	1,980	1,980	\$0.50	\$990
Four 4" Dashed Lane Stripes	LF	1,980	495	\$0.50	\$3,300
Intersection Striping	LF	1,000	3,000	\$0.50	\$13,000
Signs	Each	8	0	\$540.00	\$4,320
Stop Signs (Total Crossroads)	Each	6	0	\$540.00	\$3,240
				<b>Lump Sum =</b>	<b>\$24,850</b>

**Speedway Under RR**

Assumptions: New Signals at Speedway and Main

Signals at Speedway and Frontage Roads will be Relocated

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals at Main	1	\$200,000	\$200,000
Relocate Signals	2	\$100,000	\$200,000
	<b>I-10 Ruthrauff to Prince =</b>		<b>\$400,000</b>

**Speedway Under RR**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Assume no Utilities in I-10

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	1,980	\$100	\$198,000

**Speedway Under RR**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$183,744</b>
			<b>0.38 Miles =</b>	<b>\$69,823</b>

**Speedway Under RR**

Assumptions: New Retaining Walls will be constructed at the back of sidewalk

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
1,000	12	12,000
920	12	11,040
	<b>Total SF =</b>	<b>23,040</b>



**Speedway Under RR**

Assumptions: New Railroad Bridge and Temporary Railroad Shoofly Bridge

Two New Frontage Road Bridges to Replace Exst - Area Measured in Microstation

Item	Width	Length	SF
<b>New Bridges</b>			
Frontage Road (West) =	0	0	4,600
Frontage Road (East) =	0	0	4,600
RR Bridge =	60	140	8,400
RR Shoofly Bridge =	35	140	4,900
	<b>Total Roadway Bridge=</b>		9,200
	<b>Total Railroad Bridge=</b>		13,300

**Sahuarita Road, La Canada Drive to Country Club Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$2,532,362	\$2,532,362
Earthwork	L.Sum	1	\$1,892,333	\$1,892,333
Pavement	SY	176,483	\$21	\$3,776,890
Drainage	L.Sum	1	\$3,283,319	\$3,283,319
Sidewalk	SF	231,000	\$4	\$924,000
Curb & Gutter	L.Ft.	84,000	\$15	\$1,260,000
Signing & Marking	L.Sum	1	\$102,740	\$102,740
Traffic Signals	L.Sum	1	\$1,000,000	\$1,000,000
Utilities	L.Sum	1	\$2,100,000	\$2,100,000
Bridge	SF	46,161	\$80	\$3,692,880
Landscaping & Aesthetics	L.Sum	1	\$1,200,000	\$1,200,000
Construction Survey	L.Sum	1	\$500,000	\$500,000
Other Items	L.Sum	1	\$2,000,000	\$2,000,000
Maintenance Of Traffic	L.Sum	1	\$2,000,000	\$2,000,000
Mobilization 10%	L.Sum	1	\$2,626,452	\$2,626,452
			<b>15% Construction Contingency =</b>	\$4,333,647
			<b>Total Estimated Construction Cost =</b>	\$33,225,000
			<b>Public Art 1% =</b>	\$332,250
			<b>15% Construction Management =</b>	\$4,983,750
			<b>15% Engineering and Planning =</b>	\$4,983,750
			<b>Environmental Mitigation Cost =</b>	\$111,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$1,100,000
			<b>Total Project Cost =</b>	\$44,735,750

**Assumptions:**

- \*4-Lane Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 4 Miles
- \*New Bridge Structure Over The Santa Cruz River
- \*Approximate Construction Cost/Mile = \$8,300,000

Sahuarita Road

Item	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal (From Quants Drawing)	NA	778,251	86,472	\$5	\$432,362
Misc Removals	21,000			\$100	\$2,100,000
				Total =	\$2,532,362

**Sahuarita Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Excavation Width Based on Misc. ditch grading

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	114	21,000	2,394,000	4	9,576,000	354,667		
Excavation	50	21,000	1,050,000	1	1,050,000	38,889	\$4	\$155,556
Borrow						315,778	\$5.5	\$1,736,778
							Total =	\$1,892,333

**Sahuarita Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	1,588,350	176,483	\$21.40	\$3,776,890

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Sahuarita Road**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Project Length	Sidewalk Length	SF
Sidewalk	5.5	21,000	42,000	231,000

**Sahuarita Road**

Assumptions: Continuous C&G (both sides) for 21,000ft

Item	Length	C & G	LF
Curb and Gutter	21,000	4	84,000



**Sahuarita Road**

Assumptions: Standard Striping for a Four Lane Roadway, Five Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 15 General Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 4 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$42,240
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$5,280
Intersection Striping	LF	2,000	10,000	\$0.50	\$5,000	\$5,000
Signs	Each	15	0	\$540.00	\$8,100	\$32,400
Stop Signs (Total Crossroads)	Each	33	0	\$540.00	\$17,820	\$17,820
					<b>Lump Sum =</b>	<b>\$102,740</b>

**Sahuarita Road**

Assumptions: 4 New Signals - 1 Future Signal At Rancho Sahuarits Blv

<b>Item</b>	<b>Each</b>	<b>Unit Price</b>	<b>Extended Amount</b>
New Signals	5	\$200,000	\$1,000,000
Modify Exist. Signals	0	\$100,000	\$0
<b>TOTAL =</b>			<b>\$1,000,000</b>

**Sahuarita Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	21,000	\$100	\$2,100,000

**Sahuarita Road**

<b>New Bridge Structure</b>	<b>Width</b>	<b>Length</b>	<b>SF (From Quants Drawing)</b>
Sahuarita/I-19	-	-	22,114
Sahuarits/Sant Cruz River	-	-	24,047
<b>TOTAL =</b>			<b>46,161</b>

**Silverbell Road, Ina Road to Grant Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,104,278	\$1,104,278
Earthwork	L.Sum	1	\$2,251,000	\$2,251,000
Pavement	L.Sum	1	\$4,903,918	\$4,903,918
Drainage	L.Sum	1	\$9,243,022	\$9,243,022
Sidewalk	SF	238,790	\$4	\$955,160
Multit-Use-Path	SF	180,000	\$2	\$360,000
Curb & Gutter	L.Ft.	107,560	\$15	\$1,613,400
Concrete Header	L.Ft.	30,000	\$5	\$150,000
Signing & Marking	L.Sum	1	\$273,591	\$273,591
Traffic Signals	L.Sum	1	\$1,000,000	\$1,000,000
Utilities	L.Sum	1	\$2,528,000	\$2,528,000
Landscaping & Aesthetics	L.Sum	1	\$2,000,000	\$2,000,000
Construction Survey	L.Sum	1	\$500,000	\$500,000
Other Items	L.Sum	1	\$2,500,000	\$2,500,000
Maintenance Of Traffic	L.Sum	1	\$2,500,000	\$2,500,000
Mobilization 10%	L.Sum	1	\$3,188,237	\$3,188,237
			<b>15% Construction Contingency =</b>	\$5,260,591
			<b>Total Estimated Construction Cost =</b>	\$40,331,000
			<b>Public Art 1% =</b>	\$403,310
			<b>15% Construction Management =</b>	\$6,049,650
			<b>15% Engineering and Planning =</b>	\$6,049,650
			<b>Environmental Mitigation =</b>	\$622,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$8,500,000
			<b>Total Project Cost =</b>	\$61,955,610

**Assumptions:**

- \*Project Limits Taken From Ina Road To Grant Road
- \*3-Lane Section With Multi-Use-Path From Ina Road To Sunset Road
- \*4-Lane Section With Raised Landscaped Median From Sunset Road To Grant Road
- \*150' Min. ROW
- \*Project Length = 7.6 Miles
- \*HDR's DCR Estimate For The El Camino del Cerro To Grant Included In Item Totals
- \*Approximate Construction Cost/Mile = \$5,200,000

**Silverbell Road**

Assumptions: Average Exst Pavement 70' Width for Length of Project  
Misc Removals; Clear & Grub, etc.

Item	Width	Length	SF (From Quants Drawing)	SY	Unit Cost	Extended Amount
Pavement Removal	30	20,900	605,300	67,256	\$5	\$336,278
Misc Removals		20,900			\$20	\$418,000
					Total =	\$754,278

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	LS
Removals	\$200,000
Clear & Grubb	\$150,000

HDR Total = \$350,000

Removal Total For Both Segments = \$1,104,278

**Silverbell Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
 Excavation Areas Assumed In a Couple of Locations Where The Alignment Is Near The Existing Hills Adjacent To Silverbell

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	60	20,900	1,254,000	3	3,762,000	139,333		
Excavation			150,000	6	900,000	33,333	\$4	\$133,333
Drainage Excavation			18,000	10	180,000	6,667	\$5	\$33,333
Borrow						99,333	\$5.5	\$546,333
							Total =	\$713,000

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	CY	Unit Cost	Extended Amount
Drainage Excavation + Roadway Ex.	113,000	\$8	\$936,000
Borrow	86,000	\$7.0	\$602,000
		Total =	\$1,538,000

Earthwork Total For Both Segments = \$2,251,000

**Silverbell Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	Ave Width	Length	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	NA	NA	1,162,350	129,150	\$21.40	\$2,763,918

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

<b>Price/SY =</b>	<b>\$21.40</b>
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**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	Unit	Quantity	Unit Price	Amount
AB	CU YD	33,000	\$20	\$660,000
AC	TON	37,000	\$40	\$1,480,000
HDR Total =				\$2,140,000

**Pavement Total For Both Segments = \$4,903,918**





**Silverbell Road**

Assumptions: Continuous Sidewalk (both sides) for 5,890ft

Item	Width	Length	SF
Sidewalk	5.5	11,780	64,790

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	SF
Sidewalk	174,000

**TOTAL = 238,790**

**Silverbell Road**

Assumptions: Continuous Concrete Header on Non-Curbed Section From Ina To Sunset - 15,000ft

Item	Length
MUP	30,000

**Silverbell Road**

Assumptions: Continuous Multi-Use-Path (both sides) for first 15,000ft

Item	Width	Length	SF
MUP	6	30,000	180,000

**Silverbell Road**

Assumptions: Continuous C&G (both sides) for 5,890ft

Item	Length	C & G	LF
Curb and Gutter	5,890	4	23,560

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	SF
C&G	84,000

**TOTAL = 107,560**

**Silverbell Road**

Assumptions: Standard Striping for a Four Lane Roadway (quants for four lane even though first portion is only 3 lane), Two Signalized Intersections with 12" Stop Bars and Crosswalks  
 Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.96 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$41,818
Four 4" Dashed Lane Stripes	LF	5,280	6,600	\$0.50	\$3,300	\$13,068
Intersection Striping	LF	2,000	4,000	\$0.50	\$2,000	\$2,000
Signs	Each	20	0	\$540.00	\$10,800	\$42,768
Stop Signs (Total Crossroads)	Each	14	0	\$540.00	\$7,560	\$29,938
					<b>Total=</b>	<b>\$129,591</b>

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Pvmt Markings</b>	LF	141000	\$1.00	\$141,000.00
<b>Raised Pvmt Markers</b>	Each	1000	\$3.00	\$3,000.00
			<b>Total=</b>	<b>\$144,000.00</b>

**TOTAL = 273,591**

**Silverbell Road**

Assumptions: Two Signalized Intersections

Item	Each	Unit Price	Extended Amount
Signalized Intersections	2	\$200,000	\$400,000

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Signalized Intersections	Each	3	\$200,000.00	\$600,000.00

**TOTAL = 1,000,000**

**Silverbell Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project  
Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	20,930	\$100	\$2,093,000

**HDR ESTIMATE**

Includes 19,400ft of Silverbell - (North of El Camino del Cerro to Grant)

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Water Line Relocation	L.Sum	1	\$325,000.00	\$325,000.00
Sewer Line Relocation	L.Sum	1	\$110,000.00	\$110,000.00
			<b>Total=</b>	<b>\$435,000.00</b>

**TOTAL = 2,528,000**



**Silverbell Road**

Assumptions: New 6'x 8' x138' Concrete Box Culvert

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	2.468	138	341	\$450.00	\$153,263
Reinforcing Steel (LB/FT) =	403.000	138	55,614	\$0.75	\$41,711
				<b>Lump Sum =</b>	<b>\$194,973</b>

**Speedway Boulevard, Camino Seco to Houghton Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$273,667	\$273,667
Pavement	L.Sum	1	\$2,049,843	\$2,049,843
Drainage	L.Sum	1	\$2,415,975	\$2,415,975
Sidewalk	SF	135,465	\$4	\$541,860
Curb & Gutter	L.Ft.	49,260	\$15	\$738,900
Signing & Marking	L.Sum	1	\$77,212	\$77,212
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$1,847,250	\$1,847,250
Street Lights	L.sum	1	\$206,680	\$206,680
Screen Walls	SF	22,715	\$20	\$454,300
Landscaping & Aesthetics	L.Sum	1	\$175,000	\$175,000
Construction Survey	L.Sum	1	\$175,000	\$175,000
Other Items	L.Sum	1	\$850,000	\$850,000
Maintenance Of Traffic	L.Sum	1	\$850,000	\$850,000
Mobilization 10%	L.Sum	1	\$1,105,569	\$1,105,569
			<b>15% Construction Contingency =</b>	\$1,824,188
			<b>Total Estimated Construction Cost =</b>	\$13,985,000
			<b>Public Art 1% =</b>	\$139,850
			<b>15% Construction Management =</b>	\$2,097,750
			<b>15% Engineering and Planning =</b>	\$2,097,750
			<b>Environmental Mitigation =</b>	\$143,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$350,000
			<b>Total Project Cost =</b>	\$18,813,400

**Assumptions:**

- \*150' Min. ROW
- \*4-Lane Section With Raised Landscaped Median
- \*Project Length = 2.33 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Houghton Intersection Is Not Included In This Project
- \*Approximate Construction Cost/Mile = \$6,266,000

**Speedway**

Assumptions: Average Exst Pavement 40' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	40	12,315	492,600	54,733	\$5	\$273,667
					Total =	\$273,667

**Speedway**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC &amp; 4" AB

Average Pavement Width = 70' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	70	12315	862,050	95,783	\$21.40	\$2,049,843

**Total**      \$2,049,843

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**



**Speedway**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	24,630	135,465

**Speedway**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	12,315	4	49,260

**Speedway**

Assumptions: Standard Striping for a Four Lane Roadway, Two Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 2.33 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$24,605
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$3,076
Intersection Striping	LF	2,000	4,000	\$0.50	\$2,000	\$2,000
Signs	Each	20	0	\$600.00	\$12,000	\$27,960
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$19,572
					<b>Lump Sum =</b>	<b>\$77,212</b>



**Speedway**

Assumptions: Two Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
Signalized Intersections	2	\$200,000	\$400,000

**Speedway**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	12,315	\$150	\$1,847,250



**Speedway**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	3,245	22,715

**Sunset Road, Silverbell Road to River Road (Grade Separate UPRR)  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,274,767	\$1,274,767
Excavation	C.Y.	251,778	\$5	\$1,258,889
Borrow	C.Y.	373,104	\$6	\$2,238,622
Pavement	L.Sum	1	\$4,938,109	\$4,938,109
Drainage	L.Sum	1	\$1,727,468	\$1,727,468
Sidewalk	SF	44,770	\$4	\$179,080
Curb & Gutter	L.Ft.	41,700	\$15	\$625,500
Signing & Marking	L.Sum	1	\$356,784	\$356,784
Traffic Signals	L.Sum	1	\$600,000	\$600,000
Utilities	L.Sum	1	\$284,900	\$284,900
Street Lighting	L.Sum	1	\$1,000,000	\$1,000,000
Concrete Median Barrier	L.Ft.	3,000	\$50	\$150,000
Retaining Walls	SF	73,170	\$36	\$2,634,120
Bridge	SF	124,530	\$80	\$9,962,400
Landscaping & Aesthetics	L.Sum	1	\$1,500,000	\$1,500,000
Construction Survey	L.Sum	1	\$500,000	\$500,000
Other Items	L.Sum	1	\$2,300,000	\$2,300,000
Maintenance Of Traffic	L.Sum	1	\$2,300,000	\$2,300,000
Mobilization 10%	L.Sum	1	\$2,923,064	\$2,923,064
			<b>15% Construction Contingency =</b>	\$5,513,055
			<b>Total Estimated Construction Cost =</b>	\$42,267,000
			<b>Public Art 1% =</b>	\$422,670
			<b>15% Construction Management =</b>	\$6,340,050
			<b>15% Engineering and Planning =</b>	\$6,340,050
			<b>Environmental Mitigation =</b>	\$406,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$750,000
			<b>Total Project Cost =</b>	\$56,526,270

**Assumptions:**

- \*Project Similar to ADOT Project I-10 Reconstruction - Ruthrauff to Prince
- \*Sunset 3-Lane Section With Vertical Curb and 6' Sidewalks
- \*Grade Separate Sunset With Santa Cruz River, I-10, UPRR, & The Rillito River
- \*Lower I-10 to Grade
- \*Raise Frontage Roads to Intersect with Ina
- \*Project Length = 1.1 Miles

**Sunset over I-10/UPRR/Rillito**

Assumptions: Exst Pavement - I-10, Frontage Roads, Ramps, Sidestreets and Drives Measured in Microstation  
Misc Removals; Curb & Gutter, Sidewalk, Inlets, etc. at \$100/LF

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal - Asphalt</b>			385,950	42,883	\$2	\$85,767
<b>Pavement Removal - PCCP</b>			242,000	26,889	\$4	\$107,556
<b>Remove Exst Bridge</b>	120	180	21,600	2,400	\$60	\$144,000
<b>Misc Removals</b>		11,890			\$100	\$1,189,000
					<b>Total =</b>	<b>\$1,274,767</b>

**Sunset over I-10/UPRR/Rillito**

Assumptions: Excavation from I-10 will be used for fill areas

**Excavation**

Location	Aver. End Area	Length	CF	CY
EB I-10 Mainline	1,100	3,090	3,399,000	125,889
WB I-10 Mainline	1,100	3,090	3,399,000	125,889
			<b>Total =</b>	<b>251,778</b>

**Fill**

Location	Aver. End Area	Length	CF	CY
Westbound Frontage Road	1,800	2,400	4,320,000	160,000
Eastbound Frontage Road	1,500	2,400	3,600,000	133,333
Sunset	2,000	4,000	8,000,000	296,296
Drive	150	130	19,500	722
Drive	150	80	12,000	444
Drive	150	30	4,500	167
			<b>Total =</b>	<b>590,963</b>

Fill =	590963
Excavation =	251778
Difference =	339185
10% Shrink =	33919
<b>Borrow =</b>	<b>373104</b>

**Sunset over I-10/UPRR/Rillito**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Areas Taken From Microstation Shapes

Item	SF	SY	Price/SY =	Extended Amount
PCCP - I-10 Mainline	426,000	47,333	\$53	\$2,510,000
PCCP - Westbound Frontage Road	139,400	15,489	\$53	\$821,347
PCCP - Eastbound Frontage Road	178,400	19,822	\$53	\$1,051,136
AC - Sunset	200,165	22,241	\$21	\$475,966
AC - Ramps	33,500	3,722	\$21	\$79,659
<b>Total =</b>				<b>\$4,938,109</b>

**Price/SY**

	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY = \$21.40**

**Concrete Pmnt Price/SY**

4" AC	47,333	11	\$520,667
Load Trans Dowel	1600	60	\$96,000
14" PCCP	47,333	40	\$1,893,333
		Total =	\$2,510,000
		<b>Price/SY =</b>	<b>\$53.03</b>





**Sunset over I-10/UPRR/Rillito**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	8,140	44,770

**Sunset over I-10/UPRR/Rillito**

Assumptions: Continuous Curb & Gutter (both sides) full length of Project

<b>Item</b>	<b>Length</b>	<b>C &amp; G</b>	<b>LF</b>
<b>Curb and Gutter - Sunset</b>	4,070	2	8,140
<b>Curb and Gutter - River (Median)</b>	1,180	2	2,360
<b>Curb and Gutter - I-10</b>	3,000	4	12,000
<b>Curb and Gutter - WBFR</b>	2,400	4	9,600
<b>Curb and Gutter - EBFR</b>	2,400	4	9,600

41,700

**Sunset over I-10/UPRR/Rillito**

Assumptions: Signing and Striping will be similar to ADOT Project I-10, Ruthrauff to Prince

Similar Project I-10, Ruthrauff to Prince	Signs	Marking		
	\$100,000	\$14,860		
	\$12,000	\$6,170		
	\$63,000	\$5,410		
	\$18,000	\$4,800		
	\$5,500	\$2,130		
	\$4,500	\$16,660		
	\$15,000	\$1,290		
	\$15,300	\$16,660		
	\$44,000	\$1,290		
<b>Total =</b>	\$277,300	\$69,270	<b>\$346,570</b>	<b>\$350,000.00</b>

**Sunset Road**

Assumptions: Standard Striping for a 3 Lane Roadway, One Signalized Intersections with 12" Stop Bars and Crosswalks

Sunset Quantities Taken From 1600' East of I-10

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 0.2 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$2,112
Zero 4" Dashed Lane Stripes	LF	5,280	0	\$0.50	\$0	\$0
Intersection Striping	LF	2,000	2,000	\$0.50	\$1,000	\$1,000
Signs	Each	20	0	\$540.00	\$10,800	\$2,160
Stop Signs (Total Crossroads)	Each	14	0	\$540.00	\$7,560	\$1,512
					<b>Total=</b>	<b>\$6,784</b>

Signing & Marking TOTAL = \$356,784

**Sunset over I-10/UPRR/Rillito**

Assumptions: Three New Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	3	\$200,000	\$600,000

**Sunset over I-10/UPRR/Rillito**

Assumptions: Adjust/Relocate all Utilities for Length of Sunset

Assume no Utilities in I-10

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	4,070	\$70	\$284,900

**Sunset over I-10/UPRR/Rillito**

Assumptions: Median Barrier Along Entire Length of I-10

Concrete Median Barrier	3,000
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**Sunset over I-10/UPRR/Rillito**

Assumptions: Similar to ADOT Project I-10, Ruthrauff to Prince

I-10 Ruthrauff to Prince =	<b>\$1,000,000</b>
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**Sunset over I-10/UPRR/Rillito**

Assumptions: Similar to ADOT Project I-10, Ruthrauff to Prince

<b>Item</b>	<b>SF</b>
<b>Retaining Walls I-10, Ruthrauff to Prince</b>	148,000

<b>Length</b>	<b>Aver. Height</b>	<b>SF</b>
1,610	15	24,150
1,685	12	20,220
1,350	12	16,200
1,050	12	12,600
	<b>Total SF =</b>	<b>73,170</b>

**Sunset over I-10/UPRR/Rillito**

Assumptions: 3 new bridges - Areas taken from quants drawing

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>
<b>New Bridges</b>			
Sunset/Santa Cruz River =	NA	NA	73,700
I-10 =	NA	NA	15,530
RR =	NA	NA	7,300
Rillito =	NA	NA	28,000
		<b>Total =</b>	124,530

**Sunset Road, Silverbell Road To I-10  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$61,260	\$61,260
Earthwork	L.Sum	1	\$349,409	\$349,409
Pavement	L.Sum	1	\$217,088	\$217,088
Drainage	L.Sum	1	\$259,406	\$259,406
Sidewalk	SF	33,693	\$4	\$134,772
Curb & Gutter	L.Ft.	6,126	\$15	\$91,890
Signing & Marking	L.Sum	1	\$17,774	\$17,774
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$153,150	\$153,150
Bridge	SF	73,700	\$80	\$5,896,000
Landscaping & Aesthetics	L.Sum	1	\$200,000	\$200,000
Construction Survey	L.Sum	1	\$150,000	\$150,000
Other Items	L.Sum	1	\$400,000	\$400,000
Maintenance Of Traffic	L.Sum	1	\$50,000	\$50,000
Mobilization 10%	L.Sum	1	\$818,075	\$818,075
			<b>15% Construction Contingency =</b>	\$1,349,824
			<b>Total Estimated Construction Cost =</b>	\$10,349,000
			<b>Public Art 1% =</b>	\$103,490
			<b>15% Construction Management =</b>	\$1,552,350
			<b>15% Engineering and Planning =</b>	\$1,552,350
			<b>Environmental Mitigation =</b>	\$129,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$550,000
			<b>Total Project Cost =</b>	\$14,236,690

**Assumptions:**

- \*Project Limits Taken From Silverbell To The EBFR
- \*3-Lane Section With 6' Sidewalk & Vertical Curb
- \*150' Min. ROW
- \*Project Length = 0.58 Miles
- \*Approximate Construction Cost/Mile = \$19,000,000

**Sunset Road**

Assumptions: No Exist. Pvmnt. Removals  
Misc Removals; Clear & Grub, etc.

Item	Width	Length	SF (From Quants Drawing)	SY	Unit Cost	Extended Amount
Pavement Removal	0	3,063	0	0	\$5	\$0
Misc Removals		3,063			\$20	\$61,260
					<b>Total =</b>	<b>\$61,260</b>

**Sunset Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length

No Excavation Areas Assumed

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	70	3,063	214,410	8	1,715,280	63,529		
Excavation			0	6	0	0	\$4	\$0
Drainage Excavation			0	10	0	0	\$5	\$0
Borrow						63,529	\$5.5	\$349,409
							<b>Total =</b>	<b>\$349,409</b>

**Sunset Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	Ave Width	Length	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	NA	NA	91,295	10,144	\$21.40	\$217,088

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Sunset Road**

Assumptions: Continuous Sidewalk (both sides) for 3,063ft

Item	Width	Length	SF
Sidewalk	5.5	6,126	33,693



**Sunset Road**

Assumptions: Continuous C&G (both sides) for 3,063ft

Item	Length	C & G	LF
Curb and Gutter	3,063	2	6,126

**Sunset Road**

Assumptions: Standard Striping for a Three Lane Roadway, One Signalized Intersections with 12" Stop Bars and Crosswalks  
 Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
 Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
 Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 0.58 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$6,125
Zero 4" Dashed Lane Stripes	LF	5,280	6,600	\$0.50	\$3,300	\$0
Intersection Striping	LF	2,000	2,000	\$0.50	\$1,000	\$1,000
Signs	Each	20	0	\$540.00	\$10,800	\$6,264
Stop Signs (Total Crossroads)	Each	14	0	\$540.00	\$7,560	\$4,385
					<b>Total=</b>	<b>\$17,774</b>

**Sunset Road**

Assumptions: New Signalized Intersection At The EBFR

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	1	\$200,000	\$200,000

**Sunset Road**

Assumptions: No Existing Adjusting/Relocating

Misc. New Utilities

Item	Length	Unit Cost	Extended Amount
<b>Misc. Utilities</b>	3,063	\$50	\$153,150

**Sunset Over Santa Cruz River**

<b>New Bridge Structure</b>	<b>Width</b>	<b>Length</b>	<b>SF (From Quants Drawing</b>
Sunset/Santa Cruz River	-	-	73,700

**Sunset Road, Silverbell Road to River Road (At-Grade UPRR Crossing)  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$294,456	\$294,456
Earthwork	L.Sum	1	\$401,182	\$401,182
Pavement	L.Sum	1	\$813,705	\$813,705
Drainage	L.Sum	1	\$890,659	\$890,659
Sidewalk	SF	63,888	\$4	\$255,552
Curb & Gutter	L.Ft.	13,976	\$15	\$209,640
Signing & Marking	L.Sum	1	\$18,558	\$18,558
Traffic Signals	L.Sum	1	\$600,000	\$600,000
Utilities	L.Sum	1	\$604,000	\$604,000
Bridge	SF	101,700	\$80	\$8,136,000
Landscaping & Aesthetics	L.Sum	1	\$500,000	\$500,000
Construction Survey	L.Sum	1	\$250,000	\$250,000
Other Items	L.Sum	1	\$1,300,000	\$1,300,000
Maintenance Of Traffic	L.Sum	1	\$100,000	\$100,000
Mobilization 10%	L.Sum	1	\$1,297,375	\$1,297,375
			<b>15% Construction Contingency =</b>	\$2,350,669
			<b>Total Estimated Construction Cost =</b>	\$18,022,000
			<b>Public Art 1% =</b>	\$180,220
			<b>15% Construction Management =</b>	\$2,703,300
			<b>15% Engineering and Planning =</b>	\$2,703,300
			<b>Environmental Mitigation =</b>	\$466,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$750,000
			<b>Total Project Cost =</b>	\$24,825,320

**Assumptions:**

- \*Sunset 3-Lane Section With Vertical Curb and 6' Sidewalks
- \*At-Grade Crossing of Sunset With UPRR
- \*150' Min. ROW
- \*Project Length = 1.1 Miles
- \*Approximate Construction Cost/Mile = \$17,000,000

**Sunset Silverbell To River**

Assumptions: SF taken from quants drawing

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal - Asphalt</b>			18,250	2,028	\$2	\$4,056
<b>Pavement Removal - PCCP</b>			38,700	4,300	\$4	\$17,200
<b>Misc Removals</b>		5,808			\$50	\$290,400
					<b>Total =</b>	<b>\$294,456</b>

**Sunset Silverbell To River**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length

Minor Excavation Assumed

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	70	5,808	406,560	5	2,032,800	75,289		
Excavation	20	5,808	116,160	2	232,320	8,604	\$4	\$34,418
Drainage Excavation			0	10	0	0	\$5	\$0
Borrow						66,684	\$5.5	\$366,764
							<b>Total =</b>	<b>\$401,182</b>



**Sunset Silverbell To River**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Areas Taken From quants drawing

Item	SF	SY	Price/SY =	Extended Amount
PCCP - Sunset Road In ADOT ROW	47,200	5,244	\$69	\$363,467
AC - Sunset	189,345	21,038	\$21	\$450,238
			<b>Total =</b>	<b>\$813,705</b>

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY		
4" AB	3	0.111	\$30		\$3.33

<b>Price/SY =</b>	<b>\$21.40</b>
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Concrete Pmnt Price/SY			
4" AC	5,244	11	\$57,689
Load Trans Dowel	1600	60	\$96,000
14" PCCP	5,244	40	\$209,778
		Total =	\$363,467
		<b>Price/SY =</b>	<b>\$69.31</b>

**Sunset Silverbell To River**

Assumptions: AVer 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,452	\$80	\$116,160
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
			<b>Construction Cost per Mile =</b>	<b>\$762,960</b>
		<b>1.1 Miles New Drainage Structures=</b>		<b>\$839,256</b>

**Assumptions: 1 New 10'x 10' x 30' Concrete Box Culvert Extension (2-Barrel)**

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC Extension At The River Park Tunnel</b>			<b>CY or LBS</b>		
Concrete (CY/FT) =	2.963	30	89	\$450.00	\$40,001
Reinforcing Steel (LB/FT) =	398.000	30	11,940	\$0.75	\$8,955
			<b>Subtotal Cost per Culvert=</b>		<b>\$48,956</b>

Item	Amount
Headwalls For CBC - (Cost Taken 5% of Total CBC)	\$2,448

**DRAINAGE TOTAL = \$890,659**

**Sunset Silverbell To River**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	11,616	63,888

**Sunset Silverbell To River**

Assumptions: Continuous Curb & Gutter (both sides) full length of Project

<b>Item</b>	<b>Length</b>	<b>C &amp; G</b>	<b>LF</b>
<b>Curb and Gutter - Sunset</b>	5,808	2	11,616
<b>Curb and Gutter - River (Median)</b>	1,180	2	2,360
			13,976

**Sunset Silverbell To River**

Assumptions: Standard Striping for a 3 Lane Roadway, Three Signalized Intersections with 12" Stop Bars and Crosswalks

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 GP Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 1.1 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$11,616
Zero 4" Dashed Lane Stripes	LF	5,280	0	\$0.50	\$0	\$0
Intersection Striping	LF	2,000	6,000	\$0.50	\$3,000	\$3,000
Signs	Each	20	0	\$540.00	\$10,800	\$2,160
Stop Signs (Total Crossroads)	Each	3	0	\$540.00	\$1,620	\$1,782
					<b>Total=</b>	<b>\$18,558</b>

**Signing & Marking TOTAL = \$18,558**

**Sunset Silverbell To River**

Assumptions: Three New Signalized Intersections

Item	Each	Unit Price	Extended Amount
Signalized Intersections	3	\$200,000	\$600,000

**Sunset Silverbell To River**

Assumptions: Minor Utility Adjustments Since New Alignment

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Utility Adjustment:</b>	5,080	\$50	\$254,000
<b>At-Grade RR Crossing:</b>	1	\$350,000	\$350,000
<b>Total =</b>			<b>\$604,000</b>

**Sunset Silverbell To River**

Assumptions: 2 new bridges - Areas taken from quants drawing

Item	Width	Length	SF
<b>New Bridges</b>			
Santa Cruz River =	NA	NA	73,700
Rillito River =	NA	NA	28,000
		<b>Total =</b>	101,700



**Tangerine Road, I-10 to La Canada Drive  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,801,066	\$1,801,066
Earthwork	L.Sum	1	\$3,707,013	\$3,707,013
Pavement	L.Sum	1	\$8,494,585	\$8,494,585
Drainage	L.Sum	1	\$5,173,656	\$5,173,656
Multi-Use-Path	SF	310,080	\$2	\$620,160
Median Curb	L.Ft.	104,580	\$15	\$1,568,700
Concrete Header	L.Ft.	104,580	\$5	\$522,900
Signing & Marking	L.Sum	1	\$1,706,014	\$1,706,014
Traffic Signals	L.Sum	1	\$1,000,000	\$1,000,000
Bridges	SF	87,872	\$80	\$7,029,760
Utilities	L.Sum	1	\$2,964,500	\$2,964,500
Landscaping & Aesthetics	L.Sum	1	\$3,400,000	\$3,400,000
Construction Survey	L.Sum	1	\$760,000	\$760,000
Other Items	L.Sum	1	\$3,800,000	\$3,800,000
Maintenance Of Traffic	L.Sum	1	\$3,800,000	\$3,800,000
Mobilization 10%	L.Sum	1	\$4,634,835	\$4,634,835
			<b>15% Construction Contingency =</b>	\$7,647,478
			<b>Total Estimated Construction Cost =</b>	\$58,631,000
			<b>Public Art 1% =</b>	\$586,310
			<b>15% Construction Management =</b>	\$8,794,650
			<b>15% Engineering and Planning =</b>	\$8,794,650
			<b>Environmental Mitigation =</b>	\$696,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$3,500,000
			<b>Total Project Cost =</b>	\$81,002,610

**Assumptions:**

- \*Project Limits Taken From I-10 to La Canada
- \*4-Lane Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 9.90 Miles
- \*No Outside Curb
- \*No Storm Drain System
- \*Approximate Construction Cost/Mile = \$6,000,000

**Tangerine Road**

Assumptions: Average Exst Pavement 30' Width for Length of Project  
Misc Removals; Clear & Grub, etc.

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	26	52,289	1,359,514	151,057	\$5	\$755,286
<b>Misc Removals</b>		52,289			\$20	\$1,045,780
					Total =	\$1,801,066

**Tangerine Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Assumed No Excavation Areas

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	60	52,289	3,137,340	6	18,824,040	697,187		
Excavation	60	52,289	3,137,340	2	6,274,680	232,396	\$4	\$929,582
Drainage Excavation			50,920	6	305,520	11,316	\$5	\$56,578
Borrow						453,476	\$6.0	\$2,720,853
							Total =	\$3,707,013

**Tangerine Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB  
 Areas Measured in Microstation

Item	Ave Width	Length	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	NA	NA	3,572,350	396,928	\$21.40	\$8,494,585

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY = \$21.40

	Total Area	Medians
Pvmt Area (With Medians) =	4696843	350
-Medians =	1124493	985
Total Pvmt =	3572350	91836
		5501
		502026
		114362
		114327
		4237
		3935
		145827
		84486
		26447
		30174
		<b>Total Median Area =</b>
		1124493

**Tangerine Road**

Assumptions: No Pavement Drainage System

Assumptions: 15 New 6'x 6' x 125' Concrete Box Culverts (6-Barrel)

Item	Unit	Aver. Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	3.752	150	563	\$450.00	\$253,260
Reinforcing Steel (LB/FT) =	498.800	150	74,820	\$0.75	\$56,115
				Subtotal Cost per Culvert=	<b>\$309,375</b>
				<b>Total For 15 Culverts =</b>	<b>\$4,640,625</b>

Item	Amount
Headwalls For CBC - (Cost Taken 5% of Total CBC)	<b>\$232,031</b>

Assumptions: 19 New 42" RCP for Misc. Crossings

Cross Drainage:		Unit of Measure	Quantity	Unit Price	Extended Amount
Item					
42" Pipe		LF	3,010	\$100	<b>\$301,000</b>

	\$4,640,625
	\$232,031
	\$301,000
<b>Drainage Total =</b>	<b>\$5,173,656</b>

**Tangerine Road**

Assumptions: Continuous Multi-Use-Path (both sides) From Dove Mountain to La Canada for 25,840ft

Item	Width	Length	SF
Multi-Use-Path	6	51,680	310,080

**Tangerine Road**

Assumptions: Median C&G Only for 52,290ft

Concrete Header at Outside Edge of Pavement

Item	Length	C & G	LF
Curb and Gutter	52,290	2	104,580

**Tangerine Road**

Assumptions: Concrete Header at Outside Edge of Pavement

Item	Length	C & G	LF
Concrete Header	52,290	2	104,580



**Tangerine Road**

Assumptions: Standard Striping for a Four Lane Roadway , Four Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 10 Signs/Mile & 15 Stop Signs @ Side Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.96 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	52,290	209,160	\$0.50	\$104,580	\$1,035,342
Two 4" Dashed Lane Stripes	LF	52,290	26,145	\$0.50	\$13,073	\$129,418
Intersection Striping	LF	2,600	7,800	\$0.50	\$3,900	\$3,900
Signs	Each	99	0	\$540.00	\$53,460	\$529,254
Stop Signs (Total Crossroads)	Each	15	0	\$540.00	\$8,100	\$8,100
					<b>Total=</b>	<b>\$1,706,014</b>

**Tanterine Road**

Assumptions: Five Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	5	\$200,000	\$1,000,000

**Tangerine Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Utility Adjustment:</b>	52,290	\$50	\$2,614,500
<b>At-Grade RR Crossing:</b>	1	\$350,000	\$350,000
<b>Total =</b>			<b>\$2,964,500</b>

## Tangerine Road

Assumptions: New bidges over Tangerine

Item	Width	Length	SF
<b>New Bridges</b>			
WB I-10 =	60	144	8,640
EB I-10 =	60	144	8,640
		<b>Total =</b>	<b>87,872</b>

**Tanque Verde Road, Catalina Highway to Houghton Road  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
Removals	L.Sum	1	\$195,667	\$195,667
Pavement	L.Sum	1	\$1,465,600	\$1,465,600
Drainage	L.Sum	1	\$1,221,238	\$1,221,238
Sidewalk	SF	96,855	\$4	\$387,420
Curb & Gutter	L.Ft.	35,220	\$15	\$528,300
Signing & Marking	L.Sum	1	\$54,908	\$54,908
Traffic Signals	L.Sum	1	\$200,000	\$200,000
Utilities	L.Sum	1	\$1,320,750	\$1,320,750
Street Lights	L.sum	1	\$148,136	\$148,136
Screen Walls	SF	43,645	\$20	\$872,900
Landscaping & Aesthetics	L.Sum	1	\$150,000	\$150,000
Construction Survey	L.Sum	1	\$150,000	\$150,000
Other Items	L.Sum	1	\$650,000	\$650,000
Maintenance Of Traffic	L.Sum	1	\$650,000	\$650,000
Mobilization 10%	L.Sum	1	\$799,492	\$799,492
			<b>15% Construction Contingency =</b>	\$1,319,161
			<b>Total Estimated Construction Cost =</b>	\$10,114,000
			<b>Public Art 1% =</b>	\$101,140
			<b>15% Construction Management =</b>	\$1,517,100
			<b>15% Engineering and Planning =</b>	\$1,517,100
			<b>Environmental Mitigation =</b>	\$107,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$750,000
			<b>Total Project Cost =</b>	\$14,106,300

**Assumptions:**

- \*120' Min. ROW
- \*4-Lane Section With Raised Landscaped Median
- \*Project Length = 1.67 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Houghton Intersection Is Not Included In This Project
- \*Approximate Construction Cost/Mile = \$6,300,000

**Tanque Verde**

Assumptions: Average Exst Pavement 40' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	40	8,805	352,200	39,133	\$5	\$195,667
					Total =	\$195,667

**Tanque Verde**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 70' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	70	8805	616,350	68,483	\$21.40	\$1,465,600

**Total**      \$1,465,600

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**

**Tanque Verde**

Assumptions: Aver 36" Trunk Line, Inlets & Manhole spaced at 400', 24" Laterals from Inlets to Manhole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Drainage:</b>		<b>Per/Mile</b>		
Pipe	LF	5,280	\$100	\$528,000
Pipe - Laterals	LF	1,056	\$80	\$84,480
Inlets	Each	26	\$3,000	\$79,200
Manholes	Each	13	\$3,000	\$39,600
		<b>Construction Cost per Mile =</b>		<b>\$731,280</b>
		<b>1.67 Miles =</b>		<b>\$1,221,238</b>



**Tanque Verde**

Assumptions: Continuous Sidewalk (both sides) full length of Project

Item	Width	Length	SF
Sidewalk	5.5	17,610	96,855

**Tanque Verde**

Assumptions: Continuous Curb & Gutter (both sides & median) full length of Project

Item	Length	C & G	LF
Curb and Gutter	8,805	4	35,220

**Tanque Verde**

Assumptions: Standard Striping for a Four Lane Roadway, One Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Pay Length</b>	<b>Unit Price</b>	<b>Extended Amount</b>	<b>Total For 1.67 Miles</b>
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$17,635
Two 4" Dashed Lane Stripes	LF	5,280	2,640	\$0.50	\$1,320	\$2,204
Intersection Striping	LF	2,000	2,000	\$0.50	\$1,000	\$1,000
Signs	Each	20	0	\$600.00	\$12,000	\$20,040
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$14,028
					<b>Lump Sum =</b>	<b>\$54,908</b>

**Tanque Verde**

Assumptions: One Exst Signalized Intersections to Remain Signalized

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	1	\$200,000	\$200,000

**Tanque Verde**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	8,805	\$150	\$1,320,750

**Tanque Verde**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	<b>\$88,704</b>
			<b>1.67 Miles =</b>	<b>\$148,136</b>

**Tanque Verde**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	6,235	43,645

**Twin Peaks Road, Silverbell to Linda Vista (Including I-10 TI)  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$230,500	\$230,500
Earthwork	L.Sum	1	\$4,207,890	\$4,207,890
Bridges	L.Sum	1	\$11,797,200	\$11,797,200
Retaining Walls	L.Sum	1	\$3,192,508	\$3,192,508
Sound Walls	L.Sum	1	\$708,000	\$708,000
Pavement	L.Sum	1	\$3,366,110	\$3,366,110
Drainage	L.Sum	1	\$6,395,352	\$6,395,352
Channel Bank Protection	L.Sum	1	\$868,900	\$868,900
Dust Palliative	L.Sum	1	\$700,000	\$700,000
Sidewalk	L.Sum	1	\$137,340	\$137,340
Curb & Gutter	L.Sum	1	\$400,699	\$400,699
Barrier	L.Sum	1	\$404,200	\$404,200
Signing & Marking	L.Sum	1	\$1,000,000	\$1,000,000
Lighting & FMS	L.Sum	1	\$400,000	\$400,000
Traffic Signals	L.sum	1	\$1,000,000	\$1,000,000
Landscaping & Aesthetics	L.Sum	1	\$2,000,000	\$2,000,000
Maintenance Of Traffic	L.Sum	1	\$4,000,000	\$4,000,000
Mobilization	L.Sum	1	\$5,000,000	\$5,000,000
Utilities	L.Sum	1	\$1,000,000	\$1,000,000
Transmission Line Relocation	L.Sum	1	\$300,000	\$300,000
Other Items 10%	L.Sum	1	\$4,710,870	\$4,710,870
			<b>15% Construction Contingency =</b>	<b>\$7,773,000</b>
			<b>Total Estimated Construction Cost =</b>	<b>\$59,593,000</b>
			<b>Public Art 1%</b>	<b>\$595,930</b>
			<b>Engineering and Planning =</b>	<b>\$4,660,000</b>
			<b>Environmental Mitigation =</b>	<b>\$691,500</b>
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	<b>\$4,250,000</b>
			<b>Estimated UPRR Contribution For The Grade-Seperated Crossing =</b>	<b>\$137,000</b>
			<b>Total Project Cost =</b>	<b>\$69,653,430</b>

**Assumptions:**

- \*Estimate Taken From the Final DCR Dated August 10, 2005
- \*Project Limits Taken From Exist. Twin Peaks To Just North of Linda Vista
- \*Project Estimate Includes the Mill/Overlay of Twin Peaks From Silverbell to Twin Peaks Tie-In
- \*The Eng. and Plan. Cost Includes the Geotech. And Struct. Eng. Required For the Santa Cruz River Bridges
- \*Twin Peaks - 4-Lane Urban Roadway From Exist. Twin Peaks To Just North of Linda Vista
- \*ROW Width Varies Throughout the Project Limits



**Valencia Road, Ajo Way to Mark Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,032,900	\$1,032,900
Earthwork	L.Sum	1	\$683,800	\$683,800
Pavement	L.Sum	1	\$4,462,992	\$4,462,992
Drainage	L.Sum	1	\$6,560,294	\$6,560,294
Sidewalk	SF	309,870	\$4	\$1,239,480
Curb & Gutter	L.Ft.	112,680	\$15	\$1,690,200
Signing & Marking	L.Sum	1	\$492,857	\$492,857
Traffic Signals	L.Sum	1	\$600,000	\$600,000
Utilities	L.Sum	1	\$1,408,500	\$1,408,500
Street Lighting	L.Sum	1	\$507,514	\$507,514
Landscaping & Aesthetics	L.Sum	1	\$1,870,000	\$1,870,000
Construction Survey	L.Sum	1	\$400,000	\$400,000
Other Items	L.Sum	1	\$1,870,000	\$1,870,000
Maintenance Of Traffic	L.Sum	1	\$1,870,000	\$1,870,000
Mobilization 10%	L.Sum	1	\$2,468,854	\$2,468,854
			<b>15% Construction Contingency =</b>	\$4,073,608
			<b>Total Estimated Construction Cost =</b>	\$31,231,000
			<b>Public Art 1% =</b>	\$312,310
			<b>15% Construction Management =</b>	\$4,684,650
			<b>15% Engineering and Planning =</b>	\$4,684,650
			<b>Environmental Mitigation =</b>	\$224,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$450,000
			<b>Total Project Cost =</b>	\$41,586,610

**Assumptions:**

- \*Project Limits Taken From Ajo Road To Mark Road
- \*4-Lane Urban Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 5.76 Miles
- \*Project Cost/Mile = \$5,400,000

**Valencia Road**

Assumptions: Average Exst Pavement 30' Width for Length of Project  
Misc Removals; Clear & Grub, etc.

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	30	28,170	845,100	93,900	\$5	\$469,500
<b>Misc Removals</b>		28,170			\$20	\$563,400
					Total =	\$1,032,900

**Valencia Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Assumed No Excavation Areas

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	60	28,170	1,690,200	2	3,380,400	125,200		
Excavation			0	0	0	0	\$4	\$0
Drainage Excavation			43,200	6	259,200	9,600	\$5	\$48,000
Borrow						115,600	\$5.5	\$635,800
							Total =	\$683,800

**Valencia Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	Ave Width	Length	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	NA	NA	1,876,886	208,543	\$21.40	\$4,462,992

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Valencia Road**

Assumptions: Continuous Sidewalk (both sides) for 28,170ft

Item	Width	Length	SF
Sidewalk	5.5	56,340	309,870

**Valencia Road**

Assumptions: Continuous C&G (both sides) for 28,170ft

Item	Length	C & G	LF
Curb and Gutter	28,170	4	112,680

**Valencia Road**

Assumptions: Standard Striping for a Four Lane Roadway , Four Intersections with 12" Stop Bars and Crosswalks  
 Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)  
 Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each  
 Assume 20 Signs/Mile & 11 Stop Signs @ Side Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.96 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	28,170	112,680	\$0.50	\$56,340	\$223,106
Two 4" Dashed Lane Stripes	LF	28,170	14,085	\$0.50	\$7,043	\$27,888
Intersection Striping	LF	3,000	9,000	\$0.50	\$4,500	\$4,500
Signs	Each	100	0	\$540.00	\$54,000	\$213,840
Stop Signs (Total Crossroads)	Each	11	0	\$540.00	\$5,940	\$23,522
					<b>Total=</b>	<b>\$492,857</b>



**Valencai Road**

Assumptions: Three Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	3	\$200,000	\$600,000

**Valencai Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Utility Adjustment:</b>	28,170	\$50	\$1,408,500

**Valencia Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	\$95,040
			<b>5.34 Miles =</b>	\$507,514

**Valencia Road, Kolb Road to Houghton Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$581,667	\$581,667
Pavement	L.Sum	1	\$5,290,464	\$5,290,464
Drainage	L.Sum	1	\$4,578,718	\$4,578,718
Sidewalk	SF	287,925	\$4	\$1,151,700
Curb & Gutter	L.Ft.	104,700	\$15	\$1,570,500
Signing & Marking	L.Sum	1	\$169,656	\$169,656
Traffic Signals	L.Sum	1	\$600,000	\$600,000
Utilities	L.Sum	1	\$3,926,250	\$3,926,250
Street Lights	L.sum	1	\$366,643	\$366,643
Screen Walls	SF	0	\$20	\$0
At-Grade RR Crossing	L.Sum	1	\$500,000	\$500,000
Landscaping & Aesthetics	L.Sum	1	\$375,000	\$375,000
Construction Survey	L.Sum	1	\$350,000	\$350,000
Other Items	L.Sum	1	\$1,750,000	\$1,750,000
Maintenance Of Traffic	L.Sum	1	\$1,250,000	\$1,250,000
Mobilization 10%	L.Sum	1	\$2,246,060	\$2,246,060
			<b>15% Construction Contingency =</b>	\$3,705,999
			<b>Total Estimated Construction Cost =</b>	\$28,413,000
			<b>Public Art 1% =</b>	\$284,130
			<b>15% Construction Management =</b>	\$4,261,950
			<b>15% Engineering and Planning =</b>	\$4,261,950
			<b>Environmental Mitigation =</b>	\$830,000
			<b>Agency Estimated ROW Acquisition Cost =</b>	\$200,000
			<b>Total Project Cost =</b>	\$38,251,000

**Assumptions:**

- \*150' Min. ROW
- \*6-Lane Urban Section With Raised Landscaped Median
- \*Project Length = 4.96 Miles
- \*7' Screen Walls Were Included Across the Residential Parcels
- \*Houghton Intersection Is Not Included In This Project
- \*Approximate Construction Cost/Mile = \$6,000,000

**Valencia Road**

Assumptions: Average Exst Pavement 40' Width for Length of Project

Item	Width	Length	SF	SY	Unit Cost	Extended Amount
Pavement Removal	40	26,175	1,047,000	116,333	\$5	\$581,667
					Total =	\$581,667

**Valencia Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Average Pavement Width = 85' (Including Intersections and Turnouts)

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Mainline	85	26175	2,224,875	247,208	\$21.40	\$5,290,464

**Total**      \$5,290,464

Price/SY						
	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

**Price/SY =**      **\$21.40**



**Valencia Road**

Assumptions: Continuous Sidewalk (both sides)

Item	Width	Length	SF
Sidewalk	5.5	52,350	287,925



**Valencia Road**

Assumptions: Continuous Curb & Gutter (both sides & median)

Item	Length	C & G	LF
Curb and Gutter	26,175	4	104,700

**Valencia Road**

Assumptions: Standard Striping for a Six Lane Roadway, Three Signalized Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 14 Stop Signs/Mile

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 4.96 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	5,280	21,120	\$0.50	\$10,560	\$52,378
Four 4" Dashed Lane Stripes	LF	5,280	5,280	\$0.50	\$2,640	\$13,094
Intersection Striping	LF	2,000	6,000	\$0.50	\$3,000	\$3,000
Signs	Each	20	0	\$600.00	\$12,000	\$59,520
Stop Signs (Total Crossroads)	Each	14	0	\$600.00	\$8,400	\$41,664
					<b>Lump Sum =</b>	<b>\$169,656</b>

**Valencia Road**

Assumptions: Three Signalized Intersections

Item	Each	Unit Price	Extended Amount
Signalized Intersections	3	\$200,000	\$600,000

**Valencia Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Utility Adjustment:</b>	26,175	\$150	\$3,926,250

**Valencia Road**

Assumptions: Street Lighting Both Sides of Street, Camino Seco to Old Spanish Trail  
Poles Spaced at 500', One Pullbox/Pole

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
<b>Lighting:</b>	<b>Mile</b>			
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
		<b>Construction Cost per Mile =</b>		<b>\$73,920</b>
		<b>4.96 Miles =</b>		<b>\$366,643</b>

**Valencia Road**

Assumptions: 7' High Screen Walls at Residential Areas

Item	Height	Length	SF
Walls	7	0	0

**Valencia Road, I-19 to Alvernon Road (Controlled Access Only)  
DRAFT - COST ESTIMATE**

October 10, 2005

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
			<b>Construction Cost Sub Total =</b>	\$10,000,000
			<b>15% Construction Contingency =</b>	-
			<b>Total Estimated Construction Cost =</b>	\$10,000,000
			<b>Public Art 1% =</b>	-
			<b>15% Construction Management =</b>	-
			<b>15% Engineering and Planning =</b>	-
			<b>Environmental Mitigation =</b>	-
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	-
			<b>Total Project Cost =</b>	\$10,000,000

**Assumptions:**

\*Cost is For Controlled Access Improvements Only

\*Cost Taken From The City's Original Estimate

\*Project Length = 4.5miles

**Valencia Road, Alvernon Road to Kolb Road (Improvements)  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$1,335,306	\$1,335,306
Earthwork	L.Sum	1	\$1,162,957	\$1,162,957
Pavement	L.Sum	1	\$5,132,372	\$5,132,372
Drainage	L.Sum	1	\$5,568,387	\$5,568,387
Sidewalk	SF	249,425	\$4	\$997,700
Curb & Gutter	L.Ft.	90,700	\$15	\$1,360,500
Signing & Marking	L.Sum	1	\$459,804	\$459,804
Traffic Signals	L.Sum	1	\$800,000	\$800,000
Utilities	L.Sum	1	\$1,133,750	\$1,133,750
Street Lighting	L.Sum	1	\$408,672	\$408,672
Bridge	L.Sum	59,068	\$80	\$4,725,440
Landscaping & Aesthetics	L.Sum	1	\$2,300,000	\$2,300,000
Construction Survey	L.Sum	1	\$400,000	\$400,000
Other Items	L.Sum	1	\$2,300,000	\$2,300,000
Maintenance Of Traffic	L.Sum	1	\$2,300,000	\$2,300,000
Mobilization 10%	L.Sum	1	\$3,038,489	\$3,038,489
			<b>15% Construction Contingency =</b>	\$5,013,506
			<b>Total Estimated Construction Cost =</b>	\$38,437,000
			<b>Public Art 1% =</b>	\$384,370
			<b>15% Construction Management =</b>	\$5,765,550
			<b>15% Engineering and Planning =</b>	\$5,765,550
			<b>Environmental Mitigation =</b>	\$372,500
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$400,000
			<b>Total Project Cost =</b>	\$51,124,970

**Assumptions:**

- \*Project Limits Taken From Ajo Road To Mark Road
- \*4-Lane Urban Section With Raised Landscaped Median
- \*150' Min. ROW
- \*Project Length = 5.76 Miles
- \*Approximate Construction Cost/Mile = \$6,700,000



**Valencia Road**

Assumptions: Average Exst Pavement 70' Width for Length of Project  
Misc Removals; Clear & Grub, etc.

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	70	22,675	1,587,250	176,361	\$5	\$881,806
<b>Misc Removals</b>		22,675			\$20	\$453,500
					Total =	\$1,335,306

**Valencia Road**

Assumptions: Average Fill Width Is Based on Hinge Point To Hinge Point Distance For Project Length  
Assumed No Excavation Areas

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	84	22,675	1,904,700	3	5,714,100	211,633		
Excavation			0	0	0	0	\$4	\$0
Drainage Excavation			9,240	6	55,440	2,053	\$5	\$10,267
Borrow						209,580	\$5.5	\$1,152,690
							Total =	\$1,162,957

**Valencia Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB

Item	Ave Width	Length	SF (From Quants Drawing)	SY	Price/SY =	Extended Amount
Pavement	NA	NA	2,158,390	239,821	\$21.40	\$5,132,372

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Valencia Road**

Assumptions: Continuous Sidewalk (both sides) for 22,675ft

Item	Width	Length	SF
Sidewalk	5.5	45,350	249,425

**Valencia Road**

Assumptions: Continuous C&G (both sides) for 22,675ft

Item	Length	C & G	LF
Curb and Gutter	22,675	4	90,700

**Valencia Road**

Assumptions: Standard Striping for a Four Lane Roadway , Four Intersections with 12" Stop Bars and Crosswalks

Ten Foot Dashed Stripes with Thirty Foot Spacing (Total Length x 10/40)

Average sign 6 SF x \$20/SF = \$120 + Sign Post \$20 Each + Foundation \$400 Each = \$540 Each

Assume 20 Signs/Mile & 19 Stop Signs @ Side Streets

Item	Unit of Measure	Quantity	Pay Length	Unit Price	Extended Amount	Total For 3.96 Miles
<b>Striping:</b>	<b>Mile</b>					
Four 4" Lane Stripes	LF	22,675	90,700	\$0.50	\$45,350	\$179,586
Two 4" Dashed Lane Stripes	LF	22,675	11,338	\$0.50	\$5,669	\$22,448
Intersection Striping	LF	2,200	6,600	\$0.50	\$3,300	\$3,300
Signs	Each	100	0	\$540.00	\$54,000	\$213,840
Stop Signs (Total Crossroads)	Each	19	0	\$540.00	\$10,260	\$40,630
					<b>Total=</b>	<b>\$459,804</b>

**Valencia Road**

Assumptions: Three Signalized Intersections - Two Half Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	4	\$200,000	\$800,000



**Valencia Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

Item	Length	Unit Cost	Extended Amount
Utility Adjustment:	22,675	\$50	\$1,133,750

**Valencia Road**

Assumptions: Street Lighting Both Sides of Street  
Poles Spaced at 500', One Pullbox/Pole

Item	Unit of Measure	Quantity	Unit Price	Extended Amount
<b>Lighting:</b>	<b>Mile</b>			
Remove & Salvage Exst Lights	Each	21	\$200	\$4,224
Remove Exst Light Foundations	Each	21	\$500	\$10,560
Conductor & Conduit	LF	10,560	\$6	\$63,360
Luminaire	Each	21	\$500	\$10,560
Pull Boxes	Each	21	\$300	\$6,336
			<b>Construction Cost per Mile =</b>	\$95,040
			<b>4.3 Miles =</b>	\$408,672

Valencia Road

Assumptions: Widen Exst Bridge 25' (Both Sides)

New I-10 Bridges over Valencia

Item	Width	Length	SF
Bridge Widening			
Northbound =	25	250	6,250
Southbound =	25	250	6,250
New I-10 Bridges over Valencia			
Eastbound =	42	250	10,500
Westbound =	42	250	10,500
		Total =	59,068

**Wilmot Road, I-10 to Sahuarita Road  
DRAFT - COST ESTIMATE**

October 10, 2005

<b>Item</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Extended Amount</b>
Removals	L.Sum	1	\$574,500	\$574,500
Earthwork	L.Sum	1	\$2,105,471	\$2,105,471
Pavement	L.Sum	1	\$4,699,623	\$4,699,623
Drainage	L.Sum	1	\$9,603,961	\$9,603,961
Signing & Marking	L.Sum	1	\$537,462	\$537,462
Traffic Signals	L.Sum	1	\$400,000	\$400,000
Utilities	L.Sum	1	\$549,000	\$549,000
Landscaping & Aesthetics	L.Sum	1	\$1,850,000	\$1,850,000
Construction Survey	L.Sum	1	\$400,000	\$400,000
Other Items	L.Sum	1	\$1,850,000	\$1,850,000
Maintenance Of Traffic	L.Sum	1	\$1,850,000	\$1,850,000
Mobilization 10%	L.Sum	1	\$2,442,002	\$2,442,002
			<b>15% Construction Contingency =</b>	\$4,029,303
			<b>Total Estimated Construction Cost =</b>	\$30,891,000
			<b>Public Art 1% =</b>	\$308,910
			<b>15% Construction Management =</b>	\$4,633,650
			<b>15% Engineering and Planning =</b>	\$4,633,650
			<b>Environmental Mitigation =</b>	\$213,000
			<b>Agency Estimated ROW Acquisition, Relocation Cost =</b>	\$900,000
			<b>Total Project Cost =</b>	\$41,580,210

**Assumptions:**

- \*Project Limits Taken From I-10 To Sahuarita
- \*2-Lane Rural Section
- \*Cross Drain Structures Estimated for a Four Lane Roadway
- \*150' Min. ROW
- \*Project Length = 10.4 Miles
- \*Cost per Mile = 2,940,000

**Wilmot Road**

Assumptions: Average Exst Pavement 30' Width for Length of Existing Pavement (18,000ft)

Misc Removals; Clear & Grub, etc.

<b>Item</b>	<b>Width</b>	<b>Length</b>	<b>SF</b>	<b>SY</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Pavement Removal</b>	30	18,000	540,000	60,000	\$5	\$300,000
<b>Misc Removals</b>		54,900			\$5	\$274,500
					Total =	\$574,500

**Wilmot Road**

Assumptions: Average Fill &amp; Excavation Widths Are Based on Hinge Point To Hinge Point Distance For Project Length

Item	Width (Average)	Length	SF	Depth (Average)	CF	CY	Unit Cost	Extended Amount
Fill	60	41,200	2,472,000	4	9,888,000	366,222		
Excavation	60	13,700	822,000	2	1,644,000	60,889	\$5	\$304,444
Drainage Excavation			139,380	6	836,280	30,973	\$5	\$154,867
Borrow						274,360	\$6.0	\$1,646,160
							Total =	\$2,105,471

**Valencia Road**

Assumptions: Structural Section - 1/2" AR-ACFC, 6" AC & 4" AB  
Standard Two Lane Section

Item	Ave Width	Length	SF	SY	Price/SY =	Extended Amount
Pavement	36	54,900	1,976,400	219,600	\$21.40	\$4,699,623

Price/SY	CF/SY	LB/CF	LBs	Tons	Cost/Ton	Extended Amount
1/2" AR-ACFC	0.375	146.000	54.750	0.027	\$60	\$1.64
6" AC	4.500	146.000	657.000	0.329	\$50	\$16.43

	CF/SY	CY	Cost/CY			
4" AB	3	0.111	\$30			\$3.33

Price/SY =	\$21.40
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**Wilmot Road**

Assumptions: No Pavement Drainage  
 Applies to a 4-Lane Section

Assumptions: 21 New 6'x 6' x 115' Concrete Box Culverts (3-Barrel)

Item	Unit	Aver. Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	1.984	115	228	\$450.00	\$102,672.00
Reinforcing Steel (LB/FT) =	277.800	115	31,947	\$0.75	\$23,960.25
Subtotal Cost per Culvert=					\$126,632.25
<b>Total For 21 Culverts =</b>					<b>\$2,659,277</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$132,964</b>

Assumptions: 19 New 6'x 6' x 125' Concrete Box Culverts (4-Barrel)

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	2.573	115	296	\$450.00	\$133,153
Reinforcing Steel (LB/FT) =	354.300	115	40,745	\$0.75	\$30,558
Subtotal Cost per Culvert=					\$163,711
<b>Total For 19 Culverts =</b>					<b>\$3,110,511</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$155,526</b>

Assumptions: 14 New 6'x 6' x 125' Concrete Box Culvert (5-Barrel)

Item	Unit	Length	Quantity	Unit Cost	Extended Amount
<b>New CBC</b>			CY or LBS		
Concrete (CY/FT) =	3.163	115	364	\$450.00	\$163,685
Reinforcing Steel (LB/FT) =	427.100	115	49,117	\$0.75	\$36,837
Subtotal Cost per Culvert=					\$200,523
<b>Total For 14 Culverts =</b>					<b>\$2,807,317</b>

Item	Amount
<b>Headwalls For CBC - (Cost Taken 5% of Total CBC)</b>	<b>\$140,366</b>

Assumptions: 5 New 42" RCP/Mile for Misc. Crossings = 52

Cross Drainage:					
Item	Unit of Measure	Quantity	Unit Price	Extended Amount	
42" Pipe	LF	5,980	\$100	<b>\$598,000</b>	

\$2,659,277
\$132,964
\$3,110,511
\$155,526
\$2,807,317
\$140,366
\$598,000
<b>Drainage Total = \$9,603,961</b>





**Valencai Road**

Assumptions: Two Signalized Intersections

Item	Each	Unit Price	Extended Amount
<b>Signalized Intersections</b>	2	\$200,000	\$400,000

**Valencai Road**

Assumptions: Adjust/Relocate all Utilities for Length of Project

Remove Electric Poles and Underground Electric

<b>Item</b>	<b>Length</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
<b>Utility Adjustment:</b>	54,900	\$10	\$549,000