

1 **Final Capital Costing Memorandum**
2 **Honolulu High-Capacity Transit Corridor Project**

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4 **Acronyms Used in this Document**

5 AA Alternatives Analysis

6 CSC Composite Section Costs

7 DBEDT State of Hawai‘i Department of Business, Economic Development, and Tourism

8 DTS City and County of Honolulu Department of Transportation Services

9 EIS Environmental Impact Statement

10 ENR Engineering News-Record

11 FTA U.S. Department of Transportation Federal Transit Administration

12 HDOT State of Hawai‘i Department of Transportation

13 LPA Locally Preferred Alternative

14 NEPA National Environmental Policy Act

15 OMPO O‘ahu Metropolitan Planning Organization

16 ORTP O‘ahu Regional Transportation Plan

17 SCC Standard Cost Categories

18 TSM Transportation System Management

19 UH University of Hawai‘i

Purpose of This Memorandum

This memorandum has been prepared to present and summarize the capital cost estimates for the “build” transit alternatives being considered during the Alternatives Analysis (AA) phase of the project. The AA report describes the alternatives and the project in more detail. This memorandum provides the details of the cost estimates mentioned in the AA report.

Capital Costing Methods

The cost estimates are designed to bridge the gap between the very early planning level order-of-magnitude estimates (e.g., \$150-\$200 million per mile) and the final 100% Engineers Estimate in which hundreds of individual items have been detailed and priced.

The 2006 FTA guidelines on cost estimating were used to generate the cost estimates presented. These guidelines employ standard cost categories (SCC) to establish a consistent format for the reporting, estimating, and managing of capital costs for New Starts projects. This method will allow the summary of quantities to be tracked during the follow-on design phases for the locally preferred alternative (LPA). The SCC are divided into construction related items (items 10 through 50) and project related items (items 60 thru 100). The FTA SCC items are broken down as follows for Alternatives 3 and 4:

- 10: Guideway and Track Elements
- 20: Stations, Stops, Terminals, Intermodals
- 30: Support Facilities: Yards, Shops, Admin Buildings
- 40: Site work & Special Conditions
- 50: Systems
- 60: Right-of-Way, Land, Existing Improvements
- 70: Vehicles
- 80: Professional Services (soft costs)
- 90: Unallocated Contingency
- 100: Finance Charges

Initially, unit costs for specific items were established. Examples of items for which unit costs were established include: “trench excavation” (per cubic yard), “labor to install direct fixation rail (excluding welds)” (per track foot), “lighting, aerial guideway” (per linear foot), and “fare collection –LRT” (per station). These unit costs were exclusively carried forward to provide uniformity and comparability of cost estimates (i.e. no one-off situation-specific costs estimated after this step).

1 Then composite section costs (CSC) were calculated using the unit costs. CSC fit within
2 the FTA SCC categories and includes items such as “single at-grade ballasted trackbed-
3 open” (per route foot, code CSC10.01-1); “aerial station – sideplatforms. major (270 ft. l.)
4 mezzanine” (lump sum, code CSC20.02-1); and “landscaping & urban design:
5 residential” (per route foot, code CSC40.06-12).

6 From there, the CSC necessary for each alternative and alternative alignment were
7 assembled so that subtotal costs for each SCC category could be calculated based on the
8 number of units required to complete a specific alignment. The subtotals for each SCC
9 category were then added to generate the total cost for each alternative alignment (i.e. the
10 “Kamokila Blvd/Farrington Hwy” alignment in Section 1 of Alternative 4).

11 The cost estimates include a variety of contingencies. The design/estimating construction
12 contingency percentages for design elements are inversely proportional to the level of
13 design detail for each element. During the Alternatives Analysis phase of the project the
14 level of detail is low and a high contingency percentage averaging about 25 percent for
15 the combined elements is used. Other contingencies incorporated into the cost estimates
16 include: a change order contingency, vehicle contingency, right-of-way contingency, and
17 project reserve contingency.

18 The professional services soft costs (SCC item 80) are generally estimated as multipliers
19 of the construction costs associated with them. There are a number of multipliers for
20 professional services including preliminary engineering, final design, project
21 management, and construction administration. The sum of all the multipliers is 30
22 percent of the construction costs; the largest being 10 percent for construction
23 administration and management.

24 There are also specific professional services multipliers for vehicle cost (SCC 70) and
25 right-of-way (SCC 60), which relate solely to the costs associated with those items.

26 All construction and capital costs are expressed in 4th quarter 2006 dollars. Unit costs
27 were developed from HDOT cost data or other historical sources from other systems
28 throughout the country. When cost data from sources outside of Hawaii were used, an
29 adjustment may have been made using historic state adjustment factors such as those used
30 in the US Army Corps of Engineers Civil Works Construction Cost Index System.
31

Chapter 2

Summary of Capital Costs

The cost estimates for Alternative 3, the Managed Lane Alternative, and Alternative 4, the Fixed Guideway Alternative, are detailed in Appendices A and B, respectively. Initial unit costs for both Alternatives 3 and 4 are provided in Appendix C. Subsequent calculations of composite section costs (CSC) are presented for Alternative 3 and 4 are presented in Appendices D and E, respectively.

Table 2-1 summarizes the capital costs calculated for each alternative and alignment. The costs discussed in this Chapter are all expressed in 2006\$. The following sections discuss the results of the capital cost estimates.

Alternative 2: Transit System Management

Cost estimates were generated for the park-and-ride facilities that would be associated with Alternative 2, Transit System Management (TSM). The cost of those facilities was estimated to be \$40,154,000. This cost including the following facilities:

- UH West O'ahu facility with 1,800 at-grade stalls and 2 bus bays
- Hanua Street facility with 1,350 at-grade stalls and 4 bus bays
- Aloha Stadium facility with 1,650 at-grade stalls and 4 bus bays

Other costs would be associated with the TSM alternative, such as additional buses and other system improvements. No costs have been estimated for those items due to uncertain requirements at this time.

Alternative 3: Managed Lane Alternative

Cost estimates were generated for the two options within this alternative: (1) a two-lane reversible operation and (2) a two-lane with one lane always operation in each direction option. The reversible option (\$2.57 billion) has a lower cost because the roadway can be narrower than if one lane operates in each direction (\$3.77 billion). The two-direction option requires a wider roadway in order to have a median and extra shoulder space. On a per-mile basis, the reversible and two-direction options cost \$163 and \$233 million per mile, respectively. These unit costs are similar to the average unit cost for an elevated Alternative 4 Fixed Guideway Alternative; the average per mile cost for the elevated fixed guideway is approximately \$174 million.

Alternative 4: Fixed Guideway Alternative

Section I. Kapolei to Fort Weaver Road

Cost estimates were generated for each of the four alignments in Section I under two scenarios:

- 1 • A combination of at-grade and elevated portions of guideway. Generally, the bulk
2 of guideway in this scenario is elevated but, where possible, the guideway would
3 be placed at grade.
- 4 • A fully-elevated guideway

5 On a per mile basis, all the fully-elevated cost estimates are all relatively similar (within 3
6 percent), but the at-grade/elevated cost estimates vary by nearly 20 percent. The at-
7 grade/elevated estimates vary more because longer portions of the guideway can be
8 placed at ground level along certain alignments. The two makai alignments (Saratoga
9 Avenue and Geiger Road alignments) have the potential for longer at-grade guideways;
10 therefore, the per-mile cost estimates for those two alignments are less.

11 The shortest alignment, Kamokila Boulevard/Farrington Highway, has the lowest overall
12 project cost estimate but the highest per mile project cost. The longest alignment,
13 Saratoga Avenue/North-South Road, has the lowest per mile project cost estimate if some
14 at-grade guideways sections are used; if an all elevated guideway is used, the Kapolei
15 Parkway/North-South Road alignment has a slightly lower per mile cost than the others.

16 **Section II. Fort Weaver Road to Aloha Stadium**

17 There is only one alignment in this section. The alignment's project cost per mile,
18 approximately \$147 million, is slightly more than the rural Section I alignments but
19 significantly less than the costs in Sections IV and V urban areas.

20 **Section III. Aloha Stadium to Middle Street**

21 Cost estimates for all four of the alignments were generated assuming an elevated fixed
22 guideway. In addition, a cost estimate was generated for a partially at-grade guideway
23 along the mauka side of the airport viaduct alignment. Due to different eastern end point,
24 cost estimates for the Salt Lake Boulevard alignment were generated for both connecting
25 to the Section IV North King Street and Dillingham Street alignments.

26 The cost estimate for the partially at-grade option is approximately 11 percent higher than
27 the elevated option. In this case the partially at-grade alternative has a higher cost, rather
28 than a lower cost as was the case in Section I. The higher cost for at-grade construction
29 in this case is due to significant utility interactions in the airport area.

30 Among the elevated options, the Salt Lake Boulevard alignment has per mile project
31 costs approximately 13 percent lower than the other alignments, on average. Because the
32 Salt Lake Boulevard alignment is the shortest, this translates into a greater than 20
33 percent lower cost for total project construction.

34 Among the alignments near the airport, the Aolele Street alignment has the lowest per
35 mile cost, followed closely by the mauka of viaduct alignment, and the makai of viaduct
36 alignment is approximately 20 percent higher than the average of the other two. The
37 makai of viaduct project costs are greater due primarily to the utility relocations that
38 would be required. Because the alignments along the viaduct are shorter than the Aolele

1 Street alignment, the Aolele Street and mauka of viaduct alignments have similar total
2 costs.

3 **Section IV. Middle Street to Iwilei**

4 Three cost estimates were developed for the two alternatives; two estimates were
5 developed for the North King Street alignment because there is a significant difference
6 between connecting to North King Street from Salt Lake Boulevard or Nimitz Highway
7 alternatives in Section III. However, the total project costs for all alignments were all
8 within approximately 12 percent of each other. The North King Street alignment project
9 cost is lower than the Dillingham Boulevard alignment project cost, but only if it connects
10 with the Salt Lake Boulevard alignment in Section III. Otherwise, if the Section III to IV
11 connection occurs at Nimitz Highway, the Dillingham Boulevard alignment would be less
12 expensive. This is due to the significant distance between Nimitz Highway and North
13 King Street along Middle Street.

14 **Section V. Iwilei to UH Mānoa**

15 Cost estimates for the six alignments were generated based on connections from both
16 Dillingham Boulevard and North King Street Section IV alignments, for a total of 12 cost
17 estimates. All options connecting to the North King Street Section IV alignment were
18 slightly shorter than the corresponding connection to the Dillingham Boulevard Section
19 IV alignment.

20 The five makai alignments that all use Kapi'olani Boulevard have similar total lengths
21 but the two of those five alignments that use Nimitz Highway through downtown do not
22 include any tunnels and therefore, have lower per mile and overall project costs. The per
23 mile project costs of the two Nimitz Highway alignments are approximately 22 percent
24 less than the Hotel Street/Kawaiaha'o Street alignments and 48 percent less than the King
25 Street Tunnel/Waimanu Street or Hotel Street/Waimanu Street alignments. The Hotel
26 Street/Kawaiaha'o Street alignment costs are less than the Hotel Street or King Street
27 Tunnel/Waimanu Street alignment because the Hotel Street/Kawaiaha'o Street tunnel can
28 be done using the less-costly cut and cover technique and because stations would not be
29 as deep.

30 The Nimitz Highway/Queen Street/Kapi'olani Boulevard alignment has the lowest
31 overall project cost if it connects to the Dillingham Boulevard alignment in Section IV;
32 this alignment also has the lowest per mile costs from either Section IV connection.

33 Although the more mauka Beretania Street/South King Street alignment includes a
34 significant tunnel, its costs are similar to the makai Nimitz Highway alignments because
35 it is approximately 0.6 miles shorter. The Beretania Street/South King Street alignment
36 has the lowest overall cost if it connects to the North King Street Section IV alignment.

37 A cost estimate was also produced for the Waikīkī Spur. The project costs per mile for
38 the spur were similar to the unit costs for the Section IV alignments.

1 **System Wide Project Costs**

2 System wide project costs are those costs that are not attributable to one specific section
3 or alignment. Those costs are primarily associated with a heavy maintenance facility, fare
4 collection system and equipment, some central control costs, and the vehicles and related
5 parts. Cost estimates have been prepared based on differing numbers of total vehicles
6 purchased.

7 **Optimum Full Corridor**

8 The optimum full corridor was selected primarily using a combination of cost and
9 ridership considerations. The selection of the optimum full corridor fixed guideway
10 system is discussed in detail in the Alternatives Assessment (AA) report. The optimum
11 corridor consists of the following section alignments:

12 Section I. Saratoga Avenue/North-South Road, partially at-grade (lowest cost per
13 mile)

14 Section II. Farrington Highway/Kamehameha Highway (no choice)

15 Section III. Aolele Street (middle of cost range)

16 Section IV. Dillingham Boulevard (lowest overall cost)

17 Section V. Nimitz Highway/Halekauwila Street/Kapi‘olani Boulevard (second
18 lowest overall and unit cost from Dillingham Boulevard)

19 The total cost of this corridor is approximately \$4.62 billion and is detailed in Table 2-2.
20 The total length is approximately 27.6 miles.

21 **20-Mile Alignment**

22 The 20-mile alignment is essentially the optimum full corridor alignment discussed above
23 but trimmed at both ends to obtain an approximately 20.7-mile long system. Section I
24 would begin at UH-West O‘ahu rather than Kapolei, shortening the alignment by 5.0
25 miles; Section V would end at Ala Moana Center rather than UH-Mānoa, shortening the
26 alignment by 1.9 miles. The total cost for this corridor is approximately \$3.60 billion and
27 is detailed in Table 2-2.

28 **Estimate Limitations and Project-Specific Risk Assessment**

29 During the conceptual estimating phase of a project, a reoccurring issue is the evaluation
30 and treatment of risk. Uncertainty can result in a “difference” between the estimated cost
31 of a project as defined during the conceptual phase and the actual cost of the project that
32 is ultimately implemented. Four potential sources of uncertainty are generally
33 recognized.

- 34 • Changes in Project Scope
- 35 • Changes in Design Standards
- 36 • Incorrect Unit Cost/Quantity Assumptions

1 • Unforeseen Problems in Implementation

2 Each of these sources of uncertainty is discussed in the subsections below. Scheduling
3 delays and unforeseen construction challenges can also lead to cost overruns which may
4 challenge the financial feasibility of the project. In Preliminary Engineering and Final
5 Design phases, Honolulu will arrive at more precise cost estimates for the selected LPA.
6 The risk of cost overruns from unforeseen difficulties will nonetheless persist and
7 Honolulu can take steps to transfer these through efficient procurement, including the use
8 of PPPs, Design-Build and Turn-Key contracts or mitigate their impact through
9 appropriate inclusion of contingencies in cost estimates.

10 ***Changes in Project Scope***

11 During the conceptual engineering/environmental study phase, preliminary decisions on
12 project scope are made, for example, related to vertical and horizontal alignment, degree
13 of grade separation and other significant alignment issues. As a project progresses
14 through the various stages of evaluation, many of the preliminary project scope
15 definitions that formed the basis of the cost estimate presented here may be updated or
16 revised. To address the potential scope risk, a reasonable allowance has been introduced
17 into the estimate.

18 ***Changes in Design Standards***

19 Similar to the broader uncertainties associated with changes to project scope, changes in
20 design standards during later phases of project development also can lead to changes in
21 project cost. Examples of changes in design standards would be replacing high floor
22 vehicles with low floor vehicles, using a more sophisticated signal system, or changing
23 from a barrier-free fare collection system to the use of fare gates. To address this type of
24 risk, a reasonable allowance has been introduced into the estimate that covers potential
25 design standard changes.

26 ***Incorrect Unit Cost/Quantity Assumptions***

27 Potential problems can arise in the assumptions used to develop unit cost or unit
28 quantities. Issues that can affect the accuracy of unit cost include the local demand for
29 construction labor and its impact on wage rates, the bid climate during the construction
30 period (i.e., the level of competition among contractors), and fluctuations in basic
31 material prices. Errors in quantity assumptions are often related to changes in design
32 standards as discussed above. To address this type of risk, a contingency has been used in
33 the estimate that allows for a reasonable fluctuation in quantities and unit pricing.

34 ***Unforeseen Problems in Implementation***

35 Perhaps one of the largest sources of cost estimating uncertainty is the difficulty in
36 anticipating problems that can only be uncovered in later stages of project development.
37 Items that often are the most susceptible are right-of-way acquisition, utility relocations,
38 hazardous materials, and soil conditions. The estimating methods described in this
39 memorandum represent professionally accepted standards for preparing capital cost

1 estimates to a level of accuracy that is consistent with the level of project definition.
2 Accuracy is traditionally expressed as a +/- percentage range around the point estimate
3 that has been calculated. As noted earlier, the percentage variance factors are greatest in
4 the early stage of project definition and progressively decreases as project definition
5 increases. For example, for major transit capital projects the expected accuracy range of
6 an estimate prepared at project definition (e.g., up to 15% of design) is approximately
7 +30/-25 percent, while at final design, the accuracy range should only be approximately
8 +10/-5 percent.

9 To address the uncertainties inherent in the estimating process at the conceptual
10 engineering/environmental study phase of project development, design allowances have
11 been used.

1 **Table 2-1. Summary of Alternative Capital Cost Estimates**

Alternative/Section	Alignment Length	Construction Costs (SCC 10-59)	Other Project Costs (SCC 60-99)	Total Project Costs (SCC 10-99)	Total Project Cost per Mile
		(2006\$)	(2006\$)	(2006\$)	(2006\$/mile)
	(miles)	(x 1,000,000)	(x 1,000,000)	(x 1,000,000)	(x 1,000,000)
Alternative 2: Transportation System Management					
-		\$29	\$11	\$40	-
Alternative 3: Managed Lane Alternative					
Two-Direction Option	16.18	\$2,660	\$1,100	\$3,770	\$233
Reversible Option	15.74	\$1,800	\$770	\$2,570	\$163
Alternative 4: Fixed Guideway Alternative					
Section I. Kapolei to Fort Weaver Road					
Combination of at Grade and Elevated					
Kamokila Boulevard/ Farrington Highway (partial at-grade)	6.14	\$490	\$190	\$670	\$109
Kapolei Parkway/ North-South Road (partial at-grade)	7.23	\$570	\$220	\$790	\$109
Saratoga Avenue/ North-South Road (partial at-grade)	8.99	\$600	\$230	\$820	\$91
Geiger Road/ Fort Weaver Road (partial at-grade)	8.91	\$600	\$250	\$850	\$95
All Elevated					
Kamokila Boulevard/ Farrington Highway	6.14	\$550	\$210	\$760	\$124
Kapolei Parkway/ North-South Road	7.23	\$630	\$240	\$870	\$120
Saratoga Avenue/ North-South Road	8.99	\$800	\$300	\$1,100	\$122
Geiger Road/ Fort Weaver Road	8.91	\$780	\$310	\$1,090	\$122
Section II. Fort Weaver Road to Aloha Stadium					
Farrington Highway/ Kamehameha Highway	6.74	\$720	\$280	\$990	\$147
Section III. Aloha Stadium to Middle Street					
Salt Lake Boulevard (to North King Street)	4.81	\$420	\$160	\$580	\$121
Salt Lake Boulevard (to Dillingham Boulevard)	4.73	\$420	\$170	\$590	\$125
Mauka of the Airport Viaduct (at grade/elevated)	5.11	\$540	\$210	\$760	\$149
Mauka of the Airport Viaduct (fully elevated)	5.11	\$490	\$190	\$680	\$133
Makai of Airport Viaduct	5.16	\$590	\$230	\$820	\$159
Aolele Street	5.40	\$500	\$190	\$690	\$128

Alternative/Section	Alignment Length (miles)	Construction Costs (SCC 10-59)	Other Project Costs (SCC 60-99)	Total Project Costs (SCC 10-99)	Total Project Cost per Mile
		(2006\$)	(2006\$)	(2006\$)	(2006\$/mile)
		(x 1,000,000)	(x 1,000,000)	(x 1,000,000)	(x 1,000,000)
Section IV. Middle Street to Iwilei					
North King Street (from Nimitz Highway)	2.32	\$300	\$150	\$450	\$194
North King Street (from Salt Lake Blvd.)	1.71	\$260	\$140	\$400	\$234
Dillingham Boulevard	1.84	\$280	\$120	\$400	\$217
Section V. Iwilei to UH Mānoa					
From North King Street					
Hotel Street/ Kawaiaha'o Street/ Kapi'olani Boulevard	4.56	\$970	\$490	\$1,450	\$318
Hotel Street/ Waimanu Street/ Kapi'olani Boulevard	4.48	\$1,270	\$590	\$1,860	\$415
King Street Tunnel/ Waimanu Street/ Kapi'olani Boulevard	4.48	\$1,290	\$600	\$1,900	\$424
Nimitz Highway/ Queen Street/ Kapi'olani Boulevard	4.61	\$780	\$370	\$1,150	\$249
Nimitz Highway/ Halekauwila Street/ Kapi'olani Boulevard	4.65	\$830	\$410	\$1,240	\$267
Beretania Street/ South King Street	3.89	\$810	\$310	\$1,120	\$288
From Dillingham Boulevard					
Hotel Street/ Kawaiaha'o Street/ Kapi'olani Boulevard	4.59	\$980	\$500	\$1,480	\$322
Hotel Street/ Waimanu Street/ Kapi'olani Boulevard	4.52	\$1,270	\$600	\$1,870	\$414
King Street Tunnel/ Waimanu Street/ Kapi'olani Boulevard	4.52	\$1,290	\$610	\$1,900	\$420
Nimitz Highway/ Queen Street/ Kapi'olani Boulevard	4.61	\$780	\$360	\$1,150	\$249
Nimitz Highway/ Halekauwila Street/ Kapi'olani Boulevard	4.66	\$830	\$400	\$1,230	\$264
Beretania Street/ South King Street	4.02	\$960	\$380	\$1,340	\$333
Waikīkī Spur	1.55	\$240	\$110	\$360	\$232
System Wide					
Facilities, Controls, and 92 Vehicles	-	\$120	\$380	\$500	-
Facilities, Controls, and 90 Vehicles	-	\$120	\$360	\$480	-
Facilities, Controls, and 70 Vehicles	-	\$120	\$300	\$410	-

Notes: Construction, Other Project, and Total Project Costs are rounded to nearest \$10 million; total project costs per mile are rounded to nearest \$1 million.
Total project costs may not equal the construction costs plus other project costs presented in this table due to rounding methods.
Shading indicates lowest cost estimate for each section.

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2
3

1 **Table 2-2. Summary of Alternative 4 Full Corridor Systems**

		Align- ment Length (miles)	Construction Costs (SCC 10-59)	Other Project Costs (SCC 60-99)	Total Project Costs (SCC 10-99)	Total Project Cost per Mile
			(2006\$)	(2006\$)	(2006\$)	(2006\$/mile)
			(x 1,000,000)	(x 1,000,000)	(x 1,000,000)	(x 1,000,000)
Optimum Fixed Guideway System						
Section I	Saratoga Avenue/ North-South Road (partial at-grade)	8.99	\$600	\$230	\$820	\$91
Section II	Farrington Highway/ Kamehameha Highway	6.74	\$720	\$280	\$990	\$147
Section III	Aolele Street	5.40	\$500	\$190	\$690	\$128
Section IV	Dillingham Boulevard	1.84	\$280	\$120	\$400	\$217
Section V	Nimitz Highway/ Halekauwila Street/ Kapi'olani Boulevard	4.65	\$830	\$400	\$1,230	\$264
System-wide	90 vehicles	-	\$120	\$360	\$480	-
TOTAL		27.62	\$3,050	\$1,570	\$4,620	\$167
20-Mile Fixed Guideway System						
Section I	Saratoga Avenue/ North-South Road from UH-West Oahu (partial at-grade)	3.95	\$310	\$120	\$420	\$106
Section II	Farrington Highway/ Kamehameha Highway	6.74	\$720	\$280	\$990	\$147
Section III	Aolele Street	5.40	\$500	\$190	\$690	\$128
Section IV	Dillingham Boulevard	1.84	\$280	\$120	\$400	\$217
Section V	Nimitz Highway/ Halekauwila Street/ Kapi'olani Boulevard to Ala Moana Center	2.75	\$460	\$230	\$690	\$251
System-wide	66 vehicles	-	\$120	\$300	\$410	-
TOTAL		20.68	\$2,380	\$1,220	\$3,600	\$174

2 Notes: Construction, Other Project, and Total Project Costs are rounded to nearest \$10 million.
3 Total project costs may not equal the construction costs plus other project costs presented in this table due to rounding methods.

Appendix A

Capital Cost Estimates – Alternative 3

Honolulu High-Capacity Transit Corridor Project Managed Lane Alternative Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 10/2/08 1:45 PM			Reversible Facility
Description			
			Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$1,105,076,732
10.05	Guideway: Built-up fill		\$44,487,792
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$15,771,600
10.09	Track: Direct fixation		\$0
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$0
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$1,165,336,124
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$0
20.03	Underground station, stop, shelter, mall, terminal, platform		**NOT USED**
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$0
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$0
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITWORK & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$20,179,842
40.02	Site Utilities, Utility Relocation		\$119,402,430
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$22,759,405
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$14,028,366
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$178,870,043

Honolulu High-Capacity Transit Corridor Project Managed Lane Alternative Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 10/20/06 1:45 PM			Reversible Facility
Description			
			Elevated
50.00	SYSTEMS		
50.01	Train control and signals		\$0
50.02	Traffic signals and crossing protection		\$0
50.03	Traction power supply: substations		\$0
50.04	Traction power distribution: catenary and third rail		\$0
50.05	Communications		\$7,140,000
50.06	Fare collection system and equipment		\$0
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$7,140,000
SUBTOTAL CONSTRUCTION COSTS			\$1,351,346,167
CONTINGENCY (WEIGHTED AVERAGE)			\$354,320,709
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$1,705,666,876
FEE/RISK			In Items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$11,193,439
SUBTOTAL CONSTRUCTION COSTS			\$1,716,860,315
HAWAII STATE EXCISE 4.70%			\$80,692,435
TOTAL CONSTRUCTION COSTS			\$1,797,552,750
#####	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$58,290,000
60.02	Relocation of existing households and businesses		\$1,300,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$59,590,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$29,795,000
TOTAL ROW COSTS			\$89,385,000

Honolulu High-Capacity Transit Corridor Project Managed Lane Alternative Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 10/20/06 1:45 PM			Reversible Facility
Description			
			Elevated
70.00	VEHICLES		
70.01	Light Rail		not used
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		not used
70.07	Spare parts (10% of LRV's)		not used
		SUBTOTAL VEHICLE COST	\$0
		\$0	
		CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%
		0	\$0
		TOTAL VEHICLE COSTS	\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$53,926,583
80.02	Final Design	4.5%	\$80,889,874
80.03	Project Management for Design and Construction	5.5%	\$98,865,401
80.04	Construction Administration & Management	10.0%	\$179,755,275
80.05	Insurance-Professional liability	1.50%	\$26,963,291
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$26,963,291
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$8,987,764
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$62,914,346
		SUBTOTAL SOFT COSTS	30%
			\$539,265,825
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$145,572,215
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$1,797,552,750
		OTHER PROJECT COST (60+70+80+90+100) (2006\$)	\$774,223,040
		TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)	\$2,571,775,790
Route foot length			83.112'
Construction Cost per Route Foot (2006\$)			\$21,700
Construction Cost per Route Mile (2006\$)			\$114,576,000

Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 Guideway & Trackwork

DESCRIPTION		COST			Reversible Facility	
		ID	QTY	UNIT	Section 1 Alt 1	
1	2	3	4	5	6	7
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-3	36'-wide Segmental Aerial Structure	1	RF	\$15,597	60,102	\$937,410,894
csc10.04-4	24'-wide Segmental Aerial Structure	1	RF	\$8,064	12,478	\$100,622,592
csc10.04-5	48'-wide Segmental Aerial Structure	1	RF	\$25,027	1,308	\$32,735,316
csc10.04-6	58'-wide Segmental Aerial Structure	1	RF	\$30,361	1,130	\$34,307,930
csc10.04-3	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$1,105,076,732
Guideway: Built-up fill						
csc10.04-1	At-Grade Ramps (24 Ft width)	1	RF	\$6,768	5,694	\$38,536,992
csc10.04-2	At-Grade Ramps (36 ft)	1	RF	\$9,918	600	\$5,950,800
10.05	Guideway: Built-up fill		RF			\$44,487,792
Guideway: Underground tunnel						
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.04-7	Abutment Double At-Grade	1	RF	\$11,531	900	\$10,377,900
csc10.04-8	Abutment Single At-Grade	1	RF	\$5,993	900	\$5,393,700
csc10.04-9	Abutment Triple Lane At-Grade	1	RF	\$16,720	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$15,771,600
Track: Direct fixation						
10.09	Track: Direct fixation		RF			\$0
Track: Embedded/Paved						
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
10.11	Track: Ballasted		RF			\$0
Track: Special (switches, turnouts)						
10.12	Track: Special (switches, turnouts)		LS			\$0
Track: Vibration and noise dampening						
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$1,165,336,124

**Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 Station & Shops**

10/20/2006 date
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					SECTION 1	
					Reversible Facility	
					Section 1 Alt 1	
1	2	COST			6	7
DESCRIPTION	ID	QTY	UNIT			
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,085,345	-	\$0
20.01	AT GRADE STATIONS		RF			\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,735,742	-	\$0
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,596,707	-	\$0
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,929,058	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,068,093	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,169,678	-	\$0
20.02	AERIAL STATIONS		RF			\$0
UNDERGROUND STATIONS						
20.03	UNDERGROUND STATIONS		RF			**NOT USED**
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**
20.05	JOINT DEVELOPMENT					**NOT USED**
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	-	\$ -
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	-	\$ -
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302	-	\$ -
20.07	ELEVATORS & ESCALATORS		RF			\$0
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						

**Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 Sitework & Special Conditions**

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Reversible Facility	
40.00 Sitework & Special Conditions						1	
			40.A		AERIAL ALIGNMENT		
			40.AG		AT GRADE ALIGNMENT		
CSC40.01-1		Demolition: Urban	1	RF	\$207	75,018	\$15,528,726
CSC40.01-2		Demolition: Rural	1	RF	\$22		
CSC40.01-3		Demolition: Residential	1	RF	\$53		
CSC40.01-8		Clear and Grubbing	1	RF	\$62	75,018	\$4,651,116
CSC40.01-5		Earthwork	1	RF	in guideway		
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938		
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532		
40.01 Demo Clearing & Sitework						\$20,179,842	
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	75,018	\$6,076,458
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	75,018	\$4,050,972
CSC40.02-8		MANAGED LANE ELECTRICAL AND COMMUNICATION UTILITIES	1	LS	\$109,275,000	1	\$109,275,000
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,241,052	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$4,402,125	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,626,933	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$90,946,739	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,606,054	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0
CSC40.02-23		DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$214,023,779	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,964	-	\$0
CSC40.02-25		DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$200,019,582	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a -NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0
CSC40.02-63a1		SECTION 5: MOS 2a -DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)	1	LS	\$165,872,395	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0
40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$119,402,430

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00			
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	109013	2,592,000	\$20,167,405 \$2,592,000
40.03	Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$22,759,405
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000		\$1	\$2,500,000
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	1	ALLOW	\$2,500,000			\$2,500,000
	Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295			
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204			
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0		\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0		\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0		\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0		\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187	75,018		\$14,028,366
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93			
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	0		\$0
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0		\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0		\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0		\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0		\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	-		\$0
40.06	Site Development: Roads, Walkways, Landscaping						\$14,028,366
	Temporary Facilities						
40.08	Temporary Facilities	1					
Total Sitework & Special Conditions		1	LS				

**Honolulu High-Capacity Transit Corridor Project
Managed Lane Alternative
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems**

				Reversible Facility		
				Section 1 Alt 1		
DESCRIPTION		COST				
		ID	QTY	UNIT		
50.00 Systems				ALIGNMENT	0	1
Train Control & Signals						
csc50.01-1	ATC, Signal System Line Stations	1	RF	\$0	- \$	-
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	0	\$0
50.01	Train Control & Signals		RF			\$0
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	
Traffic Signals and Crossing Protection						
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	0	\$0
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	0	\$0
50.02	Traffic Signals and Crossing Protection		RF			\$0
Traction Power Supply: Substations						
csc50.03-1	Traction Power Substations (2 MV)	1	EA	\$1,640,461	-	\$0
50.03	Traction Power Supply: Substations		RF			\$0
10.05	Guideway: Built-up fill not used*****					
Traction Power Distribution: Catenary and Third Rail						
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	-	\$0
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	-	\$0
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$0
Communication						
csc50.05-1	ITS Roadway	1	EA	\$420,000	17	\$7,140,000
50.05	Communication					\$7,140,000
Fare Collection System and Equipment						
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	-	\$0
50.06	Fare Collection System and Equipment		RF			\$0
Central Control						
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0
50.07	Central Control		RF			\$0
Total Systems						

**Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 ROW Cost Summary**

DESCRIPTION	COST			Reversible Facility	
	ID	QTY	UNIT	Section 1 Alt 1	
60.00 Right of Way					
Purchase or lease of real property					
csc60.01-1		Right of Way Takes from Detail table	1	LS	1 \$58,290,000
60.01		Purchase or lease of real property		LS	\$58,290,000
Relocation of existing households and businesses					
csc60.02-1		BUSINESS RELOCATION from Detail table	1	ls	1 \$1,300,000
60.02		Relocation of existing households and businesses		ls	\$1,300,000
TOTAL RIGHT OF WAY					

Honolulu High-Capacity Transit Corridor Project Managed Lane Alternative Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
			Two-Direction Facility
			Elevated
Description			
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$1,736,475,960
10.05	Guideway: Built-up fill		\$48,227,400
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$14,767,950
10.09	Track: Direct fixation		\$0
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$0
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$1,799,471,310
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$11,471,484
20.03	Underground station, stop, shelter, mall, terminal, platform		**NOT USED**
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$6,504,240
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$17,975,724
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITework & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$22,983,360
40.02	Site Utilities, Utility Relocation		\$119,965,218
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$22,522,050
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$15,977,280
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS			\$183,947,908

Honolulu High-Capacity Transit Corridor Project Managed Lane Alternative Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
			Two-Direction Facility
date: 10/20/06 last update: 10/20/06 1:45 PM			
Description			
			Elevated
50.00	SYSTEMS		
50.01	Train control and signals		\$0
50.02	Traffic signals and crossing protection		\$0
50.03	Traction power supply: substations		\$0
50.04	Traction power distribution: catenary and third rail		\$0
50.05	Communications		\$6,720,000
50.06	Fare collection system and equipment		\$599,424
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$7,319,424
SUBTOTAL CONSTRUCTION COSTS			\$2,008,714,366
CONTINGENCY (WEIGHTED AVERAGE)			\$518,975,654
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$2,527,690,020
FEE/RISK			in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$16,587,966
SUBTOTAL CONSTRUCTION COSTS			\$2,544,277,986
HAWAII STATE EXCISE 4.70%			\$119,581,065
TOTAL CONSTRUCTION COSTS			\$2,663,859,051
#####	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$58,290,000
60.02	Relocation of existing households and businesses		\$1,300,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$59,590,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$29,795,000
TOTAL ROW COSTS			\$89,385,000

Honolulu High-Capacity Transit Corridor Project Managed Lane Alternative Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 10/2/06 1:45 PM			Two-Direction Facility
Description			
			Elevated
70.00	VEHICLES		
70.01	Light Rail		not used
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		not used
70.07	Spare parts (10% of LRV's)		not used
SUBTOTAL VEHICLE COST			\$0
			\$0
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%	\$0
			0
TOTAL VEHICLE COSTS			\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$79,915,772
80.02	Final Design	4.5%	\$119,873,657
80.03	Project Management for Design and Construction	5.5%	\$146,512,248
80.04	Construction Administration & Management	10.0%	\$266,385,905
80.05	Insurance-Professional liability	1.50%	\$39,957,886
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$39,957,886
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$13,319,295
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$93,235,067
SUBTOTAL SOFT COSTS		30%	\$799,157,716
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$213,144,106
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$2,663,859,051
OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$1,101,686,822
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$3,765,545,873
Route foot length			85,440'
Construction Cost per Route Foot (2006\$)			\$31,179
Construction Cost per Route Mile (2006\$)			\$164,625,120

Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 Guideway & Trackwork

		COST			Two-Direction Facility	
1	2	3	4	5	8	9
DESCRIPTION		ID	QTY	UNIT	Section 1	Alt 2
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
10.01	Guideway: At-grade Exclusive			RF		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1		RF	\$365	\$0
10.03	Guideway: At-grade in mixed traffic			RF		\$0
Guideway: Aerial structure						
csc10.04-3	36'-wide Segmental Aerial Structure	1		RF	\$15,597	\$0
csc10.04-4	24'-wide Segmental Aerial Structure	1		RF	\$8,064	\$105,751,296
csc10.04-5	46'-wide Segmental Aerial Structure	1		RF	\$25,027	\$1,448,012,166
csc10.04-6	58'-wide Segmental Aerial Structure	1		RF	\$30,361	\$182,712,498
csc10.04-3	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1		%	30%	\$0
10.04	Guideway: Aerial structure			RF		\$1,736,475,960
Guideway: Built-up fill						
csc10.04-1	At-Grade Ramps (24 Ft width)	1		RF	\$6,768	\$41,284,800
csc10.04-2	At-Grade Ramps (36 ft)	1		RF	\$9,918	\$6,942,600
10.05	Guideway: Built-up fill			RF		\$48,227,400
Guideway: Underground tunnel						
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.04-7	Abutment Double At-Grade	1		RF	\$11,531	\$3,459,300
csc10.04-8	Abutment Single At-Grade	1		RF	\$5,993	\$6,292,650
csc10.04-9	Abutment Triple Lane At-Grade	1		RF	\$16,720	\$5,016,000
10.08	Guideway: Retained cut or fill			RF		\$14,767,950
Track: Direct fixation						
10.09	Track: Direct fixation			RF		\$0
Track: Embedded/Paved						
10.10	Track: Embedded/Paved			RF		\$0
Track: Ballasted						
10.11	Track: Ballasted			RF		\$0
Track: Special (switches, turnouts)						
10.12	Track: Special (switches, turnouts)			LS		\$0
Track: Vibration and noise dampening						
10.13	Vibration and noise dampening			RF		\$0
Total Guideways						\$1,799,471,310

**Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 Station & Shops**

10/20/2006 date
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					SECTION 1	
DESCRIPTION		COST			Two-Direction Facility	
1	2	3	4	5	Section 1 Alt 2	
		ID	QTY	UNIT	8	9
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,085,345	-	\$0
20.01	AT GRADE STATIONS		RF			\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,735,742	2	\$11,471,484
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,596,707		
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,929,058	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,068,093	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,169,678	-	\$0
20.02	AERIAL STATIONS		RF			\$11,471,484
UNDERGROUND STATIONS						
20.03	UNDERGROUND STATIONS		RF			**NOT USED**
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**
20.05	JOINT DEVELOPMENT					**NOT USED**
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	4	\$ 1,818,032
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	8	\$ 4,686,208
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302		
20.07	ELEVATORS & ESCALATORS		RF			\$6,504,240
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						

Honolulu High-Capacity Transit Corridor Project
Managed Lane Alternative
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

						Two-Direction Facility	
COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST		
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		2	
			40.AG	AT GRADE ALIGNMENT			
CSC40.01-1	Demolition: Urban		1	RF	\$207	85,440	\$17,686,080
CSC40.01-2	Demolition: Rural		1	RF	\$22		
CSC40.01-3	Demolition: Residential		1	RF	\$53		\$0
CSC40.01-8	Clear and Grubbing		1	RF	\$62	85,440	\$5,297,280
CSC40.01-5	Earthwork		1	RF	in guideway		
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938		
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532		
40.01 Demo Clearing & Sitework						\$22,983,360	
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	85,440	\$6,076,458
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	85,440	\$4,613,760
CSC40.02-8	MANAGED LANE ELECTRICAL AND COMMUNICATION UTILITIES		1	LS	\$109,275,000	1	\$109,275,000
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835		\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,241,052		\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$4,402,125		\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817		\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933		\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810		\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716		\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239		\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$90,946,739		\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642		\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST		1	LS	\$21,606,054		\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750		\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000		\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250		\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$212,360,175		\$0
CSC40.02-23	DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$214,023,779		\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$198,355,978		\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964		\$0
CSC40.02-25	DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$200,019,582		\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,074,175		\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD		1	LS	\$199,798,364		\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486		\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021		\$0
SC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694		\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197		\$0
SC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870		\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234		\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342		\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973		\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,817		\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791		\$0
CSC40.02-69	DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st		1	LS	\$165,872,395		\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0
40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$119,965,218

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00			
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	107,730	\$19,930,050	\$2,592,000
<p style="text-align: center;">Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation</p>							\$22,522,050
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	
<p style="text-align: center;">Environmental mitigation, e.g. wetlands, historic/archeologic, 40.04 parks</p>							\$2,500,000
<p style="text-align: center;">Site Development: Roads, Walkways, Landscaping</p>							
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295			
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204			
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187	85,440	\$15,977,280	
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93			
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	0	\$0	\$0
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714			\$0
<p style="text-align: center;">40.06 Site Development: Roads, Walkways, Landscaping</p>							\$15,977,280
<p style="text-align: center;">Temporary Facilities</p>							
<p style="text-align: center;">40.08 Temporary Facilities</p>							
<p style="text-align: center;">Total Sitework & Special Conditions</p>							
		1	LS				

**Honolulu High-Capacity Transit Corridor Project
Managed Lane Alternative
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems**

				COST		Two-Direction Facility	
DESCRIPTION				ID	QTY	UNIT	Section 1 Alt 2
50.00 Systems						ALIGNMENT	0 2
Train Control & Signals							
csc50.01-1	ATC, Signal System Line Stations			1	RF	\$0	- \$ -
csc50.01-2	Highway Crossing Warning Devices (Preemptive)			1	EA	\$235,278	0 \$0
50.01	Train Control & Signals				RF		\$0
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****							**NOT USED**
Traffic Signals and Crossing Protection							
csc50.02-1	Traffic Signal Modifications (4 directions)			1	EA	\$376,047	0 \$0
csc50.02-2	Traffic Signal Modifications (3 directions)			1	EA	\$289,523	0 \$0
50.02	Traffic Signals and Crossing Protection				RF		\$0
Traction Power Supply: Substations							
csc50.03-1	Traction Power Substations (2 MW)			1	EA	\$1,640,461	- \$0
50.03	Traction Power Supply: Substations				RF		\$0
10.05	Guideway: Built-up fill not used*****						
Traction Power Distribution: Catenary and Third Rail							
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track			1	RF	\$315	- \$0
csc50.04-2	Traction Power Supply - Subway OCS, Double Track			1	RF	\$216	- \$0
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track			1	RF	\$225	- \$0
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track			1	RF	\$170	- \$0
50.04	Traction Power Distribution: Catenary and Third Rail				RF		\$0
Communication							
csc50.05-1	ITS Roadway			1	EA	\$420,000	16 \$6,720,000
50.05	Communication						\$6,720,000
Fare Collection System and Equipment							
csc50.06-1	Fare Vending Equipment Underground Stations			1	LS	\$584,612	- \$0
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations			1	LS	\$299,712	2 \$599,424
50.06	Fare Collection System and Equipment				RF		\$599,424
Central Control							
csc50.07	Central Control Facility			1	LS	\$8,529,933	- \$0
50.07	Central Control				RF		\$0
Total Systems							

**Honolulu High-Capacity Transit Corridor Project
 Managed Lane Alternative
 Summary Cost Comparison of Alternative Analysis
 Pricing Sheet
 ROW Cost Summary**

				Two-Direction Facility	
				Section 1 Alt 2	
DESCRIPTION	COST				
	ID	QTY	UNIT		
60.00 Right of Way					
Purchase or lease of real property					
csc60.01-1		Right of Way Takes from Detail table	1	LS	1 \$58,290,000
60.01		Purchase or lease of real property		LS	\$58,290,000
Relocation of existing households and businesses					
csc60.02-1		BUSINESS RELOCATION from Detail table	1	ls	1 \$1,300,000
60.02		Relocation of existing households and businesses		ls	\$1,300,000
TOTAL RIGHT OF WAY					

Appendix B

Capital Cost Estimates – Alternative 4

Section 1
Kamokila Blvd/Farrington Hwy
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	
			Sections & Alignments	Sections & Alignments
date: 10/20/06 last update: 9/26/06 1:45 PM			Section 1	Section 1
Description			Kamokila Blvd/Farrington Hwy	Kamokila Blvd/Farrington Hwy
			Alt 1	Alt 2
			1	2
			At-grade/elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$1,935,200	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$205,485,069	\$259,011,369
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored ¹		\$0	\$0
10.08	Guideway: Retained cut or fill		\$9,893,600	\$0
10.09	Track: Direct fixation		\$17,901,675	\$21,884,175
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$2,961,800	\$0
10.12	Track: Special (switches, turnouts)		\$4,682,782	\$4,836,153
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$242,860,126	\$285,731,697
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$3,195,536	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$23,474,360	\$29,270,950
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$13,008,480	\$16,260,600
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$39,678,376	\$45,531,550
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork ¹		\$1,186,701	\$721,701
40.02	Site Utilities, Utility Relocation		\$16,038,135	\$16,038,135
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$237,355	\$237,355
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$25,658,110	\$25,774,042
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction ⁵		\$0	\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$45,620,301	\$45,271,233

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM				Sections & Alignments	Sections & Alignments
				Section 1	Section 1
Description				Kamokila Blvd/Farrington Hwy	Kamokila Blvd/Farrington Hwy
				Alt 1	Alt 2
				1	2
50.00	SYSTEMS				
50.01	Train control and signals			\$7,716,198	\$7,716,198
50.02	Traffic signals and crossing protection			\$2,748,804	\$2,748,804
50.03	Traction power supply: substations			\$11,483,227	\$11,483,227
50.04	Traction power distribution: catenary and third rail			\$7,897,725	\$7,294,725
50.05	Communications			\$9,693,879	\$9,693,879
50.06	Fare collection system and equipment			\$1,498,560	\$1,498,560
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$41,038,393	\$40,435,393
SUBTOTAL CONSTRUCTION COSTS				\$369,197,196	\$416,969,873
CONTINGENCY (WEIGHTED AVERAGE)				\$94,295,518	\$106,192,187
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$463,492,714	\$523,162,060
FEE/RISK				<small>In Items above</small>	<small>In Items above</small>
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$3,041,671	\$3,433,251
SUBTOTAL CONSTRUCTION COSTS				\$466,534,385	\$526,595,311
HAWAII STATE EXCISE 4.70%				\$21,927,116	\$24,749,980
TOTAL CONSTRUCTION COSTS				\$488,461,501	\$551,345,291
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$260,000	\$260,000
60.02	Relocation of existing households and businesses			\$0	\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$260,000	\$260,000
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$130,000	\$130,000
TOTAL ROW COSTS				\$390,000	\$390,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency		2006\$ with Contingency	
				Sections & Alignments		Sections & Alignments	
date: 10/20/06 last update: 9/28/08 1:45 PM				Section 1		Section 1	
Description				Kamokila Blvd/Farrington Hwy		Kamokila Blvd/Farrington Hwy	
				Alt 1		Alt 2	
				1		2	
70.00	VEHICLES						
70.01	Light Rail			IN SECTION 6		IN SECTION 6	
70.02	Heavy Rail			not used		not used	
70.03	Commuter Rail			not used		not used	
70.04	Bus			not used		not used	
70.05	Other			not used		not used	
70.06	Non-revenue vehicles			IN SECTION 6		IN SECTION 6	
70.07	Spare parts (10% of LRV's)			IN SECTION 6		IN SECTION 6	
SUBTOTAL VEHICLE COST				\$0		\$0	
\$0							
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%		\$0		\$0	
0							
TOTAL VEHICLE COSTS				\$0		\$0	
80.00	SOFT COSTS						
80.01	Preliminary Engineering	3.0%		\$14,653,845		\$16,540,359	
80.02	Final Design	4.5%		\$21,980,768		\$24,810,538	
80.03	Project Management for Design and Construction	5.5%		\$26,865,383		\$30,323,991	
80.04	Construction Administration & Management	10.0%		\$48,846,150		\$55,134,529	
80.05	Insurance-Professional liability	1.50%		\$7,326,923		\$8,270,179	
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%		\$7,326,923		\$8,270,179	
80.07	Survey, Testing, Investigation, Inspection	0.50%		\$2,442,308		\$2,756,726	
80.08	Agency: Force Account Work (2%3,4)	3.5%		\$17,096,153		\$19,297,085	
SUBTOTAL SOFT COSTS		30%		\$146,538,453		\$165,403,586	
90.00	CONTINGENCY (Project Reserve) (10 thru 90)						
		6.0%		\$38,123,397		\$43,028,333	
100.00	FINANCE CHARGES						
				\$0		\$0	
110.00	Total Construction (10+20+30+40+50) (2006\$)			\$488,461,501		\$551,345,291	
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$185,051,850		\$208,821,919	
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$673,513,351		\$760,167,210	
	Route foot length			32,421'		32,421'	
	Construction Cost per Route Foot (2006\$)			\$15,100		\$17,006	
	Construction Cost per Route Mile (2006\$)			\$79,728,000		\$89,791,680	

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

					Kamokila Blvd/Farrington Hwy		Kamokila Blvd/Farrington Hwy	
DESCRIPTION		COST			Section 1 Alt 1		Section 1 Alt 2	
1	2	3	4	5	6	7	8	9
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	5,900	\$1,935,200	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01 Guideway: At-grade Exclusive					\$1,935,200		\$0	
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0	-	\$0
10.03 Guideway: At-grade in mixed traffic					\$0		\$0	
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	25,721	\$205,485,069	32,421	\$259,011,369
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	-	\$0	-	\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	-	\$0	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0	1	\$0
10.04 Guideway: Aerial structure					\$205,485,069		\$259,011,369	
10.05 Guideway: Built-up fill not used*****								
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiaono /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06 Guideway: Underground cut & cover					\$0		\$0	
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07 Guideway: Underground tunnel					\$0		\$0	
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	800	\$9,893,600	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0	-	\$0
10.08 Guideway: Retained cut or fill					\$9,893,600		\$0	
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	26,521	\$17,901,675	32,421	\$21,884,175
10.09 Track: Direct fixation					\$17,901,675		\$21,884,175	
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10 Track: Embedded/Paved					\$0		\$0	
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	5,900	\$2,961,800	-	\$0
10.11 Track: Ballasted					\$2,961,800		\$0	
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	4	\$3,829,644	5	\$4,787,055
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	1	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	0	\$0
10.12 Track: Special (switches, turnouts)					\$4,682,782		\$4,836,153	
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13 Vibration and noise dampening					\$0		\$0	
Total Guideways					\$242,860,126		\$285,731,697	

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Station & Shops

					Kamokila Blvd/Farrington Hwy		Kamokila Blvd/Farrington Hwy	
COST					Section 1 Alt 1		Section 1 Alt 2	
1	2	3	4	5	6	7	8	9
DESCRIPTION								
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	1	\$3,195,536	-	\$0
20.01 AT GRADE STATIONS		RF			\$3,195,536		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	2	\$11,881,180	2	\$11,881,180
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	2	\$11,593,180	3	\$17,389,770
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS		RF			\$23,474,360		\$29,270,950	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$0		\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	8	\$3,636,064	10	\$4,545,080
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$-	-	\$-
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$-	-	\$-
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$-	-	\$-
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	16	\$9,372,416	20	\$11,715,520
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS		RF			\$13,008,480		\$16,260,600	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Kamokila Blvd/Farrington		Kamokila Blvd/Farrington	
						Hwy		Hwy	
						Section 1 Alt 1		Section 1 Alt 2	
40.00 Sitework & Special Conditions						25,721		32,421	
			40.A		AERIAL ALIGNMENT	6,700		0	
			40.AG		AT GRADE ALIGNMENT				
CSC40.01-1		Demolition: Urban	1	RF	\$207				
CSC40.01-2		Demolition: Rural	1	RF	\$22				
CSC40.01-3		Demolition: Residential	1	RF	\$53				
CSC40.01-8		Clear and Grubbing	1	RF	\$62	13,617	\$721,701	13,617	\$721,701
CSC40.01-5		Earthwork	1	RF	in guideway	7,500	\$465,000	0	\$0
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938				
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532				
40.01 Demo Clearing & Sitework							\$1,186,701		\$721,701
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	32,421	\$2,626,101	32,421	\$2,626,101
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	32,421	\$1,750,734	32,421	\$1,750,734
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	1	\$11,661,300	1	\$11,661,300
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$80,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$200,019,582	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		ok	\$16,038,135	ok	\$16,038,135

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00		1283	\$237,355	1,283	\$237,355
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1		\$0	\$0	\$0	\$0
	Hazardous Material Mitigation: Petrochemical Contaminated						\$237,355		\$237,355
	40.03 Excavation								
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000		\$1	\$2,500,000	\$1	\$2,500,000
	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	1	ALLOW	\$2,500,000			\$2,500,000		\$2,500,000
	40.04								
	Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295		13,835	\$4,081,325	13,835	\$4,081,325
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204		1,300	\$265,200	1,300	\$265,200
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075		0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599		0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372		0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482		0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187					
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93					
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130		32,421	\$4,214,730	32,421	\$4,214,730
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160		0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543		3,600	\$16,354,800	3,600	\$16,354,800
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459		0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440		0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714		12	\$272,568	12	\$272,568
	40.06 Site Development: Roads, Walkways, Landscaping						\$25,658,110		\$25,774,042
	Temporary Facilities								
	40.08 Temporary Facilities	1		\$0					
	Total Sitework & Special Conditions	1	LS						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

DESCRIPTION	COST			Kamokila Blvd/Farrington Hwy		Kamokila Blvd/Farrington Hwy	
	ID	QTY	UNIT	Section 1 Alt 1		Section 1 Alt 2	
				1	2		
50.00 Systems			ALIGNMENT	32,421		32,421	
	Train Control & Signals						
csc50.01-1		1	RF \$238	32,421	\$ 7,716,198	32,421	\$ 7,716,198
csc50.01-2		1	EA \$235,278	0	\$0	0	\$0
50.01	Train Control & Signals				\$7,716,198		\$7,716,198
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**
	Traffic Signals and Crossing Protection						
csc50.02-1		1	EA \$376,047	5	\$1,880,235	5	\$1,880,235
csc50.02-2		1	EA \$289,523	3	\$868,569	3	\$868,569
50.02	Traffic Signals and Crossing Protection				\$2,748,804		\$2,748,804
	Traction Power Supply: Substations						
csc50.03-1		1	EA \$1,640,461	7	\$11,483,227	7	\$11,483,227
50.03	Traction Power Supply: Substations				\$11,483,227		\$11,483,227
	10.05 Guideway: Built-up fill not used*****						
	Traction Power Distribution: Catenary and Third Rail						
csc50.04-1		1	RF \$315	6,700	\$2,110,500	-	\$0
csc50.04-2		1	RF \$216	-	\$0	-	\$0
csc50.04-3		1	RF \$225	25,721	\$5,787,225	32,421	\$7,294,725
csc50.04-4		1	RF \$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail				\$7,897,725		\$7,294,725
	Communication						
csc50.05-1		1	LS \$299	32,421	\$9,693,879	32,421	\$9,693,879
50.05	Communication				\$9,693,879		\$9,693,879
	Fare Collection System and Equipment						
csc50.06-1		1	LS \$584,612	-	\$0	-	\$0
csc50.06-2		1	LS \$299,712	5	\$1,498,560	5	\$1,498,560
50.06	Fare Collection System and Equipment				\$1,498,560		\$1,498,560
	Central Control						
csc50.07		1	LS \$8,529,933	-	\$0	-	\$0
50.07	Central Control				\$0		\$0
Total Systems							

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet ROW Cost Summary							
				Kamokila Blvd/Farrington Hwy		Kamokila Blvd/Farrington Hwy	
COST				Section 1 Alt 1		Section 1 Alt 2	
DESCRIPTION	ID	QTY	UNIT				
60.00 Right of Way							
Purchase or lease of real property							
csc60.01-1		1	LS	1	\$260,000	1	\$260,000
60.01	Purchase or lease of real property		LS		\$260,000		\$260,000
Relocation of existing households and businesses							
csc60.02-1		1	ls	1	\$0	1	\$0
60.02	Relocation of existing households and businesses		ls		\$0		\$0
TOTAL RIGHT OF WAY							

Section 1
Kapolei Pkwy/North-South Rd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 1	Sections & Alignments Section 1
date: 10/20/06 last update: 9/28/06 1:45 PM				
Description			Kapolei Pkwy/North-South Rd Alt 3	Kapolei Pkwy/North-South Rd Alt 4
			3	4
			At-grade/elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$1,935,200	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$251,541,654	\$305,067,954
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$9,893,600	\$0
10.09	Track: Direct fixation		\$21,793,050	\$25,775,550
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$2,961,800	\$0
10.12	Track: Special (switches, turnouts)		\$5,841,693	\$5,793,564
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$293,966,997	\$336,637,068
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$3,195,536	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$29,558,950	\$35,355,540
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$16,260,600	\$19,512,720
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$49,015,086	\$54,868,260
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$1,641,853	\$445,253
40.02	Site Utilities, Utility Relocation		\$15,295,945	\$15,295,945
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$0	\$0
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$22,621,960	\$22,737,892
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS			\$42,059,758	\$40,979,090

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	
				Sections & Alignments Section 1	
date: 10/20/06 last update: 9/26/08 1:45 PM					
Description				Kapolei Pkwy/North-South Rd	
				Alt 3	
				Alt 4	
				3	
				4	
50.00	SYSTEMS				
50.01	Train control and signals			\$10,970,492	\$9,088,268
50.02	Traffic signals and crossing protection			\$1,128,141	\$1,128,141
50.03	Traction power supply: substations			\$13,123,688	\$13,123,688
50.04	Traction power distribution: catenary and third rail			\$9,194,850	\$8,591,850
50.05	Communications			\$11,417,614	\$11,417,614
50.06	Fare collection system and equipment			\$1,798,272	\$1,798,272
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$47,633,057	\$45,147,833
SUBTOTAL CONSTRUCTION COSTS				\$432,674,898	\$477,632,251
CONTINGENCY (WEIGHTED AVERAGE)				\$110,112,504	\$121,232,183
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$542,787,402	\$598,864,434
FEE/RISK				In Items above	In Items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$3,562,042	\$3,930,048
SUBTOTAL CONSTRUCTION COSTS				\$546,349,444	\$602,794,482
HAWAII STATE EXCISE 4.70%				\$25,678,424	\$28,331,341
TOTAL CONSTRUCTION COSTS				\$572,027,868	\$631,125,823
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$0	\$0
60.02	Relocation of existing households and businesses			\$0	\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$0	\$0
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$0	\$0
TOTAL ROW COSTS				\$0	\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 1	Sections & Alignments Section 1
date: 10/20/06 last update: 9/26/06 1:45 PM				
Description			Kapolei Pkwy/North-South Rd Alt 3	Kapolei Pkwy/North-South Rd Alt 4
			3	4
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
		SUBTOTAL VEHICLE COST	\$0	\$0
		\$0		
		CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0
		0		
		TOTAL VEHICLE COSTS	\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$17,160,836	\$18,933,775
80.02	Final Design	4.5%	\$25,741,254	\$28,400,662
80.03	Project Management for Design and Construction	5.5%	\$31,461,533	\$34,711,920
80.04	Construction Administration & Management	10.0%	\$57,202,787	\$63,112,582
80.05	Insurance-Professional liability	1.50%	\$8,580,418	\$9,466,887
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$8,580,418	\$9,466,887
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$2,860,139	\$3,155,629
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$20,020,975	\$22,089,404
		SUBTOTAL SOFT COSTS	30%	\$171,608,360
				\$189,337,746
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$44,618,174	\$49,227,814
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$572,027,868	\$631,125,823
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$216,226,534	\$238,565,560
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$788,254,402	\$869,691,383
	Route foot length		38,186'	38,186'
	Construction Cost per Route Foot (2006\$)		\$15,000	\$16,600
	Construction Cost per Route Mile (2006\$)		\$79,200,000	\$87,648,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

			COST			Kapolei Pkwy/North-South Rd		Kapolei Pkwy/North-South Rd	
DESCRIPTION			ID	QTY	UNIT	Section 1 Alt 3		Section 1 Alt 4	
1	2		3	4	5	10	11	12	13
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)									
Guideway: At-grade Exclusive									
csc10.01-1	Single At-Grade Ballasted Trackbed - Open		1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open		1	RF	\$328	5,900	\$1,935,200	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track		1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track		1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive			RF			\$1,935,200		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic									
csc10.01-4	Double At-Grade Guideway for Paved Track		1	RF	\$365	-	\$0	-	\$0
10.03	Guideway: At-grade in mixed traffic			RF			\$0		\$0
Guideway: Aerial structure									
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)		1	RF	\$7,989	31,486	\$251,541,654	38,186	\$305,067,954
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP		1	RF	\$5,993	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)		1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)		1	RF	\$8,150	-	\$0	-	\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)		1	RF	\$8,452	-	\$0	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)		1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place		1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE		1	%	30%	1	\$0	1	\$0
10.04	Guideway: Aerial structure			RF			\$251,541,654		\$305,067,954
10.05	Guideway: Built-up fill not used*****								
Guideway: Underground cut & cover									
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /		1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)		1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover			RF			\$0		\$0
Guideway: Underground tunnel									
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)		1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)		1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)		1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+		1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+		1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel						\$0		\$0
Guideway: Retained cut or fill									
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length		1	RF	\$12,367	800	\$9,893,600	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)		1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill			RF			\$9,893,600		\$0
Track: Direct fixation									
csc10.09-1	Direct Fixation Track - Single		1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track		1	RF	\$675	32,286	\$21,793,050	38,186	\$25,775,550
10.09	Track: Direct fixation			RF			\$21,793,050		\$25,775,550
Track: Embedded/Paved									
csc10.10-1	Paved Track (In Street) - Single		1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL		1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved			RF			\$0		\$0
Track: Ballasted									
csc10.11-1	Ballasted Track (Open) - Single		1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double		1	RF	\$502	5,900	\$2,961,800	-	\$0
10.11	Track: Ballasted			RF			\$2,961,800		\$0
Track: Special (switches, turnouts)									
csc10.12-1	Double Crossover DF (No. 10)		1	EA	\$957,411	5	\$4,787,055	6	\$5,744,466
csc10.12-2	Double Crossover Ballasted (No. 10)		1	EA	\$804,040	1	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF		1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF		1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation		1	EA	\$24,548	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)		1	EA	\$650	310	\$201,500	0	\$0
10.12	Track: Special (switches, turnouts)			LS			\$5,841,693		\$5,793,564
Track: Vibration and noise dampening									
csc10.13-1	Track Vibration and Noise Dampening		1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening			RF			\$0		\$0
Total Guideways							\$293,968,997		\$336,637,068

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis

Pricing Sheet
 Station & Shops

					Kapolei Pkwy/North-South Rd		Kapolei Pkwy/North-South Rd	
DESCRIPTION		COST			Section 1 Alt 3		Section 1 Alt 4	
1	2	ID	QTY	UNIT	10	11	12	13
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	1	\$3,195,536	-	\$0
20.01 AT GRADE STATIONS						\$3,195,536		\$0
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	4	\$23,762,360	4	\$23,762,360
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	1	\$5,796,590	2	\$11,593,180
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS						\$29,558,950		\$35,355,540
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS						\$0		\$0
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS						**NOT USED**		**NOT USED**
20.05 JOINT DEVELOPMENT						**NOT USED**		**NOT USED**
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****						**NOT USED**		**NOT USED**
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	10	\$ 4,545,080	12	\$ 5,454,096
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$685,776	20	\$ 11,715,520	24	\$ 14,058,624
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS						\$16,260,600		\$19,512,720
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Kapolei Pkwy/North-South		Kapolei Pkwy/North-South	
						Rd		Rd	
						Section 1 Alt 3		Section 1 Alt 4	
40.00 Sitework & Special Conditions						31,486		38,186	
			40.A	AERIAL ALIGNMENT					
			40.AG	AT GRADE ALIGNMENT	6,700		0		
CSC40.01-1		Demolition: Urban	1	RF	\$207				
CSC40.01-2		Demolition: Rural	1	RF	\$22				
CSC40.01-3		Demolition: Residential	1	RF	\$53	8,401	\$445,253	8,401	\$445,253
CSC40.01-8		Clear and Grubbing	1	RF	\$62	19,300	\$1,196,600	0	\$0
CSC40.01-5		Earthwork	1	RF	in guideway				
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938				
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532				
40.01 Demo Clearing & Sitework							\$1,641,853		\$445,253
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	38,186	\$3,093,066	38,186	\$3,093,066
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	38,186	\$2,062,044	38,186	\$2,062,044
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	1	\$10,140,835	1	\$10,140,835
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$200,019,582	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,280,694	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		ok	\$15,295,945	ok	\$15,295,945

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	-	\$0	-	\$0
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$0		\$0
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.04				1	ALLOW	\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	8,235	\$2,429,325	8,235	\$2,429,325
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	600	\$122,400	600	\$122,400
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	38,186	\$4,964,180	38,186	\$4,964,180
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	3,150	\$14,310,450	3,150	\$14,310,450
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	9	\$204,426	9	\$204,426
40.06 Site Development: Roads, Walkways, Landscaping						\$22,621,960		\$22,737,892
Temporary Facilities								
40.08 Temporary Facilities				1		\$0		
Total Sitework & Special Conditions				1	LS			

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

DESCRIPTION	COST			Kapolei Pkwy/North-South Rd		Kapolei Pkwy/North-South Rd	
	ID	QTY	UNIT	Section 1 Alt 3		Section 1 Alt 4	
50.00 Systems			ALIGNMENT	38,186		38,186	
					3		4
csc50.01-1	Train Control & Signals						
	ATC, Signal System Line Stations	1	RF	\$238	38,186	\$	9,088,268
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	8	\$1,882,224	0
							\$0
50.01	Train Control & Signals		RF			\$10,970,492	\$9,088,268
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**
	Traffic Signals and Crossing Protection						
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	3	\$1,128,141	3
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	0	\$0	0
							\$0
50.02	Traffic Signals and Crossing Protection		RF			\$1,128,141	\$1,128,141
	Traction Power Supply: Substations						
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,481	8	\$13,123,688	8
							\$13,123,688
50.03	Traction Power Supply: Substations		RF			\$13,123,688	\$13,123,688
10.05	Guideway: Built-up fill not used*****						
	Traction Power Distribution: Catenary and Third Rail						
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	6,700	\$2,110,500	-
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0	-
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	31,486	\$7,084,350	38,186
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	-
							\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$9,194,850	\$8,591,850
	Communication						
csc50.05-1	Communications System - Dual Track	1	LS	\$299	38,186	\$11,417,614	38,186
							\$11,417,614
50.05	Communication		-			\$11,417,614	\$11,417,614
	Fare Collection System and Equipment						
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0	-
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	6	\$1,798,272	6
							\$1,798,272
50.06	Fare Collection System and Equipment		RF			\$1,798,272	\$1,798,272
	Central Control						
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0	-
							\$0
50.07	Central Control		RF			\$0	\$0
Total Systems							

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet ROW Cost Summary						
					Kapolei Pkwy/North-South Rd	Kapolei Pkwy/North-South Rd
					Section 1 Alt 3	Section 1 Alt 4
DESCRIPTION	COST	ID	QTY	UNIT		
60.00 Right of Way						
Purchase or lease of real property						
csc60.01-1	Right of Way Takes from Detail table	1	LS		1	\$0
60.01	Purchase or lease of real property		LS			\$0
Relocation of existing households and businesses						
csc60.02-1	BUSINESS RELOCATION from Detail table	1	ls		1	\$0
60.02	Relocation of existing households and businesses		ls			\$0
TOTAL RIGHT OF WAY						

Section 1
Saratoga Ave/North-South Rd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments	Sections & Alignments
date: 10/20/06 last update: 9/28/06 1:45 PM			Section 1	Section 1
Description			Saratoga Ave/North-South Rd Alt 5	Saratoga Ave/North-South Rd Alt 6
			5	6
			At-grade/elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$5,902,688	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$222,709,353	\$379,261,797
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$19,787,200	\$0
10.09	Track: Direct fixation		\$19,896,975	\$32,044,275
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$9,033,992	\$0
10.12	Track: Special (switches, turnouts)		\$8,253,813	\$8,665,797
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$285,584,021	\$419,971,869
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$12,782,144	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$29,558,950	\$53,177,310
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$16,260,600	\$29,269,080
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$58,601,694	\$82,446,390
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$2,246,383	\$138,383
40.02	Site Utilities, Utility Relocation		\$21,328,052	\$21,328,052
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$0	\$0
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$21,620,220	\$22,092,587
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$47,694,655	\$46,059,022

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	
				Sections & Alignments	
date: 10/20/06 last update: 9/26/06 1:45 PM				Section 1	
Description				Saratoga Ave/North-South Rd	
				Alt 5	
				5	
				6	
50.00	SYSTEMS				
50.01	Train control and signals			\$13,180,798	\$11,298,574
50.02	Traffic signals and crossing protection			\$752,094	\$752,094
50.03	Traction power supply: substations			\$14,764,149	\$14,764,149
50.04	Traction power distribution: catenary and third rail			\$12,445,065	\$10,681,425
50.05	Communications			\$14,194,427	\$14,194,427
50.06	Fare collection system and equipment			\$2,697,408	\$2,697,408
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$58,033,941	\$54,388,077
SUBTOTAL CONSTRUCTION COSTS				\$449,914,311	\$602,865,358
CONTINGENCY (WEIGHTED AVERAGE)				\$115,086,021	\$153,112,983
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$565,000,332	\$755,978,341
FEE/RISK					
				In Items above	In Items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$3,707,815	\$4,961,108
SUBTOTAL CONSTRUCTION COSTS				\$568,708,147	\$760,939,449
HAWAII STATE EXCISE 4.70%				\$26,729,283	\$35,764,154
TOTAL CONSTRUCTION COSTS				\$595,437,430	\$796,703,603
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$0	\$0
60.02	Relocation of existing households and businesses			\$0	\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$0	\$0
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$0	\$0
TOTAL ROW COSTS				\$0	\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
				Sections & Alignments Section 1	Sections & Alignments Section 1
date: 10/20/06 last update: 9/26/06 1:45 PM					
Description				Saratoga Ave/North-South Rd Alt 5	Saratoga Ave/North-South Rd Alt 6
				5	6
70.00	VEHICLES				
70.01	Light Rail			IN SECTION 6	IN SECTION 6
70.02	Heavy Rail			not used	not used
70.03	Commuter Rail			not used	not used
70.04	Bus			not used	not used
70.05	Other			not used	not used
70.06	Non-revenue vehicles			IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)			IN SECTION 6	IN SECTION 6
	SUBTOTAL VEHICLE COST			\$0	\$0
			\$0		
	CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%	\$0	\$0
			0		
	TOTAL VEHICLE COSTS			\$0	\$0
80.00	SOFT COSTS				
80.01	Preliminary Engineering	3.0%		\$17,863,123	\$23,901,108
80.02	Final Design	4.5%		\$26,794,684	\$35,851,662
80.03	Project Management for Design and Construction	5.5%		\$32,749,059	\$43,818,698
80.04	Construction Administration & Management	10.0%		\$59,543,743	\$79,670,360
80.05	Insurance-Professional liability	1.50%		\$8,931,561	\$11,950,554
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%		\$8,931,561	\$11,950,554
80.07	Survey, Testing, Investigation, Inspection	0.50%		\$2,977,187	\$3,983,518
80.08	Agency: Force Account Work (2%3,4)	3.5%		\$20,840,310	\$27,884,626
	SUBTOTAL SOFT COSTS		30%	\$178,631,228	\$239,011,080
90.00	CONTINGENCY (Project Reserve) (10 thru 90)			\$46,444,119	\$62,142,881
100.00	FINANCE CHARGES			\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)			\$595,437,430	\$796,703,603
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$225,075,347	\$301,153,961
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$820,512,777	\$1,097,857,564
	Route foot length			47,473'	47,473'
	Construction Cost per Route Foot (2006\$)			\$12,600	\$16,800
	Construction Cost per Route Mile (2006\$)			\$66,528,000	\$88,704,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

					Saratoga Ave/North-South Rd		Saratoga Ave/North-South Rd	
					Section 1 Alt 5		Section 1 Alt 6	
DESCRIPTION	ID	QTY	UNIT	COST	14	15	16	17
1	2	3	4	5	14	15	16	17
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$280	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	17,996	\$5,902,688	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$5,902,688		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0	-	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	27,877	\$222,709,353	47,473	\$379,261,797
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,893	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	-	\$0	-	\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	-	\$0	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0	1	\$0
10.04	Guideway: Aerial structure		RF			\$222,709,353		\$379,261,797
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$0		\$0
Guideway: Retained cut or fill								
csc10.09-1	Abutment Double At-Grade (Avg. D. T/R +10 FL) 100 ft length	1	RF	\$12,367	1,600	\$19,787,200	-	\$0
csc10.09-2	Abutment Single At-Grade (Avg. D. T/R +10 FL)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$19,787,200		\$0
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	29,477	\$19,896,975	47,473	\$32,044,275
10.09	Track: Direct fixation		RF			\$19,896,975		\$32,044,275
Track: Embedded/Paved								
csc10.10-1	Paved Track (in Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (in Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	17,996	\$9,033,992	-	\$0
10.11	Track: Ballasted		RF			\$9,033,992		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	5	\$4,787,055	9	\$8,616,699
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	4	\$3,216,160	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	310	\$201,500	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$8,253,813		\$8,665,797
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$285,584,021		\$419,971,869

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis

Pricing Sheet
 Station & Shops

					Saratoga Ave/North-South Rd		Saratoga Ave/North-South Rd	
					Section 1 Alt 5		Section 1 Alt 6	
1	2	3	4	5	COST			
					ID	QTY	UNIT	
DESCRIPTION					14	15	16	17
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	4	\$12,782,144	-	\$0
20.01 AT GRADE STATIONS						\$12,782,144		\$0
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	4	\$23,762,360	7	\$41,584,130
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	1	\$5,796,590	2	\$11,593,180
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS						\$29,558,950		\$53,177,310
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS						\$0		\$0
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS						**NOT USED**		**NOT USED**
20.05 JOINT DEVELOPMENT						**NOT USED**		**NOT USED**
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****						**NOT USED**		**NOT USED**
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	10	\$ 4,545,080	18	\$ 8,181,144
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	20	\$ 11,715,520	36	\$ 21,087,936
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS						\$16,260,600		\$29,269,080
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Saratoga Ave/North-South		Saratoga Ave/North-South	
						Rd		Rd	
						Section 1 Alt 5		Section 1 Alt 6	
40.00		Sitework & Special Conditions	40.A	AERIAL ALIGNMENT	27,877	5	47,473	6	
			40.AG	AT GRADE ALIGNMENT	19,596		0		
CSC40.01-1		Demolition: Urban	1	RF	\$207				
CSC40.01-2		Demolition: Rural	1	RF	\$22				
CSC40.01-3		Demolition: Residential	1	RF	\$53	2,611	\$138,383	2,611	\$138,383
CSC40.01-8		Clear and Grubbing	1	RF	\$62	34,000	\$2,108,000	0	\$0
CSC40.01-5		Earthwork	1	RF	in guideway				
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938				
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532				
	40.01	Demo Clearing & Sitework					\$2,246,383	\$138,383	
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	47,473	\$3,845,313	47,473	\$3,845,313
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	47,473	\$2,563,542	47,473	\$2,563,542
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	1	\$14,919,197	1	\$14,919,197
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$200,019,582	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0	\$0	\$0
					ok		ok		
PARSONS BRINCKERHOFF	40.02	UTILITIES BASED ON 1992 INFORMATION	1	RF		\$21,328,052		\$21,328,052	

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	-	\$0	-	\$0
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$0		\$0
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.04				1	ALLOW	\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	885	\$261,075	885	\$261,075
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	400	\$81,600	400	\$81,600
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	47,473	\$6,171,490	47,473	\$6,171,490
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	3,150	\$14,310,450	3,150	\$14,310,450
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SOFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	9	\$204,426	9	\$204,426
40.06 Site Development: Roads, Walkways, Landscaping						\$21,620,220		\$22,092,587
Temporary Facilities								
40.08 Temporary Facilities				1		\$0		
Total Sitework & Special Conditions				1	LS			

Honolulu High-Capacity Transit Corridor Project								
Fixed Guideway Alternatives								
Summary Cost Comparison of Alternative Analysis								
Pricing Sheet								
Systems								
					Saratoga Ave/North-South Rd		Saratoga Ave/North-South Rd	
DESCRIPTION					Section 1 Alt 5		Section 1 Alt 6	
COST					5		6	
ID QTY UNIT					47,473		47,473	
ALIGNMENT					47,473		47,473	
50.00 Systems								
Train Control & Signals								
csc50.01-1	ATC, Signal System Line Stations	1	RF	\$238	47,473	\$ 11,298,574	47,473	\$ 11,298,574
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	8	\$1,882,224	0	\$0
50.01	Train Control & Signals		RF			\$13,180,798		\$11,298,574
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**	
Traffic Signals and Crossing Protection								
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	2	\$752,094	2	\$752,094
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	0	\$0	0	\$0
50.02	Traffic Signals and Crossing Protection		RF			\$752,094		\$752,094
Traction Power Supply: Substations								
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	9	\$14,764,149	9	\$14,764,149
50.03	Traction Power Supply: Substations		RF			\$14,764,149		\$14,764,149
10.05 Guideway: Built-up fill not used*****								
Traction Power Distribution: Catenary and Third Rail								
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	19,596	\$6,172,740	-	\$0
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0	-	\$0
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	27,877	\$6,272,325	47,473	\$10,681,425
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$12,445,065		\$10,681,425
Communication								
csc50.05-1	Communications System - Dual Track	1	LS	\$299	47,473	\$14,194,427	47,473	\$14,194,427
50.05	Communication					\$14,194,427		\$14,194,427
Fare Collection System and Equipment								
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0	-	\$0
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	9	\$2,697,408	9	\$2,697,408
50.06	Fare Collection System and Equipment		RF			\$2,697,408		\$2,697,408
Central Control								
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control		RF			\$0		\$0
Total Systems								

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet ROW Cost Summary							
					Saratoga Ave/North-South Rd		
					Saratoga Ave/North-South Rd		
COST							
DESCRIPTION	ID	QTY	UNIT	Section 1 Alt 5	Section 1 Alt 6		
60.00 Right of Way							
Purchase or lease of real property							
csc60.01-1		1	LS	1	\$0	1	\$0
	60.01		LS		\$0		\$0
Relocation of existing households and businesses							
csc60.02-1		1	ls	1	\$0	1	\$0
	60.02		ls		\$0		\$0
TOTAL RIGHT OF WAY							

Section 1
Geiger Rd/Fort Weaver Rd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 1	Sections & Alignments Section 1
date: 10/20/06 last update: 9/28/06 1:45 PM				
Description			Geiger Rd/Fort Weaver Rd Alt 7	Geiger Rd/Fort Weaver Rd Alt 8
			7	8
			At-grade/elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$5,248,000	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$241,787,085	\$376,002,285
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$9,893,600	\$0
10.09	Track: Direct fixation		\$20,968,875	\$31,768,875
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$8,032,000	\$0
10.12	Track: Special (switches, turnouts)		\$6,836,862	\$6,991,475
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$292,766,422	\$414,762,635
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$9,586,608	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$23,762,360	\$41,584,130
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$13,008,480	\$22,764,840
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$46,357,448	\$64,348,970
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$2,101,651	\$1,047,651
40.02	Site Utilities, Utility Relocation		\$14,939,592	\$14,939,592
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$237,355	\$237,355
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$35,985,570	\$36,301,206
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$55,764,168	\$55,025,804

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	
				Sections & Alignments	
date: 10/20/06 last update: 9/26/06 1:45 PM				Section 1	
Description				Geiger Rd/Fort Weaver Rd	
				Alt 7	
				7	
				8	
50.00	SYSTEMS				
50.01	Train control and signals			\$14,965,918	\$12,142,582
50.02	Traffic signals and crossing protection			\$1,880,235	\$1,504,188
50.03	Traction power supply: substations			\$14,764,149	\$14,764,149
50.04	Traction power distribution: catenary and third rail			\$12,101,625	\$10,589,625
50.05	Communications			\$14,072,435	\$14,072,435
50.06	Fare collection system and equipment			\$2,097,984	\$2,097,984
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$59,882,346	\$55,170,963
SUBTOTAL CONSTRUCTION COSTS				\$454,770,384	\$589,308,372
CONTINGENCY (WEIGHTED AVERAGE)				\$115,670,456	\$149,199,553
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$570,440,840	\$738,507,925
FEE/RISK					
				In Items above	In Items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$3,743,518	\$4,846,458
SUBTOTAL CONSTRUCTION COSTS				\$574,184,358	\$743,354,383
HAWAII STATE EXCISE 4.70%				\$26,986,665	\$34,937,656
TOTAL CONSTRUCTION COSTS				\$601,171,023	\$778,292,039
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$11,900,000	\$11,900,000
60.02	Relocation of existing households and businesses			\$0	\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$11,900,000	\$11,900,000
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$5,950,000	\$5,950,000
TOTAL ROW COSTS				\$17,850,000	\$17,850,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 1	Sections & Alignments Section 1
date: 10/20/06 last update: 9/28/08 1:45 PM				
Description			Geiger Rd/Fort Weaver Rd Alt 7	Geiger Rd/Fort Weaver Rd Alt 8
			7	8
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
	SUBTOTAL VEHICLE COST		\$0	\$0
		\$0		
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0	\$0
		0		
	TOTAL VEHICLE COSTS		\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$18,035,131	\$23,348,761
80.02	Final Design	4.5%	\$27,052,696	\$35,023,142
80.03	Project Management for Design and Construction	5.5%	\$33,064,406	\$42,806,062
80.04	Construction Administration & Management	10.0%	\$60,117,102	\$77,829,204
80.05	Insurance-Professional liability	1.50%	\$9,017,565	\$11,674,381
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$9,017,565	\$11,674,381
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$3,005,855	\$3,891,460
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$21,040,986	\$27,240,221
	SUBTOTAL SOFT COSTS		\$180,351,306	\$233,487,612
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$47,962,340	\$61,777,779
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$601,171,023	\$778,292,039
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$246,163,646	\$313,115,391
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$847,334,669	\$1,091,407,430
	Route foot length		47,065'	47,065'
	Construction Cost per Route Foot (2006\$)		\$12,800	\$16,600
	Construction Cost per Route Mile (2006\$)		\$67,584,000	\$87,648,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

			COST		Geiger Rd/Fort Weaver Rd		Geiger Rd/Fort Weaver Rd		
DESCRIPTION			ID	QTY	UNIT	Section 1 Alt 7		Section 1 Alt 9	
1	2		3	4	5	18	19	20	21
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)									
Guideway: At-grade Exclusive									
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260			\$0		\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	16,000		\$5,248,000		\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED					
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED					
10.01	Guideway: At-grade Exclusive		RF				\$5,248,000		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic									
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365			\$0		\$0
10.03	Guideway: At-grade in mixed traffic		RF				\$0		\$0
Guideway: Aerial structure									
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	30,265		\$241,787,085	47,065	\$376,002,285
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) C/P	1	RF	\$5,993			\$0		\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086			\$0		\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150			\$0		\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452			\$0		\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709			\$0		\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793			\$0		\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1		\$0	1	\$0
10.04	Guideway: Aerial structure		RF				\$241,787,085		\$376,002,285
10.05	Guideway: Built-up fill not used*****								
Guideway: Underground cut & cover									
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiano / U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$34,090			\$0		\$0
csc10.06-2		1	RF	\$12,898			\$0		\$0
10.06	Guideway: Underground cut & cover		RF				\$0		\$0
Guideway: Underground tunnel									
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308			\$0		\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129			\$0		\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129			\$0		\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088			\$0		\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920			\$0		\$0
10.07	Guideway: Underground tunnel						\$0		\$0
Guideway: Retained cut or fill									
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	800		\$9,893,600		\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162			\$0		\$0
10.08	Guideway: Retained cut or fill		RF				\$9,893,600		\$0
Track: Direct fixation									
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435			\$0		\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	31,065		\$20,968,875	47,065	\$31,768,875
10.09	Track: Direct fixation		RF				\$20,968,875		\$31,768,875
Track: Embedded/Paved									
csc10.10-1	Paved Track (in Street) - Single	1	RF	\$667			\$0		\$0
csc10.10-2	Paved Track (in Street) - DUAL	1	RF	\$1,250			\$0		\$0
10.10	Track: Embedded/Paved		RF				\$0		\$0
Track: Ballasted									
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247			\$0		\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	16,000		\$8,032,000		\$0
10.11	Track: Ballasted		RF				\$8,032,000		\$0
Track: Special (switches, turnouts)									
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	4		\$3,829,644	7	\$6,701,877
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	3		\$2,412,120		\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314					
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258					
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2		\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	840		\$546,000	370	\$240,500
10.12	Track: Special (switches, turnouts)		LS				\$6,836,882		\$6,991,475
Track: Vibration and noise dampening									
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074			\$0		\$0
10.13	Vibration and noise dampening		RF				\$0		\$0
Total Guideways							\$292,766,422		\$414,762,635

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					Geiger Rd/Fort Weaver Rd		Geiger Rd/Fort Weaver Rd	
DESCRIPTION		COST			Section 1 Alt 7		Section 1 Alt 9	
1	2	ID	QTY	UNIT	18	19	20	21
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	3	\$9,586,608	-	\$0
20.01 AT GRADE STATIONS		RF			\$9,586,608		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	4	\$23,762,360	7	\$41,584,130
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	-	\$0	-	\$0
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS		RF			\$23,762,360		\$41,584,130	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$0		\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	8	\$ 3,636,064	14	\$ 6,363,112
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	16	\$ 9,372,416	28	\$ 16,401,728
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS		RF			\$13,008,480		\$22,764,840	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Geiger Rd/Fort Weaver Rd		Geiger Rd/Fort Weaver Rd	
						Section 1 Alt 7		Section 1 Alt 8	
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		30,265	7	47,065	8
			40.AG	AT GRADE ALIGNMENT		16,900		0	
CSC40.01-1		Demolition: Urban	1	RF	\$207				
CSC40.01-2		Demolition: Rural	1	RF	\$22				
CSC40.01-3		Demolition: Residential	1	RF	\$53				
CSC40.01-8		Clear and Grubbing	1	RF	\$62	19,767	\$1,047,651	19,767	\$1,047,651
CSC40.01-5		Earthwork	1	RF	In guideway	17,000	\$1,054,000	0	\$0
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938				
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532				
40.01 Demo Clearing & Sitework							\$2,101,651		\$1,047,651
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	47,065	\$3,812,265	47,065	\$3,812,265
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	47,065	\$2,541,510	47,065	\$2,541,510
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	1	\$8,585,817	1	\$8,585,817
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,469,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$200,019,582	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$14,939,592	ok	\$14,939,592

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00		1,283	\$237,355	1,283	\$237,355
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1		\$0	\$0	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation							\$237,355		\$237,355
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000		\$1	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.04							\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping									
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295		21,403	\$6,313,885	21,403	\$6,313,885
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204		1,000	\$204,000	800	\$163,200
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075		0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599		0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372		0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482		0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187					
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93					
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130		47,065	\$6,118,450	47,065	\$6,118,450
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160		0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543		4,950	\$22,487,850	4,950	\$22,487,850
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459		0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440		0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714		17	\$386,138	17	\$386,138
40.06 Site Development: Roads, Walkways, Landscaping							\$35,985,570		\$36,301,206
Temporary Facilities									
40.08 Temporary Facilities									
Total Sitework & Special Conditions					1	LS			

Honolulu High-Capacity Transit Corridor Project							
Fixed Guideway Alternatives							
Summary Cost Comparison of Alternative Analysis							
Pricing Sheet							
Systems							
						Geiger Rd/Fort Weaver Rd	Geiger Rd/Fort Weaver Rd
						Section 1 Alt 7	Section 1 Alt 9
DESCRIPTION	COST					7	8
	ID	QTY	UNIT				
50.00 Systems			ALIGNMENT			47,065	47,065
	Train Control & Signals						
csc50.01-1		1	RF	\$238	47,065	\$ 11,201,470	47,065 \$ 11,201,470
csc50.01-2		1	EA	\$235,278	16	\$3,764,448	4 \$941,112
50.01	Train Control & Signals					\$14,965,918	\$12,142,582
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	**NOT USED**
	Traffic Signals and Crossing Protection						
csc50.02-1		1	EA	\$376,047	5	\$1,880,235	4 \$1,504,188
csc50.02-2		1	EA	\$289,523	0	\$0	0 \$0
50.02	Traffic Signals and Crossing Protection					\$1,880,235	\$1,504,188
	Traction Power Supply: Substations						
csc50.03-1		1	EA	\$1,640,461	9	\$14,764,149	9 \$14,764,149
50.03	Traction Power Supply: Substations					\$14,764,149	\$14,764,149
10.05	Guideway: Built-up fill not used*****						
	Traction Power Distribution: Catenary and Third Rail						
csc50.04-1		1	RF	\$315	16,800	\$5,292,000	- \$0
csc50.04-2		1	RF	\$216	-	\$0	- \$0
csc50.04-3		1	RF	\$225	30,265	\$6,809,625	47,065 \$10,589,625
csc50.04-4		1	RF	\$170	-	\$0	- \$0
50.04	Traction Power Distribution: Catenary and Third Rail					\$12,101,625	\$10,589,625
	Communication						
csc50.05-1		1	LS	\$299	47,065	\$14,072,435	47,065 \$14,072,435
50.05	Communication					\$14,072,435	\$14,072,435
	Fare Collection System and Equipment						
csc50.06-1		1	LS	\$584,612	-	\$0	- \$0
csc50.06-2		1	LS	\$299,712	7	\$2,097,984	7 \$2,097,984
50.06	Fare Collection System and Equipment					\$2,097,984	\$2,097,984
	Central Control						
csc50.07		1	LS	\$8,529,933	-	\$0	- \$0
50.07	Central Control					\$0	\$0
Total Systems							

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analy: Pricing Sheet ROW Cost Summary						
					Geiger Rd/Fort Weaver Rd	
					Geiger Rd/Fort Weaver Rd	
COST						
DESCRIPTION	ID	QTY	UNIT	Section 1 Alt 7		Section 1 Alt 9
60.00 Right of Way						
Purchase or lease of real property						
csc60.01-1		1	LS	1	\$11,900,000	1 \$11,900,000
60.01	Purchase or lease of real property		LS		\$11,900,000	\$11,900,000
Relocation of existing households and businesses						
csc60.02-1		1	ls	1	\$0	1 \$0
60.02	Relocation of existing households and businesses		ls		\$0	\$0
TOTAL RIGHT OF WAY						

Section 2
Fort Weaver Rd to Aloha Stadium
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM			Sections & Alignments Section 2
Description			Fort Weaver Rd to Aloha Stadium Alt 1 9 At-grade/elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$285,825,988
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$19,347,000
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$8,893,600
10.09	Track: Direct fixation		\$22,999,950
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$763,000
10.12	Track: Special (switches, turnouts)		\$4,633,684
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$323,453,220
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$3,195,536
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$23,762,360
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$13,008,480
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$39,966,376
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITWORK & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$7,463,018
40.02	Site Utilities, Utility Relocation		\$17,431,423
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$3,250,635
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$97,763,818
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$128,408,894

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
<small>date: 10/20/05 last update: 9/26/06 1:45 PM</small>			Sections & Alignments Section 2
Description			Fort Weaver Rd to Aloha Stadium
			Alt 1
			9
50.00	SYSTEMS		
50.01	Train control and signals		\$8,466,612
50.02	Traffic signals and crossing protection		\$8,073,384
50.03	Traction power supply: substations		\$11,483,227
50.04	Traction power distribution: catenary and third rail		\$8,535,150
50.05	Communications		\$10,638,626
50.06	Fare collection system and equipment		\$1,498,560
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$48,693,539
SUBTOTAL CONSTRUCTION COSTS			\$540,522,029
CONTINGENCY (WEIGHTED AVERAGE)			\$140,129,715
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$680,651,744
FEE/RISK			in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$4,466,777
SUBTOTAL CONSTRUCTION COSTS			\$685,118,521
HAWAII STATE EXCISE 4.70%			\$32,200,570
TOTAL CONSTRUCTION COSTS			\$717,319,091
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$3,320,000
60.02	Relocation of existing households and businesses		\$400,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$3,720,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$1,860,000
TOTAL ROW COSTS			\$5,580,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/28/06 1:45 PM			Sections & Alignments Section 2
Description			Fort Weaver Rd to Aloha Stadium Alt 1 9
70.00	VEHICLES		
70.01	Light Rail		IN SECTION 6
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6
	SUBTOTAL VEHICLE COST		\$0
		\$0	
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0
		0	
	TOTAL VEHICLE COSTS		\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$21,519,573
80.02	Final Design	4.5%	\$32,279,359
80.03	Project Management for Design and Construction	5.5%	\$39,452,550
80.04	Construction Administration & Management	10.0%	\$71,731,909
80.05	Insurance-Professional liability	1.50%	\$10,759,786
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$10,759,786
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$3,586,595
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$25,106,168
	SUBTOTAL SOFT COSTS 30%		\$215,195,726
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$56,285,689
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$717,319,091
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$277,061,415
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$994,380,506
	Route foot length		35,574'
	Construction Cost per Route Foot (2006\$)		\$20,200
	Construction Cost per Route Mile (2006\$)		\$106,656,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			Fort Weaver Rd to Aloha Stadium	
		ID	QTY	UNIT	Section 2 Alt 1	
1	2	3	4	5	22	23
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade In mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	33,274	\$265,825,986
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	-	\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$8,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (6 ft Dia)	1	RF	\$8,709	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast-in Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$265,825,986
Guideway: Built-up fill not used*****						
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawailano /	1	RF	\$34,090	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	1,500	\$19,347,000
10.06	Guideway: Underground cut & cover		RF			\$19,347,000
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,309	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+65 to 1408+	1	RF	\$26,088	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	800	\$9,893,600
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$9,893,600
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	34,074	\$22,999,950
10.09	Track: Direct fixation		RF			\$22,999,950
Track: Embedded/Paved						
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	1,500	\$753,000
10.11	Track: Ballasted		RF			\$753,000
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	4	\$3,829,644
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	1	\$804,040
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$4,633,684
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074		\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$323,453,220

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

						SECTION 2	
						Fort Weaver Rd to Aloha Stadium	
						Section 2 Alt 1	
DESCRIPTION		COST					
1	2	3	4	5	22	23	
20.00 STATIONS & SHOPS							
AT GRADE STATIONS							
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	1	\$3,195,536	
20.01	AT GRADE STATIONS		RF			\$3,195,536	
AERIAL STATIONS							
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	4	\$23,762,360	
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	-	\$0	
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	
20.02	AERIAL STATIONS		RF			\$23,762,360	
UNDERGROUND STATIONS							
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	
20.03	UNDERGROUND STATIONS		RF			\$0	
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**	
20.05	JOINT DEVELOPMENT					**NOT USED**	
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**	
ELEVATORS & ESCALATORS							
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	8	\$ 3,636,064	
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	16	\$ 9,372,416	
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302			
20.07	ELEVATORS & ESCALATORS		RF			\$13,008,480	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES							

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

						Fort Weaver Rd to Aloha Stadium	
COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Section 2 Alt 1	
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		33,274	9
			40.AG	AT GRADE ALIGNMENT		2,300	
CSC40.01-1	Demolition: Urban		1	RF	\$207	35,574	\$7,363,818
CSC40.01-2	Demolition: Rural		1	RF	\$22		
CSC40.01-3	Demolition: Residential		1	RF	\$53		
CSC40.01-8	Clear and Grubbing		1	RF	\$62	1,600	\$99,200
CSC40.01-5	Earthwork		1	RF	in guideway		
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938		
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532		
40.01 Demo Clearing & Sitework							\$7,463,018
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	35,574	\$2,881,494
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	35,574	\$1,920,996
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION-KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION-KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION-SARATOGA BLVD		1	LS	\$14,919,197	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$12,277,125	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION-GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION-FARRINGTON BLVD		1	LS	\$12,628,833	1	\$12,628,833
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$90,946,739	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST		1	LS	\$21,606,054	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION-DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$212,360,175	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION-DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$214,023,779	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$198,355,978	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION-DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$200,019,582	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,074,175	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION-DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,798,364	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,488	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0
CSC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,894	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION-DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$162,983,234	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION-DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION-DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st		1	LS	\$165,872,395	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0
						ok	
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		\$17,431,423	

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	17,571	\$3,250,635
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$3,250,635
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archaeologic, 40.04 parks						\$2,500,000
Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$285	33,974	\$10,022,330
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	6,440	\$1,313,760
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	4	\$584,300
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	3	\$331,797
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	4	\$313,488
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	35,574	\$4,624,620
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$180	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	1,800	\$39,134,400
CSC40.06-16A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	92,377	\$40,645,880
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	14	\$317,896
40.06 Site Development: Roads, Walkways, Landscaping						\$97,763,818
Temporary Facilities						
40.08 Temporary Facilities						\$0
Total Sitework & Special Conditions						
		1	LS			

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

					Fort Weaver Rd to Aloha Stadium	
DESCRIPTION	COST			Section 2 Alt 1		
	ID	QTY	UNIT			
50.00 Systems			ALIGNMENT	35,574	9	
	Train Control & Signals					
csc50.01-1		1	RF	\$238	35,574 \$ 8,466,612	
csc50.01-2		1	EA	\$235,278	0 \$0	
50.01	Train Control & Signals				\$8,466,612	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**	
	Traffic Signals and Crossing Protection					
csc50.02-1		1	EA	\$376,047	13 \$4,888,611	
csc50.02-2		1	EA	\$289,523	11 \$3,184,753	
50.02	Traffic Signals and Crossing Protection				\$8,073,364	
	Traction Power Supply: Substations					
csc50.03-1		1	EA	\$1,640,461	7 \$11,483,227	
50.03	Traction Power Supply: Substations				\$11,483,227	
	10.05 Guideway: Built-up fill not used*****					
	Traction Power Distribution: Catenary and Third Rail					
csc50.04-1		1	RF	\$315	2,300 \$724,500	
csc50.04-2		1	RF	\$216	1,500 \$324,000	
csc50.04-3		1	RF	\$225	33,274 \$7,486,650	
csc50.04-4		1	RF	\$170	- \$0	
50.04	Traction Power Distribution: Catenary and Third Rail				\$8,535,150	
	Communication					
csc50.05-1		1	LS	\$299	35,574 \$10,636,626	
50.05	Communication				\$10,636,626	
	Fare Collection System and Equipment					
csc50.06-1		1	LS	\$584,612	- \$0	
csc50.06-2		1	LS	\$299,712	5 \$1,498,560	
50.06	Fare Collection System and Equipment				\$1,498,560	
	Central Control					
csc50.07		1	LS	\$8,529,933	- \$0	
50.07	Central Control				\$0	
Total Systems						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analy:
Pricing Sheet
ROW Cost Summary

					SECTION 2	
					Fort Weaver Rd to Aloha Stadium	
					Section 2 Alt 1	
DESCRIPTION	ID	QTY	UNIT	COST		
60.00 Right of Way						
Purchase or lease of real property						
csc60.01-1				1	LS	1 \$3,320,000
	60.01				LS	\$3,320,000
Relocation of existing households and businesses						
csc60.02-1				1	ls	1 \$400,000
	60.02				ls	\$400,000
TOTAL RIGHT OF WAY						

Section 3
Salt Lake Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 3	Sections & Alignments Section 3
date: 10/20/06 last update: 9/26/08 1:45 PM				
Description			Salt Lake Blvd/North King St	Salt Lake Blvd/Dillingham Blvd
			Alt 1	Alt 2
			10	11
			Elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$0	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$206,806,250	\$203,521,800
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$0	\$0
10.09	Track: Direct fixation		\$17,126,125	\$16,856,100
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$0	\$0
10.12	Track: Special (switches, turnouts)		\$1,914,822	\$1,914,822
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$225,849,197	\$222,292,722
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$11,737,180	\$11,737,180
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$6,504,240	\$6,504,240
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$18,241,420	\$18,241,420
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITWORK & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$5,252,625	\$5,169,204
40.02	Site Utilities, Utility Relocation		\$19,495,435	\$18,860,936
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$154,280	\$154,280
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$9,923,574	\$16,974,210
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$37,325,924	\$43,658,640

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	
				2006\$ with Contingency	
date: 10/23/06 last update: 9/26/08 1:45 PM					
Description				Sections & Alignments Section 3	
				Salt Lake Blvd/North King St	
				Alt 1	
				Alt 2	
				10	
				11	
50.00	SYSTEMS				
50.01	Train control and signals			\$6,039,250	\$5,943,336
50.02	Traffic signals and crossing protection			\$5,151,512	\$5,151,512
50.03	Traction power supply: substations			\$8,202,305	\$8,202,305
50.04	Traction power distribution: catenary and third rail			\$5,709,375	\$5,618,700
50.05	Communications			\$7,587,125	\$7,466,628
50.06	Fare collection system and equipment			\$599,424	\$599,424
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$33,288,991	\$32,981,905
SUBTOTAL CONSTRUCTION COSTS				\$314,705,532	\$317,174,687
CONTINGENCY (WEIGHTED AVERAGE)				\$81,416,618	\$81,962,115
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$396,122,150	\$399,136,802
FEE/RISK					
				<small>In Items above</small>	<small>In Items above</small>
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$2,599,552	\$2,619,335
SUBTOTAL CONSTRUCTION COSTS				\$398,721,702	\$401,756,137
HAWAII STATE EXCISE 4.70%				\$18,739,920	\$18,882,538
TOTAL CONSTRUCTION COSTS				\$417,461,622	\$420,638,675
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$2,890,000	\$4,720,000
60.02	Relocation of existing households and businesses			\$0	\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$2,890,000	\$4,720,000
CONTINGENCY & ENGINEERING (40%+10%)				\$1,445,000	\$2,360,000
TOTAL ROW COSTS				\$4,335,000	\$7,080,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
				Sections & Alignments Section 3	Sections & Alignments Section 3
date: 10/20/06 last update: 9/26/06 1:45 PM					
Description				Salt Lake Blvd/North King St	Salt Lake Blvd/Dillingham Blvd
				Alt 1	Alt 2
				10	11
70.00	VEHICLES				
70.01	Light Rail		IN SECTION 6	IN SECTION 6	
70.02	Heavy Rail		not used	not used	
70.03	Commuter Rail		not used	not used	
70.04	Bus		not used	not used	
70.05	Other		not used	not used	
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6	
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6	
SUBTOTAL VEHICLE COST				\$0	\$0
\$0					
CONTINGENCY & ENGINEERING STAFF(10%+14%)				24%	\$0
0					
TOTAL VEHICLE COSTS				\$0	\$0
80.00	SOFT COSTS				
80.01	Preliminary Engineering	3.0%	\$12,523,849	\$12,619,160	
80.02	Final Design	4.5%	\$18,785,773	\$18,928,740	
80.03	Project Management for Design and Construction	5.5%	\$22,960,389	\$23,135,127	
80.04	Construction Administration & Management	10.0%	\$41,746,162	\$42,063,868	
80.05	Insurance-Professional liability	1.50%	\$6,261,924	\$6,309,580	
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$6,261,924	\$6,309,580	
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$2,087,308	\$2,103,193	
80.08	Agency Force Account Work (2%3,4)	3.5%	\$14,611,157	\$14,722,354	
SUBTOTAL SOFT COSTS				30%	\$125,238,486
					\$126,191,602
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$32,822,106	\$33,234,617	
100.00	FINANCE CHARGES		\$0	\$0	
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$417,461,622	\$420,638,675	
OTHER PROJECT COST (60+70+80+90+100) (2006\$)				\$162,395,592	\$166,506,219
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)				\$579,857,214	\$587,144,894
Route foot length				25,375'	24,972'
Construction Cost per Route Foot (2006\$)				\$16,500	\$16,900
Construction Cost per Route Mile (2006\$)				\$87,120,000	\$89,232,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

					Salt Lake Blvd/North King St		Salt Lake Blvd/Dillingham Blvd	
DESCRIPTION					Section 3 Alt 1		Section 3 Alt 2	
1	2	3	4	5	24	25	26	27
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$280	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-		-	
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-		-	
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0	-	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	-	\$0	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$6,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$9,150	25,375	\$206,806,250	24,972	\$203,521,800
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	-	\$0	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0	1	\$0
10.04	Guideway: Aerial structure		RF			\$206,806,250		\$203,521,800
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,306	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King / Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham / Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 140B+	1	RF	\$26,068	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 140B+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$0		\$0
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0		\$0
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	25,375	\$17,128,125	24,972	\$16,856,100
10.09	Track: Direct fixation		RF			\$17,128,125		\$16,856,100
Track: Embedded/Paved								
csc10.10-1	Paved Track (in Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (in Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	2	\$1,914,822	2	\$1,914,822
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$850	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$1,914,822		\$1,914,822
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$225,849,197		\$222,292,722

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Salt Lake Blvd/North King St		Salt Lake Blvd/Dillingham Blvd	
						Section 3 Alt 1		Section 3 Alt 2	
						10	11	10	11
40.00 Sitework & Special Conditions						25,375	0	24,972	0
		AERIAL ALIGNMENT	40.A						
		AT GRADE ALIGNMENT	40.AG						
CSC40.01-1	Demolition: Urban		1	RF	\$207	25,375	\$5,262,625	24,972	\$5,169,204
CSC40.01-2	Demolition: Rural		1	RF	\$22				
CSC40.01-3	Demolition: Residential		1	RF	\$53				
CSC40.01-8	Clear and Grubbing		1	RF	\$62	0	\$0	0	\$0
CSC40.01-5	Earthwork		1	RF	In guideway				
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938				
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532				
40.01 Demo Clearing & Sitework							\$5,262,625		\$5,169,204
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	25,375	\$2,055,375	24,972	\$2,022,732
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	25,375	\$1,370,250	24,972	\$1,348,488
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,918,197	-	\$0	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGERFT WEAVER BLVD		1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	1	\$16,069,810	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0	1	\$15,489,716
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST		1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,853,760	-	\$0	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,260	-	\$0	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$188,355,978	-	\$0	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$200,019,582	-	\$0	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$189,798,364	-	\$0	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$162,162,488	-	\$0	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,684	-	\$0	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,187	-	\$0	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$82,813,917	-	\$0	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)		1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		ok	\$19,495,435	ok	\$18,860,838

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	834	\$154,290	834	\$154,290
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
40.03 Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$154,290		\$154,290
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks						\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	18,600	\$5,487,000	18,500	\$5,457,500
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	2,200	\$448,800	2,200	\$448,800
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	25,375	\$3,298,750	24,972	\$3,248,380
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	1,650	\$7,485,950
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	20	\$454,280	4	\$90,856
40.06 Site Development: Roads, Walkways, Landscaping						\$9,923,674		\$16,974,210
Temporary Facilities								
40.08 Temporary Facilities								
Total Sitework & Special Conditions								
		1	LS					

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet Systems								
DESCRIPTION	COST			Salt Lake Blvd/North King St		Salt Lake Blvd/Dillingham Blvd		
	ID	QTY	UNIT					
50.00 Systems			ALIGNMENT	25,375	10	24,972	11	
	Train Control & Signals							
csc50.01-1		1	RF	\$238	25,375	\$ 6,039,250	24,972	\$ 5,943,336
csc50.01-2		1	EA	\$235,278	0	\$0	0	\$0
50.01	Train Control & Signals					\$6,039,250	\$5,943,336	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	**NOT USED**	
	Traffic Signals and Crossing Protection							
csc50.02-1		1	EA	\$376,047	6	\$2,256,282	6	\$2,256,282
csc50.02-2		1	EA	\$289,523	10	\$2,895,230	10	\$2,895,230
50.02	Traffic Signals and Crossing Protection					\$5,151,512	\$5,151,512	
	Traction Power Supply: Substations							
csc50.03-1		1	EA	\$1,640,461	5	\$8,202,305	5	\$8,202,305
50.03	Traction Power Supply: Substations					\$8,202,305	\$8,202,305	
	10.05 Guideway: Built-up fill not used*****							
	Traction Power Distribution: Catenary and Third Rail							
csc50.04-1		1	RF	\$315	-	\$0	-	\$0
csc50.04-2		1	RF	\$216	-	\$0	-	\$0
csc50.04-3		1	RF	\$225	25,375	\$5,709,375	24,972	\$5,618,700
csc50.04-4		1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail					\$5,709,375	\$5,618,700	
	Communication							
csc50.05-1		1	LS	\$299	25,375	\$7,587,125	24,972	\$7,466,628
50.05	Communication					\$7,587,125	\$7,466,628	
	Fare Collection System and Equipment							
csc50.06-1		1	LS	\$584,612	-	\$0	-	\$0
csc50.06-2		1	LS	\$299,712	2	\$599,424	2	\$599,424
50.06	Fare Collection System and Equipment					\$599,424	\$599,424	
	Central Control							
csc50.07		1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control					\$0	\$0	
Total Systems								

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet ROW Cost Summary									
						SECTION 3			
						Salt Lake Blvd/North King St		Salt Lake Blvd/Dillingham Blvd	
COST									
DESCRIPTION						Section 3 alt 1			
60.00 Right of Way									
Purchase or lease of real property									
csc60.01-1		Right of Way Takes from Detail table	1	LS		1	\$2,890,000	1	\$4,720,000
	60.01	Purchase or lease of real property		LS			\$2,890,000		\$4,720,000
Relocation of existing households and businesses									
csc60.02-1		BUSINESS RELOCATION from Detail table	1	ls		1	\$0	1	\$0
	60.02	Relocation of existing households and businesses		ls			\$0		\$0
TOTAL RIGHT OF WAY									

Section 3
Mauka side of the Airport Viaduct
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 3	Sections & Alignments Section 3
			Mauka side of the Airport Viaduct	Mauka side of the Airport Viaduct
			Alt 3	Alt 4
			12	13
			At-grade	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$2,033,600	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade In mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$162,742,300	\$220,041,850
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$9,893,600	\$0
10.09	Track: Direct fixation		\$14,039,325	\$18,224,325
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$3,112,400	\$0
10.12	Track: Special (switches, turnouts)		\$3,676,273	\$3,829,644
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$195,497,498	\$242,095,819
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$3,195,536	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$17,821,770	\$23,618,360
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$9,756,380	\$13,008,480
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$30,773,686	\$36,626,840
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$6,047,593	\$5,588,793
40.02	Site Utilities, Utility Relocation		\$114,279,104	\$26,033,507
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$4,318,270	\$4,318,270
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$15,314,761	\$15,430,693
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS			\$142,459,728	\$53,871,263

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency			
				Sections & Alignments Section 3		Sections & Alignments Section 3	
date: 10/20/06 last update: 9/28/06 1:45 PM							
Description				Mauka side of the Airport Viaduct			
				Alt 3		Alt 4	
				12		13	
50.00	SYSTEMS						
50.01	Train control and signals			\$6,425,762	\$6,425,762		
50.02	Traffic signals and crossing protection			\$2,459,281	\$2,459,281		
50.03	Traction power supply: substations			\$9,842,766	\$9,842,766		
50.04	Traction power distribution: catenary and third rail			\$6,704,775	\$6,074,775		
50.05	Communications			\$8,072,701	\$8,072,701		
50.06	Fare collection system and equipment			\$1,198,848	\$1,198,848		
50.07	Central Control			\$0	\$0		
SUBTOTAL COST SYSTEMS				\$34,704,133	\$34,074,133		
SUBTOTAL CONSTRUCTION COSTS				\$403,435,025	\$366,668,055		
CONTINGENCY (WEIGHTED AVERAGE)				\$113,573,253	\$95,511,071		
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$517,008,278	\$462,179,126		
FEE/RISK						In items above	In items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$3,392,867	\$3,033,051		
SUBTOTAL CONSTRUCTION COSTS				\$520,401,145	\$465,212,177		
HAWAII STATE EXCISE 4.70%				\$24,458,854	\$21,864,972		
TOTAL CONSTRUCTION COSTS				\$544,859,999	\$487,077,149		
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)						
60.01	Purchase or lease of real property			\$3,930,000	\$3,930,000		
60.02	Relocation of existing households and businesses			\$200,000	\$200,000		
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$4,130,000	\$4,130,000		
CONTINGENCY & ENGINEERING (40%+10%)				50%	\$2,065,000	\$2,065,000	
TOTAL ROW COSTS				\$6,195,000	\$6,195,000		

**Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis**

date: 10/20/06
last update: 9/26/06 1:45 PM

2006\$ with Contingency

2006\$ with Contingency

Sections & Alignments
Section 3

Sections & Alignments
Section 3

Description

Mauka side of the Airport Viaduct

Mauka side of the Airport Viaduct

Alt 3

Alt 4

I2

I3

70.00 VEHICLES

70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
SUBTOTAL VEHICLE COST			\$0	\$0
			\$0	
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%	\$0	\$0
			0	
TOTAL VEHICLE COSTS			\$0	\$0

80.00 SOFT COSTS

80.01	Preliminary Engineering	3.0%	\$16,345,800	\$14,612,314	
80.02	Final Design	4.5%	\$24,518,700	\$21,918,472	
80.03	Project Management for Design and Construction	5.5%	\$29,967,300	\$26,789,243	
80.04	Construction Administration & Management	10.0%	\$64,486,000	\$48,707,715	
80.05	Insurance-Professional liability	1.50%	\$8,172,900	\$7,306,157	
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$8,172,900	\$7,306,157	
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$2,724,300	\$2,435,386	
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$19,070,100	\$17,047,700	
SUBTOTAL SOFT COSTS			30%	\$163,458,000	\$146,123,144

90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$42,870,780	\$38,363,718
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100.00	FINANCE CHARGES		\$0	\$0
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110.00	Total Construction (10+20+30+40+50) (2006\$)		\$544,859,899	\$467,077,149
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$212,523,780	\$190,681,862
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$757,383,779	\$677,759,011

Route foot length		26,999'	26,999'
Construction Cost per Route Foot (2006\$)		\$20,200	\$18,100
Construction Cost per Route Mile (2006\$)		\$106,656,000	\$95,568,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			Mauka side of the Airport Viaduct		Mauka side of the Airport Viaduct	
		ID	QTY	UNIT	Section 3 Alt 3	Section 3 Alt 4	Section 3 Alt 4	Section 3 Alt 4
1	2	3	4	5	28	29	30	31
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	6,200	\$2,033,600	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$2,033,600		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	1,550	\$12,382,950	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	18,449	\$150,359,350	26,999	\$220,041,850
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	-	\$0	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft Dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0	1	\$0
10.04	Guideway: Aerial structure		RF			\$162,742,300		\$220,041,850
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaianoa /	1	RF	\$34,080	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,890	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$0		\$0
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	800	\$9,893,600	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$9,893,600		\$0
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	20,799	\$14,039,325	28,999	\$18,224,325
10.09	Track: Direct fixation		RF			\$14,039,325		\$18,224,325
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$687	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	6,200	\$3,112,400	-	\$0
10.11	Track: Ballasted		RF			\$3,112,400		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	3	\$2,872,233	4	\$3,829,644
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	1	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$850	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$9,676,273		\$3,829,644
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$195,497,498		\$242,095,819

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					Mauka side of the Airport Viaduct		Mauka side of the Airport Viaduct	
DESCRIPTION		COST						
1	2	3	4	5	28	29	30	31
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	1	\$3,195,536	-	\$0
20.01 AT GRADE STATIONS		RF			\$3,195,536		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770	3	\$17,821,770
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	-	\$0	1	\$5,796,590
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS		RF			\$17,821,770		\$23,618,360	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$0		\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	6	\$ 2,727,048	8	\$ 3,636,064
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$595,776	12	\$ 7,029,312	16	\$ 9,372,416
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302	-	\$ -	-	\$ -
20.07 ELEVATORS & ESCALATORS		RF			\$9,756,360		\$13,008,480	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

						Mauka side of the Airport Viaduct		Mauka side of the Airport Viaduct	
COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Section 3 Alt 3		Section 3 Alt 4	
						12		13	
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		19,999		26,999	
			40.AG	AT GRADE ALIGNMENT		7,000		0	
CSC40.01-1	Demolition: Urban		1	RF	\$207	26,999	\$5,588,793	26,999	\$5,588,793
CSC40.01-2	Demolition: Rural		1	RF	\$22				
CSC40.01-3	Demolition: Residential		1	RF	\$53				
CSC40.01-8	Clear and Grubbing		1	RF	\$62	7,400	\$458,800	0	\$0
CSC40.01-5	Earthwork		1	RF	In guideway				
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938				
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532				
40.01 Demo Clearing & Sitework						\$6,047,593		\$5,588,793	
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	26,999	\$2,186,919	26,999	\$2,186,919
CSC40.02-7	Utility: REMOVALS		1	RF	\$64	26,999	\$1,457,946	26,999	\$1,457,946
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGERFT WEAVER BLVD		1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	1	\$110,634,239	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$80,946,739	-	\$0	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0	1	\$22,388,642
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST		1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$198,355,978	-	\$0	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$209,019,582	-	\$0	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,798,364	-	\$0	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,488	-	\$0	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$81,198,973	-	\$0	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)		1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0	\$0	\$0
40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$114,279,104	ok	\$28,033,507

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	23,342	\$4,318,270	23,342	\$4,318,270
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
40.03	Hazardous Material Mitigation: Petrochemical Contaminated Excavation					\$4,318,270		\$4,318,270
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	1	ALLOW	\$2,500,000		\$2,500,000		\$2,500,000
	Site Development: Roads, Walkways, Landscaping							
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	9,785	\$2,886,575	9,785	\$2,886,575
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	2,850	\$581,400	2,850	\$581,400
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	1	\$146,075	1	\$146,075
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,589	0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	2	\$156,744	2	\$156,744
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	26,999	\$3,509,870	26,999	\$3,509,870
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	1,650	\$7,485,850	1,650	\$7,485,850
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	8	\$181,712	8	\$181,712
40.06	Site Development: Roads, Walkways, Landscaping					\$15,314,761		\$15,430,693
	Temporary Facilities							
40.08	Temporary Facilities	1		\$0				
Total Sitework & Special Conditions		1	LS					

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

					Mauka side of the Airport Viaduct		Mauka side of the Airport Viaduct	
DESCRIPTION	COST							
	ID	QTY	UNIT					
50.00 Systems			ALIGNMENT	26,999	12	26,999	13	
csc50.01-1	Train Control & Signals							
	ATC, Signal System Line Stations	1	RF	\$238	26,999	\$	6,425,762	
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	0	\$0	0	
50.01	Train Control & Signals		RF			\$6,425,762	\$6,425,762	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	**NOT USED**	
	Traffic Signals and Crossing Protection							
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	5	\$1,880,235	5	
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	2	\$579,046	2	
50.02	Traffic Signals and Crossing Protection		RF			\$2,459,281	\$2,459,281	
	Traction Power Supply: Substations							
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	6	\$9,842,766	6	
50.03	Traction Power Supply: Substations		RF			\$9,842,766	\$9,842,766	
	10.05 Guideway: Built-up fill not used*****							
	Traction Power Distribution: Catenary and Third Rail							
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$316	7,000	\$2,205,000	-	
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0	-	
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	19,999	\$4,499,775	26,999	
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	-	
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$6,704,775	\$6,074,775	
	Communication							
csc50.05-1	Communications System - Dual Track	1	LS	\$299	26,999	\$8,072,701	26,999	
50.05	Communication					\$8,072,701	\$8,072,701	
	Fare Collection System and Equipment							
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0	-	
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	4	\$1,198,848	4	
50.06	Fare Collection System and Equipment		RF			\$1,198,848	\$1,198,848	
	Central Control							
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0	-	
50.07	Central Control		RF			\$0	\$0	
Total Systems								

Section 3
Makai side of the Airport Viaduct
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM			Sections & Alignments Section 3
Description			Makal of the Airport Viaduct
			Alt 5
			14
			Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$221,875,600
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$0
10.09	Track: Direct fixation		\$18,376,200
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$3,829,644
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$244,081,444
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$23,818,580
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$12,613,243
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$36,431,823
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITWORK & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$5,635,368
40.02	Site Utilities, Utility Relocation		\$94,621,979
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$4,318,270
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$14,998,373
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$122,071,990

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM			Sections & Alignments Section 3
Description			Makai of the Airport Viaduct Alt 5 14
50.00	SYSTEMS		
50.01	Train control and signals		\$6,479,312
50.02	Traffic signals and crossing protection		\$2,459,281
50.03	Traction power supply: substations		\$9,842,766
50.04	Traction power distribution: catenary and third rail		\$6,125,400
50.05	Communications		\$8,139,976
50.06	Fare collection system and equipment		\$1,199,848
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$34,245,683
SUBTOTAL CONSTRUCTION COSTS			\$436,830,840
CONTINGENCY (WEIGHTED AVERAGE)			\$119,915,272
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$556,746,112
FEE/RISK			In items above
ADJUSTMENT FOR CASUAL OVERTIME (2.8% OF DIRECT LABOR)			\$3,653,646
SUBTOTAL CONSTRUCTION COSTS			\$560,399,758
HAWAII STATE EXCISE 4.70%			\$26,338,789
TOTAL CONSTRUCTION COSTS			\$586,738,547
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$5,940,000
60.02	Relocation of existing households and businesses		\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$5,940,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$2,970,000
TOTAL ROW COSTS			\$8,910,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 6/26/06 1:45 PM			Sections & Alignments Section 3
Description			Makai of the Airport Viaduct
			Alt 5
			14
70.00	VEHICLES		
70.01	Light Rail		IN SECTION 6
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6
	SUBTOTAL VEHICLE COST		\$0
		\$0	
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0
		0	
	TOTAL VEHICLE COSTS		\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$17,602,156
80.02	Final Design	4.5%	\$26,403,235
80.03	Project Management for Design and Construction	5.5%	\$32,270,620
80.04	Construction Administration & Management	10.0%	\$58,673,855
80.05	Insurance-Professional liability	1.50%	\$8,801,078
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$8,801,078
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$2,933,693
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$20,635,849
	SUBTOTAL SOFT COSTS		\$176,021,564
90.00	CONTINGENCY (Project Reserve) (10 thru 80)	6.0%	\$46,300,207
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$586,738,547
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$231,231,771
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$817,970,318
	Route foot length		27,224'
	Construction Cost per Route Foot (2006\$)		\$21,600
	Construction Cost per Route Mile (2006\$)		\$114,048,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

		COST			Makai of the Airport Viaduct	
1	2	3	4	5	32	33
DESCRIPTION		ID	QTY	UNIT	Section 3 Alt 5	
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$280	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 FL) Column (6 ft Dia)	1	RF	\$7,889	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 FL) CIP	1	RF	\$5,993	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 FL) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 FL) Column (6 ft Dia)	1	RF	\$8,150	27,224	\$221,875,600
csc10.04-4	Segmental Aerial Structure (T/R +50 FL) Column (8 ft Dia)	1	RF	\$8,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 FL) Column (8 ft Dia)	1	RF	\$8,709	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 FL) Cast - in Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$221,875,600
10.05 Guideway: Built-up fill not used*****						
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,080	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 26 ft)	1	RF	\$12,898	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King / Bertania St / S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham / Bertania St / S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 FL) 100 ft length	1	RF	\$12,367	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 FL)	1	RF	\$6,182	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	27,224	\$18,376,200
10.09	Track: Direct fixation		RF			\$18,376,200
Track: Embedded/Paved						
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0
10.11	Track: Ballasted		RF			\$0
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	4	\$3,829,644
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0
csc10.12-3	No. 8 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$3,829,644
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$244,081,444

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					Makai of the Airport Viaduct	
DESCRIPTION		COST				
1	2	3	4	5	32	33
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,538	-	\$0
20.01 AT GRADE STATIONS		RF				\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	2	\$11,881,180
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	1	\$5,796,590
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	1	\$6,140,810
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0
20.02 AERIAL STATIONS		RF				\$23,818,580
UNDERGROUND STATIONS						
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0
20.03 UNDERGROUND STATIONS		RF				\$0
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS						**NOT USED**
20.05 JOINT DEVELOPMENT						**NOT USED**
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****						**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	6	\$ 2,727,048
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	1	\$ 513,779
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	16	\$ 9,372,416
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302		
20.07 ELEVATORS & ESCALATORS		RF				\$12,613,243
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	COST	Makai side of the Airport Viaduct	
						Section 3 Alt 5	
40.00 Sitework & Special Conditions						27,224	14
			40.A	AERIAL ALIGNMENT		0	
			40.AG	AT GRADE ALIGNMENT			
CSC40.01-1	Demolition: Urban		1	RF	\$207	27,224	\$5,635,368
CSC40.01-2	Demolition: Rural		1	RF	\$22		
CSC40.01-3	Demolition: Residential		1	RF	\$53		
CSC40.01-8	Clear and Grubbing		1	RF	\$82	0	\$0
CSC40.01-5	Earthwork		1	RF	in guideway		
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938		
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532		
40.01 Demo Clearing & Sitework							\$5,635,368
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	27,224	\$2,205,144
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	27,224	\$1,470,096
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,197	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$12,277,125	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,626,933	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,089,810	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,718	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,834,239	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$90,946,739	1	\$90,946,739
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLEE ST		1	LS	\$21,606,064	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$212,360,175	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$214,023,779	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$198,355,976	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$200,019,582	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,074,175	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$189,798,364	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0
CSC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,684	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$162,983,234	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$82,813,817	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,209,791	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st		1	LS	\$165,872,395	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0
PARSONS BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$94,621,979

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185,00	23,342	\$4,318,270
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
40.03 Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$4,318,270
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks						\$2,500,000
Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	8,200	\$2,419,000
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	2,850	\$581,400
CSC40.06-17	Intersection Modification Type 1	1	LS	\$148,075	1	\$148,075
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	2	\$156,744
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	27,224	\$3,539,120
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	1,650	\$7,495,950
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	8	\$181,712
40.06 Site Development: Roads, Walkways, Landscaping						\$14,996,373
Temporary Facilities						
40.08 Temporary Facilities						\$0
Total Sitework & Special Conditions						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

					Makai of the Airport Viaduct	
DESCRIPTION	COST					
	ID	QTY	UNIT			
50.00 Systems				ALIGNMENT	27,224	14
Train Control & Signals						
csc50.01-1	ATC, Signal System Line Stations	1	RF	\$238	27,224	\$ 6,479,312
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	0	\$0
50.01	Train Control & Signals		RF			\$6,479,312
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****						
Traffic Signals and Crossing Protection						
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	5	\$1,880,235
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	2	\$579,046
50.02	Traffic Signals and Crossing Protection		RF			\$2,459,281
Traction Power Supply: Substations						
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	6	\$9,842,766
50.03	Traction Power Supply: Substations		RF			\$9,842,766
10.05 Guideway: Built-up fill not used*****						
Traction Power Distribution: Catenary and Third Rail						
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	-	\$0
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	27,224	\$6,125,400
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$6,125,400
Communication						
csc50.05-1	Communications System - Dual Track	1	LS	\$299	27,224	\$8,139,976
50.05	Communication		-			\$8,139,976
Fare Collection System and Equipment						
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	4	\$1,198,848
50.06	Fare Collection System and Equipment		RF			\$1,198,848
Central Control						
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0
50.07	Central Control		RF			\$0
Total Systems						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
ROW Cost Summary

				Makai of the Airport Viaduct	
				COST	
DESCRIPTION	ID	QTY	UNIT		
60.00 Right of Way					
Purchase or lease of real property					
csc60.01-1				1	\$5,940,000
	60.01	Right of Way Takes from Detail table		LS	
					\$5,940,000
Relocation of existing households and businesses					
csc60.02-1				1	\$0
	60.02	BUSINESS RELOCATION from Detail table		ls	
		Relocation of existing households and businesses			\$0
TOTAL RIGHT OF WAY					

Section 3
Aolele St
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/28/06 1:45 PM			Sections & Alignments Section 3
Description			Aolele St
			Alt 6
			15
			Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$229,740,477
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$0
10.09	Track: Direct fixation		\$19,238,175
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$3,829,644
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$252,808,296
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$23,618,360
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$13,008,480
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$36,626,840
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITWORK & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$5,899,707
40.02	Site Utilities, Utility Relocation		\$25,453,689
40.03	Haz. mat'l, contamin'd soil removal/mitigation, ground water treatments		\$2,621,820
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$17,105,513
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$63,580,729

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 01/20/06 1:49 PM			Sections & Alignments Section 3
Description			Aolele St Alt 6 15
50.00	SYSTEMS		
50.01	Train control and signals		\$6,783,238
50.02	Traffic signals and crossing protection		\$3,124,851
50.03	Traction power supply: substations		\$9,842,766
50.04	Traction power distribution: catenary and third rail		\$6,412,725
50.05	Communications		\$8,521,799
50.06	Fare collection system and equipment		\$1,198,848
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$35,884,227
SUBTOTAL CONSTRUCTION COSTS			\$378,900,092
CONTINGENCY (WEIGHTED AVERAGE)			\$98,372,545
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$477,272,637
FEE/RISK			In Items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$3,132,102
SUBTOTAL CONSTRUCTION COSTS			\$480,404,739
HAWAII STATE EXCISE 4.70%			\$22,579,023
TOTAL CONSTRUCTION COSTS			\$502,983,762
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$0
60.02	Relocation of existing households and businesses		\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$0
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$0
TOTAL ROW COSTS			\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/28/06 1:45 PM			Sections & Alignments Section 3
Description			Aolele St Alt 6 15
70.00	VEHICLES		
70.01	Light Rail		IN SECTION 6
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6
	SUBTOTAL VEHICLE COST		\$0
		\$0	
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0
		0	
	TOTAL VEHICLE COSTS		\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$15,089,513
80.02	Final Design	4.5%	\$22,834,289
80.03	Project Management for Design and Construction	5.5%	\$27,864,107
80.04	Construction Administration & Management	10.0%	\$50,298,376
80.05	Insurance-Professional liability	1.50%	\$7,544,756
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$7,544,756
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$2,514,919
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$17,804,432
	SUBTOTAL SOFT COSTS 30%		\$150,895,128
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$39,232,733
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$502,983,762
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$190,127,861
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$693,111,623
	Route foot length		28,501'
	Construction Cost per Route Foot (2006\$)		\$17,700
	Construction Cost per Route Mile (2006\$)		\$93,456,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			Aolele St	
		ID	QTY	UNIT	Section 3 Alt 6	
1	2	3	4	5	34	35
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	15,793	\$126,170,277
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	12,708	\$103,570,200
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$8,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (6 ft dia)	1	RF	\$8,709	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - In Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$229,740,477
10.05	Guideway: Built-up fill not used*****					
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Keolu Blvd)	1	RF	\$31,308	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$436	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	28,501	\$19,238,175
10.09	Track: Direct fixation		RF			\$19,238,175
Track: Embedded/Paved						
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0
10.11	Track: Ballasted		RF			\$0
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	4	\$3,829,644
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$3,829,644
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$252,808,288

**Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis**

Pricing Sheet
Station & Shops

DESCRIPTION		COST			Aolele St	
1	2	ID	QTY	UNIT	34	35
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0
20.01	AT GRADE STATIONS		RF			\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	1	\$5,796,590
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0
20.02	AERIAL STATIONS		RF			\$23,618,360
UNDERGROUND STATIONS						
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0
20.03	UNDERGROUND STATIONS		RF			\$0
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**
20.05	JOINT DEVELOPMENT					**NOT USED**
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	8	\$ 3,636,064
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$846,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	16	\$ 9,372,416
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302		
20.07	ELEVATORS & ESCALATORS		RF			\$13,008,480
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Aolele St	
						Section 3 Alt 6	
40.00 Sitework & Special Conditions						28,501	15
			40.A	AERIAL ALIGNMENT		0	
			40.AG	AT GRADE ALIGNMENT			
CSC40.01-1		Demolition: Urban	1	RF	\$207	28,501	\$5,899,707
CSC40.01-2		Demolition: Rural	1	RF	\$22		
CSC40.01-3		Demolition: Residential	1	RF	\$53		
CSC40.01-8		Clear and Grubbing	1	RF	\$62	0	\$0
CSC40.01-5		Earthwork	1	RF	in guideway		
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,872,938		
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532		
40.01 Demo Clearing & Sitework							\$5,899,707
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	28,501	\$2,308,581
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	28,501	\$1,539,054
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,861,300	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$12,277,125	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$80,946,739	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST	1	LS	\$21,606,054	1	\$21,606,054
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$214,023,779	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,864	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$200,019,582	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0
SC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0
SC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0
PARSONS BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$25,453,886

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	14,172	\$2,621,820
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$2,621,820
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.04						\$2,500,000
Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	14,583	\$4,304,835
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	3,150	\$642,800
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	1	\$146,075
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$75,372	2	\$156,744
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,462	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	28,501	\$3,705,130
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	1,650	\$7,495,950
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	8	\$181,712
40.06 Site Development: Roads, Walkways, Landscaping Temporary Facilities						\$17,105,513
40.08 Temporary Facilities						\$0
Total Sitework & Special Conditions						
		1	LS			

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

		COST			Aolele St	
DESCRIPTION	ID	QTY	UNIT			
50.00 Systems				ALIGNMENT	28,501	15
Train Control & Signals						
csc50.01-1	ATC, Signal System Line Stations	1	RF	\$238	28,501	\$ 6,783,238
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	0	\$0
50.01	Train Control & Signals		RF			\$6,783,238
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****						
Traffic Signals and Crossing Protection						
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	6	\$2,256,282
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	3	\$868,569
50.02	Traffic Signals and Crossing Protection		RF			\$3,124,851
Traction Power Supply: Substations						
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	6	\$9,842,766
50.03	Traction Power Supply: Substations		RF			\$9,842,766
10.05 Guideway: Built-up fill not used*****						
Traction Power Distribution: Catenary and Third Rail						
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	-	\$0
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	28,501	\$6,412,725
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$6,412,725
Communication						
csc50.05-1	Communications System - Dual Track	1	LS	\$299	28,501	\$8,521,799
50.05	Communication					\$8,521,799
Fare Collection System and Equipment						
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	4	\$1,198,848
50.06	Fare Collection System and Equipment		RF			\$1,198,848
Central Control						
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0
50.07	Central Control		RF			\$0
Total Systems						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
ROW Cost Summary

				Aolele St	
				COST	
DESCRIPTION	ID	QTY	UNIT		
60.00 Right of Way					
Purchase or lease of real property					
csc60.01-1				1	\$0
				1	\$0
	60.01			LS	\$0
Relocation of existing households and businesses					
csc60.02-1				1	\$0
				1	\$0
	60.02			ls	\$0
TOTAL RIGHT OF WAY					

Section 4
North King St
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 4	Sections & Alignments Section 4
date: 10/20/05 last update: 9/28/08 1:45 PM				
Description			Nimitz Hwy/North King St Alt 1	Salt Lake Blvd/North King St Alt 2
			16	17
			Elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$0	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$97,237,650	\$71,369,550
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$0	\$0
10.09	Track: Direct fixation		\$8,053,425	\$5,910,975
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$0	\$0
10.12	Track: Special (switches, turnouts)		\$2,872,233	\$2,872,233
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$108,163,308	\$80,152,758
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$17,821,770	\$17,677,770
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$9,756,360	\$9,756,360
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$27,578,130	\$27,434,130
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$2,469,717	\$1,812,699
40.02	Site Utilities, Utility Relocation		\$50,734,935	\$50,007,195
40.03	Haz. mat'l, contain'd soil removal/mitigation, ground water treatments		\$237,355	\$237,355
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$5,081,220	\$12,388,810
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS			\$61,023,227	\$66,946,059

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	
				Sections & Alignments Section 4	
date: 10/20/06 last update: 9/28/05 1:45 PM					
Description				Nimitz Hwy/North King St	
				Alt 1	
				16	
				Salt Lake Blvd/North King St	
				Alt 2	
				17	
50.00	SYSTEMS				
50.01	Train control and signals			\$2,839,578	\$2,084,166
50.02	Traffic signals and crossing protection			\$8,798,836	\$6,798,836
50.03	Traction power supply: substations			\$4,921,383	\$3,280,922
50.04	Traction power distribution: catenary and third rail			\$2,684,475	\$1,970,325
50.05	Communications			\$3,567,369	\$2,618,343
50.06	Fare collection system and equipment			\$899,136	\$899,136
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$23,710,777	\$19,651,728
SUBTOTAL CONSTRUCTION COSTS				\$220,475,442	\$194,184,675
CONTINGENCY (WEIGHTED AVERAGE)				\$60,713,061	\$54,001,894
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$281,188,503	\$248,186,569
FEE/RISK					
				In Items above	In Items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$1,845,300	\$1,628,724
SUBTOTAL CONSTRUCTION COSTS				\$283,033,803	\$249,815,293
HAWAII STATE EXCISE 4.7%				\$13,302,589	\$11,741,319
TOTAL CONSTRUCTION COSTS				\$296,336,392	\$261,556,612
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$25,120,000	\$25,120,000
60.02	Relocation of existing households and businesses			\$300,000	\$300,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$25,420,000	\$25,420,000
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$12,710,000	\$12,710,000
TOTAL ROW COSTS				\$38,130,000	\$38,130,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			Nimitz Hwy/North King St		Salt Lake Blvd/North King St	
		ID	QTY	UNIT	Section 4 Alt 1	Section 4 Alt 2	Section 4 Alt 1	Section 4 Alt 2
1	2	3	4	5	36	37	38	39
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade In mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	-	\$0	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	11,931	\$97,237,650	8,757	\$71,369,550
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$8,452	-	\$0	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (6 ft Dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0	1	\$0
10.04	Guideway: Aerial structure		RF			\$97,237,650		\$71,369,550
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaianoa /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$0		\$0
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0		\$0
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	11,931	\$8,053,425	8,757	\$5,910,975
10.09	Track: Direct fixation		RF			\$8,053,425		\$5,910,975
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	3	\$2,872,233	3	\$2,872,233
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$2,872,233		\$2,872,233
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$108,163,308		\$80,152,758

**Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis**

Pricing Sheet
Station & Shops

					SECTION 4			
					Nimitz Hwy/North King St		Salt Lake Blvd/North King St	
DESCRIPTION		COST						
1	2	3	4	5	36	37	38	39
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,538	-	\$0	-	\$0
20.01 AT GRADE STATIONS		RF			\$0		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770	2	\$11,881,180
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	-	\$0	1	\$5,796,590
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS		RF			\$17,821,770		\$17,677,770	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$0		\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	6	\$ 2,727,048	6	\$ 2,727,048
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	12	\$ 7,029,312	12	\$ 7,029,312
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302	-	\$ -	-	\$ -
20.07 ELEVATORS & ESCALATORS		RF			\$9,756,360		\$9,756,360	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Nimitz Hwy/North King St		Salt Lake Blvd/North King St	
						Section 4 Alt 1		Section 4 Alt 2	
						16	17		
40.00 Sitework & Special Conditions						11,931		8,757	
			40.A		AERIAL ALIGNMENT	0		0	
			40.AG		AT GRADE ALIGNMENT				
CSC40.01-1		Demolition: Urban	1	RF	\$207	11,931	\$2,469,717	8,757	\$1,812,699
CSC40.01-2		Demolition: Rural	1	RF	\$22				
CSC40.01-3		Demolition: Residential	1	RF	\$53				
CSC40.01-8		Clear and Grubbing	1	RF	\$62	0	\$0	0	\$0
CSC40.01-5		Earthwork	1	RF	in guideway				
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938				
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532				
40.01 Demo Clearing & Sitework							\$2,469,717		\$1,812,699
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	11,931	\$966,411	8,757	\$709,317
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	11,931	\$644,274	8,757	\$472,878
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1	1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a		SARATOGA BLVD	1	LS	\$12,277,125	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGERFT WEAVER BLVD	1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,469,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$99,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	1	\$48,825,000	1	\$48,825,000
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	1	\$299,250	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$212,360,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$214,023,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$198,355,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,984	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$200,019,562	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,074,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD	1	LS	\$199,798,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a		SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1		SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 6: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$80,625,729	\$0	\$0	\$0	\$0
40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$50,734,936	ok	\$50,007,195

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	1,283	\$237,355	1,283	\$237,355
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
40.03 Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$237,355		\$237,355
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks						\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	8,269	\$2,439,355	8,269	\$2,439,355
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	3,600	\$734,400	3,600	\$734,400
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	11,931	\$1,551,030	8,757	\$1,138,410
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	1,650	\$7,495,950
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SOFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	-	\$0	10	\$227,140
40.06 Site Development: Roads, Walkways, Landscaping						\$5,081,220		\$12,388,810
Temporary Facilities								
40.08 Temporary Facilities								
Total Sitework & Special Conditions								
		1	LS					

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

DESCRIPTION	COST			Nimitz Hwy/North King St		Salt Lake Blvd/North King St	
	ID	QTY	UNIT				
50.00 Systems			ALIGNMENT	11,931	16	8,757	17
Train Control & Signals							
csc50.01-1 ATC, Signal System Line Stations	1	RF	\$238	11,931	\$ 2,839,578	8,757	\$ 2,084,166
csc50.01-2 Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	0	\$0	0	\$0
50.01 Train Control & Signals		RF			\$2,839,578		\$2,084,166
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Traffic Signals and Crossing Protection							
csc50.02-1 Traffic Signal Modifications (4 directions)	1	EA	\$376,047	8	\$3,008,376	8	\$3,008,376
csc50.02-2 Traffic Signal Modifications (3 directions)	1	EA	\$289,523	20	\$5,790,460	20	\$5,790,460
50.02 Traffic Signals and Crossing Protection		RF			\$8,798,836		\$8,798,836
Traction Power Supply: Substations							
csc50.03-1 Traction Power Substations (2 MW)	1	EA	\$1,640,461	3	\$4,921,383	2	\$3,280,822
50.03 Traction Power Supply: Substations		RF			\$4,921,383		\$3,280,822
10.05 Guideway: Built-up fill not used*****							
Traction Power Distribution: Catenary and Third Rail							
csc50.04-1 Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	-	\$0	-	\$0
csc50.04-2 Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	-	\$0	-	\$0
csc50.04-3 Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	11,931	\$2,684,475	8,757	\$1,970,325
csc50.04-4 Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	-	\$0
50.04 Traction Power Distribution: Catenary and Third Rail		RF			\$2,684,475		\$1,970,325
Communication							
csc50.05-1 Communications System - Dual Track	1	LS	\$299	11,931	\$3,567,369	8,757	\$2,618,343
50.05 Communication					\$3,567,369		\$2,618,343
Fare Collection System and Equipment							
csc50.06-1 Fare Vending Equipment Underground Stations	1	LS	\$584,612	-	\$0	-	\$0
csc50.06-2 Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	3	\$899,136	3	\$899,136
50.06 Fare Collection System and Equipment		RF			\$899,136		\$899,136
Central Control							
csc50.07 Central Control Facility	1	LS	\$8,529,933	-	\$0	-	\$0
50.07 Central Control		RF			\$0		\$0
Total Systems							

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
ROW Cost Summary

SECTION 4

DESCRIPTION	COST			Nimitz Hwy/North King St		Salt Lake Blvd/North King St	
	ID	QTY	UNIT				
60.00 Right of Way							
Purchase or lease of real property							
csc60.01-1				1	\$25,120,000	1	\$25,120,000
	60.01				\$25,120,000		\$25,120,000
Relocation of existing households and businesses							
csc60.02-1				1	\$300,000	1	\$300,000
	60.02				\$300,000		\$300,000
TOTAL RIGHT OF WAY							

Section 4
Dillingham Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/28/08 1:45 PM			Sections & Alignments Section 4
Description			Dillingham Blvd Alt 3 18 Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade In mixed traffic		\$0
10.04	Guideway: Aerial structure		\$71,662,950
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$0
10.09	Track: Direct fixation		\$5,935,275
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$2,872,233
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$80,470,468
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$17,821,770
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$9,756,360
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$27,578,130
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITework & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$1,820,151
40.02	Site Utilities, Utility Relocation		\$72,140,805
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$2,313,240
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$5,931,451
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS			\$84,705,647

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 09/26/06 1:45 PM			Sections & Alignments Section 4
Description			Dillingham Blvd
			Alt 3
			18
50.00	SYSTEMS		
50.01	Train control and signals		\$2,092,734
50.02	Traffic signals and crossing protection		\$2,835,328
50.03	Traction power supply: substations		\$3,280,922
50.04	Traction power distribution: catenary and third rail		\$1,978,425
50.05	Communications		\$2,629,107
50.06	Fare collection system and equipment		\$899,136
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$13,715,652
SUBTOTAL CONSTRUCTION COSTS			\$206,469,887
CONTINGENCY (WEIGHTED AVERAGE)			\$59,494,891
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$265,964,778
FEE/RISK			in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$1,745,394
SUBTOTAL CONSTRUCTION COSTS			\$267,710,172
HAWAII STATE EXCISE 4.70%			\$12,582,378
TOTAL CONSTRUCTION COSTS			\$280,292,550
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$6,540,000
60.02	Relocation of existing households and businesses		\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$6,540,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$3,270,000
TOTAL ROW COSTS			\$9,810,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/08 last update: 9/26/08 1:45 PM			Sections & Alignments Section 4
Description			Dillingham Blvd Alt 3 1B
70.00	VEHICLES		
70.01	Light Rail		IN SECTION 6
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6
SUBTOTAL VEHICLE COST			\$0
			\$0
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%	\$0
			0
TOTAL VEHICLE COSTS			\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$8,408,777
80.02	Final Design	4.5%	\$12,613,165
80.03	Project Management for Design and Construction	5.5%	\$15,416,090
80.04	Construction Administration & Management	10.0%	\$28,029,255
80.05	Insurance-Professional liability	1.50%	\$4,204,388
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$4,204,388
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$1,401,463
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$9,810,239
SUBTOTAL SOFT COSTS		30%	\$84,087,765
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$22,451,419
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$280,292,550
OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$116,349,184
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$396,641,734
Route foot length			9,702'
Construction Cost per Route Foot (2006\$)			\$28,900
Construction Cost per Route Mile (2006\$)			\$152,592,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			Dillingham Blvd	
		ID	QTY	UNIT	40	41
1	2	3	4	5	Section 4 Alt 3	
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$9,150	8,793	\$71,662,950
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$9,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (6 ft Dia)	1	RF	\$8,709	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast-in Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$71,662,950
10.05	Guideway: Built-up fill not used*****					
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$875	8,793	\$5,935,275
10.09	Track: Direct fixation		RF			\$5,935,275
Track: Embedded/Paved						
csc10.10-1	Paved Track (in Street) - Single	1	RF	\$667	-	\$0
csc10.10-2	Paved Track (in Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0
10.11	Track: Ballasted		RF			\$0
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	3	\$2,872,233
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	-	\$0
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$850	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$2,872,233
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$80,470,458

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					Dillingham Blvd	
DESCRIPTION		COST				
1	2	ID	QTY	UNIT	3	4
					40	41
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0
20.01	AT GRADE STATIONS	RF				\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	-	\$0
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0
20.02	AERIAL STATIONS	RF				\$17,821,770
UNDERGROUND STATIONS						
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0
20.03	UNDERGROUND STATIONS	RF				\$0
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**
20.05	JOINT DEVELOPMENT					**NOT USED**
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	6	\$ 2,727,048
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	12	\$ 7,029,312
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302		
20.07	ELEVATORS & ESCALATORS	RF				\$9,756,360
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Dillingham Blvd	
						Section 4 Alt 3	
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		8,793	18
			40.AG	AT GRADE ALIGNMENT		0	
CSC40.01-1	Demolition: Urban		1	RF	\$207	8,793	\$1,820,151
CSC40.01-2	Demolition: Rural		1	RF	\$22		
CSC40.01-3	Demolition: Residential		1	RF	\$53		
CSC40.01-8	Clear and Grubbing		1	RF	\$62	0	\$0
CSC40.01-5	Earthwork		1	RF	in guideway		
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938		
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532		
40.01 Demo Clearing & Sitework							\$1,820,151
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	8,793	\$712,233
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	8,793	\$474,822
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,019,187	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$12,277,125	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,718	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$80,946,739	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST		1	LS	\$21,606,054	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	1	\$70,953,750
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$212,360,175	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$214,023,779	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$189,355,978	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$200,019,582	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$199,074,175	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$189,798,364	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0
CSC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$81,198,973	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$82,813,917	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st		1	LS	\$165,872,395	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$80,625,729	ok	\$0
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF			\$72,140,805

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	12,504	\$2,313,240
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$2,313,240
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, 40.04 parks						\$2,500,000
Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	9,702	\$2,862,090
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	2,690	\$548,760
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	8	\$884,792
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	8,793	\$1,143,090
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	6	\$136,284
40.06 Site Development: Roads, Walkways, Landscaping						\$5,931,451
Temporary Facilities						
40.08 Temporary Facilities						\$0
Total Sitework & Special Conditions						
		1	LS			

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

				Dillingham Blvd	
DESCRIPTION	COST				
	ID	QTY	UNIT		
50.00 Systems			ALIGNMENT	8,793	18
Train Control & Signals					
csc50.01-1		1	RF	\$238	8,793 \$ 2,092,734
csc50.01-2		1	EA	\$235,278	0 \$0
50.01	Train Control & Signals			RF	\$2,092,734
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					
NOT USED					
Traffic Signals and Crossing Protection					
csc50.02-1		1	EA	\$376,047	6 \$2,266,262
csc50.02-2		1	EA	\$289,523	2 \$579,046
50.02	Traffic Signals and Crossing Protection			RF	\$2,835,328
Traction Power Supply: Substations					
csc50.03-1		1	EA	\$1,640,461	2 \$3,280,922
50.03	Traction Power Supply: Substations			RF	\$3,280,922
10.05 Guideway: Built-up fill not used*****					
Traction Power Distribution: Catenary and Third Rail					
csc50.04-1		1	RF	\$315	- \$0
csc50.04-2		1	RF	\$216	- \$0
csc50.04-3		1	RF	\$225	8,793 \$1,978,425
csc50.04-4		1	RF	\$170	- \$0
50.04	Traction Power Distribution: Catenary and Third Rail			RF	\$1,978,425
Communication					
csc50.05-1		1	LS	\$299	8,793 \$2,629,107
50.05	Communication				\$2,629,107
Fare Collection System and Equipment					
csc50.06-1		1	LS	\$584,612	- \$0
csc50.06-2		1	LS	\$299,712	3 \$899,136
50.06	Fare Collection System and Equipment			RF	\$899,136
Central Control					
csc50.07		1	LS	\$8,529,933	- \$0
50.07	Central Control			RF	\$0
Total Systems					

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
ROW Cost Summary

				Dillingham Blvd	
			COST		
DESCRIPTION	ID	QTY	UNIT		
60.00 Right of Way					
Purchase or lease of real property					
csc60.01-1	Right of Way Takes from Detail table	1	LS	1	\$6,540,000
60.01	Purchase or lease of real property		LS		\$6,540,000
Relocation of existing households and businesses					
csc60.02-1	BUSINESS RELOCATION from Detail table	1	ls	1	\$0
60.02	Relocation of existing households and businesses		ls		\$0
TOTAL RIGHT OF WAY					

Section 5
Hotel St/Kawaiahao St/Kapiolani Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
				Sections & Alignments Section 5	Sections & Alignments Section 5
date: 10/20/06 last update: 9/28/06 1:45 PM					
Description				North King St/Hotel St/Kawaiahae St/Kapiolani Blvd	Dillingham Blvd/Hotel St/Kawaiahae St/Kapiolani Blvd
				Alt 1	Alt 2
				19	20
				At-grade/Tunnel/Elevated	At-grade/Tunnel/Elevated
10.00	GUIDEWAY & TRACK ELEMENTS				
10.01	Guideway: At-grade Exclusive Right-of-way			\$0	\$0
10.02	Guideway: At-grade Semi-exclusive			**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic			\$848,625	\$848,625
10.04	Guideway: Aerial structure			\$192,445,289	\$194,659,644
10.05	Guideway: Built-up fill			\$0	\$0
10.06	Guideway: Underground cut & cover			\$102,270,000	\$102,270,000
10.07	Guideway: Underground tunnel bored			\$0	\$0
10.08	Guideway: Retained cut or fill			\$8,038,550	\$8,038,550
10.09	Track: Direct fixation			\$14,665,050	\$14,806,125
10.10	Track: Embedded			\$2,906,250	\$2,906,250
10.11	Track: Ballasted			\$0	\$0
10.12	Track: Special (switches, turnouts)			\$11,318,417	\$12,275,828
10.13	Track: Vibration and noise dampening			\$0	\$0
SUBTOTAL GUIDEWAY & TRACK				\$332,492,181	\$335,805,022
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)				
20.01	At-grade station, stop, shelter, mall, terminal, platform			\$9,586,608	\$9,586,608
20.02	Aerial station, stop, shelter, mall, terminal, platform			\$48,922,088	\$54,574,678
20.03	Underground station, stop, shelter, mall, terminal, platform			\$74,005,063	\$74,005,063
20.04	Other Stations & Pedestrian Tunnels			**NOT USED**	**NOT USED**
20.05	Joint development			**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure			**NOT USED**	**NOT USED**
20.07	Elevators, escalators			\$24,054,934	\$27,307,054
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL				\$156,568,693	\$165,473,403
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				
30.01	Administration Building: Office, sales, storage, revenue counting			\$0	\$0
30.02	Light Maintenance Facility			**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility			\$0	\$0
30.04	Storage Building & Yard			"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard			**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				\$0	\$0
40.00	SITWORK & SPECIAL CONDITIONS				
40.01	Demolition, Clearing, Earthwork			\$9,073,000	\$9,111,268
40.02	Site Utilities, Utility Relocation			\$136,857,060	\$138,548,879
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			\$616,975	\$616,975
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls			not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work			\$29,011,080	\$29,081,932
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing			\$0	\$0
40.08	Temporary facilities and other indirect costs during construction			\$0	\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS				\$178,058,115	\$179,859,054

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
			North King St/Hotel St/Kawalahao St/Kapiolani Blvd	Dillingham Blvd/Hotel St/Kawalahao St/Kapiolani Blvd
			Alt 1	Alt 2
			19	20
Description				
50.00	SYSTEMS			
50.01	Train control and signals		\$8,782,762	\$8,832,494
50.02	Traffic signals and crossing protection		\$10,822,168	\$10,532,645
50.03	Traction power supply; substations		\$8,202,305	\$8,202,305
50.04	Traction power distribution; catenary and third rail		\$6,597,225	\$6,644,260
50.05	Communications		\$7,191,249	\$7,253,740
50.06	Fare collection system and equipment		\$3,881,444	\$4,181,156
50.07	Central Control		\$0	\$0
SUBTOTAL COST SYSTEMS			\$45,477,143	\$45,648,590
SUBTOTAL CONSTRUCTION COSTS			\$712,596,132	\$726,784,069
CONTINGENCY (WEIGHTED AVERAGE)			\$203,280,737	\$207,000,729
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$915,876,869	\$933,784,798
FEE/RISK				
			in items above	in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$6,010,442	\$6,127,963
SUBTOTAL CONSTRUCTION COSTS			\$921,887,311	\$939,912,761
HAWAII STATE EXCISE 4.70%			\$43,328,704	\$44,175,900
TOTAL CONSTRUCTION COSTS			\$965,216,015	\$984,088,661
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)			
60.01	Purchase or lease of real property		\$71,146,000	\$76,202,000
60.02	Relocation of existing households and businesses		\$4,600,000	\$4,600,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$75,746,000	\$80,802,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$37,873,000	\$40,401,000
TOTAL ROW COSTS			\$113,619,000	\$121,203,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency	
				Sections & Alignments Section 5 North King St/Hotel St/Kawalahao St/Kapiolani Blvd	Sections & Alignments Section 5 Dillingham Blvd/Hotel St/Kawalahao St/Kapiolani Blvd	
Description				Alt 1 19	Alt 2 20	
70.00	VEHICLES					
70.01	Light Rail			IN SECTION 6	IN SECTION 6	
70.02	Heavy Rail			not used	not used	
70.03	Commuter Rail			not used	not used	
70.04	Bus			not used	not used	
70.05	Other			not used	not used	
70.06	Non-revenue vehicles			IN SECTION 6	IN SECTION 6	
70.07	Spare parts (10% of LRV's)			IN SECTION 6	IN SECTION 6	
	SUBTOTAL VEHICLE COST			\$0	\$0	
				\$0		
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%		\$0	\$0	
				0		
	TOTAL VEHICLE COSTS			\$0	\$0	
80.00	SOFT COSTS					
80.01	Preliminary Engineering	3.0%		\$28,956,480	\$29,622,660	
80.02	Final Design	4.5%		\$43,434,721	\$44,283,990	
80.03	Project Management for Design and Construction	5.5%		\$53,086,881	\$54,124,876	
80.04	Construction Administration & Management	10.0%		\$96,521,602	\$98,408,866	
80.05	Insurance-Professional liability	1.50%		\$14,478,240	\$14,761,330	
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%		\$14,478,240	\$14,761,330	
80.07	Survey, Testing, Investigation, Inspection	0.50%		\$4,826,080	\$4,920,443	
80.08	Agency: Force Account Work (2%3,4)	3.5%		\$33,782,561	\$34,443,103	
	SUBTOTAL SOFT COSTS			30%	\$289,564,805	\$295,226,588
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%		\$82,103,989	\$84,031,098	
100.00	FINANCE CHARGES			\$0	\$0	
110.00	Total Construction (10+20+30+40+50) (2006\$)			\$965,216,015	\$984,088,661	
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$485,287,794	\$500,460,694	
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$1,450,503,809	\$1,484,549,355	
	Route foot length			24,051'	24,260'	
	Construction Cost per Route Foot (2006\$)			\$40,200	\$40,600	
	Construction Cost per Route Mile (2006\$)			\$212,256,000	\$214,368,000	

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			North King St/Hotel St/Kawaiahao St/Kapiolani Blvd		Dillingham Blvd/Hotel St/Kawaiahao St/Kapiolani Blvd			
		ID	QTY	UNIT	Section 5 Alt 1	Section 5 Alt 2	42	43	44	45
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)										
Guideway: At-grade Exclusive										
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	-	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	-	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0				\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**			**NOT USED**		
Guideway: At-grade in mixed traffic										
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	2,325	\$848,625		2,325		\$848,625
10.03	Guideway: At-grade in mixed traffic		RF			\$848,625				\$848,625
Guideway: Aerial structure										
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (8 ft Dia)	1	RF	\$7,989	-	\$0		-		\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0		-		\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (8 ft Dia)	1	RF	\$8,086	-	\$0		-		\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (8 ft Dia)	1	RF	\$8,150	15,707	\$128,012,050		15,916		\$129,715,400
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	2,369	\$20,022,788		2,369		\$20,022,788
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709	-	\$0		-		\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$6,793	-	\$0		-		\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$44,410,451		1		\$44,921,456
10.04	Guideway: Aerial structure		RF			\$192,445,289				\$194,659,644
Guideway: Built-up fill not used*****										
Guideway: Underground cut & cover										
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiahao /	1	RF	\$34,090	3,000	\$102,270,000		3,000		\$102,270,000
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0		-		\$0
10.06	Guideway: Underground cut & cover		RF			\$102,270,000				\$102,270,000
Guideway: Underground tunnel										
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0		-		\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0		-		\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0		-		\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0		-		\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0		-		\$0
10.07	Guideway: Underground tunnel					\$0				\$0
Guideway: Retained cut or fill										
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	650	\$8,038,550		650		\$8,038,550
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$8,162	-	\$0		-		\$0
10.08	Guideway: Retained cut or fill		RF			\$8,038,550				\$8,038,550
Track: Direct fixation										
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0		-		\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	21,726	\$14,665,050		21,935		\$14,806,125
10.09	Track: Direct fixation		RF			\$14,665,050				\$14,806,125
Track: Embedded/Paved										
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0		-		\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	2,325	\$2,906,250		2,325		\$2,906,250
10.10	Track: Embedded/Paved		RF			\$2,906,250				\$2,906,250
Track: Ballasted										
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0		-		\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0		-		\$0
10.11	Track: Ballasted		RF			\$0				\$0
Track: Special (switches, turnouts)										
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	9	\$8,616,699		10		\$9,574,110
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	3	\$2,412,120		3		\$2,412,120
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0		-		\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0		-		\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098		2		\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	370	\$240,500		370		\$240,500
10.12	Track: Special (switches, turnouts)		LS			\$11,318,417				\$12,275,828
Track: Vibration and noise dampening										
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0		-		\$0
10.13	Vibration and noise dampening		RF			\$0				\$0
Total Guideways						\$332,482,181				\$335,805,022

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					SECTION 5			
					North King St/Hotel St/Kawaiahao St/Kapiolani Blvd		Dillingham Blvd/Hotel St/Kawaiahao St/Kapiolani Blvd	
DESCRIPTION		COST						
1	2	3	4	5	42	43	44	45
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,638	3	\$9,586,608	3	\$9,586,608
20.01	AT GRADE STATIONS	RF			\$9,586,608		\$9,586,608	
AERIAL STATIONS								
csc20.02-1	Aerial Station - Side Platforms, Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770	2	\$11,881,180
csc20.02-2	Aerial Station - Side Platforms, Major (270 Ft. L.) No Mezzanine	1	LS	\$5,798,690	3	\$17,389,770	5	\$28,982,950
csc20.02-3	Aerial Station - Stacked Side Platforms, Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked Side Platforms, Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	1	\$6,284,810	1	\$6,284,810
csc20.02-5	Aerial Station - Center Platforms, Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	1	\$7,425,738	1	\$7,425,738
20.02	AERIAL STATIONS	RF			\$48,922,088		\$54,574,678	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	1	\$74,005,063	1	\$74,005,063
20.03	UNDERGROUND STATIONS	RF			\$74,005,063		\$74,005,063	
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS				**NOT USED**		**NOT USED**	
20.05	JOINT DEVELOPMENT				**NOT USED**		**NOT USED**	
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****				**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	12	\$ 5,454,096	14	\$ 6,363,112
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	2	\$ 1,027,558	2	\$ 1,027,558
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	30	\$ 17,573,280	34	\$ 19,916,384
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07	ELEVATORS & ESCALATORS	RF			\$24,054,934		\$27,307,054	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	North King St/Hotel St/Kawaiahao St/Kapiolani Blvd		Dillingham Blvd/Hotel St/Kawaiahao St/Kapiolani Blvd	
						Section 5 Alt 1		Section 5 Alt 2	
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		18,076	19	18,285	20
			40.AG	AT GRADE ALIGNMENT		5,975		5,975	
CSC40.01-1	Demolition: Urban		1	RF	\$207	20,924	\$4,331,268	21,106	\$4,368,942
CSC40.01-2	Demolition: Rural		1	RF	\$22	3,127	\$68,794	3,154	\$69,388
CSC40.01-3	Demolition: Residential		1	RF	\$53				
CSC40.01-8	Clear and Grubbing		1	RF	\$82	0	\$0	0	\$0
CSC40.01-5	Earthwork		1	RF	in guideway				
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938	1	\$ 4,672,938	1	\$ 4,672,938
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532				
40.01 Demo Clearing & Sitework							\$9,073,000		\$9,114,268
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	24,051	\$1,848,131	24,260	\$1,955,060
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	24,051	\$1,298,754	24,260	\$1,310,040
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10	SARATOGA BLVD		1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$9,914,625	-	\$0	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,617	-	\$0	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,834,239	-	\$0	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$80,946,739	-	\$0	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOEELE ST		1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$133,610,175	1	\$133,610,175	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$135,273,779	-	\$0	1	\$135,273,779
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$119,605,978	-	\$0	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$121,269,582	-	\$0	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$120,324,175	-	\$0	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$121,048,364	-	\$0	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,466	-	\$0	-	\$0
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0	-	\$0
SC40.02-63a1	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,280,664	-	\$0	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0	-	\$0
SC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,883,234	-	\$0	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$81,198,973	-	\$0	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st		1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSON BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$138,857,080	ok	\$138,548,879

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	3,335	\$816,975	3,335	\$816,975
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$816,975		\$816,975
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks						\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	15,738	\$4,842,710	15,572	\$4,593,740
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	5,910	\$1,205,640	5,810	\$1,185,240
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	2	\$292,150	2	\$292,150
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	2	\$221,198	2	\$221,198
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	4	\$313,488	4	\$313,488
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	1	\$32,482	1	\$32,482
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	24,051	\$3,126,630	24,260	\$3,153,800
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	112,320	\$17,971,200	112,320	\$17,971,200
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	10	\$227,140	10	\$227,140
40.06 Site Development: Roads, Walkways, Landscaping						\$29,011,080		\$29,081,932
Temporary Facilities								
40.08 Temporary Facilities								
Total Sitework & Special Conditions								
		1	LS					

Honolulu High-Capacity Transit Corridor Project							
Fixed Guideway Alternatives							
Summary Cost Comparison of Alternative Analysis							
Pricing Sheet							
Systems							
						North King St/Hotel St/Kawaiahao St/Kapiolani Blvd	
						Dillingham Blvd/Hotel St/Kawaiahao St/Kapiolani Blvd	
COST							
DESCRIPTION	ID	QTY	UNIT	ALIGNMENT			
				19	20		
50.00 Systems						24,051	24,260
Train Control & Signals							
csc50.01-1	ATC, Signal System Line Stations	1	RF	\$238	24,051	\$ 5,724,138	24,260 \$ 5,773,880
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	13	\$3,058,614	13 \$3,058,614
50.01	Train Control & Signals		RF			\$8,782,752	\$8,832,494
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****						**NOT USED**	**NOT USED**
Traffic Signals and Crossing Protection							
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	18	\$6,768,846	18 \$6,768,846
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	14	\$4,053,322	13 \$3,763,799
50.02	Traffic Signals and Crossing Protection		RF			\$10,822,168	\$10,532,645
Traction Power Supply: Substations							
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	5	\$8,202,305	5 \$8,202,305
50.03	Traction Power Supply: Substations		RF			\$8,202,305	\$8,202,305
10.05 Guideway: Built-up fill not used*****							
Traction Power Distribution: Catenary and Third Rail							
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	5,975	\$1,882,125	5,975 \$1,882,125
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	3,000	\$648,000	3,000 \$648,000
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	18,076	\$4,067,100	18,285 \$4,114,125
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	- \$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$6,597,225	\$6,644,250
Communication							
csc50.05-1	Communications System - Dual Track	1	LS	\$299	24,051	\$7,191,249	24,260 \$7,253,740
50.05	Communication		-			\$7,191,249	\$7,253,740
Fare Collection System and Equipment							
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	1	\$584,612	1 \$584,612
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	11	\$3,296,832	12 \$3,596,544
50.06	Fare Collection System and Equipment		RF			\$3,881,444	\$4,181,156
Central Control							
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0	- \$0
50.07	Central Control		RF			\$0	\$0
Total Systems							

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
ROW Cost Summary

SECTION 5

DESCRIPTION	ID	QTY	UNIT	COST			
				North King St/Hotel St/Kawaiahao St/Kapiolani Blvd	Dillingham Blvd/Hotel St/Kawaiahao St/Kapiolani Blvd		
60.00 Right of Way							
Purchase or lease of real property							
csc60.01-1				1	\$71,146,000	1	\$76,202,000
60.01	Purchase or lease of real property		LS		\$71,146,000		\$76,202,000
Relocation of existing households and businesses							
csc60.02-1				1	\$4,600,000	1	\$4,600,000
60.02	Relocation of existing households and businesses		ls		\$4,600,000		\$4,600,000
TOTAL RIGHT OF WAY							

Section 5
Hotel St/Waimanu St/Kapiolani Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
				Sections & Alignments Section 5	Sections & Alignments Section 5
date: 10/20/06 last update: 8/28/06 1:45 PM					
Description				North King St/Hotel St/Waimanu St/Kapiolani Blvd	Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd
				Alt 3	Alt 4
				21	22
				At-grade/Tunnel/Elevated	At-grade/Tunnel/Elevated
10.00	GUIDEWAY & TRACK ELEMENTS				
10.01	Guideway: At-grade Exclusive Right-of-way			\$0	\$0
10.02	Guideway: At-grade Semi-exclusive			**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic			\$897,900	\$857,750
10.04	Guideway: Aerial structure			\$179,593,554	\$181,807,909
10.05	Guideway: Built-up fill			\$0	\$0
10.06	Guideway: Underground cut & cover			\$0	\$0
10.07	Guideway: Underground tunnel bored			\$120,222,720	\$120,222,720
10.08	Guideway: Retained cut or fill			\$6,059,830	\$7,420,200
10.09	Track: Direct fixation			\$14,305,275	\$14,520,600
10.10	Track: Embedded			\$3,076,000	\$2,937,500
10.11	Track: Ballasted			\$0	\$0
10.12	Track: Special (switches, turnouts)			\$11,318,417	\$12,276,828
10.13	Track: Vibration and noise dampening			\$0	\$0
SUBTOTAL GUIDEWAY & TRACK				\$335,472,698	\$340,042,507
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)				
20.01	At-grade station, stop, shelter, mall, terminal, platform			\$9,586,608	\$9,586,608
20.02	Aerial station, stop, shelter, mall, terminal, platform			\$43,125,498	\$48,922,088
20.03	Underground station, stop, shelter, mall, terminal, platform			\$148,010,126	\$148,010,126
20.04	Other Stations & Pedestrian Tunnels			**NOT USED**	**NOT USED**
20.05	Joint development			**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure			**NOT USED**	**NOT USED**
20.07	Elevators, escalators			\$20,802,814	\$24,054,934
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL				\$221,525,046	\$230,573,756
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				
30.01	Administration Building: Office, sales, storage, revenue counting			\$0	\$0
30.02	Light Maintenance Facility			**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility			\$0	\$0
30.04	Storage Building & Yard			"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard			**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				\$0	\$0
40.00	SITWORK & SPECIAL CONDITIONS				
40.01	Demolition, Clearing, Earthwork			\$9,000,234	\$9,038,502
40.02	Site Utilities, Utility Relocation			\$287,007,924	\$290,363,347
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			\$616,975	\$616,975
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls			not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work			\$28,309,008	\$10,411,540
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing			\$0	\$0
40.08	Temporary facilities and other indirect costs during construction			\$0	\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS				\$327,434,141	\$312,930,364

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
date: 10/20/08 last update: 9/28/08 1:45 PM			North King St/Hotel St/Waimanu St/Kapiolani Blvd	Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd
Description			Alt 3	Alt 4
			21	22
50.00	SYSTEMS			
50.01	Train control and signals		\$8,888,028	\$8,737,770
50.02	Traffic signals and crossing protection		\$8,738,934	\$8,449,411
50.03	Traction power supply: substations		\$8,202,305	\$8,202,305
50.04	Traction power distribution: catenary and third rail		\$6,762,485	\$6,809,480
50.05	Communications		\$7,072,247	\$7,134,738
50.06	Fare collection system and equipment		\$4,166,344	\$4,466,056
50.07	Central Control		\$0	\$0
SUBTOTAL COST SYSTEMS			\$43,630,323	\$43,799,770
SUBTOTAL CONSTRUCTION COSTS			\$928,062,206	\$927,346,397
CONTINGENCY (WEIGHTED AVERAGE)			\$273,950,337	\$274,110,754
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$1,202,012,543	\$1,201,457,151
FEE/RISK				
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$7,888,207	\$7,884,563
SUBTOTAL CONSTRUCTION COSTS			\$1,209,900,750	\$1,209,341,714
HAWAII STATE EXCISE 4.70%			\$56,865,335	\$56,839,061
TOTAL CONSTRUCTION COSTS			\$1,266,766,085	\$1,266,180,775
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)			
60.01	Purchase or lease of real property		\$69,500,000	\$74,550,000
60.02	Relocation of existing households and businesses		\$1,700,000	\$1,700,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$71,200,000	\$76,250,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$35,600,000	\$38,125,000
TOTAL ROW COSTS			\$106,800,000	\$114,375,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5 North King St/Hotel St/Waimanu St/Kapiolani Blvd Alt 3 21	Sections & Alignments Section 5 Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd Alt 4 22
date: 10/20/06 last update: 9/26/06 1:45 PM				
Description				
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
	SUBTOTAL VEHICLE COST		\$0	\$0
		\$0		
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0	\$0
		0		
	TOTAL VEHICLE COSTS		\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$38,002,983	\$37,985,423
80.02	Final Design	4.5%	\$57,004,474	\$56,978,135
80.03	Project Management for Design and Construction	5.5%	\$69,672,135	\$69,639,943
80.04	Construction Administration & Management	10.0%	\$126,676,609	\$126,618,078
80.05	Insurance-Professional liability	1.50%	\$19,001,491	\$18,992,712
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$19,001,491	\$18,992,712
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$6,333,830	\$6,330,904
80.08	Agency: Force Account Work (2%3.4)	3.5%	\$44,336,813	\$44,316,327
	SUBTOTAL SOFT COSTS 30%		\$380,029,826	\$379,854,234
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$105,215,755	\$105,624,601
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$1,266,766,085	\$1,266,180,775
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$592,045,581	\$599,853,835
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$1,858,811,666	\$1,866,034,610
	Route foot length		23,653'	23,862'
	Construction Cost per Route Foot (2006\$)		\$53,600	\$53,100
	Construction Cost per Route Mile (2006\$)		\$283,008,000	\$280,368,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			North King St/Hotel St/Waimanu St/Kapiolani Blvd		Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd	
		ID	QTY	UNIT	Section 5 Alt 3		Section 5 Alt 4	
1	2	3	4	5	46	47	48	49
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$280	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	2,460	\$897,900	2,350	\$857,750
10.03	Guideway: At-grade in mixed traffic		RF			\$897,900		\$857,750
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,999	-	\$0	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,803	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	14,494	\$118,126,100	14,703	\$119,829,450
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	2,369	\$20,022,798	2,369	\$20,022,798
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$41,444,666	1	\$41,955,671
10.04	Guideway: Aerial structure		RF			\$179,593,564		\$181,607,809
10.05 Guideway: Built-up fill not used*****								
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiaho /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	3,840	\$120,222,720	3,840	\$120,222,720
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sla 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sla 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$120,222,720		\$120,222,720
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	490	\$6,059,830	600	\$7,420,200
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,182	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$6,059,830		\$7,420,200
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	21,193	\$14,305,275	21,512	\$14,520,600
10.09	Track: Direct fixation		RF			\$14,305,275		\$14,520,600
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	2,460	\$3,075,000	2,350	\$2,937,500
10.10	Track: Embedded/Paved		RF			\$3,075,000		\$2,937,500
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$857,411	9	\$8,816,699	10	\$9,574,110
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	3	\$2,412,120	3	\$2,412,120
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,548	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	370	\$240,500	370	\$240,500
10.12	Track: Special (switches, turnouts)		LS			\$11,316,417		\$12,275,828
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$335,472,896		\$340,042,507

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					North King St/Hotel St/Waimanu St/Kapiolani Blvd		Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd	
DESCRIPTION		COST						
1	2	ID	QTY	UNIT	46	47	48	49
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	3	\$9,586,608	3	\$9,586,608
20.01 AT GRADE STATIONS		RF			\$9,586,608		\$9,586,608	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770	3	\$17,821,770
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	2	\$11,593,180	3	\$17,389,770
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	1	\$6,284,810	1	\$6,284,810
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	1	\$7,425,738	1	\$7,425,738
20.02 AERIAL STATIONS		RF			\$43,126,498		\$48,922,088	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	2	\$148,010,126	2	\$148,010,126
20.03 UNDERGROUND STATIONS		RF			\$148,010,126		\$148,010,126	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	10	\$ 4,545,080	12	\$ 5,454,096
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	2	\$ 1,027,558	2	\$ 1,027,558
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	26	\$ 15,230,176	30	\$ 17,573,280
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS		RF			\$20,802,814		\$24,054,934	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	North King St/Hotel St/Waimanu St/Kapiolani Blvd		Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd	
						Section 5 Alt 3		Section 5 Alt 4	
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		18,863	21		22
			40.AG	AT GRADE ALIGNMENT		8,780		17,072	6,790
CSC40.01-1	Demolition: Urban		1	RF	\$207	20,578	\$4,258,646	20,760	\$4,287,320
CSC40.01-2	Demolition: Rural		1	RF	\$22	3,075	\$67,650	3,102	\$68,244
CSC40.01-3	Demolition: Residential		1	RF	\$53				
CSC40.01-8	Clear and Grubbing		1	RF	\$52	0	\$0	0	\$0
CSC40.01-5	Earthwork		1	RF	In guideway				
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938	1 \$	4,672,938	1 \$	4,672,938
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532				
40.01 Demo Clearing & Sitework							\$9,000,234		\$9,038,502
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	23,653	\$1,815,893	23,862	\$1,932,822
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	23,653	\$1,277,262	23,862	\$1,288,548
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$9,914,825	-	\$0	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,718	-	\$0	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLEE ST		1	LS	\$21,800,054	-	\$0	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$133,610,175	-	\$0	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$135,273,779	-	\$0	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$119,605,978	1	\$119,605,978	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25	DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$121,269,582	-	\$0	1	\$121,269,582
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$120,324,175	-	\$0	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$121,048,364	-	\$0	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0	-	\$0
SC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694	-	\$0	-	\$0
SC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0	-	\$0
SC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0	-	\$0
SC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	1	\$164,208,791	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)		1	LS	\$165,872,395	-	\$0	1	\$165,872,395
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		ok	\$287,007,924	ok	\$289,363,347

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	3,335	\$616,975	3,335	\$616,975
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
40.03 Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$616,975		\$616,975
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks				1	ALLOW	\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	14,618	\$4,312,310	14,452	\$4,263,340
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	4,910	\$1,001,640	4,810	\$981,240
CSC40.06-17	Intersection Modification Type 1	1	LS	\$145,075	2	\$292,150	2	\$292,150
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	2	\$221,198	2	\$221,198
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	4	\$313,488	4	\$313,488
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	1	\$32,482	1	\$32,482
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	23,853	\$3,074,890	23,862	\$3,102,060
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	112,320	\$17,971,200	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SCFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	10	\$227,140	10	\$227,140
40.06 Site Development: Roads, Walkways, Landscaping						\$28,309,008		\$10,411,540
Temporary Facilities								
40.08 Temporary Facilities				1		\$0		
Total Sitework & Special Conditions				1	LS			

Honolulu High-Capacity Transit Corridor Project								
Fixed Guideway Alternatives								
Summary Cost Comparison of Alternative Analysis								
Pricing Sheet								
Systems								
						North King St/Hotel St/Waimanu St/Kapiolani Blvd	Dillingham Blvd/Hotel St/Waimanu St/Kapiolani Blvd	
DESCRIPTION	COST							
	ID	QTY	UNIT					
50.00 Systems				ALIGNMENT	21	22		
Train Control & Signals					23,663	23,862		
csc50.01-1	ATC, Signal System Line Stations	1	RF	\$238	23,653	\$ 5,629,414	23,862	\$ 5,679,156
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$235,278	13	\$3,058,614	13	\$3,058,614
50.01	Train Control & Signals		RF			\$8,688,028		\$8,737,770
Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**	
Traffic Signals and Crossing Protection								
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	14	\$5,264,658	14	\$5,264,658
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	12	\$3,474,276	11	\$3,184,753
50.02	Traffic Signals and Crossing Protection		RF			\$8,738,934		\$8,448,411
Traction Power Supply: Substations								
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	5	\$8,202,305	5	\$8,202,305
50.03	Traction Power Supply: Substations		RF			\$8,202,305		\$8,202,305
10.05 Guideway: Built-up fill not used*****								
Traction Power Distribution: Catenary and Third Rail								
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	6,790	\$2,138,850	6,790	\$2,138,850
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$218	3,840	\$829,440	3,840	\$829,440
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	16,863	\$3,794,175	17,072	\$3,841,200
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$6,762,465		\$6,809,490
Communication								
csc50.05-1	Communications System - Dual Track	1	LS	\$299	23,653	\$7,072,247	23,862	\$7,134,738
50.05	Communication					\$7,072,247		\$7,134,738
Fare Collection System and Equipment								
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	2	\$1,169,224	2	\$1,169,224
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$209,712	10	\$2,997,120	11	\$3,296,832
50.06	Fare Collection System and Equipment		RF			\$4,166,344		\$4,466,056
Central Control								
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control		RF			\$0		\$0
Total Systems								

Section 5
King St Tunnel/Waimanu St/Kapiolani Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
			North King St/King St Tunnel/Wai'anae St/Kapiolani Blvd	Dillingham Blvd/King St Tunnel/Wai'anae St/Kapiolani Blvd
			Alt 4	Alt 5
			21a	22a
Description			At-grade/Tunnel/Elevated	At-grade/Tunnel/Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$0	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$181,672,843	\$180,196,696
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored		\$174,025,360	\$162,694,264
10.08	Guideway: Retained cut or fill		\$6,430,840	\$6,430,840
10.09	Track: Direct fixation		\$15,968,475	\$16,395,750
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$0	\$0
10.12	Track: Special (switches, turnouts)		\$9,623,208	\$8,665,797
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$387,720,826	\$394,383,346
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$42,781,278	\$36,840,688
20.03	Underground station, stop, shelter, mall, terminal, platform		\$255,516,693	\$255,516,693
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$21,198,051	\$17,945,931
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$319,496,022	\$310,303,312
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork		\$7,121,541	\$7,186,953
40.02	Site Utilities, Utility Relocation		\$167,402,486	\$169,151,545
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$616,975	\$616,975
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$28,075,504	\$27,969,612
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction		\$0	\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$205,716,506	\$207,425,085

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency			
				Sections & Alignments Section 5		Sections & Alignments Section 5	
Description				North King St/King St Tunnel/Walmanu St/Kapiolani Blvd		Dillingham Blvd/King St Tunnel/Walmanu St/Kapiolani Blvd	
				Alt 4 21a		Alt 5 22a	
50.00	SYSTEMS						
50.01	Train control and signals			\$5,630,366		\$5,781,020	
50.02	Traffic signals and crossing protection			\$8,738,934		\$8,449,411	
50.03	Traction power supply: substations			\$8,202,305		\$8,202,305	
50.04	Traction power distribution: catenary and third rail			\$7,276,923		\$7,654,968	
50.05	Communications			\$7,073,443		\$7,282,710	
50.06	Fare collection system and equipment			\$3,851,820		\$3,552,108	
50.07	Central Control			\$0		\$0	
SUBTOTAL COST SYSTEMS				\$40,773,791		\$40,902,522	
SUBTOTAL CONSTRUCTION COSTS				\$953,707,145		\$953,014,265	
CONTINGENCY (WEIGHTED AVERAGE)				\$273,593,422		\$274,468,540	
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$1,227,300,567		\$1,227,482,805	
FEE/RISK					in items above		in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$8,054,160		\$8,055,356	
SUBTOTAL CONSTRUCTION COSTS				\$1,235,354,727		\$1,235,538,161	
HAWAII STATE EXCISE 4.70%				\$58,061,672		\$58,070,294	
TOTAL CONSTRUCTION COSTS				\$1,293,416,399		\$1,293,608,455	
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)						
60.01	Purchase or lease of real property			\$69,500,000		\$74,550,000	
60.02	Relocation of existing households and businesses			\$1,700,000		\$1,700,000	
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$71,200,000		\$76,250,000	
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$35,600,000		\$38,125,000	
TOTAL ROW COSTS				\$106,800,000		\$114,375,000	

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5 North King St/King St Tunnel/Walmanu St/Kapiolani Blvd	Sections & Alignments Section 5 Dillingham Blvd/King St Tunnel/Walmanu St/Kapiolani Blvd
date: 10/20/06 last update: 01/28/06 1:45 PM			Alt 4 21a	Alt 5 22a
Description				
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
	SUBTOTAL VEHICLE COST		\$0	\$0
		\$0		
	CONTINGENCY & ENGINEERING STAFF(10%+14%)	24%	\$0	\$0
		0		
	TOTAL VEHICLE COSTS		\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$38,802,492	\$38,808,254
80.02	Final Design	4.5%	\$58,203,738	\$58,212,380
80.03	Project Management for Design and Construction	5.5%	\$71,137,902	\$71,148,465
80.04	Construction Administration & Management	10.0%	\$129,341,640	\$129,360,846
80.05	Insurance-Professional liability	1.50%	\$19,401,246	\$19,404,127
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$19,401,246	\$19,404,127
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$6,467,082	\$6,468,042
80.08	Agency: Force Account Work (2%3.4)	3.5%	\$45,269,574	\$45,276,286
	SUBTOTAL SOFT COSTS 30%		\$388,024,920	\$388,082,537
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$107,294,479	\$107,763,960
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$1,293,416,399	\$1,293,608,455
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$602,119,399	\$610,221,497
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$1,895,535,798	\$1,903,829,952
	Route foot length		23,653'	23,862'
	Construction Cost per Route Foot (2006\$)		\$54,700	\$54,300
	Construction Cost per Route Mile (2006\$)		\$288,816,000	\$288,704,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

		COST			North King St/King St Tunnel/Waimanu St/Kapiolani Blvd		Dillingham Blvd/King St Tunnel/Waimanu St/Kapiolani Blvd	
1	2	3	4	5	Section 1 Alt 5a		Section 1 Alt 5a	
DESCRIPTION		ID	QTY	UNIT	82	83	84	85
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0	-	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 FL) Column (6 ft Dia)	1	RF	\$7,989	-	\$0	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 FL) CIP	1	RF	\$5,983	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 FL) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 FL) Column (6 ft Dia)	1	RF	\$8,150	10,345	\$84,311,750	10,271	\$83,708,650
csc10.04-4	Segmental Aerial Structure (T/R +50 FL) Column (6 ft Dia)	1	RF	\$8,452	6,559	\$55,436,688	6,486	\$54,904,192
csc10.04-5	Segmental Aerial Structure (T/R +60 FL) Column (6 ft Dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 FL) Cast-in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$41,924,525	1	\$41,583,853
10.04	Guideway: Aerial structure		RF			\$181,672,943		\$180,196,695
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiaho /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King / Bertania St / S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham / Bertania St / S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	7,003	\$182,694,264
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	6,233	\$174,025,360	-	\$0
10.07	Guideway: Underground tunnel					\$174,025,360		\$182,694,264
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 FL) 100 ft length	1	RF	\$12,367	520	\$6,430,840	520	\$6,430,840
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 FL)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$6,430,840		\$6,430,840
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	23,657	\$15,968,475	24,280	\$16,395,750
10.09	Track: Direct fixation		RF			\$15,968,475		\$16,395,750
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	10	\$9,574,110	9	\$8,616,699
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$9,623,208		\$8,665,797
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$387,720,828		\$394,383,346

**Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis**

5-Jun-08

Pricing Sheet
Station & Shops

					North King St/King St Tunnel/Waimanu St/Kapiolani Blvd		Dillingham Blvd/King St Tunnel/Waimanu St/Kapiolani Blvd	
DESCRIPTION		COST						
1	2	3	4	5	82	83	84	85
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0	-	\$0
20.01 AT GRADE STATIONS		RF			\$0		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	4	\$23,762,360	3	\$17,821,770
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,798,590	2	\$11,593,180	2	\$11,593,180
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	1	\$7,425,738	1	\$7,425,738
20.02 AERIAL STATIONS		RF			\$42,781,278		\$36,840,688	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	3	\$255,516,693	3	\$255,516,693
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$255,516,693		\$255,516,693	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	12	\$ 5,454,096	10	\$ 4,545,080
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	1	\$ 513,779	1	\$ 513,779
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	26	\$ 15,230,176	22	\$ 12,887,072
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS		RF			\$21,198,051		\$17,945,931	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	North King St/King St Tunnel/Waimanu St/Kapiolani Blvd		Dillingham Blvd/King St Tunnel/Waimanu St/Kapiolani Blvd	
						Section 5 Alt 3		Section 5 Alt 4	
40.00 Sitework & Special Conditions			40.A		AERIAL ALIGNMENT	16,904	39	16,787	40
			40.AG		AT GRADE ALIGNMENT	6,753		7,523	
CSC40.01-1		Demolition: Urban	1	RF	\$207	11,829	\$2,448,603	12,145	\$2,514,015
CSC40.01-2		Demolition: Rural	1	RF	\$22	-	\$0	-	\$0
CSC40.01-3		Demolition: Residential	1	RF	\$53	-	-	-	-
CSC40.01-8		Clear and Grubbing	1	RF	\$62	0	\$0	0	\$0
CSC40.01-5		Earthwork	1	RF	In guideway	-	-	-	-
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938	1	\$ 4,672,938	1	\$ 4,672,938
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532	-	-	-	-
40.01 Demo Clearing & Sitework							\$7,121,541		\$7,186,953
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	23,657	\$1,916,217	24,290	\$1,967,490
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	23,657	\$1,277,478	24,290	\$1,311,660
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$9,914,625	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$5,585,817	-	\$0	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST	1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$133,610,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$135,273,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$119,605,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,854	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$121,269,582	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$120,324,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	1	LS	\$121,048,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,486	-	\$0	-	\$0
CSC40.02-63a		SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
SC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0	-	\$0
SC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$81,198,973	-	\$0	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$82,813,917	-	\$0	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	1	\$164,208,791	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	1	\$165,872,395
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$167,402,486	ok	\$169,151,545

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	3,335	\$616,975	3,335	\$616,975
CSC40.03-2	Hazardous Material Mitigation: Groundwater Treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
40.03	Hazardous Material Mitigation: Petrochemical Contaminated Excavation					\$616,975		\$616,975
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	1	ALLOW	\$2,500,000		\$2,500,000		\$2,500,000
	Site Development: Roads, Walkways, Landscaping							
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	14,618	\$4,312,310	14,452	\$4,263,340
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	4,910	\$1,001,640	4,810	\$981,240
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	2	\$292,150	2	\$292,150
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	2	\$221,198	2	\$221,198
CSC40.06-19	Intersection Modification Type 3	1	LS	\$76,372	4	\$313,488	4	\$313,488
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	1	\$32,482	1	\$32,482
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	23,657	\$3,075,410	24,290	\$3,157,700
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	112,320	\$17,971,200	112,320	\$17,971,200
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	-	\$0	-	\$0
40.06	Site Development: Roads, Walkways, Landscaping					\$28,075,504		\$27,969,612
	Temporary Facilities							
40.08	Temporary Facilities	1		\$0				
Total Sitework & Special Conditions		1	LS					

Honolulu High-Capacity Transit Corridor Project								
Fixed Guideway Alternatives								
Summary Cost Comparison of Alternative Analysis								
Pricing Sheet								
Systems								
						North King St/King St Tunnel/Waimanu St/Kapiolani Blvd	Dillingham Blvd/King St Tunnel/Waimanu St/Kapiolani Blvd	
DESCRIPTION	COST							
	ID	QTY	UNIT					
50.00 Systems			ALIGNMENT	23,657	39	24,290	40	
csc50.01-1	Train Control & Signals							
	ATC, Signal System Line Stations	1	RF	\$238	23,657	\$ 5,630,366	24,290	\$ 5,781,020
csc50.01-2	Highway Crossing Warning Devices (Preemptive)	1	EA	\$236,278	0	\$0	0	\$0
50.01	Train Control & Signals		RF			\$5,630,366	\$5,781,020	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	**NOT USED**	
	Traffic Signals and Crossing Protection							
csc50.02-1	Traffic Signal Modifications (4 directions)	1	EA	\$376,047	14	\$5,264,658	14	\$5,264,658
csc50.02-2	Traffic Signal Modifications (3 directions)	1	EA	\$289,523	12	\$3,474,276	11	\$3,184,753
50.02	Traffic Signals and Crossing Protection		RF			\$8,738,934	\$8,449,411	
	Traction Power Supply: Substations							
csc50.03-1	Traction Power Substations (2 MW)	1	EA	\$1,640,461	5	\$8,202,305	5	\$8,202,305
50.03	Traction Power Supply: Substations		RF			\$8,202,305	\$8,202,305	
	10.05 Guideway: Built-up fill not used*****							
	Traction Power Distribution: Catenary and Third Rail							
csc50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	1	RF	\$315	6,753	\$2,127,195	7,523	\$2,369,745
csc50.04-2	Traction Power Supply - Subway OCS, Double Track	1	RF	\$216	6,233	\$1,346,328	7,003	\$1,512,648
csc50.04-3	Traction Power Supply - Aerial OCS, Dual Track	1	RF	\$225	16,804	\$3,803,400	16,767	\$3,772,575
csc50.04-4	Traction Power Supply - Aerial OCS, Single Track	1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail		RF			\$7,276,923	\$7,654,968	
	Communication							
csc50.05-1	Communications System - Dual Track	1	LS	\$299	23,657	\$7,073,443	24,290	\$7,262,710
50.05	Communication					\$7,073,443	\$7,262,710	
	Fare Collection System and Equipment							
csc50.06-1	Fare Vending Equipment Underground Stations	1	LS	\$584,612	3	\$1,753,836	3	\$1,753,836
csc50.06-2	Fare Vending Equipment Aerial & At Grade Stations	1	LS	\$299,712	7	\$2,097,984	6	\$1,798,272
50.06	Fare Collection System and Equipment		RF			\$3,851,820	\$3,552,108	
	Central Control							
csc50.07	Central Control Facility	1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control		RF			\$0	\$0	
Total Systems								

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet ROW Cost Summary										
					North King St/King St Tunnel/Waimanu St/Kapiolani Blvd		Dillingham Blvd/King St Tunnel/Waimanu St/Kapiolani Blvd			
COST DESCRIPTION ID QTY UNIT										
60.00 Right of Way										
Purchase or lease of real property										
csc60.01-1				Right of Way Takes from Detail table	1	LS	1	\$69,500,000	1	\$74,550,000
	60.01			Purchase or lease of real property		LS		\$69,500,000		\$74,550,000
Relocation of existing households and businesses										
csc60.02-1				BUSINESS RELOCATION from Detail table	1	ls	1	\$1,700,000	1	\$1,700,000
	60.02			Relocation of existing households and businesses		ls		\$1,700,000		\$1,700,000
TOTAL RIGHT OF WAY										

Section 5
Nimitz Hwy/Queen St/Kapiolani Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM			Sections & Alignments Section 5	Sections & Alignments Section 5
Description			North King St/Nimitz Hwy/Queen St/Kapiolani Blvd Alt 5	Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd Alt 6
			23	24
			Elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$0	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$256,154,555	\$256,403,811
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$0	\$0
10.09	Track: Direct fixation		\$16,423,425	\$16,439,625
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$0	\$0
10.12	Track: Special (switches, turnouts)		\$10,580,619	\$10,580,619
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$283,168,599	\$283,424,055
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$66,599,858	\$66,455,858
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$33,811,294	\$33,811,294
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$100,411,152	\$100,287,152
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITWORK & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$5,036,517	\$5,041,485
40.02	Site Utilities, Utility Relocation		\$123,608,660	\$124,336,289
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$12,993,765	\$12,993,765
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, Site Development: Roads, walks, plazas, parking lots, landscape work		not used	not used
40.06	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$12,331,171	\$12,754,146
40.07	Temporary facilities and other indirect costs during construction		\$0	\$0
40.08			\$0	\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$156,470,313	\$157,625,685

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis		2006\$ with Contingency	2006\$ with Contingency
		Sections & Alignments Section 5	Sections & Alignments Section 5
Description		North King St/Nimitz Hwy/Queen St/Kapiolani Blvd	Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd
		Alt 5	Alt 6
		23	24
50.00	SYSTEMS		
50.01	Train control and signals	\$5,790,778	\$5,796,490
50.02	Traffic signals and crossing protection	\$10,908,692	\$10,908,692
50.03	Traction power supply: substations	\$8,202,305	\$8,202,305
50.04	Traction power distribution: catenary and third rail	\$5,474,475	\$5,479,875
50.05	Communications	\$7,274,969	\$7,282,145
50.06	Fare collection system and equipment	\$3,296,832	\$3,296,832
50.07	Central Control	\$0	\$0
SUBTOTAL COST SYSTEMS		\$40,948,051	\$40,986,339
SUBTOTAL CONSTRUCTION COSTS		\$580,988,115	\$582,283,231
CONTINGENCY (WEIGHTED AVERAGE)		\$159,660,943	\$160,057,962
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY		\$740,649,058	\$742,341,193
FEE/RISK			
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)		\$4,860,509	\$4,871,614
SUBTOTAL CONSTRUCTION COSTS		\$745,509,567	\$747,212,807
HAWAII STATE EXCISE 4.20%		\$35,038,950	\$35,119,002
TOTAL CONSTRUCTION COSTS		\$780,548,517	\$782,331,809
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property	\$41,550,000	\$36,780,000
60.02	Relocation of existing households and businesses	\$6,620,000	\$6,620,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)		\$48,170,000	\$43,400,000
CONTINGENCY & ENGINEERING (40%+10%) 50%		\$24,085,000	\$21,700,000
TOTAL ROW COSTS		\$72,255,000	\$65,100,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
			North King St/Nimitz Hwy/Queen St/Kapiolani Blvd	Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd
			Alt 5	Alt 6
			23	24
Description				
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
SUBTOTAL VEHICLE COST			\$0	\$0
			\$0	
CONTINGENCY & ENGINEERING STAFF(10%+14%)			24%	\$0
			0	
TOTAL VEHICLE COSTS			\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$23,416,456	\$23,469,954
80.02	Final Design	4.5%	\$35,124,683	\$35,204,931
80.03	Project Management for Design and Construction	5.5%	\$42,930,169	\$43,028,249
80.04	Construction Administration & Management	10.0%	\$78,054,852	\$78,233,181
80.05	Insurance-Professional liability	1.50%	\$11,708,228	\$11,734,977
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$11,708,228	\$11,734,977
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$3,902,743	\$3,911,659
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$27,319,198	\$27,381,613
SUBTOTAL SOFT COSTS			30%	\$234,164,556
				\$234,699,541
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$65,218,084	\$64,927,881
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$780,548,517	\$782,331,809
OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$371,637,640	\$364,727,422
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$1,152,186,157	\$1,147,059,231
Route foot length			24,331'	24,355'
Construction Cost per Route Foot (2006\$)			\$32,100	\$32,200
Construction Cost per Route Mile (2006\$)			\$169,488,000	\$170,016,800

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			North King St/Nimitz Hwy/Queen St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd	
		ID	QTY	UNIT	Section 5 Alt 5	Section 5 Alt 6	Section 5 Alt 6	Section 5 Alt 6
1	2	3	4	5	50	51	52	53
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	12,243	\$97,809,327	12,267	\$98,001,063
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,893	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,096	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	9,719	\$79,209,850	9,719	\$79,209,850
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$8,452	2,369	\$20,022,788	2,369	\$20,022,788
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (6 ft Dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - In Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$59,112,590	1	\$59,170,110
10.04	Guideway: Aerial structure		RF			\$256,154,655		\$256,403,611
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waialua / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$0		\$0
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0		\$0
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	24,331	\$16,423,425	24,355	\$16,439,625
10.09	Track: Direct fixation		RF			\$16,423,425		\$16,439,625
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,260	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$657,411	11	\$10,531,521	11	\$10,531,521
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$10,580,619		\$10,580,619
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$263,158,599		\$263,424,055

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					North King St/Nimitz Hwy/Queen St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd	
DESCRIPTION		COST						
1	2	3	4	5	50	51	52	53
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0	-	\$0
20.01 AT GRADE STATIONS		RF			\$0		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,940,590	5	\$29,702,950	4	\$23,762,360
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	4	\$23,186,360	5	\$28,982,950
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	1	\$6,284,810	1	\$6,284,810
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	1	\$7,425,738	1	\$7,425,738
20.02 AERIAL STATIONS		RF			\$66,599,858		\$66,455,858	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$0		\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	18	\$ 8,181,144	18	\$ 8,181,144
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	2	\$ 1,027,558	2	\$ 1,027,558
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	42	\$ 24,602,592	42	\$ 24,602,592
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302				
20.07 ELEVATORS & ESCALATORS		RF			\$33,811,294		\$33,811,294	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	North King St/Nimitz Hwy/Queen St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd	
						Section 5 Alt 5		Section 5 Alt 6	
						23	24	23	24
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		24,331		24,355	
			40.AG	AT GRADE ALIGNMENT		0		0	
CSC40.01-1	Demolition: Urban		1	RF	\$207	24,331	\$5,035,517	24,355	\$5,041,485
CSC40.01-2	Demolition: Rural		1	RF	\$22				
CSC40.01-3	Demolition: Residential		1	RF	\$53				
CSC40.01-8	Clear and Grubbing		1	RF	\$82	0	\$0	0	\$0
CSC40.01-5	Earthwork		1	RF	in guideway				
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938				
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532				
40.01 Demo Clearing & Sitework							\$5,036,517		\$5,041,485
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	24,331	\$1,970,811	24,355	\$1,972,755
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	24,331	\$1,313,874	24,355	\$1,315,170
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$9,914,625	-	\$0	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOELELE ST		1	LS	\$21,609,054	-	\$0	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$133,610,175	-	\$0	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$135,273,779	-	\$0	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$119,605,978	-	\$0	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,954	-	\$0	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$121,269,582	-	\$0	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$120,324,175	1	\$120,324,175	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$121,048,364	-	\$0	1	\$121,048,364
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,488	-	\$0	-	\$0
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694	-	\$0	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)		1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		ok	\$123,608,860	ok	\$124,336,289

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	6,669	\$1,233,765	6,669	\$1,233,765
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$11,760,000	\$11,760,000	\$11,760,000	\$11,760,000
40.03 Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$12,993,765		\$12,993,765
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks				1	ALLOW	\$2,500,000	\$2,500,000	\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	19,100	\$5,634,500	20,533	\$6,057,235
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	6,010	\$1,226,040	6,010	\$1,226,040
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	2	\$282,150	2	\$282,150
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	2	\$221,198	2	\$221,198
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	3	\$235,116	3	\$235,116
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	24,331	\$3,163,030	24,355	\$3,166,150
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	10	\$227,140	10	\$227,140
40.06 Site Development: Roads, Walkways, Landscaping						\$12,331,171		\$12,754,146
Temporary Facilities								
40.08 Temporary Facilities				1		\$0		
Total Sitework & Special Conditions				1	LS			

Honolulu High-Capacity Transit Corridor Project								
Fixed Guideway Alternatives								
Summary Cost Comparison of Alternative Analysis								
Pricing Sheet								
Systems								
						North King St/Nimitz Hwy/Queen St/Kapiolani Blvd		
						Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd		
DESCRIPTION	COST							
	ID	QTY	UNIT					
50.00 Systems			ALIGNMENT	24,331	23	24,355	24	
	Train Control & Signals							
csc50.01-1		1	RF	\$238	24,331	\$ 5,790,778	24,355	\$ 5,796,490
csc50.01-2		1	EA	\$235,278	0	\$0	0	\$0
50.01	Train Control & Signals					\$5,790,778	\$5,796,490	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	**NOT USED**	
	Traffic Signals and Crossing Protection							
csc50.02-1		1	EA	\$376,047	19	\$7,144,893	19	\$7,144,893
csc50.02-2		1	EA	\$289,523	13	\$3,763,799	13	\$3,763,799
50.02	Traffic Signals and Crossing Protection					\$10,908,692	\$10,908,692	
	Traction Power Supply: Substations							
csc50.03-1		1	EA	\$1,640,461	5	\$8,202,305	5	\$8,202,305
50.03	Traction Power Supply: Substations					\$8,202,305	\$8,202,305	
	10.05 Guideway: Built-up fill not used*****							
	Traction Power Distribution: Catenary and Third Rail							
csc50.04-1		1	RF	\$315	-	\$0	-	\$0
csc50.04-2		1	RF	\$216	-	\$0	-	\$0
csc50.04-3		1	RF	\$225	24,331	\$5,474,475	24,355	\$5,479,875
csc50.04-4		1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail					\$5,474,475	\$5,479,875	
	Communication							
csc50.05-1		1	LS	\$299	24,331	\$7,274,969	24,355	\$7,282,145
50.05	Communication					\$7,274,969	\$7,282,145	
	Fare Collection System and Equipment							
csc50.06-1		1	LS	\$584,612	-	\$0	-	\$0
csc50.06-2		1	LS	\$299,712	11	\$3,296,832	11	\$3,296,832
50.06	Fare Collection System and Equipment					\$3,296,832	\$3,296,832	
	Central Control							
csc50.07		1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control					\$0	\$0	
Total Systems								

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analy: Pricing Sheet ROW Cost Summary							
				North King St/Nimitz Hwy/Queen St/Kapiolani Blvd	Dillingham Blvd/Nimitz Hwy/Queen St/Kapiolani Blvd		
COST DESCRIPTION ID QTY UNIT							
60.00 Right of Way							
Purchase or lease of real property							
csc60.01-1	Right of Way Takes from Detail table	1	LS	1	\$41,550,000	1	\$36,780,000
60.01	Purchase or lease of real property		LS		\$41,550,000		\$36,780,000
Relocation of existing households and businesses							
csc60.02-1	BUSINESS RELOCATION from Detail table	1	ls	1	\$6,620,000	1	\$6,620,000
60.02	Relocation of existing households and businesses		ls		\$6,620,000		\$6,620,000
TOTAL RIGHT OF WAY							

Section 5
Nimitz Hwy/Halekauwila St/Kapiolani Blvd
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
			North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd	Dillingham Blvd/Nimitz Hwy/Halekauwila St/Kapiolani Blvd
			Alt 7	Alt 8
			25	26
			Elevated	Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way		\$0	\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0	\$0
10.04	Guideway: Aerial structure		\$258,626,351	\$258,875,808
10.05	Guideway: Built-up fill		\$0	\$0
10.06	Guideway: Underground cut & cover		\$0	\$0
10.07	Guideway: Underground tunnel bored1		\$0	\$0
10.08	Guideway: Retained cut or fill		\$0	\$0
10.09	Track: Direct fixation		\$16,584,075	\$16,600,275
10.10	Track: Embedded		\$0	\$0
10.11	Track: Ballasted		\$0	\$0
10.12	Track: Special (switches, turnouts)		\$10,580,619	\$10,580,619
10.13	Track: Vibration and noise dampening		\$0	\$0
SUBTOTAL GUIDEWAY & TRACK			\$285,791,045	\$286,056,502
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$66,743,858	\$66,599,858
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0	\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**	**NOT USED**
20.05	Joint development		**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**	**NOT USED**
20.07	Elevators, escalators		\$33,811,294	\$33,811,294
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$100,555,152	\$100,411,152
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting		\$0	\$0
30.02	Light Maintenance Facility		**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility		\$0	\$0
30.04	Storage Building & Yard		"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0	\$0
40.00	SITWORK & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1		\$5,085,783	\$5,090,751
40.02	Site Utilities, Utility Relocation		\$155,479,301	\$156,303,289
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$12,993,765	\$12,993,765
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$11,920,950	\$12,343,925
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0	\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0	\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$187,979,799	\$189,231,730

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency			
				Sections & Alignments		Sections & Alignments	
date: 10/20/06 last update: 01/26/06 1:45 PM				Section 5			
Description				North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd			
				Alt 7		Alt 8	
				25		26	
50.00	SYSTEMS						
50.01	Train control and signals			\$5,847,422	\$5,853,134		
50.02	Traffic signals and crossing protection			\$11,111,891	\$11,111,891		
50.03	Traction power supply; substations			\$8,202,305	\$8,202,305		
50.04	Traction power distribution; catenary and third rail			\$5,528,025	\$6,533,425		
50.05	Communications			\$7,346,131	\$7,353,307		
50.06	Fare collection system and equipment			\$3,296,832	\$3,296,832		
50.07	Central Control			\$0	\$0		
SUBTOTAL COST SYSTEMS				\$41,332,406	\$41,350,694		
SUBTOTAL CONSTRUCTION COSTS				\$615,658,402	\$617,050,078		
CONTINGENCY (WEIGHTED AVERAGE)				\$171,520,485	\$171,951,300		
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$787,178,887	\$789,001,378		
FEE/RISK						in items above	in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$5,165,861	\$5,177,822		
SUBTOTAL CONSTRUCTION COSTS				\$792,344,748	\$794,179,200		
HAWAII STATE EXCISE 4.70%				\$37,240,203	\$37,326,422		
TOTAL CONSTRUCTION COSTS				\$829,584,951	\$831,505,622		
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)						
60.01	Purchase or lease of real property			\$57,800,000	\$52,870,000		
60.02	Relocation of existing households and businesses			\$1,300,000	\$1,300,000		
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$59,100,000	\$54,170,000		
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$28,550,000	\$27,085,000		
TOTAL ROW COSTS				\$88,650,000	\$81,255,000		

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
Description			North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd	Dillingham Blvd/Nimitz Hwy/Halekauwila St/Kapiolani Blvd
			Alt 7	Alt 8
			25	26
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
SUBTOTAL VEHICLE COST			\$0	\$0
			\$0	
CONTINGENCY & ENGINEERING STAFF(10%+14%)			24%	\$0
			0	
TOTAL VEHICLE COSTS			\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$24,887,549	\$24,945,169
80.02	Final Design	4.5%	\$37,331,323	\$37,417,753
80.03	Project Management for Design and Construction	5.5%	\$45,627,172	\$45,732,809
80.04	Construction Administration & Management	10.0%	\$82,958,495	\$83,150,582
80.05	Insurance-Professional liability	1.50%	\$12,443,774	\$12,472,584
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$12,443,774	\$12,472,584
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$4,147,925	\$4,157,528
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$29,035,473	\$29,102,697
SUBTOTAL SOFT COSTS			30%	\$248,875,485
				\$249,451,686
90.00	CONTINGENCY (Project Reserve) (10 thru 90)		6.0%	\$70,026,626
				\$69,732,738
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$829,584,951	\$831,605,622
OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$407,552,111	\$400,439,424
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$1,237,137,062	\$1,231,945,046
Route foot length			24,569'	24,593'
Construction Cost per Route Foot (2006\$)			\$33,800	\$33,900
Construction Cost per Route Mile (2006\$)			\$178,464,000	\$178,992,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

		COST			North King St/Nimitz Hwy/Halekiauila St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Halekiauila St/Kapiolani Blvd	
DESCRIPTION		ID	QTY	UNIT	Section 5 Alt 7		Section 5 Alt 8	
1	2	3	4	5	54	55	56	57
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade In mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	12,481	\$99,710,709	12,505	\$99,902,445
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (8 ft Dia)	1	RF	\$8,150	9,719	\$79,209,850	9,719	\$79,209,850
csc10.04-4	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft Dia)	1	RF	\$9,452	2,369	\$20,022,788	2,369	\$20,022,788
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft Dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$59,693,004	1	\$59,740,525
10.04	Guideway: Aerial structure		RF			\$258,626,351		\$258,676,608
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.05-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 eta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 eta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$0		\$0
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0		\$0
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	24,589	\$16,584,075	24,593	\$16,600,275
10.09	Track: Direct fixation		RF			\$16,584,075		\$16,600,275
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$687	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	11	\$10,531,521	11	\$10,531,521
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$10,580,619		\$10,580,619
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$285,791,045		\$286,056,502

**Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis**

Pricing Sheet
Station & Shops

					North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Halekauwila St/Kapiolani Blvd	
DESCRIPTION		COST						
1	2	3	4	5	54	55	56	57
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0	-	\$0
20.01 AT GRADE STATIONS		RF			\$0		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	6	\$35,643,540	5	\$29,702,950
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	3	\$17,389,770	4	\$23,186,360
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	1	\$6,284,810	1	\$6,284,810
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	1	\$7,425,738	1	\$7,425,738
20.02 AERIAL STATIONS		RF			\$66,743,858		\$66,599,858	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	-	\$0
20.03 UNDERGROUND STATIONS		RF			\$0		\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	18	\$ 8,181,144	18	\$ 8,181,144
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$613,779	2	\$ 1,027,558	2	\$ 1,027,558
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	42	\$ 24,602,592	42	\$ 24,602,592
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302	-	\$ -	-	\$ -
20.07 ELEVATORS & ESCALATORS		RF			\$33,811,294		\$33,811,294	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Halekauwila St/Kapiolani Blvd	
						Section 5 Alt 7		Section 5 Alt 8	
40.00 Sitework & Special Conditions						40.A	AERIAL ALIGNMENT	25	26
						40.AG	AT GRADE ALIGNMENT		
						24,569		24,593	
						0		0	
CSC40.01-1	Demolition: Urban		1	RF	\$207	24,569	\$5,085,783	24,593	\$5,090,751
CSC40.01-2	Demolition: Rural		1	RF	\$22				
CSC40.01-3	Demolition: Residential		1	RF	\$53				
CSC40.01-8	Clear and Grubbing		1	RF	\$62	0	\$0	0	\$0
CSC40.01-5	Earthwork		1	RF	In guideway				
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938				
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532				
40.01 Demo Clearing & Sitework							\$5,085,783		\$5,090,751
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	24,569	\$1,990,089	24,593	\$1,992,033
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	24,569	\$1,326,726	24,593	\$1,328,022
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,061,360	-	\$0	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,187	-	\$0	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$9,914,625	-	\$0	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,833	-	\$0	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$80,846,739	-	\$0	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOEELE ST		1	LS	\$21,606,054	-	\$0	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$133,610,175	-	\$0	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$135,273,779	-	\$0	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$119,605,978	-	\$0	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$121,269,582	-	\$0	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$120,324,175	-	\$0	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$121,048,364	-	\$0	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486	1	\$152,162,486	-	\$0
CSC40.02-63a	SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0	-	\$0
CSC40.02-63a1	SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,894	-	\$0	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0	-	\$0
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0	1	\$152,983,234
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$81,198,973	-	\$0	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$82,813,917	-	\$0	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,781	-	\$0	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st		1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0	\$0	\$0
40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$155,479,301	ok	\$156,303,289

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	6,669	\$1,233,785	6,669	\$1,233,785
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$11,760,000	\$11,780,000	\$11,760,000	\$11,780,000
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$12,993,785		\$12,993,785
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.04						\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	17,219	\$5,078,605	18,652	\$5,502,340
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	6,010	\$1,226,040	6,010	\$1,226,040
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	2	\$292,150	2	\$292,150
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	2	\$221,198	2	\$221,188
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	4	\$313,488	4	\$313,488
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	1	\$32,482	1	\$32,482
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	24,589	\$3,193,870	24,593	\$3,197,090
CSC40.06-13	Hotel Street Mail Reconstruction	1	SF	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	10	\$227,140	10	\$227,140
40.06 Site Development: Roads, Walkways, Landscaping						\$11,920,950		\$12,343,925
Temporary Facilities								
40.08 Temporary Facilities						\$0		
Total Sitework & Special Conditions		1	LS					

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet Systems								
					North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Halekauwila St/Kapiolani Blvd	
DESCRIPTION	COST			ALIGNMENT	25		26	
	ID	QTY	UNIT					
50.00 Systems				ALIGNMENT	24,569		24,593	
	Train Control & Signals							
csc50.01-1		1	RF	\$238	24,569	\$ 5,847,422	24,593	\$ 5,853,134
csc50.01-2		1	EA	\$235,278	0	\$0	0	\$0
50.01	Train Control & Signals			RF		\$5,847,422		\$5,853,134
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**		**NOT USED**
	Traffic Signals and Crossing Protection							
csc50.02-1		1	EA	\$378,047	18	\$6,768,846	18	\$6,768,846
csc50.02-2		1	EA	\$289,523	15	\$4,342,845	15	\$4,342,845
50.02	Traffic Signals and Crossing Protection			RF		\$11,111,691		\$11,111,691
	Traction Power Supply: Substations							
csc50.03-1		1	EA	\$1,640,461	5	\$8,202,305	5	\$8,202,305
50.03	Traction Power Supply: Substations			RF		\$8,202,305		\$8,202,305
	10.05 Guideway: Built-up fill not used*****							
	Traction Power Distribution: Catenary and Third Rail							
csc50.04-1		1	RF	\$315	-	\$0	-	\$0
csc50.04-2		1	RF	\$216	-	\$0	-	\$0
csc50.04-3		1	RF	\$225	24,569	\$5,528,025	24,593	\$5,533,425
csc50.04-4		1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail			RF		\$5,528,025		\$5,533,425
	Communication							
csc50.05-1		1	LS	\$299	24,569	\$7,346,131	24,593	\$7,353,307
50.05	Communication			-		\$7,346,131		\$7,353,307
	Fare Collection System and Equipment							
csc50.06-1		1	LS	\$594,612	-	\$0	-	\$0
csc50.06-2		1	LS	\$299,712	11	\$3,296,832	11	\$3,296,832
50.06	Fare Collection System and Equipment			RF		\$3,296,832		\$3,296,832
	Central Control							
csc50.07		1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control			RF		\$0		\$0
Total Systems								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analy:
Pricing Sheet
ROW Cost Summary

				North King St/Nimitz Hwy/Halekauwila St/Kapiolani Blvd		Dillingham Blvd/Nimitz Hwy/Halekauwila St/Kapiolani Blvd	
				COST			
DESCRIPTION	ID	QTY	UNIT				
60.00 Right of Way							
Purchase or lease of real property							
csc60.01-1	Right of Way Takes from Detail table	1	LS	1	\$57,800,000	1	\$52,870,000
60.01	Purchase or lease of real property		LS		\$57,800,000		\$52,870,000
Relocation of existing households and businesses							
csc60.02-1	BUSINESS RELOCATION from Detail table	1	ls	1	\$1,300,000	1	\$1,300,000
60.02	Relocation of existing households and businesses		ls		\$1,300,000		\$1,300,000
TOTAL RIGHT OF WAY							

Section 5
Beretania St/South King St
Capital Cost Estimate
October 20, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
				Sections & Alignments Section 5	Sections & Alignments Section 5
date: 10/20/06 last update: 9/26/08 1:45 PM					
Description				North King St/Beretania St/South King St	Dillingham Blvd/Beretania St/South King St
				Alt 9	Alt 10
				27	28
				Elevated/Tunnel/Elevated	Elevated/Tunnel/Elevated
10.00	GUIDEWAY & TRACK ELEMENTS				
10.01	Guideway: At-grade Exclusive Right-of-way			\$0	\$0
10.02	Guideway: At-grade Semi-exclusive			**NOT USED**	**NOT USED**
10.03	Guideway: At-grade in mixed traffic			\$0	\$0
10.04	Guideway: Aerial structure			\$156,526,829	\$150,430,423
10.05	Guideway: Built-up fill			\$0	\$0
10.06	Guideway: Underground cut & cover			\$0	\$0
10.07	Guideway: Underground tunnel bored 1			\$128,861,512	\$160,699,955
10.08	Guideway: Retained cut or fill			\$6,183,500	\$6,059,830
10.09	Track: Direct fixation			\$13,863,825	\$14,316,076
10.10	Track: Embedded			\$0	\$0
10.11	Track: Ballasted			\$0	\$0
10.12	Track: Special (switches, turnouts)			\$7,706,386	\$8,665,797
10.13	Track: Vibration and noise dampening			\$0	\$0
SUBTOTAL GUIDEWAY & TRACK				\$313,144,052	\$340,172,080
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)				
20.01	At-grade station, stop, shelter, mall, terminal, platform			\$0	\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform			\$41,296,130	\$41,296,130
20.03	Underground station, stop, shelter, mall, terminal, platform			\$85,172,231	\$159,177,294
20.04	Other Stations & Pedestrian Tunnels			**NOT USED**	**NOT USED**
20.05	Joint development			**NOT USED**	**NOT USED**
20.06	Automobile parking multi-story structure			**NOT USED**	**NOT USED**
20.07	Elevators, escalators			\$22,764,840	\$22,764,840
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL				\$149,233,201	\$223,238,264
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				
30.01	Administration Building: Office, sales, storage, revenue counting			\$0	\$0
30.02	Light Maintenance Facility			**NOT USED**	**NOT USED**
30.03	Heavy Maintenance Facility			\$0	\$0
30.04	Storage Building & Yard			"IN 30.02"	"IN 30.02"
30.05	Maintenance of Way Building & Yard			**NOT USED**	**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				\$0	\$0
40.00	SITWORK & SPECIAL CONDITIONS				
40.01	Demolition, Clearing, Earthwork 1			\$25,455,603	\$25,557,108
40.02	Site Utilities, Utility Relocation			\$63,971,738	\$65,677,132
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			\$237,355	\$237,355
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			\$2,500,000	\$2,500,000
40.05	Major site structures including retaining walls, sound walls			not used	not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work			\$8,628,083	\$8,489,213
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing			\$0	\$0
40.08	Temporary facilities and other indirect costs during construction 5			\$0	\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS				\$100,792,779	\$102,460,808

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	
				Sections & Alignments Section 5	
date: 10/20/08 last update: 9/28/08 1:45 PM					
Description				North King St/Beretania St/South King St	Dillingham Blvd/Beretania St/South King St
				Alt 9	Alt 10
				27	28
50.00	SYSTEMS				
50.01	Train control and signals			\$4,888,282	\$5,047,742
50.02	Traffic signals and crossing protection			\$9,464,406	\$9,464,406
50.03	Traction power supply: substations			\$6,561,844	\$8,202,305
50.04	Traction power distribution: catenary and third rail			\$6,235,443	\$6,772,995
50.05	Communications			\$6,141,161	\$6,341,491
50.06	Fare collection system and equipment			\$2,682,596	\$3,267,208
50.07	Central Control			\$0	\$0
SUBTOTAL COST SYSTEMS				\$35,973,732	\$39,096,147
SUBTOTAL CONSTRUCTION COSTS				\$599,143,764	\$704,967,298
CONTINGENCY (WEIGHTED AVERAGE)				\$171,888,562	\$201,708,980
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY				\$771,032,326	\$906,676,279
FEE/RISK					
				<small>in items above</small>	<small>in items above</small>
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)				\$5,059,900	\$5,950,063
SUBTOTAL CONSTRUCTION COSTS				\$776,092,226	\$912,626,342
HAWAII STATE EXCISE 4.70%				\$36,476,335	\$42,893,438
TOTAL CONSTRUCTION COSTS				\$812,568,561	\$955,519,780
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)				
60.01	Purchase or lease of real property			\$2,780,000	\$11,990,000
60.02	Relocation of existing households and businesses			\$200,000	\$200,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)				\$2,980,000	\$12,190,000
CONTINGENCY & ENGINEERING (40%+10%) 50%				\$1,490,000	\$6,095,000
TOTAL ROW COSTS				\$4,470,000	\$18,285,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency	2006\$ with Contingency
			Sections & Alignments Section 5	Sections & Alignments Section 5
date: 10/20/06 last updated: 9/26/06 1:45 PM			North King St/Beretania St/South King St	Dillingham Blvd/Beretania St/South King St
Description			Alt 9	Alt 10
			27	28
70.00	VEHICLES			
70.01	Light Rail		IN SECTION 6	IN SECTION 6
70.02	Heavy Rail		not used	not used
70.03	Commuter Rail		not used	not used
70.04	Bus		not used	not used
70.05	Other		not used	not used
70.06	Non-revenue vehicles		IN SECTION 6	IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6	IN SECTION 6
SUBTOTAL VEHICLE COST			\$0	\$0
			\$0	
CONTINGENCY & ENGINEERING STAFF(10%+14%)			24%	\$0
			0	
TOTAL VEHICLE COSTS			\$0	\$0
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$24,377,057	\$28,665,593
80.02	Final Design	4.5%	\$36,585,585	\$42,988,390
80.03	Project Management for Design and Construction	5.5%	\$44,691,271	\$52,553,588
80.04	Construction Administration & Management	10.0%	\$81,256,856	\$95,551,978
80.05	Insurance-Professional liability	1.50%	\$12,188,528	\$14,332,797
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$12,188,528	\$14,332,797
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$4,062,843	\$4,777,599
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$28,439,900	\$33,443,192
SUBTOTAL SOFT COSTS			30%	\$243,770,568
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$63,648,548	\$75,627,643
100.00	FINANCE CHARGES		\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$812,568,661	\$955,519,780
OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$311,889,116	\$380,568,577
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$1,124,457,677	\$1,336,088,357
Route foot length			20,539'	21,209'
Construction Cost per Route Foot (2006\$)			\$39,600	\$45,100
Construction Cost per Route Mile (2006\$)			\$209,088,000	\$238,128,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

		COST			North King St/Beretania St/South King St		Dillingham Blvd/Beretania St/South King St	
1	2	3	4	5	Section 5 Alt 9		Section 5 Alt 10	
DESCRIPTION		ID	QTY	UNIT	58	59	60	61
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)								
Guideway: At-grade Exclusive								
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0		\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
Guideway: At-grade in mixed traffic								
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0		\$0
Guideway: Aerial structure								
csc10.04-1	Segmental Aerial Structure (T/R +25 FL) Column (6 ft Dia)	1	RF	\$7,989	10,211	\$81,575,679	9,624	\$76,886,136
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 FL) CIP	1	RF	\$5,683	-	\$0	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 FL) Column (6 ft Dia)	1	RF	\$8,086	-	\$0	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 FL) Column (6 ft Dia)	1	RF	\$8,150	2,963	\$24,146,450	2,963	\$24,146,450
csc10.04-4	Segmental Aerial Structure (T/R +50 FL) Column (8 ft Dia)	1	RF	\$8,452	1,737	\$14,681,124	1,737	\$14,681,124
csc10.04-5	Segmental Aerial Structure (T/R +60 FL) Column (8 ft dia)	1	RF	\$8,709	-	\$0	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 FL) Cast - in Place	1	RF	\$5,793	-	\$0	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$36,121,576	1	\$34,714,713
10.04	Guideway: Aerial structure		RF			\$156,526,629		\$150,430,423
10.05	Guideway: Built-up fill not used*****							
Guideway: Underground cut & cover								
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiaho /	1	RF	\$34,090	-	\$0	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0		\$0
Guideway: Underground tunnel								
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Beretania St \ S King St)	1	RF	\$25,129	5,126	\$128,861,512	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Beretania St \ S King St)	1	RF	\$25,129	-	\$0	6,395	\$160,699,955
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	-	\$0
10.07	Guideway: Underground tunnel					\$128,861,512		\$160,699,955
Guideway: Retained cut or fill								
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 FL) 100 ft length	1	RF	\$12,367	500	\$6,183,500	400	\$6,059,830
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 FL)	1	RF	\$6,162	-	\$0	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$6,183,500		\$6,059,830
Track: Direct fixation								
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	20,539	\$13,863,825	21,209	\$14,316,075
10.09	Track: Direct fixation		RF			\$13,863,825		\$14,316,075
Track: Embedded/Paved								
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	-	\$0
10.10	Track: Embedded/Paved		RF			\$0		\$0
Track: Ballasted								
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	-	\$0
10.11	Track: Ballasted		RF			\$0		\$0
Track: Special (switches, turnouts)								
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	8	\$7,659,288	9	\$8,616,699
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$7,706,386		\$8,665,797
Track: Vibration and noise dampening								
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	-	\$0
10.13	Vibration and noise dampening		RF			\$0		\$0
Total Guideways						\$313,144,052		\$340,172,080

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					North King St/Beretania St/South King St		Dillingham Blvd/Beretania St/South King St	
DESCRIPTION		COST						
1	2	3	4	5	58	59	60	61
20.00 STATIONS & SHOPS								
AT GRADE STATIONS								
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0	-	\$0
20.01 AT GRADE STATIONS		RF			\$0		\$0	
AERIAL STATIONS								
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	5	\$29,702,950	5	\$29,702,950
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	2	\$11,593,180	2	\$11,593,180
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	-	\$0
20.02 AERIAL STATIONS		RF			\$41,296,130		\$41,296,130	
UNDERGROUND STATIONS								
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	1	\$85,172,231	1	\$85,172,231
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	1	\$74,005,063
20.03 UNDERGROUND STATIONS		RF			\$85,172,231		\$159,177,294	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**		**NOT USED**	
20.05 JOINT DEVELOPMENT					**NOT USED**		**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**		**NOT USED**	
ELEVATORS & ESCALATORS								
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	14	\$ 6,363,112	14	\$ 6,363,112
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$613,779	-	\$ -	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	28	\$ 16,401,728	28	\$ 16,401,728
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302	-	\$ -	-	\$ -
20.07 ELEVATORS & ESCALATORS		RF			\$22,764,840		\$22,764,840	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	North King St/Beretania St/South King St		Dillingham Blvd/Beretania St/South King St	
						Section 5 Alt 9		Section 5 Alt 10	
40.00 Sitework & Special Conditions						14,911	27	14,324	28
						5,628		6,885	
CSC40.01-1		Demolition: Urban	1	RF	\$207	14,377	\$2,976,038	14,846	\$3,073,122
CSC40.01-2		Demolition: Rural	1	RF	\$22	6,162	\$135,564	6,363	\$139,986
CSC40.01-3		Demolition: Residential	1	RF	\$53				
CSC40.01-8		Clear and Grubbing	1	RF	\$82	0	\$0	0	\$0
CSC40.01-5		Earthwork	1	RF					
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938				
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532	42,000	\$22,344,000	42,000	\$22,344,000
40.01 Demo Clearing & Sitework						\$25,455,603		\$25,557,188	
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	20,539	\$1,663,659	21,209	\$1,717,029
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	20,539	\$1,109,106	21,209	\$1,145,286
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,681,300	-	\$0	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$9,914,625	-	\$0	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,716	-	\$0	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$90,946,739	-	\$0	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	1	LS	\$21,608,054	-	\$0	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$133,610,175	-	\$0	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$135,273,779	-	\$0	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$119,605,978	-	\$0	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,984	-	\$0	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$121,289,582	-	\$0	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$120,324,175	-	\$0	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD	1	LS	\$121,048,364	-	\$0	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,466	-	\$0	-	\$0
CSC40.02-63a		SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0	-	\$0
SC40.02-63a1		SECTION 5:MOS 2a .DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,684	-	\$0	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,187	-	\$0	-	\$0
SC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	-	\$0	-	\$0
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,198,973	1	\$61,198,973	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0	1	\$62,813,917
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	1	LS	\$165,872,395	-	\$0	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$60,625,728	\$0	\$0	\$0	\$0
PARSONS BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$63,971,738	ok	\$65,677,132

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	1,283	\$237,355	1,283	\$237,355
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0	\$0	\$0
40.03 Hazardous Material Mitigation: Petrochemical Contaminated Excavation						\$237,355		\$237,355
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000	\$1	\$2,500,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks						\$2,500,000		\$2,500,000
Site Development: Roads, Walkways, Landscaping								
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	13,930	\$4,109,350	13,164	\$3,883,380
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	3,900	\$795,600	3,900	\$795,600
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,462	0	\$0	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187				
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93				
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	20,539	\$2,670,070	21,209	\$2,757,170
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	10	\$227,140	10	\$227,140
40.05 Site Development: Roads, Walkways, Landscaping						\$6,628,083		\$8,489,213
Temporary Facilities								
40.08 Temporary Facilities						\$0		
Total Sitework & Special Conditions								
		1	LS					

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis Pricing Sheet Systems								
					North King St/Beretania St/South King St		Dillingham Blvd/Beretania St/South King St	
DESCRIPTION	COST							
	ID	QTY	UNIT					
50.00 Systems			ALIGNMENT	20,539	27	21,209	28	
	Train Control & Signals							
csc50.01-1		1	RF	\$238	20,539	\$ 4,888,282	21,209	\$ 5,047,742
csc50.01-2		1	EA	\$235,278	0	\$0	0	\$0
50.01	Train Control & Signals				\$4,888,282		\$5,047,742	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**		**NOT USED**	
	Traffic Signals and Crossing Protection							
csc50.02-1		1	EA	\$376,047	9	\$3,384,423	9	\$3,384,423
csc50.02-2		1	EA	\$289,523	21	\$6,079,983	21	\$6,079,983
50.02	Traffic Signals and Crossing Protection				\$9,464,406		\$9,464,406	
	Traction Power Supply: Substations							
csc50.03-1		1	EA	\$1,640,461	4	\$6,561,844	5	\$8,202,305
50.03	Traction Power Supply: Substations				\$6,561,844		\$8,202,305	
	10.05 Guideway: Built-up fill not used*****							
	Traction Power Distribution: Catenary and Third Rail							
csc50.04-1		1	RF	\$315	5,628	\$1,772,820	6,885	\$2,168,775
csc50.04-2		1	RF	\$216	5,128	\$1,107,648	6,395	\$1,381,320
csc50.04-3		1	RF	\$225	14,911	\$3,354,975	14,324	\$3,222,900
csc50.04-4		1	RF	\$170	-	\$0	-	\$0
50.04	Traction Power Distribution: Catenary and Third Rail				\$6,235,443		\$6,772,995	
	Communication							
csc50.05-1		1	LS	\$299	20,539	\$6,141,161	21,209	\$6,341,491
50.05	Communication				\$6,141,161		\$6,341,491	
	Fare Collection System and Equipment							
csc50.06-1		1	LS	\$584,612	1	\$584,612	2	\$1,169,224
csc50.06-2		1	LS	\$299,712	7	\$2,097,984	7	\$2,097,984
50.06	Fare Collection System and Equipment				\$2,682,596		\$3,267,208	
	Central Control							
csc50.07		1	LS	\$8,529,933	-	\$0	-	\$0
50.07	Central Control				\$0		\$0	
Total Systems								

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analy:
Pricing Sheet
ROW Cost Summary

					North King St/Beretania St/South King St		Dillingham Blvd/Beretania St/South King St		
COST									
DESCRIPTION	ID	QTY	UNIT						
60.00 Right of Way									
Purchase or lease of real property									
csc60.01-1				1	LS	1	\$2,780,000	1	\$11,990,000
	60.01	Purchase or lease of real property			LS		\$2,780,000		\$11,990,000
Relocation of existing households and businesses									
csc60.02-1				1	ls	1	\$200,000	1	\$200,000
	60.02	Relocation of existing households and businesses			ls		\$200,000		\$200,000
TOTAL RIGHT OF WAY									

Section 5
Waikiki Spur
Capital Cost Estimate
October 4, 2006

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/08 last update: 9/26/08 1:45 PM			Sections & Alignments
Description			Section 5
			Waikiki Spur
			Alt 11
			29
			Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade In mixed traffic		\$0
10.04	Guideway: Aerial structure		\$65,238,174
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored1		\$0
10.08	Guideway: Retained cut or fill		\$0
10.09	Track: Direct fixation		\$5,512,050
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$1,963,920
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$72,714,144
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$11,593,180
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$6,604,240
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$18,097,420
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITEWORK & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork1		\$1,690,362
40.02	Site Utilities, Utility Relocation		\$61,728,139
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$0
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$2,500,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$4,498,014
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction5		\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$70,416,515

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
		date: 10/20/06 last update: 9/28/06 1:45 PM	Sections & Alignments Section 5
Description			Waikiki Spur Alt 11 29
50.00	SYSTEMS		
50.01	Train control and signals		\$1,943,508
50.02	Traffic signals and crossing protection		\$8,855,409
50.03	Traction power supply: substations		\$3,280,922
50.04	Traction power distribution: catenary and third rail		\$1,607,780
50.05	Communications		\$2,441,634
50.06	Fare collection system and equipment		\$599,424
50.07	Central Control		\$0
SUBTOTAL COST SYSTEMS			\$18,729,677
SUBTOTAL CONSTRUCTION COSTS			\$179,956,756
CONTINGENCY (WEIGHTED AVERAGE)			\$51,581,039
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$231,537,795
FEE/RISK			in Rems above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$1,519,467
SUBTOTAL CONSTRUCTION COSTS			\$233,057,262
HAWAII STATE EXCISE 4.70%			\$10,953,691
TOTAL CONSTRUCTION COSTS			\$244,010,953
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$12,120,000
60.02	Relocation of existing households and businesses		\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$12,120,000
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$6,060,000
TOTAL ROW COSTS			\$18,180,000

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM			Sections & Alignments
Description			Section 5
			Waikiki Spur
			Alt 11
			29
70.00	VEHICLES		
70.01	Light Rail		IN SECTION 6
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		IN SECTION 6
70.07	Spare parts (10% of LRV's)		IN SECTION 6
SUBTOTAL VEHICLE COST			\$0
			\$0
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%	\$0
			0
TOTAL VEHICLE COSTS			\$0
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$7,320,329
80.02	Final Design	4.6%	\$10,980,493
80.03	Project Management for Design and Construction	5.6%	\$13,420,602
80.04	Construction Administration & Management	10.0%	\$24,401,095
80.05	Insurance-Professional liability	1.50%	\$3,660,164
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$3,660,164
80.07	Survey, Testing, Investigation, Inspection	0.60%	\$1,220,055
80.08	Agency: Force Account Work (2%3,4)	3.5%	\$8,540,383
SUBTOTAL SOFT COSTS			30% \$73,203,285
90.00	CONTINGENCY (Project Reserve) (10 thru 90)	6.0%	\$20,123,654
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$244,010,953
OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$111,606,939
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$355,517,892
Route foot length			8,166'
Construction Cost per Route Foot (2006\$)			\$29,900
Construction Cost per Route Mile (2006\$)			\$157,872,000

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Guideway & Trackwork

DESCRIPTION		COST			Waikiki Spur	
		ID	QTY	UNIT	Section 5 Alt 11	
1	2	3	4	5	62	63
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade In mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	8,166	\$65,238,174
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	-	\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$8,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft Dia)	1	RF	\$8,709	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$65,238,174
10.05	Guideway: Built-up fill not used*****					
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 26 ft)	1	RF	\$12,898	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimenu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1409+	1	RF	\$26,088	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1409+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	8,166	\$5,512,050
10.09	Track: Direct fixation		RF			\$5,512,050
Track: Embedded/Paved						
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0
10.11	Track: Ballasted		RF			\$0
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	2	\$1,914,822
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$1,963,920
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$72,714,144

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					Waikiki Spur	
DESCRIPTION		COST				
1	2	3	4	5	62	63
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	-	\$0
20.01 AT GRADE STATIONS		RF				\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	-	\$0
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,796,590	2	\$11,593,180
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0
20.02 AERIAL STATIONS		RF				\$11,593,180
UNDERGROUND STATIONS						
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0
20.03 UNDERGROUND STATIONS		RF				\$0
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS						**NOT USED**
20.05 JOINT DEVELOPMENT						**NOT USED**
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****						**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	4	\$ 1,818,032
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$685,776	8	\$ 4,686,208
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302		
20.07 ELEVATORS & ESCALATORS		RF				\$6,504,240
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						18097420

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST	Waikiki Spur	
						Section 5 Alt 11	
40.00 Sitework & Special Conditions						8,166	29
			40.A		AERIAL ALIGNMENT	0	
			40.AG		AT GRADE ALIGNMENT		
CSC40.01-1	Demolition: Urban		1	RF	\$207	8,166	\$1,690,362
CSC40.01-2	Demolition: Rural		1	RF	\$22		
CSC40.01-3	Demolition: Residential		1	RF	\$53		
CSC40.01-8	Clear and Grubbing		1	RF	\$62	0	\$0
CSC40.01-5	Earthwork		1	RF	in guideway		
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938		
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532		
40.01 Demo Clearing & Sitework							\$1,690,362
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	8,166	\$661,446
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	8,166	\$440,964
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,197	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$9,914,825	-	\$0
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,628,933	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$80,846,738	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- ADLELE ST		1	LS	\$21,606,054	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$133,610,175	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$135,273,779	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$119,605,978	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$6,467,964	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$121,269,582	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$120,324,175	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$121,048,364	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486	-	\$0
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0
SC40.02-63a1	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694	-	\$0
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0
SC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)		1	LS	\$165,872,395	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$1	\$60,625,729
PARSONS BRINCKERHOFF	40.02 UTILITIES BASED ON 1992 INFORMATION		1	RF		ok	\$61,728,139

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	-	\$0
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$0
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$2,500,000
Environmental mitigation, e.g. wetlands, historic/archeologic, 40.04 parks						\$2,500,000
Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	8,166	\$2,408,970
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	3,900	\$795,600
CSC40.06-17	Intersection Modification Type 1	1	LS	\$148,075	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	8,166	\$1,061,580
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714		\$0
40.06 Site Development: Roads, Walkways, Landscaping						\$4,498,014
Temporary Facilities						
40.08 Temporary Facilities						\$0
Total Sitework & Special Conditions						70,416,516

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

					Waikiki Spur	
DESCRIPTION	COST					
	ID	QTY	UNIT			
50.00 Systems			ALIGNMENT	8,166	29	
	Train Control & Signals					
csc50.01-1		1	RF	\$238	8,166 \$ 1,943,508	
csc50.01-2		1	EA	\$235,278	0 \$0	
50.01	Train Control & Signals				\$1,943,508	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**	
	Traffic Signals and Crossing Protection					
csc50.02-1		1	EA	\$376,047	12 \$4,512,564	
csc50.02-2		1	EA	\$289,523	15 \$4,342,845	
50.02	Traffic Signals and Crossing Protection				\$8,855,409	
	Traction Power Supply: Substations					
csc50.03-1		1	EA	\$1,640,461	2 \$3,280,922	
50.03	Traction Power Supply: Substations				\$3,280,922	
	10.05 Guideway: Built-up fill not used*****					
	Traction Power Distribution: Catenary and Third Rail					
csc50.04-1		1	RF	\$315	- \$0	
csc50.04-2		1	RF	\$216	- \$0	
csc50.04-3		1	RF	\$225	3,992 \$898,200	
csc50.04-4		1	RF	\$170	4,174 \$709,580	
50.04	Traction Power Distribution: Catenary and Third Rail				\$1,607,780	
	Communication					
csc50.05-1		1	LS	\$299	8,166 \$2,441,634	
50.05	Communication				\$2,441,634	
	Fare Collection System and Equipment					
csc50.06-1		1	LS	\$584,612	- \$0	
csc50.06-2		1	LS	\$299,712	2 \$599,424	
50.06	Fare Collection System and Equipment				\$599,424	
	Central Control					
csc50.07		1	LS	\$8,529,933	- \$0	
50.07	Central Control				\$0	
Total Systems					18728677	

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analy:
Pricing Sheet
ROW Cost Summary

				Waikiki Spur	
				COST	
DESCRIPTION	ID	QTY	UNIT		
60.00 Right of Way					
Purchase or lease of real property					
csc60.01-1				1	\$12,120,000
				1	\$12,120,000
60.01				LS	\$12,120,000
Relocation of existing households and businesses					
csc60.02-1				1	\$0
				1	\$0
60.02				ls	\$0
TOTAL RIGHT OF WAY					

**Full Corridor
Systemwide**

**Capital Cost Estimate
October 20, 2006**

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency
date: 10/20/06 last update: 02/26/06 1:45 PM				Sections & Alignments Section 5
Description				Systemwide
				Alt 11
				30
				Elevated
10.00	GUIDEWAY & TRACK ELEMENTS			
10.01	Guideway: At-grade Exclusive Right-of-way			\$0
10.02	Guideway: At-grade Semi-exclusive			**NOT USED**
10.03	Guideway: At-grade in mixed traffic			\$0
10.04	Guideway: Aerial structure			
10.05	Guideway: Built-up fill			\$0
10.06	Guideway: Underground cut & cover			\$0
10.07	Guideway: Underground tunnel bored1			\$0
10.08	Guideway: Retained cut or fill			\$0
10.09	Track: Direct fixation			\$0
10.10	Track: Embedded			\$0
10.11	Track: Ballasted			\$0
10.12	Track: Special (switches, turnouts)			\$0
10.13	Track: Vibration and noise dampening			\$0
SUBTOTAL GUIDEWAY & TRACK				\$0
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)			
20.01	At-grade station, stop, shelter, mall, terminal, platform			\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform			\$0
20.03	Underground station, stop, shelter, mall, terminal, platform			\$0
20.04	Other Stations & Pedestrian Tunnels			**NOT USED**
20.05	Joint development			**NOT USED**
20.06	Automobile parking multi-story structure			**NOT USED**
20.07	Elevators, escalators			\$0
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL				\$0
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			
30.01	Administration Building: Office, sales, storage, revenue counting			\$14,758,888
30.02	Light Maintenance Facility			**NOT USED**
30.03	Heavy Maintenance Facility			\$66,456,265
30.04	Storage Building & Yard			"IN 30.02"
30.05	Maintenance of Way Building & Yard			**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)				\$81,215,153
40.00	SITework & SPECIAL CONDITIONS			
40.01	Demolition, Clearing, Earthwork1			\$0
40.02	Site Utilities, Utility Relocation			\$0
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments			\$0
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks			\$0
40.05	Major site structures including retaining walls, sound walls			not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work			\$0
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing			\$0
40.08	Temporary facilities and other indirect costs during construction5			\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS				\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			2006\$ with Contingency
date: 10/20/06 last update: 9/28/06 1:45 PM			Sections & Alignments Section 5
Description			Systemwide
			AH II
			30
50.00	SYSTEMS		
50.01	Train control and signals		\$0
50.02	Traffic signals and crossing protection		\$0
50.03	Traction power supply: substations		\$0
50.04	Traction power distribution: catenary and third rail		\$0
50.05	Communications		\$0
50.06	Fare collection system and equipment		\$0
50.07	Central Control		\$8,529,933
SUBTOTAL COST SYSTEMS			\$8,529,933
SUBTOTAL CONSTRUCTION COSTS			\$89,745,086
CONTINGENCY (WEIGHTED AVERAGE)			\$22,436,272
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$112,181,358
FEE/RISK			in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)			\$736,190
SUBTOTAL CONSTRUCTION COSTS			\$112,917,548
HAWAII STATE EXCISE 4.70%			\$5,307,125
TOTAL CONSTRUCTION COSTS			\$118,224,673
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$0
60.02	Relocation of existing households and businesses		\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$0
CONTINGENCY & ENGINEERING (40%+10%)			50% \$0
TOTAL ROW COSTS			\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				2006\$ with Contingency	2006\$ with Contingency
		date: 10/20/06 last update: 9/28/06 1:45 PM		Sections & Alignments Section 5	Sections & Alignments Section 5
Description				Systemwide	Systemwide
				Alt II	Alt II
				30	30
70.00	VEHICLES			90-vehicles	92-vehicles
70.01	Light Rail			\$222,005,880	\$226,939,344
70.02	Heavy Rail			not used	not used
70.03	Commuter Rail			not used	not used
70.04	Bus			not used	not used
70.05	Other			not used	not used
70.06	Non-revenue vehicles			\$4,203,149	\$4,203,149
70.07	Spare parts (10% of LRV's)			\$17,267,110	\$22,693,916
SUBTOTAL VEHICLE COST				\$243,476,139	\$253,836,409
				\$0	
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24%		\$58,434,273	\$60,920,738
				0	
TOTAL VEHICLE COSTS				\$301,910,412	\$314,757,147
80.00	SOFT COSTS				
80.01	Preliminary Engineering	3.0%		\$3,546,740	\$3,546,740
80.02	Final Design	4.5%		\$5,320,110	\$5,320,110
80.03	Project Management for Design and Construction	5.5%		\$6,502,357	\$6,502,357
80.04	Construction Administration & Management	10.0%		\$11,822,467	\$11,822,467
80.05	Insurance-Professional liability	1.50%		\$1,773,370	\$1,773,370
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%		\$1,773,370	\$1,773,370
80.07	Survey, Testing, Investigation, Inspection	0.50%		\$591,123	\$591,123
80.08	Agency: Force Account Work (2%3,4)	3.5%		\$4,137,884	\$4,137,864
SUBTOTAL SOFT COSTS				\$36,467,401	\$36,467,401
90.00	CONTINGENCY (Project Reserve) (10 thru 90)			\$27,336,149	\$28,106,953
100.00	FINANCE CHARGES			\$0	\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)			\$118,224,673	\$118,224,673
OTHER PROJECT COST (60+70+80+90+100) (2006\$)				\$364,713,962	\$378,331,501
TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)				\$482,938,635	\$496,556,174
Route foot length				8,166'	8,166'
Construction Cost per Route Foot (2006\$)				\$14,500	\$14,500
Construction Cost per Route Mile (2006\$)				\$76,560,000	\$76,560,000

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet

YARDS, SHOPS, ADMIN/SUPPORT FACILITIES

Systemwide

DESCRIPTION		COST		Systemwide		
1	2	ID	QTY	UNIT	80	81
30.00 YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (20 ACRES)						
ADMINISTRATION BUILDING: OFFICE, SALES, STORAGE, REVENUE COUNTING						
csc30.01-1	Administration Building & Site Facilities	1	LS	\$14,758,888	1	\$14,758,888
30.01	ADMINISTRATION BUILDING: OFFICE, SALES, STORAGE, REVENUE		RF			\$14,758,888
HEAVY MAINTENANCE FACILITY						
csc30.02-1	Storage Track & Running Repair Maintenance Bldg (9 Acres)	1	LS	\$0		
csc30.02-2	Heavy Maintenance Facility and Yard (30 Acres) {accomodate	1	LS	\$66,456,265	1	\$66,456,265
30.03	HEAVY MAINTENANCE FACILITY		RF			\$66,456,265
30.02	LIGHT MAINTENANCE FACILITY NOT USED*****					**NOT USED**
30.04	STORAGE BUILDING & YARD					"IN 30.02"
30.05	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						\$81,215,153

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

DESCRIPTION	COST			Systemwide	
	ID	QTY	UNIT	Section 6	
50.00 Systems			ALIGNMENT	0	38
Train Control & Signals					
csc50.01-1		1	RF	\$238	- \$ -
csc50.01-2		1	EA	\$235,278	0 \$0
50.01	Train Control & Signals			RF	\$0
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**
Traffic Signals and Crossing Protection					
csc50.02-1		1	EA	\$376,047	0 \$0
csc50.02-2		1	EA	\$289,523	0 \$0
50.02	Traffic Signals and Crossing Protection			RF	\$0
Traction Power Supply: Substations					
csc50.03-1		1	EA	\$1,640,461	- \$0
50.03	Traction Power Supply: Substations			RF	\$0
10.05	Guideway: Built-up fill not used*****				
Traction Power Distribution: Catenary and Third Rail					
csc50.04-1		1	RF	\$315	- \$0
csc50.04-2		1	RF	\$216	- \$0
csc50.04-3		1	RF	\$225	- \$0
csc50.04-4		1	RF	\$170	- \$0
50.04	Traction Power Distribution: Catenary and Third Rail			RF	\$0
Communication					
csc50.05-1		1	LS	\$299	- \$0
50.05	Communication				\$0
Fare Collection System and Equipment					
csc50.06-1		1	LS	\$584,612	- \$0
csc50.06-2		1	LS	\$299,712	- \$0
50.06	Fare Collection System and Equipment			RF	\$0
Central Control					
csc50.07		1	LS	\$8,529,933	1 \$8,529,933
50.07	Central Control			RF	\$8,529,933
Total Systems					

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet Vehicles
 Summary Cost Comparison of Alternative Analysis

Vehicles Cost Summary

COST ID	DESCRIPTION	20-mile Alignment QTY	Full Corridor QTY	UNIT	UNIT COST	20-mile Alignment COST	Full Corridor COST
70.00 Vehicles							
CSC70.01	Articulated LRV	70	90	EA	\$2,466,732	\$172,671,240	\$222,005,880
70.01	TOTAL		90	EA		\$172,671,240	\$222,005,880
CSC70.06	Non Revenue Vehicles	1	1	LS	\$4,203,149	\$4,203,149	\$4,203,149
70.06	TOTAL		1	LS		\$4,203,149	\$4,203,149
CSC70.07	Spare Parts	70	90	EA	\$246,673	\$17,267,110	\$22,200,570
70.07	TOTAL		90	EA		\$17,267,110	\$22,200,570
Total Vehicles			1	LS		\$194,141,499	\$248,409,599

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet Vehicles
Summary Cost Comparison of Alternative Analysis

Vehicles Cost Summary

COST ID	DESCRIPTION	20-mile Alignment QTY	Full Corridor QTY	UNIT	UNIT COST	20-mile Alignment COST	Full Corridor COST
70.00 Vehicles							
CSC70.01	Articulated LRV	70	92	EA	\$2,466,732	\$172,671,240	\$226,939,344
70.01	TOTAL		92	EA		\$172,671,240	\$226,939,344
CSC70.06	Non Revenue Vehicles	1	1	LS	\$4,203,149	\$4,203,149	\$4,203,149
70.06	TOTAL		1	LS		\$4,203,149	\$4,203,149
CSC70.07	Spare Parts	70	92	EA	\$246,673	\$17,267,110	\$22,693,916
70.07	TOTAL		92	EA		\$17,267,110	\$22,693,916
Total Vehicles			1	LS		\$194,141,499	\$253,836,409

**20-mile Alignment
Saratoga Ave/North-South Rd
Capital Cost Estimate
October 20, 2006**

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			20-mile Alignment
20-mile Alignment (Kapolei to Ala Moana) Sta 192+00 to 1475+00			2006\$ with Contingency
date: 10/20/06 last update: 9/26/08 1:45 PM			Sections & Alignments
			Section 1
Description			Saratoga Ave/North-South Rd from N/S- Kapolei Pkwy Station Alt 5
			5
			At-grade/elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$2,033,600
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$112,469,142
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored		\$0
10.08	Guideway: Retained cut or fill		\$7,420,200
10.09	Track: Direct fixation		\$9,907,650
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$3,112,400
10.12	Track: Special (switches, turnouts)		\$2,969,460
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$137,912,452
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$3,195,536
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$11,981,180
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$6,504,240
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$21,580,956
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITework & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork		\$2,468,400
40.02	Site Utilities, Utility Relocation Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$12,733,155
40.03	Environmental mitigation, e.g. wetlands,		\$237,355
40.04	historic/archeologic, parks		\$750,000
40.05	Major site structures including retaining walls, sound walls		**NOT USED**
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$28,774,592
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction ²		\$0
SUBTOTAL COST SITework & SPECIAL CONDITIONS			\$44,963,502

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis		20-mile Alignment
20-mile Alignment (Kapolei to Ala Moana) Sta 192+00 to 1475+00		2006\$ with Contingency
date: 10/23/06 last update: 9/28/05 1:45 PM		Sections & Alignments Section 1
Description		Saratoga Ave/North-South Rd from N/S- Kapolei Pkwy Station
50.00	SYSTEMS	
50.01	Train control and signals	\$6,851,188
50.02	Traffic signals and crossing protection	\$0
50.03	Traction power supply: substations	\$6,561,844
50.04	Traction power distribution: catenary and third rail	\$5,309,550
50.05	Communications	\$6,242,522
50.06	Fare collection system and equipment	\$899,136
50.07	Central Control	\$0
SUBTOTAL COST SYSTEMS		\$25,854,240
SUBTOTAL CONSTRUCTION COSTS		\$230,321,150
CONTINGENCY (WEIGHTED AVERAGE)		\$59,199,179
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY		\$289,520,329
FEE/RISK		in items above
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)		\$1,899,977
SUBTOTAL CONSTRUCTION COSTS		\$291,420,306
HAWAII STATE EXCISE 4.70%		\$13,696,754
TOTAL CONSTRUCTION COSTS		\$305,117,060
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)	
60.01	Purchase or lease of real property	\$0
60.02	Relocation of existing households and businesses	\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)		\$0
CONTINGENCY & ENGINEERING (40%+10%) 50%		\$0
TOTAL ROW COSTS		\$0
70.00	VEHICLES	
70.01	Light Rail	IN SECTION 6
70.02	Heavy Rail	not used
70.03	Commuter Rail	not used
70.04	Bus	not used
70.05	Other	not used
70.06	Non-revenue vehicles	IN SECTION 6
70.07	Spare parts (10% of LRV's)	IN SECTION 6
SUBTOTAL VEHICLE COST		\$0
CONTINGENCY & ENGINEERING STAFF (10%+14%) 24%		\$0
TOTAL VEHICLE COSTS		\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			20-mile Alignment
20-mile Alignment (Kapolei to Afa Moana) Sta 192+00 to 1475+00			2006\$ with Contingency
date: 10/20/06 last update: 9/28/08 1:46 PM			Sections & Alignments
			Section 1
Description			Saratoga Ave/North-South Rd from N/S- Kapolei Pkwy Station
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$9,153,512
80.02	Final Design	4.5%	\$13,730,268
80.03	Project Management for Design and Construction	5.5%	\$16,781,438
80.04	Construction Administration & Management	10.0%	\$30,511,706
80.05	Insurance-Professional liability	1.50%	\$4,576,756
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$4,576,756
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$1,525,585
80.08	Agency: Force Account Work (2% ³⁻⁴)	3.5%	\$10,679,097
	SUBTOTAL SOFT COSTS		30%
			\$91,535,118
90.00	CONTINGENCY (Project Reserve) (10 thru 80)		6.0%
			\$23,799,131
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$305,117,060
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$115,334,249
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$420,451,309
	Route foot length		20,878'
	Construction Cost per Route Foot (2006\$)		\$14,700
	Construction Cost per Route Mile (2006\$)		\$77,616,000

20,878

Full build segments (2006\$)

\$3,604,580,144

\$420,451,309

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Guideway & Trackwork

20-mile Alignment

DESCRIPTION		COST			Saratoga Ave/North-South Rd from N/S-Kapolei Station	
		ID	QTY	UNIT	64	65
1	2	3	4	5	Section 1 Alt 5a	
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	6,200	\$2,033,600
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
10.01	Guideway: At-grade Exclusive		RF			\$2,033,600
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	0	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	14,078	\$112,469,142
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,693	-	\$0
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	-	\$0
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (6 ft Dia)	1	RF	\$8,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (6 ft dia)	1	RF	\$8,700	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$0
10.04	Guideway: Aerial structure		RF			\$112,469,142
10.05	Guideway: Built-up fill not used*****					
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,090	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+65 to 1408+	1	RF	\$26,088	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	600	\$7,420,200
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,182	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$7,420,200
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	14,678	\$9,907,650
10.09	Track: Direct fixation		RF			\$9,907,650
Track: Embedded/Paved						
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$687	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	6,200	\$3,112,400
10.11	Track: Ballasted		RF			\$3,112,400
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	2	\$1,914,822
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	1	\$804,040
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$850	310	\$201,500
10.12	Track: Special (switches, turnouts)		LS			\$2,969,460
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$137,912,452

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

						20-mile Alignment	
						20-mile Alignment Saratoga Ave/North-South Rd from N-S/Kapolei Station (Sta 192+50)	
DESCRIPTION		COST			Section 1 Alt 5		
1	2	3	4	5	6	65	
20.00 STATIONS & SHOPS							
AT GRADE STATIONS							
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,536	1	\$3,195,536	
20.01 AT GRADE STATIONS		RF				\$3,195,536	
AERIAL STATIONS							
csc20.02-1	Aerial Station - Side Platforms, Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	2	\$11,881,180	
csc20.02-2	Aerial Station - Side Platforms, Major (270 Ft. L.) No Mezzanine	1	LS	\$5,798,590	-	\$0	
csc20.02-3	Aerial Station - Stacked Side Platforms, Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0	
csc20.02-4	Aerial Station - Stacked Side Platforms, Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0	
csc20.02-5	Aerial Station - Center Platforms, Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	-	\$0	
20.02 AERIAL STATIONS		RF				\$11,881,180	
UNDERGROUND STATIONS							
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0	
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0	
20.03 UNDERGROUND STATIONS		RF				\$0	
20.04 OTHER STATIONS & PEDESTRIAN TUNNELS						**NOT USED**	
20.05 JOINT DEVELOPMENT						**NOT USED**	
20.06 MAINTENANCE OF WAY BUILDING & YARD NOT USED*****						**NOT USED**	
ELEVATORS & ESCALATORS							
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	4	\$ 1,818,032	
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	-	\$ -	
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$845,338	-	\$ -	
csc20.07-4	ESCALATORS (16 ft Rise)	1	EA	\$523,954	-	\$ -	
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	8	\$ 4,686,208	
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302			
20.07 ELEVATORS & ESCALATORS		RF				\$6,504,240	
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES							

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

						20-mile Alignment	
						Saratoga Ave/North-South Rd from N-S/Kapolei Station	
						Section 1 Alt 5	
COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST		
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		14,078	30
			40.AG	AT GRADE ALIGNMENT		6,800	
CSC40.01-1	Demolition: Urban		1	RF	\$207		
CSC40.01-2	Demolition: Rural		1	RF	\$22		
CSC40.01-3	Demolition: Residential		1	RF	\$53	6,800	\$360,400
CSC40.01-8	Clear and Grubbing		1	RF	\$62	34,000	\$2,108,000
CSC40.01-5	Earthwork		1	RF	in guideway		
CSC40.01-6	Building Mitigation (Underpinning, etc)		1	RF	\$4,672,938		
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)		1	SF	\$532		
40.01 Demo Clearing & Sitework							\$2,468,400
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION		1	RF	\$81	20,878	\$1,681,118
CSC40.02-7	Utility: REMOVALS		1	RF	\$54	20,878	\$1,127,412
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD		1	LS	\$11,661,300	-	\$0
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD		1	LS	\$10,140,835	-	\$0
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD		1	LS	\$14,919,197	-	\$0
CSC40.02-10a	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD		1	LS	\$9,814,625	1	\$9,814,625
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD		1	LS	\$8,585,817	-	\$0
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD		1	LS	\$12,828,833	-	\$0
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD		1	LS	\$16,069,810	-	\$0
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD		1	LS	\$15,489,716	-	\$0
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$110,634,239	-	\$0
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED		1	LS	\$80,946,739	-	\$0
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT		1	LS	\$22,388,642	-	\$0
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- ADLELE ST		1	LS	\$21,608,054	-	\$0
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD		1	LS	\$70,953,750	-	\$0
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST		1	LS	\$48,825,000	-	\$0
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST		1	LS	\$299,250	-	\$0
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD		1	LS	\$133,610,175	-	\$0
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO		1	LS	\$135,273,779	-	\$0
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$118,805,978	-	\$0
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD		1	LS	\$9,497,964	-	\$0
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI		1	LS	\$121,269,582	-	\$0
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD		1	LS	\$120,324,175	-	\$0
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEEN ST/KAPIOLANI BLVD		1	LS	\$121,048,364	-	\$0
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,162,486	-	\$0
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$33,552,021	-	\$0
SC40.02-63a1	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$34,290,694	-	\$0
SC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$52,504,197	-	\$0
SC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$53,242,870	-	\$0
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$152,983,234	-	\$0
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI		1	LS	\$124,826,342	-	\$0
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST		1	LS	\$61,198,973	-	\$0
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST		1	LS	\$62,813,917	-	\$0
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)		1	LS	\$164,208,791	-	\$0
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)		1	LS	\$165,872,395	-	\$0
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR		1	LS	\$60,625,729	\$0	\$0
PARSONS BRINCKERHOFF 40.02 UTILITIES BASED ON 1992 INFORMATION						ok	\$12,733,155

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	1,283	\$237,355
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
<p style="text-align: center;">Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation</p>						\$237,355
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$750,000
<p style="text-align: center;">Environmental mitigation, e.g. wetlands, historic/archeologic, 40.04 parks</p>						\$750,000
<p style="text-align: center;">Site Development: Roads, Walkways, Landscaping</p>						
CSC40.05-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	0	\$0
CSC40.05-1a	Turn Pocket (100 ft)	1	RF	\$204	0	\$0
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	0	\$0
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	0	\$0
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	20,878	\$2,714,140
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	1,800	\$8,177,400
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	40,000	\$17,600,000
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	2	\$45,428
<p style="text-align: center;">40.06 Site Development: Roads, Walkways, Landscaping</p>						\$28,774,592
<p style="text-align: center;">Temporary Facilities</p>						
<p style="text-align: center;">40.08 Temporary Facilities</p>						\$0
<p style="text-align: center;">Total Sitework & Special Conditions</p>						
		1	LS			44,953,502

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

20-mile Alignment

Saratoga Ave/North-South Rd from N-S/Kapolei Station

DESCRIPTION	COST			Section 1 Alt 5	
	ID	QTY	UNIT	30	
50.00 Systems			ALIGNMENT	20,878	
	Train Control & Signals				
csc50.01-1		1	RF	\$238	20,878 \$ 4,988,964
csc50.01-2		1	EA	\$235,278	8 \$1,882,224
50.01	Train Control & Signals			RF	\$6,851,188
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**
	Traffic Signals and Crossing Protection				
csc50.02-1		1	EA	\$376,047	0 \$0
csc50.02-2		1	EA	\$289,523	0 \$0
50.02	Traffic Signals and Crossing Protection			RF	\$0
	Traction Power Supply: Substations				
csc50.03-1		1	EA	\$1,640,461	4 \$6,561,844
50.03	Traction Power Supply: Substations			RF	\$6,561,844
	10.05 Guideway: Built-up fill not used*****				
	Traction Power Distribution: Catenary and Third Rail				
csc50.04-1		1	RF	\$315	6,800 \$2,142,000
csc50.04-2		1	RF	\$216	- \$0
csc50.04-3		1	RF	\$225	14,078 \$3,167,550
csc50.04-4		1	RF	\$170	- \$0
50.04	Traction Power Distribution: Catenary and Third Rail			RF	\$5,309,550
	Communication				
csc50.05-1		1	LS	\$299	20,878 \$6,242,522
50.05	Communication			-	\$6,242,522
	Fare Collection System and Equipment				
csc50.06-1		1	LS	\$584,612	- \$0
csc50.06-2		1	LS	\$299,712	3 \$899,136
50.06	Fare Collection System and Equipment			RF	\$899,136
	Central Control				
csc50.07		1	LS	\$8,529,933	- \$0
50.07	Central Control			RF	\$0
Total Systems					

**Honolulu High-Capacity Transit Corridor Project
 Fixed Guideway Alternatives
 Summary Cost Comparison of Alternative Analy:**

Pricing Sheet
 ROW Cost Summary

					20-mile Alignment	
					Saratoga Ave/North-South Rd from N-S/Kapolei Station	
					Section 1 Alt 5	
DESCRIPTION	ID	QTY	UNIT	COST		
60.00 Right of Way						
Purchase or lease of real property						
csc60.01-1						
	60.01					
Relocation of existing households and businesses						
csc60.02-1						
	60.02					
TOTAL RIGHT OF WAY						

**20-mile Alignment
Nimitz Hwy/Halekauwila St/Kapiolani Blvd
Capital Cost Estimate
October 20, 2006**

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis 20-mile Alignment (Kapolei to Ala Moana) Sta 192+00 to 1475+00			20-mile Alignment
			2006\$ with Contingency
			Sections & Alignments
			Section 5
Description			Dillingham/Nimitz Hwy/Halekauwila St/Kapiolani Blvd to Ala Moana Sta
			25
			Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$118,312,558
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored		\$0
10.08	Guideway: Retained cut or fill		\$0
10.09	Track: Direct fixation		\$9,803,700
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$4,836,153
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$132,952,411
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$31,044,098
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$14,693,811
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$45,737,909
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$0
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$0
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$0
40.00	SITWORK & SPECIAL CONDITIONS		
40.01	Demolition, Clearing, Earthwork		\$3,006,468
40.02	Site Utilities, Utility Relocation		\$126,787,082
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$0
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$750,000
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$5,293,361
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction ²		\$0
SUBTOTAL COST SITEWORK & SPECIAL CONDITIONS			\$135,836,911

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis 20-mile Alignment (Kapolei to Ala Moana) Sta 192+00 to 1475+00		20-mile Alignment
date: 10/20/06 last update: 9/26/06 1:45 PM		2006\$ with Contingency
Description		Sections & Alignments Section 5
		Dillingham/Nimitz Hwy/Halekuanvila St/Kapiolani Blvd to Ala Moana Sta
50.00	SYSTEMS	
50.01	Train control and signals	\$3,456,712
50.02	Traffic signals and crossing protection	\$6,336,226
50.03	Traction power supply: substations	\$4,921,383
50.04	Traction power distribution: catenary and third rail	\$3,267,900
50.05	Communications	\$4,342,676
50.06	Fare collection system and equipment	\$1,498,560
50.07	Central Control	\$0
SUBTOTAL COST SYSTEMS		\$23,823,457
SUBTOTAL CONSTRUCTION COSTS		\$338,350,688
CONTINGENCY (WEIGHTED AVERAGE)		\$97,642,027
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY		\$435,992,715
FEE/RISK		<i>in items above</i>
ADJUSTMENT FOR CASUAL OVERTIME (2.5% OF DIRECT LABOR)		\$2,861,202
SUBTOTAL CONSTRUCTION COSTS		\$438,853,917
HAWAII STATE EXCISE (4.70%)		\$20,626,134
TOTAL CONSTRUCTION COSTS		\$459,480,051
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)	
60.01	Purchase or lease of real property	\$31,800,000
60.02	Relocation of existing households and businesses	\$1,300,000
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)		\$33,100,000
CONTINGENCY & ENGINEERING (40%+10%)		50% \$16,550,000
TOTAL ROW COSTS		\$49,650,000
70.00	VEHICLES	
70.01	Light Rail	IN SECTION 6
70.02	Heavy Rail	not used
70.03	Commuter Rail	not used
70.04	Bus	not used
70.05	Other	not used
70.06	Non-revenue vehicles	IN SECTION 6
70.07	Spare parts (10% of LRV's)	IN SECTION 6
SUBTOTAL VEHICLE COST		\$0
CONTINGENCY & ENGINEERING STAFF(10%+14%)		24% \$0
TOTAL VEHICLE COSTS		\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis				20-mile Alignment
20-mile Alignment (Kapolei to Ala Moana) Sta 192+00 to 1475+00				2006\$ with Contingency
date: 10/20/08 fast update: 9/26/06 1:45 PM				Sections & Alignments
Description				Section 5
				Dillingham/Nimitz Hwy/Halekauwila Su/Kapiolani Blvd to Ala Moana Sta
80.00	SOFT COSTS			
80.01	Preliminary Engineering	3.0%	\$13,784,402	
80.02	Final Design	4.5%	\$20,676,802	
80.03	Project Management for Design and Construction	5.5%	\$25,271,403	
80.04	Construction Administration & Management	10.0%	\$45,948,005	
80.05	Insurance-Professional liability	1.50%	\$6,892,201	
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$6,892,201	
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$2,297,400	
80.08	Agency: Force Account Work (2%)	3.5%	\$16,081,802	
	SUBTOTAL SOFT COSTS 30%		\$137,844,016	
90.00	CONTINGENCY (Project Reserve) (10 thru 90)			6.0%
			\$38,818,444	
100.00	FINANCE CHARGES			\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)			\$459,480,051
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)			\$226,312,460
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)			\$685,792,511
	Route foot length			14,524'
	Construction Cost per Route Foot (2006\$)			\$31,700
	Construction Cost per Route Mile (2006\$)			\$167,376,000

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Guideway & Trackwork

20-mile Alignment

DESCRIPTION		COST			Dillingham/Nimitz Hwy/Halekauwila St/Kapiolani Blvd to Ala Moana Sta	
		ID	QTY	UNIT	78	79
1	2	3	4	5	78	79
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)						
Guideway: At-grade Exclusive						
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$260	-	\$0
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-	-
10.01	Guideway: At-grade Exclusive		RF			\$0
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**
Guideway: At-grade in mixed traffic						
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0
10.03	Guideway: At-grade in mixed traffic		RF			\$0
Guideway: Aerial structure						
csc10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	1	RF	\$7,989	-	\$0
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	1	RF	\$5,993	12,505	\$74,942,465
csc10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	1	RF	\$8,086	-	\$0
csc10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	1	RF	\$8,150	2,019	\$16,454,850
csc10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	1	RF	\$8,452	-	\$0
csc10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	1	RF	\$8,709	-	\$0
csc10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - In Place	1	RF	\$5,793	-	\$0
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$27,419,195
10.04	Guideway: Aerial structure		RF			\$118,816,510
10.05 Guideway: Built-up fill not used*****						
Guideway: Underground cut & cover						
csc10.06-1	Cut & Cover, Tunnel (TBM), Portal, U Wall (Hotel St / Kawaiāno /	1	RF	\$34,090	-	\$0
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,666	-	\$0
10.06	Guideway: Underground cut & cover		RF			\$0
Guideway: Underground tunnel						
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	1	RF	\$25,129	-	\$0
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 s/a 1315+55 to 1408+	1	RF	\$26,086	-	\$0
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 s/a 1348+50 to 1408+	1	RF	\$27,920	-	\$0
10.07	Guideway: Underground tunnel					\$0
Guideway: Retained cut or fill						
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	1	RF	\$12,367	-	\$0
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	1	RF	\$6,162	-	\$0
10.08	Guideway: Retained cut or fill		RF			\$0
Track: Direct fixation						
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	14,524	\$9,803,700
10.09	Track: Direct fixation		RF			\$9,803,700
Track: Embedded/Paved						
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0
10.10	Track: Embedded/Paved		RF			\$0
Track: Ballasted						
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0
10.11	Track: Ballasted		RF			\$0
Track: Special (switches, turnouts)						
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	5	\$4,787,055
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0
10.12	Track: Special (switches, turnouts)		LS			\$4,836,153
Track: Vibration and noise dampening						
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0
10.13	Vibration and noise dampening		RF			\$0
Total Guideways						\$133,456,363

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Guideway & Trackwork

20-mile Alignment

						Dillingham/Nimitz Hwy/Halekauwila St/Kapiolani Blvd to Ala Moana Sta	
						Section 1 Alt 6a	
						COST	
DESCRIPTION	ID	QTY	UNIT				
1	2	3	4	5	78	79	
10.00 GUIDEWAY & TRACK ELEMENTS (route miles)							
Guideway: At-grade Exclusive							
csc10.01-1	Single At-Grade Ballasted Trackbed - Open	1	RF	\$280	-	\$0	
csc10.01-2	Double At-Grade Ballasted Trackbed - Open	1	RF	\$328	-	\$0	
csc10.01-5	Single At-Grade Guideway for Paved Track	1	RF	**NOT USED	-		
csc10.01-6	Double At-Grade Guideway for Paved Track	1	RF	**NOT USED	-		
10.01	Guideway: At-grade Exclusive		RF			\$0	
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	
Guideway: At-grade in mixed traffic							
csc10.01-4	Double At-Grade Guideway for Paved Track	1	RF	\$365	-	\$0	
10.03	Guideway: At-grade in mixed traffic		RF			\$0	
Guideway: Aerial structure							
csc10.04-1	Segmental Aerial Structure (T/R +25 FL) Column (5 ft Dia)	1	RF	\$7,989	-	\$0	
csc10.04-2a	Standard Aerial Dual Structure (T/R +30 FL) CIP	1	RF	\$5,952	12,505	\$74,554,810	
csc10.04-2	Segmental Aerial Structure (T/R +30 FL) Column (6 ft Dia)	1	RF	\$8,239	-	\$0	
csc10.04-3	Segmental Aerial Structure (T/R +40 FL) Column (5 ft Dia)	1	RF	\$8,150	2,019	\$16,454,850	
csc10.04-4	Segmental Aerial Structure (T/R +50 FL) Column (8 ft Dia)	1	RF	\$8,452	-	\$0	
csc10.04-5	Segmental Aerial Structure (T/R +60 FL) Column (8 ft Dia)	1	RF	\$8,572	-	\$0	
csc10.04-6	Standard Aerial Dual Structure (T/R +30 FL) Cast - in Place	1	RF	\$5,764	-	\$0	
csc10.04-6X	FACTOR FOR DOWNTOWN AERIAL STRUCTURE	1	%	30%	1	\$27,302,898	
10.04	Guideway: Aerial structure		RF			\$118,312,558	
10.05	Guideway: Built-up fill not used*****						
Guideway: Underground cut & cover							
csc10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano /	1	RF	\$34,080	-	\$0	
csc10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	1	RF	\$12,898	-	\$0	
10.06	Guideway: Underground cut & cover		RF			\$0	
Guideway: Underground tunnel							
csc10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	1	RF	\$31,308	-	\$0	
csc10.07-2	Tunnel, Portal and U-Wall (North King \ Beriania St \ S King St)	1	RF	\$25,129	-	\$0	
csc10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Beriania St \ S King St)	1	RF	\$25,129	-	\$0	
csc10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+	1	RF	\$26,088	-	\$0	
csc10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+	1	RF	\$27,920	-	\$0	
10.07	Guideway: Underground tunnel					\$0	
Guideway: Retained cut or fill							
csc10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 FL) 100 ft length	1	RF	\$12,367	-	\$0	
csc10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 FL)	1	RF	\$6,162	-	\$0	
10.08	Guideway: Retained cut or fill		RF			\$0	
Track: Direct fixation							
csc10.09-1	Direct Fixation Track - Single	1	RF	\$435	-	\$0	
csc10.09-2	Direct Fixation Dual Track	1	RF	\$675	14,524	\$9,803,700	
10.09	Track: Direct fixation		RF			\$9,803,700	
Track: Embedded/Paved							
csc10.10-1	Paved Track (In Street) - Single	1	RF	\$667	-	\$0	
csc10.10-2	Paved Track (In Street) - DUAL	1	RF	\$1,250	-	\$0	
10.10	Track: Embedded/Paved		RF			\$0	
Track: Ballasted							
csc10.11-1	Ballasted Track (Open) - Single	1	RF	\$247	-	\$0	
csc10.11-2	Ballasted Track (Open) - Double	1	RF	\$502	-	\$0	
10.11	Track: Ballasted		RF			\$0	
Track: Special (switches, turnouts)							
csc10.12-1	Double Crossover DF (No. 10)	1	EA	\$957,411	5	\$4,787,055	
csc10.12-2	Double Crossover Ballasted (No. 10)	1	EA	\$804,040	-	\$0	
csc10.12-3	No. 6 Turnout - DF	1	EA	\$282,314	-	\$0	
csc10.12-4	No. 5 Turnout - DF	1	EA	\$135,258	-	\$0	
csc10.12-5	Permanent Terminal, Direct Fixation	1	EA	\$24,549	2	\$49,098	
csc10.12-6	Grade Crossing Panels (Dual Track)	1	EA	\$650	0	\$0	
10.12	Track: Special (switches, turnouts)		LS			\$4,836,153	
Track: Vibration and noise dampening							
csc10.13-1	Track Vibration and Noise Dampening	1	RF	\$1,074	-	\$0	
10.13	Vibration and noise dampening		RF			\$0	
Total Guideways						\$132,952,411	

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet
Station & Shops

					20-mile Alignment	
					Dillingham/Nimitz Hwy/Halekauwila St/Kapiolani Blvd to Ala Moana Sta	
					Section 1 Alt 5	
DESCRIPTION		COST				
1	2	3	4	5	78	79
20.00 STATIONS & SHOPS						
AT GRADE STATIONS						
csc20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	1	LS	\$3,195,538	-	\$0
20.01	AT GRADE STATIONS		RF			\$0
AERIAL STATIONS						
csc20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$5,940,590	3	\$17,821,770
csc20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$5,798,590	1	\$5,798,590
csc20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	1	LS	\$6,140,810	-	\$0
csc20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	1	LS	\$6,284,810	-	\$0
csc20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	1	LS	\$7,425,738	1	\$7,425,738
20.02	AERIAL STATIONS		RF			\$31,044,098
UNDERGROUND STATIONS						
csc20.03-1	Underground Station with Center Platform and Mezzanine	1	LS	\$85,172,231	-	\$0
csc20.03-2	Underground Station with Center Platform without Mezzanine	1	LS	\$74,005,063	-	\$0
20.03	UNDERGROUND STATIONS		RF			\$0
20.04	OTHER STATIONS & PEDESTRIAN TUNNELS					**NOT USED**
20.05	JOINT DEVELOPMENT					**NOT USED**
20.06	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
ELEVATORS & ESCALATORS						
csc20.07-1	ELEVATORS (40 ft Rise)	1	EA	\$454,508	8	\$ 3,636,064
csc20.07-2	ELEVATORS (50 ft Rise)	1	EA	\$513,779	1	\$ 513,779
csc20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	1	EA	\$645,336	-	\$ -
csc20.07-4	ESCALATORS (15 ft Rise)	1	EA	\$523,954	-	\$ -
csc20.07-5	ESCALATORS (30 ft Rise)	1	EA	\$585,776	18	\$ 10,543,968
csc20.07-6	ESCALATORS (60 ft Rise)	1	EA	\$795,302		
20.07	ELEVATORS & ESCALATORS		RF			\$14,693,811
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Sitework & Special Conditions

						20-mile Alignment	
						Dillingham/Nimitz Hwy/Halekauwila St/Kapiolani Blvd to Ala Moana Sta	
						Section 1 Alt 5	
COST ID	FTA Code	DESCRIPTION	QTY	UNIT	UNIT COST		
40.00 Sitework & Special Conditions			40.A	AERIAL ALIGNMENT		14,524	37
			40.AG	AT GRADE ALIGNMENT		0	
CSC40.01-1		Demolition: Urban	1	RF	\$207	14,524	\$3,005,468
CSC40.01-2		Demolition: Rural	1	RF	\$22		
CSC40.01-3		Demolition: Residential	1	RF	\$53		
CSC40.01-8		Clear and Grubbing	1	RF	\$62	0	\$0
CSC40.01-5		Earthwork	1	RF	in guideway		
CSC40.01-6		Building Mitigation (Underpinning, etc)	1	RF	\$4,672,938		
CSC40.01-7		Building Mitigation (Parking Structure Demolition & Reconstruction)	1	SF	\$532		
40.01 Demo Clearing & Sitework							\$3,005,468
CSC40.02-1		UTILITIES BASED ON 1992 INFORMATION	1	RF	\$81	14,524	\$1,176,444
CSC40.02-7		Utility: REMOVALS	1	RF	\$54	14,524	\$784,296
CSC40.02-8		SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	1	LS	\$11,661,300	-	\$0
CSC40.02-9		SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	1	LS	\$10,140,835	-	\$0
CSC40.02-10		SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	1	LS	\$14,919,197	-	\$0
CSC40.02-10a		SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	1	LS	\$9,914,925	-	\$0
CSC40.02-11		SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	1	LS	\$8,585,817	-	\$0
CSC40.02-12		SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	1	LS	\$12,628,933	-	\$0
CSC40.02-13		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	1	LS	\$16,069,810	-	\$0
CSC40.02-14		SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	1	LS	\$15,489,718	-	\$0
CSC40.02-15		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$110,634,239	-	\$0
CSC40.02-16		SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	1	LS	\$80,946,739	-	\$0
CSC40.02-17		SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	1	LS	\$22,388,642	-	\$0
CSC40.02-18		SECTION 3: ELECTRICAL & COMMUNICATION- AOOLEE ST	1	LS	\$21,606,054	-	\$0
CSC40.02-19		SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	1	LS	\$70,953,750	-	\$0
CSC40.02-20		SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	1	LS	\$48,825,000	-	\$0
CSC40.02-21		SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	1	LS	\$299,250	-	\$0
CSC40.02-22		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	1	LS	\$133,610,175	-	\$0
CSC40.02-23		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO	1	LS	\$135,273,779	-	\$0
CSC40.02-24		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$119,605,978	-	\$0
CSC40.02-24a		SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	1	LS	\$9,497,964	-	\$0
CSC40.02-25		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	1	LS	\$121,269,582	-	\$0
CSC40.02-26		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	1	LS	\$120,324,175	-	\$0
CSC40.02-62		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	1	LS	\$121,048,364	-	\$0
CSC40.02-63		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,162,488	-	\$0
CSC40.02-63a		SECTION 5: MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$33,552,021	-	\$0
CSC40.02-63a1		SECTION 5: MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$34,290,694	-	\$0
CSC40.02-63b		SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$52,504,197	-	\$0
CSC40.02-63b1		SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$53,242,870	-	\$0
CSC40.02-64		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$152,983,234	-	\$0
CSC40.02-64a		SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	1	LS	\$124,826,342	1	\$124,826,342
CSC40.02-65		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	1	LS	\$61,186,973	-	\$0
CSC40.02-66		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	1	LS	\$62,813,917	-	\$0
CSC40.02-68		SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	1	LS	\$164,208,791	-	\$0
CSC40.02-69		SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st)	1	LS	\$165,872,395	-	\$0
CSC40.02-67		SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	1	LS	\$80,825,729	\$0	\$0
PARSONS BRINCKERHOFF		40.02 UTILITIES BASED ON 1992 INFORMATION	1	RF		ok	\$126,787,082

CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	1	TON	\$185.00	-	\$0
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	1	GAL	\$1	\$0	\$0
Hazardous Material Mitigation: Petrochemical Contaminated 40.03 Excavation						\$0
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archaeological/Historical Monitoring	1	ALLOW	\$2,500,000	\$1	\$750,000
Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.04						\$750,000
Site Development: Roads, Walkways, Landscaping						
CSC40.06-1	Street Construction Adj. to LRT - One Lane	1	RF	\$295	6,919	\$2,041,105
CSC40.06-1a	Turn Pocket (100 ft)	1	RF	\$204	3,100	\$832,400
CSC40.06-17	Intersection Modification Type 1	1	LS	\$146,075	0	\$0
CSC40.06-18	Intersection Modification Type 2	1	LS	\$110,599	0	\$0
CSC40.06-19	Intersection Modification Type 3	1	LS	\$78,372	1	\$78,372
CSC40.06-21	Intersection Modification Type 4	1	LS	\$32,482	1	\$32,482
CSC40.06-10	Landscaping & Urban Design: Urban	1	RF	\$187		
CSC40.06-11	Landscaping & Urban Design: Rural	1	RF	\$93		
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	1	RF	\$130	14,524	\$1,888,120
CSC40.06-13	Hotel Street Mall Reconstruction	1	sf	\$160	0	\$0
CSC40.06-14	PARK & RIDE AT GRADE	1	STALL	\$4,543	0	\$0
CSC40.06-15	PARK & RIDE STRUCTURED	1	STALL	\$24,459	0	\$0
CSC40.06-15A	ACCESS RAMP TO P&R STRUCTURE	1	SQFT	\$440	0	\$0
CSC40.06-16	BUS BAYS	100%	STALL	\$22,714	-	\$0
40.05 Site Development: Roads, Walkways, Landscaping Temporary Facilities						\$5,293,361
40.08 Temporary Facilities						\$0
Total Sitework & Special Conditions						135,836,911

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

20-mile Alignment

					Dillingham/Nimitz Hwy/Halekiauwila St/Kapiolani Blvd to Ala Moana Sta	
DESCRIPTION	COST			Section 1 Alt 5		
	ID	QTY	UNIT		37	
50.00 Systems			ALIGNMENT	14,524		
	Train Control & Signals					
csc50.01-1		1	RF	\$238	14,524 \$ 3,456,712	
csc50.01-2		1	EA	\$235,278	0 \$0	
50.01	Train Control & Signals			RF	\$3,456,712	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****				**NOT USED**	
	Traffic Signals and Crossing Protection					
csc50.02-1		1	EA	\$376,047	13 \$4,888,611	
csc50.02-2		1	EA	\$289,523	5 \$1,447,615	
50.02	Traffic Signals and Crossing Protection			RF	\$6,336,226	
	Traction Power Supply: Substations					
csc50.03-1		1	EA	\$1,640,461	3 \$4,921,383	
50.03	Traction Power Supply: Substations			RF	\$4,921,383	
10.05	Guideway: Built-up fill not used*****					
	Traction Power Distribution: Catenary and Third Rail					
csc50.04-1		1	RF	\$315	- \$0	
csc50.04-2		1	RF	\$216	- \$0	
csc50.04-3		1	RF	\$225	14,524 \$3,267,900	
csc50.04-4		1	RF	\$170	- \$0	
50.04	Traction Power Distribution: Catenary and Third Rail			RF	\$3,267,900	
	Communication					
csc50.05-1		1	LS	\$299	14,524 \$4,342,676	
50.05	Communication			-	\$4,342,676	
	Fare Collection System and Equipment					
csc50.06-1		1	LS	\$584,612	- \$0	
csc50.06-2		1	LS	\$299,712	5 \$1,498,560	
50.06	Fare Collection System and Equipment			RF	\$1,498,560	
	Central Control					
csc50.07		1	LS	\$8,629,933	- \$0	
50.07	Central Control			RF	\$0	
Total Systems						

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analy:
Pricing Sheet
ROW Cost Summary

					20-mile Alignment			
					Dillingham/Nimitz Hwy/Halekauwila St/Kapiolani Blvd to Ala Moana Sta			
					Section 1 Alt 5			
DESCRIPTION	ID	QTY	UNIT	COST				
60.00 Right of Way								
Purchase or lease of real property								
csc60.01-1				Right of Way Takes from Detail table	1	LS	1	\$31,800,000
60.01				Purchase or lease of real property		LS		\$31,800,000
Relocation of existing households and businesses								
csc60.02-1				BUSINESS RELOCATION from Detail table	1	ls	1	\$1,300,000
60.02				Relocation of existing households and businesses		ls		\$1,300,000
TOTAL RIGHT OF WAY								

**20-mile Alignment
Systemwide**

**Capital Cost Estimate
October 20, 2006**

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			20-mile Alignment
20-mile Alignment (Kapolei to Ata Moana) Sta 192+00 to 1475+00			2006\$ with Contingency
date: 10/20/06 last update: 9/26/06 1:45 PM			Sections & Alignments
			Section 5
Description			Systemwide
			Alt 11
			26
			Elevated
10.00	GUIDEWAY & TRACK ELEMENTS		
10.01	Guideway: At-grade Exclusive Right-of-way		\$0
10.02	Guideway: At-grade Semi-exclusive		**NOT USED**
10.03	Guideway: At-grade in mixed traffic		\$0
10.04	Guideway: Aerial structure		\$0
10.05	Guideway: Built-up fill		\$0
10.06	Guideway: Underground cut & cover		\$0
10.07	Guideway: Underground tunnel bored		\$0
10.08	Guideway: Retained cut or fill		\$0
10.09	Track: Direct fixation		\$0
10.10	Track: Embedded		\$0
10.11	Track: Ballasted		\$0
10.12	Track: Special (switches, turnouts)		\$0
10.13	Track: Vibration and noise dampening		\$0
SUBTOTAL GUIDEWAY & TRACK			\$0
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL (#underground stations/#aerial platforms/#at grade platforms)		
20.01	At-grade station, stop, shelter, mall, terminal, platform		\$0
20.02	Aerial station, stop, shelter, mall, terminal, platform		\$0
20.03	Underground station, stop, shelter, mall, terminal, platform		\$0
20.04	Other Stations & Pedestrian Tunnels		**NOT USED**
20.05	Joint development		**NOT USED**
20.06	Automobile parking multi-story structure		**NOT USED**
20.07	Elevators, escalators		\$0
SUBTOTAL COST STATIONS, STOPS, TERMINALS, INTERMODAL			\$0
30.00	YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)		
30.01	Administration Building: Office, sales, storage, revenue counting		\$14,758,888
30.02	Light Maintenance Facility		**NOT USED**
30.03	Heavy Maintenance Facility		\$66,456,265
30.04	Storage Building & Yard		"IN 30.02"
30.05	Maintenance of Way Building & Yard		**NOT USED**
SUBTOTAL COST YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (acres)			\$81,215,153
40.00	SITWORK & SPECIAL CONDITIONS		
40.01	Demolition, Cleaning, Earthwork		\$0
40.02	Site Utilities, Utility Relocation		\$0
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		\$0
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks		\$0
40.05	Major site structures including retaining walls, sound walls		not used
40.06	Site Development: Roads, walks, plazas, parking lots, landscape work		\$0
40.07	Site furniture, lighting, shelters, bike facilities, signage, fencing		\$0
40.08	Temporary facilities and other indirect costs during construction		\$0
SUBTOTAL COST SITWORK & SPECIAL CONDITIONS			\$0

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			20-mile Alignment
20-mile Alignment (Kapolei to Ala Moana) Sta 192+00 to 1475+00			2006\$ with Contingency
date: 10/26/06 last update: 9/25/06 1:45 PM			Sections & Alignments
			Section 5
Description			Systemwide
50.00	SYSTEMS		
50.01	Train control and signals		\$0
50.02	Traffic signals and crossing protection		\$0
50.03	Traction power supply: substations		\$0
50.04	Traction power distribution: catenary and third rail		\$0
50.05	Communications		\$0
50.06	Fare collection system and equipment		\$0
50.07	Central Control		\$8,529,933
SUBTOTAL COST SYSTEMS			\$8,529,933
SUBTOTAL CONSTRUCTION COSTS			\$89,745,086
CONTINGENCY (WEIGHTED AVERAGE)			\$22,436,272
SUBTOTAL CONSTRUCTION COSTS WITH CONTINGENCY			\$112,181,358
FEE/RISK			In Items above
ADJUSTMENT FOR CASUAL OVERTIME (25% OF DIRECT LABOR)			\$736,190
SUBTOTAL CONSTRUCTION COSTS			\$112,917,548
HAWAII STATE EXCISE 4.70%			\$5,307,125
TOTAL CONSTRUCTION COSTS			\$118,224,673
60.00	ROW, LAND, EXISTING IMPROVEMENTS (acres)		
60.01	Purchase or lease of real property		\$0
60.02	Relocation of existing households and businesses		\$0
SUBTOTAL COST ROW, LAND, EXISTING IMPROVEMENTS (acres)			\$0
CONTINGENCY & ENGINEERING (40%+10%) 50%			\$0
TOTAL ROW COSTS			\$0
70.00	VEHICLES		
70.01	Light Rail		\$172,671,240
70.02	Heavy Rail		not used
70.03	Commuter Rail		not used
70.04	Bus		not used
70.05	Other		not used
70.06	Non-revenue vehicles		\$4,203,149
70.07	Spare parts (10% of LRVs)		\$14,307,034
SUBTOTAL VEHICLE COST			\$191,181,423
CONTINGENCY & ENGINEERING STAFF (10%+14%) 24%			\$45,883,542
TOTAL VEHICLE COSTS			\$237,064,965

Honolulu High-Capacity Transit Corridor Project Fixed Guideway Alternatives Summary Cost Comparison of Alternative Analysis			20-mile Alignment
20-mile Alignment (Kapolei to Aiea Moana) Sta 192+00 to 1475+00			2006\$ with Contingency
date: 10/20/06 last update: 9/28/08 1:46 PM			Sections & Alignments
			Section 5
Description			Systemwide
80.00	SOFT COSTS		
80.01	Preliminary Engineering	3.0%	\$3,546,740
80.02	Final Design	4.5%	\$5,320,110
80.03	Project Management for Design and Construction	5.5%	\$6,502,357
80.04	Construction Administration & Management	10.0%	\$11,822,467
80.05	Insurance-Professional liability	1.50%	\$1,773,370
80.06	Legal, Permits, Review Fees by other agencies, cities, etc	1.50%	\$1,773,370
80.07	Survey, Testing, Investigation, Inspection	0.50%	\$591,123
80.08	Agency: Force Account Work (2% ^{8.4})	3.5%	\$4,137,864
	SUBTOTAL SOFT COSTS 30%		\$35,467,401
90.00	CONTINGENCY (Project Reserve) (10 thru 90)		6.0%
			\$23,445,422
100.00	FINANCE CHARGES		\$0
110.00	Total Construction (10+20+30+40+50) (2006\$)		\$118,224,673
	OTHER PROJECT COST (60+70+80+90+100) (2006\$)		\$295,977,788
	TOTAL PROJECT COST (10+20+30+40+50+60+70+80+90+100) (2006\$)		\$414,202,461
	Route foot length		
	Construction Cost per Route Foot (2006\$)		
	Construction Cost per Route Mile (2006\$)		

Full build segments (2006\$)

\$3,604,580,144

\$414,202,461

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet

YARDS, SHOPS, ADMIN/SUPPORT FACILITIES

20-mile Alignment

1	2	COST		Systemwide		
		3	4	5	80	81
DESCRIPTION		ID	QTY	UNIT		
30.00 YARDS, SHOPS, ADMIN/SUPPORT FACILITIES (20 ACRES)						
ADMINISTRATION BUILDING: OFFICE, SALES, STORAGE, REVENUE COUNTING						
csc30.01-1	Administration Building & Site Facilities	1	LS	\$14,758,888	1	\$14,758,888
30.01	ADMINISTRATION BUILDING: OFFICE, SALES, STORAGE, REVENUE		RF			\$14,758,888
HEAVY MAINTENANCE FACILITY						
csc30.02-1	Storage Track & Running Repair Maintenance Bldg (9 Acres) (1	LS	\$0		
csc30.02-2	Heavy Maintenance Facility and Yard (30 Acres) (accomodate	1	LS	\$66,456,265	1	\$66,456,265
30.03	HEAVY MAINTENANCE FACILITY		RF			\$66,456,265
30.02	LIGHT MAINTENANCE FACILITY NOT USED*****					**NOT USED**
30.04	STORAGE BUILDING & YARD					"IN 30.02"
30.05	MAINTENANCE OF WAY BUILDING & YARD NOT USED*****					**NOT USED**
Total YARDS, SHOPS ADMINISTRATION SUPPORT FACILITIES						\$81,215,153

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Pricing Sheet
Systems

20-mile Alignment

					Systemwide		
					Section 6		
DESCRIPTION	COST		QTY	UNIT			
	ID				38		
50.00 Systems				ALIGNMENT	0		
Train Control & Signals							
csc50.01-1		1	RF	\$238	-	\$-	
csc50.01-2		1	EA	\$235,278	0	\$0	
50.01	Train Control & Signals			RF		\$0	
	Guideway: At-grade semi-exclusive (allows cross-traffic) NOT USED*****					**NOT USED**	
Traffic Signals and Crossing Protection							
csc50.02-1		1	EA	\$376,047	0	\$0	
csc50.02-2		1	EA	\$289,523	0	\$0	
50.02	Traffic Signals and Crossing Protection			RF		\$0	
Traction Power Supply: Substations							
csc50.03-1		1	EA	\$1,640,461	-	\$0	
50.03	Traction Power Supply: Substations			RF		\$0	
10.05	Guideway: Built-up fill not used*****						
Traction Power Distribution: Catenary and Third Rail							
csc50.04-1		1	RF	\$315	-	\$0	
csc50.04-2		1	RF	\$216	-	\$0	
csc50.04-3		1	RF	\$225	-	\$0	
csc50.04-4		1	RF	\$170	-	\$0	
50.04	Traction Power Distribution: Catenary and Third Rail			RF		\$0	
Communication							
csc50.05-1		1	LS	\$299	-	\$0	
50.05	Communication					\$0	
Fare Collection System and Equipment							
csc50.06-1		1	LS	\$584,612	-	\$0	
csc50.06-2		1	LS	\$299,712	-	\$0	
50.06	Fare Collection System and Equipment			RF		\$0	
Central Control							
csc50.07		1	LS	\$8,529,933	1	\$8,529,933	
50.07	Central Control			RF		\$8,529,933	
Total Systems							

Honolulu High-Capacity Transit Corridor Project

Fixed Guideway Alternatives

Summary Cost Comparison of Alternative Analysis

Pricing Sheet Vehicles
 Summary Cost Comparison of Alternative Analysis

Vehicles Cost Summary

COST ID	DESCRIPTION	20-mile Alignment QTY	Full Corridor QTY	UNIT	UNIT COST	20-mile Alignment COST	Full Corridor COST
70.00 Vehicles							
CSC70.01	Articulated LRV	70	90	EA	\$2,466,732	\$172,671,240	\$222,005,880
70.01	TOTAL		90	EA		\$172,671,240	\$222,005,880
CSC70.06	Non Revenue Vehicles	1	1	LS	\$4,203,149	\$4,203,149	\$4,203,149
70.06	TOTAL		1	LS		\$4,203,149	\$4,203,149
CSC70.07	Spare Parts	70	90	EA	\$246,673	\$17,267,110	\$22,200,570
70.07	TOTAL		90	EA		\$17,267,110	\$22,200,570
Total Vehicles			1	LS		\$194,141,499	\$248,409,599

Appendix C

Initial Unit Costs for Alternatives 3 & 4

cost in 4 th QTR 2006\$			
CODE	DESCRIPTION	UOM	UNIT COST
02220.11	Sawcut Asphalt Pavement	lf	\$3.53
02220.12	Sawcut Concrete Pavement	lf	\$6.91
02220.21	Asphaltic Pavement Removal	sy	\$7.38
02220.21a	Break, Remove & Dispose of Asphalt Pavement	sy	
02220.22	Concrete Pavement Removal	sy	\$24.09
02220.23	Remove Concrete Sidewalk	sy	\$8.03
02220.24	Remove Concrete Curb	lf	\$5.13
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20
02220.26	Bridge Demolition	sf	\$24.09
02220.26M	Demolition of Track Slab	sf	\$8.55
02220.27	Allowance for Demolition of parking garage	LS	\$229,430.07
02220.28	Allowance for parking garage reconstruction	LS	\$774,326.50
02220.29	Surface Demolition & Site Removal for Surface Access	sf	\$14.34
02220.30	Allowance for Tunnel Breakout Along Market to Montgomery Sta	ls	\$458,860.15
02220.31	Allowance for Breakout into Building Basement	ls	\$458,860.15
02230.01	Clearing & Grubbing, Light	sy	\$0.72
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05
02230.03	Clearing & Grubbing, Heavy	sy	\$2.33
02260.21	Soldier Pile & Lagging Wall incl/Bracing	sf	\$64.23
02260.22	Steel Sheet Pile and Shoring	sf	\$24.09
02260.23	Soldier Pile & Lagging Wall	sf	\$40.15
02260.24PB	Trench Shoring	sf	\$3.15
02260.31	Slurry Concrete Wall, 2 ft Wide	sf	\$163.79
02260.32	Slurry Concrete Wall, 3 ft Wide	sf	\$240.87
02260.40	Reinforced Earth Walls	sf	\$35.33
02260.51	Street Decking & Support Beams	sf	\$120.44
02310.01	Finish Grading	sy	\$0.97
02310.03	At-Grade Drainage Ditch	lf	\$6.43
02310.12	Rough Grading	sf	\$0.65
02310.13	Subgrade Removal/Repair	sf	\$1.73
02315.00PB	Backfill Material (imported)	cy	\$16.86

02315.01	Common Excavation	cy	\$7.55
02315.02	Common Backfill	cy	\$9.50
02315.03	Excavation & Removal of Contaminated Soil	cy	\$184.67
02315.04	Excavation, Haul and Thermal Disposal of Hydrocarbon Contaminated Soil	TON	\$184.67
02315.04a	Collect, Treat and Dispose of Hydrocarbon Contaminated Groundwater	gal	\$0.80
02315.05	Compaction	cy	\$6.06
02315.06	Trench Excavation	cy	\$13.65
02315.07	Structural Excavation	cy	\$19.27
02315.08	Structural Backfill	cy	\$18.62
02315.08PB	Trench Backfill	cy	\$12.04
02315.09	Cut & Cover Excavation	cy	\$12.36
02315.10	Cut & Cover Backfill	cy	\$20.87
02315.11	Soil Stabilization: Lime Treatment (6% mix 18" depth)	sf	\$2.28
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12
02370.02	Sedimentation Control - Roadway, Allowance	lf	\$19.59
02370.03	Underdrains	lf	\$50.75
BRIDGE WORK:			
02370.03	Prestressing CIP Concrete (Bridge)	lbs	\$1.75
02370.04	Structure Excavation (Bridge)	cy	\$55.87
02370.05	Structure Excavation (Retaining Wall)	cy	\$40.15
02370.06	Structure Backfill (Bridge)	cy	\$65.90
02370.07	Structure Backfill (Retaining Wall) - (Bridge)	cy	\$51.39
02370.08	Rock Socket	lf	\$666.34
02370.09	Temporary Working Trestle (35ft. width)	sf	\$88.32
02370.10	Sliding Bearings	ea	\$3,211.58
02370.11	9 FT Dia Shafts (Incl. Cofferdam)	lf	\$1,772.79
02370.12	Prestressing CIP Concrete	lbs	\$2.81
02370.13	Structural Concrete, Bridge	cy	\$512.56
02370.14	Structural Concrete, Retaining Wall	cy	\$475.96
02370.15	Drill & Bond Dowels (Epoxy)	lf	\$32.12
02370.16	Structure Approach Slab (LRT)	cy	\$475.96
02370.17	Bar Reinforcing Steel (Bridge)	lbs	\$0.74
02370.18	Bar Reinforcing Steel (Retaining Wall)	lbs	\$1.39
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14
02370.20	2-rung Tube Rail	lf	\$152.55
02370.21	Concrete Barrier	lf	\$72.01
02370.21a	Concrete Median Barrier	lf	\$250.00
02370.22	Concrete Barrier (Ornate)	lf	\$112.16
02370.23	Geocomposite Drain	sf	\$2.81
02370.24	Joint Seal Bid Item (Type B-MR=6")	lf	\$175.74
02370.25	Traffic Striping	lf	\$1.77
02370.26	Traffic Signs	ea	\$642.32

02370.27w	Traffic Stripe (Thermoplastic) & Markers	lf	\$3.49
02370.28	Pavement Markings	sf	\$5.45
02370.29	Bridge Lighting	ea	\$3,532.73
02370.30s	Building Mitigation (underpinning)	LS	\$4,028,395
02370.30s1	Building Mitigation (Parking Garage Demolition & reconstruction)	SF	\$458.86
02370.31	Remove Diaphragm Wall Shoring	tons	\$350.00
02240.00	Dewatering during Construction (major)	mo	\$40,000.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00
02455.01	.5m Diameter Drilled Concrete Piles	lf	\$281.02
02455.02	Furnish Concrete Piling	lf	\$32.12
02455.03	Drive Concrete Piling	ea	\$1,445.21
02456.01w	Lift Castings	ea	\$358.49
02500.01	Utility Modifications - Light	RF	\$152.55
02500.02	Utility Modifications - Moderate	RF	\$722.60
02500.03	Utility Modifications - Heavy	RF	\$1,477.33
02500.03	Utility Modifications - Heavy	RF	\$1,477.33
02250.02	CDSM	cy	\$300.00
02250.03	Soldier Pile (W24x84)	lbs	\$0.89
02250.04	Waler & Strut	lbs	\$1.38
02510.01pb	Water Pipe up to 8 Inch not incl Exc, Backfill, Shoring, testing	lf	\$47.39
02510.02pb	Water Pipe 12 Inch not incl Exc, Backfill, Shoring, testing	lf	\$64.62
02510.03pb	Water Pipe 16 Inch not incl Exc, Backfill, Shoring, testing	lf	\$90.47
02510.04pb	Water Pipe 24 Inch not incl Exc, Backfill, Shoring, testing	lf	\$160.84
02510.05pb	Water Pipe 36 Inch not incl Exc, Backfill, Shoring, testing	lf	\$193.01
02510.06pb	STORM DRAIN PIPE RCP CLASS 4 up to 18 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$46.64
02510.07pb	STORM DRAIN PIPE RCP CLASS 4 up to 24 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$62.73
02510.08pb	STORM DRAIN PIPE RCP CLASS 4 up to 30 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$118.22
02510.09pb	STORM DRAIN PIPE RCP CLASS 4 up to 48 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$254.91
02515.01pb	PLASTIC drainage Pipe up to 6 Inch not incl Exc, Backfill, Shoring, testing	lf	\$31.59
02515.02pb	PLASTIC drainage Pipe up to 8 Inch not incl Exc, Backfill, Shoring, testing	lf	\$44.52
02515.03pb	PLASTIC drainage Pipe up to 10 Inch not incl Exc, Backfill, Shoring, testing	lf	\$68.21
02515.04pb	PLASTIC drainage Pipe up to 20 Inch not incl Exc, Backfill, Shoring, testing	lf	\$129.25
02530.01pb	Sewer Pipe (RCP CLASS 5) up to 15 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$47.04
02530.02pb	Sewer Pipe (RCP CLASS 5) up to 18 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$54.43
02530.03pb	Sewer Pipe (RCP CLASS 5) up to 21 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$64.57
02530.04pb	Sewer Pipe (RCP CLASS 5) up to 24 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$72.88
02530.05pb	Sewer Pipe (Elliptical C507 Class 3) 30 Inch inc Exc, Backfill, Shoring, testing	lf	\$163.14
02530.06pb	Sewer Pipe (Elliptical C507 Class 3) 56 Inch inc Exc, Backfill, Shoring, testing	lf	\$311.26
02530.07pb	Sewer Pipe (RCP Class 5) 96 Inch inc Exc, Backfill, Shoring, testing	lf	\$1,433.94

02530.08pb	Diversion Structure	ls	
02530.09pb	Pump Station (Ref Ralston Contract Phase B bid 4/98)	ls	\$698,429.92
02550.01pb	Gas Pipe (1-4" Dia) Steel Pipe Exc & Backfill	lf	\$35.33
02550.02pb	Gas Pipe (6" Dia) Steel Pipe Exc & Backfill	lf	\$55.35
02550.03pb	Gas Pipe (8" Dia) Steel Pipe Exc & Backfill	lf	\$78.42
02550.04pb	Gas Pipe (10" Dia) Steel Pipe Exc & Backfill	lf	\$125.46
02550.05pb	Gas Pipe (16" Dia) Steel Pipe Exc & Backfill	lf	\$178.97
02580.01	Remove & Dispose of 13-4" Ducts	lf	
02580.02	Remove & Dispose of Telephone Handhole	ea	
02580.03	Remove & Dispose of Telephone Manhole	ea	
02580.04	13-4" GRS Telephone Ductbank Concrete Encased Excl. Earthwork	lf	
02580.05	Telephone Handhole (4' x 4' x 4' deep)	ea	\$2,273.45
02580.06	Telephone Manhole (6' x 8' x 6' deep)	ea	
02580.07	Remove & Dispose of 4-4" Telephone Ducts	lf	
02580.08	4-4" GRS Telephone Ductbank Concrete Encased Excl. Earthwork	lf	
02580.09	8-4" GRS Telephone Ductbank Concrete Encased Excl. Earthwork	lf	
02580.01M	Ductbank 8-4", 3-2" PVC Conduits	lf	\$276.21
02580.02M	Ductbank 3-2" RGS Conduits	lf	\$74.82
02580.01pb	Ductbank 2-4" PVC Conduits Concrete w 220 kv line	lf	\$86.47
02580.02pb	Ductbank 16-3" PVC Conduits Encased in Concrete	lf	\$246.60
02580.03pb	Ductbank 20-4" PVC Concrete	lf	\$380.36
02580.04pb	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	lf	\$64.86
02580.05pb	Ductbank 4-5" PVC Conduits Encased in Concrete	lf	\$88.26
02580.06pb	Ductbank 16-4" PVC Conduits Encased in Concrete	lf	\$270.94
02580.07pb	Ductbank 40-4" PVC Concrete	lf	\$674.68
02580.97pb	Ductbank Pullbox 3 1/2"	ea	\$286.79
02580.98pb	Ductbank Manhole Type C1	ea	\$19,501.56
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05
02620.01	Retaining Wall Drainage	lf	\$48.17
02620.02	Trackway Underdrains	lf	\$24.49
02620.03	Column & Substructure Drainage	lf	\$46.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68
02630.02	Trackway Drainage, Paved	lf	\$38.54
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23
02630.04	Trackway Drainage, Aerial	lf	\$48.17
02630.05M	Trackway Drains, Cast Iron	EA	\$2,500.00
02630.06M	Manhole 4' x 8' INC FRAME & GRADE (EXC Shoring, Exc and Backfill)	EA	\$2,615.50
02630.07pb	Manhole 6' x 6' (inc Shoring, Exc and Backfill)	EA	\$8,603.63
02630.08pb	Catch Basin (4' Deep CIP)	EA	\$3,171.30
02630.09pb	Water Valve Relocation (includes box and existing valve)	EA	\$3,203.99
02260.51	Street Decking	SF	\$183.54
02720.01	Aggregate Subbase	cy	\$24.72
02720.02	Aggregate Base	cy	\$30.91

02720.05	Subballast	cy	\$40.15
02720.06	Ballast	cy	\$44.96
02740.01a	Restore Asphalt Pavement	sy	\$86.04
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04
02740.03	Asphaltic Concrete Rubberized Pavement (NightworkLarge Qty.)	tn	\$94.65
02740.04	Park and Ride Lot at-grade	stall	\$4,129.74
02740.05	Park and Ride Lot Structured	stall	\$22,235.00
02750.01	Concrete Pavement	cy	\$369.33
02750.02	Concrete Sidewalk (4")	sf	\$5.62
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71
02750.03M	Concrete Sidewalk (6")	ft2	\$7.24
02750.05	Concrete Sidewalk (4")	ft2	\$6.18
02760.00	Service Road	sy	\$24.09
02770.02	Concrete Curbs (4")	lf	\$12.84
02770.03	Concrete Curb and Gutter	lf	\$25.05
02770.04	Concrete Gutter	sy	\$29.38
02770.04M	Concrete Curb Ramps	ea	\$3,556.17
02770.05	Stone Curbs	lf	\$21.67
02770.06	Simulated Stone Curbs	lf	\$18.62
02770.07	Concrete Barrier, One Side	lf	\$72.26
02770.08	Concrete Barrier, Two Side	lf	\$80.29
02770.09	Concrete Ballast Curb	lf	\$48.17
02770.10M	Concrete Track Curb (6")	lf	\$172.07
02785.01M	Asphalt Cold Planing and Cleaning 1" to 3" (over 25,000 sy)	sy	\$2.00
02785.02M	Asphalt Cold Planing and Cleaning 1" to 3" (5-7K sy)	sy	\$2.58
02820.01	4 ft Chain Link Fence	lf	\$7.86
02820.02	4 ft Chain Link Fence, Wall Mounted	lf	\$11.08
02820.03	7 ft Chain Link Fence	lf	\$12.84
02820.04	7 ft Chain Link Fence, Wall Mounted	lf	\$15.74
02820.05	7 ft Chain Link Fence, Wall Mounted w/ 3 Strand Bard Wire	lf	\$18.87
02820.06	7 ft Chain Link Fence w/ 3 Strand Barb Wire	lf	\$15.66
02840.01	Concrete Median Barriers	lf	\$48.17
02840.02	Precast Sound Wall	sf	\$56.20
02890.01	Remove & Relocate Traffic Signal	ea	\$0.00
02890.02	Remove & Salvage Traffic Signal Pole & Arm	ea	
02890.03	Relocate Traffic Signal Pole Including New Foundation	ea	
02890.04	Relocate Traffic Signal Arm	ea	
02890.05	Traffic Signal Arm	ea	
02890.06	Traffic Signal Pole Including Foundation	ea	
02890.07	Remove & Dispopse of Traffic Signal Pullbox	ea	

02890.08	Traffic Signal Pullbox	ea	
02890.09	Remove & Dispose of 2-2 1/2" Traffic Signal Conduits	lf	
02890.10	2-2 1/2" Traffic Signal Conduits - Embedded	lf	
02890.11	Ductbank Excavation (25% by Hand)	cy	
02890.12	Ductbank Backfill	cy	
02890.13	Ductbank Soil Removal	cy	
02890.14	Remove & Relocate Street Light & Pole Incl. New Foundation and Pullbox	ea	
02900.01	Landscaping, Moderate (no irrigation)	lf	\$26.50
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79
03210.01	Reinforcing Steel	lbs	\$1.09
03210.02	Reinforcing Steel, Epoxy Coated	lbs	\$1.29
03233.01	Drilled Caissons 36" dia. X 70 ft.	lf	\$361.31
03233.02a	Shaft 6 ft dia (cased)	lf	\$1,315.77
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54
03233.02b	Shaft 8 ft dia (cased)	lf	\$3,857.63
03300.01	Architectural Treatment (Fluted)	sf	\$20.08
03300.09pb	CIPC, ADA Concrete Ramp w Railing	LS	\$22,943.01
03300.09w	CIPC, Speed Bumps	LS	\$22,943.01
03300.10	CIPC, Diaphragm Concrete	cy	\$682.47
03300.11	CIPC, Footings	cy	\$297.07
03300.12	CIPC, Floor Slab	cy	\$400.00
03300.13	CIPC, Walls	cy	\$449.62
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00
03300.15	CIPC, Track Slab (L&M)	cy	\$306.96
03300.16	CIPC, Concrete Infill (L&M)	cy	\$361.31
03300.17	CIPC, Topping Slab	cy	\$353.28
03300.18	CIPC, Track Plinth	cy	\$430.18
03300.19W	CIPC, Track Pavement (Integral Colored Concrete)	sy	\$109.88
03300.20M	CIPC, Track Pavement (Plain Concrete)	sy	\$50.00
03300.21	CIPC, C&C Invert Slab	cy	\$420.00
03300.22	CIPC, C&C Exterior Walls, Formed 1 Side	cy	\$458.86
03300.23	CIPC, C&C Exterior Walls, Formed 2 Sides	cy	\$550.00
03300.24	CIPC, C&C Interior Walls	cy	\$550.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00
03300.25a	CIPC, C&C Intermediate Slab	cy	\$725.00
03300.26	CIPC, C&C Roof Slab - Arched	cy	\$875.00
03300.27	CIPC, Service Walkway	lf	\$147.74
03300.28	Pile Cap Formwork	sf	\$16.86
03300.29	CIPC, Aerial Pile Cap	cy	\$321.16
03300.30	Column Formwork	sf	\$24.09
03300.31	CIPC, Columns	cy	\$475.00
03300.32	Pier Cap Formwork	sf	\$8.65

03300.33	CIPC, Aerial Pier	cy	\$481.74
03300.34	CIP, Aerial Pier Cap	cy	\$521.89
03300.35	CIPC, Aerial Single Track Box Girder	sy	\$115.62
03300.36	CIPC, Aerial Double Track Box Girder	sy	\$401.45
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219
03300.35b	Furnish 24'-wide Segmental Box (d=7 ft)	rf	\$2,390
03300.35c	Furnish 36'-wide Segmental Box (d=7 ft)	rf	\$3,663
03300.35d	Furnish 46'-wide Segmental Box (d=7 ft)	rf	\$5,139
03300.35e	Furnish 58'-wide Segmental Box (d=7 ft)	rf	\$7,399
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150
03300.36b	Install 24'-wide Segmental Box (d=7 ft)	rf	\$3,392
03300.36c	Install 36'-wide Segmental Box (d=7 ft)	rf	\$6,123
03300.36d	Install 46'-wide Segmental Box (d=7 ft)	rf	\$10,387
03300.36e	Install 58'-wide Segmental Box (d=7 ft)	rf	\$11,872
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58
03300.39	CIPC, Aerial Platform Slab	cy	\$616.62
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16
03300.42	CIPC, U-Wall Stems	cy	\$449.62
03300.51	CIPC, Retaining Wall Footings	cy	\$282.62
03300.52	CIPC, Retaining Wall Stems	cy	\$439.98
03300.53	CIPC, Retaining Wall, Complete	sf	\$72.26
03300.80	CIPC, Tunnel Entrance Concrete	cy	\$602.18
03300.81	CIPC, Tunnel Invert Concrete	cy	\$369.33
03300.82	CIPC, Strut/Beam Concrete	cy	\$562.03
03300.83	CIPC, Station Vertical Access (Structural Stairs)	vf	\$2,875.85
03300.84	CIPC, Station Vertical Access (Structural Elevator)	ls	\$240,868.16
03300.85	CIPC, Ventillation Concrete	cy	\$675.00
03300.86pb	Precast Vault (10 ft x 10 ft)	cy	\$833.33
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72
03390.01	CIP Conc. Closure Pour	cy	\$326.24
03390.01a	Longitudinal Closure Pour and Joint	lf	\$900.00
03320.01S	Water Stops, 9"	lf	\$13.71
03401.01	Precast Prestressed Girders, Furnish	lf	\$467.77
03402.02	Precast Prestressed Conc. Girders, Erect Only	ea	\$2,784.35
03400.03	Precast Prestressed AASHTO Beams	lf	\$147.74
03400.05	Precast Concrete T Beams (18m)	ea	\$12,043.41
03410.20	Precast Concrete Slabs	sy	\$27.30
03410.21	Precast Prestressed Concrete Box Girder	sy	\$72.26
03410.22	Precast Prestressed Concrete Platforms	sy	\$48.17
05520.00S	Cross Passage and Doors	ea	\$7,500.00
05520.01	Metal Pipe and Tube Railing	lf	\$48.97
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45
05525.01	Vent Grillage	sf	\$52.20

05650.01	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	lf	\$212.69
05650.02a	Special Trackwork, incl/ Fasteners & Rail (Facility Building)	lf	\$428.26
05650.09	Ballast Mat and Slab	sf	\$20.87
05650.09a	Floating Slab (Dual Track)	RF	\$1,003.62
05650.10	Electrical Isolation Membrane	sy	\$173.42
05650.11	Extruded Rubber Insert	lf	\$9.79
05650.11a	Extruded Rubber Rail Boot "Iron Horse" w/Pandroi Caps	lf	\$30.67
05650.12	Rubber LRT Crossing Panels	sy	\$799.69
05650.13	Dual Precast Concrete LRT Crossing Panels	lf	\$642.32
05650.14	Permanent Terminal, Direct Fixation	ea	\$22,943.01
05650.19	Special Trackwork, No. 8 Dbl Crossover,Ballasted	ea	\$401,502.63
05650.20	Special Trackwork, No. 8 Dbl Crossover,DF	ea	\$553,973.39
05650.21	Special Trackwork, No. 10 Dbl Crossover,Ballasted	ea	\$717,024.66
05650.22W	Special Trackwork, No. 10 Dbl Crossover,DF	ea	\$860,362.77
05650.23	Special Trackwork, No. 8 Sgl Crossover,Ballasted	ea	\$200,695.63
05650.24	Special Trackwork, No. 8 Sgl Crossover,DF	ea	\$240,901.58
05650.25	Special Trackwork, No.10 Sgl Crossover,Ballasted	ea	\$232,882.66
05650.26	Special Trackwork, No. 10 Sgl Crossover,DF	ea	\$280,996.15
05650.27	Special Trackwork, No. 20 Turnout,Ballasted	ea	\$136,544.31
05650.28	Special Trackwork, No. 15 Turnout,Ballasted	ea	\$120,395.10
05650.29	Special Trackwork, No. 10 Turnout,Ballasted	ea	\$109,146.35
05650.29M	Special Trackwork, No. 10 Turnout,DF	ea	\$200,000.00
05650.30	Special Trackwork, No. 8 Turnout,Ballasted	ea	\$96,338.36
05650.30d	Special Trackwork, No. 8 Turnout, DF	ea	\$177,863.99
05650.31	Special Trackwork, No. 6 Turnout,Ballasted	ea	\$80,300.53
05650.31W	Special Trackwork, No. 6 Turnout,DF	ea	\$229,430.07
05650.32	Special Trackwork, No. 5 Turnout,Ballasted	ea	\$72,281.61
05650.32a	Special Trackwork, No. 5 Turnout,DF	ea	\$126,409.29
05650.33	Special Trackwork, Junction, Non-Grade Sep, Ballasted	ea	\$160,601.05
05650.33A	Special Trackwork, No. 8 Equilateral, DF	ea	\$151,913.89
05650.33B	Special Trackwork, No. 6 Equilateral, DF	ea	\$138,097.97
05650.34M	Special Trackwork, Straight Double Tounge Turnout, DF	ea	\$195,015.56
05650.35M	Special Trackwork, Diamond Crossing, DF	ea	\$212,222.82
05650.34	115 RE Rail, Standard CC-Mat'l	tf	\$47.03
05650.34w	Purchase RI60N Girder Rail	tf	\$45.45
05650.35	115 RE Rail, High Strength-Mat'l	tf	\$75.71
05650.35W	115 RE Rail, w Guardrail (shop Bent) L&M	tf	\$76.92
05650.36	136 RE Rail, Standard CC-Mat'l	tf	\$37.12
05650.36W	Special Trackwork, Spare Parts	LS	\$34,414.51
05650.37	136 RE Rail, High Strength-Mat'l	tf	\$42.23
05650.37W	Special Trackwork, Spare Parts Diamond Crossing	LS	\$11,471.50
05650.38	Wood Crossties, Treated Hardwood-Mat'l	tf	\$20.07
05650.39	Concrete Crossties, Including Rail Shoulders-Mat'l	tf	\$32.12

05650.40	AREA Tie Plate, Double Shoulder-Mat'l	tf	\$9.31
05650.41	Pandrol Rolled Tie Plate, Double Shoulder-Mat'l	tf	\$10.28
05650.42	Cut Rail Holding Spikes, 5/8", 2 Spikes per Plate-Mat'l	tf	\$0.74
05650.43	Pandrol 'fast' Clips, pad & insulator, 2 per Plate	tf	\$12.04
05650.44	Cut Anchor Spikes, 2 Spikes per Plate	tf	\$0.74
05650.45	Screw Anchor Spikes, 2 per Plate	tf	\$3.21
05650.46	"Hairpin" Anchor Lock Spikes, 2 per Plate	tf	\$1.67
05650.47	36" Joint Bar with Bolts, Nuts, & Washers (12' O.C.)	ea	\$164.59
05650.48	Rail Anchors, Box Anchoring	tf	\$2.57
05650.48M	Rail Grout	tf	\$250.00
05650.49	Rail Anchors, Single Anchoring	tf	\$1.28
05650.49w	Fastening System, Embedded DF (2 bolts, 2 inserts, plate, shims, clips and pad)	EA	\$68.83
05650.50	Ballast, @ 1.4 tons/c.y.	tf	\$39.50
05650.51	Subballast @ 1.4 tons/c.y.	tf	\$28.36
05650.52W	Rail Welds Thermite (Assume every 15m)	ea	\$671.08
05650.52	Rail Welds, Shop Welding Plant (Work Train Req'd)	tf	\$5.35
05650.53	Rail Welds, Field Welding Plant	tf	\$4.53
05650.54	Rail Welds, Field Weld, Thermite	tf	\$0.14
05650.60	Install Rails and Ties	tf	\$23.03
05650.60w	Labor to Install Direct Fixation Rail (excluding welds)	tf	\$76.92
05650.61w	Labor to set R160N Girder Rail, DF	tf	\$69.93
05650.61	Labor for Ties Distribution	tf	\$2.87
05650.62	Field Welds (\$400 Mat'l & Labor)	tf	\$0.68
05650.62w	Labor to Install Curved 115# RE Rail (excluding welds) (Inc Sep Blocks)	tf	\$113.63
05650.63	Labor Additive, Class I Railroad, 190%	tf	\$35.22
05650.64	Labor Additive, Contractor, 50%	tf	\$9.27
05650.65	Labor to Install Ballast: Surfacing & Lining	tf	\$3.05
05650.66	Labor to Install Subballast	tf	\$0.25
05650.67	Labor Additive, Class I Railroad, 190%	tf	\$4.10
05650.68	Labor Additive, Contractor, 50%	tf	\$1.08
05650.69	Work Train	tf	\$1.20
05650.70	Work Train Additive, 200%	tf	\$2.41
05650.71	Rail Equipment	tf	\$3.21
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63
05820.02	Install Rail Boot "Iron Horse" w/Pandrol Caps	lf	\$21.67
07130.21	Sheet Waterproofing, Slab on Grade	sf	\$4.82
07170.21	Waterproofing, Geotextile Exterior Walls	sf	\$9.47
07170.22	Waterproofing, Geotextile Roof Slab	sf	\$8.61
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09
09000.01a	Architectural Finish, Underground Station	sf	\$25.82
09000.02	Tactile Warning Strip	sf	\$40.15
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20
09000.04	Artwork wall	sf	\$11.47

10100.01m	Signage, Stations	sta	\$65,265.06
10500.01	Station Canopy with foundation	sf	\$281.02
10500.01P	Station Canopy with aerial foundation	sf	\$210.76
10500.01a	Equipment Room and Station Entrance	sf	\$143.39
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57
11155.01	Fare Collection - LRT	sta	\$144,563.22
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66
12000.02m	Station Furnishings, Side Platform (Allowance)	sta	\$573,575.18
13000.01	Maintenance and Administration Bldg.	sf	\$290.00
13000.01A	Running Repair Building	sf	\$250.00
13000.02	Material & Parts Storage	sf	\$100.00
13000.03	Inspection Pit	ea	\$426,800.00
13000.031	M&E Facilities to Inspection Pit	ea	\$71,900.00
13000.03a	Blowdown Pit	ea	\$426,800.00
13000.04	Body Shop	sf	\$100.00
13000.05	Car Wash	sf	\$100.00
13100.01	Wheel Truing Machine	ea	\$2,155,700.00
13100.02	Wheel Axle Press Machine	ea	\$1,077,800.00
13100.03	Turntables (with Pit)	ea	\$86,200.00
13100.04	Cranes, 10-Ton	ea	\$115,000.00
13100.05	Car Body Hoist	ea	\$1,221,500.00
13100.06	Truck Repair Hoist	ea	\$265,900.00
13100.07	Floor Jack (Portable w carriage)	ea	\$64,700.00
13100.08	Floor Jack (Permanent w pit)	ea	\$646,700.00
13200.01	Mineral Spirits Tank	ea	\$115,000.00
13200.02	Waste Oil Tank	ea	\$107,800.00
13300.01	Paint Shop Equipment	ls	\$215,600.00
13300.02	Wash Equipment	ls	\$1,006,000.00
13300.03	Shop Small Tools & Misc Equipment	sf	\$2.51
13300.04	Forklifts & Material Handling Equipment	ls	\$107,800.00
14600.01a	Escalators, (15 ft Rise)	ea	\$401,502.63
14600.01b	Escalators, (30 ft Rise)	ea	\$437,500.00
14600.01c	Escalators, (60 ft Rise)	ea	\$525,000.00
14600.02a	Traction Elevators, (30 ft Rise)	ea	\$315,466.35
14600.02b	Traction Elevators, (40 ft Rise)	ea	\$343,750.00
14600.02c	Traction Elevators, (50 ft Rise)	ea	\$412,500.00
14610.10S	Pump Station	ea	\$748,474.01
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00
15300.02m	Fire Protection and Plumbing, Underground Station	ls	\$1,080,573
15300.03m	Fire Alarm System	LS	\$387,250.16
15300.04m	Fire Protection Substations	ls	\$192,000
15700.02	Subsurface Ventilation, Tunnel	If	\$1,086.32

15800.01	Air Distribution, Subsurface Ventilation	If	\$573.58
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62
16000.02m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding)	ft2	\$18.00
16000.03m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Chinatown)	LS	\$57,357.52
16000.04m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Union Square)	LS	\$51,621.77
16000.05m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Market)	LS	\$91,772.03
16000.06m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Moscone)	LS	\$68,829.02
16060.01	Corrosion Control, At-Grade	If	\$2.00
16060.02	Corrosion Control, Aerial	If	\$2.97
16130.21	Ductbank, At Grade Guideway	If	\$48.97
16130.22	Ductbank, Aerial Guideway	If	\$110.79
16130.23	Ductbank, Tunnel Guideway	If	\$78.69
16370.01	Traction Power Supply, Substation	ea	\$1,077,800.00
16370.02	Traction Power Supply, M.& S.	If	\$72.26
16370.03	Traction Power Supply, D.C. Feeder	If	\$72.26
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00
16370.04P	Traction Power Supply, Aerial OCS, Dual Track	ft	\$200.00
16370.05H	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$305.50
16370.06H	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$254.58
16370.061H	Traction Power Supply, (OCS), Subway, DoubleTrack	RF	\$127.29
16370.16H	4" Cand splice boxes with support system	RF	\$63.65
16370.05P	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$283.00
16370.06M	Traction Power Supply, (OCS), Subway, Single Track	RF	\$143.86
16370.06P	Traction Power Supply, (OCS), Subway, DoubleTrack	RF	\$195.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51
16370.09M	Traction Power Feeder Spare	RF	\$22.96
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31
16370.11M	Riser Spare	RF	\$0.51
16370.12M	Catenery Detectors	RF	\$0.31
16370.13M	Catenery Detectors Spare	RF	\$0.51
16370.14M	Traction Power Supply, At-grade OCS, Existing Trolley Realignment	LS	\$2,200,000.00
16370.15M	Traction Power Supply, At-grade OCS, 4 th & King Intersection Special Work	LS	\$1,002.23
16370.16M	4" Cand splice boxes with support system	RF	\$612.31
16371.01	Traction Power Supply, Substation (1.5 MW)	ea	\$963,494.93
16371.02	Civilwork for Substation (Foundation, Misc. Wiring, Bldg Arch)	ea	\$240,901.58
16371.01M	Traction Power Equipment, Substation Aux Electrical (Prefab w/arch)	ea	\$850,000.00
16371.01aM	Substation Architectural	ea	\$150,000.00
16371.02M	TP equipment and Misc. Spare	ls	\$80,000.00
16371.03M	Fire Suppression	ea	\$81,748.39
16371.04M	Fire Suppression Spare	LS	\$16,037.83
16371.05M	Mechanical System	ea	\$58,025.76
16371.06M	Mech Spare	LS	\$11,471.50

16371.07M	Traction Power SCADA (RTU, fiber optic hardware)	ea	\$120,011.37
16371.08M	SCADA Spare (RTU Substation)	LS	\$24,000.00
16371.09M	Connection to SCADA master (SCADA master upgrade, Fiber cables)	LS	\$440,000.00
16371.10M	SCADA Master Spare	LS	\$44,000.00
16371.11M	Gap Breaker (the breaker, RTU, and aux electrical, maintenance phone)	ea	\$400,000.00
16371.12M	Gap Breaker Spare	LS	\$80,000.00
16371.13M	MIMIC Panel	LS	\$253,000.00
16371.14M	MIMIC Panel Spare	LS	\$25,000.00
16371.15M	Maintenance Telephone System (MTS)	RF	\$6.63
16371.16M	MTS Spare	RF	\$0.66
16371.17M	Facilities Telephone System	RF	\$22.99
16371.18M	METS Telephone	RF	\$5.95
16371.19M	Public Telephone	RF	\$13.20
16371.20M	Radio System: Muni Radio	RF	\$0.00
16371.21M	Radio System: ECD Radio	RF	\$32.75
16371.22M	Emergency Telephone System	RF	\$66.48
16371.23M	Fire Department Telephone System	RF	\$45.61
16371.24M	Misc. Telecom Infrastructure	RF	\$83.76
16500.01	Lighting, At Grade Guideway	lf	\$56.20
16500.02	Lighting, Aerial Guideway	lf	\$80.29
16500.03	Lighting, Cut & Cover Guideway	lf	\$240.87
16500.04	Lighting, Tunnel Guideway	lf	\$160.58
16500.05P	Lighting, U-Wall Guideway	lf	\$142.27
16500.05	Portal Lighting	LS	\$40,000.00
16500.06m1	Lighting, Roadway (6 blocks)	LS	\$344,356.00
16500.06m2	Lighting, Roadway Power	LS	\$6,000.00
16500.06	Lighting, Roadway	ea	\$7,929.90
16500.07	Lighting, Area	sf	\$3.72
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03
16500.03m	Power, Tunnel Guideway	tf	\$70.22
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02
16500.05m	Corrosion Control	tf	\$8.65
16500.06m	Corrosion Control Spare	tf	\$0.88
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75
16560.01m	Traffic Signal Lighting (4 intersection)	ls	\$565,418.94
16560.02m	Traffic Signal Work at 4 th & King Townsend	ls	\$210,000.00
16560.03m	Traffic Signal Spare	ls	\$20,000.00

16600.01	Systemwide Raceways	rf	\$222.75
16700.01m	ATC Line & Station	RF	\$238.00
16700.02m	OCC Expansion and Modification	sta	
16700.02P	Central Control Facility	sf	\$334.12
16700.02	ATC Interlockings, Turnout	ea	\$883,194.41
16700.03	ATC Interlockings, Double Crossover	ea	\$1,043,795.46
16700.04	ATC Interlockings, Single Crossover	ea	\$722,593.36
16700.05	ATC Interlockings, Wye	ea	\$883,194.41
16700.06	ATC Interlockings, Permanent Terminal, End of Line	ea	\$834,969.54
16700.07	ATC Interlockings, Transit Mall, Double Crossover	ea	\$1,043,795.46
16700.08	ATC Signals, Yard and Shop	ls	\$4,817,363.28
16700.09	CSX Signal System Modification	RF	\$36.98
16700.10m	Station Communications (PA,CCTV,Radio, Fare Vending) Sta A	STA	\$2,456,467.00
16700.11m	Station Communications (PA,CCTV,Radio, fare vending) Sta B	STA	\$2,456,467.00
16700.12m	Station Communications (PA,CCTV,Radio) Sta C	STA	
16700.13m	Station Communications (PA,CCTV,Radio, Fare Vending) Sta D	STA	\$2,456,467.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79
16700.11	Station Communications (PA&CCTV Rough-in)	STA	\$11,137.38
16700.13	Line Costs (Emergency Phone)	lf	\$40.15
16700.14	Radio/Telephone System	ea	\$521,897.73
16700.15	Wayside Line Costs, Wayside Cable & Equipment	lf	\$56.30
16700.16	Wayside Line Costs, Cable Ductbank (At-Grade Only)	lf	\$80.77
16700.17	Highway Crossing Signals, Preemptive	ea	\$192,676.71
16700.18	Traffic Signal (incl Signal Controller) (cost per each direction)	ea	\$80,300.53
16700.19	Crossing Gates with Flashers, New	ea	\$200,695.63
16700.20	Crossing Gates with Flashers, Relocated	ea	\$136,544.31
16700.21	Pedestrian Crossing Signal	ea	\$51,677.45
16700.22	Pedestrian Crossing Pavement	sf	\$11.14
16700.23	Pedestrian Crossing Signal 1 Direction	ea	\$2,895.72
16700.24	Station Agents' Booth	ea	\$240,901.58
16700.25	Communications/ATC Computer @ OCC Building	ea	\$8,831,832.69
16700.26W	Cost of PG&E 12.47KV Sources	ea	\$6,900,000.00
16700.27W	Cost of Power Distribution Equipment	sta	\$1,356,388.00
16700.28W	VETAG Equipment	ea	\$64,939.00
16700.29W	Switch Controllers at Grade	ea	\$178,344.00
16700.28	Relocate Overhead Power	lf	\$200.73
16700.29M	Fire, Blue Light, METS including Conduit and Wiring in the tunnel	LS	\$1,659,000.00
16700.30M	Fire, Blue Light, METS, Courtesy, Pay, Agent & Office Phones, including C&W	sta	\$400,000.00
16700.31M	Various Phone Systems' Connection to Central Control	LS	\$930,000.00
16700.32M	Various Phone Systems Spare	LS	\$300,000.00
16700.33M	Security Systems	LS	\$1,700,000.00
16700.34M	System Fiber Optic Cable	LS	\$1,100,000.00

16700.35M	Subway SCADA system & wiring at Central Control -16700	LS	\$1,190,250.00
16700.36M	Subway system Integration with Central Control	LS	\$572,000.00
16700.37M	Subway SCADA Service Contract	LS	\$143,449.48
16700.38M	Training of MUNI Personnel (for Central Control)	LS	\$57,357.52
16700.39M	O & M manuals (for equipment at Central Control)	LS	\$57,357.52
16700.40M	Subway SCADA: System Wide startup and operational Testing	LS	\$286,787.59
16700.41M	Subway SCADA: Misc Security System	LS	\$373,213.68
16700.42M	Power SCADA graphic display	LS	\$230,000.00
16700.43M	Power SCADA graphic display Spare	LS	\$23,000.00
16700.44M	UPS 100Kva	LS	\$96,500.00
16700.45M	UPS 100Kva Spare	LS	\$10,000.00
16700.46M	UPS 40Kva	LS	\$52,275.00
16700.47M	UPS 40Kva Spare	LS	\$5,000.00
16770.01M	Subway Station TVM & Fare Gate System	LS	\$546,365.56
16770.02M	Surface & Aerial Station TVM System	LS	\$280,105.16
17100.01M	Articulated LRV	ea	\$2,356,000
17100.02M	Articulated LRV Spare Parts (5% of LRV Cost)	ea	\$0.00
17100.011	Articulated LRV - Low Floor for Handicap Access	ea	\$4,977,942.06
17100.012	Vintage Trolley	ea	\$1,926,945.31
17100.013M	Non-Revenue Vehicle	ls	\$1,147,150.36
17100.02	Maintenance of Way Vehicles	ls	\$4,014,469.40
17100.03	Standard 35' Bus	ea	\$401,502.63
17100.04	Standard 40' Bus	ea	\$441,597.20
17100.05	Articulated 60' Bus	ea	\$561,992.30
99999.01J	Tunnel SEM (Reach 1: Tail track & Crossover Cavems)	RF	\$61,647.83
99999.02-1PB	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiahao/ Kapiolani Blvd)	RF	\$29,300.00
99999.02-2PB	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	RF	\$26,700.00
99999.02-3PB	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	RF	\$21,000.00
99999.02-4PB	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	RF	\$21,000.00
99999.02-5PB	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+90)	RF	\$23,400.00
99999.02-6PB	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+90)	RF	\$25,200.00
99999.04J	Tunnel SXM Vertical Stacked	RF	\$21,996.41
99999.05J	Tunnel SXM & SEM Single Box	RF	\$21,860.63
99999.06J	CTS Excavation Support	LS	\$54,176,088.00
99999.07J	UMS Excavation Support	LS	\$87,914,179.00
99999.09J	MOS Excavation Support	LS	\$50,647,599.00
99999.10J	Temporary Work Shafts	LS	\$11,186,676.00
100000.01M	ROW Costs: Relocation of existing households and businesses	LS	\$1,538,461.00
100000.02M	Station Property A	LS	\$4,771,154
100000.03M	Garage	LS	\$975,000
100000.04M	Tunnel Easements	LS	\$100,000
100000.05M	Station Property B	LS	\$8,000,000

1299999	Allowance for casual OT	%	10%
1300000	UTILITIES: UPDATE FROM 1992 STUDY	RF	\$75
1300001	UTILITIES: URBAN TUNNEL/AT GRADE	RF	\$3,000
1300002	UTILITIES: RURAL AERIAL	RF	\$38
1300003	UTILITIES: RURAL TUNNE;/AT GRADE	RF	\$1,500
1300004	UTILITIES: RESIDENTIAL AERIAL	RF	\$75
1300005	UTILITIES: RESIDENTIAL TUNNEL/AT GRADE	RF	\$2,250
1300006	UTILITIES: REMOVALS	RF	\$50
1300016	SECTION 1: KAMOKILA ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$15,548,400
1300017	SECTION 1: KAPOLEI ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$13,521,113
1300018	SECTION 1: SARATOGA ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$19,892,263
1300018a	SECTION 1: MOS 1 SARATOGA ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$13,219,500
1300019	SECTION 1: GEIGER/FORT WEAVER ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$11,447,756
1300020A	SECTION 2: FARRINGTON ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$37,721,644
1300021	SECTION 3: SALT LAKE BLVD/NORTH KING ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$21,426,413
1300022	SECTION 3: SALT LAKE BLVD / DILLINGHAM ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$20,652,955
1300023	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT AT GRADE ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$147,512,318
1300024	SECTION 3: MAKAI SIDE OF AIRPORT VIADUCT ELEVATED ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$121,262,318
1300025A	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$29,851,523
1300026	SECTION 3: AOLELE ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$28,808,072
1300027	SECTION 4: DILLINGHAM ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$94,605,000
1300028	SECTION 4: KING ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$65,100,000
1300029	SECTION 4: MIDDLE ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$399,000
1300030A	SECTION 5: NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$178,146,900
1300031	SECTION 5: DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$180,365,038
1300032	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$159,474,637
1300032b	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY (short tunnel)	Is	\$218,945,054
1300032a	SECTION 5: MOS NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$12,663,952
1300033	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$161,692,776

1300033b	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY (long Tunnel)	Is	\$221,163,193
1300033a	SECTION 5: MOS DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$14,882,091
1300034	SECTION 5: NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$160,432,233
1300041	SECTION 5: WAIKIKI SPUR	Is	\$79,249,319
1300042	SECTION 5: DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	Is	\$161,397,819
1300043	SECTION 5:NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$179,014,689
1300044	SECTION 5:DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$179,980,275
1300045	SECTION 5: NORTH KING / BERETANIA ST / S KING ST	Is	\$79,998,657
1300046	SECTION 5: DILLINGHAM / BERETANIA ST / S KING ST	Is	\$82,109,696
1300043a	SECTION 5:MOS 2a : NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$43,858,851
1300043a1	SECTION 5:MOS 2a : Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$44,824,437
1300043b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$68,632,937
1300043b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$69,598,523
1300044a	SECTION 5: MOS 3 NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$163,171,689
1300044a1	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$164,137,276
1300007	LANDSCAPING & URBAN DESIGN: URBAN	RF	\$172.50
1300010	LANDSCAPING & URBAN DESIGN: RURAL	RF	\$86.25
1300015	LANDSCAPING & URBAN DESIGN: BASED ON 1992 Study	RF	\$115.00
1300020	DEMOLITION: URBAN	RF	\$185.19
1300025	DEMOLITION: RURAL	RF	\$19.85
1300030	DEMOLITION: RESIDENTIAL	RF	\$47.41
1300035	RECONSTRUCT HOTEL STREET MALL	SF	\$147.50
1300036	ELEVATED STRUCTURE (ONE LANE)	SF	\$400.00
1300040	BIOLOGICAL/ARCHEOLOGICAL/HISTORICAL MONITORING	ALLOW	\$2,500,000.00

Appendix C

Initial Unit Costs for Alternatives 3 & 4

cost in 4 th QTR 2006\$			
CODE	DESCRIPTION	UOM	UNIT COST
02220.11	Sawcut Asphalt Pavement	lf	\$3.53
02220.12	Sawcut Concrete Pavement	lf	\$6.91
02220.21	Asphaltic Pavement Removal	sy	\$7.38
02220.21a	Break, Remove & Dispose of Asphalt Pavement	sy	
02220.22	Concrete Pavement Removal	sy	\$24.09
02220.23	Remove Concrete Sidewalk	sy	\$8.03
02220.24	Remove Concrete Curb	lf	\$5.13
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20
02220.26	Bridge Demolition	sf	\$24.09
02220.26M	Demolition of Track Slab	sf	\$8.55
02220.27	Allowance for Demolition of parking garage	LS	\$229,430.07
02220.28	Allowance for parking garage reconstruction	LS	\$774,326.50
02220.29	Surface Demolition & Site Removal for Surface Access	sf	\$14.34
02220.30	Allowance for Tunnel Breakout Along Market to Montgomery Sta	ls	\$458,860.15
02220.31	Allowance for Breakout into Building Basement	ls	\$458,860.15
02230.01	Clearing & Grubbing, Light	sy	\$0.72
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05
02230.03	Clearing & Grubbing, Heavy	sy	\$2.33
02260.21	Soldier Pile & Lagging Wall incl/Bracing	sf	\$64.23
02260.22	Steel Sheet Pile and Shoring	sf	\$24.09
02260.23	Soldier Pile & Lagging Wall	sf	\$40.15
02260.24PB	Trench Shoring	sf	\$3.15
02260.31	Slurry Concrete Wall, 2 ft Wide	sf	\$163.79
02260.32	Slurry Concrete Wall, 3 ft Wide	sf	\$240.87
02260.40	Reinforced Earth Walls	sf	\$35.33
02260.51	Street Decking & Support Beams	sf	\$120.44
02310.01	Finish Grading	sy	\$0.97
02310.03	At-Grade Drainage Ditch	lf	\$6.43
02310.12	Rough Grading	sf	\$0.65
02310.13	Subgrade Removal/Repair	sf	\$1.73
02315.00PB	Backfill Material (imported)	cy	\$16.86

02315.01	Common Excavation	cy	\$7.55
02315.02	Common Backfill	cy	\$9.50
02315.03	Excavation & Removal of Contaminated Soil	cy	\$184.67
02315.04	Excavation, Haul and Thermal Disposal of Hydrocarbon Contaminated Soil	TON	\$184.67
02315.04a	Collect, Treat and Dispose of Hydrocarbon Contaminated Groundwater	gal	\$0.80
02315.05	Compaction	cy	\$6.06
02315.06	Trench Excavation	cy	\$13.65
02315.07	Structural Excavation	cy	\$19.27
02315.08	Structural Backfill	cy	\$18.62
02315.08PB	Trench Backfill	cy	\$12.04
02315.09	Cut & Cover Excavation	cy	\$12.36
02315.10	Cut & Cover Backfill	cy	\$20.87
02315.11	Soil Stabilization: Lime Treatment (6% mix 18" depth)	sf	\$2.28
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12
02370.02	Sedimentation Control - Roadway, Allowance	lf	\$19.59
02370.03	Underdrains	lf	\$50.75
BRIDGE WORK:			
02370.03	Prestressing CIP Concrete (Bridge)	lbs	\$1.75
02370.04	Structure Excavation (Bridge)	cy	\$55.87
02370.05	Structure Excavation (Retaining Wall)	cy	\$40.15
02370.06	Structure Backfill (Bridge)	cy	\$65.90
02370.07	Structure Backfill (Retaining Wall) - (Bridge)	cy	\$51.39
02370.08	Rock Socket	lf	\$666.34
02370.09	Temporary Working Trestle (35ft. width)	sf	\$88.32
02370.10	Sliding Bearings	ea	\$3,211.58
02370.11	9 FT Dia Shafts (Incl. Cofferdam)	lf	\$1,772.79
02370.12	Prestressing CIP Concrete	lbs	\$2.81
02370.13	Structural Concrete, Bridge	cy	\$512.56
02370.14	Structural Concrete, Retaining Wall	cy	\$475.96
02370.15	Drill & Bond Dowels (Epoxy)	lf	\$32.12
02370.16	Structure Approach Slab (LRT)	cy	\$475.96
02370.17	Bar Reinforcing Steel (Bridge)	lbs	\$0.74
02370.18	Bar Reinforcing Steel (Retaining Wall)	lbs	\$1.39
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14
02370.20	2-rung Tube Rail	lf	\$152.55
02370.21	Concrete Barrier	lf	\$72.01
02370.21a	Concrete Median Barrier	lf	\$250.00
02370.22	Concrete Barrier (Ornate)	lf	\$112.16
02370.23	Geocomposite Drain	sf	\$2.81
02370.24	Joint Seal Bid Item (Type B-MR=6")	lf	\$175.74
02370.25	Traffic Striping	lf	\$1.77
02370.26	Traffic Signs	ea	\$642.32

02370.27w	Traffic Stripe (Thermoplastic) & Markers	lf	\$3.49
02370.28	Pavement Markings	sf	\$5.45
02370.29	Bridge Lighting	ea	\$3,532.73
02370.30s	Building Mitigation (underpinning)	LS	\$4,028,395
02370.30s1	Building Mitigation (Parking Garage Demolition & reconstruction)	SF	\$458.86
02370.31	Remove Diaphragm Wall Shoring	tons	\$350.00
02240.00	Dewatering during Construction (major)	mo	\$40,000.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00
02455.01	.5m Diameter Drilled Concrete Piles	lf	\$281.02
02455.02	Furnish Concrete Piling	lf	\$32.12
02455.03	Drive Concrete Piling	ea	\$1,445.21
02456.01w	Lift Castings	ea	\$358.49
02500.01	Utility Modifications - Light	RF	\$152.55
02500.02	Utility Modifications - Moderate	RF	\$722.60
02500.03	Utility Modifications - Heavy	RF	\$1,477.33
02500.03	Utility Modifications - Heavy	RF	\$1,477.33
02250.02	CDSM	cy	\$300.00
02250.03	Soldier Pile (W24x84)	lbs	\$0.89
02250.04	Waler & Strut	lbs	\$1.38
02510.01pb	Water Pipe up to 8 Inch not incl Exc, Backfill, Shoring, testing	lf	\$47.39
02510.02pb	Water Pipe 12 Inch not incl Exc, Backfill, Shoring, testing	lf	\$64.62
02510.03pb	Water Pipe 16 Inch not incl Exc, Backfill, Shoring, testing	lf	\$90.47
02510.04pb	Water Pipe 24 Inch not incl Exc, Backfill, Shoring, testing	lf	\$160.84
02510.05pb	Water Pipe 36 Inch not incl Exc, Backfill, Shoring, testing	lf	\$193.01
02510.06pb	STORM DRAIN PIPE RCP CLASS 4 up to 18 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$46.64
02510.07pb	STORM DRAIN PIPE RCP CLASS 4 up to 24 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$62.73
02510.08pb	STORM DRAIN PIPE RCP CLASS 4 up to 30 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$118.22
02510.09pb	STORM DRAIN PIPE RCP CLASS 4 up to 48 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$254.91
02515.01pb	PLASTIC drainage Pipe up to 6 Inch not incl Exc, Backfill, Shoring, testing	lf	\$31.59
02515.02pb	PLASTIC drainage Pipe up to 8 Inch not incl Exc, Backfill, Shoring, testing	lf	\$44.52
02515.03pb	PLASTIC drainage Pipe up to 10 Inch not incl Exc, Backfill, Shoring, testing	lf	\$68.21
02515.04pb	PLASTIC drainage Pipe up to 20 Inch not incl Exc, Backfill, Shoring, testing	lf	\$129.25
02530.01pb	Sewer Pipe (RCP CLASS 5) up to 15 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$47.04
02530.02pb	Sewer Pipe (RCP CLASS 5) up to 18 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$54.43
02530.03pb	Sewer Pipe (RCP CLASS 5) up to 21 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$64.57
02530.04pb	Sewer Pipe (RCP CLASS 5) up to 24 Inch excludes Exc, Backfill, Shoring, testing, INC RUBBER JTS	lf	\$72.88
02530.05pb	Sewer Pipe (Elliptical C507 Class 3) 30 Inch inc Exc, Backfill, Shoring, testing	lf	\$163.14
02530.06pb	Sewer Pipe (Elliptical C507 Class 3) 56 Inch inc Exc, Backfill, Shoring, testing	lf	\$311.26
02530.07pb	Sewer Pipe (RCP Class 5) 96 Inch inc Exc, Backfill, Shoring, testing	lf	\$1,433.94

02530.08pb	Diversion Structure	ls	
02530.09pb	Pump Station (Ref Ralston Contract Phase B bid 4/98)	ls	\$698,429.92
02550.01pb	Gas Pipe (1-4" Dia) Steel Pipe Exc & Backfill	lf	\$35.33
02550.02pb	Gas Pipe (6" Dia) Steel Pipe Exc & Backfill	lf	\$55.35
02550.03pb	Gas Pipe (8" Dia) Steel Pipe Exc & Backfill	lf	\$78.42
02550.04pb	Gas Pipe (10" Dia) Steel Pipe Exc & Backfill	lf	\$125.46
02550.05pb	Gas Pipe (16" Dia) Steel Pipe Exc & Backfill	lf	\$178.97
02580.01	Remove & Dispose of 13-4" Ducts	lf	
02580.02	Remove & Dispose of Telephone Handhole	ea	
02580.03	Remove & Dispose of Telephone Manhole	ea	
02580.04	13-4" GRS Telephone Ductbank Concrete Encased Excl. Earthwork	lf	
02580.05	Telephone Handhole (4' x 4' x 4' deep)	ea	\$2,273.45
02580.06	Telephone Manhole (6' x 8' x 6' deep)	ea	
02580.07	Remove & Dispose of 4-4" Telephone Ducts	lf	
02580.08	4-4" GRS Telephone Ductbank Concrete Encased Excl. Earthwork	lf	
02580.09	8-4" GRS Telephone Ductbank Concrete Encased Excl. Earthwork	lf	
02580.01M	Ductbank 8-4", 3-2" PVC Conduits	lf	\$276.21
02580.02M	Ductbank 3-2" RGS Conduits	lf	\$74.82
02580.01pb	Ductbank 2-4" PVC Conduits Concrete w 220 kv line	lf	\$86.47
02580.02pb	Ductbank 16-3" PVC Conduits Encased in Concrete	lf	\$246.60
02580.03pb	Ductbank 20-4" PVC Concrete	lf	\$380.36
02580.04pb	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	lf	\$64.86
02580.05pb	Ductbank 4-5" PVC Conduits Encased in Concrete	lf	\$88.26
02580.06pb	Ductbank 16-4" PVC Conduits Encased in Concrete	lf	\$270.94
02580.07pb	Ductbank 40-4" PVC Concrete	lf	\$674.68
02580.97pb	Ductbank Pullbox 3 1/2"	ea	\$286.79
02580.98pb	Ductbank Manhole Type C1	ea	\$19,501.56
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05
02620.01	Retaining Wall Drainage	lf	\$48.17
02620.02	Trackway Underdrains	lf	\$24.49
02620.03	Column & Substructure Drainage	lf	\$46.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68
02630.02	Trackway Drainage, Paved	lf	\$38.54
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23
02630.04	Trackway Drainage, Aerial	lf	\$48.17
02630.05M	Trackway Drains, Cast Iron	EA	\$2,500.00
02630.06M	Manhole 4' x 8' INC FRAME & GRADE (EXC Shoring, Exc and Backfill)	EA	\$2,615.50
02630.07pb	Manhole 6' x 6' (inc Shoring, Exc and Backfill)	EA	\$8,603.63
02630.08pb	Catch Basin (4' Deep CIP)	EA	\$3,171.30
02630.09pb	Water Valve Relocation (includes box and existing valve)	EA	\$3,203.99
02260.51	Street Decking	SF	\$183.54
02720.01	Aggregate Subbase	cy	\$24.72
02720.02	Aggregate Base	cy	\$30.91

02720.05	Subballast	cy	\$40.15
02720.06	Ballast	cy	\$44.96
02740.01a	Restore Asphalt Pavement	sy	\$86.04
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04
02740.03	Asphaltic Concrete Rubberized Pavement (NightworkLarge Qty.)	tn	\$94.65
02740.04	Park and Ride Lot at-grade	stall	\$4,129.74
02740.05	Park and Ride Lot Structured	stall	\$22,235.00
02750.01	Concrete Pavement	cy	\$369.33
02750.02	Concrete Sidewalk (4")	sf	\$5.62
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71
02750.03M	Concrete Sidewalk (6")	ft2	\$7.24
02750.05	Concrete Sidewalk (4")	ft2	\$6.18
02760.00	Service Road	sy	\$24.09
02770.02	Concrete Curbs (4")	lf	\$12.84
02770.03	Concrete Curb and Gutter	lf	\$25.05
02770.04	Concrete Gutter	sy	\$29.38
02770.04M	Concrete Curb Ramps	ea	\$3,556.17
02770.05	Stone Curbs	lf	\$21.67
02770.06	Simulated Stone Curbs	lf	\$18.62
02770.07	Concrete Barrier, One Side	lf	\$72.26
02770.08	Concrete Barrier, Two Side	lf	\$80.29
02770.09	Concrete Ballast Curb	lf	\$48.17
02770.10M	Concrete Track Curb (6")	lf	\$172.07
02785.01M	Asphalt Cold Planing and Cleaning 1" to 3" (over 25,000 sy)	sy	\$2.00
02785.02M	Asphalt Cold Planing and Cleaning 1" to 3" (5-7K sy)	sy	\$2.58
02820.01	4 ft Chain Link Fence	lf	\$7.86
02820.02	4 ft Chain Link Fence, Wall Mounted	lf	\$11.08
02820.03	7 ft Chain Link Fence	lf	\$12.84
02820.04	7 ft Chain Link Fence, Wall Mounted	lf	\$15.74
02820.05	7 ft Chain Link Fence, Wall Mounted w/ 3 Strand Bard Wire	lf	\$18.87
02820.06	7 ft Chain Link Fence w/ 3 Strand Barb Wire	lf	\$15.66
02840.01	Concrete Median Barriers	lf	\$48.17
02840.02	Precast Sound Wall	sf	\$56.20
02890.01	Remove & Relocate Traffic Signal	ea	\$0.00
02890.02	Remove & Salvage Traffic Signal Pole & Arm	ea	
02890.03	Relocate Traffic Signal Pole Including New Foundation	ea	
02890.04	Relocate Traffic Signal Arm	ea	
02890.05	Traffic Signal Arm	ea	
02890.06	Traffic Signal Pole Including Foundation	ea	
02890.07	Remove & Dispopse of Traffic Signal Pullbox	ea	

02890.08	Traffic Signal Pullbox	ea	
02890.09	Remove & Dispose of 2-2 1/2" Traffic Signal Conduits	lf	
02890.10	2-2 1/2" Traffic Signal Conduits - Embedded	lf	
02890.11	Ductbank Excavation (25% by Hand)	cy	
02890.12	Ductbank Backfill	cy	
02890.13	Ductbank Soil Removal	cy	
02890.14	Remove & Relocate Street Light & Pole Incl. New Foundation and Pullbox	ea	
02900.01	Landscaping, Moderate (no irrigation)	lf	\$26.50
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79
03210.01	Reinforcing Steel	lbs	\$1.09
03210.02	Reinforcing Steel, Epoxy Coated	lbs	\$1.29
03233.01	Drilled Caissons 36" dia. X 70 ft.	lf	\$361.31
03233.02a	Shaft 6 ft dia (cased)	lf	\$1,315.77
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54
03233.02b	Shaft 8 ft dia (cased)	lf	\$3,857.63
03300.01	Architectural Treatment (Fluted)	sf	\$20.08
03300.09pb	CIPC, ADA Concrete Ramp w Railing	LS	\$22,943.01
03300.09w	CIPC, Speed Bumps	LS	\$22,943.01
03300.10	CIPC, Diaphragm Concrete	cy	\$682.47
03300.11	CIPC, Footings	cy	\$297.07
03300.12	CIPC, Floor Slab	cy	\$400.00
03300.13	CIPC, Walls	cy	\$449.62
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00
03300.15	CIPC, Track Slab (L&M)	cy	\$306.96
03300.16	CIPC, Concrete Infill (L&M)	cy	\$361.31
03300.17	CIPC, Topping Slab	cy	\$353.28
03300.18	CIPC, Track Plinth	cy	\$430.18
03300.19W	CIPC, Track Pavement (Integral Colored Concrete)	sy	\$109.88
03300.20M	CIPC, Track Pavement (Plain Concrete)	sy	\$50.00
03300.21	CIPC, C&C Invert Slab	cy	\$420.00
03300.22	CIPC, C&C Exterior Walls, Formed 1 Side	cy	\$458.86
03300.23	CIPC, C&C Exterior Walls, Formed 2 Sides	cy	\$550.00
03300.24	CIPC, C&C Interior Walls	cy	\$550.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00
03300.25a	CIPC, C&C Intermediate Slab	cy	\$725.00
03300.26	CIPC, C&C Roof Slab - Arched	cy	\$875.00
03300.27	CIPC, Service Walkway	lf	\$147.74
03300.28	Pile Cap Formwork	sf	\$16.86
03300.29	CIPC, Aerial Pile Cap	cy	\$321.16
03300.30	Column Formwork	sf	\$24.09
03300.31	CIPC, Columns	cy	\$475.00
03300.32	Pier Cap Formwork	sf	\$8.65

03300.33	CIPC, Aerial Pier	cy	\$481.74
03300.34	CIP, Aerial Pier Cap	cy	\$521.89
03300.35	CIPC, Aerial Single Track Box Girder	sy	\$115.62
03300.36	CIPC, Aerial Double Track Box Girder	sy	\$401.45
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219
03300.35b	Furnish 24'-wide Segmental Box (d=7 ft)	rf	\$2,390
03300.35c	Furnish 36'-wide Segmental Box (d=7 ft)	rf	\$3,663
03300.35d	Furnish 46'-wide Segmental Box (d=7 ft)	rf	\$5,139
03300.35e	Furnish 58'-wide Segmental Box (d=7 ft)	rf	\$7,399
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150
03300.36b	Install 24'-wide Segmental Box (d=7 ft)	rf	\$3,392
03300.36c	Install 36'-wide Segmental Box (d=7 ft)	rf	\$6,123
03300.36d	Install 46'-wide Segmental Box (d=7 ft)	rf	\$10,387
03300.36e	Install 58'-wide Segmental Box (d=7 ft)	rf	\$11,872
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58
03300.39	CIPC, Aerial Platform Slab	cy	\$616.62
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16
03300.42	CIPC, U-Wall Stems	cy	\$449.62
03300.51	CIPC, Retaining Wall Footings	cy	\$282.62
03300.52	CIPC, Retaining Wall Stems	cy	\$439.98
03300.53	CIPC, Retaining Wall, Complete	sf	\$72.26
03300.80	CIPC, Tunnel Entrance Concrete	cy	\$602.18
03300.81	CIPC, Tunnel Invert Concrete	cy	\$369.33
03300.82	CIPC, Strut/Beam Concrete	cy	\$562.03
03300.83	CIPC, Station Vertical Access (Structural Stairs)	vf	\$2,875.85
03300.84	CIPC, Station Vertical Access (Structural Elevator)	ls	\$240,868.16
03300.85	CIPC, Ventillation Concrete	cy	\$675.00
03300.86pb	Precast Vault (10 ft x 10 ft)	cy	\$833.33
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72
03390.01	CIP Conc. Closure Pour	cy	\$326.24
03390.01a	Longitudinal Closure Pour and Joint	lf	\$900.00
03320.01S	Water Stops, 9"	lf	\$13.71
03401.01	Precast Prestressed Girders, Furnish	lf	\$467.77
03402.02	Precast Prestressed Conc. Girders, Erect Only	ea	\$2,784.35
03400.03	Precast Prestressed AASHTO Beams	lf	\$147.74
03400.05	Precast Concrete T Beams (18m)	ea	\$12,043.41
03410.20	Precast Concrete Slabs	sy	\$27.30
03410.21	Precast Prestressed Concrete Box Girder	sy	\$72.26
03410.22	Precast Prestressed Concrete Platforms	sy	\$48.17
05520.00S	Cross Passage and Doors	ea	\$7,500.00
05520.01	Metal Pipe and Tube Railing	lf	\$48.97
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45
05525.01	Vent Grillage	sf	\$52.20

05650.01	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	lf	\$212.69
05650.02a	Special Trackwork, incl/ Fasteners & Rail (Facility Building)	lf	\$428.26
05650.09	Ballast Mat and Slab	sf	\$20.87
05650.09a	Floating Slab (Dual Track)	RF	\$1,003.62
05650.10	Electrical Isolation Membrane	sy	\$173.42
05650.11	Extruded Rubber Insert	lf	\$9.79
05650.11a	Extruded Rubber Rail Boot "Iron Horse" w/Pandroi Caps	lf	\$30.67
05650.12	Rubber LRT Crossing Panels	sy	\$799.69
05650.13	Dual Precast Concrete LRT Crossing Panels	lf	\$642.32
05650.14	Permanent Terminal, Direct Fixation	ea	\$22,943.01
05650.19	Special Trackwork, No. 8 Dbl Crossover,Ballasted	ea	\$401,502.63
05650.20	Special Trackwork, No. 8 Dbl Crossover,DF	ea	\$553,973.39
05650.21	Special Trackwork, No. 10 Dbl Crossover,Ballasted	ea	\$717,024.66
05650.22W	Special Trackwork, No. 10 Dbl Crossover,DF	ea	\$860,362.77
05650.23	Special Trackwork, No. 8 Sgl Crossover,Ballasted	ea	\$200,695.63
05650.24	Special Trackwork, No. 8 Sgl Crossover,DF	ea	\$240,901.58
05650.25	Special Trackwork, No.10 Sgl Crossover,Ballasted	ea	\$232,882.66
05650.26	Special Trackwork, No. 10 Sgl Crossover,DF	ea	\$280,996.15
05650.27	Special Trackwork, No. 20 Turnout,Ballasted	ea	\$136,544.31
05650.28	Special Trackwork, No. 15 Turnout,Ballasted	ea	\$120,395.10
05650.29	Special Trackwork, No. 10 Turnout,Ballasted	ea	\$109,146.35
05650.29M	Special Trackwork, No. 10 Turnout,DF	ea	\$200,000.00
05650.30	Special Trackwork, No. 8 Turnout,Ballasted	ea	\$96,338.36
05650.30d	Special Trackwork, No. 8 Turnout, DF	ea	\$177,863.99
05650.31	Special Trackwork, No. 6 Turnout,Ballasted	ea	\$80,300.53
05650.31W	Special Trackwork, No. 6 Turnout,DF	ea	\$229,430.07
05650.32	Special Trackwork, No. 5 Turnout,Ballasted	ea	\$72,281.61
05650.32a	Special Trackwork, No. 5 Turnout,DF	ea	\$126,409.29
05650.33	Special Trackwork, Junction, Non-Grade Sep, Ballasted	ea	\$160,601.05
05650.33A	Special Trackwork, No. 8 Equilateral, DF	ea	\$151,913.89
05650.33B	Special Trackwork, No. 6 Equilateral, DF	ea	\$138,097.97
05650.34M	Special Trackwork, Straight Double Tounge Turnout, DF	ea	\$195,015.56
05650.35M	Special Trackwork, Diamond Crossing, DF	ea	\$212,222.82
05650.34	115 RE Rail, Standard CC-Mat'l	tf	\$47.03
05650.34w	Purchase R160N Girder Rail	tf	\$45.45
05650.35	115 RE Rail, High Strength-Mat'l	tf	\$75.71
05650.35W	115 RE Rail, w Guardrail (shop Bent) L&M	tf	\$76.92
05650.36	136 RE Rail, Standard CC-Mat'l	tf	\$37.12
05650.36W	Special Trackwork, Spare Parts	LS	\$34,414.51
05650.37	136 RE Rail, High Strength-Mat'l	tf	\$42.23
05650.37W	Special Trackwork, Spare Parts Diamond Crossing	LS	\$11,471.50
05650.38	Wood Crossties, Treated Hardwood-Mat'l	tf	\$20.07
05650.39	Concrete Crossties, Including Rail Shoulders-Mat'l	tf	\$32.12

05650.40	AREA Tie Plate, Double Shoulder-Mat'l	tf	\$9.31
05650.41	Pandrol Rolled Tie Plate, Double Shoulder-Mat'l	tf	\$10.28
05650.42	Cut Rail Holding Spikes, 5/8", 2 Spikes per Plate-Mat'l	tf	\$0.74
05650.43	Pandrol 'fast' Clips, pad & insulator, 2 per Plate	tf	\$12.04
05650.44	Cut Anchor Spikes, 2 Spikes per Plate	tf	\$0.74
05650.45	Screw Anchor Spikes, 2 per Plate	tf	\$3.21
05650.46	"Hairpin" Anchor Lock Spikes, 2 per Plate	tf	\$1.67
05650.47	36" Joint Bar with Bolts, Nuts, & Washers (12' O.C.)	ea	\$164.59
05650.48	Rail Anchors, Box Anchoring	tf	\$2.57
05650.48M	Rail Grout	tf	\$250.00
05650.49	Rail Anchors, Single Anchoring	tf	\$1.28
05650.49w	Fastening System, Embedded DF (2 bolts, 2 inserts, plate, shims, clips and pad)	EA	\$68.83
05650.50	Ballast, @ 1.4 tons/c.y.	tf	\$39.50
05650.51	Subballast @ 1.4 tons/c.y.	tf	\$28.36
05650.52W	Rail Welds Thermite (Assume every 15m)	ea	\$671.08
05650.52	Rail Welds, Shop Welding Plant (Work Train Req'd)	tf	\$5.35
05650.53	Rail Welds, Field Welding Plant	tf	\$4.53
05650.54	Rail Welds, Field Weld, Thermite	tf	\$0.14
05650.60	Install Rails and Ties	tf	\$23.03
05650.60w	Labor to Install Direct Fixation Rail (excluding welds)	tf	\$76.92
05650.61w	Labor to set R160N Girder Rail, DF	tf	\$69.93
05650.61	Labor for Ties Distribution	tf	\$2.87
05650.62	Field Welds (\$400 Mat'l & Labor)	tf	\$0.68
05650.62w	Labor to Install Curved 115# RE Rail (excluding welds) (Inc Sep Blocks)	tf	\$113.63
05650.63	Labor Additive, Class I Railroad, 190%	tf	\$35.22
05650.64	Labor Additive, Contractor, 50%	tf	\$9.27
05650.65	Labor to Install Ballast: Surfacing & Lining	tf	\$3.05
05650.66	Labor to Install Subballast	tf	\$0.25
05650.67	Labor Additive, Class I Railroad, 190%	tf	\$4.10
05650.68	Labor Additive, Contractor, 50%	tf	\$1.08
05650.69	Work Train	tf	\$1.20
05650.70	Work Train Additive, 200%	tf	\$2.41
05650.71	Rail Equipment	tf	\$3.21
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63
05820.02	Install Rail Boot "Iron Horse" w/Pandrol Caps	lf	\$21.67
07130.21	Sheet Waterproofing, Slab on Grade	sf	\$4.82
07170.21	Waterproofing, Geotextile Exterior Walls	sf	\$9.47
07170.22	Waterproofing, Geotextile Roof Slab	sf	\$8.61
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09
09000.01a	Architectural Finish, Underground Station	sf	\$25.82
09000.02	Tactile Warning Strip	sf	\$40.15
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20
09000.04	Artwork wall	sf	\$11.47

10100.01m	Signage, Stations	sta	\$65,265.06
10500.01	Station Canopy with foundation	sf	\$281.02
10500.01P	Station Canopy with aerial foundation	sf	\$210.76
10500.01a	Equipment Room and Station Entrance	sf	\$143.39
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57
11155.01	Fare Collection - LRT	sta	\$144,563.22
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66
12000.02m	Station Furnishings, Side Platform (Allowance)	sta	\$573,575.18
13000.01	Maintenance and Administration Bldg.	sf	\$290.00
13000.01A	Running Repair Building	sf	\$250.00
13000.02	Material & Parts Storage	sf	\$100.00
13000.03	Inspection Pit	ea	\$426,800.00
13000.031	M&E Facilities to Inspection Pit	ea	\$71,900.00
13000.03a	Blowdown Pit	ea	\$426,800.00
13000.04	Body Shop	sf	\$100.00
13000.05	Car Wash	sf	\$100.00
13100.01	Wheel Truing Machine	ea	\$2,155,700.00
13100.02	Wheel Axle Press Machine	ea	\$1,077,800.00
13100.03	Turntables (with Pit)	ea	\$86,200.00
13100.04	Cranes, 10-Ton	ea	\$115,000.00
13100.05	Car Body Hoist	ea	\$1,221,500.00
13100.06	Truck Repair Hoist	ea	\$265,900.00
13100.07	Floor Jack (Portable w carriage)	ea	\$64,700.00
13100.08	Floor Jack (Permanent w pit)	ea	\$646,700.00
13200.01	Mineral Spirits Tank	ea	\$115,000.00
13200.02	Waste Oil Tank	ea	\$107,800.00
13300.01	Paint Shop Equipment	ls	\$215,600.00
13300.02	Wash Equipment	ls	\$1,006,000.00
13300.03	Shop Small Tools & Misc Equipment	sf	\$2.51
13300.04	Forklifts & Material Handling Equipment	ls	\$107,800.00
14600.01a	Escalators, (15 ft Rise)	ea	\$401,502.63
14600.01b	Escalators, (30 ft Rise)	ea	\$437,500.00
14600.01c	Escalators, (60 ft Rise)	ea	\$525,000.00
14600.02a	Traction Elevators, (30 ft Rise)	ea	\$315,466.35
14600.02b	Traction Elevators, (40 ft Rise)	ea	\$343,750.00
14600.02c	Traction Elevators, (50 ft Rise)	ea	\$412,500.00
14610.10S	Pump Station	ea	\$748,474.01
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00
15300.02m	Fire Protection and Plumbing, Underground Station	ls	\$1,080,573
15300.03m	Fire Alarm System	LS	\$387,250.16
15300.04m	Fire Protection Substations	ls	\$192,000
15700.02	Subsurface Ventilation, Tunnel	If	\$1,086.32

15800.01	Air Distribution, Subsurface Ventilation	If	\$573.58
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62
16000.02m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding)	ft2	\$18.00
16000.03m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Chinatown)	LS	\$57,357.52
16000.04m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Union Square)	LS	\$51,621.77
16000.05m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Market)	LS	\$91,772.03
16000.06m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Moscone)	LS	\$68,829.02
16060.01	Corrosion Control, At-Grade	If	\$2.00
16060.02	Corrosion Control, Aerial	If	\$2.97
16130.21	Ductbank, At Grade Guideway	If	\$48.97
16130.22	Ductbank, Aerial Guideway	If	\$110.79
16130.23	Ductbank, Tunnel Guideway	If	\$78.69
16370.01	Traction Power Supply, Substation	ea	\$1,077,800.00
16370.02	Traction Power Supply, M.& S.	If	\$72.26
16370.03	Traction Power Supply, D.C. Feeder	If	\$72.26
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00
16370.04P	Traction Power Supply, Aerial OCS, Dual Track	ft	\$200.00
16370.05H	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$305.50
16370.06H	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$254.58
16370.061H	Traction Power Supply, (OCS), Subway, DoubleTrack	RF	\$127.29
16370.16H	4" Cand splice boxes with support system	RF	\$63.65
16370.05P	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$283.00
16370.06M	Traction Power Supply, (OCS), Subway, Single Track	RF	\$143.86
16370.06P	Traction Power Supply, (OCS), Subway, DoubleTrack	RF	\$195.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51
16370.09M	Traction Power Feeder Spare	RF	\$22.96
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31
16370.11M	Riser Spare	RF	\$0.51
16370.12M	Catenery Detectors	RF	\$0.31
16370.13M	Catenery Detectors Spare	RF	\$0.51
16370.14M	Traction Power Supply, At-grade OCS, Existing Trolley Realignment	LS	\$2,200,000.00
16370.15M	Traction Power Supply, At-grade OCS, 4 th & King Intersection Special Work	LS	\$1,002.23
16370.16M	4" Cand splice boxes with support system	RF	\$612.31
16371.01	Traction Power Supply, Substation (1.5 MW)	ea	\$963,494.93
16371.02	Civilwork for Substation (Foundation, Misc. Wiring, Bldg Arch)	ea	\$240,901.58
16371.01M	Traction Power Equipment, Substation Aux Electrical (Prefab w/arch)	ea	\$850,000.00
16371.01aM	Substation Architectural	ea	\$150,000.00
16371.02M	TP equipment and Misc. Spare	ls	\$80,000.00
16371.03M	Fire Suppression	ea	\$81,748.39
16371.04M	Fire Suppression Spare	LS	\$16,037.83
16371.05M	Mechanical System	ea	\$58,025.76
16371.06M	Mech Spare	LS	\$11,471.50

16371.07M	Traction Power SCADA (RTU, fiber optic hardware)	ea	\$120,011.37
16371.08M	SCADA Spare (RTU Substation)	LS	\$24,000.00
16371.09M	Connection to SCADA master (SCADA master upgrade, Fiber cables)	LS	\$440,000.00
16371.10M	SCADA Master Spare	LS	\$44,000.00
16371.11M	Gap Breaker (the breaker, RTU, and aux electrical, maintenance phone)	ea	\$400,000.00
16371.12M	Gap Breaker Spare	LS	\$80,000.00
16371.13M	MIMIC Panel	LS	\$253,000.00
16371.14M	MIMIC Panel Spare	LS	\$25,000.00
16371.15M	Maintenance Telephone System (MTS)	RF	\$6.63
16371.16M	MTS Spare	RF	\$0.66
16371.17M	Facilities Telephone System	RF	\$22.99
16371.18M	METS Telephone	RF	\$5.95
16371.19M	Public Telephone	RF	\$13.20
16371.20M	Radio System: Muni Radio	RF	\$0.00
16371.21M	Radio System: ECD Radio	RF	\$32.75
16371.22M	Emergency Telephone System	RF	\$66.48
16371.23M	Fire Department Telephone System	RF	\$45.61
16371.24M	Misc. Telecom Infrastructure	RF	\$83.76
16500.01	Lighting, At Grade Guideway	lf	\$56.20
16500.02	Lighting, Aerial Guideway	lf	\$80.29
16500.03	Lighting, Cut & Cover Guideway	lf	\$240.87
16500.04	Lighting, Tunnel Guideway	lf	\$160.58
16500.05P	Lighting, U-Wall Guideway	lf	\$142.27
16500.05	Portal Lighting	LS	\$40,000.00
16500.06m1	Lighting, Roadway (6 blocks)	LS	\$344,356.00
16500.06m2	Lighting, Roadway Power	LS	\$6,000.00
16500.06	Lighting, Roadway	ea	\$7,929.90
16500.07	Lighting, Area	sf	\$3.72
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03
16500.03m	Power, Tunnel Guideway	tf	\$70.22
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02
16500.05m	Corrosion Control	tf	\$8.65
16500.06m	Corrosion Control Spare	tf	\$0.88
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75
16560.01m	Traffic Signal Lighting (4 intersection)	ls	\$565,418.94
16560.02m	Traffic Signal Work at 4 th & King Townsend	ls	\$210,000.00
16560.03m	Traffic Signal Spare	ls	\$20,000.00

16600.01	Systemwide Raceways	rf	\$222.75
16700.01m	ATC Line & Station	RF	\$238.00
16700.02m	OCC Expansion and Modification	sta	
16700.02P	Central Control Facility	sf	\$334.12
16700.02	ATC Interlockings, Turnout	ea	\$883,194.41
16700.03	ATC Interlockings, Double Crossover	ea	\$1,043,795.46
16700.04	ATC Interlockings, Single Crossover	ea	\$722,593.36
16700.05	ATC Interlockings, Wye	ea	\$883,194.41
16700.06	ATC Interlockings, Permanent Terminal, End of Line	ea	\$834,969.54
16700.07	ATC Interlockings, Transit Mall, Double Crossover	ea	\$1,043,795.46
16700.08	ATC Signals, Yard and Shop	ls	\$4,817,363.28
16700.09	CSX Signal System Modification	RF	\$36.98
16700.10m	Station Communications (PA,CCTV,Radio, Fare Vending) Sta A	STA	\$2,456,467.00
16700.11m	Station Communications (PA,CCTV,Radio, fare vending) Sta B	STA	\$2,456,467.00
16700.12m	Station Communications (PA,CCTV,Radio) Sta C	STA	
16700.13m	Station Communications (PA,CCTV,Radio, Fare Vending) Sta D	STA	\$2,456,467.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79
16700.11	Station Communications (PA&CCTV Rough-in)	STA	\$11,137.38
16700.13	Line Costs (Emergency Phone)	lf	\$40.15
16700.14	Radio/Telephone System	ea	\$521,897.73
16700.15	Wayside Line Costs, Wayside Cable & Equipment	lf	\$56.30
16700.16	Wayside Line Costs, Cable Ductbank (At-Grade Only)	lf	\$80.77
16700.17	Highway Crossing Signals, Preemptive	ea	\$192,676.71
16700.18	Traffic Signal (incl Signal Controller) (cost per each direction)	ea	\$80,300.53
16700.19	Crossing Gates with Flashers, New	ea	\$200,695.63
16700.20	Crossing Gates with Flashers, Relocated	ea	\$136,544.31
16700.21	Pedestrian Crossing Signal	ea	\$51,677.45
16700.22	Pedestrian Crossing Pavement	sf	\$11.14
16700.23	Pedestrian Crossing Signal 1 Direction	ea	\$2,895.72
16700.24	Station Agents' Booth	ea	\$240,901.58
16700.25	Communications/ATC Computer @ OCC Building	ea	\$8,831,832.69
16700.26W	Cost of PG&E 12.47KV Sources	ea	\$6,900,000.00
16700.27W	Cost of Power Distribution Equipment	sta	\$1,356,388.00
16700.28W	VETAG Equipment	ea	\$64,939.00
16700.29W	Switch Controllers at Grade	ea	\$178,344.00
16700.28	Relocate Overhead Power	lf	\$200.73
16700.29M	Fire, Blue Light, METS including Conduit and Wiring in the tunnel	LS	\$1,659,000.00
16700.30M	Fire, Blue Light, METS, Courtesy, Pay, Agent & Office Phones, including C&W	sta	\$400,000.00
16700.31M	Various Phone Systems' Connection to Central Control	LS	\$930,000.00
16700.32M	Various Phone Systems Spare	LS	\$300,000.00
16700.33M	Security Systems	LS	\$1,700,000.00
16700.34M	System Fiber Optic Cable	LS	\$1,100,000.00

16700.35M	Subway SCADA system & wiring at Central Control -16700	LS	\$1,190,250.00
16700.36M	Subway system Integration with Central Control	LS	\$572,000.00
16700.37M	Subway SCADA Service Contract	LS	\$143,449.48
16700.38M	Training of MUNI Personnel (for Central Control)	LS	\$57,357.52
16700.39M	O & M manuals (for equipment at Central Control)	LS	\$57,357.52
16700.40M	Subway SCADA: System Wide startup and operational Testing	LS	\$286,787.59
16700.41M	Subway SCADA: Misc Security System	LS	\$373,213.68
16700.42M	Power SCADA graphic display	LS	\$230,000.00
16700.43M	Power SCADA graphic display Spare	LS	\$23,000.00
16700.44M	UPS 100Kva	LS	\$96,500.00
16700.45M	UPS 100Kva Spare	LS	\$10,000.00
16700.46M	UPS 40Kva	LS	\$52,275.00
16700.47M	UPS 40Kva Spare	LS	\$5,000.00
16770.01M	Subway Station TVM & Fare Gate System	LS	\$546,365.56
16770.02M	Surface & Aerial Station TVM System	LS	\$280,105.16
17100.01M	Articulated LRV	ea	\$2,356,000
17100.02M	Articulated LRV Spare Parts (5% of LRV Cost)	ea	\$0.00
17100.011	Articulated LRV - Low Floor for Handicap Access	ea	\$4,977,942.06
17100.012	Vintage Trolley	ea	\$1,926,945.31
17100.013M	Non-Revenue Vehicle	ls	\$1,147,150.36
17100.02	Maintenance of Way Vehicles	ls	\$4,014,469.40
17100.03	Standard 35' Bus	ea	\$401,502.63
17100.04	Standard 40' Bus	ea	\$441,597.20
17100.05	Articulated 60' Bus	ea	\$561,992.30
99999.01J	Tunnel SEM (Reach 1: Tail track & Crossover Cavems)	RF	\$61,647.83
99999.02-1PB	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiahao/ Kapiolani Blvd)	RF	\$29,300.00
99999.02-2PB	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	RF	\$26,700.00
99999.02-3PB	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	RF	\$21,000.00
99999.02-4PB	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	RF	\$21,000.00
99999.02-5PB	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+90)	RF	\$23,400.00
99999.02-6PB	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+90)	RF	\$25,200.00
99999.04J	Tunnel SXM Vertical Stacked	RF	\$21,996.41
99999.05J	Tunnel SXM & SEM Single Box	RF	\$21,860.63
99999.06J	CTS Excavation Support	LS	\$54,176,088.00
99999.07J	UMS Excavation Support	LS	\$87,914,179.00
99999.09J	MOS Excavation Support	LS	\$50,647,599.00
99999.10J	Temporary Work Shafts	LS	\$11,186,676.00
100000.01M	ROW Costs: Relocation of existing households and businesses	LS	\$1,538,461.00
100000.02M	Station Property A	LS	\$4,771,154
100000.03M	Garage	LS	\$975,000
100000.04M	Tunnel Easements	LS	\$100,000
100000.05M	Station Property B	LS	\$8,000,000

1299999	Allowance for casual OT	%	10%
1300000	UTILITIES: UPDATE FROM 1992 STUDY	RF	\$75
1300001	UTILITIES: URBAN TUNNEL/AT GRADE	RF	\$3,000
1300002	UTILITIES: RURAL AERIAL	RF	\$38
1300003	UTILITIES: RURAL TUNNE;/AT GRADE	RF	\$1,500
1300004	UTILITIES: RESIDENTIAL AERIAL	RF	\$75
1300005	UTILITIES: RESIDENTIAL TUNNEL/AT GRADE	RF	\$2,250
1300006	UTILITIES: REMOVALS	RF	\$50
1300016	SECTION 1: KAMOKILA ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$15,548,400
1300017	SECTION 1: KAPOLEI ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$13,521,113
1300018	SECTION 1: SARATOGA ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$19,892,263
1300018a	SECTION 1: MOS 1 SARATOGA ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$13,219,500
1300019	SECTION 1: GEIGER/FORT WEAVER ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$11,447,756
1300020A	SECTION 2: FARRINGTON ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$37,721,644
1300021	SECTION 3: SALT LAKE BLVD/NORTH KING ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$21,426,413
1300022	SECTION 3: SALT LAKE BLVD / DILLINGHAM ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$20,652,955
1300023	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT AT GRADE ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$147,512,318
1300024	SECTION 3: MAKAI SIDE OF AIRPORT VIADUCT ELEVATED ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$121,262,318
1300025A	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$29,851,523
1300026	SECTION 3: AOLELE ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$28,808,072
1300027	SECTION 4: DILLINGHAM ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$94,605,000
1300028	SECTION 4: KING ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$65,100,000
1300029	SECTION 4: MIDDLE ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$399,000
1300030A	SECTION 5: NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$178,146,900
1300031	SECTION 5: DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$180,365,038
1300032	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$159,474,637
1300032b	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY (short tunnel)	Is	\$218,945,054
1300032a	SECTION 5: MOS NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$12,663,952
1300033	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$161,692,776

1300033b	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY (long Tunnel)	Is	\$221,163,193
1300033a	SECTION 5: MOS DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$14,882,091
1300034	SECTION 5: NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD ELECTRICAL AND OTHER COMMUNICATION UTILITY	Is	\$160,432,233
1300041	SECTION 5: WAIKIKI SPUR	Is	\$79,249,319
1300042	SECTION 5: DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	Is	\$161,397,819
1300043	SECTION 5:NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$179,014,689
1300044	SECTION 5:DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$179,980,275
1300045	SECTION 5: NORTH KING / BERETANIA ST / S KING ST	Is	\$79,998,657
1300046	SECTION 5: DILLINGHAM / BERETANIA ST / S KING ST	Is	\$82,109,696
1300043a	SECTION 5:MOS 2a : NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$43,858,851
1300043a1	SECTION 5:MOS 2a : Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$44,824,437
1300043b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$68,632,937
1300043b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$69,598,523
1300044a	SECTION 5: MOS 3 NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$163,171,689
1300044a1	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	Is	\$164,137,276
1300007	LANDSCAPING & URBAN DESIGN: URBAN	RF	\$172.50
1300010	LANDSCAPING & URBAN DESIGN: RURAL	RF	\$86.25
1300015	LANDSCAPING & URBAN DESIGN: BASED ON 1992 Study	RF	\$115.00
1300020	DEMOLITION: URBAN	RF	\$185.19
1300025	DEMOLITION: RURAL	RF	\$19.85
1300030	DEMOLITION: RESIDENTIAL	RF	\$47.41
1300035	RECONSTRUCT HOTEL STREET MALL	SF	\$147.50
1300036	ELEVATED STRUCTURE (ONE LANE)	SF	\$400.00
1300040	BIOLOGICAL/ARCHEOLOGICAL/HISTORICAL MONITORING	ALLOW	\$2,500,000.00

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CODE	DESCRIPTION	UOM	UNIT COST \$
CSC10.04-1	At-Grade Ramps (24 Ft width)	RF	\$6,768
CSC10.04-2	At-Grade Ramps (36 ft)	RF	\$9,918
CSC10.04-3	36'-wide Segmental Aerial Structure	RF	\$15,597
CSC10.04-4	24'-wide Segmental Aerial Structure	RF	\$8,064
CSC10.04-5	46'-wide Segmental Aerial Structure	RF	\$25,027
CSC10.04-6	58'-wide Segmental Aerial Structure	RF	\$30,361
CSC10.04-7	Abutment Double At-Grade	RF	\$11,531
CSC10.04-8	Abutment Single At-Grade	RF	\$5,993
CSC10.04-9	Abutment Triple Lane At-Grade	RF	\$16,720
CSC20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	LS	\$3,085,345
CSC20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	LS	\$5,735,742
CSC20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS	\$5,596,707
CSC20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS	\$5,929,058
CSC20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	LS	\$6,068,093
CSC20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	LS	\$7,169,678
CSC20.07-1	ELEVATORS (40 ft Rise)	EA	\$454,508
CSC20.07-2	ELEVATORS (50 ft Rise)	EA	\$513,779
CSC20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	EA	\$645,336
CSC20.07-4	ESCALATORS (15 ft Rise)	EA	\$523,954
CSC20.07-5	ESCALATORS (30 ft Rise)	EA	\$585,776
CSC20.07-6	ESCALATORS (60 ft Rise)	EA	\$795,302
CSC30.01-1	Administration Building & Site Facilities	LS	\$14,758,888
CSC30.02-1	Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)	LS	\$27,228,638
CSC30.02-2	Heavy Maintenance Facility and Yard (30 Acres) (accomodates 16 vehicles)	LS	\$66,456,265
CSC40.01-1	Demolition: Urban	RF	\$207
CSC40.01-2	Demolition: Rural	RF	\$22
CSC40.01-3	Demolition: Residential	RF	\$53
CSC40.01-8	Clear and Grubbing	RF	\$62
CSC40.01-5	Earthwork	RF	in guideway
CSC40.01-6	Building Mitigation (Underpinning, etc)	RF	\$4,672,938
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)	SF	\$532
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION	RF	\$81
CSC40.02-2	Utility: URBAN TUNNEL/AT GRADE	RF	\$3,240
CSC40.02-3	Utility: RURAL AERIAL	RF	\$41
CSC40.02-4	Utility: RURAL TUNNEL/AT GRADE	RF	\$1,620
CSC40.02-5	Utility: RESIDENTIAL AERIAL	RF	\$81
CSC40.02-6	Utility: RESIDENTIAL TUNNEL/AT GRADE	RF	\$2,430

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CODE	DESCRIPTION	UOM	UNIT COST \$
CSC40.02-7	Utility: REMOVALS	RF	\$54
CSC40.02-8	MANAGED LANE ELECTRICAL AND COMMUNICATION UTILITIES	LS	\$109,275,000
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	LS	\$10,140,835
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	LS	\$14,919,197
CSC40.02-10A	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	LS	\$9,914,625
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	LS	\$8,585,817
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	LS	\$12,628,933
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	LS	\$16,069,810
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	LS	\$15,489,716
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS	\$110,634,239
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	LS	\$90,946,739
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS	\$22,388,642
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST	LS	\$21,606,054
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	LS	\$70,953,750
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	LS	\$48,825,000
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	LS	\$299,250
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS	\$133,610,175
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS	\$135,273,779
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$119,605,978
CSC40.02-24A	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$9,497,964
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$121,269,582
CSC40.02-25A	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$11,161,568
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	LS	\$120,324,175
CSC40.02-27	Utility Removal (all sizes)	LF	\$73
CSC40.02-28	20 ea 4" PVC, concrete encased	LF	\$608
CSC40.02-29	40 ea 4" CPC, concrete encased	LF	\$933
CSC40.02-30	WATER PIPE (DIP) UP TO 8 INCH Dia	LF	\$85
CSC40.02-31	WATER PIPE (DIP) UP TO 12 INCH Dia	LF	\$111
CSC40.02-32	WATER PIPE (DIP) UP TO 16 INCH Dia	LF	\$167
CSC40.02-33	WATER PIPE (DIP) UP TO 24 INCH Dia	LF	\$269
CSC40.02-34	WATER PIPE (DIP) UP TO 36 INCH Dia	LF	\$349
CSC40.02-35	STORM DRAIN PIPE (RCP CLASS 3) UP TO 18 INCH Dia	LF	\$127
CSC40.02-36	STORM DRAIN PIPE (RCP CLASS 3) UP TO 24 INCH Dia	LF	\$163
CSC40.02-37	STORM DRAIN PIPE (RCP CLASS 3) UP TO 30 INCH Dia	LF	\$250
CSC40.02-38	STORM DRAIN PIPE (RCP CLASS 3) UP TO 48 INCH Dia	LF	\$465
CSC40.02-39	SEWER PIPE (RCP CLASS 5) UP TO 15 INCH Dia	LF	\$117
CSC40.02-40	SEWER PIPE (VCP C425) UP TO 18 INCH Dia	LF	\$135

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CSC40.02-41	SEWER PIPE (VCP C425) UP TO 21 INCH Dia	LF	\$156
CSC40.02-42	SEWER PIPE (RCP CLASS 5) UP TO 24 INCH Dia	LF	\$201
CSC40.02-43	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 6 INCH Dia	LF	\$65
CSC40.02-44	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 8 INCH Dia	LF	\$82
CSC40.02-45	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 10 INCH Dia	LF	\$107
CSC40.02-46	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF	\$223
CSC40.02-47	MANHOLE (SEWER, STORM, GAS, WATER) 4' DIA X 6' DEEP	EA	\$10,416
CSC40.02-48	CATCHBASIN (4' DEEP CIP)	EA	\$4,111
CSC40.02-49	WATER VALVE RELOCATION	EA	\$4,147
CSC40.02-50	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF	\$223
CSC40.02-51	Gas Pipe (1-4" Dia) Plastic Pipe Exc & Backfill	LF	\$58
CSC40.02-52	Gas Pipe (6" Dia) Plastic Pipe Exc & Backfill	LF	\$76
CSC40.02-53	Gas Pipe (8" Dia) Plastic Pipe Exc & Backfill	LF	\$101
CSC40.02-54	Gas Pipe (10" Dia) Plastic Pipe Exc & Backfill	LF	\$146
CSC40.02-55	Gas Pipe (16" Dia) Plastic Pipe Exc & Backfill	LF	\$227
CSC40.02-56	Ductbank 2-4" PVC Conduits w 220 kv line	LF	\$594
CSC40.02-57	Ductbank 16-3" PVC Conduits encased in concrete	LF	\$395
CSC40.02-58	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	LF	\$110
CSC40.02-59	Ductbank 16-4" PVC Conduits Encased in Concrete	LF	\$421
CSC40.02-60	Ductbank 4-5" PVC Conduits Encased in Concrete	LF	\$135
CSC40.02-61	Pump Station	LS	\$768,273
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	LS	\$121,048,364
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$152,162,486
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$33,552,021
CSC40.02-63a	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$34,290,694
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$52,504,197
CSC40.02-63b	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$53,242,870
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$152,983,234
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$124,826,342
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	LS	\$61,198,973
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	LS	\$62,813,917
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	LS	\$60,625,729
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	LS	\$164,208,791
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel)	LS	\$165,872,395
CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	TON	\$185
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	GAL	1
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	ALLOW	2500000

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CODE	DESCRIPTION	UOM	UNIT COST \$
CSC40.06-1	Street Construction Adj. to LRT - One Lane	RF	\$295
CSC40.06-1a	Turn Pocket (100 ft)	RF	\$204
CSC40.06-2	Street Construction Adj. to LRT - Two Lane	RF	\$412
CSC40.06-3	Street Construction Adj. to LRT - Three Lane	RF	\$522
CSC40.06-4	Street Construction Adj. to LRT - Four Lane	RF	\$632
CSC40.06-10	Landscaping & Urban Design: Urban	RF	\$187
CSC40.06-11	Landscaping & Urban Design: Rural	RF	\$93
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	RF	\$130
CSC40.06-13	Hotel Street Mall Reconstruction	sf	\$160
CSC40.06-14	PARK & RIDE AT GRADE	STALL	\$4,543
CSC40.06-15	PARK & RIDE STRUCTURED	STALL	\$24,459
CSC40.06-15A	ONE LANE ELEVATED STRUCTURE TO P&R GARAGE	SF	\$440
CSC40.06-16	BUS BAYS	STALL	\$22,714
CSC40.06-17	Intersection Modification Type 1	LS	\$146,075
CSC40.06-18	Intersection Modification Type 2	LS	\$110,599
CSC40.06-19	Intersection Modification Type 3	LS	\$78,372
CSC40.06-20	Intersection Modification Type 3w	LS	\$30,994
CSC40.06-21	Intersection Modification Type 4	LS	\$32,482
CSC40.06-22	Intersection Modification Type 5	LS	\$143,961
CSC40.06-23	Intersection Modification Type 5a	LS	\$93,526
CSC40.06-24	Intersection Modification Type 5B	LS	\$10,283
CSC50.01-1	ATC, Signal System Line Stations	RF	#N/A
CSC50.01-2	Highway Crossing Warning Devices (Preemptive)	EA	\$235,278
CSC50.02-1	Traffic Signal Modifications (4 directions)	EA	\$376,047
CSC50.02-2	Traffic Signal Modifications (3 directions)	EA	\$289,523
CSC50.03-1	Traction Power Substations (2 MW)	EA	\$1,640,461
CSC50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	RF	\$315
CSC50.04-2	Traction Power Supply - Subway OCS, Double Track	RF	\$216
CSC50.04-3	Traction Power Supply - Aerial OCS, Dual Track	RF	\$225
CSC50.04-4	Traction Power Supply - Aerial OCS, Single Track	RF	\$170
CSC50.05-1	ITS Roadway	LS	\$420,000
CSC50.06-1	Fare Vending Equipment Underground Stations	LS	\$584,612
CSC50.06-2	Fare Vending Equipment Aerial & At Grade Stations	LS	\$299,712
CSC50.07	Central Control Facility	LS	\$8,529,933
CSC60.01	ROW: Purchase or Lease of real estate	LS	#N/A
CSC60.02	ROW Relocation of existing households and businesses	LS	#N/A
CSC70.01	Articulated LRV	EA	\$2,466,732

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CODE	DESCRIPTION	UOM	UNIT COST \$
CSC70.06	Maintenance of Way Vehicles	LS	\$4,203,149
CSC70.07	Spare Parts	LS	\$246,673

At-Grade Ramps (24 Ft width)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 24 ft width and 5,694 rf (Bottom Line Cost to be divided by the 5,694 rf = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	15,184	\$15,943.00
02310.01	Finish Grading	sy	\$0.97	409,968	\$397,669.00
02315.02	Common Backfill	cy	\$9.50	1,230,066	\$11,685,627.00
02315.00PB	Backfill Material (imported)	cy	\$16.86	1,230,066	\$20,738,913.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	5,694	\$182,891.00
02370.03	Underdrains	lf	\$50.75	5,694	\$288,971.00
02370.21	Concrete Barrier	lf	\$72.01	11,388	\$820,050.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	5,694	\$278,835.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$4,129,067.88	1	\$4,129,068.00
	At-Grade Ramps (24 Ft width)	RF	5,694		\$38,537,967.00
CSC10.04-1	At-Grade Ramps (24 Ft width)	RF	Route Foot		\$6,768.17

At-Grade Ramps (36 ft)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 36 ft width and 600 rf (Bottom Line Cost to be divided by the 600 rf = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	15,184.00	\$15,943.00
02310.01	Finish Grading	sy	\$0.97	3,240.00	\$3,143.00
02315.02	Common Backfill	cy	\$9.50	194,562.00	\$1,848,339.00
02315.00PB	Backfill Material (imported)	cy	\$16.86	194,562.00	\$3,280,315.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	600.00	\$19,272.00
02370.03	Underdrains	lf	\$50.75	600	\$30,450.00
02370.21	Concrete Barrier	lf	\$72.01	1,200.00	\$86,412.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	600.00	\$29,382.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$637,590.72	1	\$637,591.00
	At-Grade Ramps (36 ft)	RF	600		\$5,950,847.00
CSC10.04-2	At-Grade Ramps (36 ft)	RF	Route Foot		\$9,918.08

36'-wide Segmental Aerial Structure					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	in section 40.01
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	80.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	49.0	\$362.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
02370.21	Concrete Barrier	lf	\$72.01	240.0	\$17,282.00
03233.02b	Shaft 8 ft dia (cased)	lf	\$3,857.63	90	\$347,187.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	11.0	\$340.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	12.9	\$2,220.00
02620.03	Column & Substructure Drainage	lf	\$46.00	52.0	\$2,392.00
03210.01	Reinforcing Steel	lbs	\$1.09	58,200.0	\$63,438.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	30.0	\$15,657.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35c	Furnish 36'-wide Segmental Box (d=7 ft)	rf	\$3,663.00	120.0	\$439,560.00
03300.36c	Install 36'-wide Segmental Box (d=7 ft)	rf	\$6,123.00	120.0	\$734,760.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	67.2	\$413.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	199.5	\$4,006.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$200,532.12	1	\$200,532.00
	36'-wide Segmental Aerial Structure	RF	120		\$1,871,633.00
CSC10.04-3	36'-wide Segmental Aerial Structure	RF	Route Foot		\$15,596.94

24'-wide Segmental Aerial Structure					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	in section 40.01
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	80.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	49.0	\$362.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
02370.21	Concrete Barrier	lf	\$72.01	240.0	\$17,282.00
03233.02a	Shaft 6 ft dia (cased)	lf	\$1,315.77	40	\$52,631.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	11.0	\$340.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	12.9	\$2,220.00
02620.03	Column & Substructure Drainage	lf	\$46.00	52.0	\$2,392.00
03210.01	Reinforcing Steel	lbs	\$1.09	33,000.0	\$35,970.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	21.2	\$11,064.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35b	Furnish 24'-wide Segmental Box (d=7 ft)	rf	\$2,390.00	120.0	\$286,800.00
03300.36b	Install 24'-wide Segmental Box (d=7 ft)	rf	\$3,392.00	120.0	\$407,040.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	67.2	\$413.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	199.5	\$4,006.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$103,680.48	1	\$103,680.00
	24'-wide Segmental Aerial Structure	RF	120		\$967,684.00
CSC10.04-4	24'-wide Segmental Aerial Structure	RF	Route Foot		\$8,064.03

46'-wide Segmental Aerial Structure					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	in section 40.01
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	80.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	49.0	\$362.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
02370.21	Concrete Barrier	lf	\$72.01	240.0	\$17,282.00
02370.21a	Concrete Median Barrier	lf	\$250.00	240.0	\$60,000.00
03233.02b	Shaft 8 ft dia (cased)	lf	\$3,857.63	120	\$462,916.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	11.0	\$340.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	12.9	\$2,220.00
02620.03	Column & Substructure Drainage	lf	\$46.00	52.0	\$2,392.00
03210.01	Reinforcing Steel	lbs	\$1.09	76,800.0	\$83,712.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	63.6	\$33,192.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03390.01a	Longitudinal Closure Pour and Joint	lf	\$900.00	120.0	\$108,000.00
03300.35d	Furnish 46'-wide Segmental Box (d=7 ft)	rf	\$5,139.00	120.0	\$616,680.00
03300.36d	Install 46'-wide Segmental Box (d=7 ft)	rf	\$10,387.00	120.0	\$1,246,440.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	67.2	\$413.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	199.5	\$4,006.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$321,772.68	1	\$321,773.00
	46'-wide Segmental Aerial Structure	RF	120		\$3,003,212.00
CSC10.04-5	46'-wide Segmental Aerial Structure	RF	Route Foot		\$25,026.77

58'-wide Segmental Aerial Structure					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	in section 40.01
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	80.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	49.0	\$362.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02370.21	Concrete Barrier	lf	\$72.01	240.0	\$17,282.00
02370.21a	Concrete Median Barrier	lf	\$250.00	240.0	\$60,000.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
03233.02b	Shaft 8 ft dia (cased)	lf	\$3,857.63	140	\$540,068.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	11.0	\$340.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	12.9	\$2,220.00
02620.03	Column & Substructure Drainage	lf	\$46.00	52.0	\$2,392.00
03210.01	Reinforcing Steel	lbs	\$1.09	101,400.0	\$110,526.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	98.4	\$51,354.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03390.01a	Longitudinal Closure Pour and Joint	lf	\$900.00	120.0	\$108,000.00
03300.35e	Furnish 58'-wide Segmental Box (d=7 ft)	rf	\$7,399.00	120.0	\$887,880.00
03300.36e	Install 58'-wide Segmental Box (d=7 ft)	rf	\$11,872.00	120.0	\$1,424,640.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	67.2	\$413.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	199.5	\$4,006.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$390,356.04	1	\$390,356.00
	58'-wide Segmental Aerial Structure	RF	120		\$3,643,323.00
CSC10.04-6	58'-wide Segmental Aerial Structure	RF	Route Foot		\$30,361.03

Abutment Double At-Grade

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES TYPICAL ABUTMENT 300 FT (Bottom Line Cost to be divided by the 900 RF = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	3,960.00	\$4,158.00
02310.01	Finish Grading	sy	\$0.97	74,520.00	\$72,284.00
02315.01	Common Excavation	cy	\$7.55	10,800.00	\$81,540.00
02315.00PB	Backfill Material (imported)	cy	\$16.86	7,470.00	\$125,944.00
02315.07	Structural Excavation	cy	\$19.27	2,970.00	\$57,232.00
02370.07	Structure Backfill (Retaining Wall) - (Bridge)	cy	\$51.39	2,970.00	\$152,628.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	900.00	\$28,908.00
03210.01	Reinforcing Steel	lbs	\$1.09	44,100.00	\$48,069.00
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16	6,390.00	\$2,052,212.00
03300.42	CIPC, U-Wall Stems	cy	\$449.62	837.00	\$376,332.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	900.00	\$44,073.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	2,970.00	\$80,042.00
02455.02	Furnish Concrete Piling	lf	\$32.12	90,000.00	\$2,890,800.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	2,250.00	\$3,251,723.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$1,111,913.40	1	\$1,111,913.00
	Abutment Double At-Grade	RF	900		\$10,377,858.00
CSC10.04-7	Abutment Double At-Grade	RF	Route Foot		\$11,530.95

Abutment Single At-Grade

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES TYPICAL ABUTMENT 300 FT (Bottom Line Cost to be divided by the 900 RF = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	2,520.00	\$2,646.00
02310.01	Finish Grading	sy	\$0.97	74,520.00	\$72,284.00
02315.01	Common Excavation	cy	\$7.55	10,800.00	\$81,540.00
02315.00PB	Backfill Material (imported)	cy	\$16.86	4,140.00	\$69,800.00
02315.07	Structural Excavation	cy	\$19.27	1,710.00	\$32,952.00
02370.07	Structure Backfill (Retaining Wall) - (Bridge)	cy	\$51.39	1,710.00	\$87,877.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	900.00	\$28,908.00
03210.01	Reinforcing Steel	lbs	\$1.09	24,300.00	\$26,487.00
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16	3,177.00	\$1,020,325.00
03300.42	CIPC, U-Wall Stems	cy	\$449.62	837.00	\$376,332.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	900.00	\$44,073.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1,710.00	\$46,085.00
02455.02	Furnish Concrete Piling	lf	\$32.12	36,000.00	\$1,156,320.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	900.00	\$1,300,689.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$521,558.16	1	\$521,558.00
	Abutment Single At-Grade	RF		900	\$4,867,876.00
CSC10.04-8	Abutment Single At-Grade	RF		Route Foot	\$5,992.90

Abutment Triple Lane At-Grade						
					alignment	3,840
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
	ALL QUANTITIES TYPICAL ABUTMENT 300 FT (Bottom Line Cost to be divided by the 300 RF = Cost/RF)					
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	1,914.00	\$2,010.00	
02310.01	Finish Grading	sy	\$0.97	36,018.00	\$34,937.00	
02315.01	Common Excavation	cy	\$7.55	5,220.00	\$39,411.00	
02315.00PB	Backfill Material (Imported)	cy	\$16.86	3,610.50	\$60,873.00	
02315.07	Structural Excavation	cy	\$19.27	1,435.50	\$27,662.00	
02370.07	Structure Backfill (Retaining Wall) - (Bridge)	cy	\$51.39	1,435.50	\$73,770.00	
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	435.00	\$13,972.00	
03210.01	Reinforcing Steel	lbs	\$1.09	21,315.00	\$23,233.00	
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16	3,088.50	\$991,903.00	
03300.42	CIPC, U-Wall Stems	cy	\$449.62	404.55	\$181,894.00	
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	435.00	\$21,302.00	
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1,435.50	\$38,687.00	
02455.02	Furnish Concrete Piling	lf	\$32.12	43,500.00	\$1,397,220.00	
02455.03	Drive Concrete Piling	ea	\$1,445.21	1,087.50	\$1,571,666.00	
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$537,424.80	1.0	\$537,424.80	
CSC10.04-9	Abutment Triple Lane At-Grade	RF	Route Foot	300.0	\$16,720	

At-Grade Station - Split Side Platform (270 Ft. L.)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER STATION (270 Ft. Long)					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	580.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	1,350.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	40.50	in section 40.01
02310.01	Finish Grading	sy	\$0.97	6,480.0	\$6,286.00
02315.01	Common Excavation	cy	\$7.55	240.0	\$1,812.00
02315.07	Structural Excavation	cy	\$19.27	40.5	\$780.00
02315.08	Structural Backfill	cy	\$18.62	240.0	\$4,469.00
16700.21	Pedestrian Crossing Signal	ea	\$51,677.45	2.0	\$103,355.00
16700.22	Pedestrian Crossing Pavement	sf	\$11.14	320.0	\$3,565.00
02620.02	Trackway Underdrains	lf	\$24.49	270.0	\$6,612.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	90.0	\$781.00
02720.05	Subballast	cy	\$40.15	81.0	\$3,252.00
03210.01	Reinforcing Steel	lbs	\$1.09	36,660.0	\$39,959.00
03300.13	CIPC, Walls	cy	\$449.62	63.3	\$28,461.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	120.0	\$78,000.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	60.0	\$45,283.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	2,970.0	\$77,487.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10500.01	Station Canopy with foundation	sf	\$281.02	4,000.0	\$1,124,080.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	2.0	\$112,405.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.02m	Station Furnishings, Side Platform (Allowance)	sta	\$573,575.18	1.0	\$573,575.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	3,240.0	\$186,689.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$143,081.20	1.0	\$143,081.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$330,572.64	1.0	\$330,573.00
	At-Grade Station - Single Side Platform	270 LF			\$3,085,345
CSC20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	LS			\$3,085,345

Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02455.02	Furnish Concrete Piling	lf	\$32.12	5,625.0	\$180,675.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	125.0	\$180,651.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	2,275.0	\$127,855.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (Including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	169,220.0	\$184,450.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	167.6	\$79,610.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	25.0	\$16,250.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	8,755.0	\$504,463.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$614,543.76	1.0	\$614,544.00
CSC20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	LS			\$5,735,742

Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02455.02	Furnish Concrete Piling	lf	\$32.12	5,625.0	\$180,675.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	125.0	\$180,651.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	1,375.0	\$77,275.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	164,220.0	\$179,000.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	167.6	\$79,610.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	0.0	\$0.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	7,855.0	\$452,605.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$599,647.20	1.0	\$599,647.00
CSC20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS			\$5,596,707

Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02455.02	Furnish Concrete Piling	lf	\$32.12	8,437.5	\$271,013.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	187.5	\$270,977.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	1,375.0	\$77,275.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	197,720.0	\$215,515.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	335.1	\$159,173.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	0.0	\$0.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	7,855.0	\$452,605.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$635,256.24	1.0	\$635,256.00
CSC20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS			\$5,929,058

Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (270 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02455.02	Furnish Concrete Piling	lf	\$32.12	8,437.5	\$271,013.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	187.5	\$270,977.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	2,275.0	\$127,855.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	202,720.0	\$220,965.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	335.1	\$159,173.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	25.0	\$16,250.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	8,755.0	\$504,463.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$650,152.80	1.0	\$650,153.00
CSC20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	LS			\$6,068,093

Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02455.02	Furnish Concrete Piling	lf	\$32.12	5,625.0	\$180,675.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	125.0	\$180,651.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	2,275.0	\$127,855.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	169,220.0	\$184,450.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	167.6	\$79,610.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	25.0	\$16,250.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	8,755.0	\$504,463.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$614,543.76	1.0	\$614,544.00
CSC20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	LS			\$7,169,678

ELEVATORS (40 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	7,913.4	\$8,626.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	32.7	\$24,679.00
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	13,583	\$74,027.00
14600.02a	Traction Elevators, (30 ft Rise)	ea	\$315,466.35	1.0	\$315,466.00
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$31,709.85	1.0	\$31,710.00
CSC20.07-1	ELEVATORS (40 ft Rise)	EA			\$454,508

ELEVATORS (50 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	9,891.8	\$10,782.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	40.9	\$30,868.00
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	16,978.8	\$92,534.00
14600.02b	Traction Elevators, (40 ft Rise)	ea	\$343,750.00	1.0	\$343,750.00
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$35,845.05	1.0	\$35,845.00
CSC20.07-2	ELEVATORS (50 ft Rise)	EA			\$513,779

ELEVATORS-RAPID RISE (70 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	13,848.5	\$15,095
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	57.2	\$43,170
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	23,770.3	\$129,548
14600.02c	Traction Elevators, (50 ft Rise)	ea	\$412,500.00	1.0	\$412,500
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$45,023.48	1.0	\$45,023.00
CSC20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	EA			\$645,336

ESCALATORS (15 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	6,330.7	\$6,900
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	26.2	\$19,774
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	10,866.4	\$59,222
14600.01a	Escalators, (15 ft Rise)	ea	\$401,502.63	1.0	\$401,503
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$36,554.93	1.0	\$36,555.00
CSC20.07-4	ESCALATORS (15 ft Rise)	EA			\$523,954

ESCALATORS (30 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	7,913.4	\$8,626
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	32.8	\$24,755
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	13,583.0	\$74,027
14600.01b	Escalators, (30 ft Rise)	ea	\$437,500.00	1.0	\$437,500
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$40,868.10	1.0	\$40,868.00
CSC20.07-5	ESCALATORS (30 ft Rise)	EA			\$585,776

ESCALATORS (60 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	15,826.8	\$17,251
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	65.6	\$49,510
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	27,166.0	\$148,055
14600.01c	Escalators, (60 ft Rise)	ea	\$525,000.00	1.0	\$525,000
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$55,486.20	1.0	\$55,486.00
CSC20.07-6	ESCALATORS (60 ft Rise)	EA			\$795,302

Demolition: Urban					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF (flat surface only Buildings NIC)</u>				
1300020	DEMOLITION: URBAN	RF	\$185.19	1.00	\$185
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$22.20	1.0	\$22.00
CSC40.01-1	Demolition: Urban	RF			\$207

Demolition: Rural					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF (flat surface only Buildings NIC)</u>				
1300025	DEMOLITION: RURAL	RF	\$19.85	1.00	\$20
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$2.20	1.0	\$2.00
CSC40.01-2	Demolition: Rural	RF			\$22

Demolition: Residential					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	All quantities per RF (flat surface only Buildings NIC)				
1300030	DEMOLITION: RESIDENTIAL	RF	\$47.41	1.00	\$47
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$5.64	1.0	\$6.00
CSC40.01-3	Demolition: Residential	RF			\$53

Clear & Grub					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF</u> Included in guideway	0	\$0.00	-	in guideway
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	Is	\$0.00	1.0	\$0.00
CSC40.01-4	Clear & Grub	RF			in guideway

Earthwork					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF</u>				
	Included in guideway	0	\$0.00	-	in guideway
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$0.00	1.0	\$0.00
CSC40.01-5	Earthwork	RF			in guideway
Clear and Grubbing					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES assume guideway width as 30 ft				
02230.02	Clearing & Grubbing, Moderate	sf	1.05	30	31.50
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	26.95	1	26.95
	Maint.of Traffic (2%) + Mob/Demob (in sect 4.08) + Minor Util. (4%)	ls	3.51	1	3.51
CSC40.01-8	Clear and Grubbing			1	RF
					\$61.96

Building Mitigation (Underpinning, etc)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Based on Muni SF				
02370.30s	Building Mitigation (underpinning)	LS	\$4,028,395.00	\$1	\$4,028,395
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$644,543.20	1.0	\$644,543.00
CSC40.01-6	Building Mitigation (Underpinning, etc)	LS			\$4,672,938

Building Mitigation (Parking Structure Demolition & Reconstruction)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02370.30s1	<u>Based on Muni SF</u> Building Mitigation (Parking Garage Demolition & reconstruction)	SF	\$458.86	1	\$459
	Maint. of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$73.44	1.0	\$73.00
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)	SF			\$532

UTILITIES BASED ON 1992 INFORMATION					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300000	ALL QUANTITIES BASED ON RF COST BASED ON 1992 STUDY INFORMATION				
	UTILITIES: UPDATE FROM 1992 STUDY	RF	\$75.00	1.00	\$75.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$6.00	1.0	\$6.00
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION	RF			\$81

Utility: URBAN TUNNEL/AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300001	ALL QUANTITIES BASED ON RF UTILITIES: URBAN TUNNEL/AT GRADE	RF	\$3,000.00	1.00	\$3,000.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$240.00	1.0	\$240.00
CSC40.02-2	Utility: URBAN TUNNEL/AT GRADE	RF			\$3,240

Utility: RURAL AERIAL					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300002	ALL QUANTITIES BASED ON RF				
	UTILITIES: RURAL AERIAL	RF	\$38.00	1.00	\$38.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3.04	1.0	\$3.00
CSC40.02-3	Utility: RURAL AERIAL	RF			\$41

Utility: RURAL TUNNEL/AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300003	ALL QUANTITIES BASED ON RF UTILITIES: RURAL TUNNE;/AT GRADE	RF	\$1,500.00	1.00	\$1,500.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$120.00	1.0	\$120.00
CSC40.02-4	Utility: RURAL TUNNEL/AT GRADE	RF			\$1,620

Utility: RESIDENTIAL AERIAL					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300004	ALL QUANTITIES BASED ON RF UTILITIES: RESIDENTIAL AERIAL	RF	\$75.00	1.00	\$75.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$6.00	1.0	\$6.00
CSC40.02-5	Utility: RESIDENTIAL AERIAL	RF			\$81

Utility: RESIDENTIAL TUNNEL/AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300005	ALL QUANTITIES BASED ON RF UTILITIES: RESIDENTIAL TUNNEL/AT GRADE	RF	\$2,250.00	1.00	\$2,250.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$180.00	1.0	\$180.00
CSC40.02-6	Utility: RESIDENTIAL TUNNEL/AT GRADE	RF			\$2,430

Utility: REMOVALS					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300006	ALL QUANTITIES BASED ON RF UTILITIES: REMOVALS	RF	\$50.00	1.00	\$50.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$4.00	1.0	\$4.00
CSC40.02-7	Utility: REMOVALS	RF			\$54

MANAGED LANE ELECTRICAL AND COMMUNICATION UTILITIES					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300016	Managed Lane Utility	ls	\$145,700,000.00	1.00	\$145,700,000.00
	Deduct 10% for replication in MK estimate	10%			-\$14,570,000.00
	Assume 15% share by utility	15%	\$145,700,000.00		-\$21,855,000.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$8,742,000.00	INC ABOVE	\$0.00
CSC40.02-8	MANAGED LANE ELECTRICAL AND COMMUNICATION UTILITIES	LS			\$109,275,000

SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300017	SECTION 1: KAPOLEI ELECTRICAL AND OTHER COMMUNICATION UTILIT	ls	\$13,521,113.00	1.00	\$13,521,113.00
	Deduct 10% for replication in MK estimate	10%			-\$1,352,111.30
	Assume 15% share by utility	15%	\$13,521,113.00		-\$2,028,166.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$811,266.78	INC ABOVE	\$0.00
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	LS			\$10,140,835

SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300018	SECTION 1: SARATOGA ELECTRICAL AND OTHER COMMUNICATION UTIL	ls	\$18,988,069.00	1.00	\$18,988,069.00
	Deduct 10% for replication in MK estimate	10%			-\$1,898,806.90
	Assume 15% share by utility	15%	\$18,988,069.00		-\$2,848,210.35
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,139,284.14	INC ABOVE	\$0.00
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	LS			\$14,241,052

SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300018a	SECTION 1: MOS 1 SARATOGA ELECTRICAL AND OTHER COMMUNICATI	ls	\$5,869,500.00	1.00	\$5,869,500.00
	Deduct 10% for replication in MK estimate	10%			-\$586,950.00
	Assume 15% share by utility	15%	\$5,869,500.00		-\$880,425.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$352,170.00	INC ABOVE	\$0.00
CSC40.02-10A	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	LS			\$4,402,125

SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300019	SECTION 1: GEIGER/FORT WEAVER ELECTRICAL AND OTHER COMMUN	ls	\$11,447,756.00	1.00	\$11,447,756.00
	Deduct 10% for replication in MK estimate	10%			-\$1,144,775.60
	Assume 15% share by utility	15%	\$11,447,756.00		-\$1,717,163.40
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$686,865.36	INC ABOVE	\$0.00
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	LS			\$8,585,817

SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300020A	SECTION 2: FARRINGTON ELECTRICAL AND OTHER COMMUNICATION U	ls	\$37,721,644.00	1.00	\$37,721,644.00
	Deduct 10% for replication in MK estimate	10%			-\$3,772,164.40
	deduct from MK estimate FG 26				-\$7,440,300.00
	deduct from MK estimate FG 27				-\$8,222,000.00
	Assume 15% share by utility	15%	\$37,721,644.00		-\$5,658,246.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,010,314.64	INC ABOVE	\$0.00
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	LS			\$12,628,933

SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300021	SECTION 3: SALT LAKE BLVD/NORTH KING ST ELECTRICAL AND OTHER	ls	\$21,426,413.00	1.00	\$21,426,413.00
	Deduct 10% for replication in MK estimate	10%			-\$2,142,641.30
	Assume 15% share by utility	15%	\$21,426,413.00		-\$3,213,961.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,285,584.78	INC ABOVE	\$0.00
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	LS			\$16,069,810

SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300022	SECTION 3: SALT LAKE BLVD / DILLINGHAM ELECTRICAL AND OTHER CO	ls	\$20,652,955.00	1.00	\$20,652,955.00
	Deduct 10% for replication in MK estimate	10%			-\$2,065,295.50
	Assume 15% share by utility	15%	\$20,652,955.00		-\$3,097,943.25
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,239,177.30	INC ABOVE	\$0.00
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	LS			\$15,489,716

SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300023	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT AT GRADE ELECTRICAL	ls	\$147,512,318.00	1.00	\$147,512,318.00
	Deduct 10% for replication in MK estimate	10%			-\$14,751,231.80
	Assume 15% share by utility	15%	\$147,512,318.00		-\$22,126,847.70
	Maint.of Traffic (2%) + Mob/Demob (8%) + Minor Util. (0%)	ls	\$8,850,739.08	INC ABOVE	\$0.00
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS			\$110,634,239

SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300024	SECTION 3: MAKAI SIDE OF AIRPORT VIADUCT ELEVATED ELECTRICAL	ls	\$121,262,318.00	1.00	\$121,262,318.00
	Deduct 10% for replication in MK estimate	10%			-\$12,126,231.80
	Assume 15% share by utility	15%	\$121,262,318.00		-\$18,189,347.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$7,275,739.08	INC ABOVE	\$0.00
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	LS			\$90,946,739

SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300025A	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT ELECTRICAL AND OTHE	ls	\$29,851,523.00	1.00	\$29,851,523.00
	Deduct 10% for replication in MK estimate	10%			-\$2,985,152.30
	Assume 15% share by utility	15%	\$29,851,523.00		-\$4,477,728.45
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,791,091.38	INC ABOVE	\$0.00
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS			\$22,388,642

SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300026	SECTION 3: AOLELE ST ELECTRICAL AND OTHER COMMUNICATION UTIL	ls	\$28,808,072.00	1.00	\$28,808,072.00
	Deduct 10% for replication in MK estimate	10%			-\$2,880,807.20
	Assume 15% share by utility	15%	\$28,808,072.00		-\$4,321,210.80
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,728,484.32	INC ABOVE	\$0.00
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST	LS			\$21,606,054

SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300027	SECTION 4: DILLINGHAM ST ELECTRICAL AND OTHER COMMUNICATION	ls	\$94,605,000.00	1.00	\$94,605,000.00
	Deduct 10% for replication in MK estimate	10%			-\$9,460,500.00
	Assume 15% share by utility	15%	\$94,605,000.00		-\$14,190,750.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,676,300.00	INC ABOVE	\$0.00
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	LS			\$70,953,750

SECTION 4: ELECTRICAL & COMMUNICATION- KING ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300028	SECTION 4: KING ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	ls	\$65,100,000.00	1.00	\$65,100,000.00
	Deduct 10% for replication in MK estimate	10%			-\$6,510,000.00
	Assume 15% share by utility	15%	\$65,100,000.00		-\$9,765,000.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3,906,000.00	INC ABOVE	\$0.00
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	LS			\$48,825,000

SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300029	SECTION 4: MIDDLE ST ELECTRICAL AND OTHER COMMUNICATION UTIL	ls	\$399,000.00	1.00	\$399,000.00
	Deduct 10% for replication in MK estimate	10%			-\$39,900.00
	Assume 15% share by utility	15%	\$399,000.00		-\$59,850.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$23,940.00	INC ABOVE	\$0.00
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	LS			\$299,250

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300030A	SECTION 5: NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	ls	\$283,146,900.00	1.00	\$283,146,900.00
	Deduct 10% for replication in MK estimate	10%			-\$28,314,690.00
	Assume 15% share by utility	15%	\$283,146,900.00		-\$42,472,035.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$16,988,814.00	INC ABOVE	\$0.00
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS			\$212,360,175

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300031	SECTION 5: DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BL	ls	\$285,365,038.00	1.00	\$285,365,038.00
	Deduct 10% for replication in MK estimate	10%			-\$28,536,503.80
	Assume 15% share by utility	15%	\$285,365,038.00		-\$42,804,755.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$17,121,902.28	INC ABOVE	\$0.00
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS			\$214,023,779

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300032	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL	ls	\$264,474,637.00	1.00	\$264,474,637.00
	Deduct 10% for replication in MK estimate	10%			-\$26,447,463.70
	Assume 15% share by utility	15%	\$264,474,637.00		-\$39,671,195.55
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$15,868,478.22	INC ABOVE	\$0.00
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$198,355,978

SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300032a	SECTION 5: MOS NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECT	ls	\$12,663,952.00	1.00	\$12,663,952.00
	Deduct 10% for replication in MK estimate	10%			-\$1,266,395.20
	Assume 15% share by utility	15%	\$12,663,952.00		-\$1,899,592.80
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$759,837.12	INC ABOVE	\$0.00
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$9,497,964

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300033	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	ls	\$266,692,776.00	1.00	\$266,692,776.00
	Deduct 10% for replication in MK estimate	10%			-\$26,669,277.60
	Assume 15% share by utility	15%	\$266,692,776.00		-\$40,003,916.40
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$16,001,566.56	INC ABOVE	\$0.00
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$200,019,582

SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300033a	SECTION 5: MOS DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI	ls	\$14,882,091.00	1.00	\$14,882,091.00
	Deduct 10% for replication in MK estimate	10%			-\$1,488,209.10
	Assume 15% share by utility	15%	\$14,882,091.00		-\$2,232,313.65
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$892,925.46	INC ABOVE	\$0.00
CSC40.02-25A	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$11,161,568

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300034	SECTION 5: NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD EL	ls	\$265,432,233.00	1.00	\$265,432,233.00
	Deduct 10% for replication in MK estimate	10%			-\$26,543,223.30
	Assume 15% share by utility	15%	\$265,432,233.00		-\$39,814,834.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$15,925,933.98	INC ABOVE	\$0.00
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	LS			\$199,074,175

Utility Removal (all sizes)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES BASED ON AVERAGE TRENCH WIDTH 1M X 1.5M DEPTH x 1M LENGTH					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.2	\$1.00
02260.24PB	Trench Shoring	sf	\$3.15	8.0	\$25.00
02315.06	Trench Excavation	cy	\$13.65	0.4	\$5.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02315.08PB	Trench Backfill	cy	\$12.04	0.4	\$5.00
02315.00pb	Backfill Material (imported)	cy	\$16.86	0.2	\$3.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	0.5	\$4.00
02720.02	Aggregate Base	cy	\$30.91	0.1	\$3.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.05	\$8.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$5.66	1.0	\$6.00
CSC40.02-27	Utility Removal (all sizes)	LF			\$73

20 ea 4" PVC, concrete encased

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	4.48	5.0	2
		shoring req'd > value			3.0
	<i>Reference SCVTA Contract C320 Bid Dec 1998</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.8	\$22.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02580.03pb	Ductbank 20-4" PVC Concrete	lf	\$380.36	1.0	\$380.00
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.14	\$24.09
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$55.31	1.0	\$55.00
CSC40.02-28	20 ea 4" PVC, concrete encased	LF			\$608

40 ea 4" CPC, concrete encased

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.48	5.0	2
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.8	\$22.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02580.07pb	Ductbank 40-4" PVC Concrete	lf	\$674.68	1.0	\$675.00
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.14	\$24.09
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$84.81	1.0	\$85.00
CSC40.02-29	40 ea 4" CPC, concrete encased	LF			\$933

WATER PIPE (DIP) UP TO 8 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02510.01pb	Water Pipe up to 8 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$47.39	1.0	\$47.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$6.60	1.0	\$7.00
CSC40.02-30	WATER PIPE (DIP) UP TO 8 INCH Dia	LF			\$85

WATER PIPE (DIP) UP TO 12 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.00	2.5	1.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.3	\$8.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02510.02pb	Water Pipe 12 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$64.62	1.0	\$65.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.10	\$17.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$8.67	1.0	\$9.00
CSC40.02-31	WATER PIPE (DIP) UP TO 12 INCH Dia	LF			\$111

WATER PIPE (DIP) UP TO 16 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.33	3.3	1.33
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.4	\$11.00
02260.24PB	Trench Shoring	sf	\$3.15	6.6	\$21.00
02510.03pb	Water Pipe 16 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$90.47	1.0	\$90.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$13.12	1.0	\$13.00
CSC40.02-32	WATER PIPE (DIP) UP TO 16 INCH Dia	LF			\$167

WATER PIPE (DIP) UP TO 24 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.00	5.0	2.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.7	\$19.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02510.04pb	Water Pipe 24 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$160.84	1.0	\$161.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.13	\$22.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$21.08	1.0	\$21.00
CSC40.02-33	WATER PIPE (DIP) UP TO 24 INCH Dia	LF			\$269

WATER PIPE (DIP) UP TO 36 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	5.00	7.5	3.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.6	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.4	\$38.00
02260.24PB	Trench Shoring	sf	\$3.15	15.0	\$47.00
02510.05pb	Water Pipe 36 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$193.01	1.0	\$193.00
02720.02	Aggregate Base	cy	\$30.91	0.08	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.16	\$28.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$27.37	1.0	\$27.00
CSC40.02-34	WATER PIPE (DIP) UP TO 36 INCH Dia	LF			\$349

STORM DRAIN PIPE (RCP CLASS 3) UP TO 18 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.50	3.8	1.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.5	\$13.00
02260.24PB	Trench Shoring	sf	\$3.15	7.6	\$24.00
02510.06pb	STORM DRAIN PIPE RCP CLASS 4 up to 18 Inch excludes Exc, Backfill, Shor	lf	\$46.64	1.0	\$47.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$9.90	1.0	\$10.00
CSC40.02-35	STORM DRAIN PIPE (RCP CLASS 3) UP TO 18 INCH Dia	LF			\$127

STORM DRAIN PIPE (RCP CLASS 3) UP TO 24 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	4.00	5.0	2.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.7	\$19.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02510.07pb	STORM DRAIN PIPE RCP CLASS 4 up to 24 Inch excludes Exc, Backfill, Shor	lf	\$62.73	1.0	\$63.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.13	\$22.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$12.75	1.0	\$13.00
CSC40.02-36	STORM DRAIN PIPE (RCP CLASS 3) UP TO 24 INCH Dia	LF			\$163

STORM DRAIN PIPE (RCP CLASS 3) UP TO 30 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.50	6.3	2.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.1	\$30.00
02260.24PB	Trench Shoring	sf	\$3.15	12.6	\$40.00
02510.08pb	STORM DRAIN PIPE RCP CLASS 4 up to 30 Inch excludes Exc, Backfill, Sho	lf	\$118.22	1.0	\$118.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.15	\$26.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$19.51	1.0	\$20.00
CSC40.02-37	STORM DRAIN PIPE (RCP CLASS 3) UP TO 30 INCH Dia	LF			\$250

STORM DRAIN PIPE (RCP CLASS 3) UP TO 48 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	6.00	10.0	4.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.7	\$5.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	2.2	\$59.00
02260.24PB	Trench Shoring	sf	\$3.15	20.0	\$63.00
02510.09pb	STORM DRAIN PIPE RCP CLASS 4 up to 48 Inch excludes Exc, Backfill, Shor	lf	\$254.91	1.0	\$255.00
02720.02	Aggregate Base	cy	\$30.91	0.09	\$3.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.19	\$33.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$36.47	1.0	\$36.00
CSC40.02-38	STORM DRAIN PIPE (RCP CLASS 3) UP TO 48 INCH Dia	LF			\$465

SEWER PIPE (RCP CLASS 5) UP TO 15 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.25	3.1	1.25
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.4	\$11.00
02260.24PB	Trench Shoring	sf	\$3.15	6.2	\$20.00
02530.01pb	Sewer Pipe (RCP CLASS 5) up to 15 Inch excludes Exc, Backfill, Shoring, test	lf	\$47.04	1.0	\$47.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.10	\$17.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$9.20	1.0	\$9.00
CSC40.02-39	SEWER PIPE (RCP CLASS 5) UP TO 15 INCH Dia	LF			\$117

SEWER PIPE (VCP C425) UP TO 18 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.50	3.8	1.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.5	\$13.00
02260.24PB	Trench Shoring	sf	\$3.15	7.6	\$24.00
02530.02pb	Sewer Pipe (RCP CLASS 5) up to 18 Inch excludes Exc, Backfill, Shoring, test	lf	\$54.43	1.0	\$54.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$10.50	1.0	\$11.00
CSC40.02-40	SEWER PIPE (VCP C425) UP TO 18 INCH Dia	LF			\$135

SEWER PIPE (VCP C425) UP TO 21 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.75	4.4	1.75
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.6	\$16.00
02260.24PB	Trench Shoring	sf	\$3.15	8.8	\$28.00
02530.03pb	Sewer Pipe (RCP CLASS 5) up to 21 Inch excludes Exc, Backfill, Shoring, test	lf	\$64.57	1.0	\$65.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.12	\$21.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$12.22	1.0	\$12.00
CSC40.02-41	SEWER PIPE (VCP C425) UP TO 21 INCH Dia	LF			\$156

SEWER PIPE (RCP CLASS 5) UP TO 24 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES BASED ON TRENCH DIMENSIONS		TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.50	6.3	2.50
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.1	\$30.00
02260.24PB	Trench Shoring	sf	\$3.15	12.6	\$40.00
02530.04pb	Sewer Pipe (RCP CLASS 5) up to 24 Inch excludes Exc, Backfill, Shoring, test	lf	\$72.88	1.0	\$73.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.15	\$26.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$15.68	1.0	\$16.00
CSC40.02-42	SEWER PIPE (RCP CLASS 5) UP TO 24 INCH Dia	LF			\$201

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 6 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.50	1.3	0.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.1	\$3.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02515.01pb	PLASTIC drainage Pipe up to 6 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$31.59	1.0	\$32.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.08	\$14.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$5.06	1.0	\$5.00
CSC40.02-43	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 6 INCH	LF			\$65

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 8 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02515.02pb	PLASTIC drainage Pipe up to 8 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$44.52	1.0	\$45.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$6.43	1.0	\$6.00
CSC40.02-44	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 8 INCH Dia	LF			\$82

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 10 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.83	2.1	0.83
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02515.03pb	PLASTIC drainage Pipe up to 10 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$68.21	1.0	\$68.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$8.40	1.0	\$8.00
CSC40.02-45	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 10 INCH Dia	LF			\$107

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	3.67	4.2	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.6	\$16.00
02260.24PB	Trench Shoring	sf	\$3.15	8.4	\$26.00
02515.04pb	PLASTIC drainage Pipe up to 20 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$129.25	1.0	\$129.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.12	\$21.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$17.48	1.0	\$17.00
CSC40.02-46	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF			\$223

MANHOLE (SEWER, STORM, GAS, WATER) 4' DIA X 6' DEEP

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		6	8.00	7.0	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	24.0	\$85.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2.7	\$20.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	12.4	\$334.00
02260.24PB	Trench Shoring	sf	\$3.15	84.0	\$265.00
02630.07pb	Manhole 6' x 6' (inc Shoring, Exc and Backfill)	EA	\$8,603.63	1.0	\$8,604.00
02720.02	Aggregate Base	cy	\$30.91	0.74	\$23.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.55	\$267.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$815.97	1.0	\$816.00
CSC40.02-47	MANHOLE (SEWER, STORM, GAS, WATER) 4' DIA X 6' DEEP	EA			\$10,416

CATCHBASIN (4' DEEP CIP)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		6	6.00	4.0	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	24.0	\$85.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2.7	\$20.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	5.3	\$143.00
02260.24PB	Trench Shoring	sf	\$3.15	48.0	\$151.00
02630.08pb	Catch Basin (4' Deep CIP)	EA	\$3,171.30	1.0	\$3,171.00
02720.02	Aggregate Base	cy	\$30.91	0.56	\$17.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.16	\$200.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$322.04	1.0	\$322.00
CSC40.02-48	CATCHBASIN (4' DEEP CIP)	EA			\$4,111

WATER VALVE RELOCATION

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		6	6.00	4.0	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	24.0	\$85.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2.7	\$20.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	5.3	\$143.00
02260.24PB	Trench Shoring	sf	\$3.15	48.0	\$151.00
02630.09pb	Water Valve Relocation (includes box and existing valve)	EA	\$3,203.99	1.0	\$3,204.00
02720.02	Aggregate Base	cy	\$30.91	0.56	\$17.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.16	\$200.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$324.84	1.0	\$325.00
CSC40.02-49	WATER VALVE RELOCATION	EA			\$4,147

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.67	4.2	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.6	\$16.00
02260.24PB	Trench Shoring	sf	\$3.15	8.4	\$26.00
02515.04pb	PLASTIC drainage Pipe up to 20 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$129.25	1.0	\$129.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.12	\$21.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$17.48	1.0	\$17.00
CSC40.02-50	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF			\$223

Gas Pipe (1-4" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.33	0.8	0.33
		shoring req'd > value			3.0
	<i>Reference Phoenix LRT Study 1999</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.1	\$3.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.01pb	Gas Pipe (1-4" Dia) Steel Pipe Exc & Backfill	lf	\$35.33	1.0	\$35.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.08	\$14.00
	Assume 15% share by utility				
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$6.23	1.0	\$6.00
	Assume 15% share by utility	0.15	\$68.00		-\$10
CSC40.02-51	Gas Pipe (1-4" Dia) Plastic Pipe Exc & Backfill	LF			\$58

Gas Pipe (6" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.50	1.3	0.50
		shoring req'd > value			3.0
	<i>Reference Phoenix LRT Study 1999</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.1	\$3.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.02pb	Gas Pipe (6" Dia) Steel Pipe Exc & Backfill	lf	\$55.35	1.0	\$55.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.08	\$14.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$8.25	1.0	\$8.00
	Assume 15% share by utility	0.15	\$90.00		-\$14
CSC40.02-52	Gas Pipe (6" Dia) Plastic Pipe Exc & Backfill	LF			\$76

Gas Pipe (8" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.03pb	Gas Pipe (8" Dia) Steel Pipe Exc & Backfill	lf	\$78.42	1.0	\$78.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$10.87	1.0	\$11.00
	Assume 15% share by utility	0.15	\$119.00		-\$18
CSC40.02-53	Gas Pipe (8" Dia) Plastic Pipe Exc & Backfill	LF			\$101

Gas Pipe (10" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.83	2.1	0.83
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.04pb	Gas Pipe (10" Dia) Steel Pipe Exc & Backfill	lf	\$125.46	1.0	\$125.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$15.58	1.0	\$16.00
	Assume 15% share by utility	0.15	\$171.00		-\$26
CSC40.02-54	Gas Pipe (10" Dia) Plastic Pipe Exc & Backfill	LF			\$146

Gas Pipe (16" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.33	3.3	1.33
		shoring req'd > value			3.0
	<i>Reference Phoenix LRT Study 1999</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.4	\$11.00
02260.24PB	Trench Shoring	sf	\$3.15	6.6	\$21.00
02550.05pb	Gas Pipe (16" Dia) Steel Pipe Exc & Backfill	lf	\$178.97	1.0	\$179.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$24.33	1.0	\$24.00
	Assume 15% share by utility	0.15	\$266.00		-\$40
CSC40.02-55	Gas Pipe (16" Dia) Plastic Pipe Exc & Backfill	LF			\$227

Ductbank 2-4" PVC Conduits w 220 kv line

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.01pb	Ductbank 2-4" PVC Conduits Concrete w 220 kv line	lf	\$86.47	1.0	\$86.00
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.04	\$321.00
02720.02	Aggregate Base	cy	\$30.91	0.09	\$3.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.67	\$115.29
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$54.00	1.0	\$54.00
CSC40.02-56	Ductbank 2-4" PVC Conduits w 220 kv line	LF			\$594.00

Ductbank 16-3" PVC Conduits encased in concrete

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
	Reference SCVTA Contract C320 Bid Dec 98				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.02pb	Ductbank 16-3" PVC Conduits Encased in Concrete	lf	\$246.60	1.0	\$246.60
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.30
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$35.90	1.0	\$36
CSC40.02-57	Ductbank 16-3" PVC Conduits encased in concrete	LF			\$395

Ductbank 1-4", 2-1/4" PVC Conduits w FO line

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.04pb	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	lf	\$64.86	1.0	\$64.86
02580.97pb	Ductbank Pullbox 3 1/2"	ea	\$286.79	0.01	\$2.87
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$9.98	1.0	\$10
CSC40.02-58	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	LF			\$110

Ductbank 16-4" PVC Conduits Encased in Concrete

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
	<i>Reference SCVTA Contract C320 Bid Dec 98</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.06pb	Ductbank 16-4" PVC Conduits Encased in Concrete	lf	\$270.94	1.0	\$270.94
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.30
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$38.33	1.0	\$38.33
CSC40.02-59	Ductbank 16-4" PVC Conduits Encased in Concrete	LF			\$421

Ductbank 4-5" PVC Conduits Encased in Concrete

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
	<i>Reference SCVTA Contract C320 Bid Dec 98</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.05pb	Ductbank 4-5" PVC Conduits Encased in Concrete	lf	\$88.26	1.0	\$88.26
02580.97pb	Ductbank Pullbox 3 1/2"	ea	\$286.79	0.01	\$2.87
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$12.32	1.0	\$12
CSC40.02-60	Ductbank 4-5" PVC Conduits Encased in Concrete	LF			\$135

Pump Station					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02530.09pb	ALL QUANTITIES BASED ON Lump Sum	TRENCH DIMENSIONS			
		L (M)	W (M)	D (M)	
		0.00	0.00	0.00	
		shoring req'd > value		0.00	
	Reference <i>Ralston Contract 1998</i>				
	Pump Station (Ref Ralston Contract Phase B bid 4/98)	ls	\$698,430	1.00	\$698,430
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	69843.00	1.00	\$69,843
CSC40.02-61	Pump Station	LS			\$768,273

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300042	SECTION 5: DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	ls	\$266,397,819.00	1.00	\$266,397,819.00
	Deduct 10% for replication in MK estimate	10%			-\$26,639,781.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$19,180,642.97	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$266,397,819.00		-\$39,959,672.85
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	LS			\$199,798,364

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043	SECTION 5:NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$179,014,689.00	1.00	\$179,014,689.00
	Deduct 10% for replication in MK estimate	10%			taken in unit cost
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$14,321,175.12	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$179,014,689.00		-\$26,852,203.35
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$152,162,486

SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043a	SECTION 5:MOS 2a : NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLA	ls	\$43,858,851.00	1.00	\$43,858,851.00
	Deduct 10% for replication in MK estimate	10%			-\$4,385,885.10
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3,157,837.27	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$39,472,965.90		-\$5,920,944.89
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$33,552,021

SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043a1	SECTION 5:MOS 2a : Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$44,824,437.00	1.00	\$44,824,437.00
	Deduct 10% for replication in MK estimate	10%			-\$4,482,443.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3,227,359.46	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$40,341,993.30		-\$6,051,299.00
CSC40.02-63a1	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$34,290,694

SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$68,632,937.00	1.00	\$68,632,937.00
	Deduct 10% for replication in MK estimate	10%			-\$6,863,293.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$4,941,571.46	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$61,769,643.30		-\$9,265,446.50
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$52,504,197

SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$69,598,523.00	1.00	\$69,598,523.00
	Deduct 10% for replication in MK estimate	10%			-\$6,959,852.30
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,011,093.66	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$62,638,670.70		-\$9,395,800.61
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$53,242,870

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300044	SECTION 5:DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$179,980,275.00	1.00	\$179,980,275.00
	Deduct 10% for replication in MK estimate	10%			taken in unit cost
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$14,398,422.00	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$179,980,275.00		-\$26,997,041.25
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$152,983,234

SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300044a	SECTION 5: MOS 3 NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$163,171,689.00	1.00	\$163,171,689.00
	Deduct 10% for replication in MK estimate	10%			-\$16,317,168.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$11,748,361.61	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$146,854,520.10		-\$22,028,178.02
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$124,826,342

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300045	SECTION 5: NORTH KING / BERETANIA ST / S KING ST	ls	\$79,998,657.00	1.00	\$79,998,657.00
	Deduct 10% for replication in MK estimate	10%			-\$7,999,865.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,759,903.30	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$71,998,791.30		-\$10,799,818.70
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	LS			\$61,198,973

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300046	SECTION 5: DILLINGHAM / BERETANIA ST / S KING ST	ls	\$82,109,696.00	1.00	\$82,109,696.00
	Deduct 10% for replication in MK estimate	10%			-\$8,210,969.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,911,898.11	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$73,898,726.40		-\$11,084,808.96
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	LS			\$62,813,917

SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300041	SECTION 5: WAIKIKI SPUR	ls	\$79,249,319.00	1.00	\$79,249,319.00
	Deduct 10% for replication in MK estimate	10%			-\$7,924,931.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,705,950.97	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$71,324,387.10		-\$10,698,658.07
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	LS			\$60,625,729

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300032b	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL	ls	\$218,945,054.00	1.00	\$218,945,054.00
	Deduct 10% for replication in MK estimate	10%			-\$21,894,505.40
	Assume 15% share by utility	15%	\$218,945,054.00		-\$32,841,758.10
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$13,136,703.24	INC ABOVE	\$0.00
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	LS			\$164,208,791

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300033b	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	ls	\$221,163,193.00	1.00	\$221,163,193.00
	Deduct 10% for replication in MK estimate	10%			-\$22,116,319.30
	Assume 15% share by utility	15%	\$221,163,193.00		-\$33,174,478.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$13,269,791.58	INC ABOVE	\$0.00
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	LS			\$165,872,395

Hazardous Material Mitigation: Petrochemical Contaminated Excavation

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02315.04	<p>Item quantities based on provided by PBQD cost based on quote by Hawaiian Remediation and Recycling (1994 cost escalated to 2006\$) Excavation, Haul and Thermal Disposal of Hydrocarbon Contaminated Soil</p>	TON	\$184.67	1.0	\$185.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	inc above	1.0	\$0.00
CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	TON	TON		\$185.00

Hazardous Material Mitigation: Groundwater treatment

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Item quantities based on provided by PBQD				
02315.04a	Collect, Treat and Dispose of Hydrocarbon Contaminated Groundwater	gal	\$0.80	1.0	\$0.80
	Baker Tanks	allow	\$0.05	1.0	\$0.05
	Pumps	allow	\$0.02	1.0	\$0.02
	Straw	allow	\$0.01	1.0	\$0.01
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$0.12	1.0	\$0.12
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	GAL			\$1.00

Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300040	<p>Cost per section based on allowance for unknown</p> <p>BIOLOGICAL/ARCHEOLOGICAL/HISTORICAL MONITORING</p>	ALLOW	\$2,500,000.00	1.0	\$2,500,000.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$0.00	1.0	\$0.00
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	ALLOW			\$2,500,000.00

Street Construction Adj. to LRT - One Lane

lane

12

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	1.3	\$1.00
02315.01	Common Excavation	cy	\$7.55	0.4	\$3.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	1.3	\$11.00
02720.01	Aggregate Subbase	cy	\$24.72	0.2	\$5.00
02720.02	Aggregate Base	cy	\$30.91	0.3	\$9.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.4	\$69.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$36.26	1.0	\$36.00
CSC40.06-1	Street Construction Adj. to LRT - One Lane	RF		Route Foot	\$295.00

Turn Pocket (100 ft)

lane

12

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	100.0	\$353.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	133.3	\$984.00
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	\$0.00
02220.24	Remove Concrete Curb	lf	\$5.13	100.0	\$513.00
02310.01	Finish Grading	sy	\$0.97	133.3	\$129.00
02315.01	Common Excavation	cy	\$7.55	59.1	\$446.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	133.3	\$1,157.00
02720.01	Aggregate Subbase	cy	\$24.72	18.7	\$462.00
02720.02	Aggregate Base	cy	\$30.91	18.7	\$578.00
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	39.1	\$3,364.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	110.0	\$2,756.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	0.0	\$0.00
02370.25	Traffic Striping	lf	\$0.02	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.500	\$3,965.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$2,508.66	1.0	\$2,509.00
CSC40.06-1a	Turn Pocket (100 ft)	RF	Route Foot	100.0	\$204.28

Street Construction Adj. to LRT - Two Lane

lane

24

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	2.7	\$3.00
02315.01	Common Excavation	cy	\$7.55	0.9	\$7.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	2.7	\$23.00
02720.01	Aggregate Subbase	cy	\$24.72	0.4	\$10.00
02720.02	Aggregate Base	cy	\$30.91	0.6	\$19.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.8	\$138.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$50.54	1.0	\$51.00
CSC40.06-2	Street Construction Adj. to LRT - Two Lane	RF	Route Linear Foot		\$412.00

Street Construction Adj. to LRT - Three Lane

lane

36

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	4.0	\$4.00
02315.01	Common Excavation	cy	\$7.55	1.3	\$10.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	4.0	\$35.00
02720.01	Aggregate Subbase	cy	\$24.72	0.7	\$17.00
02720.02	Aggregate Base	cy	\$30.91	0.8	\$25.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.2	\$206.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint. of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$64.12	1.0	\$64.00
CSC40.06-3	Street Construction Adj. to LRT - Three Lane	RF	Route Linear Foot		\$522.00

Street Construction Adj. to LRT - Four Lane

lane

48

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	5.3	\$5.00
02315.01	Common Excavation	cy	\$7.55	1.8	\$14.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	5.3	\$46.00
02720.01	Aggregate Subbase	cy	\$24.72	0.9	\$22.00
02720.02	Aggregate Base	cy	\$30.91	1.0	\$31.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.6	\$275.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$77.56	1.0	\$78.00
CSC40.06-4	Street Construction Adj. to LRT - Four Lane	RF	Route Linear Foot		\$632.00

Landscaping & Urban Design: Urban					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
1300007	LANDSCAPING & URBAN DESIGN: URBAN	RF	\$172.50	1.0	\$173.00
	Maint.of Traffic (1.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$13.84	1.0	\$14.00
CSC40.06-10	Landscaping & Urban Design: Urban	RF	Route Foot		\$187.00

Landscaping & Urban Design: Rural					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
1300010	LANDSCAPING & URBAN DESIGN: RURAL	RF	\$86.25	1.0	\$86.00
	Maint.of Traffic (1.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$6.88	1.0	\$7.00
CSC40.06-11	Landscaping & Urban Design: Rural	RF	Route Foot		\$93.00

Landscaping & Urban Design Based on 1992 Study					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
1300015	LANDSCAPING & URBAN DESIGN: BASED ON 1992 Study	RF	\$115.00	1.0	\$115.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$14.95	1.0	\$15.00
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	RF	Route Foot		\$130.00

Hotel Street Mall Reconstruction					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER SQUARE FOOT BASED ON 92 STUDY				
1300035	RECONSTRUCT HOTEL STREET MALL	SF	\$147.50	1.0	\$148.00
	Maint.of Traffic (1.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$11.84	1.0	\$12.00
CSC40.06-13	Hotel Street Mall Reconstruction	sf	SQUARE FOOT		\$160.00

PARK & RIDE AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STALL				
02740.04	Park and Ride Lot at-grade	stall	\$4,129.74	1.0	\$4,130.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$413.00	1.0	\$413.00
CSC40.06-14	PARK & RIDE AT GRADE	STALL	EA		\$4,543.00

PARK & RIDE STRUCTURED					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STALL based on bart design build contract 12ys-130				
02740.05	Park and Ride Lot Structured	stall	\$22,235.00	1.0	\$22,235.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$2,223.50	1.0	\$2,224.00
CSC40.06-15	PARK & RIDE STRUCTURED	STALL	EA		\$24,459.00

ONE LANE ELEVATED STRUCTURE TO P&R GARAGE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STALL based on bart design build contract 12ys-130				
1300036	ELEVATED STRUCTURE (ONE LANE)	SF	\$400.00	1.0	\$400.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$40.00	1.0	\$40.00
CSC40.06-15A	ONE LANE ELEVATED STRUCTURE TO P&R GARAGE	SF	SF		\$440.00

BUS BAYS					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER BAY				
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	1.0	\$20,649.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$2,064.90	1.0	\$2,065.00
CSC40.06-16	BUS BAYS	STALL	EA		\$22,714.00

Intersection Modification Type 1						
					lane	400
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY						
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	400.0	\$1,412	
02220.21	Asphaltic Pavement Removal	sy	\$7.38	175.0	\$1,292	
02220.23	Remove Concrete Sidewalk	sy	\$8.03	260.0	\$2,088	
02220.24	Remove Concrete Curb	lf	\$5.13	965.0	\$4,950	
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	300.0	\$8,085	
02310.01	Finish Grading	sy	\$0.97	230.0	\$223	
02315.01	Common Excavation	cy	\$7.55	177.8	\$1,342	
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	400.0	\$12,848	
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	435.0	\$3,776	
02720.01	Aggregate Subbase	cy	\$24.72	32.2	\$796	
02720.02	Aggregate Base	cy	\$30.91	32.2	\$995	
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	80.2	\$6,900	
02770.03	Concrete Curb and Gutter	lf	\$25.05	985.0	\$24,674	
02770.08	Concrete Barrier, Two Side	lf	\$80.29	400.0	\$32,116	
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	1,200.0	\$7,416	
02370.25	Traffic Striping	lf	\$1.77	1,900.0	\$3,363	
16500.06	Lighting, Roadway	ea	\$7,929.90	2.000	\$15,860	
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$17,939.04	1.0	\$17,939	
CSC40.06-17	Intersection Modification Type 1	LS	Lump Sum		\$146,075	

Intersection Modification Type 2

				lane	350
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	350.0	\$1,236
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	102.0	\$819
02220.24	Remove Concrete Curb	lf	\$5.13	280.0	\$1,436
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	65.0	\$1,752
02310.01	Finish Grading	sy	\$0.97	102.0	\$99
02315.01	Common Excavation	cy	\$7.55	155.6	\$1,175
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	350.0	\$11,242
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	102.0	\$885
02720.01	Aggregate Subbase	cy	\$24.72	42.0	\$1,038
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	104.6	\$9,000
02770.03	Concrete Curb and Gutter	lf	\$25.05	640.0	\$16,032
02770.08	Concrete Barrier, Two Side	lf	\$80.29	400.0	\$32,116
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	410.0	\$2,534
02370.25	Traffic Striping	lf	\$1.77	1,400.0	\$2,478
16500.06	Lighting, Roadway	ea	\$7,929.90	1.750	\$13,877
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$13,582.38	1.0	\$13,582
CSC40.06-18	Intersection Modification Type 2	LS	Lump Sum		\$110,599

Intersection Modification Type 3

lane 100

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	100.0	\$353
02220.21	Asphaltic Pavement Removal	sy	\$7.38	20.0	\$148
02220.23	Remove Concrete Sidewalk	sy	\$8.03	80.0	\$642
02220.24	Remove Concrete Curb	lf	\$5.13	340.0	\$1,744
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	80.0	\$2,156
02310.01	Finish Grading	sy	\$0.97	100.0	\$97
02315.01	Common Excavation	cy	\$7.55	44.4	\$335
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	100.0	\$868
02720.01	Aggregate Subbase	cy	\$24.72	0.0	\$0
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	340.0	\$8,517
02770.08	Concrete Barrier, Two Side	lf	\$80.29	320.0	\$25,693
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	2,320.0	\$14,338
02370.25	Traffic Striping	lf	\$1.77	800.0	\$1,416
16500.06	Lighting, Roadway	ea	\$7,929.90	1.000	\$7,930
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$9,624.58	1.0	\$9,625
CSC40.06-19	Intersection Modification Type 3	LS	Lump Sum		\$78,372

Intersection Modification Type 3w

lane 100

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	\$0
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	\$0
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	\$0
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.0	\$0
02310.01	Finish Grading	sy	\$0.97	0.0	\$0
02315.01	Common Excavation	cy	\$7.55	0.0	\$0
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	0.0	\$0
02720.01	Aggregate Subbase	cy	\$24.72	0.0	\$0
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	140.0	\$3,507
02770.08	Concrete Barrier, Two Side	lf	\$80.29	140.0	\$11,241
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	0.0	\$0
02370.25	Traffic Striping	lf	\$1.77	0.0	\$0
16500.06	Lighting, Roadway	ea	\$7,929.90	1.000	\$7,930
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$3,806.32	1.0	\$3,806
CSC40.06-20	Intersection Modification Type 3w	LS	Lump Sum		\$30,994

Intersection Modification Type 4

lane 100

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	\$0
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	100.0	\$803
02220.24	Remove Concrete Curb	lf	\$5.13	100.0	\$513
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	40.0	\$1,078
02310.01	Finish Grading	sy	\$0.97	0.0	\$0
02315.01	Common Excavation	cy	\$7.55	0.0	\$0
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	100.0	\$868
02720.01	Aggregate Subbase	cy	\$24.72	8.6	\$213
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	110.0	\$2,756
02770.08	Concrete Barrier, Two Side	lf	\$80.29	80.0	\$6,423
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	550.0	\$3,399
02370.25	Traffic Striping	lf	\$1.77	0.0	\$0
16500.06	Lighting, Roadway	ea	\$7,929.90	1.000	\$7,930
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$3,989.02	1.0	\$3,989
CSC40.06-21	Intersection Modification Type 4	LS	Lump Sum		\$32,482

Intersection Modification Type 5

lane

350

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	350.0	\$1,236
02220.21	Asphaltic Pavement Removal	sy	\$7.38	60.0	\$443
02220.23	Remove Concrete Sidewalk	sy	\$8.03	395.0	\$3,172
02220.24	Remove Concrete Curb	lf	\$5.13	1,115.0	\$5,720
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	280.0	\$7,546
02310.01	Finish Grading	sy	\$0.97	455.0	\$441
02315.01	Common Excavation	cy	\$7.55	155.6	\$1,175
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	350.0	\$11,242
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	455.0	\$3,949
02720.01	Aggregate Subbase	cy	\$24.72	32.2	\$796
02720.02	Aggregate Base	cy	\$30.91	32.2	\$995
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	80.2	\$6,900
02770.03	Concrete Curb and Gutter	lf	\$25.05	950.0	\$23,798
02770.08	Concrete Barrier, Two Side	lf	\$80.29	320.0	\$25,693
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	2,000.0	\$12,360
02370.25	Traffic Striping	lf	\$1.77	2,800.0	\$4,956
16500.06	Lighting, Roadway	ea	\$7,929.90	2.000	\$15,860
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$17,679.48	1.0	\$17,679
CSC40.06-22	Intersection Modification Type 5	LS	Lump Sum		\$143,961

Intersection Modification Type 5a

lane 350

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	350.0	\$1,236
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	75.0	\$602
02220.24	Remove Concrete Curb	lf	\$5.13	220.0	\$1,129
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	50.0	\$1,348
02310.01	Finish Grading	sy	\$0.97	75.0	\$73
02315.01	Common Excavation	cy	\$7.55	155.6	\$1,175
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	350.0	\$11,242
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	75.0	\$651
02720.01	Aggregate Subbase	cy	\$24.72	30.8	\$761
02720.02	Aggregate Base	cy	\$30.91	30.8	\$952
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	76.7	\$6,599
02770.03	Concrete Curb and Gutter	lf	\$25.05	220.0	\$5,511
02770.08	Concrete Barrier, Two Side	lf	\$80.29	160.0	\$12,846
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	3,520.0	\$21,754
02370.25	Traffic Striping	lf	\$1.77	170.0	\$301
16500.06	Lighting, Roadway	ea	\$7,929.90	2.000	\$15,860
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$11,485.60	1.0	\$11,486
CSC40.06-23	Intersection Modification Type 5a	LS	Lump Sum		\$93,526

Intersection Modification Type 5B

lane

350

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	\$0
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	\$0
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	\$0
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.0	\$0
02310.01	Finish Grading	sy	\$0.97	0.0	\$0
02315.01	Common Excavation	cy	\$7.55	0.0	\$0
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	0.0	\$0
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	0.0	\$0
02720.01	Aggregate Subbase	cy	\$24.72	0.0	\$0
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	0.0	\$0
02770.08	Concrete Barrier, Two Side	lf	\$80.29	100.0	\$8,029
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	0.0	\$0
02370.25	Traffic Striping	lf	\$1.77	560.0	\$991
16500.06	Lighting, Roadway	ea	\$7,929.90	0.000	\$0
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$1,262.80	1.0	\$1,263
CSC40.06-24	Intersection Modification Type 5B	LS	Lump Sum		\$10,283

ATC, Signal System Line Stations					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.01m	<p>Quantities are based on Muni Assumed train control for 60 vehicles ATC Line & Station</p>	RF	\$238.00	1.0	\$238.00
	<p>Maint.of Traffic (0%) + Mob/Demob (0%) + Minor Util. (0%) Inc in items in spreadsheet atc 0705-05</p>	ls	\$0.00	1.0	\$0.00
TOTAL COST FOR SEGMENT					\$238
CSC50.01-1	ATC, Signal System Line Stations	RF			\$238

Highway Crossing Warning Devices (Preemptive)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
16700.15	Wayside Line Costs, Wayside Cable & Equipment	lf	\$56.30	100.0	\$5,630.00
16700.16	Wayside Line Costs, Cable Ductbank (At-Grade Only)	lf	\$80.77	100.0	\$8,077.00
16700.17	Highway Crossing Signals, Preemptive	ea	\$192,676.71	1.0	\$192,677.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$28,893.76	1.0	\$28,894.00
CSC50.01-2	Highway Crossing Warning Devices (Preemptive)	EA			\$235,278

Traffic Signal Modifications (4 directions)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.18	Traffic Signal (incl Signal Controller) (cost per each direction)	ea	\$80,300.53	4.0	\$321,202.00
16700.23	Pedestrian Crossing Signal 1 Direction	ea	\$2,895.72	4.0	\$11,583.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$43,262.05	1.0	\$43,262.00
CSC50.02-1	Traffic Signal Modifications (4 directions)	EA			\$376,047

Traffic Signal Modifications (3 directions)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.18	Traffic Signal (incl Signal Controller) (cost per each direction)	ea	\$80,300.53	3.0	\$240,902.00
16700.23	Pedestrian Crossing Signal 1 Direction	ea	\$2,895.72	3.0	\$8,687.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$39,934.24	1.0	\$39,934.00
CSC50.02-2	Traffic Signal Modifications (3 directions)	EA			\$289,523

Traction Power Substations (2 MW)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantity based on 1 substations				
16371.01M	Traction Power Equipment, Substation Aux Electrical (Prefab w/arch)	ea	\$850,000.00	1.0	\$850,000.00
16371.02M	TP equipment and Misc. Spare	ls	\$80,000.00	0.0	\$0.00
16371.01aM	Substation Architectural	ea	\$150,000.00	1.0	\$150,000.00
16371.07M	Traction Power SCADA (RTU, fiber optic hardware)	ea	\$120,011.37	1.0	\$120,011.00
16371.13M	MIMIC Panel	LS	\$253,000.00	0.5	\$126,500.00
16371.14M	MIMIC Panel Spare	LS	\$25,000.00	0.0	\$0.00
16371.08M	SCADA Spare (RTU Substation)	LS	\$24,000.00	0.5	\$12,000.00
16371.09M	Connection to SCADA master (SCADA master upgrade, Fiber cables)	LS	\$440,000.00	0.3	\$132,000.00
16371.10M	SCADA Master Spare	LS	\$44,000.00	0.0	\$0.00
16371.11M	Gap Breaker (the breaker, RTU, and aux electrical, maintenance phone)	ea	\$400,000.00	0.1	\$40,000.00
16371.12M	Gap Breaker Spare	LS	\$80,000.00	0.0	\$0.00
16371.15M	Maintenance Telephone System (MTS)	RF	\$6.63	1,000.0	\$6,630.00
16371.16M	MTS Spare	RF	\$0.66	0.0	\$0.00
	Utility and Above 480 Volt Power				
16700.26W	Cost of PG&E 12.47KV Sources	ea	\$6,900,000.00	0.000	\$0.00
16700.27W	Cost of Power Distribution Equipment	sta	\$1,356,388.00	1.0	in above 16371.01M
15300.04m	Fire Protection Substations	ls	\$192,000.00	0.5	\$96,000.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$107,319.87	1.0	\$107,320.00
CSC50.03-1	Traction Power Substations (2 MW)	EA		1.0	\$1,640,461

Traction Power Supply - At-Grade OCS, Dual Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment See estimate from PBTRS 9-1-06				
16370.05p	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$283.00	1.0	\$283.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	Is	\$24.65	1.0	\$25.00
TOTAL COST FOR SEGMENT					\$315
CSC50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	RF	Route Foot	1	\$315

Traction Power Supply - Subway OCS, Double Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment Assumes LPSCAT Low Profile Catenary See estimate from PBTRS 9-1-06				
16370.06p	Traction Power Supply, (OCS), Subway, DoubleTrack	RF	\$195.00	1.0	\$195.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$14.14	1.0	\$14.00
TOTAL COST FOR SEGMENT					\$216
CSC50.04-2	Traction Power Supply - Subway OCS, Double Track	RF	Route Feet	1	\$216

Traction Power Supply - Aerial OCS, Dual Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment				
	Assumes LPSCAT Low Profile Cantenary				
	See estimate from PBTRS 9-1-06				
16370.04p	Traction Power Supply, Aerial OCS, Dual Track	ft	\$200.00	1.0	\$200.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$17.60	1.0	\$18.00
TOTAL COST FOR SEGMENT					\$225
CSC50.04-3	Traction Power Supply - Aerial OCS, Dual Track	RF	Route Foot		\$225

Traction Power Supply - Aerial OCS, Single Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment Assumes LPSCAT Low Profile Cantenary See estimate from PBTRS 9-1-06				
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00	1.0	\$150.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$13.35	1.0	\$13.00
TOTAL COST FOR SEGMENT					\$170
CSC50.04-4	Traction Power Supply - Aerial OCS, Single Track	RF	Route Foot	1	\$170

ITS Roadway					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16371.24M	Based on Hwy 238 Bid results 2006 \$				
	ITS For Hwy On-ramp	allow	\$375,000.00	1.0	\$375,000.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$45,000.00	1.0	\$45,000.00
TOTAL COST FOR SEGMENT					\$420,000
CSC50.05-1	ITS Roadway	LS			\$420,000

Fare Vending Equipment Underground Stations					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16770.01M	Subway Station TVM & Fare Gate System	LS	\$546,365.56	1.0	\$546,366
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$38,245.62	1.0	\$38,246.00
CSC50.06-1	Fare Vending Equipment Underground Stations	LS			\$584,612

Fare Vending Equipment Aerial & At Grade Stations					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16770.02M	Surface & Aerial Station TVM System	LS	\$280,105.16	1.0	\$280,105
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$19,607.35	1.0	\$19,607.00
CSC50.06-2	Fare Vending Equipment Aerial & At Grade Stations	LS			\$299,712

Central Control Facility					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.31M	Central Control: Telephone Various Phone Systems' Connection to Central Control	LS	\$930,000.00	1.0	\$930,000.00
16700.42M	Central Control : Power SCADA Power SCADA graphic display	LS	\$230,000.00	1.0	\$230,000.00
16700.43M	Power SCADA graphic display Spare	LS	\$23,000.00	1.0	\$23,000.00
16700.44M	Central Control: UPS UPS 100Kva	LS	\$96,500.00	1.0	\$96,500.00
16700.45M	UPS 100Kva Spare	LS	\$10,000.00	1.0	\$10,000.00
16700.02p	Central Control Facility	sf	\$334.12	20,000.0	\$6,682,400.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$558,033.00	1.0	\$558,033.00
CSC50.07	Central Control Facility	LS			\$8,529,933

Administration Building & Site Facilities					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
13000.01	Maintenance and Administration Bldg.	sf	\$290.00	45,000.0	\$13,050,000.00
02740.04	Park and Ride Lot at-grade Parking & Site Facilities use 250 sf / ee Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	stall	\$4,129.74	180.0	\$743,353.00
		ls	\$965,534.71	1.0	\$965,535.00
CSC30.01-1	Administration Building & Site Facilities	LS			\$14,758,888

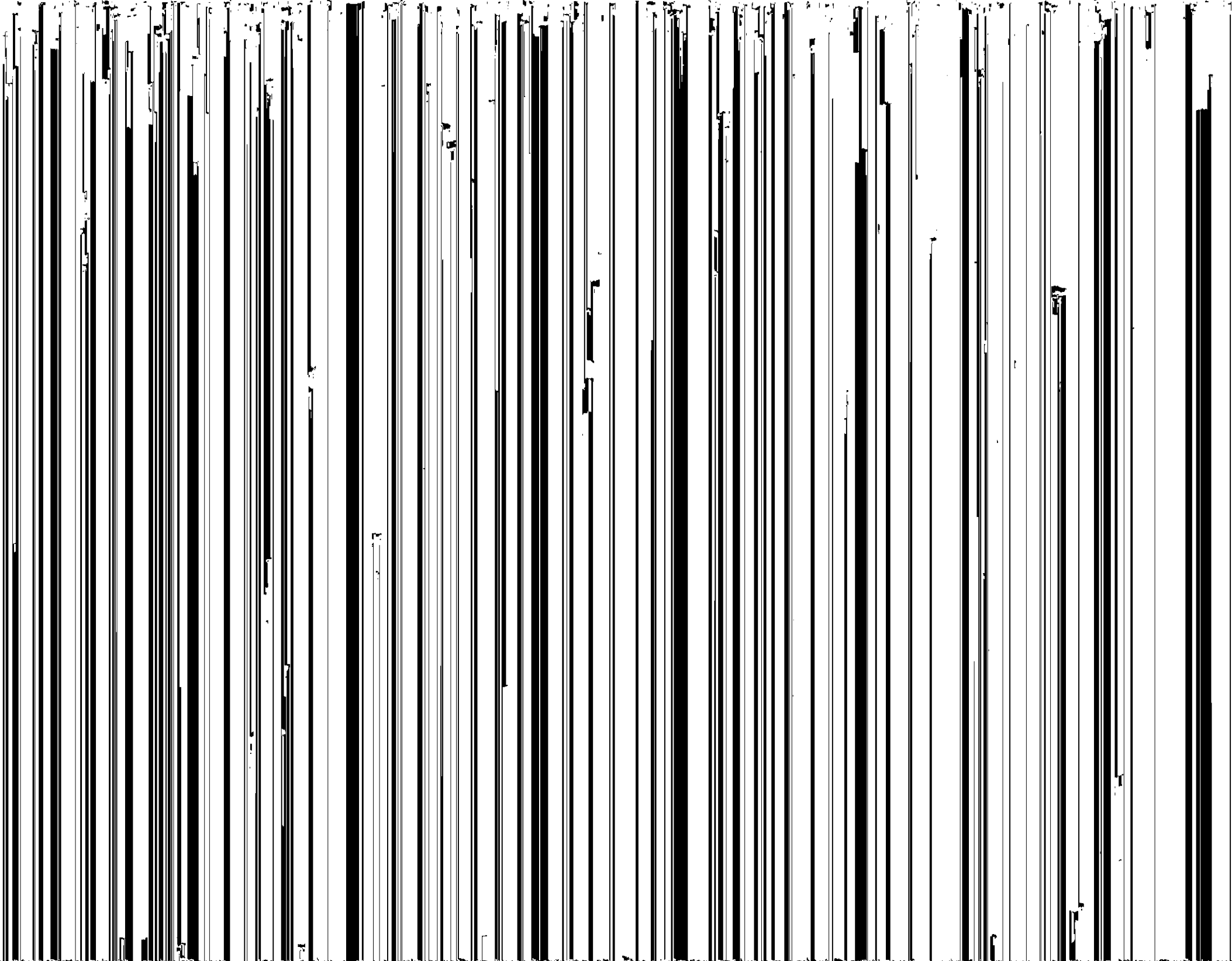
Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02230.01	Clearing & Grubbing, Light	sy	\$0.72	43,560.0	\$31,363
02310.01	Finish Grading	sy	\$0.97	392,040.0	\$380,279
02310.12	Rough Grading	sf	\$0.65	392,040.0	\$254,826
02315.11	Soil Stabilization: Lime Treatment (6% mix 18" depth)	sf	\$2.28	392,040.0	\$893,851
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1,742.4	\$55,966
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	43,560.0	\$378,101
02720.02	Aggregate Base	cy	\$30.91	7,623.0	\$235,627
02720.05	Subballast	cy	\$40.15	2,397.8	\$96,272
02720.06	Ballast	cy	\$44.96	3,458.3	\$155,485
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	1,688	\$145,236
02820.06	7 ft Chain Link Fence w/ 3 Strand Barb Wire	lf	\$15.66	1,742.4	\$27,286
05650.01	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	lf	\$212.69	8,300.0	\$1,765,327
05650.02a	Special Trackwork, incl/ Fasteners & Rail (Facility Building)	lf	\$428.26	1,100.0	\$471,086
05650.13	Dual Precast Concrete LRT Crossing Panels	lf	\$642.32	192.0	\$123,325
13000.01a	Running Repair Building	sf	\$250.00	22,000.0	\$5,500,000
05650.30	Special Trackwork, No. 8 Turnout,Ballasted	ea	\$96,338.36	4.0	\$385,353
05650.31	Special Trackwork, No. 6 Turnout,Ballasted	ea	\$80,300.53	10.0	\$803,005
13000.03	Inspection Pit	ea	\$426,800.00	2.0	\$853,600
13000.02	Material & Parts Storage	sf	\$100.00	5,500.0	\$550,000
13000.05	Car Wash	sf	\$100.00	0.0	\$0
13100.01	Wheel Truing Machine	ea	\$2,155,700.00	0.0	\$0
13100.02	Wheel Axle Press Machine	ea	\$1,077,800.00	0.0	\$0
13100.03	Turntables (with Pit)	ea	\$86,200.00	1.0	\$86,200
13100.04	Cranes, 10-Ton	ea	\$115,000.00	1.0	\$115,000
13000.03a	Blowdown Pit	ea	\$426,800.00	0.0	\$0
13100.06	Truck Repair Hoist	ea	\$265,900.00	1.0	\$265,900

Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)

continued

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
13200.01	Mineral Spirits Tank	ea	\$115,000.00	1.0	\$115,000
13200.02	Waste Oil Tank	ea	\$107,800.00	1.0	\$107,800
13300.01	Paint Shop Equipment	ls	\$215,600.00	0.0	\$0
13300.02	Wash Equipment	ls	\$1,006,000.00	1.0	\$1,006,000
13100.07	Floor Jack (Portable w carriage)	ea	\$64,700.00	1.0	\$64,700
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	8,300.0	\$406,451
16370.01	Traction Power Supply, Substation	ea	\$1,077,800.00	1.0	\$1,077,800
16370.02	Traction Power Supply, M.& S.	lf	\$72.26	1,100.0	\$79,486
16370.03	Traction Power Supply, D.C. Feeder	lf	\$72.26	8,300.0	\$599,758
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00	8,300.0	\$1,245,000
16500.01	Lighting, At Grade Guideway	lf	\$56.20	8,300.0	\$466,460
	Landscaping				in Urban Design
	Right-of-Way				in Right-of-way cost
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$707,483.70	1.0	\$707,484.00
CSC30.02-1	Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)	LS			\$27,228,638



Heavy Maintenance Facility and Yard (30 Acres) (accommodates 16 vehicles)

continued

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
13200.01	Mineral Spirits Tank	ea	\$115,000.00	1.0	\$115,000
13200.02	Waste Oil Tank	ea	\$107,800.00	1.0	\$107,800
13300.01	Paint Shop Equipment	ls	\$215,600.00	1.0	\$215,600
13300.02	Wash Equipment	ls	\$1,006,000.00	1.0	\$1,006,000
13100.07	Floor Jack (Portable w carriage)	ea	\$64,700.00	1.0	\$64,700
13100.08	Floor Jack (Permanent w pit)	ea	\$646,700.00	1.0	\$646,700
13300.03	Shop Small Tools & Misc Equipment	sf	\$2.51	105,000.0	\$263,550
13300.04	Forklifts & Material Handling Equipment	ls	\$107,800.00	1.0	\$107,800
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	16,600.0	\$812,902
16370.01	Traction Power Supply, Substation	ea	\$1,077,800.00	1.0	\$1,077,800
16370.02	Traction Power Supply, M. & S.	lf	\$72.26	2,750.0	\$198,715
16370.03	Traction Power Supply, D.C. Feeder	lf	\$72.26	16,600.0	\$1,199,516
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00	16,600.0	\$2,490,000
16500.01	Lighting, At Grade Guideway	lf	\$56.20	16,600.0	\$932,920
	Landscaping				in Urban Design
	Right-of-Way				in Right-of-way cost
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$5,206,251.19	1.0	\$5,206,251.00
CSC30.02-2	Heavy Maintenance Facility and Yard (30 Acres) (accommodates 16 vehicles)	LS			\$66,456,265

Articulated LRV					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
17100.01M	VEHICLES SIMILAR TO SF MUNI				
	Articulated LRV	ea	\$2,356,000.00	1.0	\$2,356,000.00
	GENERAL EXCISE TAX	%	\$2,356,000.00	4.70%	\$110,732.00
CSC70.01	Articulated LRV	EA		1.0	\$2,466,732

Spare Parts					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	VEHICLES SIMILAR TO SF MUNI (USE 10% FOR NEW START)				
17100.02M	Articulated LRV Spare Parts (5% of LRV Cost) Includes General Excise Tax	%	\$2,466,732.00	10%	\$246,673.20
CSC70.07	Spare Parts	LS		1.0	\$246,673

Maintenance of Way Vehicles					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	VEHICLES SIMILAR TO SF MUNI (USE 10% FOR NEW START)				
17100.02	General Excise Tax #N/A	Is %	\$4,014,469.40 \$4,014,469.00	1.0 4.70%	\$4,014,469.00 \$188,680.04
CSC70.06	Maintenance of Way Vehicles	LS		1.0	\$4,203,149

ROW: Purchase or Lease of real estate					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	not determined for AA				
	#N/A	#N/A	#N/A	1.0	#N/A
	#N/A	#N/A	#N/A	1.0	#N/A
	#N/A	#N/A	#N/A	1.0	#N/A
	#N/A	#N/A	#N/A	1.0	#N/A
CSC60.01	ROW: Purchase or Lease of real estate	LS		1.0	#N/A

ROW Relocation of existing households and businesses					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Not determined for AA #N/A	#N/A	#N/A	1.0	#N/A
CSC60.02	ROW Relocation of existing households and businesses	LS		1.0	#N/A

Appendix E

**Composite Section Cost Summary and
Details – Alternative 4**

Composite Section Summary

CODE	DESCRIPTION	UOM	UNIT COST \$
CSC10.01-1	Single At-Grade Ballasted Trackbed - Open	RF	\$260
CSC10.01-2	Double At-Grade Ballasted Trackbed - Open	RF	\$328
CSC10.01-3	Single At-Grade Guideway for Paved Track	RF	\$346
CSC10.01-4	Double At-Grade Guideway for Paved Track	RF	\$342
CSC10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	RF	\$7,989
CSC10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	RF	\$8,086
CSC10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	RF	\$5,993
CSC10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	RF	\$8,150
CSC10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	RF	\$8,452
CSC10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	RF	\$8,709
CSC10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	RF	\$5,793
CSC10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano / Kapiolani Blvd)	RF	\$34,090
CSC10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	RF	\$12,898
CSC10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	RF	\$31,308
CSC10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	RF	\$25,129
CSC10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	RF	\$25,129
CSC10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+90)	RF	\$26,088
CSC10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+90)	RF	\$27,920
CSC10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	RF	\$12,367
CSC10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	RF	\$6,162
CSC10.09-1	Direct Fixation Track - Single	RF	\$435
CSC10.09-2	Direct Fixation Dual Track	RF	\$675
CSC10.10-1	Paved Track (In Street) - Single	RF	\$667
CSC10.10-2	Paved Track (In Street) - DUAL	RF	\$1,250
CSC10.11-1	Ballasted Track (Open) - Single	RF	\$247
CSC10.11-2	Ballasted Track (Open) - Double	RF	\$502
CSC10.12-1	Double Crossover DF (No. 10)	EA	\$957,411
CSC10.12-2	Double Crossover Ballasted (No. 10)	EA	\$804,040
CSC10.12-3	No. 6 Turnout - DF	EA	\$282,314
CSC10.12-4	No. 5 Turnout - DF	EA	\$135,258
CSC10.12-5	Permanent Terminal, Direct Fixation	EA	\$24,549
CSC10.12-6	Grade Crossing Panels (Dual Track)	EA	\$650
CSC10.13-1	Track Vibration and Noise Dampening	RF	\$1,074
CSC20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	LS	\$3,195,536
CSC20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	LS	\$5,940,590
CSC20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS	\$5,796,590
CSC20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS	\$6,140,810
CSC20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	LS	\$6,284,810
CSC20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	LS	\$7,425,738

Composite Section Summary

CODE	DESCRIPTION	UOM	UNIT COST \$
CSC20.03-1	Underground Station with Center Platform and Mezzanine	LS	\$85,172,231
CSC20.03-2	Underground Station with Center Platform without Mezzanine	LS	\$74,005,063
CSC20.07-1	ELEVATORS (40 ft Rise)	EA	\$454,508
CSC20.07-2	ELEVATORS (50 ft Rise)	EA	\$513,779
CSC20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	EA	\$645,336
CSC20.07-4	ESCALATORS (15 ft Rise)	EA	\$523,954
CSC20.07-5	ESCALATORS (30 ft Rise)	EA	\$585,776
CSC20.07-6	ESCALATORS (60 ft Rise)	EA	\$795,302
CSC30.01-1	Administration Building & Site Facilities	LS	\$14,758,888
CSC30.02-1	Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)	LS	\$27,228,638
CSC30.02-2	Heavy Maintenance Facility and Yard (30 Acres) (accommodates 16 vehicles)	LS	\$66,456,265
CSC40.01-1	Demolition: Urban	RF	\$207
CSC40.01-2	Demolition: Rural	RF	\$22
CSC40.01-3	Demolition: Residential	RF	\$53
CSC40.01-8	Clear and Grubbing	RF	\$62
CSC40.01-5	Earthwork	RF	in guideway
CSC40.01-6	Building Mitigation (Underpinning, etc)	RF	\$4,672,938
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)	SF	\$532
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION	RF	\$81
CSC40.02-2	Utility: URBAN TUNNEL/AT GRADE	RF	\$3,240
CSC40.02-3	Utility: RURAL AERIAL	RF	\$41
CSC40.02-4	Utility: RURAL TUNNEL/AT GRADE	RF	\$1,620
CSC40.02-5	Utility: RESIDENTIAL AERIAL	RF	\$81
CSC40.02-6	Utility: RESIDENTIAL TUNNEL/AT GRADE	RF	\$2,430
CSC40.02-7	Utility: REMOVALS	RF	\$54
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	LS	\$11,661,300
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	LS	\$10,140,835
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	LS	\$14,919,197
CSC40.02-10A	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	LS	\$9,914,625
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	LS	\$8,585,817
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	LS	\$12,628,933
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	LS	\$16,069,810
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	LS	\$15,489,716
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS	\$110,634,239
CSC40.02-16	SECTION 3: ELECTRICAL & COMMUNICATION- MAKAI SIDE OF AIRPORT VIADUCT ELEVATED	LS	\$90,946,739
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS	\$22,388,642
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOOLELE ST	LS	\$21,606,054
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	LS	\$70,953,750
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	LS	\$48,825,000
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	LS	\$299,250

Composite Section Summary

CODE	DESCRIPTION	UOM	UNIT COST \$
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS	\$133,610,175
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS	\$135,273,779
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$119,605,978
CSC40.02-24A	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$9,497,964
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$121,269,582
CSC40.02-25A	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS	\$11,161,568
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	LS	\$120,324,175
CSC40.02-27	Utility Removal (all sizes)	LF	\$73
CSC40.02-28	20 ea 4" PVC, concrete encased	LF	\$608
CSC40.02-29	40 ea 4" CPC, concrete encased	LF	\$933
CSC40.02-30	WATER PIPE (DIP) UP TO 8 INCH Dia	LF	\$85
CSC40.02-31	WATER PIPE (DIP) UP TO 12 INCH Dia	LF	\$111
CSC40.02-32	WATER PIPE (DIP) UP TO 16 INCH Dia	LF	\$167
CSC40.02-33	WATER PIPE (DIP) UP TO 24 INCH Dia	LF	\$269
CSC40.02-34	WATER PIPE (DIP) UP TO 36 INCH Dia	LF	\$349
CSC40.02-35	STORM DRAIN PIPE (RCP CLASS 3) UP TO 18 INCH Dia	LF	\$127
CSC40.02-36	STORM DRAIN PIPE (RCP CLASS 3) UP TO 24 INCH Dia	LF	\$163
CSC40.02-37	STORM DRAIN PIPE (RCP CLASS 3) UP TO 30 INCH Dia	LF	\$250
CSC40.02-38	STORM DRAIN PIPE (RCP CLASS 3) UP TO 48 INCH Dia	LF	\$465
CSC40.02-39	SEWER PIPE (RCP CLASS 5) UP TO 15 INCH Dia	LF	\$117
CSC40.02-40	SEWER PIPE (VCP C425) UP TO 18 INCH Dia	LF	\$135
CSC40.02-41	SEWER PIPE (VCP C425) UP TO 21 INCH Dia	LF	\$156
CSC40.02-42	SEWER PIPE (RCP CLASS 5) UP TO 24 INCH Dia	LF	\$201
CSC40.02-43	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 6 INCH Dia	LF	\$65
CSC40.02-44	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 8 INCH Dia	LF	\$82
CSC40.02-45	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 10 INCH Dia	LF	\$107
CSC40.02-46	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF	\$223
CSC40.02-47	MANHOLE (SEWER, STORM, GAS, WATER) 4' DIA X 6' DEEP	EA	\$10,416
CSC40.02-48	CATCHBASIN (4' DEEP CIP)	EA	\$4,111
CSC40.02-49	WATER VALVE RELOCATION	EA	\$4,147
CSC40.02-50	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF	\$223
CSC40.02-51	Gas Pipe (1-4" Dia) Plastic Pipe Exc & Backfill	LF	\$58
CSC40.02-52	Gas Pipe (6" Dia) Plastic Pipe Exc & Backfill	LF	\$76
CSC40.02-53	Gas Pipe (8" Dia) Plastic Pipe Exc & Backfill	LF	\$101
CSC40.02-54	Gas Pipe (10" Dia) Plastic Pipe Exc & Backfill	LF	\$146
CSC40.02-55	Gas Pipe (16" Dia) Plastic Pipe Exc & Backfill	LF	\$227
CSC40.02-56	Ductbank 2-4" PVC Conduits w 220 kv line	LF	\$594
CSC40.02-57	Ductbank 16-3" PVC Conduits encased in concrete	LF	\$395
CSC40.02-58	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	LF	\$110
CSC40.02-59	Ductbank 16-4" PVC Conduits Encased in Concrete	LF	\$421

Composite Section Summary

CODE	DESCRIPTION	UOM	UNIT COST \$
CSC40.02-60	Ductbank 4-5" PVC Conduits Encased in Concrete	LF	\$135
CSC40.02-61	Pump Station	LS	\$768,273
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	LS	\$121,048,364
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$152,162,486
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$33,552,021
CSC40.02-63a	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$34,290,694
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$52,504,197
CSC40.02-63b	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$53,242,870
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$152,983,234
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS	\$124,826,342
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	LS	\$61,198,973
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	LS	\$62,813,917
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	LS	\$60,625,729
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	LS	\$164,208,791
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel	LS	\$165,872,395
CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	TON	\$185
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	GAL	1
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	ALLOW	2500000
CSC40.06-1	Street Construction Adj. to LRT - One Lane	RF	\$295
CSC40.06-1a	Turn Pocket (100 ft)	RF	\$204
CSC40.06-2	Street Construction Adj. to LRT - Two Lane	RF	\$412
CSC40.06-3	Street Construction Adj. to LRT - Three Lane	RF	\$522
CSC40.06-4	Street Construction Adj. to LRT - Four Lane	RF	\$632
CSC40.06-10	Landscaping & Urban Design: Urban	RF	\$187
CSC40.06-11	Landscaping & Urban Design: Rural	RF	\$93
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	RF	\$130
CSC40.06-13	Hotel Street Mall Reconstruction	sf	\$160
CSC40.06-14	PARK & RIDE AT GRADE	STALL	\$4,543
CSC40.06-15	PARK & RIDE STRUCTURED	STALL	\$24,459
CSC40.06-15A	ONE LANE ELEVATED STRUCTURE TO P&R GARAGE	SF	\$440
CSC40.06-16	BUS BAYS	STALL	\$22,714
CSC40.06-17	Intersection Modification Type 1	LS	\$146,075
CSC40.06-18	Intersection Modification Type 2	LS	\$110,599
CSC40.06-19	Intersection Modification Type 3	LS	\$78,372
CSC40.06-20	Intersection Modification Type 3w	LS	\$30,994
CSC40.06-21	Intersection Modification Type 4	LS	\$32,482
CSC40.06-22	Intersection Modification Type 5	LS	\$143,961
CSC40.06-23	Intersection Modification Type 5a	LS	\$93,526
CSC40.06-24	Intersection Modification Type 5B	LS	\$10,283
CSC50.01-1	ATC, Signal System Line Stations	RF	\$238

Composite Section Summary

CODE	DESCRIPTION	UOM	UNIT COST \$
CSC50.01-2	Highway Crossing Warning Devices (Preemptive)	EA	\$235,278
CSC50.02-1	Traffic Signal Modifications (4 directions)	EA	\$376,047
CSC50.02-2	Traffic Signal Modifications (3 directions)	EA	\$289,523
CSC50.03-1	Traction Power Substations (2 MW)	EA	\$1,640,461
CSC50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	RF	\$315
CSC50.04-2	Traction Power Supply - Subway OCS, Double Track	RF	\$216
CSC50.04-3	Traction Power Supply - Aerial OCS, Dual Track	RF	\$225
CSC50.04-4	Traction Power Supply - Aerial OCS, Single Track	RF	\$170
CSC50.05-1	Communications System - Dual Track	LS	\$299
CSC50.06-1	Fare Vending Equipment Underground Stations	LS	\$584,612
CSC50.06-2	Fare Vending Equipment Aerial & At Grade Stations	LS	\$299,712
CSC50.07	Central Control Facility	LS	\$8,529,933
CSC60.01	ROW: Purchase or Lease of real estate	LS	#N/A
CSC60.02	ROW Relocation of existing households and businesses	LS	#N/A
CSC70.01	Articulated LRV	EA	\$2,466,732
CSC70.06	Maintenance of Way Vehicles	LS	\$4,203,149
CSC70.07	Spare Parts	LS	\$246,673

Honolulu High-Capacity Transit Corridor Project
Fixed Guideway Alternatives
Summary Cost Comparison of Alternative Analysis
Composite Section Details

Single At-Grade Ballasted Trackbed - Open

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	3.3	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.04	\$19.00
02310.01	Finish Grading	sy	\$0.97	30.0	\$29.00
02310.03	At-Grade Drainage Ditch	lf	\$6.43	1.0	\$6.00
02315.01	Common Excavation	cy	\$7.55	2.2	\$17.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02620.02	Trackway Underdrains	lf	\$24.49	1.0	\$24.00
02720.05	Subballast	cy	\$40.15	0.74	\$30.00
02820.03	7 ft Chain Link Fence	lf	\$12.84	2.0	\$26.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	1.0	\$49.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$27.84	1.0	\$28.00
CSC10.01-1	Single At-Grade Ballasted Trackbed - Open	RF		ROUTE FOOT	\$260.00

Double At-Grade Ballasted Trackbed - Open

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	5.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.10	\$48.00
02310.01	Finish Grading	sy	\$0.97	30.0	\$29.00
02310.03	At-Grade Drainage Ditch	lf	\$6.43	2.0	\$13.00
02315.01	Common Excavation	cy	\$7.55	2.2	\$17.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02620.02	Trackway Underdrains	lf	\$24.49	2.0	\$49.00
02720.05	Subballast	cy	\$40.15	0.74	\$30.00
02820.03	7 ft Chain Link Fence	lf	\$12.84	2.0	\$26.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	1.0	\$49.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$35.16	1.0	\$35.00
CSC10.01-2	Double At-Grade Ballasted Trackbed - Open	RF	ROUTE FOOT		\$328.00

Single At-Grade Guideway for Paved Track

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	3.3	\$24.00
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.11	\$53.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	0.8	\$45.00
02310.01	Finish Grading	sy	\$0.97	30.0	\$29.00
02315.07	Structural Excavation	cy	\$19.27	2.2	\$42.00
02370.02	Sedimentation Control - Roadway, Allowance	lf	\$19.59	1.0	\$20.00
02620.02	Trackway Underdrains	lf	\$24.49	1.0	\$24.00
02720.06	Ballast	cy	\$44.96	0.35	\$16.00
02770.09	Concrete Ballast Curb	lf	\$48.17	0.00	\$0.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	1.0	\$49.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$37.08	1.0	\$37.00
CSC10.01-3	Single At-Grade Guideway for Paved Track	RF		Route Foot	\$346.00

Double At-Grade Guideway for Paved Track

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	5.0	\$37.00
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.15	\$72.00
02310.01	Finish Grading	sy	\$0.97	30.0	\$29.00
02315.07	Structural Excavation	cy	\$19.27	2.2	\$42.00
02370.02	Sedimentation Control - Roadway, Allowance	lf	\$19.59	1.0	\$20.00
02620.02	Trackway Underdrains	lf	\$24.49	2.0	\$49.00
02720.06	Ballast	cy	\$44.96	0.60	In Track work \$
02770.09	Concrete Ballast Curb	lf	\$48.17	0.00	\$0.00
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	1.0	\$49.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$36.60	1.0	\$37.00
CSC10.01-4	Double At-Grade Guideway for Paved Track	RF	ROUTE FOOT		\$342.00

Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	in section 40.01
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	80.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	49.0	\$362.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	40	\$78,782.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	11.0	\$340.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	12.9	\$2,220.00
02620.03	Column & Substructure Drainage	lf	\$46.00	52.0	\$2,392.00
03210.01	Reinforcing Steel	lbs	\$1.09	63,951.0	\$69,707.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	19.1	\$9,968.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219.00	120.0	\$266,280.00
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150.00	120.0	\$378,000.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	67.2	\$413.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	199.5	\$4,006.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$102,714.48	1	\$102,714.00
	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	RF		120	\$958,668.00
CSC10.04-1	Segmental Aerial Structure (T/R +25 Ft.) Column (6 ft Dia)	RF		Route Foot	\$7,988.90

Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	\$0.00
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	96.0	\$339.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	64.0	\$472.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	267.0	\$15,005.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	40	\$78,782.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	16.0	\$495.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	16.8	\$2,891.00
02620.03	Column & Substructure Drainage	lf	\$46.00	87.0	\$4,002.00
03210.01	Reinforcing Steel	lbs	\$1.09	64,950.0	\$70,796.00
03300.29	CIPC, Aerial Pile Cap	cy	\$321.16	0.0	\$0.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	22.5	\$11,743.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219.00	120	\$266,280.00
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150.00	120.0	\$378,000.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	142.8	\$877.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	237.3	\$4,765.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$103,969.20	1	\$103,969.00
	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	RF		120	\$970,379.00
CSC10.04-2	Segmental Aerial Structure (T/R +30 Ft.) Column (6 ft Dia)	RF		Route Foot	\$8,086.49

Standard Aerial Dual Structure (T/R +30 Ft.) CIP

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 80 LF Span (Bottom Line Cost to be divided by the 80 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	355.6	\$373.00
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	5.0	in section 40.01
02315.07	Structural Excavation	cy	\$19.27	241	\$4,644.00
02315.08	Structural Backfill	cy	\$18.62	85	\$1,583.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	40	\$78,782.00
03210.01	Reinforcing Steel	lbs	\$1.09	64,950	\$70,796.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	89	\$42,875.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	162	\$84,546.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	31	\$15,332.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	3.1	\$1,011.00
03401.01	Precast Prestressed Girders, Furnish	lf	\$467.77	192	\$89,812.00
03402.02	Precast Prestressed Conc. Girders, Erect Only	ea	\$2,784.35	2.2	\$6,126.00
03300.27	CIPC, Service Walkway	lf	\$147.74	80.0	\$11,819.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$48,923.88	1	\$48,924.00
	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	RF	80		\$456,623.00
CSC10.04-2a	Standard Aerial Dual Structure (T/R +30 Ft.) CIP	RF	Route Foot		\$5,993.18

Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	\$0.00
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	120.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	100.0	\$738.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	40	\$78,782.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	25.0	\$773.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	26.3	\$4,525.00
02620.03	Column & Substructure Drainage	lf	\$46.00	96.0	\$4,416.00
03210.01	Reinforcing Steel	lbs	\$1.09	67,282.0	\$73,337.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	28.5	\$14,874.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219.00	120.0	\$266,280.00
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150.00	120.0	\$378,000.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	264.6	\$1,625.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	316.1	\$6,347.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$104,781.72	1	\$104,782.00
	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	RF		120	\$977,963.00
CSC10.04-3	Segmental Aerial Structure (T/R +40 Ft.) Column (6 ft Dia)	RF		Route Foot	\$8,149.69

Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	\$0.00
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	120.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	100.0	\$738.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	205.0	\$11,521.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	44	\$86,660.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	25.0	\$773.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	26.3	\$4,525.00
02620.03	Column & Substructure Drainage	lf	\$46.00	96.0	\$4,416.00
03210.01	Reinforcing Steel	lbs	\$1.09	84,060.0	\$91,625.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	40.4	\$21,084.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219.00	120.0	\$266,280.00
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150.00	120.0	\$378,000.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	264.6	\$1,625.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	316.1	\$6,347.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$108,666.84	1	\$108,667.00
	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	RF		120	\$1,014,224.00
CSC10.04-4	Segmental Aerial Structure (T/R +50 Ft.) Column (8 ft Dia)	RF		Route Foot	\$8,451.87

Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 120 LF Span (Bottom Line Cost to be divided by the 120 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	in special cond	\$0.00
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	120.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	100.0	\$738.00
02220.25a	Haul & Dispose of AC or Concrete Spoil (20 mi RT)	ton	\$56.20	440.0	\$24,728.00
02240.01	Dewatering during Construction (minor)	mo	\$3,200.00	2.0	\$6,400.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	44	\$86,660.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	100.0	\$2,695.00
02720.02	Aggregate Base	cy	\$30.91	25.0	\$773.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	26.3	\$4,525.00
02620.03	Column & Substructure Drainage	lf	\$46.00	96.0	\$4,416.00
03210.01	Reinforcing Steel	lbs	\$1.09	87,600.0	\$95,484.00
03300.34	CIP, Aerial Pier Cap	cy	\$521.89	60.4	\$31,522.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$494.58	in segmental	\$0.00
03390.01	CIP Conc. Closure Pour	cy	\$326.24	in segmental	\$0.00
03300.35a	Furnish Segmental Box (d=7 ft)	rf	\$2,219.00	120.0	\$266,280.00
03300.36a	Install Segmental Box (d=7 ft)	rf	\$3,150.00	120.0	\$378,000.00
02370.19	Miscellaneous Metal (Bridge)	lbs	\$6.14	264.6	\$1,625.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	316.1	\$6,347.00
05820.01	Elastomeric Bearing Pads	ea	\$1,284.63	4.0	\$5,139.00
03300.27	CIPC, Service Walkway	lf	\$147.74	120.0	\$17,729.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$111,967.32	1	\$111,967.00
	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	RF		120	\$1,045,028.00
CSC10.04-5	Segmental Aerial Structure (T/R +60 Ft.) Column (8 ft dia)	RF		Route Foot	\$8,708.57

Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES for 80 LF Span (Bottom Line Cost to be divided by the 80 Lf Span = Cost/RF)				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	355.6	\$373.00
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	5.0	in section 40.01
02315.07	Structural Excavation	cy	\$17.34	241	\$4,179.00
02315.08	Structural Backfill	cy	\$16.76	85	\$1,425.00
03233.02	Shaft 7 ft dia (cased)	lf	\$1,969.54	40	\$78,782.00
03210.01	Reinforcing Steel	lbs	\$0.98	64,950	\$63,651.00
03300.33	CIPC, Aerial Pier	cy	\$390.21	89	\$34,729.00
03300.34	CIP, Aerial Pier Cap	cy	\$469.70	162	\$76,091.00
03300.37	CIPC, Aerial Track Deck Slab	cy	\$445.12	67	\$29,823.00
03390.01	CIP Conc. Closure Pour	cy	\$293.62	3.1	\$910.00
03401.01	Precast Prestressed Girders, Furnish	lf	\$420.99	160	\$67,358.00
03402.02	Precast Prestressed Conc. Girders, Erect Only	ea	\$2,505.92	2.2	\$5,513.00
03300.27	CIPC, Service Walkway	lf	\$132.97	80.0	\$10,638.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$44,816.64	1	\$44,817.00
	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	RF	\$80.00		\$418,289.00
CSC10.04-6	Standard Aerial Dual Structure (T/R +30 Ft.) Cast - in Place	RF	Route Foot		\$5,793.30

Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano / Kapiolani Blvd)						
					alignment	3,000
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER ROUTE FOOT						
<u>Tunnel: Parsons Brinckerhoff Denver</u>						
99999.02-1PB	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiahaoh / Kapiolani Blvd)	RF	\$29,300.00	1	\$29,300.00	
	Precast Wall for Ventillation	RF	\$520.83	1.0	\$521.00	
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	0	\$0.00	
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23	2.0	\$128.00	
14610.10S	Pump Station	ea	\$748,474.01	0.0003	\$225.00	
05520.00S	Cross Passage and Doors	ea	\$7,500.00	0.005	\$38.00	
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	1	\$182.00	
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1.0	\$1,086.00	
16500.04	Lighting, Tunnel Guideway	lf	\$160.58	1.0	in below	
03300.27	CIPC, Service Walkway	lf	\$147.74	1.0	\$148.00	
<u>Electrical Lighting:</u>						
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72	1.0	\$111.00	
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03	1.0	\$11.00	
16500.03m	Power, Tunnel Guideway	tf	\$70.22	1.0	\$70.00	
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02	1.0	\$7.00	
16500.05m	Corrosion Control	tf	\$8.65	1.0	\$9.00	
16500.06m	Corrosion Control Spare	tf	\$0.88	1.0	\$1.00	
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54	1.0	\$13.00	
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25	1.0	\$1.00	
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52	1.0	\$8.00	
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75	1.0	\$1.00	
<u>Systems Elements (in section 6.00 Systems)</u>						
<u>Trackwork (in Section 1.08)</u>						
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (.5%)	ls	\$2,230.20	1.0	\$2,230.20	
CSC10.06-1	Cut & Cover, Tunnel (TBM) , Portal, U Wall (Hotel St / Kawaiano / Kapiolani Blvd)	RF	Route Foot		\$34,090	

Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)						
					alignment	3,840
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER ROUTE FOOT						
<u>Tunnel: Jacobs Associates</u>						
99999.02-2PB	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	RF	\$26,700.00	1.0	\$26,700.00	
	Precast Wall for Ventilation	RF	\$520.83	1.0	\$521.00	
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23	2.0	\$128.00	
14610.10S	Pump Station	ea	\$748,474.01	0.0003	\$225.00	
05520.00S	Cross Passage and Doors	ea	\$7,500.00	0.005	\$38.00	
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	1	\$182.00	
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1.0	\$1,086.00	
16500.04	Lighting, Tunnel Guideway	lf	\$160.58	1.0	in below	
03300.27	CIPC, Service Walkway	lf	\$147.74	1.0	\$148.00	
<u>Electrical Lighting</u>						
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72	1.0	\$111.00	
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03	1.0	\$11.00	
16500.03m	Power, Tunnel Guideway	tf	\$70.22	1.0	\$70.00	
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02	1.0	\$7.00	
16500.05m	Corrosion Control	tf	\$8.65	1.0	\$9.00	
16500.06m	Corrosion Control Spare	tf	\$0.88	1.0	\$1.00	
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54	1.0	\$13.00	
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25	1.0	\$1.00	
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52	1.0	\$8.00	
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75	1.0	\$1.00	
<u>Systems Elements (in section 6.00 Systems)</u>						
<u>Trackwork (in Section 1.08)</u>						
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%) (Systems only inc in	ls	\$2,048.20	1.0	\$2,048.20	
CSC10.07-1	Tunnel, Portal and U-Wall (Hotel Waimanu / Kapiolani Blvd)	RF	Route Foot	1.0	\$31,308	

Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)						
					alignment	5,128
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER ROUTE FOOT (Tunnel U wall Portal on Dillingham same cost as N King)						
<u>Tunnel</u>						
99999.02-3PB	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	RF	\$21,000.00	1.0	\$21,000.00	
	Precast Wall for Ventillation	RF	\$520.83	1.0	\$521.00	
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23	2.0	\$128.00	
14610.10S	Pump Station	ea	\$748,474.01	0.0002	\$150.00	
05520.00S	Cross Passage and Doors	ea	\$7,500.00	0.005	\$38.00	
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	1	\$182.00	
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1.0	\$1,086.00	
16500.04	Lighting, Tunnel Guideway	lf	\$160.58	1.0	in below	
03300.27	CIPC, Service Walkway	lf	\$147.74	1.0	\$148.00	
<u>Electrical Lighting:</u>						
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72	1.0	\$111.00	
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03	1.0	\$11.00	
16500.03m	Power, Tunnel Guideway	tf	\$70.22	1.0	\$70.00	
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02	1.0	\$7.00	
16500.05m	Corrosion Control	tf	\$8.65	1.0	\$9.00	
16500.06m	Corrosion Control Spare	tf	\$0.88	1.0	\$1.00	
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54	1.0	\$13.00	
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25	1.0	\$1.00	
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52	1.0	\$8.00	
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75	1.0	\$1.00	
<u>Systems Elements (in section 6.00 Systems)</u>						
<u>Trackwork (in Section 1.08)</u>						
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%) (Systems only inc in	ls	\$1,643.95	1.0	\$1,643.95	
CSC10.07-2	Tunnel, Portal and U-Wall (North King \ Bertania St \ S King St)	RF	Route Foot	1.0	\$25,129	

Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)						
					alignment	6,395
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER ROUTE FOOT						
(Tunnel U wall Portal on Dillingham same cost as N King)						
<u>Tunnel</u>						
99999.02-4PB	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	RF	\$21,000.00	1.0	\$21,000.00	
	Precast Wall for Ventillation	RF	\$520.83	1.0	\$521.00	
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23	2.0	\$128.00	
14610.10S	Pump Station	ea	\$748,474.01	0.0002	\$150.00	
05520.00S	Cross Passage and Doors	ea	\$7,500.00	0.005	\$38.00	
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	1	\$182.00	
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1.0	\$1,086.00	
16500.04	Lighting, Tunnel Guideway	lf	\$160.58	1.0	in below	
03300.27	CIPC, Service Walkway	lf	\$147.74	1.0	\$148.00	
<u>Electrical Lighting:</u>						
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72	1.0	\$111.00	
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03	1.0	\$11.00	
16500.03m	Power, Tunnel Guideway	tf	\$70.22	1.0	\$70.00	
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02	1.0	\$7.00	
16500.05m	Corrosion Control	tf	\$8.65	1.0	\$9.00	
16500.06m	Corrosion Control Spare	tf	\$0.88	1.0	\$1.00	
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54	1.0	\$13.00	
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25	1.0	\$1.00	
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52	1.0	\$8.00	
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75	1.0	\$1.00	
<u>Systems Elements (in section 6.00 Systems)</u>						
<u>Trackwork (in Section 1.08)</u>						
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%) (Systems only inc in	ls	\$1,643.95	1.0	\$1,643.95	
CSC10.07-3	Tunnel, Portal and U-Wall (Dillingham \ Bertania St \ S King St)	RF	Route Foot	1.0	\$25,129	

Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+90)						
					alignment	7,003
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER ROUTE FOOT						
<u>Tunnel</u>						
99999.02-5PB	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+90)	RF	\$23,400.00	1.0	\$23,400.00	
	Precast Wall for Ventillation	RF	\$520.83	1.0	\$521.00	
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23	2.0	\$128.00	
14610.10S	Pump Station	ea	\$748,474.01	0.0006	\$449.00	
05520.00S	Cross Passage and Doors	ea	\$7,500.00	0.005	\$38.00	
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	1	\$182.00	
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1.0	\$814.50	
16500.04	Lighting, Tunnel Guideway	lf	\$160.58	1.0	in below	
03300.27	CIPC, Service Walkway	lf	\$147.74	1.0	\$148.00	
<u>Electrical Lighting:</u>						
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72	1.0	\$111.00	
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03	1.0	\$11.00	
16500.03m	Power, Tunnel Guideway	tf	\$70.22	1.0	\$70.00	
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02	1.0	\$7.00	
16500.05m	Corrosion Control	tf	\$8.65	1.0	\$9.00	
16500.06m	Corrosion Control Spare	tf	\$0.88	1.0	\$1.00	
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54	1.0	\$13.00	
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25	1.0	\$1.00	
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52	1.0	\$8.00	
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75	1.0	\$1.00	
<u>Systems Elements (in section 6.00 Systems)</u>						
<u>Trackwork (in Section 1.08)</u>						
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%) (Systems only inc ir	ls	\$175.88	1.0	\$175.88	
CSC10.07-4	Tunnel, Portal and U-Wall (King St Option 1 sta 1315+55 to 1408+90)	RF	Route Foot	1.0	\$26,088	

Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+90)						
					alignment	6,233
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER ROUTE FOOT						
<u>Tunnel</u>						
99999.02-6PB	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+90)	RF	\$25,200.00	1.0	\$25,200.00	
	Precast Wall for Ventillation	RF	\$520.83	1.0	\$521.00	
02630.03	Trackway Drainage, Tunneling	lf	\$64.23	2.0	\$128.00	
14610.10S	Pump Station	ea	\$748,474.01	0.00064	\$479.00	
05520.00S	Cross Passage and Doors	ea	\$7,500.00	0.005	\$38.00	
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	1	\$182.00	
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1.0	\$814.50	
16500.04	Lighting, Tunnel Guideway	lf	\$160.58	1.0	in below	
03300.27	CIPC, Service Walkway	lf	\$147.74	1.0	\$148.00	
<u>Electrical Lighting:</u>						
16500.01m	Lighting, Tunnel Guideway	tf	\$110.72	1.0	\$111.00	
16500.02m	Lighting, Tunnel Guideway Spare	tf	\$11.03	1.0	\$11.00	
16500.03m	Power, Tunnel Guideway	tf	\$70.22	1.0	\$70.00	
16500.04m	Power, Tunnel Guideway Spare	tf	\$7.02	1.0	\$7.00	
16500.05m	Corrosion Control	tf	\$8.65	1.0	\$9.00	
16500.06m	Corrosion Control Spare	tf	\$0.88	1.0	\$1.00	
16500.07m	36 strand fiber in 2"RGSC	tf	\$12.54	1.0	\$13.00	
16500.08m	36 strand fiber in 2"RGSC Spare	tf	\$1.25	1.0	\$1.00	
16500.09m	12 strand fiber in 2"RGSC	tf	\$7.52	1.0	\$8.00	
16500.10m	12 strand fiber in 2"RGSC Spare	tf	\$0.75	1.0	\$1.00	
<u>Systems Elements (in section 6.00 Systems)</u>						
<u>Trackwork (in Section 1.08)</u>						
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%) (Systems only inc in	ls	\$177.98	1.0	\$177.98	
CSC10.07-5	Tunnel, Portal and U-Wall (King St Option 2 sta 1348+50 to 1408+90)	RF	Route Foot	1.0	\$27,920	

Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER 1 RF				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	4.4	\$5.00
02315.07	Structural Excavation	cy	\$19.27	3.3	\$64.00
02315.08	Structural Backfill	cy	\$18.62	3.3	\$61.00
02315.00PB	Backfill Material (imported)	cy	\$16.86	8.3	\$140.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	3.3	\$89.00
02455.02	Furnish Concrete Piling	lf	\$32.12	100.0	\$3,212
02455.03	Drive Concrete Piling	ea	\$1,445.21	2.5	\$3,613
02620.02	Trackway Underdrains	lf	\$24.49	2	\$49.00
03210.01	Reinforcing Steel	lbs	\$1.09	49	\$53.00
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16	7.10	\$2,280.00
03300.42	CIPC, U-Wall Stems	cy	\$449.62	0.93	\$418.00
02370.16	Structure Approach Slab (LRT)	cy	\$475.96	1.67	\$795.00
16600.01	Systemwide Raceways	rf	\$222.75	1	\$223.00
16500.05P	Lighting, U-Wall Guideway	lf	\$142.27	1	\$142.00
02310.01	Finish Grading	sy	\$0.97	9.20	\$9.00
02315.01	Common Excavation	cy	\$7.55	12.00	\$91.00
02720.05	Subballast	cy	\$40.15	1.30	\$52.00
02720.06	Ballast	cy	\$44.96	In Trackwork	\$0.00
02820.03	7 ft Chain Link Fence	lf	\$12.84	2.00	\$26.00
02760.00	Service Road	sy	\$24.09	1.40	\$34.00
03300.27	CIPC, Service Walkway	lf	\$147.74	1.00	\$148.00
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$862.80	1	\$863.00
CSC10.08-1	Abutment Double At-Grade (Avg. D. T/R +10 Ft.) 100 ft length	RF		1	\$12,367.00

Abutment Single At-Grade (Avg. D. T/R +10 Ft.)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER 1 RF				
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	2.8	\$3.00
02315.07	Structural Excavation	cy	\$19.27	1.9	\$37.00
02315.08	Structural Backfill	cy	\$18.62	1.9	\$35.00
02315.00PB	Backfill Material (imported)	cy	\$16.86	4.6	\$78.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.9	\$51.00
02455.02	Furnish Concrete Piling	lf	\$32.12	40.0	\$1,285.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	1.0	\$1,445.00
02620.02	Trackway Underdrains	lf	\$24.49	2	\$49.00
03210.01	Reinforcing Steel	lbs	\$1.09	27	\$29.00
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16	3.53	\$1,134.00
03300.42	CIPC, U-Wall Stems	cy	\$449.62	0.93	\$418.00
02370.16	Structure Approach Slab (LRT)	cy	\$475.96	0.93	\$443.00
16600.01	Systemwide Raceways	rf	\$222.75	1	\$223.00
16500.05P	Lighting, U-Wall Guideway	lf	\$142.27	1	\$142.00
02310.01	Finish Grading	sy	\$0.97	9.20	\$9.00
02315.01	Common Excavation	cy	\$7.55	12.00	\$91.00
02720.05	Subballast	cy	\$40.15	1.30	\$52.00
02720.06	Ballast	cy	\$44.96	In Trackwork	\$0.00
02820.03	7 ft Chain Link Fence	lf	\$12.84	2.00	\$26.00
02760.00	Service Road	sy	\$24.09	1.40	\$34.00
03300.27	CIPC, Service Walkway	lf	\$147.74	1.00	\$148.00
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$429.90	1	\$430.00
CSC10.08-2	Abutment Single At-Grade (Avg. D. T/R +10 Ft.)	RF		1	\$6,162.00

U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft) (45 ft W x 25 ft H)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE Foot based on 361 ft length				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	722.0	\$2,549.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	1,805.0	\$13,321.00
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	80.00	\$38,539.00
02230.02	Clearing & Grubbing, Moderate	sy	\$1.05	0.0	in section 40.01
02260.22	Steel Sheet Pile and Shoring	sf	\$24.09	29,963.0	\$721,809.00
02315.07	Structural Excavation	cy	\$19.27	16,713.0	\$322,060.00
02315.08	Structural Backfill	cy	\$18.62	1,671.3	\$31,120.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	16,713.0	\$450,415.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	361.0	\$11,595.00
02720.02	Aggregate Base	cy	\$30.91	601.7	\$18,599.00
02630.03	Trackway Drainage, Tunnelling	lf	\$64.23	1,444.0	\$92,748.00
02370.20	2-rung Tube Rail	lf	\$152.55	772.0	\$117,769.00
03210.01	Reinforcing Steel	lbs	\$1.09	495,358.0	\$539,940.00
03300.41	CIPC, U-Wall invert Slab	cy	\$321.16	3,205.7	\$1,029,543.00
03300.42	CIPC, U-Wall Stems	cy	\$449.62	1,371.7	\$616,744.00
03300.80	CIPC, Tunnel Entrance Concrete	cy	\$602.18	266.1	\$160,240.00
03300.27	CIPC, Service Walkway	lf	\$147.74	722.0	\$106,668.00
	Systems:				
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	361.0	\$17,678.00
15300.01	Fire Protection Piping, Guideway Structure (6" Dia Wet)	RF	\$182.00	0	\$0.00
	Electrical:				
16500.05	Portal Lighting	LS	\$40,000.00	1.0	\$40,000.00
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$324,850.28	1.0	\$324,850.00
CSC10.06-2	U-Wall Retained Cut Dual Track Portal (Avg. Depth 25 ft)	RF	Route Foot	361.0	\$12,898.02

Ballasted Track (Open) - Single

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE TRACK FOOT					
02230.01	Clearing & Grubbing, Light	sy	\$0.72	6.11	In Guideway \$
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.10	in section 40.01
02315.01	Common Excavation	cy	\$7.55	0.22	In Guideway \$
02820.03	7 ft Chain Link Fence	lf	\$12.84	1.00	In Guideway \$
TRACKWORK:					
MATERIAL:					
05650.34	115 RE Rail, Standard CC-Mat'l	tf	\$47.03	0.90	\$42.33
05650.35	115 RE Rail, High Strength-Mat'l	tf	\$75.71	0.10	\$7.57
05650.39	Concrete Crosssties, Including Rail Shoulders-Mat'l	tf	\$32.12	1.00	\$32.12
05650.43	Pandrol 'fast' Clips, pad & insulator, 2 per Plate	tf	\$12.04	1.00	\$12.04
02720.06	Ballast	cy	\$44.96	0.64	\$28.77
02720.05	Subballast	cy	\$40.15	0.66	In Guideway \$
05650.52	Rail Welds, Shop Welding Plant (Work Train Req'd)	tf	\$5.35	1.00	\$5.35
05650.53	Rail Welds, Field Welding Plant	tf	\$4.53	1.00	\$4.53
05650.54	Rail Welds, Field Weld, Thermite	tf	\$0.14	1.00	\$0.14
INSTALLATION:					
05650.60	Install Rails and Ties	tf	\$23.03	1.00	\$23.03
05650.61	Labor for Ties Distribution	tf	\$2.87	1.00	\$2.87
05650.62	Field Welds (\$400 Mat'l & Labor)	tf	\$0.68	1.00	\$0.68
05650.63	Labor Additive, Class I Railroad, 190%	tf	\$35.22	1.00	\$35.22
05650.64	Labor Additive, Contractor, 50%	tf	\$9.27	1.00	\$9.27
05650.65	Labor to Install Ballast: Surfacing & Lining	tf	\$3.05	1.00	\$3.05
05650.66	Labor to Install Subballast	tf	\$0.25	1.00	In Guideway \$
05650.67	Labor Additive, Class I Railroad, 190%	tf	\$4.10	1.00	\$4.10
05650.68	Labor Additive, Contractor, 50%	tf	\$1.08	1.00	\$1.08
05650.69	Work Train	tf	\$1.20	1.00	\$1.20
05650.71	Rail Equipment	tf	\$3.21	1.00	\$3.21
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$30.32	1.00	\$30.00
CSC10.11-1	Ballasted Track (Open) - Single	RF	Route foot	1.0	246.56

Ballasted Track (Open) - Double					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER TWO TRACK FOOT					
02230.01	Clearing & Grubbing, Light	sy	\$0.72	6.11	In Guideway \$
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.10	in section 40.01
02315.01	Common Excavation	cy	\$7.55	0.22	In Guideway \$
02820.03	7 ft Chain Link Fence	lf	\$12.84	1.00	In Guideway \$
TRACKWORK:					
MATERIAL:					
05650.34	115 RE Rail, Standard CC-Mat'l	tf	\$47.03	1.80	\$84.65
05650.35	115 RE Rail, High Strength-Mat'l	tf	\$75.71	0.20	\$15.14
05650.39	Concrete Crossties, Including Rail Shoulders-Mat'l	tf	\$32.12	2.00	\$64.24
05650.43	Pandrol 'fast' Clips, pad & insulator, 2 per Plate	tf	\$12.04	2.00	\$24.08
02720.06	Ballast	cy	\$44.96	2.22	\$99.81
02720.05	Subballast	cy	\$40.15	0.98	In Guideway \$
05650.52	Rail Welds, Shop Welding Plant (Work Train Req'd)	tf	\$5.35	2.00	\$10.70
05650.53	Rail Welds, Field Welding Plant	tf	\$4.53	2.00	\$9.06
05650.54	Rail Welds, Field Weld, Thermite	tf	\$0.14	2.00	\$0.28
INSTALLATION:					
05650.60	Install Rails and Ties	tf	\$23.03	2.00	\$46.06
05650.61	Labor for Ties Distribution	tf	\$2.87	2.00	\$5.74
05650.62	Field Welds (\$400 Mat'l & Labor)	tf	\$0.68	2.00	\$1.36
05650.63	Labor Additive, Class I Railroad, 190%	tf	\$35.22	1.00	\$35.22
05650.64	Labor Additive, Contractor, 50%	tf	\$9.27	2.00	\$18.54
05650.65	Labor to Install Ballast: Surfacing & Lining	tf	\$3.05	2.00	\$6.10
05650.66	Labor to Install Subballast	tf	\$0.25	2.00	In Guideway \$
05650.67	Labor Additive, Class I Railroad, 190%	tf	\$4.10	2.00	\$8.20
05650.68	Labor Additive, Contractor, 50%	tf	\$1.08	2.00	\$2.16
05650.69	Work Train	tf	\$1.20	2.00	\$2.40
05650.71	Rail Equipment	tf	\$3.21	2.00	\$6.42
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$61.62	1.00	\$62.00
CSC10.11-2	Ballasted Track (Open) - Double	RF	Route foot	1.0	502.16

Paved Track (In Street) - Single					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
	MATERIAL & INSTALLATION:				
02770.10M	Concrete Track Curb (6")	lf	\$172.07	0.59	\$101.52
03300.20M	CIPC, Track Pavement (Plain Concrete)	sy	\$50.00	2.53	\$126.50
02630.05M	Trackway Drains, Cast Iron	EA	\$2,500.00	0.01	\$25.00
03300.09w	CIPC, Speed Bumps	LS	\$22,943.01	0.00	\$0.00
05650.34W	Purchase RI60N Girder Rail	tf	\$45.45	2.00	\$90.90
05650.49w	Fastening System, Embedded DF (2 bolts, 2 inserts, plate, shims, clips and pad)	EA	\$68.83	0.67	\$46.12
05650.61w	Labor to set RI60N Girder Rail, DF	tf	\$69.93	1.00	\$69.93
03300.15	CIPC, Track Slab (L&M)	cy	\$306.96	0.26	\$79.81
03210.01	Reinforcing Steel	lbs	\$1.09	17.24	\$18.79
05650.52w	Rail Welds Thermite (Assume every 15m)	ea	\$671.08	0.04	\$26.84
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$81.96	1.00	\$82.00
CSC10.10-1	Paved Track (In Street) - Single	RF	Route foot	1.0	\$667.41

Paved Track (In Street) - DUAL					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
	TRACKWORK PAVED TRACK				
	<u>MATERIAL & INSTALLATION:</u>				
02770.10M	Concrete Track Curb (6")	lf	\$172.07	1.17	\$201.32
03300.20M	CIPC, Track Pavement (Plain Concrete)	sy	\$50.00	5.05	\$252.50
02630.05M	Trackway Drains, Cast Iron	EA	\$2,500.00	0.02	\$50.00
03300.09w	CIPC, Speed Bumps	LS	\$22,943.01	0.00	\$0.00
05650.34W	Purchase R160N Girder Rail	tf	\$45.45	4.00	\$181.80
05650.49w	Fastening System, Embedded DF (2 bolts, 2 inserts, plate, shims, clips and pad)	EA	\$68.83	1.33	\$91.54
05650.61w	Labor to set R160N Girder Rail, DF	tf	\$69.93	2.00	\$139.86
03300.15	CIPC, Track Slab (L&M)	cy	\$306.96	0.52	\$159.62
03210.01	Reinforcing Steel	lbs	\$1.09	34.47	\$37.57
05650.52w	Rail Welds Thermite (Assume every 15m)	ea	\$671.08	0.08	\$53.69
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$81.75	1.00	\$82.00
CSC10.10-2	Paved Track (In Street) - DUAL	RF	Route foot	1.0	\$1,250

Direct Fixation Track - Single

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT					
02230.01	Clearing & Grubbing, Light	sy	\$0.72	6.11	n/a
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	0.10	in section 40.01
02315.01	Common Excavation	cy	\$7.55	0.22	In Guideway \$
02820.03	7 ft Chain Link Fence	lf	\$12.84	1.00	n/a
TRACKWORK:					
MATERIAL:					
05650.34	115 RE Rail, Standard CC-Mat'l	tf	\$47.03	0.90	\$42.33
05650.35	115 RE Rail, High Strength-Mat'l	tf	\$75.71	0.10	\$7.57
05650.49w	Fastening System, Embedded DF (2 bolts, 2 inserts, plate, shims, clips and pad	EA	\$68.83	1.00	\$68.83
03300.18	CIPC, Track Plinth	cy	\$430.18	0.30	\$129.05
03210.01	Reinforcing Steel	lbs	\$1.09	52.50	\$57.23
INSTALLATION:					
05650.60w	Labor to Install Direct Fixation Rail (excluding welds)	tf	\$76.92	1.00	\$76.92
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$53.47	1.00	\$53.00
CSC10.09-1	Direct Fixation Track - Single	RF	Route foot	1.0	434.93

Direct Fixation Dual Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
	TRACKWORK TUNNEL				
05650.34	115 RE Rail, Standard CC-Mat'l	tf	\$47.03	1.90	\$89.36
05650.35	115 RE Rail, High Strength-Mat'l	tf	\$75.71	0.10	\$7.57
05650.49w	Fastening System, Embedded DF (2 bolts, 2 inserts, plate, shims, clips and pad	EA	\$68.83	2.00	\$137.66
03300.18	CIPC, Track Plinth	cy	\$430.18	0.60	\$258.11
03300.27	CIPC, Service Walkway	lf	\$147.74	0.00	in guideway
03210.01	Reinforcing Steel	lbs	\$1.09	105.00	\$114.45
05650.52w	Rail Welds Thermite (Assume every 15m)	ea	\$671.08	0.04	\$26.84
05650.60w	Labor to Install Direct Fixation Rail (excluding welds)	tf	\$76.92	2.00	\$153.84
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%) duct for fastners for 30" spacing	ls	\$55.15	1.00	\$55.00
					-\$168.00
CSC10.09-2	Direct Fixation Dual Track	RF	Route foot	1.0	\$675

Double Crossover DF (No. 10)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
05650.22W	Special Trackwork, No. 10 Dbl Crossover,DF (Includes 115 lb. rail, second pour concrete, 4- No. 10 T.O. include hardened frog, switch, panelized, D.F. fasteners)	ea	\$860,362.77	1.0	\$860,362.77
05650.36W	Special Trackwork, Spare Parts	LS	\$34,414.51	1.0	\$34,414.51
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$62,634.41	1.0	\$62,634.00
CSC10.12-1	Double Crossover DF (No. 10)	EA			\$957,411

Double Crossover Ballasted (No. 10)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
05650.21	Special Trackwork, No. 10 Dbl Crossover, Ballasted (Includes 115 lb. rail, second pour concrete, 4- No. 10 T.O. include hardened frog, switch, panelized, fasteners)	ea	\$717,024.66	1.0	\$717,024.66
05650.36W	Special Trackwork, Spare Parts	LS	\$34,414.51	1.0	\$34,414.51
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$52,600.74	1.0	\$52,601.00
CSC10.12-2	Double Crossover Ballasted (No. 10)	EA			\$804,040

No. 6 Turnout - DF					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
05650.31w	Special Trackwork, No. 6 Turnout,DF (Includes 115 lb. rail, second pour concrete, 4- No. 10 T.O. include hardened frog, switch, panelized, D.F. fasteners)	ea	\$229,430.07	1.0	\$229,430.00
05650.36W	Special Trackwork, Spare Parts	LS	\$34,414.51	1.0	\$34,414.51
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$18,469.12	1.0	\$18,469.00
CSC10.12-3	No. 6 Turnout - DF	EA			\$282,314

No. 5 Turnout - DF					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
05650.32a	Special Trackwork, No. 5 Turnout,DF (Includes 115 lb. rail, second pour concrete, 4- No. 10 T.O. include hardened frog, switch, panelized, D.F. fasteners)	ea	\$126,409.29	1.0	\$126,409.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$8,848.63	1.0	\$8,849.00
CSC10.12-4	No. 5 Turnout - DF	EA			\$135,258

Permanent Terminal, Direct Fixation					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
05650.14	Permanent Terminal, Direct Fixation (Includes 115 lb. rail, crossties, severe service bumping posts panelized, rail plates & clips)	ea	\$22,943.01	1.0	\$22,943.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$1,606.01	1.0	\$1,606.00
CSC10.12-5	Permanent Terminal, Direct Fixation	EA			\$24,549

Grade Crossing Panels (Dual Track)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
05650.13	Dual Precast Concrete LRT Crossing Panels (furnish and installed)	lf	\$642.32	1.0	\$642.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$8.35	1.0	\$8.00
CSC10.12-6	Grade Crossing Panels (Dual Track)	EA			\$650

Track Vibration and Noise Dampening					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Item quantities based on allowance for a 1000 RF Tunnel segment				
02840.02	Precast Sound Wall	sf	\$56.20	0.0	\$0.00
05650.09a	Floating Slab (Dual Track)	RF	\$1,003.62	1,000	\$1,003,620
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$70,253.40	1.0	\$70,253.00
TOTAL COST PER SEGMENT					\$1,073,873
CSC10.13-1	Track Vibration and Noise Dampening	RF	Route Foot	1,000	\$1,074.00

At-Grade Station - Split Side Platform (270 Ft. L.)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER STATION (270 Ft. Long)					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	580.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	1,350.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	40.50	in section 40.01
02310.01	Finish Grading	sy	\$0.97	6,480.0	\$6,286.00
02315.01	Common Excavation	cy	\$7.55	240.0	\$1,812.00
02315.07	Structural Excavation	cy	\$19.27	40.5	\$780.00
02315.08	Structural Backfill	cy	\$18.62	240.0	\$4,469.00
16700.21	Pedestrian Crossing Signal	ea	\$51,677.45	2.0	\$103,355.00
16700.22	Pedestrian Crossing Pavement	sf	\$11.14	320.0	\$3,565.00
02620.02	Trackway Underdrains	lf	\$24.49	270.0	\$6,612.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	90.0	\$781.00
02720.05	Subballast	cy	\$40.15	81.0	\$3,252.00
03210.01	Reinforcing Steel	lbs	\$1.09	36,660.0	\$39,959.00
03300.13	CIPC, Walls	cy	\$449.62	63.3	\$28,461.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	120.0	\$78,000.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	60.0	\$45,283.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	2,970.0	\$77,487.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10500.01	Station Canopy with foundation	sf	\$281.02	4,000.0	\$1,124,080.00
02900.02	Landscaping, Extensive (Including Irrigation)	lf	\$163.79	250.0	\$40,948.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	2.0	\$112,405.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.02m	Station Furnishings, Side Platform (Allowance)	sta	\$573,575.18	1.0	\$573,575.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	3,240.0	\$186,689.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$143,081.20	1.0	\$143,081.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$440,763.52	1.0	\$440,764.00
	At-Grade Station - Single Side Platform	270 LF			\$3,195,536
CSC20.01-1	At-Grade Station - Split Side Platform (270 Ft. L.)	LS			\$3,195,536

Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02455.02	Furnish Concrete Piling	lf	\$32.12	5,625.0	\$180,675.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	125.0	\$180,651.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	2,275.0	\$127,855.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	169,220.0	\$184,450.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	167.6	\$79,610.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	25.0	\$16,250.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	8,755.0	\$504,463.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$819,391.68	1.0	\$819,392.00
CSC20.02-1	Aerial Station - SidePlatforms. Major (270 Ft. L.) Mezzanine	LS			\$5,940,590

Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER STATION (300 Ft. Long)					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02455.02	Furnish Concrete Piling	lf	\$32.12	5,625.0	\$180,675.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	125.0	\$180,651.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	1,375.0	\$77,275.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	164,220.0	\$179,000.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	167.6	\$79,610.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	0.0	\$0.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	7,855.0	\$452,605.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$799,529.60	1.0	\$799,530.00
CSC20.02-2	Aerial Station - SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS			\$5,796,590

Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02455.02	Furnish Concrete Piling	lf	\$32.12	8,437.5	\$271,013.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	187.5	\$270,977.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	1,375.0	\$77,275.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	197,720.0	\$215,515.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	335.1	\$159,173.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	0.0	\$0.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	7,855.0	\$452,605.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$847,008.32	1.0	\$847,008.00
CSC20.02-3	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) No Mezzanine	LS			\$6,140,810

Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (270 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02455.02	Furnish Concrete Piling	lf	\$32.12	8,437.5	\$271,013.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	187.5	\$270,977.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	2,275.0	\$127,855.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	202,720.0	\$220,965.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	335.1	\$159,173.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	25.0	\$16,250.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	8,755.0	\$504,463.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$866,870.40	1.0	\$866,870.00
CSC20.02-4	Aerial Station - Stacked SidePlatforms. Major (270 Ft. L.) Mezzanine	LS			\$6,284,810

Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STATION (300 Ft. Long)				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	600.0	in section 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2,000.0	in section 40.01
02220.25	Miscellaneous Demolition - Crew	hr	\$481.74	50.00	in section 40.01
02310.01	Finish Grading	sy	\$0.97	11,700.0	\$11,349.00
02455.02	Furnish Concrete Piling	lf	\$32.12	5,625.0	\$180,675.00
02455.03	Drive Concrete Piling	ea	\$1,445.21	125.0	\$180,651.00
02315.01	Common Excavation	cy	\$7.55	866.7	\$6,544.00
02315.07	Structural Excavation	cy	\$19.27	0.0	\$0.00
02315.08	Structural Backfill	cy	\$18.62	0.0	\$0.00
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0.00
02620.02	Trackway Underdrains	lf	\$24.49	600.0	\$14,694.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	200.0	\$1,736.00
02720.05	Subballast	cy	\$40.15	0.0	\$0.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$56.20	2,275.0	\$127,855.00
10500.01p	Station Canopy with aerial foundation	sf	\$210.76	7,800.0	\$1,643,928.00
02750.03	Kiss & Ride (Incl. Curb Cuts, C&G, etc.)	stl	\$9,177.20	6.0	\$55,063.00
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	6.0	\$123,892.00
02900.02	Landscaping, Extensive (including irrigation)	lf	\$163.79	250.0	\$40,948.00
03210.01	Reinforcing Steel	lbs	\$1.09	169,220.0	\$184,450.00
03300.12	CIPC, Floor Slab	cy	\$400.00	38.2	\$15,280.00
03300.31	CIPC, Columns	cy	\$475.00	167.6	\$79,610.00
03300.33	CIPC, Aerial Pier	cy	\$481.74	138.9	\$66,914.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	0.0	\$0.00
03300.13	CIPC, Walls	cy	\$449.62	109.7	\$49,323.00
03300.14	CIPC, Platform Slab (Elevated)	cy	\$650.00	300.0	\$195,000.00
03300.14-1	CIPC, mezzanine Slab (Elevated)	cy	\$650.00	25.0	\$16,250.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	66.7	\$50,340.00
09000.01	Architectural Finish, At-Grade Station Platform	sf	\$26.09	9,720.0	\$253,595.00
09000.02	Tactile Warning Strip	sf	\$40.15	1,080.0	\$43,362.00
10100.01m	Signage, Stations	sta	\$65,265.06	2.0	\$130,530.00
10500.02	Station Shelters (Incl'g benches, Evap. Cooling, Etc.)	ea	\$56,202.57	1.0	\$56,203.00
11155.02m	Vending Machine Area (Allowance)	sta	\$51,677.45	0.0	\$0.00
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
16000.01m	Electrical/ Mechanical SF allowance At Grade Stations	ft2	\$57.62	8,755.0	\$504,463.00
16700.14m	Station Communications (PA,CCTV,Radio) At Grade/Aerial Station	STA	\$572,324.79	1.0	\$572,325.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$819,391.68	1.0	\$819,392.00
CSC20.02-5	Aerial Station - Center Platforms. Major (270 Ft. L.) Mezzanine	LS			\$7,425,738

Underground Station with Center Platform and Mezzanine					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
Underground Station with Center Platform and Mezzanine					
Cost from SF Muni USS Station					
<u>Demolition, Excavation & Support</u>					
99999.07J	UMS Excavation Support	LS	\$58,023,358.14	1	\$58,023,358.14
02220.29	Surface Demolition & Site Removal for Surface Access	sf	\$14.34	0	in section 40.01
02315.07	Structural Excavation	cy	\$19.27	0	in USS Exc Support
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0	in USS Exc Support
02220.27	Allowance for Demolition of parking garage	LS	\$229,430.07	0	\$0.00
02220.28	Allowance for parking garage reconstruction	LS	\$774,326.50	0	\$0.00
<u>TRACK GUIDEWAY</u>					
CSC10.10-2	Paved Track (In Street) - DUAL	RF	1250	250	\$312,500.00
<u>INTERIOR STRUCTURAL SHELL</u>					
07170.21	Waterproofing, Geotextile Exterior Walls	sf	\$9.47	64,620.0	\$611,951.00
07170.22	Waterproofing, Geotextile Roof Slab	sf	\$8.61	38,368.1	\$330,349.00
07130.21	Sheet Waterproofing, Slab on Grade	sf	\$4.82	38,368.1	\$184,934.00
03300.21	CIPC, C&C Invert Slab	cy	\$420.00	724.0	\$304,080.00
03300.23	CIPC, C&C Exterior Walls, Formed 2 Sides	cy	\$550.00	7,629.0	\$4,195,950.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	4,799.0	\$3,479,275.00
03300.24	CIPC, C&C Interior Walls	cy	\$550.00	537	\$295,350.00
03300.85	CIPC, Ventillation Concrete	cy	\$675.00	537	\$362,475.00
03210.01	Reinforcing Steel	lbs	\$1.09	2,489,550	\$2,713,610.00
Exterior Access: Structural					
03300.83	CIPC, Station Vertical Access (Structural Stairs)	vf	\$2,875.85	270.0	\$776,480.00
<u>EXTERIOR ARCHITECTURAL</u>					
05525.01	Vent Grillage	sf	\$52.20	2,154	\$112,439.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	6,462	\$129,757.00
<u>ARCHITECTURAL</u>					
09000.01a	Architectural Finish, Underground Station	sf	\$51.64	26,225.5	\$1,354,285.00

Underground Station Continued

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
09000.02	Tactile Warning Strip	sf	\$40.15	2,028.0	\$81,424.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$70.25	17,153.0	\$1,204,998.00
16700.24	Station Agents' Booth	ea	\$240,901.58	2.0	\$481,803.00
10100.01m	Signage, Stations	sta	\$65,265.06	4.0	ommunication below
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
MECHANICAL/ELECTRICAL					
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1,000	\$1,086,320.00
15800.01	Air Distribution, Subsurface Ventilation	lf	\$573.58	1,000	\$573,580.00
15300.02m	Fire Protection and Plumbing, Underground Station	ls	\$1,080,573.00	1	\$1,080,573.00
16000.02m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding)	ft2	\$18.00	24,646	\$443,628.00
16000.04m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Union Square)	LS	\$51,621.77	1.0	\$51,622.00
15300.03m	Fire Alarm System	LS	\$387,250.16	1.0	\$387,250.00
COMMUNICATION SYSTEMS					
16700.11m	Station Communications (PA,CCTV,Radio, fare vending) Sta B	STA	\$2,456,467.00	1.0	\$2,456,467.00
SYSTEMS (TRAIN CONTROL SIGNAL COMMUNICATION)					
	LEED Implementation (15% of Station Finsihes and systems)	LS	\$10,736,844.00	15%	\$1,610,526.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$2,011,027.57	1.0	\$2,011,028.00
CSC20.03-1	Underground Station with Center Platform and Mezzanine	LS			\$85,172,231

Underground Station with Center Platform without Mezzanine					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
Underground Station with Center Platform without Mezzanine					
Cost from SF Muni USS Station					
<u>Demolition, Excavation & Support</u>					
99999.07J	UMS Excavation Support	LS	\$48,352,798.45	1	\$48,352,798.45
02220.29	Surface Demolition & Site Removal for Surface Access	sf	\$14.34	0	in section 40.01
02315.07	Structural Excavation	cy	\$19.27	0	in USS Exc Support
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0	in USS Exc Support
02220.27	Allowance for Demolition of parking garage	LS	\$229,430.07	0	\$0.00
02220.28	Allowance for parking garage reconstruction	LS	\$774,326.50	0	\$0.00
<u>TRACK GUIDEWAY</u>					
CSC10.10-2	Paved Track (In Street) - DUAL	RF	1250	250	\$312,500.00
<u>INTERIOR STRUCTURAL SHELL</u>					
07170.21	Waterproofing, Geotextile Exterior Walls	sf	\$9.47	64,620.0	\$611,951.00
07170.22	Waterproofing, Geotextile Roof Slab	sf	\$8.61	38,368.1	\$330,349.00
07130.21	Sheet Waterproofing, Slab on Grade	sf	\$4.82	38,368.1	\$184,934.00
03300.21	CIPC, C&C Invert Slab	cy	\$420.00	724.0	\$304,080.00
03300.23	CIPC, C&C Exterior Walls, Formed 2 Sides	cy	\$550.00	7,629.0	\$4,195,950.00
03300.25	CIPC, C&C Roof Slab	cy	\$725.00	4,799.0	\$3,479,275.00
03300.24	CIPC, C&C Interior Walls	cy	\$550.00	537.0	\$295,350.00
03300.85	CIPC, Ventillation Concrete	cy	\$675.00	537.0	\$362,475.00
03210.01	Reinforcing Steel	lbs	\$1.09	2,489,550	\$2,713,610.00
<u>Exterior Access: Structural</u>					
03300.83	CIPC, Station Vertical Access (Structural Stairs)	vf	\$2,875.85	270.0	\$776,480.00
<u>EXTERIOR ARCHITECTURAL</u>					
05525.01	Vent Grillage	sf	\$52.20	2,154	\$112,439.00
03300.01	Architectural Treatment (Fluted)	sf	\$20.08	6,462	\$129,757.00
<u>ARCHITECTURAL</u>					
09000.01a	Architectural Finish, Underground Station	sf	\$51.64	26,225.5	\$1,354,285.00

Underground Station Continued

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
09000.02	Tactile Warning Strip	sf	\$40.15	2,028.0	\$81,424.00
09000.03	Architectural Finish, Station Ancillary Space	sf	\$70.25	0.0	\$0.00
16700.24	Station Agents' Booth	ea	\$240,901.58	2.0	\$481,803.00
10100.01m	Signage, Stations	sta	\$65,265.06	4.0	ommunication below
12000.01	Station Furnishings, Center Platform (Allowance)	sta	\$516,217.66	1.0	\$516,218.00
MECHANICAL/ELECTRICAL					
15700.02	Subsurface Ventilation, Tunnel	lf	\$1,086.32	1,000	\$1,086,320.00
15800.01	Air Distribution, Subsurface Ventilation	lf	\$573.58	1,000	\$573,580.00
15300.02m	Fire Protection and Plumbing, Underground Station	ls	\$1,080,573.00	1	\$1,080,573.00
16000.02m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding)	ft2	\$18.00	24,646	\$443,628.00
16000.04m	Station Pwr and Ltg (switches, equip. pwr, UPS, conduit and wiring, grounding) spare (Union Square)	LS	\$51,621.77	1.0	\$51,622.00
15300.03m	Fire Alarm System	LS	\$387,250.16	1.0	\$387,250.00
COMMUNICATION SYSTEMS					
16700.11m	Station Communications (PA,CCTV,Radio, fare vending) Sta B	STA	\$2,456,467.00	1.0	\$2,456,467.00
SYSTEMS (TRAIN CONTROL SIGNAL COMMUNICATION)					
	LEED Implementation (15% of Station Finsihes and systems)	LS	\$9,531,846.00	15%	\$1,429,776.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,900,167.75	1.0	\$1,900,168.00
CSC20.03-2	Underground Station with Center Platform without Mezzanine	LS			\$74,005,063

ELEVATORS (40 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	7,913.4	\$8,626.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	32.7	\$24,679.00
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	13,583	\$74,027.00
14600.02a	Traction Elevators, (30 ft Rise)	ea	\$315,466.35	1.0	\$315,466.00
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$31,709.85	1.0	\$31,710.00
CSC20.07-1	ELEVATORS (40 ft Rise)	EA			\$454,508

ELEVATORS (50 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	9,891.8	\$10,782.00
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	40.9	\$30,868.00
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	16,978.8	\$92,534.00
14600.02b	Traction Elevators, (40 ft Rise)	ea	\$343,750.00	1.0	\$343,750.00
	Maint. of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$35,845.05	1.0	\$35,845.00
CSC20.07-2	ELEVATORS (50 ft Rise)	EA			\$513,779

ELEVATORS-RAPID RISE (70 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	13,848.5	\$15,095
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	57.2	\$43,170
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	23,770.3	\$129,548
14600.02c	Traction Elevators, (50 ft Rise)	ea	\$412,500.00	1.0	\$412,500
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$45,023.48	1.0	\$45,023.00
CSC20.07-3	ELEVATORS-RAPID RISE (70 ft Rise)	EA			\$645,336

ESCALATORS (15 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	6,330.7	\$6,900
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	26.2	\$19,774
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	10,866.4	\$59,222
14600.01a	Escalators, (15 ft Rise)	ea	\$401,502.63	1.0	\$401,503
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$36,554.93	1.0	\$36,555.00
CSC20.07-4	ESCALATORS (15 ft Rise)	EA			\$523,954

ESCALATORS (30 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	7,913.4	\$8,626
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	32.8	\$24,755
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	13,583.0	\$74,027
14600.01b	Escalators, (30 ft Rise)	ea	\$437,500.00	1.0	\$437,500
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$40,868.10	1.0	\$40,868.00
CSC20.07-5	ESCALATORS (30 ft Rise)	EA			\$585,776

ESCALATORS (60 ft Rise)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
03210.01	Reinforcing Steel	lbs	\$1.09	15,826.8	\$17,251
03300.99	CIPC, Miscellaneous Structures	cy	\$754.72	65.6	\$49,510
05522.01	Elevators, & Escalator Structural Steel	lbs	\$5.45	27,166.0	\$148,055
14600.01c	Escalators, (60 ft Rise)	ea	\$525,000.00	1.0	\$525,000
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$55,486.20	1.0	\$55,486.00
CSC20.07-6	ESCALATORS (60 ft Rise)	EA			\$795,302

Demolition: Urban					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF (flat surface only Buildings NIC)</u>				
1300020	DEMOLITION: URBAN	RF	\$185.19	1.00	\$185
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$22.20	1.0	\$22.00
CSC40.01-1	Demolition: Urban	RF			\$207

Demolition: Rural					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300025	<u>All quantities per RF (flat surface only Buildings NIC)</u> DEMOLITION: RURAL	RF	\$19.85	1.00	\$20
	Maint.of Traffic (1%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$2.20	1.0	\$2.00
CSC40.01-2	Demolition: Rural	RF			\$22

Demolition: Residential					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF (flat surface only Buildings NIC)</u>				
1300030	DEMOLITION: RESIDENTIAL	RF	\$47.41	1.00	\$47
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$5.64	1.0	\$6.00
CSC40.01-3	Demolition: Residential	RF			\$53

Clear & Grub					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF</u> Included in guideway	0	\$0.00	-	in guideway
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$0.00	1.0	\$0.00
CSC40.01-4	Clear & Grub	RF			in guideway

Earthwork					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	<u>All quantities per RF</u> Included in guideway	0	\$0.00	-	in guideway
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$0.00	1.0	\$0.00
CSC40.01-5	Earthwork	RF			in guideway

Clear and Grubbing

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES assume guideway width as 30 ft				
02230.02	Clearing & Grubbing, Moderate	sf	1.05	30	31.50
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	26.95	1	26.95
	Maint.of Traffic (2%) + Mob/Demob (in sect 4.08) + Minor Util. (4%)	ls	3.51	1	3.51
CSC40.01-8	Clear and Grubbing			1	RF
					\$61.96

Building Mitigation (Underpinning, etc)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02370.30s	<u>Based on Muni SF</u> Building Mitigation (underpinning)	LS	\$4,028,395.00	\$1	\$4,028,395
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$644,543.20	1.0	\$644,543.00
CSC40.01-6	Building Mitigation (Underpinning, etc)	LS			\$4,672,938

Building Mitigation (Parking Structure Demolition & Reconstruction)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02370.30s1	Based on Muni SF Building Mitigation (Parking Garage Demolition & reconstruction)	SF	\$458.86	1	\$459
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$73.44	1.0	\$73.00
CSC40.01-7	Building Mitigation (Parking Structure Demolition & Reconstruction)	SF			\$532

UTILITIES BASED ON 1992 INFORMATION					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300000	<p>ALL QUANTITIES BASED ON RF COST BASED ON 1992 STUDY INFORMATION</p> <p>UTILITIES: UPDATE FROM 1992 STUDY</p>	RF	\$75.00	1.00	\$75.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$6.00	1.0	\$6.00
CSC40.02-1	UTILITIES BASED ON 1992 INFORMATION	RF			\$81

Utility: URBAN TUNNEL/AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300001	ALL QUANTITIES BASED ON RF UTILITIES: URBAN TUNNEL/AT GRADE	RF	\$3,000.00	1.00	\$3,000.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$240.00	1.0	\$240.00
CSC40.02-2	Utility: URBAN TUNNEL/AT GRADE	RF			\$3,240

Utility: RURAL AERIAL					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300002	ALL QUANTITIES BASED ON RF UTILITIES: RURAL AERIAL	RF	\$38.00	1.00	\$38.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3.04	1.0	\$3.00
CSC40.02-3	Utility: RURAL AERIAL	RF			\$41

Utility: RURAL TUNNEL/AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300003	<p>ALL QUANTITIES BASED ON RF</p> <p>UTILITIES: RURAL TUNNE;/AT GRADE</p>	RF	\$1,500.00	1.00	\$1,500.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$120.00	1.0	\$120.00
CSC40.02-4	Utility: RURAL TUNNEL/AT GRADE	RF			\$1,620

Utility: RESIDENTIAL AERIAL					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300004	ALL QUANTITIES BASED ON RF UTILITIES: RESIDENTIAL AERIAL	RF	\$75.00	1.00	\$75.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$6.00	1.0	\$6.00
CSC40.02-5	Utility: RESIDENTIAL AERIAL	RF			\$81

Utility: RESIDENTIAL TUNNEL/AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300005	ALL QUANTITIES BASED ON RF UTILITIES: RESIDENTIAL TUNNEL/AT GRADE	RF	\$2,250.00	1.00	\$2,250.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$180.00	1.0	\$180.00
CSC40.02-6	Utility: RESIDENTIAL TUNNEL/AT GRADE	RF			\$2,430

SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300016	SECTION 1: KAMOKILA ELECTRICAL AND OTHER COMMUNICATION UTILIT	ls	\$15,548,400.00	1.00	\$15,548,400.00
	Deduct 10% for replication in MK estimate	10%			-\$1,554,840.00
	Assume 15% share by utility	15%	\$15,548,400.00		-\$2,332,260.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$932,904.00	INC ABOVE	\$0.00
CSC40.02-8	SECTION 1: ELECTRICAL & COMMUNICATION- KAMOKILA BLVD	LS			\$11,661,300

SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300017	SECTION 1: KAPOLEI ELECTRICAL AND OTHER COMMUNICATION UTILIT	ls	\$13,521,113.00	1.00	\$13,521,113.00
	Deduct 10% for replication in MK estimate	10%			-\$1,352,111.30
	Assume 15% share by utility	15%	\$13,521,113.00		-\$2,028,166.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$811,266.78	INC ABOVE	\$0.00
CSC40.02-9	SECTION 1: ELECTRICAL & COMMUNICATION- KAPOLEI BLVD	LS			\$10,140,835

SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300018	SECTION 1: SARATOGA ELECTRICAL AND OTHER COMMUNICATION UTIL	ls	\$19,892,263.00	1.00	\$19,892,263.00
	Deduct 10% for replication in MK estimate	10%			-\$1,989,226.30
	Assume 15% share by utility	15%	\$19,892,263.00		-\$2,983,839.45
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,193,535.78	INC ABOVE	\$0.00
CSC40.02-10	SECTION 1: ELECTRICAL & COMMUNICATION- SARATOGA BLVD	LS			\$14,919,197

SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300018a	SECTION 1: MOS 1 SARATOGA ELECTRICAL AND OTHER COMMUNICATIO	ls	\$13,219,500.00	1.00	\$13,219,500.00
	Deduct 10% for replication in MK estimate	10%			-\$1,321,950.00
	Assume 15% share by utility	15%	\$13,219,500.00		-\$1,982,925.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$793,170.00	INC ABOVE	\$0.00
CSC40.02-10A	SECTION 1: ELECTRICAL & COMMUNICATION- MOS 1 SARATOGA BLVD	LS			\$9,914,625

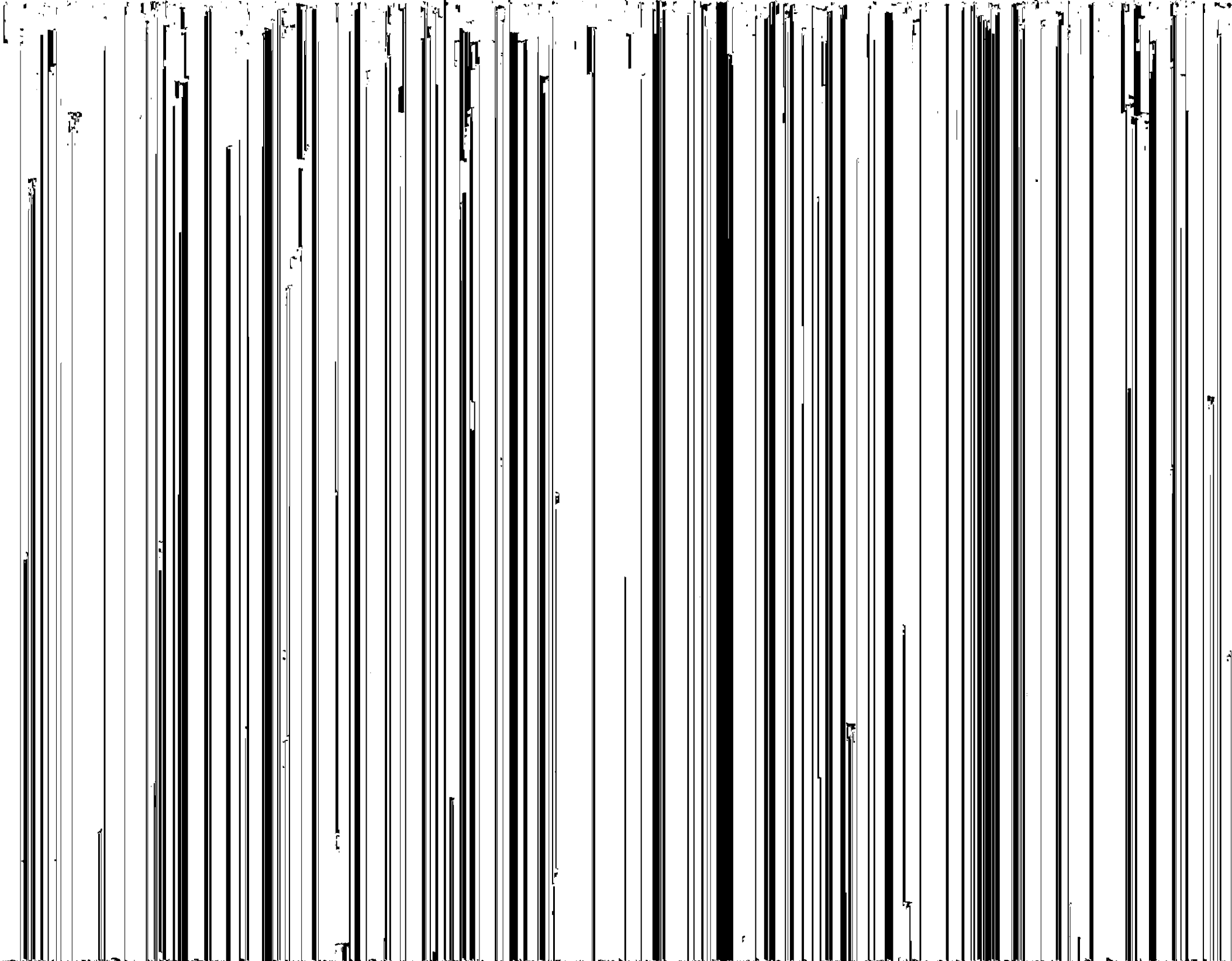
SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300019	SECTION 1: GEIGER/FORT WEAVER ELECTRICAL AND OTHER COMMUNIC	ls	\$11,447,756.00	1.00	\$11,447,756.00
	Deduct 10% for replication in MK estimate	10%			-\$1,144,775.60
	Assume 15% share by utility	15%	\$11,447,756.00		-\$1,717,163.40
	Maint. of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$686,865.36	INC ABOVE	\$0.00
CSC40.02-11	SECTION 1: ELECTRICAL & COMMUNICATION- GEIGER/FT WEAVER BLVD	LS			\$8,585,817

SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300020A	SECTION 2: FARRINGTON ELECTRICAL AND OTHER COMMUNICATION UT	ls	\$37,721,644.00	1.00	\$37,721,644.00
	Deduct 10% for replication in MK estimate	10%			-\$3,772,164.40
	deduct from MK estimate FG 26				-\$7,440,300.00
	deduct from MK estimate FG 27				-\$8,222,000.00
	Assume 15% share by utility	15%	\$37,721,644.00		-\$5,658,246.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,010,314.64	INC ABOVE	\$0.00
CSC40.02-12	SECTION 2: ELECTRICAL & COMMUNICATION- FARRINGTON BLVD	LS			\$12,628,933

SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300021	SECTION 3: SALT LAKE BLVD/NORTH KING ST ELECTRICAL AND OTHER C	ls	\$21,426,413.00	1.00	\$21,426,413.00
	Deduct 10% for replication in MK estimate	10%			-\$2,142,641.30
	Assume 15% share by utility	15%	\$21,426,413.00		-\$3,213,961.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,285,584.78	INC ABOVE	\$0.00
CSC40.02-13	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/NORTH KING BLVD	LS			\$16,069,810

SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300022	SECTION 3: SALT LAKE BLVD / DILLINGHAM ELECTRICAL AND OTHER CO	ls	\$20,652,955.00	1.00	\$20,652,955.00
	Deduct 10% for replication in MK estimate	10%			-\$2,065,295.50
	Assume 15% share by utility	15%	\$20,652,955.00		-\$3,097,943.25
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,239,177.30	INC ABOVE	\$0.00
CSC40.02-14	SECTION 3: ELECTRICAL & COMMUNICATION- SALT LAKE/DILLINGHAM BLVD	LS			\$15,489,716

SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300023	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT AT GRADE ELECTRICAL	ls	\$147,512,318.00	1.00	\$147,512,318.00
	Deduct 10% for replication in MK estimate	10%			-\$14,751,231.80
	Assume 15% share by utility	15%	\$147,512,318.00		-\$22,126,847.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$8,850,739.08	INC ABOVE	\$0.00
CSC40.02-15	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS			\$110,634,239



SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300025A	SECTION 3: MAUKA SIDE OF AIRPORT VIADUCT ELECTRICAL AND OTHER	ls	\$29,851,523.00	1.00	\$29,851,523.00
	Deduct 10% for replication in MK estimate	10%			-\$2,985,152.30
	Assume 15% share by utility	15%	\$29,851,523.00		-\$4,477,728.45
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,791,091.38	INC ABOVE	\$0.00
CSC40.02-17	SECTION 3: ELECTRICAL & COMMUNICATION- MAUKA SIDE OF AIRPORT VIADUCT	LS			\$22,388,642

SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300026	SECTION 3: AOLELE ST ELECTRICAL AND OTHER COMMUNICATION UTIL	ls	\$28,808,072.00	1.00	\$28,808,072.00
	Deduct 10% for replication in MK estimate	10%			-\$2,880,807.20
	Assume 15% share by utility	15%	\$28,808,072.00		-\$4,321,210.80
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$1,728,484.32	INC ABOVE	\$0.00
CSC40.02-18	SECTION 3: ELECTRICAL & COMMUNICATION- AOLELE ST	LS			\$21,606,054

SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300027	SECTION 4: DILLINGHAM ST ELECTRICAL AND OTHER COMMUNICATION	ls	\$94,605,000.00	1.00	\$94,605,000.00
	Deduct 10% for replication in MK estimate	10%			-\$9,460,500.00
	Assume 15% share by utility	15%	\$94,605,000.00		-\$14,190,750.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,676,300.00	INC ABOVE	\$0.00
CSC40.02-19	SECTION 4: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD	LS			\$70,953,750

SECTION 4: ELECTRICAL & COMMUNICATION- KING ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300028	SECTION 4: KING ST ELECTRICAL AND OTHER COMMUNICATION UTILITY	ls	\$65,100,000.00	1.00	\$65,100,000.00
	Deduct 10% for replication in MK estimate	10%			-\$6,510,000.00
	Assume 15% share by utility	15%	\$65,100,000.00		-\$9,765,000.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3,906,000.00	INC ABOVE	\$0.00
CSC40.02-20	SECTION 4: ELECTRICAL & COMMUNICATION- KING ST	LS			\$48,825,000

SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300029	SECTION 4: MIDDLE ST ELECTRICAL AND OTHER COMMUNICATION UTILI	ls	\$399,000.00	1.00	\$399,000.00
	Deduct 10% for replication in MK estimate	10%			-\$39,900.00
	Assume 15% share by utility	15%	\$399,000.00		-\$59,850.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$23,940.00	INC ABOVE	\$0.00
CSC40.02-21	SECTION 4: ELECTRICAL & COMMUNICATION- MIDDLE ST	LS			\$299,250

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300030A	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
	SECTION 5: NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	ls	\$178,146,900.00	1.00	\$178,146,900.00
	Deduct 10% for replication in MK estimate	10%			-\$17,814,690.00
	Assume 15% share by utility	15%	\$178,146,900.00		-\$26,722,035.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$10,688,814.00	INC ABOVE	\$0.00
CSC40.02-22	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS			\$133,610,175

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300031	SECTION 5: DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	ls	\$180,365,038.00	1.00	\$180,365,038.00
	Deduct 10% for replication in MK estimate	10%			-\$18,036,503.80
	Assume 15% share by utility	15%	\$180,365,038.00		-\$27,054,755.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$10,821,902.28	INC ABOVE	\$0.00
CSC40.02-23	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/KAWAIAHAO ST/KAPIOLANI BLVD	LS			\$135,273,779

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300032	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL	ls	\$159,474,637.00	1.00	\$159,474,637.00
	Deduct 10% for replication in MK estimate	10%			-\$15,947,463.70
	Assume 15% share by utility	15%	\$159,474,637.00		-\$23,921,195.55
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$9,568,478.22	INC ABOVE	\$0.00
CSC40.02-24	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$119,605,978

SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300032a	SECTION 5: MOS NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTR	ls	\$12,663,952.00	1.00	\$12,663,952.00
	Deduct 10% for replication in MK estimate	10%			-\$1,266,395.20
	Assume 15% share by utility	15%	\$12,663,952.00		-\$1,899,592.80
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$759,837.12	INC ABOVE	\$0.00
CSC40.02-24a	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$9,497,964

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300033	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	ls	\$161,692,776.00	1.00	\$161,692,776.00
	Deduct 10% for replication in MK estimate	10%			-\$16,169,277.60
	Assume 15% share by utility	15%	\$161,692,776.00		-\$24,253,916.40
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$9,701,566.56	INC ABOVE	\$0.00
CSC40.02-25	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$121,269,582

SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300033a	SECTION 5: MOS DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	ls	\$14,882,091.00	1.00	\$14,882,091.00
	Deduct 10% for replication in MK estimate	10%			-\$1,488,209.10
	Assume 15% share by utility	15%	\$14,882,091.00		-\$2,232,313.65
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$892,925.46	INC ABOVE	\$0.00
CSC40.02-25A	SECTION 5: ELECTRICAL & COMMUNICATION- MOS 1 DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	LS			\$11,161,568

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300034	SECTION 5: NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD ELE	ls	\$160,432,233.00	1.00	\$160,432,233.00
	Deduct 10% for replication in MK estimate	10%			-\$16,043,223.30
	Assume 15% share by utility	15%	\$160,432,233.00		-\$24,064,834.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$9,625,933.98	INC ABOVE	\$0.00
CSC40.02-26	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/NIMITZ HWY/QUEEN ST/KAPIOLANI BLVD	LS			\$120,324,175

Utility Removal (all sizes)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES BASED ON AVERAGE TRENCH WIDTH 1M X 1.5M DEPTH x 1M LENGTH					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.2	\$1.00
02260.24PB	Trench Shoring	sf	\$3.15	8.0	\$25.00
02315.06	Trench Excavation	cy	\$13.65	0.4	\$5.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02315.08PB	Trench Backfill	cy	\$12.04	0.4	\$5.00
02315.00pb	Backfill Material (imported)	cy	\$16.86	0.2	\$3.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	0.5	\$4.00
02720.02	Aggregate Base	cy	\$30.91	0.1	\$3.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.05	\$8.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$5.66	1.0	\$6.00
CSC40.02-27	Utility Removal (all sizes)	LF			\$73

20 ea 4" PVC, concrete encased

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.48	5.0	2
		shoring req'd > value			3.0
	<i>Reference SCVTA Contract C320 Bid Dec 1998</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.8	\$22.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02580.03pb	Ductbank 20-4" PVC Concrete	lf	\$380.36	1.0	\$380.00
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.14	\$24.09
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$55.31	1.0	\$55.00
CSC40.02-28	20 ea 4" PVC, concrete encased	LF			\$608

40 ea 4" CPC, concrete encased

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.48	5.0	2
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.8	\$22.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02580.07pb	Ductbank 40-4" PVC Concrete	lf	\$674.68	1.0	\$675.00
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.14	\$24.09
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$84.81	1.0	\$85.00
CSC40.02-29	40 ea 4" CPC, concrete encased	LF			\$933

WATER PIPE (DIP) UP TO 8 INCH Dia					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.67	1.7	0.67
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02510.01pb	Water Pipe up to 8 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$47.39	1.0	\$47.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$6.60	1.0	\$7.00
CSC40.02-30	WATER PIPE (DIP) UP TO 8 INCH Dia	LF			\$85

WATER PIPE (DIP) UP TO 12 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	3.00	2.5	1.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.3	\$8.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02510.02pb	Water Pipe 12 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$64.62	1.0	\$65.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.10	\$17.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$8.67	1.0	\$9.00
CSC40.02-31	WATER PIPE (DIP) UP TO 12 INCH Dia	LF			\$111

WATER PIPE (DIP) UP TO 16 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.33	3.3	1.33
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.4	\$11.00
02260.24PB	Trench Shoring	sf	\$3.15	6.6	\$21.00
02510.03pb	Water Pipe 16 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$90.47	1.0	\$90.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$13.12	1.0	\$13.00
CSC40.02-32	WATER PIPE (DIP) UP TO 16 INCH Dia	LF			\$167

WATER PIPE (DIP) UP TO 24 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.00	5.0	2.00
		shoring req'd > value			3.0
	<i>Reference Phoenix LRT Study 1999</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.7	\$19.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02510.04pb	Water Pipe 24 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$160.84	1.0	\$161.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.13	\$22.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$21.08	1.0	\$21.00
CSC40.02-33	WATER PIPE (DIP) UP TO 24 INCH Dia	LF			\$269

WATER PIPE (DIP) UP TO 36 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	5.00	7.5	3.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.6	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.4	\$38.00
02260.24PB	Trench Shoring	sf	\$3.15	15.0	\$47.00
02510.05pb	Water Pipe 36 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$193.01	1.0	\$193.00
02720.02	Aggregate Base	cy	\$30.91	0.08	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.16	\$28.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$27.37	1.0	\$27.00
CSC40.02-34	WATER PIPE (DIP) UP TO 36 INCH Dia	LF			\$349

STORM DRAIN PIPE (RCP CLASS 3) UP TO 18 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	3.50	3.8	1.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.5	\$13.00
02260.24PB	Trench Shoring	sf	\$3.15	7.6	\$24.00
02510.06pb	STORM DRAIN PIPE RCP CLASS 4 up to 18 Inch excludes Exc, Backfill, Shoring	lf	\$46.64	1.0	\$47.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$9.90	1.0	\$10.00
CSC40.02-35	STORM DRAIN PIPE (RCP CLASS 3) UP TO 18 INCH Dia	LF			\$127

STORM DRAIN PIPE (RCP CLASS 3) UP TO 24 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	4.00	5.0	2.00
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.7	\$19.00
02260.24PB	Trench Shoring	sf	\$3.15	10.0	\$32.00
02510.07pb	STORM DRAIN PIPE RCP CLASS 4 up to 24 Inch excludes Exc, Backfill, Shoring	lf	\$62.73	1.0	\$63.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.13	\$22.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$12.75	1.0	\$13.00
CSC40.02-36	STORM DRAIN PIPE (RCP CLASS 3) UP TO 24 INCH Dia	LF			\$163

STORM DRAIN PIPE (RCP CLASS 3) UP TO 30 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	4.50	6.3	2.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.1	\$30.00
02260.24PB	Trench Shoring	sf	\$3.15	12.6	\$40.00
02510.08pb	STORM DRAIN PIPE RCP CLASS 4 up to 30 Inch excludes Exc, Backfill, Shori	lf	\$118.22	1.0	\$118.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.15	\$26.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$19.51	1.0	\$20.00
CSC40.02-37	STORM DRAIN PIPE (RCP CLASS 3) UP TO 30 INCH Dia	LF			\$250

STORM DRAIN PIPE (RCP CLASS 3) UP TO 48 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS				
		TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	6.00	10.0	4.00
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.7	\$5.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	2.2	\$59.00
02260.24PB	Trench Shoring	sf	\$3.15	20.0	\$63.00
02510.09pb	STORM DRAIN PIPE RCP CLASS 4 up to 48 Inch excludes Exc, Backfill, Shoring	lf	\$254.91	1.0	\$255.00
02720.02	Aggregate Base	cy	\$30.91	0.09	\$3.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.19	\$33.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$36.47	1.0	\$36.00
CSC40.02-38	STORM DRAIN PIPE (RCP CLASS 3) UP TO 48 INCH Dia	LF			\$465

SEWER PIPE (RCP CLASS 5) UP TO 15 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.25	3.1	1.25
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.4	\$11.00
02260.24PB	Trench Shoring	sf	\$3.15	6.2	\$20.00
02530.01pb	Sewer Pipe (RCP CLASS 5) up to 15 Inch excludes Exc, Backfill, Shoring, testin	lf	\$47.04	1.0	\$47.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.10	\$17.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$9.20	1.0	\$9.00
CSC40.02-39	SEWER PIPE (RCP CLASS 5) UP TO 15 INCH Dia	LF			\$117

SEWER PIPE (VCP C425) UP TO 18 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.50	3.8	1.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.5	\$13.00
02260.24PB	Trench Shoring	sf	\$3.15	7.6	\$24.00
02530.02pb	Sewer Pipe (RCP CLASS 5) up to 18 Inch excludes Exc, Backfill, Shoring, testin	lf	\$54.43	1.0	\$54.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$10.50	1.0	\$11.00
CSC40.02-40	SEWER PIPE (VCP C425) UP TO 18 INCH Dia	LF			\$135

SEWER PIPE (VCP C425) UP TO 21 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.75	4.4	1.75
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.6	\$16.00
02260.24PB	Trench Shoring	sf	\$3.15	8.8	\$28.00
02530.03pb	Sewer Pipe (RCP CLASS 5) up to 21 Inch excludes Exc, Backfill, Shoring, testin	lf	\$64.57	1.0	\$65.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.12	\$21.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$12.22	1.0	\$12.00
CSC40.02-41	SEWER PIPE (VCP C425) UP TO 21 INCH Dia	LF			\$156

SEWER PIPE (RCP CLASS 5) UP TO 24 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	4.50	6.3	2.50
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.5	\$4.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	1.1	\$30.00
02260.24PB	Trench Shoring	sf	\$3.15	12.6	\$40.00
02530.04pb	Sewer Pipe (RCP CLASS 5) up to 24 Inch excludes Exc, Backfill, Shoring, testin	lf	\$72.88	1.0	\$73.00
02720.02	Aggregate Base	cy	\$30.91	0.07	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.15	\$26.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$15.68	1.0	\$16.00
CSC40.02-42	SEWER PIPE (RCP CLASS 5) UP TO 24 INCH Dia	LF			\$201

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 6 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.50	1.3	0.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.1	\$3.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02515.01pb	PLASTIC drainage Pipe up to 6 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$31.59	1.0	\$32.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.08	\$14.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$5.06	1.0	\$5.00
CSC40.02-43	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 6 INCH Dia	LF			\$65.00

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 8 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.67	1.7	0.67
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02515.02pb	PLASTIC drainage Pipe up to 8 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$44.52	1.0	\$45.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$6.43	1.0	\$6.00
CSC40.02-44	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 8 INCH Dia	LF			\$82

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 10 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.83	2.1	0.83
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02515.03pb	PLASTIC drainage Pipe up to 10 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$68.21	1.0	\$68.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$8.40	1.0	\$8.00
CSC40.02-45	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 10 INCH Dia	LF			\$107

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.67	4.2	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.6	\$16.00
02260.24PB	Trench Shoring	sf	\$3.15	8.4	\$26.00
02515.04pb	PLASTIC drainage Pipe up to 20 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$129.25	1.0	\$129.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.12	\$21.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$17.48	1.0	\$17.00
CSC40.02-46	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH	LF			\$223

MANHOLE (SEWER, STORM, GAS, WATER) 4' DIA X 6' DEEP

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		6	8.00	7.0	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	24.0	\$85.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2.7	\$20.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	12.4	\$334.00
02260.24PB	Trench Shoring	sf	\$3.15	84.0	\$265.00
02630.07pb	Manhole 6' x 6' (inc Shoring, Exc and Backfill)	EA	\$8,603.63	1.0	\$8,604.00
02720.02	Aggregate Base	cy	\$30.91	0.74	\$23.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.55	\$267.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$815.97	1.0	\$816.00
CSC40.02-47	MANHOLE (SEWER, STORM, GAS, WATER) 4' DIA X 6' DEEP	EA			\$10,416

CATCHBASIN (4' DEEP CIP)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		6	6.00	4.0	1.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	24.0	\$85.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2.7	\$20.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	5.3	\$143.00
02260.24PB	Trench Shoring	sf	\$3.15	48.0	\$151.00
02630.08pb	Catch Basin (4' Deep CIP)	EA	\$3,171.30	1.0	\$3,171.00
02720.02	Aggregate Base	cy	\$30.91	0.56	\$17.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.16	\$200.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$322.04	1.0	\$322.00
CSC40.02-48	CATCHBASIN (4' DEEP CIP)	EA			\$4,111

WATER VALVE RELOCATION

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		6	6.00	4.0	1.67
		shoring req'd > value			3.0
	<i>Reference Means 2003</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	24.0	\$85.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	2.7	\$20.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	5.3	\$143.00
02280.24PB	Trench Shoring	sf	\$3.15	48.0	\$151.00
02630.09pb	Water Valve Relocation (includes box and existing valve)	EA	\$3,203.99	1.0	\$3,204.00
02720.02	Aggregate Base	cy	\$30.91	0.56	\$17.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.16	\$200.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$324.84	1.0	\$325.00
CSC40.02-49	WATER VALVE RELOCATION	EA			\$4,147

DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	3.67	4.2	1.67
		shoring req'd > value		3.0	
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.6	\$16.00
02260.24PB	Trench Shoring	sf	\$3.15	8.4	\$26.00
02515.04pb	PLASTIC drainage Pipe up to 20 Inch not inclu Exc, Backfill, Shoring, testing	lf	\$129.25	1.0	\$129.00
02720.02	Aggregate Base	cy	\$30.91	0.06	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.12	\$21.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$17.48	1.0	\$17.00
CSC40.02-50	DRAINAGE PIPE SUPERSTRUCTURE TO DI (REINF PLASTIC PIPE) UP TO 20 INCH Dia	LF			\$223

Gas Pipe (1-4" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.33	0.8	0.33
		shoring req'd > value			3.0
	<i>Reference Phoenix LRT Study 1999</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.1	\$3.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.01pb	Gas Pipe (1-4" Dia) Steel Pipe Exc & Backfill	lf	\$35.33	1.0	\$35.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.08	\$14.00
	Assume 15% share by utility				
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$6.23	1.0	\$6.00
	Assume 15% share by utility	0.15	\$68.00		-\$10
CSC40.02-51	Gas Pipe (1-4" Dia) Plastic Pipe Exc & Backfill	LF			\$58

Gas Pipe (6" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.50	1.3	0.50
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.1	\$3.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.02pb	Gas Pipe (6" Dia) Steel Pipe Exc & Backfill	lf	\$55.35	1.0	\$55.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.08	\$14.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$8.25	1.0	\$8.00
	Assume 15% share by utility	0.15	\$90.00		-\$14
CSC40.02-52	Gas Pipe (6" Dia) Plastic Pipe Exc & Backfill	LF			\$76

Gas Pipe (8" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.03pb	Gas Pipe (8" Dia) Steel Pipe Exc & Backfill	lf	\$78.42	1.0	\$78.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$10.87	1.0	\$11.00
	Assume 15% share by utility	0.15	\$119.00		-\$18
CSC40.02-53	Gas Pipe (8" Dia) Plastic Pipe Exc & Backfill	LF			\$101

Gas Pipe (10" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.83	2.1	0.83
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02550.04pb	Gas Pipe (10" Dia) Steel Pipe Exc & Backfill	lf	\$125.46	1.0	\$125.00
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$15.58	1.0	\$16.00
	Assume 15% share by utility	0.15	\$171.00		-\$26
CSC40.02-54	Gas Pipe (10" Dia) Plastic Pipe Exc & Backfill	LF			\$146

Gas Pipe (16" Dia) Plastic Pipe Exc & Backfill

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	3.33	3.3	1.33
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.4	\$3.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.4	\$11.00
02260.24PB	Trench Shoring	sf	\$3.15	6.6	\$21.00
02550.05pb	Gas Pipe (16" Dia) Steel Pipe Exc & Backfill	lf	\$178.97	1.0	\$179.00
02720.02	Aggregate Base	cy	\$30.91	0.05	\$2.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.11	\$19.00
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$24.33	1.0	\$24.00
	Assume 15% share by utility	0.15	\$266.00		-\$40
CSC40.02-55	Gas Pipe (16" Dia) Plastic Pipe Exc & Backfill	LF			\$227

Ductbank 2-4" PVC Conduits w 220 kv line

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS		TRENCH DIMENSIONS		Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.67	1.7	0.67
		shoring req'd > value		3.0	
	<i>Reference Sac Folsom Extension Bid Sept 01</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.00
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.00
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.01pb	Ductbank 2-4" PVC Conduits Concrete w 220 kv line	lf	\$86.47	1.0	\$86.00
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.04	\$321.00
02720.02	Aggregate Base	cy	\$30.91	0.09	\$3.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.67	\$115.29
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$54.00	1.0	\$54
CSC40.02-56	Ductbank 2-4" PVC Conduits w 220 kv line	LF			\$594

Ductbank 16-3" PVC Conduits encased in concrete

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria dia. (ft)
		L (ft)	W (ft)	D (ft)	
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
	<i>Reference SCVTA Contract C320 Bid Dec 98</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.02pb	Ductbank 16-3" PVC Conduits Encased in Concrete	lf	\$246.60	1.0	\$246.60
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.30
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$35.90	1.0	\$36
CSC40.02-57	Ductbank 16-3" PVC Conduits encased in concrete	LF			\$395

Ductbank 1-4", 2-1/4" PVC Conduits w FO line

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
	<i>Reference SCVTA Contract C320 Bid Dec 98</i>				
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.04pb	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	lf	\$64.86	1.0	\$64.86
02580.97pb	Ductbank Pullbox 3 1/2"	ea	\$286.79	0.01	\$2.87
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$9.98	1.0	\$10
CSC40.02-58	Ductbank 1-4", 2-1/4" PVC Conduits w FO line	LF			\$110

Ductbank 16-4" PVC Conduits Encased in Concrete

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.06pb	Ductbank 16-4" PVC Conduits Encased in Concrete	lf	\$270.94	1.0	\$270.94
02580.99pb	Ductbank Pullbox Type D	ea	\$8,030.05	0.01	\$80.30
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (8%) + Minor Util. (1%)	ls	\$38.33	1.0	\$38
CSC40.02-59	Ductbank 16-4" PVC Conduits Encased in Concrete	LF			\$421

Ductbank 4-5" PVC Conduits Encased in Concrete

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES BASED ON TRENCH DIMENSIONS	TRENCH DIMENSIONS			Pipe Criteria
		L (ft)	W (ft)	D (ft)	dia. (ft)
		1	2.67	1.7	0.67
		shoring req'd > value			3.0
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	2.0	\$7.06
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.3	\$2.21
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.2	\$5.39
02260.24PB	Trench Shoring	sf	\$3.15	0.0	\$0.00
02580.05pb	Ductbank 4-5" PVC Conduits Encased in Concrete	lf	\$88.26	1.0	\$88.26
02580.97pb	Ductbank Pullbox 3 1/2"	ea	\$286.79	0.01	\$2.87
02720.02	Aggregate Base	cy	\$30.91	0.04	\$1.24
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.09	\$15.49
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	\$12.32	1.0	\$12
CSC40.02-60	Ductbank 4-5" PVC Conduits Encased in Concrete	LF			\$135

Pump Station

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02530.09pb	ALL QUANTITIES BASED ON Lump Sum	TRENCH DIMENSIONS			
		L (M)	W (M)	D (M)	
		0.00	0.00	0.00	
		shoring req'd > value		0.00	
	Reference Ralston Contract 1998 Pump Station (Ref Ralston Contract Phase B bid 4/98)	ls	\$698,430	1.00	\$698,430
	Maint.of Traffic (3%) + Mob/Demob (6%) + Minor Util. (1%)	ls	69843.00	1.00	\$69,843
CSC40.02-61	Pump Station	LS			\$768,273

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300042	SECTION 5: DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	ls	\$161,397,819.00	1.00	\$161,397,819.00
	Deduct 10% for replication in MK estimate	10%			-\$16,139,781.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$11,620,642.97	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$161,397,819.00		-\$24,209,672.85
CSC40.02-62	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM/NIMITZ/QUEENST/KAPIOLANI BLVD	LS			\$121,048,364

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300043	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
	SECTION 5:NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$179,014,689.00	1.00	\$179,014,689.00
	Deduct 10% for replication in MK estimate	10%			taken in unit cost
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$14,321,175.12	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$179,014,689.00		-\$26,852,203.35
CSC40.02-63	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$152,162,486

SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300043a	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
	SECTION 5:MOS 2a : NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$43,858,851.00	1.00	\$43,858,851.00
	Deduct 10% for replication in MK estimate	10%			-\$4,385,885.10
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3,157,837.27	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$39,472,965.90		-\$5,920,944.89
CSC40.02-63a	SECTION 5:MOS 2a :NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$33,552,021

SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300043a1	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
	SECTION 5:MOS 2a : Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$44,824,437.00	1.00	\$44,824,437.00
	Deduct 10% for replication in MK estimate	10%			-\$4,482,443.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$3,227,359.46	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$40,341,993.30		-\$6,051,299.00
CSC40.02-63a1	SECTION 5:MOS 2a :DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$34,290,694

SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$68,632,937.00	1.00	\$68,632,937.00
	Deduct 10% for replication in MK estimate	10%			-\$6,863,293.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$4,941,571.46	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$61,769,643.30		-\$9,265,446.50
CSC40.02-63b	SECTION 5: MOS 2b NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$52,504,197

SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300043b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$69,598,523.00	1.00	\$69,598,523.00
	Deduct 10% for replication in MK estimate	10%			-\$6,959,852.30
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,011,093.66	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$62,638,670.70		-\$9,395,800.61
CSC40.02-63b1	SECTION 5: MOS 2b Dillingham / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$53,242,870

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300044	SECTION 5:DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$179,980,275.00	1.00	\$179,980,275.00
	Deduct 10% for replication in MK estimate	10%			taken in unit cost
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$14,398,422.00	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$179,980,275.00		-\$26,997,041.25
CSC40.02-64	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$152,983,234

SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300044a	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
	SECTION 5: MOS 3 NORTH KING / NIMITZ / HALEKAUWILA ST / KAPIOLANI	ls	\$163,171,689.00	1.00	\$163,171,689.00
	Deduct 10% for replication in MK estimate	10%			-\$16,317,168.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$11,748,361.61	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$146,854,520.10		-\$22,028,178.02
CSC40.02-64a	SECTION 5: MOS 3 DILLINGHAM / NIMITZ / HALEKAUWILA ST / KAPIOLANI	LS			\$124,826,342

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300045	SECTION 5: NORTH KING / BERETANIA ST / S KING ST	ls	\$79,998,657.00	1.00	\$79,998,657.00
	Deduct 10% for replication in MK estimate	10%			-\$7,999,865.70
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,759,903.30	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$71,998,791.30		-\$10,799,818.70
CSC40.02-65	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING / BERETANIA ST / S KING ST	LS			\$61,198,973

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300046	SECTION 5: DILLINGHAM / BERETANIA ST / S KING ST	ls	\$82,109,696.00	1.00	\$82,109,696.00
	Deduct 10% for replication in MK estimate	10%			-\$8,210,969.60
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,911,898.11	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$73,898,726.40		-\$11,084,808.96
CSC40.02-66	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM / BERETANIA ST / S KING ST	LS			\$62,813,917

SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300041	SECTION 5: WAIKIKI SPUR	ls	\$79,249,319.00	1.00	\$79,249,319.00
	Deduct 10% for replication in MK estimate	10%			-\$7,924,931.90
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$5,705,950.97	INC ABOVE	\$0.00
	Assume 15% share by utility	0.15	\$71,324,387.10		-\$10,698,658.07
CSC40.02-67	SECTION 5: ELECTRICAL & COMMUNICATION- WAIKIKI SPUR	LS			\$60,625,729

SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300032b	SECTION 5: NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD ELECTRICAL	ls	\$218,945,054.00	1.00	\$218,945,054.00
	Deduct 10% for replication in MK estimate	10%			-\$21,894,505.40
	Assume 15% share by utility	15%	\$218,945,054.00		-\$32,841,758.10
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$13,136,703.24	INC ABOVE	\$0.00
CSC40.02-68	SECTION 5: ELECTRICAL & COMMUNICATION- NORTH KING ST/WAIMANU ST/KAPIOLANI BLVD (short Tunnel King st)	LS			\$164,208,791

SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES AND COSTS PROVIDED BY MK ENGINEERS SEE BASIS OF ESTIMATE				
1300033b	SECTION 5: DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD	ls	\$221,163,193.00	1.00	\$221,163,193.00
	Deduct 10% for replication in MK estimate	10%			-\$22,116,319.30
	Assume 15% share by utility	15%	\$221,163,193.00		-\$33,174,478.95
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (0%)	ls	\$13,269,791.58	INC ABOVE	\$0.00
CSC40.02-69	SECTION 5: ELECTRICAL & COMMUNICATION- DILLINGHAM BLVD/HOTEL ST/WAIMANU ST/KAPIOLANI BLVD (long Tunnel King st	LS			\$165,872,395

Hazardous Material Mitigation: Petrochemical Contaminated Excavation

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02315.04	<p>Item quantities based on provided by PBQD cost based on quote by Hawaiian Remediation and Recycling (1994 cost escalated to 2006\$) Excavation, Haul and Thermal Disposal of Hydrocarbon Contaminated Soil</p>	TON	\$184.67	1.0	\$185.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	Is	inc above	1.0	\$0.00
CSC40.03-1	Hazardous Material Mitigation: Petrochemical Contaminated Excavation	TON	TON		\$185.00

Hazardous Material Mitigation: Groundwater treatment

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Item quantities based on provided by PBQD				
02315.04a	Collect, Treat and Dispose of Hydrocarbon Contaminated Groundwater	gal	\$0.80	1.0	\$0.80
	Baker Tanks	allow	\$0.05	1.0	\$0.05
	Pumps	allow	\$0.02	1.0	\$0.02
	Straw	allow	\$0.01	1.0	\$0.01
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$0.12	1.0	\$0.12
CSC40.03-2	Hazardous Material Mitigation: Groundwater treatment	GAL			\$1.00

Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
1300040	<p>Cost per section based on allowance for unknown</p> <p>BIOLOGICAL/ARCHEOLOGICAL/HISTORICAL MONITORING</p>	ALLOW	\$2,500,000.00	1.0	\$2,500,000.00
	Maint.of Traffic (4%) + Mob/Demob (8%) + Minor Util. (4%)	Is	\$0.00	1.0	\$0.00
CSC40.04-1	Environmental Mitigation: Allowance for Biological and Archeological/Historical Monitoring	ALLOW			\$2,500,000.00

Street Construction Adj. to LRT - One Lane

Street Construction Adj. to LRT - One Lane				lane	12
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	1.3	\$1.00
02315.01	Common Excavation	cy	\$7.55	0.4	\$3.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	1.3	\$11.00
02720.01	Aggregate Subbase	cy	\$24.72	0.2	\$5.00
02720.02	Aggregate Base	cy	\$30.91	0.3	\$9.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.4	\$69.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$36.26	1.0	\$36.00
CSC40.06-1	Street Construction Adj. to LRT - One Lane	RF	Route Foot		\$295.00

Turn Pocket (100 ft)

lane

12

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	100.0	\$353.00
02220.21	Asphaltic Pavement Removal	sy	\$7.38	133.3	\$984.00
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	\$0.00
02220.24	Remove Concrete Curb	lf	\$5.13	100.0	\$513.00
02310.01	Finish Grading	sy	\$0.97	133.3	\$129.00
02315.01	Common Excavation	cy	\$7.55	59.1	\$446.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	133.3	\$1,157.00
02720.01	Aggregate Subbase	cy	\$24.72	18.7	\$462.00
02720.02	Aggregate Base	cy	\$30.91	18.7	\$578.00
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	39.1	\$3,364.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	110.0	\$2,756.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	0.0	\$0.00
02370.25	Traffic Striping	lf	\$0.02	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.500	\$3,965.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$2,508.66	1.0	\$2,509.00
CSC40.06-1a	Turn Pocket (100 ft)	RF	Route Foot	100.0	\$204.28

Street Construction Adj. to LRT - Two Lane

Street Construction Adj. to LRT - Two Lane				lane	24
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	2.7	\$3.00
02315.01	Common Excavation	cy	\$7.55	0.9	\$7.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	2.7	\$23.00
02720.01	Aggregate Subbase	cy	\$24.72	0.4	\$10.00
02720.02	Aggregate Base	cy	\$30.91	0.6	\$19.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	0.8	\$138.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	fl2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$50.54	1.0	\$51.00
CSC40.06-2	Street Construction Adj. to LRT - Two Lane	RF	Route Linear Foot		\$412.00

Street Construction Adj. to LRT - Three Lane

lane

36

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	4.0	\$4.00
02315.01	Common Excavation	cy	\$7.55	1.3	\$10.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	4.0	\$35.00
02720.01	Aggregate Subbase	cy	\$24.72	0.7	\$17.00
02720.02	Aggregate Base	cy	\$30.91	0.8	\$25.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.2	\$206.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$64.12	1.0	\$64.00
CSC40.06-3	Street Construction Adj. to LRT - Three Lane	RF	Route Linear Foot		\$522.00

Street Construction Adj. to LRT - Four Lane

lane

48

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER ROUTE LINEAR FOOT based on 400 ft block					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	in demo 40.01
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	in demo 40.01
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	in demo 40.01
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	in demo 40.01
02310.01	Finish Grading	sy	\$0.97	5.3	\$5.00
02315.01	Common Excavation	cy	\$7.55	1.8	\$14.00
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1.0	\$32.00
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	5.3	\$46.00
02720.01	Aggregate Subbase	cy	\$24.72	0.9	\$22.00
02720.02	Aggregate Base	cy	\$30.91	1.0	\$31.00
02740.01	Asphaltic Concrete Pavement (Small Qty.)	tn	\$172.07	1.6	\$275.00
02770.03	Concrete Curb and Gutter	lf	\$25.05	1.0	\$25.00
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	4.0	\$25.00
02370.25	Traffic Striping	lf	\$0.00	1.0	\$0.00
16500.06	Lighting, Roadway	ea	\$7,929.90	0.010	\$79.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$77.56	1.0	\$78.00
CSC40.06-4	Street Construction Adj. to LRT - Four Lane	RF	Route Linear Foot		\$632.00

Landscaping & Urban Design: Urban					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
1300007	LANDSCAPING & URBAN DESIGN: URBAN	RF	\$172.50	1.0	\$173.00
	Maint.of Traffic (1.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$13.84	1.0	\$14.00
CSC40.06-10	Landscaping & Urban Design: Urban	RF	Route Foot		\$187.00

Landscaping & Urban Design: Rural					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
1300010	LANDSCAPING & URBAN DESIGN: RURAL	RF	\$86.25	1.0	\$86.00
	Maint.of Traffic (1.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$6.88	1.0	\$7.00
CSC40.06-11	Landscaping & Urban Design: Rural	RF	Route Foot		\$93.00

Landscaping & Urban Design Based on 1992 Study					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER ROUTE FOOT				
1300015	LANDSCAPING & URBAN DESIGN: BASED ON 1992 Study	RF	\$115.00	1.0	\$115.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$14.95	1.0	\$15.00
CSC40.06-12	Landscaping & Urban Design Based on 1992 Study	RF	Route Foot		\$130.00

Hotel Street Mall Reconstruction					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER SQUARE FOOT BASED ON 92 STUDY				
1300035	RECONSTRUCT HOTEL STREET MALL	SF	\$147.50	1.0	\$148.00
	Maint.of Traffic (1.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$11.84	1.0	\$12.00
CSC40.06-13	Hotel Street Mall Reconstruction	sf	SQUARE FOOT		\$160.00

PARK & RIDE AT GRADE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STALL				
02740.04	Park and Ride Lot at-grade	stall	\$4,129.74	1.0	\$4,130.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$413.00	1.0	\$413.00
CSC40.06-14	PARK & RIDE AT GRADE	STALL	EA		\$4,543.00

PARK & RIDE STRUCTURED					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02740.05	ALL QUANTITIES PER STALL based on bart design build contract 12ys-130				
	Park and Ride Lot Structured	stall	\$22,235.00	1.0	\$22,235.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$2,223.50	1.0	\$2,224.00
CSC40.06-15	PARK & RIDE STRUCTURED	STALL	EA		\$24,459.00

ONE LANE ELEVATED STRUCTURE TO P&R GARAGE					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER STALL based on bart design build contract 12ys-130				
1300036	ELEVATED STRUCTURE (ONE LANE)	SF	\$400.00	1.0	\$400.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$40.00	1.0	\$40.00
CSC40.06-15A	ONE LANE ELEVATED STRUCTURE TO P&R GARAGE	SF	SF		\$440.00

BUS BAYS					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	ALL QUANTITIES PER BAY				
02750.04	Concrete Bus Bay (Incl. Curb Cuts, C&G, shelter, etc.)	stl	\$20,648.71	1.0	\$20,649.00
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (2%)	ls	\$2,064.90	1.0	\$2,065.00
CSC40.06-16	BUS BAYS	STALL	EA		\$22,714.00

Intersection Modification Type 1						
					lane	400
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY						
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	400.0	\$1,412	
02220.21	Asphaltic Pavement Removal	sy	\$7.38	175.0	\$1,292	
02220.23	Remove Concrete Sidewalk	sy	\$8.03	260.0	\$2,088	
02220.24	Remove Concrete Curb	lf	\$5.13	965.0	\$4,950	
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	300.0	\$8,085	
02310.01	Finish Grading	sy	\$0.97	230.0	\$223	
02315.01	Common Excavation	cy	\$7.55	177.8	\$1,342	
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	400.0	\$12,848	
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	435.0	\$3,776	
02720.01	Aggregate Subbase	cy	\$24.72	32.2	\$796	
02720.02	Aggregate Base	cy	\$30.91	32.2	\$995	
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	80.2	\$6,900	
02770.03	Concrete Curb and Gutter	lf	\$25.05	985.0	\$24,674	
02770.08	Concrete Barrier, Two Side	lf	\$80.29	400.0	\$32,116	
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	1,200.0	\$7,416	
02370.25	Traffic Striping	lf	\$1.77	1,900.0	\$3,363	
16500.06	Lighting, Roadway	ea	\$7,929.90	2.000	\$15,860	
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$17,939.04	1.0	\$17,939	
CSC40.06-17	Intersection Modification Type 1	LS	Lump Sum		\$146,075	

Intersection Modification Type 2

Intersection Modification Type 2					lane	350
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY						
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	350.0	\$1,236	
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0	
02220.23	Remove Concrete Sidewalk	sy	\$8.03	102.0	\$819	
02220.24	Remove Concrete Curb	lf	\$5.13	280.0	\$1,436	
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	65.0	\$1,752	
02310.01	Finish Grading	sy	\$0.97	102.0	\$99	
02315.01	Common Excavation	cy	\$7.55	155.6	\$1,175	
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	350.0	\$11,242	
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	102.0	\$885	
02720.01	Aggregate Subbase	cy	\$24.72	42.0	\$1,038	
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298	
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	104.6	\$9,000	
02770.03	Concrete Curb and Gutter	lf	\$25.05	640.0	\$16,032	
02770.08	Concrete Barrier, Two Side	lf	\$80.29	400.0	\$32,116	
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	410.0	\$2,534	
02370.25	Traffic Striping	lf	\$1.77	1,400.0	\$2,478	
16500.06	Lighting, Roadway	ea	\$7,929.90	1.750	\$13,877	
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$13,582.38	1.0	\$13,582	
CSC40.06-18	Intersection Modification Type 2	LS	Lump Sum		\$110,599	

Intersection Modification Type 3

		lane				100
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY						
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	100.0	\$353	
02220.21	Asphaltic Pavement Removal	sy	\$7.38	20.0	\$148	
02220.23	Remove Concrete Sidewalk	sy	\$8.03	80.0	\$642	
02220.24	Remove Concrete Curb	lf	\$5.13	340.0	\$1,744	
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	80.0	\$2,156	
02310.01	Finish Grading	sy	\$0.97	100.0	\$97	
02315.01	Common Excavation	cy	\$7.55	44.4	\$335	
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212	
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	100.0	\$868	
02720.01	Aggregate Subbase	cy	\$24.72	0.0	\$0	
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298	
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0	
02770.03	Concrete Curb and Gutter	lf	\$25.05	340.0	\$8,517	
02770.08	Concrete Barrier, Two Side	lf	\$80.29	320.0	\$25,693	
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	2,320.0	\$14,338	
02370.25	Traffic Striping	lf	\$1.77	800.0	\$1,416	
16500.06	Lighting, Roadway	ea	\$7,929.90	1.000	\$7,930	
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$9,624.58	1.0	\$9,625	
CSC40.06-19	Intersection Modification Type 3	LS	Lump Sum		\$78,372	

Intersection Modification Type 3w

				lane	100
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	\$0
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	\$0
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	\$0
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.0	\$0
02310.01	Finish Grading	sy	\$0.97	0.0	\$0
02315.01	Common Excavation	cy	\$7.55	0.0	\$0
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	0.0	\$0
02720.01	Aggregate Subbase	cy	\$24.72	0.0	\$0
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	140.0	\$3,507
02770.08	Concrete Barrier, Two Side	lf	\$80.29	140.0	\$11,241
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	0.0	\$0
02370.25	Traffic Striping	lf	\$1.77	0.0	\$0
16500.06	Lighting, Roadway	ea	\$7,929.90	1.000	\$7,930
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$3,806.32	1.0	\$3,806
CSC40.06-20	Intersection Modification Type 3w	LS	Lump Sum		\$30,994

Intersection Modification Type 4

				lane	100
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	\$0
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	100.0	\$803
02220.24	Remove Concrete Curb	lf	\$5.13	100.0	\$513
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	40.0	\$1,078
02310.01	Finish Grading	sy	\$0.97	0.0	\$0
02315.01	Common Excavation	cy	\$7.55	0.0	\$0
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	100.0	\$3,212
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	100.0	\$868
02720.01	Aggregate Subbase	cy	\$24.72	8.6	\$213
02720.02	Aggregate Base	cy	\$30.91	42.0	\$1,298
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	110.0	\$2,756
02770.08	Concrete Barrier, Two Side	lf	\$80.29	80.0	\$6,423
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	550.0	\$3,399
02370.25	Traffic Striping	lf	\$1.77	0.0	\$0
16500.06	Lighting, Roadway	ea	\$7,929.90	1.000	\$7,930
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$3,989.02	1.0	\$3,989
CSC40.06-21	Intersection Modification Type 4	LS	Lump Sum		\$32,482

Intersection Modification Type 5

				lane	350
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	350.0	\$1,236
02220.21	Asphaltic Pavement Removal	sy	\$7.38	60.0	\$443
02220.23	Remove Concrete Sidewalk	sy	\$8.03	395.0	\$3,172
02220.24	Remove Concrete Curb	lf	\$5.13	1,115.0	\$5,720
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	280.0	\$7,546
02310.01	Finish Grading	sy	\$0.97	455.0	\$441
02315.01	Common Excavation	cy	\$7.55	155.6	\$1,175
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	350.0	\$11,242
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	455.0	\$3,949
02720.01	Aggregate Subbase	cy	\$24.72	32.2	\$796
02720.02	Aggregate Base	cy	\$30.91	32.2	\$995
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	80.2	\$6,900
02770.03	Concrete Curb and Gutter	lf	\$25.05	950.0	\$23,798
02770.08	Concrete Barrier, Two Side	lf	\$80.29	320.0	\$25,693
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	2,000.0	\$12,360
02370.25	Traffic Striping	lf	\$1.77	2,800.0	\$4,956
16500.06	Lighting, Roadway	ea	\$7,929.90	2.000	\$15,860
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$17,679.48	1.0	\$17,679
CSC40.06-22	Intersection Modification Type 5	LS	Lump Sum		\$143,961

Intersection Modification Type 5a

Intersection Modification Type 5a					lane	350
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$	
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY						
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	350.0	\$1,236	
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0	
02220.23	Remove Concrete Sidewalk	sy	\$8.03	75.0	\$602	
02220.24	Remove Concrete Curb	lf	\$5.13	220.0	\$1,129	
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	50.0	\$1,348	
02310.01	Finish Grading	sy	\$0.97	75.0	\$73	
02315.01	Common Excavation	cy	\$7.55	155.6	\$1,175	
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	350.0	\$11,242	
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	75.0	\$651	
02720.01	Aggregate Subbase	cy	\$24.72	30.8	\$761	
02720.02	Aggregate Base	cy	\$30.91	30.8	\$952	
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	76.7	\$6,599	
02770.03	Concrete Curb and Gutter	lf	\$25.05	220.0	\$5,511	
02770.08	Concrete Barrier, Two Side	lf	\$80.29	160.0	\$12,846	
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	3,520.0	\$21,754	
02370.25	Traffic Striping	lf	\$1.77	170.0	\$301	
16500.06	Lighting, Roadway	ea	\$7,929.90	2.000	\$15,860	
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$11,485.60	1.0	\$11,486	
CSC40.06-23	Intersection Modification Type 5a	LS	Lump Sum		\$93,526	

Intersection Modification Type 5B

				lane	350
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
ALL QUANTITIES PER LUMP SUM FROM 1992 STUDY					
02220.11	Sawcut Asphalt Pavement	lf	\$3.53	0.0	\$0
02220.21	Asphaltic Pavement Removal	sy	\$7.38	0.0	\$0
02220.23	Remove Concrete Sidewalk	sy	\$8.03	0.0	\$0
02220.24	Remove Concrete Curb	lf	\$5.13	0.0	\$0
02320.20	Haul & Dispose 12 cy dump 20 mil RT	cy	\$26.95	0.0	\$0
02310.01	Finish Grading	sy	\$0.97	0.0	\$0
02315.01	Common Excavation	cy	\$7.55	0.0	\$0
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	0.0	\$0
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	0.0	\$0
02720.01	Aggregate Subbase	cy	\$24.72	0.0	\$0
02720.02	Aggregate Base	cy	\$30.91	0.0	\$0
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	0.0	\$0
02770.03	Concrete Curb and Gutter	lf	\$25.05	0.0	\$0
02770.08	Concrete Barrier, Two Side	lf	\$80.29	100.0	\$8,029
02750.05	Concrete Sidewalk (4")	ft2	\$6.18	0.0	\$0
02370.25	Traffic Striping	lf	\$1.77	560.0	\$991
16500.06	Lighting, Roadway	ea	\$7,929.90	0.000	\$0
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$1,262.80	1.0	\$1,263
CSC40.06-24	Intersection Modification Type 5B	LS	Lump Sum		\$10,283

ATC, Signal System Line Stations					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.01m	<p>Quantities are based on Muni Assumed train control for 60 vehicles ATC Line & Station</p>	RF	\$238.00	1.0	\$238.00
	<p>Maint.of Traffic (0%) + Mob/Demob (0%) + Minor Util. (0%) Inc in items in spreadsheet atc 0705-05</p>	ls	\$0.00	1.0	\$0.00
TOTAL COST FOR SEGMENT					\$238
CSC50.01-1	ATC, Signal System Line Stations	RF			\$238

Highway Crossing Warning Devices (Preemptive)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
			\$		\$
16700.15	Wayside Line Costs, Wayside Cable & Equipment	lf	\$56.30	100.0	\$5,630.00
16700.16	Wayside Line Costs, Cable Ductbank (At-Grade Only)	lf	\$80.77	100.0	\$8,077.00
16700.17	Highway Crossing Signals, Preemptive	ea	\$192,676.71	1.0	\$192,677.00
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$28,893.76	1.0	\$28,894.00
CSC50.01-2	Highway Crossing Warning Devices (Preemptive)	EA			\$235,278

Traffic Signal Modifications (4 directions)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.18	Traffic Signal (incl Signal Controller) (cost per each direction)	ea	\$80,300.53	4.0	\$321,202.00
16700.23	Pedestrian Crossing Signal 1 Direction	ea	\$2,895.72	4.0	\$11,583.00
	Maint.of Traffic (1.5%) + Mob/Demob (10%) + Minor Util. (1.5%)	ls	\$43,262.05	1.0	\$43,262.00
CSC50.02-1	Traffic Signal Modifications (4 directions)	EA			\$376,047

Traffic Signal Modifications (3 directions)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.18	Traffic Signal (incl Signal Controller) (cost per each direction)	ea	\$80,300.53	3.0	\$240,902.00
16700.23	Pedestrian Crossing Signal 1 Direction	ea	\$2,895.72	3.0	\$8,687.00
	Maint.of Traffic (6%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$39,934.24	1.0	\$39,934.00
CSC50.02-2	Traffic Signal Modifications (3 directions)	EA			\$289,523

Traction Power Substations (2 MW)					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
Quantity based on 1 substations					
16371.01M	Traction Power Equipment, Substation Aux Electrical (Prefab w/arch)	ea	\$850,000.00	1.0	\$850,000.00
16371.02M	TP equipment and Misc. Spare	ls	\$80,000.00	0.0	\$0.00
16371.01aM	Substation Architectural	ea	\$150,000.00	1.0	\$150,000.00
16371.07M	Traction Power SCADA (RTU, fiber optic hardware)	ea	\$120,011.37	1.0	\$120,011.00
16371.13M	MIMIC Panel	LS	\$253,000.00	0.5	\$126,500.00
16371.14M	MIMIC Panel Spare	LS	\$25,000.00	0.0	\$0.00
16371.08M	SCADA Spare (RTU Substation)	LS	\$24,000.00	0.5	\$12,000.00
16371.09M	Connection to SCADA master (SCADA master upgrade, Fiber cables)	LS	\$440,000.00	0.3	\$132,000.00
16371.10M	SCADA Master Spare	LS	\$44,000.00	0.0	\$0.00
16371.11M	Gap Breaker (the breaker, RTU, and aux electrical, maintenance phone)	ea	\$400,000.00	0.1	\$40,000.00
16371.12M	Gap Breaker Spare	LS	\$80,000.00	0.0	\$0.00
16371.15M	Maintenance Telephone System (MTS)	RF	\$6.63	1,000.0	\$6,630.00
16371.16M	MTS Spare	RF	\$0.66	0.0	\$0.00
Utility and Above 480 Volt Power					
16700.26W	Cost of PG&E 12.47KV Sources	ea	\$6,900,000.00	0.000	\$0.00
16700.27W	Cost of Power Distribution Equipment	sta	\$1,356,388.00	1.0	in above 16371.01M
15300.04m	Fire Protection Substations	ls	\$192,000.00	0.5	\$96,000.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$107,319.87	1.0	\$107,320.00
CSC50.03-1	Traction Power Substations (2 MW)	EA		1.0	\$1,640,461

Traction Power Supply - At-Grade OCS, Dual Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment See estimate from PBTRS 9-1-06				
16370.05p	Traction Power Supply, (OCS), At-Grade, Double Track	RF	\$283.00	1.0	\$283.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$24.65	1.0	\$25.00
TOTAL COST FOR SEGMENT					\$315
CSC50.04-1	Traction Power Supply - At-Grade OCS, Dual Track	RF	Route Foot	1	\$315

Traction Power Supply - Subway OCS, Double Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment Assumes LPSCAT Low Profile Cantenary See estimate from PBTRS 9-1-06				
16370.06p	Traction Power Supply, (OCS), Subway, DoubleTrack	RF	\$195.00	1.0	\$195.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$14.14	1.0	\$14.00
TOTAL COST FOR SEGMENT					\$216
CSC50.04-2	Traction Power Supply - Subway OCS, Double Track	RF	Route Feet	1	\$216

Traction Power Supply - Aerial OCS, Dual Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment Assumes LPSCAT Low Profile Cantenary See estimate from PBTRS 9-1-06				
16370.04p	Traction Power Supply, Aerial OCS, Dual Track	ft	\$200.00	1.0	\$200.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$17.60	1.0	\$18.00
TOTAL COST FOR SEGMENT					\$225
CSC50.04-3	Traction Power Supply - Aerial OCS, Dual Track	RF	Route Foot		\$225

Traction Power Supply - Aerial OCS, Single Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Quantities are based on a 1 RF segment Assumes LPSCAT Low Profile Cantenary See estimate from PBTRS 9-1-06				
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00	1.0	\$150.00
16370.07M	Traction Power Supply, (OCS), Spare Parts	RF	\$7.06	1.0	\$7.00
16370.08M	Traction Power DC Feeder Cables, including splices and fire proofing (No Boxes)	RF	\$224.51	1.0	in above
16370.09M	Traction Power Feeder Spare	RF	\$22.96	1.0	in above
16370.10M	Riser, 500 Kcmil cable in 2"RGSC	RF	\$5.31	1.0	in above
16370.11M	Riser Spare	RF	\$0.51	1.0	in above
16370.12M	Catenery Detectors	RF	\$0.31	1.0	in above
16370.13M	Catenery Detectors Spare	RF	\$0.51	1.0	in above
16370.16H	4" Cand splice boxes with support system	RF	\$63.65	1.0	in above
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$13.35	1.0	\$13.00
TOTAL COST FOR SEGMENT					\$170
CSC50.04-4	Traction Power Supply - Aerial OCS, Single Track	RF	Route Foot	1	\$170

Communications System - Dual Track					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16371.24M	Misc. Telecom Infrastructure	RF	\$83.76	1.0	\$84.00
16371.20M	Radio System: Muni Radio	RF	\$0.00	1.0	not used
16371.21M	Radio System: ECD Radio	RF	\$32.75	1.0	\$33.00
16371.22M	Emergency Telephone System	RF	\$66.48	1.0	\$66.00
16371.23M	Fire Department Telephone System	RF	\$45.61	1.0	\$46.00
16371.15M	Maintenance Telephone System (MTS)	RF	\$6.63	1.0	\$7.00
16371.16M	MTS Spare	RF	\$0.66	1.0	\$1.00
16371.17M	Facilities Telephone System	RF	\$22.99	1.0	\$23.00
16371.18M	METS Telephone	RF	\$5.95	1.0	\$6.00
16371.19M	Public Telephone	RF	\$13.20	1.0	\$13.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$19.53	1.0	\$20.00
TOTAL COST FOR SEGMENT					\$299
CSC50.05-1	Communications System - Dual Track	LS			\$299

Fare Vending Equipment Underground Stations					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16770.01M	Subway Station TVM & Fare Gate System	LS	\$546,365.56	1.0	\$546,366
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$38,245.62	1.0	\$38,246.00
CSC50.06-1	Fare Vending Equipment Underground Stations	LS			\$584,612

Fare Vending Equipment Aerial & At Grade Stations					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16770.02M	Surface & Aerial Station TVM System	LS	\$280,105.16	1.0	\$280,105
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$19,607.35	1.0	\$19,607.00
CSC50.06-2	Fare Vending Equipment Aerial & At Grade Stations	LS			\$299,712

Central Control Facility					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
16700.31M	Central Control: Telephone Various Phone Systems' Connection to Central Control	LS	\$930,000.00	1.0	\$930,000.00
16700.42M	Central Control : Power SCADA Power SCADA graphic display	LS	\$230,000.00	1.0	\$230,000.00
16700.43M	Power SCADA graphic display Spare	LS	\$23,000.00	1.0	\$23,000.00
16700.44M	Central Control: UPS UPS 100Kva	LS	\$96,500.00	1.0	\$96,500.00
16700.45M	UPS 100Kva Spare	LS	\$10,000.00	1.0	\$10,000.00
16700.02p	Central Control Facility	sf	\$334.12	20,000.0	\$6,682,400.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$558,033.00	1.0	\$558,033.00
CSC50.07	Central Control Facility	LS			\$8,529,933

Administration Building & Site Facilities					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
13000.01	Maintenance and Administration Bldg.	sf	\$290.00	45,000.0	\$13,050,000.00
02740.04	Park and Ride Lot at-grade Parking & Site Facilities use 250 sf / ee	stall	\$4,129.74	180.0	\$743,353.00
	Maint.of Traffic (.5%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$965,534.71	1.0	\$965,535.00
CSC30.01-1	Administration Building & Site Facilities	LS			\$14,758,888

Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02230.01	Clearing & Grubbing, Light	sy	\$0.72	43,560.0	\$31,363
02310.01	Finish Grading	sy	\$0.97	392,040.0	\$380,279
02310.12	Rough Grading	sf	\$0.65	392,040.0	\$254,826
02315.11	Soil Stabilization: Lime Treatment (6% mix 18" depth)	sf	\$2.28	392,040.0	\$893,851
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	1,742.4	\$55,966
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	43,560.0	\$378,101
02720.02	Aggregate Base	cy	\$30.91	7,623.0	\$235,627
02720.05	Subballast	cy	\$40.15	2,397.8	\$96,272
02720.06	Ballast	cy	\$44.96	3,458.3	\$155,485
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	1,688	\$145,236
02820.06	7 ft Chain Link Fence w/ 3 Strand Barb Wire	lf	\$15.66	1,742.4	\$27,286
05650.01	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	lf	\$212.69	8,300.0	\$1,765,327
05650.02a	Special Trackwork, incl/ Fasteners & Rail (Facility Building)	lf	\$428.26	1,100.0	\$471,086
05650.13	Dual Precast Concrete LRT Crossing Panels	lf	\$642.32	192.0	\$123,325
13000.01a	Running Repair Building	sf	\$250.00	22,000.0	\$5,500,000
05650.30	Special Trackwork, No. 8 Turnout, Ballasted	ea	\$96,338.36	4.0	\$385,353
05650.31	Special Trackwork, No. 6 Turnout, Ballasted	ea	\$80,300.53	10.0	\$803,005
13000.03	Inspection Pit	ea	\$426,800.00	2.0	\$853,600
13000.02	Material & Parts Storage	sf	\$100.00	5,500.0	\$550,000
13000.05	Car Wash	sf	\$100.00	0.0	\$0
13100.01	Wheel Truing Machine	ea	\$2,155,700.00	0.0	\$0
13100.02	Wheel Axle Press Machine	ea	\$1,077,800.00	0.0	\$0
13100.03	Turntables (with Pit)	ea	\$86,200.00	1.0	\$86,200
13100.04	Cranes, 10-Ton	ea	\$115,000.00	1.0	\$115,000
13000.03a	Blowdown Pit	ea	\$426,800.00	0.0	\$0
13100.06	Truck Repair Hoist	ea	\$265,900.00	1.0	\$265,900

Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)

continued

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
13200.01	Mineral Spirits Tank	ea	\$115,000.00	1.0	\$115,000
13200.02	Waste Oil Tank	ea	\$107,800.00	1.0	\$107,800
13300.01	Paint Shop Equipment	ls	\$215,600.00	0.0	\$0
13300.02	Wash Equipment	ls	\$1,006,000.00	1.0	\$1,006,000
13100.07	Floor Jack (Portable w carriage)	ea	\$64,700.00	1.0	\$64,700
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	8,300.0	\$406,451
16370.01	Traction Power Supply, Substation	ea	\$1,077,800.00	1.0	\$1,077,800
16370.02	Traction Power Supply, M.& S.	lf	\$72.26	1,100.0	\$79,486
16370.03	Traction Power Supply, D.C. Feeder	lf	\$72.26	8,300.0	\$599,758
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00	8,300.0	\$1,245,000
16500.01	Lighting, At Grade Guideway	lf	\$56.20	8,300.0	\$466,460
	Landscaping				in Urban Design
	Right-of-Way				in Right-of-way cost
	Maint.of Traffic (4%) + Mob/Demob (6%) + Minor Util. (4%)	ls	\$707,483.70	1.0	\$707,484.00
CSC30.02-1	Storage Track & Running Repair Maintenance Bldg (9 Acres) (17 vehicles)	LS			\$27,228,638

Heavy Maintenance Facility and Yard (30 Acres) (accomodates 16 vehicles)

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
02230.01	Clearing & Grubbing, Light	sy	\$0.72	145,200.0	\$104,544
02310.01	Finish Grading	sy	\$0.97	1,306,800.0	\$1,267,596
02310.12	Rough Grading	sf	\$0.65	1,306,800.0	\$849,420
02315.11	Soil Stabilization: Lime Treatment (6% mix 18" depth)	sf	\$2.28	1,306,800.0	\$2,979,504
02370.01	Soil Erosion and Sedimentation Control, Allowance	lf	\$32.12	5,808.0	\$186,553
02630.01	Site / Roadway Drainage, Allowance	sy	\$8.68	145,200.0	\$1,260,336
02720.02	Aggregate Base	cy	\$30.91	25,410.0	\$785,423
02720.05	Subballast	cy	\$40.15	4,796	\$192,559
02720.06	Ballast	cy	\$44.96	6,917	\$310,988
02740.02	Asphaltic Concrete Pavement (Med/Large Qty.)	tn	\$86.04	2,110	\$181,544
02820.06	7 ft Chain Link Fence w/ 3 Strand Barb Wire	lf	\$15.66	5,808.0	\$90,953
05650.01	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	lf	\$212.69	16,600.0	\$3,530,654
05650.02a	Special Trackwork, incl/ Fasteners & Rail (Facility Building)	lf	\$428.26	2,750.0	\$1,177,715
05650.13	Dual Precast Concrete LRT Crossing Panels	lf	\$642.32	240.0	\$154,157
13000.01	Maintenance and Administration Bldg.	sf	\$290.00	105,000.0	\$30,450,000
05650.30	Special Trackwork, No. 8 Turnout,Ballasted	ea	\$96,338.36	4.0	\$385,353
05650.31	Special Trackwork, No. 6 Turnout,Ballasted	ea	\$80,300.53	23.0	\$1,846,912
13000.03	Inspection Pit	ea	\$426,800.00	2.0	\$853,600
13000.02	Material & Parts Storage	sf	\$100.00	0.0	\$0
13000.05	Car Wash	sf	\$100.00	5,000.0	\$500,000
13100.01	Wheel Truing Machine	ea	\$2,155,700.00	1.0	\$2,155,700
13100.02	Wheel Axle Press Machine	ea	\$1,077,800.00	1.0	\$1,077,800
13100.03	Turntables (with Pit)	ea	\$86,200.00	10.0	\$862,000
13100.04	Cranes, 10-Ton	ea	\$115,000.00	1.0	\$115,000
13000.03a	Blowdown Pit	ea	\$426,800.00	1.0	\$426,800
13100.06	Truck Repair Hoist	ea	\$265,900.00	1.0	\$265,900

Heavy Maintenance Facility and Yard (30 Acres) (accomodates 16 vehicles)

continued

CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
13200.01	Mineral Spirits Tank	ea	\$115,000.00	1.0	\$115,000
13200.02	Waste Oil Tank	ea	\$107,800.00	1.0	\$107,800
13300.01	Paint Shop Equipment	ls	\$215,600.00	1.0	\$215,600
13300.02	Wash Equipment	ls	\$1,006,000.00	1.0	\$1,006,000
13100.07	Floor Jack (Portable w carriage)	ea	\$64,700.00	1.0	\$64,700
13100.08	Floor Jack (Permanent w pit)	ea	\$646,700.00	1.0	\$646,700
13300.03	Shop Small Tools & Misc Equipment	sf	\$2.51	105,000.0	\$263,550
13300.04	Forklifts & Material Handling Equipment	ls	\$107,800.00	1.0	\$107,800
16130.21	Ductbank, At Grade Guideway	lf	\$48.97	16,600.0	\$812,902
16370.01	Traction Power Supply, Substation	ea	\$1,077,800.00	1.0	\$1,077,800
16370.02	Traction Power Supply, M.& S.	lf	\$72.26	2,750.0	\$198,715
16370.03	Traction Power Supply, D.C. Feeder	lf	\$72.26	16,600.0	\$1,199,516
16370.041p	Traction Power Supply, At-grade OCS, Single Track	ft	\$150.00	16,600.0	\$2,490,000
16500.01	Lighting, At Grade Guideway	lf	\$56.20	16,600.0	\$932,920
	Landscaping Right-of-Way				in Urban Design in Right-of-way cost
	Maint.of Traffic (2%) + Mob/Demob (6%) + Minor Util. (.5%)	ls	\$5,206,251.19	1.0	\$5,206,251.00
CSC30.02-2	Heavy Maintenance Facility and Yard (30 Acres) (accomodates 16 vehicles)	LS			\$66,456,265

Spare Parts					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	VEHICLES SIMILAR TO SF MUNI (USE 10% FOR NEW START)				
17100.02M	Articulated LRV Spare Parts (5% of LRV Cost) Includes General Excise Tax	%	\$2,466,732.00	10%	\$246,673.20
CSC70.07	Spare Parts	LS		1.0	\$246,673

Maintenance of Way Vehicles					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	VEHICLES SIMILAR TO SF MUNI (USE 10% FOR NEW START)				
17100.02	General Excise Tax #N/A	ls	\$4,014,469.40	1.0	\$4,014,469.00
		%	\$4,014,469.00	4.70%	\$188,680.04
CSC70.06	Maintenance of Way Vehicles	LS		1.0	\$4,203,149

ROW: Purchase or Lease of real estate					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	not determined for AA				
	#N/A	#N/A	#N/A	1.0	#N/A
	#N/A	#N/A	#N/A	1.0	#N/A
	#N/A	#N/A	#N/A	1.0	#N/A
	#N/A	#N/A	#N/A	1.0	#N/A
CSC60.01	ROW: Purchase or Lease of real estate	LS		1.0	#N/A

ROW Relocation of existing households and businesses					
CODE	ITEM DESCRIPTION	UNIT	UNIT COST \$	QUANTITY	TOTAL COST \$
	Not determined for AA #N/A	#N/A	#N/A	1.0	#N/A
CSC60.02	ROW Relocation of existing households and businesses	LS		1.0	#N/A