



*Bay Link*

Miami • Miami Beach Transportation Corridor Study

*December 2004*

# Capital Cost Estimating Methodology Technical Memorandum

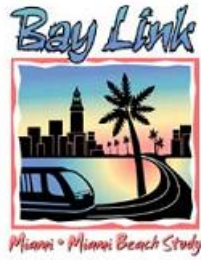


Miami-Dade Metropolitan  
Planning Organization

and

U.S. Department of Transportation  
Federal Transit Administration





# **MIAMI-MIAMI BEACH TRANSPORTATION CORRIDOR (BAY LINK) STUDY**

## **Capital Cost Estimating Methodology Technical Memorandum**

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# 1.0 Introduction

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This document provides a framework for the presentation of methods, cost data and cost assumptions to be used in the development of Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS) level capital costs estimates for the alignment which will be defined, developed and evaluated as part of the Miami-Miami Beach Transportation Corridor (Bay Link) Study. This updated methodology applies specifically to the process of updating the refined definition of the Locally Preferred Alternative (LPA) identified during the Phase 2 work. Comparative capital cost estimates will be required in progressive levels of detail as the process passes through the various stages of the development process.

This Technical Memorandum presenting the Capital Cost Estimating Methodology is part of a set of common technical methods and guidance to be followed for the development and review of the proposed alignment(s) for the corridor. The development of the capital cost estimating methodology is identified in the Project Scope of Services.

## 1.1 Purpose and Scope

The purpose of this technical memorandum is to:

- Describe the methods that will be used to define, quantify and present capital cost estimates required for project evaluation;
- Define the nature and sources for cost data to be used in the preparation of capital cost estimates;
- Define cost assumptions that will be used in the preparation of capital cost estimates; and
- Explain limitations that are present in capital cost estimates at this stage of project definition.

The capital costing methodology is intended to provide professionally accepted guidelines for accurately and consistently estimating the costs of the capital components of the alignment(s) under consideration in the Bay Link Corridor. It will also provide a framework for using the cost estimates by defining the basis for the estimates and the associated level of confidence for the estimated costs of the various components. This will allow decision-makers to effectively evaluate capital costs as one of the significant criteria in their evaluation and selection of the components which will comprise the proposed project. Capital cost estimates will also contribute to the assessment of effectiveness and efficiency.

## **2.0 Estimating Methodology**

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The methodology to be used in generating capital cost estimates has been developed in general accordance with FTA guidelines for estimating capital costs. Part of the FTA guidelines call for cost components for the various alternatives to be developed and summarized into a set of standard cost categories. These cost categories form the basis for the format and structure that will be used for the capital cost detail and summary sheets that will be developed for this project. These cost categories are described in Section 2.2 below.

### **2.1 General Approach**

Each of the alternatives that have been developed for the Bay Link project have conceptual engineering plans and profiles, typical sections, station locations and written definitions for the major cost components.

A significant part of the planning process will be to develop a common set of design standards, typical cross-sections and other facility elements for the transit technology planned. These facility elements can be classified into one of two broad groups, either typical or non-typical facilities. Typical facility costs are developed for items that can be defined by a typical cross-section and applied over a given length of alignment or based on a conceptual scope of work developed as appropriate for a specific typical facility. The typical facility unit cost is developed by combining the costs for all of the individual work items applicable to a typical cross section or facility and creating one composite section unit cost. Typical cross sections have been developed for each of the alternatives. Non-typical facility costs will be developed based on conceptual design relating to the unique facility under consideration. For those non typical facilities elements that are necessary for overall system operation, but whose costs cannot be allocated to a specific geographic segment of the system (e.g., vehicles, storage and maintenance facility, etc.), cost will be included at the summary level. After details are prepared for both typical and non-typical facilities and the cost data is developed, it will be put into a cost stream format based on the stationing of the alignment for each alternative. This format relates the cost directly to the plan and profile drawings and assists in summarizing costs, and in the analysis of the various alignment segments.

### **2.2 Capital Cost Categories**

In accordance with recommended FTA estimating methodology, capital cost components of the various alternatives will be classified into the following cost categories.

- Guideway and Trackwork Elements
- Support Facilities: Yards, Shops
- Systems
- Stations, Stops, Terminals

- Vehicles
- Sitework & Special Conditions
- ROW, Land, Existing Improvements
- Soft Costs

The following provides brief descriptions of these cost categories and their constituent elements.

## **2.2.1 Guideway and Trackwork Elements**

Guideway elements are portions of the transit system that can be assigned costs at a fairly aggregate level with an acceptable level of accuracy. Most commonly these are line portions of each alignment that can be represented by typical cross sections. Guideway elements are subdivided into two primary sub-categories, guideway and trackwork.

### **2.2.1.1 Guideway**

The guideway category consists of three primary elements, at-grade construction, aerial structure construction, and depressed/subway construction. This category includes all the foundational construction elements up to the point where trackwork begins. The guideway cost estimates are based on parametric unit cost information specifically developed for each construction type. Generally, all the parametric guideway cost estimates provide for the following:

- At-Grade construction
  - Traffic control
  - Site work, including clearing, demolitions and earthwork
  - Erosion control and soil stabilization
  - Drainage systems for the guideway
  - Catenary pole foundations
  - Concrete base slab for embedded guideway construction
  - Subgrade preparation and subballast for ballasted guideway construction
  - Retaining walls where needed in cuts and fills
  - Allowance for ductbanks, corrosion control, and signage
- Aerial structures construction
  - Traffic control
  - Site work, including demolition and clearing
  - Structural excavation and backfill
  - Foundation support
  - Concrete footings, columns, pier caps, and superstructure

- Steel reinforcement
- Pedestrian protection
- Allowance for ductbanks, corrosion control, and signage
- Depressed/Subway construction
  - Traffic control
  - Site work, including demolition and clearing and restoration
  - Structural excavation and backfill
  - Temporary excavation support and dewatering
  - Concrete footings, base slabs, stem or exterior walls, interior walls and roof slabs
  - Ventilation, fire protection, lighting
  - Allowance for ductbanks, corrosion control, and signage

Separate parametric unit prices will be developed for various increments in the height or depth of typical sections for embankment, retained cut or fill, and aerial structures.

The trackwork unit cost is calculated separately from the guideway construction unit cost.

#### **2.2.1.2 Trackwork**

Trackwork includes the running rails, ties, ballast, direct fixation, embedded and special work components (turnouts, crossovers, etc.) associated with the guideway construction. Trackwork unit costs are divided into the following four types of construction:

- Ballasted track (used in at-grade construction);
- Direct-fixation track (track fixed onto a structural concrete slab, used in aerial or subway construction);
- Paved or embedded track (used in street-running situations); and
- Shop track (used in the maintenance shop building).

The cost of constructing the supporting subgrade, subballast, or concrete supporting structure will be included in the guideway unit costs. The cost of the trackwork is a separate unit cost. The standard rail for ballasted and direct-fixation track is continuous welded 115RE rail. The ballasted trackwork unit cost includes rail, concrete ties with ballast, rail welding, rail fasteners, and rail anchors. For aerial structures the rail is attached on a second-pour concrete plinth pad with a direct fixation rail fastener. The unit cost for embedded trackwork includes rail, rail welding, reinforced concrete track slab, structural running surface, coated tie bars, and rail embedding materials. Track drains are included in the guideway unit costs. The costs for special trackwork are based on mainline construction and are



either ballasted, direct-fixation or embedded construction as required. Special trackwork includes single and double turnouts, crossovers, wyes, pocket tracks, and rail crossings. The costs for special trackwork are applied on a per unit basis at specific locations. The trackwork costs for the storage yard or maintenance shop facility is included in the cost category for Storage and Maintenance Facilities.

### **2.2.2 Support Facilities: Yards, Shop**

This cost category includes vehicle storage and maintenance buildings, trackwork for storage of rail vehicles, office support areas, maintenance of way facilities, major shop equipment, and operation control center

### **2.2.3 Systems**

This cost category includes four functional cost elements; control systems, electrification, communications and revenue collection.

#### **2.2.3.1 Control Systems**

Control systems cost includes the signaling and control systems required for safe and efficient operations of the transit technology. It includes automatic wayside signals in areas of separate right-of-way, automatic train stop circuitry in the track and vehicles, block supervision where required for street operation, traffic signal pre-emption, and protection at hazardous guideway/highway at-grade crossings (flashing lights, bells, and signs). The unit costs include an allowance for testing, training, and startup.

#### **2.2.3.2 Electrification**

The electrification system provides the power for all train operations. It consists primarily of substations and mainline track power distribution facilities. The traction power system is based on a dc overhead contact system (OCS). The OCS consists primarily of support poles, brackets arms and hardware, cables, and messenger cable. Signal and communication power needs are also included in the traction power costs. Power supply or distribution for buildings associated with the storage and maintenance facilities or power for passenger stations is not included in this cost category. The unit costs include an allowance for testing, training, and startup.

#### **2.2.3.3 Communications**

The communications system provides the necessary subsystems to support the total operational requirements of the transit technology. The communications system costs provide for the following subsystems and /or functions as appropriate to the technology.

- Supervisory and control and data acquisition subsystems (SCADA) to enable the remote monitoring of train operations, track conditions, substations, and station support facilities from the OCC using fiber-optic cable transmission systems.

- Communications subsystems consisting of two-way radio, public address (PA), PABX (digital switch) telephone equipment, and variable message signs (VMS).
- Interface to the fare collection and ticket vending equipment.
- Equipment for the hearing-impaired, reader boards, and associated wiring, as well as an allowance for testing, training, and startup is included in the unit costs for the above systems elements.

#### **2.2.3.4 Fare Collection**

Costs for elements in this category are based upon a self-service, barrier-free, proof of payment fare collection system. Ticket vending machines (TVM) costs shall be based on a microprocessor controlled coin or bill accepting machine capable of optionally accepting credit, debit, and stored value cards. Each station platform will have a minimum of one TVM with several higher volume stations having two TVM's. The unit cost for fare collection includes all equipment costs, and installation costs. The hardware includes provisions for fare vending facilities and access for the physically handicapped. The unit costs include an allowance for testing, training, and startup.

#### **2.2.4 Stations, Stops, Terminals**

Station costs represent the fixed facilities and amenities for transit stations. The passenger station cost estimates are based on parametric unit prices developed for each type of station, which include at-grade and aerial stations, as applicable. Also included in this cost category are parking lots, parking garages or pedestrian overpasses that are adjacent to and part of a passenger station. Generally, all the parametric station cost estimates consist of the following:

- At-grade Stations
  - Station types will be either side or center platform. Platform lengths will be based on two car trains for the regional system and 1 car trains for the South Beach circulator.
  - Site work, including clearing, demolition, and excavation
  - Grading, borrow fill, and soil stabilization
  - Concrete footings, stem walls, and platform slab
  - Canopy(s) covering about one-half of the platform
  - Surface treatment of platform with pavers and tactile warning strips.
  - Allowance for benches, signs, artwork, etc.
  - Lighting, electrical, and mechanical allowances
- Aerial or Stations
  - Station types will be either side or center platform. Platform length will be based on two car trains.
  - Site work, including clearing, demolition, and excavation

- Grading, borrow fill, and soil stabilization
- Concrete footings, columns, pier caps, superstructure, platform slabs, steel reinforcement, and pedestrian barrier
- Canopy(s) covering about one-half of the platform
- Surface treatment of platform with pavers and tactile warning strips.
- Allowance for benches, signs, artwork, etc.
- Lighting, electrical, and mechanical allowances
- Vertical circulation elements (i.e., stairs, escalators and elevators)
- Equipment room for train control and communication equipment

Any station requirements necessary to function as a multi-modal facility will be included in the special condition category.

### **2.2.5 Vehicles**

This cost category is generally subdivided into revenue and non-revenue vehicles (where non-revenue vehicles include maintenance-of-way vehicles, and agency trucks and automobiles). Revenue vehicles will include costs for a streetcar type vehicle.

### **2.2.6 Sitework and Special Conditions**

Development of a fixed guideway transit system often involves some mitigating requirements that are not directly related to transit system service, but which are required for transit system construction. Special conditions can include items that cannot be adequately represented by a typical section because of complexity, uncertain alignment, special site conditions, or other unique circumstances. Special condition elements can include:

- Utility Relocations
- Demolitions (outside of the guideway envelope)
- Roadway Modifications (outside of the guideway envelope)
- Environmental Mitigation
- Landscaping

#### **2.2.6.1 Utility Relocations**

Generally one of the largest cost elements within this cost category is the relocation of existing utilities from within the guideway construction envelope. These relocations can include both public and private utilities, subject to any agreements that may apply to franchised utilities that exist within public right-of-ways. Typically utility relocation information is not available during the FEIS phase of project development; therefore, four levels of utility relocation allowances with average unit costs based on historical experience have been defined. These levels will be applied

along the various transit alignments based on an evaluation of the complexity of the utility relocations anticipated.

#### **2.2.6.2 Demolitions**

This cost element generally include costs for the demolition of special features such as buildings (if not included as part of right-of-way), large structures (bridges or retaining walls), existing railway trackbeds or other existing features that fall outside of the guideway construction envelope.

#### **2.2.6.3 Roadway Modifications**

Roadway modifications can include new and reconstructed roadways, streets, bridges, parking areas or pedestrian walkways (outside of station areas), sidewalks, curbs and gutters, existing and new traffic signal construction, crossing protection, and related facilities associated with construction of the rail guideway. The roadway modification cost estimates will be based on parametric unit costs applied to quantities developed on location specific data taken from the conceptual engineering alignment plans.

#### **2.2.6.4 Environmental Mitigation Costs**

Any special environmental mitigation costs, such as noise or vibration mitigation or wetlands mitigation, would be included under this category.

#### **2.2.6.5 Landscaping Costs**

Typically landscaping information is not available during the FEIS phase of project development; therefore, several levels of landscaping allowances with average unit costs based on historical experience will be included. Landscaping costs associated with station development or parking facilities are included in the composite cost for those particular items. This allowance is for any landscaping that would occur along the guideway.

#### **2.2.7 ROW, Land, Existing Improvements**

This cost category covers all land acquisition and acquisition related costs required to obtain various real property needed for the construction, operation, and maintenance of the alignments. Costs include the fee acquisition of permanent and temporary easements, relocation costs, business damages and other miscellaneous costs.

#### **2.2.8 Soft Costs**

This cost category includes allowances for preliminary engineering, engineering design, construction management, agency program management, change order contingency, project insurance, and training/start-up/testing costs. These allowances are computed by applying a percentage to the total construction cost estimated for each cost category (excluding right-of-way). Because Vehicles are primarily a procurement type contract, soft costs for this cost category do not include engineering or construction management. The following is a list of the percentage multipliers being applied to the total construction costs to cover these items:

## Streetcar

Preliminary Engineering	4%
Engineering Design	6%
Construction Management	8%
Project Management, Agency/PMC	4%
Change Order Contingency	7%
Project Insurance	5%
Training/Start-Up/Testing	3%

### **2.2.8.1 Engineering and Management**

Engineering and management add-ons include the cost for preliminary engineering, final design, construction management and inspection services, and administration services required to implement each alternative.

### **2.2.8.2 Project Management, Agency & PMC**

The add-on for program/Metro Dade Transit (MDT) management cost includes the costs incurred by a program management consultant as well as the implementing agency (MDT) in administrating and reviewing the various engineering and management consultants involved in the project.

### **2.2.8.3 Construction Contingency**

A contingency will be applied to the cost estimates to cover the costs of changes in scope or changed conditions that occur during construction.

### **2.2.8.4 Project Insurance**

Project insurance includes all premium costs to provide "wrap-up" insurance coverage through an Owner Controlled Insurance Program (OCIP). This includes professional liability, comprehensive general liability, builder's risk, worker's compensation and employer's liability, construction equipment loss or damage, and automobile insurance. It should be noted that the project will be the subject of a later phase risk analysis by the client, project agent and broker to establish actual insurance costs. The self insurance concept is used here as a means of capturing the cost of insurance.

### **2.2.8.5 Training/Start-Up/Testing**

The add-on for this category includes the costs incurred by the implementing agency (MDT) in training transit personnel, testing of the new systems, and preparing the system for the beginning of revenue service.

## **3.0 Cost Data**

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Cost data will be developed using several sources and will be comparable to those seen in the South Florida region for similar type construction. The cost data will be refined and updated throughout the subsequent design phases. The first task in developing the cost data is to prepare a list of work items that are typical based on the scope of work for the transit technology. Unit costs for these work items will then be estimated using various cost references and historical cost data and will be compiled into a database format to form a Unit Cost Library (UCL). The key elements of the UCL are an Item Code, Item Description, Unit of Measure, and Unit Cost. A preliminary UCL is contained in Appendix A. This UCL summary will include, but will not be limited to, those items typically found in a project of this scope. All unit costs include contractor's direct construction cost plus all taxes, general expense, overhead and profit. The unit costs do not include items such as engineering, construction management, owner's administrative costs and allowances for contingencies. These costs will be included as percentage add-ons to the cost estimate under the cost category project soft costs.

### **3.1 Sources of Cost Data**

Unit costs to be included in the estimates will be derived from multiple resources. In addition to Florida Department of Transportation (FDOT), MDT's experience and other local resources, information from other transit systems throughout the United States will be compared and adjusted to specific alignment needs. Unit cost data will be obtained from the Parsons Brinckerhoff's historical cost estimating database of completed projects and their respective historical bid information. All cost resources will be adjusted to reflect current local South Florida rates and conditions.

## **4.0 Cost Estimating Assumptions**

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The basic assumptions and criteria used in developing the cost data are as follows:

- The estimates will be prepared using second quarter 2004 dollars.
- No premium time on labor costs will be included.
- Adequate experienced craft labor is available.
- Normal productivity rates as historically experienced will be utilized.
- Compatible trade agreements exist in the region.
- No strike impacts will be experienced by the project.
- There are sufficient experienced contractors available to perform the work.
- Normal South Florida area weather impacts to construction schedule and costs.
- Existing state of the art construction technology will be utilized.

### **4.1 Design Allowance**

A design allowance is included in the estimates to account for the level of design information that is available at this stage of project development. The allowance addresses unforeseen items of work or quantity fluctuations and variances in unit costs that develop as the project progresses through the various stages of development. The percentages used will be reduced as the project progresses through the later preliminary and final stages of design. The design allowance provides a reserve during the early project development stage and reflects the degree of uncertainty associated with the level of engineering data available and design completion achieved for the various design elements. The design allowance is calculated on the total construction costs for the various line items in each cost category and is added to the construction cost since it represents an unknown portion of the expected total construction value. The design allowance percentages that are being used for this design stage are 15 percent for all capital cost categories with the following exception, guideway (25 percent), and special conditions (30 percent).

### **4.2 Estimating Procedures**

Capital costs are to be developed for each alignment by utilizing both “bottom up” and “top down” estimating approaches. Each approach is described in the following sections.

#### **4.2.1 Bottom Up and Top Down Approaches**

The majority of composite unit costs utilized for the capital cost estimates will be developed based on a “bottom up” approach. In this approach, the cost of major work elements, as generally defined by typical sections, is determined by totaling the

cost of their component parts. Sufficient engineering data is required to reasonably define the scope of work and quantities represented by each typical section. Unit prices, as reflected in the UCL, are developed and combined with the estimated quantities to determine the costs for each major category of work, such as guideway elements, stations, and system elements. The advantage of this approach is the ability to adjust costs for minor changes of scope, as well as the higher confidence level inherent in a bottom up estimate. The disadvantage is the level of engineering and estimating effort required to produce a bottom up estimate and the additional time required to adjust the estimate for revisions.

In the “top down” method, an order-of-magnitude cost is determined, usually derived from data from similar projects, and this cost is used directly or converted to some unit measure (such as route feet) and applied as a unit cost. This method is faster than the bottom up approach; and, for certain technologies and alignment alternatives, the resulting comparative cost estimates can be sufficiently accurate. This method is used as infrequently as possible. As an example, the cost for transit vehicles is generally derived from data from other projects and therefore is a “top down” unit cost. Other systemwide elements, which may not be specifically located, use “top down” unit costs even though a detailed scope serves to support the projected costs. The estimating methodology selected to estimate the alternatives capital cost will use a combination of the two basic procedures described above. The bottom up approach is used to develop parametric unit costs for elements for which discrete quantities can be developed. This approach is typically used for the following cost categories:

- Guideway Elements
- System Elements
- Stations
- Special Conditions (Demolitions and Roadway Modifications)
- Right-of-Way

The top down approach is typically used to estimate costs for the following categories:

- Storage and Maintenance Facility
- Vehicles
- Special Conditions (Utility Relocations and Environmental Mitigation)

#### **4.2.2 Facilities Costing Procedure**

The typical facilities costing procedure begins with a typical cross section or sketch of a typical facility such as at-grade guideway. In most cases these typical facilities represent an element which is used more than once in the construction of the alignment. For elements that can be defined by a typical section, unit quantities (such as cubic yards of excavation, or lineal feet of track) required to construct one route foot of the section are computed and unit costs are applied to determine a base



cost for constructing a typical route foot. This base cost is augmented by allowances as needed to provide a complete parametric unit cost. To the extent possible, transit guideway sections will be estimated by using typical sections. For certain cost category items a site-specific, non-typical section will require that a unique cost estimate be prepared. For a non-typical facility, the quantities of construction units (such as cubic yards of concrete or lineal feet of piping) required to construct a complete facility are computed and unit costs are applied to determine a base cost for constructing the non-typical facility. This base cost is augmented by allowances as needed to provide a complete parametric unit cost. Special facilities, such as complex structures, major utilities, or special station amenities, will be estimated in a similar fashion as the typical facilities. Sketches will be prepared when practical. In some cases, historical data may be applied if available. In technically challenging problems, some basic data gathering and design may be required to determine an appropriate cost. Once a cost is determined, it will be assigned to its appropriate cost category.

#### **4.2.3 Organization And Management Of Cost Data**

The preparation of cost estimates for the alternatives will involve development of a cost information database of considerable size and complexity. Procedures will be developed that streamline the estimating process and allow a thorough review and checking of the cost data in order to avoid clerical and mathematical errors. The proposed procedures include:

- Use of proven computer software for data processing and storage; and
- Development of data in a cost-stream format and subsequently summarizing to higher levels.

All capital cost estimates for Bay Link will be prepared using Microsoft Excel 2000. The organization of the cost data into a cost stream format will enable a thorough review and checking of the data with respect to the plan and profile drawings.

#### **4.2.4 Cost Estimating Results Format**

The cost estimating methodology uses three levels of cost presentation to provide cost information results in increasing levels of detail. The costs will be developed by alignment and by segment, with each alignment consisting of several segments. The estimating process originates with the Segment Level Cost Estimates, the lowest level of detail summary, which are used to develop Alignment Level summaries. This approach facilitates responses to different questions and enables users to focus only on the level of detail that meets their needs. These levels provide an efficient and logical flow of data from the most detailed level to the summary level.

The Segment level Cost Estimate is the most detailed level and gives the cost breakdown by category for a single alignment segment. It presents the quantity take-offs in a cost stream format, which keys each element of the estimate to specific locations by stationing. This level relates the quantity take-offs to the plan and profile drawings, helping to document what has been included, thus making reviewing and checking easier than a traditional construction estimate by units. This data is then rolled up to summary level spreadsheets. The summary level Cost Estimate gives cost breakdowns by category for each segment within an alignment. It is at this level

that the estimate add-ons will be applied with the appropriate percentages assigned to the various cost categories. The summary will provide a total project cost for a single alignment.

#### 4.2.5 Annualized Cost Factors

The evaluation of the cost effectiveness of an alternative requires that all evaluation measure (capital costs, operations and maintenance costs, non-Federal funding and user benefits) be expressed in annual terms. Since capital costs are estimated as a total expenditure of constant (base year) dollars, an annual payment will be computed that is equivalent to what is in reality a one-time expenditure of capital funds. For each capital cost item, the annualized equivalent will be computed through application of the following annualization factor:

$$\text{Annualization Factor} = \frac{i \times (1+i)^n}{(1+i)^n - 1}$$

where  $i$  = discount rate; and  
 $n$  = economic life.

The annualized cost of the line item is the total cost of that line item multiplied by its annualization factor. The summation of all annualized line item costs gives the overall annualized cost for the alternative. Table 1 contains a list of the various cost categories and their respective economic lifetime and annualization factors. These annualization factors have been determined based on a FTA-prescribed seven percent discount rate.

**Table 1. Annualization Factors**

<b>Description</b>	<b>Lifetime (Years)</b>	<b>Annualization Factor</b>
Guideway	30	0.081
Trackwork	30	0.081
Storage and Maintenance Facilities/OCC	30	0.081
Traction Power	30	0.081
Train Control	30	0.081
Communications	30	0.081
Fare Collection	25	0.086
Passenger Stations	30	0.081
Light Rail Vehicles	30	0.081
Bus Vehicles	12	0.126
Utility Relocations	30	0.081
Roadway Modifications	20	0.094
Right-of-Way	100	0.070

## **5.0 Estimate Limitations**

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A reoccurring issue in the estimation of capital cost during the conceptual phase of a project is the evaluation and treatment of uncertainty. Uncertainty can result in a “difference” between the estimated cost of a project as defined during the concept phase and the actual cost of the project that is ultimately implemented. Four potential sources of uncertainty are generally recognized.

- Changes in Project Scope
- Changes in Design Standards
- Incorrect Unit Cost/Quantity Assumptions
- Unforeseen Problems in Implementation

### **5.1 Changes in Project Scope**

During the corridor study phase, preliminary decisions on project scope are made on such issues as vertical and horizontal alignment, degree of grade separation and other significant alignment items. As a project progresses through the various stages of evaluation many of the original project scope definitions that formed the basis of the cost estimate will be updated or revised during the various screening of alternatives.

### **5.2 Changes in Design Standards**

Similar to the broader uncertainties on project scope but generally more specific in nature, changes in design standard during later phases of project development can lead to changes in project cost. Examples of changes in design standards would be replacing high floor vehicles with low floor vehicles, using a more sophisticated signal system, or changing from a barrier free fare collection to fare gates, and so forth.

### **5.3 Incorrect Unit Cost / Quantity Assumptions**

A variety of potential problems exist in the assumptions used in selecting unit cost or unit quantities. Issues that can affect the accuracy of unit cost include local demand for construction labor and its impact on wage rates, bid climate during the construction period and fluctuations in basic material prices. Errors in quantity assumptions are often related to changes in design standards as discussed above.

### **5.4 Unforeseen Problems in Implementation**

Perhaps one of the largest sources of uncertainty is the difficulty in anticipating problems that will only be uncovered in later stages of project development. Areas that appear to be most susceptible are right-of-way acquisition, utility relocations, hazardous materials, and soil conditions. The estimating methods described in Section 2 represent professionally accepted standards for preparing capital cost estimates to a level of accuracy that is consistent with the level of project definition. Accuracy is traditionally expressed as a +/- percentage range around the point

# **APPENDIX A**

## **Conceptual Capital Cost Estimates**

**BAY LINK**  
**MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR**  
**Street Car - Downtown Miami to Miami Beach Via Macaurther Casuway**  
**Capital Cost Estimate**  
**(2004 Dollars in Millions)**

Description	Regional Line		Miami Beach	Maintenance	Vehicles	Total Amount
	Miami	Miami Beach	Circulator	Facility		
Length (RF):	41,500	27,100	26,650	5,070		95,250
Number of Stations:	19	15	11			45
Number of Vehicles:					21	21
<b>1.0 Guideway Elements</b>						
1.1 Guideway	\$40.41	\$30.97	\$8.60	\$1.91		\$81.89
1.2 Trackwork	\$20.80	\$16.02	\$12.34	\$4.47		\$53.63
<b>2.0 Yards &amp; Shops</b>						
2.0 Yard & Shop				\$26.57		\$26.57
<b>3.0 System Elements</b>						
3.1 Train Control	\$8.53	\$6.77	\$3.86	\$0.44		\$19.61
3.2 Traction Power	\$11.18	\$7.46	\$6.77	\$1.63		\$27.04
3.3 Communications	\$7.28	\$5.36	\$3.94	\$0.40		\$16.98
3.4 Fare Collection	\$2.57	\$2.79	\$1.23	\$0.00		\$6.59
<b>4.0 Passenger Stations</b>						
4.0 Passenger Stations	\$21.15	\$11.34	\$3.48	\$0.00		\$35.97
<b>5.0 Special Conditions</b>						
5.1 Utility Modifications	\$5.80	\$3.76	\$3.96	\$0.75		\$14.28
5.2 Demolitions	\$0.52	\$0.31	\$0.36	\$0.07		\$1.25
5.3 Roadway Modifications	\$5.35	\$5.23	\$2.73	\$0.00		\$13.32
5.4 Environmental Mitigation	\$2.90	\$1.88	\$1.98	\$0.15		\$6.92
5.5 Landscaping	\$1.22	\$0.79	\$0.83	\$0.16		\$3.00
<b>6.0 Vehicles</b>						
6.0 Revenue Vehicles					\$43.22	\$43.22
<b>Subtotal Construction Costs</b>	<b>\$127.72</b>	<b>\$92.68</b>	<b>\$50.09</b>	<b>\$36.54</b>	<b>\$43.22</b>	<b>\$350.26</b>
<b>7.0 Right-of-Way</b>						
7.0 Right-of-Way	\$0.12	\$0.12	\$0.05	\$10.34		\$10.63
<b>8.0 Soft Costs (Calculated on Construction Cost Only)</b>						
8.1 Preliminary Engineering	\$5.11	\$3.71	\$2.00	\$1.46		\$12.28
8.2 Engineering Design	\$7.66	\$5.56	\$3.01	\$2.19		\$18.42
8.3 Construction Management	\$10.22	\$7.41	\$4.01	\$2.92		\$24.56
8.4 Project Management, Agency/PMC	\$5.11	\$3.71	\$2.00	\$1.46	\$1.73	\$14.01
8.5 Change Order Contingency	\$8.94	\$6.49	\$3.51	\$2.56	\$3.03	\$24.52
8.6 Project Insurance	\$6.39	\$4.63	\$2.50	\$1.83	\$2.16	\$17.51
8.7 Training/Start-Up/Testing	\$3.83	\$2.78	\$1.50	\$1.10	\$1.30	\$10.51
<b>Subtotal Soft Costs</b>	<b>\$47.26</b>	<b>\$34.29</b>	<b>\$18.53</b>	<b>\$13.52</b>	<b>\$8.21</b>	<b>\$121.82</b>
<b>Grand Total (\$2004)</b>	<b>\$175.11</b>	<b>\$127.09</b>	<b>\$68.67</b>	<b>\$60.41</b>	<b>\$51.43</b>	<b>\$482.71</b>

**BAY LINK**  
**MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR**  
**Street Car - Downtown Miami to Miami Beach Via Macauther Casuway**  
**Capital Cost Estimate**  
**(2004 Dollars in Millions)**

Description	Miami Beach		Causeway		Miami
	Circulator	Connector	5th Ave. to Watson Island	Watson Island to Biscayne Blvd.	
Length (RF):	26,650	19,025	11,275	6,500	31,800
Number of Stations:	11	14	1	2	17
Number of Vehicles:	4	5	3	3	6
<b>1.0 Guideway Elements</b>					
1.1 Guideway	\$8.96	\$6.24	\$30.61	\$25.85	\$10.24
1.2 Trackwork	\$13.17	\$12.06	\$7.34	\$4.94	\$16.12
<b>2.0 Yards &amp; Shops</b>					
2.0 Yard & Shop	\$4.92	\$5.12	\$4.98	\$4.65	\$6.89
<b>3.0 System Elements</b>					
3.1 Train Control	\$3.95	\$4.10	\$3.81	\$2.39	\$5.37
3.2 Traction Power	\$7.07	\$5.18	\$3.92	\$2.37	\$8.50
3.3 Communications	\$4.02	\$4.53	\$1.49	\$1.11	\$5.83
3.4 Fare Collection	\$1.23	\$2.68	\$0.11	\$0.22	\$2.35
<b>4.0 Passenger Stations</b>					
4.0 Passenger Stations	\$3.48	\$8.67	\$2.67	\$10.98	\$10.16
<b>5.0 Special Conditions</b>					
5.1 Utility Modifications	\$4.10	\$2.97	\$1.55	\$0.73	\$4.92
5.2 Demolitions	\$0.37	\$0.27	\$0.11	\$0.07	\$0.44
5.3 Roadway Modifications	\$2.73	\$5.23	\$0.00	\$0.00	\$5.35
5.4 Environmental Mitigation	\$2.01	\$1.44	\$0.73	\$0.33	\$2.40
5.5 Landscaping	\$0.86	\$0.62	\$0.33	\$0.15	\$1.03
<b>6.0 Vehicles</b>					
6.0 Revenue Vehicles	\$8.23	\$10.29	\$6.17	\$6.17	\$12.35
<b>Subtotal Construction Costs</b>	<b>\$65.09</b>	<b>\$69.42</b>	<b>\$63.82</b>	<b>\$59.97</b>	<b>\$91.95</b>
<b>7.0 Right-of-Way</b>					
7.0 Right-of-Way	\$1.96	\$2.11	\$1.94	\$1.81	\$2.81
<b>8.0 Soft Costs (Calculated on Construction Cost Only)</b>					
8.1 Preliminary Engineering	\$2.27	\$2.37	\$2.31	\$2.15	\$3.18
8.2 Engineering Design	\$3.41	\$3.55	\$3.46	\$3.23	\$4.78
8.3 Construction Management	\$4.55	\$4.73	\$4.61	\$4.30	\$6.37
8.4 Project Management, Agency/PMC	\$2.60	\$2.78	\$2.55	\$2.40	\$3.68
8.5 Change Order Contingency	\$4.56	\$4.86	\$4.47	\$4.20	\$6.44
8.6 Project Insurance	\$3.25	\$3.47	\$3.19	\$3.00	\$4.60
8.7 Training/Start-Up/Testing	\$1.95	\$2.08	\$1.91	\$1.80	\$2.76
<b>Subtotal Soft Costs</b>	<b>\$22.60</b>	<b>\$23.83</b>	<b>\$22.50</b>	<b>\$21.08</b>	<b>\$31.80</b>
<b>Grand Total (\$2004)</b>	<b>\$89.65</b>	<b>\$95.37</b>	<b>\$88.27</b>	<b>\$82.86</b>	<b>\$126.55</b>

BAY LINK  
**MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR**  
**Street Car - Downtown Miami to Miami Beach Via Macauther Casuway**  
**Capital Cost Estimate**  
**(YOE Dollars in Millions, Revenue Service 2023)**

Description	Miami Beach		Causeway		Miami
	Circulator	Connector	5th Ave. to Watson Island	Watson Island to Biscayne Blvd.	
Length (RF):	26,650	19,025	11,275	6,500	31,800
Number of Stations:	11	14	1	2	17
Number of Vehicles:	4	5	3	3	6
<b>1.0 Guideway Elements</b>					
1.1 Guideway	\$14.50	\$10.10	\$49.55	\$41.86	\$16.57
1.2 Trackwork	\$21.32	\$19.53	\$11.88	\$8.00	\$26.10
<b>2.0 Yards &amp; Shops</b>					
2.0 Yard & Shop	\$7.96	\$8.29	\$8.07	\$7.53	\$11.15
<b>3.0 System Elements</b>					
3.1 Train Control	\$6.39	\$6.64	\$6.16	\$3.87	\$8.69
3.2 Traction Power	\$11.44	\$8.39	\$6.35	\$3.83	\$13.76
3.3 Communications	\$6.50	\$7.34	\$2.41	\$1.79	\$9.44
3.4 Fare Collection	\$1.99	\$4.34	\$0.18	\$0.36	\$3.80
<b>4.0 Passenger Stations</b>					
4.0 Passenger Stations	\$5.63	\$14.04	\$4.32	\$17.78	\$16.46
<b>5.0 Special Conditions</b>					
5.1 Utility Modifications	\$6.64	\$4.81	\$2.51	\$1.19	\$7.97
5.2 Demolitions	\$0.60	\$0.43	\$0.18	\$0.11	\$0.72
5.3 Roadway Modifications	\$4.43	\$8.47	\$0.00	\$0.00	\$8.66
5.4 Environmental Mitigation	\$3.25	\$2.34	\$1.19	\$0.53	\$3.89
5.5 Landscaping	\$1.39	\$1.01	\$0.53	\$0.25	\$1.67
<b>6.0 Vehicles</b>					
6.0 Revenue Vehicles	\$13.33	\$16.66	\$10.00	\$10.00	\$19.99
<b>Subtotal Construction Costs</b>	<b>\$105.38</b>	<b>\$112.39</b>	<b>\$103.33</b>	<b>\$97.09</b>	<b>\$148.86</b>
<b>7.0 Right-of-Way</b>					
7.0 Right-of-Way	\$3.18	\$3.41	\$3.14	\$2.93	\$4.54
<b>8.0 Soft Costs (Calculated on Construction Cost Only)</b>					
8.1 Preliminary Engineering	\$3.68	\$3.83	\$3.73	\$3.48	\$5.15
8.2 Engineering Design	\$5.52	\$5.74	\$5.60	\$5.23	\$7.73
8.3 Construction Management	\$7.36	\$7.66	\$7.47	\$6.97	\$10.31
8.4 Project Management, Agency/PMC	\$4.22	\$4.50	\$4.13	\$3.88	\$5.95
8.5 Change Order Contingency	\$7.38	\$7.87	\$7.23	\$6.80	\$10.42
8.6 Project Insurance	\$5.27	\$5.62	\$5.17	\$4.85	\$7.44
8.7 Training/Start-Up/Testing	\$3.16	\$3.37	\$3.10	\$2.91	\$4.47
<b>Subtotal Soft Costs</b>	<b>\$36.59</b>	<b>\$38.59</b>	<b>\$36.43</b>	<b>\$34.13</b>	<b>\$51.48</b>
<b>Grand Total (\$YOE)</b>	<b>\$145.15</b>	<b>\$154.39</b>	<b>\$142.90</b>	<b>\$134.15</b>	<b>\$204.88</b>

## **APPENDIX A-1**

### **Segment Definition and Segment Cost Estimate Summary**



**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SEGMENT DEFINITION**

Segment No.	Stationing		Quantity	Units	Description
	Begin	End			
DOWNTOWN MIAMI					Even though there are some small lengths of "double track" in the downtown portion, all segments will be quantified as single guideway to facilitate segmentation to match the proposed Miami Streetcar (MS) alignments that are common with Bay Link.
R1	101+00	106+50	550	RF	Biscayne Blvd. @ NE 9th St. to point joining MS near NE 2nd Ave..
R2	106+50	166+50	6,000	RF	NE 9th St. to Miami Blvd. to NE 3rd St. to NW 1st Ave. to SE 1st St. to NE 1st Ave. to point leaving MS
R3	166+50	219+00	5,250	RF	SE 1st St. to Biscayne Blvd. to just north of 9th St.
R4	850+00	861+50	1,150	RF	Biscayne Blvd. @ NE 9th St. to point joining MS near NE 1st Ave.
R5	861+50	880+50	1,900	RF	NE 1st Ave. to a point leaving MS near NE 3rd St.
R6	880+50	952+00	7,150	RF	NE 3rd St. to NW 1st Ave. to NE 1st St. to Biscayne Blvd. to just north of 9th St.
CAUSEWAY					All segments in this section will be quantified at double track.
R7	219+00	239+00	2,000	RF	Biscayne Blvd. to Causeway
R8	239+00	261+00	2,200	RF	New guideway superstructure on existing bridge substructure
R9	261+00	299+00	3,800	RF	Aerial guideway on Watson Island
R10	299+00	325+00	2,600	RF	Structural guideway on causeway shoulder to Miami / Miami Beach limits
R11	325+00	369+00	4,400	RF	Structural guideway on causeway shoulder from Miami / Miami Beach limits
R12	369+00	406+00	3,700	RF	Double guideway bridge
MIAMI BEACH					
R13	406+00	589+00	18,300	RF	Single guideway loop running counter clockwise on 5th St. to Washington Ave. to 17th St. to Alton Rd. back to 5th St.
R14	(No stationing shown on dwg.)				Single guideway spur from 17th St. to Convention Center
MIAMI BEACH CIRCULATOR					
G1	1000+00	1266+50	26,650	RF	Single guideway loop running clockwise on Washington Ave. to South Pointe Dr. to Alton Rd. to Lincoln Rd. to West Ave. to Dade Blvd. to 22nd St. to Collins Ave. to 17th St. back to Washington Ave.

**BAY LINK**  
**MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR**  
**Street Car - Downtown Miami to Miami Beach Via Macauther Casuway (Segment Summary)**  
**Capital Cost Estimate**  
**(2004 Dollars in Millions)**

Description	Downtown Miami						MacArthur Causeway						Miami Beach			Maintenance Facility	Vehicles	Total
	Segment R-1	Segment R-2	Segment R-3	Segment R-4	Segment R-5	Segment R-6	Segment R-7	Segment R-8	Segment R-9	Segment R-10	Segment R-11	Segment R-12	Segment R-13	Segment R-14	Segment G-1			
Length (RF):	9,600	6,000	6,200	1,100	1,800	7,100	1,125	2,450	2,925	3,200	4,000	4,075	18,425	600	26,650	5,070		95,250
Number of Stations:	1	4	4	1	2	5	1	0	1	0	0	1	13	1	11			45
Number of Vehicles:																	21	21
<b>1.0 Guideway Elements</b>																		
1.1 Guideway	\$2.94	\$1.84	\$1.90	\$0.34	\$0.55	\$2.17	\$1.77	\$12.44	\$11.32	\$5.15	\$6.44	\$18.66	\$5.64	\$0.23	\$8.60	\$1.91		\$81.89
1.2 Trackwork	\$4.49	\$2.94	\$2.86	\$0.61	\$0.92	\$3.13	\$1.33	\$1.29	\$1.54	\$1.68	\$2.60	\$2.21	\$10.33	\$0.87	\$12.34	\$4.47		\$53.63
<b>2.0 Yards &amp; Shops</b>																		
2.0 Yard & Shop																\$26.57		\$26.57
<b>3.0 System Elements</b>																		
3.1 Train Control	\$1.20	\$1.05	\$1.07	\$0.33	\$0.49	\$1.12	\$0.59	\$0.74	\$0.98	\$0.97	\$1.42	\$1.33	\$3.72	\$0.30	\$3.86	\$0.44		\$19.61
3.2 Traction Power	\$2.44	\$1.52	\$1.57	\$0.28	\$0.46	\$1.80	\$0.36	\$0.79	\$0.94	\$1.03	\$1.28	\$1.31	\$4.68	\$0.19	\$6.77	\$1.63		\$27.04
3.3 Communications	\$0.64	\$1.29	\$1.30	\$0.31	\$0.60	\$1.59	\$0.35	\$0.19	\$0.49	\$0.52	\$0.32	\$0.58	\$4.15	\$0.31	\$3.94	\$0.40		\$16.98
3.4 Fare Collection	\$0.11	\$0.56	\$0.56	\$0.11	\$0.22	\$0.78	\$0.11	\$0.00	\$0.11	\$0.00	\$0.00	\$0.11	\$2.57	\$0.11	\$1.23	\$0.00		\$6.59
<b>4.0 Passenger Stations</b>																		
4.0 Passenger Stations	\$0.60	\$2.39	\$2.39	\$0.60	\$1.20	\$2.99	\$4.55	\$0.00	\$6.43	\$0.00	\$0.00	\$2.67	\$7.77	\$0.90	\$3.48	\$0.00		\$35.97
<b>5.0 Special Conditions</b>																		
5.1 Utility Modifications	\$1.43	\$0.89	\$0.92	\$0.16	\$0.27	\$1.06	\$0.17	\$0.00	\$0.43	\$0.48	\$0.59	\$0.34	\$2.74	\$0.09	\$3.96	\$0.75		\$14.28
5.2 Demolitions	\$0.13	\$0.08	\$0.08	\$0.01	\$0.02	\$0.09	\$0.02	\$0.00	\$0.04	\$0.04	\$0.05	\$0.00	\$0.25	\$0.01	\$0.36	\$0.07		\$1.25
5.3 Roadway Modifications	\$0.71	\$1.61	\$1.31	\$0.00	\$0.36	\$1.37	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5.23	\$0.00	\$2.73	\$0.00		\$13.32
5.4 Environmental Mitigation	\$0.71	\$0.45	\$0.46	\$0.08	\$0.13	\$0.53	\$0.08	\$0.00	\$0.22	\$0.24	\$0.30	\$0.17	\$1.37	\$0.04	\$1.98	\$0.15		\$6.92
5.5 Landscaping	\$0.30	\$0.19	\$0.19	\$0.03	\$0.06	\$0.22	\$0.04	\$0.00	\$0.09	\$0.10	\$0.12	\$0.07	\$0.58	\$0.02	\$0.83	\$0.16		\$3.00
<b>6.0 Vehicles</b>																		
6.0 Revenue Vehicles																	\$43.22	\$43.22
<b>Subtotal Construction Costs</b>	<b>\$15.71</b>	<b>\$14.80</b>	<b>\$14.62</b>	<b>\$2.87</b>	<b>\$5.27</b>	<b>\$16.86</b>	<b>\$9.36</b>	<b>\$15.44</b>	<b>\$22.59</b>	<b>\$10.20</b>	<b>\$13.13</b>	<b>\$27.46</b>	<b>\$49.02</b>	<b>\$3.07</b>	<b>\$50.09</b>	<b>\$36.54</b>	<b>\$43.22</b>	<b>\$350.26</b>
<b>7.0 Right-of-Way</b>																		
7.0 Right-of-Way	\$0.00	\$0.02	\$0.07	\$0.00	\$0.01	\$0.02	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.12	\$0.00	\$0.05	\$10.34		\$10.63
<b>8.0 Soft Costs (Calculated on Construction Cost Only)</b>																		
8.1 Preliminary Engineering 4.0%	\$0.63	\$0.59	\$0.58	\$0.11	\$0.21	\$0.67	\$0.37	\$0.62	\$0.90	\$0.41	\$0.53	\$1.10	\$1.96	\$0.12	\$2.00	\$1.46		\$12.28
8.2 Engineering Design 6.0%	\$0.94	\$0.89	\$0.88	\$0.17	\$0.32	\$1.01	\$0.56	\$0.93	\$1.36	\$0.61	\$0.79	\$1.65	\$2.94	\$0.18	\$3.01	\$2.19		\$18.42
8.3 Construction Management 8.0%	\$1.26	\$1.18	\$1.17	\$0.23	\$0.42	\$1.35	\$0.75	\$1.24	\$1.81	\$0.82	\$1.05	\$2.20	\$3.92	\$0.25	\$4.01	\$2.92		\$24.56
8.4 PM, Agency/PMC 4.0%	\$0.63	\$0.59	\$0.58	\$0.11	\$0.21	\$0.67	\$0.37	\$0.62	\$0.90	\$0.41	\$0.53	\$1.10	\$1.96	\$0.12	\$2.00	\$1.46	\$1.73	\$14.01
8.5 Change Order Contingency 7.0%	\$1.10	\$1.04	\$1.02	\$0.20	\$0.37	\$1.18	\$0.66	\$1.08	\$1.58	\$0.71	\$0.92	\$1.92	\$3.43	\$0.21	\$3.51	\$2.56	\$3.03	\$24.52
8.6 Project Insurance 5.0%	\$0.79	\$0.74	\$0.73	\$0.14	\$0.26	\$0.84	\$0.47	\$0.77	\$1.13	\$0.51	\$0.66	\$1.37	\$2.45	\$0.15	\$2.50	\$1.83	\$2.16	\$17.51
8.7 Training/Start-Up/Testing 3.0%	\$0.47	\$0.44	\$0.44	\$0.09	\$0.16	\$0.51	\$0.28	\$0.46	\$0.68	\$0.31	\$0.39	\$0.82	\$1.47	\$0.09	\$1.50	\$1.10	\$1.30	\$10.51
<b>Subtotal Soft Costs</b>	<b>LS \$5.81</b>	<b>\$5.48</b>	<b>\$5.41</b>	<b>\$1.06</b>	<b>\$1.95</b>	<b>\$6.24</b>	<b>\$3.46</b>	<b>\$5.71</b>	<b>\$8.36</b>	<b>\$3.77</b>	<b>\$4.86</b>	<b>\$10.16</b>	<b>\$18.14</b>	<b>\$1.13</b>	<b>\$18.53</b>	<b>\$13.52</b>	<b>\$8.21</b>	<b>\$121.82</b>
<b>Grand Total (\$2004)</b>	<b>\$21.52</b>	<b>\$20.29</b>	<b>\$20.10</b>	<b>\$3.93</b>	<b>\$7.24</b>	<b>\$23.11</b>	<b>\$12.83</b>	<b>\$21.16</b>	<b>\$30.95</b>	<b>\$13.97</b>	<b>\$17.99</b>	<b>\$37.62</b>	<b>\$67.28</b>	<b>\$4.20</b>	<b>\$68.67</b>	<b>\$60.41</b>	<b>\$51.43</b>	<b>\$482.71</b>

LEVEL 4		BAY LINK MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR Segment R-1 TECHNOLOGY: Streetcar Sta. 10+00 to Sta. 106+00							
STATIONING BEGIN      END		DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
1.0 GUIDEWAY ELEMENTS									
1.1 GUIDEWAY									
10+00	- 106+00	At-Grade Embedded, Single Track in Street	AG20	9,600	RF	\$245	\$2,352,576	25%	\$2,940,720
		Total Guideway		9,600	RF		\$2,352,576		\$2,940,720
1.2 TRACKWORK									
10+00	- 106+00	Embedded - Single Track	TK10	9,600	RF	\$383	\$3,679,392	15%	\$4,231,301
		Embedded - Turnout	SP22	2	EA	\$112,881	\$225,762	15%	\$259,627
		Total Trackwork		9,600	RF		\$3,905,154		\$4,490,928
3.0 SYSTEM ELEMENTS									
3.1 TRAIN CONTROL									
10+00	- 106+00	Train Control - Signal Prioritization	TC03	9,600	RF	\$76	\$731,712	15%	\$841,469
		Train Control, Station	TC10	1	EA	\$85,748	\$85,748	15%	\$98,610
		Train Control, Turnout	TC25	2	EA	\$114,330	\$228,660	15%	\$262,959
		Total Train Control		9,600	RF		\$1,046,120		\$1,203,037
3.2 TRACTION POWER									
10+00	- 106+00	Traction Power - Single Track	TP01	9,600	RF	\$95	\$912,000	15%	\$1,048,800
		Traction Power - Substation without Building	TP12	2	EA	\$664,257	\$1,207,741	15%	\$1,388,902
		Total Traction Power		9,600	RF		\$2,119,741		\$2,437,702
3.3 COMMUNICATIONS									
10+00	- 106+00	Communication, Line - Single	CM01	9,600	RF	\$34	\$329,280	15%	\$378,672
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
		Total Communications		9,600	RF		\$557,940		\$641,631
3.4 FARE COLLECTION									
		Fare Collection - Single Installation	FC01	1	EA	\$97,181	\$97,181	15%	\$111,758
		Total Fare Collection		1	LS		\$97,181		\$111,758
4.0 PASSENGER STATIONS									
Park West (North) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$24,759	15%	\$28,473
		Total Passenger Stations		1	LS		\$519,939		\$597,929
5.0 SPECIAL CONDITIONS									
5.1 UTILITY MODIFICATIONS									
10+00	- 106+00	Utility Modifications Allowance - Light	UM01	9,600	RF	\$114	\$1,097,568	30%	\$1,426,838
		Total Special Conditions		9,600	RF		\$1,097,568		\$1,426,838
5.2 DEMOLITIONS									
10+00	- 106+00	Demolition Allowance - Guideway	DM20	9,600	RF	\$10	\$98,784	30%	\$128,419
		Total Demolitions		1	LS		\$98,784		\$128,419
5.3 ROADWAY MODIFICATIONS									
		Roadway Modifications Allowance - Existing Signal	RM20	3	EA	\$91,464	\$274,392	30%	\$356,710
		Roadway Modifications Allowance - New Signal	RM21	2	EA	\$137,196	\$274,392	30%	\$356,710
		Total Roadway Modifications		1	LS		\$548,784		\$713,419
5.4 ENVIRONMENTAL MITIGATION									
10+00	- 106+00	Environmental Mitigation Allowance - Moderate	EM02	9,600	RF	\$57	\$548,832	30%	\$713,482
		Total Environmental Mitigation		9,600	RF		\$548,832		\$713,482
5.5 LANDSCAPING									
10+00	- 106+00	Landscaping Allowance - Guideway	LS10	9,600	RF	\$24	\$230,496	30%	\$299,645
		Total Landscaping		9,600	RF		\$230,496		\$299,645
TOTAL				9,600	RF		\$1,636		\$15,705,508

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-2									
TECHNOLOGY: Streetcar									
Sta. 106+00 to Sta. 166+00									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
106+00	- 166+00	At-Grade Embedded, Single Track in Street	AG20	6,000	RF	\$245	\$1,470,360	25%	\$1,837,950
		Total Guideway		6,000	RF		\$1,470,360		\$1,837,950
<b>1.2 TRACKWORK</b>									
106+00	- 166+00	Embedded - Single Track	TK10	6,000	RF	\$383	\$2,299,620	15%	\$2,644,563
		Embedded - Turnout	SP22	1	EA	\$112,881	\$112,881	15%	\$129,813
		Embedded - Diamond Crossing	SP23	1	EA	\$143,233	\$143,233	15%	\$164,718
		Total Trackwork		6,000	RF		\$2,555,734		\$2,939,094
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
106+00	- 166+00	Train Control - Signal Prioritization	TC03	6,000	RF	\$76	\$457,320	15%	\$525,918
		Train Control, Station	TC10	4	EA	\$85,748	\$342,990	15%	\$394,439
		Train Control, Turnout	TC25	1	EA	\$114,330	\$114,330	15%	\$131,480
		Total Train Control		6,000	RF		\$914,640		\$1,051,836
<b>3.2 TRACTION POWER</b>									
106+00	- 166+00	Traction Power - Single Track	TP01	6,000	RF	\$95	\$570,000	15%	\$655,500
		Traction Power - Substation without Building	TP12	1	EA	\$664,257	\$754,838	15%	\$868,064
		Total Traction Power		6,000	RF		\$1,324,838		\$1,523,564
<b>3.3 COMMUNICATIONS</b>									
106+00	- 166+00	Communication, Line - Single	CM01	6,000	RF	\$34	\$205,800	15%	\$236,670
		Communication, Station	CM05	4	EA	\$228,660	\$914,640	15%	\$1,051,836
		Total Communications		6,000	RF		\$1,120,440		\$1,288,506
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	3	EA	\$97,181	\$291,542	15%	\$335,273
		Fare Collection - Double Installation	FC02	1	EA	\$194,361	\$194,361	15%	\$223,515
		Total Fare Collection		1	LS		\$485,903		\$558,788
<b>4.0 PASSENGER STATIONS</b>									
Miami Ave. / NE 8th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Miami Ave. / NE 5th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Government Center (North) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
SE 1st St. / Miami Ave. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$99,036	15%	\$113,891
		Total Passenger Stations		1	LS		\$2,079,754		\$2,391,717
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
106+00	- 166+00	Utility Modifications Allowance - Light	UM01	6,000	RF	\$114	\$685,980	30%	\$891,774
		Total Special Conditions		6,000	RF		\$685,980		\$891,774
<b>5.2 DEMOLITIONS</b>									
106+00	- 166+00	Demolition Allowance - Guideway	DM20	6,000	RF	\$10	\$61,740	30%	\$80,262
		Total Demolitions		1	LS		\$61,740		\$80,262
<b>5.3 ROADWAY MODIFICATIONS</b>									
		Roadway Modifications Allowance - Existing Si	RM20	9	EA	\$91,464	\$823,176	30%	\$1,070,129
		Roadway Modifications Allowance - New Signal	RM21	3	EA	\$137,196	\$411,588	30%	\$535,064
		Total Roadway Modifications					\$1,234,764		\$1,605,193
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
106+00	- 166+00	Enviromental Mitigation Allowance - Moderate	EM02	6,000	RF	\$57	\$343,020	30%	\$445,926
		Total Environmental Mitigation		6,000	RF		\$343,020		\$445,926
<b>5.5 LANDSCAPING</b>									
106+00	- 166+00	Landscaping Allowance - Guideway	LS10	6,000	RF	\$24	\$144,060	30%	\$187,278
		Total Landscaping		6,000	RF		\$144,060		\$187,278
<b>TOTAL</b>				6,000	RF		\$2,467		\$14,801,888

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-3									
TECHNOLOGY: Streetcar									
Sta. 166+00 to Sta. 228+00									
STATIONING	STATIONING	DESCRIPTION	COST	QTY	UNIT	UNIT	BASE	DESIGN	TOTAL
BEGIN	END		ID			COST	COST	ALLOWANCE	COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
166+00	228+00	At-Grade Embedded, Single Track in Street	AG20	6,200	RF	\$245	\$1,519,372	25%	\$1,899,215
		Total Guideway		6,200	RF		\$1,519,372		\$1,899,215
<b>1.2 TRACKWORK</b>									
166+00	228+00	Embedded - Single Track	TK10	6,200	RF	\$383	\$2,376,274	15%	\$2,732,715
		Embedded - Turnout	SP22	1	EA	\$112,881	\$112,881	15%	\$129,813
		Total Trackwork		6,200	RF		\$2,489,155		\$2,862,528
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
166+00	228+00	Train Control - Signal Prioritization	TC03	6,200	RF	\$76	\$472,564	15%	\$543,449
		Train Control, Station	TC10	4	EA	\$85,748	\$342,990	15%	\$394,439
		Train Control, Turnout	TC25	1	EA	\$114,330	\$114,330	15%	\$131,480
		Total Train Control		6,200	RF		\$929,884		\$1,069,367
<b>3.2 TRACTION POWER</b>									
166+00	228+00	Traction Power - Single Track	TP01	6,200	RF	\$95	\$589,000	15%	\$677,350
		Traction Power - Substation without Building	TP12	1	EA	\$664,257	\$779,999	15%	\$896,999
		Total Traction Power		6,200	RF		\$1,368,999		\$1,574,349
<b>3.3 COMMUNICATIONS</b>									
166+00	228+00	Communication, Line - Single	CM01	6,200	RF	\$34	\$212,660	15%	\$244,559
		Communication, Station	CM05	4	EA	\$228,660	\$914,640	15%	\$1,051,836
		Total Communications		6,200	RF		\$1,127,300		\$1,296,395
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	3	EA	\$97,181	\$291,542	15%	\$335,273
		Fare Collection - Double Installation	FC02	1	EA	\$194,361	\$194,361	15%	\$223,515
		Total Fare Collection		1	LS		\$485,903		\$558,788
<b>4.0 PASSENGER STATIONS</b>									
SE 1st St. / NE 3rd Ave. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Bayfront Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Bayside (East) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
AA Arena (East) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$99,036	15%	\$113,891
		Total Passenger Stations		1	LS		\$2,079,754		\$2,391,717
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
166+00	228+00	Utility Modifications Allowance - Light	UM01	6,200	RF	\$114	\$708,846	30%	\$921,500
		Total Special Conditions		6,200	RF		\$708,846		\$921,500
<b>5.2 DEMOLITIONS</b>									
166+00	228+00	Demolition Allowance - Guideway	DM20	6,200	RF	\$10	\$63,798	30%	\$82,937
		Total Demolitions		1	LS		\$63,798		\$82,937
<b>5.3 ROADWAY MODIFICATIONS</b>									
		Roadway Modifications Allowance - Existing Signal	RM20	11	EA	\$91,464	\$1,006,104	30%	\$1,307,935
		Roadway Modifications Allowance - New Signal	RM21	0	EA	\$137,196	\$0	30%	\$0
		Total Roadway Modifications					\$1,006,104		\$1,307,935
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
166+00	228+00	Environmental Mitigation Allowance - Moderate	EM02	6,200	RF	\$57	\$354,454	30%	\$460,790
		Total Environmental Mitigation		6,200	RF		\$354,454		\$460,790
<b>5.5 LANDSCAPING</b>									
166+00	228+00	Landscaping Allowance - Guideway	LS10	6,200	RF	\$24	\$148,862	30%	\$193,521
		Total Landscaping		6,200	RF		\$148,862		\$193,521
<b>TOTAL</b>				<b>6,200</b>	<b>RF</b>		<b>\$2,358</b>		<b>\$14,619,042</b>

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-4									
Sta. 851+00 to Sta. 862+00									
TECHNOLOGY: Streetcar									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
851+00	- 862+00	At-Grade Embedded, Single Track in Street	AG20	1,100	RF	\$245	\$269,566	25%	\$336,958
		Total Guideway		1,100	RF		\$269,566		\$336,958
<b>1.2 TRACKWORK</b>									
851+00	- 862+00	Embedded - Single Track	TK10	1,100	RF	\$383	\$421,597	15%	\$484,837
		Embedded - Turnout	SP22	1	EA	\$112,881	\$112,881	15%	\$129,813
		Total Trackwork		1,100	RF		\$534,478		\$614,650
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
851+00	- 862+00	Train Control - Signal Prioritization	TC03	1,100	RF	\$76	\$83,842	15%	\$96,418
		Train Control, Station	TC10	1	EA	\$85,748	\$85,748	15%	\$98,610
		Train Control, Turnout	TC25	1	EA	\$114,330	\$114,330	15%	\$131,480
		Total Train Control		1,100	RF		\$283,920		\$326,507
<b>3.2 TRACTION POWER</b>									
851+00	- 862+00	Traction Power - Single Track	TP01	1,100	RF	\$95	\$104,500	15%	\$120,175
		Traction Power - Substation without Building	TP12	0.2	EA	\$664,257	\$138,387	15%	\$159,145
		Total Traction Power		1,100	RF		\$242,887		\$279,320
<b>3.3 COMMUNICATIONS</b>									
851+00	- 862+00	Communication, Line - Single	CM01	1,100	RF	\$34	\$37,730	15%	\$43,390
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
		Total Communications		1,100	RF		\$266,390		\$306,349
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	1	EA	\$97,181	\$97,181	15%	\$111,758
		Total Fare Collection		1	LS		\$97,181		\$111,758
<b>4.0 PASSENGER STATIONS</b>									
Park West (South) Sta.									
		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$24,759	15%	\$28,473
		Total Passenger Stations		1	LS		\$519,939		\$597,929
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
851+00	- 862+00	Utility Modifications Allowance - Light	UM01	1,100	RF	\$114	\$125,763	30%	\$163,492
		Total Special Conditions		1,100	RF		\$125,763		\$163,492
<b>5.2 DEMOLITIONS</b>									
851+00	- 862+00	Demolition Allowance - Guideway	DM20	1,100	RF	\$10	\$11,319	30%	\$14,715
		Total Demolitions		1	LS		\$11,319		\$14,715
<b>5.3 ROADWAY MODIFICATIONS</b>									
		None							
		Total Roadway Modifications					\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
851+00	- 862+00	Environmental Mitigation Allowance - Moderate	EM02	1,100	RF	\$57	\$62,887	30%	\$81,753
		Total Environmental Mitigation		1,100	RF		\$62,887		\$81,753
<b>5.5 LANDSCAPING</b>									
851+00	- 862+00	Landscaping Allowance - Guideway	LS10	1,100	RF	\$24	\$26,411	30%	\$34,334
		Total Landscaping		1,100	RF		\$26,411		\$34,334
<b>TOTAL</b>				1,100	RF		\$2,607		\$2,867,764

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-5									
TECHNOLOGY: Streetcar									
Sta. 862+00 to Sta. 880+00									
STATIONING	STATIONING	DESCRIPTION	COST	QTY	UNIT	UNIT	BASE	DESIGN	TOTAL
BEGIN	END		ID			COST	COST	ALLOWANCE	COST
1.0 GUIDEWAY ELEMENTS									
1.1 GUIDEWAY									
862+00	880+00	At-Grade Embedded, Single Track in Street	AG20	1,800	RF	\$245	\$441,108	25%	\$551,385
		Total Guideway		1,800	RF		\$441,108		\$551,385
1.2 TRACKWORK									
862+00	880+00	Embedded - Single Track	TK10	1,800	RF	\$383	\$689,886	15%	\$793,369
		Embedded - Turnout	SP22	1	EA	\$112,881	\$112,881	15%	\$129,813
		Total Trackwork		1,801	RF		\$802,767		\$923,182
3.0 SYSTEM ELEMENTS									
3.1 TRAIN CONTROL									
862+00	880+00	Train Control - Signal Prioritization	TC03	1,800	RF	\$76	\$137,196	15%	\$157,775
		Train Control, Station	TC10	2	EA	\$85,748	\$171,495	15%	\$197,219
		Train Control, Turnout	TC25	1	EA	\$114,330	\$114,330	15%	\$131,480
		Total Train Control		1,800	RF		\$423,021		\$486,474
3.2 TRACTION POWER									
862+00	880+00	Traction Power - Single Track	TP01	1,800	RF	\$95	\$171,000	15%	\$196,650
		Traction Power - Substation without Building	TP12	0.3	EA	\$664,257	\$226,451	15%	\$260,419
		Total Traction Power		1,800	RF		\$397,451		\$457,069
3.3 COMMUNICATIONS									
862+00	880+00	Communication, Line - Single	CM01	1,800	RF	\$34	\$61,740	15%	\$71,001
		Communication, Station	CM05	2	EA	\$228,660	\$457,320	15%	\$525,918
		Total Communications		1,800	RF		\$519,060		\$596,919
3.4 FARE COLLECTION									
		Fare Collection - Single Installation	FC01	2	EA	\$97,181	\$194,361	15%	\$223,515
		Total Fare Collection		1	LS		\$194,361		\$223,515
4.0 PASSENGER STATIONS									
NE 1st Ave. / NE 8th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
NE 1st Ave. / NE 5th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$49,518	15%	\$56,946
		Total Passenger Stations		1	LS		\$1,039,877		\$1,195,859
5.0 SPECIAL CONDITIONS									
5.1 UTILITY MODIFICATIONS									
862+00	880+00	Utility Modifications Allowance - Light	UM01	1,800	RF	\$114	\$205,794	30%	\$267,532
		Total Special Conditions		1,800	RF		\$205,794		\$267,532
5.2 DEMOLITIONS									
862+00	880+00	Demolition Allowance - Guideway	DM20	1,800	RF	\$10	\$18,522	30%	\$24,079
		Total Demolitions		1	LS		\$18,522		\$24,079
5.3 ROADWAY MODIFICATIONS									
		Roadway Modifications Allowance - Existing Signal	RM20	3	EA	\$91,464	\$274,392	30%	\$356,710
		Roadway Modifications Allowance - New Signal	RM21	0	EA	\$137,196	\$0	30%	\$0
		Total Roadway Modifications					\$274,392		\$356,710
5.4 ENVIRONMENTAL MITIGATION									
862+00	880+00	Environmental Mitigation Allowance - Moderate	EM02	1,800	RF	\$57	\$102,906	30%	\$133,778
		Total Environmental Mitigation		1,800	RF		\$102,906		\$133,778
5.5 LANDSCAPING									
862+00	880+00	Landscaping Allowance - Guideway	LS10	1,800	RF	\$24	\$43,218	30%	\$56,183
		Total Landscaping		1,800	RF		\$43,218		\$56,183
TOTAL				1,800	RF		\$2,929		\$5,272,685

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-6									
Sta. 880+00 to Sta. 951+00									
TECHNOLOGY: Streetcar									
STATIONING	STATIONING	DESCRIPTION	COST	QTY	UNIT	UNIT	BASE	DESIGN	TOTAL
BEGIN	END		ID			COST	COST	ALLOWANCE	COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
880+00	951+00	At-Grade Embedded, Single Track in Street	AG20	7,100	RF	\$245	\$1,739,926	25%	\$2,174,908
		Total Guideway		7,100	RF		\$1,739,926		\$2,174,908
<b>1.2 TRACKWORK</b>									
880+00	951+00	Embedded - Single Track	TK10	7,100	RF	\$383	\$2,721,217	15%	\$3,129,400
		Total Trackwork		7,100	RF		\$2,721,217		\$3,129,400
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
880+00	951+00	Train Control - Signal Prioritization	TC03	7,100	RF	\$76	\$541,162	15%	\$622,336
		Train Control, Station	TC10	5	EA	\$85,748	\$428,738	15%	\$493,048
		Total Train Control		7,100	RF		\$969,900		\$1,115,384
<b>3.2 TRACTION POWER</b>									
880+00	951+00	Traction Power - Single Track	TP01	7,100	RF	\$95	\$674,500	15%	\$775,675
		Traction Power - Substation without Building	TP12	1.3	EA	\$664,257	\$893,225	15%	\$1,027,208
		Total Traction Power		7,100	RF		\$1,567,725		\$1,802,883
<b>3.3 COMMUNICATIONS</b>									
880+00	951+00	Communication, Line - Single	CM01	7,100	RF	\$34	\$243,530	15%	\$280,060
		Communication, Station	CM05	5	EA	\$228,660	\$1,143,300	15%	\$1,314,795
		Total Communications		7,100	RF		\$1,386,830		\$1,594,855
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	3	EA	\$97,181	\$291,542	15%	\$335,273
		Fare Collection - Double Installation	FC02	2	EA	\$194,361	\$388,722	15%	\$447,030
		Total Fare Collection		1	LS		\$680,264		\$782,303
<b>4.0 PASSENGER STATIONS</b>									
Government Center (South) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
NE 1st St. / NE 1st Ave. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
NE 1st St. / NE 3rd Ave. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Bayside (West) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
AA Arena (West) Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$123,795	15%	\$142,364
		Total Passenger Stations		1	LS		\$2,599,693		\$2,989,646
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
880+00	951+00	Utility Modifications Allowance - Light	UM01	7,100	RF	\$114	\$811,743	30%	\$1,055,266
		Total Special Conditions		7,100	RF		\$811,743		\$1,055,266
<b>5.2 DEMOLITIONS</b>									
880+00	951+00	Demolition Allowance - Guideway	DM20	7,100	RF	\$10	\$73,059	30%	\$94,977
		Total Demolitions		1	LS		\$73,059		\$94,977
<b>5.3 ROADWAY MODIFICATIONS</b>									
		Roadway Modifications Allowance - Existing Signal	RM20	10	EA	\$91,464	\$914,640	30%	\$1,189,032
		Roadway Modifications Allowance - New Signal	RM21	1	EA	\$137,196	\$137,196	30%	\$178,355
		Total Roadway Modifications					\$1,051,836		\$1,367,387
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
880+00	951+00	Environmental Mitigation Allowance - Moderate	EM02	7,100	RF	\$57	\$405,907	30%	\$527,679
		Total Environmental Mitigation		7,100	RF		\$405,907		\$527,679
<b>5.5 LANDSCAPING</b>									
880+00	951+00	Landscaping Allowance - Guideway	LS10	7,100	RF	\$24	\$170,471	30%	\$221,612
		Total Landscaping		7,100	RF		\$170,471		\$221,612
<b>TOTAL</b>				<b>7,100</b>	<b>RF</b>		<b>\$2,374</b>		<b>\$16,856,300</b>



<div> <div>LEVEL 4</div> <div> <div>BAY LINK</div> <div>MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR</div> <div>Segment R-7</div> <div>Sta. 228+00 to Sta. 239+25</div> </div> </div>									
TECHNOLOGY: Streetcar									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
228+00	- 239+25	Retained Fill - Two Sides (Avg. 10' Height)	RF21	1,125	RF	\$1,258	\$1,415,576	25%	\$1,769,470
		Total Guideway		1,125	RF		\$1,415,576		\$1,769,470
<b>1.2 TRACKWORK</b>									
228+00	- 239+25	Embedded - Double Track	TK11	1,125	RF	\$767	\$862,346	15%	\$991,698
		Embedded - Single Cross-over	SP20	1	EA	\$294,148	\$294,148	15%	\$338,270
		Total Trackwork		1,126	RF		\$1,156,494		\$1,329,969
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
228+00	- 239+25	Train Control - Double Track	TC02	1,125	RF	\$263	\$295,830	15%	\$340,205
		Train Control, Station	TC10	1	EA	\$85,748	\$85,748	15%	\$98,610
		Train Control, Single Crossover	TC20	1	EA	\$128,621	\$128,621	15%	\$147,914
		Total Train Control		1,125	RF		\$510,199		\$586,729
<b>3.2 TRACTION POWER</b>									
228+00	- 239+25	Traction Power - Double Track	TP02	1,125	RF	\$153	\$172,125	15%	\$197,944
		Traction Power - Substation without Building	TP12	0.2	EA	\$664,257	\$141,532	15%	\$162,762
		Total Traction Power		1,125	RF		\$313,657		\$360,706
<b>3.3 COMMUNICATIONS</b>									
228+00	- 239+25	Communication, Line - Double	CM02	1,125	RF	\$69	\$77,175	15%	\$88,751
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
		Total Communications		1,125	RF		\$305,835		\$351,710
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	1	EA	\$97,181	\$97,181	15%	\$111,758
		Total Fare Collection		1	LS		\$97,181		\$111,758
<b>4.0 PASSENGER STATIONS</b>									
Museum Park Sta.									
		At-Grade - Center Platform	ST01	1	LS	\$745,094	\$745,094	15%	\$856,858
		Station Pedestrian Access Bridge	PA01	200	LF	\$4,430	\$886,000	15%	\$1,018,900
		Station Pedestrian Vertical Access - Elevated	PA20	2	EA	\$1,144,992	\$2,289,984	15%	\$2,633,482
		Allowance for Art		5%			\$37,255	15%	\$42,843
		Total Passenger Stations		1	LS		\$3,958,333		\$4,552,082
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
228+00	- 239+25	Utility Modifications Allowance - Light	UM01	1,125	RF	\$114	\$128,621	30%	\$167,208
		Total Special Conditions		1,125	RF		\$128,621		\$167,208
<b>5.2 DEMOLITIONS</b>									
228+00	- 239+25	Demolition Allowance - Guideway	DM20	1,125	RF	\$10	\$11,576	30%	\$15,049
		Total Demolitions		1	LS		\$11,576		\$15,049
<b>5.3 ROADWAY MODIFICATIONS</b>									
		Roadway Modifications Allowance - Existing Si	RM20	0	EA	\$91,464	\$0	30%	\$0
		Roadway Modifications Allowance - New Signal	RM21	0	EA	\$137,196	\$0	30%	\$0
		Total Roadway Modifications					\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
228+00	- 239+25	Environmental Mitigation Allowance - Moderate	EM02	1,125	RF	\$57	\$64,316	30%	\$83,611
		Total Environmental Mitigation		1,125	RF		\$64,316		\$83,611
<b>5.5 LANDSCAPING</b>									
228+00	- 239+25	Landscaping Allowance - Guideway	LS10	1,125	RF	\$24	\$27,011	30%	\$35,115
		Total Landscaping		1,125	RF		\$27,011		\$35,115
<b>TOTAL</b>				1,125	RF		\$8,323		\$9,363,406

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-8									
TECHNOLOGY: Streetcar									
Sta. 239+25 to Sta. 263+75									
STATIONING		DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
BEGIN	END								
1.0 GUIDEWAY ELEMENTS									
1.1 GUIDEWAY									
239+25	- 263+75	Dbi. Precast Segmental Box Girder on Existing	EL55	2,450	RF	\$2,428	\$5,948,600	25%	\$7,435,750
		Allowance for modification to existing piers		1	LS		\$4,000,000	25%	\$5,000,000
		Total Guideway		2,450	RF		\$9,948,600		\$12,435,750
1.2 TRACKWORK									
239+25	- 263+75	Direct Fixation - Double Track	TK21	2,450	RF	\$457	\$1,120,434	15%	\$1,288,499
		Total Trackwork		2,450	RF		\$1,120,434		\$1,288,499
3.0 SYSTEM ELEMENTS									
3.1 TRAIN CONTROL									
239+25	- 263+75	Train Control - Double Track	TC02	2,450	RF	\$263	\$644,252	15%	\$740,890
		Total Train Control		2,450	RF		\$644,252		\$740,890
3.2 TRACTION POWER									
239+25	- 263+75	Traction Power - Double Track	TP02	2,450	RF	\$153	\$374,850	15%	\$431,078
		Traction Power - Substation without Building	TP12	0.5	EA	\$664,257	\$308,225	15%	\$354,459
		Total Traction Power		2,450	RF		\$683,075		\$785,537
3.3 COMMUNICATIONS									
239+25	- 263+75	Communication, Line - Double	CM02	2,450	RF	\$69	\$168,070	15%	\$193,281
		Total Communications		2,450	RF		\$168,070		\$193,281
3.4 FARE COLLECTION									
		None							
		Total Fare Collection		1	LS		\$0		\$0
4.0 PASSENGER STATIONS									
		None							
		Total Passenger Stations		1	LS		\$0		\$0
5.0 SPECIAL CONDITIONS									
5.1 UTILITY MODIFICATIONS									
		None							
		Total Special Conditions		0	RF		\$0		\$0
5.2 DEMOLITIONS									
		None							
		Total Demolitions					\$0		\$0
5.3 ROADWAY MODIFICATIONS									
		None							
		Total Roadway Modifications					\$0		\$0
5.4 ENVIRONMENTAL MITIGATION									
		None							
		Total Environmental Mitigation		0	RF		\$0		\$0
5.5 LANDSCAPING									
		None							
		Total Landscaping		0	RF		\$0		\$0
TOTAL				2,450	RF		\$6,304		\$15,443,956

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-9									
TECHNOLOGY: Streetcar									
Sta. 263+75 to Sta. 293+00									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
263+75	- 281+00	Dbl. Precast Segmental Box Girder (Avg. Pier 1	EL22	1,725	RF	\$3,053	\$5,266,425	25%	\$6,583,031
281+00	- 286+00	Dbl. Precast Segmental Box Girder (Straddle B	EL27	500	RF	\$3,297	\$1,648,500	25%	\$2,060,625
286+00	- 293+00	Dbl. Precast Segmental Box Girder (Avg. Pier 1	EL22	700	RF	\$3,053	\$2,137,100	25%	\$2,671,375
Total Guideway				2,925	RF		\$9,052,025		\$11,315,031
<b>1.2 TRACKWORK</b>									
263+75	- 293+00	Direct Fixation - Double Track	TK21	2,925	RF	\$457	\$1,337,661	15%	\$1,538,310
Total Trackwork				2,925	RF		\$1,337,661		\$1,538,310
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
263+75	- 293+00	Train Control - Double Track	TC02	2,925	RF	\$263	\$769,158	15%	\$884,532
		Train Control, Station	TC10	1	EA	\$85,748	\$85,748	15%	\$98,610
Total Train Control				2,925	RF		\$854,906		\$983,141
<b>3.2 TRACTION POWER</b>									
263+75	- 293+00	Traction Power - Double Track	TP02	2,925	RF	\$153	\$447,525	15%	\$514,654
		Traction Power - Substation without Building	TP12	0.6	EA	\$664,257	\$367,983	15%	\$423,181
Total Traction Power				2,925	RF		\$815,508		\$937,835
<b>3.3 COMMUNICATIONS</b>									
263+75	- 293+00	Communication, Line - Double	CM02	2,925	RF	\$69	\$200,655	15%	\$230,753
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
Total Communications				2,925	RF		\$429,315		\$493,712
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	1	EA	\$97,181	\$97,181	15%	\$111,758
Total Fare Collection				1	LS		\$97,181		\$111,758
<b>4.0 PASSENGER STATIONS</b>									
Watson Island Sta.		Elevated - Side Platform w/ Mezzanine At-Grac	ST12	1	LS	\$2,969,899	\$2,969,899	15%	\$3,415,383
		Station Pedestrian Access Bridge	PA01	300	LF	\$4,430	\$1,329,000	15%	\$1,528,350
		Station Pedestrian Vertical Access - Elevated	PA20	1	EA	\$1,144,992	\$1,144,992	15%	\$1,316,741
		Allowance for Art		5%			\$148,495	15%	\$170,769
Total Passenger Stations				1	LS		\$5,592,386		\$6,431,243
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
263+75	- 293+00	Utility Modifications Allowance - Light	UM01	2,925	RF	\$114	\$334,415	30%	\$434,740
Total Special Conditions				2,925	RF		\$334,415		\$434,740
<b>5.2 DEMOLITIONS</b>									
263+75	- 293+00	Demolition Allowance - Guideway	DM20	2,925	RF	\$10	\$30,098	30%	\$39,128
Total Demolitions				1	LS		\$30,098		\$39,128
<b>5.3 ROADWAY MODIFICATIONS</b>									
None									
Total Roadway Modifications							\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
263+75	- 293+00	Environmental Mitigation Allowance - Moderate	EM02	2,925	RF	\$57	\$167,222	30%	\$217,389
Total Environmental Mitigation				2,925	RF		\$167,222		\$217,389
<b>5.5 LANDSCAPING</b>									
263+75	- 293+00	Landscaping Allowance - Guideway	LS10	2,925	RF	\$24	\$70,229	30%	\$91,298
Total Landscaping				2,925	RF		\$70,229		\$91,298
<b>TOTAL</b>				2,925	RF		\$7,724		\$22,593,585

LEVEL 4		BAY LINK MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR Segment R-10 TECHNOLOGY: Streetcar Sta. 293+00 to Sta. 325+00							
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
293+00	- 325+00	Dbl. Precast AASHTO Girder on Grade Beams	EL50	3,200	RF	\$1,288	\$4,121,600	25%	\$5,152,000
		Total Guideway		3,200	RF		\$4,121,600		\$5,152,000
<b>1.2 TRACKWORK</b>									
293+00	- 325+00	Direct Fixation - Double Track	TK21	3,200	RF	\$457	\$1,463,424	15%	\$1,682,938
		Total Trackwork		3,200	RF		\$1,463,424		\$1,682,938
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
293+00	- 325+00	Train Control - Double Track	TC02	3,200	RF	\$263	\$841,472	15%	\$967,693
		Total Train Control		3,200	RF		\$841,472		\$967,693
<b>3.2 TRACTION POWER</b>									
293+00	- 325+00	Traction Power - Double Track	TP02	3,200	RF	\$153	\$489,600	15%	\$563,040
		Traction Power - Substation without Building	TP12	0.6	EA	\$664,257	\$402,580	15%	\$462,967
		Total Traction Power		3,200	RF		\$892,180		\$1,026,007
<b>3.3 COMMUNICATIONS</b>									
293+00	- 325+00	Communication, Line - Double	CM02	3,200	RF	\$69	\$219,520	15%	\$252,448
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
		Total Communications		3,200	RF		\$448,180		\$515,407
<b>3.4 FARE COLLECTION</b>									
		None							
		Total Fare Collection		1	LS		\$0		\$0
<b>4.0 PASSENGER STATIONS</b>									
		None							
		Total Passenger Stations		1	LS		\$0		\$0
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
293+00	- 325+00	Utility Modifications Allowance - Light	UM01	3,200	RF	\$114	\$365,856	30%	\$475,613
		Total Special Conditions		3,200	RF		\$365,856		\$475,613
<b>5.2 DEMOLITIONS</b>									
293+00	- 325+00	Demolition Allowance - Guideway	DM20	3,200	RF	\$10	\$32,928	30%	\$42,806
		Total Demolitions		1	LS		\$32,928		\$42,806
<b>5.3 ROADWAY MODIFICATIONS</b>									
		None							
		Total Roadway Modifications					\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
293+00	- 325+00	Environmental Mitigation Allowance - Moderate	EM02	3,200	RF	\$57	\$182,944	30%	\$237,827
		Total Environmental Mitigation		3,200	RF		\$182,944		\$237,827
<b>5.5 LANDSCAPING</b>									
293+00	- 325+00	Landscaping Allowance - Guideway	LS10	3,200	RF	\$24	\$76,832	30%	\$99,882
		Total Landscaping		3,200	RF		\$76,832		\$99,882
<b>TOTAL</b>				3,200	RF		\$3,188		\$10,200,173

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-11									
TECHNOLOGY: Streetcar									
Sta. 325+00 to Sta. 365+00									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
325+00	- 365+00	Dbl. Precast AASHTO Girder on Grade Beams	EL50	4,000	RF	\$1,288	\$5,152,000	25%	\$6,440,000
		Total Guideway		4,000	RF		\$5,152,000		\$6,440,000
<b>1.2 TRACKWORK</b>									
325+00	- 365+00	Direct Fixation - Double Track	TK21	4,000	RF	\$457	\$1,829,280	15%	\$2,103,672
		Direct Fixation - Double Cross-over	SP30	1	EA	\$434,454	\$434,454	15%	\$499,622
		Total Trackwork		4,001	RF		\$2,263,734		\$2,603,294
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
325+00	- 365+00	Train Control - Double Track	TC02	4,000	RF	\$263	\$1,051,840	15%	\$1,209,616
		Train Control, Double Crossover	TC15	1	EA	\$185,786	\$185,786	15%	\$213,654
		Total Train Control		4,000	RF		\$1,237,626		\$1,423,270
<b>3.2 TRACTION POWER</b>									
325+00	- 365+00	Traction Power - Double Track	TP02	4,000	RF	\$153	\$612,000	15%	\$703,800
		Traction Power - Substation without Building	TP12	0.8	EA	\$664,257	\$503,225	15%	\$578,709
		Total Traction Power		4,000	RF		\$1,115,225		\$1,282,509
<b>3.3 COMMUNICATIONS</b>									
325+00	- 365+00	Communication, Line - Double	CM02	4,000	RF	\$69	\$274,400	15%	\$315,560
		Total Communications		4,000	RF		\$274,400		\$315,560
<b>3.4 FARE COLLECTION</b>									
		None							
		Total Fare Collection		1	LS		\$0		\$0
<b>4.0 PASSENGER STATIONS</b>									
		None							
		Total Passenger Stations		1	LS		\$0		\$0
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
325+00	- 365+00	Utility Modifications Allowance - Light	UM01	4,000	RF	\$114	\$457,320	30%	\$594,516
		Total Special Conditions		4,000	RF		\$457,320		\$594,516
<b>5.2 DEMOLITIONS</b>									
325+00	- 365+00	Demolition Allowance - Guideway	DM20	4,000	RF	\$10	\$41,160	30%	\$53,508
		Total Demolitions		1	LS		\$41,160		\$53,508
<b>5.3 ROADWAY MODIFICATIONS</b>									
		None							
		Total Roadway Modifications					\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
325+00	- 365+00	Environmental Mitigation Allowance - Moderate	EM02	4,000	RF	\$57	\$228,680	30%	\$297,284
		Total Environmental Mitigation		4,000	RF		\$228,680		\$297,284
<b>5.5 LANDSCAPING</b>									
325+00	- 365+00	Landscaping Allowance - Guideway	LS10	4,000	RF	\$24	\$96,040	30%	\$124,852
		Total Landscaping		4,000	RF		\$96,040		\$124,852
<b>TOTAL</b>				<b>4,000</b>	<b>RF</b>		<b>\$3,284</b>		<b>\$13,134,793</b>

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-12									
TECHNOLOGY: Streetcar									
Sta. 365+00 to Sta. 405+75									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
365+00	- 375+00	Dbl. Precast Segmental Box Girder (Avg. Pier 2	EL22	1,000	RF	\$3,053	\$3,053,000	25%	\$3,816,250
375+00	- 386+00	Twin - Sngl. Precast Segmental Box Girder (Av	EL32	1,100	RF	\$3,832	\$4,215,200	25%	\$5,269,000
386+00	- 403+75	Dbl. Precast Segmental Box Girder (River Cros	EL28	1,775	RF	\$4,079	\$7,240,225	25%	\$9,050,281
403+75	- 405+75	Retained Fill - Two Sides (Avg. 20' Height)	RF22	200	RF	\$2,082	\$416,474	25%	\$520,593
Total Guideway				4,075	RF		\$14,924,899		\$18,656,124
<b>1.2 TRACKWORK</b>									
365+00	- 403+75	Direct Fixation - Double Track	TK21	3,875	RF	\$457	\$1,772,115	15%	\$2,037,932
403+75	- 405+75	Embedded - Double Track	TK11	200	RF	\$767	\$153,306	15%	\$176,302
Total Trackwork				4,075	RF		\$1,925,421		\$2,214,234
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
365+00	- 405+75	Train Control - Double Track	TC02	4,075	RF	\$263	\$1,071,562	15%	\$1,232,296
		Train Control, Station	TC10	1	EA	\$85,748	\$85,748	15%	\$98,610
Total Train Control				4,075	RF		\$1,157,310		\$1,330,906
<b>3.2 TRACTION POWER</b>									
365+00	- 405+75	Traction Power - Double Track	TP02	4,075	RF	\$153	\$623,475	15%	\$716,996
		Traction Power - Substation without Building	TP12	0.8	EA	\$664,257	\$512,661	15%	\$589,560
Total Traction Power				4,075	RF		\$1,136,136		\$1,306,556
<b>3.3 COMMUNICATIONS</b>									
365+00	- 405+75	Communication, Line - Double	CM02	4,075	RF	\$69	\$279,545	15%	\$321,477
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
Total Communications				4,075	RF		\$508,205		\$584,436
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	1	EA	\$97,181	\$97,181	15%	\$111,758
Total Fare Collection				1	LS		\$97,181		\$111,758
<b>4.0 PASSENGER STATIONS</b>									
Terminal Island Sta.									
		Elevated - Center Platform w/ Mezzanine At-Gr	ST11	1	LS	\$2,210,976	\$2,210,976	15%	\$2,542,623
		Allowance for Art		5%			\$110,549	15%	\$127,131
Total Passenger Stations				1	LS		\$2,321,525		\$2,669,754
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
365+00	- 386+00	Utility Modifications Allowance - Light	UM01	2,100	RF	\$114	\$240,093	30%	\$312,121
403+75	- 405+75	Utility Modifications Allowance - Light	UM01	200	RF	\$114	\$22,866	30%	\$29,726
Total Special Conditions				2,300	RF		\$262,959		\$341,847
<b>5.2 DEMOLITIONS</b>									
		None							
Total Demolitions							\$0		\$0
<b>5.3 ROADWAY MODIFICATIONS</b>									
		None							
Total Roadway Modifications							\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
365+00	- 386+00	Environmental Mitigation Allowance - Moderate	EM02	2,100	RF	\$57	\$120,057	30%	\$156,074
403+75	- 405+75	Environmental Mitigation Allowance - Moderate	EM02	200	RF	\$57	\$11,434	30%	\$14,864
Total Environmental Mitigation				2,300	RF		\$131,491		\$170,938
<b>5.5 LANDSCAPING</b>									
365+00	- 386+00	Landscaping Allowance - Guideway	LS10	2,100	RF	\$24	\$50,421	30%	\$65,547
403+75	- 405+75	Landscaping Allowance - Guideway	LS10	200	RF	\$24	\$4,802	30%	\$6,243
Total Landscaping				2,300	RF		\$55,223		\$71,790
<b>TOTAL</b>				<b>4,075</b>	<b>RF</b>		<b>\$6,738</b>		<b>\$27,458,342</b>

LEVEL 4		BAY LINK							
		MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR							
		Segment R-13							
TECHNOLOGY: Streetcar		Sta. 405+75 to Sta. 590+00							
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
1.0 GUIDEWAY ELEMENTS									
1.1 GUIDEWAY									
405+75	- 590+00	At-Grade Embedded, Single Track in Street	AG20	18,425	RF	\$245	\$4,515,231	25%	\$5,644,038
		Total Guideway		18,425	RF		\$4,515,231		\$5,644,038
1.2 TRACKWORK									
405+75	- 590+00	Embedded - Single Track	TK10	18,425	RF	\$383	\$7,081,750	15%	\$8,121,012
		Embedded - Double Cross-over	SP21	2	EA	\$505,979	\$1,011,958	15%	\$1,163,751
		Embedded - Turnout	SP22	3	EA	\$112,881	\$338,644	15%	\$389,440
		Embedded - Diamond Crossing	SP23	4	EA	\$143,233	\$572,530	15%	\$658,870
		Total Trackwork		18,434	RF		\$8,985,282		\$10,333,074
3.0 SYSTEM ELEMENTS									
3.1 TRAIN CONTROL									
405+75	- 590+00	Train Control - Signal Prioritization	TC03	18,425	RF	\$76	\$1,404,354	15%	\$1,615,007
		Train Control, Station	TC10	13	EA	\$85,748	\$1,114,718	15%	\$1,281,925
		Train Control, Double Crossover	TC15	2	EA	\$185,786	\$371,573	15%	\$427,308
		Train Control, Turnout	TC25	3	EA	\$114,330	\$342,990	15%	\$394,439
		Total Train Control		18,425	RF		\$3,233,634		\$3,718,679
3.2 TRACTION POWER									
405+75	- 590+00	Traction Power - Single Track	TP01	18,425	RF	\$95	\$1,750,375	15%	\$2,012,931
		Traction Power - Substation without Building	TP12	3.5	EA	\$664,257	\$2,317,981	15%	\$2,665,678
		Total Traction Power		18,425	RF		\$4,068,356		\$4,678,610
3.3 COMMUNICATIONS									
405+75	- 590+00	Communication, Line - Single	CM01	18,425	RF	\$34	\$631,978	15%	\$726,774
		Communication, Station	CM05	13	EA	\$228,660	\$2,972,580	15%	\$3,418,467
		Total Communications		18,425	RF		\$3,604,558		\$4,145,241
3.4 FARE COLLECTION									
		Fare Collection - Single Installation	FC01	3	EA	\$97,181	\$291,542	15%	\$335,273
		Fare Collection - Double Installation	FC02	10	EA	\$194,361	\$1,943,610	15%	\$2,235,152
		Total Fare Collection		1	LS		\$2,235,152		\$2,570,424
4.0 PASSENGER STATIONS									
5th St. / Alton Rd. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
6th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
10th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
14th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Lincoln Rd. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
17th St. / PAC Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
17th St. / Meridian Ave. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
17th St. / Alton Rd. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
16th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
Espanola Way Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
12th St. Station		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
9th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
6th St. Sta.		At-Grade - Single Side Platform (160')	ST04	1	LS	\$495,180	\$495,180	15%	\$569,456
		Allowance for Art		5%			\$321,867	15%	\$370,147
		Total Passenger Stations		1	LS		\$6,759,201		\$7,773,081
5.0 SPECIAL CONDITIONS									
5.1 UTILITY MODIFICATIONS									
405+75	- 590+00	Utility Modifications Allowance - Light	UM01	18,425	RF	\$114	\$2,106,530	30%	\$2,738,489
		Total Special Conditions		18,425	RF		\$2,106,530		\$2,738,489
5.2 DEMOLITIONS									
405+75	- 590+00	Demolition Allowance - Guideway	DM20	18,425	RF	\$10	\$189,593	30%	\$246,471
		Total Demolitions		1	LS		\$189,593		\$246,471
5.3 ROADWAY MODIFICATIONS									
		Roadway Modifications Allowance - Existing Signal	RM20	32	EA	\$91,464	\$2,926,848	30%	\$3,804,902
		Roadway Modifications Allowance - New Signal	RM21	8	EA	\$137,196	\$1,097,568	30%	\$1,426,838
		Total Roadway Modifications					\$4,024,416		\$5,231,741
5.4 ENVIRONMENTAL MITIGATION									
405+75	- 590+00	Environmental Mitigation Allowance - Moderate	EM02	18,425	RF	\$57	\$1,053,357	30%	\$1,369,364
		Total Environmental Mitigation		18,425	RF		\$1,053,357		\$1,369,364
5.5 LANDSCAPING									
405+75	- 590+00	Landscaping Allowance - Guideway	LS10	18,425	RF	\$24	\$442,384	30%	\$575,100
		Total Landscaping		18,425	RF		\$442,384		\$575,100
TOTAL				18,425	RF		\$2,661		\$49,024,312

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Segment R-14									
TECHNOLOGY: Streetcar									
Sta. 228+00 to Sta. 239+25									
STATIONING	STATIONING	DESCRIPTION	COST	QTY	UNIT	UNIT	BASE	DESIGN	TOTAL
BEGIN	END		ID			COST	COST	ALLOWANCE	COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
+0	- 6+00	At-Grade Embedded, Double Track in Street	AG21	600	RF	\$301	\$180,528	25%	\$225,660
		Total Guideway		600	RF		\$180,528		\$225,660
<b>1.2 TRACKWORK</b>									
+0	- 6+00	Embedded - Double Track	TK11	600	RF	\$767	\$459,918	15%	\$528,906
		Embedded - Single Cross-over	SP20	1	EA	\$294,148	\$294,148	15%	\$338,270
		Total Trackwork		601	RF		\$754,066		\$867,176
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
+0	- 6+00	Train Control - Signal Prioritization	TC03	600	RF	\$76	\$45,732	15%	\$52,592
		Train Control, Station	TC10	1	EA	\$85,748	\$85,748	15%	\$98,610
		Train Control, Single Crossover	TC20	1	EA	\$128,621	\$128,621	15%	\$147,914
		Total Train Control		600	RF		\$260,101		\$299,116
<b>3.2 TRACTION POWER</b>									
+0	- 6+00	Traction Power - Double Track	TP02	600	RF	\$153	\$91,800	15%	\$105,570
		Traction Power - Substation without Building	TP12	0.1	EA	\$664,257	\$75,484	15%	\$86,806
		Total Traction Power		600	RF		\$167,284		\$192,376
<b>3.3 COMMUNICATIONS</b>									
+0	- 6+00	Communication, Line - Double	CM02	600	RF	\$69	\$41,160	15%	\$47,334
		Communication, Station	CM05	1	EA	\$228,660	\$228,660	15%	\$262,959
		Total Communications		600	RF		\$269,820		\$310,293
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	1	EA	\$97,181	\$97,181	15%	\$111,758
		Total Fare Collection		1	LS		\$97,181		\$111,758
<b>4.0 PASSENGER STATIONS</b>									
Convention Center Sta.									
		At-Grade - Center Platform	ST01	1	LS	\$745,094	\$745,094	15%	\$856,858
		Allowance for Art		5%			\$37,255	15%	\$42,843
		Total Passenger Stations		1	LS		\$782,348		\$899,701
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
+0	- 6+00	Utility Modifications Allowance - Light	UM01	600	RF	\$114	\$68,598	30%	\$89,177
		Total Special Conditions		600	RF		\$68,598		\$89,177
<b>5.2 DEMOLITIONS</b>									
+0	- 6+00	Demolition Allowance - Guideway	DM20	600	RF	\$10	\$6,174	30%	\$8,026
		Total Demolitions		1	LS		\$6,174		\$8,026
<b>5.3 ROADWAY MODIFICATIONS</b>									
		Roadway Modifications Allowance - Existing Signal	RM20	0	EA	\$91,464	\$0	30%	\$0
		Roadway Modifications Allowance - New Signal	RM21	0	EA	\$137,196	\$0	30%	\$0
		Total Roadway Modifications					\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
+0	- 6+00	Environmental Mitigation Allowance - Moderate	EM02	600	RF	\$57	\$34,302	30%	\$44,593
		Total Environmental Mitigation		600	RF		\$34,302		\$44,593
<b>5.5 LANDSCAPING</b>									
+0	- 6+00	Landscaping Allowance - Guideway	LS10	600	RF	\$24	\$14,406	30%	\$18,728
		Total Landscaping		600	RF		\$14,406		\$18,728
<b>TOTAL</b>				600	RF		\$5,111		\$3,066,604



<div> <div>LEVEL 4</div> <div> <div>BAY LINK</div> <div>MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR</div> <div>Segment G-1</div> <div>Sta. 228+00 to Sta. 239+25</div> </div> </div>									
TECHNOLOGY: Streetcar									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
1000+00	- 1154+00	At-Grade Embedded, Single Track in Street	AG20	15,400	RF	\$245	\$3,773,924	25%	\$4,717,405
1154+00	- 1155+00	Bridge Structure, Sgl Track	BR01	100	RF	\$2,001	\$200,100	25%	\$250,125
1155+00	- 1197+00	At-Grade Embedded, Single Track in Street	AG20	4,200	RF	\$245	\$1,029,252	25%	\$1,286,565
1197+00	- 1198+00	Bridge Structure, Sgl Track	BR01	100	RF	\$2,001	\$200,100	25%	\$250,125
1198+00	- 1266+50	At-Grade Embedded, Single Track in Street	AG20	6,850	RF	\$245	\$1,678,661	25%	\$2,098,326
Total Guideway				26,650	RF		\$6,882,037		\$8,602,546
<b>1.2 TRACKWORK</b>									
1000+00	- 1154+00	Embedded - Single Track	TK10	15,400	RF	\$383	\$5,902,358	15%	\$6,787,712
1154+00	- 1155+00	Direct Fixation - Single Track	TK20	100	RF	\$229	\$22,866	15%	\$26,296
1155+00	- 1197+00	Embedded - Single Track	TK10	4,200	RF	\$383	\$1,609,734	15%	\$1,851,194
1197+00	- 1198+00	Direct Fixation - Single Track	TK20	100	RF	\$229	\$22,866	15%	\$26,296
1198+00	- 1266+50	Embedded - Single Track	TK10	6,850	RF	\$383	\$2,625,400	15%	\$3,019,209
Storage Track		Embedded - Single Track	TK10	550	RF	\$383	\$210,799	15%	\$242,418
		Embedded - Turnout	SP22	3	EA	\$112,881	\$338,644	15%	\$389,440
Total Trackwork				26,650	RF		\$10,732,666		\$12,342,565
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
1000+00	- 1266+50	Train Control - Signal Prioritization	TC03	26,650	RF	\$76	\$2,031,263	15%	\$2,335,952
		Train Control, Station	TC10	11	EA	\$85,748	\$943,223	15%	\$1,084,706
		Train Control, Single Crossover	TC20	3	EA	\$128,621	\$385,864	15%	\$443,743
Total Train Control				26,650	RF		\$3,360,349		\$3,864,402
<b>3.2 TRACTION POWER</b>									
1000+00	- 1266+50	Traction Power - Single Track	TP01	26,650	RF	\$95	\$2,531,750	15%	\$2,911,513
		Traction Power - Substation without Building	TP12	5.0	EA	\$664,257	\$3,352,738	15%	\$3,855,649
Total Traction Power				26,650	RF		\$5,884,488		\$6,767,161
<b>3.3 COMMUNICATIONS</b>									
1000+00	- 1266+50	Communication, Line - Single	CM01	26,650	RF	\$34	\$914,095	15%	\$1,051,209
		Communication, Station	CM05	11	EA	\$228,660	\$2,515,260	15%	\$2,892,549
Total Communications				26,650	RF		\$3,429,355		\$3,943,758
<b>3.4 FARE COLLECTION</b>									
		Fare Collection - Single Installation	FC01	11	EA	\$97,181	\$1,068,986	15%	\$1,229,333
Total Fare Collection				1	LS		\$1,068,986		\$1,229,333
<b>4.0 PASSENGER STATIONS</b>									
Alton Rd. / 4th St. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
2nd St. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
South Pointe Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
Washington Ave. / 3rd St. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
Collins Rd. / 18th St. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
22nd St. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
Dade Blvd. / Washington Ave. St.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
Dade Blvd. / Meridian Ave. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
Dade Blvd. / Michigan Ave. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
West Ave. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
Alton Rd. / 6th St. Sta.		At-Grade - Single Side Platform (80')	ST05	1	LS	\$261,881	\$261,881	15%	\$301,163
		Allowance for Art		5%			\$144,035	15%	\$165,640
Total Passenger Stations				1	LS		\$3,024,726		\$3,478,435
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
1000+00	- 1266+50	Utility Modifications Allowance - Light	UM01	26,650	RF	\$114	\$3,046,895	30%	\$3,960,963
Total Special Conditions				26,650	RF		\$3,046,895		\$3,960,963
<b>5.2 DEMOLITIONS</b>									
1000+00	- 1266+50	Demolition Allowance - Guideway	DM20	26,650	RF	\$10	\$274,229	30%	\$356,497
Total Demolitions				1	LS		\$274,229		\$356,497
<b>5.3 ROADWAY MODIFICATIONS</b>									
		Roadway Modifications Allowance - Existing Signage	RM20	11	EA	\$91,464	\$1,006,104	30%	\$1,307,935
		Roadway Modifications Allowance - New Signage	RM21	8	EA	\$137,196	\$1,097,568	30%	\$1,426,838
Total Roadway Modifications							\$2,103,672		\$2,734,774
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
1000+00	- 1266+50	Environmental Mitigation Allowance - Moderate	EM02	26,650	RF	\$57	\$1,523,581	30%	\$1,980,655
Total Environmental Mitigation				26,650	RF		\$1,523,581		\$1,980,655
<b>5.5 LANDSCAPING</b>									
1000+00	- 1266+50	Landscaping Allowance - Guideway	LS10	26,650	RF	\$24	\$639,867	30%	\$831,826
Total Landscaping				26,650	RF		\$639,867		\$831,826
<b>TOTAL</b>				26,650	RF		\$1,880		\$50,092,915

# **APPENDIX A-2**

## **Maintenance Yard and Shop**

LEVEL 4									
BAY LINK									
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR									
Yard & Shop									
TECHNOLOGY: Streetcar									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
<b>1.0 GUIDEWAY ELEMENTS</b>									
<b>1.1 GUIDEWAY</b>									
+0	- 50+70	* At-Grade Embedded, Double Track in Street	AG21	5,070	RF	\$301	\$1,525,462	25%	\$1,906,827
		Total Guideway		5,070	RF		\$1,525,462		\$1,906,827
<b>1.2 TRACKWORK</b>									
+0	- 50+70	* Embedded - Double Track	TK11	5,070	RF	\$767	\$3,886,307	15%	\$4,469,253
		Total Trackwork		5,070	RF		\$3,886,307		\$4,469,253
<b>2.0 YARD AND SHOPS</b>									
<b>2.1 Maintenance Facility</b>		Allowance for Y&S, per Vehicle	YS01	21	EA	\$1,100,000	\$23,100,000	15%	\$26,565,000
		Total Yard and Shop		1	LS		\$23,100,000		\$26,565,000
<b>3.0 SYSTEM ELEMENTS</b>									
<b>3.1 TRAIN CONTROL</b>									
+0	- 50+70	* Train Control - Signal Prioritization	TC03	5,070	RF	\$76	\$386,435	15%	\$444,401
		Total Train Control		5,070	RF		\$386,435		\$444,401
<b>3.2 TRACTION POWER</b>									
+0	- 50+70	* Traction Power - Double Track	TP02	5,070	RF	\$153	\$775,710	15%	\$892,067
		* Traction Power - Substation without Building	TP12	1.0	EA	\$664,257	\$637,838	15%	\$733,514
		Total Traction Power		5,070	RF		\$1,413,548		\$1,625,580
<b>3.3 COMMUNICATIONS</b>									
+0	- 50+70	* Communication, Line - Double	CM02	5,070	RF	\$69	\$347,802	15%	\$399,972
		Total Communications		5,070	RF		\$347,802		\$399,972
<b>3.4 FARE COLLECTION</b>									
		None							
		Total Fare Collection		1	LS		\$0		\$0
<b>4.0 PASSENGER STATIONS</b>									
		None							
		Total Passenger Stations		1	LS		\$0		\$0
<b>5.0 SPECIAL CONDITIONS</b>									
<b>5.1 UTILITY MODIFICATIONS</b>									
+0	- 50+70	* Utility Modifications Allowance - Light	UM01	5,070	RF	\$114	\$579,653	30%	\$753,549
		Total Special Conditions		5,070	RF		\$579,653		\$753,549
<b>5.2 DEMOLITIONS</b>									
+0	- 50+70	* Demolition Allowance - Guideway	DM20	5,070	RF	\$10	\$52,170	30%	\$67,821
		Total Demolitions		1	LS		\$52,170		\$67,821
<b>5.3 ROADWAY MODIFICATIONS</b>									
		None							
		Total Roadway Modifications					\$0		\$0
<b>5.4 ENVIRONMENTAL MITIGATION</b>									
+0	- 50+70	* Environmental Mitigation Allowance - Light	EM01	5,070	RF	\$23	\$115,951	30%	\$150,736
		Total Environmental Mitigation		5,070	RF		\$115,951		\$150,736
<b>5.5 LANDSCAPING</b>									
+0	- 50+70	* Landscaping Allowance - Guideway	LS10	5,070	RF	\$24	\$121,731	30%	\$158,250
		Total Landscaping		5,070	RF		\$121,731		\$158,250
* Yard lead estimated from the Miami Streetcar line to the maintenance facility along 7th St.									
<b>TOTAL</b>				5,070	RF		\$7,207		\$36,541,390

## **APPENDIX A-3**

### **Vehicles**

LEVEL 4

BAY LINK  
MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR  
Vehicle

TECHNOLOGY: Streetcar

STATIONING		DESCRIPTION	COST		UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
BEGIN	END		ID	QTY					
6.0	VEHICLES								
6.1	Vehicles	Streetcar Vehicles		21	EA	\$2,057,940	\$43,216,740	0%	\$43,216,740
6.2	Bus Vehicles	Bus Vehicles		0	EA	\$375,000	\$0	0%	\$0
		Total Vehicles		21	EA		\$43,216,740		\$43,216,740

## **APPENDIX A-4**

### **Right-Of-Way**

LEVEL 4		BAY LINK MIAMI - MIAMI BEACH TRANSPORTATION CORRIDOR Right-of-Way							
TECHNOLOGY: Streetcar									
STATIONING BEGIN	END	DESCRIPTION	COST ID	QTY	UNIT	UNIT COST	BASE COST	DESIGN ALLOWANCE	TOTAL COST
7.0	RIGHT-OF-WAY								
7.1	Segment R-2	NW Corner of NE 3rd St. / Miami Ave.		620	SF	\$17	\$10,675	50%	\$16,012
		Total Segment 1					\$10,675		\$16,012
7.2	Segment R-3	Amerian Airlines Arena Station		2,900	SF	\$17	\$49,931	50%	\$74,897
		Total Segment 2					\$49,931		\$74,897
7.3	Segment R-5	SE Corner of NE9th St. / NE 1st Ave.		560	SF	\$17	\$9,642	50%	\$14,463
		Total Segment 3					\$9,642		\$14,463
7.4	Segment R-6	SE Corner of NE 3rd St. / NW 1st Ave.		700	SF	\$17	\$12,052	50%	\$18,079
		Total Segment 4					\$12,052		\$18,079
7.5	Segment R-13	NE Corner of 17th St. / Alton Rd.		4,475	SF	\$17	\$77,049	50%	\$115,573
		Total Segment 5					\$77,049		\$115,573
7.6	Segment G-1	NE Corner of Lincoln Rd. / West Ave.		1,800	SF	\$17	\$30,992	50%	\$46,488
		Total Segment 6					\$30,992		\$46,488
7.7	Yard and Shop	Property at NE 5th Ave. / 7th St.		5,900	SF	\$17	\$101,584	50%	\$152,376
		Maintenance Yard Site # 2		394,600	SF	\$17	\$6,794,077	50%	\$10,191,116
		Total Yard & Shop		400,500	SF		\$6,895,661		\$10,343,492
				9.4	AC				
TOTAL				411,555	SF				\$10,629,003

# **APPENDIX A-5**

## **Quantity Take-Off**



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**QUANTITY TAKEOFF**

Segment No.	Stationing		Quantity	Units	Typical Section	Description
	Begin	End				
R-1	<b>Guideway</b>					
	10+00	106+00	9,600	RF	AG20	At-Grade Embedded, Single Track in Street
			9,600	RF		
	<b>Trackwork</b>					
	10+00	106+00	9,600	RF	TK10	Embedded - Single Track
			2	EA	SP22	Embedded - Turnout
	<b>Stations</b>					
	Park West (North) Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			3	EA	RM20	Roadway Modifications Allowance - Existing Signal
			2	EA	RM21	Roadway Modifications Allowance - New Signal
R-2	<b>Guideway</b>					
	106+00	166+00	6,000	RF	AG20	At-Grade Embedded, Single Track in Street
			6,000	RF		
	<b>Trackwork</b>					
	106+00	166+00	6,000	RF	TK10	Embedded - Single Track
			1	EA	SP22	Embedded - Turnout
			1	EA	SP23	Embedded - Diamond Crossing
	<b>Stations</b>					
	Miami Ave. / NE 8th St. Sta		1	LS	ST04	At-Grade - Single Side Platform (160')
	Miami Ave / NE 5th St. Sta		1	LS	ST04	At-Grade - Single Side Platform (160')
	Government Center (North		1	LS	ST04	At-Grade - Single Side Platform (160')
	SE 1st St. / Miami Ave. Sta		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			9	EA	RM20	Roadway Modifications Allowance - Existing Signal
			3	EA	RM21	Roadway Modifications Allowance - New Signal
R-3	<b>Guideway</b>					
	166+00	228+00	6,200	RF	AG20	At-Grade Embedded, Single Track in Street
			6,200	RF		
	<b>Trackwork</b>					
	166+00	228+00	6,200	RF	TK10	Embedded - Single Track
			1	EA	SP22	Embedded - Turnout
	<b>Stations</b>					
	SE 1st St. / NE 3rd Ave. St		1	LS	ST04	At-Grade - Single Side Platform (160')
	Bayfront Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	Bayside (East) Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	AA Arena (East) Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			11	EA	RM20	Roadway Modifications Allowance - Existing Signal
			0	EA	RM21	Roadway Modifications Allowance - New Signal

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**QUANTITY TAKEOFF**

Segment No.	Stationing		Quantity	Units	Typical Section	Description
	Begin	End				
<b>R-4</b>	<b>Guideway</b>					
	851+00	862+00	1,100	RF	AG20	At-Grade Embedded, Single Track in Street
			<b>1,100</b>	<b>RF</b>		
	<b>Trackwork</b>					
	851+00	862+00	1,100	RF	TK10	Embedded - Single Track
			1	EA	SP22	Embedded - Turnout
	<b>Stations</b>					
	Park West (South) Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			0	EA	RM20	Roadway Modifications Allowance - Existing Signal
			0	EA	RM21	Roadway Modifications Allowance - New Signal
<b>R-5</b>	<b>Guideway</b>					
	862+00	880+00	1,800	RF	AG20	At-Grade Embedded, Single Track in Street
			<b>1,800</b>	<b>RF</b>		
	<b>Trackwork</b>					
	862+00	880+00	1,800	RF	TK10	Embedded - Single Track
			1	EA	SP22	Embedded - Turnout
	<b>Stations</b>					
	NE 1st Ave. / NE 8th St. St		1	LS	ST04	At-Grade - Single Side Platform (160')
	NE 1st Ave. / NE 5th St. St		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			3	EA	RM20	Roadway Modifications Allowance - Existing Signal
			0	EA	RM21	Roadway Modifications Allowance - New Signal

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**QUANTITY TAKEOFF**

Segment No.	Stationing		Quantity	Units	Typical Section	Description
	Begin	End				
<b>R-6</b>	<b>Guideway</b>					
	880+00	951+00	7,100	RF	AG20	At-Grade Embedded, Single Track in Street
			7,100	RF		
	<b>Trackwork</b>					
	880+00	951+00	7,100	RF	TK10	Embedded - Single Track
	<b>Stations</b>					
	Government Center (South		1	LS	ST04	At-Grade - Single Side Platform (160')
	NE 1st St. / NE 1st Ave. St		1	LS	ST04	At-Grade - Single Side Platform (160')
	NE 1st St. / NE 3rd Ave. St		1	LS	ST04	At-Grade - Single Side Platform (160')
	Bayside (West) Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	AA Arena (West) Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			10	EA	RM20	Roadway Modifications Allowance - Existing Signal
			1	EA	RM21	Roadway Modifications Allowance - New Signal
<b>R-7</b>	<b>Guideway</b>					
	228+00	239+25	1,125	RF	RF21	Retained Fill Embedded - Two Sides (Avg. 10' Height)
			1,125	RF		
	<b>Trackwork</b>					
	228+00	239+25	1,125	RF	TK11	Embedded - Double Track
			1	EA	SP20	Embedded - Single Cross-over
	<b>Stations</b>					
	Museum Park Sta.		1	LS	ST01	At-Grade - Center Platform
	<b>Traffic Signals</b>					
			0	EA	RM20	Roadway Modifications Allowance - Existing Signal
			0	EA	RM21	Roadway Modifications Allowance - New Signal
<b>R-8</b>	<b>Guideway</b>					
	239+25	263+75	2,450	RF	EL55	Dbl. Precast Segmental Box Girder on Existing Substructure
			2,450	RF		
	<b>Trackwork</b>					
	239+25	263+75	2,450	RF	TK21	Direct Fixation - Double Track

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**QUANTITY TAKEOFF**

Segment No.	Stationing		Quantity	Units	Typical Section	Description
	Begin	End				
<b>R-9</b>	<b>Guideway</b>					
	263+75	281+00	1,725	RF	EL22	Dbl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)
	281+00	286+00	500	RF	EL27	Dbl. Precast Segmental Box Girder (Straddle Bents)
	286+00	293+00	700	RF	EL22	Dbl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)
			<b>2,925</b>	<b>RF</b>		
	<b>Trackwork</b>					
	263+75	293+00	2,925	RF	TK21	Direct Fixation - Double Track
	<b>Stations</b>					
	Watson Island Sta.		1	LS	ST12	Elevated - Side Platform w/ Mezzanine At-Grade
			300	LF	PA01	Station Pedestrian Access Bridge
			1	EA	PA20	Station Pedestrian Vertical Access - Elevated
<b>R-10</b>	<b>Guideway</b>					
	293+00	325+00	3,200	RF	EL50	Dbl. Precast AASHTO Girder on Grade Beams
			<b>3,200</b>	<b>RF</b>		
	<b>Trackwork</b>					
	293+00	325+00	3,200	RF	TK21	Direct Fixation - Double Track
<b>R-11</b>	<b>Guideway</b>					
	325+00	365+00	4,000	RF	EL50	Dbl. Precast AASHTO Girder on Grade Beams
			<b>4,000</b>	<b>RF</b>		
	<b>Trackwork</b>					
	325+00	365+00	4,000	RF	TK21	Direct Fixation - Double Track
			1	EA	SP30	Direct Fixation - Double Cross-over

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**QUANTITY TAKEOFF**

Segment No.	Stationing		Quantity	Units	Typical Section	Description
	Begin	End				
<b>R-12</b>	<b>Guideway</b>					
	365+00	375+00	1,000	RF	EL22	Dbl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)
	375+00	386+00	1,100	RF	EL32	Twin - Sngl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)
	386+00	403+75	1,775	RF	EL28	Dbl. Precast Segmental Box Girder (River Crossng)
	403+75	405+75	200	RF	RF22	Retained Fill - Two Sides (Avg. 20' Height)
			<b>4,075</b>	<b>RF</b>		
	<b>Trackwork</b>					
	365+00	403+75	3,875	RF	TK21	Direct Fixation - Double Track
	403+75	405+75	200	RF	TK11	Embedded - Double Track
	<b>Stations</b>					
	Terminal Island Sta.		1	LS	ST11	Elevated - Center Platform w/ Mezzanine At-Grade
<b>R-13</b>	<b>Guideway</b>					
	405+75	590+00	18,425	RF	AG20	At-Grade Embedded, Single Track in Street
			<b>18,425</b>	<b>RF</b>		
	<b>Trackwork</b>					
	405+75	590+00	18,425	RF	TK10	Embedded - Single Track
			2	EA	SP21	Embedded - Double Cross-over
			3	EA	SP22	Embedded - Turnout
			4	EA	SP23	Embedded - Diamond Crossing
	<b>Stations</b>					
	5th St. / Alton Rd. Sta		1	LS	ST04	At-Grade - Single Side Platform (160')
	6th St. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	10th St. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	14th St. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	Lincoln Rd. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	17th St. / PAC Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	17th St. / Meridian Ave. Sta		1	LS	ST04	At-Grade - Single Side Platform (160')
	17th St. / Alton Rd. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	16th St. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	Espanola Way Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	12th St. Station		1	LS	ST04	At-Grade - Single Side Platform (160')
	9th St. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	6th St. Sta.		1	LS	ST04	At-Grade - Single Side Platform (160')
	<b>Traffic Signals</b>					
			32	EA	RM20	Roadway Modifications Allowance - Existing Signal
			8	EA	RM21	Roadway Modifications Allowance - New Signal

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**QUANTITY TAKEOFF**

Segment No.	Stationing		Quantity	Units	Typical Section	Description
	Begin	End				
<b>R-14</b>	<b>Guideway</b>					
	0+00	6+00	600	RF	AG21	At-Grade Embedded, Double Track in Street
			<b>600</b>	<b>RF</b>		
	<b>Trackwork</b>					
	0+00	6+00	600	RF	TK11	Embedded - Double Track
			1	EA	SP20	Embedded - Single Cross-over
	<b>Stations</b>					
	Convention Center Sta.		1	LS	ST01	At-Grade - Center Platform
	<b>Traffic Signals</b>					
			0	EA	RM20	Roadway Modifications Allowance - Existing Signal
			0	EA	RM21	Roadway Modifications Allowance - New Signal
<b>G-1</b>	<b>Guideway</b>					
	1000+00	1154+00	15,400	RF	AG20	At-Grade Embedded, Single Track in Street
	1154+00	1155+00	100	RF	BR01	Bridge Structure, Sgl Track
	1155+00	1197+00	4,200	RF	AG20	At-Grade Embedded, Single Track in Street
	1197+00	1198+00	100	RF	BR01	Bridge Structure, Sgl Track
	1197+00	1266+50	6,950	RF	AG20	At-Grade Embedded, Single Track in Street
			<b>26,750</b>	<b>RF</b>		
	<b>Trackwork</b>					
	1000+00	1154+00	15,400	RF	TK10	Embedded - Single Track
	1154+00	1155+00	100	RF	TK20	Direct Fixation - Single Track
	1155+00	1197+00	4,200	RF	TK10	Embedded - Single Track
	1197+00	1198+00	100	RF	TK20	Direct Fixation - Single Track
	1197+00	1266+50	6,950	RF	TK10	Embedded - Single Track
			550	RF	TK10	Embedded - Single Track (storage track)
			3	EA	SP22	Embedded - Turnout
	<b>Stations</b>					
	Alton Rd. / 4th St. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	2nd St. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	South Pointe Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	Washington Ave. / 3rd St. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	Collins Rd. / 18th St. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	22nd St. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	Dade Blvd. / Washington Ave.		1	LS	ST05	At-Grade - Single Side Platform (80')
	Dade Blvd. / Meridian Ave.		1	LS	ST05	At-Grade - Single Side Platform (80')
	Dade Blvd. / Michigan Ave.		1	LS	ST05	At-Grade - Single Side Platform (80')
	West Ave. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	Alton Rd. / 6th St. Sta.		1	LS	ST05	At-Grade - Single Side Platform (80')
	<b>Traffic Signals</b>					
			11	EA	RM20	Roadway Modifications Allowance - Existing Signal
			8	EA	RM21	Roadway Modifications Allowance - New Signal

# **APPENDIX B**

## **Unit Cost Library**

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
01560.01	Traffic Control, Light	lf	\$68.60
01560.02	Traffic Control, Moderate	lf	\$91.46
01560.03	Traffic Control, Heavy	lf	\$171.50
02110.01	Excavation & Removal of Contaminated Soil	cy	\$148.63
02120.01	Enviromental Mitigation Allow. - Light	lf	\$22.87
02120.02	Enviromental Mitigation Allow. - Moderate	lf	\$57.17
02120.03	Enviromental Mitigation Allow. - Heavy	lf	\$91.46
02220.01	Sawcut Asphalt Pavement	lf	\$2.86
02220.02	Sawcut Concrete Pavement	lf	\$5.37
02220.05	Asphaltic Pavement Removal	sy	\$6.86
02220.06	Concrete Pavement Removal	sy	\$17.15
02220.07	Remove Concrete Sidewalk	sy	\$5.72
02220.08	Remove Concrete Curb	lf	\$4.12
02220.80	Miscellaneous Demolition - Allowance	lf	\$10.29
02220.99	Miscellaneous Demolition - Crew	hr	\$400.16
02225.01	Site Development Allow. For Stations	sf	\$29.73
02230.01	Clearing & Grubbing, Light	sy	\$0.57
02230.02	Clearing & Grubbing, Moderate	sy	\$0.80
02230.03	Clearing & Grubbing, Heavy	sy	\$1.83
02250.01	Steel Sheet Pile and Shoring	sf	\$32.01
02260.01	Soldier Pile & Lagging Wall incl/Bracing	sf	\$51.45
02260.10	Slurry Concrete Wall 2 ft. Wide	sf	\$131.48
02260.11	Slurry Concrete Wall 3 ft. Wide	sf	\$194.36
02260.50	Street Decking	sf	\$28.58
02310.01	Rough Grading	sf	\$0.45
02310.02	Finish Grading	sf	\$0.69
02310.10	At-Grade Drainage Ditch	lf	\$5.14
02315.01	Regular Excavation	cy	\$6.00
02315.02	Embankment	cy	\$9.00
02315.10	Structural Excavation	cy	\$18.29
02315.11	Structural Backfill	cy	\$25.00
02315.15	Haul and Waste Soil	cy	\$6.86
02315.20	Cut & Cover Excavation	cy	\$22.87
02315.21	Cut & Cover Backfill	cy	\$41.16
02340.01	Geotextile Fabric	sy	\$1.71
02370.01	Erosion Control, Guideway Allowance	lf	\$25.15
02370.02	Erosion Control, Roadway Allowance	lf	\$14.86
02410.01	Tunnel Excavation & Support, Rock	cy	\$205.79
02410.02	Tunnel Excavation & Support, Earth	cy	\$177.21
02410.03	Shaft Excavation & Support, Rock	cy	\$160.06
02410.04	Shaft Excavation & Support, Earth	cy	\$142.91
02410.10	Contact Grouting	cf	\$11.43
02410.20	CIPC, Tunnel Lining	cy	\$571.65
02410.21	CIPC, Shaft Lining	cy	\$514.49
02410.22	Precast Tunnel Lining Segments	sf	\$25.15



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
02410.30	Crosspassage	ea	\$171,495.00
02410.50	Temporary Air, Water, Ventilation	lf	\$22.87
02455.01	Driven Piling	vlf	\$68.60
02465.01	Bored Caisson, 6ft. Dia.	vlf	\$457.32
02465.02	Bored Caisson, 7ft. Dia.	vlf	\$583.08
02465.03	Bored Caisson, 8ft. Dia.	vlf	\$748.86
02465.04	Bored Caisson, 9ft. Dia.	vlf	\$937.51
02465.05	Bored Caisson, 10ft. Dia.	vlf	\$1,143.30
02470.01	OCS Pole Foundations	ea	\$1,714.95
02500.01	Utility Modifications - Rural	lf	\$114.33
02500.02	Utility Modifications - Light Urban	lf	\$400.16
02500.03	Utility Modifications - Moderate Urban	lf	\$743.15
02500.04	Utility Modifications - Heavy Urban	lf	\$1,486.29
02620.01	Wall Drains	lf	\$40.02
02620.02	Underdrains	lf	\$20.58
02630.01	Site / Roadway Drainage, Allowance	lf	\$74.31
02630.09	Trackway Drainage, Ballasted	lf	\$45.73
02630.10	Trackway Drainage, Paved Area	lf	\$57.17
02630.11	Trackway Drainage, Tunnel	lf	\$68.60
02630.12	Trackway Drainage, Aerial	lf	\$34.30
02630.20	Strom Water Management Pond	sy	\$13.72
02720.01	Aggregate Subbase	cy	\$19.44
02720.02	Aggregate Base	cy	\$25.15
02730.01	Cement Stabilized Base	cy	\$57.17
02740.01	Asphalt Treated Base	tn	\$51.45
02740.05	Asphaltic Concrete Pavement	tn	\$57.17
02750.01	Concrete Pavement, Non-reinforced	cy	\$297.26
02750.02	Concrete Pavement, Reinforced	cy	\$342.99
02766.01	Misc. Signing and Stripping, Roadway	lf	\$0.86
02766.02	Misc. Signing and Stripping, Parking Lot	sf	\$0.29
02770.01	Asphalt Concrete Curb	lf	\$3.09
02770.02	Concrete Curb	lf	\$10.29
02770.03	Concrete Curb and Gutter	lf	\$13.72
02770.04	Concrete Gutter	sy	\$22.87
02770.05	Stone Curbs	lf	\$20.58
02770.10	Concrete Ripple Strip	lf	\$34.30
02775.01	Concrete Sidewalk	sy	\$25.15
02780.01	Unit Pavers	sy	\$57.17
02790.01	Precast Concrete Sleeper Beams	ea	\$800.31
02790.02	Precast Concrete Guideway Beams	lf	\$62.88
02810.01	Irrigation System, Moderate	sf	\$0.57
02810.02	Irrigation System, Large	sf	\$0.86
02820.01	6 ft. Chain Link Fence	lf	\$10.29
02820.02	6 ft. Chain Link Fence w/ 3 Strand Barb Wire	lf	\$13.72
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	\$12.58

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
02820.04	6 ft. Chain Link Fence, Wall Mounted w/ 3 Strand	lf	\$14.86
02830.01	Reinforced Earth Walls (MSE)	sf	\$34.30
02830.05	CIPC, Retaining Wall, Complete	sf	\$62.88
02840.01	Metal Guardrail	lf	\$20.58
02840.05	Concrete Median Barrier	lf	\$40.02
02840.06	Concrete Barrier Wall	cy	\$457.32
02840.10	Precast Sound Wall	sf	\$43.45
02850.01	Bridge Structure, Allowance	sf	\$165.78
02900.01	Landscaping, Moderate	sf	\$1.14
02900.02	Landscaping, Extensive	sf	\$2.86
03210.01	Reinforcing Steel	lb	\$0.69
03210.02	Reinforcing Steel, Epoxy Coated	lb	\$0.86
03210.03	Prestressing Strands	lb	\$2.52
03300.01	CIPC, Footings	cy	\$342.99
03300.02	CIPC, Slab on Grade	cy	\$274.39
03300.03	CIPC, Walls	cy	\$537.35
03300.04	CIPC, Columns	cy	\$857.48
03300.05	CIPC, Beams	cy	\$777.44
03300.06	CIPC, Parapet	cy	\$731.71
03300.07	CIPC, Elevated Slab	cy	\$594.52
03300.08	CIPC, C&C Slab on Grade	cy	\$297.26
03300.09	CIPC, C&C Exterior Walls, Formed 1 Side	cy	\$605.95
03300.10	CIPC, C&C Exterior Walls, Formed 2 Sides	cy	\$685.98
03300.11	CIPC, C&C Interior Walls	cy	\$640.25
03300.12	CIPC, C&C Roof Slab	cy	\$560.22
03300.13	CIPC, Aerial Footing	cy	\$320.12
03300.14	CIPC, Aerial Pier	cy	\$571.65
03300.15	CIPC, Aerial Pier Cap	cy	\$514.49
03300.16	CIPC, Aerial Deck Slab	cy	\$400.16
03300.17	CIPC, Aerial Box Girder	cy	\$914.64
03300.99	CIPC, Miscellaneous Structures	cy	\$800.31
03400.02	Precast Prestressed I Beams, TP III	lf	\$80.03
03400.03	Precast Prestressed I Beams, TP V	lf	\$137.20
03410.20	Precast Concrete Slabs	sf	\$2.86
03410.21	Precast Prestressed Concrete U Girder	lf	\$314.41
03410.22	Precast Segmental Box Girder, Single	lf	\$1,314.80
03410.23	Precast Segmental Box Girder, Double	lf	\$2,057.94
03410.24	Precast Segmental Box Girder, Long Span	lf	\$2,595.29
03410.25	Precast Barrier Wall	sf	\$13.72
05120.01	Structural Steel, Box Girder	lb	\$1.43
05120.05	Structural Steel, Misc.	lb	\$2.00
05120.10	Structural Steel, Grating	sf	\$8.00
05520.01	Metal Pipe and Tube Railing	lf	\$40.02
05520.10	OCS Pole Foundation on Structure	ea	\$571.65
05650.01	Subballast	cy	\$32.01

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
05650.02	Ballast	cy	\$36.59
05650.03	Concrete Track Slab	sy	\$85.75
05650.04	Concrete Track Infill	sy	\$45.73
05650.05	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	tf	\$171.50
05650.06	Direct Fixation Trackwork, incl/ Fasteners & Rail	tf	\$228.66
05650.07	Contact Rail, incl/ Cover Board	lf	\$137.20
05650.08	Ballasted Yard Track, incl/ Ties, Fasteners & Rail	tf	\$222.94
05650.09	Ballasted Freight Railroad, incl/ Ties, Fasteners &	tf	\$148.63
05650.10	Ballasted Freight Railroad, Relocated	tf	\$137.20
05650.11	Ballasted Freight Railroad, Demolition	tf	\$11.43
05650.15	Embedded Trackwork, incl/ Fasteners & Rail	tf	\$285.83
05650.19	Extruded Rubber Insert	lf	\$8.00
05650.20	Electrical Isolation Membrane	sy	\$125.76
05650.21	Rubber RR Crossing Panels	sy	\$628.82
05650.22	Precast Concrete RR Crossing Panels	lf	\$342.99
05650.30	Permanent Terminal, Ballasted	ea	\$6,859.80
05650.31	Special Trackwork, No. 10 Dbl Crossover,Ballasted	ea	\$342,990.00
05650.32	Special Trackwork, No. 10 Dbl Crossover,DF	ea	\$503,052.00
05650.33	Special Trackwork, No. 8 Dbl Crossover,Ballasted	ea	\$297,258.00
05650.34	Special Trackwork, No. 8 Dbl Crossover,DF	ea	\$434,454.00
05650.35	Special Trackwork, No. 10 Sgl Crossover,Ballasted	ea	\$226,373.40
05650.36	Special Trackwork, No. 10 Sgl Crossover,DF	ea	\$258,385.80
05650.37	Special Trackwork, No. 8 Sgl Crossover,Ballasted	ea	\$168,065.10
05650.38	Special Trackwork, No. 8 Sgl Crossover,DF	ea	\$205,794.00
05650.39	Special Trackwork, No. 20 Turnout,Ballasted	ea	\$185,214.60
05650.40	Special Trackwork, No. 15 Turnout,Ballasted	ea	\$141,769.20
05650.41	Special Trackwork, No. 10 Turnout,Ballasted	ea	\$112,043.40
05650.42	Special Trackwork, No. 8 Turnout,Ballasted	ea	\$84,604.20
05650.43	Special Trackwork, No. 6 Turnout,Ballasted	ea	\$56,021.70
05650.44	Special Trackwork, Yard Turnout,Ballasted	ea	\$24,009.30
05650.45	Special Trackwork, Junction, Non-Grade Sep, Ball	ea	\$85,747.50
05650.46	Special Trackwork, Junction, Non-Grade Sep, DF	ea	\$107,470.20
05650.49	Special Trackwork, No. 8 Turnout,DF	ea	\$95,000.00
05650.52	Special Trackwork, No. 5 Turnout,DF	ea	\$60,000.00
05820.01	Elastomeric Bearing Pads	ea	\$514.49
05820.02	POT Bearing, Single	ea	\$6,859.80
05820.03	POT Bearing, Double	ea	\$9,146.40
07130.21	Sheet Waterproofing	sf	\$4.00
07170.21	Bentonite Waterproofing, Vertical	sf	\$6.29
07170.22	Bentonite Waterproofing, Horizontal	sf	\$5.26
09000.01	Architectural Finish, Station Platform	sf	\$51.45
09000.02	Platform Edge	sf	\$40.02
09000.03	Curtain Wall	sf	\$20.00
10100.01	Signage, Stations	sta	\$11,433.00
10100.02	Signage, BRT Station	sta	\$8,003.10

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
10100.03	Signage, Guideway	lf	\$13.72
10500.01	Station Canopy	sf	\$80.03
11155.01	Fare Collection, Reversible Gate	ea	\$129,192.90
11155.02	Fare Collection, Farecard Vendor	ea	\$134,909.40
11155.03	Fare Collection, Money Changer	ea	\$13,719.60
11155.10	Fare Collection, Ticket Vending Machine	ea	\$68,598.00
11155.11	Fare Collection, Validating Machine	ea	\$5,716.50
11155.20	Fare Collection, Installation & Testing	ea	\$11,433.00
12000.01	Station Furnishings, Single Platform (Allowance)	sta	\$51,448.50
12000.02	Station Furnishings, Double Platform (Allowance)	sta	\$80,031.00
12000.03	Station Furnishings, Short Platform (Allowance)	sta	\$34,299.00
13000.01	Maintenance Building	sf	\$285.83
13000.02	Operations Building	sf	\$205.79
13000.03	Chemical/Equipment Storage	sf	\$182.93
13000.04	Body/Paint Shop	sf	\$171.50
13000.05	Car Wash Building	sf	\$194.36
13000.06	Service Bays	sf	\$160.06
13000.08	BRT Bus Operator Welfare Building	sf	\$148.63
13000.09	BRT Transfer Facility Building	sf	\$228.66
13000.10	Pedestrian Access Structure	sf	\$137.20
13000.20	Traction Power Structure, Substation	ea	\$205,794.00
13100.01	Wheel Truing Machine	ea	\$1,714,950.00
13100.02	Wheel Axle Press Machine	ea	\$640,248.00
13100.03	Turntables	ea	\$68,598.00
13100.04	Cranes, 10-Ton	ea	\$80,031.00
13100.05	Car Body Hoist	ea	\$1,006,104.00
13100.06	Truck Repair Hoist	ea	\$194,361.00
13200.01	Mineral Spirits Tank	ea	\$51,448.50
13200.02	Waste Oil Tank	ea	\$62,881.50
13300.01	Paint Shop Equipment	ls	\$205,794.00
13300.02	Wash Equipment	ls	\$320,124.00
13300.03	Misc. Office and Shop Equipment	ls	\$743,145.00
14600.01	Escalators, to 25 ft. Rise	ea	\$228,660.00
14600.02	Escalators, 36 ft. to 40 ft. Rise	ea	\$434,454.00
14600.03	Escalators, 56 ft. to 60 ft. Rise	ea	\$608,235.60
14600.04	Escalators, 71 ft. to 80 ft. Rise	ea	\$729,882.72
14600.05	Escalators, 111 ft. to 120 ft. Rise	ea	\$1,021,835.81
14600.09	Elevators, 25 ft. Rise	ea	\$114,330.00
14600.10	Elevators, 40 ft. Rise	ea	\$160,062.00
14600.11	Elevators, 75 ft. Rise	ea	\$208,080.60
14600.12	Elevators, 110 ft. Rise	ea	\$249,696.72
14600.20	Stairs Complete, Std. Width	vf	\$800.31
14600.21	Stairs Complete, Wide	vf	\$1,371.96
15300.01	Fire Protection Piping, Tunnel	lf	\$68.60
15400.01	Pumping Station (Tunnel / Cut & Cover)	ea	\$285,825.00

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
15700.02	Subsurface Ventilation	lf	\$400.16
15700.10	Ventilation Equipment (Allowance)	ea	\$571,650.00
15800.01	Station Mechanical (Allowance)	sf	\$9.15
16000.01	Station Electrical (Allowance)	sf	\$17.15
16060.01	Corrosion Control, At-Grade	lf	\$1.71
16060.02	Corrosion Control, Aerial	lf	\$2.29
16130.20	Direct Bury Conduit, At Grade Guideway	lf	\$6.86
16130.21	Ductbank, At Grade Guideway	lf	\$40.02
16130.22	Ductbank, Aerial Guideway	lf	\$85.75
16130.23	Ductbank, Tunnel Guideway	lf	\$62.88
16370.01	Traction Power Equipment, Substation	ea	\$651,681.00
16370.04	Traction Power Supply, Trunkline	lf	\$45.73
16370.05	Traction Power Supply, Branchline	lf	\$40.02
16370.06	Traction Power Supply, (OCS), At-Grade, Single T	lf	\$80.03
16370.07	Traction Power Supply, (OCS), At-Grade, Double T	lf	\$137.20
16500.01	Lighting, At Grade Guideway	lf	\$45.73
16500.02	Lighting, Aerial Guideway	lf	\$62.88
16500.03	Lighting, Cut & Cover Guideway	lf	\$182.93
16500.04	Lighting, Tunnel Guideway	lf	\$182.93
16500.05	Lighting, Stations (Allowance)	sf	\$8.00
16500.06	Lighting, Roadway	lf	\$28.58
16500.07	Lighting, Area	sf	\$2.86
16700.01	Train Control, Line	lf	\$131.48
16700.02	Train Control, Station	ea	\$85,747.50
16700.03	Train Control, Yard	lf	\$160.06
16700.04	Train Control, Turnout	ea	\$114,330.00
16700.05	Train Control, Double Crossover	ea	\$185,786.25
16700.06	Train Control, Single Crossover	ea	\$128,621.25
16700.07	Train Control, Yard Crossover	ea	\$88,605.75
16700.08	Communication, Line	lf	\$34.30
16700.09	Communication, Station	ea	\$228,660.00
16700.10	Communication, Yard	ea	\$1,943,610.00
16700.11	Highway Crossing Signals, Preemptive	ea	\$137,196.00
16700.12	Highway Crossing Signals, Preferential	ea	\$228,660.00
16700.13	Crossing Gates with Flashers, New	ea	\$125,763.00
16700.14	Crossing Gates with Flashers, Relocated	ea	\$102,897.00
16700.15	Pedestrian Crossing Signals	ea	\$85,747.50
16700.19	Signal Prioritization	ea	\$57,165.00
16700.20	Traffic Signal - Existing	ea	\$91,464.00
16700.21	Traffic Signal - New	ea	\$137,196.00
16800.01	Train Control, Commuter Line	lf	\$28.58
16800.05	Train Control, Commuter - Turnout	ea	\$171,495.00
17100.01	LRT Vehicles, Low Floor Cars	ea	\$3,086,910.00
17100.02	Maintenance of Way, Vehicles & Equipment	ls	\$1,486,290.00
17100.03	Standard 35 ft. Bus	ea	\$308,691.00

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**UNIT COST LIBRARY**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
17100.04	Standard 40 ft. Bus	ea	\$337,273.50
17100.05	Articulated 60 ft. Bus	ea	\$428,737.50
17100.08	Streetcar Vehicles	ea	\$2,057,940.00
17100.10	Diesel Locomotive	ea	\$3,961,534.50
17100.11	Passenger Car	ea	\$2,160,837.00

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**COMPOSITE SECTION COSTS**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
	<b>GUIDEWAY:</b>		
AG01	At-Grade Ballasted Track - Open	RF	\$283
AG02	At-Grade Ballasted Track - Adjacent to Street	RF	\$437
AG03	At-Grade Ballasted Track - Street Median	RF	\$882
AG04	At-Grade Ballasted Track - Street Median (Transition at Stations)	RF	\$932
AG05	At-Grade Ballasted Track - Street Median (At Stations)	RF	\$983
AG09	At-Grade Ballasted Track - Highway Median	RF	\$500
AG10	At-Grade Ballasted Track - Curb Side Lanes	RF	\$531
AG11	At-Grade Ballasted Track - Railroad Corridor	RF	\$230
AG12	At-Grade Ballasted Track - Rail/Highway Crossing	RF	\$283
AG20	At-Grade Embedded, Single Track in Street	RF	\$245
AG21	At-Grade Embedded, Double Track in Street	RF	\$301
AG31	At-Grade Embedded, Sngl Track - Curb Lane	RF	\$627
AG40	At-Grade Embedded, Single Track - Median Lane	RF	\$627
AG41	At-Grade Street Running Track - Curb Lane	RF	\$1,074
AG42	At-Grade Embedded, Single Track - Adjacent to Street	RF	\$384
RC01	Retained Cut - One Side (Avg. 10' Depth)	RF	\$1,697
RC02	Retained Cut - One Side (Avg. 20' Depth)	RF	\$3,013
RC21	Retained Cut - Two Sides (Avg. 10' Depth)	RF	\$3,571
RC22	Retained Cut - Two Sides (Avg. 20' Depth)	RF	\$6,089
RC32	Retained Cut - U-Wall (Avg. 20' Depth)	RF	\$6,402
RC41	Retained Cut - One Side in Railroad Corridor (Avg. 10' Depth)	RF	\$1,717
RF01	Retained Fill - One Side (Avg. 10' Height)	RF	\$705
RF02	Retained Fill - One Side (Avg. 20' Height)	RF	\$1,074
RF12	Retained Fill - Twin Dbl Side (Avg. 20' Height)	RF	\$3,668
RF21	Retained Fill - Two Sides (Avg. 10' Height)	RF	\$1,258
RF22	Retained Fill - Two Sides (Avg. 20' Height)	RF	\$2,082
RF32	Retained Fill - Sngl, Two Sides (Avg. 20' Height)	RF	\$1,970
RF41	Retained Fill - One Side in Railroad Corridor (Avg. 10' Depth)	RF	\$725
RF90	Retaining Wall, One Side Only (Avg. 10' Height)	RF	\$783
CF01	Retained Cut and Fill (Avg. 10' Height)	RF	\$2,636
CF02	Retained Cut and Fill (Avg. 20' Height)	RF	\$4,523
BR01	Bridge Structure, Sgl Track	RF	\$2,001
BR02	Bridge Structure, Dbl track	RF	\$3,240
EL02	Sgl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)	RF	\$2,141
EL03	Sgl. Precast Segmental Box Girder (Avg. Pier 30' Ht.)	RF	\$2,203



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**COMPOSITE SECTION COSTS**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
	<b>GUIDEWAY (Con't):</b>		
EL22	Dbl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)	RF	\$3,053
EL23	Dbl. Precast Segmental Box Girder (Avg. Pier 30' Ht.)	RF	\$3,137
EL24	Dbl. Precast Segmental Box Girder (Avg. Pier 40' Ht.)	RF	\$3,271
EL27	Dbl. Precast Segmental Box Girder (Straddle Bents)	RF	\$3,297
EL28	Dbl. Precast Segmental Box Girder (River Crossng)	RF	\$4,079
EL32	Twin - Sngl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)	RF	\$3,832
EL33	Twin - Sngl. Precast AASHTO Girder (Avg. Pier 30' Ht.)	RF	\$2,766
EL34	Twin - Sngl. Precast AASHTO Girder (Avg. Pier 40' Ht.)	RF	\$2,909
EL42	Dbl. Precast AASHTO Girder (Avg. Pier 20' Ht.)	RF	\$2,233
EL43	Dbl. Precast AASHTO Girder (Avg. Pier 30' Ht.)	RF	\$2,359
EL44	Dbl. Precast AASHTO Girder (Avg. Pier 40' Ht.)	RF	\$2,485
EL45	Dbl. Precast AASHTO Girder (Avg. Pier 50' Ht.)	RF	\$2,612
EL50	Dbl. Precast AASHTO Girder on Grade Beams	RF	\$1,288
EL55	Dbl. Precast Segmental Box Girder on Existing Substructure	RF	\$2,428
	<b>TRACKWORK:</b>		
TK01	Ballasted - Single Track	RF	\$208
TK02	Ballasted - Double Track	RF	\$402
TK10	Embedded - Single Track	RF	\$383
TK11	Embedded - Double Track	RF	\$767
TK20	Direct Fixation - Single Track	RF	\$229
TK21	Direct Fixation - Double Track	RF	\$457
SP02	At-Grade Double Roadway Crossing	RF	\$686
SP08	Ballasted - Double Cross-over (Std.)	EA	\$297,258
SP12	Ballasted - Double Cross-over (Wide)	EA	\$356,710
SP14	Ballasted - Pocket Track	RF	\$983
SP16	Ballasted - Turnout	EA	\$141,769
SP20	Embedded - Single Cross-over	EA	\$294,148
SP21	Embedded - Double Cross-over	EA	\$505,979
SP22	Embedded - Turnout	EA	\$112,881
SP23	Embedded - Diamond Crossing	EA	\$143,233
SP30	Direct Fixation - Double Cross-over	EA	\$434,454
SP32	Direct Fixation - Pocket Track	RF	\$1,203
SP34	Direct Fixation - Turnout	EA	\$95,000



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**COMPOSITE SECTION COSTS**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
	<b>YARDS AND SHOPS:</b>		
YS01	Allowance for Y&S, per Vehicle	EA	\$1,100,000
	<b>TRAIN CONTROL:</b>		
TC01	Train Control - Single Track	RF	\$131
TC02	Train Control - Double Track	RF	\$263
TC03	Train Control - Signal Prioritization	RF	\$76
TC05	Train Control, Line - Yard	RF	\$160
TC10	Train Control, Station	EA	\$85,748
TC15	Train Control, Double Crossover	EA	\$185,786
TC20	Train Control, Single Crossover	EA	\$128,621
TC25	Train Control, Turnout	EA	\$114,330
TC81	Train Control, Commuter Rail	RF	\$29
TC85	Train Control, Turnout Commuter Rail	EA	\$171,495
	<b>TRACTION POWER:</b>		
TP01	Traction Power - Single Track	RF	\$95
TP02	Traction Power - Double Track	RF	\$153
TP10	Traction Power - Substation with Building	EA	\$870,051
TP12	Traction Power - Substation without Building	EA	\$664,257
	<b>COMMUNICATIONS:</b>		
CM01	Communication, Line - Single	RF	\$34
CM02	Communication, Line - Double	RF	\$69
CM05	Communication, Station	EA	\$228,660
	<b>FARE COLLECTION:</b>		
FC01	Fare Collection - Single Installation	EA	\$97,181
FC02	Fare Collection - Double Installation	EA	\$194,361
	<b>PASSENGER STATIONS:</b>		
ST01	At-Grade - Center Platform	LS	\$745,094
ST02	At-Grade - Side Platform	LS	\$926,987
ST04	At-Grade - Single Side Platform (160')	LS	\$495,180
ST05	At-Grade - Single Side Platform (80')	LS	\$261,881

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**COMPOSITE SECTION COSTS**

CODE	DESCRIPTION	2nd Qtr 2004	
		UNIT	UNIT COST \$
	<b>PASSENGER STATIONS (Con't):</b>		
ST11	Elevated - Center Platform w/ Mezzanine At-Grade	LS	\$2,210,976
ST12	Elevated - Side Platform w/ Mezzanine At-Grade	LS	\$2,969,899
PA01	Station Pedestrian Access Bridge	LF	\$4,430
PA05	Station Pedestrian Access Cut & Cover Tunnel	LF	\$7,714
PA20	Station Pedestrian Vertical Access - Elevated	EA	\$1,144,992
SF02	Station Site Facilities - Surface Parking	SP	\$2,468
SF05	Station Site Facilities - Bus / Shuttle Bays	SP	\$2,969
SF20	Station Site Facilities - Parking Garage	SP	\$11,145
	<b>SPECIAL CONDITIONS:</b>		
UM01	Utility Modifications Allowance - Light	RF	\$114
UM02	Utility Modifications Allowance - Light Urban	RF	\$400
UM03	Utility Modifications Allowance - Moderate Urban	RF	\$743
UM04	Utility Modifications Allowance - Heavy Urban	RF	\$1,486
UM80	Utility Modifications Allowance - Existing RR Corridor	RF	\$11
DM01	Demolition Allowance - Existing Bridge Structure	SF	\$8.23
DM10	Demolition Allowance - Existing Station Structure	SF	\$86.43
DM20	Demolition Allowance - Guideway	RF	\$10.29
DM80	Demolition Allowance - Existing Paved Area	SF	\$7.40
RM01	Roadway Modifications Allowance - Under Aerial Structure	RF	\$353.50
RM10	Roadway Modifications Allowance - Adding 1 Lane	LnF	\$244.66
RM20	Roadway Modifications Allowance - Existing Signal	EA	\$91,464
RM21	Roadway Modifications Allowance - New Signal	EA	\$137,196
RM82	Roadway Modifications Allowance - AC Paving (incl. Curb & Sidewalk)	SF	\$23.97
RM90	Roadway Modifications Allowance - Adding New Bridge	SF	\$119.97
EM01	Enviromental Mitigation Allowance - Light	RF	\$22.87
EM02	Enviromental Mitigation Allowance - Moderate	RF	\$57.17
EM03	Enviromental Mitigation Allowance - Heavy	RF	\$91.46
LS02	Landscaping Allowance - Site	SF	\$3.72
LS10	Landscaping Allowance - Guideway	RF	\$24.01

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Open**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.01	Traffic Control, Light	lf	1.0	\$68.60	\$69
02230.02	Clearing & Grubbing, Moderate	sy	6.1	\$0.80	\$5
02310.01	Rough Grading	sf	55.0	\$0.45	\$25
02310.02	Finish Grading	sf	38.0	\$0.69	\$26
02310.10	At-Grade Drainage Ditch	lf	1.0	\$5.14	\$5
02315.01	Regular Excavation	cy	2.8	\$6.00	\$17
02340.01	Geotextile Fabric	sy	4.2	\$1.71	\$7
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02820.01	6 ft. Chain Link Fence	lf	2.0	\$10.29	\$21
05650.01	Subballast	cy	0.9	\$32.01	\$30
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>AG01</b>	<b>At-Grade Ballasted Track - Open</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$283</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Adjacent to Street**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	1.0	\$2.86	\$3
02220.05	Asphaltic Pavement Removal	sy	0.4	\$6.86	\$3
02230.01	Clearing & Grubbing, Light	sy	5.6	\$0.57	\$3
02310.01	Rough Grading	sf	50.0	\$0.45	\$23
02310.02	Finish Grading	sf	34.0	\$0.69	\$23
02310.10	At-Grade Drainage Ditch	lf	1.0	\$5.14	\$5
02315.01	Regular Excavation	cy	2.5	\$6.00	\$15
02340.01	Geotextile Fabric	sy	3.8	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	1.0	\$20.58	\$21
02630.01	Site / Roadway Drainage, Allowance	lf	1.0	\$74.31	\$74
02720.02	Aggregate Base	cy	0.1	\$25.15	\$4
02740.05	Asphaltic Concrete Pavement	tn	0.1	\$57.17	\$7
02770.03	Concrete Curb and Gutter	lf	1.0	\$13.72	\$14
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
05650.01	Subballast	cy	0.8	\$32.01	\$27
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG02</b>	<b>At-Grade Ballasted Track - Adjacent to Street</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$437</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Street Median**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.03	Traffic Control, Heavy	lf	1.0	\$171.50	\$172
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	5.3	\$6.86	\$37
02220.07	Remove Concrete Sidewalk	sy	0.9	\$5.72	\$5
02220.08	Remove Concrete Curb	lf	4.0	\$4.12	\$16
02310.01	Rough Grading	sf	86.0	\$0.45	\$39
02310.02	Finish Grading	sf	78.0	\$0.69	\$54
02315.01	Regular Excavation	cy	2.2	\$6.00	\$13
02340.01	Geotextile Fabric	sy	3.3	\$1.71	\$6
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.01	Site / Roadway Drainage, Allowance	lf	2.0	\$74.31	\$149
02720.02	Aggregate Base	cy	1.8	\$25.15	\$45
02740.05	Asphaltic Concrete Pavement	tn	1.7	\$57.17	\$99
02766.01	Misc. Signing and Stripping, Roadway	lf	4.0	\$0.86	\$3
02770.03	Concrete Curb and Gutter	lf	4.0	\$13.72	\$55
02775.01	Concrete Sidewalk	sy	0.9	\$25.15	\$22
05650.01	Subballast	cy	0.7	\$32.01	\$24
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG03</b>	<b>At-Grade Ballasted Track - Street Median</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$882</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Street Median (Transition at Stations)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.03	Traffic Control, Heavy	lf	1.0	\$171.50	\$172
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	5.3	\$6.86	\$37
02220.07	Remove Concrete Sidewalk	sy	0.9	\$5.72	\$5
02220.08	Remove Concrete Curb	lf	4.0	\$4.12	\$16
02310.01	Rough Grading	sf	98.0	\$0.45	\$44
02310.02	Finish Grading	sf	90.0	\$0.69	\$62
02315.01	Regular Excavation	cy	2.2	\$6.00	\$13
02340.01	Geotextile Fabric	sy	3.3	\$1.71	\$6
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.01	Site / Roadway Drainage, Allowance	lf	2.0	\$74.31	\$149
02720.02	Aggregate Base	cy	2.2	\$25.15	\$56
02740.05	Asphaltic Concrete Pavement	tn	2.2	\$57.17	\$124
02766.01	Misc. Signing and Stripping, Roadway	lf	5.0	\$0.86	\$4
02770.03	Concrete Curb and Gutter	lf	4.0	\$13.72	\$55
02775.01	Concrete Sidewalk	sy	0.9	\$25.15	\$22
05650.01	Subballast	cy	0.7	\$32.01	\$24
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG04</b>	<b>At-Grade Ballasted Track - Street Median (Transition at Stations)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$932</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Street Median (At Stations)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.03	Traffic Control, Heavy	lf	1.0	\$171.50	\$172
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	5.3	\$6.86	\$37
02220.07	Remove Concrete Sidewalk	sy	0.9	\$5.72	\$5
02220.08	Remove Concrete Curb	lf	4.0	\$4.12	\$16
02310.01	Rough Grading	sf	110.0	\$0.45	\$50
02310.02	Finish Grading	sf	102.0	\$0.69	\$70
02315.01	Regular Excavation	cy	2.2	\$6.00	\$13
02340.01	Geotextile Fabric	sy	3.3	\$1.71	\$6
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.01	Site / Roadway Drainage, Allowance	lf	2.0	\$74.31	\$149
02720.02	Aggregate Base	cy	2.7	\$25.15	\$67
02740.05	Asphaltic Concrete Pavement	tn	2.6	\$57.17	\$149
02766.01	Misc. Signing and Stripping, Roadway	lf	6.0	\$0.86	\$5
02770.03	Concrete Curb and Gutter	lf	4.0	\$13.72	\$55
02775.01	Concrete Sidewalk	sy	0.9	\$25.15	\$22
05650.01	Subballast	cy	0.7	\$32.01	\$24
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG05</b>	<b>At-Grade Ballasted Track - Street Median (At Stations)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$983</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Highway Median**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	0.9	\$6.86	\$6
02310.01	Rough Grading	sf	32.0	\$0.45	\$14
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.01	Regular Excavation	cy	2.4	\$6.00	\$14
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.01	Site / Roadway Drainage, Allowance	lf	1.0	\$74.31	\$74
02720.02	Aggregate Base	cy	0.3	\$25.15	\$7
02740.05	Asphaltic Concrete Pavement	tn	0.3	\$57.17	\$15
02840.05	Concrete Median Barrier	lf	2.0	\$40.02	\$80
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG09</b>	<b>At-Grade Ballasted Track - Highway Median</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$500</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Curb Side Lanes**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	0.9	\$6.86	\$6
02230.01	Clearing & Grubbing, Light	sy	5.6	\$0.57	\$3
02310.01	Rough Grading	sf	50.0	\$0.45	\$23
02310.02	Finish Grading	sf	34.0	\$0.69	\$23
02310.10	At-Grade Drainage Ditch	lf	2.0	\$5.14	\$10
02315.01	Regular Excavation	cy	2.5	\$6.00	\$15
02340.01	Geotextile Fabric	sy	3.8	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$23
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.01	Site / Roadway Drainage, Allowance	lf	1.0	\$74.31	\$74
02720.02	Aggregate Base	cy	0.3	\$25.15	\$7
02740.05	Asphaltic Concrete Pavement	tn	0.3	\$57.17	\$15
02770.03	Concrete Curb and Gutter	lf	1.0	\$13.72	\$14
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02840.05	Concrete Median Barrier	lf	1.0	\$40.02	\$40
05650.01	Subballast	cy	0.8	\$32.01	\$27
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG10</b>	<b>At-Grade Ballasted Track - Curb Side Lanes</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$531</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Railroad Corridor**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	5.6	\$0.80	\$4
02310.01	Rough Grading	sf	50.0	\$0.45	\$23
02310.02	Finish Grading	sf	37.0	\$0.69	\$25
02310.10	At-Grade Drainage Ditch	lf	1.0	\$5.14	\$5
02315.01	Regular Excavation	cy	2.7	\$6.00	\$16
02340.01	Geotextile Fabric	sy	4.1	\$1.71	\$7
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	1.0	\$20.58	\$21
02820.01	6 ft. Chain Link Fence	lf	2.0	\$10.29	\$21
05650.01	Subballast	cy	0.9	\$32.01	\$29
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>AG11</b>	<b>At-Grade Ballasted Track - Railroad Corridor</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$230</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Ballasted Track - Rail/Highway Crossing**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	2.9	\$6.86	\$20
02310.01	Rough Grading	sf	26.5	\$0.45	\$12
02310.02	Finish Grading	sf	26.5	\$0.69	\$18
02315.01	Regular Excavation	cy	1.5	\$6.00	\$9
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02630.10	Trackway Drainage, Paved Area	lf	1.0	\$57.17	\$57
02720.02	Aggregate Base	cy	0.1	\$25.15	\$4
02740.05	Asphaltic Concrete Pavement	tn	0.1	\$57.17	\$8
02770.02	Concrete Curb	lf	1.0	\$10.29	\$10
05650.01	Subballast	cy	0.7	\$32.01	\$21
<b>AG12</b>	<b>At-Grade Ballasted Track - Rail/Highway Crossing</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$283</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Embedded, Single Track in Street**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	1.0	\$6.86	\$7
02310.01	Rough Grading	sf	9.3	\$0.45	\$4
02310.02	Finish Grading	sf	9.3	\$0.69	\$6
02315.01	Regular Excavation	cy	0.3	\$6.00	\$2
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$17
02630.10	Trackway Drainage, Paved Area	lf	1.0	\$57.17	\$57
02720.02	Aggregate Base	cy	0.2	\$25.15	\$4
05650.04	Concrete Track Infill	sy	0.2	\$45.73	\$10
05650.19	Extruded Rubber Insert	lf	2.0	\$8.00	\$16
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.20	Direct Bury Conduit, At Grade Guideway	lf	1.0	\$6.86	\$7
<b>AG20</b>	<b>At-Grade Embedded, Single Track in Street</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$245</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Embedded, Double Track in Street**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	4.0	\$2.86	\$11
02220.05	Asphaltic Pavement Removal	sy	2.1	\$6.86	\$14
02310.01	Rough Grading	sf	18.5	\$0.45	\$8
02310.02	Finish Grading	sf	18.5	\$0.69	\$13
02315.01	Regular Excavation	cy	0.7	\$6.00	\$4
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$17
02630.10	Trackway Drainage, Paved Area	lf	1.0	\$57.17	\$57
02720.02	Aggregate Base	cy	0.3	\$25.15	\$9
05650.04	Concrete Track Infill	sy	0.4	\$45.73	\$20
05650.19	Extruded Rubber Insert	lf	4.0	\$8.00	\$32
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.20	Direct Bury Conduit, At Grade Guideway	lf	1.0	\$6.86	\$7
<b>AG21</b>	<b>At-Grade Embedded, Double Track in Street</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$301</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Embedded, Sngl Track - Curb Lane**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	1.3	\$6.86	\$9
02310.01	Rough Grading	sf	12.0	\$0.45	\$5
02310.02	Finish Grading	sf	12.0	\$0.69	\$8
02315.01	Regular Excavation	cy	0.4	\$6.00	\$3
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.10	Trackway Drainage, Paved Area	lf	1.0	\$57.17	\$57
02720.02	Aggregate Base	cy	0.2	\$25.15	\$6
02740.05	Asphaltic Concrete Pavement	tn	0.1	\$57.17	\$7
02770.02	Concrete Curb	lf	1.0	\$10.29	\$10
05650.03	Concrete Track Slab	sy	1.3	\$85.75	\$114
05650.04	Concrete Track Infill	sy	1.0	\$45.73	\$46
05650.20	Electrical Isolation Membrane	sy	1.0	\$125.76	\$126
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG31</b>	<b>At-Grade Embedded, Sngl Track - Curb Lane</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$627</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Embedded, Single Track - Median Lane**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	1.3	\$6.86	\$9
02310.01	Rough Grading	sf	12.0	\$0.45	\$5
02310.02	Finish Grading	sf	12.0	\$0.69	\$8
02315.01	Regular Excavation	cy	0.4	\$6.00	\$3
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.10	Trackway Drainage, Paved Area	lf	1.0	\$57.17	\$57
02720.02	Aggregate Base	cy	0.2	\$25.15	\$6
02740.05	Asphaltic Concrete Pavement	tn	0.1	\$57.17	\$7
02770.02	Concrete Curb	lf	1.0	\$10.29	\$10
05650.03	Concrete Track Slab	sy	1.3	\$85.75	\$114
05650.04	Concrete Track Infill	sy	1.0	\$45.73	\$46
05650.20	Electrical Isolation Membrane	sy	1.0	\$125.76	\$126
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG40</b>	<b>At-Grade Embedded, Single Track - Median Lane</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$627</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Street Running Track - Curb Lane**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	2.0	\$2.86	\$6
02220.05	Asphaltic Pavement Removal	sy	2.7	\$6.86	\$18
02310.01	Rough Grading	sf	24.0	\$0.45	\$11
02310.02	Finish Grading	sf	24.0	\$0.69	\$16
02315.01	Regular Excavation	cy	0.9	\$6.00	\$5
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$23
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.10	Trackway Drainage, Paved Area	lf	2.0	\$57.17	\$114
02720.02	Aggregate Base	cy	0.2	\$25.15	\$6
02740.05	Asphaltic Concrete Pavement	tn	0.1	\$57.17	\$7
02770.02	Concrete Curb	lf	2.0	\$10.29	\$21
05650.03	Concrete Track Slab	sy	2.7	\$85.75	\$229
05650.04	Concrete Track Infill	sy	2.3	\$45.73	\$107
05650.20	Electrical Isolation Membrane	sy	2.3	\$125.76	\$293
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG41</b>	<b>At-Grade Street Running Track - Curb Lane</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$1,074</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**At-Grade Embedded, Single Track - Adjacent to Street**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02220.01	Sawcut Asphalt Pavement	lf	1.0	\$2.86	\$3
02220.05	Asphaltic Pavement Removal	sy	0.2	\$6.86	\$2
02310.01	Rough Grading	sf	24.0	\$0.45	\$11
02310.02	Finish Grading	sf	24.0	\$0.69	\$16
02315.01	Regular Excavation	cy	0.9	\$6.00	\$5
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02470.01	OCS Pole Foundations	ea	0.01	\$1,714.95	\$11
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.10	Trackway Drainage, Paved Area	lf	1.0	\$57.17	\$57
02720.02	Aggregate Base	cy	0.2	\$25.15	\$6
02750.01	Concrete Pavement, Non-reinforced	cy	0.2	\$297.26	\$55
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
16500.06	Lighting, Roadway	lf	1.0	\$28.58	\$29
<b>AG42</b>	<b>At-Grade Embedded, Single Track - Adjacent to Street</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$384</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut - One Side (Avg. 10' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	6.1	\$0.80	\$5
02250.01	Steel Sheet Pile and Shoring	sf	13.0	\$32.01	\$416
02310.01	Rough Grading	sf	55.0	\$0.45	\$25
02310.02	Finish Grading	sf	35.0	\$0.69	\$24
02315.01	Regular Excavation	cy	7.8	\$6.00	\$47
02315.10	Structural Excavation	cy	4.4	\$18.29	\$81
02315.11	Structural Backfill	cy	3.6	\$25.00	\$89
02340.01	Geotextile Fabric	sy	3.9	\$1.71	\$7
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	1.0	\$40.02	\$40
02620.02	Underdrains	lf	1.0	\$20.58	\$21
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	1.0	\$12.58	\$13
03210.01	Reinforcing Steel	lb	230.6	\$0.69	\$158
03300.01	CIPC, Footings	cy	0.8	\$342.99	\$279
03300.03	CIPC, Walls	cy	0.7	\$537.35	\$388
05650.01	Subballast	cy	0.9	\$32.01	\$28
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RC01</b>	<b>Retained Cut - One Side (Avg. 10' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$1,697</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut - One Side (Avg. 20' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	6.1	\$0.80	\$5
02250.01	Steel Sheet Pile and Shoring	sf	23.0	\$32.01	\$736
02310.01	Rough Grading	sf	55.0	\$0.45	\$25
02310.02	Finish Grading	sf	35.0	\$0.69	\$24
02315.01	Regular Excavation	cy	14.3	\$6.00	\$86
02315.10	Structural Excavation	cy	11.4	\$18.29	\$209
02315.11	Structural Backfill	cy	9.1	\$25.00	\$228
02340.01	Geotextile Fabric	sy	3.9	\$1.71	\$7
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	1.0	\$40.02	\$40
02620.02	Underdrains	lf	1.0	\$20.58	\$21
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	1.0	\$12.58	\$13
03210.01	Reinforcing Steel	lb	412.5	\$0.69	\$283
03300.01	CIPC, Footings	cy	1.3	\$342.99	\$432
03300.03	CIPC, Walls	cy	1.5	\$537.35	\$801
05650.01	Subballast	cy	0.9	\$32.01	\$28
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RC02</b>	<b>Retained Cut - One Side (Avg. 20' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$3,013</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut - Two Sides (Avg. 10' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	6.1	\$0.80	\$5
02250.01	Steel Sheet Pile and Shoring	sf	26.0	\$32.01	\$832
02310.01	Rough Grading	sf	55.0	\$0.45	\$25
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.10	Structural Excavation	cy	28.9	\$18.29	\$528
02315.11	Structural Backfill	cy	8.7	\$25.00	\$217
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	2.0	\$40.02	\$80
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.09	Trackway Drainage, Ballasted	lf	1.0	\$45.73	\$46
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
03210.01	Reinforcing Steel	lb	461.1	\$0.69	\$316
03300.01	CIPC, Footings	cy	1.6	\$342.99	\$559
03300.03	CIPC, Walls	cy	1.4	\$537.35	\$776
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RC21</b>	<b>Retained Cut - Two Sides (Avg. 10' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$3,571</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut - Two Sides (Avg. 20' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	6.1	\$0.80	\$5
02250.01	Steel Sheet Pile and Shoring	sf	46.0	\$32.01	\$1,473
02310.01	Rough Grading	sf	55.0	\$0.45	\$25
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.10	Structural Excavation	cy	48.1	\$18.29	\$881
02315.11	Structural Backfill	cy	14.4	\$25.00	\$361
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	2.0	\$40.02	\$80
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.09	Trackway Drainage, Ballasted	lf	1.0	\$45.73	\$46
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
03210.01	Reinforcing Steel	lb	825.0	\$0.69	\$566
03300.01	CIPC, Footings	cy	2.5	\$342.99	\$864
03300.03	CIPC, Walls	cy	3.0	\$537.35	\$1,602
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RC22</b>	<b>Retained Cut - Two Sides (Avg. 20' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$6,089</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut - U-Wall (Avg. 20' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	4.4	\$0.80	\$4
02250.01	Steel Sheet Pile and Shoring	sf	50.0	\$32.01	\$1,601
02310.01	Rough Grading	sf	40.0	\$0.45	\$18
02310.02	Finish Grading	sf	36.0	\$0.69	\$25
02315.10	Structural Excavation	cy	37.0	\$18.29	\$678
02315.11	Structural Backfill	cy	3.7	\$25.00	\$93
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	2.0	\$40.02	\$80
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.11	Trackway Drainage, Tunnel	lf	1.0	\$68.60	\$69
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
03210.01	Reinforcing Steel	lb	1,044.4	\$0.69	\$716
03300.01	CIPC, Footings	cy	4.0	\$342.99	\$1,372
03300.03	CIPC, Walls	cy	3.0	\$537.35	\$1,592
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.23	Ductbank, Tunnel Guideway	lf	1.0	\$62.88	\$63
<b>RC32</b>	<b>Retained Cut - U-Wall (Avg. 20' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$6,402</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Guideway:****Retained Cut - One Side in Railroad Corridor (Avg. 10' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	6.1	\$0.80	\$5
02250.01	Steel Sheet Pile and Shoring	sf	13.0	\$32.01	\$416
02310.01	Rough Grading	sf	55.0	\$0.45	\$25
02310.02	Finish Grading	sf	35.0	\$0.69	\$24
02310.10	At-Grade Drainage Ditch	lf	1.0	\$5.14	\$5
02315.01	Regular Excavation	cy	7.8	\$6.00	\$47
02315.10	Structural Excavation	cy	4.4	\$18.29	\$81
02315.11	Structural Backfill	cy	3.6	\$25.00	\$89
02340.01	Geotextile Fabric	sy	0.1	\$1.71	\$0
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	1.0	\$40.02	\$40
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	1.0	\$12.58	\$13
03210.01	Reinforcing Steel	lb	230.6	\$0.69	\$158
03300.01	CIPC, Footings	cy	0.8	\$342.99	\$279
03300.03	CIPC, Walls	cy	0.7	\$537.35	\$388
05650.01	Subballast	cy	0.9	\$32.01	\$28
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RC41</b>	<b>Retained Cut - One Side in Railroad Corridor (Avg. 10' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$1,717</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Fill - One Side (Avg. 10' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	5.1	\$0.80	\$4
02310.01	Rough Grading	sf	46.0	\$0.45	\$21
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.02	Embankment	cy	3.0	\$9.00	\$27
02315.10	Structural Excavation	cy	1.3	\$18.29	\$24
02315.11	Structural Backfill	cy	0.5	\$25.00	\$13
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	1.0	\$40.02	\$40
02620.02	Underdrains	lf	1.0	\$20.58	\$21
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	1.0	\$12.58	\$13
02830.01	Reinforced Earth Walls (MSE)	sf	12.0	\$34.30	\$412
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RF01</b>	<b>Retained Fill - One Side (Avg. 10' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$705</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Fill - One Side (Avg. 20' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	5.1	\$0.80	\$4
02310.01	Rough Grading	sf	46.0	\$0.45	\$21
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.02	Embankment	cy	5.9	\$9.00	\$53
02315.10	Structural Excavation	cy	1.3	\$18.29	\$24
02315.11	Structural Backfill	cy	0.5	\$25.00	\$13
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	1.0	\$40.02	\$40
02620.02	Underdrains	lf	1.0	\$20.58	\$21
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	1.0	\$12.58	\$13
02830.01	Reinforced Earth Walls (MSE)	sf	22.0	\$34.30	\$755
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RF02</b>	<b>Retained Fill - One Side (Avg. 20' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$1,074</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Fill - Twin Dbl Side (Avg. 20' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	6.0	\$0.80	\$5
02310.01	Rough Grading	sf	54.0	\$0.45	\$24
02310.02	Finish Grading	sf	28.0	\$0.69	\$19
02315.02	Embankment	cy	20.7	\$9.00	\$187
02315.10	Structural Excavation	cy	3.8	\$18.29	\$69
02315.11	Structural Backfill	cy	1.5	\$25.00	\$38
02340.01	Geotextile Fabric	sy	3.1	\$1.71	\$5
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	2.0	\$40.02	\$80
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	4.0	\$12.58	\$50
02830.01	Reinforced Earth Walls (MSE)	sf	88.0	\$34.30	\$3,018
05650.01	Subballast	cy	0.7	\$32.01	\$22
16060.01	Corrosion Control, At-Grade	lf	2.0	\$1.71	\$3
16130.21	Ductbank, At Grade Guideway	lf	2.0	\$40.02	\$80
<b>RF12</b>	<b>Retained Fill - Twin Dbl Side (Avg. 20' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$3,668</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Fill - Two Sides (Avg. 10' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.01	Clearing & Grubbing, Light	sy	4.7	\$0.57	\$3
02310.01	Rough Grading	sf	42.0	\$0.45	\$19
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.02	Embankment	cy	11.9	\$9.00	\$107
02315.10	Structural Excavation	cy	2.7	\$18.29	\$49
02315.11	Structural Backfill	cy	1.1	\$25.00	\$27
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.09	Trackway Drainage, Ballasted	lf	1.0	\$45.73	\$46
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
02830.01	Reinforced Earth Walls (MSE)	sf	24.0	\$34.30	\$823
05650.01	Subballast	cy	0.8	\$32.01	\$24
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RF21</b>	<b>Retained Fill - Two Sides (Avg. 10' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$1,258</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Fill - Two Sides (Avg. 20' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.01	Clearing & Grubbing, Light	sy	4.7	\$0.57	\$3
02310.01	Rough Grading	sf	42.0	\$0.45	\$19
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.02	Embankment	cy	23.7	\$9.00	\$213
02315.10	Structural Excavation	cy	3.8	\$18.29	\$69
02315.11	Structural Backfill	cy	1.5	\$25.00	\$38
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.09	Trackway Drainage, Ballasted	lf	1.0	\$45.73	\$46
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
02830.01	Reinforced Earth Walls (MSE)	sf	44.0	\$34.30	\$1,509
05650.01	Subballast	cy	0.8	\$32.01	\$24
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RF22</b>	<b>Retained Fill - Two Sides (Avg. 20' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$2,082</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Fill - Sngl, Two Sides (Avg. 20' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.01	Clearing & Grubbing, Light	sy	3.1	\$0.57	\$2
02310.01	Rough Grading	sf	28.0	\$0.45	\$13
02310.02	Finish Grading	sf	18.0	\$0.69	\$12
02315.02	Embankment	cy	13.3	\$9.00	\$120
02315.10	Structural Excavation	cy	3.8	\$18.29	\$69
02315.11	Structural Backfill	cy	1.5	\$25.00	\$38
02340.01	Geotextile Fabric	sy	2.0	\$1.71	\$3
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02630.09	Trackway Drainage, Ballasted	lf	1.0	\$45.73	\$46
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
02830.01	Reinforced Earth Walls (MSE)	sf	44.0	\$34.30	\$1,509
05650.01	Subballast	cy	0.8	\$32.01	\$24
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RF32</b>	<b>Retained Fill - Sngl, Two Sides (Avg. 20' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$1,970</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Guideway:****Retained Fill - One Side in Railroad Corridor (Avg. 10' Depth)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	5.1	\$0.80	\$4
02310.01	Rough Grading	sf	46.0	\$0.45	\$21
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02310.10	At-Grade Drainage Ditch	lf	1.0	\$5.14	\$5
02315.02	Embankment	cy	3.0	\$9.00	\$27
02315.10	Structural Excavation	cy	1.3	\$18.29	\$24
02315.11	Structural Backfill	cy	0.5	\$25.00	\$13
02340.01	Geotextile Fabric	sy	0.1	\$1.71	\$0
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	1.0	\$40.02	\$40
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02820.01	6 ft. Chain Link Fence	lf	1.0	\$10.29	\$10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	1.0	\$12.58	\$13
02830.01	Reinforced Earth Walls (MSE)	sf	12.0	\$34.30	\$412
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>RF41</b>	<b>Retained Fill - One Side in Railroad Corridor (Avg. 10' Depth)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$725</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut and Fill (Avg. 10' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	5.6	\$0.80	\$4
02250.01	Steel Sheet Pile and Shoring	sf	13.0	\$32.01	\$416
02310.01	Rough Grading	sf	50.0	\$0.45	\$23
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.01	Regular Excavation	cy	3.6	\$6.00	\$21
02315.02	Embankment	cy	3.6	\$9.00	\$32
02315.10	Structural Excavation	cy	5.8	\$18.29	\$106
02315.11	Structural Backfill	cy	4.6	\$25.00	\$116
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	2.0	\$40.02	\$80
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
03210.01	Reinforcing Steel	lb	461.1	\$0.69	\$316
03300.01	CIPC, Footings	cy	1.6	\$342.99	\$559
03300.03	CIPC, Walls	cy	1.4	\$537.35	\$776
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>CF01</b>	<b>Retained Cut and Fill (Avg. 10' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$2,636</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Retained Cut and Fill (Avg. 20' Height)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02230.02	Clearing & Grubbing, Moderate	sy	5.6	\$0.80	\$4
02250.01	Steel Sheet Pile and Shoring	sf	23.0	\$32.01	\$736
02310.01	Rough Grading	sf	50.0	\$0.45	\$23
02310.02	Finish Grading	sf	32.0	\$0.69	\$22
02315.01	Regular Excavation	cy	6.5	\$6.00	\$39
02315.02	Embankment	cy	6.5	\$9.00	\$59
02315.10	Structural Excavation	cy	9.5	\$18.29	\$173
02315.11	Structural Backfill	cy	7.6	\$25.00	\$190
02340.01	Geotextile Fabric	sy	3.6	\$1.71	\$6
02370.01	Erosion Control, Guideway Allowance	lf	1.0	\$25.15	\$25
02620.01	Wall Drains	lf	2.0	\$40.02	\$80
02620.02	Underdrains	lf	2.0	\$20.58	\$41
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	2.0	\$12.58	\$25
03210.01	Reinforcing Steel	lb	825.0	\$0.69	\$566
03300.01	CIPC, Footings	cy	2.5	\$342.99	\$864
03300.03	CIPC, Walls	cy	3.0	\$537.35	\$1,602
05650.01	Subballast	cy	0.8	\$32.01	\$25
16060.01	Corrosion Control, At-Grade	lf	1.0	\$1.71	\$2
16130.21	Ductbank, At Grade Guideway	lf	1.0	\$40.02	\$40
<b>CF02</b>	<b>Retained Cut and Fill (Avg. 20' Height)</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$4,523</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Bridge Structure, Sgl Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON CLEAR SPAN OF 140 ft. (Includes abutments)</b>					
01560.01	Traffic Control, Light	lf	140.0	\$68.60	\$9,604
02230.01	Clearing & Grubbing, Light	sy	60.0	\$0.57	\$34
02250.01	Steel Sheet Pile and Shoring	sf	530.0	\$32.01	\$16,967
02315.10	Structural Excavation	cy	52.0	\$18.29	\$951
02315.11	Structural Backfill	cy	20.0	\$25.00	\$500
02455.01	Driven Piling	vlf	800.0	\$68.60	\$54,878
02630.12	Trackway Drainage, Aerial	lf	140.0	\$34.30	\$4,802
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	280.0	\$12.58	\$3,521
03210.01	Reinforcing Steel	lb	30,300.0	\$0.69	\$20,785
03300.01	CIPC, Footings	cy	18.5	\$342.99	\$6,345
03300.03	CIPC, Walls	cy	29.5	\$537.35	\$15,852
03300.06	CIPC, Parapet	cy	31.1	\$731.71	\$22,756
03300.16	CIPC, Aerial Deck Slab	cy	72.4	\$400.16	\$28,971
03400.03	Precast Prestressed I Beams, TP V	lf	560.0	\$137.20	\$76,830
05520.10	OCS Pole Foundation on Structure	ea	1.6	\$571.65	\$889
05820.01	Elastomeric Bearing Pads	ea	8.0	\$514.49	\$4,116
16060.02	Corrosion Control, Aerial	lf	140.0	\$2.29	\$320
16130.22	Ductbank, Aerial Guideway	lf	140.0	\$85.75	\$12,005
<b>TOTAL COST PER 140 FEET</b>					<b>\$280,127</b>
<b>BR01</b>	<b>Bridge Structure, Sgl Track</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,001</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Bridge Structure, Dbl track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON CLEAR SPAN OF 140 ft. (Includes abutments)</b>					
01560.01	Traffic Control, Light	lf	140.0	\$68.60	\$9,604
02230.01	Clearing & Grubbing, Light	sy	100.0	\$0.57	\$57
02250.01	Steel Sheet Pile and Shoring	sf	880.0	\$32.01	\$28,171
02315.10	Structural Excavation	cy	85.0	\$18.29	\$1,555
02315.11	Structural Backfill	cy	30.0	\$25.00	\$750
02455.01	Driven Piling	vlf	1,320.0	\$68.60	\$90,549
02630.12	Trackway Drainage, Aerial	lf	140.0	\$34.30	\$4,802
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	280.0	\$12.58	\$3,521
03210.01	Reinforcing Steel	lb	46,240.0	\$0.69	\$31,720
03300.01	CIPC, Footings	cy	30.6	\$342.99	\$10,495
03300.03	CIPC, Walls	cy	48.9	\$537.35	\$26,276
03300.06	CIPC, Parapet	cy	31.1	\$731.71	\$22,756
03300.16	CIPC, Aerial Deck Slab	cy	120.6	\$400.16	\$48,259
03400.03	Precast Prestressed I Beams, TP V	lf	1,120.0	\$137.20	\$153,660
05520.10	OCS Pole Foundation on Structure	ea	1.6	\$571.65	\$889
05820.01	Elastomeric Bearing Pads	ea	16.0	\$514.49	\$8,232
16060.02	Corrosion Control, Aerial	lf	140.0	\$2.29	\$320
16130.22	Ductbank, Aerial Guideway	lf	140.0	\$85.75	\$12,005
<b>TOTAL COST PER 140 FEET</b>					<b>\$453,621</b>
<b>BR02</b>	<b>Bridge Structure, Dbl track</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$3,240</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Sgl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	207.0	\$0.80	\$166
02465.02	Bored Caisson, 7ft. Dia.	vlf	75.0	\$583.08	\$43,731
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	4,180.0	\$0.69	\$2,867
03300.14	CIPC, Aerial Pier	cy	20.9	\$571.65	\$11,947
03410.22	Precast Segmental Box Girder, Single	lf	120.0	\$1,314.80	\$157,775
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.02	POT Bearing, Single	ea	1.0	\$6,859.80	\$6,860
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
<b>TOTAL COST PER 120 FEET</b>					<b>\$256,899</b>
<b>EL02</b>	<b>Sgl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,141</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Sgl. Precast Segmental Box Girder (Avg. Pier 30' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	207.0	\$0.80	\$166
02465.02	Bored Caisson, 7ft. Dia.	vlf	75.0	\$583.08	\$43,731
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	6,280.0	\$0.69	\$4,308
03300.14	CIPC, Aerial Pier	cy	31.4	\$571.65	\$17,950
03410.22	Precast Segmental Box Girder, Single	lf	120.0	\$1,314.80	\$157,775
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.02	POT Bearing, Single	ea	1.0	\$6,859.80	\$6,860
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
<b>TOTAL COST PER 120 FEET</b>					<b>\$264,342</b>
<b>EL03</b>	<b>Sgl. Precast Segmental Box Girder (Avg. Pier 30' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,203</b>	

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Guideway:****Dbl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	415.0	\$0.80	\$332
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	5,700.0	\$0.69	\$3,910
03300.14	CIPC, Aerial Pier	cy	28.5	\$571.65	\$16,292
03410.23	Precast Segmental Box Girder, Double	lf	120.0	\$2,057.94	\$246,953
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
<b>TOTAL COST PER 120 FEET</b>					<b>\$366,350</b>
<b>EL22</b>	<b>Dbl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$3,053</b>	

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Guideway:****Dbl. Precast Segmental Box Girder (Avg. Pier 30' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	415.0	\$0.80	\$332
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	8,560.0	\$0.69	\$5,872
03300.14	CIPC, Aerial Pier	cy	42.8	\$571.65	\$24,467
03410.23	Precast Segmental Box Girder, Double	lf	120.0	\$2,057.94	\$246,953
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
<b>TOTAL COST PER 120 FEET</b>					<b>\$376,487</b>
<b>EL23</b>	<b>Dbl. Precast Segmental Box Girder (Avg. Pier 30' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$3,137</b>	

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Guideway:****Dbl. Precast Segmental Box Girder (Avg. Pier 40' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	415.0	\$0.80	\$332
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	13,080.0	\$0.69	\$8,973
03300.14	CIPC, Aerial Pier	cy	65.4	\$571.65	\$37,386
03410.23	Precast Segmental Box Girder, Double	lf	120.0	\$2,057.94	\$246,953
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
<b>TOTAL COST PER 120 FEET</b>					<b>\$392,507</b>
<b>EL24</b>	<b>Dbl. Precast Segmental Box Girder (Avg. Pier 40' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$3,271</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast Segmental Box Girder (Straddle Bents)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	415.0	\$0.80	\$332
02455.01	Driven Piling	vlf	800.0	\$68.60	\$54,878
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	17,718.5	\$0.69	\$12,155
03300.13	CIPC, Aerial Footing	cy	42.7	\$320.12	\$13,659
03300.14	CIPC, Aerial Pier	cy	23.7	\$571.65	\$13,550
03300.15	CIPC, Aerial Pier Cap	cy	22.2	\$514.49	\$11,433
03410.23	Precast Segmental Box Girder, Double	lf	120.0	\$2,057.94	\$246,953
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
<b>TOTAL COST PER 120 FEET</b>					<b>\$395,658</b>
<b>EL27</b>	<b>Dbl. Precast Segmental Box Girder (Straddle Bents)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$3,297</b>	



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast Segmental Box Girder (River Crossng)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	415.0	\$0.80	\$332
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
03210.01	Reinforcing Steel	lb	8,560.0	\$0.69	\$5,872
03300.14	CIPC, Aerial Pier	cy	42.8	\$571.65	\$24,467
03410.23	Precast Segmental Box Girder, Double	lf	120.0	\$2,057.94	\$246,953
03410.25	Precast Barrier Wall	sf	720.0	\$13.72	\$9,878
05520.10	OCS Pole Foundation on Structure	ea	1.3	\$571.65	\$762
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	120.0	\$2.29	\$274
16130.22	Ductbank, Aerial Guideway	lf	120.0	\$85.75	\$10,290
	Allowance for construction over water			30%	\$112,946
<b>TOTAL COST PER 120 FEET</b>					<b>\$489,433</b>
<b>EL28</b>	<b>Dbl. Precast Segmental Box Girder (River Crossng)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$4,079</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Twin - Sngl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 120 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	120.0	\$68.60	\$8,232
02230.02	Clearing & Grubbing, Moderate	sy	276.0	\$0.80	\$221
02465.01	Bored Caisson, 6ft. Dia.	vlf	100.0	\$457.32	\$45,732
02630.12	Trackway Drainage, Aerial	lf	240.0	\$34.30	\$8,232
03210.01	Reinforcing Steel	lb	12,700.0	\$0.69	\$8,712
03300.14	CIPC, Aerial Pier	cy	52.4	\$571.65	\$29,954
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03410.22	Precast Segmental Box Girder, Single	lf	240.0	\$1,314.80	\$315,551
03410.25	Precast Barrier Wall	sf	1,440.0	\$13.72	\$19,756
05520.10	OCS Pole Foundation on Structure	ea	2.7	\$571.65	\$1,524
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 120 FEET</b>					<b>\$459,814</b>
<b>EL32</b>	<b>Twin - Sngl. Precast Segmental Box Girder (Avg. Pier 20' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$3,832</b>	

**BAY LINK**

Miami - Miami Beach Transportation Corridor Study

**SECTION / COMPOSITE COST**

Guideway:

Twin - Sngl. Precast AASHTO Girder (Avg. Pier 30' Ht.)

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	80.0	\$68.60	\$5,488
02230.02	Clearing & Grubbing, Moderate	sy	276.0	\$0.80	\$221
02465.01	Bored Caisson, 6ft. Dia.	vlf	100.0	\$457.32	\$45,732
02630.12	Trackway Drainage, Aerial	lf	160.0	\$34.30	\$5,488
03210.01	Reinforcing Steel	lb	12,700.0	\$0.69	\$8,712
03300.14	CIPC, Aerial Pier	cy	52.4	\$571.65	\$29,954
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03300.16	CIPC, Aerial Deck Slab	cy	66.8	\$400.16	\$26,730
03400.03	Precast Prestressed I Beams, TP V	lf	480.0	\$137.20	\$65,854
03410.25	Precast Barrier Wall	sf	960.0	\$13.72	\$13,171
05520.10	OCS Pole Foundation on Structure	ea	1.8	\$571.65	\$1,016
05820.01	Elastomeric Bearing Pads	ea	12.0	\$514.49	\$6,174
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$221,294</b>
<b>EL33</b>	<b>Twin - Sngl. Precast AASHTO Girder (Avg. Pier 30' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,766</b>	

**BAY LINK**

Miami - Miami Beach Transportation Corridor Study

**SECTION / COMPOSITE COST**

Guideway:

Twin - Sngl. Precast AASHTO Girder (Avg. Pier 40' Ht.)

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	80.0	\$68.60	\$5,488
02230.02	Clearing & Grubbing, Moderate	sy	276.0	\$0.80	\$221
02465.01	Bored Caisson, 6ft. Dia.	vlf	100.0	\$457.32	\$45,732
02630.12	Trackway Drainage, Aerial	lf	160.0	\$34.30	\$5,488
03210.01	Reinforcing Steel	lb	16,200.0	\$0.69	\$11,113
03300.14	CIPC, Aerial Pier	cy	69.9	\$571.65	\$39,958
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03300.16	CIPC, Aerial Deck Slab	cy	66.8	\$400.16	\$26,730
03400.03	Precast Prestressed I Beams, TP V	lf	480.0	\$137.20	\$65,854
03410.25	Precast Barrier Wall	sf	960.0	\$13.72	\$13,171
05820.01	Elastomeric Bearing Pads	ea	12.0	\$514.49	\$6,174
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$232,682</b>
<b>EL34</b>	<b>Twin - Sngl. Precast AASHTO Girder (Avg. Pier 40' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,909</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast AASHTO Girder (Avg. Pier 20' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	80.0	\$68.60	\$5,488
02230.02	Clearing & Grubbing, Moderate	sy	248.9	\$0.80	\$199
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	80.0	\$34.30	\$2,744
03210.01	Reinforcing Steel	lb	7,920.0	\$0.69	\$5,433
03300.14	CIPC, Aerial Pier	cy	28.5	\$571.65	\$16,292
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03300.16	CIPC, Aerial Deck Slab	cy	62.3	\$400.16	\$24,930
03400.03	Precast Prestressed I Beams, TP V	lf	320.0	\$137.20	\$43,903
03410.25	Precast Barrier Wall	sf	480.0	\$13.72	\$6,585
05820.01	Elastomeric Bearing Pads	ea	8.0	\$514.49	\$4,116
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$178,608</b>
<b>EL42</b>	<b>Dbl. Precast AASHTO Girder (Avg. Pier 20' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,233</b>	

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Guideway:****Dbl. Precast AASHTO Girder (Avg. Pier 30' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>					
01560.01	Traffic Control, Light	lf	80.0	\$68.60	\$5,488
02230.02	Clearing & Grubbing, Moderate	sy	248.9	\$0.80	\$199
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	80.0	\$34.30	\$2,744
03210.01	Reinforcing Steel	lb	10,780.0	\$0.69	\$7,395
03300.14	CIPC, Aerial Pier	cy	42.8	\$571.65	\$24,467
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03300.16	CIPC, Aerial Deck Slab	cy	62.3	\$400.16	\$24,930
03400.03	Precast Prestressed I Beams, TP V	lf	320.0	\$137.20	\$43,903
03410.25	Precast Barrier Wall	sf	480.0	\$13.72	\$6,585
05820.01	Elastomeric Bearing Pads	ea	8.0	\$514.49	\$4,116
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$188,744</b>
<b>EL43</b>	<b>Dbl. Precast AASHTO Girder (Avg. Pier 30' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,359</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast AASHTO Girder (Avg. Pier 40' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>				
01560.01	Traffic Control, Light	lf	80.0	\$68.60	\$5,488
02230.02	Clearing & Grubbing, Moderate	sy	248.9	\$0.80	\$199
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	80.0	\$34.30	\$2,744
03210.01	Reinforcing Steel	lb	13,620.0	\$0.69	\$9,343
03300.14	CIPC, Aerial Pier	cy	57.0	\$571.65	\$32,584
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03300.16	CIPC, Aerial Deck Slab	cy	62.3	\$400.16	\$24,930
03400.03	Precast Prestressed I Beams, TP V	lf	320.0	\$137.20	\$43,903
03410.25	Precast Barrier Wall	sf	480.0	\$13.72	\$6,585
05820.01	Elastomeric Bearing Pads	ea	8.0	\$514.49	\$4,116
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$198,810</b>
<b>EL44</b>	<b>Dbl. Precast AASHTO Girder (Avg. Pier 40' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$2,485</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast AASHTO Girder (Avg. Pier 50' Ht.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>				
01560.01	Traffic Control, Light	lf	80.0	\$68.60	\$5,488
02230.02	Clearing & Grubbing, Moderate	sy	248.9	\$0.80	\$199
02465.03	Bored Caisson, 8ft. Dia.	vlf	75.0	\$748.86	\$56,165
02630.12	Trackway Drainage, Aerial	lf	80.0	\$34.30	\$2,744
03210.01	Reinforcing Steel	lb	16,480.0	\$0.69	\$11,305
03300.14	CIPC, Aerial Pier	cy	71.3	\$571.65	\$40,759
03300.15	CIPC, Aerial Pier Cap	cy	11.1	\$514.49	\$5,711
03300.16	CIPC, Aerial Deck Slab	cy	62.3	\$400.16	\$24,930
03400.03	Precast Prestressed I Beams, TP V	lf	320.0	\$137.20	\$43,903
03410.25	Precast Barrier Wall	sf	480.0	\$13.72	\$6,585
05820.01	Elastomeric Bearing Pads	ea	8.0	\$514.49	\$4,116
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$208,946</b>
<b>EL45</b>	<b>Dbl. Precast AASHTO Girder (Avg. Pier 50' Ht.)</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$2,612</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast AASHTO Girder on Grade Beams**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON PIER SPACING OF 80 ft. C-C</b>				
01560.02	Traffic Control, Moderate	lf	80.0	\$91.46	\$7,317
02370.01	Erosion Control, Guideway Allowance	lf	80.0	\$25.15	\$2,012
02455.01	Driven Piling	vlf	150.0	\$68.60	\$10,290
03210.01	Reinforcing Steel	lb	7,457.8	\$0.69	\$5,116
03300.15	CIPC, Aerial Pier Cap	cy	12.4	\$514.49	\$6,380
03300.16	CIPC, Aerial Deck Slab	cy	24.9	\$400.16	\$9,959
03400.02	Precast Prestressed I Beams, TP III	lf	400.0	\$80.03	\$32,012
03410.25	Precast Barrier Wall	sf	240.0	\$13.72	\$3,293
05120.10	Structural Steel, Grating	sf	1,344.0	\$8.00	\$10,756
05520.01	Metal Pipe and Tube Railing	lf	80.0	\$40.02	\$3,201
05520.10	OCS Pole Foundation on Structure	ea	0.9	\$571.65	\$508
05820.01	Elastomeric Bearing Pads	ea	10.0	\$514.49	\$5,145
16060.02	Corrosion Control, Aerial	lf	80.0	\$2.29	\$183
16130.22	Ductbank, Aerial Guideway	lf	80.0	\$85.75	\$6,860
<b>TOTAL COST PER 80 FEET</b>					<b>\$103,032</b>
<b>EL50</b>	<b>Dbl. Precast AASHTO Girder on Grade Beams</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$1,288</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Guideway:**  
**Dbl. Precast Segmental Box Girder on Existing Substructure**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON AVG. PIER SPACING OF 135 ft. C-C</b>					
01560.02	Traffic Control, Moderate	lf	135.0	\$91.46	\$12,348
02630.12	Trackway Drainage, Aerial	lf	135.0	\$34.30	\$4,630
03410.23	Precast Segmental Box Girder, Double	lf	135.0	\$2,057.94	\$277,822
03410.25	Precast Barrier Wall	sf	810.0	\$13.72	\$11,113
05520.10	OCS Pole Foundation on Structure	ea	1.5	\$571.65	\$857
05820.03	POT Bearing, Double	ea	1.0	\$9,146.40	\$9,146
16060.02	Corrosion Control, Aerial	lf	135.0	\$2.29	\$309
16130.22	Ductbank, Aerial Guideway	lf	135.0	\$85.75	\$11,576
<b>TOTAL COST PER 135 FEET</b>					<b>\$327,801</b>
<b>EL55</b>	<b>Dbl. Precast Segmental Box Girder on Existing Substructure</b>	<b>RF</b>	<b>Route Linear Foot</b>	<b>\$2,428</b>	

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Ballasted - Single Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
05650.02	Ballast	cy	1.0	\$36.59	\$37
05650.05	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	tf	1.0	\$171.50	\$172
<b>TK01</b>	<b>Ballasted - Single Track</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$208</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Ballasted - Double Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
05650.02	Ballast	cy	1.6	\$36.59	\$59
05650.05	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	tf	2.0	\$171.50	\$343
<b>TK02</b>	<b>Ballasted - Double Track</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$402</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Embedded - Single Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
05650.03	Concrete Track Slab	sy	0.7	\$85.75	\$64
05650.04	Concrete Track Infill	sy	0.7	\$45.73	\$34
05650.15	Embedded Trackwork, incl/ Fasteners & Rail	tf	1.0	\$285.83	\$286
<b>TK10</b>	<b>Embedded - Single Track</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$383</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Embedded - Double Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
05650.03	Concrete Track Slab	sy	1.5	\$85.75	\$127
05650.04	Concrete Track Infill	sy	1.5	\$45.73	\$68
05650.15	Embedded Trackwork, incl/ Fasteners & Rail	tf	2.0	\$285.83	\$572
<b>TK11</b>	<b>Embedded - Double Track</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$767</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Direct Fixation - Single Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
05650.06	ALL QUANTITIES PER ROUTE LINEAR FOOT Direct Fixation Trackwork, incl/ Fasteners & Rail	tf	1.0	\$228.66	\$229
TK20	Direct Fixation - Single Track	RF	Route Foot		\$229

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Direct Fixation - Double Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
05650.06	ALL QUANTITIES PER ROUTE LINEAR FOOT Direct Fixation Trackwork, incl/ Fasteners & Rail	tf	2.0	\$228.66	\$457
TK21	Direct Fixation - Double Track	RF	Route Foot		\$457



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**At-Grade Double Roadway Crossing**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.22	Precast Concrete RR Crossing Panels	lf	2.0	\$342.99	\$686
<b>SP02</b>	<b>At-Grade Double Roadway Crossing</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$686</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Ballasted - Double Cross-over (Std.)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	ALL QUANTITIES PER EACH				
05650.33	Special Trackwork, No. 8 Dbl Crossover,Ballasted	ea	1.0	\$297,258.00	\$297,258
SP08	Ballasted - Double Cross-over (Std.)	EA	Each		\$297,258

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Ballasted - Double Cross-over (Wide)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.33	Special Trackwork, No. 8 Dbl Crossover, Ballasted Allowance for wider track centers	ea	1.0 10%	\$297,258.00	\$297,258 \$59,452
<b>SP12</b>	<b>Ballasted - Double Cross-over (Wide)</b>	<b>EA</b>	<b>Each</b>		<b>\$356,710</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Ballasted - Pocket Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON 1,200 ROUTE FOOT</b>				
05650.05	Ballasted Trackwork, incl/ Ties, Fasteners & Rail	tf	3,600.0	\$171.50	\$617,382
05650.42	Special Trackwork, No. 8 Turnout,Ballasted	ea	4.0	\$84,604.20	\$338,417
05650.43	Special Trackwork, No. 6 Turnout,Ballasted	ea	4.0	\$56,021.70	\$224,087
<b>TOTAL COST PER 1,200 FEET</b>					<b>\$1,179,886</b>
<b>SP14</b>	<b>Ballasted - Pocket Track</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$983</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Ballasted - Turnout**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.40	Special Trackwork, No. 15 Turnout,Ballasted	ea	1.0	\$141,769.20	\$141,769
<b>SP16</b>	<b>Ballasted - Turnout</b>	<b>EA</b>	<b>Each</b>		<b>\$141,769</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Embedded - Single Cross-over**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.03	Concrete Track Slab	sy	272.0	\$85.75	\$23,323
05650.04	Concrete Track Infill	sy	272.0	\$45.73	\$12,439
05650.36	Special Trackwork, No. 10 Sgl Crossover,DF	ea	1.0	\$258,386	\$258,386
<b>SP20</b>	<b>Embedded - Single Cross-over</b>	<b>EA</b>	<b>Each</b>		<b>\$294,148</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Embedded - Double Cross-over**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.03	Concrete Track Slab	sy	544.0	\$85.75	\$46,647
05650.04	Concrete Track Infill	sy	544.0	\$45.73	\$24,878
05650.34	Special Trackwork, No. 8 Dbl Crossover,DF	ea	1.0	\$434,454.00	\$434,454
<b>SP21</b>	<b>Embedded - Double Cross-over</b>	<b>EA</b>	<b>Each</b>		<b>\$505,979</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Embedded - Turnout**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.03	Concrete Track Slab	sy	136.0	\$85.75	\$11,662
05650.04	Concrete Track Infill	sy	136.0	\$45.73	\$6,220
05650.49	Special Trackwork, No. 8 Turnout,DF	ea	1.0	\$95,000.00	\$95,000
<b>SP22</b>	<b>Embedded - Turnout</b>	<b>EA</b>	<b>Each</b>		<b>\$112,881</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Embedded - Diamond Crossing**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.03	Concrete Track Slab	sy	272.0	\$85.75	\$23,323
05650.04	Concrete Track Infill	sy	272.0	\$45.73	\$12,439
05650.46	Special Trackwork, Junction, Non-Grade Sep, DF	ea	1.0	\$107,470.20	\$107,470
<b>SP23</b>	<b>Embedded - Diamond Crossing</b>	<b>EA</b>	<b>Each</b>		<b>\$143,233</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Direct Fixation - Double Cross-over**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
05650.34	ALL QUANTITIES PER EACH Special Trackwork, No. 8 Dbl Crossover,DF	ea	1.0	\$434,454.00	\$434,454
SP30	Direct Fixation - Double Cross-over	EA	Each		\$434,454

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Direct Fixation - Pocket Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON 1,200 ROUTE FOOT</b>				
05650.06	Direct Fixation Trackwork, incl/ Fasteners & Rail	tf	3,600.0	\$228.66	\$823,176
05650.49	Special Trackwork, No. 8 Turnout,DF	ea	4.0	\$95,000.00	\$380,000
05650.52	Special Trackwork, No. 5 Turnout,DF	ea	4.0	\$60,000.00	\$240,000
<b>TOTAL COST PER 1,200 FEET</b>					<b>\$1,443,176</b>
<b>SP32</b>	<b>Direct Fixation - Pocket Track</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$1,203</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Trackwork:**  
**Direct Fixation - Turnout**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER EACH</b>				
05650.49	Special Trackwork, No. 8 Turnout,DF	ea	1.0	\$95,000.00	\$95,000
<b>SP34</b>	<b>Direct Fixation - Turnout</b>	<b>EA</b>	<b>Each</b>		<b>\$95,000</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control - Single Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT				
16700.01	Train Control, Line	lf	1.0	\$131.48	\$131
TC01	Train Control - Single Track	RF	Route Foot		\$131

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control - Double Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT				
16700.01	Train Control, Line	lf	2.0	\$131.48	\$263
TC02	Train Control - Double Track	RF	Route Foot		\$263

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control - Signal Prioritization**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.19	ALL QUANTITIES ARE BASED ON 1 SIGNAL EVERY 750 FT. Signal Prioritization	ea	0.001	\$57,165.00	\$76
TC03	Train Control - Signal Prioritization	RF	Route Foot		\$76

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Line - Yard**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	ALL QUANTITIES PER ROUTE LINEAR FOOT				
16700.03	Train Control, Yard	lf	1.0	\$160.06	\$160
TC05	Train Control, Line - Yard	RF	Route Foot		\$160



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Station**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.02	<b>ALL QUANTITIES PER STATION</b> Train Control, Station	ea	1.0	\$85,747.50	\$85,748
<b>TC10</b>	<b>Train Control, Station</b>	<b>EA</b>	<b>Each</b>		<b>\$85,748</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Double Crossover**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.05	Train Control, Double Crossover	ea	1.0	\$185,786.25	\$185,786
TC15	Train Control, Double Crossover	EA	Each		\$185,786

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Single Crossover**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.06	Train Control, Single Crossover	ea	1.0	\$128,621.25	\$128,621
TC20	Train Control, Single Crossover	EA	Each		\$128,621

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Turnout**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.04	Train Control, Turnout	ea	1.0	\$114,330.00	\$114,330
TC25	Train Control, Turnout	EA	Each		\$114,330

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Commuter Rail**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16800.01	Train Control, Commuter Line	lf	1.0	\$28.58	\$29
TC81	Train Control, Commuter Rail	RF	Route Foot		\$29

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Train Control, Turnout Commuter Rail**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16800.05	Train Control, Commuter - Turnout	ea	1.0	\$171,495.00	\$171,495
TC85	Train Control, Turnout Commuter Rail	EA	Each		\$171,495

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Traction Power - Single Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES ARE BASED ON 5,280 FT SEGMENT</b>				
16370.04	Traction Power Supply, Trunkline	lf	1,320.0	\$45.73	\$60,366
16370.05	Traction Power Supply, Branchline	lf	528.0	\$40.02	\$21,128
16370.06	Traction Power Supply, (OCS), At-Grade, Single Track	lf	5,280.0	\$80.03	\$422,564
<b>TOTAL COST PER 5,280 FT</b>					<b>\$504,058</b>
<b>TP01</b>	<b>Traction Power - Single Track</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$95</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Traction Power - Double Track**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES ARE BASED ON 5,280 FT SEGMENT</b>				
16370.04	Traction Power Supply, Trunkline	lf	1,320.0	\$45.73	\$60,366
16370.05	Traction Power Supply, Branchline	lf	528.0	\$40.02	\$21,128
16370.07	Traction Power Supply, (OCS), At-Grade, Double Track	lf	5,280.0	\$137.20	\$724,395
<b>TOTAL COST PER 5,280 FT</b>					<b>\$805,889</b>
<b>TP02</b>	<b>Traction Power - Double Track</b>	<b>RF</b>	<b>Route Linear Foot</b>		<b>\$153</b>



<p><b>BAY LINK</b></p> <p><b>Miami - Miami Beach Transportation Corridor Study</b></p> <p><b>SECTION / COMPOSITE COST</b></p> <p><b>System Elements:</b></p> <p><b>Traction Power - Substation with Building</b></p>
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CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
13000.20	Traction Power Structure, Substation	ea	1.0	\$205,794.00	\$205,794
16370.01	Traction Power Equipment, Substation	ea	1.0	\$651,681.00	\$651,681
16370.04	Traction Power Supply, Trunkline	lf	100.0	\$45.73	\$4,573
16370.05	Traction Power Supply, Branchline	lf	200.0	\$40.02	\$8,003
TP10	Traction Power - Substation with Building	EA	Each		\$870,051

<p><b>BAY LINK</b></p> <p><b>Miami - Miami Beach Transportation Corridor Study</b></p> <p><b>SECTION / COMPOSITE COST</b></p> <p><b>System Elements:</b></p> <p><b>Traction Power - Substation without Building</b></p>
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CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16370.01	Traction Power Equipment, Substation	ea	1.0	\$651,681.00	\$651,681
16370.04	Traction Power Supply, Trunkline	lf	100.0	\$45.73	\$4,573
16370.05	Traction Power Supply, Branchline	lf	200.0	\$40.02	\$8,003
TP12	Traction Power - Substation without Building	EA	Each		\$664,257

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Communication, Line - Single**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.08	ALL QUANTITIES PER ROUTE LINEAR FOOT Communication, Line	lf	1.0	\$34.30	\$34
CM01	Communication, Line - Single	RF	Route Foot		\$34

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Communication, Line - Double**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.08	ALL QUANTITIES PER ROUTE LINEAR FOOT Communication, Line	lf	2.0	\$34.30	\$69
CM02	Communication, Line - Double	RF	Route Foot		\$69

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Communication, Station**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
16700.09	ALL QUANTITIES PER STATION Communication, Station	ea	1.0	\$228,660.00	\$228,660
CM05	Communication, Station	EA	Each		\$228,660

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Fare Collection - Single Installation**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
11155.10	Fare Collection, Ticket Vending Machine	ea	1.0	\$68,598.00	\$68,598
11155.11	Fare Collection, Validating Machine	ea	1.0	\$5,716.50	\$5,717
11155.20	Fare Collection, Installation & Testing	ea	2.0	\$11,433.00	\$22,866
<b>FC01</b>	<b>Fare Collection - Single Installation</b>	<b>EA</b>	<b>Each</b>		<b>\$97,181</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Fare Collection - Double Installation**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
11155.10	Fare Collection, Ticket Vending Machine	ea	2.0	\$68,598.00	\$137,196
11155.11	Fare Collection, Validating Machine	ea	2.0	\$5,716.50	\$11,433
11155.20	Fare Collection, Installation & Testing	ea	4.0	\$11,433.00	\$45,732
<b>FC02</b>	<b>Fare Collection - Double Installation</b>	<b>EA</b>	<b>Each</b>		<b>\$194,361</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Fare Collection - Single Side Platform Station**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
11155.10	Fare Collection, Ticket Vending Machine	ea	2.0	\$68,598.00	\$137,196
11155.11	Fare Collection, Validating Machine	ea	2.0	\$5,716.50	\$11,433
11155.20	Fare Collection, Installation & Testing	ea	4.0	\$11,433.00	\$45,732
<b>FC03</b>	<b>Fare Collection - Single Side Platform Station</b>	<b>EA</b>	<b>Each</b>		<b>\$194,361</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Fare Collection - BRT Platform**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
11155.10	Fare Collection, Ticket Vending Machine	ea	1.0	\$68,598.00	\$68,598
11155.11	Fare Collection, Validating Machine	ea	1.0	\$5,716.50	\$5,717
11155.20	Fare Collection, Installation & Testing	ea	2.0	\$11,433.00	\$22,866
<b>FC60</b>	<b>Fare Collection - BRT Platform</b>	<b>EA</b>	<b>Each</b>		<b>\$97,181</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**System Elements:**  
**Fare Collection - Commuter Rail Station**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
11155.10	Fare Collection, Ticket Vending Machine	ea	2.0	\$68,598.00	\$137,196
11155.11	Fare Collection, Validating Machine	ea	1.0	\$5,716.50	\$5,717
11155.20	Fare Collection, Installation & Testing	ea	3.0	\$11,433.00	\$34,299
<b>FC81</b>	<b>Fare Collection - Commuter Rail Station</b>	<b>EA</b>	<b>Each</b>		<b>\$177,212</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****At-Grade - Center Platform  
(20' x 160' Platform)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES PER STATION</b>					
02225.01	Site Development Allow. For Stations	sf	4,224.0	\$29.73	\$125,562
02230.02	Clearing & Grubbing, Moderate	sy	586.7	\$0.80	\$470
02310.02	Finish Grading	sf	5,280.0	\$0.69	\$3,622
02315.01	Regular Excavation	cy	391.1	\$6.00	\$2,347
02315.10	Structural Excavation	cy	60.0	\$18.29	\$1,098
02315.11	Structural Backfill	cy	380.0	\$25.00	\$9,500
02340.01	Geotextile Fabric	sy	680.0	\$1.71	\$1,166
02370.01	Erosion Control, Guideway Allowance	lf	180.0	\$25.15	\$4,527
02470.01	OCS Pole Foundations	ea	2.0	\$1,714.95	\$3,430
03210.01	Reinforcing Steel	lb	34,666.7	\$0.69	\$23,781
03300.02	CIPC, Slab on Grade	cy	133.3	\$274.39	\$36,586
03300.03	CIPC, Walls	cy	40.0	\$537.35	\$21,494
09000.01	Architectural Finish, Station Platform	sf	3,240.0	\$51.45	\$166,693
09000.02	Platform Edge	sf	360.0	\$40.02	\$14,406
10100.01	Signage, Stations	sta	1.0	\$11,433.00	\$11,433
10500.01	Station Canopy	sf	1,800.0	\$80.03	\$144,056
12000.01	Station Furnishings, Single Platform (Allowance)	sta	1.0	\$51,448.50	\$51,449
15800.01	Station Mechanical (Allowance)	sf	3,600.0	\$9.15	\$32,927
16000.01	Station Electrical (Allowance)	sf	3,600.0	\$17.15	\$61,738
16500.05	Lighting, Stations (Allowance)	sf	3,600.0	\$8.00	\$28,811
<b>ST01</b>	<b>At-Grade - Center Platform</b>	<b>LS</b>	<b>Lump Sum</b>		<b>\$745,094</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****At-Grade - Side Platform****(2 each - 12' x 160' Platform)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES PER STATION</b>					
02225.01	Site Development Allow. For Stations	sf	4,928.0	\$29.73	\$146,489
02230.02	Clearing & Grubbing, Moderate	sy	684.4	\$0.80	\$548
02310.02	Finish Grading	sf	6,160.0	\$0.69	\$4,226
02315.01	Regular Excavation	cy	456.3	\$6.00	\$2,738
02315.10	Structural Excavation	cy	120.0	\$18.29	\$2,195
02315.11	Structural Backfill	cy	440.0	\$25.00	\$11,000
02340.01	Geotextile Fabric	sy	800.0	\$1.71	\$1,372
02370.01	Erosion Control, Guideway Allowance	lf	180.0	\$25.15	\$4,527
02470.01	OCS Pole Foundations	ea	2.0	\$1,714.95	\$3,430
03210.01	Reinforcing Steel	lb	48,000.0	\$0.69	\$32,927
03300.02	CIPC, Slab on Grade	cy	160.0	\$274.39	\$43,903
03300.03	CIPC, Walls	cy	80.0	\$537.35	\$42,988
09000.01	Architectural Finish, Station Platform	sf	3,960.0	\$51.45	\$203,736
09000.02	Platform Edge	sf	360.0	\$40.02	\$14,406
10100.01	Signage, Stations	sta	1.0	\$11,433.00	\$11,433
10500.01	Station Canopy	sf	2,160.0	\$80.03	\$172,867
12000.02	Station Furnishings, Double Platform (Allowance)	sta	1.0	\$80,031.00	\$80,031
15800.01	Station Mechanical (Allowance)	sf	4,320.0	\$9.15	\$39,512
16000.01	Station Electrical (Allowance)	sf	4,320.0	\$17.15	\$74,086
16500.05	Lighting, Stations (Allowance)	sf	4,320.0	\$8.00	\$34,573
<b>ST02</b>	<b>At-Grade - Side Platform</b>	<b>LS</b>	<b>Lump Sum</b>		<b>\$926,987</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****At-Grade - Single Side Platform (160')**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES PER STATION</b>					
02225.01	Site Development Allow. For Stations	sf	2,112.0	\$29.73	\$62,781
01560.02	Traffic Control, Moderate	lf	220.0	\$91.46	\$20,122
02220.01	Sawcut Asphalt Pavement	lf	440.0	\$2.86	\$1,258
02220.05	Asphaltic Pavement Removal	sy	293.3	\$6.86	\$2,012
02310.02	Finish Grading	sf	2,640.0	\$0.69	\$1,811
02315.01	Regular Excavation	cy	195.6	\$6.00	\$1,173
02315.10	Structural Excavation	cy	60.0	\$18.29	\$1,098
02315.11	Structural Backfill	cy	180.0	\$25.00	\$4,500
02340.01	Geotextile Fabric	sy	480.0	\$1.71	\$823
02370.01	Erosion Control, Guideway Allowance	lf	180.0	\$25.15	\$4,527
02470.01	OCS Pole Foundations	ea	2.0	\$1,714.95	\$3,430
02720.02	Aggregate Base	cy	16.3	\$25.15	\$410
02740.05	Asphaltic Concrete Pavement	tn	16.0	\$57.17	\$912
03210.01	Reinforcing Steel	lb	24,000.0	\$0.69	\$16,464
03300.02	CIPC, Slab on Grade	cy	80.0	\$274.39	\$21,951
03300.03	CIPC, Walls	cy	40.0	\$537.35	\$21,494
09000.01	Architectural Finish, Station Platform	sf	1,800.0	\$51.45	\$92,607
09000.02	Platform Edge	sf	360.0	\$40.02	\$14,406
10100.01	Signage, Stations	sta	1.0	\$11,433.00	\$11,433
10500.01	Station Canopy	sf	1,080.0	\$80.03	\$86,433
12000.01	Station Furnishings, Single Platform (Allowance)	sta	1.0	\$51,448.50	\$51,449
15800.01	Station Mechanical (Allowance)	sf	2,160.0	\$9.15	\$19,756
16000.01	Station Electrical (Allowance)	sf	2,160.0	\$17.15	\$37,043
16500.05	Lighting, Stations (Allowance)	sf	2,160.0	\$8.00	\$17,287
<b>ST04</b>	<b>At-Grade - Single Side Platform (160')</b>	<b>LS</b>	<b>Lump Sum</b>		<b>\$495,180</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****At-Grade - Single Side Platform (80')**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES PER STATION</b>					
02225.01	Site Development Allow. For Stations	sf	1,056.0	\$29.73	\$31,390
01560.02	Traffic Control, Moderate	lf	110.0	\$91.46	\$10,061
02220.01	Sawcut Asphalt Pavement	lf	220.0	\$2.86	\$629
02220.05	Asphaltic Pavement Removal	sy	146.7	\$6.86	\$1,006
02310.02	Finish Grading	sf	1,320.0	\$0.69	\$905
02315.01	Regular Excavation	cy	97.8	\$6.00	\$587
02315.10	Structural Excavation	cy	30.0	\$18.29	\$549
02315.11	Structural Backfill	cy	90.0	\$25.00	\$2,250
02340.01	Geotextile Fabric	sy	240.0	\$1.71	\$412
02370.01	Erosion Control, Guideway Allowance	lf	90.0	\$25.15	\$2,264
02470.01	OCS Pole Foundations	ea	1.0	\$1,714.95	\$1,715
02720.02	Aggregate Base	cy	8.1	\$25.15	\$205
02740.05	Asphaltic Concrete Pavement	tn	8.0	\$57.17	\$456
03210.01	Reinforcing Steel	lb	12,000.0	\$0.69	\$8,232
03300.02	CIPC, Slab on Grade	cy	40.0	\$274.39	\$10,976
03300.03	CIPC, Walls	cy	20.0	\$537.35	\$10,747
09000.01	Architectural Finish, Station Platform	sf	900.0	\$51.45	\$46,304
09000.02	Platform Edge	sf	180.0	\$40.02	\$7,203
10100.01	Signage, Stations	sta	1.0	\$11,433.00	\$11,433
10500.01	Station Canopy	sf	540.0	\$80.03	\$43,217
12000.03	Station Furnishings, Short Platform (Allowance)	sta	1.0	\$34,299.00	\$34,299
15800.01	Station Mechanical (Allowance)	sf	1,080.0	\$9.15	\$9,878
16000.01	Station Electrical (Allowance)	sf	1,080.0	\$17.15	\$18,521
16500.05	Lighting, Stations (Allowance)	sf	1,080.0	\$8.00	\$8,643
<b>ST05</b>	<b>At-Grade - Single Side Platform (80')</b>	<b>LS</b>	<b>Lump Sum</b>		<b>\$261,881</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Elevated - Center Platform w/ Mezzanine At-Grade**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
02225.01	Site Development Allow. For Stations	sf	4,620.0	\$29.73	\$137,333
02230.02	Clearing & Grubbing, Moderate	sy	855.6	\$0.80	\$685
02310.02	Finish Grading	sf	7,700.0	\$0.69	\$5,282
02455.01	Driven Piling	vlf	2,250.0	\$68.60	\$154,346
02315.10	Structural Excavation	cy	140.0	\$18.29	\$2,561
02315.11	Structural Backfill	cy	66.7	\$25.00	\$1,667
02630.12	Trackway Drainage, Aerial	lf	360.0	\$34.30	\$12,348
03210.01	Reinforcing Steel	lb	95,500.0	\$0.69	\$65,511
03300.02	CIPC, Slab on Grade	cy	106.7	\$274.39	\$29,268
03300.13	CIPC, Aerial Footing	cy	73.3	\$320.12	\$23,476
03300.14	CIPC, Aerial Pier	cy	160.0	\$571.65	\$91,464
03300.16	CIPC, Aerial Deck Slab	cy	137.5	\$400.16	\$55,021
03400.03	Precast Prestressed I Beams, TP V	lf	1,800.0	\$137.20	\$246,953
03410.25	Precast Barrier Wall	sf	1,080.0	\$13.72	\$14,817
05820.01	Elastomeric Bearing Pads	ea	40.0	\$514.49	\$20,579
09000.01	Architectural Finish, Station Platform	sf	4,500.0	\$51.45	\$231,518
09000.02	Platform Edge	sf	360.0	\$40.02	\$14,406
10100.01	Signage, Stations	sta	1.0	\$11,433.00	\$11,433
10500.01	Station Canopy	sf	2,160.0	\$80.03	\$172,867
12000.01	Station Furnishings, Single Platform (Allowance)	sta	1.0	\$51,448.50	\$51,449
14600.01	Escalators, to 25 ft. Rise	ea	2.0	\$228,660.00	\$457,320
14600.09	Elevators, 25 ft. Rise	ea	1.0	\$114,330.00	\$114,330
15800.01	Station Mechanical (Allowance)	sf	8,640.0	\$9.15	\$79,025
16000.01	Station Electrical (Allowance)	sf	8,640.0	\$17.15	\$148,172
16500.05	Lighting, Stations (Allowance)	sf	8,640.0	\$8.00	\$69,147
<b>ST11</b>	<b>Elevated - Center Platform w/ Mezzanine At-Grade</b>	<b>LS</b>	<b>Lump Sum</b>		<b>\$2,210,976</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Elevated - Side Platform w/ Mezzanine At-Grade**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER STATION</b>				
02225.01	Site Development Allow. For Stations	sf	4,620.0	\$29.73	\$137,333
02230.02	Clearing & Grubbing, Moderate	sy	855.6	\$0.80	\$685
02310.02	Finish Grading	sf	7,700.0	\$0.69	\$5,282
02455.01	Driven Piling	vlf	2,250.0	\$68.60	\$154,346
02315.10	Structural Excavation	cy	128.0	\$18.29	\$2,341
02315.11	Structural Backfill	cy	61.3	\$25.00	\$1,533
02630.12	Trackway Drainage, Aerial	lf	180.0	\$34.30	\$6,174
03210.01	Reinforcing Steel	lb	96,666.7	\$0.69	\$66,311
03300.02	CIPC, Slab on Grade	cy	106.7	\$274.39	\$29,268
03300.13	CIPC, Aerial Footing	cy	66.7	\$320.12	\$21,342
03300.14	CIPC, Aerial Pier	cy	160.0	\$571.65	\$91,464
03300.16	CIPC, Aerial Deck Slab	cy	150.0	\$400.16	\$60,023
03400.03	Precast Prestressed I Beams, TP V	lf	2,160.0	\$137.20	\$296,343
03410.25	Precast Barrier Wall	sf	1,080.0	\$13.72	\$14,817
05820.01	Elastomeric Bearing Pads	ea	48.0	\$514.49	\$24,695
09000.01	Architectural Finish, Station Platform	sf	5,040.0	\$51.45	\$259,300
09000.02	Platform Edge	sf	360.0	\$40.02	\$14,406
10100.01	Signage, Stations	sta	1.0	\$11,433.00	\$11,433
10500.01	Station Canopy	sf	2,700.0	\$80.03	\$216,084
12000.02	Station Furnishings, Double Platform (Allowance)	sta	1.0	\$80,031.00	\$80,031
14600.01	Escalators, to 25 ft. Rise	ea	4.0	\$228,660.00	\$914,640
14600.09	Elevators, 25 ft. Rise	ea	2.0	\$114,330.00	\$228,660
15800.01	Station Mechanical (Allowance)	sf	9,720.0	\$9.15	\$88,903
16000.01	Station Electrical (Allowance)	sf	9,720.0	\$17.15	\$166,693
16500.05	Lighting, Stations (Allowance)	sf	9,720.0	\$8.00	\$77,790
<b>ST12</b>	<b>Elevated - Side Platform w/ Mezzanine At-Grade</b>	<b>LS</b>	<b>Lump Sum</b>		<b>\$2,969,899</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Stations:**  
**Station Pedestrian Access Bridge**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON TYPICAL SPAN OF 120 ft.</b>				
02630.12	Trackway Drainage, Aerial	lf	120.0	\$34.30	\$4,116
02850.01	Bridge Structure, Allowance	sf	3,000.0	\$165.78	\$497,336
09000.01	Architectural Finish, Station Platform	sf	120.0	\$51.45	\$6,174
16500.05	Lighting, Stations (Allowance)	sf	3,000.0	\$8.00	\$24,009
<b>TOTAL COST PER 120 FEET</b>					<b>\$531,635</b>
<b>PA01</b>	<b>Station Pedestrian Access Bridge</b>	<b>LF</b>	<b>Linear Foot</b>		<b>\$4,430</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Station Pedestrian Access Cut & Cover Tunnel**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON LENGTH OF 150 ft.</b>				
02230.01	Clearing & Grubbing, Light	sy	250.0	\$0.57	\$143
02260.01	Soldier Pile & Lagging Wall incl/Bracing	sf	6,000.0	\$51.45	\$308,691
02260.50	Street Decking	sf	2,250.0	\$28.58	\$64,311
02310.01	Rough Grading	sf	2,250.0	\$0.45	\$1,019
02315.20	Cut & Cover Excavation	cy	1,666.7	\$22.87	\$38,110
02315.21	Cut & Cover Backfill	cy	541.7	\$41.16	\$22,294
02370.01	Erosion Control, Guideway Allowance	lf	150.0	\$25.15	\$3,773
02620.02	Underdrains	lf	300.0	\$20.58	\$6,174
02630.11	Trackway Drainage, Tunnel	lf	150.0	\$68.60	\$10,290
03210.01	Reinforcing Steel	lb	110,000.0	\$0.69	\$75,458
03300.08	CIPC, C&C Slab on Grade	cy	166.7	\$297.26	\$49,543
03300.09	CIPC, C&C Exterior Walls, Formed 1 Side	cy	166.7	\$605.95	\$100,992
03300.12	CIPC, C&C Roof Slab	cy	125.0	\$560.22	\$70,027
03300.99	CIPC, Miscellaneous Structures	cy	91.7	\$800.31	\$73,362
05120.05	Structural Steel, Misc.	lb	50,000.0	\$2.00	\$100,039
07130.21	Sheet Waterproofing	sf	8,550.0	\$4.00	\$34,213
09000.01	Architectural Finish, Station Platform	sf	2,250.0	\$51.45	\$115,759
10100.01	Signage, Stations	sta	0.5	\$11,433.00	\$5,717
15800.01	Station Mechanical (Allowance)	sf	2,250.0	\$9.15	\$20,579
16000.01	Station Electrical (Allowance)	sf	2,250.0	\$17.15	\$38,586
16500.05	Lighting, Stations (Allowance)	sf	2,250.0	\$8.00	\$18,007
<b>TOTAL COST PER 150 FEET</b>					<b>\$1,157,086</b>
<b>PA05</b>	<b>Station Pedestrian Access Cut &amp; Cover Tunnel</b>	<b>LF</b>	<b>Linear Foot</b>		<b>\$7,714</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Station Pedestrian Vertical Access - Elevated**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER LOCATION</b>				
02225.01	Site Development Allow. For Stations	sf	1,800.0	\$29.73	\$53,506
02230.01	Clearing & Grubbing, Light	sy	200.0	\$0.57	\$114
02310.02	Finish Grading	sf	1,800.0	\$0.69	\$1,235
09000.01	Architectural Finish, Station Platform	sf	1,800.0	\$51.45	\$92,607
10100.01	Signage, Stations	sta	0.3	\$11,433.00	\$2,858
13000.10	Pedestrian Access Structure	sf	1,800.0	\$137.20	\$246,953
14600.01	Escalators, to 25 ft. Rise	ea	2.0	\$228,660.00	\$457,320
14600.10	Elevators, 40 ft. Rise	ea	1.0	\$160,062.00	\$160,062
14600.21	Stairs Complete, Wide	vf	50.0	\$1,371.96	\$68,598
15800.01	Station Mechanical (Allowance)	sf	1,800.0	\$9.15	\$16,464
16000.01	Station Electrical (Allowance)	sf	1,800.0	\$17.15	\$30,869
16500.05	Lighting, Stations (Allowance)	sf	1,800.0	\$8.00	\$14,406
PA20	Station Pedestrian Vertical Access - Elevated	EA	Each		\$1,144,992

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Station Site Facilities - Surface Parking**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON CONSTRUCTING 500 SPACE LOT</b>					
02230.02	Clearing & Grubbing, Moderate	sy	22,250.0	\$0.80	\$17,807
02310.02	Finish Grading	sf	175,000.0	\$0.69	\$120,047
02315.01	Regular Excavation	cy	13,000.0	\$6.00	\$78,000
02370.02	Erosion Control, Roadway Allowance	lf	1,800.0	\$14.86	\$26,753
02630.01	Site / Roadway Drainage, Allowance	lf	1,000.0	\$74.31	\$74,315
02630.20	Strom Water Management Pond	sy	2,250.0	\$13.72	\$30,869
02720.02	Aggregate Base	cy	4,280.0	\$25.15	\$107,653
02740.01	Asphalt Treated Base	tn	3,990.0	\$51.45	\$205,280
02740.05	Asphaltic Concrete Pavement	tn	2,130.0	\$57.17	\$121,761
02766.02	Misc. Signing and Stripping, Parking Lot	sf	165,000.0	\$0.29	\$47,161
02770.03	Concrete Curb and Gutter	lf	3,250.0	\$13.72	\$44,589
02775.01	Concrete Sidewalk	sy	725.0	\$25.15	\$18,236
02810.02	Irrigation System, Large	sf	10,000.0	\$0.86	\$8,575
02900.02	Landscaping, Extensive	sf	10,000.0	\$2.86	\$28,583
11155.10	Fare Collection, Ticket Vending Machine	ea	1.0	\$68,598.00	\$68,598
16500.07	Lighting, Area	sf	82,500.0	\$2.86	\$235,806
<b>TOTAL COST PER 500 SPACE</b>					<b>\$1,234,031</b>
<b>SF02</b>	<b>Station Site Facilities - Surface Parking</b>	<b>SP</b>	<b>Space</b>		<b>\$2,468</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Station Site Facilities - Bus / Shuttle Bays**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON CONSTRUCTING 10 BAYS</b>					
02230.02	Clearing & Grubbing, Moderate	sy	560.0	\$0.80	\$448
02310.02	Finish Grading	sf	4,375.0	\$0.69	\$3,001
02315.01	Regular Excavation	cy	400.0	\$6.00	\$2,400
02370.02	Erosion Control, Roadway Allowance	lf	50.0	\$14.86	\$743
02630.01	Site / Roadway Drainage, Allowance	lf	25.0	\$74.31	\$1,858
02630.20	Strom Water Management Pond	sy	60.0	\$13.72	\$823
02720.02	Aggregate Base	cy	107.0	\$25.15	\$2,691
02740.01	Asphalt Treated Base	tn	100.0	\$51.45	\$5,145
02740.05	Asphaltic Concrete Pavement	tn	53.0	\$57.17	\$3,030
02766.02	Misc. Signing and Stripping, Parking Lot	sf	4,125.0	\$0.29	\$1,179
02770.03	Concrete Curb and Gutter	lf	80.0	\$13.72	\$1,098
02775.01	Concrete Sidewalk	sy	18.0	\$25.15	\$453
02810.02	Irrigation System, Large	sf	250.0	\$0.86	\$214
02900.02	Landscaping, Extensive	sf	250.0	\$2.86	\$715
16500.07	Lighting, Area	sf	2,062.5	\$2.86	\$5,895
<b>TOTAL COST PER 10 SPACE</b>					<b>\$29,693</b>
<b>SF05</b>	<b>Station Site Facilities - Bus / Shuttle Bays</b>	<b>SP</b>	<b>Space</b>		<b>\$2,969</b>

**BAY LINK****Miami - Miami Beach Transportation Corridor Study****SECTION / COMPOSITE COST****Stations:****Station Site Facilities - Parking Garage**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
<b>ALL QUANTITIES BASED ON CONSTRUCTING 2000 SPACE GARAGE</b>					
02230.02	Clearing & Grubbing, Moderate	sy	18,900.0	\$0.80	\$15,126
02310.02	Finish Grading	sf	160,000.0	\$0.69	\$109,757
02315.01	Regular Excavation	cy	11,900.0	\$6.00	\$71,400
02315.10	Structural Excavation	cy	600.0	\$18.29	\$10,976
02455.01	Driven Piling	vlf	16,000.0	\$68.60	\$1,097,568
02370.02	Erosion Control, Roadway Allowance	lf	1,600.0	\$14.86	\$23,781
02630.01	Site / Roadway Drainage, Allowance	lf	800.0	\$74.31	\$59,452
02766.02	Misc. Signing and Stripping, Parking Lot	sf	620,000.0	\$0.29	\$177,212
02810.02	Irrigation System, Large	sf	16,000.0	\$0.86	\$13,720
02900.02	Landscaping, Extensive	sf	16,000.0	\$2.86	\$45,732
03210.01	Reinforcing Steel	lb	0.0	\$0.69	\$0
03300.01	CIPC, Footings	cy	595.0	\$342.99	\$204,079
03300.02	CIPC, Slab on Grade	cy	4,300.0	\$274.39	\$1,179,886
03300.04	CIPC, Columns	cy	1,280.0	\$857.48	\$1,097,568
03300.07	CIPC, Elevated Slab	cy	8,600.0	\$594.52	\$5,112,838
03400.03	Precast Prestressed I Beams, TP V	lf	80,400.0	\$137.20	\$11,030,558
05520.01	Metal Pipe and Tube Railing	lf	4,800.0	\$40.02	\$192,074
05820.01	Elastomeric Bearing Pads	ea	240.0	\$514.49	\$123,476
11155.10	Fare Collection, Ticket Vending Machine	ea	1.0	\$68,598.00	\$68,598
14600.11	Elevators, 75 ft. Rise	ea	1.0	\$208,080.60	\$208,081
14600.20	Stairs Complete, Std. Width	vf	96.0	\$800.31	\$76,830
15800.01	Station Mechanical (Allowance)	sf	40,000.0	\$9.15	\$365,856
16000.01	Station Electrical (Allowance)	sf	40,000.0	\$17.15	\$685,980
16500.05	Lighting, Stations (Allowance)	sf	40,000.0	\$8.00	\$320,124
<b>TOTAL COST PER 2000 SPACE</b>					<b>\$22,290,669</b>
<b>SF20</b>	<b>Station Site Facilities - Parking Garage</b>	<b>SP</b>	<b>Space</b>		<b>\$11,145</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Utility Modifications Allowance - Light**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02500.01	Utility Modifications - Rural	lf	1.0	\$114.33	\$114
UM01	Utility Modifications Allowance - Light	RF	Route Foot		\$114

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Utility Modifications Allowance - Light Urban**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
02500.02	ALL QUANTITIES PER ROUTE LINEAR FOOT Utility Modifications - Light Urban	lf	1.0	\$400.16	\$400
UM02	Utility Modifications Allowance - Light Urban	RF	Route Foot		\$400



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Utility Modifications Allowance - Moderate Urban**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02500.03	Utility Modifications - Moderate Urban	lf	1.0	\$743.15	\$743
<b>UM03</b>	<b>Utility Modifications Allowance - Moderate Urban</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$743</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Utility Modifications Allowance - Heavy Urban**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
02500.04	ALL QUANTITIES PER ROUTE LINEAR FOOT Utility Modifications - Heavy Urban	lf	1.0	\$1,486.29	\$1,486
UM04	Utility Modifications Allowance - Heavy Urban	RF	Route Foot		\$1,486

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Utility Modifications Allowance - Existing RR Corridor**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
02500.01	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b> <b>(Assumes only 10% of route requires utility work)</b> Utility Modifications - Rural	lf	0.1	\$114.33	\$11
<b>UM80</b>	<b>Utility Modifications Allowance - Existing RR Corridor</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$11</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Demolition Allowance - Existing Bridge Structure**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER SQUARE FOOT OF DECK</b>				
01560.02	Traffic Control, Moderate	lf	0.020	\$91.46	\$1.83
02220.99	Miscellaneous Demolition - Crew	hr	0.016	\$400.16	\$6.40
<b>DM01</b>	<b>Demolition Allowance - Existing Bridge Structure</b>	<b>SF</b>	<b>Square Foot</b>		<b>\$8.23</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Demolition Allowance - Existing Station Structure**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER SQUARE NEAT FOOT</b>				
01560.02	Traffic Control, Moderate	lf	0.070	\$91.46	\$6.40
02220.99	Miscellaneous Demolition - Crew	hr	0.200	\$400.16	\$80.03
<b>DM10</b>	<b>Demolition Allowance - Existing Station Structure</b>	<b>SF</b>	<b>Square Foot</b>		<b>\$86.43</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Demolition Allowance - Guideway**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02220.80	Miscellaneous Demolition - Allowance	lf	1.000	\$10.29	\$10.29
<b>DM20</b>	<b>Demolition Allowance - Guideway</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$10.29</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Demolition Allowance - Existing Paved Area**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON AREA OF 1,800 SQUARE FOOT</b>				
01560.02	Traffic Control, Moderate	lf	100.0	\$91.46	\$9,146
02220.01	Sawcut Asphalt Pavement	lf	100.0	\$2.86	\$286
02220.05	Asphaltic Pavement Removal	sy	133.3	\$6.86	\$915
02220.07	Remove Concrete Sidewalk	sy	44.4	\$5.72	\$254
02220.08	Remove Concrete Curb	lf	100.0	\$4.12	\$412
02310.01	Rough Grading	sf	1,800.0	\$0.45	\$815
02370.02	Erosion Control, Roadway Allowance	lf	100.0	\$14.86	\$1,486
<b>TOTAL COST PER 1800 SQUARE FEET</b>					<b>\$13,314</b>
<b>DM80</b>	<b>Demolition Allowance - Existing Paved Area</b>	<b>SF</b>	<b>Square Foot</b>		<b>\$7.40</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Roadway Modifications Allowance - Under Aerial Structure**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02230.01	Clearing & Grubbing, Light	sy	2.2	\$0.57	\$1
02310.01	Rough Grading	sf	20.0	\$0.45	\$9
02310.02	Finish Grading	sf	12.0	\$0.69	\$8
02315.01	Regular Excavation	cy	0.7	\$6.00	\$4
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02630.01	Site / Roadway Drainage, Allowance	lf	1.0	\$74.31	\$74
02720.01	Aggregate Subbase	cy	0.5	\$19.44	\$10
02720.02	Aggregate Base	cy	0.3	\$25.15	\$8
02740.01	Asphalt Treated Base	tn	0.5	\$51.45	\$23
02766.01	Misc. Signing and Stripping, Roadway	lf	1.0	\$0.86	\$1
02770.03	Concrete Curb and Gutter	lf	1.0	\$13.72	\$14
02775.01	Concrete Sidewalk	sy	0.6	\$25.15	\$15
02840.05	Concrete Median Barrier	lf	2.0	\$40.02	\$80
<b>RM01</b>	<b>Roadway Modifications Allowance - Under Aerial Structure</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$354</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Roadway Modifications Allowance - Adding 1 Lane**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LANE FOOT</b>				
01560.02	Traffic Control, Moderate	lf	1.0	\$91.46	\$91
02230.01	Clearing & Grubbing, Light	sy	2.2	\$0.57	\$1
02310.01	Rough Grading	sf	20.0	\$0.45	\$9
02310.02	Finish Grading	sf	12.0	\$0.69	\$8
02315.01	Regular Excavation	cy	0.7	\$6.00	\$4
02370.02	Erosion Control, Roadway Allowance	lf	1.0	\$14.86	\$15
02630.01	Site / Roadway Drainage, Allowance	lf	1.0	\$74.31	\$74
02720.01	Aggregate Subbase	cy	0.5	\$19.44	\$10
02720.02	Aggregate Base	cy	0.3	\$25.15	\$8
02740.01	Asphalt Treated Base	tn	0.5	\$51.45	\$23
02766.01	Misc. Signing and Stripping, Roadway	lf	1.0	\$0.86	\$1
<b>RM10</b>	<b>Roadway Modifications Allowance - Adding 1 Lane</b>	<b>LnF</b>	<b>Lane Foot</b>		<b>\$245</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Roadway Modifications Allowance - Existing Signal**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER INTERSECTION</b>				
16700.20	Traffic Signal - Existing	ea	1.0	\$91,464.00	\$91,464
<b>RM20</b>	<b>Roadway Modifications Allowance - Existing Signal</b>	<b>EA</b>	<b>Each</b>		<b>\$91,464</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Roadway Modifications Allowance - New Signal**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER INTERSECTION</b>				
16700.21	Traffic Signal - New	ea	1.0	\$137,196.00	\$137,196
<b>RM21</b>	<b>Roadway Modifications Allowance - New Signal</b>	<b>EA</b>	<b>Each</b>		<b>\$137,196</b>

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**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Roadway Modifications Allowance - AC Paving (incl. Curb & Sidewalk)**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES BASED ON 1,000 SQUARE FOOT</b>				
01560.02	Traffic Control, Moderate	lf	83.33	\$91.46	\$7,622.00
02230.01	Clearing & Grubbing, Light	sy	111.11	\$0.57	\$63.52
02310.01	Rough Grading	sf	1,000.00	\$0.45	\$452.74
02310.02	Finish Grading	sf	1,000.00	\$0.69	\$685.98
02315.01	Regular Excavation	cy	74.07	\$6.00	\$444.44
02370.02	Erosion Control, Roadway Allowance	lf	83.33	\$14.86	\$1,238.58
02630.01	Site / Roadway Drainage, Allowance	lf	83.33	\$74.31	\$6,192.88
02730.01	Cement Stabilized Base	cy	37.04	\$57.17	\$2,117.22
02740.01	Asphalt Treated Base	tn	48.35	\$51.45	\$2,487.53
02740.05	Asphaltic Concrete Pavement	tn	9.05	\$57.17	\$517.34
02766.01	Misc. Signing and Stripping, Roadway	lf	83.33	\$0.86	\$71.46
02770.03	Concrete Curb and Gutter	lf	83.33	\$13.72	\$1,143.30
02775.01	Concrete Sidewalk	sy	37.04	\$25.15	\$931.58
<b>TOTAL COST PER 1,000 SQUARE FOOT</b>					<b>\$23,969</b>
<b>RM82</b>	<b>Roadway Modifications Allowance - AC Paving (incl. Curb &amp; Side</b>	<b>SF</b>	<b>Square Foot</b>		<b>\$23.97</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Roadway Modifications Allowance - Adding New Bridge**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER SQUARE FOOT OF DECK</b>				
01560.02	Traffic Control, Moderate	lf	0.020	\$91.46	\$1.83
02230.01	Clearing & Grubbing, Light	sy	0.023	\$0.57	\$0.01
02250.01	Steel Sheet Pile and Shoring	sf	0.203	\$32.01	\$6.50
02315.10	Structural Excavation	cy	0.020	\$18.29	\$0.37
02315.11	Structural Backfill	cy	0.007	\$25.00	\$0.18
02455.01	Driven Piling	vlf	0.304	\$68.60	\$20.85
02630.12	Trackway Drainage, Aerial	lf	0.032	\$34.30	\$1.10
02820.03	6 ft. Chain Link Fence, Wall Mounted	lf	0.065	\$12.58	\$0.82
03210.01	Reinforcing Steel	lb	10.654	\$0.69	\$7.31
03300.01	CIPC, Footings	cy	0.007	\$342.99	\$2.40
03300.03	CIPC, Walls	cy	0.011	\$537.35	\$5.91
03300.06	CIPC, Parapet	cy	0.007	\$731.71	\$5.12
03300.16	CIPC, Aerial Deck Slab	cy	0.028	\$400.16	\$11.20
05120.01	Structural Steel, Box Girder	lb	38.000	\$1.43	\$54.31
05820.01	Elastomeric Bearing Pads	ea	0.004	\$514.49	\$2.06
<b>RM90</b>	<b>Roadway Modifications Allowance - Adding New Bridge</b>	<b>SF</b>	<b>Square Foot</b>		<b>\$119.97</b>

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**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Enviromental Mitigation Allowance - Light**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
02120.01	ALL QUANTITIES PER ROUTE LINEAR FOOT Enviromental Mitigation Allow. - Light	lf	1.0	\$22.87	\$23
EM01	Enviromental Mitigation Allowance - Light	RF	Route Foot		\$23

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Enviromental Mitigation Allowance - Moderate**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
02120.02	ALL QUANTITIES PER ROUTE LINEAR FOOT Enviromental Mitigation Allow. - Moderate	lf	1.0	\$57.17	\$57
EM02	Enviromental Mitigation Allowance - Moderate	RF	Route Foot		\$57

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Enviromental Mitigation Allowance - Heavy**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE LINEAR FOOT</b>				
02120.03	Enviromental Mitigation Allow. - Heavy	lf	1.0	\$91.46	\$91
<b>EM03</b>	<b>Enviromental Mitigation Allowance - Heavy</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$91</b>



**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Landscaping Allowance - Site**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER SQUARE FOOT</b>				
02810.02	Irrigation System, Large	sf	1.000	\$0.86	\$0.86
02900.02	Landscaping, Extensive	sf	1.000	\$2.86	\$2.86
<b>LS02</b>	<b>Landscaping Allowance - Site</b>	<b>SF</b>	<b>Square Foot</b>		<b>\$3.72</b>

**BAY LINK**  
**Miami - Miami Beach Transportation Corridor Study**  
**SECTION / COMPOSITE COST**  
**Special Conditions**  
**Landscaping Allowance - Guideway**

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST \$	TOTAL COST \$
	<b>ALL QUANTITIES PER ROUTE FOOT</b>				
02810.02	Irrigation System, Large	sf	12.000	\$0.86	\$10.29
02900.01	Landscaping, Moderate	sf	12.000	\$1.14	\$13.72
<b>LS10</b>	<b>Landscaping Allowance - Guideway</b>	<b>RF</b>	<b>Route Foot</b>		<b>\$24.01</b>