

**APPENDIX 6-A: SAN FRANCISCO TO SAN JOSE PROJECT  
SECTION: PEPD RECORD SET CAPITAL COST ESTIMATE REPORT**

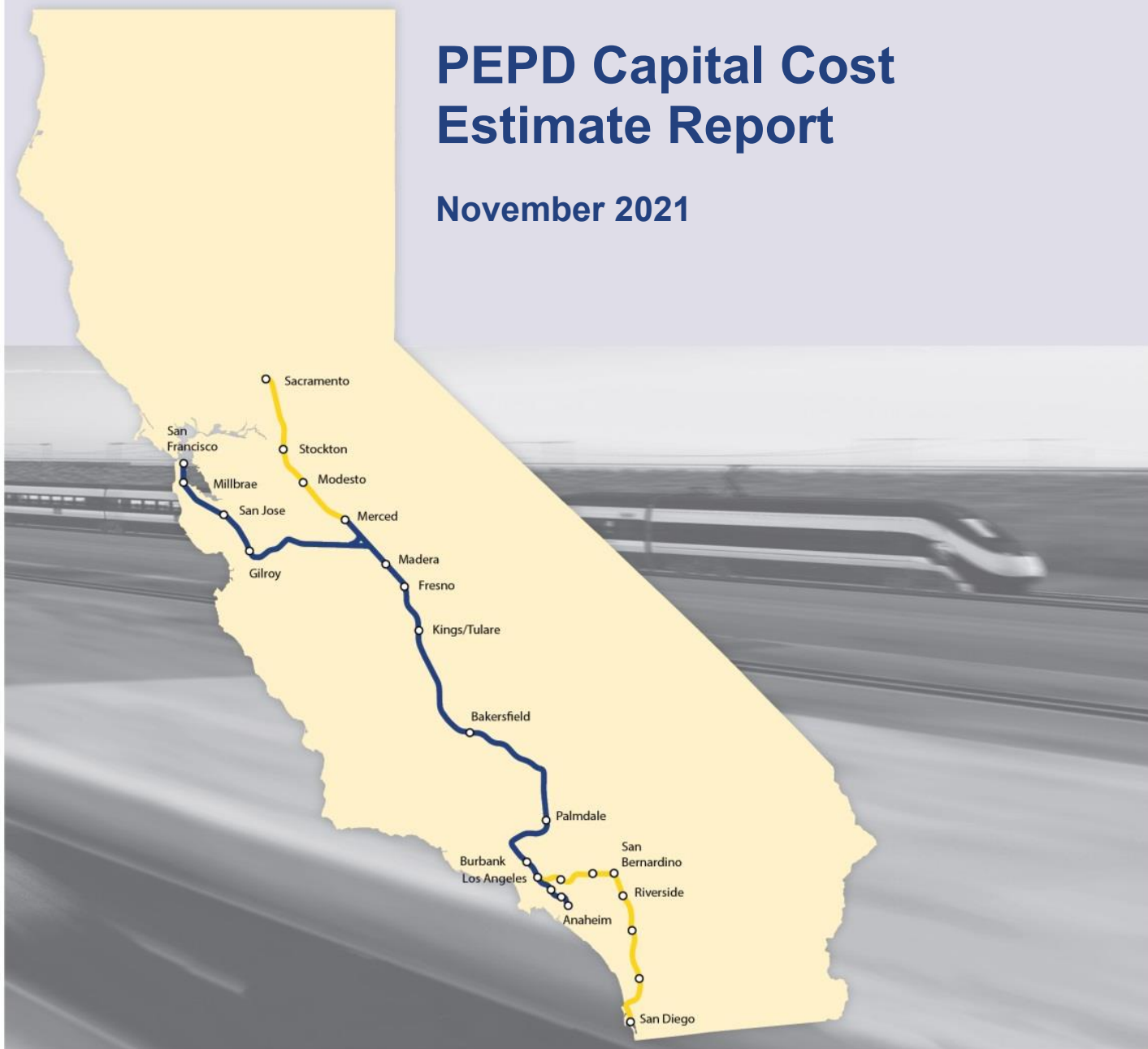


California High Speed Rail Authority

# *San Francisco to San Jose Project Section*

## PEPD Capital Cost Estimate Report

November 2021



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## 1.0 INTRODUCTION

### 1.1 Purpose and Scope

The purpose of this report is to present the Capital Cost Estimating Methodology (CCEM) in the preparation of reasonably reliable and accurate capital cost estimates for the PEPD Design level.

This document describes the methodology for preparation of estimated capital cost for the California High-Speed Rail Project (CHSRP) San Francisco to San Jose PEPD document. In addition, it presents the summary of Capital Cost Estimates along with detailed FRA Standard Cost Categories (SCC) and sub-categories or cost elements. Refinement of these cost estimates will be on-going during the advancement of engineering during subsequent project development phases.

The primary objectives of this report are:

- Identify the methods and processes used to develop the capital cost estimate during PEPD Design Level Phase;
- Identify the source documents and/or methodology used for pricing work;
- Specify how estimating assumptions have been documented during the course of the estimate development;
- Describe Unit Price Elements;
- Define the approach and methodology with respect to FRA Standard Cost Categories (SCC);
- Present estimates have been developed for each complete alignment alternative for the San Francisco to San Jose Project Section.

The estimating approach has been done in a manner that (1) allows consistent application to each alternative to facilitate comparisons; (2) provides the proper foundation for more detailed estimates as selected alternative(s) are further evaluated; and (3) provides the basis for subsequent construction package procurement level estimates with additional guidelines for a more detailed capital cost estimate.

Considering CHSRP's size, complexity, phased design, and number of participants, it is important that the CCEM is flexible enough to be applied at each point in the project development process to appropriately support the tracking, monitoring and control of cost changes through each of the program's design and implementation phases. This document addresses only the capital cost estimating requirements for the PEPD Design level. Additional guidelines have been developed for the preparation of capital cost estimates for subsequent phases of the CHSRP.

### 1.2 Statement of Technical Issue

The document is intended to address the preparation of a program cost estimate, including construction, acquisition of right-of-way, vehicles, and professional services during execution of the project.

The CCEM is intended to provide guidelines for accurately and consistently estimating the costs of capital infrastructure and systems for the PEPD Design level. It also provides a framework for defining the scope and technical basis for the estimates, the roles and responsibilities for specific estimating tasks among the project participations, and the structure, organization, and format for reporting capital costs for all geographic sections of CHSRP.

## 1.3 General Information

### 1.3.1 Definition of Terms

Technical terms, acronyms, or other cost estimating terminology specifically used for capital cost estimating purposes, unless otherwise indicated, will follow the standard definition of terms published by the Association for the Advancement of Cost Engineering (AACE) International in their Recommend Practice No. 10S-90 – Cost Engineering Terminology.

The following acronyms used in this document have specific connotations with regard to California High Speed Rail system.

#### Acronyms

AACE	Association for the Advancement of Cost Engineering
CCEM	Capital Cost Estimating Methodology
Authority	California High-Speed Rail Authority
CHSRP	California High-Speed Rail Project
ENR	Engineering News Record
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HST	High Speed Train
LCCA	Life Cycle Cost Analysis
O&M	Operating and Maintenance
PMT	Program Management Team
RC	Regional Consultant(s)
SCC	Standard Cost Categories
TM	Technical Memorandum
UPE	Unit Price Elements
WBS	Work Breakdown Structure

### 1.3.2 Units

The California High-Speed Rail Project is based on U.S. Customary Units consistent with guidelines prepared by the California Department of Transportation and defined by the National Institute of Standards and Technology (NIST). U.S. Customary Units are officially used in the United States and are also known in the US as “English” or “Imperial” units. In order to avoid confusion, all formal references to units of measure shall be made in terms of U.S. Customary Units.

Guidance for units of measure terminology, values, and conversions can be found in the Caltrans Metric Program Transitional Plan, Appendice B U.S. Customary General Primer (<http://www.dot.ca.gov/hq/oppd/metric/TransitionPlan/Appendice-B-US-Customary-General-Primer.pdf>). Caltrans Metric Program Transitional Plan, Appendice B can also be found as an attachment to the CHSRP Mapping and Survey Technical Memorandum.

## 2.0 CAPITAL COST ESTIMATING METHODOLOGY

Estimating methodologies are not static and must be flexible enough to adjust to the needs of the project's stage in the development process. The development process is described by the overall level of engineering design associated with the major development stages defined for the CHSRP:

Development Stage	Engineering Design Completion			
Programmatic EIR/S	0% - 5%			
Project EIR/S	5% - 15%			
PEPD Design Level	15% - 30%			
Procurement Level		30% - 90%		
Design-Build			90% - 100%	
	0	15%	30%	90% 100%

Each development stage is represented by a range of engineering design completion and influenced by ongoing updates to the ridership demand forecast and associated revisions to estimated system capacity, service design and operating plans. Because of this variability, the appropriate estimating methods or procedures at a given milestone will be based on the actual levels of project engineering and scope definition present at that time. Because the program will be designed in multiple segments, the level of engineering design completed for major high-speed rail system elements will be at different levels at any point in time. The goal of using established estimating methodologies is to assure that project estimates are prepared in a consistent and uniform manner, organized and standardized in methods, and formatted in order to facilitate estimate review and reporting.

### 2.1 Estimating Format

A consistent format is developed for the reporting, estimating, and managing of the project's capital costs. This document recommends using standard cost categories (SCC) established by the Federal Railroad Administration (FRA) as part of American Recovery and Reinvestment Act (ARRA) grant application requirements. Preparation of capital costs in SCC format is adopted throughout the PEPD Design phase.

### 2.2 Estimating Software

Commercially available database software systems are used depending on the type of work elements. For example, Timberline is used for surface heavy construction work elements and HCSS is used for underground work elements. However, in order to provide uniformity between numerous work elements and sections of the corridor and to provide consistent platform for reporting and analysis requirements, the cost data are exported to Microsoft Excel. This will better enable the review, edit consolidation and reporting of estimate components over the course and provide more flexibility to make adjustments.

### 2.3 FRA Standard Cost Category (SCC)

The methodology used for generating capital cost estimates has been consistent with FRA guidelines for estimating capital costs. The heart of the FRA guidance is the SCC, which enables FRA-funded projects to develop budget baselines that summarize to the SCC. This cost structure is used for capital cost detail and summary sheets and is described below. Where the level of design does not support quantity measurements, parametric estimating techniques were utilized.

### **2.3.1 Work Breakdown Structure (WBS)**

This involves the development of the Work Breakdown Structure (WBS) that is applied to cost estimating and cost reporting. The WBS for estimating includes a coding system that is used for estimating elements. The WBS for reporting includes the development of a coding system that allows the cost estimates to be sorted and presented by categories and subcategories as prescribed by the FRA.

The WBS for capital cost estimates for the PEPD Design level is based upon the FRA Standard Cost Categories is presented in Appendix A.

The primary WBS for quantities and unit prices are Unit Price Element's (UPE's). UPE's were originally developed as an estimating tool to assist in the development of conceptual level cost estimates and provide a method for translating typical construction items into a unit-based unit of measurement. The scope and definition of UPE's are developed by the Regional Consultant based on the unique design present in their project section.

### **2.3.2 Estimated Unit Costs**

The development of construction unit costs for each of the construction activities that is identified and quantified from the design documents. The development of individual or composite estimated unit costs is accomplished through the use of historical bid data and by unit cost analysis, as appropriate, using labor, equipment and material rates. Unit costs are expressed in current year dollars and are adjusted to reflect any regional variations.

These methods are used either individually or in combination. For the PEPD Design level, when limited engineering details are available, the historical bid price method is typically used.

#### **2.3.2.1 Historical Bid Price Method**

Historical bid prices are typically used to develop costs for common construction elements. When using this method, the time of bid and conditions of the historical project used for pricing is considered and factors applied as needed:

- Adjust bid prices where the bid date is older than 12 months from the current date by using an appropriate escalation factor
- Adjust bid prices to reflect conditions of the project, such as type of terrain, geographical location, soil, traffic and other related factors. For location factor adjustments, the City Cost Index as published by RS Means is used.

Sources for historical bid prices that are used may come from local, regional, statewide and national levels, as well as from international high-speed rail projects with unique high-speed elements. Historical unit prices that are used for the CHSRP will be verified for appropriateness and documented as to their source as well as any adjustments for site, escalation or location factors.

#### **2.3.2.2 Unit Cost Analysis Method**

The estimated unit cost analysis method is typically used to develop costs for complex construction elements including but not limited to viaducts, retained earth systems, tunneling and underground structures. This method allows for unit costs to be developed based on current local construction and market conditions, such as changes which might affect productivity or the cost of labor or materials. The following steps are required in order to develop a unit price using this method:

- Analyze the proposed construction conditions
- Estimate production rates where applicable
- Obtain materials prices using local available sources
- Determine labor and equipment rates where applicable
- Calculate direct unit price using the above factors



The following sources are used to obtain basic cost data that is input into the database estimating program in order to develop any needed construction unit prices:

- Labor Rates – RS Means national wages adjusted by City Cost Index factor, Federal Davis-Bacon Wage Determination and/or California Department of Industrial Relations Prevailing Wage Determinations.
- Equipment Rates – RS Means and/or Corp of Engineers Construction Equipment Ownership and Operating Expense Schedule, Region VII.
- Material Prices - Material and supply prices for locally available material are obtained from local supplier quotes, if possible. Secondary sources of material cost data may be taken from RS Means, Engineering News-Report (ENR) or other published resource.

A list of prototypical work elements and the units of measure are estimated for PEPD Design level with corresponding estimated unit cost. Appendix A presents the list of variable cost elements within each FRA SCC 10's to 60's series. When required, additional project-specific work elements reflecting unique site conditions and configurations are identified and their estimated costs are developed in addition to prototypical unit costs. Examples of these project-specific unit costs include very high and/or long span iconic bridge structures, grade separations, specific roadway improvements, unique utility relocations, staged construction to accommodate existing rail or vehicular traffic, or restrictive site access conditions in urban areas.

### 2.3.3 Quantity Takeoffs

The task of quantity takeoffs involves preparation of estimated quantities either by direct measurement and calculation of construction elements that are shown in design drawings, sketches, electronically calculated from CADD files or established as an allowance quantity based on professional experience and judgment. Quantity take-offs have been prepared by the Regional Consultant and are presented in the San Francisco to San Jose PEPD quantities document "FJ\_2021\_PEPD\_AppA\_Qty\_20210929 and "JM 2021\_PEPD\_AppA-Qty-v10\_20210929"

### 2.3.4 Allocated and Unallocated Contingencies

Contingency, in the statistical sense, is the estimated percentage by which a calculated value may differ from its true or final value and is typically included in an estimate as an allowance for the level of engineering design completion or to address imperfections in the estimating methods used at the various project development stages. Contingency is typically added to a particular item or group of items by the use of percentage multipliers. Contingency is generally greatest for the early stage of project development and decreases with advancement in the level of engineering design and pricing detail. During the preliminary design of the high-speed rail project, the limited level of design information that is available requires the use of contingency allowances that are allocated against specific construction or procurement cost categories. The percentage selected for a given cost category are generally based on level of definition of the scope of work involved and substantiated by professional judgment and experience relative to level of uncertainty and historical cost variability typically seen for work within a particular cost category. For the purposes of this estimating program, contingency is assigned into two major categories – allocated and unallocated.

Allocated contingency is added to each cost category based on an assessment of the quality of design information; means and methods; and site accessibility available for individual items of work. This contingency typically falls in a range of 10% to 25%. The exact percentage selected for each cost category is based on professional judgment and experience related to the cost variability typically seen for items of work within a particular cost category. The contingency is generally higher for underground elements reflecting the additional exposure for unknowns as well as the construction complexity. It is also higher for stations, terminals, storage yard facilities and utilities since their design progress is still in the conceptual level and identification of all the utilities are not determined. The percentages shown in Table 2-1 are the values that are normally used; however, slightly higher or lower values are used if a project-specific condition warrant.

Unallocated contingency is typically included to address uncertainties that are more global in nature like schedule delays, changes in contracting environment, or other such issues that are not associated with individual construction activities. Unallocated contingencies will be estimated at 5 percent of the total construction costs.

**Table 2-1 Allocated Contingency Percentages by Cost Category**

Cost Category No.	Description	Allocated Contingency Percentage
<b>10 Track Structures and Track</b>		
10.01	Track structure: Viaduct	15%
10.02	Track structure: Major/Movable bridges	15%
10.03	Track structure: Under grade bridges	15%
10.04	Track structure: Culverts and drainage structures	15%
10.05	Track structure: Cut and Fill (> 4' height/depth)	20%
10.06	Track structure: At-grade (grading and subgrade stabilization)	10%
10.07	Track structure: Tunnel	25%
10.08	Track structure: Retaining walls and systems	15%
10.09	Track new construction: Conventional ballasted	15%
10.10	Track new construction: Non-ballasted	15%
10.11	Track rehabilitation: Ballast and surfacing	15%
10.12	Track rehabilitation: Ditching and drainage	15%
10.13	Track rehabilitation: Component replacement (rail, ties, etc)	15%
10.14	Track: Special track work (switches, turnouts, insulated joints)	15%
10.15	Track: Major interlocking	15%
10.16	Track: Switch heaters (with power and control)	15%
10.17	Track: Vibration and noise dampening	15%
10.18	Other linear structures including fencing, sound walls	15%
<b>20 Stations, Terminals, Intermodal</b>		25%
<b>30 Support Facilities: Yards, Shops, Admin. Bldgs</b>		25%
<b>40 Sitework, Right of Way, Land, Existing Improvements</b>		
40.01	Demolition, clearing, site preparation	25%
40.02	Site utilities, utility relocation	25%
40.03	Hazardous material, contaminated soil removal/mitigation, ground water treatments	15%
40.04	Environmental mitigation: wetlands, historic/archeology, parks	20%
40.05	Site structures including retaining walls, sound walls	25%
40.06	Temporary facilities and other indirect costs during construction	10%

40.07	Purchase or lease of real estate	35%
40.08	Highway/pedestrian overpass/grade separations	20%
40.09	Relocation of existing households and businesses	0%
<b>50 Communications &amp; Signaling</b>		15%
<b>60 Electric Traction</b>		15%
<b>70 Vehicles</b>		0%
<b>80 Professional Services</b>		0%

### 2.3.5 Environmental Mitigation

An allowance to account for the cost of environmental mitigation that relates to hydrology and water resources; wetland impact; hazardous material and waste; historic/archeology; safety and security; noise, vibration and air quality during construction and permanent aesthetic is included in the total capital cost. This allowance is based on 3% of the total cost of track structures, track work, station buildings, roadway modification and highway grade separation.

### 2.3.6 Right-of-Way Cost Estimate

This involves preparing estimated quantities of impacted properties, either permanent takes or temporary easements, which result from construction, operation, and maintenance of proposed high-speed rail alignment alternatives. In order to arrive at the estimated cost, professional experience and judgment in the area of property valuation, business damages, and legal and administrative issues as they relate to the estimation of right-of-way costs have been applied. The values used in the cost estimate were developed by the Regional consultant to reflect the design changes. "Memorandum - HSR San Francisco to San Jose Segment - Limited Cost Estimate 09-03-21" and "Memorandum - HSR JM Segment - Scott to W Alma Segregation 09.03.21"

### 2.3.7 Vehicle Estimate

The costs for the San Francisco to San Jose section do not include acquisition of high-speed train vehicles. Acquisition of trainsets is considered to be a system-wide procurement and is not associated with construction of individual sections of the CHSRP System. Consistent with the Revised 2016 Business Plan, the cost of vehicles was determined by using publicly available data regarding recent sales of comparable equipment to other CHSRP projects around the world and by informal consultations with the manufacturers.

### 2.3.8 Program Implementation/Professional Services Add-ons

Program Implementation costs are included to represent the costs of engineering, project and construction management, contract administration, permits and fees, training/start-up/testing and any force account work. These add-on costs are calculated as a percentage of construction costs only (applied individually and not cumulatively and excluding vehicle procurement and right-of-way costs) and presented under Professional Services cost category in the estimate. The management and administration cost associated with right-of-way and rolling stock are included with the respective items.

Preliminary Engineering	2.0%
Program Management	3.0%
Final Design	6.0%
Construction Management	4.0%
Agency Costs	0.5%
Total	15.5%

In addition, an allowance for system start-up and pre-revenue testing is added to the Professional Services cost category in the amount of 6% of the Train Controls, Communications and Electrification construction costs.

### 2.3.9 Escalation

Estimates are prepared in Base Year dollars with the Base Year defined as the current calendar year. Unit costs are updated annually or as required. For cost estimates with a base year that is older than the current calendar by one or more years, actual historical construction cost index values are used to calculate the escalation rate to be applied to bring a cost from the period in question to the present.

### 2.3.10 Finance Charge

Finance charges are not included in the capital cost estimates.

## 2.4 Estimate Validation

Following preparation of the PEPD Design level estimates, cost estimates are subjected to a validation process including reviews by subject matter experts in the areas of engineering and construction.

## 2.5 Estimate Reconciliation

Reconciliations are made between current cost estimates and cost estimates that were developed in previous design phases. The goal of reconciliation is to identify and document significant changes that may have occurred since the preparation of the prior capital cost estimate. Significant changes are identified in the reconciliation under one of three categories that best reflects the cause for the change: Quantity, Unit Price, or Scope, as applicable.

## 2.6 Estimate Assumption and Exclusions

- All costs are in Q4 2021\$.
- Allocated contingency is included in all costs.
- Track relocations in an active corridor have been considered but final costs will vary as design gets finalized through coordination with Caltrain.
- ROW costs have been included based on current ROW report as referenced in the list of documents from the RC. High value is considered for the estimate.
- ROW costs do not include any procurement costs or contribution for sharing the corridor with railroads.

- This estimate includes the section from Scott Blvd. to Alma Ave including the San Jose station.
- LMF East assumed 10% of the materials to be disposed of is contaminated; LMF West assumed 20% of the materials to be disposed of is contaminated.
- Costs contained in Appendix C are broken down by the 2 main Alternatives A and B going from 4<sup>th</sup> & King Street Station to Scott Blvd. Also Alt A and Alt B with Milbrae Reduced Site Plan (MRSP) options is included in Appendix C. In addition to the 2 main alternatives there are 4 supplemental alternatives going from Scott Blvd. to Alma Ave. (alts. 1,2,3,4) including San Jose/Diridon Station. The estimate tables have been combined in the following manner: Alt Alt A+4, Alt A+4 DV1, Alt B+1, Alt B+2, Alt B+3.
- Appendix C is divided into 2 parts summarized by UPE's and FRA SCC major categories.
- This estimate does not include costs that may be necessary for integration of communications and train control with the Caltrain systems.
- Allowance for Transbay Terminal termination and any costs towards the contribution of the Caltrain electrification project are not included in this estimate as they are budgetary set asides at the programmatic level.
- There may be some minor rounding variances due to allocation of indirect costs back into total costs on very large sum.

## APPENDIX A WORK BREAKDOWN STRUCTURE (WBS)

### WORK BREAKDOWN STRUCTURE (FRA STANDARD COST CATEGORIES)

<b>10 TRACK STRUCTURES &amp; TRACK</b>	
10.01	Track structure: Viaduct
10.02	Track structure: Major/Movable bridge
10.03	Track structure: Under grade Bridges
10.04	Track structure: Culverts and drainage structures
10.05	Track structure: Cut and Fill (> 4' height/depth)
10.06	Track structure: At-grade (grading and subgrade stabilization)
10.07	Track structure: Tunnel
10.08	Track structure: Retaining walls and systems
10.09	Track new construction: Conventional ballasted
10.10	Track new construction: Non-ballasted
10.11	Track rehabilitation: Ballast and surfacing
10.12	Track rehabilitation: Ditching and drainage
10.13	Track rehabilitation: Component replacement (rail, ties, etc)
10.14	Track: Special track work (switches, turnouts, insulated joints)
10.15	Track: Major interlockings
10.16	Track: Switch heaters (with power and control)
10.17	Track: Vibration and noise dampening
10.18	Other linear structures including fencing, sound walls
<b>20 STATIONS, TERMINALS, INTERMODAL</b>	
20.01	Station buildings: Intercity passenger rail only
20.02	Station buildings: Joint use (commuter rail, intercity bus)
20.03	Platforms
20.04	Elevators, escalators
20.05	Joint commercial development
20.06	Pedestrian / bike access and accommodation, landscaping, parking lots
20.07	Automobile, bus, van accessways including roads
20.08	Fare collection systems and equipment
20.09	Station security

**30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS**

30.01	Administration building: Office, sales, storage, revenue counting
30.02	Light maintenance facility
30.03	Heavy maintenance facility
30.04	Storage or maintenance-of-way building/bases
30.05	Yard and yard track

**40 SITEWORK, RIGHT OF WAY, LAND, EXISTING IMPROVEMENTS**

40.01	Demolition, clearing, site preparation
40.02	Site utilities, utility relocation
40.03	Hazardous material, contaminated soil removal/mitigation, ground water treatments
40.04	Environmental mitigation: wetlands, historic/archeology, parks
40.05	Site structures including retaining walls, sound walls
40.06	Temporary facilities and other indirect costs during construction
40.07	Purchase or lease of real estate
40.08	Highway/pedestrian overpass/grade separations
40.09	Relocation of existing households and businesses

**50 COMMUNICATIONS & SIGNALING**

50.01	Wayside signaling equipment
50.02	Signal power access and distribution
50.03	On-board signaling equipment
50.04	Traffic control and dispatching systems
50.05	Communications
50.06	Grade crossing protection
50.07	Hazard detectors: dragging equipment high water, slide, etc.
50.08	Station train approach warning system

**60 ELECTRIC TRACTION**

60.01	Traction power transmission: High voltage
60.02	Traction power supply: Substations
60.03	Traction power distribution: Catenary and third rail
60.04	Traction power control

**70 VEHICLES**

70.00	Vehicle acquisition: Electric locomotive
70.01	Vehicle acquisition: Non-electric locomotive

70.02	Vehicle acquisition: Electric multiple unit
70.03	Vehicle acquisition: Diesel multiple unit
70.04	Vehicle acquisition: Loco-hauled passenger cars w/ ticketed space
70.05	Vehicle acquisition: Loco-hauled passenger cars w/o ticketed space
70.06	Vehicle acquisition: Maintenance of way vehicles
70.07	Vehicle acquisition: Non-railroad support vehicles
70.08	Vehicle refurbishment: Electric locomotive
70.09	Vehicle refurbishment: Non-electric locomotive
70.10	Vehicle refurbishment: Electric multiple unit
70.11	Vehicle refurbishment: Diesel multiple unit
70.12	Vehicle refurbished: Passenger loco-hauled car w/ ticketed space
70.13	Vehicle refurbished: Non-passenger loco-hauled car w/o ticketed space
70.14	Vehicle refurbishment: Maintenance of way vehicles
70.15	Spare parts

#### **80 PROFESSIONAL SERVICES (applies to Cats. 10 60)**

80.01	Service Development Plan/Service Environmental
80.02	Preliminary Engineering/Project Environmental
80.03	Final design
80.04	Project management for design and construction
80.05	Construction administration & management
80.06	Professional liability and other non-construction insurance
80.07	Legal; Permits; Review Fees by other agencies, cities, etc.
80.08	Surveys, testing, investigation
80.09	Engineering inspection
80.10	Start up

#### **90 UNALLOCATED CONTINGENCY**

#### **100 FINANCE CHARGES**



## APPENDIX B TYPICAL UNIT COST ELEMENTS

No.	DESCRIPTION	UNIT
<b>10.01</b>	<b>Track structure: Viaduct</b>	
10.01.122	Elevated Structure - 1 Track (20' Avg. Pier Ht)	Route Mile
10.01.123	Elevated Structure - 1 Track (30' Avg. Pier Ht)	Route Mile
10.01.124	Elevated Structure - 1 Track (40' Avg. Pier Ht)	Route Mile
10.01.125	Elevated Structure - 1 Track (50' Avg. Pier Ht)	Route Mile
10.01.126	Elevated Structure - 1 Track (60' Avg. Pier Ht)	Route Mile
10.01.127	Elevated Structure - 1 Track (70' Avg. Pier Ht)	Route Mile
10.01.222	Elevated Structure - 2 Track (20' Avg. Pier Ht)	Route Mile
10.01.223	Elevated Structure - 2 Track (30' Avg. Pier Ht)	Route Mile
10.01.224	Elevated Structure - 2 Track (40' Avg. Pier Ht)	Route Mile
10.01.225	Elevated Structure - 2 Track (50' Avg. Pier Ht)	Route Mile
10.01.226	Elevated Structure - 2 Track (60' Avg. Pier Ht)	Route Mile
10.01.227	Elevated Structure - 2 Track (70' Avg. Pier Ht)	Route Mile
10.01.242	Elevated Structure - 4 Track (20' Avg. Pier Ht)	Route Mile
10.01.243	Elevated Structure - 4 Track (30' Avg. Pier Ht)	Route Mile
10.01.244	Elevated Structure - 4 Track (40' Avg. Pier Ht)	Route Mile
10.01.245	Elevated Structure - 4 Track (50' Avg. Pier Ht)	Route Mile
10.01.246	Elevated Structure - 4 Track (60' Avg. Pier Ht)	Route Mile
10.01.247	Elevated Structure - 4 Track (70' Avg. Pier Ht)	Route Mile
10.01.322	Elevated Structure (LS) - 1 Track (20' Avg. Pier Ht)	Route Mile
10.01.323	Elevated Structure (LS) - 1 Track (30' Avg. Pier Ht)	Route Mile
10.01.324	Elevated Structure (LS) - 1 Track (40' Avg. Pier Ht)	Route Mile
10.01.325	Elevated Structure (LS) - 1 Track (50' Avg. Pier Ht)	Route Mile
10.01.326	Elevated Structure (LS) - 1 Track (60' Avg. Pier Ht)	Route Mile
10.01.327	Elevated Structure (LS) - 1 Track (70' Avg. Pier Ht)	Route Mile
10.01.422	Elevated Structure (LS) - 2 Track (20' Avg. Pier Ht)	Route Mile
10.01.423	Elevated Structure (LS) - 2 Track (30' Avg. Pier Ht)	Route Mile
10.01.424	Elevated Structure (LS) - 2 Track (40' Avg. Pier Ht)	Route Mile
10.01.425	Elevated Structure (LS) - 2 Track (50' Avg. Pier Ht)	Route Mile
10.01.426	Elevated Structure (LS) - 2 Track (60' Avg. Pier Ht)	Route Mile
10.01.427	Elevated Structure (LS) - 2 Track (70' Avg. Pier Ht)	Route Mile
10.01.431	Elevated Structure (LS-Tall) - 2-Single Tracks (110' Avg. Pier Ht)	Route Mile

No.	DESCRIPTION	UNIT
10.01.432	Elevated Structure (LS-Tall) - 2-Single Tracks (120' Avg. Pier Ht)	Route Mile
10.01.512	Elevated Structure Straddle over 2 RR - 1 Track (20' Avg. Pier Ht)	Route Mile
10.01.513	Elevated Structure Straddle over 2 RR - 1 Track (30' Avg. Pier Ht)	Route Mile
10.01.514	Elevated Structure Straddle over 2 RR - 1 Track (40' Avg. Pier Ht)	Route Mile
10.01.515	Elevated Structure Straddle over 2 RR - 1 Track (50' Avg. Pier Ht)	Route Mile
10.01.522	Elevated Structure Straddle over 2 RR - 2 Track (20' Avg. Pier Ht)	Route Mile
10.01.523	Elevated Structure Straddle over 2 RR - 2 Track (30' Avg. Pier Ht)	Route Mile
10.01.524	Elevated Structure Straddle over 2 RR - 2 Track (40' Avg. Pier Ht)	Route Mile
10.01.525	Elevated Structure Straddle over 2 RR - 2 Track (50' Avg. Pier Ht)	Route Mile
10.01.612	Elevated Structure Straddle over 4 RR - 1 Track (20' Avg. Pier Ht)	Route Mile
10.01.613	Elevated Structure Straddle over 4 RR - 1 Track (30' Avg. Pier Ht)	Route Mile
10.01.614	Elevated Structure Straddle over 4 RR - 1 Track (40' Avg. Pier Ht)	Route Mile
10.01.615	Elevated Structure Straddle over 4 RR - 1 Track (50' Avg. Pier Ht)	Route Mile
10.01.622	Elevated Structure Straddle over 4 RR - 2 Track (20' Avg. Pier Ht)	Route Mile
10.01.623	Elevated Structure Straddle over 4 RR - 2 Track (30' Avg. Pier Ht)	Route Mile
10.01.624	Elevated Structure Straddle over 4 RR - 2 Track (40' Avg. Pier Ht)	Route Mile
10.01.625	Elevated Structure Straddle over 4 RR - 2 Track (50' Avg. Pier Ht)	Route Mile
10.01.944	Elevated Structure - 2 Track w/ 2 Single Trenches	Route Mile
<b>10.02</b>	<b>Track structure: Major/Movable bridge</b>	
10.02.013	Bridge Structure - 3 span with 1 Track	Route Mile
10.02.023	Bridge Structure - 3 span with 2 Track	Route Mile
10.02.043	Bridge Structure - 3 span with 4 Track	Route Mile
<b>10.05</b>	<b>Track structure: Cut and Fill (&gt; 4' height/depth)</b>	
10.05.111	At-Grade Track-bed in Cut - 1 Track (5' Avg. Exc Depth)	Route Mile

No.	DESCRIPTION	UNIT
10.05.112	At-Grade Track-bed in Cut - 1 Track (10' Avg. Exc Depth)	Route Mile
10.05.113	At-Grade Track-bed in Cut - 1 Track (15' Avg. Exc Depth)	Route Mile
10.05.114	At-Grade Track-bed in Cut - 1 Track (20' Avg. Exc Depth)	Route Mile
10.05.121	At-Grade Track-bed in Cut - 2 Track (5' Avg. Exc Depth)	Route Mile
10.05.122	At-Grade Track-bed in Cut - 2 Track (10' Avg. Exc Depth)	Route Mile
10.05.123	At-Grade Track-bed in Cut - 2 Track (15' Avg. Exc Depth)	Route Mile
10.05.124	At-Grade Track-bed in Cut - 2 Track (20' Avg. Exc Depth)	Route Mile
10.05.126	At-Grade Track-bed in Cut - 2 Track (40' Avg. Exc Depth)	Route Mile
10.05.128	At-Grade Track-bed in Cut - 2 Track (60' Avg. Exc Depth)	Route Mile
10.05.130	At-Grade Track-bed in Cut - 2 Track (80' Avg. Exc Depth)	Route Mile
10.05.132	At-Grade Track-bed in Cut - 2 Track (100' Avg. Exc Depth)	Route Mile
10.05.211	At-Grade Track-bed in Fill - 1 Track (5' Avg. Fill Ht)	Route Mile
10.05.212	At-Grade Track-bed in Fill - 1 Track (10' Avg. Fill Ht)	Route Mile
10.05.213	At-Grade Track-bed in Fill - 1 Track (15' Avg. Fill Ht)	Route Mile
10.05.214	At-Grade Track-bed in Fill - 1 Track (20' Avg. Fill Ht)	Route Mile
10.05.221	At-Grade Track-bed in Fill - 2 Track (5' Avg. Fill Ht)	Route Mile
10.05.222	At-Grade Track-bed in Fill - 2 Track (10' Avg. Fill Ht)	Route Mile
10.05.223	At-Grade Track-bed in Fill - 2 Track (15' Avg. Fill Ht)	Route Mile
10.05.224	At-Grade Track-bed in Fill - 2 Track (20' Avg. Fill Ht)	Route Mile
10.05.226	At-Grade Track-bed in Fill - 2 Track (40' Avg. Fill Ht)	Route Mile
10.05.228	At-Grade Track-bed in Fill - 2 Track (60' Avg. Fill Ht)	Route Mile
10.05.230	At-Grade Track-bed in Fill - 2 Track (80' Avg. Fill Ht)	Route Mile
10.05.232	At-Grade Track-bed in Fill - 2 Track (100' Avg. Fill Ht)	Route Mile
<b>10.06</b>	<b>Track structure: At-grade (grading and subgrade stabilization)</b>	
10.06.210	At-Grade Track-bed with Closed Drainage - 1 Track	Route Mile
10.06.220	At-Grade Track-bed with Closed Drainage - 2 Track	Route Mile
10.06.230	At-Grade Track-bed with Closed Drainage - 3 Track	Route Mile
10.06.240	At-Grade Track-bed with Closed Drainage - 4 Track	Route Mile
<b>10.07</b>	<b>Track structure: Tunnel</b>	
10.07.101	TBM Single Track Twin Tunnel 30ft ID Unpressurized TBM in hard rock	Route Mile
10.07.102	TBM Single Track Twin Tunnel 30ft ID Slurry TBM in hard rock	Route Mile
10.07.103	TBM Single Track Twin Tunnel 30ft ID in soft ground	Route Mile
10.07.104	TBM Double Track Tunnel 50ft ID in soft ground	Route Mile

No.	DESCRIPTION	UNIT
10.07.105	TBM Double Track Tunnel 40ft ID in soft ground	Route Mile
10.07.201	D&B Single Track Twin Tunnel 30ft ID in hard rock	Route Mile
10.07.202	D&B Single Track Twin Tunnel 30ft ID in rock	Route Mile
10.07.203	D&B Double Track Tunnel 40ft ID in hard rock	Route Mile
10.07.204	D&B Double Track Tunnel 40ft ID in rock	Route Mile
10.07.205	D&B Double Track Tunnel 50ft ID in hard rock	Route Mile
10.07.206	D&B Double Track Tunnel 50ft ID in rock	Route Mile
10.07.301	SEM Single Track Twin Tunnel 30ft ID in soft ground	Route Mile
10.07.302	SEM Single Track Twin Tunnel 30ft ID in soft ground	Route Mile
10.07.303	SEM Double Track Tunnel 40ft ID in soft ground	Route Mile
10.07.304	SEM Double Track Tunnel 40ft ID in soft ground	Route Mile
10.07.305	SEM Double Track Tunnel 50ft ID in soft ground	Route Mile
10.07.306	SEM Double Track Tunnel 50ft ID in soft ground	Route Mile
10.07.401	RH Single Track Twin Tunnel 30ft ID in soft rock	Route Mile
10.07.402	RH Single Track Twin Tunnel 30ft ID in soft rock	Route Mile
10.07.403	RH Double Track Tunnel 40ft ID in soft rock	Route Mile
10.07.404	RH Double Track Tunnel 40ft ID in soft rock	Route Mile
10.07.405	RH Double Track Tunnel 50ft ID in soft rock	Route Mile
10.07.406	RH Double Track Tunnel 50ft ID in soft rock	Route Mile
10.07.207	D&B Cross Passage conservative cost in rock	Linear Feet
10.07.407	RH Cross Passage conservative cost in soft rock	Linear Feet
10.07.501	Cross Passage in Soft Ground	Linear Feet
10.07.502	Cross Passage in Soft Ground, including jet grout	Linear Feet
10.07.114	Cut & Cover Box - 1 Track/ 1 Box (40' Avg. Exc Depth)	Route Mile
10.07.115	Cut & Cover Box - 1 Track/ 1 Box (50' Avg. Exc Depth)	Route Mile
10.07.116	Cut & Cover Box - 1 Track/ 1 Box (60' Avg. Exc Depth)	Route Mile
10.07.214	Cut & Cover Box - 2 Track / 1 Box (40' Avg. Exc Depth)	Route Mile
10.07.215	Cut & Cover Box - 2 Track / 1 Box (50' Avg. Exc Depth)	Route Mile
10.07.216	Cut & Cover Box - 2 Track / 1 Box (60' Avg. Exc Depth)	Route Mile
10.07.224	Cut & Cover Box - 2 Track/ 2 Box (40' Avg. Exc Depth)	Route Mile
10.07.225	Cut & Cover Box - 2 Track / 2 Box (50' Avg. Exc Depth)	Route Mile
10.07.226	Cut & Cover Box - 2 Track / 2 Box (60' Avg. Exc Depth)	Route Mile
10.07.414	Cut & Cover Box - 4 Track / 1 Box (40' Avg. Exc Depth)	Route Mile
10.07.415	Cut & Cover Box - 4 Track / 1 Box (50' Avg. Exc Depth)	Route Mile
10.07.416	Cut & Cover Box - 4 Track / 1 Box (60' Avg. Exc Depth)	Route Mile

No.	DESCRIPTION	UNIT
10.07.801	Ventilation Shaft	VF
10.07.802	Mid-Line Ventilation Structure	LS
10.07.803	Tunnel Portal Structure	LS
10.07.805	Emergency Access Shaft	VF
10.07.850	Pumping Station	EA
10.07.901	Mechanical & Electrical Allowance for Underground (Single)	Route Mile
10.07.902	Mechanical & Electrical Allowance for Underground (Double)	Route Mile
10.07.920	Ventilation Equipment Allowance	EA
10.07.922	Double Deck - 2 Track Trench on Top of 2 Track C&C Box	Route Mile
10.07.950	Allowance for Construction Monitoring	Route Mile
<b>10.08</b>	<b>Track structure: Retaining walls and systems</b>	
10.08.211	Retained Cut, Trench - 1 Track (10' Avg. Exc Depth)	Route Mile
10.08.212	Retained Cut, Trench - 1 Track (20' Avg. Exc Depth)	Route Mile
10.08.213	Retained Cut, Trench - 1 Track (30' Avg. Exc Depth)	Route Mile
10.08.221	Retained Cut, Trench - 2 Track (10' Avg. Exc Depth)	Route Mile
10.08.222	Retained Cut, Trench - 2 Track (20' Avg. Exc Depth)	Route Mile
10.08.223	Retained Cut, Trench - 2 Track (30' Avg. Exc Depth)	Route Mile
10.08.241	Retained Cut, Trench - 4 Track (10' Avg. Exc Depth)	Route Mile
10.08.242	Retained Cut, Trench - 4 Track (20' Avg. Exc Depth)	Route Mile
10.08.243	Retained Cut, Trench - 4 Track (30' Avg. Exc Depth)	Route Mile
10.08.344	Retained Cut, Staged Trench - 4 Track (40' Avg. Exc Depth)	Route Mile
10.08.346	Retained Cut, Staged Trench - 4 Track (60' Avg. Exc Depth)	Route Mile
10.08.411	Retained Fill, Walls Both Sides - 1 Tracks (10' Avg. Wall Ht)	Route Mile
10.08.412	Retained Fill, Walls Both Sides - 1 Tracks (20' Avg. Wall Ht)	Route Mile
10.08.413	Retained Fill, Walls Both Sides - 1 Tracks (30' Avg. Wall Ht)	Route Mile
10.08.421	Retained Fill, Walls Both Sides - 2 Tracks (10' Avg. Wall Ht)	Route Mile
10.08.422	Retained Fill, Walls Both Sides - 2 Tracks (20' Avg. Wall Ht)	Route Mile
10.08.423	Retained Fill, Walls Both Sides - 2 Tracks (30' Avg. Wall Ht)	Route Mile
<b>10.09</b>	<b>Track new construction: Conventional ballasted</b>	
10.09.110	Ballasted Track - 1 Track	Route Mile
10.09.112	Ballasted Track (Track Laying Machine) - 1 Track	Route Mile
10.09.120	Ballasted Track - 2 Track	Route Mile
10.09.122	Ballasted Track (Track Laying Machine) - 2 Track	Route Mile
10.09.240	Ballasted Track - 2 Track (Station Track)	Route Mile
10.09.810	Ballasted Freight Track - 1 Track	Route Mile

No.	DESCRIPTION	UNIT
10.09.820	Ballasted Freight Track - 2 Track	Route Mile
10.09.910	Ballasted Track Relocation - 1 Track (Temporary)	Route Mile
10.09.920	Ballasted Track Relocation - 1 Track (Permanent)	Route Mile
<b>10.10</b>	<b>Track new construction: Non-ballasted</b>	
10.10.110	Direct Fixation Track - 1 Track	Route Mile
10.10.120	Direct Fixation Track - 2 Track	Route Mile
10.10.140	Direct Fixation Track - 4 Track	Route Mile
10.10.210	Independent Dual Block Track - 1 Track	Route Mile
10.10.220	Independent Dual Block Track - 2 Track	Route Mile
10.10.240	Independent Dual Block Track - 4 Track	Route Mile
<b>10.14</b>	<b>Track: Special track work (switches, turnouts, insulated joints)</b>	
10.14.100	Direct Fixation Turnout (60 MPH)	EA
10.14.105	Direct Fixation Turnout (80 MPH)	EA
10.14.110	Direct Fixation Turnout (110 MPH)	EA
10.14.115	Direct Fixation Turnout (150 MPH)	EA
10.14.130	Direct Fixation Crossover (60 MPH)	EA
10.14.135	Direct Fixation Crossover (80 MPH)	EA
10.14.140	Direct Fixation Crossover (110 MPH)	EA
10.14.145	Direct Fixation Crossover (150 MPH)	EA
10.14.200	Ballasted Turnout (60 MPH)	EA
10.14.205	Ballasted Turnout (80 MPH)	EA
10.14.210	Ballasted Turnout (110 MPH)	EA
10.14.215	Ballasted Turnout (150 MPH)	EA
10.14.300	Ballasted Crossover (60 MPH)	EA
10.14.305	Ballasted Crossover (80 MPH)	EA
10.14.310	Ballasted Crossover (110 MPH)	EA
10.14.315	Ballasted Crossover (150 MPH)	EA
10.14.400	Terminal - Bumping Post	
<b>20.01</b>	<b>Station buildings: Intercity passenger rail only</b>	
20.01.105	Millbrae Station	LS
20.01.105	Millbrae Station - Site Elements	LS
20.02.200	Redwood/Palo Alto Station	LS
20.02.201	Redwood/Palo Alto Station - Site Elements	LS
20.02.215	Gilroy Station	LS

No.	DESCRIPTION	UNIT
20.02.216	Gilroy Station - Site Elements	LS
20.02.225	San Jose Station	LS
20.02.226	San Jose Station-Site Elements	LS
20.01.100	Artic Station	LS
20.01.110	LA Union Station	LS
20.02.205	Norwalk Station	LS
20.02.206	Norwalk Station - Site Elements	LS
20.02.210	Tulare Station	LS
20.02.211	Tulare Station - Site Elements	LS
20.02.220	Burbank Station	LS
20.02.221	Burbank Station - Site Elements	LS
20.02.230	Merced Station	LS
20.02.231	Merced Station - Site Elements	LS
20.02.235	Fresno Station	LS
20.02.236	Fresno Station - Site Elements	LS
20.02.240	Bakersfield Station	LS
20.02.241	Bakersfield Station - Site Elements	LS
20.02.245	Palmdale Station	LS
20.02.246	Palmdale Station - Site Elements	LS
20.02.250	Sylmar Station	LS
20.02.251	Sylmar Station - Site Elements	LS
<b>20.06</b>	<b>Pedestrian / bike access and accommodation, landscaping, parking lots</b>	
20.06.120	Pedestrian Access (Cut & Cover)	LF
20.06.140	Pedestrian Plaza	SF
20.06.160	Pedestrian Access, Vertical Structure, 30' Height	EA
20.06.210	Parking - At Grade	STL
20.06.250	Parking - Structured (Above Grade)	STL
20.06.800	Landscaping Allowance	SF
20.06.810	Landscaping Allowance, Guideway	Route Mile
<b>20.07</b>	<b>Automobile, bus, van accessways including roads</b>	
20.07.010	Roadway Modification, New AC Paving	SF
20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	SF
20.07.710	Permanent Service/Emergency Access Road (20' Wide)	Route Mile



No.	DESCRIPTION	UNIT
20.07.715	Access Road Entrance Point	EA
20.07.800	Streetscaping Allowance	ESF
<b>30.02</b>	<b>Light maintenance facility</b>	
30.02.010	Light Maintenance Facility (LMF)	EA
<b>30.03</b>	<b>Heavy maintenance facility</b>	
30.03.010	Heavy Maintenance Facility (HMF)	EA
<b>30.04</b>	<b>Storage or maintenance-of-way building/bases</b>	
30.04.010	Maintenance of Way Facility (MOWF)	EA
<b>30.05</b>	<b>Yard and yard track</b>	
30.05.110	Ballasted Track - Yard Track	Route Mile
30.05.200	Ballasted Turnout, No. 15	EA
30.05.210	Ballasted Diamond Crossover, No. 15	EA
30.05.250	Heavy Duty Rubber Grade Crossing	TF
<b>40.01</b>	<b>Demolition, clearing, site preparation</b>	
40.01.010	Demolition Allowance, Bridge	SF
40.01.050	Demolition Allowance, Building (1 Story)	SF
40.01.060	Demolition Allowance, Building (2 Story)	SF
40.01.110	Demolition Allowance, Asphalt Pavement	SY
40.01.140	Demolition Allowance, Concrete Curb	LF
40.01.150	Demolition Allowance, Concrete Sidewalk	SY
40.01.810	Demolition Allowance, Remove Railroad Track	Route Mile
40.01.900	Miscellaneous Excavation & Support Items	LS
<b>40.02</b>	<b>Site utilities, utility relocation</b>	
40.02.001	Utility Relocation Allowance, Level 1	Route Mile
40.02.002	Utility Relocation Allowance, Level 2	Route Mile
40.02.003	Utility Relocation Allowance, Level 3	Route Mile
40.02.004	Utility Relocation Allowance, Level 4	Route Mile
40.02.005	Utility Relocation Allowance, Level 5	Route Mile
40.02.050	Site Utility Allowance	Route Mile
<b>40.03</b>	<b>Hazardous material, contaminated soil removal/mitigation, ground water treatments</b>	
40.03.100	Hazardous Material Removal Allowance, Light	Route Mile
40.03.105	Hazardous Material Removal Allowance, Medium	Route Mile
40.03.110	Hazardous Material Removal Allowance, Heavy	Route Mile
40.03.150	Removal of Contaminated Soil	CF



No.	DESCRIPTION	UNIT
<b>40.04</b>	<b>Environmental mitigation: wetlands, historic/archeology, parks</b>	
40.04.100	Environmental Mitigation Allowance, Light	Route Mile
40.04.105	Environmental Mitigation Allowance, Medium	Route Mile
40.04.110	Environmental Mitigation Allowance, Heavy	Route Mile
<b>40.05</b>	<b>Site structures including retaining walls, sound walls</b>	
40.05.012	Retaining Wall - 1 Wall (12' Avg. Height)	LF
40.05.111	Containment (Crash) Wall - 1 Wall (6' Avg. Height Above Rail)	LF
40.05.120	Blast Wall (At Stations) - 1 Wall (20' Avg. Height Above Platform)	LF
40.05.211	Sound Wall - 1 Wall (8' Avg. Height)	LF
40.05.310	Intrusion Protection Berm	LF
<b>40.06</b>	<b>Temporary facilities and other indirect costs during construction</b>	
<b>40.07</b>	<b>Purchase or lease of real estate</b>	
	<b>Right-of-Way Required for Segment</b>	
40.07.100	Dense Urban	Acre
40.07.101	Urban	Acre
40.07.102	Dense Suburban	Acre
40.07.103	Suburban	Acre
40.07.104	Farmland	Acre
40.07.105	Undeveloped	Acre
	<b>Right-of-Way Required for Stations and Maintenance Facilities</b>	
40.07.200	Dense Urban	Acre
40.07.201	Urban	Acre
40.07.202	Dense Suburban	Acre
40.07.203	Suburban	Acre
40.07.204	Undeveloped	Acre
<b>40.08</b>	<b>Highway/pedestrian overpass/grade separations</b>	
40.08.322	Roadway Overcrossing HSR - 2 lane retained fill roadway over 2 tracks	EA
40.08.324	Roadway Overcrossing HSR - 4 lane retained fill roadway over 2 tracks	EA
40.08.326	Roadway Overcrossing HSR - 6 lane retained fill roadway over 2 tracks	EA

No.	DESCRIPTION	UNIT
40.08.342	Roadway Overcrossing HSR - 2 lane retained fill roadway over 4 tracks	EA
40.08.344	Roadway Overcrossing HSR - 4 lane retained fill roadway over 4 tracks	EA
40.08.346	Roadway Overcrossing HSR - 6 lane retained fill roadway over 4 tracks	EA
40.08.422	Roadway Overcrossing HSR - 2 lane roadway on embankment over 2 tracks	EA
40.08.424	Roadway Overcrossing HSR - 4 lane roadway on embankment over 2 tracks	EA
40.08.426	Roadway Overcrossing HSR - 6 lane roadway on embankment over 2 tracks	EA
<b>50.01</b>	<b>Wayside signaling equipment</b>	
50.01.010	Train Controls (ATC)	Route Mile
50.01.020	Wayside Protection System	Route Mile
50.01.030	Train Control, Wayside Facility Site Work	EA
<b>50.05</b>	<b>Communications</b>	
50.05.010	Communications (w/Fiber Optic Backbone)	Route Mile
<b>60.02</b>	<b>Traction power supply: Substations</b>	
60.02.100	Traction Power Supply	Route Mile
60.02.010	Traction Power, Supply Station Site Work	EA
60.02.020	Traction Power, Switching Station Site Work	EA
60.02.030	Traction Power, Paralleling Station Site Work	EA
<b>60.03</b>	<b>Traction power distribution: Catenary and third rail</b>	
60.03.100	Traction Power Distribution	Route Mile

## APPENDIX C DETAILED COST BUDGET

### Detail Cost Budget Data

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
<b>1</b>		<b>Alt A</b>					
	10.02.059	LMF West Lead Track Structure - Alt A	2,700.00	SF	381	/SF	1,028,063
	10.02.060	Pergola structure	55,552.00	SF	1,230	/SF	68,337,834
	10.02.081	Hillcrest Blvd Underpass at Sta 807+00	1,520.00	SF	381	/SF	578,761
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.89	RM	5,158,588	/RM	9,749,730
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	1.31	RM	8,465,860	/RM	11,090,276
	10.06.230	At-Grade Track-bed with Closed Drainage - 3 Track	0.21	RM	9,126,293	/RM	1,916,521
	10.06.240	At-Grade Track-bed with Closed Drainage - 4 Track	0.32	RM	9,774,083	/RM	3,127,706
	10.06.323	Decrease Existing Track Height up to 3" - 2 Track	5.06	RM	5,551,712	/RM	28,091,662
	10.06.326	Increase Existing Track Height up to 6" - 2 Track	26.27	RM	5,551,712	/RM	145,843,468
	10.06.328	Increase Existing Track Height 6"-2' - 2 Track	4.05	RM	5,761,030	/RM	23,332,173
	10.06.350	Increase Existing Track Height >2" - 2 Track	0.78	RM	16,164,743	/RM	12,608,499
	10.06.351	Decrease Existing Track Height more than 3" - 2 Track	2.37	RM	12,719,046	/RM	30,144,140

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.08.421	Retained Fill, Walls Both Sides - 2 Tracks (10' Avg. Wall Ht)	0.62	RM	9,180,823	/RM	5,692,110
	10.08.422	Retained Fill, Walls Both Sides - 2 Tracks (20' Avg. Wall Ht)	0.85	RM	24,416,485	/RM	20,754,013
	10.09.911	Ballasted Track Relocation - 1 Track (Permanent) 0'-1'	15.12	RM	432,572	/RM	6,540,492
	10.09.912	Ballasted Track Relocation - 1 Track (Permanent) 1'-10'	15.85	RM	1,247,877	/RM	19,778,850
	10.09.913	Ballasted Track Relocation - 1 Track (Permanent) 10'-21'	1.61	RM	4,959,495	/RM	7,984,786
	10.09.914	Ballasted Track Relocation - 1 Track (Permanent) More than 21'	1.97	RM	4,234,777	/RM	8,342,511
	10.09.990	Shoefly Track - 1 Track (Includes all sitework, drainage, ballast, etc)	0.21	RM	4,253,688	/RM	893,275
	10.09.995	Connection between shoefly track and other track	3.00	EA	74,613	/EA	223,839
	10.10.110	Direct Fixation Track - 1 Track	3.08	RM	5,920,091	/RM	18,233,880
	10.14.200	Ballasted Turnout (60 MPH)	28.00	EA	621,272	/EA	17,395,622
	10.16.150	Widen Drainage Structure	3.00	EA	136,543	/EA	409,630
	10.16.151	Cover Existing Structure	1.00	EA	6,827	/EA	6,827
	20.01.100	4th and King Station	1.00	LS	22,796,778	/LS	22,796,778
	20.01.101	4th and King Station - Site Elements	1.00	LS	1,187,333	/LS	1,187,333

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.01.103	Bayshore Station	1.00	LS	19,177,041	/LS	19,177,041
	20.01.105	Millbrea Station	1.00	LS	57,433,133	/LS	57,433,133
	20.01.108	San Bruno Station	1.00	LS	3,799,463	/LS	3,799,463
	20.01.109	Broadway Station	1.00	LS	9,379,924	/LS	9,379,924
	20.01.112a	Hayward Park Station - Alt A	1.00	LS	13,298,121	/LS	13,298,121
	20.01.118	Atherton Station	1.00	LS	13,298,121	/LS	13,298,121
	20.06.160	Pedestrian Access, Vertical Structure, 30' Height	1.00	ea	311,675	/ea	311,675
	20.06.162	Pedestrian Access, Pedestrian access ramp & stairway - Belmont Station	2.00	EA	1,099,141	/EA	2,198,281
	20.07.901	Quad Gate Prototype A	8.00	EA	534,805	/EA	4,278,440
	20.07.902	Quad Gate Prototype B	11.00	EA	555,080	/EA	6,105,880
	20.07.903	Quad Gate Prototype B1	2.00	EA	461,627	/EA	923,253
	20.07.904	Quad Gate Prototype C	4.00	EA	1,036,447	/EA	4,145,790
	20.07.905	Quad Gate Prototype D	7.00	EA	713,789	/EA	4,996,521
	20.07.907	Quad Gate Prototype E	6.00	EA	438,132	/EA	2,628,789

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	30.02.010	Light Maintenance Facility (LMF)	1.00	EA	885,979,144	/EA	885,979,144
	40.01.900	Demolition Allowance, Platform	8,800.00	SF	14	/SF	121,565
	40.02.004	Natural Gas/Oil, 26"-33"	285.00	LF	188	/LF	53,575
	40.02.005	Natural Gas/Oil, Unk	1,475.00	LF	167	/LF	245,973
	40.02.006	Jet Fuel, 6"-12"	5,100.00	LF	160	/LF	816,876
	40.02.007	Potable Water, 4"-10"	1,915.00	LF	177	/LF	338,309
	40.02.008	Potable Water, 11"-24'	3,215.00	LF	380	/LF	1,221,194
	40.02.009	Potable Water, 25"-36"	185.00	LF	410	/LF	75,762
	40.02.012	Potable Water, Unk"	490.00	EA	350	/EA	171,578
	40.02.013	Sanitary Sewer, 6"-15"	3,810.00	LF	173	/LF	658,455
	40.02.014	Sanitary Sewer, 16"-24"	575.00	LF	151	/LF	87,046
	40.02.015	Sanitary Sewer, 25"-36"	540.00	EA	194	/EA	104,958
	40.02.016	Sanitary Sewer, 37"-48"	1,585.00	LF	388	/LF	615,225
	40.02.017	Sanitary Sewer, 49"-54"	5,070.00	LF	162	/LF	822,423

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.018	Sanitary Sewer, Unk	400.00	LF	181	/LF	72,337
	40.02.019	Storm Drain, 6"-18"	630.00	LF	194	/LF	122,451
	40.02.020	Storm Drain, 19"-30"	2,150.00	LF	194	/LF	417,887
	40.02.024	Storm Drain, Unk	3,540.00	LF	306	/LF	1,082,311
	40.02.025	Box Culvert, All Sizes	2,480.00	LF	194	/LF	481,667
	40.02.026	Drainage Canal, All Sizes	1,520.00	SF	194	/SF	295,436
	40.02.027	Pump Station (Storm)	1.00	EA	593,667	/EA	593,667
	40.02.029	Telecomm/Fiber Optic UG, All Sizes	32,690.00	LF	405	/LF	13,233,120
	40.02.036	Electric OH, 115 kV	17,400.00	LF	237	/LF	4,116,436
	40.02.038	Electric OH, unknown	4,090.00	LF	193	/LF	789,728
	40.02.040	Electric & Telecomm OH on JP, Unk	5,080.00	LF	237	/LF	1,201,810
	40.03.001	Bird Electrocutation Avoidance Configuration	1.00	LS		/LS	
	40.04	Environmental Mitigation (% Calculation)	1.00	LS	50,606,473	/LS	50,606,473
	40.06	Temp Facilities	1.00	LS	61,852,355	/LS	61,852,355

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.07	Right of Way Purchase (From Regional Consultant)	1.00	LS	1,606,221,000	/LS	1,606,221,000
	40.08.152	Roadway Overcrossing HSR (Tunnel Avenue): 2-Lane Roadway OVER Five-Trk	1.00	EA	196,943,153	/EA	196,943,153
	50.05.010	Communications (w/Fiber Optic Backbone) - 2 Track	43.00	RM	1,860,093	/RM	79,984,002
	60.03.100	Traction Power Distribution - 2 Tracks	43.00	RM	2,410,501	/RM	103,651,534
	80.00.00	Professional Services	1.00	LS	313,610,755	/LS	313,610,755
	90.00.00	Unallocated Contingency	1.00	LS	142,818,941	/LS	142,818,941
		<b>Total Alt A</b>	<b>43.00</b>	<b>RM</b>	<b>94,824,892</b>	<b>/RM</b>	<b>4,077,470,357</b>
<b>2</b>		<b>Alt B</b>					
	10.01.002	Cut	177,120.00	CY	13	/CY	2,297,624
	10.01.002a	Cut, Solid Waste (Disposal)	248,791.00	CY	153	/CY	37,942,864
	10.01.002b	Cut. Transport for Reuse	159,900.00	CY	32	/CY	5,080,456
	10.01.004	Overbreak in embankment	161,733.00	CY	45	/CY	7,236,114
	10.01.005a	Embankment	619,315.00	CY	40	/CY	25,047,630
	10.01.005b	Imported earthwork	137,969.00	CY	51	/CY	7,013,838



Alt	UPE	Description	Takeoff Quantity	Grand Total Unit Price	Grand Total Amount
	10.01.006	Overbreak fill in cut	87,058.00 CY	45 /CY	3,895,067
	10.01.007	Overbreak fill in embankment	161,733.00 CY	45 /CY	7,236,114
	10.01.008	Subballast	855,449.00 CY	57 /CY	49,058,680
	10.02.060	Pergola structure	48,072.00 SF	1,230 /SF	59,136,239
	10.02.082	25th Ave Underpass at Sta 1142+00	3,192.00 SF	381 /SF	1,215,399
	10.02.083	28th Ave Underpass at Sta 1156+00	3,458.00 SF	381 /SF	1,316,682
	10.02.085	31st Ave Underpass at Sta 1168+00	3,686.00 SF	381 /SF	1,403,497
	10.02.086	Hillsdale Blvd at Sta 1178+00	4,066.00 SF	381 /SF	1,548,187
	10.02.088	Belmont Station Ped Underpass at Sta 1262+00	7,208.00 SF	381 /SF	2,744,548
	10.02.089	Ralston Ave Underpass at Sta 1265+00	7,208.00 SF	776 /SF	5,592,663
	10.02.090	Harbor Blvd Underpass at Sta 1282+00	3,800.00 SF	381 /SF	1,446,904
	10.02.091	Holly Street Underpass at 1325+00	8,228.00 SF	381 /SF	3,132,927
	10.02.092	San Carlos Station Pedestrian Underpass at Sta 1350+00	10,608.00 SF	381 /SF	4,039,146
	10.02.093	Brittan Ave Underpass at Sta 1364+00	3,762.00 SF	381 /SF	1,432,435

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.02.094	Howard Ave Underpass at Sta 1374+00	3,762.00	SF	381	/SF	1,432,435
	10.05.301	Transition wedge - 1 Track (20' Avg. < Fill Ht < 40' Avg.)	2.00	EA	950,423	/EA	1,900,846
	10.05.311	Transition wedge - 2 Tracks (20' Avg. < Fill Ht < 40' Avg.)	4.00	EA	1,462,189	/EA	5,848,756
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.45	RM	5,158,561	/RM	7,479,913
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	1.03	RM	8,465,860	/RM	8,719,835
	10.06.323	Decrease Existing Track Height up to 3" - 2 Track	4.38	RM	5,551,712	/RM	24,316,498
	10.06.326	Increase Existing Track Height up to 6" - 2 Track	25.77	RM	5,551,712	/RM	143,067,612
	10.06.328	Increase Existing Track Height 6"-2' - 2 Track	3.20	RM	5,761,030	/RM	18,435,297
	10.06.350	Increase Existing Track Height >2" - 2 Track	1.02	RM	16,164,743	/RM	16,488,038
	10.06.351	Decrease Existing Track Height more than 3" - 2 Track	1.88	RM	12,719,046	/RM	23,911,807
	10.08.221	Retained Cut, Trench - 2 Track (10' Avg. Exc Depth)	0.93	RM	108,260,311	/RM	100,682,090
	10.08.421	Retained Fill, Walls Both Sides - 2 Tracks (10' Avg. Wall Ht)	0.64	RM	18,361,644	/RM	11,751,452
	10.08.422	Retained Fill, Walls Both Sides - 2 Tracks (20' Avg. Wall Ht)	8.39	RM	34,590,021	/RM	290,210,275
	10.08.422a	Retained Fill, Walls One Side - 2 Tracks (20' Avg. Wall Ht)	1.27	RM	17,295,010	/RM	21,964,663

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.08.423	Retained Fill, Walls Both Sides - 2 Tracks (30' Avg. Wall Ht)	0.44	RM	39,564,218	/RM	17,408,256
	10.08.423a	Retained Fill, Walls One Side - 2 Tracks (30' Avg. Wall Ht)	2.94	RM	19,782,109	/RM	58,159,400
	10.09.110	Ballasted Track - 1 Track	3.02	RM	2,363,853	/RM	7,138,836
	10.09.120	Ballasted Track - 2 Track	9.67	RM	4,214,243	/RM	40,751,731
	10.09.911	Ballasted Track Relocation - 1 Track (Permanent) 0'-1'	14.70	RM	432,572	/RM	6,358,812
	10.09.912	Ballasted Track Relocation - 1 Track (Permanent) 1'-10'	23.70	RM	1,247,877	/RM	29,574,684
	10.09.913	Ballasted Track Relocation - 1 Track (Permanent) 10'-21'	3.17	RM	4,959,495	/RM	15,721,598
	10.09.914	Ballasted Track Relocation - 1 Track (Permanent) More than 21'	0.41	RM	4,234,777	/RM	1,736,259
	10.09.990	Shoefly Track - 1 Track (Includes all sitework, drainage, ballast, etc)	1.73	RM	4,253,688	/RM	7,358,881
	10.09.995	Connection between shoefly track and other track	37.00	EA	74,613	/EA	2,760,679
	10.10.110	Direct Fixation Track - 1 Track	3.08	RM	5,920,091	/RM	18,233,880
	10.14.200	Ballasted Turnout (60 MPH)	15.00	EA	621,272	/EA	9,319,083
	10.14.201	Ballasted Turnout #9	4.00	EA	621,272	/EA	2,485,089
	10.14.250	Ballasted Turnout #9	1.00	EA	122,889	/EA	122,889

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.14.260	Ballasted Turnout #10	1.00	EA	102,408	/EA	102,408
	10.14.280	Ballasted Turnout #20	6.00	EA	327,704	/EA	1,966,224
	10.14.340	Ballasted Crossover #20	6.00	EA	1,365,433	/EA	8,192,601
	10.16.150	Widen Drainage Structure	5.00	EA	136,543	/EA	682,717
	10.16.151	Cover Existing Structure	1.00	EA	6,827	/EA	6,827
	20.01.100	4th and King Station	1.00	LS	22,796,778	/LS	22,796,778
	20.01.101	4th and King Station - Site Elements	1.00	LS	1,187,333	/LS	1,187,333
	20.01.103	Bayshore Station	1.00	LS	19,177,041	/LS	19,177,041
	20.01.105	Millbrea Station	1.00	LS	57,433,133	/LS	57,433,133
	20.01.108	San Bruno Station	1.00	LS	3,799,463	/LS	3,799,463
	20.01.109	Broadway Station	1.00	LS	9,379,924	/LS	9,379,924
	20.01.113b	Hillsdale Station - Alt B	1.00	LS	12,466,988	/LS	12,466,988
	20.01.114b	Belmont Station - Alt B	1.00	LS	14,960,386	/LS	14,960,386
	20.01.115b	San Carlos Station - Alt B	1.00	LS	13,298,121	/LS	13,298,121

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.01.118	Atherton Station	1.00	LS	13,298,121	/LS	13,298,121
	20.06.120	Pedestrian Access (Cut & Cover)	180.00	LF	38,149	/LF	6,866,764
	20.06.160	Pedestrian Access, Vertical Structure, 30' Height	1.00	ea	311,675	/ea	311,675
	20.06.160a	Pedestrian Access, Pedestrian access ramp & stairway - Belmont Station, Alt B	1.00	ea	445,250	/ea	445,250
	20.06.160b	Pedestrian Access, Pedestrian access ramp & stairway - San Carlos Station, Alt B	1.00	ea	445,250	/ea	445,250
	20.06.162	Pedestrian Access, Pedestrian access ramp & stairway - Belmont Station	2.00	EA	1,099,141	/EA	2,198,281
	20.07.901	Quad Gate Prototype A	8.00	EA	534,805	/EA	4,278,440
	20.07.902	Quad Gate Prototype B	11.00	EA	555,080	/EA	6,105,880
	20.07.903	Quad Gate Prototype B1	2.00	EA	461,627	/EA	923,253
	20.07.904	Quad Gate Prototype C	4.00	EA	1,036,447	/EA	4,145,790
	20.07.905	Quad Gate Prototype D	7.00	EA	713,789	/EA	4,996,521
	20.07.907	Quad Gate Prototype E	6.00	EA	438,132	/EA	2,628,789
	30.02.010b	Light Maintenance Facility (LMF)- West Brisbane	1.00	LS	970,865,130	/LS	970,865,130

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.01.810	Demolition Allowance, Remove Railroad Tracks	15.79	RM	296,833	/RM	4,686,999
	40.01.820	Demolition Allowance, Remove Railroad Track - Special Track Work	6.00	EA	29,683	/EA	178,100
	40.01.900	Demolition Allowance, Platform	11,200.00	SF	14	/SF	154,719
	40.02.004	Natural Gas/Oil, 26"-33"	285.00	LF	188	/LF	53,575
	40.02.005	Natural Gas/Oil, Unk	1,255.00	LF	192	/LF	240,684
	40.02.006	Jet Fuel, 6"-12"	16,270.00	LF	160	/LF	2,605,994
	40.02.007	Potable Water, 4"-10"	1,245.00	LF	194	/LF	241,986
	40.02.008	Potable Water, 11"-24'	5,740.00	LF	380	/LF	2,180,297
	40.02.009	Potable Water, 25"-36"	465.00	LF	410	/LF	190,430
	40.02.012	Potable Water, Unk"	2,215.00	EA	350	/EA	775,605
	40.02.013	Sanitary Sewer, 6"-15"	2,465.00	LF	194	/LF	479,112
	40.02.014	Sanitary Sewer, 16"-24"	2,945.00	LF	151	/LF	445,827
	40.02.015	Sanitary Sewer, 25"-36"	3,080.00	EA	194	/EA	596,123
	40.02.017	Sanitary Sewer, 49"-54"	5,070.00	LF	162	/LF	822,423

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.018	Sanitary Sewer, Unk	3,685.00	LF	193	/LF	710,829
	40.02.019	Storm Drain, 6"-18"	1,055.00	LF	193	/LF	203,253
	40.02.020	Storm Drain, 19"-30"	2,715.00	LF	213	/LF	578,810
	40.02.021	Storm Drain, 31"-42"	805.00	LF	304	/LF	245,117
	40.02.022	Storm Drain, 43"-54"	295.00	LF	11	/LF	3,166
	40.02.023	Storm Drain, 55"-72"	2,510.00	LF	358	/LF	897,841
	40.02.024	Storm Drain, Unk	2,520.00	LF	306	/LF	770,459
	40.02.025	Box Culvert, All Sizes	1,375.00	LF	189	/LF	259,319
	40.02.026	Drainage Canal, All Sizes	14,945.00	SF	190	/SF	2,835,376
	40.02.027	Pump Station (Storm)	4.00	EA	296,931	/EA	1,187,722
	40.02.028	Pump Station (Sanitary)	2.00	EA	742,083	/EA	1,484,167
	40.02.029	Telecomm/Fiber Optic UG, All Sizes	72,595.00	LF	405	/LF	29,386,919
	40.02.031	Telecommunication Facility	1.00	EA	443,436	/EA	443,436
	40.02.032	Electric UG, Unk	5,295.00	LF	198	/LF	1,045,976

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.033	Electric OH, 0-21 kV	1,520.00	LF	87	/LF	131,634
	40.02.035	Electric OH, 51-114 kV	500.00	LF	125	/LF	62,337
	40.02.036	Electric OH, 115 kV	4,610.00	LF	237	/LF	1,090,619
	40.02.038	Electric OH, unknown	7,365.00	LF	194	/LF	1,426,277
	40.02.040	Electric & Telecomm OH on JP, Unk	8,170.00	LF	237	/LF	1,932,833
	40.03.001	Bird Electrocutation Avoidance Configuration	1.00	LS		/LS	
	40.04	Environmental Mitigation (% Calculation)	1.00	LS	75,780,045	/LS	75,780,045
	40.06	Temp Facilities	1.00	LS	92,620,055	/LS	92,620,055
	40.07	Right of Way Purchase (From Regional Consultant)	1.00	LS	2,073,501,000	/LS	2,073,501,000
	40.08.152b	Roadway Overcrossing HSR (Tunnel Avenue): Two-Lane Roadway OVER Five-Tracks - Alt B	1.00	LS	170,343,773	/LS	170,343,773
	50.05.010	Communications (w/Fiber Optic Backbone) - 2 Track	43.00	RM	1,860,093	/RM	79,984,002
	60.03.100	Traction Power Distribution - 2 Tracks	43.00	RM	2,410,501	/RM	103,651,534
	80.00.00	Professional Services	1.00	LS	439,678,792	/LS	439,678,792
	90.00.00	Unallocated Contingency	1.00	LS	197,536,333	/LS	197,536,333



Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
		<b>Total Alt B</b>	<b>43.00</b>	<b>RM</b>	<b>130,129,284</b>	<b>/RM</b>	<b>5,595,559,194</b>
<b>01</b>		<b>Alt A MRSP</b>					
	10.02.059	LMF West Lead Track Structure - Alt A	2,700.00	SF	381	/SF	1,028,063
	10.02.060	Pergola structure	55,552.00	SF	1,230	/SF	68,337,834
	10.02.081	Hillcrest Blvd Underpass at Sta 807+00	1,520.00	SF	381	/SF	578,761
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.89	RM	5,158,588	/RM	9,749,730
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	1.31	RM	8,465,860	/RM	11,090,276
	10.06.230	At-Grade Track-bed with Closed Drainage - 3 Track	0.21	RM	9,126,293	/RM	1,916,521
	10.06.240	At-Grade Track-bed with Closed Drainage - 4 Track	0.32	RM	9,774,083	/RM	3,127,706
	10.06.323	Decrease Existing Track Height up to 3" - 2 Track	5.06	RM	5,551,712	/RM	28,091,662
	10.06.326	Increase Existing Track Height up to 6" - 2 Track	26.27	RM	5,551,712	/RM	145,843,468
	10.06.328	Increase Existing Track Height 6"-2' - 2 Track	4.05	RM	5,761,030	/RM	23,332,173
	10.06.350	Increase Existing Track Height >2" - 2 Track	0.78	RM	16,164,743	/RM	12,608,499
	10.06.351	Decrease Existing Track Height more than 3" - 2 Track	2.37	RM	12,719,046	/RM	30,144,140

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.08.421	Retained Fill, Walls Both Sides - 2 Tracks (10' Avg. Wall Ht)	0.62	RM	9,180,823	/RM	5,692,110
	10.08.422	Retained Fill, Walls Both Sides - 2 Tracks (20' Avg. Wall Ht)	0.85	RM	24,416,485	/RM	20,754,013
	10.09.911	Ballasted Track Relocation - 1 Track (Permanent) 0'-1'	15.12	RM	432,572	/RM	6,540,492
	10.09.912	Ballasted Track Relocation - 1 Track (Permanent) 1'-10'	15.85	RM	1,247,877	/RM	19,778,850
	10.09.913	Ballasted Track Relocation - 1 Track (Permanent) 10'-21'	1.61	RM	4,959,495	/RM	7,984,786
	10.09.914	Ballasted Track Relocation - 1 Track (Permanent) More than 21'	1.97	RM	4,234,777	/RM	8,342,511
	10.09.990	Shoefly Track - 1 Track (Includes all sitework, drainage, ballast, etc)	0.21	RM	4,253,688	/RM	893,275
	10.09.995	Connection between shoefly track and other track	3.00	EA	74,613	/EA	223,839
	10.10.110	Direct Fixation Track - 1 Track	3.08	RM	5,920,091	/RM	18,233,880
	10.14.200	Ballasted Turnout (60 MPH)	28.00	EA	621,272	/EA	17,395,622
	10.16.150	Widen Drainage Structure	3.00	EA	136,543	/EA	409,630
	10.16.151	Cover Existing Structure	1.00	EA	6,827	/EA	6,827
	20.01.100	4th and King Station	1.00	LS	22,796,778	/LS	22,796,778
	20.01.101	4th and King Station - Site Elements	1.00	LS	1,187,333	/LS	1,187,333

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.01.103	Bayshore Station	1.00	LS	19,177,041	/LS	19,177,041
	20.01.105	Millbrea Station	1.00	LS	52,662,592	/LS	52,662,592
	20.01.108	San Bruno Station	1.00	LS	3,799,463	/LS	3,799,463
	20.01.109	Broadway Station	1.00	LS	9,379,924	/LS	9,379,924
	20.01.112a	Hayward Park Station - Alt A	1.00	LS	13,298,121	/LS	13,298,121
	20.01.118	Atherton Station	1.00	LS	13,298,121	/LS	13,298,121
	20.06.160	Pedestrian Access, Vertical Structure, 30' Height	1.00	ea	311,675	/ea	311,675
	20.06.162	Pedestrian Access, Pedestrian access ramp & stairway - Belmont Station	2.00	EA	1,099,141	/EA	2,198,281
	20.07.901	Quad Gate Prototype A	8.00	EA	534,805	/EA	4,278,440
	20.07.902	Quad Gate Prototype B	11.00	EA	555,080	/EA	6,105,880
	20.07.903	Quad Gate Prototype B1	2.00	EA	461,627	/EA	923,253
	20.07.904	Quad Gate Prototype C	4.00	EA	1,036,447	/EA	4,145,790
	20.07.905	Quad Gate Prototype D	7.00	EA	713,789	/EA	4,996,521
	20.07.907	Quad Gate Prototype E	6.00	EA	438,132	/EA	2,628,789

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	30.02.010	Light Maintenance Facility (LMF)	1.00	EA	885,979,144	/EA	885,979,144
	40.01.900	Demolition Allowance, Platform	8,800.00	SF	14	/SF	121,565
	40.02.004	Natural Gas/Oil, 26"-33"	285.00	LF	188	/LF	53,575
	40.02.005	Natural Gas/Oil, Unk	1,475.00	LF	167	/LF	245,973
	40.02.006	Jet Fuel, 6"-12"	5,100.00	LF	160	/LF	816,876
	40.02.007	Potable Water, 4"-10"	1,915.00	LF	177	/LF	338,309
	40.02.008	Potable Water, 11"-24'	3,215.00	LF	380	/LF	1,221,194
	40.02.009	Potable Water, 25"-36"	185.00	LF	410	/LF	75,762
	40.02.012	Potable Water, Unk"	490.00	EA	350	/EA	171,578
	40.02.013	Sanitary Sewer, 6"-15"	3,810.00	LF	173	/LF	658,455
	40.02.014	Sanitary Sewer, 16"-24"	575.00	LF	151	/LF	87,046
	40.02.015	Sanitary Sewer, 25"-36"	540.00	EA	194	/EA	104,958
	40.02.016	Sanitary Sewer, 37"-48"	1,585.00	LF	388	/LF	615,225
	40.02.017	Sanitary Sewer, 49"-54"	5,070.00	LF	162	/LF	822,423

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.018	Sanitary Sewer, Unk	400.00	LF	181	/LF	72,337
	40.02.019	Storm Drain, 6"-18"	630.00	LF	194	/LF	122,451
	40.02.020	Storm Drain, 19"-30"	2,150.00	LF	194	/LF	417,887
	40.02.024	Storm Drain, Unk	3,540.00	LF	306	/LF	1,082,311
	40.02.025	Box Culvert, All Sizes	2,480.00	LF	194	/LF	481,667
	40.02.026	Drainage Canal, All Sizes	1,520.00	SF	194	/SF	295,436
	40.02.027	Pump Station (Storm)	1.00	EA	593,667	/EA	593,667
	40.02.029	Telecomm/Fiber Optic UG, All Sizes	32,690.00	LF	405	/LF	13,233,120
	40.02.036	Electric OH, 115 kV	17,400.00	LF	237	/LF	4,116,436
	40.02.038	Electric OH, unknown	4,090.00	LF	193	/LF	789,728
	40.02.040	Electric & Telecomm OH on JP, Unk	5,080.00	LF	237	/LF	1,201,810
	40.03.001	Bird Electrocutation Avoidance Configuration	1.00	LS		/LS	
	40.04	Environmental Mitigation (% Calculation)	1.00	LS	50,606,473	/LS	50,606,473
	40.06	Temp Facilities	1.00	LS	61,852,355	/LS	61,852,355

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.07	Right of Way Purchase (From Regional Consultant)	1.00	LS	1,458,858,000	/LS	1,458,858,000
	40.08.152	Roadway Overcrossing HSR (Tunnel Avenue): 2-Lane Roadway OVER Five-Trk	1.00	EA	196,943,153	/EA	196,943,153
	50.05.010	Communications (w/Fiber Optic Backbone) - 2 Track	43.00	RM	1,860,093	/RM	79,984,002
	60.03.100	Traction Power Distribution - 2 Tracks	43.00	RM	2,410,501	/RM	103,651,534
	80.00.00	Professional Services	1.00	LS	313,610,755	/LS	312,851,200
	90.00.00	Unallocated Contingency	1.00	LS	142,818,941	/LS	137,156,871
		<b>Total Alt A MRSP</b>	<b>43.00</b>	<b>RM</b>	<b>91,137,563</b>	<b>/RM</b>	<b>3,918,915,191</b>
<b>02</b>		<b>Alt B MRSP</b>					
	10.01.002	Cut	177,120.00	CY	13	/CY	2,297,624
	10.01.002a	Cut, Solid Waste (Disposal)	248,791.00	CY	153	/CY	37,942,864
	10.01.002b	Cut. Transport for Reuse	159,900.00	CY	32	/CY	5,080,456
	10.01.004	Overbreak in embankment	161,733.00	CY	45	/CY	7,236,114
	10.01.005a	Embankment	619,315.00	CY	40	/CY	25,047,630
	10.01.005b	Imported earthwork	137,969.00	CY	51	/CY	7,013,838

Alt	UPE	Description	Takeoff Quantity	Grand Total Unit Price	Grand Total Amount
	10.01.006	Overbreak fill in cut	87,058.00 CY	45 /CY	3,895,067
	10.01.007	Overbreak fill in embankment	161,733.00 CY	45 /CY	7,236,114
	10.01.008	Subballast	855,449.00 CY	57 /CY	49,058,680
	10.02.060	Pergola structure	48,072.00 SF	1,230 /SF	59,136,239
	10.02.082	25th Ave Underpass at Sta 1142+00	3,192.00 SF	381 /SF	1,215,399
	10.02.083	28th Ave Underpass at Sta 1156+00	3,458.00 SF	381 /SF	1,316,682
	10.02.085	31st Ave Underpass at Sta 1168+00	3,686.00 SF	381 /SF	1,403,497
	10.02.086	Hillsdale Blvd at Sta 1178+00	4,066.00 SF	381 /SF	1,548,187
	10.02.088	Belmont Station Ped Underpass at Sta 1262+00	7,208.00 SF	381 /SF	2,744,548
	10.02.089	Ralston Ave Underpass at Sta 1265+00	7,208.00 SF	776 /SF	5,592,663
	10.02.090	Harbor Blvd Underpass at Sta 1282+00	3,800.00 SF	381 /SF	1,446,904
	10.02.091	Holly Street Underpass at 1325+00	8,228.00 SF	381 /SF	3,132,927
	10.02.092	San Carlos Station Pedestrian Underpass at Sta 1350+00	10,608.00 SF	381 /SF	4,039,146
	10.02.093	Brittan Ave Underpass at Sta 1364+00	3,762.00 SF	381 /SF	1,432,435

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.02.094	Howard Ave Underpass at Sta 1374+00	3,762.00	SF	381	/SF	1,432,435
	10.05.301	Transition wedge - 1 Track (20' Avg. < Fill Ht < 40' Avg.)	2.00	EA	950,423	/EA	1,900,846
	10.05.311	Transition wedge - 2 Tracks (20' Avg. < Fill Ht < 40' Avg.)	4.00	EA	1,462,189	/EA	5,848,756
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.45	RM	5,158,561	/RM	7,479,913
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	1.03	RM	8,465,860	/RM	8,719,835
	10.06.323	Decrease Existing Track Height up to 3" - 2 Track	4.38	RM	5,551,712	/RM	24,316,498
	10.06.326	Increase Existing Track Height up to 6" - 2 Track	25.77	RM	5,551,712	/RM	143,067,612
	10.06.328	Increase Existing Track Height 6"-2' - 2 Track	3.20	RM	5,761,030	/RM	18,435,297
	10.06.350	Increase Existing Track Height >2" - 2 Track	1.02	RM	16,164,743	/RM	16,488,038
	10.06.351	Decrease Existing Track Height more than 3" - 2 Track	1.88	RM	12,719,046	/RM	23,911,807
	10.08.221	Retained Cut, Trench - 2 Track (10' Avg. Exc Depth)	0.93	RM	108,260,311	/RM	100,682,090
	10.08.421	Retained Fill, Walls Both Sides - 2 Tracks (10' Avg. Wall Ht)	0.64	RM	18,361,644	/RM	11,751,452
	10.08.422	Retained Fill, Walls Both Sides - 2 Tracks (20' Avg. Wall Ht)	8.39	RM	34,590,021	/RM	290,210,275
	10.08.422a	Retained Fill, Walls One Side - 2 Tracks (20' Avg. Wall Ht)	1.27	RM	17,295,010	/RM	21,964,663



Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.08.423	Retained Fill, Walls Both Sides - 2 Tracks (30' Avg. Wall Ht)	0.44	RM	39,564,218	/RM	17,408,256
	10.08.423a	Retained Fill, Walls One Side - 2 Tracks (30' Avg. Wall Ht)	2.94	RM	19,782,109	/RM	58,159,400
	10.09.110	Ballasted Track - 1 Track	3.02	RM	2,363,853	/RM	7,138,836
	10.09.120	Ballasted Track - 2 Track	9.67	RM	4,214,243	/RM	40,751,731
	10.09.911	Ballasted Track Relocation - 1 Track (Permanent) 0'-1'	14.70	RM	432,572	/RM	6,358,812
	10.09.912	Ballasted Track Relocation - 1 Track (Permanent) 1'-10'	23.70	RM	1,247,877	/RM	29,574,684
	10.09.913	Ballasted Track Relocation - 1 Track (Permanent) 10'-21'	3.17	RM	4,959,495	/RM	15,721,598
	10.09.914	Ballasted Track Relocation - 1 Track (Permanent) More than 21'	0.41	RM	4,234,777	/RM	1,736,259
	10.09.990	Shoefly Track - 1 Track (Includes all sitework, drainage, ballast, etc)	1.73	RM	4,253,688	/RM	7,358,881
	10.09.995	Connection between shoefly track and other track	37.00	EA	74,613	/EA	2,760,679
	10.10.110	Direct Fixation Track - 1 Track	3.08	RM	5,920,091	/RM	18,233,880
	10.14.200	Ballasted Turnout (60 MPH)	15.00	EA	621,272	/EA	9,319,083
	10.14.201	Ballasted Turnout #9	4.00	EA	621,272	/EA	2,485,089
	10.14.250	Ballasted Turnout #9	1.00	EA	122,889	/EA	122,889

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.14.260	Ballasted Turnout #10	1.00	EA	102,408	/EA	102,408
	10.14.280	Ballasted Turnout #20	6.00	EA	327,704	/EA	1,966,224
	10.14.340	Ballasted Crossover #20	6.00	EA	1,365,433	/EA	8,192,601
	10.16.150	Widen Drainage Structure	5.00	EA	136,543	/EA	682,717
	10.16.151	Cover Existing Structure	1.00	EA	6,827	/EA	6,827
	20.01.100	4th and King Station	1.00	LS	22,796,778	/LS	22,796,778
	20.01.101	4th and King Station - Site Elements	1.00	LS	1,187,333	/LS	1,187,333
	20.01.103	Bayshore Station	1.00	LS	19,177,041	/LS	19,177,041
	20.01.105	Millbrea Station	1.00	LS	52,662,592	/LS	52,662,592
	20.01.108	San Bruno Station	1.00	LS	3,799,463	/LS	3,799,463
	20.01.109	Broadway Station	1.00	LS	9,379,924	/LS	9,379,924
	20.01.113b	Hillsdale Station - Alt B	1.00	LS	12,466,988	/LS	12,466,988
	20.01.114b	Belmont Station - Alt B	1.00	LS	14,960,386	/LS	14,960,386
	20.01.115b	San Carlos Station - Alt B	1.00	LS	13,298,121	/LS	13,298,121

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.01.118	Atherton Station	1.00	LS	13,298,121	/LS	13,298,121
	20.06.120	Pedestrian Access (Cut & Cover)	180.00	LF	38,149	/LF	6,866,764
	20.06.160	Pedestrian Access, Vertical Structure, 30' Height	1.00	ea	311,675	/ea	311,675
	20.06.160a	Pedestrian Access, Pedestrian access ramp & stairway - Belmont Station, Alt B	1.00	ea	445,250	/ea	445,250
	20.06.160b	Pedestrian Access, Pedestrian access ramp & stairway - San Carlos Station, Alt B	1.00	ea	445,250	/ea	445,250
	20.06.162	Pedestrian Access, Pedestrian access ramp & stairway - Belmont Station	2.00	EA	1,099,141	/EA	2,198,281
	20.07.901	Quad Gate Prototype A	8.00	EA	534,805	/EA	4,278,440
	20.07.902	Quad Gate Prototype B	11.00	EA	555,080	/EA	6,105,880
	20.07.903	Quad Gate Prototype B1	2.00	EA	461,627	/EA	923,253
	20.07.904	Quad Gate Prototype C	4.00	EA	1,036,447	/EA	4,145,790
	20.07.905	Quad Gate Prototype D	7.00	EA	713,789	/EA	4,996,521
	20.07.907	Quad Gate Prototype E	6.00	EA	438,132	/EA	2,628,789
	30.02.010b	Light Maintenance Facility (LMF)- West Brisbane	1.00	LS	970,865,130	/LS	970,865,130

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.01.810	Demolition Allowance, Remove Railroad Tracks	15.79	RM	296,833	/RM	4,686,999
	40.01.820	Demolition Allowance, Remove Railroad Track - Special Track Work	6.00	EA	29,683	/EA	178,100
	40.01.900	Demolition Allowance, Platform	11,200.00	SF	14	/SF	154,719
	40.02.004	Natural Gas/Oil, 26"-33"	285.00	LF	188	/LF	53,575
	40.02.005	Natural Gas/Oil, Unk	1,255.00	LF	192	/LF	240,684
	40.02.006	Jet Fuel, 6"-12"	16,270.00	LF	160	/LF	2,605,994
	40.02.007	Potable Water, 4"-10"	1,245.00	LF	194	/LF	241,986
	40.02.008	Potable Water, 11"-24'	5,740.00	LF	380	/LF	2,180,297
	40.02.009	Potable Water, 25"-36"	465.00	LF	410	/LF	190,430
	40.02.012	Potable Water, Unk"	2,215.00	EA	350	/EA	775,605
	40.02.013	Sanitary Sewer, 6"-15"	2,465.00	LF	194	/LF	479,112
	40.02.014	Sanitary Sewer, 16"-24"	2,945.00	LF	151	/LF	445,827
	40.02.015	Sanitary Sewer, 25"-36"	3,080.00	EA	194	/EA	596,123
	40.02.017	Sanitary Sewer, 49"-54"	5,070.00	LF	162	/LF	822,423

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.018	Sanitary Sewer, Unk	3,685.00	LF	193	/LF	710,829
	40.02.019	Storm Drain, 6"-18"	1,055.00	LF	193	/LF	203,253
	40.02.020	Storm Drain, 19"-30"	2,715.00	LF	213	/LF	578,810
	40.02.021	Storm Drain, 31"-42"	805.00	LF	304	/LF	245,117
	40.02.022	Storm Drain, 43"-54"	295.00	LF	11	/LF	3,166
	40.02.023	Storm Drain, 55"-72"	2,510.00	LF	358	/LF	897,841
	40.02.024	Storm Drain, Unk	2,520.00	LF	306	/LF	770,459
	40.02.025	Box Culvert, All Sizes	1,375.00	LF	189	/LF	259,319
	40.02.026	Drainage Canal, All Sizes	14,945.00	SF	190	/SF	2,835,376
	40.02.027	Pump Station (Storm)	4.00	EA	296,931	/EA	1,187,722
	40.02.028	Pump Station (Sanitary)	2.00	EA	742,083	/EA	1,484,167
	40.02.029	Telecomm/Fiber Optic UG, All Sizes	72,595.00	LF	405	/LF	29,386,919
	40.02.031	Telecommunication Facility	1.00	EA	443,436	/EA	443,436
	40.02.032	Electric UG, Unk	5,295.00	LF	198	/LF	1,045,976

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.033	Electric OH, 0-21 kV	1,520.00	LF	87	/LF	131,634
	40.02.035	Electric OH, 51-114 kV	500.00	LF	125	/LF	62,337
	40.02.036	Electric OH, 115 kV	4,610.00	LF	237	/LF	1,090,619
	40.02.038	Electric OH, unknown	7,365.00	LF	194	/LF	1,426,277
	40.02.040	Electric & Telecomm OH on JP, Unk	8,170.00	LF	237	/LF	1,932,833
	40.03.001	Bird Electrocutation Avoidance Configuration	1.00	LS		/LS	
	40.04	Environmental Mitigation (% Calculation)	1.00	LS	75,780,045	/LS	75,780,045
	40.06	Temp Facilities	1.00	LS	92,620,055	/LS	92,620,055
	40.07	Right of Way Purchase (From Regional Consultant)	1.00	LS	1,997,024,000	/LS	1,997,024,000
	40.08.152b	Roadway Overcrossing HSR (Tunnel Avenue): Two-Lane Roadway OVER Five-Tracks - Alt B	1.00	LS	170,343,773	/LS	170,343,773
	50.05.010	Communications (w/Fiber Optic Backbone) - 2 Track	43.00	RM	1,860,093	/RM	79,984,002
	60.03.100	Traction Power Distribution - 2 Tracks	43.00	RM	2,410,501	/RM	103,651,534
	80.00.00	Professional Services	1.00	LS	439,678,792	/LS	452,009,754
	90.00.00	Unallocated Contingency	1.00	LS	197,536,333	/LS	194,497,158

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
		<b>Total Alt B MRSP</b>	<b>43.00</b>	<b>RM</b>	<b>128,455,894</b>	<b>/RM</b>	<b>5,523,603,440</b>
<b>01</b>		<b>Alternative 01 Scott-Alma</b>					
	<b>SS1</b>	<b>San Jose Diridon Sta Approach: Viaduct to I-880 (Scott to Diridon Sta)</b>	<b>4.18</b>	<b>RM</b>	<b>252,396,101</b>	<b>/RM</b>	<b>1,055,015,704</b>
	10.01.222	Elevated Structure - 2 Track (20' Avg. Pier Ht)	0.04	RM	200,136,594	/RM	8,005,464
	10.01.223	Elevated Structure - 2 Track (30' Avg. Pier Ht, 90' Span)	0.02	RM	202,498,578	/RM	4,049,972
	10.01.225b	Elevated Structure - 2 Track (50' Avg. Pier Ht) - 110' Spacing	0.33	RM	223,965,402	/RM	73,908,583
	10.01.226a	Elevated Structure - 2 Track (60' Avg. Pier Ht, 90' Span)	0.03	RM	304,188,495	/RM	9,125,655
	10.01.226c	Elevated Structure - 2 Track (60' Avg. Pier Ht) - 110' Spacing	0.04	RM	241,240,257	/RM	9,649,610
	10.01.226d	Elevated Structure - 2 Track (60' Avg. Pier Ht, 120' Span)	0.05	RM	197,175,132	/RM	9,858,757
	10.02.044	Scott-Diridon - 4 Trk over 3 Trk (60' Avg. Pier Ht) - 120' Spacing	0.29	RM	773,052,863	/RM	224,185,330
	10.02.045	Scott-Diridon - Diridon-Tamien - 4 Trk	0.19	RM	856,527,021	/RM	162,740,134
	10.02.048	Scott-Diridon - BC -160-220-160 Span - Taylor St	0.10	RM	145,875,957	/RM	14,587,596
	10.02.051	Scott-Diridon - BC -180-180 span - SJ City Market, Wye S Trk	0.07	RM	124,084,889	/RM	8,685,942
	10.02.052	Scott-Diridon - 4 Trk BC-150-240-150 Span - Santa Clara Street	0.10	RM	318,439,484	/RM	31,843,948

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	3.11	RM	4,096,042	/RM	12,738,691
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	3.00	RM	7,153,488	/RM	21,460,463
	10.06.230	At-Grade Track-Bed With Closed Drainage - 3 Track	0.68	RM	7,449,993	/RM	5,065,995
	10.06.240	At-Grade Track-Bed With Closed Drainage - 4 Track	0.85	RM	7,740,488	/RM	6,579,415
	10.08.421	Ret Fill, Walls Both Sides - 2 Trk (10' Avg. Wall Ht)	0.13	RM	15,302,317	/RM	1,989,301
	10.08.422	Retained Fill, Wall Both Sides - 2 Trks (20'Avg. Wall Ht)	0.09	RM	28,101,147	/RM	2,529,103
	10.09.112	Ballasted Track (Track Laying Machine) - 1 Track	3.11	RM	1,564,808	/RM	4,866,554
	10.09.122	Ballasted Track (Track Laying Machine) - 2 Track	3.23	RM	3,073,829	/RM	9,928,468
	10.09.132	Ballasted Track (Track Laying Machine) - 3 Track	0.68	RM	4,713,558	/RM	3,205,220
	10.09.142	Ballasted Track (Track Laying Machine) - 4 Track	0.85	RM	6,231,395	/RM	5,296,685
	10.10.120	Direct Fixation Track - 2 Track	0.68	RM	4,520,632	/RM	3,074,030
	10.10.140	Direct Fixation Track - 4 Track	0.58	RM	9,058,582	/RM	5,253,978
	10.14.201	Ballasted Turnout #9	2.00	EA	127,173	/EA	254,346
	10.14.202	Ballasted Turnout #10	2.00	EA	138,477	/EA	276,954



Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.14.203	Ballasted Turnout #11 & #14	4.00	EA	233,150	/EA	932,601
	10.14.204	Ballasted Turnout #15	2.00	EA	211,955	/EA	423,909
	10.14.206	Ballasted Turnout #20	2.00	EA	339,128	/EA	678,255
	10.14.321	Ballasted Crossover #10	3.00	EA	720,646	/EA	2,161,938
	10.14.400	Terminal - Bumping Post	2.00	Ea	45,217	/Ea	90,434
	20.02.225	San Jose (Diridon) Sta	1.00	LS	307,339,406	/LS	307,339,406
	20.06.173	Ped Brdg Undercrossing HSR & Ramps/Stairs (College Park Sta):	1.00	EA	23,682,109	/EA	23,682,109
	20.06.210	Parking, at Grade	207.00	stl	8,589	/stl	1,777,938
	20.07.010	Roadway Modification, New AC Paving	60,800.00	SF	170	/SF	10,357,586
	20.07.715	Access Road Entrance Point	1.00	EA	48,633	/EA	48,633
	40.02.002	Natural Gas/Oil, 9"-16"	1,890.00	LF	195	/LF	367,686
	40.02.003	Potable Water, 10"-16"	3,267.00	LF	307	/LF	1,003,559
	40.02.005	Utility Relocation Allowance, Level 5 Urban	1,233.00	LF	197	/LF	243,040
	40.02.006	Sanitary Sewer, 37"-48"	1,964.00	LF	399	/LF	784,294

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.008	Storm Drain, 42"-54"	2,295.00	LF	349	/LF	800,159
	40.02.011	Pump Station (Storm)	2.00	EA	383,976	/EA	767,952
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	2,301.00	LF	283	/LF	651,077
	40.02.020	Electric OH, 115 kV	6,753.00	LF	245	/LF	1,653,294
	40.02.022	Electric OH, unknown	153.00	LF	194	/LF	29,729
	40.08.100.v	Rdwy Overxing HSR (West Hedding): 2-Ln Rdwy Over 2 Trk	1.00	EA	28,884,707	/EA	28,884,707
	40.08.200.ad	Rdwy Underxing HSR (West Taylor): 2-Ln Rdwy Under 3 Trk	1.00	EA	4,371,515	/EA	4,371,515
	40.08.200.ad1	Rdwy Underxing Rail- 3 Trk (Main) Over 4 Ln Rdwy	1.00	EA	7,004,092	/EA	7,004,092
	40.08.200.ad2	Trench Base Slab - Taylor	1.00	EA	21,388,093	/EA	21,388,093
	50.01.030	Train Control, Wayside Facility Work	1.00	EA	31,216	/EA	31,216
	50.01.050	Train Control, Wayside Facility - Type B - Site Work & Equipment	1.00	EA	16,978	/EA	16,978
	50.01.080	Train Control, Wayside Facility - Type E - Site Work & Equipment	1.00	EA	72,970	/EA	72,970
	50.05.020	Communications	4.19	RM	3,491	/RM	14,627
	60.02.010	Traction Power, Supply Station Site Work	1.00	EA	277,713	/EA	277,713

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
SS3		<b>San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to</b>	<b>1.84</b>	<b>RM</b>	<b>299,346,957</b>	<b>/RM</b>	<b>550,798,400</b>
	10.01.225d	Elevated Structure - 2 Track (50' Avg. Pier Ht) - 150' Spacing	0.14	RM	197,484,535	/RM	27,647,835
	10.01.226e	Elevated Structure - 2 Track (60' Avg. Pier Ht, 150' Span)	0.11	RM	209,654,303	/RM	23,061,973
	10.02.040	Diridon-Tamien - 2 Track	1.06	RM	198,673,112	/RM	210,593,499
	10.02.041	Diridon-Tamien - 4 Track	0.52	RM	482,156,229	/RM	250,721,239
	10.10.120	Direct Fixation Track - 2 Track	1.35	RM	4,495,392	/RM	6,068,779
	10.10.140	Direct Fixation Track - 4 Track	0.49	RM	9,005,693	/RM	4,412,790
	10.14.135	Direct Fixation Crossover (80 MPH)	1.00	EA	2,548,376	/EA	2,548,376
	20.06.211	Bike Path Realignment (Almaden Expy)	1.00	EA	22,305,801	/EA	22,305,801
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	9,800.00	SF	170	/SF	1,669,479
	40.02.005	Utility Relocation Allowance, Level 5 Urban	750.00	LF	197	/LF	147,834
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	2,040.00	LF	283	/LF	577,226
	40.02.020	Electric OH, 115 kV	1,400.00	LF	245	/LF	342,753
	40.02.024	Transmission Tower	1.00	EA	614,361	/EA	614,361

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	50.01.030	Train Control, Wayside Facility Work	1.00	EA	31,216	/EA	31,216
	50.01.040	Train Control, Wayside Facility - Type Aa - Site Work & Equipment	1.00	EA	38,261	/EA	38,261
	50.01.050	Train Control, Wayside Facility - Type B - Site Work & Equipment	1.00	EA	16,978	/EA	16,978
<b>SS99-1</b>		<b>Alternative 1 Complete</b>	<b>6.03</b>	<b>RM</b>	<b>299,346,957</b>	<b>/RM</b>	<b>1,633,137,234</b>
	40.04.110	Environmental Mitigation Allowance, Heavy	1.00	LS	49,159,382	/LS	49,159,382
	40.06.100	Temporary facilities and other indirect costs during construction	1.00	LS	60,083,690	/LS	60,083,690
	40.07.100	ROW Procurement Acquisition	1.00	LS	1,068,895,000	/LS	1,068,895,000
	50.01	Way Side Signalling equipment	6.03	RM	5,550,462	/RM	33,469,288
	50.04	Traffic Control and dispatching systems	6.03	RM	67,993	/RM	409,997
	50.05	Communications	6.03	RM	823,845	/RM	4,967,787
	50.07	Hazard detectors	6.03	RM	170,105	/RM	1,025,732
	60.03	Traction Power distribution: catenary and third rail	6.03	RM	2,841,108	/RM	17,131,883
	60.04	Traction power control	6.03	RM	89,009	/RM	536,723
	80.00.00	Professional Services	1.00	LS	282,285,946	/LS	282,285,946

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	90.00.00	Unallocated Contingency	1.00	LS	115,171,806	/LS	115,171,806
		<b>Total Alternative 01 Scott-Alma</b>	<b>6.03</b>	<b>RM</b>	<b>259,249,247</b>	<b>/RM</b>	<b>3,238,951,338</b>
<b>02</b>		<b>Alternative 02 Scott-Alma</b>					
	<b>SS2</b>	<b>San Jose Diridon Sta Approach: Viaduct to Scott (Scott to Diridon Sta)</b>	<b>4.18</b>	<b>RM</b>	<b>426,119,227</b>	<b>/RM</b>	<b>1,781,178,368</b>
	10.01.222	Elevated Structure - 2 Track (20' Avg. Pier Ht)	0.23	RM	191,434,989	/RM	44,030,047
	10.01.222a	Elevated Structure - 2 Track (20' Avg. Pier Ht, 120' Span)	0.16	RM	179,694,590	/RM	28,751,134
	10.01.222b	Elevated Structure - 2 Track (20' Avg. Pier Ht, 150' Span)	0.14	RM	172,149,277	/RM	24,100,899
	10.01.223	Elevated Structure - 2 Track (30' Avg. Pier Ht, 90' Span)	0.29	RM	241,369,061	/RM	69,997,028
	10.01.223a	Elevated Structure - 2 Track (30' Avg. Pier Ht) - 110' Spacing	0.88	RM	200,848,292	/RM	176,746,497
	10.01.224	Elevated Structure - 2 Track (40' Avg. Pier Ht)	0.31	RM	213,569,428	/RM	66,206,523
	10.01.227b	Elevated Structure - 2 Track (70' Avg. Pier Ht, 110' Span)	0.02	RM	251,516,157	/RM	5,030,323
	10.02.042	Scott-Diridon - 2 Trk over 3 Trk (30' Avg. Pier Ht) - 110' Spacing	0.23	RM	659,149,081	/RM	151,604,289
	10.02.043	Scott-Diridon - 2 Trk over 5 Trk (30' Avg. Pier Ht) - 110' Spacing	0.15	RM	729,926,080	/RM	109,488,912
	10.02.044	Scott-Diridon - 4 Trk over 3 Trk (60' Avg. Pier Ht) - 120' Spacing	0.29	RM	773,052,863	/RM	224,185,330

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.02.045	Scott-Diridon - Diridon-Tamien - 4 Trk	0.19	RM	856,527,021	/RM	162,740,134
	10.02.046	Scott-Diridon - BC -160-220-160 Span - Lafayette St	0.10	RM	230,392,863	/RM	23,039,286
	10.02.047	Scott-Diridon - BC -160-220-160 Span - I-880	0.10	RM	158,284,449	/RM	15,828,445
	10.02.048	Scott-Diridon - BC -160-220-160 Span - Taylor St	0.10	RM	145,875,957	/RM	14,587,596
	10.02.049	Scott-Diridon - BC-120-240-120 Span - Santa Clara Sta	0.09	RM	239,189,151	/RM	21,527,024
	10.02.051	Scott-Diridon - BC -180-180 span - SJ City Market, Wye S Trk	0.14	RM	124,084,901	/RM	17,371,886
	10.02.052	Scott-Diridon - 4 Trk BC-150-240-150 Span - Santa Clara Street	0.10	RM	318,439,484	/RM	31,843,948
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	0.74	RM	4,125,169	/RM	3,052,625
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	0.12	RM	7,223,465	/RM	866,816
	10.06.230	At-Grade Track-Bed With Closed Drainage - 3 Track	1.20	RM	7,455,527	/RM	8,946,632
	10.06.240	At-Grade Track-Bed With Closed Drainage - 4 Track	0.77	RM	7,696,894	/RM	5,926,608
	10.08.421	Ret Fill, Walls Both Sides - 2 Trk (10' Avg. Wall Ht)	0.14	RM	15,224,244	/RM	2,131,394
	10.08.422	Retained Fill, Wall Both Sides - 2 Trks (20'Avg. Wall Ht)	0.20	RM	26,968,498	/RM	5,393,700
	10.09.112	Ballasted Track (Track Laying Machine) - 1 Track	0.74	RM	1,575,936	/RM	1,166,192

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.09.122	Ballasted Track (Track Laying Machine) - 2 Track	0.46	RM	3,085,185	/RM	1,419,185
	10.09.132	Ballasted Track (Track Laying Machine) - 3 Track	1.20	RM	4,717,486	/RM	5,660,984
	10.09.142	Ballasted Track (Track Laying Machine) - 4 Track	0.77	RM	6,198,223	/RM	4,772,632
	10.10.120	Direct Fixation Track - 2 Track	2.92	RM	4,494,477	/RM	13,123,873
	10.10.140	Direct Fixation Track - 4 Track	0.56	RM	9,101,994	/RM	5,097,117
	10.14.321	Ballasted Crossover #10	1.00	EA	720,646	/EA	720,646
	10.14.322	Ballasted Crossover #11	3.00	EA	806,841	/EA	2,420,523
	10.14.323	Ballasted Crossover #14	4.00	EA	1,003,252	/EA	4,013,009
	10.14.324	Ballasted Crossover #20	1.00	EA	1,413,031	/EA	1,413,031
	10.14.400	Terminal - Bumping Post	2.00	Ea	45,217	/Ea	90,434
	20.02.225	San Jose (Diridon) Sta	1.00	LS	307,339,406	/LS	307,339,406
	20.06.120	Ped Access (Cut & Cover)	650.00	LF	35,942	/LF	23,362,383
	20.06.172	Ped Brdg Undercrossing HSR (Lafayette St) Alt2:	1.00	EA	3,575,460	/EA	3,575,460
	20.06.210	Parking, at Grade	242.00	stl	8,589	/stl	2,078,555

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.07.010	Roadway Modification, New AC Paving	60,800.00	SF	170	/SF	10,357,586
	20.07.715	Access Road Entrance Point	1.00	EA	48,633	/EA	48,633
	40.02.002	Natural Gas/Oil, 9"-16"	472.00	LF	195	/LF	91,824
	40.02.003	Potable Water, 10"-16"	1,703.00	LF	307	/LF	523,129
	40.02.005	Utility Relocation Allowance, Level 5 Urban	1,650.00	LF	197	/LF	325,236
	40.02.006	Sanitary Sewer, 37"-48"	2,404.00	LF	399	/LF	960,001
	40.02.008	Storm Drain, 42"-54"	631.00	LF	349	/LF	220,000
	40.02.009	Storm Drain, 55"-72"	1,592.00	LF	372	/LF	591,733
	40.02.011	Pump Station (Storm)	2.00	EA	383,976	/EA	767,952
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	29,283.00	LF	283	/LF	8,285,737
	40.02.016	Electric UG	3,478.00	LF	310	/LF	1,077,674
	40.02.019	Electric OH, 51-114 kV	2,971.00	LF	130	/LF	385,133
	40.02.020	Electric OH, 115 kV	7,511.00	LF	245	/LF	1,838,870
	40.08.200.ae	Rdwy Underxing HSR (West Hedding): 2-Ln Rdwy Under 5 Trk	1.00	EA	57,058,342	/EA	57,058,342



Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.08.200.af	Rdwy Uxing HSR (De La Cruz Blvd): 5-Ln, RF Rdwy Under 7 Trks/6-Ln Rdwy	1.00	EA	106,588,784	/EA	106,588,784
	40.08.200.ah	Rdwy Underxing UPRR (Lafayette St) - 1 Trk (Main) Over 4 Ln Rdwy	1.00	EA	2,008,349	/EA	2,008,349
	50.01.030	Train Control, Wayside Facility Work	1.00	EA	31,216	/EA	31,216
	50.01.050	Train Control, Wayside Facility - Type B - Site Work & Equipment	1.00	EA	16,978	/EA	16,978
	50.01.080	Train Control, Wayside Facility - Type E - Site Work & Equipment	1.00	EA	72,970	/EA	72,970
	60.02.010	Traction Power, Supply Station Site Work	1.00	EA	277,713	/EA	277,713
<b>SS3</b>		<b>San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to</b>	<b>1.84</b>	<b>RM</b>	<b>299,346,957</b>	<b>/RM</b>	<b>550,798,401</b>
	10.01.225d	Elevated Structure - 2 Track (50' Avg. Pier Ht) - 150' Spacing	0.14	RM	197,484,535	/RM	27,647,835
	10.01.226e	Elevated Structure - 2 Track (60' Avg. Pier Ht, 150' Span)	0.11	RM	209,654,303	/RM	23,061,973
	10.02.040	Diridon-Tamien - 2 Track	1.06	RM	198,673,112	/RM	210,593,499
	10.02.041	Diridon-Tamien - 4 Track	0.52	RM	482,156,229	/RM	250,721,239
	10.10.120	Direct Fixation Track - 2 Track	1.35	RM	4,495,392	/RM	6,068,779
	10.10.140	Direct Fixation Track - 4 Track	0.49	RM	9,005,693	/RM	4,412,790
	10.14.135	Direct Fixation Crossover (80 MPH)	1.00	EA	2,548,376	/EA	2,548,376

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.06.211	Bike Path Realignment (Almaden Expy)	1.00	EA	22,305,801	/EA	22,305,801
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	9,800.00	SF	170	/SF	1,669,479
	40.02.005	Utility Relocation Allowance, Level 5 Urban	750.00	LF	197	/LF	147,834
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	2,040.00	LF	283	/LF	577,226
	40.02.020	Electric OH, 115 kV	1,400.00	LF	245	/LF	342,753
	40.02.024	Transmission Tower	1.00	EA	614,361	/EA	614,361
	50.01.030	Train Control, Wayside Facility Work	1.00	EA	31,216	/EA	31,216
	50.01.040	Train Control, Wayside Facility - Type Aa - Site Work & Equipment	1.00	EA	38,261	/EA	38,261
	50.01.050	Train Control, Wayside Facility - Type B - Site Work & Equipment	1.00	EA	16,978	/EA	16,978
<b>SS99-2</b>		<b>Alternative 2 Complete</b>	<b>6.03</b>	<b>RM</b>	<b>327,016,529</b>		<b>1,971,909,667</b>
	40.04.110	Environmental Mitigation Allowance, Heavy	1.00	LS	71,600,558	/LS	71,600,558
	40.06.100	Temporary facilities and other indirect costs during construction	1.00	LS	87,511,794	/LS	87,511,794
	40.07.100	ROW Procurement Acquisition	1.00	LS	1,195,693,001	/LS	1,195,693,001
	50.01	Way Side Signalling equipment	6.03	RM	5,550,462	/RM	33,469,288

Alt		UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
		50.04	Traffic Control and dispatching systems	6.03	RM	67,993	/RM	409,997
		50.05	Communications	6.03	RM	823,845	/RM	4,967,787
		50.07	Hazard detectors	6.03	RM	170,105	/RM	1,025,732
		60.03	Traction Power distribution: catenary and third rail	6.03	RM	2,841,108	/RM	17,131,883
		60.04	Traction power control	6.03	RM	89,009	/RM	536,723
		80.00.00	Professional Services	1.00	LS	406,345,526	/LS	406,345,526
		90.00.00	Unallocated Contingency	1.00	LS	153,217,378	/LS	153,217,378
			<b>Alternative 02 Scott-Alma</b>	<b>43.00</b>	<b>RM</b>	<b>100,090,382</b>	<b>/RM</b>	<b>4,303,886,436</b>
<b>03</b>			<b>Alternative 03 Scott-Alma</b>					
	<b>SS2</b>		<b>San Jose Diridon Sta Approach: Viaduct to Scott (Scott to Diridon Sta)</b>	<b>4.18</b>	<b>RM</b>	<b>426,119,226</b>	<b>/RM</b>	<b>1,781,178,366</b>
		10.01.222	Elevated Structure - 2 Track (20' Avg. Pier Ht)	0.23	RM	191,434,989	/RM	44,030,047
		10.01.222a	Elevated Structure - 2 Track (20' Avg. Pier Ht, 120' Span)	0.16	RM	179,694,590	/RM	28,751,134
		10.01.222b	Elevated Structure - 2 Track (20' Avg. Pier Ht, 150' Span)	0.14	RM	172,149,277	/RM	24,100,899
		10.01.223	Elevated Structure - 2 Track (30' Avg. Pier Ht, 90' Span)	0.29	RM	241,369,061	/RM	69,997,028

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.01.223a	Elevated Structure - 2 Track (30' Avg. Pier Ht) - 110' Spacing	0.88	RM	200,848,292	/RM	176,746,497
	10.01.224	Elevated Structure - 2 Track (40' Avg. Pier Ht)	0.31	RM	213,569,428	/RM	66,206,523
	10.01.227b	Elevated Structure - 2 Track (70' Avg. Pier Ht, 110' Span)	0.02	RM	251,516,157	/RM	5,030,323
	10.02.042	Scott-Diridon - 2 Trk over 3 Trk (30' Avg. Pier Ht) - 110' Spacing	0.23	RM	659,149,081	/RM	151,604,289
	10.02.043	Scott-Diridon - 2 Trk over 5 Trk (30' Avg. Pier Ht) - 110' Spacing	0.15	RM	729,926,080	/RM	109,488,912
	10.02.044	Scott-Diridon - 4 Trk over 3 Trk (60' Avg. Pier Ht) - 120' Spacing	0.29	RM	773,052,863	/RM	224,185,330
	10.02.045	Scott-Diridon - Diridon-Tamien - 4 Trk	0.19	RM	856,527,021	/RM	162,740,134
	10.02.046	Scott-Diridon - BC -160-220-160 Span - Lafayette St	0.10	RM	230,392,863	/RM	23,039,286
	10.02.047	Scott-Diridon - BC -160-220-160 Span - I-880	0.10	RM	158,284,449	/RM	15,828,445
	10.02.048	Scott-Diridon - BC -160-220-160 Span - Taylor St	0.10	RM	145,875,957	/RM	14,587,596
	10.02.049	Scott-Diridon - BC-120-240-120 Span - Santa Clara Sta	0.09	RM	239,189,151	/RM	21,527,024
	10.02.051	Scott-Diridon - BC -180-180 span - SJ City Market, Wye S Trk	0.14	RM	124,084,901	/RM	17,371,886
	10.02.052	Scott-Diridon - 4 Trk BC-150-240-150 Span - Santa Clara Street	0.10	RM	318,439,484	/RM	31,843,948
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	0.74	RM	4,125,169	/RM	3,052,625

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	0.12	RM	7,223,465	/RM	866,816
	10.06.230	At-Grade Track-Bed With Closed Drainage - 3 Track	1.20	RM	7,455,527	/RM	8,946,632
	10.06.240	At-Grade Track-Bed With Closed Drainage - 4 Track	0.77	RM	7,696,894	/RM	5,926,608
	10.08.421	Ret Fill, Walls Both Sides - 2 Trk (10' Avg. Wall Ht)	0.14	RM	15,224,244	/RM	2,131,394
	10.08.422	Retained Fill, Wall Both Sides - 2 Trks (20' Avg. Wall Ht)	0.20	RM	26,968,498	/RM	5,393,700
	10.09.112	Ballasted Track (Track Laying Machine) - 1 Track	0.74	RM	1,575,936	/RM	1,166,192
	10.09.122	Ballasted Track (Track Laying Machine) - 2 Track	0.46	RM	3,085,185	/RM	1,419,185
	10.09.132	Ballasted Track (Track Laying Machine) - 3 Track	1.20	RM	4,717,486	/RM	5,660,984
	10.09.142	Ballasted Track (Track Laying Machine) - 4 Track	0.77	RM	6,198,223	/RM	4,772,632
	10.10.120	Direct Fixation Track - 2 Track	2.92	RM	4,494,477	/RM	13,123,873
	10.10.140	Direct Fixation Track - 4 Track	0.56	RM	9,101,994	/RM	5,097,117
	10.14.321	Ballasted Crossover #10	1.00	EA	720,646	/EA	720,646
	10.14.322	Ballasted Crossover #11	3.00	EA	806,841	/EA	2,420,523
	10.14.323	Ballasted Crossover #14	4.00	EA	1,003,252	/EA	4,013,009

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.14.324	Ballasted Crossover #20	1.00	EA	1,413,031	/EA	1,413,031
	10.14.400	Terminal - Bumping Post	2.00	Ea	45,217	/Ea	90,434
	20.02.225	San Jose (Diridon) Sta	1.00	LS	307,339,406	/LS	307,339,406
	20.06.120	Ped Access (Cut & Cover)	650.00	LF	35,942	/LF	23,362,383
	20.06.172	Ped Brdg Undercrossing HSR (Lafayette St) Alt2:	1.00	EA	3,575,460	/EA	3,575,460
	20.06.210	Parking, at Grade	242.00	stl	8,589	/stl	2,078,555
	20.07.010	Roadway Modification, New AC Paving	60,800.00	SF	170	/SF	10,357,586
	20.07.715	Access Road Entrance Point	1.00	EA	48,633	/EA	48,633
	40.02.002	Natural Gas/Oil, 9"-16"	472.00	LF	195	/LF	91,824
	40.02.003	Potable Water, 10"-16"	1,703.00	LF	307	/LF	523,129
	40.02.005	Utility Relocation Allowance, Level 5 Urban	1,650.00	LF	197	/LF	325,236
	40.02.006	Sanitary Sewer, 37"-48"	2,404.00	LF	399	/LF	960,001
	40.02.008	Storm Drain, 42"-54"	631.00	LF	349	/LF	220,000
	40.02.009	Storm Drain, 55"-72"	1,592.00	LF	372	/LF	591,733

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.011	Pump Station (Storm)	2.00	EA	383,976	/EA	767,952
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	29,283.00	LF	283	/LF	8,285,737
	40.02.016	Electric UG	3,478.00	LF	310	/LF	1,077,674
	40.02.019	Electric OH, 51-114 kV	2,971.00	LF	130	/LF	385,133
	40.02.020	Electric OH, 115 kV	7,511.00	LF	245	/LF	1,838,870
	40.08.200.ae	Rdwy Underxing HSR (West Hedding): 2-Ln Rdwy Under 5 Trk	1.00	EA	57,058,342	/EA	57,058,342
	40.08.200.af	Rdwy Uxing HSR (De La Cruz Blvd): 5-Ln, RF Rdwy Under 7 Trks/6-Ln Rdwy	1.00	EA	106,588,784	/EA	106,588,784
	40.08.200.ah	Rdwy Underxing UPRR (Lafayette St) - 1 Trk (Main) Over 4 Ln Rdwy	1.00	EA	2,008,349	/EA	2,008,349
	50.01.030	Train Control, Wayside Facility Work	1.00	EA	31,216	/EA	31,216
	50.01.050	Train Control, Wayside Facility - Type B - Site Work & Equipment	1.00	EA	16,978	/EA	16,978
	50.01.080	Train Control, Wayside Facility - Type E - Site Work & Equipment	1.00	EA	72,970	/EA	72,970
	60.02.010	Traction Power, Supply Station Site Work	1.00	EA	277,713	/EA	277,713
<b>SS3</b>		<b>San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to</b>	<b>1.84</b>	<b>RM</b>	<b>299,346,957</b>	<b>/RM</b>	<b>550,798,400</b>
	10.01.225d	Elevated Structure - 2 Track (50' Avg. Pier Ht) - 150' Spacing	0.14	RM	197,484,535	/RM	27,647,835

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.01.226e	Elevated Structure - 2 Track (60' Avg. Pier Ht, 150' Span)	0.11	RM	209,654,303	/RM	23,061,973
	10.02.040	Diridon-Tamien - 2 Track	1.06	RM	198,673,112	/RM	210,593,499
	10.02.041	Diridon-Tamien - 4 Track	0.52	RM	482,156,229	/RM	250,721,239
	10.10.120	Direct Fixation Track - 2 Track	1.35	RM	4,495,392	/RM	6,068,779
	10.10.140	Direct Fixation Track - 4 Track	0.49	RM	9,005,693	/RM	4,412,790
	10.14.135	Direct Fixation Crossover (80 MPH)	1.00	EA	2,548,376	/EA	2,548,376
	20.06.211	Bike Path Realignment (Almaden Expy)	1.00	EA	22,305,801	/EA	22,305,801
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	9,800.00	SF	170	/SF	1,669,479
	40.02.005	Utility Relocation Allowance, Level 5 Urban	750.00	LF	197	/LF	147,834
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	2,040.00	LF	283	/LF	577,226
	40.02.020	Electric OH, 115 kV	1,400.00	LF	245	/LF	342,753
	40.02.024	Transmission Tower	1.00	EA	614,361	/EA	614,361
	50.01.030	Train Control, Wayside Facility Work	1.00	EA	31,216	/EA	31,216
	50.01.040	Train Control, Wayside Facility - Type Aa - Site Work & Equipment	1.00	EA	38,261	/EA	38,261



Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	50.01.050	Train Control, Wayside Facility - Type B - Site Work & Equipment	1.00	EA	16,978	/EA	16,978
<b>SS99-3</b>		<b>Alternative 3 Complete</b>	<b>6.03</b>	<b>RM</b>	<b>327,016,529</b>	<b>/RM</b>	<b>1,971,909,667</b>
	40.04.110	Environmental Mitigation Allowance, Heavy	1.00	LS	71,600,558	/LS	71,600,558
	40.06.100	Temporary facilities and other indirect costs during construction	1.00	LS	87,511,794	/LS	87,511,794
	40.07.100	ROW Procurement Acquisition	1.00	LS	1,195,693,001	/LS	1,195,693,001
	50.01	Way Side Signalling equipment	6.03	RM	5,550,462	/RM	33,469,288
	50.04	Traffic Control and dispatching systems	6.03	RM	67,993	/RM	409,997
	50.05	Communications	6.03	RM	823,845	/RM	4,967,787
	50.07	Hazard detectors	6.03	RM	170,105	/RM	1,025,732
	60.03	Traction Power distribution: catenary and third rail	6.03	RM	2,841,108	/RM	17,131,883
	60.04	Traction power control	6.03	RM	89,009	/RM	536,723
	80.00.00	Professional Services	1.00	LS	406,345,526	/LS	406,345,526
	90.00.00	Unallocated Contingency	1.00	LS	153,217,378	/LS	153,217,378
		<b>Alternative 03 Scott-Alma</b>	<b>6.03</b>	<b>RM</b>	<b>713,745,677</b>	<b>/RM</b>	<b>4,303,886,433</b>

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
<b>04</b>		<b>Alternative 04 Scott-Alma</b>					
	<b>SS401</b>	<b>Scott Blvd to Diridon Station</b>	<b>4.16</b>	<b>RM</b>	<b>22,547,148</b>	<b>/RM</b>	<b>93,796,135</b>
	10.05.300	Transition Wedge - 1 Trk (Fill Ht < 20' Avg.)	14.00	EA	191,832	/EA	2,685,652
	10.05.310	Transition Wedge - 2 Trk (Fill Ht < 20' Avg.)	6.00	EA	688,629	/EA	4,131,772
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.30	RM	4,101,237	/RM	5,331,608
	10.09.110	Ballasted Track - 1 Track	1.30	RM	2,350,177	/RM	3,055,231
	10.14.201	Ballasted Turnout #9	2.00	EA	127,173	/EA	254,346
	10.14.202	Ballasted Turnout #10	2.00	EA	138,477	/EA	276,954
	10.14.320	Ballasted Crossover	3.00	EA	652,820	/EA	1,958,461
	10.14.321	Ballasted Crossover #10	3.00	EA	720,646	/EA	2,161,938
	10.14.323	Ballasted Crossover #14	2.00	EA	1,003,252	/EA	2,006,504
	20.02.225	San Jose (Diridon) Sta	1.00	LS	60,057,021	/LS	60,057,021
	20.02.297	College Park Station	1.00	LS	1,636,317	/LS	1,636,317
	20.06.210b1	Parking - Deck Structure (1 story, 68 stalls)	1.00	LS		/LS	
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	10,800.00	SF	170	/SF	1,839,834

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.011	Pump Station (Storm)	1.00	EA	383,976	/EA	383,976
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	11,505.00	LF	283	/LF	3,255,384
	40.02.016	Electric UG	300.00	LF	310	/LF	92,956
	40.02.020	Electric OH, 115 kV	920.00	LF	245	/LF	225,238
	40.02.024	Transmission Tower	1.00	EA	614,361	/EA	614,361
	40.02.039	Storm Drain, 6"-18"	70.00	LF	217	/LF	15,201
	40.02.040	Storm Drain, 19"-30"	620.00	LF	316	/LF	196,162
	40.08.200.au	Rdwy Underxing UPRR (Taylor St): Exist Rd Under 1 Trk	1.00	EA	3,575,692	/EA	3,575,692
	50.01.090	Train Control, Wayside Facility - Ptc Site - Site Work & Equipment	1.00	EA	12,274	/EA	12,274
	50.05.020	Communications	2.00	EA	14,627	/EA	29,253
<b>SS402</b>		<b>Diridon Station to Alma Ave</b>	<b>1.8</b>	<b>RM</b>	<b>96,010,452</b>	<b>/RM</b>	<b>172,818,813</b>
	10.01.001	Topsoil	14,929.00	CY	4	/CY	63,246
	10.01.002	Cut	27,305.00	CY	13	/CY	366,423
	10.01.004	Overbreak In Embankment	8,515.00	CY	20	/CY	168,489

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.01.005	Embankment	27,994.00	CY	23	/CY	632,745
	10.01.006	Overbreak Fill In Cut	17,083.00	CY	20	/CY	338,038
	10.01.007	Overbreak Fill In Embankment	8,515.00	CY	20	/CY	168,489
	10.01.008	Subballast	11,250.00	CY	59	/CY	667,683
	10.02.055	Steel Through Girder - I-280	1.00	EA	11,543,530	/EA	11,543,530
	10.02.056	Concrete Through Girder - SR-87	1.00	EA	17,998,863	/EA	17,998,863
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.95	RM	4,101,237	/RM	7,997,412
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	1.79	RM	7,151,230	/RM	12,800,702
	10.09.110	Ballasted Track - 1 Track	1.95	RM	2,350,177	/RM	4,582,846
	10.09.120	Ballasted Track - 2 Track	1.79	RM	5,049,875	/RM	9,039,276
	10.14.202	Ballasted Turnout #10	7.00	EA	138,477	/EA	969,339
	10.14.323	Ballasted Crossover #14	3.00	EA	1,003,252	/EA	3,009,757
	20.06.211	Bike Path Realignment (Almaden Expy)	1.00	EA	22,305,801	/EA	22,305,801
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	6,100.00	SF	170	/SF	1,039,166

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.07.801	Quad Gate Prototype A	2.00	EA	2,498,465	/EA	4,996,929
	40.02.011	Pump Station (Storm)	2.00	EA	383,976	/EA	767,952
	40.02.022	Electric OH, unknown	370.00	LF	194	/LF	71,893
	40.02.045	Electric OH & Telecom OH on JP, Unknown	1,150.00	LF	194	/LF	223,451
	40.05.025	Retaining Wall In Fill - 1 Wall (20' Avg. Height)	4,584.00	LF	7,680	/LF	35,203,678
	40.05.026	Retaining Wall In Fill - 1 Wall (30' Avg. Height)	237.94	LF	9,215	/LF	2,192,717
	40.05.050	Retaining Wall In Cut - 1 Wall (10' Avg. Exc Depth)	1,966.25	LF	3,072	/LF	6,039,941
	40.08.200.av	Rdwy Underxing HSR (Guadalupe River): Creek Under 1 Trk	1.00	EA	7,347,669	/EA	7,347,669
	40.08.200.aw	Roadway Undercrossing HSR (Bird Ave): Exist road UNDER Three Tracks	1.00	EA	9,159,119	/EA	9,159,119
	40.08.200.ax	Rdwy Underxing HSR (Delmas Ave): Exist Rd Under 3 Trk	1.00	EA	4,077,704	/EA	4,077,704
	40.08.200.ay	Rdwy Underxing HSR (Prevost St): Exist Rd Under 1 Trk	1.00	EA	1,922,822	/EA	1,922,822
	40.08.200.az	Rdwy Underxing HSR (Willow St): Exist Rd Under 1 Trk	1.00	EA	3,617,322	/EA	3,617,322
	40.08.200.ba	Rdwy Underxing HSR (Alma Ave): Exist Rd Under 2 Trk	1.00	EA	3,493,537	/EA	3,493,537
	50.01.090	Train Control, Wayside Facility - Ptc Site - Site Work & Equipment	1.00	EA	12,274	/EA	12,274

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
<b>SS99-4</b>		<b>Alternative 04 Complete</b>	<b>5.95</b>	<b>RM</b>	<b>158,678,893</b>	<b>/RM</b>	<b>944,139,413</b>
	40.04.110	Environmental Mitigation Allowance, Heavy	1.00	LS	7,907,885	/LS	7,907,885
	40.06.100	Temporary facilities and other indirect costs during construction	1.00	LS	9,665,193	/LS	9,665,193
	40.07.100	ROW Procurement Acquisition	1.00	LS	755,711,000	/LS	755,711,000
	50.01	Way Side Signalling equipment	5.95	RM	7,129,328	/RM	42,419,503
	50.01.010	Train Controls (ATC) - 2 Track	5.95	RM	587,075	/RM	3,493,099
	50.04	Traffic Control and dispatching systems	5.95	RM	67,127	/RM	399,405
	50.05	Communications	5.95	RM	789,511	/RM	4,697,593
	50.07	Hazard detectors	5.95	RM	206,019	/RM	1,225,811
	60.03	Traction Power distribution: catenary and third rail	5.95	RM	2,253,330	/RM	13,407,316
	60.03.150	OCS - Double Track On Embankment	5.95	RM	872,270	/RM	5,190,009
	60.04	Traction power control	5.95	RM	87,875	/RM	522,857
	80.00.00	Professional Services	1.00	LS	56,653,343	/LS	56,653,343
	90.00.00	Unallocated Contingency	1.00	LS	42,846,399	/LS	42,846,399

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
		<b>Alternative 04 Scott-Alma</b>	<b>5.95</b>	<b>RM</b>	<b>203,488,128</b>	<b>/RM</b>	<b>1,210,754,361</b>
<b>05</b>		<b>Alternative 04 - Diridon Design Variant</b>					
	<b>SS DV1</b>	<b>Diridon Design Variant 1</b>		<b>RM</b>		<b>/RM</b>	<b>20,982,522</b>
	10.09.142	Ballasted Track (Track Laying Machine) - 4 Track	0.51	RM	10,385,658	/RM	5,296,685
	10.09.912	Ballasted Track Relocation - 1 Track (Permanent) 1'-10'	1.82	RM	1,248,682	/RM	2,272,601
	10.14.202	Ballasted Turnout #10	11.00	EA	138,477	/EA	1,523,248
	10.14.320	Ballasted Crossover	1.00	EA	652,820	/EA	652,820
	10.14.321	Ballasted Crossover #10	5.00	EA	720,646	/EA	3,603,230
	10.14.323	Ballasted Crossover #14	1.00	EA	1,003,252	/EA	1,003,252
	20.02.225	San Jose (Diridon) Sta	1.00	LS	6,106,753	/LS	6,106,753
	20.06.210	Parking, at Grade	61.00	stl	8,589	/stl	523,933
	20.06.210b2	Parking - Deck Structure (1 story, additional 31 stalls)	1.00	LS		/LS	
	<b>SS401</b>	<b>Scott Blvd to Diridon Station</b>	<b>4.16</b>	<b>RM</b>	<b>22,540,116</b>	<b>/RM</b>	<b>93,766,882</b>
	10.05.300	Transition Wedge - 1 Trk (Fill Ht < 20' Avg.)	14.00	EA	191,832	/EA	2,685,652

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.05.310	Transition Wedge - 2 Trk (Fill Ht < 20' Avg.)	6.00	EA	688,629	/EA	4,131,772
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.30	RM	4,101,237	/RM	5,331,608
	10.09.110	Ballasted Track - 1 Track	1.30	RM	2,350,177	/RM	3,055,231
	10.14.201	Ballasted Turnout #9	2.00	EA	127,173	/EA	254,346
	10.14.202	Ballasted Turnout #10	2.00	EA	138,477	/EA	276,954
	10.14.320	Ballasted Crossover	3.00	EA	652,820	/EA	1,958,461
	10.14.321	Ballasted Crossover #10	3.00	EA	720,646	/EA	2,161,938
	10.14.323	Ballasted Crossover #14	2.00	EA	1,003,252	/EA	2,006,504
	20.02.225	San Jose (Diridon) Sta	1.00	LS	60,057,021	/LS	60,057,021
	20.02.297	College Park Station	1.00	LS	1,636,317	/LS	1,636,317
	20.06.210b1	Parking - Deck Structure (1 story, 68 stalls)	1.00	LS		/LS	
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	10,800.00	SF	170	/SF	1,839,834
	40.02.011	Pump Station (Storm)	1.00	EA	383,976	/EA	383,976
	40.02.013	Telecomm/Fiber Optic UG, All Sizes	11,505.00	LF	283	/LF	3,255,384



Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	40.02.016	Electric UG	300.00	LF	310	/LF	92,956
	40.02.020	Electric OH, 115 kV	920.00	LF	245	/LF	225,238
	40.02.024	Transmission Tower	1.00	EA	614,361	/EA	614,361
	40.02.039	Storm Drain, 6"-18"	70.00	LF	217	/LF	15,201
	40.02.040	Storm Drain, 19"-30"	620.00	LF	316	/LF	196,162
	40.08.200.au	Rdwy Underxing UPRR (Taylor St): Exist Rd Under 1 Trk	1.00	EA	3,575,692	/EA	3,575,692
	50.01.010	Train Controls (ATC) - 2 Track	4.16	RM		/RM	
	50.01.090	Train Control, Wayside Facility - Ptc Site - Site Work & Equipment	1.00	EA	12,274	/EA	12,274
	50.05.010	Communications (w/Fiber Optic Backbone) - 2 Track	4.16	RM		/RM	
	50.05.020	Communications	2.00	EA	14,627	/EA	29,253
	60.03.150	OCS - Double Track On Embankment	0.30	RM		/RM	
<b>SS402</b>		<b>Diridon Station to Alma Ave</b>	<b>1.8</b>	<b>RM</b>	<b>96,010,452</b>	<b>/RM</b>	<b>172,818,813</b>
	10.01.001	Topsoil	14,929.00	CY	4	/CY	63,246
	10.01.002	Cut	27,305.00	CY	13	/CY	366,423
	10.01.004	Overbreak In Embankment	8,515.00	CY	20	/CY	168,489

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	10.01.005	Embankment	27,994.00	CY	23	/CY	632,745
	10.01.006	Overbreak Fill In Cut	17,083.00	CY	20	/CY	338,038
	10.01.007	Overbreak Fill In Embankment	8,515.00	CY	20	/CY	168,489
	10.01.008	Subballast	11,250.00	CY	59	/CY	667,683
	10.02.055	Steel Through Girder - I-280	1.00	EA	11,543,530	/EA	11,543,530
	10.02.056	Concrete Through Girder - SR-87	1.00	EA	17,998,863	/EA	17,998,863
	10.06.210	At-Grade Track Bed in Fill - 2 Track (10'Avg fill ht)	1.95	RM	4,101,237	/RM	7,997,412
	10.06.220	At-Grade Track Bed w/ closed Drainage - 2 Track	1.79	RM	7,151,230	/RM	12,800,702
	10.09.110	Ballasted Track - 1 Track	1.95	RM	2,350,177	/RM	4,582,846
	10.09.120	Ballasted Track - 2 Track	1.79	RM	5,049,875	/RM	9,039,276
	10.14.202	Ballasted Turnout #10	7.00	EA	138,477	/EA	969,339
	10.14.323	Ballasted Crossover #14	3.00	EA	1,003,252	/EA	3,009,757
	20.06.211	Bike Path Realignment (Almaden Expy)	3.00	EA	7,435,267	/EA	22,305,801
	20.07.020	Roadway Modification, New AC Paving (including Curb & Sidewalk)	1.00	SF	1,039,166	/SF	1,039,166

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
	20.07.801	Quad Gate Prototype A	6,100.00	EA	819	/EA	4,996,929
	40.02.011	Pump Station (Storm)	2.00	EA	383,976	/EA	767,952
	40.02.022	Electric OH, unknown	370.00	LF	194	/LF	71,893
	40.02.045	Electric OH & Telecom OH on JP, Unknown	1,150.00	LF	194	/LF	223,451
	40.05.025	Retaining Wall In Fill - 1 Wall (20' Avg. Height)	4,584.00	LF	7,680	/LF	35,203,678
	40.05.026	Retaining Wall In Fill - 1 Wall (30' Avg. Height)	237.94	LF	9,215	/LF	2,192,717
	40.05.050	Retaining Wall In Cut - 1 Wall (10' Avg. Exc Depth)	1,966.25	LF	3,072	/LF	6,039,941
	40.08.200.av	Rdwy Underxing HSR (Guadalupe River): Creek Under 1 Trk	1.00	EA	7,347,669	/EA	7,347,669
	40.08.200.aw	Roadway Undercrossing HSR (Bird Ave): Exist road UNDER Three Tracks	1.00	EA	9,159,119	/EA	9,159,119
	40.08.200.ax	Rdwy Underxing HSR (Delmas Ave): Exist Rd Under 3 Trk	1.00	EA	4,077,704	/EA	4,077,704
	40.08.200.ay	Rdwy Underxing HSR (Prevost St): Exist Rd Under 1 Trk	1.00	EA	1,922,822	/EA	1,922,822
	40.08.200.az	Rdwy Underxing HSR (Willow St): Exist Rd Under 1 Trk	1.00	EA	3,617,322	/EA	3,617,322
	40.08.200.ba	Rdwy Underxing HSR (Alma Ave): Exist Rd Under 2 Trk	1.00	EA	3,493,537	/EA	3,493,537
	50.01.090	Train Control, Wayside Facility - Ptc Site - Site Work & Equipment	1.00	EA	12,274	/EA	12,274

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
<b>SS99-5</b>		<b>Alternative 04-DV1 Complete</b>	<b>5.95</b>	<b>RM</b>	<b>160,012,134</b>	<b>/RM</b>	<b>952,072,196</b>
	40.04.110	Environmental Mitigation Allowance, Heavy	1.00	LS	8,548,124	/LS	8,548,124
	40.06.100	Temporary facilities and other indirect costs during construction	1.00	LS	10,447,707	/LS	10,447,707
	40.07.100	ROW Procurement Acquisition	1.00	LS	757,658,000	/LS	757,658,000
	50.01	Way Side Signalling equipment	5.95	RM	7,129,328	/RM	42,419,503
	50.01.010	Train Controls (ATC) - 2 Track	5.95	RM	587,075	/RM	3,493,099
	50.04	Traffic Control and dispatching systems	5.95	RM	67,127	/RM	399,405
	50.05	Communications	5.95	RM	789,511	/RM	4,697,593
	50.07	Hazard detectors	5.95	RM	206,019	/RM	1,225,811
	60.03	Traction Power distribution: catenary and third rail	5.95	RM	2,253,330	/RM	13,407,316
	60.03.150	OCS - Double Track On Embankment	5.95	RM	872,270	/RM	5,190,009
	60.04	Traction power control	5.95	RM	87,875	/RM	522,857
	80.00.00	Professional Services	1.00	LS	60,192,796	/LS	60,192,796
	90.00.00	Unallocated Contingency	1.00	LS	43,869,976	/LS	43,869,976

Alt	UPE	Description	Takeoff Quantity		Grand Total Unit Price		Grand Total Amount
		Total Alternative 04 - Diridon Design Variant	5.95	RM	208,342,927	/RM	1,239,640,413

**Detail Cost Budget Data (By SCC Major Task)**

Alt	Subsection	SCC-Major	Description	Grand Total
			<b>F-J</b>	
<b>1</b>			<b>Alt A</b>	
		10.00	Track Structure & Track	442,104,669
		20.00	Stations, Terminal, Intermodal	165,958,543
		30.00	Support Facilities, Yards, and Shops	885,979,144
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,943,362,773
		50.00	Communications & Signaling	79,984,002
		60.00	Electric Traction	103,651,534
		80.00	Professional Services	313,610,755
		90.00	Unallocated Contingency	142,818,941
			<b>Alt A</b>	<b>4,077,470,361</b>
<b>2</b>			<b>Alt B</b>	
		10.00	Track Structure & Track	1,132,107,380
		20.00	Stations, Terminal, Intermodal	201,143,181
		30.00	Support Facilities, Yards, and Shops	970,865,130
		40.00	Sitework, Right of Way, Land, Existing Conditions	2,470,592,837
		50.00	Communications & Signaling	79,984,002
		60.00	Electric Traction	103,651,534
		80.00	Professional Services	439,678,792
		90.00	Unallocated Contingency	197,536,333
			<b>Alt B</b>	<b>5,595,559,188</b>
<b>1</b>			<b>Alt A MRSP</b>	

		10.00	Track Structure & Track	442,104,669
		20.00	Stations, Terminal, Intermodal	161,188,002
		30.00	Support Facilities, Yards, and Shops	885,979,144
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,795,694,455
		50.00	Communications & Signaling	79,984,002
		60.00	Electric Traction	103,651,534
		80.00	Professional Services	312,851,200
		90.00	Unallocated Contingency	137,156,871
			<b>Alt A MRSP</b>	<b>3,918,609,825</b>
<b>2</b>			<b>Alt B MRSP</b>	
		10.00	Track Structure & Track	1,132,107,380
		20.00	Stations, Terminal, Intermodal	196,372,640
		30.00	Support Facilities, Yards, and Shops	970,865,130
		40.00	Sitework, Right of Way, Land, Existing Conditions	2,393,748,026
		50.00	Communications & Signaling	79,984,002
		60.00	Electric Traction	103,651,534
		80.00	Professional Services	452,009,754
		90.00	Unallocated Contingency	194,497,158
			<b>Alt B MRSP</b>	<b>5,523,235,623</b>
			<b>Scott -Alma</b>	
<b>01</b>			<b>Alternative 01</b>	
	<b>SS1</b>		<b>San Jose Diridon Sta Approach: Viaduct to I-880 (Scott to Diridon Sta)</b>	
		10.00	Track Structure & Track	643,447,330
		20.00	Stations, Terminal, Intermodal	343,205,672
		40.00	Sitework, Right of Way, Land, Existing Conditions	67,949,196
		50.00	Communications & Signaling	135,791
		60.00	Electric Traction	277,713
			<b>SS1 San Jose Diridon Sta Approach: Viaduct to I-880 (Scott to Diridon Sta)</b>	<b>1,055,015,702</b>
	<b>SS3</b>		<b>San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to</b>	

		10.00	Track Structure & Track	525,054,491
		20.00	Stations, Terminal, Intermodal	23,975,280
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,682,175
		50.00	Communications & Signaling	86,456
			SS3 San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to	550,798,402
	SS99-1		Alternative 1 Complete	
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,178,138,072
		50.00	Communications & Signaling	39,872,804
		60.00	Electric Traction	17,668,606
		80.00	Professional Services	282,285,946
		90.00	Unallocated Contingency	115,171,806
			SS99-1 Alternative 1 Complete	1,633,137,233
			Alternative 01	3,238,951,337
02			Alternative 02	
	SS2		San Jose Diridon Sta Approach: Viaduct to Scott (Scott to Diridon Sta)	
		10.00	Track Structure & Track	1,253,294,702
		20.00	Stations, Terminal, Intermodal	346,762,023
		40.00	Sitework, Right of Way, Land, Existing Conditions	180,722,765
		50.00	Communications & Signaling	121,164
		60.00	Electric Traction	277,713
			SS2 San Jose Diridon Sta Approach: Viaduct to Scott (Scott to Diridon Sta)	1,781,178,368
	SS3		San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to	
		10.00	Track Structure & Track	525,054,491
		20.00	Stations, Terminal, Intermodal	23,975,280
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,682,175
		50.00	Communications & Signaling	86,456
			SS3 San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to	550,798,402
	SS99-2		Alternative 2 Complete	
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,354,805,352

		50.00	Communications & Signaling	39,872,804
		60.00	Electric Traction	17,668,606
		80.00	Professional Services	406,345,526
		90.00	Unallocated Contingency	153,217,378
			SS99-2 Alternative 2 Complete	1,971,909,667
			<b>Alternative 02</b>	<b>4,303,886,436</b>
<b>03</b>			<b>Alternative 03</b>	
	SS2		San Jose Diridon Sta Approach: Viaduct to Scott (Scott to Diridon Sta)	
		10.00	Track Structure & Track	1,253,294,702
		20.00	Stations, Terminal, Intermodal	346,762,023
		40.00	Sitework, Right of Way, Land, Existing Conditions	180,722,765
		50.00	Communications & Signaling	121,164
		60.00	Electric Traction	277,713
			SS2 San Jose Diridon Sta Approach: Viaduct to Scott (Scott to Diridon Sta)	1,781,178,368
	SS3		San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to	
		10.00	Track Structure & Track	525,054,491
		20.00	Stations, Terminal, Intermodal	23,975,280
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,682,175
		50.00	Communications & Signaling	86,456
			SS3 San Jose to Monterey Corridor:Diridon Sta to Alma Ave Diridon Sta to	550,798,402
	SS99-3		Alternative 3 Complete	
		40.00	Sitework, Right of Way, Land, Existing Conditions	1,354,805,352
		50.00	Communications & Signaling	39,872,804
		60.00	Electric Traction	17,668,606
		80.00	Professional Services	406,345,526
		90.00	Unallocated Contingency	153,217,378
			SS99-2 Alternative 2 Complete	1,971,909,667
			<b>Alternative 03</b>	<b>4,303,886,436</b>
<b>04</b>			<b>Alternative 04</b>	



	<b>SS401</b>		<b>Scott Blvd to Diridon Station</b>	
		10.00	Track Structure & Track	21,862,466
		20.00	Stations, Terminal, Intermodal	63,533,172
		40.00	Sitework, Right of Way, Land, Existing Conditions	8,358,970
		50.00	Communications & Signaling	41,527
			<b>SS401 Scott Blvd to Diridon Station</b>	<b>93,796,135</b>
	<b>SS402</b>		<b>Diridon Station to Alma Ave</b>	
		10.00	Track Structure & Track	70,346,838
		20.00	Stations, Terminal, Intermodal	28,341,896
		40.00	Sitework, Right of Way, Land, Existing Conditions	74,117,805
		50.00	Communications & Signaling	12,274
			<b>SS402 Diridon Station to Alma Ave</b>	<b>172,818,811</b>
	<b>SS99-4</b>		<b>Alternative 04 Complete</b>	
		40.00	Sitework, Right of Way, Land, Existing Conditions	773,284,078
		50.00	Communications & Signaling	52,235,412
		60.00	Electric Traction	19,120,182
		80.00	Professional Services	56,653,343
		90.00	Unallocated Contingency	42,846,399
			<b>SS99-4 Alternative 04 Complete</b>	<b>944,139,415</b>
			<b>04 Alternative 04</b>	<b>1,210,754,361</b>
<b>05</b>			<b>Alternative 04 - Diridon Design Variant</b>	
	<b>SS DV1</b>		<b>Diridon Design Variant 1</b>	
		10.00	Track Structure & Track	14,351,837
		20.00	Stations, Terminal, Intermodal	6,630,686
			<b>SS DV1 Diridon Design Variant 1</b>	<b>20,982,523</b>
	<b>SS401</b>		<b>Scott Blvd to Diridon Station</b>	
		10.00	Track Structure & Track	21,862,466
		20.00	Stations, Terminal, Intermodal	63,533,172
		40.00	Sitework, Right of Way, Land, Existing Conditions	8,358,970

	50.00	Communications & Signaling	41,527
	60.00	Electric Traction	
		<b>SS401 Scott Blvd to Diridon Station</b>	<b>93,796,135</b>
<b>SS402</b>		<b>Diridon Station to Alma Ave</b>	
	10.00	Track Structure & Track	70,346,838
	20.00	Stations, Terminal, Intermodal	28,341,896
	40.00	Sitework, Right of Way, Land, Existing Conditions	74,117,805
	50.00	Communications & Signaling	12,274
	60.00	Electric Traction	
		<b>SS402 Diridon Station to Alma Ave</b>	<b>172,818,811</b>
<b>SS99-5</b>		<b>Alternative 04-DV1 Complete</b>	
	40.00	Sitework, Right of Way, Land, Existing Conditions	776,653,831
	50.00	Communications & Signaling	52,235,412
	60.00	Electric Traction	19,120,182
	80.00	Professional Services	60,192,796
	90.00	Unallocated Contingency	43,869,976
		<b>SS99-5 Alternative 04-DV1 Complete</b>	<b>952,072,197</b>
		<b>05 Alternative 04 - Diridon Design Variant</b>	<b>1,239,669,666</b>

**Estimate Summary**

<b>Alt (F-J&amp;Scott-Alma)</b>	<b>Description</b>	<b>Grand Total</b>
Alt A	4th&King to Scott	4,077,470,357
Alt B	4th&King to Scott	5,595,559,194
Alt A MRSP	4th&King to Scott	3,918,609,822
Alt B MRSP	4th&King to Scott	5,523,235,627
Alt A+4	4th&king to Alma	5,288,224,718
Alt A+4 DV1	4th&king to Alma	5,317,140,023
Alt B+1	4th&king to Alma	8,834,510,532
Alt B+2	4th&king to Alma	9,899,445,627
Alt B+3	4th&king to Alma	9,899,445,627

## APPENDIX D LIST OF DOCUMENTS

The following documents were received by the Regional Consultant.

- FJ\_2021\_PEPD\_AppA\_Qty\_20210506
- FJ\_2021\_PEPD\_AppA\_Qty\_20210506\_rev
- JM 2021\_PEPD\_AppA-Qty-v10\_20210423\_CLEAN
- FJ\_Updated Earthwork\_092921
- FJ\_2021\_PEPD\_AppA\_Qty\_20210929
- JM 2021\_PEPD\_AppA-Qty-v10\_20210929
- 2. Appendix 5 - Table of Impacted Parcels-FJ
- 2. Appendix 5 - Table of Impacted Parcels-Scott-W Alma 09.03.2021
- Memorandum - HSR JM Segment - Scott to W Alma Segregation 09.03.21
- Memorandum - HSR San Francisco to San Jose Segment - Limited Cost Estimate 09-03-21
- ROWRR list 20210709\_print
- ROWRR list Scott-Alma 20210709