US-101 Freeway Cap

Preliminary Feasibility Study

Summary Report prepared for the City of Ventura

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CITY OF VENTURA
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SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

COMPASS BLUEPRINT

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This is a project of the City of Ventura with funding provided by the Southern California Association of Governments' (SCAG) Compass Blueprint Demonstration Project Program. Compass Blueprint assists Southern California cities and other organizations in evaluating planning options and stimulating development consistent with the region's goals. Compass Blueprint tools support visioning efforts, infill analyses, economic and policy analyses, and marketing and communication programs.

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The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of SCAG or DOT. This report does not constitute a standard, specification or regulation.

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Executive Summary

This project is a research study conducted by the City of Ventura, in partnership with the Southern California Association of Governments' (SCAG) Compass Blueprint Program, to assess the feasibility of creating a transit-oriented mixed-use waterfront downtown in Ventura by capping over the US 101 Freeway. The freeway is a physical barrier to realizing the City's vision for its downtown by effectively isolating the downtown from the waterfront.

The purpose of the research study was to determine if a reconnection over the freeway was physically possible, and to answer the questions:

- Is it physically possible to cap the US 101 Freeway where it runs through downtown Ventura?
- If it is physically possible, how much will it cost to cap the freeway?
- How much land will be reclaimed by capping the freeway?
- What will the appropriate mix of uses be for the reclaimed land?
- Will it be feasible for public and private buildings to be developed on the reclaimed land?
- What will be the best approach to move forward with the project?

During the seven-month study, a multi-disciplinary consulting team led by the firm of Fregonese Associates with the engineering support of Kimley-Horn and Associates worked in concert with City staff and Caltrans representatives to examine existing local site conditions, look at real world examples from other cities where similar reconnection efforts had been completed, and identify the range of alternatives that could be physically and technically pursued.

The City explored three capping alternatives:

- Limited capping to accommodate a park, bicycle and pedestrian facilities (would not structurally support buildings and roadways).
- Limited capping to provide for improved access between downtown and the beach, possibly by widening existing bridges.
- Full or partial capping—by expanding existing bridges and constructing new capping that would structurally accommodate new buildings and roadways.

The team analyzed each alternative to identify the parameters within which it would be physically and technically feasible to pursue each alternative, individually or in some combination. The analyses assessed the spectrum of issues and impacts on urban design and land use, structural engineering, noise abatement, real estate and economic development, constructability, and air rights controls.

A discussion of each alternative approach is included in this report. The technical analysis conducted as part of this initial research effort estimates construction costs, air rights conversion and acquisition issues, possible funding mechanisms, the process for reaching out to the public and building partnerships, and other critical issues that will be involved in executing future phases of work.

Work conducted during this initial research study yields the following conclusions:

- A variety of alternative approaches can be pursued to reconnect downtown Ventura with the waterfront;
- Replacing noisy vacant airspace with productive uses can transform the area and provide significant social and economic benefits that extend far beyond the immediately abutting properties to include adjacent neighborhoods;
- The engineering and economics of building above the freeway are sound and feasible;
- The regulatory issues associated with reconnecting across specific sections of US 101 Freeway can be resolved effectively and in a reasonable time period;
- Any reconnection project must include significant outreach to and input and direction from the community; and
- Air rights issues will need to be addressed as part of any capping plan that includes new buildings or other economic uses within the US 101 right-of-way.

Next Steps

The findings presented here provide a basis for moving forward with a community-wide public outreach effort and set a framework for addressing the broad scope of issues associated with any reconnection alternative the City may wish to pursue.

Multiple options exist for re-establishing connectivity within the study area. If the experiences of numerous other communities around California and the country are any indicator, the ultimate success of reconnection in Ventura will be the result of the combined efforts of an informed and involved resident and business community, working in partnership with city, state, and federal agencies—for whom the existing transportation system must continue to function safely and efficiently.

1. Introduction

The physical separation created by the US 101 Ventura Freeway between Ventura's downtown and the beach has been a persistent concern that residents mentioned as part of the 2005 General Plan process and reinforced during the preparation of the Downtown Specific Plan. As a response, the City applied for and was awarded a Demonstration Project grant from SCAG's Compass Blueprint Program. The program provided funding to examine the feasibility of creating a transit-oriented, mixed-use, waterfront downtown by capping over the US 101 Freeway. The US 101 Freeway currently is a physical barrier to the downtown community. A capping project will repair the tear in the urban fabric resulting from the freeway construction, and regain valuable downtown real estate for uses that benefit the community, such as a multi-modal transit center.

The US 101 Ventura Freeway is a six-lane, automobile only roadway that runs below-grade through the heart of downtown Ventura. The freeway location and configuration reflects transportation planning decisions of the 1960s. It is automobile-centric and no other mode of transportation is possible along its right-of-way. The freeway cuts through Downtown, effectively restricting development along prime real estate adjacent to the Pacific Ocean and precluding the opportunity to create a vibrant, transit-oriented community.

Purpose

The study examines the existing conditions in the project area and determines if capping of the freeway is physically possible. It also identifies a range of alternative capping concepts, defines opportunities, constraints and costs, identifies the location for a multi-modal transit center and assesses potential other public and private uses. Issues that are also addressed include urban design and land use, structural and geotechnical engineering, noise abatement, real estate and economic development, traffic, tunnel safety, environmental regulations, constructability and air rights. It outlines a process for moving forward with the next phases of developing the concept.

Agency Involvement

The study was prepared with oversight from the City of Ventura and the Southern California Association of Governments (SCAG). The team held monthly meetings with City staff from the Economic Development, Planning, and Engineering Departments. City staff helped determine design constraints and select cap alignment alternatives. They also provided technical documentation and historic knowledge of transportation projects in the area.

Caltrans also provided input on the feasibility of the freeway cap. Representatives from Community Planning, Project Studies, Environmental, and Design Divisions met with the team and City staff to assess fatal flaws of the preliminary design. Caltrans also helped define the next steps and process for the planning and design of the freeway cap.

Alternatives to Achieving Goals

The study identifies three project alternatives that all meet the City's objective to increase connectivity between the downtown and the beach, but have varying cost, construction methods, and land area created. The City identified two fixed constraints to consider in determining the alternatives: to maintain the existing alignment and elevation of the Union Pacific railroad and to maintain the existing location and elevation of the freeway travel lanes. Lowering the freeway lanes to provide vertical clearance for a cap would further exacerbate the existing flooding issue caused by high groundwater. The existing topography also helped define the spatial limits of the cap alternatives. The freeway is below-grade from approximately Sanjon Road to California Street. This area is the natural extent for the cap because the cap must have minimum required clearance over the freeway, but not be too high above the existing ground to provide connectivity. Future land use and development potential are also important design considerations because of the potential need to fund the cap's construction with revenues captured from new development. The cap alternatives were defined with the City to provide a range of options that balance cost with land area created.

Defining Alternatives

Three alternative cap designs were defined to meet the City's planning objectives and provide options for cost and construction timelines. Alternative 1 was designed as a complement to the City's current project to widen the sidewalk on California Street. Alternative 1 would widen the California Street bridge to accommodate additional space for pedestrian and bicycle connections across the freeway. Alternative 2 would include Alternative 1 and extend to the east. The eastern limit of Alternative 2 would be defined by the Union Pacific Railroad tracks. This alternative was studied because it would provide additional new land on the cap, while avoiding the lengthy and possibly costly process of rebuilding the railroad's crossing of the freeway right-of-way. Alternative 3 would extend from west of California Street to west of Sanjon Road, its limits defined by the elevation of the freeway and the minimum vertical clearance requirements. Each alternative is defined in more detail below.

Alternative 1

Alternative 1 would widen the California Street bridge to the west by approximately 165' to provide additional pedestrian and bicycle access across the bridge from downtown to the beach and the fairgrounds area. The western limit of the bridge is determined by the minimum vertical clearance required by Caltrans. This alternative assumes that the existing California Street bridge would remain in its current location even though it does not meet the current minimum vertical clearance requirement. Alternative 1 would yield approximately 0.6 acres of new land area.

Alternative 2

Alternative 2 includes the improvements described in Alternative 1 with an additional extension east from California Street to the west side of the railroad bridge. This alternative would maintain the existing substandard vertical clearance at California Street, but would meet or

Freeway Cap Alternatives

Alternative	Area	Description
Alternative 1	0.6 ac	Widening of California Street to the west until vertical clearance limit
Alternative 2	2.5 ac	Alternative 1 + cap to the east of California Street, ending west of the railroad bridge. This Alternative would be a flat cap foundation with buildings on top.
Alternative 3	14 ac	Alternative 1 + cap east of California Street, ending just west of Sanjon Road at vertical clearance limit. This alternative would be a stepped cap foundation with buildings on top.

Alternative 1

Alternative 2

Alternative 3

exceed the vertical clearance required by Caltrans for newly constructed sections of the freeway cap. Demolition of the existing Chestnut Street on-ramp would be required with traffic rerouted to the existing on-ramp at Harbor Boulevard or a new ramp on the freeway cap. This alternative would accommodate structures of up to four stories. There is minimal impact to the railroad expected with this alternative. Alternative 2 would result in creation of approximately 2.5 acres of new land atop the cap.

Alternative 3

Alternative 3 is the largest of the alternatives. The cap would extend from west of California Street to just west of Sanjon Road. The cap foundation would need to be "stepped" to provide the required vertical clearance and to tie into the surrounding grade levels. Vertical clearance and tie-in conditions also define the eastern limit of this alternative. The existing clearance at California Street would be maintained. This alternative would require demolition of the existing Chestnut Street on-ramp and the existing pedestrian bridge, which would be replaced by connections across the cap to the beach. Alternative 3 also requires reconstruction of the Union Pacific railroad bridge. The alignment of the railroad will be maintained and appropriate safety measures would be included in the design to separate other uses on the cap. This alternative would accommodate buildings up to four stories. Alternative 3 creates approximately 14 acres of new land.

Structural Analysis

The structural analysis completed for this study utilizes Caltrans design standards in defining the physical design and associated structural issues for each the three alternatives. The current structural condition of the California Street bridge and the US 101 Freeway are unknown. A geotechnical study was not completed as part of this study.

Additional information on the three alternative cap concepts is included in the Structural Analysis chapter of this report.

2. Issues and Opportunities

Overview

The consulting team conducted an initial screening of technical and economic issues that will drive the feasibility of improving connectivity between the downtown and the waterfront. The analysis addresses background concerns, existing conditions, functional constraints, and design factors that will need to be considered in order to successfully pursue any of the freeway capping alternatives. The matrix below provides a comparative assessment of the potential benefits and impacts of each alternative as they relate to each of the major technical areas of concern.

Opportunities

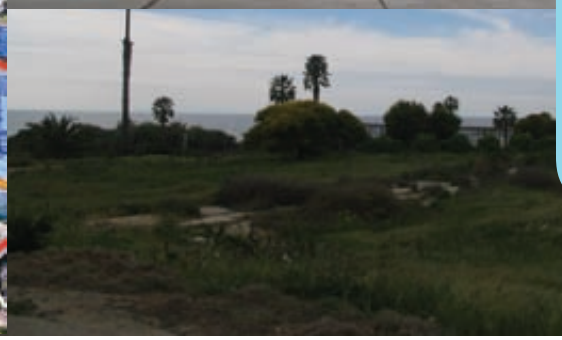
- Reconnect downtown and waterfront severed by freeway
- Infill development on properties that border cap
- Create new properties with views of Pacific Ocean
- Create "active corners" on parcels that border arterial streets and new freeway cap
- Outdoor dining, cafes, markets facing cap
- Entertainment and festivals on the cap
- Requires coordinated programming
- Transit station and multi-modal connections
- Increased opportunities for walking and biking

Constraints

- Overall costs and financing challenges
- Funding will likely be required from a variety of sources
- Railroad line bisects cap area
- Safety concerns
- Residential development generates most income
- Limits office/commercial activities on and near the cap
- Freeway on- and off-ramp design challenges
- Potential for conflicts between vehicles and pedestrians
- Small parcels—"some assembly required"

Other Successful Cap Projects

- Dozens of "freeway cap" projects are in various stages of development around the country, including in San Diego, Dallas Texas, Phoenix, Columbus Ohio.
- Regionally, there is a small freeway cap in La Canada Flintridge above the Foothill (210) Freeway, just east of the Glendale (2) Freeway interchange.



Potential Benefits and Impacts

Alternative	Acreage Created	Estimated Cost	Benefits	Challenges	Structural	Transportation	Noise
1 – CA St. widening	0.6	$23,600,000	Least costly; Easiest to implement	Does not meet minimum vertical clearance requirements		Increased pedestrian and bike connections across freeway	Insignificant noise reduction
2 – Flat Cap to Railroad	2.5	$96,530,000	Relatively easy to construct; Pedestrian access to beach.	Possible view restrictions; Demolition of Chestnut on-ramp		Removal of Chestnut on-ramp may cause increased volume on Harbor Blvd. ramp; Increased pedestrian and bike connections across freeway	Significant noise reduction, depending on cap usage
3 – Stepped Cap to Sanjon Road	14	$426,030,000	Continuous access across freeway provides maximum public benefit	Possible view restrictions; Demolition of Chestnut on-ramp; Interruption to Railroad operations	Additional support needed for railroad, which adds additional cost	Possible location for a multi-modal transit center; Potential street grid on-cap; Removal of Chestnut on-ramp may cause increased volume on Harbor Blvd. ramp; Increased pedestrian and bike connections across freeway	Significant noise reduction, depending on cap usage

3. Structural Analysis

The structural analysis completed for this study utilized Caltrans design standards to define the alternatives and the structural issues associated with the design and construction of each of the three alternatives. The existing structural condition of the California Street bridge and the US 101 Freeway is unknown and there was no geotechnical study completed. Detailed illustrations can be found in Appendix B.

Structural – Alternative 1
Alternative 1 would consist of a two span structure similar to the existing California Street bridge. The two span structure would have additional piers to support the cap and would be constructed in the median of the freeway. Alternative 1 would create approximately 26,136 square feet (0.6 acres) of land.

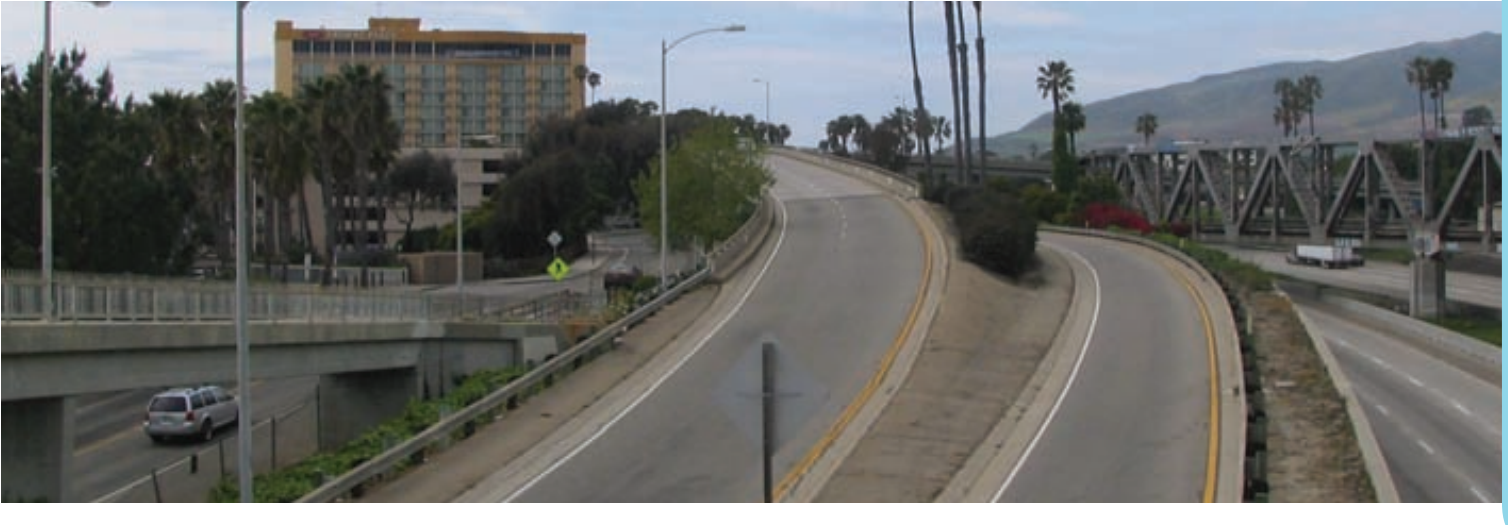
The new structure would be constructed with a finished grade of approximately +35 feet to allow for 17 feet of vertical clearance for the freeway below. These elevations are based on an approximate superstructure depth of 6 to 7 feet. Due to the finished grade on the California Street bridge being approximately +32 feet, the proposed structures and the California Street Bridge would be independent, unconnected structures.

The new structure would likely be a cast-in-place post-tensioned superstructure to minimize the structure depths and match the existing California Street bridge. This structure would require substantial falsework (temporary forms or structures that hold the cap until it can support itself) and traffic control during construction. It is likely that the freeway would be limited to two lanes of traffic to minimize the falsework opening requirements and thus falsework depths to maintain vertical clearances during construction.

Waterproofing of the cap would be required. Drainage of the cap area would also be important so water does not pond on the cap. It is assumed that only minor utilities such as electrical conduits and irrigation piping would be required on/in this structure.

Structural – Alternative 2
Alternative 2 would widen the California Street bridge on both sides—constructing approximately 165 feet of cap structure adjacent to and west of the existing California Street bridge and approximately 320 feet of cap structure adjacent to and east of the existing California Street bridge. Alternative 2 would create approximately 2.5 acres of land.

The cap to the east would terminate prior to impacting the existing Union Pacific Railroad bridge and alignment. It is assumed that the finished grade of the cap would be approximately +35 feet to allow for 17 feet of vertical clearance for the freeway below. These elevations are based on an approximate superstructure depth of 6 feet. The finished grade on the California Street bridge is approximately +32 feet. Therefore, the cap and the California Street bridge will need to remain separate structures, independent from each other.



Alternative 2 would consist of a two span structure of the US 101 Freeway with piers constructed within the existing freeway median. The western cap structure would be similar to the Alternative 1 structure. The eastern cap structure would require construction outside of the freeway alignment to tie into the existing conditions.

On the north side of the cap, the grade of the California Street off-ramp may require significant amounts of fill to bring the adjacent grades up to the cap elevations, depending on the design and construction of the relocated California Street off-ramp. Therefore, the abutment on the north side of the cap will be a full height abutment placed between the existing freeway and ramp alignments with fill placed in the ramp area to bring the grade up to the cap elevations. At the existing gore area of the ramp the structure will transition to span the ramp and terminate at the north side of the ramp alignment. The existing grades in this area will match the approximate cap elevations and therefore a full height abutment will not be required.

The cap superstructure would consist of a cast-in-place post-tensioned concrete box structure or a precast prestressed concrete beam and slab system. The cast-in-place post-tensioned concrete box structure would provide for a more shallow superstructure to help maintain the necessary clearance for the freeway below, but will require substantial falsework and traffic control during construction. It is likely that the freeway would be limited to two lanes of traffic to minimize the falsework opening requirements and thus falsework depths to maintain vertical clearances during construction. The use of precast prestressed concrete beams would eliminate the falsework requirements, but would require a deeper superstructure and closure of the freeway during erection of the girders. The closures could be limited to nighttime and/or weekend closures, but this would lengthen the construction schedule. The availability of the precast prestressed concrete girders could be limited. Local providers would need to be contacted during the structure selection phase of the project to confirm their ability to produce the quantity of girders required.

Waterproofing the Alternative 2 freeway cap will be critical due to the construction of parks and buildings proposed to be on top of it. If low-rise residential and commercial buildings on the cap are constructed on the cap, additional utilities such as water, gas and sewer will need to be placed within the structure. Placement of these types of utilities within the structure would need to be coordinated with Caltrans to determine requirements in a structure over their right-of-way.

Structural – Alternative 3

Alternative 3 includes construction of approximately 165 feet of cap structure adjacent to and west of the existing California Street bridge and approximately 850 feet of cap structure adjacent to and east of the existing California Street bridge. The cap to the east would require removal of the Chestnut Street on-ramp and removal and re-construction of the Union Pacific Railroad bridge. The proposed finished grade of the cap would vary along its length to provide the required minimum vertical clearance to the freeway and match existing adjacent grades on the north side of the freeway. Alternative 3 would create approximately 14 acres of land.

The structural requirements for Alternative 3 would be similar to those described for Alternative 2, with the following additional requirements.

Coordination with the Union Pacific Railroad would be critical with this alternative since it would require a temporary (6-9 month) closure of the tracks. The existing railroad bridge would need to be removed prior to construction of the cap and the railroad would be integrated into the cap structure with the same alignment. The cap structure would be a heavily reinforced section with significantly increased construction costs in order to support the weight of the rail load. The interruption of service to the railroad, increased structure design requirements, and increased construction costs of this segment of the cap would be critical considerations of Alternative 3.

East of the railroad bridge segment of the cap, the structure will extend above existing grades on the south end (beach-side) of the cap. The south end could be constructed on piers and would not require a full height abutment since fill will not be placed against it to bring the adjacent grade up to the grade of the cap. Instead, vertical pedestrian circulation in the form of stairs and ramps will be provided for pedestrian access down from the cap to the beach-front area below.

Cost Opinions

High-level planning cost opinions were developed for each of the alternatives. The cost opinions will be refined as the planning and design progresses. The cost opinions are in 2008 dollars. The cost opinions include demolition, the cap structure, waterproofing, mobilization, drainage, traffic control, and contingency. These costs were assumed based on Caltrans' Project Development Procedures Manual and recent Caltrans Project Study Reports. Costs for contingency, design, and construction administration are also included. These costs will change as the design becomes more certain.

The cost opinions do not include any right-of-way acquisition that might be required, reconfiguration of existing railroad, structures, or realignment of streets adjacent to the cap, and infrastructure for land uses on the cap. Costs also exclude air rights acquisition and construction of open space and buildings on the cap. The detailed cost opinions are shown in the tables on the following pages.

Structural Alternative Cost Estimates

Alternative	Cost
Alternative 1 – CA St. Widening	$23,600,000
Alternative 2 – Flat Cap to Railroad	$96,530,000
Alternative 3 – Stepped Cap to San Jon Road	$426,030,000

Alternative 1 – California Street Widening
Preliminary Cost Opinion

Item	Quantity	Unit Cost	Cost
BRIDGE STRUCTURE	31350 SQ.FT.	$ 330.00	$ 10,345,500
TOP DECK WATERPROOFING	31350 SQ.FT.	$ 12.00	$ 376,200
CONSTRUCTION COST SUBTOTAL			$ 10,721,700
MOBILIZATION		15%	$ 1,608,255
DRAINAGE		2%	$ 214,434
TRAFFIC CONTROL		2.5%	$ 268,043
SPECIALTY & UNIDENTIFIED ITEM ALLOWANCE		10%	$ 1,072,170
SUBTOTAL			**$ 13,884,600**
DESIGN (PROJECT STUDY REPORT)		3%	$ 416,538
DESIGN (PROJECT REPORT & ENVIRONMENTAL DOCUMENT)		10%	$ 1,388,460
DESIGN (PLANS, SPECIFICATIONS, & ESTIMATES)		12%	$ 1,666,152
CONSTRUCTION ADMINISTRATION		15%	$ 2,082,690
CONTINGENCY		30%	$ 4,165,380
TOTAL			**$ 23,600,000**

Assumptions:

1. Pier in median of US 101 Freeway
2. Short seat abutments built on existing fills
3. Landscaping only on top of deck, not buildings.
4. Does not include Right-of-Way acquisition.
5. Does not include landscaping costs.

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Alternative 2 – Flat Cap to Railroad Preliminary Cost Opinion

	Item	Quantity	Unit Cost	Cost
	REMOVE EXISTING CHESNUT STREET ON-RAMP	1 L.SUM	$ 550,000.00	$ 550,000
	BRIDGE STRUCTURE	126600 SQ.FT.	$ 330.00	$ 41,778,000
	TOP DECK WATERPROOFING	126600 SQ.FT.	$ 12.00	$ 1,519,200
	CONSTRUCTION COST SUBTOTAL			$ 43,847,200
	MOBILIZATION		15%	$ 6,577,080
	DRAINAGE		2%	$ 876,944
	TRAFFIC CONTROL		2.5%	$ 1,096,180
	SPECIALTY & UNIDENTIFIED ITEM ALLOWANCE		10%	$ 4,384,720
	SUBTOTAL			**$ 56,782,100**
	DESIGN (PROJECT STUDY REPORT)		3%	$ 1,703,463
	DESIGN (PROJECT REPORT & ENVIRONMENTAL DOCUMENT)		10%	$ 5,678,210
	DESIGN (PLANS, SPECIFICATIONS, & ESTIMATES)		12%	$ 6,813,852
	CONSTRUCTION ADMINISTRATION		15%	$ 8,517,315
	CONTINGENCY		30%	$ 17,034,630
	TOTAL			**$ 96,530,000**

Assumptions:

1. Pier in median of US 101 Freeway
2. Short seat abutments built on existing fills
3. Landscaping only on top of deck, not buildings.
4. Does not include Right-of-Way acquisition.
5. Does not include landscaping costs.

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Alternative 3 – Stepped Cap to San Jon Road
Preliminary Cost Opinion

	Item	Quantity	Unit Cost	Cost
	REMOVE EXISTING CHESNUT STREET ON-RAMP	1 L.SUM	$ 550,000.00	$ 550,000
	REMOVE EXISTING RAILROAD BRIDGE	1 L.SUM	$ 4,750,000.00	$ 4,750,000
	BRIDGE STRUCTURE	343900 SQ.FT.	$ 350.00	$ 120,365,000
	BRIDGE STRUCTURE - INCLUDES RAILROAD LOADINGS	123200 SQ.FT.	$ 500.00	$ 61,600,000
	TOP DECK WATERPROOFING	467100 SQ.FT.	$ 12.00	$ 5,605,200
	CONSTRUCTION COST SUBTOTAL			$ 192,870,200
	MOBILIZATION		15%	$ 28,930,530
	DRAINAGE		2%	$ 3,857,404
	TRAFFIC CONTROL		2.5%	$ 4,821,755
	RAILROAD TRAFFIC CONTROL			$ 840,000
	SPECIALTY & UNIDENTIFIED ITEM ALLOWANCE		10%	$ 19,287,020
	SUBTOTAL			**$ 250,606,900**
	DESIGN (PROJECT STUDY REPORT)		3%	$ 7,518,207
	DESIGN (PROJECT REPORT & ENVIRONMENTAL DOCUMENT)		10%	$ 25,060,690
	DESIGN (PLANS, SPECIFICATIONS, & ESTIMATES)		12%	$ 30,072,828
	CONSTRUCTION ADMINISTRATION		15%	$ 37,591,035
	CONTINGENCY		30%	$ 75,182,070
	TOTAL			**$ 426,030,000**

Assumptions:

1. Pier in median of US 101 Freeway
2. Short seat abutments built on existing fills
3. Landscaping only on top of deck, not buildings.
4. Assumes RR bridge can be out of service for an extended period. Shoefly construction costs have not been considered.
5. Does not include Right-of-Way acquisition.
6. Does not include landscaping costs.
7. Estimate does not include any railroad work associated with modifying the approaches to the railroad bridge.

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4. Redevelopment Opportunities

The preliminary structural analysis confirmed that it is technically feasible to build a cap over US 101 in at least three alternative ways. Each alternative has its own costs, benefits, opportunities and constraints.

This leads to investigating the opportunities for the redevelopment of existing and new land around the cap. One of the desired outcomes is reconnecting Ventura's downtown with the waterfront and increasing opportunities for housing, services, shopping, and transit access. This section discusses the process of assessing how these outcomes could be achieved. There is a description of how potential development was modeled and provided to the public at a citywide workshop. This is followed by analysis of the workshop input, followed by a series of redevelopment and cap financing scenarios that were built based on this input.

Alternative 1, the smallest option, is the most costly on a per-acre of land basis, but is also the least complicated and expensive overall. It does not create a substantial amount of land, compared to the other alternatives. The redevelopment impact of Alternative 1 would most likely be to minimize the psychological and pedestrian barrier that US 101 represents between the oceanfront properties and the downtown.

Alternative 2, the next largest option, is significantly more costly, but delivers a 2.5 acreas of potentially redevelopable land over the freeway. It has the potential to more significantly reduce noise from the freeway, thus more effectively "sealing" the breach between the ocean and downtown.

Alternative 3, the largest option at 14 acres, is the most costly and complicated to construct, but also creates a the widest range of redevelopment options. As a bona-fide lid over the freeway, Alternative 3 would provide substantial noise reduction and fundamentally reshape the landscape between the ocean and downtown. The opportunity to develop a more substantial urban environment is greatest with this option; though the potential cost and risk is also the greatest.

Each alternative provides a broader range of redevelopment options, but at a commensurately higher cost and risk. Alternative 1 is the most likely option if using solely local financing. Alternatives 2 and 3, are significantly more expensive and complicated, and would probably require the lions share of financing to come from outside sources (state and/or federal). The range of options available to finance any of the alternatives through phased development are broad, and a series of possible scenarios that highlight local, redevelopment, and outside sources of financing are discussed later in this section.

Any eventual effort to constuct a freeway cap that captures value from the creation of additional buildable land will require careful attention to phasing and the securing of development entitlements. It can be assumed that a developer will be unikely to commit siginificant resources on the front-end unless an iron-clad right to develop is secured in advance. Additionally, securing the financing necessary to construct a cap (in addition to that from value-capture) would most likely need to be secured in advance of any developer agreement.

Cost Assumptions

Development Item	Price
Land	$75/ Square foot (not entitled)
Residential Construction	$180 / Square foot
Office Construction	$180 / Square foot
Retail Construction	$150 / Square foot

Sales and Rent Assumptions

Product	Price
Residential units	$450-750,000 / Unit
Office Space	$25.00 / Square Foot
Retail Space	$30.00 / Square Foot

Parcel Analysis

The consultant team analyzed assessor data in the immediate vicinity of the proposed cap to determine which parcels may have increased redevelopment potential in the event the cap is constructed. The analysis included a comparison of the value of existing improvements to the value of the land for each parcel. After screening out public facilities, buildings of historical significance, and other unsuitable properties, a number of parcels appeared likely to redevelop given a major investment in the area.

Prototypes

The redevelopment opportunity analysis included the development of hypothetical real estate projects that could be added to downtown in the event that the cap was constructed. Nine prototype buildings were created and served as key elements of the public workshop exercise. They are based on plausible developments in the City of Ventura using land cost, construction cost, rental and sales rates similar to those found in the area. They are based on market research and interviews with local developers. Parking ratios that are currently in effect in the downtown area are built into the models. In the interest of exploring a range of building height options, some of the prototypes are designed to be taller than the three-four stories currently allowed downtown.

In general the prototype buildings are either residential or office buildings of various heights, ranging from two to eight stories. The office buildings and some of the residential buildings include ground-floor retail; a hotel and one-story retail building were also modeled (see the Appendix for a profile of each prototype building). Each prototype is based on a one-half acre parcel and contains a certain number of dwelling units and square feet of retail and office space. An advantage of creating standardized half-acre prototypes is that they are interchangeable, allowing us to explore a range of possible development scenarios.

Building Prototype Descriptions

Building Prototype	Stories	Description
One-story retail	1	Local-serving retail
Townhouses	2	Attached housing
Mixed-use Residential	3	Condos or apartments above retail
Residential Flats	4	Condos or apartments with units on ground floor
Mixed-use Residential	6	Condos or apartments above retail
Mixed-use Residential	8	Condos or apartments above retail
Mixed-use Office	4	Office space above retail
Mixed-use Office	8	Office space above retail
Hotel & Restaurant	4	Boutique hotel with dining

While these prototypes are modeled using a tool similar to a development pro-forma, they do not necessarily represent individual projects that would be financially feasible. Instead, the models help give a rough approximation of what kind of development one might expect in the area, given land costs, prices, and existing regulations. Each prototype project assumed a 25% equity stake and targeted a 15% pre-tax return on equity.

To estimate the economic impact of development around the freeway cap and its ability to help finance the project, an annual tax increment value was calculated for each prototype. The annual TIF increment value available to help finance the freeway cap was based on 1% of the final value of the prototype building, less 20% for affordable housing funds, and less a further 40% for non-freeway cap investments. Thus the TIF increment estimates were fairly conservative.

Building Prototype Value and Annual Tax Increment Yield

Building Prototype	Project Value	Annual TIF Increment
One-story retail	N/A	N/A
Townhouses	$ 5,817,000	$ 27,922
Mixed-use Residential	$ 21,600,000	$ 103,680
Residential Flats	$ 13,600,000	$ 65,280
Mixed-use Residential	$ 21,600,000	$ 103,680
Mixed-use Residential	$ 26,600,000	$ 127,680
Mixed-use Office	$ 19,700,000	$ 94,560
Mixed-use Office	$ 37,500,000	$ 184,800
Hotel & Restaurant	$ 26,500,000	$ 127,200

Mixed-Use Residential 4-Story

Ventura, California

Building Summary

Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	4.00	stories
Usable FAR	3.31	
Residential units/acre	97	/acre
Avg. unit size (sf)	1,148	
Employees/acre	19	/acre

	gross square feet	net square feet	dwelling units
Residential	57,653	49,005	43
Affordable Residential	7,207	6,126	6
Retail	7,207	6,126	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	72,066	61,256	49

ROI (rental) =		*5.8%*
IRR (Rental)=		*8.5%*
Project Profit	*$*	*3,242,460*
Project Profit %		*15.0%*

Financial Summary

Average unit sale price	$545,063	
Average cost/sf	$475	/sf
Average unit rent	$2,065.50	/month
Average rent (sf/month)	$1.80	/sf
Retail rent (sf/year)	$30.00	/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$21,654,915	

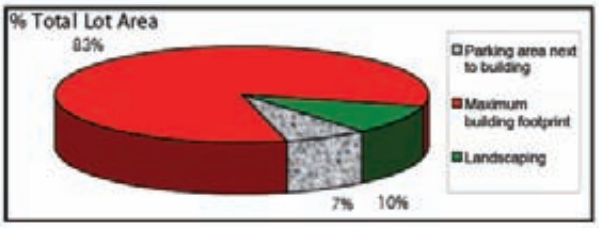
Construction Costs *

Residential	$170	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary

Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	10%



A summary sheet describing a mixed-use building prototype that was developed for the workshop exercise. All of the building prototypes can be found in Appendix A.

Public Workshop

The building prototypes served as the building blocks for the public workshop exercise that took place at the Crowne Plaza Hotel in downtown Ventura on April 2, 2008. Each prototype was represented by a "chip", or icon which participants could place on a large map of the downtown. The goal of this exercise to was to allow the public to choose a preferred freeway cap alternative balancing the costs of improvements with tax increment revenues from new development and redevelopment.

For purposes of the workshop exercise, all dollar figures for the cost of each cap alternative and building prototype tax increment values were converted to a 1,000-point scale. Each cap cost a fixed number of points, while each building prototype contributed a fixed number of points. The more valuable building types contributed a greater amount of tax revenue that could be applied to pay for the cap.

In addition to the tax increment revenues assigned to new development chips, a selection of alternative funding sources was available to participants for financing their preferred design. This way, participants could indicate what mix of funding resources they would prefer to use to finance the cap.

Alternative Funding Sources:

- Developer Contribution
- Business Improvement District
- Downtown Property Tax Increase
- Citywide Property Tax Increase
- General Obligation Bonds
- State Transportation Funds
- Federal Transportation Funds

Alternative funding sources were "free", in that participants could use as many of them as they liked to balance the cost of their chosen cap.

Groups were encouraged to use as many of the building prototype chips as they thought appropriate in any combination and to balance design with financing however they chose. They were asked to focus attention on the areas around the proposed freeway cap, but were not restricted from placing chips anywhere on the map.

Workshop participants were charged with four tasks:

1. The first step was to choose the physical extent of the freeway cap. Each table chose one preferred cap from among three alternatives described in Section 1. Each cap alternative was coupled with a cost estimate ranging from $25 million for 0.6 acres of new land to $425 million for 14 new acres of space between downtown and the coast. Participants were forced to weigh the trade-offs between the benefits of a large cap and the lower cost of a small cap.

2. Second, participants were provided with a series of paper icons, or "chips", that represent different types of potential future development. The icons included a range of uses, from plazas and fountains to future housing, jobs and even hotels. Each icon is accompanied by a description of the potential tax increment value of each new use and how it might offset the costs of building the cap. As the groups worked through the exercise, choosing their cap options and redevelopment scenarios, the estimated tax increment revenue was subtracted from the cost of the cap, providing participants with an incentive to either choose a conservatively sized cap, or to encourage further investment in development to generate revenue.

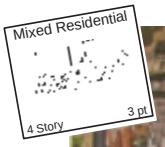
3. Third, if the groups were not able to finance their preferred cap alternative with anticipated TIF revenue from their redevelopment scenario, they were asked to make up the funding gap by choosing among other potential sources of funding, from localized property taxes and developer contributions to state and federal funding.

4. During the land use design phase of the workshop participants were also tasked with locating a multi-modal transit center. Similar to the development icons, participants were given a paper chip to represent the transit facility.

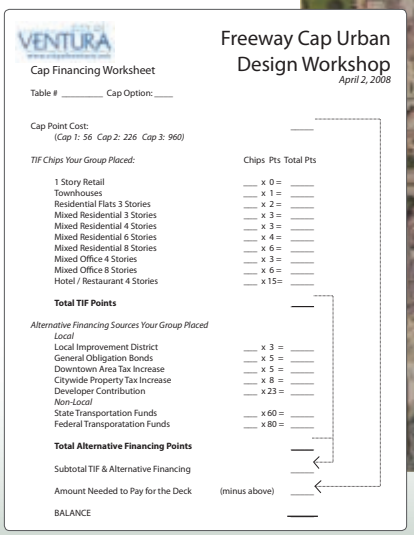
The approximately 200 workshop participants created 14 unique mapped visions of a capped freeway and re-connected downtown, portraying some strong themes and a wide range of ideas.

The smallest cap alternative was not a popular choice. Roughly one-third of the participants selected the mid-sized cap (#2 in this report) and another third chose the largest, 14 acre cap #3. Interestingly, another third of the tables developed their own cap design by cutting the largest cap into a shorter section, roughly halfway between the size of alternatives 2 and 3. For the purpose of this report this hybrid cap option will be called #2.5.

A sample of the workshop materials



Sample redevelopment "chip"



VENTURA

Freeway Cap Urban Design Workshop
April 2, 2008

Cap Financing Worksheet

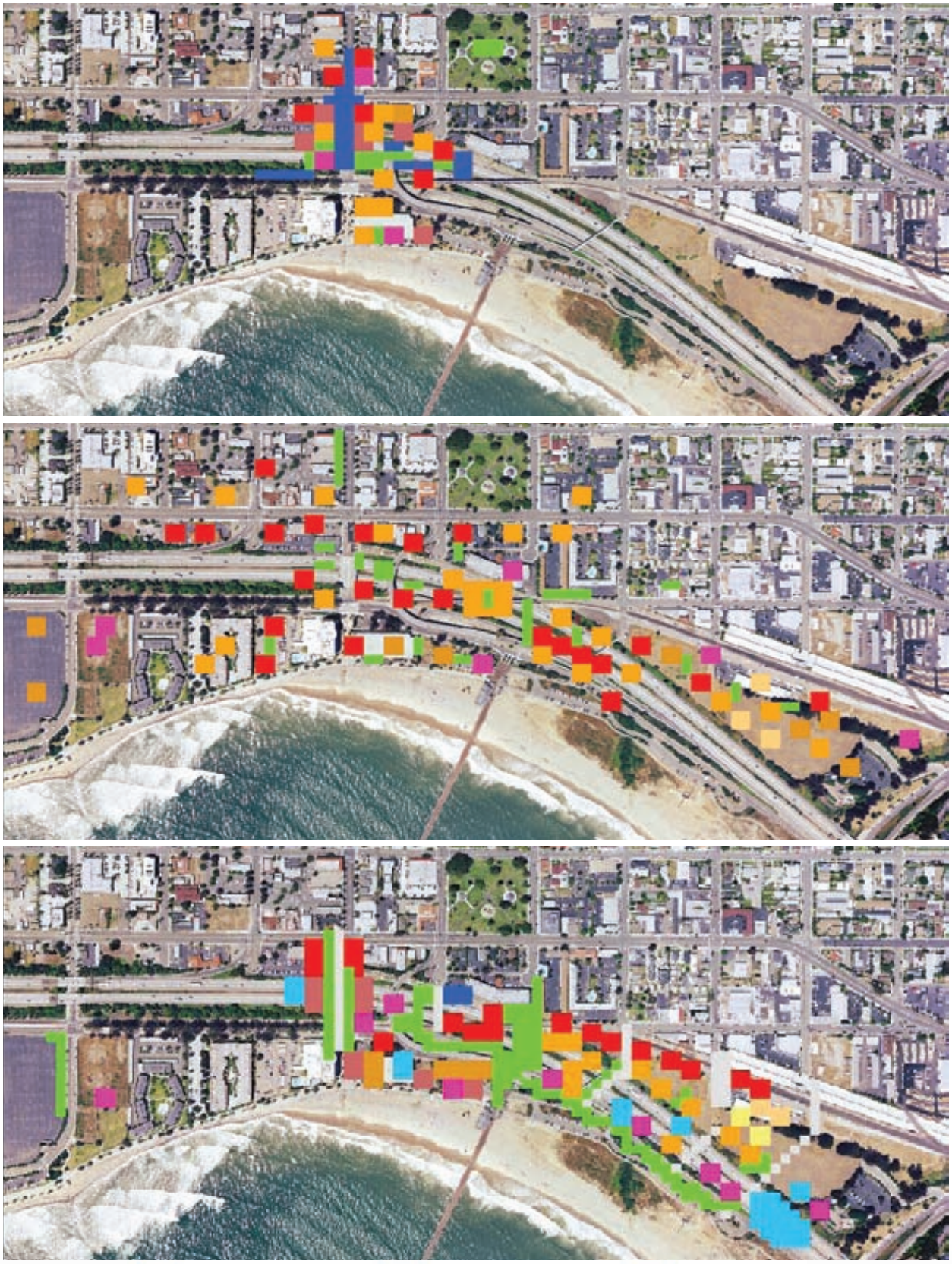
Table # _____ Cap Option: ____

Cap Point Cost: ____
(*Cap 1: 56 Cap 2: 226 Cap 3: 960*)

TIF Chips Your Group Placed:	Chips	Pts	Total Pts
1 Story Retail	___	x 0 =	____
Townhouses	___	x 1 =	____
Residential Flats 3 Stories	___	x 2 =	____
Mixed Residential 3 Stories	___	x 3 =	____
Mixed Residential 4 Stories	___	x 3 =	____
Mixed Residential 6 Stories	___	x 4 =	____
Mixed Residential 8 Stories	___	x 6 =	____
Mixed Office 4 Stories	___	x 3 =	____
Mixed Office 8 Stories	___	x 6 =	____
Hotel / Restaurant 4 Stories	___	x 15=	____
Total TIF Points			____
Alternative Financing Sources Your Group Placed			
Local			
Local Improvement District	___	x 3 =	____
General Obligation Bonds	___	x 5 =	____
Downtown Area Tax Increase	___	x 5 =	____
Citywide Property Tax Increase	___	x 8 =	____
Developer Contribution	___	x 23 =	____
Non-Local			
State Transportation Funds	___	x 60 =	____
Federal Transporatation Funds	___	x 80 =	____
Total Alternative Financing Points			____
Subtotal TIF & Alternative Financing			____
Amount Needed to Pay for the Deck	(minus above)		____
BALANCE			____

Worksheet showing cap alternative costs and financing options

Base map of the planning area

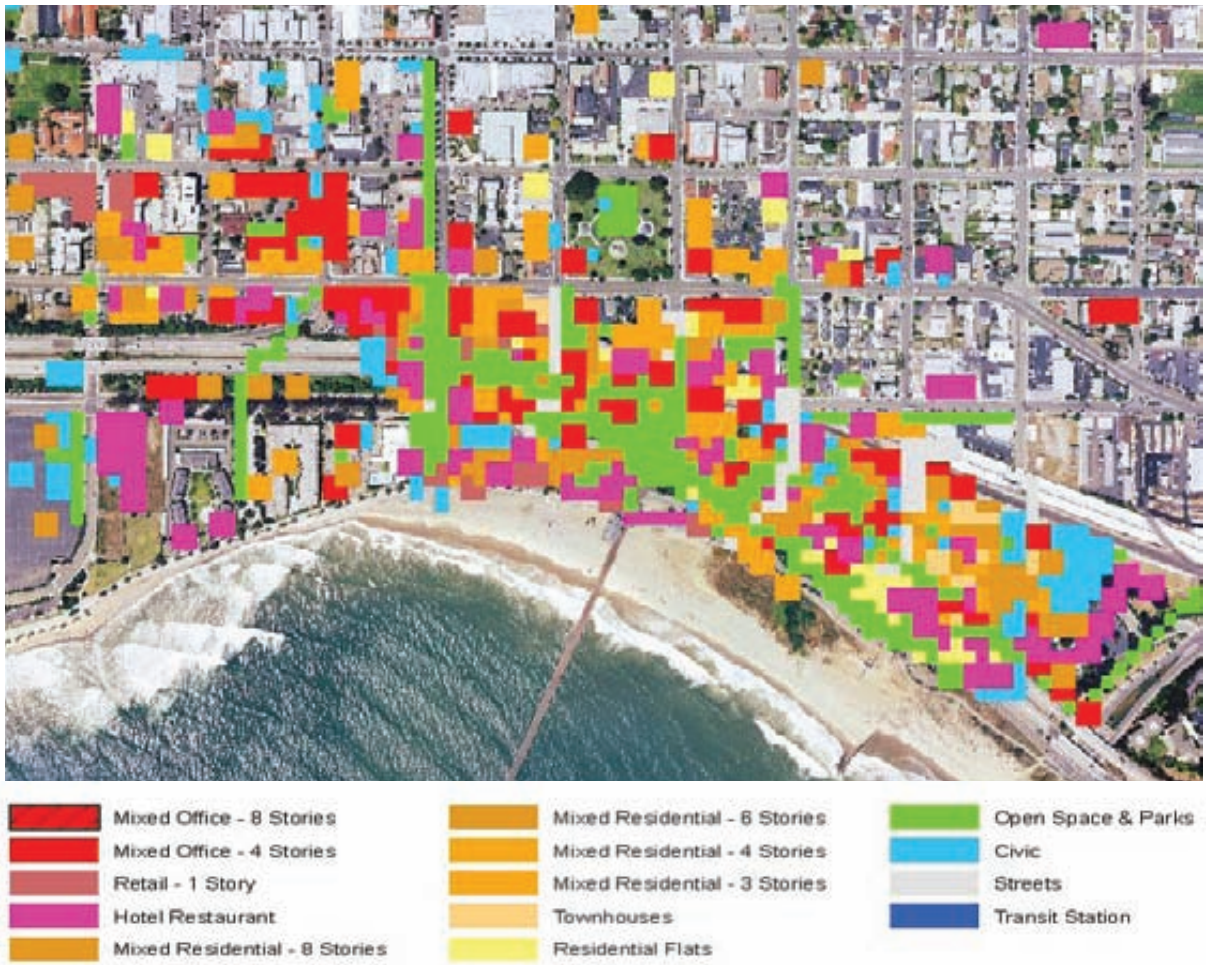


Sample digitized workshop maps showing preferred cap alternative and location of development chips.

Following the workshop, each of the workshop maps was entered into a GIS system for analysis. When all of the maps are "sandwiched together" several prominent, shared themes appear:

- a "spine" of open space running from east to west, connected to existing streets and paths;
- the area around California Street was the prime location for much of the development on and near the cap;
- building heights and densities generally decreased toward the East, especially closer to the coast itself.

These results indicate that participants viewed the potential freeway cap as an opportunity to expand open space, but also leverage some new land for more intense development on the southern end of California Street. Development was not entirely discouraged farther east along the oceanfront, but it appears that participants were more sensitive to maintaining viewsheds or keeping building heights to a minimum.



Composite digitized workshop map showing the placement of all chips.

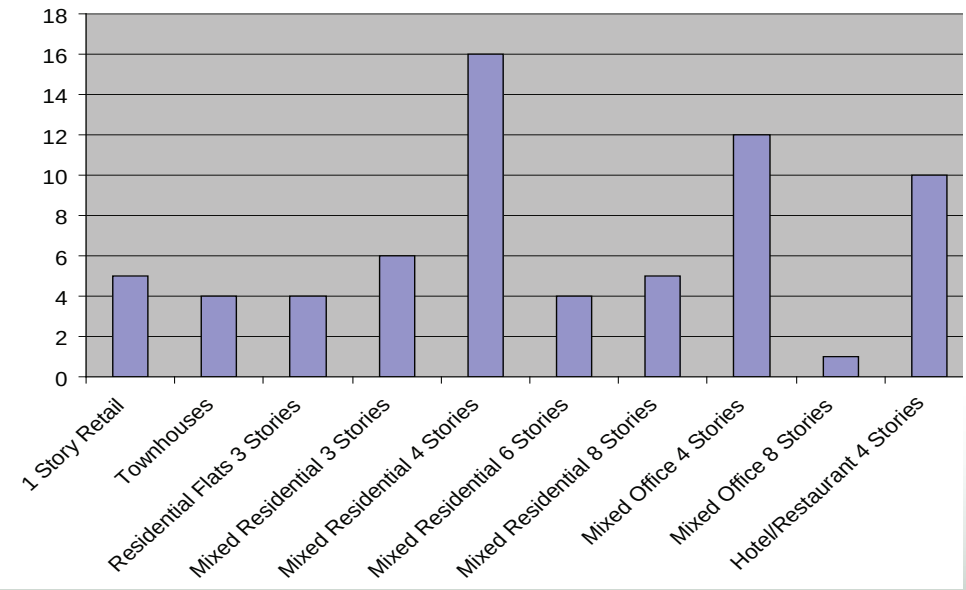
A conceptual illustration of how the cap could reconnect the street grid with the oceanfront

In addition to looking at where the participants envision new growth and development it is equally interesting to observe the types of land uses they prefer.

The chart below shows that on average, groups chose four-story buildings most often. There was also significant support for buildings in the six- to eight-story range, the most "intense" chips provided.

The goal of raising revenue to pay for the cap likely encouraged some tables to choose some of the taller buildings. This is most evident when looking at the number of hotels that participants placed on the maps (hotel chips provided the greatest amount of TIF revenue).

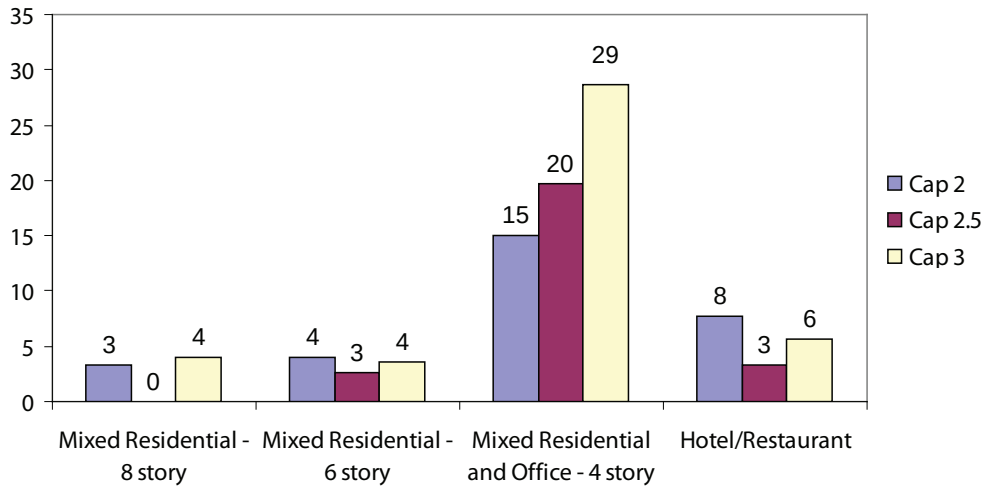
Worskhop Average Chips Used



The consultant team looked at chip placements within 200 feet of each cap option (#2, #2.5, and #3). Of the taller mixed-use development chips, there was a fairly equal level of support between the groups, regardles of what cap they chose. The exception was for four-story mixed residential and office buildings. The number of chips placed increased with the size of the cap option chosen. However, because cap option #3 was so large and provided a lot of extra developable land, this may be an indication that participants were most comfortable with four-story buildings, regardless of how aggressive they were on choosing a cap.

Also noteworthy was the tendency of groups to place a large share of taller buildings in a core area somewhere between California and Fir Streets (near the footprint of cap option #2). Even groups that chose the larger cap option #3 tended to place over half of their four-story chips in this area (29 out of 43 chips placed). This may indicate that, in general, residents are interested in seeing more intense development in this area, even in the event that cap option #3 is eventually built. This is also illustrated by the high concentration of chips placed in the California Street area on all of the workshop maps.

Chips Placed Within 200 Ft Buffer of Cap Option 2



This image shows how often an icon was placed on a given location of the map. The red squares signify concentrations of development (more chips placed).

Using this analysis and findings, the consultant team developed a concept map of the area. It envisions an east-west greenway "spine" running the length of cap option #3. It includes larger, more intense buildings on the Triangle site, but smaller, one- or two-story townhouses closer to the beach. The area around California Street is more intensly developed, and includes a new multi-modal path connecting Plaza Park with the oceanfront.

This concept map places the transit station to between Fir and Chestnut Streets, just north of the cap. It does not represent a final location for the transit station.

Above is a conceptual drawing based on the synthesized workshop input.

Transit Center Placement

Another task for the participants was to locate a multi-modal transit center. A freeway cap will provide opportunities for a multi-modal transit center along with possible sites elsewhere in the existing downtown area. The ultimate location depends on several priorities:

- Ability to positively impact surrounding land use
- Access for residents and surrounding communities
- Phasing of the cap and transit center construction

While transit center icons were placed in a variety of locations, three areas stood out with the highest frequency of chip placements: on California Street over the existing freeway (named option A), south of Thompson Boulevard between Fir and Chestnut Streets (option B), and at the westernmost tip of the Triangle site (option C). Using these three general locations, the consultant team estimated the general footprint that each transit station option would require.

Transit station option A would be most conveniently located for access directly from downtown along California Street, to and from the oceanfront, and from the fairgrounds. Furthermore, it would provide excellent freeway access. On the other hand, it could contirbute to increased congestion around the freeway access points and on California Street. Furthermore, it may require the acquisition of property directly north of the freeway to provide sufficient circulation for vehicles.

Transit option B would be located on land created by one of the two larger freeway caps. Therefore, it would not require the acquistion of land, and could serve as a design element to help shape adjacent development on the cap. However, it may require the acquisition of land north of the cap, and the extension of both Fir and Chestnut Streets. Another potential issue would be the need for additional at-grade rail crossings to connect the transit center with the rest of the street grid.

Finally, Option C would be located at the westernmost tip of the Triangle site and across Front Street. It would also influence the shape of development on and around the freeway cap. However, it would also require additional at-grade railroad crossings and a significant change in the current bus network.

Overall, each site has advantages and disadvantages. Option A represents the option closest to downtown and the California Street area where workshop participants tended to place the most development. Options B and C, however, capitalize on the larger cap options, and may avoid traffic congestion around the freeway.

The darker the blue coloring the more often a transit center icon was located on a specific site. The California Street area, the center of the cap along the rail line, and the Western end of the Triangle site are the three locations that were further analyzed as potential transit center locations.

These images show the three potential transit center locations and footprints, based on workshop participant input.

Financing Resources

Regardless of which cap alternative the workship groups chose, the Tax Increment Finance revenues from placed buildings was between $115 and $127 million at each table. The use of business improvement district, local taxes, and general obligation bond chips was varied. This may be an indication that those financing options were not as well understood by the workshop participants. Developer contributions ranged from $16.3 to $29.7 million, and state and federal funding chips ranged from about $54 to $297 million per table. Understandably, groups that chose cap option #3 allocated a much larger proportion of state and federal financing.

The workshop exercise did not require participants to precisely balance costs and revenues. Some tables' scenarios produced revenue surpluses and others' had a deficit. The groups that chose cap option #2 tended to allocate twice as much in TIF and other financial resources to pay for the cap, whereas cap option #3 tended to break even. Financing for cap option #2.5, for which a cost was estimated, tended to fall below what was needed. This is understandable, however, since each group had a slightly different version of the hybrid cap.

For caps #2 and #3, state and federal funds comprised some of the largest sources of funding (83% and 70%). The developer contribution share was sizeable for cap option #2, but fell dramatically for #2.5 and #3, primarily because of the much greater overall cost of those alternatives.

The exercise was not designed to create a hard-and-fast financial plan, but rather to give a rough sense of how the public might choose to allocate funds for a freeway cap project.

While there appeared to be strong support for redevelopment and TIF as a financing tool, it is important to remember that groups were encouraged to be bold and create maps that embody an ideal vision of downtown. Furthermore, they were asked to use TIF as much as possible to get the points they needed before using local taxes or state and federal monies, which may have led to more intense redevelopment scenarios than would be preferred in another context.

Workshop Average Allocation of Funding

Alternative Funding Sources	Points Allocated
Local Improvement District	6
General Obligation Bonds	15
Downtown Area Tax Increase	7
Citywide Property Tax Increase	12
Developer Contribution	64
State Transportation Funds	180
Federal Transportation Funds	222

Workshop Financing Allocations

Cap	Total Cap Cost*	Avg. TIF	Avg. BID, Local Taxes, GOB Chips Placed	Avg. Developer Contribution	Avg. State & Federal Chips Placed	Total Allocated
2	$96.5 Million	$115 Million	$ 0	$26.7 Million	$80 Million	$221 Million
2.5	$276 Million	$127 Million	$34 Million	$16.3 Million	$54.9 Million	$232 Million
3	$426 Million	$117 Million	$9.3 Million	$29.7 Million	$297 Million	$453 Million

**The cost for Cap 2.5 was estimated*

Workshop Financing Allocation by Share of Cap Cost

Cap	Total Cap Cost*	Avg. TIF	Avg. BID, Local Taxes, GOB Chips Placed	Avg. Developer Contribution	Avg. State & Federal Chips Placed	Total Allocated
2	$96.5 Million	119%	0%	28%	83%	230%
2.5	$276 Million	46%	12%	6%	20%	84%
3	$426 Million	27%	2%	7%	70%	106%

Cap Scenarios

The consultant team used the workshop input to develop a set of scenarios for how downtown Ventura may plausibly evolve and develop with a new connection to the waterfront. With the same building prototypes that were used at the workshop, two development scenarios were created for the areas immediately surrounding each cap option. The original cap options #1, #2, and #3 were used, rather than the hybrid caps from the workshop, to maintain consistency with the study's structural engineering analysis.

These scenarios feature significantly less intense development than most of the visions produced at the public workshop. Each scenario identifies a set of parcels within close proximity to each cap option. A mix of building prototypes was applied to these parcels. For each cap option the first scenario features a mix of four-story buildings (which conform to the City's existing development code) and the second a mix of taller buildings. In general, the second scenario represents a more intensive, higher-value-added build-out. Non-TIF financing sources include a $5-per-household tax, a developer contribution of $10,000-per-dwelling-unit, and a business improvement district to fund a bond of $500,000. Finally, state and federal funds were applied in equal proportions to fill any leftover funding gap.

The scenarios help illustrate the scale at which local, state, and federal funds may be needed to finance each of the three cap options. However, there are some caveats. TIF revenues do not assume that there is a phasing of construction; rather they capture the total value of the scenario at build-out. For some parcels around the proposed cap areas, particularly what is known as the "triangle site", there is a potential chicken-and-egg problem: the freeway cap is the catalyst that provides a development opportunity, but financing the cap depends, in part on using the increased value of that development. As a result, it may be necessary for the City to seek state and federal funds for the early stages of the freeway cap construction, in essence filling in for TIF revenues that will start flowing once projects are completed. This entails no small amount of risk for the City, which may need to guarantee the redevelopment in certain areas in order to secure state or federal financing.

Cap Option #1 – Scenarios 1 & 2

These scenarios envision the development of approximately 3.75 acres of land including and surrounding cap option #1.

Cap Option #1 – Scenario 1

The build-out for Scenario 1 is made up of five four-story residential buildings with retail on the ground floor, for a total of 135 dwelling units and 35,300 square feet of retail space. It also includes a 1.25-acre hotel and restaurant development (over 30 years). The height and scale of development is consistent with existing codes in downtown Ventura.

This scenario generates an estimated $759,000 per year in TIF revenue, which represents a total bonding capacity of $11.3 million, or about 48% of the cost of cap option #1.

The relative cost of cap option #1, compared to options #2 and #3 make it relatively easy to finance with mostly local sources. This scenario achieves approximately 68% local financing of the cap, primarily through TIF bonds, followed by a citywide tax increase, and a developer contribution.

Cap Option #1 Scenario Area

Cap 1 Scenario 1

Prototype	# of Buildings in Scenario	Total Units	Total SQFT Retail	Total SQFT Office	Building TIF Value	Total TIF Revenue
Townhouses	0	-	-	-	$ 27,922	$ -
Mixed Residential 4 Stories	3	69	35,310	-	$ 103,680	$ 311,040
Residential Flats 3 Stories	2	66	-	-	$ 65,280	$ 130,560
Mixed Residential 6 Stories	0	-	-	-	$ 103,680	$ -
Mixed Residential 8 Stories	0	-	-	-	$ 127,680	$ -
Mixed Office 4 Stories	0	-	-	-	$ 94,560	$ -
Mixed Office 8 Stories	0	-	-	-	$ 184,800	$ -
Hotel/Restaurant 4 Stories	3	-	-	-	$ 127,200	$ 318,000
Total		135	35,310	-		$ 759,600

Cap 1 Scenario 1			
Acres of redevelopment		3.75	
Dwelling Units		135	
		Sources / (Uses)	**Share of Cost**
Cap Option 1 Cost	$	(23,600,000)	
Redevelopment			
TIF Bond	$	11,272,757	48%
Alternative Financing			
Developer Contribution ($10,000 / unit)	$	1,350,000	6%
Business Improvement District	$	500,000	2%
Tax Increase ($5 / household / year)	$	2,832,000	12%
State Transportation Funds	$	3,500,000	15%
Federal Transportation Funds	$	4,145,243	18%
	$	23,600,000	100%
	$	-	
Local Funds	$	15,954,757	68%
State/Federal Funds	$	7,645,243	32%
Total Redev Value	$	158,250,000	
Cap as % of Redev Value		15%	
Developer Contribution as % of Redev Value		0.85%	

Cap Option #1 – Scenario 2

The build-out for Scenario 1 is made up of three eight-story residential buildings with retail on the ground floor, and five eight-story office buildings with retail on the ground floor. There is a total of 246 dwelling units, 56,775 square feet of retail space, and 484,830 square feet of office space (over 30 years). The height and scale of development is about twice that currently allowed in the downtown area.

This scenario generates an estimated $1.2 million per year in TIF revenue, which represents a bonding capacity of $18 million, or about 76% of the cost of cap option #1.

It achieves approximately 100% local financing of the Cap, primarily through TIF bonds, followed by a citywide tax increase, and a developer contribution. The business improvement district, state, and federal funds were adjusted downward to account for the increased local share. While it is unlikely that the project would proceed without at least some of state and/or federal funds, this scenario illustrates how the shift in building heights and uses would generate a higher TIF bonding capacity.

Cap 1 Scenario 2

Prototype	# of Buildings in Scenario	Total Units	Total SQFT Retail	Total SQFT Office	Building TIF Value	Total TIF Revenue
Townhouses	0	-	-	-	$ 27,922	$ -
Mixed Residential 4 Stories	0	-	-	-	$ 103,680	$ -
Residential Flats 3 Stories	0	-	-	-	$ 65,280	$ -
Mixed Residential 6 Stories	0	-	-	-	$ 103,680	$ -
Mixed Residential 8 Stories	3	246	56,775	-	$ 127,680	$ 383,040
Mixed Office 4 Stories	0	-	-	-	$ 94,560	$ -
Mixed Office 8 Stories	5	-	-	484,830	$ 184,800	$ 831,600
Hotel/Restaurant 4 Stories	0	-	-	-	$ 127,200	$ -
Total		246	56,775	484,830		$ 1,214,640

Cap 1 Scenario 2		
Acres of redevelopment	3.75	
Dwelling Units	246	
	Sources / (Uses)	**Share of Cost**
Cap Option 1 Cost	$ (23,600,000)	
Redevelopment		
TIF Bond	$ 18,025,726	76%
Alternative Financing		
Developer Contribution ($10,000 / unit)	$ 2,460,000	10%
Business Improvement District	$ 282,274	1%
Tax Increase ($5 / household / year)	$ 2,832,000	12%
State Transportation Funds		0%
Federal Transportation Funds		0%
	$ 23,600,000	100%
	$ -	
Local Funds	$ 23,600,000	100%
State/Federal Funds	$ -	0%
Total Redev Value	$ 248,550,000	
Cap as % of Redev Value	9%	
Developer Contribution as % of Redev Value	0.99%	

Cap Option #2 – Scenario 1 & 2

These scenarios envision the development of approximately 7.5 acres of land including and surrounding cap option #2.

Cap Option #2 – Scenario 1

The build-out for Scenario 1 is made up of nine four-story residential buildings with retail on the ground floor, and four four-story office buildings with retail on the ground floor. It includes a 1.5 acre hotel and restaurant development. There is a total of 207 dwelling units, 105,930 square feet of retail space, and 187,250 square feet of office space (over 30 years). The height and scale of development is consistent with existing requirements in downtown Ventura.

This scenario generates an estimated $1.6 million per year in TIF revenue, which represents a bonding capacity of $23 million, or about 24% of the cost of cap option #2.

This scenario achieves approximately 30% local financing for the cap, primarily through TIF bonds. A citywide tax increase and a developer contribution represent a much smaller proportion of the financing structure. State and federal funding make up a commensurately larger share of the financing for this cap option.

Cap Option #2 Scenario Area

Cap 2 Scenario 1

Prototype	# of Buildings in Scenario	Total Units	Total SQFT Retail	Total SQFT Office	Building TIF Value	Total TIF Revenue
Townhouses	0	-	-	-	$ 27,922	$ -
Mixed Residential 4 Stories	9	207	105,930	-	$ 103,680	$ 933,120
Residential Flats 3 Stories	0	-	-	-	$ 65,280	$ -
Mixed Residential 6 Stories	0	-	-	-	$ 103,680	$ -
Mixed Residential 8 Stories	0	-	-	-	$ 127,680	$ -
Mixed Office 4 Stories	4	-	-	187,250	$ 94,560	$ 330,960
Mixed Office 8 Stories	0	-	-	-	$ 184,800	$ -
Hotel/Restaurant 4 Stories	3	-	-	-	$ 127,200	$ 318,000
Total		207	105,930	187,250		$ 1,582,080

		Sources / (Uses)	Share of Cost
Cap 2 Scenario 1			
Acres of redevelopment		7.5	
Dwelling Units		207	
		Sources / (Uses)	**Share of Cost**
Cap Option 2 Cost	$	(96,529,999)	
Redevelopment			
TIF Bond	$	23,478,677	24%
Alternative Financing			
Developer Contribution ($10,000 / unit)	$	2,070,000	2%
Business Improvement District	$	500,000	1%
Tax Increase ($5 / household / year)	$	2,832,000	3%
State Transportation Funds	$	33,824,661	35%
Federal Transportation Funds	$	33,824,661	35%
	$	96,529,999	100%
	$	-	
Local Funds	$	28,880,677	30%
State/Federal Funds	$	67,649,322	70%
Total Redev Value	$	329,600,000	
Cap as % of Redev Value		29%	
Developer Contribution as % of Redev Value		0.63%	

Cap Option #2 – Scenario 2

The build-out for Scenario 2 is made up of nine eight-story residential buildings with retail on the ground floor, and four eight-story office buildings with retail on the ground floor. It includes a 1.5 acre hotel and restaurant development. There is a total of 738 dwelling units, 170,325 square feet of retail space, and 377,090 square feet of office space. The height and scale of development is about twice that currently allowed in the downtown area.

This scenario generates an estimated $2.1 million per year in TIF revenue, which represents a total bonding capacity of $31.3 million, or about 32% of the cost of cap option #2.

This scenario achieves approximately 44% local financing of the Cap, primarily through TIF bonds. A citywide tax increase and a developer contribution represent a much smaller proportion of the financing structure. State and federal funding make up a commensurately larger share of the financing for this cap option.

Cap 2 Scenario 2

Prototype	# of Buildings in Scenario	Total Units	Total SQFT Retail	Total SQFT Office	Building TIF Value	Total TIF Revenue
Townhouses	0	-	-	-	$ 27,922	$ -
Mixed Residential 4 Stories	0	-	-	-	$ 103,680	$ -
Residential Flats 3 Stories	0	-	-	-	$ 65,280	$ -
Mixed Residential 6 Stories	0	-	-	-	$ 103,680	$ -
Mixed Residential 8 Stories	9	738	170,325	-	$ 127,680	$ 1,149,120
Mixed Office 4 Stories	0	-	-	-	$ 94,560	$ -
Mixed Office 8 Stories	4	-	-	377,090	$ 184,800	$ 646,800
Hotel/Restaurant 4 Stories	3	-	-	-	$ 127,200	$ 318,000
Total		738	170,325	377,090		$ 2,113,920

Cap 2 Scenario 2		
Acres of redevelopment	7.5	
Dwelling Units	738	
	Sources / (Uses)	**Share of Cost**
Cap Option 2 Cost	$ (96,529,999)	
Redevelopment		
TIF Bond	$ 31,371,387	32%
Alternative Financing		
Developer Contribution ($10,000 / unit)	$ 7,380,000	8%
Business Improvement District	$ 500,000	1%
Tax Increase ($5 / household / year)	$ 2,832,000	3%
State Transportation Funds	$ 27,223,306	28%
Federal Transportation Funds	$ 27,223,306	28%
	$ 96,529,999	100%
	$ -	
Local Funds	$ 42,083,387	44%
State/Federal Funds	$ 54,446,612	56%
Total Redev Value	$ 436,900,000	
Cap as % of Redev Value	22%	
Developer Contribution as % of Redev Value	1.69%	

Cap Option #3 – Scenario 1 & 2

These scenarios envision the development of approximately 28 acres of land including and surrounding Cap Option #3.

Cap Option #3 – Scenario 1

The build-out for Scenario 1 is made up of ten townhouse developments, twenty-five four-story residential buildings with retail on the ground floor, ten three-story residential buildings, and seven four-story office buildings with retail on the ground floor. It includes a 2.5 acre hotel and restaurant development. There is a total of 1,015 dwelling units, 294,250 square feet of retail space, and 347,750 square feet of office space. The height and scale of development is about twice that allowed in the downtown area.

This scenario generates an estimated $4.8 million per year in TIF revenue, which represents a bonding capacity of $70.8 million, or about 17% of the cost of cap option #3.

Cap Option #3 Scenario Area

This scenario achieves approximately 20% local financing of the Cap, primarily through TIF bonds. A citywide tax increase and a developer contribution represent a much smaller proportion of the financing structure. State and federal funding make up a commensurately larger share of the financing for this cap option.

Cap 3 Scenario 1

Prototype	# of Buildings in Scenario	Total Units	Total SQFT Retail	Total SQFT Office	Building TIF Value	Total TIF Revenue
Townhouses	10	110	-	-	$ 27,922	$ 279,220
Mixed Residential 4 Stories	25	575	294,250	-	$ 103,680	$ 2,592,000
Residential Flats 3 Stories	10	330	-	-	$ 65,280	$ 652,800
Mixed Residential 6 Stories	0	-	-	-	$ 103,680	$ -
Mixed Residential 8 Stories	0	-	-	-	$ 127,680	$ -
Mixed Office 4 Stories	7	-	-	347,750	$ 94,560	$ 614,640
Mixed Office 8 Stories	0	-	-	-	$ 184,800	$ -
Hotel/Restaurant 4 Stories	5	-	-	-	$ 127,200	$ 636,000
Total		1,015	294,250	347,750		$ 4,774,660

		Sources / (Uses)	Share of Cost
Cap 3 Scenario 1			
Acres of redevelopment		28.25	
Dwelling Units		1,015	
		Sources / (Uses)	**Share of Cost**
Cap Option 3 Cost	$	(426,030,006)	
Redevelopment			
TIF Bond	$	70,857,794	17%
Alternative Financing			
Developer Contribution ($10,000 / unit)	$	10,150,000	2%
Business Improvement District	$	500,000	0%
Tax Increase ($5 / household / year)	$	2,832,000	1%
State Transportation Funds	$	170,845,106	40%
Federal Transportation Funds	$	170,845,106	40%
	$	426,030,006	100%
	$	-	
Local Funds	$	84,339,794	20%
State/Federal Funds	$	341,690,212	80%
Total Redev Value	$	994,720,000	
Cap as % of Redev Value		43%	
Developer Contribution as % of Redev Value		1.02%	

Cap Option #3 – Scenario 2

The build-out for Scenario 2 is made up of a wide variety of building prototypes, most of which are six to eight stories. It includes a 2.5 acre hotel and restaurant development. There is a total of 2,502 dwelling units, 483,295 square feet of retail space, and 700,310 square feet of office space. The height and scale of development is about twice that currently allowed in the downtown area.

This scenario generates an estimated $6.4 million per year in TIF revenue, which represents a bonding capacity of $95.5 million, or about 22% of the cost of cap option #3.

This scenario achieves approximately 29% local financing of the Cap, primarily through TIF bonds. A citywide tax increase and a developer contribution represent a much smaller proportion of the financing structure. State and federal funding make up a commensurately larger share of the financing for this cap option.

Cap 3 Scenario 2

Prototype	# of Buildings in Scenario	Total Units	Total SQFT Retail	Total SQFT Office	Building TIF Value	Total TIF Revenue
Townhouses	4	44	-	-	$ 27,922	$ 111,688
Mixed Residential 4 Stories	6	138	70,620	-	$ 103,680	$ 622,080
Residential Flats 3 Stories	0	-	-	-	$ 65,280	$ -
Mixed Residential 6 Stories	25	1,500	223,425	-	$ 103,680	$ 2,592,000
Mixed Residential 8 Stories	10	820	189,250	-	$ 127,680	$ 1,276,800
Mixed Office 4 Stories	0	-	-	-	$ 94,560	$ -
Mixed Office 8 Stories	7	-	-	700,310	$ 184,800	$ 1,201,200
Hotel/Restaurant 4 Stories	5	-	-	-	$ 127,200	$ 636,000
Total		2,502	483,295	700,310		$ 6,439,768

Cap 3 Scenario 2			
Acres of redevelopment		28.25	
Dwelling Units		2,502	
		Sources / (Uses)	**Share of Cost**
Cap Option 3 Cost	$	(426,030,006)	
Redevelopment			
TIF Bond	$	95,568,639	22%
Alternative Financing			
Developer Contribution ($10,000 / unit)	$	25,020,000	6%
Business Improvement District	$	500,000	0%
Tax Increase ($5 / household / year)	$	2,832,000	1%
State Transportation Funds	$	151,054,683	35%
Federal Transportation Funds	$	151,054,684	35%
	$	426,030,006	100%
	$	-	
Local Funds	$	123,920,639	29%
State/Federal Funds	$	302,109,367	71%
Total Redev Value	$	1,335,118,000	
Cap as % of Redev Value		32%	
Developer Contribution as % of Redev Value		1.87%	

5. Next Steps

The technical analysis and background research conducted for this study is intended to answer the following questions:

- Is it physically possible to cap the US 101 Freeway where it runs through downtown Ventura?
- If it is physically possible, how much would it cost to cap the freeway?
- How much land would be reclaimed by capping the freeway?
- What would the appropriate mix of uses be on the reclaimed land?
- Would it be feasible for public and private uses to be developed on the reclaimed land?
- What would be the best way to move forward?

Next steps should provide details on staff, time, and resources. These steps would include developing a plan, preparing state regulatory documents, and conducting preliminary engineering.

Public Involvement

Building on the April 2008 public workshop, the community must continue to be engaged in planning the best way to reconnect downtown with the waterfront. An effective public involvement process will inform the stakeholders of the issues at hand and solicit their comments, concerns, and expectations for the design of the cap and greater downtown. Discussions with local developers and historic preservationists should also be included throughout this process. There are a variety of potential approaches for facilitating this public involvement effort. Examples include meeting with representative stakeholders and/or citizen's advisory groups, holding public open houses, sending out broadcast newsletters, and/or creating a project website that documents, explains, and invites comments about the project.

For federally funded projects, TEA-21 regulations require that the study and evaluation of transportation options and decision-making on those options, involve a broad array of stakeholders and affected agencies (Federal Register, October 28, 1993). Therefore, in addition to reaching out to the local community, it will be necessary to coordinate with all agencies that may be impacted by any of the capping alternatives.

Dialogue should be initiated with the offices of the senatorial and congressional leaders that might be affected by this project. Contact with these leaders may generate political and funding support for the project and will ensure that during subsequent phases of the project these important stakeholders will be well aware of the long-term process.

Planning

This initial study is only part of a broader planning process that involves the initiation of an environmental assessment, preliminary cost estimating, and completion of Caltrans' Project Study Report. It should allow the City and Caltrans to continue pursuing investigations of capping alternatives with the public and with potential affected agencies. Elements of the planning process should include working with the community and affected agencies to:

- Establish a clear set of goals and objectives for reconnecting downtown with the waterfront that will guide the planning process through to the next phases of implementation:
- Generate a more detailed list of candidate concepts and design options for meeting the goals and objectives;
- Evaluate the feasibility of the concepts and design options and identify any potential fatal flaws, based, in part, on knowledge obtained during this initial study;
- Reach consensus on two or three potentially viable concepts for analysis and screening during the environmental review process;
- Analyze the benefits, trade-offs, and concerns for each concept;
- Initiate an environmental assessment and Caltrans' Project Study Report for the final design concepts;
- Prepare an "order of magnitude" cost estimate; and
- Prepare preliminary engineering and construction documents.

Environmental Assessment

The extent of environmental review will vary depending on the complexity of the alternatives selected and their potential effects on the surrounding environment. Procedural steps for completing the environmental review will also vary, depending on how a project is funded.

- If the project is federally financed, all environmental studies must comply with the procedural requirements of the National Environmental Policy Act (NEPA).
- If local or state-only funds are used, the project must comply only with California Environmental Quality Act procedures (CEQA).

In either case, the capping alternatives must comply with all applicable state and federal laws and regulations, including the National Endangered Species Act, Clean Air and Water Acts, Coastal Zone Management Act, historic sites, and other sensitive lands. Compliance with these acts and other state and federal regulations is usually established in the environmental document after review by agencies with responsibilities in those areas.

Environmental documents that are subject to NEPA will also require review and approval by the Federal Highway Administration (FHWA). For a full Environmental Impact Statement, this may require more than a year of review and interagency coordination. Early and proactive contact with regulatory agencies (e.g., FHWA, EPA, NMFS, Union Pacific Railroads, Corps of Engineers), coupled with information gained from public involvement outreach efforts, will help identify the potential critical issues that must be addressed during environmental documentation.

Caltrans' Role in the Project

This study effort included two meetings with Caltrans District 7 and Caltrans Headquarters staff to understand fatal flaws or design constraints for the alternatives and to understand the Caltrans planning process going forward. Representatives from the Project Studies, Environmental, Community Planning, and Design Divisions of Caltrans attended the meetings and provided input. A Caltrans representative also attended the public workshop to hear the opinions of the public.

The freeway cap design issues are not insurmountable and do not present barriers to Caltrans approval or eventual construction within Caltrans' right-of-way. The freeway cap would be designed to meet the current vertical clearance requirements, but maintaining the existing vertical clearance at California Street would require a design exception. A design exception is a Caltrans approval process that includes analysis of cost implications for reconstructing the bridge to meet current vertical clearance standards and identification of clearance constraints at the location and upstream and downstream of the existing bridge.

The primary issues discussed with Caltrans were air rights (the right to develop the space above the Caltrans-owned freeway), vertical clearance, access and ramp closure, right-of-way needs, and maintenance concerns. Caltrans provided input but stated their opinion is only preliminary at this point pending further planning, design, and Caltrans process requirements. Caltrans did not provide an opinion on preference regarding one cap alternative over any nother, but they did express support for the project because it would provide for a mixed-use transit oriented development and increased connectivity. They did not see any fatal flaws with the project based upon the information presented to them, which is contained in this report.

Right-of-Way

A potential issue that affects the feasibility of the cap is the ultimate plan for the right-of-way of the US 101 Freeway. Caltrans is currently in the process of updating the Transportation Concept Report (TCR) for this segment of US 101. The TCR is a long-range planning document that defines the ultimate vision for the future of the freeway corridor, including right-of-way and cross sections. The TCR could define the ultimate section of the freeway to help determine the span of the cap and potential right-of-way takings or eminent domain issues. It is important for the proposed freeway cap concepts to be weighed against the outcomes of the TCR to determine if the cap concepts, as conceived are in conformance with Caltrans' long-term plan for the freeway.

Project Study Report (PSR)

Assuming the final outcome of the TCR for this segment of US 101 will allow the cap project to proceed, the next step will be to complete a Project Study Report (PSR). For any project as large and complex as the proposed freeway cap, Caltrans requires the completion of a PSR; its purpose is to provide a clear understanding of the project, a reasonable estimate of costs, and a reasonable schedule for project delivery. A PSR requires the completion of a Preliminary Environmental Assessment Report to identify any potential environmental issues and to determine the mitigation measures and costs, if any, which will need to be addressed further. The PSR is ultimately used to help substantiate a project, get buy-in from Caltrans and the federal government, and provide enough detailed support documentation for pursuing project funding at the state and local levels.

Preliminary Engineering

In order to support both the PSR and the required environmental assessments, preliminary engineering (PE) will need to be conducted on various alternative designs. A sampling of activities for the PE phase include detailed development of conceptual designs, evaluation of structure types, impacts to traffic, development of construction scenarios and their impacts on US 101 operations. A complete list of required PE studies is defined in the PSR and additional studies may be required to address all of the local issues. The preliminary engineering will help to shape the studies required for completing the environmental assessment, and will ultimately result in a design that is about 30 percent complete.

The PE work will also address interface with other transportation infrastructure projects and the potential for shared funding and construction windows. The PE studies will evaluate the potential for incorporating this proposed freeway cap project with others Caltrans is working on to reduce impacts to traffic, make efficient use of funding, and provide a sound long-term project.

The PSR process may take between two and three years. The environmental study process could take approximately three years and the design of the freeway cap is expected to take approximately two years. Construction for the cap is expected to take approximately two years, depending upon the alternative selected. The project could be phased to the City's advantage to benefit from funding opportunities or adjacent projects.

Air Rights Controls

US 101 through Ventura is part of the larger US Highway System. Its construction was funded primarily with federal dollars. It is owned and operated by Caltrans under federal guidelines. The controlling agencies are Caltrans and the Federal Highway Administration (FHWA). Caltrans has the right, under federal and state law, to lease the use of air

space over US 101 where it is "not required presently or in the foreseeable future for the safe and proper operation and maintenance of the highway," subject to approval by the FHWA, and in certain cases, the California Transportation Commission and its Airspace Advisory Committee. A final determination by Caltrans and the FHWA that conveyance of air rights will not adversely affect continued operation, maintenance, and/or expansion of US 101 will be necessary for a project to proceed. Under California Law, Caltrans must charge fair market value for most uses of air rights above or below freeways and deposit monies collected to the State Highway Account. Caltrans and the FHWA policies are predisposed to lease rather than sell any air rights.

Once Caltrans and the FHWA determine that alternative uses of the air rights are feasible, an appraisal of the value of the air rights is performed. There are many examples across the country of development projects built on caps over freeways. Although each project is unique, there are some common themes:

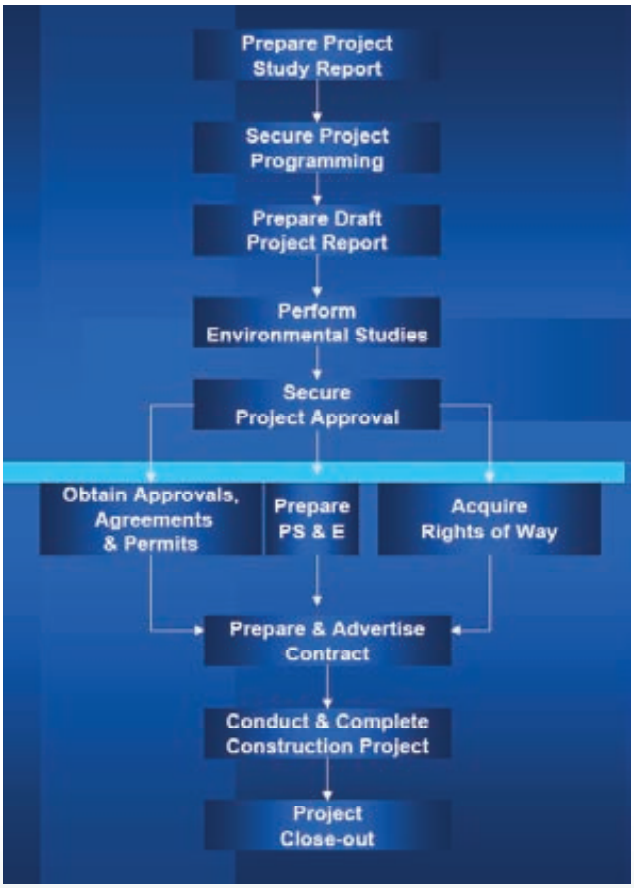
- Study areas that were dedicated to public use did not include or require consideration or reimbursement for the value of the air rights.
- The ultimate value of air rights for private development included a substantial discount that reflected the additional costs of building in airspace rather than on raw land.
- Air rights made available for private use were leased rather than sold.
- Most of the capping projects were part of larger transportation projects.
- Each project resulted in major value increases and triggered investment on properties located on or adjacent to the capping project and in many cases eventually spawned further capping efforts to complement the initial capping success.

Negotiating an air rights lease will be a very important first step, particularly if private development is planned for the capped area above the freeway. This issue would not influence the design and approval of the freeway cap, but could affect the City's phasing nd financing of the project. Beginning this process early will be important for defining the City's overall options for building and financing the cap.

State and Federal Partners- Summary

The next steps that must be initiated with Caltrans and FHWA are:

- Final determination that any proposed project is compatible with its continued uses under the TCR; and
- Negotiate a definitive agreement covering valuation and disposition of the air rights.



An overview of Caltrans' planning process for large projects

Secure Funding

Building above US 101 is not likely to pay for itself at the outset. However, other capping projects have shown that, over time, the benefits created by re-connecting neighborhoods and creating developable land can exceed the initial costs of constructing above a freeway.

Public Financing

Capping over US 101 is likely to require public subsidy, and there is a range of options available to provide public funding for this type of project. Any strategy pursued will depend upon project details and timing. Below are some financing mechanisms that may be considered.

- Tax Increment Financing can be used for capital improvements, potentially including a freeway cap, within a defined redevelopment district. Currently, the study area is located in part of the Merged Downtown Redevelopment Area.
- General Obligation Bonds. General obligation (G.O.) bonds can be issued for capital infrastructure construction such as a bridge widening, new bridge or capping project. G.O. bonds must be approved by City of Ventura voters and would be repaid through local property tax revenues.
- Grants. Depending on the configuration and uses, it is possible that federal discretionary grant programs—either within HUD or the department of transportation—may be available. Grant-funded projects often provide innovative solutions for mitigating the effects of highway transportation infrastructure construction. For designs containing park and civic uses, federal urban US Forestry or Department of Commerce grants may be available. A local match would be required. State grant programs, notably those funded with recently-passed infrastructure bond measures, are another potential funding source.
- Local Improvement District/Tax Abatement. New private properties created by the project could form a local improvement district (LID). Bancroft bonds could be sold, with annual debt service paid from the savings under a property tax exemption available at this location, due to its adjacency to transit lines. With an LID, those who are benefiting from enhanced services and increased property values pay all or a portion of the costs of construction.

Market Factors

Many factors will affect a project's economics and financing. Construction and development could occur in different ways:

- The City or state could build the project and lease any usable portions to a developer.
- A developer could build the project and turn the public portions over to the City or state.
- There could be a public/private partnership with any combination of the three parties. Final business arrangements would have to occur through a negotiated process ultimately shaped by economic factors and financing decisions and mechanisms described above.

Creating useable space in downtown Ventura will benefit the public whether it is used for housing, commercial, or open space. Developing a successful funding strategy is the key to making this vision a reality.

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Appendix A: Building Prototypes

Townhouse

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	2.00	stories
Usable FAR	0.75	
Residential units/acre	22	/acre
Avg. unit size (sf)	1,275	
Employees/acre	-	/acre

	gross square feet	net square feet	dwelling units
Residential	16,305	13,860	11
Affordable Residential	-	-	-
Retail	-	-	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	16,305	13,860	11

IRR (Rental)=	*n/a*
Project Profit (Owner)=	*$ 876,571*
Project Profit % (Owner)=	*15.1%*

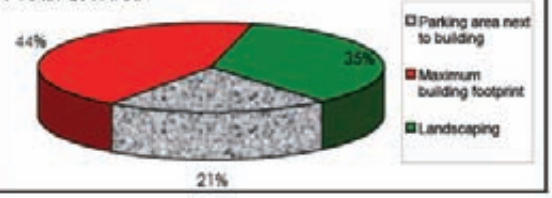
Financial Summary		
Average unit sale price	$669,375	
Average cost/sf	$525	/sf
Average unit rent	$2,040.00	/month
Average rent (sf/month)	$1.60	/sf
Retail rent (sf/year)		/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$5,817,179	

Construction Costs *		
Residential	$155	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	35%

% Total Lot Area



Mixed-Use Residential 3-Story

Ventura, California

Building Summary		
Lot area (sf)	43,560	sf
Lot area (acres)	1	acre
Height	2.75	stories
Usable FAR	1.80	
Residential units/acre	43	/acre
Avg. unit size (sf)	1,190	
Employees/acre	16	/acre

	gross square feet	net square feet	dwelling units
Residential	52,572	44,686	38
Affordable Residential	6,277	5,336	5
Retail	11,770	10,004	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	70,619	60,026	43

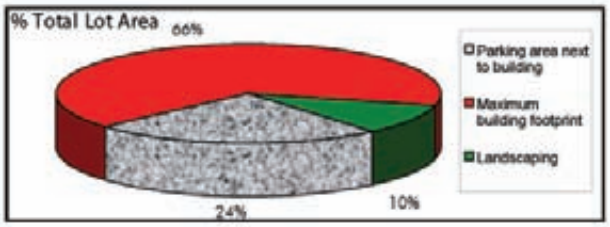
ROI (rental) =		*6.0%*
IRR (Rental)=		*10.1%*
Project Profit (Owner)=	$	*3,225,010*
Project Profit % (Owner)=		*14.9%*

Financial Summary		
Average unit sale price	$577,150	
Average cost/sf	$485	/sf
Average unit rent	$2,142.00	/month
Average rent (sf/month)	$1.80	/sf
Retail rent (sf/year)	$32.00	/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$3,267,000	/acre
Total project costs	$21,621,949	

Construction Costs *		
Residential	$160	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	10%



Residential Flats

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	4.00	stories
Usable FAR	1.98	
Residential units/acre	66	/acre
Avg. unit size (sf)	1,148	
Employees/acre	-	/acre

	gross square feet	net square feet	dwelling units
Residential	36,690	31,187	27
Affordable Residential	6,475	5,504	6
Retail	-	-	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	43,165	36,690	33

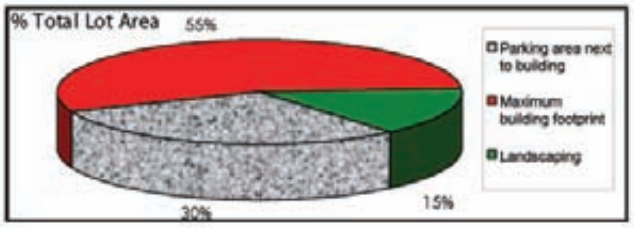
ROI (rental) =	*4.9%*
IRR (Rental) =	*-0.5%*
Project Profit (Owner) =	*$ 2,088,997*
Project Profit % (Owner) =	*15.4%*

Financial Summary		
Average unit sale price	$579,488	
Average cost/sf	$505	/sf
Average unit rent	$1,950.75	/month
Average rent (sf/month)	$1.70	/sf
Retail rent (sf/year)		/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$13,557,165	

Construction Costs *		
Residential	$170	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	15%



Mixed-Use Residential 4-Story

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	4.00	stories
Usable FAR	3.31	
Residential units/acre	97	/acre
Avg. unit size (sf)	1,148	
Employees/acre	19	/acre

-	gross square feet	net square feet	dwelling units
Residential	57,653	49,005	43
Affordable Residential	7,207	6,126	6
Retail	7,207	6,126	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	72,066	61,256	49

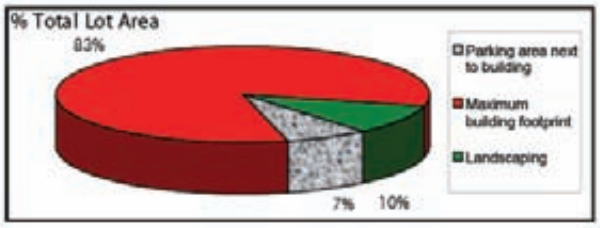
ROI (rental) =		*5.8%*
IRR (Rental)=		*8.5%*
Project Profit	*$*	*3,242,460*
Project Profit %		*15.0%*

Financial Summary		
Average unit sale price	$545,063	
Average cost/sf	$475	/sf
Average unit rent	$2,065.50	/month
Average rent (sf/month)	$1.80	/sf
Retail rent (sf/year)	$30.00	/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$21,654,915	

Construction Costs *		
Residential	$170	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	10%



Mixed-Use Residential 6-Story

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	6.00	stories
Usable FAR	4.10	
Residential units/acre	121	/acre
Avg. unit size (sf)	1,148	
Employees/acre	24	/acre

-	gross square feet	net square feet	dwelling units
Residential	71,497	60,772	53
Affordable Residential	8,937	7,597	7
Retail	8,937	7,597	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	89,371	75,965	60

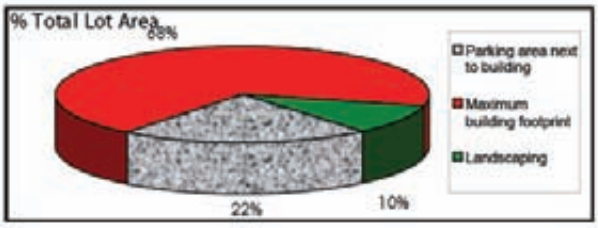
ROI (rental) =		*5.3%*
IRR (Rental)=		*3.7%*
Project Profit	*$*	*4,164,492*
Project Profit %		*15.6%*

Financial Summary		
Average unit sale price	$545,063	
Average cost/sf	$475	/sf
Average unit rent	$1,836.00	/month
Average rent (sf/month)	$1.60	/sf
Retail rent (sf/year)	$30.00	/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$26,664,892	

Construction Costs *		
Residential	$180	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	10%



Mixed-Use Residential 6-Story

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	8.00	stories
Usable FAR	3.87	
Residential units/acre	160	/acre
Avg. unit size (sf)	850	
Employees/acre	11	/acre

	gross square feet	net square feet	dwelling units
Residential	80,094	68,080	80
Affordable Residential	-	-	-
Retail	4,215	3,583	-
Office	-	-	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	84,310	71,663	80

ROI (rental) =		*4.8%*
IRR (Rental)=		*-1.6%*
Project Profit	*$*	*6,131,680*
Project Profit %		*22.4%*

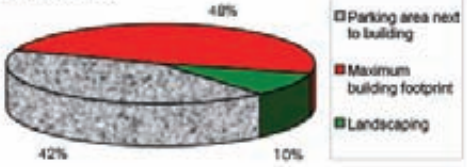
Financial Summary		
Average unit sale price	$403,750	
Average cost/sf	$475	/sf
Average unit rent	$1,360.00	/month
Average rent (sf/month)	$1.60	/sf
Retail rent (sf/year)	$30.00	/sf
Office rent (sf/year)	$0.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$27,340,991	

Construction Costs *		
Residential	$180	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	10%

% Total Lot Area



Mixed-Use Office 8-Story

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	8	stories
Usable FAR	5.79	
Residential units/acre	-	/acre
Avg. unit size (sf)	1,530	
Employees/acre	663	/acre

-	gross square feet	net square feet	dwelling units
Residential	-	-	-
Affordable Residential	-	-	-
Retail	18,925	16,086	-
Office	107,240	91,154	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	126,165	107,240	-

ROI (rental) =		*7.2%*
IRR (Rental)=		*17.7%*
Project Profit	*$*	*(7,264,706)*
Project Profit %		*-19.4%*

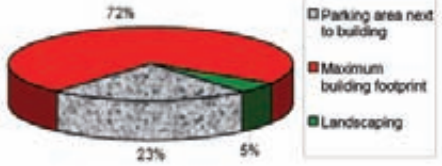
Financial Summary		
Average unit sale price		
Average cost/sf		/sf
Average unit rent		/month
Average rent (sf/month)		/sf
Retail rent (sf/year)	$30.00	/sf
Office rent (sf/year)	$25.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$37,389,380	

Construction Costs *		
Residential	$170	/sf
Retail	$150	/sf
Office	$180	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	5%

% Total Lot Area



Mixed-Use Office 4-Story

Ventura, California

Building Summary

Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	4	stories
Usable FAR	2.90	
Residential units/acre	-	/acre
Avg. unit size (sf)	1,530	
Employees/acre	332	/acre

-	gross square feet	net square feet	dwelling units
Residential	-	-	-
Affordable Residential	-	-	-
Retail	9,462	8,043	-
Office	53,620	45,577	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	63,082	53,620	-

ROI (rental) =		*6.8%*
IRR (Rental)=		*15.5%*
Project Profit	*$*	*(4,631,560)*
Project Profit %		*-23.5%*

Financial Summary

Average unit sale price		
Average cost/sf		/sf
Average unit rent		/month
Average rent (sf/month)		/sf
Retail rent (sf/year)	$30.00	/sf
Office rent (sf/year)	$25.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$19,693,897	

Construction Costs *

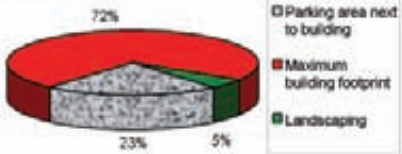
Residential	$170	/sf
Retail	$150	/sf
Office	$180	/sf

parking costs exclusive

Parking and Open Space Summary

Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	5%

% Total Lot Area



Restaurant and Hotel

Ventura, California

Building Summary		
Lot area (sf)	21,780	sf
Lot area (acres)	1	acre
Height	4.20	stories
Usable FAR	2.63	
Hotel units/acre	127	/acre
Avg. unit size (sf)	325	
Employees/acre	158	/acre

	gross square feet	net square feet	dwelling units
HOTEL	-	-	-
Affordable Residential	-	-	-
Retail	48,708	41,402	-
Office	8,595	7,306	-
Industrial	-	-	-
Public	-	-	-
Other	-	-	-
Total	57,303	48,708	

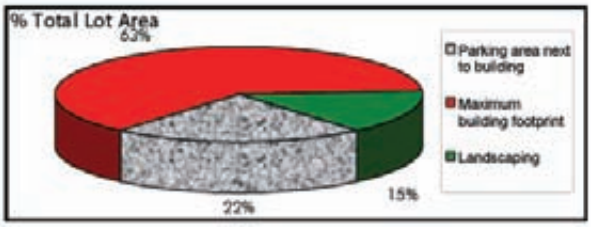
ROI (rental) =	*15.8%*
IRR (Rental) =	*49.8%*
Project Profit (Owner) =	*$ 3,911,872*
Project Profit % (Owner) =	*14.8%*

Financial Summary		
Average unit sale price		
Average cost/sf		/sf
Average unit rent		/month
Average rent (sf/month)		/sf
Retail rent (sf/year)	$123.54	/sf
Office rent (sf/year)	$30.00	/sf
Estimated land value	$75.00	/sf
Estimated land value	$1,633,500	/acre
Total project costs	$26,502,074	

Construction Costs *		
Residential	$110	/sf
Hotel	$315	/sf
Restaurant	$200	/sf

**Includes building and parking costs exclusive of tenant improvements*

Parking and Open Space Summary	
Residential parking/unit	1.00
Retail parking/ksf	2.00
Office parking/ksf	2.00
Total parking spaces	-
Open space (%)	15%



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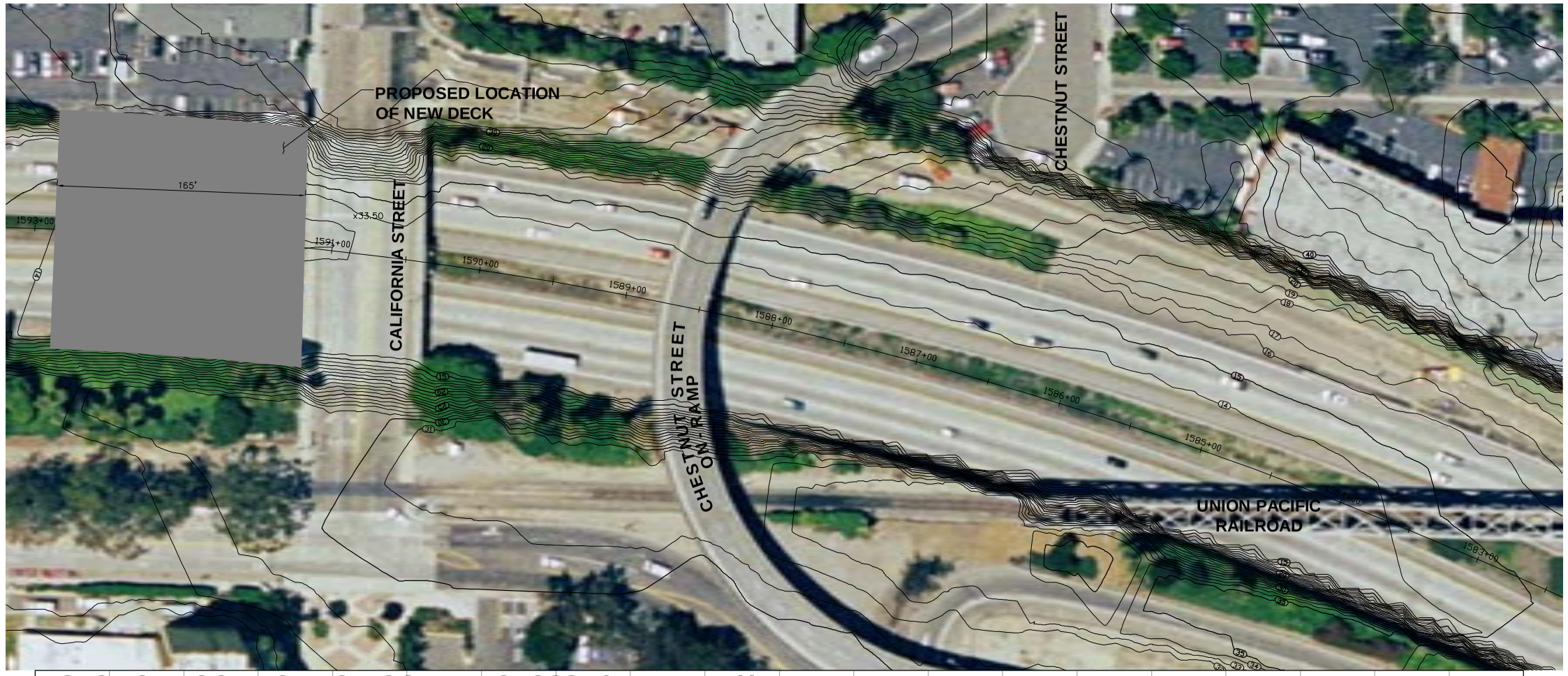
Appendix B: Cap Structural Drawings

The following pages include conceptual structural drawings for the original cap options #1, #2, and #3. They represent proposed designs based on existing conditions in the project study area.

ALTERNATIVE 01 - CALIFORNIA STREET EXTENSION FOR PEDESTRIAN AND BICYCLE ACCESS



N

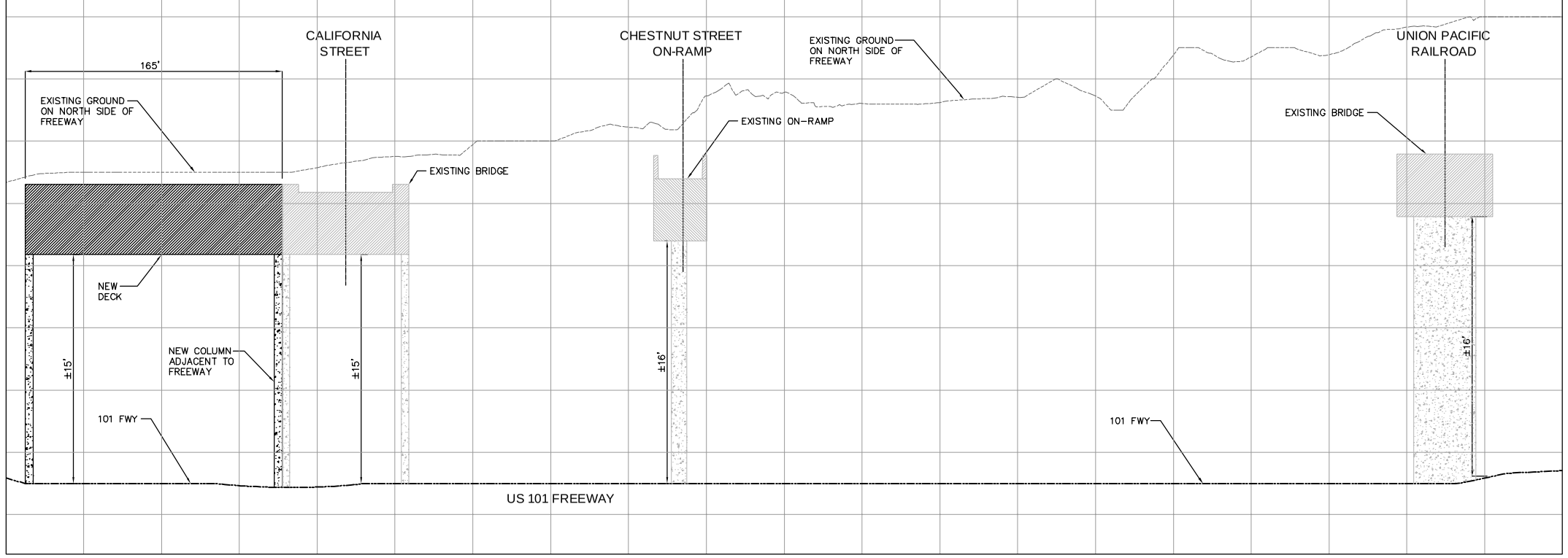
DECK DATA:
DECK: APPROXIMATELY 0.6 ACRES

APPROX. COST: $23,600,000

ASSUMPTIONS:
–MAINTAINS SAME CLEARANCE AS EXISTING CALIFORNIA STREET BRIDGE

–EXTENDS BRIDGE WESTERLY UNTIL CRITICAL CLEARANCE POINT

SECTION LOOKING FROM OCEAN ACROSS 101 FREEWAY



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SCALE (V): 1"=4'
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DRAWN BY: BK/RL
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ALTERNATIVE 1
CALIFORNIA STREET EXTENSION FOR PERDESTRIAN AND BICYCLE ACCESS

PROJECT NO.
099241000

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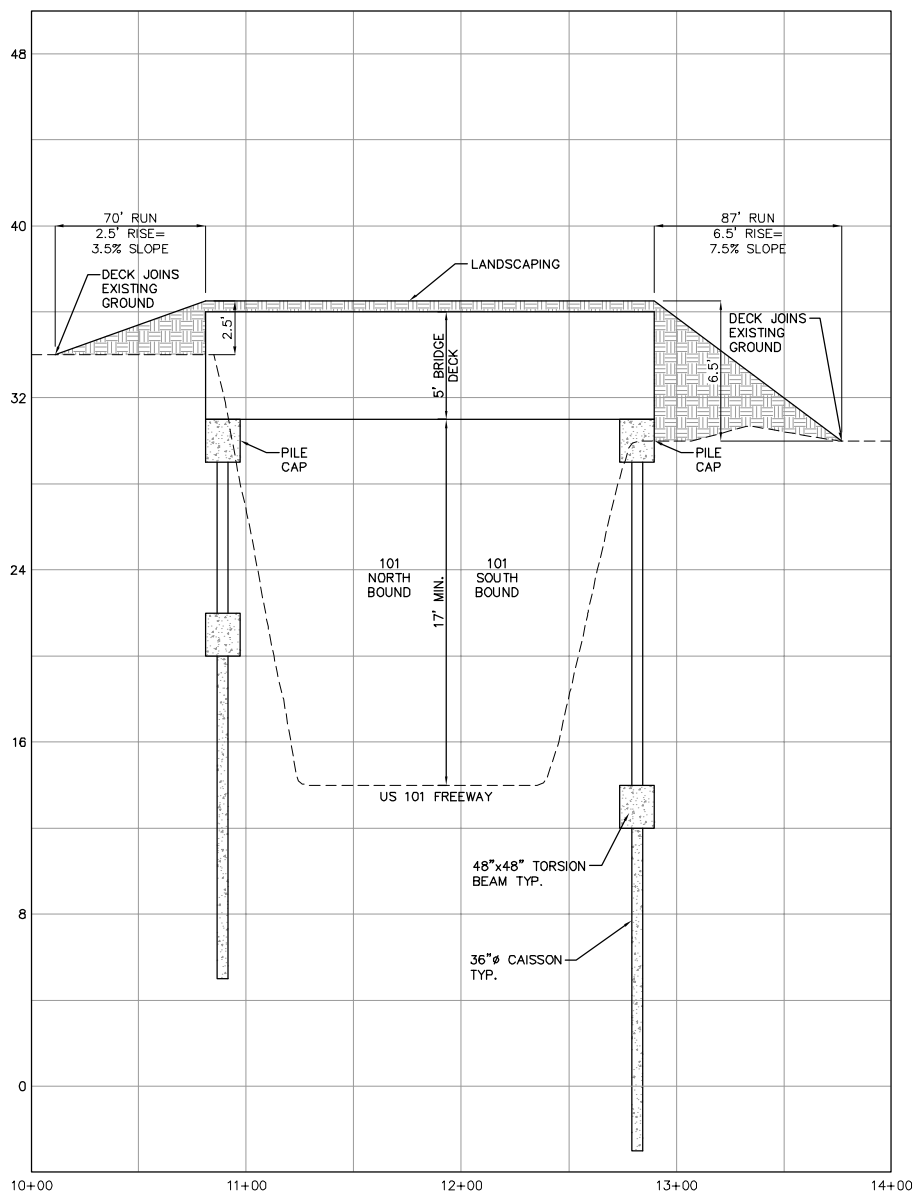
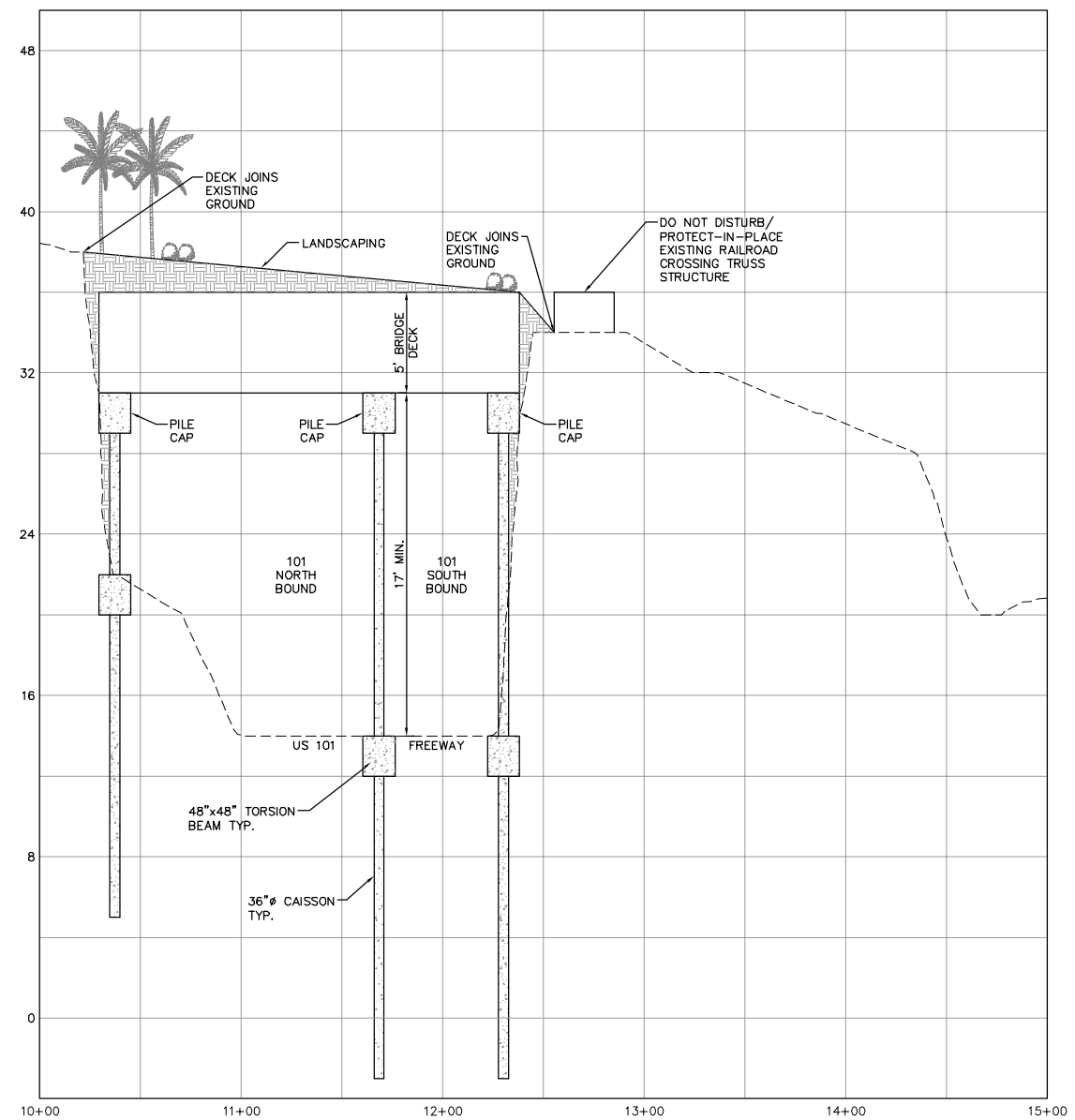
ALTERNATIVE 2 - FLAT DECK SECTIONS

1 / - SECTION WEST OF CALIFORNIA STREET
LOOKING EAST FROM FREEWAY



2 / - SECTION WEST OF CHESTNUT STREET
LOOKING EAST FROM FREEWAY



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ALTERNATIVE 2
FLAT DECK SECTIONS

PROJECT NO.
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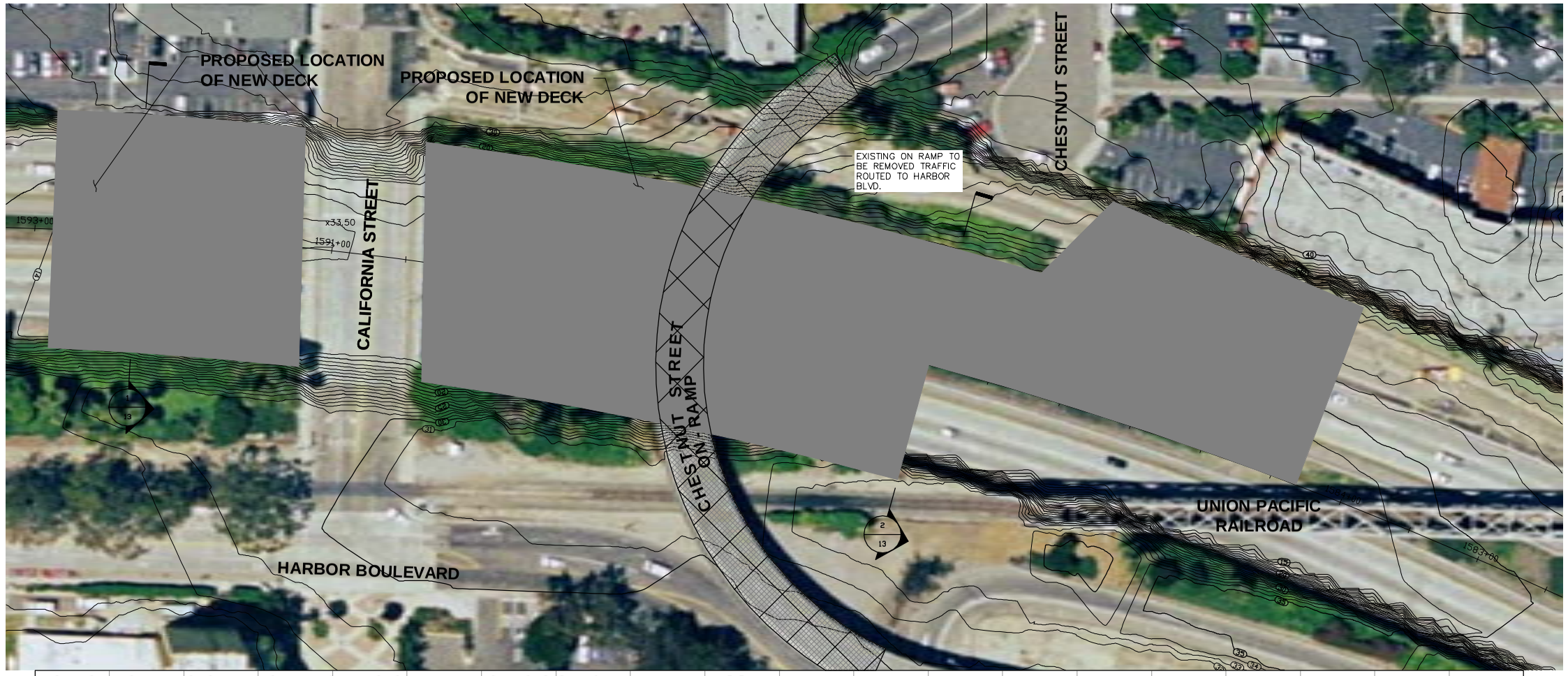
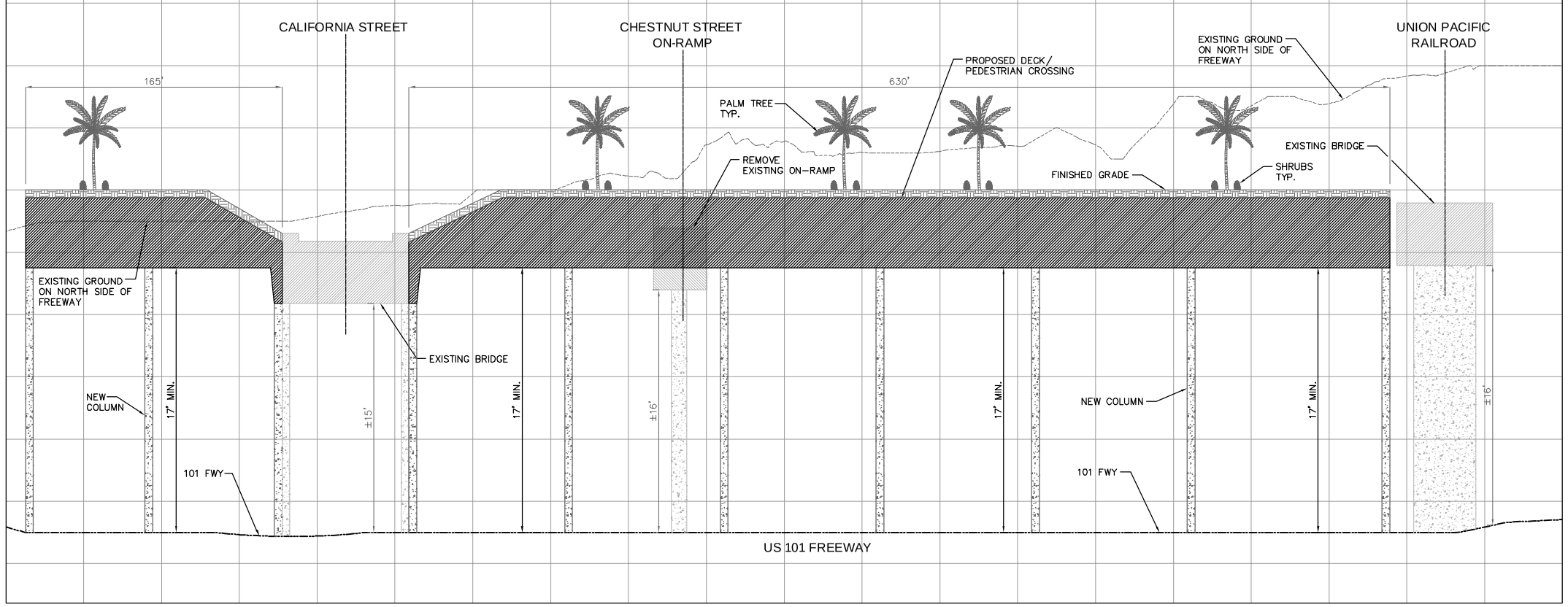
ALTERNATIVE 2 - FLAT DECK WITH BUILDINGS



SECTION LOOKING FROM OCEAN ACROSS 101 FREEWAY



DECK DATA:
DECK: APPROXIMATELY 2.5 ACRES

APPROX. COST: $96,530,000

ASSUMPTIONS:
- ASSUMES A FLAT DECK WITH 3 STORY MAX. STRUCTURES
- SIGNIFICANT STRUCTURAL DESIGN
- NO INTERFERENCE WITH RAILROAD BRIDGE OR OPERATIONS
- DEMOLITION OF CHESTNUT STREET ON-RAMP. REROUTE TO HARBOR BOULEVARD.

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ALTERNATIVE 2
FLAT DECK WITH BUILDINGS

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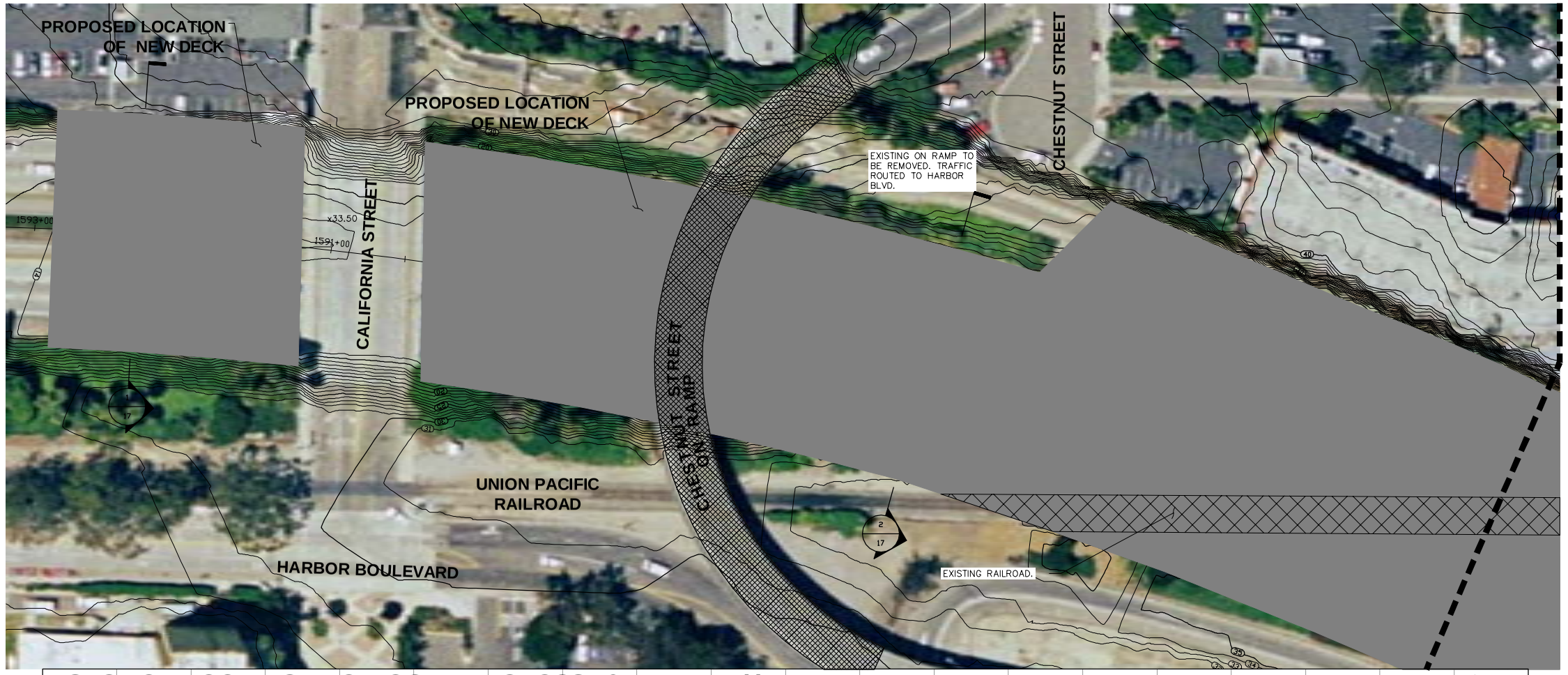
ALTERNATIVE 3 - FULL DECK WITH TEMPORARY RAILROAD CLOSURE

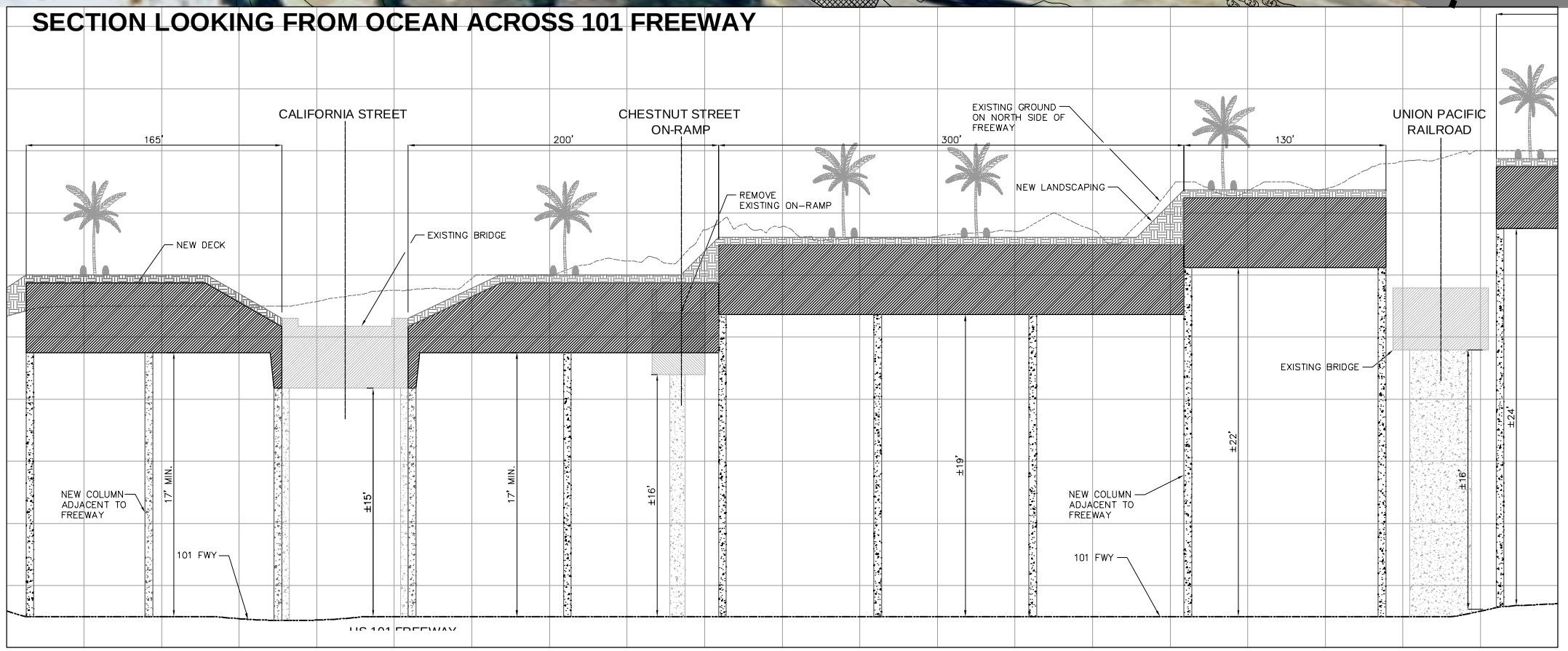


DECK DATA:
DECK: APPROXIMATELY 14 ACRES

APPROX. COST: $426,030,000

ASSUMPTIONS:
- STEPPED DECK WITH LANDSCAPING/ PARK ON TOP
- DEMOLITION OF CHESTNUT STREET ON-RAMP. REROUTE TO HARBOR BOULEVARD.
- TEMPORARY INTERFERENCE WITH RAILROAD BRIDGE OR OPERATIONS

SECTION LOOKING FROM OCEAN ACROSS 101 FREEWAY



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ALTERNATIVE 3
FULL DECK WITH TEMPORARY RAILROAD CLOSURE

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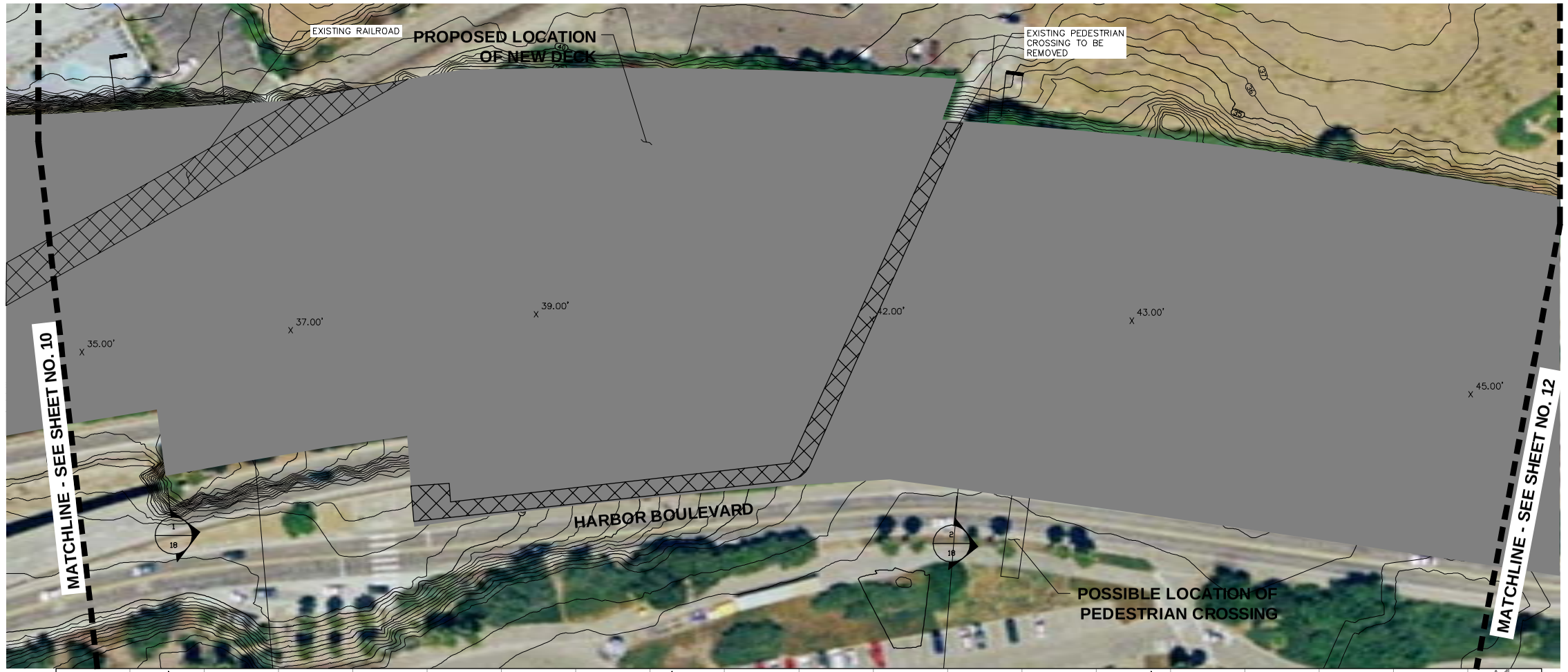

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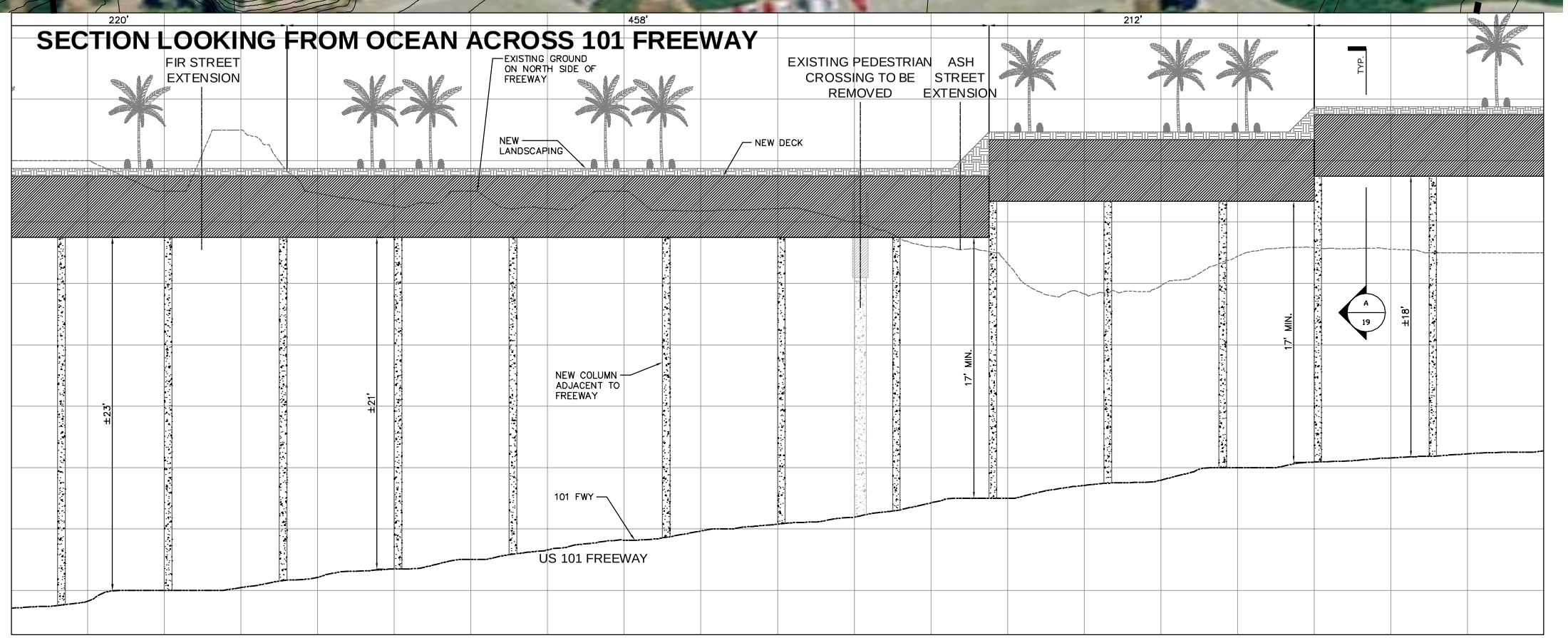
DECK: SEE SHEET NO. 10

APPROX. COST OF DECK ONLY:
SEE SHEET NO. 10

ASSUMPTIONS:
-SEE SHEET NO. 10



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FULL DECK WITH TEMPORARY RAILROAD CLOSURE

PROJECT NO.
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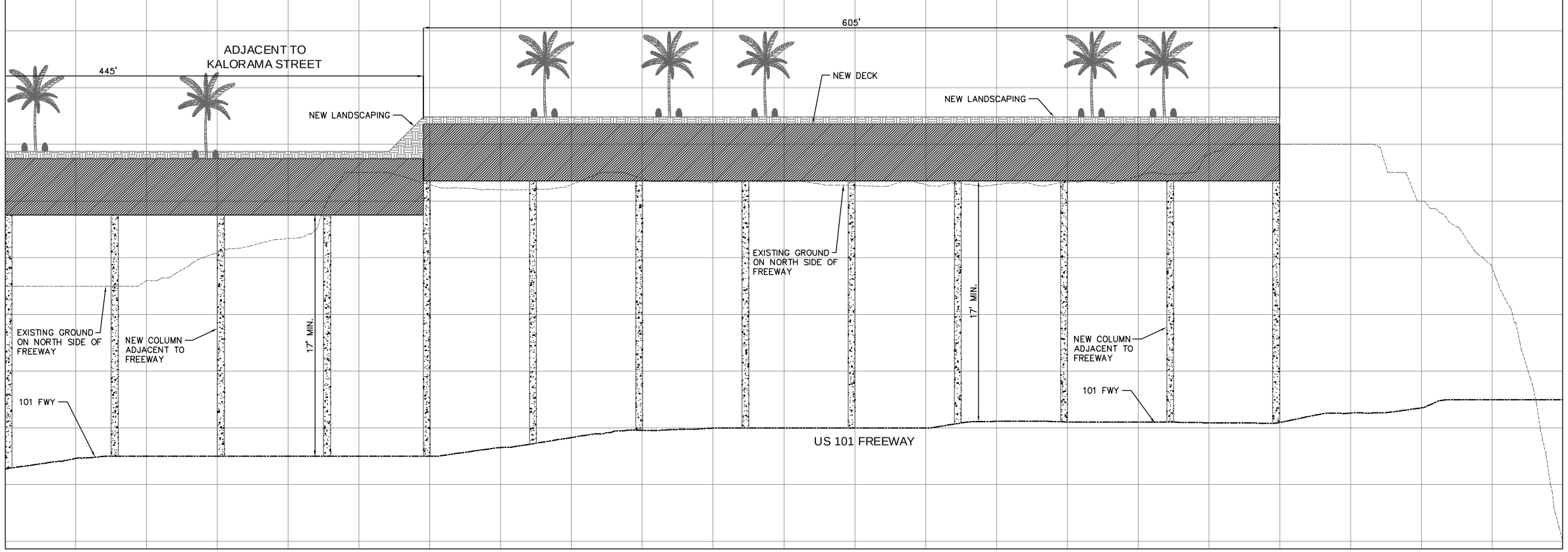
ALTERNATIVE 3 - FULL DECK WITH TEMPORARY RAILROAD CLOSURE

SECTION LOOKING FROM OCEAN ACROSS 101 FREEWAY



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ALTERNATIVE 3
FULL DECK WITH TEMPORARY RAILROAD CLOSURE

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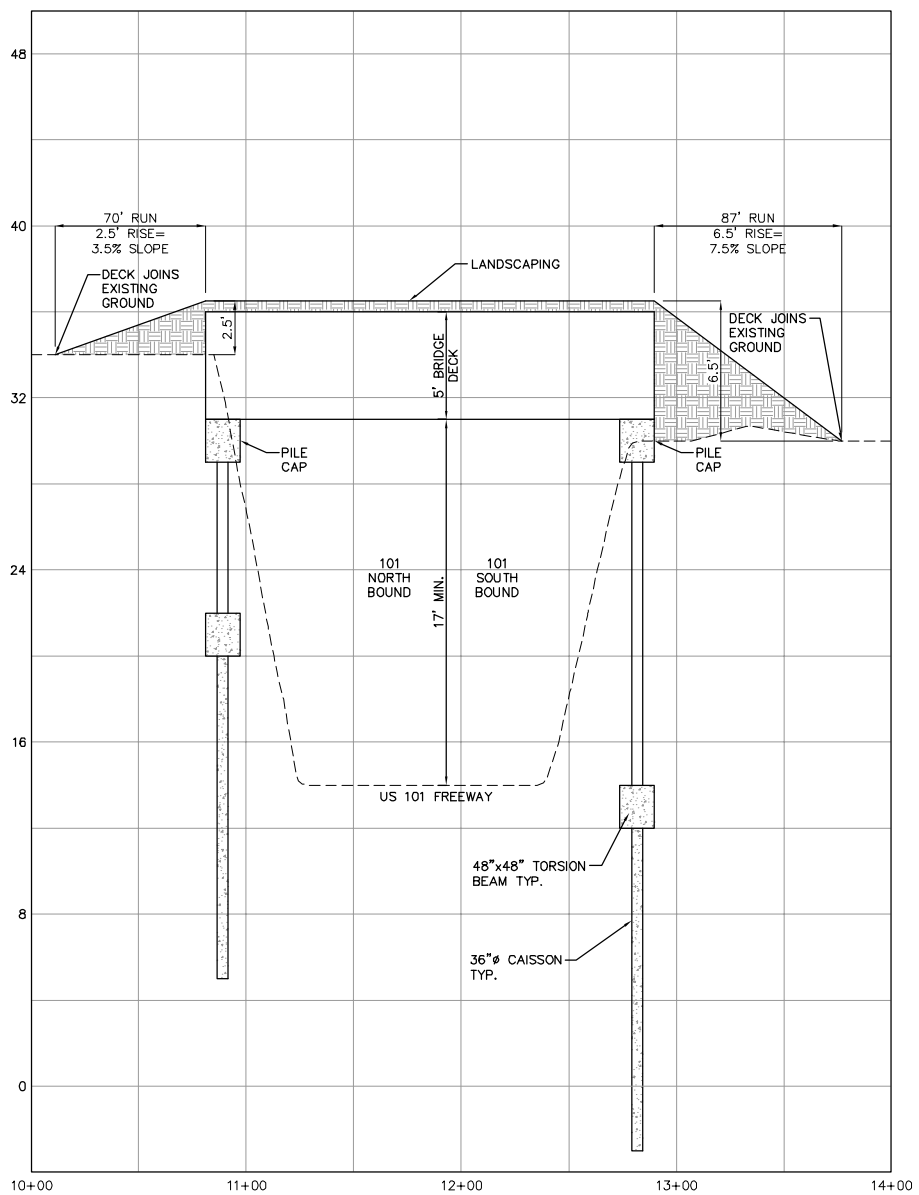
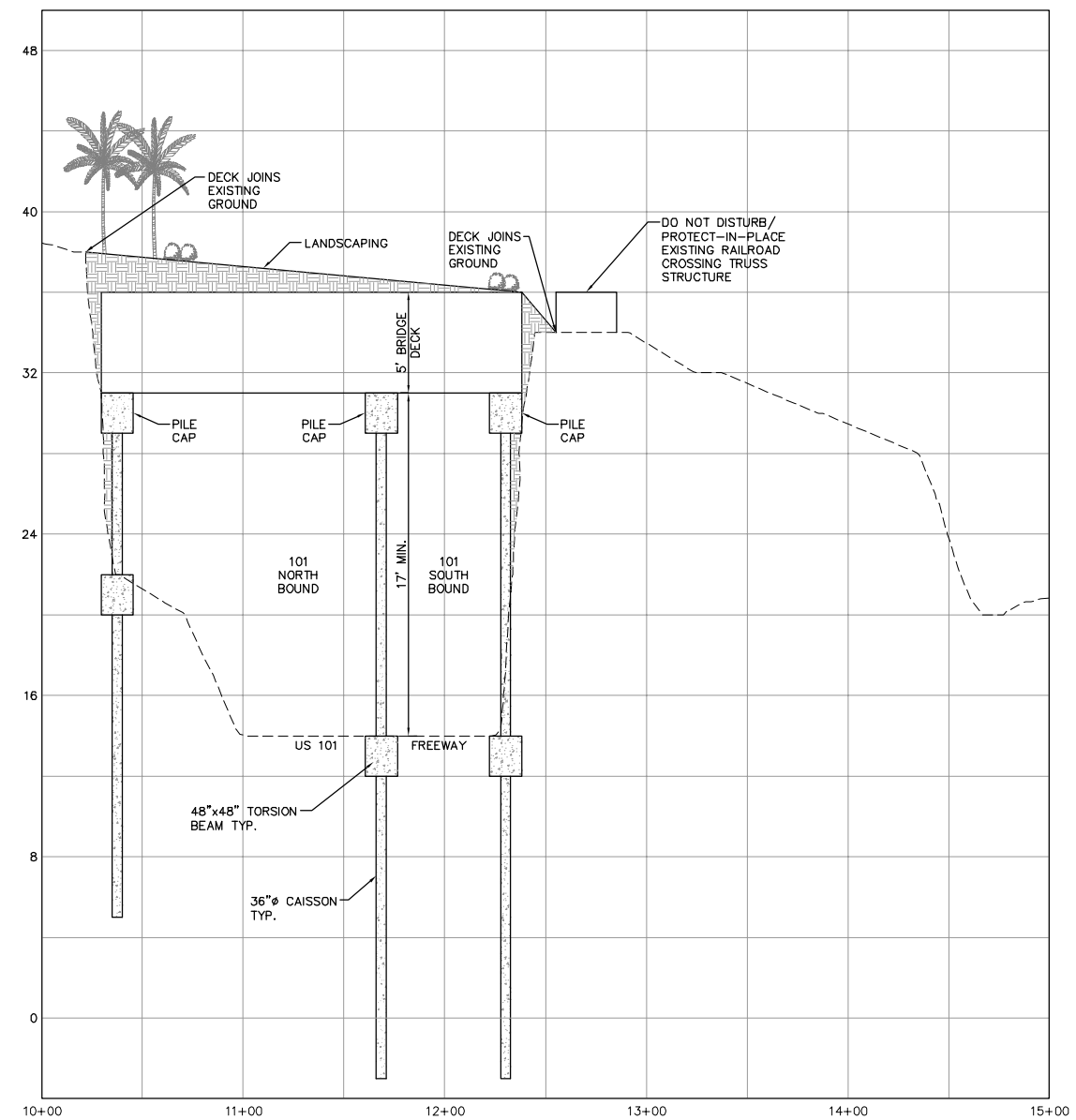
ALTERNATIVE 3 - FULL DECK SECTIONS

1 - SECTION WEST OF CALIFORNIA STREET
LOOKING EAST FROM FREEWAY



2 - SECTION WEST OF CHESTNUT STREET
LOOKING EAST FROM FREEWAY



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ALTERNATIVE 3
FULL DECK SECTIONS

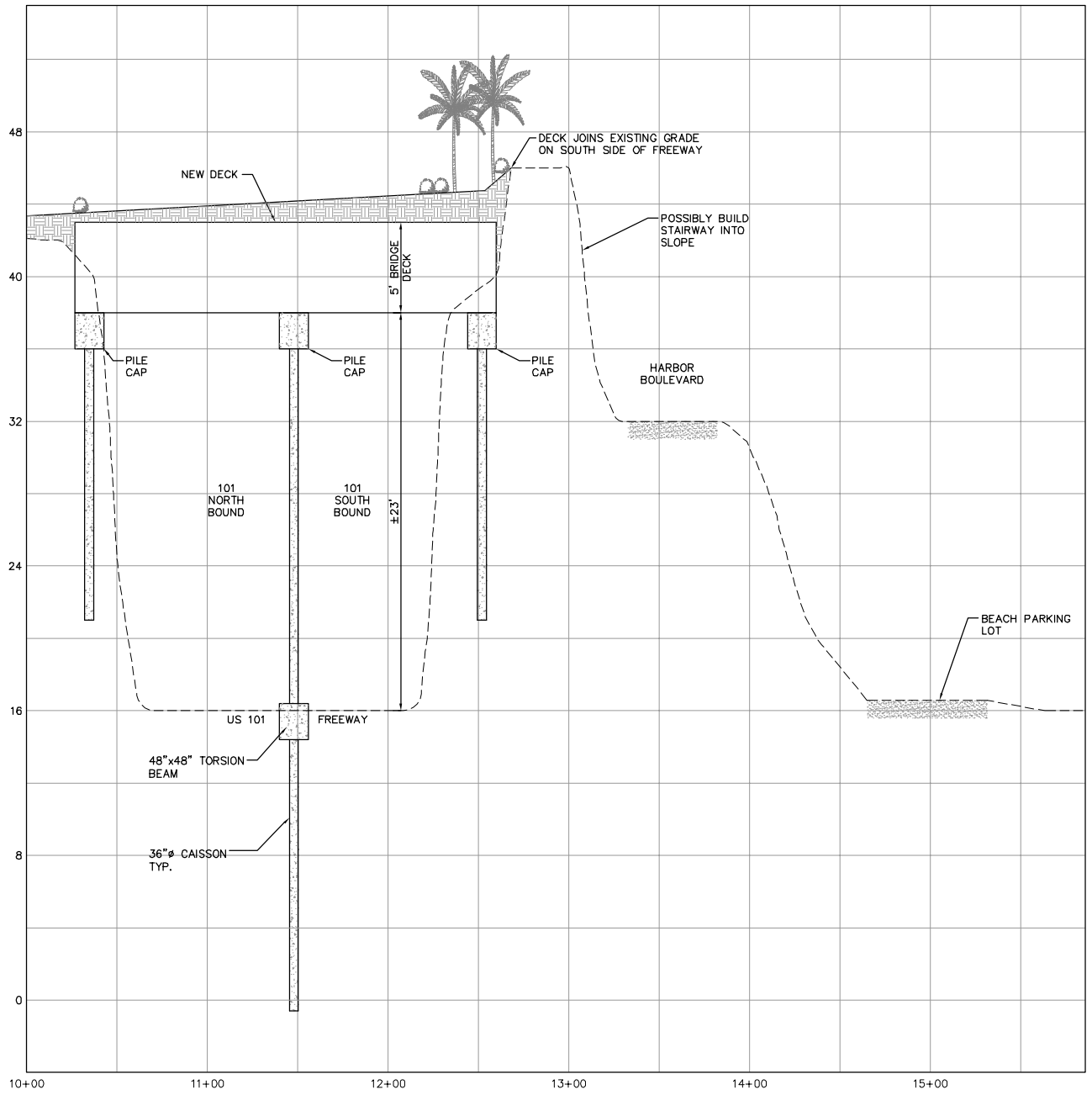
PROJECT NO.
099241000

DRAWING NAME
–

ALTERNATIVE 3 - FULL DECK SECTIONS

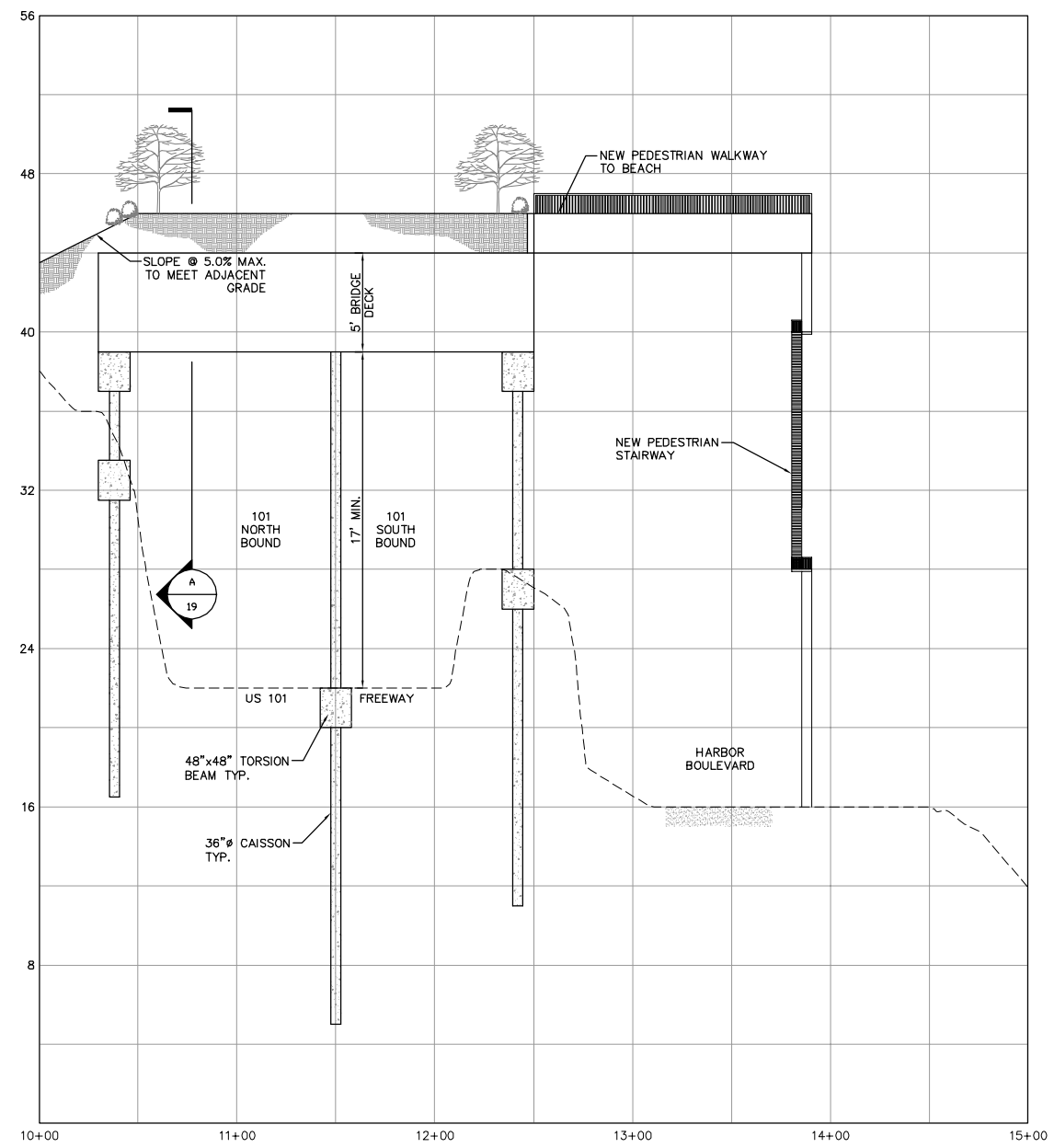
1 / -

SECTION AT FIR STREET EXTENSION
LOOKING EAST FROM FREEWAY



2 / -

SECTION AT ASH STREET EXTENSION
LOOKING EAST FROM FREEWAY



NO.	REVISION	BY	DATE	APPR.

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Engineering, Planning, and Environmental Consultants 5550 Topanga Canyon Boulevard, Suite 250 Woodland Hills, CA 91367 (818) 227-2790

SCALE (H): 1"=40'
SCALE (V): 1"=4'
DESIGNED BY: BV
DRAWN BY: BK/RL
CHECKED BY: AP
DATE: 3/17/08

ALTERNATIVE 3
FULL DECK SECTIONS

PROJECT NO.
099241000

DRAWING NAME
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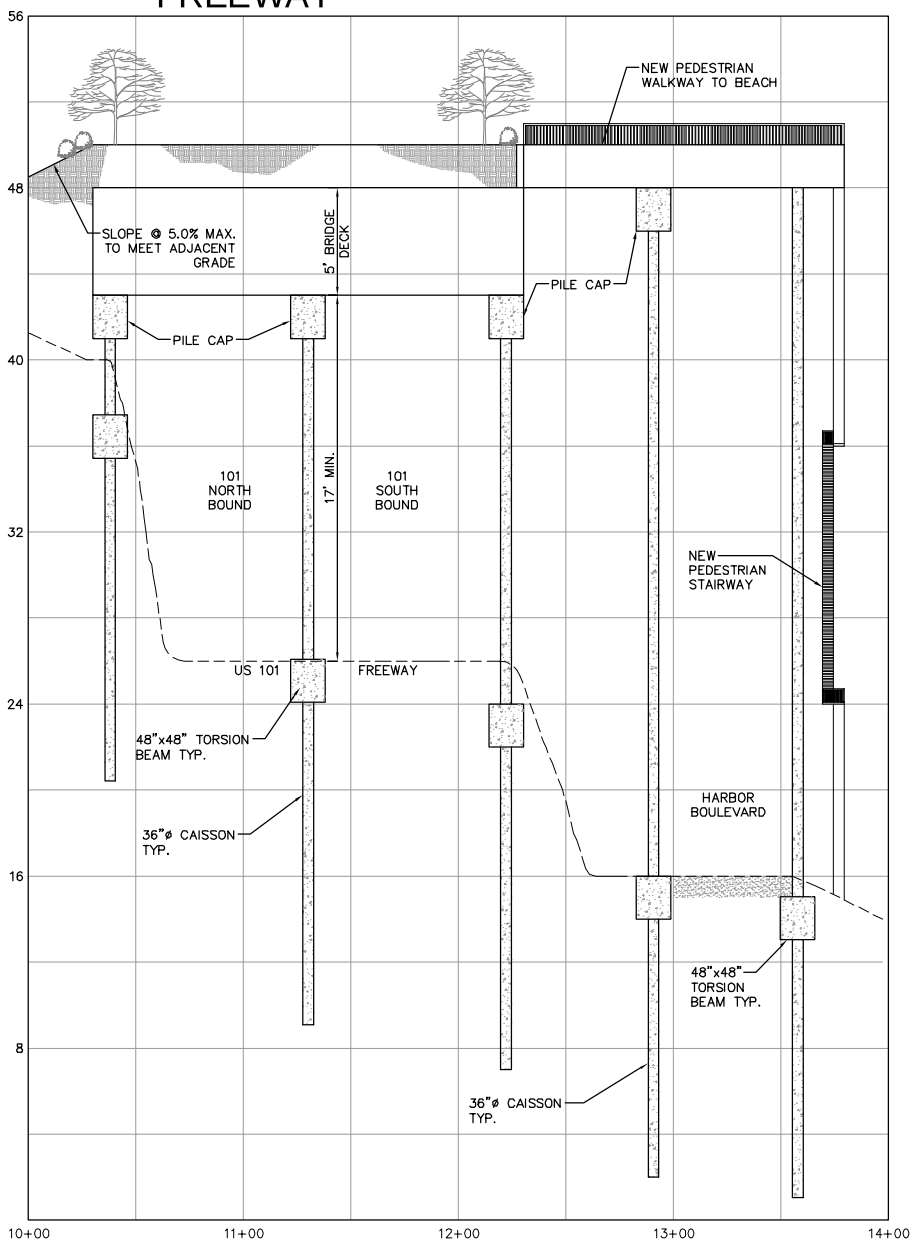
ALTERNATIVE 3 - FULL DECK SECTIONS

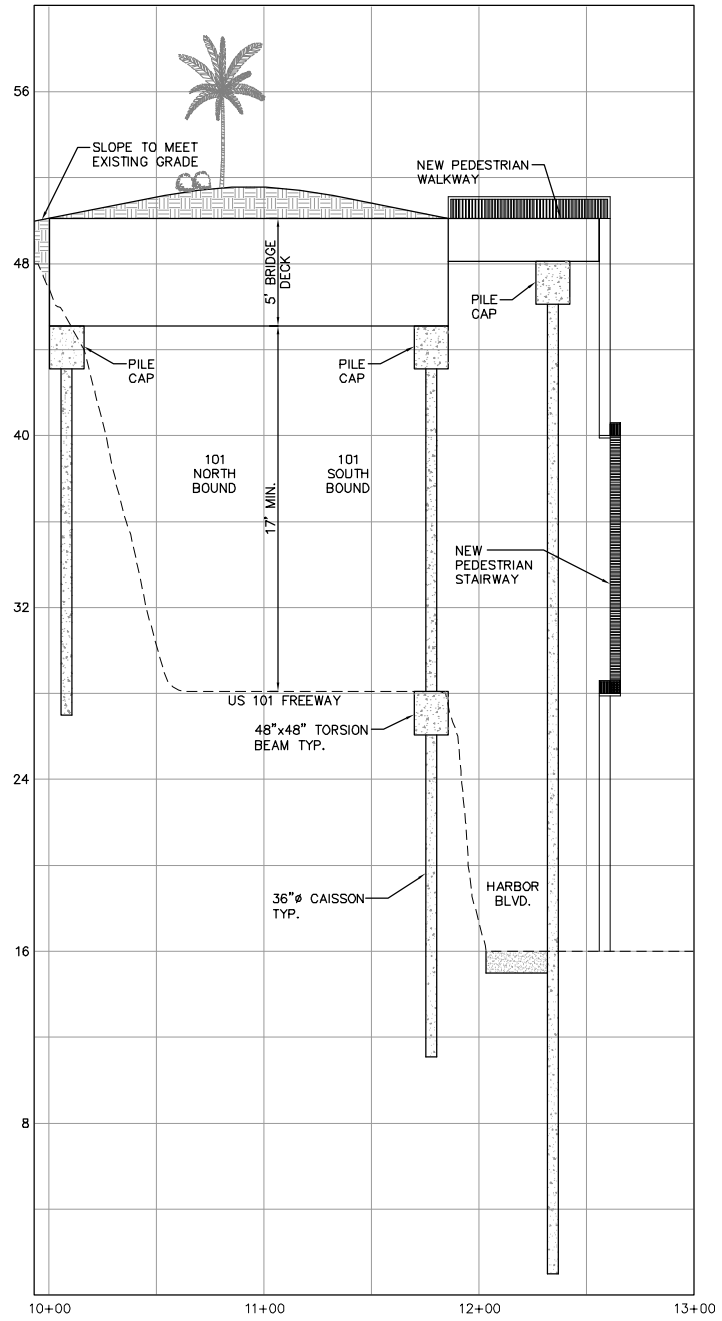
1 / -

SECTION AT KALORAMA STREET EXTENSION LOOKING EAST FROM FREEWAY



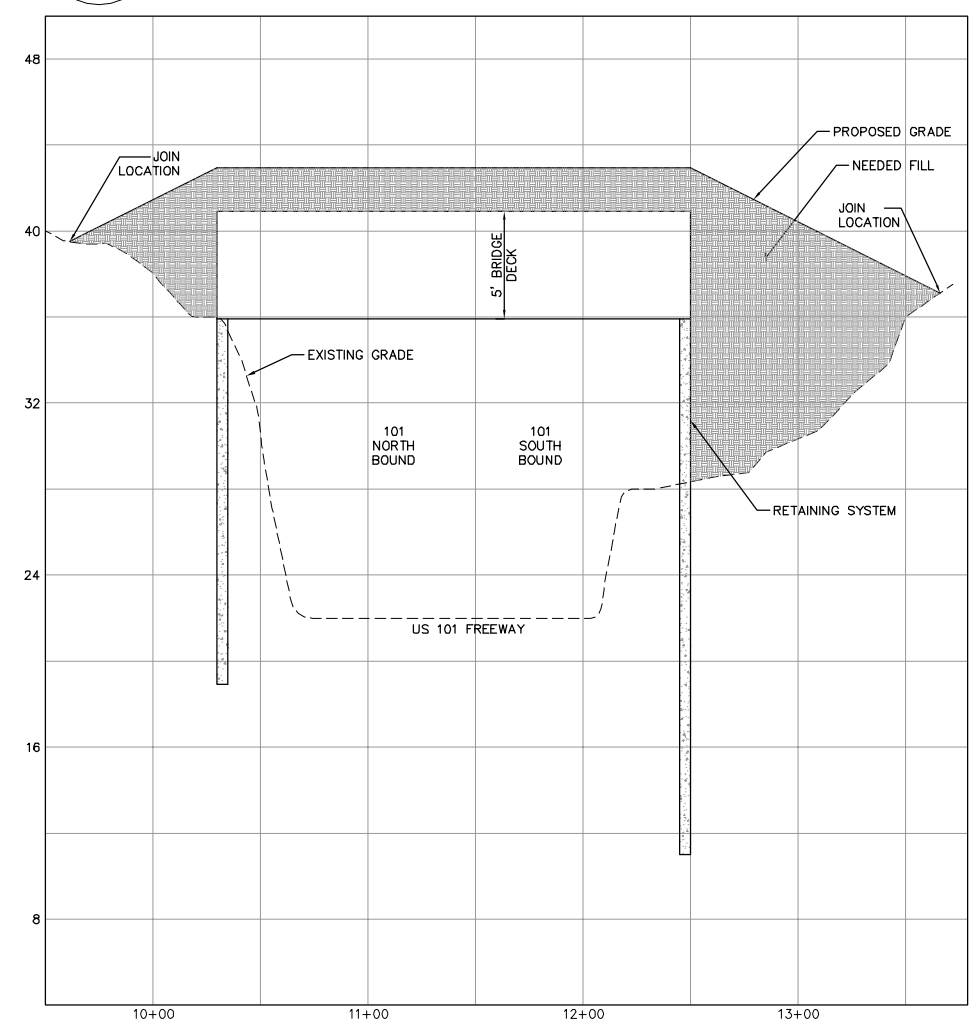
2 / -

SECTION 200' WEST OF SAN JON ROAD LOOKING EAST FROM FREEWAY



A / -

TYPICAL SECTION WHERE ADJACENT GRADE IS LOWER THAN TOP OF CAP



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SCALE (H): 1"=40'
SCALE (V): 1"=4'
DESIGNED BY: BV
DRAWN BY: BK/RL
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ALTERNATIVE 3 FULL DECK/TYPICAL SECTIONS

PROJECT NO.
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