

*Final  
Environmental Impact Report*

# *Silva Valley Parkway Interchange*

*with*

## *U. S. Highway 50*



*Lead Agency:*

*El Dorado County  
Department of Transportation*

*Submitted by:*

*Jones & Stokes Associates, Inc.*

*February 1990  
SCH #88050215*

- o 30-foot-tall standards with 200-watt bulbs located at the exits and merges of the ramps with Silva Valley Parkway and also at the intersections, and
- o 40-foot-tall standards with 310-watt bulbs located at the exits and merges of the ramps with U. S. 50 and may be along the loop ramps, in conformance with Caltrans criteria.

## NECESSARY PERMITS AND APPROVALS

The following permits and approval would be necessary to develop the Silva Valley Parkway/U. S. 50 Interchange:

- o certification of the EIR by El Dorado County;
- o selection of a project by El Dorado County and Caltrans;
- o acquisition of affected private property and transfer of ownership to Caltrans, which could involve condemnation proceedings;
- o acquisition of a California Department of Fish and Game (DFG) Streambed Alteration Agreements (1601 and 1603), which may be necessary to implement changes to Carson Creek or other drainages; and
- o possible acquisition of a Section 404 permit from the U. S. Army Corps of Engineers, which may be necessary for placing box culverts in Carson Creek or other drainages, placing fill, or dredging the waterways. Note: although no jurisdictional determination has been made, it appears that the Undercrossing Design would eliminate more wetland than the Ridge Design.

## DESCRIPTION OF THE TWO ALTERNATIVES

Regardless of which alternative is ultimately selected, the location and design must be approved by the County of El Dorado and Caltrans.

### Ridge Design Description

#### Project Location

The Ridge Design site is located approximately 5,000 feet east of the El Dorado Hills Boulevard/U. S. 50 Interchange. The topography of the Ridge Design site is highly variable, with scattered hills, streamcourses, and gentle slopes. On the north side of U. S. 50, the site varies from fairly steep to more gradual in an east-west direction. The ridge rises immediately west of Carson Creek. Carson Creek passes through a triple 10-foot-wide

box culvert under U. S. 50 and flows southward into Deer Creek and ultimately to the Cosumnes River.

On the south side of U. S. 50, the topography slopes gradually from east to west until reaching Carson Creek, where the slope drops off into the stream channel and then rises on the west side to the top of the ridge.

The primary land use in the vicinity is agriculture, with some scattered single family residences. Two houses and agriculturally related structures occupy gently sloping parcels on the north side of U. S. 50. The remaining parcels are vacant and used for horse and cattle grazing. Tong Road provides access to the houses on the north side of U. S. 50. The small community of Clarksville, which consists of several residences, miscellaneous structures, barns, and storage structures, lies to the south of U. S. 50. Land between Clarksville and U. S. 50 also is used for horse and cattle grazing. White Rock Road and the PGandE substation lie to the west of the ridge and south of the highway.

White Rock Road is a two-lane, roughly north-south county road that passes between two ridges. The road follows a small, unnamed drainage channel in the vicinity of the highway. White Rock Road is paved south of the highway and unpaved just north of the highway.

#### Design Features of the Ridge Design

The Ridge Design is called a "Parclo A" (partial cloverleaf with the loop on-ramps in the northeast and southwest quadrants) (Figure 2-3). Parclo A designs consist of two entrance ramps (a loop on-ramp and directional on-ramp) and one exit ramp in each direction of travel on the freeway. The overcrossing would span the ridge, yielding approximately 16.5 feet of vertical clearance over U. S. 50. This overcrossing would have four lanes for through traffic on Silva Valley Parkway.

The tapers for the loop on-ramps would begin at the end of the overcrossing. The overcrossing would have 8-foot-wide shoulders on the outside and a 20-foot-wide median (16-foot-wide divider with a 2-foot-wide curb clearance on each side) from edge of traveled way to edge of traveled way. The profile of the overcrossing shows a 6-percent grade on the south side of the highway and 4 percent on the north side of the highway, with a design speed of 50 mph. The loop on-ramps would be 28 feet wide, including a single 16-foot-wide lane and a 4-foot-wide left and 8-foot-wide right shoulder. These on-ramps would descend from the overcrossing at approximately a 6-percent grade. The radius of the loop on-ramps would be 175 feet, with a design speed of approximately 27 mph. The other two on-ramps and off-ramps would be 12-15 feet wide, with 8-foot-wide shoulders on the right sides, 4-foot-wide shoulders on the left sides, and a design speed of 40 mph or better.

The gradients for the eastbound on-ramp, eastbound off-ramp, westbound on-ramp, and westbound off-ramp would be approximately 1 percent, 4.5 percent, 6 percent, and 5.8 percent, respectively.

Auxiliary lanes are proposed between the El Dorado Hills Boulevard/U. S. 50 Interchange and the Silva Valley Parkway/U. S. 50 Interchange. A truck-climbing lane,

beginning at the eastbound U. S. 50 loop on-ramp, is also proposed, but only the portion within the interchange area would be constructed. The remainder of the lane would be funded and constructed sometime in the future by Caltrans.

In addition, implementation of the Ridge Design would entail the following tasks:

- o realigning Silva Valley Parkway to the east and tying into White Rock Road,
- o reconstructing a portion of White Rock Road to provide access to property south of the freeway,
- o closing and removing a portion of the existing Tong Road north of the freeway and providing a new access road north of the four affected parcels,
- o constructing bridges over Carson Creek for both the eastbound on-ramp and the westbound off-ramp,
- o constructing a 290-foot-long retaining wall ranging in height from 4 to 28 feet where the eastbound off-ramp begins curving south to minimize impacts to the PGandE substation,
- o constructing a 648-foot-long retaining wall ranging in height from 4 to 16 feet where the eastbound on-ramp joins the freeway to avoid the grave sites at the Tong Cemetery and the access road to the cemetery,
- o constructing a 210-foot-long, 12-foot-high retaining wall where the existing eastbound freeway lane crosses Carson Creek to avoid impacts of the truck-climbing lane on an identified spring in Carson Creek, and
- o constructing a 176-foot-long retaining wall, varying in height from 20 to 30 to 16 feet, along the outside of the northbound to westbound loop on-ramp to minimize impacts to Carson Creek.

### **Cut and Fill for the Ridge Design**

A substantial amount of earth fill would be necessary for construction of this interchange design. Approximately 315,000 cubic yards of earth fill would be required, while only about 65,000 cubic yards of excavation would be obtained from the construction of this alternative. The additional import borrow required could be obtained from American River aggregate on White Rock Road. The majority of the excavation would be located on the north side of U. S. 50, primarily along the Silva Valley Parkway and the westbound loop on-ramp. The existing height of the hillside to the north of the frontage road on the north would be reduced by about 15 feet. The majority of the earth fill would be required south of U. S. 50 to build up the existing hillside and to fill in the valley to the west between Clarksville Substation and the existing White Rock Road. The portion of the Silva Valley Parkway near the existing intersection with White Rock Road would be about 15 feet higher than the existing roadway. The southern end of the existing hillside would be built up with the addition of earth fill. Approximately 74,000 cubic yards of fill would

be required to raise the ground elevation of the valley west of White Rock Road by about 25 feet and allow construction of the eastbound off-ramp. The valley north of the highway and west of the existing undercrossing would also be raised by approximately 25 feet. Approximately 47,000 cubic yards of fill would be required for the construction of the eastbound on-ramp where the hill slopes down to the creek. Auxiliary lane construction would require approximately 11,800 cubic yards of fill and approximately 26,600 cubic yards of excavation.

The estimated capital, engineering, and contingency cost for the Ridge Design is \$14,750,000 (1988 dollars). No right-of-way, landscaping, or mitigation costs are included in this estimate. See Table 2-2 for an itemized breakdown of this cost estimate.

## Undercrossing Design Description

### Project Location

The Undercrossing Design site would be located where existing White Rock Road passes under U. S. 50, approximately 4,200 feet east of the El Dorado Hills Boulevard/U. S. 50 Interchange and 800 feet west of the Ridge Design. Because the Undercrossing Design site location is proximate to the Ridge Design location, the site descriptions overlap.

Development north of the highway in the immediate vicinity of this alternative is limited to that along Tong Road. The houses mentioned earlier lie to the east of the undercrossing design site. The surrounding land is vacant and used for agriculture, primarily grazing. South of the highway, the PGandE substation is approximately 650 feet west of White Rock Road, a single family residence lies about 200 feet further to the west on a knoll, and the Clarksville Cemetery lies west of the house. Access to these properties is provided by the Jocrger Cutoff Road.

### Design Features of the Undercrossing Design

The undercrossing project design is called a "Parclo B" (partial cloverleaf with loop off-ramps in the northwest and southeast quadrants) (Figure 2-4). Parclo B interchanges have two exit ramps (a loop off-ramp and a directional off-ramp) and one entrance ramp for both directions of travel on the freeway.

Construction of the Undercrossing Design would require removing the existing U. S. 50 structure that spans the undercrossing and widening the existing undercrossing to accommodate four lanes of through traffic and two left-turn lanes, one in each direction, with a 20-foot-wide median (16-foot-wide divider with a 2-foot-wide curb clearance on each side) from edge of traveled way to edge of traveled way on White Rock Road/Silva Valley Parkway.

The loop off-ramps would be 16 feet wide, with 8-foot-wide shoulders on the inside, 4-foot-wide shoulders on the outside, and a radius of 175 feet. The eastbound loop off-ramp would descend at approximately a 5.2-percent gradient, and the westbound loop

Table 2-2. Cost Estimate for the Ridge Design

Items	Cost Estimate (1988 dollars)
Base and paving	\$ 1,884,885
Earthwork	2,029,620
Drainage	981,884
Signs and striping	156,000
Signalization	200,000
Utilities	785,000
Miscellaneous items (fence, MBGR, C&G, lighting standards, erosion control, temporary road, S/W, frontage road)*	<u>1,110,880</u>
Subtotal	\$ 7,148,269
Contingency (16 percent)	<u>1,143,723</u>
Subtotal (without structures)	\$ 8,291,992
Structure Cost (Bridge & Retaining Walls)	<u>3,802,965</u>
Total (with structures)	\$12,094,957
Engineering Fee (10 percent)	<u>1,209,496</u>
Total (without auxiliary lanes)	\$13,304,453
Auxiliary Lanes	<u>1,429,687</u>
Total	\$14,734,140

- \* MBGR = metal beam guard rail.  
 C&G = curb and gutter.  
 S/W = sidewalk.

Note: Landscaping would be required as designated in the Cooperative Agreement. Cost of right-of-way, landscaping, or mitigation are not included in this cost estimate.

Source: Bissell & Karn, Inc. 1989.

off-ramp would descend at approximately a 2.4-percent gradient. Design speeds for the loop off-ramps would be 25 mph or better.

The eastbound off-ramp would begin just west of the PGandE substation, curve with a radius of 700 feet, and descend the slope at a 6.7-percent gradient. The westbound off-ramp would begin close to the Hall/Richmond Cemetery, curve with a radius of 700 feet, and descend the slope at a 5-percent gradient. Each on-ramp would have two points of access, from northbound and southbound Silva Valley Parkway. The width of the on-ramp where these two accesses merge would be 36 feet and then would narrow to 24 feet, including shoulders. The eastbound on-ramp would ascend the slope at approximately a 7-percent gradient, while the westbound on-ramp would descend the slope at less than approximately a 2-percent gradient. The design speeds of the off- and on-ramps would be 35 mph or better.

Auxiliary lanes are proposed between the El Dorado Hills Boulevard/U. S. 50 Interchange and the Silva Valley Parkway/U. S. 50 Interchange. A truck-climbing lane for eastbound U. S. 50, beginning at the Clarksville undercrossing, is also proposed but only the portion within the interchange area would be constructed. The remainder of the truck climbing lane would be funded and constructed by Caltrans sometime in the future.

In addition, implementation of the Undercrossing Design would entail the following tasks:

- o relocating El Dorado Irrigation District (EID) water and sewer lines in White Rock Road;
- o constructing a 280-foot-long retaining wall, ranging in height from 4 to 16 feet, adjacent to the PGandE substation to minimize impacts to the access road and structures;
- o constructing a 350-foot-long retaining wall, ranging in height from 8 to 26 feet, adjacent to the Tong property on the south side of U. S. 50 to minimize impacts to the Carson Creek spring;
- o constructing a 670-foot-long retaining wall, ranging in height from 12 to 16 feet, adjacent to the Tong property on the south side of U. S. 50 to avoid impacts to the Tong Cemetery;
- o realigning the Joerger Cutoff Road to provide access to a residence, the PGandE substation, and the Clarksville Cemetery;
- o realigning White Rock Road to provide access to Clarksville;
- o realigning Tong Road to provide access to properties to the north;
- o extending the existing triple 10- by 10-foot box culvert for Carson Creek to the north to accommodate the relocation of the frontage road; and

- o detouring traffic on U. S. 50 for at least 6 months while the new bridges on U. S. 50 are being constructed. (See Chapter 10 for a discussion of possible detours.)

### **Cut and Fill for the Undercrossing Design**

Substantial amounts of excavation and earth fill would be required for construction of this interchange design. Approximately 312,000 cubic yards of excavation and approximately 178,000 cubic yards of fill would be required. The majority of the fill would be needed on the west side of Silva Valley Parkway to fill in low areas by the minor creek, primarily where the westbound loop off-ramp and the eastbound off-ramp would be located. Silva Valley Parkway would require about 44,000 cubic yards of fill, principally on the northern side of the highway. About 20 feet of fill would be placed in the valley in the southwest quadrant by the eastbound off-ramp. Constructing this interchange design would require reducing the height of the ridge east of Silva Valley Parkway by 25-30 feet both north and south of U. S. 50; it would not affect the hillside north of the frontage road, however. The majority of the excavation that would be required would occur east through this hillside. Constructing the eastbound on-ramp and the westbound off-ramp would require 70,000-80,000 cubic yards of excavation each. Constructing the Silva Valley Parkway would also require about 45,000 cubic yards of excavation, since the roadbed would be lowered 2-3 feet. Construction of the auxiliary lanes would require approximately 26,600 cubic yards of excavation and no earth fill.

The estimated capital, engineering, and contingency cost for the Undercrossing Design is \$15,750,000 (1988 dollars). No right-of-way, landscaping, or mitigation costs are included in this estimate. See Table 2-3 for an itemized breakdown of this cost estimate.

## **ADVANTAGES AND DISADVANTAGES**

Table 2-4 compares the advantages and disadvantages for the two alternatives in terms of geometrics, operations, construction impacts, and right-of-way impacts.

## **ALTERNATIVES CONSIDERED BUT REJECTED**

As previously stated, several alternatives were considered and rejected during the preliminary engineering phase of this project, including:

- o Parcel A at the existing White Rock Road undercrossing,
- o Parcel A-B at the existing White Rock Road undercrossing,
- o diamond at the existing White Rock Road undercrossing,

Table 2-3. Cost Estimate for the Undercrossing Design

Items	Cost Estimate (1988 dollars)
Base and paving	\$ 1,692,910
Earthwork	2,496,000
Drainage	1,550,609
Signs and striping	176,000
Signalization	200,000
Utilities	977,000
Miscellaneous items (fence, MBGR, C&G, lighting standards, erosion control, temporary detour, S/W, frontage road)*	<u>1,750,930</u>
Subtotal	\$ 8,843,449
Contingency (16 percent)	<u>1,414,952</u>
Subtotal (without structures)	\$10,258,401
Structure Cost (Bridge and retaining walls)	<u>3,227,500</u>
Total (with structures)	\$13,485,901
Engineering fee (10 percent)	<u>1,348,590</u>
Total (without auxiliary lanes)	\$14,834,491
Auxiliary lanes	<u>913,283</u>
Total	\$15,747,774

- \* MBGR = metal beam guard rail.
- C&G = curb and gutter.
- S/W = sidewalk.

Note: Landscaping would be required as designated in the Cooperative Agreement. Cost of right-of-way, landscaping, and mitigation are not included in this cost estimate.

Source: Bissell & Karn, Inc. 1989.

Table 2-4. Advantages and Disadvantages of the Ridge Design and Undercrossing Design

	Ridge Design	Undercrossing Design
<b>Geometrics:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. Would be located on existing "rise" requiring less earthwork.</li> <li>2. Parcel A with dual entrance ramps is the interchange configuration generally preferred by Caltrans and the county.</li> </ol>	<ol style="list-style-type: none"> <li>1. The truck climbing lane would begin immediately east of the existing undercrossing on U. S. 50.</li> <li>2. The existing bridge structures on U. S. 50, which are approximately 25 years old, would be replaced by new bridge structures.</li> </ol>
<hr/>		
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. Steep (6 percent) downgrades on both loop on-ramps and WB directional on-ramp.</li> <li>2. EB off-ramp intersects with Silva Valley Parkway on a 6 percent grade. Grade of intersections preferred to be 4 percent or less.</li> <li>3. Steep grade on Silva Valley Parkway (6 percent).</li> <li>4. Would require 3,500 ft of additional roadway for Silva Valley Parkway.</li> </ol>	<ol style="list-style-type: none"> <li>1. Steep (7 percent) grades on EB on-ramp and EB loop off-ramp (6 percent).</li> <li>2. EB off-ramp has 7 percent downgrade, which is greater than Caltrans generally prefers for maximum ramp grades.</li> <li>3. Would require lowering existing profile of White Rock Road to obtain vertical clearance for bridges. This could require relocation of existing sewer and water lines.</li> <li>4. Would require longer bridges on U. S. 50 to replace the existing bridges due to width (118 ft, which includes the roadway, median, shoulders, and sidewalks) of Silva Valley Parkway.</li> <li>5. EB on-ramp would cut through existing hill and require substantial excavation.</li> <li>6. Relocation of White Rock Road, access road to PGandE substation, and driveway access to Peerman residence would be required.</li> </ol>
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<b>Operations:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. WB weaving section would be improved by providing two entrances onto the freeway, spreading the merging traffic along U. S. 50.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would have single entrance and exit design on U. S. 50 for interchange.</li> </ol>

Table 2-4. Continued

Ridge Design	Undercrossing Design
<ol style="list-style-type: none"> <li>2. Both weaving distances would be longer than those of the undercrossing alternative.</li> <li>3. EB directional on-ramp would have only NB Silva Valley Parkway traffic using it, providing greater capacity for ramp. Would require less constraining of project traffic.</li> <li>4. White Rock Road (existing) could be used for bicycles, pedestrians, farm equipment, and excess traffic, providing greater capacity with smaller width (84 ft) on Silva Valley Parkway.</li> </ol>	
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Disadvantages:	<ol style="list-style-type: none"> <li>1. EB weaving section would be at capacity/LOS F.</li> <li>2. WB off-ramp would diverge from U. S. 50 on a horizontal curve at the end of a steep downgrade.</li> </ol> <ol style="list-style-type: none"> <li>1. EB weaving length would be at the absolute minimum length of 1,600 ft and at LOS F.</li> <li>2. WB off-ramp diverges at the end of a steep downgrade on U. S. 50. Off-ramp itself would be on a steep downgrade.</li> <li>3. WB weaving section would be at WSD in the p.m. peak hour.</li> <li>4. Would add SB Silva Valley Parkway traffic to the NB Silva Valley Parkway traffic on the EB on-ramp, which is already over capacity. Traffic would be slowed by a 7 percent upgrade, further constraining the capacity of the ramp.</li> <li>5. Would require expansive width on cross street (118 ft) to obtain the same capacity and to provide for bicyclists and pedestrians. Farm equipment would also need to use the undercrossing.</li> <li>6. EB on-ramp traffic would have to merge with the truck climbing lane.</li> <li>7. Would reduce the speed of the vehicles on the loop exit ramps from a high speed facility to 25 mph, possibly encouraging run-off-the-road accidents.</li> </ol>

Table 2-4. Continued

	Ridge Design	Undercrossing Design
<b>Construction Impacts:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. Construction of interchange would be simplified. Initial development traffic could be handled by existing White Rock Road while Silva Valley Parkway/U. S. 50 Interchange is being constructed.</li> <li>2. No major detours would be required on U. S. 50.</li> </ol>	
<hr/>		
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. Usual construction impacts, noise, etc. would occur in project area.</li> </ol>	<ol style="list-style-type: none"> <li>1. As a minimum, the construction of the bridges on U. S. 50 would have to precede the residential development. Silva Valley Parkway would be reduced to one lane of traffic during construction of the U. S. 50 mainline bridges.</li> <li>2. Requirement of detours for at least 6 months would be required on U. S. 50 while constructing new bridges. Loop ramp bridges could be used for temporary detour of U. S. 50 traffic while reconstructing mainline U. S. 50 bridges.</li> <li>3. More difficult to maintain traffic on Silva Valley Parkway during construction of interchange.</li> </ol>
<hr/>		
<b>Right-of-Way Impacts:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. No impact on PGandE substation with construction of retaining wall.</li> <li>2. No relocation of Hall/Richmond Cemetery.</li> <li>3. Would avoid Tong's Cemetery and unmarked graves with construction of retaining wall.</li> </ol>	<ol style="list-style-type: none"> <li>1. No need for structures over Carson Creek.</li> <li>2. Would minimize impact to Tong's property, including the Cemetery.</li> <li>3. Would require acquisition of approximately 0.3 acre of Byram's 5-acre parcel and approximately 0.3 acre of Dolder's 5-acre parcel. Would require minimum relocation of frontage road.</li> </ol>

Table 2-4. Continued

	Ridge Design	Undercrossing Design
Disadvantages:	<ol style="list-style-type: none"> <li>1. Mitigation would be required for Tong's spring. Would require construction of a structure on the EB on-ramp over Carson Creek to provide access to the spring used for watering livestock and wildlife.</li> <li>2. Impacts on Carson Creek would require two bridges and a retaining wall within interchange area.</li> <li>3. Impacts Tong's property by acquisition of approximately 1.3 acres.</li> <li>4. Would require acquisition of about 0.9 acre of approximately 5-acre Byram parcel and about 3.4 acres of approximately 5-acre Dolder parcel. Would require relocation of frontage road to serve these properties.</li> <li>5. Would require relocation of 115-kV and 60-kV PGandE power lines.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mitigation would be required for Tong's spring. A retaining wall would be required along the EB on-ramp to ensure the integrity of the spring used for watering livestock and wildlife.</li> <li>2. Impacts on minor creek west of existing undercrossing. Would require box culverts for the many crossings of the creek.</li> <li>3. Would require retaining wall to stay clear of PGandE substation. Would also require relocation of about 2,000 ft of roadway accessing substation and the Peerman residence.</li> <li>4. Loss of natural public open space in northwest quadrant of interchange. Public open space is designated in the approved Specific Plan.</li> <li>5. Would require the relocation of Historical Marker #699 for the Mormon Tavern.</li> <li>6. Would require relocation of 115-kV and 60-kV PGandE power lines.</li> <li>7. Impacts to Carson Creek would require an extension of the existing box culvert on the north side.</li> <li>8. Hall/Richmond Cemetery could be undercut by the WB off-ramp.</li> </ol>

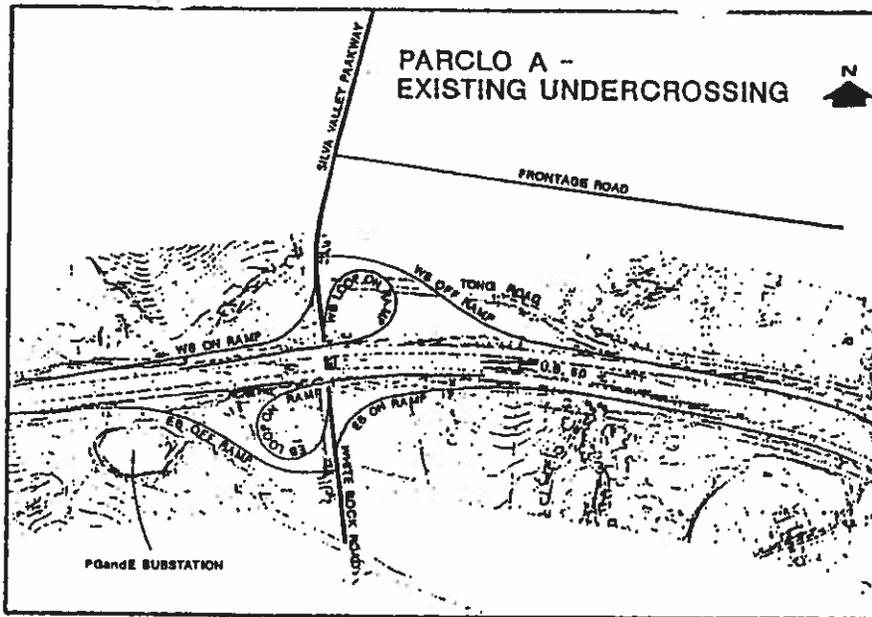
Source: Bissell & Karn, Inc. 1989. Draft Project Report and Attachments. Silva Valley Parkway/U. S. 50 Interchange, January 1989.

- o Parco B at the ridge, and
- o diamond at the ridge.

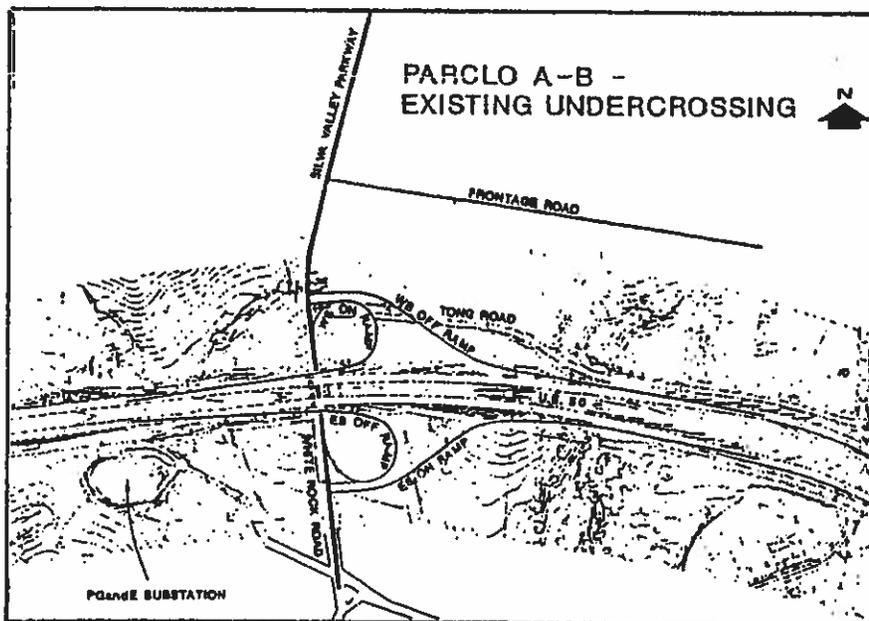
Each of these alternatives and the reason for its rejection are explained in detail below and are shown in Figures 2-5, 2-6, and 2-7.

## **NO-PROJECT ALTERNATIVE**

CEQA requires analysis of feasible project alternatives. Numerous alternatives were considered and rejected because of their infeasibility or inability to meet the project objectives. The only other project alternative evaluated in this EIR is the No-Project Alternative. The No-Project Alternative assumes that an interchange would not be built. Detailed analyses of the No-Project Alternative are found in Chapter 10, "Transportation," Chapter 11, "Air Quality," and Chapter 12, "Noise." Additional information on the No-Project Alternative is found in Chapter 14, "Alternatives to the Proposed Project."

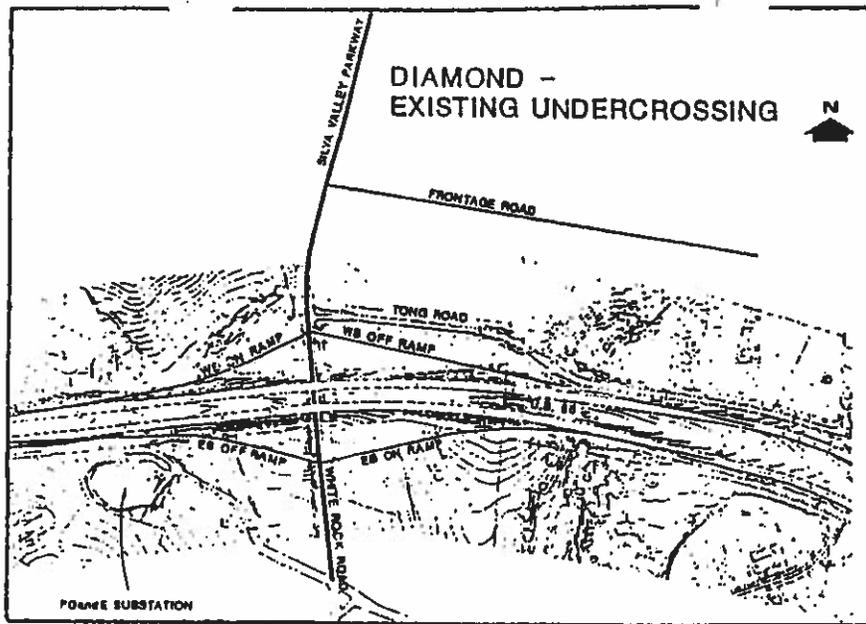


This design would result in a weaving distance between the El Dorado Hills Boulevard/U. S. 50 Interchange on-ramp and the eastbound off-ramp that would not meet the minimum requirements of Caltrans or El Dorado County. This short distance would create extremely hazardous conditions for motorists entering eastbound U. S. 50 from El Dorado Hills Boulevard and those maneuvering to exit the highway at the eastbound off-ramp. This alternative would have a substantial impact on the operation and maintenance of the PGandE substation and probably require its relocation.

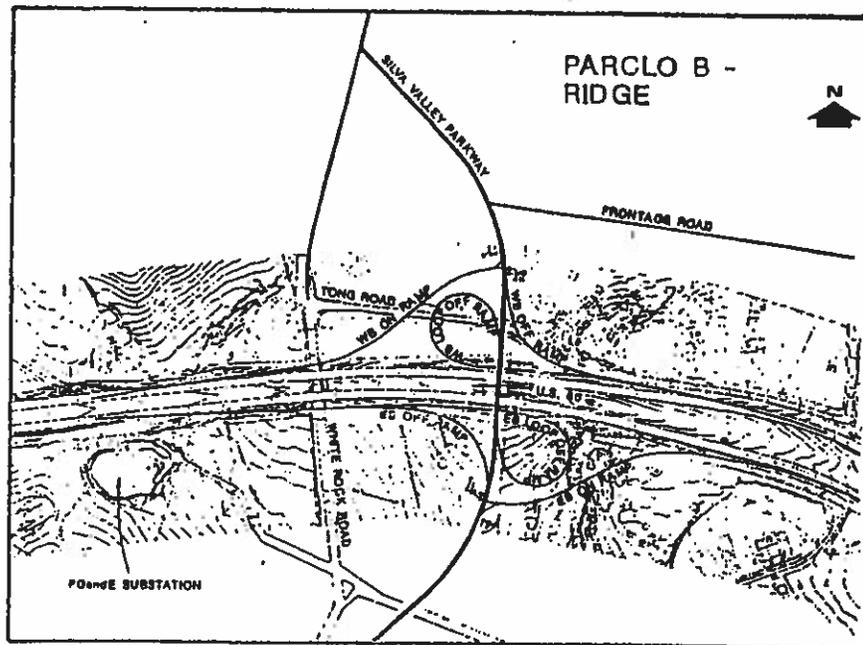


This unusual interchange includes two loop ramps on the east side of Silva Valley Parkway: a westbound loop on-ramp in the northeast quadrant and an eastbound loop off-ramp in the southeast quadrant. The capacity of this design is lower than that of either a Parclo A or Parclo B design because of the larger number of conflicting movements (left turns across lanes). This interchange design was rejected from further environmental review because it is a nonstandard configuration, it is not preferred by Caltrans, and it would not be able to accommodate the projected traffic volumes.

FIGURE 2-5. ALTERNATIVES CONSIDERED BUT REJECTED: PARCLO A - EXISTING UNDERCROSSING AND PARCLO A-B - EXISTING UNDERCROSSING

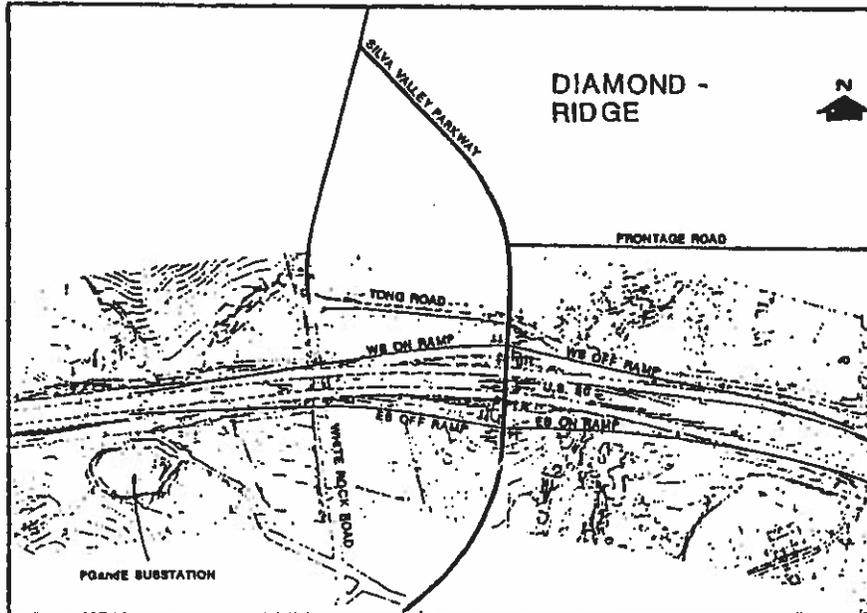


The capacity of a diamond interchange is low because of the large number of conflicting turning movements at the ramp intersections. Each intersection would require signalization. The existing undercrossing structure would constrain the storage provided for left-turn movements.



The capacity of a Parclo B design is lower than that of a Parclo A design because it has more conflicting movements. The weaving distance between the westbound on-ramp and the El Dorado Hills Boulevard/U. S. 50 Interchange would be shorter than that of the proposed Parclo A at this location. In addition, the loop off-ramps would require a rapid deceleration by motorists exiting the freeway at high speeds, increasing the likelihood of accidents. This interchange design was rejected from further environmental review because of these issues. This alternative would have a significant impact on Carson Creek on the south side of U. S. 50 and the Tong Cemetery.

FIGURE 2-6. ALTERNATIVES CONSIDERED BUT REJECTED: DIAMOND - EXISTING UNDERCROSSING AND PARCLO B - RIDGE

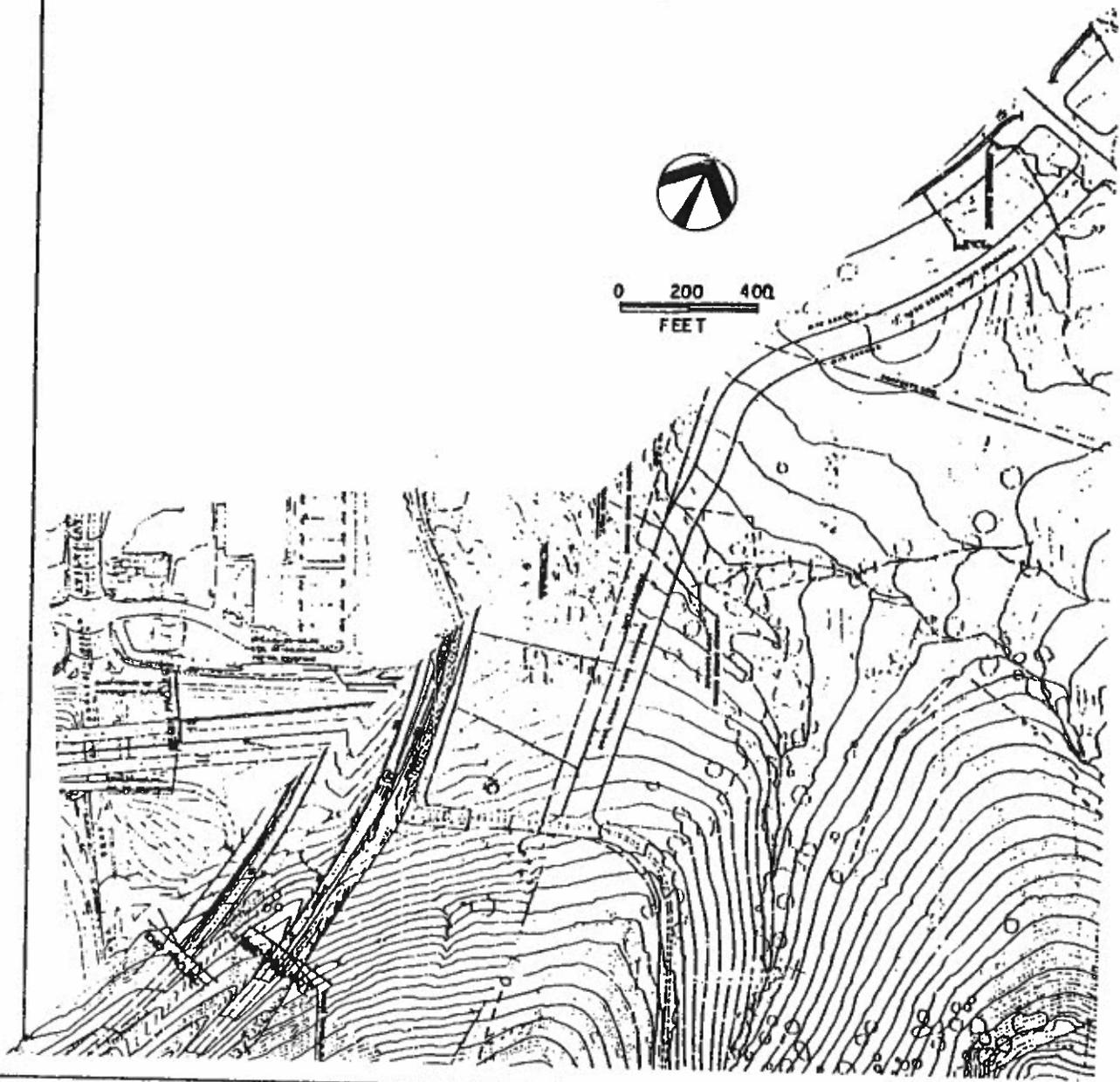


In addition to the aforementioned capacity constraints, the ridge structure would also require a wider overcrossing structure to accommodate left-turn pockets. Both diamond designs were rejected from further evaluation because of their low capacity and structural constraints and requirements.

FIGURE 2-7. ALTERNATIVES CONSIDERED BUT REJECTED: DIAMOND - RIDGE



0 200 400  
FEET





0 200 400  
FEET

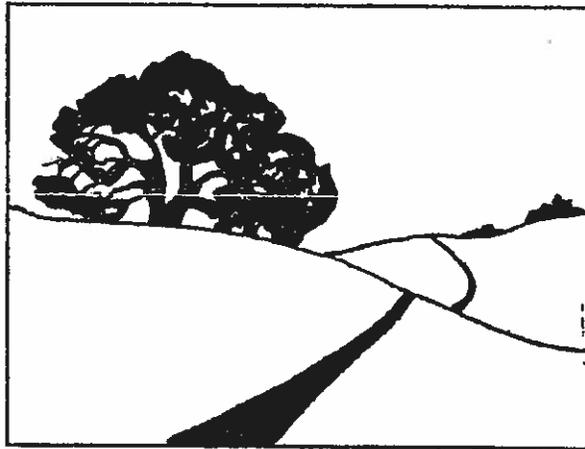


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SCH #88050215*

- o 30-foot-tall standards with 200-watt bulbs located at the exits and merges of the ramps with Silva Valley Parkway and also at the intersections, and
- o 40-foot-tall standards with 310-watt bulbs located at the exits and merges of the ramps with U. S. 50 and may be along the loop ramps, in conformance with Caltrans criteria.

## NECESSARY PERMITS AND APPROVALS

The following permits and approval would be necessary to develop the Silva Valley Parkway/U. S. 50 Interchange:

- o certification of the EIR by El Dorado County;
- o selection of a project by El Dorado County and Caltrans;
- o acquisition of affected private property and transfer of ownership to Caltrans, which could involve condemnation proceedings;
- o acquisition of a California Department of Fish and Game (DFG) Streambed Alteration Agreements (1601 and 1603), which may be necessary to implement changes to Carson Creek or other drainages; and
- o possible acquisition of a Section 404 permit from the U. S. Army Corps of Engineers, which may be necessary for placing box culverts in Carson Creek or other drainages, placing fill, or dredging the waterways. Note: although no jurisdictional determination has been made, it appears that the Undercrossing Design would eliminate more wetland than the Ridge Design.

## DESCRIPTION OF THE TWO ALTERNATIVES

Regardless of which alternative is ultimately selected, the location and design must be approved by the County of El Dorado and Caltrans.

### Ridge Design Description

#### Project Location

The Ridge Design site is located approximately 5,000 feet east of the El Dorado Hills Boulevard/U. S. 50 Interchange. The topography of the Ridge Design site is highly variable, with scattered hills, streamcourses, and gentle slopes. On the north side of U. S. 50, the site varies from fairly steep to more gradual in an east-west direction. The ridge rises immediately west of Carson Creek. Carson Creek passes through a triple 10-foot-wide

box culvert under U. S. 50 and flows southward into the Cosumnes River.

On the south side of U. S. 50, the topography slopes reaching Carson Creek, where the slope drops off into the on the west side to the top of the ridge.

The primary land use in the vicinity is agriculture, and residences. Two houses and agriculturally related structures on the north side of U. S. 50. The remaining parcels are cattle grazing. Tong Road provides access to the houses of a small community of Clarksville, which consists of several structures, barns, and storage structures, lies to the south of Clarksville and U. S. 50 also is used for horse and cattle. The PGandE substation lie to the west of the ridge and south of the highway.

White Rock Road is a two-lane, roughly north-south road between two ridges. The road follows a small, unnamed drainage highway. White Rock Road is paved south of the highway.

### Design Features of the Ridge Design

The Ridge Design is called a "Parclo A" (partial cloverleaf interchange in the northeast and southwest quadrants) (Figure 2-3). It features entrance ramps (a loop on-ramp and directional on-ramp) and exit ramps in the direction of travel on the freeway. The overcrossing has approximately 16.5 feet of vertical clearance over U. S. 50 and provides four lanes for through traffic on Silva Valley Parkway.

The tapers for the loop on-ramps would begin at the overcrossing and would have 8-foot-wide shoulders on the outside (16-foot-wide divider with a 2-foot-wide curb clearance on the inside) way to edge of traveled way. The profile of the overcrossing is 2 percent on the south side of the highway and 4 percent on the north side. The design speed of 50 mph. The loop on-ramps would be 28 feet wide lane and a 4-foot-wide left and 8-foot-wide right shoulder. The on-ramps would descend from the overcrossing at approximately a 6-percent grade. The on-ramps would be 175 feet, with a design speed of approximately 50 mph. The on-ramps and off-ramps would be 12-15 feet wide, with 8-foot-wide shoulders, 4-foot-wide shoulders on the left sides, and a design speed of 50 mph.

The gradients for the eastbound on-ramp, eastbound off-ramp, and westbound off-ramp would be approximately 1 percent, respectively.

Auxiliary lanes are proposed between the El Dorado Interchange and the Silva Valley Parkway/U. S. 50 Interchange.

beginning at the eastbound U. S. 50 loop on-ramp, is also proposed, but only the portion within the interchange area would be constructed. The remainder of the lane would be funded and constructed sometime in the future by Caltrans.

In addition, implementation of the Ridge Design would entail the following tasks:

- o realigning Silva Valley Parkway to the east and tying into White Rock Road,
- o reconstructing a portion of White Rock Road to provide access to property south of the freeway,
- o closing and removing a portion of the existing Tong Road north of the freeway and providing a new access road north of the four affected parcels,
- o constructing bridges over Carson Creek for both the eastbound on-ramp and the westbound off-ramp,
- o constructing a 290-foot-long retaining wall ranging in height from 4 to 28 feet where the eastbound off-ramp begins curving south to minimize impacts to the PGandE substation,
- o constructing a 648-foot-long retaining wall ranging in height from 4 to 16 feet where the eastbound on-ramp joins the freeway to avoid the grave sites at the Tong Cemetery and the access road to the cemetery,
- o constructing a 210-foot-long, 12-foot-high retaining wall where the existing eastbound freeway lane crosses Carson Creek to avoid impacts of the truck-climbing lane on an identified spring in Carson Creek, and
- o constructing a 176-foot-long retaining wall, varying in height from 20 to 30 to 16 feet, along the outside of the northbound to westbound loop on-ramp to minimize impacts to Carson Creek.

### **Cut and Fill for the Ridge Design**

A substantial amount of earth fill would be necessary for construction of this interchange design. Approximately 315,000 cubic yards of earth fill would be required, while only about 65,000 cubic yards of excavation would be obtained from the construction of this alternative. The additional import borrow required could be obtained from American River aggregate on White Rock Road. The majority of the excavation would be located on the north side of U. S. 50, primarily along the Silva Valley Parkway and the westbound loop on-ramp. The existing height of the hillside to the north of the frontage road on the north would be reduced by about 15 feet. The majority of the earth fill would be required south of U. S. 50 to build up the existing hillside and to fill in the valley to the west between Clarksville Substation and the existing White Rock Road. The portion of the Silva Valley Parkway near the existing intersection with White Rock Road would be about 15 feet higher than the existing roadway. The southern end of the existing hillside would be built up with the addition of earth fill. Approximately 74,000 cubic yards of fill would

be required to raise the ground elevation of the valley west of White Rock Road by about 25 feet and allow construction of the eastbound off-ramp. The valley north of the highway and west of the existing undercrossing would also be raised by approximately 25 feet. Approximately 47,000 cubic yards of fill would be required for the construction of the eastbound on-ramp where the hill slopes down to the creek. Auxiliary lane construction would require approximately 11,800 cubic yards of fill and approximately 26,600 cubic yards of excavation.

The estimated capital, engineering, and contingency cost for the Ridge Design is \$14,750,000 (1988 dollars). No right-of-way, landscaping, or mitigation costs are included in this estimate. See Table 2-2 for an itemized breakdown of this cost estimate.

## Undercrossing Design Description

### Project Location

The Undercrossing Design site would be located where existing White Rock Road passes under U. S. 50, approximately 4,200 feet east of the El Dorado Hills Boulevard/U. S. 50 Interchange and 800 feet west of the Ridge Design. Because the Undercrossing Design site location is proximate to the Ridge Design location, the site descriptions overlap.

Development north of the highway in the immediate vicinity of this alternative is limited to that along Tong Road. The houses mentioned earlier lie to the east of the undercrossing design site. The surrounding land is vacant and used for agriculture, primarily grazing. South of the highway, the PGandE substation is approximately 650 feet west of White Rock Road, a single family residence lies about 200 feet further to the west on a knoll, and the Clarksville Cemetery lies west of the house. Access to these properties is provided by the Joerger Cutoff Road.

### Design Features of the Undercrossing Design

The undercrossing project design is called a "Parclo B" (partial cloverleaf with loop off-ramps in the northwest and southeast quadrants) (Figure 2-4). Parclo B interchanges have two exit ramps (a loop off-ramp and a directional off-ramp) and one entrance ramp for both directions of travel on the freeway.

Construction of the Undercrossing Design would require removing the existing U. S. 50 structure that spans the undercrossing and widening the existing undercrossing to accommodate four lanes of through traffic and two left-turn lanes, one in each direction, with a 20-foot-wide median (16-foot-wide divider with a 2-foot-wide curb clearance on each side) from edge of traveled way to edge of traveled way on White Rock Road/Silva Valley Parkway.

The loop off-ramps would be 16 feet wide, with 8-foot-wide shoulders on the inside, 4-foot-wide shoulders on the outside, and a radius of 175 feet. The eastbound loop off-ramp would descend at approximately a 5.2-percent gradient, and the westbound loop

Table 2-2. Cost Estimate for the Ridge Design

Items	Cost Estimate (1988 dollars)
Base and paving	\$ 1,884,885
Earthwork	2,029,620
Drainage	981,884
Signs and striping	156,000
Signalization	200,000
Utilities	785,000
Miscellaneous items (fence, MBGR, C&G, lighting standards, erosion control, temporary road, S/W, frontage road)*	<u>1,110,880</u>
Subtotal	\$ 7,148,269
Contingency (16 percent)	<u>1,143,723</u>
Subtotal (without structures)	\$ 8,291,992
Structure Cost (Bridge & Retaining Walls)	<u>3,802,965</u>
Total (with structures)	\$12,094,957
Engineering Fee (10 percent)	<u>1,209,496</u>
Total (without auxiliary lanes)	\$13,304,453
Auxiliary Lanes	<u>1,429,687</u>
Total	\$14,734,140

- \* MBGR = metal beam guard rail.
- C&G = curb and gutter.
- S/W = sidewalk.

Note: Landscaping would be required as designated in the Cooperative Agreement. Cost of right-of-way, landscaping, or mitigation are not included in this cost estimate.

Source: Bissell & Karn, Inc. 1989.

off-ramp would descend at approximately a 2.4-percent gradient. Design speeds for the loop off-ramps would be 25 mph or better.

The eastbound off-ramp would begin just west of the PGandE substation, curve with a radius of 700 feet, and descend the slope at a 6.7-percent gradient. The westbound off-ramp would begin close to the Hall/Richmond Cemetery, curve with a radius of 700 feet, and descend the slope at a 5-percent gradient. Each on-ramp would have two points of access, from northbound and southbound Silva Valley Parkway. The width of the on-ramp where these two accesses merge would be 36 feet and then would narrow to 24 feet, including shoulders. The eastbound on-ramp would ascend the slope at approximately a 7-percent gradient, while the westbound on-ramp would descend the slope at less than approximately a 2-percent gradient. The design speeds of the off- and on-ramps would be 35 mph or better.

Auxiliary lanes are proposed between the El Dorado Hills Boulevard/U. S. 50 Interchange and the Silva Valley Parkway/U. S. 50 Interchange. A truck-climbing lane for eastbound U. S. 50, beginning at the Clarksville undercrossing, is also proposed but only the portion within the interchange area would be constructed. The remainder of the truck climbing lane would be funded and constructed by Caltrans sometime in the future.

In addition, implementation of the Undercrossing Design would entail the following tasks:

- o relocating El Dorado Irrigation District (EID) water and sewer lines in White Rock Road;
- o constructing a 280-foot-long retaining wall, ranging in height from 4 to 16 feet, adjacent to the PGandE substation to minimize impacts to the access road and structures;
- o constructing a 350-foot-long retaining wall, ranging in height from 8 to 26 feet, adjacent to the Tong property on the south side of U. S. 50 to minimize impacts to the Carson Creek spring;
- o constructing a 670-foot-long retaining wall, ranging in height from 12 to 16 feet, adjacent to the Tong property on the south side of U. S. 50 to avoid impacts to the Tong Cemetery;
- o realigning the Joerger Cutoff Road to provide access to a residence, the PGandE substation, and the Clarksville Cemetery;
- o realigning White Rock Road to provide access to Clarksville;
- o realigning Tong Road to provide access to properties to the north;
- o extending the existing triple 10- by 10-foot box culvert for Carson Creek to the north to accommodate the relocation of the frontage road; and

- o detouring traffic on U. S. 50 for at least 6 months while the new bridges on U. S. 50 are being constructed. (See Chapter 10 for a discussion of possible detours.)

### **Cut and Fill for the Undercrossing Design**

Substantial amounts of excavation and earth fill would be required for construction of this interchange design. Approximately 312,000 cubic yards of excavation and approximately 178,000 cubic yards of fill would be required. The majority of the fill would be needed on the west side of Silva Valley Parkway to fill in low areas by the minor creek, primarily where the westbound loop off-ramp and the eastbound off-ramp would be located. Silva Valley Parkway would require about 44,000 cubic yards of fill, principally on the northern side of the highway. About 20 feet of fill would be placed in the valley in the southwest quadrant by the eastbound off-ramp. Constructing this interchange design would require reducing the height of the ridge east of Silva Valley Parkway by 25-30 feet both north and south of U. S. 50; it would not affect the hillside north of the frontage road, however. The majority of the excavation that would be required would occur east through this hillside. Constructing the eastbound on-ramp and the westbound off-ramp would require 70,000-80,000 cubic yards of excavation each. Constructing the Silva Valley Parkway would also require about 45,000 cubic yards of excavation, since the roadbed would be lowered 2-3 feet. Construction of the auxiliary lanes would require approximately 26,600 cubic yards of excavation and no earth fill.

The estimated capital, engineering, and contingency cost for the Undercrossing Design is \$15,750,000 (1988 dollars). No right-of-way, landscaping, or mitigation costs are included in this estimate. See Table 2-3 for an itemized breakdown of this cost estimate.

## **ADVANTAGES AND DISADVANTAGES**

Table 2-4 compares the advantages and disadvantages for the two alternatives in terms of geometrics, operations, construction impacts, and right-of-way impacts.

## **ALTERNATIVES CONSIDERED BUT REJECTED**

As previously stated, several alternatives were considered and rejected during the preliminary engineering phase of this project, including:

- o Parclo A at the existing White Rock Road undercrossing,
- o Parclo A-B at the existing White Rock Road undercrossing,
- o diamond at the existing White Rock Road undercrossing,

Table 2-3. Cost Estimate for the Undercrossing Design

Items	Cost Estimate (1988 dollars)
Base and paving	\$ 1,692,910
Earthwork	2,496,000
Drainage	1,550,609
Signs and striping	176,000
Signalization	200,000
Utilities	977,000
Miscellaneous items (fence, MBGR, C&G, lighting standards, erosion control, temporary detour, S/W, frontage road)*	<u>1,750,930</u>
Subtotal	\$ 8,843,449
Contingency (16 percent)	<u>1,414,952</u>
Subtotal (without structures)	\$10,258,401
Structure Cost (Bridge and retaining walls)	<u>3,227,500</u>
Total (with structures)	\$13,485,901
Engineering fee (10 percent)	<u>1,348,590</u>
Total (without auxiliary lanes)	\$14,834,491
Auxiliary lanes	<u>913,283</u>
Total	\$15,747,774

- \* MBGR = metal beam guard rail.  
 C&G = curb and gutter.  
 S/W = sidewalk.

Note: Landscaping would be required as designated in the Cooperative Agreement. Cost of right-of-way, landscaping, and mitigation are not included in this cost estimate.

Source: Bissell & Karn, Inc. 1989.

Table 2-4. Advantages and Disadvantages of the Ridge Design and Undercrossing Design

	Ridge Design	Undercrossing Design
<b>Geometrics:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. Would be located on existing "rise" requiring less earthwork.</li> <li>2. Parcel A with dual entrance ramps is the interchange configuration generally preferred by Caltrans and the county.</li> </ol>	<ol style="list-style-type: none"> <li>1. The truck climbing lane would begin immediately east of the existing undercrossing on U. S. 50.</li> <li>2. The existing bridge structures on U. S. 50, which are approximately 25 years old, would be replaced by new bridge structures.</li> </ol>
<hr/>		
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. Steep (6 percent) downgrades on both loop on-ramps and WB directional on-ramp.</li> <li>2. EB off-ramp intersects with Silva Valley Parkway on a 6 percent grade. Grade of intersections preferred to be 4 percent or less.</li> <li>3. Steep grade on Silva Valley Parkway (6 percent).</li> <li>4. Would require 3,500 ft of additional roadway for Silva Valley Parkway.</li> </ol>	<ol style="list-style-type: none"> <li>1. Steep (7 percent) grades on EB on-ramp and EB loop off-ramp (6 percent).</li> <li>2. EB off-ramp has 7 percent downgrade, which is greater than Caltrans generally prefers for maximum ramp grades.</li> <li>3. Would require lowering existing profile of White Rock Road to obtain vertical clearance for bridges. This could require relocation of existing sewer and water lines.</li> <li>4. Would require longer bridges on U. S. 50 to replace the existing bridges due to width (118 ft, which includes the roadway, median, shoulders, and sidewalks) of Silva Valley Parkway.</li> <li>5. EB on-ramp would cut through existing hill and require substantial excavation.</li> <li>6. Relocation of White Rock Road, access road to PGandE substation, and driveway access to Peerman residence would be required.</li> </ol>
<hr/>		
<b>Operations:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. WB weaving section would be improved by providing two entrances onto the freeway, spreading the merging traffic along U. S. 50.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would have single entrance and exit design on U. S. 50 for interchange.</li> </ol>

Table 2-4. Continued

Ridge Design	Undercrossing Design
<ol style="list-style-type: none"> <li>2. Both weaving distances would be longer than those of the undercrossing alternative.</li> <li>3. EB directional on-ramp would have only NB Silva Valley Parkway traffic using it, providing greater capacity for ramp. Would require less constraining of project traffic.</li> <li>4. White Rock Road (existing) could be used for bicycles, pedestrians, farm equipment, and excess traffic, providing greater capacity with smaller width (84 ft) on Silva Valley Parkway.</li> </ol>	
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Disadvantages:	
<ol style="list-style-type: none"> <li>1. EB weaving section would be at capacity/LOS F.</li> <li>2. WB off-ramp would diverge from U. S. 50 on a horizontal curve at the end of a steep downgrade.</li> </ol>	<ol style="list-style-type: none"> <li>1. EB weaving length would be at the absolute minimum length of 1,600 ft and at LOS F.</li> <li>2. WB off-ramp diverges at the end of a steep downgrade on U. S. 50. Off-ramp itself would be on a steep downgrade.</li> <li>3. WB weaving section would be at WSD in the p.m. peak hour.</li> <li>4. Would add SB Silva Valley Parkway traffic to the NB Silva Valley Parkway traffic on the EB on-ramp, which is already over capacity. Traffic would be slowed by a 7 percent upgrade, further constraining the capacity of the ramp.</li> <li>5. Would require expansive width on cross street (118 ft) to obtain the same capacity and to provide for bicyclists and pedestrians. Farm equipment would also need to use the undercrossing.</li> <li>6. EB on-ramp traffic would have to merge with the truck climbing lane.</li> <li>7. Would reduce the speed of the vehicles on the loop exit ramps from a high speed facility to 25 mph, possibly encouraging run-off-the-road accidents.</li> </ol>

Table 2-4. Continued

	Ridge Design	Undercrossing Design
<b>Construction Impacts:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. Construction of interchange would be simplified. Initial development traffic could be handled by existing White Rock Road while Silva Valley Parkway/ U. S. 50 Interchange is being constructed.</li> <li>2. No major detours would be required on U. S. 50.</li> </ol>	
<hr/>		
<b>Disadvantages:</b>	<ol style="list-style-type: none"> <li>1. Usual construction impacts, noise, etc. would occur in project area.</li> </ol>	<ol style="list-style-type: none"> <li>1. As a minimum, the construction of the bridges on U. S. 50 would have to precede the residential development. Silva Valley Parkway would be reduced to one lane of traffic during construction of the U. S. 50 mainline bridges.</li> <li>2. Requirement of detours for at least 6 months would be required on U. S. 50 while constructing new bridges. Loop ramp bridges could be used for temporary detour of U. S. 50 traffic while reconstructing mainline U. S. 50 bridges.</li> <li>3. More difficult to maintain traffic on Silva Valley Parkway during construction of interchange.</li> </ol>
<hr/>		
<b>Right-of-Way Impacts:</b>		
<b>Advantages:</b>	<ol style="list-style-type: none"> <li>1. No impact on PGandE substation with construction of retaining wall.</li> <li>2. No relocation of Hall/Richmond Cemetery.</li> <li>3. Would avoid Tong's Cemetery and unmarked graves with construction of retaining wall.</li> </ol>	<ol style="list-style-type: none"> <li>1. No need for structures over Carson Creek.</li> <li>2. Would minimize impact to Tong's property, including the Cemetery.</li> <li>3. Would require acquisition of approximately 0.3 acre of Byram's 5-acre parcel and approximately 0.3 acre of Dolder's 5-acre parcel. Would require minimum relocation of frontage road.</li> </ol>

Table 2-4. Continued

	Ridge Design	Undercrossing Design
Disadvantages:	<ol style="list-style-type: none"> <li>1. Mitigation would be required for Tong's spring. Would require construction of a structure on the EB on-ramp over Carson Creek to provide access to the spring used for watering livestock and wildlife.</li> <li>2. Impacts on Carson Creek would require two bridges and a retaining wall within interchange area.</li> <li>3. Impacts Tong's property by acquisition of approximately 1.3 acres.</li> <li>4. Would require acquisition of about 0.9 acre of approximately 5-acre Byram parcel and about 3.4 acres of approximately 5-acre Dolder parcel. Would require relocation of frontage road to serve these properties.</li> <li>5. Would require relocation of 115-kV and 60-kV PGandE power lines.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mitigation would be required for Tong's spring. A retaining wall would be required along the EB on-ramp to ensure the integrity of the spring used for watering livestock and wildlife.</li> <li>2. Impacts on minor creek west of existing undercrossing. Would require box culverts for the many crossings of the creek.</li> <li>3. Would require retaining wall to stay clear of PGandE substation. Would also require relocation of about 2,000 ft of roadway accessing substation and the Peerman residence.</li> <li>4. Loss of natural public open space in northwest quadrant of interchange. Public open space is designated in the approved Specific Plan.</li> <li>5. Would require the relocatinn of Historical Marker #699 for the Mormon Tavern.</li> <li>6. Would require relocation of 115-kV and 60-kV PGandE power lines.</li> <li>7. Impacts to Carson Creek would require an extension of the existing box culvert on the north side.</li> <li>8. Hall/Richmond Cemetery could be undercut by the WB off-ramp.</li> </ol>

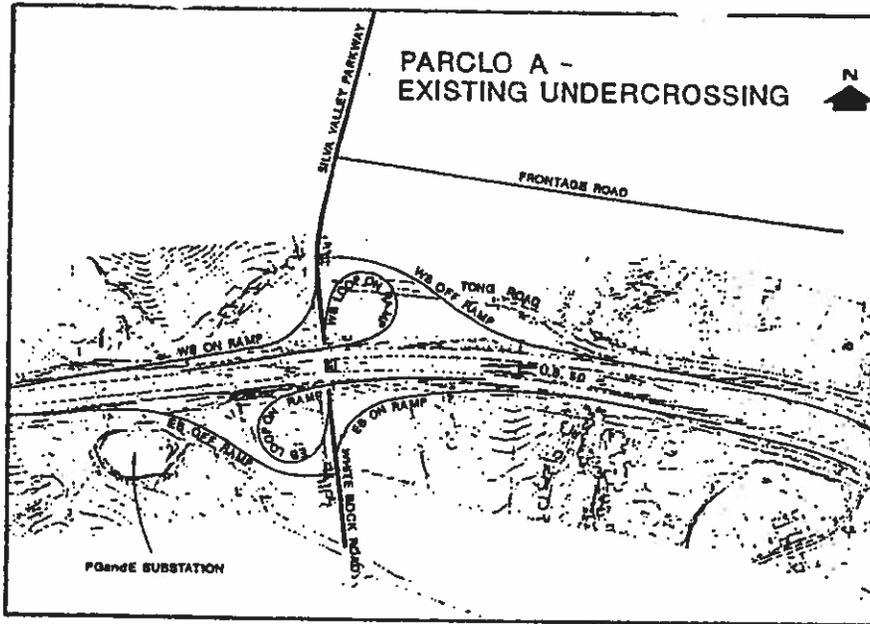
Source: Bissell & Karn, Inc. 1989. Draft Project Report and Attachments. Silva Valley Parkway/U. S. 50 Interchange, January 1989.

- o Parco B at the ridge, and
- o diamond at the ridge.

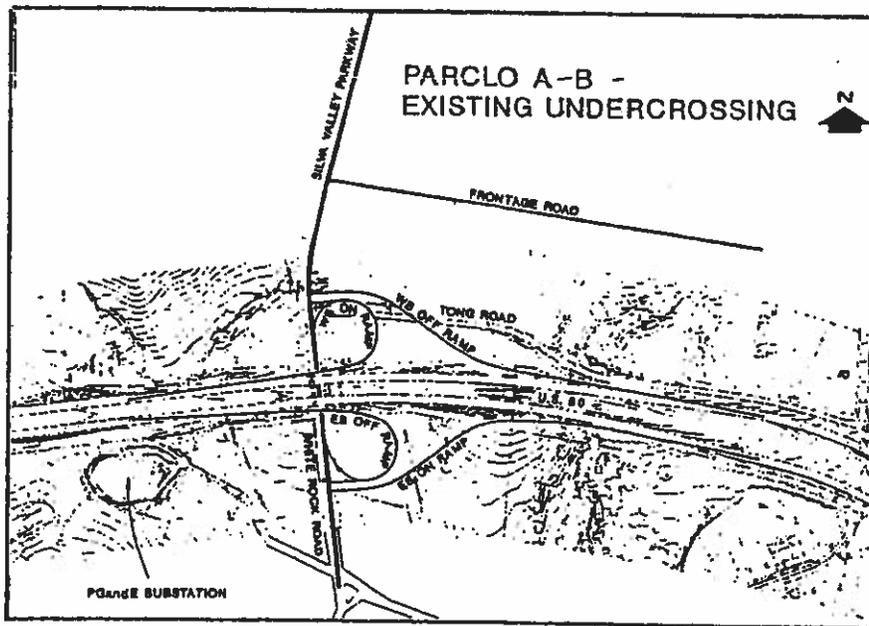
Each of these alternatives and the reason for its rejection are explained in detail below and are shown in Figures 2-5, 2-6, and 2-7.

## NO-PROJECT ALTERNATIVE

CEQA requires analysis of feasible project alternatives. Numerous alternatives were considered and rejected because of their infeasibility or inability to meet the project objectives. The only other project alternative evaluated in this EIR is the No-Project Alternative. The No-Project Alternative assumes that an interchange would not be built. Detailed analyses of the No-Project Alternative are found in Chapter 10, "Transportation," Chapter 11, "Air Quality," and Chapter 12, "Noise." Additional information on the No-Project Alternative is found in Chapter 14, "Alternatives to the Proposed Project."

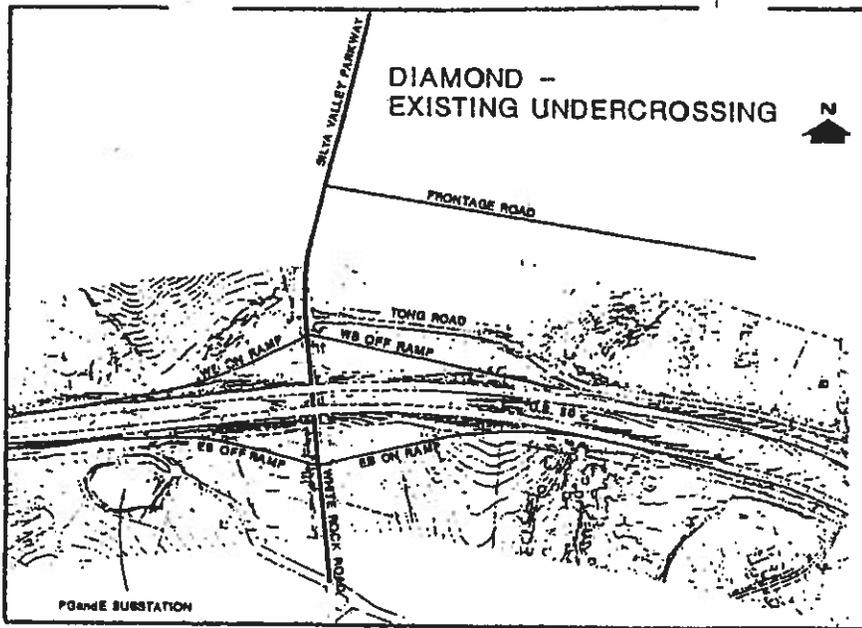


This design would result in a weaving distance between the El Dorado Hills Boulevard/U. S. 50 Interchange on-ramp and the eastbound off-ramp that would not meet the minimum requirements of Caltrans or El Dorado County. This short distance would create extremely hazardous conditions for motorists entering eastbound U. S. 50 from El Dorado Hills Boulevard and those maneuvering to exit the highway at the eastbound off-ramp. This alternative would have a substantial impact on the operation and maintenance of the PGandE substation and probably require its relocation.

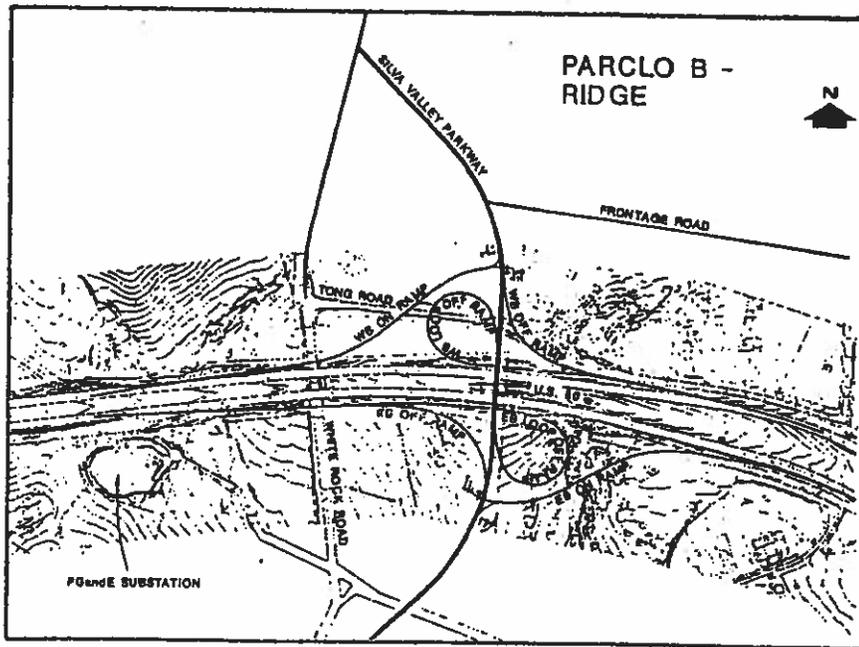


This unusual interchange includes two loop ramps on the east side of Silva Valley Parkway: a westbound loop on-ramp in the northeast quadrant and an eastbound loop off-ramp in the southeast quadrant. The capacity of this design is lower than that of either a Parclo A or Parclo B design because of the larger number of conflicting movements (left turns across lanes). This interchange design was rejected from further environmental review because it is a nonstandard configuration, it is not preferred by Caltrans, and it would not be able to accommodate the projected traffic volumes.

FIGURE 2-5. ALTERNATIVES CONSIDERED BUT REJECTED: PARCLO A - EXISTING UNDERCROSSING AND PARCLO A-B - EXISTING UNDERCROSSING

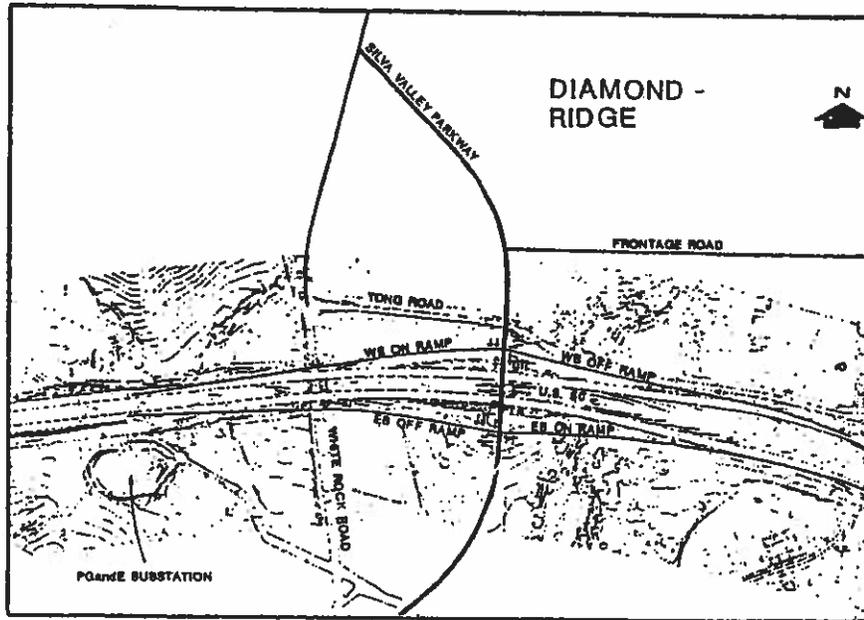


The capacity of a diamond interchange is low because of the large number of conflicting turning movements at the ramp intersections. Each intersection would require signalization. The existing undercrossing structure would constrain the storage provided for left-turn movements.



The capacity of a Parclo B design is lower than that of a Parclo A design because it has more conflicting movements. The weaving distance between the westbound on-ramp and the El Dorado Hills Boulevard/U. S. 50 Interchange would be shorter than that of the proposed Parclo A at this location. In addition, the loop off-ramps would require a rapid deceleration by motorists exiting the freeway at high speeds, increasing the likelihood of accidents. This interchange design was rejected from further environmental review because of these issues. This alternative would have a significant impact on Carson Creek on the south side of U. S. 50 and the Tong Cemetery.

FIGURE 2-6. ALTERNATIVES CONSIDERED BUT REJECTED: DIAMOND - EXISTING UNDERCROSSING AND PARCLO B - RIDGE

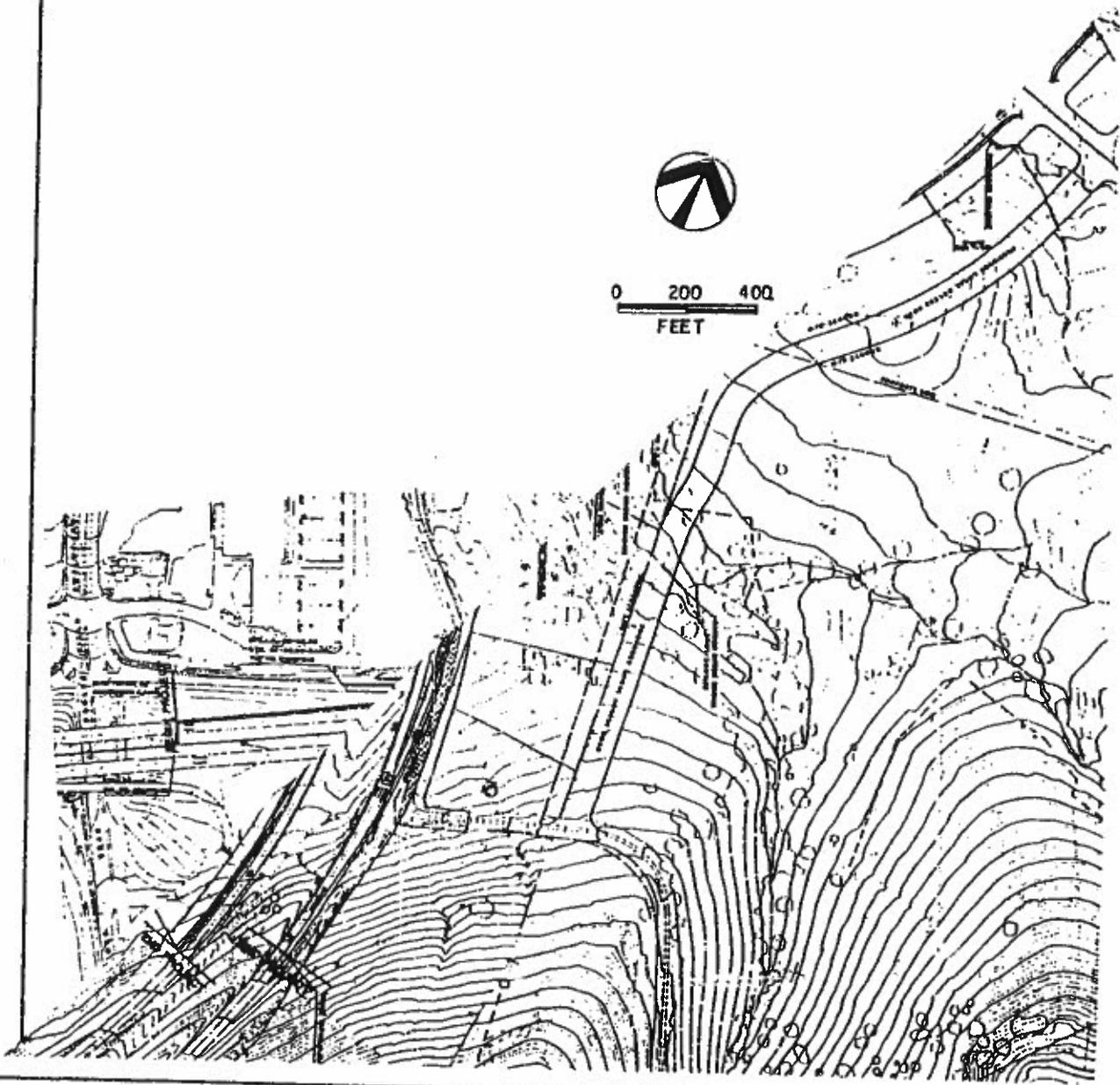


In addition to the aforementioned capacity constraints, the ridge structure would also require a wider overcrossing structure to accommodate left-turn pockets. Both diamond designs were rejected from further evaluation because of their low capacity and structural constraints and requirements.

FIGURE 2-7. ALTERNATIVES CONSIDERED BUT REJECTED: DIAMOND - RIDGE



0 200 400  
FEET





0 200 400  
FEET

