



Staff Report

August 13, 2019

TO: Honorable Mayor and Members of the Town Council
FROM: Britton Snipes, Town Engineer/Public Works Director
DATE: August 13, 2019
RE: King Road Interchange update

Recommendation

Town Council to determine whether the Town should pursue an Interchange at King Road and I-80 or not.

Issue Statement and Discussion

The idea of an interchange at King Road and I-80 has been considered for several years. In 2000 when the issue came up, the Town sought an opinion from CalTrans. At the time Caltrans indicated that a new interchange at King Rd would be too close to the existing interchanges at Horseshoe Bar Road and Penryn Road. In addition, it would need to be demonstrated that the existing interchanges or local roads can neither provide nor be improved to provide a satisfactory accommodation for future traffic. In 2018 the Town requested CalTrans to consider the interchange again. CalTrans reiterated its previous concerns in the attached letter.

The following is a summary of concerns and reasons that an interchange may not be feasible at this location

- King road is too close to the Horseshoe Bar and the Penryn interchanges.
- I-80 is an Interstate and would require Federal Highways' approval for a connection.
- Caltrans does not see the need for an additional connection and would not support a new connection
- The south side of I-80 is in Placer County. Placer County does not support a new interchange at this location.
- The project cost to modify the existing King Road overpass to make connections to I-80 would exceed \$31 million.

In 2008 the Town solicited proposals to design an interchange a from MHM Engineering. A drawing was developed showing how an interchange at King Road could be combined with the Horseshoe Bar Rd interchange (see attached drawing), The road alignments show that Raley's building would need to be modified, wetlands on the south side of the freeway would need to be crossed, and private property would need to be acquired.

In Summary, Caltrans will not support a connection to I-80 at King Road because it is too close to both the Penryn and the Horseshoe Bar Road interchanges. FHWA is unlikely to approve any connection to an Interstate without Caltrans support. It is unlikely that the Town could obtain any grants to assist with funding the interchange without Caltrans' support.

Given that a full interchange is infeasible because of the cost and proximity to the other two interchanges, a smaller connection of just on ramps and/or off ramps has been suggested. This revised scope would reduce construction cost, but this does not affect FHWA's or Caltrans's position on a connection to the Interstate.

The Town may be the only agency interested in the idea of making a connection to I-80 at King Road. If the Town would like to pursue a connection of on/off ramps to I-80 at King Road the funding for the following items will need to be identified.

• Prepare a Feasibility Study	\$ 150,000
• Update the Circulation Element.	\$ 40,000
• Preliminary Design	\$ 800,000
• Environmental Clearance	\$ 1,800,000
• Right of Way	\$ 2,200,000
• Project Study Report	\$ 1,900,000
• Design	\$ 2,400,000
• Construction	\$20,000,000
• Inspection	\$ 2,000,000
<u>Estimated Total</u>	<u>\$31,290,000</u>

These costs do not include the cost of petitioning FHWA, CalTrans and Placer County to allow a connection to be made.

Staff does not recommend pursuing a connection to I-80 at this point in time for the following reasons:

1. It is unlikely that FHWA will allow a new connection to the interstate between the two existing connections.
2. Caltrans will not support making a new connection to the interstate.
3. Placer County has not shown any interest in supporting a new connection.
4. The cost to study, petition, design and construct a connection to I-80 at King would be greater than \$31 million.
5. A full interchange would be partially located in the County and Placer County has not shown any interest in participating in a joint project.
6. One of the first things that Caltrans requires is that a study be performed to see if other less intrusive projects can be constructed. Improvements to Horseshoe Bar Interchange can be made to increase capacity. It is unlikely a study would conclude that improvements to the existing interchange could not be made.
7. The two existing interchanges are not so overwhelmed that a third connection is warranted. Petitioning FHWA/Caltrans/County for another interchange to reduce traffic on local roads is not a strong argument for an interchange.
8. In the 2005 Traffic Impact Fee program we commissioned a study of an interchange at King Road and I-80. That study was started but we stopped when we received the correspondence for Caltrans stating that they wouldn't support an interchange.
9. Funding for the roads in Loomis is very limited. We currently have a \$350,000 shortfall to maintain the existing roads. The cost to even study an interchange doesn't make sense when we have such a backlog of maintenance projects.

If any of the above conditions change, staff will bring this item back for further discussion.

Next Steps if the Council chooses to pursue an Interchange

1. Identify amount and source for funding of staff and consultants
2. Form a committee
3. Determine funding
4. Meet with Caltrans. Detail the path to deliver a connection to the freeway.
5. Hire a consultant to study a connection.

- a. Traffic Study to identify need and possible use.
- b. Determine Scope (simple connection/full interchange/combine with other interchanges)
- c. Identify Right of Way needs
- d. Identify Environmental Issues
- e. Identify required studies
- f. Identify on going maintenance cost (signals, landscaping, etc)
- g. Design cost
- h. Construction cost
- i. Inspection cost
- j. Identify timing

Attachments

- A Letter from Caltrans dated December 20, 2018
- B MHM proposal King Road Interchange dated January 18, 2005.
- C Exhibit west bound onramp only King Rd and I-80.
- D Figure 504.2A Single Lane Freeway Entrance
- E Letter Caltrans dated October 12, 2000

DEPARTMENT OF TRANSPORTATION

DISTRICT 3

703 B STREET
MARYSVILLE, CA 95901
TTY 711
www.dot.ca.gov/dist3



*Making Conservation
a California Way of Life.*

RECEIVED

TOWN OF LOOMIS

December 20, 2018

RECEIVED

JAN 02 2019

TOWN OF LOOMIS

Mr. Brit Snipes
Public Works Director
Town of Loomis
3665 Taylor Road
Loomis, CA 95650

Dear Mr. Snipes:

Thank you for your December 14, 2018 inquiry regarding the possibility of a new interchange or ramps at King Road and Interstate 80.

Interchange spacing is a design feature which is critical to the safe and efficient utilization of all freeways. Caltrans Interchange spacing standards are governed by the Highway Design Manual Chapter 500 and Design Information Bulletin Number 77. Design standards require the minimum interchange spacing of one mile in urban areas and three miles outside of urban areas on Interstate highways. The spacing between the existing King Road Overcrossing and Horseshoe Bar Road Interchange to the west and Penryn Road Interchange to the east is 0.8 miles in each direction. Therefore, the new interchange would not meet the minimum design standards.

Deviation from the standards and new interchanges or ramps also require approvals and concurrences from the Federal Highway Administration and California Transportation Commission. The project sponsor is responsible for establishing the project need, justifying deviations and ensuring consistency with local and regional land use and transportation plans. Placer County plans do not currently include modifications at King Road and Interstate 80.

Thank you again for your inquiry. If you have any questions please contact me at (530) 741-4318 or Fernando Rivera Chief, Traffic Operations Office Chief (Acting) at (530) 741-5710.

Sincerely,

THOMAS L. BRANNON
Deputy District Director
Maintenance and Traffic Operations



Attachment B
RECEIVED
JAN 20 2005
TOWN OF LOOMIS

January 18, 2005

Brian Frাগiao
Director of Public Works
Town of Loomis
6140 Horseshoe Bar Road, Suite K
Loomis, California 95650

Subject: Expanded I-80 Interchange at Horseshoe Bar Road and King Road

Dear Mr. Frাগiao:

We are pleased to present this letter proposal for preliminary engineering services for the expanded interchange on Interstate 80 at Horseshoe Bar Road and King Road near the Town of Loomis.

Access of I-80 in the Loomis area is limited to the Horseshoe Bar Road Interchange. The current configuration causes congestion that will progressively worsen with increased traffic loads. A new design that expands the Interchange by including King Road will provide better circulation and will relieve traffic congestion. The City should initiate sufficient engineering design for the combined interchange concept to allow the concept to be included in the future I-80 widening project.

Enclosed is a Scope of Services and a Fee Estimate. The estimated fee to complete the work is \$44,826. MHM would appreciate the opportunity to work with the town of Loomis, and is ready to begin work immediately upon authorization. If you have any questions or need additional information, please call.

Sincerely,

Orin N. Bennett
Vice President

ONB:jlc

Enclosures as stated



ENGINEERS & SURVEYORS SINCE 1892

EXHIBIT A

Town of Loomis

Horseshoe Bar Road / King Road / I-80 Expanded Interchange

Scope of Services

Task 1: Base Map

Obtain aerial photographs of the King Road/Horseshoe Bar Road along I-80. Perform sufficient paper survey investigation to identify parcel line locations of any parcels that may be affected by the expanded interchange project. Obtain right-of-way information from Loomis, Placer County and Caltrans for the interchange area. Obtain existing utility information for the area from Loomis, Caltrans, Placer County Water Agency, South Placer Municipal Utility District, and private utility companies. Prepare a base map using the aerial photograph as the underlying base and showing all the obtained information.

Task 2: Preliminary Interchange Geometrics

Prepare preliminary geometrics of the King Road/Horseshoe Bar Road combined interchange. Review the interchange configuration with Loomis staff and revise as requested. Prepare proposal combined interchange conceptual plan.

Task 3: Traffic Projections

Review traffic projections available from the existing DKS traffic model of the area. Work with DKS to obtain long-term projections and a traffic load analysis with and without the combined interchange concept.

Task 4: Combined Interchange Conceptual Map

Based upon the information obtained in Task 1 through Task 2, prepare a conceptual map for review with City staff. After appropriate revisions, prepare a Final combined Interchange Conceptual Map in large format (approximately 36 inch by 42 inch) and small format (approximately 11 inch by 17 inch).

Task 5: Fatal Flaw Environmental Review

Review environmental issues on a conceptual level and gather sufficient office data to develop a preliminary environmental constraints review. Use the constraints review to assess a best-possible, if an environmental issue exists which could warrant that the project should not be given further consideration.

Task 6: Potential Project Schedule

Based upon experience and history of other projects, prepare a very preliminary Project Schedule.

Task 7: Preliminary Order of Magnitude Estimate of Cost

Based upon the Combined Interchange Conceptual Map, prepare an Order of Magnitude Estimate of Cost. Based upon historic Engineering News Record data, project that cost to the proposed construction date determined in the preliminary schedule.

Task 8: Funding Options

Based upon experience and knowledge of funding sources, prepare a list of potential funding sources for the project.

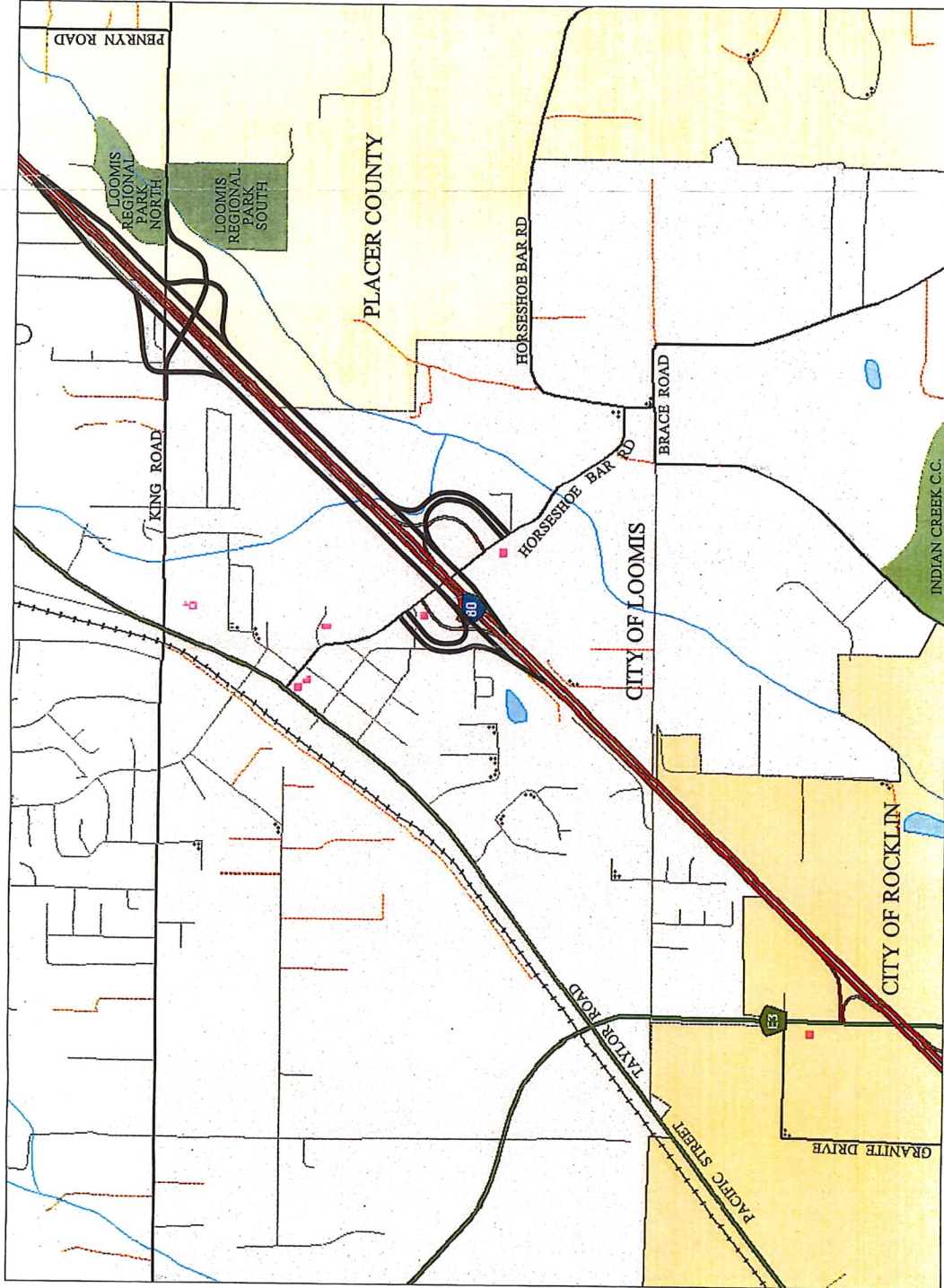
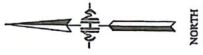
Task 9: Project Coordination

Inform other agencies of the concept of the combined interchange project. The other agencies include City of Rocklin, Placer County, Placer County Transportation Planning Agency, Caltrans and the Federal Highway Administration. Work with the other Agencies to coordinate the combined interchange project with other local projects.

Town of Loomis
Horseshoe Bar Road / King Road / I-80 Expanded Interchange

Proposal
Fee Estimate

Fee Estimate										MISC. EXPENSES				TOTAL			
Task	Public Agency Liason Watkins, R. 190 \$/hr		Principal Engineer Bennett, O. 140 \$/hr		Project Engineer Ramirez, C. 118 \$/hr		Sr CADD/ Tech Blevins, D. 95 \$/hr		Word Processor -Alloway, S. 55 \$/hr		Traffic Consultant DKS	Environmental Consultant ESA	Aerial Mapping Radman				
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost							
1 Base Map	2 hrs	\$380	2 hrs	\$280	16 hrs	\$1,888	20 hrs	\$1,900	8 hrs	\$440	\$0	\$0	\$3,000	\$8,388			
2 Preliminary Interchange Geometrics	12 hrs	\$2,280	6 hrs	\$840	24 hrs	\$2,832	40 hrs	\$3,800	8 hrs	\$440	\$0	\$0	\$0	\$10,052			
3 Traffic Projections	4 hrs	\$760	1 hrs	\$140	8 hrs	\$944	16 hrs	\$1,520	8 hrs	\$440	\$3,000	\$0	\$0	\$5,284			
4 Combined Interchange Conceptual Map	4 hrs	\$760	4 hrs	\$560	4 hrs	\$472	16 hrs	\$1,520	4 hrs	\$0	\$0	\$0	\$0	\$4,512			
5 Fatal Flaw Environmental Review	2 hrs	\$380	2 hrs	\$280	16 hrs	\$1,888	16 hrs	\$0	4 hrs	\$220	\$0	\$8,000	\$0	\$2,768			
6 Potential Project Schedule	2 hrs	\$380	1 hrs	\$140	8 hrs	\$944	16 hrs	\$380	16 hrs	\$880	\$0	\$0	\$0	\$2,344			
7 Preliminary Order of Magnitude Estimate of Cost	1 hrs	\$190	4 hrs	\$560	12 hrs	\$1,416	4 hrs	\$380	2 hrs	\$110	\$200	\$0	\$0	\$2,856			
8 Funding Options	4 hrs	\$760	2 hrs	\$280	4 hrs	\$472	16 hrs	\$0	4 hrs	\$220	\$0	\$0	\$0	\$1,150			
9 Project Coordination	16 hrs	\$3,040	16 hrs	\$2,240	4 hrs	\$472	80 hrs	\$7,600	44 hrs	\$2,220	\$0	\$0	\$0	\$7,472			
Subtotal	47 hrs	\$8,930	38 hrs	\$5,320	92 hrs	\$10,856	80 hrs	\$7,600	44 hrs	\$2,420	\$3,000	\$8,000	\$3,000	\$44,826			
PROJECT TOTAL											\$3,000	\$8,000	\$3,000	\$44,826			



PLAN SCALE	
PROJECT SCALE	
DATE	
SHEET	

M.H.M.
 ENGINEERING & SURVEYING
 7200 BROADWAY, SUITE 200
 ROCKLIN, CA 95765
 TEL: (916) 412-1111 FAX: (916) 412-1112

VERIFY SCALE	
DATE	
BY	
SCALE	

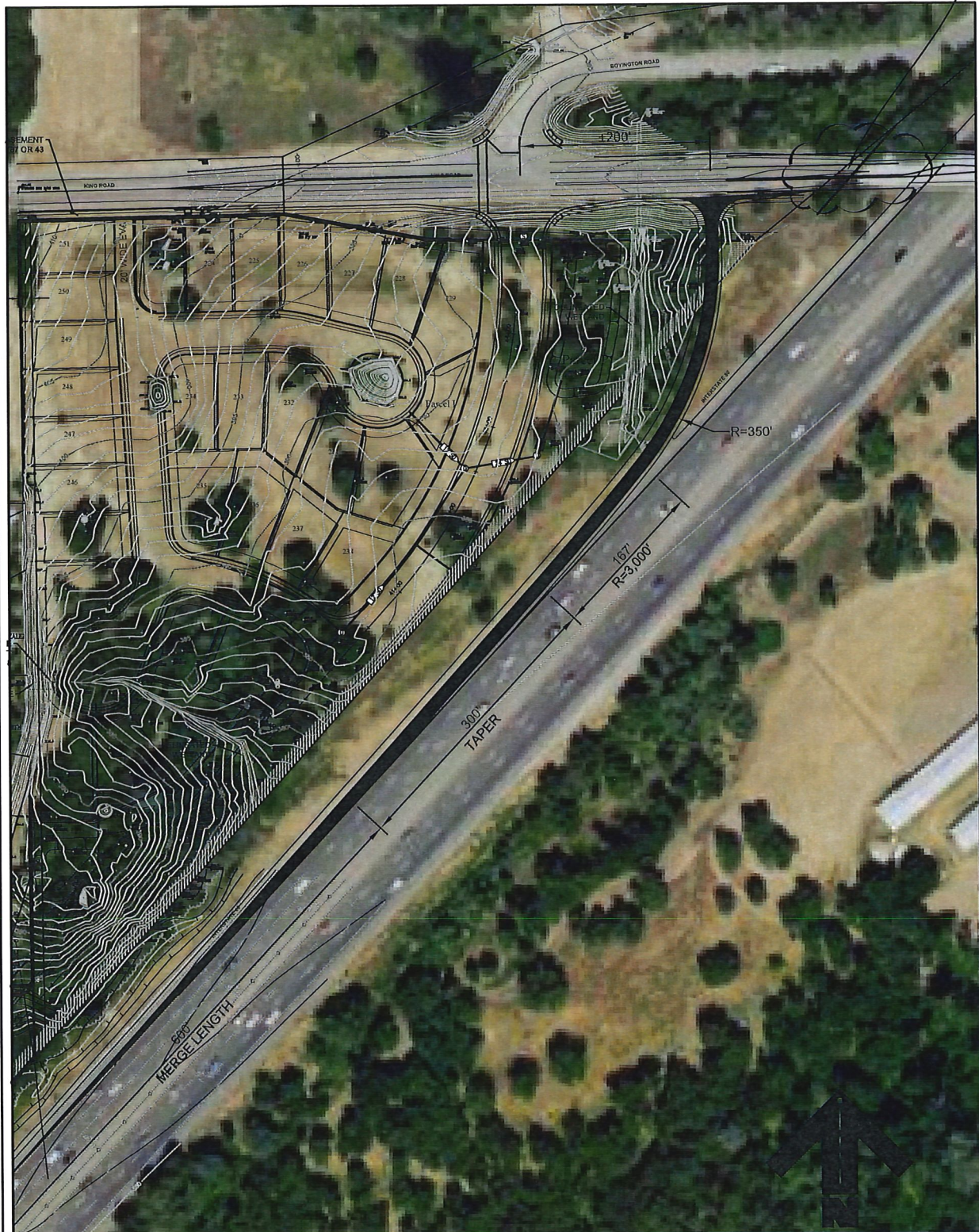
DESIGNED BY	
DRAWN BY	
CHECKED BY	
APP. NAME	

REV.	DATE	BY	APP.	DESCRIPTION
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DESIGN SUBMITTAL	
NOT FOR CONSTRUCTION	

CONCEPTUAL KING RD ON RAMP
TO I-80
DECEMBER, 2018

WIDENING OF BRIDGE DECK MAY
BE REQUIRED FOR WESTBOUND
KING RD. LEFT TURN TO ON RAMP.



NOTES:

1) A SIGHT DISTANCE STUDY SHOULD BE DONE TO DETERMINE
IF VERTICAL SIGHT FOR WESTBOUND KING ROAD IS ADEQUATE.

2) DESIGN BASED UPON CALTRANS HIGHWAY DESIGN MANUAL,
SINGLE LANE FREEWAY ENTRANCE, FIGURE 504.2A.

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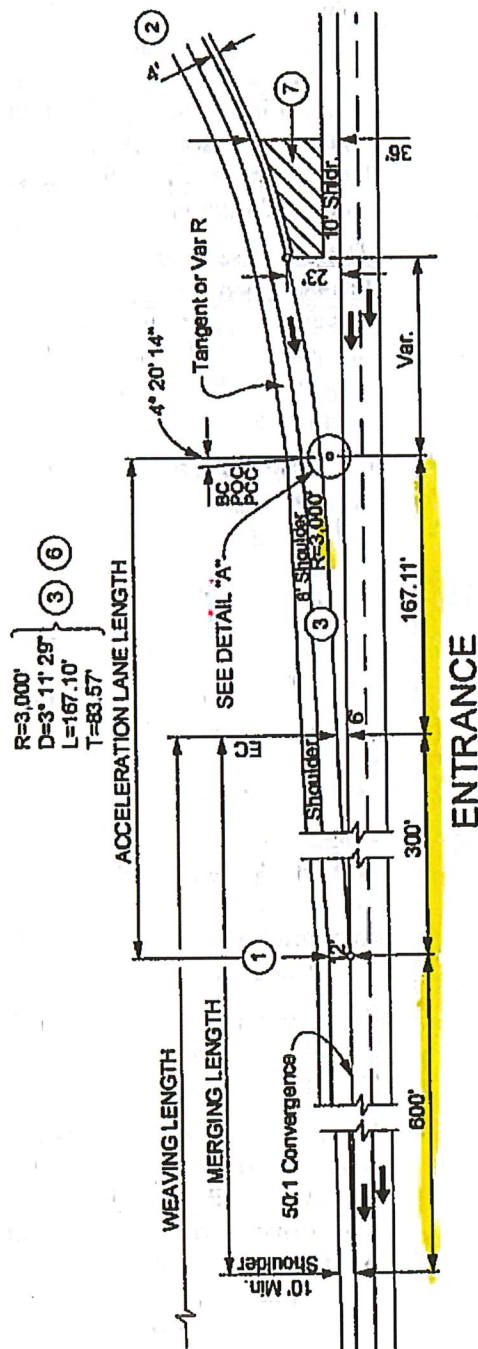
SCALE: 1" = 100'

500-12

December 14, 2018

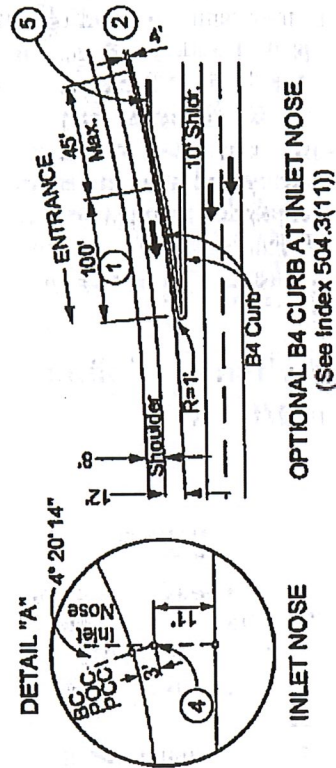
HIGHWAY DESIGN MANUAL

Figure 504.2A
Single Lane Freeway Entrance



NOTES:

- ① On freeway to freeway connections the right paved shoulder shall be 10' - Table 302.1.
- ② On single- and two-lane freeway to freeway connections, the left paved shoulder shall be 5' - Table 302.1.
- ③ When freeway is not on tangent alignment, select radius to approximate same degree of convergence (see Index 504.2(3)).
- ④ Locate as if it were to be center of a 1' radius curb nose.
- ⑤ 1:15 (longitudinal to lateral) Flare, 45' long - Table 405.4.
- ⑥ 2% superelevation may be acceptable for the 3,000' radius curve on entrance ramps.
- ⑦ Contrasting surface treatment (See Index 504.2(2)).
- ⑧ See Index 504.2(7) for pedestrian and bicycle ramp crossings on freeways where bicycle or pedestrian travel is not prohibited. See Index 302.1 for shoulder width standards.



DEPARTMENT OF TRANSPORTATION

DISTRICT 3

P.O. BOX 911, MARYSVILLE, CA 95901
 DD Telephone 530-741-4509
 FAX Telephone 530-741-5117
 Telephone 530-741-5120



October 12, 2000

Mr. Perry Beck
 Town Manager
 Town of Loomis
 P.O. Box 1327
 Loomis, CA 95650

Post-It™ brand fax transmittal memo 7671		# of pages ▶ 12
To	Perry Beck	From
Co.	Town Manager	Co.
Dept.	Loomis	Phone #
Fax #	(916) 652-1847	Fax #

Re: King Road/Interstate 80

Dear Mr. Beck:

This is in reply to your September 25, 2000, letter regarding the possibility of a new interchange at King Road and Interstate 80 and funding for this project.

The most important question posed is, will an interchange be allowed at King Road and Interstate 80. To answer this question we are guided by Design Information Bulletin (DIB) Number 77 - Interchange Spacing (included for reference).

Standards require the minimum spacing between interchanges shall be 1.5 km in urban areas and 3.0 km in rural areas. Interchange spacing is a design feature, which is critical to the safe and efficient utilization of all freeways. The spacing between the existing King Road Overcrossing and Horseshoe Bar Road Interchange to the west is 1.3 km and the same distance between King Road and Penryn Road Interchange to the east. The 1.5 km spacing for urban areas is a Caltrans mandatory design exception, meaning sufficient information must be presented showing a lesser spacing will not have a significant adverse impact on the safety and operation of Interstate 80, based on an analysis of current and future traffic before the exception will be approved.

DIB Number 77 also requires it to be demonstrated that the existing interchanges and/or local roads and streets in the corridor can neither provide the necessary traffic service nor be improved to satisfactorily accommodate the future traffic demands.

Because we are dealing with an Interstate Route it would also be necessary to gain Federal Highway Administration (FHWA) approval for a new interchange. Steps for final approval from FHWA are gained first with their conceptual approval prior to completion of a Project Study Report. Final approval is received once the Project Report and final environmental document are completed and approved.

It would also be necessary for the California Transportation Commission to approve a new public road connection.

Regarding funding, Caltrans does not participate in new interchanges. Typically, local funds are used to build most new interchanges. Another source is Regional Transportation Improvement Program funds. Placer County Transportation Planning Agency should be contacted regarding their availability in Placer County.

Mr. Perry Beck
October 12, 2000
Page 2

I hope this answers your letter. If you have any other questions, please feel free to call me at (530) 741-4233 or Mike Forga, Project Manager for Special Funded Projects at (530) 741-5456.

Sincerely,

IRENE T. ITAMURA
District Director

c: Jody Lonergan - Planning
Jeff Pulverman - Planning
Steve Kirkpatrick - Program/Project Management