Request Programming in 2012 SHOPP

PROJECT LOCATION: In San Mateo County, on Southbound State Route 280 from Route 1/280 Separation PM M27.1 to San Francisquito Creek UC PM R0.30, and on Northbound State Route 280 from San Francisquito Creek UC to Serramonte Blvd. UC; and on State Route 92 at PM R14.4.

APPROVAL RECOMMENDED:

ROLAND AU-YEUNG, DISTRICT PROGRAM MANAGER

APPROVAL RECOMMENDED:

9/15/11
NANDINI SHRIDHAR, PROJECT MANAGER

APPROVED:

BIJAN SARTIPI, DISTRICT DIRECTOR

9-27-11
DATE

This project initiation document has been prepared under the direction of the following Registered Civil Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED CIVIL ENGINEER

9/15/2011
DATE

Initiating Office/Initiator:
The Program Manager for the SHOPP, Safety (Collision Severity Reduction Project) has established that a project is needed that meets the qualification for the SHOPP, Safety Program.

This Small Capital Value Project (SCVP) project initiation document provides conceptual approval of the proposal and a recommendation to program the project into the current State Highway Operation and Protection Program. A project report will serve as final approval of the proposal.

Purpose and Need:
Purpose:
To upgrade to current standard the existing rail connections and to provide transition railing to bridge railings, abutments, walls, concrete barriers, and other structures and thus reduce the potential and severity of run-off-road type accidents. .

Need:
The existing railing transition railing in the locations identified within the project limits are not up to current standard.

Deficiency Summary:
The office of Traffic Safety identified in the Conceptual Approval documentation for this project a list of locations within the project limits with railings that are not up to current standard and need to be upgraded.

Project Proposal
It is proposed to install Type WB or Type STB transition railing at existing metal beam guard railing (MBGR) that are connected to bridge approach railing or concrete barrier at various locations on State Routes 280 and 92 in San Mateo County.

R/W:
Not anticipated. The work is to be performed within Caltrans right of way.

Disposal Site:
Not anticipated. Commercial disposal sites will be provided if needed upon further studies in the next phase.

Utilities:
To be verified in the next phase.

Environmental:
Environmental impacts associated with this project are expected to be minimal and a Categorical Exemption/Exclusion (CE) is anticipated. The appropriate environmental clearance will be determined in the next project phase.

Programming

PROJECT CAPITAL COST		
Fiscal Year	**Right of Way Capital**	**Construction Capital**
FY11/12		$2,850,000
FY12/13		$2,964,000
FY13/ 14	$28,000	$3,082,000
FY 14/15		$3,206,000
FY 15/16 (*)		$3,334,000

Key assumptions for the cost estimate:
-Project to be programmed in 2012 SHOPP
-4% escalation/year.
- The following items are percentage of total construction capital:
  SWDR 2.5%
  Contingency 30%
  Right of Way 1%
  Environmental Compliance 1%

* Cost escalated to mid-year construction

	PROJECT SUPPORT COMPONENTS								
	PA&ED 0 Phase		**Design 1 Phase**		**Right of Way 2 Phase**		**Construction 3 Phase**		**Total**
	Dist	**DES**	**Dist**	**DES**	**Dist**	**DES**	**Dist**	**DES**	
Estimated PY's	1.5	1	2	2	0.5		1.5	0.5	9

Key assumptions for support cost estimate: 1PY= 1758 hr. $180,000/PY.
Support cost is 50% of total cost.

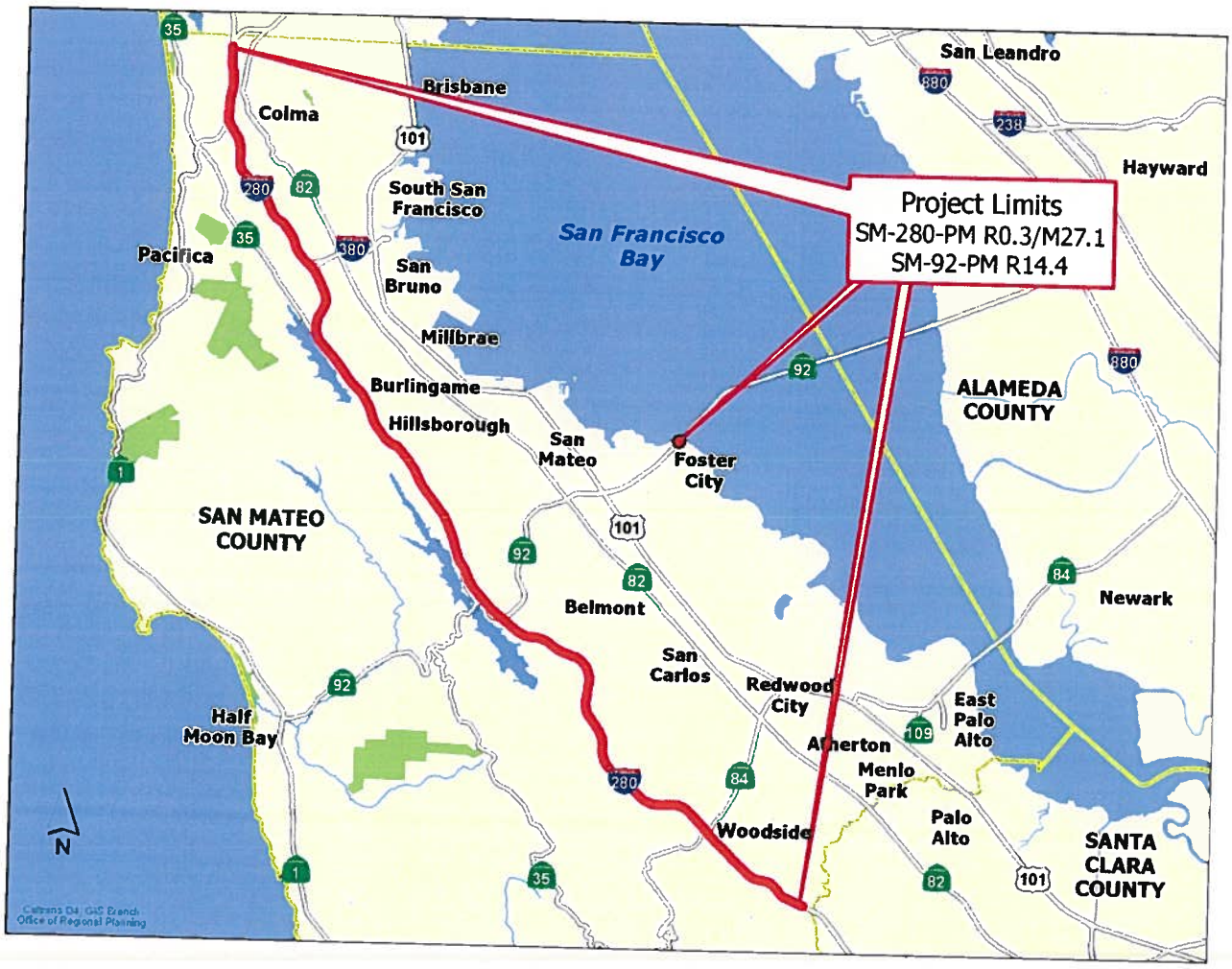
Schedule:

Project Milestones	Delivery Date (Month, Year)
PID	09/2011
PA & ED	07/2013
PS&E	07/2014
Right of Way Certification	09/2014
Ready to List	10/2014
Begin Construction	01/2015
Contract Acceptance	10/2015
End Project	10/2016

ATTACHMENTS:

- Location Map
- Cost Estimate
- Location inventory
- Standard Plans A78G and A77J4

04-SM -280- PM R0.3/M27.1 & 92 PM R14.4
Program Code 201.015
ID 0400020615, EA 1G830K
September/2011



LOCATION MAP

04-SM-280 PM R0.3/m27.1 & 92 PM R14.4
Project ID No. 0400020615 (EA# 1G830K)
Collision Severity Reduction Project 201.015

Location							Description	Connecting Structure			Transiton Railing Type *		Concrete Anchor Block (LF)	Vegetation Control (Minor Concrete) (SQYD)	MBGR (LF)		Single Thrie Beam Barrier (LF)	Double Thrie Beam Barrier (LF)	Alternative Flared Terminal System (EA)	Existing Features/ Notes/ Remarks
ID #	County	Rte	PM	Direction NB/SB	Hwy (H) / Ramp (R)	Left (L) or Right (R) Side		Abutment	Wall	Bridge Rail	WB	STB			Remove	Install				
1	SM	280	27.11	SB	H	R	Beginning Route 1/280 Separation 35-173L - Tunnel	Y			1		10	52.8	120	120			1	Modify existing DI if necessary
2	SM	280	R26.3	SB	H	R	JuniperoSerra Blvd. OC, Bridge # 35-184		Y		1		10	16.5	37.5					
3	SM	280	R26.09	SB	H	R	SB Off to Sullivan Ave.		Y		1		10	16.5	37.5					Existing MBGR attached to retaining wall, shielding light standard
4	SM	280	R25.78	SB	H	R	San Pedro Road OC, Bridge # 35-181		Y		1		10	16.5	37.5					
5	SM	280	R24.63	SB	H	R	Serramonte Blvd. UC, Bridge # 35-209L			Y	1		10	16.5	37.5					
6	SM	280	R24.20	SB	H	R	Hickey Blvd. UC, Bridge # 35-116L			Y	1		10	16.5	37.5					
7	SM	280	R23.16	SB	H	R	King Drive UC, Bridge # 35-202L			Y	1		10	16.5	37.5					
8	SM	280	R22.62	SB	H	R	Westborough UC, Bridge # 35-212			Y	1		10	16.5	37.5					
9	SM	280	R22.04	SB	H	R	Avalon Drive UC, Bridge # 35-228L			Y	1		10	16.5	37.5					
10	SM	280	R20.97	SB	H	R	Route 280/380 Separation, Bridge #35-217			Y	1		10	16.5	37.5					
11	SM	280	R20.75	SB	H	R	San Bruno Ave. UC, Bridge #35-227			Y	1		10	16.5	37.5					
12	SM	280	R20.22	SB	H	R	Whitman Way Off Ramp UC, Bridge #35-197			Y	1		10	16.5	37.5					
13	SM	280	R20.04	SB	H	R	Junipero Serra Blvd. RP UC, Bridge #35-196			Y	1		10	16.5	37.5					
14	SM	280	R18.52	SB	H	R	Larkspur Drive UC, Bridge #35-216L			Y	1		10	16.5	37.5					
15	SM	280	R17.92	SB	R	R	Hillcrest Blvd. UC, Bridge #35-211L			Y	1		10	16.5	37.5					
16	SM	280	R17.17	SB	H	R	Trousdale Drive UC, Bridge #35-215L			Y	1		10	35.2	80	80				
17	SM	280	R14.22	SB	H	L	Hayne Road UC, Bridge #35-210L			Y		1	10	96.8	220	220				
18	SM	280	R14.22	SB	H	R	Hayne Road UC, Bridge #35-210L			Y	1		10	16.5	37.5					
19	SM	280	R12.73	SB	H	R	San Mateo Creek, Bridge #35-199			Y	1		10	16.5	37.5					
20	SM	280	10.82	SB	H	R	Rte. 280/92 Separation, Bridge #35-243			Y	1		10	16.5	37.5					Existing concrete block 1' W x 2' L x 33" H. DI is adjacent to block, out in shoulder.
21	SM	280	9.41	SB	H	R	Rancho Pulgas UC, Bridge #35-247			Y	1		10	66	150	150			1	Electric box next to end of bridge barrier, under first MBGR span. May need relocation. No existing Terminal System.
22	SM	280	6.65	SB	H	R	Edgewood Road UC, Bridge #35-250			Y	1		10	16.5	37.5					
23	SM	280	R6.99	SB	H	R	Service Road UC, Bridge #35-277			Y	1		10	35.2	80	80				
24	SM	280	R6.60	SB	H	R	Canada Road UC, Bridge #35-276			Y	1		10	127.6	290	290				
25	SM	280	R4.99	SB	H	L	Canada Road UC, Bridge #35-231L			Y		1	10	35.2	80		80			Bolt approach end to existing Type 60 concrete median barrier
26	SM	280	R4.99	SB	H	R	Canada Road UC, Bridge #35-231L			Y	1		10	52.8	120	120			1	
27	SM	280	R4.71	SB	H	L	Farm Hill Blvd. UC, Bridge #35-230L			Y		1	10	74.8	170		170			Bolt approach end to existing Type 60 concrete median barrier
28	SM	280	R4.71	SB	H	R	Farm Hill Blvd. UC, Bridge #35-230L			Y	1		10	52.8	120	120			1	

* To obtain a conservative estimate, a concrete anchor block is assumed (see Std Pln A77J3 for WB, A78G for STB) for all transition railing connections unless otherwise noted in the table

** Upgrade only approach end Transition Railing System.

04-SM-280 PM R0.3/M27.1 & 92 PM R14.4
Project ID No. 0400020615 EA 1G830K
Collision Severity Reduction Project 201.015

Location							Description	Connecting Structure			Transiton Railing Type *		Concrete Anchor Block (LF)	Vegetation Control (Minor Concrete) (SQYD)	MBGR (LF)		Single Thrie Beam Barrier (LF)	Double Thrie Beam Barrier (LF)	Alternative Flared Terminal System (EA)	Existing Features/ Notes/ Remarks
ID #	County	Rte	PM	Direction NB/SB	Hwy (H) / Ramp (R)	Left (L) or Right (R) Side		Abutment	Wall	Bridge Rail	WB	STB			Remove	Install				
29	SM	280	R3.32	SB	H	R	Route 280/84 Separation, Bridge #35-232L			Y	1		10	28.6	65	65			1	
30	SM	280	R1.02	SB	H	R	Stanford Linear Accel. UC, Bridge #35-194			Y	1		10	35.2	80	80			1	
31	SM	280	R0.30	SB	H	R	San Francisquito Creek, Bridge #35-234L			Y	1		10	33	75	75			1	
32	SM	280	R0.30	SB	H	L	San Francisquito Creek, Bridge #35-234L			Y		1	10	41.8	95		95			Bolt approach end to existing Type 60 concrete barrier
33	SM	280	R0.30	NB	H	R	San Francisquito Creek UC, Bridge #35-234R			Y	1		10	30.8	70	70			1	Light boxes to be relocated
34	SM	280	R0.30	NB	H	L	San Francisquito Creek UC, Bridge #35-234R			Y		1	10	33	75		75			Bolt approach end to existing Type 60 concrete barrier
35	SM	280	R1.02	NB	H	R	Stanford Linear Accel UC, Bridge #35-194			Y	1		10	28.6	65	65			1	Bury end post in cut slope + Keep existing call box at the same location behind the new MBGR
36	SM	280	R3.36	NB	H	R	Route 280/84 Separation, Bridge #35-232R			Y	1		10	19.8	45	45			1	
37	SM	280	R4.65	NB	H	R	Farm Hill Blvd UC, Bridge #35-230R			Y	1		10	52.8	120	120			1	
38	SM	280	R4.99	NB	H	R	Canada Road UC, Bridge #35-231R			Y	1		10	28.6	65	65				Bury end post in cut slope
39	SM	280	R6.99	NB	R	R	Service Road UC, Bridge #35-277R			Y	1		10	59.4	135	135			1	Replace non-standard bridge rail and upgrade existing Corten
40	SM	280	6.65	NB	H	R	Edgewood Road UC, Bridge #35-250R			Y	1		10	88	200	200			1	Electric box next to bridge rail (under MBGR)
41	SM	280	9.41	NB	H	R	Rancho Pulgas UC, Bridge #35-247R			Y	1		10	132	300	300			1	
42	SM	280	10.81	NB	H	R	Route 280/92 Separation, Bridge #35-243R				1		10	16.5	37.5					Attach Type WB MBGR Transition Railing to existing concrete block (31" high)
43	SM	280	R12.73	NB	H	R	San Mateo Creek, Bridge #35-199, Right Side slope				1		10	28.6	65	65				Existing MBGR end post buried in the cut slope
44	SM	280	R14.22	NB	H	R	Hayne Road UC, Bridge #35-210R			Y	1		10	16.5	37.5					
45	SM	280	R17.16	NB	H	R	Trousdale Drive UC, Bridge #35-215R			Y	1		10	16.5	37.5					
46	SM	280	R17.92	NB	H	R	Hillcrest Blvd. UC, Bridge #35-211R			Y	1		10	16.5	37.5					
47	SM	280	R17.92	NB	H	L	Hillcrest Blvd. UC, Bridge #35-211R			Y		1	10	16.5	37.5					Attach Type STB Single Thrie Beam Barrier Transition Railing to existing concrete block
48	SM	280	R18.22	NB	H	R	Approximately 0.3 Miles South of Larkspur Drive UC		Y		1		10	16.5	37.5					Attach Type WB MBGR transition Railing to existing sound wall
49	SM	280	R20.08	NB	H	R	Junipero Blvd. Off-Ramp UC, Bridge #35-196R			Y	1		10	16.5	37.5					2-crate DI 6.5 ft from bridge (under MBGR)
50	SM	280	R20.08	NB	H	L	Junipero Blvd. Off-Ramp UC, Bridge #35-196R			Y		1	10	52.8	120		120			Replace existing Corten/Galvanized MBGR with Single Thrie Beam Barrier and bury end of rail in the slope
51	SM	280	R20.75	NB	H	R	San Bruno Ave. UC, Bridge #35-227			Y	1		10	28.6	65	65			1	
52	SM	280	R20.97	NB	H	R	Route 280/380 Separation, Bridge #35-217			Y	1		10	16.5	37.5					
53	SM	280	R21.55	NB	H	R	National Cemetery Side hill Viaduct, Bridge #35-320			Y	1		10	16.5	37.5					Attach Type WB MBGR Transition Railing to existing Type 50 concrete railing --Electrical box next to bridge railing, under MBGR
54	SM	280	R22.05	NB	H	R	Avalon Drive UC, Bridge #35-228R			Y	1		10	16.5	37.5					

* To obtain a conservative estimate, a concrete anchor block is assumed (see Std Pln A77J3 for WB, A78G for STB) for all transition railing connections unless otherwise noted in the table
** Upgrade only approach end Transition Railing Systems.

04-SM-280 PM R0.3/M27.1 & 92 PM R14.4
Project ID No. 0400020615 EA 1G830K
Collision Severity Reduction Project 201.015

Location							Description	Connecting Structure			Transiton Railing Type *		Concrete Anchor Block (LF)	Vegetation Control (Minor Concrete) (SQYD)	MBGR (LF)		Single Thrie Beam Barrier (LF)	Double Thrie Beam Barrier (LF)	Alternative Flared Terminal System (EA)	Existing Features/ Notes/ Remarks
ID #	County	Rte	PM	Direction NB/SB	Hwy (H) / Ramp (R)	Left (L) or Right (R) Side		Abutment	Wall	Bridge Rail	WB	STB			Remove	Install				
55	SM	280	R22.05	NB	H	L	Avalon Drive UC, Bridge #35-228R			Y		1	10	352	800		400			Remove existing 800' Corten/Galvanized MBGR and replace it with 400' Single Thrie Beam Barrier and bolt it to existing Type 60 concrete median barrier
56	SM	280	R22.62	NB	R	R	Westborough Blvd. UC, Bridge #35-212R			Y	1		10	16.5	37.5					
57	SM	280	R22.62	NB	H	L	Westborough Blvd. UC, Bridge #35-212R			Y		1	10	16.5	37.5		25			Replace existing MBGR with Single Thrie Beam Barrier and bury end post in cut slope
58	SM	280	R23.16	NB	H	L	King Drive UC, Bridge #35-202R			Y		1	10	44	100		100			Replace existing MBGR with Single Thrie Beam Barrier and bury end post in cut slope
59	SM	280	R24.20	NB	NB	R	Hickey Blvd. UC, Bridge #35-116R			Y	1		10	16.5	37.5					
60	SM	280	R24.20	NB	H	L	Hickey Blvd. UC, Bridge #35-116R			Y		1	10	33	75		75			Replace existing Corten/Galvanized MBGR with Single Thrie Beam Barrier and bolt to existing Type 60 concrete median barrier
61	SM	280	R24.6	NB	H	R	Serramonte Blvd. UC, Bridge #35-209R			Y	1		10	16.5	37.5					Electrical box next to bridge rail, under MBGR. End MBGR currently burried in cut slope.
62	SM	280	R24.65	NB	H	L	Serramonte Blvd. UC, Bridge #35-209R			Y		1	10	41.8	95		95			Replace existing Corten MBGR with Single Thrie Beam Barrier and bury anchor post in cut slope
63	SM	92	R14.44	EB	H	R	San Mateo/Hayward/Bay Bridge # 35-054			Y	1		10				25		1	Install nested Single Thrie Beam Barrier in front of existing 30' concrete block and pull box + Install 3' to 10' Type 60 concrete barrier behind the existing pull box + Attach the Type WB MBGR Transition Railing to the new 3' to 10' Type 60 concrete barrier and the existing flare terminal system (SRT)

* To obtain a conservative estimate, a concrete anchor block is assumed (see Std Pln A77J3 for WB, A78G for STB) for all transition railing connections unless otherwise noted in the table
** Upgrade only approach end Transition Railing Terminal Systems.

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

District-County-Route	04-SM-280 & 92
PM	R0.3/M27.1 & R14.4
EA	1G830K
Project ID	0400020615K
Program Code	SHOPP 201.015

PROJECT DESCRIPTION:

Limits: In San Mateo County on Route 280 from San Francisquito Creek UC PM R0.30 to Route 1/280 Separation PM M27.1 and on State Route 92 at PM R14.4.

Proposed Improvement: It is proposed to install Type WB or Type STB transition railing at existing metal beam guard railing (MBGR) that are connected to bridge approach railing or concrete barrier at various locations on State Routes 280 and 92 in San Mateo County.

Alternative: Build Alternative

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$	2,817,591
TOTAL STRUCTURE ITEMS	$	0.00
SUBTOTAL CONSTRUCTION COSTS	$	2,817,591
TOTAL RIGHT OF WAY ITEMS	$	28,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$	2,845,591
USE	$	2,850,000

Reviewed by District Program Manager _____ (Signature)

Approved by Project Manager _____ (Signature) Date 9/15/11

Phone No. (510) 286-4892

District-County-Route	04-SM-280 & 92
PM	R0.3/M27.1 & R14.4
EA	1G830K
Project ID	0400020615K

I. ROADWAY ITEMS

Section 1 Earthwork

	Quantity	Unit	Unit Price	Item Cost	Section Cost
Roadway Excavation			$	$ 0	
Imported Borrow			$	$	
Clearing & Grubbing	1	LS	$ 40000	$ 40000	
Develop Water Supply			$	$	
Top Soil Reapplication			$	$	
Stepped Slopes and Slope Rounding (Contour Grading)			$	$	
Remove Concrete			$	$ 0	

Subtotal Earthwork $ 40,000

Section 2 Pavement Structural Section

	Quantity	Unit	Unit Price	Item Cost	Section Cost
PCC Pavement (___Depth)			$	$	
PCC Pavement (___Depth)			$	$	
Hot Mix Ashpalt (Type A)	98.7	TON	$ 180	$ 17766	
Lean Concrete Base			$	$	
Cement-Treated Base			$	$	
Aggregate Base (Class 3)			$	$ 0	
Treated Permeable Base			$	$	
Aggregate Sub base			$	$	
Pavement Reinforcing Fabric			$	$	
Asphalt Concrete (AC Dike Type E)	3765	LF	$ 5	$ 18825	
Edge Drains			$	$	

Subtotal Pavement Structural Section $ 36591

Section 3 Drainage

	Quantity	Unit	Unit Price	Item Cost	Section Cost
Large Drainage Facilities			$	$	
Storm Drains			$	$	
Pumping Plants			$	$	
Project Drainage (X-Drains, overside, etc.)	1	LS	$ 20000	$ 20000	

Subtotal Drainage $ 20,000

District-County-Route	04-SM-280 & 92
PM	R0.3/M27.1 & R14.4
EA	1G830K
Project ID	0400020615K

Section 4: Specialty Items

	Quantity	Unit	Unit Price	Item Cost	Section Cost
Retaining Walls			$	$	
Noise Barriers			$	$	
Barriers and Guardrails			$	$	
ADL soil	200	CY	$ 250	$ 50000	
Water Pollution Control	1	LS	$ 70000	$ 70000	
Hazardous Waste Investigation and/or Mitigation Work	1	LS	$ 25000	$ 25000	(2.5% const. cost)
Temporary K-Rail			$	$ 0	
Temporary Crash Cushion			$	$ 0	
Environmental Compliance	1	LS	$ 28000	$ 28000	(1% const. cost)
Resident Engineer Office			$	$	

Subtotal Specialty Items $ 173,000

Section 5: Traffic Items

	Quantity	Unit	Unit Price	Item Cost	Section Cost
Lighting			$	$	
Traffic Delineation Items			$	$	
Traffic Signals			$	$	
Overhead Sign Structures			$	$	
Roadside Signs			$	$	
Traffic Control Systems	1	LS	$ 300000	$ 300000	
Transportation Management Plan	1	LS	$ 190000	$ 190000	
Temporary Detection System			$	$	
Staging			$	$ 0	
Thermoplastic Traffic Stripe			$	$ 0	
Remove Channelizer			$	$ 0	
Remove Traffic Stripe			$	$ 0	
Remove Pavement Marker			$	$	

Subtotal Traffic Items $ 490,000

District-County-Route	04-SM-280 & 92
PM	R0.3/M27.1 & R14.4
EA	1G830K
Project ID	0400020615K

Section 6 Planting and Irrigation

	Quantity	Unit	Unit Price	Item Cost	Section Cost
Highway Planting			$	$	
Replacement Planting			$	$ 0	
Irrigation Modification			$	$	
Relocate Existing Irrigation Facilities			$	$	
Irrigation Crossovers			$	$	
			$	$	
Subtotal Planting and Irrigation Section					$ 0

Section 7: Roadside Management and Safety Section

	Quantity	Unit	Unit Price	Item Cost	Section Cost
Vegetation Control-Minor Concrete	2400	SQYD	$ 65	156000	
Concrete Anchor Blocks (10 LF/Block)	630	LF	$ 500	$ 315000	
Remove existing MBGR	5340	LF	$ 10	53400	
Metal Beam Guard Rail-Wood Post	2530	LF	$ 38	96140	
Alternative Flared Terminal System	16	EA	$ 2600	41600	
Transition Railing -Type WB	51	EA	$ 3500	178500	
Transition Railing -Type STB	12	EA	$ 4750	57000	
Single Thrie Beam Barrier	1260	LF	$ 40	50400	
Gore Area Pavement			$	$	
Pavement beyond the gore area			$	$	
Miscellaneous Paving			$	$	
Erosion Control			$	$ 0	
Slope Protection			$	$	
Side Slopes/Embankment			$	$	
Relocating roadside facilities/features			$	$	
Subtotal Roadside Management and Safety Section					$ 948,040

TOTAL SECTIONS: 1 thru 7 $ 1,707,631

District-County-Route 04-SM-280 & 92
PM R0.3/M27.1 & R14.4
EA 1G830K
Project ID 0400020615K

Section 8: Minor Items

$ 1,707,631 X 10 % = $ 170,763

(Subtotal Sections 1 thru 7)

TOTAL MINOR ITEMS $ 170,763

Section 9: Roadway Mobilization

$ 1,878,394 X 10 % = $ 187,839

(Subtotal Sections 1 thru 8)

TOTAL ROADWAY MOBILIZATION $ 187,839

Section 10 Roadway Additions

Supplemental Work

$ 1,878,394 X 10 % = $ 187,839

(Subtotal Sections 1 thru 8)

Contingencies

$ 1,878,394 X 30 % = $ 563,518

(Subtotal Sections 1 thru 8)

TOTAL ROADWAY ADDITIONS $ 751,358

TOTAL ROADWAY ITEMS $ 2,817,591
(Subtotal Sections 1 thru 10)

Estimate Prepared By Oscar Portocarrero Phone # (510) 286-6329 Date 8/24/2011
(Print Name)

Estimate Checked By Warwick W.T. Cheung Phone # (510) 622-0155 Date 8/24/2011
(Print Name)

District-County-Route 04-SM-280 & 92
PM R0.3/M27.1 & R14.4
EA 1G830K
Project ID 0400020615K

II. STRUCTURES ITEMS

	Structure (1)	Structure (2)	Structure (3)
Bridge Name			
Structure Type			
Width (out to out) - (ft)			
Span Lengths - (ft)			
Total Area - (ft2)			
Footing Type (pile/spread)			
Cost Per ft2 (incl. 10% mobilization and 25% contingency)	$		
Total Cost for Structure	$		

SUBTOTAL STRUCTURES ITEMS $ _____
(Sum of Total Cost for Structures)

Railroad Related Costs:

SUBTOTAL RAILROAD ITEMS $ 0

TOTAL STRUCTURES ITEMS $ _____
(Sum of Structures Items plus Railroad Items)

COMMENTS: _____

Estimate Prepared By _____ Phone # _____ Date _____
(Print Name)

NOTE: If appropriate, attach additional pages and backup.

District-County-Route 04-SM-280 & 92
PM R0.3/M27.1 & R14.4
EA 1G830K
Project ID 0400020615K

III. RIGHT OF WAY ITEMS

	ESCALATED
A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	$
Project Permit Fees	$
Grantor's Appraisal Cost	$
B. Utility Relocation	$
C. Relocation Assistance	$
D. Clearance/Demolition	$
E. Title and Escrow Fees	$
1% of Construction Capital Cost	$ 28000

TOTAL RIGHT OF WAY ITEMS (Escalated Value) $ 28,000

Anticipated Date of Right of Way Certification (Date to which Values are Escalated) Jun-13

F. Construction Contract Work

Brief Description of Work: _____

Right of Way Branch Cost Estimate for Work * $ 0

* This dollar amount is to be included in the Roadway and/or Structures Items of Work, as

COMMENTS: _____

Estimate Prepared By Oscar Portocarrero (Print Name) Phone # (510)286-6329 Date _____

NOTE: If appropriate, attach additional pages and backup.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

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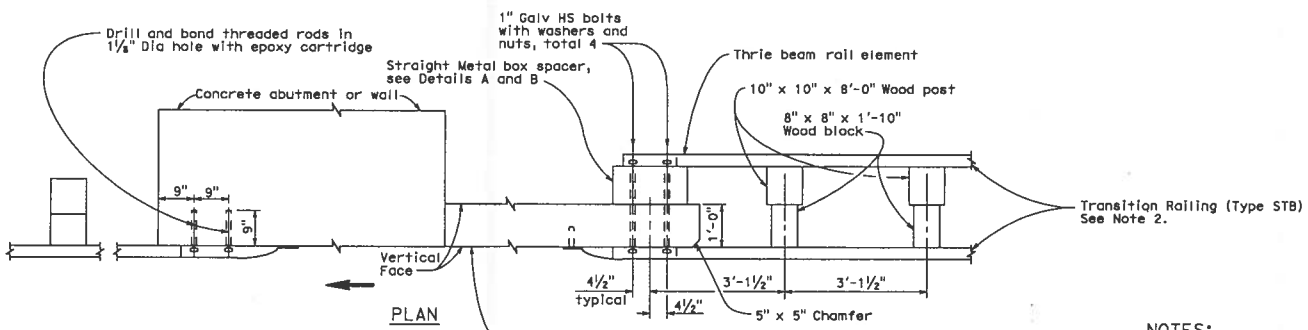
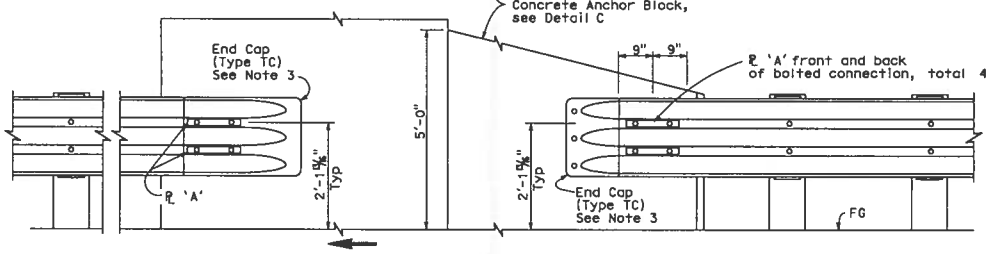
REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-07 — CIVIL — STATE OF CALIFORNIA

To get to the Caltrans web site, go to: http://www.dot.ca.gov





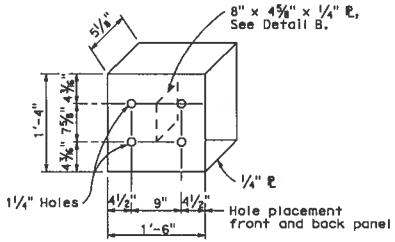
CONNECTION DETAIL 3A

CONNECTION DETAIL 4A
See Note 2

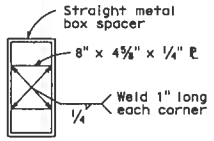
SINGLE THRIE BEAM BARRIER CONNECTION TO ABUTMENT OR WALL

NOTES:

1. These connection details apply to concrete abutments and walls. For additional connections details, see Project Plans.
2. For additional details of Transition Railing (Type STB), see Standard Plan A78J. Transition Railing (Type STB) transitions the standard 12 gage single thrie beam barrier to a heavier gage single thrie beam railing section then to a heavier gage nested double thrie beam barrier section which then is connected to the concrete anchor block.
3. For details of End Cap (Type TC), see Standard Plan A78C1.
4. Direction of adjacent traffic indicated by ⟶.

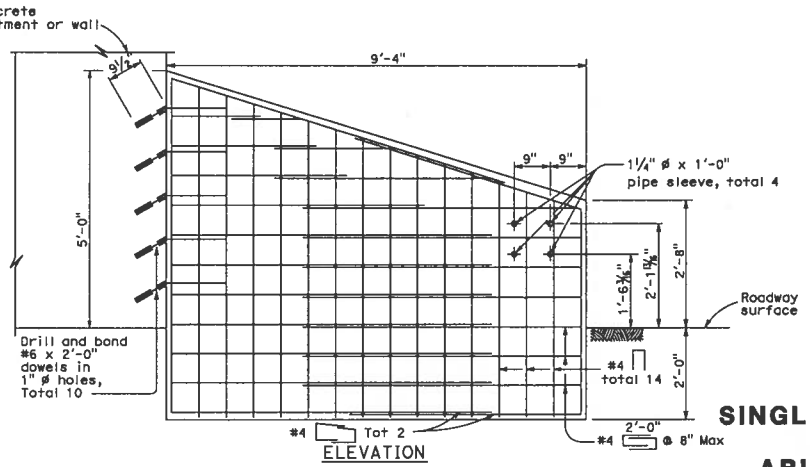


DETAIL A



DETAIL B

STRAIGHT METAL BOX SPACER



ANCHOR BLOCK FOR TRANSITION RAILING CONNECTION

DETAIL C

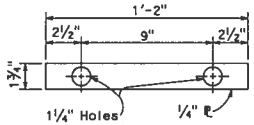


PLATE 'A'

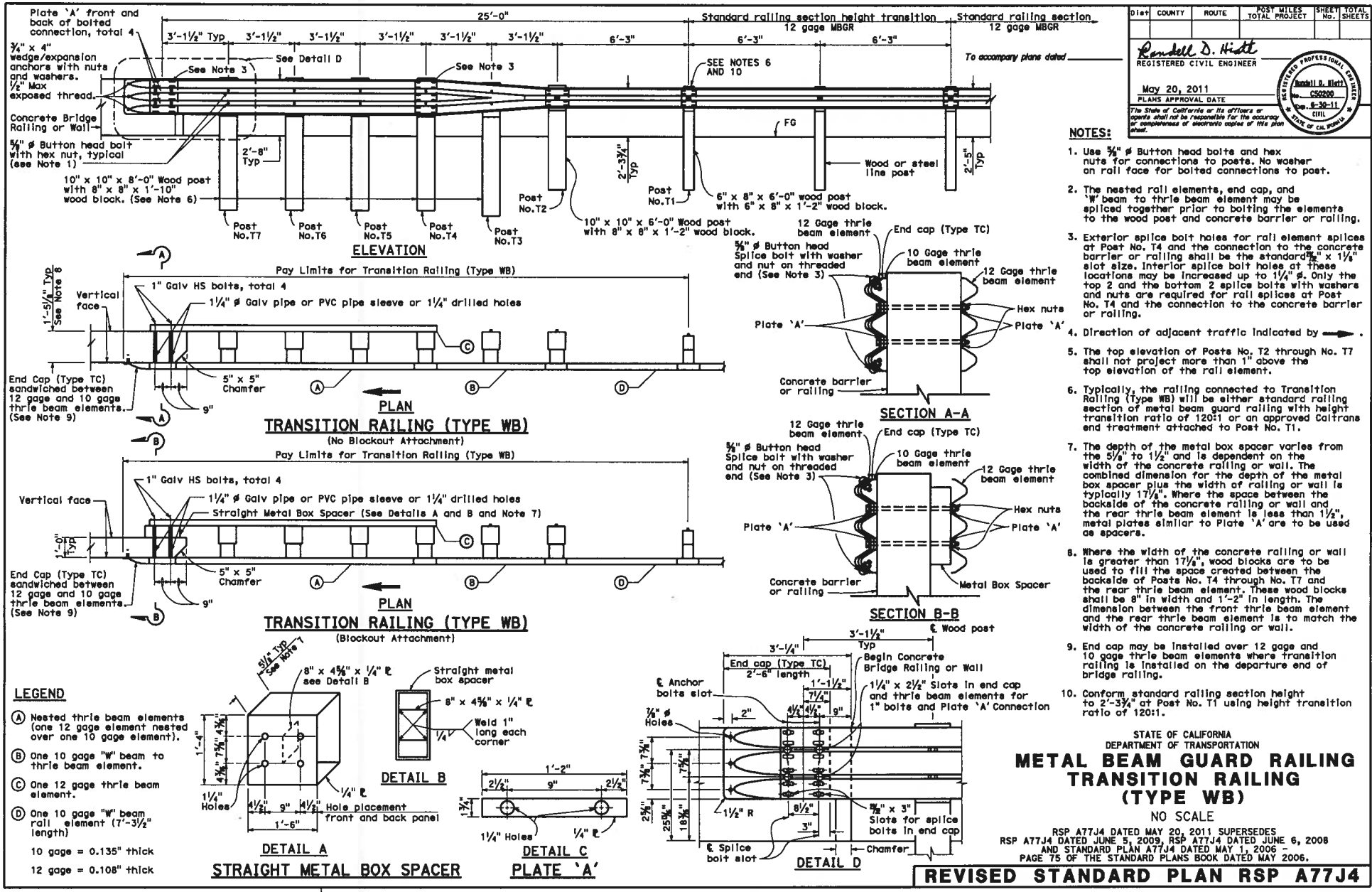
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SINGLE THRIE BEAM BARRIER CONNECTIONS TO ABUTMENTS AND WALLS

NO SCALE

A78G

2-6-06



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

NOTES:

1. Use ⅝" ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
3. Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard ⅞" x 1⅛" slot size. Interior splice bolt holes at these locations may be increased up to 1¼" ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
4. Direction of adjacent traffic indicated by ⟶ .
5. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing with height transition ratio of 120:1 or an approved Caltrans end treatment attached to Post No. T1.
7. The depth of the metal box spacer varies from the 5⅛" to 1½" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17⅛". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1½", metal plates similar to Plate 'A' are to be used as spacers.
8. Where the width of the concrete railing or wall is greater than 17⅛", wood blocks are to be used to fill the space created between the backside of Posts No. T4 through No. T7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
9. End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.
10. Conform standard railing section height to 2'-3¾" at Post No. T1 using height transition ratio of 120:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TRANSITION RAILING (TYPE WB)

NO SCALE

RSP A77J4 DATED MAY 20, 2011 SUPERSEDES RSP A77J4 DATED JUNE 5, 2009, RSP A77J4 DATED JUNE 6, 2008 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 - PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J4

2006 REVISED STANDARD PLAN RSP A77J4

5-14-09