

MADERA STATION RELOCATION PROJECT

APPENDIX F
PRELIMINARY PROJECT CAPITAL
COST ESTIMATES

SAN JOAQUIN JOINT POWERS AUTHORITY

October 2020

Madera Station Relocation Project - Preliminary Cost Estimate Summary 20-Aug-20

Item Code	<u>Description</u>	Construction Cost	Project Cost
MS-1	PHASE 1 - SAN JOAQUINS RELOCATED STATION	\$18,900,314	\$24,910,614
MS-2	PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (ACCESS ROAD)	\$22,327,288	\$29,427,365
MS-3	PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (HSR PLATFORM & PARKING AREA EXPANSION)	\$7,725,838	\$10,182,655
MS-4	PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (HSR TRACK)	\$49,567,609	\$65,330,109
Project To	tal .	\$98,521,049	\$129,850,742
Note:			
If intrusion p	rotection is needed for the HSR Station Track (ADD)	\$10,800,000	\$14,234,400

20-Aug-20

MS-1

PHASE 1 - SAN JOAQUINS RELOCATED STATION

20-Aug-20

MS-2

PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (ACCESS ROAD)

Item Description	Construction Cost
Civil Works Track, Signal & Train Control Structures Stations Right of Way	\$14,998,503 \$0 \$3,780,000 \$0 \$1,537,500
Subtotal Escalation from 2017 to 2020 (9.9%)	\$20,316,003 \$22,327,288
Project Cost	\$29,427,365

20-Aug-20

MS-3

PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (HSR PLATFORM & PARKING AREA EXPANSION)

<u>Item Description</u>	Construction Cost
Civil Works Track, Signal & Train Control Structures Stations Right of Way	\$880,874 \$0 \$0 \$6,149,006 \$0
Subtotal Escalation from 2017 to 2020 (9.9%)	\$7,029,880 \$7,725,838
Project Cost	\$10,182,655

20-Aug-20

MS-4

PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (HSR TRACK)

Project Cost	\$65,330,109
Subtotal Escalation from 2017 to 2020 (9.9%)	\$45,102,465 \$49,567,609
Right of Way	\$615,000
Stations	\$0
Structures	\$3,141,320
Track, Signal & Train Control	\$35,833,511
Civil Works	\$5,512,634
<u>Item Description</u>	Construction Cost

DATE

Rev 3

Rev 2

Rev 4

Rev1 8/20/2020

MS-1 PHASE 1 - SAN JOAQUINS RELOCATED STATION

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SCC Codes	Estimate Quantity	DESCRIPTION	UNITS	UNIT COSTS	BASE COST	CONTINGENCY	TOTAL PRICE
		CIVIL WORKS					
40.01	14.2 C	LEAR & GRUB LIGHT	AC	\$2,500	\$35,500	40.00%	\$49,700
40.01	C	LEAR & GRUB HEAVY	AC	\$5,000	\$0	30.00%	\$0
40.01	D	EMOLITION	SF	\$8	\$0	30.00%	\$0
40.01	33260 E	ARTHWORK COMMON	BCY	\$25	\$831,500	30.00%	\$1,080,950
40.01	E	ARTHWORK (EXCAVATION	BCY	\$50	\$0	30.00%	\$0
40.01	Е	MBANKMENT [°]	FCY	\$10	\$0	30.00%	\$0
40.01	8000 B	ORROW	FCY	\$25	\$200,000	30.00%	\$260,000
40.01	R	EMOVE HOV LANE CONTF	LF	\$400	\$0	30.00%	\$0
40.07	R	ECONSTRUCT FREEWAY L	SF	\$100	\$0	50.00%	\$0
40.01	S	TRUCTURE EXCAVATION	CY	\$40	\$0	25.00%	\$0
40.05	R	ETAINING WALLS (0 TO 10	SF	\$35	\$0	20.00%	\$0
40.05	R	ETAINING WALLS (10 TO 2	SF	\$60	\$0	30.00%	\$0
10.08	S	OIL NAIL WALLS	SF	\$70	\$0	30.00%	\$0
10.08	M	ISEWALL ROADWAY	SF	\$55	\$0	25.00%	\$0
40.05	S	OUND WALL	LF	\$90	\$0	50.00%	\$0
40.02	В	OX CULVERT	CY	\$1,000	\$0	30.00%	\$0
40.02	В	OX CULVERT	CY	\$1,000	\$0	30.00%	\$0
40.02	41752 D	RAINAGE (DIA-INCH-FOO)	LF	\$12	\$501,027	40.00%	\$701,438
40.02	D	RAINAGE (DIA-INCH-FOO)	LF	\$12	\$0	40.00%	\$0
40.01	II.	MPORTED BORROW ROADV	CY	\$25	\$0	25.00%	\$0
40.07	165849 R	COADWAY CONSTRUCTION	SF	\$27	\$4,477,924	25.00%	\$5,597,405
40.07	Α	GGREGATE BASE ROADW	CY	\$45	\$0	25.00%	\$0
40.07	Α	SPHALT CONCRETE ROAD	TONS	\$65	\$0	25.00%	\$0
40.07	С	CONCRETE PAVEMENT	CY	\$210	\$0	20.00%	\$0
40.07	G	GUARD RAIL ROADWAY	LF	\$30	\$0	25.00%	\$0
40.07	Α	SPHALT DIKES ROADWAY	LF	\$4	\$0	25.00%	\$0
40.07	S	TREET RESTORATIONS	SF	\$15	\$0	40.00%	\$0
50.02	S	IGNALLED STREET TRAFFIC	EACH	\$300,000	\$0	20.00%	\$0
50.02	M	ODIFIED TRAFFIC SIGNAL	EACH	\$100,000	\$0	20.00%	\$0
40.02	40 S	TREET LIGHTING	EACH	\$4,500	\$180,000	20.00%	\$216,000

\$9,054,493

	TRAFFIC CONTROL	DAYS	\$1,200	\$0	50.00%	\$0	1
	LUNIOD CONJODETTE			40	00.0070	ΨΟ	
	MINOR CONCRETE	CY	\$400	\$0	30.00%	\$0	
	K RAIL TEMPORARY	LF	\$30	\$0	30.00%	\$0	
	CONCRETE BARRIER	LF	\$50	\$0	30.00%	\$0	
	STRIPPING	LF	\$1	\$0	20.00%	\$0	
40.06	1000 PERMANENT FENCING	LF	\$35	\$35,000	20.00%	\$42,000	
	VEHICULAR FENCE GATES	EACH	\$2,000	\$0	20.00%	\$0	
40.04	9000 SILT FENCE and ORANGE FE	LF	\$15	\$135,000	20.00%	\$162,000	
40.04	EROSION CONTROL TEMPOF	SF	\$7	\$0	30.00%	\$0	
40.06	10000 LANDSCAPING PERMANENT	SY	\$15	\$150,000	30.00%	\$195,000	
40.02	1 UTILITY ALLOCATION	LS	\$750,000	\$750,000	0.00%	\$750,000	
40.02	DEVELOP PERMANENT WAT	LS	\$100,000	\$0	30.00%	\$0	
40.02	YARD LIGHTING	EACH	\$2,500	\$0	20.00%	\$0	
	TRACK WORK						\$2,061,549
40.01	488 REMOVE EXISTING TRACK	TF	\$40	\$19,520	20.00%	\$23,424	
40.01	REMOVE EXISTING TURNOUT	EACH	\$25,000	\$0	10.00%	\$0	
10.11	SHIFT EXISTING TRACK	TF	\$100	\$0	20.00%	\$0	
10.11	UPGRADE EXISTING TRACK	TF	\$300	\$0	20.00%	\$0	
10.11	1853 TRACK (INCL RAIL, CONCRE	TF	\$500	\$926,500	25.00%	\$1,158,125	
10.11	TRACK (INCL RAIL, WOOD T	TF	\$450	\$0	25.00%	\$0	
10.12	GRADE CROSSING TRACK C	TF	\$750	\$0	20.00%	\$0	
10.12	TRACK PANELS	SF	\$75	\$0	30.00%	\$0	
10.12	CROSSOVER No.15	EACH	\$800,000	\$0	20.00%	\$0	
10.12	CROSSOVER No.20	EACH	\$1,000,000	\$0	20.00%	\$0	
10.12	TURNOUT (#7)	EACH	\$200,000	\$0	10.00%	\$0	
10.12	TURNOUT (#8)	EACH	\$210,000	\$0	10.00%	\$0	
10.12	TURNOUT (#9)	EACH	\$220,000	\$0	10.00%	\$0	
10.12	TURNOUT (#10)	EACH	\$250,000	\$0	10.00%	\$0	
10.12	TURNOUT (#14)	EACH	\$325,000	\$0	10.00%	\$0	
10.12	TURNOUT (#15)	EACH	\$350,000	\$0	10.00%	\$0	
10.12	2 TURNOUT (#20)	EACH	\$400,000	\$800,000	10.00%	\$880,000	
10.12	TURNOUT (#24)	EACH	\$450,000	\$0	10.00%	\$0	
10.12	DIAMOND CROSSING	EACH	\$500,000	\$0	10.00%	\$0	
10.12	DERAIL	EACH	\$100,000	\$0	10.00%	\$0	
10.12	BUMPING POST	EACH	\$25,000	\$0	20.00%	\$0	
10.11	UPGRADE MAINTRACK TO C	TF	\$100	\$0	30.00%	\$0	
	SIGNAL WORK						\$1,428,000
50.02	PEDESTRIAN GATES & SIGN	EACH	\$100,000	\$0	20.00%	\$0	
50.02	CANTILEVER SIGNAL	EACH	\$200,000	\$0	20.00%	\$0	

50.01	2 DOG HOUSE (Signal House)	EACH	\$250,000	\$500,000	20.00%	\$600,000	
40.02	2 NEW ELECTRIC SERVICE	EACH	\$20,000	\$40,000	20.00%	\$48,000	
50.01	NEW INTERMEDIATE SIGNAL:	EACH	\$150,000	\$0	20.00%	\$0	
50.01	NEW INTERMEDIATE SIGNAL:	EACH	\$300,000	\$0	20.00%	\$0	
50.01	2 NEW TURNOUT SIGNAL	EACH	\$325,000	\$650,000	20.00%	\$780,000	
50.01	NEW CROSSOVER SIGNALL	EACH	\$500,000	\$0	20.00%	\$0	
50.02	NEW GRADE CROSSING SIG	EACH	\$250,000	\$0	20.00%	\$0	
50.02	NEW CROSSING GATES & S	EACH	\$400,000	\$0	20.00%	\$0	
50.01	UPGRADE SIGNALS TO CLA	MILE	\$200,000	\$0	30.00%	\$0	
	BRIDGE STRUCTURES	3					\$0
40.01	BRIDGE REMOVAL	SF	\$200	\$0	50.00%	\$0	
10.04	RAILROAD SHORT BRIDGE (SF	\$400	\$0	30.00%	\$0	
10.04	RAILROAD AERIAL GUIDEWA	SF	\$500	\$0	30.00%	\$0	
10.04	RAILROAD BRIDGE STEEL	SF	\$500	\$0	30.00%	\$0	
10.04	HIGHWAY BRIDGE CONCRET	SF	\$400	\$0	50.00%	\$0	
10.04	HIGHWAY BRIDGE STEEL.	SF	\$500	\$0	30.00%	\$0	
10.04	TRESTLE BRIDGE STEEL	SF	\$550	\$0	30.00%	\$0	
10.04	PEDESTRIAN BRIDGE	SF	\$400	\$0	30.00%	\$0	
	BARRIER RAIL PERMANENT	LF	\$100	\$0	25.00%	\$0	
10.06	UNDERPASS STRUCTURE	CY	\$750	\$0	25.00%	\$0	
	TRAIN CONTROL						\$0
50.01	POSITIVE TRAIN CONTROL	MILE	\$2,000,000	\$0	25.00%	\$0	
50.01	TRAIN CONTROL SYSTEM	EACH	\$200,000	\$0	30.00%	\$0	
50.01	TRAIN CONTROL CABLING	LF	\$12	\$0	30.00%	\$0	
50.01	TRAIN CONTROL DIGITAL C	EACH	\$500,000	\$0	40.00%	\$0	
50.01	COMPUTER TRAFFIC MANAC	LS	\$1,500,000	\$0	30.00%	\$0	
40.02	COMMERCIAL ELECTRICAL S	EACH	\$50,000	\$0	25.00%	\$0	
40.02	LINE UTILITIES WITHIN TRACF	LF	\$30	\$0	30.00%	\$0	
40.02	LINE UTILITIES CROSSING TR	EACH	\$2,500	\$0	30.00%	\$0	
40.02	LINE UTILITIES FIBER OPTIC	LF	\$50	\$0	30.00%	\$0	
	STATIONS						\$4,003,696
20.01	TYPE A SMALL INTERMODE	EACH	##########	\$0	20.00%	\$0	
20.01	TYPEK LARGE INTERMODEL	EACH	###########	\$0	50.00%	\$0	
20.01	9000 STATION PLATFORM STRUC	SF	\$200	\$1,800,000	20.00%	\$2,160,000	
20.01	2400 STATION SHELTERS / BUILDI	SF	\$75	\$180,000	20.00%	\$216,000	
20.01	STATION PLATFORM STRUC	SF	\$300	\$0	20.00%	\$0	

40.01 20.01 30.02 40.07 20.06 40.07 40.02 20.07	1 STATION PRIMARY ELECTRIC STATION AMENITIES 30430 SIDEWALK 102 PARKING LOTS PARKING STRUCTURES 22245 BUS LANE AND UNLOADING 102 PARKING LOT LIGHTING ELEVATORS	EACH SF SF SPACES SPACES SF SPACES EACH	\$50,000 \$65 \$10 \$3,000 \$20,000 \$25 \$750 \$450,000	\$50,000 \$0 \$304,300 \$306,000 \$0 \$556,125 \$76,500	10.00% 30.00% 30.00% 25.00% 25.00% 30.00% 25.00%	\$55,000 \$0 \$395,590 \$382,500 \$0 \$695,156 \$99,450 \$0	
20.07	ESCALATOR	EACH	\$300,000	\$0	25.00%	\$0	
	RIGHT OF WAY						\$650,000
60.01 60.01 60.01 60.01 60.01 60.01 60.01	ROW LAND ONLY 260000 ROW AGRICULTURAL ROW ORCHARDS ROW PAVED AREAS ROW RESIDENTIAL AREA ROW LIGHT INDUSTRIAL ARI ROW HEAVY INDUSTRIAL AI BUSINESS RELOCATIONS (Value of business, relocation,goodw ill, legal,appraisal,etc.)	SF SF SF SF SF SF VALUE	\$4 \$2 \$6 \$8 \$10 \$14 \$16 \$1	\$0 \$520,000 \$0 \$0 \$0 \$0 \$0 \$0	25.00% 25.00% 25.00% 25.00% 25.00% 25.00% 25.00% 0.00%	\$0 \$650,000 \$0 \$0 \$0 \$0 \$0 \$0	
	TUNNEL CONSTRUCTION	ON					\$0
	TUNNELING CONSTRUCTION TUNNELING CONSTRUCTION SINGLE BORE RESTORE (DIA) TWIN BORE RESTORE (DIA)	LF LF LF LF	\$12,000 \$12,000	\$0 \$0 \$0 \$0	30.00% 30.00% 30.00% 30.00%	\$0 \$0 \$0 \$0	
	\$0						
	BART INTERFACE CALTRANS INTERFACE WOF	DAYS DAYS	\$900 \$900	\$0 \$0	20.00% 20.00%	\$0 \$0	
	ROLLING STOCK						\$0
	ROLLING STOCK DMU EQUIF	EACH	\$8,000,000	\$0	0.00%	\$0	

TOTAL CONSTRUCTION COST	\$17,197,738
Escalation from 2017 to 2020 (9.9%)	\$18,900,314
Project Cost	\$24,910,614

216000

Rev 1 Rev 2 Rev 3

Rev 4

8/20/2020

MS-2 PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (ACCESS ROAD)

SCC Codes	CODE	Estimate Quantity	DESCRIPTION	UNITS	UNIT COSTS	BASE COST	ONTINGEN	OTAL PRICE	SUB TOTAL WORK ELEMENT
			CIVIL WORKS						\$14,998,503
40.01	40.01	12	CLEAR & GRUB LIGHT	AC	\$2,500	\$30,000	40.00%	\$42,000	
40.01	40.02		CLEAR & GRUB HEAVY	AC	\$5,000	\$0	30.00%	\$0	
40.01	40.03		DEMOLITION	SF	\$8	\$0	30.00%	\$0	
40.01	40.04	25000	EARTHWORK COMMON	BCY	\$25	\$625,000	30.00%	\$812,500	
40.01	40.05		EARTHWORK (EXCAVATION ROCK)	BCY	\$50	\$0	30.00%	\$0	
40.01	40.01		EMBANKMENT	FCY	\$10	\$0	30.00%	\$0	
40.01		40000	BORROW	FCY	\$25	\$1,000,000	30.00%	\$1,300,000	
40.01			REMOVE HOV LANE CONTROLS SYSTEM	LF	\$400	\$0	30.00%	\$0	
40.07			RECONSTRUCT FREEWAY LANE 580	SF	\$100	\$0	50.00%	\$0	
40.01			STRUCTURE EXCAVATION	CY	\$40	\$0	25.00%	\$0	
40.05			RETAINING WALLS (0 TO 10 FEET TALL)	SF	\$35	\$0	20.00%	\$0	
40.05			RETAINING WALLS (10 TO 20 FEET TALL)	SF	\$60	\$0	30.00%	\$0	
10.08		8400	SOIL NAIL WALLS	SF	\$70	\$588,000	30.00%	\$764,400	
10.08			MSE WALL ROADWAY	SF	\$55	\$0	25.00%	\$0	
40.05			SOUND WALL	LF	\$90	\$0	50.00%	\$0	
40.02			BOX CULVERT	CY	\$1,000	\$0	30.00%	\$0	
40.02			BOX CULVERT	CY	\$1,000	\$0	30.00%	\$0	
40.02		35284	DRAINAGE (DIAINCH-FOOT) - Including Storm W	LF	\$12	\$423,403	40.00%	\$592,764	
40.02	40.05		DRAINAGE (DIAINCH-FOOT)	LF	\$12	\$0	40.00%	\$0	
40.01	40.05		IMPORTED BORROW ROADWAY	CY	\$25	\$0	25.00%	\$0	
40.07		319373	ROADWAY CONSTRUCTION (BASE, PAVE, FINIS	SF	\$27	\$8,623,071	25.00%	##########	
40.07	41.01		AGGREGATE BASE ROADWAY	CY	\$45	\$0	25.00%	\$0	
40.07	41.05		ASPHALT CONCRETE ROADWAY	TONS	\$65	\$0	25.00%	\$0	
40.07	30.02		CONCRETE PAVEMENT	CY	\$210	\$0	20.00%	\$0	
40.07	30.02		GUARD RAIL ROADWAY	LF	\$30	\$0	25.00%	\$0	
40.07	41.01		ASPHALT DIKES ROADWAY	LF	\$4	\$0	25.00%	\$0	
40.07	41.01		STREET RESTORATIONS	SF	\$15	\$0	40.00%	\$0	
50.02	41.01		SIGNALLED STREET TRAFFIC CONTROL	EACH	\$300,000	\$0	20.00%	\$0	
50.02		1	MODIFIED TRAFFIC SIGNAL	EACH	\$150,000	\$150,000	20.00%	\$180,000	
40.02	41.01	10	STREET LIGHTING	EACH	\$4,500	\$45,000	20.00%	\$54,000	
	41.01		TRAFFIC CONTROL	DAYS	\$1,200	\$0	50.00%	\$0	
	41.01		MINOR CONCRETE	CY	\$400	\$0	30.00%	\$0	
			K RAIL TEMPORARY	LF	\$30	\$0	30.00%	\$0	
	41.01		CONCRETE BARRIER	LF	\$50	\$0	30.00%	\$0	
	41.01		STRIPPING	LF	\$1	\$0	20.00%	\$0	

40.06	20.3	PERMANENT FENCING	LF	\$35	\$0	20.00%	\$0	
		VEHICULAR FENCE GATES	EACH	\$2,000	\$0	20.00%	\$0	
40.04	50.02	5000 SILT FENCE and ORANGE FENCE	LF	\$15	\$75,000	20.00%	\$90,000	
40.04		EROSION CONTROL TEMPORARY	SF	\$7	\$0	30.00%	\$0	
40.06	41.01	12000 LANDSCAPING PERMANENT	SY	\$15	\$180,000	30.00%	\$234,000	
40.02		1 UTILITY ALLOCATION	LS	\$150,000	\$150,000	0.00%	\$150,000	
40.02		DEVELOP PERMANENT WATER SUPPLY	LS	\$100,000	\$0	30.00%	\$0	
40.02		YARD LIGHTING	EACH	\$2,500	\$0	20.00%	\$0	
		TRACK WORK						\$0
40.01	10.03	REMOVE EXISTING TRACK	TF	\$40	\$0	20.00%	\$0	
40.01	10.03	REMOVE EXISTING TURNOUTS	EACH	\$25,000	\$0	10.00%	\$0	
10.11	10.03	SHIFT EXISTING TRACK	TF	\$100	\$0	20.00%	\$0	
10.11	10.03	UPGRADE EXISTING TRACK	TF	\$300	\$0	20.00%	\$0	
10.11	10.11	TRACK (INCL RAIL, CONCRETE TIES, BALLAST 8	TF	\$500	\$0	25.00%	\$0	
10.11	10.11	TRACK (INCL RAIL, WOOD TIES, BALLAST & SUE	TF	\$450	\$0	25.00%	\$0	
10.11	10.12	GRADE CROSSING TRACK COMPLETE (T+T+B+S)	TF	\$750	\$0	20.00%	\$0	
10.12	10.12	TRACK PANELS	SF	\$75	\$0 \$0	30.00%	\$0	
10.12	10.12	CROSSOVER No.15	EACH	\$800,000	\$0 \$0	20.00%	\$0	
10.12	10.12	CROSSOVER No.13	EACH	\$1,000,000	\$0 \$0	20.00%	\$0	
10.12	10.12	TURNOUT (#7)	EACH	\$200,000	\$0 \$0	10.00%	\$0	
10.12	10.12	TURNOUT (#8)	EACH	\$210,000	\$0 \$0	10.00%	\$0	
10.12	10.12	TURNOUT (#8)	EACH	\$220,000	\$0 \$0	10.00%	\$0	
10.12	10.12	TURNOUT (#10)	EACH	\$250,000	\$0 \$0	10.00%	\$0	
10.12	10.12	TURNOUT (#10)	EACH	\$325,000	\$0 \$0	10.00%	\$0 \$0	
10.12	10.12	TURNOUT (#14)	EACH	\$350,000	\$0 \$0	10.00%	\$0 \$0	
10.12	10.12	, ,	EACH		\$0 \$0	10.00%		
10.12	10.12	TURNOUT (#20) TURNOUT (#24)	EACH	\$400,000 \$450,000	\$0 \$0	10.00%	\$0 \$0	
10.12	10.12	DIAMOND CROSSING	EACH	\$500,000 \$500,000	\$0 \$0	10.00%	\$0 \$0	
10.12	10.12	DERAIL	EACH	\$100,000	\$0 \$0	10.00%	\$0	
10.12	10.12	BUMPING POST	EACH	\$25,000	\$0 \$0	20.00%	\$0	
10.12	10.12	UPGRADE MAINTRACK TO CLASS 6	TF	\$100	\$0 \$0	30.00%	\$0	
10.11		OF GRADE WAINTRACK TO CLASS 0	117	\$100	φυ	30.00 /6	φυ	
		SIGNAL WORK						\$0
50.02	50.02	PEDESTRIAN GATES & SIGNALS	EACH	\$100,000	\$0	20.00%	\$0	
50.02	50.02	CANTILEVER SIGNAL	EACH	\$200,000	\$0	20.00%	\$0	
50.01	50.1	DOG HOUSE (Signal House)	EACH	\$250,000	\$0	20.00%	\$0	
40.02	50.15	NEW ELECTRIC SERVICE	EACH	\$20,000	\$0	20.00%	\$0	
50.01	50.02	NEW INTERMEDIATE SIGNALS SINGLE TRACK	EACH	\$150,000	\$0	20.00%	\$0	
50.01	50.02	NEW INTERMEDIATE SIGNALS DOUBLE TRACK	EACH	\$300,000	\$0	20.00%	\$0	
50.01	50.02	NEW TURNOUT SIGNAL	EACH	\$325,000	\$0	20.00%	\$0	
50.01	50.02	NEW CROSSOVER SIGNALLING	EACH	\$500,000	\$0	20.00%	\$0	
50.02	50.02	NEW GRADE CROSSING SIGNALS	EACH	\$250,000	\$0	20.00%	\$0	
50.02	50.02	NEW CROSSING GATES & SIGNALS	EACH	\$400,000	\$0	20.00%	\$0	
50.01	50.02	UPGRADE SIGNALS TO CLASS 6	MILE	\$200,000	\$0	30.00%	\$0	
		BRIDGE STRUCTURES						\$3,780,000

40.01		BRIDGE REMOVAL	SF	\$200	\$0	50.00%	\$0	
10.04		RAILROAD SHORT BRIDGE CONCRETE	SF	\$400	\$0	30.00%	\$0	
10.04		RAILROAD AERIAL GUIDEWAY	SF	\$500	\$0	30.00%	\$0	
10.04		RAILROAD BRIDGE STEEL	SF	\$500	\$0	30.00%	\$0	
10.04		6300 HIGHWAY BRIDGE CONCRETE	SF	\$400	\$2,520,000	50.00% \$3,		
10.04		HIGHWAY BRIDGE STEEL.	SF	\$500	\$0	30.00%	\$0	
10.04		TRESTLE BRIDGE STEEL	SF	\$550	\$0	30.00%	\$0	
10.04		PEDESTRIAN BRIDGE	SF	\$400	\$0	30.00%	\$0	
		BARRIER RAIL PERMANENT	LF	\$100	\$0	25.00%	\$0	
10.06		UNDERPASS STRUCTURE	CY	\$750	\$0	25.00%	\$0	
		TRAIN CONTROL						\$0
50.01		POSITIVE TRAIN CONTROL	MILE	\$2,000,000	\$0	25.00%	\$0	
50.01	50.21	TRAIN CONTROL SYSTEM	EACH	\$200,000	\$0 \$0	30.00%	\$0	
50.01	50.25	TRAIN CONTROL CABLING	LACIT	\$12	\$0 \$0	30.00%	\$0	
50.01	50.2	TRAIN CONTROL DIGITAL CBOSS	EACH	\$500.000	\$0 \$0	40.00%	\$0	
50.01	40.75	COMPUTER TRAFFIC MANAGEMENT	LS	\$1,500,000	\$0	30.00%	\$0	
40.02	50.03	COMMERCIAL ELECTRICAL SERVICE	EACH	\$50,000	\$0	25.00%	\$0	
40.02	30.03	LINE UTILITIES WITHIN TRACKWAY	LF	\$30	\$0	30.00%	\$0	
40.02		LINE UTILITIES CROSSING TRACKS	EACH	\$2,500	\$0	30.00%	\$0	
40.02		LINE UTILITIES FIBER OPTIC PARALLEL TO TRA		\$50	\$0	30.00%	\$0	
		CTATIONS						
		STATIONS						\$0
20.01		TYPE A SMALL INTERMODEL STATION	EACH	\$13,000,000	\$0	20.00%	\$0	
20.01		TYPE K LARGE INTERMODEL STATION	EACH	\$32,000,000	\$0	50.00%	\$0	
20.01	20.01	STATION PLATFORM STRUCTURES NEW	SF	\$200	\$0	20.00%	\$0	
20.01	20.01	STATION SHELTERS / BUILDINGS	SF	\$75	\$0	20.00%	\$0	
20.01	20.01	STATION PLATFORM STRUCTURES UPGRADE	SF	\$300	\$0	20.00%	\$0	
40.01	20.01	STATION PRIMARY ELECTRICAL SERVICE	EACH	\$50,000	\$0	10.00%	\$0	
20.01		STATION AMENITIES	SF	\$65	\$0	30.00%	\$0	
30.02	20.25	SIDEWALK	SF	\$10	\$0	30.00%	\$0	
40.07	20.06	PARKING LOTS	SPACES	\$3,000	\$0	25.00%	\$0	
20.06	20.26	PARKING STRUCTURES	SPACES	\$20,000	\$0	25.00%	\$0	
40.07		BUS LANE AND UNLOADING	SF	\$25	\$0	25.00%	\$0	
40.02		PARKING LOT LIGHTING	SPACES	\$750	\$0	30.00%	\$0	
20.07		ELEVATORS	EACH	\$450,000	\$0	25.00%	\$0	
20.07		ESCALATOR	EACH	\$300,000	\$0	25.00%	\$0	
		RIGHT OF WAY						\$1,537,500
60.01	60.01	ROW LAND ONLY	SF	\$4	\$0	25.00%	\$0	
60.01		615000 ROW AGRICULTURAL	SF	\$2	\$1,230,000	25.00% \$1,		
60.01	60.01	ROW ORCHARDS	SF	\$6	\$0	25.00%	\$0	
60.01		ROW PAVED AREAS	SF	\$8	\$0	25.00%	\$0	
60.01		ROW RESIDENTIAL AREA	SF	\$10	\$0	25.00%	\$0	
60.01		ROW LIGHT INDUSTRIAL AREA	SF	\$14	\$0	25.00%	\$0	

60.01	ROW HEAVY INDUSTRIAL AREA BUSINESS RELOCATIONS (Value of business, relocation,goodwill, legal,appraisal,etc.)	SF VALUE	\$16 \$1	\$0 \$0	25.00% 0.00%	\$0 \$0	
	TUNNEL CONSTRUCTION						\$0
	TUNNELING CONSTRUCTION NEW SINGLE BO TUNNELING CONSTRUCTION NEW TWIN BORE SINGLE BORE RESTORE (DIA)	LF LF LF	\$12,000 \$12,000	\$0 \$0 \$0	30.00% 30.00% 30.00%	\$0 \$0 \$0	
	TWIN BORE RESTORE (DIA) GENERAL SUPPORT ITEMS	LF		\$0	30.00%	\$0	\$0
	BART INTERFACE CALTRANS INTERFACE WORK	DAYS DAYS	\$900 \$900	\$0 \$0	20.00% 20.00%	\$0 \$0	
	RULLING STUCK & CAPITAL INVESTMENTS						\$0
	ROLLING STOCK DMU EQUIPMENT	EACH	\$8,000,000	\$0	0.00%	\$0	
	TOTAL CONSTRUCTION COST						#########
	Escalation from 2017 to 2020 (9.9%)						\$22,327,288
	Project Cost						\$29,427,365

DATE

Rev 2

Rev 3

Rev 4

SUB TOTAL WORK ELEMENT

\$880,874

Rev1 8/20/2020

MS-3 PHASE 2 - HSR INTERIM OPERATING SEGMENT STATION (HSR PLATFORM & PARKING AREA EXPANSION)

SCC Codes	Estimate Quantity	DESCRIPTION	UNITS	UNIT COSTS	BASE COST	CONTINGENCY	TOTAL PRICE
		CIVIL WORKS					
40.01	2.5	CLEAR & GRUB LIGHT	AC	\$2,500	\$6,250	40.00%	\$8,750
40.01		CLEAR & GRUB HEAVY	AC	\$5,000	\$0	30.00%	\$0
40.01		DEMOLITION	SF	\$8	\$0	30.00%	\$0
40.01	5000	EARTHWORK COMMON	BCY	\$25	\$125,000	30.00%	\$162,500
40.01		EARTHWORK (EXCAVATION ROCK)	BCY	\$50	\$0	30.00%	\$0
40.01		EMBANKMENT	FCY	\$10	\$0	30.00%	\$0
40.01		BORROW	FCY	\$25	\$0	30.00%	\$0
40.01		REMOVE HOV LANE CONTROLS SYSTEM	LF	\$400	\$0	30.00%	\$0
40.07		RECONSTRUCT FREEWAY LANE 580	SF	\$100	\$0	50.00%	\$0
40.01		STRUCTURE EXCAVATION	CY	\$40	\$0	25.00%	\$0
40.05		RETAINING WALLS (0 TO 10 FEET TALL)	SF	\$35	\$0	20.00%	\$0
40.05		RETAINING WALLS (10 TO 20 FEET TALL)	SF	\$60	\$0	30.00%	\$0
10.08		SOIL NAIL WALLS	SF	\$70	\$0	30.00%	\$0
10.08		MSE WALL ROADWAY	SF	\$55	\$0	25.00%	\$0
40.05		SOUND WALL	LF	\$90	\$0	50.00%	\$0
40.02		BOX CULVERT	CY	\$1,000	\$0	30.00%	\$0
40.02		BOX CULVERT	CY	\$1,000	\$0	30.00%	\$0
40.02	7351	DRAINAGE (DIA-INCH-FOOT) - Including Storm Wa	LF	\$12	\$88,209	40.00%	\$123,493
40.02		DRAINAGE (DIA-INCH-FOOT)	LF	\$12	\$0	40.00%	\$0
40.01		IMPORTED BORROW ROADWAY	CY	\$25	\$0	25.00%	\$0
40.07	9915	ROADWAY CONSTRUCTION (BASE, PAVE, FINISHE	SF	\$27	\$267,705	25.00%	\$334,631
40.07		AGGREGATE BASE ROADWAY	CY	\$45	\$0	25.00%	\$0
40.07		ASPHALT CONCRETE ROADWAY	TONS	\$65	\$0	25.00%	\$0
40.07		CONCRETE PAVEMENT	CY	\$210	\$0	20.00%	\$0
40.07		GUARD RAIL ROADWAY	LF	\$30	\$0	25.00%	\$0
40.07		ASPHALT DIKES ROADWAY	LF	\$4	\$0	25.00%	\$0
40.07		STREET RESTORATIONS	SF	\$15	\$0	40.00%	\$0
50.02		SIGNALLED STREET TRAFFIC CONTROL	EACH	\$300,000	\$0	20.00%	\$0
50.02		MODIFIED TRAFFIC SIGNAL	EACH	\$150,000	\$0	20.00%	\$0
40.02	10	STREET LIGHTING	EACH	\$4,500	\$45,000	20.00%	\$54,000

	TRAFFIC CONTROL	DAYS	\$1,200	\$0	50.00%	\$0	
	MINOR CONCRETE	CY	\$400	\$0	30.00%	\$0	
	K RAIL TEMPORARY	LF	\$30	\$0	30.00%	\$0	
	CONCRETE BARRIER	LF	\$50	\$0	30.00%	\$0	
	STRIPPING	LF	\$1	\$0	20.00%	\$0	
40.06	PERMANENT FENCING	LF	\$35	\$0	20.00%	\$0	
	VEHICULAR FENCE GATES	EACH	\$2,000	\$0	20.00%	\$0	
40.04	SILT FENCE and ORANGE FENCE	LF	\$15	\$0	20.00%	\$0	
40.04	EROSION CONTROL TEMPORARY	SF	\$7	\$0	30.00%	\$0	
40.06	5000 LANDSCAPING PERMANENT	SY	\$15	\$75,000	30.00%	\$97,500	
40.02	1 UTILITY ALLOCATION	LS	\$100,000	\$100,000	0.00%	\$100,000	
40.02	DEVELOP PERMANENT WATER SUPPLY	LS	\$100,000	\$0	30.00%	\$0	
40.02	YARD LIGHTING	EACH	\$2,500	\$0	20.00%	\$0	
	TRACK WORK						\$0
40.01	REMOVE EXISTING TRACK	TF	\$40	\$0	20.00%	\$0	
40.01	REMOVE EXISTING TURNOUTS	EACH	\$25,000	\$0	10.00%	\$0	
10.11	SHIFT EXISTING TRACK	TF	\$100	\$0	20.00%	\$0	
10.11	UPGRADE EXISTING TRACK	TF	\$300	\$0	20.00%	\$0	
10.11	TRACK (INCL RAIL, CONCRETE TIES, BALLAST & S	TF	\$500	\$0	25.00%	\$0	
10.11	TRACK (INCL RAIL, WOOD TIES, BALLAST & SUBB.	TF	\$450	\$0	25.00%	\$0	
10.11	GRADE CROSSING TRACK COMPLETE (T+T+B+SB+	TF	\$750	\$0 \$0	20.00%	\$0 \$0	
10.12	TRACK PANELS	SF	\$75	\$0 \$0	30.00%	\$0	
10.12	CROSSOVER No.15	EACH	\$800,000	\$0 \$0	20.00%	\$0 \$0	
10.12	CROSSOVER No.20	EACH	\$1,000,000	\$0 \$0	20.00%	\$0 \$0	
10.12	TURNOUT (#7)	EACH	\$200,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#8)	EACH	\$210,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#9)	EACH	\$220,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#10)	EACH	\$250,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#14)	EACH	\$325,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#14) TURNOUT (#15)	EACH	\$350,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#20)	EACH	\$400,000	\$0 \$0	10.00%	\$0 \$0	
10.12	TURNOUT (#24)	EACH	\$450,000	\$0 \$0	10.00%	\$0 \$0	
10.12	DIAMOND CROSSING	EACH	\$500,000	\$0 \$0	10.00%	\$0 \$0	
10.12	DERAIL DERAIL	EACH	\$100,000	\$0 \$0	10.00%	\$0	
10.12	BUMPING POST	EACH	\$25,000	\$0 \$0	20.00%	\$0	
10.12	UPGRADE MAINTRACK TO CLASS 6	TF	\$23,000 \$100	\$0 \$0	30.00%	\$0 \$0	
10.11	OPGRADE WAINTRACK TO CLASS 6	IF	\$100	ΦО	30.00%	ΦΟ	
	SIGNAL WORK						\$0
50.02	PEDESTRIAN GATES & SIGNALS	EACH	\$100,000	\$0	20.00%	\$0	
50.02	CANTILEVER SIGNAL	EACH	\$200,000	\$0	20.00%	\$0	
50.01	DOG HOUSE (Signal House)	EACH	\$250,000	\$0	20.00%	\$0	

40.02	NEW ELECTRIC SERVICE	EACH	\$20,000	\$0	20.00%	\$0	
50.01	NEW INTERMEDIATE SIGNALS SINGLE TRACK	EACH	\$150,000	\$0	20.00%	\$0	
50.01	NEW INTERMEDIATE SIGNALS DOUBLE TRACK	EACH	\$300,000	\$0	20.00%	\$0	
50.01	NEW TURNOUT SIGNAL	EACH	\$325,000	\$0	20.00%	\$0	
50.01	NEW CROSSOVER SIGNALLING	EACH	\$500,000	\$0	20.00%	\$0	
50.02	NEW GRADE CROSSING SIGNALS	EACH	\$250,000	\$0	20.00%	\$0	
50.02	NEW CROSSING GATES & SIGNALS	EACH	\$400,000	\$0	20.00%	\$0	
50.01	UPGRADE SIGNALS TO CLASS 6	MILE	\$200,000	\$0	30.00%	\$0	
	BRIDGE STRUCTURES						\$0
							·
40.01	BRIDGE REMOVAL	SF	\$200	\$0	50.00%	\$0	
10.04	RAILROAD SHORT BRIDGE CONCRETE	SF	\$400	\$0	30.00%	\$0	
10.04	RAILROAD AERIAL GUIDEWAY	SF	\$500	\$0	30.00%	\$0	
10.04	RAILROAD BRIDGE STEEL	SF	\$500	\$0	30.00%	\$0	
10.04	HIGHWAY BRIDGE CONCRETE	SF	\$400	\$0	50.00%	\$0	
10.04	HIGHWAY BRIDGE STEEL.	SF	\$500	\$0	30.00%	\$0	
10.04	TRESTLE BRIDGE STEEL	SF	\$550	\$0	30.00%	\$0	
10.04	PEDESTRIAN BRIDGE	SF	\$400	\$0	30.00%	\$0	
	BARRIER RAIL PERMANENT	LF	\$100	\$0	25.00%	\$0	
10.06	UNDERPASS STRUCTURE	CY	\$750	\$0	25.00%	\$0	
	TRAIN CONTROL						\$0
50.01	POSITIVE TRAIN CONTROL	MILE	\$2,000,000	\$0	25.00%	\$0	
50.01	TRAIN CONTROL SYSTEM	EACH	\$200,000	\$0	30.00%	\$0	
50.01	TRAIN CONTROL CABLING	LF	\$12	\$0	30.00%	\$0	
50.01	TRAIN CONTROL DIGITAL CBOSS	EACH	\$500,000	\$0	40.00%	\$0	
50.01	COMPUTER TRAFFIC MANAGEMENT	LS	\$1,500,000	\$0	30.00%	\$0	
40.02	COMMERCIAL ELECTRICAL SERVICE	EACH	\$50,000	\$0	25.00%	\$0	
40.02	LINE UTILITIES WITHIN TRACKWAY	LF	\$30	\$0	30.00%	\$0	
40.02	LINE UTILITIES CROSSING TRACKS	EACH	\$2,500	\$0	30.00%	\$0	
40.02	LINE UTILITIES FIBER OPTIC PARALLEL TO TRACK	LF	\$50	\$0	30.00%	\$0	
	STATIONS						\$6,149,006
20.01	TYPE A SMALL INTERMODEL STATION	EACH	\$13,000,000	\$0	20.00%	\$0	
20.01	TYPE K LARGE INTERMODEL STATION	EACH	\$32,000,000	\$0 \$0	50.00%	\$0	
20.01	15000 STATION PLATFORM STRUCTURES NEW	SF	\$200	\$3,000,000	20.00%	\$3,600,000	
20.01	5000 STATION PLATICISM STRUCTURES NEW	SF	\$200 \$75	\$375,000	20.00%	\$450,000	
20.01	STATION PLATFORM STRUCTURES UPGRADE	SF	\$300	\$373,000 \$0	20.00%	\$430,000	
40.01	1 STATION PRIMARY ELECTRICAL SERVICE	EACH	\$50,000	\$50,000	10.00%	\$55,000	
20.01	STATION PRIMART ELECTRICAL SERVICE	SF	\$50,000 \$65	\$50,000 \$0	30.00%	\$55,000	
30.02	30250 SIDEWALK	SF	\$10	\$302,500	30.00%	\$393,250	
00.02	COLOG GIPETITIES	<u></u>	ΨιΟ	ψουΣ,ουυ	00.0070	ψ000,200	

40.07 266 PARKING LOTS SPACES \$3,000 \$798,000 25.00% \$997,500 20.06 PARKING STRUCTURES SPACES \$20,000 \$0 25.00% \$0 40.07 12605 BUS LANE AND UNLOADING SF \$25 \$315,125 25.00% \$393,906 40.02 266 PARKING LOT LIGHTING SPACES \$750 \$199,500 30.00% \$259,350 20.07 ELEVATORS EACH \$450,000 \$0 25.00% \$0 20.07 ESCALATOR EACH \$300,000 \$0 25.00% \$0 20.07 ESCALATOR EACH \$300,000 \$0 25.00% \$0 25.00% \$0 20.07 ESCALATOR SF \$4 \$0 25.00% \$0 20.07 EACH \$300,000 \$0 25.00% \$0	\$0
40.07 12605 BUS LANE AND UNLOADING SF \$25 \$315,125 25.00% \$393,906 40.02 266 PARKING LOT LIGHTING SPACES \$750 \$199,500 30.00% \$259,350 20.07 ELEVATORS EACH \$450,000 \$0 25.00% \$0 25.00% \$0 20.07 ESCALATOR EACH \$300,000 \$0 25.00% \$0 25.00% \$0 20.07 ESCALATOR SF \$44 \$0 25.00% \$0 60.01 ROW AGRICULTURAL SF \$2 \$0 25.00% \$0 60.01 ROW ORCHARDS SF \$6 \$0 25.00% \$0 60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$110 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$114 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA	\$0
40.02 266 PARKING LOT LIGHTING SPACES \$750 \$199,500 30.00% \$259,350 20.07 ELEVATORS EACH \$450,000 \$0 25.00% \$0 20.07 ESCALATOR EACH \$300,000 \$0 25.00% \$0 20.07 ESCALATOR EACH \$300,000 \$0 25.00% \$0	\$0
ELEVATORS EACH \$450,000 \$0 25.00% \$0 20.07 ESCALATOR EACH \$300,000 \$0 25.00% \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$0
### EACH \$300,000 \$0 25.00% \$0 ### RIGHT OF WAY Fight of Way Fight of Way Fight of Way	\$0
RIGHT OF WAY 60.01 ROW LAND ONLY SF \$4 \$0 25.00% \$0 60.01 ROW AGRICULTURAL SF \$2 \$0 25.00% \$0 60.01 ROW ORCHARDS SF \$6 \$0 25.00% \$0 60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	\$0
60.01 ROW LAND ONLY SF \$4 \$0 25.00% \$0 60.01 ROW AGRICULTURAL SF \$2 \$0 25.00% \$0 60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	\$0
60.01 ROW AGRICULTURAL SF \$2 \$0 25.00% \$0 60.01 ROW ORCHARDS SF \$6 \$0 25.00% \$0 60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	
60.01 ROW ORCHARDS SF \$6 \$0 25.00% \$0 60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	
60.01 ROW PAVED AREAS SF \$8 \$0 25.00% \$0 60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	
60.01 ROW RESIDENTIAL AREA SF \$10 \$0 25.00% \$0 60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	
60.01 ROW LIGHT INDUSTRIAL AREA SF \$14 \$0 25.00% \$0	
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60.01 POW HEAVY INDUSTRIAL A DEA SE \$16 \$0. 25.00% \$0.	
00.01 NOVITIES VITINDOSTNISE ANES SI \$10 \$0 25.00% \$0	
BUSINESS RELOCATIONS (Value of business, VALUE \$1 \$0 0.00% \$0	
60.02 relocation,goodwill, legal,appraisal,etc.)	
TUNNEL CONSTRUCTION	\$0
TUNNELING CONSTRUCTION NEW SINGLE BORE (I LF \$12,000 \$0 30.00% \$0	
TUNNELING CONSTRUCTION NEW TWIN BORE (DI/ LF \$0 30.00% \$0	
SINGLE BORE RESTORE (DIA) LF \$12,000 \$0 30.00% \$0	
TWIN BORE RESTORE (DIA) LF \$0 30.00% \$0	
GENERAL SUPPORT ITEMS	\$0
BART INTERFACE DAYS \$900 \$0 20.00% \$0	
CALTRANS INTERFACE WORK DAYS \$900 \$0 20.00% \$0	
RULLING STUCK & CAPITAL INIVERTMENTS	\$0
ROLLING STOCK DMU EQUIPMENT EACH \$8,000,000 \$0 0.00% \$0	
TOTAL CONSTRUCTION COST \$7	,029,880
Escalation from 2017 to 2020 (9.9%)	\$7,725,838
25 data in 11 in 25 in 15 25 25 (515 /5)	

DATE

Rev 2 Rev 3

Rev 4

Rev 1

				8/20/2020	Rev 2	Rev 3	Rev 4	
	MS-4	PHASE 2 - HSR INTERIM OPERATING SEC	GMENT STATI	ON (HSR TRACK)				
C es	Estimate Quantity	DESCRIPTION	UNITS	UNIT COSTS	BASE COST	CONTINGENCY	TOTAL PRICE	SUB TOTAL WORK ELEMEN
		CIVIL WORKS						\$5,512,634
1	17	CLEAR & GRUB LIGHT	AC	\$2,500	\$42,500	40.00%	\$59,500	
1		CLEAR & GRUB HEAVY	AC	\$5,000	\$0	30.00%	\$0	
1		DEMOLITION	SF	\$8	\$0		\$0	
1		EARTHWORK COMMON	BCY	\$25	\$0		\$0	
1		EARTHWORK (EXCAVATION ROCK)	BCY	\$50	\$0	30.00%	\$0	
1		EMBANKMENT	FCY	\$10	\$0	30.00%	\$0	
1	120000	BORROW	FCY	\$25	\$3,000,000	30.00%	\$3,900,000	
1		REMOVE HOV LANE CONTROLS SYST	LF	\$400	\$0		\$0	
7		RECONSTRUCT FREEWAY LANE 580	SF	\$100	\$0		\$0	
1		STRUCTURE EXCAVATION	CY	\$40	\$0		\$0	
5		RETAINING WALLS (0 TO 10 FEET TALL	SF	\$35	\$0	20.00%	\$0	
5		RETAINING WALLS (10 TO 20 FEET TAL	SF	\$60	\$0		\$0	
8		SOIL NAIL WALLS	SF	\$70	\$0		\$0	
8		MSE WALL ROADWAY	SF	\$55	\$0	25.00%	\$0	
5		INTRUSION PROTECTION	LF	\$2,400	\$0	30.00%	\$0	
2		BOX CULVERT	CY	\$1,000	\$0	30.00%	\$0	
2		BOX CULVERT	CY	\$1,000	\$0	30.00%	\$0	
2	49985	DRAINAGE (DIAINCH-FOOT) - Including	LF	\$12	\$599,821	40.00%	\$839,750	
2		DRAINAGE (DIAINCH-FOOT)	LF	\$12	\$0	40.00%	\$0	
1		IMPORTED BORROW ROADWAY	CY	\$25	\$0	25.00%	\$0	
7		ROADWAY CONSTRUCTION (BASE, PA	SF	\$27	\$0	25.00%	\$0	
7		AGGREGATE BASE ROADWAY	CY	\$45	\$0	25.00%	\$0	
7		ASPHALT CONCRETE ROADWAY	TONS	\$65	\$0	25.00%	\$0	
7		CONCRETE PAVEMENT	CY	\$210	\$0	20.00%	\$0	
7		GUARD RAIL ROADWAY	LF	\$30	\$0	25.00%	\$0	
7		ASPHALT DIKES ROADWAY	LF	\$4	\$0	25.00%	\$0	
7		STREET RESTORATIONS	SF	\$15	\$0	40.00%	\$0	
2		SIGNALLED STREET TRAFFIC CONTRC	EACH	\$300,000	\$0	20.00%	\$0	
2		MODIFIED TRAFFIC SIGNAL	EACH	\$150,000	\$0	20.00%	\$0	
2		STREET LIGHTING	EACH	\$4,500	\$0	20.00%	\$0	
		TRAFFIC CONTROL	DAYS	\$1,200	\$0	50.00%	\$0	
		MINOR CONCRETE	CY	\$400	\$0	30.00%	\$0	
		K RAIL TEMPORARY	LF	\$30	\$0	30.00%	\$0	
		CONCRETE BARRIER	LF	\$50	\$0	30.00%	\$0	
		STRIPPING	LF	\$1	\$0	20.00%	\$0	
6	13302	PERMANENT FENCING	LF	\$35	\$465,570	20.00%	\$558,684	
		VEHICULAR FENCE GATES	EACH	\$2,000	\$0	20.00%	\$0	
4		SILT FENCE and ORANGE FENCE	LF	\$15	\$0	20.00%	\$0	

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40.04	17000 EROSION CONTROL TEMPORARY	SF	\$7	\$119,000	30.00%	\$154,700	
40.06	LANDSCAPING PERMANENT	SY	\$15	\$0	30.00%	\$0	
40.02	UTILITY ALLOCATION	LS	\$900,000	\$0	0.00%	\$0	
40.02	DEVELOP PERMANENT WATER SUPPL'	LS	\$100,000	\$0	30.00%	\$0	
40.02	YARD LIGHTING	EACH	\$2,500	\$0	20.00%	\$0	
	TRACK WORK						\$15,530,625
40.01	REMOVE EXISTING TRACK	TF	\$40	\$0	20.00%	\$0	
40.01	REMOVE EXISTING TURNOUTS	EACH	\$25,000	\$0	10.00%	\$0	
10.11	SHIFT EXISTING TRACK	TF	\$100	\$0	20.00%	\$0	
10.11	UPGRADE EXISTING TRACK	TF	\$300	\$0	20.00%	\$0	
10.11	17841 TRACK (INCL RAIL, CONCRETE TIES, E	TF	\$500	\$8,920,500	25.00%	\$11,150,625	
10.11	TRACK (INCL RAIL, WOOD TIES, BALLA	TF	\$450	\$0	25.00%	\$0	
10.12	GRADE CROSSING TRACK COMPLETE	TF	\$750	\$0	20.00%	\$0	
10.12	TRACK PANELS	SF	\$75	\$0	30.00%	\$0	
10.12	CROSSOVER No.15	EACH	\$800,000	\$0	20.00%	\$0	
10.12	2 CROSSOVER No.20	EACH	\$1,000,000	\$2,000,000	20.00%	\$2,400,000	
10.12	TURNOUT (#7)	EACH	\$200,000	\$0	10.00%	\$0	
10.12	TURNOUT (#8)	EACH	\$210,000	\$0	10.00%	\$0	
10.12	TURNOUT (#9)	EACH	\$220,000	\$0	10.00%	\$0	
10.12	TURNOUT (#10)	EACH	\$250,000	\$0	10.00%	\$0	
10.12	TURNOUT (#14)	EACH	\$325,000	\$0	10.00%	\$0	
10.12	TURNOUT (#15)	EACH	\$350,000	\$0	10.00%	\$0	
10.12	TURNOUT (#20)	EACH	\$400,000	\$0	10.00%	\$0	
10.12	4 TURNOUT (#24)	EACH	\$450,000	\$1,800,000	10.00%	\$1,980,000	
10.12	DIAMOND CROSSING	EACH	\$500,000	\$0	10.00%	\$0	
10.12	DERAIL	EACH	\$100,000	\$0	10.00%	\$0	
10.12	BUMPING POST	EACH	\$25,000	\$0	20.00%	\$0	
10.11	UPGRADE MAINTRACK TO CLASS 6	TF	\$100	\$0	30.00%	\$0	
	SIGNAL WORK						\$3,408,000
50.02	PEDESTRIAN GATES & SIGNALS	EACH	\$100,000	\$0	20.00%	\$0	
50.02	CANTILEVER SIGNAL	EACH	\$200,000	\$0 \$0	20.00%	\$0	
50.02	2 DOG HOUSE (Signal House)	EACH	\$250,000	\$500,000	20.00%	\$600,000	
40.02	2 NEW ELECTRIC SERVICE	EACH	\$20,000	\$40,000	20.00%	\$48,000	
50.01	NEW INTERMEDIATE SIGNALS SINGLE	EACH	\$150,000	\$0,000	20.00%	\$0,000	
50.01	NEW INTERMEDIATE SIGNALS DOUBLE	EACH	\$300,000	\$0	20.00%	\$0	
50.01	4 NEW TURNOUT SIGNAL	EACH	\$325,000	\$1,300,000	20.00%	\$1,560,000	
50.01	2 NEW CROSSOVER SIGNALLING	EACH	\$500,000	\$1,000,000	20.00%	\$1,200,000	
50.02	NEW GRADE CROSSING SIGNALS	EACH	\$250,000	\$0	20.00%	\$0	
50.02	NEW CROSSING GATES & SIGNALS	EACH	\$400,000	\$0	20.00%	\$0	
50.01	UPGRADE SIGNALS TO CLASS 6	MILE	\$200,000	\$0	30.00%	\$0	
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	BRIDGE STRUCTURES						\$3,141,320
40.01	BRIDGE REMOVAL	SF	\$200	\$0	50.00%	\$0	
10.04	6041 RAILROAD SHORT BRIDGE CONCRETE	SF	\$400	\$2,416,400	30.00%	\$3,141,320	
10.04	RAILROAD AERIAL GUIDEWAY	SF	\$500	\$0	30.00%	\$0	
10.04	RAILROAD BRIDGE STEEL	SF	\$500	\$0	30.00%	\$0	

10.04	HIGHWAY BRIDGE CONCRETE	SF	\$400	\$0	50.00%	\$0	
10.04	HIGHWAY BRIDGE STEEL.	SF	\$500	\$0	30.00%	\$0	
10.04	TRESTLE BRIDGE STEEL	SF	\$550	\$0	30.00%	\$0	
10.04	PEDESTRIAN BRIDGE	SF	\$400	\$0	30.00%	\$0	
	BARRIER RAIL PERMANENT	LF	\$100	\$0	25.00%	\$0	
10.06	UNDERPASS STRUCTURE	CY	\$750	\$0	25.00%	\$0	
	TRAIN CONTROL						\$16,894,886
50.01	3.4 SYSTEM FACILITIES (OCS, COMMS, IN	MILE	\$4,000,000	\$13,515,909	25.00%	\$16,894,886	
50.01	TRAIN CONTROL SYSTEM	EACH	\$200,000	\$0	30.00%	\$0	
50.01	TRAIN CONTROL CABLING	LF	\$12	\$0	30.00%	\$0	
50.01	TRAIN CONTROL DIGITAL CBOSS	EACH	\$500,000	\$0	40.00%	\$0	
50.01	COMPUTER TRAFFIC MANAGEMENT	LS	\$1,500,000	\$0	30.00%	\$0	
40.02	COMMERCIAL ELECTRICAL SERVICE	EACH	\$50,000	\$0	25.00%	\$0	
40.02	LINE UTILITIES WITHIN TRACKWAY	LF	\$30	\$0	30.00%	\$0	
40.02	LINE UTILITIES CROSSING TRACKS	EACH	\$2,500	\$0	30.00%	\$0	
40.02	LINE UTILITIES FIBER OPTIC PARALLI	LF	\$2,500 \$50	\$0 \$0	30.00%	\$0	
40.0Z	LINE OTHER TO THE TAKKE		Ψ30	ΨΟ	30.0070	ΨΟ	
	STATIONS						\$0
20.01	TYPE A SMALL INTERMODEL STATION	EACH	\$13,000,000	\$0	20.00%	\$0	
20.01	TYPE K LARGE INTERMODEL STATION	EACH	\$32,000,000	\$0	50.00%	\$0	
20.01	STATION PLATFORM STRUCTURES NE	SF	\$200	\$0	20.00%	\$0	
20.01	STATION SHELTERS / BUILDINGS	SF	\$75	\$0	20.00%	\$0	
20.01	STATION PLATFORM STRUCTURES UP	SF	\$300	\$0	20.00%	\$0	
40.01	STATION PRIMARY ELECTRICAL SERV	EACH	\$50,000	\$0	10.00%	\$0	
20.01	STATION AMENITIES	SF	\$65	\$0	30.00%	\$0	
30.02	SIDEWALK	SF	\$10	\$0	30.00%	\$0	
40.07	PARKING LOTS	SPACES	\$3,000	\$0	25.00%	\$0	
20.06	PARKING STRUCTURES	SPACES	\$20,000	\$0	25.00%	\$0	
40.07	BUS LANE AND UNLOADING	SF	\$25	\$0	25.00%	\$0	
40.02	PARKING LOT LIGHTING	SPACES	\$750	\$0	30.00%	\$0	
20.07	ELEVATORS	EACH	\$450,000	\$0	25.00%	\$0	
20.07	ESCALATOR	EACH	\$300,000	\$0	25.00%	\$0	
	RIGHT OF WAY						\$615,000
60.01	82000 ROW LAND ONLY	SF	\$6	\$492,000	25.00%	\$615,000	
60.01	ROW AGRICULTURAL	SF	\$2	\$0	25.00%	\$0	
60.01	ROW ORCHARDS	SF	\$6	\$0	25.00%	\$0	
60.01	ROW PAVED AREAS	SF	\$8	\$0	25.00%	\$0	
60.01	ROW RESIDENTIAL AREA	SF	\$10	\$0	25.00%	\$0	
60.01	ROW LIGHT INDUSTRIAL AREA	SF	\$10 \$14	\$0 \$0	25.00%	\$0 \$0	
60.01	ROW HEAVY INDUSTRIAL AREA	SF	\$14 \$16	\$0 \$0	25.00%	\$0 \$0	
00.01		VALUE	\$10 \$1	\$0 \$0	0.00%	\$0 \$0	
	BUSINESS RELOCATIONS (Value of	VALUE	φI	Φυ	0.00%	φυ	
60.02	business, relocation, goodwill,						
00.02	legal, appraisal, etc.)						
	TUNNEL CONSTRUCTION						\$0
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TUNNELING CONSTRUCTION NEW SI TUNNELING CONSTRUCTION NEW TV SINGLE BORE RESTORE (DIA)	LF LF LF	\$12,000 \$12,000	\$0 \$0 \$0	30.00% 30.00% 30.00%	\$0 \$0 \$0	
TWIN BORE RESTORE (DIA)	LF		\$0	30.00%	\$0	
GENERAL SUPPORT ITEMS						\$0
BART INTERFACE	DAYS	\$900	\$0	20.00%	\$0	
CALTRANS INTERFACE WORK	DAYS	\$900	\$0	20.00%	\$0	
RULLING STUCK & CAPITAL						\$0
ROLLING STOCK DMU EQUIPMENT	EACH	\$8,000,000	\$0	0.00%	\$0	
TOTAL CONSTRUCTION COST						\$45,102,465
Escalation from 2017 to 2020 (9.9%)						\$49,567,609
Project Cost						\$65,330,109