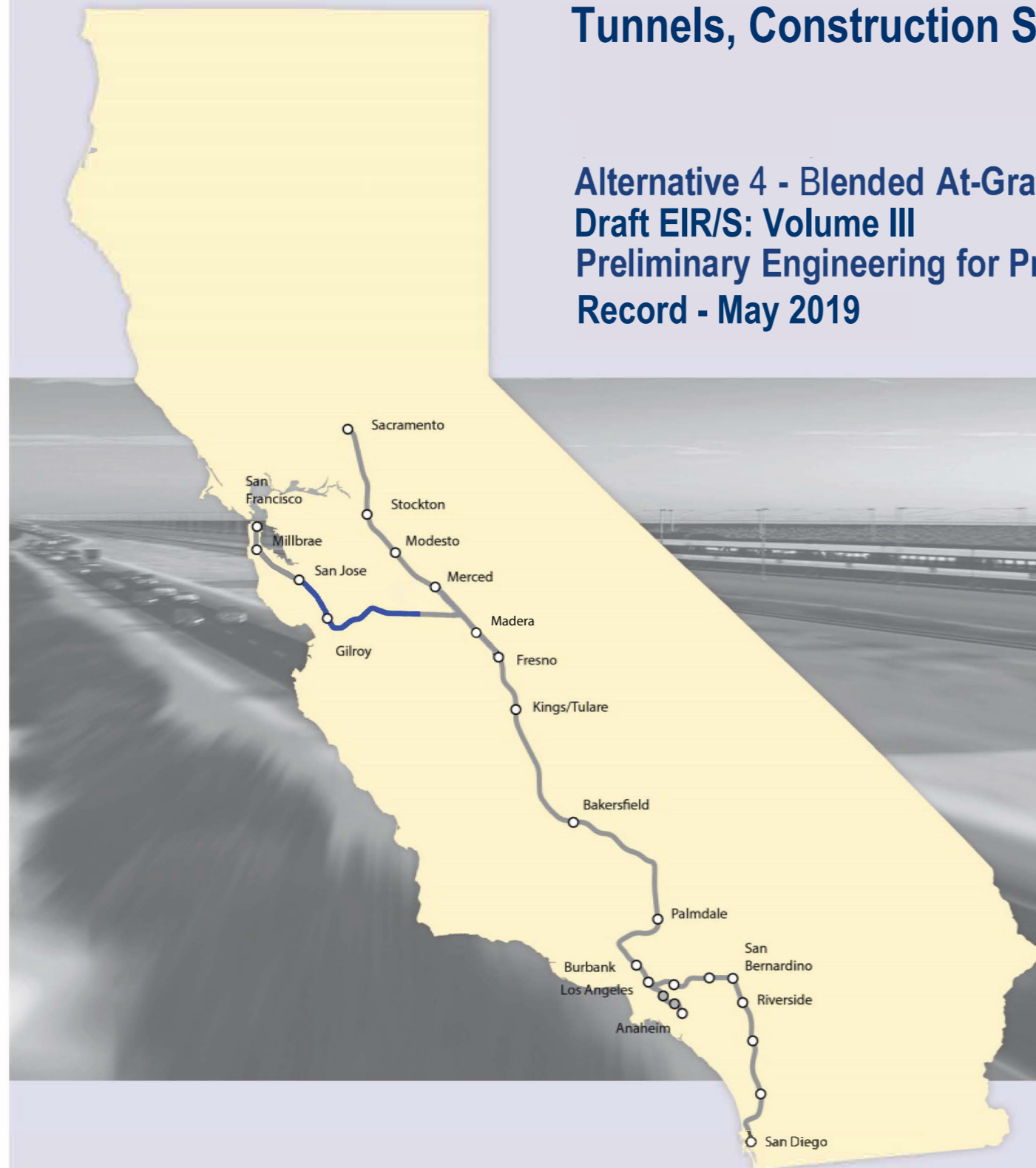


California High-Speed Rail Authority

# San Jose to Merced Section: San Jose to Central Valley Wye

Tunnels, Construction Staging, Alignment Data Tables

Alternative 4 - Blended At-Grade to Downtown Gilroy  
Draft EIR/S: Volume III  
Preliminary Engineering for Project Definition  
Record - May 2019



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 100 - 148 OF 148**

**ALTERNATIVE 4 - CP COAST TO DOWNTOWN GILROY**

BOOK	SHEET NO	DRAWING NO	SUBSECTION	GEOGRAPHIC LOCATION	ALIGNMENT OR FEATURE	SHEET DESCRIPTION	ADDITIONAL DESCRIPTION
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**COVER, INDEX OF DRAWING AND KEY MAPS**

BOOK 4E	A	COVER	SAN JOSE TO MERCED SECTION	N/A	SAN JOSE TO CENTRAL VALLEY WYE	ALTERNATIVE 4	
BOOK 4E	B	GE-A0405	ENTIRE ALTERNATIVE	TUNNELS, CONSTRUCTION STAGING	INDEX OF DRAWING	SHEET 5 OF 6	
BOOK 4E	C	GE-A0406	ENTIRE ALTERNATIVE	ALIGNMENT DATA TABLES	INDEX OF DRAWING	SHEET 6 OF 6	
BOOK 4E	D	GE-D0401	GENERAL	ENTIRE ALTERNATIVE	KEY MAP	COMPOSITE PLAN	
BOOK 4E	E	GE-D0402	GENERAL	ENTIRE ALTERNATIVE	KEY MAP	SYSTEMS SITES	SHEET 1 OF 2

**TUNNEL - PACHECO PASS**

BOOK 4E	100	TN-D1404	PACHECO PASS	N/A	TUNNEL	TUNNEL 2 - PORTAL 1	
BOOK 4E	101	TN-D1405	PACHECO PASS	ACCESS RD 1	TUNNEL	TUNNEL PORTAL 2 ACCESS ROAD	
BOOK 4E	102	TN-D1406	PACHECO PASS	CALIFORNIA AQUEDUCT	TUNNEL	TUNNEL PORTAL 2 ACCESS ROAD	
BOOK 4E	103	TN-D1407	PACHECO PASS	ACCESS RD 2	TUNNEL	TUNNEL PORTAL 2 ACCESS ROAD	
BOOK 4E	104	TN-D1408	PACHECO PASS	N/A	TUNNEL	LONGITUDINAL PROFILE	
BOOK 4E	105	TN-D1409	PACHECO PASS	N/A	TUNNEL	GRADING DETAIL	
BOOK 4E	106	TN-D1410	PACHECO PASS	N/A	TUNNEL	GRADING DETAIL	
BOOK 4E	107	TN-D1411	PACHECO PASS	N/A	TUNNEL	GRADING DETAIL	
BOOK 4E	108	TN-D1412	PACHECO PASS	N/A	TUNNEL	GRADING DETAIL	
BOOK 4E	109	TN-D1413	PACHECO PASS	I-5, FAHEY RD	TUNNEL	GRADING DETAIL	
BOOK 4E	110	TN-D1414	PACHECO PASS	N/A	TUNNEL	TUNNEL 2 - PORTAL 1	SECTIONS
BOOK 4E	111	TN-D1415	PACHECO PASS	N/A	TUNNEL	TUNNEL 2 - PORTAL 2	APPROACH 1
BOOK 4E	112	TN-D1416	PACHECO PASS	N/A	TUNNEL	TUNNEL 2 - PORTAL 2	APPROACH 2

**CONSTRUCTION STAGING**

BOOK 4E	113	CV-I1601	SAN JOAQUIN VALLEY	N/A	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	GENERAL NOTES
BOOK 4E	114	CV-I1602	SAN JOAQUIN VALLEY	INGOMAR GRADE RD AT HENRY MILLER RD	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	HENRY MILLER ROAD GRADE SEPARATION
BOOK 4E	115	CV-I1603	SAN JOAQUIN VALLEY	HENRY MILLER RD	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	HENRY MILLER ROAD GRADE SEPARATION
BOOK 4E	116	CV-I1604	SAN JOAQUIN VALLEY	HENRY MILLER RD AT MERCEY SPRINGS RD	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	SR-165 / MERCEY SPRINGS ROAD GRADE SEPARATION
BOOK 4E	117	CV-I1605	SAN JOAQUIN VALLEY	HENRY MILLER RD AT DELTA RD	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	DELTA ROAD GRADE SEPARATION
BOOK 4E	118	CV-I1606	SAN JOAQUIN VALLEY	HENRY MILLER RD AT TURNER ISLAND RD	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	TURNER ISLAND ROAD GRADE SEPARATION
BOOK 4E	119	CV-I1607	SAN JOAQUIN VALLEY	HENRY MILLER RD AT CARLUCCI RD	HENRY MILLER ROAD	CONSTRUCTION STAGING PLAN	CARLUCCI ROAD GRADE SEPARATION

**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET B**

\$USER \$ \$DATE \$ \$TIME \$ \$PENTBL \$ \$PLTDRVS \$ \$FILE \$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE

**RECORD PEPD  
SUBMITTAL**

**MAY 3, 2019**

**NOT FOR  
CONSTRUCTION**

**HNTB** 1111 Broadway  
9th Floor  
Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN JOSE TO MERCED**

ALTERNATIVE 4  
INDEX OF DRAWING  
SHEET 5 OF 6

CONTRACT NO.	HSR15-34
DRAWING NO.	GE-A0405
SCALE	NONE
SHEET NO.	



**ALTERNATIVE 4 - CP COAST TO DOWNTOWN GILROY**

BOOK	SHEET NO	DRAWING NO	SUBSECTION	GEOGRAPHIC LOCATION	ALIGNMENT OR FEATURE	SHEET DESCRIPTION	ADDITIONAL DESCRIPTION
<b>TRACK GUIDEWAY HORIZONTAL ALIGNMENT DATA TABLE</b>							
BOOK 4E	120	TT-B4001	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C401 TO C404	CURVE NO. C401 TO C404
BOOK 4E	121	TT-B4002	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C405 TO C408	CURVE NO. C405 TO C408
BOOK 4E	122	TT-B4003	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C409 TO C414	CURVE NO. C409 TO C414
BOOK 4E	123	TT-B4004	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C415 TO C418	CURVE NO. C415 TO C418
BOOK 4E	124	TT-B4005	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C419	CURVE NO. C419
BOOK 4E	125	TT-B4006	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C420 TO C423	CURVE NO. C420 TO C423
BOOK 4E	126	TT-B4007	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C424 TO C427	CURVE NO. C424 TO C427
BOOK 4E	127	TT-B4008	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C428 TO C431	CURVE NO. C428 TO C431
BOOK 4E	128	TT-B4009	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C432 TO C435	CURVE NO. C432 TO C435
BOOK 4E	129	TT-B4010	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C436 TO C439	CURVE NO. C436 TO C439
BOOK 4E	130	TT-B4011	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C440 TO C443	CURVE NO. C440 TO C443
BOOK 4E	131	TT-B4012	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C444 TO C447	CURVE NO. C444 TO C447
BOOK 4E	132	TT-B4013	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C448 TO C451	CURVE NO. C448 TO C451
BOOK 4E	133	TT-B4014	ALTERNATIVE 4	N/A	MT3 TRACK ALIGNMENT DATA TABLE	CURVE NO. C452 TO C453	CURVE NO. C452 TO C453
BOOK 4E	134	TT-B0120	MORGAN HILL AND GILROY	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C127 AND C128
BOOK 4E	135	TT-B0121	MORGAN HILL AND GILROY	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C129
BOOK 4E	136	TT-B0122	MORGAN HILL AND GILROY	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C130
BOOK 4E	137	TT-B0123	PACHECO PASS	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C131
BOOK 4E	138	TT-B0124	PACHECO PASS	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C132 AND C133
BOOK 4E	139	TT-B0125	PACHECO PASS	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C134 AND C135
BOOK 4E	140	TT-B0126	PACHECO PASS	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C136
BOOK 4E	141	TT-B0127	SAN JOAQUIN VALLEY	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C137
BOOK 4E	142	TT-B0128	SAN JOAQUIN VALLEY	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C138 AND C139
BOOK 4E	143	TT-B0129	SAN JOAQUIN VALLEY	N/A	TRACK GUIDEWAY	B2 TRACK ALIGNMENT DATA TABLE	CURVE NO. C140
BOOK 4E	144	TT-B0130	MORGAN HILL AND GILROY	N/A	TRACK GUIDEWAY	B1 TRACK ALIGNMENT DATA TABLE	CURVE NO. C230
BOOK 4E	145	TT-B0131	MORGAN HILL AND GILROY	N/A	TRACK GUIDEWAY	B1 TRACK ALIGNMENT DATA TABLE	CURVE NO. C231 AND C231A
BOOK 4E	146	TT-B0132	PACHECO PASS	N/A	TRACK GUIDEWAY	B1 TRACK ALIGNMENT DATA TABLE	CURVE NO. C232 AND C233
BOOK 4E	147	TT-B0133	PACHECO PASS	N/A	TRACK GUIDEWAY	B1 TRACK ALIGNMENT DATA TABLE	CURVE NO. C234 AND C235
BOOK 4E	148	TT-B0134	PACHECO PASS	N/A	TRACK GUIDEWAY	B1 TRACK ALIGNMENT DATA TABLE	CURVE NO. C236

**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET C**

\$USER \$ DATE \$ \$TIME \$ \$PENTBL \$ \$PLTDRVS \$ \$FILE \$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
DRAWN BY  
CHECKED BY  
IN CHARGE  
DATE

**RECORD PEPD  
SUBMITTAL**  
  
**MAY 3, 2019**  
  
**NOT FOR  
CONSTRUCTION**

**HNTB** 1111 Broadway  
9th Floor  
Oakland, CA 94607



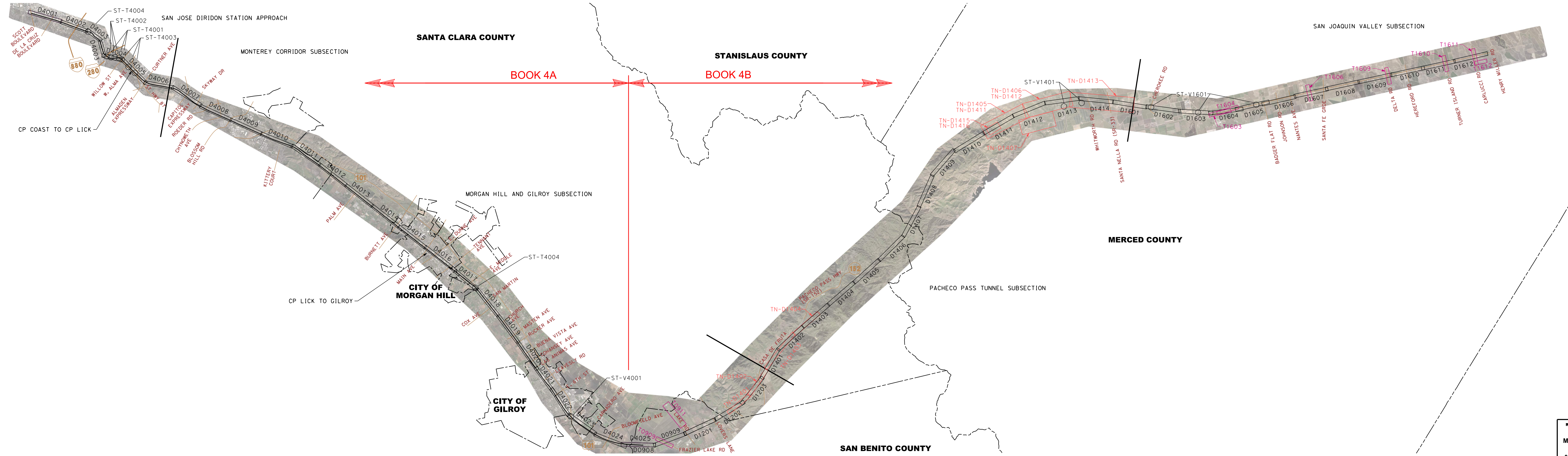
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN JOSE TO MERCED**  
ALTERNATIVE 4  
INDEX OF DRAWING  
SHEET 6 OF 6

CONTRACT NO.  
HSR15-34  
DRAWING NO.  
GE-A0406  
SCALE  
NONE  
SHEET NO.



**ALTERNATIVE 4 BOOK INDEX**

- BOOK 4A: COMPOSITE PLAN, PROFILE AND CROSS SECTIONS
- BOOK 4B: COMPOSITE PLAN, PROFILE AND CROSS SECTIONS
- BOOK 4C: STATIONS
- BOOK 4D: STRUCTURES, ROADWAY, MAINTENANCE OF WAY
- BOOK 4E: TUNNELS - PACHECO PASS, CONSTRUCTION STAGING, ALIGNMENT DATA TABLES



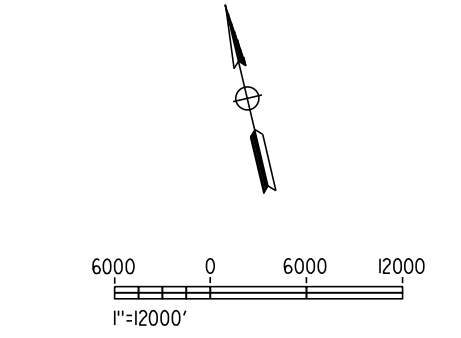
BOOK 4A      BOOK 4B

**NOTE:**  
ALTERNATIVE KEY MAP SHOWN SIDE BY SIDE FOR CLARITY.

**LEGEND**  
**KEY MAP LEGEND**

- SID-XX AERIAL ORTHO-PHOTO
- DXXXX COMPOSITE ROLL PLOTS
- TXXXX GRADE SEPARATION ROLL PLOTS
- TN-DXXXX TUNNEL ROLL PLOTS
- ST-TXXXX STRUCTURES ROLL PLOTS
- SECTION BREAK
- CITY LIMITS
- COUNTY LINE
- ALMADEN RD EXISTING ROAD

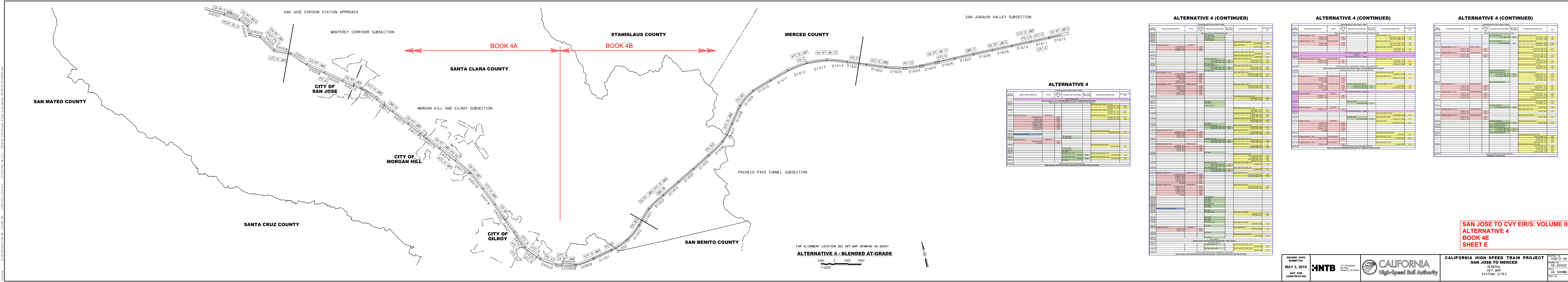
**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET D**



RECORD PERIOD SUBMITTAL MAY 3, 2019 NOT FOR CONSTRUCTION	<b>HNTB</b> <small>1111 Broadway 9th Floor Oakland, CA 94607</small>		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> ALTERNATIVE 4 KEY MAP COMPOSITE PLAN	CONTRACT NO. HSR15-34 DRAWING NO. CE-D0401 SCALE AS SHOWN SHEET NO.
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SAN MATEO COUNTY

SAN JOSE DIRIDON STATION APPROACH

MONTEREY CORRIDOR SUBSECTION

SANTA CLARA COUNTY

MORGAN HILL AND GILROY SUBSECTION

CITY OF MORGAN HILL

CITY OF GILROY

SANTA CRUZ COUNTY

STANISLAUS COUNTY

MERCED COUNTY

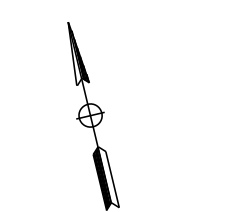
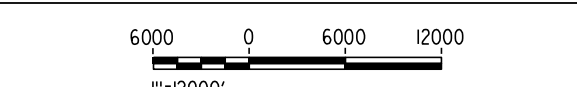
SAN BENITO COUNTY

MERCED COUNTY SUBSECTION

PACHECO PASS TUNNEL SUBSECTION

FOR ALIGNMENT LOCATION SEE KEP MAP DRAWING GE-D0401

ALTERNATIVE 4 - BLENDED AT-GRADE



ALTERNATIVE 4

Station Mile Post	Track Power Facility (TPF)	TPF ID	Alt. Equip. (SWS, ATC, PS)	Automatic Train Control (ATC)	Dist. to Prev. ATC Mile	Communications Radio Tower	Dist. to Prev. RT Mile
00908	SA-RT-JM8	ATC-A	SA-RT-JM8	ATC-A	0.00		
00909	SA-RT-JM4	ATC-D-JM4	SA-RT-JM4	ATC-D-JM4	0.01		
01201	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.29		
01202	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01203	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01204	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01205	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01206	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01207	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01208	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01209	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01210	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01211	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01212	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01213	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01214	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01215	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01216	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01217	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01218	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01219	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
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01294	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01295	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01296	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01297	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01298	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01299	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01300	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01301	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01302	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01303	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01304	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01305	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01306	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01307	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01308	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01309	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01310	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01311	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01312	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
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01317	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
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01330	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01331	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01332	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01333	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01334	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01335	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
01336	SA-RT-JM1	ATC-E	SA-RT-JM1	ATC-E	0.01		
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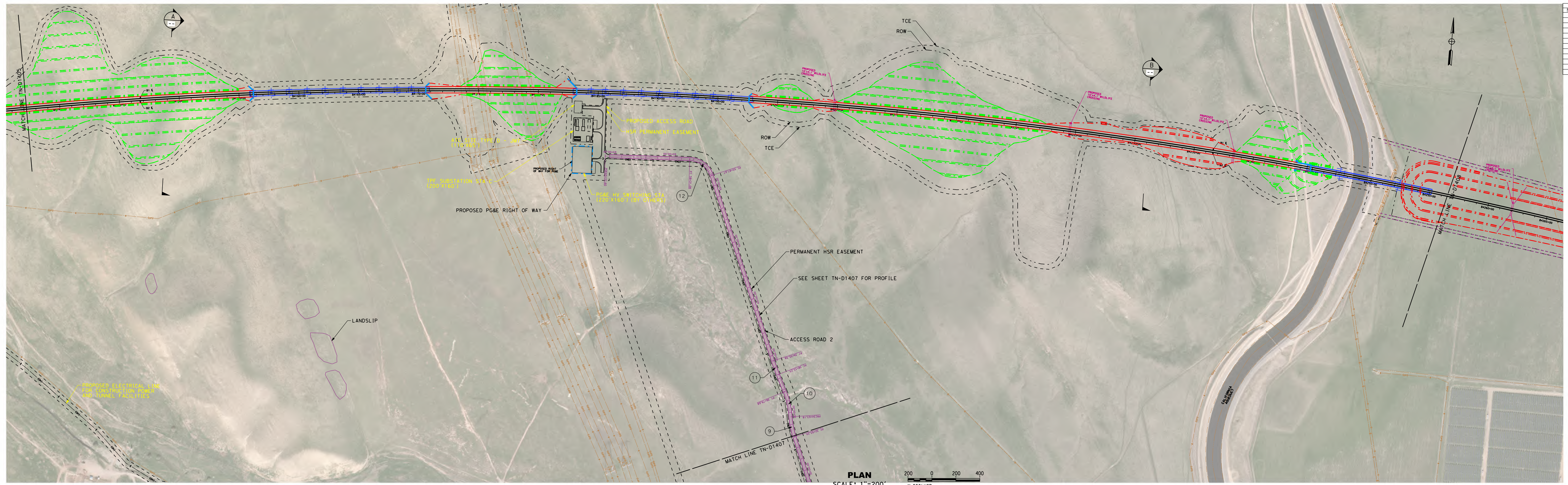




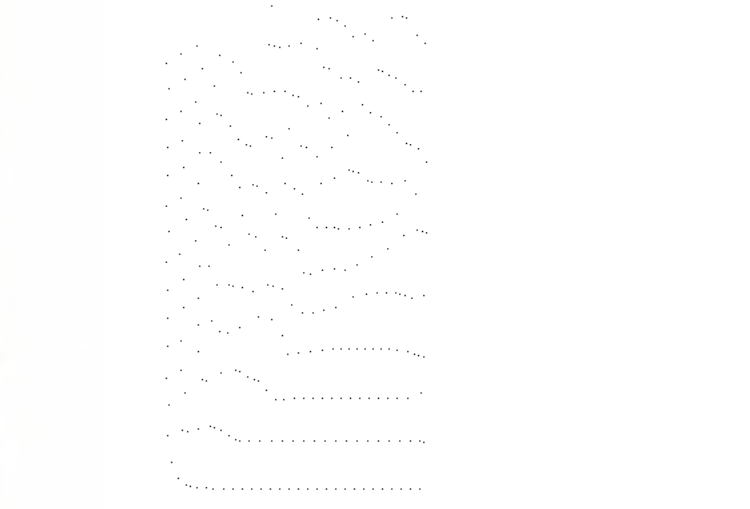




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CURVE DATA ACCESS ROAD 2				
NO.	R	Δ	L	T
1	50	17°35'37.70"	15.353	7.738
2	500	7°18'48.17"	63.821	31.954
3	500	12°26'28.27"	108.57	54.499
4	500	10°56'19.97"	95.460	47.875
5	500	15°46'2.20"	137.695	69.235
6	500	10°01'23.13"	87.468	43.846
7	232	19°16'47.16"	98.278	49.608
8	2000	5°50'22.16"	205.837	102.007
9	700	13°54'36.03"	183.943	85.391
10	700	17°43'12.56"	216.493	109.117
11	2000	1°10'18.39"	122.351	61.195
12	200	69°44'2.74"	243.418	139.351

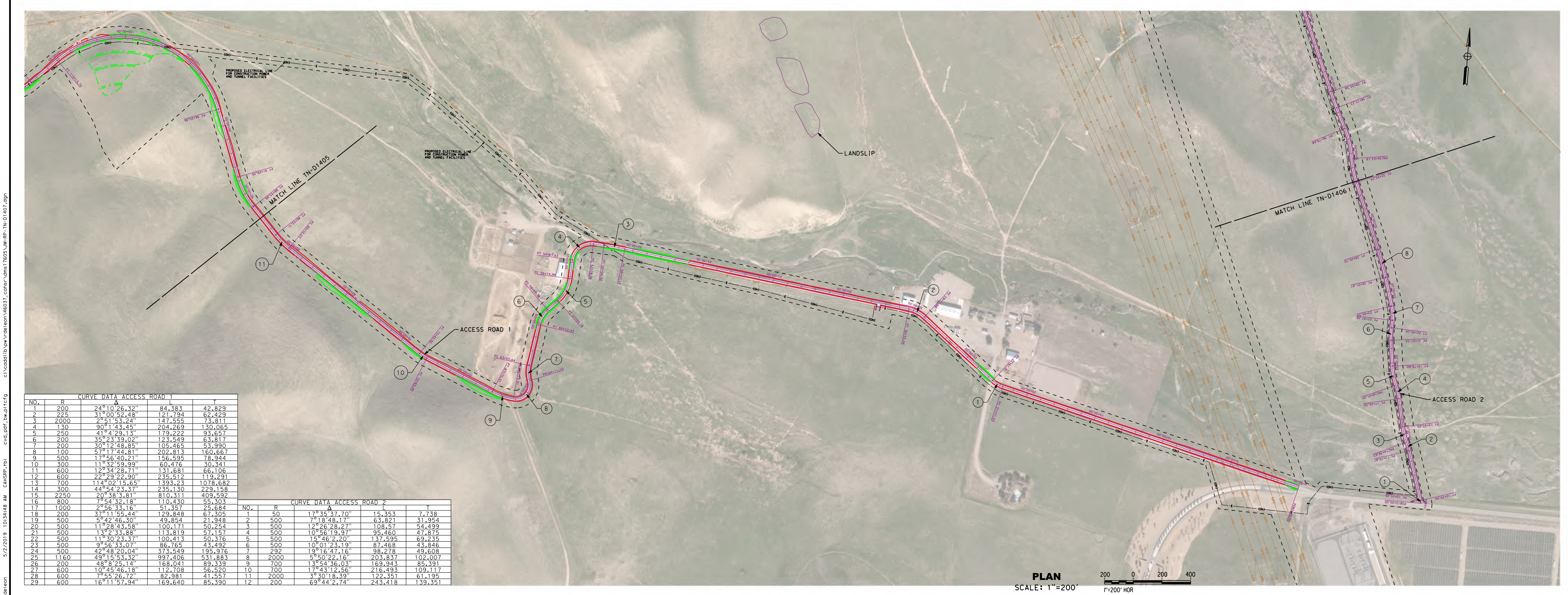


**NOTE:**  
 1. REFER TO GENERAL NOTES SHEETS GE-B0001 AND GE-B0002 FOR NOTES.

**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 102 OF 148**

RECORD PERM SUBMITTAL MAY 3, 2019 NOT FOR CONSTRUCTION		1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL TUNNEL PORTAL 2 ACCESS ROAD	CONTRACT NO. HSR15-34 DRAWING NO. TN-D1406 SCALE AS SHOWN SHEET NO.
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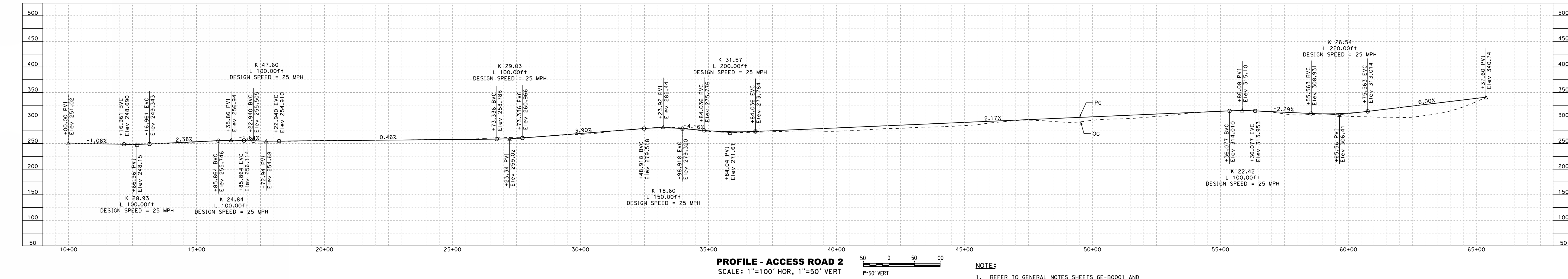


CURVE DATA ACCESS ROAD 1			
NO.	R	Δ	L
1	200	24°10'26.32"	84.383
2	225	31°50'52.48"	121.794
3	2000	2°51'53.24"	147.456
4	130	90°1'43.45"	204.269
5	250	45°23'39.02"	179.222
6	200	35°12'48.85"	105.465
7	100	57°17'44.81"	202.813
8	100	17°56'40.21"	156.939
9	300	11°32'59.99"	60.476
10	600	17°54'28.11"	131.681
11	600	22°29'22.90"	235.512
12	700	11°42'15.65"	1393.23
13	300	48°54'23.37"	235.130
14	2250	2°58'3.81"	810.311
15	800	2°54'32.18"	110.430
16	1000	2°56'33.16"	51.357
17	200	37°11'55.44"	129.848
18	500	5°42'26.30"	49.854
19	500	11°28'43.58"	100.171
20	500	13°2'33.88"	113.819
21	500	11°30'23.37"	100.413
22	500	9°56'33.07"	86.165
23	500	42°48'20.04"	373.649
24	1180	48°15'53.32"	991.406
25	200	48°18'25.14"	188.041
26	600	10°45'46.18"	112.708
27	600	7°53'26.72"	82.381
28	600	16°11'57.94"	169.640

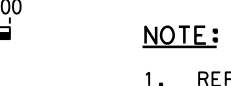
  

CURVE DATA ACCESS ROAD 2			
NO.	R	Δ	L
1	50	17°35'37.70"	15.353
2	500	7°18'48.17"	63.821
3	500	12°26'28.27"	108.57
4	500	10°56'19.97"	95.460
5	500	15°26'22.20"	137.395
6	500	10°11'23.19"	87.468
7	292	19°16'47.16"	98.278
8	2000	5°50'22.16"	203.837
9	700	13°54'36.03"	169.943
10	700	17°43'12.56"	216.493
11	2000	3°30'18.29"	122.351
12	200	69°24'27.74"	243.418

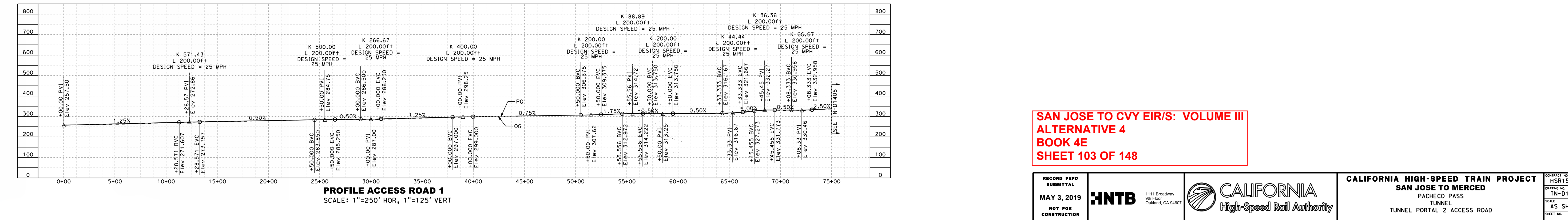
**PLAN**  
SCALE: 1"=200'  
1"=200' HOR



**PROFILE - ACCESS ROAD 2**  
SCALE: 1"=100' HOR, 1"=50' VERT  
1"=50' VERT



NOTE:  
1. REFER TO GENERAL NOTES SHEETS GE-B0001 AND GE-B0002 FOR NOTES.



**PROFILE ACCESS ROAD 1**  
SCALE: 1"=250' HOR, 1"=125' VERT

**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 103 OF 148**

RECORD PERM SUBMITTAL MAY 3, 2019 NOT FOR CONSTRUCTION		1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL TUNNEL PORTAL 2 ACCESS ROAD	CONTRACT NO. HSR15-34 DRAWING NO. TN-D1407 SCALE: AS SHOWN SHEET NO.
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NOTE:  
REFER TO COMPOSITE DRAWINGS FOR TUNNEL PROFILE  
DETAILS.



**PROFILE**  
SCALE: 1"=1600' HOR, 1"=100' VERT

**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 104 OF 148**

RECORD PERM  
SUBMITTAL  
MAY 3, 2019  
NOT FOR  
CONSTRUCTION



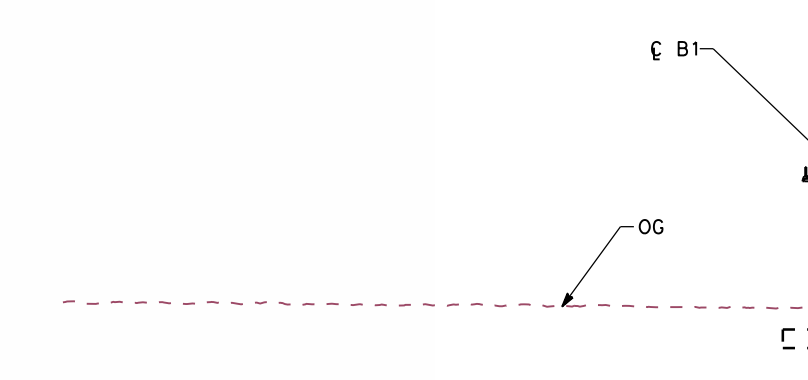
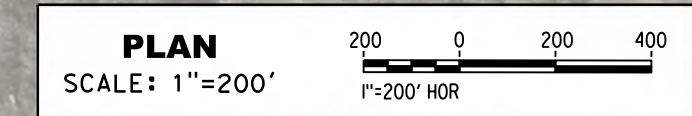
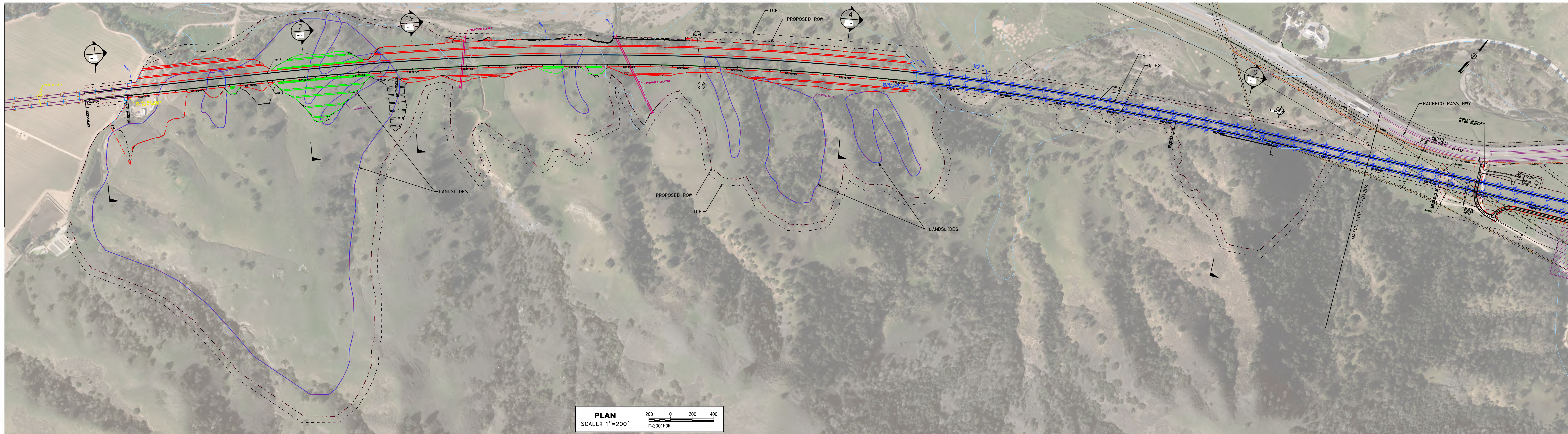
1111 Broadway  
9th Floor  
Oakland, CA 94607



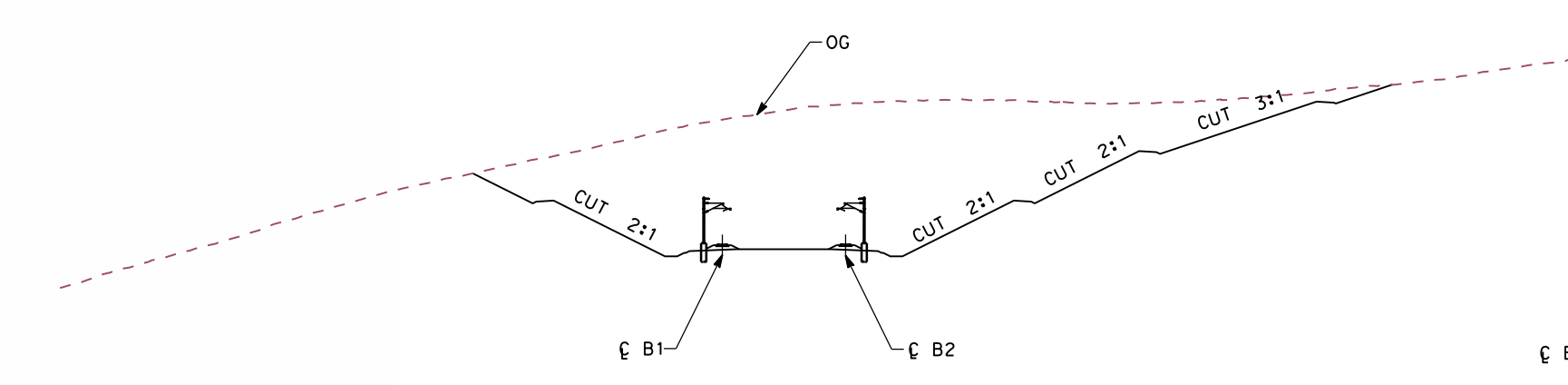
**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
PACHECO PASS  
TUNNEL  
LONGITUDINAL PROFILE

CONTRACT NO.  
HSR15-34  
DRAWING NO.  
TN-D-1408  
SCALE  
AS SHOWN  
SHEET NO.

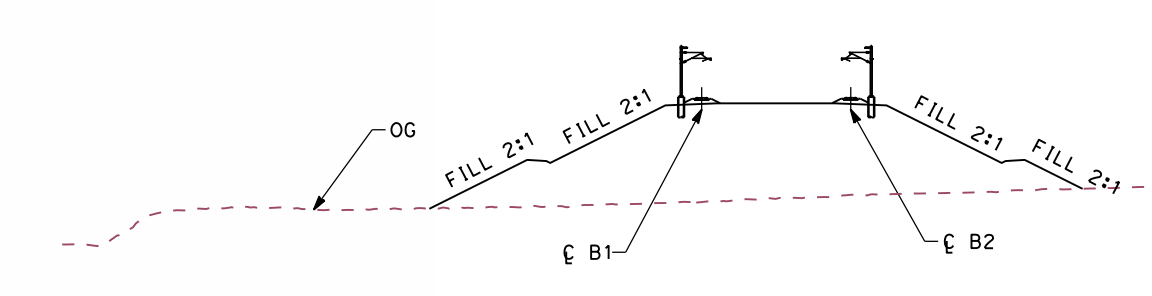




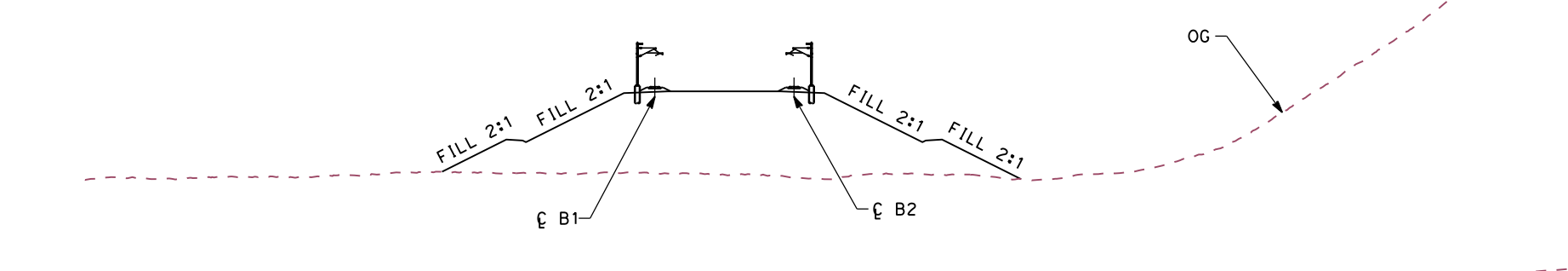
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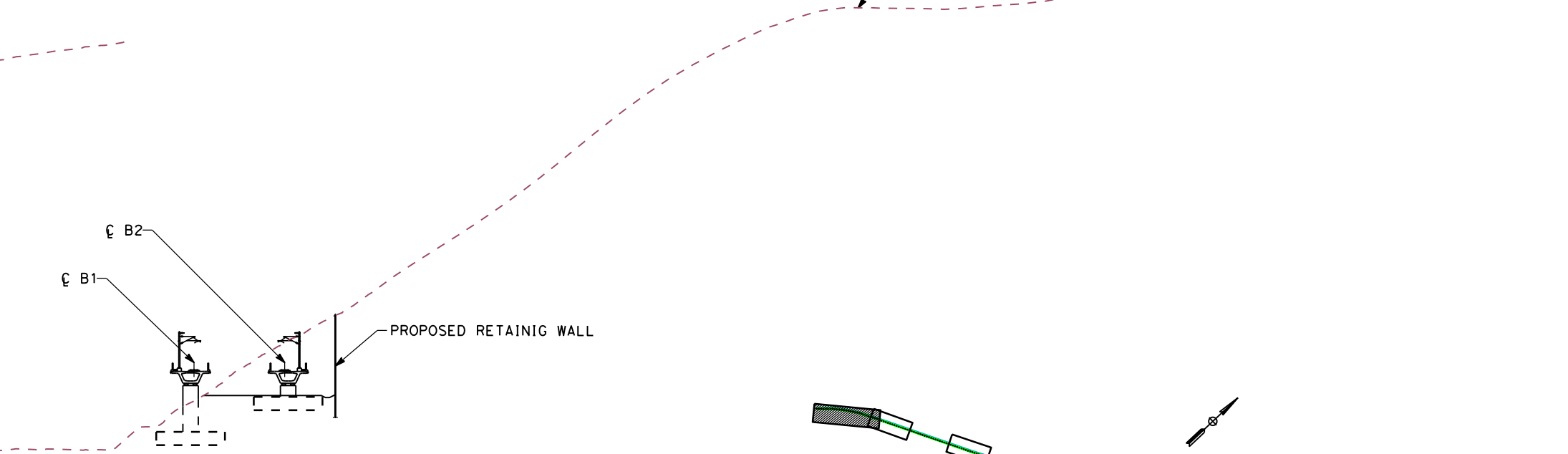
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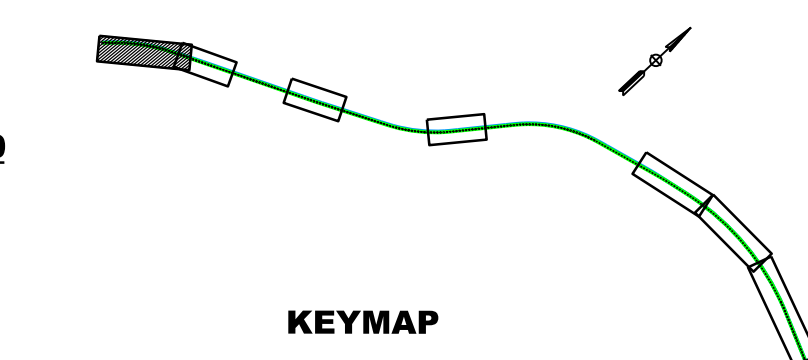
**3** CROSS SECTION 3175+00  
SCALE 1"=50'



**4** CROSS SECTION 3215+00  
SCALE 1"=50'



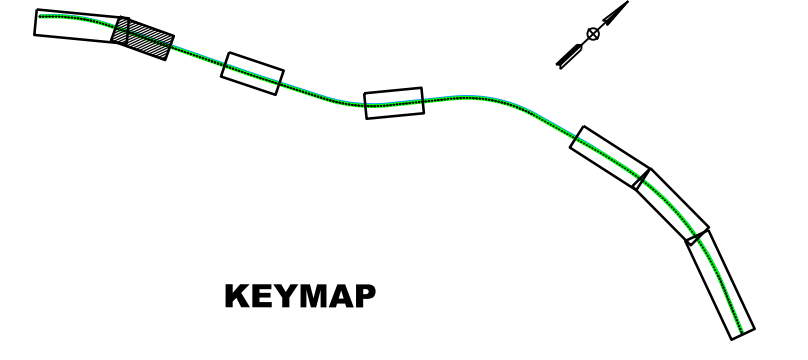
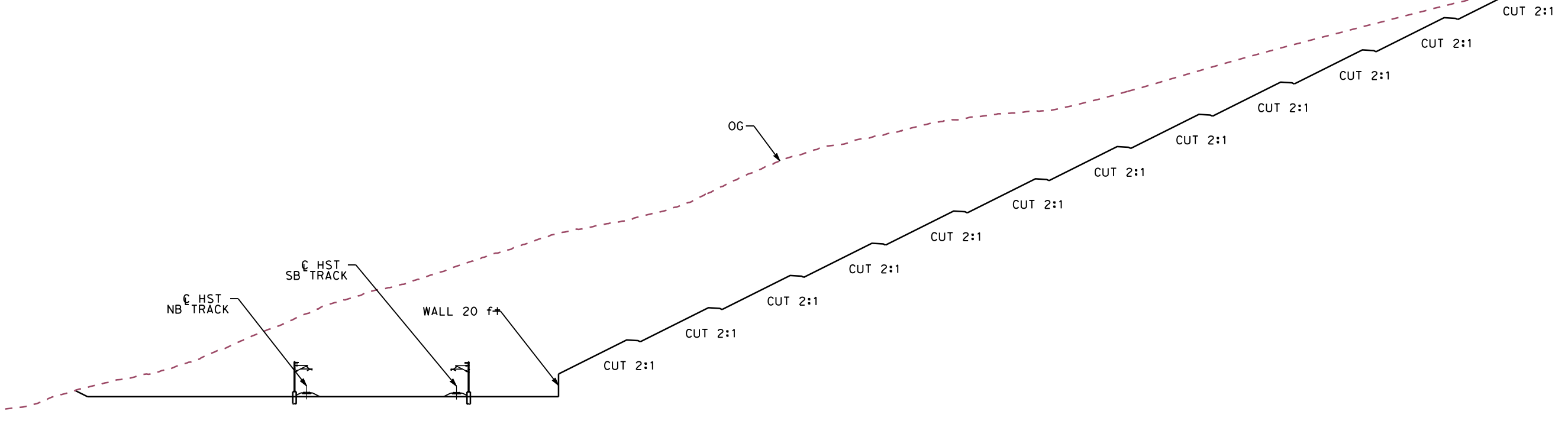
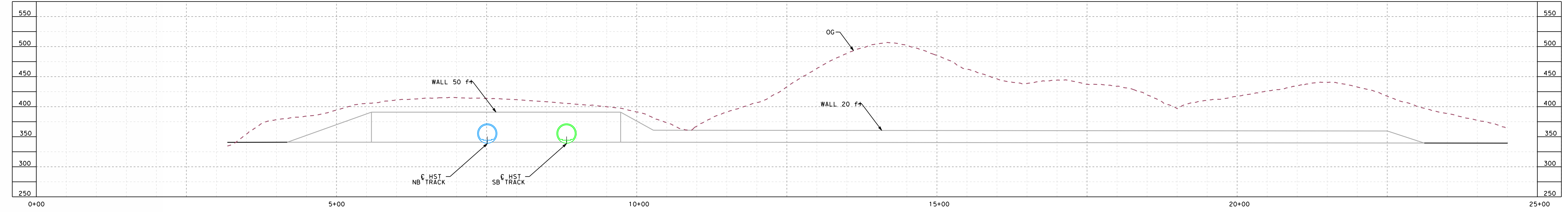
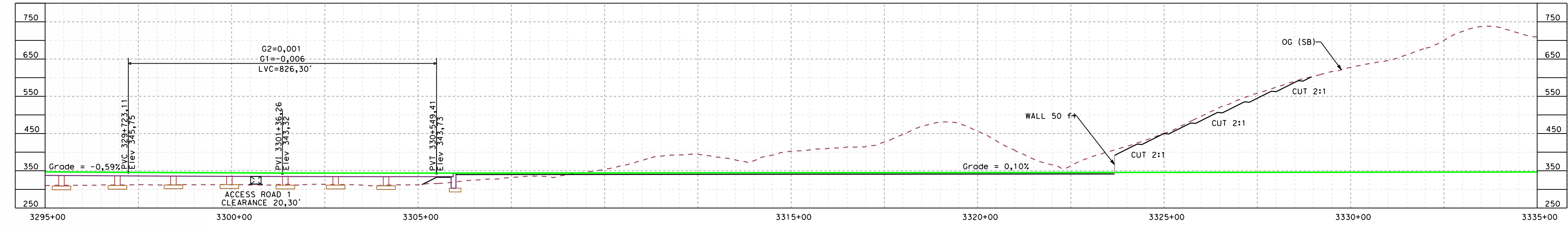
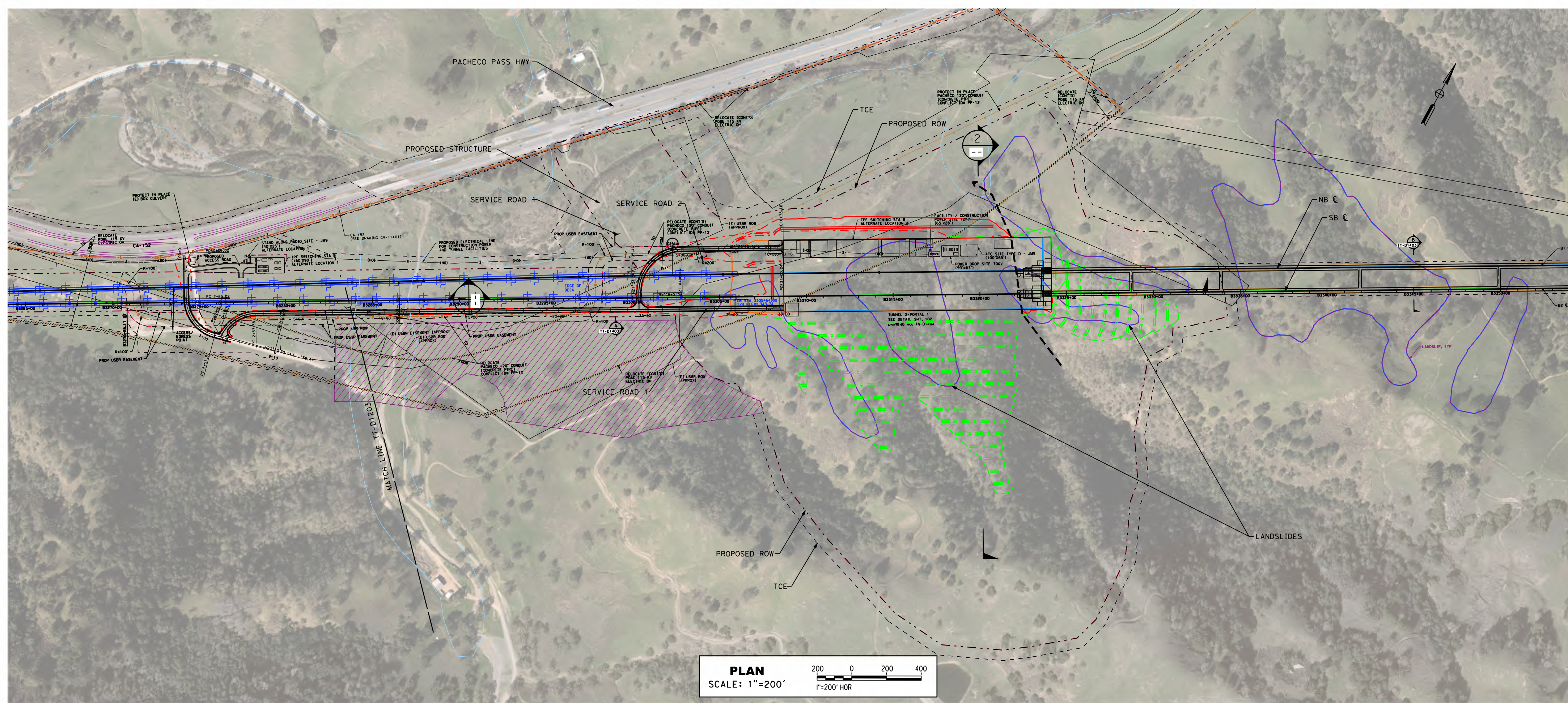
**5** CROSS SECTION 3252+00  
SCALE 1"=50'



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 105 OF 148**

RECORD PERM SUBMITTAL MAY 3, 2019 NOT FOR CONSTRUCTION		1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL GRADING DETAIL	CONTRACT NO. HSR15-34 DRAWING NO. TN-D1409 SCALE AS SHOWN SHEET NO.
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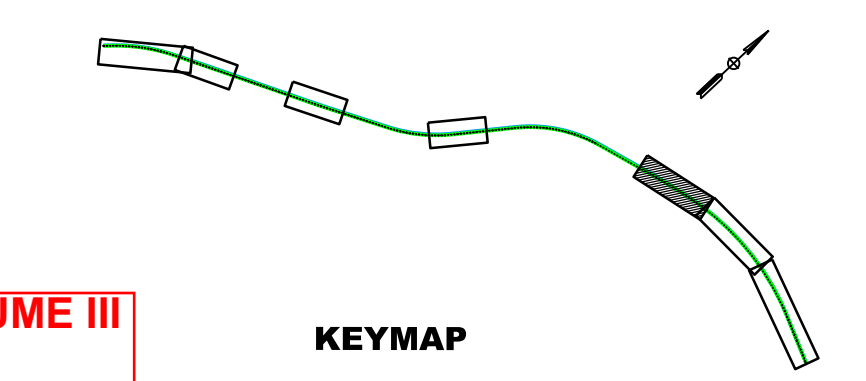
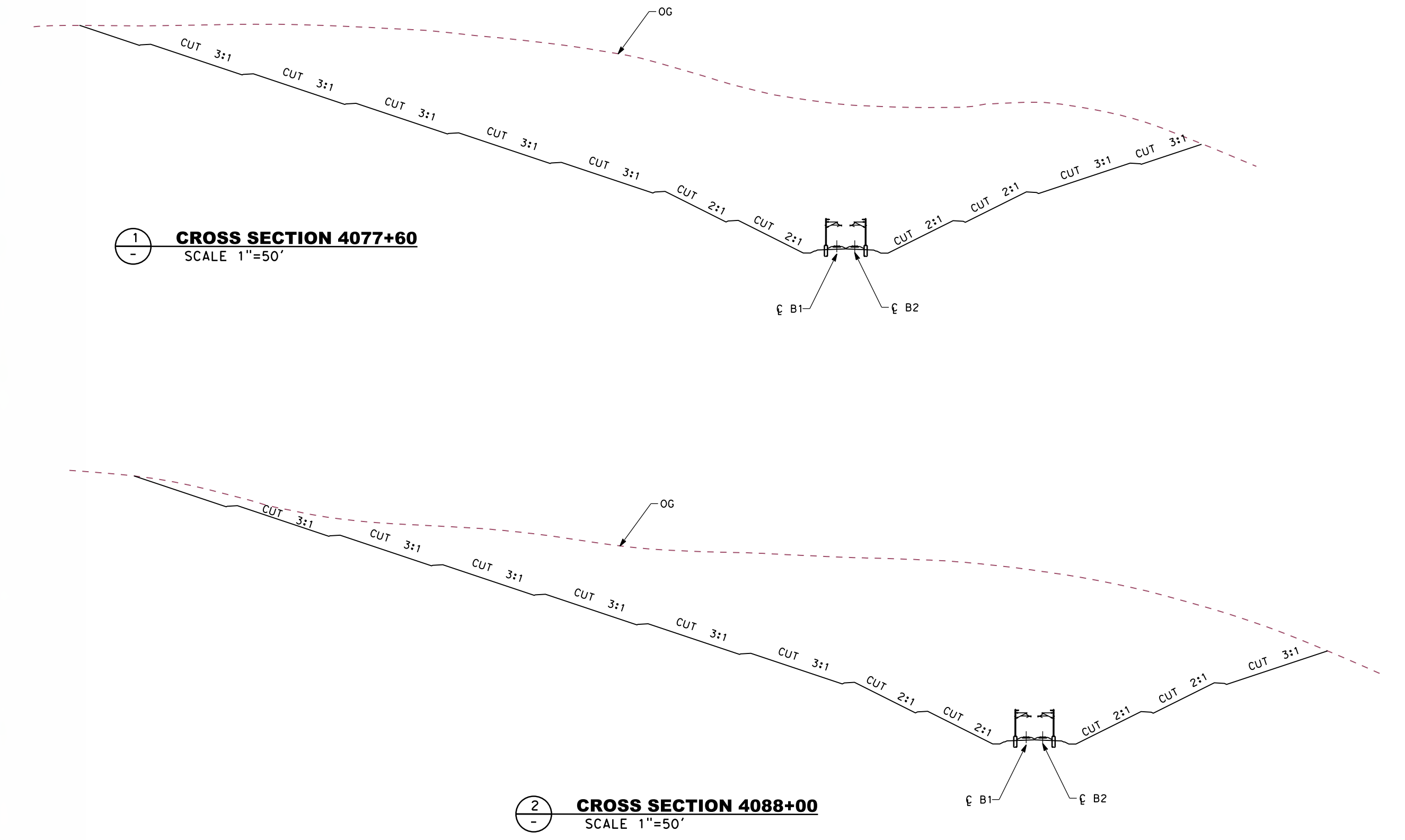
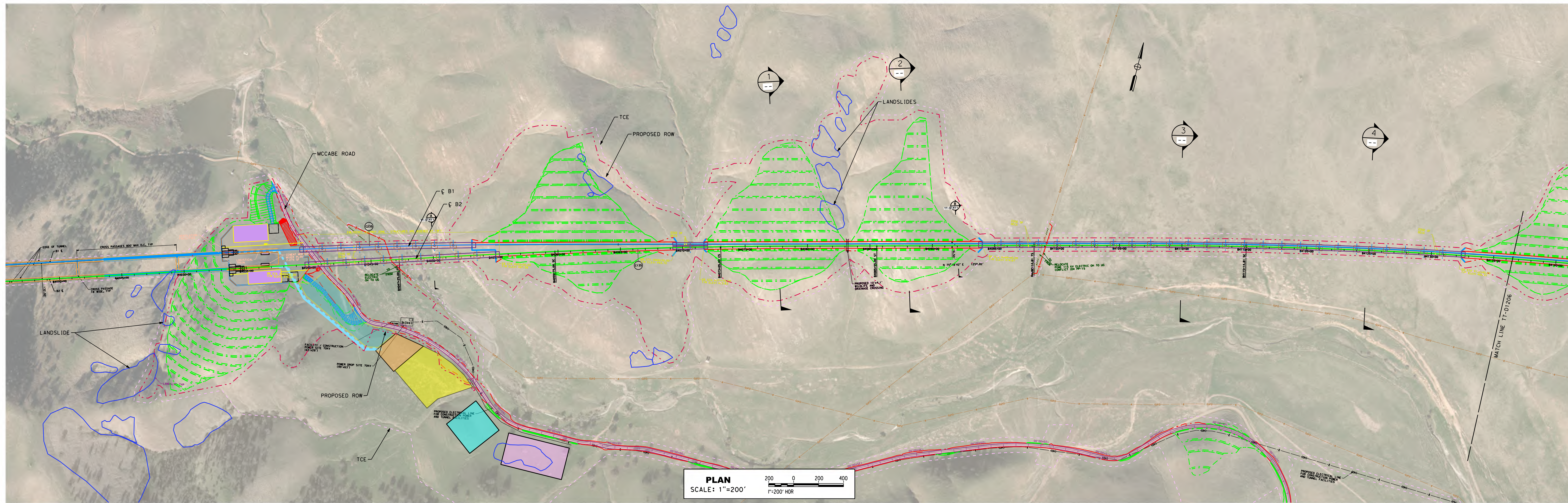




**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 106 OF 148**

RECORD PERMITS <b>MAY 3, 2019</b> NOT FOR CONSTRUCTION	<b>HNTB</b> 1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL GRADING DETAIL	CONTRACT NO. HSR15-35 DRAWING NO. TN-D1410 SCALE AS SHOWN SHEET NO.
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**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 107 OF 148**

RECORD PREP SUBMITTAL MAY 3, 2019 NOT FOR CONSTRUCTION		1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL GRADING DETAIL	CONTRACT NO. HSR15-36 DRAWING NO. TN-D1411 SCALE AS SHOWN SHEET NO.
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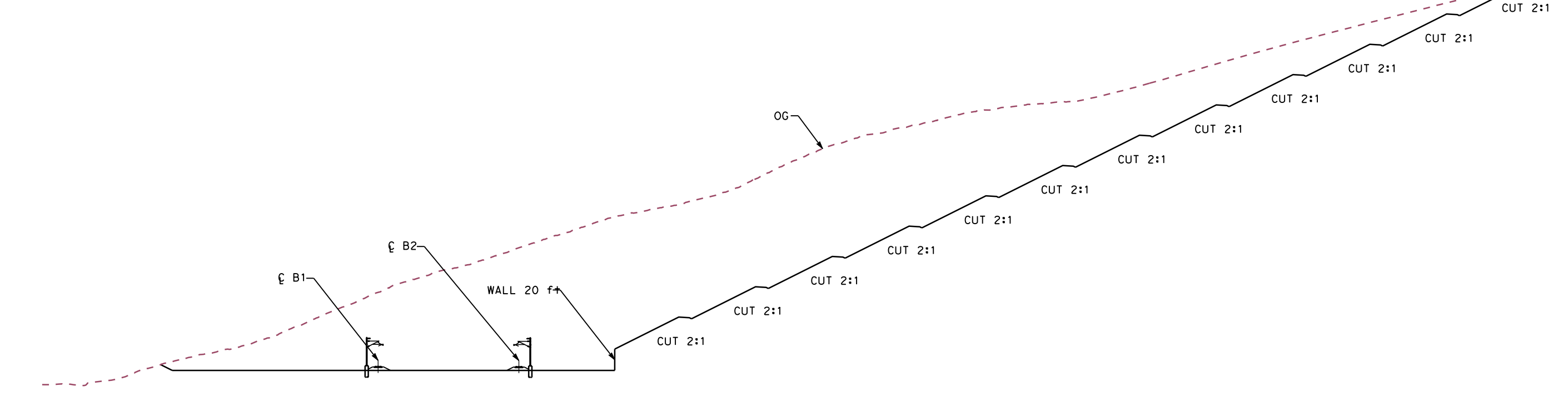
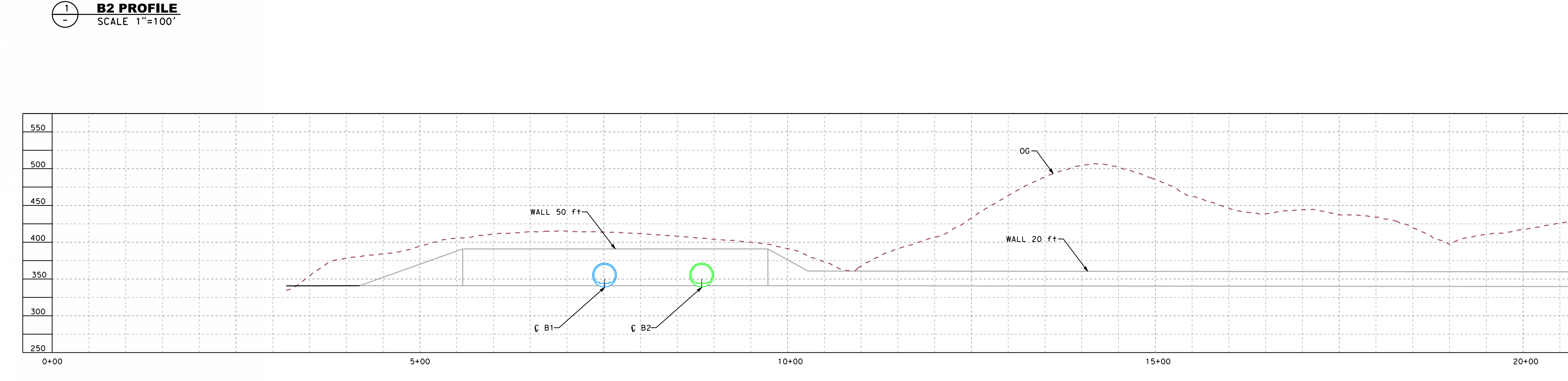
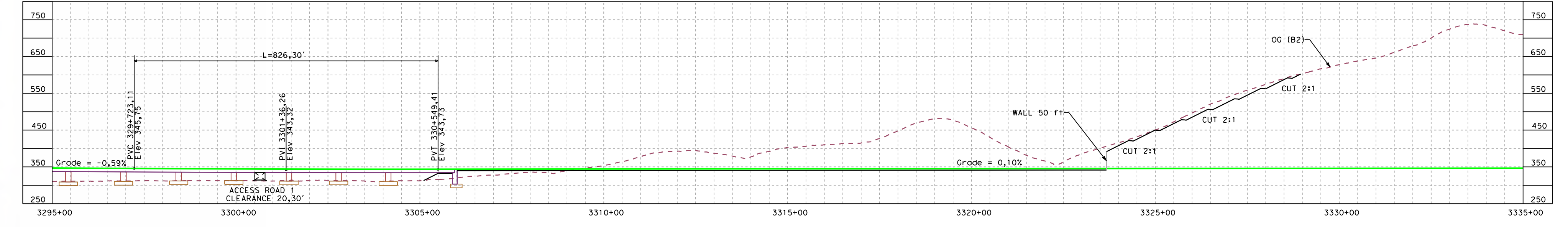
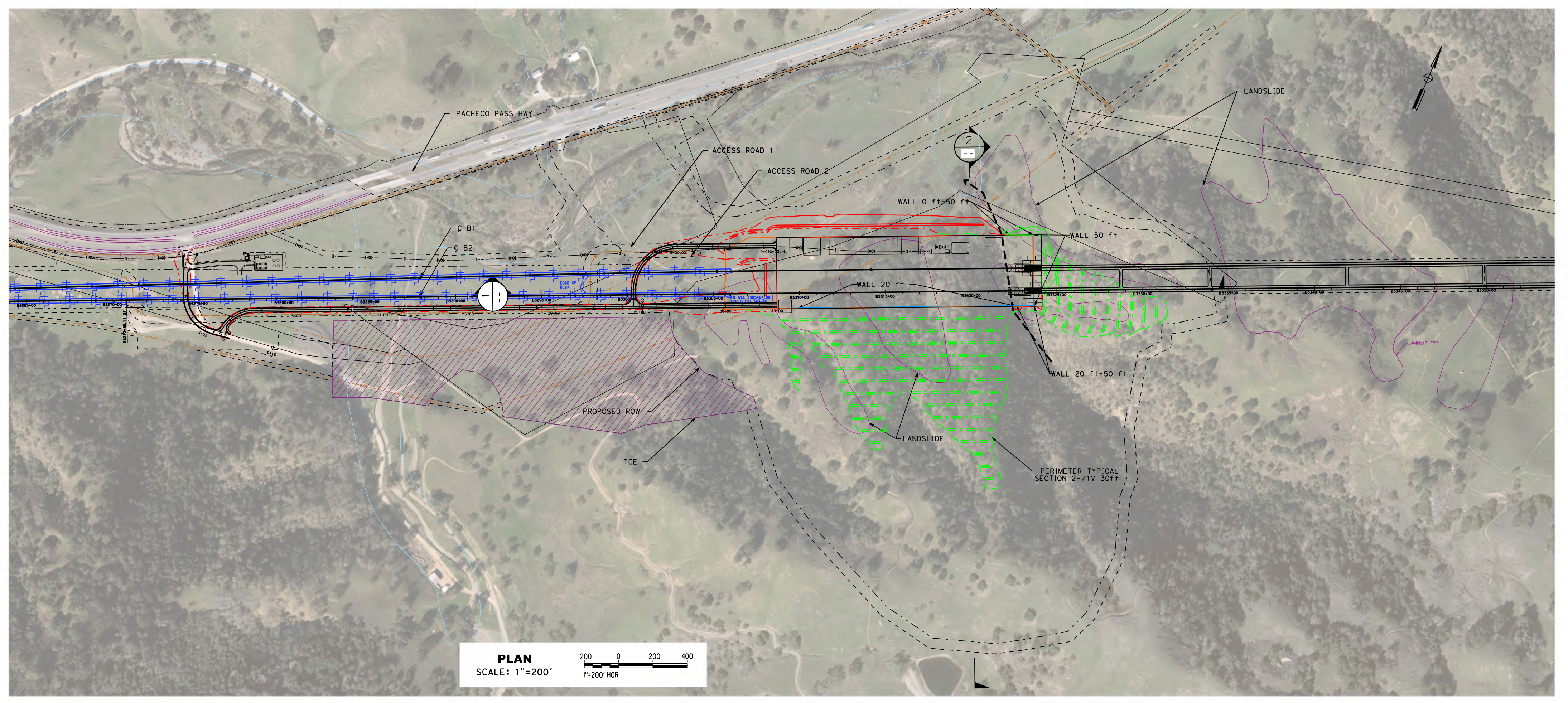










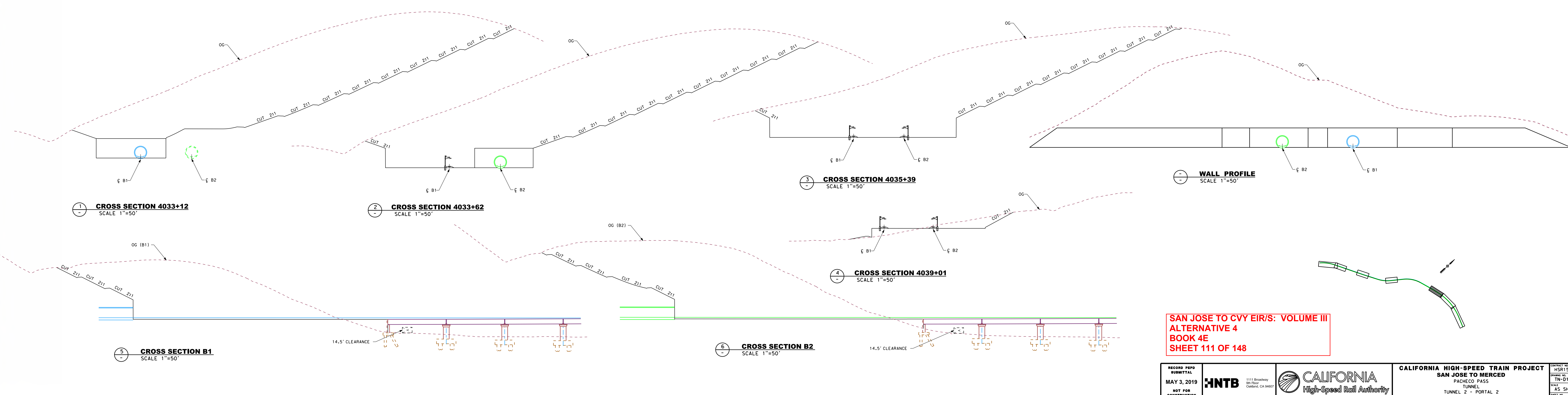
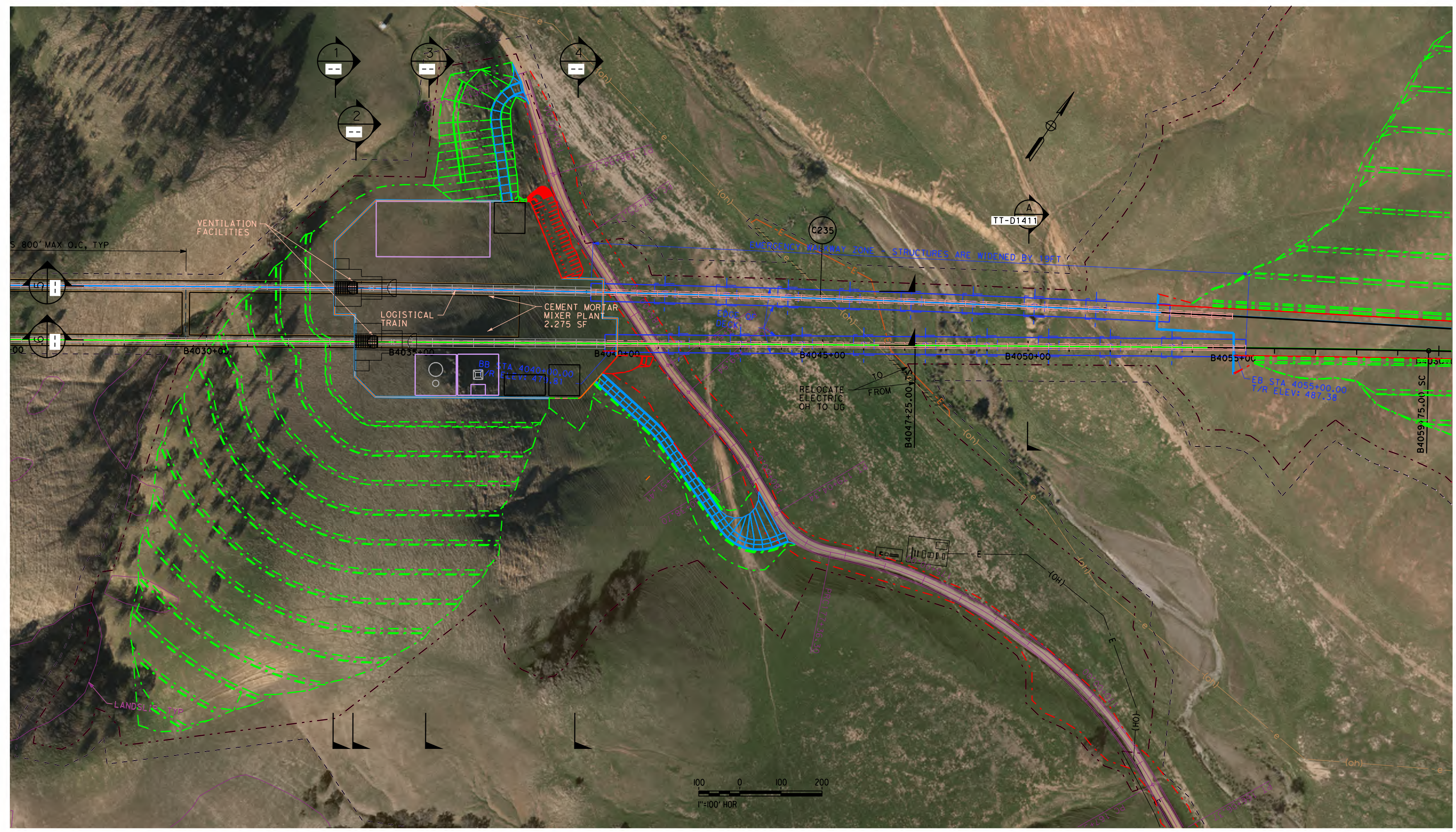


**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 110 OF 148**

RECORD PERMITS <b>MAY 3, 2019</b> NOT FOR CONSTRUCTION	<b>HNTB</b> 1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL TUNNEL 2 - PORTAL 1 SECTIONS	CONTRACT NO. HSR15-39 DRAWING NO. TN-D1414 SCALE AS SHOWN SHEET NO.
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**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 111 OF 148**

RECORD PEPP SUBMITTAL <b>MAY 3, 2019</b> NOT FOR CONSTRUCTION		1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN JOSE TO MERCED</b> PACHECO PASS TUNNEL TUNNEL 2 - PORTAL 2 APPROACH 1	CONTRACT NO. HSR15-40 DRAWING NO. TN-D1415 SCALE AS SHOWN SHEET NO.
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HENRY MILLER ROAD DETOUR:

1. BUILD TEMPORARY ROADWAY ON NORTH SIDE OF HENRY MILLER ROAD. SEE DRAWINGS CV-11602 AND CV-11603 FOR DETAILS.
2. DIRECT TRAFFIC ONTO DETOUR AND CLOSE EXISTING ROADWAY TO ALLOW FOR CONSTRUCTION OF GRADE SEPARATION.
3. CLOSE VOLTA ROAD AND DETOUR TRAFFIC ONTO INGOMAR GRADE ROAD TO HENRY MILLER ROAD.
4. RESTORE TRAFFIC TO HENRY MILLER ROAD AFTER COMPLETION OF GRADE SEPARATION WORK.
5. CONSTRUCT REMAINING PORTION OF OF VOLTA RD.
6. REMOVE TEMPORARY ROADWAY.

CARLUCCI ROAD DETOUR:

1. BUILD TEMPORARY DETOUR ROADWAY ON EAST SIDE OF CARLUCCI ROAD. SEE DRAWING CV-11607 FOR DETAILS.
3. DIRECT TRAFFIC ONTO DETOUR AND CLOSE EXISTING CARLUCCI ROAD TO ALLOW FOR CONSTRUCTION OF GRADE SEPARATION.
4. RESTORE TRAFFIC TO CARLUCCI ROAD, REALIGNED HENRY MILLER ROAD, AND REALIGNED HUTCHINS ROAD UPON COMPLETION OF GRADE SEPARATION WORK.
5. REMOVE TEMPORARY ROADWAYS.

NOTES:

1. GRADE SEPARATION CONSTRUCTION SHALL BE PHASED TO AVOID CONCURRENT CLOSURE OF ANY TWO ROADWAYS WITHIN A 2-MILE RADIUS.

SR-165 / MERCEY SPRINGS ROAD DETOUR:

1. BUILD TEMPORARY DETOUR ROADWAY ON WEST SIDE OF SR-165 / MERCEY SPRINGS ROAD. SEE DRAWING CV-11604 FOR DETAILS.
2. DIRECT TRAFFIC ONTO DETOUR AND CLOSE EXISTING ROADWAY TO ALLOW FOR CONSTRUCTION OF GRADE SEPARATION.
3. RESTORE TRAFFIC TO SR-165 / MERCEY SPRINGS ROAD UPON COMPLETION OF GRADE SEPARATION WORK.
4. REMOVE TEMPORARY ROADWAY.

DELTA ROAD DETOUR:

1. BUILD TEMPORARY DETOUR ROADWAY ON EAST SIDE OF DELTA ROAD. SEE DRAWING CV-11605 FOR DETAILS.
2. DIRECT TRAFFIC ONTO DETOUR AND CLOSE EXISTING ROADWAY TO ALLOW FOR CONSTRUCTION OF GRADE SEPARATION AND FRONTAGE ROAD.
3. RESTORE TRAFFIC TO DELTA ROAD UPON COMPLETION OF GRADE SEPARATION WORK.
4. REMOVE TEMPORARY ROADWAY.

TURNER ISLAND ROAD DETOUR:

1. CONSTRUCT CONNECTOR ROAD AND TEMPORARY DETOUR ROADWAY ON WEST SIDE OF TURNER ISLAND ROAD. SEE DRAWING CV-11606 FOR DETAILS.
2. DIRECT TRAFFIC ONTO DETOUR / CONNECTOR ROAD DURING CONSTRUCTION OF GRADE SEPARATION.
3. RESTORE TRAFFIC TO TURNER ISLAND ROAD UPON COMPLETION OF GRADE SEPARATION WORK.
4. REMOVE TEMPORARY ROADWAY.

**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 113 OF 148**

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE

**RECORD PEPD  
SUBMITTAL**

**MAY 3, 2019**

**NOT FOR  
CONSTRUCTION**

HNTB

1111 Broadway  
9th Floor  
Oakland, CA 94607



CALIFORNIA

High-Speed Rail Authority

CALIFORNIA HIGH-SPEED TRAIN PROJECT

SAN JOSE TO MERCED

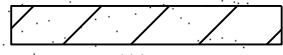
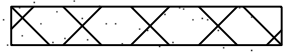
SAN JOAQUIN VALLEY  
HENRY MILLER ROAD  
CONSTRUCTION STAGING PLAN  
GENERAL NOTES

CONTRACT NO. HSR15-34
DRAWING NO. CV-11601
SCALE NO SCALE
SHEET NO.



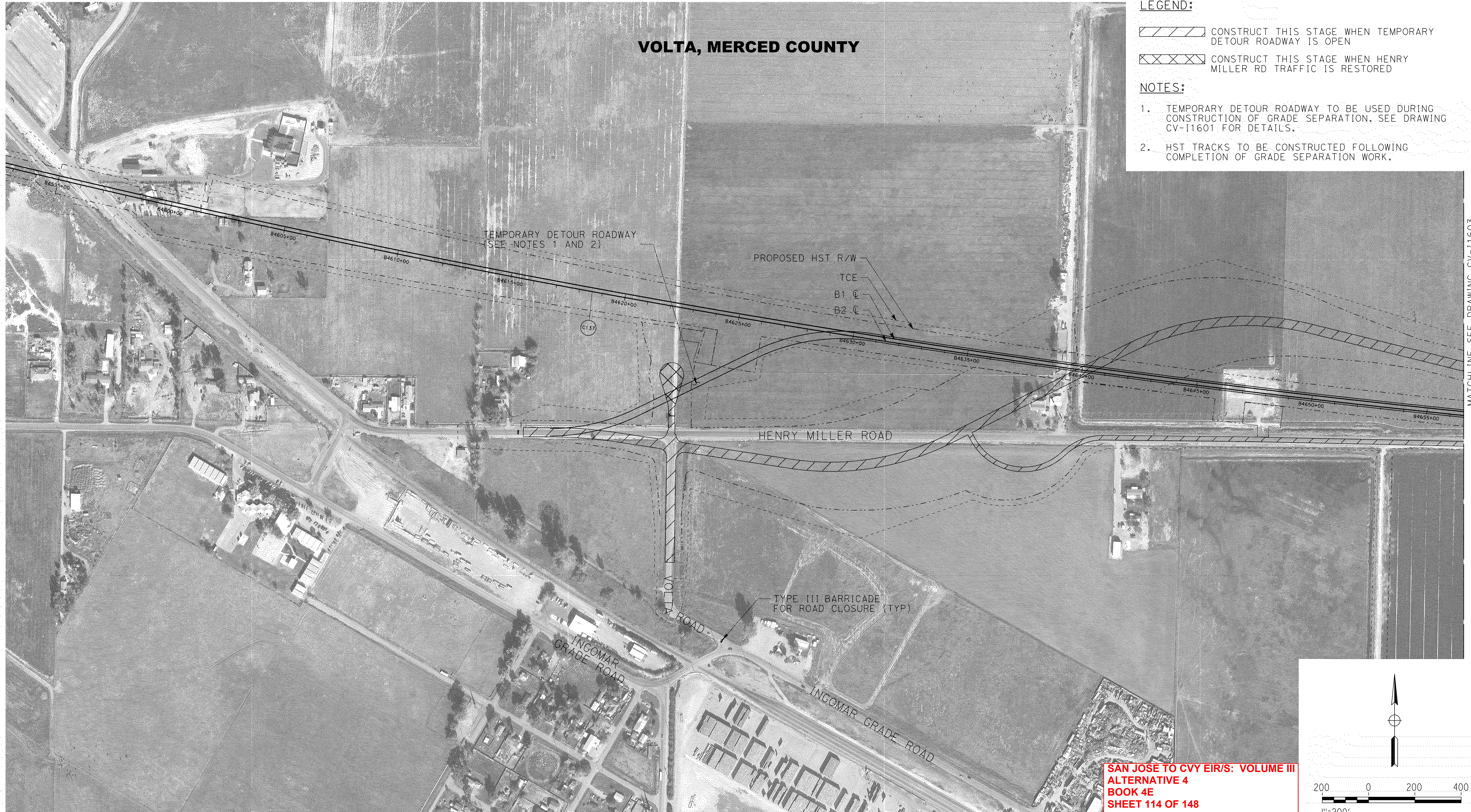
**VOLTA, MERCED COUNTY**

**LEGEND:**

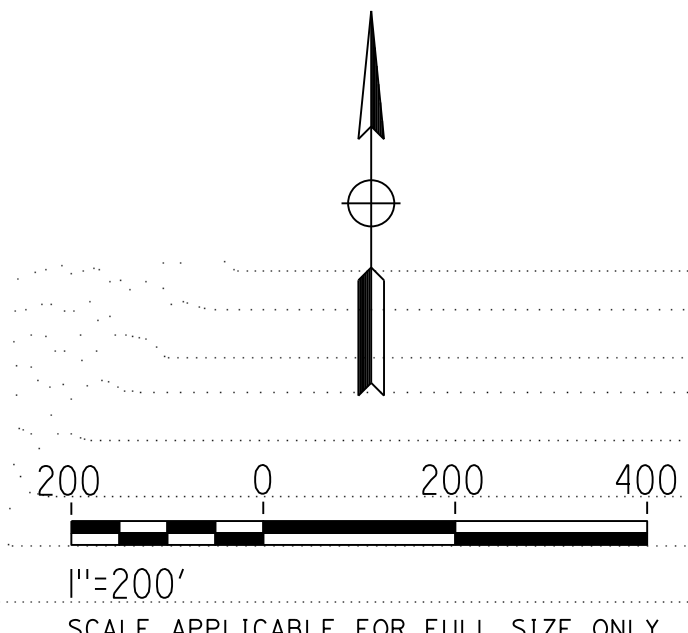
-  CONSTRUCT THIS STAGE WHEN TEMPORARY DETOUR ROADWAY IS OPEN
-  CONSTRUCT THIS STAGE WHEN HENRY MILLER RD TRAFFIC IS RESTORED

**NOTES:**

1. TEMPORARY DETOUR ROADWAY TO BE USED DURING CONSTRUCTION OF GRADE SEPARATION. SEE DRAWING CV-11601 FOR DETAILS.
2. HST TRACKS TO BE CONSTRUCTED FOLLOWING COMPLETION OF GRADE SEPARATION WORK.



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 114 OF 148**



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MATCHLINE SEE DRAWING CV-11603

REV	DATE	BY	CHK	APP	DESCRIPTION

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IN CHARGE	
DATE	

**RECORD PEPP  
SUBMITTAL**

**MAY 3, 2019**

**NOT FOR  
CONSTRUCTION**

**HNTB** 1111 Broadway  
9th Floor  
Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

SAN JOAQUIN VALLEY  
HENRY MILLER ROAD  
CONSTRUCTION STAGING PLAN  
HENRY MILLER ROAD GRADE SEPARATION

CONTRACT NO.	HSR15-34
DRAWING NO.	CV-11602
SCALE	AS SHOWN
SHEET NO.	



**VOLTA, MERCED COUNTY**

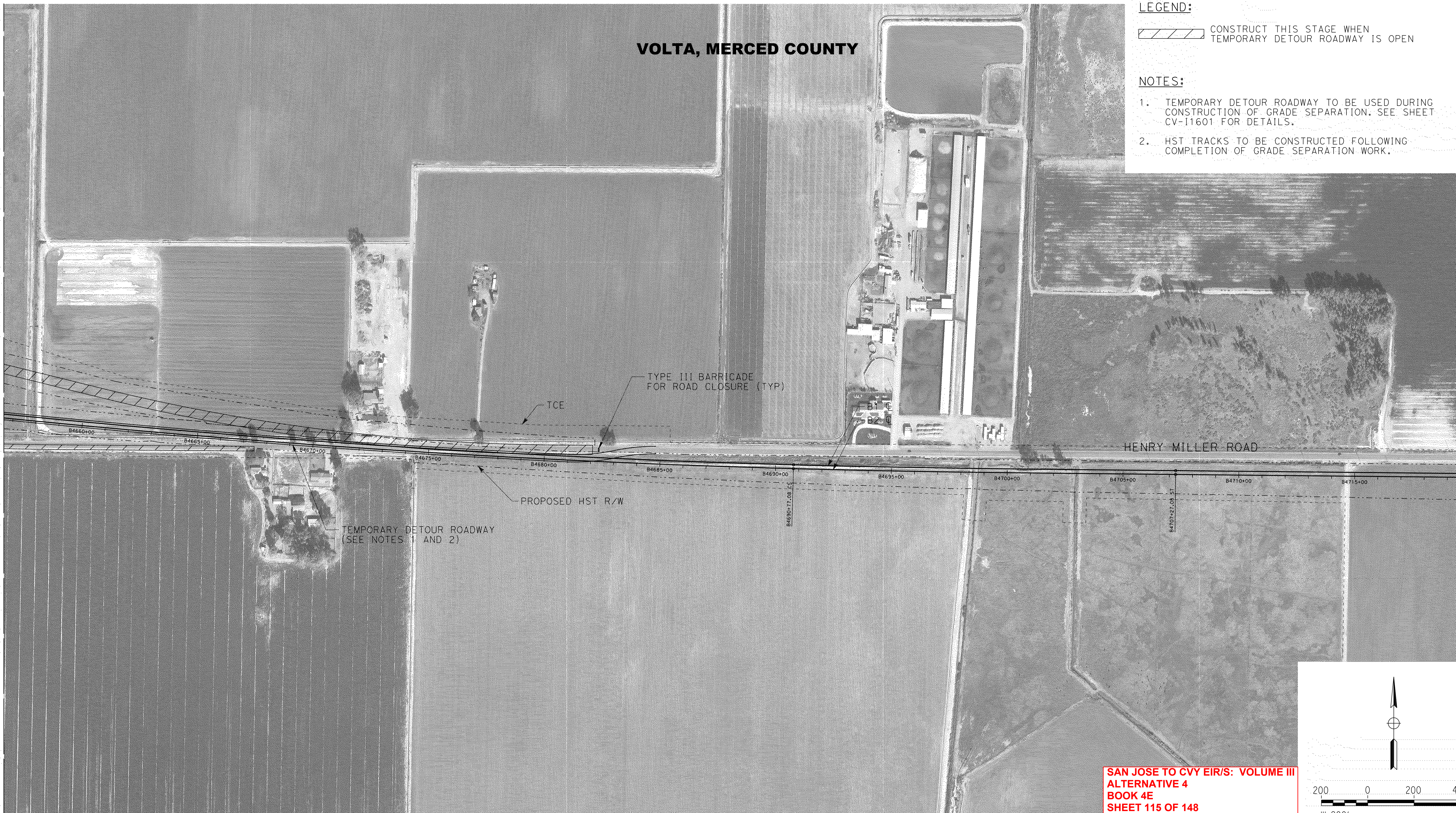
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 CONSTRUCT THIS STAGE WHEN TEMPORARY DETOUR ROADWAY IS OPEN

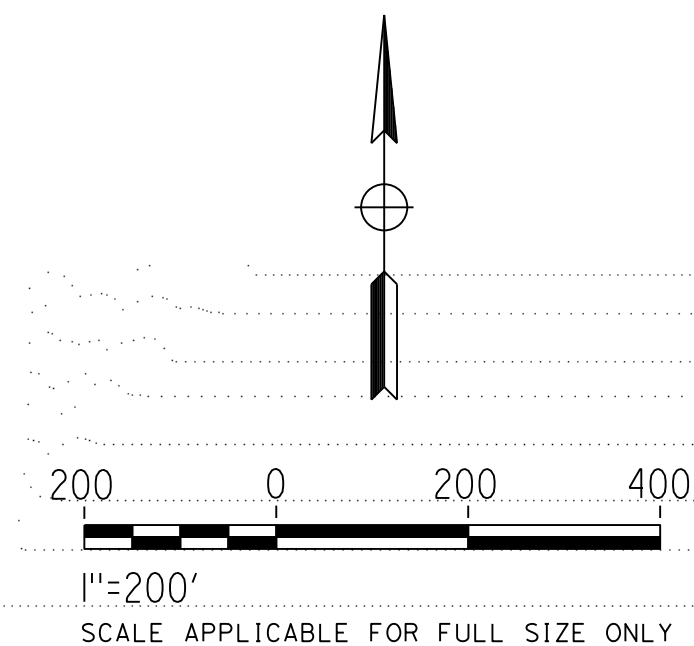
**NOTES:**

1. TEMPORARY DETOUR ROADWAY TO BE USED DURING CONSTRUCTION OF GRADE SEPARATION. SEE SHEET CV-11601 FOR DETAILS.
2. HST TRACKS TO BE CONSTRUCTED FOLLOWING COMPLETION OF GRADE SEPARATION WORK.

MATCHLINE SEE DRAWING CV-11602



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 115 OF 148**



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CHECKED BY
IN CHARGE
DATE

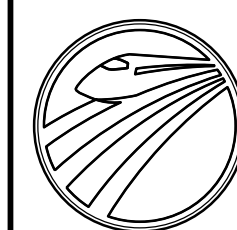
**RECORD PEPD  
SUBMITTAL**

**MAY 3, 2019**

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CONSTRUCTION**



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**CALIFORNIA**  
High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
SAN JOAQUIN VALLEY  
HENRY MILLER ROAD  
CONSTRUCTION STAGING PLAN  
HENRY MILLER ROAD GRADE SEPARATION

CONTRACT NO. HSR15-34
DRAWING NO. CV-11603
SCALE AS SHOWN
SHEET NO.



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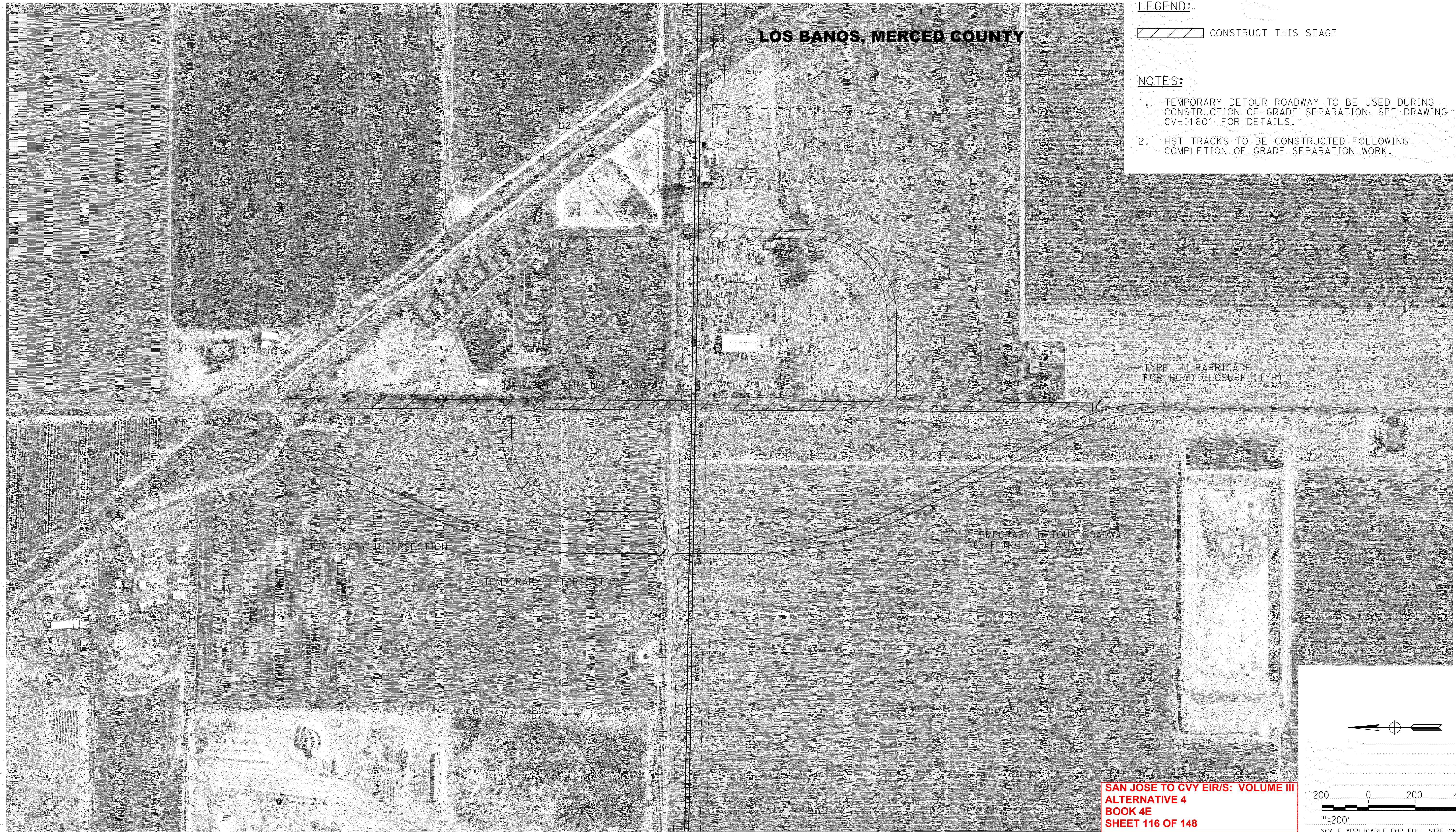
**LOS BANOS, MERCED COUNTY**

**LEGEND:**

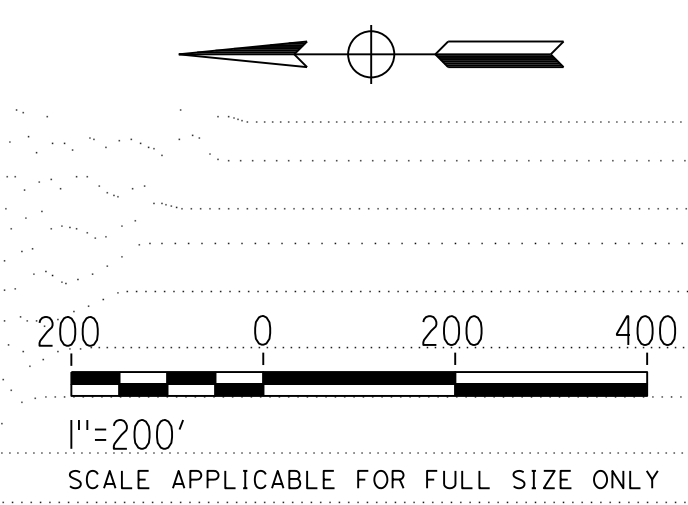
 CONSTRUCT THIS STAGE

**NOTES:**

1. TEMPORARY DETOUR ROADWAY TO BE USED DURING CONSTRUCTION OF GRADE SEPARATION. SEE DRAWING CV-11601 FOR DETAILS.
2. HST TRACKS TO BE CONSTRUCTED FOLLOWING COMPLETION OF GRADE SEPARATION WORK.



**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 116 OF 148**



REV	DATE	BY	CHK	APP	DESCRIPTION

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**MAY 3, 2019**  
  
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**CONSTRUCTION**

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 SAN JOAQUIN VALLEY  
 HENRY MILLER ROAD  
 CONSTRUCTION STAGING PLAN  
 SR-165 / MERCEY SPRINGS ROAD GRADE SEPARATION

CONTRACT NO.	HSR15-34
DRAWING NO.	CV-11604
SCALE	AS SHOWN
SHEET NO.	



**MERCED COUNTY**

**LEGEND:**

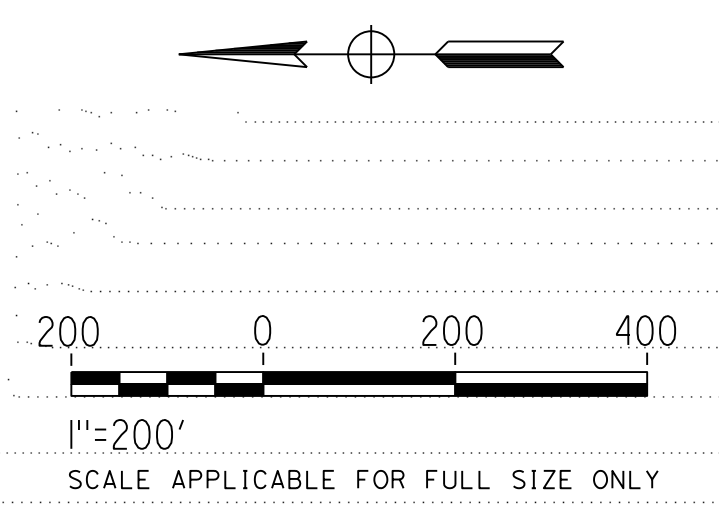
 CONSTRUCT THIS STAGE

**NOTES:**

1. TEMPORARY DETOUR ROADWAY TO BE USED DURING CONSTRUCTION OF GRADE SEPARATION. SEE DRAWING CV-11601 FOR DETAILS.
2. HST TRACKS TO BE CONSTRUCTED FOLLOWING COMPLETION OF GRADE SEPARATION WORK.



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 117 OF 148**



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**CALIFORNIA**  
High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

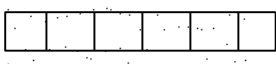
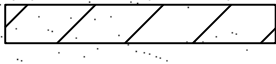
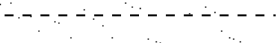
SAN JOAQUIN VALLEY  
HENRY MILLER ROAD  
CONSTRUCTION STAGING PLAN  
DELTA ROAD GRADE SEPARATION

CONTRACT NO.	HSR15-34
DRAWING NO.	CV-11605
SCALE	AS SHOWN
SHEET NO.	



**MERCED COUNTY**

**LEGEND:**

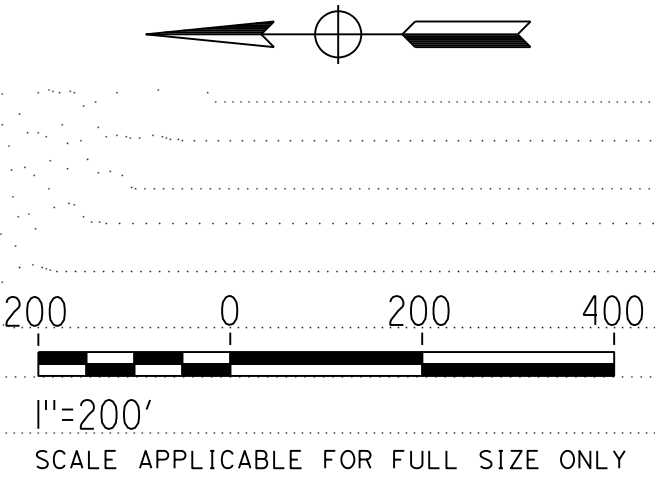
-  CONSTRUCT STAGE 1 (CONSTRUCT AS PART OF TEMPORARY ROAD)
-  CONSTRUCT STAGE 2
-  TEMPORARY CONSTRUCTION EASEMENT

**NOTES:**

1. TEMPORARY DETOUR ROADWAY AND CONNECTOR ROAD TO BE USED DURING CONSTRUCTION OF GRADE SEPARATION. SEE DRAWING CV-11601 FOR DETAILS.
2. HST TRACKS TO BE CONSTRUCTED FOLLOWING COMPLETION OF GRADE SEPARATION WORK.



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 118 OF 148**



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IN CHARGE
DATE

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SUBMITTAL**

**MAY 3, 2019**

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CONSTRUCTION**

**HNTB** 1111 Broadway  
9th Floor  
Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

SAN JOAQUIN VALLEY  
HENRY MILLER ROAD  
CONSTRUCTION STAGING PLAN  
TURNER ISLAND ROAD GRADE SEPARATION

CONTRACT NO.	HSR15-34
DRAWING NO.	CV-11606
SCALE	AS SHOWN
SHEET NO.	



**MERCED COUNTY**

**LEGEND:**

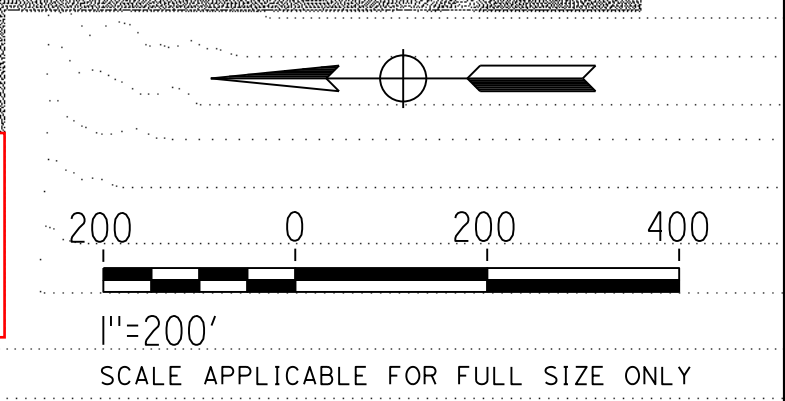
 CONSTRUCT THIS STAGE

**NOTES:**

1. TEMPORARY DETOUR ROADWAY TO BE USED DURING CONSTRUCTION OF GRADE SEPARATION. SEE SHEET CV-I1601 FOR DETAILS.
2. HST TRACKS TO BE CONSTRUCTED FOLLOWING COMPLETION OF GRADE SEPARATION WORK.



**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 119 OF 148**



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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

SAN JOAQUIN VALLEY  
HENRY MILLER ROAD  
CONSTRUCTION STAGING PLAN  
CARLUCCI ROAD GRADE SEPARATION

CONTRACT NO.	HSR15-34
DRAWING NO.	CV-I1607
SCALE	AS SHOWN
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	POB	2872+86.55	1958137.752	6137507.790		4093.26							S 60°29'13" E		
	TANGENT	PI	2913+79.81	1956121.329	6141069.924											
	TANGENT	PI	2913+79.81	1956121.329	6141069.924		2621.29							S 60°29'51" E		
	TANGENT	PC	2940+01.09	1954830.444	6143351.319											
C401	ARC	PC	2940+01.09	1954830.444	6143351.319											
	ARC	PI	2940+49.22	1954806.743	6143393.205	11459.19	96.25	0°28'53"		79	0.00	2.18		0°30'00"		
	ARC	CC		1944857.125	6137708.097											
	ARC	PT	2940+97.35	1954782.692	6143434.890											
	TANGENT	PT	2940+97.35	1954782.692	6143434.890		211.89							S 60°00'58" E		
	TANGENT	TS	2943+09.24	1954676.799	6143618.421											
	CLOTHOID	TS	2943+09.24	1954676.799	6143618.421										S 60°00'58" E	S 59°43'13" E
	CLOTHOID	SPI	2943+75.90	1954643.482	6143676.165		100.00	0°17'45"	50.00	0.04						
	CLOTHOID	SC	2944+09.24	1954626.675	6143704.951											
C402	ARC	SC	2944+09.24	1954626.675	6143704.951											
	ARC	PI	2946+31.28	1954514.713	6143896.707	9683.84	444.02	2°37'38"		79	1.00	1.58		0°35'30"		
	ARC	CC		1946263.956	6138822.156											
	ARC	CS	2948+53.26	1954394.080	6144083.130											
	CLOTHOID	CS	2948+53.26	1954394.080	6144083.130										S 57°05'36" E	S 56°47'51" E
	CLOTHOID	SPI	2948+86.59	1954375.970	6144111.115		100.00	0°17'45"	50.00	0.04						
	CLOTHOID	ST	2949+53.26	1954339.464	6144166.898											
	TANGENT	ST	2949+53.26	1954339.464	6144166.898		2679.51							S 56°47'51" E		
	TANGENT	PI	2976+32.77	1952872.160	6146408.951											
	TANGENT	PI	2976+32.77	1952872.160	6146408.951		4106.14							S 56°48'33" E		
	TANGENT	PI	3017+38.91	1950624.344	6149845.190											
	TANGENT	PI	3017+38.91	1950624.344	6149845.190		1184.94							S 56°46'21" E		
	TANGENT	TS	3029+23.85	1949975.040	6150836.393											
	CLOTHOID	TS	3029+23.85	1949975.040	6150836.393										S 56°46'21" E	S 58°58'19" E
	CLOTHOID	SPI	3029+97.19	1949934.853	6150897.741		110.00	2°11'58"	55.00	0.35						
	CLOTHOID	SC	3030+33.85	1949915.950	6150929.166											
C403	ARC	SC	3030+33.85	1949915.950	6150929.166											
	ARC	PI	3031+31.38	1949865.675	6151012.745	1432.69	194.77	7°47'21"		40	1.00	3.47		3°59'57"		
	ARC	CC		1951143.645	6151667.654											
	ARC	CS	3032+28.62	1949827.192	6151102.366											
	CLOTHOID	CS	3032+28.62	1949827.192	6151102.366										S 66°45'40" E	S 68°57'39" E
	CLOTHOID	SPI	3032+65.29	1949812.722	6151136.062		110.00	2°11'58"	55.00	0.35						
	CLOTHOID	ST	3033+38.62	1949786.393	6151204.512											
	TANGENT	ST	3033+38.62	1949786.393	6151204.512		88.97							S 68°57'39" E		
	TANGENT	TS	3034+27.59	1949754.451	6151287.554											
	CLOTHOID	TS	3034+27.59	1949754.451	6151287.554										S 68°57'39" E	S 66°45'40" E
	CLOTHOID	SPI	3035+00.93	1949728.122	6151356.004		110.00	2°11'58"	55.00	0.35						
	CLOTHOID	SC	3035+37.59	1949713.652	6151389.701											
C404	ARC	SC	3035+37.59	1949713.652	6151389.701											
	ARC	PI	3038+41.26	1949593.836	6151668.731	1432.69	598.48	23°56'03"		40	1.00	3.47		3°59'57"		
	ARC	CC		1948397.199	6150824.412											
	ARC	CS	3041+36.07	1949371.124	6151875.160											
	CLOTHOID	CS	3041+36.07	1949371.124	6151875.160										S 42°49'37" E	S 40°37'39" E
	CLOTHOID	SPI	3041+72.74	1949344.229	6151900.089		110.00	2°11'58"	55.00	0.35						
	CLOTHOID	ST	3042+46.07	1949288.567	6151947.843											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 120 OF 148

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**RECORD PEPD SUBMITTAL**  
 MAY 3, 2019  
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CALIFORNIA High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT2/MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C401 TO C404

CONTRACT NO. HSR15-34
DRAWING NO. TT-B4001
SCALE NONE
SHEET NO.



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	3042+46.07	1949288.567	6151947.843		81.28							S 40°37'39" E		
	TANGENT	TS	3043+27.35	1949226.879	6152000.768											
	CLOTHOID	TS	3043+27.35	1949226.879	6152000.768										S 40°37'39" E	S 37°08'27" E
	CLOTHOID	SPI	3044+30.70	1949148.438	6152068.065		155.00	3°29'12"	77.49	0.79						
	CLOTHOID	SC	3044+82.35	1949107.237	6152099.271											
C405	ARC	SC	3044+82.35	1949107.237	6152099.271											
	ARC	PI	3046+29.95	1948989.578	6152188.388	1273.57	293.89	13°13'17"			40	1.50	3.53	4°29'56"		
	ARC	CC		1948338.284	6151084.041											
	ARC	CS	3047+76.24	1948854.655	6152248.233											
	CLOTHOID	CS	3047+76.24	1948854.655	6152248.233										S 23°55'10" E	S 20°25'58" E
	CLOTHOID	SPI	3048+27.92	1948807.409	6152269.188		155.00	3°29'12"	77.49	0.79						
	CLOTHOID	ST	3049+31.24	1948710.559	6152305.270											
	TANGENT	ST	3049+31.24	1948710.559	6152305.270									S 20°25'58" E		
	TANGENT	TS	3050+29.55	1948618.426	6152339.594											
	CLOTHOID	TS	3050+29.55	1948618.426	6152339.594										S 20°25'58" E	S 23°52'04" E
	CLOTHOID	SPI	3051+32.91	1948521.576	6152375.675		155.00	3°26'06"	77.49	0.77						
	CLOTHOID	SC	3051+84.55	1948474.312	6152396.588											
C406	ARC	SC	3051+84.55	1948474.312	6152396.588											
	ARC	PI	3053+30.73	1948340.639	6152455.734	1292.71	291.11	12°54'09"			40	1.00	3.96	4°25'56"		
	ARC	CC		1948997.378	6153578.747											
	ARC	CS	3054+75.66	1948223.549	6152543.234											
	CLOTHOID	CS	3054+75.66	1948223.549	6152543.234										S 36°46'14" E	S 40°12'19" E
	CLOTHOID	SPI	3055+27.35	1948182.147	6152574.173		155.00	3°26'06"	77.49	0.77						
	CLOTHOID	ST	3056+30.66	1948103.213	6152640.890											
	TANGENT	ST	3056+30.66	1948103.213	6152640.890									S 40°12'19" E		
	TANGENT	TS	3066+46.72	1947327.217	6153296.783		1016.05									
	CLOTHOID	TS	3066+46.72	1947327.217	6153296.783										S 40°12'19" E	S 37°47'23" E
	CLOTHOID	SPI	3067+50.06	1947248.291	6153363.494		155.00	2°24'56"	77.50	0.54						
	CLOTHOID	SC	3068+01.72	1947207.454	6153395.159											
C407	ARC	SC	3068+01.72	1947207.454	6153395.159											
	ARC	PI	3069+74.60	1947070.833	6153501.094	1838.21	344.75	10°44'44"			15	0.50	0.00	3°07'01"		
	ARC	CC		1946081.061	6151942.487											
	ARC	PCC	3071+46.46	1946916.856	6153579.699											
	ARC	PCC	3071+46.46	1946916.856	6153579.699											
	ARC	PI	3072+73.23	1946803.949	6153637.338	702.18	250.84	20°28'03"			15	0.50	0.79	8°09'35"		
	ARC	CC		1946597.590	6152954.298											
	ARC	PCC	3073+97.30	1946678.014	6153651.857											
	ARC	PCC	3073+97.30	1946678.014	6153651.857											
	ARC	PI	3074+61.72	1946614.020	6153659.235	1978.01	128.79	3°43'50"			15	0.50	0.00	2°53'48"		
	ARC	CC		1946451.462	6151686.864											
	ARC	PT	3075+26.09	1946549.680	6153662.434											
	TANGENT	PT	3075+26.09	1946549.680	6153662.434									S 2°50'46" E		
	TANGENT	PI	3076+48.13	1946427.787	6153668.494											
	TANGENT	PI	3076+48.13	1946427.787	6153668.494									S 2°40'24" E		
	TANGENT	PC	3080+18.89	1946057.439	6153685.787		370.75									
C408	ARC	PC	3080+18.89	1946057.439	6153685.787											
	ARC	PI	3080+73.03	1946003.357	6153688.312	2022.41	108.26	3°04'01"			15	0.00	0.45	2°49'59"		
	ARC	CC		1945963.111	6151665.578											
	ARC	PT	3081+27.14	1945949.217	6153687.940											

**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 121 OF 148**

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REV	DATE	BY	CHK	APP	DESCRIPTION

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Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

ALTERNATIVE 4

MT3 TRACK ALIGNMENT DATA TABLE

CURVE NO. C405 TO C408

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4002
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	PT	3081+27.14	1945949.217	6153687.940		60.45							S 0°23'37" W		
	TANGENT	PC	3081+87.59	1945888.770	6153687.525											
C409	ARC	PC	3081+87.59	1945888.770	6153687.525											
	ARC	PI	3082+21.21	1945855.149	6153687.294	1273.57	67.23	3°01'28"			15	0.00	0.71	4°29'56"		
	ARC	CC		1945880.021	6154961.065											
	ARC	PT	3082+54.82	1945821.563	6153688.837											
	TANGENT	PT	3082+54.82	1945821.563	6153688.837		1284.03							S 2°37'51" E		
	TANGENT	PC	3095+38.85	1944538.888	6153747.775											
C410	ARC	PC	3095+38.85	1944538.888	6153747.775											
	ARC	PI	3095+94.39	1944483.402	6153750.324	2864.93	111.08	2°13'17"			15	0.00	0.32	2°00'00"		
	ARC	CC		1944670.391	6156609.685											
	ARC	PRC	3096+49.92	1944428.057	6153755.022											
C411	ARC	PRC	3096+49.92	1944428.057	6153755.022											
	ARC	PI	3097+09.98	1944368.216	6153760.102	2864.93	120.10	2°24'06"			15	0.00	0.32	2°00'00"		
	ARC	CC		1944185.724	6150900.360											
	ARC	PT	3097+70.02	1944308.214	6153762.670											
	TANGENT	PT	3097+70.02	1944308.214	6153762.670		585.99							S 2°27'02" E		
	TANGENT	TS	3103+56.00	1943722.762	6153787.724											
	CLOTHOID	TS	3103+56.00	1943722.762	6153787.724										S 2°27'02" E	S 3°39'01" E
	CLOTHOID	SPI	3104+09.34	1943669.476	6153790.004		80.00	1°12'00"	40.00	0.14						
	CLOTHOID	SC	3104+36.01	1943642.862	6153791.702											
C412	ARC	SC	3104+36.01	1943642.862	6153791.702											
	ARC	PI	3105+00.39	1943578.607	6153795.801	1910.08	128.72	3°51'40"			20	0.50	0.34	2°59'59"		
	ARC	CC		1943764.470	6155697.907											
	ARC	PCC	3105+64.73	1943514.775	6153804.218											
	ARC	PCC	3105+64.73	1943514.775	6153804.218											
	ARC	PI	3107+29.30	1943351.618	6153825.732	1228.11	327.19	15°15'52"			30	0.50	2.44	4°39'55"		
	ARC	CC		1943675.320	6155021.789											
	ARC	PT	3108+91.92	1943199.881	6153889.441											
	TANGENT	PT	3108+91.92	1943199.881	6153889.441		80.40							S 22°46'34" E		
	TANGENT	TS	3109+72.32	1943125.746	6153920.568											
	CLOTHOID	TS	3109+72.32	1943125.746	6153920.568										S 22°46'34" E	S 24°46'32" E
	CLOTHOID	SPI	3110+38.99	1943064.274	6153946.379		100.00	1°59'59"	50.00	0.29						
	CLOTHOID	SC	3110+72.32	1943034.005	6153960.349											
C413	ARC	SC	3110+72.32	1943034.005	6153960.349											
	ARC	PI	3112+31.71	1942889.290	6154027.143	1432.69	317.47	12°41'46"			40	1.00	3.47	3°59'57"		
	ARC	CC		1943634.398	6155261.168											
	ARC	CS	3113+89.79	1942762.792	6154124.109											
	CLOTHOID	CS	3113+89.79	1942762.792	6154124.109										S 37°28'18" E	S 39°28'17" E
	CLOTHOID	SPI	3114+23.12	1942736.334	6154144.390		100.00	1°59'59"	50.00	0.29						
	CLOTHOID	ST	3114+89.79	1942684.868	6154186.772											
	TANGENT	ST	3114+89.79	1942684.868	6154186.772		743.45							S 39°28'17" E		
	TANGENT	TS	3122+33.23	1942110.970	6154659.375											
	CLOTHOID	TS	3122+33.23	1942110.970	6154659.375										S 39°28'17" E	S 42°26'24" E
	CLOTHOID	SPI	3123+66.59	1942008.030	6154744.146		200.00	2°58'07"	99.99	0.86						
	CLOTHOID	SC	3124+33.23	1941958.818	6154789.145											
C414	ARC	SC	3124+33.23	1941958.818	6154789.145											
	ARC	PI	3131+54.02	1941426.891	6155275.543	1930.00	1379.65	40°57'27"			55	2.00	4.27	2°58'07"		
	ARC	CC		1943261.217	6156213.454											
	ARC	CS	3138+12.88	1941344.017	6155991.547											
	CLOTHOID	CS	3138+12.88	1941344.017	6155991.547										S 83°23'52" E	S 86°21'59" E
	CLOTHOID	SPI	3138+79.57	1941336.350	6156057.788		200.00	2°58'07"	99.99	0.86						
	CLOTHOID	ST	3140+12.88	1941327.898	6156190.872											

**SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 122 OF 148**

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Oakland, CA 94607



**CALIFORNIA**  
High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

ALTERNATIVE 4

MT3 TRACK ALIGNMENT DATA TABLE  
CURVE NO. C409 TO C414

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4003
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	3140+12.88	1941327.898	6156190.872		338.42							S 86°21'59" E		
	TANGENT	TS	3143+51.30	1941306.451	6156528.610											
	CLOTHOID	TS	3143+51.30	1941306.451	6156528.610										S 86°21'59" E	S 68°44'11" E
	CLOTHOID	SPI	3149+67.71	1941267.385	6157143.774		920.00	17°37'48"	458.55	23.51						
	CLOTHOID	SC	3152+71.30	1941155.156	6157432.165											
C415	ARC	SC	3152+71.30	1941155.156	6157432.165											
	ARC	PI	3156+59.65	1941014.317	6157794.077	1494.95	759.90	29°07'27"			55	4.00	4.10	3°49'57"		
	ARC	CC		1939761.981	6156890.005											
	ARC	CS	3160+31.21	1940715.140	6158041.683											
	CLOTHOID	CS	3160+31.21	1940715.140	6158041.683										S 39°36'43" E	S 31°56'49" E
	CLOTHOID	SPI	3161+64.77	1940612.247	6158126.840		400.00	7°39'55"	199.88	4.46						
	CLOTHOID	ST	3164+31.21	1940385.758	6158268.074											
	TANGENT	ST	3164+31.21	1940385.758	6158268.074		2079.17							S 31°56'49" E		
	TANGENT	TS	3185+10.38	1938621.498	6159368.230											
	CLOTHOID	TS	3185+10.38	1938621.498	6159368.230										S 31°56'49" E	S 31°37'19" E
	CLOTHOID	SPI	3185+97.04	1938547.958	6159414.088		130.00	0°19'30"	65.00	0.06						
	CLOTHOID	SC	3186+40.38	1938511.059	6159436.808											
C416	ARC	SC	3186+40.38	1938511.059	6159436.808											
	ARC	PI	3188+19.39	1938358.626	6159530.665	11459.19	357.99	1°47'24"			90	1.50	1.33	0°30'00"		
	ARC	CC		1932502.889	6149678.992											
	ARC	CS	3189+98.37	1938203.335	6159619.716											
	CLOTHOID	CS	3189+98.37	1938203.335	6159619.716										S 29°49'55" E	S 29°30'25" E
	CLOTHOID	SPI	3190+41.70	1938165.744	6159641.272		130.00	0°19'30"	65.00	0.06						
	CLOTHOID	ST	3191+28.37	1938090.318	6159683.958											
	TANGENT	ST	3191+28.37	1938090.318	6159683.958		292.74							S 29°30'25" E		
	TANGENT	TS	3194+21.11	1937835.547	6159828.140											
	CLOTHOID	TS	3194+21.11	1937835.547	6159828.140										S 29°30'25" E	S 29°44'43" E
	CLOTHOID	SPI	3195+07.78	1937760.122	6159870.826		130.00	0°14'18"	65.00	0.05						
	CLOTHOID	SC	3195+51.11	1937722.498	6159892.326											
C417	ARC	SC	3195+51.11	1937722.498	6159892.326											
	ARC	PI	3201+59.58	1937194.204	6160194.212	15626.15	1216.32	4°27'35"			90	1.50	0.58	0°22'00"		
	ARC	CC		1945475.310	6173459.581											
	ARC	CS	3207+67.43	1936690.984	6160536.264											
	CLOTHOID	CS	3207+67.43	1936690.984	6160536.264										S 34°12'18" E	S 34°26'36" E
	CLOTHOID	SPI	3208+10.76	1936655.146	6160560.624		130.00	0°14'18"	65.00	0.05						
	CLOTHOID	ST	3208+97.43	1936583.673	6160609.642											
	TANGENT	ST	3208+97.43	1936583.673	6160609.642		832.04							S 34°26'36" E		
	TANGENT	TS	3217+29.47	1935897.497	6161080.239											
	CLOTHOID	TS	3217+29.47	1935897.497	6161080.239										S 34°26'36" E	S 34°02'28" E
	CLOTHOID	SPI	3218+16.14	1935826.024	6161129.257		130.00	0°24'08"	65.00	0.08						
	CLOTHOID	SC	3218+59.47	1935790.117	6161153.514											
C418	ARC	SC	3218+59.47	1935790.117	6161153.514											
	ARC	PI	3219+96.94	1935676.209	6161230.465	9261.21	274.91	1°42'03"			90	1.50	2.00	0°37'07"		
	ARC	CC		1930605.794	6153479.348											
	ARC	CS	3221+34.38	1935560.067	6161304.002											
	CLOTHOID	CS	3221+34.38	1935560.067	6161304.002										S 32°20'26" E	S 31°56'18" E
	CLOTHOID	SPI	3221+77.71	1935523.455	6161327.183		130.00	0°24'08"	65.00	0.08						
	CLOTHOID	ST	3222+64.38	1935449.908	6161373.031											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 123 OF 148

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 MAY 3, 2019  
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C415 TO C418

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4004
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	3222+64.38	1935449.908	6161373.031		610.14							S 31°56'18" E		
	TANGENT	TS	3228+74.52	1934932.130	6161695.799											
	CLOTHOID	TS	3228+74.52	1934932.130	6161695.799										S 31°56'18" E	S 38°28'54" E
	CLOTHOID	SPI	3237+51.24	1934188.134	6162159.586		1314.17	6°32'36"	656.80	12.50						
	CLOTHOID	SC	3241+88.70	1933844.793	6162432.513											
	ARC	SC	3241+88.70	1933844.793	6162432.513											
C419	ARC	PI	3254+96.30	1932821.193	6163246.189	5753.62	2571.53	25°36'28"			110	5.00	3.42	0°59'45"		
	ARC	CC		1937425.071	6166936.490											
	ARC	CS	3267+60.22	1932249.814	6164422.348											
	CLOTHOID	CS	3267+60.22	1932249.814	6164422.348										S 64°05'22" E	S 66°34'45" E
	CLOTHOID	SPI	3269+26.92	1932176.973	6164572.288		500.00	2°29'22"	249.98	1.81						
	CLOTHOID	ST	3272+60.22	1932044.466	6164878.188											
	TANGENT	ST	3272+60.22	1932044.466	6164878.188		4546.78							S 66°34'45" E		
EQN	TANGENT	BK	3315+00.00	1930359.224	6168768.648											
EQN	TANGENT	AHD	315+00.00	1930359.224	6168768.648									S 66°34'45" E		
	TANGENT	TS	318+07.00	1930237.198	6169050.353											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 124 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**

ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C419

CONTRACT NO. HSR15-34
DRAWING NO. TT-B4005
SCALE NONE
SHEET NO.



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
EQN	TANGENT	ST	3272+60.22	1932044.466	6164878.188		4546.78							S 66°34'45" E		
	TANGENT	BK	3315+00.00	1930359.224	6168768.648											
	TANGENT	AHD	315+00.00	1930359.224	6168768.648									S 66°34'45" E		
	TANGENT	TS	318+07.00	1930237.198	6169050.353											
	CLOTHOID	TS	318+07.00	1930237.198	6169050.353										S 66°34'45" E	S 63°55'35" E
	CLOTHOID	SPI	321+40.37	1930104.688	6169356.257		500.00	2°39'09"	249.98	1.93						
	CLOTHOID	SC	323+07.00	1930031.419	6169505.992											
C420	ARC	SC	323+07.00	1930031.419	6169505.992											
	ARC	PI	333+98.80	1929551.547	6170486.680	5400.00	2154.52	22°51'38"			110	6.00	2.99	1°03'40"		
	ARC	CC		1925180.973	6167132.562											
	ARC	CS	344+61.52	1928728.381	6171203.913											
	CLOTHOID	CS	344+61.52	1928728.381	6171203.913										S 41°03'57" E	S 38°24'48" E
	CLOTHOID	SPI	346+28.22	1928602.696	6171313.423		500.00	2°39'09"	249.98	1.93						
	CLOTHOID	ST	349+61.52	1928341.484	6171520.556											
	TANGENT	ST	349+61.52	1928341.484	6171520.556		946.71							S 38°24'48" E		
	TANGENT	TS	359+08.23	1927599.692	6172108.776											
	CLOTHOID	TS	359+08.23	1927599.692	6172108.776										S 38°24'48" E	S 38°39'34" E
	CLOTHOID	SPI	360+05.56	1927523.426	6172169.252		146.00	0°14'46"	73.00	0.05						
	CLOTHOID	SC	360+54.23	1927485.424	6172199.654											
C421	ARC	SC	360+54.23	1927485.424	6172199.654											
	ARC	PI	361+07.97	1927443.459	6172233.225	17000.00	107.48	0°21'44"			110	1.50	1.35	0°20'13"		
	ARC	CC		1938105.147	6185474.498											
	ARC	CS	361+61.71	1927401.707	6172267.061											
	CLOTHOID	CS	361+61.71	1927401.707	6172267.061										S 39°01'18" E	S 39°16'04" E
	CLOTHOID	SPI	362+10.38	1927363.897	6172297.703		146.00	0°14'46"	73.00	0.05						
	CLOTHOID	ST	363+07.71	1927288.542	6172359.309											
	TANGENT	ST	363+07.71	1927288.542	6172359.309		301.44							S 39°16'04" E		
	TANGENT	TS	366+09.15	1927055.169	6172550.103											
	CLOTHOID	TS	366+09.15	1927055.169	6172550.103										S 39°16'04" E	S 39°01'18" E
	CLOTHOID	SPI	367+06.48	1926979.814	6172611.710		146.00	0°14'46"	73.00	0.05						
	CLOTHOID	SC	367+55.15	1926942.004	6172642.351											
C422	ARC	SC	367+55.15	1926942.004	6172642.351											
	ARC	PI	368+13.97	1926896.310	6172679.382	17000.00	117.63	0°23'47"			110	1.50	1.35	0°20'13"		
	ARC	CC		1916238.565	6159434.914											
	ARC	CS	368+72.78	1926850.361	6172716.096											
	CLOTHOID	CS	368+72.78	1926850.361	6172716.096										S 38°37'31" E	S 38°22'45" E
	CLOTHOID	SPI	369+21.45	1926812.341	6172746.475		146.00	0°14'46"	73.00	0.05						
	CLOTHOID	ST	370+18.78	1926736.039	6172806.905											
	TANGENT	ST	370+18.78	1926736.039	6172806.905		1659.44							S 38°22'45" E		
	TANGENT	TS	386+78.22	1925435.168	6173837.193											
	CLOTHOID	TS	386+78.22	1925435.168	6173837.193										S 38°22'45" E	S 40°01'25" E
	CLOTHOID	SPI	389+28.24	1925239.180	6173992.415		375.00	1°38'40"	187.49	0.90						
	CLOTHOID	SC	390+53.22	1925143.450	6174072.809											
C423	ARC	SC	390+53.22	1925143.450	6174072.809											
	ARC	PI	394+03.68	1924875.082	6174298.185	6533.00	700.22	6°08'28"			110	4.50	2.93	0°52'37"		
	ARC	CC		1929344.841	6179075.649											
	ARC	CS	397+53.45	1924632.364	6174550.978											
	CLOTHOID	CS	397+53.45	1924632.364	6174550.978										S 46°09'53" E	S 47°48'33" E
	CLOTHOID	SPI	398+78.46	1924545.784	6174641.151		375.00	1°38'40"	187.49	0.90						
	CLOTHOID	ST	401+28.45	1924377.876	6174826.387											

**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 125 OF 148**

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CALIFORNIA

High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C420 TO C423

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4006
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	401+28.45	1924377.876	6174826.387		2897.03							S 47°48'33" E		
	TANGENT	TS	430+25.48	1922432.224	6176972.833											
	CLOTHOID	TS	430+25.48	1922432.224	6176972.833										S 47°48'33" E	S 48°39'54" E
	CLOTHOID	SPI	431+78.81	1922329.244	6177086.441		230.00	0°51'21"	115.00	0.29						
	CLOTHOID	SC	432+55.48	1922278.608	6177144.008											
C424	ARC	SC	432+55.48	1922278.608	6177144.008											
	ARC	PI	434+48.77	1922150.945	6177289.143	7700.00	386.50	2°52'34"			110	2.75	3.55	0°44'39"		
	ARC	CC		1928060.226	6182229.565											
	ARC	CS	436+41.98	1922030.725	6177440.502											
	CLOTHOID	CS	436+41.98	1922030.725	6177440.502										S 51°32'27" E	S 52°23'48" E
	CLOTHOID	SPI	437+18.65	1921983.041	6177500.537		230.00	0°51'21"	115.00	0.29						
	CLOTHOID	ST	438+71.98	1921889.477	6177622.017											
	TANGENT	ST	438+71.98	1921889.477	6177622.017		6489.13							S 52°23'48" E		
	TANGENT	TS	503+61.11	1917929.860	6182763.051											
	CLOTHOID	TS	503+61.11	1917929.860	6182763.051										S 52°23'48" E	S 52°09'05" E
	CLOTHOID	SPI	504+52.44	1917874.129	6182835.410		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	504+98.11	1917846.109	6182871.470											
C425	ARC	SC	504+98.11	1917846.109	6182871.470											
	ARC	PI	506+28.04	1917766.384	6182974.071	16000.00	259.86	0°55'50"			110	1.50	1.53	0°21'29"		
	ARC	CC		1905211.971	6173054.212											
	ARC	CS	507+57.97	1917685.003	6183075.363											
	CLOTHOID	CS	507+57.97	1917685.003	6183075.363										S 51°13'15" E	S 50°58'32" E
	CLOTHOID	SPI	508+03.64	1917656.401	6183110.964		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	508+94.97	1917598.892	6183181.918											
	TANGENT	ST	508+94.97	1917598.892	6183181.918		259.19							S 50°58'32" E		
	TANGENT	TS	511+54.16	1917435.693	6183383.276											
	CLOTHOID	TS	511+54.16	1917435.693	6183383.276										S 50°58'32" E	S 51°13'15" E
	CLOTHOID	SPI	512+45.50	1917378.184	6183454.231		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	512+91.16	1917349.582	6183489.831											
C426	ARC	SC	512+91.16	1917349.582	6183489.831											
	ARC	PI	514+21.10	1917268.202	6183591.123	16000.00	259.86	0°55'50"			110	1.50	1.53	0°21'29"		
	ARC	CC		1929822.615	6193510.982											
	ARC	CS	515+51.03	1917188.476	6183693.724											
	CLOTHOID	CS	515+51.03	1917188.476	6183693.724										S 52°09'05" E	S 52°23'48" E
	CLOTHOID	SPI	515+96.69	1917160.456	6183729.784		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	516+88.03	1917104.725	6183802.143											
	TANGENT	ST	516+88.03	1917104.725	6183802.143		795.57							S 52°23'48" E		
	TANGENT	TS	524+83.59	1916619.277	6184432.433											
	CLOTHOID	TS	524+83.59	1916619.277	6184432.433										S 52°23'48" E	S 52°38'31" E
	CLOTHOID	SPI	525+74.92	1916563.546	6184504.792		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	526+20.59	1916535.836	6184541.091											
C427	ARC	SC	526+20.59	1916535.836	6184541.091											
	ARC	PI	527+55.11	1916454.209	6184648.017	16000.00	269.04	0°57'48"			110	1.50	1.53	0°21'29"		
	ARC	CC		1929253.570	6194249.810											
	ARC	CS	528+89.63	1916374.390	6184756.300											
	CLOTHOID	CS	528+89.63	1916374.390	6184756.300										S 53°36'19" E	S 53°51'02" E
	CLOTHOID	SPI	529+35.30	1916347.294	6184793.060		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	530+26.63	1916293.417	6184866.810											

SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 126 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
ALTERNATIVE 4  
MT3 TRACK ALIGNMENT DATA TABLE  
CURVE NO. C424 TO C427

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4007
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	530+26.63	1916293.417	6184866.810		232.10							S 53°51'02" E		
	TANGENT	TS	532+58.72	1916156.506	6185054.223											
	CLOTHOID	TS	532+58.72	1916156.506	6185054.223										S 53°51'02" E	S 53°36'19" E
	CLOTHOID	SPI	533+50.06	1916102.629	6185127.973		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	533+95.72	1916075.533	6185164.732											
C428	ARC	SC	533+95.72	1916075.533	6185164.732											
	ARC	PI	535+30.25	1915995.715	6185273.016	16000.00	269.04	0°57'48"			110	1.50	1.53	0°21'29"		
	ARC	CC		1903196.353	6175671.223											
	ARC	CS	536+64.76	1915914.087	6185379.942											
	CLOTHOID	CS	536+64.76	1915914.087	6185379.942										S 52°38'31" E	S 52°23'48" E
	CLOTHOID	SPI	537+10.43	1915886.377	6185416.241		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	538+01.76	1915830.646	6185488.600											
	TANGENT	ST	538+01.76	1915830.646	6185488.600		7712.14							S 52°23'48" E		
	TANGENT	TS	615+13.90	1911124.757	6191598.567											
	CLOTHOID	TS	615+13.90	1911124.757	6191598.567										S 52°23'48" E	S 52°53'50" E
	CLOTHOID	SPI	617+47.24	1910982.379	6191783.427		350.00	0°30'02"	175.00	0.25						
	CLOTHOID	SC	618+63.90	1910911.999	6191876.476											
C429	ARC	SC	618+63.90	1910911.999	6191876.476											
	ARC	PI	625+13.36	1910520.216	6192394.452	20033.00	1298.46	3°42'49"			110	1.00	1.42	0°17'10"		
	ARC	CC		1926889.386	6203961.351											
	ARC	CS	631+62.36	1910162.804	6192936.716											
	CLOTHOID	CS	631+62.36	1910162.804	6192936.716										S 56°36'39" E	S 57°06'41" E
	CLOTHOID	SPI	632+79.03	1910098.599	6193034.128		350.00	0°30'02"	175.00	0.25						
	CLOTHOID	ST	635+12.36	1909971.897	6193230.065											
	TANGENT	ST	635+12.36	1909971.897	6193230.065		1753.07							S 57°06'41" E		
	TANGENT	TS	652+65.43	1909019.962	6194702.168											
	CLOTHOID	TS	652+65.43	1909019.962	6194702.168										S 57°06'41" E	S 57°12'14" E
	CLOTHOID	SPI	654+59.43	1908914.618	6194865.075		291.00	0°05'33"	145.50	0.04						
	CLOTHOID	SC	655+56.43	1908862.078	6194946.614											
C430	ARC	SC	655+56.43	1908862.078	6194946.614											
	ARC	PI	657+03.30	1908782.525	6195070.074	90000.00	293.74	0°11'13"			110	0.00	0.54	0°03'49"		
	ARC	CC		1984516.406	6243695.179											
	ARC	CS	658+50.17	1908703.376	6195193.793											
	CLOTHOID	CS	658+50.17	1908703.376	6195193.793										S 57°23'27" E	S 57°29'01" E
	CLOTHOID	SPI	659+47.17	1908651.102	6195275.503		291.00	0°05'33"	145.50	0.04						
	CLOTHOID	ST	661+41.17	1908546.819	6195439.091											
	TANGENT	ST	661+41.17	1908546.819	6195439.091		874.85							S 57°29'01" E		
	TANGENT	TS	670+16.02	1908076.552	6196176.794											
	CLOTHOID	TS	670+16.02	1908076.552	6196176.794										S 57°29'01" E	S 54°57'21" E
	CLOTHOID	SPI	675+16.07	1907807.754	6196598.456		750.00	2°31'40"	374.98	2.76						
	CLOTHOID	SC	677+66.02	1907664.175	6196803.171											
C431	ARC	SC	677+66.02	1907664.175	6196803.171											
	ARC	PI	689+53.82	1906982.133	6197775.631	8500.00	2360.30	15°54'36"			110	4.00	1.71	0°40'27"		
	ARC	CC		1900705.147	6191922.401											
	ARC	CS	701+26.32	1906059.638	6198523.872											
	CLOTHOID	CS	701+26.32	1906059.638	6198523.872										S 39°02'45" E	S 36°31'05" E
	CLOTHOID	SPI	703+76.36	1905865.441	6198681.386		750.00	2°31'40"	374.98	2.76						
	CLOTHOID	ST	708+76.32	1905463.565	6198978.954											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 127 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

ALTERNATIVE 4

MT3 TRACK ALIGNMENT DATA TABLE

CURVE NO. C428 TO C431

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4008
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	708+76.32	1905463.565	6198978.954		642.75							S 36°31'05" E		
	TANGENT	TS	715+19.07	1904947.003	6199361.440											
	CLOTHOID	TS	715+19.07	1904947.003	6199361.440										S 36°31'05" E	S 37°48'02" E
	CLOTHOID	SPI	717+13.07	1904791.087	6199476.888		291.00	1°16'57"	145.50	0.54						
	CLOTHOID	SC	718+10.07	1904714.439	6199536.343											
C432	ARC	SC	718+10.07	1904714.439	6199536.343											
	ARC	PI	719+84.93	1904576.272	6199643.518	6500.00	349.63	3°04'55"			110	3.50	3.96	0°52'53"		
	ARC	CC		1908698.379	6204672.316											
	ARC	CS	721+59.70	1904444.068	6199757.966											
	CLOTHOID	CS	721+59.70	1904444.068	6199757.966										S 40°52'57" E	S 42°09'54" E
	CLOTHOID	SPI	722+56.71	1904370.728	6199821.456		291.00	1°16'57"	145.50	0.54						
	CLOTHOID	ST	724+50.70	1904226.928	6199951.685											
	TANGENT	ST	724+50.70	1904226.928	6199951.685		3099.71							S 42°09'54" E		
	TANGENT	TS	755+50.41	1901929.381	6202032.418											
	CLOTHOID	TS	755+50.41	1901929.381	6202032.418										S 42°09'54" E	S 41°21'12" E
	CLOTHOID	SPI	758+33.74	1901719.368	6202222.613		425.00	0°48'42"	212.50	0.50						
	CLOTHOID	SC	759+75.41	1901613.023	6202316.214											
C433	ARC	SC	759+75.41	1901613.023	6202316.214											
	ARC	PI	761+21.01	1901503.724	6202412.416	15000.00	291.20	1°06'44"			110	1.75	1.49	0°22'55"		
	ARC	CC		1891702.518	6191056.468											
	ARC	CS	762+66.61	1901392.577	6202506.479											
	CLOTHOID	CS	762+66.61	1901392.577	6202506.479										S 40°14'28" E	S 39°25'45" E
	CLOTHOID	SPI	764+08.28	1901284.436	6202597.998		425.00	0°48'42"	212.50	0.50						
	CLOTHOID	ST	766+91.61	1901065.584	6202777.952											
	TANGENT	ST	766+91.61	1901065.584	6202777.952		1134.67							S 39°25'45" E		
	TANGENT	TS	778+26.28	1900189.156	6203498.609											
	CLOTHOID	TS	778+26.28	1900189.156	6203498.609										S 39°25'45" E	S 39°14'25" E
	CLOTHOID	SPI	780+46.28	1900019.226	6203638.337		330.00	0°11'21"	165.00	0.09						
	CLOTHOID	SC	781+56.28	1899934.031	6203707.920											
C434	ARC	SC	781+56.28	1899934.031	6203707.920											
	ARC	PI	783+59.11	1899776.939	6203836.225	50000.00	405.66	0°27'53"			110	0.00	0.97	0°06'53"		
	ARC	CC		1868305.373	6164982.889											
	ARC	CS	785+61.94	1899618.812	6203963.251											
	CLOTHOID	CS	785+61.94	1899618.812	6203963.251										S 38°46'31" E	S 38°35'11" E
	CLOTHOID	SPI	786+71.94	1899533.055	6204032.140		330.00	0°11'21"	165.00	0.09						
	CLOTHOID	ST	788+91.94	1899361.087	6204169.353											
	TANGENT	ST	788+91.94	1899361.087	6204169.353		10067.32							S 38°35'11" E		
	TANGENT	PC	889+59.25	1891491.772	6210448.263											
C435	ARC	PC	889+59.25	1891491.772	6210448.263											
	ARC	PI	891+08.15	1891375.383	6210541.130	550000.00	297.80	0°01'52"			110	0.00	0.08	0°00'38"		
	ARC	CC		2234522.736	6640366.579											
	ARC	PT	892+57.05	1891259.045	6210634.059											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 128 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C432 TO C435

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4009
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	PT	892+57.05	1891259.045	6210634.059		23317.76							S 38°37'02" E		
	TANGENT	TS	1125+74.81	1873040.134	6225187.044											
	CLOTHOID	TS	1125+74.81	1873040.134	6225187.044										S 38°37'02" E	S 38°44'54" E
	CLOTHOID	SPI	1126+81.48	1872956.792	6225253.616		160.00	0°07'51"	80.00	0.03						
	CLOTHOID	SC	1127+34.81	1872915.197	6225286.998											
C436	ARC	SC	1127+34.81	1872915.197	6225286.998											
	ARC	PI	1128+35.96	1872836.309	6225350.308	35000.00	202.30	0°19'52"			110	1.00	0.39	0°09'49"		
	ARC	CC		1894821.699	6252583.612											
	ARC	CS	1129+37.11	1872757.788	6225414.074											
	CLOTHOID	CS	1129+37.11	1872757.788	6225414.074										S 39°04'46" E	S 39°12'37" E
	CLOTHOID	SPI	1129+90.45	1872716.387	6225447.695		160.00	0°07'51"	80.00	0.03						
	CLOTHOID	ST	1130+97.11	1872633.738	6225515.126											
	TANGENT	ST	1130+97.11	1872633.738	6225515.126		326.87							S 39°12'37" E		
	TANGENT	TS	1134+23.99	1872380.467	6225721.765											
	CLOTHOID	TS	1134+23.99	1872380.467	6225721.765										S 39°12'37" E	S 39°05'12" E
	CLOTHOID	SPI	1135+30.65	1872297.819	6225789.197		160.00	0°07'26"	80.00	0.03						
	CLOTHOID	SC	1135+83.99	1872256.422	6225822.823											
C437	ARC	SC	1135+83.99	1872256.422	6225822.823											
	ARC	PI	1136+84.72	1872178.236	6225886.332	37000.00	201.46	0°18'43"			110	1.00	0.31	0°09'17"		
	ARC	CC		1848928.167	6197103.622											
	ARC	CS	1137+85.44	1872099.706	6225949.415											
	CLOTHOID	CS	1137+85.44	1872099.706	6225949.415										S 38°46'28" E	S 38°39'02" E
	CLOTHOID	SPI	1138+38.78	1872058.127	6225982.815		160.00	0°07'26"	80.00	0.03						
	CLOTHOID	ST	1139+45.44	1871974.824	6226049.436											
	TANGENT	ST	1139+45.44	1871974.824	6226049.436		943.43							S 38°39'02" E		
	TANGENT	TS	1148+88.87	1871238.034	6226638.675											
	CLOTHOID	TS	1148+88.87	1871238.034	6226638.675										S 38°39'02" E	S 38°32'10" E
	CLOTHOID	SPI	1149+68.87	1871175.557	6226688.641		120.00	0°06'53"	60.00	0.02						
	CLOTHOID	SC	1150+08.87	1871144.268	6226713.561											
C438	ARC	SC	1150+08.87	1871144.268	6226713.561											
	ARC	PI	1151+10.11	1871065.079	6226776.632	30000.00	202.47	0°23'12"			110	1.00	0.62	0°11'28"		
	ARC	CC		1852454.042	6203247.086											
	ARC	CS	1152+11.35	1870985.466	6226839.168											
	CLOTHOID	CS	1152+11.35	1870985.466	6226839.168										S 38°08'58" E	S 38°02'05" E
	CLOTHOID	SPI	1152+51.35	1870954.010	6226863.876		120.00	0°06'53"	60.00	0.02						
	CLOTHOID	ST	1153+31.35	1870890.999	6226913.167											
	TANGENT	ST	1153+31.35	1870890.999	6226913.167		210.55							S 38°02'05" E		
	TANGENT	TS	1155+41.90	1870725.163	6227042.895											
	CLOTHOID	TS	1155+41.90	1870725.163	6227042.895										S 38°02'05" E	S 38°08'58" E
	CLOTHOID	SPI	1156+21.90	1870662.152	6227092.187		120.00	0°06'53"	60.00	0.02						
	CLOTHOID	SC	1156+61.90	1870630.696	6227116.895											
C439	ARC	SC	1156+61.90	1870630.696	6227116.895											
	ARC	PI	1157+68.81	1870546.621	6227182.935	30000.00	213.82	0°24'30"			110	1.00	0.62	0°11'28"		
	ARC	CC		1889162.120	6250708.977											
	ARC	CS	1158+75.72	1870463.019	6227249.573											
	CLOTHOID	CS	1158+75.72	1870463.019	6227249.573										S 38°33'28" E	S 38°40'20" E
	CLOTHOID	SPI	1159+15.72	1870431.740	6227274.505		120.00	0°06'53"	60.00	0.02						
	CLOTHOID	ST	1159+95.72	1870369.281	6227324.494											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 129 OF 148

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REV	DATE	BY	CHK	APP	DESCRIPTION

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**RECORD PEPD SUBMITTAL**  
 MAY 3, 2019  
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 1111 Broadway  
 9th Floor  
 Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C436 TO C439

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4010
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	1159+95.72	1870369.281	6227324.494		12686.02							S 38°40'20" E		
	TANGENT	TS	1286+81.74	1860464.901	6235251.557											
	CLOTHOID	TS	1286+81.74	1860464.901	6235251.557										S 38°40'20" E	S 35°05'12" E
	CLOTHOID	SPI	1291+82.51	1860073.934	6235564.471		751.00	3°35'09"	375.45	3.92						
	CLOTHOID	SC	1294+32.74	1859869.014	6235708.420											
C440	ARC	SC	1294+32.74	1859869.014	6235708.420											
	ARC	PI	1297+97.35	1859570.652	6235918.008	6000.00	728.33	6°57'19"			110	5.25	2.84	0°57'18"		
	ARC	CC		1856420.131	6230798.715											
	ARC	CS	1301+61.07	1859249.107	6236089.924											
	CLOTHOID	CS	1301+61.07	1859249.107	6236089.924										S 28°07'53" E	S 24°32'45" E
	CLOTHOID	SPI	1304+11.50	1859028.264	6236207.999		751.00	3°35'09"	375.45	3.92						
	CLOTHOID	ST	1309+12.07	1858572.749	6236416.028											
	TANGENT	ST	1309+12.07	1858572.749	6236416.028		510.83							S 24°32'45" E		
	TANGENT	TS	1314+22.90	1858108.079	6236628.238											
	CLOTHOID	TS	1314+22.90	1858108.079	6236628.238										S 24°32'45" E	S 24°18'01" E
	CLOTHOID	SPI	1315+14.24	1858025.000	6236666.179		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	1315+59.90	1857983.379	6236684.972											
C441	ARC	SC	1315+59.90	1857983.379	6236684.972											
	ARC	PI	1316+40.39	1857910.024	6236718.094	16000.00	160.97	0°34'35"			110	1.50	1.53	0°21'29"		
	ARC	CC		1851399.048	6222102.565											
	ARC	CS	1317+20.87	1857836.340	6236750.475											
	CLOTHOID	CS	1317+20.87	1857836.340	6236750.475										S 23°43'26" E	S 23°28'43" E
	CLOTHOID	SPI	1317+66.54	1857794.533	6236768.848		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	1318+57.87	1857710.761	6236805.236											
	TANGENT	ST	1318+57.87	1857710.761	6236805.236		835.92							S 23°28'43" E		
	TANGENT	TS	1326+93.79	1856944.050	6237138.273											
	CLOTHOID	TS	1326+93.79	1856944.050	6237138.273										S 23°28'43" E	S 23°43'26" E
	CLOTHOID	SPI	1327+85.12	1856860.278	6237174.661		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	1328+30.79	1856818.470	6237193.034											
C442	ARC	SC	1328+30.79	1856818.470	6237193.034											
	ARC	PI	1329+11.27	1856744.786	6237225.415	16000.00	160.97	0°34'35"			110	1.50	1.53	0°21'29"		
	ARC	CC		1863255.763	6251840.944											
	ARC	CS	1329+91.76	1856671.432	6237258.537											
	CLOTHOID	CS	1329+91.76	1856671.432	6237258.537										S 24°18'01" E	S 24°32'45" E
	CLOTHOID	SPI	1330+37.43	1856629.811	6237277.330		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	1331+28.76	1856546.732	6237315.271											
	TANGENT	ST	1331+28.76	1856546.732	6237315.271		826.70							S 24°32'45" E		
	TANGENT	TS	1339+55.46	1855794.739	6237658.698											
	CLOTHOID	TS	1339+55.46	1855794.739	6237658.698										S 24°32'45" E	S 24°47'28" E
	CLOTHOID	SPI	1340+46.79	1855711.660	6237696.640		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	1340+92.46	1855670.201	6237715.789											
C443	ARC	SC	1340+92.46	1855670.201	6237715.789											
	ARC	PI	1341+77.53	1855592.971	6237751.460	16000.00	170.14	0°36'33"			110	1.50	1.53	0°21'29"		
	ARC	CC		1862379.151	6252241.283											
	ARC	CS	1342+62.60	1855516.123	6237787.950											
	CLOTHOID	CS	1342+62.60	1855516.123	6237787.950										S 25°24'01" E	S 25°38'44" E
	CLOTHOID	SPI	1343+08.27	1855474.871	6237807.538		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	1343+99.60	1855392.535	6237847.067											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 130 OF 148

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REV	DATE	BY	CHK	APP	DESCRIPTION

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C440 TO C443

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4011
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	1343+99.60	1855392.535	6237847.067		788.80							S 25°38'44" E		
	TANGENT	TS	1351+88.40	1854681.436	6238188.464											
	CLOTHOID	TS	1351+88.40	1854681.436	6238188.464										S 25°38'44" E	S 25°24'01" E
	CLOTHOID	SPI	1352+79.74	1854599.100	6238227.994		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	SC	1353+25.40	1854557.848	6238247.582											
C444	ARC	SC	1353+25.40	1854557.848	6238247.582											
	ARC	PI	1354+10.47	1854481.001	6238284.072	16000.00	170.14	0°36'33"			110	1.50	1.53	0°21'29"		
	ARC	CC		1847694.820	6223794.248											
	ARC	CS	1354+95.54	1854403.770	6238319.743											
	CLOTHOID	CS	1354+95.54	1854403.770	6238319.743										S 24°47'28" E	S 24°32'45" E
	CLOTHOID	SPI	1355+41.21	1854362.311	6238338.892		137.00	0°14'43"	68.50	0.05						
	CLOTHOID	ST	1356+32.54	1854279.232	6238376.833											
	TANGENT	ST	1356+32.54	1854279.232	6238376.833		4972.10							S 24°32'45" E		
	TANGENT	TS	1406+04.65	1849756.456	6240442.339											
	CLOTHOID	TS	1406+04.65	1849756.456	6240442.339										S 24°32'45" E	S 24°18'01" E
	CLOTHOID	SPI	1408+04.65	1849574.529	6240525.423		300.00	0°14'44"	150.00	0.11						
	CLOTHOID	SC	1409+04.65	1849483.389	6240566.574											
C445	ARC	SC	1409+04.65	1849483.389	6240566.574											
	ARC	PI	1411+85.64	1849227.296	6240682.205	35000.00	561.96	0°55'12"			110	0.00	1.39	0°09'49"		
	ARC	CC		1835080.308	6208667.495											
	ARC	CS	1414+66.61	1848969.380	6240793.710											
	CLOTHOID	CS	1414+66.61	1848969.380	6240793.710										S 23°22'49" E	S 23°08'05" E
	CLOTHOID	SPI	1415+66.61	1848877.590	6240833.393		300.00	0°14'44"	150.00	0.11						
	CLOTHOID	ST	1417+66.61	1848693.673	6240911.972											
	TANGENT	ST	1417+66.61	1848693.673	6240911.972		4274.86							S 23°08'05" E		
	TANGENT	TS	1460+41.47	1844762.582	6242591.534											
	CLOTHOID	TS	1460+41.47	1844762.582	6242591.534										S 23°08'05" E	S 22°55'48" E
	CLOTHOID	SPI	1461+74.80	1844639.970	6242643.920		200.00	0°12'17"	100.00	0.06						
	CLOTHOID	SC	1462+41.47	1844578.571	6242669.894											
C446	ARC	SC	1462+41.47	1844578.571	6242669.894											
	ARC	PI	1464+98.70	1844341.666	6242770.113	28000.00	514.45	1°03'10"			110	0.50	1.24	0°12'17"		
	ARC	CC		1833669.591	6216882.413											
	ARC	CS	1467+55.92	1844102.960	6242865.963											
	CLOTHOID	CS	1467+55.92	1844102.960	6242865.963										S 21°52'38" E	S 21°40'22" E
	CLOTHOID	SPI	1468+22.58	1844041.094	6242890.804		200.00	0°12'17"	100.00	0.06						
	CLOTHOID	ST	1469+55.92	1843917.186	6242940.044											
	TANGENT	ST	1469+55.92	1843917.186	6242940.044		12254.58							S 21°40'22" E		
	TANGENT	TS	1592+10.50	1832528.899	6247465.706											
	CLOTHOID	TS	1592+10.50	1832528.899	6247465.706										S 21°40'22" E	S 21°58'45" E
	CLOTHOID	SPI	1594+10.50	1832343.037	6247539.567		300.00	0°18'24"	150.00	0.13						
	CLOTHOID	SC	1595+10.50	1832250.305	6247576.994											
C447	ARC	SC	1595+10.50	1832250.305	6247576.994											
	ARC	PI	1596+69.88	1832102.509	6247636.645	28033.00	318.76	0°39'05"			110	0.50	1.23	0°12'16"		
	ARC	CC		1842742.243	6273572.538											
	ARC	CS	1598+29.25	1831955.401	6247697.973											
	CLOTHOID	CS	1598+29.25	1831955.401	6247697.973										S 22°37'51" E	S 22°56'14" E
	CLOTHOID	SPI	1599+29.25	1831863.100	6247736.452		300.00	0°18'24"	150.00	0.13						
	CLOTHOID	ST	1601+29.25	1831678.914	6247814.397											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 131 OF 148

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REV	DATE	BY	CHK	APP	DESCRIPTION

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C444 TO C447

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4012
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	1601+29.25	1831678.914	6247814.397		391.47							S 22°56'14" E		
	TANGENT	TS	1605+20.72	1831318.401	6247966.960											
	CLOTHOID	TS	1605+20.72	1831318.401	6247966.960										S 22°56'14" E	S 23°43'49" E
	CLOTHOID	SPI	1606+87.38	1831164.911	6248031.915		250.00	0°47'34"	125.00	0.29						
	CLOTHOID	SC	1607+70.72	1831088.622	6248065.452											
C448	ARC	SC	1607+70.72	1831088.622	6248065.452											
	ARC	PI	1610+36.73	1830845.096	6248172.505	9033.00	531.88	3°22'25"			110	2.50	2.87	0°38'03"		
	ARC	CC		1834723.776	6256334.717											
	ARC	CS	1613+02.59	1830608.293	6248293.704											
	CLOTHOID	CS	1613+02.59	1830608.293	6248293.704										S 27°06'14" E	S 27°53'48" E
	CLOTHOID	SPI	1613+85.93	1830534.109	6248331.672		250.00	0°47'34"	125.00	0.29						
	CLOTHOID	ST	1615+52.59	1830386.809	6248409.652											
	TANGENT	ST	1615+52.59	1830386.809	6248409.652		420.35							S 27°53'48" E		
	TANGENT	TS	1619+72.94	1830015.307	6248606.326											
	CLOTHOID	TS	1619+72.94	1830015.307	6248606.326										S 27°53'48" E	S 26°51'44" E
	CLOTHOID	SPI	1621+89.61	1829823.816	6248707.701		325.00	1°02'04"	162.50	0.49						
	CLOTHOID	SC	1622+97.94	1829727.169	6248756.653											
C449	ARC	SC	1622+97.94	1829727.169	6248756.653											
	ARC	PI	1627+59.15	1829315.732	6248965.046	9000.00	921.60	5°52'02"			110	2.75	2.65	0°38'12"		
	ARC	CC		1825660.546	6240727.794											
	ARC	CS	1632+19.54	1828885.147	6249130.290											
	CLOTHOID	CS	1632+19.54	1828885.147	6249130.290										S 20°59'43" E	S 19°57'38" E
	CLOTHOID	SPI	1633+27.88	1828784.003	6249169.106		325.00	1°02'04"	162.50	0.49						
	CLOTHOID	ST	1635+44.54	1828580.348	6249243.072											
	TANGENT	ST	1635+44.54	1828580.348	6249243.072		1339.56							S 19°57'38" E		
	TANGENT	TS	1648+84.10	1827321.263	6249700.363											
	CLOTHOID	TS	1648+84.10	1827321.263	6249700.363										S 19°57'38" E	S 19°49'32" E
	CLOTHOID	SPI	1649+74.10	1827236.670	6249731.086		135.00	0°08'06"	67.50	0.03						
	CLOTHOID	SC	1650+19.10	1827194.337	6249746.349											
C450	ARC	SC	1650+19.10	1827194.337	6249746.349											
	ARC	PI	1651+21.93	1827097.595	6249781.227	28647.90	205.67	0°24'41"			110	0.50	1.19	0°12'00"		
	ARC	CC		1817478.140	6222796.438											
	ARC	CS	1652+24.77	1827000.606	6249815.409											
	CLOTHOID	CS	1652+24.77	1827000.606	6249815.409										S 19°24'52" E	S 19°16'46" E
	CLOTHOID	SPI	1652+69.77	1826958.165	6249830.367		135.00	0°08'06"	67.50	0.03						
	CLOTHOID	ST	1653+59.77	1826873.212	6249860.083											
	TANGENT	ST	1653+59.77	1826873.212	6249860.083		3450.23							S 19°16'46" E		
	TANGENT	TS	1688+10.00	1823616.472	6250999.257											
	CLOTHOID	TS	1688+10.00	1823616.472	6250999.257										S 19°16'46" E	S 20°11'14" E
	CLOTHOID	SPI	1690+93.33	1823349.024	6251092.807		425.00	0°54'29"	212.50	0.56						
	CLOTHOID	SC	1692+35.00	1823216.057	6251141.696											
C451	ARC	SC	1692+35.00	1823216.057	6251141.696											
	ARC	PI	1706+11.41	1821924.196	6251616.683	13408.96	2743.21	11°43'18"			120	3.00	1.30	0°25'38"		
	ARC	CC		1827843.360	6263726.940											
	ARC	CS	1719+78.21	1820755.773	6252344.216											
	CLOTHOID	CS	1719+78.21	1820755.773	6252344.216										S 31°54'32" E	S 32°49'01" E
	CLOTHOID	SPI	1721+19.88	1820635.511	6252419.098		425.00	0°54'29"	212.50	0.56						
	CLOTHOID	ST	1724+03.21	1820397.393	6252572.655											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 132 OF 148

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 Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C448 TO C451

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4013
SCALE	NONE
SHEET NO.	



TRACK ALIGNMENT DATA SUMMARY TABLE - JM SB TRACK

CURVE	ELEMENT	POINT TYPE	MT3 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EA) (IN)	TNGT BEARING/ CHRD DEG. CV. (0°00'00")	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	1724+03.21	1820397.393	6252572.655		759.05							S 32°49'01" E		
	TANGENT	TS	1731+62.26	1819759.483	6252984.027											
	CLOTHOID	TS	1731+62.26	1819759.483	6252984.027										S 32°49'01" E	S 33°28'31" E
	CLOTHOID	SPI	1734+12.26	1819549.380	6253119.517		375.00	0°39'30"	187.50	0.36						
	CLOTHOID	SC	1735+37.26	1819445.113	6253188.465											
C452	ARC	SC	1735+37.26	1819445.113	6253188.465											
	ARC	PI	1747+64.54	1818421.412	6253865.405	16316.50	2449.94	8°36'11"			120	2.00	1.54	0°21'04"		
	ARC	CC		1828444.940	6266798.435											
	ARC	CS	1759+87.20	1817510.492	6254687.860											
	CLOTHOID	CS	1759+87.20	1817510.492	6254687.860										S 42°04'42" E	S 42°44'12" E
	CLOTHOID	SPI	1761+12.20	1817417.712	6254771.630		375.00	0°39'30"	187.50	0.36						
	CLOTHOID	ST	1763+62.20	1817234.091	6254941.289											
	TANGENT	ST	1763+62.20	1817234.091	6254941.289		2426.95							S 42°44'12" E		
	TANGENT	TS	1787+89.15	1815451.544	6256588.297											
	CLOTHOID	TS	1787+89.15	1815451.544	6256588.297										S 42°44'12" E	S 45°12'44" E
	CLOTHOID	SPI	1798+55.92	1814668.023	6257312.241		1600.00	2°28'32"	799.95	5.76						
	CLOTHOID	SC	1803+89.15	1814292.233	6257690.826											
C453	ARC	SC	1803+89.15	1814292.233	6257690.826											
	ARC	PI	1845+62.74	1811352.015	6260652.908	18516.50	8209.96	25°24'15"			200	6.00	2.65	0°18'34"		
	ARC	CC		1827433.787	6270735.378											
	ARC	CS	1885+99.11	1809966.841	6264589.924											
	CLOTHOID	CS	1885+99.11	1809966.841	6264589.924										S 70°36'59" E	S 73°05'31" E
	CLOTHOID	SPI	1891+32.54	1809789.802	6265093.116		1600.00	2°28'32"	799.95	5.76						
	CLOTHOID	ST	1901+99.11	1809479.544	6266113.774											
	TANGENT	ST	1901+99.11	1809479.544	6266113.774		2090.54							S 73°05'31" E		
	TANGENT	TS	1922+89.66	1808871.535	6268113.949											
	COSINE	TS	1922+89.66	1808871.535	6268113.949										S 73°05'31" E	S 75°29'04" E
	COSINE	SPI	1933+75.32	1808555.782	6269152.682		1545.00	2°23'33"	772.48	3.06						
	COSINE	SC	1938+34.66	1808440.613	6269597.507											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 ALTERNATIVE 4  
 MT3 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C452 AND C453

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B4014
SCALE	NONE
SHEET NO.	



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	COSINE	TS	1736+84.96	1823804.741	6251036.202										S 19°27'33.8" E	S 21°34'56.3" E
	COSINE	SPI	1743+38.46	1823188.574	6251253.906		930	2°07'22.5"	464.99	1.63						
	COSINE	SC	1746+14.96	1822931.387	6251355.642											
	ARC	SC	1746+14.96	1822931.387	6251355.642											
C127	ARC	PI	1766+98.51	1820993.916	6252122.048	12550	4129.42	18°51'09.0"			150	4.75	2.42			
	ARC	CC		1827547.744	6263025.764											
	ARC	CS	1787+44.38	1819408.035	6253473.401											
	COSINE	CS	1787+44.38	1819408.035	6253473.401										S 40°26'05.3" E	S 42°33'27.8" E
	COSINE	SPI	1790+20.96	1819197.520	6253652.784		930	2°07'22.5"	464.99	1.63						
	COSINE	ST	1796+74.38	1818716.157	6254094.765											
	TANGENT	ST	1796+74.38	1818716.157	6254094.765									S 42°33'27.8" E		
	TANGENT	TS	1843+65.65	1815260.587	6257267.620											
	COSINE	TS	1843+65.65	1815260.587	6257267.620										S 42°33'27.8" E	S 44°57'00.7" E
	COSINE	SPI	1854+51.31	1814460.891	6258001.890		1545	2°23'32.9"	772.48	3.06						
	COSINE	SC	1859+10.65	1814135.698	6258326.518											
	ARC	SC	1859+10.65	1814135.698	6258326.518											
C128	ARC	PI	1901+39.08	1811143.147	6261313.872	18500	8314.04	25°44'57.1"			200	5.75	2.90			
	ARC	CC		1827205.799	6271419.358											
	ARC	CS	1942+24.69	1809745.546	6265304.656											
	COSINE	CS	1942+24.69	1809745.546	6265304.656										S 70°41'57.8" E	S 73°05'30.8" E
	COSINE	SPI	1946+84.18	1809593.673	6265738.324		1545	2°23'32.9"	772.48	3.06						
	COSINE	ST	1957+69.69	1809277.920	6266777.057											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 134 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 MORGAN HILL AND GILROY  
 TRACK GUIDEWAY  
 B2 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C127 AND C128

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0120
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	1957+69.69	1809277.920	6266777.057									S 73°05'30.8" E		
	TANGENT	TS	1971+66.98	1808871.535	6268113.949											
	COSINE	TS	1971+66.98	1808871.535	6268113.949										S 73°05'30.8" E	S 75°29'03.7" E
	COSINE	SPI	1982+52.64	1808555.782	6269152.682		1545	2°23'32.9"	772.48	3.06						
	COSINE	SC	1987+11.98	1808440.613	6269597.507											
	ARC	SC	1987+11.98	1808440.613	6269597.507											
C129	ARC	PI	2026+00.20	1807466.053	6273361.612	18500	7664.87	23°44'19.2"			200	5.75	2.90			
	ARC	CC		1826350.080	6274234.425											
	ARC	CS	2063+76.85	1808089.249	6277199.565											
	COSINE	CS	2063+76.85	1808089.249	6277199.565										N 80°46'37.1" E	N 78°23'04.2" E
	COSINE	SPI	2068+36.34	1808162.895	6277653.116		1545	2°23'32.9"	772.48	3.06						
	COSINE	ST	2079+21.85	1808381.486	6278716.547											
	TANGENT	ST	2079+21.85	1808381.486	6278716.547									N 78°23'04.2" E		
	TANGENT	POE	2160+00.00	1810007.966	6286629.265											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 135 OF 148

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**CALIFORNIA**  
 High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 MORGAN HILL AND GILROY  
 TRACK GUIDEWAY  
 B2 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C129

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0121
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	POB	2160+00.00	1810007.966	6286629.265									N 78°23'04.2" E		
	TANGENT	TS	2182+25.40	1810456.034	6288809.090											
	COSINE	TS	2182+25.40	1810456.034	6288809.090										N 78°23'04.2" E	N 75°49'57.6" E
	COSINE	SPI	2199+82.16	1810809.745	6290529.870		2500	2°33'06.6"	1249.96	5.27						
	COSINE	SC	2207+25.40	1810991.728	6291250.786											
	ARC	SC	2207+25.40	1810991.728	6291250.786											
C130	ARC	PI	2284+49.03	1812882.124	6298739.506	28066	15074.12	30°46'23.9"			200	4.50	1.20			
	ARC	CC		1838204.101	6284381.500											
	ARC	CS	2357+99.52	1818337.898	6304206.594											
	COSINE	CS	2357+99.52	1818337.898	6304206.594										N 45°03'33.6" E	N 42°30'27.0" E
	COSINE	SPI	2365+43.05	1818863.109	6304732.894		2500	2°33'06.6"	1249.96	5.27						
	COSINE	ST	2382+99.52	1820158.170	6305919.911											
	TANGENT	ST	2382+99.52	1820158.170	6305919.911									N 42°30'27.0" E		
	TANGENT	POE	2387+88.85 = 3144+59.57	1820518.898	6306250.545											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 136 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 MORGAN HILL AND GILROY  
 TRACK GUIDEWAY  
 B2 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C130

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0122
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Tangent	POB	2387+88.85 = 3144+59.57	1820518.898	6306250.545									N 42°30'27.0" E		
	Tangent	TS	3148+52.15	1820808.304	6306515.806											
	Cosine	TS	3148+52.15	1820808.304	6306515.806										N 42°30'27.0" E	N 45°03'55.3" E
	Cosine	SPI	3166+08.91	1822103.366	6307702.824		2500	2°33'28.3"	1249.96	5.29						
	Cosine	SC	3173+52.15	1822628.522	6308229.180											
	Arc	SC	3173+52.15	1822628.522	6308229.180											
C131	Arc	PI	3209+88.88	1825197.141	6310803.666	28000	7232.96	14°48'02.3"			200	3.00	2.71			
	Arc	CC		1802806.960	6328005.572											
	Arc	CS	3245+85.11	1827022.865	6313948.902											
	Cosine	CS	3245+85.11	1827022.865	6313948.902										N 59°51'57.6" E	N 62°25'25.9" E
	Cosine	SPI	3253+28.64	1827396.136	6314591.948		2500	2°33'28.3"	1249.96	5.29						
	Cosine	ST	3270+85.11	1828209.386	6316149.132											
	Tangent	ST	3270+85.11	1828209.386	6316149.132									N 62°25'25.9" E		
	Tangent	TS	3473+31.90	1837582.173	6334095.815											

SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 137 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN JOSE TO MERCED**

PACHECO PASS  
TRACK GUIDEWAY  
B2 TRACK ALIGNMENT DATA TABLE  
CURVE NO. C131

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0123
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Cosine	TS	3473+31.90	1837582.173	6334095.815										N 62°25'25.9" E	N 62°09'43.8" E
	Cosine	SPI	3481+75.07	1837972.500	6334843.199		1200	0°15'42.1"	600	0.26						
	Cosine	SC	3485+31.90	1838139.129	6335158.734											
	Arc	SC	3485+31.90	1838139.129	6335158.734											
C132	Arc	PI	3493+91.00	1838540.304	6335918.414	131366	1718.18	0°44'57.8"			200	0.00	1.22			
	Arc	CC		1954302.509	6273814.663											
	Arc	CS	3502+50.08	1838951.381	6336672.783											
	Cosine	CS	3502+50.08	1838951.381	6336672.783										N 61°24'46.0" E	N 61°09'03.9" E
	Cosine	SPI	3506+06.91	1839122.123	6336986.111		1200	0°15'42.1"	600	0.26						
	Cosine	ST	3514+50.08	1839528.955	6337724.642											
	Tangent	ST	3514+50.08	1839528.955	6337724.642									N 61°09'03.9" E		
	Tangent	TS	3599+46.45	1843628.466	6345166.567											
	Cosine	TS	3599+46.45	1843628.466	6345166.567										N 61°09'03.9" E	N 58°48'44.9" E
	Cosine	SPI	3613+51.83	1844306.567	6346397.537		2000	2°20'19.0"	999.98	3.87						
	Cosine	SC	3619+46.45	1844614.582	6346906.381											
	Arc	SC	3619+46.45	1844614.582	6346906.381											
C133	Arc	PI	3660+91.36	1846760.988	6350452.261	24500	8212.07	19°12'17.2"			200	5.50	1.03			
	Arc	CC		1865573.770	6334219.284											
	Arc	CS	3701+58.51	1849954.345	6353094.759											
	Cosine	CS	3701+58.51	1849954.345	6353094.759										N 39°36'27.7" E	N 37°16'08.8" E
	Cosine	SPI	3707+53.32	1850412.601	6353473.965		2000	2°20'19.0"	999.98	3.87						
	Cosine	ST	3721+58.51	1851531.007	6354325.009											
	Tangent	ST	3721+58.51	1851531.007	6354325.009									N 37°16'08.8" E		
	Tangent	TS	3796+87.11	1857522.263	6358884.019											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 138 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 PACHECO PASS  
 TRACK GUIDEWAY  
 B2 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C132 AND C133

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B0124
SCALE	NONE
SHEET NO.	



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Cosine	TS	3796+87.11	1857522.263	6358884.019										N 37°16'08.8" E	N 40°59'45.3" E
	Cosine	SPI	3816+98.44	1859122.880	6360101.999		2862	3°43'36.6"	1430.91	8.82						
	Cosine	SC	3825+49.11	1859765.459	6360660.504											
	Arc	SC	3825+49.11	1859765.459	6360660.504											
C134	Arc	PI	3880+36.23	1863906.901	6364260.087	22000	10754.82	28°00'33.7"			200	6.00	1.27			
	Arc	CC		1845333.340	6377265.140											
	Arc	CS	3933+03.92	1865872.838	6369382.942											
	Cosine	CS	3933+03.92	1865872.838	6369382.942										N 69°00'19" E	N 72°43'55.6" E
	Cosine	SPI	3941+55.29	1866177.869	6370177.795		2862	3°43'36.6"	1430.91	8.82						
	Cosine	ST	3961+65.92	1866774.911	6372098.469											
	Tangent	ST	3961+65.92	1866774.911	6372098.469									N 72°43'55.6" E		
	Tangent	TS	4047+25.00	1869315.585	6380271.771											
	Cosine	TS	4047+25.00	1869315.585	6380271.771										N 72°43'55.6" E	N 73°28'41.4" E
	Cosine	SPI	4056+03.31	1869576.302	6381110.493		1250	0°44'45.7"	625	0.77						
	Cosine	SC	4059+75.00	1869682.008	6381466.848											
	Arc	SC	4059+75.00	1869682.008	6381466.848											
C135	Arc	PI	4066+40.04	1869871.133	6382104.431	48000	1330	1°35'15.2"			250	3.50	1.71			
	Arc	CC		1823663.860	6395117.127											
	Arc	CS	4073+05.00	1870042.521	6382747.009											
	Cosine	CS	4073+05.00	1870042.521	6382747.009										N 75°03'56.6" E	N 75°48'42.4" E
	Cosine	SPI	4076+76.70	1870138.313	6383106.156		1250	0°44'45.7"	625	0.77						
	Cosine	ST	4085+55.00	1870353.594	6383957.674											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 139 OF 148

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 Oakland, CA 94607



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 PACHECO PASS  
 TRACK GUIDEWAY  
 B2 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C134 AND C135

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B0125
SCALE	NONE
SHEET NO.	



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Tangent	ST	4085+55.00	1870353.594	6383957.674									N 75°48'42.4" E		
	Tangent	TS	4098+14.81	1870662.385	6385179.059											
	Cosine	TS	4098+14.81	1870662.385	6385179.059										N 75°48'42.4" E	N 77°01'45.5" E
	Cosine	SPI	4110+09.33	1870955.170	6386337.137		1700	1°13'03.1"	849.99	1.71						
	Cosine	SC	4115+14.81	1871068.638	6386829.767											
	Arc	SC	4115+14.81	1871068.638	6386829.767											
C136	Arc	PI	4233+20.38	1873718.430	6398334.115	40000	22959.31	32°53'12.4"			250	4.00	2.25			
	Arc	CC		1832089.239	6395807.876											
	Arc	CS	4344+74.12	1869696.938	6409433.621											
	Cosine	CS	4344+74.12	1869696.938	6409433.621										S 70°05'02.1" E	S 68°51'58.9" E
	Cosine	SPI	4349+79.65	1869524.733	6409908.916		1700	1°13'03.1"	849.99	1.71						
	Cosine	ST	4361+74.12	1869094.057	6411023.091											
	Tangent	ST	4361+74.12	1869094.057	6411023.091									S 68°51'58.9" E		
	Tangent	POE	4432+13.18 =4410+00.00	1866556.165	6417588.715											

**SAN JOSE TO CVY EIR/S: VOLUME III**  
**ALTERNATIVE 4**  
**BOOK 4E**  
**SHEET 140 OF 148**

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CALIFORNIA

High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 PACHECO PASS  
 TRACK GUIDEWAY  
 B2 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C136

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B0126
SCALE	NONE
SHEET NO.	



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	POB	4426+12.16 = 4410+00.00	1866556.165	6417588.715									S 68°51'58.9" E		
	TANGENT	TS	4522+81.61	1862488.645	6428111.548											
	COSINE	TS	4522+81.61	1862488.645	6428111.548										S 68°51'58.9" E	S 69°52'35.0" E
	COSINE	SPI	4534+40.99	1862070.639	6429192.946		1650	1°00'36"	825	1.38						
	COSINE	SC	4539+31.61	1861901.831	6429653.647											
	ARC	SC	4539+31.61	1861901.831	6429653.647											
C137	ARC	PI	4615+71.14	1859273.478	6436826.800	46800	15145.47	18°32'32"			250	4.00	1.34			
	ARC	CC		1905844.811	6445755.027											
	ARC	CS	4690+77.08	1859062.638	6444463.416											
	COSINE	CS	4690+77.08	1859062.638	6446113.202										S 88°25'06.7" E	S 89°25'42.8" E
	COSINE	SPI	4695+67.73	1859049.097	6444953.884		1650	1°00'36"	825	1.38						
	COSINE	ST	4707+27.08	1859037.534	6446113.202											
	TANGENT	ST	4707+27.08	1859037.534	6446113.200									S 89°25'42.8" E		
	TANGENT	TS	4816+47.36	1858928.618	6457032.942											

SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 141 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

**SAN JOSE TO MERCED**

SAN JOAQUIN VALLEY  
TRACK GUIDEWAY  
B2 TRACK ALIGNMENT DATA TABLE  
CURVE NO. C137

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0127
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	COSINE	TS	4816+47.36	1858928.618	6457032.942										S 89°25'42.8" E	S 89°21'23.5" E
	COSINE	SPI	4822+65.69	1858922.451	6457651.237		880	0°04'19"	440	0.05						
	COSINE	SC	4825+27.36	1858919.513	6457912.895											
	ARC	SC	4825+27.36	1858919.513	6457912.895											
C138	ARC	PI	4831+20.89	1858912.847	6458506.388	350000	1187.06	0°11'40"			250	0.00	0.71			
	ARC	CC		1508941.586	6453982.139											
	ARC	CS	4837+14.42	1858904.168	6459099.854											
	COSINE	CS	4837+14.42	1858904.168	6459099.854										S 89°09'43.9" E	S 89°05'24.6" E
	COSINE	SPI	4839+76.09	1858900.342	6459361.500		880	0°04'19"	440	0.05						
	COSINE	ST	4845+94.42	1858890.524	6459979.748											
	TANGENT	ST	4845+94.42	1858890.524	6459979.748									S 89°05'24.6" E		
	TANGENT	TS	4977+06.47	1858682.317	6473090.146											
	COSINE	TS	4977+06.47	1858682.317	6473090.146										S 89°05'24.6" E	S 89°01'12.5" E
	COSINE	SPI	4983+24.80	1858672.498	6473708.394		880	0°04'12"	440	0.05						
	COSINE	SC	4985+86.47	1858668.023	6473970.030											
	ARC	SC	4985+86.47	1858668.023	6473970.030											
C139	ARC	PI	4990+27.67	1858660.478	6474411.165	360000	882.4	0°08'26"			250	0.00	0.69			
	ARC	CC		1498720.668	6467813.635											
	ARC	CS	4994+68.87	1858651.852	6474852.281											
	COSINE	CS	4994+68.87	1858651.852	6474852.281										S 88°52'46.9" E	S 88°48'34.8" E
	COSINE	SPI	4997+30.55	1858646.736	6475113.906		880	0°04'12"	440	0.05						
	COSINE	ST	5003+48.87	1858633.891	6475732.098											

SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 142 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
SAN JOAQUIN VALLEY  
TRACK GUIDEWAY  
B2 TRACK ALIGNMENT DATA TABLE  
CURVE NO. C138 AND C139

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0128
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B2 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	TANGENT	ST	5003+48.87	1858633.891	6475732.098									S 88°48'34.8" E		
	TANGENT	TS	5253+61.39	1858114.287	6500739.223											
	COSINE	TS	5253+61.39	1858114.287	6500739.223										S 88°48'34.8" E	S 89°02'41.9" E
	COSINE	SPI	5261+69.43	1858097.501	6501547.089		1150	0°14'07"	575	0.22						
	COSINE	SC	5265+11.39	1858091.801	6501889.002											
	ARC	SC	5265+11.39	1858091.801	6501889.002											
C140	ARC	PI	5271+05.93	1858081.892	6502483.461	140000	1189.07	0°29'12"			250	0.75	1.04			
	ARC	CC		1998072.354	6504222.431											
	ARC	CS	5277+00.47	1858077.032	6503077.982											
	COSINE	CS	5277+00.47	1858077.032	6503077.982										S 89°31'53.8" E	S 89°46'01.0" E
	COSINE	SPI	5280+42.43	1858074.236	6503419.932		1150	0°14'07"	575	0.22						
	COSINE	ST	5288+50.47	1858070.949	6504227.965											
	TANGENT	ST	5288+50.47	1858070.949	6504227.965									S 89°46'01.0" E		
	TANGENT	POE	5337+28.93	1858051.106	6509106.386											

SAN JOSE TO CVY EIR/S: VOLUME III  
ALTERNATIVE 4  
BOOK 4E  
SHEET 143 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
SAN JOAQUIN VALLEY  
TRACK GUIDEWAY  
B2 TRACK ALIGNMENT DATA TABLE  
CURVE NO. C140

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0129
SCALE NONE
SHEET NO.







CURVE	ELEMENT	POINT TYPE	B1 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Tangent	POB	2387+88.85 = 3144+59.57	1820563.494	6306201.890									N 42°30'27.0" E		
	Tangent	TS	3155+25.93	1821349.600	6306922.413											
	Cosine	TS	3155+25.93	1821349.600	6306922.413										N 42°30'27.0" E	N 44°13'38.9" E
	Cosine	SPI	3166+50.20	1822178.400	6307682.069		1600	1°43'11.8"	799.99	2.27						
	Cosine	SC	3171+25.93	1822519.356	6308013.952											
	Arc	SC	3171+25.93	1822519.356	6308013.952											
C231	Arc	PI	3207+71.14	1825131.428	6310556.517	26650	7245.46	15°34'38.2"			200	3.50	2.50			
	Arc	CC		1803930.752	6327110.713											
	Arc	CS	3243+71.38	1826964.781	6313707.132											
	Cosine	CS	3243+71.38	1826964.781	6313707.132										N 59°48'17.0" E	N 61°31'28.8" E
	Cosine	SPI	3248+47.19	1827204.090	6314118.384		1600	1°43'11.8"	799.99	2.27						
	Cosine	ST	3259+71.38	1827740.121	6315106.644											
	Tangent	ST	3259+71.38	1827740.121	6315106.644									N 61°31'28.8" E		
	Tangent	TS	3288+23.11	1829099.770	6317613.380											
	Cosine	TS	3288+23.11	1829099.770	6317613.380										N 61°31'28.8" E	N 61°45'32.6" E
	Cosine	SPI	3294+55.49	1829401.275	6318169.256		900	0°14'03.8"	450	0.17						
	Cosine	SC	3297+23.11	1829527.909	6318405.021											
	Arc	SC	3297+23.11	1829527.909	6318405.021											
C231A	Arc	PI	3301+36.26	1829723.404	6318768.994	110000	826.3	0°25'49.4"			200	0.00	1.45			
	Arc	CC		1732621.688	6370454.847											
	Arc	CS	3305+49.41	1829916.160	6319134.425											
	Cosine	CS	3305+49.41	1829916.160	6319134.425										N 62°11'22.1" E	N 62°25'25.9" E
	Cosine	SPI	3308+17.03	1830041.019	6319371.135		900	0°14'03.8"	450	0.17						
	Cosine	ST	3314+49.41	1830333.764	6319931.674											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 145 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 MORGAN HILL AND GILROY  
 TRACK GUIDEWAY  
 B1 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C231 AND C231A

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0131
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B1 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Tangent	ST	3314+49.41	1830333.764	6319931.674									N 62°25'25.9" E		
	Tangent	TS	3473+59.21	1837698.838	6334034.058											
	Cosine	TS	3473+59.21	1837698.838	6334034.058										N 62°25'25.9" E	N 62°09'43.3" E
	Cosine	SPI	3482+02.38	1838089.165	6334781.443		1200	0°15'42.6"	600	0.26						
	Cosine	SC	3485+59.21	1838255.794	6335096.977											
	Arc	SC	3485+59.21	1838255.794	6335096.977											
C232	Arc	PI	3494+17.58	1838656.629	6335856.009	131300	1716.71	0°44'56.9"			200	0.00	1.22			
	Arc	CC		1954360.672	6273783.460											
	Arc	CS	3502+75.92	1839067.354	6336609.735											
	Cosine	CS	3502+75.92	1839067.354	6336609.735										N 61°24'46.5" E	N 61°09'03.9" E
	Cosine	SPI	3506+32.75	1839238.094	6336923.063		1200	0°15'42.6"	600	0.26						
	Cosine	ST	3514+75.92	1839644.926	6337661.593											
	Tangent	ST	3514+75.92	1839644.926	6337661.593									N 61°09'03.9" E		
	Tangent	TS	3599+57.59	1843737.348	6345090.649											
	Cosine	TS	3599+57.59	1843737.348	6345090.649										N 61°09'03.9" E	N 58°48'22.2" E
	Cosine	SPI	3613+62.98	1844415.449	6346321.620		2000	2°20'41.7"	999.98	3.88						
	Cosine	SC	3619+57.59	1844723.521	6346830.431											
	Arc	SC	3619+57.59	1844723.521	6346830.431											
C233	Arc	PI	3660+88.57	1846863.100	6350364.152	24434	8184.56	19°11'31.7"			200	5.50	1.05			
	Arc	CC		1865624.853	6334175.206											
	Arc	CS	3701+42.15	1850045.429	6352998.115											
	Cosine	CS	3701+42.15	1850045.429	6352998.115										N 39°36'50.5" E	N 37°16'08.8" E
	Cosine	SPI	3707+36.96	1850503.643	6353377.372		2000	2°20'41.7"	999.98	3.88						
	Cosine	ST	3721+42.15	1851622.050	6354228.417											
	Tangent	ST	3721+42.15	1851622.050	6354228.417									N 37°16'08.8" E		
	Tangent	TS	3796+77.89	1857618.997	6358791.757											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 146 OF 148

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 PACHECO PASS  
 TRACK GUIDEWAY  
 B1 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C232 AND C233

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0132
SCALE NONE
SHEET NO.



CURVE	ELEMENT	POINT TYPE	B1 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Cosine	TS	3796+77.89	1857618.997	6358791.757										N 37°16'08.8" E	N 40°59'05.2" E
	Cosine	SPI	3816+89.22	1859219.613	6360009.736		2862	3°42'56.5"	1430.91	8.79						
	Cosine	SC	3825+39.89	1859862.298	6360568.114											
	Arc	SC	3825+39.89	1859862.298	6360568.114											
C234	Arc	PI	3880+48.04	1864020.309	6364180.680	22066	10795.67	28°01'54.0"			200	6.00	1.25			
	Arc	CC		1845390.124	6377225.380											
	Arc	CS	3933+35.56	1865992.777	6369323.544											
	Cosine	CS	3933+35.56	1865992.777	6369323.544										N 69°00'59.2" E	N 72°43'55.6" E
	Cosine	SPI	3941+86.93	1866297.653	6370118.454		2862	3°42'56.5"	1430.91	8.79						
	Cosine	ST	3961+97.56	1866894.695	6372039.126											
	Tangent	ST	3961+97.56	1866894.695	6372039.126								N 72°43'55.6" E			
	Tangent	TS	4025+52.66	1868781.141	6378107.789											
	Cosine	TS	4025+52.66	1868781.141	6378107.789										N 72°43'55.6" E	N 73°28'37.1" E
	Cosine	SPI	4034+66.10	1869052.287	6378980.060		1300	0°44'41.4"	650	0.8						
	Cosine	SC	4038+52.66	1869162.228	6379350.668											
	Arc	SC	4038+52.66	1869162.228	6379350.668											
C235	Arc	PI	4045+46.46	1869359.543	6380015.811	50000	1387.5	1°35'23.8"			250	3.50	1.50			
	Arc	CC		1821226.954	6393570.706											
	Arc	CS	4052+40.16	1869538.327	6380686.173											
	Cosine	CS	4052+40.16	1869538.327	6380686.173										N 75°04'00.9" E	N 75°48'42.4" E
	Cosine	SPI	4056+26.73	1869637.943	6381059.689		1300	0°44'41.4"	650	0.8						
	Cosine	ST	4065+40.16	1869861.835	6381945.267											
	Tangent	ST	4065+40.16	1869861.835	6381945.267								N 75°48'42.4" E			
	Tangent	TS	4098+71.53	1870678.382	6385175.015											

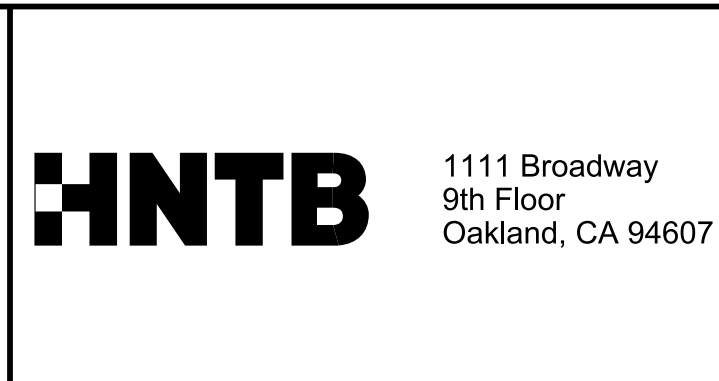
SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 147 OF 148

\$FILE \$ \$PLTDRVS \$ \$PENTBLS \$ \$TIME \$ \$DATE \$ \$USER \$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY	
DRAWN BY	
CHECKED BY	
IN CHARGE	
DATE	

**RECORD PEPP SUBMITTAL**  
 MAY 3, 2019  
 NOT FOR CONSTRUCTION



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 PACHECO PASS  
 TRACK GUIDEWAY  
 B1 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C234 AND C235

CONTRACT NO.	HSR15-34
DRAWING NO.	TT-B0133
SCALE	NONE
SHEET NO.	



CURVE	ELEMENT	POINT TYPE	B1 TRACK STATION	COORDINATES		RADIUS (FT)	LENGTH (FT)	DELTA, Δ	K	P	DESIGN SPEED (MPH)	ACTUAL SUPERELEVATION (EA) (IN)	UNBALANCED SUPERELEVATION (EU) (IN)	BEARING (0°00'00") (TANGENT)	WCB (0°00'00")	
				NORTHING	EASTING										START ANGLE	END ANGLE
	Cosine	TS	4098+71.53	1870678.382	6385175.015										N 75°48'42.4" E	N 77°01'43.7" E
	Cosine	SPI	4110+66.04	1870971.167	6386333.093		1700	1°13'01.3"	849.99	1.71						
	Cosine	SC	4115+71.53	1871084.639	6386825.722											
	Arc	SC	4115+71.53	1871084.639	6386825.722											
C236	Arc	PI	4233+82.35	1873735.710	6398335.164	40016.5	22969.48	32°53'16.1"			250	4.00	2.25			
	Arc	CC		1832089.239	6395807.876											
	Arc	CS	4345+41.01	1869712.333	6409439.572											
	Cosine	CS	4345+41.01	1869712.333	6409439.572										S 70°05'00.3" E	S 68°51'58.9" E
	Cosine	SPI	4350+46.54	1869540.123	6409914.865		1700	1°13'01.3"	849.99	1.71						
	Cosine	ST	4362+41.01	1869109.447	6411029.040											
	Tangent	ST	4362+41.01	1869109.447	6411029.040									S 68°51'58.9" E		
	Tangent	POE	4432+80.06= 4410+00.00	1866571.556	6417594.664											

SAN JOSE TO CVY EIR/S: VOLUME III  
 ALTERNATIVE 4  
 BOOK 4E  
 SHEET 148 OF 148

\$USER \$ \$DATE \$ \$TIME \$ \$PENTBL \$ \$PLTDRVS \$ \$FILE \$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE

**RECORD PEPD  
SUBMITTAL**  
  
**MAY 3, 2019**  
  
**NOT FOR  
CONSTRUCTION**

HNTB

1111 Broadway  
9th Floor  
Oakland, CA 94607



CALIFORNIA

High-Speed Rail Authority

**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN JOSE TO MERCED**  
 PACHECO PASS  
 TRACK GUIDEWAY  
 B1 TRACK ALIGNMENT DATA TABLE  
 CURVE NO. C236

CONTRACT NO. HSR15-34
DRAWING NO. TT-B0134
SCALE NONE
SHEET NO.