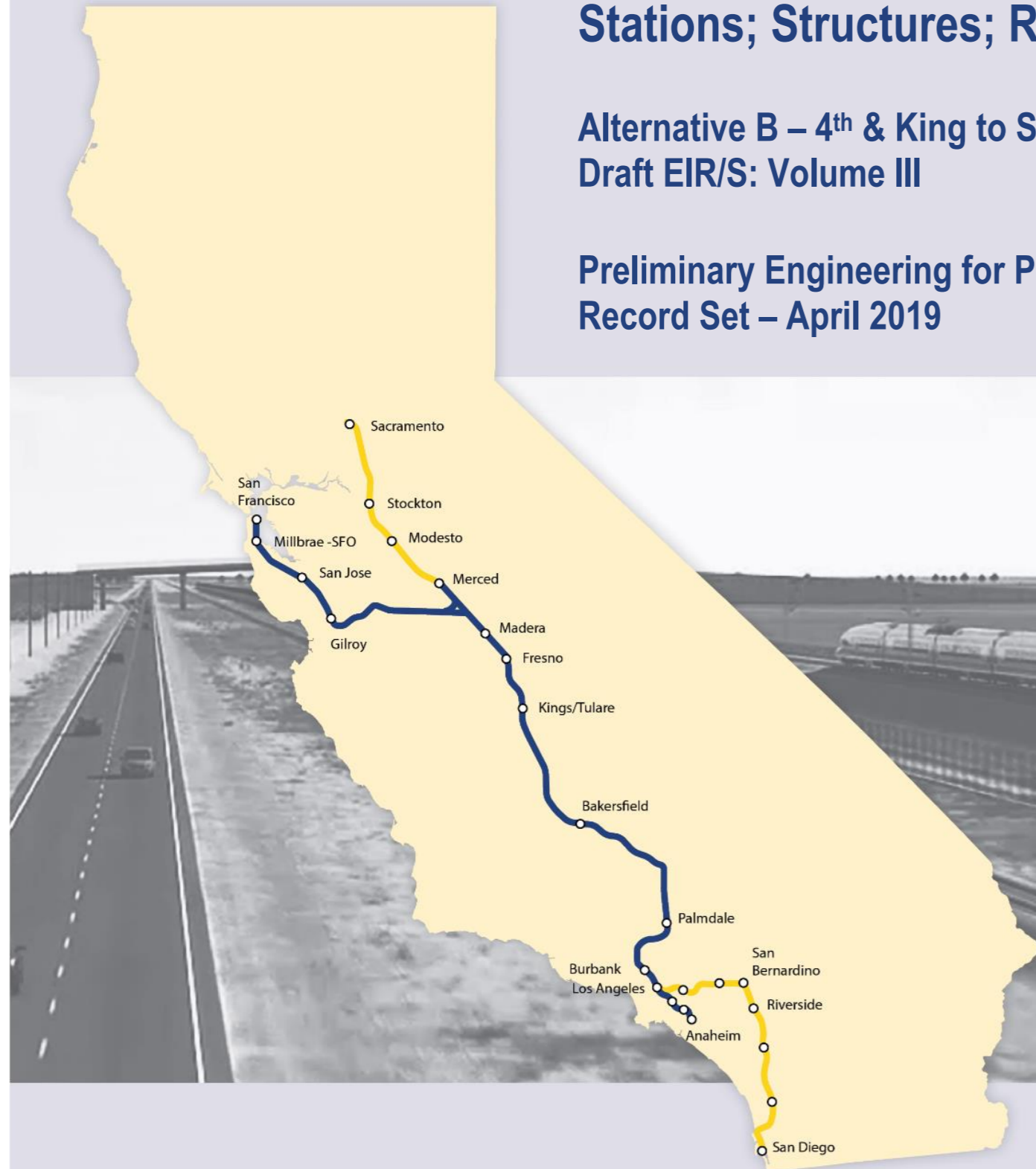


# San Francisco to San Jose Project Section

## Stations; Structures; Roadway

Alternative B – 4<sup>th</sup> & King to Scott Blvd  
Draft EIR/S: Volume III

Preliminary Engineering for Project Definition  
Record Set – April 2019



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 27 TO 50 OF 142**

**ALTERNATIVE B - SAN FRANCISCO TO SAN JOSE (4TH/KING TO SCOTT BOULEVARD)**

BOOK	SHEET NO	DRAWING NO	SUBSECTION	GEOGRAPHIC LOCATION OR FEATURE	ALIGNMENT OR FEATURE	SHEET DESCRIPTION	ADDITIONAL DESCRIPTION
<b>COVER, INDEX OF DRAWING AND KEY MAPS</b>							
BOOK B3	A	COVER		4TH & KING TO SCOTT BLVD	ALTERNATIVE B	ALTERNATIVE A	
BOOK B3	B	GE-A2103	ENTIRE ALTERNATIVE	STATION, COMPLEX STRUCTURES AND GRADE SEPARATED	INDEX OF DRAWINGS	SHEET 3 OF 6	
BOOK B3	C	GE-D2101	ENTIRE ALTERNATIVE		KEY MAP	COMPOSITE PLAN	SHEET 1 OF 4
BOOK B3	D	GE-D2102	ENTIRE ALTERNATIVE		KEY MAP	COMPOSITE PLAN	SHEET 2 OF 4
BOOK B3	E	GE-D2103	ENTIRE ALTERNATIVE		KEY MAP	COMPOSITE PLAN	SHEET 3 OF 4
BOOK B3	F	GE-D2104	ENTIRE ALTERNATIVE		KEY MAP	COMPOSITE PLAN	SHEET 4 OF 4
BOOK B3	G	GE-D2105	ENTIRE ALTERNATIVE		KEY MAP	SYSTEM SITES	
<b>STATIONS</b>							
BOOK B3	27	AR-J0101	STATION		4TH AND KING	GENERAL SITE PLAN	
BOOK B3	28	AR-J0102	STATION		4TH AND KING	DETAILED SITE PLAN	
BOOK B3	29	AR-J0103	STATION		4TH AND KING	PLATFORM LEVEL PLAN	
BOOK B3	30	AR-J0104	STATION		4TH AND KING	SECTION	
BOOK B3	31	AR-J0105	STATION		4TH AND KING	MASSING DIAGRAM 1	
BOOK B3	32	AR-J0106	STATION		4TH AND KING	MASSING DIAGRAM 2	
BOOK B3	33	AR-J0107	STATION		4TH AND KING	FACILITY SIZING TABLE	1 OF 3
BOOK B3	34	AR-J0108	STATION		4TH AND KING	FACILITY SIZING TABLE	2 OF 3
BOOK B3	35	AR-J0109	STATION		4TH AND KING	FACILITY SIZING TABLE	3 OF 3
BOOK B3	36	AR-J0111	STATION		MILLBRAE	GENERAL SITE PLAN	
BOOK B3	37	AR-J0112	STATION		MILLBRAE	DETAILED SITE PLAN	
BOOK B3	38	AR-J0113	STATION		MILLBRAE	CONCOURSE PLAN	
BOOK B3	39	AR-J0114	STATION		MILLBRAE	SECTION	
BOOK B3	40	AR-J0115	STATION		MILLBRAE	MASSING DIAGRAM 1	
BOOK B3	41	AR-J0116	STATION		MILLBRAE	MASSING DIAGRAM 2	
BOOK B3	42	AR-J0117	STATION		MILLBRAE	FACILITY SIZING TABLE	1 OF 3
BOOK B3	43	AR-J0118	STATION		MILLBRAE	FACILITY SIZING TABLE	2 OF 3
BOOK B3	44	AR-J0119	STATION		MILLBRAE	FACILITY SIZING TABLE	3 OF 3
<b>STRUCTURES</b>							
BOOK B3	45	ST-T0201	ALTERNATIVE B			OVERPASSES AND UNDERPASSES	SHEET 1 OF 4
BOOK B3	46	ST-T0202	ALTERNATIVE B			OVERPASSES AND UNDERPASSES	SHEET 2 OF 4
BOOK B3	47	ST-T0203	ALTERNATIVE B			OVERPASSES AND UNDERPASSES	SHEET 3 OF 4
BOOK B3	48	ST-T0204	ALTERNATIVE B			OVERPASSES AND UNDERPASSES	SHEET 4 OF 4
BOOK B3	49	ST-V0201	ALTERNATIVE B		COMPLEX STRUCTURES	LMF LEAD TRACK PERGOLA	GENERAL PLAN
<b>ROADWAY</b>							
BOOK B3	50	CV-T0201	ALTERNATIVE B		GRADE SEPARATED ROADWAY	PLAN, PROFILE AND TYPICAL SECTIONS	TUNNEL AVENUE

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET B**

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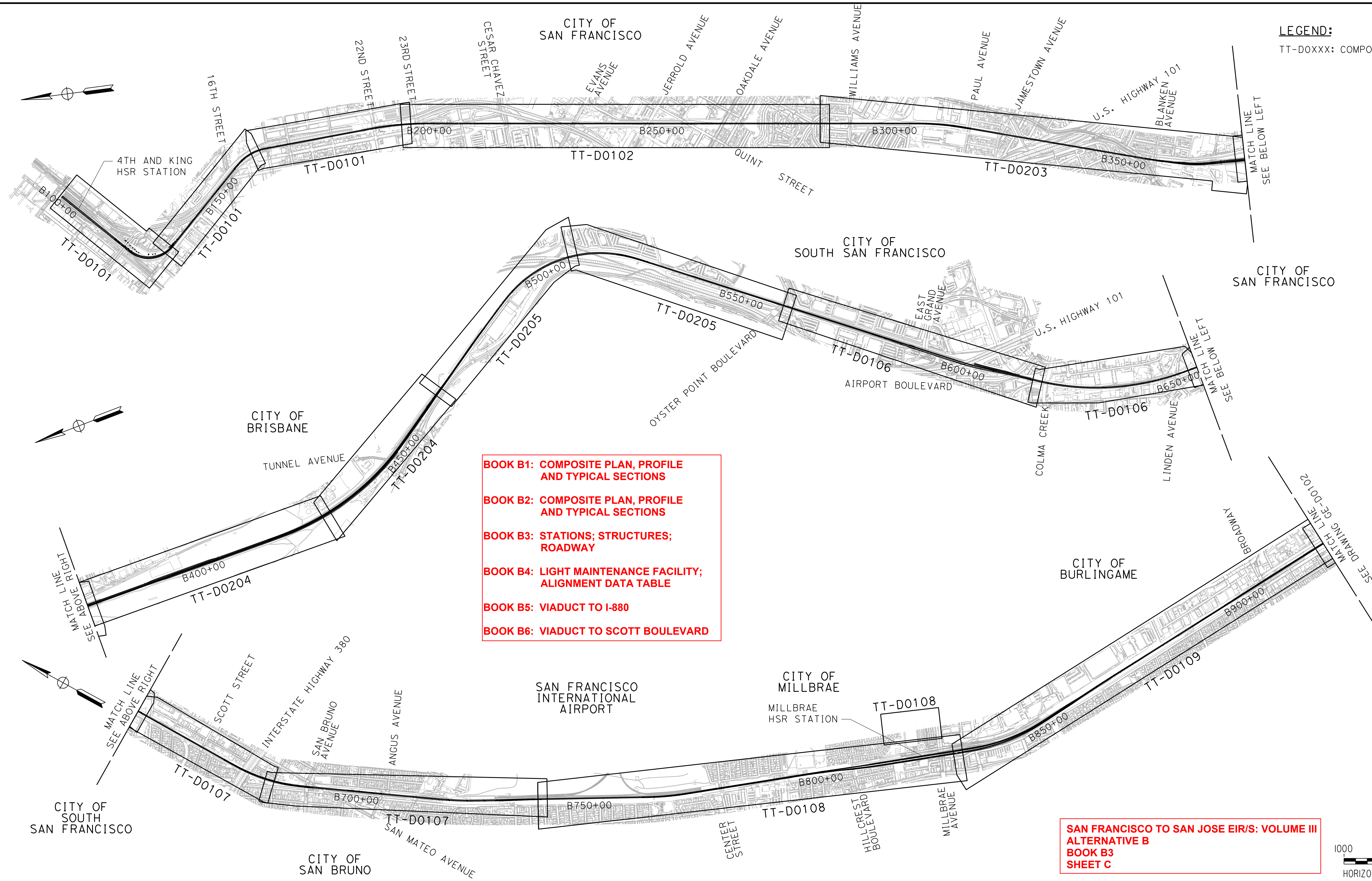


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**

ALTERNATIVE B  
INDEX OF DRAWINGS  
SHEET 3 OF 6

CONTRACT NO.	HSR15-34
DRAWING NO.	GE-A2103
SCALE	NONE
SHEET NO.	

**LEGEND:**  
TT-DOXXX: COMPOSITE ROLL PLOT



- BOOK B1: COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS**
- BOOK B2: COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS**
- BOOK B3: STATIONS; STRUCTURES; ROADWAY**
- BOOK B4: LIGHT MAINTENANCE FACILITY; ALIGNMENT DATA TABLE**
- BOOK B5: VIADUCT TO I-880**
- BOOK B6: VIADUCT TO SCOTT BOULEVARD**

**BOOK B1**

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET C**



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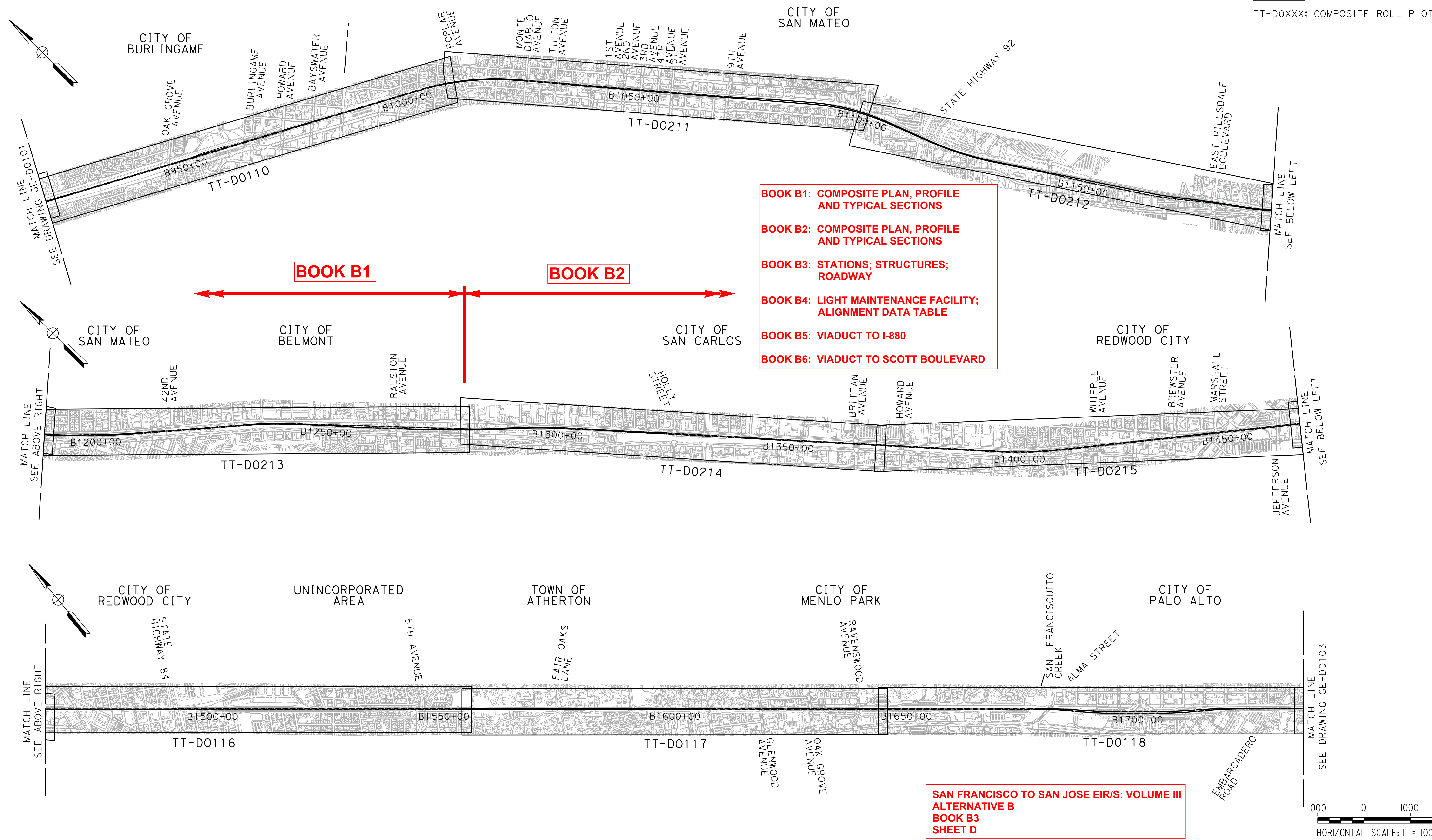
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**

ALTERNATIVE B  
KEY MAP  
COMPOSITE PLAN  
SHEET 1 OF 4

CONTRACT NO.	HSR15-34
DRAWING NO.	GE-D2101
SCALE	AS SHOWN
SHEET NO.	



- BOOK B1: COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS**
- BOOK B2: COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS**
- BOOK B3: STATIONS; STRUCTURES; ROADWAY**
- BOOK B4: LIGHT MAINTENANCE FACILITY; ALIGNMENT DATA TABLE**
- BOOK B5: VIADUCT TO I-880**
- BOOK B6: VIADUCT TO SCOTT BOULEVARD**

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET D**



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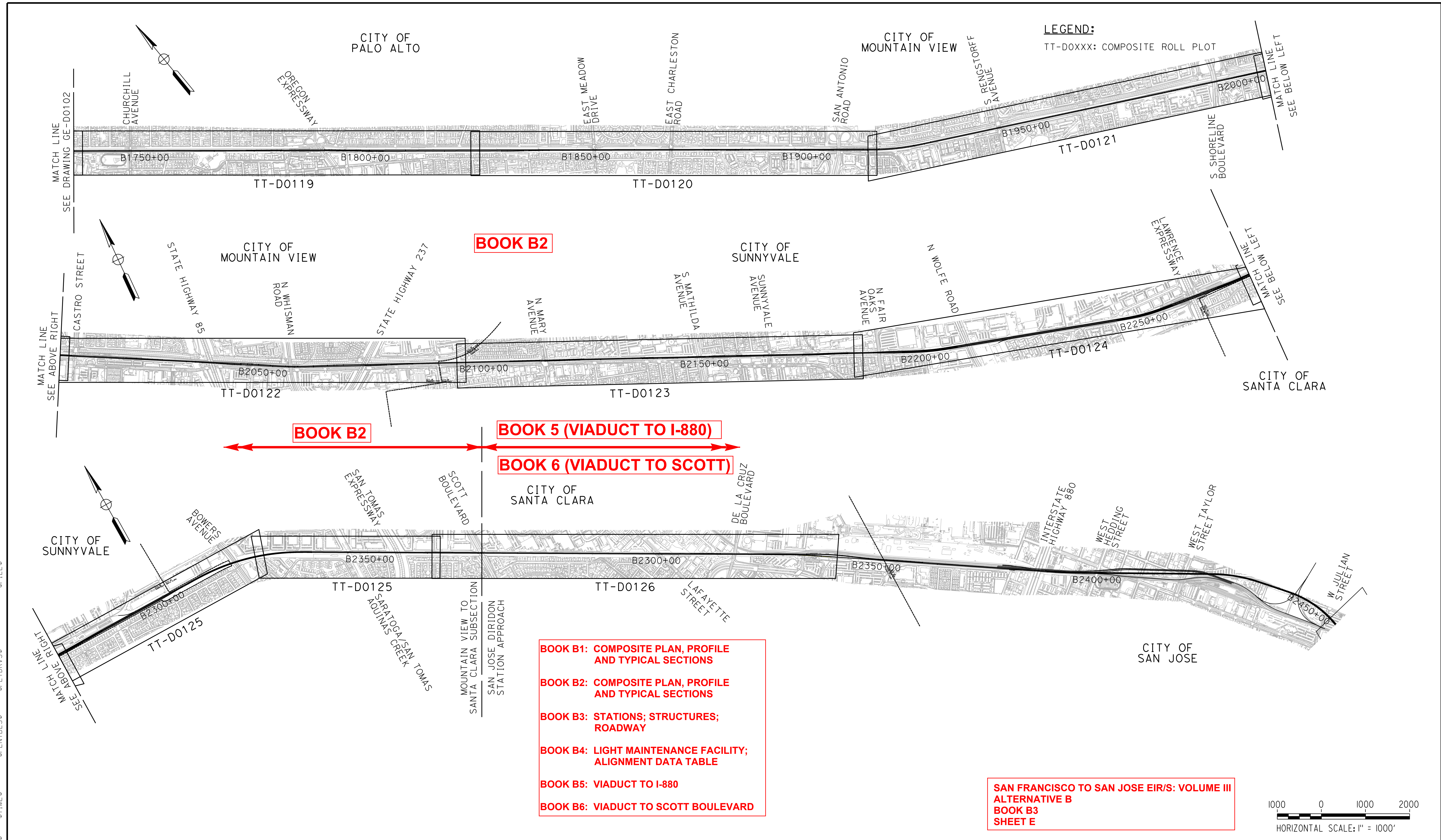
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**

ALTERNATIVE B  
KEY MAP  
COMPOSITE PLAN  
SHEET 2 OF 4

CONTRACT NO.	HSR15-34
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SCALE	AS SHOWN
SHEET NO.	



**LEGEND:**  
TT-DOXXX: COMPOSITE ROLL PLOT

**BOOK B2**

**BOOK B2**

**BOOK 5 (VIADUCT TO I-880)**

**BOOK 6 (VIADUCT TO SCOTT)**

- BOOK B1: COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS**
- BOOK B2: COMPOSITE PLAN, PROFILE AND TYPICAL SECTIONS**
- BOOK B3: STATIONS; STRUCTURES; ROADWAY**
- BOOK B4: LIGHT MAINTENANCE FACILITY; ALIGNMENT DATA TABLE**
- BOOK B5: VIADUCT TO I-880**
- BOOK B6: VIADUCT TO SCOTT BOULEVARD**

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET E**



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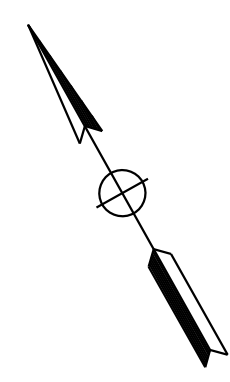
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**

ALTERNATIVE B  
KEY MAP  
COMPOSITE PLAN  
SHEET 3 OF 4

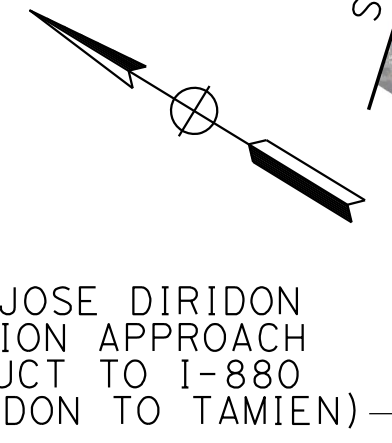
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TT-DOXXX: COMPOSITE ROLL PLOT

**ALTERNATIVE B  
SCOTT BLVD TO W. ALMA  
(VIADUCT TO I-880)  
BOOK B5**



**BOOK B1: COMPOSITE PLAN, PROFILE  
AND TYPICAL SECTIONS**

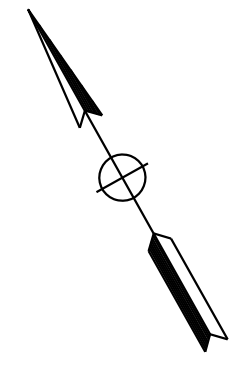
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AND TYPICAL SECTIONS**

**BOOK B3: STATIONS; STRUCTURES;  
ROADWAY**

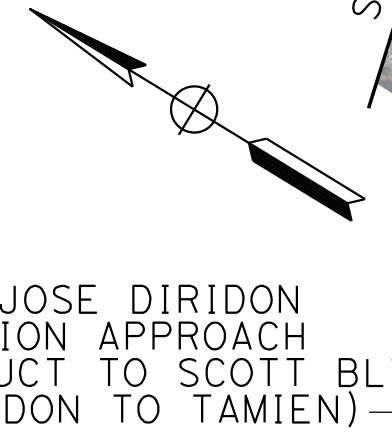
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ALIGNMENT DATA TABLE**

**BOOK B5: VIADUCT TO I-880**

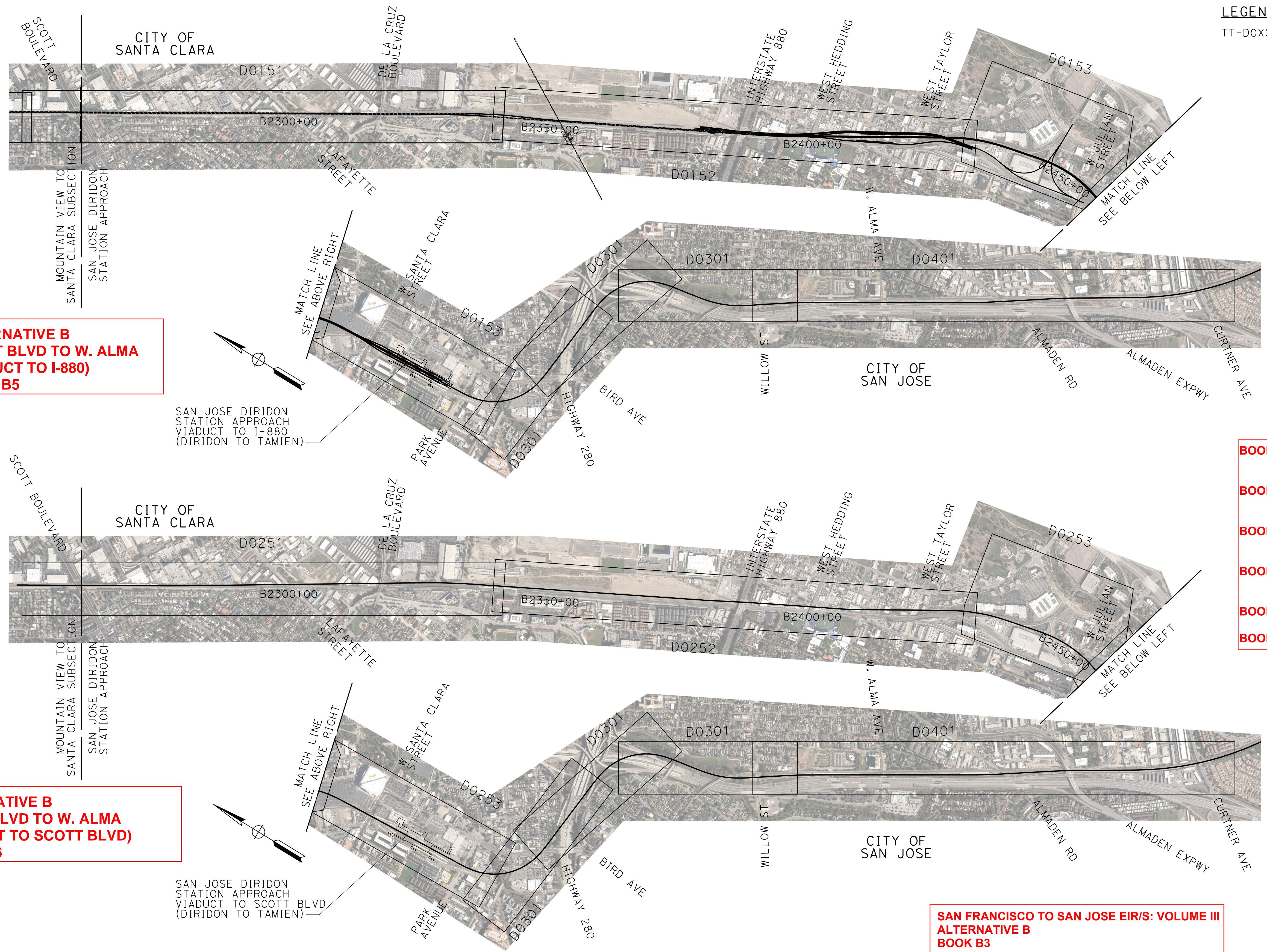
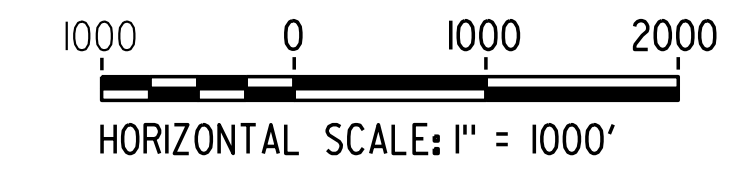
**BOOK B6: VIADUCT TO SCOTT BOULEVARD**



**ALTERNATIVE B  
SCOTT BLVD TO W. ALMA  
(VIADUCT TO SCOTT BLVD)  
BOOK B6**



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET F**



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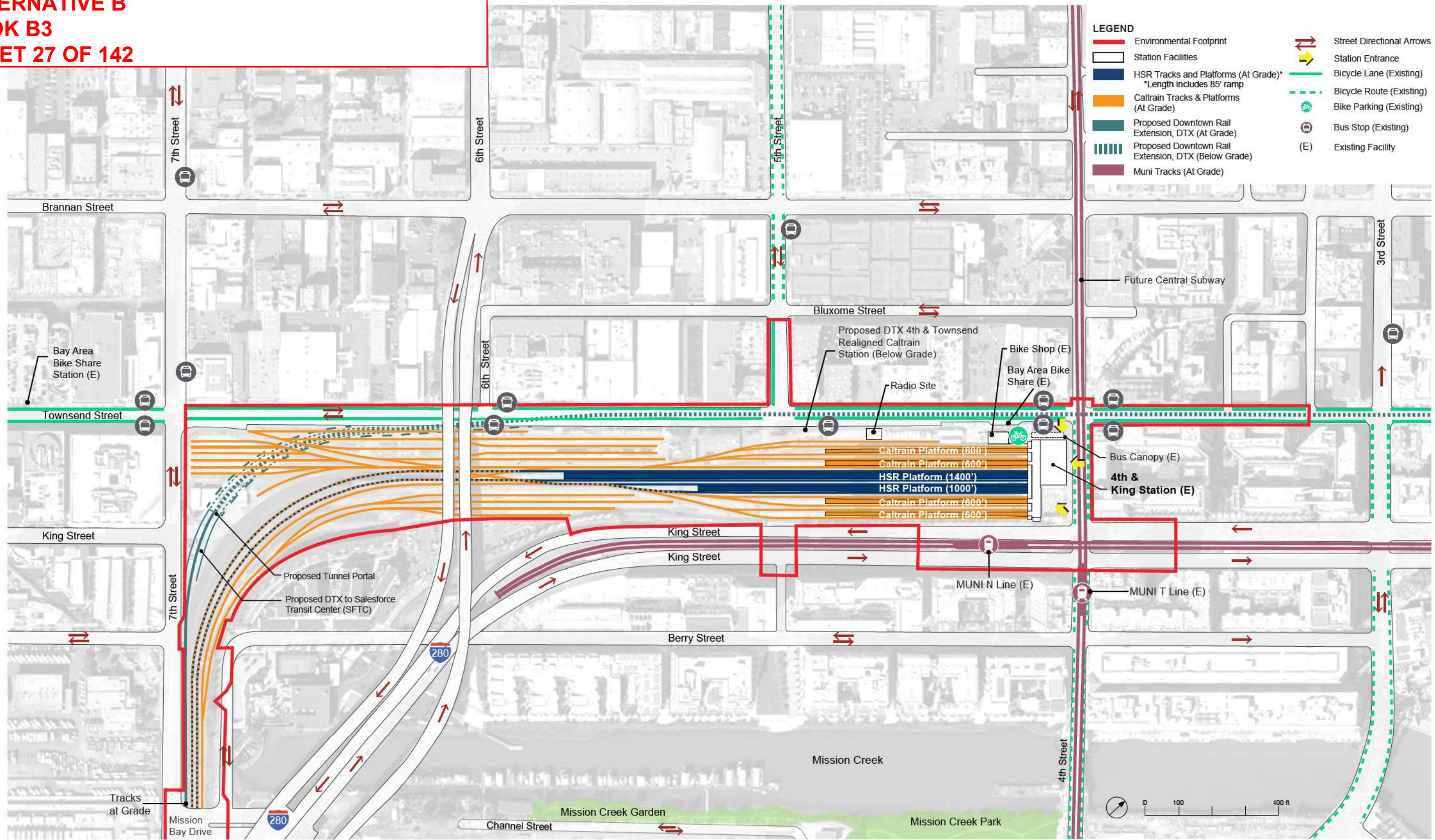
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SAN FRANCISCO TO SAN JOSE**

ALTERNATIVE B  
KEY MAP  
COMPOSITE PLAN  
SHEET 4 OF 4

CONTRACT NO.	HSR15-34
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**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 27 OF 142**



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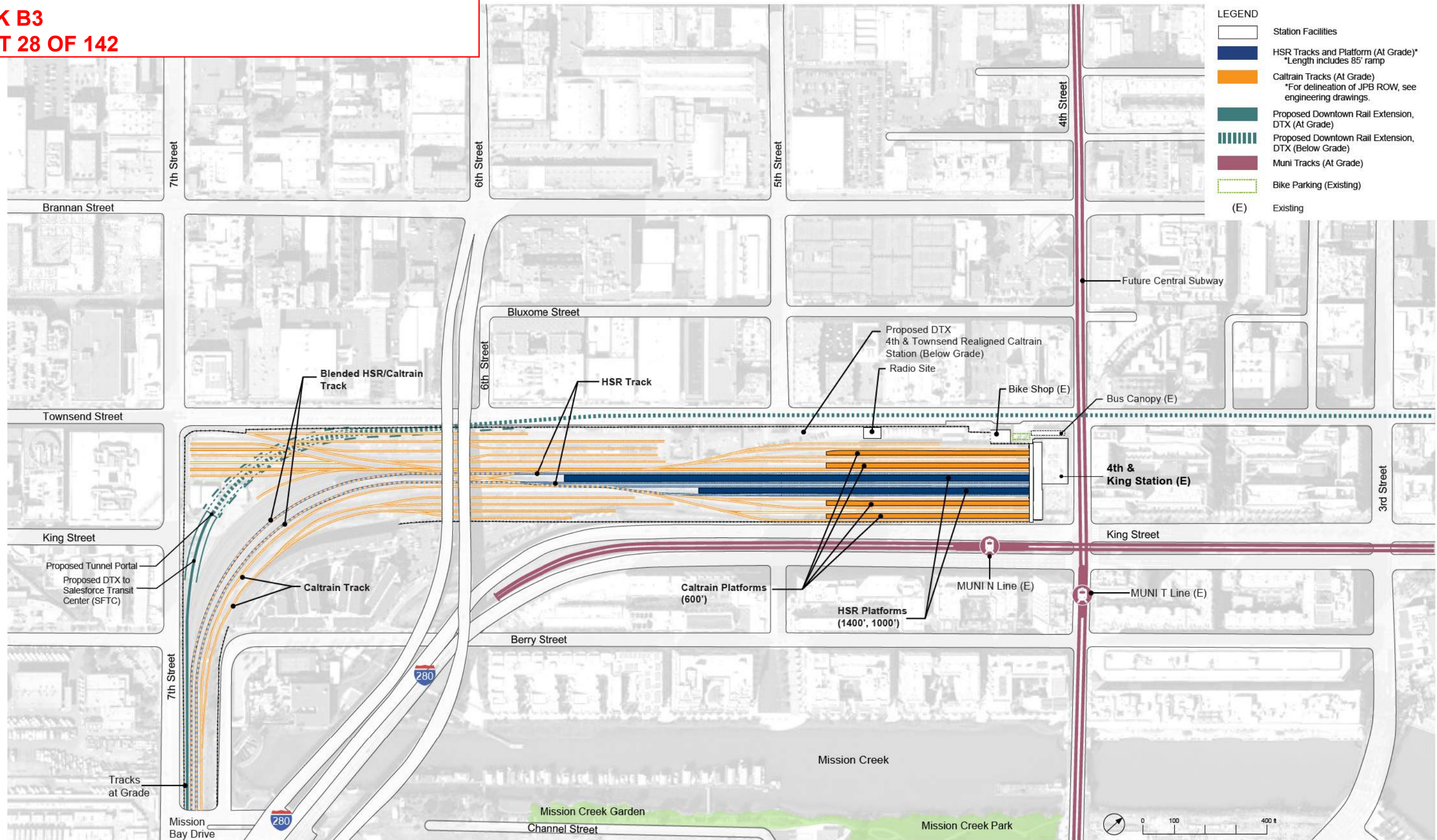
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SAN FRANCISCO TO SAN JOSE**

STATION  
4TH AND KING  
GENERAL SITE PLAN

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0101
SCALE	AS SHOWN
SHEET NO.	



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 28 OF 142**



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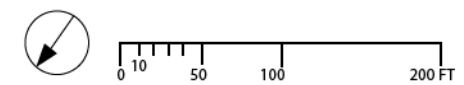
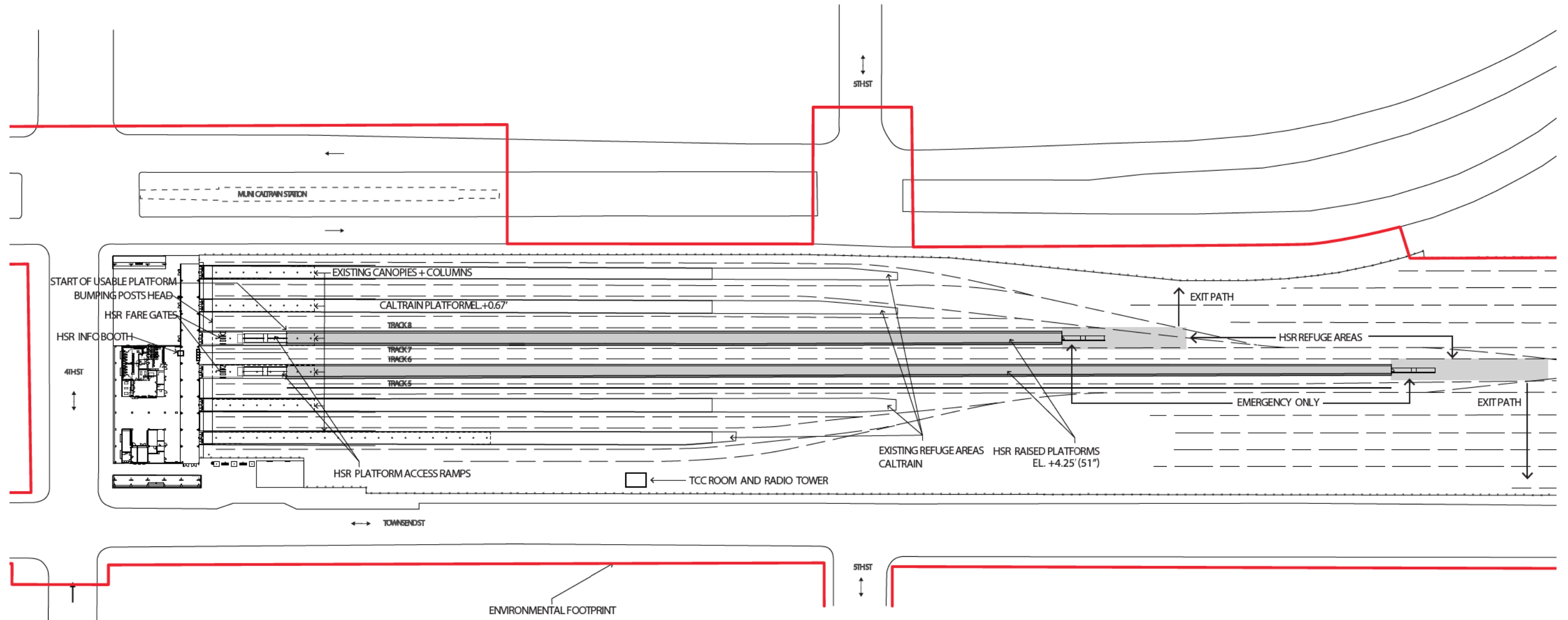
**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**

STATION  
 4TH AND KING  
 DETAILED SITE PLAN

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0102
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 29 OF 142**

- \*\*NOTES :**
- BUMPING POST PER CALTRAIN SD-2241
  - BUMPING POST SET 8' FROM END OF RAIL, 5.83' BUMPING POST LENGTH
  - TRAINS PARK 20' FROM HEAD
  - FROM THE EXISTING STATION WALL, 14.4' TO END OF BUMPING POST, THEN 70.6' TO USABLE PLATFORM.
  - LENGTH OF USABLE PLATFORM 914' FOR 1000' PLATFORM.



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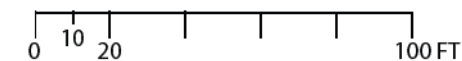
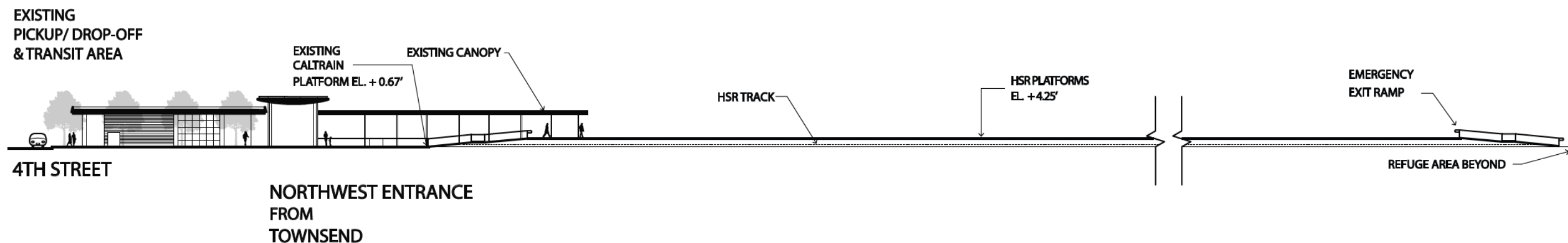
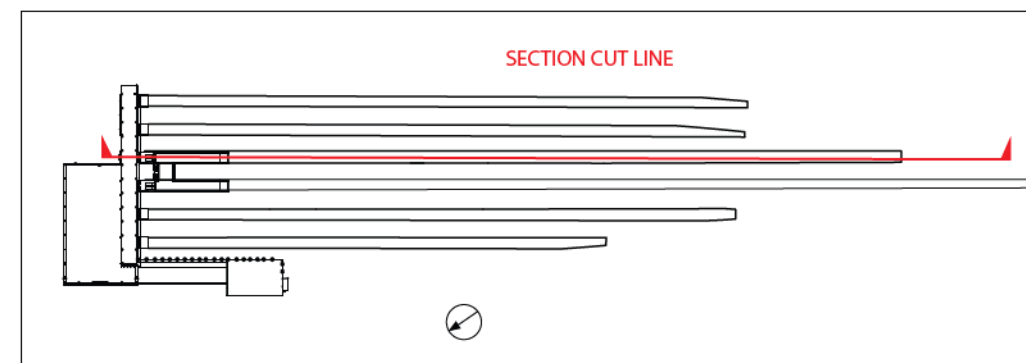


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**

STATION  
4TH AND KING  
PLATFORM LEVEL PLAN

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0103
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 30 OF 142**



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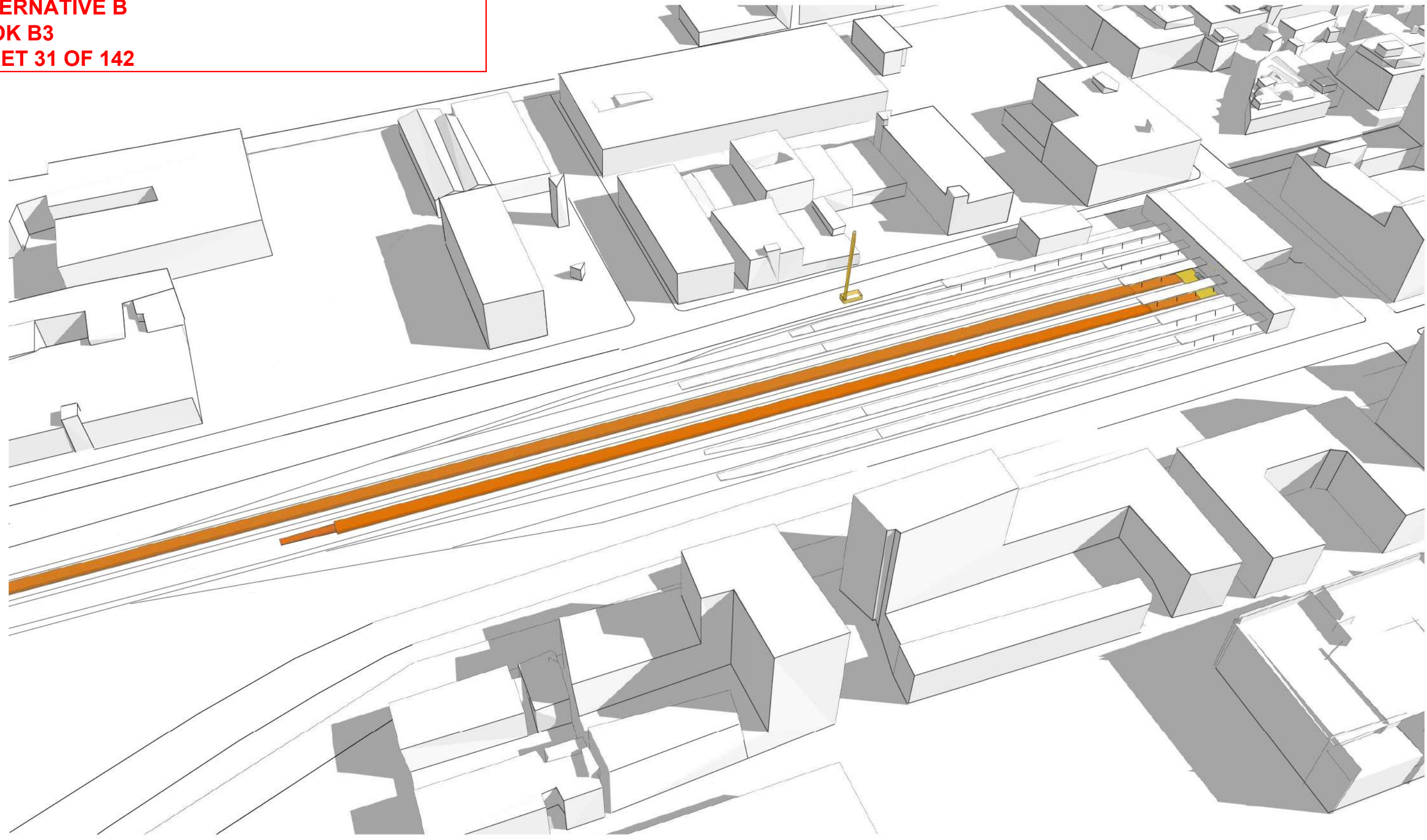
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**

STATION  
4TH AND KING  
SECTION

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0104
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 31 OF 142**



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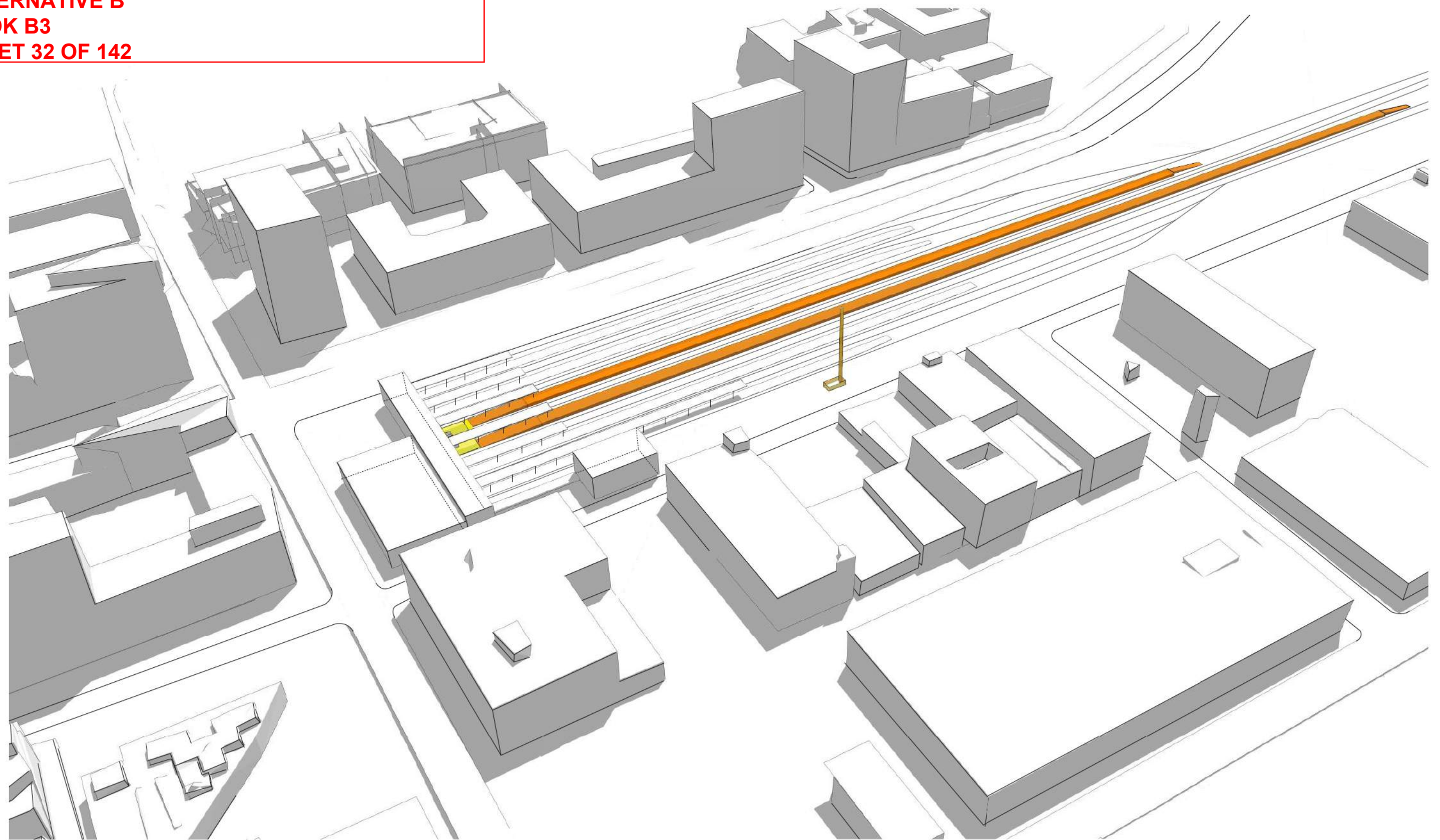
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**  
  
STATION  
4TH AND KING  
MASSING DIAGRAM 1

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0105
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 32 OF 142**



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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**  
  
STATION  
4TH AND KING  
MASSING DIAGRAM 2

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0106
SCALE	AS SHOWN
SHEET NO.	

4th & King Station Programming & Area Requirements Table				
Category	Description	Formula	Requirement Area/ Unit	Comments
Daily Peak Ridership Boardings 2029	Long distance	10,175	10,175	Planning Memorandum Station Boardings, Access, Egress and Parking INST-PLAN-05
P360B	Highest Daily Boardings X Conversion Factor for Boardings=6 Hour Boardings	Highest Daily Boardings x 0.67=P360B 10,175 x 0.67	6,817	California HSTP Design Criteria, Chapter 14-Stations, Oct 2015, Working Draft, Rev.2 Table 14-1 Passenger Ridership Assumptions Table 14-3 Concourse Circulation and Waiting Areas
P360A	Peak 6 Hour Boardings X Conversion Factor for Alightings =6 Hour Alightings	P360B x 0.75=P360A 6,817 x 0.75	5,113	
P60B	Peak 6 Hour Boardings x Peak Hour Conversion Factor for Boardings=Peak Hour Boardings	P360B x 0.17=P60B 6,817 X 0.17	1,159	
P60A	Peak Hour Boardings x Peak Hour Conversion Factor for Alightings=Peak Hour Alightings	P60B x 0.75=P60A 1,159 x 0.75	869	
P30B	Peak Hour Boardings / 2 x Surge Factor = Peak 30-minute Boardings	(P60B / 2) x 1.2=P30B (1,159/2) x 1.2	695	
P30A	Peak 30-minute Boardings x Conversion Factor = Peak 30-minute Alightings	P30B x 0.075=P30A 695 x 0.75	522	
P15B	Peak Hour Boardings / 4 x Surge Factor = Peak 15-minute Boardings	(P60B / 4) x 1.3= P15B ( 1,159 /4) x 1.3	377	
P15A	Peak 15-minute Boardings x Conversion Factor=Peak 15-minute Alightings	P15B x 0.75=P15A 377 x 0.75	282	
P5B	Peak Hour Boardings /12 x Surge Factor = Peak 5-minute Boardings	(P60B / 12) x 1.4= P5B (1,159/12) x 1.4	135	
P5A	Peak 5-minute Boardings x Conversion Factor = Peak 5-minute Alightings	P5B x 0.75=P5A 135 x 0.75	101	
P1B	Peak Hour Boardings /60 x Surge Factor=Peak 1-minute Boardings	(P60B /60) x 1.5=P1B (1,159/60) x 1.5	29	
P1A	Peak 1-minute Boardings x Conversion Factor for Alightings=Peak 1-minute Alightings	P1Bx0.75 29x0.75	22	
Cf	Unobstructed Net Concourse Free Public Area Circulation Width	(P15B+P15A)/(15x10 people/ft/min) or 16 ft min. (377+282)/(15x10 people/ft/min)	16	
Wf	Net Waiting Area in Concourse Free Public Area	((P15Bx1.1) + (P15Ax0.1))x 14 SF ((377x1.1) + (282x0.1)) x 14	6,196	
Public Restrooms	Women + Men + Unisex accessible restroom for each group	(P15B+P15A) / 2 (377+282) / 2	330	
Passenger Amenity Space Allocation	Station Design Target Yr. Daily Boardings	9,000	9,000	California HSTP Design Criteria, Chapter 14 - Stations, March Rev.2 14.3.5.5 Station Public Amenity (Commercial) Spaces, Table 14-7
Ticket Windows	Station Quantity	P60B/600 1159/600	2	
Ticket Vending Machines		P60B/280 1159/280	4	14.3.5.6
Value Added Machines	2 Per Each Fare Paid Area		3	14.3.5.6
Fare Gates		P15A /50 ppm 282/50 One additional gate to be provided if under 10	6	14.3.5.6 D
Emergency Gates			2	14.3.3.6
Sr	Seating at Concourse Fare Free Waiting Area	((P15B x 1.1) + (P15A x 0.1)) x 0.25	1,043	Table 14-22: Station Seating

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 33 OF 142**

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
STATION  
4th AND KING  
FACILITY SIZING TABLE

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0107
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 34 OF 142**

**4th & King Station Facility Sizing Table**

Projected Daily Ridership (2029) 10,175, based on CHSR Planning Memorandum Station Boardings, Access, Egress and Parking

STATION TYPE: Temporary, Tenant at Caltrain's 4th and King Station facility. As a result, the program considers the following:  
 1. HSR will be a tenant at Caltrain's 4th and King Station facility and HSR operation at 4th and King will be temporary. HSR platforms will be designed and constructed to be removed when all HSR train service moves to SFTC.  
 2. HSR platforms are modified from Caltrain platforms which are existing and non-conforming to current CBC and NFPA 130 design standards. HSR's tenant improvements are subjected to review and approval by owner and/or reviewing agency who has jurisdiction over the facility.  
 3. HSR will operate one 700' trainset with 455 passengers max at each platform at any given time. HSR's passenger load is significantly lower than designated Caltrain passenger load and thus does not alter required passenger evacuation on platform.  
 4. Proposed HSR platform tenant improvements are Type II Construction, non-combustible construction, suitable for open station construction as defined by CBC.

	Function Name	Area (SF)	EF	Required Area (SF)	Formula	Chapter 14:Stations	Comments
Concourse Public Free Areas	Station Concourse (Free Area - Main Hall)	NA	1.2	19,774	P15 x 30sf/person 389 x 30	14.3.5.3	P15 = P15 B + P15 A = 389 Using Memorandum dated May 10, 2016, Attachment E Facility Sizing Table Example
	Entrances					14.3.5.2	# TBD, 15 ft width at least one entrance
	Mezzanine						Included with the Concourse Area
	Passenger Waiting Area	NA	1.2	6,196	$((P15B \times 1.1) + (P15A \times 0.1)) \times 14$ SF	14.3.5.3.B.C Table 14-3	California HSTP Design Criteria, Chapter 14-Stations, March 2016, Rev. 2, Table 14-1 Passenger Ridership Assumptions, Table 14-3 Concourse Circulation and Waiting Areas
	Ticket Vending Machines (TVM)	104	1.2	4	P60B/280, 1,159/280	Table 14-5	Includes queuing space
	Baggage Storage (Concessionaire)	NA					TBD
	Retail (Concessionaire)	NA	1.2	9,000		Table 14-7	More than 15,000 daily boardings
	Restaurant (Concessionaire)	NA				Table 14-7	Included in the 9,000 SF
	Food Service (Concessionaire)	NA				Table 14-7	Included in the 9,000 SF
	Business Lounge	NA	1.2	600		14.3.5.7.C	Without restrooms
	Public Restrooms	NA	1.2	2040	CBC 2016, CPC 2016 (P15B + P15A)/2	14.3.5.4	A-3 Assembly Occupancy, 502 male, 502 female, 2 unisex Female: 7 water closets, 5 lavatories Male: 3 water closets, 4 urinal, 5 lavatories 2 drinking fountains
	Janitor Closets	NA	1.2	240	60 x 4	14.3.7.1.D	Located in concourse free area, platform, and each restroom.
<b>Subtotal</b>		<b>104</b>					
Security & Standard Areas	Ticket Window Counters	NA	2	150	Window Counter 5F min. 75 SF/window (2 Windows) P60B/600, 1,159/600	14.3.5.6.B 14.3.5.7A	
	Station Patron Information Booth	100	1	100	Standard Unit (Kiosk)	14.3.5.7.B	
	Red "Cap" Booth						TBD
	Police Office	NA	2	500		14.3.6.2.A	
	Police Restrooms + Lockers			TBD	CBC 2016, CPC 2016		
	Janitor Closets	NA	2	60		14.3.7.1.D	
	Security Guard Office	NA	2	144 SF		14.3.6.2.B	
<b>Subtotal</b>		<b>100</b>					

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
 STATION  
 4th AND KING  
 FACILITY SIZING TABLE

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0108
SCALE	AS SHOWN
SHEET NO.	

4th & King Station Facility Sizing Table							
Projected Daily Ridership (2029) 10,175, based on CHSR Planning Memorandum Station Boardings, Access, Egress and Parking							
STATION TYPE: Intermediate, Full-Service, Small: based on Chapter 14 Stations Design Criteria, Table 14-3							
	Function Name	Area (SF)	EF	Required Area (SF)	Formula	Chapter 14:Stations	Comments
Non-Public Station Staff Only	Ticket Admin., Handling & Storage	NA	2	260		14.3.5.6.B 14.3.5.7 14.3.6.2.C-D	Ticket Administration Office 75SF/window
	Lost & Found & First Aid Room	NA	2	200	100 SF x (2)	14.3.6.1.E-F	
	Station Control Room (SCR)	NA	2	1,100		14.3.6.2.E	
	Main Station Computer Room	NA	2	500		14.3.6.2.F	
	Temporary Incident Command Post (CP)	NA	2	300		14.3.6.2.G	
	Station Operation Room (SOR)	NA	2	1,100		14.3.6.2.H	
	SOR Dedicated Computer Room, SOR Workroom	NA	2	500		14.3.6.2.F-H	
	Main OCC Computer Room	NA	2	500		14.6.3.2.F	
	Staff Lockers, Showers, Restrooms	NA	2		CBC 2016	14.3.6.1.I	Will need number of staff projection to determine SF required.
	Janitor Closets	NA	2	60		14.3.7.1.C	
	Staff Breakroom & Meeting Rooms	NA	2	400	200 SF x (2)	14.3.6.1.G-H	200 SF min or as req to provide 25 SF /staff
	Station Manager Office	NA	2	144		14.3.6.1.A	
	Facility Manager's Office	NA	2	144		14.3.6.1.C	
	Administration Office Space	NA	2	300		14.3.6.1.B	
	Facilities Maintenance Office	NA	2	330		14.3.6.1.C	
	Station General Storage Rooms	NA	2	200		14.3.7.1.E	Add 60 SF for misc. storage if required.
	Platform Area Op. Mgt. Booth	NA	1	100	Standard Unit	14.3.6.2.I	One OMB to be provided on each platform.
	Train Control /Communications Room	NA	2	1,915		14.3.7.2	Table 14-8, for the train control and communications equipment.
	Entrance Facility Room	NA	2	240		14.3.7.2	Table 14-8, for entry of service cabling into the building. May be co-located with the TCC room.
	3rd Party Telecom Room	NA	2	120		14.3.7.2	Table 14-8, for local telephone company.
Communications Closets	NA	2	130	130 SF each	14.3.7.2	Table 14-8, number TBD. Locate close to center of each 10,000 SF of Station Floor Area	
Renewable Energy/Stormwater	NA		TBD				
	<b>Subtotal</b>	<b>0</b>					
<b>TOTAL AREA - ENTRANCE &amp; CONCOURSE:</b>		<b>204</b>					
Bldg Services & Plant Rooms	Mech., Elec. & Plumbing Rooms	NA		TBD	Gross Factor	14.3.7.2	
	Battery Room	NA	2	400	200 SF x ( 2 )	14.3.7.4.B	Two rooms required, including one room at each end of station for low voltage (LV) batteries.
	UPS Room	NA	2	1,800	900 SF x ( 2 )	14.3.7.4.C	Two rooms required, one at each end of station for LV distribution, transforming, EP
	Fire Detection & Protection Rooms	NA		TBD	Gross Factor	14.3.7.6	
Maint. Support Areas	Main Station Recycling/Refuse	NA	2	150	150 SF min.	14.3.7.1.A	
	Secondary Station Recycling	NA	2	60		14.3.7.1.C	
	Landscape Maintenance Room	NA	2	100		14.3.7.1.F	
	Loading Dock	NA		TBD		14.3.7.1.H	
<b>FACILITIES TO BE SHARED WITH CALTRAIN</b>		<b>0</b>					

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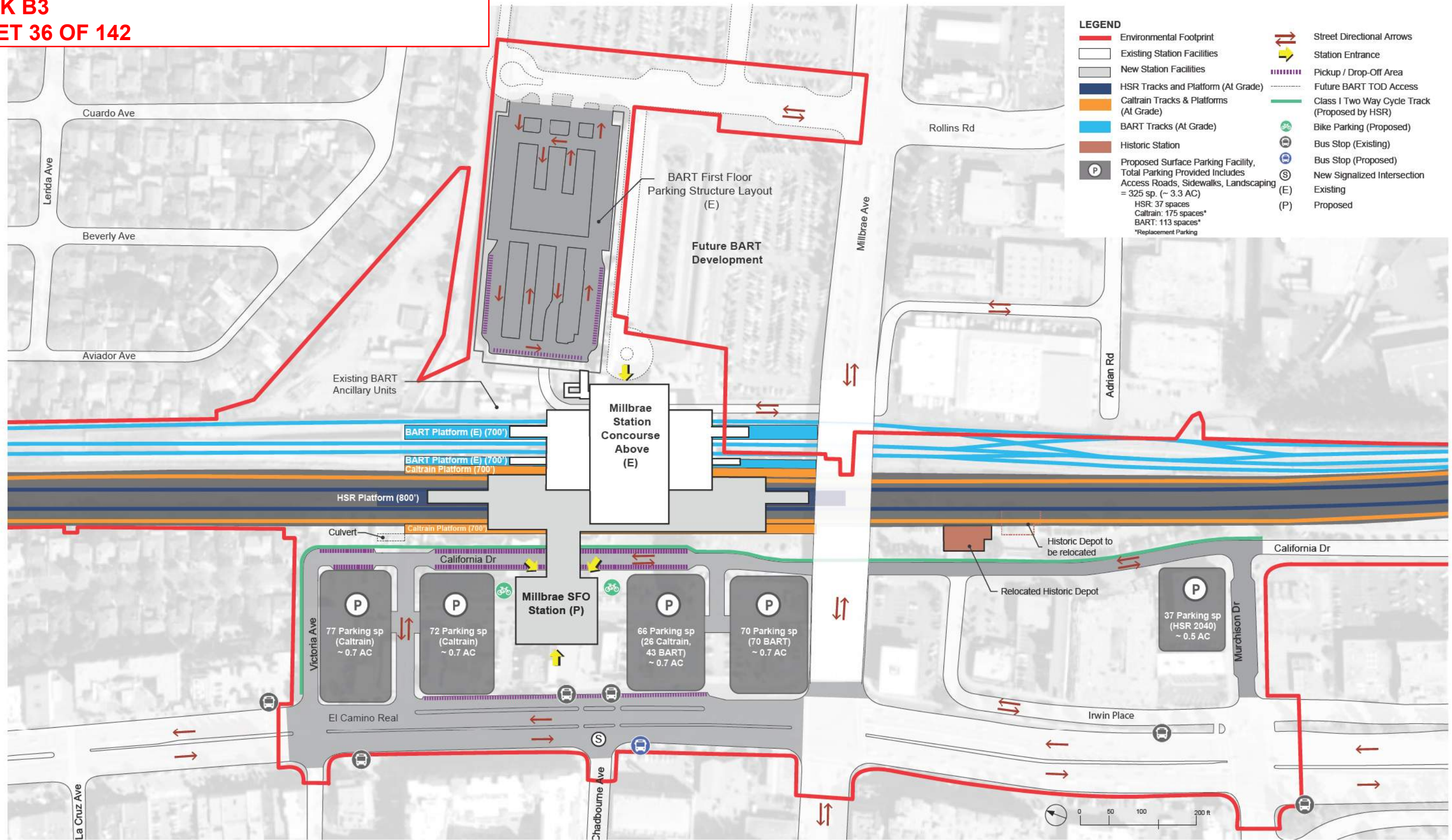


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**  
STATION  
4th AND KING  
FACILITY SIZING TABLE

CONTRACT NO. HSR15-34
DRAWING NO. AR-J0109
SCALE AS SHOWN
SHEET NO.



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 36 OF 142**



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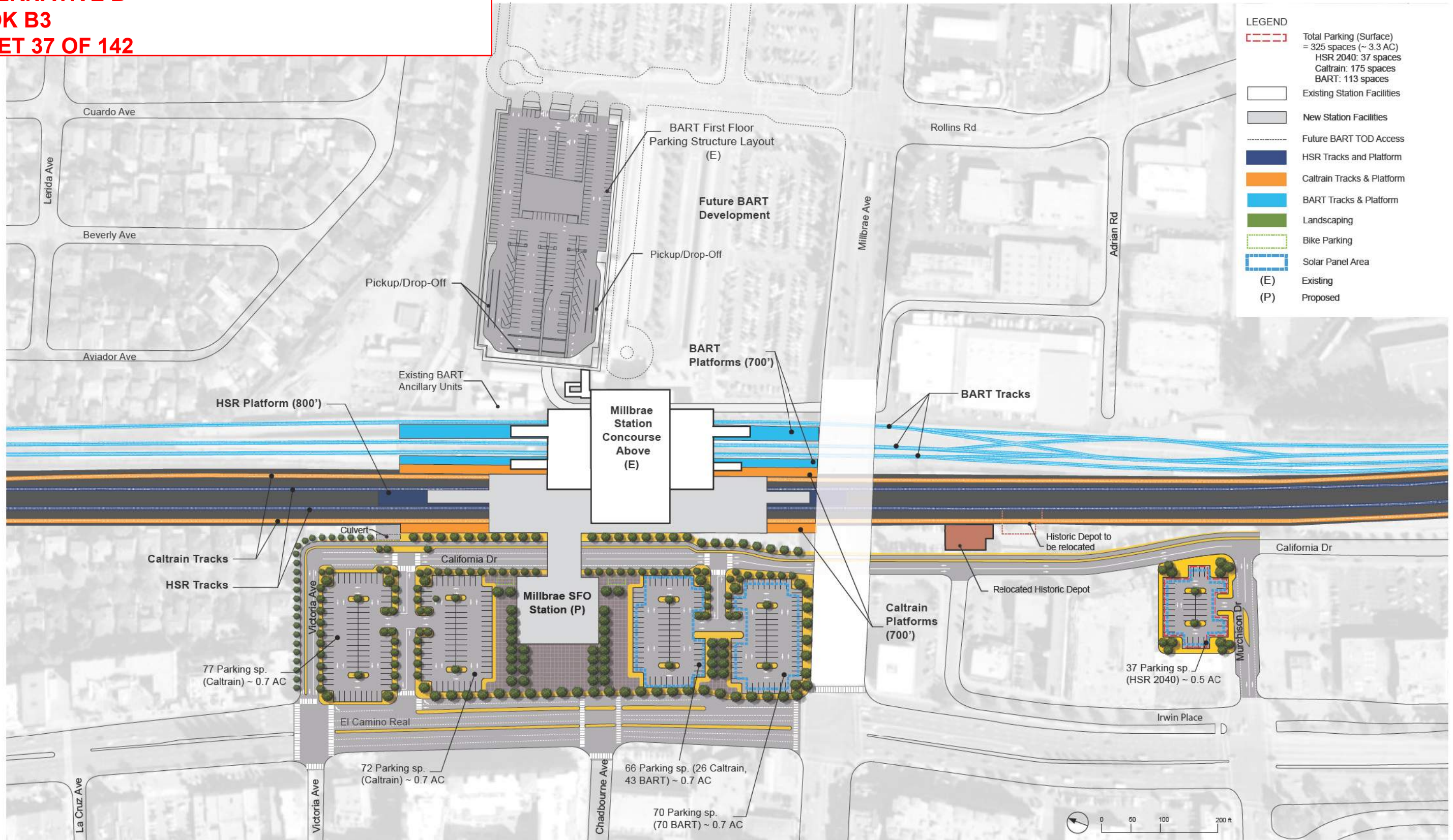
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
 STATION  
 MILLBRAE  
 GENERAL SITE PLAN

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0111
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 37 OF 142**



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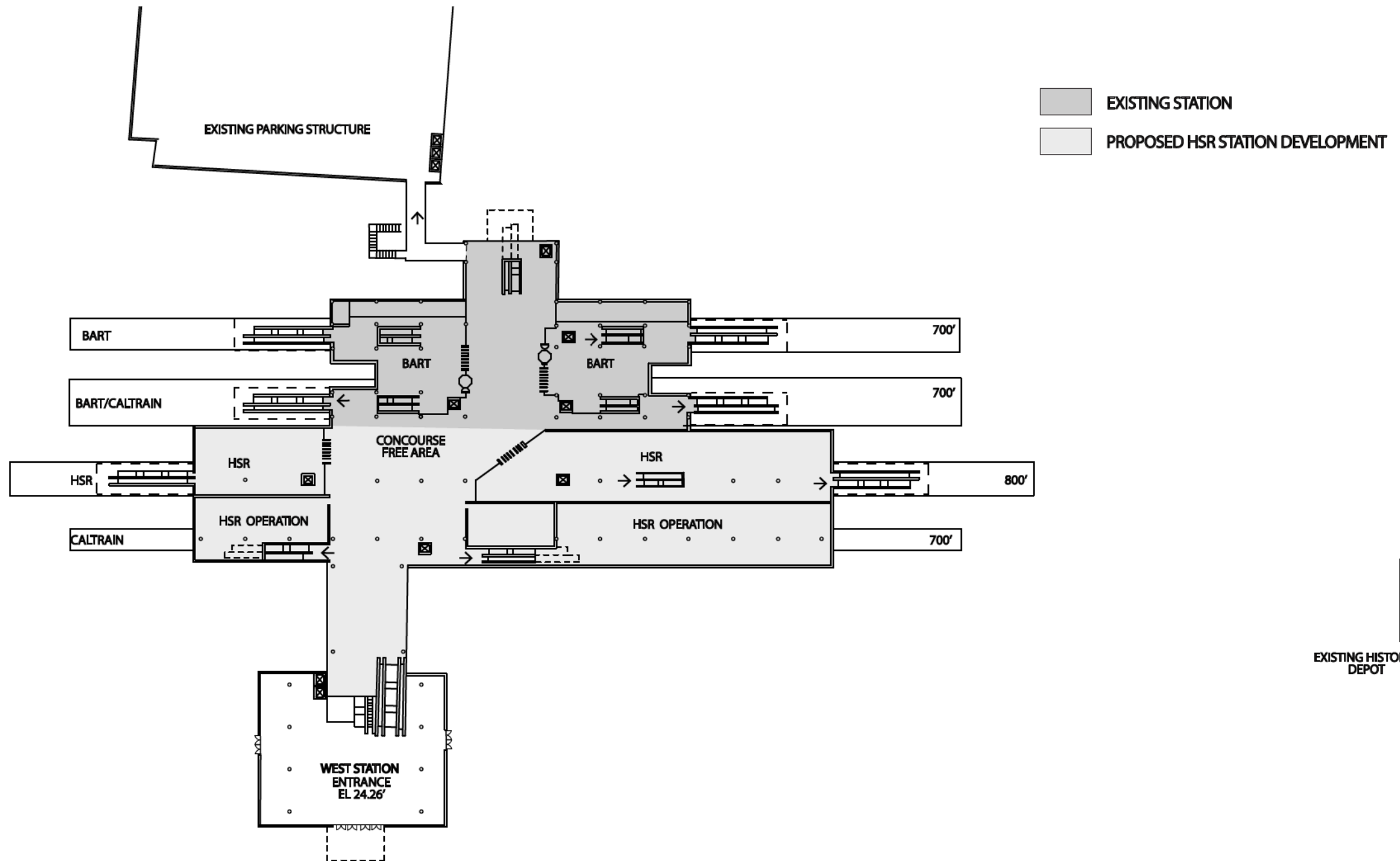


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SAN FRANCISCO TO SAN JOSE**

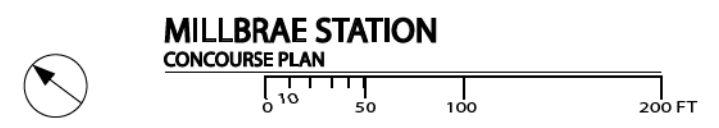
STATION  
MILLBRAE  
DETAILED SITE PLAN

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0112
SCALE	AS SHOWN
SHEET NO.	

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**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
 ALTERNATIVE B  
 BOOK B3  
 SHEET 38 OF 142**



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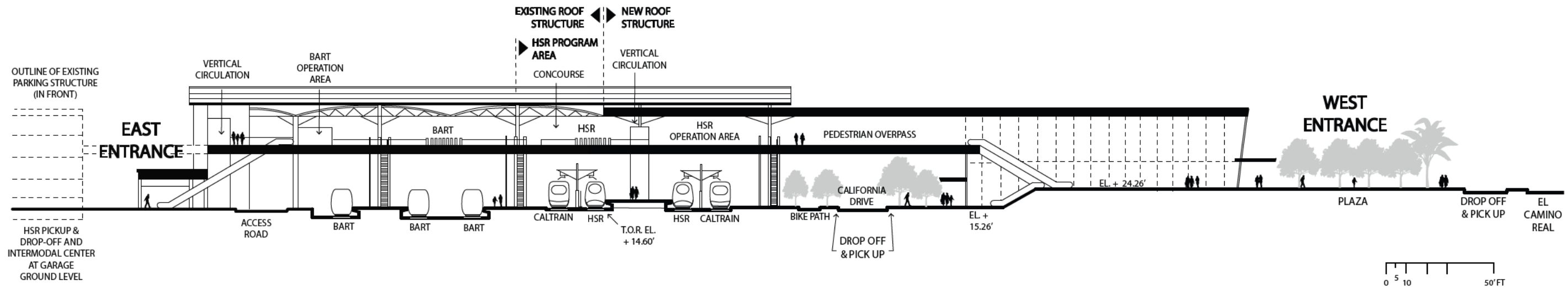
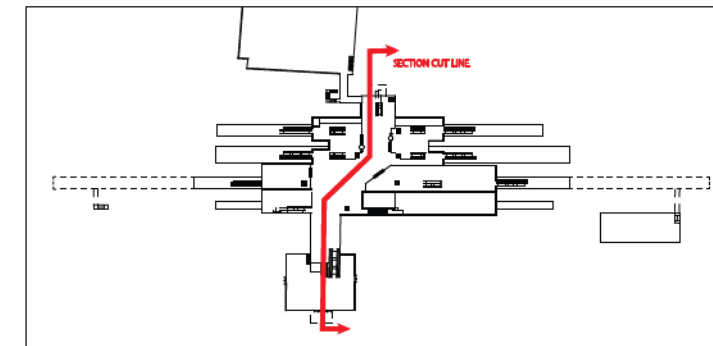
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 SAN FRANCISCO TO SAN JOSE**  
  
 STATION  
 MILLBRAE  
 CONCOURSE PLAN

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0113
SCALE	AS SHOWN
SHEET NO.	

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**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 39 OF 142**

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CALIFORNIA HIGH-SPEED TRAIN PROJECT

SAN FRANCISCO TO SAN JOSE

STATION  
MILLBRAE  
SECTION

CONTRACT NO. HSR15-34	DRAWING NO. AR-J0114
SCALE AS SHOWN	
SHEET NO.	

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SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
 ALTERNATIVE B  
 BOOK B3  
 SHEET 40 OF 142

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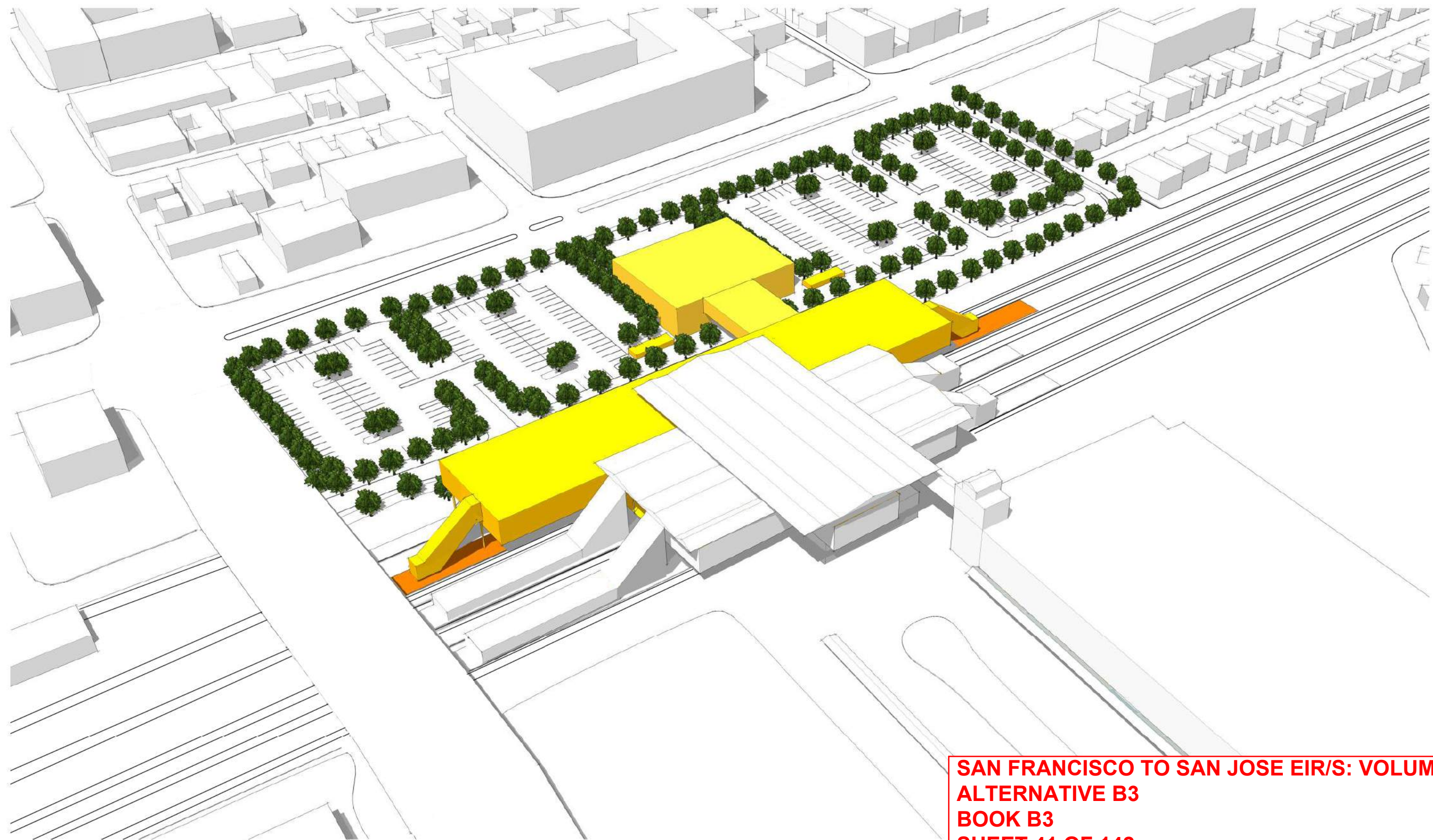
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
 STATION  
 MILLBRAE  
 MASSING DIAGRAM 1

CONTRACT NO.  
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SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
 ALTERNATIVE B3  
 BOOK B3  
 SHEET 41 OF 142

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
 STATION  
 MILLBRAE  
 MASSING DIAGRAM 2

CONTRACT NO.  
 HSR15-34  
 DRAWING NO.  
 AR-J0116  
 SCALE  
 AS SHOWN  
 SHEET NO.

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 42 OF 142**

Millbrae Station Programming & Area Requirements Table				
Category	Description	Formula	Requirement Area/ Unit	Comments
Daily Peak Ridership Boardings 2040	Long distance	5,570	5,570	Planning Memorandum Station Boardings, Access, Egress and Parking INST-PLAN-05
P360B	Highest Daily Boardings X Conversation Factor for Boardings=6hour Boardings	Highest Daily Boardings x 0.67=P360B 6,000 x 0.67	3,732	California HSTP Design Criteria, Chapter 14-Stations, Oct 2015, Working Draft, Rev.2 Table 14-1 Passenger Ridership Assumptions Table 14-3 Concourse Circulation and Waiting Areas
P360A	Peak 6 Hour Boardings X Conversation Factor for Alightings =6hour Alightings	P360B x 0.75=P360A 10,385 x 0.75	2,799	
P60B	Peak 6 hour Boardings x Peak hour conversion Factor for Boardings=Peak Hour Boardings	P360B x 0.17=P60B 10,385 X 0.17	634	
P60A	Peak Hour Boardings x Peak Hour conversion Factor for Alightings=Peak Hour Alightings	P60B x 0.75=P60A 1,765 x 0.75	476	
P30B	Peak Hour Boardings /2 x Surge Factor = Peak 30-minute Boardings	(P60B /2) x 1.2=P30B (1,765/2) x 1.2	381	
P30A	Peak 30-minute Boardings x Conversion Factor = Peak 30 minute Alightings	P30B x 0.075=P30A 1,059 x 0.75	285	
P15B	Peak Hour Boardings / 4 x Surge Factor = Peak 15- minute Boardings	(P60B / 4) x 1.3= P15B ( 1,765 /4) x 1.3	206	
P15A	Peak 15-minute Boardings x Conversion Factor=Peak 15 minute Alightings	P15B x 0.75=P15A 574 x 0.75	155	
P5B	Peak Hour Boardings /12 x Surge Factor = Peak 5-minute Boardings	(P60B / 12) x 1.4= P5B (1,765 /12) x 1.4	74	
P5A	Peak 5-minute Boardings x Conversion Factor = Peak 5-minute Alightings	P5B x 0.75=P5A 206 x 0.75	56	
P1B	Peak Hour Boardings /60 x Surge Factor=Peak 1 Minute Boardings	(P60B /60) x 1.5=P1B (1,765/60) x 1.5	16	
P1A	Peak 1-minute Boardings x Conversion Factor for Alightings=Peak 1 Minute Alightings	P1Bx0.75 17x0.75	12	
Cf	Unobstructed Net Concourse Free Public Area Circulation Width	(P15B+P15A)/(15x10 people/ft/min) or 16 ft min. (222+167)/(15x10 people/ft/min)	16	
Wf	Net Waiting Area in Concourse Free Public Area	((P15Bx1.1) + (P15Ax0.1))x 14 square feet ((222x1.1) +(167x0.1)) x 14	3,392	
Public Restrooms	Women + Men + Unisex accessible restroom for each group	(P15B+P15A) / 2 (222+167) /2	180	
Passenger Amenity Space Allocation	Station Design Target Yr. Daily Boardings	9,000	9,000	California HSTP Design Criteria, Chapter 14 - Stations, March Rev2. 14.3.5.5 Station Public Amenity (Commercial) Spaces, Table 14-7
Ticket Windows	Station Quantity	P60B/600 1765/600	1	
Ticket Vending Machines		P60B/280 1765/280	2	14.3.5.6
Value Added Machines	2 Per Each Fare Paid Area		3	14.3.5.6
Fare Gates		P15A /50 ppm 430/50 One additional gate to be provided if under 10	3	14.3.5.6 D
Emergency Gates			2	14.3.3.6
Sr	Seating at Concourse Fare Free Waiting Area	((P15B x 1.1) + (P15A x 0.1)) x 0.25	571	Table 14-22: Station Seating

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**  
  
STATION  
MILLBRAE  
FACILITY SIZING TABLE

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0117
SCALE	AS SHOWN
SHEET NO.	

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 43 OF 142**

Millbrae Station Facility Sizing Table							
Projected Daily Ridership (2040) 5,570, based on CHSR Planning Memorandum Station Boardings, Access, Egress and Parking							
STATION TYPE: Intermediate, Full-Service, Small: based on Chapter 14 Stations Design Criteria, Table 14-3							
	Function Name	Area (SF)	EF	Required Area (SF)	Formula	Chapter 14:Stations	Comments
Concourse Public Free Areas	Station Concourse (Free Area - Main Hall)	12,990	1.2	10,825	$P15 \times 30sf/person \ 389 \times 30$	14.3.5.3	$P15 = P15 \ B + P15 \ A = 389$ Using Memorandum dated May 10, 2016, Attachment E Facility Sizing Table Example
	Entrances					14.3.5.2	# TBD, 15 ft width at least one entrance
	Mezzanine						Included with the Concourse Area
	Passenger Waiting Area	4,070	1.2	3,392	$((P15B \times 1.1) + (P15A \times 0.1)) \times 14 \ SF$	14.3.5.3.B.C Table 14-3	California HSTP Design Criteria, Chapter 14-Stations, March 2016, Rev 2, Table 14-1 Passenger Ridership Assumptions, Table 14-3 Concourse Circulation and Waiting Areas
	Ticket Vending Machines (TVM)	68	1.2	2	$P60B/280, \ 1765/280$	Table 14-5	Includes Queuing space
	Baggage Storage (Concessionaire)	TBD					TBD
	Retail (Concessionaire)	10,800	1.2	9,000		Table 14-7	More than 15,000 daily boardings
	Restaurant (Concessionaire)	0				Table 14-7	Included in the 9,000 SF
	Food Service (Concessionaire)	0				Table 14-7	Included in the 9,000 SF
	Business Lounge	720	1.2	600		14.3.5.7.C	Without restrooms
Public Restrooms	2448	1.2	2040	$CBC \ 2016, \ CPC \ 2016 \ (P15B + P15A)/2$	14.3.5.4	A-3 Assembly Occupancy, 502 Male, 502 Female, (2) Unisex Female: 7 Water closets, 5 Lavatories Male: 3 Water closets, 4 Urinals, 5 Lavatories 2 Drinking fountains	
Janitor Closets	288	1.2	240	$60 \times 4$	14.3.7.1.D	Located in concourse free area, platform, and each restroom.	
Standard Areas	Ticket Window Counters	317	2	150	$Window \ Counter \ 5F \ min. \ 75 \ SF/window \ (2 \ Windows) \ P60B/600, \ 1,765/600$	14.3.5.6.B 14.3.5.7A	
	Station Patron Information Booth	100	1	100	Standard Unit (Kiosk)	14.3.5.7.B	
	Red "Cap" Booth						TBD
Security	Police Office	1000	2	500		14.3.6.2.A	
	Police Restrooms + Lockers			TBD	$CBC \ 2016, \ CPC \ 2016$		
	Janitor Closets	120	2	60		14.3.7.1.D	
	Security Guard Office	288	2	144 SF		14.3.6.2.B	

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

REV	DATE	BY	CHK	APP	DESCRIPTION

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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
STATION  
MILLBRAE  
FACILITY SIZING TABLE

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0118
SCALE	AS SHOWN
SHEET NO.	



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 44 OF 142**

Millbrae Station Facility Sizing Table							
Projected Daily Ridership (2040) 5,570, based on CHSR Planning Memorandum Station Boardings, Access, Egress and Parking							
STATION TYPE: Intermediate, Full-Service, Small: based on Chapter 14 Stations Design Criteria, Table 14-3							
	Function Name	Area (SF)	EF	Required Area (SF)	Formula	Chapter 14:Stations	Comments
Non-Public Station Staff Only	Ticket Admin., Handling & Storage	520	2	260		14.3.5.6.B 14.3.5.7 14.3.6.2.C-D	Ticket Administration Office 75SF/window
	Lost & Found & First Aid Room	400	2	200	100 SF x (2)	14.3.6.1.E-F	
	Station Control Room (SCR)	2200	2	1,100		14.3.6.2.E	
	Main Station Computer Room	1000	2	500		14.3.6.2.F	
	Temporary Incident Command Post (CP)	600	2	300		14.3.6.2.G	
	Station Operation Room (SOR)	2200	2	1,100		14.3.6.2.H	
	SOR Dedicated Computer Room, SOR Workroom	1000	2	500		14.3.6.2.F-H	
	Main OCC Computer Room	1000	2	500		14.6.3.2.F	
	Staff Lockers, Showers, Restrooms	TBD	2		CBC 2016	14.3.6.1.I	Will need number of staff projection to determine SF required.
	Janitor Closets	120	2	60		14.3.7.1.C	
	Staff Breakroom & Meeting Rooms	800	2	400	200 SF x (2)	14.3.6.1.G-H	200 SF min. or as required to provide 25 SF /staff
	Station Manager Office	288	2	144		14.3.6.1.A	
	Facility Manager's Office	288	2	144		14.3.6.1.C	
	Administration Office Space	600	2	300		14.3.6.1.B	
	Facilities Maintenance Office	660	2	330		14.3.6.1.C	
	Station General Storage Rooms	400	2	200		14.3.7.1.E	Add 60 SF for misc. storage if required.
	Platform Area Op. Mgt. Booth	100	1	100	Standard Unit	14.3.6.2.I	One OMB to be provided on each platform.
	Train Control /Communications Room	3830	2	1,915		14.3.7.2	Table 14-8, for the train control and communications equipment
	Entrance Facility Room	480	2	240		14.3.7.2	Table 14-8, for entry of service cabling into the building. May be co-located with the TCC room.
	3rd Party Telecom Room	240	2	120		14.3.7.2	Table 14-8, for local telephone company.
Communications Closets	260	2	130	130 SF each	14.3.7.2	Table 14-8, number TBD. Locate close to center of each 10,000 SF of Station Floor Area	
Renewable Energy/Stormwater			TBD				
Bldg Services & Plant Rooms	Mech., Elec. & Plumbing Rooms			TBD	Gross Factor	14.3.7.2	
	Battery Room	800	2	400	200 SF x ( 2 )	14.3.7.4.B	Two rooms required, including one room at each end of station for LV batteries.
	UPS Room	3600	2	1,800	900 SF x ( 2 )	14.3.7.4.C	Two rooms required, one at each end of station for low voltage (LV) distribution, transforming, EP
	Fire Detection & Protection Rooms			TBD	Gross Factor	14.3.7.6	
Maint. Support Areas	Main Station Recycling/Refuse	300	2	150	150 SF min.	14.3.7.1.A	
	Secondary Station Recycling	120	2	60		14.3.7.1.C	
	Landscape Maintenance Room	200	2	100		14.3.7.1.F	
	Loading Dock			TBD		14.3.7.1.H	
<b>TOTAL AREA - ENTRANCE &amp; CONCOURSE:</b>		<b>55,215</b>					
	Platform Area (800'x30')x1	24,000					
	Bus Bays	N/A					Bus bays are provided in modified BART parking structure
	Parking Area	104,800					
	Pickup and Drop-off	7,920					

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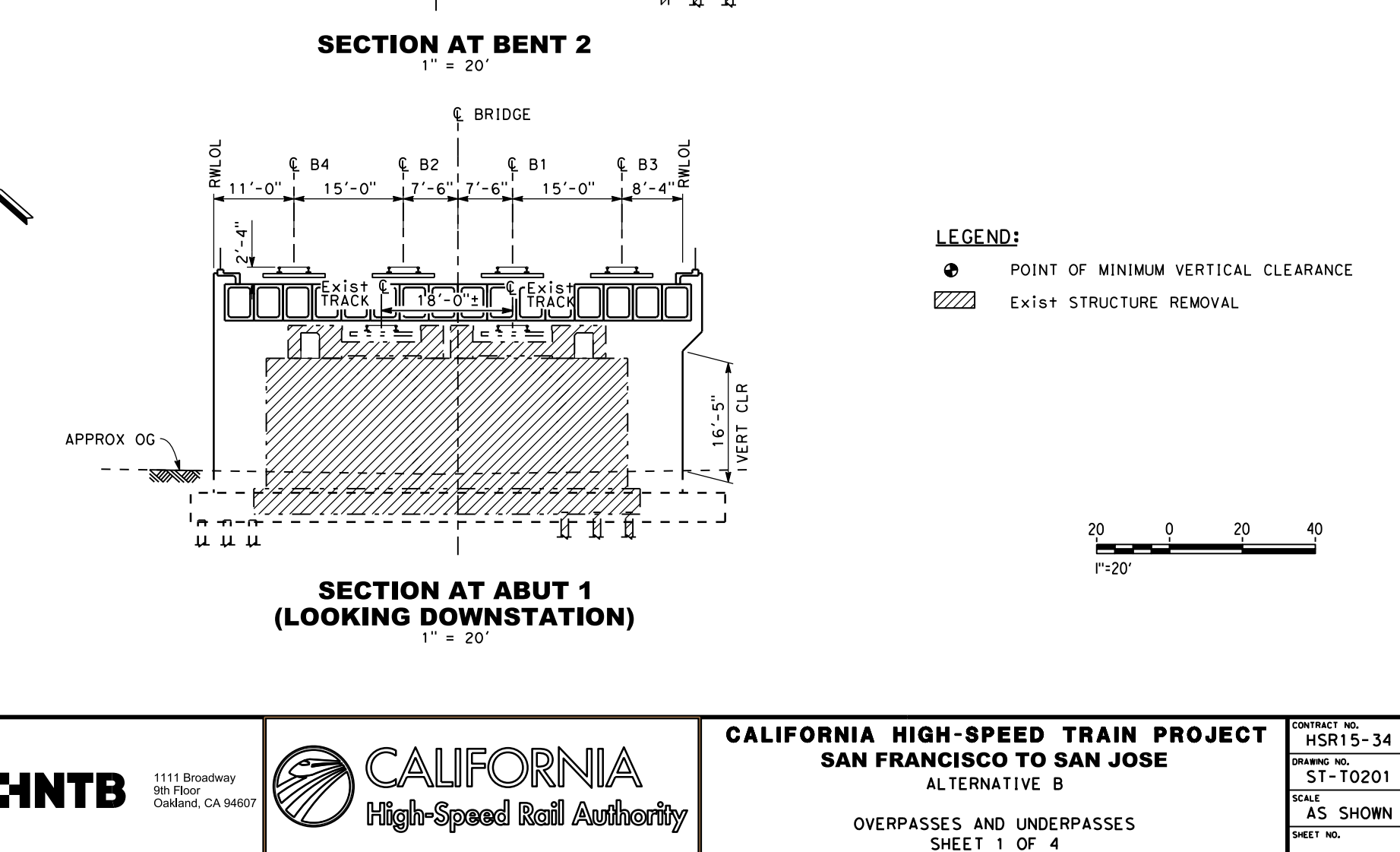
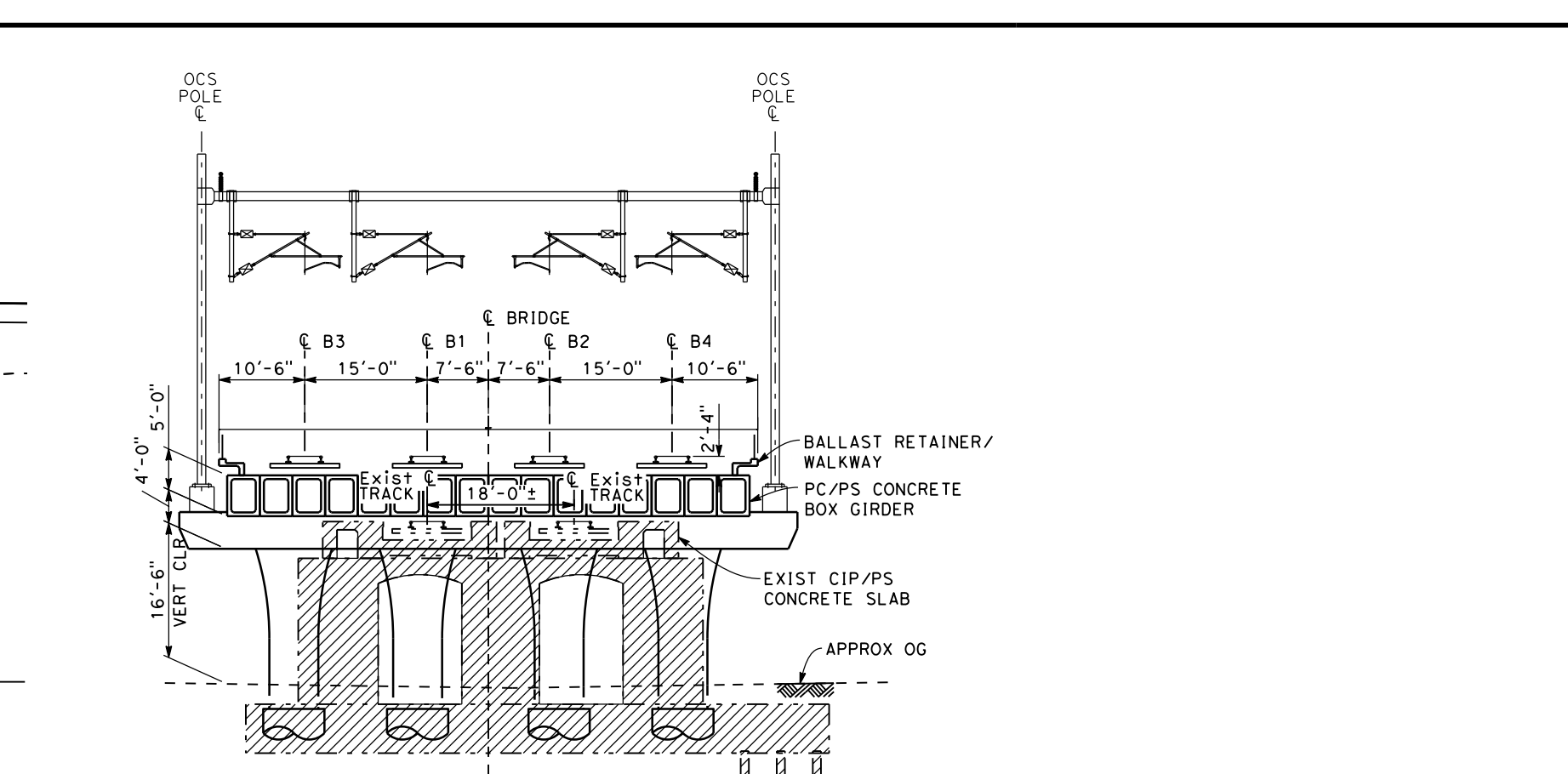
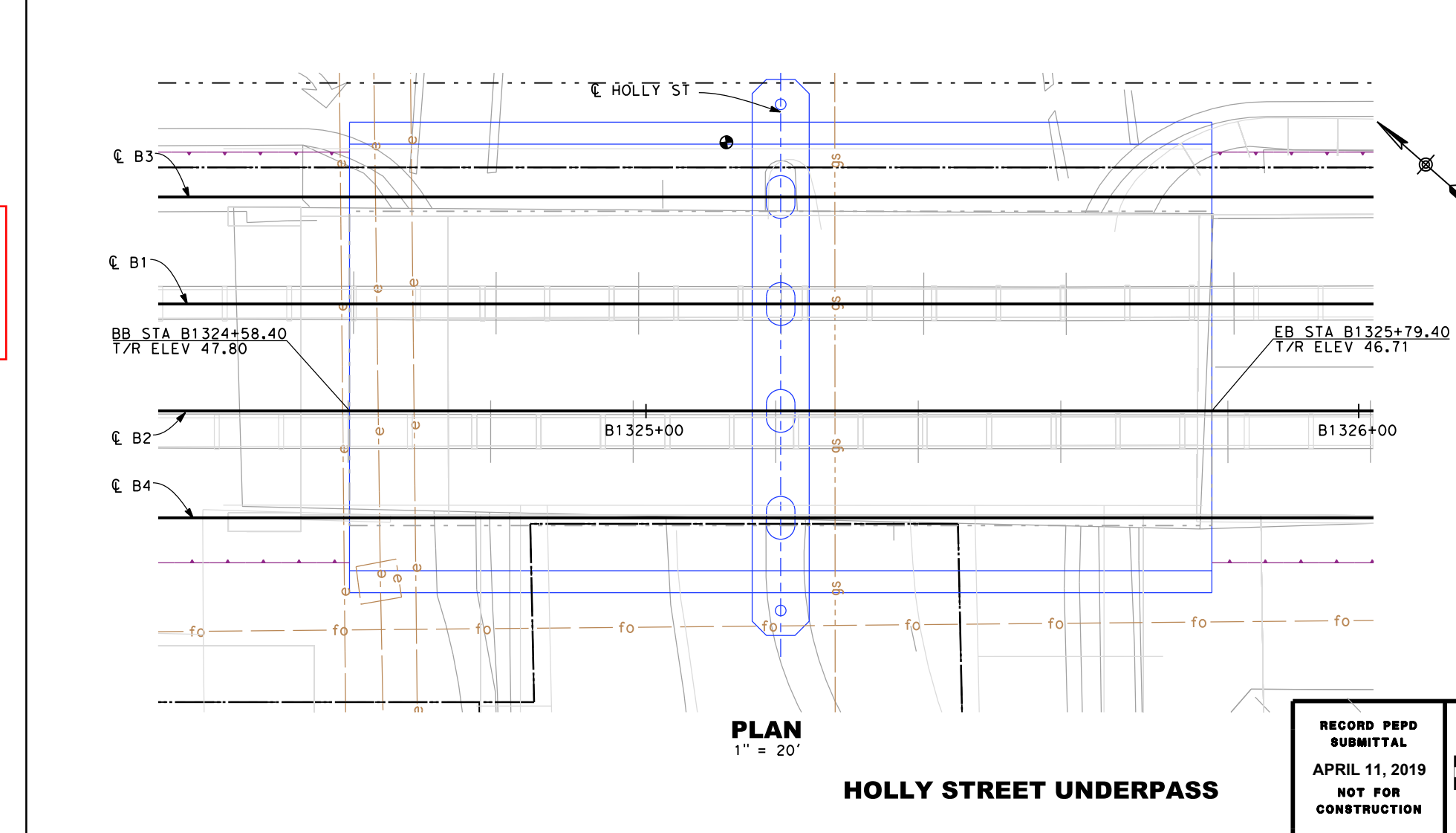
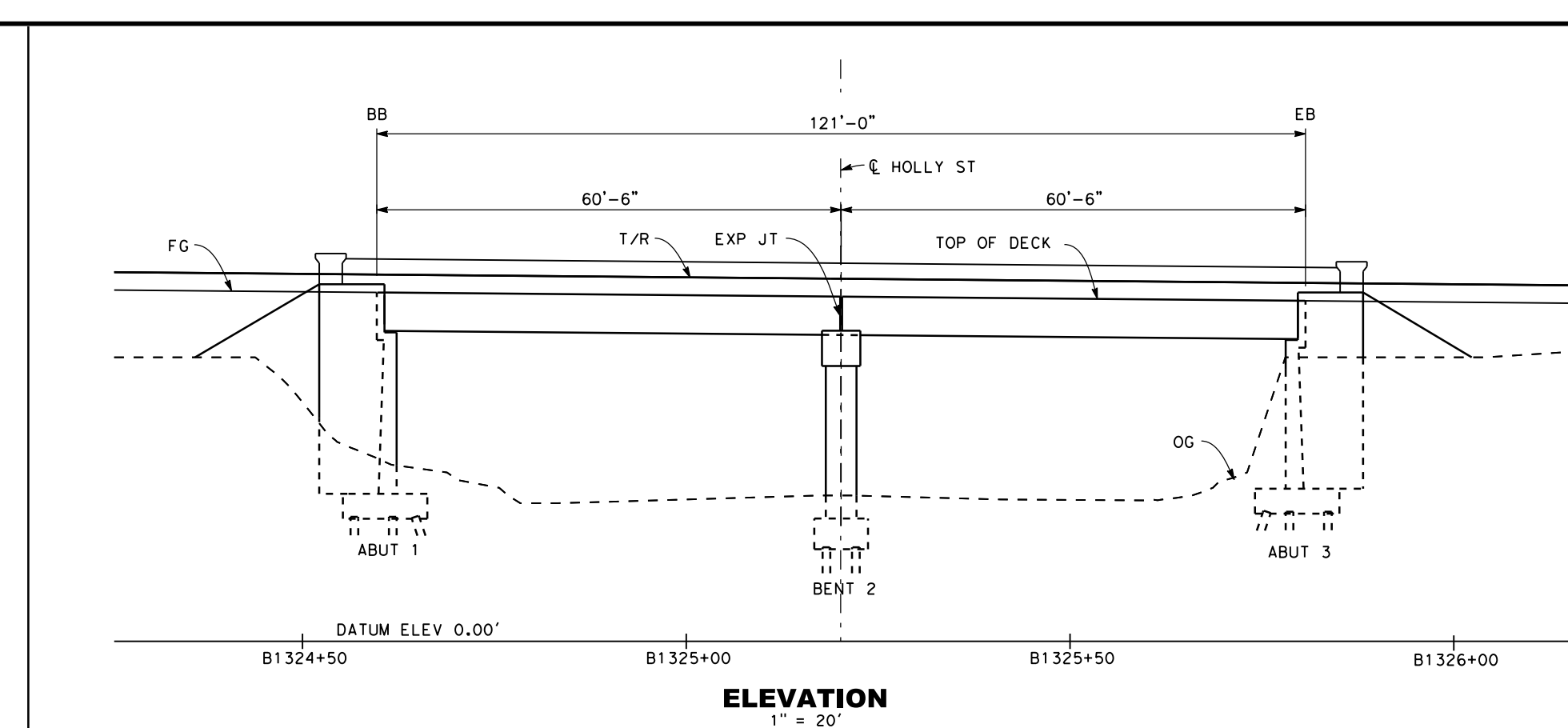
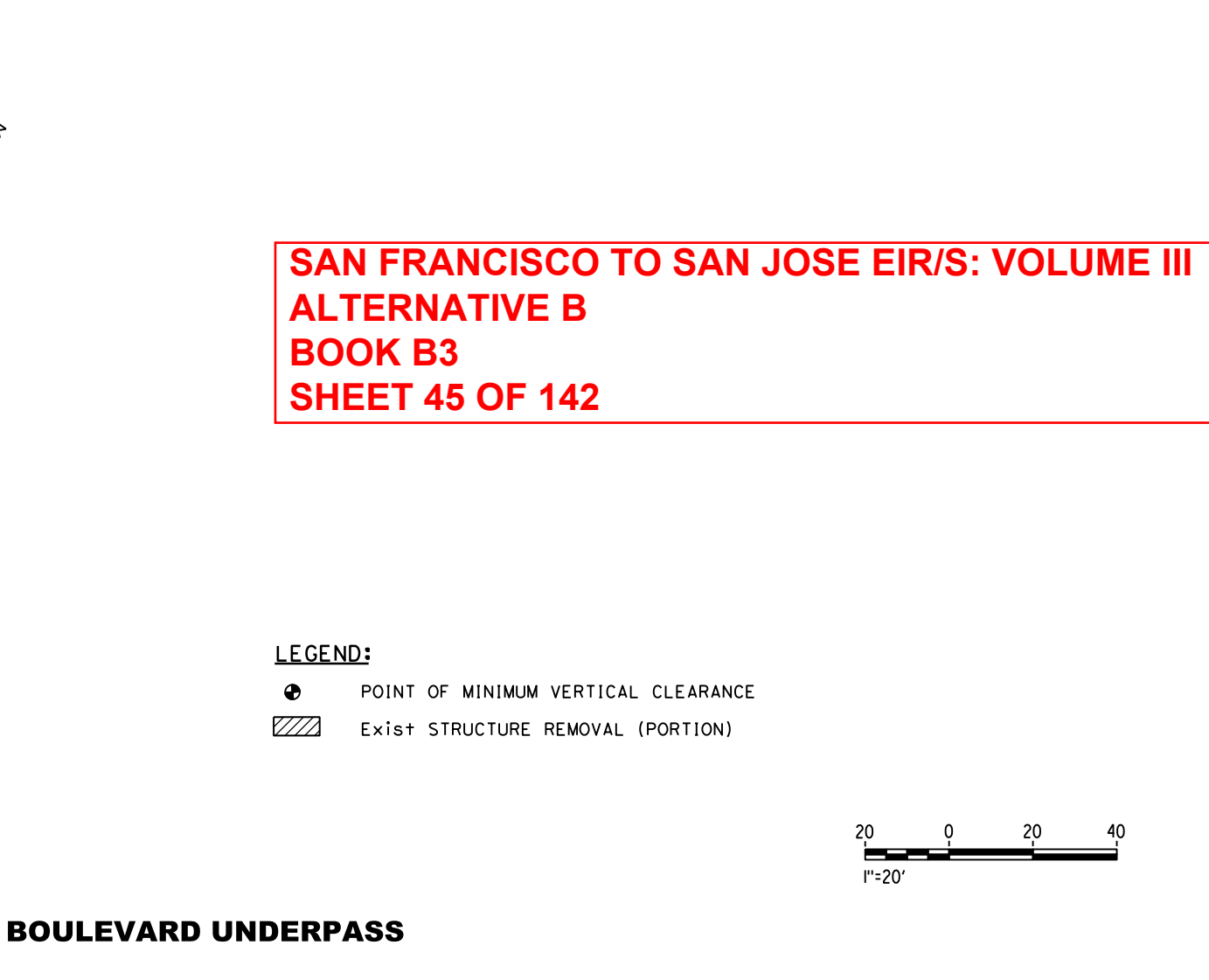
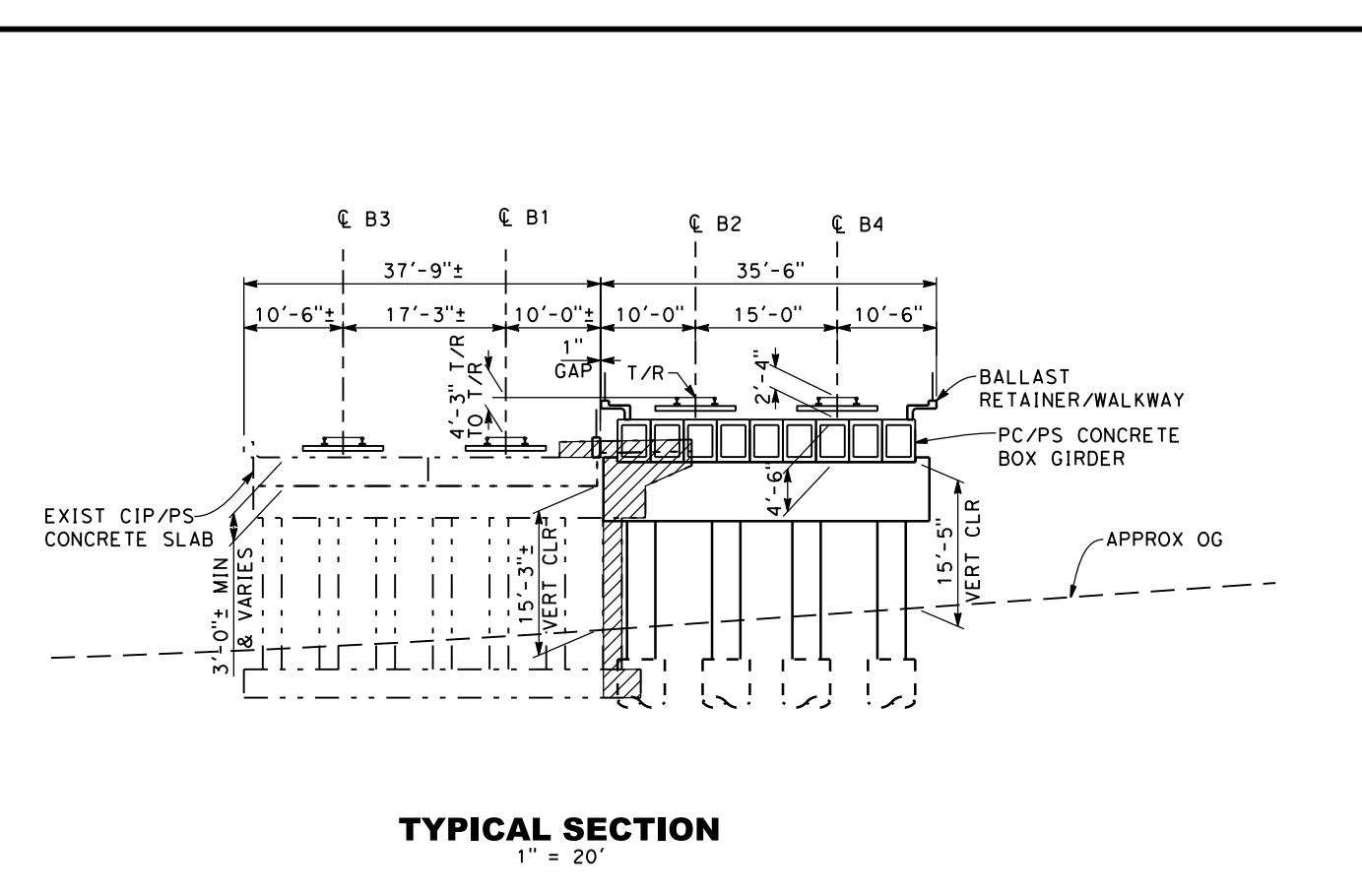
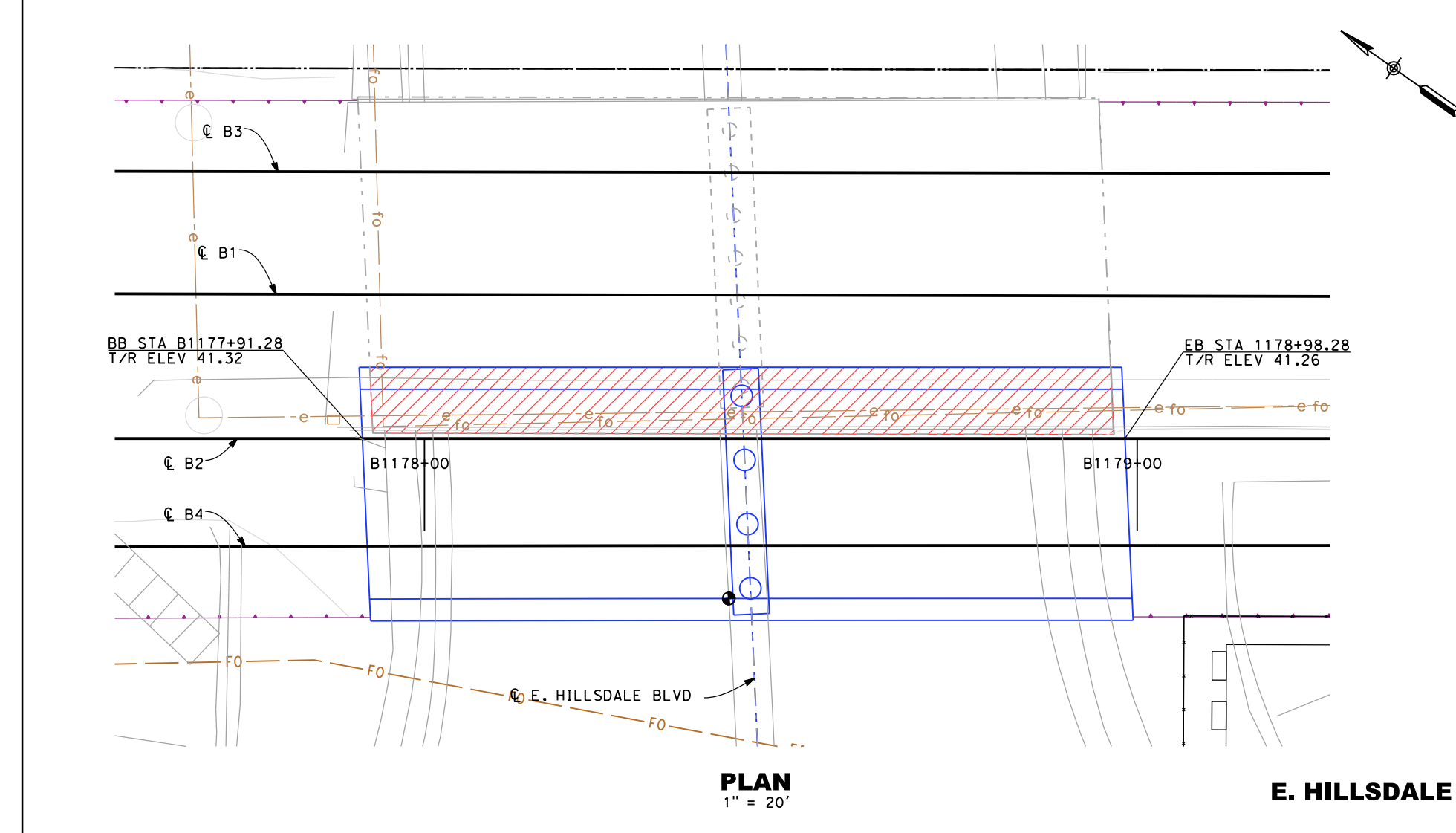
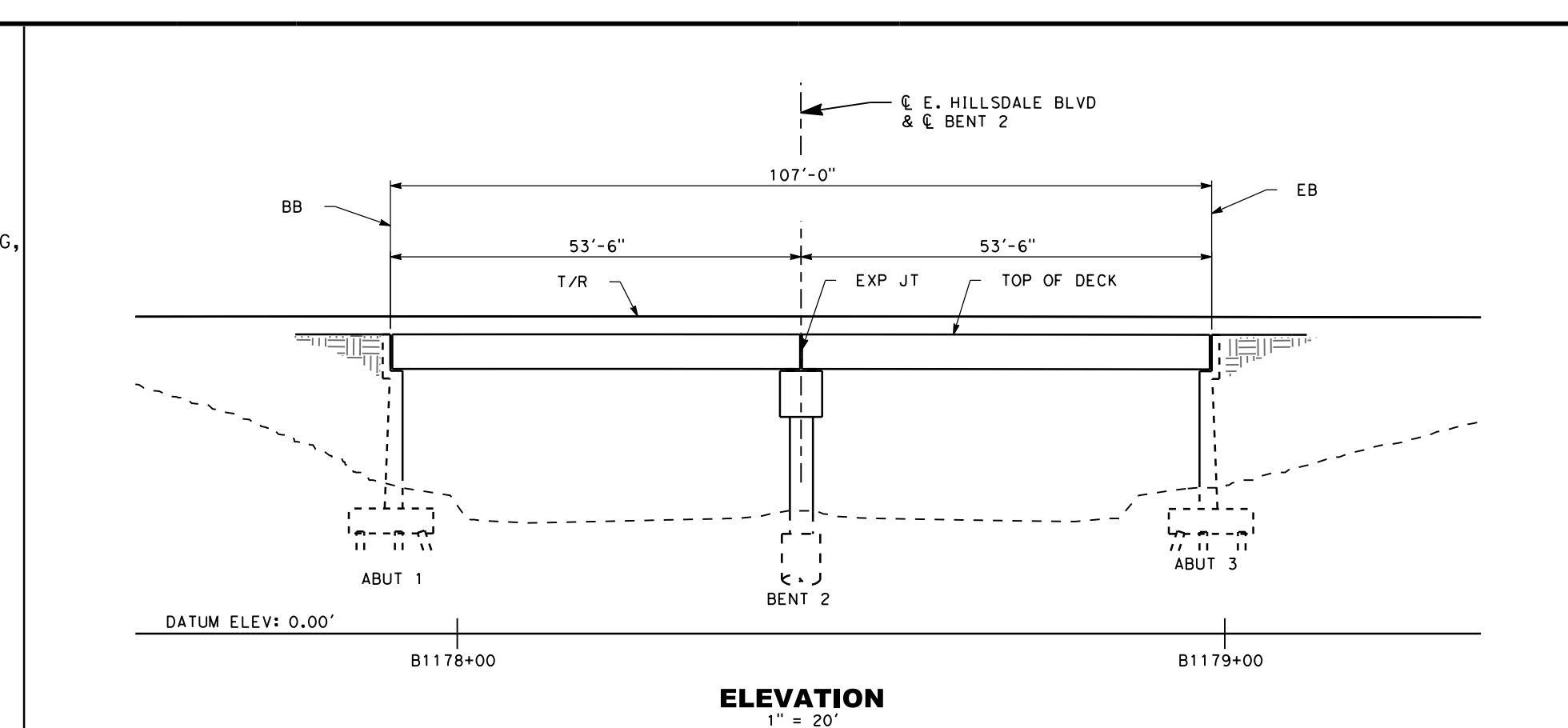
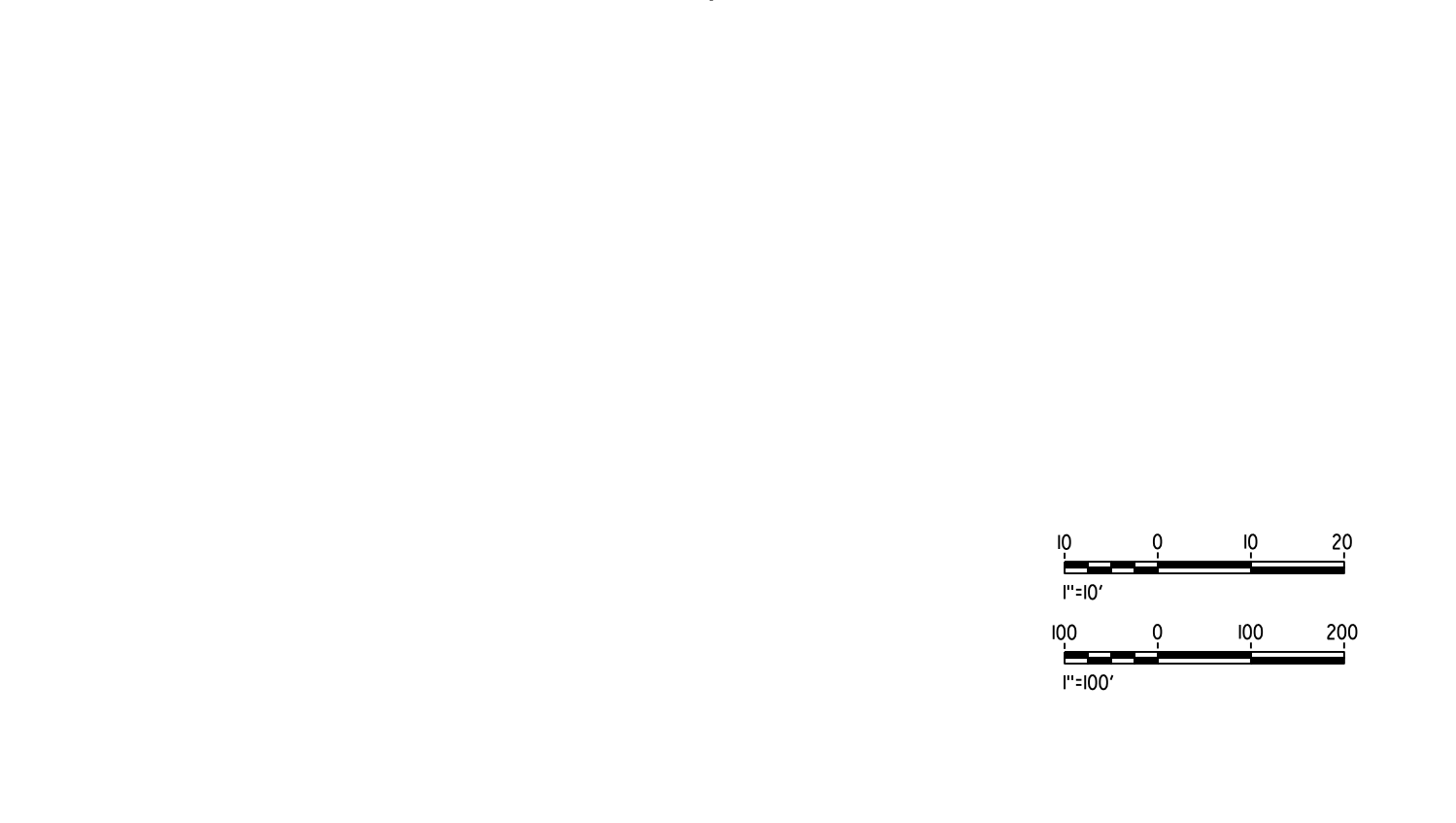
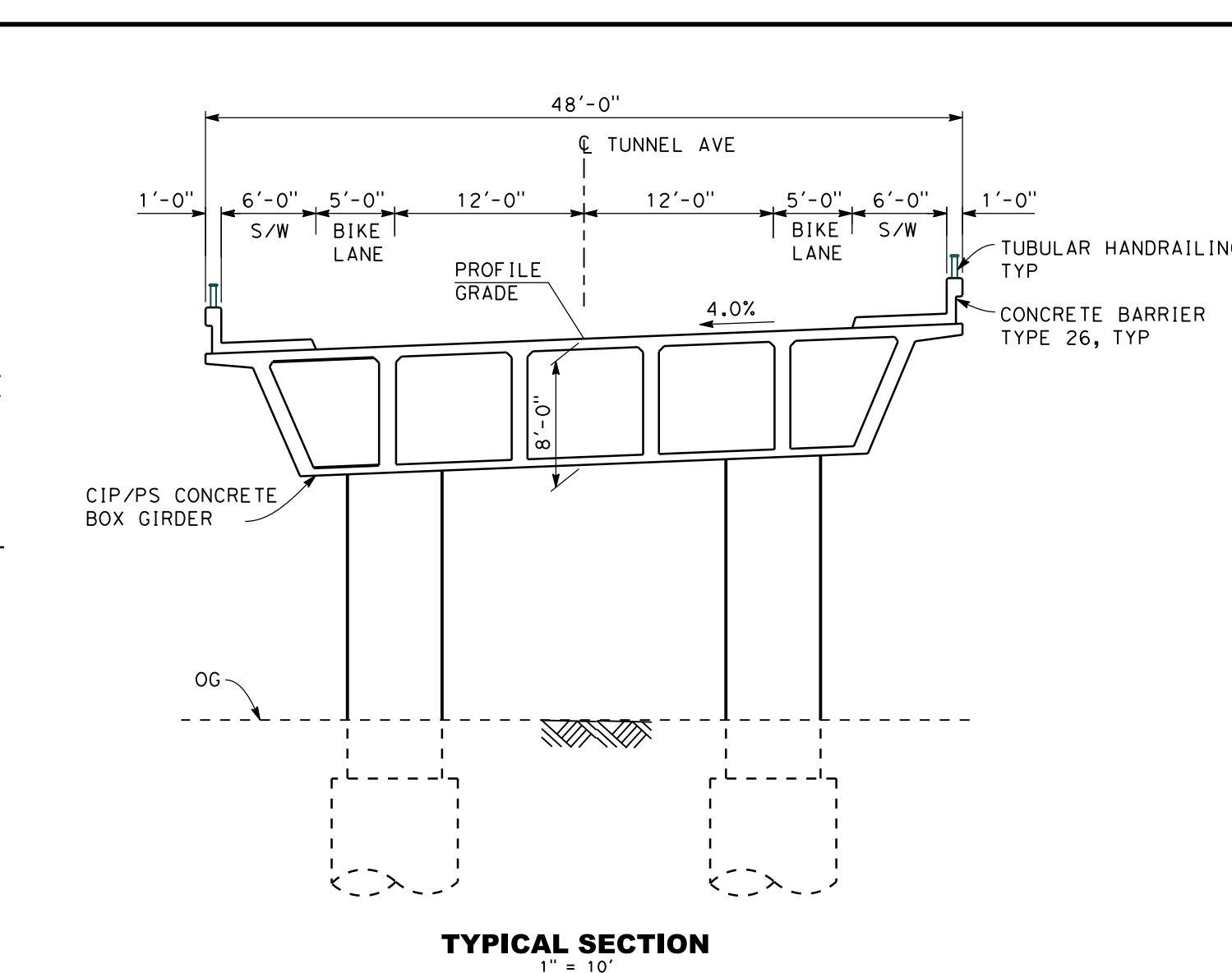
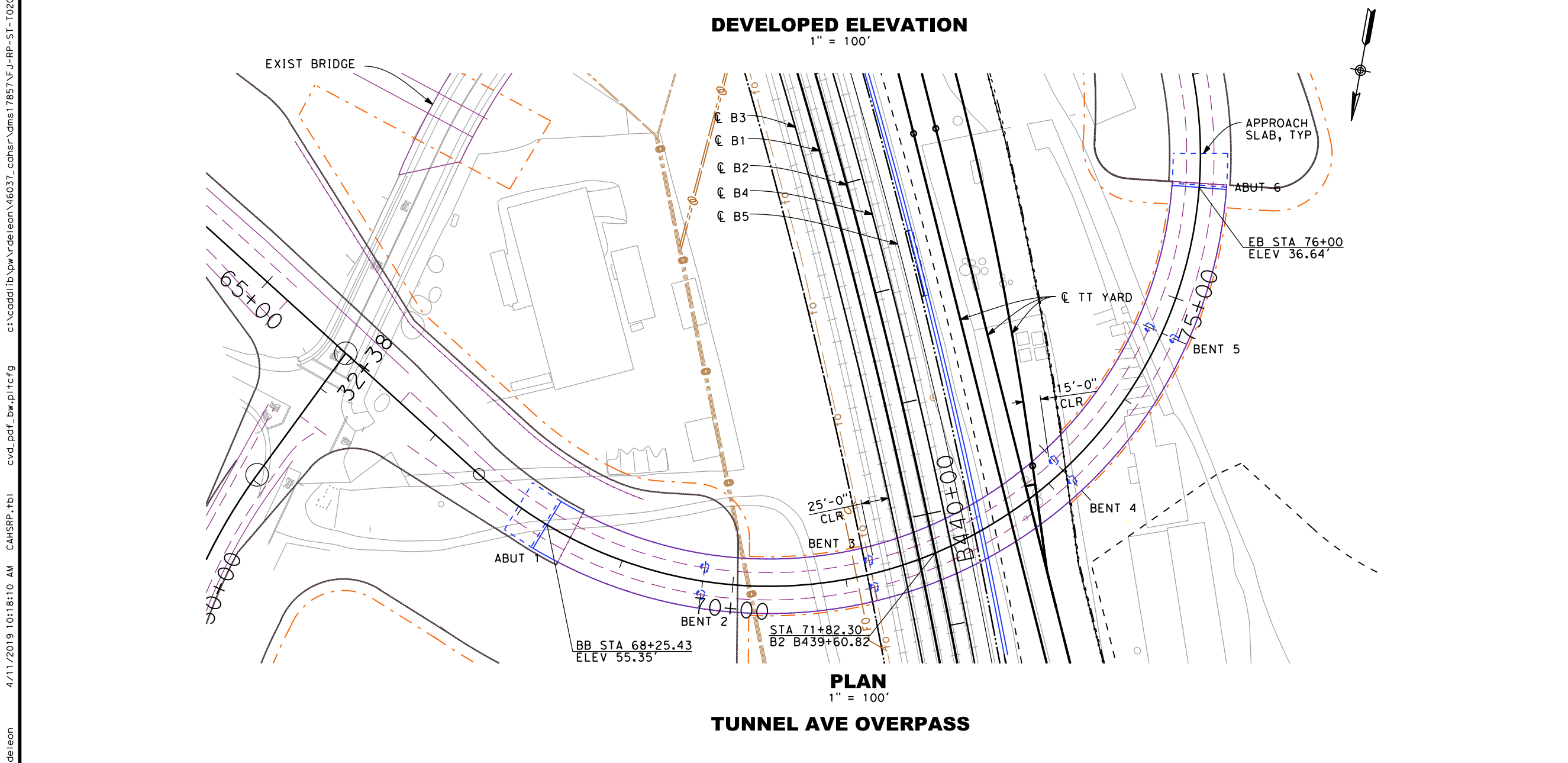
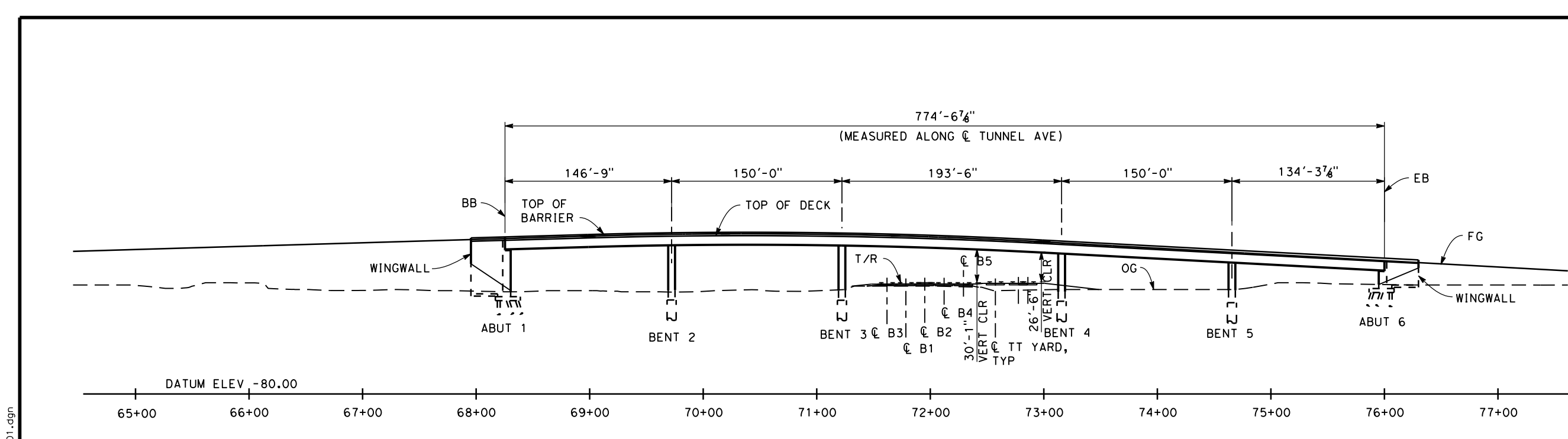
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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
STATION  
MILLBRAE  
FACILITY SIZING TABLE

CONTRACT NO.	HSR15-34
DRAWING NO.	AR-J0119
SCALE	AS SHOWN
SHEET NO.	

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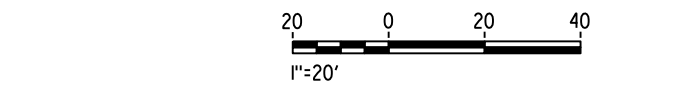
**SAN FRANCISCO TO SAN JOSE EIRS: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 45 OF 142**

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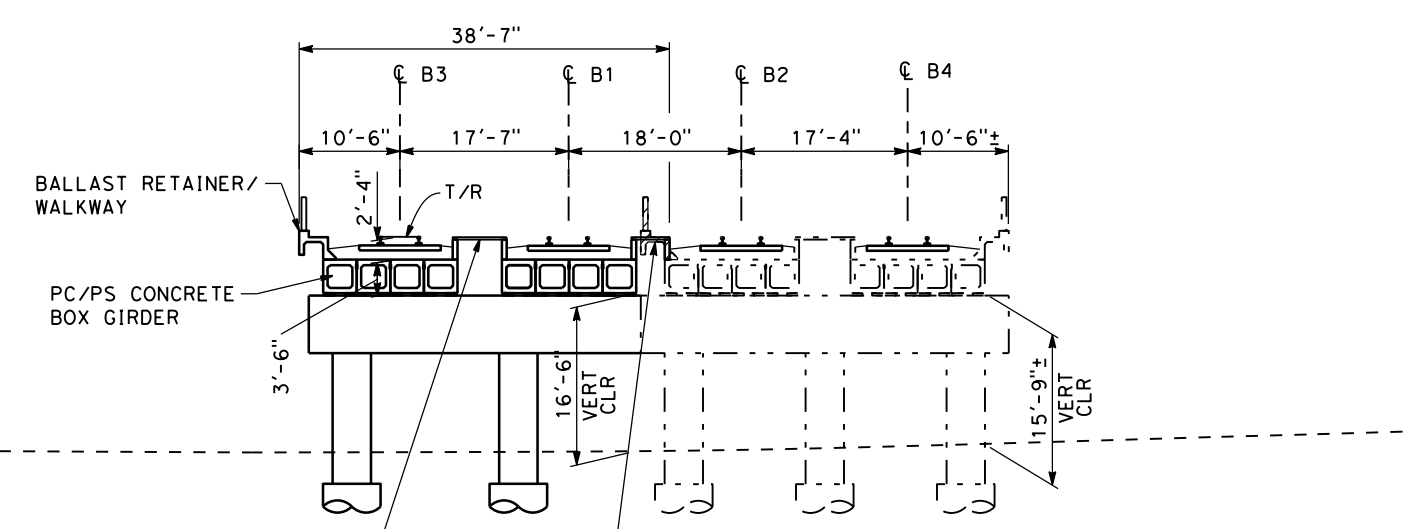
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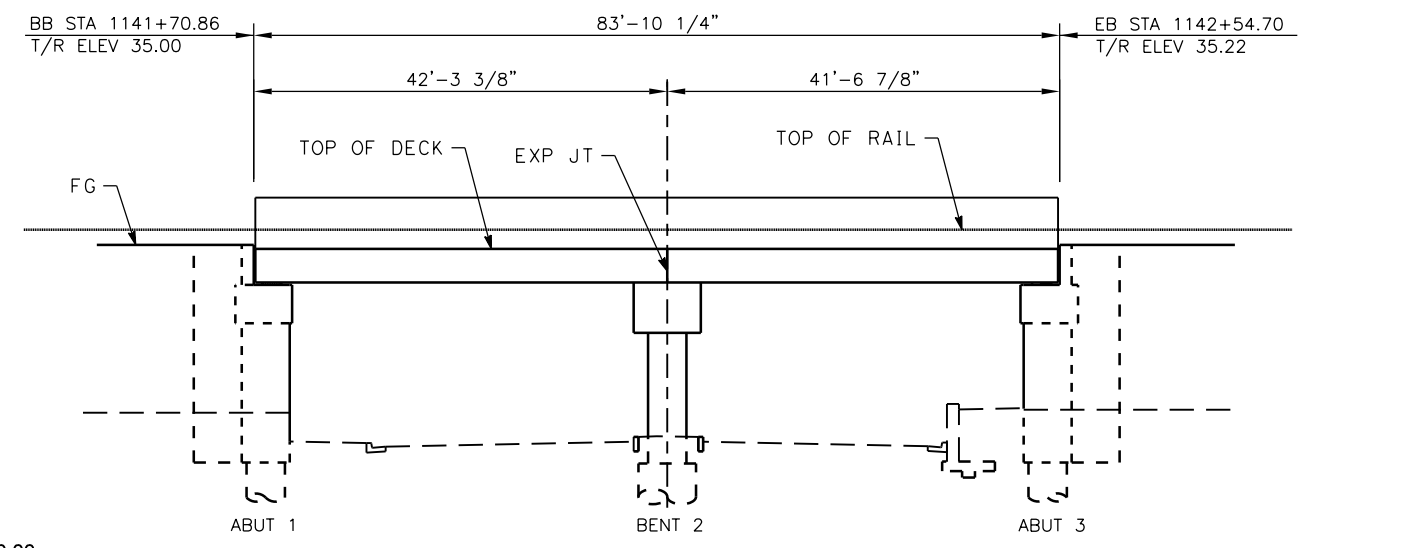
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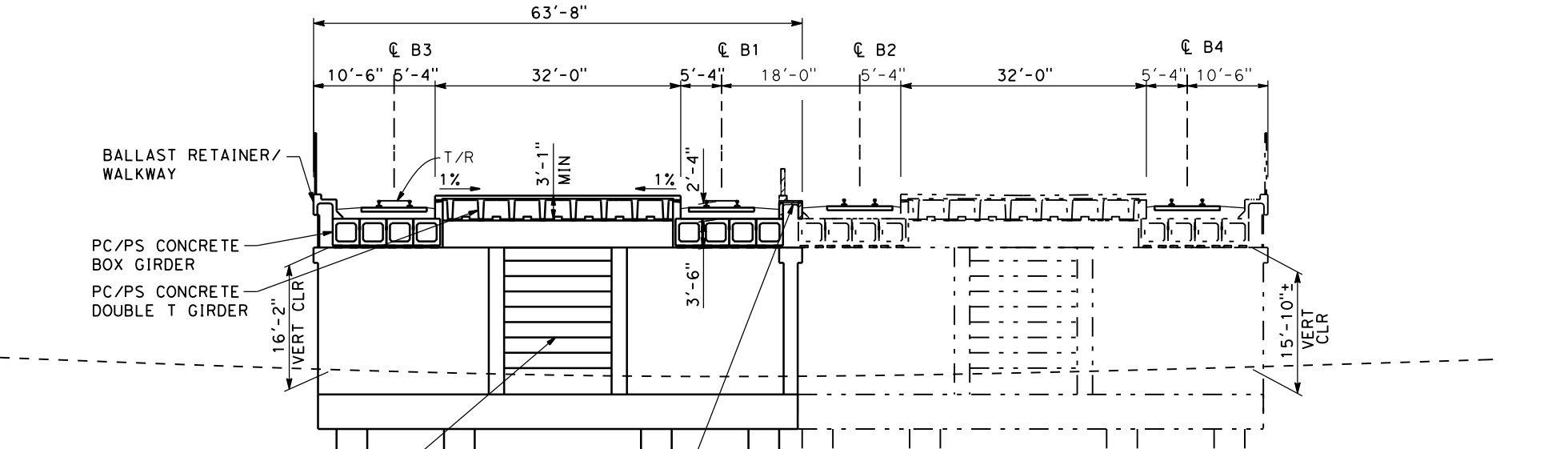
RECORD PERM SUBMITTAL APRIL 11, 2019 NOT FOR CONSTRUCTION	<b>HNTB</b> <small>1111 Broadway 9th Floor Oakland, CA 94607</small>		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN FRANCISCO TO SAN JOSE</b> ALTERNATIVE B OVERPASSES AND UNDERPASSES SHEET 1 OF 4	CONTRACT NO. HSR15-34 DRAWING NO. ST-T0201 SCALE AS SHOWN SHEET NO.
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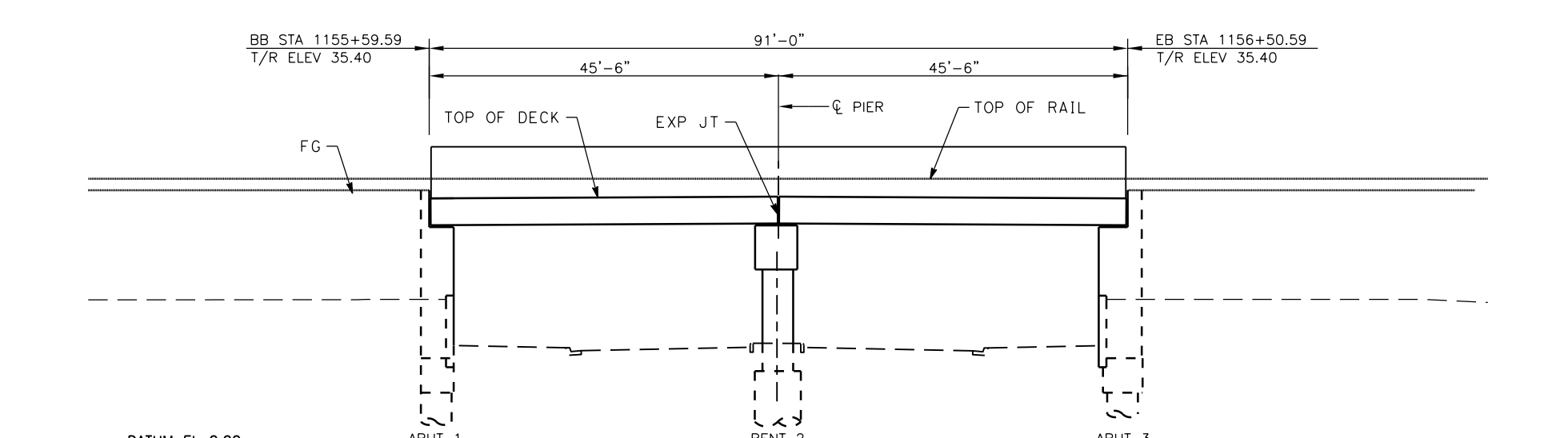
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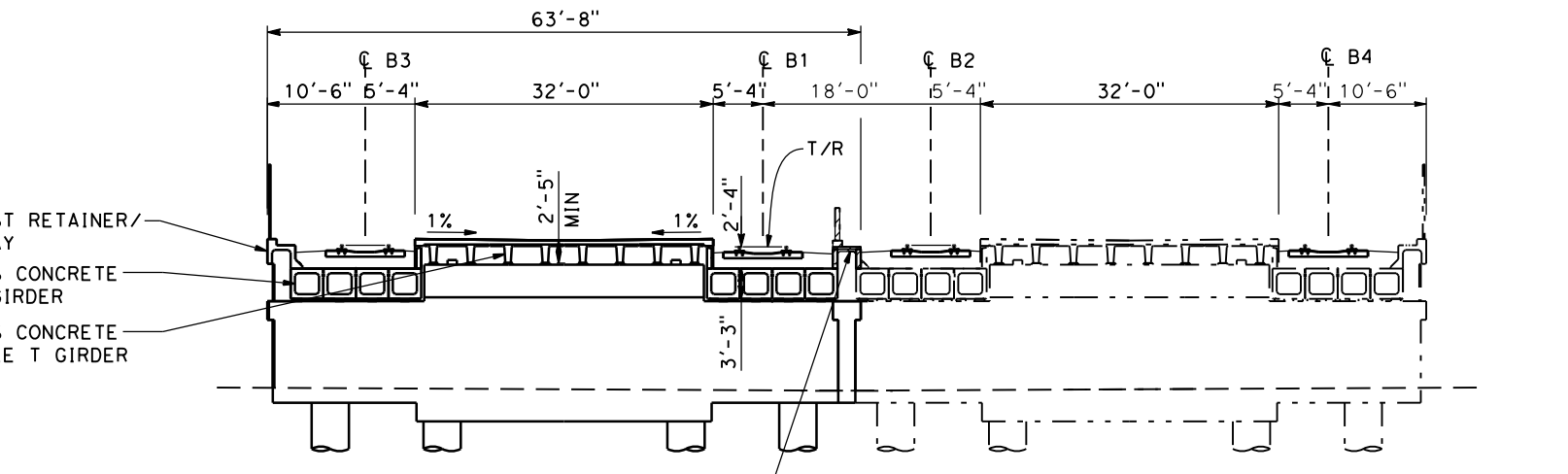
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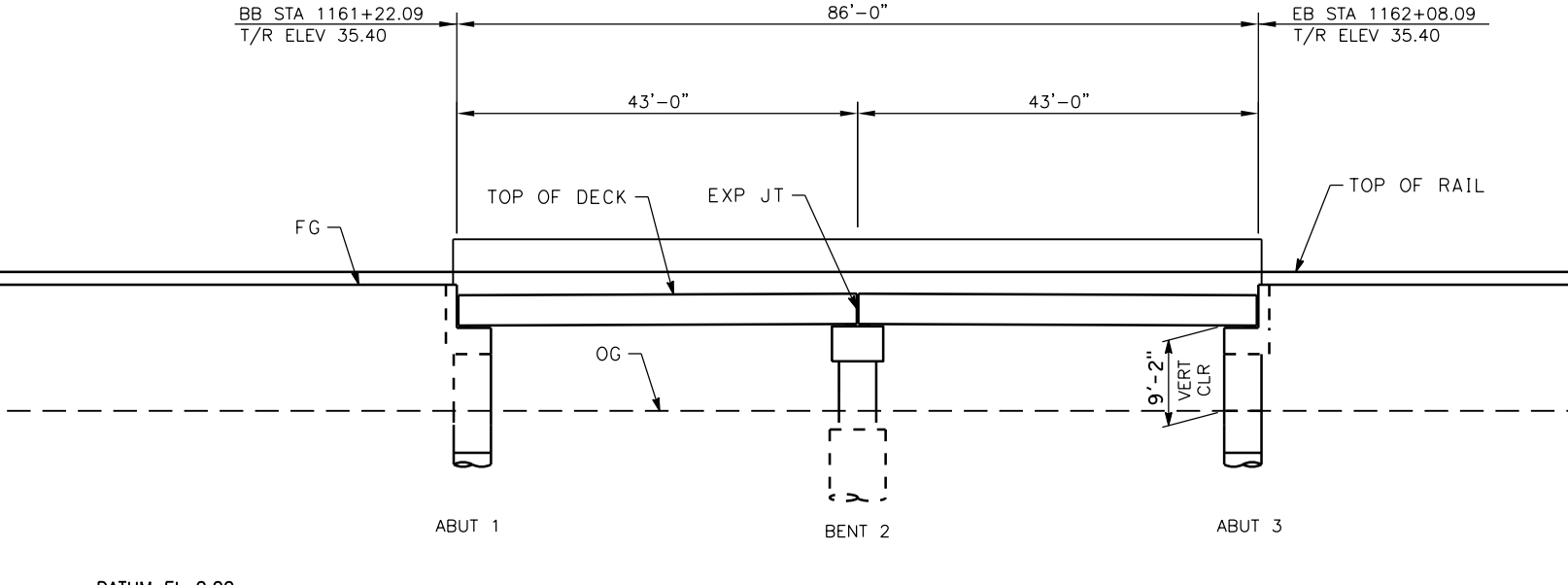
**28TH AVENUE SECTION AT ABUT 3**  
SCALE: 1" = 20'



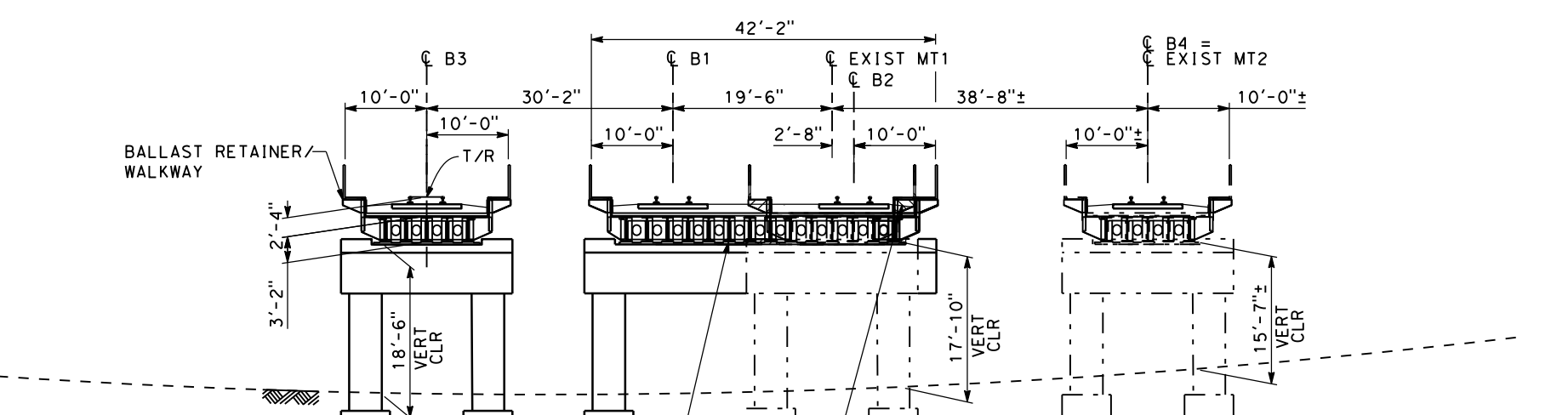
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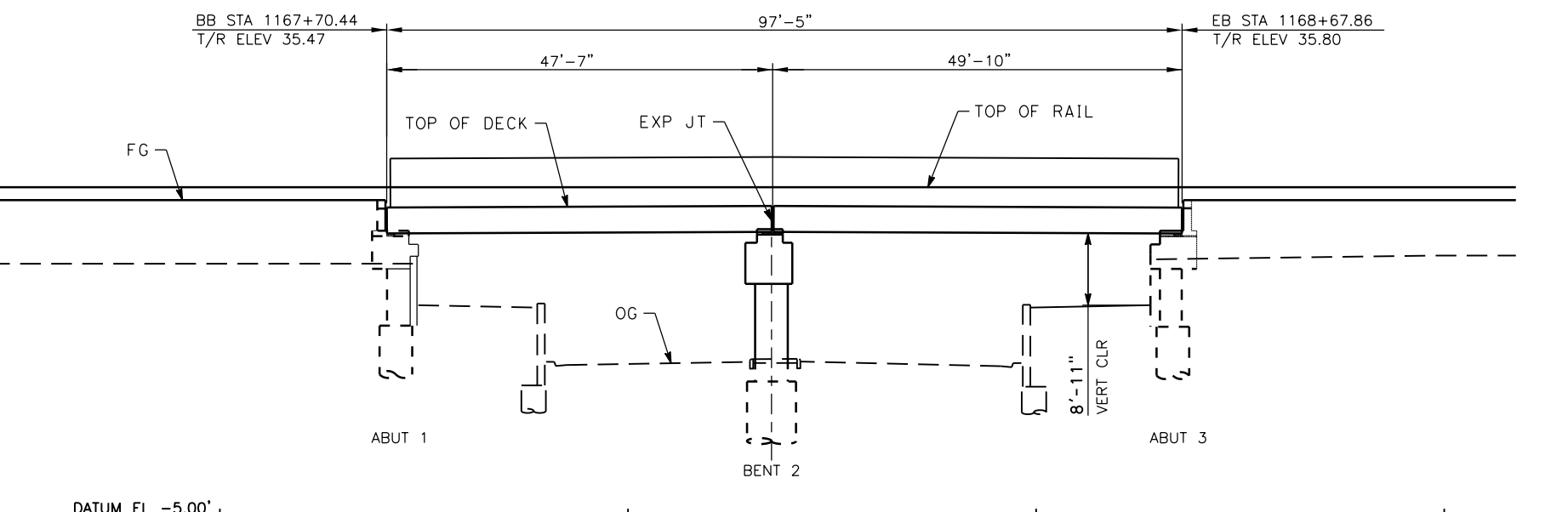
**HILLSDALE STATION PEDESTRIAN UNDERPASS SECTION AT ABUT 3**  
SCALE: 1" = 20'



**ELEVATION**  
SCALE: 1" = 20'



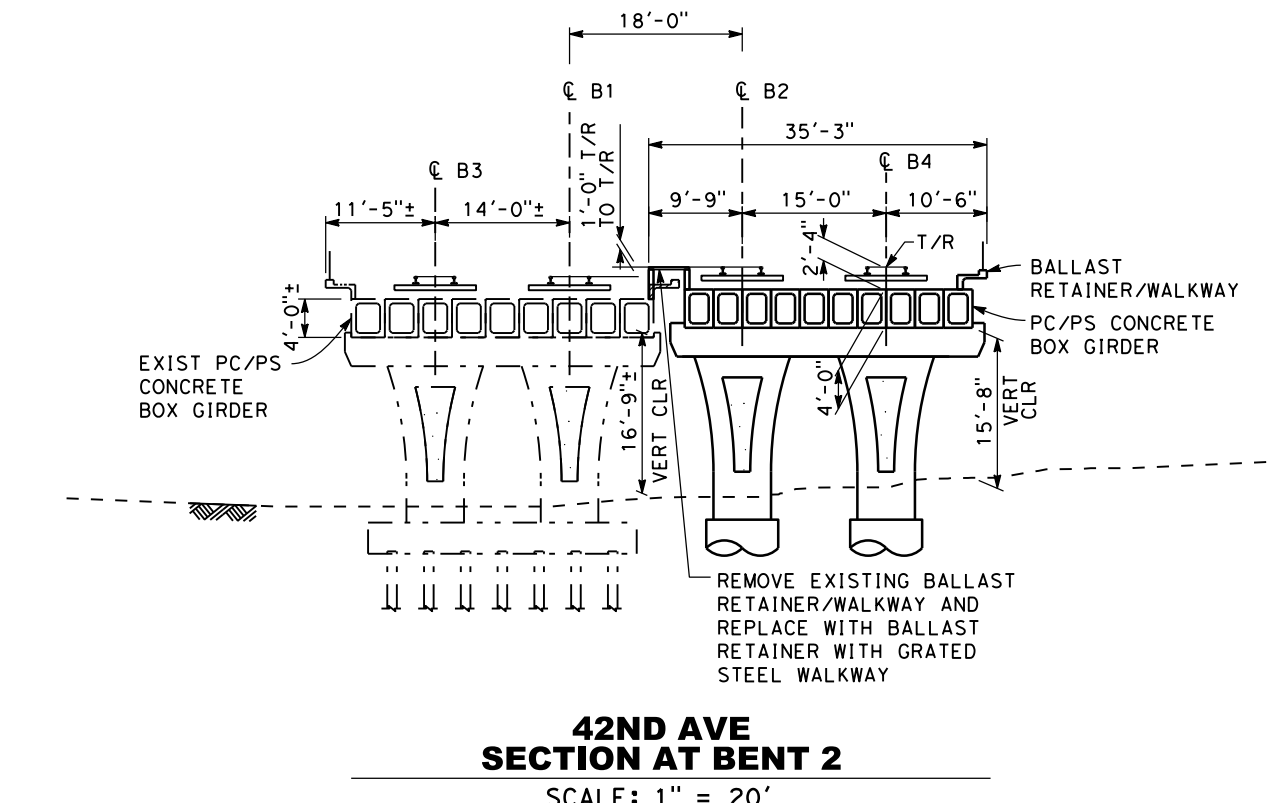
**31ST AVENUE SECTION AT BENT 2**  
SCALE: 1" = 20'



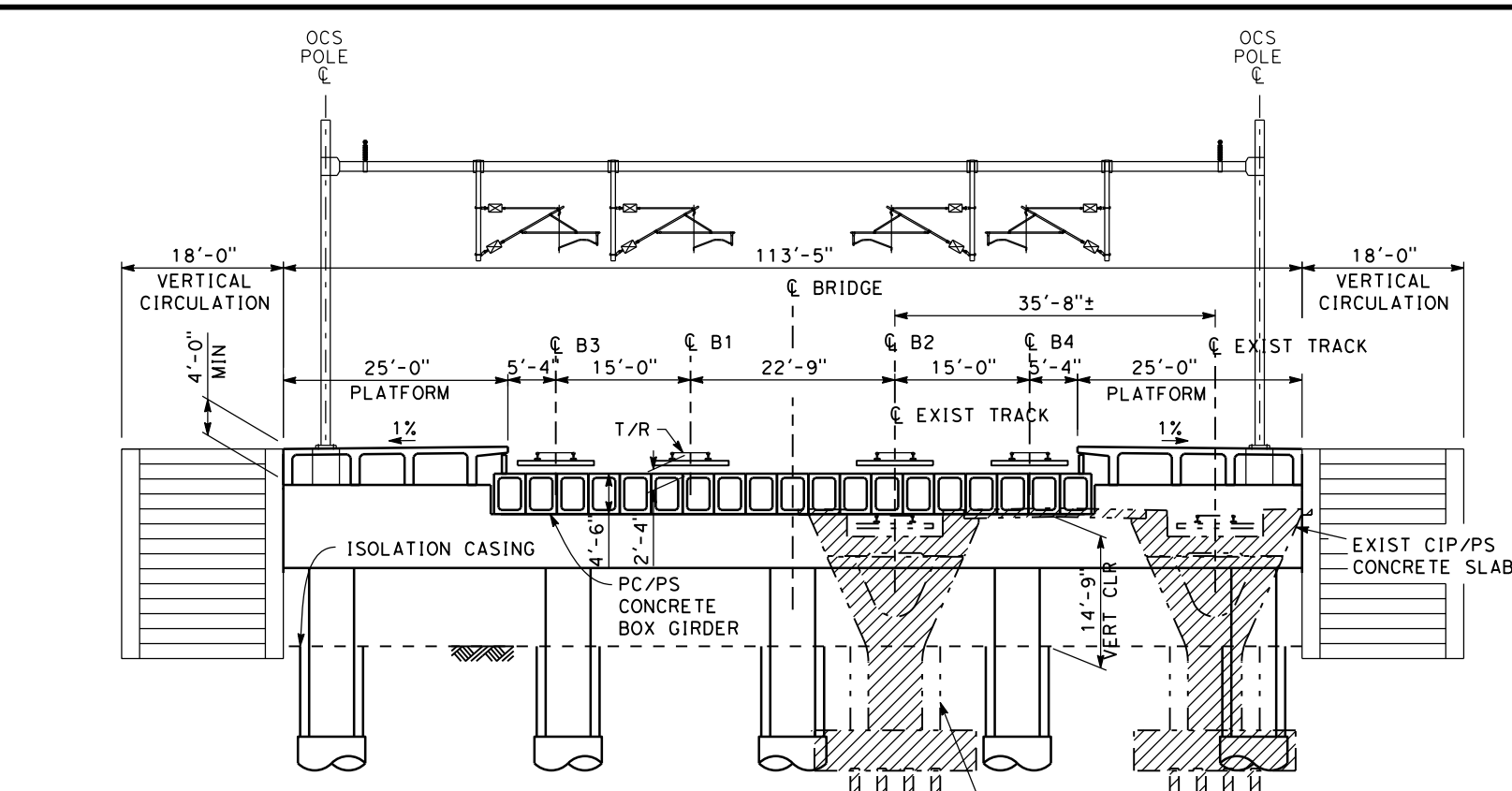
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SCALE: 1" = 20'

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 46 OF 142**

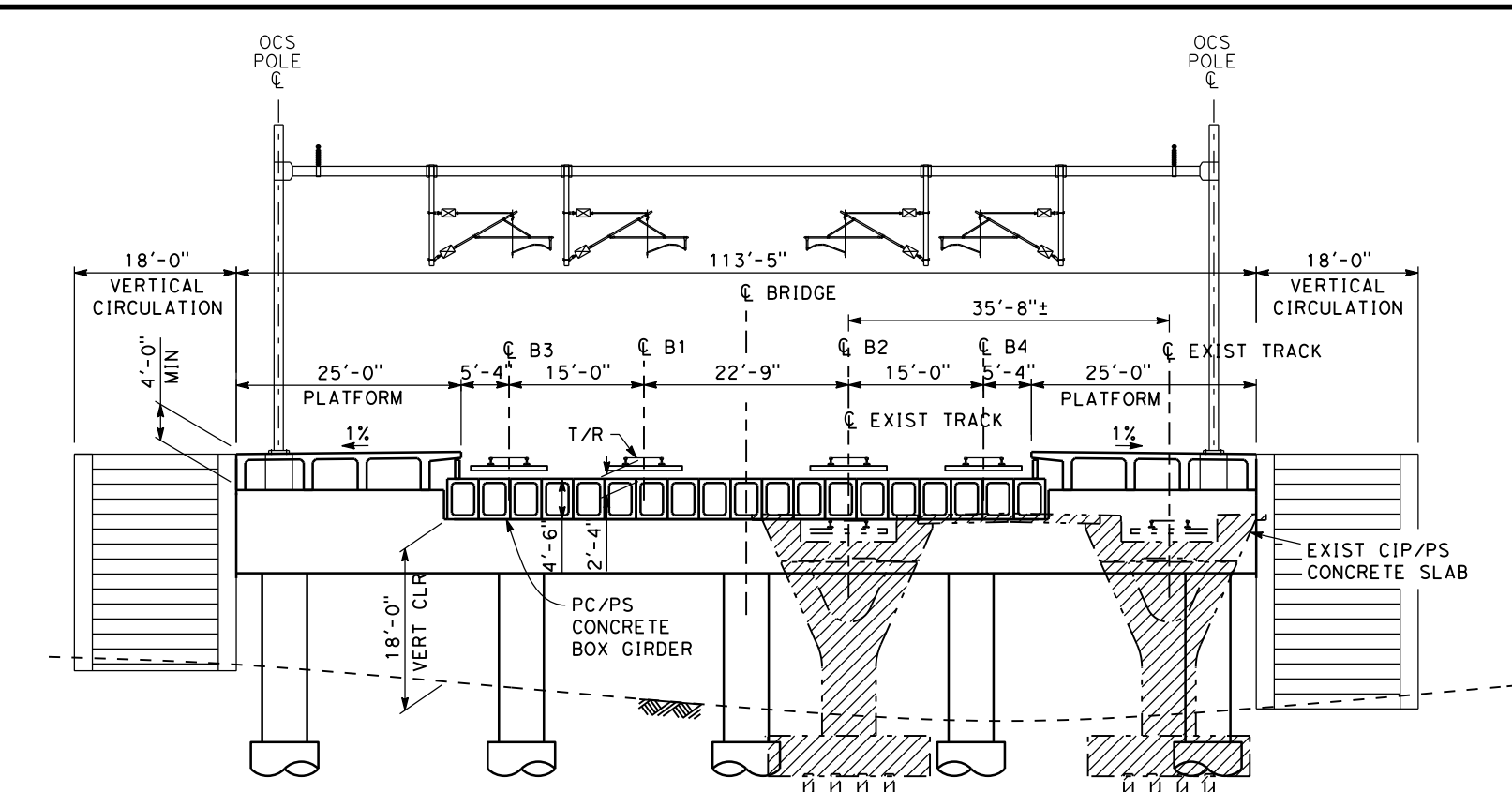
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			OVERPASSES AND UNDERPASSES SHEET 2 OF 4	DRAWING NO. ST-T0202
				SCALE AS SHOWN
				SHEET NO.



**42ND AVE SECTION AT BENT 2**  
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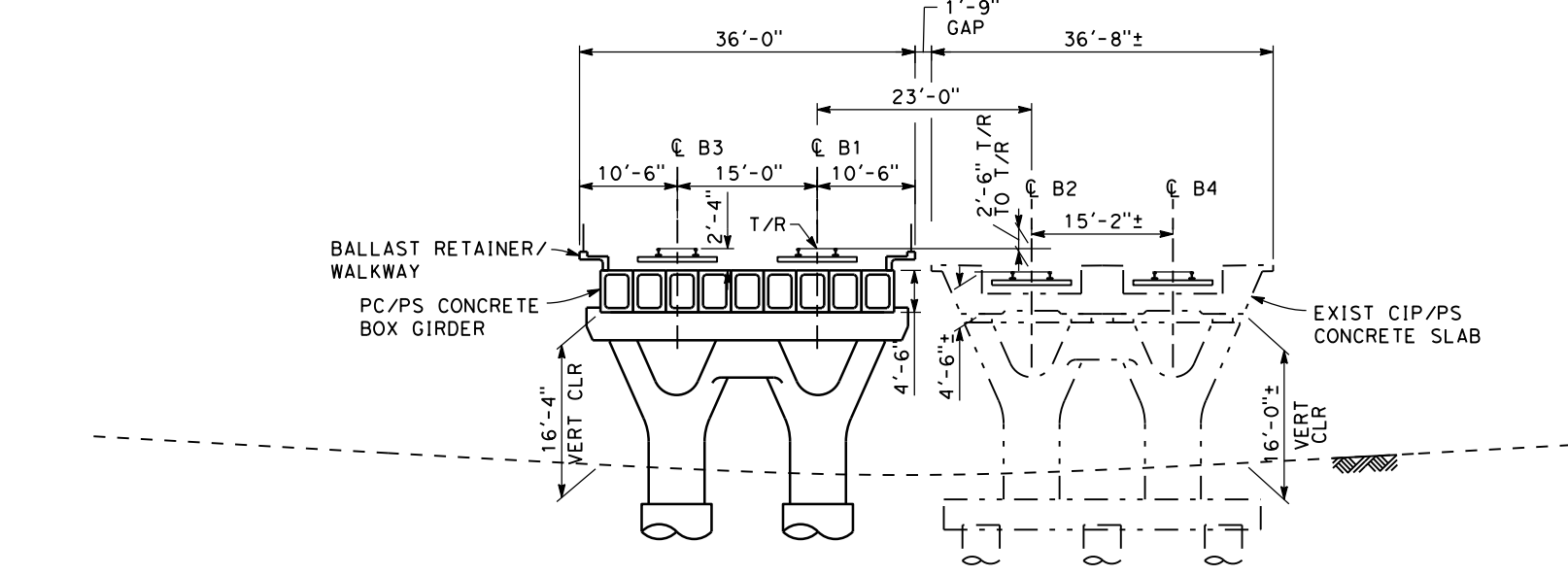


**BELMONT STATION PEDESTRIAN UNDERPASS SECTION AT BENT 2**  
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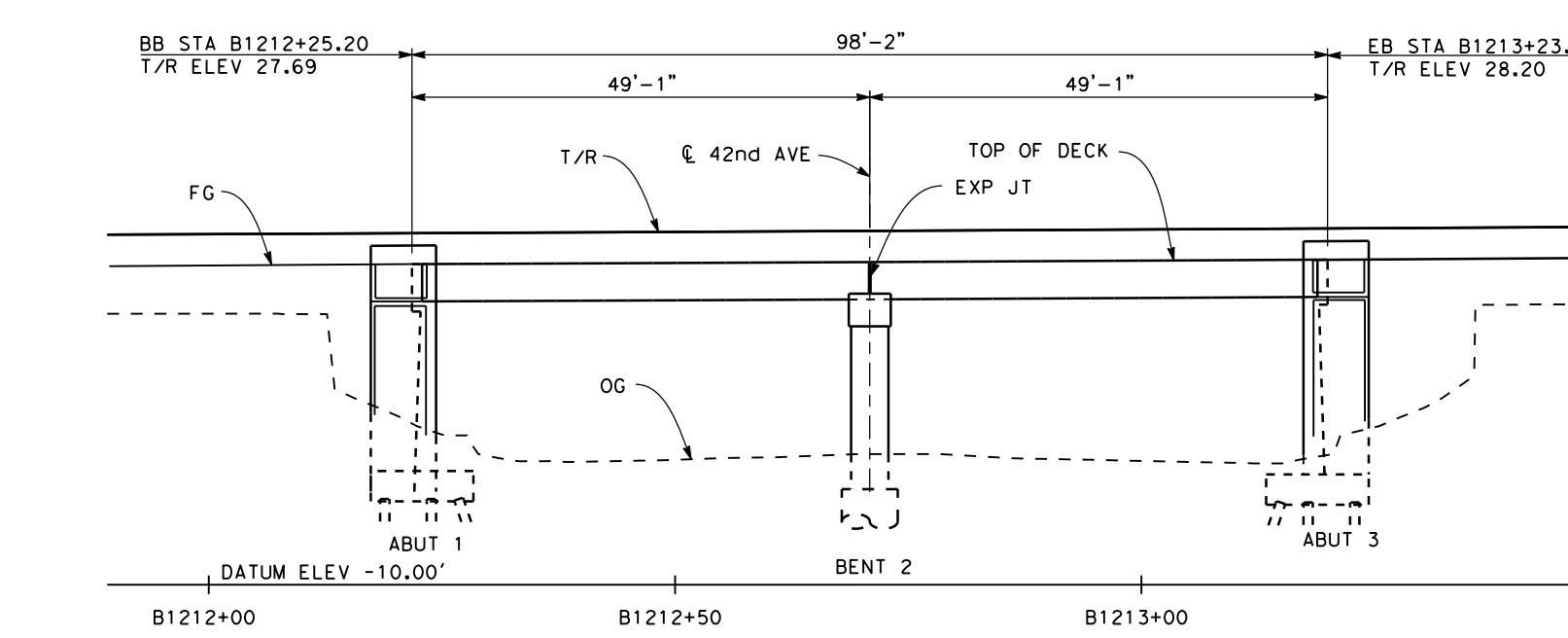


**RALSTON AVE SECTION AT BENT 2**  
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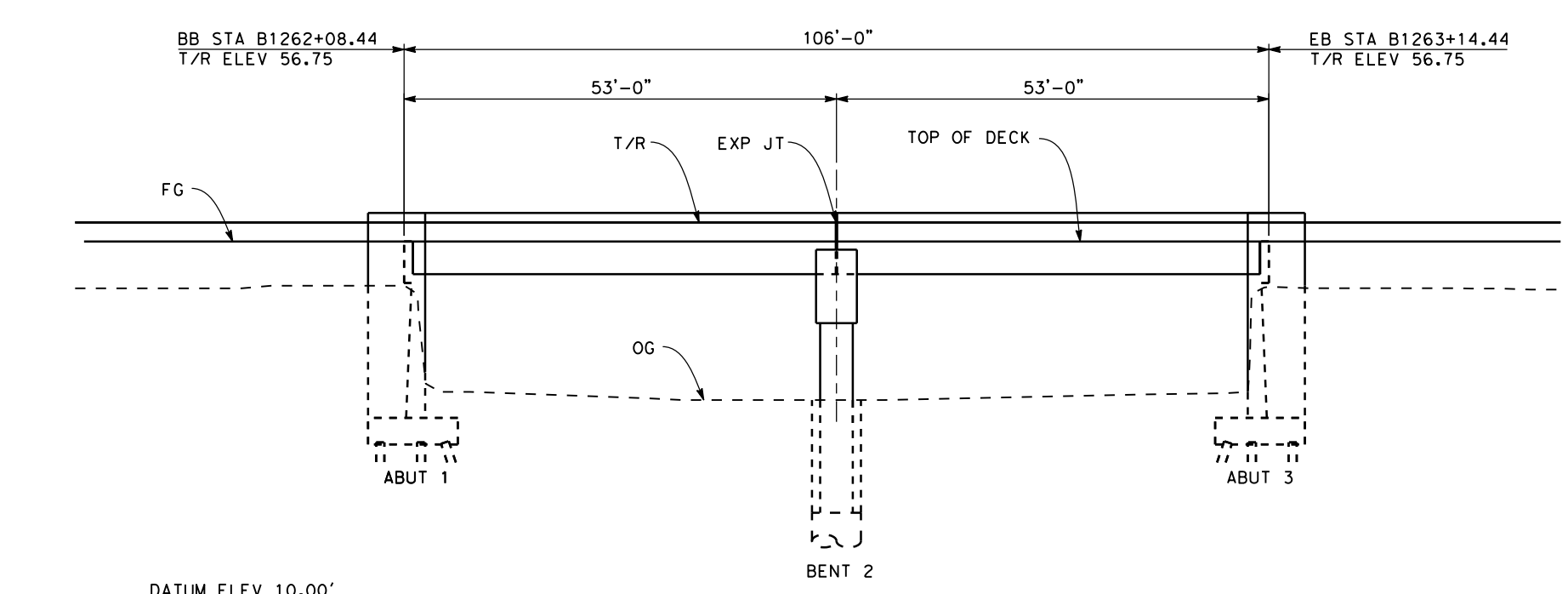
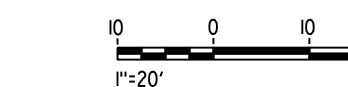
**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 47 OF 142**



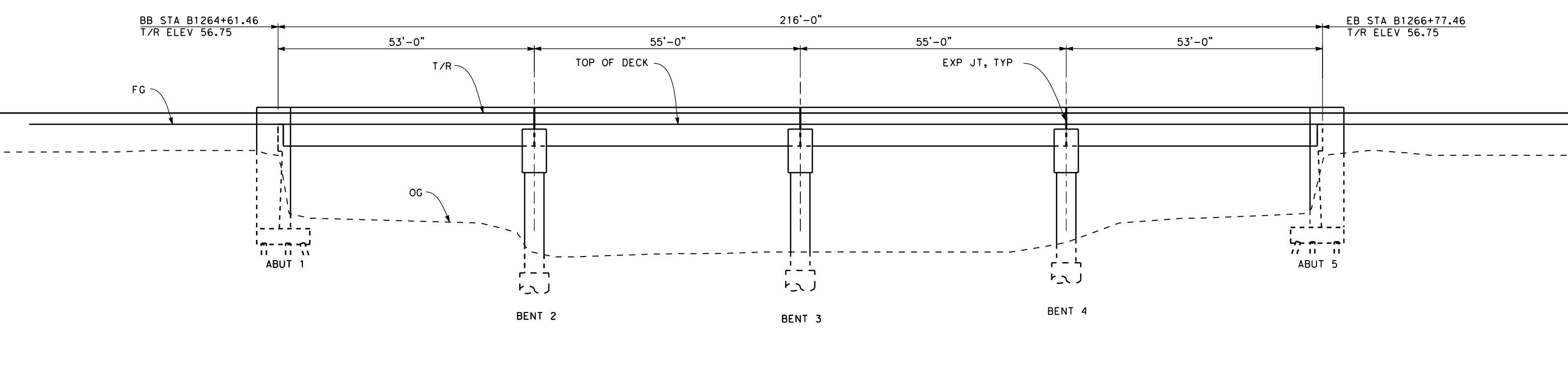
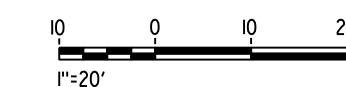
**HARBOR BLVD SECTION AT BENT 2**  
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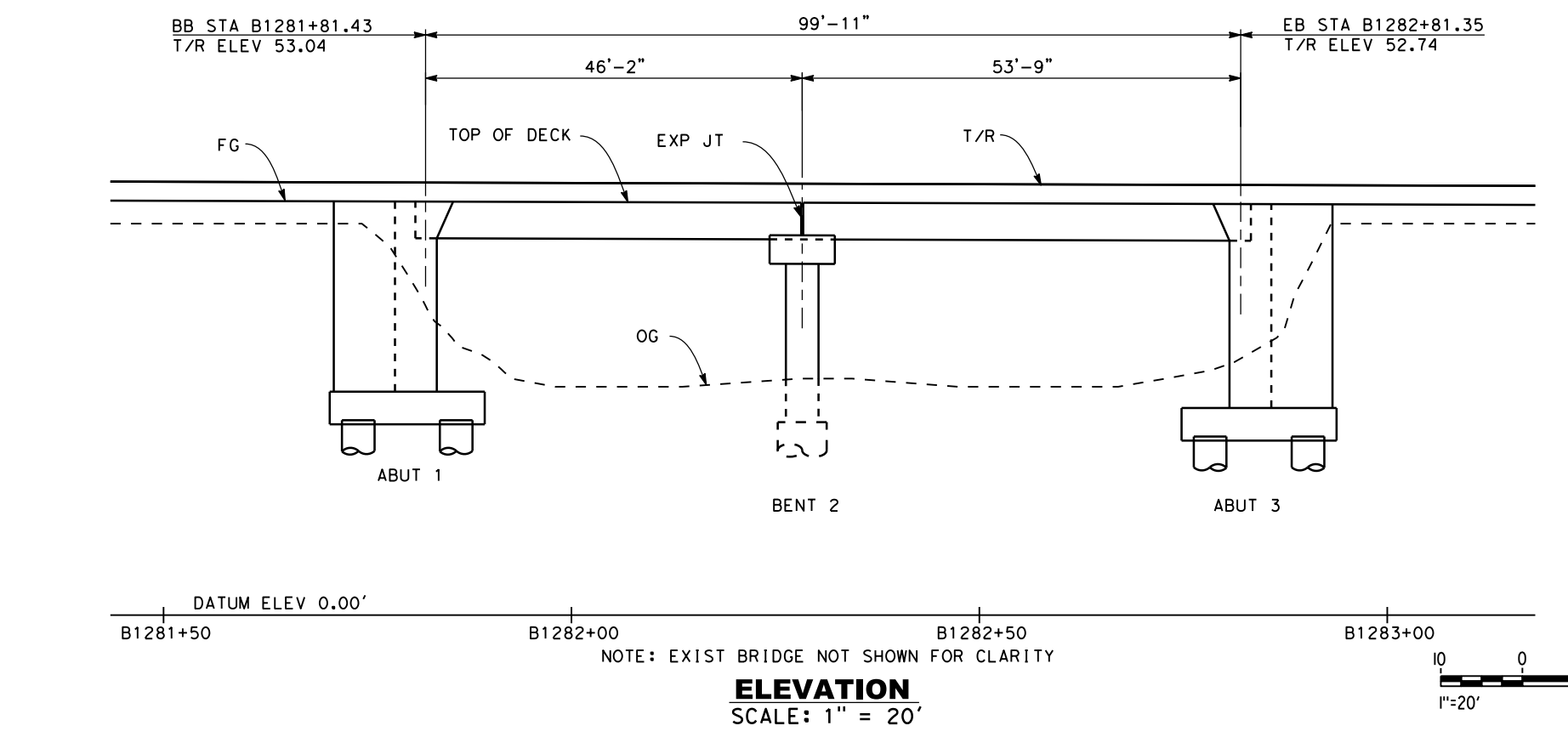
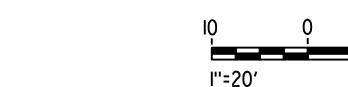
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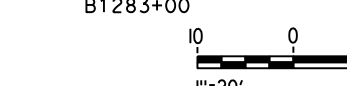
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**ELEVATION**  
SCALE: 1" = 20'



**ELEVATION**  
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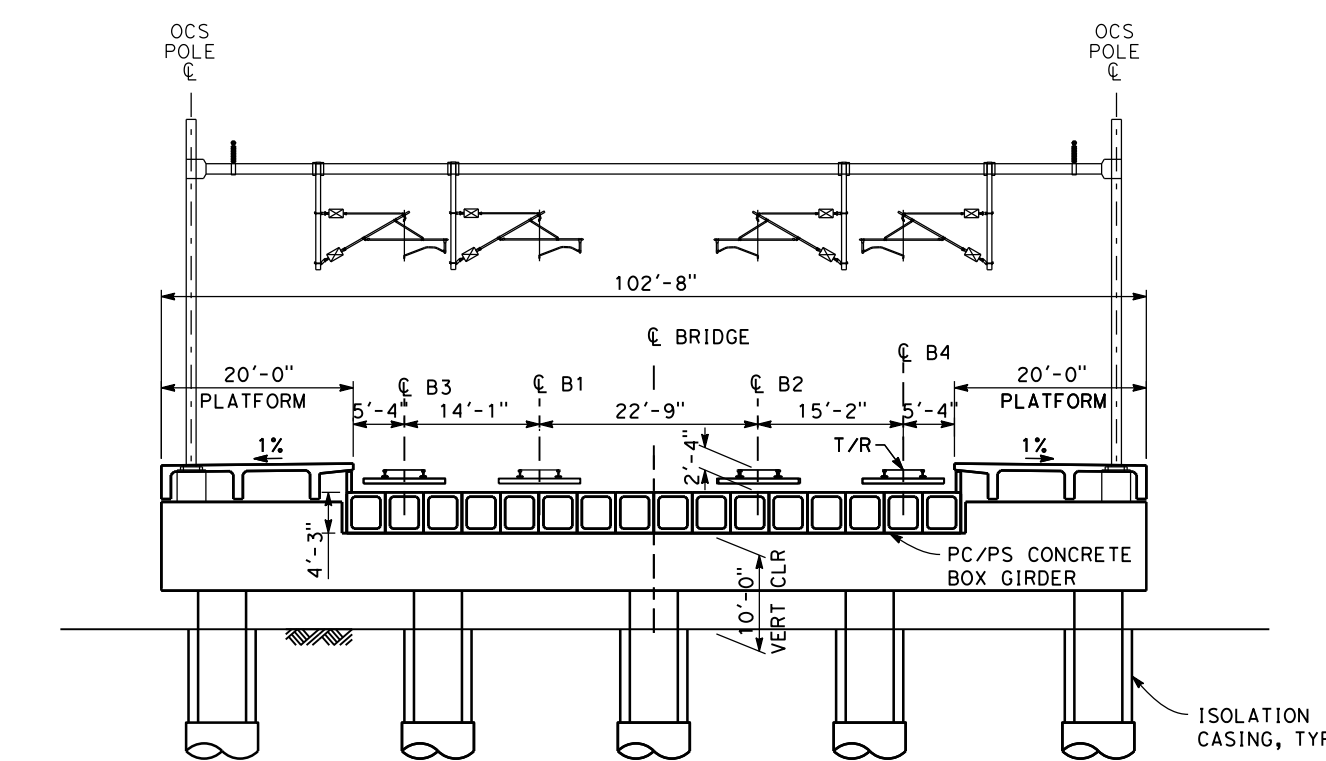
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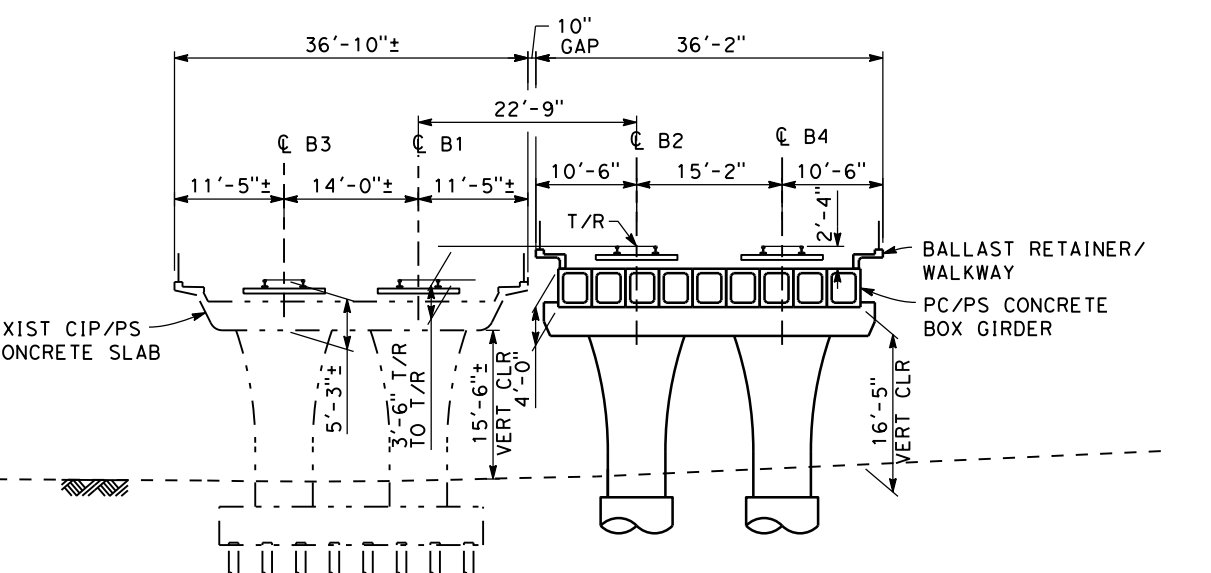


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**SAN FRANCISCO TO SAN JOSE**  
ALTERNATIVE B  
OVERPASSES AND UNDERPASSES  
SHEET 3 OF 4

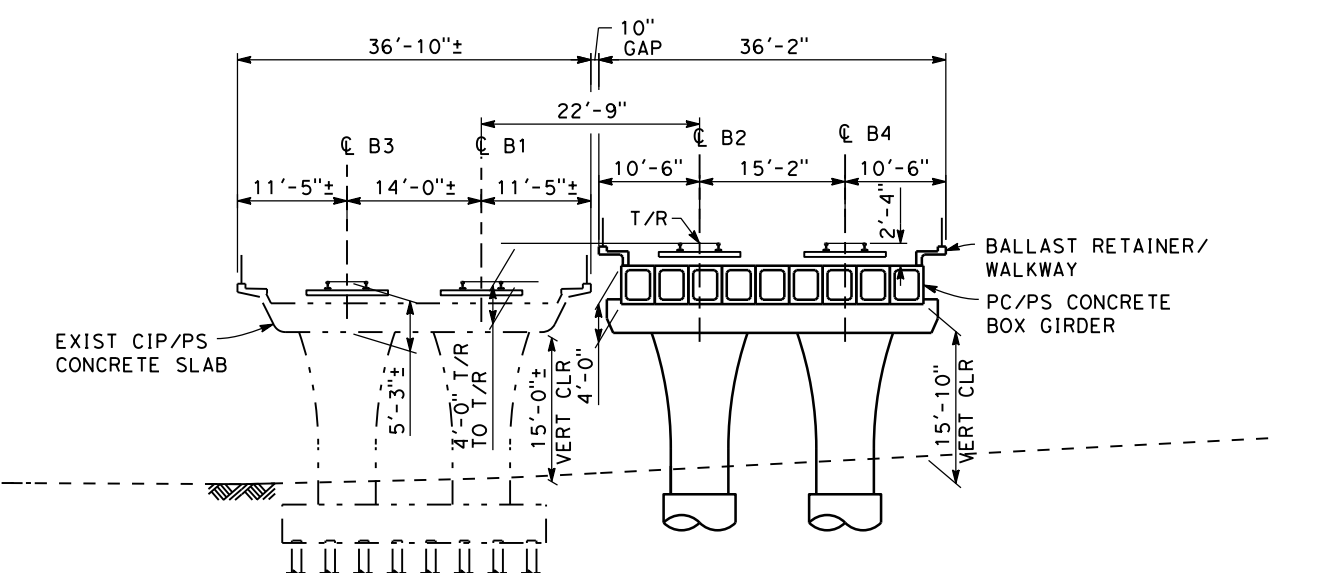
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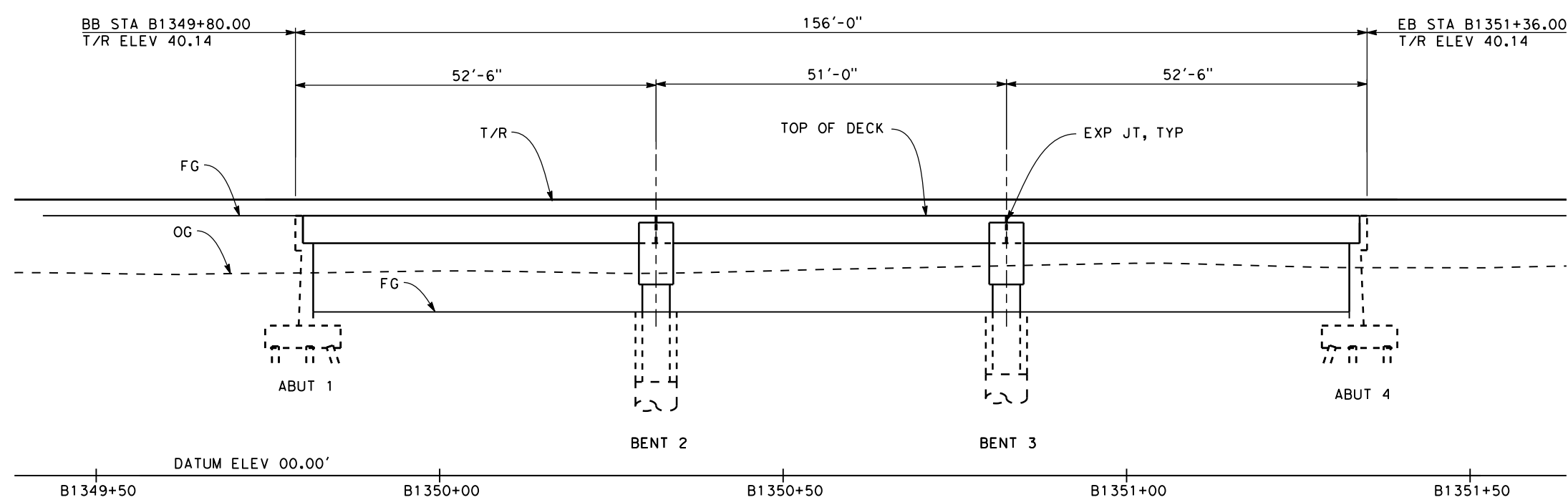
**SAN CARLOS STATION  
SECTION AT BENT 2**  
SCALE: 1" = 20'



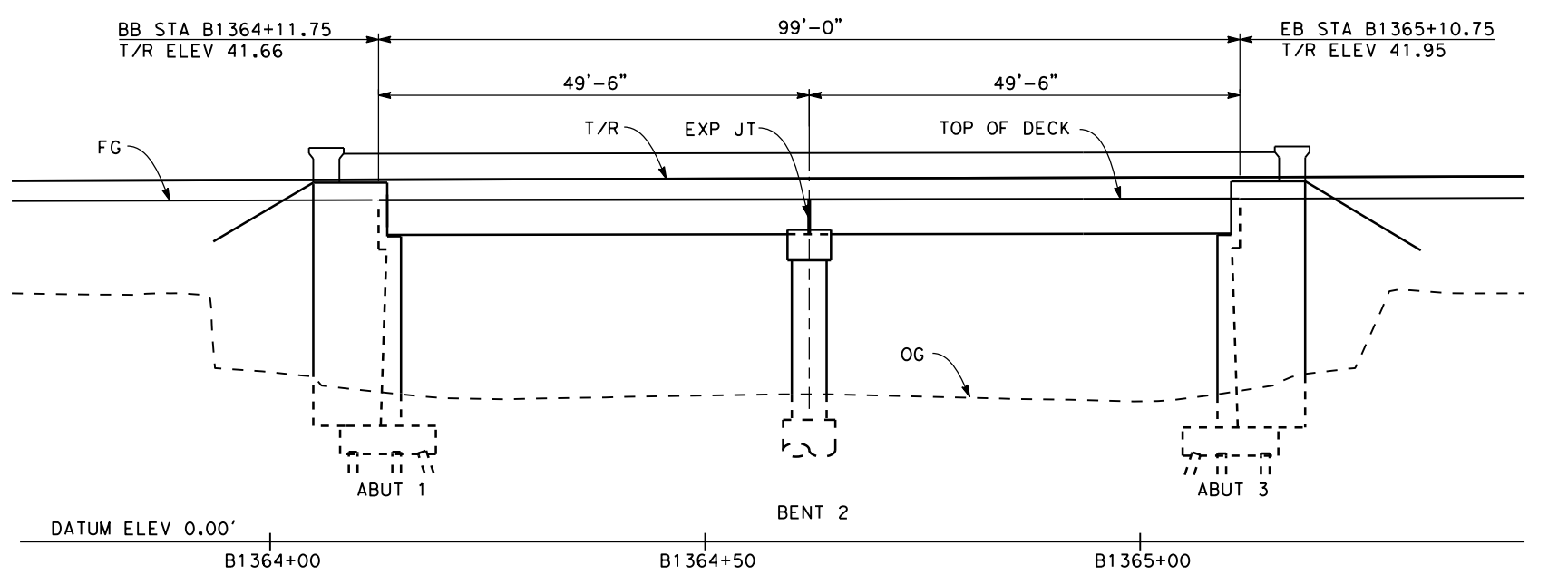
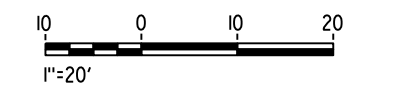
**BRITTAN AVENUE  
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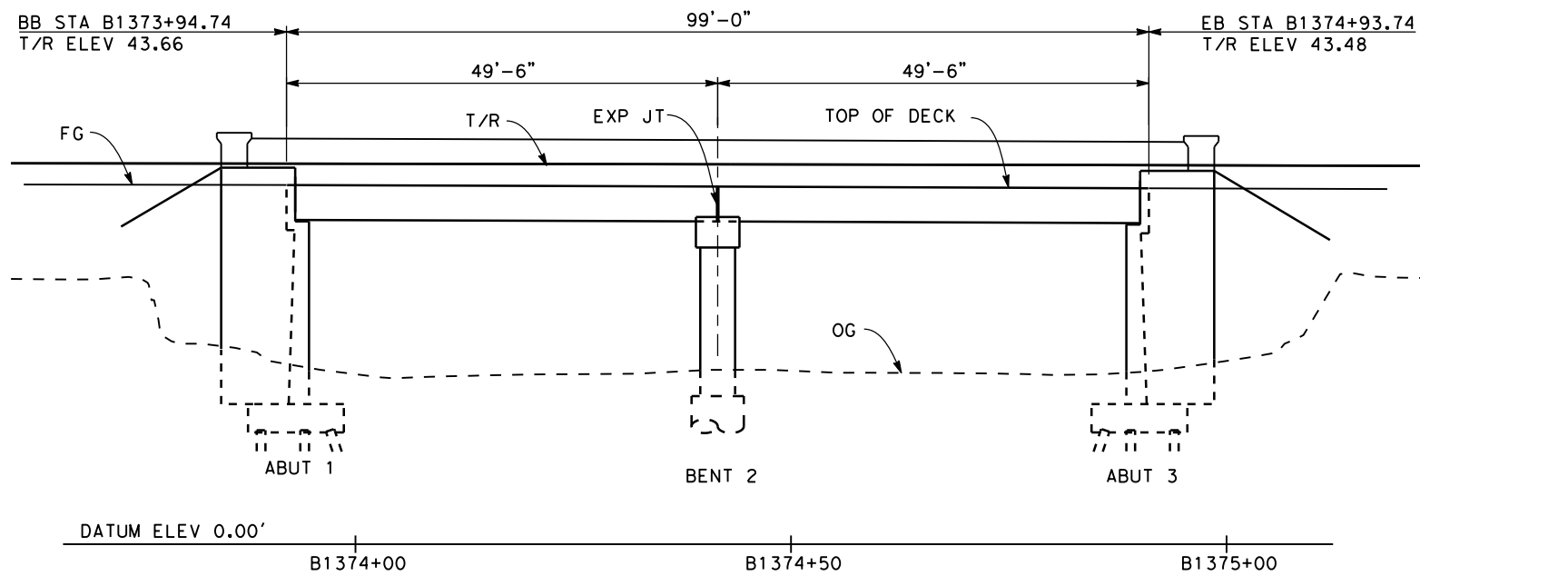
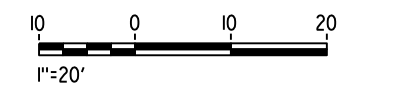
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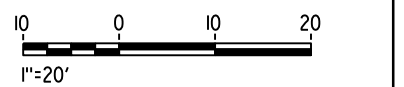
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SCALE: 1" = 20'**



**ELEVATION  
SCALE: 1" = 20'**



**ELEVATION  
SCALE: 1" = 20'**



**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III  
ALTERNATIVE B  
BOOK B3  
SHEET 48 OF 142**

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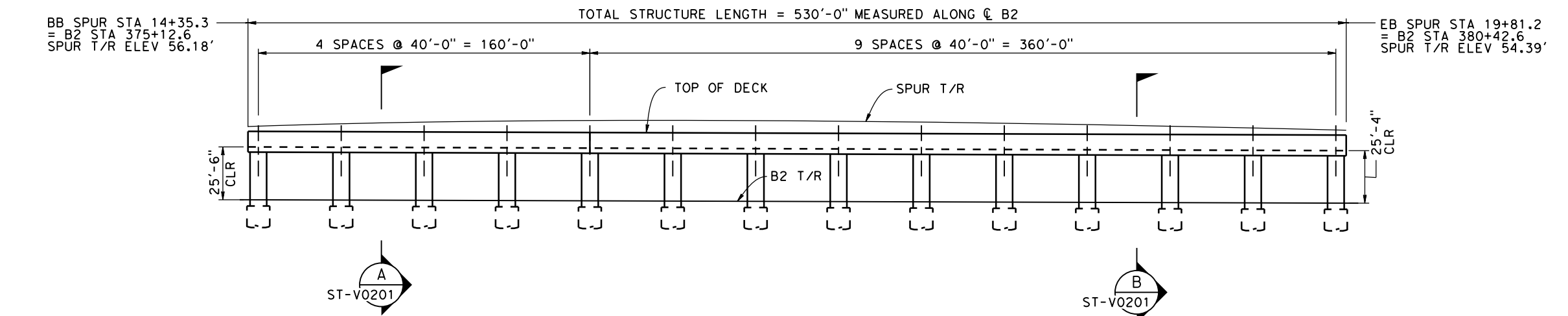


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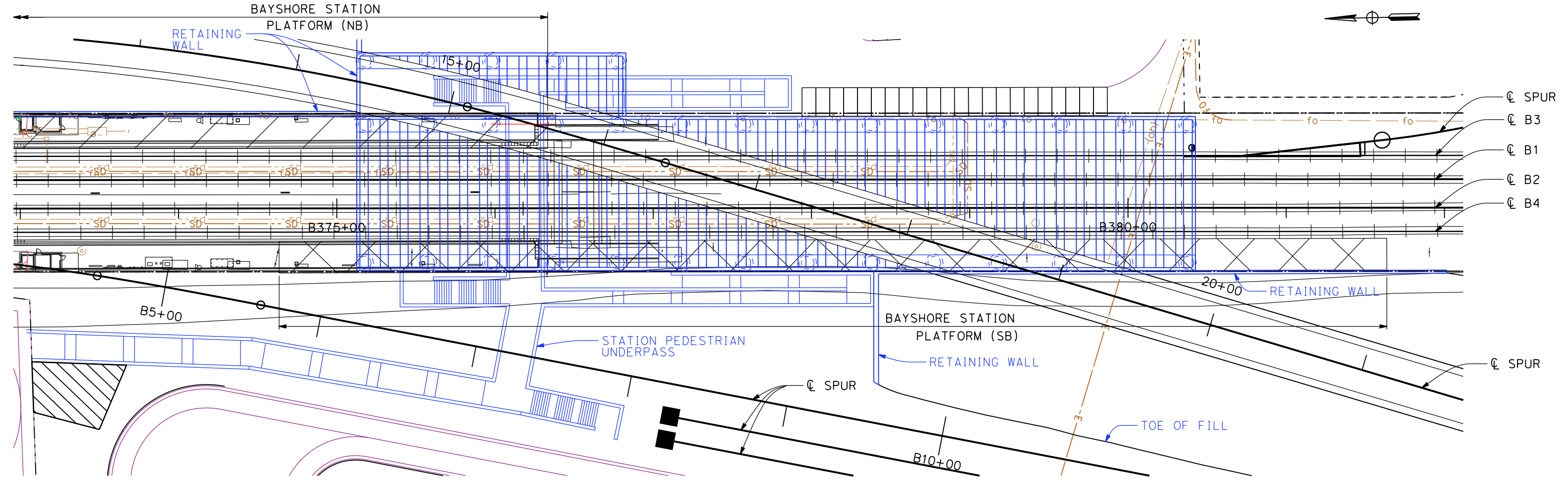


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
SAN FRANCISCO TO SAN JOSE**  
ALTERNATIVE B  
OVERPASSES AND UNDERPASSES  
SHEET 4 OF 4

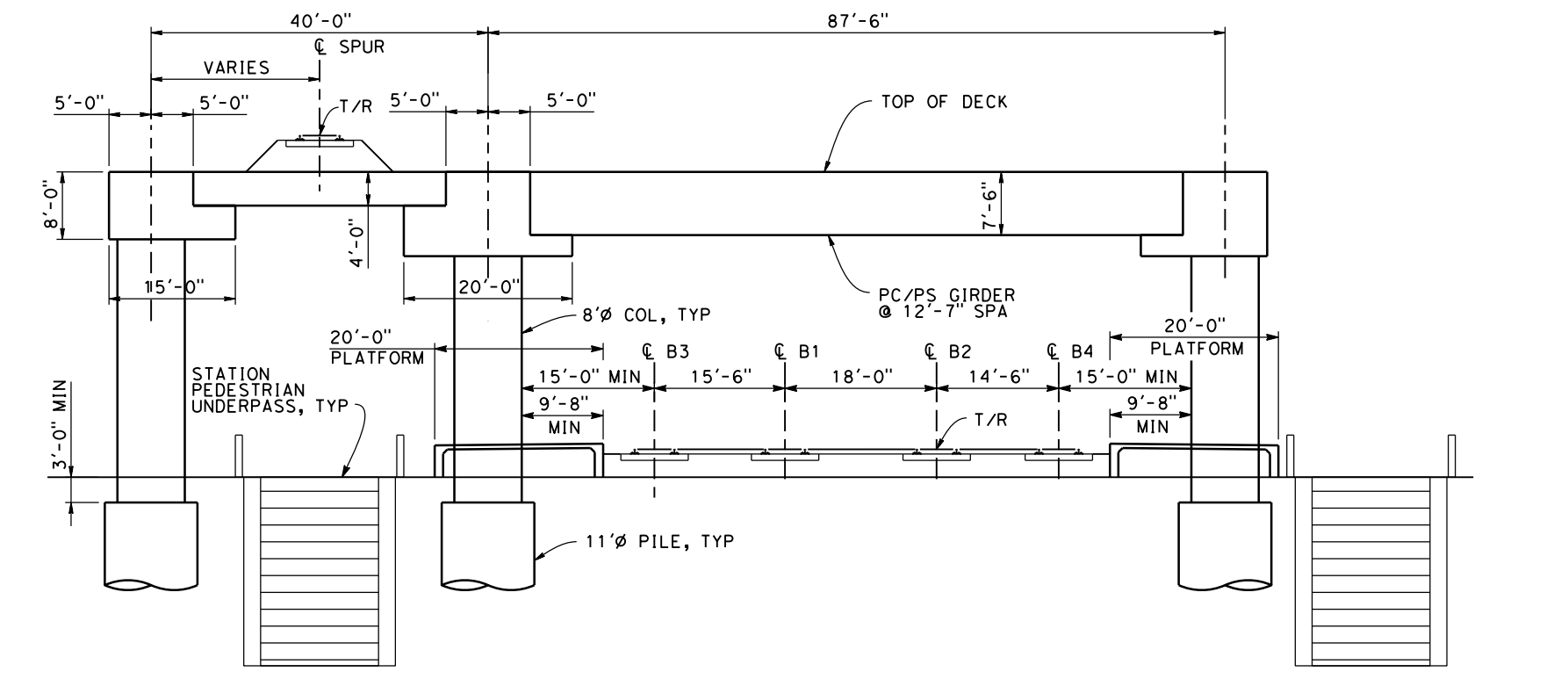
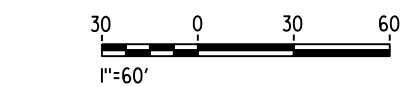
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HSR15-34  
DRAWING NO.  
ST-T0204  
SCALE  
AS SHOWN  
SHEET NO.



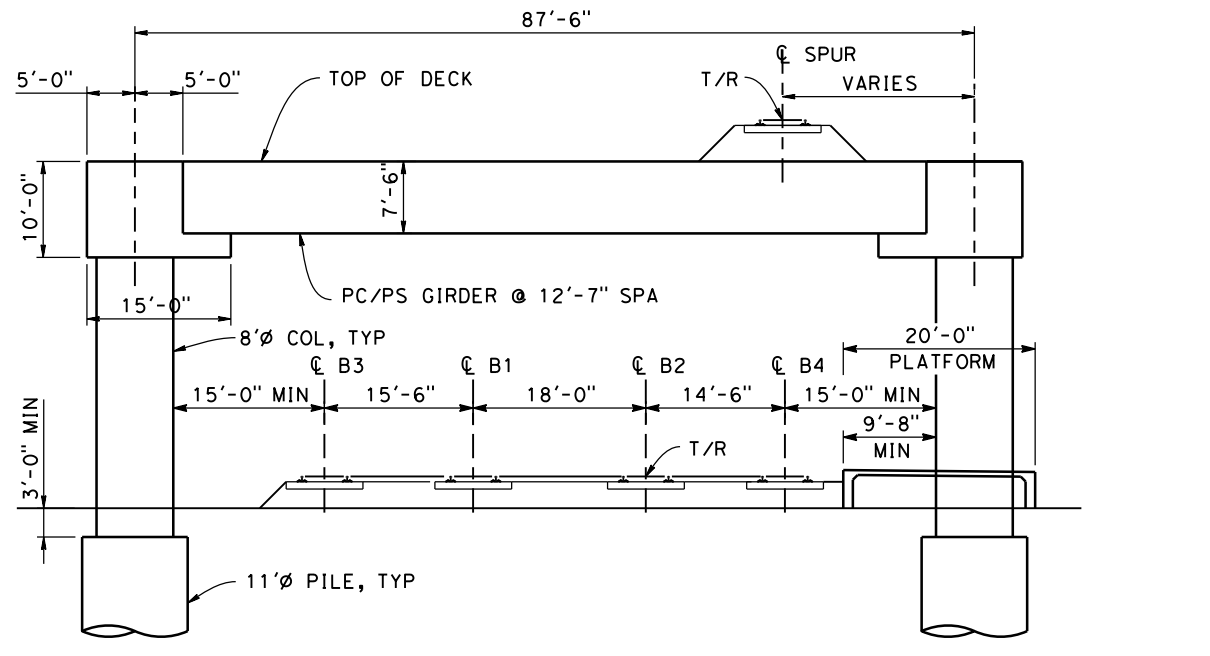
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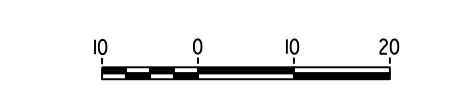
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**SECTION A**  
SCALE 1" = 20'



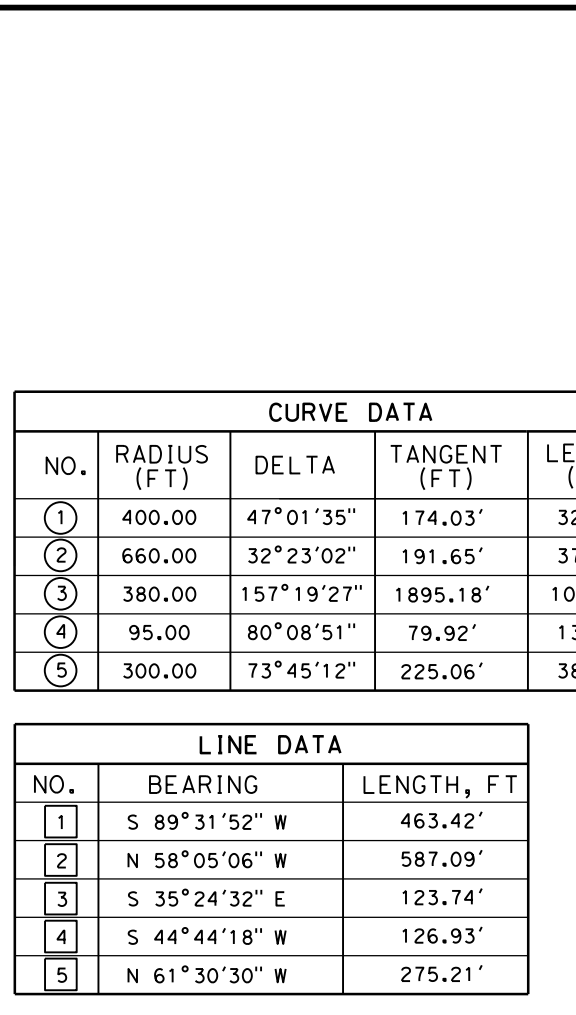
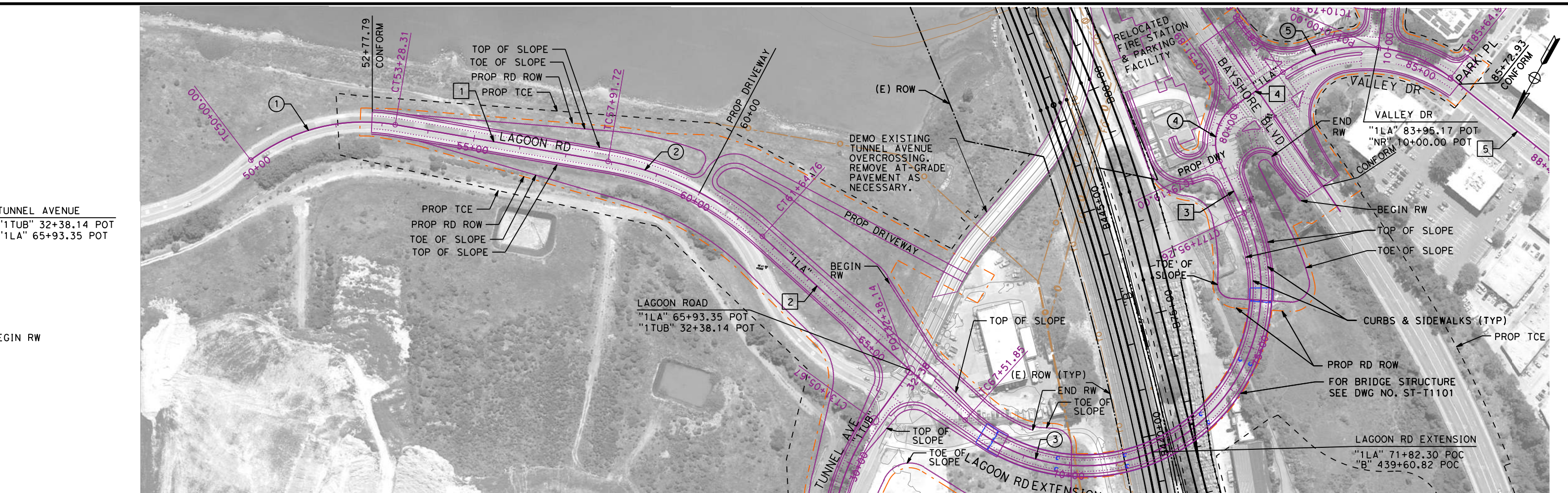
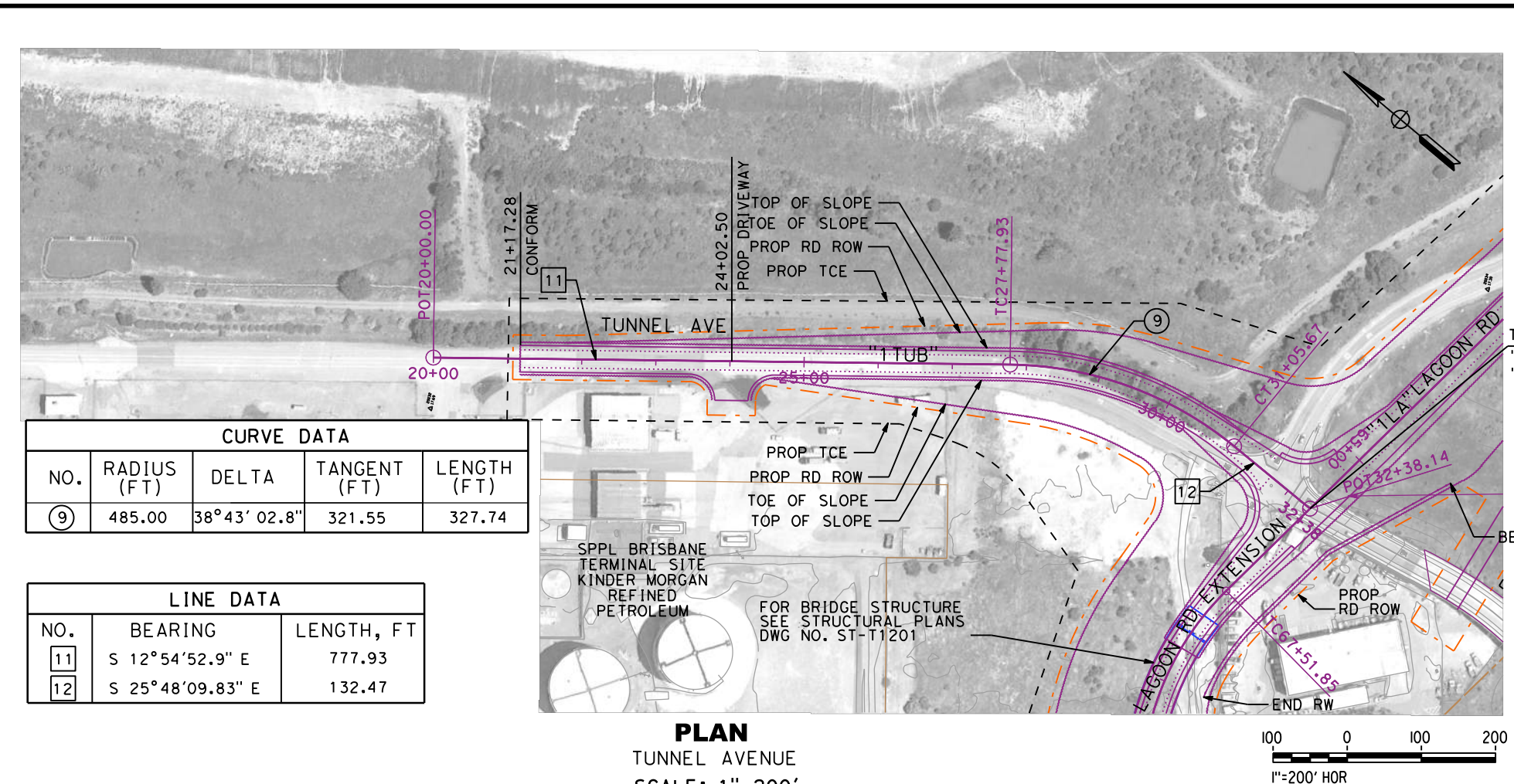
**SECTION B**  
SCALE 1" = 20'



**NOTE:**  
1. REFER TO GENERAL NOTES DRAWING NO. GE-B0101 FOR NOTES.

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 49 OF 142**

RECORD PERM SUBMITTAL APRIL 11, 2019 NOT FOR CONSTRUCTION		1111 Broadway 9th Floor Oakland, CA 94607		<b>CALIFORNIA HIGH-SPEED TRAIN PROJECT</b> <b>SAN FRANCISCO TO SAN JOSE</b> ALTERNATIVE B COMPLEX STRUCTURES LMF LEAD TRACK PERGOLA GENERAL PLAN	CONTRACT NO. HSR15-34 DRAWING NO. ST-V0201 SCALE AS SHOWN SHEET NO.
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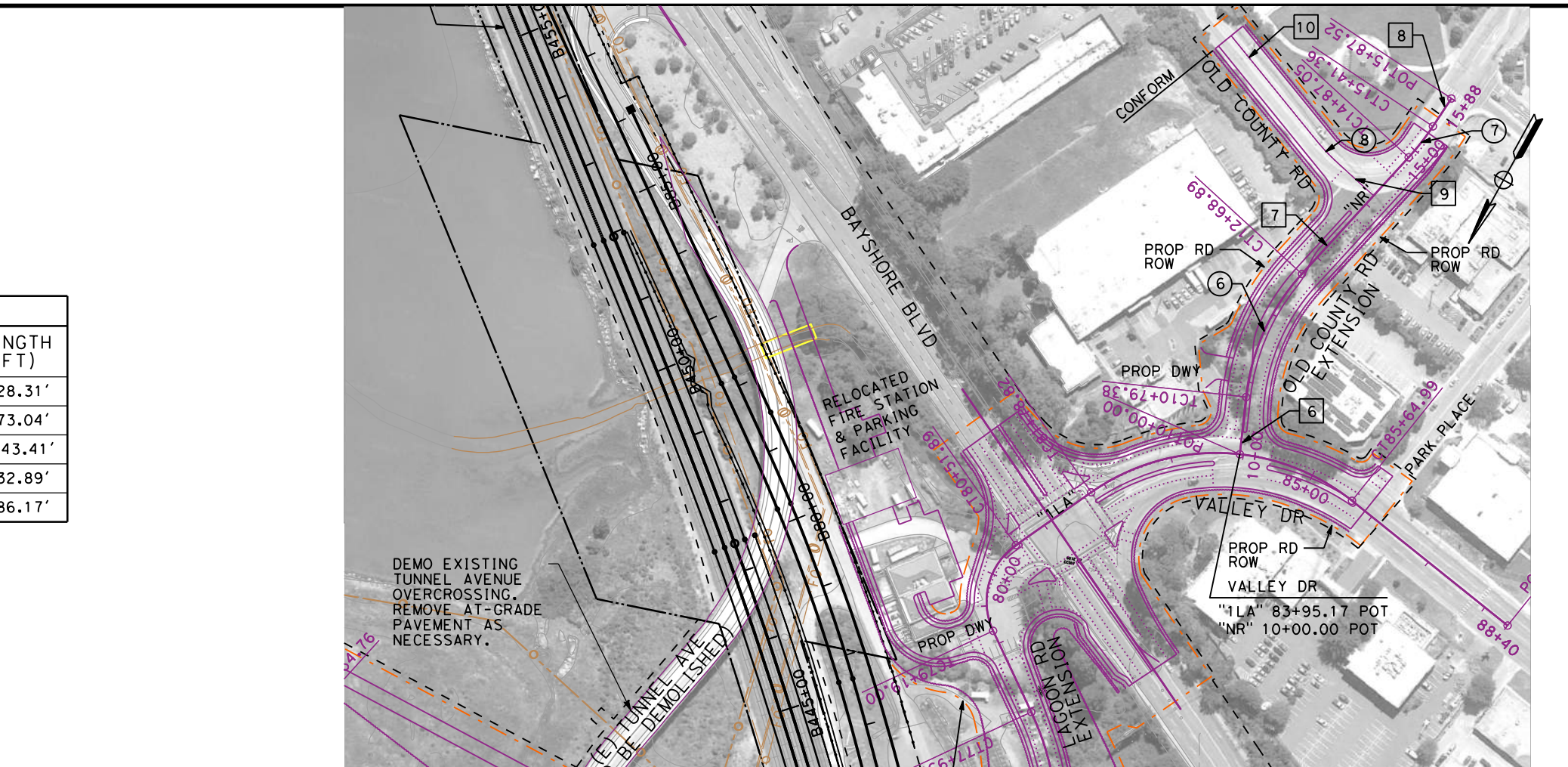
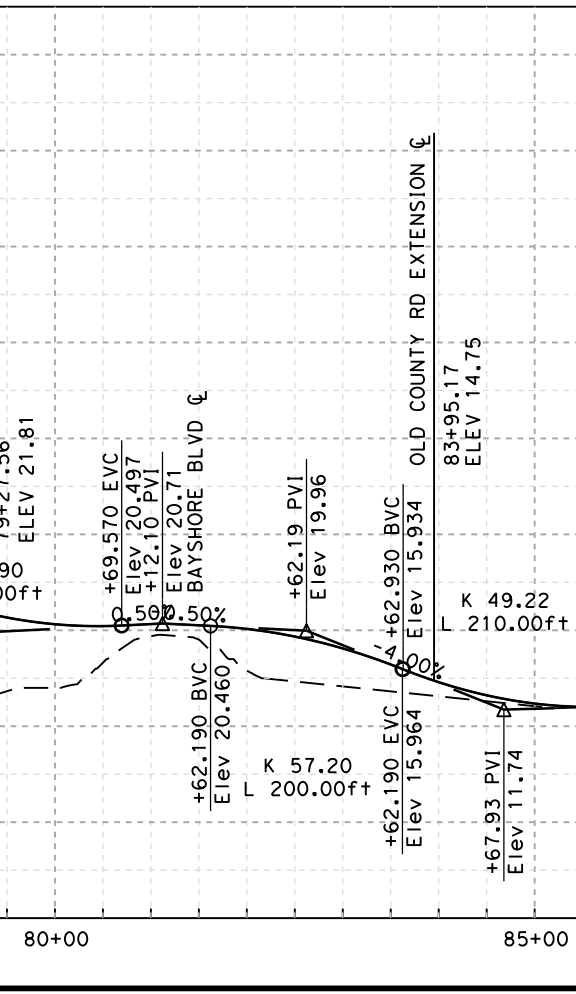
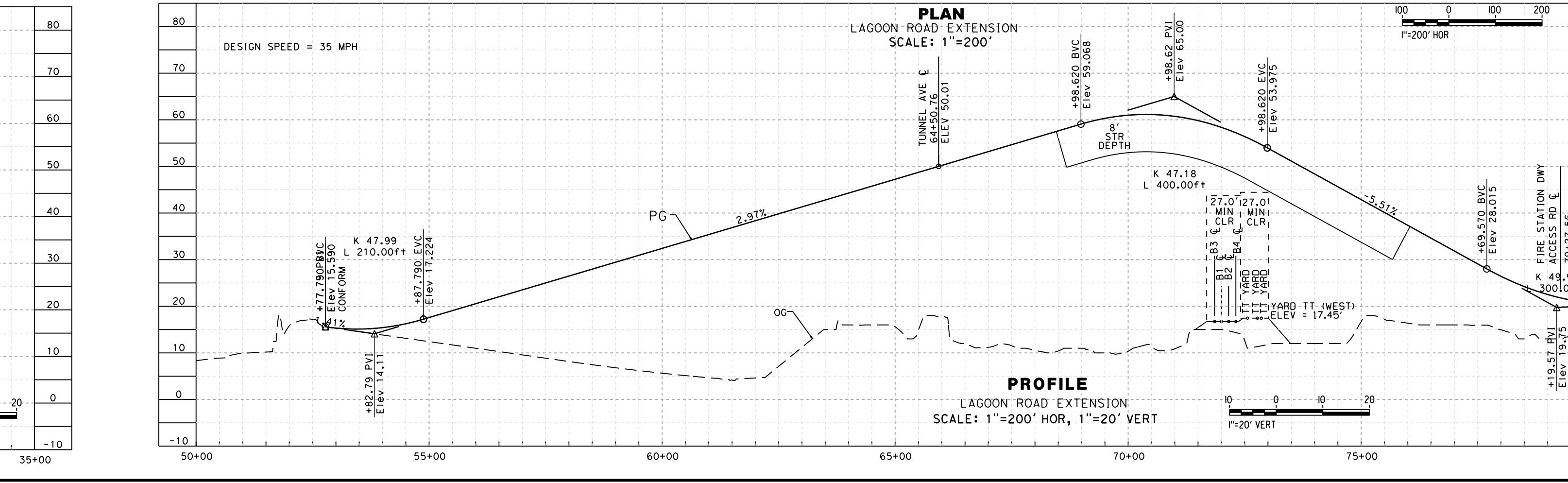
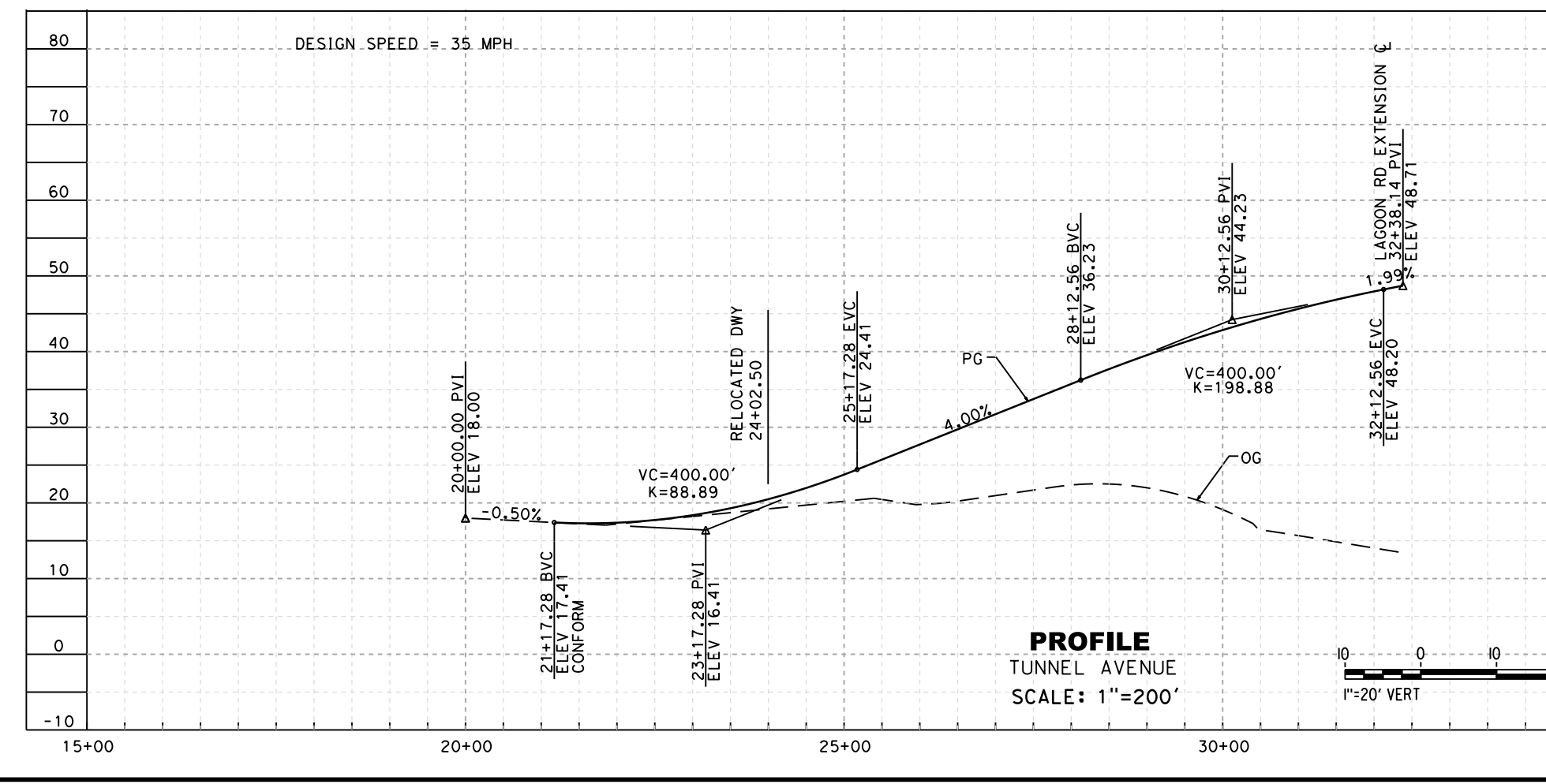


**CURVE DATA**

NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
1	400.00	47°01'35"	174.03	328.31
2	660.00	32°23'02"	191.65	373.04
3	380.00	157°19'27"	1895.18	1043.41
4	95.00	80°08'51"	79.92	132.89
5	300.00	73°45'12"	225.06	386.17

**LINE DATA**

NO.	BEARING	LENGTH, FT
1	S 89°31'52" W	463.42
2	N 58°05'06" W	587.09
3	S 35°24'32" E	123.74
4	S 44°44'18" W	126.93
5	N 61°30'30" W	275.21

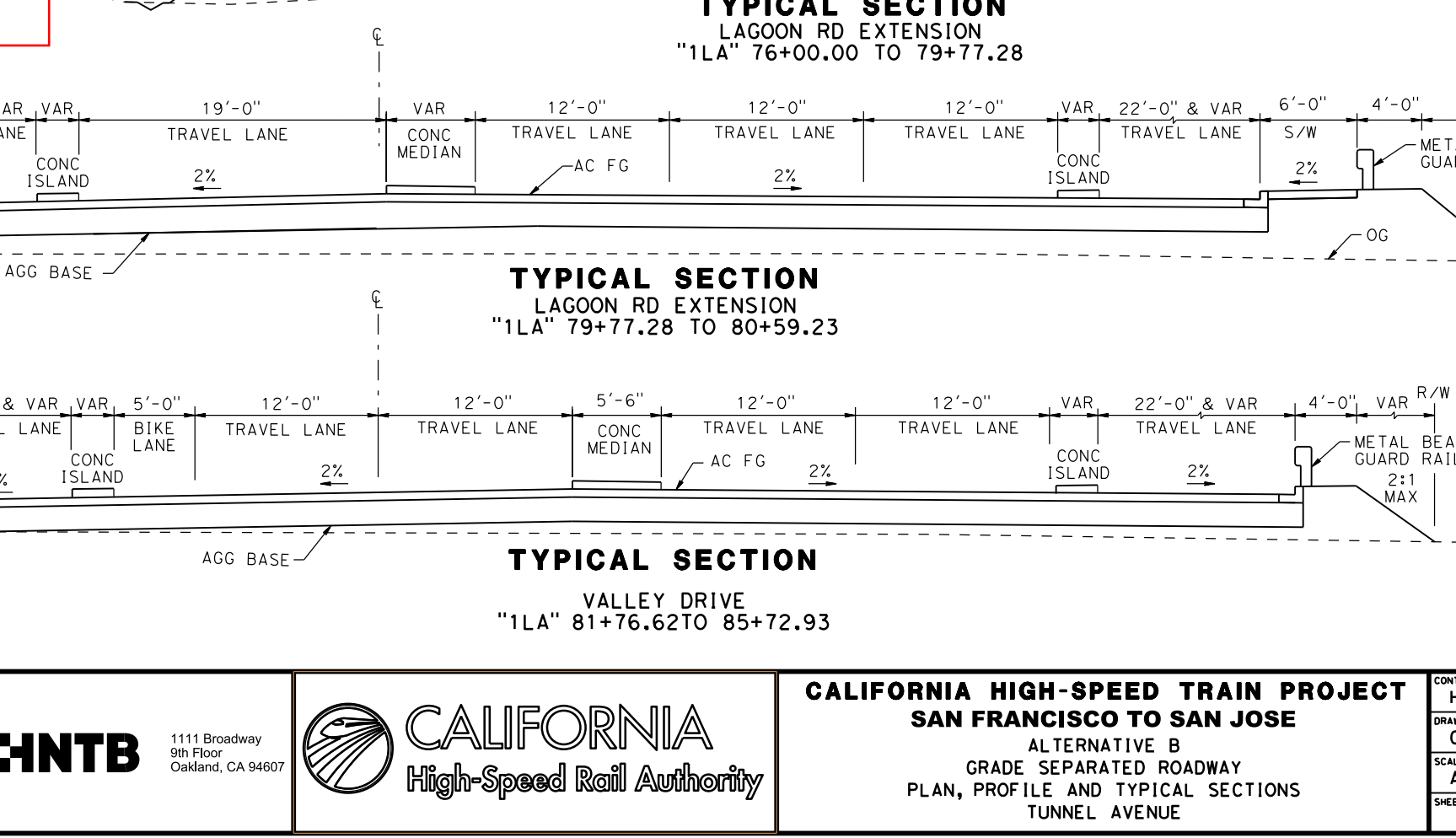
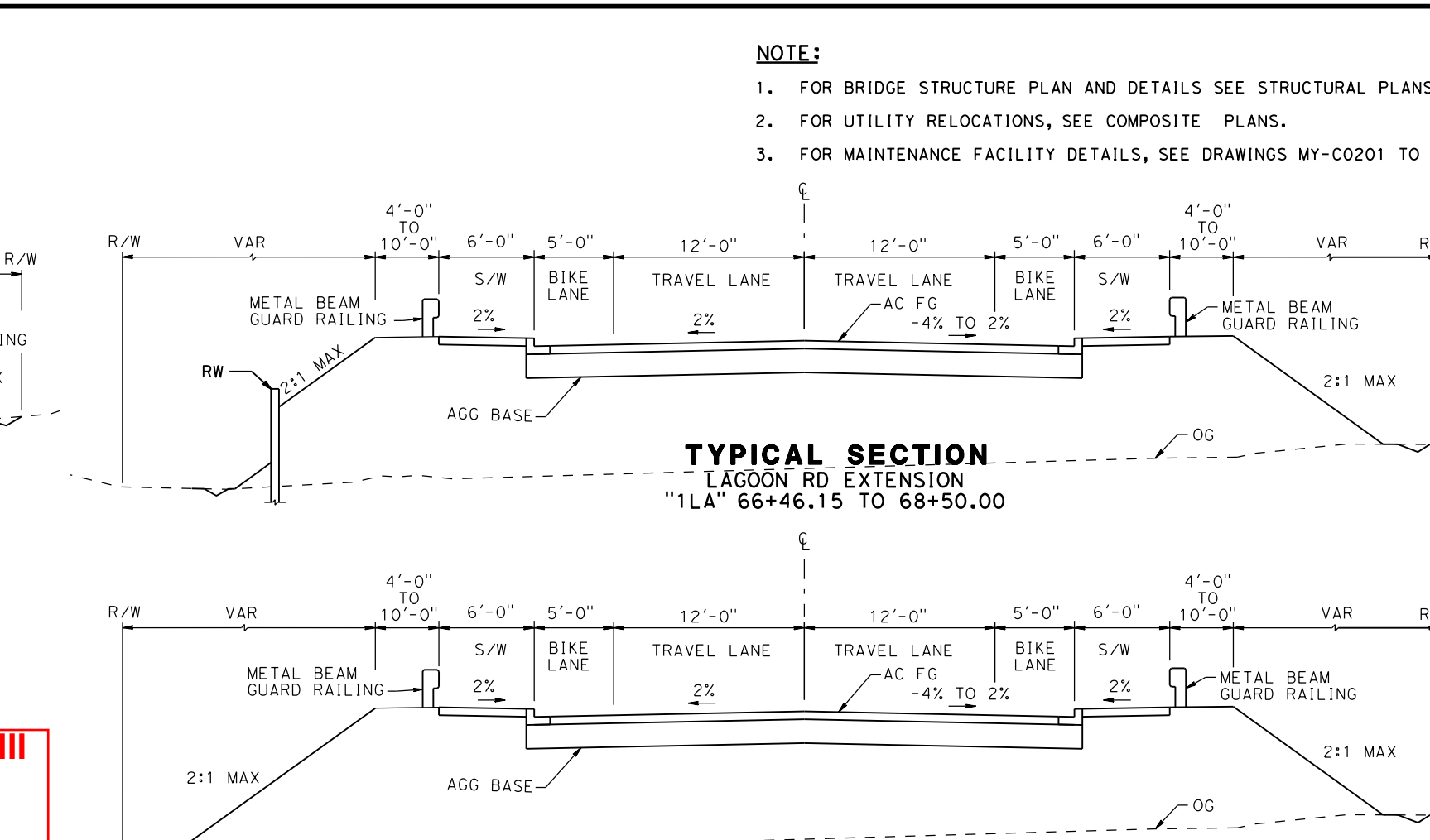
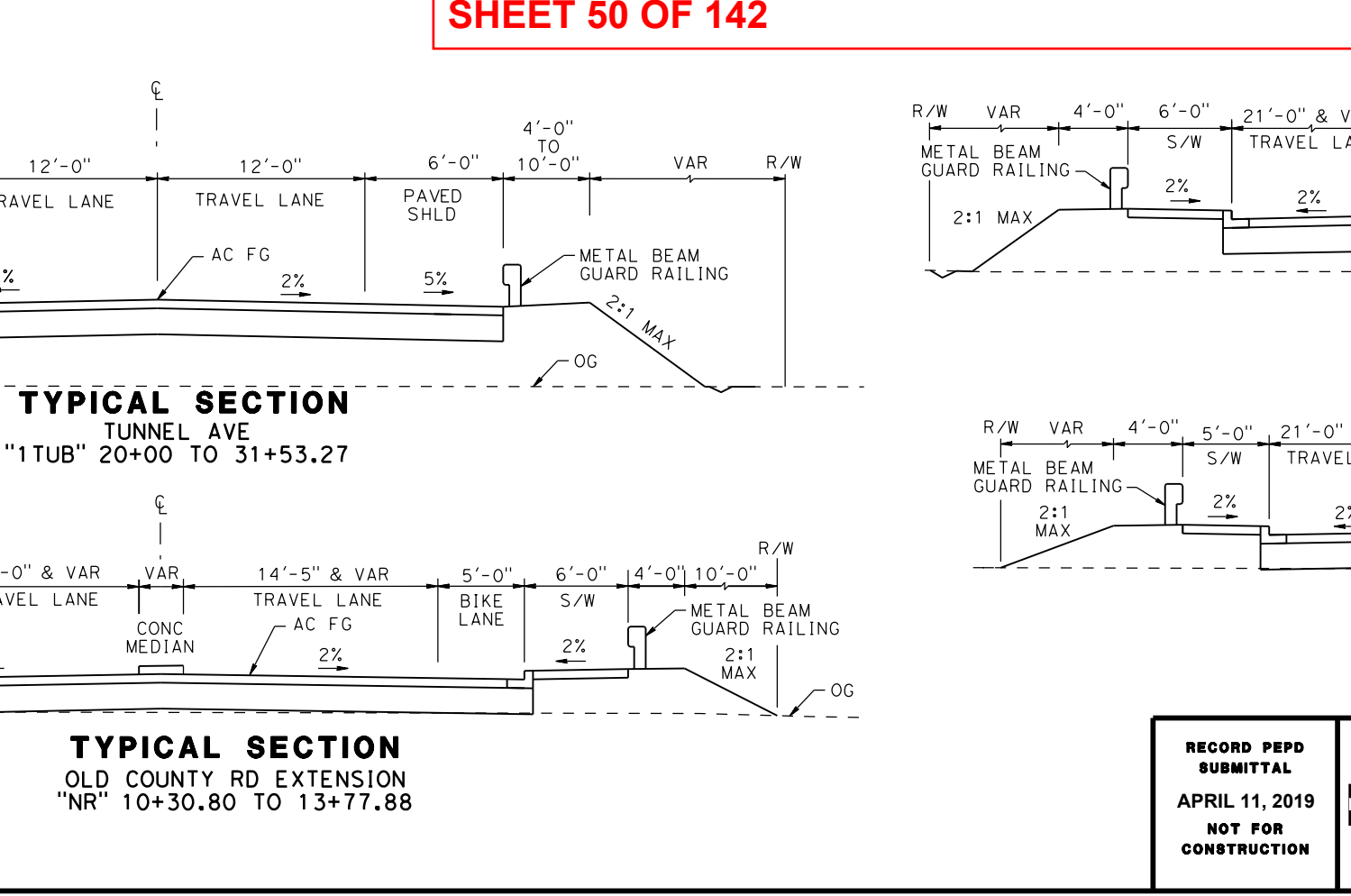
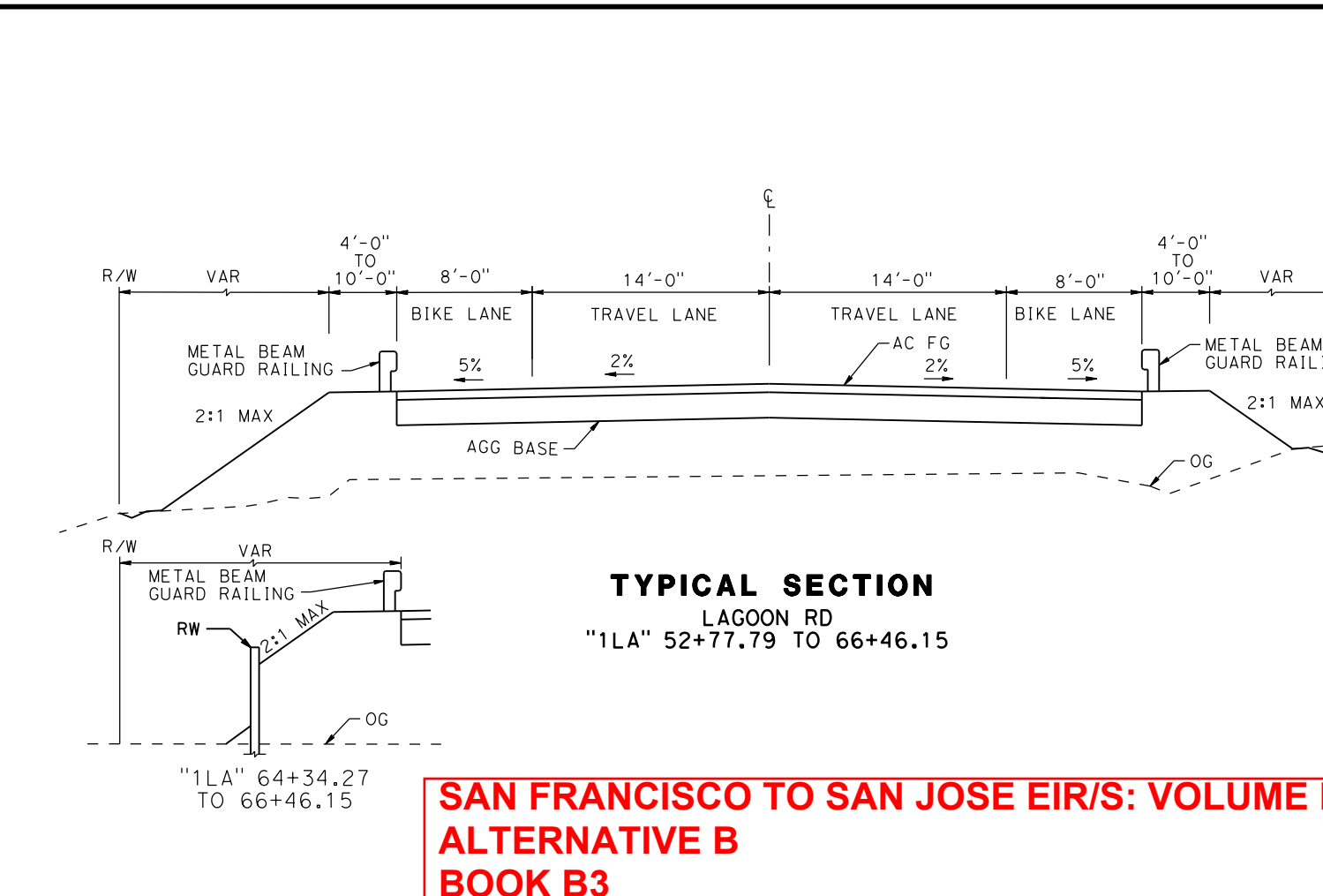
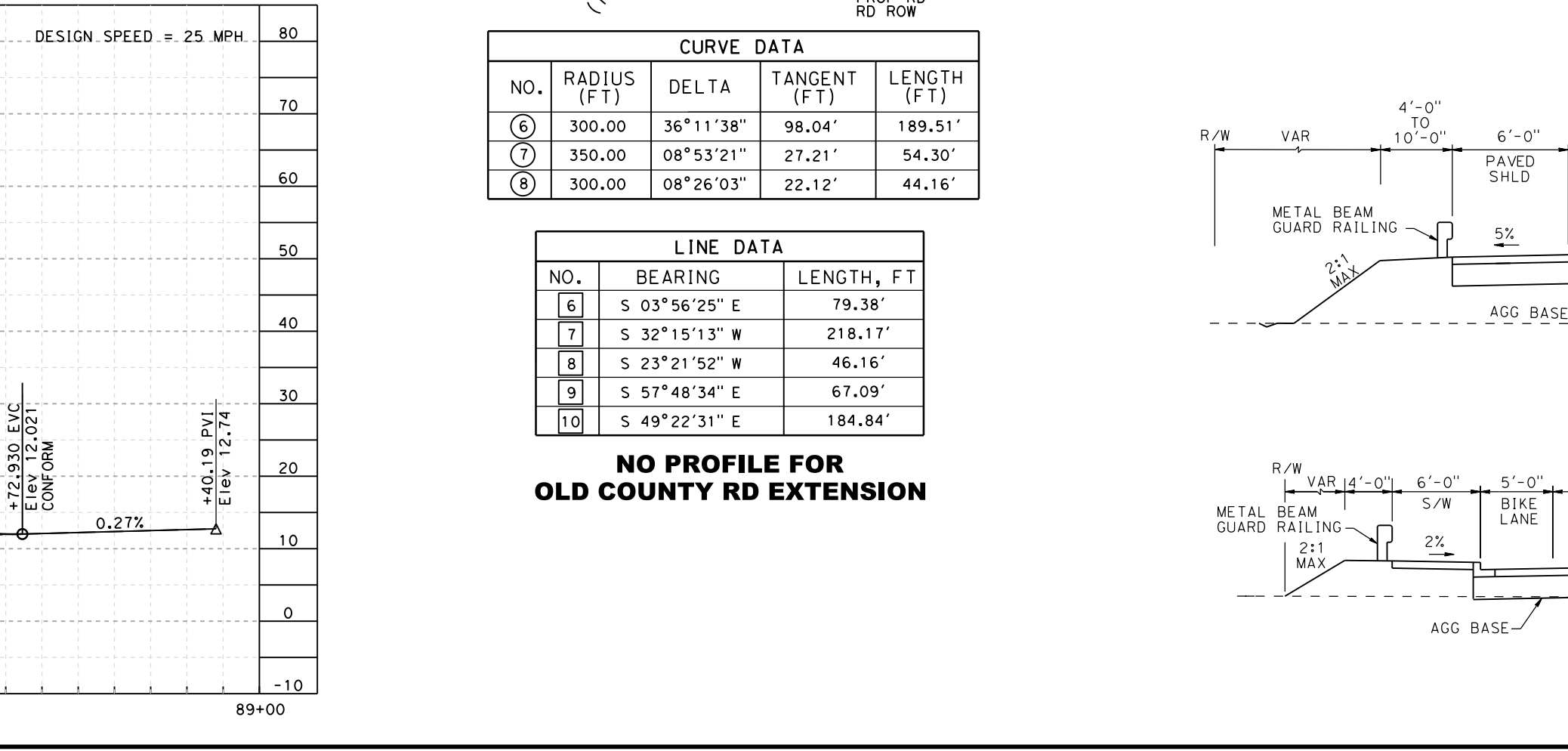


**CURVE DATA**

NO.	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
6	300.00	36°11'38"	98.04	189.51
7	350.00	08°53'21"	27.21	54.30
8	300.00	08°26'03"	22.12	44.16

**LINE DATA**

NO.	BEARING	LENGTH, FT
6	S 03°56'25" E	79.38
7	S 32°15'13" W	218.17
8	S 23°21'52" W	46.16
9	S 57°48'34" E	67.09
10	S 49°22'31" E	184.84



- NOTE:**
1. FOR BRIDGE STRUCTURE PLAN AND DETAILS SEE STRUCTURAL PLANS.
  2. FOR UTILITY RELOCATIONS, SEE COMPOSITE PLANS.
  3. FOR MAINTENANCE FACILITY DETAILS, SEE DRAWINGS MY-C0201 TO MY-C0207.

**SAN FRANCISCO TO SAN JOSE EIR/S: VOLUME III**  
**ALTERNATIVE B**  
**BOOK B3**  
**SHEET 50 OF 142**