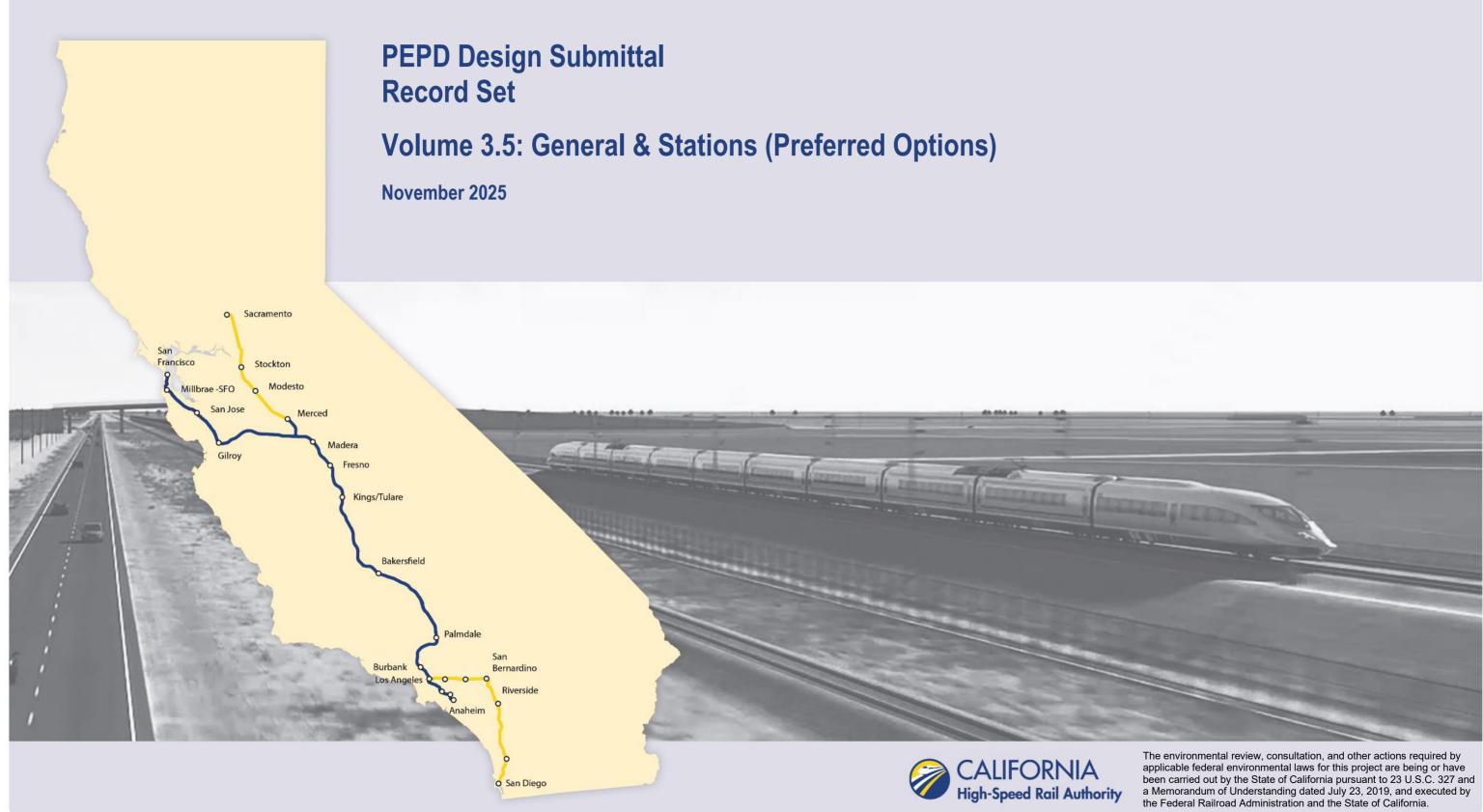
California High-Speed Rail Authority

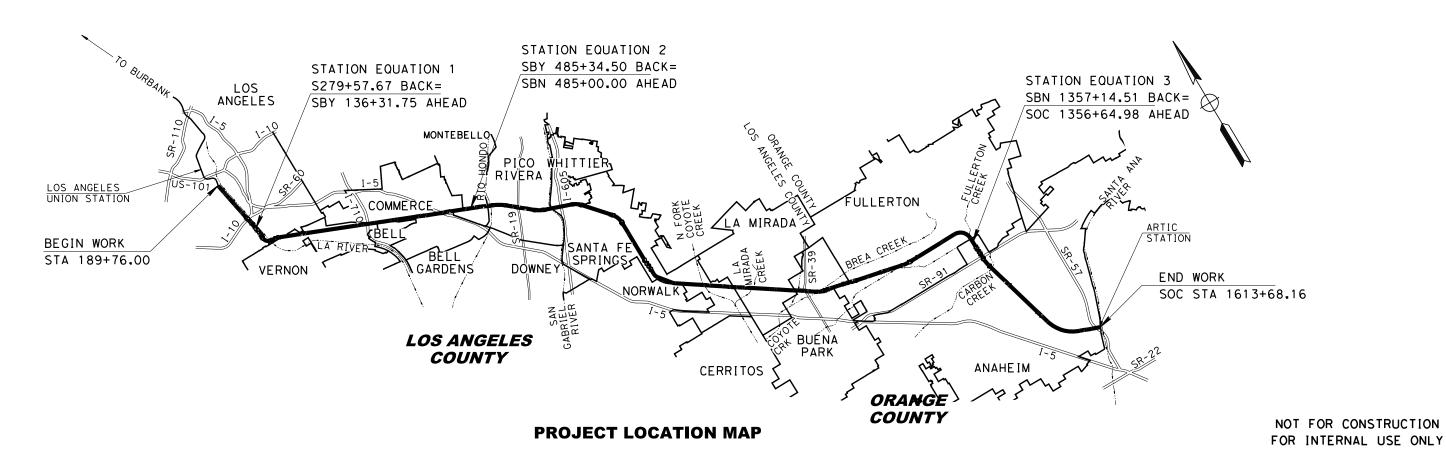
Los Angeles to Anaheim Project Section





PRELIMINARY ENGINEERING FOR PROJECT DEFINITION (PEPD) CALIFORNIA HIGH-SPEED TRAIN PROJECT TONGVA SUBDIVISION LOS ANGELES TO ANAHEIM VOLUME 3.5 GENERAL & STATIONS





| M. MAMAWAL | DRAWN BY | M. MAMAWAL | DRAWN BY | M. MAMAWAL | DRAWN BY | M. MAMAWAL | CHECKED BY | J. SWANSON | IN CHARGE | J. SWANSON | DATE | BY CHK APP | DESCRIPTION | DATE | DATE

PEPD SUBMITTAL FOR INTERNAL USE ONLY

USE ONLY

NOT FOR
CONSTRUCTION





CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PROJECT LOCATION MAP

CONTRACT NO.
HSR06-0005
DRAWING NO.
GE-A0501
SCALE
NO SCALE
A

PEPD INDEX OF VOLUMES

	T
VOLUME NO.	CONTENT
VOLUME 3.1	GENERAL
	TRACK ALIGNMENT
	RIGHT-OF-WAY IMPACT
VOLUME 3.2	GENERAL
	AERIAL STRUCTURES
	BRACED TRENCH
	RETAINING WALLS
VOLUME 3.3	GENERAL
	GRADE SEPARATIONS
VOLUME 3.3A	GENERAL
	STATE COLLEGE GRADE SEPARATION (BY OCTA)
VOLUME 3.4	GENERAL
	UTILITIES
	GRADING AND DRAINAGE
	TRACTION POWER FACILITY SITE
	COMMUNICATION SYSTEM SITE
VOLUME 3.5	GENERAL
	STATIONS

VOLUME NO.	CONTENT
VOLUME 3.6	15TH ST LIGHT MAINTENANCE FACILITY III & STATIONS (NON-PREFERRED OPTIONS)
	GENERAL
	TRACK ALIGNMENT
	RIGHT-OF-WAY IMPACT
	STATIONS
	GRADE SEPARATIONS
	ROADWAY WORK
	UTILITIES
VOLUME 3.7	NOT USED
VOLUME 3.8	GENERAL
	LINK UNION STATION (LINK US) BY LA METRO
	1

NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

						DESIGNED BY M. MAMAWAL
						DRAWN BY
						CHECKED BY
						J. SWANSON IN CHARGE
						J. SWANSON
REV	DATE	ВΥ	СНК	APP	DESCRIPTION	08/29/25

PEPD SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR
CONSTRUCTION





CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION INDEX OF VOLUMES

CONTRACT NO.
HSR06-0005

DRAWING NO.
GE-A0510

SCALE
AS SHOWN

VOLUME 3.5 - GENERAL & STATIONS

	GENERAL
DRAWING NO.	DRAWING TITLE
GE-A0500	COVER SHEET - VOLUME 3.5
GE-A0501	PROJECT LOCATION MAP
GE-A0510	INDEX OF VOLUMES
GE-A0511	INDEX OF DRAWINGS VOLUME 3.5 - SHEET 1 OF 1
GE-D0501	VOLUME 3.5 - KEY MAP SHEET 1 OF 3
GE-D0502	VOLUME 3.5 - KEY MAP SHEET 2 OF 3
GE-D0503	VOLUME 3.5 - KEY MAP SHEET 3 OF 3
GE-B0501	BASIS OF DESIGN SUMMARY
GE-C0501	ACRONYMS AND ABBREVIATIONS 1
GE-C0502	ACRONYMS AND ABBREVIATIONS 2
GE-C0503	ACRONYMS AND ABBREVIATIONS 3
GE-C0504	ACRONYMS AND ABBREVIATIONS 4
GE-C0505	ACRONYMS AND ABBREVIATIONS 5
GE-C0511	SYMBOLS 1
GE-C0512	SYMBOLS 2
GE-B0511	GENERAL NOTES 1 OF 1
GE-D6501	TRACK SCHEMATIC
GE-D6502	TRACK SCHEMATIC - 26TH STREET LMF III OPTION
	STATIONS
DRAWING NO.	DRAWING TITLE
AR-B0201	COMMERCE STATION - GENERAL SITE PLAN
AR-B0501	NORWALK / SANTA FE SPRINGS STATION - GENERAL SITE PLAN
AR-B0601	BUENA PARK STATION - GENERAL SITE PLAN

AR-Y9901 ANAHEIM STATION - PROGRAM TABLE SHEET 1 OF 3	STATIONS							
AR-Y9901 ANAHEIM STATION - PROGRAM TABLE SHEET 1 OF 3 AR-Y9902 ANAHEIM STATION - PROGRAM TABLE SHEET 2 OF 3 AR-Y9903 ANAHEIM STATION - PROGRAM TABLE SHEET 3 OF 3 AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8902 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3	DRAWING NO.	DRAWING TITLE						
AR-Y9901 ANAHEIM STATION - PROGRAM TABLE SHEET 1 OF 3 AR-Y9902 ANAHEIM STATION - PROGRAM TABLE SHEET 2 OF 3 AR-Y9903 ANAHEIM STATION - PROGRAM TABLE SHEET 3 OF 3 AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8902 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-Y9902 ANAHEIM STATION - PROGRAM TABLE SHEET 2 OF 3 AR-Y9903 ANAHEIM STATION - PROGRAM TABLE SHEET 3 OF 3 AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3	AR-B0701	FULLERTON STATION - GENERAL SITE PLAN						
AR-Y9902 ANAHEIM STATION - PROGRAM TABLE SHEET 2 OF 3 AR-Y9903 ANAHEIM STATION - PROGRAM TABLE SHEET 3 OF 3 AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-Y9902 ANAHEIM STATION - PROGRAM TABLE SHEET 2 OF 3 AR-Y9903 ANAHEIM STATION - PROGRAM TABLE SHEET 3 OF 3 AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-Y9903 ANAHEIM STATION - PROGRAM TABLE SHEET 3 OF 3 AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3	AR-Y9901	ANAHEIM STATION - PROGRAM TABLE SHEET 1 OF 3						
AR-B0901 ANAHEIM STATION - GENERAL SITE PLAN AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3	AR-Y9902							
AC-C1901 ANAHEIM STATION - DETAILED SITE PLAN AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-J3901 ANAHEIM STATION - CROSS SECTION AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-J8901 ANAHEIM STATION - MASSING MODEL 1 OF 3 AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-J8902 ANAHEIM STATION - MASSING MODEL 2 OF 3								
AR-J8903 ANAHEIM STATION - MASSING MODEL 3 OF 3								
	AR-J8903	ANAHEIM STATION - MASSING MODEL 3 OF 3						

NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

			J. SWANSON IN CHARGE J. SWANSON
			CHECKED BY J. SWANSON
			DRAWN BY
			DESIGNED BY M. MAMAWAL

PEPD SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR CONSTRUCTION

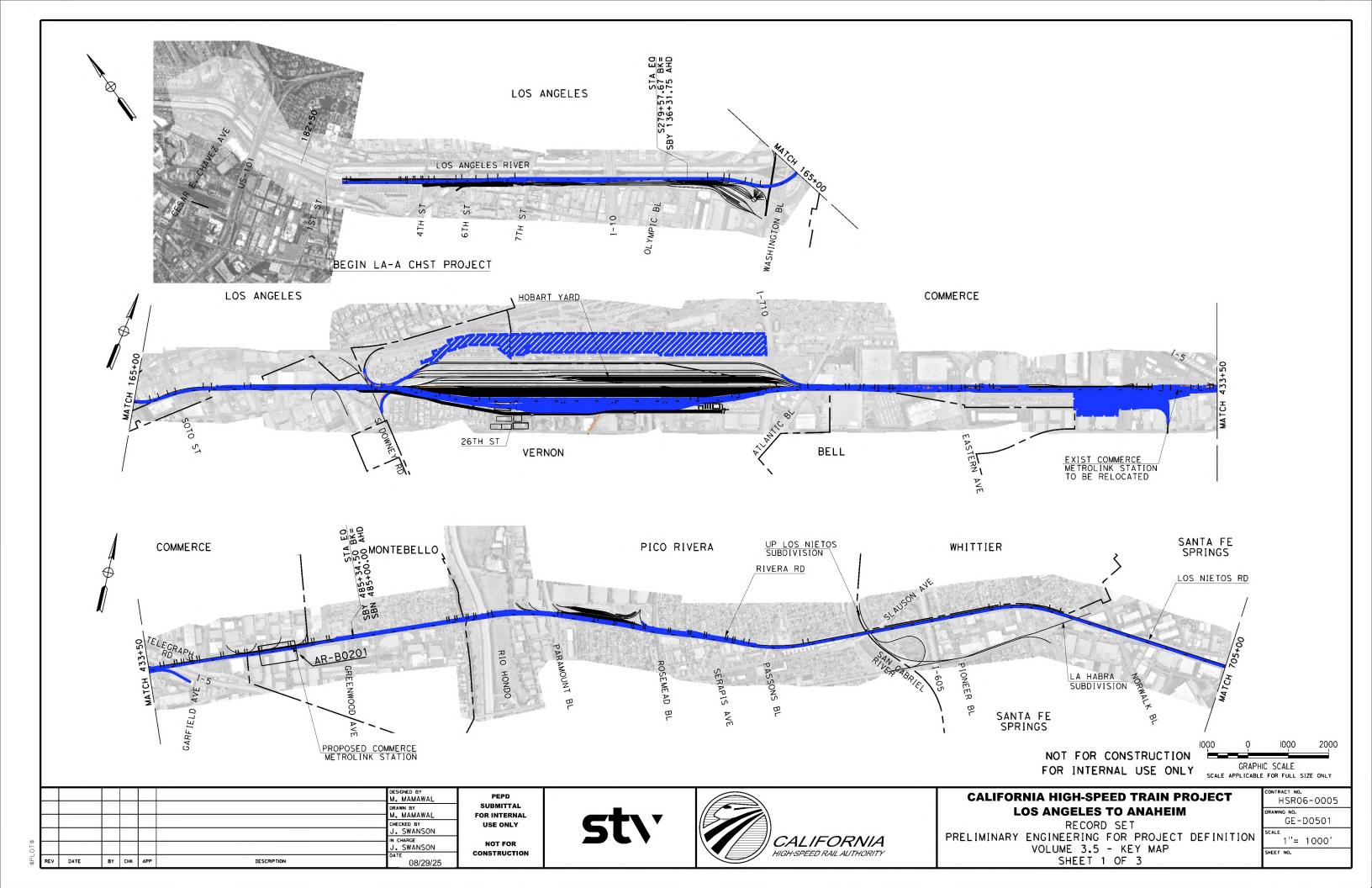
stv

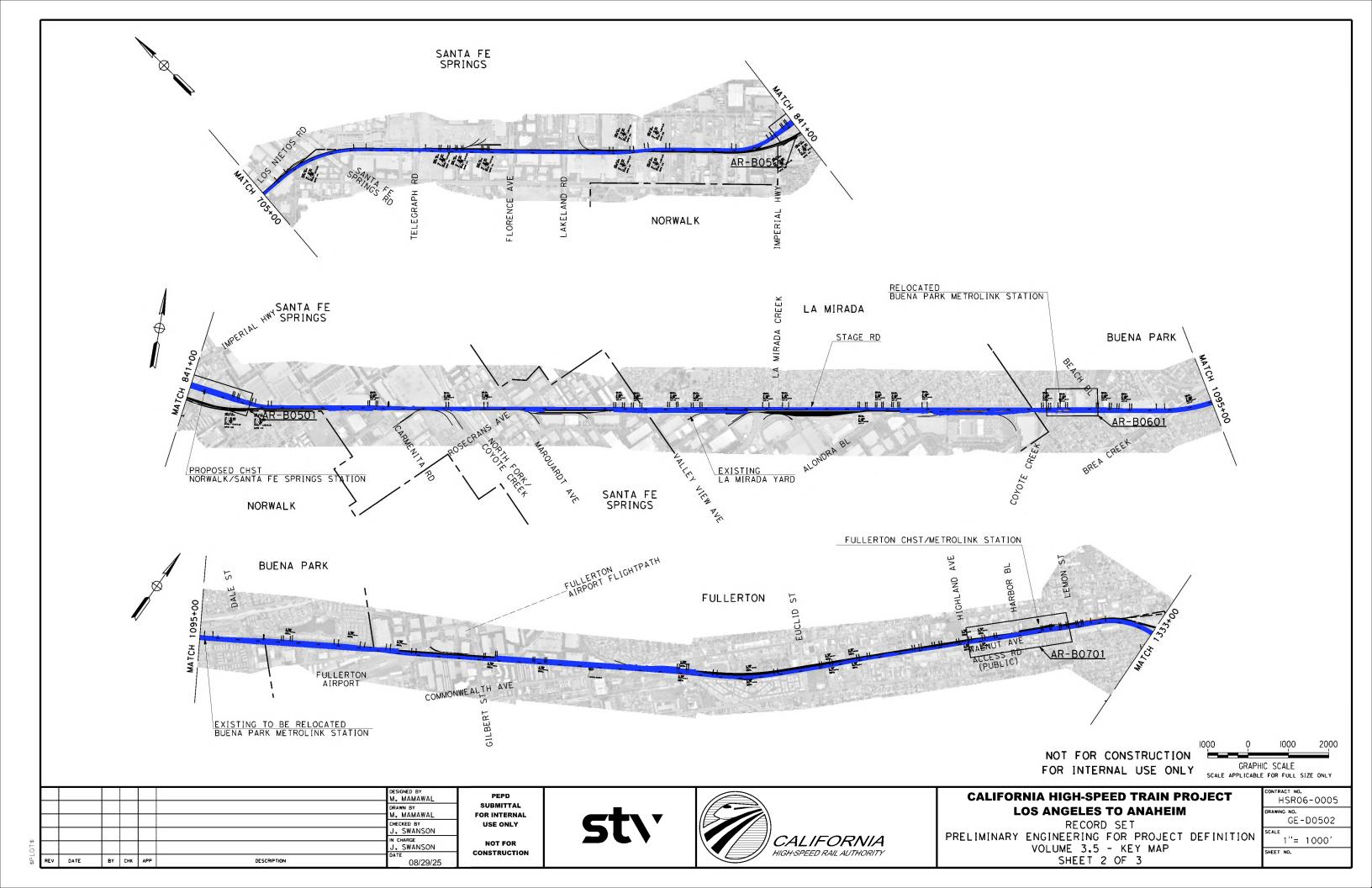


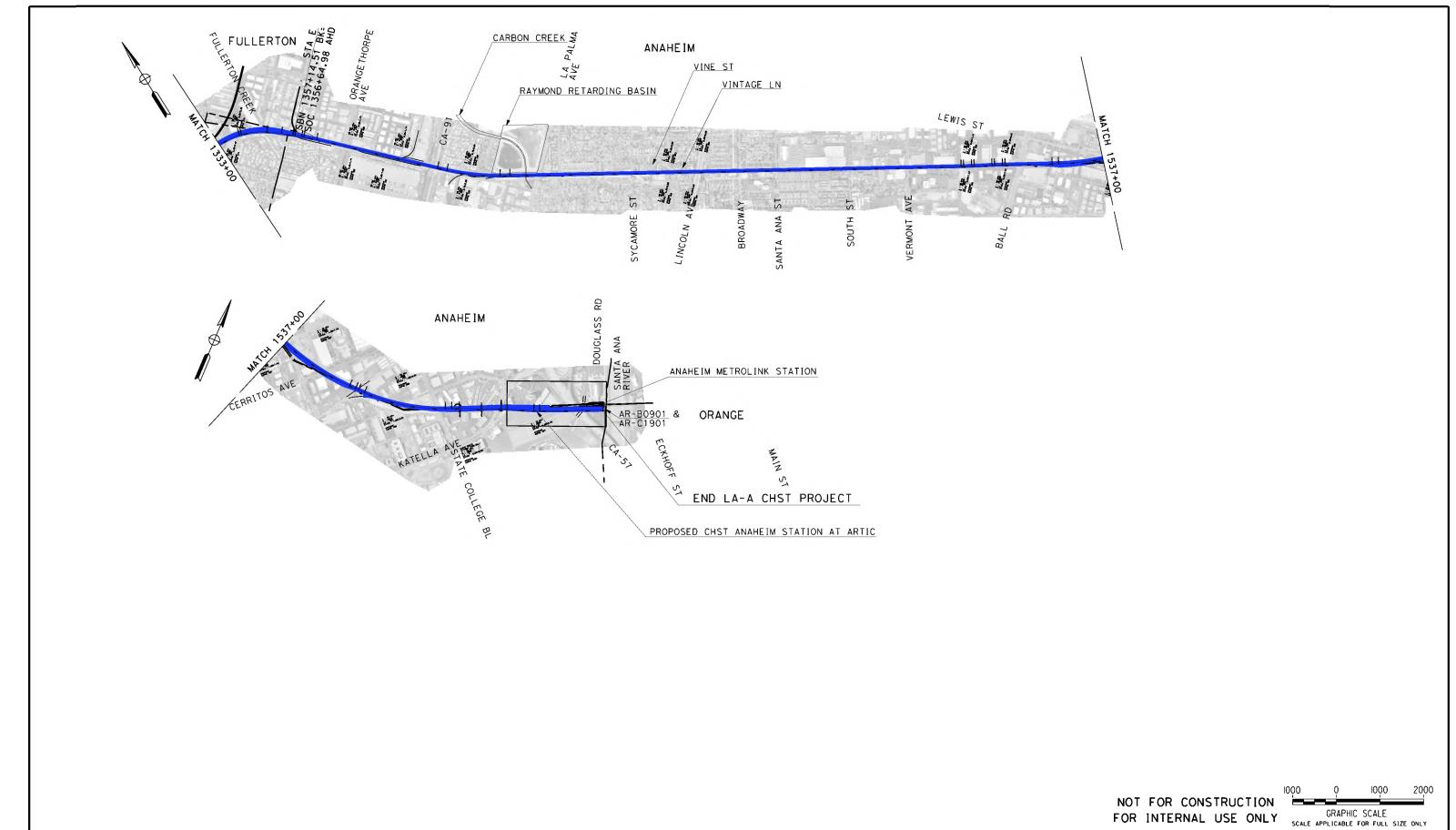
CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
INDEX OF DRAWINGS
VOLUME 3.5 - SHEET 1 OF 1

CONTRACT NO.
HSR06-0005
DRAWING NO.
GE-A0511
SCALE
AS SHOWN
CHEET NO







SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR CONSTRUCTION





CALIFORNIA HIGH-SPEED TRAIN PROJECT

LOS ANGELES TO ANAHEIM

RECORD SET

PRELIMINARY ENGINEERING FOR PROJECT DEFINITION

VOLUME 3.5 - KEY MAP

SHEET 3 OF 3

ADLI	TON FOLE SIZE ONET								
	CONTRACT NO.								
	HSR06-0005								
	DRAWING NO.								
	GE-D0503								
	SCALE								
N	1"= 1000'								
	SHEET NO.								

FOR THE LOS ANGELES TO ANAHEIM SEGMENT (LOSSAN CORRIDOR), THE CALIFORNIA HIGH-SPEED RAIL AUTHORITY (AUTHORITY) HAS ADOPTED A STRATEGY TO 'BLEND' HIGH SPEED WITH EXISTING RAIL SYSTEMS ON SHARED INFRASTRUCTURE TO ACCELERATE AND BROADEN BENEFITS, IMPROVE EFFICIENCY, MINIMIZE COMMUNITY IMPACTS AND REDUCE CONSTRUCTION COST. THE TECHNICAL REQUIREMENTS NECESSARY TO ALLOW JOINT OPERATION OF HIGH-SPEED RAIL, CONVENTIONAL PASSENGER RAIL, AND FREIGHT RAIL WITHIN THE BLENDED SYSTEM CORRIDOR BETWEEN UNION STATION IN

 TECHNICAL MEMORANDUM (TM) 0.3.1 BASIS OF DESIGN FOR BLENDED OPERATION IN THE LA-A CORRIDOR, RO DATED AUGUST 20, 2016.

LOS ANGELES AND THE ANAHEIM REGIONAL TRANSPORTATION INTERMODAL CENTER IN

INFRASTRUCTURE REQUIREMENTS

THE AUTHORITY HAS ESTABLISHED PERFORMANCE REQUIREMENTS TO GUIDE THE DEVELOPMENT OF THE HIGH-SPEED RAIL SYSTEM IN BLENDED CORRIDORS BASED ON THE FRA TIER STRUCTURE FOR PASSENGER SYSTEMS DESCRIBED IN THE "HIGH-SPEED PASSENGER RAIL SAFETY STRATEGY (2009)."

THE REQUIREMENTS FOR MAJOR DESIGN ELEMENTS ARE LISTED BELOW:

1. INTEROPERABILITY

ANAHEIM ARE BASED ON:

REQUIRED LEVEL OF INTEROPERABILITY BETWEEN THE PASSENGER AND FREIGHT RAILROADS THAT OPERATE IN THE LA-A CORRIDOR WILL BE MAINTAINED.

THE RAILROAD OPERATORS AND RIGHT-OF-WAY OWNERS ARE:

AUTHORITY
METROLINK
AMTRAK/LOSSAN
LA METRO
OCTA
BNSF RAILWAY
UNION PACIFIC RAILROAD

THE DESIGNS PROPOSED DO NOT PRECLUDE THE PROPOSED FUTURE OPERATIONS BY OTHER RAIL OPERATORS AND/OR AGENCIES SUCH AS:

COACHELLA VALLEY RAIL SERVICE BY RCTC

2. DESIGN SPEEDS

DESIGN SPEED: MAXIMUM ALLOWED PER EXISTING ALIGNMENT/ROW CONSTRAINTS WITH A NOT TO EXCEED MAXIMUM OF 110 MPH.

3. TRACK CENTER SPACING

14'-0" MINIMUM IN CERTAIN AREAS ALONG ALIGNMENT

4. INTRUSION PROTECTION

INTRUSION DETECTION WILL BE PROVIDED AT LOCATIONS WHERE IT IS APPROPRIATE TO MITIGATE AN INTRUSION HAZARD BASED ON HAZARD ASSESSMENT.

ACCESS CONTROL

FULL ACCESS CONTROL IS NOT PRACTICAL IN THIS SEGMENT, INTRUSION PROTECTION AND/OR INTRUSION MONITORING WILL BE EMPLOYED WITH MITIGATIONS AS REQUIRED TO PROMOTE SAFE AND RELIABLE OPERATION.

6. TRACK ALIGNMENT

THE LA-A CORRIDOR IS PLANNED TO OPERATE AS A CLASS 5/6 SERVICE (SPEEDS UP TO 110 MPH) WITH A POSSIBLE AT-GRADE ROADWAY CROSSINGS. TRACK ALIGNMENT DESIGN STANDARDS ARE GENERALLY BASED ON HOST RAILROAD STANDARDS UNLESS OTHERWISE NOTED ON GEOMETRY TABLES.

BASIS OF DESIGN SUMMARY

RAIL PROFILES DEPICT THE TOP OF RAIL ELEVATION. ON SUPERELEVATED HORIZTONAL CURVES, THE TOP OF RAIL ELEVATION IS THE LOW RAIL.

7. AT-GRADE ROADWAY-RAIL CROSSING

SELECT AT-GRADE ROADWAY-RAIL CROSSINGS IN THE CITY OF ANAHEIM WILL REMAIN AT-GRADE AS TRAINS WILL NOT EXCEED OPERATING SPEEDS GREATER THAN 125 MPH AS DEFINED BY FRA.

8. GRADE SEPARATIONS

SELECT EXISTING AT-GRADE ROADWAY/RAIL CROSSINGS WILL BE GRADE SEPARATED WHERE ADDITIONAL TRACKS EXCEEDS THREE OR MORE AND/OR AS REQUIRED TO ACCOMMODATE HSR OPERATIONS.

THE AUTHORITY HAS DEVELOPED A LIST OF EARLY PROJECTS THAT ARE CURRENTLY IN EITHER DESIGN OR CONSTRUCTION AND THAT ARE TO BE ENVIRONMENTALLY CLEARED BY THIS HSR EIR/EIS. THOSE CROSSINGS ARE:

1. STATE COLLEGE

ALL OTHER CROSSINGS NEW OR REQUIRING MODIFICATIONS WILL BE CLEARED ENVIRONMENTALLY BY HSR EXCEPT FOR:

- 1. LAKELAND (HSR ON AERIAL STRUCTURE)
- 9. TERMINAL AND INTERMEDIATE STATION(S)

THE FOLLOWING STATION IN THE CORRIDOR IS DESIGNATED AS A TERMINAL STATION:

ANAHEIM STATION AT ARTIC

THE FOLLOWING STATIONS ARE DESIGNATED AS POSSIBLE INTERMEDIATE STATIONS:

SANTA FE SPRINGS/NORWALK AND FULLERTON

10. TRACK AND PLATFORM CONFIGURATION

BASED ON NOTICE TO DESIGNERS NO. 13-STATION PLATFORM AND TRACK LAYOUT (RELEASED ON SEPTEMBER 7, 2016), THE STATION PASSENGER PLATFORMS ARE PLANNED FOR A LENGTH OF APPROXIMATELY 800 TO 1410 FEET TO ACCOMMODATE A RANGE OF HIGH-SPEED TRAINSETS. PLATFORM LENGTHS SHOWN IN PLANS ARE BASED ON COORDINATED STATION PLANNING WITH AUTHORITY AND STAKEHOLDERS.

INTERMEDIATE STATION PLATFORM CONFIGURATIONS WILL ENSURE CUSTOMER SAFETY AS TRAINS MAY OPERATE THROUGH OR IN PROXIMITY TO THE STATION PLATFORM WITHOUT STOPPING.

11. VEHICLE STORAGE AND MAINTENANCE

UNDER CURRENT OPERATING ASSUMPTION, FLEET STORAGE, CLEANING, SERVICING, INSPECTION, MAINTENANCE, AND REPAIR REQUIREMENTS WILL BE SUPPORTED AT:

TERMINAL STORAGE AND MAINTENANCE FACILITY (LEVEL III) THAT PROVIDES IN-SERVICE INSPECTION, CLEANING AND MAINTENANCE WITH A LOCATION IN PROXIMITY TO LOS ANGELES UNION STATION.

LAYOVER TRACKS FOR OVERNIGHT LAYUP AND TURNAROUND AT LOS ANGELES UNION STATION AND ARTIC STATION IN ANAHEIM.

12. SHARED RAIL OPERATIONS

IN THE LOS ANGELES TO ANAHEIM CORRIDOR HSR WILL OPERATE IN A SHARED RIGHT-OF-WAY CORRIDOR AND ON SHARED TRACKS, FREIGHT OPERATORS WILL CROSS OVER THE ELECTRIFIED TRACKS AT DEFINED LOCATIONS UTILIZING OWL DIAMONDS AND WILL ALSO BE ALLOWED TO UTILIZE THE TWO ELECTRIFIED TRACKS AT DEFINED TIMES OR IN CASE OF EMERGENCIES.

13. SHARED RIGHT OF WAY (ROW)

ALONG THIS RAIL CORRIDOR, THE RIGHT-OF-WAY AND TRACKS ARE OWNED EITHER BY THE BNSF FREIGHT RAILWAY, METRO, AND OCTA WITH FREIGHT OPERATIONS OCCURRING SIMULTANEOUSLY THROUGHOUT THE DAY.

14. DIAMOND (AT-GRADE) CROSSINGS

THE USE OF ONE-WAY LOW SPEED "OWL" DIAMOND CROSSINGS WILL BE PROVIDED AT LOCATIONS WHERE OPERATING SPEEDS AS SHOWN ON THE PLANS AND AS DETERMINED BY BNSF AND UPRR RAILROADS.

15. STRUCTURAL DESIGN

A.PEPD STRUCTURE DESIGN WILL BE BASED ON CHSTP CP 2-3 DESIGN CRITERIA MANUAL REV 3 DATED FEBRUARY, 2016.

B.DESIGN LIFE = 100 YEARS

16. EXISTING PRIMARY TYPE 2 OVERHEAD STRUCTURES

A.WILL MEET THE NON-COLLAPSE PERFORMANCE FOR MAXIMUM CONSIDERED EARTHQUAKE (MCE).

B. TO REMAIN ELASTIC FOR ONE THIRD OF MCE SPECTRA.

17. SURVEY

A. HORIZONTAL AND VERTICAL DATUM:

- i. CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) FOR COORDINATE SYSTEM.
- ii. THE NORTH AMERICAN DATUM OF 1988 (NAVD88) FOR HORIZONTAL DATUM.
- iii. THE NORTH AMERICAN DATUM OF 1988 (NAVD88) FOR VERTICAL DATUM,

B. CITY OF LA IS GRANTOR WITHIN THEIR CITY LIMITS.

SYSTEM REQUIREMENTS

SYSTEMS

DESIGN ELEMENTS RELATED TO ELECTRIFICATION/TRACTION POWER SUPPLY SYSTEM (TPSS), TRAIN CONTROL SYSTEMS AND COMMUNICATIONS ARE NOT PART OF THIS CONTRACT AND THESE DESIGN ELEMENTS WILL BE DESIGNED BY OTHERS.

ELEMENT LOCATIONS WILL BE DEFINED AS PART OF THIS CONTRACT.

AUTHORITY SYSTEMS TEAM DIRECTED THE FOLLOWING UPDATES AT A SEPTEMBER 15, 2016 WORKSHOP:

ELIMINATE ALTERNATE SITE OPTIONS

ELIMINATE BACK TO BACK PARALLELING STATION;

MAINTAIN STANDARD LAYOUT TPSS-TPPS-TPSWS-TPPS-TPSS INTRODUCE A PORTAL / BRIDGE STRUCTURE EVERY MILE IN SEGMENTS UTILIZING THE DOUBLE CANTILEVER CATENARY POLE.

RIGHT-OF-WAY FOR THESE SYSTEMS AND SUB-SYSTEMS WILL BE DEFINED BY THE AUTHORITY AND SUBJECT TO CHANGE.

PRELIMINARY POWER SOURCES ARE SHOWN AND SUBJECT TO CHANGE WITH FINAL DETERMINATION BASED ON DISCUSSIONS BETWEENOTHE ORTHOGONISTRUCTION UTILITY OWNER.

FOR INTERNAL USE ONLY

						DESIGNED BY M. MAMAWAL
						DRAWN BY
						CHECKED BY
						J. SWANSON IN CHARGE
						J. SWANSON
REV	DATE	BY	СНК	APP	DESCRIPTION	DATE 08/29/25

SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR CONSTRUCTION





CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

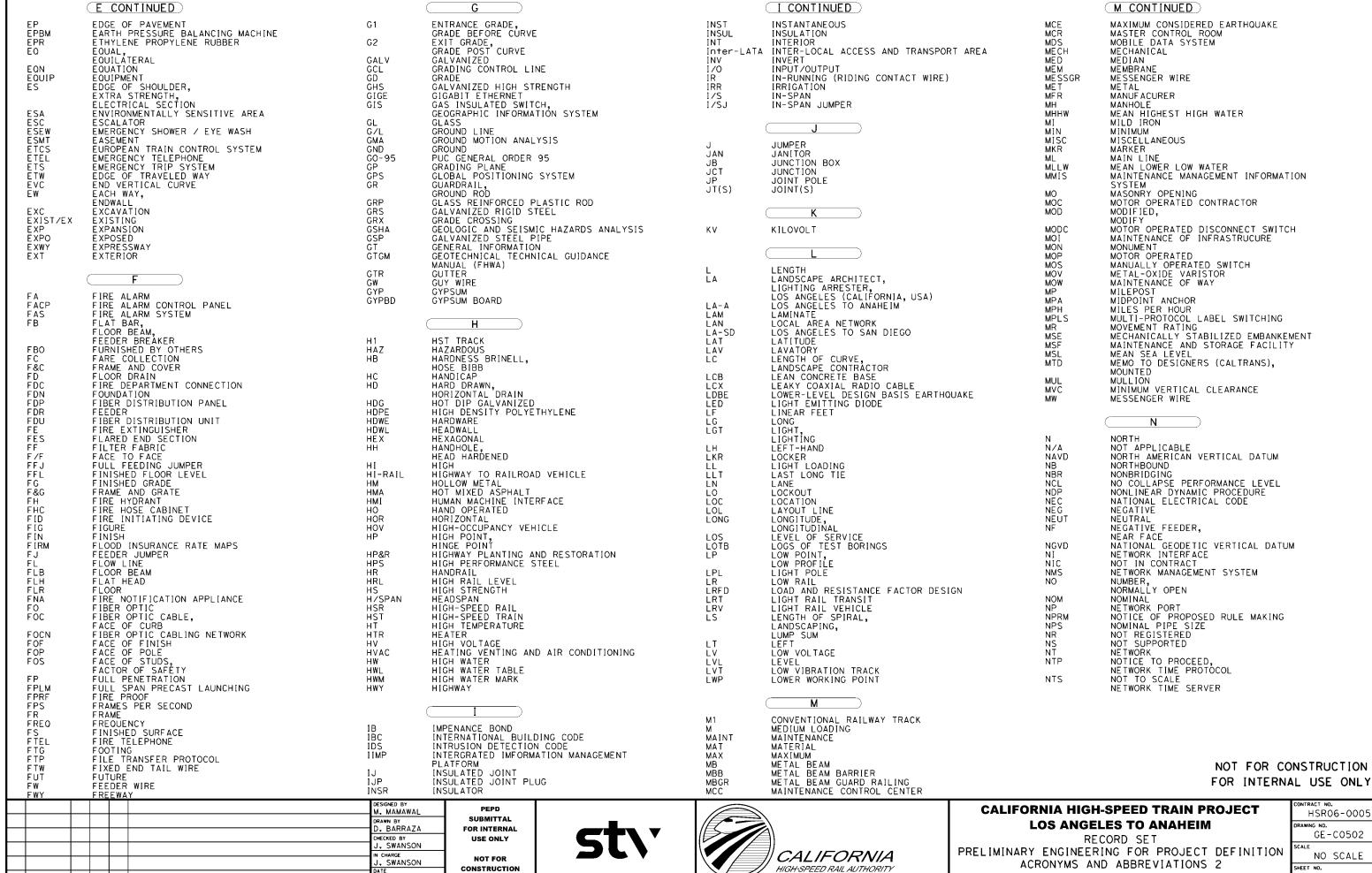
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
BASIS OF DESIGN SUMMARY

CONTRACT NO.								
Н	HSR06-0005							
DRAWING	NO.							
	GE-B0501							
SCALE								
	NO	SCALE						

SHEET NO.

	(A)	(B CONTINUED		C CONTINUED		(D CONTINUED)
@ AADT	AT AVERAGE ANNUAL DAILY TRAFFIC	BDP BDS	BRIDGE DESIGN PRACTICE (CALTRANS) BRIDGE DESIGN SPECIFICATIONS (CALTRANS)	CIC	CAST IRON COMMUNICATIONS INTERFACE CABINE	DD T	DOWNDRAIN, DEVICE DRIVER
AB	AGGREGATE BASE, ANCHOR BOLT	BEG	BRIDGE DESIGN SPECIFICATIONS (CALTRANS) BURIED EARTH (GROUND) CONDUCTOR BEGIN	CIDH CIF	CAST-IN-DRILLED-HOLE	DE DEL	DEAD END DELINEATOR
ABBC	ASBESTOS BONDED BITUMINOUS COATED AIR-BLOWN MORTAR		BŸPASS FEEDER ANCHOR BASIC IMPULSE INSULATION LEVEL	CIP C-I-P	COMMON INTERMEDIATE FORMAT CAST IRON PIPE CAST-IN-PLACE CAST-IN-PLACE CONCRETE PIPE	DEMO DEPT	DEMOLISH DEPARTMENT
ABM ABN	AIR-BLOWN MORTAR ABANDON	BĪTUM BK	BITUMINOUS BACK	CIPCP CIS	CAST-IN-PLACE CONCRETE PIPE CUSTOMER INFORMATION SIGN CAST-IN-STEEL-SHELL	DE T DF	DETOUR DIRECT FIXATION,
ABUT ABV	ABUTMENT ABOVE	BKF BKR	BACKFILL BREAKER	CISS CJ	CONSTRUCTION JOINT	DGA	DRINKING FOUNTAÍN DOWN GUY ANCHOR
AC	ALTERNATING CURRENT, ASPHALT CONCRETE	BL BLDG	BASELĪNE BUILDING	ČJP CKT	COMPLETE JOINT PENETRATION CIRCUIT	DHV DI	DÉSIGN HOURLY VOLUME DRAINAGE INLET
ACB ACMB	ASBESTOS BONDED BITOMINOUS COATED AIR-BLOWN MORTAR AIR-BLOWN MORTAR ABANDON ABUTMENT ABOVE ALTERNATING CURRENT, ASPHALT CONCRETE ASPHALT CONCRETE ASPHALT CONCRETE BASE AC DISTRIBUTION PANEL MAIN BREAKER	BLKG BLM_	BLOCKING BRIDGE-LOG MILE	CL CL2	CLASS CLASS 2	DIAG DIAPH	DIAGONAL DIAPHRAGM
ACOUS ACP	ASBESTOS CEMENT PIPE	BLVD	BALLAST BOULEVARD	CL-6 CLG	CHAIN LINK FENCE (6 FT) CEILING	DIFF DIM	DIFFERENTIAL DIMENSION_
ACS ACSR	ACCESS CONTROL ROOM ALUMINUM CONDUCTOR STEEL REINFORCED	BM BN	BENCHMARK BACKBONE NETWORK	CLK CLKG	COMPLETE JOINT PENETRATION CIRCUIT CLASS CLASS 2 CHAIN LINK FENCE (6 FT) CEILING CHAIN LINK CAULKING CLOSET	DIN DIP	DROP INLET DUCTILE IRON PIPE
AD ADJ	AREA DRAIN ADJACENT,	BND BOC	BOUND BOTTOM OF CURB	CLO CLR	CLEAR.	DISC	DIRECTION DISCONNECT
ADI	ADJUSTABLE	BOCC BOS	BACK-UP OPERATIONAL CONTROL CENTER BOTTOM OF SLOPE	СМ	CLEARÁNCE CONTROL MODULE, CORRUGATED METAL	DISP DIST	DISPENSER DISTANCE DISTANCE
ADL ADP	AC DISTRIBUTION PANEL	BOT Bow Br	BOTTOM OF WALL	CMP CMU	CORRUGATED METAL PIPE	DISTR DMBB	DISTRIBUTION DOUBLE METAL BEAM BARRIER
ADT A&E AE C	ARCHITECTURAL AND ENGINEERING	BRG	BRIDGE, BRIDGE CURVE BEARING	CMU CNTR CO	CONCRETE MASONRY UNIT	DN DNS DO	DOWN DOMAIN NAME SYSTEM DOOR OPENING
AED AFC	AUTOMATED EXTERNAL DEFIBRILLATOR	BRKT BRS	BRACKET BROADBAND RADIO SYSTEM	COL	CLEANOUT, COUNTY COLUMN	DPDT DPDT DR	DOUBLE-POLE DOUBLE-THROW DRIVE
AFES A/G	ALUMINUM CONDUCTOR STEEL REINFORCED AREA DRAIN ADJACENT, ADJUST, ADJUST, ADJUSTABLE ADDED DEAD LOAD AC DISTRIBUTION PANEL AVERAGE DAILY TRAFFIC ARCHITECTURAL AND ENGINEERING AERIAL EARTH (GROUND) CONDUCTOR AUTOMATED EXTERNAL DEFIBRILLATOR AUTOMATIC FARE COLLECTION ALTERNATIVE FLARED END SECTION AT-GRADE AERIAL GROUND WIRE AHEAD ALUMINUM ALIGNMENT ALTERNATE TIME FROM MIDNIGHT TO NOON ANCHOR AUTOMATIC NUMBER IDENTIFICATION ANNUNCIATOR	BRT BS	BUS RAPID TRANSIT BODY SPAN WIRE	COMM CONC	COLUMN COMMUNICATIONS CONCRETE	DS DS	DOWNSPOUT, DISCONNECT SWITCH
AGW AHD	AERIAL GROUND WIRE	BSC B/SPAN	BASE STATION CONTROLLER BODY SPAN	COND	CONDUIT CONNECTOR,	DSC DSCW	DIFFERING SITE CONDITIONS
AL ALIGN	ALUMINUM ALIGNMENT	BT BTM	BUS TIE BOTTOM	CONST	CONNECTION	DSG DSHA	DIRECT SUSPENSION CONTACT WIRE DISCONNECT SWITCH GROUP DETERMINISTIC SEISMIC HAZARD ANALYSIS
AL T AM	ALTERNATE TIME FROM MIDNIGHT TO NOON	BTS BTWN	BASE TRANCEIVER STATION BETWEEN	CONT	CONSTRUCT, CONSTRUCTION CONTINUOUS.	DST DTBB	DISTRICT DOUBLE THRIE BEAM BARRIER
ANC ANI	ANCHOR AUTOMATIC NUMBER IDENTIFICATION	BVC BW	BEGINNING OF VERTICAL CURVE BARBED WIRE.		CONTINUOUS, CONTINUATION CONTRACTOR	DTM DVR	DIGITAL TERRAIN MODEL DIGITAL VIDEO RECORDERS
ANN ANS	ANNUNCIATOR AMBIENT NOISE SENSOR	B/W	BALANCE WEIGHT BLACK AND WHITE	CONTR COORD CORR	COORDINATE CORRIDOR	DWG DWY	DRAWING DRIVEWAY
AP APC	ALTERNATIVE PIPE ALTERNATIVE PIPE CULVERT AREA OF POTENTIAL EFFECTS	BWA BWLAN	BALANCE WEIGHT ANCHOR BROADBAND WIRELESS LOCAL AREA NETWORK	CP CPT	CONTROL POINT CONE PENETRATION TEST, CONTROL POWER TRANSFORMER	DXO	DOUBLE CROSSOVER
APE APEF <i>Z</i>	AREA OF POTENTIAL EFFECTS ALQUIST-PRIOLO EARTHQUAKE FAULT ZONE APPLICATION PROGRAMMING INTERFACE	BZ	BRONZE	CPU	CENTRAL PROCESSING UNIT		E
API APPROX	APPROXIMATE	(С	CR	CREEK, CONDUIT RISER	EL EU	APPLIED CANT UNBALANCED CANT
APU AR	ALTERNATIVE PIPE UNDERDRAIN ACCESS RESTRICTION	С	CLOSE, CONTACT,	CRC CRCP	COMBINED RELAY AND CONTROL PANE CONTINUOUS REINFORCED CONCRETE	CAVENIENI	EAST EACH
ARCH ARS	ARCHITECTURAL ACCELERATION RESPONSE SPECTRUM	СА	CONTROL CERTIFICATION ACCEPTANCE	CRSP CRZ	CONCRETED ROCK SLOPE PROTECTION CLEAR RECOVERY ZONE	N EB	EASTBOUND, END OF BRIDGE
AS ASPH	AGGREGATE SUBBASE ASPHALT	CAA CAB	CABLE ANCHOR ASSEMBLY CABINET	CS	CONTROL SWITCH, CURVE TO SPIRAL	EC	END HORIZONTAL CURVE, ELECTRICAL CONDUCTOR
ASRP ASSY AT	ALUMINUM SPIRAL RIB PIPE ASSEMBLY AUTOTRANSFORMER,	CADD CAH	COMPUTER-AIDED DESIGN AND DRAFTING CONTROLLED ACCESS HIGHWAY	CSA CSP CSPA	CONSTRUCTION STAGING AREA CORRUGATED STEEL PIPE CORRUGATED STEEL PIPE ARCH	ECR EE	END CURB RETURN EACH END
ATC	AUTOMATIC TENSION AUTOMATIC TENSION AUTOMATIC TRAIN CONTROL	CALP	CUSTOMER ASSISTANCE INTERCOM CORRUGATED ALUMINUM PIPE	CT	CERAMIC TILE, CURVE TO TANGENT, COURT.	EF EGS	EACH FACE EMERGENCY GROUND SWITCH
ATEL ATM	ADMINISTRATIVE TELEPHONE ALONG TRACK MOVEMENT	CANT CAP	CANTILEVER CAPACITY,	СТВ	CURRENT TRANSFORMER/TRANSDUCER CEMENT TREATED BASE	EHS E I	EXTRA HIGH STRENGTH EMERGENCY INTERCOM
ATO ATP	AUTOMATIC TRAIN OPERATION AUTOMATIC TRAIN PROTECTION		CAPACITOR, CORRUGATED ALUMINUM PIPE	CTPB CTPM	CEMENT TREATED PERMEABLE BASE CEMENT TREATED PERMEABLE MATER:	EJ E-LAN	EXPANSION JOINT ETHERNET LAN
ATPB ATPM	ASPHALT TREATED PERMEARLE BASE	CAS	CORRUGATED ALUMINUM PIPE ARCH CONSTRUCTION AREA SIGN	CTR CTSK	CENTER COUNTERSUNK	ELAST ELEC	ELASTOMERIC ELECTRICAL, ELECTRIC
ATR ATS	ASPHALT TREATED PERMEABLE MATERIAL ABOVE TOP OF RAIL AUTOMATIC TRAIN SUPERVISION,		CATEGORY, CATEGORY SPECIFICATION FOR	ĊTVT	COMBINED CURRENT TRANSFORMER AN VOLTAGE TRANSFORMER	ELECT	ELECTROLIER
AUX	AUTO TENSIONED SYSTEM AUXILIARY	CATE	TWISTED PAIR CABLING CANTENARY FOUNDATION CANTENARY POLE	CTW CU	COUNTER WEIGHT TAIL WIRE COPPER	ELEV ELOCK EMB	ELEVATION ELECTRONIC LOCK EMBANKMENT
AVE AVG	AVENUE AVERAGE	CB	CATCH BASIN, CIRCUIT BREAKER,	CUL V	CULVERT CURVE	EMB EMC EMER	EMBANKMENI ELECTROMAGNETIC COMPATIBILITY EMERGENCY
AVL AWG	AUTOMATIC VEHICLE LOCATION AMERICAN WIRE GAUGE		CONCRETE BARRIER COMMUNICATIONS BASED TRAIN CONTROL	CVR CW	COVER CONTACT WIRE	EMF EMI	ELECTROMAGNETIC FIELD ELECTROMAGNETIC INTERFERENCE
	(B)	CBW C&C	CONCRETE BLOCK WALL CUT AND COVER	CWA CWH	CONTACT WIRE ANCHOR CONTACT WIRE HEIGHT	EMS EMU	ELEMENT MANAGEMENT SYSTEM ELECTRIC MULTIPLE UNIT
BAGR	BRIDGE APPROACH GUARD RAILING	C-C CCO	CENTERLINE TO CENTERLINE CONTRACT CHANGE ORDER	CWR CWT	CONTINUOUSLY WELDED RAIL COUNTER WEIGHT	ENCL ENGR	ENCLOSURE FNGINFFR.
BAR BAT	BARRIER BATTERY	CCS CCTV	CALIFORNIA COORDINATE SYSTEM CLOSED CIRCUIT TELEVISION		(D	EO	ENGINEERING BEND OF BRIDGE
BB B-B	BEGINNING OF BRIDGE BACK-TO-BACK	CCVT CEG	COUPLING CAPACITOR VOLTAGE TRANSFORMER CERTIFIED ENGINEERING GEOLOGIST	D	DEPTH	EOD EOS	EDGE OF DECK ELECTRICAL OPERATED BRIDGE
BC	BEGINNING OF CURVE, BOLT CIRCLE	CEM CER	CEMENT COMMUNICATIONS EQUIPMENT ROOM	DB DBE	DESIGN-BUILD DESIGN BASIS EARTHQUAKE	ĒŌŴ	END OF WALL
BCR BD	BEGIN CURB RETURN BOARD	CG	CURB AND GUTTER CENTER OF GRAVITY	DBL DC	DOUBLE DIRECT CURRENT		NOT FOR CONSTRUCTION
BDA BDD	BI-DIRECTIONAL AMPLIFIER BRIDGE DESIGN DETAILS (CALTRANS)	CGS CHNL	CALIFORNIA GEOLOGICAL SURVEY CHANNEL	DCMB DCP	DC DISTRIBUTION PANEL MAIN BREAD DC DISTRIBUTION PANEL	KER	FOR INTERNAL USE ONLY
		DESIGNED BY M. MAMAWAL	PEPD			CALIFORNIA HIG	H-SPEED TRAIN PROJECT CONTRACT NO. HSR06-0005
		DRAWN BY D. BARRAZA	SUBMITTAL FOR INTERNAL				ELES TO ANAHEIM DRAWING NO.
		CHECKED BY J. SWANSON	USE ONLY NOT FOR				DINC FOR PROJECT DEFINITION SCALE
LOT\$		IN CHARGE J. SWANSON DATE	NOT FOR CONSTRUCTION		CALIFORNIA HIGH-SPEED RAIL AUTHORITY		AND ABBREVIATIONS 1 NO SCALE SHEET NO.
REV DATE	BY CHK APP DESCRIPTION	08/29/25					





DATE

BY CHK APP

DESCRIPTION

08/29/25

	O		(P CONTINUED)		<u> </u>		(S CONTINUED)
OA OBLR	OVERALL OBLITERATE	PSU PT	POWER SUPPLY UNIT POTENTIAL TRANSFORMER, POINT OF TANGENT	S	SOUTH, SLOPE	SW	SOUNDWALL, SOFTWARE
OC	ON CENTER, OVERCROSSING	PTC PTD/R	POSITIVE TRAIN CONTROL	SAE SALV	STRUCTURE APPROACH EMBANKMENT SALVAGE	SWA SWAT	SINGLE WIRE ANCHOR SINGLE WIRE AUTO TENSIONED
occ ocs	OPERATIONS CONTROL CENTER OVERHEAD CONTACT SYSTEM	PTEL PTM	PAPER TOWEL DISPENSER AND RECEPTACLE PASSENGER ASSISTANCE TELEPHONE PARKING TICKET MACHINE	SAPP SB	STRUCTURAL ALUMINUM PLATE PIPE SOUTHBOUND	SWFT SWGR	SINGLE WIRE - FIXED TERMINATION SWITCHGEAR
OF OF F	OUTSIDE FACE OFFSET	PTT PTZ	PUSH TO TALK PAN-TILT-ZOOM	SC	SPIRAL TO CURVE, SWITCH CABLE	SWK SWPPP	SIDEWALK
OG OH	ORIGINAL GROUND OVERHEAD	PUE PVC	PUBLIC UTILITY EASEMENT POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE	SCADA SCAT	SUPERVISORY CONTROL AND DATA AOU! SIMPLE CATENARY - AUTO TENSION	ISITION SWR SWS	SEWER SWITCHING STATION
0-LA 0&M	ORANGE COUNTY TO LOS ANGELES OPERATIONS AND MAINTENANCE	PVI PVMT	POINT OF VERTICAL INTERSECTION PAVEMENT	SCB SCC	SUBSTATION CONTROL BUILDING	SWT SYM	SWITCH SYMMETRICAL
0-0 00R	OUT TO OUT OUT OUT-OF-RUNNING (NONRIDING CONTACT WIRE)	PVT P w r	POINT OF VERTICAL TANGENT POWER	SCD SCFT	STATION CONTROL CENTER SEAT COVER DISPENSER SIMPLE CATENARY - FIXED TENSION		Ţ
OP OPL	OVERPASS OPERABILITY PERFORMANCE LEVEL			SCHD SCN	SCHEDULE SECURITY CLASSIFICATION NUMBERS	т	TANGENT,
OPNG OPP	OPENING OPPOSITE	OOS	QUALITY OF SERVICE	SCPE SCSP	SEISMIC CAPACITY AND PERFORMANCE SLOTTED CORRUGATED STEEL PIPE	EVALUATION '	TREAD TANGENT
ORS OSP	OPERATIONS RADIO SYSTEM OUTSIDE PLANT	OT OTY	OUARRY TILE OUANTITY	SD SDB	STORM DRAIN SYSTEM DUCT BANK	TASAS T&B	TRAFFIC ACCIDENT SUREILLANCE ANALYSIS SYSTEM TOP AND BOTTOM
OVERTEMP OWLS	OVERTEMPERATURE ONE WAY LOW SPEED (DIAMOND CROSSING)	311		SCSP SCSP SD SDB SDC SDOF SE	SEISMIC DESIGN CRITERIA SINGLE DEGREE OF FREEDOM	TBD/T TBM	BV TO BE DETERMINED/VERIFIED
	(P)	D	(R)	SECT	SUPER ELEVATION SECTION	TCL TC	TUNNEL BORING MACHINE TRACK CENTERLINE TRAIN CONTROL, TANGENT TO CURVE
PA PACIS	PUBLIC ADDRESS PUBLIC ADDRESS/CUSTOMER	R	RADIUS, RED REMOTE ANNUNCIATOR	SECTLEG SEP SERV	SECTIONALIZING SEPARATION SERVICE	TCB TCC	TRAFFIC CONTROL BOX TRAIN CONTROL AND COMMUNICATIONS
PAN	INFORMATION SYSTEM PANTOGRAPH	RA R/A RAID	ROCK ANCHOR REDUNDANT ARRAY OF INDEPENDENT DISKS	SF S	SERVICE SPRING FROG SANTA FE SPRINGS	TCCR TCCT	TRAIN CONTROL AND COMMUNICATIONS ROOM TRACK CIRCUIT
PAP PAX	PERFORATED ALUMINUM PIPE PASSENGER	RB RBM	RESILIENT BASE RAILBOUND MANGANESE FROG	SF S SG SHA	SUBGRADE SEISMIC HAZARDS ANALYSIS	TČE TCP/I	
PB	PULL BOX, PUSH BUTTON (ON ELECTRICAL DIAGRAMS)	RC RC	REGIONAL CONSULTANT	SHLD SHS	SHOULDER STATE HIGHWAY SYSTEM	TCR	PROTOCOL TRANSMISSION COMMUNICATIONS ROOM
PBX PC	PRIVATE BRANCH EXCHANGE PRECAST CONCRETE, POINT OF CURVE	RCA RCB	REINFORCED CONCRETE REINFORCED CONCRETE ARCH REINFORCED CONCRETE BOX	SHT SI	SHEET SECTION INSULATOR,	TD	TRENCH DRAIN, TIME DELAY
PCC	PORTLAND CEMENT CONCRETE, POINT OF COMPOUND CURVE	RCC	REGIONAL CONTROL CENTER	SIG	SITE INVESTIGATION SIGNAL	TDA TDD	TIRE DERIVED AGGREGATE TELECOMMUNICATIONS DEVICE FOR THE DEAF
PCP PCPT	PERFORATED CONCRETE PIPE PIEZOCONE PENETROMETER TEST	RČE RCP RCPA	REGISTERED CIVIL ENGINEER REINFORCED CONCRETE PIPE REINFORCED CONCRETE PIPE ARCH	SIM SLAN	SIMILAR PASSENGER STATION LOCAL AREA NETV	TDM TEL WORK	TIME DIVISION MULTIPLEXING TELEPHONE
PE PED PEPD	PORCELAIN ENAMEL PEDESTRIAN PRELIMINARY ENGINEERING FOR	RD	ROAD, ROOF DRAIN	SM SMF	SELECTED MATERIAL SOLID MANGANESE FROG,	TEMP TERM TES	TĒMPORARŸ TERMINATION TRACTION ELECTRIFICATION SYSTEM
PERF	PROJECT DEFINITION PERFORATED	R&D RD w Y	REMOVE AND DISPOSE ROADWAY	SNF	SINGLE MODE FIBER SWING NOSE FROG	TESC TETEL	TEMPORARY EROSION AND SETTLEMENT CONTROL
PERM PE T	PERMEABLE POTENTIAL EQUALIZING JUMPER	RE REBAR	RUNNING EDGE OF RAIL CONCRETE REINFORCED BAR	SNTP SP	SIMPLE NETWORK TIME PROTOCOL SPARE	TFE TG	TETRAFLOUROETHYLENE TOP OF GRADE
PF PFDHA	POWER FACTOR PROBABILISTIC FAULT DISPLACEMENT	RECT REF	RECTANGULAR REFERENCE REFERENCE POINT	SPC SPEC	SPECIAL SPECIFICATION	THK TIS	THICK TELEPHONE AND INTERCOM SYSTEM
PG	HAZARD ANALYSIS PROFILE GRADE	REFP REINF	REINFORCED.	SPKR SPL SPS	SPEAKER SAFETY PERFORMANCE LEVEL SMALL PART STEELWORK	TK TL TM	TRACK TENSION LENGTH
PH PHE	PHASE POTHOLF	REL	REINFORCEMÉNT, REINFORCING RELOCATE,	SPST SPT	SINGLE POLE SINGLE THROW STANDARD PENETRATION TEST	TMP	TECHNICAL MEMORANDUM TEMPERATURE
PID PITO	PASSENGER INFORMATION DISPLAY POINT OF INTERSECTION TURNOUT	REM	RELOCATED REMOTE	SQ SR	SOUARE SYSTEM REQUIREMENT,	TO	TURNOUT, TELECOM OUTLET
PJP PL	PARTIAL JOINT PENETRATION PLATE,	REPL REOD	REPLACEMENT REQUIRED	SRRA	STATE ROUTE SAFETY ROADSIDE REST AREA	TOC TOE	TOP OF CURB BOTTOM OF WALL
P/L PLAM	PLACE PROPERTY LINE	RESIL RET	RESILIENT RETAINING	SRSS SS	SQUARE ROOT OF SUM OF SQUARES SLOPE STAKE, SUBSTATION	TOG TOL	TOP OF GRATE TOLERANCE
PLAM PLAS PLC	PLASTIC LAMINATE PLASTER PROGRAMMABLE LOGIC CONTROLLER	REV	REVISED, REVISION	S/SPAN	STEADY SPAN	TOLR TOF TOF G	TOP OF LOW RAIL TOP OF FOUNDATION TOP OF FINISH GRADE
PLYWD PM	PLYWOOD POST MILE,	RF RF I	RADIO FREQUENCY REQUEST FOR INFORMATION	SSI SSK	SOIL STRUCTURE INTERACTION SERVICE SINK	TOP TOR	TOP OF PAVEMENT TOP OF RAIL
PMS	TIME FROM NOON TO MIDNIGHT PAVEMENT MANAGEMENT SYSTEM	RGS RH	RIGID GALVANIZED STEEL RIGHT-HAND	SSPA SSPP	STRUCTURAL STEEL PLATE ARCH STRUCTURAL STEEL PLATE PIPE	TOS TOT	TOP OF SLOPE TOP OF TIE,
PN PNL	PAVING NOTCH PANEL	RM	RESTRICTED MANUAL, ROOM	SSPPA SSRP	STRUCTURAL STEEL PLATE PIPE ARCH	TOW	TOTAL TOP OF WALL
PNT POB	POINT POINT OF BEGINNING	R-M RO	ROAD MIXED ROUGH OPENING RIGHT-OF-WAY	SST SSW SSWR	SOIL STRUCTURE INTERACTION SERVICE SINK STRUCTURAL STEEL PLATE ARCH STRUCTURAL STEEL PLATE PIPE STRUCTURAL STEEL PLATE PIPE ARCH STEEL SPIRAL RIB PIPE STAINLESS STEEL STEADY SPAN WIRE SANITARY SEWER SENEAT TO TANCENT	TP	TELEPHONE POLE, TRACTION POWER
POC POE	POINT OF CONNECTION POINT OF ENDING	ROW RP RR	RADIUS POINT RAILROAD,	ST	SPIRAL TO TANGENT, STREET	TPD	TREATED PERMEABLE BASE TOILET PAPER DISPENSER
POS POTS	POSITIVE PLAIN ORDINARY TELEPHONE SERVICE	RRR	RUNNING RAIL	STA	STATION, STATIONING	TPF TPM	TRACTION POWER FACILITY TREATED PERMEABLE MATERIAL
PP	PLASTIC PIPE, POWER POLE PRESERVED PERMEABLE LINER	RRRR	RESURFACING, RESTORATION, REHABILITATION (3R) RESURFACING, RESTORATION,	STBB STD	SINGLE THRIE BEAM BARRIER STANDARD	TPS TPSS	TRACTION POWER SUPPLY SYSTEM TRACTION POWER SUBSTATION (INCLUDING PARALLEL AND SWITCHING STATIONS)
PPL PPP PR	PREFORMED PERMEABLE LINER PERFORATED PLASTIC PIPE	RRX	REHABILITATION, RECONSTRUCTION (4R) RAILROAD GRADE CROSSING	STC STIFF	SINGLE TRACK CANTILEVER STIFFENER	T/R TRANS	(INCLUDING PARALLEL AND SWITCHING STATIONS) TOP OF RAIL ELEVATION TRANSVERSE
PRI PROP	PAIR PRIMARY RATE INTERFACE (ISDN SERVICE) PROPOSED	R&S RSP	REMOVE AND SALVAGE ROCK SLOPE PROTECTION	STL STOR	STEEL STORAGE	TRK	TRANSVERSE, TRANSITION TRACK
PS PS	PARALLELING STATION, POINT OF SWITCH	RT	RESILIENT TILE, RIGHT	STP STR	SHEILDED TWISTED PAIR CABLE STRUCTURAL,	TS	TRAFFIC SIGNAL, TANGENT TO SPIRAL,
P/S	PRESTRESSED, PERFORATED STEEL PIPE	RTE RTU	ROUTE REMOTE TERMINAL UNIT	STS	STRUCTURE SPIRAL SPIRAL		TUBULAR STEEL
PSP PSTN	PRODUCT SAFETY PLAN PUBLIC SWITCHED TELEPHONE NETWORK	RW R/W	RETAINING WALL RIGHT-OF-WAY	STW SUPV	STATIC WIRE SUPERVISORY SURFACING		NOT FOR CONSTRUCTION
PSTTWS	PUBLIC SAFETY TRENCH AND TUNNEL WIRELESS SYSTEM	RWL RWY	RAIN WATER LEADER RAILWAY	SURF SUSP	SUSPENDED		FOR INTERNAL USE ONLY
		DESIGNED BY M. MAMAWAL	PEPD SUBMITTAL				IIGH-SPEED TRAIN PROJECT CONTRACT NO. HSR06-0005
	++	DRAWN BY D. BARRAZA CHECKED BY				LOS AN	RECORD SET ORANGE NO. GE-C0503
ω		J. SWANSON	⊣		CALIFORNIA	PRELIMINARY ENGIN	NEERING FOR PROJECT DEFINITION SCALE
REV DATE B	BY CHK APP DESCRIPTION	J. SWANSON DATE	CONSTRUCTION		HIGH-SPEED RAIL AUTHORITY	ACRONYMS	S AND ABBREVIATIONS 3
⊕ L.E.Y DATE B	DESCRIPTION	08/29/2					



	T CONTINUED		(W CONTINUED)		(TRACK GEOMETRY - HORIZONTAL)		(UNITS OF MEASUREMENT)	
TSI TSM	TECHNICAL SPECIFICATIONS FOR INTEROPERABILITY TRAFFIC SYSTEMS MANAGEMENT	ww	WINGWALL, WALKWAY	ВС	BEGIN HORIZONTAL CURVE	AC AMP	ACRES AMPERES	
TŚMP TTC TTEL	TRAFFIC SYSTEMS MANSGEMENT PLAN TWO TRACK CANTILEVER TRAIN EMERGENCY SPEAKERPHONE	WWF WWLOL WWM	WELDED WIRE FABRIC WINGWALL LAYOUT LIN WELDED WIRE MESH	IE CC CS CT	COMPOUND CURVE POINT OF CHANGE FROM CIRCULAR CURVE TO S POINT OF CHANGE FROM CURVE TO TANGENT	PIRAL BTU	BRITISH THERMAL UNIT	
TV TVS(S) TW	TELEVISION TICKET VENDING MACHINE(S) TIE WIRE,		<u> </u>	К1	TANGENT DISTANCE PF SHIFT PC REFERENCE TO THE TS	CAL CF CP	CALIPER CUBIC FEET CANDLE POWER	
TYP	TIME WARNER CABLE TYPICAL	X/CAT	CROSS CANTENARY	К2	TANGENT DISTANCE PF SHIFT PT REFERENCE TO THE ST	CY	CUBIC YARD	
	U	XD XFMR XO	TRANSDUCER TRANSFORMER CROSSOVER	LC LS1	LENGTH OF CIRCULAR CURVE LENGTH OF SPIRAL	dB DEG DIA	DECIBEL DEGREE DIAMETER	
UB UBC	UTILITY BOX UNIFORM BUILDING CODE	XOST XSEC X/SPAN	CROSSOVER SPRING TE CROSS SECTION CROSS SPAN	INSTONER LS2 LSC	LENGTH OF SPIRAL FROM TS TO SC LENGTH OF COMPOUND SPIRAL FROM CS TO SC	Eu	UNBALANCED SUPERELEVATION	
UC UD UG	UNDERCROSSING UNDERDRAIN UNDERGROUND,	XING XMITTER	CROSSING TRANSMITTER	p1 p2	OFFSET FROM INITIAL TANGENT TO PC OF THE SHIFTED CIRCLE OF SPIRALIZED CURVE OFFSET FROM INITIAL TANGENT TO PT OF THE	FT	FARENHEIT FOOT, FEET	
UGB	UNDERGRADE UNDERGRADE BRIDGE			PC	SHIFTED CIRCLE OF SPIRALIZED CURVE POINT OF CURVE POINT OF COMPOUND CURVE		ACCELERATION DUE TO GRAVITY	
UI UNINS UON	USER INTERFACE UNINSULATED UNLESS OTHERWISE NOTED			PCC PF	POINT OF COMPOUND CURVE POINT OF FROG POINT OF INTERSECTION	g GA GAL	GAUGE GALLON_	
UP UPS	UNDERPASS UNINTERRUPTIBLE POWER SUPPLY			PI PITO POB	POINT OF INTERSECTION POINT OF INTERSECTION TURNOUT POINT OF BEGINNING	GB GBPS GHz	GIGABYTE GIGABITS PER SECOND GIGAHERTZ	
UR UrEDAS	URINAL URGENT EARTHQUAKE DETECTION AND ALARM SYSTEM			POC POE	POINT ON HORIZONTAL CURVE POINT OF ENDING	HR	HOUR	
USCS UTIL UTPUN	UNITED SOIL CLASSIFICATION SYSTEM UTILITY SHEILDED TWISTED PAIR			POS POVC	POINT ON SPIRAL POINT ON VERTICAL CURVE	H⊺ H <i>z</i>	HEIGHT HERTZ	
UWP	UPPER WORKING POINT			POVT PRC PRVC	POINT ON VERTICAL TANGENT POINT OF REVERSE CURVE POINT OF REVERSE VERTICAL CURVE	ID IF	INSIDE DIAMETER INSIDE FACE	
	V			PS PT	POINT OF REVERSE VERTICAL CURVE POINT OF SWITCH POINT OF TANGENT	IN IR	INCHES INSIDE RADIUS	
V	VELOCITY, DESIGN SPEED,			SC	POINT OF CHANGE FROM SPIRAL TO CIRCULAR (CURVE K	KIPS (1000 POUNDS)	
VAC VAR	VALVE VOLTS ALTERNATING CURRENT VARIABLE,			SPO SS SSC	POINT ON ORIGIN OF COMPOUND SPIRAL POINT OF CHANGE BETWEEN SPIRALS SPIRAL TO SPIRAL POINT OF CURVATURE	KCMIL KH <i>z</i> KSF	THOUSAND CIRCULAR MILS KILOHERTZ KIPS PER SQUARE FOOT	
VAIN	VARIES VIRTUAL CONCETENATION			ST	POINT OF CHANGE FROM SPIRAL TO TANGENT	KSI KV	KIPS PER SQUARE INCH KILOVOLTS	
VCE VCP	VERTICAL CIRCULATION ELEMENT VITRIFIED CLAY PIPE			TC TS	POINT OF CHANGE FROM TANGENT TO CURVE POINT OF CHANGE FROM TANGENT TO SPIRAL	KVA KVAR	KILOVOLTS-AMPERE KILOVOLTS-AMPERE REACTIVE	
VCT VCD VE	VINYL COMPOSITION TILE VOLT DC VALUE ENGINEERING			Ts1 Ts2	TANGENT DISTANCE FROM TS TO PI TANGENT DISTANCE FROM ST TO PI	K₩ KWH/D	KILOWATT KILOWATT HOUR / DEMAND	
VE VERT VEST VIA	VERTICAL VESTIBULE VIADUCT			Xs1 Xs2	TANGENT OFFSET AT THE SC TANGENT OFFSET AT THE CS	L LB LB/FT	LENGTH POUNDS POUNDS PER FOOT	
VLAN VMS	VIRTUAL LOCAL AREA NETWORK VARIABLE MESSAGE SIGN.			Δ Δc	TOTAL CENTRAL ANGLE OF THE SPIRALIZED CU CENTRAL ANGLE OF CIRCULAR CURVE (Lc) FROM	RVE LF	LINEAR FOOT	
VOL	VARIABLE MESSAGE SYSTÉM VOLTIMETER,			Δ c1	SC TO CS CENTRAL ANGLE OF FIRST CIRCULAR CURVE OF	m MBPS	METER MEGABITS PER SECOND	
VOIP VPN	VOLUME VOICE OVER INTERNET PROTOCOL VIRTUAL PRIVATE NETWORK			Δc2	COMPOUND CURVATURE CENTRAL ANGLE OF SECOND CIRCULAR CURVE O COMPOUND CURVATURE	MCM OF MHZ mm	THOUSAND CIRCULAR MILS MEGAHERTZ MILLIMETER	
VRCS VS	VOICE RADIO COMMUNICATIONS SYSTEM VOLTAGE SWITCH			θs1	CENTRAL ANGLE OF SPIRAL LENGTH LS1 OR SP	MPH	MILES PER HOUR MEGAVOLT-AMPERE	
νŤ	VOLTAGE TRANSFORMER/TRANSDUCER			θ s 2	ANGLE OF FIRST SPIRAL IN SPIRALIZED CURVE CENTRAL ANGLE OF SPIRAL LENGTH Ls2 OR SP	NW PIRAL	MEGAWATT	
	W			θsc	ANGLE OF SECOND SPIRAL IN SPIRALIZED CURV CENTRAL ANGLE OF COMPOUND SPIRAL OR COMPOUND SPIRAL ANGLE FROM CS TO SC	VE OD PSF	OUTSIDE DIAMETER POUNDS PER SQUARE FOOT	
W	WEST, WIDTH					PSI PSIG	POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH GAUGE	
W/ WA WB	W]TH WORK AREA WESTBOUND			BVC	TRACK GEOMETRY - VERTICAL BEGIN VERTICAL CURVE	SEC	SECOND	
WC WCS	WATER CLOSET WIRELESS COMMUNICATIONS SYSTEM			Ea	ACTUAL SUPERELEVATION	SF SY	SQUARE FEET SQUARE YARD	
WD WLAN	WOOD WIRELESS LOCAL AREA NETWORK			EVC	END VERTICAL CURVE	TF	TRACK FEET	
WM W/O WP	WIRE MESH WITHOUT WORK POINT.			PCVC POVC POVT	POINT OF COMPOUND VERTICAL CURVE POINT OF VERTICAL INTERSECTION POINT ON VERTICAL CURVE	VA VAC	VOLTS VOLT-AMPERE	
WPF	WOOD POLE ' WATERPROOF			PVI	POINT ON VERTICAL CORVE	Y YR(S)	YARDS YEAR(S)	
WPC WR	WAYSIDE POWER CUBICLES WIRE RUN WILL DESPECT TO			VC VPI	VERTICAL CURVE VERTICAL POINT OF INTERSECTION	111(3)		
WRT WS	WITH RESPECT TO WATER SURFACE, WORK STATION							
WSP WT WV	WELDED STEEL PIPE WEIGHT WATER VALVE							CONSTRUCTION
YV V	HAILN VALVE						FOR INTER	RNAL USE ONLY
		DESIGNED BY M. MAMAWAL	PEPD SUBMITTAL			CALIFORNIA	HIGH-SPEED TRAIN PROJECT	CONTRACT NO. HSR06-0005

SUBMITTAL

FOR INTERNAL

USE ONLY

NOT FOR

CONSTRUCTION

DRAWN BY

CHECKED BY
J. SWANSON

CHARGE

08/29/25

LOT\$

BY CHK APP

DESCRIPTION

LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ACRONYMS AND ABBREVIATIONS 4

SHEET

ION

HSR06-0005

DRAWING NO.

GE-C0504

NO SCALE

SHEET NO.

(AGENCIES/ORGANIZATIONS/REFERENCE) AGENCIES/ORGANIZATIONS/REFERENCE CONTINUED ASSOCIATION OF AMERICAN RAILROADS AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS AMERICAN CONCRETE INSTITUTE NATIONAL EMERGENGY NUMBER ASSOCIATION NATIONAL ELECTRICAL SAFETY CODE NATIONAL FIRE PROTECTION ASSOCIATION NATIONAL INSTITUTE OF STANDARDS AND AASHTO NESC NEPA NIST AMERICAN WITH DISABILITIES ACT (FEDERAL) AMERICAN INSTITUTE OF STEEL CONSTRUCTION ADA **TECHNOLOGY** OCFCD ORANGE COUNTY FLOOD CONTROL DISTRIC **AMTRAK** NATIONAL RAILROAD PASSANGER CORPORATION ORANGE COUNTY TRANSPORTATION AUTHORITY AMERICAN NATIONAL STANDARDS INSTITUTE ADVANCED NATIONAL SEISMIC SYSTEM AMERICAN PUBLIC WORKS ASSOCIATION AMERICAN RAILWAY ENGINEERING ASSOCIATION ANSI OSHA OCCUPATIONAL SAFETY AND HEALTH ANSS ADMINISTRATION PACIFIC EARTHOUAKE ENGINEER RESEARCH PACIFIC GAS AND ELECTRIC COMPANY APWA PEER AREA PG&E AREMA AMERICAN RAILWAY ENGINEERING AND PUC PUBLIC UTILITIES COMMISSION MAINTENANCE-OF-WAY ASSOCIATION RAIL SAFETY IMPROVEMENT ACT (2008) ANAHEIM REGIONAL TRANSPORTATION INTERMODAL CENTER ARTIC **RWOCB** REGIONAL WATER QUALITY CONTROL BOARD SOCIETY OF AMERICAN VALUE ENGINEERS SOUTHERN CALIFORNIA EDISON SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY AMERICAN SOCIETY OF CIVIL ENGINEERS ASTM INTERNATIONAL, AMERICAN SOCIETY OF TESTING AND MATERIALS ASCE SAVE ASTM SCE SCRRA ATC APPLIED TECHNOLOGY COUNCIL SDG&E SAN DIEGO GAS AND ELECTRIC COMPANY AMERICAN WELDING SOCIETY SAN DIEGO NORTHERN RAILWAY BART SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT SHOPP STATE HIGHWAY OPERATION AND PROTECTION BDA BRIDGE DESIGN AIDS (CALTRANS) PROGRAM (FORMERLY HSOPP) STATE HISTORIC PRESERVATION OFFICER (STATE) SAN JOAQUIN REGIONAL RAIL AUTHORITY SACRAMENTO MUNICIPAL UTILITY DISTRICT BRIDGE DESIGN DETAILS (CALTRANS) BRIDGE DESIGN PRACTICE (CALTRANS) BRIDGE DESIGN SPECIFICATIONS (CALTRANS) BURLIGNTON NORTHERN SANTA FE RAILWAY, SHPO BDD BDP SJRRA SMUD BNSF SOUTHERN PACIFIC TRANSPORTATION COMPANY SPTC BNSF RAILWAY SEISMIC SAFETY COMMISSION CALNET CALIFORNIA INTEGRATED TELECOMMUNICATIONS SSORC SAFETY AND SECURITY OVERSIGHT AND NETWORK REVIEW COMMITTEE SILICON VALLEY BERRYESSA EXTENSION SILICON VALLEY RAPID TRANSIT UNION PACIFIC RAILROAD CALIFORNIA DEPARTMENT OF TRANSPORTATION SVBX **CALTRANS** CALIFORNIA BUILDING CODE CALIFORNIA DEPARTMENT OF TRANSPORTATION-BRIDGE DESIGN MANUAL SVRT UPRR CBDM UNITED STATES UNITED STATES (ARMY) CORP OF ENGINEERS CALIFORNIA CODE OF REGULATIONS CALIFORNIA HIGH-SPEED TRAIN DESIGN CRITERIA CALIFORNIA ELECTRIC CODE ÜSCE UNITED STATES COAST GUARD UNITED SOIL CLASSIFICATION SYSTEM CALIFORNIA ENVIRONMENTAL QUALITY ACT CEQA SANTA CLARA VALLEY TRANSPORTATION AUTHORITY CODE OF FEDERAL REGULATIONS COUNTY HEALTH DEPARTMENT CALIFORNIA DEPARTMENT OF HIGHWAY PATROL CER CHD CHP CALIFORNIA HIGH-SPEED TRAIN CALIFORNIA HIGH-SPEED TRAIN PROJECT CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD CIWMB CALIFORNIA PERMIT HANDBOOK CALIFORNIA PUBLIC UTILITIES COMMISSION COMMUTER RAIL PROGRAM (STATE) DEPARTMENT OF DEFENSE (FEDERAL) DEPARTMENT OF TRANSPORTATION (FEDERAL) CPH CPUC DOD DOT DOWNTOWN EXTENSION (CALTRAIN) EUROPEAN INTEGRETED RADIO ENHANCED NETWORK EIRENE EUROPEAN RAIL TRAFFIC MANAGEMENT SYSTEM FEDERAL AVIATION ADMINISTRATION **ERTMS** FAA FEDERAL COMMUNICATIONS COMMISSION FCC FEDERAL EMERGENCY MANAGEMENT AGENY FEMA FEDERAL HIGHWAY ADMINISTRATION **FHWA FMFCD** FRESNO METROPOLITAN FLOOD CONTROL DISTRICT FRA FEDERAL RAILROAD ADMINISTRATION FSTIP FEDERAL STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM FEDERAL TRANSIT ADMINISTRATION FTA GEOTECHNICAL BASELINE REPORT GBR GEOTECHNICAL BASELINE REPORT FOR BIDDING GBR-B GEOTECHNICAL BASELINE REPORT FOR CONSTRUCTION CDR GEOTECHNICAL DATA REPORT IEEE INSTITUTE OF ELECTRICAL AND ELECTRONICS FNGINFFRS ISO INTERNATIONAL ORGANIZATION FOR STANDARDIZATION LACDPW LOS ANGELES COUNTY DEPT OF PUBLIC WORKS LOS ANGELES DEPARTMENT OF LADWP WATER AND POWER LAUS LOS ANGELES UNION STATION LOCAL TRANSPORTATION COMMISSION LOS ANGELES COUNTY METROPOLITAN METRO TRANSIT AUTHORITY METROPOLITAN TRANSIT AUTHORITY MUTCD MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES MWD METROPOLITAN WATER DISTRICT NATIONAL AMBIENT AIR QUALITY STANDARDS NAAQS NOISE ABATEMENT CRITERIA NAC **NBSSR** NOISE BARRIER SCOPE SUMMARY REPORT NATIONAL ELECTRICAL MANUFACTURERS NEMA SUBMITTAL FOR INTERNAL

(SEGMENT/COUNTY CODES AND SUBDIVISIONS)

OL OWE ITT	COCKET CODES AND SODI
A-J B-P F-B J-M L-D L-O K-F P-L	ALTAMONT PASS BAKERSFIELD TO PALMDALE FRESNO TO BAKERSFIELD SAN FRANCISCO TO SAN JOSE SAN JOSE TO MERCED LOS ANGELES TO SAN DIEGO LOS ANGELES TO ANAHEIM MERCED TO FRESNO PALMDALE TO LOS ANGELES SACRAMENTO TO MERCED
B C D J P S T	BAY SUBDIVISION CAPITAL SUBDIVISION DESERT SUBDIVISION SAN JACINTO SUBDIVISION PACHECO SUBDIVISION SIERRA SUBDIVISION TONGVA SUBDIVISION
ALPAMMTL CCCONDED FREEMPYRN KIA KSDNNANPVAAUVC MMERODNAMMENODNAMMENODNAMMENODNATHILONLB MENODNAMMENODN	ALAMEDA ALPINE AMADOR BUTTE CALAVERAS CONTRA COSTA COLUSA DEL NORTE EL DORADO FRESNO GLENN HUMBOLT IMPERIAL INYO KERN KINGS LOS ANGELES LAKE LASSEN MADERA MENDOCINO MERCED MONO MODOC MONTEREY MARIPOSA MARIN NAPA NEVADA ORANGE PLACER PLUMAS RIVERSIDE SACRAMENTO SANTA BARBARA SAN BERNARDINO SANTA CLARA SANTA CRUZ SAN DIEGO SAN FRANCISCO SHASTA SIERRA SISKIYOU SAN JOAOUIN SAN JOAOUIN SAN LUIS OBISPO SAN MATEO SONOMA STANISLAUS SUTTER TEHAMA TRINITY TULARE TULARE VENTURA YOLO VIIRA

NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

							DESIGNED BY M. MAMAWAL
							DRAWN BY
							CHECKED BY
							J. SWANSON
9							J. SWANSON
Ĺ A	REV	DATE	ВΥ	СНК	APP	DESCRIPTION	DATE 08/29/25

USE ONLY

NOT FOR CONSTRUCTION



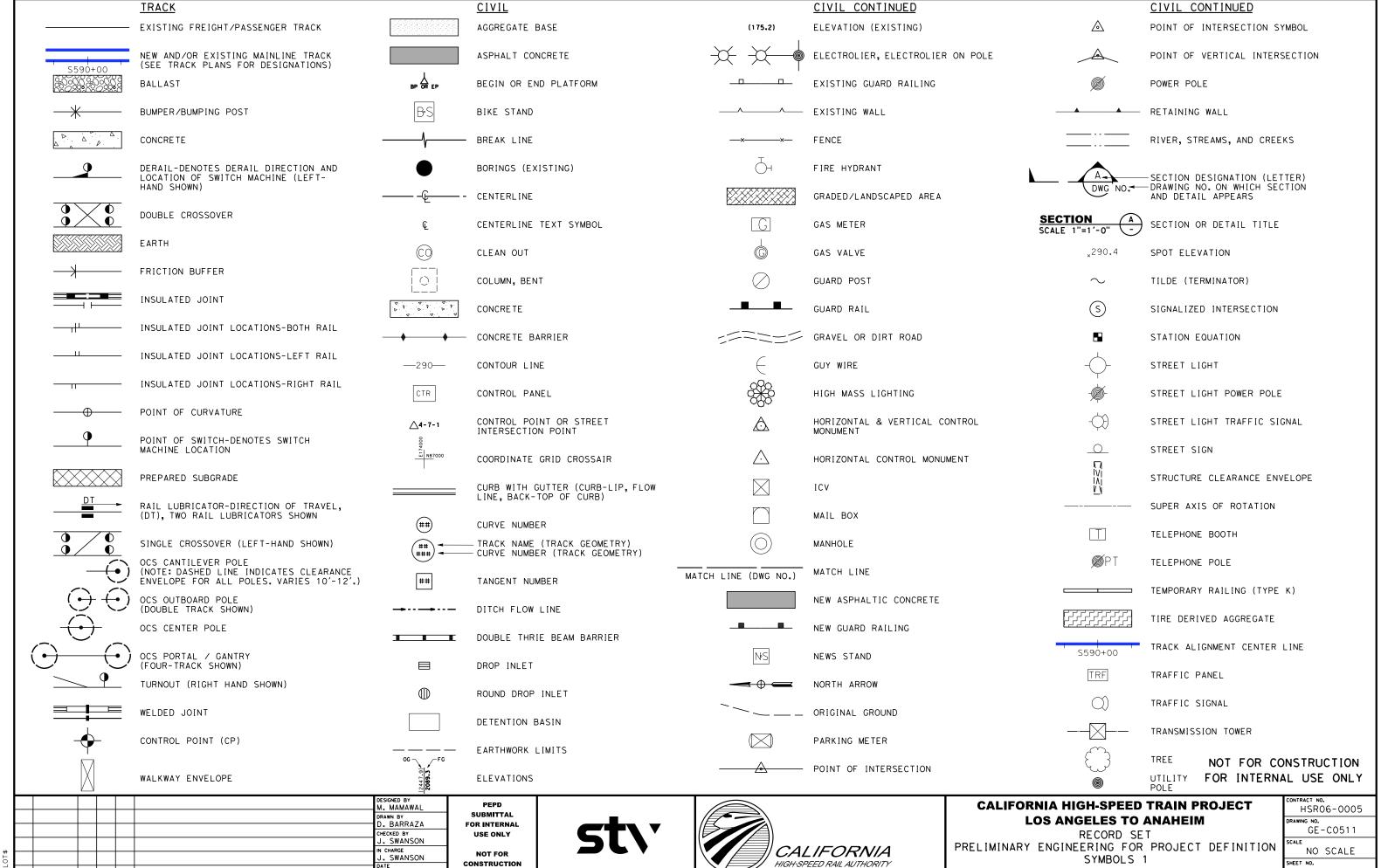


YUB

CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET PRELIMINARY ENGINEERING FOR PROJECT DEFINITION ACRONYMS AND ABBREVIATIONS 5

CONTRACT NO.								
H	HSR06-0005							
DRAWIN	DRAWING NO.							
	GE-	-C0505						
SCALE								
	NO	SCALE						
SHEET	NO.							

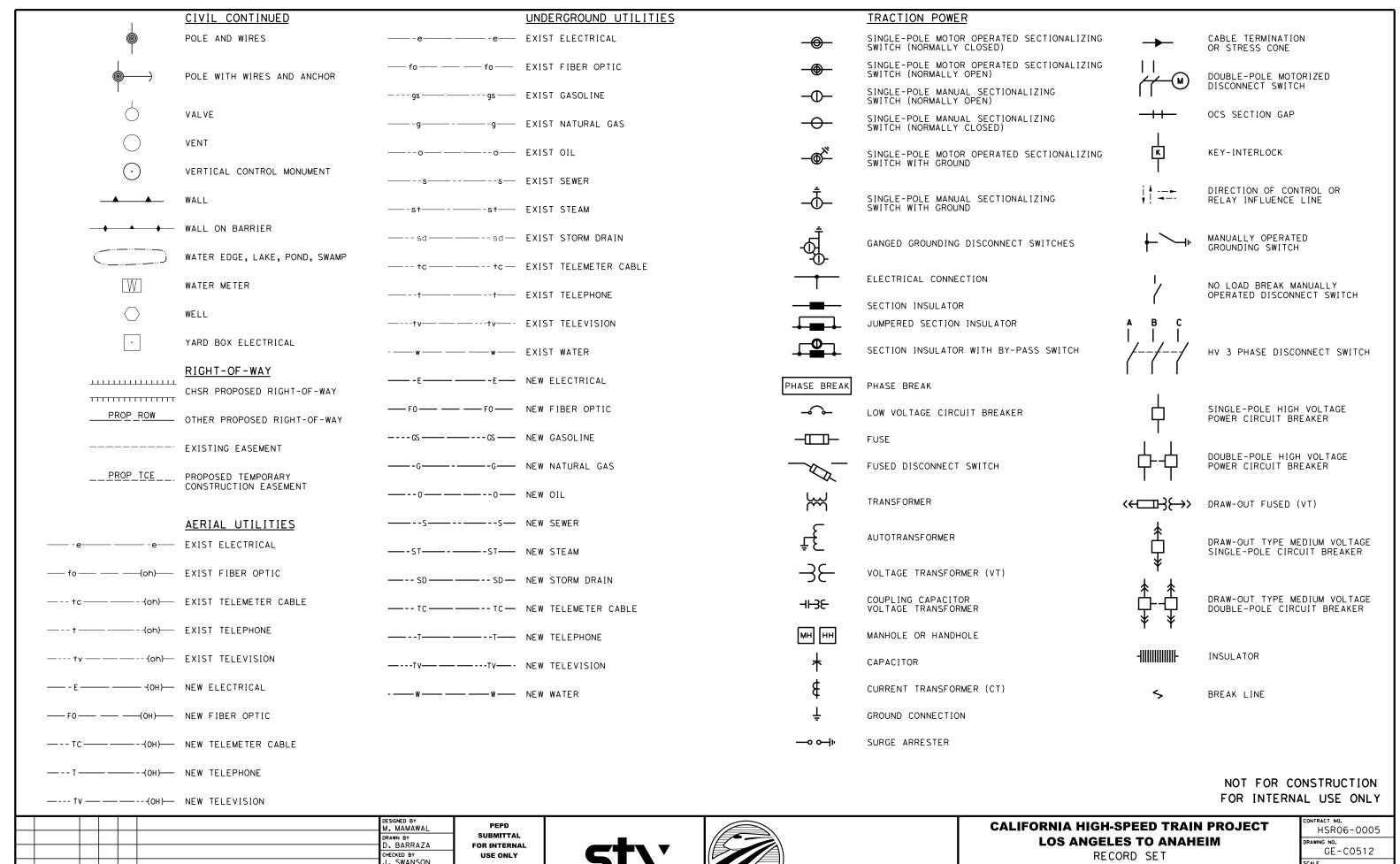


DATE

BY CHK APP

DESCRIPTION

08/29/25



CALIFORNIA

HIGH-SPEED RAIL AUTHORITY

CHARGE SWANSON

NOT FOR

CONSTRUCTION

PRELIMINARY ENGINEERING FOR PROJECT DEFINITION

SYMBOLS 2

NO SCALE

HEET NO.

DATE

BY CHK APP

DESCRIPTION

GENERAL NOTES

GENERAL

- 1. VOLUMES 3.1 THRU 3.5 PRESENT THE ENGINEERING PLANS FOR THE PREFERRED SHARED TRACK OPTIONS BETWEEN LOS ANGELES AND ANAHEIM. THESE OPTIONS CONSIST OF:
 - A. NO HSR INTERMEDIATE STATIONS AT NORWALK/SANTA FE SPRINGS AND FULLERTON.
 - B. 26TH STREET LIGHT MAINTENANCE FACILTY III
- 2. NON-PREFERRED OPTIONS ARE PRESENTED IN VOLUME 3.6. THESE CONSIST OF:
 - A. HSR INTERMEDIATE STATIONS AT NORWALK/SANTA FE SPRINGS AND FULLERTON.
 - B. 15TH STREET LIGHT MAINTENANCE FACLITY III
- 3. FOR PURPOSES OF THIS PEPD VOLUME 3, THE GEOGRAPHIC NORTHERN LIMITS OF THIS LA-A PEPD AND FOR THIS EIR/EIS ARE AT THE NORTHERN EDGE OF THE PROPOSED US-101 VIADUCT, NOTWITHSTANDING ANY INDIVIDUAL NOTE IN THIS PEPD OR IN THE EIR TO THE CONTRARY.
- 4. THE FOLLOWING TYPES OF REFINEMENTS TO ELEMENTS OF SHARED PASSENGER TRACK ALTERNATIVE A AND SHARED PASSENGER TRACK ALTERNATIVE B HAVE BEEN IDENTIFIED BECAUSE OF ONGOING VALUE ENGINEERING REVIEW. BASED ON PRELIMINARY REVIEW, THESE TYPES OF REFINEMENTS ARE LIKELY MINOR AND ARE UNLIKELY TO AFFECT DEIR/DEIS IMPACT FINDINGS. SUBJECT TO FINAL REVIEW CONFIRMING THESE PRELIMINARY FINDINGS, VALUE ENGINEERING REFINEMENTS MAY BE INCORPORATED IN A REVISED HSR LAA PEPD RECORD SET TO BE ISSUED WITH THE FINAL EIR/EIS. THE BELOW ARE EXAMPLES OF REFINEMENTS THAT COULD BE INDENTIFIED AS PART OF VALUE ENGINEERING REVIEW BETWEEN THE DEIR/DEIS AND FINAL EIR/EIS.

HSR TRACK ALIGNMENT

INCREASE PROFILE GRADE TO 3.0% ON AERIAL STRUCTURES AND TRENCH AT THE LOCATIONS LISTED BELOW, TO REDUCE THEIR TOTAL LENGTHS, WITH NO REVISION TO PROJECT FOOTPRINT:

- SANTA FE SPRINGS FLYOVER: CURRENT GRADE -1.9% PROPOSED -3.0%, ON THE SOUTH END. THE NORTH APPROACH WON'T BE CHANGED DUE TO THE PROXIMITY TO THE ROADWAY GRADE SEPARATIONS AT FLORENCE AVE AND LAKELAND RD.
- FULLERTON TRENCH: CURRENT GRADE -2.5% PROPOSED -3.0% ON THE NORTH AND 2.7% CURRENT TO 3.0% PROPOSED, ON THE SOUTH APPROACHES.

LIGHT MAINTENANCE FACILITIES (LMF)

- REDUCTION IN TRAIN CAPACITY, WITH NO REVISION TO PROJECT FOOTPRINT:

 26TH STREET LMF: CURRENTLY DESIGNED TO ACCOMMODATE 36 TRAINS
 (24 IN YARD, 12 IN SHOP). PROPOSED DOWNSIZING TO 30 TRAINS
 (20 IN YARD, 10 IN SHOP).
 - -15TH STREET LMF: CURRENTLY DESIGNED TO ACCOMMODATE 32 TRAINS (20 IN YARD, 12 IN SHOP). PROPOSED DOWNSIZING TO 30 TRAINS (20 IN YARD, 10 IN SHOP).

VOLUME 3.1

1. RAIL ALIGNMENT BETWEEN MAIN STREET, UNION STATION, AND 1ST STREET IS BEING DESIGNED BY METRO'S LINKUS TEAM. THE ALIGNMENT THAT IS SHOWN IS BASED ON LATEST COORDINATION WITH THEIR TEAM, SHOWN FOR REFERENCE ONLY AND SUBJECT TO CHANGE. SEE VOLUME 3.8.

14OLNUME 3.2

VOLUME 3.3

1. NONE

VOLUME 3.3A

 STATE COLLEGE ENGINEERING PLANS BASED ON 35% OCTA DESIGN PLANS AND WILL BE ENVIRONMENTALLY CLEARED AS PART OF THIS HSR LA-A EIR/EIS.

VOLUME 3.4

EXISTING COMPOSITE UTILITY NOTES:

- UTILITY CONFLICTS ON CROSSING STREETS AT EXISTING GRADE SEPARATIONS ARE NOT ANTICIPATED.
- 2. ONLY THE FOLLOWING UTILITIES SHALL BE CONSIDERED MAJOR AND ARE IDENTIFIED IN THE UTILITY CONFLICTS MATRIX ON THE DRAWINGS.

 A. WET UTILITIES:
 - SEWER, WATER, STORM DRAIN GREATER THAN OR EQUAL TO 12".
 - II. ALL OIL LINES.
 - III. ALL FUEL (GASOLINE) LINES.
 - IV. ALL GAS LINES.
 - B. DRY UTILITIES:
 - ALL FIBER OPTIC LINES.
 - II. ALL ELECTRIC LINES GREATER THAN 240V.
 - III. ALL DUCT BANKS WITH 6 OR MORE DUCTS.
 - IV. EXCLUDE INDIVIDUAL TELEPHONE, CABLE LINES.
 C. ALL OTHER CONFLICTS ARE CONSIDERED MINOR AND ARE NOT SHOWN IN
 - THE UTILITY CONFLICTS MATRIX.

 D. UTILITIES AT GRADE SEPARATIONS ARE NOT SHOWN IN THE UTILITY

 CONFLICTS MATRIX FYEN IN THE THE ADDITION APPRICATE ADDITIONS ARE NOT SHOWN IN THE UTILITY
 - CONFLICTS MATRIX EVEN IF THEY FALL UNDER THE ABOVE CRITERIA SINCE VOLUME 3.3 OFFERS MORE SPECIFIC AND ACCURATE INFORMATION REGARDING THE DESIGN.
 - E. ALL NEW OR RELOCATION OF EXISTING UTILITIES WILL FOLLOW THE CITY, STATE, AND FEDERAL REQUIREMENTS AND GUILDELINES FOR SEPARATION, PROTECTION, AND CONSTRUCTION.

VOLUME 3.5

 DESIGN PLANS PROVIDED IN THIS VOLUME REPRESENT UNIQUE DESIGN ELEMENTS SPECIFICALLY RELATED TO THE NON-PREFERRED OPTIONS.

VOLUME 3.6

1. NONE

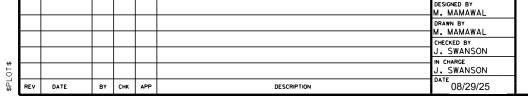
VOLUME 3.7

1. THIS VOLUME NOT USED

VOLUME 3.8

 PLANS PROVIDED IN THIS VOLUME REPRESENT ELEMENTS THAT HSR AUTHORITY WILL BE ENVIRONMENTALLY CLEARING AS PART OF METRO'S LINKUS PROJECT.

NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY



PEPD SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR





CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GENERAL NOTES 1 OF 1

CONTRACT NO.

HSR06-0005

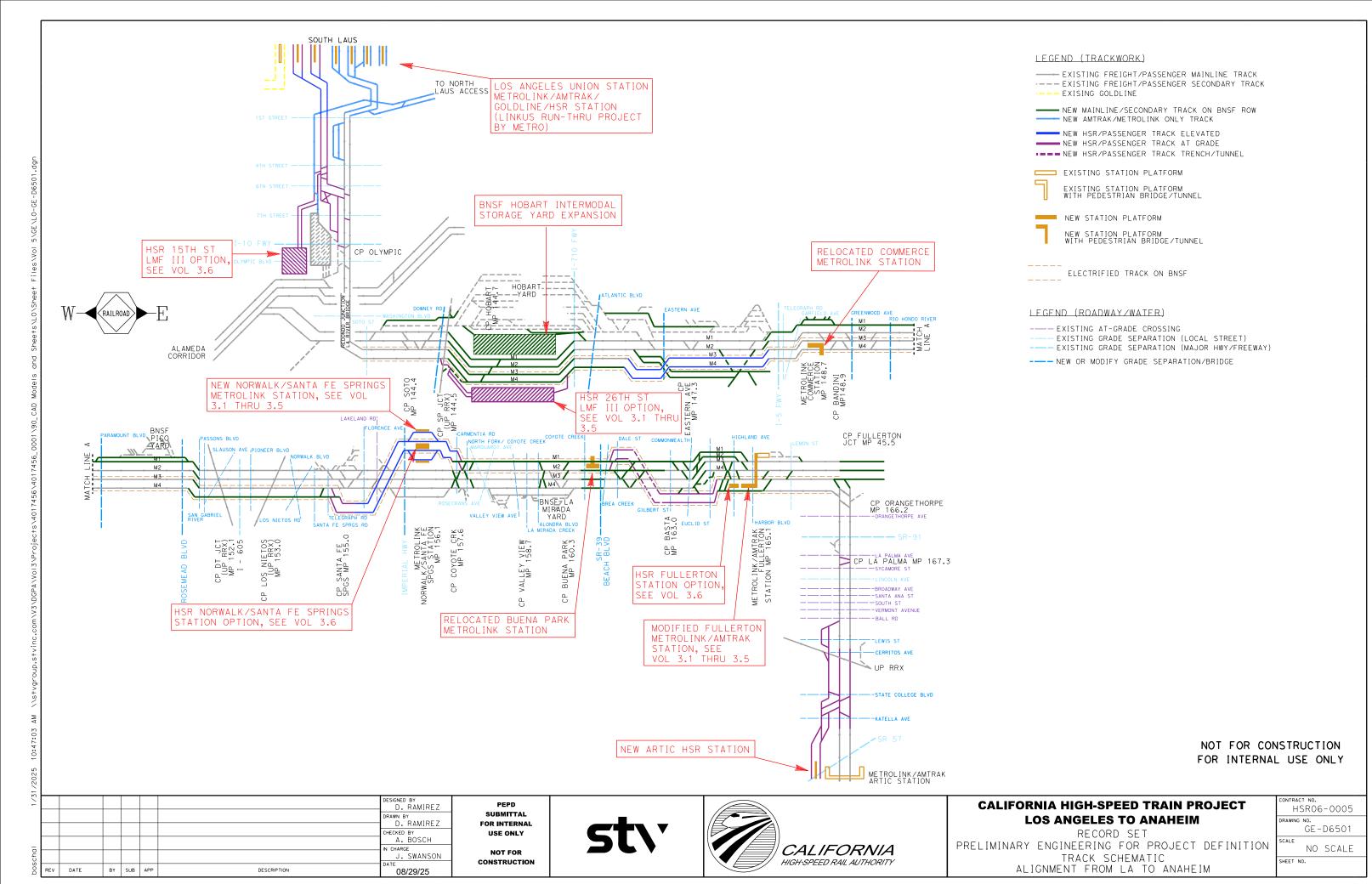
DRAWING NO.

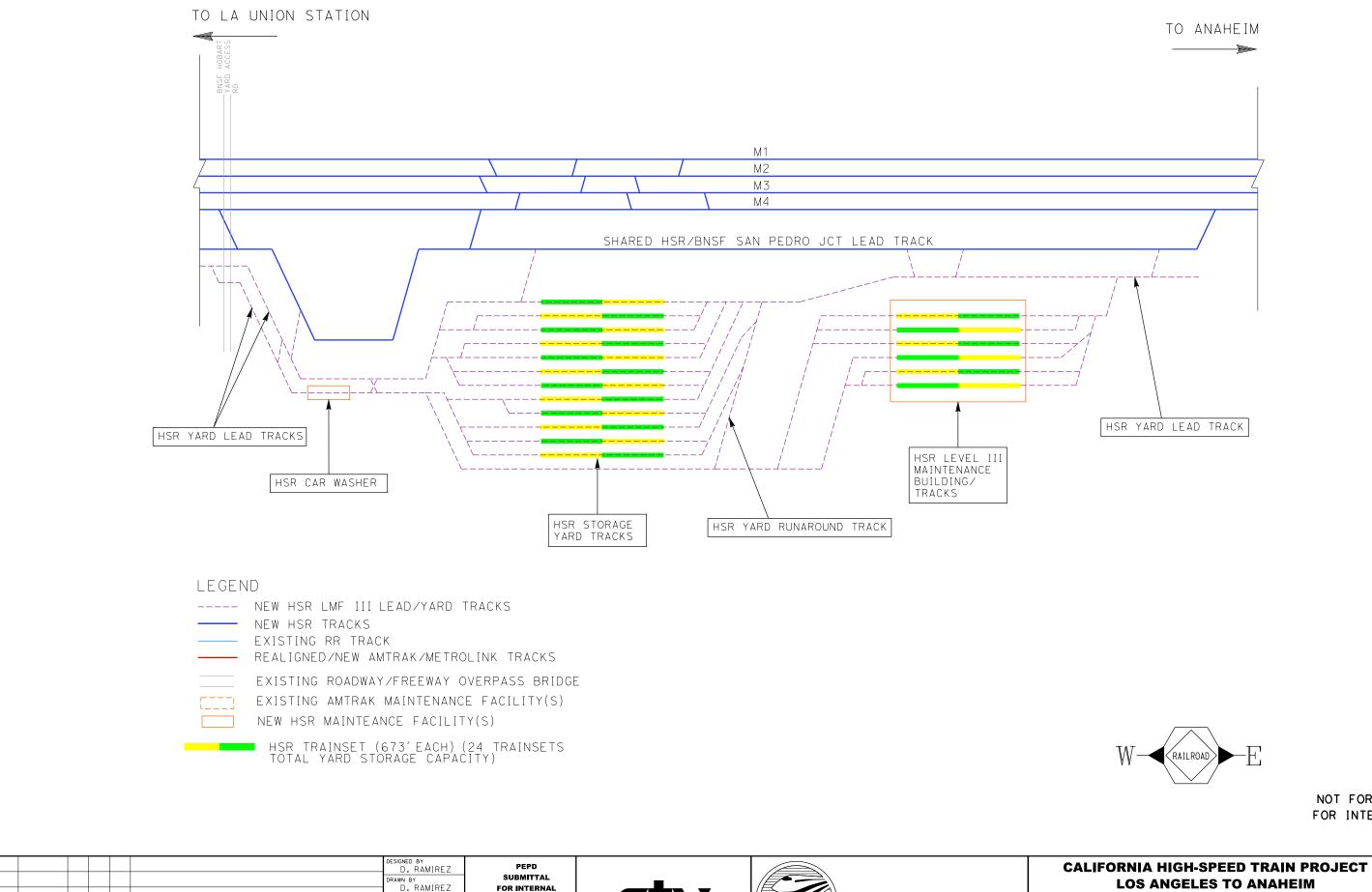
GE-B0511

SCALE

NO SCALE

SHEET NO.





CHECKED BY A. BOSCH

08/29/25

DESCRIPTION

BY SUB APP

N CHARGE J. SWANSON

USE ONLY

NOT FOR

CONSTRUCTION

HSR06-0005 GE-D6502 NO SCALE SHEET NO.

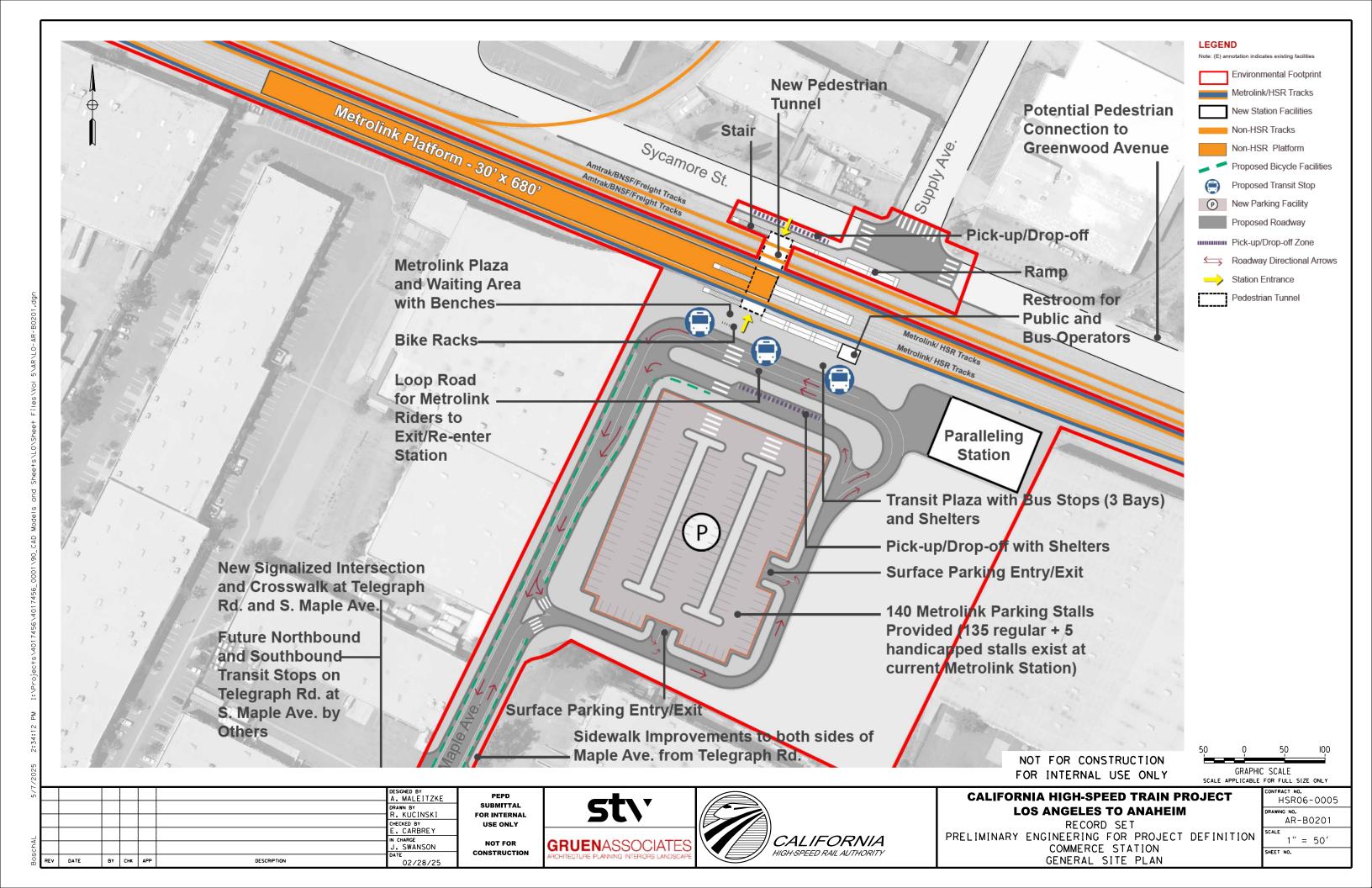
NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

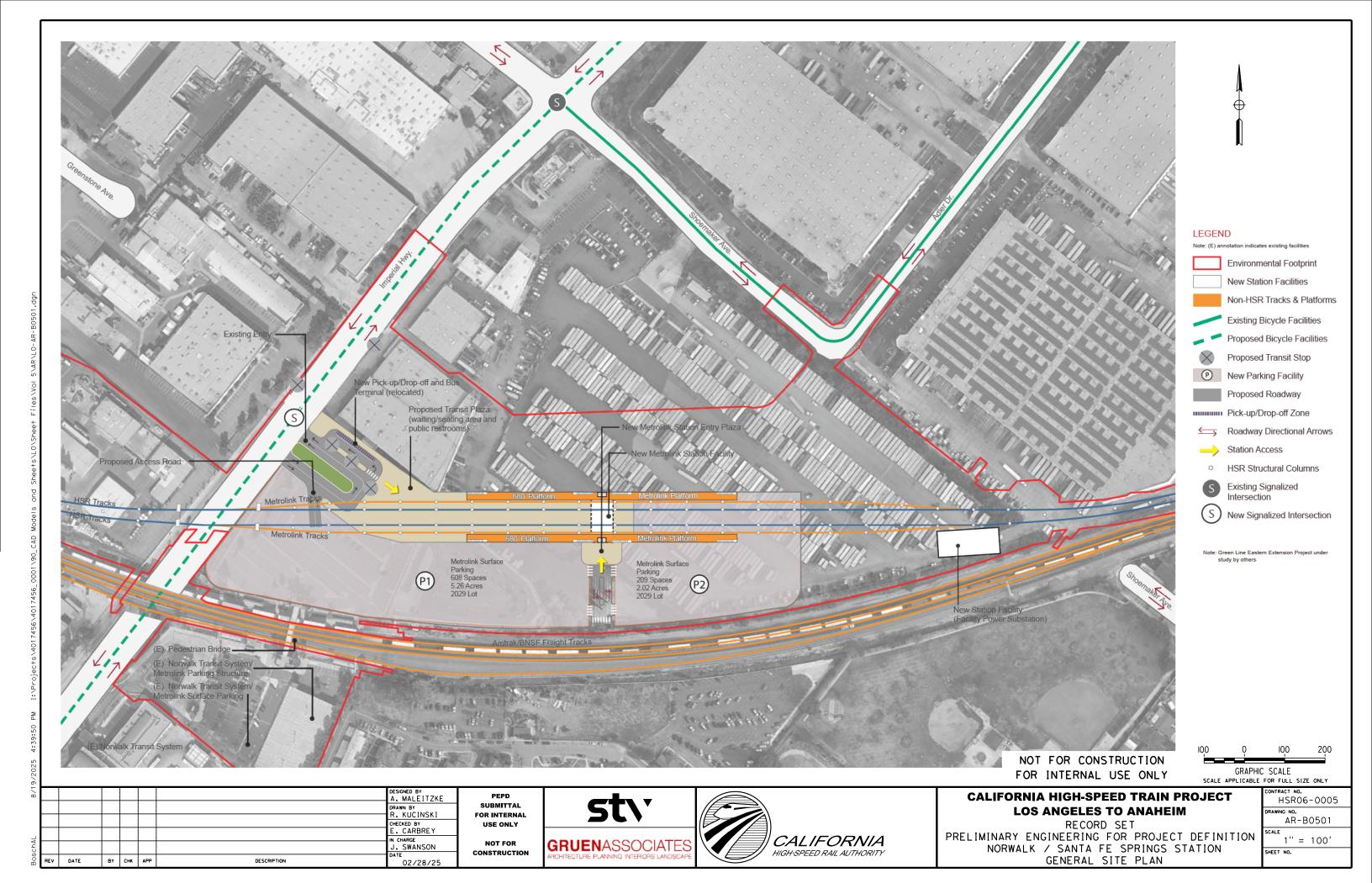
CALIFORNIA

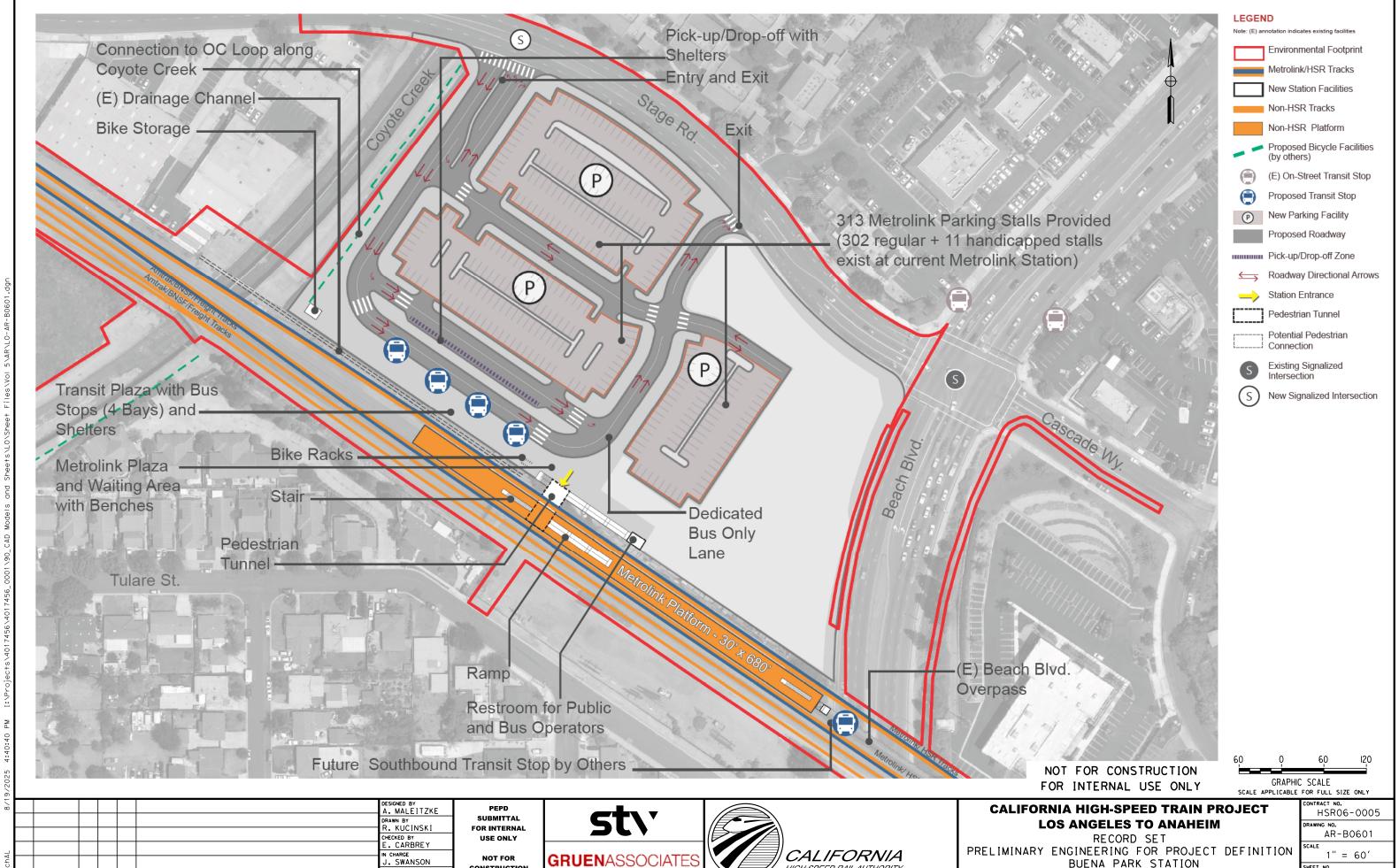
HIGH-SPEED RAIL AUTHORITY

LOS ANGELES TO ANAHEIM

RECORD SET PRELIMINARY ENGINEERING FOR PROJECT DEFINITION SCALE TRACK SCHEMATIC
26TH STREET LMF III OPTION



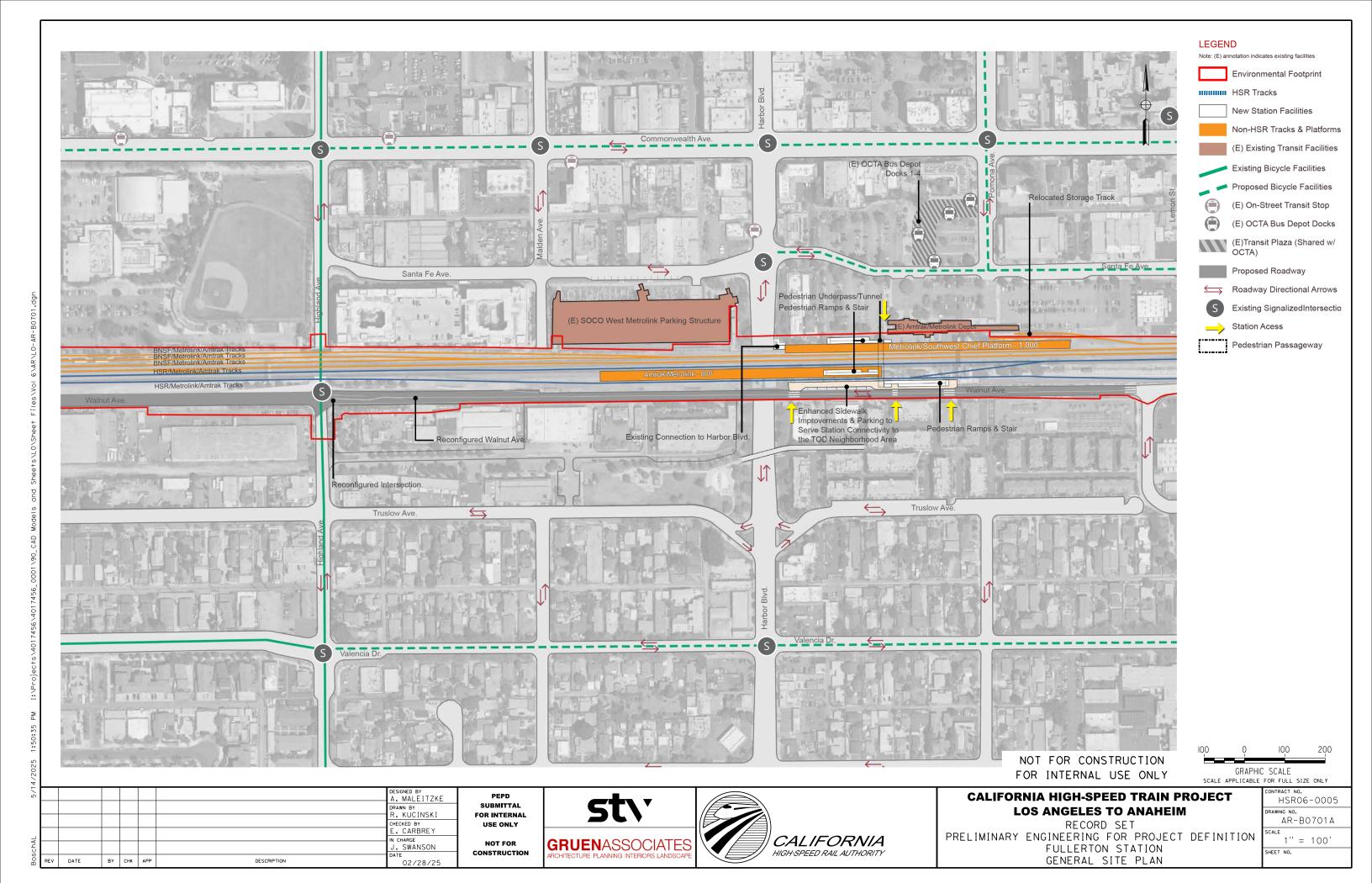




BY CHK APP

DESCRIPTION

BUENA PARK STATION GENERAL SITE PLAN



901.dgn	
5\AR\LO-AR-Y9	
eet Files\Vol	
Sheets/L0/She	
Models and	
5_0001\90_CAD	
17456\4017456	
:\Projects\40	
10:11:57 AM I	
/31/2025	

	No	Program Facility	Assumptions/Equation (Chapter 14 March 2016 Revision 2)	Minimum Required		Queuing Distance (lf)	Designed Area	HSR Project Design Criteria Chapter 14: Stations
		Unpaid Area			, ,			, , ,
	1	Waiting Area	None				1,121	14.3.5.3.C - Public Waiting Areas
	2	Public Restrooms (Male/Female)	Based on CBC for Group A-3 Occupancy	555			564	14.3.5.4 - Public Restrooms
	3	Public Restrooms (Unisex)	64 sf minimum per restroom	64			72	14.3.5.4 - Public Restrooms
	4	Public Amenity (Commercial) Space	Less than 5k = 3,000 sf; 5k-10k = 6,000 sf; More than 10k = 9,000 sf	9,000			9,048	14.3.5.5 - Passenger Amenity Spaces
	5	Fare Gates (Queuing Area)	P15b/50ppm x ((number of faregates -1x3) + (1 faregate x 4)) x 20 liner feet	740		20 lf	760	14.3.5.6.E - Fare Gates
	6	Ticket Vending Machines (Incl. Queuing Area)	Provided to meet peak passenger demand	218		8 lf	230	14.3.5.6.C - Ticket Vending Machines
	7	Ticket Sales Office	75 sf x each ticket window (windows required dependent on ridership)	225			225	14.3.5.6.B - Ticket Office Window
	8	Ticket Sales Windows	Ticket Windows x 5 linear feet in width (each) x queuing distance	300		20 lf	300	14.3.3.1.B - Queuing Space
	9	Passenger Information Counter	100 sf minimum	100			100	14.3.5.7.B - Passenger Information Counter
	10	Business Lounge	600 sf minimum without Restrooms	600			856	14.3.5.7.C - Business Lounge
	11	Vertical Transportation - Elevators	located along Santa Ana River Trail and PUDO (Metrolink)				726	14.3.3.3.E - Passenger Elevators
	12	Vertical Transportation - Stairs/Escalators/Ramps (PUDO)	located along Santa Ana River Trail and PUDO (Metrolink)				7,632	14.3.3.3.B and 14.3.3.3.C - Escalators and Stairs
	13	Vertical Transportation - Elevators (Queuing Area)	Table 14-5			8 lf	528	14.3.3.1.B - Queuing Space
n Public	14	Vertical Transportation - Stairs/Escalators/Ramps (Queuing Area)	Table 14-5			15 lf	900	14.3.3.1.B - Queuing Space
eas	15	Pedestrian Bridge/Pedestrian Passageway Circulation	CHSTP Ridership in accordance with NFPA 130				13,596	
	16	Circulation	CHSTP Ridership in accordance with NFPA 130		16 lf		5,804	14.3.3.2 - Horizontal Circulation
		Subtotal					42,462	
		Paid Area						
	17	Fare Gates (Queuing Area)	P15b/50ppm x ((number of faregates -1x3) + (1 faregate x 4)) x 20 liner feet	740		20 lf	760	14.3.5.6.E - Fare Gates
	18	Value Added Machines (Incl. Queuing Area)	3.4' width x 8 linear feet x # VAMs	54			80	14.3.5.6.D - Value Added Machines (VAMs)
	19	Vertical Transportation - Elevators	2 Elevators per platform and level				726	14.3.3.3.E - Passenger Elevators
	20	Vertical Transportation - Stairs/Escalators/Ramps					1,821	14.3.3.3.B and 14.3.3.3.C - Escalators and Stairs
	21	Vertical Transportation - Elevators (Queuing Area)	Table 14-5			8 lf	528	14.3.3.1.B - Queuing Space
	22	Vertical Transportation - Stairs/Escalators/Ramps (Queuing Area)	Table 14-5			15 lf		14.3.3.1.B - Queuing Space
	23	Circulation	CHSTP Ridership in accordance with NFPA 130		16 lf	 		14.3.3.2 - Horizontal Circulation
		Subtotal					9,725	
		Platform						
	24	Platform Area	Min Length = 1,410 lf; Min Width = 30 lf	42,300	30 lf		60,826	14.3.2.2 - Platform Planning
		Subtotal		,			60,826	

Table continued on next page

NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

1/3							DESIGNED BY A. MALEITZKE
							DRAWN BY R. KUCINSKI
ŀ							CHECKED BY E. CARBREY
boschal							IN CHARGE J. SWANSON
ğoq	REV	DATE	ВΥ	СНК	APP	DESCRIPTION	DATE 02/28/25

PEPD
SUBMITTAL
FOR INTERNAL
USE ONLY
NOT FOR

CONSTRUCTION





CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ANAHEIM STATION AT ARTIC
PROGRAM SCHEDULE 1 OF 3

CONTRACT NO.								
HSR06-0005								
DRAWING NO.								
AR-Y9901								
SCALE								
1" = 100'								
SHEET NO.								

	No	Program Facility	Assumptions/Equation (Chapter 14 March 2016 Revision 2)	Minimum Required Area	Minimum Required Width/Linear Feet (lf)	Queuing Distance (lf)	Designed Area	HSR Project Design Criteria Chapter 14: Stations
		Non-Public Station Administrative Staff Support Services Facilities	es					
	25	Station Managers Office	270 sf minimum	270			273	14.3.6.1.A - Station Managers Office
	26	Station Administrative Offices	Size as Required				635	14.3.6.1.B - Station Administration Office
	27	Facility Maintenance Office	330 sf minimum	330			399	14.3.6.1.C - Facility Maintenance Office
	28	Transportation Agency Offices	Requested by local agencies				532	14.3.6.1.D - Transportation Agency Offices
	29	Lost and Found	120 sf minimum for Terminal Stations	120			126	14.3.6.1.E - Lost and Found
	30	First Aid Room	120 sf minimum for Terminal Stations	120			_	14.3.6.1.F - First Aid Room
	31	Staff Break Room	200 sf minimum or 25 sf per staff typical shift	250			350	14.3.6.1.G - Staff Break Room
	32	Training and Meeting Room	200 sf minimum or 25 sf per staff typical shift	200			250	14.3.6.1.H - Training and Meeting Room
	33	Staff Locker Room	Size as Required				1,935	14.3.6.1.I - Staff Locker Rooms
	34	Staff Restrooms (Male/Female)	Accordance with CBC	765			784	14.3.6.1.J - Staff Restrooms
	35	Circulation/Hallways	Per CBC		3'-8" lf		985	14.3.3.2.F - Non-Public Corridors
		Subtotal					6,393	
Public		Non-Public Secure Station Staff Support Services Facilities						
Support eas	36	Security Guard Office	144 sf minimum	144	+			14.3.6.2.B - Security Guard Office
cas	37	Ticket Administration Office	75 sf per ticket window	225	1			
	38	Cash Handling and Ticket Storage Room	260 sf minimum	260				14.3.6.2.D - Cash Handling and Ticket Storage Room
	39	Station Control Room (SCR)	1,100 sf minimum	1,100	+			14.3.6.2.E - Station Control Room (SCR)
	40	Station Computer Rooms	500 sf each, total of 2	1,000				
	41	Temporary Command Post	1,500 sf minimum at Terminal Stations	1,500			1,507	14.3.6.2.G - Temporary Command Post (CP)
	42	Stations Operations Room (SOR)	1.100 sf minimum	1,100			1,427	14.3.6.2.H - Stations Operations Room (SOR)
	43	Operation Management Booth	100 sf (per Platform)	100			100	14.3.6.2.I - Operation Management Booth
	44	Terminal Station Police Facilities	700 sf + dedicated locker room facilities (Table 14-10)	1,700			1,775	14.3.8.1.A
	45	Terminal Station Train Crew Support	2,250 sf minimum (Table 14-11)	2,250			2,254	14.3.8.1.B
	46	Terminal Station Rolling Stock Maintenance	1,375 sf minimum (Table 14-12)	1,375			1,375	14.3.8.2.A
	47	Terminal Station Commissary Requirements	1,270 minimum (Table 14-13)	1,270			1,281	14.3.8.2.B
	48	Secured Circulation/Hallways	Per CBC		3'-8" lf		985	14.3.6.2
		Subtotal					13,537	
		Maintenance Support Spaces						
	49	Main Station Recycling / Refuse Storage Facility	150 sf minimum, larger for Terminal Facilities	150				14.3.7.1.A - Main Station Recycling / Refuse Storage Facility
	50	Secondary Station Recycling / Refuse Storage Facility	100 sf minimum	100			117	14.3.7.1.B - Secondary Station Recycling / Refuse Storage Facility
	51	Janitor's Closet	60 sf each min x 4	240				14.3.7.1.C - Janitor's Closet
	52	Station General Storage Rooms	200 sf + 60 sf for misc. storage spaces	260				14.3.7.1.D - Station General Storage Rooms
	53	Landscape Maintenace Room	100 sf minimum	100				14.3.7.1.E - Landscape Maintenace Room
	54	Loading Zone	Sized as appropriate					14.3.7.1.F - Loading Zone
ion	55	Loading Dock	Sized as appropriate					14.3.7.1.G - Loading Dock
lary	56	Service Access	Sized as appropriate				1	14.3.7.1.H - Service Access
ties		Subtotal					3,308	
	56	Building Services and Plant Rooms	6: 44 6 ::					440704 5 1 1 1 1 1 1
	56	Environmental Control	Sized by Designer				1	14.3.7.2.A - Environmental Control
	57	Electric System	10,000 sf Substation + 1,100 sf Station each, 2 rooms min.	12,200				14.3.7.2.B - Electric System
	58	Fire Protection	Sized by Designer				_	14.3.7.2.C- Fire Protection
	59	Plumbing and Drainage	Sized by Designer					14.3.7.2.D- Plumbing and Drainage
	60	CHST Core Systems Spaces	See Table 14-8	2,405				14.3.7.2.E- CHST Core Systems Spaces
	ρΊ	Circulation/Hallways	Per CBC		3'-8" lf		+	14.3.6.2
		Subtotal					17,093	NOT FOR CONSTRUCTION

| DESIGNED BY | A. MALEITZKE | DRAWN BY | R. KUCINSKI | CHECKED BY | E. CARBREY | IN CHARGE | J. SWANSON | DATE | BY CHK | APP | DESCRIPTION | DATE | D2/28/25

PEPD
SUBMITTAL
FOR INTERNAL
USE ONLY
NOT FOR

CONSTRUCTION





CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ANAHEIM STATION AT ARTIC
PROGRAM SCHEDULE 2 OF 3

i	inued on next page							
	CONTRACT NO.							
	HSR06-0005							
	DRAWING NO.							
	AR-Y9902							
	SCALE							
	1" = 100'							
	SHEET NO.							

	No	Program Facility	Assumptions/Equation (Chapter 14 March 2016 Revision 2)	Minimum Required	Width/Linear	•	Designed Area	HSR Project Design Criteria Chapter 14: Stations
		Subtotal					17,093	
		Ingress/Egress Circulation						
	62	Parking	ModeShare Summary 6-21-16	See Below			See Below	
Transportation	63	Pick-Up/Drop-Off	ModeShare Summary 6-21-16	See Below			See Below	
	64	Bus Bays	ModeShare Summary 6-21-16	See Below			See Below	
	65	Roads/Circulation	Sized by Designer	See Below			See Below	
		Subtotal						
		Station Program Subtotal					153,344	

Walls and Structure

Station Total

Assumed 25% Grossing Factor of Total Program Area sf

38,336

191.680

Parking and	Pick-up/Drop-Off	Uses

Fair	and Fick-	up/Drop-	Uli USES		
Parking					
	Facility	Туре	2029 Quantity	2040 Quantity	Unit
HSR			1,350	0	atalla
Metrolink/Amtrak	P1	Structure	405	0	stalls (9'x18')
Metrolink Employee			221	0	
TOTAL			1,9	976¹	stalls
TOTAL			19.80 ²		acres
Pick-up/Drop-off					
Shared with ARTIC			22		bays
HSR Dedicated			36		(8'x20')
TOTAL				58	bays
TOTAL			91,	500³	sq. ft.

¹This number represents the required High Speed Rail parking stalls and relocated or displaced Metrolink/Amtrak and Metrolink employee parking as a result of the proposed High Speed Rail project. Displaced Angels parking will be located in Facility P2, which will be restriped to accommodate the current number of stalls.

²The total parking area also includes the parking access roads, sidewalks, and landscaping areas. This number also includes the acreage for displaced Angels parking (16.52) to be restriped, within Facility P2, to accommodate the current number of stalls.

³The total area includes the stalls, buffer lanes (adjacent to traffic lane), adjacent sidewalk and access roads.

	Station Enti	ry Plazas and Trar	nsit Plazas
Program Facility	Required Area	Designed Area	HSR Design Criteria Chapter 14
Station Entry Plaza	Varies per Site	22,570 sq. ft.	14.4.4.8 Station Entry Plazas
Transit Plaza	Varies per Site	0 sq. ft.	14.4.2.4 Transit Planning Principles
TOTAL PLAZA		22,570 sq. ft.	

Note: All Plaza areas include main and secondary plazas per the proposed general and detailed site plans. There is no proposed transit plaza due to having a shared Transit Plaza with the existing ARTIC Station.

_

DESIGNED BY A. MALEITZKE RAWN BY CHECKED BY
E. CARBREY CHARGE SWANSON BY CHK APP DESCRIPTION 02/28/25

SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR

CONSTRUCTION

GRUENASSOCIATES ARCHITECTURE PLANNING INTERIORS LANDSCAPE

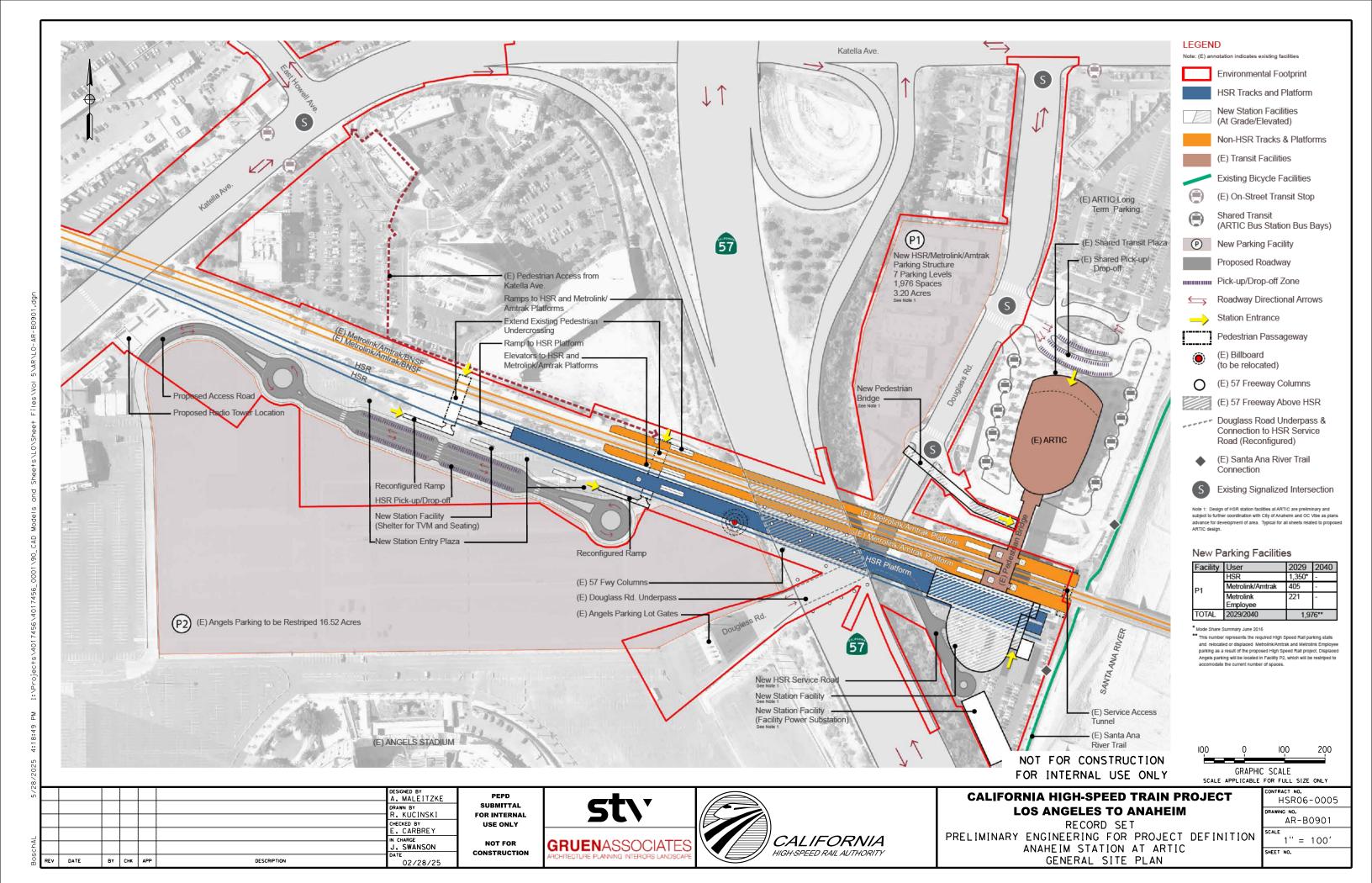


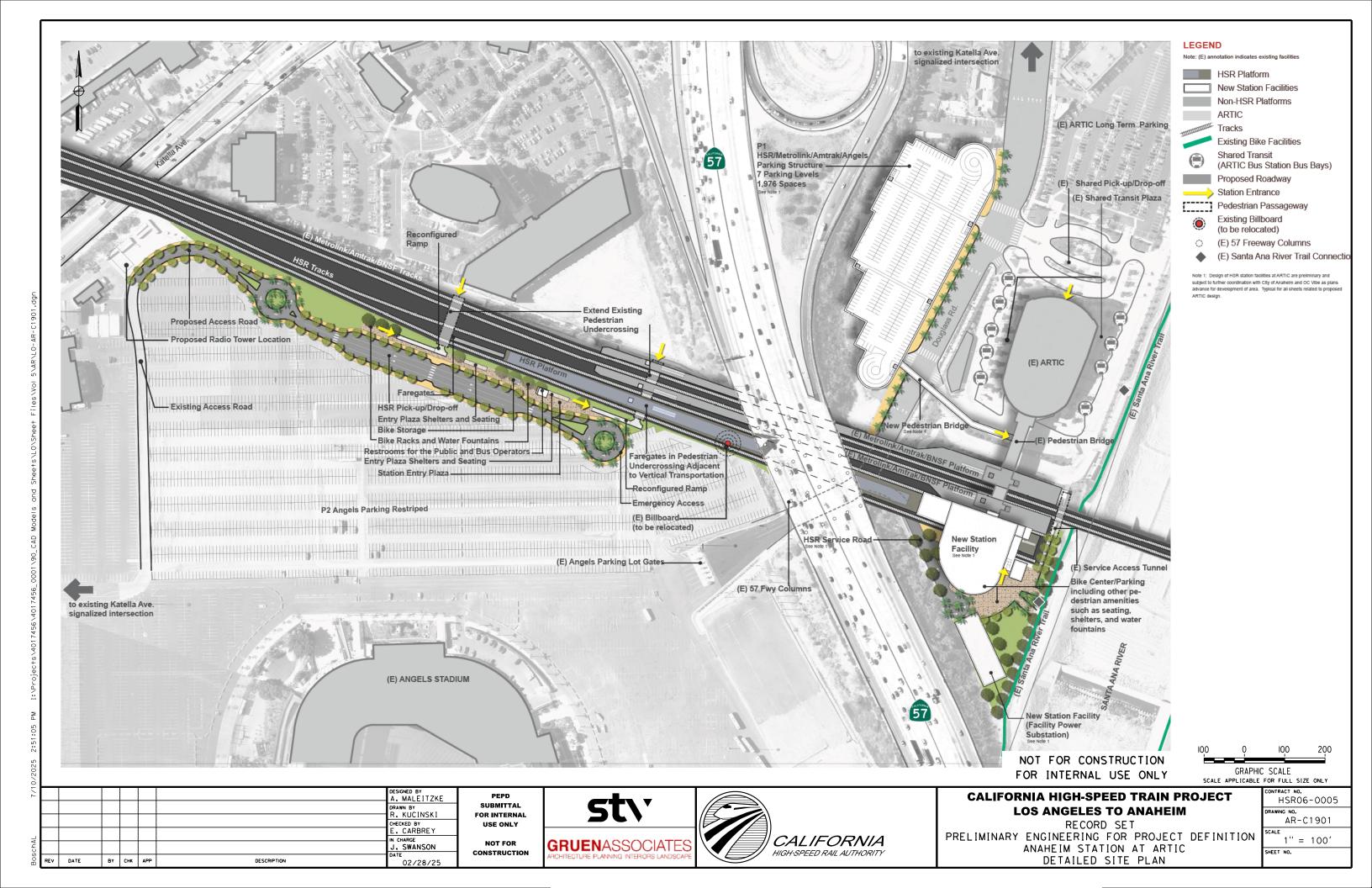
NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

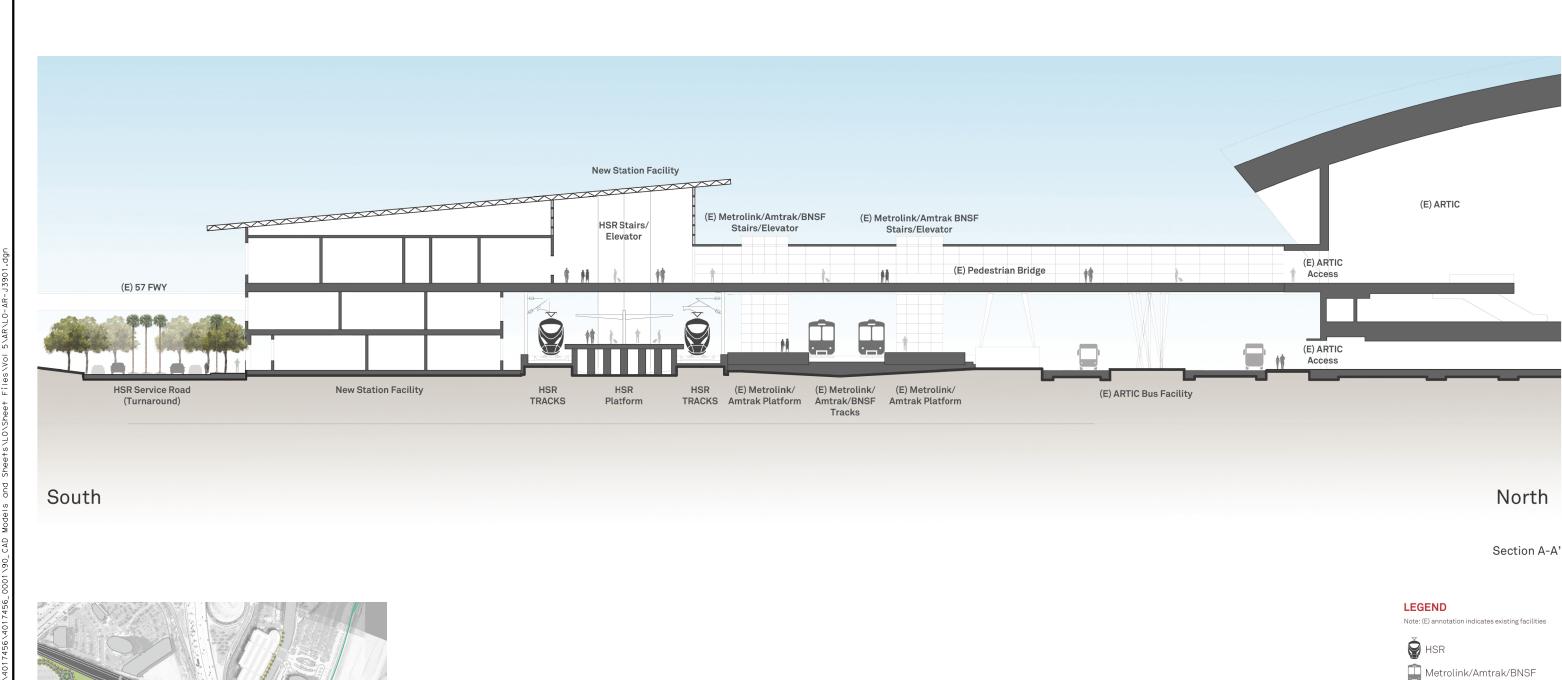
CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM

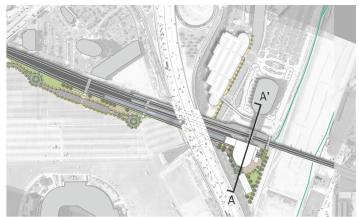
RECORD SET PRELIMINARY ENGINEERING FOR PROJECT DEFINITION SCALE ANAHEIM STATION AT ARTIC PROGRAM SCHEDULE 3 OF 3

HSR06-0005 AR-Y9903 1" = 100' SHEET NO.









NOT FOR CONSTRUCTION FOR INTERNAL USE ONLY

20	Q	20	40
SCALE	GRAPHI(C SCALE	SIZE ONLY

						DESIGNED BY A. MALEITZKE
						DRAWN BY R. KUCINSKI
						CHECKED BY
						E. CARBREY
						IN CHARGE J. SWANSON
REV	DATE	ВΥ	СНК	APP	DESCRIPTION	DATE 02/28/25

PEPD SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR

CONSTRUCTION

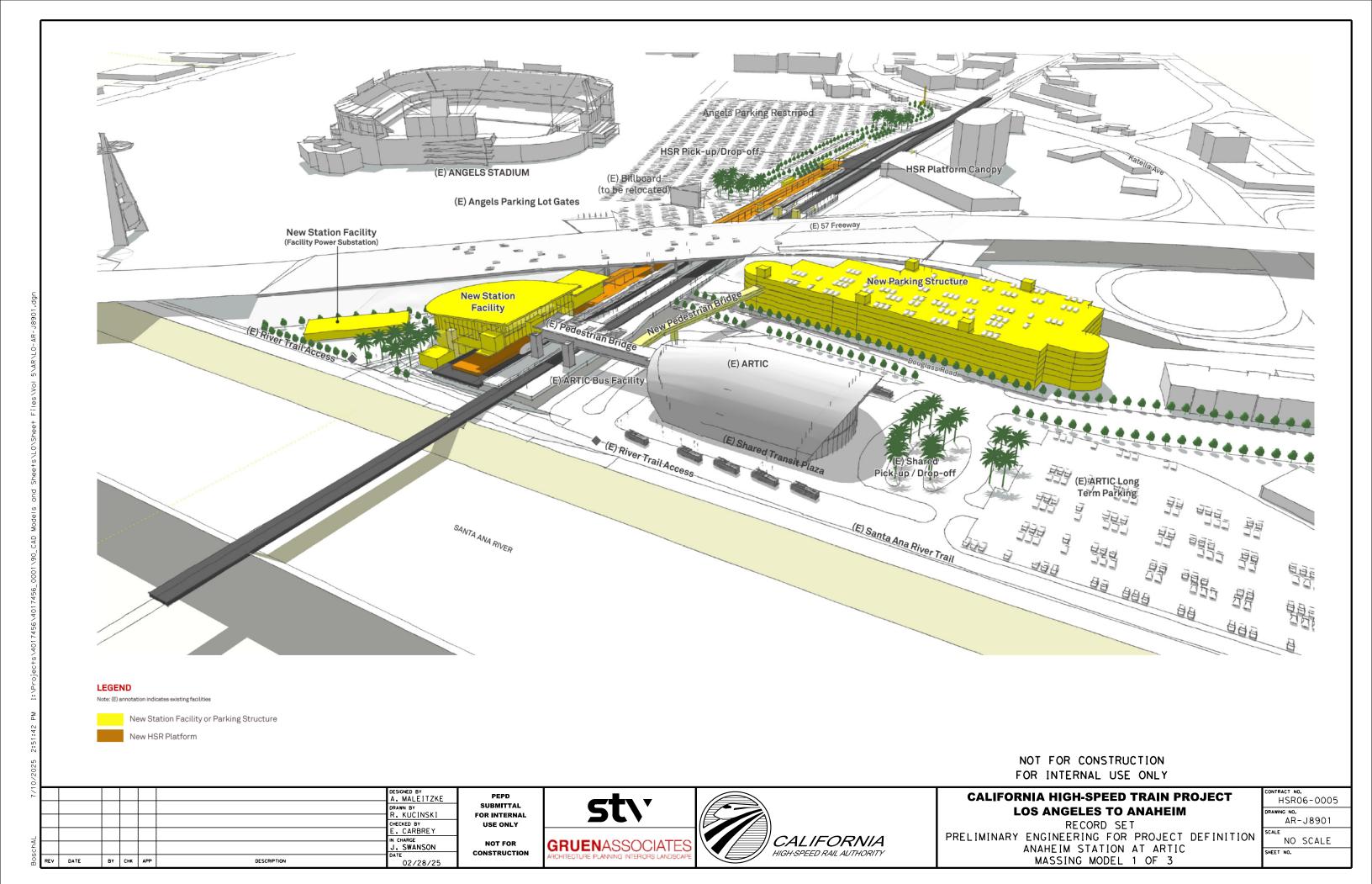


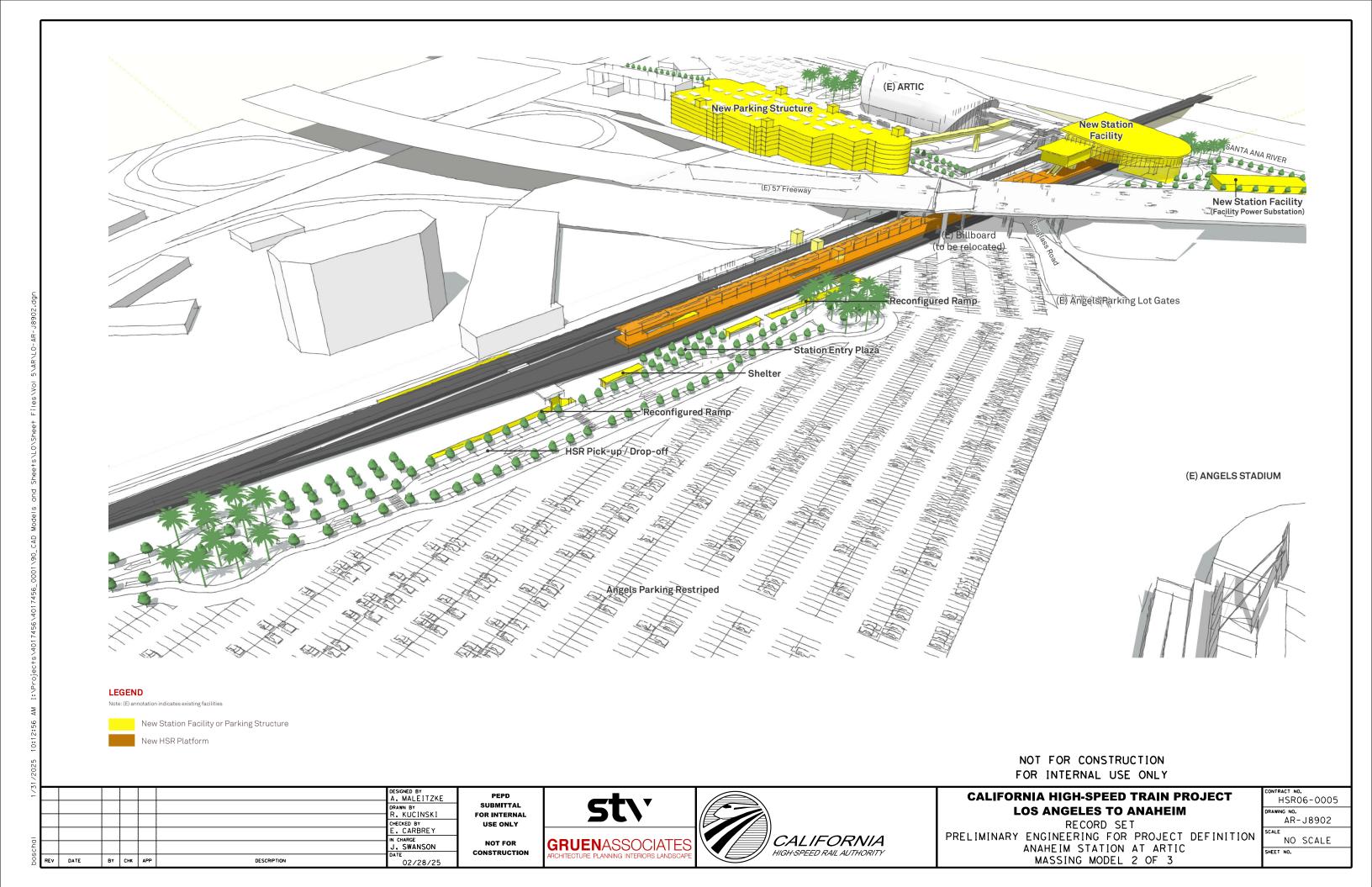


CALIFORNIA HIGH-SPEED TRAIN PROJECT LOS ANGELES TO ANAHEIM RECORD SET

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ANAHIEM STATION AT ARTIC
CROSS SECTION

LE	FOR FULL SIZE ONLY
	CONTRACT NO. HSR06-0005
	DRAWING NO.
	AR-J3901
	1" = 20'
	SHEET NO.





BY CHK APP

DESCRIPTION

02/28/25

MASSING MODEL 3 OF 3