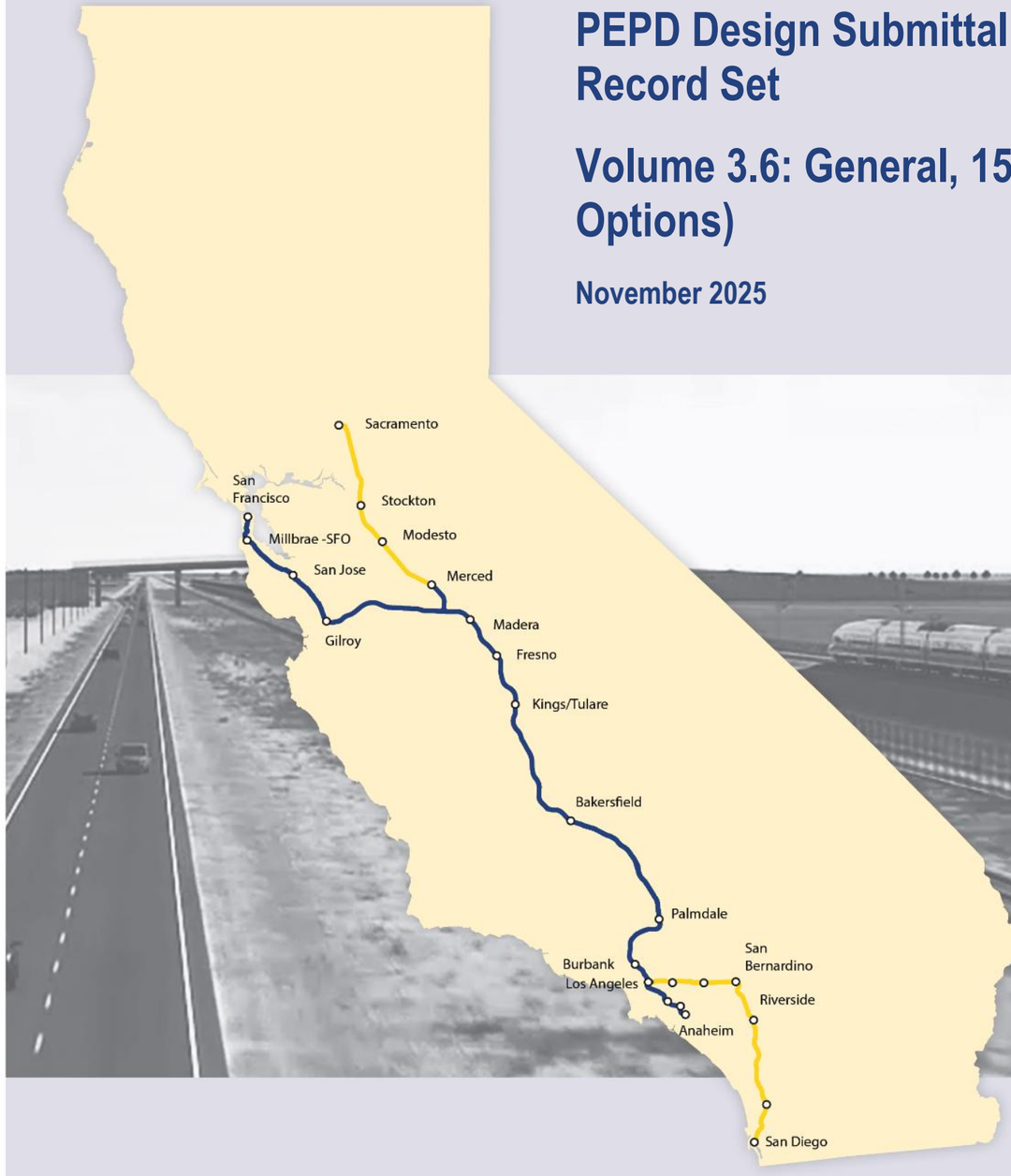
California High-Speed Rail Authority

Los Angeles to Anaheim Project Section



PEPD Design Submittal
Record Set

Volume 3.6: General, 15th St Light Maintenance Facility III & Stations (Non-Preferred Options)

November 2025

CALIFORNIA High-Speed Rail Authority

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad Administration and the State of California.

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY



PRELIMINARY ENGINEERING FOR PROJECT DEFINITION (PEPD)

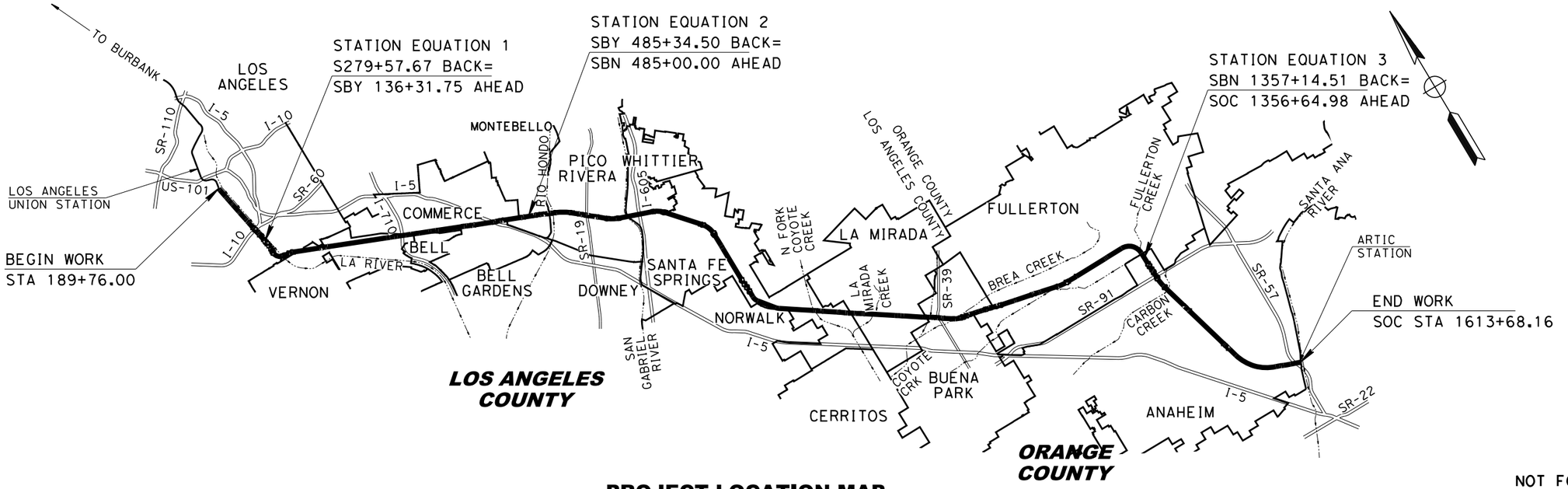
CALIFORNIA HIGH-SPEED TRAIN PROJECT

TONGVA SUBDIVISION

LOS ANGELES TO ANAHEIM

VOLUME 3.6

GENERAL & BNSF COLTON INTERMODAL FACILITY COMPONENT



PROJECT LOCATION MAP

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DESIGNED BY: M. MAMAWAL
DRAWN BY: M. MAMAWAL
CHECKED BY: J. SWANSON
IN CHARGE: J. SWANSON
DATE: 08/29/25

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

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-A0601
SCALE: NO SCALE
SHEET NO.:

$PLOT$

PEPD INDEX OF VOLUMES

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
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VOLUME NO.	CONTENT
VOLUME 3.6	15TH ST LIGHT MAINTENANCE FACILITY III & STATIONS (NON-PREFERRED OPTIONS)
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	ROADWAY WORK
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VOLUME 3.7	NOT USED
VOLUME 3.8	GENERAL
	LINK UNION STATION (LINK US) BY LA METRO

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
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INDEX OF VOLUMES

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0610
SCALE AS SHOWN
SHEET NO.

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VOLUME 3.6 - GENERAL & 15TH STREET LMF III & HSR NOWALK/SANTA FE SPRINGS & FULLERTON STATION OPTIONS (NON-PREFERRED)

GENERAL

DRAWING NO.	DRAWING TITLE
GE-A0600	COVER SHEET - VOLUME 3.6
GE-A0601	PROJECT LOCATION MAP
GE-A0610	INDEX OF VOLUMES
GE-A0611	INDEX OF DRAWINGS VOLUME 3.6 - SHEET 1 OF 2
GE-A0612	INDEX OF DRAWINGS VOLUME 3.6 - SHEET 2 OF 2
GE-D0601	VOLUME 3.6 - KEY MAP SHEET 1 OF 3
GE-D0602	VOLUME 3.6 - KEY MAP SHEET 2 OF 3
GE-D0603	VOLUME 3.6 - KEY MAP SHEET 3 OF 3
GE-B0601	BASIS OF DESIGN SUMMARY
GE-C0601	ACRONYMS AND ABBREVIATIONS 1
GE-C0602	ACRONYMS AND ABBREVIATIONS 2
GE-C0603	ACRONYMS AND ABBREVIATIONS 3
GE-C0604	ACRONYMS AND ABBREVIATIONS 4
GE-C0605	ACRONYMS AND ABBREVIATIONS 5
GE-C0611	SYMBOLS 1
GE-C0612	SYMBOLS 2
GE-B0611	GENERAL NOTES 1 OF 1
GE-D6601	TRACK SCHEMATIC
GE-D6602	TRACK SCHEMATIC - 15TH STREET LMF III OPTION

15TH STREET LMF III OPTION

DRAWING NO.	DRAWING TITLE
TT-D3032A	CROSS SECTIONS
TT-D1901A	15TH STREET LMF III OPTION
TT-D1902A	15TH STREET LMF III OPTION
TT-D1903A	15TH STREET LMF III OPTION
RW-M1860	RIGHT-OF-WAY IMPACT HSR 15TH ST LMF III OPTION
RW-M1861	RIGHT-OF-WAY IMPACT HSR 15TH ST LMF III OPTION
RW-M1862	RIGHT-OF-WAY IMPACT HSR 15TH ST LMF III OPTION
ST-K1013A	15TH STREET LMF III U-TRENCH - PLAN AND ELEVATION
UT-C1901	EXISTING COMPOSITE UTILITIES PLAN HSR 15TH ST LMF III OPTION
UT-C1902	EXISTING COMPOSITE UTILITIES PLAN HSR 15TH ST LMF III OPTION
UT-C1903	EXISTING COMPOSITE UTILITIES PLAN HSR 15TH ST LMF III OPTION

NORWALK/SANTA FE SPRINGS HSR STATION OPTION

DRAWING NO.	DRAWING TITLE
TT-D3016A	CROSS SECTIONS
TT-D1563A	PLAN AND PROFILE STA SBN 828+50 TO STA SBN 841+00
TT-D1564A	PLAN AND PROFILE STA SBN 841+00 TO STA SBN 854+50
TT-D1565A	PLAN AND PROFILE STA SBN 854+50 TO STA SBN 868+00
RW-M1563A	RIGHT-OF-WAY IMPACT N/SF HSR STATION OPTION
RW-M1564A	RIGHT-OF-WAY IMPACT N/SF HSR STATION OPTION
RW-M1565A	RIGHT-OF-WAY IMPACT N/SF HSR STATION OPTION
RW-M1731A	RIGHT-OF-WAY IMPACT IMPERIAL HWY & SHOEMAKER AVE
ST-J0018A	TYPICAL HST AERIAL STRUCTION SECTION - N/SF HSR STATION OPTION
AR-Y9501A	NORWALK / SANTA FE SPRINGS STATION - PROGRAM TABLE SHEET 1 OF 3
AR-Y9502A	NORWALK / SANTA FE SPRINGS STATION - PROGRAM TABLE SHEET 2 OF 3
AR-Y9503A	NORWALK / SANTA FE SPRINGS STATION - PROGRAM TABLE SHEET 3 OF 3
AR-B0501A	NORWALK / SANTA FE SPRINGS STATION - GENERAL SITE PLAN
AR-C1501A	NORWALK / SANTA FE SPRINGS STATION - DETAILED SITE PLAN
AR-J3501A	NORWALK / SANTA FE SPRINGS STATION - CROSS SECTION
AR-J8501A	NORWALK / SANTA FE SPRINGS STATION - MASSING MODEL 1 OF 2
AR-J8502A	NORWALK / SANTA FE SPRINGS STATION - MASSING MODEL 2 OF 2

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
INDEX OF DRAWINGS
VOLUME 3.6 - SHEET 1 OF 2

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0611
SCALE AS SHOWN
SHEET NO.

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VOLUME 3.6 - GENERAL & 15TH STREET LMF III & HSR NOWALK/SANTA FE SPRINGS & FULLERTON STATION OPTIONS (NON-PREFERRED)

FULLERTON HSR STATION OPTION

DRAWING NO.	DRAWING TITLE
TT-D3027A	CROSS SECTIONS
TT-D1596A	PLAN AND PROFILE STA SBN 1253+00 TO STA SBN 1266+50
TT-D1597A	PLAN AND PROFILE STA SBN 1266+50 TO STA SBN 1280+00
TT-D1598A	PLAN AND PROFILE STA SBN 1280+00 TO STA SBN 1293+50
TT-D1599A	PLAN AND PROFILE STA SBN 1293+50 TO STA SBN 1307+00
TT-D6006A	HORIZONTAL ALIGNMENT DATA - LA-A SOUTHBOUND TRACK
RW-M1597A	RIGHT-OF-WAY IMPACT STA SBN 1267+00 TO STA SBN 1280+50
RW-M1598A	RIGHT-OF-WAY IMPACT STA SBN 1280+50 TO STA SBN 1294+00
RW-M1599A	RIGHT-OF-WAY IMPACT STA SBN 1294+00 TO STA SBN 1307+50
ST-K1351A	GRADE SEPARATION - HIGHLAND AVENUE - GENERAL PLAN
CV-T0321A	GRADE SEPARATION - W & E WALNUT AVE - ORIENTATION MAP
CV-T1321A	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 1 OF 4
CV-T1322A	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 2 OF 4
CV-T1323A	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 3 OF 4
CV-T1324A	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 4 OF 4
CV-T1326A	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 1 OF 4
CV-T1327A	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 2 OF 4
CV-T1328A	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 3 OF 4
CV-T1329A	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 4 OF 4
CV-T3321A	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 1 OF 4
CV-T3322A	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 2 OF 4
CV-T3323A	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 3 OF 4
CV-T3324A	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 4 OF 4
CV-T1351A	GRADE SEPARATION - HIGHLAND AVE - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1352A	GRADE SEPARATION - HIGHLAND AVE - PLAN AND PROFILE - SHEET 2 OF 2
CV-T0351A	GRADE SEPARATION - HIGHLAND AVE - ORIENTATION MAP
CV-T1356A	GRADE SEPARATION - HIGHLAND AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1357A	GRADE SEPARATION - HIGHLAND AVE - IMPACT PLAN - SHEET 2 OF 2
CV-T3351A	GRADE SEPARATION - HIGHLAND AVE - CROSS SECTION - SHEET 1 OF 1
CV-T0361A	GRADE SEPARATION - HARBOR BLVD - ORIENTATION MAP
CV-T3361A	GRADE SEPARATION - HARBOR BLVD - CROSS SECTION - SHEET 1 OF 1
CV-T1361A	GRADE SEPARATION - HARBOR BLVD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1366A	GRADE SEPARATION - HARBOR BLVD - IMPACT PLAN - SHEET 1 OF 1

FULLERTON HSR STATION OPTION

DRAWING NO.	DRAWING TITLE
AR-Y9701A	FULLERTON STATION - PROGRAM TABLE SHEET 1 OF 3
AR-Y9702A	FULLERTON STATION - PROGRAM TABLE SHEET 2 OF 3
AR-Y9703A	FULLERTON STATION - PROGRAM TABLE SHEET 3 OF 3
AR-B0701A	FULLERTON STATION STATION - GENERAL SITE PLAN
AR-C1701A	FULLERTON STATION - DETAILED SITE PLAN 1 OF 1
AR-J3701A	FULLERTON STATION - CROSS SECTION 1 OF 2
AR-J3702A	FULLERTON STATION - CROSS SECTION 2 OF 2
AR-J8701A	FULLERTON STATION - MASSING MODEL 1 OF 2
AR-J8702A	FULLERTON STATION - MASSING MODEL 2 OF 2

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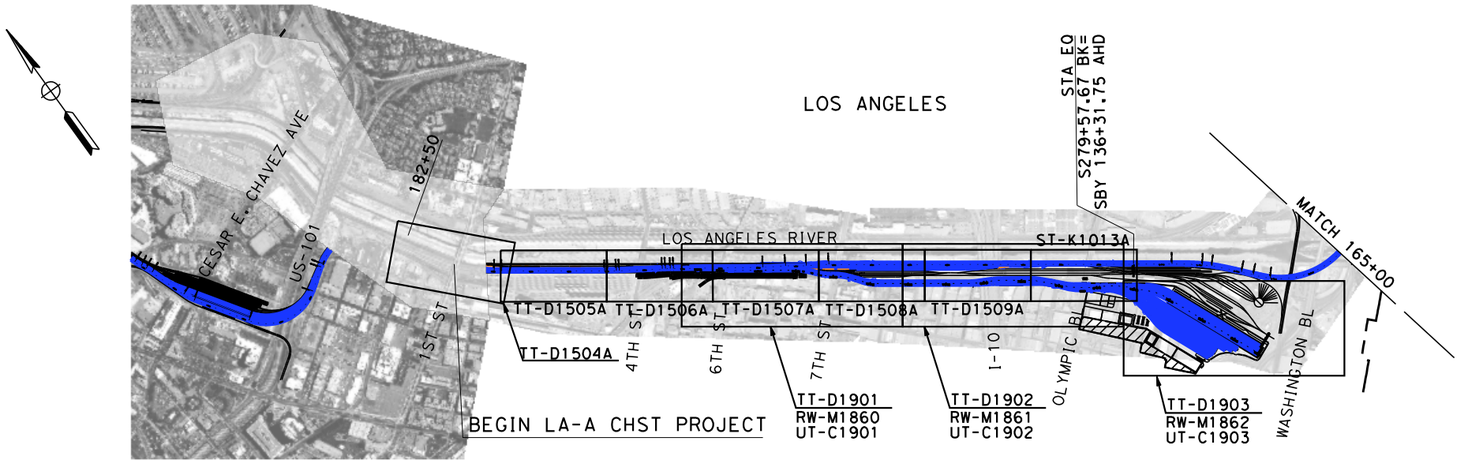
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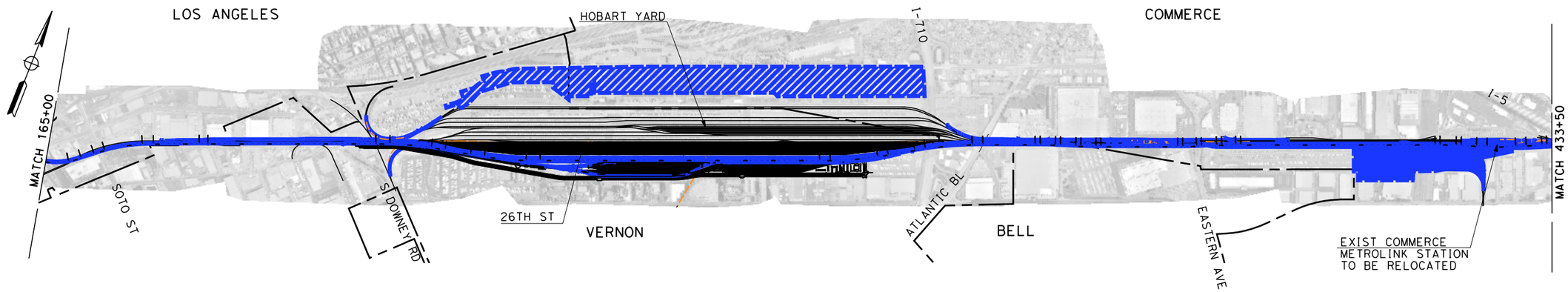
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

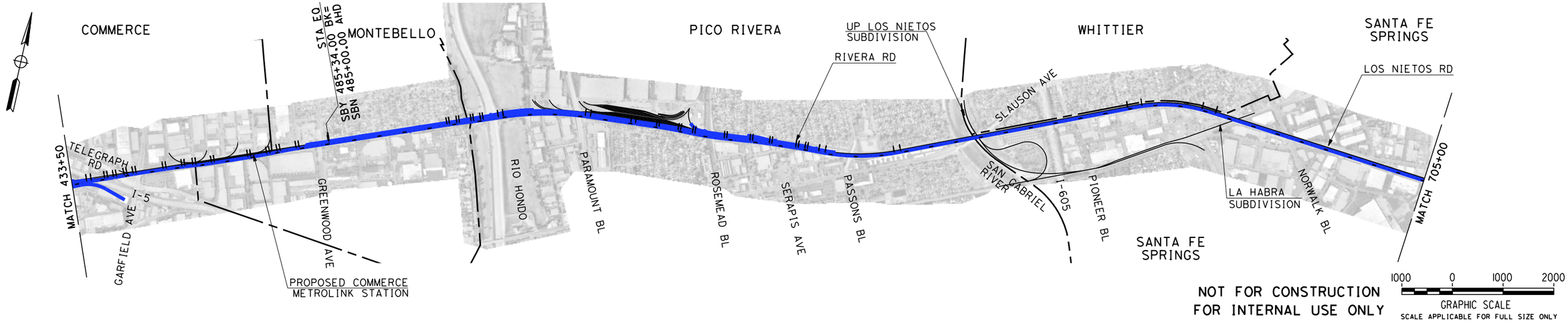
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
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INDEX OF DRAWINGS
VOLUME 3.6 - SHEET 2 OF 2

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0612
SCALE AS SHOWN
SHEET NO.

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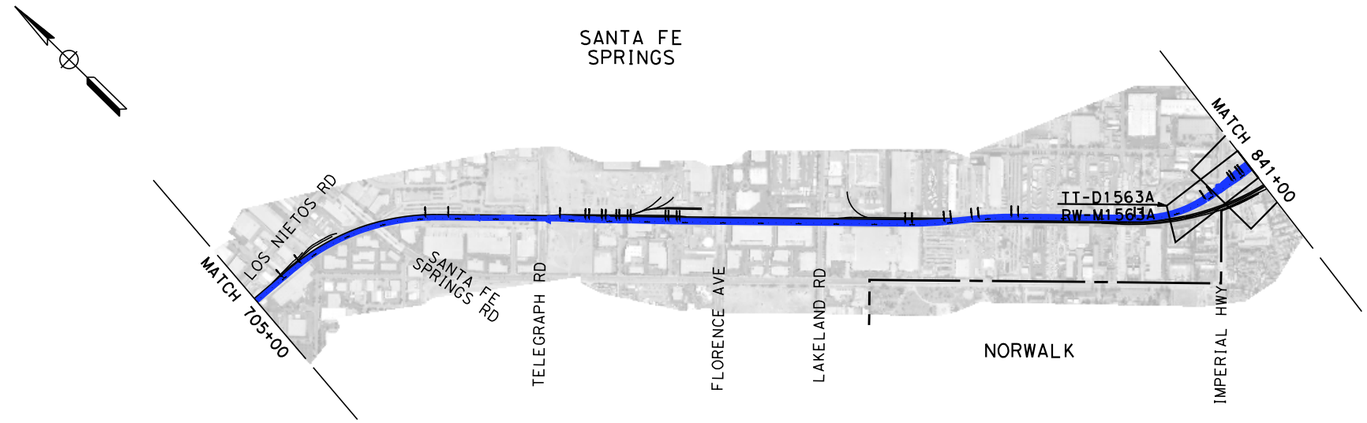
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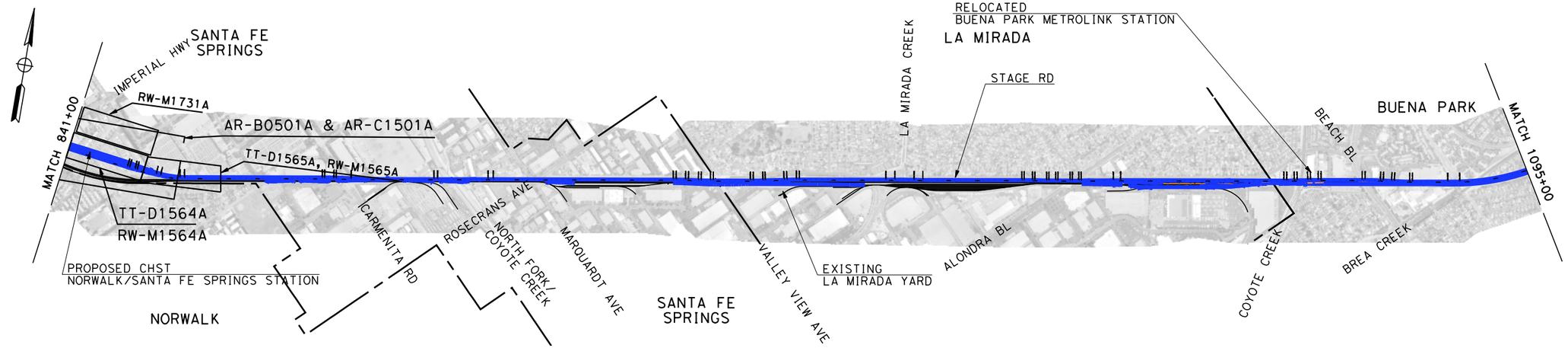
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

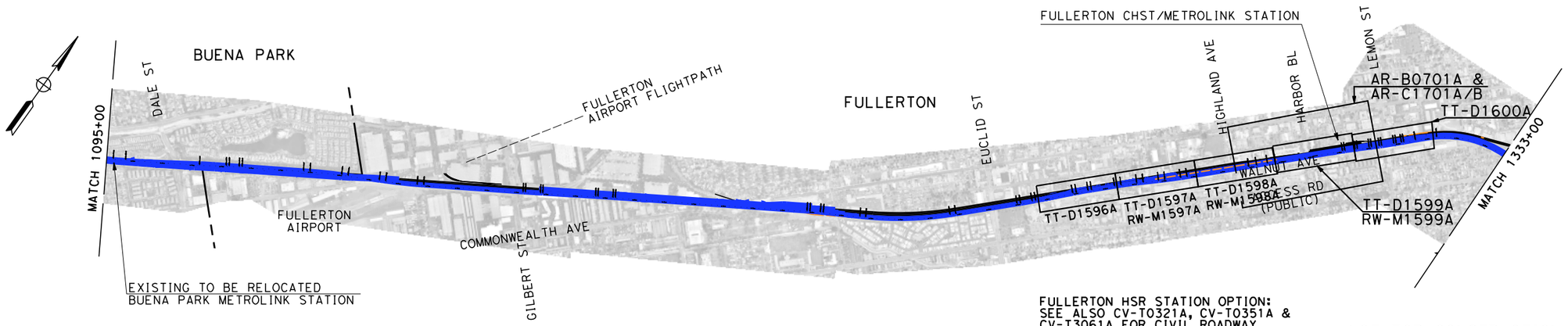
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
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VOLUME 3.6 - KEY MAP
SHEET 1 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0601
SCALE 1"= 1000'
SHEET NO.

$PLOT$







FULLERTON HSR STATION OPTION:
SEE ALSO CV-T0321A, CV-T0351A &
CV-T3061A FOR CIVIL ROADWAY
KEYMAP & ST-K1351A

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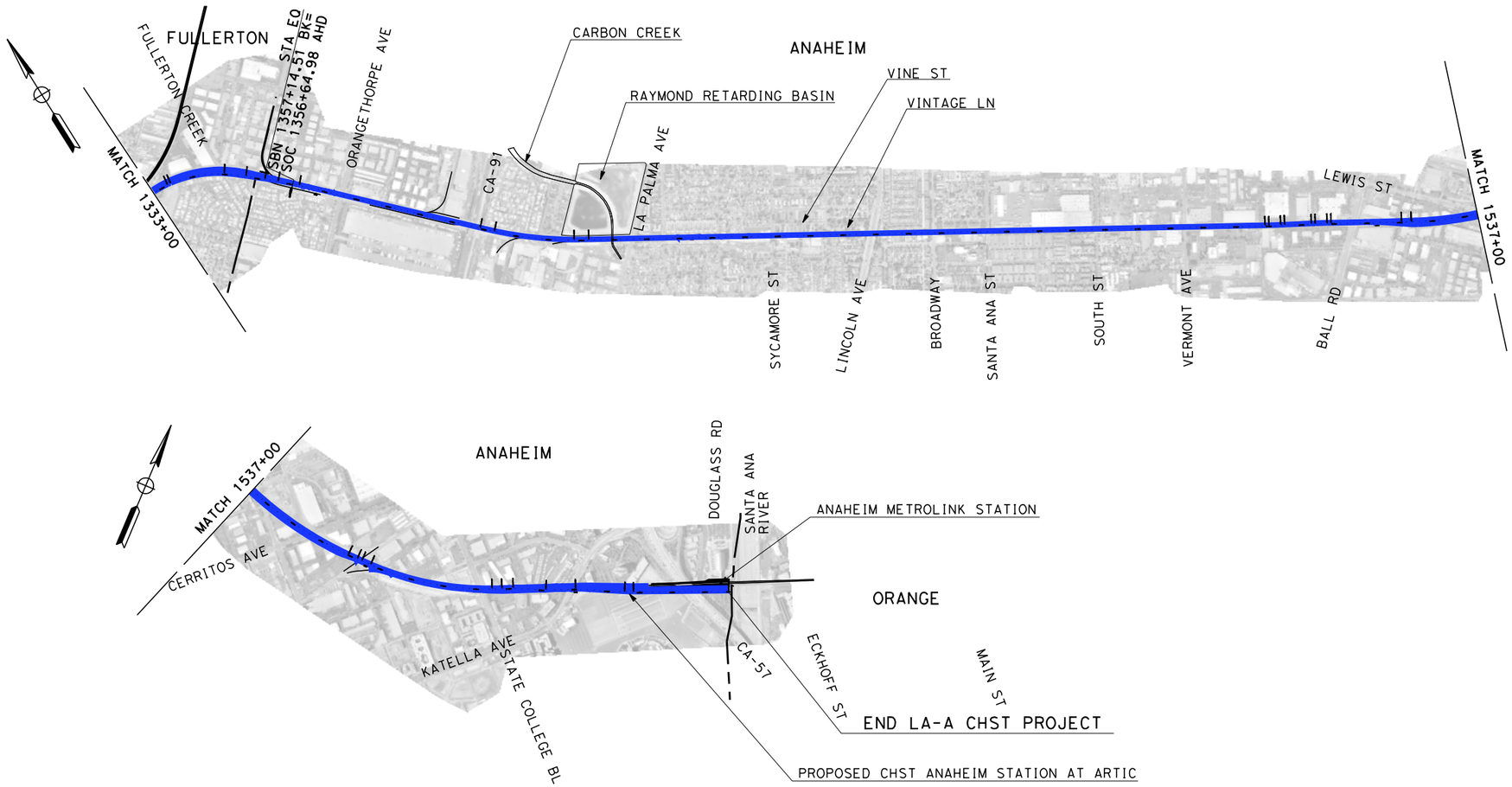
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
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VOLUME 3.6 - KEY MAP
SHEET 2 OF 3

CONTRACT NO. HSR06-0005
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SCALE 1"= 1000'
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CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
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PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
VOLUME 3.6 - KEY MAP
SHEET 3 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0603
SCALE 1"= 1000'
SHEET NO.

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BASIS OF DESIGN SUMMARY

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 LOS ANGELES AND THE ANAHEIM REGIONAL TRANSPORTATION INTERMODAL CENTER IN ANAHEIM ARE BASED ON:

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

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

   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.

5. 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.

   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

1. 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 BETWEEN THE AUTHORITY AND UTILITY OWNER.

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FOR INTERNAL USE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

PEPD SUBMITTAL FOR INTERNAL USE ONLY

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
BASIS OF DESIGN SUMMARY

CONTRACT NO. HSR06-0005
DRAWING NO. GE-B0601
SCALE NO SCALE
SHEET NO.

$PLOT$

A

@	AT
AADT	AVERAGE ANNUAL DAILY TRAFFIC
AB	AGGREGATE BASE, ANCHOR BOLT
ABBC	ASBESTOS BONDED BITUMINOUS COATED AIR-BLOWN MORTAR
ABM	AIR-BLOWN MORTAR
ABN	ABANDON
ABUT	ABUTMENT
ABV	ABOVE
AC	ALTERNATING CURRENT, ASPHALT CONCRETE
ACB	ASPHALT CONCRETE BASE
ACMB	AC DISTRIBUTION PANEL MAIN BREAKER
ACOUS	ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE
ACS	ACCESS CONTROL ROOM
ACSR	ALUMINUM CONDUCTOR STEEL REINFORCED
AD	AREA DRAIN
ADJ	ADJACENT, ADJUST, ADJUSTABLE
ADL	ADDED DEAD LOAD
ADP	AC DISTRIBUTION PANEL
ADT	AVERAGE DAILY TRAFFIC
A&E	ARCHITECTURAL AND ENGINEERING
AEC	AERIAL EARTH (GROUND) CONDUCTOR
AED	AUTOMATED EXTERNAL DEFIBRILLATOR
AFC	AUTOMATIC FARE COLLECTION
AFES	ALTERNATIVE FLARED END SECTION
A/G	AT-GRADE
AGW	AERIAL GROUND WIRE
AHD	AHEAD
AL	ALUMINUM
ALIGN	ALIGNMENT
ALT	ALTERNATE
AM	TIME FROM MIDNIGHT TO NOON
ANC	ANCHOR
ANI	AUTOMATIC NUMBER IDENTIFICATION
ANN	ANNUNCIATOR
ANS	AMBIENT NOISE SENSOR
AP	ALTERNATIVE PIPE
APC	ALTERNATIVE PIPE CULVERT
APE	AREA OF POTENTIAL EFFECTS
APEFZ	ALQUIST-PRIOLO EARTHQUAKE FAULT ZONE
API	APPLICATION PROGRAMMING INTERFACE
APPROX	APPROXIMATE
APU	ALTERNATIVE PIPE UNDERDRAIN
AR	ACCESS RESTRICTION
ARCH	ARCHITECTURAL
ARS	ACCELERATION RESPONSE SPECTRUM
AS	AGGREGATE SUBBASE
ASPH	ASPHALT
ASRP	ALUMINUM SPIRAL RIB PIPE
ASSY	ASSEMBLY
AT	AUTOTRANSFORMER, AUTOMATIC TENSION
ATC	AUTOMATIC TRAIN CONTROL
ATEL	ADMINISTRATIVE TELEPHONE
ATM	ALONG TRACK MOVEMENT
ATO	AUTOMATIC TRAIN OPERATION
ATP	AUTOMATIC TRAIN PROTECTION
ATPB	ASPHALT TREATED PERMEABLE BASE
ATPM	ASPHALT TREATED PERMEABLE MATERIAL
ATR	ABOVE TOP OF RAIL
ATS	AUTOMATIC TRAIN SUPERVISION, AUTO TENSIONED SYSTEM
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AVL	AUTOMATIC VEHICLE LOCATION
AWG	AMERICAN WIRE GAUGE

B

BAGR	BRIDGE APPROACH GUARD RAILING
BAR	BARRIER
BAT	BATTERY
BB	BEGINNING OF BRIDGE
B-B	BACK-TO-BACK
BC	BEGINNING OF CURVE, BOLT CIRCLE
BCR	BEGIN CURB RETURN
BD	BOARD
BDA	BI-DIRECTIONAL AMPLIFIER
BDD	BRIDGE DESIGN DETAILS (CALTRANS)

B CONTINUED

BDP	BRIDGE DESIGN PRACTICE (CALTRANS)
BDS	BRIDGE DESIGN SPECIFICATIONS (CALTRANS)
BEC	BURIED EARTH (GROUND) CONDUCTOR
BEG	BEGIN
BFA	BYPASS FEEDER ANCHOR
BIL	BASIC IMPULSE INSULATION LEVEL
BITUM	BITUMINOUS
BK	BACK
BKF	BACKFILL
BKR	BREAKER
BL	BASELINE
BLDG	BUILDING
BLKG	BLOCKING
BLM	BRIDGE-LOG MILE
BLST	BALLAST
BLVD	BOULEVARD
BM	BENCHMARK
BN	BACKBONE NETWORK
BND	BOUND
BOC	BOTTOM OF CURB
BOCC	BACK-UP OPERATIONAL CONTROL CENTER
BOS	BOTTOM OF SLOPE
BOT	BOTTOM
BOW	BOTTOM OF WALL
BR	BRIDGE, BRIDGE CURVE
BRG	BEARING
BRKT	BRACKET
BRS	BROADBAND RADIO SYSTEM
BRT	BUS RAPID TRANSIT
BS	BODY SPAN WIRE
BSC	BASE STATION CONTROLLER
B/SPAN	BODY SPAN
BT	BUS TIE
BTM	BOTTOM
BTS	BASE TRANCEIVER STATION
BTWN	BETWEEN
BVC	BEGINNING OF VERTICAL CURVE
BW	BARBED WIRE, BALANCE WEIGHT
B/W	BLACK AND WHITE
BWA	BALANCE WEIGHT ANCHOR
BWLAN	BROADBAND WIRELESS LOCAL AREA NETWORK
BZ	BRONZE

C

C	CLOSE, CONTACT, CONTROL
CA	CERTIFICATION ACCEPTANCE
CAA	CABLE ANCHOR ASSEMBLY
CAB	CABINET
CADD	COMPUTER-AIDED DESIGN AND DRAFTING
CAH	CONTROLLED ACCESS HIGHWAY
CAI	CUSTOMER ASSISTANCE INTERCOM
CALP	CORRUGATED ALUMINUM PIPE
CANT	CANTILEVER
CAP	CAPACITY, CAPACITOR, CORRUGATED ALUMINUM PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CAS	CONSTRUCTION AREA SIGN
CAT	CATEGORY, CATEGORY SPECIFICATION FOR TWISTED PAIR CABLING
CATF	CANTENARY FOUNDATION
CATP	CANTENARY POLE
CB	CATCH BASIN, CIRCUIT BREAKER, CONCRETE BARRIER
CBTC	COMMUNICATIONS BASED TRAIN CONTROL
CBW	CONCRETE BLOCK WALL
C&C	CUT AND COVER
C-C	CENTERLINE TO CENTERLINE
CCO	CONTRACT CHANGE ORDER
CCS	CALIFORNIA COORDINATE SYSTEM
CCTV	CLOSED CIRCUIT TELEVISION
CCVT	COUPLING CAPACITOR VOLTAGE TRANSFORMER
CEG	CERTIFIED ENGINEERING GEOLOGIST
CEM	CEMENT
CER	COMMUNICATIONS EQUIPMENT ROOM
C&G	CURB AND GUTTER
CG	CENTER OF GRAVITY
CGS	CALIFORNIA GEOLOGICAL SURVEY
CHNL	CHANNEL

C CONTINUED

CI	CAST IRON
CIC	COMMUNICATIONS INTERFACE CABINET
CIDH	CAST-IN-DRILLED-HOLE
CIF	COMMON INTERMEDIATE FORMAT
CIP	CAST IRON PIPE
C-I-P	CAST-IN-PLACE
CIPCP	CAST-IN-PLACE CONCRETE PIPE
CIS	CUSTOMER INFORMATION SIGN
CISS	CAST-IN-STEEL-SHELL
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CKT	CIRCUIT
CL	CLASS
CL2	CLASS 2
CL-6	CHAIN LINK FENCE (6 FT)
CLG	CEILING
CLK	CHAIN LINK
CLKG	CAULKING
CLO	CLOSET
CLR	CLEAR, CLEARANCE
CM	CONTROL MODULE, CORRUGATED METAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CLEANOUT, COUNTY
COL	COLUMN
COMM	COMMUNICATIONS
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTOR, CONNECTION
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CP	CONTROL POINT
CPT	CONE PENETRATION TEST, CONTROL POWER TRANSFORMER
CPU	CENTRAL PROCESSING UNIT
CR	CREEK, CONDUIT RISER
CRC	COMBINED RELAY AND CONTROL PANEL
CRCP	CONTINUOUS REINFORCED CONCRETE PAVEMENT
CRSP	CONCRETED ROCK SLOPE PROTECTION
CRZ	CLEAR RECOVERY ZONE
CS	CONTROL SWITCH, CURVE TO SPIRAL
CSA	CONSTRUCTION STAGING AREA
CSP	CORRUGATED STEEL PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CT	CERAMIC TILE, CURVE TO TANGENT, COURT, CURRENT TRANSFORMER/TRANSDUCER
CTB	CEMENT TREATED BASE
CTPB	CEMENT TREATED PERMEABLE BASE
CTPM	CEMENT TREATED PERMEABLE MATERIAL
CTR	CENTER
CTSK	COUNTERSUNK
CTVT	COMBINED CURRENT TRANSFORMER AND VOLTAGE TRANSFORMER
CTW	COUNTER WEIGHT TAIL WIRE
CU	COPPER
CULV	CULVERT
CV	CURVE
CVR	COVER
CW	CONTACT WIRE
CWA	CONTACT WIRE ANCHOR
CWH	CONTACT WIRE HEIGHT
CWR	CONTINUOUSLY WELDED RAIL
CWT	COUNTER WEIGHT

D

D	DEPTH
DB	DESIGN-BUILD
DBE	DESIGN BASIS EARTHQUAKE
DBL	DOUBLE
DC	DIRECT CURRENT
DCMB	DC DISTRIBUTION PANEL MAIN BREAKER
DCP	DC DISTRIBUTION PANEL

D CONTINUED

DD	DOWNDRAIN, DEVICE DRIVER
DE	DEAD END
DEL	DELINEATOR
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET	DETOUR
DF	DIRECT FIXATION, DRINKING FOUNTAIN
DGA	DOWN GUY ANCHOR
DHV	DESIGN HOURLY VOLUME
DI	DRAINAGE INLET
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFERENTIAL
DIM	DIMENSION
DIN	DROP INLET
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISC	DISCONNECT
DISP	DISPENSER
DIST	DISTANCE
DISTR	DISTRIBUTION
DMBB	DOUBLE METAL BEAM BARRIER
DN	DOWN
DNS	DOMAIN NAME SYSTEM
DO	DOOR OPENING
DPDT	DOUBLE-POLE DOUBLE-THROW
DR	DRIVE
DS	DOWNSPOUT, DISCONNECT SWITCH
DSC	DIFFERING SITE CONDITIONS
DSCW	DIRECT SUSPENSION CONTACT WIRE
DSG	DISCONNECT SWITCH GROUP
DSHA	DETERMINISTIC SEISMIC HAZARD ANALYSIS
DST	DISTRICT
DTBB	DOUBLE THRIE BEAM BARRIER
DTM	DIGITAL TERRAIN MODEL
DVR	DIGITAL VIDEO RECORDERS
DWG	DRAWING
DWY	DRIVEWAY
DXO	DOUBLE CROSSOVER

E

E_a	APPLIED CANT
E_u	UNBALANCED CANT
E	EAST
EA	EACH
EB	EASTBOUND, END OF BRIDGE
EC	END HORIZONTAL CURVE, ELECTRICAL CONDUCTOR
ECR	END CURB RETURN
EE	EACH END
EF	EACH FACE
EGS	EMERGENCY GROUND SWITCH
EHS	EXTRA HIGH STRENGTH
EI	EMERGENCY INTERCOM
EJ	EXPANSION JOINT
E-LAN	ETHERNET LAN
ELAST	ELASTOMERIC
ELEC	ELECTRICAL, ELECTRIC
ELECT	ELECTROLIER
ELEV	ELEVATION
ELOCK	ELECTRONIC LOCK
EMB	EMBANKMENT
EMC	ELECTROMAGNETIC COMPATIBILITY
EMER	EMERGENCY
EMF	ELECTROMAGNETIC FIELD
EMI	ELECTROMAGNETIC INTERFERENCE
EMS	ELEMENT MANAGEMENT SYSTEM
EMU	ELECTRIC MULTIPLE UNIT
ENCL	ENCLOSURE
ENGR	ENGINEER, ENGINEERING
EO	BEND OF BRIDGE
EOD	EDGE OF DECK
EOS	ELECTRICAL OPERATED BRIDGE
EOW	END OF WALL

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ACRONYMS AND ABBREVIATIONS 1

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SCALE NO SCALE
SHEET NO.

$PLOT$

E CONTINUED

EP	EDGE OF PAVEMENT
EPBM	EARTH PRESSURE BALANCING MACHINE
EPR	ETHYLENE PROPYLENE RUBBER
EQ	EQUAL, EQUILATERAL
EQN	EQUATION
EQUIP	EQUIPMENT
ES	EDGE OF SHOULDER, EXTRA STRENGTH, ELECTRICAL SECTION
ESA	ENVIRONMENTALLY SENSITIVE AREA
ESC	ESCALATOR
ESEW	EMERGENCY SHOWER / EYE WASH
ESMT	EASEMENT
ETCS	EUROPEAN TRAIN CONTROL SYSTEM
ETEL	EMERGENCY TELEPHONE
ETS	EMERGENCY TRIP SYSTEM
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICAL CURVE
EW	EACH WAY, ENDWALL
EXC	EXCAVATION
EXIST/EX	EXISTING
EXP	EXPANSION
EXPO	EXPOSED
EXWY	EXPRESSWAY
EXT	EXTERIOR

F

FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAS	FIRE ALARM SYSTEM
FB	FLAT BAR, FLOOR BEAM, FEEDER BREAKER
FBO	FURNISHED BY OTHERS
FC	FARE COLLECTION
F&C	FRAME AND COVER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FDP	FIBER DISTRIBUTION PANEL
FDR	FEEDER
FDU	FIBER DISTRIBUTION UNIT
FE	FIRE EXTINGUISHER
FES	FLARED END SECTION
FF	FILTER FABRIC
F/F	FACE TO FACE
FFJ	FULL FEEDING JUMPER
FFL	FINISHED FLOOR LEVEL
FG	FINISHED GRADE
F&G	FRAME AND GRATE
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FID	FIRE INITIATING DEVICE
FIG	FIGURE
FIN	FINISH
FIRM	FLOOD INSURANCE RATE MAPS
FJ	FEEDER JUMPER
FL	FLOW LINE
FLB	FLOOR BEAM
FLH	FLAT HEAD
FLR	FLOOR
FNA	FIRE NOTIFICATION APPLIANCE
FO	FIBER OPTIC
FOC	FIBER OPTIC CABLE, FACE OF CURB
FOCN	FIBER OPTIC CABLING NETWORK
FOF	FACE OF FINISH
FOP	FACE OF POLE
FOS	FACE OF STUDS, FACTOR OF SAFETY
FP	FULL PENETRATION
FPLM	FULL SPAN PRECAST LAUNCHING
FPRF	FIRE PROOF
FPS	FRAMES PER SECOND
FR	FRAME
FREQ	FREQUENCY
FS	FINISHED SURFACE
FTEL	FIRE TELEPHONE
FTG	FOOTING
FTP	FILE TRANSFER PROTOCOL
FTW	FIXED END TAIL WIRE
FUT	FUTURE
FW	FEEDER WIRE
FWY	FREEWAY

G

G1	ENTRANCE GRADE, GRADE BEFORE CURVE
G2	EXIT GRADE, GRADE POST CURVE
GALV	GALVANIZED
GCL	GRADING CONTROL LINE
GD	GRADE
GHS	GALVANIZED HIGH STRENGTH
GIGE	GIGABIT ETHERNET
GIS	GAS INSULATED SWITCH, GEOGRAPHIC INFORMATION SYSTEM
GL	GLASS
G/L	GROUND LINE
GMA	GROUND MOTION ANALYSIS
GND	GROUND
GO-95	PUC GENERAL ORDER 95
GP	GRADING PLANE
GPS	GLOBAL POSITIONING SYSTEM
GR	GUARDRAIL, GROUND ROD
GRP	GLASS REINFORCED PLASTIC ROD
GRS	GALVANIZED RIGID STEEL
GRX	GRADE CROSSING
GSHA	GEOLOGIC AND SEISMIC HAZARDS ANALYSIS
GSP	GALVANIZED STEEL PIPE
GT	GENERAL INFORMATION
GTGM	GEOTECHNICAL TECHNICAL GUIDANCE MANUAL (FHWA)
GTR	GUTTER
GW	GUY WIRE
GYP	GYPSUM
GYPBD	GYPSUM BOARD

H

H1	HST TRACK
HAZ	HAZARDOUS
HB	HARDNESS BRINELL, HOSE BIBB
HC	HANDICAP
HD	HARD DRAWN, HORIZONTAL DRAIN
HDG	HOT DIP GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HDWE	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
HH	HANDHOLE, HEAD HARDENED
HI	HIGH
HI-RAIL	HIGHWAY TO RAILROAD VEHICLE
HM	HOLLOW METAL
HMA	HOT MIXED ASPHALT
HMI	HUMAN MACHINE INTERFACE
HO	HAND OPERATED
HOR	HORIZONTAL
HOV	HIGH-OCCUPANCY VEHICLE
HP	HIGH POINT, HINGE POINT
HP&R	HIGHWAY PLANTING AND RESTORATION
HPS	HIGH PERFORMANCE STEEL
HR	HANDRAIL
HRL	HIGH RAIL LEVEL
HS	HIGH STRENGTH
H/SPAN	HEADSPAN
HSR	HIGH-SPEED RAIL
HST	HIGH-SPEED TRAIN
HT	HIGH TEMPERATURE
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING VENTING AND AIR CONDITIONING
HW	HIGH WATER
HWL	HIGH WATER TABLE
HWM	HIGH WATER MARK
HWY	HIGHWAY

I

IB	IMPENANCE BOND
IBC	INTERNATIONAL BUILDING CODE
IDS	INTRUSION DETECTION CODE
IIMP	INTERGRATED IMFORMATION MANAGEMENT PLATFORM
IJ	INSULATED JOINT
IJP	INSULATED JOINT PLUG
INSR	INSULATOR
INST	INSTANTANEOUS
INSUL	INSULATION
INT	INTERIOR
Inter-LATA	INTER-LOCAL ACCESS AND TRANSPORT AREA
INV	INVERT
I/O	INPUT/OUTPUT
IR	IN-RUNNING (RIDING CONTACT WIRE)
IRR	IRRIGATION
I/S	IN-SPAN
I/SJ	IN-SPAN JUMPER

I CONTINUED

J

J	JUMPER
JAN	JANITOR
JB	JUNCTION BOX
JCT	JUNCTION
JP	JOINT POLE
JT(S)	JOINT(S)

K

KV	KILOVOLT

L

L	LENGTH
LA	LANDSCAPE ARCHITECT, LIGHTING ARRESTER, LOS ANGELES (CALIFORNIA, USA)
LA-A	LOS ANGELES TO ANAHEIM
LAM	LAMINATE
LAN	LOCAL AREA NETWORK
LA-SD	LOS ANGELES TO SAN DIEGO
LAT	LATITUDE
LAV	LAVATORY
LC	LENGTH OF CURVE, LANDSCAPE CONTRACTOR
LCB	LEAN CONCRETE BASE
LCX	LEAKY COAXIAL RADIO CABLE
LDBE	LOWER-LEVEL DESIGN BASIS EARTHQUAKE
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LG	LONG
LGT	LIGHT, LIGHTING
LH	LEFT-HAND
LKR	LOCKER
LL	LIGHT LOADING
LLT	LAST LONG TIE
LN	LANE
LO	LOCKOUT
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDE, LONGITUDINAL
LOS	LEVEL OF SERVICE
LOTB	LOGS OF TEST BORINGS
LP	LOW POINT, LOW PROFILE
LPL	LIGHT POLE
LR	LOW RAIL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LRT	LIGHT RAIL TRANSIT
LRV	LIGHT RAIL VEHICLE
LS	LENGTH OF SPIRAL, LANDSCAPING, LUMP SUM
LT	LEFT
LV	LOW VOLTAGE
LVL	LEVEL
LVT	LOW VIBRATION TRACK
LWP	LOWER WORKING POINT

M

M1	CONVENTIONAL RAILWAY TRACK
M	MEDIUM LOADING
MAINT	MAINTENANCE
MAT	MATERIAL
MAX	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
MCC	MAINTENANCE CONTROL CENTER
MCE	MAXIMUM CONSIDERED EARTHQUAKE
MCR	MASTER CONTROL ROOM
MDS	MOBILE DATA SYSTEM
MECH	MECHANICAL
MED	MEDIAN
MEM	MEMBRANE
MESSGR	MESSENGER WIRE
MET	METAL
MFR	MANUFACURER
MH	MANHOLE
MHHW	MEAN HIGHEST HIGH WATER
MI	MILD IRON
MIN	MINIMUM
MISC	MISCELLANEOUS
MKR	MARKER
ML	MAIN LINE
MLLW	MEAN LOWER LOW WATER
MMIS	MAINTENANCE MANAGEMENT INFORMATION SYSTEM
MO	MASONRY OPENING
MOC	MOTOR OPERATED CONTRACTOR
MOD	MODIFIED, MODIFY
MODC	MOTOR OPERATED DISCONNECT SWITCH
MOI	MAINTENANCE OF INFRASTRUCURE
MON	MONUMENT
MOP	MOTOR OPERATED
MOS	MANUALLY OPERATED SWITCH
MOV	METAL-OXIDE VARISTOR
MOW	MAINTENANCE OF WAY
MP	MILEPOST
MPA	MIDPOINT ANCHOR
MPH	MILES PER HOUR
MPLS	MULTI-PROTOCOL LABEL SWITCHING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKEMENT
MSF	MAINTENANCE AND STORAGE FACILITY
MSL	MEAN SEA LEVEL
MTD	MEMO TO DESIGNERS (CALTRANS), MOUNTED
MUL	MULLION
MVC	MINIMUM VERTICAL CLEARANCE
MW	MESSENGER WIRE

N

N	NORTH
N/A	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NB	NORTHBOUND
NBR	NONBRIDGING
NCL	NO COLLAPSE PERFORMANCE LEVEL
NDP	NONLINEAR DYNAMIC PROCEDURE
NEC	NATIONAL ELECTRICAL CODE
NEG	NEGATIVE
NEUT	NEUTRAL
NF	NEGATIVE FEEDER, NEAR FACE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NI	NETWORK INTERFACE
NIC	NOT IN CONTRACT
NMS	NETWORK MANAGEMENT SYSTEM
NO	NUMBER, NORMALLY OPEN
NOM	NOMINAL
NP	NETWORK PORT
NPRM	NOTICE OF PROPOSED RULE MAKING
NPS	NOMINAL PIPE SIZE
NR	NOT REGISTERED
NS	NOT SUPPORTED
NT	NETWORK
NTP	NOTICE TO PROCEED, NETWORK TIME PROTOCOL
NTS	NOT TO SCALE NETWORK TIME SERVER

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DRAWING NO. GE-C0602
SCALE NO SCALE
SHEET NO.

$PLOT$

O

OA	OVERALL
OBLR	OBLITERATE
OC	ON CENTER, OVERCROSSING
OCC	OPERATIONS CONTROL CENTER
OCS	OVERHEAD CONTACT SYSTEM
OF	OUTSIDE FACE
OFF	OFFSET
OG	ORIGINAL GROUND
OH	OVERHEAD
O-LA	ORANGE COUNTY TO LOS ANGELES
O&M	OPERATIONS AND MAINTENANCE
O-O	OUT TO OUT
OOR	OUT-OF-RUNNING (NONRIDING CONTACT WIRE)
OP	OVERPASS
OPL	OPERABILITY PERFORMANCE LEVEL
OPNG	OPENING
OPP	OPPOSITE
ORS	OPERATIONS RADIO SYSTEM
OSP	OUTSIDE PLANT
OVERTEMP	OVERTEMPERATURE
OWLS	ONE WAY LOW SPEED (DIAMOND CROSSING)

P

PA	PUBLIC ADDRESS
PACIS	PUBLIC ADDRESS/CUSTOMER INFORMATION SYSTEM
PAN	PANTOGRAPH
PAP	PERFORATED ALUMINUM PIPE
PAX	PASSENGER
PB	PULL BOX, PUSH BUTTON (ON ELECTRICAL DIAGRAMS)
PBX	PRIVATE BRANCH EXCHANGE
PC	PRECAST CONCRETE, POINT OF CURVE
PCC	PORTLAND CEMENT CONCRETE, POINT OF COMPOUND CURVE
PCP	PERFORATED CONCRETE PIPE
PCPT	PIEZOCONE PENETROMETER TEST
PE	PORCELAIN ENAMEL
PED	PEDESTRIAN
PEPD	PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PERF	PERFORATED
PERM	PERMEABLE
PET	POTENTIAL EQUALIZING JUMPER
PF	POWER FACTOR
PFDHA	PROBABILISTIC FAULT DISPLACEMENT HAZARD ANALYSIS
PG	PROFILE GRADE
PH	PHASE
PHE	POTHOLE
PID	PASSENGER INFORMATION DISPLAY
PITO	POINT OF INTERSECTION TURNOUT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE, PLACE
P/L	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLYWD	PLYWOOD
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PMS	PAVEMENT MANAGEMENT SYSTEM
PN	PAVING NOTCH
PNL	PANEL
PNT	POINT
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POE	POINT OF ENDING
POS	POSITIVE
POTS	PLAIN ORDINARY TELEPHONE SERVICE
PP	PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PR	PAIR
PRI	PRIMARY RATE INTERFACE (ISDN SERVICE)
PROP	PROPOSED
PS	PARALLELING STATION, POINT OF SWITCH
P/S	PRESTRESSED, PERFORATED STEEL PIPE
PSP	PRODUCT SAFETY PLAN
PSTN	PUBLIC SWITCHED TELEPHONE NETWORK
PSTTWS	PUBLIC SAFETY TRENCH AND TUNNEL WIRELESS SYSTEM
PSU	POWER SUPPLY UNIT
PT	POTENTIAL TRANSFORMER, POINT OF TANGENT
PTC	POSITIVE TRAIN CONTROL
PTD/R	PAPER TOWEL DISPENSER AND RECEPTACLE
PTEL	PASSENGER ASSISTANCE TELEPHONE
PTM	PARKING TICKET MACHINE
PTT	PUSH TO TALK
PTZ	PAN-TILT-ZOOM
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENT
PWR	POWER

Q

QOS	QUALITY OF SERVICE
QT	QUARRY TILE
QTY	QUANTITY

R

R	RADIUS, RED
RA	REMOTE ANNUNCIATOR
R/A	ROCK ANCHOR
RAID	REDUNDANT ARRAY OF INDEPENDENT DISKS
RB	RESILIENT BASE
RBM	RAILBOUND MANGANESE FROG
RC	REGIONAL CONSULTANT, REINFORCED CONCRETE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCC	REGIONAL CONTROL CENTER
RCE	REGISTERED CIVIL ENGINEER
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD, ROOF DRAIN
R&D	REMOVE AND DISPOSE
RDWY	ROADWAY
RE	RUNNING EDGE OF RAIL
REBAR	CONCRETE REINFORCED BAR
RECT	RECTANGULAR
REF	REFERENCE
REFP	REFERENCE POINT
REINF	REINFORCED, REINFORCEMENT, REINFORCING
REL	RELOCATE, RELOCATED
REM	REMOTE
REPL	REPLACEMENT
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING
REV	REVISED, REVISION
RF	RADIO FREQUENCY
RFI	REQUEST FOR INFORMATION
RGS	RIGID GALVANIZED STEEL
RH	RIGHT-HAND
RM	RESTRICTED MANUAL, ROOM
R-M	ROAD MIXED
RO	ROUGH OPENING
ROW	RIGHT-OF-WAY
RP	RADIUS POINT
RR	RAILROAD, RUNNING RAIL
RRR	RESURFACING, RESTORATION, REHABILITATION (3R)
RRRR	RESURFACING, RESTORATION, REHABILITATION, RECONSTRUCTION (4R)
RRX	RAILROAD GRADE CROSSING
R&S	REMOVE AND SALVAGE
RSP	ROCK SLOPE PROTECTION
RT	RESILIENT TILE, RIGHT
RTE	ROUTE
RTU	REMOTE TERMINAL UNIT
RW	RETAINING WALL
R/W	RIGHT-OF-WAY
RWL	RAIN WATER LEADER
RWY	RAILWAY

S

S	SOUTH, SLOPE
SAE	STRUCTURE APPROACH EMBANKMENT
SALV	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SPIRAL TO CURVE, SWITCH CABLE
SCADA	SUPERVISORY CONTROL AND DATA AQUISITION
SCAT	SIMPLE CATENARY - AUTO TENSION
SCB	SUBSTATION CONTROL BUILDING
SCC	STATION CONTROL CENTER
SCD	SEAT COVER DISPENSER
SCFT	SIMPLE CATENARY - FIXED TENSION
SCHD	SCHEDULE
SCN	SECURITY CLASSIFICATION NUMBERS
SCPE	SEISMIC CAPACITY AND PERFORMANCE EVALUATION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
SDB	SYSTEM DUCT BANK
SDC	SEISMIC DESIGN CRITERIA
SDOF	SINGLE DEGREE OF FREEDOM
SE	SUPER ELEVATION
SECT	SECTION
SECTLEG	SECTIONALIZING
SEP	SEPARATION
SERV	SERVICE
SF	SPRING FROG
SFS	SANTA FE SPRINGS
SG	SUBGRADE
SHA	SEISMIC HAZARDS ANALYSIS
SHLD	SHOULDER
SHS	STATE HIGHWAY SYSTEM
SHT	SHEET
SI	SECTION INSULATOR, SITE INVESTIGATION
SIG	SIGNAL
SIM	SIMILAR
SLAN	PASSENGER STATION LOCAL AREA NETWORK
SM	SELECTED MATERIAL
SMF	SOLID MANGANESE FROG, SINGLE MODE FIBER
SNF	SWING NOSE FROG
SNTP	SIMPLE NETWORK TIME PROTOCOL
SP	SPARE
SPC	SPECIAL
SPEC	SPECIFICATION
SPKR	SPEAKER
SPL	SAFETY PERFORMANCE LEVEL
SPS	SMALL PART STEELWORK
SPST	SINGLE POLE SINGLE THROW
SPT	STANDARD PENETRATION TEST
SQ	SQUARE
SR	SYSTEM REQUIREMENT, STATE ROUTE
SRRA	SAFETY ROADSIDE REST AREA
SRSS	SQUARE ROOT OF SUM OF SQUARES
SS	SLOPE STAKE, SUBSTATION
S/SPAN	STEADY SPAN
SSI	SOIL STRUCTURE INTERACTION
SSK	SERVICE SINK
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
SST	STAINLESS STEEL
SSW	STEADY SPAN WIRE
SSWR	SANITARY SEWER
ST	SPIRAL TO TANGENT, STREET
STA	STATION, STATIONING
STBB	SINGLE THRIE BEAM BARRIER
STD	STANDARD
STC	SINGLE TRACK CANTILEVER
STIFF	STIFFENER
STL	STEEL
STOR	STORAGE
STP	SHEILDED TWISTED PAIR CABLE
STR	STRUCTURAL, STRUCTURE
STS	SPIRAL TANGENT SPIRAL
STW	STATIC WIRE
SUPV	SUPERVISORY
SURF	SURFACING
SUSP	SUSPENDED
SW	SOUNDWALL, SOFTWARE
SWA	SINGLE WIRE ANCHOR
SWAT	SINGLE WIRE AUTO TENSIONED
SWFT	SINGLE WIRE - FIXED TERMINATION
SWGR	SWITCHGEAR
SWK	SIDEWALK
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SWR	SEWER
SWS	SWITCHING STATION
SWT	SWITCH
SYM	SYMMETRICAL

T

T	TANGENT, TREAD
TAN	TANGENT
TASAS	TRAFFIC ACCIDENT SUREILLANCE ANALYSIS SYSTEM
T&B	TOP AND BOTTOM
TBD/TBV	TO BE DETERMINED/VERIFIED
TBM	TUNNEL BORING MACHINE
TCL	TRACK CENTERLINE
TC	TRAIN CONTROL, TANGENT TO CURVE
TCB	TRAFFIC CONTROL BOX
TCC	TRAIN CONTROL AND COMMUNICATIONS
TCCR	TRAIN CONTROL AND COMMUNICATIONS ROOM
TCCT	TRACK CIRCUIT
TCE	TEMPORARY CONSTRUCTION EASEMENT
TCP/IP	TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL
TCR	TRANSMISSION COMMUNICATIONS ROOM
TD	TRENCH DRAIN, TIME DELAY
TDA	TIRE DERIVED AGGREGATE
TDD	TELECOMMUNICATIONS DEVICE FOR THE DEAF
TDM	TIME DIVISION MULTIPLEXING
TEL	TELEPHONE
TEMP	TEMPORARY
TERM	TERMINATION
TES	TRACTION ELECTRIFICATION SYSTEM
TESC	TEMPORARY EROSION AND SETTLEMENT CONTROL
TETEL	TRAIN EMERGENCY TELEPHONE/SPEAKERPHONE
TFE	TETRAFLOUROETHYLENE
TG	TOP OF GRADE
THK	THICK
TIS	TELEPHONE AND INTERCOM SYSTEM
TK	TRACK
TL	TENSION LENGTH
TM	TECHNICAL MEMORANDUM
TMP	TEMPERATURE
TO	TURNOUT, TELECOM OUTLET
TOC	TOP OF CURB
TOE	BOTTOM OF WALL
TOG	TOP OF GRATE
TOL	TOLERANCE
TOLR	TOP OF LOW RAIL
TOF	TOP OF FOUNDATION
TOFG	TOP OF FINISH GRADE
TOP	TOP OF PAVEMENT
TOR	TOP OF RAIL
TOS	TOP OF SLOPE
TOT	TOP OF TIE, TOTAL
TOW	TOP OF WALL
TP	TELEPHONE POLE, TRACTION POWER
TPB	TREATED PERMEABLE BASE
TPD	TOILET PAPER DISPENSER
TPF	TRACTION POWER FACILITY
TPM	TREATED PERMEABLE MATERIAL
TPS	TRACTION POWER SUPPLY SYSTEM
TPSS	TRACTION POWER SUBSTATION (INCLUDING PARALLEL AND SWITCHING STATIONS)
T/R	TOP OF RAIL ELEVATION
TRANS	TRANSVERSE, TRANSITION
TRK	TRACK
TS	TRAFFIC SIGNAL, TANGENT TO SPIRAL, TUBULAR STEEL

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. MAMAWAL
DRAWN BY D. BARRAZA
CHECKED BY J. SWANSON
IN CHARGE J. SWANSON
DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ACRONYMS AND ABBREVIATIONS 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0603
SCALE NO SCALE
SHEET NO.

$PLOT$

T CONTINUED

TSI	TECHNICAL SPECIFICATIONS FOR INTEROPERABILITY
TSM	TRAFFIC SYSTEMS MANAGEMENT
TSMP	TRAFFIC SYSTEMS MANSGEMENT PLAN
TTC	TWO TRACK CANTILEVER
TTEL	TRAIN EMERGENCY SPEAKERPHONE
TV	TELEVISION
TVS(S)	TICKET VENDING MACHINE(S)
TW	TIE WIRE, TIME WARNER CABLE
TYP	TYPICAL

U

UB	UTILITY BOX
UBC	UNIFORM BUILDING CODE
UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND, UNDERGRADE
UGB	UNDERGRADE BRIDGE
UI	USER INTERFACE
UNINS	UNINSULATED
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
UPS	UNINTERRUPTIBLE POWER SUPPLY
UR	URINAL
UrEDAS	URGENT EARTHQUAKE DETECTION AND ALARM SYSTEM
USCS	UNITED SOIL CLASSIFICATION SYSTEM
UTIL	UTILITY
UTPUN	SHEILDED TWISTED PAIR
UWP	UPPER WORKING POINT

V

V	VELOCITY, DESIGN SPEED, VALVE
VAC	VOLTS ALTERNATING CURRENT
VAR	VARIABLE, VARIES
VCAT	VIRTUAL CONCETENATION
VCE	VERTICAL CIRCULATION ELEMENT
VCP	VITRIFIED CLAY PIPE
VCT	VINYL COMPOSITION TILE
VCD	VOLT DC
VE	VALUE ENGINEERING
VERT	VERTICAL
VEST	VESTIBULE
VIA	VIADUCT
VLAN	VIRTUAL LOCAL AREA NETWORK
VMS	VARIABLE MESSAGE SIGN, VARIABLE MESSAGE SYSTEM
VOL	VOLTIMETER, VOLUME
VOIP	VOICE OVER INTERNET PROTOCOL
VPN	VIRTUAL PRIVATE NETWORK
VRCS	VOICE RADIO COMMUNICATIONS SYSTEM
VS	VOLTAGE SWITCH
VT	VOLTAGE TRANSFORMER/TRANSDUCER

W

W	WEST, WIDTH
W/	WITH
WA	WORK AREA
WB	WESTBOUND
WC	WATER CLOSET
WCS	WIRELESS COMMUNICATIONS SYSTEM
WD	WOOD
WLAN	WIRELESS LOCAL AREA NETWORK
WM	WIRE MESH
W/O	WITHOUT
WP	WORK POINT, WOOD POLE
WPF	WATERPROOF
WPC	WAYSIDE POWER CUBICLES
WR	WIRE RUN
WRT	WITH RESPECT TO
WS	WATER SURFACE, WORK STATION
WSP	WELDED STEEL PIPE
WT	WEIGHT
WV	WATER VALVE

W CONTINUED

WW	WINGWALL, WALKWAY
WWF	WELDED WIRE FABRIC
WWLOL	WINGWALL LAYOUT LINE
WWM	WELDED WIRE MESH

X

X/CAT	CROSS CANTENARY
XD	TRANSDUCER
XFMR	TRANSFORMER
XO	CROSSOVER
XOST	CROSSOVER SPRING TENSIONER
XSEC	CROSS SECTION
X/SPAN	CROSS SPAN
XING	CROSSING
XMITTER	TRANSMITTER

TRACK GEOMETRY - HORIZONTAL

BC	BEGIN HORIZONTAL CURVE
CC	COMPOUND CURVE
CS	POINT OF CHANGE FROM CIRCULAR CURVE TO SPIRAL
CT	POINT OF CHANGE FROM CURVE TO TANGENT
K1	TANGENT DISTANCE PF SHIFT PC REFERENCE TO THE TS
K2	TANGENT DISTANCE PF SHIFT PT REFERENCE TO THE ST
LC	LENGTH OF CIRCULAR CURVE
Ls1	LENGTH OF SPIRAL
Ls2	LENGTH OF SPIRAL FROM TS TO SC
LSc	LENGTH OF COMPOUND SPIRAL FROM CS TO SC
p1	OFFSET FROM INITIAL TANGENT TO PC OF THE SHIFTED CIRCLE OF SPIRALIZED CURVE
p2	OFFSET FROM INITIAL TANGENT TO PT OF THE SHIFTED CIRCLE OF SPIRALIZED CURVE
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PF	POINT OF FROG
PI	POINT OF INTERSECTION
PITO	POINT OF INTERSECTION TURNOUT
POB	POINT OF BEGINNING
POC	POINT ON HORIZONTAL CURVE
POE	POINT OF ENDING
POS	POINT ON SPIRAL
POVC	POINT ON VERTICAL CURVE
POVT	POINT ON VERTICAL TANGENT
PRC	POINT OF REVERSE CURVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	POINT OF SWITCH
PT	POINT OF TANGENT
SC	POINT OF CHANGE FROM SPIRAL TO CIRCULAR CURVE
SPO	POINT ON ORIGIN OF COMPOUND SPIRAL
SS	POINT OF CHANGE BETWEEN SPIRALS
SSC	SPIRAL TO SPIRAL POINT OF CURVATURE
ST	POINT OF CHANGE FROM SPIRAL TO TANGENT
TC	POINT OF CHANGE FROM TANGENT TO CURVE
TS	POINT OF CHANGE FROM TANGENT TO SPIRAL
Ts1	TANGENT DISTANCE FROM TS TO PI
Ts2	TANGENT DISTANCE FROM ST TO PI
Xs1	TANGENT OFFSET AT THE SC
Xs2	TANGENT OFFSET AT THE CS
Δ	TOTAL CENTRAL ANGLE OF THE SPIRALIZED CURVE
Δc	CENTRAL ANGLE OF CIRCULAR CURVE (Lc) FROM SC TO CS
Δc1	CENTRAL ANGLE OF FIRST CIRCULAR CURVE OF COMPOUND CURVATURE
Δc2	CENTRAL ANGLE OF SECOND CIRCULAR CURVE OF COMPOUND CURVATURE
θs1	CENTRAL ANGLE OF SPIRAL LENGTH Ls1 OR SPIRAL ANGLE OF FIRST SPIRAL IN SPIRALIZED CURVE
θs2	CENTRAL ANGLE OF SPIRAL LENGTH Ls2 OR SPIRAL ANGLE OF SECOND SPIRAL IN SPIRALIZED CURVE
θsc	CENTRAL ANGLE OF COMPOUND SPIRAL OR COMPOUND SPIRAL ANGLE FROM CS TO SC

TRACK GEOMETRY - VERTICAL

BVC	BEGIN VERTICAL CURVE
Ea	ACTUAL SUPERELEVATION
EVC	END VERTICAL CURVE
PCVC	POINT OF COMPOUND VERTICAL CURVE
POVC	POINT OF VERTICAL INTERSECTION
POVT	POINT ON VERTICAL CURVE
PVI	POINT ON VERTICAL TANGENT
VC	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION

UNITS OF MEASUREMENT

Ac	ACRES
AMP	AMPERES
BTU	BRITISH THERMAL UNIT
CAL	CALIPER
CF	CUBIC FEET
CP	CANDLE POWER
CY	CUBIC YARD
dB	DECIBEL
DEG	DEGREE
DIA	DIAMETER
Eu	UNBALANCED SUPERELEVATION
F	FARENHEIT
FT	FOOT, FEET
g	ACCELERATION DUE TO GRAVITY
GA	GAUGE
GAL	GALLON
GB	GIGABYTE
GBPS	GIGABITS PER SECOND
GHz	GIGAHERTZ
HR	HOUR
HT	HEIGHT
Hz	HERTZ
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCHES
IR	INSIDE RADIUS
K	KIPS (1000 POUNDS)
KCMIL	THOUSAND CIRCULAR MILS
KHz	KILOHERTZ
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
KV	KILOVOLTS
KVA	KILOVOLTS-AMPERE
KVAR	KILOVOLTS-AMPERE REACTIVE
KW	KILOWATT
KWH/D	KILOWATT HOUR / DEMAND
L	LENGTH
LB	POUNDS
LB/FT	POUNDS PER FOOT
LF	LINEAR FOOT
m	METER
MBPS	MEGABITS PER SECOND
MCM	THOUSAND CIRCULAR MILS
MHz	MEGAHERTZ
mm	MILLIMETER
MPH	MILES PER HOUR
MVA	MEGAVOLT-AMPERE
MW	MEGAWATT
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
SEC	SECOND
SF	SQUARE FEET
SY	SQUARE YARD
TF	TRACK FEET
VA	VOLTS
VAC	VOLT-AMPERE
Y	YARDS
YR(S)	YEAR(S)

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ACRONYMS AND ABBREVIATIONS 4

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0604
SCALE NO SCALE
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$PLOT$

AGENCIES/ORGANIZATIONS/REFERENCE

AAR	ASSOCIATION OF AMERICAN RAILROADS
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ACI	AMERICAN CONCRETE INSTITUTE
ADA	AMERICAN WITH DISABILITIES ACT (FEDERAL)
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AMTRAK	NATIONAL RAILROAD PASSANGER CORPORATION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ANSS	ADVANCED NATIONAL SEISMIC SYSTEM
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
AREA	AMERICAN RAILWAY ENGINEERING ASSOCIATION
AREMA	AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION
ARTIC	ANAHEIM REGIONAL TRANSPORTATION INTERMODAL CENTER
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	ASTM INTERNATIONAL, AMERICAN SOCIETY OF TESTING AND MATERIALS
ATC	APPLIED TECHNOLOGY COUNCIL
AWS	AMERICAN WELDING SOCIETY
BART	SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
BDA	BRIDGE DESIGN AIDS (CALTRANS)
BDD	BRIDGE DESIGN DETAILS (CALTRANS)
BDP	BRIDGE DESIGN PRACTICE (CALTRANS)
BDS	BRIDGE DESIGN SPECIFICATIONS (CALTRANS)
BNSF	BURLIGNTON NORTHERN SANTA FE RAILWAY, BNSF RAILWAY
CALNET	CALIFORNIA INTEGRATED TELECOMMUNICATIONS NETWORK
CALTRANS	CALIFORNIA DEPARTMENT OF TRANSPORTATION
CBC	CALIFORNIA BUILDING CODE
CBDM	CALIFORNIA DEPARTMENT OF TRANSPORTATION-BRIDGE DESIGN MANUAL
CCR	CALIFORNIA CODE OF REGULATIONS
CDC	CALIFORNIA HIGH-SPEED TRAIN DESIGN CRITERIA
CEC	CALIFORNIA ELECTRIC CODE
CEQA	CALIFORNIA ENVIRONMENTAL QUALITY ACT
CFR	CODE OF FEDERAL REGULATIONS
CHD	COUNTY HEALTH DEPARTMENT
CHP	CALIFORNIA DEPARTMENT OF HIGHWAY PATROL (STATE)
CHST	CALIFORNIA HIGH-SPEED TRAIN
CHSTP	CALIFORNIA HIGH-SPEED TRAIN PROJECT
CIWMB	CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD
CPH	CALIFORNIA PERMIT HANDBOOK
CPUC	CALIFORNIA PUBLIC UTILITIES COMMISSION
CRR	COMMUTER RAIL PROGRAM (STATE)
DOD	DEPARTMENT OF DEFENSE (FEDERAL)
DOT	DEPARTMENT OF TRANSPORTATION (FEDERAL)
DTX	DOWNTOWN EXTENSION (CALTRAIN)
EIRENE	EUROPEAN INTEGRETED RADIO ENHANCED NETWORK
ERTMS	EUROPEAN RAIL TRAFFIC MANAGEMENT SYSTEM
FAA	FEDERAL AVIATION ADMINISTRATION
FCC	FEDERAL COMMUNICATIONS COMMISSION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENY
FHWA	FEDERAL HIGHWAY ADMINISTRATION
FMFCD	FRESNO METROPOLITAN FLOOD CONTROL DISTRICT
FRA	FEDERAL RAILROAD ADMINISTRATION
FSTIP	FEDERAL STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM
FTA	FEDERAL TRANSIT ADMINISTRATION
GBR	GEOTECHNICAL BASELINE REPORT
GBR-B	GEOTECHNICAL BASELINE REPORT FOR BIDDING
GBR-C	GEOTECHNICAL BASELINE REPORT FOR CONSTRUCTION
GDR	GEOTECHNICAL DATA REPORT
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
LACDPW	LOS ANGELES COUNTY DEPT OF PUBLIC WORKS
LADWP	LOS ANGELES DEPARTMENT OF WATER AND POWER
LAUS	LOS ANGELES UNION STATION
LTC	LOCAL TRANSPORTATION COMMISSION
METRO	LOS ANGELES COUNTY METROPOLITAN TRANSIT AUTHORITY
MTA	METROPOLITAN TRANSIT AUTHORITY
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
MWD	METROPOLITAN WATER DISTRICT
NAAQS	NATIONAL AMBIENT AIR QUALITY STANDARDS
NAC	NOISE ABATEMENT CRITERIA
NBSSR	NOISE BARRIER SCOPE SUMMARY REPORT
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

AGENCIES/ORGANIZATIONS/REFERENCE CONTINUED

NENA	NATIONAL EMERGENGY NUMBER ASSOCIATION
NESC	NATIONAL ELECTRICAL SAFETY CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIST	NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
OCFCD	ORANGE COUNTY FLOOD CONTROL DISTRICT
OCTA	ORANGE COUNTY TRANSPORTATION AUTHORITY
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEER	PACIFIC EARTHQUAKE ENGINEER RESEARCH
PG&E	PACIFIC GAS AND ELECTRIC COMPANY
PUC	PUBLIC UTILITIES COMMISSION
RSIA	RAIL SAFETY IMPROVEMENT ACT (2008)
RWQCB	REGIONAL WATER QUALITY CONTROL BOARD (STATE)
SAVE	SOCIETY OF AMERICAN VALUE ENGINEERS
SCE	SOUTHERN CALIFORNIA EDISON
SCRRA	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
SDG&E	SAN DIEGO GAS AND ELECTRIC COMPANY
SDNR	SAN DIEGO NORTHERN RAILWAY
SHOPP	STATE HIGHWAY OPERATION AND PROTECTION PROGRAM (FORMERLY HSOPP)
SHPO	STATE HISTORIC PRESERVATION OFFICER (STATE)
SJRRA	SAN JOAQUIN REGIONAL RAIL AUTHORITY
SMUD	SACRAMENTO MUNICIPAL UTILITY DISTRICT
SPTC	SOUTHERN PACIFIC TRANSPORTATION COMPANY
SSCOM	SEISMIC SAFETY COMMISSION
SSORC	SAFETY AND SECURITY OVERSIGHT AND REVIEW COMMITTEE
SVBX	SILICON VALLEY BERRYESSA EXTENSION
SVRT	SILICON VALLEY RAPID TRANSIT
UPRR	UNION PACIFIC RAILROAD
US	UNITED STATES
USCE	UNITED STATES (ARMY) CORP OF ENGINEERS
USCG	UNITED STATES COAST GUARD
USCS	UNITED SOIL CLASSIFICATION SYSTEM
VTA	SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

SEGMENT/COUNTY CODES AND SUBDIVISIONS

A-J	ALTAMONT PASS
B-P	BAKERSFIELD TO PALMDALE
F-B	FRESNO TO BAKERSFIELD
F-J	SAN FRANCISCO TO SAN JOSE
J-M	SAN JOSE TO MERCED
L-D	LOS ANGELES TO SAN DIEGO
L-O	LOS ANGELES TO ANAHEIM
M-F	MERCED TO FRESNO
P-L	PALMDALE TO LOS ANGELES
S-M	SACRAMENTO TO MERCED
B	BAY SUBDIVISION
C	CAPITAL SUBDIVISION
D	DESERT SUBDIVISION
J	SAN JACINTO SUBDIVISION
P	PACHECO SUBDIVISION
S	SIERRA SUBDIVISION
T	TONGVA SUBDIVISION
ALA	ALAMEDA
ALP	ALPINE
AMA	AMADOR
BUT	BUTTE
CAL	CALAVERAS
CC	CONTRA COSTA
COL	COLUSA
DN	DEL NORTE
ED	EL DORADO
FRE	FRESNO
GLE	GLENN
HUM	HUMBOLT
IMP	IMPERIAL
INY	INYO
KER	KERN
KIN	KINGS
LA	LOS ANGELES
LAK	LAKE
LAS	LASSEN
MAD	MADERA
MEN	MENDOCINO
MER	MERCED
MNO	MONO
MOD	MODOC
MON	MONTEREY
MPA	MARIPOSA
MRN	MARIN
NAP	NAPA
NEV	NEVADA
ORA	ORANGE
PLA	PLACER
PLU	PLUMAS
RIV	RIVERSIDE
SAC	SACRAMENTO
SB	SANTA BARBARA
SBD	SAN BERNARDINO
SBT	SAN BENITO
SCL	SANTA CLARA
SCR	SANTA CRUZ
SD	SAN DIEGO
SF	SAN FRANCISCO
SHA	SHASTA
SIE	SIERRA
SIS	SISKIYOU
SJ	SAN JOAQUIN
SLO	SAN LUIS OBISPO
SM	SAN MATEO
SOL	SOLANO
SON	SONOMA
STA	STANISLAUS
SUT	SUTTER
TEH	TEHAMA
TRI	TRINITY
TUL	TULARE
TUO	TUOLUMNE
VEN	VENTURA
YOL	YOLO
YUB	YUBA

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. MAMAWAL
DRAWN BY D. BARRAZA
CHECKED BY J. SWANSON
IN CHARGE J. SWANSON
DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ACRONYMS AND ABBREVIATIONS 5

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0605
SCALE NO SCALE
SHEET NO.

$PLOT$

TRACK

- EXISTING FREIGHT/PASSENGER TRACK
- NEW AND/OR EXISTING MAINLINE TRACK (SEE TRACK PLANS FOR DESIGNATIONS) — S590+00
- BALLAST
- BUMPER/BUMPING POST
- CONCRETE
- DERAIL-DENOTES DERAIL DIRECTION AND LOCATION OF SWITCH MACHINE (LEFT-HAND SHOWN)
- DOUBLE CROSSOVER
- EARTH
- FRICTION BUFFER
- INSULATED JOINT
- INSULATED JOINT LOCATIONS-BOTH RAIL
- INSULATED JOINT LOCATIONS-LEFT RAIL
- INSULATED JOINT LOCATIONS-RIGHT RAIL
- POINT OF CURVATURE
- POINT OF SWITCH-DENOTES SWITCH MACHINE LOCATION
- PREPARED SUBGRADE
- DT — RAIL LUBRICATOR-DIRECTION OF TRAVEL, (DT), TWO RAIL LUBRICATORS SHOWN
- SINGLE CROSSOVER (LEFT-HAND SHOWN)
- OCS CANTILEVER POLE (NOTE: DASHED LINE INDICATES CLEARANCE ENVELOPE FOR ALL POLES. VARIES 10'-12'.)
- OCS OUTBOARD POLE (DOUBLE TRACK SHOWN)
- OCS CENTER POLE
- OCS PORTAL / GANTRY (FOUR-TRACK SHOWN)
- TURNOUT (RIGHT HAND SHOWN)
- WELDED JOINT
- CONTROL POINT (CP)
- WALKWAY ENVELOPE

CIVIL

- AGGREGATE BASE
- ASPHALT CONCRETE
- BP OR EP — BEGIN OR END PLATFORM
- BS — BIKE STAND
- BREAK LINE
- BORINGS (EXISTING)
- CENTERLINE
- ℄ — CENTERLINE TEXT SYMBOL
- CO — CLEAN OUT
- COLUMN, BENT
- CONCRETE
- CONCRETE BARRIER
- 290 — CONTOUR LINE
- CTR — CONTROL PANEL
- △4-7-1 — CONTROL POINT OR STREET INTERSECTION POINT
- E174000 N87000 — COORDINATE GRID CROSSAIR
- CURB WITH GUTTER (CURB-LIP, FLOW LINE, BACK-TOP OF CURB)
- ## — CURVE NUMBER
- ## / ### — TRACK NAME (TRACK GEOMETRY) / CURVE NUMBER (TRACK GEOMETRY)
- ## — TANGENT NUMBER
- DITCH FLOW LINE
- DOUBLE THRIE BEAM BARRIER
- DROP INLET
- ROUND DROP INLET
- DETENTION BASIN
- EARTHWORK LIMITS
- OG / FG — (2447.9) 2089.3 — ELEVATIONS

CIVIL CONTINUED

- (175.2) — ELEVATION (EXISTING)
- ELECTROLIER, ELECTROLIER ON POLE
- EXISTING GUARD RAILING
- EXISTING WALL
- FENCE
- FIRE HYDRANT
- GRADED/LANDSCAPED AREA
- G — GAS METER
- G — GAS VALVE
- GUARD POST
- GUARD RAIL
- GRAVEL OR DIRT ROAD
- GUY WIRE
- HIGH MASS LIGHTING
- HORIZONTAL & VERTICAL CONTROL MONUMENT
- HORIZONTAL CONTROL MONUMENT
- ICV
- MAIL BOX
- MANHOLE
- MATCH LINE (DWG NO.) — MATCH LINE
- NEW ASPHALTIC CONCRETE
- NEW GUARD RAILING
- NS — NEWS STAND
- NORTH ARROW
- ORIGINAL GROUND
- PARKING METER
- POINT OF INTERSECTION

CIVIL CONTINUED

- POINT OF INTERSECTION SYMBOL
- POINT OF VERTICAL INTERSECTION
- POWER POLE
- RETAINING WALL
- RIVER, STREAMS, AND CREEKS
- A / DWG NO. — SECTION DESIGNATION (LETTER) DRAWING NO. ON WHICH SECTION AND DETAIL APPEARS
- SECTION / SCALE 1"=1'-0" — A / - — SECTION OR DETAIL TITLE
- ×290.4 — SPOT ELEVATION
- TILDE (TERMINATOR)
- S — SIGNALIZED INTERSECTION
- STATION EQUATION
- STREET LIGHT
- STREET LIGHT POWER POLE
- STREET LIGHT TRAFFIC SIGNAL
- STREET SIGN
- STRUCTURE CLEARANCE ENVELOPE
- SUPER AXIS OF ROTATION
- T — TELEPHONE BOOTH
- PT — TELEPHONE POLE
- TEMPORARY RAILING (TYPE K)
- TIRE DERIVED AGGREGATE
- S590+00 — TRACK ALIGNMENT CENTER LINE
- TRF — TRAFFIC PANEL
- TRAFFIC SIGNAL
- TRANSMISSION TOWER
- TREE
- UTILITY POLE

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DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
SYMBOLS 1

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0611
SCALE NO SCALE
SHEET NO.

$PLOT$

CIVIL CONTINUED

- POLE AND WIRES
- POLE WITH WIRES AND ANCHOR
- VALVE
- VENT
- VERTICAL CONTROL MONUMENT
- WALL
- WALL ON BARRIER
- WATER EDGE, LAKE, POND, SWAMP
- WATER METER
- WELL
- YARD BOX ELECTRICAL

RIGHT-OF-WAY

- CHSR PROPOSED RIGHT-OF-WAY
- PROP ROW — OTHER PROPOSED RIGHT-OF-WAY
- EXISTING EASEMENT
- PROP TCE — PROPOSED TEMPORARY CONSTRUCTION EASEMENT

AERIAL UTILITIES

- EXIST ELECTRICAL
- EXIST FIBER OPTIC
- EXIST TELEMETER CABLE
- EXIST TELEPHONE
- EXIST TELEVISION
- NEW ELECTRICAL
- NEW FIBER OPTIC
- NEW TELEMETER CABLE
- NEW TELEPHONE
- NEW TELEVISION

UNDERGROUND UTILITIES

- EXIST ELECTRICAL
- EXIST FIBER OPTIC
- EXIST GASOLINE
- EXIST NATURAL GAS
- EXIST OIL
- EXIST SEWER
- EXIST STEAM
- EXIST STORM DRAIN
- EXIST TELEMETER CABLE
- EXIST TELEPHONE
- EXIST TELEVISION
- EXIST WATER
- NEW ELECTRICAL
- NEW FIBER OPTIC
- NEW GASOLINE
- NEW NATURAL GAS
- NEW OIL
- NEW SEWER
- NEW STEAM
- NEW STORM DRAIN
- NEW TELEMETER CABLE
- NEW TELEPHONE
- NEW TELEVISION
- NEW WATER

TRACTION POWER

- SINGLE-POLE MOTOR OPERATED SECTIONALIZING SWITCH (NORMALLY CLOSED)
- SINGLE-POLE MOTOR OPERATED SECTIONALIZING SWITCH (NORMALLY OPEN)
- SINGLE-POLE MANUAL SECTIONALIZING SWITCH (NORMALLY OPEN)
- SINGLE-POLE MANUAL SECTIONALIZING SWITCH (NORMALLY CLOSED)
- SINGLE-POLE MOTOR OPERATED SECTIONALIZING SWITCH WITH GROUND
- SINGLE-POLE MANUAL SECTIONALIZING SWITCH WITH GROUND
- GANGED GROUNDING DISCONNECT SWITCHES
- ELECTRICAL CONNECTION
- SECTION INSULATOR
- JUMPERED SECTION INSULATOR
- SECTION INSULATOR WITH BY-PASS SWITCH
- PHASE BREAK — PHASE BREAK
- LOW VOLTAGE CIRCUIT BREAKER
- FUSE
- FUSED DISCONNECT SWITCH
- TRANSFORMER
- AUTOTRANSFORMER
- VOLTAGE TRANSFORMER (VT)
- COUPLING CAPACITOR VOLTAGE TRANSFORMER
- MH HH — MANHOLE OR HANDHOLE
- CAPACITOR
- CURRENT TRANSFORMER (CT)
- GROUND CONNECTION
- SURGE ARRESTER

- CABLE TERMINATION OR STRESS CONE
- M — DOUBLE-POLE MOTORIZED DISCONNECT SWITCH
- OCS SECTION GAP
- K — KEY-INTERLOCK
- DIRECTION OF CONTROL OR RELAY INFLUENCE LINE
- MANUALLY OPERATED GROUNDING SWITCH
- NO LOAD BREAK MANUALLY OPERATED DISCONNECT SWITCH
- A B C — HV 3 PHASE DISCONNECT SWITCH
- SINGLE-POLE HIGH VOLTAGE POWER CIRCUIT BREAKER
- DOUBLE-POLE HIGH VOLTAGE POWER CIRCUIT BREAKER
- DRAW-OUT FUSED (VT)
- DRAW-OUT TYPE MEDIUM VOLTAGE SINGLE-POLE CIRCUIT BREAKER
- DRAW-OUT TYPE MEDIUM VOLTAGE DOUBLE-POLE CIRCUIT BREAKER
- INSULATOR
- BREAK LINE

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IN CHARGE J. SWANSON
DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
SYMBOLS 2

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0612
SCALE NO SCALE
SHEET NO.

$PLOT$

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.

VOLUME 3.2

VOLUME 3.3

1. NONE

VOLUME 3.3A

1. 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:

1. 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:
      I. 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:
      I. 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 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

1. 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

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

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DESIGNED BY M. MAMAWAL
DRAWN BY M. MAMAWAL
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IN CHARGE J. SWANSON
DATE 11/1/25

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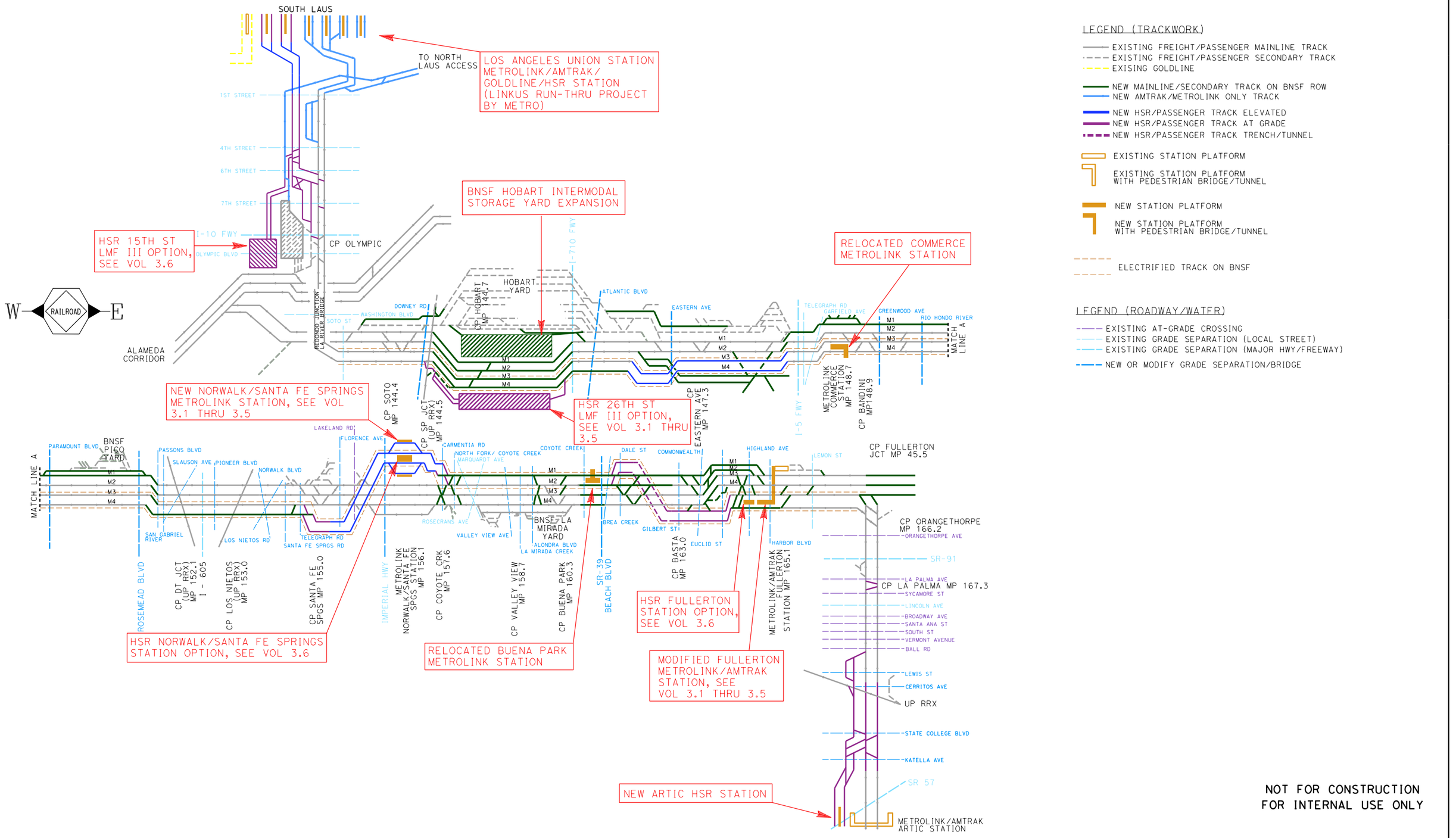
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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-B0611
SCALE NO SCALE
SHEET NO.

$PLOT$



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REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY D. RAMIREZ
DRAWN BY D. RAMIREZ
CHECKED BY A. BOSCH
IN CHARGE J. SWANSON
DATE 08/29/25

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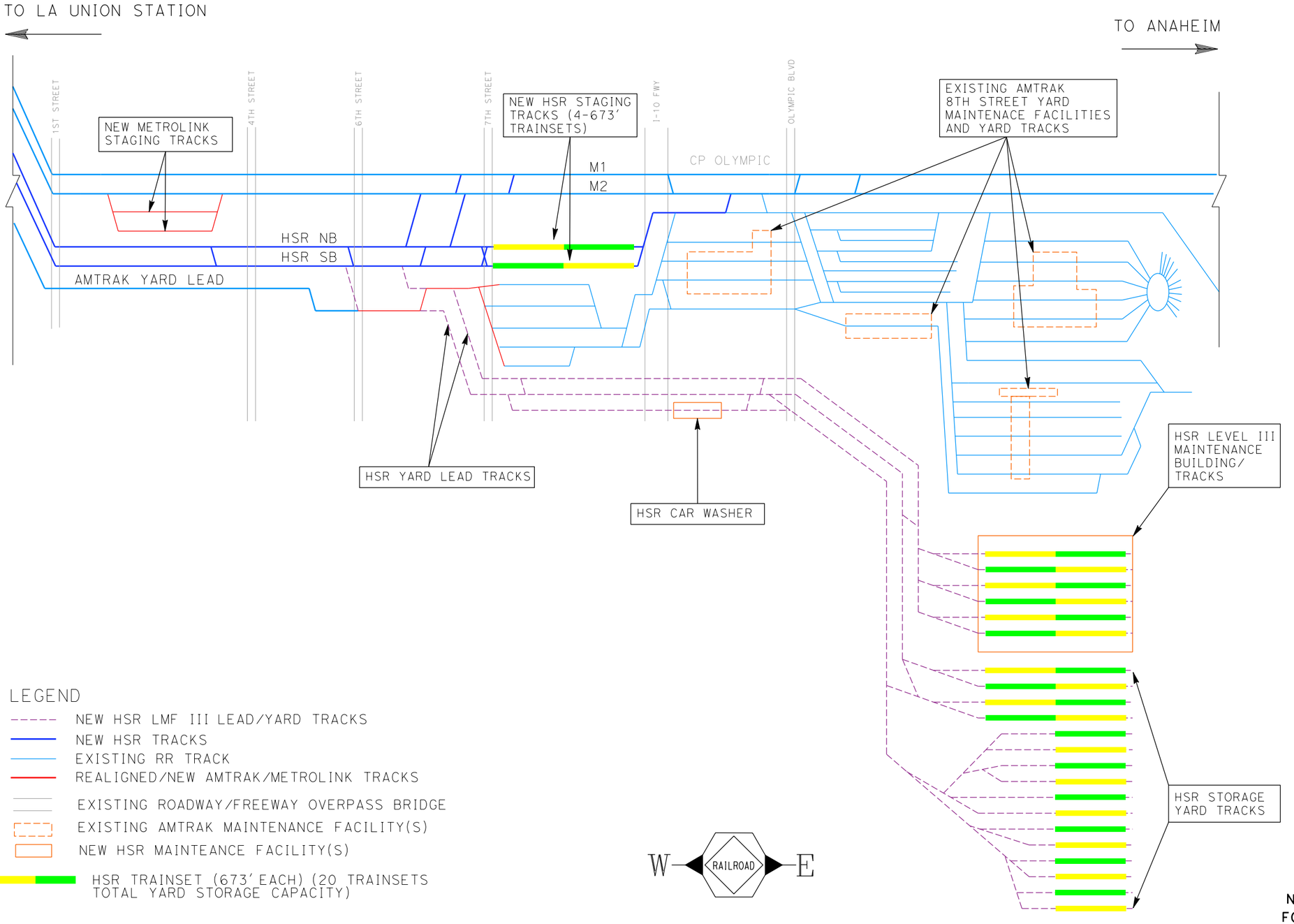
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
TRACK SCHEMATIC
ALIGNMENT FROM LA TO ANAHEIM

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D6601
SCALE NO SCALE
SHEET NO.

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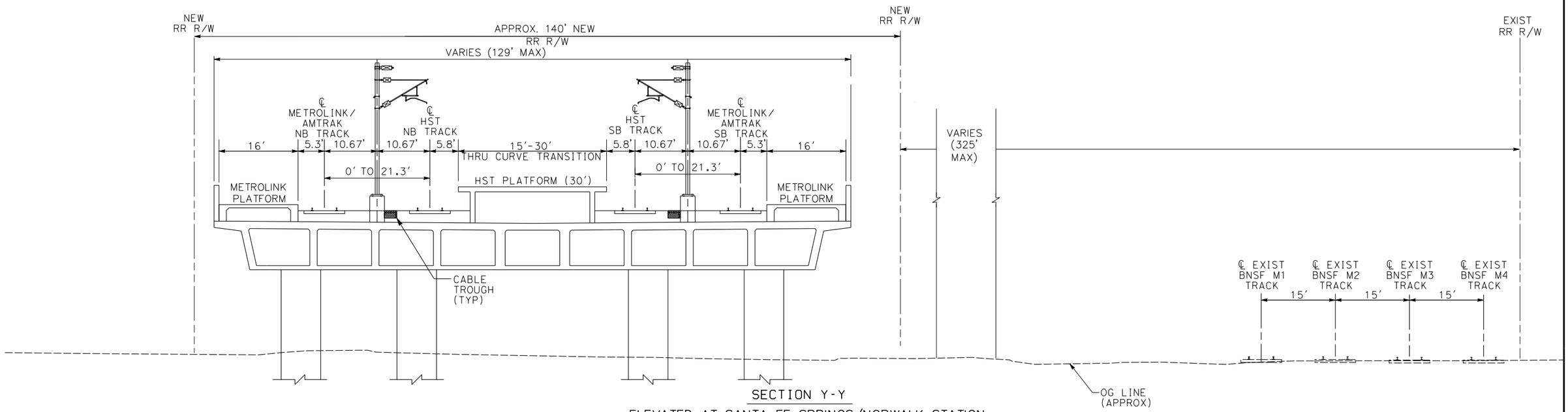
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
TRACK SCHEMATIC
15TH STREET LMF III OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D6602
SCALE NO SCALE
SHEET NO.

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SECTION Y-Y

ELEVATED AT SANTA FE SPRINGS/NORWALK STATION

STA SBN 829+00 TO STA SBN 863+00

NOTE:
1. STATION CONFIGURATION MAY CHANGE BASED ON DIRECTION FROM AUTHORITY
2. DISCUSSIONS ONGOING WITH CITIES OF NORWALK AND SANTA FE SPRINGS ON NEED/DESIRE TO HAVE HSR STATION IN THEIR JURISDICTIONS

10 0 10 20

1"=10' HOR

SCALE APPLICABLE FOR FULL SIZE ONLY

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DRAWN BY D. RAMIREZ
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
CROSS SECTIONS
HSR NORWALK/SANTA FE SPRINGS OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. TT-D3016A
SCALE AS SHOWN
SHEET NO.

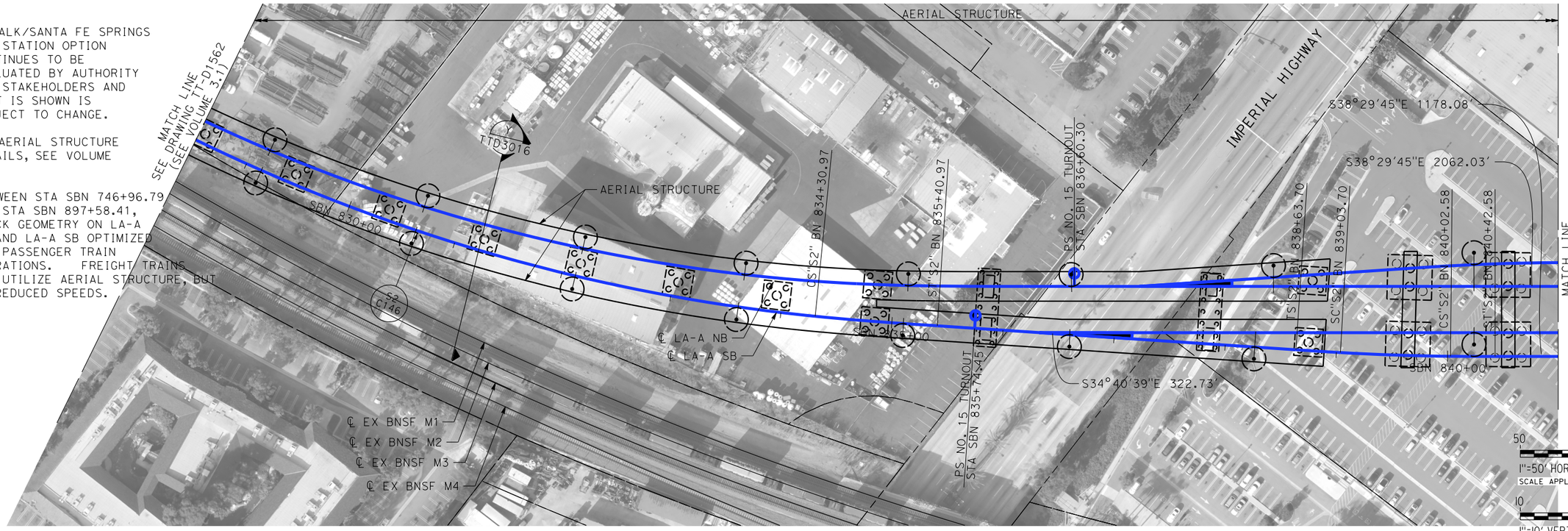
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NOTES:

1. NORWALK/SANTA FE SPRINGS HST STATION OPTION CONTINUES TO BE EVALUATED BY AUTHORITY AND STAKEHOLDERS AND WHAT IS SHOWN IS SUBJECT TO CHANGE.

2. FOR AERIAL STRUCTURE DETAILS, SEE VOLUME 3.2.

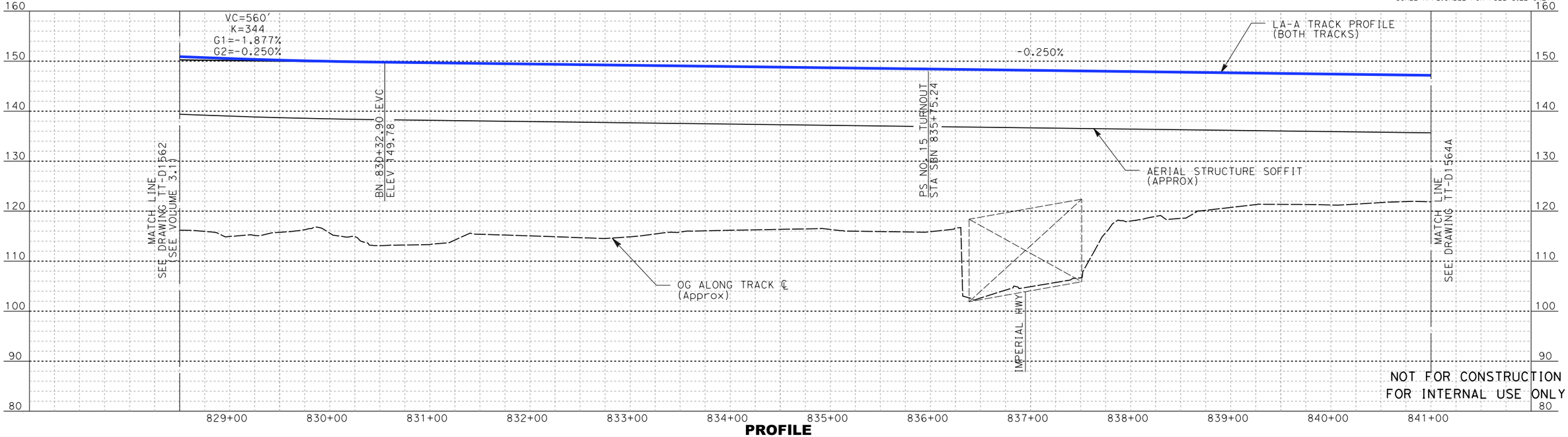
3. BETWEEN STA SBN 746+96.79 AND STA SBN 897+58.41, TRACK GEOMETRY ON LA-A NB AND LA-A SB OPTIMIZED FOR PASSENGER TRAIN OPERATIONS. FREIGHT TRAINS MAY UTILIZE AERIAL STRUCTURE, BUT AT REDUCED SPEEDS.



50 0 50 100
1"=50' HOR
SCALE APPLICABLE FOR FULL SIZE ONLY

10 0 10 20
1"=10' VERT
SCALE APPLICABLE FOR FULL SIZE ONLY

PLAN



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PROFILE

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY A. LEWIS :Z
DRAWN BY D. RAMIREZ
CHECKED BY A. BOSCH
IN CHARGE J. SWANSON
DATE 08/29/25

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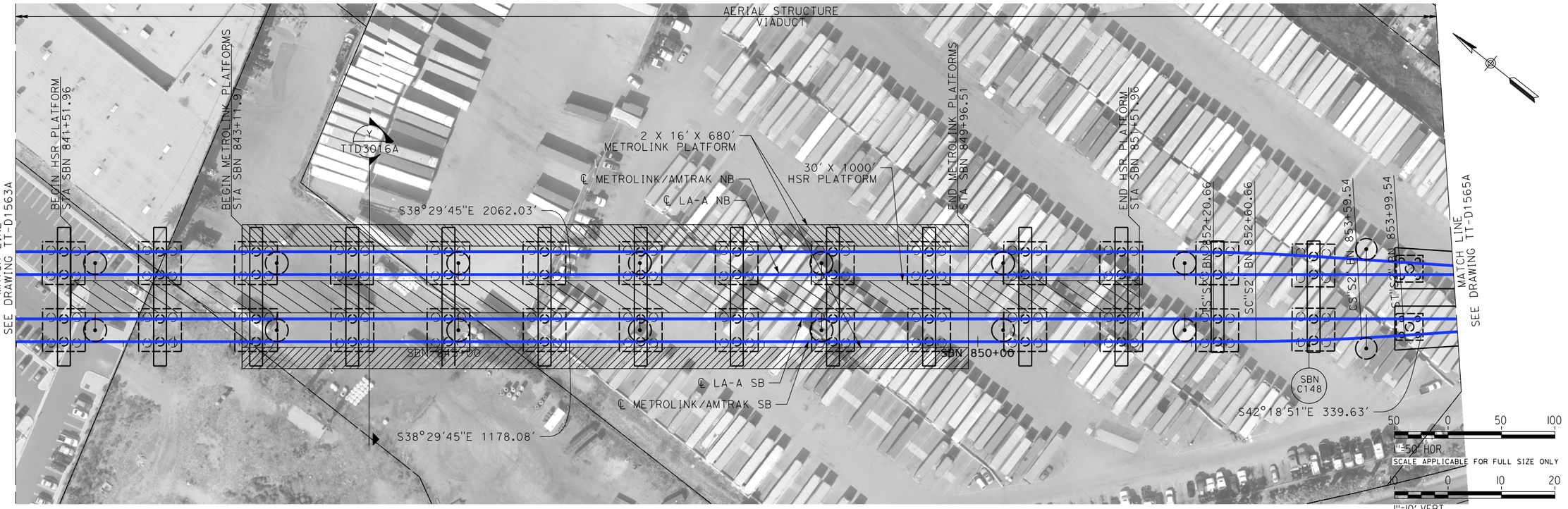
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

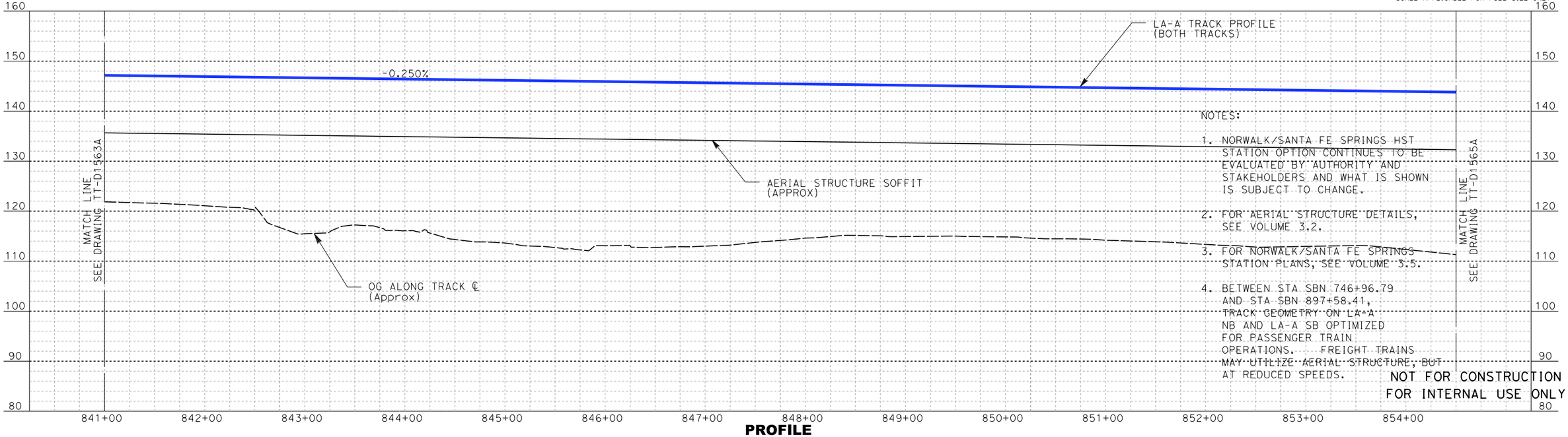
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PLAN AND PROFILE
HSR NORWALK/SANTA FE SPRINGS OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. TT-D1563A
SCALE AS SHOWN
SHEET NO.

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PLAN



PROFILE

NOTES:

1. NORWALK/SANTA FE SPRINGS HST STATION OPTION CONTINUES TO BE EVALUATED BY AUTHORITY AND STAKEHOLDERS AND WHAT IS SHOWN IS SUBJECT TO CHANGE.
2. FOR AERIAL STRUCTURE DETAILS, SEE VOLUME 3.2.
3. FOR NORWALK/SANTA FE SPRINGS STATION PLANS, SEE VOLUME 3.5.
4. BETWEEN STA SBN 746+96.79 AND STA SBN 897+58.41, TRACK GEOMETRY ON LA-A NB AND LA-A SB OPTIMIZED FOR PASSENGER TRAIN OPERATIONS. FREIGHT TRAINS MAY UTILIZE AERIAL STRUCTURE, BUT AT REDUCED SPEEDS.

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DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PLAN AND PROFILE
HSR NORWALK/SANTA FE SPRINGS OPTION

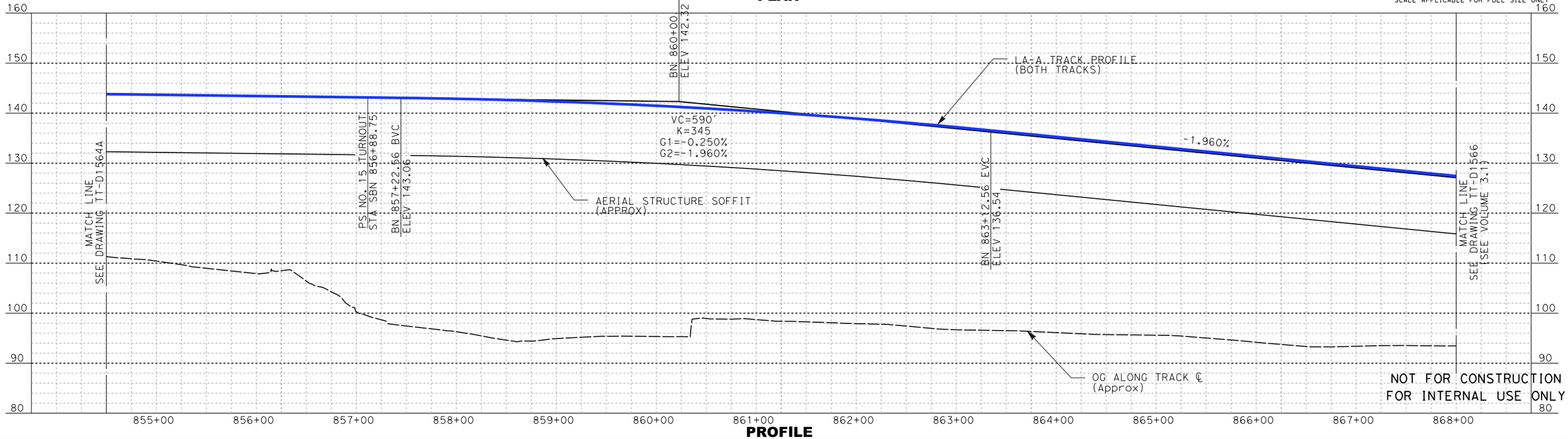
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DRAWING NO. TT-D1564A
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PLAN



PROFILE

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY A. LEWIS :Z
DRAWN BY D. RAMIREZ
CHECKED BY A. BOSCH
IN CHARGE J. SWANSON
DATE 08/29/25

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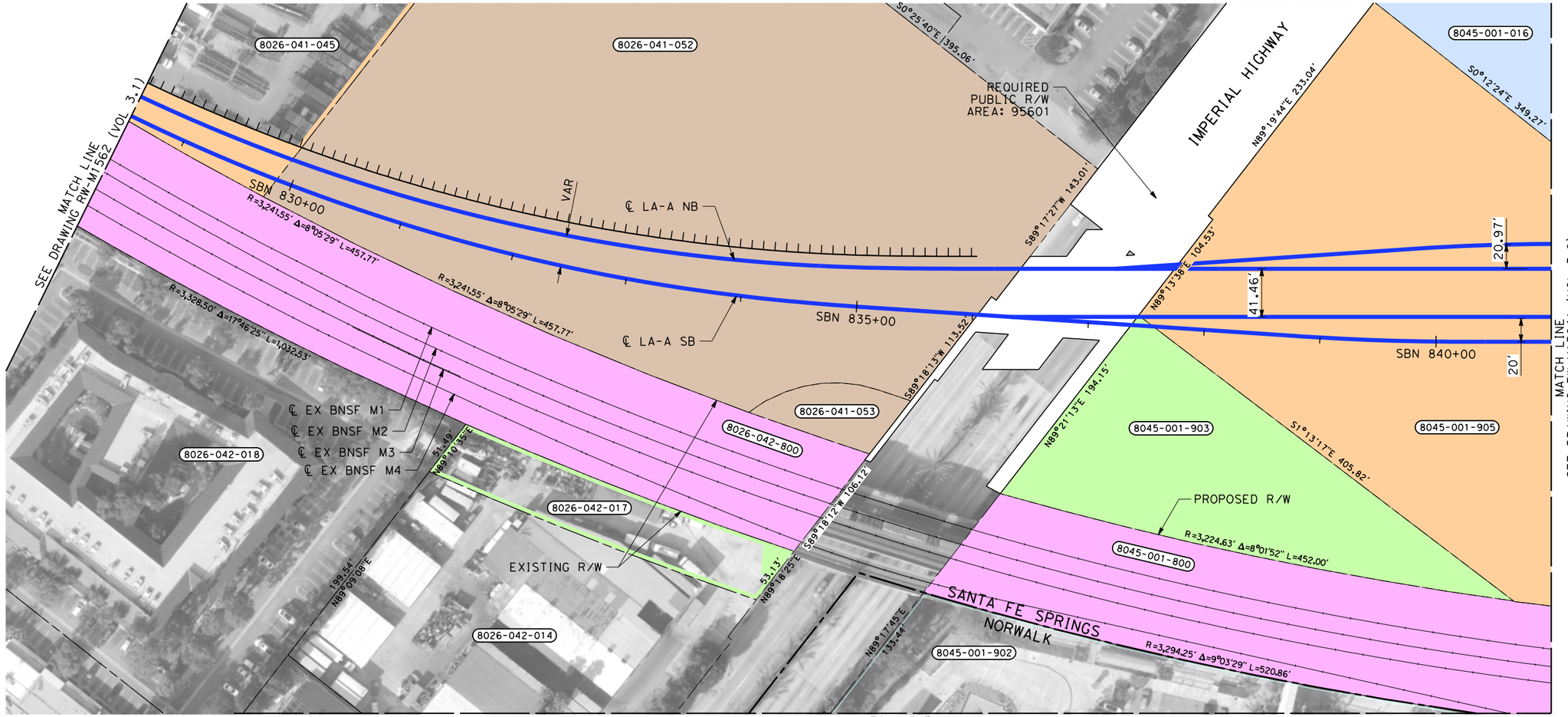
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PLAN AND PROFILE
HSR NORWALK/SANTA FE SPRINGS OPTION

CONTRACT NO. HSR06-0005
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PARCEL#	TITLE CODE ②	GRANTOR	AREAS (square feet or as noted) TOTAL	REQUIRED ⬡ [UF]	EXCESS ⬡ [UF]	REMAINDER	REMARKS	RECORDATION TYPE ③	DATE	DOC.# ④
8026-041-052		SIKA CHEMICAL CORP	211054	211054						
8026-041-053		SIKA CHEMICAL CORP	4892	4892						
8026-042-017		DIRTPAD LLC	15144	95			UTILITY			
8045-001-800		BNSF RAILWAY	227252	227252						
8045-001-903		SANTA FE SPRINGS CITY	41741	41741						
8045-001-905		COMMUNITY DEV COMMISSION	135505	135505						
8045-001-016		COAST INDUSTRIAL	93649	93649						

THE DISPOSITION, WHETHER OWNED OR LEASED, OF RIGHT-OF-WAY (ROW) FROM REDONDO JUNCTION (EXISTING BRIDGE OVER LOS ANGELES RIVER) TO THE CITY OF FULLERTON IS DEPENDENT UPON THE DISCUSSIONS AND NEGOTIATIONS BETWEEN THE CALIFORNIA HIGH SPEED RAIL AUTHORITY (AUTHORITY) AND THE BURLINGTON NORTHERN SANTA FE RAILWAY (BNSF).

NOTES:

1. INFORMATION IS BASED ON APPRAISAL MAPPING FROM COUNTY AND GIS; NEEDS TO BE VERIFIED.
2. PARCELS THAT FALL ON MULTIPLE SHEETS ARE ONLY PRESENTED ON THE FIRST SHEET TABLE.
3. GRADE SEPARATION & SYSTEM FACILITY IMPACTS LOCATED BEYOND ALIGNMENT ARE LOCATED ON "RW-M17XX SERIES" SHEETS.
4. MAINTENANCE YARD IMPACTS ARE LOCATED ON "RW-M18XX SERIES" SHEETS.

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50 0 50 100
1"=50'
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY R. NAFAR
DRAWN BY M. MAMAWAL
CHECKED BY M. SATISH
IN CHARGE J. SWANSON
DATE 08/29/25

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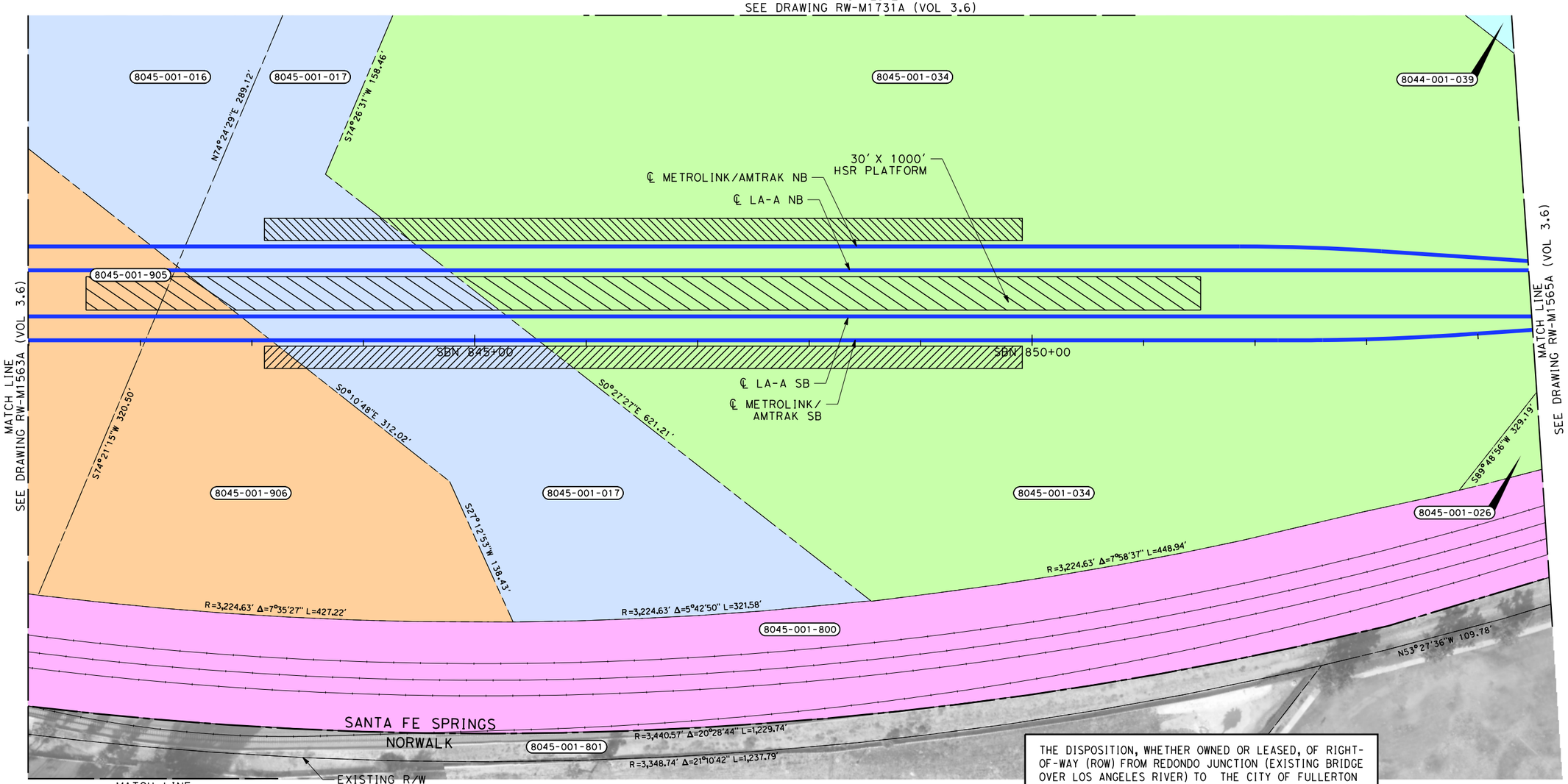
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
RIGHT-OF-WAY IMPACT
N/SF HSR STATION OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. RW-M1563A
SCALE AS SHOWN
SHEET NO.

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8045-001-906		COMMUNITY DEV COMMISSION	76361	76361			STATION			
8045-001-017		COAST INDUSTRIAL	112024	112024			STATION			
8045-001-034		SFS TRUCK STORAGE INC	663029	663029			STATION			
8044-001-039		GOLDEN SPRINGS DEV CO LLC	32185	32185						
8045-001-026		SFS TRUCK STORAGE INC	39210	39210			STATION			

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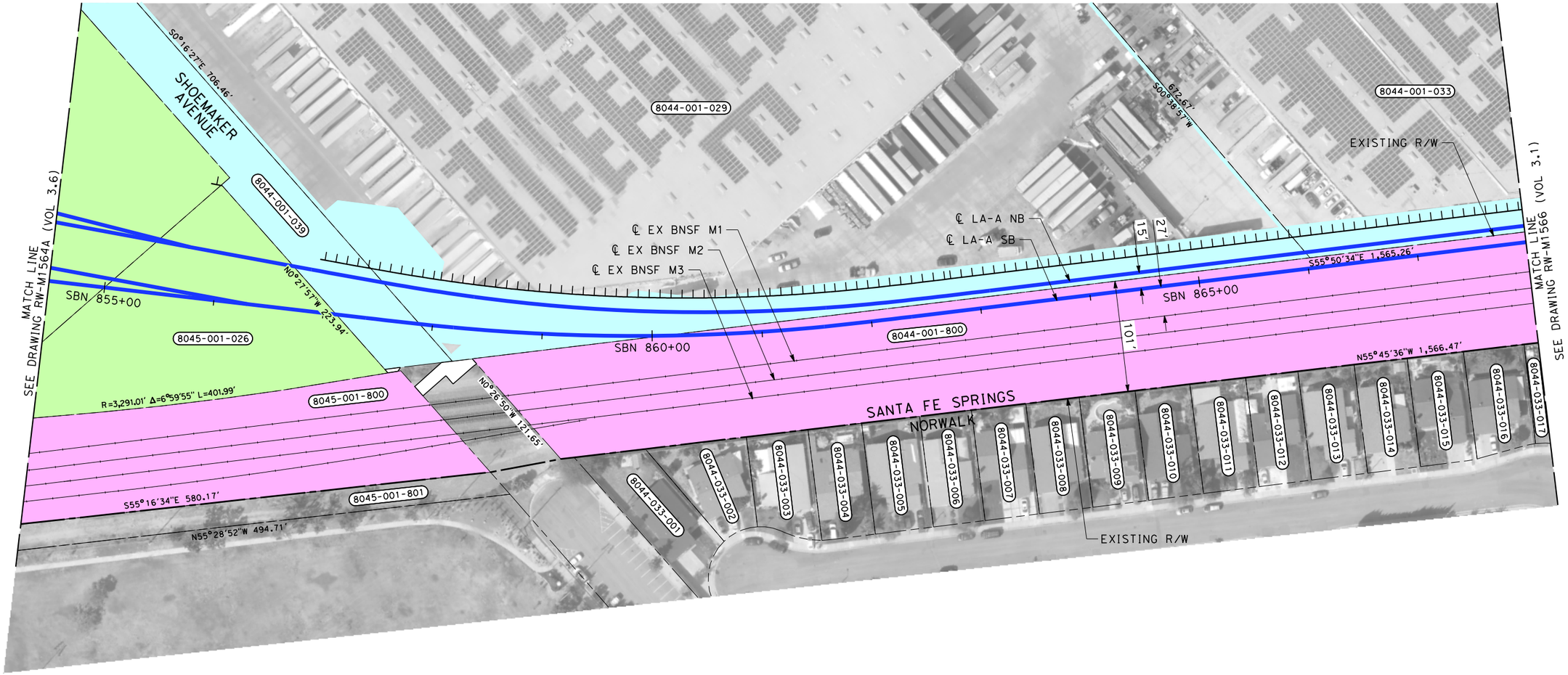
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CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
RIGHT-OF-WAY IMPACT
N/SF HSR STATION OPTION

CONTRACT NO. HSR06-0005
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SHEET NO.

$PLOT$



PARCEL#	TITLE CODE ②	GRANTOR	AREAS (square feet or as noted) TOTAL	REQUIRED ⬡ [UF]	EXCESS ⬡ [UF]	REMAINDER	REMARKS	RECORDATION TYPE ③	DATE	DOC.# ④
8044-001-029-1		GOLDEN SPRINGS DEV CO LLC	612445	34298			TRACK/BRIDGE/DRAINAGE			
8044-001-029-2		GOLDEN SPRINGS DEV CO LLC	612445	21191			TCE			
8044-001-800		BNSF RAILWAY	158533	158533						
8044-001-033-1		GOLDEN SPRINGS DEV CO LLC	607931	25021			TRACK/BRIDGE			
8044-001-033-2		GOLDEN SPRINGS DEV CO LLC	607931	15509			TCE			

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IN CHARGE J. SWANSON
DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
RIGHT-OF-WAY IMPACT
N/SF HSR STATION OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. RW-M1565A
SCALE AS SHOWN
SHEET NO.

$PLOT$

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MATCH LINE
SEE DRAWING RW-M1564A

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50 0 50 100
1"=50'
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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DRAWN BY M. MAMAWAL
CHECKED BY M. SATISH
IN CHARGE J. SWANSON
DATE 08/29/25

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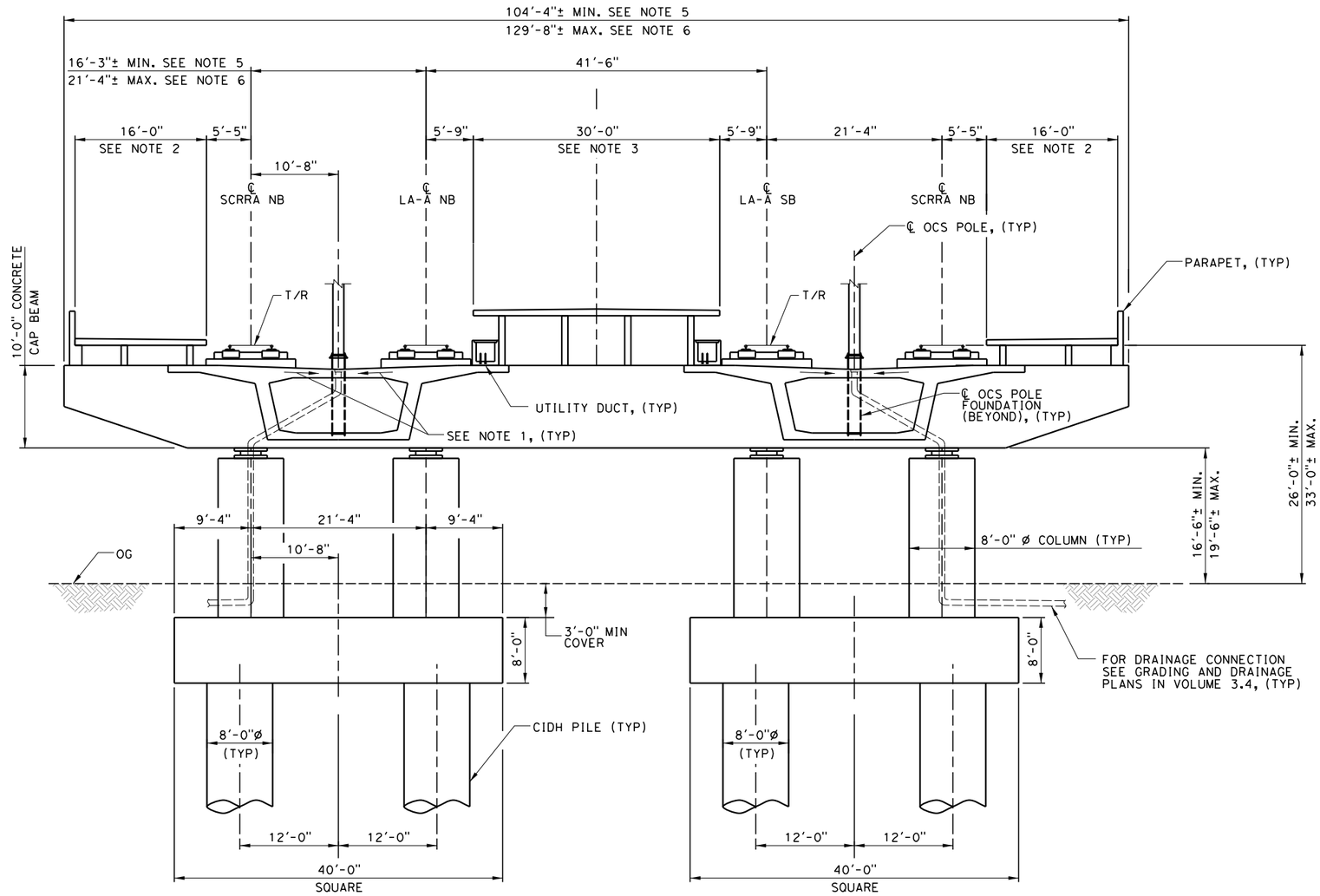
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
RIGHT-OF-WAY IMPACT
N/SF HSR STATION OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. RW-M1731A
SCALE AS SHOWN
SHEET NO.

$PLOT$



SANTA FE SPRINGS STATION TYPICAL BENT

SCALE: 1/8" = 1'-0"

NOTES:

1. DRAINAGE CROSS SLOPE SHALL BE 2%.
2. SCRRA SIDE PLATFORM IS FOR BENTS 78 TO BENT 85.
3. CHST CENTER PLATFORM IS FOR BENTS 76 TO BENT 87.
4. FOR STATION DRAWINGS SEE VOLUME 3.5, GENERAL AND STATIONS.
5. DIMENSION SHOWN IS FOR STATION LIMITS AND DOES NOT INCLUDE BENTS 74,75,88 AND 89.
6. DIMENSION SHOWN IS FOR STATION LIMITS AND INCLUDES BENTS 74,75,88 AND 89.

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

8 0 8 16
1/8"=1'-0"
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY M. RODRIGUEZ
DRAWN BY Z. OHN
CHECKED BY D. SARETSKY
IN CHARGE J. SWANSON
DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
TYPICAL HST AERIAL STRUCTURE SECTION
N/SF HSR STATION OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. ST-J0018A
SCALE AS SHOWN
SHEET NO.

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	No	Program Facility	Assumptions/Equation (Chapter 14 March 2016 Revision 2)	Required Area	Minimum Required Width/Linear Feet (lf)	Queuing Distance (lf)	Designed Area	HSR Project Design Criteria Chapter 14: Stations
Station Public Areas		**Unpaid Area**						
	1	Waiting Area	None				2,110	14.3.5.3.C - Public Waiting Areas
	2	Public Restrooms (Male/Female)	Based on CBC for Group A-3 Occupancy	915			1,317	14.3.5.4 - Public Restrooms
	3	Public Restrooms (Unisex)	64 sf minimum per restroom	128			225	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	3,000			3,763	14.3.5.5 - Passenger Amenity Spaces
	5	Fare Gates (Queuing Area)	P1b/50ppm x ((number of faregates -1x3) + (1 faregate x 4)) x 20 linear feet	80		20 lf	1,600	14.3.5.6.E - Fare Gates
	6	Ticket Vending Machines (Incl. Queuing Area)	Provided to meet peak passenger demand	82		8 lf	262	14.3.5.6.C - Ticket Vending Machines
	7	Ticket Sales Office	75 sf x each ticket window (windows required dependent on ridership)	75			150	14.3.5.6.B - Ticket Office Window
	8	Ticket Sales Windows (Queuing Area)	Ticket Windows x 5 linear feet in width (each) x queuing distance	100		20 lf	100	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			1,195	14.3.5.7.C - Business Lounge (includes terrace)
	11	Vertical Transportation - Elevators	2 Elevators per platform and level	726			1,089	14.3.3.3.E - Passenger Elevators
	12	Vertical Transportation - Stairs/Escalators					1,150	14.3.3.3.B and 14.3.3.3.C - Escalators and Stairs
	13	Vertical Transportation - Elevators (Queuing Area)	Table 14-5	528		8 lf	792	14.3.3.1.B - Queuing Space
	14	Vertical Transportation - Stairs/Escalators (Queuing Area)	Table 14-5			15 lf	630	14.3.3.1.B - Queuing Space
	15	Circulation	CHSTP Ridership in accordance with NFPA 130		16 lf		19,214	14.3.3.2 - Horizontal Circulation
		Subtotal					*33,697*	
		Paid Area						
	16	Fare Gates (Queuing Area)	P1b/50ppm x ((number of faregates -1x3) + (1 faregate x 4)) x 20 liner feet	80		20 lf	360	14.3.5.6.E - Fare Gates
	17	Value Added Machines (Including Queuing Area)	3.4' width x 8 linear feet x #VAMs (7)	54			190	14.3.5.6.D - Value Added Machines (VAMs)
	18	Vertical Transportation - Elevators	4 Elevators per platform and level				484	14.3.3.3.E - Passenger Elevators
	19	Vertical Transportation - Stairs/Escalators	CHST Guide Specifications				648	14.3.3.3.B and 14.3.3.3.C - Escalators and Stairs
	20	Vertical Transportation - Elevators (Queuing Area)	Table 14-5			8 lf	352	14.3.3.1.B - Queuing Space
	21	Vertical Transportation - Stairs/Escalators (Queuing Area)	Table 14-5			15 lf	360	14.3.3.1.B - Queuing Space
	22	Circulation	CHSTP Ridership in accordance with NFPA 130		16 lf		1,148	14.3.3.2 - Horizontal Circulation
		Subtotal					*3,542*	
		Platform						
	23	Platform Area (Per Platform)	Min Length = 1,410 lf with potential 205' expansions ; Min Width = 30 lf	42,300	30 lf		42,300	14.3.2.2 - Platform Planning
		Subtotal					*42,300*	

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DESIGNED BY A. MALEITZKE
DRAWN BY R. KUCINSKI
CHECKED BY E. CARBREY
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DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
PROGRAM SCHEDULE 1 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. AR-Y9501A
SCALE 1" = 100'
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	No	Program Facility	Assumptions/Equation (Chapter 14 March 2016 Revision 2)	Required Area	Minimum Required Width/Linear Feet (lf)	Queuing Distance (lf)	Designed Area	HSR Project Design Criteria Chapter 14: Stations
Non-Public Station Support Areas		**Non-Public Station Administrative Staff Support Services Facilities**						
	24	Station Managers Office	270 sf minimum	270			280	14.3.6.1.A - Station Manager's Office
	25	Station Administrative Offices	Size as Required				340	14.3.6.1.B - Station Administration Office
	26	Facility Maintenance Office	330 sf minimum	330			350	14.3.6.1.C - Facility Maintenance Office
	27	Transportation Agency Offices	Requested by local agencies				408	14.3.6.1.D - Transportation Agency Offices
	28	Lost and Found	80 sf minimum	80			90	14.3.6.1.E - Lost and Found
	29	First Aid Room	80 sf minimum	80			86	14.3.6.1.F - First Aid Room
	30	Staff Break Room	200 sf minimum or 25 sf per staff typical shift	200			220	14.3.6.1.G - Staff Break Room
	31	Training and Meeting Room	200 sf minimum or 25 sf per staff typical shift	200			220	14.3.6.1.H - Training and Meeting Room
	32	Staff Locker Room	Size as Required				1,067	14.3.6.1.I - Staff Locker Rooms
	33	Staff Restrooms (Male/Female)	Accordance with CBC	310			500	14.3.6.1.J - Staff Restrooms
	34	Circulation/Hallways	per CBC		3'-8" lf		452	14.3.3.2.F - Non-Public Corridors
		Subtotal					*4,013*	
		Non-Public Secure Station Staff Support Services Facilities						
	35	Police Office	500 sf minimum	500			953	14.3.6.2.A - Police Office
	36	Security Guard Office	144 sf minimum	144			150	14.3.6.2.B - Security Guard Office
	37	Ticket Administration Office	75 sf per ticket window	75			150	14.3.6.2.C - Ticket Administration Office
	38	Cash Handling and Ticket Storage Room	260 sf minimum	260			298	14.3.6.2.D - Cash Handling and Ticket Storage Room
	39	Station Control Room (SCR)	1,100 sf minimum	1,100			1,290	14.3.6.2.E - Station Control Room (SCR)
	40	Station Computer Rooms	500 sf each, minimum of 2	1,000			1,046	14.3.6.2.F - Station Computer Rooms
	41	Temporary Command Post (CP)	300 sf minimum	300			339	14.3.6.2.G - Temporary Command Post (CP)
	42	Stations Operations Room (SOR)	1.100 sf minimum	1,100			1,306	14.3.6.2.H - Stations Operations Room (SOR)
	43	Operation Management Booth (OMB)	100 sf per platform	100			100	14.3.6.2.I - Operation Management Booth
	44	Secured Circulation/Hallways	per CBC		3'-8" lf		452	14.3.6.2
		Subtotal					*6,084*	
Station Ancillary Facilities		**Maintenance Support Spaces**						
	45	Main Station Recycling / Refuse Storage Facility		150			153	14.3.7.1.A - Main Station Recycling / Refuse Storage Facility
	46	Secondary Station Recycling / Refuse Storage Facility	100 sf minimum	100			104	14.3.7.1.B - Secondary Station Recycling / Refuse Storage Facility
	47	Janitor's Closet	60 sf each	240			240	14.3.7.1.C - Janitor's Closet
	48	Station General Storage Rooms	200 sf + 60 sf for misc. storage spaces	260			316	14.3.7.1.D - Station General Storage Rooms
	49	Landscape Maintenace Room	100 sf minimum	100			114	14.3.7.1.E - Landscape Maintenace Room
	50	Loading Zone	Sized as appropriate				512	14.3.7.1.F - Loading Zone
	51	Loading Dock	Sized as appropriate				205	14.3.7.1.G - Loading Dock
	52	Service Access	Sized as appropriate				2,187	14.3.7.1.H - Service Access
		Subtotal					*3,831*	
		Building Services and Plant Rooms						
	53	Environmental Control	Sized by Designer				225	14.3.7.2.A - Environmental Control
	54	Electric System	10,000 Substation + 1,100 sf Station	11,100			11,160	14.3.7.2.B - Electric System
	55	Fire Protection	Sized by Designer				367	14.3.7.2.C- Fire Protection
	56	Plumbing and Drainage	Sized by Designer				176	14.3.7.2.D- Plumbing and Drainage
	57	CHST Core Systems Spaces	2,405	2,405			2,519	14.3.7.2.E- CHST Core Systems Spaces
	58	Circulation/Hallways	per CBC		3'-8" lf		452	
		Subtotal					*14,899*	

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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NORWALK / SANTA FE SPRINGS STATION
PROGRAM SCHEDULE 2 OF 3

CONTRACT NO. HSR06-0005
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	No	Program Facility	Assumptions/Equation (Chapter 14 March 2016 Revision 2)	Required Area	Minimum Required Width/Linear Feet (lf)	Queuing Distance (lf)	Designed Area	HSR Project Design Criteria Chapter 14: Stations
		Ingress/Egress Circulation						
Transportation	59	Parking	ModeShare Summary 6-21-16	See Below			See Below	
	60	Pick-Up/Drop-Off	ModeShare Summary 6-21-16	See Below			See Below	
	61	Bus Bays	ModeShare Summary 6-21-16	See Below			See Below	
	62	Roads/Circulation	Sized by Designer	See Below			See Below	
		Subtotal						
		Station Program Subtotal					***104,824***	
		Walls and Structure	Assumed 25% Grossing Factor of Total Program Area sf				***26,206***	
		Station Total					**131,030**	

Parking and Pick-up/Drop-Off Uses

Required Parking					
	Facility	Type	Quantity	Quantity	Unit
HSR	P1, P2, P3, P4-1 & P4-2	Surface	350	290	stalls (9'x18')
Metrolink/Amtrak Replacement			608	0	
TOTAL			**1,248**		**stalls**
			15.20[1]		**acres**
Pick-up/Drop-off					
HSR Dedicated			24		bays (8'x20')
TOTAL			**24**		**bays**
			14,316[2]		**sq. ft.**

[1]The total parking area also includes the parking access roads, sidewalks, and landscaping areas.

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

Station Entry Plazas and Transit Plazas

Program Facility	Required Area	Designed Area	HSR Design Criteria Chapter 14
Station Entry Plaza	Varies per Site	**21,800 sq. ft.**	14.4.4.8 Station Entry Plazas
Transit Plaza	Varies per Site	**19,450 sq. ft.**	14.4.2.4 Transit Planning Principles
TOTAL PLAZA		**41,250 sq. ft.**	

Note: All Plaza areas include main and secondary plazas per the proposed general and detailed site plans.

Ridership Estimates

Daily Boardings per CHSRA 2016 Business Plan	**2029**	1,900
	2040	4,000

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REV	DATE	BY	CHK	APP	DESCRIPTION

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DRAWN BY R. KUCINSKI
CHECKED BY E. CARBREY
IN CHARGE J. SWANSON
DATE 08/29/25

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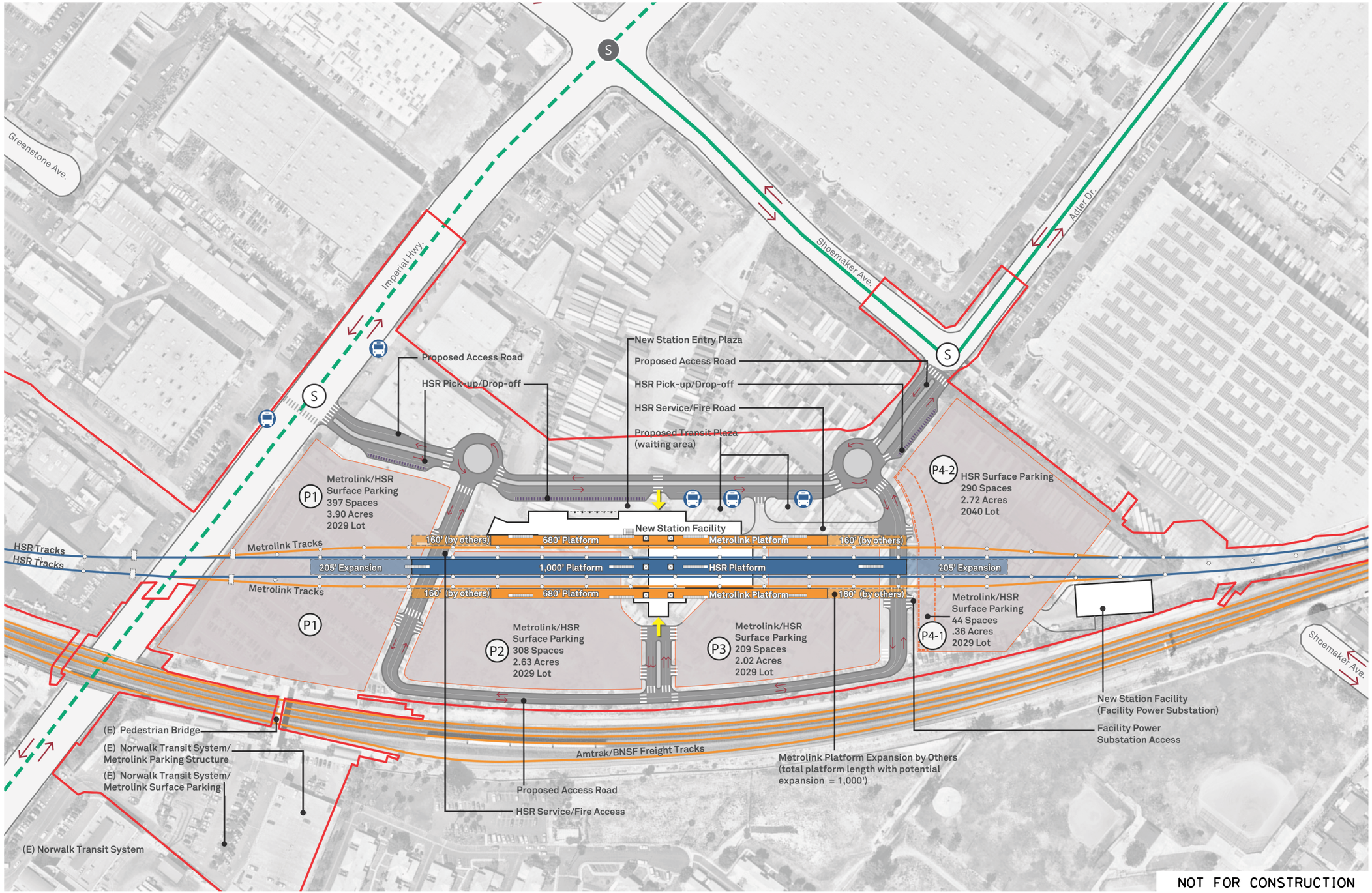
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GRUENASSOCIATES
ARCHITECTURE PLANNING INTERIORS LANDSCAPE

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
PROGRAM SCHEDULE 3 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. AR-Y9503A
SCALE 1" = 100'
SHEET NO.

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LEGEND

Note: (E) annotation indicates existing facilities

- Environmental Footprint
- HSR Tracks and Platform
- New Station Facilities
- Non-HSR Tracks & Platforms
- Existing Bicycle Facilities
- Proposed Bicycle Facilities
- Proposed Transit Stop
- New Parking Facility
- Proposed Roadway
- Pick-up/Drop-off Zone
- Roadway Directional Arrows
- Station Entrance
- HSR Structural Columns
- Existing Signalized Intersection
- New Signalized Intersection

Note: Green Line Eastern Extension Project under study by others

New Parking Facilities

Facility	User	2029	2040
P1-P4	HSR	350*	290*
	Metrolink/Amtrak	608	-
TOTAL	HSR + Metrolink/ Amtrak	1,248	

* Mode Share Summary June 2016

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100 0 100 200
GRAPHIC SCALE
SCALE APPLICABLE FOR FULL SIZE ONLY

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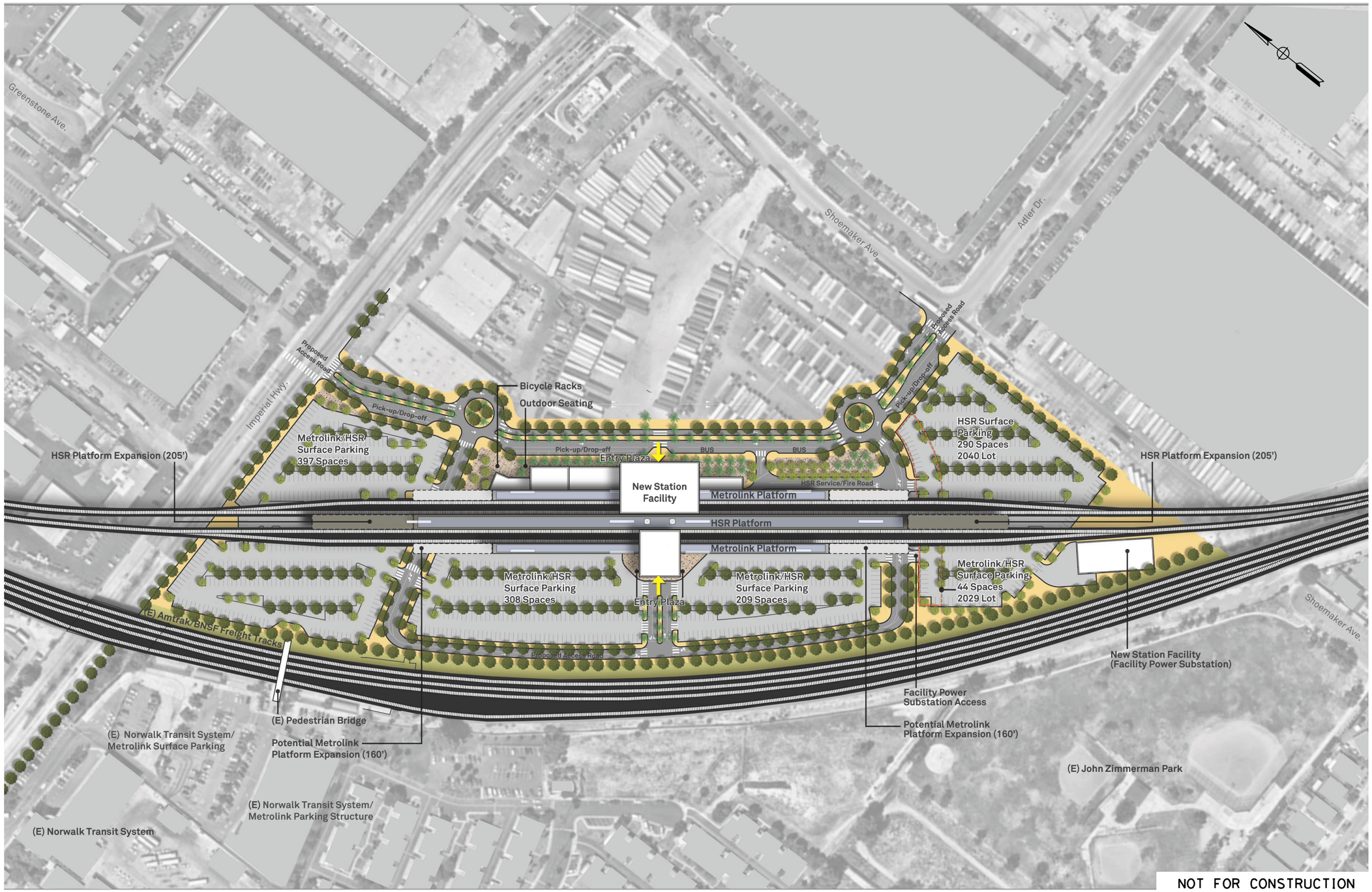
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
GENERAL SITE PLAN

CONTRACT NO. HSR06-0005
DRAWING NO. AR-B0501A
SCALE 1" = 100'
SHEET NO.

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LEGEND

Note: (E) annotation indicates existing facilities

- HSR Platform and Canopy
- New Station Facilities
- Non-HSR Platforms and Cano
- Tracks
- Proposed Roadway
- Station Entrance

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100 0 100 200
GRAPHIC SCALE
SCALE APPLICABLE FOR FULL SIZE ONLY

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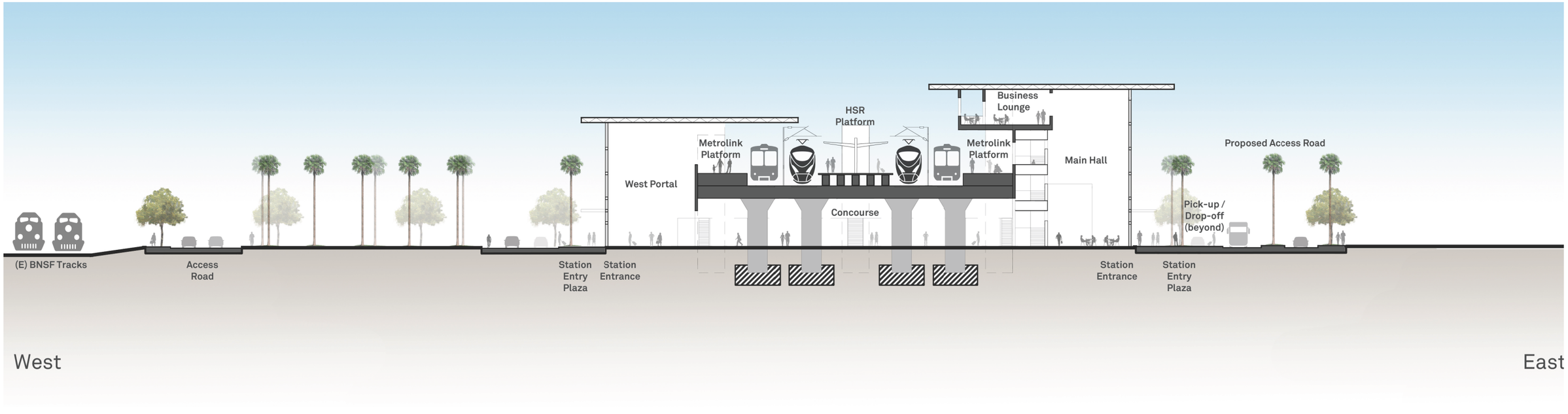
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM

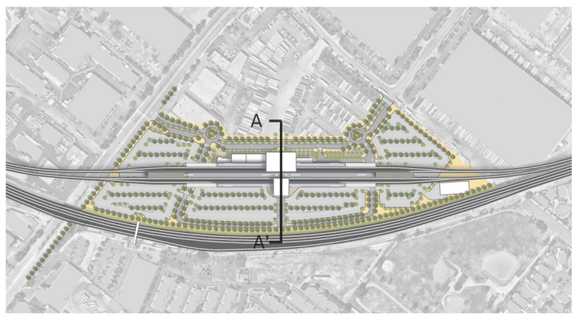
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
DETAILED SITE PLAN

CONTRACT NO. HSR06-0005
DRAWING NO. AR-C1501A
SCALE 1" = 100'
SHEET NO.

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Section A-



LEGEND

Note: (E) annotation indicates existing facilities

- HSR
- Metrolink
- BNSF/Freight

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20 0 20 40
GRAPHIC SCALE
SCALE APPLICABLE FOR FULL SIZE ONLY

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
CROSS SECTION

CONTRACT NO. HSR06-0005
DRAWING NO. AR-J3501A
SCALE 1" = 20'
SHEET NO.

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LEGEND

Note: (E) annotation indicates existing facilities

- New Station Facility
- New HSR Platform

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
MASSING MODEL 1 OF 2

CONTRACT NO. HSR06-0005
DRAWING NO. AR-J8501A
SCALE NO SCALE
SHEET NO.

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LEGEND

Note: (E) annotation indicates existing facilities

- New Station Facility
- New HSR Platform

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
NORWALK / SANTA FE SPRINGS STATION
MASSING MODEL 2 OF 2

CONTRACT NO. HSR06-0005
DRAWING NO. AR-J8502A
SCALE NO SCALE
SHEET NO.

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