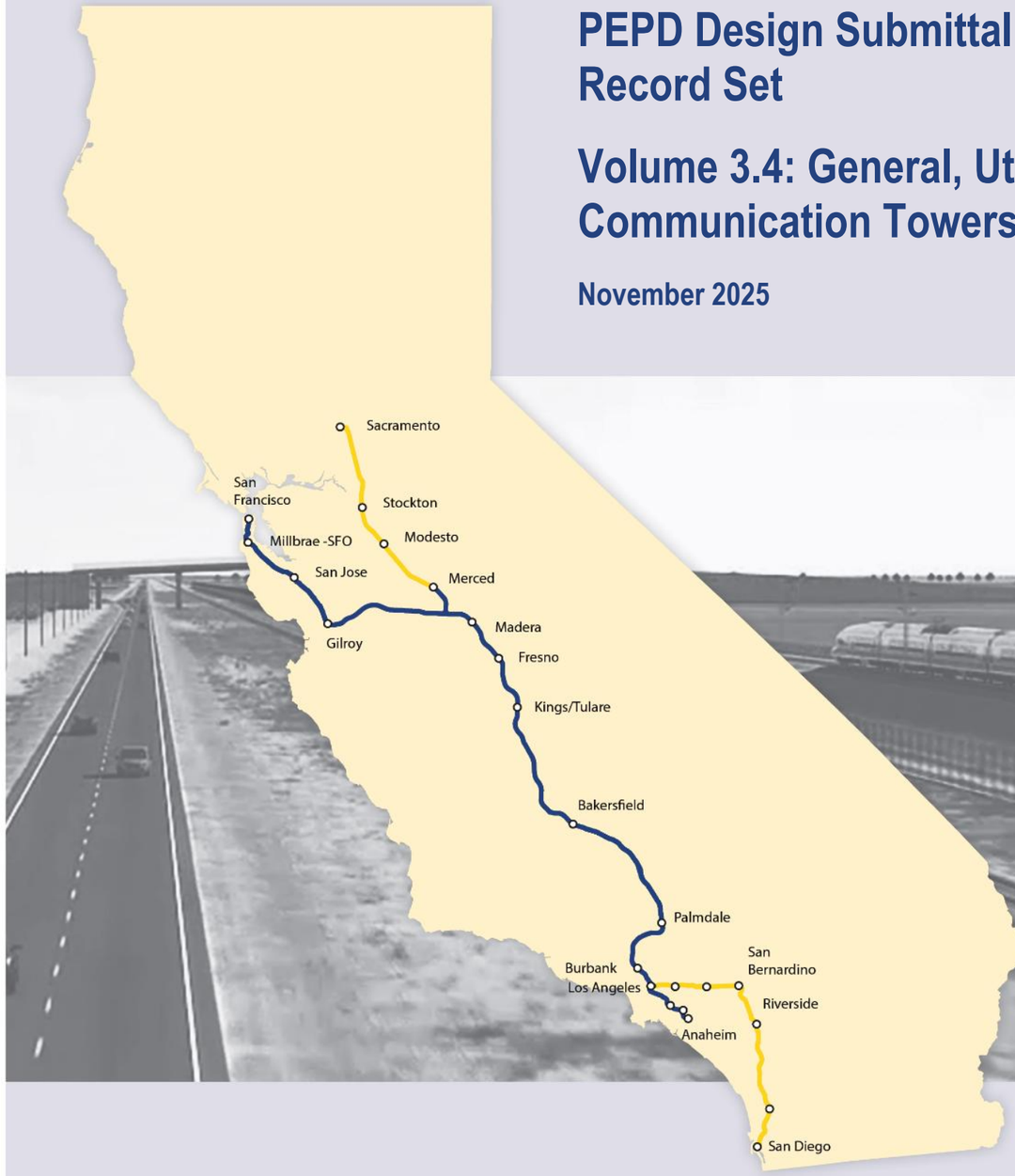
California High-Speed Rail Authority

Los Angeles to Anaheim Project Section



PEPD Design Submittal
Record Set

Volume 3.4: General, Utilities, Grading and Drainage, Traction Power & Communication Towers

November 2025



CALIFORNIA High-Speed Rail Authority

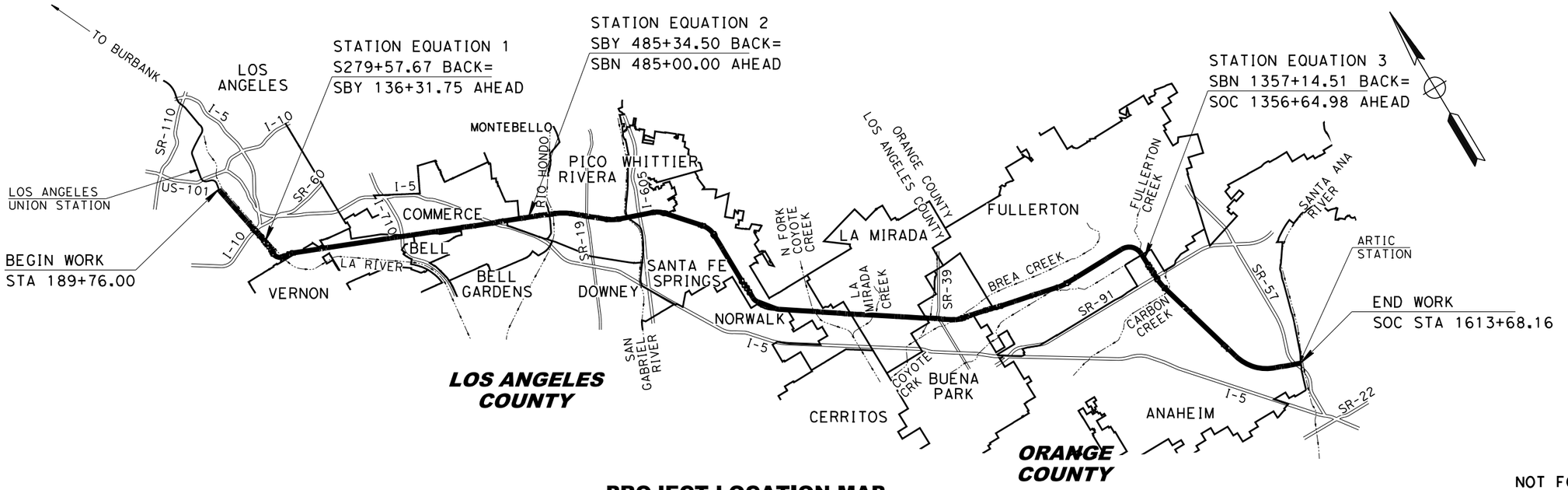
The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad 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 3.4
GENERAL, UTILITIES, GRADING AND DRAINAGE, TRACTION POWER, & COMMUNICATION TOWERS



PROJECT LOCATION MAP

NOT FOR CONSTRUCTION
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

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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-A0401
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
	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

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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 VOLUMES

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0410
SCALE AS SHOWN
SHEET NO.

$PLOT$

VOLUME 3.4 - GENERAL, UTILITIES, GRADING AND DRAINAGE, TRACTION POWER, & COMMUNICATION TOWERS

GENERAL

DRAWING NO.	DRAWING TITLE
GE-A0400	COVER SHEET - VOLUME 3.4
GE-A0401	PROJECT LOCATION MAP
GE-A0410	INDEX OF VOLUMES
GE-A0411	INDEX OF DRAWINGS VOLUME 3.4 - SHEET 1 OF 6
GE-A0412	INDEX OF DRAWINGS VOLUME 3.4 - SHEET 2 OF 6
GE-A0413	INDEX OF DRAWINGS VOLUME 3.4 - SHEET 3 OF 6
GE-A0414	INDEX OF DRAWINGS VOLUME 3.4 - SHEET 4 OF 6
GE-A0415	INDEX OF DRAWINGS VOLUME 3.4 - SHEET 5 OF 6
GE-A0416	INDEX OF DRAWINGS VOLUME 3.4 - SHEET 6 OF 6
GE-D0401	VOLUME 3.4 - KEY MAP UTILITIES - SHEET 1 OF 3
GE-D0402	VOLUME 3.4 - KEY MAP UTILITIES - SHEET 2 OF 3
GE-D0403	VOLUME 3.4 - KEY MAP UTILITIES - SHEET 3 OF 3
GE-D0411	VOLUME 3.4 - KEY MAP GRADING AND DRAINAGE - SHEET 1 OF 3
GE-D0412	VOLUME 3.4 - KEY MAP GRADING AND DRAINAGE - SHEET 2 OF 3
GE-D0413	VOLUME 3.4 - KEY MAP GRADING AND DRAINAGE - SHEET 3 OF 3
GE-B0401	BASIS OF DESIGN SUMMARY
GE-C0401	ACRONYMS AND ABBREVIATIONS 1
GE-C0402	ACRONYMS AND ABBREVIATIONS 2
GE-C0403	ACRONYMS AND ABBREVIATIONS 3
GE-C0404	ACRONYMS AND ABBREVIATIONS 4
GE-C0405	ACRONYMS AND ABBREVIATIONS 5
GE-C0411	SYMBOLS 1
GE-C0412	SYMBOLS 2
GE-B0411	GENERAL NOTES 1 OF 1
GE-D6401	TRACK SCHEMATIC
GE-D6402	TRACK SCHEMATIC - 26TH STREET LMF III OPTION

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-C1504	EXISTING COMPOSITE UTILITIES PLAN STA S182+50 TO STA S196+00 - FOR REFERENCE ONLY
UT-C1505	EXISTING COMPOSITE UTILITIES PLAN STA S196+00 TO STA S210+00
UT-C1506	EXISTING COMPOSITE UTILITIES PLAN STA S210+00 TO STA S224+00
UT-C1507	EXISTING COMPOSITE UTILITIES PLAN STA S224+00 TO STA S238+00
UT-C1508	EXISTING COMPOSITE UTILITIES PLAN STA S238+00 TO STA S252+00
UT-C1509	EXISTING COMPOSITE UTILITIES PLAN STA S252+00 TO STA S266+00
UT-C1510	EXISTING COMPOSITE UTILITIES PLAN STA S266+00 (BACK) TO STA SBN 137+00 (AHEAD)
UT-C1511	EXISTING COMPOSITE UTILITIES PLAN STA SBN 137+00 TO STA SBN 151+00
UT-C1512	EXISTING COMPOSITE UTILITIES PLAN STA SBN 151+00 TO STA SBN 164+50
UT-C1513	EXISTING COMPOSITE UTILITIES PLAN STA SBN 164+50 TO STA SBN 178+50
UT-C1514	EXISTING COMPOSITE UTILITIES PLAN STA SBN 178+50 TO STA SBN 192+50
UT-C1515	EXISTING COMPOSITE UTILITIES PLAN STA SBN 192+50 TO STA SBN 206+50
UT-C1516	EXISTING COMPOSITE UTILITIES PLAN STA SBN 206+50 TO STA SBN 220+50
UT-C1517	EXISTING COMPOSITE UTILITIES PLAN STA SBN 220+50 TO STA SBN 234+50
UT-C1518	EXISTING COMPOSITE UTILITIES PLAN STA SBN 234+50 TO STA SBN 248+50
UT-C1519	EXISTING COMPOSITE UTILITIES PLAN STA SBN 248+50 TO STA SBN 262+00
UT-C1520	EXISTING COMPOSITE UTILITIES PLAN STA SBN 262+00 TO STA SBN 275+50
UT-C1521	EXISTING COMPOSITE UTILITIES PLAN STA SBN 275+50 TO STA SBN 289+00
UT-C1522	EXISTING COMPOSITE UTILITIES PLAN STA SBN 289+00 TO STA SBN 302+50
UT-C1523	EXISTING COMPOSITE UTILITIES PLAN STA SBN 302+50 TO STA SBN 316+00
UT-C1524	EXISTING COMPOSITE UTILITIES PLAN STA SBN 316+00 TO STA SBN 329+50
UT-C1525	EXISTING COMPOSITE UTILITIES PLAN STA SBN 329+50 TO STA SBN 342+00
UT-C1526	EXISTING COMPOSITE UTILITIES PLAN STA SBN 342+00 TO STA SBN 354+50
UT-C1527	EXISTING COMPOSITE UTILITIES PLAN STA SBN 354+50 TO STA SBN 367+00
UT-C1528	EXISTING COMPOSITE UTILITIES PLAN STA SBN 367+00 TO STA SBN 379+50
UT-C1529	EXISTING COMPOSITE UTILITIES PLAN STA SBN 368+50 TO STA SBN 382+00
UT-C1530	EXISTING COMPOSITE UTILITIES PLAN STA SBN 382+00 TO STA SBN 395+50
UT-C1531	EXISTING COMPOSITE UTILITIES PLAN STA SBN 395+50 TO STA SBN 409+00
UT-C1532	EXISTING COMPOSITE UTILITIES PLAN STA SBN 409+00 TO STA SBN 422+50
UT-C1533	EXISTING COMPOSITE UTILITIES PLAN STA SBN 433+50 TO STA SBN 446+00
UT-C1534	EXISTING COMPOSITE UTILITIES PLAN STA SBN 446+00 TO STA SBN 459+50
UT-C1535	EXISTING COMPOSITE UTILITIES PLAN STA SBN 459+50 TO STA SBN 472+00
UT-C1536	EXISTING COMPOSITE UTILITIES PLAN STA SBN 472+00 TO STA SBN 484+50
UT-C1537	EXISTING COMPOSITE UTILITIES PLAN STA SBN 484+50 TO STA SBN 497+00
UT-C1538	EXISTING COMPOSITE UTILITIES PLAN STA SBN 497+00 TO STA SBN 510+50
UT-C1539	EXISTING COMPOSITE UTILITIES PLAN STA SBN 510+50 TO STA SBN 524+00
UT-C1540	EXISTING COMPOSITE UTILITIES PLAN STA SBN 524+00 TO STA SBN 537+50
UT-C1541	EXISTING COMPOSITE UTILITIES PLAN STA SBN 537+50 TO STA SBN 550+00
UT-C1542	EXISTING COMPOSITE UTILITIES PLAN STA SBN 550+00 TO STA SBN 562+50

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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 3.4 - SHEET 1 OF 6

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0411
SCALE AS SHOWN
SHEET NO.

$PLOT$

VOLUME 3.4 - GENERAL, UTILITIES, GRADING AND DRAINAGE, TRACTION POWER, & COMMUNICATION TOWERS

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-C1543	EXISTING COMPOSITE UTILITIES PLAN STA SBN 562+50 TO STA SBN 576+00
UT-C1544	EXISTING COMPOSITE UTILITIES PLAN STA SBN 576+00 TO STA SBN 589+50
UT-C1545	EXISTING COMPOSITE UTILITIES PLAN STA SBN 589+50 TO STA SBN 602+00
UT-C1546	EXISTING COMPOSITE UTILITIES PLAN STA SBN 602+00 TO STA SBN 614+50
UT-C1547	EXISTING COMPOSITE UTILITIES PLAN STA SBN 614+50 TO STA SBN 628+00
UT-C1548	EXISTING COMPOSITE UTILITIES PLAN STA SBN 628+00 TO STA SBN 641+50
UT-C1549	EXISTING COMPOSITE UTILITIES PLAN STA SBN 641+50 TO STA SBN 654+00
UT-C1550	EXISTING COMPOSITE UTILITIES PLAN STA SBN 654+00 TO STA SBN 666+50
UT-C1551	EXISTING COMPOSITE UTILITIES PLAN STA SBN 666+50 TO STA SBN 679+00
UT-C1552	EXISTING COMPOSITE UTILITIES PLAN STA SBN 679+00 TO STA SBN 691+50
UT-C1553	EXISTING COMPOSITE UTILITIES PLAN STA SBN 691+50 TO STA SBN 705+50
UT-C1554	EXISTING COMPOSITE UTILITIES PLAN STA SBN 705+50 TO STA SBN 719+00
UT-C1555	EXISTING COMPOSITE UTILITIES PLAN STA SBN 719+00 TO STA SBN 732+50
UT-C1556	EXISTING COMPOSITE UTILITIES PLAN STA SBN 732+50 TO STA SBN 746+50
UT-C1557	EXISTING COMPOSITE UTILITIES PLAN STA SBN 746+50 TO STA SBN 760+50
UT-C1558	EXISTING COMPOSITE UTILITIES PLAN STA SBN 760+50 TO STA SBN 774+50
UT-C1559	EXISTING COMPOSITE UTILITIES PLAN STA SBN 774+50 TO STA SBN 788+50
UT-C1560	EXISTING COMPOSITE UTILITIES PLAN STA SBN 788+50 TO STA SBN 802+00
UT-C1561	EXISTING COMPOSITE UTILITIES PLAN STA SBN 802+00 TO STA SBN 815+50
UT-C1562	EXISTING COMPOSITE UTILITIES PLAN STA SBN 815+50 TO STA SBN 829+00
UT-C1563	EXISTING COMPOSITE UTILITIES PLAN STA SBN 829+00 TO STA SBN 841+50
UT-C1564	EXISTING COMPOSITE UTILITIES PLAN STA SBN 841+50 TO STA SBN 855+00
UT-C1565	EXISTING COMPOSITE UTILITIES PLAN STA SBN 855+00 TO STA SBN 868+50
UT-C1566	EXISTING COMPOSITE UTILITIES PLAN STA SBN 868+50 TO STA SBN 881+00
UT-C1567	EXISTING COMPOSITE UTILITIES PLAN STA SBN 881+00 TO STA SBN 893+00
UT-C1568	EXISTING COMPOSITE UTILITIES PLAN STA SBN 893+00 TO STA SBN 905+00
UT-C1569	EXISTING COMPOSITE UTILITIES PLAN STA SBN 905+00 TO STA SBN 917+50
UT-C1570	EXISTING COMPOSITE UTILITIES PLAN STA SBN 917+00 TO STA SBN 929+50
UT-C1571	EXISTING COMPOSITE UTILITIES PLAN STA SBN 930+00 TO STA SBN 942+50
UT-C1572	EXISTING COMPOSITE UTILITIES PLAN STA SBN 942+50 TO STA SBN 955+00
UT-C1573	EXISTING COMPOSITE UTILITIES PLAN STA SBN 955+00 TO STA SBN 967+50
UT-C1574	EXISTING COMPOSITE UTILITIES PLAN STA SBN 967+50 TO STA SBN 980+00
UT-C1575	EXISTING COMPOSITE UTILITIES PLAN STA SBN 980+00 TO STA SBN 992+50
UT-C1576	EXISTING COMPOSITE UTILITIES PLAN STA SBN 992+50 TO STA SBN 1005+00
UT-C1577	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1005+00 TO STA SBN 1017+50
UT-C1578	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1017+50 TO STA SBN 1030+00
UT-C1579	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1030+00 TO STA SBN 1043+50
UT-C1580	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1043+50 TO STA SBN 1057+00
UT-C1581	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1057+00 TO STA SBN 1069+50

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-C1582	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1069+50 TO STA SBN 1082+00
UT-C1583	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1082+00 TO STA SBN 1095+50
UT-C1584	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1095+50 TO STA SBN 1109+00
UT-C1585	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1109+00 TO STA SBN 1122+50
UT-C1586	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1122+50 TO STA SBN 1136+00
UT-C1587	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1136+00 TO STA SBN 1148+50
UT-C1588	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1148+50 TO STA SBN 1161+00
UT-C1589	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1161+00 TO STA SBN 1173+50
UT-C1590	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1173+50 TO STA SBN 1186+00
UT-C1591	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1186+00 TO STA SBN 1199+50
UT-C1592	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1199+50 TO STA SBN 1213+00
UT-C1593	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1213+00 TO STA SBN 1226+50
UT-C1594	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1226+50 TO STA SBN 1240+00
UT-C1595	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1240+00 TO STA SBN 1253+50
UT-C1596	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1253+50 TO STA SBN 1267+00
UT-C1597	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1267+00 TO STA SBN 1280+50
UT-C1598	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1280+50 TO STA SBN 1294+00
UT-C1599	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1294+00 TO STA SBN 1307+50
UT-C1600	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1307+50 TO STA SBN 1321+00
UT-C1601	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1321+00 TO STA SBN 1333+00
UT-C1602	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1333+00 TO STA SBN 1345+50
UT-C1603	EXISTING COMPOSITE UTILITIES PLAN STA SBN 1345+50 TO STA SBN 1358+00
UT-C1604	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1358+00 TO STA SOC 1370+50
UT-C1605	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1370+50 TO STA SOC 1383+00
UT-C1606	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1383+00 TO STA SOC 1395+50
UT-C1607	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1395+50 TO STA SOC 1408+00
UT-C1608	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1408+00 TO STA SOC 1420+50
UT-C1609	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1420+50 TO STA SOC 1433+00
UT-C1610	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1433+00 TO STA SOC 1445+50
UT-C1611	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1445+50 TO STA SOC 1459+00
UT-C1612	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1459+00 TO STA SOC 1472+50
UT-C1613	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1472+50 TO STA SOC 1486+00
UT-C1614	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1486+00 TO STA SOC 1499+50
UT-C1615	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1499+50 TO STA SOC 1512+00
UT-C1616	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1512+00 TO STA SOC 1524+50
UT-C1617	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1524+50 TO STA SOC 1537+00
UT-C1618	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1537+00 TO STA SOC 1549+50
UT-C1619	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1549+50 TO STA SOC 1562+00
UT-C1620	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1562+00 TO STA SOC 1574+50

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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INDEX OF DRAWINGS
VOLUME 3.4 - SHEET 2 OF 6

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0412
SCALE AS SHOWN
SHEET NO.

$PLOT$

VOLUME 3.4 - GENERAL, UTILITIES, GRADING AND DRAINAGE, TRACTION POWER, & COMMUNICATION TOWERS

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-C1621	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1574+50 TO STA SOC 1586+00
UT-C1622	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1586+00 TO STA SOC 1597+50
UT-C1623	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1597+50 TO STA SOC 1610+00
UT-C1624	EXISTING COMPOSITE UTILITIES PLAN STA SOC 1610+00 TO STA SOC 1613+68
UT-C1901	NOT USED
UT-C1902	NOT USED
UT-C1903	NOT USED
UT-C6001	PROPOSED UTILITIES PLAN - EASTERN AVE STA 242+50 TO STA 256+00
UT-C6002	PROPOSED UTILITIES PLAN - BANDINI BLVD STA 159+50 TO STA 170+00
UT-C6003	PROPOSED UTILITIES PLAN - BANDINI BLVD STA 170+00 TO STA 178+00
UT-C6004	PROPOSED UTILITIES PLAN - BANDINI BLVD STA 178+00 TO STA 191+00
UT-C6005	PROPOSED UTILITIES PLAN - BANDINI BLVD STA 191+00 TO STA 206+00
UT-C6006	PROPOSED UTILITIES PLAN - BANDINI BLVD STA 206+00 TO STA 211+00
UT-D1504	PROPOSED UTILITIES RELOCATION PLAN STA S182+50 TO STA S196+00 - FOR REFERENCE ONLY
UT-D1505	PROPOSED UTILITIES RELOCATION PLAN STA S196+00 TO STA S210+00
UT-D1506	PROPOSED UTILITIES RELOCATION PLAN STA S210+00 TO STA S224+00
UT-D1507	PROPOSED UTILITIES RELOCATION PLAN STA S224+00 TO STA S238+00
UT-D1508	PROPOSED UTILITIES RELOCATION PLAN STA S238+00 TO STA S252+00
UT-D1509	PROPOSED UTILITIES RELOCATION PLAN STA S252+00 TO STA S266+00
UT-D1510	PROPOSED UTILITIES RELOCATION PLAN STA S266+00 (BACK) TO STA SBN 137+00 (AHEAD)
UT-D1511	PROPOSED UTILITIES RELOCATION PLAN STA SBN 137+00 TO STA SBN 151+00
UT-D1512	PROPOSED UTILITIES RELOCATION PLAN STA SBN 151+00 TO STA SBN 164+50
UT-D1513	PROPOSED UTILITIES RELOCATION PLAN STA SBN 164+50 TO STA SBN 178+50
UT-D1514	PROPOSED UTILITIES RELOCATION PLAN STA SBN 178+50 TO STA SBN 192+50
UT-D1515	PROPOSED UTILITIES RELOCATION PLAN STA SBN 192+50 TO STA SBN 206+50
UT-D1516	PROPOSED UTILITIES RELOCATION PLAN STA SBN 206+50 TO STA SBN 220+50
UT-D1517	PROPOSED UTILITIES RELOCATION PLAN STA SBN 220+50 TO STA SBN 234+50
UT-D1518	PROPOSED UTILITIES RELOCATION PLAN STA SBN 234+50 TO STA SBN 248+50
UT-D1519	PROPOSED UTILITIES RELOCATION PLAN STA SBN 248+50 TO STA SBN 262+00
UT-D1520	PROPOSED UTILITIES RELOCATION PLAN STA SBN 262+00 TO STA SBN 275+50
UT-D1521	PROPOSED UTILITIES RELOCATION PLAN STA SBN 275+50 TO STA SBN 289+00
UT-D1522	PROPOSED UTILITIES RELOCATION PLAN STA SBN 289+00 TO STA SBN 302+50
UT-D1523	PROPOSED UTILITIES RELOCATION PLAN STA SBN 302+50 TO STA SBN 316+00
UT-D1524	PROPOSED UTILITIES RELOCATION PLAN STA SBN 316+00 TO STA SBN 329+50
UT-D1525	PROPOSED UTILITIES RELOCATION PLAN STA SBN 329+50 TO STA SBN 342+00
UT-D1526	PROPOSED UTILITIES RELOCATION PLAN STA SBN 342+00 TO STA SBN 354+50
UT-D1527	PROPOSED UTILITIES RELOCATION PLAN STA SBN 354+50 TO STA SBN 367+00
UT-D1528	PROPOSED UTILITIES RELOCATION PLAN STA SBN 367+00 TO STA SBN 379+50
UT-D1529	PROPOSED UTILITIES RELOCATION PLAN STA SBN 379+50 TO STA SBN 393+00

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-D1530	PROPOSED UTILITIES RELOCATION PLAN STA SBN 393+00 TO STA SBN 406+50
UT-D1531	PROPOSED UTILITIES RELOCATION PLAN STA SBN 406+50 TO STA SBN 420+00
UT-D1532	PROPOSED UTILITIES RELOCATION PLAN STA SBN 420+00 TO STA SBN 433+50
UT-D1533	PROPOSED UTILITIES RELOCATION PLAN STA SBN 433+50 TO STA SBN 446+00
UT-D1534	PROPOSED UTILITIES RELOCATION PLAN STA SBN 446+00 TO STA SBN 459+50
UT-D1535	PROPOSED UTILITIES RELOCATION PLAN STA SBN 459+50 TO STA SBN 472+00
UT-D1536	PROPOSED UTILITIES RELOCATION PLAN STA SBN 472+00 TO STA SBN 484+50
UT-D1537	PROPOSED UTILITIES RELOCATION PLAN STA SBN 484+50 TO STA SBN 497+00
UT-D1538	PROPOSED UTILITIES RELOCATION PLAN STA SBN 497+00 TO STA SBN 510+50
UT-D1539	PROPOSED UTILITIES RELOCATION PLAN STA SBN 510+50 TO STA SBN 524+00
UT-D1540	PROPOSED UTILITIES RELOCATION PLAN STA SBN 524+00 TO STA SBN 537+50
UT-D1541	PROPOSED UTILITIES RELOCATION PLAN STA SBN 537+50 TO STA SBN 550+00
UT-D1542	PROPOSED UTILITIES RELOCATION PLAN STA SBN 550+00 TO STA SBN 562+50
UT-D1543	PROPOSED UTILITIES RELOCATION PLAN STA SBN 562+50 TO STA SBN 576+00
UT-D1544	PROPOSED UTILITIES RELOCATION PLAN STA SBN 576+00 TO STA SBN 589+50
UT-D1545	PROPOSED UTILITIES RELOCATION PLAN STA SBN 589+50 TO STA SBN 602+00
UT-D1546	PROPOSED UTILITIES RELOCATION PLAN STA SBN 602+00 TO STA SBN 614+50
UT-D1547	PROPOSED UTILITIES RELOCATION PLAN STA SBN 614+50 TO STA SBN 628+00
UT-D1548	PROPOSED UTILITIES RELOCATION PLAN STA SBN 628+00 TO STA SBN 641+50
UT-D1549	PROPOSED UTILITIES RELOCATION PLAN STA SBN 641+50 TO STA SBN 654+00
UT-D1550	PROPOSED UTILITIES RELOCATION PLAN STA SBN 654+00 TO STA SBN 666+50
UT-D1551	PROPOSED UTILITIES RELOCATION PLAN STA SBN 666+50 TO STA SBN 679+00
UT-D1552	PROPOSED UTILITIES RELOCATION PLAN STA SBN 679+00 TO STA SBN 691+50
UT-D1553	PROPOSED UTILITIES RELOCATION PLAN STA SBN 691+50 TO STA SBN 705+50
UT-D1554	PROPOSED UTILITIES RELOCATION PLAN STA SBN 705+50 TO STA SBN 719+00
UT-D1555	PROPOSED UTILITIES RELOCATION PLAN STA SBN 719+00 TO STA SBN 732+50
UT-D1556	PROPOSED UTILITIES RELOCATION PLAN STA SBN 732+50 TO STA SBN 746+50
UT-D1557	PROPOSED UTILITIES RELOCATION PLAN STA SBN 746+50 TO STA SBN 760+50
UT-D1558	PROPOSED UTILITIES RELOCATION PLAN STA SBN 765+00 TO STA SBN 774+50
UT-D1559	PROPOSED UTILITIES RELOCATION PLAN STA SBN 774+50 TO STA SBN 788+50
UT-D1560	PROPOSED UTILITIES RELOCATION PLAN STA SBN 788+50 TO STA SBN 802+00
UT-D1561	PROPOSED UTILITIES RELOCATION PLAN STA SBN 802+00 TO STA SBN 815+50
UT-D1562	PROPOSED UTILITIES RELOCATION PLAN STA SBN 815+50 TO STA SBN 829+00
UT-D1563	PROPOSED UTILITIES RELOCATION PLAN STA SBN 829+00 TO STA SBN 841+50
UT-D1564	PROPOSED UTILITIES RELOCATION PLAN STA SBN 841+50 TO STA SBN 855+00
UT-D1565	PROPOSED UTILITIES RELOCATION PLAN STA SBN 855+00 TO STA SBN 868+50
UT-D1566	PROPOSED UTILITIES RELOCATION PLAN STA SBN 868+50 TO STA SBN 881+00
UT-D1567	PROPOSED UTILITIES RELOCATION PLAN STA SBN 881+00 TO STA SBN 893+00
UT-D1568	PROPOSED UTILITIES RELOCATION PLAN STA SBN 893+00 TO STA SBN 905+00

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VOLUME 3.4 - GENERAL, UTILITIES, GRADING AND DRAINAGE, TRACTION POWER, & COMMUNICATION TOWERS

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-D1569	PROPOSED UTILITIES RELOCATION PLAN STA SBN 905+00 TO STA SBN 917+50
UT-D1570	PROPOSED UTILITIES RELOCATION PLAN STA SBN 917+50 TO STA SBN 930+00
UT-D1571	PROPOSED UTILITIES RELOCATION PLAN STA SBN 930+00 TO STA SBN 942+50
UT-D1572	PROPOSED UTILITIES RELOCATION PLAN STA SBN 942+50 TO STA SBN 955+00
UT-D1573	PROPOSED UTILITIES RELOCATION PLAN STA SBN 955+00 TO STA SBN 967+50
UT-D1574	PROPOSED UTILITIES RELOCATION PLAN STA SBN 967+50 TO STA SBN 980+00
UT-D1575	PROPOSED UTILITIES RELOCATION PLAN STA SBN 980+00 TO STA SBN 992+50
UT-D1576	PROPOSED UTILITIES RELOCATION PLAN STA SBN 992+50 TO STA SBN 1005+00
UT-D1577	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1005+00 TO STA SBN 1017+50
UT-D1578	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1017+50 TO STA SBN 1030+00
UT-D1579	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1030+00 TO STA SBN 1043+50
UT-D1580	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1043+50 TO STA SBN 1057+00
UT-D1581	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1057+00 TO STA SBN 1069+50
UT-D1582	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1069+50 TO STA SBN 1082+00
UT-D1583	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1082+00 TO STA SBN 1095+50
UT-D1584	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1095+50 TO STA SBN 1109+00
UT-D1585	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1109+00 TO STA SBN 1122+50
UT-D1586	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1122+50 TO STA SBN 1136+00
UT-D1587	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1136+00 TO STA SBN 1148+50
UT-D1588	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1148+50 TO STA SBN 1161+00
UT-D1589	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1161+00 TO STA SBN 1173+50
UT-D1590	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1173+50 TO STA SBN 1186+00
UT-D1591	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1186+00 TO STA SBN 1199+50
UT-D1592	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1199+50 TO STA SBN 1213+00
UT-D1593	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1213+00 TO STA SBN 1226+50
UT-D1594	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1226+50 TO STA SBN 1240+00
UT-D1595	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1240+00 TO STA SBN 1253+50
UT-D1596	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1253+50 TO STA SBN 1267+00
UT-D1597	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1267+00 TO STA SBN 1280+50
UT-D1598	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1280+50 TO STA SBN 1294+00
UT-D1599	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1294+00 TO STA SBN 1307+50
UT-D1600	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1307+50 TO STA SBN 1321+00
UT-D1601	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1321+00 TO STA SBN 1333+00
UT-D1602	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1333+00 TO STA SBN 1345+50
UT-D1603	PROPOSED UTILITIES RELOCATION PLAN STA SBN 1345+50 (BACK) TO STA SOC 1358+00 (AHEAD)
UT-D1604	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1358+00 TO STA SOC 1370+50
UT-D1605	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1370+50 TO STA SOC 1383+00
UT-D1606	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1383+00 TO STA SOC 1395+50
UT-D1607	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1395+50 TO STA SOC 1408+00

UTILITIES

DRAWING NO.	DRAWING TITLE
UT-D1608	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1408+00 TO STA SOC 1420+50
UT-D1609	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1420+50 TO STA SOC 1433+00
UT-D1610	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1433+00 TO STA SOC 1445+50
UT-D1611	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1445+50 TO STA SOC 1459+00
UT-D1612	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1459+00 TO STA SOC 1472+50
UT-D1613	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1472+50 TO STA SOC 1486+00
UT-D1614	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1486+00 TO STA SOC 1499+50
UT-D1615	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1499+50 TO STA SOC 1512+00
UT-D1616	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1512+00 TO STA SOC 1524+50
UT-D1617	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1524+50 TO STA SOC 1537+00
UT-D1618	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1537+00 TO STA SOC 1549+50
UT-D1619	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1549+50 TO STA SOC 1562+00
UT-D1620	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1562+00 TO STA SOC 1574+50
UT-D1621	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1574+50 TO STA SOC 1586+00
UT-D1622	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1586+00 TO STA SOC 1597+50
UT-D1623	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1597+50 TO STA SOC 1610+00
UT-D1624	PROPOSED UTILITIES RELOCATION PLAN STA SOC 1610+00 TO STA SOC 1613+68
UT-D1901	NOT USED
UT-D1902	NOT USED
UT-D1903	NOT USED
UT-D6001	EXISTING COMPOSITE UTILITIES PLAN - EASTERN AVE STA 242+50 TO STA 256+00
UT-D6002	EXISTING COMPOSITE UTILITIES PLAN - BANDINI BLVD STA 159+50 TO STA 170+00
UT-D6003	EXISTING COMPOSITE UTILITIES PLAN - BANDINI BLVD STA 170+00 TO STA 178+00
UT-D6004	EXISTING COMPOSITE UTILITIES PLAN - BANDINI BLVD STA 178+00 TO STA 191+00
UT-D6005	EXISTING COMPOSITE UTILITIES PLAN - BANDINI BLVD STA 191+00 TO STA 206+00
UT-D6006	EXISTING COMPOSITE UTILITIES PLAN - BANDINI BLVD STA 206+00 TO STA 211+00

GRADING & DRAINAGE

DRAWING NO.	DRAWING TITLE
CV-G0011	DRAINAGE TYPICAL SECTION
CV-G1504	GRADING AND DRAINAGE STA S182+50 TO STA S196+00 - FOR REFERENCE ONLY
CV-G1505	GRADING AND DRAINAGE STA S196+00 TO STA S210+00
CV-G1506	GRADING AND DRAINAGE STA S210+00 TO STA S224+00
CV-G1507	GRADING AND DRAINAGE STA S224+00 TO STA S238+00
CV-G1508	GRADING AND DRAINAGE STA S238+00 TO STA S252+00
CV-G1509	GRADING AND DRAINAGE STA S252+00 TO STA S266+00
CV-G1510	GRADING AND DRAINAGE STA S266+00 (BACK) TO STA SBY 137+00 (AHEAD)
CV-G1511	GRADING AND DRAINAGE STA SBY 137+00 TO STA SBY 151+00

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GRADING & DRAINAGE

DRAWING NO.	DRAWING TITLE
CV-G1512	GRADING AND DRAINAGE STA SBY 151+00 TO STA SBY 164+50
CV-G1513	NOT USED
CV-G1514	NOT USED
CV-G1515	NOT USED
CV-G1516	GRADING AND DRAINAGE STA SBY 206+50 TO STA SBY 220+50
CV-G1517	GRADING AND DRAINAGE STA SBY 220+50 TO STA SBY 234+50
CV-G1518	GRADING AND DRAINAGE STA SBY 234+50 TO STA SBY 248+50
CV-G1519	GRADING AND DRAINAGE STA SBY 248+50 TO STA SBY 262+00
CV-G1520	GRADING AND DRAINAGE STA SBY 262+00 TO STA SBY 275+50
CV-G1521	GRADING AND DRAINAGE STA SBY 275+50 TO STA SBY 289+00
CV-G1522	GRADING AND DRAINAGE STA SBY 289+00 TO STA SBY 302+50
CV-G1523	GRADING AND DRAINAGE STA SBY 302+50 TO STA SBY 316+00
CV-G1524	GRADING AND DRAINAGE STA SBY 316+00 TO STA SBY 329+50
CV-G1525	GRADING AND DRAINAGE STA SBY 329+50 TO STA SBY 342+00
CV-G1526	GRADING AND DRAINAGE STA SBY 342+00 TO STA SBY 354+50
CV-G1527	GRADING AND DRAINAGE STA SBY 354+50 TO STA SBY 367+00
CV-G1528	GRADING AND DRAINAGE STA SBY 367+00 TO STA SBY 379+50
CV-G1529	GRADING AND DRAINAGE STA SBY 379+50 TO STA SBY 393+00
CV-G1530	GRADING AND DRAINAGE STA SBY 393+00 TO STA SBY 406+50
CV-G1531	GRADING AND DRAINAGE STA SBY 406+50 TO STA SBY 420+00
CV-G1532	GRADING AND DRAINAGE STA SBY 420+00 TO STA SBY 433+50
CV-G1533	GRADING AND DRAINAGE STA SBY 433+50 TO STA SBY 446+00
CV-G1534	GRADING AND DRAINAGE STA SBY 446+00 TO STA SBY 458+50
CV-G1535	GRADING AND DRAINAGE STA SBY 458+50 TO STA SBY 471+00
CV-G1536	GRADING AND DRAINAGE STA SBY 471+00 TO STA SBY 483+50
CV-G1537	GRADING AND DRAINAGE STA SBY 483+50 TO STA SBY 497+00
CV-G1538	GRADING AND DRAINAGE STA SBN 497+00 TO STA SBN 510+50
CV-G1539	GRADING AND DRAINAGE STA SBN 510+50 TO STA SBN 524+00
CV-G1540	GRADING AND DRAINAGE STA SBN 524+00 TO STA SBN 537+50
CV-G1541	GRADING AND DRAINAGE STA SBN 537+50 TO STA SBN 550+00
CV-G1542	GRADING AND DRAINAGE STA SBN 550+00 TO STA SBN 562+50
CV-G1543	GRADING AND DRAINAGE STA SBN 562+50 TO STA SBN 576+00
CV-G1544	GRADING AND DRAINAGE STA SBN 576+00 TO STA SBN 589+50
CV-G1545	GRADING AND DRAINAGE STA SBN 589+50 TO STA SBN 602+00
CV-G1546	GRADING AND DRAINAGE STA SBN 602+00 TO STA SBN 614+50
CV-G1547	GRADING AND DRAINAGE STA SBN 614+50 TO STA SBN 628+00
CV-G1548	GRADING AND DRAINAGE STA SBN 628+00 TO STA SBN 641+50
CV-G1549	GRADING AND DRAINAGE STA SBN 641+50 TO STA SBN 654+00
CV-G1550	GRADING AND DRAINAGE STA SBN 654+00 TO STA SBN 666+50

GRADING & DRAINAGE

DRAWING NO.	DRAWING TITLE
CV-G1551	GRADING AND DRAINAGE STA SBN 666+50 TO STA SBN 679+00
CV-G1552	GRADING AND DRAINAGE STA SBN 679+00 TO STA SBN 691+50
CV-G1553	GRADING AND DRAINAGE STA SBN 691+50 TO STA SBN 705+50
CV-G1554	GRADING AND DRAINAGE STA SBN 705+50 TO STA SBN 719+00
CV-G1555	GRADING AND DRAINAGE STA SBN 719+00 TO STA SBN 732+50
CV-G1556	GRADING AND DRAINAGE STA SBN 732+50 TO STA SBN 746+50
CV-G1557	GRADING AND DRAINAGE STA SBN 746+50 TO STA SBN 760+50
CV-G1558	GRADING AND DRAINAGE STA SBN 760+50 TO STA SBN 774+50
CV-G1559	GRADING AND DRAINAGE STA SBN 774+50 TO STA SBN 788+50
CV-G1560	GRADING AND DRAINAGE STA SBN 788+50 TO STA SBN 802+00
CV-G1561	GRADING AND DRAINAGE STA SBN 802+00 TO STA SBN 815+50
CV-G1562	GRADING AND DRAINAGE STA SBN 815+50 TO STA SBN 829+00
CV-G1563	GRADING AND DRAINAGE STA SBN 829+00 TO STA SBN 841+50
CV-G1564	GRADING AND DRAINAGE STA SBN 841+50 TO STA SBN 855+00
CV-G1565	GRADING AND DRAINAGE STA SBN 855+00 TO STA SBN 868+50
CV-G1566	GRADING AND DRAINAGE STA SBN 868+50 TO STA SBN 881+00
CV-G1567	GRADING AND DRAINAGE STA SBN 881+00 TO STA SBN 893+00
CV-G1568	GRADING AND DRAINAGE STA SBN 893+00 TO STA SBN 905+00
CV-G1569	GRADING AND DRAINAGE STA SBN 905+00 TO STA SBN 917+50
CV-G1570	GRADING AND DRAINAGE STA SBN 917+50 TO STA SBN 930+00
CV-G1571	GRADING AND DRAINAGE STA SBN 930+00 TO STA SBN 942+50
CV-G1572	GRADING AND DRAINAGE STA SBN 942+50 TO STA SBN 955+00
CV-G1573	GRADING AND DRAINAGE STA SBN 955+00 TO STA SBN 967+50
CV-G1574	GRADING AND DRAINAGE STA SBN 967+50 TO STA SBN 980+00
CV-G1575	GRADING AND DRAINAGE STA SBN 980+00 TO STA SBN 992+50
CV-G1576	GRADING AND DRAINAGE STA SBN 992+50 TO STA SBN 1005+00
CV-G1577	GRADING AND DRAINAGE STA SBN 1005+00 TO STA SBN 1017+50
CV-G1578	GRADING AND DRAINAGE STA SBN 1017+50 TO STA SBN 1030+00
CV-G1579	GRADING AND DRAINAGE STA SBN 1030+00 TO STA SBN 1043+50
CV-G1580	GRADING AND DRAINAGE STA SBN 1043+50 TO STA SBN 1057+00
CV-G1581	GRADING AND DRAINAGE STA SBN 1057+00 TO STA SBN 1069+50
CV-G1582	GRADING AND DRAINAGE STA SBN 1069+50 TO STA SBN 1082+00
CV-G1583	GRADING AND DRAINAGE STA SBN 1082+00 TO STA SBN 1095+50
CV-G1584	GRADING AND DRAINAGE STA SBN 1095+50 TO STA SBN 1109+00
CV-G1585	GRADING AND DRAINAGE STA SBN 1109+00 TO STA SBN 1122+50
CV-G1586	GRADING AND DRAINAGE STA SBN 1122+50 TO STA SBN 1136+00
CV-G1587	GRADING AND DRAINAGE STA SBN 1136+00 TO STA SBN 1148+50
CV-G1588	GRADING AND DRAINAGE STA SBN 1148+50 TO STA SBN 1161+00
CV-G1589	GRADING AND DRAINAGE STA SBN 1161+00 TO STA SBN 1173+50

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GRADING & DRAINAGE

DRAWING NO.	DRAWING TITLE
CV-G1590	GRADING AND DRAINAGE STA SBN 1173+50 TO STA SBN 1186+00
CV-G1591	GRADING AND DRAINAGE STA SBN 1186+00 TO STA SBN 1199+50
CV-G1592	GRADING AND DRAINAGE STA SBN 1199+50 TO STA SBN 1213+00
CV-G1593	GRADING AND DRAINAGE STA SBN 1213+00 TO STA SBN 1226+50
CV-G1594	GRADING AND DRAINAGE STA SBN 1226+50 TO STA SBN 1240+00
CV-G1595	GRADING AND DRAINAGE STA SBN 1240+00 TO STA SBN 1253+50
CV-G1596	GRADING AND DRAINAGE STA SBN 1253+50 TO STA SBN 1267+00
CV-G1597	GRADING AND DRAINAGE STA SBN 1267+00 TO STA SBN 1280+50
CV-G1598	GRADING AND DRAINAGE STA SBN 1280+50 TO STA SBN 1294+00
CV-G1599	GRADING AND DRAINAGE STA SBN 1294+00 TO STA SBN 1307+50
CV-G1600	GRADING AND DRAINAGE STA SBN 1307+50 TO STA SBN 1321+00
CV-G1601	NOT USED
CV-G1602	NOT USED
CV-G1603	NOT USED
CV-G1604	NOT USED
CV-G1605	NOT USED
CV-G1606	NOT USED
CV-G1607	NOT USED
CV-G1608	NOT USED
CV-G1609	NOT USED
CV-G1610	NOT USED
CV-G1611	NOT USED
CV-G1612	NOT USED
CV-G1613	NOT USED
CV-G1614	NOT USED
CV-G1615	NOT USED
CV-G1616	NOT USED
CV-G1617	NOT USED
CV-G1618	NOT USED
CV-G1619	NOT USED
CV-G1620	NOT USED
CV-G1621	GRADING AND DRAINAGE STA SOC 1574+50 TO STA SOC 1586+00
CV-G1622	GRADING AND DRAINAGE STA SOC 1586+00 TO STA SOC 1597+50
CV-G1623	GRADING AND DRAINAGE STA SOC 1597+50 TO STA SOC 1610+00
CV-G1624	GRADING AND DRAINAGE STA SOC 1610+00 TO STA SOC 1613+68
CV-G1901	NOT USED
CV-G1902	NOT USED
CV-G1903	NOT USED

TRACTION POWER

DRAWING NO.	DRAWING TITLE
TP-B0001	SYSTEM FACILITIES KEY PLAN SHEET 1 OF 1
TP-O1001	TRACTION POWER FACILITY SITE PLAN PROPOSED LOS ANGELES SUBSTATION
TP-O1002	TRACTION POWER FACILITY SITE PLAN PROPOSED LOS ANGELES SUBSTATION
TP-O1011	NOT USED
TP-O1021	TRACTION POWER FACILITY SITE PLAN PROPOSED PARALLELING STATION 2
TP-O1031	TRACTION POWER FACILITY SITE PLAN PROPOSED MIDPOINT SWITCHING STATION
TP-O1041	NOT USED
TP-O1051	TRACTION POWER FACILITY SITE PLAN PROPOSED PARALLELING STATION 4
TP-O1071	TRACTION POWER FACILITY SITE PLAN PROPOSED ANAHEIM SUBSTATION

COMMUNICATION TOWERS

DRAWING NO.	DRAWING TITLE
CO-F1011	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 1
CO-F1031	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 3
CO-F1051	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 5
CO-F1071	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 7
CO-F1091	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 9
CO-F1111	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 11
CO-F1131	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 13
CO-F1151	COMMUNICATIONS SYSTEM SITE PLAN STANDALONE RADIO SITE 15

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REV	DATE	BY	CHK	APP	DESCRIPTION

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

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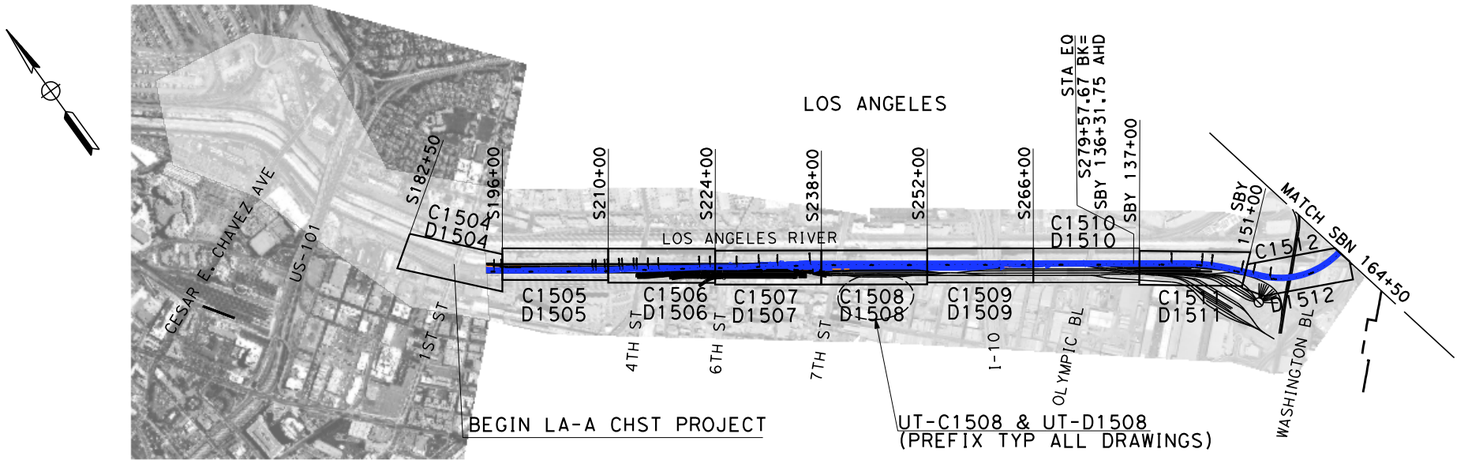
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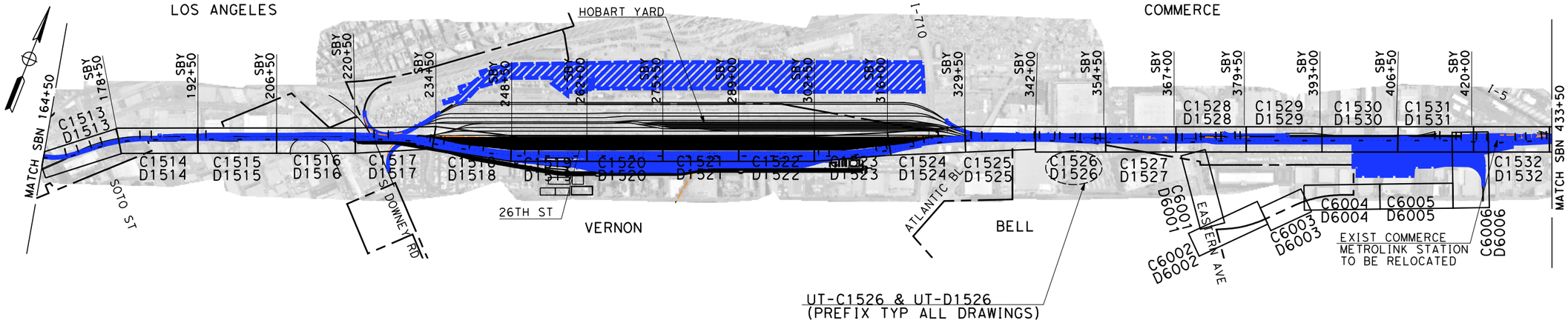
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

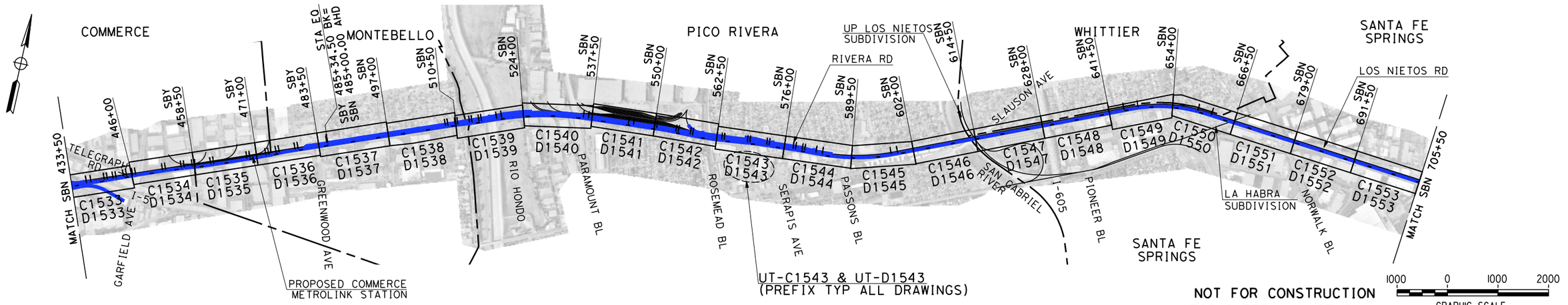
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
INDEX OF DRAWINGS
VOLUME 3.4 - SHEET 6 OF 6

CONTRACT NO. HSR06-0005
DRAWING NO. GE-A0416
SCALE AS SHOWN
SHEET NO.

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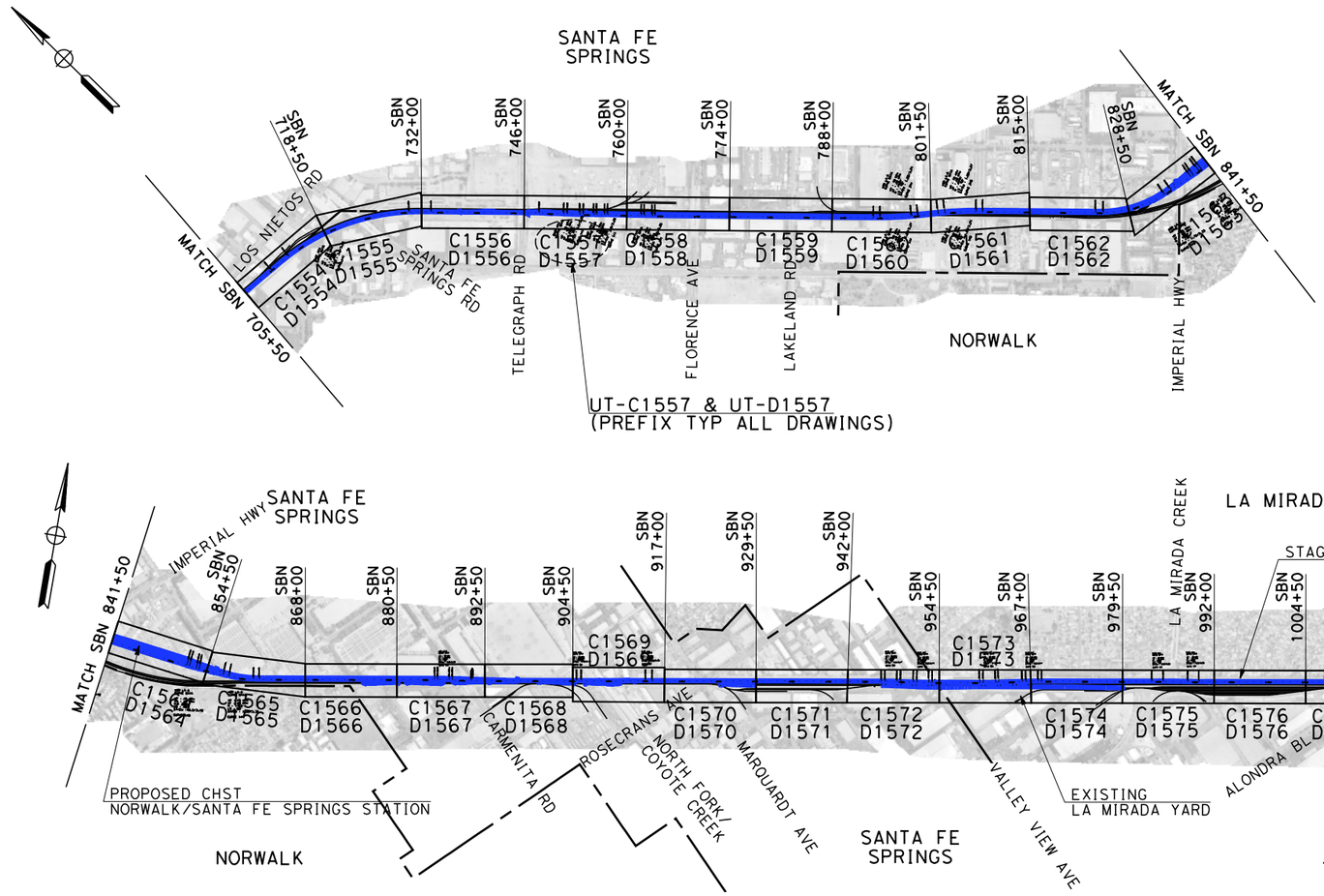
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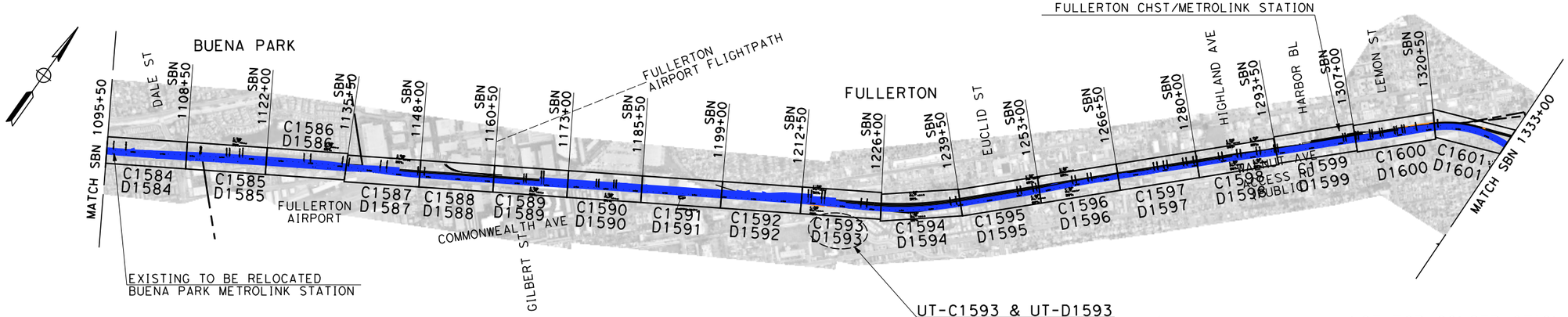
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
VOLUME 3.4 - KEY MAP
UTILITIES - SHEET 1 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0401
SCALE 1"= 1000'
SHEET NO.

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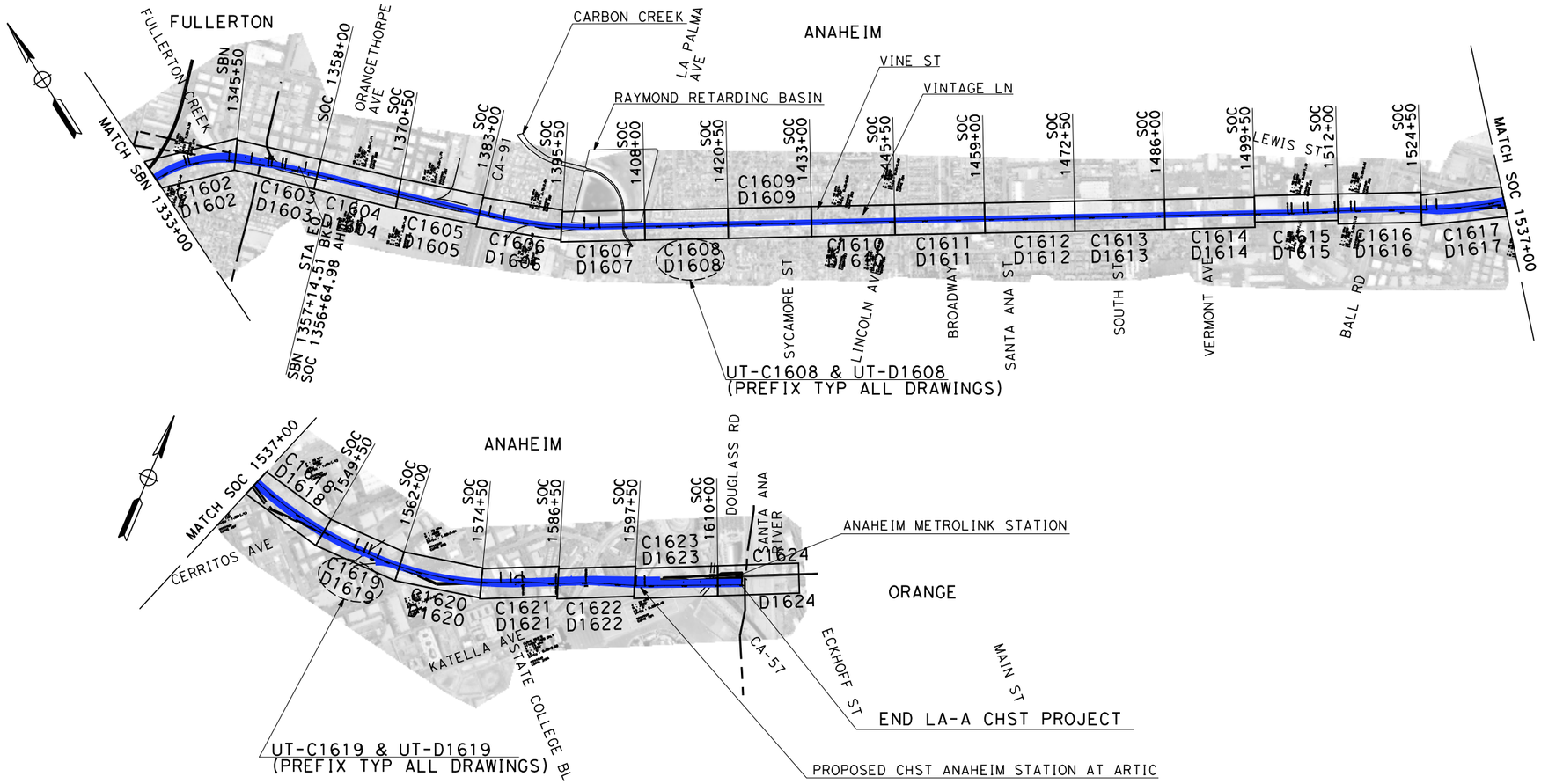
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
VOLUME 3.4 - KEY MAP
UTILITIES - SHEET 2 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0402
SCALE 1"= 1000'
SHEET NO.

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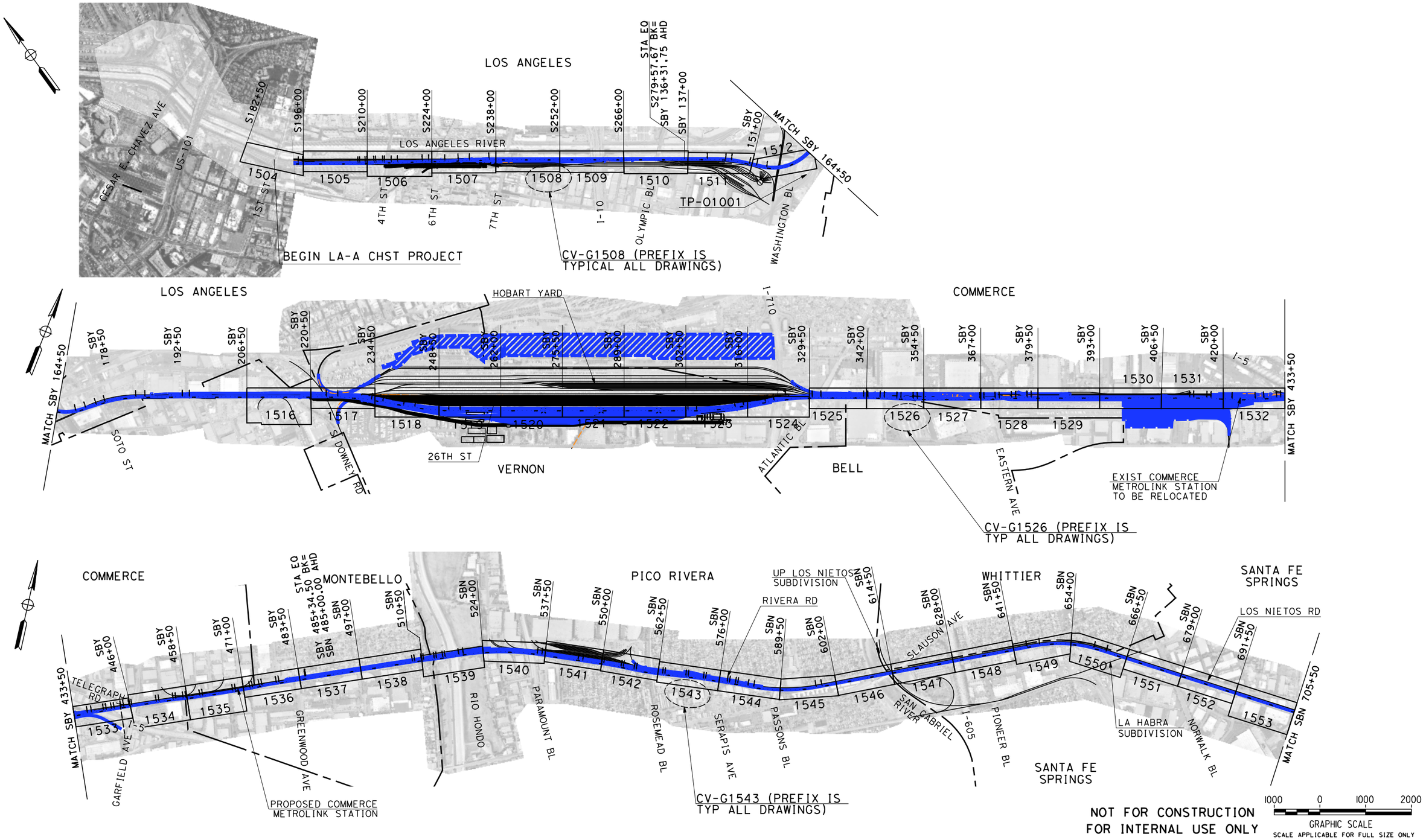
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
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VOLUME 3.4 - KEY MAP
UTILITIES - SHEET 3 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0403
SCALE 1"= 1000'
SHEET NO.

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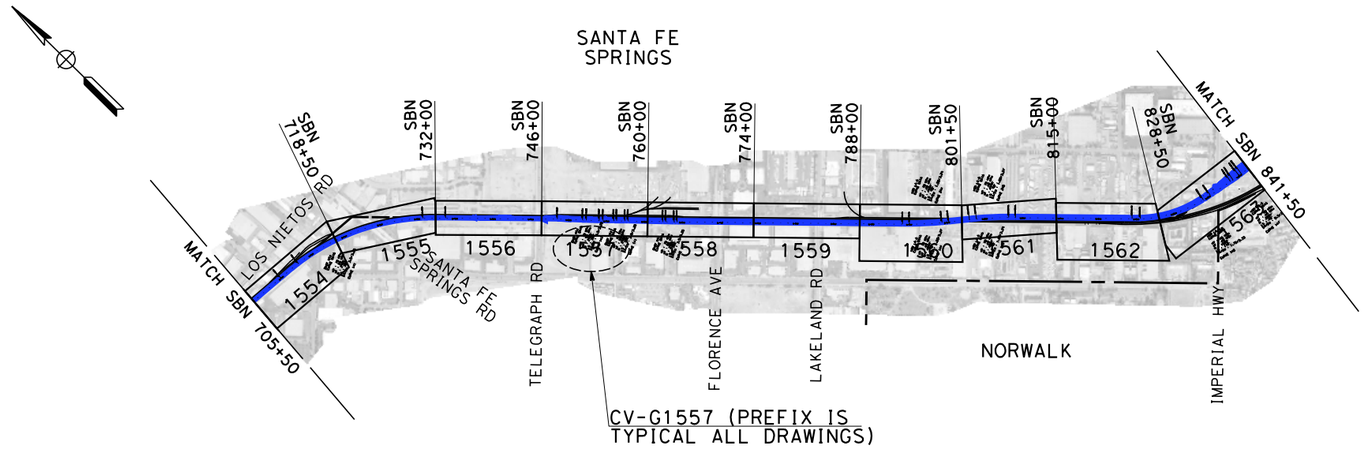
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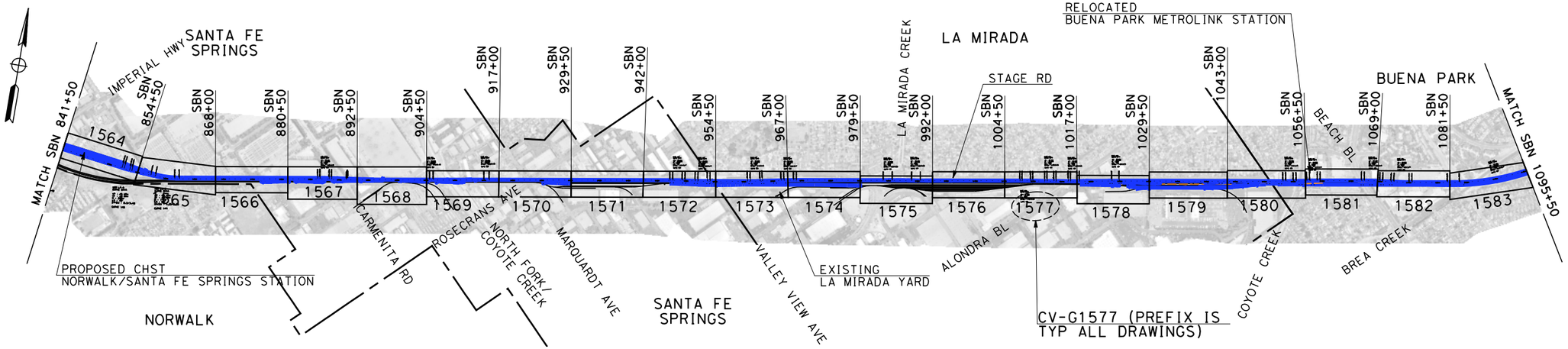
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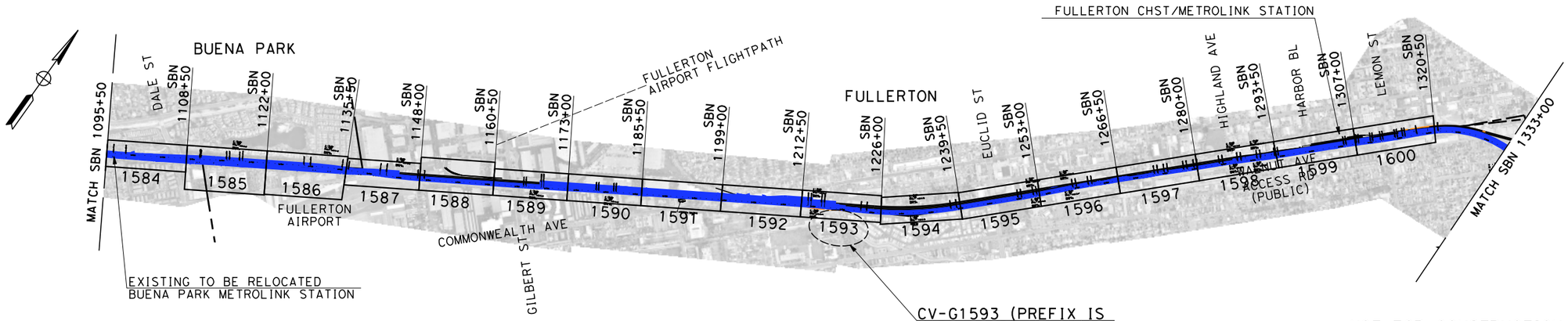
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
VOLUME 3.4 - KEY MAP
GRADING AND DRAINAGE - SHEET 1 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0411
SCALE 1"= 1000'
SHEET NO.

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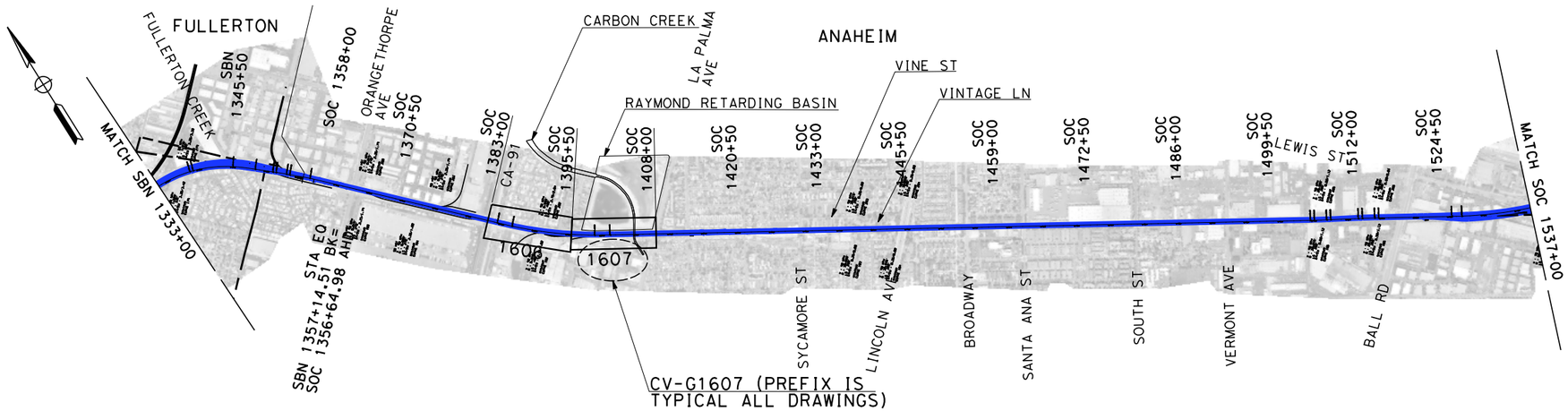
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
VOLUME 3.4 - KEY MAP
GRADING AND DRAINAGE - SHEET 2 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0412
SCALE 1"= 1000'
SHEET NO.

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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 3.4 - KEY MAP
GRADING AND DRAINAGE - SHEET 3 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D0413
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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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
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BASIS OF DESIGN SUMMARY

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DRAWING NO. GE-B0401
SCALE NO SCALE
SHEET NO.

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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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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 1

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0401
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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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 2

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0402
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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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-C0403
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

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SCALE NO SCALE
SHEET NO.

$PLOT$

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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$PLOT$

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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$PLOT$

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

- -e- -e- EXIST ELECTRICAL
- -fo- -fo- -(oh)- EXIST FIBER OPTIC
- -tc- -tc- -(oh)- EXIST TELEMETER CABLE
- -t- -t- -(oh)- EXIST TELEPHONE
- -tv- -tv- -(oh)- EXIST TELEVISION
- -E- -E- -(OH)- NEW ELECTRICAL
- -FO- -FO- -(OH)- NEW FIBER OPTIC
- -TC- -TC- -(OH)- NEW TELEMETER CABLE
- -T- -T- -(OH)- NEW TELEPHONE
- -TV- -TV- -(OH)- NEW TELEVISION

UNDERGROUND UTILITIES

- -e- -e- EXIST ELECTRICAL
- -fo- -fo- EXIST FIBER OPTIC
- -gs- -gs- EXIST GASOLINE
- -g- -g- EXIST NATURAL GAS
- -o- -o- EXIST OIL
- -s- -s- EXIST SEWER
- -st- -st- EXIST STEAM
- -sd- -sd- EXIST STORM DRAIN
- -tc- -tc- EXIST TELEMETER CABLE
- -t- -t- EXIST TELEPHONE
- -tv- -tv- EXIST TELEVISION
- -w- -w- EXIST WATER
- -E- -E- NEW ELECTRICAL
- -FO- -FO- NEW FIBER OPTIC
- -GS- -GS- NEW GASOLINE
- -G- -G- NEW NATURAL GAS
- -O- -O- NEW OIL
- -S- -S- NEW SEWER
- -ST- -ST- NEW STEAM
- -SD- -SD- NEW STORM DRAIN
- -TC- -TC- NEW TELEMETER CABLE
- -T- -T- NEW TELEPHONE
- -TV- -TV- NEW TELEVISION
- -W- -W- 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

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

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
SYMBOLS 2

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0412
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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REV	DATE	BY	CHK	APP	DESCRIPTION

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

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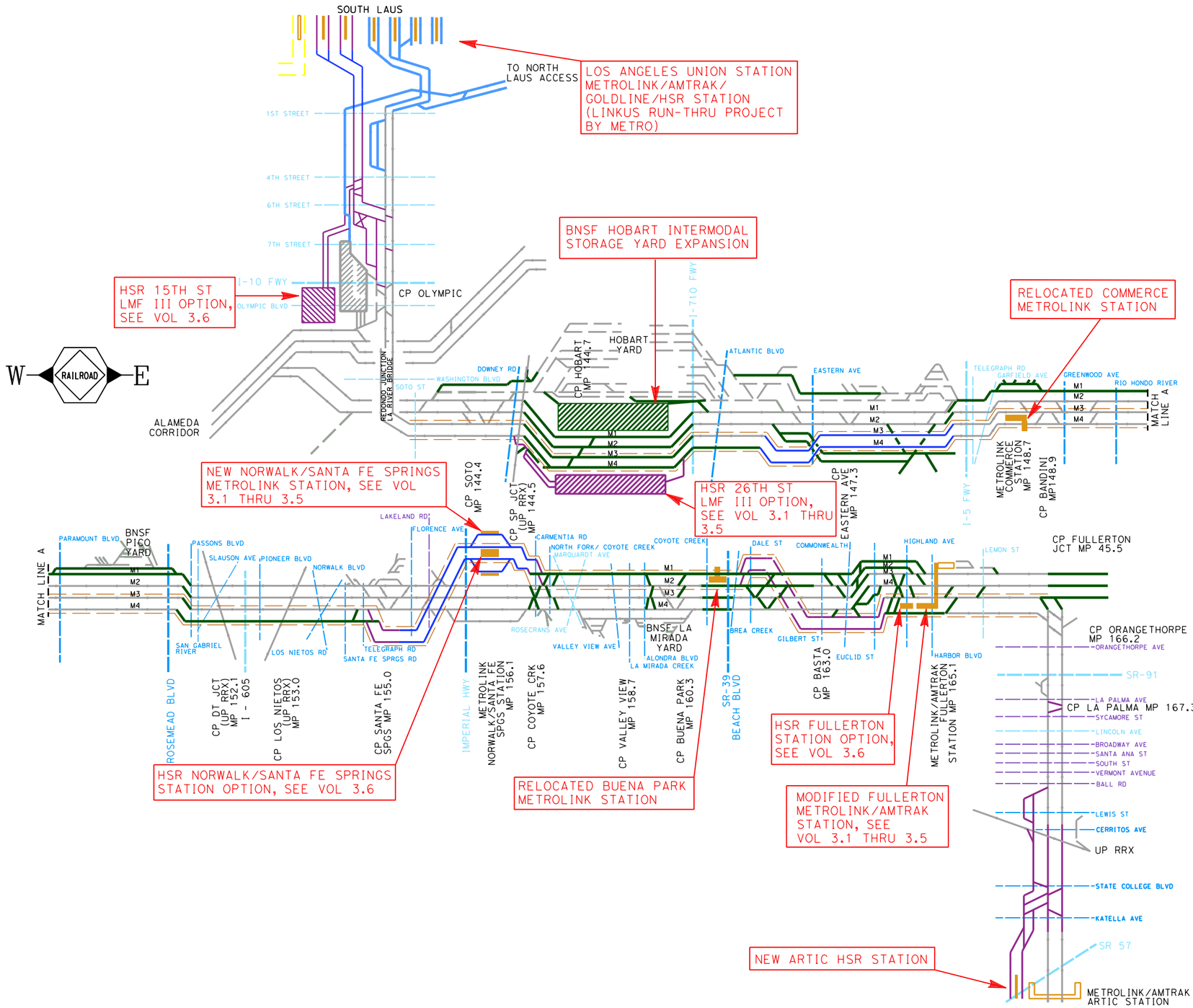
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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-B0411
SCALE NO SCALE
SHEET NO.

$PLOT$



LEGEND (TRACKWORK)

- EXISTING FREIGHT/PASSENGER MAINLINE TRACK
- EXISTING FREIGHT/PASSENGER SECONDARY TRACK
- EXISING GOLDLINE
- NEW MAINLINE/SECONDARY TRACK ON BNSF ROW
- NEW AMTRAK/METROLINK ONLY TRACK
- NEW HSR/PASSENGER TRACK ELEVATED
- NEW HSR/PASSENGER TRACK AT GRADE
- NEW HSR/PASSENGER TRACK TRENCH/TUNNEL
- EXISTING STATION PLATFORM
- EXISTING STATION PLATFORM WITH PEDESTRIAN BRIDGE/TUNNEL
- NEW STATION PLATFORM
- NEW STATION PLATFORM WITH PEDESTRIAN BRIDGE/TUNNEL
- ELECTRIFIED TRACK ON BNSF

LEGEND (ROADWAY/WATER)

- EXISTING AT-GRADE CROSSING
- EXISTING GRADE SEPARATION (LOCAL STREET)
- EXISTING GRADE SEPARATION (MAJOR HWY/FREEWAY)
- NEW OR MODIFY GRADE SEPARATION/BRIDGE

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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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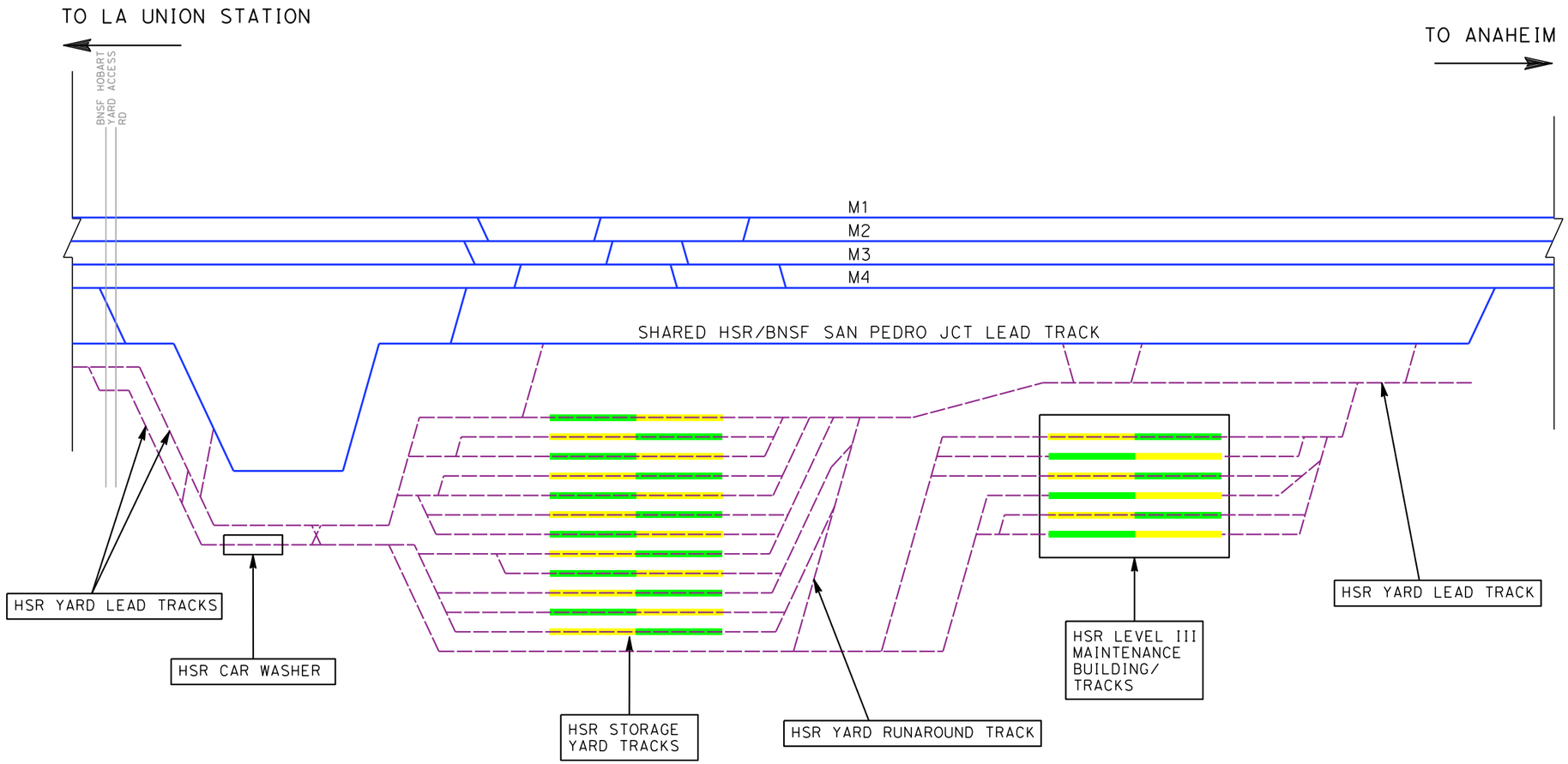
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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-D6401
SCALE NO SCALE
SHEET NO.

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LEGEND

- NEW HSR LMF III LEAD/YARD TRACKS
- NEW HSR TRACKS
- EXISTING RR TRACK
- REALIGNED/NEW AMTRAK/METROLINK TRACKS
- EXISTING ROADWAY/FREEWAY OVERPASS BRIDGE
- EXISTING AMTRAK MAINTENANCE FACILITY(S)
- NEW HSR MAINTEANCE FACILITY(S)
- HSR TRAINSET (673' EACH) (24 TRAINSETS TOTAL YARD STORAGE CAPACITY)

W — RAILROAD — E

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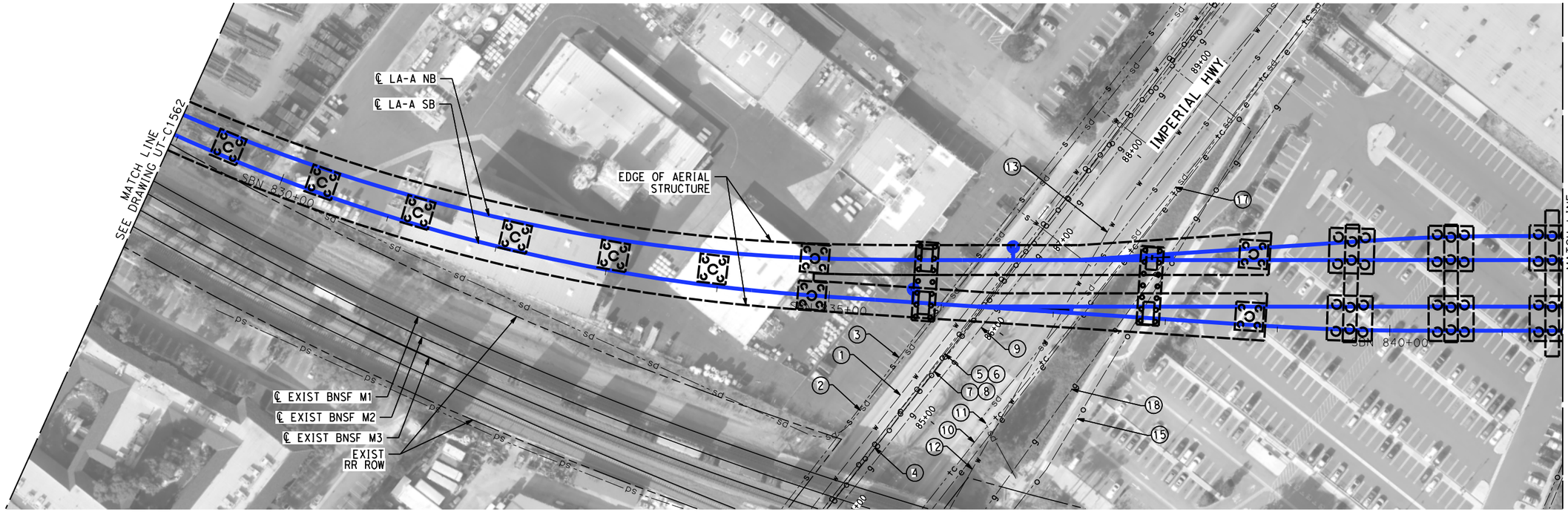
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
TRACK SCHEMATIC
26TH STREET LMF III OPTION

CONTRACT NO. HSR06-0005
DRAWING NO. GE-D6402
SCALE NO SCALE
SHEET NO.

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MAJOR UTILITY CONFLICTS

No.	TYPE OF UTILITY	SIZE / MATERIAL	LOCATION	OWNER	DISPOSITION
①	WATER	UNKNOWN	STA SBN 827+25	CITY OF SANTA FE SPRINGS	RELOCATE
②	STORM DRAIN	60" RCP	STA SBN 827+50	CITY OF SANTA FE SPRINGS	RELOCATE
③	SEWER	8"	STA SBN 836+00	CITY OF SANTA FE SPRINGS	RELOCATE
④	OIL	8"	STA SBN 836+35/ IMPERIAL HWY	SCG	PROTECT-IN-PLACE
⑤	OIL	4" (ABAND)	STA SBN 836+00	CHEVRON-TOSCO (UNION GASOLINE)	REMOVE INTERFERING PORTIONS
⑥	OIL	8"	STA SBN 836+00	SHELL CRUDE OIL	PROTECT-IN-PLACE
⑦	OIL	8"	STA SBN 836+25	WILSHIRE GASOLINE	PROTECT-IN-PLACE
⑧	OIL	8"	STA SBN 836+25	WILSHIRE GASOLINE	PROTECT-IN-PLACE
⑨	OIL	8"	STA SBN 836+25	WILSHIRE GASOLINE	PROTECT-IN-PLACE
⑩	COMMUNICATION	UNKNOWN	STA SBN 836+25	AT&T	PROTECT-IN-PLACE

MAJOR UTILITY CONFLICTS

No.	TYPE OF UTILITY	SIZE / MATERIAL	LOCATION	OWNER	DISPOSITION
⑪	WATER	12" ACP	STA SBN 836+50	GOLDEN STATE WATER COMPANY	PROTECT-IN-PLACE
⑫	ELECTRIC	UNKNOWN	STA SBN 836+50	SCE	PROTECT-IN-PLACE
⑬	WATER	77" WELDED STEEL PIPE	STA SBN 836+75	METROPOLITAN WATER DISTRICT	PROTECT-IN-PLACE
⑭	NOT USED	-	-	-	-
⑮	OIL	8" BREA CRUDE LINE WITH 12" CASING	STA SBN 837+75	CRIMSON	RELOCATE
⑯	NOT USED	-	-	-	-
⑰	STORM DRAIN	24" RCP	STA SBN 836+75	LACFCD	PROTECT-IN-PLACE
⑱	GAS	8" HP	STA SBN 837+80 IMPERIAL HWY	SCG	RELOCATE

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

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

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY C. HUANG
DRAWN BY C. HUANGE
CHECKED BY A. BOSCH
IN CHARGE J. SWANSON
DATE 08/29/25

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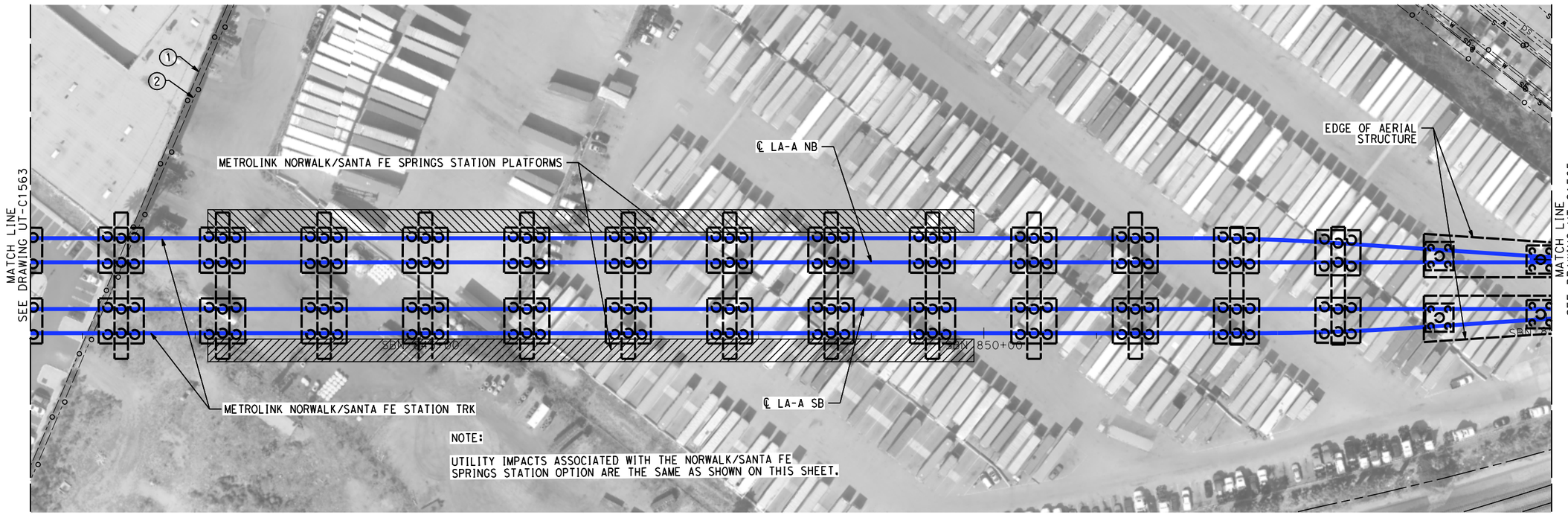
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
EXISTING COMPOSITE UTILITIES PLAN
STA SBN 829+00 TO STA SBN 841+50

CONTRACT NO. HSR06-0005
DRAWING NO. UT-C1563
SCALE 1" = 50'
SHEET NO.

$PLOT$



MAJOR UTILITY CONFLICTS

No.	TYPE OF UTILITY	SIZE / MATERIAL	LOCATION	OWNER	DISPOSITION
(1)	OIL	10"	STA SBN 841+75	UNION OIL	RELOCATE
(2)	OIL	6" (ABAND)	STA SBN 841+75	UNION OIL	RELOCATE

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50 0 50 100
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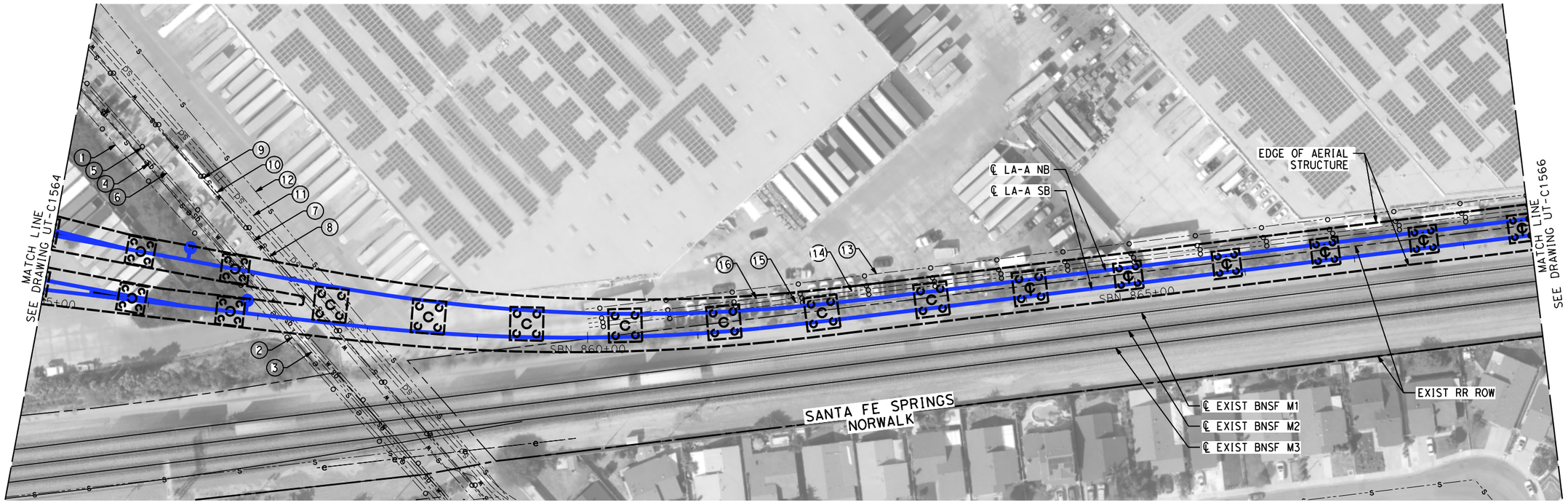
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
EXISTING COMPOSITE UTILITIES PLAN
STA SBN 841+50 TO STA SBN 855+00

CONTRACT NO. HSR06-0005
DRAWING NO. UT-C1564
SCALE 1" = 50'
SHEET NO.

$PLOT$



MAJOR UTILITY CONFLICTS

No.	TYPE OF UTILITY	SIZE / MATERIAL	LOCATION	OWNER	DISPOSITION
①	OIL	6"	STA SBN 856+00	CRIMSON (POWERLINE OIL)	RELOCATE
②	ELECTRIC	OH	STA SBN 856+00	SCE	RELOCATE
③	SEWER	8"	STA SBN 856+00	KINDER MORGAN	RELOCATE
④	GASOLINE	10"	STA SBN 856+00	WILSHIRE OIL	RELOCATE
⑤	WATER	12"	STA SBN 856+00	KINDER MORGAN	RELOCATE
⑥	OIL	24"	STA SBN 856+25	KINDER MORGAN	RELOCATE
⑦	WATER	16" STEEL PIPE WITH 30" x 3/16" STEEL CASING	STA SBN 856+25	CENTRAL BASIN MUNICIPAL WATER DISTRICT	RELOCATE
⑧	OIL	8"	STA SBN 856+00	CRIMSON (POWERLINE FUEL OIL)	RELOCATE
⑨	SEWER	12"	STA SBN 856+50	CITY OF SANTA FE SPRINGS	RELOCATE
⑩	OIL	16"	STA SBN 856+50	KINDER MORGAN	RELOCATE
⑪	STORM DRAIN	7.5'X5' RCB	STA SBN 856+00	LACFCD	RELOCATE
⑫	SEWER		STA SBN 856+50	CITY OF NORWALK	RELOCATE
⑬	OIL	4"	STA SBN 860+00 TO STA SBN 868+00	CHEVRON (STANDARD GASOLINE)	RELOCATE

MAJOR UTILITY CONFLICTS

No.	TYPE OF UTILITY	SIZE / MATERIAL	LOCATION	OWNER	DISPOSITION
⑭	OIL	8"	STA SBN 860+00 TO STA SBN 868+00	CHEVRON	RELOCATE
⑮	OIL	6"	STA SBN 860+00 TO STA SBN 868+00	WILSHIRE OIL	RELOCATE
⑯	OIL	12"	STA SBN 860+00 TO STA SBN 868+00	GULF (WILSHIRE) OIL	RELOCATE

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

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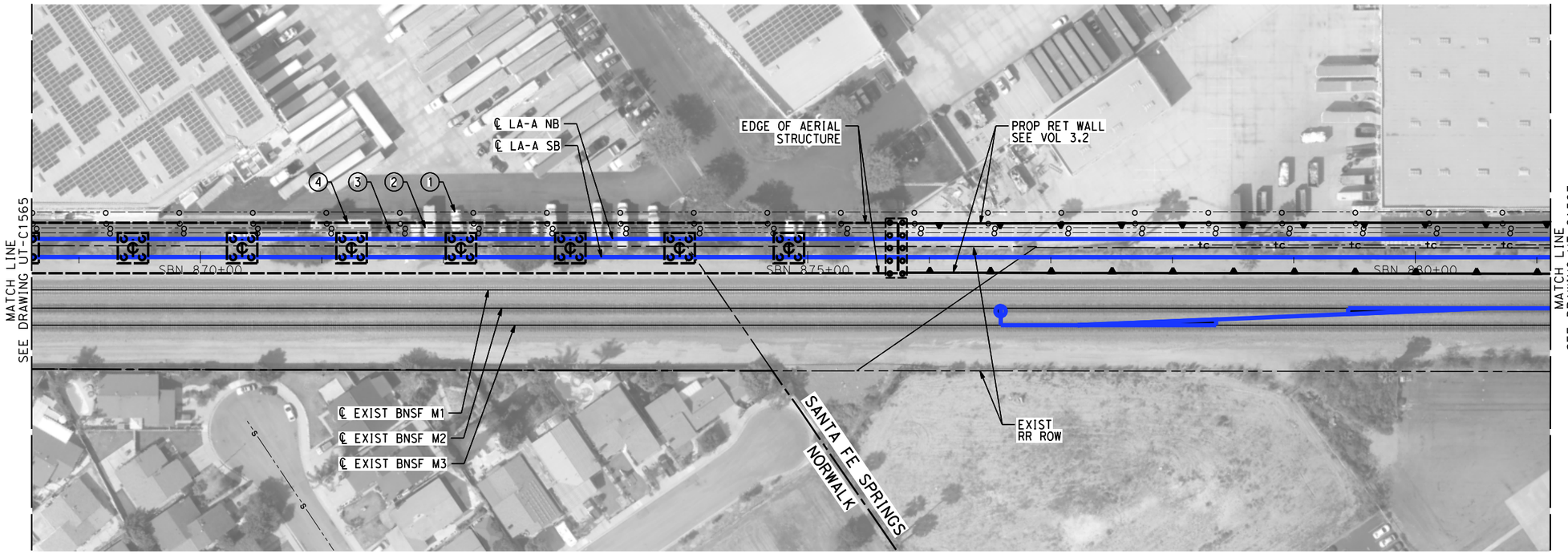
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
EXISTING COMPOSITE UTILITIES PLAN
STA SBN 855+00 TO STA SBN 868+50

CONTRACT NO. HSR06-0005
DRAWING NO. UT-C1565
SCALE 1" = 50'
SHEET NO.

$PLOT$



MAJOR UTILITY CONFLICTS

No.	TYPE OF UTILITY	SIZE / MATERIAL	LOCATION	OWNER	DISPOSITION
①	OIL	4"	STA SBN 868+00 TO STA SBN 880+50	CHEVRON (STANDARD GASOILINE)	RELOCATE
②	OIL	6"	STA SBN 868+00 TO STA SBN 880+50	CHEVRON (WISHIRE OIL)	RELOCATE
③	OIL	8"	STA SBN 868+00 TO STA SBN 880+50	CHEVRON	RELOCATE
④	OIL	12"	STA SBN 868+00 TO STA SBN 880+50	GULF (WILSHIRE) OIL	RELOCATE

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DATE 08/29/25

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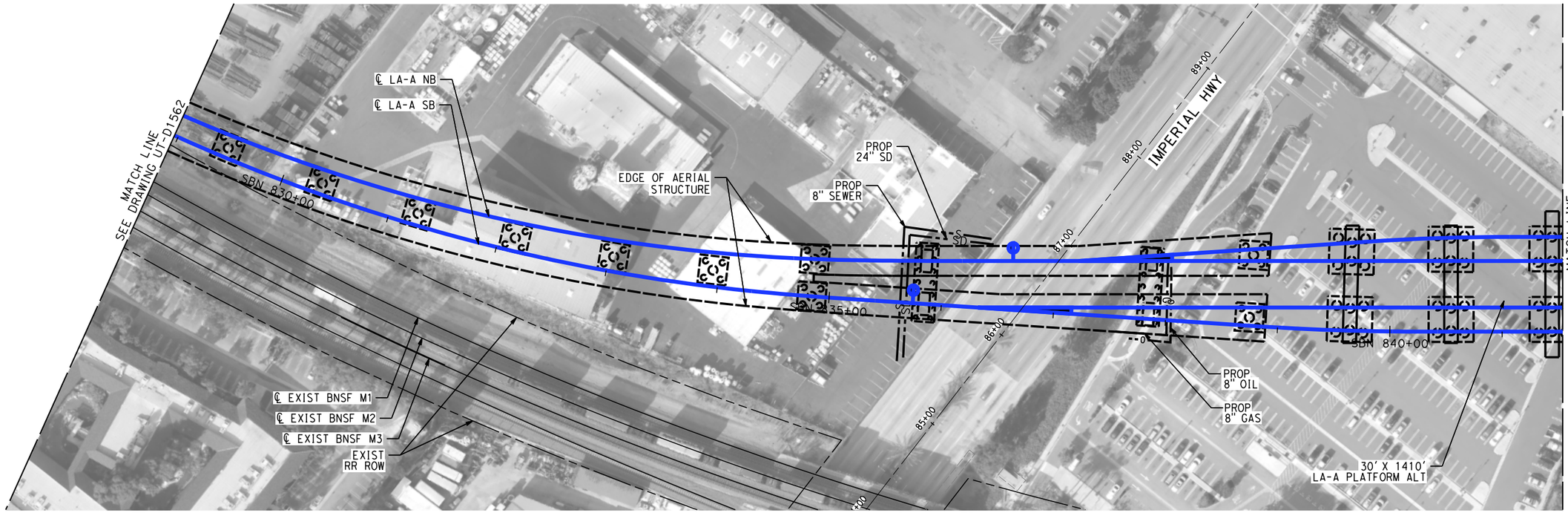
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
EXISTING COMPOSITE UTILITIES PLAN
STA SBN 868+50 TO STA SBN 881+00

CONTRACT NO. HSR06-0005
DRAWING NO. UT-C1566
SCALE 1" = 50'
SHEET NO.

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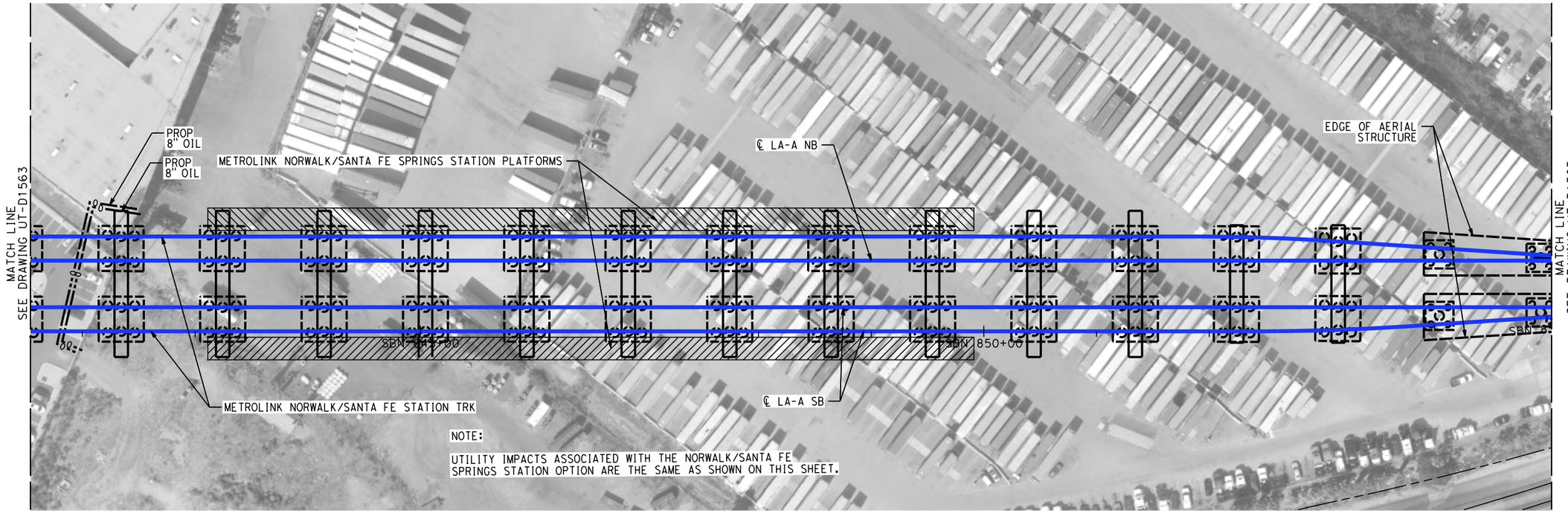
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM

RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PROPOSED UTILITIES RELOCATION PLAN
STA SBN 829+00 TO STA SBN 841+50

CONTRACT NO. HSR06-0005
DRAWING NO. UT-D1563
SCALE 1" = 50'
SHEET NO.

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REV	DATE	BY	CHK	APP	DESCRIPTION

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

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NOT FOR CONSTRUCTION

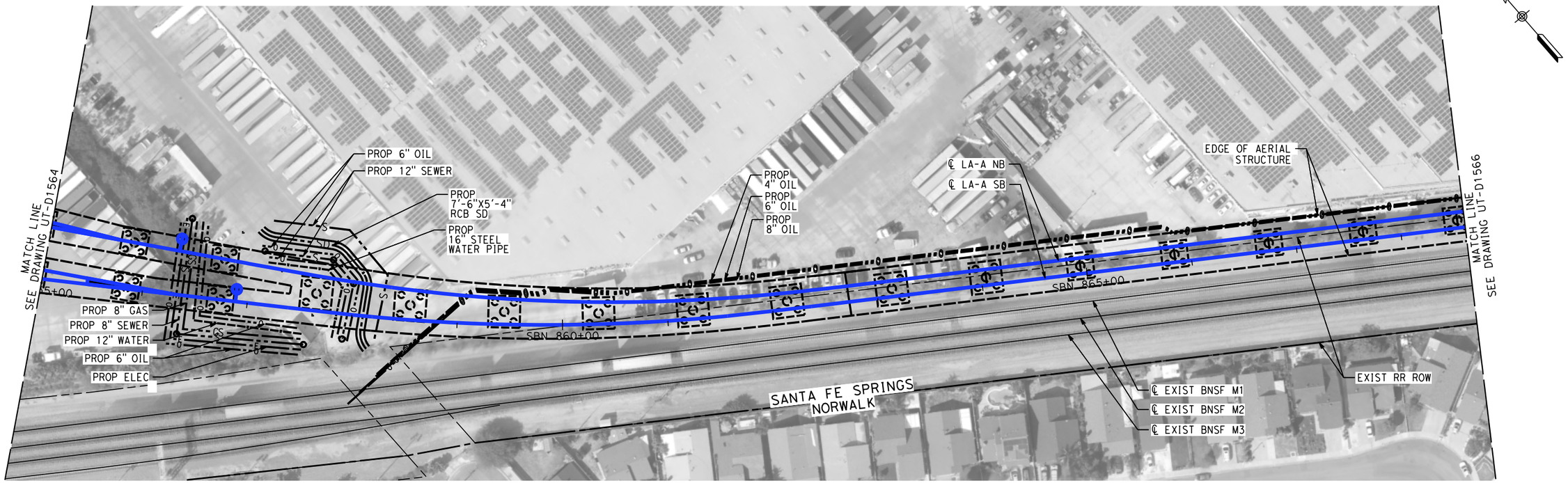
stv

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PROPOSED UTILITIES RELOCATION PLAN
STA SBN 841+50 TO STA SBN 855+00

CONTRACT NO. HSR06-0005
DRAWING NO. UT-D1564
SCALE 1" = 50'
SHEET NO.

$PLOT$



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

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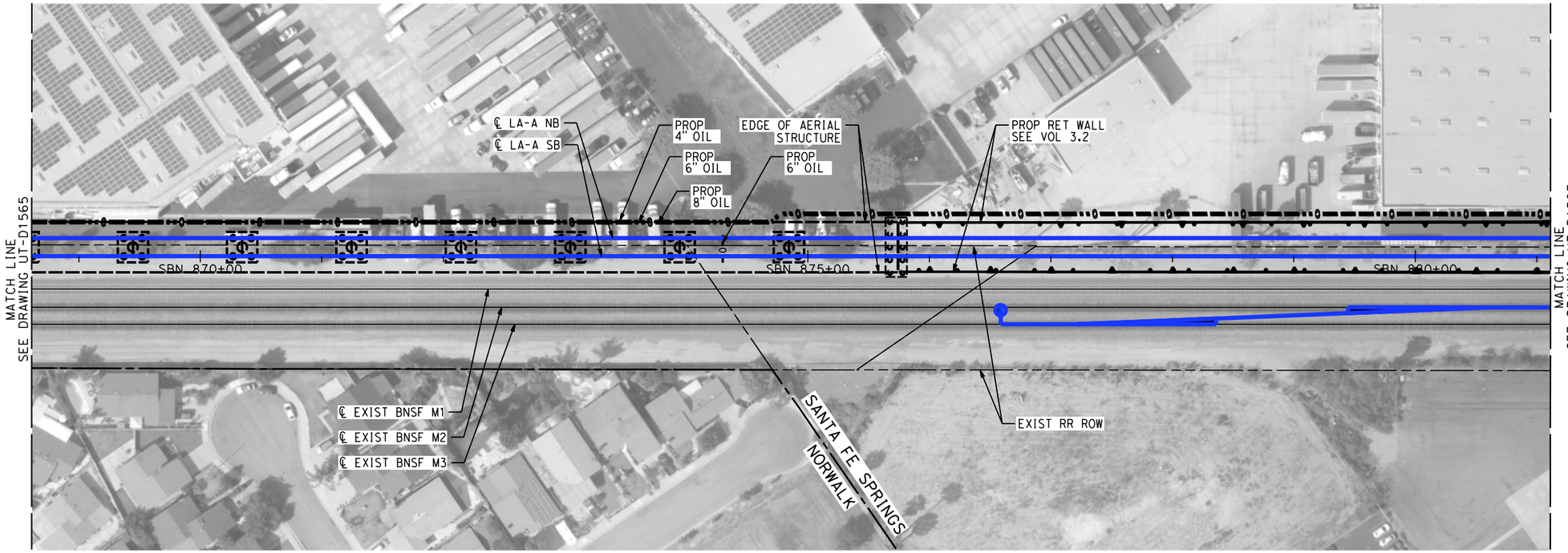
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PROPOSED UTILITIES RELOCATION PLAN
STA SBN 855+00 TO STA SBN 868+50

CONTRACT NO. HSR06-0005
DRAWING NO. UT-D1565
SCALE 1" = 50'
SHEET NO.

$PLOT$



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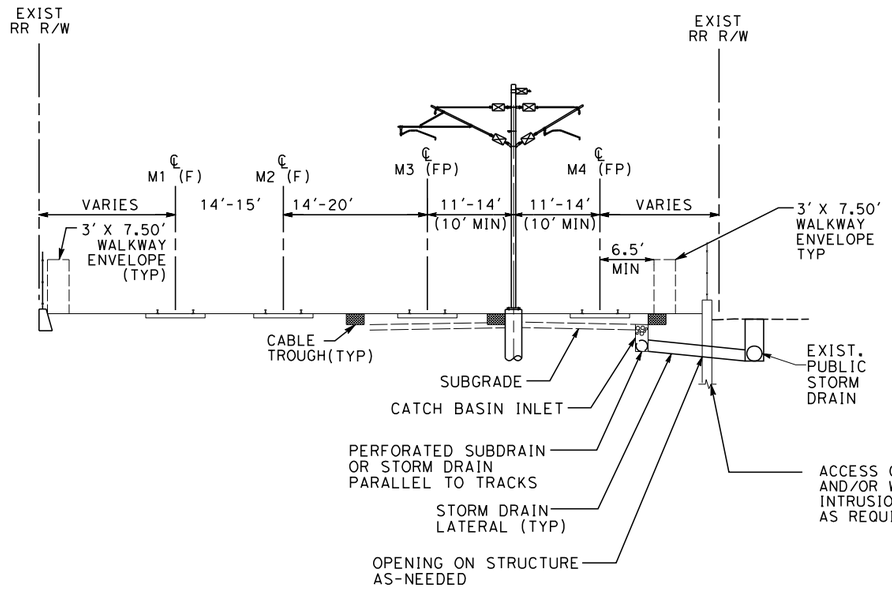
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
PROPOSED UTILITIES RELOCATION PLAN
STA SBN 868+50 TO STA SBN 881+00

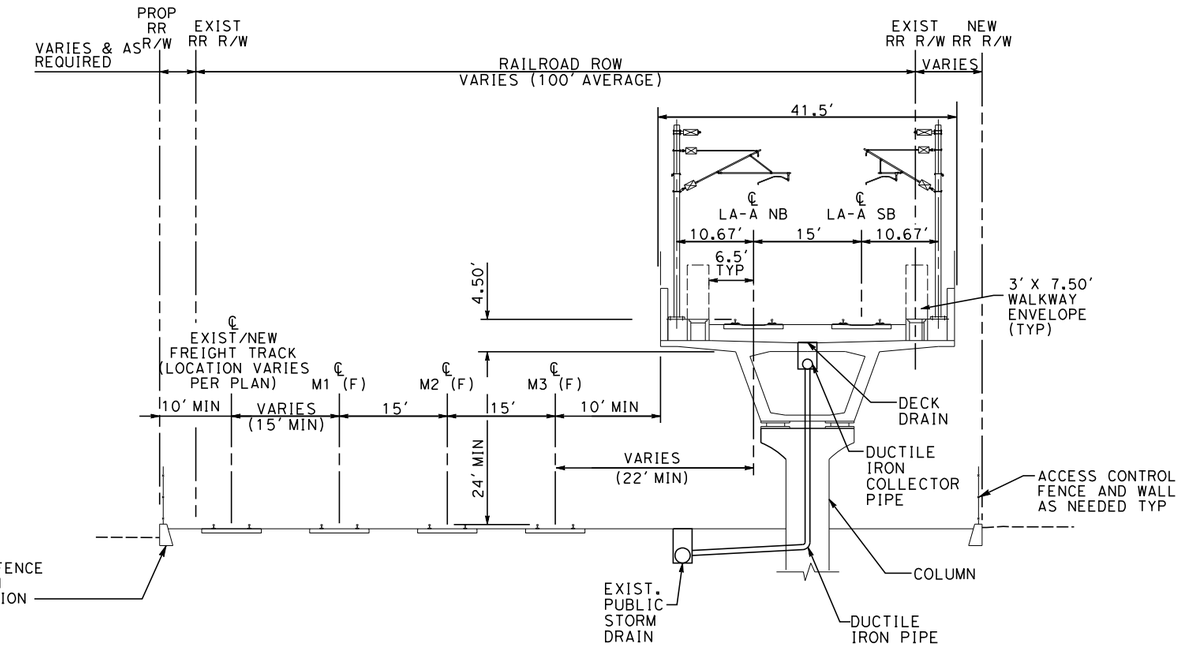
CONTRACT NO. HSR06-0005
DRAWING NO. UT-D1566
SCALE 1" = 50'
SHEET NO.

$PLOT$



TYPICAL DRAINAGE CONCEPT FOR AT GRADE CONDITION

NTS



TYPICAL DRAINAGE CONCEPT FOR AERIAL STRUCTURE

NTS

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FOR INTERNAL USE ONLY

10 0 10 20

1"=10'

SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

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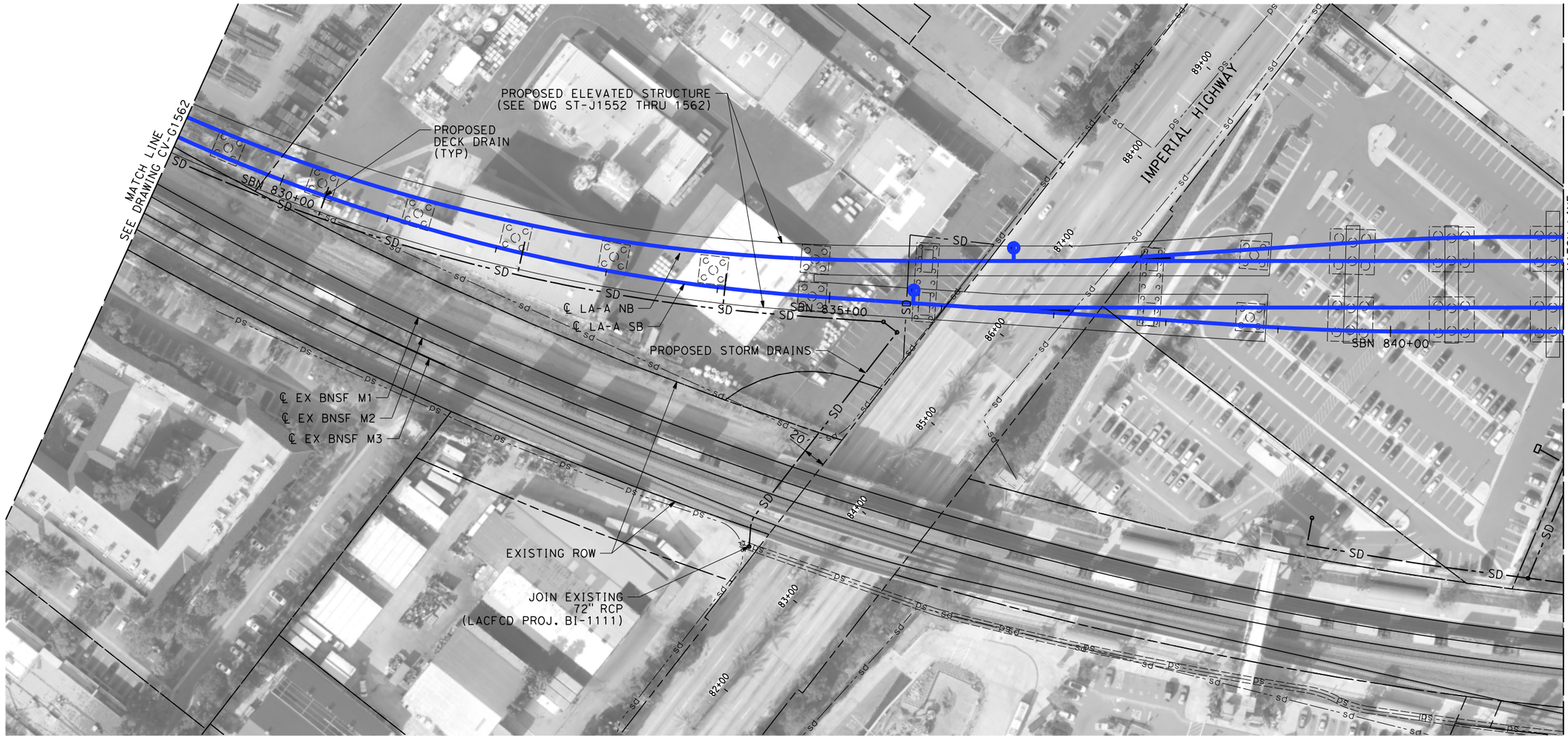
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
DRAINAGE TYPICAL SECTION

CONTRACT NO. HSR06-0005
DRAWING NO. CV-G0011
SCALE AS SHOWN
SHEET NO.

I:\Projects\4017456\4017456_0001\90_CAD Models and Sheets\LO\Sheet Files\Vol 4\CV\LO-CV-G0011.dgn

$PLOT$



NOTES:

1. INTRUSION BARRIER WILL BE PROVIDED AT RAILROAD RIGHT OF WAY.
2. CONTOUR GRADING ALONG THE HST TRACKS IS BASED ON THE TOP OF SUBGRADE ELEVATIONS. BALLAST IS NOT INCLUDED.
3. FOR RETAINING WALL INFORMATION SEE RETAINING WALL PLANS IN VOLUME 3.2.

NOT FOR CONSTRUCTION
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50 0 50 100
1"=50'
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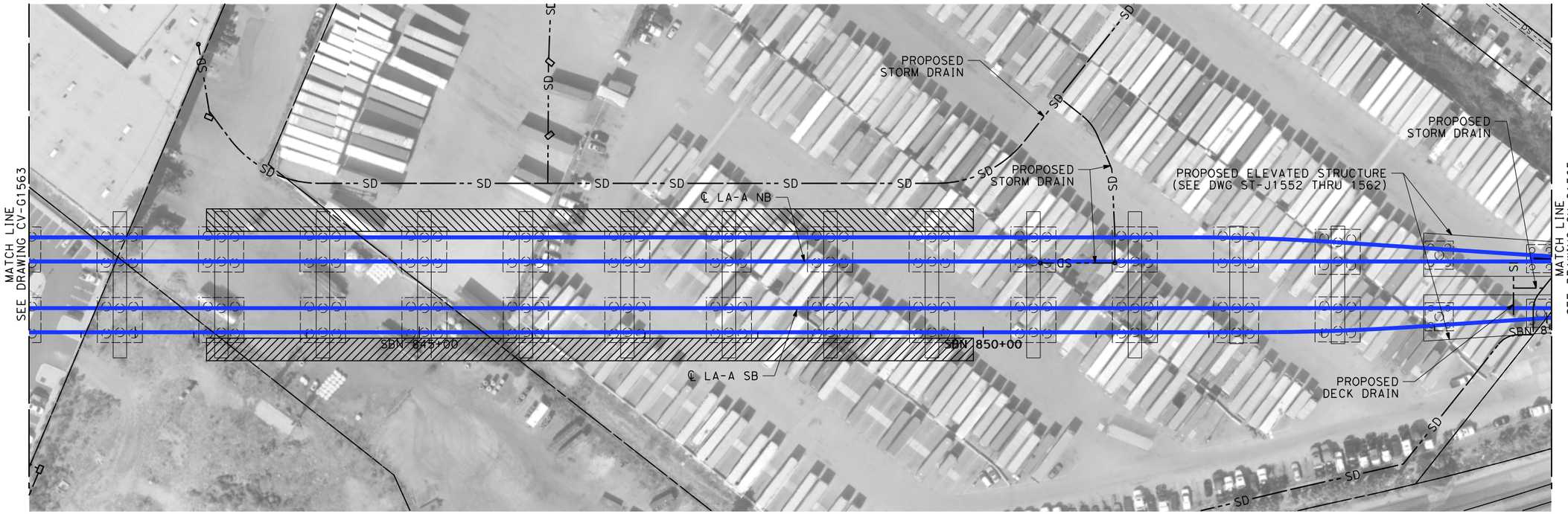
stv

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADING AND DRAINAGE
STA SBN 829+00 TO STA SBN 841+50

CONTRACT NO. HSR06-0005
DRAWING NO. CV-G1563
SCALE 1" = 50'
SHEET NO.

$PLOT$



NOTES:

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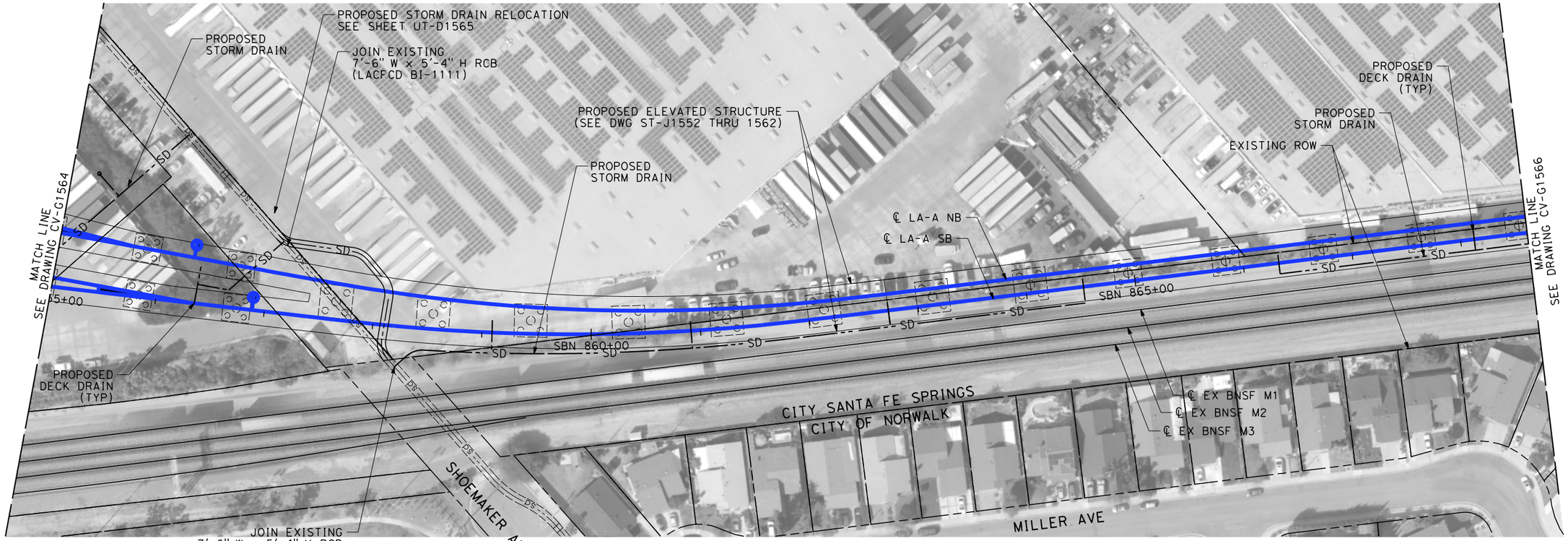
stv

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADING AND DRAINAGE
STA SBN 841+50 TO STA SBN 855+00

CONTRACT NO. HSR06-0005
DRAWING NO. CV-G1564
SCALE 1" = 50'
SHEET NO.

$PLOT$



NOTES:

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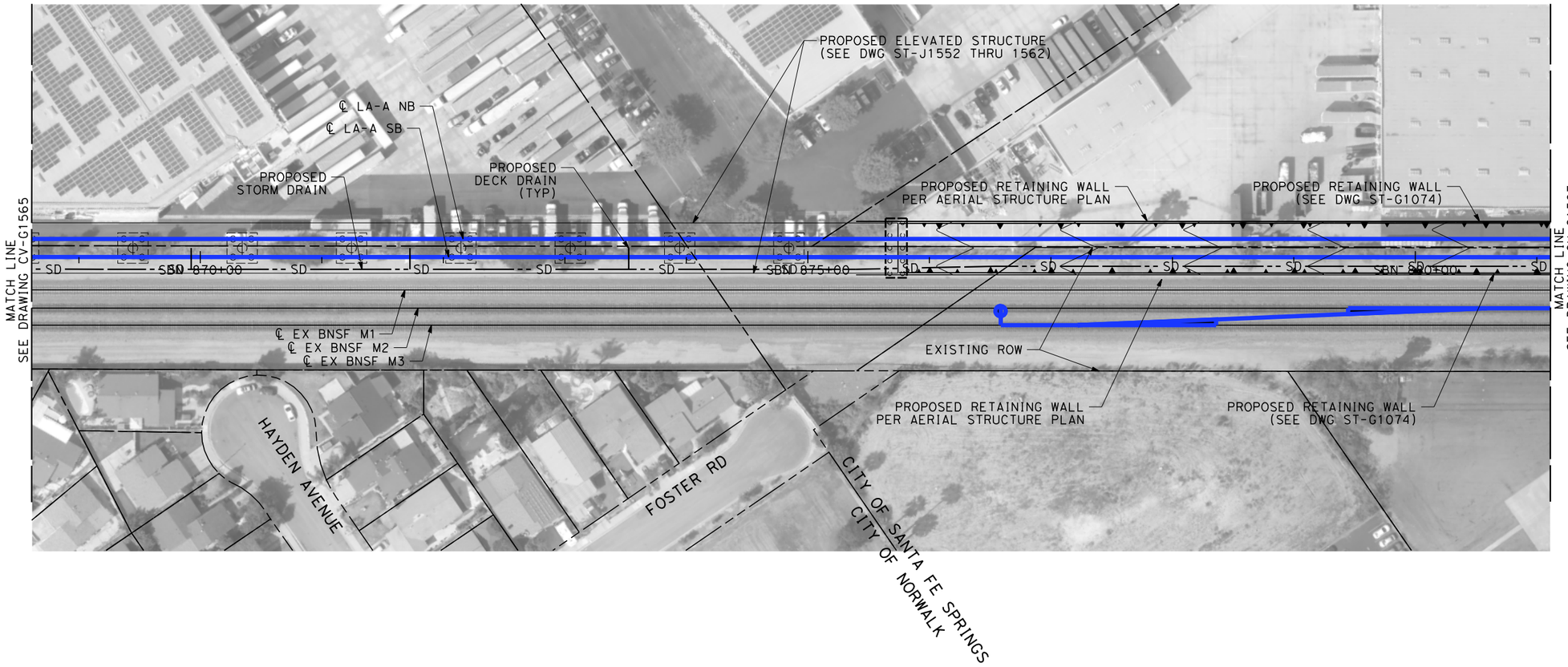
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADING AND DRAINAGE
STA SBN 855+00 TO STA SBN 868+50

CONTRACT NO. HSR06-0005
DRAWING NO. CV-G1565
SCALE 1" = 50'
SHEET NO.

$PLOT$



NOTES:

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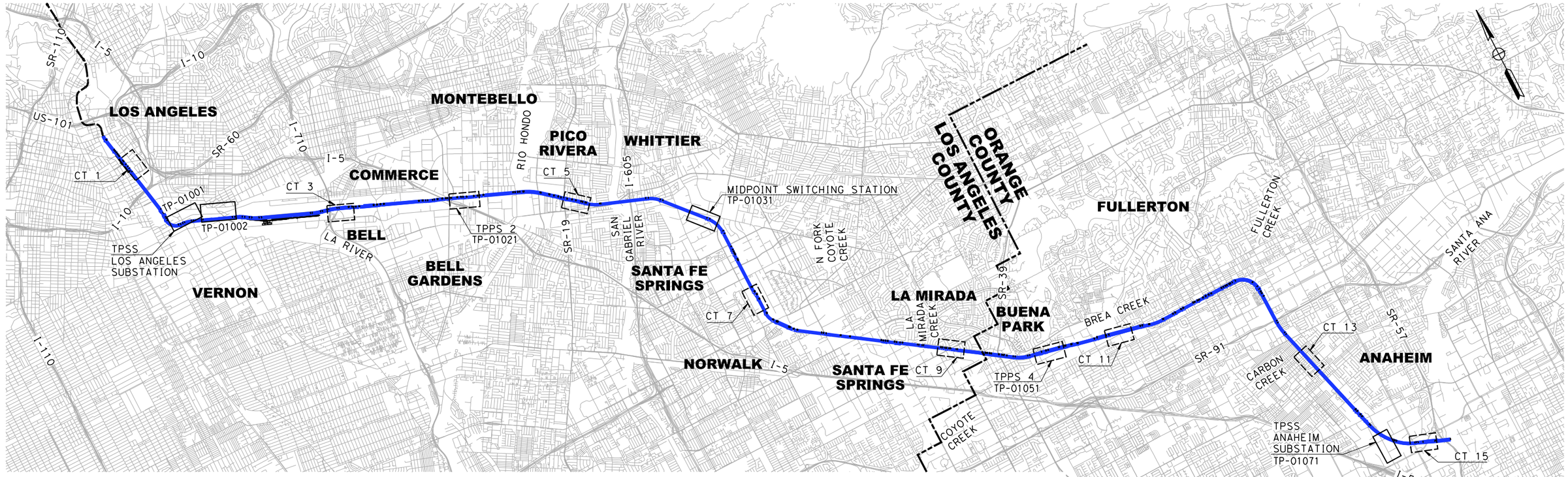
stv

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADING AND DRAINAGE
STA SBN 868+50 TO STA SBN 881+00

CONTRACT NO. HSR06-0005
DRAWING NO. CV-G1566
SCALE 1" = 50'
SHEET NO.

$PLOT$



FACILITIES				
DESCRIPTION	STATIONING	DIST FROM TERMINAL STATION	OFFSET FROM TRACK	DISTANCE FROM SYSTEM FACILITY OR COMM DISTANCES LINE OF SIGHT	DRAWING NO
TRACTION POWER SUBSTATION (LOS ANGELES)	172+00	3.13 MILES FROM UNION STATION	30 FEET FROM HSR	3.13 MILES FROM LA UNION STATION	TP-01001
TRACTION POWER PARALLELING STATION 2	472+00	22.04 MILES FROM ARTIC	20 FEET FROM HSR	4.54 MILES FROM TPP STATION 1 (AT WASHINGTON BLVD)	TP-01021
TRACTION POWER PARALLELING STATION 4	1122+00	9.47 MILES FROM ARTIC	40 FEET FROM HSR	7.73 MILES FROM MIDPOINT SWITCHING STATION (AT LOS NIETOS RD)	TP-01051
TRACTION POWER MIDPOINT SWITCHING STATION	714+00	13.47 MILES FROM UNION STATION	100 FEET FROM HSR	4.6 MILES FROM PARALLELING STATION 2 (AT MAPLE AVE)	TP-01031
TRACTION POWER SUBSTATION (ANAHEIM)	1545+00	1.5 MILES FROM ARTIC	69 FEET FROM HSR	8.01 MILES FROM PARALLELING STATION 4 (AT ARTESIA BLVD)	TP-01071
COMMUNICATION TOWER 1 (STANDALONE RADIO SITE 1)	235+00	1.74 MILES FROM UNION STATION	801 FEET FROM HSR	1.38 MILES FROM COMMUNICATION TOWER AT PATSAOURAS PLAZA	CO-F1011
COMMUNICATION TOWER 3 (STANDALONE RADIO SITE 3)	337+50	6.25 MILES FROM UNION STATION	53 FEET FROM HSR	4.10 MILES FROM COMMUNICATION TOWER 1 (AT JESSE ST)	CO-F1031
COMMUNICATION TOWER 5 (STANDALONE RADIO SITE 5)	575+00	10.91 MILES FROM UNION STATION	72 FEET FROM HSR	4.50 MILES FROM COMMUNICATION TOWER 3 (AT ATLANTIC BLVD	CO-F1051
COMMUNICATION TOWER 7 (STANDALONE RADIO SITE 7)	809+00	15.27 MILES FROM UNION STATION	111 FEET FROM HSR	3.91 MILES FROM COMMUNICATION TOWER 5 (AT SERAPIS AVE)	CO-F1071
COMMUNICATION TOWER 9 (STANDALONE RADIO SITE 9)	1021+00	19.31 MILES FROM UNION STATION	97 FEET FROM HSR	3.87 MILES FROM COMMUNICATION TOWER 7 (AT BLOOMFIELD AVE)	CO-F1091
COMMUNICATION TOWER 11 (STANDALONE RADIO SITE 11)	1190+00	22.52 MILES FROM UNION STATION	100 FEET FROM HSR	3.27 MILES FROM COMMUNICATION TOWER 9 (AT ALONDRA RD)	CO-F1111
COMMUNICATION TOWER 13 (STANDALONE RADIO SITE 13)	1429+00	27 MILES FROM UNION STATION	178 FEET FROM HSR	3.57 MILES FROM COMMUNICATION TOWER 11 (AT BROOKHURST RD)	CO-F1131
COMMUNICATION TOWER 15 (STANDALONE RADIO SITE 15)	1590+00	30.06 MILES FROM UNION STATION	111 FEET FROM HSR	3.22 MILES FROM COMMUNICATION TOWER 13 (AT SYCAMORE STREET)	CO-F1151

NOTE:

1. SINCE THE HSR BURBANK TO LA SEGMENT (APPROXIMATELY 12 MILES LONG) HAS NO TRACTION POWER SUBSTATIONS (TPSS) WITHIN IT'S SEGMENT, THE LA TO ANAHEIM SEGMENT MUST HAVE TWO TPSS'S WITHIN IT'S SEGMENT. ONE IS LOCATED ON THE EAST BANK OF THE LA RIVER WITHIN THE CITY OF LA AND THE OTHER IS AT THE END OF THIS SEGMENT IN CITY OF ANAHEIM. DISTANCE BETWEEN THESE TPSS'S IS APPROXIMATELY 30 MILES.

LEGEND:

TPPS	TRACTION POWER PARALLELING STATION
TPSS	TRACTION POWER SUBSTATION
TPSWS	TRACTION SWITCHING STATION
CT	COMMUNICATION TOWER
TO	TURNOUT
XO	CROSSOVER
LA	LOS ANGELES
	IMPACTED PARCELS SEE ROW DRAWINGS

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

5,000 0 5,000 10,000

1"=5000'

SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY R. NAFAR
DRAWN BY D. BARRAZA
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IN CHARGE J. SWANSON
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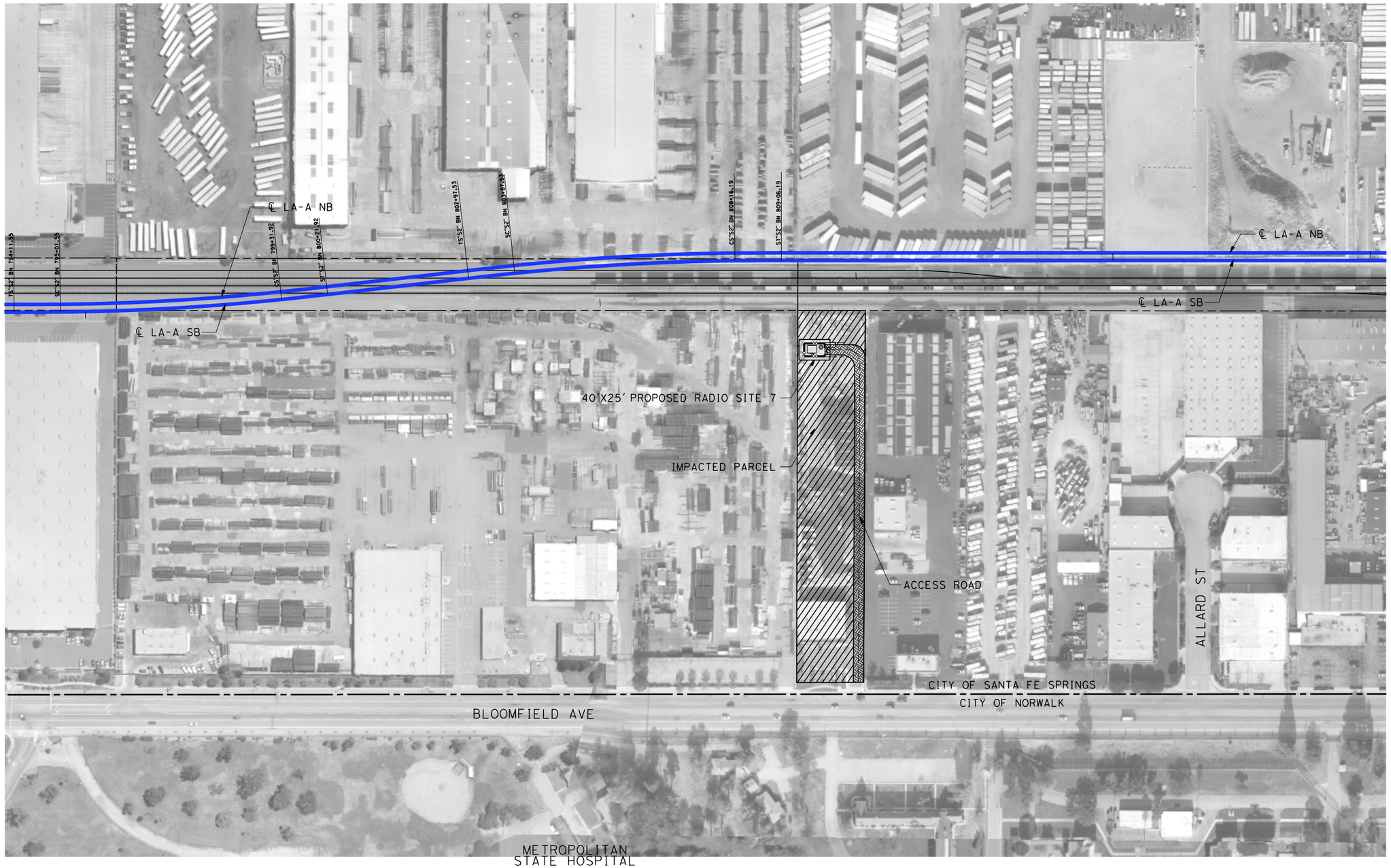
stv

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
SYSTEM FACILITIES KEY PLAN
SHEET 1 OF 1

CONTRACT NO. HSR06-0005
DRAWING NO. TP-B0001
SCALE 1" = 5000'
SHEET NO.

$PLOT$



CITY OF SANTA FE SPRINGS

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100 0 100 200
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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
COMMUNICATIONS SYSTEM SITE PLAN
STANDALONE RADIO SITE 7

CONTRACT NO. HSR06-0005
DRAWING NO. CO-F1071
SCALE 1" = 100'
SHEET NO.

$PLOT$