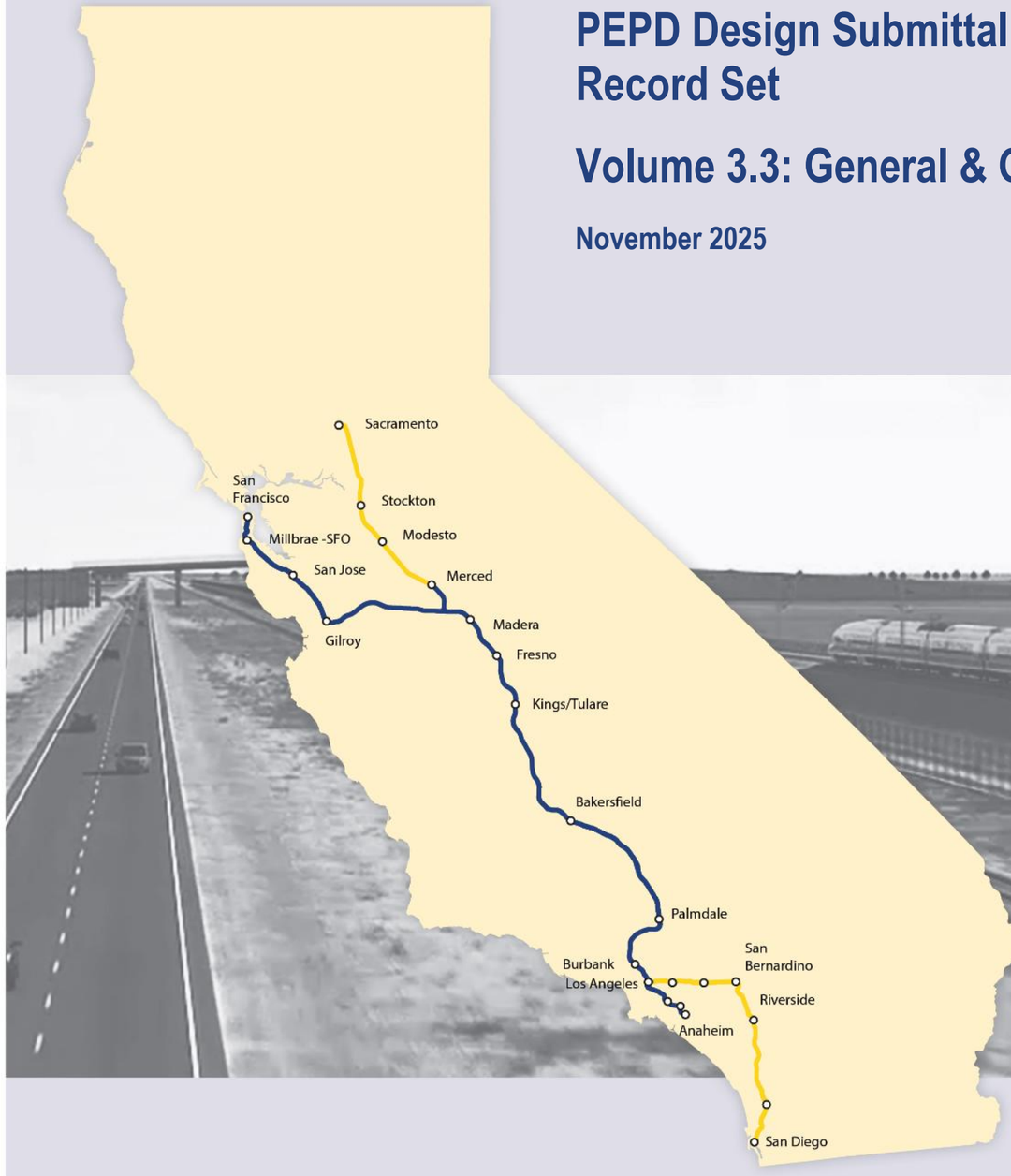
California High-Speed Rail Authority

Los Angeles to Anaheim Project Section



PEPD Design Submittal
Record Set

Volume 3.3: General & Grade Separations

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)

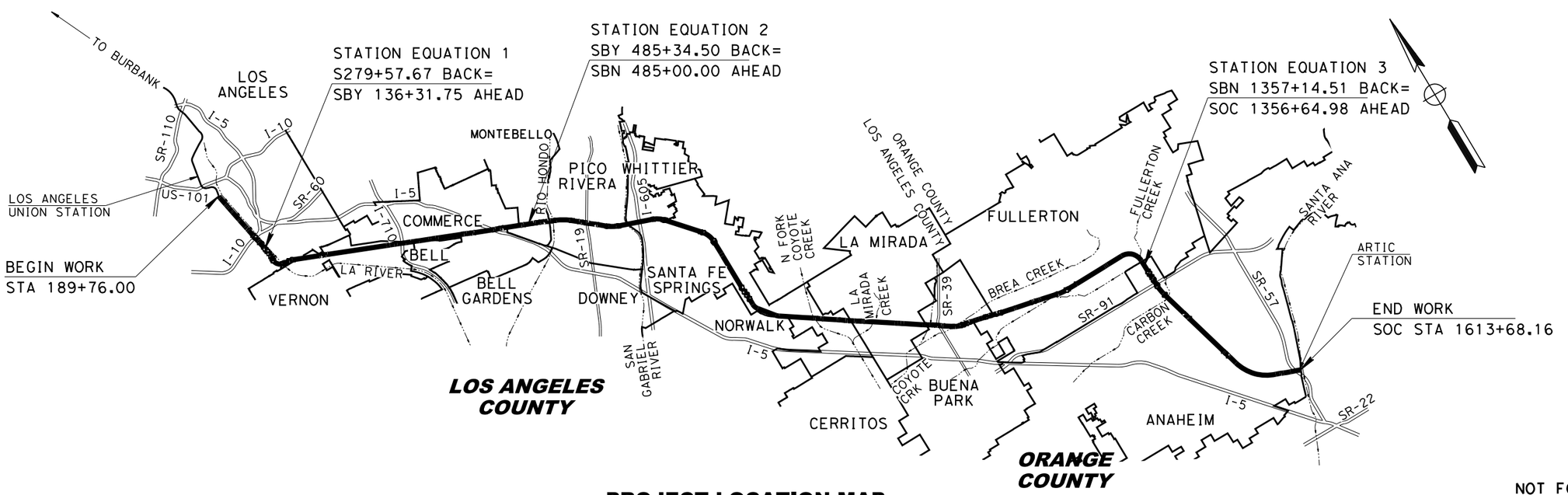
CALIFORNIA HIGH-SPEED TRAIN PROJECT

TONGVA SUBDIVISION

LOS ANGELES TO ANAHEIM

VOLUME 3.3

GENERAL & GRADE SEPARATIONS



PROJECT LOCATION MAP

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

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CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

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

CONTRACT NO.: HSR06-0005
DRAWING NO.: GE-A0301
SCALE: NO SCALE
SHEET NO.:

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CONTRACT NO. HSR06-0005
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VOLUME 3.3 - GENERAL & GRADE SEPARATIONS

GENERAL

DRAWING NO.	DRAWING TITLE
GE-A0300	COVER SHEET - VOLUME 3.3
GE-A0301	PROJECT LOCATION MAP
GE-A0310	INDEX OF VOLUMES
GE-A0311	INDEX OF DRAWINGS VOLUME 3.3 - SHEET 1 OF 5
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GE-B0301	BASIS OF DESIGN SUMMARY
GE-C0301	ACRONYMS AND ABBREVIATIONS 1
GE-C0302	ACRONYMS AND ABBREVIATIONS 2
GE-C0303	ACRONYMS AND ABBREVIATIONS 3
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GE-C0311	SYMBOLS 1
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GE-B0311	GENERAL NOTES 1 OF 1
GE-D6301	TRACK SCHEMATIC
GE-D6302	TRACK SCHEMATIC - 26TH STREET LMF III OPTION

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
CV-T0001	EXISTING ROADWAY BRIDGES - ORIENTATION MAP
ST-K1001	EXISTING 1ST STREET VIADUCT PLAN AND ELEVATION
ST-K1004	EXISTING 4TH STREET VIADUCT PLAN AND ELEVATION
ST-K1007	EXISTING 7TH STREET VIADUCT PLAN AND ELEVATION
ST-K1010	EXISTING SANTA MONICA VIADUCT (I-10) PLAN AND ELEVATION
ST-K1013	EXISTING OLYMPIC BLVD BRIDGE PLAN AND ELEVATION
CV-T0016	GRADE SEPARATION - S DOWNEY RD - ORIENTATION MAP
CV-T1016	GRADE SEPARATION - S DOWNEY RD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1017	GRADE SEPARATION - S DOWNEY RD - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1018	GRADE SEPARATION - S DOWNEY RD - IMPACT PLAN - SHEET 1 OF 2
CV-T1019	GRADE SEPARATION - S DOWNEY RD - IMPACT PLAN - SHEET 2 OF 2

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
CV-T3016	GRADE SEPARATION - S DOWNEY RD - CROSS SECTION - SHEET 1 OF 1
ST-K1016	GRADE SEPARATION - SOUTH DOWNEY RD - GENERAL PLAN
ST-K1021	EXISTING INTERSTATE 710 (HOBART YARD) OH - GENERAL PLAN 1 OF 2
ST-K1022	EXISTING INTERSTATE 710 (HOBART YARD) OH - GENERAL PLAN 2 OF 2
CV-T0021	GRADE SEPARATION - ATLANTIC BLVD - ORIENTATION MAP
CV-T1021	GRADE SEPARATION - ATLANTIC BLVD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1022	GRADE SEPARATION - ATLANTIC BLVD - IMPACT PLAN - SHEET 1 OF 1
CV-T3021	GRADE SEPARATION - ATLANTIC BLVD - CROSS SECTION - SHEET 1 OF 1
ST-K1031	GRADE SEPARATION - ATLANTIC BLVD GENERAL PLAN 1 OF 2
ST-K1032	GRADE SEPARATION - ATLANTIC BLVD GENERAL PLAN 2 OF 2
CV-T0025	GRADE SEPARATION - E 26TH ST (VERNON) - ORIENTATION MAP
CV-T1025	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 1 OF 11
CV-T1026	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 2 OF 11
CV-T1027	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 3 OF 11
CV-T1028	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 4 OF 11
CV-T1029	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 5 OF 11
CV-T1030	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 6 OF 11
CV-T1031	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 7 OF 11
CV-T1032	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 8 OF 11
CV-T1033	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 9 OF 11
CV-T1034	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 10 OF 11
CV-T1035	GRADE SEPARATION - E 26TH ST (VERNON) - PLAN AND PROFILE - SHEET 11 OF 11
CV-T1038	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 1 OF 9
CV-T1039	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 2 OF 9
CV-T1040	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 3 OF 9
CV-T1041	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 4 OF 9
CV-T1042	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 5 OF 9
CV-T1043	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 6 OF 9
CV-T1044	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 7 OF 9
CV-T1045	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 8 OF 9
CV-T1046	GRADE SEPARATION - E 26TH ST (VERNON) - IMPACT PLAN - SHEET 9 OF 9
CV-T3025	GRADE SEPARATION - E 26TH ST (VERNON) - CROSS SECTION - SHEET 1 OF 1
ST-K1017	GRADE SEPARATION - DRAINAGE CHANNEL(LMF) - GENERAL PLAN 1 OF 1
ST-K1019	GRADE SEPARATION - 26TH ST (VERNON) - GENERAL PLAN

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VOLUME 3.3 - GENERAL & GRADE SEPARATIONS

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ST-K1047	GRADE SEPARATION - EASTERN AVENUE - GENERAL PLAN
CV-T0056	GRADE SEPARATION - E 26TH ST (COMMERCE) - ORIENTATION MAP
CV-T1059	GRADE SEPARATION - E 26TH ST (COMMERCE) - IMPACT PLAN - SHEET 1 OF 2
CV-T1060	GRADE SEPARATION - E 26TH ST (COMMERCE) - IMPACT PLAN - SHEET 2 OF 2
ST-K1056	GRADE SEPARATION - I-5 SANTA ANA FREEWAY - GENERAL PLAN
ST-K1057	GRADE SEPARATION - I-5 SANTA ANA FREEWAY - ELEVATION AND SECTION
ST-K1058	GRADE SEPARATION - TELEGRAPH ROAD - GENERAL PLAN
ST-K1059	GRADE SEPARATION - GARFIELD AVENUE - GENERAL PLAN
CV-T1058-C	ROADWAY IMPROVEMENT - MAPLE AVE (MONTEBELLO) - IMPACT PLAN - SHEET 1 OF 2
CV-T1058-D	ROADWAY IMPROVEMENT - MAPLE AVE (MONTEBELLO) - IMPACT PLAN - SHEET 2 OF 2
CV-T1058-E	ROADWAY IMPROVEMENT SYCAMORE ST (COMMERCE) - IMPACT PLAN - SHEET 1 OF 1
CV-T3055	ROADWAY IMPROVEMENT - MAPLE AVE (MONTEBELLO) - CROS SECTION - SHEET 1 OF 1
CV-T0061	GRADE SEPARATION - GREENWOOD AVE - ORIENTATION MAP
CV-T1061	GRADE SEPARATION - GREENWOOD AVE - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1062	GRADE SEPARATION - GREENWOOD AVE - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1065	GRADE SEPARATION - GREENWOOD AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1066	GRADE SEPARATION - GREENWOOD AVE - IMPACT PLAN - SHEET 2 OF 2
CV-T3061	GRADE SEPARATION - GREENWOOD AVE - CROSS SECTION - SHEET 1 OF 1
ST-K1061	GRADE SEPARATION - GREENWOOD AVENUE - GENERAL PLAN
CV-T0071	GRADE SEPARATION - RIO HONDO ACCESS RD - ORIENTATION MAP
ST-K1071	GRADE SEPARATION - RIO HONDO ACCESS ROAD - GENERAL PLAN
CV-T0081	GRADE SEPARATION - RIO HONDO - ORIENTATION MAP
ST-K1081	GRADE SEPARATION - RIO HONDO - GENERAL PLAN
CV-T0091	GRADE SEPARATION - PARAMOUNT BLVD - ORIENTATION MAP
CV-T1091	GRADE SEPARATION - PARAMOUNT BLVD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1092	GRADE SEPARATION - PARAMOUNT BLVD - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1095	GRADE SEPARATION - PARAMOUNT BLVD - IMPACT PLAN - SHEET 1 OF 2
CV-T1096	GRADE SEPARATION - PARAMOUNT BLVD - IMPACT PLAN - SHEET 2 OF 2
CV-T3091	GRADE SEPARATION - PARAMOUNT BLVD - CROSS SECTION - SHEET 1 OF 1
ST-K1091	GRADE SEPARATION - PARAMOUNT BLVD - GENERAL PLAN
CV-T0101	GRADE SEPARATION - ROSEMEAD BLVD - ORIENTATION MAP
CV-T1101	GRADE SEPARATION - ROSEMEAD BLVD - PLAN AND PROFILE - SHEET 1 OF 3
CV-T1102	GRADE SEPARATION - ROSEMEAD BLVD - PLAN AND PROFILE - SHEET 2 OF 3
CV-T1103	GRADE SEPARATION - ROSEMEAD BLVD - PLAN AND PROFILE - SHEET 3 OF 3
CV-T1105	GRADE SEPARATION - ROSEMEAD BLVD - IMPACT PLAN - SHEET 1 OF 2
CV-T1106	GRADE SEPARATION - ROSEMEAD BLVD - IMPACT PLAN - SHEET 2 OF 2
CV-T3101	GRADE SEPARATION - ROSEMEAD BLVD - CROSS SECTION - SHEET 1 OF 1

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
UT-Y1105	GRADE SEPARATION - ROSEMEAD BLVD - UTILITY PLAN - SHEET 1 OF 2
UT-Y1106	GRADE SEPARATION - ROSEMEAD BLVD - UTILITY PLAN - SHEET 2 OF 2
ST-K1101	GRADE SEPARATION - ROSEMEAD BLVD - GENERAL PLAN
CV-T0111	GRADE SEPARATION - PASSONS BLVD - ORIENTATION MAP
CV-T1111	GRADE SEPARATION - PASSONS BLVD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1115	GRADE SEPARATION - PASSONS BLVD - IMPACT PLAN - SHEET 1 OF 1
CV-T3111	GRADE SEPARATION - PASSONS BLVD - CROSS SECTION - SHEET 1 OF 1
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CV-T0121	GRADE SEPARATION - SLAUSON AVE - ORIENTATION MAP
CV-T1121	GRADE SEPARATION - SLAUSON AVE - PLAN AND PROFILE - SHEET 1 OF 4
CV-T1122	GRADE SEPARATION - SLAUSON AVE - PLAN AND PROFILE - SHEET 2 OF 4
CV-T1123	GRADE SEPARATION - SLAUSON AVE - PLAN AND PROFILE - SHEET 3 OF 4
CV-T1124	GRADE SEPARATION - SLAUSON AVE - PLAN AND PROFILE - SHEET 4 OF 4
CV-T1125	GRADE SEPARATION - SLAUSON AVE - IMPACT PLAN - SHEET 1 OF 3
CV-T1126	GRADE SEPARATION - SLAUSON AVE - IMPACT PLAN - SHEET 2 OF 3
CV-T1127	GRADE SEPARATION - SLAUSON AVE - IMPACT PLAN - SHEET 3 OF 3
ST-K1121	GRADE SEPARATION - SAN GABRIEL RIVER GENERAL PLAN 1 OF 3
ST-K1122	GRADE SEPARATION - SAN GABRIEL RIVER GENERAL PLAN 2 OF 3
ST-K1123	GRADE SEPARATION - SAN GABRIEL RIVER GENERAL PLAN 3 OF 3
CV-T0135	GRADE SEPARATION - FREEWAY I-605 - ORIENTATION MAP
CV-T1135	GRADE SEPARATION - FREEWAY I-605 - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1138	GRADE SEPARATION - FREEWAY I-605 - IMPACT PLAN - SHEET 1 OF 1
ST-K1131	EXISTING INTERSTATE 605 (BRADWELL) OVERHEAD - GENERAL PLAN - SHEET 1 OF 2
ST-K1132	EXISTING INTERSTATE 605 (BRADWELL) OVERHEAD - GENERAL PLAN - SHEET 2 OF 2
CV-T0141	GRADE SEPARATION - PIONEER BLVD - ORIENTATION MAP
CV-T1141	GRADE SEPARATION - PIONEER BLVD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1142	GRADE SEPARATION - PIONEER BLVD - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1143	GRADE SEPARATION - RIVERA RD & ACCESS RD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1144	GRADE SEPARATION - RIVERA LOOP & WHEELOCK CIR - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1146	GRADE SEPARATION - PIONEER BLVD - IMPACT PLAN - SHEET 1 OF 2
CV-T1147	GRADE SEPARATION - PIONEER BLVD - IMPACT PLAN - SHEET 2 OF 2
CV-T3141	GRADE SEPARATION - PIONEER BLVD - CROSS SECTION - SHEET 1 OF 2
CV-T3142	GRADE SEPARATION - PIONEER BLVD - CROSS SECTION - SHEET 2 OF 2
UT-Y1146	GRADE SEPARATION - PIONEER BLVD - UTILITY PLAN - SHEET 1 OF 2
UT-Y1147	GRADE SEPARATION - PIONEER BLVD - UTILITY PLAN - SHEET 2 OF 2
ST-K1141	GRADE SEPARATION - PIONEER BLVD - GENERAL PLAN

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DRAWING NO. GE-A0312
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GRADE SEPARATIONS

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CV-T0151	GRADE SEPARATION - NORWALK BLVD - ORIENTATION MAP
CV-T1151	GRADE SEPARATION - NORWALK BLVD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1152	GRADE SEPARATION - NORWALK BLVD - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1155	GRADE SEPARATION - NORWALK BLVD - IMPACT PLAN - SHEET 1 OF 1
CV-T3151	GRADE SEPARATION - NORWALK BLVD - CROSS SECTION - SHEET 1 OF 1
UT-Y1155	GRADE SEPARATION - NORWALK BLVD - UTILITY PLAN - SHEET 1 OF 1
ST-K1151	GRADE SEPARATION - NORWALK BLVD - GENERAL PLAN
CV-T0161	GRADE SEPARATION - LOS NIETOS ROAD - ORIENTATION MAP
CV-T1161	GRADE SEPARATION - LOS NIETOS ROAD - PLAN AND PROFILE - SHEET 1 OF 3
CV-T1162	GRADE SEPARATION - LOS NIETOS ROAD - PLAN AND PROFILE - SHEET 2 OF 3
CV-T1163	GRADE SEPARATION - LOS NIETOS ROAD - PLAN AND PROFILE - SHEET 3 OF 3
CV-T1165	GRADE SEPARATION - LOS NIETOS ROAD - IMPACT PLAN - SHEET 1 OF 2
CV-T1166	GRADE SEPARATION - LOS NIETOS ROAD - IMPACT PLAN - SHEET 2 OF 2
CV-T3161	GRADE SEPARATION - LOS NIETOS ROAD - CROSS SECTION - SHEET 1 OF 1
UT-Y1165	GRADE SEPARATION - LOS NIETOS ROAD - UTILITY PLAN - SHEET 1 OF 2
UT-Y1166	GRADE SEPARATION - LOS NIETOS ROAD - UTILITY PLAN - SHEET 2 OF 2
ST-K1161	GRADE SEPARATION - LOS NIETOS ROAD - GENERAL PLAN
ST-K3161	GRADE SEPARATION - LOS NIETOS ROAD - STRUCTURAL SECTION
CV-T0171	GRADE SEPARATION - SANTA FE SPRINGS ROAD - ORIENTATION MAP
CV-T1171	GRADE SEPARATION - SANTA FE SPRINGS ROAD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1176	GRADE SEPARATION - SANTA FE SPRINGS ROAD - IMPACT PLAN - SHEET 1 OF 1
UT-Y1176	GRADE SEPARATION - SANTA FE SPRINGS ROAD - UTILITY PLAN - SHEET 1 OF 1
ST-K1171	GRADE SEPARATION - SANTA FE SPRINGS ROAD - GENERAL PLAN
CV-T0181	GRADE SEPARATION - TELEGRAPH RD, SFS - ORIENTATION MAP
CV-T1181	GRADE SEPARATION - TELEGRAPH RD, SFS - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1186	GRADE SEPARATION - TELEGRAPH RD, SFS - IMPACT PLAN - SHEET 1 OF 1
UT-Y1186	GRADE SEPARATION - TELEGRAPH RD, SFS - UTILITY PLAN - SHEET 1 OF 1
ST-K1181	GRADE SEPARATION - TELEGRAPH ROAD - GENERAL PLAN
CV-T0191	GRADE SEPARATION - FLORENCE AVENUE - ORIENTATION MAP
CV-T1191	GRADE SEPARATION - FLORENCE AVENUE - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1196	GRADE SEPARATION - FLORENCE AVENUE - IMPACT PLAN - SHEET 1 OF 1
UT-Y1196	GRADE SEPARATION - FLORENCE AVENUE - UTILITY PLAN - SHEET 1 OF 1
ST-K1191	GRADE SEPARATION - FLORENCE AVENUE - GENERAL PLAN

GRADE SEPARATIONS

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CV-T0205	GRADE SEPARATION - IMPERIAL HIGHWAY - ORIENTATION MAP
CV-T1205	GRADE SEPARATION - IMPERIAL HIGHWAY - PLAN AND PROFILE - SHEET 1 OF 3
CV-T1206	GRADE SEPARATION - IMPERIAL HIGHWAY - PLAN AND PROFILE - SHEET 2 OF 3
CV-T1207	GRADE SEPARATION - IMPERIAL HIGHWAY - PLAN AND PROFILE - SHEET 3 OF 3
CV-T1208	GRADE SEPARATION - IMPERIAL HIGHWAY - IMPACT PLAN - SHEET 1 OF 3
CV-T1209	GRADE SEPARATION - IMPERIAL HIGHWAY - IMPACT PLAN - SHEET 2 OF 3
CV-T1210	GRADE SEPARATION - IMPERIAL HIGHWAY - IMPACT PLAN - SHEET 3 OF 3
CV-T3205	GRADE SEPARATION - IMPERIAL HIGHWAY - CROSS SECTION - SHEET 1 OF 1
CV-T0211	GRADE SEPARATION - CARMENITA RD - ORIENTATION MAP
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CV-T1216	GRADE SEPARATION - CARMENITA RD - IMPACT PLAN - SHEET 1 OF 1
CV-T3211	GRADE SEPARATION - CARMENITA RD - CROSS SECTION - SHEET 1 OF 1
UT-Y1216	GRADE SEPARATION - CARMENITA RD - UTILITY PLAN - SHEET 1 OF 1
ST-K1211	GRADE SEPARATION - CARMENITA ROAD - GENERAL PLAN
CV-T0221	GRADE SEPARATION - COYOTE CREEK/NORTH FORK - ORIENTATION MAP
ST-K1221	GRADE SEPARATION - COYOTE CREEK/NORTH FORK - GENERAL PLAN
CV-T0241	GRADE SEPARATION - VALLEY VIEW AVE - ORIENTATION MAP
CV-T1241	GRADE SEPARATION - VALLEY VIEW AVE - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1242	GRADE SEPARATION - VALLEY VIEW AVE - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1245	GRADE SEPARATION - VALLEY VIEW AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1246	GRADE SEPARATION - VALLEY VIEW AVE - IMPACT PLAN - SHEET 2 OF 2
CV-T3241	GRADE SEPARATION - VALLEY VIEW AVE - CROSS SECTION - SHEET 1 OF 1
ST-K1241	GRADE SEPARATION - VALLEY VIEW AVE - GENERAL PLAN - SHEET 1 OF 2
ST-K1242	GRADE SEPARATION - VALLEY VIEW AVE - GENERAL PLAN - SHEET 2 OF 2
CV-T0251	GRADE SEPARATION - LA MIRADA CREEK - ORIENTATION MAP
ST-K1251	GRADE SEPARATION - LA MIRADA CREEK - GENERAL PLAN - SHEET 1 OF 2
ST-K1252	GRADE SEPARATION - LA MIRADA CREEK - GENERAL PLAN - SHEET 2 OF 2
CV-T0261	GRADE SEPARATION - ALONDRA BLVD - ORIENTATION MAP
CV-T1261	GRADE SEPARATION - ALONDRA BLVD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1262	GRADE SEPARATION - ALONDRA BLVD - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1263	GRADE SEPARATION - STAGE RD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1264	GRADE SEPARATION - ALONDRA BLVD - IMPACT PLAN - SHEET 1 OF 2
CV-T1265	GRADE SEPARATION - ALONDRA BLVD - IMPACT PLAN - SHEET 2 OF 2
CV-T3261	GRADE SEPARATION - ALONDRA BLVD - CROSS SECTION - SHEET 1 OF 1
UT-Y1264	GRADE SEPARATION - ALONDRA BLVD - UTILITY PLAN - SHEET 1 OF 2
UT-Y1265	GRADE SEPARATION - ALONDRA BLVD - UTILITY PLAN - SHEET 2 OF 2
ST-K1261	GRADE SEPARATION - ALONDRA BLVD - GENERAL PLAN
ST-K3261	GRADE SEPARATION - ALONDRA BLVD - STRUCTURAL SECTION

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CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
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VOLUME 3.3 - GENERAL & GRADE SEPARATIONS

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
CV-T0264	GRADE SEPARATION - COYOTE CREEK - ORIENTATION MAP
ST-K1264	GRADE SEPARATION - COYOTE CREEK - GENERAL PLAN
CV-T0266	GRADE SEPARATION - BEACH BLVD - ORIENTATION MAP
CV-T1266	GRADE SEPARATION - BEACH BLVD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1267	GRADE SEPARATION - BEACH BLVD - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1268	GRADE SEPARATION - BEACH BLVD - IMPACT PLAN - SHEET 1 OF 2
CV-T1269	GRADE SEPARATION - BEACH BLVD - IMPACT PLAN - SHEET 2 OF 2
CV-T3266	GRADE SEPARATION - BEACH BLVD - CROSS SECTION - SHEET 1 OF 1
ST-K1266	GRADE SEPARATION - BEACH BLVD - GENERAL PLAN
ST-K3266	GRADE SEPARATION - BEACH BLVD - STRUCTURAL SECTION
CV-T0269	GRADE SEPARATION - BREA CREEK - ORIENTATION MAP
ST-K1269	GRADE SEPARATION - BREA CREEK - GENERAL PLAN
CV-T0271	GRADE SEPARATION - DALE STREET - ORIENTATION MAP
CV-T1271	GRADE SEPARATION - DALE STREET - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1272	GRADE SEPARATION - DALE STREET - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1275	GRADE SEPARATION - DALE STREET - IMPACT PLAN - SHEET 1 OF 2
CV-T1276	GRADE SEPARATION - DALE STREET - IMPACT PLAN - SHEET 2 OF 2
CV-T3271	GRADE SEPARATION - DALE STREET - CROSS SECTION - SHEET 1 OF 1
ST-K1271	GRADE SEPARATION - DALE STREET - GENERAL PLAN
CV-T0281	GRADE SEPARATION - ARTESIA AVE - ORIENTATION MAP
CV-T1281	GRADE SEPARATION - ARTESIA AVE - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1282	GRADE SEPARATION - ARTESIA AVE - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1285	GRADE SEPARATION - ARTESIA AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1286	GRADE SEPARATION - ARTESIA AVE - IMPACT PLAN - SHEET 2 OF 2
CV-T3281	GRADE SEPARATION - ARTESIA AVE - CROSS SECTION - SHEET 1 OF 1
CV-T0291	GRADE SEPARATION - GILBERT ST - ORIENTATION MAP
CV-T1291	GRADE SEPARATION - GILBERT ST - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1292	GRADE SEPARATION - GILBERT ST - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1295	GRADE SEPARATION - GILBERT ST - IMPACT PLAN - SHEET 1 OF 2
CV-T1296	GRADE SEPARATION - GILBERT ST - IMPACT PLAN - SHEET 2 OF 2
CV-T3291	GRADE SEPARATION - GILBERT ST - CROSS SECTION - SHEET 1 OF 1
ST-K1291	GRADE SEPARATION - GILBERT STREET - GENERAL PLAN
CV-T0301	GRADE SEPARATION - W COMMONWEALTH AVE - ORIENTATION MAP
CV-T1301	GRADE SEPARATION - W COMMONWEALTH AVE - PLAN AND PROFILE - SHEET 1 OF 3
CV-T1302	GRADE SEPARATION - W COMMONWEALTH AVE - PLAN AND PROFILE - SHEET 2 OF 3
CV-T1303	GRADE SEPARATION - W COMMONWEALTH AVE - PLAN AND PROFILE - SHEET 3 OF 3
CV-T1305	GRADE SEPARATION - W COMMONWEALTH AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1306	GRADE SEPARATION - W COMMONWEALTH AVE - IMPACT PLAN - SHEET 2 OF 2

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
CV-T3301	GRADE SEPARATION - W COMMONWEALTH AVE - CROSS SECTION - SHEET 1 OF 1
UT-Y1305	GRADE SEPARATION - W COMMONWEALTH AVE - UTILITY PLAN - SHEET 1 OF 2
UT-Y1306	GRADE SEPARATION - W COMMONWEALTH AVE - UTILITY PLAN - SHEET 2 OF 2
ST-K1301	GRADE SEPARATION - W COMMONWEALTH AVE - GENERAL PLAN
ST-K3301	GRADE SEPARATION - W COMMONWEALTH AVE - STRUCTURAL PLAN
CV-T0311	GRADE SEPARATION - EUCLID ST - ORIENTATION MAP
CV-T1311	GRADE SEPARATION - EUCLID ST - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1312	GRADE SEPARATION - EUCLID ST - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1315	GRADE SEPARATION - EUCLID ST - IMPACT PLAN - SHEET 1 OF 2
CV-T1316	GRADE SEPARATION - EUCLID ST - IMPACT PLAN - SHEET 2 OF 2
CV-T3311	GRADE SEPARATION - EUCLID ST - CROSS SECTION - SHEET 1 OF 1
ST-K1311	GRADE SEPARATION - EUCLID STREET - GENERAL PLAN
CV-T0321	GRADE SEPARATION - W & E WALNUT AVE - ORIENTATION MAP
CV-T1321	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 1 OF 4
CV-T1322	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 2 OF 4
CV-T1323	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 3 OF 4
CV-T1324	GRADE SEPARATION - W & E WALNUT AVE - PLAN AND PROFILE - SHEET 4 OF 4
CV-T1326	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 1 OF 4
CV-T1327	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 2 OF 4
CV-T1328	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 3 OF 4
CV-T1329	GRADE SEPARATION - W & E WALNUT AVE - IMPACT PLAN - SHEET 4 OF 4
CV-T3321	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 1 OF 4
CV-T3322	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 2 OF 4
CV-T3323	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 3 OF 4
CV-T3324	GRADE SEPARATION - W & E WALNUT AVE - CROSS SECTION - SHEET 4 OF 4
CV-T0351	GRADE SEPARATION - HIGHLAND AVE - ORIENTATION MAP
CV-T1351	GRADE SEPARATION - HIGHLAND AVE - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1352	GRADE SEPARATION - HIGHLAND AVE - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1356	GRADE SEPARATION - HIGHLAND AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1357	GRADE SEPARATION - HIGHLAND AVE - IMPACT PLAN - SHEET 2 OF 2
CV-T3351	GRADE SEPARATION - HIGHLAND AVE - CROSS SECTION - SHEET 1 OF 1
ST-K1351	GRADE SEPARATION - HIGHLAND AVE - GENERAL PLAN
CV-T0361	GRADE SEPARATION - HARBOR BLVD - ORIENTATION MAP
CV-T1361	GRADE SEPARATION - HARBOR BLVD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1366	GRADE SEPARATION - HARBOR BLVD - IMPACT PLAN - SHEET 1 OF 1
CV-T3361	GRADE SEPARATION - HARBOR BLVD - CROSS SECTION - SHEET 1 OF 1
ST-K1361	GRADE SEPARATION - HARBOR BLVD - GENERAL PLAN
CV-T0371	GRADE SEPARATION - LEMON ST - ORIENTATION MAP
CV-T1371	GRADE SEPARATION - LEMON ST - PLAN AND PROFILE - SHEET 1 OF 2

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

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VOLUME 3.3 - GENERAL & GRADE SEPARATIONS

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
CV-T1372	GRADE SEPARATION - LEMON ST - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1376	GRADE SEPARATION - LEMON ST - IMPACT PLAN - SHEET 1 OF 2
CV-T1377	GRADE SEPARATION - LEMON ST - IMPACT PLAN - SHEET 2 OF 2
CV-T3371	GRADE SEPARATION - LEMON ST - CROSS SECTION - SHEET 1 OF 1
ST-K1371	GRADE SEPARATION - LEMON STREET - GENERAL PLAN
CV-T0391	GRADE SEPARATION - DRAINAGE CHANNEL - ORIENTATION MAP
ST-K1391	GRADE SEPARATION - DRAINAGE CHANNEL GENERAL PLAN
CV-T0401	GRADE SEPARATION - FULLERTON CREEK - ORIENTATION MAP
ST-K1401	GRADE SEPARATION - FULLERTON CREEK - GENERAL PLAN
CV-T0411	GRADE SEPARATION - ORANGETHORPE AVE - ORIENTATION MAP
CV-T0421	EXISTING NORTH ANAHEIM FWY OVERHEAD (SR-91) - ORIENTATION MAP
ST-K1421	EXISTING NORTH ANAHEIM FWY OVERHEAD (SR-91) - GENERAL PLAN - SHEET 1 OF 2
ST-K1422	EXISTING NORTH ANAHEIM FWY OVERHEAD (SR-91) - GENERAL PLAN - SHEET 2 OF 2
CV-T0441	GRADE SEPARATION - CARBON CREEK - ORIENTATION MAP
ST-K1441	GRADE SEPARATION - CARBON CREEK - GENERAL PLAN
CV-T0451	GRADE SEPARATION - LA PALMA AVE - ORIENTATION MAP
CV-T0461	GRADE SEPARATION - SYCAMORE STREET - ORIENTATION MAP
CV-T0471	GRADE SEPARATION - LINCOLN AVE - ORIENTATION MAP
CV-T1471	GRADE SEPARATION - LINCOLN AVE - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1476	GRADE SEPARATION - LINCOLN AVE - IMPACT PLAN - SHEET 1 OF 1
ST-K1471	GRADE SEPARATION - LINCOLN AVE - GENERAL PLAN
CV-T0491	GRADE SEPARATION - BROADWAY - ORIENTATION MAP
CV-T0501	PEDESTRIAN OVERHEAD - E SOUTH STREET - ORIENTATION MAP
CV-T0511	GRADE SEPARATION - VERMONT AVE - ORIENTATION MAP
CV-T0521	GRADE SEPARATION - BALL RD - ORIENTATION MAP
CV-T0541	GRADE SEPARATION - LEWIS ST - ORIENTATION MAP
CV-T1541	GRADE SEPARATION - LEWIS ST - PLAN AND PROFILE - SHEET 1 OF 3
CV-T1542	GRADE SEPARATION - LEWIS ST - PLAN AND PROFILE - SHEET 2 OF 3
CV-T1543	GRADE SEPARATION - LEWIS ST - PLAN AND PROFILE - SHEET 3 OF 3
CV-T1546	GRADE SEPARATION - LEWIS ST - IMPACT PLAN - SHEET 1 OF 2
CV-T1547	GRADE SEPARATION - LEWIS ST - IMPACT PLAN - SHEET 2 OF 2
CV-T3541	GRADE SEPARATION - LEWIS ST - CROSS SECTION - SHEET 1 OF 1
UT-Y1546	GRADE SEPARATION - LEWIS ST - UTILITY PLAN - SHEET 1 OF 2
UT-Y1547	GRADE SEPARATION - LEWIS ST - UTILITY PLAN - SHEET 2 OF 2
ST-K1541	GRADE SEPARATION - LEWIS ST - GENERAL PLAN

GRADE SEPARATIONS

DRAWING NO.	DRAWING TITLE
CV-T0551	GRADE SEPARATION - E CERRITOS AVE - ORIENTATION MAP
CV-T1551	GRADE SEPARATION - E CERRITOS AVE - PLAN AND PROFILE - SHEET 1 OF 3
CV-T1552	GRADE SEPARATION - E CERRITOS AVE - PLAN AND PROFILE - SHEET 2 OF 3
CV-T1553	GRADE SEPARATION - E CERRITOS AVE - PLAN AND PROFILE - SHEET 3 OF 3
CV-T1554	GRADE SEPARATION - S VERNON ST - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1556	GRADE SEPARATION - E CERRITOS AVE - IMPACT PLAN - SHEET 1 OF 3
CV-T1557	GRADE SEPARATION - E CERRITOS AVE - IMPACT PLAN - SHEET 2 OF 3
CV-T1558	GRADE SEPARATION - E CERRITOS AVE - IMPACT PLAN - SHEET 3 OF 3
CV-T1559	GRADE SEPARATION - S VERNON ST - IMPACT PLAN - SHEET 1 OF 1
CV-T3551	GRADE SEPARATION - E CERRITOS AVE - CROSS SECTION - SHEET 1 OF 1
UT-Y1556	GRADE SEPARATION - E CERRITOS AVE - UTILITY PLAN - SHEET 1 OF 3
UT-Y1557	GRADE SEPARATION - E CERRITOS AVE - UTILITY PLAN - SHEET 2 OF 3
UT-Y1558	GRADE SEPARATION - E CERRITOS AVE - UTILITY PLAN - SHEET 3 OF 3
UT-Y1559	GRADE SEPARATION - S VERNON ST - UTILITY PLAN - SHEET 1 OF 1
ST-K1551	GRADE SEPARATION - CERRITOS AVE - GENERAL PLAN
CV-T0571	GRADE SEPARATION - KATELLA AVE - ORIENTATION MAP
CV-T1571	GRADE SEPARATION - KATELLA AVE - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1572	GRADE SEPARATION - KATELLA AVE - PLAN AND PROFILE - SHEET 2 OF 2
CV-T1576	GRADE SEPARATION - KATELLA AVE - IMPACT PLAN - SHEET 1 OF 2
CV-T1577	GRADE SEPARATION - KATELLA AVE - IMPACT PLAN - SHEET 2 OF 2
CV-T3571	GRADE SEPARATION - KATELLA AVE - CROSS SECTION - SHEET 1 OF 1
UT-Y1576	GRADE SEPARATION - KATELLA AVE - UTILITY PLAN - SHEET 1 OF 2
UT-Y1577	GRADE SEPARATION - KATELLA AVE - UTILITY PLAN - SHEET 2 OF 2
ST-K1571	GRADE SEPARATION - KATELLA AVE - GENERAL PLAN
ST-K1572	GRADE SEPARATION - KATELLA AVE - STAGE CONSTRUCTION
CV-T0581	GRADE SEPARATION - DOUGLASS RD - ORIENTATION MAP
CV-T1581	GRADE SEPARATION - S DOUGLASS RD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1582	GRADE SEPARATION - S DOUGLASS RD - PLAN AND PROFILE - SHEET 1 OF 2
CV-T1583	GRADE SEPARATION - S DOUGLASS SERVICE RD - PLAN AND PROFILE - SHEET 1 OF 1
CV-T1586	GRADE SEPARATION - S DOUGLASS RD - IMPACT PLAN - SHEET 1 OF 1
CV-T3581	GRADE SEPARATION - S DOUGLASS RD AND SERVICE RD - CROSS SECTION - SHEET 1 OF 1
UT-Y1586	GRADE SEPARATION - S DOUGLASS RD - UTILITY PLAN - SHEET 1 OF 1
ST-K1581	GRADE SEPARATION - SOUTH DOUGLASS ROAD - GENERAL PLAN
ST-K1582	GRADE SEPARATION - SOUTH DOUGLASS ROAD - SB & NB ELEVATION
ST-K3581	GRADE SEPARATION - SOUTH DOUGLASS ROAD - TYPICAL SECTION (SHEET 1 OF 2)
ST-K3582	GRADE SEPARATION - SOUTH DOUGLASS ROAD - TYPICAL SECTION (SHEET 2 OF 2)

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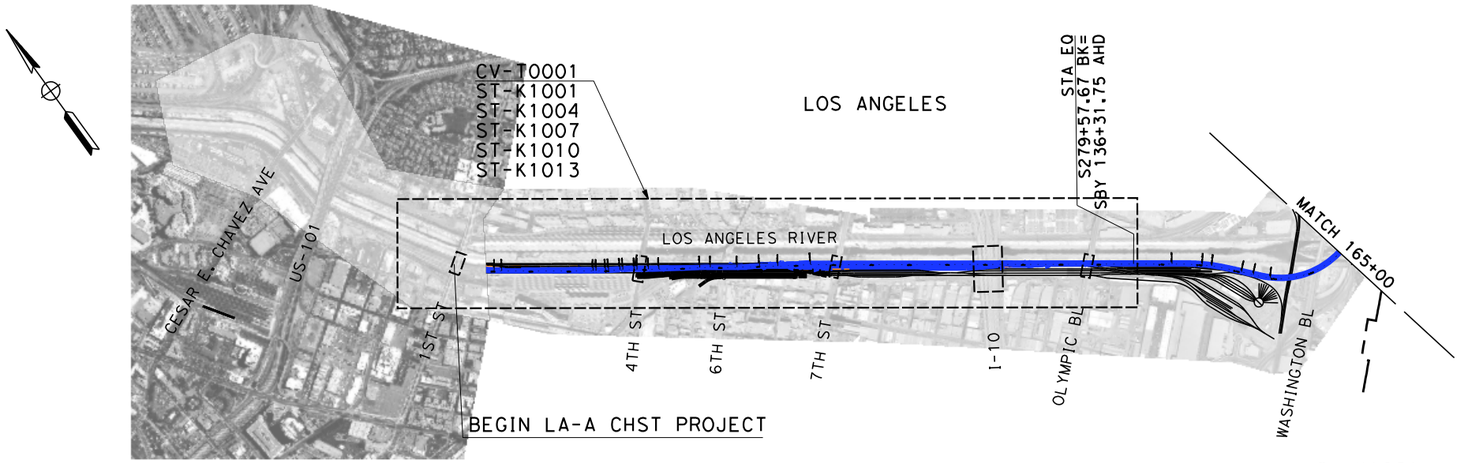
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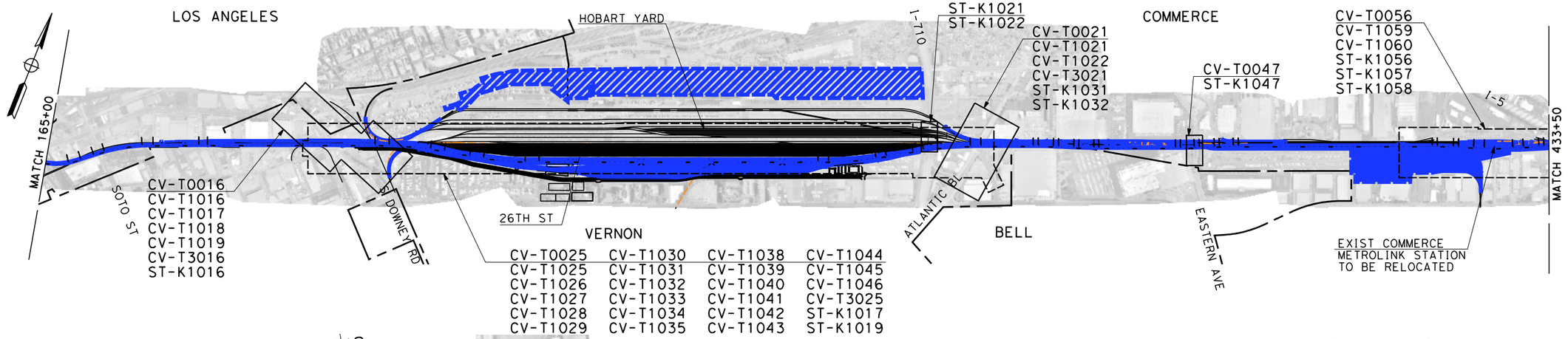
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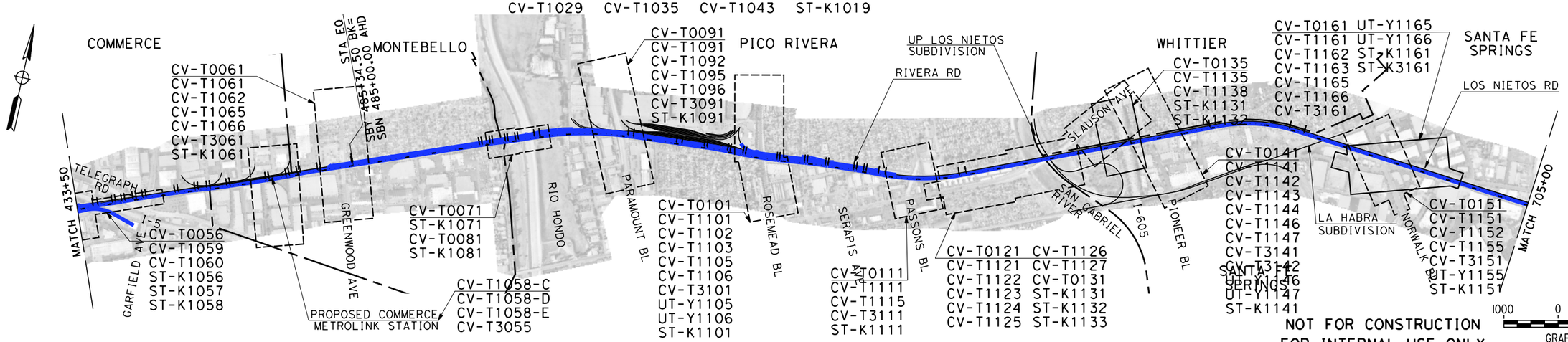
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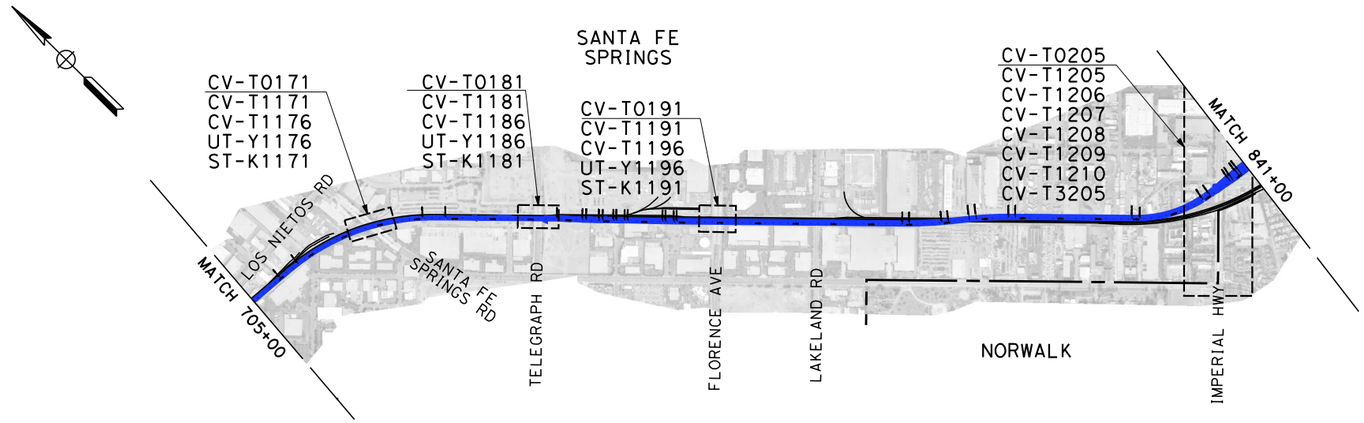
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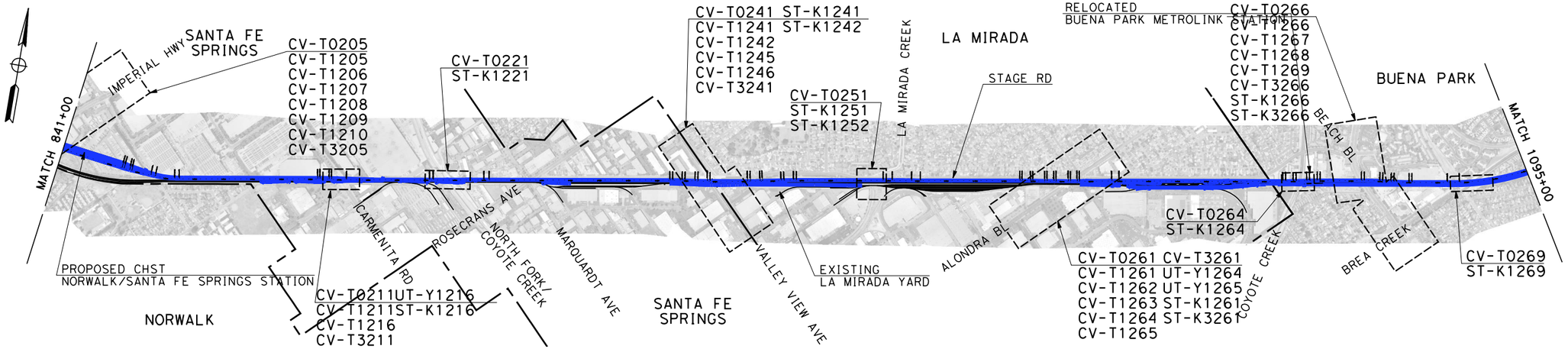
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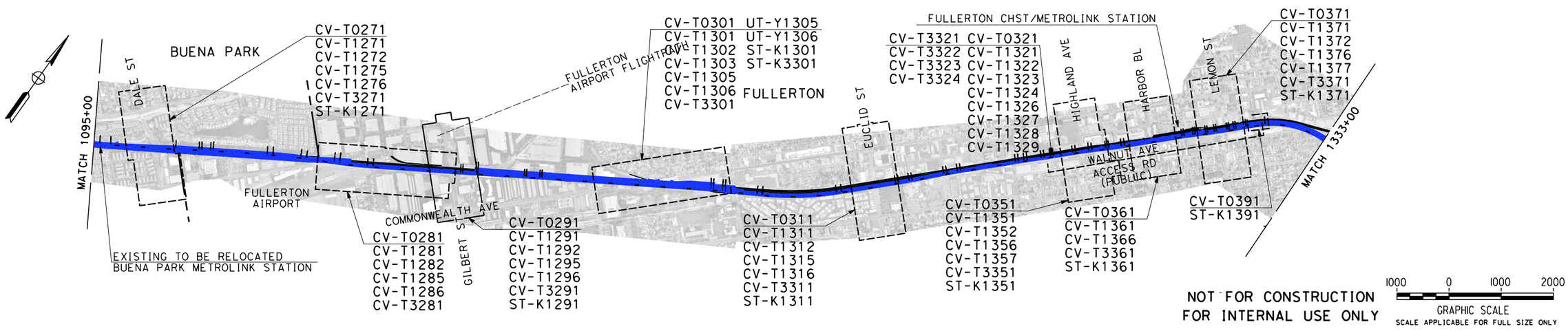
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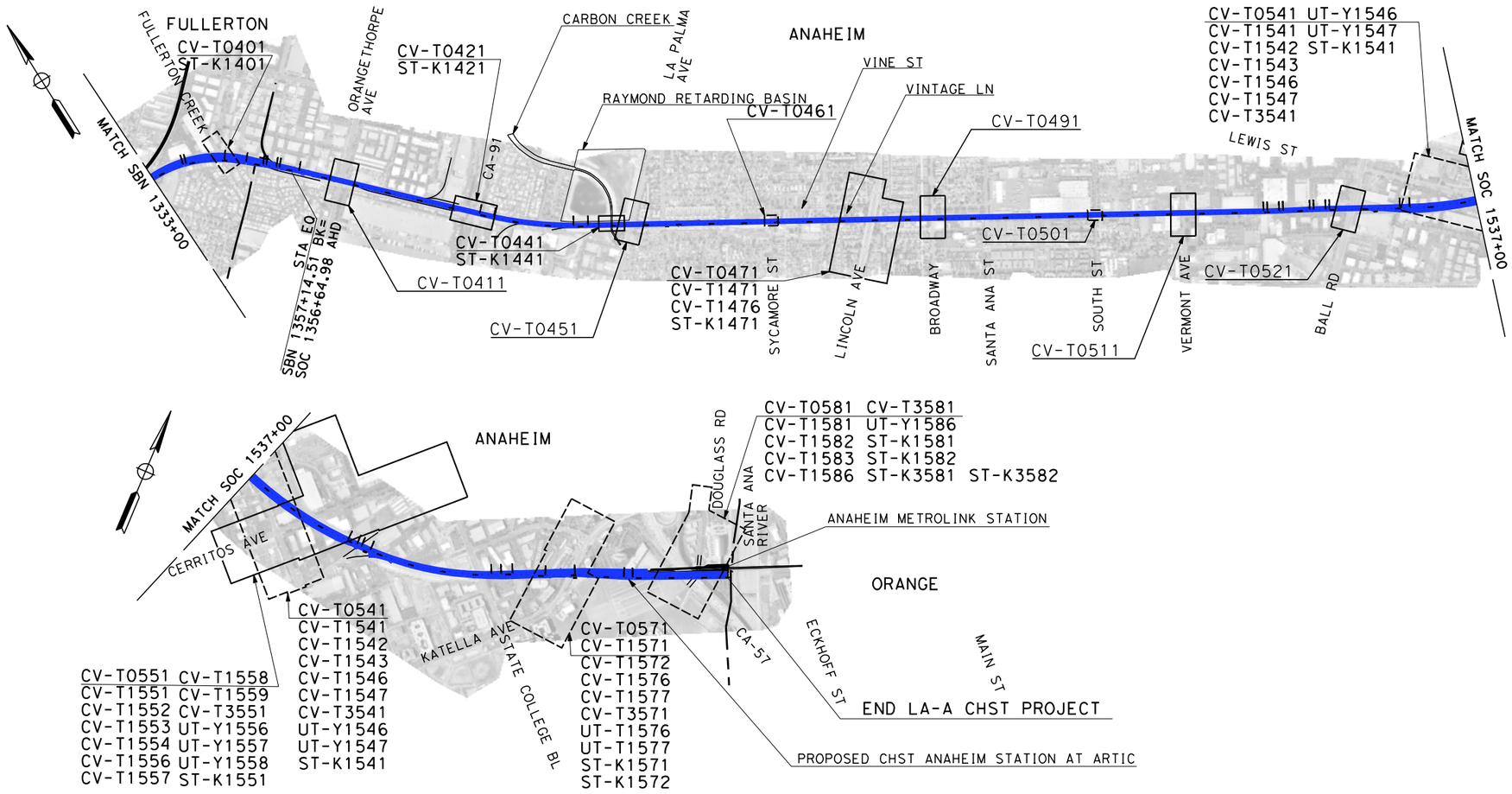
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SHEET NO.

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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.

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

PEPD SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR CONSTRUCTION

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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

CONTRACT NO. HSR06-0005
DRAWING NO. GE-B0301
SCALE NO SCALE
SHEET NO.

$PLOT$

A

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

B

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

B CONTINUED

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

C

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

C CONTINUED

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

D

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

D CONTINUED

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

E

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

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DESIGNED BY M. MAMAWAL
DRAWN BY D. BARRAZA
CHECKED BY J. SWANSON
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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-C0301
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

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

M CONTINUED

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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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 2

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0302
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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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-C0303
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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RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
ACRONYMS AND ABBREVIATIONS 4

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0304
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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REV	DATE	BY	CHK	APP	DESCRIPTION

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

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0305
SCALE NO SCALE
SHEET NO.

$PLOT$

TRACK

- EXISTING FREIGHT/PASSENGER TRACK
- NEW AND/OR EXISTING MAINLINE TRACK (SEE TRACK PLANS FOR DESIGNATIONS) — S590+00
- BALLAST
- BUMPER/BUMPING POST
- CONCRETE
- DERAIL-DENOTES DERAIL DIRECTION AND LOCATION OF SWITCH MACHINE (LEFT-HAND SHOWN)
- DOUBLE CROSSOVER
- EARTH
- FRICTION BUFFER
- INSULATED JOINT
- INSULATED JOINT LOCATIONS-BOTH RAIL
- INSULATED JOINT LOCATIONS-LEFT RAIL
- INSULATED JOINT LOCATIONS-RIGHT RAIL
- POINT OF CURVATURE
- POINT OF SWITCH-DENOTES SWITCH MACHINE LOCATION
- PREPARED SUBGRADE
- RAIL LUBRICATOR-DIRECTION OF TRAVEL, (DT), TWO RAIL LUBRICATORS SHOWN — DT
- 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
- BEGIN OR END PLATFORM — BP OR EP
- BIKE STAND — BS
- BREAK LINE
- BORINGS (EXISTING)
- CENTERLINE — ℄
- CENTERLINE TEXT SYMBOL — ℄
- CLEAN OUT — CO
- COLUMN, BENT
- CONCRETE
- CONCRETE BARRIER
- CONTOUR LINE — 290
- CONTROL PANEL — CTR
- CONTROL POINT OR STREET INTERSECTION POINT — 4-7-1
- COORDINATE GRID CROSSAIR — E174000 N87000
- 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
- ELEVATIONS — OG, FG, (2447.9), 2089.3

CIVIL CONTINUED

- (175.2) ELEVATION (EXISTING)
- ELECTROLIER, ELECTROLIER ON POLE
- EXISTING GUARD RAILING
- EXISTING WALL
- FENCE
- FIRE HYDRANT
- GRADED/LANDSCAPED AREA
- GAS METER — G
- GAS VALVE — G
- 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 — MATCH LINE (DWG NO.)
- NEW ASPHALTIC CONCRETE
- NEW GUARD RAILING
- NEWS STAND — NS
- 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
- SECTION DESIGNATION (LETTER) / DRAWING NO. ON WHICH SECTION AND DETAIL APPEARS — A / DWG NO.
- SECTION OR DETAIL TITLE — SECTION, SCALE 1"=1'-0", A
- SPOT ELEVATION — 290.4
- TILDE (TERMINATOR)
- SIGNALIZED INTERSECTION — S
- STATION EQUATION
- STREET LIGHT
- STREET LIGHT POWER POLE
- STREET LIGHT TRAFFIC SIGNAL
- STREET SIGN
- STRUCTURE CLEARANCE ENVELOPE
- SUPER AXIS OF ROTATION
- TELEPHONE BOOTH — T
- TELEPHONE POLE — PT
- TEMPORARY RAILING (TYPE K)
- TIRE DERIVED AGGREGATE
- TRACK ALIGNMENT CENTER LINE — S590+00
- TRAFFIC PANEL — TRF
- TRAFFIC SIGNAL
- TRANSMISSION TOWER
- TREE
- UTILITY POLE

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DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0311
SCALE NO SCALE
SHEET NO.

$PLOT$

CIVIL CONTINUED

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

RIGHT-OF-WAY

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

AERIAL UTILITIES

- -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

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DRAWN BY D. BARRAZA
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IN CHARGE J. SWANSON
DATE 08/29/25

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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

CONTRACT NO. HSR06-0005
DRAWING NO. GE-C0312
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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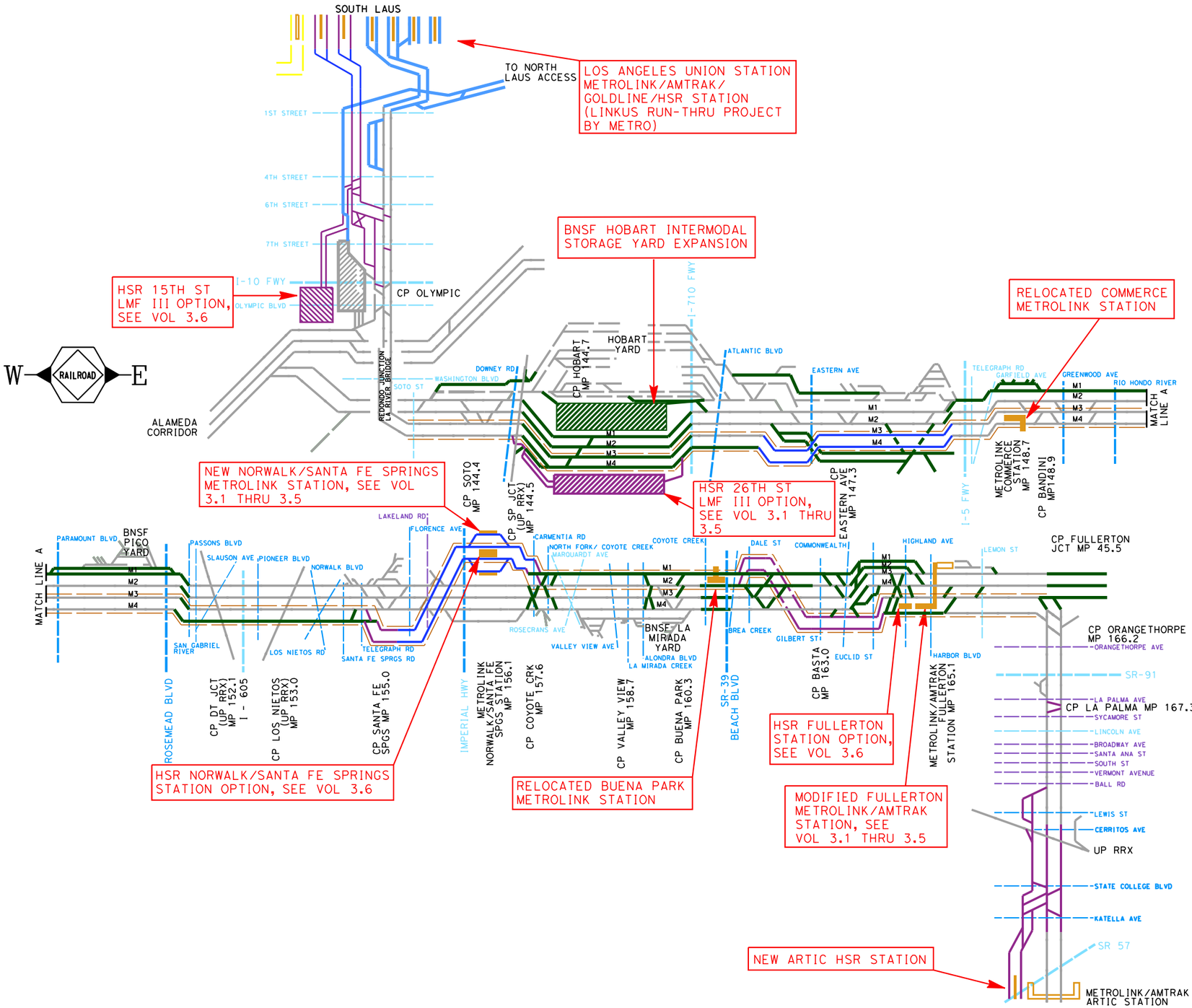
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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-B0311
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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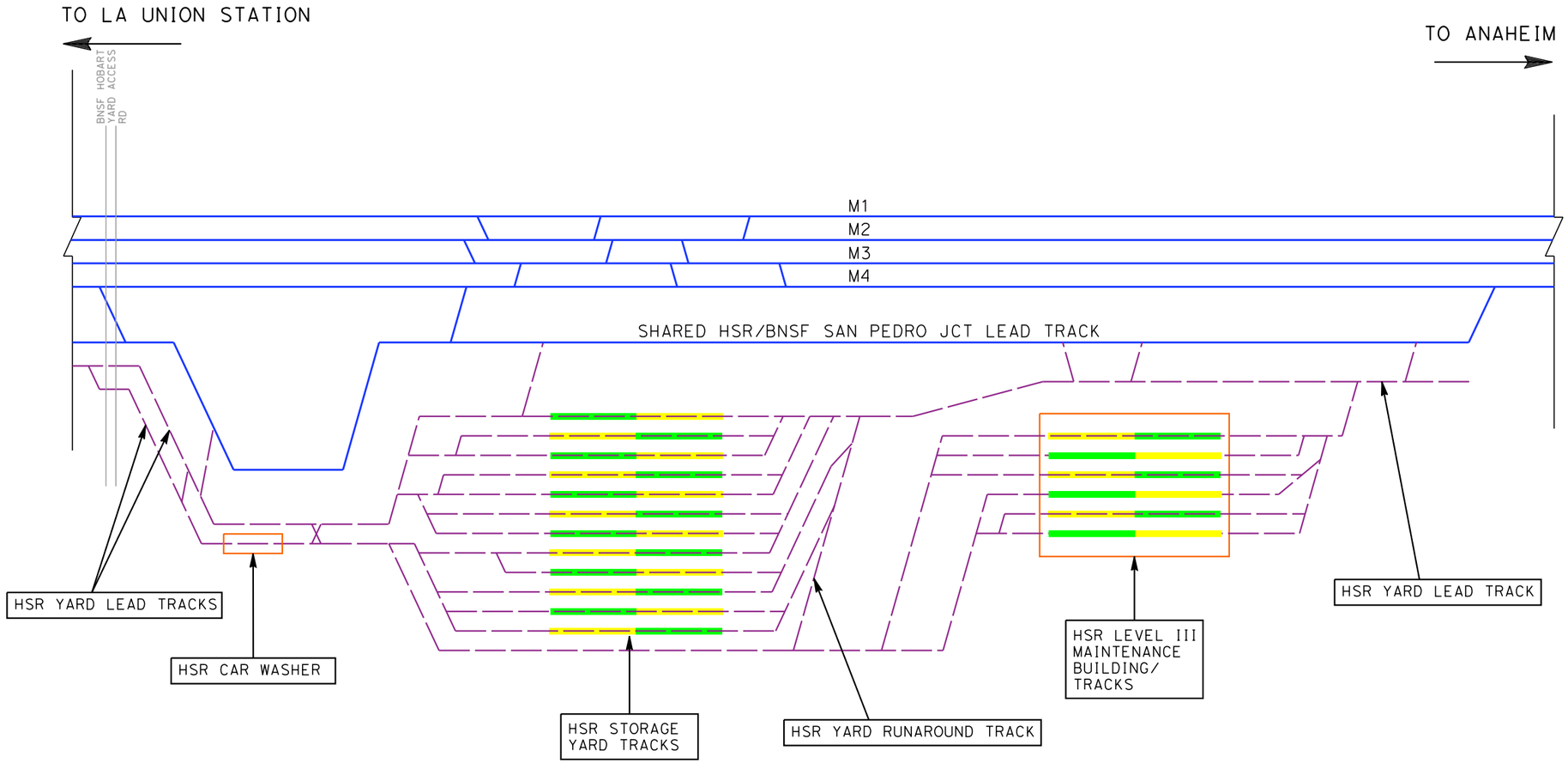
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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-D6301
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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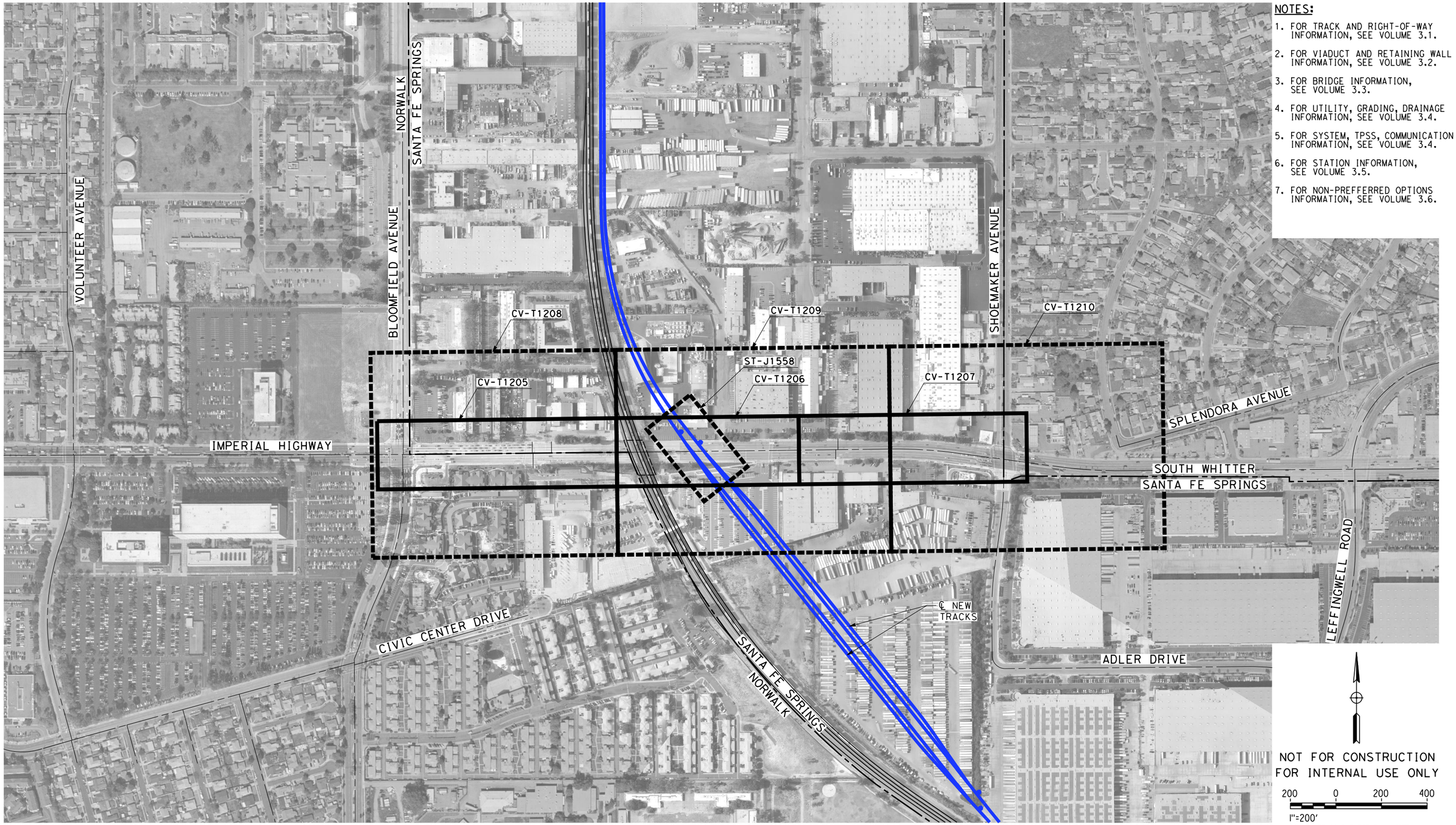
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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-D6302
SCALE NO SCALE
SHEET NO.

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NOTES:

1. FOR TRACK AND RIGHT-OF-WAY INFORMATION, SEE VOLUME 3.1.
2. FOR VIADUCT AND RETAINING WALL INFORMATION, SEE VOLUME 3.2.
3. FOR BRIDGE INFORMATION, SEE VOLUME 3.3.
4. FOR UTILITY, GRADING, DRAINAGE INFORMATION, SEE VOLUME 3.4.
5. FOR SYSTEM, TPSS, COMMUNICATION INFORMATION, SEE VOLUME 3.4.
6. FOR STATION INFORMATION, SEE VOLUME 3.5.
7. FOR NON-PREFFERRED OPTIONS INFORMATION, SEE VOLUME 3.6.

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200 0 200 400
1"=200'
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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CHECKED BY J. SWANSON
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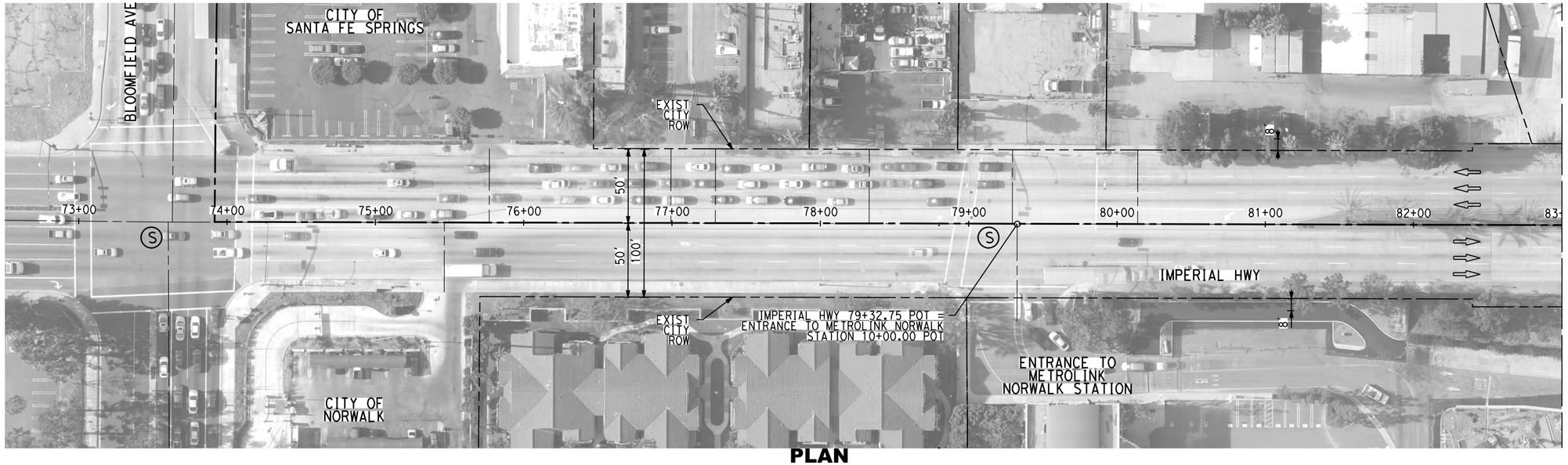
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM

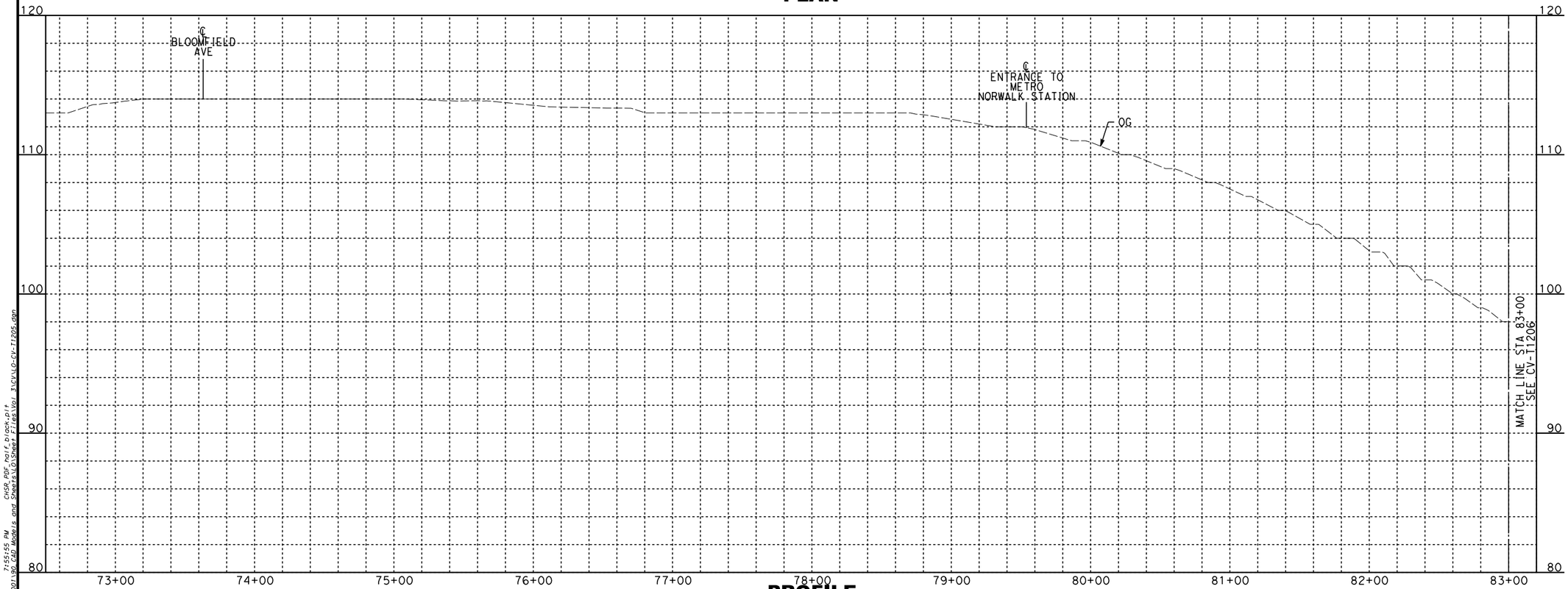
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PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADE SEPARATION - IMPERIAL HIGHWAY
ORIENTATION MAP

CONTRACT NO. HSR06-0005
DRAWING NO. CV-T0205
SCALE 1" = 200'
SHEET NO.

$PLOT$



PLAN



PROFILE

NOTES:

1. FOR TRACK AND RIGHT-OF-WAY INFORMATION, SEE VOLUME 3.1.
2. FOR VIADUCT AND RETAINING WALL INFORMATION, SEE VOLUME 3.2.
3. FOR BRIDGE INFORMATION, SEE VOLUME 3.3.
4. FOR UTILITY, GRADING, DRAINAGE INFORMATION, SEE VOLUME 3.4.
5. FOR SYSTEM, TPSS, COMMUNICATION INFORMATION, SEE VOLUME 3.4.
6. FOR STATION INFORMATION, SEE VOLUME 3.5.
7. FOR NON-PREFFERRED OPTIONS INFORMATION, SEE VOLUME 3.6.

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

40 0 40 80
1"=40' HORIZ
SCALE APPLICABLE FOR FULL SIZE ONLY
4 0 4 8
1"=4' VERT
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

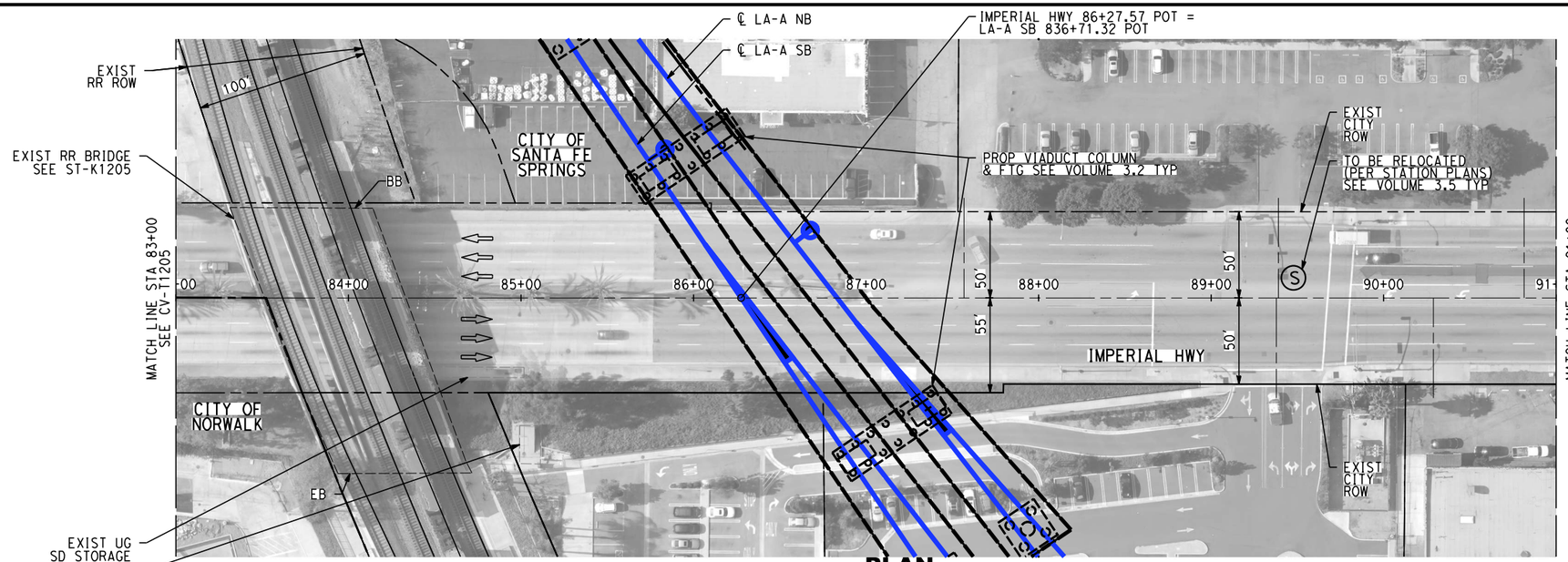
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

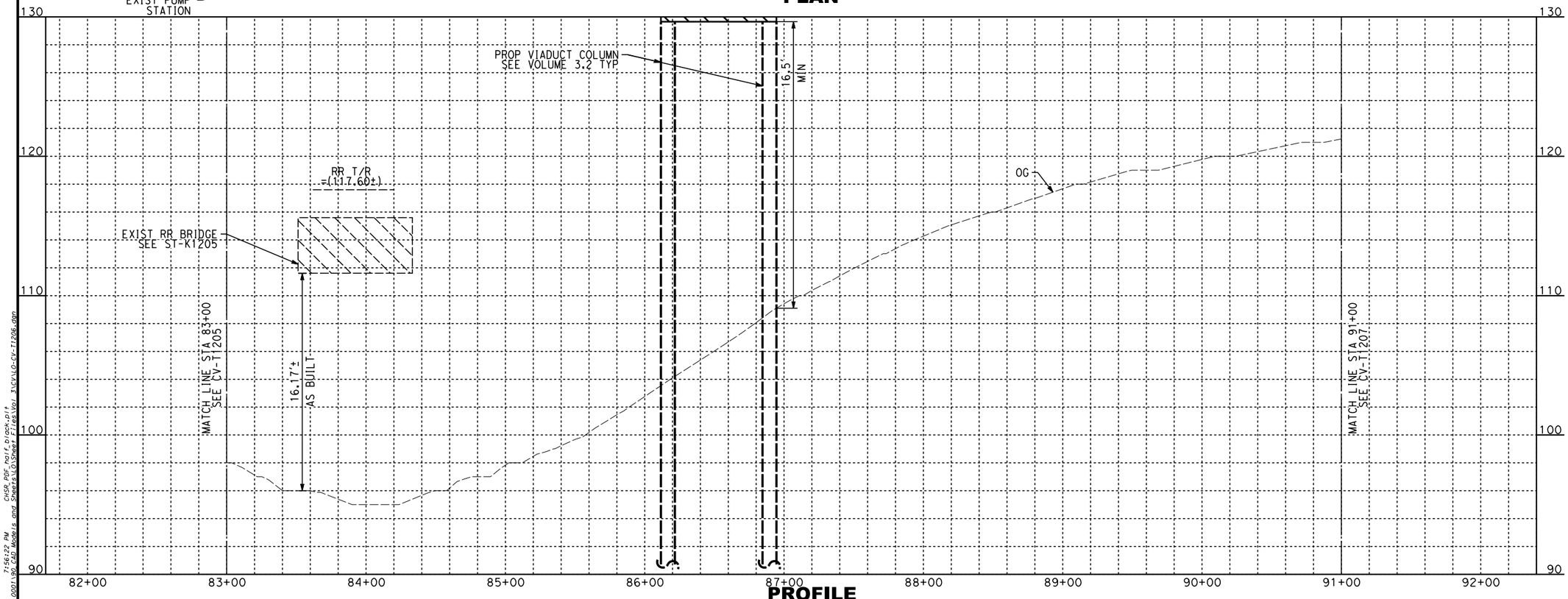
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADE SEPARATION - IMPERIAL HIGHWAY
PLAN AND PROFILE - SHEET 1 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. CV-T1205
SCALE AS SHOWN
SHEET NO.

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PLAN



PROFILE

NOTES:

1. FOR TRACK AND RIGHT-OF-WAY INFORMATION, SEE VOLUME 3.1.
2. FOR VIADUCT AND RETAINING WALL INFORMATION, SEE VOLUME 3.2.
3. FOR BRIDGE INFORMATION, SEE VOLUME 3.3.
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5. FOR SYSTEM, TPSS, COMMUNICATION INFORMATION, SEE VOLUME 3.4.
6. FOR STATION INFORMATION, SEE VOLUME 3.5.
7. FOR NON-PREFFERRED OPTIONS INFORMATION, SEE VOLUME 3.6.
8. FOR AERIAL STRUCTURAL, SEE VOLUME 3.2.

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

40 0 40 80
1"=40' HORIZ
SCALE APPLICABLE FOR FULL SIZE ONLY

4 0 4 8
1"=4' VERT
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

PEPD SUBMITTAL FOR INTERNAL USE ONLY

NOT FOR CONSTRUCTION

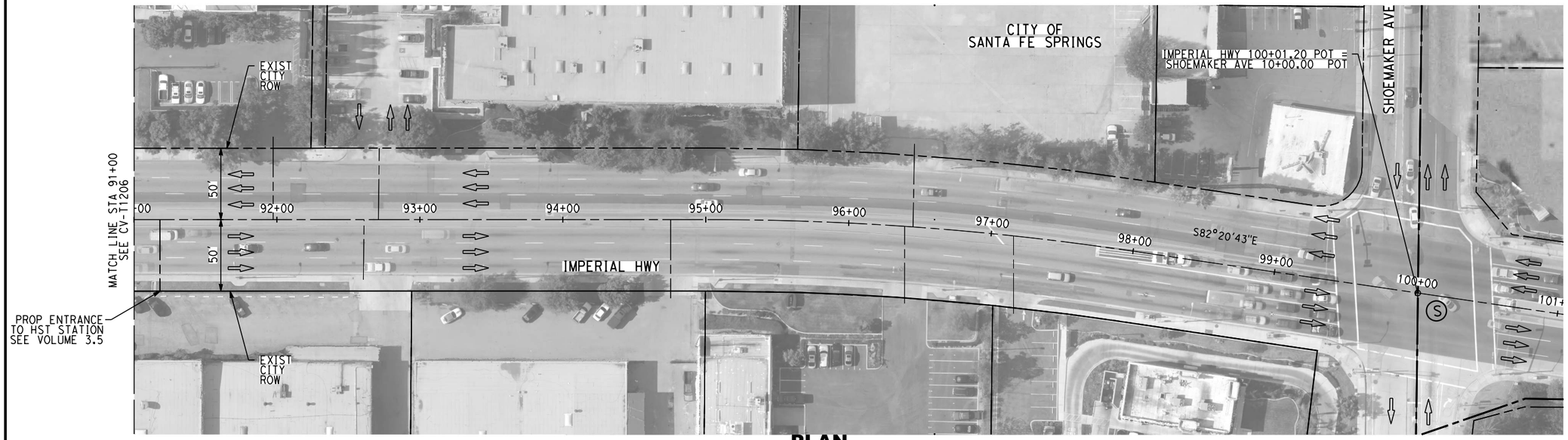
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

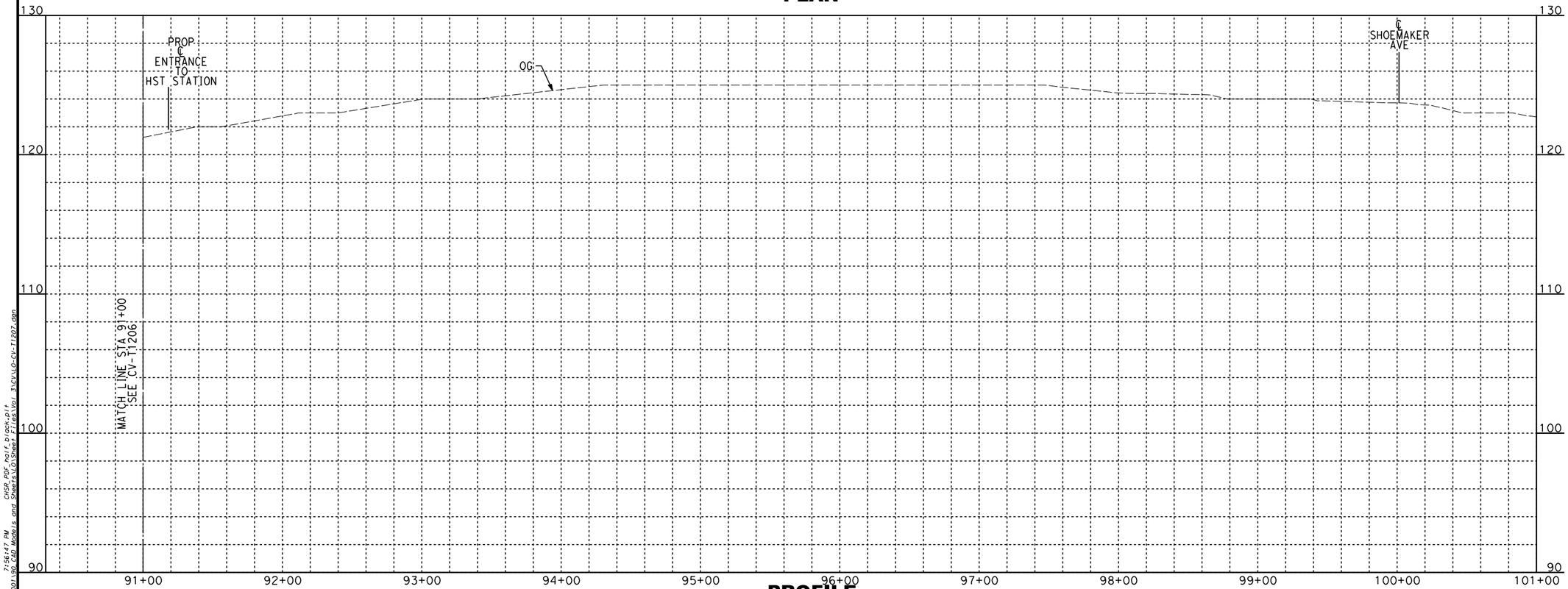
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADE SEPARATION - IMPERIAL HIGHWAY
PLAN AND PROFILE - SHEET 2 OF 3

CONTRACT NO.: HSR06-0005
DRAWING NO.: CV-T1206
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SHEET NO.:

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ChiangM



PLAN



PROFILE

NOTES:

1. FOR TRACK AND RIGHT-OF-WAY INFORMATION, SEE VOLUME 3.1.
2. FOR VIADUCT AND RETAINING WALL INFORMATION, SEE VOLUME 3.2.
3. FOR BRIDGE INFORMATION, SEE VOLUME 3.3.
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NOT FOR CONSTRUCTION
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40 0 40 80
1"=40' HORIZ
SCALE APPLICABLE FOR FULL SIZE ONLY

4 0 4 8
1"=4' VERT
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADE SEPARATION - IMPERIAL HIGHWAY
PLAN AND PROFILE - SHEET 3 OF 3

CONTRACT NO.: HSR06-0005
DRAWING NO.: CV-T1207
SCALE: AS SHOWN
SHEET NO.:

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NOTES:

1. FOR TRACK AND RIGHT-OF-WAY INFORMATION, SEE VOLUME 3.1.
2. FOR VIADUCT AND RETAINING WALL INFORMATION, SEE VOLUME 3.2.
3. FOR BRIDGE INFORMATION, SEE VOLUME 3.3.
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6. FOR STATION INFORMATION, SEE VOLUME 3.5.
7. FOR NON-PREFFERRED OPTIONS INFORMATION, SEE VOLUME 3.6.

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

50 0 50 100

1"=50' HORIZ

SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

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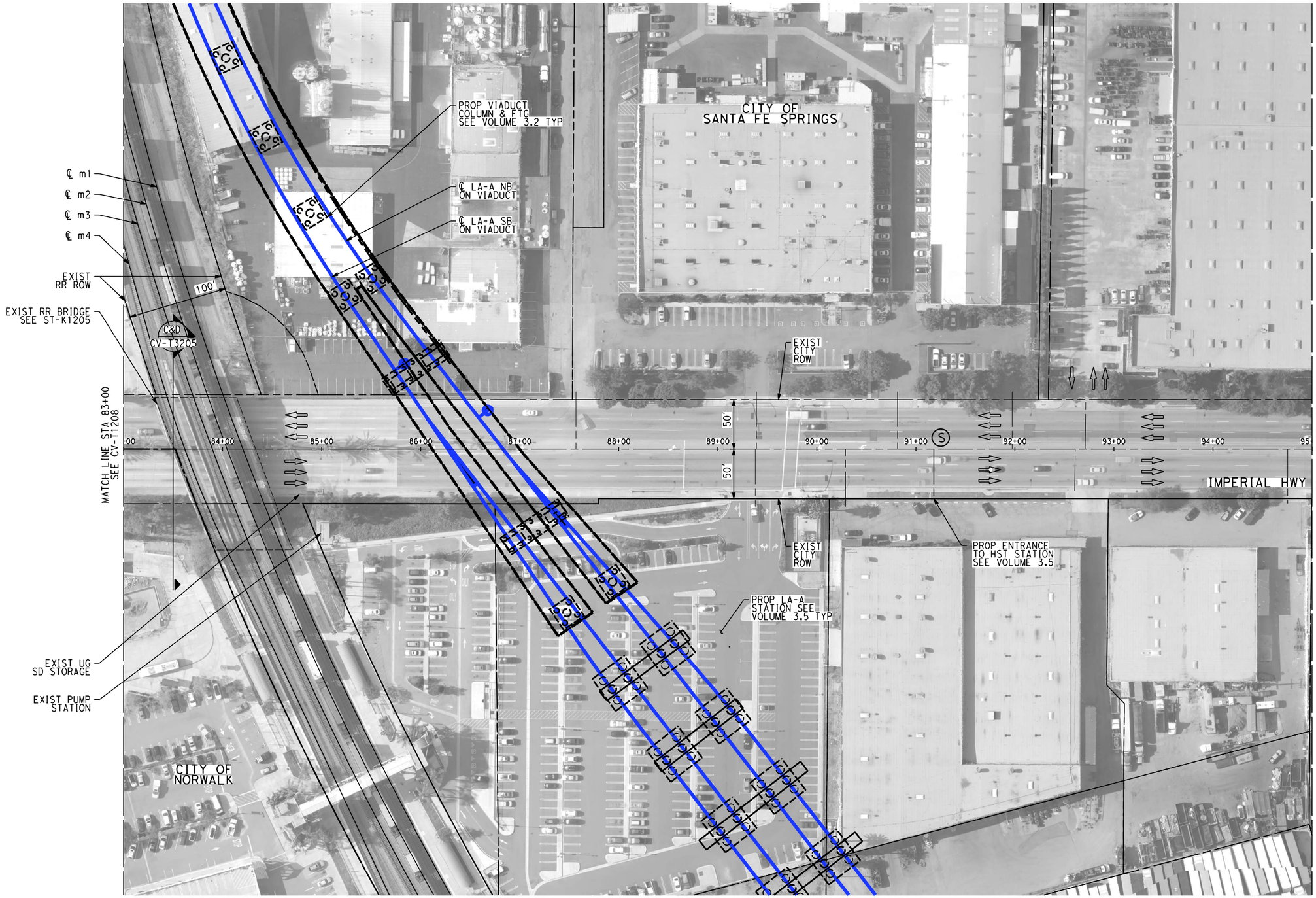
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADE SEPARATION - IMPERIAL HIGHWAY
IMPACT PLAN - SHEET 1 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. CV-T1208
SCALE AS SHOWN
SHEET NO.

ChiangM
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NOTES:

1. FOR TRACK AND RIGHT-OF-WAY INFORMATION, SEE VOLUME 3.1.
2. FOR VIADUCT AND RETAINING WALL INFORMATION, SEE VOLUME 3.2.
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6. FOR STATION INFORMATION, SEE VOLUME 3.5.
7. FOR NON-PREFFERRED OPTIONS INFORMATION, SEE VOLUME 3.6.
8. FOR AERIAL STRUCTURAL, SEE VOLUME 3.2.

NOT FOR CONSTRUCTION
FOR INTERNAL USE ONLY

50 0 50 100

1"=50' HORIZ
SCALE APPLICABLE FOR FULL SIZE ONLY

REV	DATE	BY	CHK	APP	DESCRIPTION

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

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO ANAHEIM
RECORD SET
PRELIMINARY ENGINEERING FOR PROJECT DEFINITION
GRADE SEPARATION - IMPERIAL HIGHWAY
IMPACT PLAN - SHEET 2 OF 3

CONTRACT NO. HSR06-0005
DRAWING NO. CV-T1209
SCALE AS SHOWN
SHEET NO.

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