California High-Speed Rail Authority

RFP No.: HSR 14-32

Request for Proposals for Design-Build Services for Construction Package 4

Reference Material, Part B.1

15% Preliminary Design Plans

Note: Southern limit of CP4 ends just north of Poplar Ave, at approximately station WS1 5880+00, even though this document shows the limit just north of 7th Standard Road. Work south of the contract limit of WS1 5880+00 should not be considered as part of the contract

REVIEW DRAFT
RFP No. HSR 14-32 – Reference Material, Part B.1

CALIFORNIA HIGH-SPEED TRAIN

Alignment Plans

RECORD SET 15% DESIGN SUBMISSION

Fresno to Bakersfield

Plans and Profiles and Cross Sections

May 2014

CALIFORNIA High-Speed Rail Authority

RFP No. HSR 14-32 – REVIEW DRAFT

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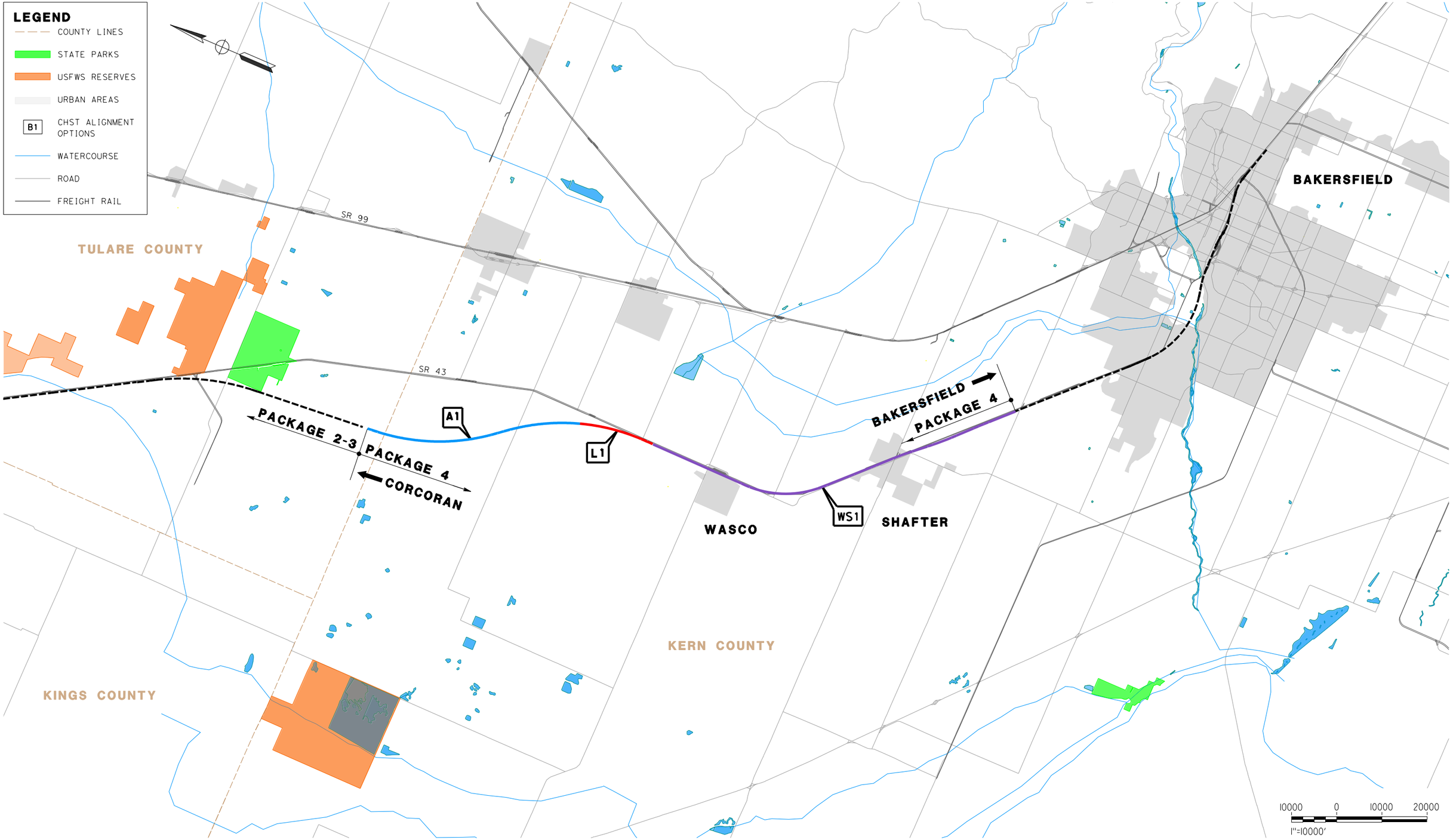
paul.tonkin 8/7/2014 4:15:40 PM CAHSRP-r1.tbl CHSR_PDF_half_color_200dpi.plt

RFP No. HSR 14-32 – REVIEW DRAFT



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY S. BURGES
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
PACKAGE 4
ALIGNMENT
LOCATION MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-B1100
SCALE AS SHOWN
SHEET NO. 1 OF 7

GENERAL SHEETS

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
TT-B1100		PACKAGE 4 - ALIGNMENT - LOCATION MAP	1 OF 7
GE-A0027		ALIGNMENT - INDEX OF SHEETS	2 OF 7
CB0010		GENERAL - ABBREVIATIONS AND LEGENDS - SHEET 1 OF 2	3 OF 7
CB0011		GENERAL - ABBREVIATIONS AND LEGENDS - SHEET 2 OF 2	4 OF 7
CB0013	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY GE-A0033	-
GE-A0033		ALIGNMENT - CURVE DATA - SHEET 2 OF 2	5 OF 7
CB0016		WILDLIFE CROSSINGS - LOCATION MAP	6 OF 7
TP-B0002		TRACTION POWER FACILITY, CROSSOVER & STATION - LOCATION EXHIBIT	7 OF 7

ALIGNMENT A1 - ALLENSWORTH SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CB1400	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1100	-
TT-D1100		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 3919+50 TO 4926+16 - KEY MAP	1 OF 21
~~CB1401~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 3919+50 TO 3976+00 - PLAN AND PROFILE~~	~~2 OF 21~~
~~CB1402~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 3976+00 TO 4032+00 - PLAN AND PROFILE~~	~~3 OF 21~~
~~CB1750~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4032+00 TO 4088+00 - PLAN AND PROFILE~~	~~4 OF 21~~
~~CB1751~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4088+00 TO 4144+00 - PLAN AND PROFILE~~	~~5 OF 21~~
~~CB1752~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4144+00 TO 4200+00 - PLAN AND PROFILE~~	~~6 OF 21~~
~~CB1753~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4200+00 TO 4256+00 - PLAN AND PROFILE~~	~~7 OF 21~~
~~CB1754~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4256+00 TO 4312+00 - PLAN AND PROFILE~~	~~8 OF 21~~
~~CB1755~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4312+00 TO 4368+00 - PLAN AND PROFILE~~	~~9 OF 21~~
~~CB1756~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4368+00 TO 4424+00 - PLAN AND PROFILE~~	~~10 OF 21~~
CB1757	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1101	-
TT-D1101		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4424+00 TO 4480+00 - PLAN AND PROFILE	11 OF 21
CB1758		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4480+00 TO 4536+00 - PLAN AND PROFILE	12 OF 21
CB1759		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4536+00 TO 4592+00 - PLAN AND PROFILE	13 OF 21
CB1760		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4592+00 TO 4648+00 - PLAN AND PROFILE	14 OF 21
CB1761	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1102	-
TT-D1102		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4648+00 TO 4704+00 - PLAN AND PROFILE	15 OF 21
CB1762		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4707+00 TO 4760+00 - PLAN AND PROFILE	16 OF 21
CB1763		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4760+00 TO 4816+00 - PLAN AND PROFILE	17 OF 21
CB1764		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4816+00 TO 4872+00 - PLAN AND PROFILE	18 OF 21
CB1765		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - STA. 4872+00 TO 4926+16 - PLAN AND PROFILE	19 OF 21
CB3401		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - CROSS SECTIONS	20 OF 21
CB3402	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D3101	-
TT-D3101		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - CROSS SECTIONS	21 OF 21

ALIGNMENT L1 - POSO CREEK SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CB1525		POSO CREEK SUBSECTION - ALIGNMENT L1 - STA. 5154+50 TO 5322+33 - KEY MAP	1 OF 6
CB1526		POSO CREEK SUBSECTION - ALIGNMENT L1 - STA. 5154+50 TO 5210+50 - PLAN AND PROFILE	2 OF 6
CB1527		POSO CREEK SUBSECTION - ALIGNMENT L1 - STA. 5210+50 TO 5266+50 - PLAN AND PROFILE	3 OF 6
CB1528		POSO CREEK SUBSECTION - ALIGNMENT L1 - STA. 5266+50 TO 5322+33 - PLAN AND PROFILE	4 OF 6
CB3526		POSO CREEK SUBSECTION - ALIGNMENT L1 - CROSS SECTIONS	5 OF 6
CB3527		POSO CREEK SUBSECTION - ALIGNMENT L1 - CROSS SECTIONS	6 OF 6

ALIGNMENT WS1 - THROUGH WASCO-SHAFTER SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CB1448	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1150	-
TT-D1150		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5422+50 TO 6511+99 - KEY MAP	1 OF 35
CB1449		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5422+50 TO 5478+50 - PLAN AND PROFILE	2 OF 35
CB1450		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5478+50 TO 5334+50 - PLAN AND PROFILE	3 OF 35
CB1451		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5334+50 TO 5562+50 - PLAN AND PROFILE	4 OF 35
CB1452		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5562+50 TO 5590+50 - PLAN AND PROFILE	5 OF 35
CB1453		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5559+50 TO 5618+50 - PLAN AND PROFILE	6 OF 35
CB1454		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5618+50 TO 5646+50 - PLAN AND PROFILE	7 OF 35
CB1455		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5646+50 TO 5702+50 - PLAN AND PROFILE	8 OF 35
CB1456		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5702+50 TO 5758+50 - PLAN AND PROFILE	9 OF 35
CB1457		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5758+50 TO 5814+50 - PLAN AND PROFILE	10 OF 35
CB1458		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA 5814+50 TO 5870+50 - PLAN AND PROFILE	11 OF 35
CB1459		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5870+50 TO 5926+50 - PLAN AND PROFILE	12 OF 35
CB1460		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5926+50 TO 5954+50 - PLAN AND PROFILE	13 OF 35
CB1461		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5954+50 TO 5982+50 - PLAN AND PROFILE	14 OF 35
CB1462		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 5982+50 TO 6010+50 - PLAN AND PROFILE	15 OF 35
CB1463		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6010+50 TO 6038+50 - PLAN AND PROFILE	16 OF 35
CB1464		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6038+50 TO 6094+50 - PLAN AND PROFILE	17 OF 35
CB1465	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1151	-
TT-D1151		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6094+50 TO 6150+50 - PLAN AND PROFILE	18 OF 35
CB1466	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1152	-
TT-D1152		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6150+50 TO 6206+50 - PLAN AND PROFILE	19 OF 35
CB1467	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1153	-
TT-D1153		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6260+50 TO 6262+50 - PLAN AND PROFILE	20 OF 35
CB1468	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D1154	-
TT-D1154		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6262+50 TO 6318+50 - PLAN AND PROFILE	21 OF 35
~~CB1469~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6318+50 TO 6374+50 - PLAN AND PROFILE~~	~~22 OF 35~~
~~CB1470~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6374+50 TO 6430+50 - PLAN AND PROFILE~~	~~23 OF 35~~
~~CB1471~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6430+50 TO 6486+50 - PLAN AND PROFILE~~	~~24 OF 35~~
~~CB1472~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STA. 6486+50 TO 6511+99 - PLAN AND PROFILE~~	~~25 OF 35~~
CB3446		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	26 OF 35
CB3447		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	27 OF 35
CB3448		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	28 OF 35
CB3449		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	29 OF 35
CB3450		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	30 OF 35
CB3451		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	31 OF 35
CB3452		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	32 OF 35
CB3453	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY TT-D3151	-
TT-D3151		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	33 OF 35
CB3454		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	34 OF 35
CB3455		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - CROSS SECTIONS	35 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY P. TONKIN
DRAWN BY P. TONKIN
CHECKED BY K.SEYMOUR
IN CHARGE S. BURGES
DATE 09/24/14

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NOT FOR CONSTRUCTION

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CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALIGNMENT
INDEX OF SHEETS

CONTRACT NO. HSR 06-0003
DRAWING NO. GE-A0027
SCALE NO SCALE
SHEET NO. 2 OF 7

A

AB	AGGREGATE BASE
ABBC	ASBESTOS BONDED BITUMINOUS COATED
ABM	AIR-BLOWN MORTAR
ABN	ABANDON
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
ACB	ASPHALT CONCRETE BASE
ACP	ASBESTOS CEMENT PIPE
ADL	ADDED DEAD LOAD
ADJ	ADJUST
AFES	ALTERNATIVE FLARED END SECTION
AHD	AHEAD
ALT	ALTERNATE
AM	TIME FROM MIDNIGHT TO NOON
AP	ALTERNATIVE PIPE
APC	ALTERNATIVE PIPE CULVERT
APPROX	APPROXIMATE
APU	ALTERNATIVE PIPE UNDERDRAIN
ARS	ACCELERATION RESPONSE SPECTRUM
AR	ACCESS RESTRICTION
AS	AGGREGATE SUBBASE
ASRP	ALUMINUM SPIRAL RIB PIPE
ASSY	ASSEMBLY
ATPB	ASPHALT TREATED PERMEABLE BASE
ATPM	ASPHALT TREATED PERMEABLE MATERIAL
AVE	AVENUE
AVG	AVERAGE
@	AT

B

BAGR	BRIDGE APPROACH GUARD RAILING
BB	BEGINNING OF BRIDGE
BC	BEGIN HORIZONTAL CURVE
BCC	BALANCED CANTILEVER CONSTRUCTION
BCR	BEGIN CURB RETURN
BEG	BEGIN
BIT CTD	BITUMINOUS COATED
BK	BACK
BKF	BACKFILL
BLDG	BUILDING
BLM	BRIDGE-LOG MILE
BLVD	BOULEVARD
BM	BENCH MARK
BND	BOUND
BNSF	BURLINGTON NORTH & SANTA FE
BOT	BOTTOM
BR	BRIDGE
BRG	BEARING
BTU	BRITISH THERMAL UNIT
BVC	BEGIN VERTICAL CURVE
BW	BARBED WIRE

C

CAA	CABLE ANCHOR ASSEMBLY
CAP	CORRUGATED ALUMINUM PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CAS	CONSTRUCTION AREA SIGN
CB	CONCRETE BARRIER
CBW	CONCRETE BLOCK WALL
C-C	CENTER TO CENTER

C CONTINUED

CHSRA	CALIFORNIA HIGH SPEED RAIL AUTHORITY
CHST	CALIFORNIA HIGH SPEED TRAIN
CHSR	CALIFORNIA HIGH SPEED RAIL
CG	CENTER OF GRAVITY
CHNL	CHANNEL
CI	CAST IRON
CIDH	CAST-IN-DRILLED-HOLE
CIP,C-I-P	CAST-IN-PLACE, CAST IRON PIPE
CIPCP	CAST IN PLACE CONCRETE PIPE
CISS	CAST-IN-STEEL-SHELL
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE, CLASS
CL2	CLASS 2
CL-6	CHAIN LINK FENCE (6 FT)
CLR	CLEAR, CLEARANCE
CM	CORRUGATED METAL
CMP	CORRUGATED METAL PIPE
CO	COUNTY
COL	COLUMN
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTOR
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CP	CLEARANCE POINT
CR	CREEK
CRCP	CONTINUOUS REINFORCED CONCRETE PAVEMENT
CRSP	CONCRETED ROCK SLOPE PROTECTION
CS	CURVE TO SPIRAL
CSP	CORRUGATED STEEL PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CTB	CEMENT TREATED BASE
CTPB	CEMENT TREATED PERMEABLE BASE
CTPM	CEMENT TREATED PERMEABLE MATERIAL
CTRS	CENTERS
CVFPB	CENTRAL VALLEY FLOOD PROTECTION BOARD
CULV	CULVERT
℄	CENTERLINE

D

D	DEPTH
DD	DOWNDRAIN, DIRECTIVE DRILLING
DBL	DOUBLE
DEG	DEGREE
DEL	DELINEATOR
DET	DETAIL, DETOUR
DF	DOUGLAS FIR
DI	DRAINAGE INLET, DROP INLET
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIST	DISTANCE, DISTRICT
DMBB	DOUBLE METAL BEAM BARRIER
DR	DRIVE
DTBB	DOUBLE THRIE BEAM BARRIER
DWY	DRIVEWAY

E

E	EAST, EASTING
EA	ACTUAL SUPERELEVATION
EU	UNBALANCED SUPERELEVATION

E CONTINUED

EASE	EASEMENT
EB	END OF BRIDGE, EASTBOUND
EC	END HORIZONTAL CURVE
ECR	END CURB RETURN
ED	EDGE DRAIN
EDC	EDGE DRAIN CLEANOUT
EDO	EDGE DRAIN OUTLET
EDV	EDGE DRAIN VENT
ELEC	ELECTROLIER
ELECT	ELECTRIC
ELEV	ELEVATION
EMB	EMBANKMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EP	EDGE OF PAVEMENT
EQ	EQUATION, EQUAL
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICAL CURVE
EW	ENDWALL
EXC	EXCAVATION
EXIST, EX.	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXWY	EXPRESSWAY
EXT	EXTERIOR

F

F & C	FRAME AND COVER
F & G	FRAME AND GRATE
FB	FLOOR BEAM
F-B	FRESNO TO BAKERSFIELD
FDN	FOUNDATION
FEBT	FACING EASTBOUND TRAFFIC
FES	FLARED END SECTION
FF	FILTER FABRIC
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FL	FLOW LINE
FNBT	FACING NORTHBOUND TRAFFIC
FOC	FACE OF CONCRETE
FR RD	FRONTAGE ROAD
FS	FAR SIDE, FINISHED SURFACE
FSBT	FACING SOUTHBOUND TRAFFIC
FT	FOOT, FEET
FTG	FOOTING
FWBT	FACING WESTBOUND TRAFFIC
FWY	FREEWAY
FPLM	FULL SPAN PRECAST LAUNCHING METHOD

G

G	ACCELERATION DUE TO GRAVITY
GA	GAGE
GALV	GALVANIZED
GP	GRADING PLANE
GR	GUARD RAILING
GSP	GALVANIZED STEEL PIPE
GTR	GUTTER

H

H	HEIGHT
HR	HOUR
HD	HORIZONTAL DRAIN
HDWL	HEADWALL
HEX HD	HEXAGONAL HEAD
HMA	HOT MIXED ASPHALT
HORIZ	HORIZONTAL
HP	HINGE POINT, HORSEPOWER
HPS	HIGH PERFORMANCE STEEL
HS	HIGH STRENGTH
HST	HIGH SPEED TRAIN
HSR	HIGH SPEED RAIL
HW	HEADWALL, HIGH WATER
HWM	HIGH WATER MARK
HWY	HIGHWAY

I

IB	IMPORTED BORROW
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH, INCHES
INT	INTERIOR
INV	INVERT
IRR	IRRIGATION

J

JCT	JUNCTION
JP	JOINT POLE
JPCP	JOINTED PLAIN CONCRETE PAVEMENT
JS	JUNCTION STRUCTURE
JT	JOINT

K

K	DISTANCE TO ACHIEVE 1% GRADE CHANGE

L

L	LENGTH
LAT	LATITUDE
LCB	LEAN CONCRETE BASE
LN	LANE
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDE
LONGIT	LONGITUDINAL
LS	LENGTH OF SPIRAL
LC	LENGTH OF CURVE
LT	LEFT

M

MAINT	MAINTENANCE
MAX	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
MED	MEDIAN
M-F	MERCED TO FRESNO
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MISC I & S	MISCELLANEOUS IRON AND STEEL
MKR	MARKER
M/L	MAIN LINE (RAILWAY)

M CONTINUED

MOD	MODIFIED, MODIFY
MON	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MPH	MILES PER HOUR
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EARTH
MTL	MATERIAL
MSS	MOVING SCAFFOLDING SYSTEM

N

N	NORTH, NORTHING
NB	NORTHBOUND
NO.	NUMBER (MUST HAVE PERIOD)
NOS.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NTS	NOT TO SCALE
N/A	NOT APPLICABLE

O

OBLR	OBLITERATE
OC	OVERCROSSING
OCS	OVERHEAD CONTACT SYSTEM
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OH	OVERHEAD
O-O	OUT TO OUT
OPP	OPPOSITE

P

P	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PED	PEDESTRIAN
PED OC	PEDESTRIAN OVERCROSSING
PED UC	PEDESTRIAN UNDERCROSSING
PERM MTL	PERMEABLE MATERIAL
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
℄,PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POB	POINT OF BEGINNING
POC	POINT OF HORIZONTAL CURVE
POE	POINT OF ENDING
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE

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DATE 12/31/13

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GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 1 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0010
SCALE NO SCALE
SHEET NO. 3 OF 7

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P CONTINUED

PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED, PARALLEL STATION
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVP	MAINTENANCE VEHICLE PULLOUT

Q

QTY	QUANTITY

R

R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD
REINF	REINFORCED, REINFORCEMENT, REINFORCING
REL	RELOCATE
REPL	REPLACEMENT
RET	RETAINING
REV	REVISED
RDWY	ROADWAY
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RTE	ROUTE
RW	REDWOOD, RETAINING WALL
R/W, ROW	RIGHT OF WAY
RWY	RAILWAY

S

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
SALV	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SPIRAL TO CURVE
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SEP	SEPARATION
SG	SUBGRADE
SHLD	SHOULDER
SHT	SHEET
SIM	SIMILAR
S	STATION LINE
SM	SELECTED MATERIAL
SPEC	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE, SPIRAL TO SPIRAL

S CONTINUED

SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
SR	STATE ROUTE
ST	STREET, SPIRAL TO TANGENT
STA	STATION
STBB	SINGLE THRIE BEAM BARRIER
STD	STANDARD
STR	STRUCTURE
SRS	STAND ALONE RADIO SITE
SURF	SURFACING
SW	SIDEWALK, SOUND WALL
SWR	SEWER
SWS	SWITCHING STATION
SYM	SYMMETRICAL
S4S	SURFACE 4 SIDES
SJVR	SAN JOAQUIN VALLEY RAILROAD

T

T	SEMI-TANGENT
TAB	TABLET
TAN	TANGENT
TBB	THRIE BEAM BARRIER
TBR	TIMBER
TC	TOP OF CURB, TANGENT TO CURVE
TCB	TRAFFIC CONTROL BOX
TEL	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GRADE
TOT	TOTAL
TM	TECHNICAL MEMORANDUM
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
TPSS	TRACTION POWER SUPPLY STATION
TRANS	TRANSITION, TRANSVERSE
TS	TRAFFIC SIGNAL, TUBULAR STEEL, TANGET TO SPIRAL
TYP	TYPICAL
TOR	TOP OF RAIL

U

UC	UNDERCROSSING
UD	UNDERDRAIN
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
UPRR	UNION PACIFIC RAILROAD
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

V

V	VALVE, DESIGN SPEED
VAR	VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIA	VIADUCT
VOL	VOLUME

W

W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
WT	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE
W/	WITH

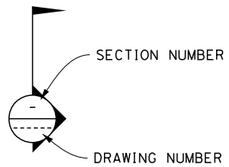
X

X SEC	CROSS SECTION
XING	CROSSING

Y

YR	YEAR
YRS	YEARS

LEGEND



-E- PROPOSED ELECTRICITY LINE

-e- EXISTING ELECTRICITY LINE

-e-(oh)- EXISTING OVERHEAD ELECTRICITY LINE

-E-(OH)- PROPOSED OVERHEAD ELECTRICTY LINE

PROPOSED HST RIGHT OF WAY

PROPOSED HST TRACK CENTERLINE

RETAINING WALL

TOE OF SLOPE / TOP OF CUT

CONTROL LINE EXAMPLE "A" LINE

255+00 260+00 265+00

OR TRACK (PLAN AND ELEVATION)

REL TRACK TO BE REMOVED AND RELOCATED PER BNSF

REMOVE BASE & SURFACING

SOUND BARRIER (POTENTIAL)

DIRECTION OF FLOW

WATER SURFACE

GENERAL NOTES

1. TRACK PROFILE IS DESIGNED AS TOP OF THE LOW RAIL. VERTICAL CLEARANCE REQUIREMENTS ARE MEASURED FROM THE TOP OF THE HIGH RAIL ON SUPERELEVATED TRACK. THE CLEARANCE ENVELOPES SHOWN DEMONSTRATE THE MINIMUM CLEARANCE REQUIREMENTS.

2. MINIMUM VERTICAL CLEARANCE REQUIREMENTS TO CANALS AND DITCHES ARE NOT KNOWN. FURTHER CONSULTATION WITH THE WATERCOURSE OWNERS WILL BE REQUIRED TO DETERMINE NECESSARY CLEARANCES.

3. THE FOLLOWING ARE ROADWAY DESIGN STANDARDS AND GUIDELINES:
   A. CALTRANS HIGHWAY DESIGN MANUAL (2012)
   B. AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (2011)
   C. AASHTO ROADSIDE DESIGN GUIDE (2011)
   D. APPLICABLE LOCAL DESIGN STANDARD AND GUIDELINES (I.E., CITY OF FRESNO)

4. THE FEMA FLOODPLAIN BOUNDARIES ARE CALLED OUT AS "LIMIT OF 100YR FEMA FLOODPLAIN". THE LIMITS OF THE MODELED 100 YEAR WATER SURFACE ELEVATIONS (WSE) ARE APPROXIMATE AND ARE MARKED WITH THE NAME OF THE WATERBODY ASSOCIATED WITH THE MODELED FLOODING, E.G. "LIMIT OF POSO CREEK FLOODPLAIN".

5. THE STRUCTURE DESIGN ASSUMES THAT THE DEPTH FROM TOR TO TOP OF DECK IS 2'-6" THROUGHOUT. HOWEVER, WHERE BALLASTED TRACK FORM IS USED, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-9" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE, AND PROTECTION LAYER IF REQUIRED. FOR SLAB TRACKFORM, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-6" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE AND PROTECTION LAYER IF REQUIRED.

6. WHERE THE VERTICAL ALIGNMENT GRADE IS LESS THAN 0.5% THE UPPER SURFACE OF THE VIADUCT STRUCTURE SHALL BE PROFILED TO GIVE A MINIMUM LONGITUDINAL FALL OF 0.5%. TYPICALLY FOR A SPAN OF 120'-00" ON A 0% GRADE SECTION OF VIADUCT THIS COULD BE ACHIEVED BY MODIFYING THE CROSS SLOPE OF THE GIRDER LINEARLY BETWEEN 0.8% AT MID-SPAN TO 2% AT EACH END.

7. WHEN LATERAL SEPARATION BETWEEN THE CONVENTIONAL RAILROAD AND HST SYSTEM IS LESS THAN 102', A SITE SPECIFIC HAZARD ANALYSIS WILL BE CONDUCTED TO DETERMINE WHAT SPECIFIC COLLISION PROTECTION MEASURES MAY NEED TO BE IMPLEMENTED.

8. RIP-RAP PROTECTION IS REQUIRED FOR EMBANKMENTS WITHIN FEMA SPECIAL FLOOD HAZARD ZONES, IN ACCORDANCE WITH DESIGN CRITERIA.

9. HST ALIGNMENT CONTROL LINE IS DESIGNED AS THE CENTERLINE BETWEEN THE TWO MAINLINE TRACKS.

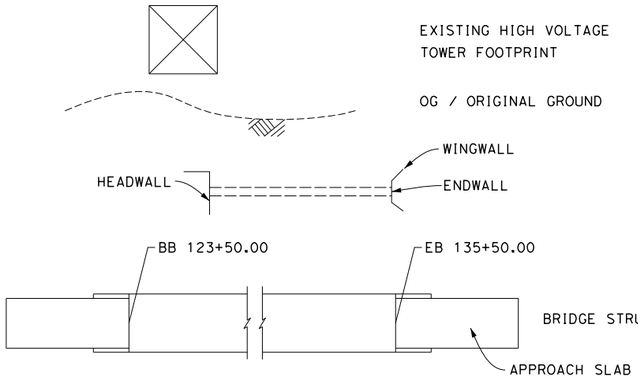
10. TRACK FORM USED IN TYPICAL SECTIONS IS INDICATIVE.

DIRECTION OF TRAFFIC

POINT OF MINIMUM VERTICAL CLEARANCE
ROAD CLOSURE (ROADWAYS)

[1] LINE DATA

(1) (3) CURVE DATA (ALIGNMENTS)
CURVE DATA (STRUCTURES)



RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY D. HUNT
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 2 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0011
SCALE NO SCALE
SHEET NO. 4 OF 7

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ALIGNMENT P

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~13~~	~~250~~	~~2000000~~	~~0.00~~	~~0.13~~	~~0~~	~~1999~~

ALIGNMENT A1

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~14~~	~~250~~	~~50500~~	~~3.50~~	~~1.45~~	~~1400~~	~~21393~~
15	250	45000	3.75	1.81	1500	25440.83
16	250	45000	3.75	1.81	1500	29556/22710

ALIGNMENT A2

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~70~~	~~250~~	~~45000~~	~~3.75~~	~~1.81~~	~~1500~~	~~10257.35~~
~~71~~	~~250~~	~~45000~~	~~3.75~~	~~1.81~~	~~1500~~	~~11168.36~~

ALIGNMENT L1

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
16	250	45000	3.75	1.81	1500	29556

ALIGNMENT L2

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~16~~	~~250~~	~~45000~~	~~3.75~~	~~1.81~~	~~1500~~	~~22710~~
~~92~~	~~250~~	~~45000~~	~~3.75~~	~~1.81~~	~~1500~~	~~15609~~

ALIGNMENT L4

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~111~~	~~250~~	~~45000~~	~~3.75~~	~~1.81~~	~~1500~~	~~22536~~

ALIGNMENT WS1

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
17	220	22008.25	6.50	2.30	2100	15380
18	250	640000	0.00	0.39	1200	4007
19	250	50000	2.75	2.25	1200	2221
20	250	68000	2.50	1.18	1200	4447
21	250	105000	1.25	1.13	1200	1216

ALIGNMENT WS2

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~80~~	~~250~~	~~60000~~	~~3.00~~	~~1.17~~	~~1200~~	~~14392~~

ALIGNMENT B1

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~22~~	~~250~~	~~60000~~	~~2.75~~	~~1.42~~	~~1200~~	~~1200~~
~~23~~	~~220~~	~~19500.25~~	~~7.00~~	~~2.92~~	~~1714~~	~~17153~~
~~24~~	~~220~~	~~19500.25~~	~~7.00~~	~~2.92~~	~~1714~~	~~2676~~
~~25~~	~~220~~	~~30000.25~~	~~3.50~~	~~2.95~~	~~956~~	~~1291~~
~~26~~	~~220~~	~~20000.34~~	~~7.00~~	~~2.60~~	~~1720~~	~~5348~~

ALIGNMENT B2

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~100~~	~~250~~	~~60000~~	~~2.75~~	~~1.42~~	~~1200~~	~~1200~~
~~101~~	~~220~~	~~19500.25~~	~~7.00~~	~~2.92~~	~~1700~~	~~17086.93~~
~~102~~	~~220~~	~~19600~~	~~7.00~~	~~2.84~~	~~1692.55~~	~~2375~~
~~103~~	~~220~~	~~23500~~	~~5.50~~	~~2.74~~	~~1331.22~~	~~1432.02~~
~~104~~	~~220~~	~~33000~~	~~3.50~~	~~2.37~~	~~1050~~	~~2770.34~~
~~105~~	~~220~~	~~20000~~	~~7.00~~	~~2.60~~	~~1720.24~~	~~4097.46~~

ALIGNMENT B3

CURVE No.	DESIGN SPEED (MPH)	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~120~~	~~250~~	~~60000~~	~~2.75~~	~~1.42~~	~~1200~~	~~1200~~
~~121~~	~~220~~	~~19500.25~~	~~7.00~~	~~2.92~~	~~1700~~	~~17087~~
~~122~~	~~220~~	~~19600~~	~~7.00~~	~~2.84~~	~~1700~~	~~2375~~
~~123~~	~~130~~	~~10100.25~~	~~3.75~~	~~2.94~~	~~640~~	~~1245~~
~~124~~	~~125~~	~~8100.25~~	~~4.75~~	~~2.96~~	~~700~~	~~1096~~
~~125~~	~~145~~	~~9500~~	~~6.00~~	~~2.85~~	~~1300~~	~~2842~~

STANDARD STATION TRACK RETURN CURVE

DESIGN SPEED (MPH)	TOTAL LENGTH ALONG MAIN TRACK	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~110~~	~~1364.60~~	~~13500~~	~~1.25~~	~~2.34~~	~~160~~	~~320.21~~

B3 STATION TRACKS RETURN CURVE

DESIGN SPEED (MPH)	TOTAL LENGTH ALONG MAIN TRACK	RADIUS (R) (FT)	ACTUAL SUPERELEVATION EA (IN)	UNBALANCED SUPERELEVATION EU (IN)	SPIRAL LENGTH LS (FT)	CURVE LENGTH LC (FT)
~~80~~	~~991.80~~	~~7000~~	~~1.25~~	~~2.41~~	~~120~~	~~222.24~~

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY P. TONKIN
DRAWN BY P. TONKIN
CHECKED BY K. SEYMOUR
IN CHARGE R. COFFIN
DATE 09/24/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALIGNMENT
CURVE DATA
SHEET 1 OF 1

CONTRACT NO. HSR 06-0003
DRAWING NO. GE-A0033
SCALE NO SCALE
SHEET NO. 5 OF 7

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LEGEND

- COUNTY LINES
- B1 — CHST ALIGNMENT OPTIONS
- WILDLIFE CROSSING AREAS
- URBAN AREAS
- WATERCOURSE
- ROAD
- FREIGHT RAIL

TULARE COUNTY
FRESNO COUNTY
KERN COUNTY
KINGS COUNTY
VISALIA
TULARE
HANFORD
CORCORAN
BAKERSFIELD
SHAFTER
WASCO
FRESNO
SR 180
SR 99
SR 198
SR 41
SR 43
SR 58
Kaweah River
Kings River
Tule River
Poso Creek
Kern River
Canal

AREA FOR PROVISION OF WILDLIFE CROSSINGS

KINGS RIVER WILDLIFE CROSSING AREAS

B1, B2, B3, WS1, WS2, A1, A2, C1, C2, C3, P, L1,L2,L3,L4, H, HW, HW2, K1/K5, K2/K6, K3, K4, M, F1

NOTES:

1. WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN COLE SLOUGH AND KING'S RIVER (H), KINGS RIVER (HW), AND BETWEEN CROSS CREEK (C1/C2) AND TAUSSIG AVENUE (L1-L4).
2. A DESCRIPTION OF THE DIMENSIONS, LOCATION AND FREQUENCY OF THE WILDLIFE CROSSINGS IS PROVIDED IN THE HYDROLOGY, HYDRAULICS, AND DRAINAGE REPORT.

4000 0 4000 8000
1"=4000'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY D. HUNT
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
WILDLIFE CROSSINGS
LOCATION MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0016
SCALE AS SHOWN
SHEET NO. 6 OF 7

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LEGEND:

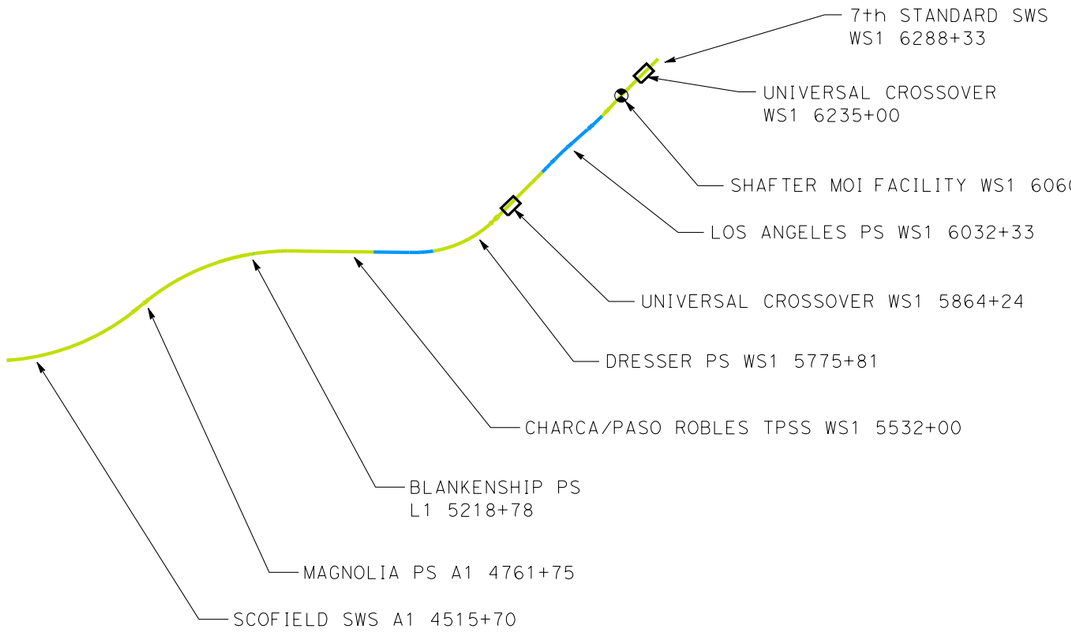
- AT-GRADE ALIGNMENT
- ELEVATED/AERIAL ALIGNMENT
- BELOW-GRADE/TRENCH ALIGNMENT
- PROPOSED CROSSOVER LOCATION
- MOI LOCATION
- HST STATION
- TPSS TRACTION POWER SUBSTATION
- PS PARALLELING STATION
- SWS SWITCHING STATION

20000 0 20000 40000

1"=20000'

NOTES:

1. RETAINED EARTHWORK STRUCTURES HAVE BEEN CONSIDERED AS AT-GRADE ALIGNMENT FOR THE PURPOSES OF THIS DRAWING.
2. TRACTION POWER FACILITY STATIONING TAKEN AS THE MIDPOINT BETWEEN THE TWO LOCATION OPTIONS PRESENTED IN THE 15% ALIGNMENT PLAN AND PROFILE DRAWINGS.



RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY J. SCHNURBUSCH
DRAWN BY J. SCHNURBUSCH
CHECKED BY A. THIBODEAU
IN CHARGE S. BURGES
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
TRACTION POWER FACILITY, CROSSOVER & STATION LOCATION EXHIBIT

CONTRACT NO. HSR 06-0003
DRAWING NO. TP-B0002
SCALE AS SHOWN
SHEET NO. 7 OF 7

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LEGEND

EXISTING FREIGHT RAILROAD

PROPOSED CHST

3000 0 3000 6000

1"=3000'

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 3919+50 TO 4925+51
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1100
SCALE AS SHOWN
SHEET NO. 1 OF 21

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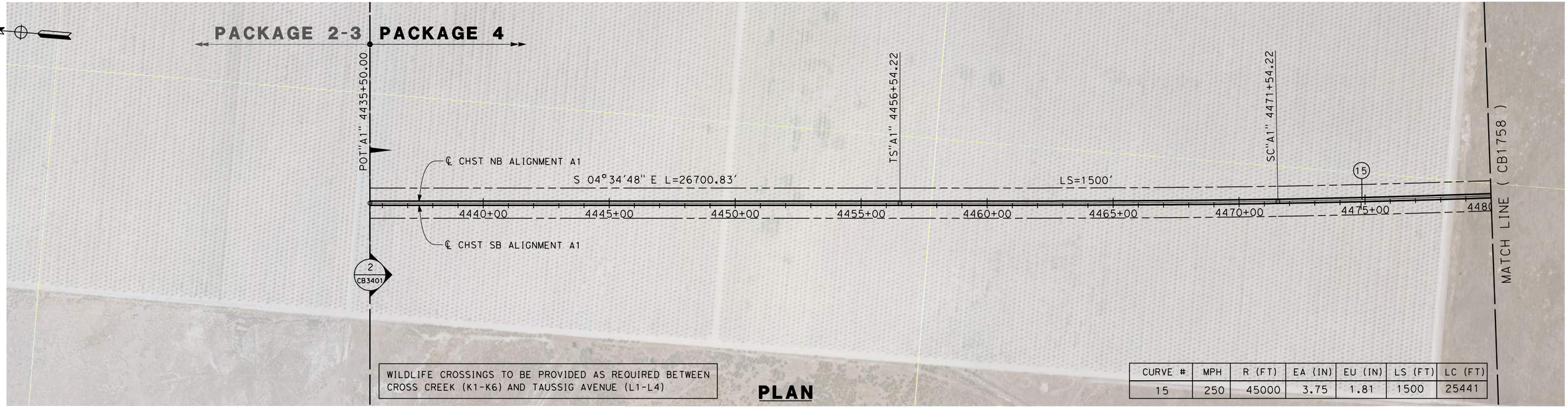
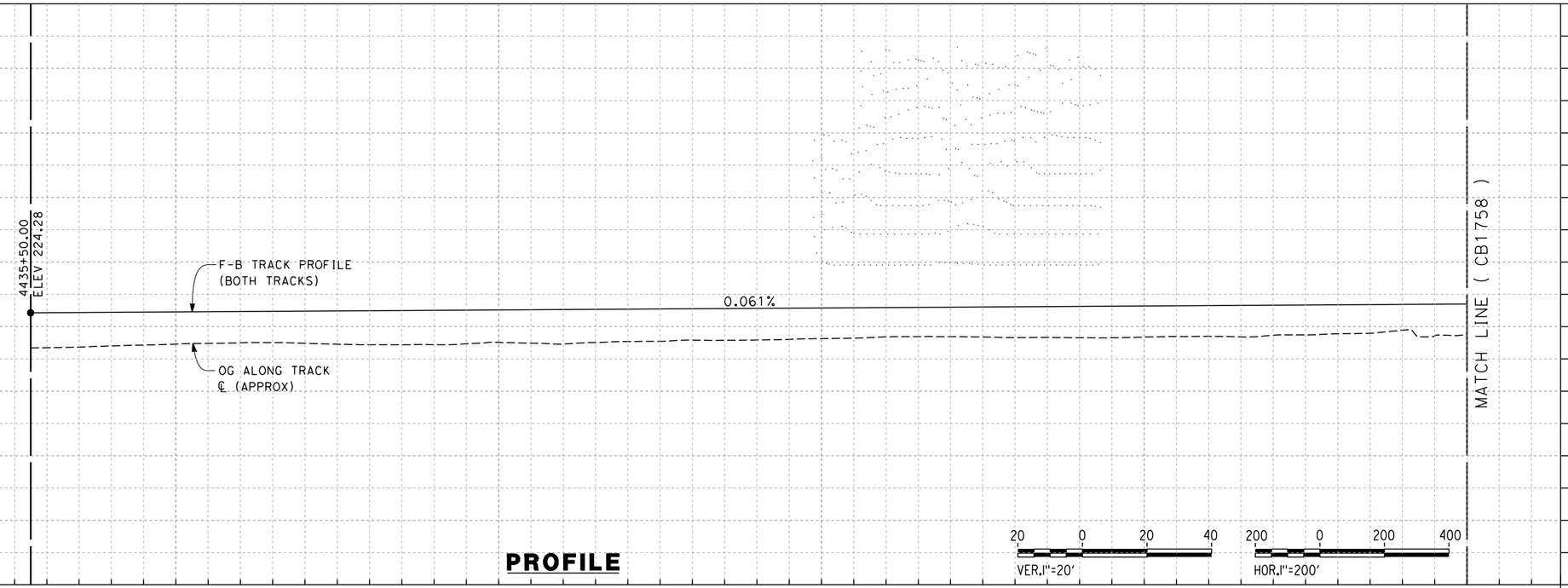


WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN CROSS CREEK (K1-K6) AND TAUSSIG AVENUE (L1-L4)

PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
15	250	45000	3.75	1.81	1500	25441



PROFILE

STATION		4440+00	4450+00	4460+00	4470+00	4480+00	TOTAL
CY	Exc						
	Emb						

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4424+00 TO 4480+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1101
SCALE AS SHOWN
SHEET NO. 11 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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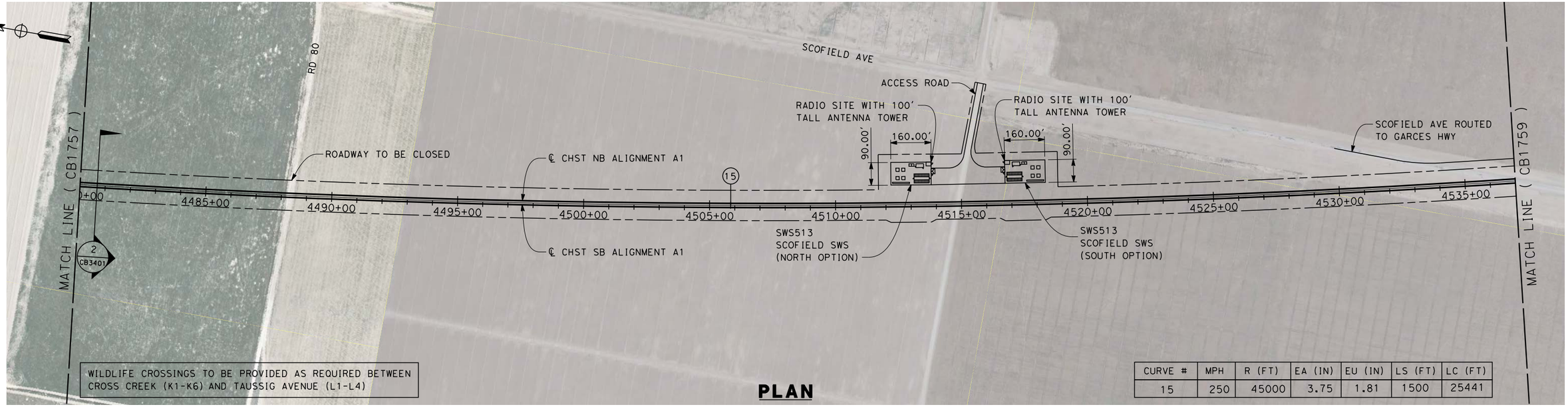
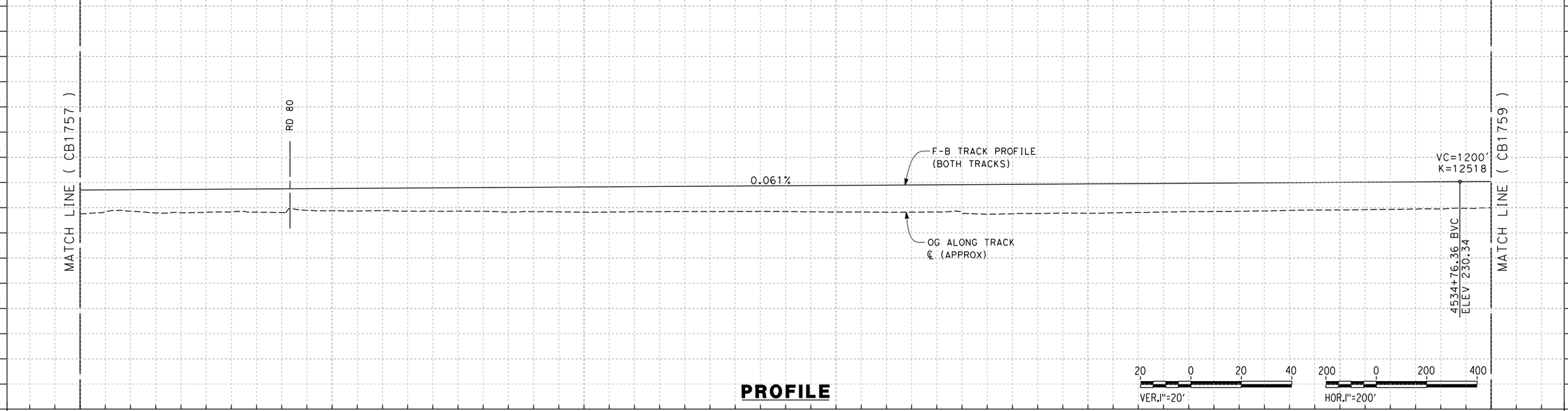


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
15	250	45000	3.75	1.81	1500	25441



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

IRS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4480+00 TO 4536+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1758
SCALE AS SHOWN
SHEET NO. 12 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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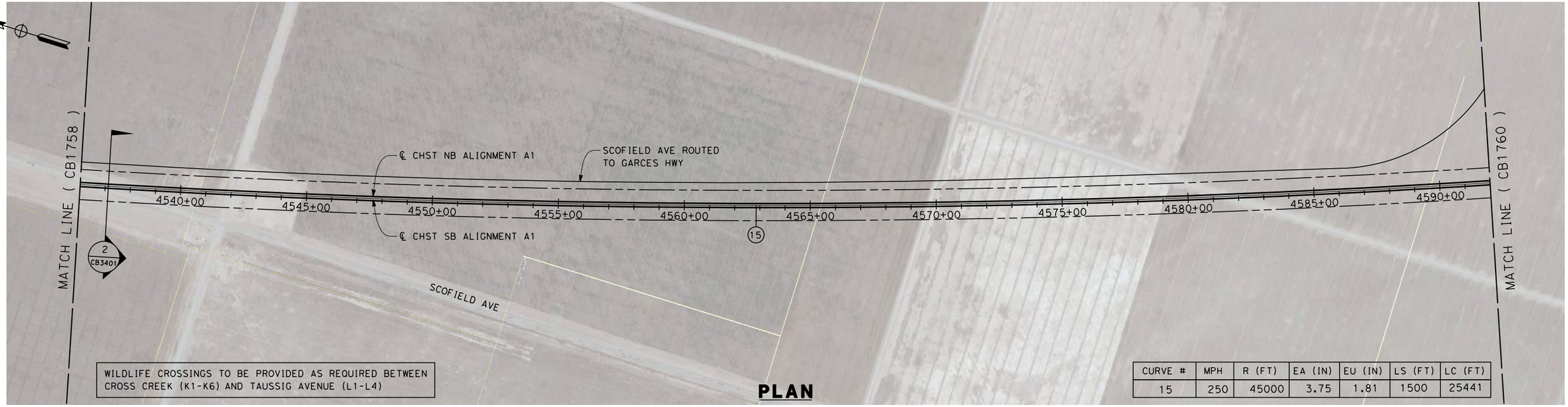
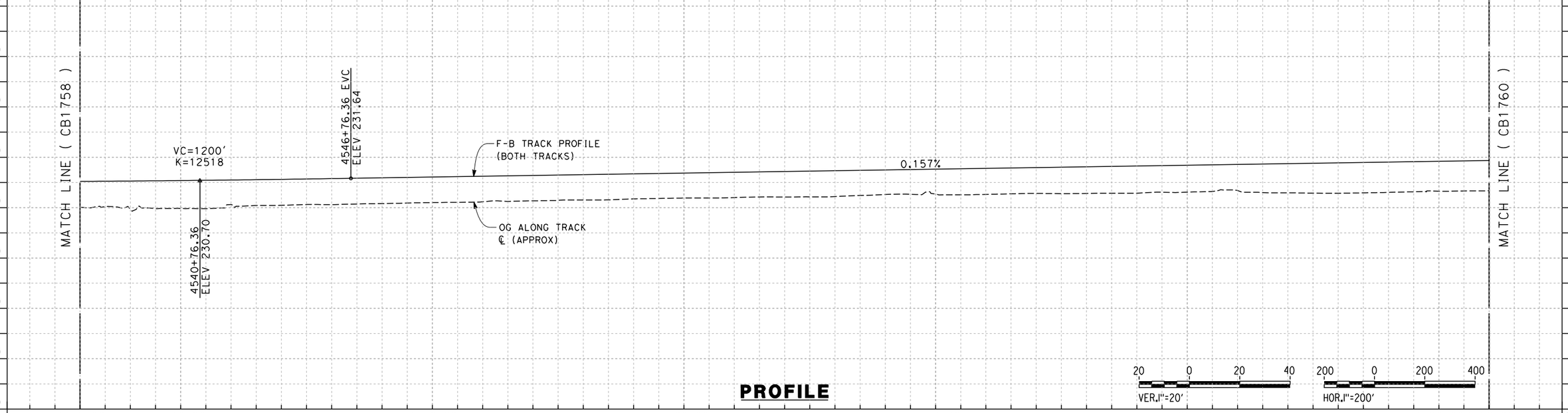


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
15	250	45000	3.75	1.81	1500	25441



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4536+00 TO 4592+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1759
SCALE AS SHOWN
SHEET NO. 13 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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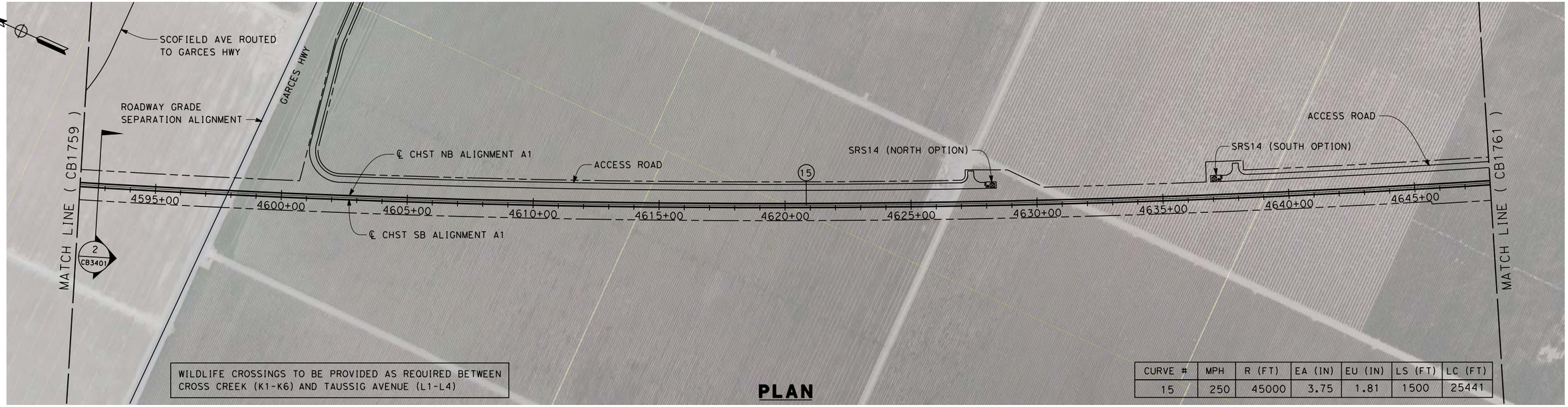
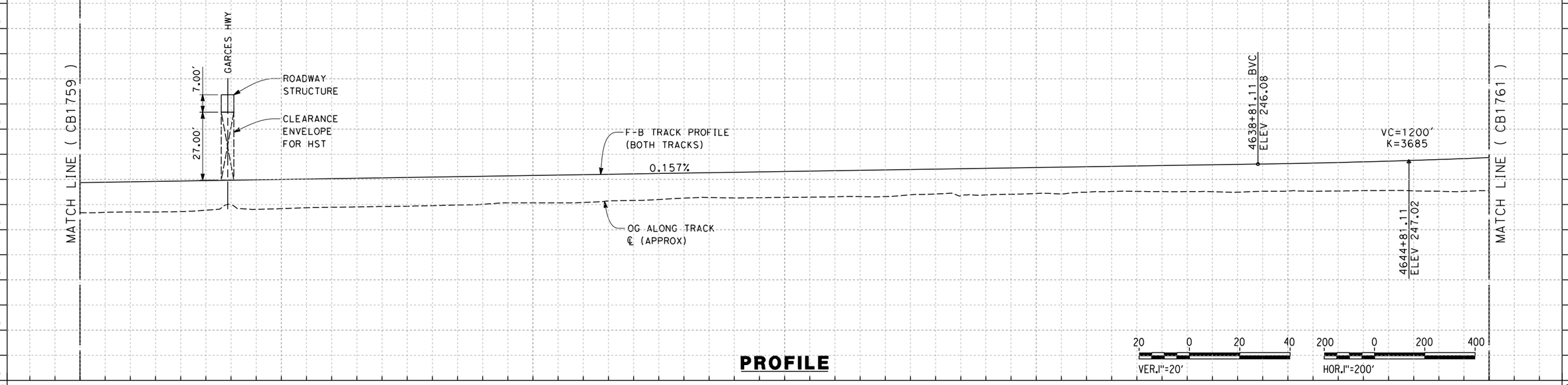


WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN CROSS CREEK (K1-K6) AND TAUSSIG AVENUE (L1-L4)

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
15	250	45000	3.75	1.81	1500	25441

PLAN



PROFILE

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4592+00 TO 4648+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1760
SCALE AS SHOWN
SHEET NO. 14 OF 21

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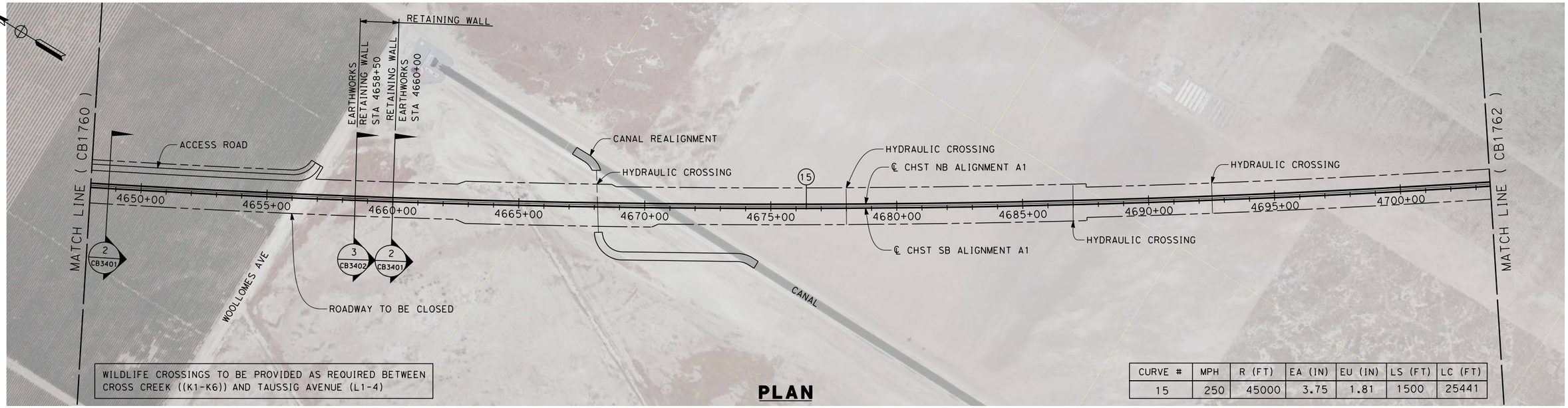
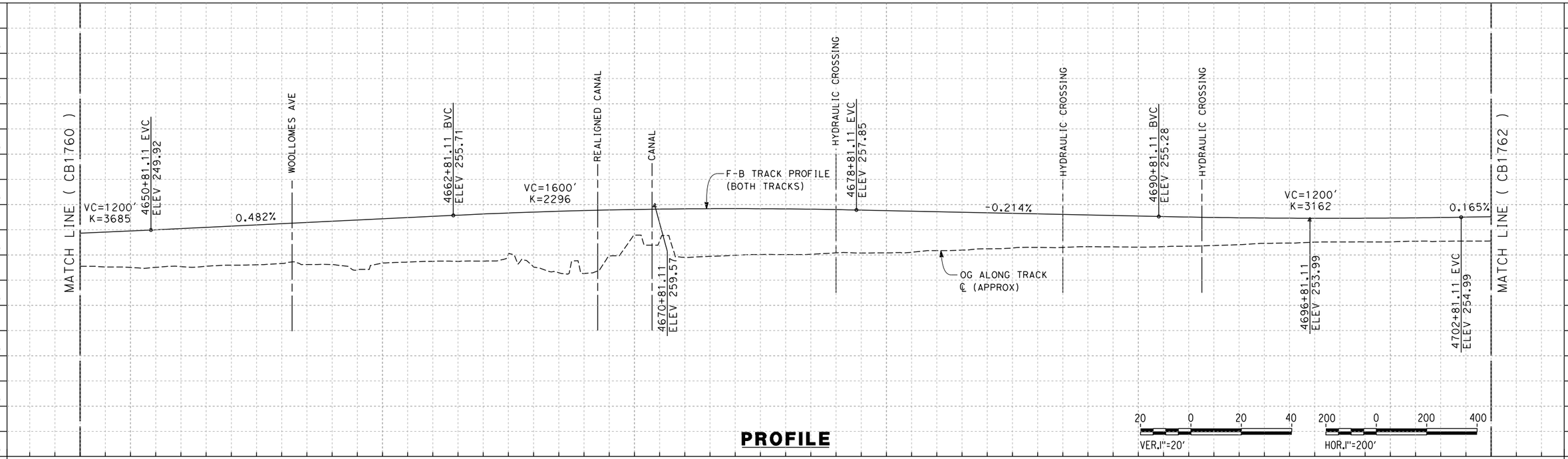


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
15	250	45000	3.75	1.81	1500	25441



PROFILE

STATION	4648+00	4650+00	4660+00	4670+00	4680+00	4690+00	4700+00	4704+00	TOTAL
CY Exc									
CY Emb									

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY P. TONKIN
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4648+00 TO 4704+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1102
SCALE AS SHOWN
SHEET NO. 15 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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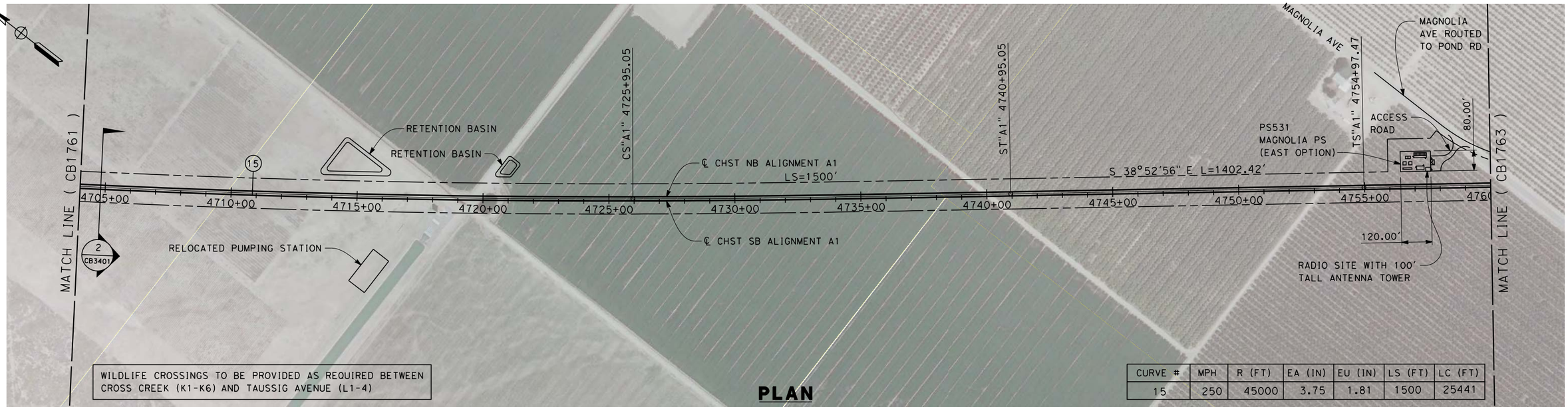
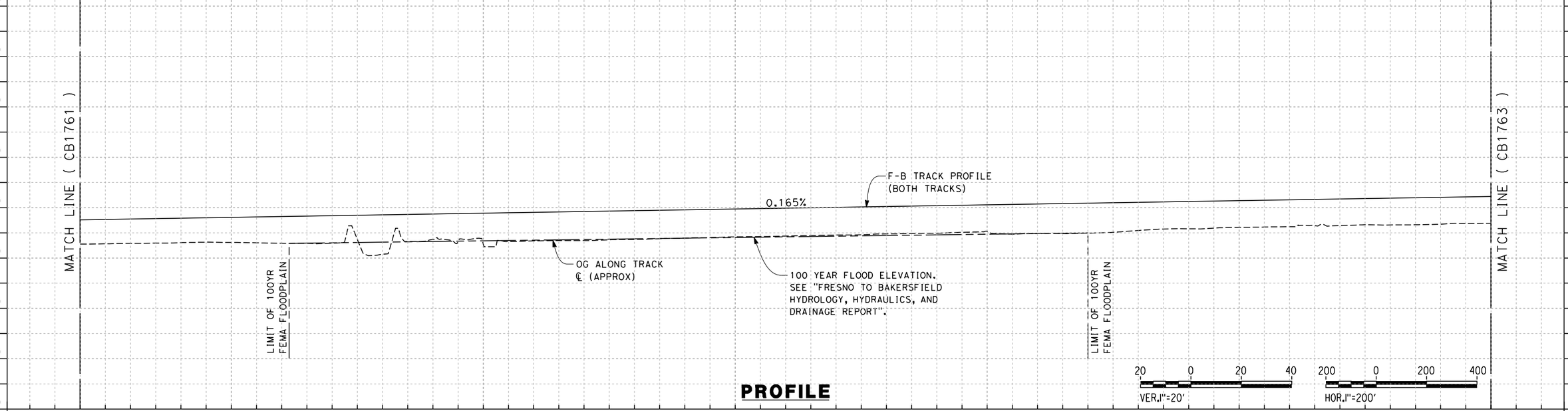


WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN CROSS CREEK (K1-K6) AND TAUSSIG AVENUE (L1-4)

PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
15	250	45000	3.75	1.81	1500	25441



PROFILE

STATION	4704+00	4710+00	4720+00	4730+00	4740+00	4750+00	4760+00	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4704+00 TO 4760+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1762
SCALE AS SHOWN
SHEET NO. 16 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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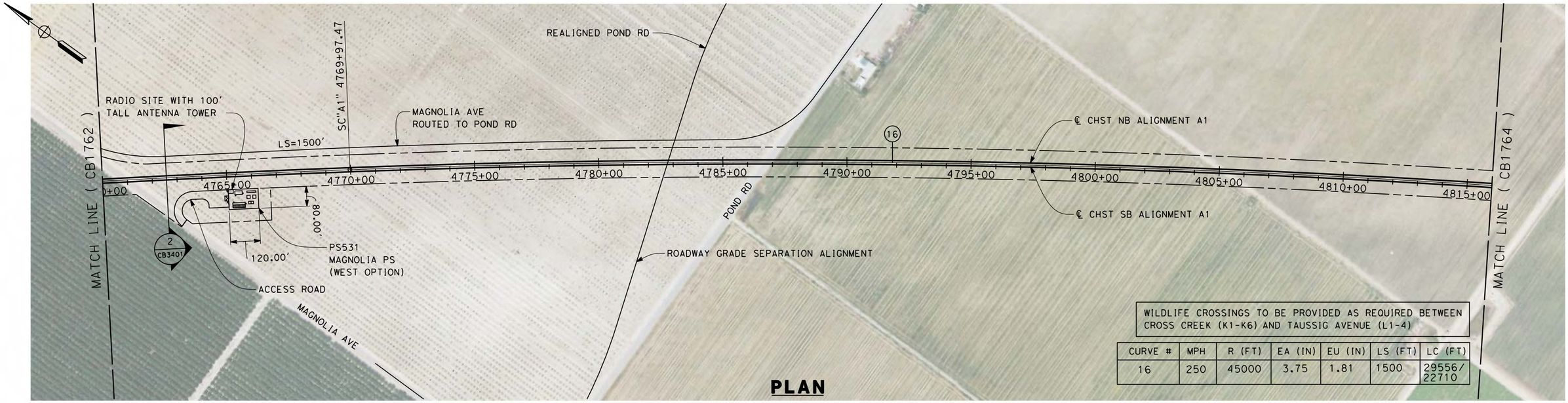
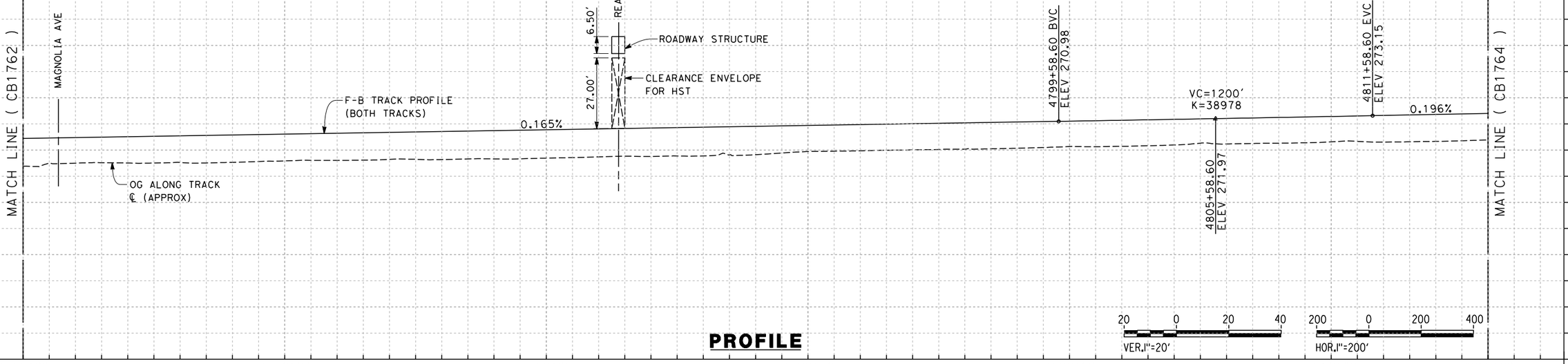


WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN CROSS CREEK (K1-K6) AND TAUSSIG AVENUE (L1-4)

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
16	250	45000	3.75	1.81	1500	29556/ 22710

PLAN



PROFILE

STATION	4760+00	4770+00	4780+00	4790+00	4800+00	4810+00	4816+00	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4760+00 TO 4816+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1763
SCALE AS SHOWN
SHEET NO. 17 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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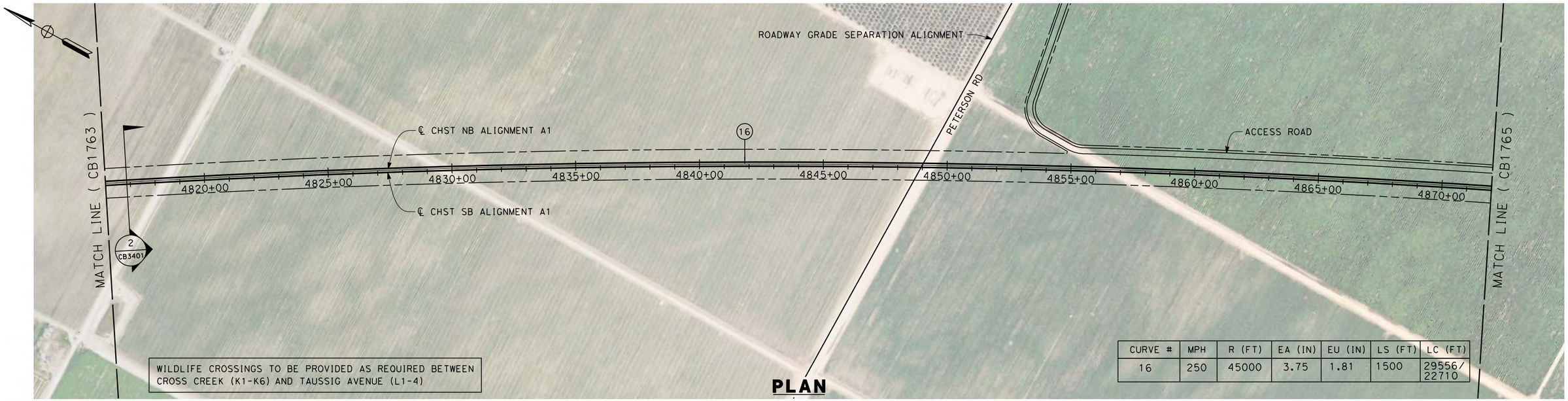
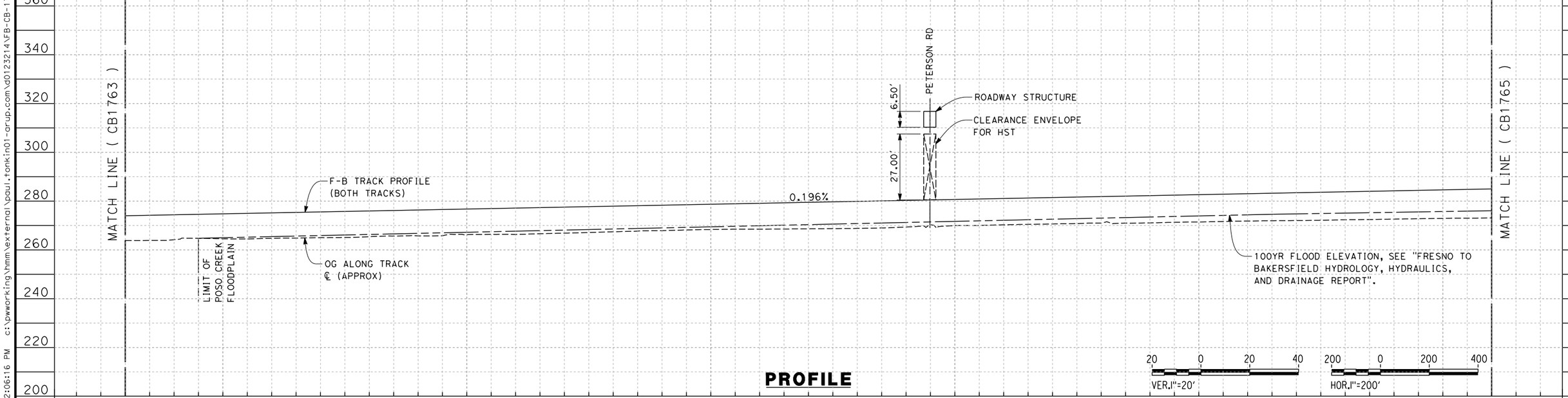


CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
16	250	45000	3.75	1.81	1500	29556/ 22710

PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4816+00 TO 4872+00
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1764
SCALE AS SHOWN
SHEET NO. 18 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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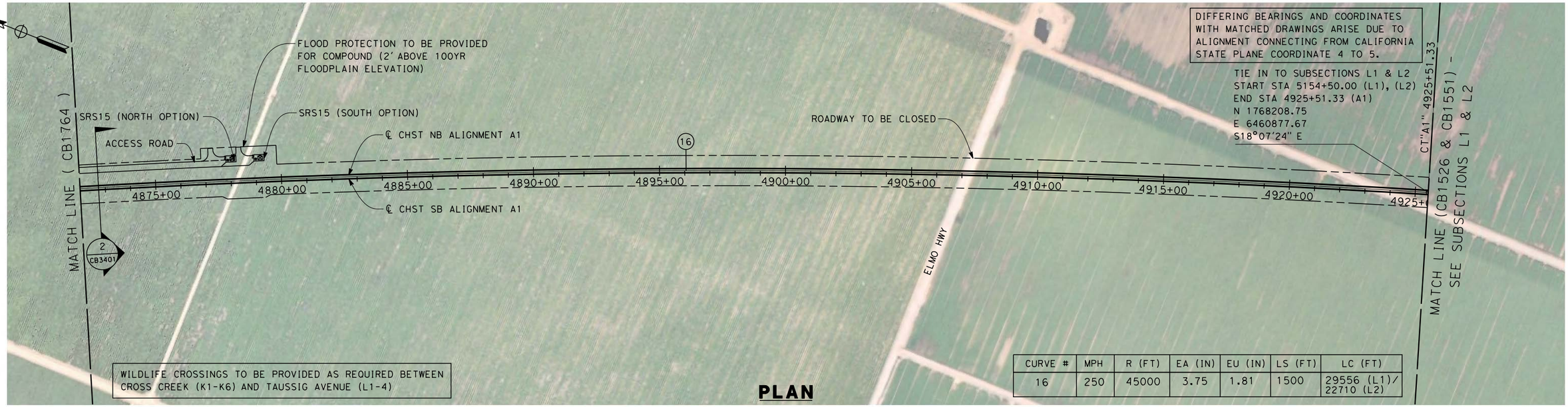
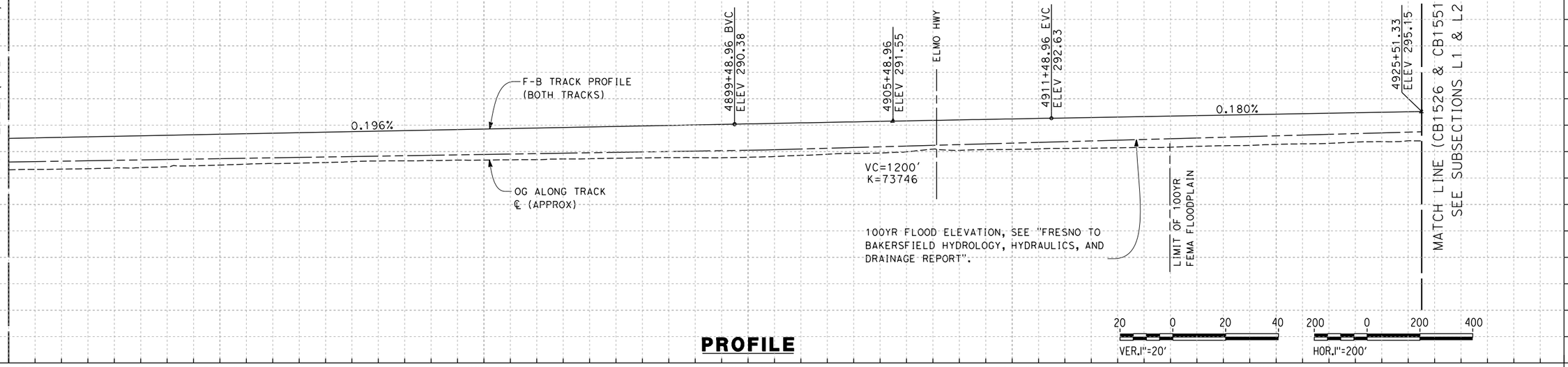


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
16	250	45000	3.75	1.81	1500	29556 (L1)/ 22710 (L2)



PROFILE

STATION	4872+00	4880+00	4890+00	4900+00	4910+00	4920+00	4928+00	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
STA. 4872+00 TO 4925+51
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1765
SCALE AS SHOWN
SHEET NO. 19 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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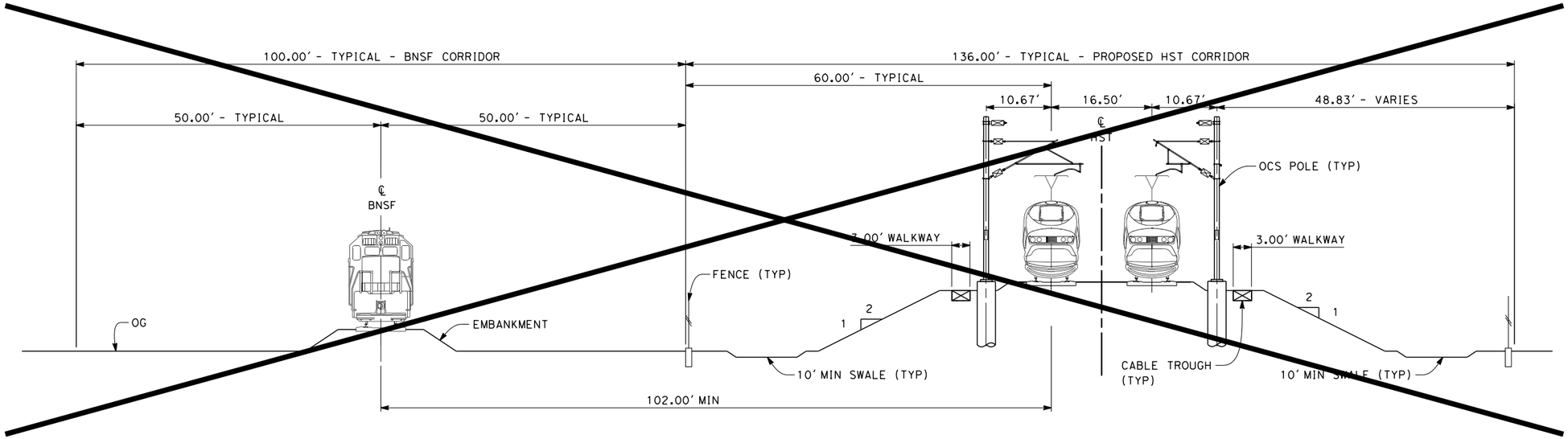
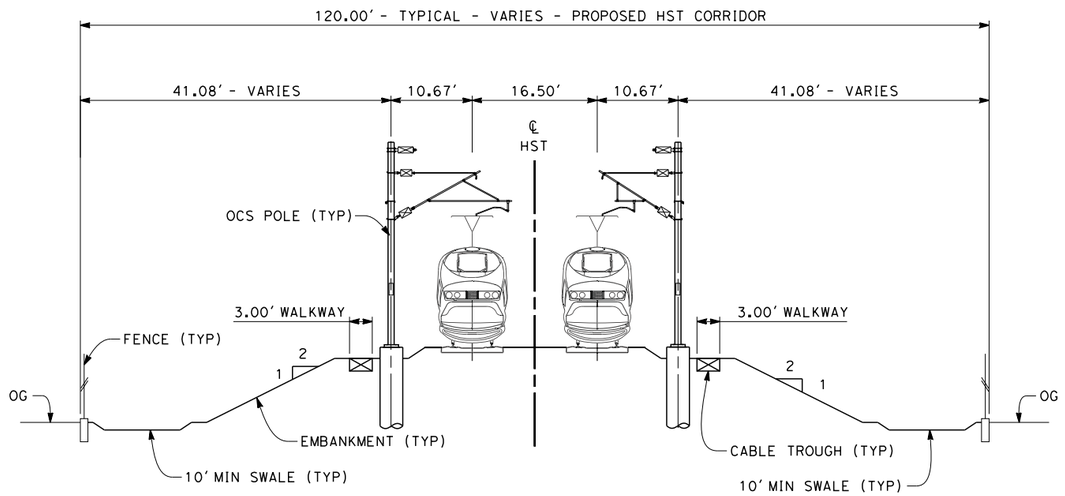


SECTION 1

TWIN TRACK - ADJACENT TO SINGLE TRACK BNSF
STA 3919+50 THROUGH STA 3967+75



SECTION 2

TWIN TRACK - AT-GRADE WITH OPEN DRAINAGE
STA 3967+75 THROUGH STA 3982+20
STA 4085+95 THROUGH STA 4925+51.33

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3401
SCALE AS SHOWN
SHEET NO. 20 OF 21

RFP No. HSR 14-32 – REVIEW DRAFT

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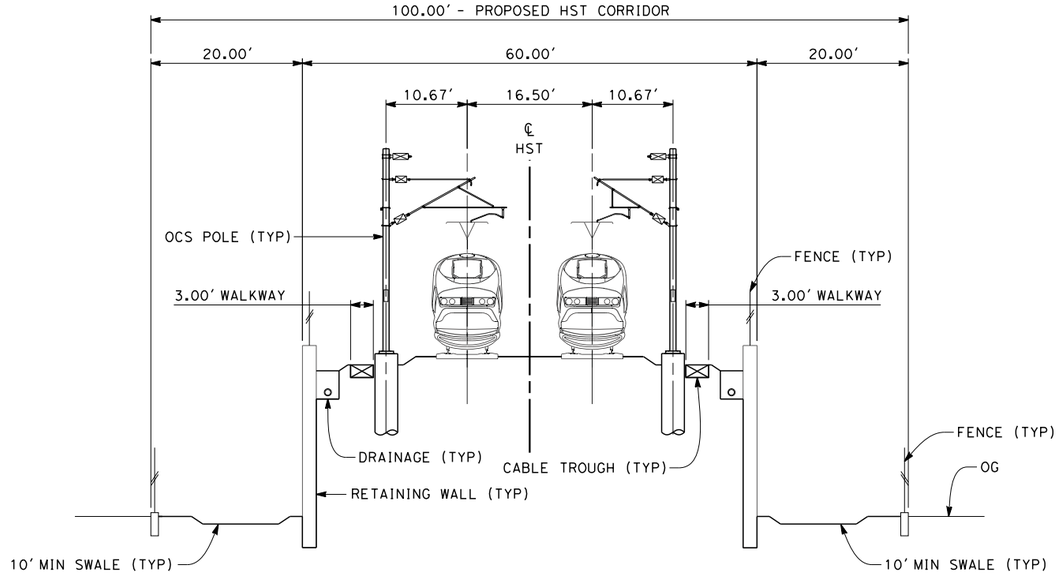
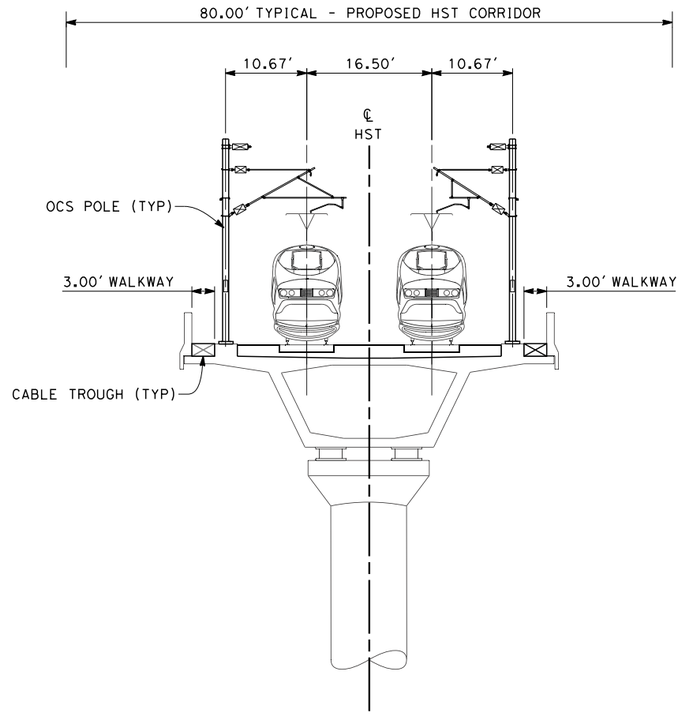


SECTION 3

TWIN TRACK - RETAINED EMBANKMENT
STA 3982+20 THROUGH STA 4005+25
STA 4067+65 THROUGH STA 4085+95
STA 4658+50 THROUGH STA 4660+00 (SEE NOTE 4)



SECTION 4

TWIN TRACK - AERIAL VIADUCT
STA 4005+25 THROUGH STA 4067+65

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
4. LEFT SIDE IS RETAINED EMBANKMENT AND RIGHT SIDE IS EMBANKMENT WITH OPEN DRAINAGE FROM STA 4658+50 THROUGH 4660+00.

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY E. TANAKA
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D3101
SCALE AS SHOWN
SHEET NO. 21 OF 21

RFP NO. HSR 14-32 – REVIEW DRAFT

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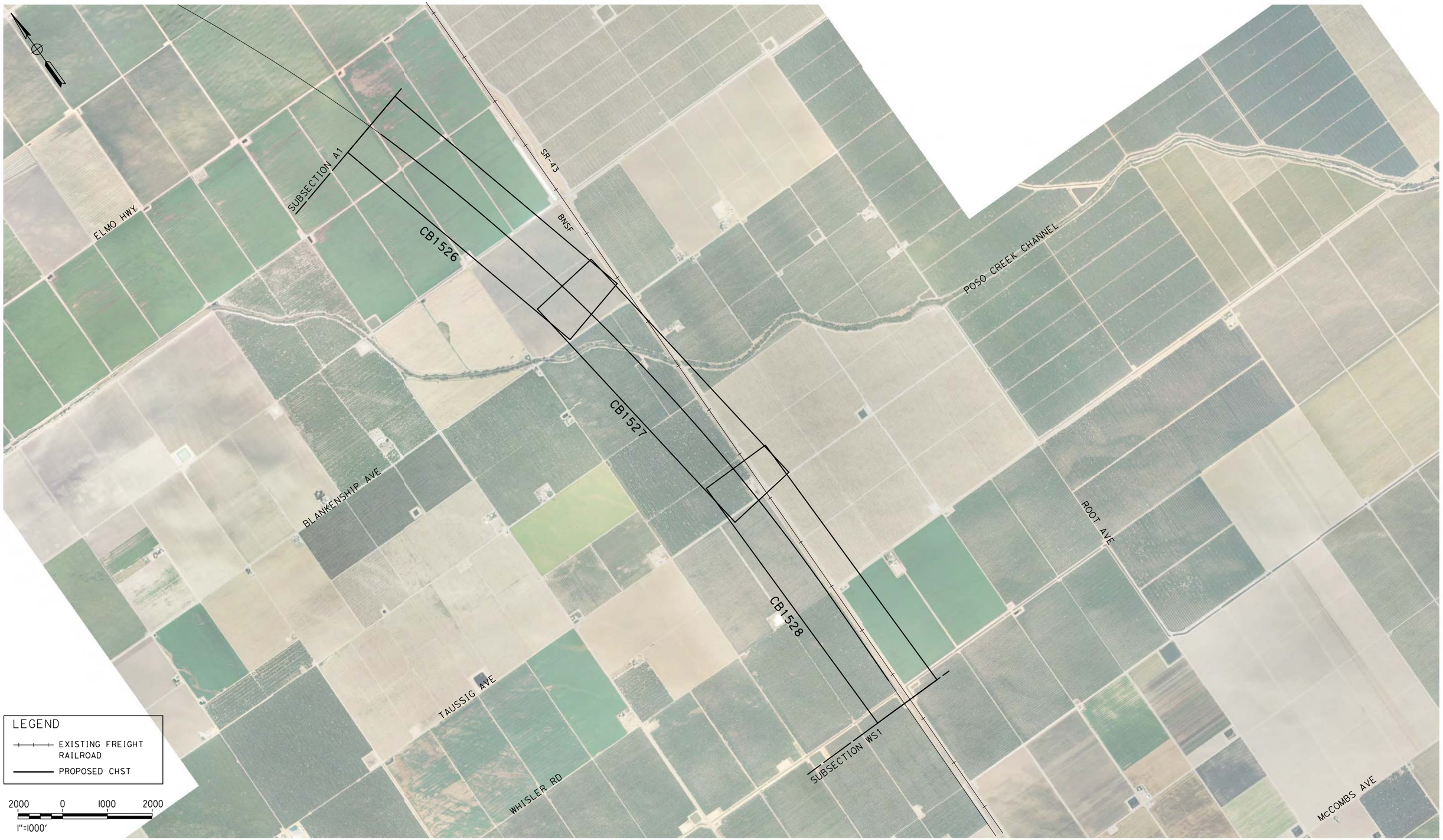

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
POSO CREEK SUBSECTION
ALIGNMENT L1
STA. 5154+50 TO 5322+33
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1525
SCALE AS SHOWN
SHEET NO. 1 OF 6

RFP NO. HSR 14-32 – REVIEW DRAFT

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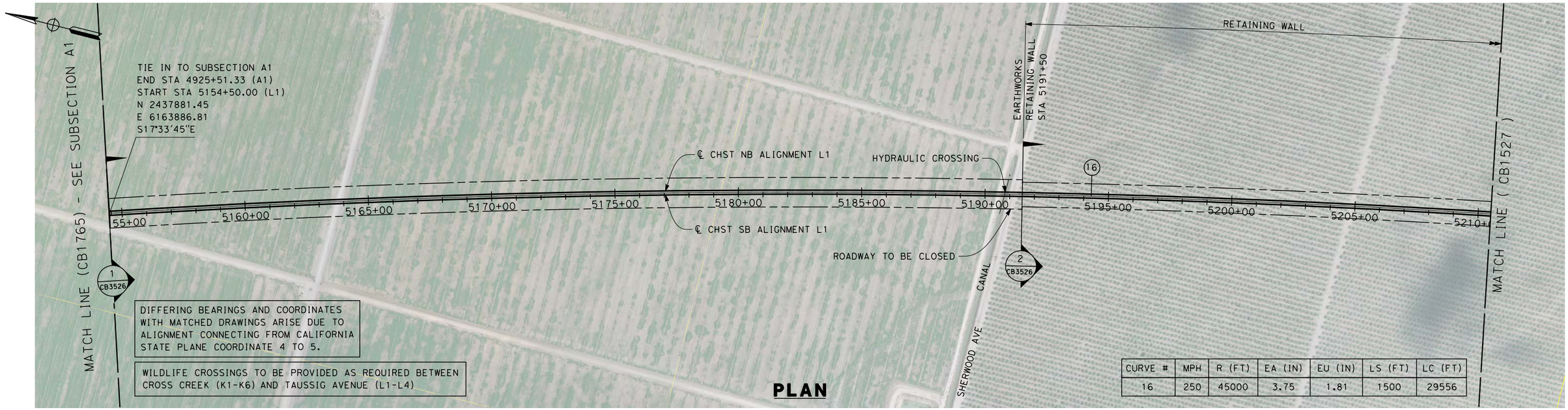
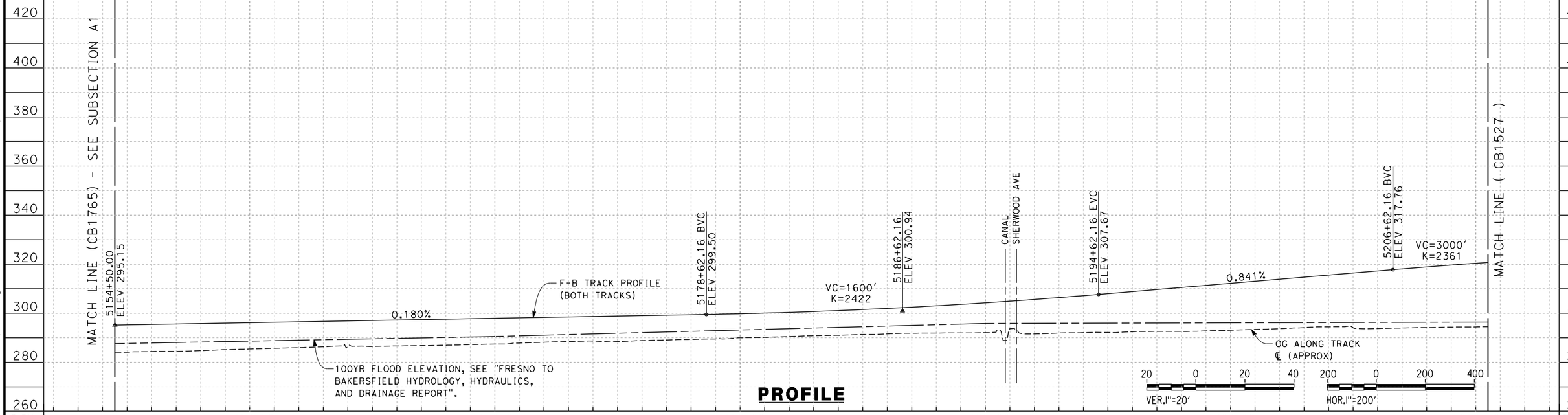


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
16	250	45000	3.75	1.81	1500	29556



PROFILE

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
POSO CREEK SUBSECTION
ALIGNMENT L1
STA. 5154+50 TO 5210+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1526
SCALE AS SHOWN
SHEET NO. 2 OF 6

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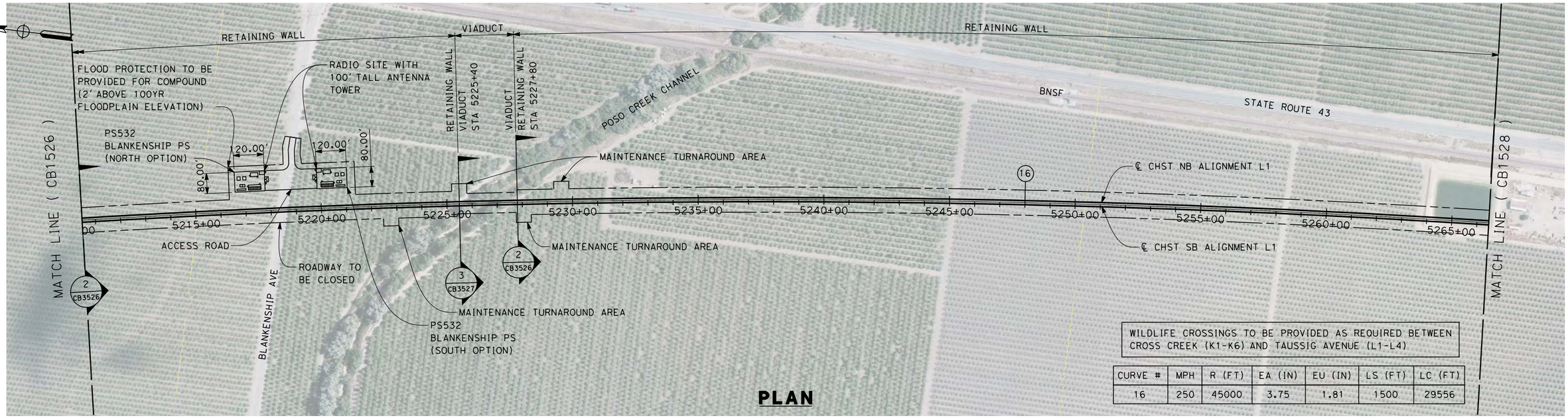
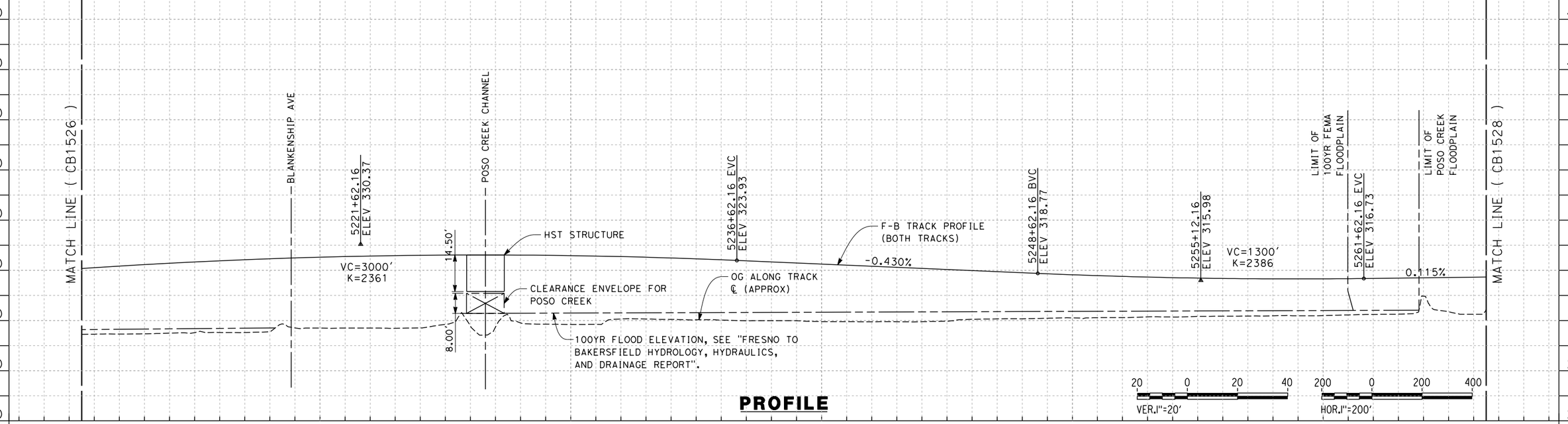


WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN CROSS CREEK (K1-K6) AND TAUSSIG AVENUE (L1-L4)

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
16	250	45000	3.75	1.81	1500	29556

PLAN



PROFILE

STATION	5210+50	5220+00	5230+00	5240+00	5250+00	5260+00	5266+50	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
POSO CREEK SUBSECTION
ALIGNMENT L1
STA. 5210+50 TO 5266+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1527
SCALE AS SHOWN
SHEET NO. 3 OF 6

RFP NO. HSR 14-32 – REVIEW DRAFT

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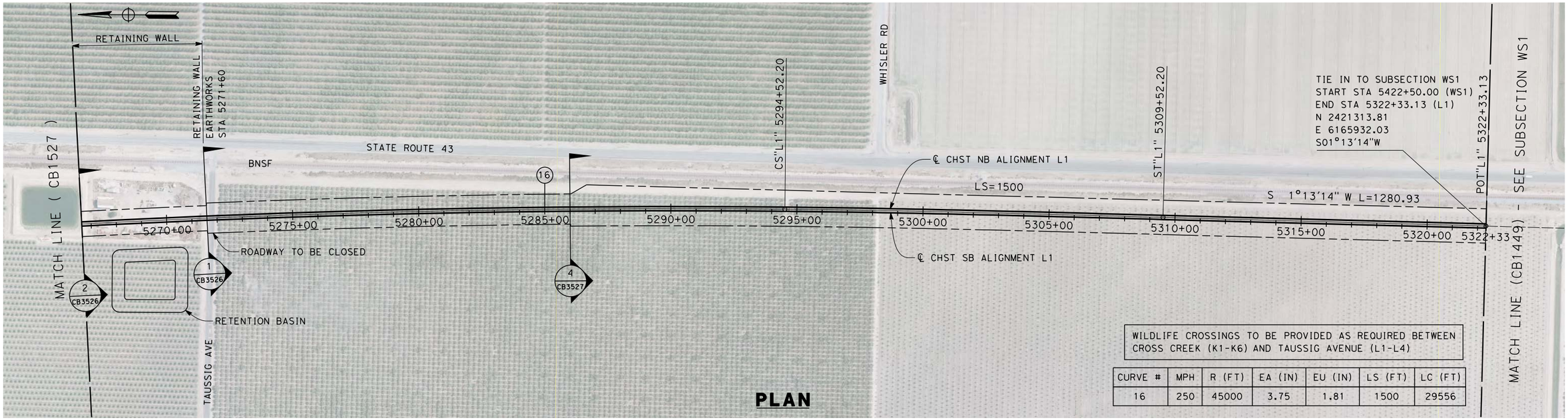
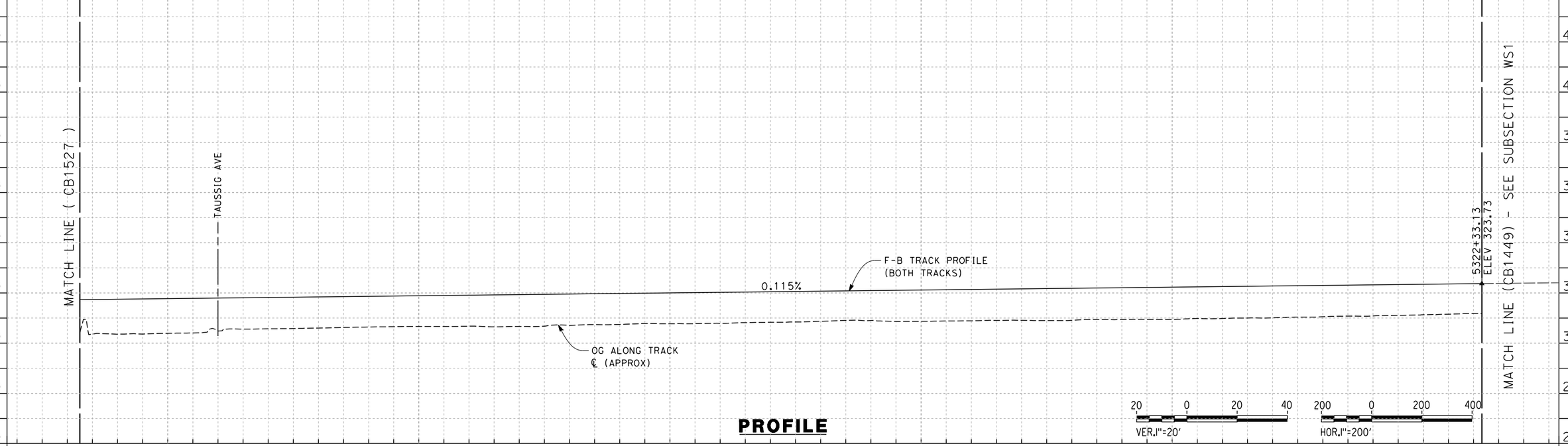


PLAN

WILDLIFE CROSSINGS TO BE PROVIDED AS REQUIRED BETWEEN CROSS CREEK (K1-K6) AND TAUSSIG AVENUE (L1-L4)

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
16	250	45000	3.75	1.81	1500	29556



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
POSO CREEK SUBSECTION
ALIGNMENT L1
STA. 5266+50 TO 5322+33
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1528
SCALE AS SHOWN
SHEET NO. 4 OF 6

RFP NO. HSR 14-32 – REVIEW DRAFT

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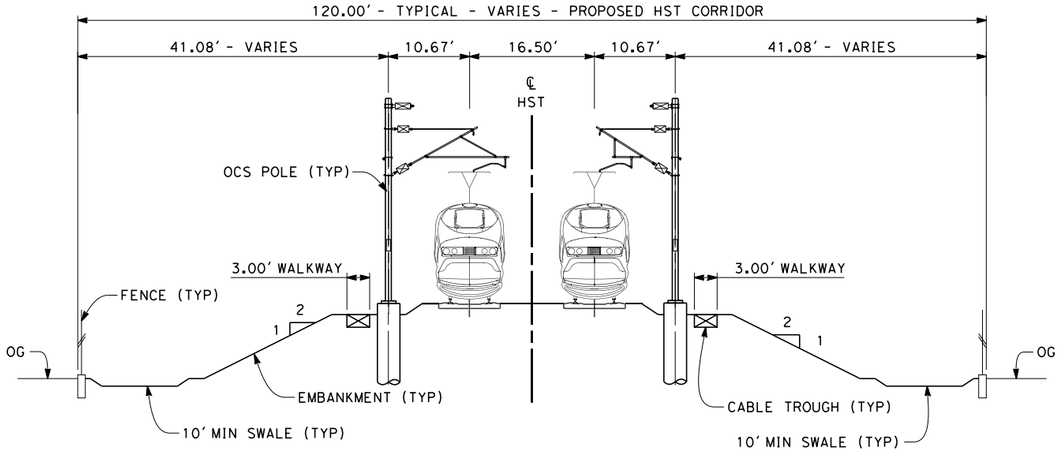
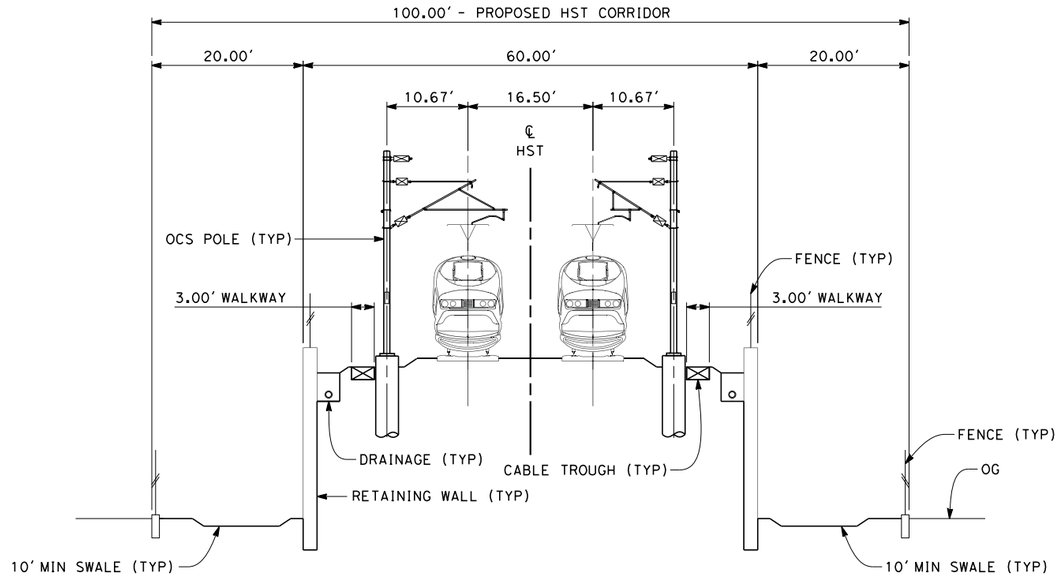


SECTION 1

TWIN TRACK - AT-GRADE WITH OPEN DRAINAGE
STA 5154+50 THROUGH STA 5191+50
STA 5271+60 THROUGH STA 5286+00



SECTION 2

TWIN TRACK - RETAINED EMBANKMENT
STA 5191+50 THROUGH STA 5225+40
STA 5227+80 THROUGH STA 5271+60

10 0 10 20
1"=10'

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
POSO CREEK SUBSECTION
ALIGNMENT L1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3526
SCALE AS SHOWN
SHEET NO. 5 OF 6

RFP No. HSR 14-32 – REVIEW DRAFT

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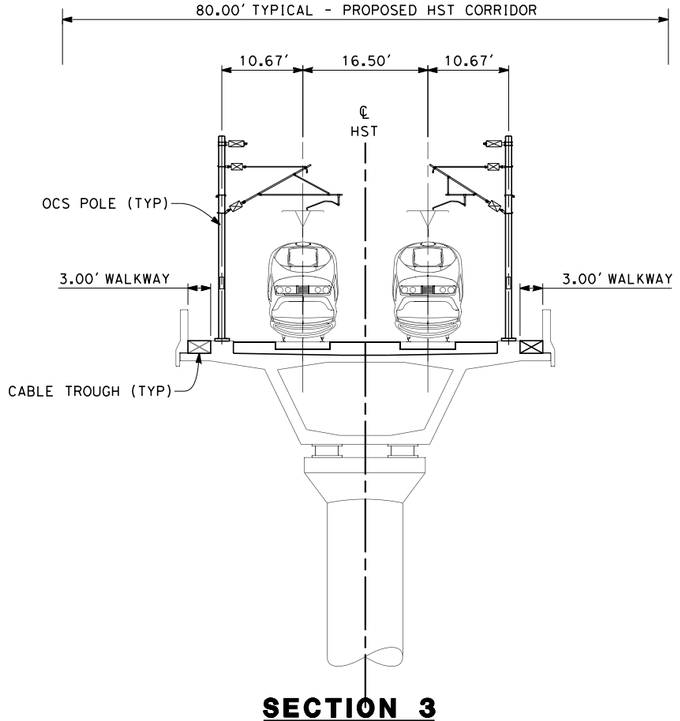
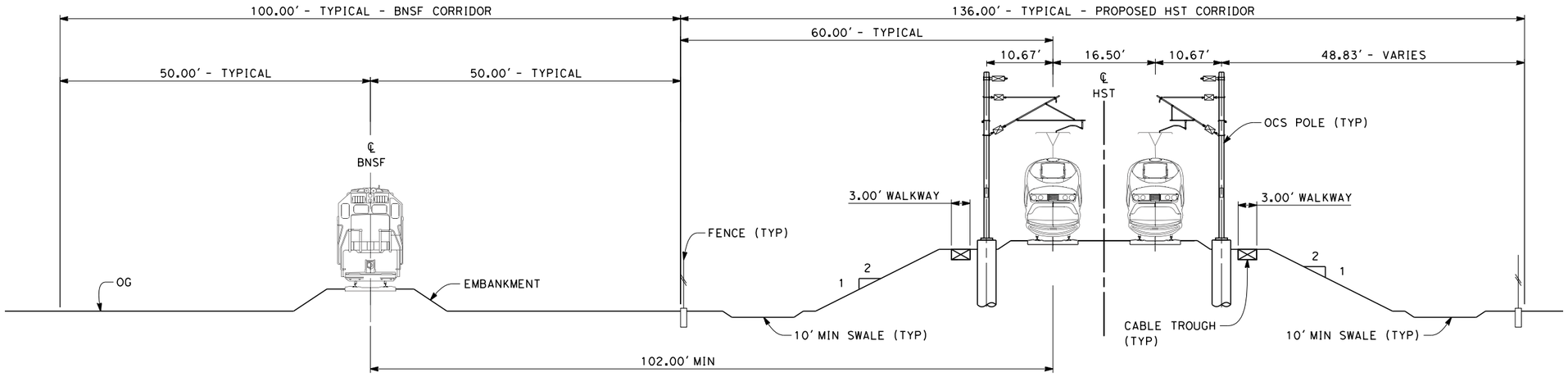


SECTION 3

TWIN TRACK - AERIAL VIADUCT
STA 5225+40 THROUGH STA 5227+80



SECTION 4

TWIN TRACK - ADJACENT TO SINGLE TRACK BNSF
STA 5286+00 TO STA 5322+33

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
POSO CREEK SUBSECTION
ALIGNMENT L1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3527
SCALE AS SHOWN
SHEET NO. 6 OF 6

RFP No. HSR 14-32 – REVIEW DRAFT

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5422+50 TO 6511+99
KEYPLAN

CONTRACT NO. HSR-06-0003
DRAWING NO. TT-D1150
SCALE AS SHOWN
SHEET NO. 1 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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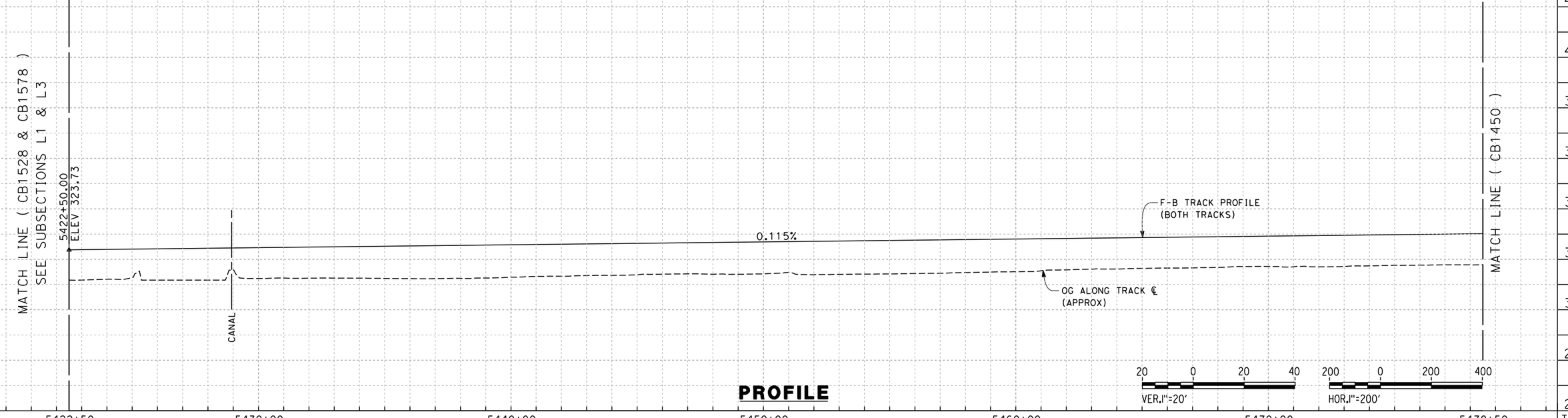
PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5422+50 TO 5478+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1449
SCALE AS SHOWN
SHEET NO. 2 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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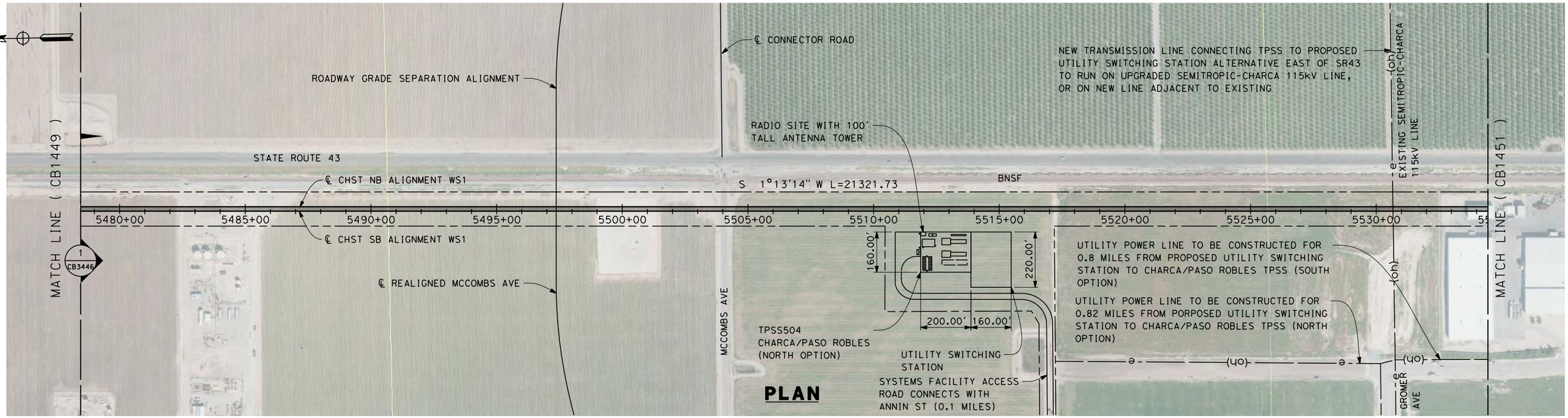

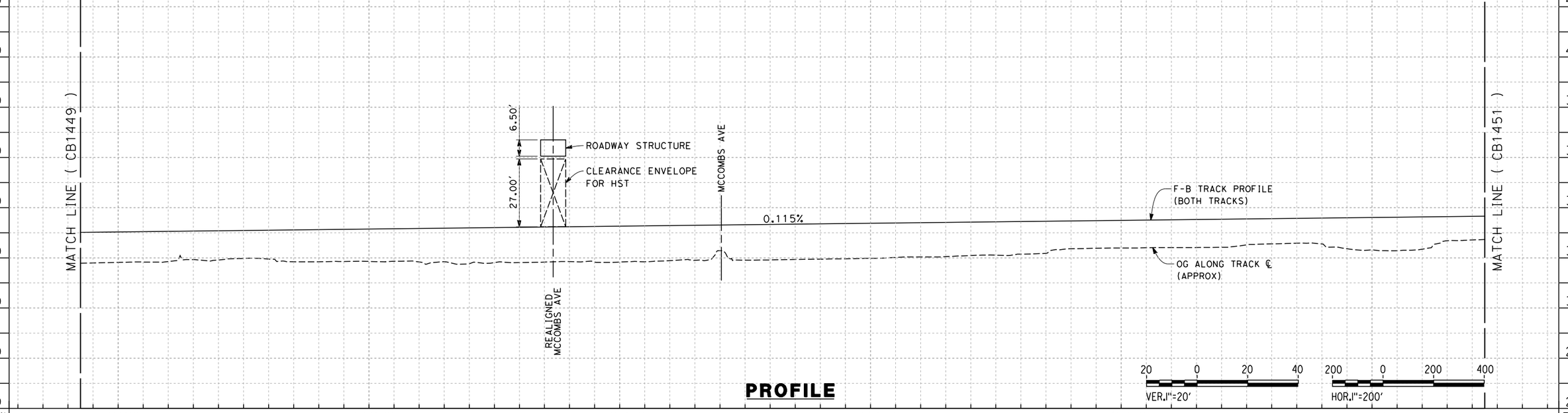

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5478+50 TO 5534+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1450
SCALE AS SHOWN
SHEET NO. 3 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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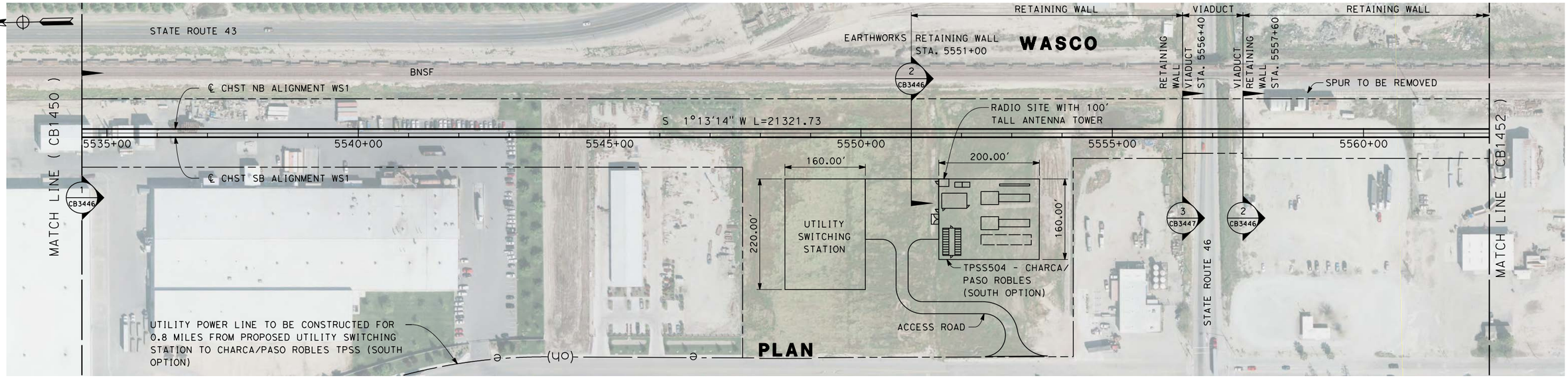

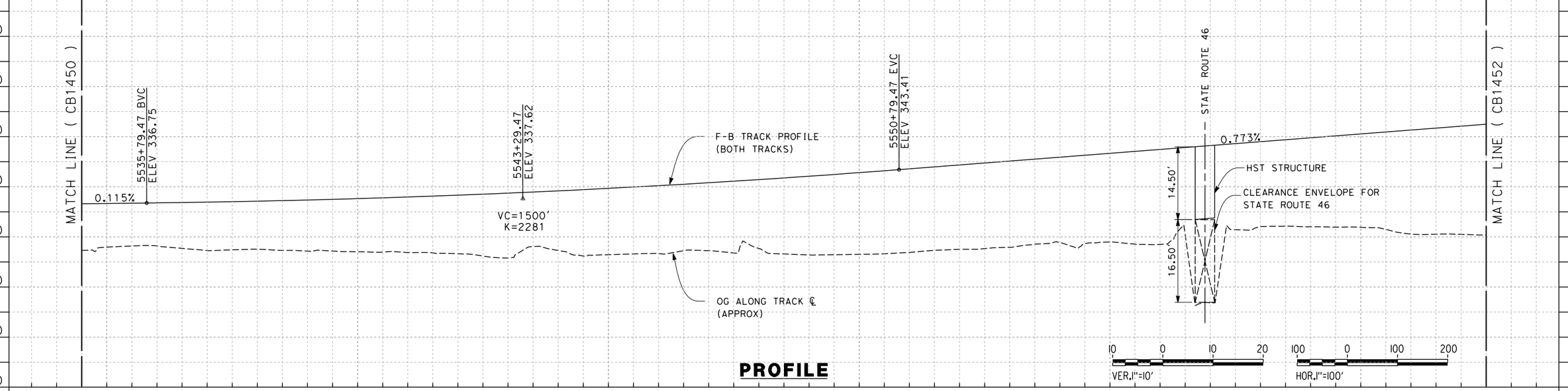

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5534+50 TO 5562+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1451
SCALE AS SHOWN
SHEET NO. 4 OF 35

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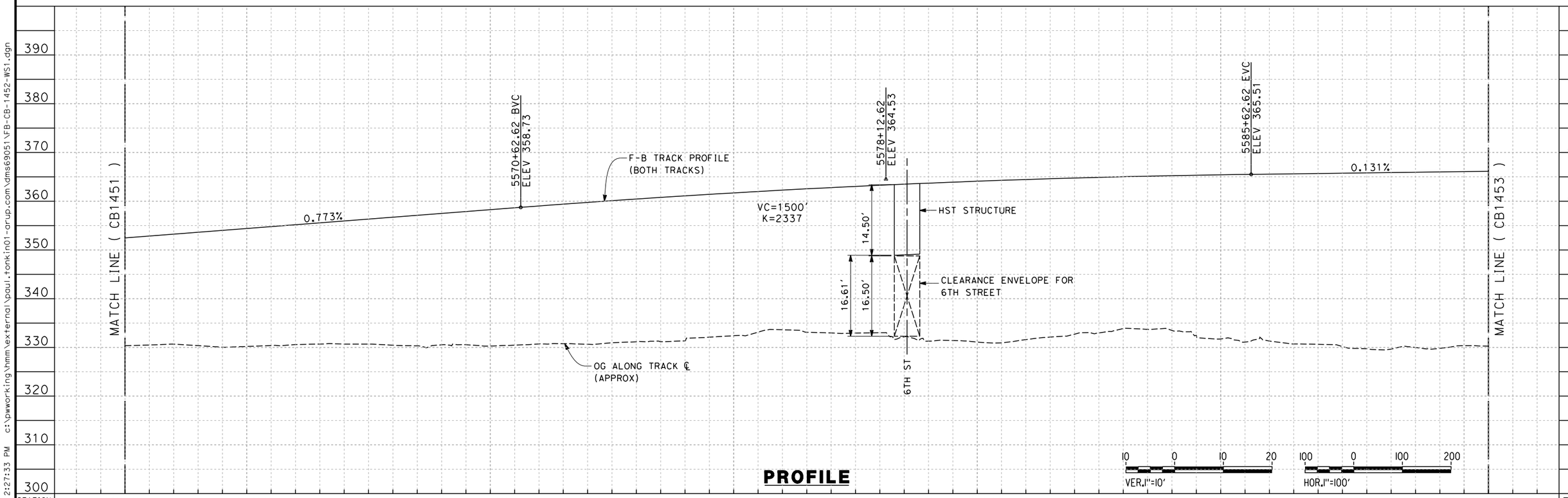

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S.LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5562+50 TO 5590+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1452
SCALE AS SHOWN
SHEET NO. 5 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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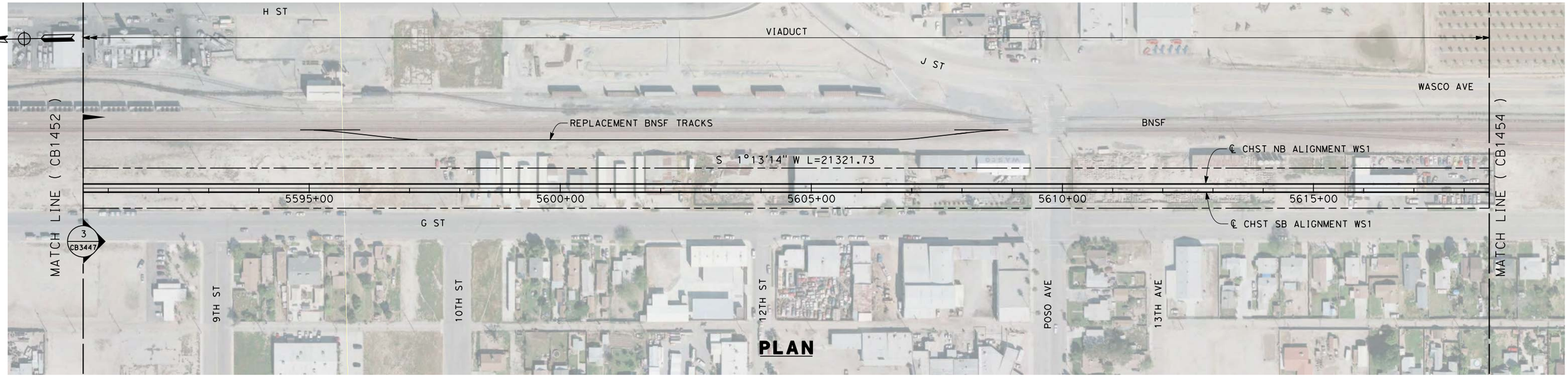
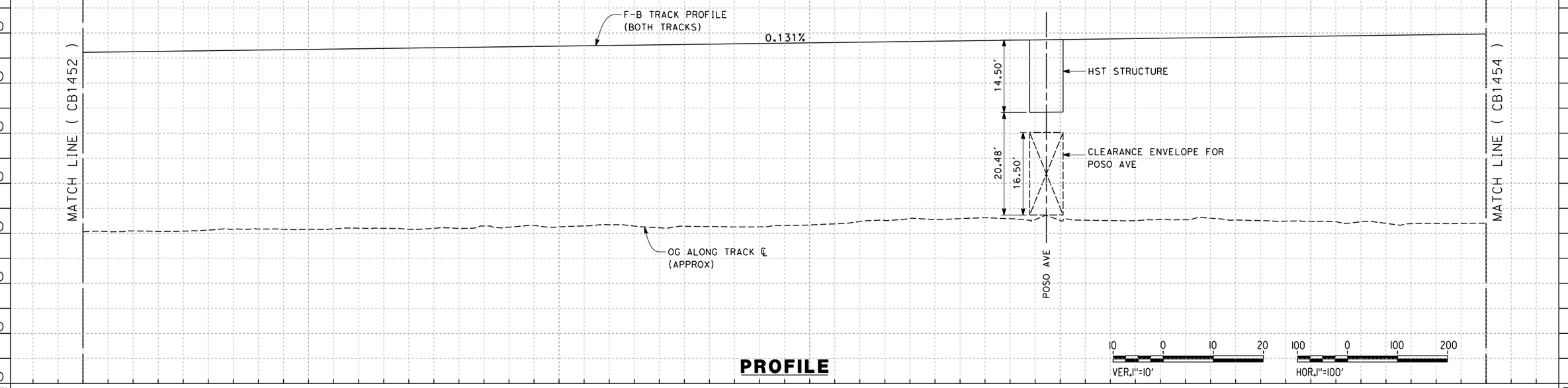


PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5590+50 TO 5618+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1453
SCALE AS SHOWN
SHEET NO. 6 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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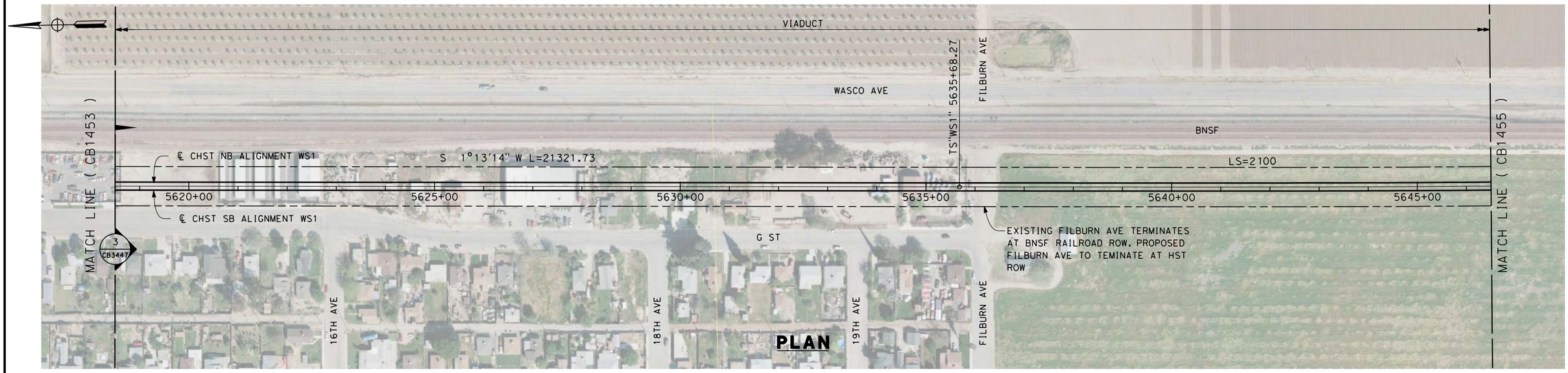

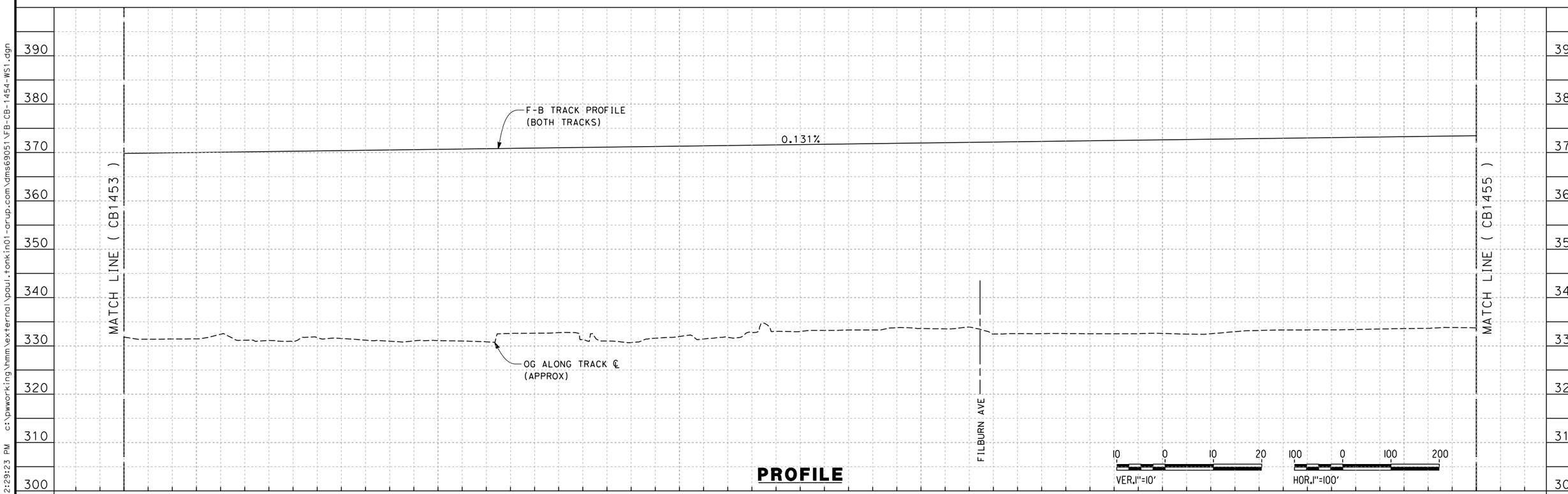

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5618+50 TO 5646+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1454
SCALE AS SHOWN
SHEET NO. 7 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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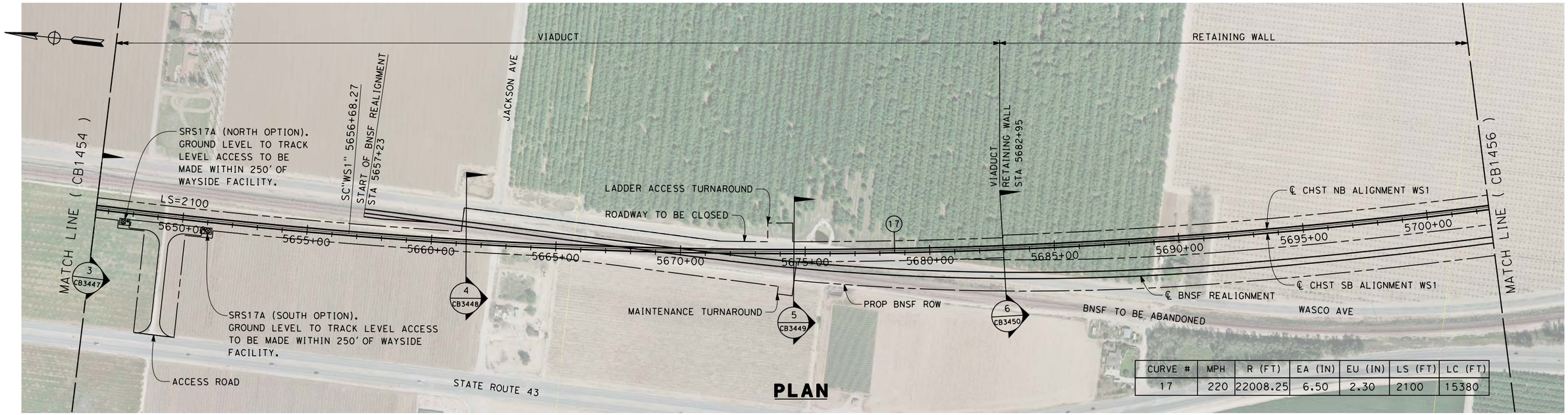
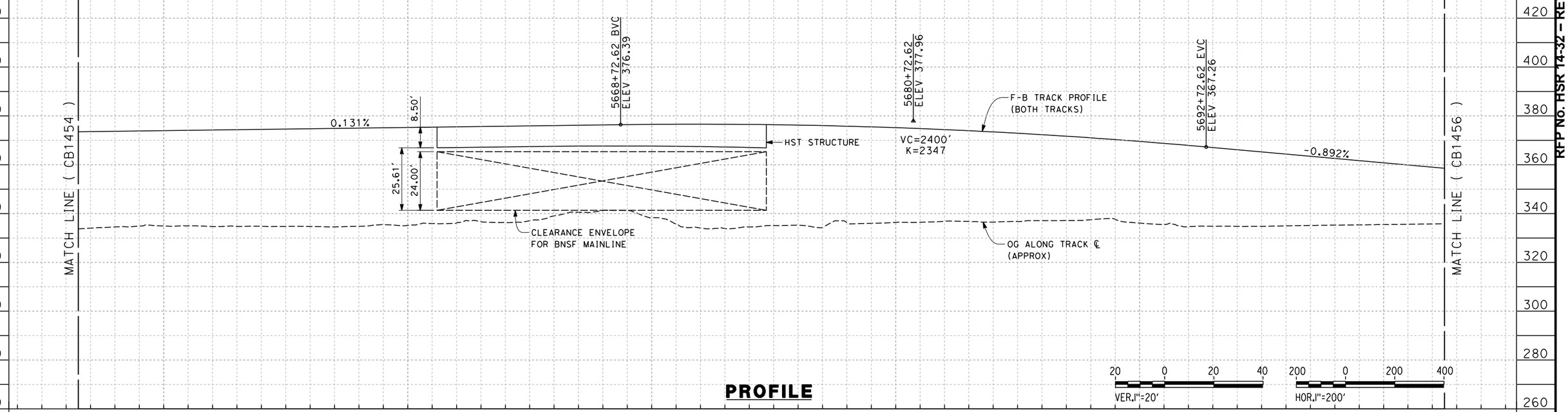


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
17	220	22008.25	6.50	2.30	2100	15380



PROFILE

STATION	5646+50	5650+00	5660+00	5670+00	5680+00	5690+00	5700+00	5702+50	TOTAL
CY Exc									
CY Emb									

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5646+50 TO 5702+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1455
SCALE AS SHOWN
SHEET NO. 8 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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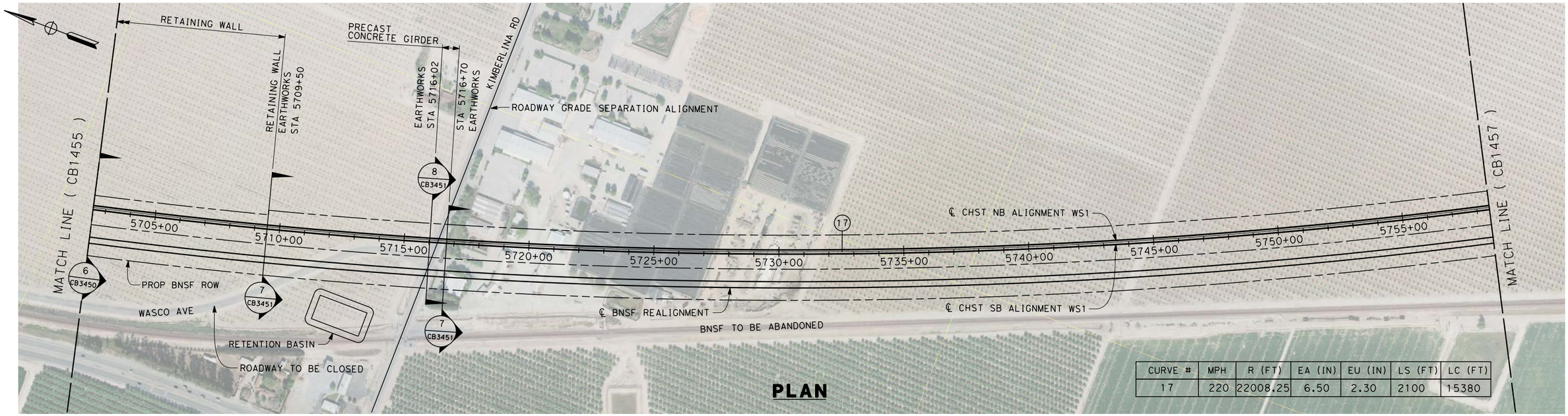
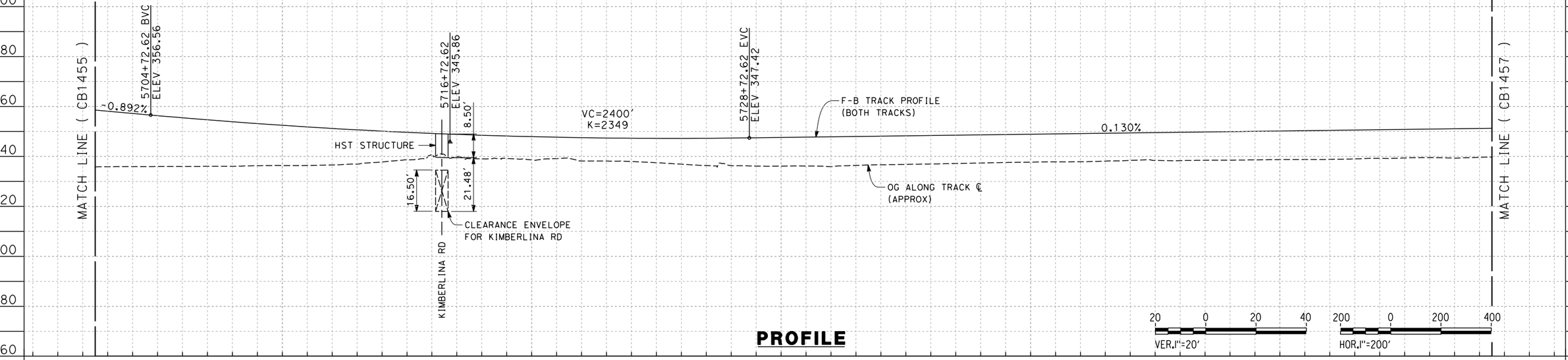
paul.tonkin



CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
17	220	22008.25	6.50	2.30	2100	15380



STATION	5702+50	5710+00	5720+00	5730+00	5740+00	5750+00	5758+50	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5702+50 TO 5758+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1456
SCALE AS SHOWN
SHEET NO. 9 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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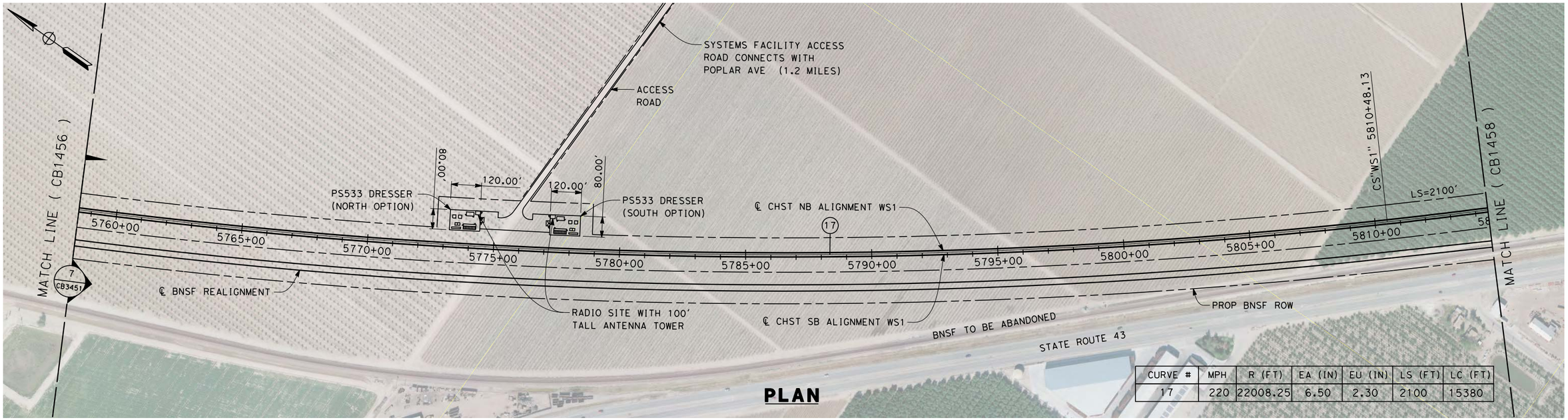
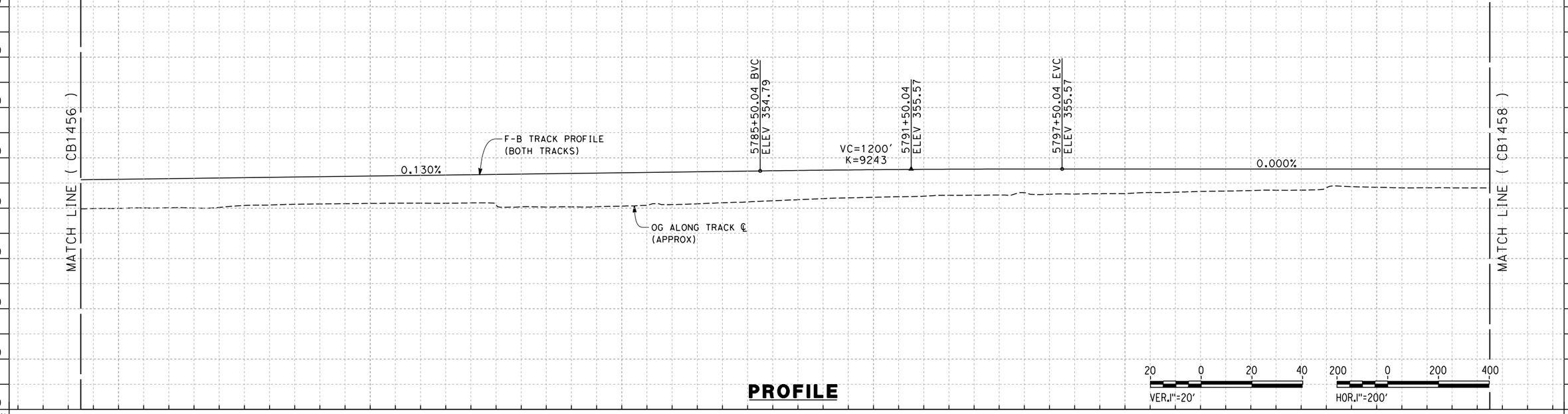
david.hunt



CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
17	220	22008.25	6.50	2.30	2100	15380

PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5758+50 TO 5814+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1457
SCALE AS SHOWN
SHEET NO. 10 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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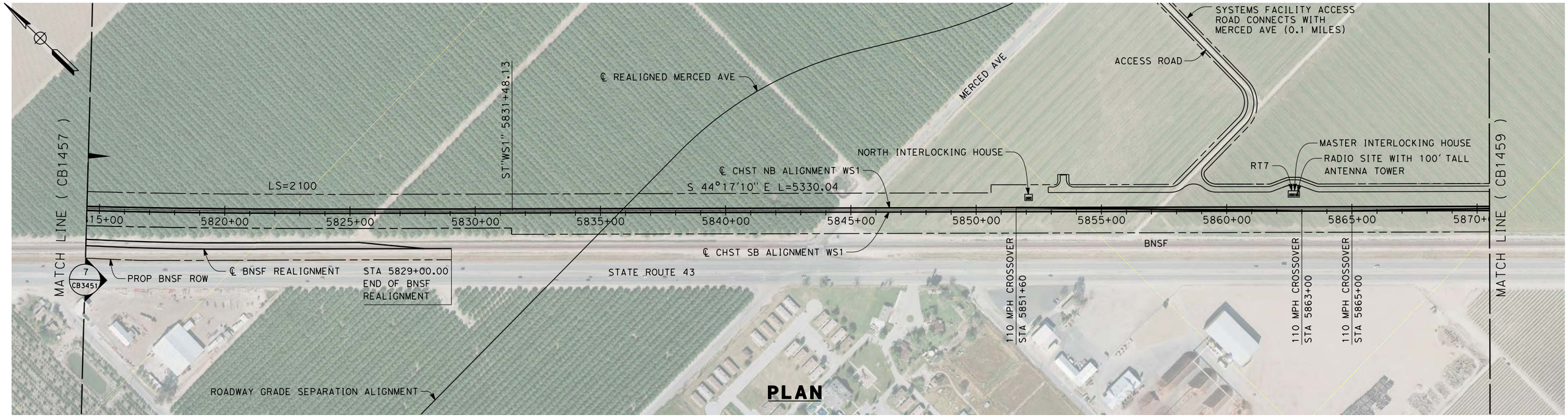
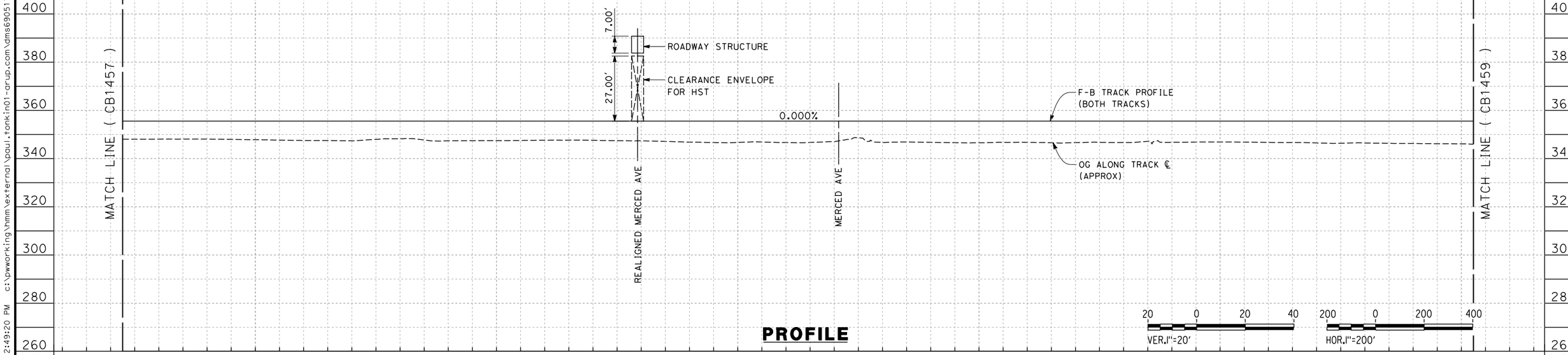
paul.tonkin



PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

IRS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5814+50 TO 5870+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1458
SCALE AS SHOWN
SHEET NO. 11 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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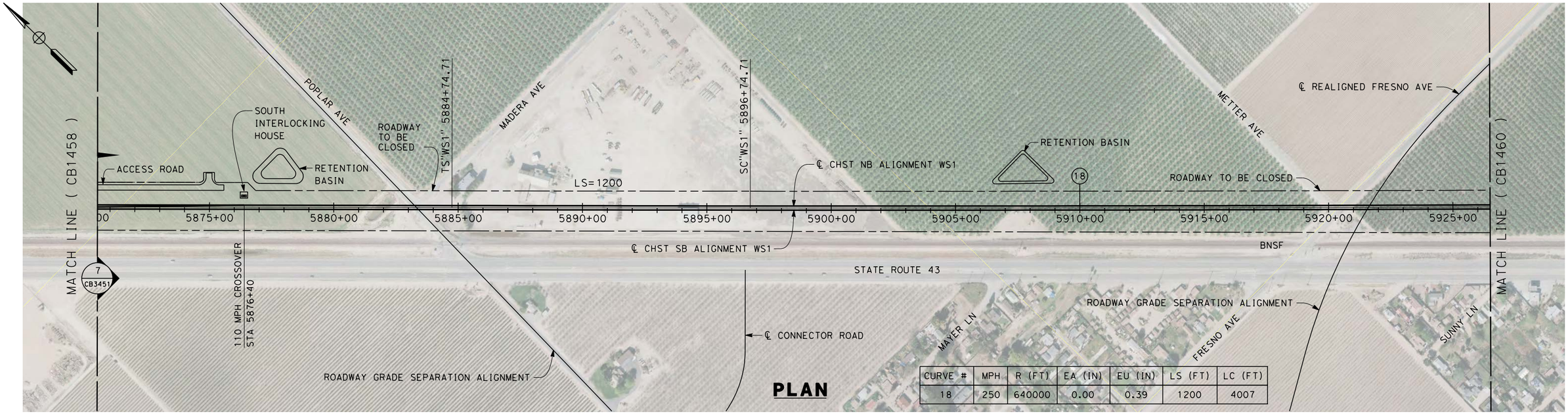
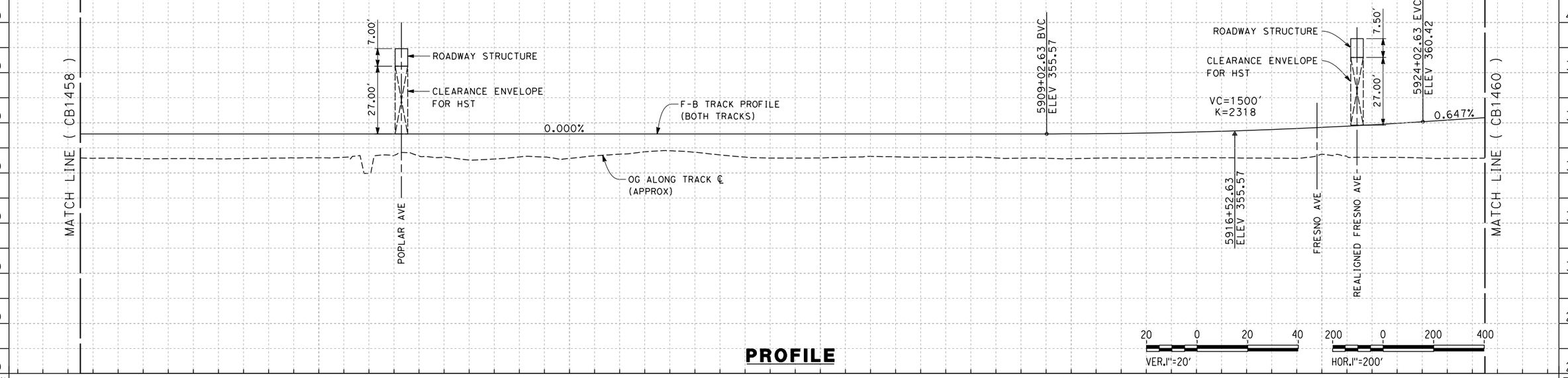


PLAN

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
18	250	640000	0.00	0.39	1200	4007



PROFILE

STATION	5870+50	5880+00	5890+00	5900+00	5910+00	5920+00	5926+50	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5870+50 TO 5926+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1459
SCALE AS SHOWN
SHEET NO. 12 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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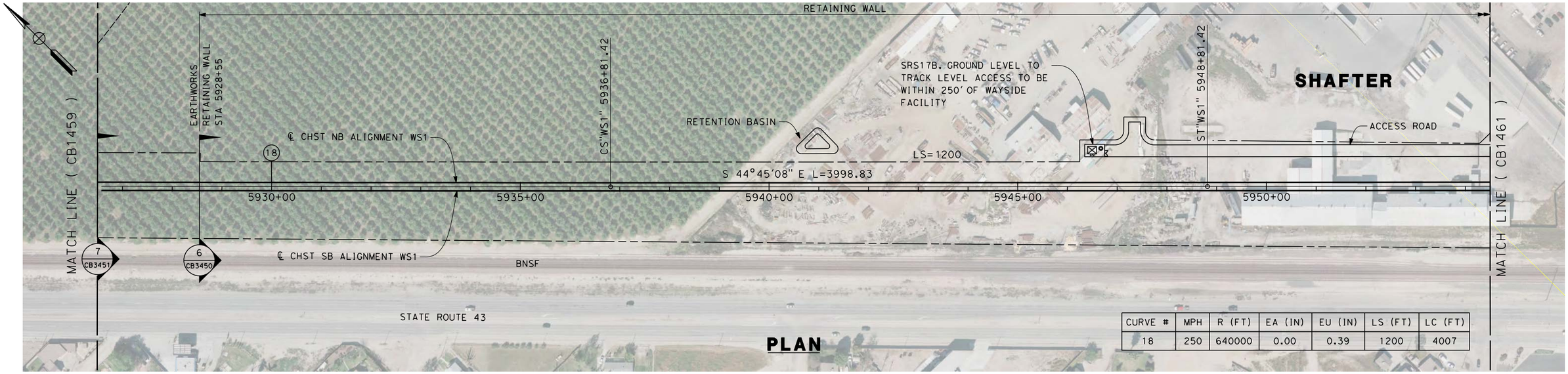
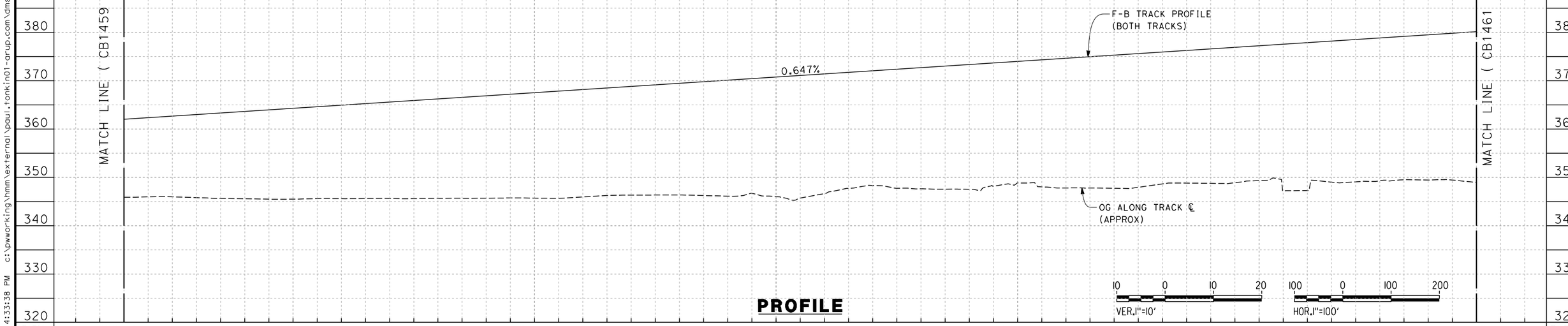


CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
18	250	640000	0.00	0.39	1200	4007



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

IRS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5926+50 TP 5954+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1460
SCALE AS SHOWN
SHEET NO. 13 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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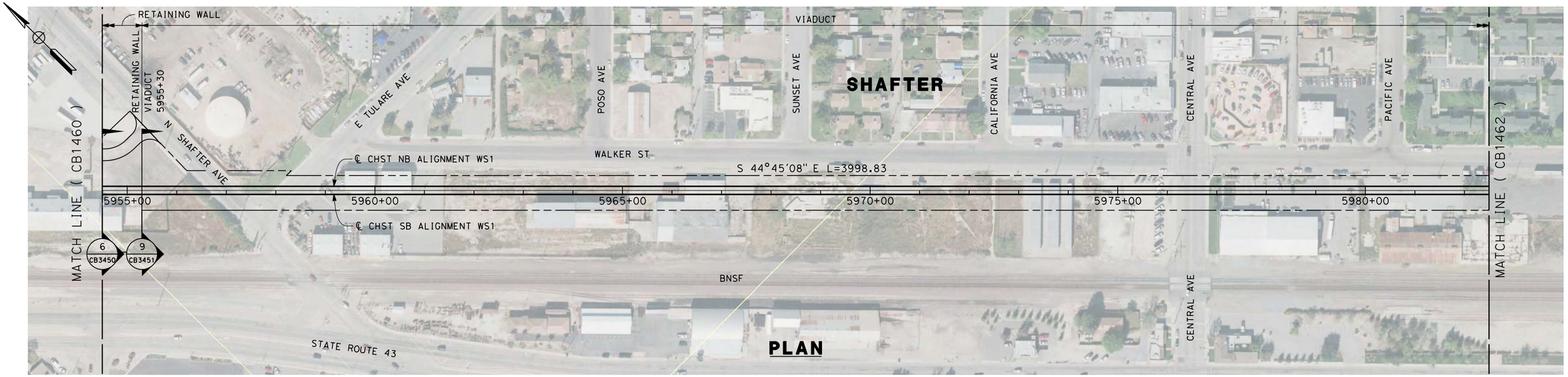

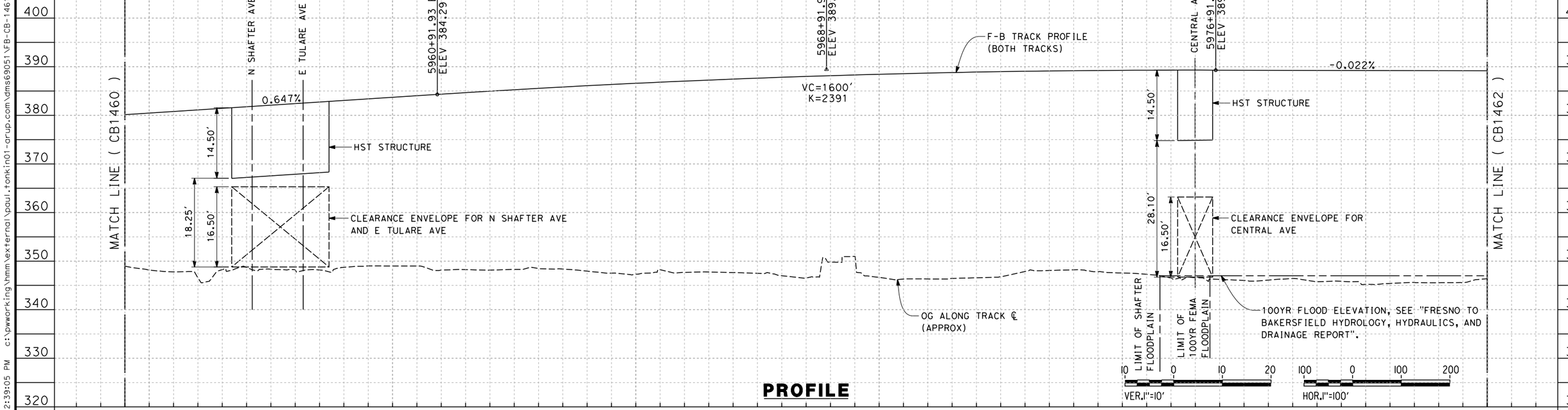

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5954+50 TP 5982+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1461
SCALE AS SHOWN
SHEET NO. 14 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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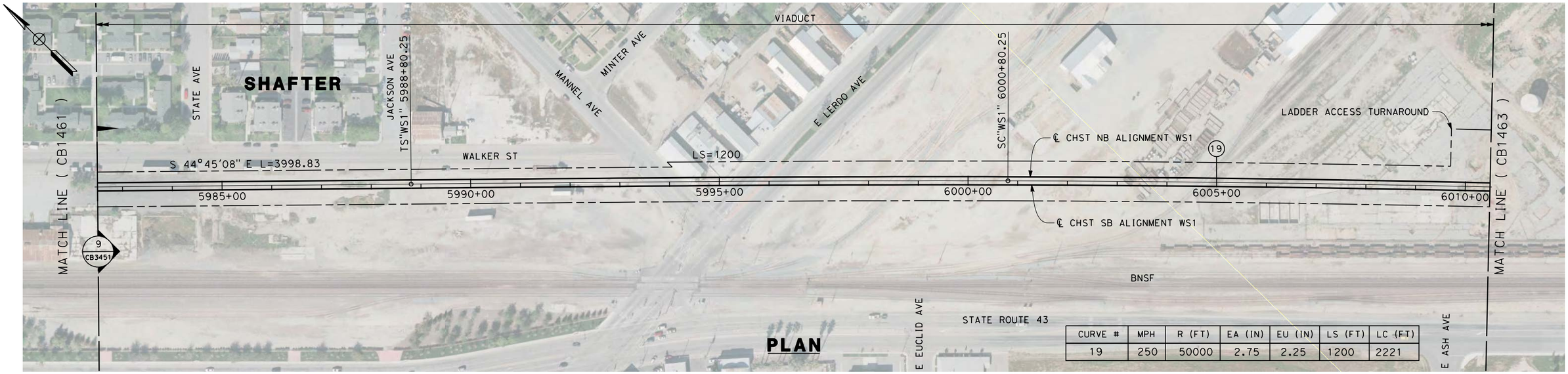

CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
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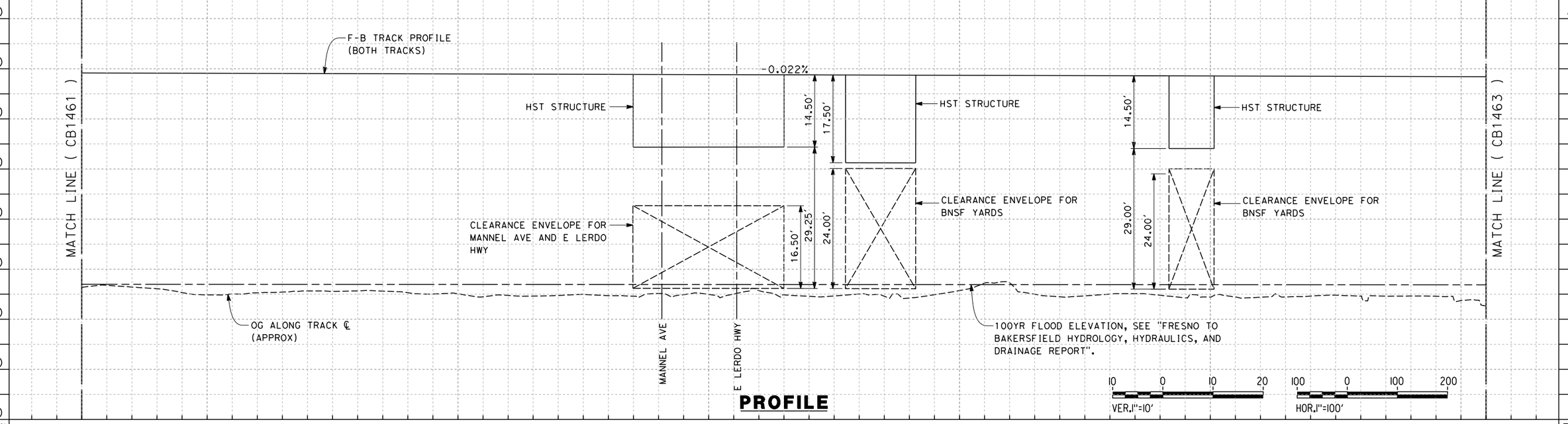

STATION	5982+50	3	4	5985+00	6	7	8	9	5990+00	1	2	3	4	5995+00	6	7	8	9	6000+00	1	2	3	4	6005+00	6	7	8	9	6010+00	6010+50	TOTAL
CY Exc																															
CY Emb																															

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 5982+50 TO 6010+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1462
SCALE AS SHOWN
SHEET NO. 15 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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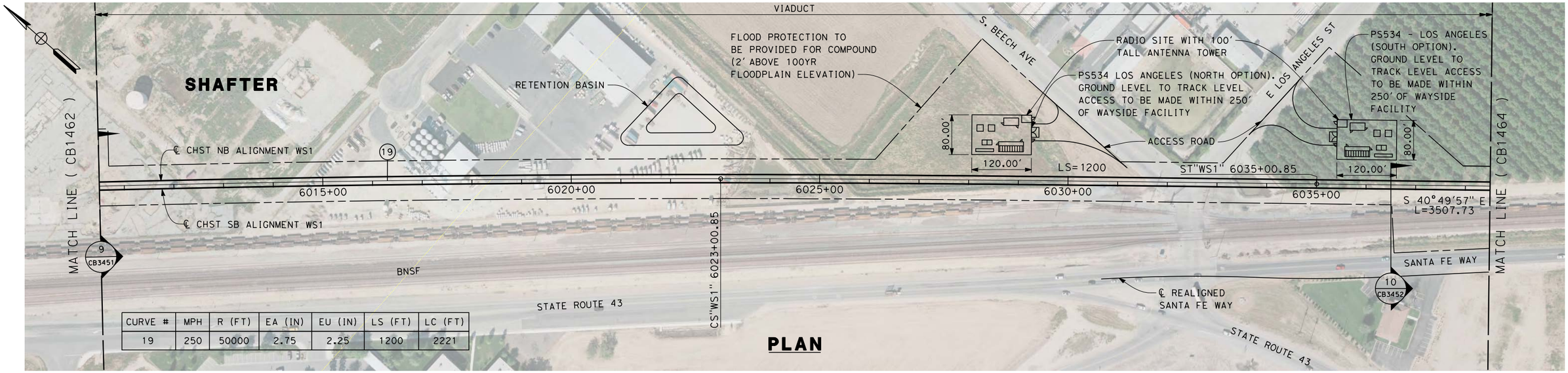
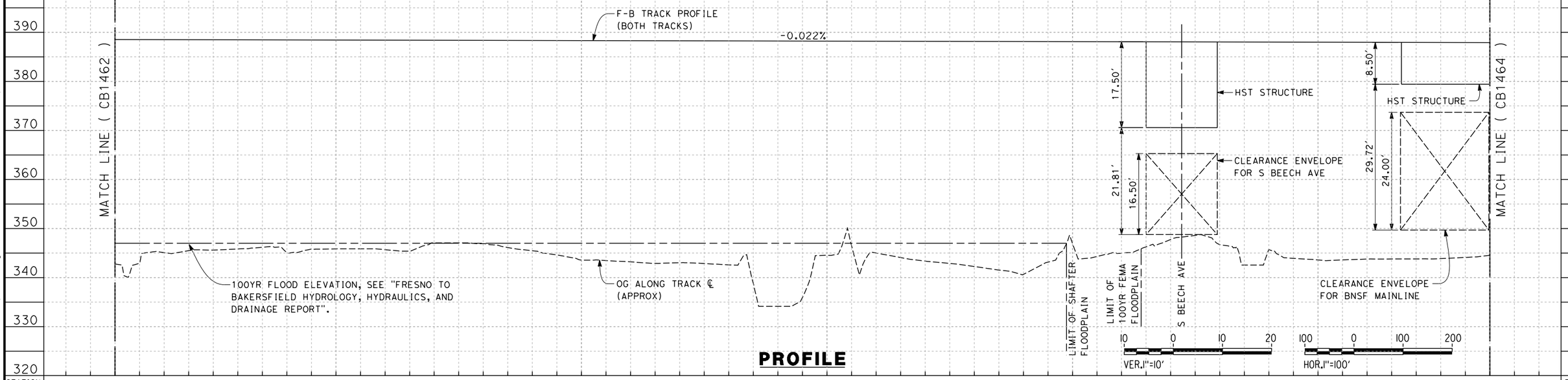


CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
19	250	50000	2.75	2.25	1200	2221

PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 6010+50 TO 6038+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1463
SCALE AS SHOWN
SHEET NO. 16 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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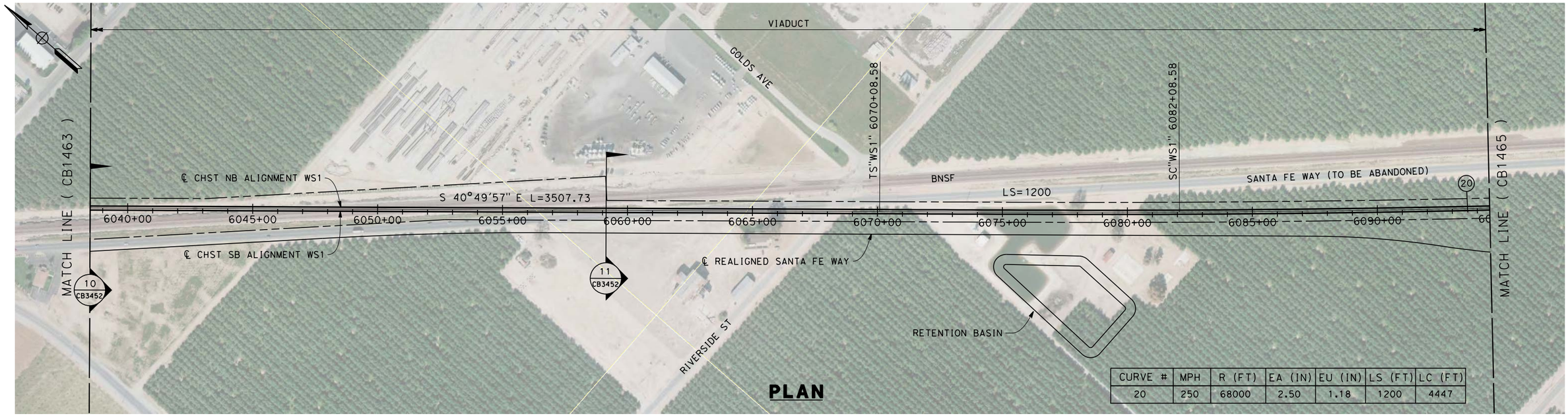
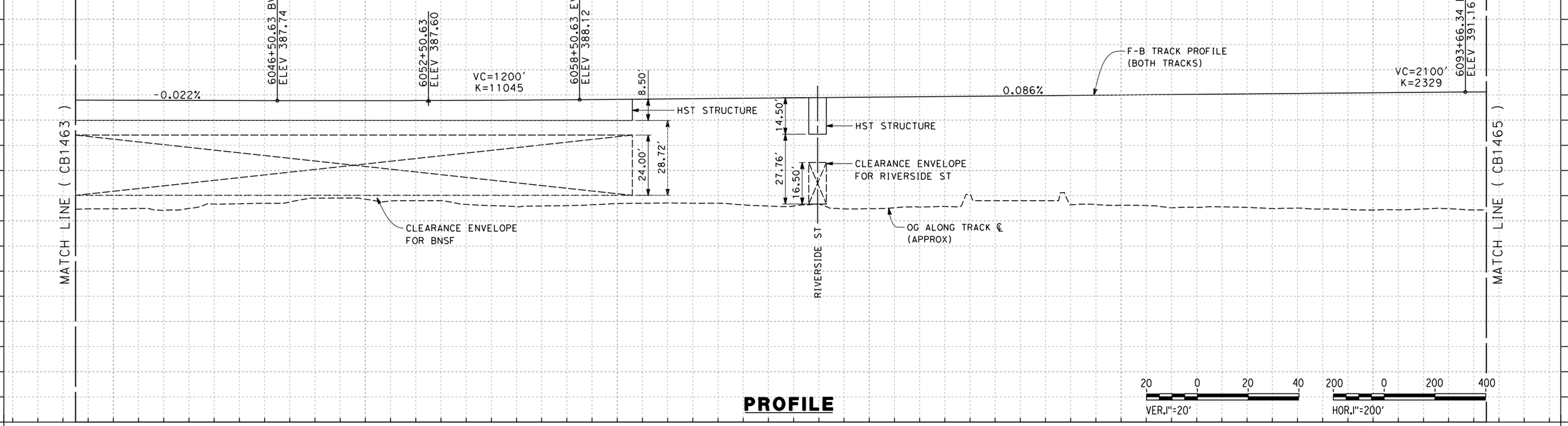


CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
20	250	68000	2.50	1.18	1200	4447



STATION	6038+50	6040+00	6050+00	6060+00	6070+00	6080+00	6090+00	6094+50	TOTAL
CY Exc									
CY Emb									

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 6038+50 TO 6094+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. CB1464
SCALE AS SHOWN
SHEET NO. 17 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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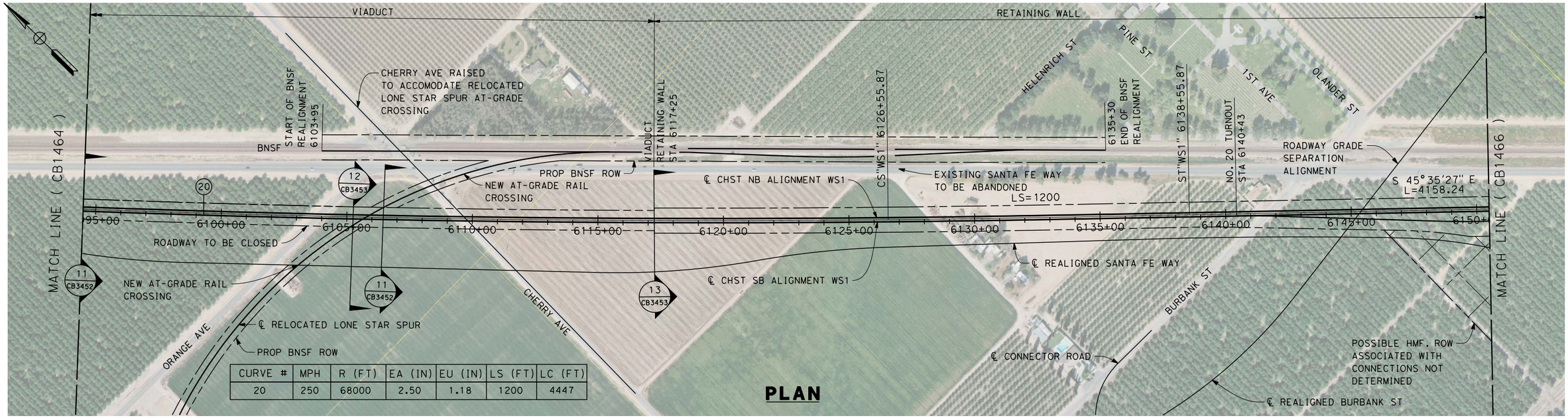
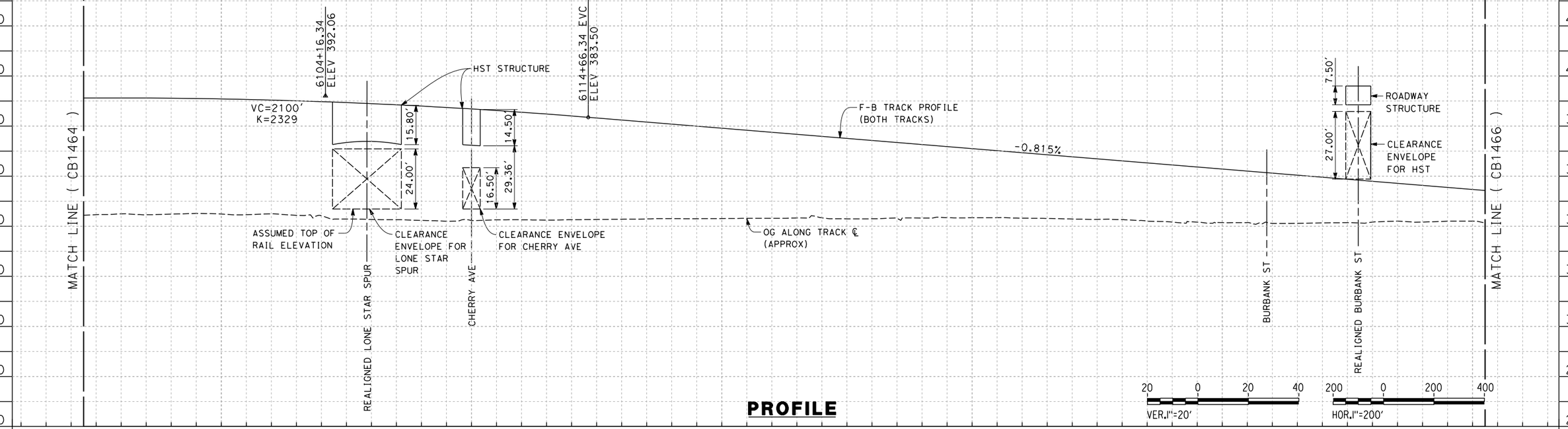


CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
20	250	68000	2.50	1.18	1200	4447

PLAN



PROFILE

STATION	6094+50	6100+00	6110+00	6120+00	6130+00	6140+00	6150+50	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY P. TONKIN
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 6094+50 TO 6150+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1151
SCALE AS SHOWN
SHEET NO. 18 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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CURVE #	MPH	R (FT)	EA (IN)	EU (IN)	LS (FT)	LC (FT)
21	250	105000	1.25	1.13	1200	1216

℄ REALIGNED BURBANK ST
RETAINING WALL
RETAINING WALL
EARTHWORKS
6151+00
MATCH LINE (CB1465)
℄ MAINTENANCE OF INFRASTRUCTURE FACILITY SIDING TRACK
EXISTING LONE STAR SPUR TO BE RELOCATED (SEE SHEET CB1465)
S 45°35'27" E L=4158.24
NO. 11 TURNOUT (TYP)
30' MOIF TRACK CENTERLINE SPACINGS EXCEPT WHERE SHOWN OTHERWISE. LENGTHS MEET OR EXCEEDED REQUIREMENTS IN DIRECTIVE DRAWING 5.1H
SIDING CP TO CP = 3784'
MOI 1 CP TO CP = 3125'
TS"WS1" 6180+14.11
EXISTING SANTA FE WAY TO BE ABANDONED
LS=1200
SC"WS1" 6192+14.11
21
BNSF
℄ CHST NB ALIGNMENT WS1
CS"WS1" 6204+29.93
LS=1200
SANTA FE WAY
6155+00 6160+00 6165+00 6170+00 6175+00 6180+00 6185+00 6190+00 6195+00 6200+00 6205+00
MOI 2 CP TO CP = 2466'
MOI 3 CP TO CP = 1808'
MOI 4 CP TO CP = 1149'
MOI 5 CP TO CP = 930'
MOI 6 CP TO CP = 570'
NO. 11 TURNOUT (TYP)
LENGTH OF LEAD TRACK = 2566'
℄ CHST SB ALIGNMENT WS1
40.00'
40.00'
40.00'
14
CB3454
15
CB3455
SRS18 (NORTH OPTION)
LENGTH OF LEAD TRACK = 1371'
SRS18 (SOUTH OPTION)
BALLAST STORAGE AREA
ACCESS ROAD
POWER SUBSTATION
MOIF ~ 38 ACRES
EQUIPMENT PARKING
WAREHOUSE
PARKING
ACCESS ROAD CONNECTS TO REALIGNED SANTA FE WAY
MENDOTA ST
POSSIBLE HMF. ROW ASSOCIATED WITH CONNNECTIONS NOT DETERMINED.
℄ REALIGNED SANTA FE WAY
MATCH LINE (CB1467)

PLAN

420 400 380 360 340 320 300 280 260

6150+69.06 BVC
ELEV 354.13
-0.815%
VC=1900'
K=2285
LONE STAR SPUR (TO BE RELOCATED)
6169+69.06 EVC
ELEV 346.54
F-B TRACK PROFILE (BOTH TRACKS)
0.016%
6160+19.06
ELEV 346.38
LIMITS OF WEIDENBACH ST FLOODPLAIN
LIMIT OF 100YR FEMA FLOODPLAIN
OG ALONG TRACK ℄ (APPROX)
100 YEAR FLOOD ELEVATION. SEE "FRESNO TO BAKERSFIELD HYDROLOGY, HYDRAULICS, AND DRAINAGE REPORT".
MATCH LINE (CB1465)
MATCH LINE (CB1467)

20 0 20 40 VER,1"=20'
200 0 200 400 HOR,1"=200'

PROFILE

STATION	6150+50	6160+00	6170+00	6180+00	6190+00	6200+00	6206+50	TOTAL
CY Exc								
CY Emb								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY P. TONKIN
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 6150+50 TO 6206+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1152
SCALE AS SHOWN
SHEET NO. 19 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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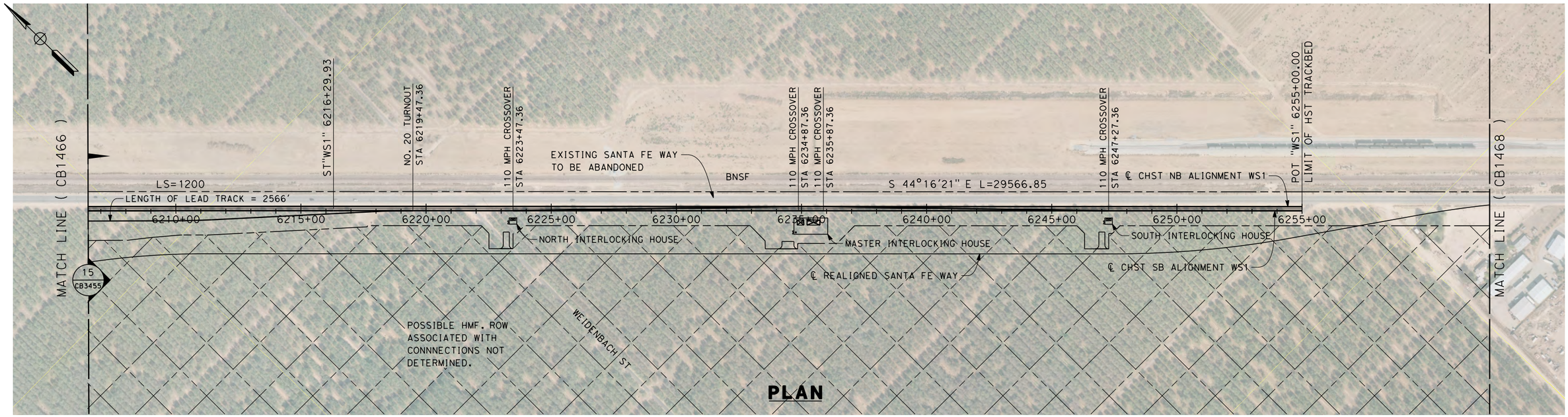
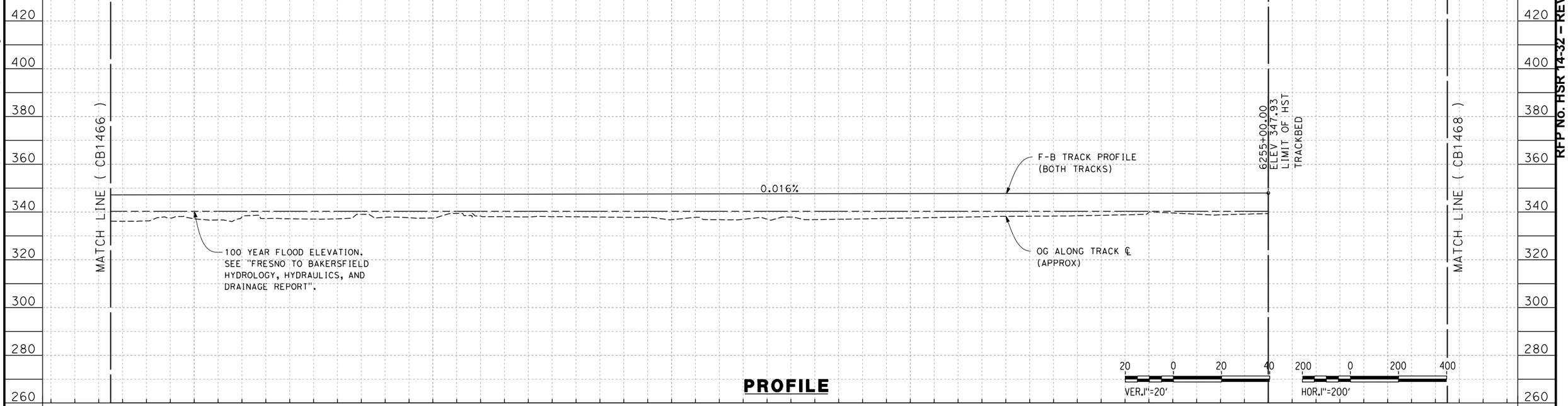


PLAN



PROFILE

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 6206+50 TO 6262+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1153
SCALE AS SHOWN
SHEET NO. 20 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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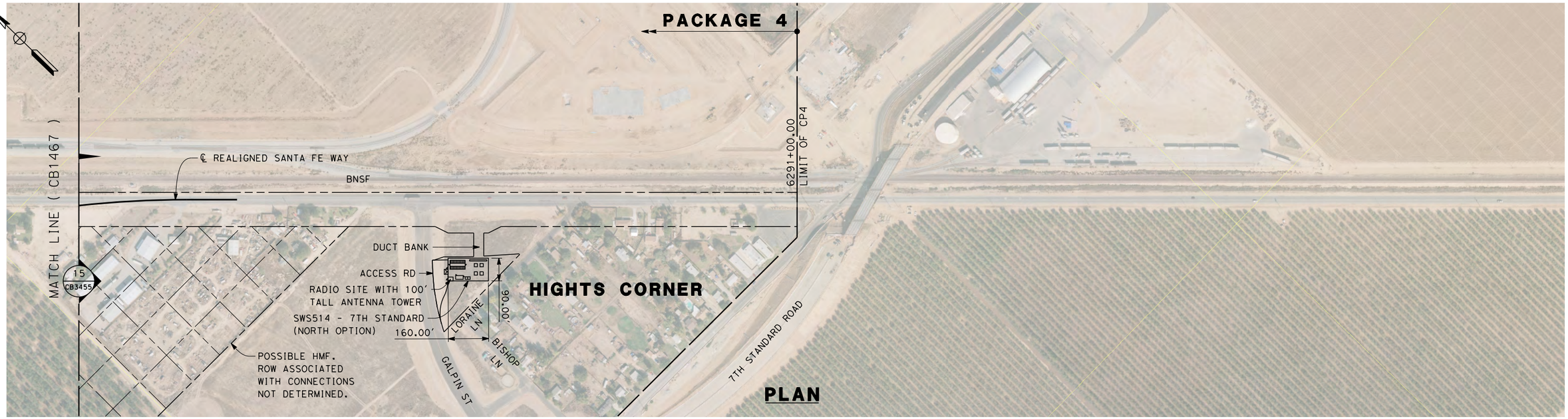
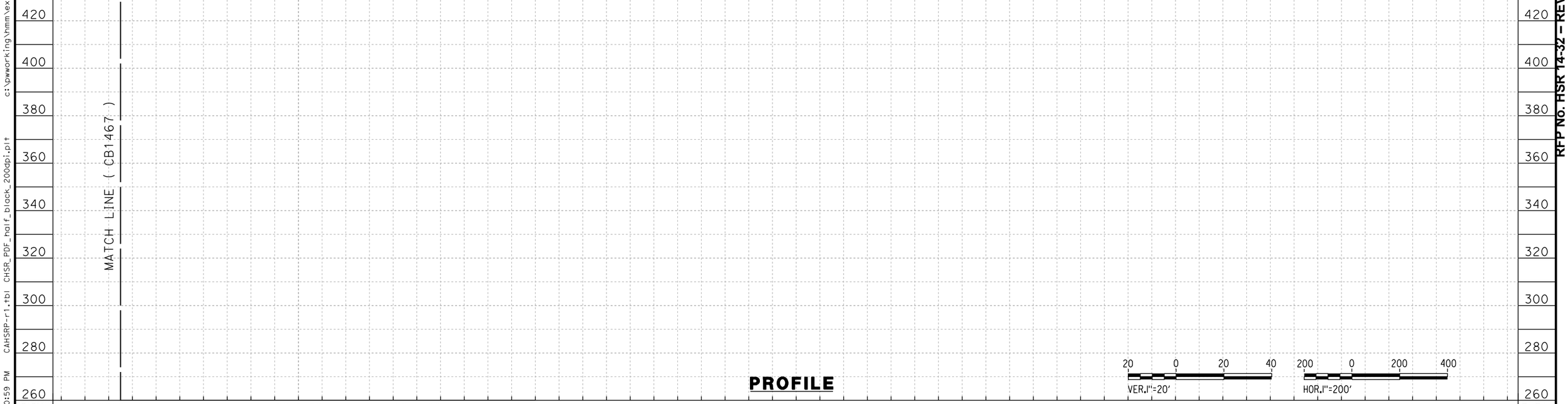


PLAN



PROFILE

STATION	6262+50	6270+00	6275+00	TOTAL
CY Exc				
CY Emb				

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY P. TONKIN
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STA. 6262+50 TO 6318+50
PLAN AND PROFILE

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D1154
SCALE AS SHOWN
SHEET NO. 21 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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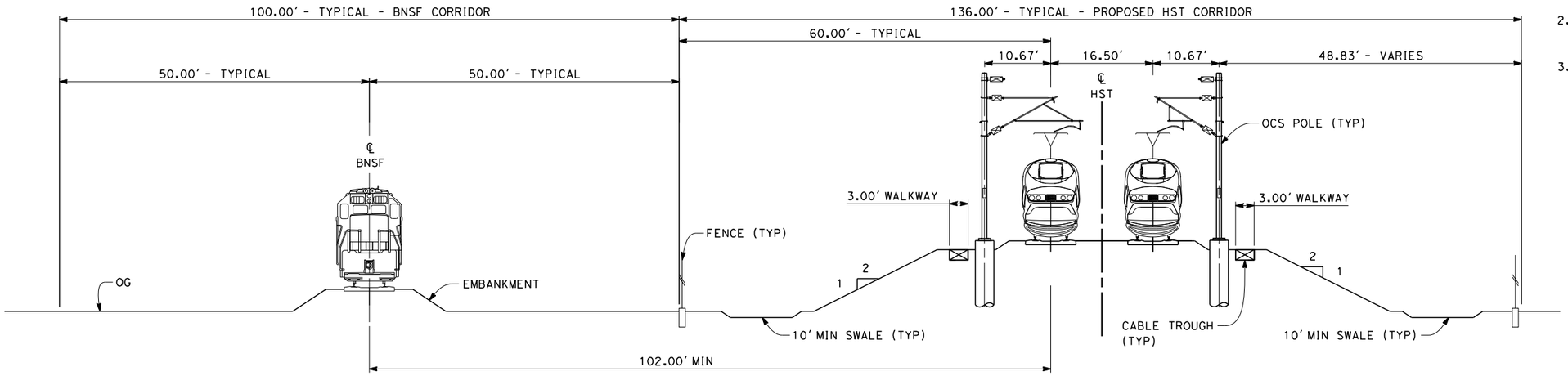
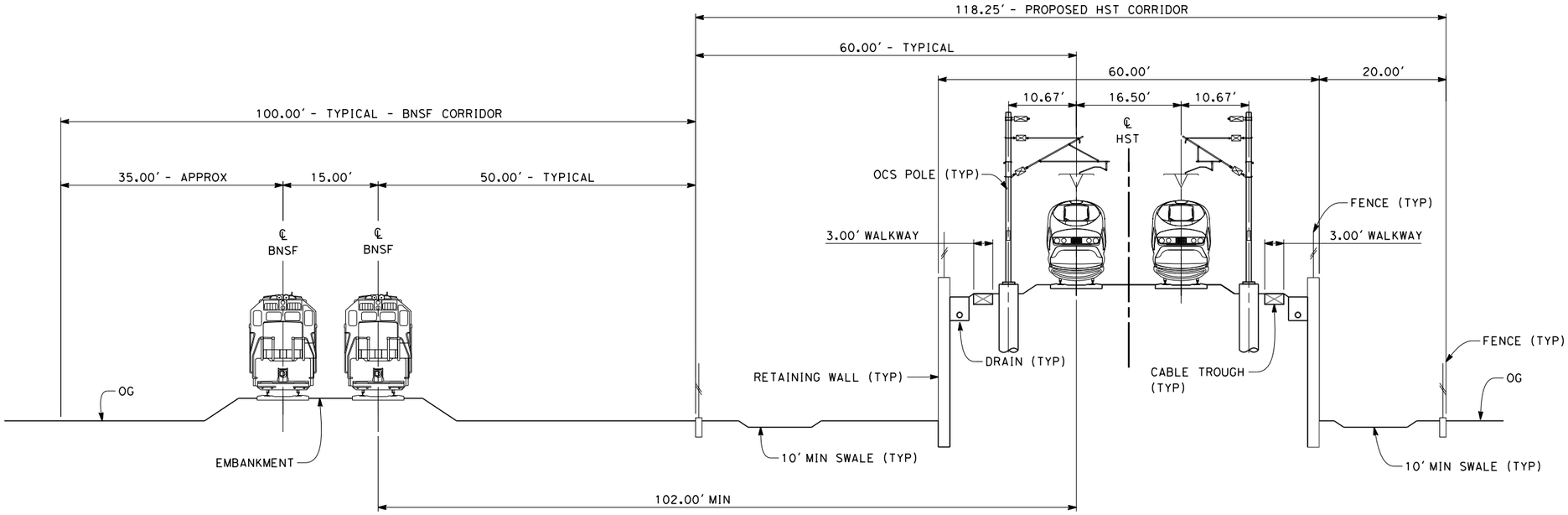


NOTE:
"TWIN-TRACK BNSF EXISTS BETWEEN STA: 5506+00 TO 5551+00"

SECTION 1

TWIN TRACK - ADJACENT TO BNSF
STA 5422+50 THROUGH STA 5551+00



SECTION 2

TWIN TRACK ON RETAINED EMBANKMENT, ADJACENT TO BNSF
STA 5551+00 THROUGH STA 5556+40
STA 5557+60 THROUGH STA 5564+80

10 0 10 20
1"=10'

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT FRESNO TO BAKERSFIELD

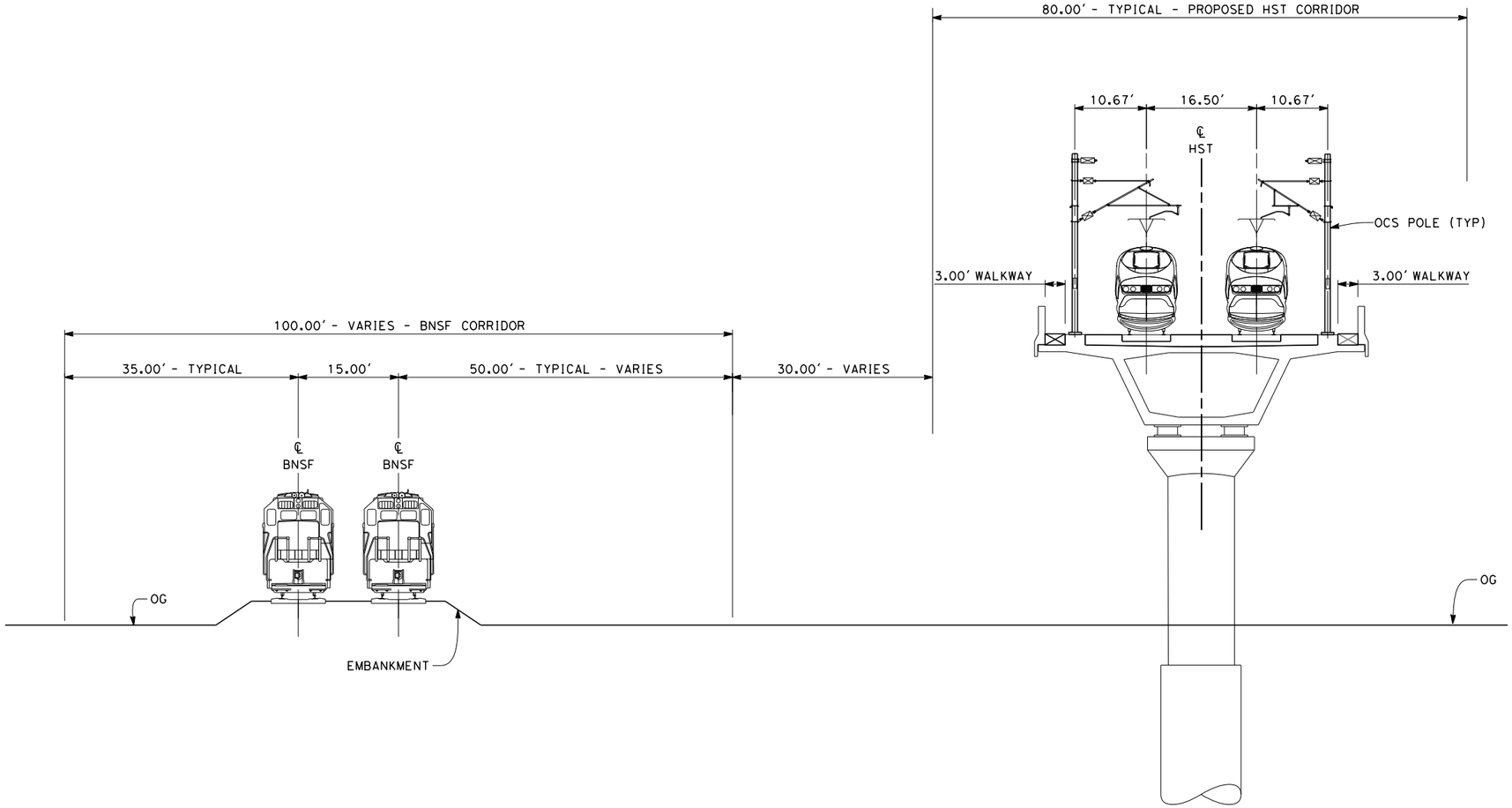
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3446
SCALE AS SHOWN
SHEET NO. 26 OF 35

stephen.litsas 12/12/2013 2:56:33 PM c:\pwworking\hmm\external\paul.tonkin01-arup.com\dms69051\FB-CB-3446-WS1.dgn

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. FOR EXTENTS OF BNSF REALIGNMENTS AND LOCATION OF BNSF SIDING TRACKS, SEE PLAN SHEETS.
4. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



SECTION 3

TWIN TRACK - AERIAL VIADUCT ADJACENT TO BNSF
STA 5556+40 THROUGH STA 5557+60
STA 5564+80 THROUGH STA 5661+30

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

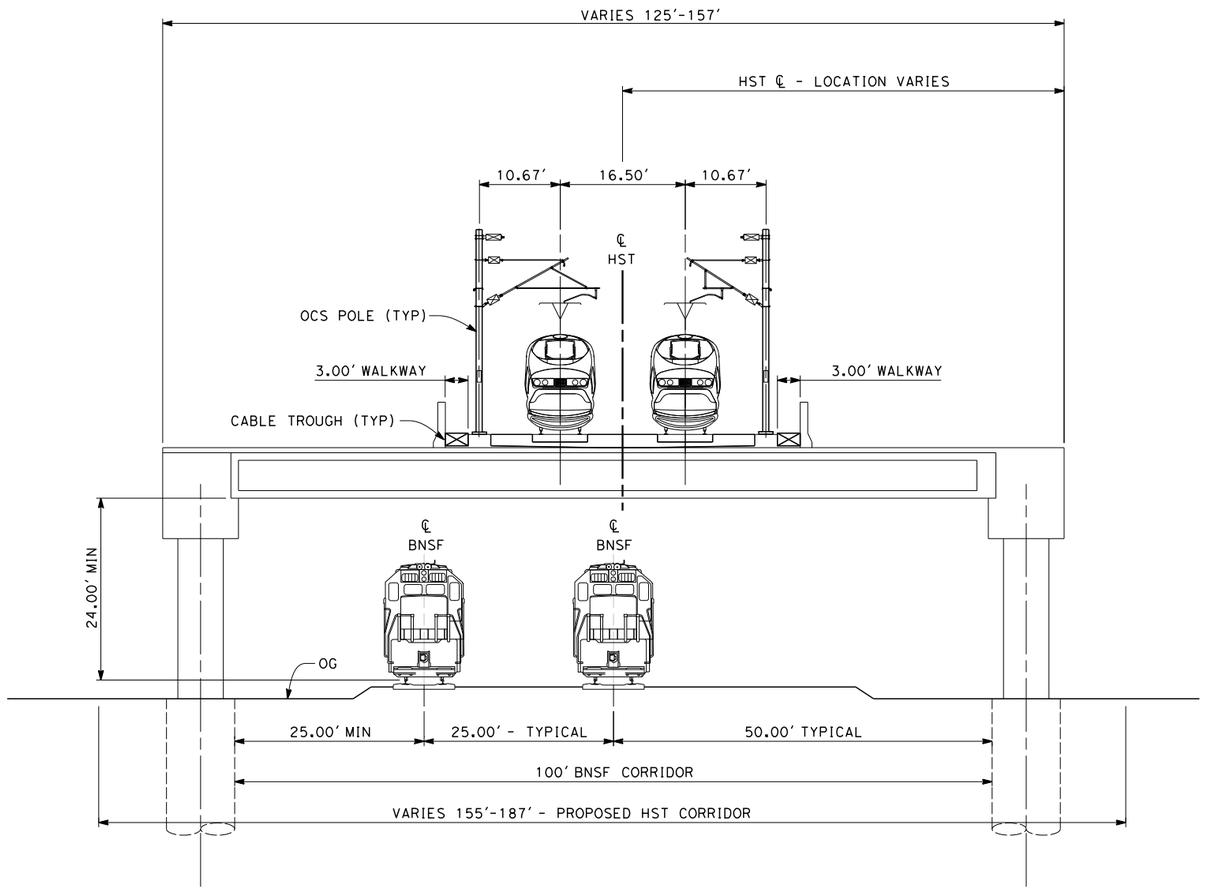
CONTRACT NO. HSR 06-0003
DRAWING NO. CB3447
SCALE AS SHOWN
SHEET NO. 27 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

stephen.litsas 12/12/2013 2:56:58 PM c:\pwworking\hmm\external\paul.tonkin01-arup.com\dms69051\FB-CB-3447-WS1.dgn

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. FOR EXTENTS OF BNSF REALIGNMENTS, SEE PLAN SHEETS.
4. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



SECTION 4

TWIN TRACK - ELEVATED SLAB OVER BNSF
STA 5661+30 THROUGH STA 5674+55

10 0 10 20
1"=10'

RFP No. HSR 14-32 – REVIEW DRAFT

$USER$ $DATE$ $TIME$ $FILE$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

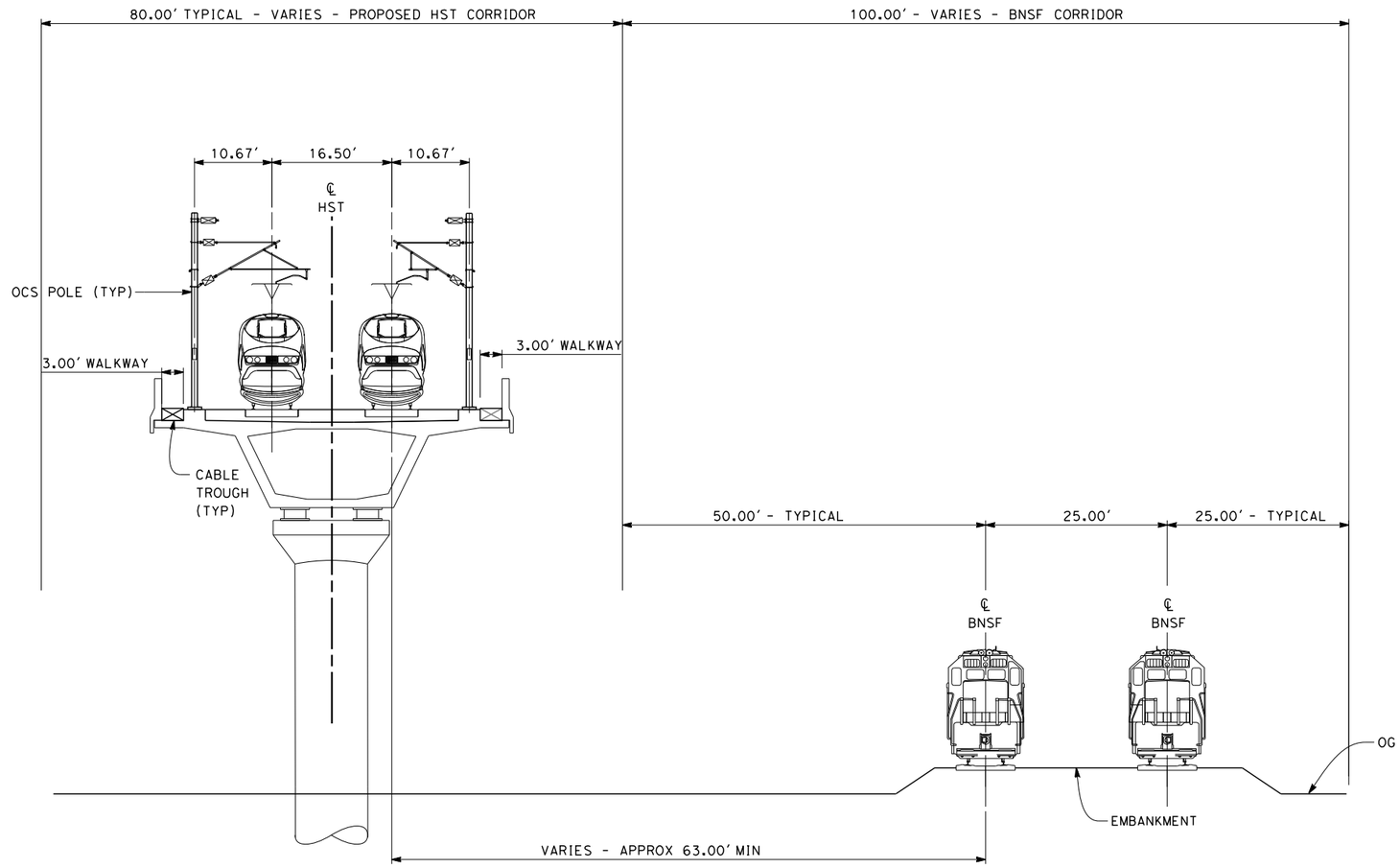
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3448
SCALE AS SHOWN
SHEET NO. 28 OF 35

NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. FOR EXTENTS OF BNSF REALIGNMENTS, SEE PLAN SHEETS.
4. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



SECTION 5

TWIN TRACK - AERIAL VIADUCT ADJACENT TO BNSF
STA 5674+55 THROUGH STA 5682+95

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S, LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3449
SCALE AS SHOWN
SHEET NO. 29 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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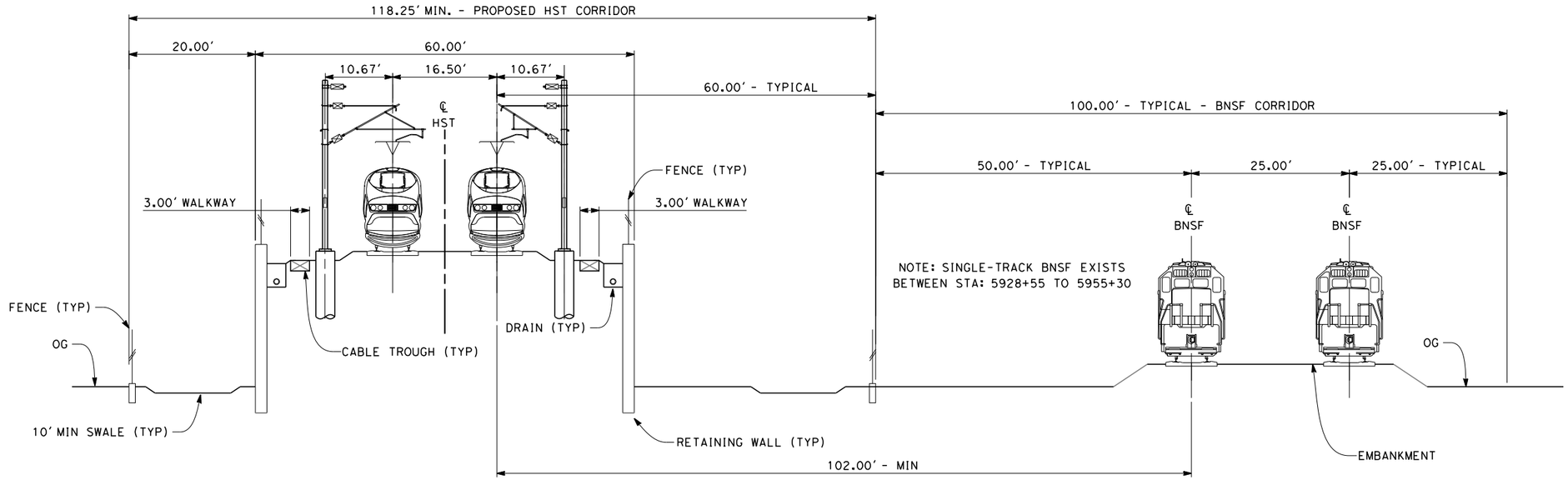
NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. FOR EXTENTS OF BNSF REALIGNMENT, SEE PLAN SHEETS.
4. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



SECTION 6

TWIN TRACK ON RETAINED EMBANKMENT - ADJACENT TO BNSF
STA 5682+95 THROUGH STA 5709+50
STA 5928+55 THROUGH STA 5955+30

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3450
SCALE AS SHOWN
SHEET NO. 30 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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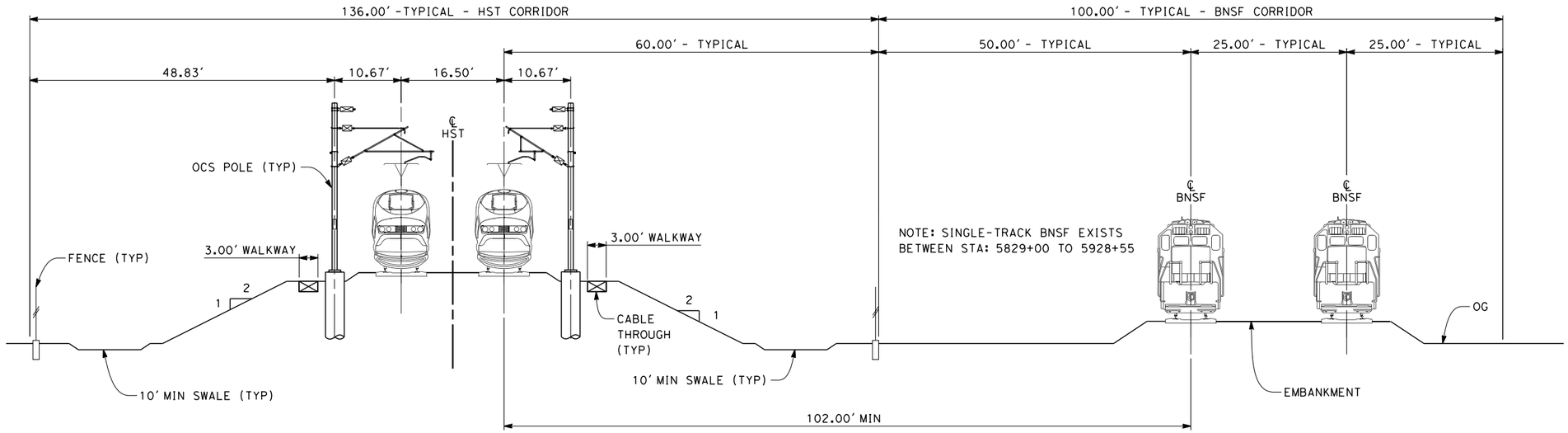
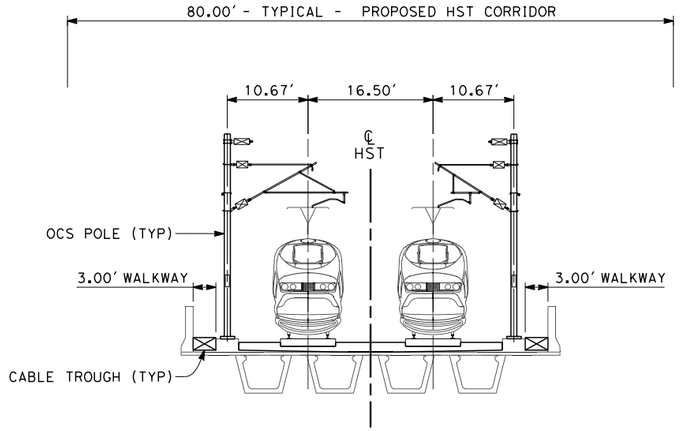


NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. FOR EXTENTS OF BNSF REALIGNMENTS, SEE PLAN SHEETS.
4. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
5. PER CALTRANS HIGHWAY DESIGN MANUAL REQUIREMENTS, A HIGHWAY BARRIER IS REQUIRED WHEN ADEQUATE HORIZONTAL CLEARANCE BETWEEN ROADWAY TRAVELED WAY AND HST STRUCTURE COLUMN IS NOT MET. STA 5968+70 TO 5996+40

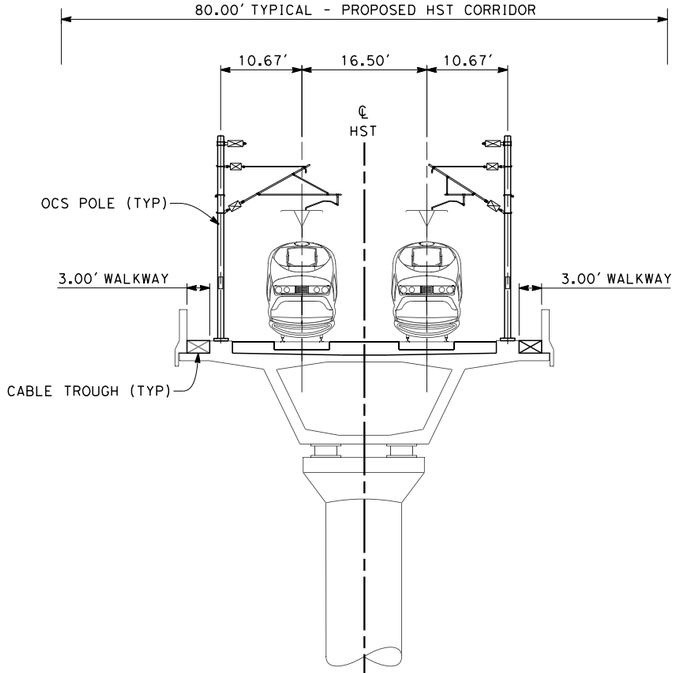
SECTION 7

TWIN TRACK - ADJACENT TO BNSF
STA 5709+50 THROUGH STA 5715+96
STA 5716+80 THROUGH STA 5928+55



SECTION 8

TWIN TRACK - ELEVATED PRECAST CONCRETE GIRDER STRUCTURE
STA 5715+96 THROUGH STA 5716+80



SECTION 9

TWIN TRACK - AERIAL VIADUCT
STA 5955+30 THROUGH STA 6036+65

10 0 10 20
1"=10'

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3451
SCALE AS SHOWN
SHEET NO. 31 OF 35

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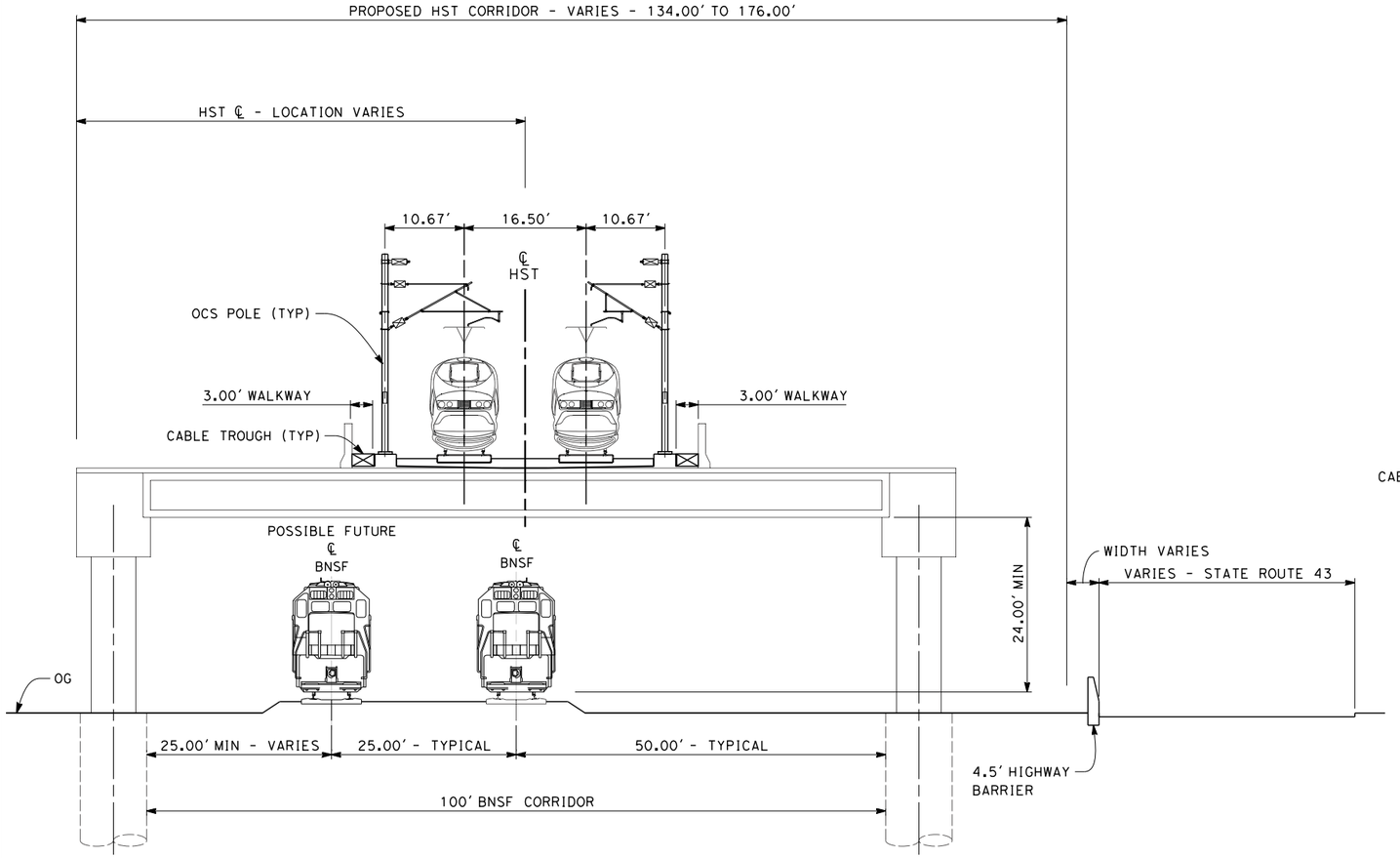
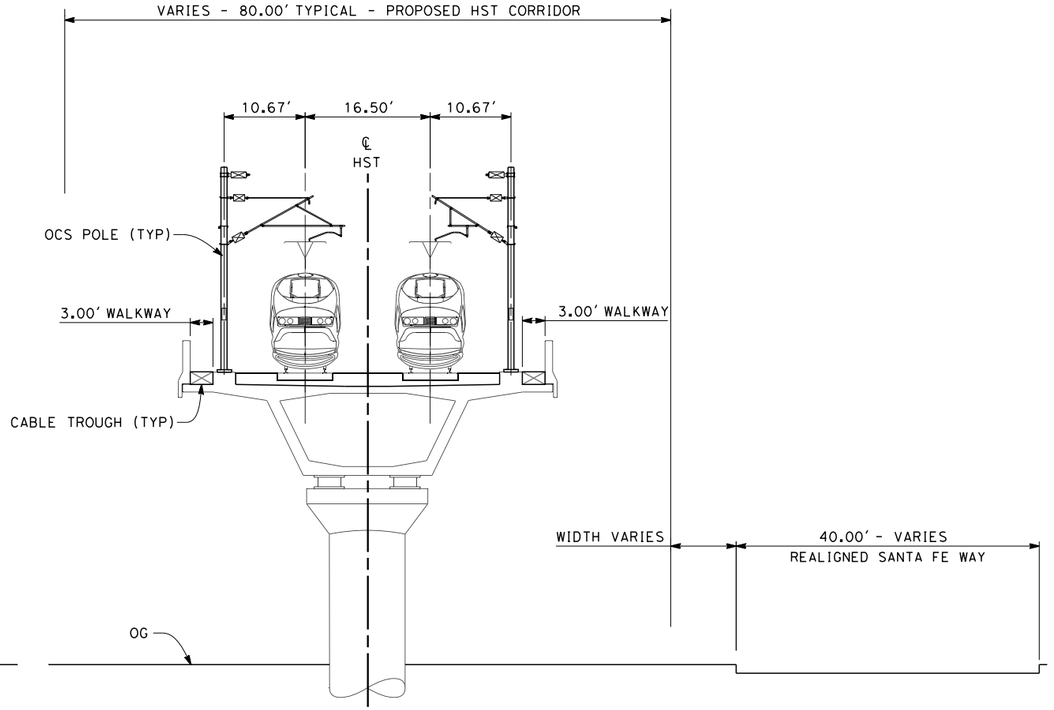
NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
4. PER CALTRANS HIGHWAY DESIGN MANUAL REQUIREMENTS, A HIGHWAY BARRIER IS REQUIRED WHEN ADEQUATE HORIZONTAL CLEARANCE BETWEEN ROADWAY TRAVELED WAY AND HST STRUCTURE COLUMN IS NOT MET. STA 6036+65 TO 6059+05.



SECTION 10

TWIN TRACK - ELEVATED SLAB OVER BNSF ADJACENT TO HIGHWAY
STA 6036+65 THROUGH STA 6059+05



SECTION 11

TWIN TRACK - AERIAL VIADUCT ADJACENT TO REALIGNED SANTA FE WAY
STA 6059+05 THROUGH STA 6105+25
STA 6106+45 THOGUTH STA 6117+75

10 0 10 20
1"=10'

RFP No. HSR 14-32 – REVIEW DRAFT

$FILE$ $TIME$ $DATE$ $USER$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

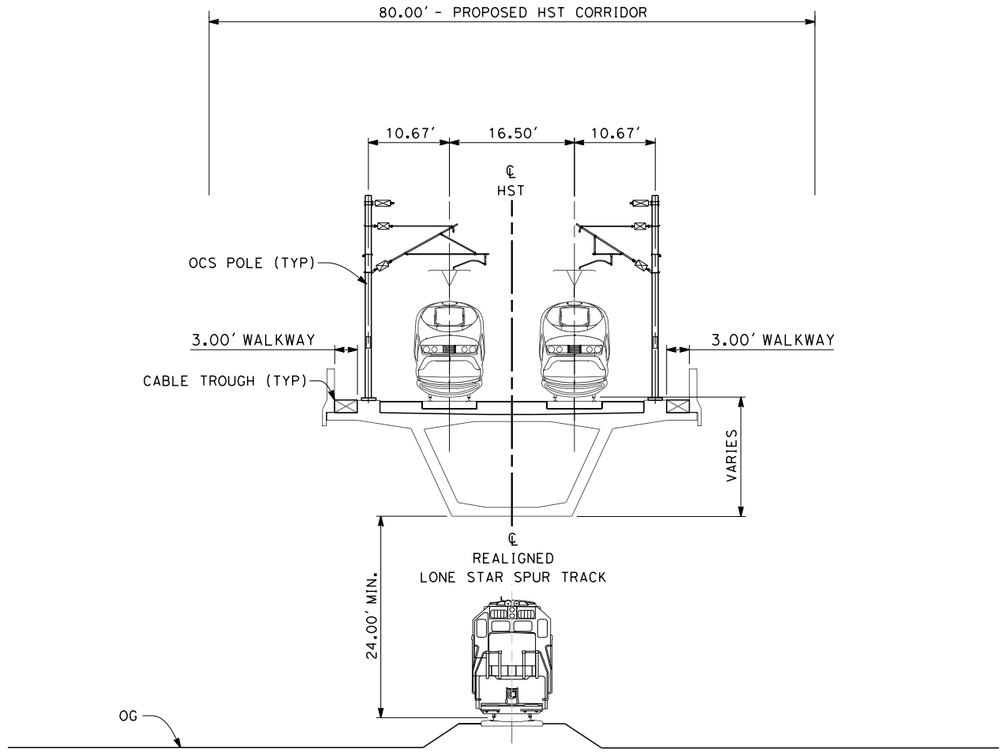
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3452
SCALE AS SHOWN
SHEET NO. 32 OF 35

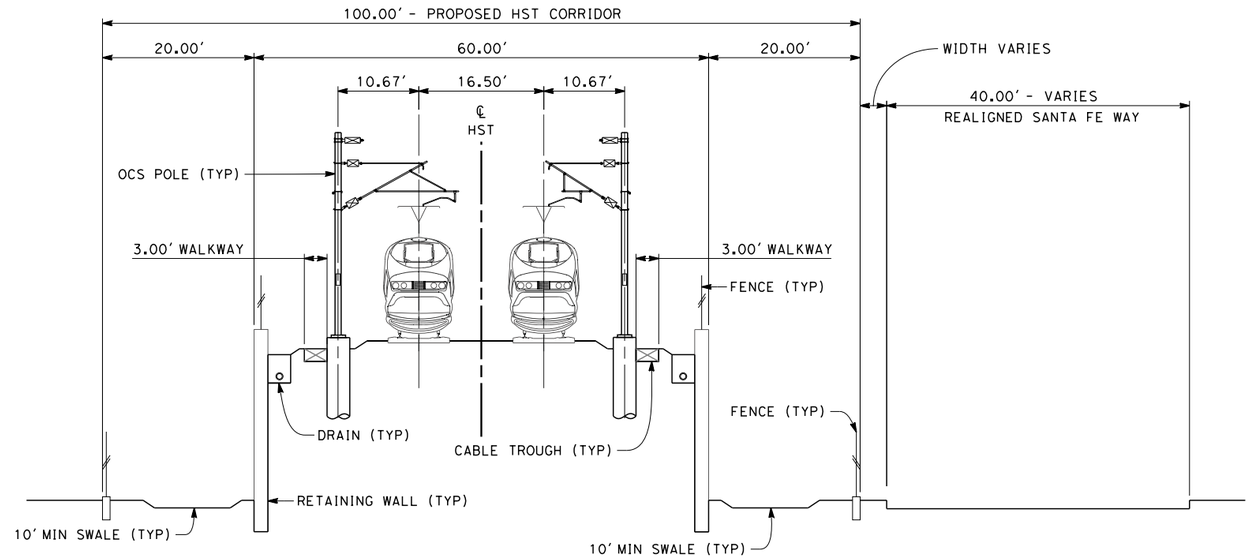
NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



SECTION 12

TWIN TRACK VIADUCT OVER REALIGNED LONE STAR SPUR
STA 6105+25 THROUGH STA 6106+45



SECTION 13

TWIN TRACK ON RETAINED EMBANKMENT - ADJACENT TO REALIGNED SANTA FE WAY
STA 6117+25 THROUGH STA 6151+00

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY P. TONKIN
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-D3151
SCALE AS SHOWN
SHEET NO. 33 OF 35

RFP NO. HSR 14-32 – REVIEW DRAFT

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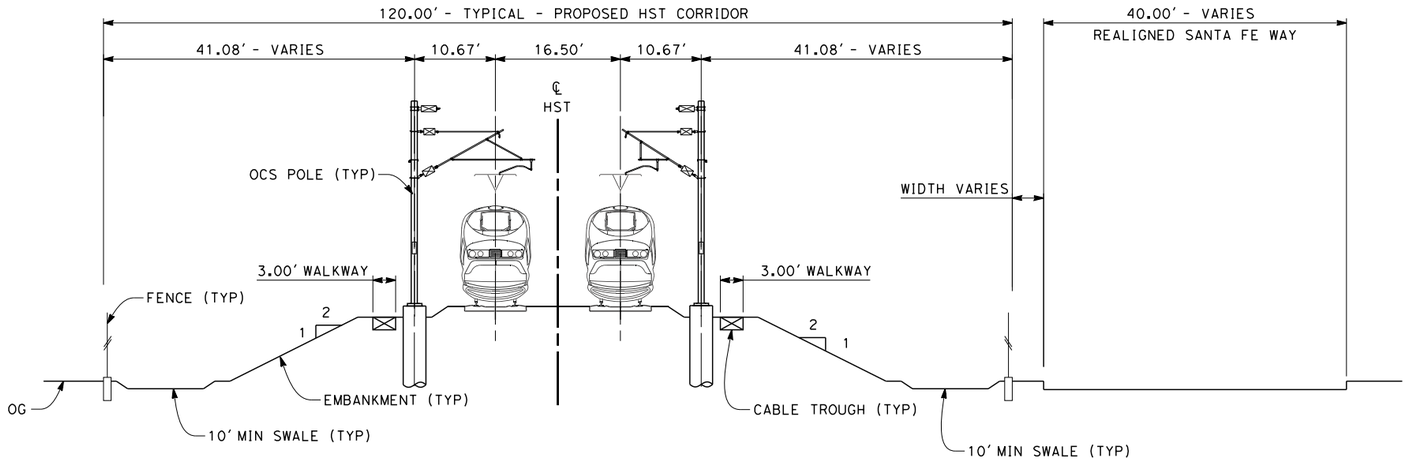
NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.
4. MOIF NOT SHOWN. SEE PLAN DRAWINGS.



SECTION 14

TWIN TRACK - AT GRADE ADJACENT TO REALIGNED SANTA FE WAY
STA 6151+00 THROUGH STA 6195+00

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3454
SCALE AS SHOWN
SHEET NO. 34 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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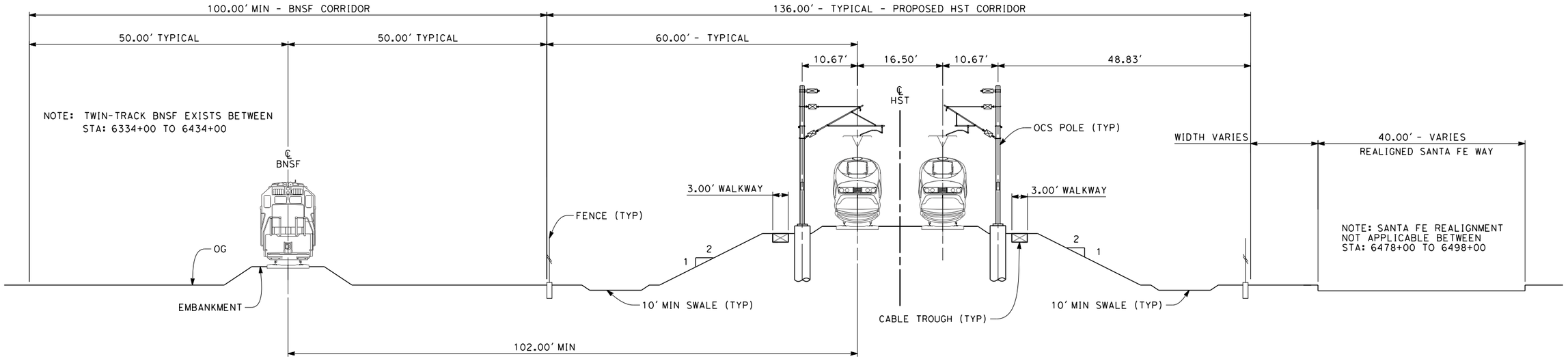
NOTES:

1. TRACKFORM SHOWN IS INDICATIVE.
2. FOR STRUCTURE DIMENSIONS SEE STRUCTURAL CROSS SECTIONS.
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE DATA TABLES.



SECTION 15

TWIN TRACK - BETWEEN BNSF AND REALIGNED SANTA FE
STA 6195+00 THROUGH STA 6511+96.78

10 0 10 20
1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. LITSAS
DRAWN BY J. BORGHESI
CHECKED BY G. WALKER
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CB3455
SCALE AS SHOWN
SHEET NO. 35 OF 35

RFP No. HSR 14-32 – REVIEW DRAFT

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CALIFORNIA HIGH-SPEED TRAIN

HST Structure Plans

RECORD SET 15% DESIGN SUBMISSION

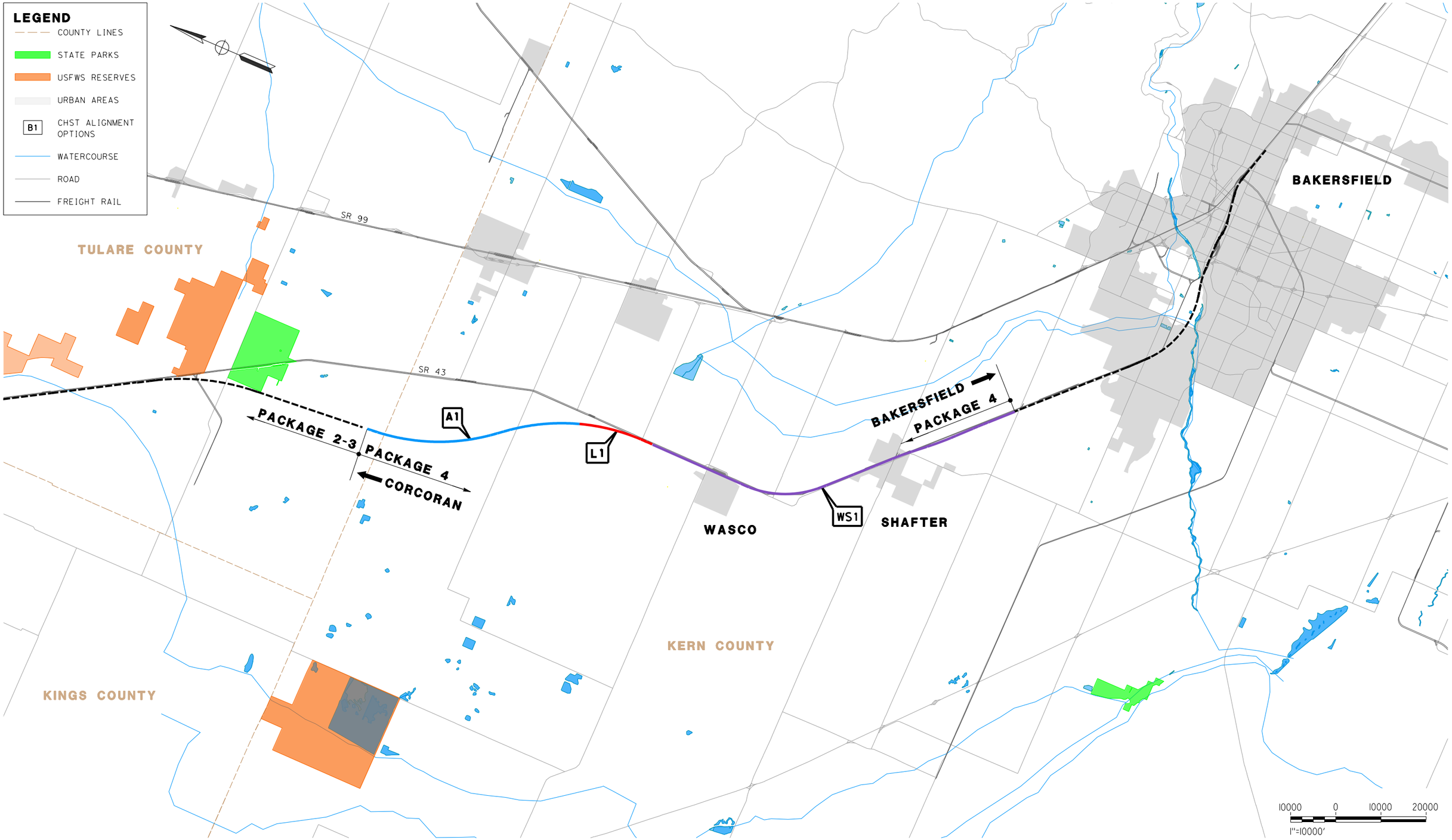
Fresno to Bakersfield

Plans and Elevations and Typical Sections

May 2014

CALIFORNIA High-Speed Rail Authority

RFP No. HSR 14-32 – REVIEW DRAFT



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY S. BURGES
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
PACKAGE 4
ALIGNMENT
LOCATION MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-B1100
SCALE AS SHOWN
SHEET NO. 1 OF 4

RFP No. HSR 14-32 – REVIEW DRAFT

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paul.tonkin

GENERAL SHEETS

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
TT-B1100		PACKAGE 4 - ALIGNMENT - LOCATION MAP	1 OF 4
GE-A0028		HST STRUCTURES - INDEX OF SHEETS	2 OF 4
CB0010		GENERAL - ABBREVIATIONS AND LEGENDS - SHEET 1 OF 2	3 OF 4
CB0011		GENERAL - ABBREVIATIONS AND LEGENDS - SHEET 2 OF 2	4 OF 4

ALIGNMENT L1 - POSO CREEK BRIDGE

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SV1600		POSO CREEK SUBSECTION - ALIGNMENT L1 - POSO CREEK BRIDGE - KEY MAP	1 OF 2
SV1601		POSO CREEK SUBSECTION - ALIGNMENT L1 - POSO CREEK BRIDGE - PLAN AND ELEVATION	2 OF 2

ALIGNMENT WS1 - STATE ROUTE 46 UNDERPASS

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SV1698		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STATE ROUTE 46 UNDERPASS - KEY MAP	1 OF 2
SV1699		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - STATE ROUTE 46 UNDERPASS - PLAN AND ELEVATION	2 OF 2

ALIGNMENT WS1 - WASCO VIADUCT

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SV1700		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - KEY MAP	1 OF 15
SV1703		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	2 OF 15
SV1704		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	3 OF 15
SV1705		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	4 OF 15
SV1706		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	5 OF 15
SV1707		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	6 OF 15
SV1708		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	7 OF 15
SV1709		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	8 OF 15
SV1710		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	9 OF 15
SV1711		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	10 OF 15
SV1712		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	11 OF 15
SV1713		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	12 OF 15
SV1714		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	13 OF 15
SV1715		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - PLAN AND ELEVATION	14 OF 15
SV1716		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - WASCO VIADUCT - TYPICAL SECTIONS	15 OF 15

ALIGNMENT WS1 - KIMBERLINA ROAD UNDERPASS

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SV1720		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - KIMBERLINA ROAD UNDERPASS - KEY MAP	1 OF 3
SV1721		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - KIMBERLINA ROAD UNDERPASS - PLAN AND ELEVATION	2 OF 3
SV1722		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - KIMBERLINA ROAD BNSF UNDERPASS - PLAN AND ELEVATION	3 OF 3

ALIGNMENT WS1 - SHAFTER VIADUCT

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SV1750		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - KEY MAP	1 OF 20
SV1756		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	2 OF 20
SV1757		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	3 OF 20
SV1758		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	4 OF 20
SV1759		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	5 OF 20
SV1760		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	6 OF 20
SV1761		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	7 OF 20
SV1762		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	8 OF 20
SV1763		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	9 OF 20
SV1764		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	10 OF 20
SV1765		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	11 OF 20
SV1766		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	12 OF 20
SV1767		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	13 OF 20
SV1768		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	14 OF 20
SV1769		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	15 OF 20
SV1770		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	16 OF 20
SV1771		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	17 OF 20
SV1772		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - PLAN AND ELEVATION	18 OF 20
SV1773		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - TYPICAL SECTIONS	19 OF 20
SV1774		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - SHAFTER VIADUCT - TYPICAL SECTIONS	20 OF 20

RFP NO. HSR 14-32 – REVIEW DRAFT

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY P. TONKIN
DRAWN BY P. TONKIN
CHECKED BY K. SEYMOUR
IN CHARGE S. BURGES
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
HSR STRUCTURES
INDEX OF SHEETS

CONTRACT NO. HSR 06-0003
DRAWING NO. GE-A0028
SCALE NO SCALE
SHEET NO. 2 OF 4

A

AB	AGGREGATE BASE
ABBC	ASBESTOS BONDED BITUMINOUS COATED
ABM	AIR-BLOWN MORTAR
ABN	ABANDON
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
ACB	ASPHALT CONCRETE BASE
ACP	ASBESTOS CEMENT PIPE
ADL	ADDED DEAD LOAD
ADJ	ADJUST
AFES	ALTERNATIVE FLARED END SECTION
AHD	AHEAD
ALT	ALTERNATE
AM	TIME FROM MIDNIGHT TO NOON
AP	ALTERNATIVE PIPE
APC	ALTERNATIVE PIPE CULVERT
APPROX	APPROXIMATE
APU	ALTERNATIVE PIPE UNDERDRAIN
ARS	ACCELERATION RESPONSE SPECTRUM
AR	ACCESS RESTRICTION
AS	AGGREGATE SUBBASE
ASRP	ALUMINUM SPIRAL RIB PIPE
ASSY	ASSEMBLY
ATPB	ASPHALT TREATED PERMEABLE BASE
ATPM	ASPHALT TREATED PERMEABLE MATERIAL
AVE	AVENUE
AVG	AVERAGE
@	AT

B

BAGR	BRIDGE APPROACH GUARD RAILING
BB	BEGINNING OF BRIDGE
BC	BEGIN HORIZONTAL CURVE
BCC	BALANCED CANTILEVER CONSTRUCTION
BCR	BEGIN CURB RETURN
BEG	BEGIN
BIT CTD	BITUMINOUS COATED
BK	BACK
BKF	BACKFILL
BLDG	BUILDING
BLM	BRIDGE-LOG MILE
BLVD	BOULEVARD
BM	BENCH MARK
BND	BOUND
BNSF	BURLINGTON NORTH & SANTA FE
BOT	BOTTOM
BR	BRIDGE
BRG	BEARING
BTU	BRITISH THERMAL UNIT
BVC	BEGIN VERTICAL CURVE
BW	BARBED WIRE

C

CAA	CABLE ANCHOR ASSEMBLY
CAP	CORRUGATED ALUMINUM PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CAS	CONSTRUCTION AREA SIGN
CB	CONCRETE BARRIER
CBW	CONCRETE BLOCK WALL
C-C	CENTER TO CENTER

C CONTINUED

CHSRA	CALIFORNIA HIGH SPEED RAIL AUTHORITY
CHST	CALIFORNIA HIGH SPEED TRAIN
CHSR	CALIFORNIA HIGH SPEED RAIL
CG	CENTER OF GRAVITY
CHNL	CHANNEL
CI	CAST IRON
CIDH	CAST-IN-DRILLED-HOLE
CIP,C-I-P	CAST-IN-PLACE, CAST IRON PIPE
CIPCP	CAST IN PLACE CONCRETE PIPE
CISS	CAST-IN-STEEL-SHELL
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE, CLASS
CL2	CLASS 2
CL-6	CHAIN LINK FENCE (6 FT)
CLR	CLEAR, CLEARANCE
CM	CORRUGATED METAL
CMP	CORRUGATED METAL PIPE
CO	COUNTY
COL	COLUMN
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTOR
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CP	CLEARANCE POINT
CR	CREEK
CRCP	CONTINUOUS REINFORCED CONCRETE PAVEMENT
CRSP	CONCRETED ROCK SLOPE PROTECTION
CS	CURVE TO SPIRAL
CSP	CORRUGATED STEEL PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CTB	CEMENT TREATED BASE
CTPB	CEMENT TREATED PERMEABLE BASE
CTPM	CEMENT TREATED PERMEABLE MATERIAL
CTRS	CENTERS
CVFPB	CENTRAL VALLEY FLOOD PROTECTION BOARD
CULV	CULVERT
℄	CENTERLINE

D

D	DEPTH
DD	DOWNDRAIN, DIRECTIVE DRILLING
DBL	DOUBLE
DEG	DEGREE
DEL	DELINEATOR
DET	DETAIL, DETOUR
DF	DOUGLAS FIR
DI	DRAINAGE INLET, DROP INLET
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIST	DISTANCE, DISTRICT
DMBB	DOUBLE METAL BEAM BARRIER
DR	DRIVE
DTBB	DOUBLE THRIE BEAM BARRIER
DWY	DRIVEWAY

E

E	EAST, EASTING
EA	ACTUAL SUPERELEVATION
EU	UNBALANCED SUPERELEVATION

E CONTINUED

EASE	EASEMENT
EB	END OF BRIDGE, EASTBOUND
EC	END HORIZONTAL CURVE
ECR	END CURB RETURN
ED	EDGE DRAIN
EDC	EDGE DRAIN CLEANOUT
EDO	EDGE DRAIN OUTLET
EDV	EDGE DRAIN VENT
ELEC	ELECTROLIER
ELECT	ELECTRIC
ELEV	ELEVATION
EMB	EMBANKMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EP	EDGE OF PAVEMENT
EQ	EQUATION, EQUAL
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICAL CURVE
EW	ENDWALL
EXC	EXCAVATION
EXIST, EX.	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXWY	EXPRESSWAY
EXT	EXTERIOR

F

F & C	FRAME AND COVER
F & G	FRAME AND GRATE
FB	FLOOR BEAM
F-B	FRESNO TO BAKERSFIELD
FDN	FOUNDATION
FEBT	FACING EASTBOUND TRAFFIC
FES	FLARED END SECTION
FF	FILTER FABRIC
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FL	FLOW LINE
FNBT	FACING NORTHBOUND TRAFFIC
FOC	FACE OF CONCRETE
FR RD	FRONTAGE ROAD
FS	FAR SIDE, FINISHED SURFACE
FSBT	FACING SOUTHBOUND TRAFFIC
FT	FOOT, FEET
FTG	FOOTING
FWBT	FACING WESTBOUND TRAFFIC
FWY	FREEWAY
FPLM	FULL SPAN PRECAST LAUNCHING METHOD

G

G	ACCELERATION DUE TO GRAVITY
GA	GAGE
GALV	GALVANIZED
GP	GRADING PLANE
GR	GUARD RAILING
GSP	GALVANIZED STEEL PIPE
GTR	GUTTER

H

H	HEIGHT
HR	HOUR
HD	HORIZONTAL DRAIN
HDWL	HEADWALL
HEX HD	HEXAGONAL HEAD
HMA	HOT MIXED ASPHALT
HORIZ	HORIZONTAL
HP	HINGE POINT, HORSEPOWER
HPS	HIGH PERFORMANCE STEEL
HS	HIGH STRENGTH
HST	HIGH SPEED TRAIN
HSR	HIGH SPEED RAIL
HW	HEADWALL, HIGH WATER
HWM	HIGH WATER MARK
HWY	HIGHWAY

I

IB	IMPORTED BORROW
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH, INCHES
INT	INTERIOR
INV	INVERT
IRR	IRRIGATION

J

JCT	JUNCTION
JP	JOINT POLE
JPCP	JOINTED PLAIN CONCRETE PAVEMENT
JS	JUNCTION STRUCTURE
JT	JOINT

K

K	DISTANCE TO ACHIEVE 1% GRADE CHANGE

L

L	LENGTH
LAT	LATITUDE
LCB	LEAN CONCRETE BASE
LN	LANE
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDE
LONGIT	LONGITUDINAL
LS	LENGTH OF SPIRAL
LC	LENGTH OF CURVE
LT	LEFT

M

MAINT	MAINTENANCE
MAX	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
MED	MEDIAN
M-F	MERCED TO FRESNO
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MISC I & S	MISCELLANEOUS IRON AND STEEL
MKR	MARKER
M/L	MAIN LINE (RAILWAY)

M CONTINUED

MOD	MODIFIED, MODIFY
MON	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MPH	MILES PER HOUR
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EARTH
MTL	MATERIAL
MSS	MOVING SCAFFOLDING SYSTEM

N

N	NORTH, NORTHING
NB	NORTHBOUND
NO.	NUMBER (MUST HAVE PERIOD)
NOS.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NTS	NOT TO SCALE
N/A	NOT APPLICABLE

O

OBLR	OBLITERATE
OC	OVERCROSSING
OCS	OVERHEAD CONTACT SYSTEM
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OH	OVERHEAD
O-O	OUT TO OUT
OPP	OPPOSITE

P

P	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PED	PEDESTRIAN
PED OC	PEDESTRIAN OVERCROSSING
PED UC	PEDESTRIAN UNDERCROSSING
PERM MTL	PERMEABLE MATERIAL
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
℄,PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POB	POINT OF BEGINNING
POC	POINT OF HORIZONTAL CURVE
POE	POINT OF ENDING
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE

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IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 1 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0010
SCALE NO SCALE
SHEET NO. 3 OF 4

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P CONTINUED

PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED, PARALLEL STATION
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVP	MAINTENANCE VEHICLE PULLOUT

Q

QTY	QUANTITY

R

R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD
REINF	REINFORCED, REINFORCEMENT, REINFORCING
REL	RELOCATE
REPL	REPLACEMENT
RET	RETAINING
REV	REVISED
RDWY	ROADWAY
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RTE	ROUTE
RW	REDWOOD, RETAINING WALL
R/W, ROW	RIGHT OF WAY
RWY	RAILWAY

S

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
SALV	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SPIRAL TO CURVE
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SEP	SEPARATION
SG	SUBGRADE
SHLD	SHOULDER
SHT	SHEET
SIM	SIMILAR
S	STATION LINE
SM	SELECTED MATERIAL
SPEC	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE, SPIRAL TO SPIRAL

S CONTINUED

SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
SR	STATE ROUTE
ST	STREET, SPIRAL TO TANGENT
STA	STATION
STBB	SINGLE THRIE BEAM BARRIER
STD	STANDARD
STR	STRUCTURE
SRS	STAND ALONE RADIO SITE
SURF	SURFACING
SW	SIDEWALK, SOUND WALL
SWR	SEWER
SWS	SWITCHING STATION
SYM	SYMMETRICAL
S4S	SURFACE 4 SIDES
SJVR	SAN JOAQUIN VALLEY RAILROAD

T

T	SEMI-TANGENT
TAB	TABLET
TAN	TANGENT
TBB	THRIE BEAM BARRIER
TBR	TIMBER
TC	TOP OF CURB, TANGENT TO CURVE
TCB	TRAFFIC CONTROL BOX
TEL	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GRADE
TOT	TOTAL
TM	TECHNICAL MEMORANDUM
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
TPSS	TRACTION POWER SUPPLY STATION
TRANS	TRANSITION, TRANSVERSE
TS	TRAFFIC SIGNAL, TUBULAR STEEL, TANGET TO SPIRAL
TYP	TYPICAL
TOR	TOP OF RAIL

U

UC	UNDERCROSSING
UD	UNDERDRAIN
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
UPRR	UNION PACIFIC RAILROAD
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

V

V	VALVE, DESIGN SPEED
VAR	VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIA	VIADUCT
VOL	VOLUME

W

W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
WT	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE
W/	WITH

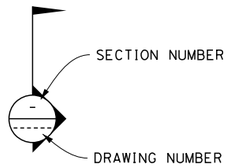
X

X SEC	CROSS SECTION
XING	CROSSING

Y

YR	YEAR
YRS	YEARS

LEGEND



-E- PROPOSED ELECTRICITY LINE

-e- EXISTING ELECTRICITY LINE

-e-(oh)- EXISTING OVERHEAD ELECTRICITY LINE

-E-(OH)- PROPOSED OVERHEAD ELECTRICTY LINE

PROPOSED HST RIGHT OF WAY

PROPOSED HST TRACK CENTERLINE

RETAINING WALL

TOE OF SLOPE / TOP OF CUT

CONTROL LINE EXAMPLE "A" LINE

255+00 260+00 265+00

OR TRACK (PLAN AND ELEVATION)

REL TRACK TO BE REMOVED AND RELOCATED PER BNSF

REMOVE BASE & SURFACING

SOUND BARRIER (POTENTIAL)

DIRECTION OF FLOW

WATER SURFACE

GENERAL NOTES

1. TRACK PROFILE IS DESIGNED AS TOP OF THE LOW RAIL. VERTICAL CLEARANCE REQUIREMENTS ARE MEASURED FROM THE TOP OF THE HIGH RAIL ON SUPERELEVATED TRACK. THE CLEARANCE ENVELOPES SHOWN DEMONSTRATE THE MINIMUM CLEARANCE REQUIREMENTS.

2. MINIMUM VERTICAL CLEARANCE REQUIREMENTS TO CANALS AND DITCHES ARE NOT KNOWN. FURTHER CONSULTATION WITH THE WATERCOURSE OWNERS WILL BE REQUIRED TO DETERMINE NECESSARY CLEARANCES.

3. THE FOLLOWING ARE ROADWAY DESIGN STANDARDS AND GUIDELINES:
   A. CALTRANS HIGHWAY DESIGN MANUAL (2012)
   B. AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (2011)
   C. AASHTO ROADSIDE DESIGN GUIDE (2011)
   D. APPLICABLE LOCAL DESIGN STANDARD AND GUIDELINES (I.E., CITY OF FRESNO)

4. THE FEMA FLOODPLAIN BOUNDARIES ARE CALLED OUT AS "LIMIT OF 100YR FEMA FLOODPLAIN". THE LIMITS OF THE MODELED 100 YEAR WATER SURFACE ELEVATIONS (WSE) ARE APPROXIMATE AND ARE MARKED WITH THE NAME OF THE WATERBODY ASSOCIATED WITH THE MODELED FLOODING, E.G. "LIMIT OF POSO CREEK FLOODPLAIN".

5. THE STRUCTURE DESIGN ASSUMES THAT THE DEPTH FROM TOR TO TOP OF DECK IS 2'-6" THROUGHOUT. HOWEVER, WHERE BALLASTED TRACK FORM IS USED, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-9" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE, AND PROTECTION LAYER IF REQUIRED. FOR SLAB TRACKFORM, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-6" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE AND PROTECTION LAYER IF REQUIRED.

6. WHERE THE VERTICAL ALIGNMENT GRADE IS LESS THAN 0.5% THE UPPER SURFACE OF THE VIADUCT STRUCTURE SHALL BE PROFILED TO GIVE A MINIMUM LONGITUDINAL FALL OF 0.5%. TYPICALLY FOR A SPAN OF 120'-00" ON A 0% GRADE SECTION OF VIADUCT THIS COULD BE ACHIEVED BY MODIFYING THE CROSS SLOPE OF THE GIRDER LINEARLY BETWEEN 0.8% AT MID-SPAN TO 2% AT EACH END.

7. WHEN LATERAL SEPARATION BETWEEN THE CONVENTIONAL RAILROAD AND HST SYSTEM IS LESS THAN 102', A SITE SPECIFIC HAZARD ANALYSIS WILL BE CONDUCTED TO DETERMINE WHAT SPECIFIC COLLISION PROTECTION MEASURES MAY NEED TO BE IMPLEMENTED.

8. RIP-RAP PROTECTION IS REQUIRED FOR EMBANKMENTS WITHIN FEMA SPECIAL FLOOD HAZARD ZONES, IN ACCORDANCE WITH DESIGN CRITERIA.

9. HST ALIGNMENT CONTROL LINE IS DESIGNED AS THE CENTERLINE BETWEEN THE TWO MAINLINE TRACKS.

10. TRACK FORM USED IN TYPICAL SECTIONS IS INDICATIVE.

DIRECTION OF TRAFFIC

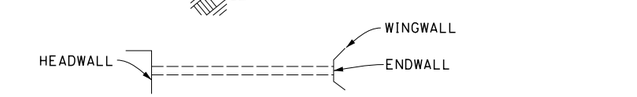
POINT OF MINIMUM VERTICAL CLEARANCE
ROAD CLOSURE (ROADWAYS)

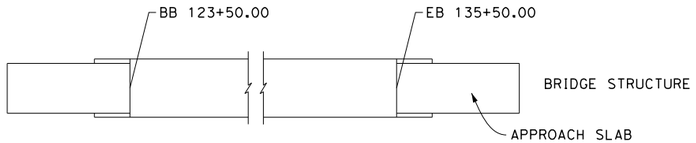
[1] LINE DATA

(1) (3) CURVE DATA (ALIGNMENTS)
CURVE DATA (STRUCTURES)

EXISTING HIGH VOLTAGE TOWER FOOTPRINT

OG / ORIGINAL GROUND





RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY D. HUNT
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 2 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0011
SCALE NO SCALE
SHEET NO. 4 OF 4

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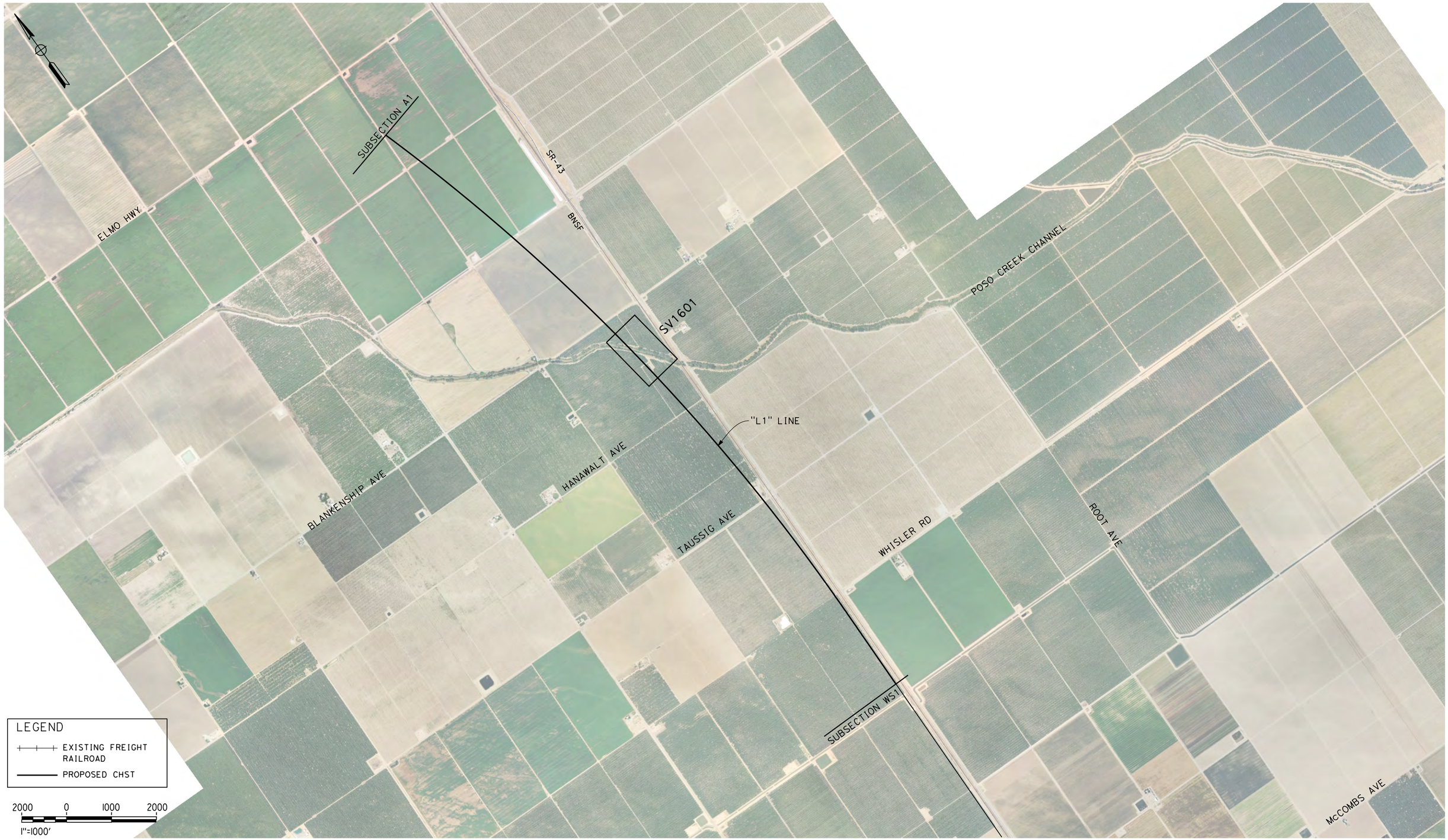

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

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CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

POSO CREEK SUBSECTION
ALIGNMENT L1
POSO CREEK BRIDGE
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1600
SCALE AS SHOWN
SHEET NO. 1 OF 2

RFP No. HSR 14-32 – REVIEW DRAFT

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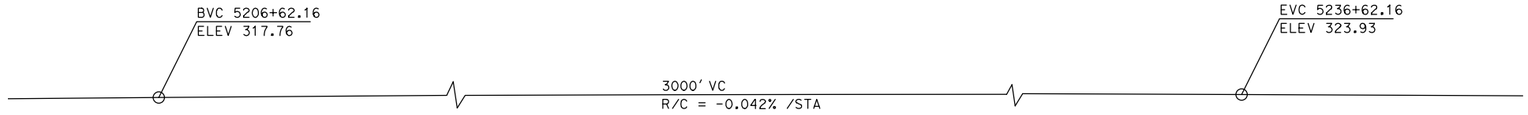
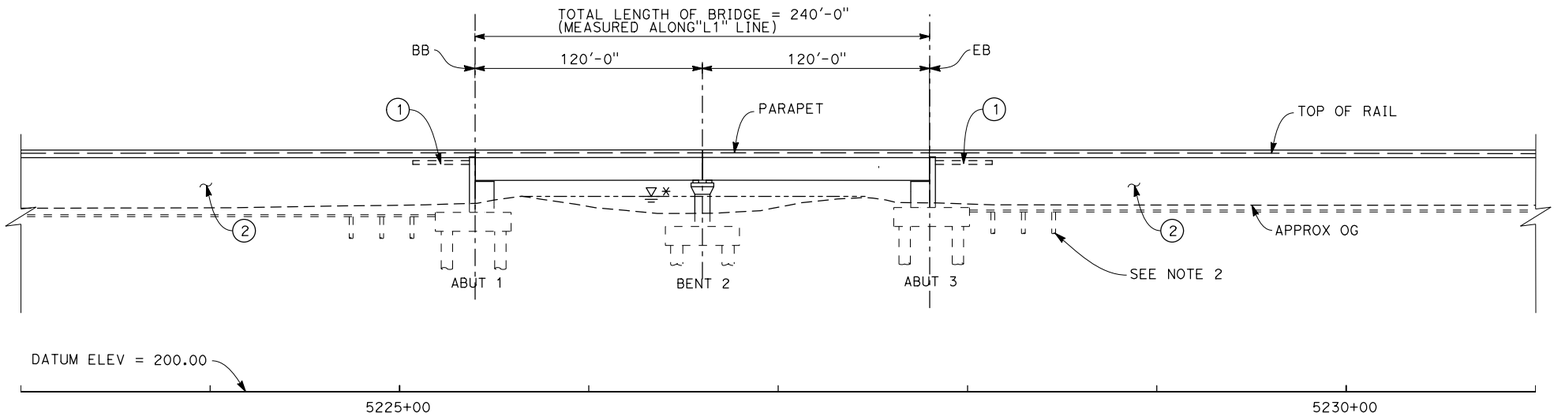


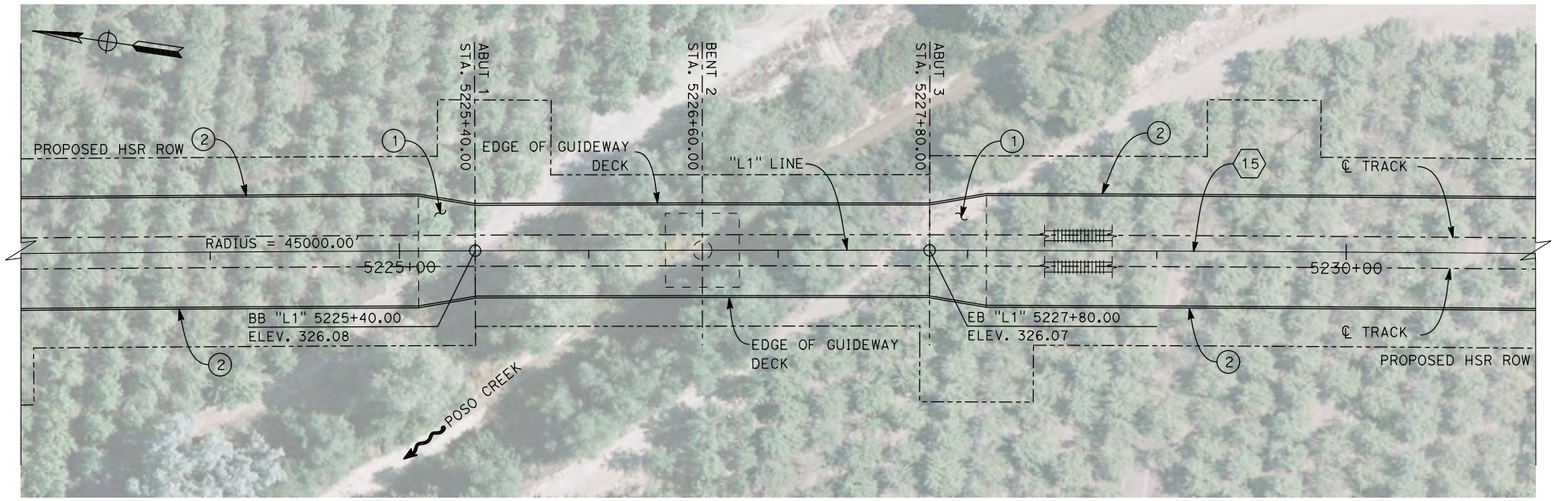
TOP OF RAIL "L1" LINE

NO SCALE



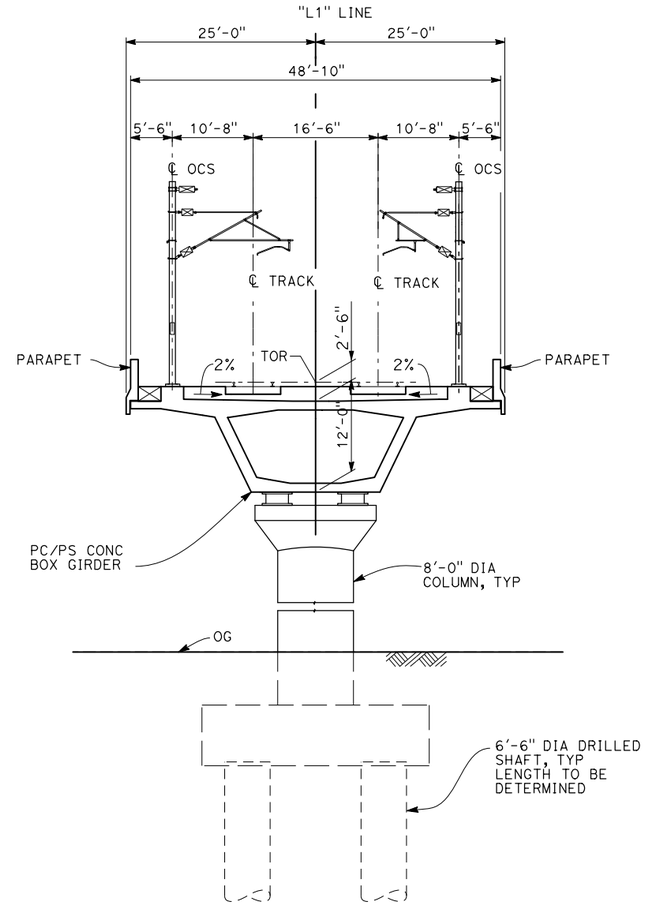
ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'



TYPICAL SECTION

SCALE 1" = 10'

NOTES:

1. PILE LENGTH TO BE DETERMINED
2. ALL PILES ARE NOT SHOWN

* ESTIMATED 100-YEAR FLOOD ELEVATION, "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT"

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

CURVE DATA

(15)

R = 45000.00'
Δ = 17° 49' 41.4"
T = 7058.1'
L = 14002.2'

10 0 10 20 — 1"=10'

40 0 40 80 — 1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

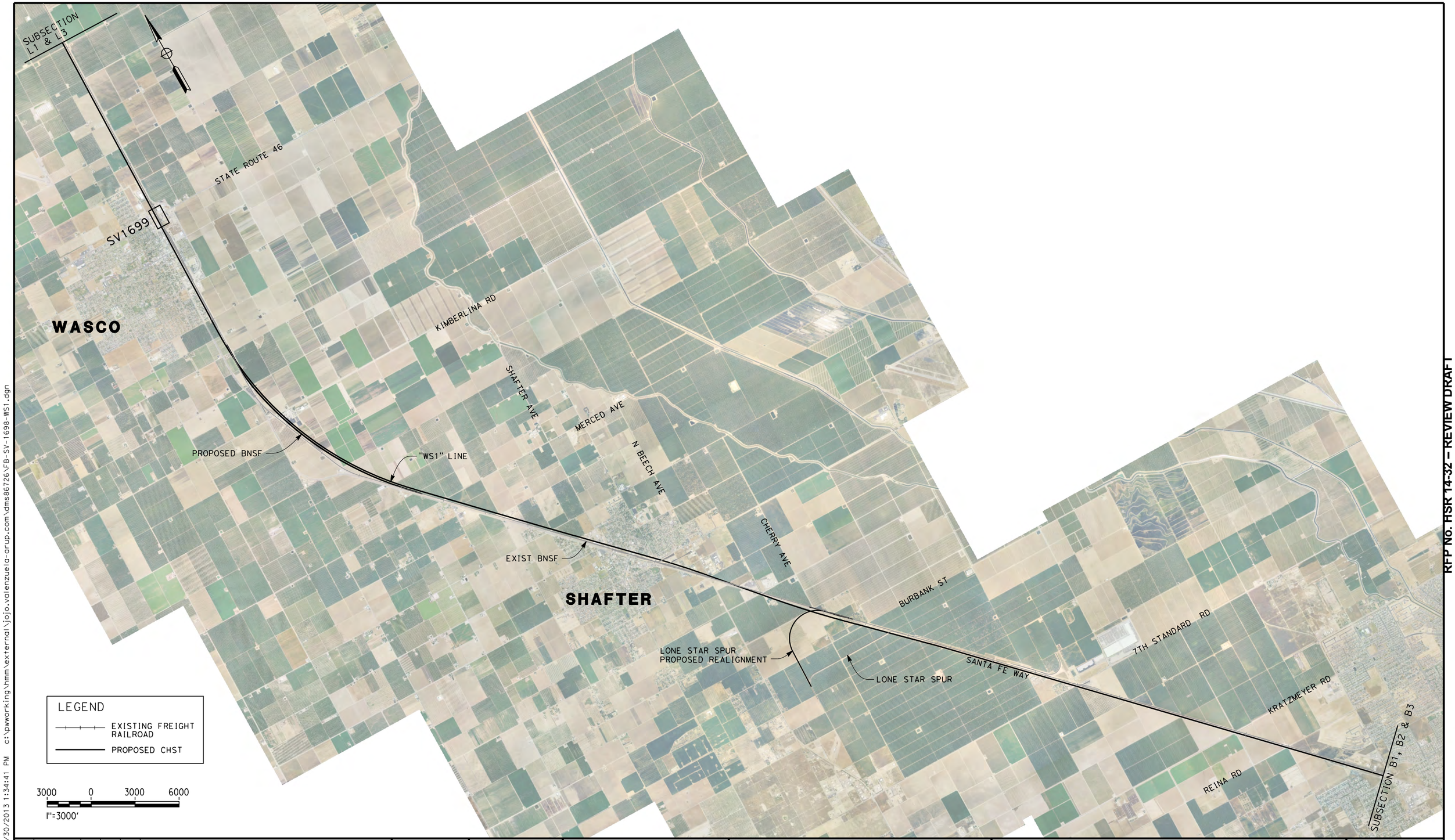
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT FRESNO TO BAKERSFIELD

POSO CREEK SUBSECTION
ALIGNMENT L1
POSO CREEK BRIDGE
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1601
SCALE AS SHOWN
SHEET NO. 2 OF 2

$FILE$ $TIME$ $DATE$ $USER$



RFP No. HSR 14-32 – REVIEW DRAFT

jojo.valenzuela 12/30/2013 1:34:41 PM c:\pwworking\hmm\external\jojo.valenzuela-arup.com\dms86726\FB-SV-1698-WS1.dgn

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY E. SUDHAUSEN
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

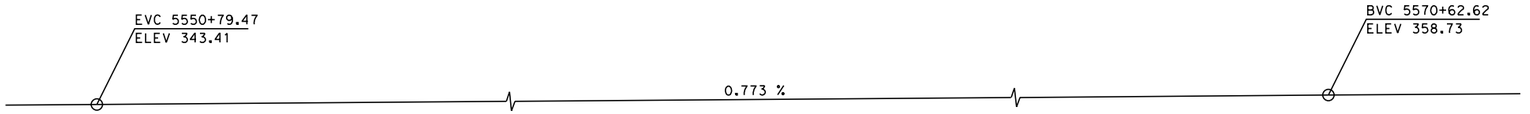
RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

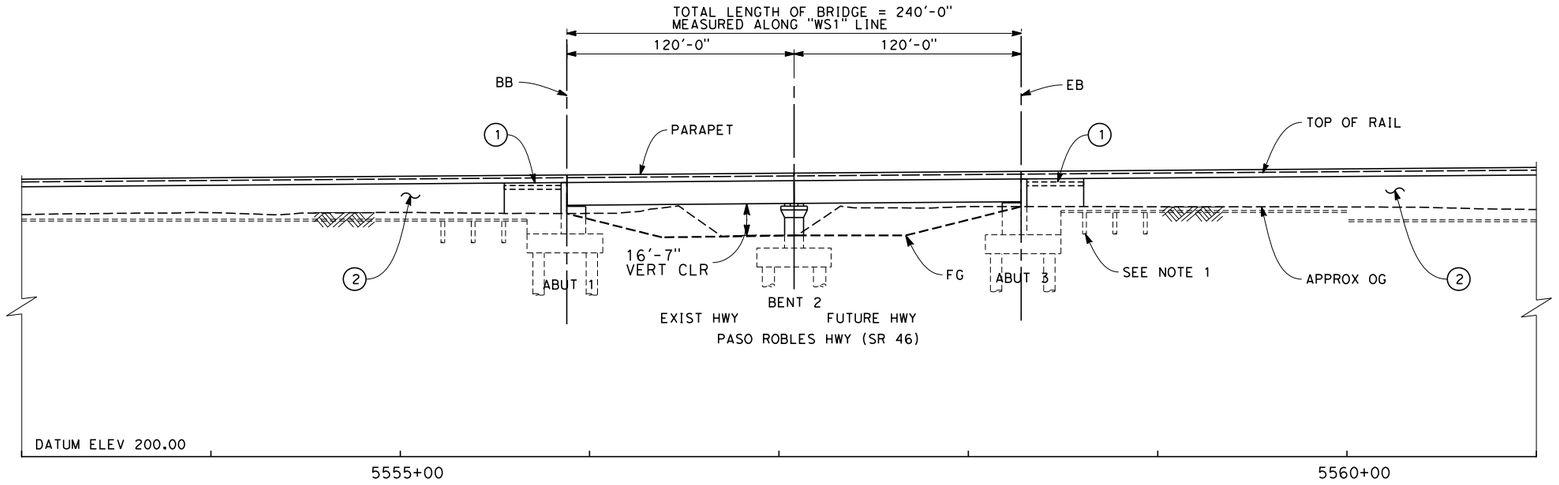
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STATE ROUTE 46 UNDERPASS
KEY MAP

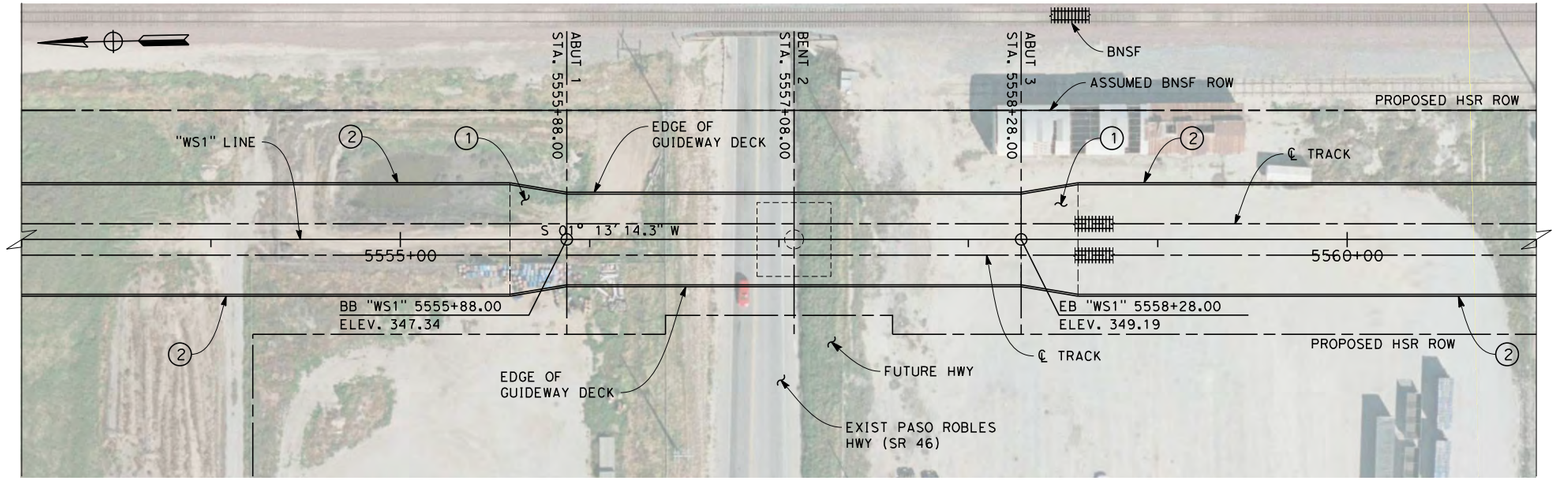
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1698
SCALE AS SHOWN
SHEET NO. 1 OF 2



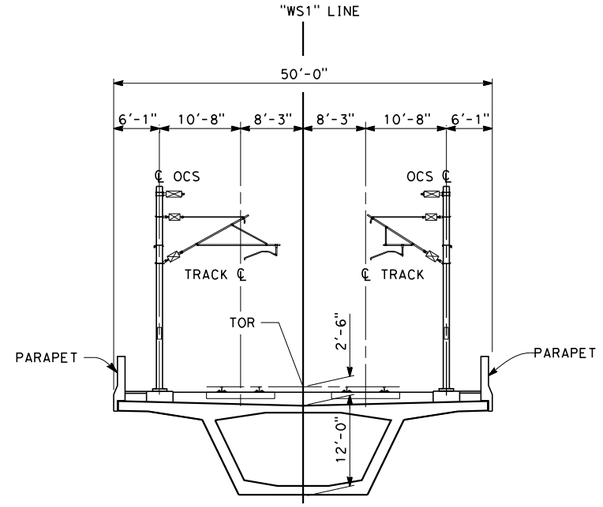
TOP OF RAIL "WS1" LINE
NO SCALE



ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'



TYPICAL SECTION
SCALE: 1" = 10'

NOTES:

1. ALL PILES NOT SHOWN
2. PILE LENGTH TO BE DETERMINED

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

10 0 10 20 — 1"=10'

40 0 40 80 — 1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY J. VALENZUELA
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
STATE ROUTE 46 UNDERPASS
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1699
SCALE AS SHOWN
SHEET NO. 2 OF 2

RFP No. HSR 14-32 – REVIEW DRAFT

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SUBSECTION L1 & L3

STATE ROUTE 46

SV1703
SV1704
SV1705
SV1706
SV1707
SV1708
SV1709
SV1710
SV1711
SV1712
SV1713
SV1714
SV1715

WASCO

KIMBERLINA RD

SHAFTER AVE

MERCED AVE

N BEECH AVE

CHERRY AVE

PROPOSED BNSF

"WS1" LINE

EXIST BNSF

SHAFTER

BURBANK ST

LONE STAR SPUR
PROPOSED REALIGNMENT

LONE STAR SPUR

SANTA FE WAY

7TH STANDARD RD

KRATZMEYER RD

REINA RD

SUBSECTION B1, B2 & B3

LEGEND

EXISTING FREIGHT RAILROAD

PROPOSED CHST

3000 0 3000 6000

1"=3000'

RFP No. HSR 14-32 – REVIEW DRAFT

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY E. SUDHAUSEN
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

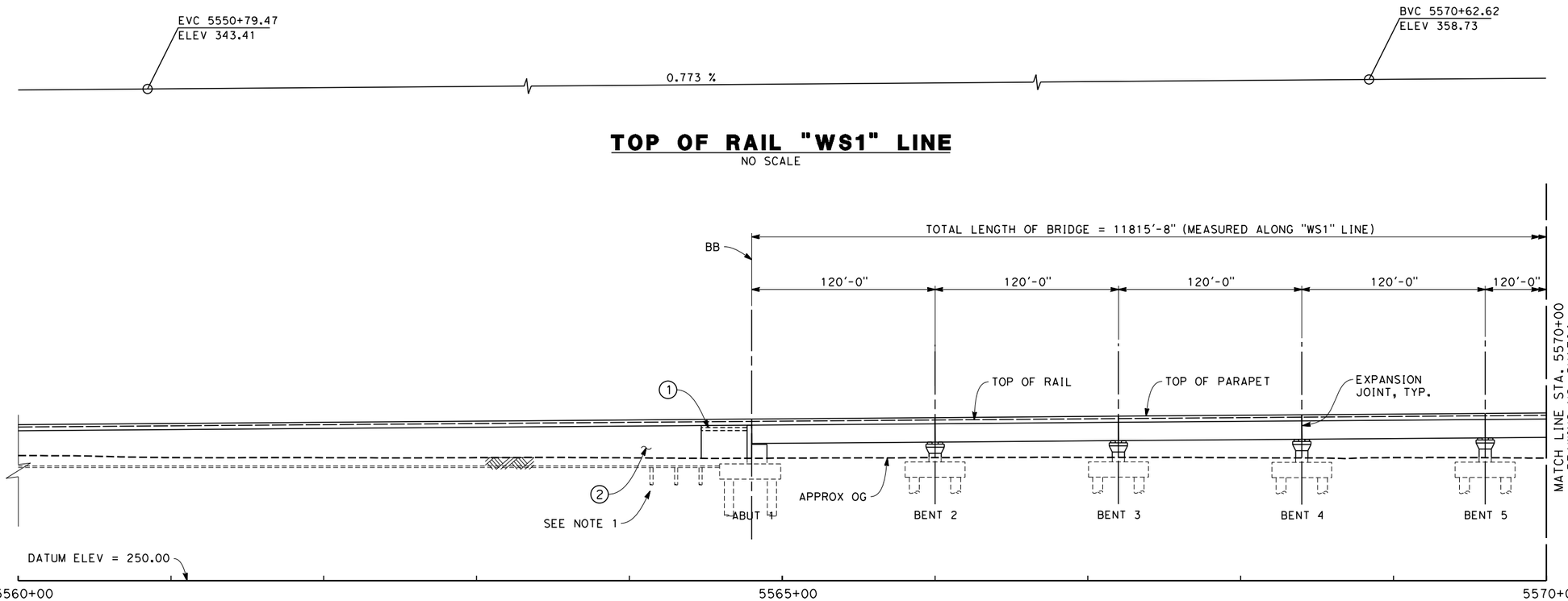
RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1700
SCALE AS SHOWN
SHEET NO. 1 OF 15

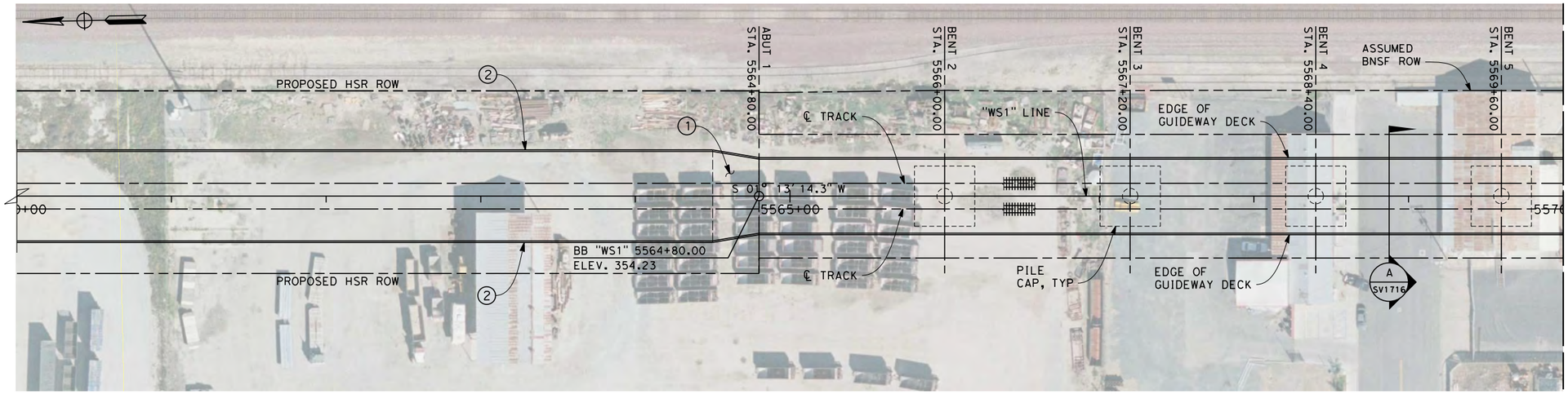


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1703
SCALE AS SHOWN
SHEET NO. 2 OF 15

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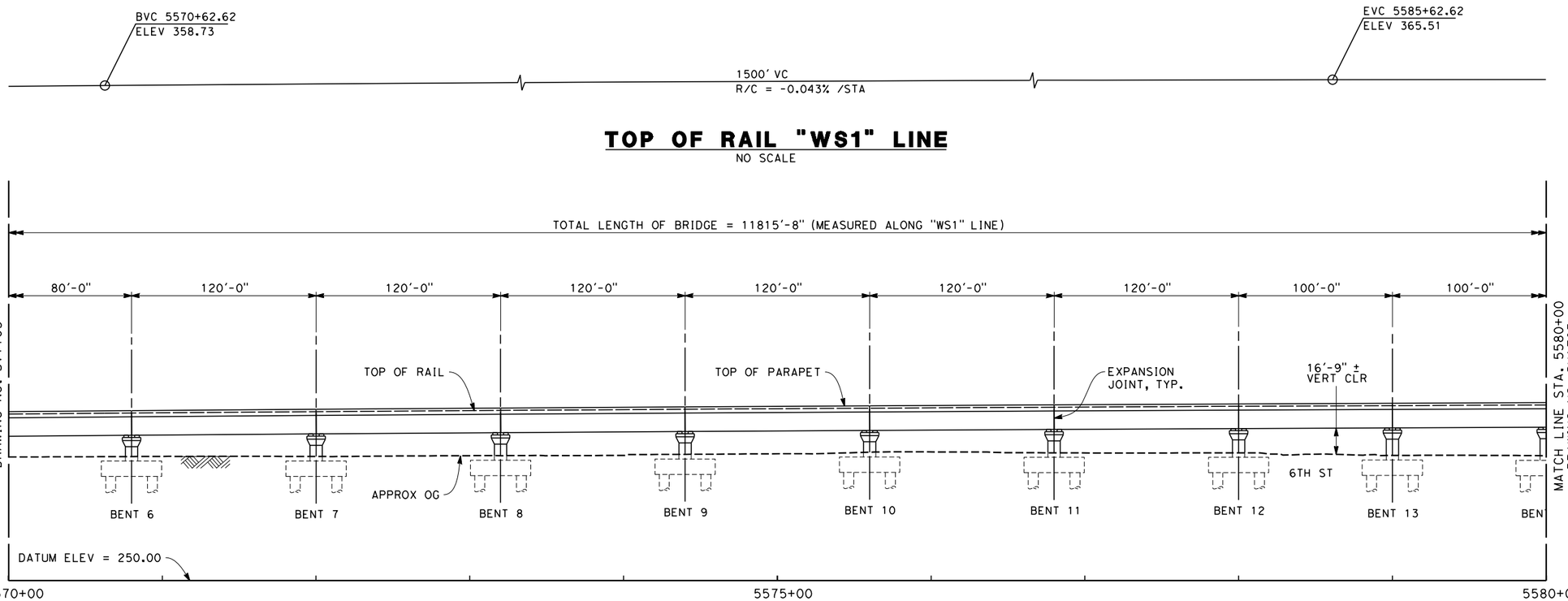
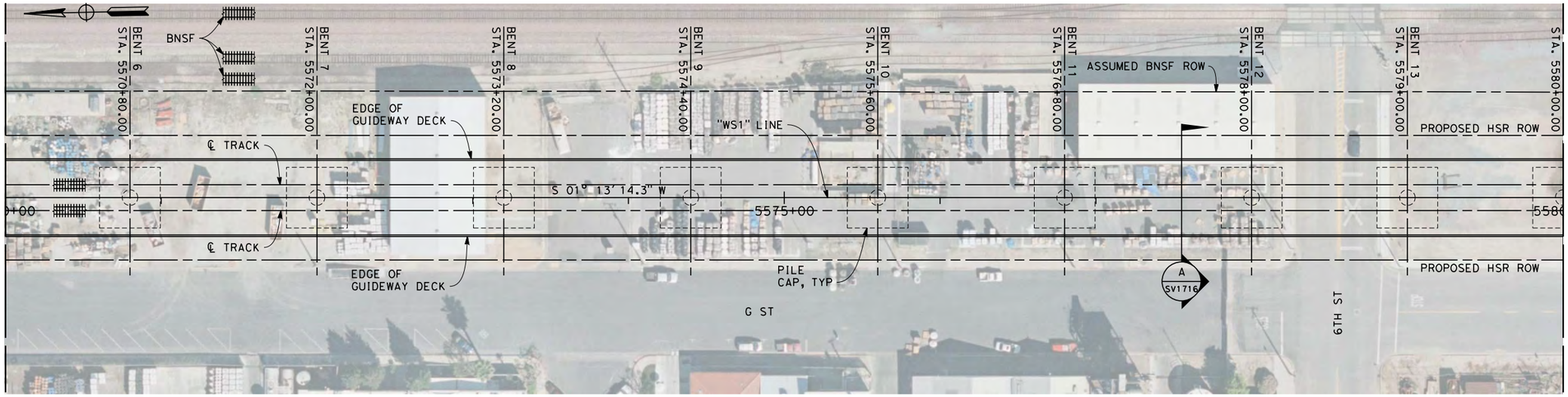


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
(1) STRUCTURE APPROACH SLAB
(2) RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1704
SCALE AS SHOWN
SHEET NO. 3 OF 15

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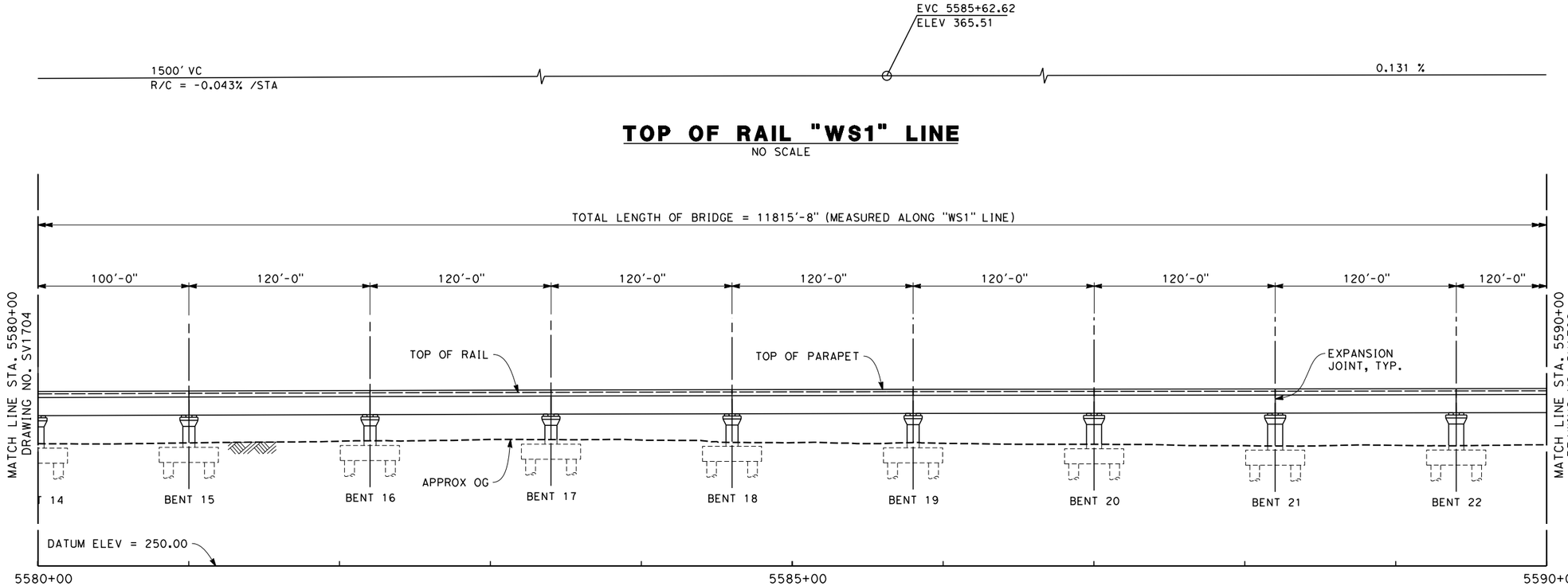
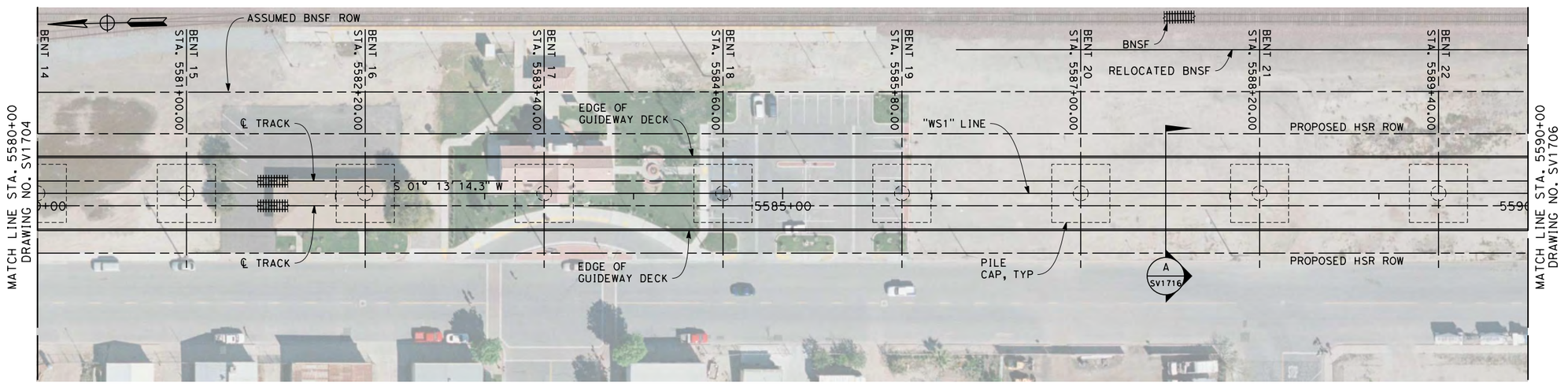


TOP OF RAIL "WS1" LINE

NO SCALE

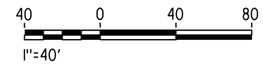
ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'



NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1705
SCALE AS SHOWN
SHEET NO. 4 OF 15

RFP No. HSR 14-32 – REVIEW DRAFT

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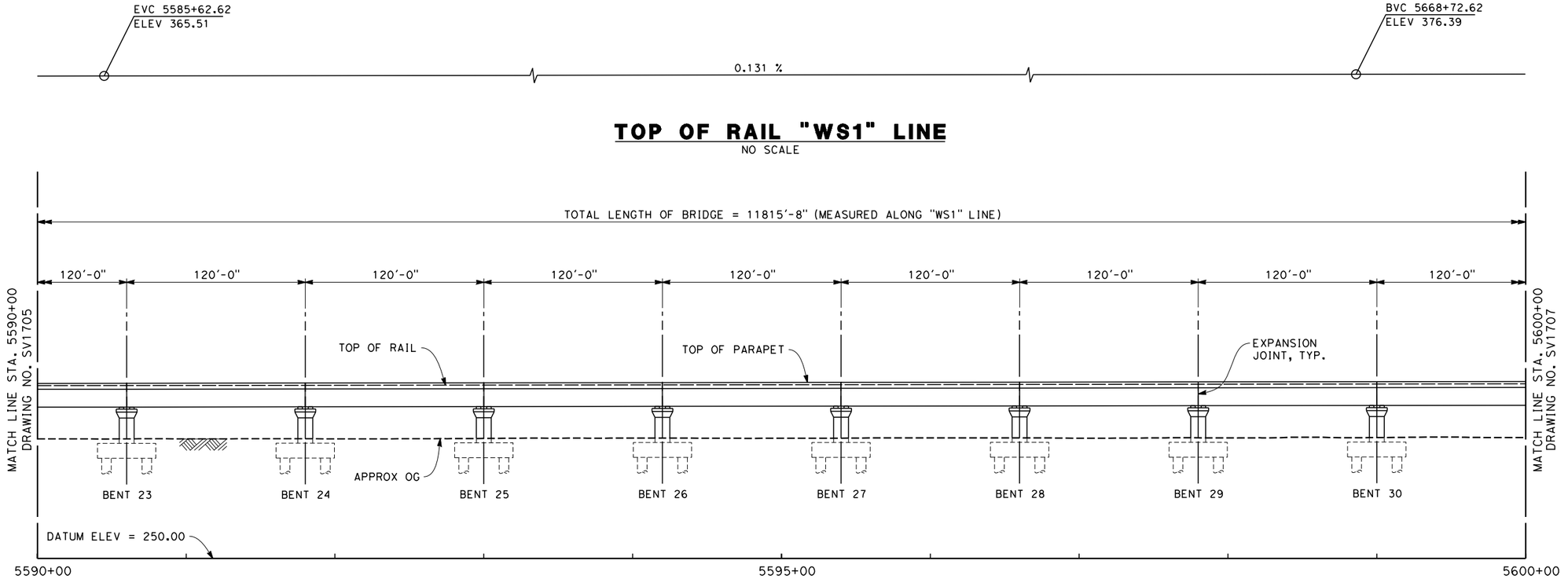
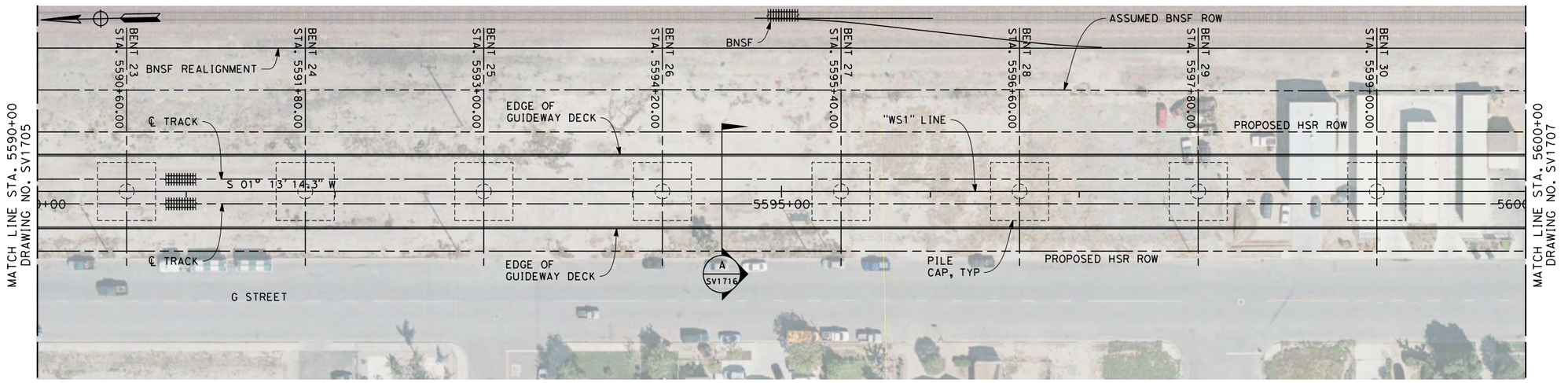


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1706
SCALE AS SHOWN
SHEET NO. 5 OF 15

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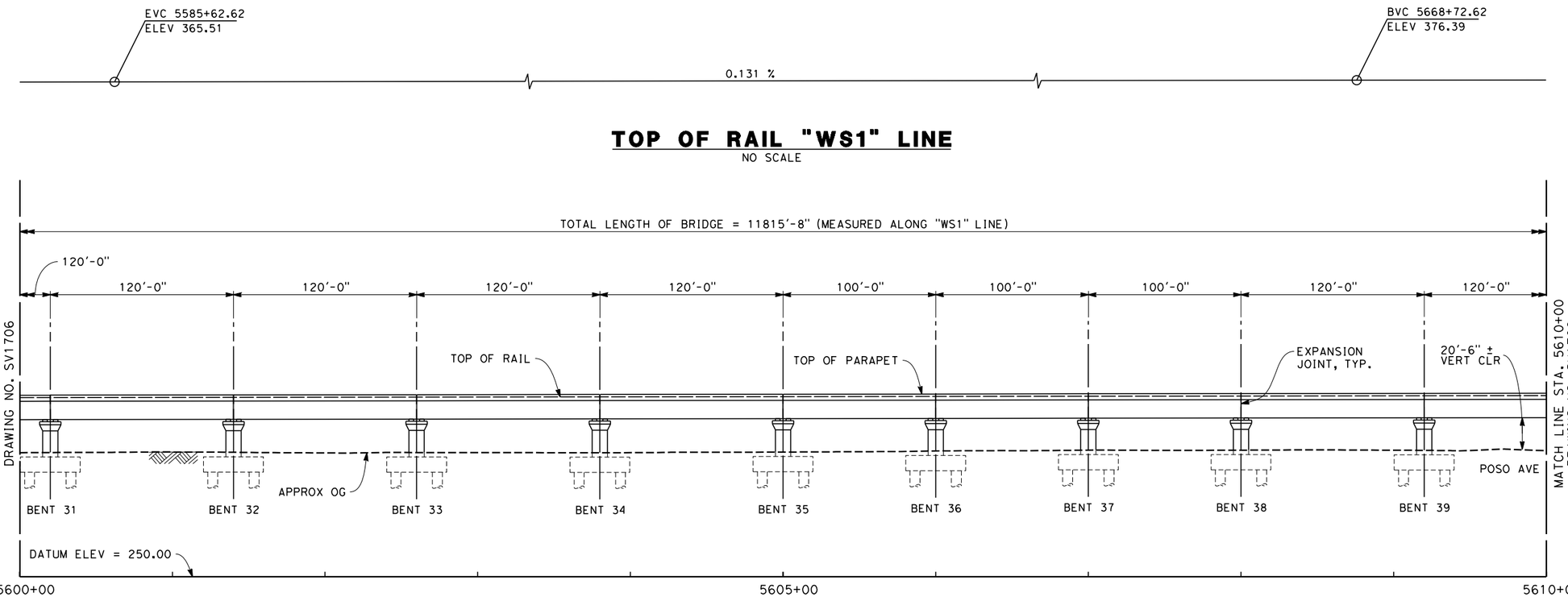
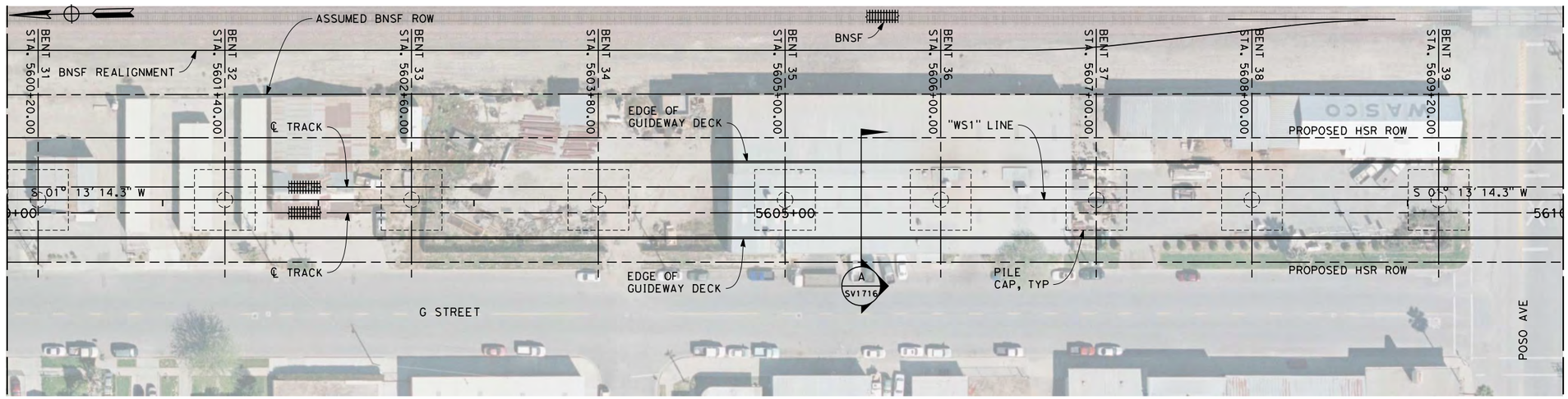


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1707
SCALE AS SHOWN
SHEET NO. 6 OF 15

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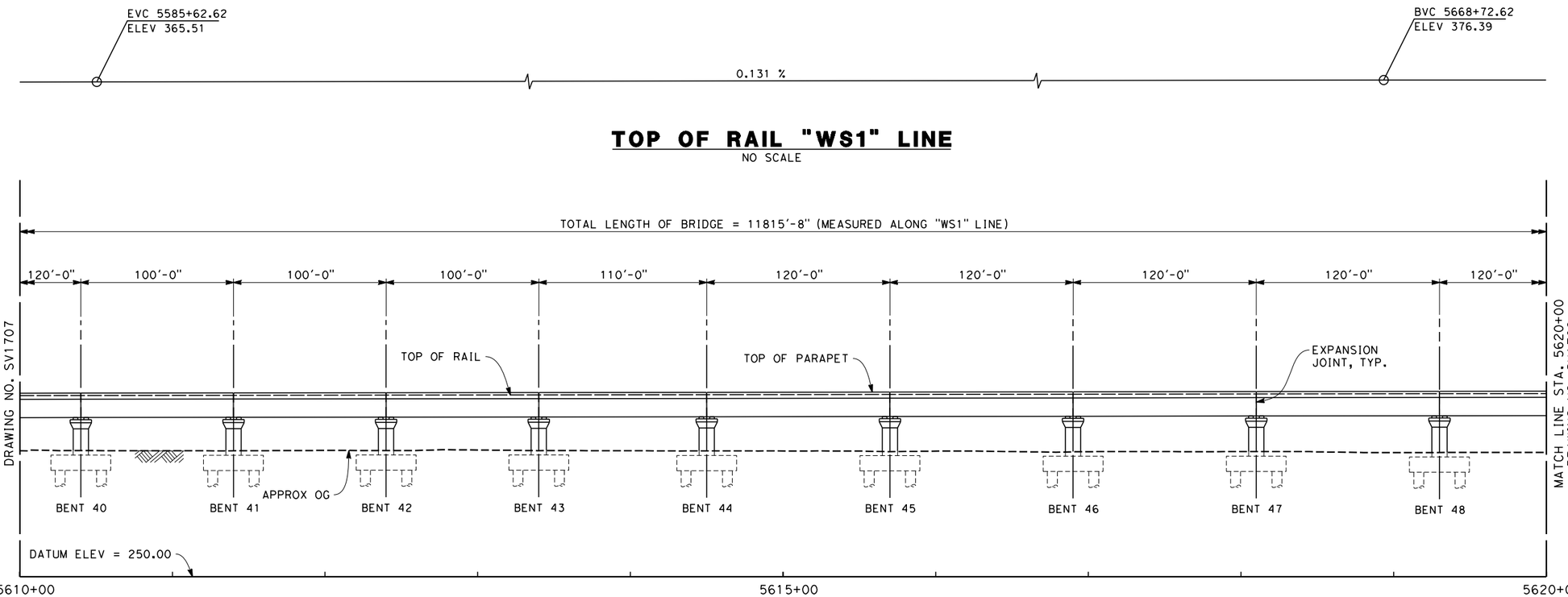
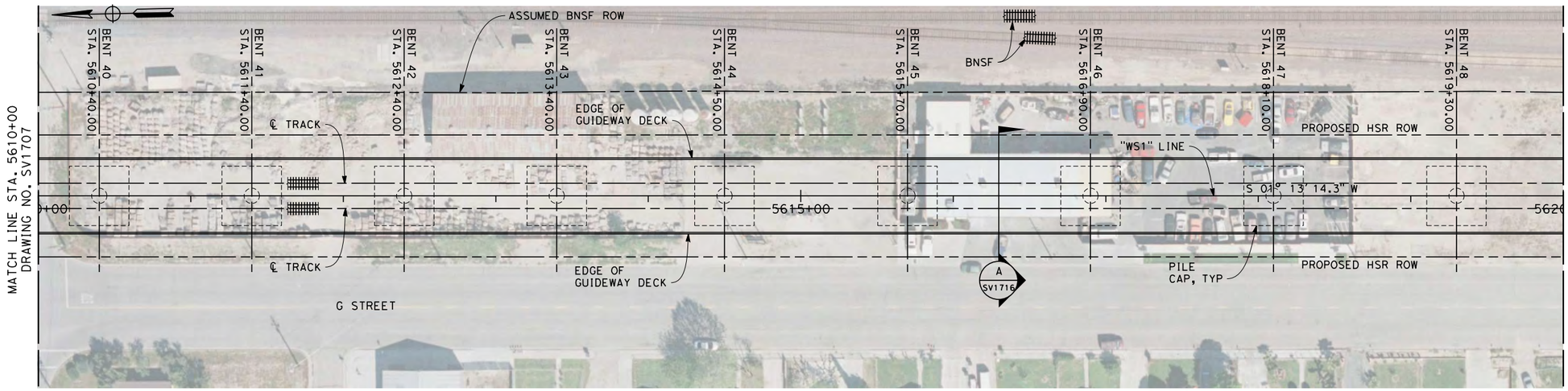


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1708
SCALE AS SHOWN
SHEET NO. 7 OF 15

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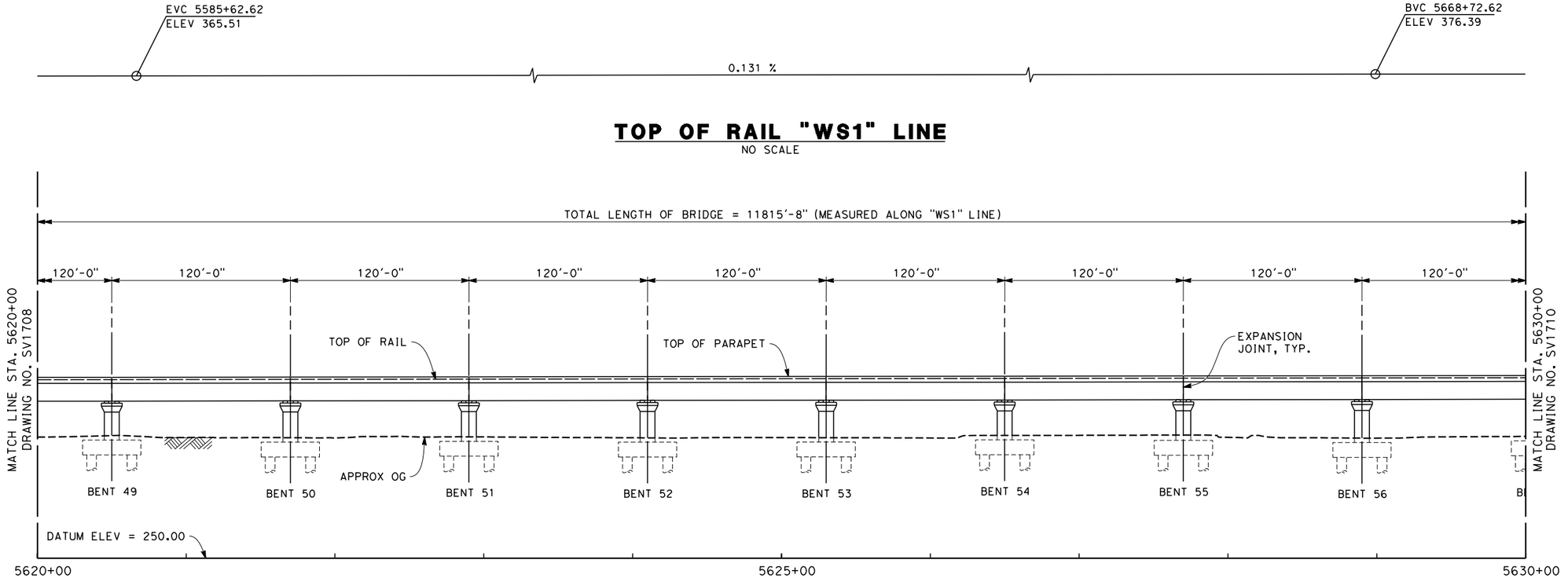
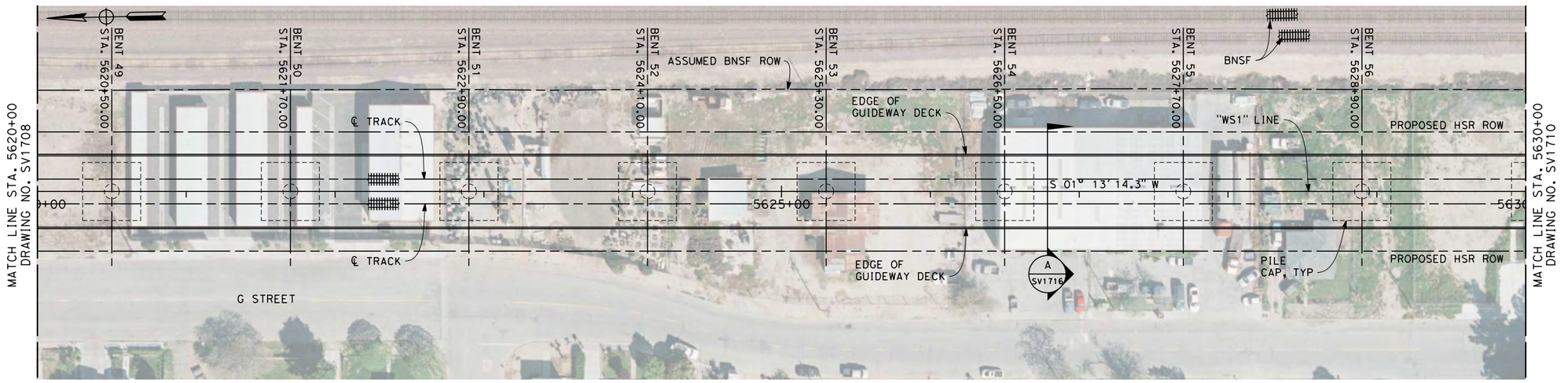


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
(1) STRUCTURE APPROACH SLAB
(2) RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

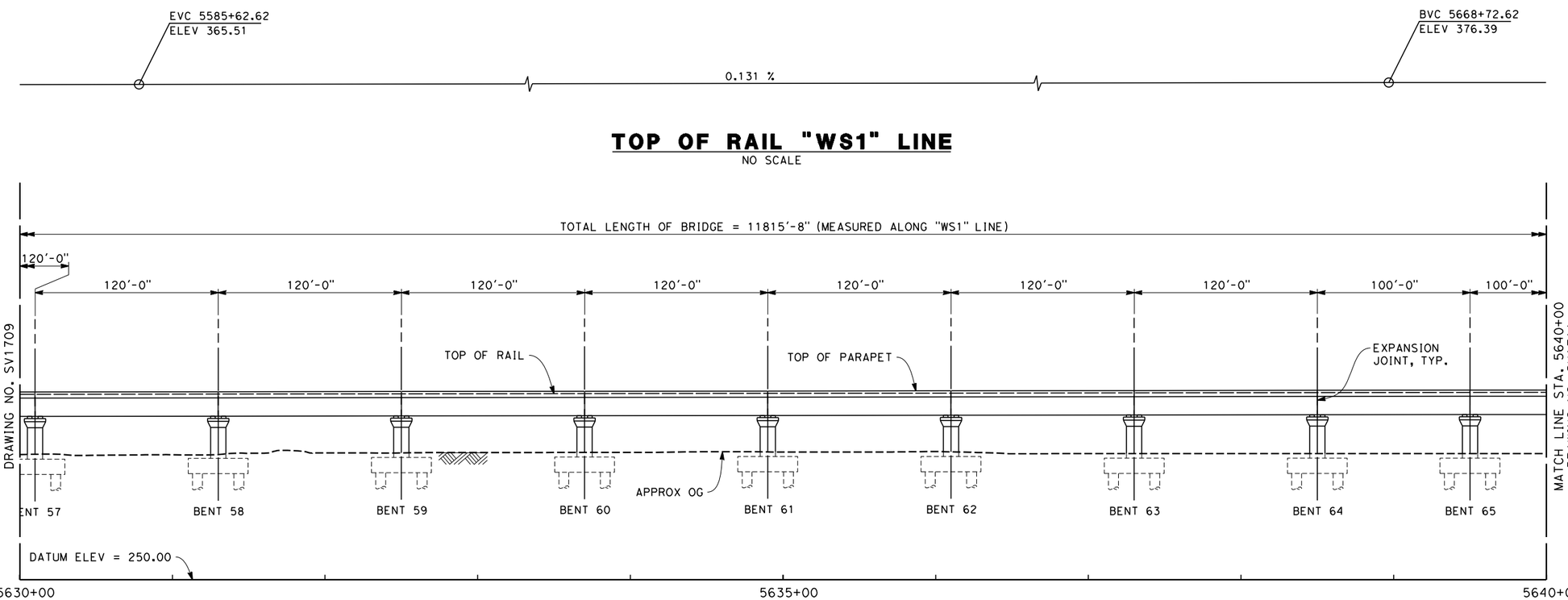
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

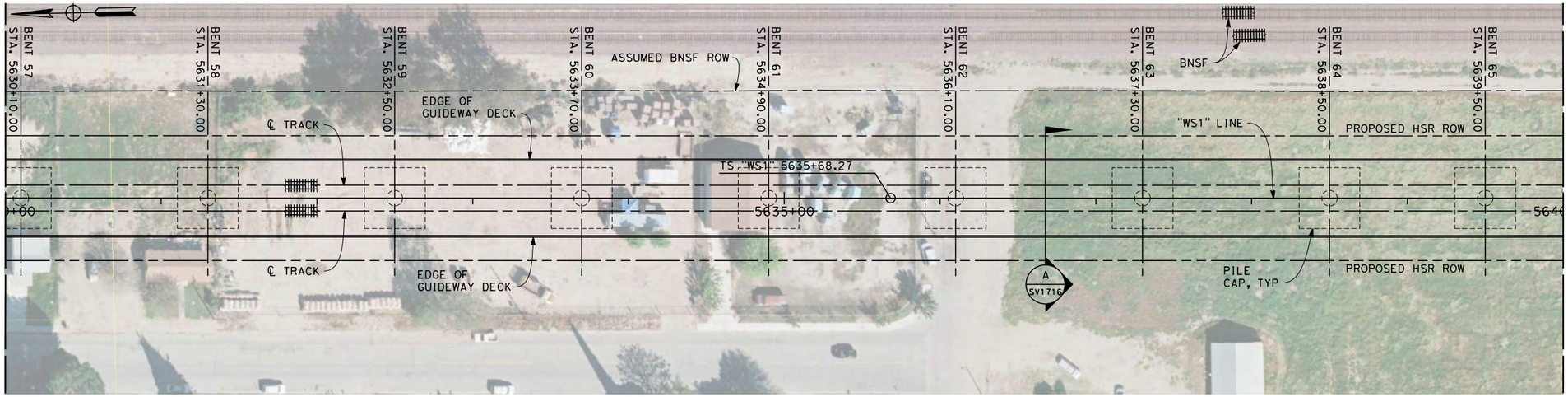
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1709
SCALE AS SHOWN
SHEET NO. 8 OF 15

Nadine.Hutton 12/12/2013 7:08:49 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1709-WS1.dgn



TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1710
SCALE AS SHOWN
SHEET NO. 9 OF 15

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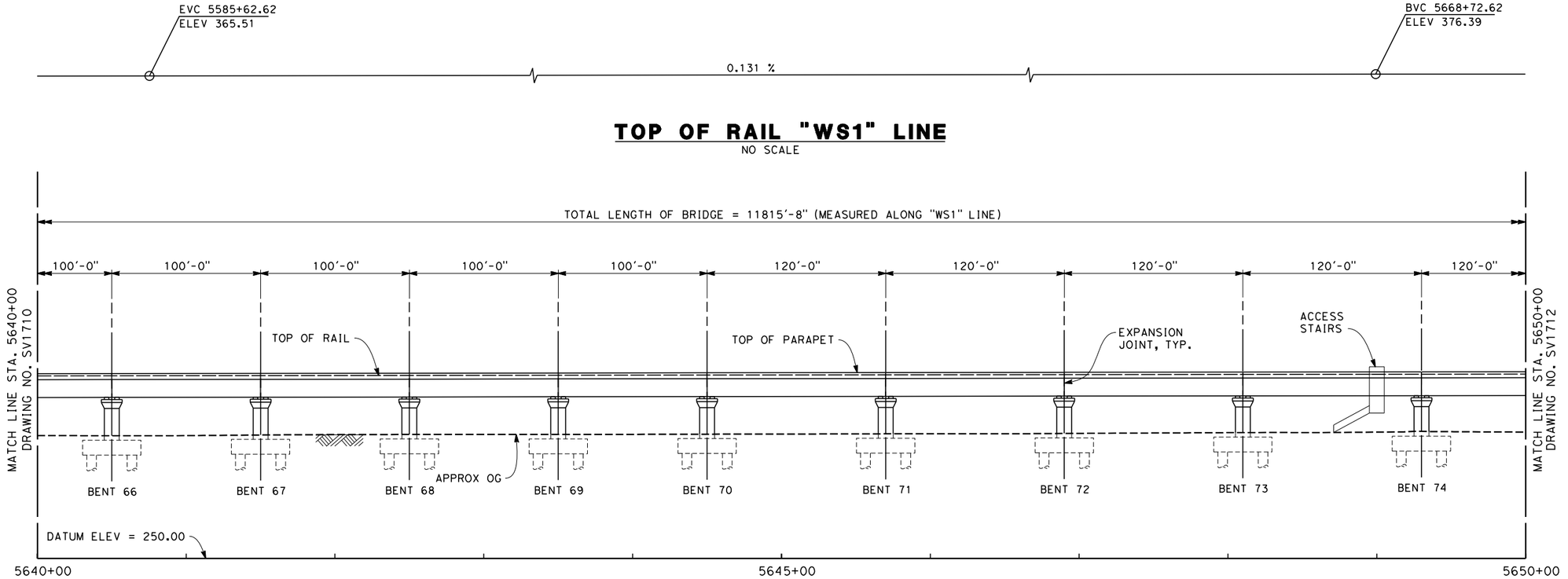
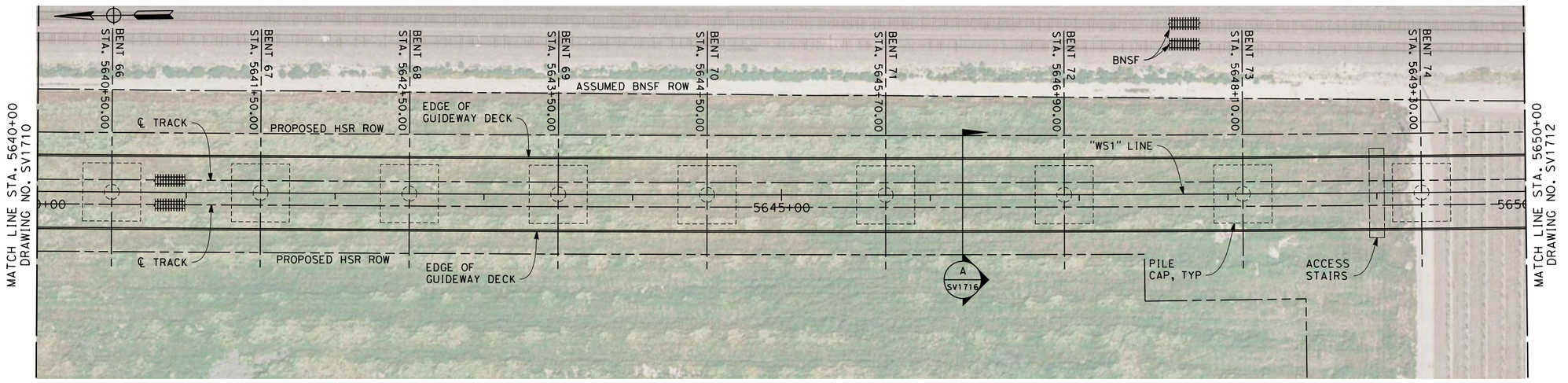


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1711
SCALE AS SHOWN
SHEET NO. 10 OF 15

RFP No. HSR 14-32 – REVIEW DRAFT

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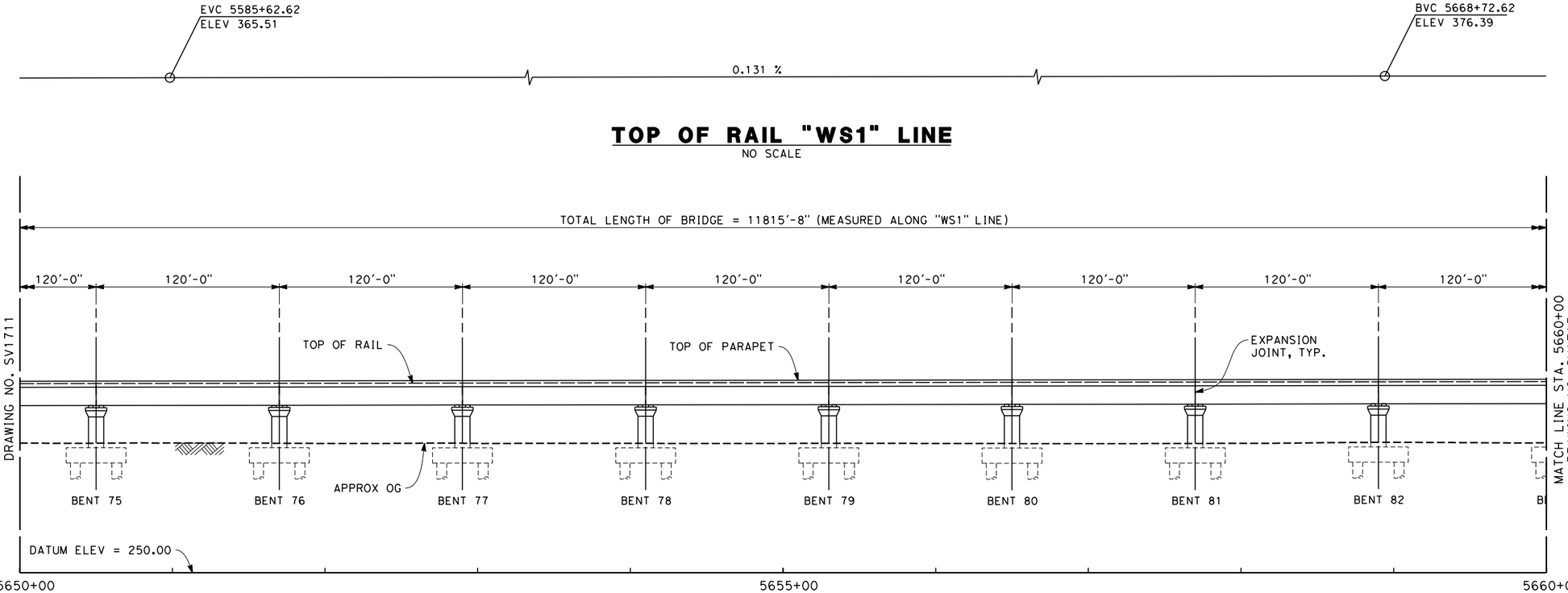
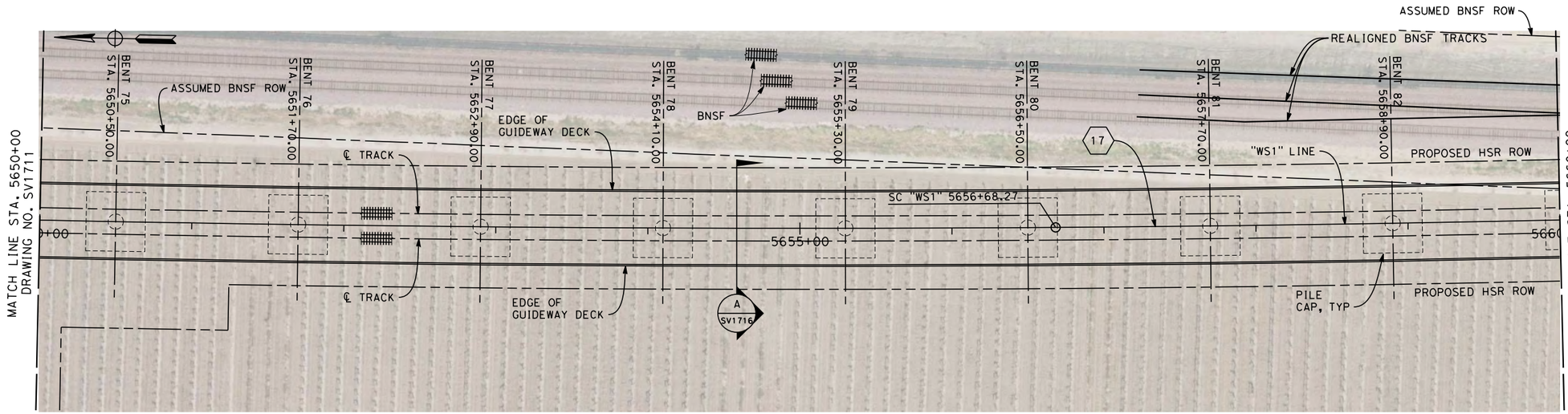


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

17

R = 22000
Δ = 40°02'15"
T = 8016
L = 15373

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

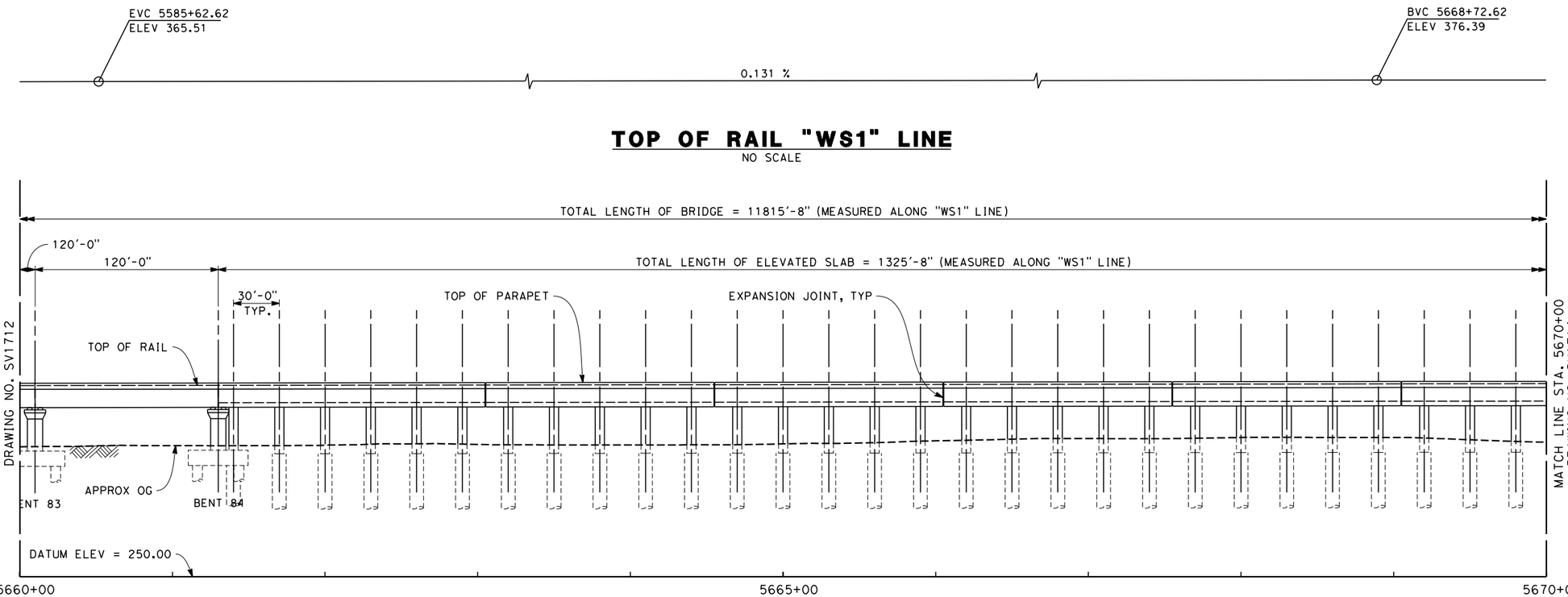
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

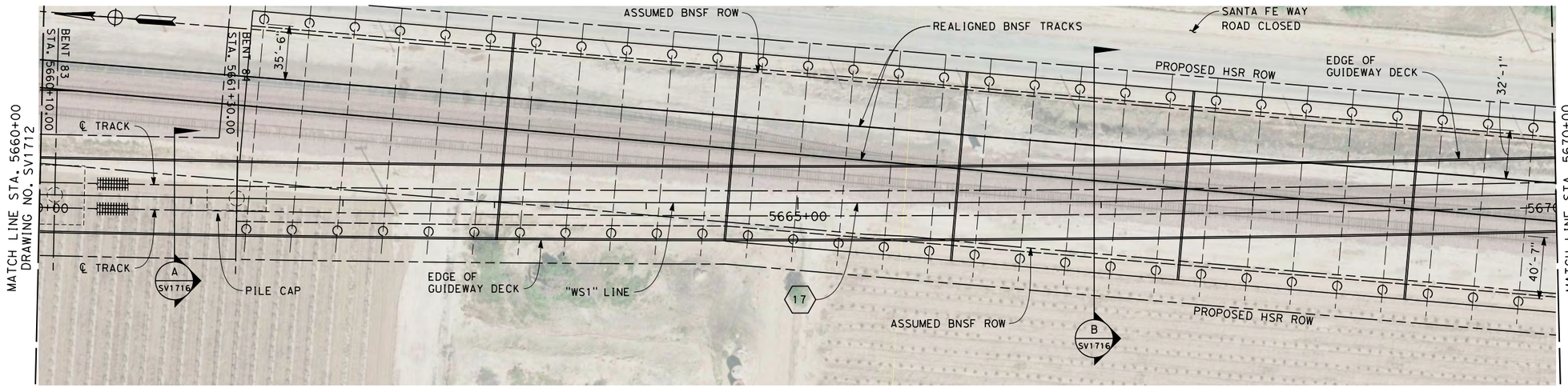
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1712
SCALE AS SHOWN
SHEET NO. 11 OF 15

Nadine.Hutton 12/12/2013 7:10:23 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\VFB-SV-1712-WS1.dgn



TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
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LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

17

R = 22000
Δ = 40°02'15"
T = 8016
L = 15373

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1713
SCALE AS SHOWN
SHEET NO. 12 OF 15

RFP No. HSR 14-32 – REVIEW DRAFT

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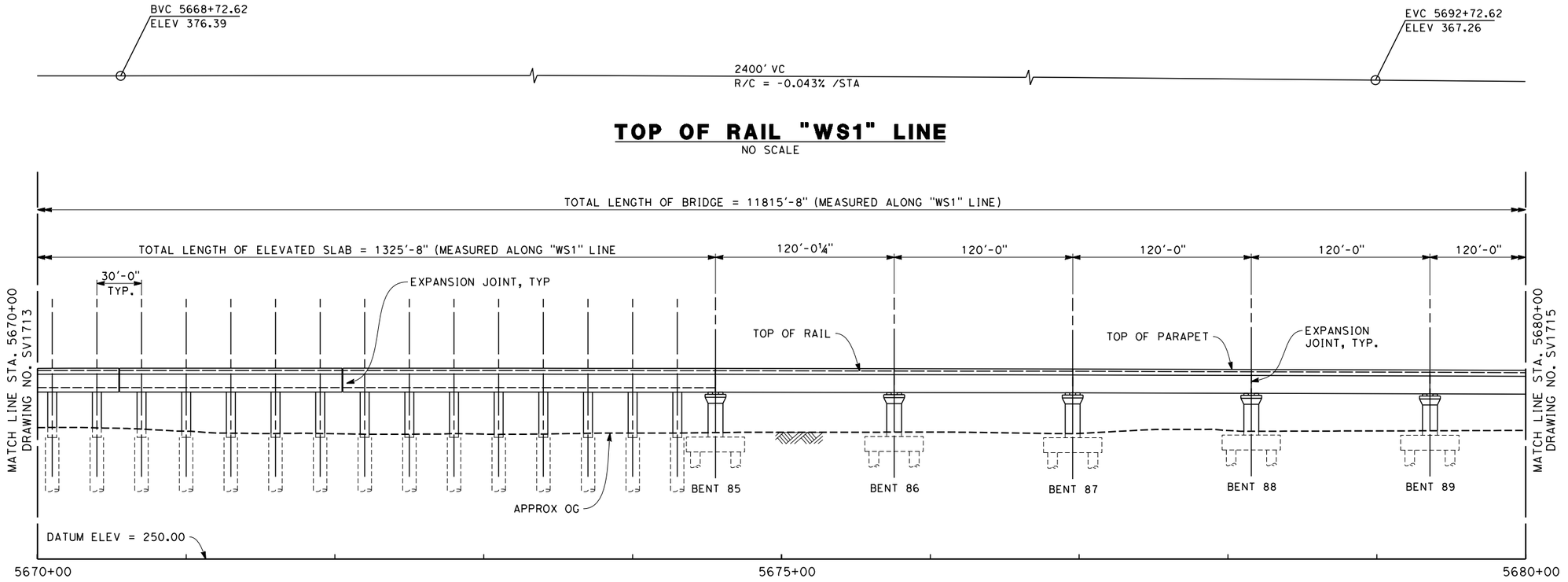
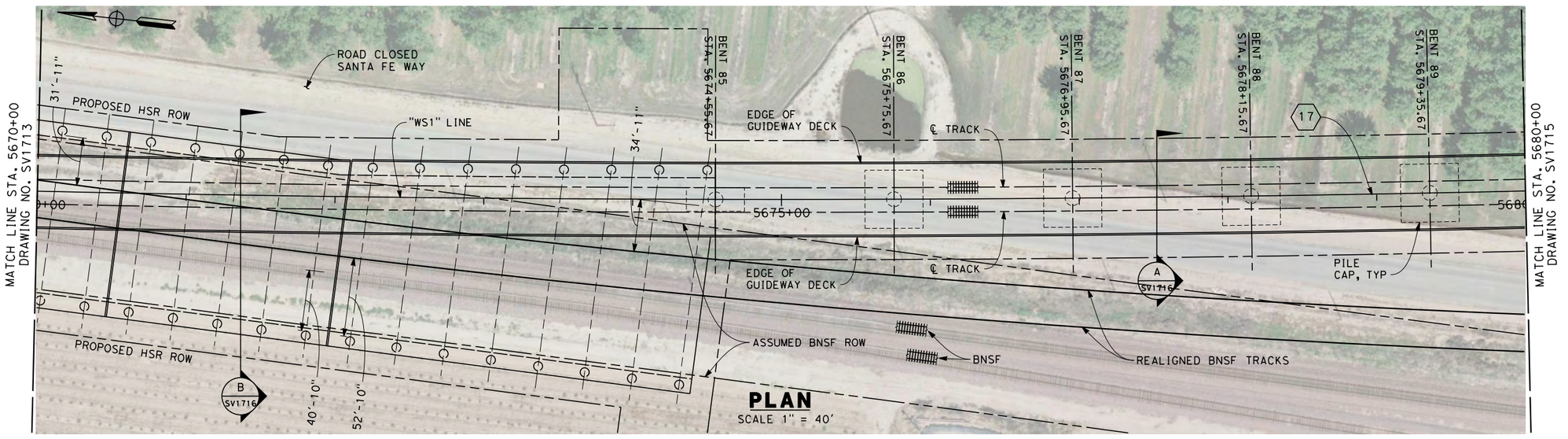


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
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LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

17

R = 22000
Δ = 40°02'15"
T = 8016
L = 15373

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1714
SCALE AS SHOWN
SHEET NO. 13 OF 15

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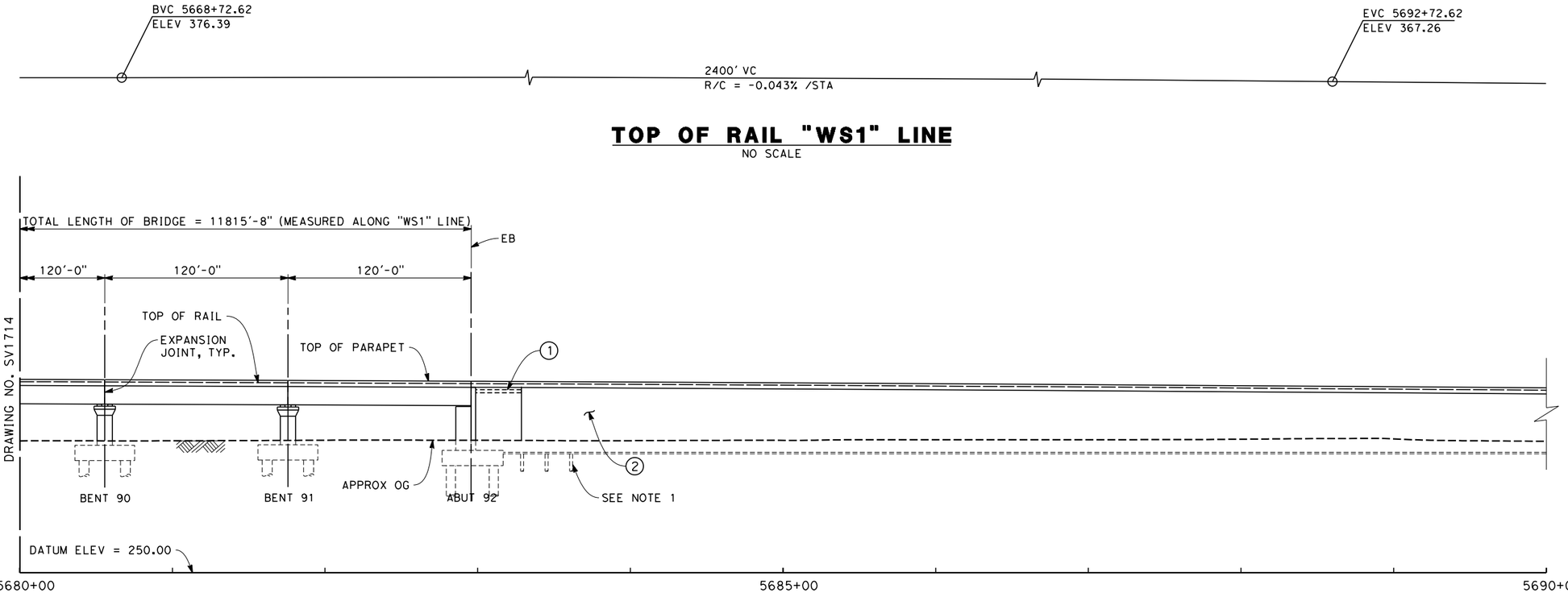
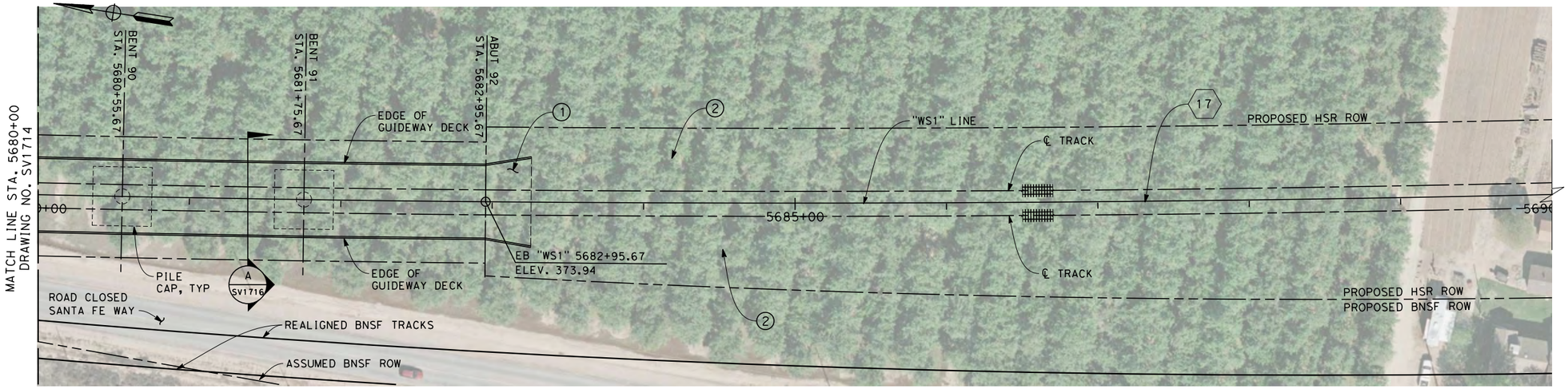


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

(17)

R = 22000
Δ = 40°02'15"
T = 8016
L = 15373

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1715
SCALE AS SHOWN
SHEET NO. 14 OF 15

RFP No. HSR 14-32 – REVIEW DRAFT

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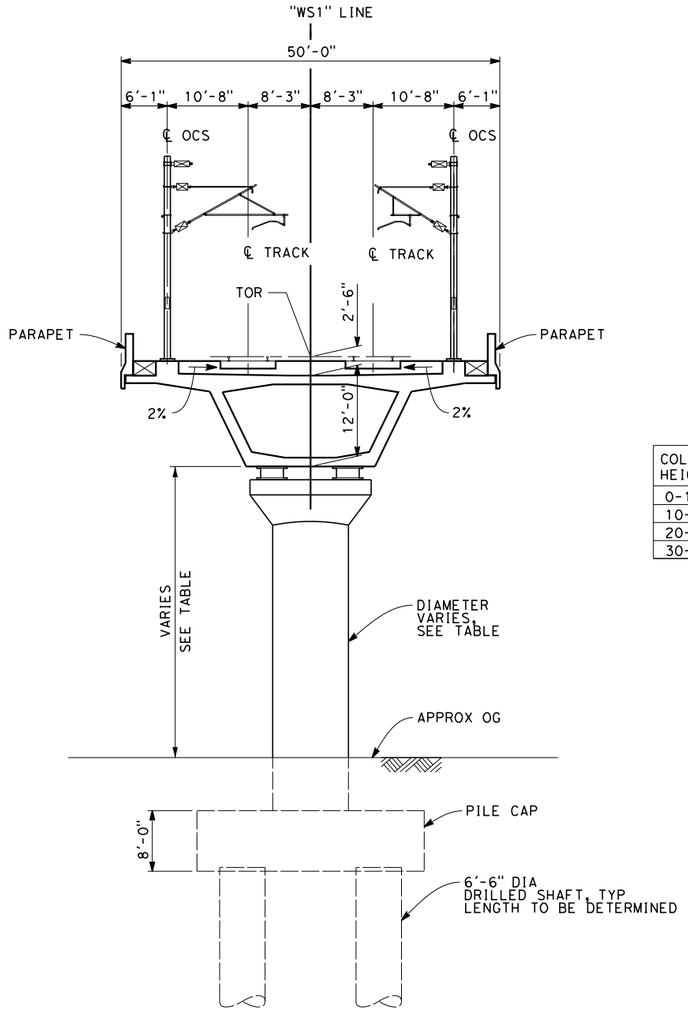
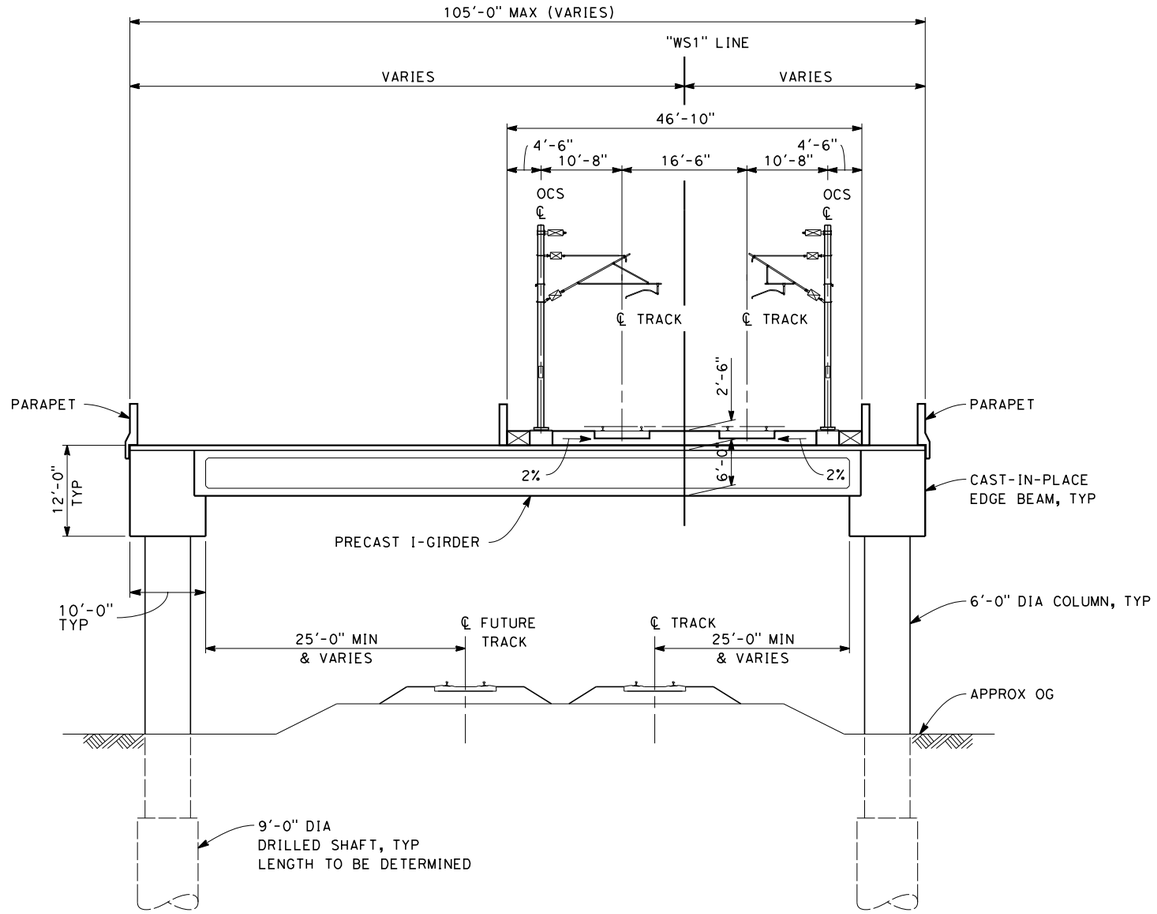


COLUMN HEIGHT	COLUMN DIA.
0-10'	8'
10-20'	8'
20-30'	10'
30-40'	10'

SECTION A

SCALE: 1" = 10'

STA 5564+80 THROUGH 5661+30
STA 5674+56 THROUGH 5682+96



SECTION B

SCALE: 1" = 10'

STA 5661+30 THROUGH 5674+56

10 0 10 20
1"-10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
WASCO VIADUCT
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1716
SCALE AS SHOWN
SHEET NO. 15 OF 15

RFP NO. HSR 14-32 – REVIEW DRAFT

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SUBSECTION L1 & L3

STATE ROUTE 46

WASCO

KIMBERLINA RD

SHAFTER AVE

MERCED AVE

N BEECH AVE

CHERRY AVE

SV1721

SV1722

"WS1" LINE

PROPOSED BNSF

EXIST BNSF

SHAFTER

BURBANK ST

7TH STANDARD RD

LONE STAR SPUR
PROPOSED REALIGNMENT

LONE STAR
SPUR

SANTA FE WAY

KRATZMEYER RD

REINA RD

SUBSECTION B1, B2 & B3

LEGEND

EXISTING FREIGHT RAILROAD

PROPOSED CHST

3000 0 3000 6000

1"=3000'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY E. SUDHAUSEN
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

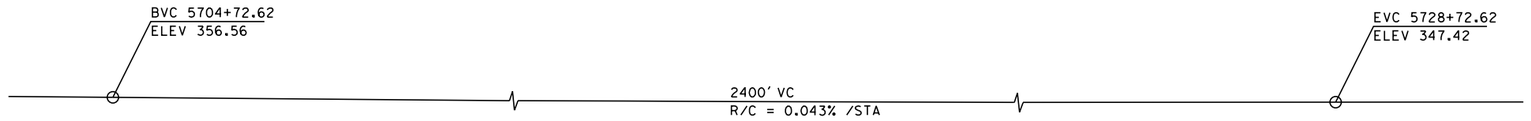
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
KIMBERLINA ROAD UNDERPASS
KEY MAP

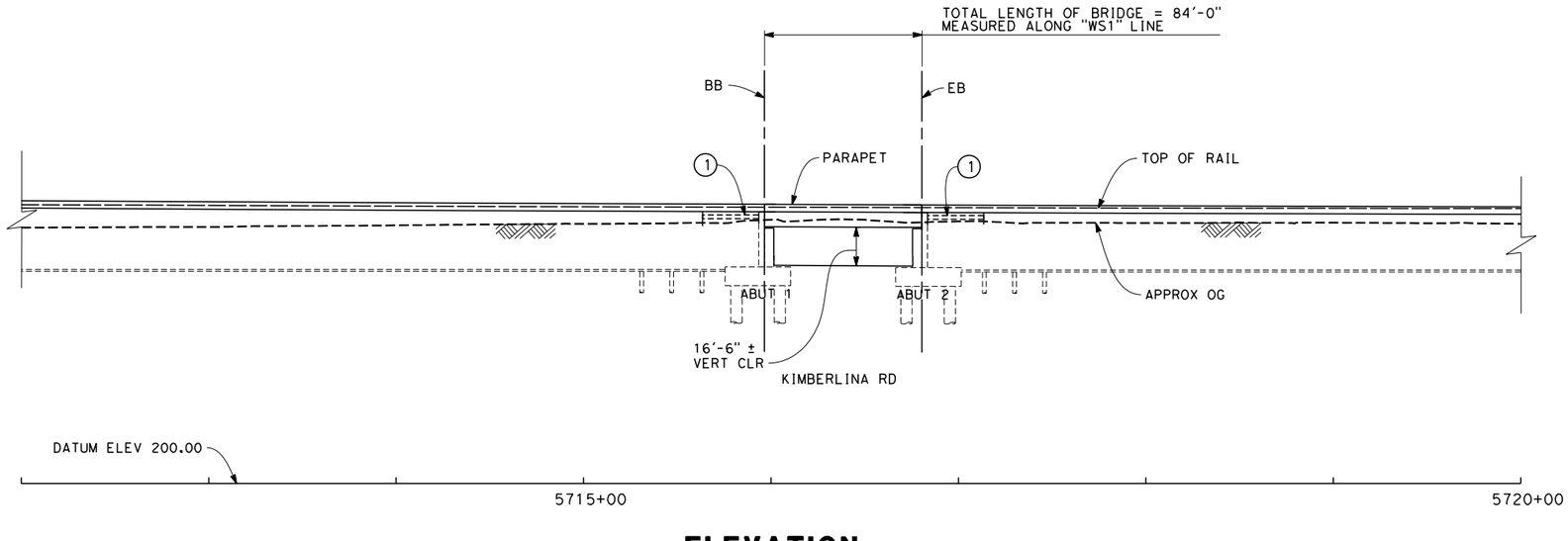
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1720
SCALE AS SHOWN
SHEET NO. 1 OF 3

jojo.valenzuela 12/30/2013 1:44:49 PM c:\pwworking\hmm\external\jojo.valenzuela-arup.com\dms86726\FB-SV-1720-WS1.dgn



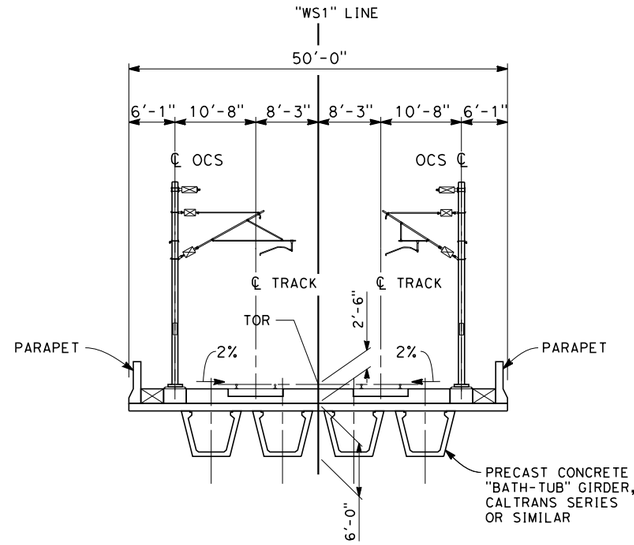
TOP OF RAIL "WS1" LINE

NO SCALE



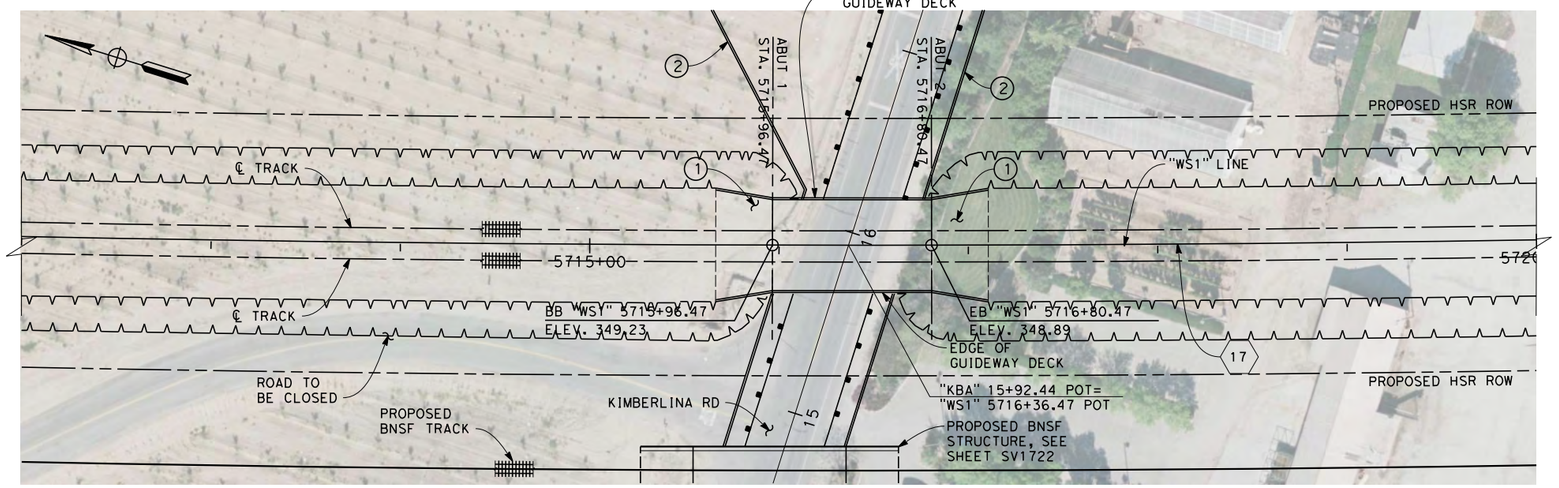
ELEVATION

SCALE 1" = 40'



TYPICAL SECTION

SCALE: 1" = 10'



PLAN

SCALE 1" = 40'

CURVE DATA

17

R = 22000.00'

Δ = 40° 02' 15.1"

T = 8015.5'

L = 15373.3'

NOTES:

1. ALL PILES NOT SHOWN
2. PILE LENGTH TO BE DETERMINED

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

10 0 10 20 — 1"=10'

40 0 40 80 — 1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY J. VALENZUELA
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED TRAIN

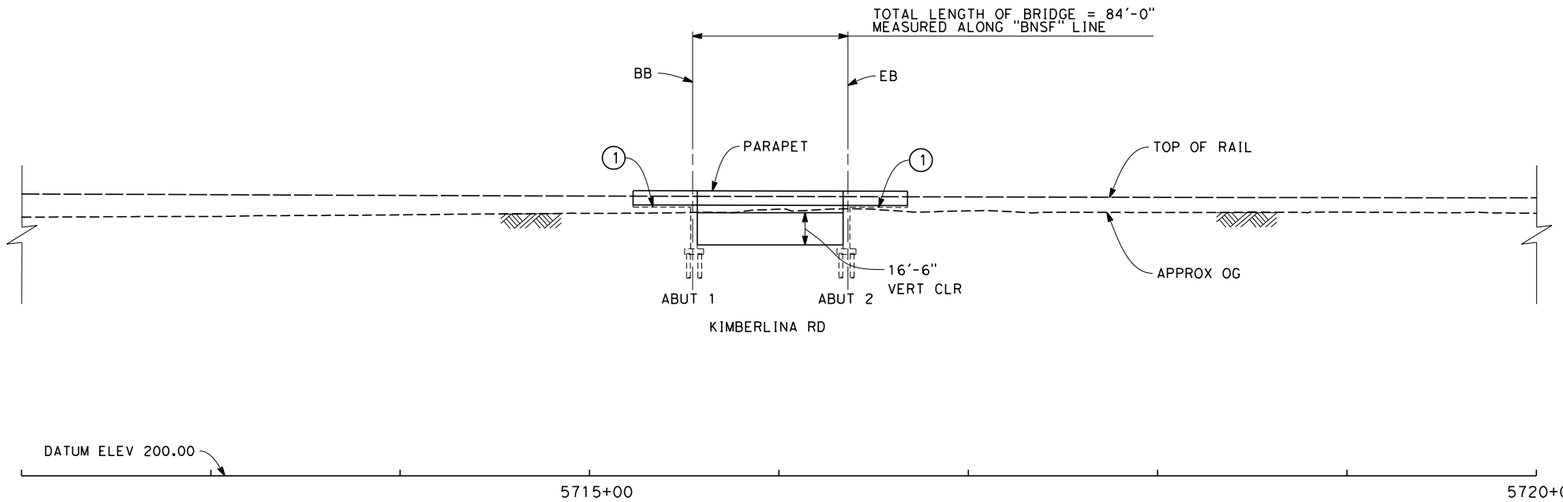
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
KIMBERLINA ROAD UNDERPASS
PLAN AND ELEVATION

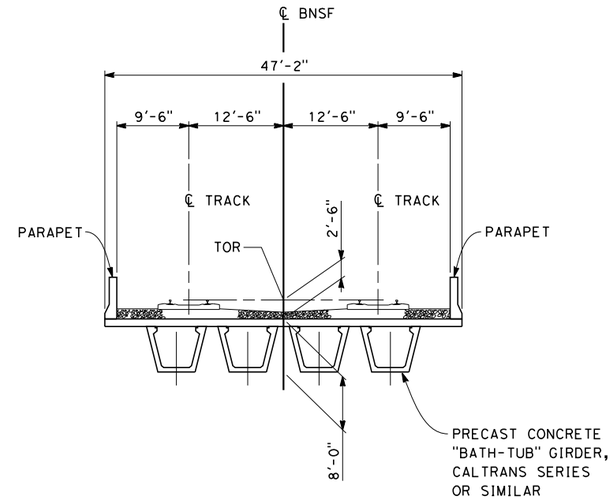
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1721
SCALE AS SHOWN
SHEET NO. 2 OF 3

RFP No. HSR 14-32 – REVIEW DRAFT

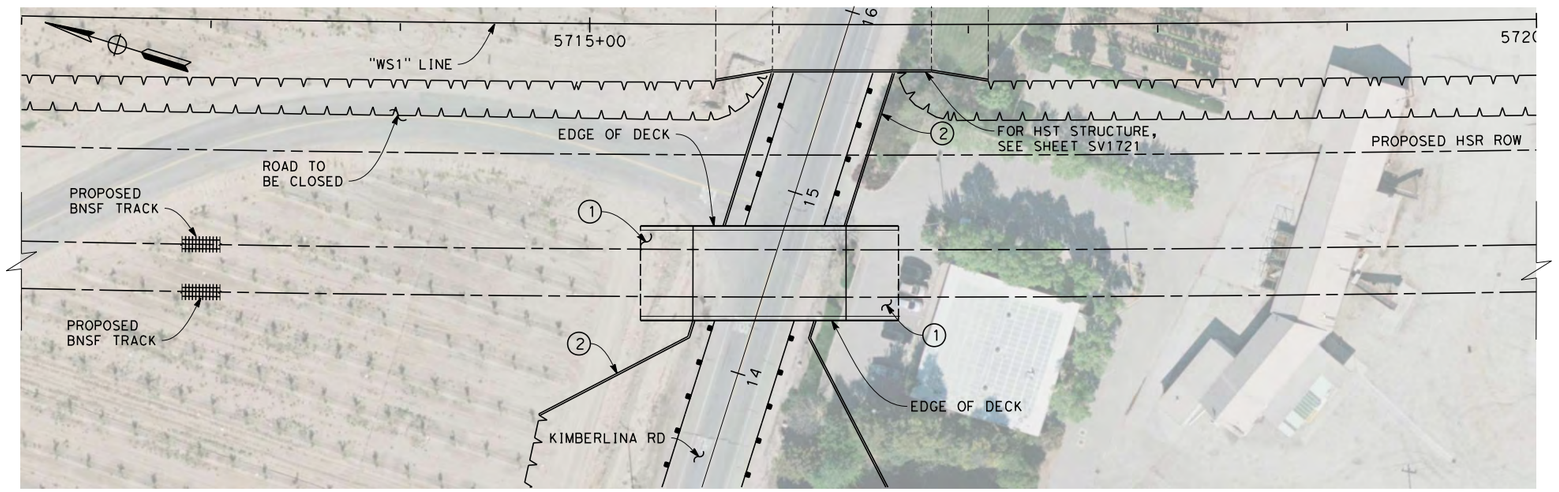
Nadine.Hutton 12/12/2013 7:13:55 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\VFB-SV-1721-WS1.dgn



ELEVATION
SCALE 1" = 40'



TYPICAL SECTION
SCALE: 1" = 10'



PLAN
SCALE 1" = 40'

NOTES:

1. ALL PILES NOT SHOWN
2. PILE LENGTH TO BE DETERMINED

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

10 0 10 20 — 1"=10'

40 0 40 80 — 1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY J. VALENZUELA
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
KIMBERLINA ROAD BNSF UNDERPASS
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1722
SCALE AS SHOWN
SHEET NO. 3 OF 3

RFP No. HSR 14-32 – REVIEW DRAFT

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RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY E. SUDHAUSEN
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1750
SCALE AS SHOWN
SHEET NO. 1 OF 20

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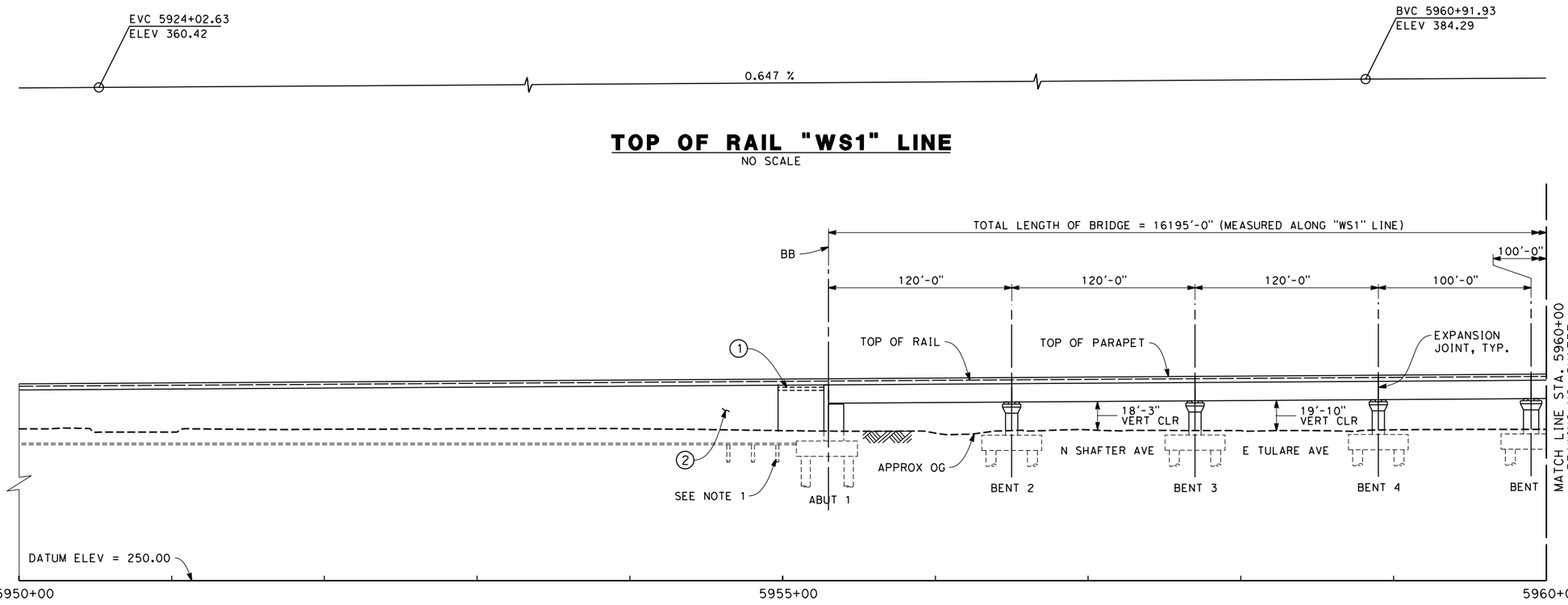
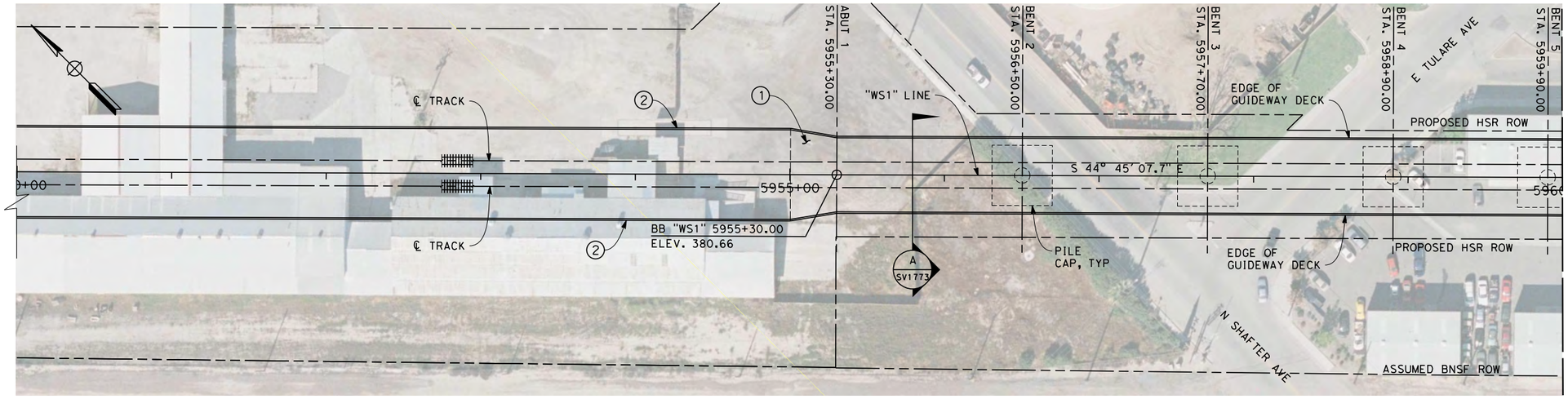


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1756
SCALE AS SHOWN
SHEET NO. 2 OF 20

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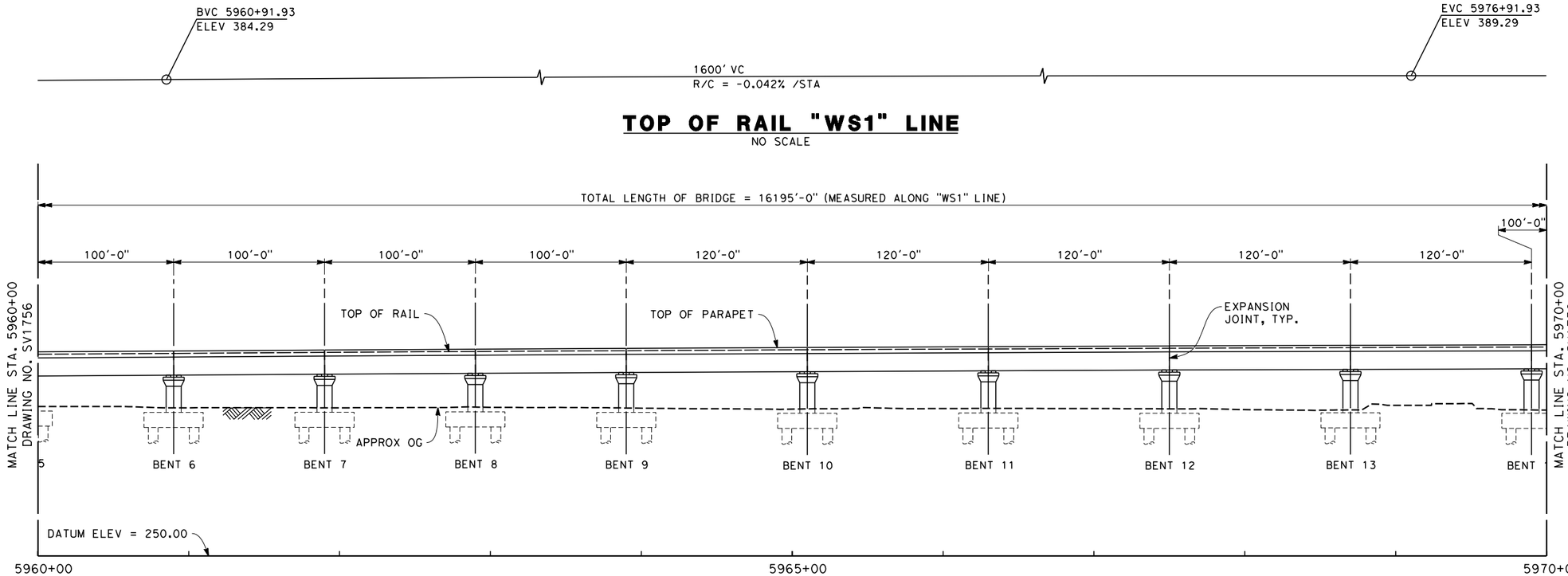
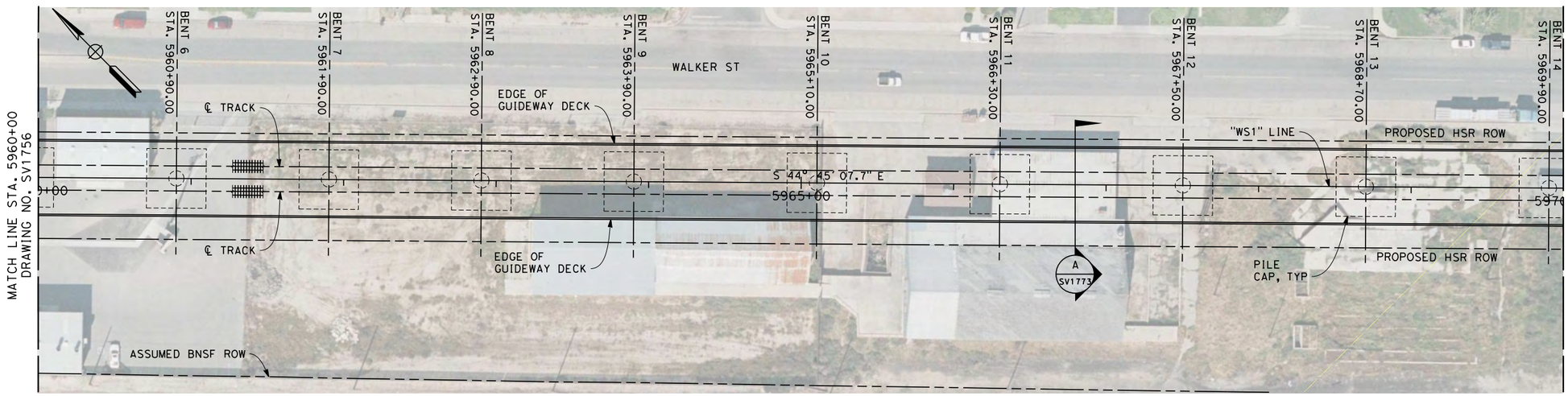


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1757
SCALE AS SHOWN
SHEET NO. 3 OF 20

RFP No. HSR 14-32 – REVIEW DRAFT

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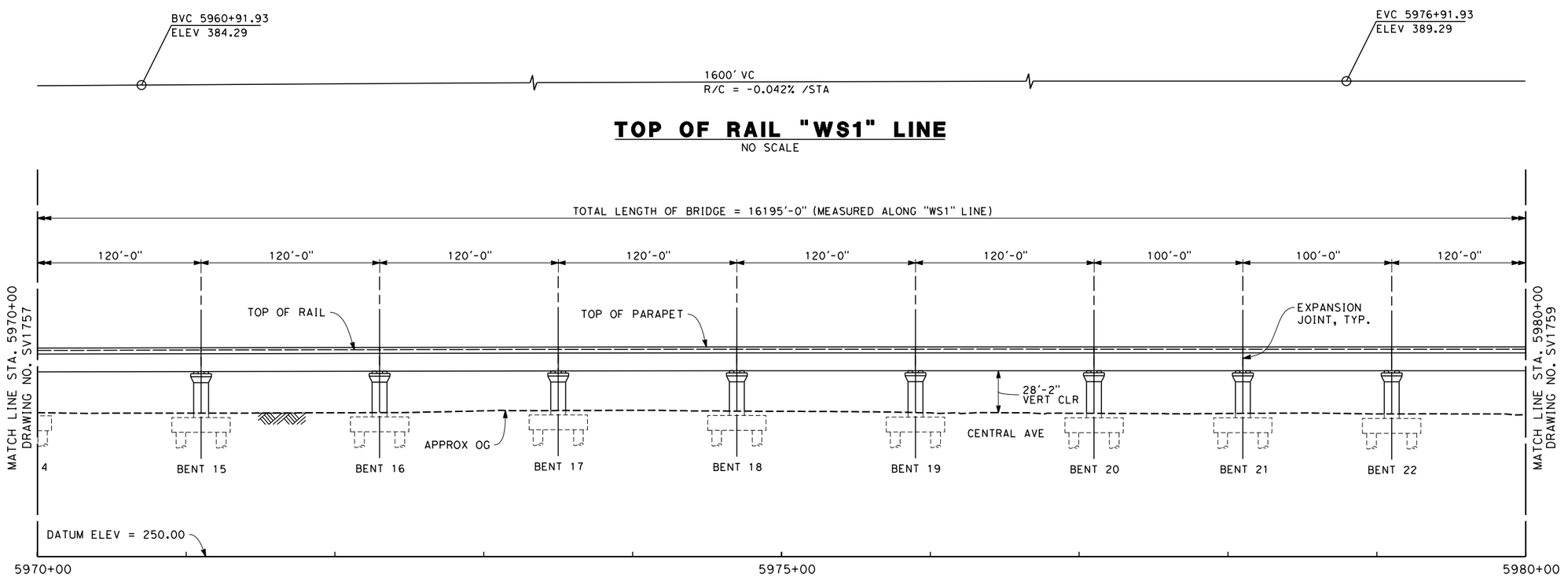
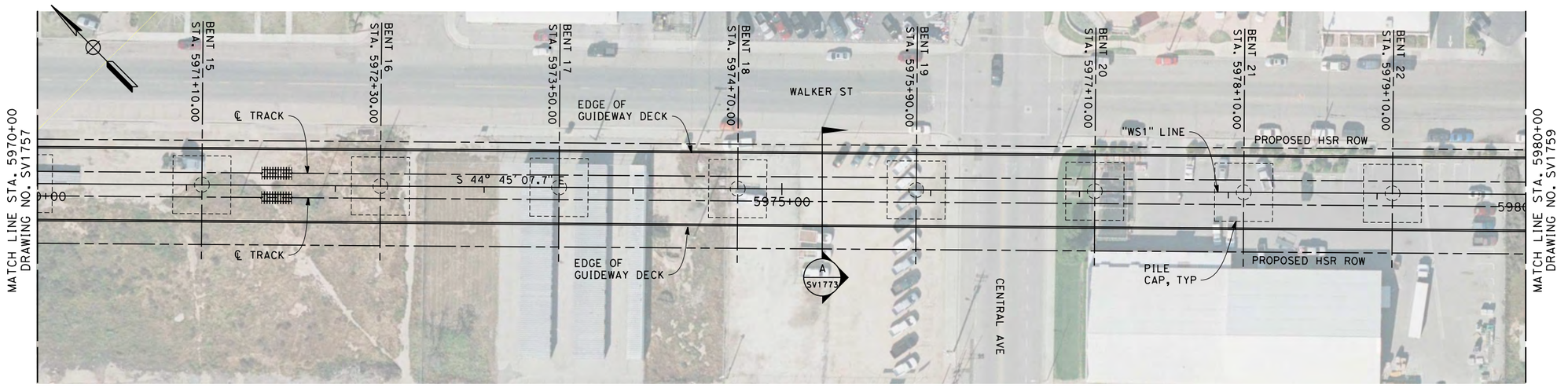


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1758
SCALE AS SHOWN
SHEET NO. 4 OF 20

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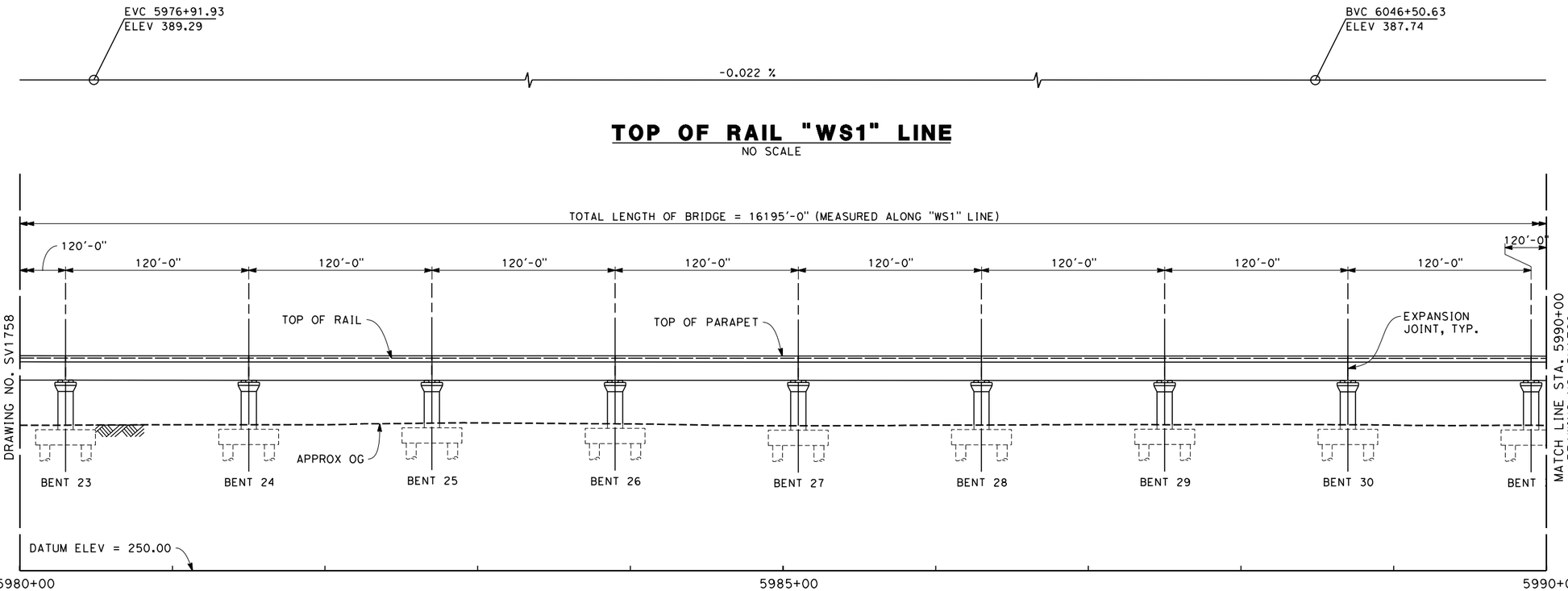
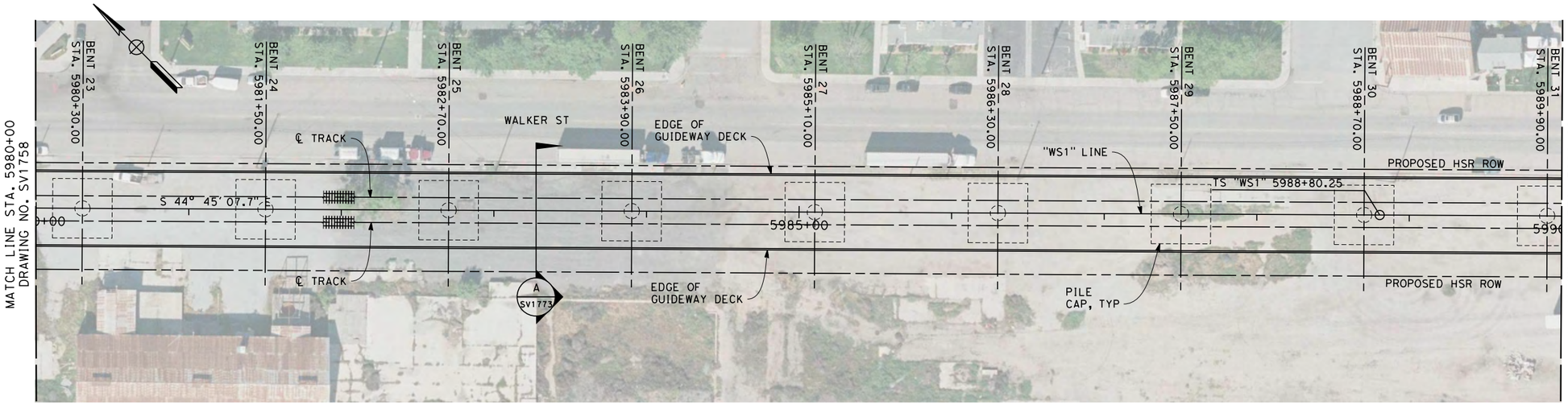


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
(1) STRUCTURE APPROACH SLAB
(2) RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1759
SCALE AS SHOWN
SHEET NO. 5 OF 20

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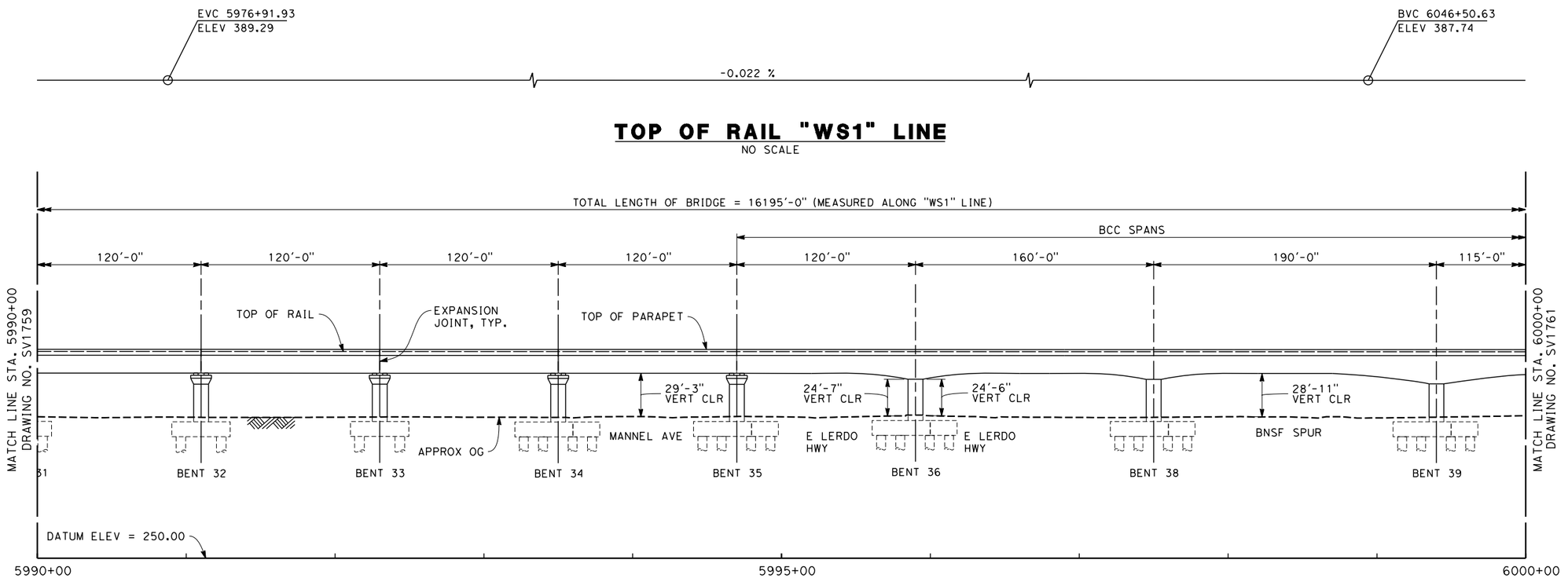
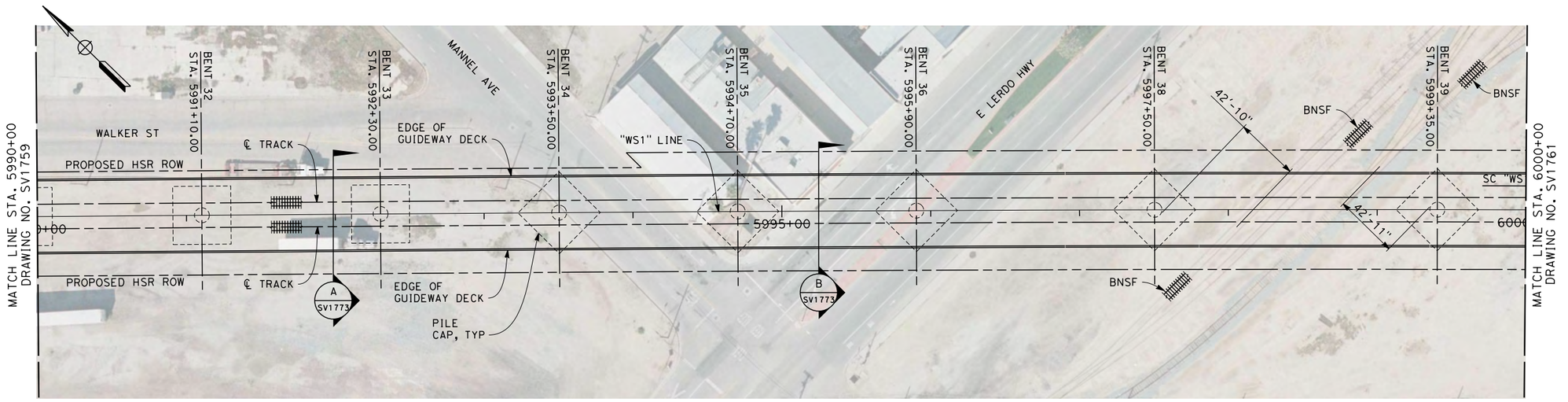


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

LEGEND:

1. STRUCTURE APPROACH SLAB
2. RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

RFP No. HSR 14-32 – REVIEW DRAFT

$USER$ $TIME$ $FILE$ $DATE$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY Q. LIU
IN CHARGE R. COFFIN
DATE 05/23/14

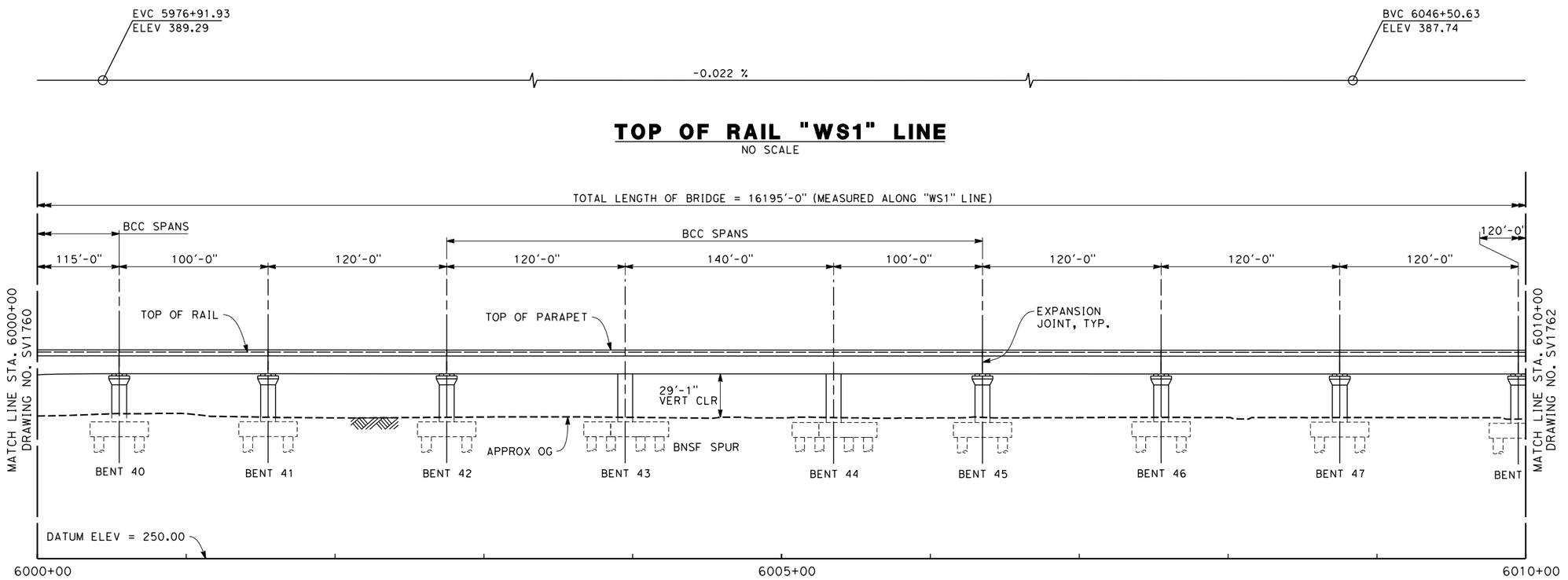
RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1760
SCALE AS SHOWN
SHEET NO. 6 OF 20

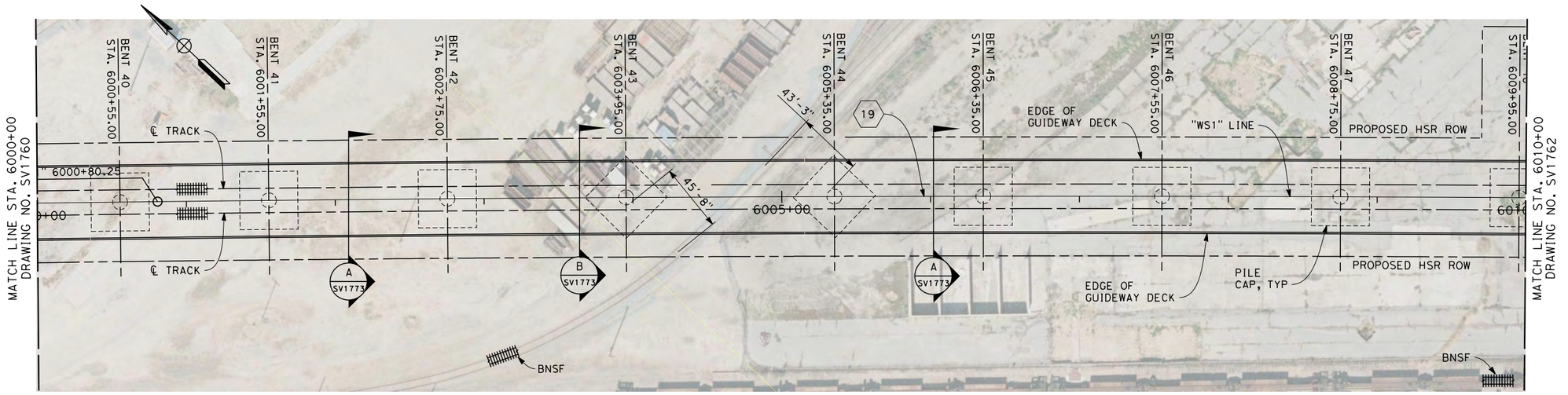


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   - SIMPLE SPANS - MSS OR FLPM
   - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   - STEEL TRUSS - INSITU, SLID OR LAUNCHED
   - ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

(19)

R = 50000
Δ = 02°32'40.6"
T = 1110.5'
L = 2220.6'

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY Q. LIU
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

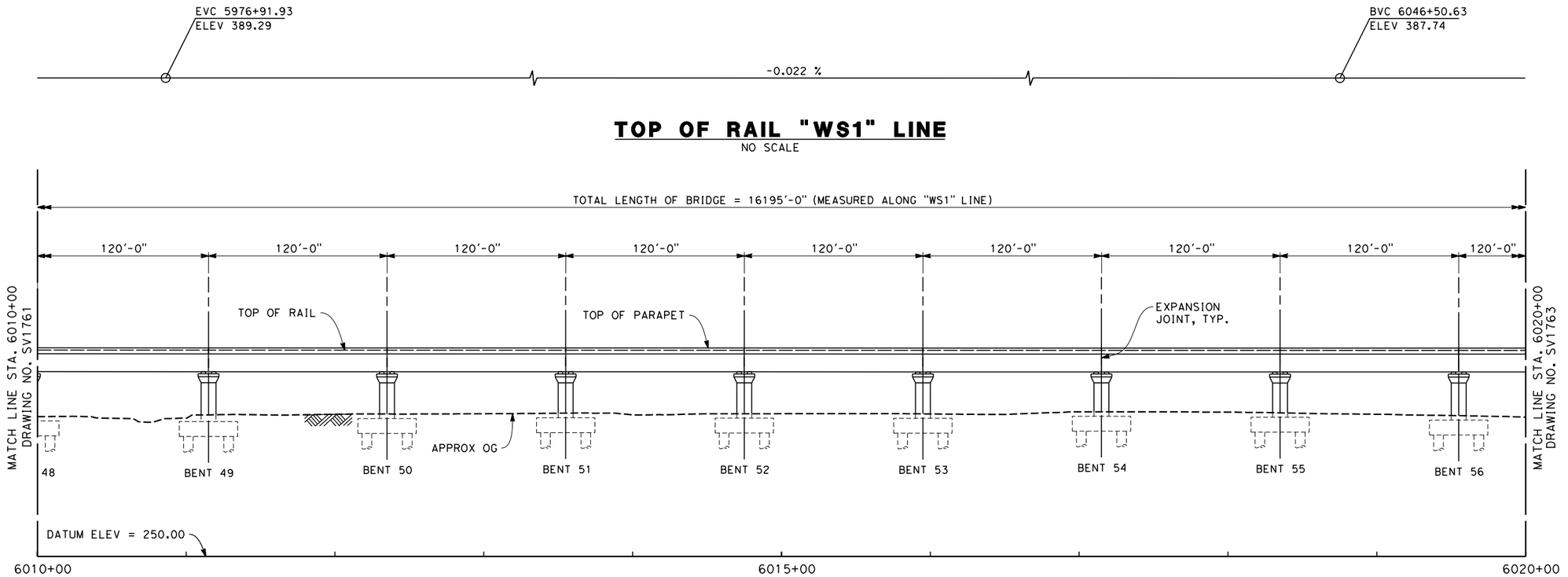
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

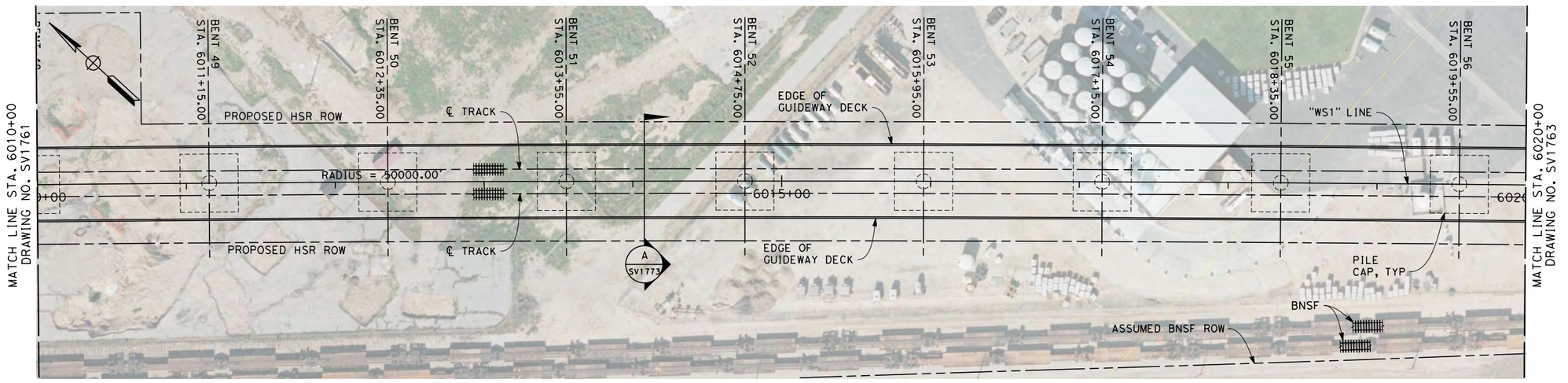
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1761
SCALE AS SHOWN
SHEET NO. 7 OF 20

$USER$ $DATE$ $TIME$ $FILE$



TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA
(19)
R = 50000
Δ = 02°32'40.6"
T = 1110.5'
L = 2220.6'

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1762
SCALE AS SHOWN
SHEET NO. 8 OF 20

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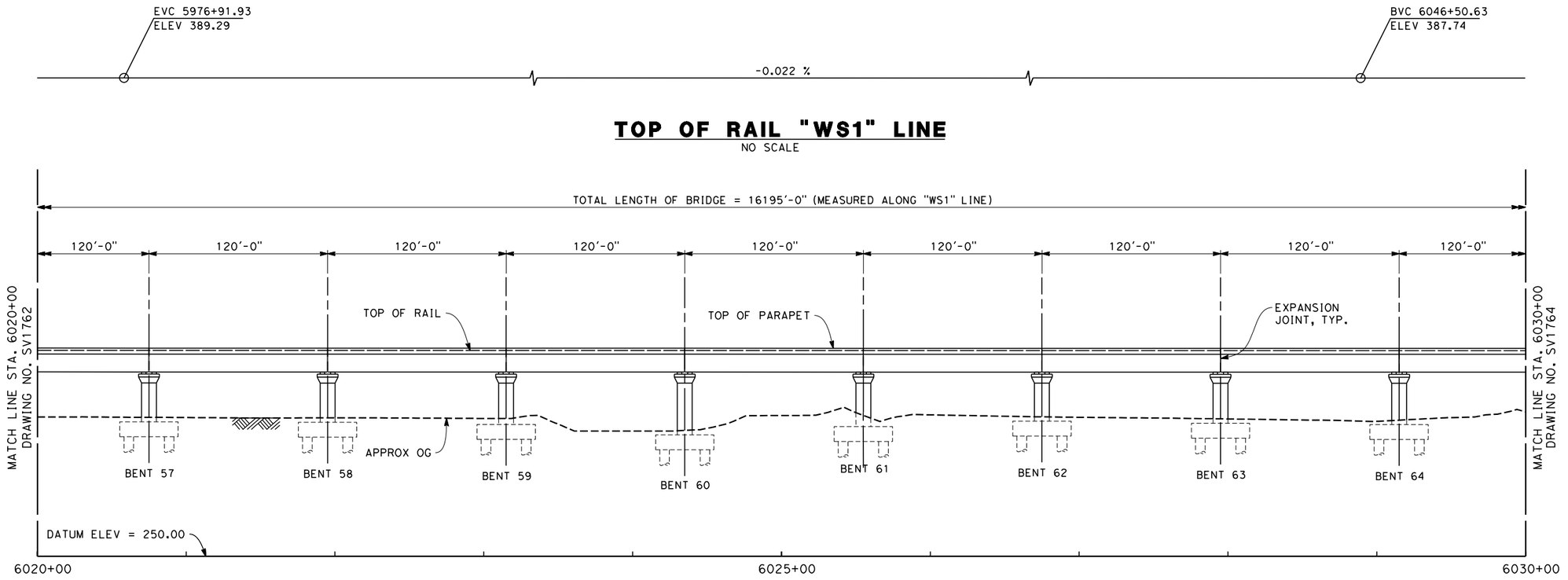


TOP OF RAIL "WS1" LINE

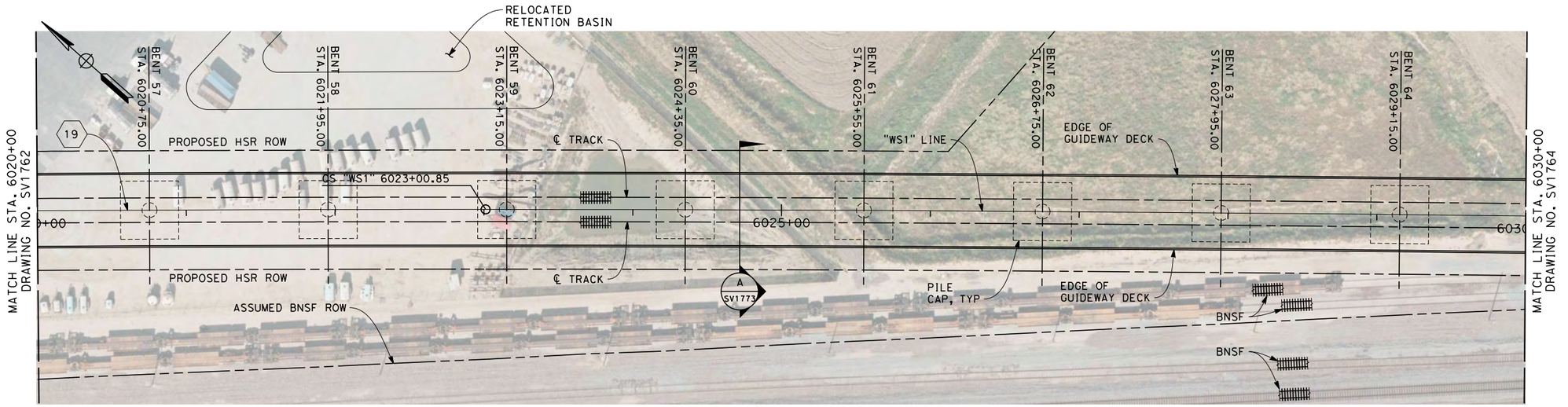
NO SCALE

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

(19)

R = 50000
Δ = 02°32'40.6"
T = 1110.5'
L = 2220.6'

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

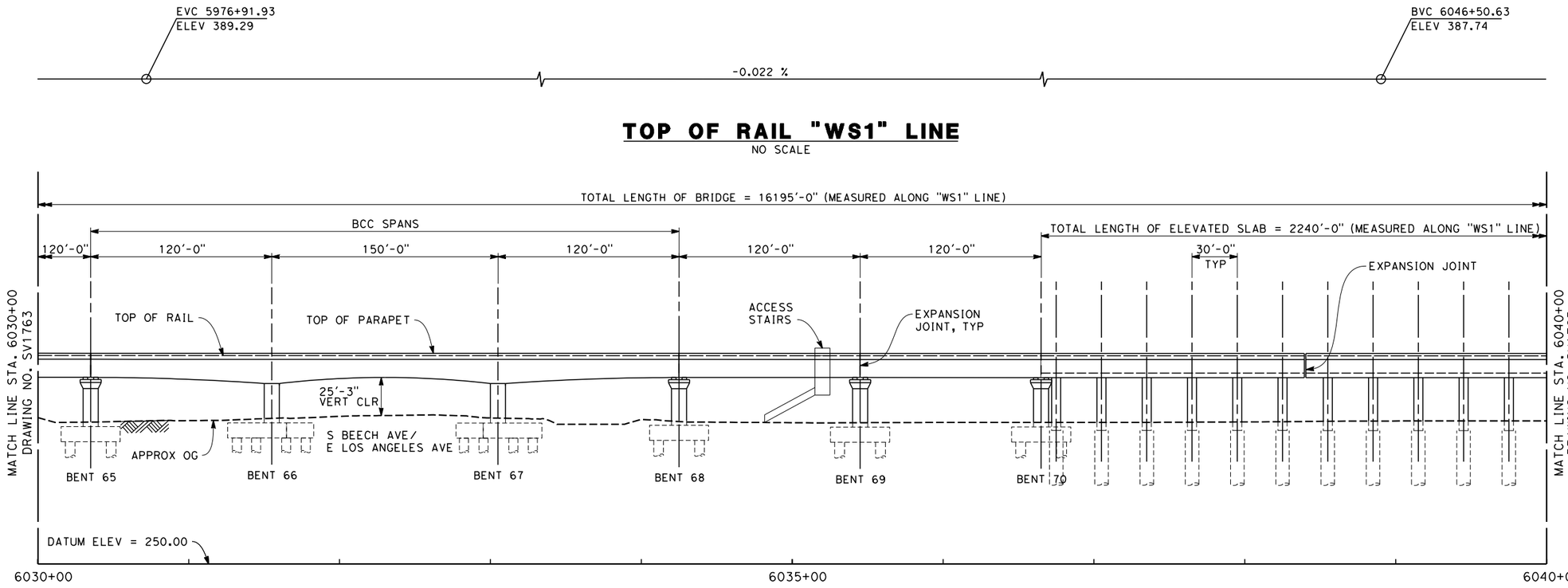
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1763
SCALE AS SHOWN
SHEET NO. 9 OF 20

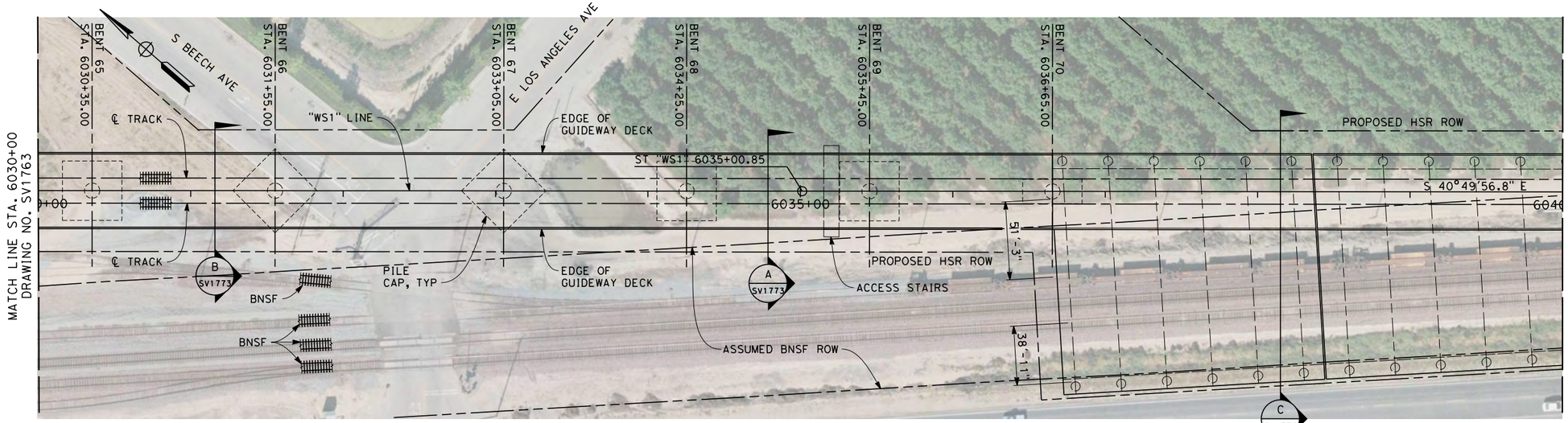
RFP NO. HSR 14-32 – REVIEW DRAFT

jojo.valenzuela 12/28/2013 3:58:33 PM c:\pwworking\hmm\external\jojo.valenzuela-arup.com\dms86726\FB-SV-1763-WS1.dgn



TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
1. STRUCTURE APPROACH SLAB
2. RETAINING WALL
* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1764
SCALE AS SHOWN
SHEET NO. 10 OF 20

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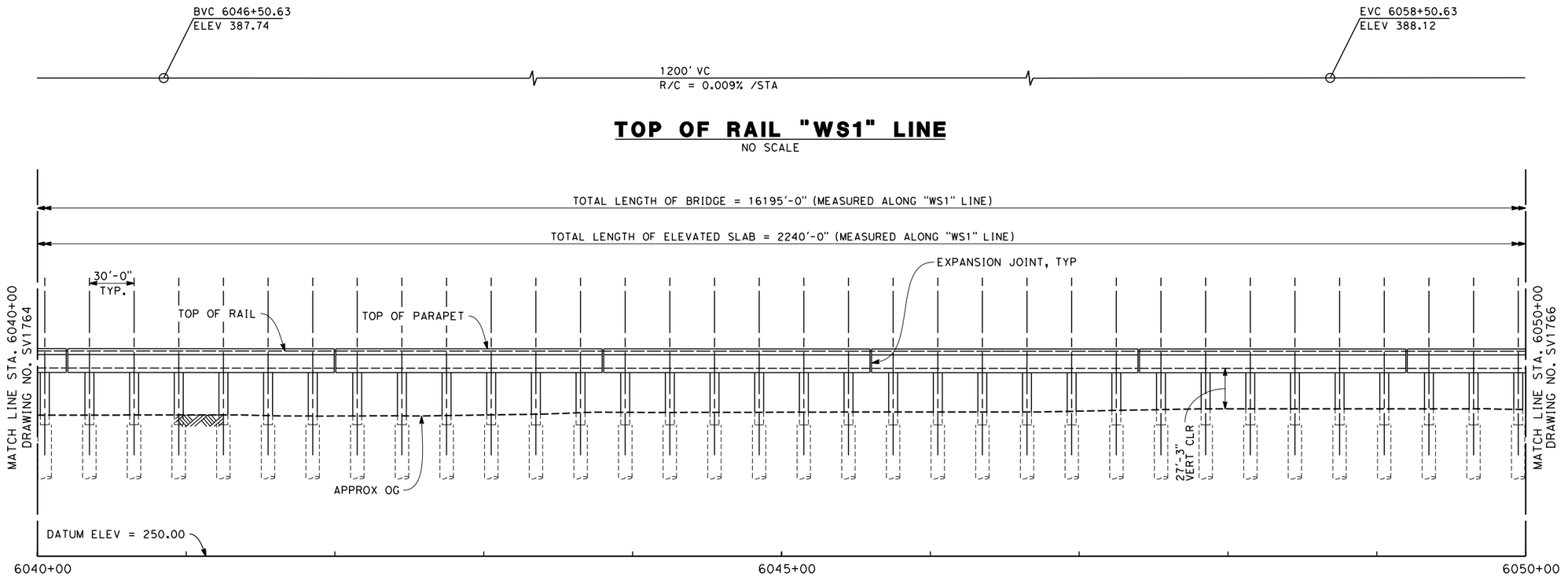
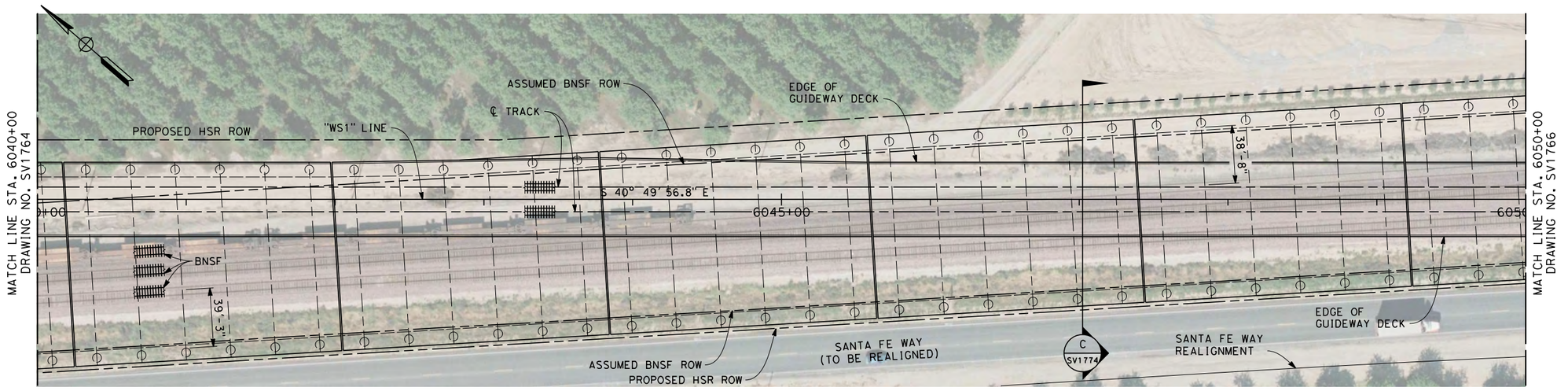


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1765
SCALE AS SHOWN
SHEET NO. 11 OF 20

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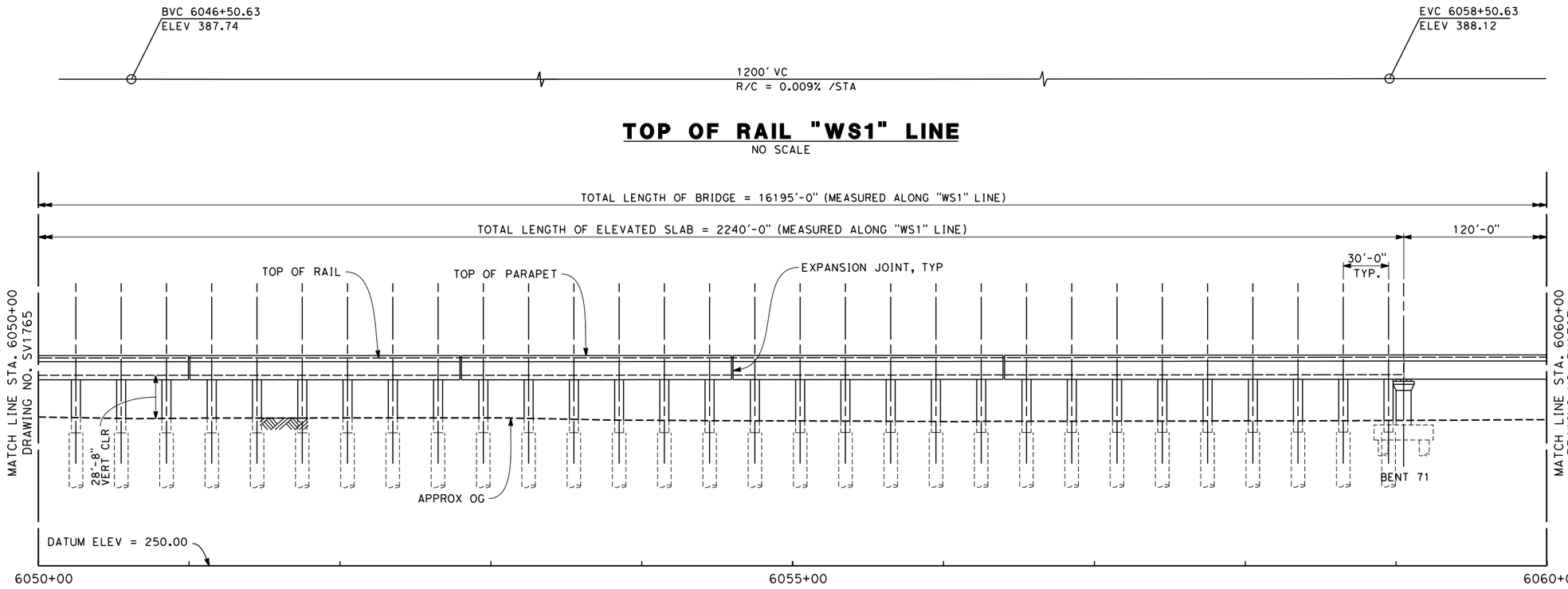
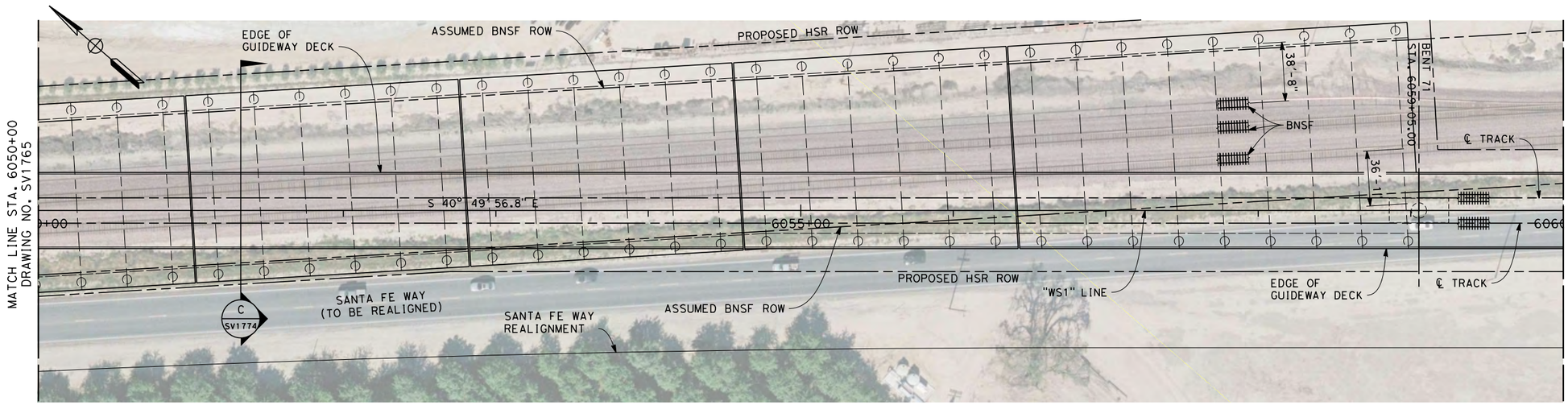


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1766
SCALE AS SHOWN
SHEET NO. 12 OF 20

RFP No. HSR 14-32 – REVIEW DRAFT

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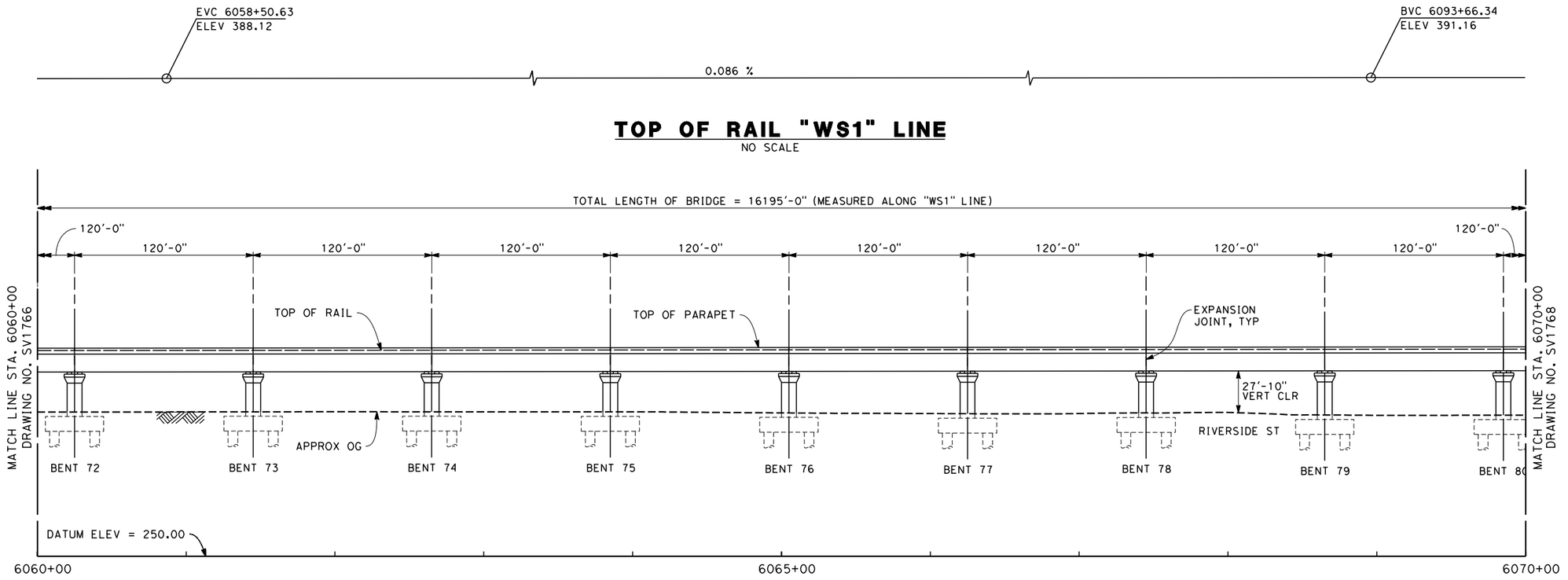
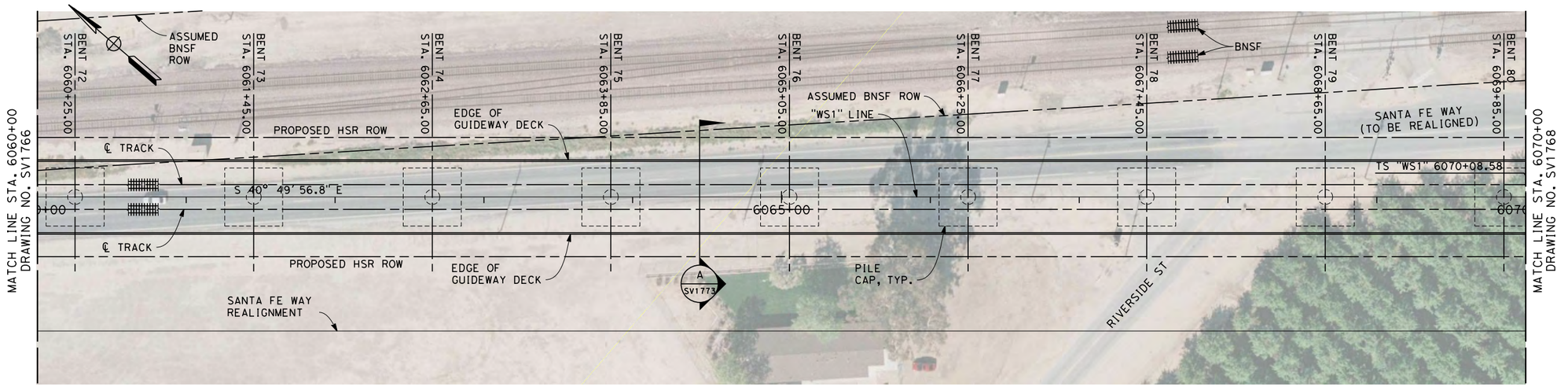


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1767
SCALE AS SHOWN
SHEET NO. 13 OF 20

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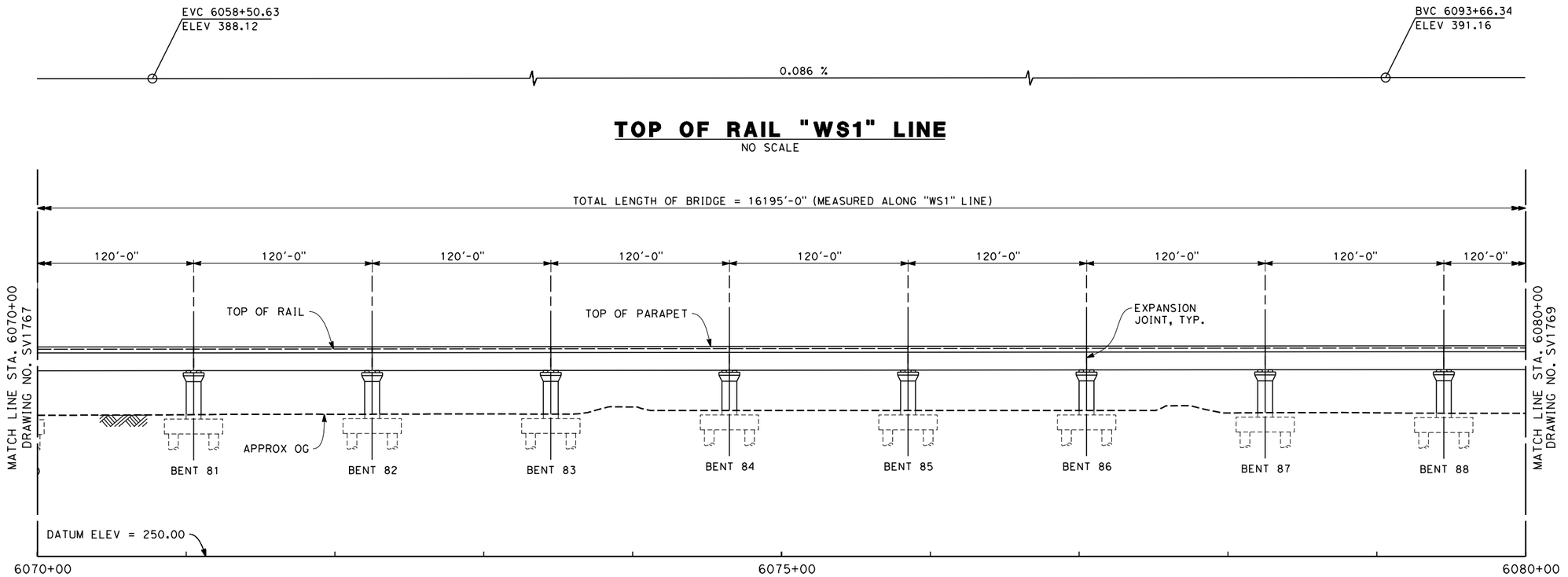
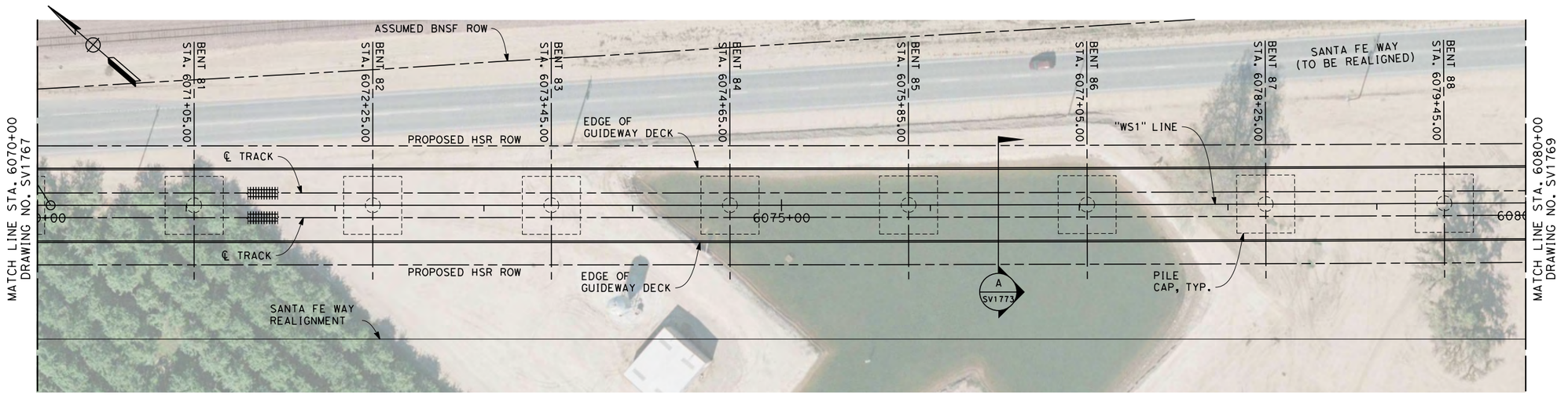


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:
(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

40 0 40 80
1"=40'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1768
SCALE AS SHOWN
SHEET NO. 14 OF 20

RFP No. HSR 14-32 – REVIEW DRAFT

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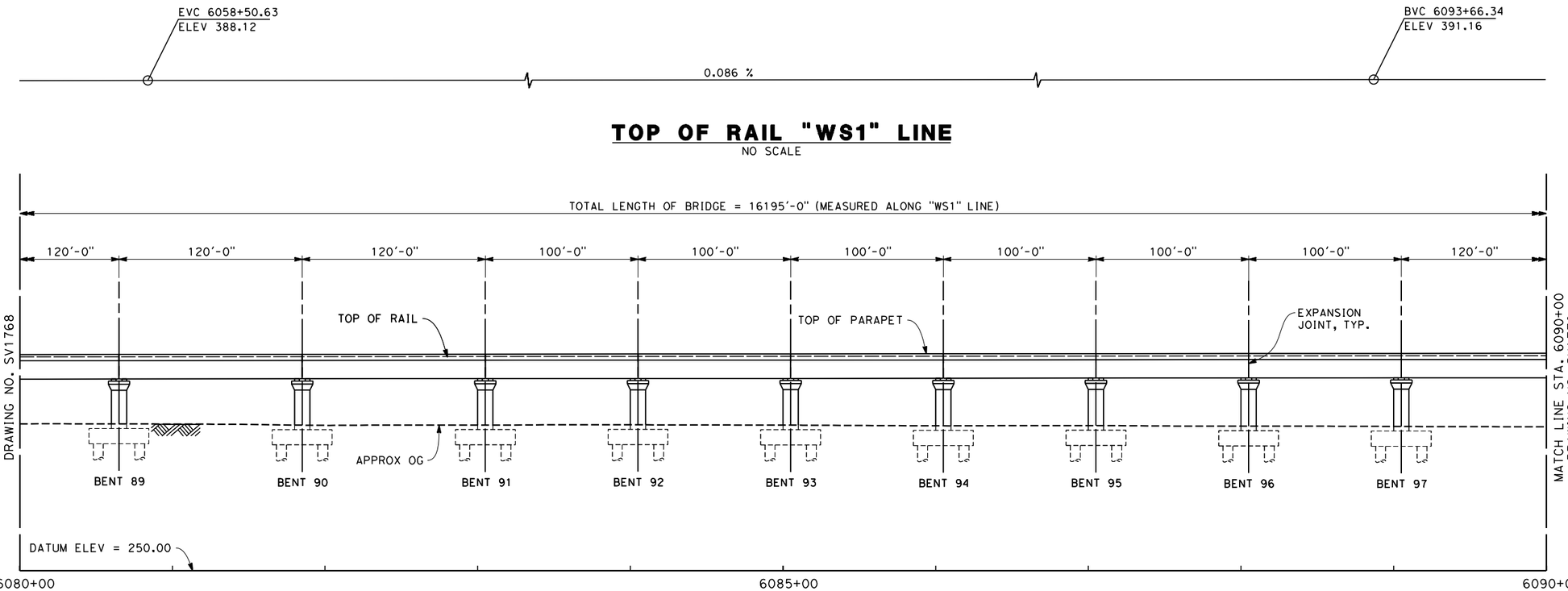
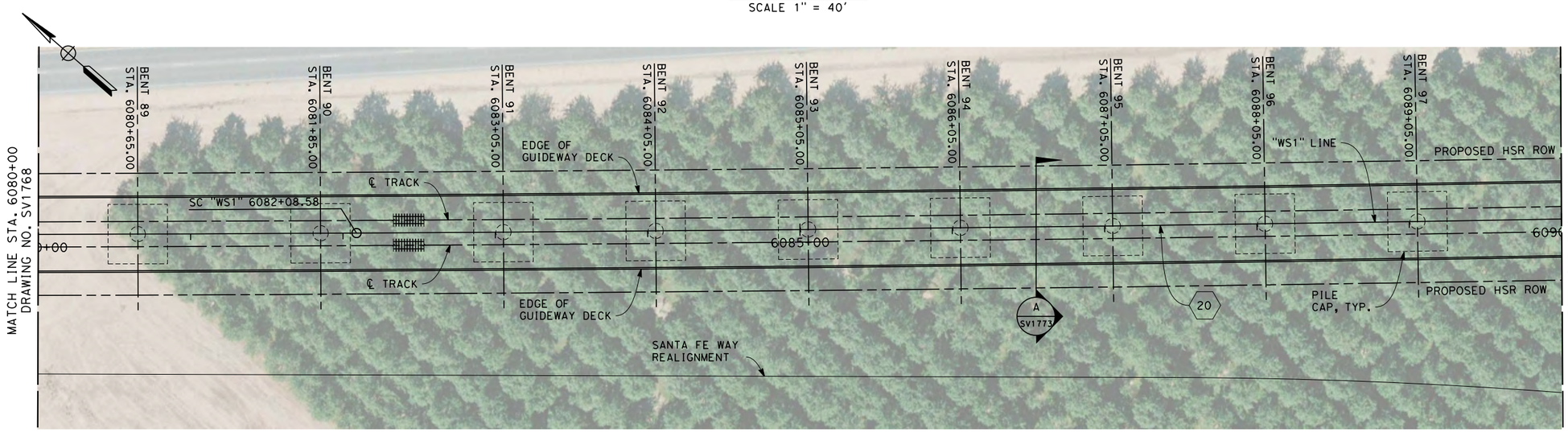


TOP OF RAIL "WS1" LINE
NO SCALE

ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

NOTES
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   - SIMPLE SPANS - MSS OR FLPM
   - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   - STEEL TRUSS - INSITU, SLID OR LAUNCHED
   - ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

① STRUCTURE APPROACH SLAB

② RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

⑳

R = 68000.00'
Δ = 03° 44' 50.0"
T = 2224.4'
L = 4447.3'

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1769
SCALE AS SHOWN
SHEET NO. 15 OF 20

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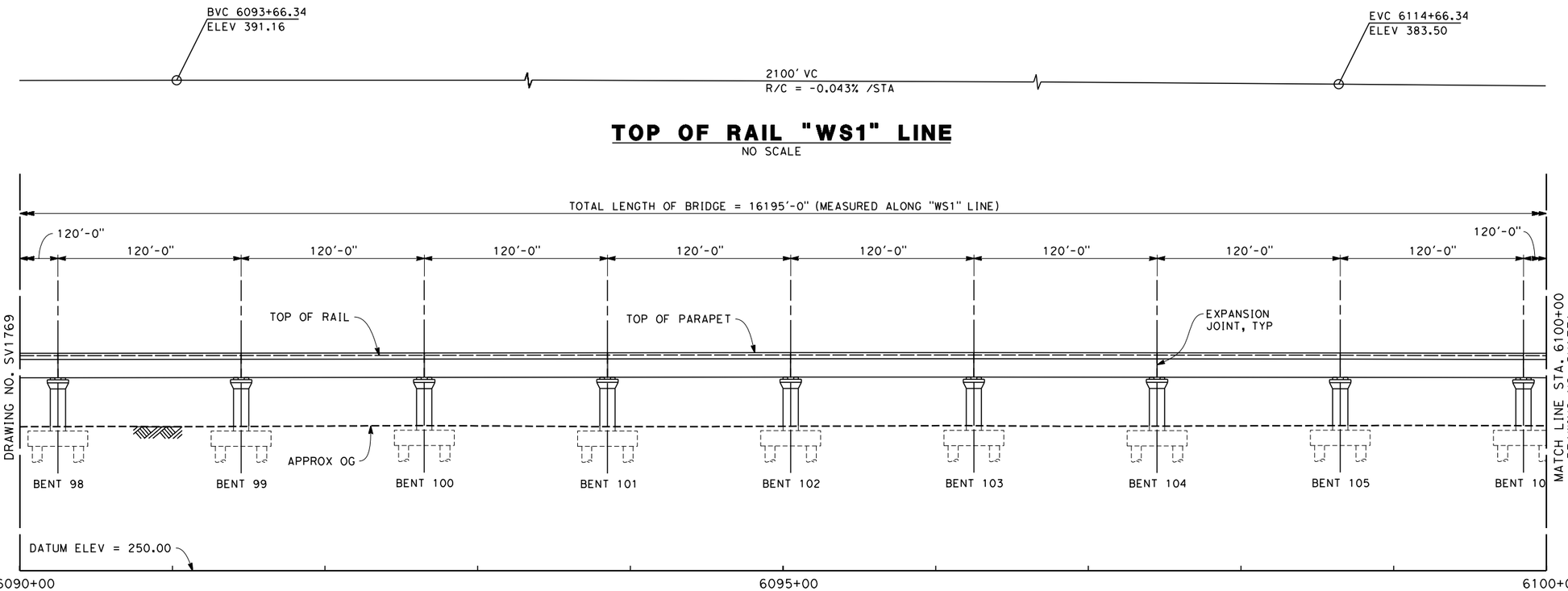
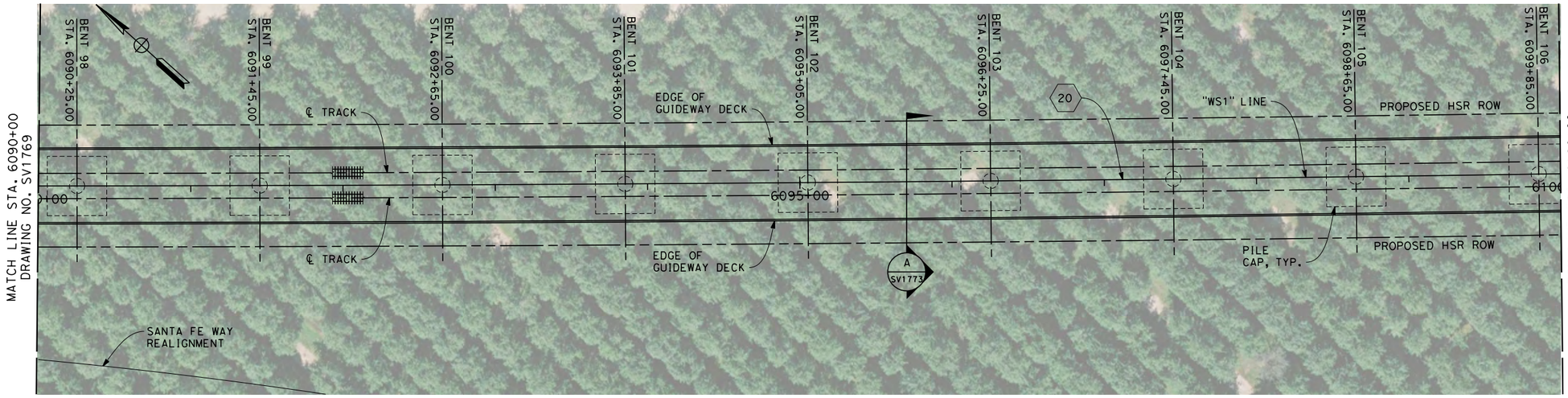


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

⬡ 20

R = 68000.00'
Δ = 03° 44' 50.0"
T = 2224.4'
L = 4447.3'

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. FISHER
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

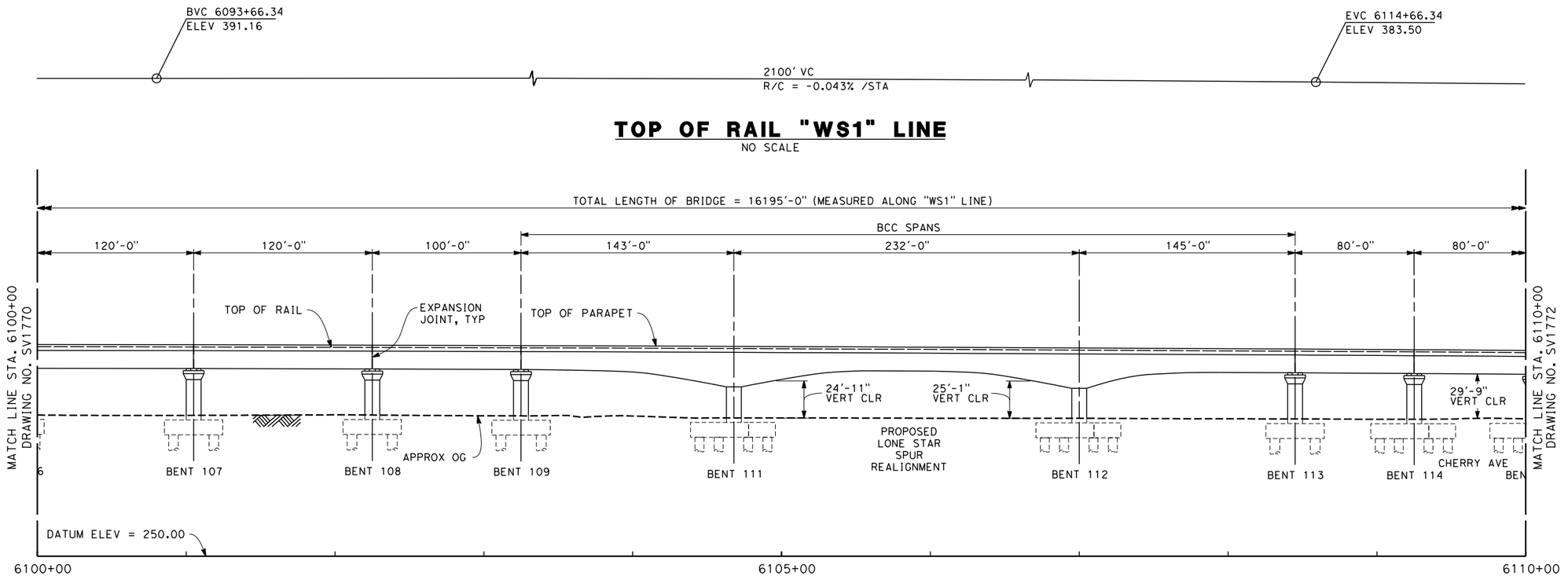
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1770
SCALE AS SHOWN
SHEET NO. 16 OF 20

Nadine.Hutton 12/12/2013 7:26:45 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\VFB-SV-1770-WS1.dgn

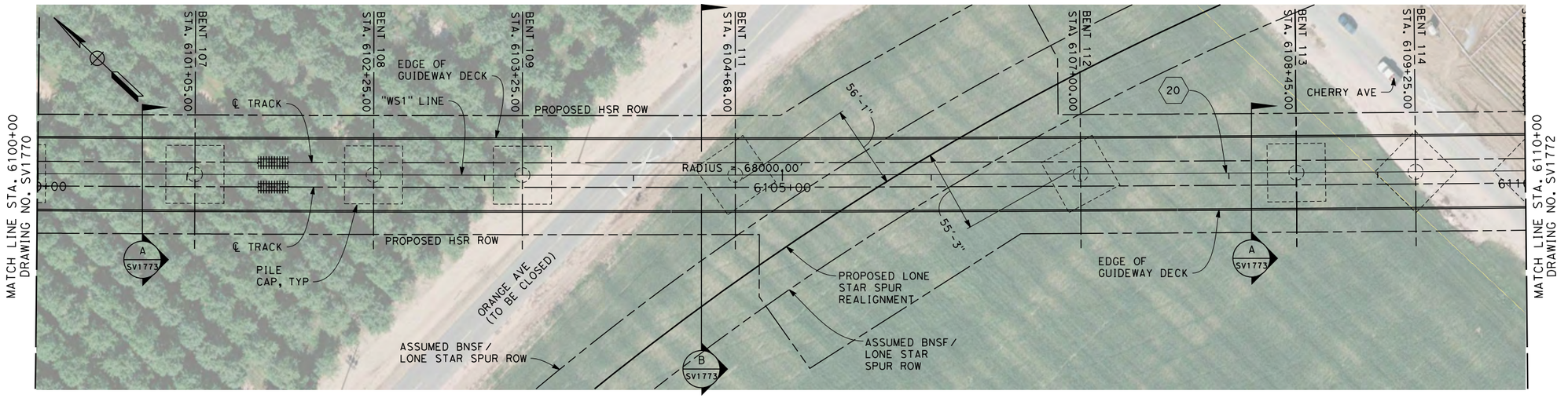


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

20

R = 68000.00'
Δ = 03° 44' 50.0"
T = 2224.4'
L = 4447.3'

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY Q. LIU
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

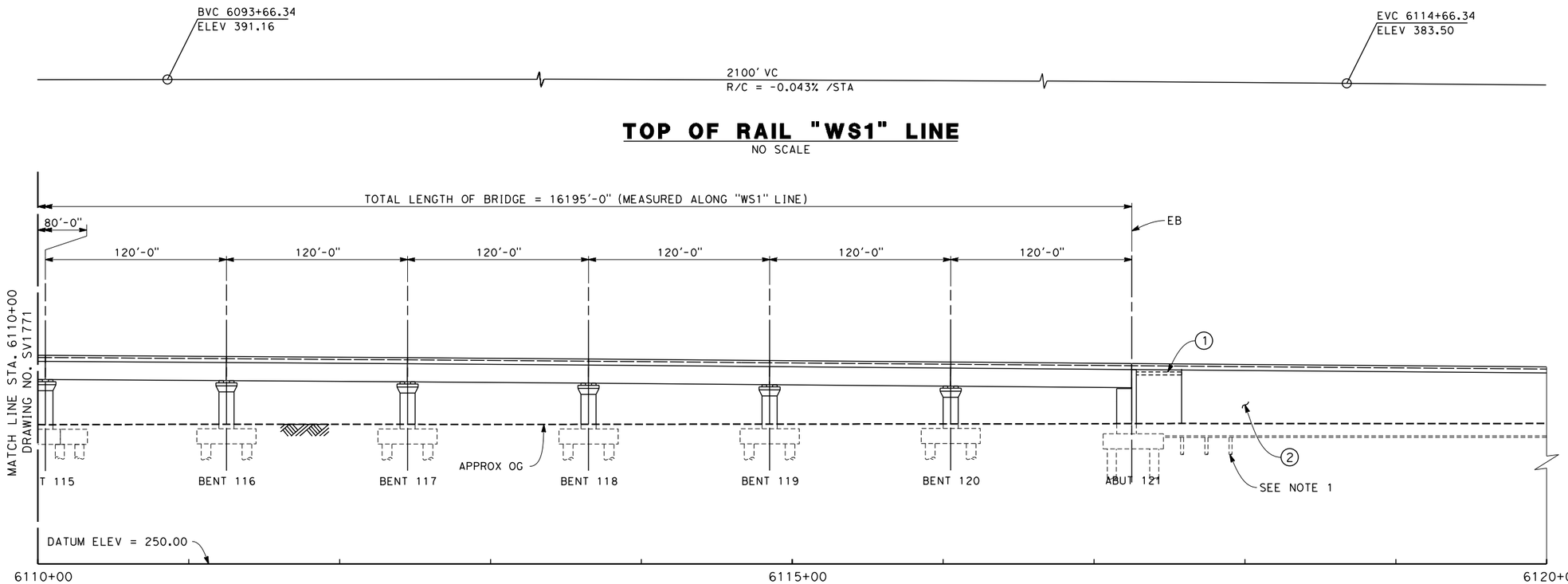
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1771
SCALE AS SHOWN
SHEET NO. 17 OF 20

$USER$ $DATE$ $TIME$ $FILE$

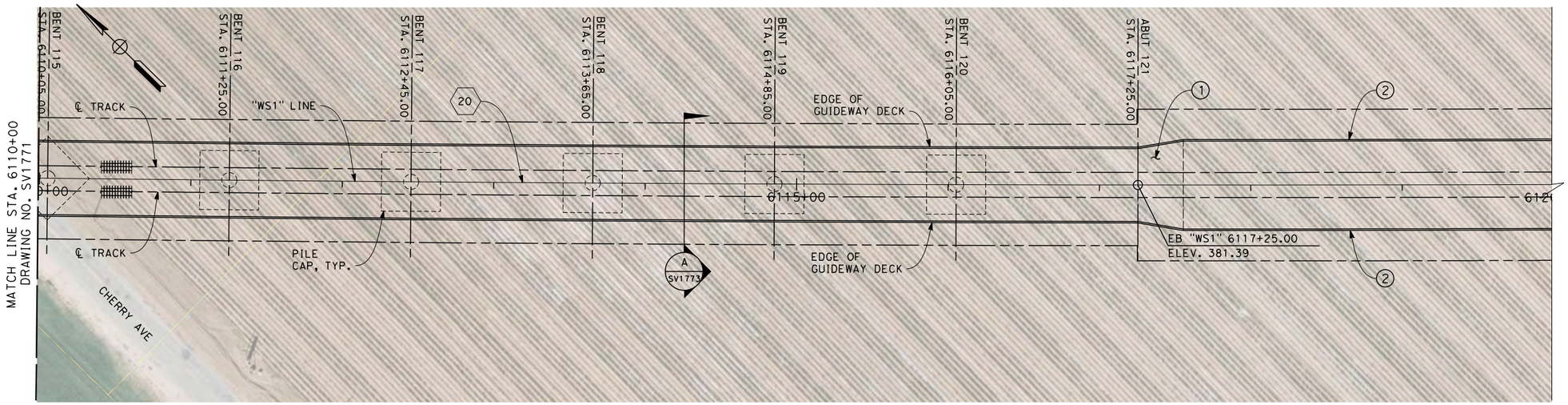


TOP OF RAIL "WS1" LINE

NO SCALE

ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'

NOTES

1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
   SIMPLE SPANS - MSS OR FLPM
   CONTINUOUS SPANS - BCC - PRECAST IN-SITU
   STEEL TRUSS - INSITU, SLID OR LAUNCHED
   ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS ARE PROVIDED AT SYSTEMS SITES (APPROX. 2.5 MILE INTERVALS). LADDER ACCESS TO VIADUCTS IS PROVIDED AT 2500 FT INTERVALS WITH ACCESS ROAD AND TURNING CIRCLE WHERE NECESSARY.

LEGEND:

(1) STRUCTURE APPROACH SLAB

(2) RETAINING WALL

* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".

CURVE DATA

20

R = 68000.00'
Δ = 03° 44' 50.0"
T = 2224.4'
L = 4447.3'

40 0 40 80
1"=40'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY Q. LIU
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

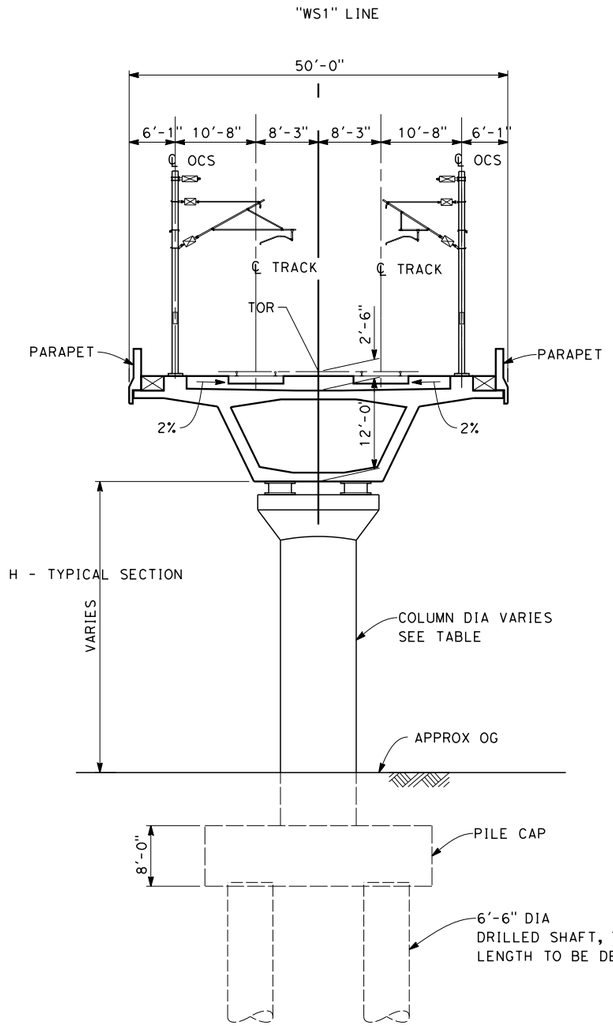
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

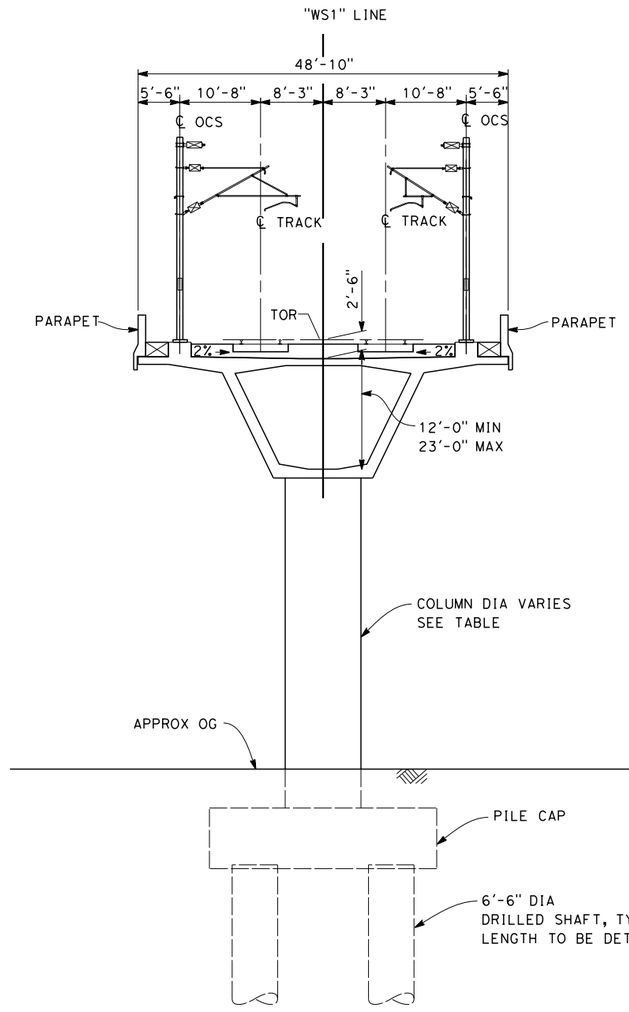
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1772
SCALE AS SHOWN
SHEET NO. 18 OF 20

$USER$ $DATE$ $TIME$ $FILE$





COLUMN DIAMETERS	
COLUMN HEIGHT	DIAMETER
0-20	8 FT
20-40	10 FT
40-50	12 FT
50-60	15 FT
60-80	20 FT
80-100	25 FT

SECTION A
SCALE: 1" = 10'

STA 5955+30 THROUGH 5994+70
STA 6000+55 THROUGH 6002+75
STA 6006+35 THROUGH 6030+35
STA 6034+25 THROUGH 6036+65
STA 6059+05 THROUGH 6103+25
STA 6108+45 THROUGH 6117+25

SECTION B
SCALE: 1" = 10'

STA 5994+70 THROUGH 6000+55
STA 6002+75 THROUGH 6006+35
STA 6030+35 THROUGH 6034+25
STA 6103+25 THROUGH 6108+45

10 0 10 20
1"-10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY O. LIU
IN CHARGE R. COFFIN
DATE 05/23/14

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URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1773
SCALE AS SHOWN
SHEET NO. 19 OF 20

RFP No. HSR 14-32 – REVIEW DRAFT

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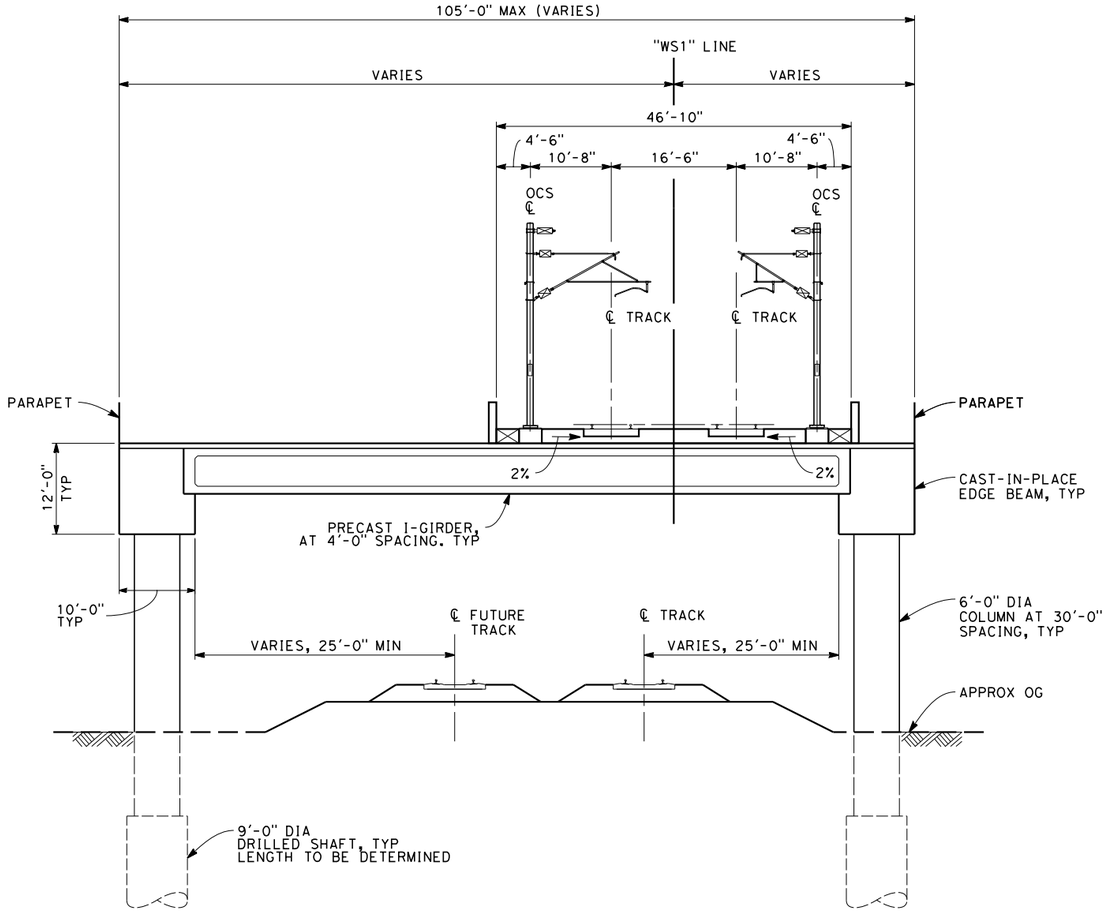
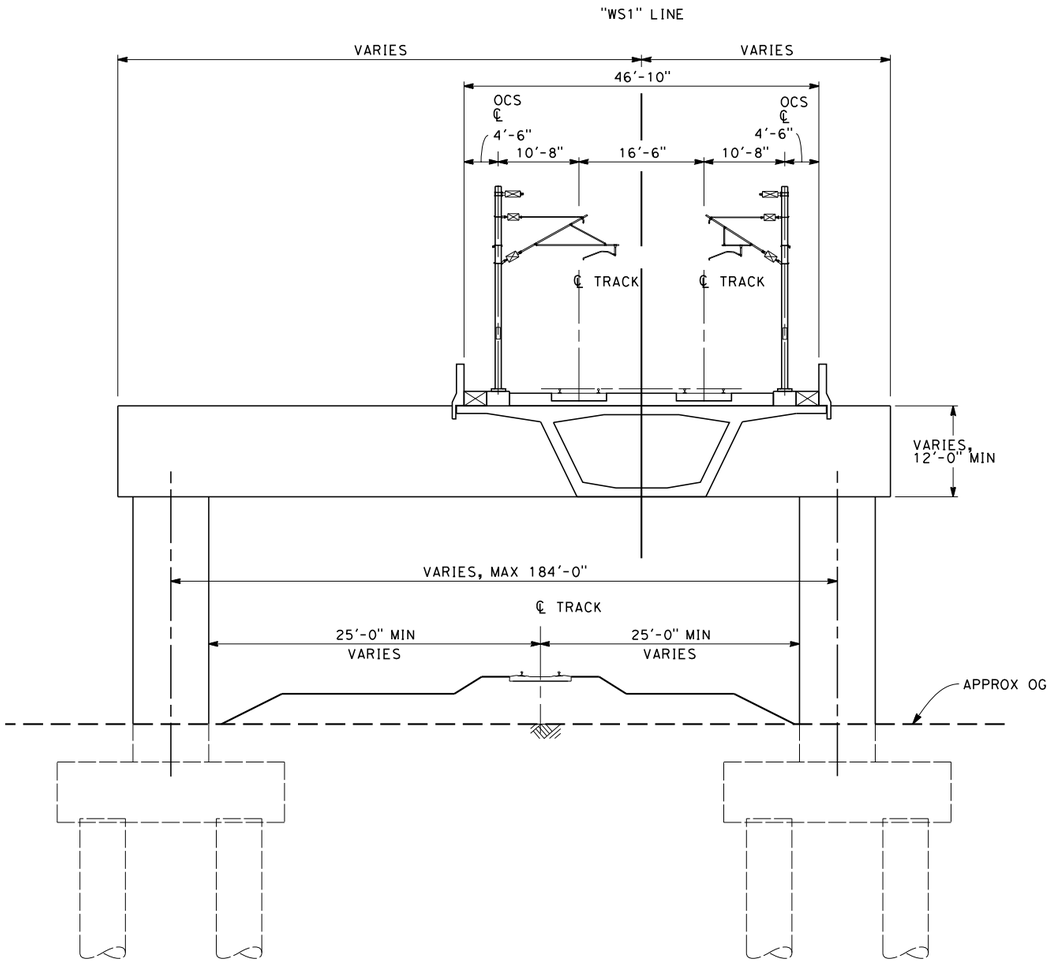


SECTION C

SCALE: 1" = 10'

STA 6036+65 THROUGH 6059+05



SECTION D

SCALE: 1" = 10'

STA 6105+25 THROUGH 6106+45

10 0 10 20
1"-10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Y. REN
DRAWN BY F. PALERMO
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
SHAFTER VIADUCT
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1774
SCALE AS SHOWN
SHEET NO. 20 OF 20

RFP NO. HSR 14-32 – REVIEW DRAFT

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CALIFORNIA HIGH-SPEED TRAIN

Roadway and Grade Separation Plans

RECORD SET 15% DESIGN SUBMISSION

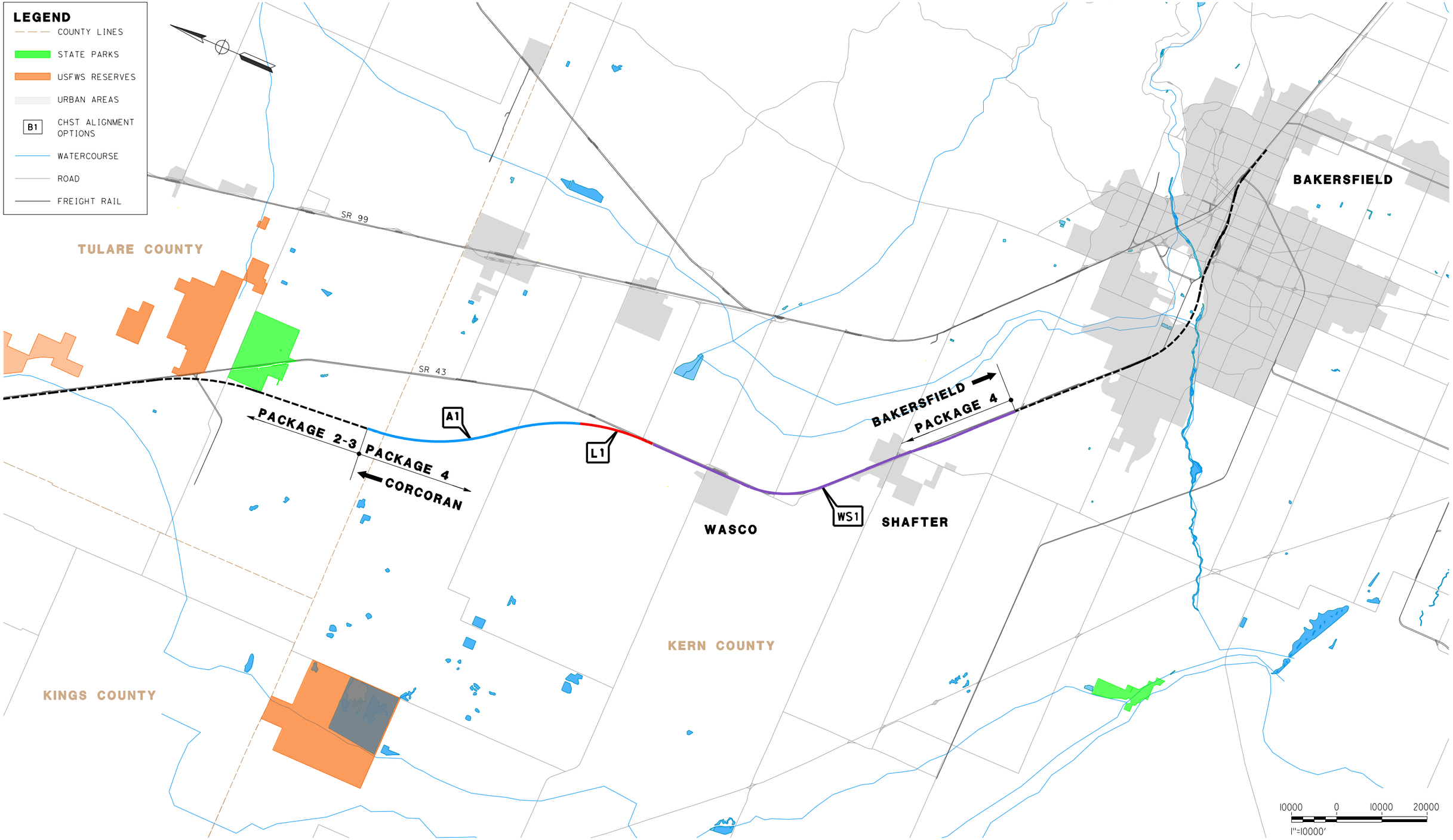
Fresno to Bakersfield

Plans and Profiles and Cross Sections

May 2014

CALIFORNIA High-Speed Rail Authority

RFP No. HSR 14-32 – REVIEW DRAFT



RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY S. BURGES
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
PACKAGE 4
ALIGNMENT
LOCATION MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-B1100
SCALE AS SHOWN
SHEET NO. 1 OF 5

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GENERAL SHEETS

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
TT-B1100		ALIGNMENT - LOCATION MAP	1 OF 5
GE-A0029		ROADWAY & GRADE SEPARATION - INDEX OF SHEETS - SHEET 1 OF 2	2 OF 5
GE-A0031		ROADWAY & GRADE SEPARATION - INDEX OF SHEETS - SHEET 2 OF 2	3 OF 5
CB0010		GENERAL - ABBREVIATIONS & LEGENDS - SHEET 1 OF 2	4 OF 5
CB0011		GENERAL - ABBREVIATIONS & LEGENDS - SHEET 2 OF 2	5 OF 5

ALIGNMENT A1 - ALLENSWORTH BYPASS SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CB0110	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1100	-
CV-T1100		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - ROADWAY/GRADE SEPARATION - KEY MAP	1 OF 24
~~CT1501~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - COUNTY RD J22~~	~~2 OF 24~~
CT1511	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1101	-
CV-T1101		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - GARCES HWY	3 OF 24
CT1512	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1102	-
CV-T1102		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - GARCES HWY	4 OF 24
CT1513	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1103	-
CV-T1103		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - SCOFIELD AVE	5 OF 24
CT1514	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1104	-
CV-T1104		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - SCOFIELD AVE	6 OF 24
CT1521	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1108	-
CV-T1108		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - POND RD	7 OF 24
CT1522		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - POND RD	8 OF 24
CT1523		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - MAGNOLIA AVE	9 OF 24
CT1531		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - PETERSON RD	10 OF 24
CT1532		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION LAYOUT - PETERSON RD	11 OF 24
~~CT2501~~		~~ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - COUNTY RD J22~~	~~12 OF 24~~
CT2510		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - GARCES HWY	13 OF 24
CT2511		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - GARCES HWY	14 OF 24
CT2512	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1105	-
CV-T1105		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - SCOFIELD AVE	15 OF 24
CT2513	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1106	-
CV-T1106		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - SCOFIELD AVE	16 OF 24
CT2514	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1107	-
CV-T1107		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - SCOFIELD AVE	17 OF 24
CT2521		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - POND RD	18 OF 24
CT2522		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - POND RD	19 OF 24
CT2523		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - MAGNOLIA AVE	20 OF 24
CT2524		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - MAGNOLIA AVE	21 OF 24
CT2531		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - PETERSON RD	22 OF 24
CT2532		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - GRADE SEPARATION PROFILE - PETERSON RD	23 OF 24
CT3070	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1109	-
CV-T1109		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - ROADWAY/GRADE SEPARATION - TYPICAL CROSS SECTIONS	24 OF 24

ALIGNMENT L1 - POSO CREEK SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CB0130		POSO CREEK SUBSECTION - ALIGNMENT L1 - ROADWAY/GRADE SEPARATION - KEY MAP	1 OF 1

ALIGNMENT WS1 - THROUGH WASCO-SHAFTER SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CB0170	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1125	-
CV-T1125		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY/GRADE SEPARATION - KEY MAP	1 OF 67
CT1900	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1132	-
CV-T1132		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - MCCOMBS AVE	2 OF 67
CT1901		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - MCCOMBS AVE	3 OF 67
CT1903		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - KIMBERLINA RD	4 OF 67
CT1904		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - MERCED AVE	5 OF 67
CT1905		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - MERCED AVE	6 OF 67
CT1906		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - POPLAR AVE	7 OF 67
CT1907		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - POPLAR AVE	8 OF 67
CT1909		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - FRESNO AVE	9 OF 67
CT1910		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - FRESNO AVE	10 OF 67
CT1912		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - BURBANK ST & CHERRY AVE	11 OF 67
CT1913		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - BURBANK ST	12 OF 67
CT1915	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1126	-
CV-T1126		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - 7TH STANDARD RD	13 OF 67
~~CT1917~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - KRATZMEYER RD~~	~~14 OF 67~~
~~CT1919~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - RENFRO RD~~	~~15 OF 67~~
~~CT1920~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION LAYOUT - RENFRO RD~~	~~16 OF 67~~
CT2900		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - MCCOMBS AVE	17 OF 67
CT2901		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - MCCOMBS AVE	18 OF 67
CT2902		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - ANNIN CONNECTOR & MCCOMBS CONNECTOR	19 OF 67
CT2903		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - KIMBERLINA RD	20 OF 67
CT2904		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - MERCED AVE	21 OF 67
CT2905		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - MERCED AVE	22 OF 67
CT2906		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - POPLAR AVE	23 OF 67
CT2907		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - POPLAR AVE & POPLAR CONNECTOR	24 OF 67
CT2909		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - FRESNO AVE	25 OF 67
CT2910		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - FRESNO AVE	26 OF 67
CT2912		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - BURBANK ST	27 OF 67
CT2913		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - BURBANK ST	28 OF 67
CT2914		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - BURBANK CONNECTOR	29 OF 67
~~CT2915~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - 7TH STANDARD RD~~	~~30 OF 67~~
~~CT2917~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - KRATZMEYER RD~~	~~31 OF 67~~
~~CT2918~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - KRATZMEYER RD & KRATZMEYER CONNECTOR~~	~~32 OF 67~~
~~CT2919~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - RENFRO RD~~	~~33 OF 67~~
~~CT2920~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - GRADE SEPARATION PROFILE - RENFRO RD~~	~~34 OF 67~~
CR1900		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	35 OF 67
CR1901		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	36 OF 67
CR1902		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	37 OF 67
CR1903		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	38 OF 67
CR1904		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	39 OF 67
CR1905		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	40 OF 67
CR1906		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	41 OF 67
CR1907	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1127	-
CV-T1127		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	42 OF 67
CR1908	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1128	-
CV-T1128		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY	43 OF 67
~~CR1909~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY~~	~~44 OF 67~~
~~CR1910~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY~~	~~45 OF 67~~
~~CR1911~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY~~	~~46 OF 67~~
~~CR1912~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY~~	~~47 OF 67~~
~~CR1913~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY~~	~~48 OF 67~~
~~CR1914~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY LAYOUT - SANTA FE WAY~~	~~49 OF 67~~
CR2900		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	50 OF 67
CR2901		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	51 OF 67
CR2902		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	52 OF 67

FOR CONTINUATION SEE DRAWING GE-A0031

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY P. TONKIN
DRAWN BY P. TONKIN
CHECKED BY K. SEYMOUR
IN CHARGE S. BURGES
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ROADWAY & GRADE SEPARATION
INDEX OF SHEETS
SHEET 1 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. GE-A0029
SCALE NO SCALE
SHEET NO. 2 OF 5

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ALIGNMENT WS1 - THROUGH WASCO-SHAFTER SUBSECTION CONT'D

FOR CONTINUATION, SEE DRAWING GE-A0029

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
CR2903		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	53 OF 67
CR2904		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	54 OF 67
CR2905		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	55 OF 67
CR2906		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	56 OF 67
CR2907	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1129	-
CV-T1129		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	57 OF 67
CR2908	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1130	-
CV-T1130		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY	58 OF 67
~~CR2909~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~59 OF 67~~
~~CR2910~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~60 OF 67~~
~~CR2911~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~61 OF 67~~
~~CR2912~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~62 OF 67~~
~~CR2913~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~63 OF 67~~
~~CR2914~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~64 OF 67~~
~~CR2915~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY PROFILE - SANTA FE WAY~~	~~65 OF 67~~
CT3130	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1133	-
CV-T1133		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY/GRADE SEPARATION - TYPICAL CROSS SECTIONS	66 OF 67
CT3131	SS	THIS SHEET IS SUPERSEDED AND IS NOT IN THIS PACKAGE - REPLACED BY CV-T1131	-
CV-T1131		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - ROADWAY/GRADE SEPARATION - TYPICAL CROSS SECTIONS	67 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY P. TONKIN
DRAWN BY P. TONKIN
CHECKED BY K. SEYMOUR
IN CHARGE S. BURGES
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NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ROADWAY & GRADE SEPARATION
INDEX OF SHEETS
SHEET 2 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. GE-A0031
SCALE NO SCALE
SHEET NO. 3 OF 5

A

AB	AGGREGATE BASE
ABBC	ASBESTOS BONDED BITUMINOUS COATED
ABM	AIR-BLOWN MORTAR
ABN	ABANDON
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
ACB	ASPHALT CONCRETE BASE
ACP	ASBESTOS CEMENT PIPE
ADL	ADDED DEAD LOAD
ADJ	ADJUST
AFES	ALTERNATIVE FLARED END SECTION
AHD	AHEAD
ALT	ALTERNATE
AM	TIME FROM MIDNIGHT TO NOON
AP	ALTERNATIVE PIPE
APC	ALTERNATIVE PIPE CULVERT
APPROX	APPROXIMATE
APU	ALTERNATIVE PIPE UNDERDRAIN
ARS	ACCELERATION RESPONSE SPECTRUM
AR	ACCESS RESTRICTION
AS	AGGREGATE SUBBASE
ASRP	ALUMINUM SPIRAL RIB PIPE
ASSY	ASSEMBLY
ATPB	ASPHALT TREATED PERMEABLE BASE
ATPM	ASPHALT TREATED PERMEABLE MATERIAL
AVE	AVENUE
AVG	AVERAGE
@	AT

B

BAGR	BRIDGE APPROACH GUARD RAILING
BB	BEGINNING OF BRIDGE
BC	BEGIN HORIZONTAL CURVE
BCC	BALANCED CANTILEVER CONSTRUCTION
BCR	BEGIN CURB RETURN
BEG	BEGIN
BIT CTD	BITUMINOUS COATED
BK	BACK
BKF	BACKFILL
BLDG	BUILDING
BLM	BRIDGE-LOG MILE
BLVD	BOULEVARD
BM	BENCH MARK
BND	BOUND
BNSF	BURLINGTON NORTH & SANTA FE
BOT	BOTTOM
BR	BRIDGE
BRG	BEARING
BTU	BRITISH THERMAL UNIT
BVC	BEGIN VERTICAL CURVE
BW	BARBED WIRE

C

CAA	CABLE ANCHOR ASSEMBLY
CAP	CORRUGATED ALUMINUM PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CAS	CONSTRUCTION AREA SIGN
CB	CONCRETE BARRIER
CBW	CONCRETE BLOCK WALL
C-C	CENTER TO CENTER

C CONTINUED

CHSRA	CALIFORNIA HIGH SPEED RAIL AUTHORITY
CHST	CALIFORNIA HIGH SPEED TRAIN
CHSR	CALIFORNIA HIGH SPEED RAIL
CG	CENTER OF GRAVITY
CHNL	CHANNEL
CI	CAST IRON
CIDH	CAST-IN-DRILLED-HOLE
CIP,C-I-P	CAST-IN-PLACE, CAST IRON PIPE
CIPCP	CAST IN PLACE CONCRETE PIPE
CISS	CAST-IN-STEEL-SHELL
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE, CLASS
CL2	CLASS 2
CL-6	CHAIN LINK FENCE (6 FT)
CLR	CLEAR, CLEARANCE
CM	CORRUGATED METAL
CMP	CORRUGATED METAL PIPE
CO	COUNTY
COL	COLUMN
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTOR
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CP	CLEARANCE POINT
CR	CREEK
CRCP	CONTINUOUS REINFORCED CONCRETE PAVEMENT
CRSP	CONCRETED ROCK SLOPE PROTECTION
CS	CURVE TO SPIRAL
CSP	CORRUGATED STEEL PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CTB	CEMENT TREATED BASE
CTPB	CEMENT TREATED PERMEABLE BASE
CTPM	CEMENT TREATED PERMEABLE MATERIAL
CTRS	CENTERS
CVFPB	CENTRAL VALLEY FLOOD PROTECTION BOARD
CULV	CULVERT
℄	CENTERLINE

D

D	DEPTH
DD	DOWNDRAIN, DIRECTIVE DRILLING
DBL	DOUBLE
DEG	DEGREE
DEL	DELINEATOR
DET	DETAIL, DETOUR
DF	DOUGLAS FIR
DI	DRAINAGE INLET, DROP INLET
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIST	DISTANCE, DISTRICT
DMBB	DOUBLE METAL BEAM BARRIER
DR	DRIVE
DTBB	DOUBLE THRIE BEAM BARRIER
DWY	DRIVEWAY

E

E	EAST, EASTING
EA	ACTUAL SUPERELEVATION
EU	UNBALANCED SUPERELEVATION

E CONTINUED

EASE	EASEMENT
EB	END OF BRIDGE, EASTBOUND
EC	END HORIZONTAL CURVE
ECR	END CURB RETURN
ED	EDGE DRAIN
EDC	EDGE DRAIN CLEANOUT
EDO	EDGE DRAIN OUTLET
EDV	EDGE DRAIN VENT
ELEC	ELECTROLIER
ELECT	ELECTRIC
ELEV	ELEVATION
EMB	EMBANKMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EP	EDGE OF PAVEMENT
EQ	EQUATION, EQUAL
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICAL CURVE
EW	ENDWALL
EXC	EXCAVATION
EXIST, EX.	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXWY	EXPRESSWAY
EXT	EXTERIOR

F

F & C	FRAME AND COVER
F & G	FRAME AND GRATE
FB	FLOOR BEAM
F-B	FRESNO TO BAKERSFIELD
FDN	FOUNDATION
FEBT	FACING EASTBOUND TRAFFIC
FES	FLARED END SECTION
FF	FILTER FABRIC
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FL	FLOW LINE
FNBT	FACING NORTHBOUND TRAFFIC
FOC	FACE OF CONCRETE
FR RD	FRONTAGE ROAD
FS	FAR SIDE, FINISHED SURFACE
FSBT	FACING SOUTHBOUND TRAFFIC
FT	FOOT, FEET
FTG	FOOTING
FWBT	FACING WESTBOUND TRAFFIC
FWY	FREEWAY
FPLM	FULL SPAN PRECAST LAUNCHING METHOD

G

G	ACCELERATION DUE TO GRAVITY
GA	GAGE
GALV	GALVANIZED
GP	GRADING PLANE
GR	GUARD RAILING
GSP	GALVANIZED STEEL PIPE
GTR	GUTTER

H

H	HEIGHT
HR	HOUR
HD	HORIZONTAL DRAIN
HDWL	HEADWALL
HEX HD	HEXAGONAL HEAD
HMA	HOT MIXED ASPHALT
HORIZ	HORIZONTAL
HP	HINGE POINT, HORSEPOWER
HPS	HIGH PERFORMANCE STEEL
HS	HIGH STRENGTH
HST	HIGH SPEED TRAIN
HSR	HIGH SPEED RAIL
HW	HEADWALL, HIGH WATER
HWM	HIGH WATER MARK
HWY	HIGHWAY

I

IB	IMPORTED BORROW
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH, INCHES
INT	INTERIOR
INV	INVERT
IRR	IRRIGATION

J

JCT	JUNCTION
JP	JOINT POLE
JPCP	JOINTED PLAIN CONCRETE PAVEMENT
JS	JUNCTION STRUCTURE
JT	JOINT

K

K	DISTANCE TO ACHIEVE 1% GRADE CHANGE

L

L	LENGTH
LAT	LATITUDE
LCB	LEAN CONCRETE BASE
LN	LANE
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDE
LONGIT	LONGITUDINAL
LS	LENGTH OF SPIRAL
LC	LENGTH OF CURVE
LT	LEFT

M

MAINT	MAINTENANCE
MAX	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
MED	MEDIAN
M-F	MERCED TO FRESNO
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MISC I & S	MISCELLANEOUS IRON AND STEEL
MKR	MARKER
M/L	MAIN LINE (RAILWAY)

M CONTINUED

MOD	MODIFIED, MODIFY
MON	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MPH	MILES PER HOUR
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EARTH
MTL	MATERIAL
MSS	MOVING SCAFFOLDING SYSTEM

N

N	NORTH, NORTHING
NB	NORTHBOUND
NO.	NUMBER (MUST HAVE PERIOD)
NOS.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NTS	NOT TO SCALE
N/A	NOT APPLICABLE

O

OBLR	OBLITERATE
OC	OVERCROSSING
OCS	OVERHEAD CONTACT SYSTEM
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OH	OVERHEAD
O-O	OUT TO OUT
OPP	OPPOSITE

P

P	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PED	PEDESTRIAN
PED OC	PEDESTRIAN OVERCROSSING
PED UC	PEDESTRIAN UNDERCROSSING
PERM MTL	PERMEABLE MATERIAL
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
℄,PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POB	POINT OF BEGINNING
POC	POINT OF HORIZONTAL CURVE
POE	POINT OF ENDING
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE

RFP NO. HSR 14-32 – REVIEW DRAFT

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CLI60413

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY D. HUNT
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT FRESNO TO BAKERSFIELD

GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 1 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0010
SCALE NO SCALE
SHEET NO. 4 OF 5

P CONTINUED

PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED, PARALLEL STATION
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVP	MAINTENANCE VEHICLE PULLOUT

Q

QTY	QUANTITY

R

R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD
REINF	REINFORCED, REINFORCEMENT, REINFORCING
REL	RELOCATE
REPL	REPLACEMENT
RET	RETAINING
REV	REVISED
RDWY	ROADWAY
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RTE	ROUTE
RW	REDWOOD, RETAINING WALL
R/W, ROW	RIGHT OF WAY
RWY	RAILWAY

S

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
SALV	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SPIRAL TO CURVE
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SEP	SEPARATION
SG	SUBGRADE
SHLD	SHOULDER
SHT	SHEET
SIM	SIMILAR
S	STATION LINE
SM	SELECTED MATERIAL
SPEC	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE, SPIRAL TO SPIRAL

S CONTINUED

SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
SR	STATE ROUTE
ST	STREET, SPIRAL TO TANGENT
STA	STATION
STBB	SINGLE THRIE BEAM BARRIER
STD	STANDARD
STR	STRUCTURE
SRS	STAND ALONE RADIO SITE
SURF	SURFACING
SW	SIDEWALK, SOUND WALL
SWR	SEWER
SWS	SWITCHING STATION
SYM	SYMMETRICAL
S4S	SURFACE 4 SIDES
SJVR	SAN JOAQUIN VALLEY RAILROAD

T

T	SEMI-TANGENT
TAB	TABLET
TAN	TANGENT
TBB	THRIE BEAM BARRIER
TBR	TIMBER
TC	TOP OF CURB, TANGENT TO CURVE
TCB	TRAFFIC CONTROL BOX
TEL	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GRADE
TOT	TOTAL
TM	TECHNICAL MEMORANDUM
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
TPSS	TRACTION POWER SUPPLY STATION
TRANS	TRANSITION, TRANSVERSE
TS	TRAFFIC SIGNAL, TUBULAR STEEL, TANGET TO SPIRAL
TYP	TYPICAL
TOR	TOP OF RAIL

U

UC	UNDERCROSSING
UD	UNDERDRAIN
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
UPRR	UNION PACIFIC RAILROAD
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

V

V	VALVE, DESIGN SPEED
VAR	VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIA	VIADUCT
VOL	VOLUME

W

W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
WT	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE
W/	WITH

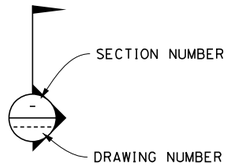
X

X SEC	CROSS SECTION
XING	CROSSING

Y

YR	YEAR
YRS	YEARS

LEGEND



—-E— PROPOSED ELECTRICITY LINE

—-e— EXISTING ELECTRICITY LINE

—-e—(oh)— EXISTING OVERHEAD ELECTRICITY LINE

—-E—(OH)— PROPOSED OVERHEAD ELECTRICTY LINE

PROPOSED HST RIGHT OF WAY

PROPOSED HST TRACK CENTERLINE

RETAINING WALL

TOE OF SLOPE / TOP OF CUT

CONTROL LINE EXAMPLE "A" LINE

255+00 260+00 265+00

OR TRACK (PLAN AND ELEVATION)

REL TRACK TO BE REMOVED AND RELOCATED PER BNSF

REMOVE BASE & SURFACING

SOUND BARRIER (POTENTIAL)

DIRECTION OF FLOW

WATER SURFACE

GENERAL NOTES

1. TRACK PROFILE IS DESIGNED AS TOP OF THE LOW RAIL. VERTICAL CLEARANCE REQUIREMENTS ARE MEASURED FROM THE TOP OF THE HIGH RAIL ON SUPERELEVATED TRACK. THE CLEARANCE ENVELOPES SHOWN DEMONSTRATE THE MINIMUM CLEARANCE REQUIREMENTS.

2. MINIMUM VERTICAL CLEARANCE REQUIREMENTS TO CANALS AND DITCHES ARE NOT KNOWN. FURTHER CONSULTATION WITH THE WATERCOURSE OWNERS WILL BE REQUIRED TO DETERMINE NECESSARY CLEARANCES.

3. THE FOLLOWING ARE ROADWAY DESIGN STANDARDS AND GUIDELINES:
   A. CALTRANS HIGHWAY DESIGN MANUAL (2012)
   B. AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (2011)
   C. AASHTO ROADSIDE DESIGN GUIDE (2011)
   D. APPLICABLE LOCAL DESIGN STANDARD AND GUIDELINES (I.E., CITY OF FRESNO)

4. THE FEMA FLOODPLAIN BOUNDARIES ARE CALLED OUT AS "LIMIT OF 100YR FEMA FLOODPLAIN". THE LIMITS OF THE MODELED 100 YEAR WATER SURFACE ELEVATIONS (WSE) ARE APPROXIMATE AND ARE MARKED WITH THE NAME OF THE WATERBODY ASSOCIATED WITH THE MODELED FLOODING, E.G. "LIMIT OF POSO CREEK FLOODPLAIN".

5. THE STRUCTURE DESIGN ASSUMES THAT THE DEPTH FROM TOR TO TOP OF DECK IS 2'-6" THROUGHOUT. HOWEVER, WHERE BALLASTED TRACK FORM IS USED, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-9" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE, AND PROTECTION LAYER IF REQUIRED. FOR SLAB TRACKFORM, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-6" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE AND PROTECTION LAYER IF REQUIRED.

6. WHERE THE VERTICAL ALIGNMENT GRADE IS LESS THAN 0.5% THE UPPER SURFACE OF THE VIADUCT STRUCTURE SHALL BE PROFILED TO GIVE A MINIMUM LONGITUDINAL FALL OF 0.5%. TYPICALLY FOR A SPAN OF 120'-00" ON A 0% GRADE SECTION OF VIADUCT THIS COULD BE ACHIEVED BY MODIFYING THE CROSS SLOPE OF THE GIRDER LINEARLY BETWEEN 0.8% AT MID-SPAN TO 2% AT EACH END.

7. WHEN LATERAL SEPARATION BETWEEN THE CONVENTIONAL RAILROAD AND HST SYSTEM IS LESS THAN 102', A SITE SPECIFIC HAZARD ANALYSIS WILL BE CONDUCTED TO DETERMINE WHAT SPECIFIC COLLISION PROTECTION MEASURES MAY NEED TO BE IMPLEMENTED.

8. RIP-RAP PROTECTION IS REQUIRED FOR EMBANKMENTS WITHIN FEMA SPECIAL FLOOD HAZARD ZONES, IN ACCORDANCE WITH DESIGN CRITERIA.

9. HST ALIGNMENT CONTROL LINE IS DESIGNED AS THE CENTERLINE BETWEEN THE TWO MAINLINE TRACKS.

10. TRACK FORM USED IN TYPICAL SECTIONS IS INDICATIVE.

DIRECTION OF TRAFFIC

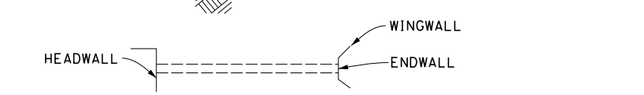
POINT OF MINIMUM VERTICAL CLEARANCE
ROAD CLOSURE (ROADWAYS)

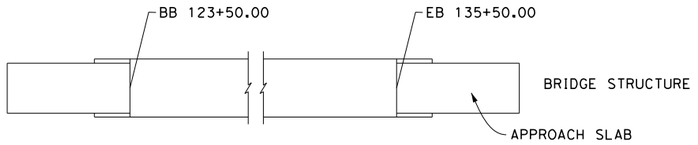
[1] LINE DATA

(1) (3) CURVE DATA (ALIGNMENTS)
CURVE DATA (STRUCTURES)

EXISTING HIGH VOLTAGE TOWER FOOTPRINT

OG / ORIGINAL GROUND





RFP No. HSR 14-32 – REVIEW DRAFT

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CL160413

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY D. HUNT
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

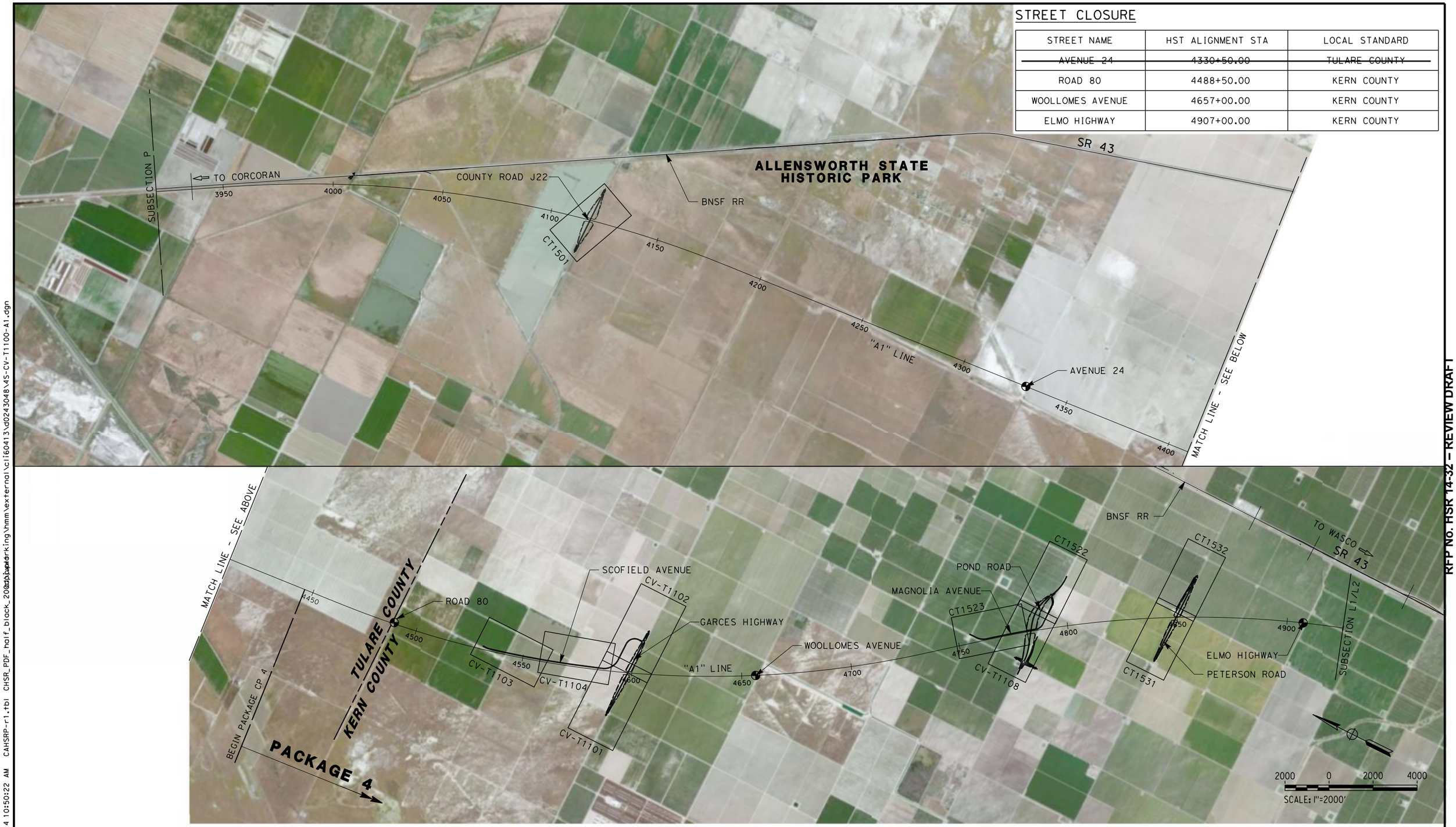
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 2 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0011
SCALE NO SCALE
SHEET NO. 5 OF 5

STREET CLOSURE

STREET NAME	HST ALIGNMENT STA	LOCAL STANDARD
~~AVENUE 24~~	~~4330+50.00~~	~~TULARE COUNTY~~
ROAD 80	4488+50.00	KERN COUNTY
WOOLLOMES AVENUE	4657+00.00	KERN COUNTY
ELMO HIGHWAY	4907+00.00	KERN COUNTY



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
ROADWAY/GRADE SEPARATION
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1100
SCALE AS SHOWN
SHEET NO. 1 OF 24

RFP NO. HSR 14-32 – REVIEW DRAFT

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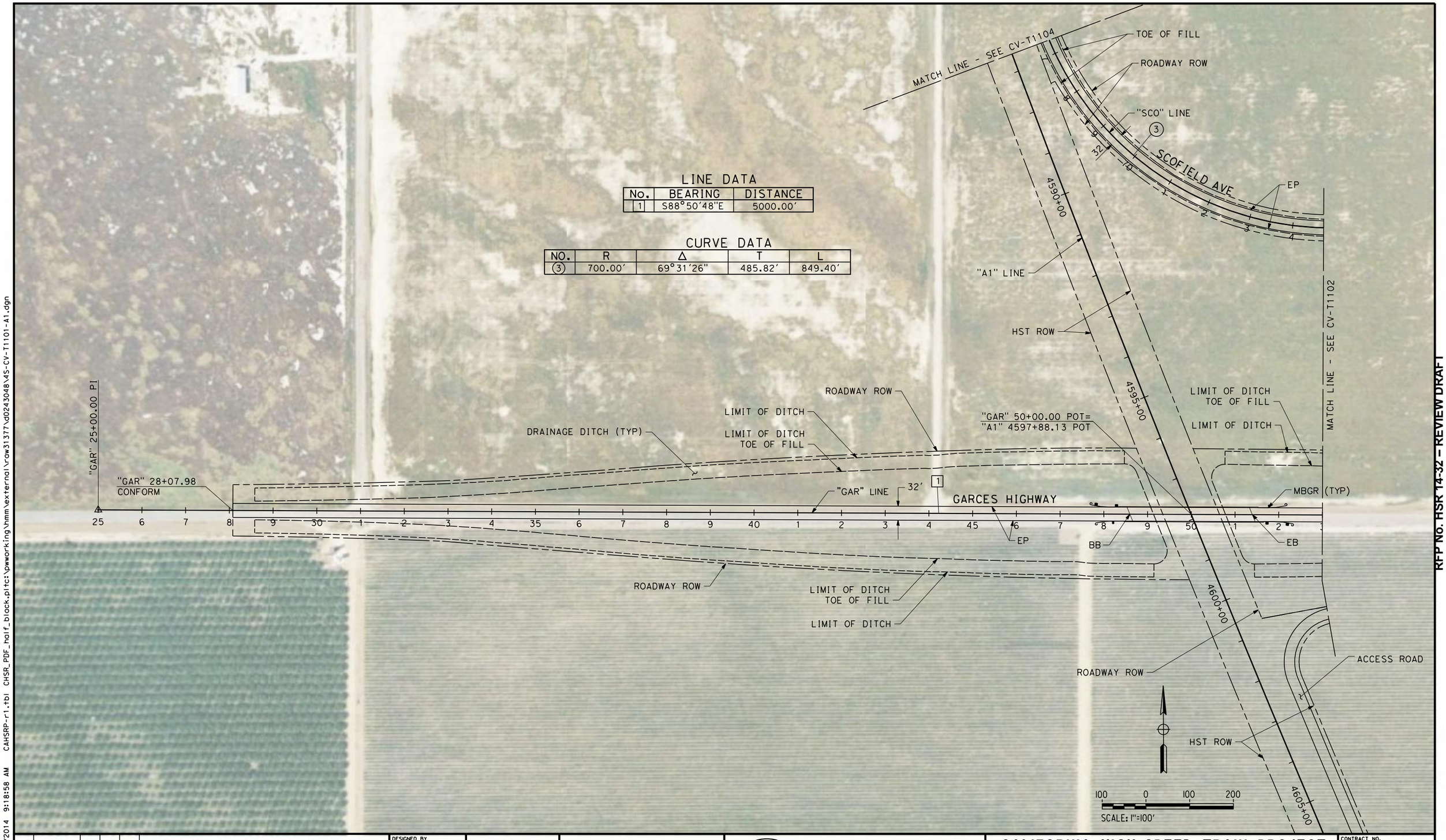
LINE DATA

No.	BEARING	DISTANCE
1	S88°50'48"E	5000.00'

CURVE DATA

NO.	R	Δ	T	L
③	700.00'	69°31'26"	485.82'	849.40'



RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
GARCES HWY

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1101
SCALE AS SHOWN
SHEET NO. 3 OF 24

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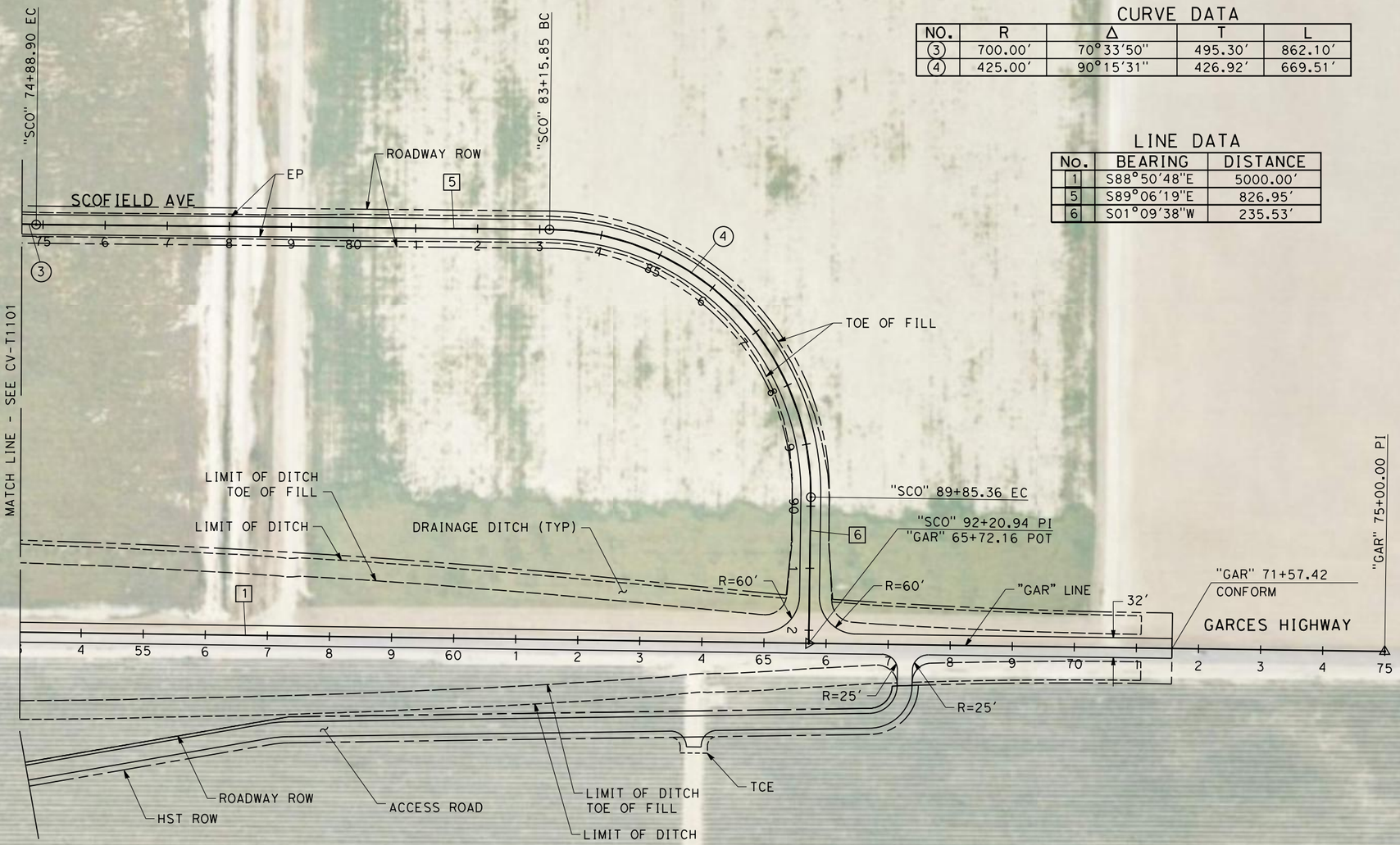
CURVE DATA

NO.	R	Δ	T	L
(3)	700.00′	70°33′50"	495.30′	862.10′
(4)	425.00′	90°15′31"	426.92′	669.51′

LINE DATA

NO.	BEARING	DISTANCE
1	S88°50′48"E	5000.00′
5	S89°06′19"E	826.95′
6	S01°09′38"W	235.53′



100 0 100 200
SCALE: 1"=100′

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

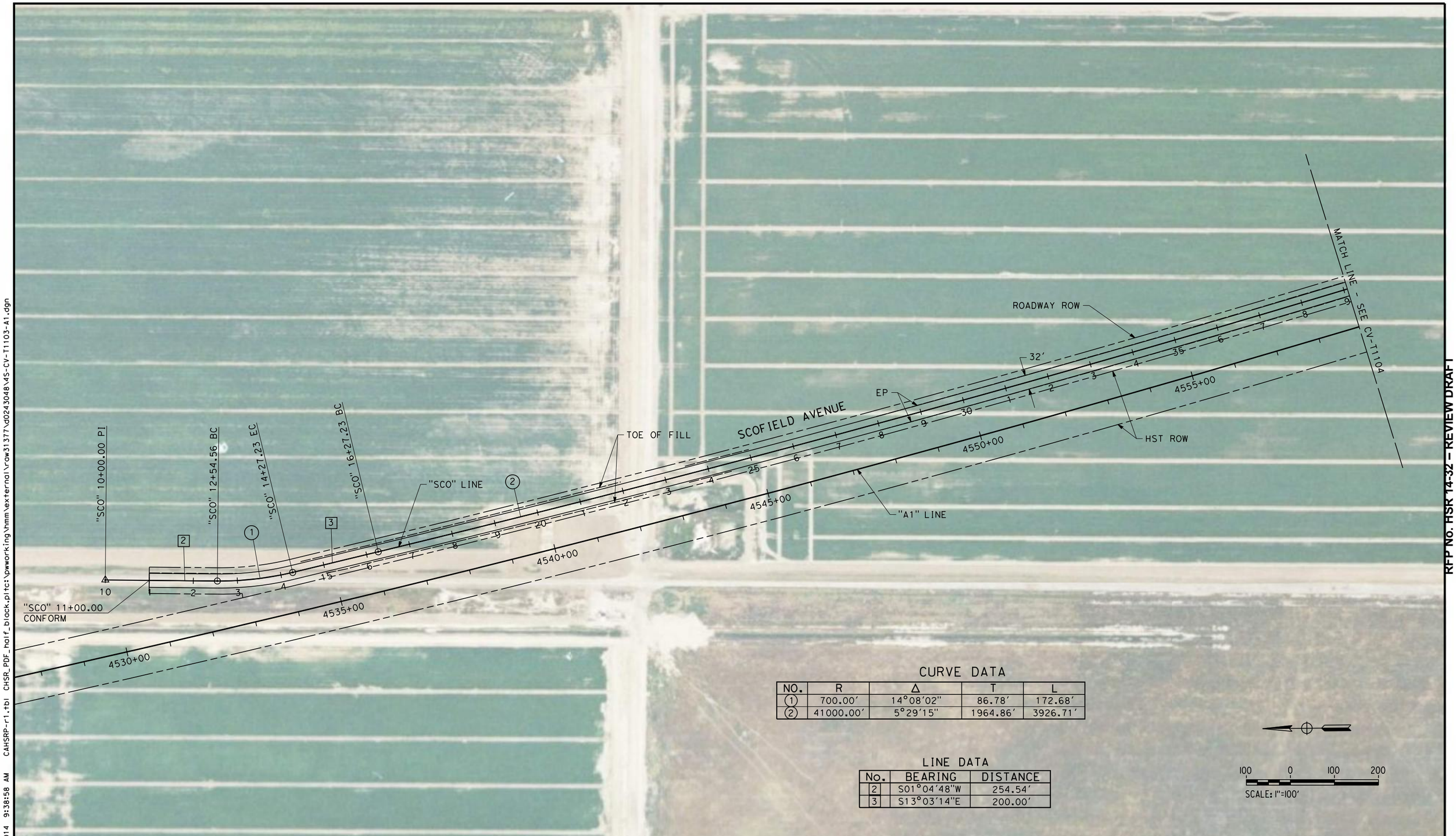
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
GARCES HWY

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1102
SCALE AS SHOWN
SHEET NO. 4 OF 24

RFP No. HSR 14-32 – REVIEW DRAFT

8/6/2014 9:24:57 AM CAHSRP-r1.tbl CHSR_PDF_half_black.pltc:\pwworking\hmm\external\row31377\d0243048\4S-CV-T1102-A1.dgn row31377



CURVE DATA

NO.	R	Δ	T	L
(1)	700.00′	14°08′02"	86.78′	172.68′
(2)	41000.00′	5°29′15"	1964.86′	3926.71′

LINE DATA

No.	BEARING	DISTANCE
2	S01°04′48"W	254.54′
3	S13°03′14"E	200.00′

100 0 100 200
SCALE: 1"=100′

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
SCOFIELD AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1103
SCALE AS SHOWN
SHEET NO. 5 OF 24

RFP No. HSR 14-32 – REVIEW DRAFT

row31377 8/6/2014 9:38:58 AM CAHSRP-r1.tbl CHSR_PDF_half_black.plt c:\pwworking\hmm\external\row31377\d0243048\d4S-CV-T1103-A1.dgn

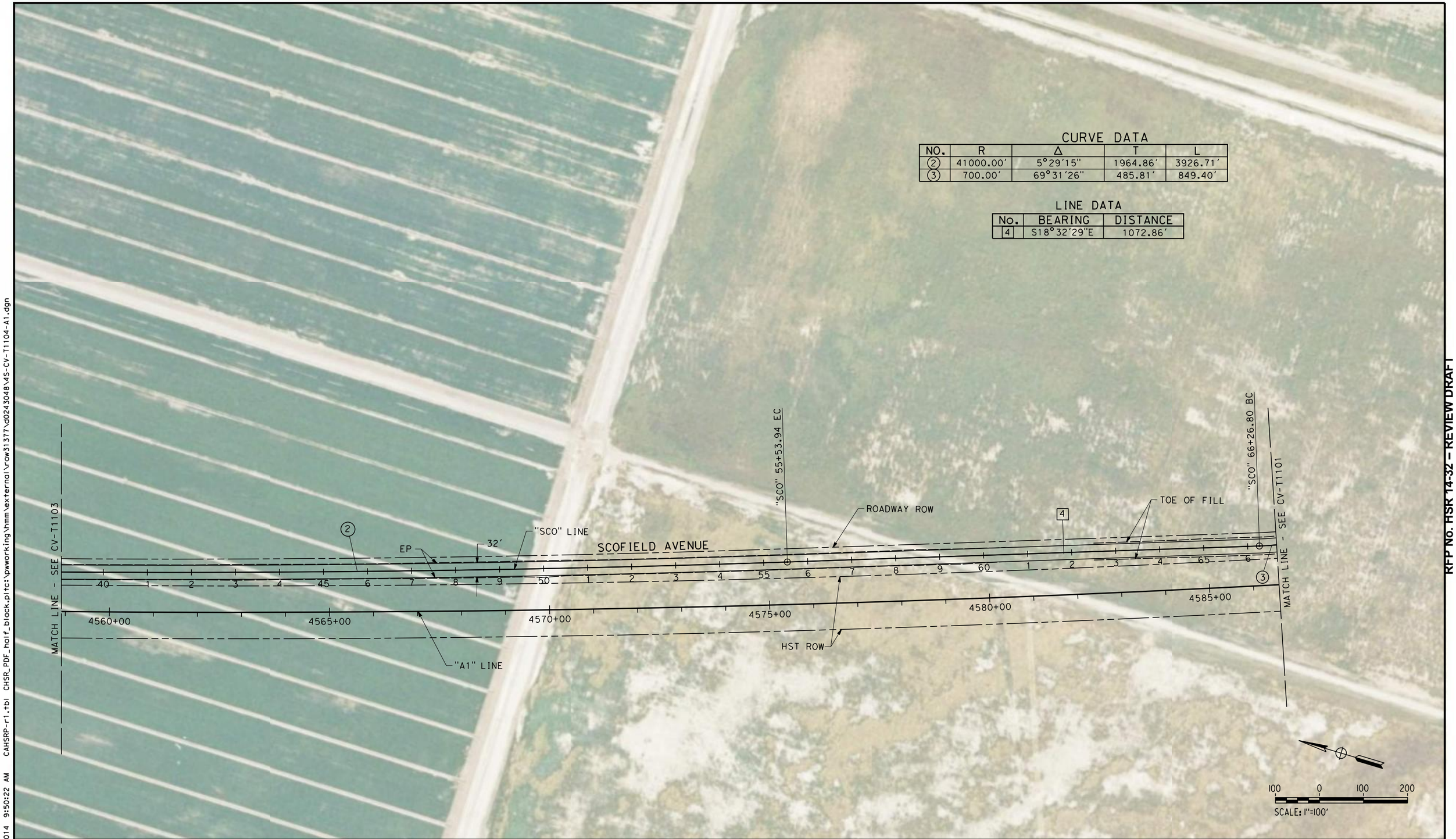
RFP No. HSR 14-32 – REVIEW DRAFT

CURVE DATA

NO.	R	Δ	T	L
(2)	41000.00′	5°29′15"	1964.86′	3926.71′
(3)	700.00′	69°31′26"	485.81′	849.40′

LINE DATA

No.	BEARING	DISTANCE
4	S18°32′29"E	1072.86′



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

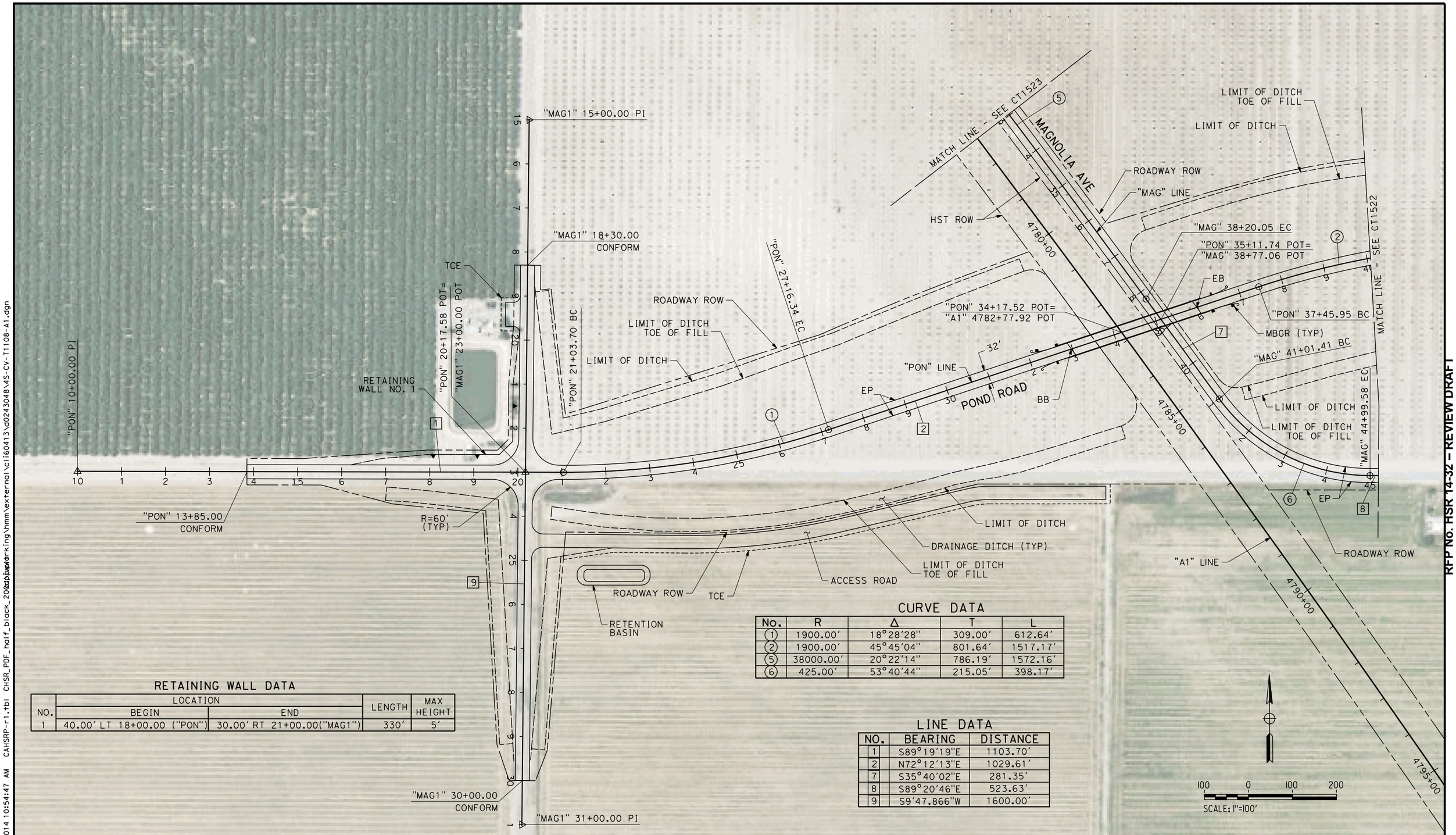
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
SCOFIELD AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1104
SCALE AS SHOWN
SHEET NO. 6 OF 24

row31377 8/6/2014 9:50:22 AM CAHSRP-r1.tbl CHSR_PDF_half_black.pltc: \pwworking\hmm\external\row31377\d0243048\4S-CV-T1104-A1.dgn



CURVE DATA

No.	R	Δ	T	L
1	1900.00'	18°28'28"	309.00'	612.64'
2	1900.00'	45°45'04"	801.64'	1517.17'
5	38000.00'	20°22'14"	786.19'	1572.16'
6	425.00'	53°40'44"	215.05'	398.17'

RETAINING WALL DATA

NO.	LOCATION		LENGTH	MAX HEIGHT
	BEGIN	END		
1	40.00' LT 18+00.00 ("PON")	30.00' RT 21+00.00("MAG1")	330'	5'

LINE DATA

NO.	BEARING	DISTANCE
1	S89°19'19"E	1103.70'
2	N72°12'13"E	1029.61'
7	S35°40'02"E	281.35'
8	S89°20'46"E	523.63'
9	S9'47.866"W	1600.00'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
POND RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1108
SCALE AS SHOWN
SHEET NO. 7 OF 24

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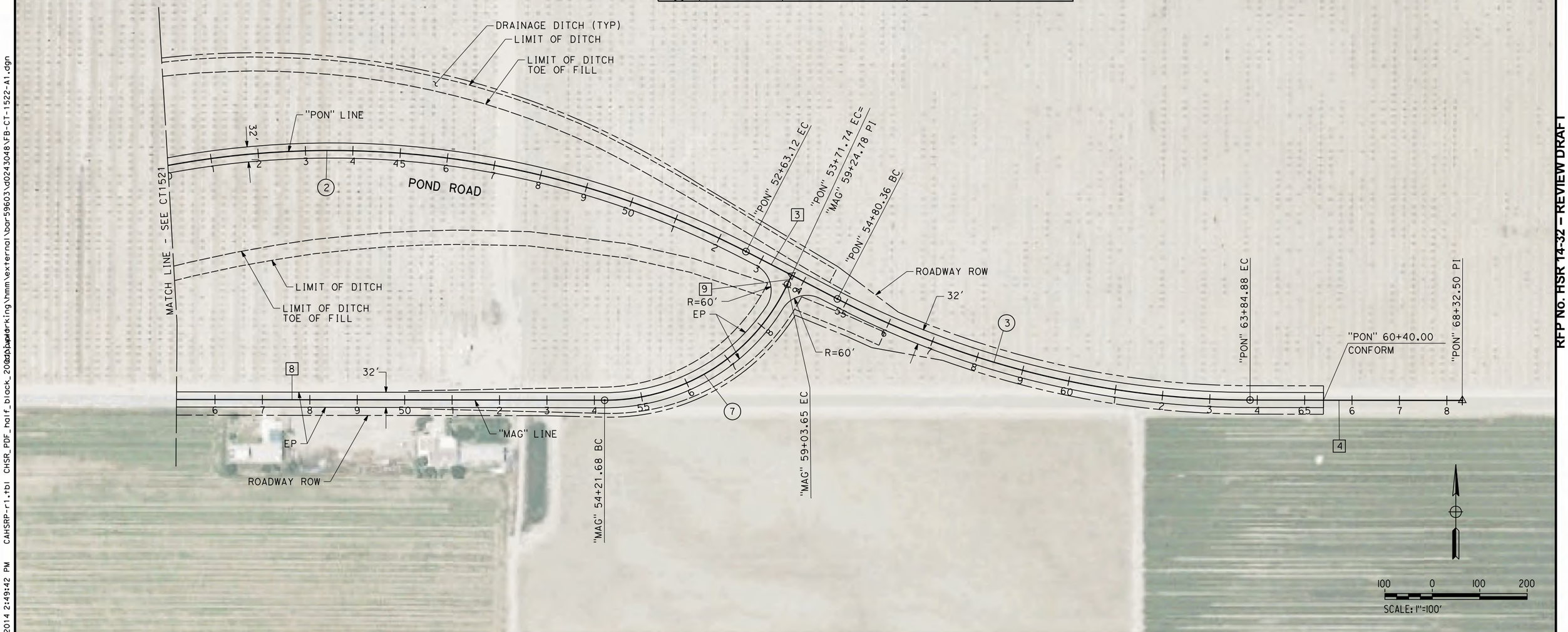
LINE DATA

NO.	BEARING	DISTANCE
3	S64°19'19"E	210.01'
4	S89°19'19"E	447.62'
8	S89°20'46"E	922.11'
9	N25°40'41"E	21.13'

CURVE DATA

No.	R	Δ	T	L
2	1900.00'	45°45'04"	801.64'	1517.17'
3	1900.00'	27°16'36"	461.00'	904.53'
7	425.00'	64°58'33"	270.63'	481.97'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
POND RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1522
SCALE AS SHOWN
SHEET NO. 8 OF 24

RFP No. HSR 14-32 – REVIEW DRAFT

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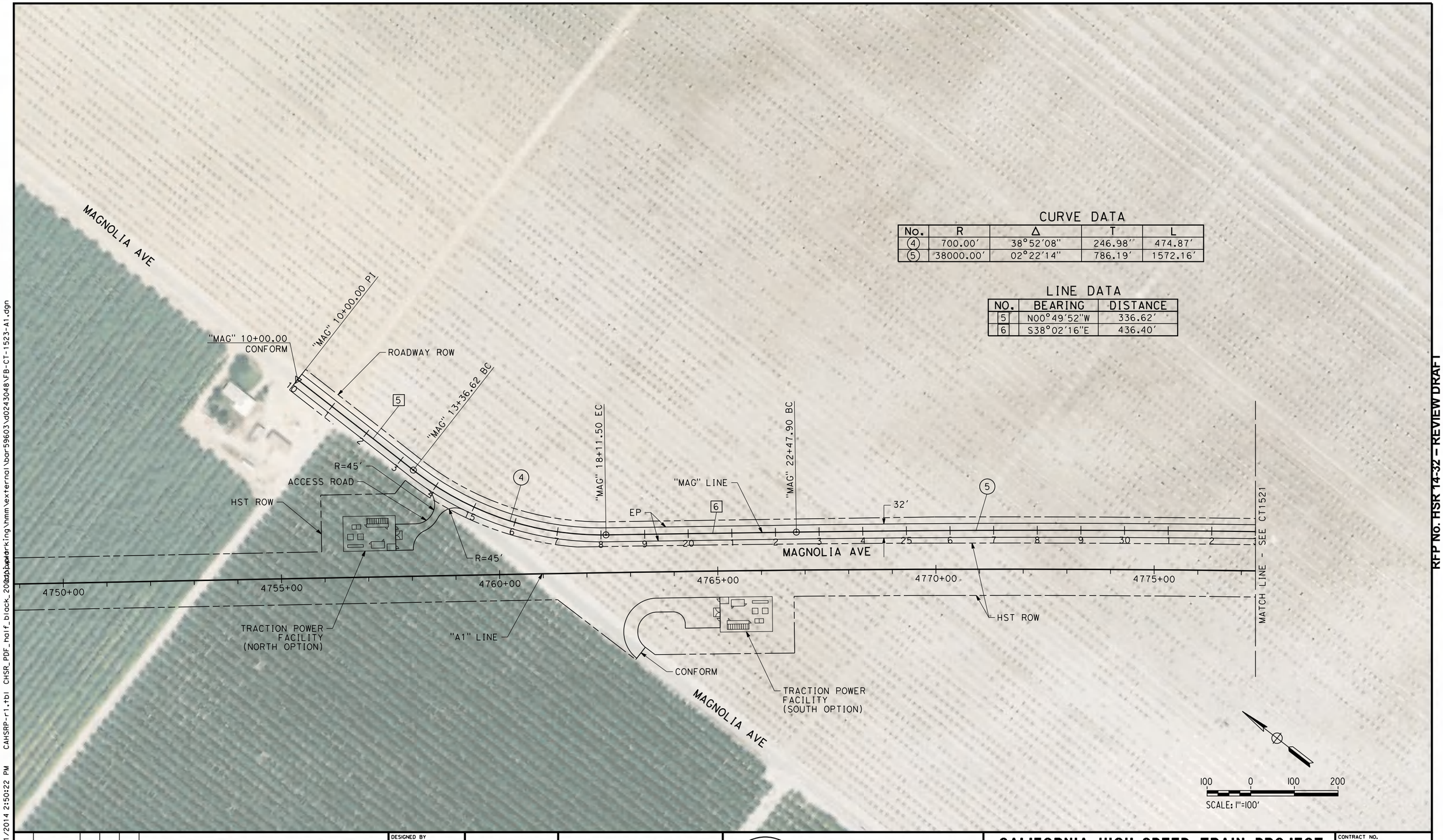
RFP NO. HSR 14-32 – REVIEW DRAFT

CURVE DATA

No.	R	Δ	T	L
(4)	700.00′	38°52′08″	246.98′	474.87′
(5)	38000.00′	02°22′14″	786.19′	1572.16′

LINE DATA

NO.	BEARING	DISTANCE
5	N00°49′52″W	336.62′
6	S38°02′16″E	436.40′



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
MAGNOLIA AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1523
SCALE AS SHOWN
SHEET NO. 9 OF 24

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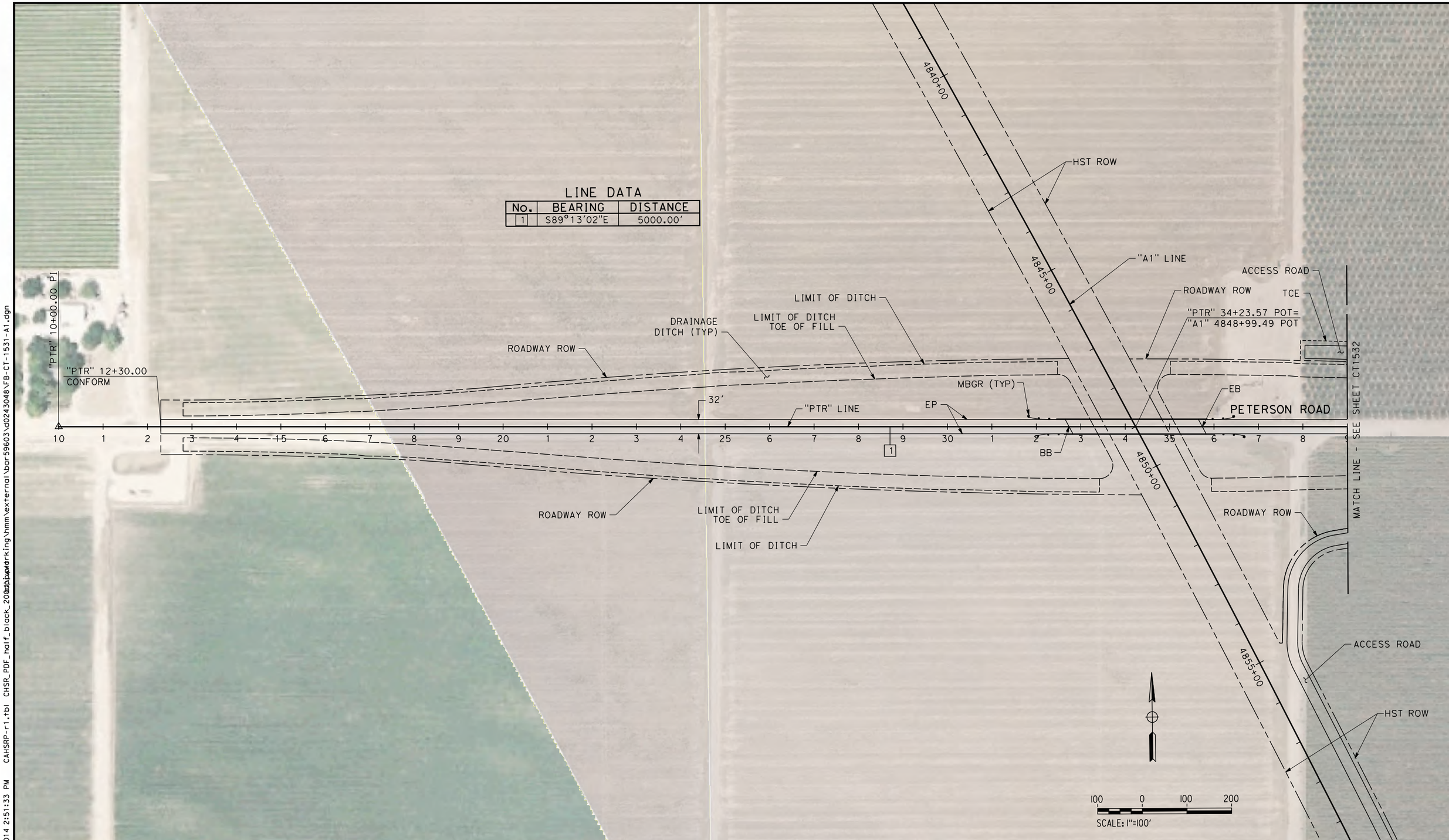

LINE DATA

No.	BEARING	DISTANCE
1	S89°13'02"E	5000.00'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
PETERSON RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1531
SCALE AS SHOWN
SHEET NO. 10 OF 24

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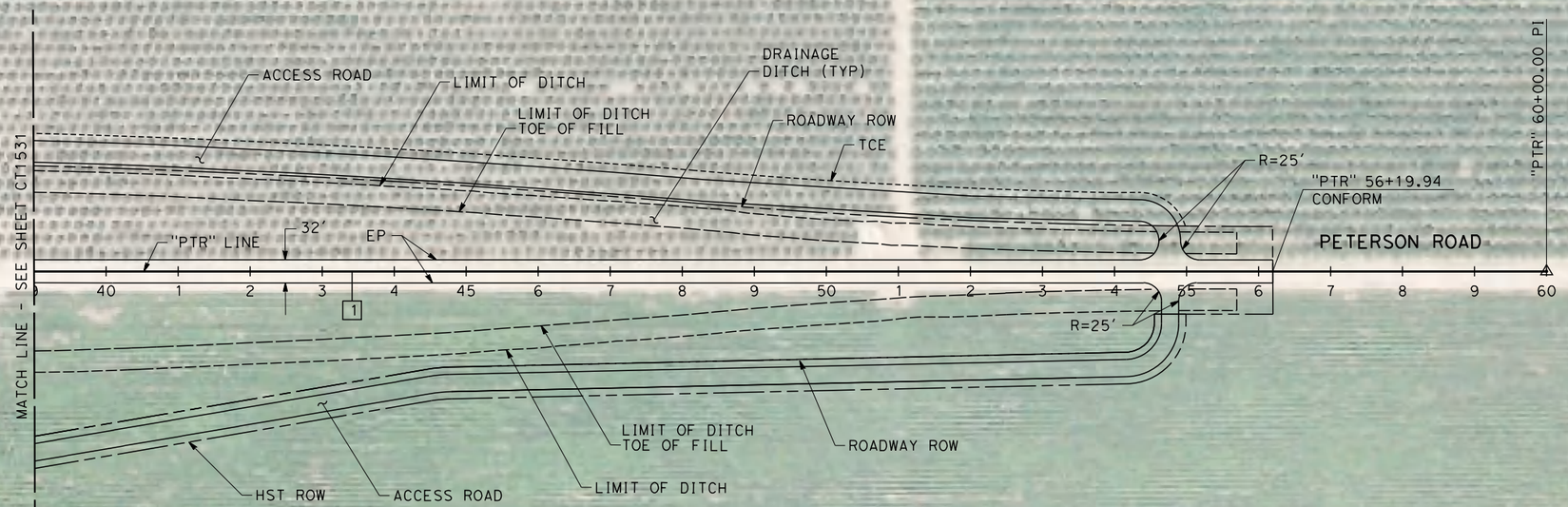

LINE DATA

No.	BEARING	DISTANCE
1	S89°13'02"E	5000.00'

100 0 100 200

SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION LAYOUT
PETERSON RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1532
SCALE AS SHOWN
SHEET NO. 11 OF 24

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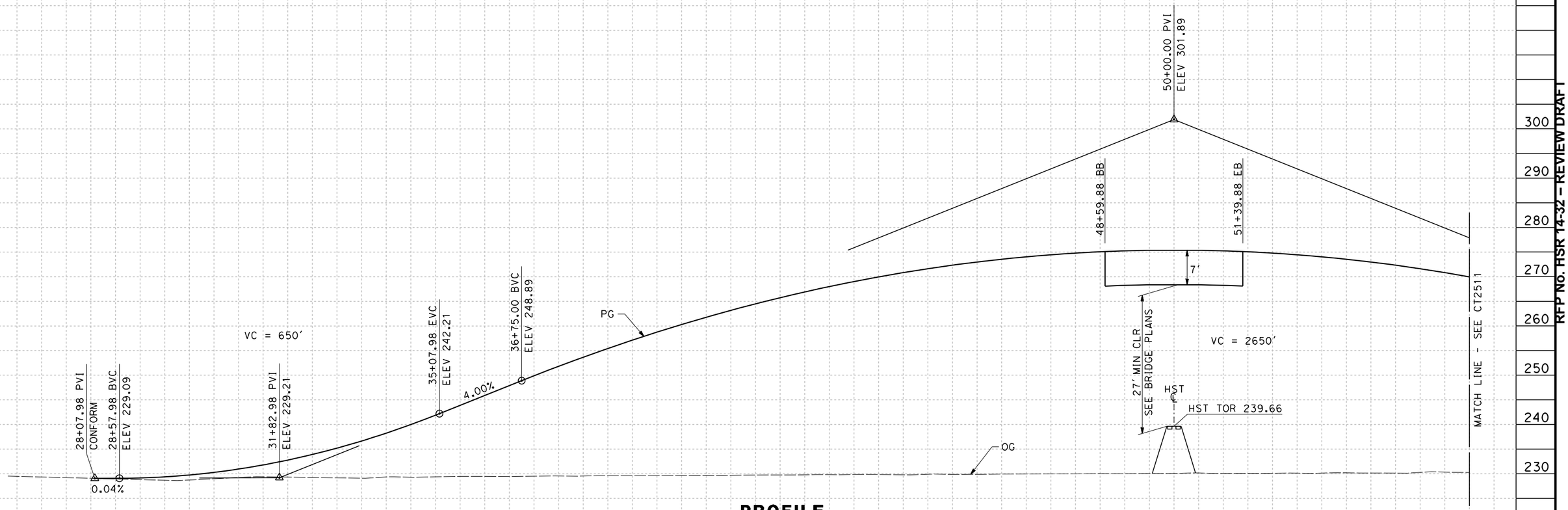
NOTES:
1. MIN VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL.



PROFILE

"GAR" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	7	8	9	30	1	2	3	4	35	6	7	8	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	6	TOTAL
CY Exc																															
CY Emb																															

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPERATION PROFILE
GARCES HWY

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2510
SCALE AS SHOWN
SHEET NO. 13 OF 24

RFP NO. HSR 14-32 – REVIEW DRAFT

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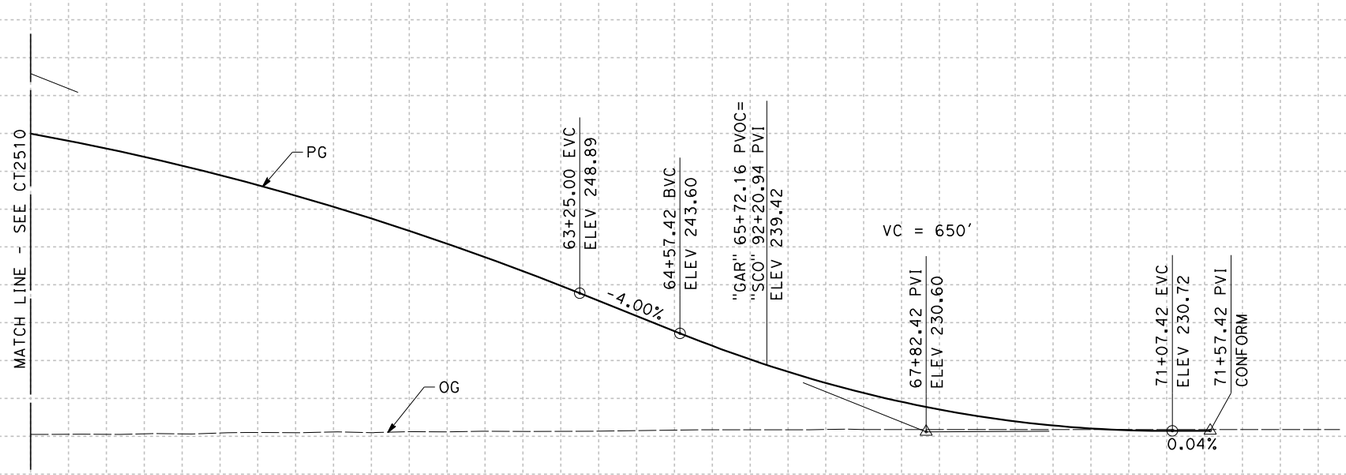
RFP No. HSR 14-32 – REVIEW DRAFT



PROFILE
"GAR" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	6	7	8	9	60	1	2	3	4	65	6	7	8	9	70	1	2	TOTAL
CY Exc																		
CY Emb																		

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
GARCES HWY

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2511
SCALE AS SHOWN
SHEET NO. 14 OF 24

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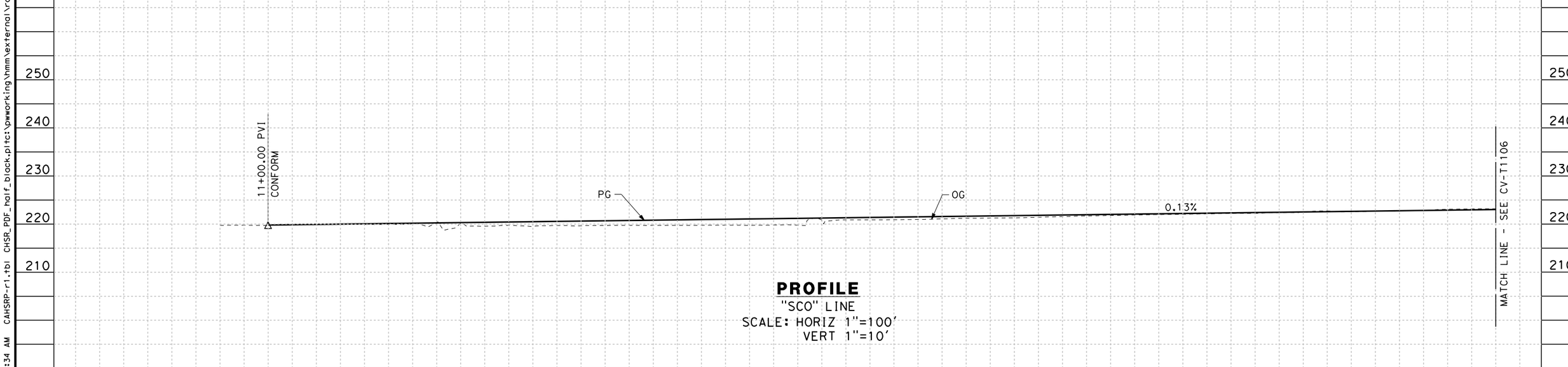
BAR50597



PROFILE
"SCO" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
SCOFIELD AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1105
SCALE AS SHOWN
SHEET NO. 15 OF 24

RFP No. HSR 14-32 – REVIEW DRAFT

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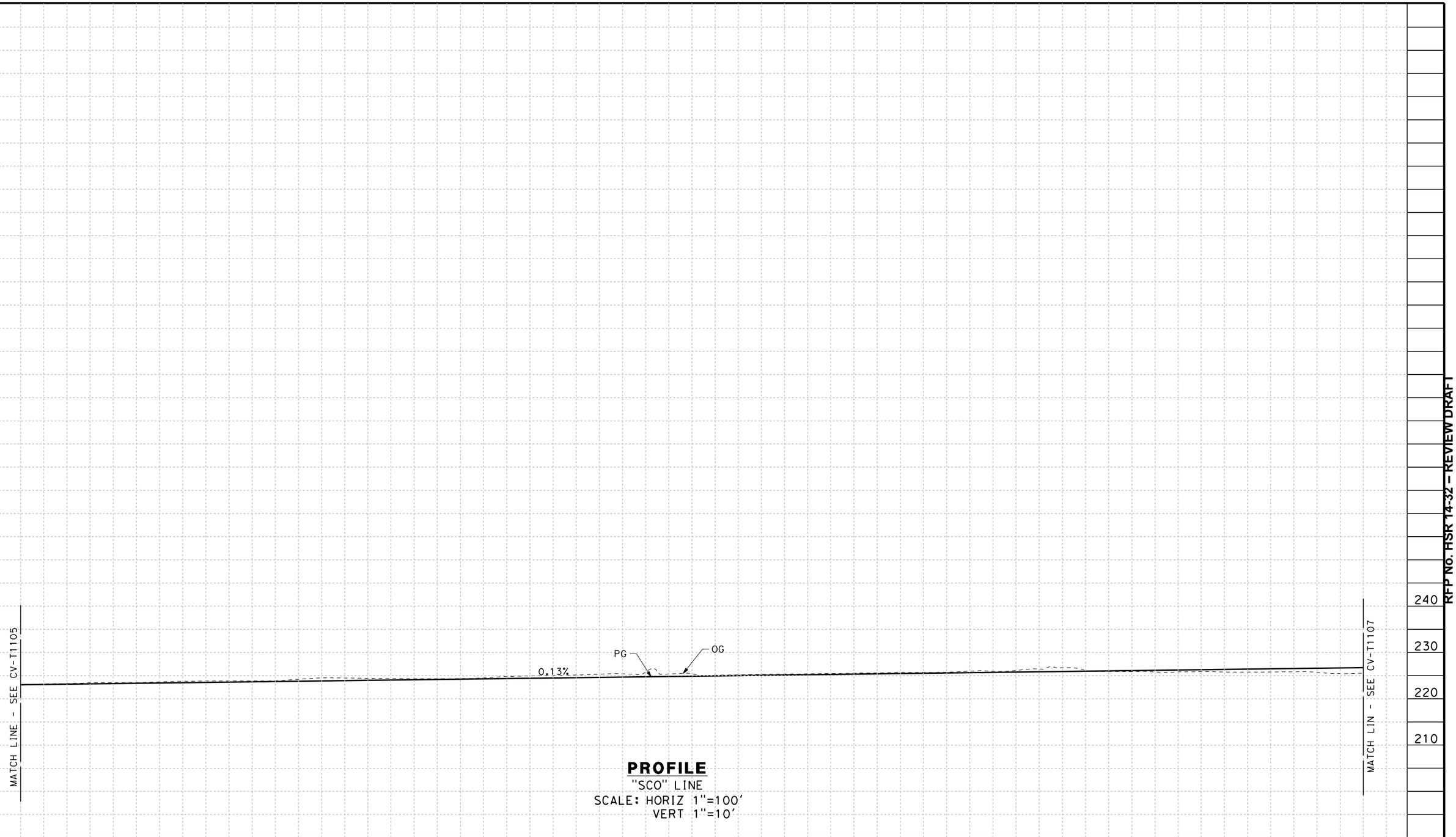
RFP No. HSR 14-32 – REVIEW DRAFT



PROFILE
"SCO" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	6	7	8	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	6	7	8	9	60	1	2	3	4	65	TOTAL
CY Exc																															
CY Emb																															

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
SCOFIELD AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1106
SCALE AS SHOWN
SHEET NO. 16 OF 24

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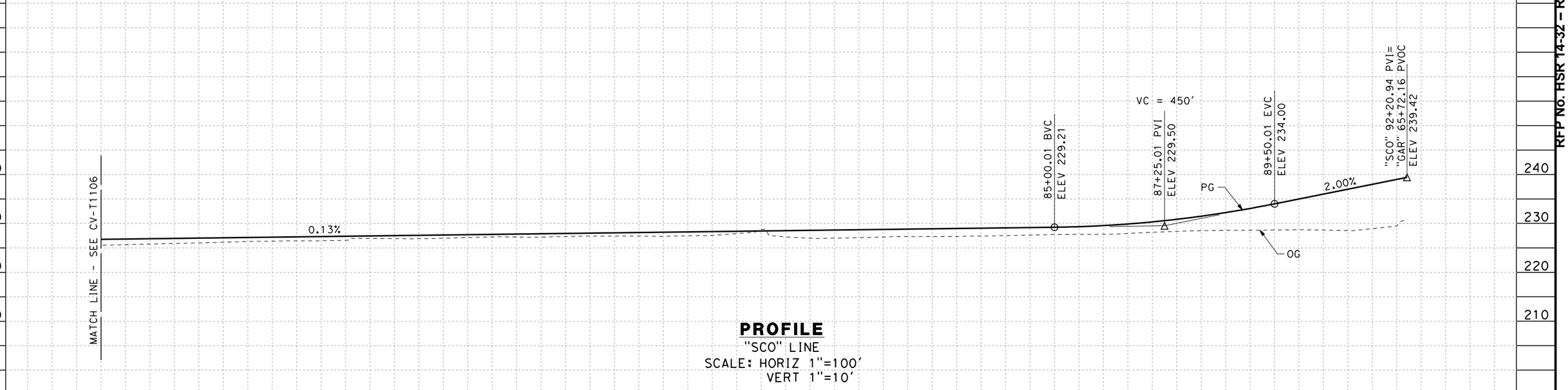
RFP No. HSR 14-32 – REVIEW DRAFT



PROFILE
"SCO" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	6	7	8	9	70	1	2	3	4	75	6	7	8	9	80	1	2	3	4	85	6	7	8	9	90	1	2	3	TOTAL
CY Exc																													
CY Emb																													

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
SCOFIELD AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1107
SCALE AS SHOWN
SHEET NO. 17 OF 24

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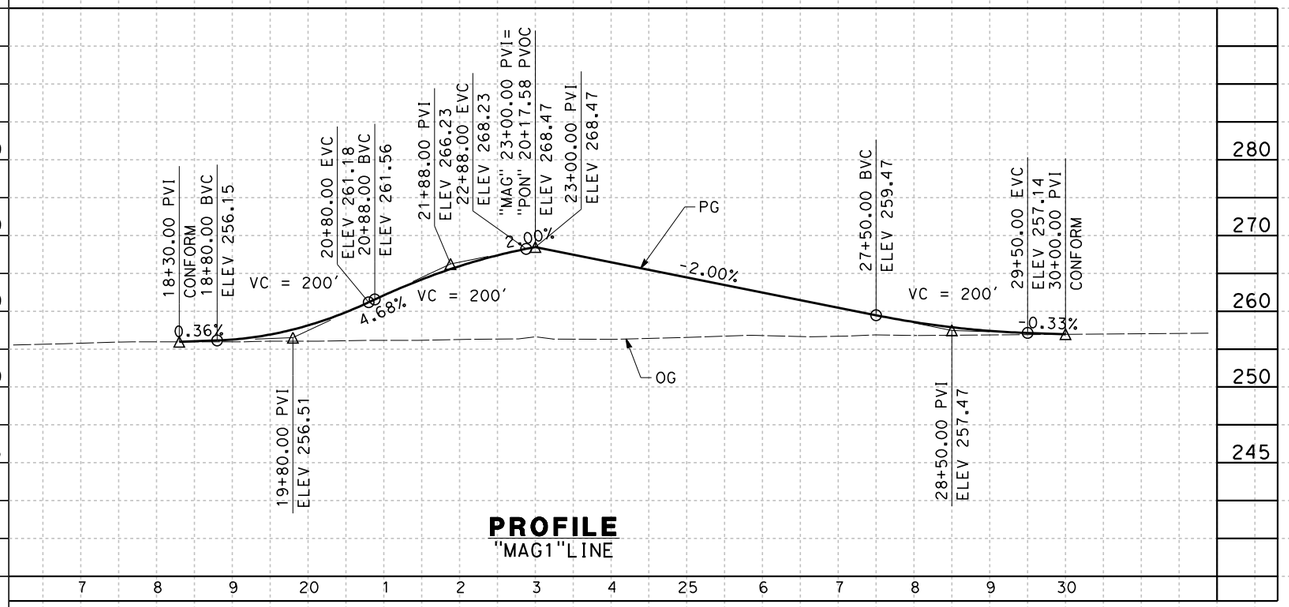
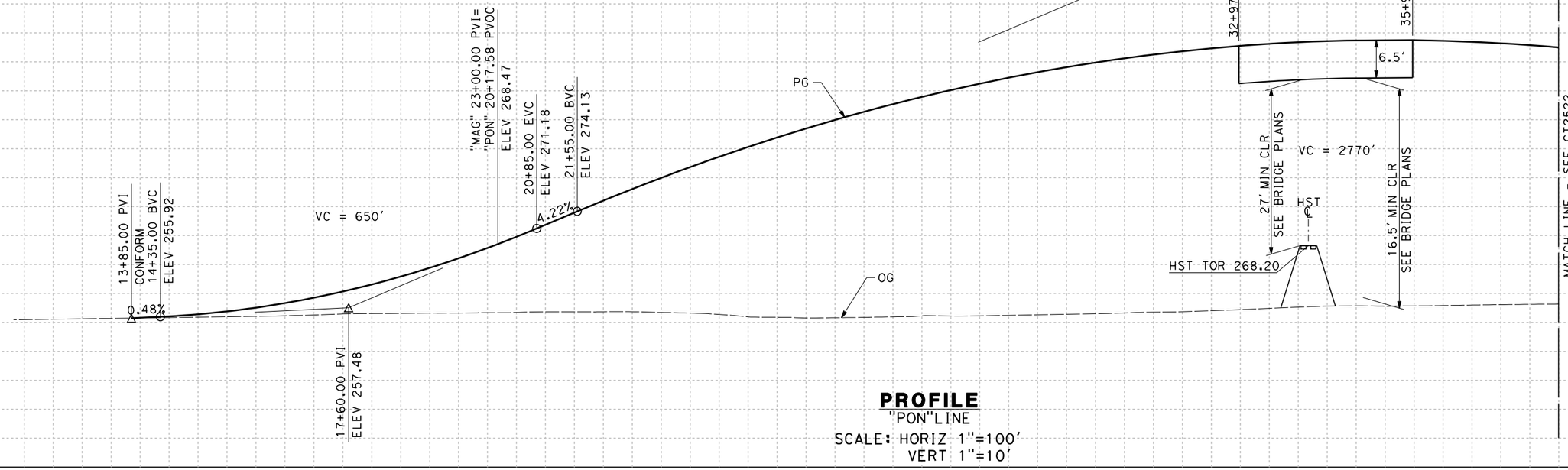
row31377

NOTES:
1. MIN VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL.
2. MIN VERTICAL CLEARANCE OVER MAGNOLIA AVENUE IS 16.5' FROM ROADWAY.



PROFILE
"MAG1"LINE



PROFILE
"PON"LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION		2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	35	6	7	8	TOTAL
CY	Exc																												
	Emb																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
POND RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2521
SCALE AS SHOWN
SHEET NO. 18 OF 24

RFP No. HSR 14-32 – REVIEW DRAFT

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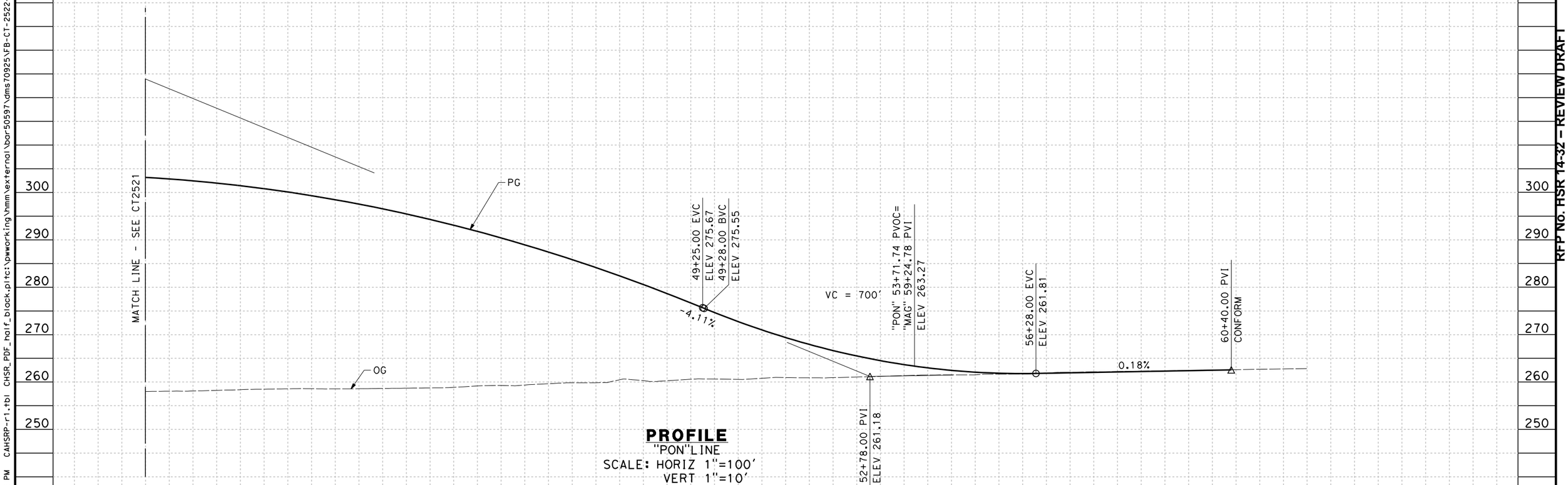
RFP No. HSR 14-32 – REVIEW DRAFT



PROFILE
"PON" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	8	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	6	7	8	9	60	1	2	3	4	65	TOTAL
CY Exc																													
CY Emb																													

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

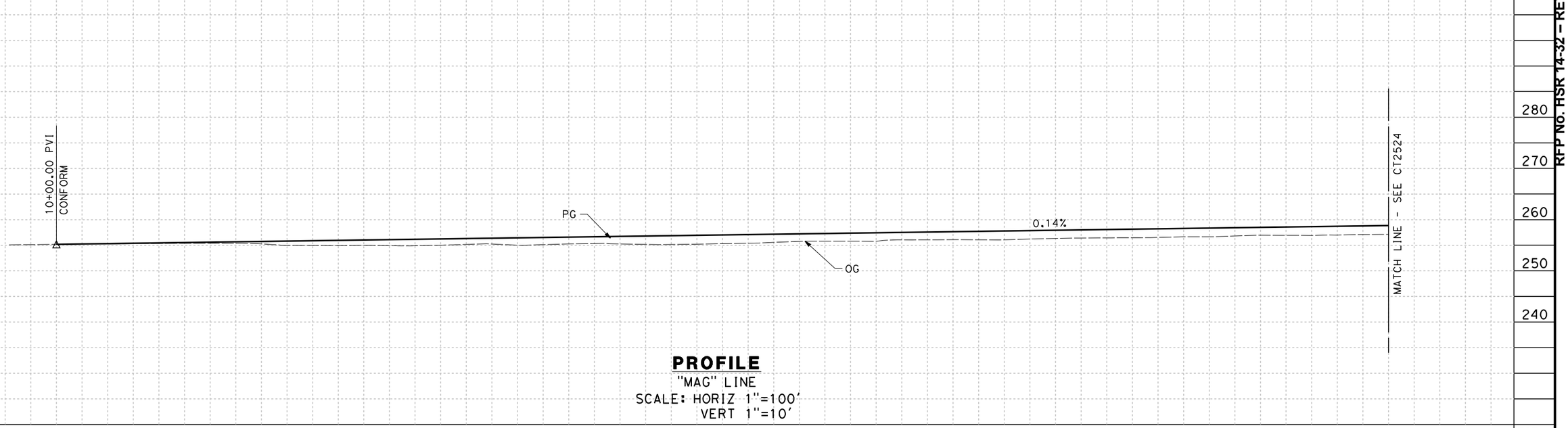
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
POND RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2522
SCALE AS SHOWN
SHEET NO. 19 OF 24

12/30/2013 2:09:12 PM CAHSRP-r1.tbl CHSR_PDF_half_black.plt c:\pwworking\hmm\external\bar50597\dms70925\FB-CT-2522-A1.dgn
BAR50597

NOTES:
1. MIN VERTICAL CLEARANCE OVER MAGNOLIA AVENUE IS 16.5' FROM ROADWAY.



PROFILE
"MAG" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	35	6	TOTAL
CY Exc																												
CY Emb																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
MAGNOLIA AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2523
SCALE AS SHOWN
SHEET NO. 20 OF 24

RFP NO. HSR 14-32 – REVIEW DRAFT

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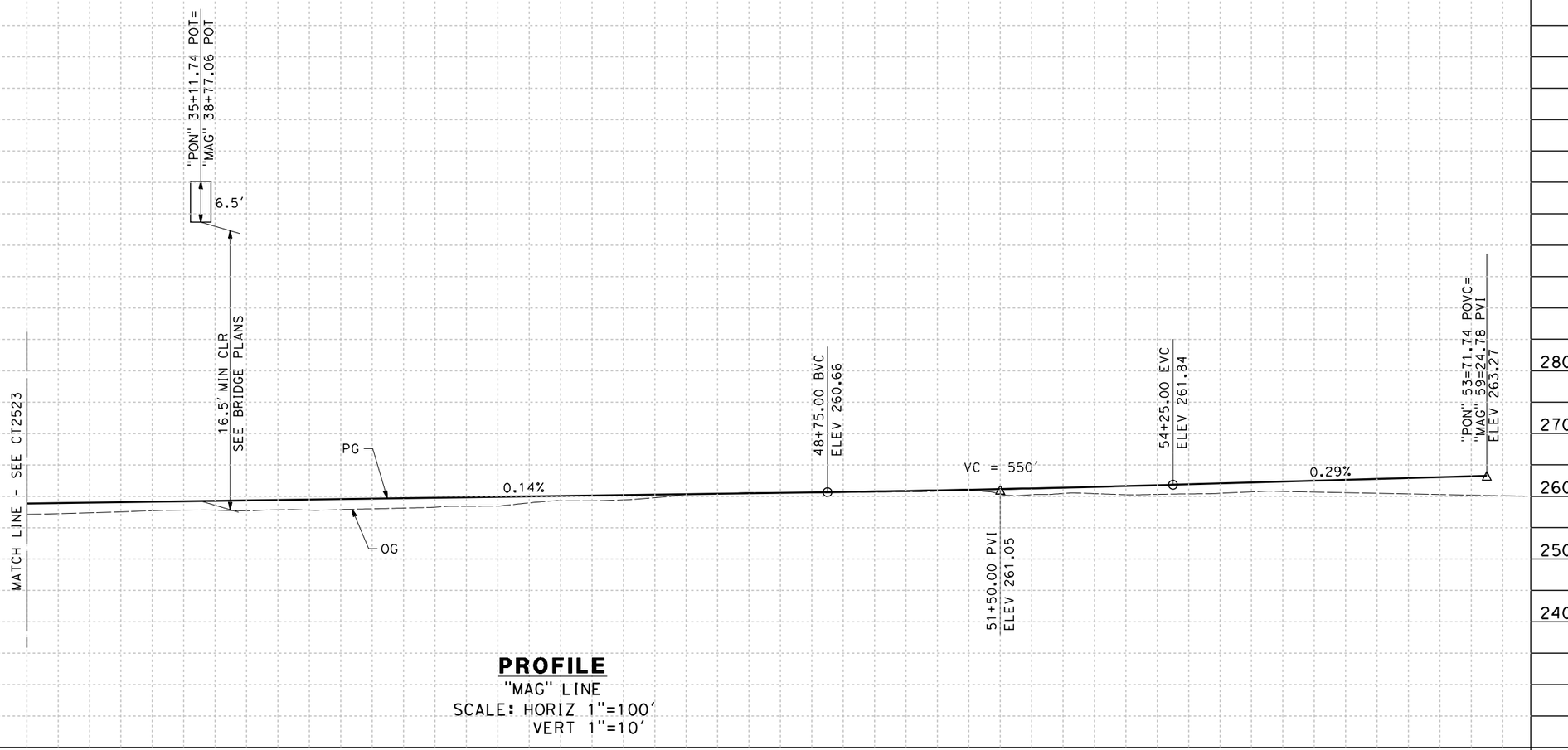
BAR50597



PROFILE
"MAG" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	6	7	8	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	6	7	8	9	TOTAL
CY Exc																									
CY Emb																									

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
MAGNOLIA AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2524
SCALE AS SHOWN
SHEET NO. 21 OF 24

RFP NO. HSR 14-32 – REVIEW DRAFT

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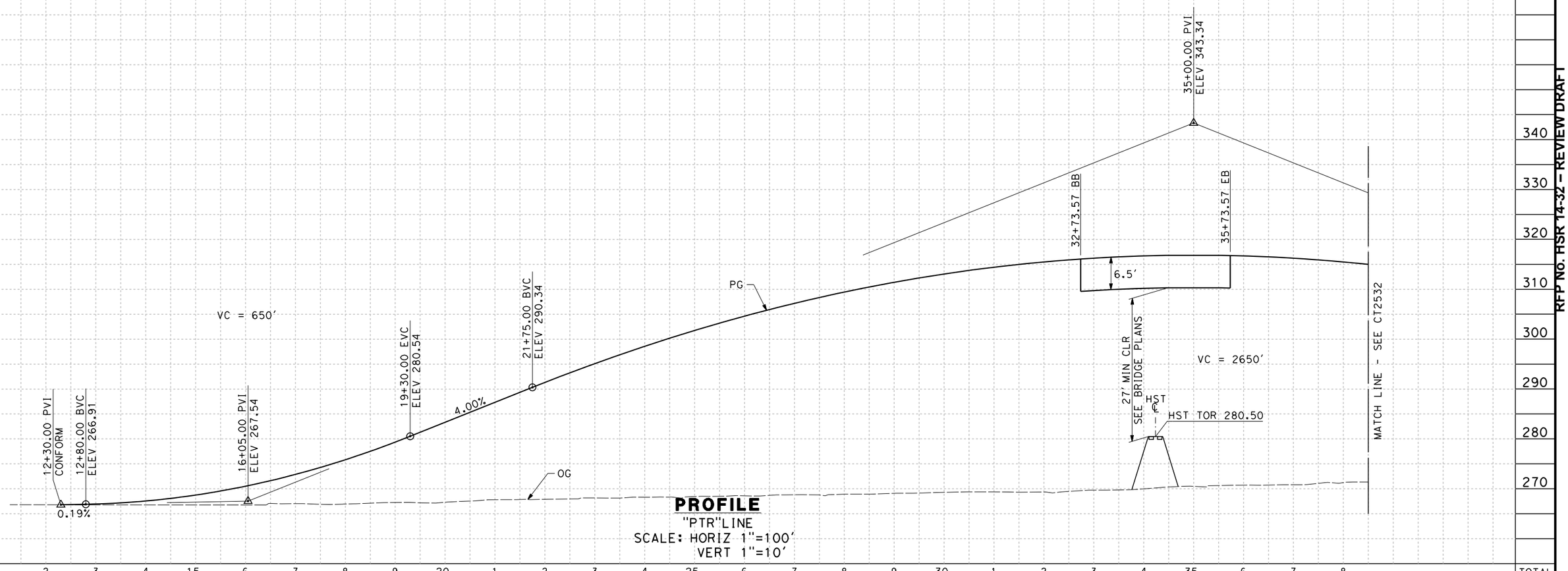
BAR50597

NOTES:
1. MIN VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL.



PROFILE
"PTR"LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	35	6	7	8	TOTAL
CY Exc																												
CY Emb																												

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPARATION PROFILE
PETERSON ROAD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2531
SCALE AS SHOWN
SHEET NO. 22 OF 24

RFP NO. HSR 14-32 – REVIEW DRAFT

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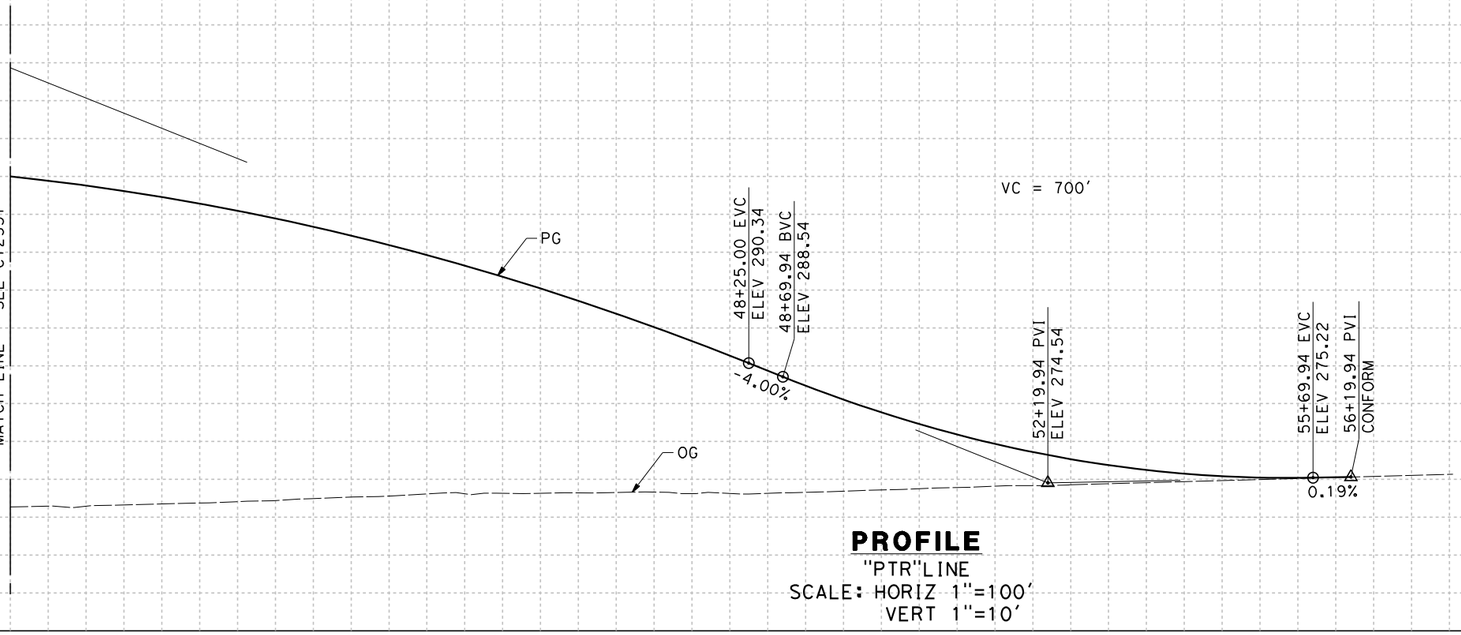
RFP NO. HSR 14-32 – REVIEW DRAFT



PROFILE
"PTR"LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

340 330 320 310 300 290 280 270

STATION	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	6	7	8	9	60	TOTAL
CY Exc																							
CY Emb																							

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
GRADE SEPERATION PROFILE
PETERSON ROAD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT2532
SCALE AS SHOWN
SHEET NO. 23 OF 24

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BAR50597

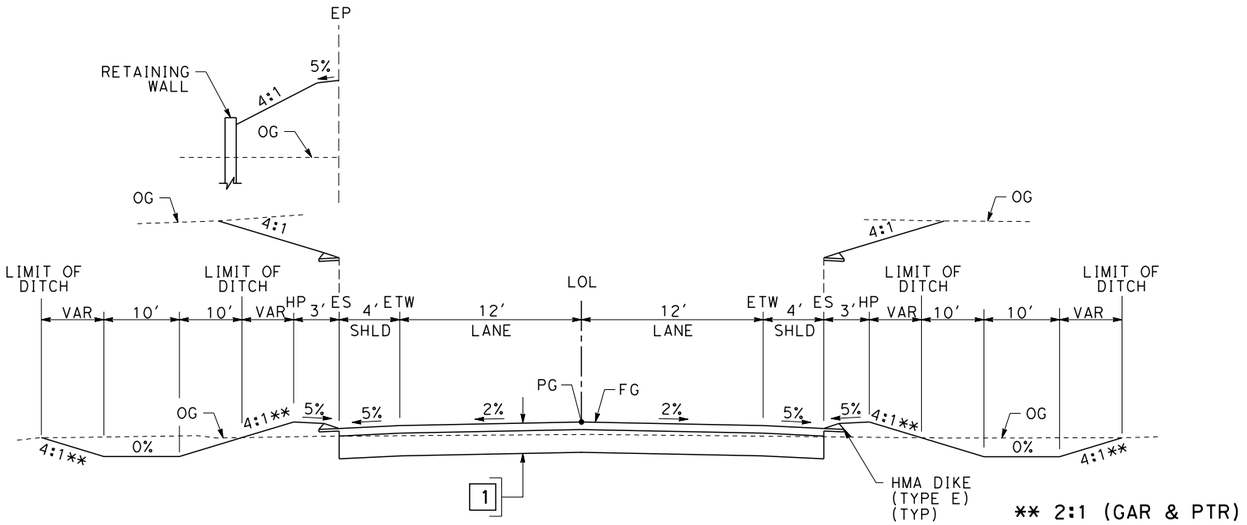
NOTES:

1. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
2. PAVEMENT SECTIONS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. EXACT DIMENSIONS AND MATERIAL OF THE PAVEMENT SECTION TO BE CONFIRMED.

STRUCTURAL SECTIONS

TYPICAL ROADWAY

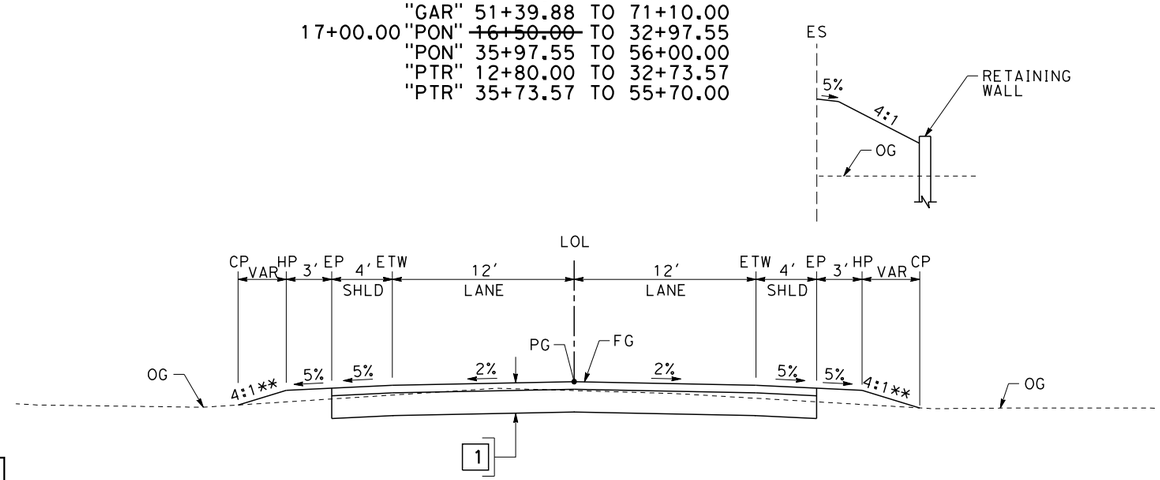
1 — 0.30' HMA (TYPE A)
1.40' CL 2 AB



** 2:1 (GAR & PTR)

SECTION A

~~"J22" 33+00.00 TO 47+27.42~~
~~"J22" 50+07.42 TO 64+00.00~~
"GAR" 28+57.00 TO 48+59.88
"GAR" 51+39.88 TO 71+10.00
17+00.00 "PON" ~~16+50.00~~ TO 32+97.55
"PON" 35+97.55 TO 56+00.00
"PTR" 12+80.00 TO 32+73.57
"PTR" 35+73.57 TO 55+70.00



SECTION B

** 2:1 (GAR & PTR)

~~"J22" 32+50.00 TO 33+00.00~~
~~"J22" 64+00.00 TO 64+50.00~~
"GAR" 28+07.98 TO 28+57.00
"GAR" 71+10.00 TO 71+57.42
"SCO" 11+00.00 TO 92+20.94
"PON" 13+85.00 TO ~~16+50.00~~ 17+00.00
"PON" 56+00.00 TO 60+40.00
"MAG" 10+00.00 TO 59+24.78
"MAG1" 18+30.00 TO 30+00.00
"PTR" 12+30.00 TO 12+80.00
"PTR" 55+70.00 TO 56+19.94

TABLE OF DESIGN SPEEDS

STREET NAME	ALIGNMENT DESIGNATION	DESIGN SPEED	CRITERIA / JURISDICTION
~~COUNTY RD J22~~	~~J22~~	~~50~~	~~AASHTO/TULARE COUNTY~~
GARCES HWY	GAR	65	KERN COUNTY/KERN COUNTY
SCOFIELD AVE	SCO	45(35*)	KERN COUNTY/KERN COUNTY
POND RD	PON	65	KERN COUNTY/KERN COUNTY
MAGNOLIA AVE	MAG	45(35*)	KERN COUNTY/KERN COUNTY
MAGNOLIA AVE(SOUTH)	MAG1	45	KERN COUNTY/KERN COUNTY
PETERSON RD	PTR	65	KERN COUNTY/KERN COUNTY

* WILL REQUIRE REDUCED DESIGN SPEED AT HORIZONTAL CURVE PRIOR TO STOP CONDITION.

RFP No. HSR 14-32 – REVIEW DRAFT

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY I. JOSIFEK
DRAWN BY P. BARBER
CHECKED BY T. CLIFFORD
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

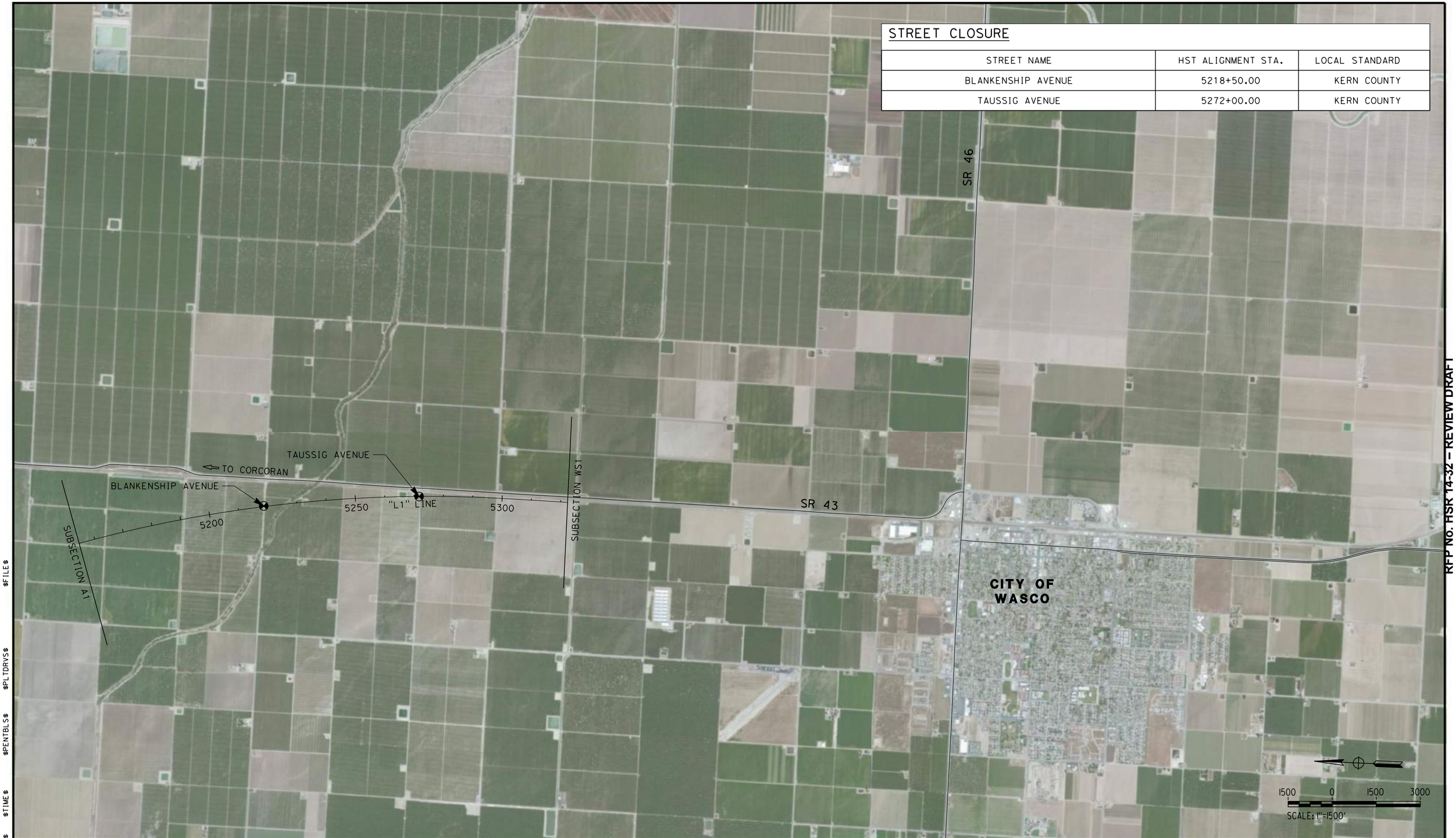
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
ROADWAY/GRADE SEPARATION
TYPICAL CROSS SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1109
SCALE AS SHOWN
SHEET NO. 24 OF 24

STREET CLOSURE

STREET NAME	HST ALIGNMENT STA.	LOCAL STANDARD
BLANKENSHIP AVENUE	5218+50.00	KERN COUNTY
TAUSSIG AVENUE	5272+00.00	KERN COUNTY



RFP No. HSR 14-32 – REVIEW DRAFT

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$PLTDRVS$
$PENTBLS$
$TIME$
$DATE$
$USER$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY: I. JOSIFEK
DRAWN BY: P. BARBER
CHECKED BY: T. CLIFFORD
IN CHARGE: R. COFFIN
DATE: 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

POSO CREEK SUBSECTION
ALIGNMENT L1
ROADWAY/GRADE SEPARATION
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0130
SCALE AS SHOWN
SHEET NO. 1 OF 1

STREET CLOSURE

STREET NAME	HST ALIGNMENT STA	LOCAL STANDARD
WASCO AVE	5662+75.00 TO 5716+50.00	KERN COUNTY
MADERA AVE	5883+50.00	KERN COUNTY
METTER AVE	5920+00.00	KERN COUNTY
ORANGE AVE	6104+00.00	KERN COUNTY
~~REINA RD~~	~~6443+50.00~~	~~KERN COUNTY~~

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY / GRADE SEPARATION
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1125
SCALE AS SHOWN
SHEET NO. 1 OF 67

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LINE DATA

NO.	BEARING	DISTANCE
1	S 89°26'28" E	262.66'
2	N 61°32'33" E	334.08'
3	S 88°46'35" E	780.00'
8	S 26°17'38" E	57.79'
9	S 89°24'21" E	200.50'

CURVE DATA

NO.	R	Δ	T	L
①	2000.00'	29°00'59"	517.54'	1012.86'
②	2000.00'	29°40'52"	529.94'	1036.06'
⑥	300.00'	63°06'43"	184.24'	330.45'

"WS1" LINE
HST ROW
"MCA" 39+45.67 EC
ROADWAY ROW
LIMIT OF DITCH
LIMIT OF DITCH
TOE OF FILL
DRAINAGE DITCH (TYP)
"MCA" LINE
EP
40'
MBGR
(TYP)
BB
"MCA" 29+09.61 BC
"MCA" 25+75.52 EC
"MCA" 25+00.00 POC=
"AMCC" 0+00.00 PI
"AMCC" 0+57.79 BC
ROADWAY ROW
"MCA" 42+35.67 POT=
"WS1" 5497+36.93 POT
LIMIT OF DITCH
TOE OF FILL
LIMIT OF DITCH
"AMCC" 5+88.74 PI
5495+00
5500+00
5505+00
MATCH LINE - SEE SHEET CT1901
BNSF
SR 43
REMOVE EXIST
AT-GRADE CROSSING
"MCA" 13+00.00 PI
CONFORM
"MCA" 15+62.66 BC
CONFORM
TCE
R=15'
MCCOMBS AVE
R=15'
TCE
CONFORM
CONFORM
R=30'
R=30'
LIMIT OF DITCH
LIMIT OF DITCH
TOE OF FILL
"AMCC" LINE
REMOVE BASE
AND SURFACING
32'
ANNIN
CONNECTOR
"AMCC" 3+88.24 EC
"AMCC" 5+00.00
CONFORM
ANNIN AVE
REMOVE BASE AND SURFACING
100 0 100 200
SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
MCCOMBS AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1132
SCALE AS SHOWN
SHEET NO. 2 OF 67

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CLI60413

LINE DATA

NO.	BEARING	DISTANCE
3	S 88°46'35" E	780.00'
4	S 61°49'38" E	430.30'
5	S 89°26'28" E	439.42'
6	N 28°10'22" E	78.00'
7	S 89°26'28" E	1274.22'

CURVE DATA

NO.	R	Δ	T	L
③	2000.00'	26°56'57"	479.22'	940.71'
④	2000.00'	27°36'50"	491.50'	963.91'
⑤	300.00'	62°23'10"	181.64'	326.65'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT FRESNO TO BAKERSFIELD

THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
MCCOMBS AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1901
SCALE AS SHOWN
SHEET NO. 3 OF 67

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BAR59603

LINE DATA

NO.	BEARING	DISTANCE
1	S 89°29'37" E	2200.00'

RELOCATE BNSF TRACKS
HST ROW
BNSF
5710+00
"WS1" LINE
REMOVE BASE AND SURFACING (TYP)
RETENTION BASIN
ROADWAY ROW
R=45'
CONFORM
40'
SR 43
"KBA" 6+00.00 PI
TOP OF CUT
TCE
R=15'
CONFORM
MBGR (TYP)
EP
5715+00
RETAINING WALL NO. 1
TOP OF CUT
TCE
CONFORM
R=35'
ROADWAY ROW
"KBA" 28+00.00 PI
CONFORM
"KBA" LINE
KIMBERLINA RD
KIMBERLINA RD
R=60'
TOP OF CUT
ROADWAY ROW
"KBA" 6+91.66 CONFORM
1
RETAINING WALL NO. 2
TOP OF CUT
CONFORM
R=15'
"KBA" 15+93.16 POT= "WS1" 5716+36.56 POT
5720+00
5725+00

100 0 100 200
SCALE: 1"=100'

RETAINING WALL DATA

NO.	LOCATION BEGIN	LOCATION END	LENGTH	MAX HEIGHT
1	93.05' LT 13+47.00	103.46' LT 16+87.88	400'	30'
2	100.52' RT 13+58.35	86.32' RT 19+56.32	650'	30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
KIMBERLINA RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1903
SCALE AS SHOWN
SHEET NO. 4 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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BAR59603

LINE DATA

NO.	BEARING	DISTANCE
1	S 89°33'37" E	2204.06'

CURVE DATA

NO.	R	Δ	T	L
1	1500.00'	31°41'13"	425.68'	829.56'

RETAINING WALL DATA

NO.	LOCATION		LENGTH	MAX HEIGHT
	BEGIN	END		
1	16.00' RT 19+83.08	184.60' RT 21+68.37	237'	43'

SCARONI AVE
"MER" 0+00.00 PI
"MER" 0+12.00 CONFORM
RELOCATE BNSF TRACKS
"WS1" LINE
HST ROW
5825+00
5830+00
SR 43
BNSF
5835+00
5840+00
5845+00
"MER" 18+75.74 POT=
"WS1" 5835+83.89 POT
"MER" 22+04.06 BC
LIMIT OF DITCH
DRAINAGE DITCH (TYP)
LIMIT OF DITCH TOE OF FILL
ROADWAY ROW
R=60'
MERCED AVE
"MER" LINE
EP
EB
BB
MBGR
MBGR (TYP)
32'
RET WALL NO.1
LIMIT OF DITCH
LIMIT OF DITCH TOE OF FILL
ROADWAY ROW
MATCH LINE - SEE SHEET CT1905
OLD MERCED AVE
REMOVE EXIST AT-GRADE CROSSING
100 0 100 200
SCALE: 1"=100'

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
MERCED AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1904
SCALE AS SHOWN
SHEET NO. 5 OF 67

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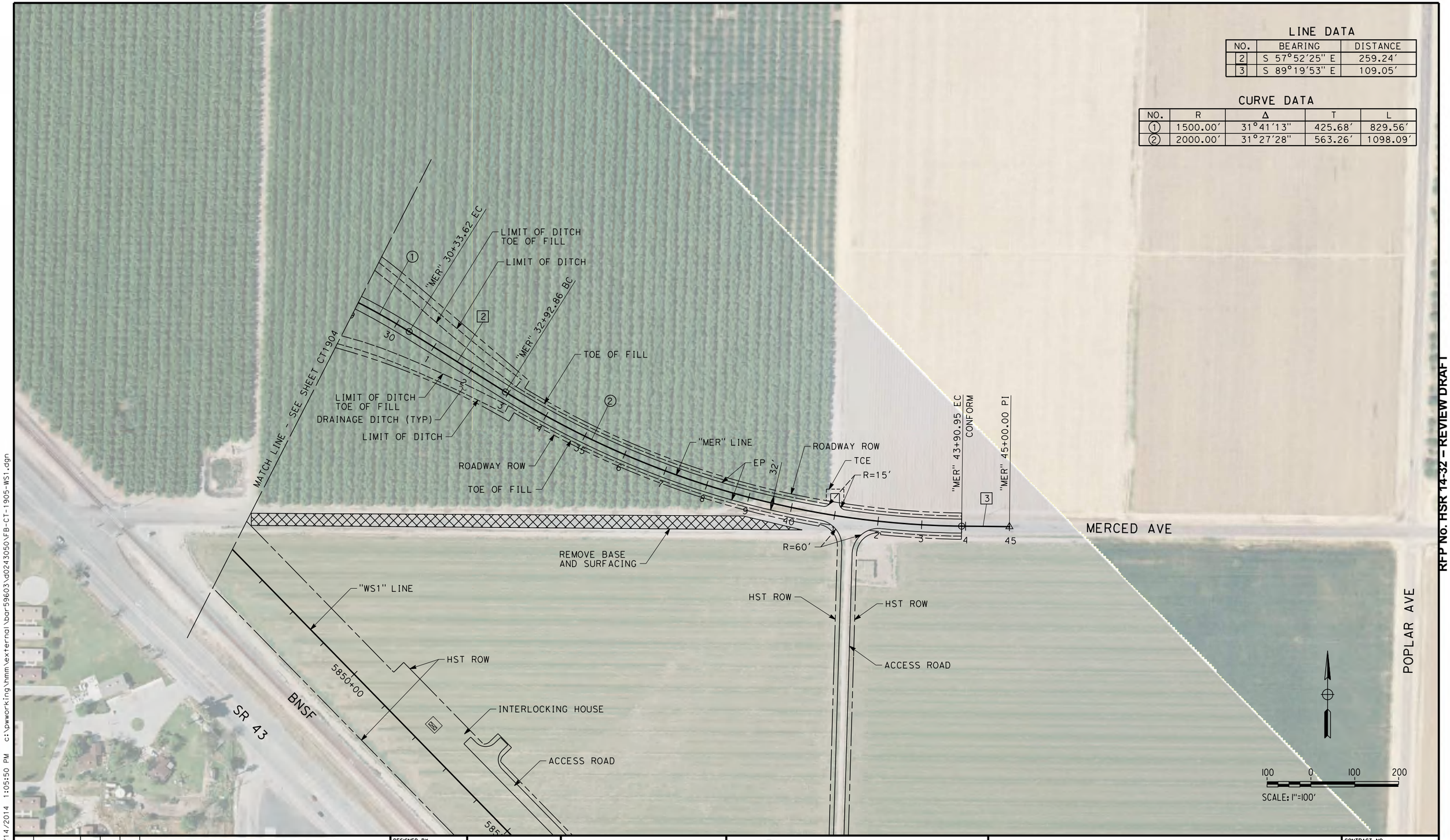
BAR59603



LINE DATA

NO.	BEARING	DISTANCE
2	S 57°52'25" E	259.24'
3	S 89°19'53" E	109.05'

CURVE DATA

NO.	R	Δ	T	L
1	1500.00'	31°41'13"	425.68'	829.56'
2	2000.00'	31°27'28"	563.26'	1098.09'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
MERCED AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1905
SCALE AS SHOWN
SHEET NO. 6 OF 67

BAR59603 7/14/2014 1:05:50 PM c:\pwworking\hmm\external\bar59603\d0243050\FB-CT-1905-WS1.dgn

LINE DATA

NO.	BEARING	DISTANCE
1	S 01°46'48" W	3600.00'

RETAINING WALL DATA

NO.	LOCATION		LENGTH	MAX HEIGHT
	BEGIN	END		
1	189.32' RT 23+50.15	17.50' LT 25+15.68	239'	45'

SCALE: 1"=100'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
POPLAR AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1906
SCALE AS SHOWN
SHEET NO. 7 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

BAR59603 7/14/2014 1:07:01 PM c:\pwworking\hmm\external\bar59603\d0243050\FB-CT-1906-WS1.dgn

LINE DATA

NO.	BEARING	DISTANCE
1	S 01°46'48" W	3600.00'
2	S 88°13'12" E	250.00'
3	N 45°40'47" E	323.36'

CURVE DATA

NO.	R	Δ	T	L
①	425.00'	46°06'01"	180.84'	341.96'

"WS1" LINE
HST ROW
5900+00
5895+00
5890+00
5885+00
BNSF
SR43
"POF" 9+15.32 PI
"POF" 8+80.32 CONFORM
R=60'
R=60'
POPLAR CONNECTOR
"POF" 5+91.96 EC
EP
32'
TOE OF FILL
"POF" LINE
"POF" 2+50.00 BC
LIMIT OF DITCH TOE OF FILL
LIMIT OF DITCH
ROADWAY ROW
R=60'
R=60'
"POP" LINE
32'
EP
MATCH LINE - SEE SHEET CT1906
ROADWAY ROW
LIMIT OF DITCH
LIMIT OF DITCH TOE OF FILL
DRAINAGE DITCH (TYP)
"POP" 41+00.00 POT=
"POF" 0+00.00 POT
"POP" 45+00.00 CONFORM
POPLAR AVE
FRESNO AVE

100 0 100 200
SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

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BAR59603

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

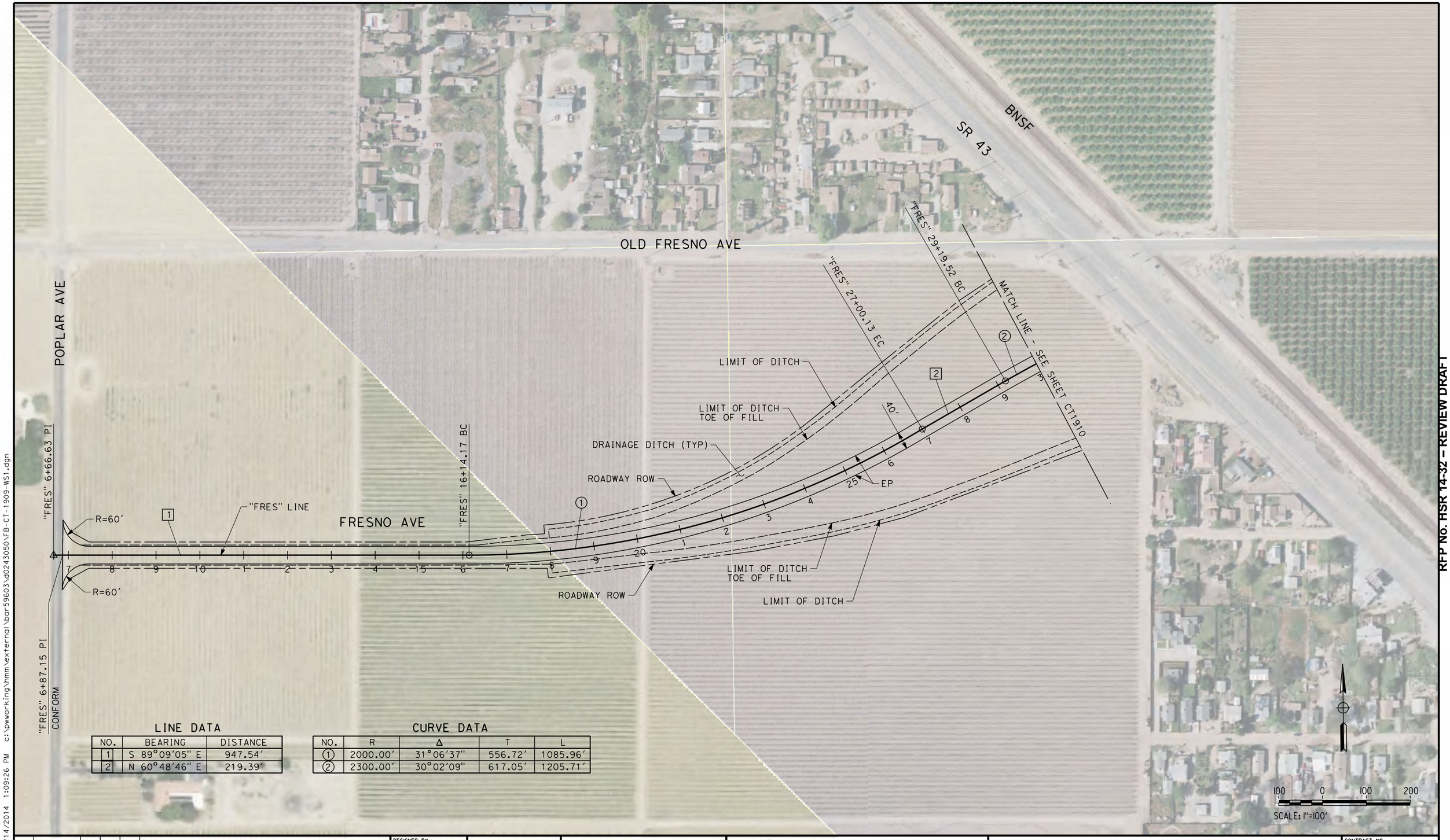
RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
POPLAR AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1907
SCALE AS SHOWN
SHEET NO. 8 OF 67



LINE DATA

NO.	BEARING	DISTANCE
1	S 89°09'05" E	947.54'
2	N 60°48'46" E	219.39'

CURVE DATA

NO.	R	Δ	T	L
①	2000.00'	31°06'37"	556.72'	1085.96'
②	2300.00'	30°02'09"	617.05'	1205.71'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
FRESNO AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1909
SCALE AS SHOWN
SHEET NO. 9 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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LINE DATA		
NO.	BEARING	DISTANCE
3	S 89°09'05" E	1374.77'

CURVE DATA				
NO.	R	Δ	T	L
②	2300.00'	30°02'09"	617.05'	1205.71'

ROADWAY ROW
CONFORM
R=30'
METTER AVE
"FRES" 41+25.23 EC
ROADWAY ROW
R=30'
CUL-DE-SAC
"FRES" 35+69.76 POC=
"WS1" 5921+60.21 POT
R=42'
ACCESS ROAD
ROADWAY ROW
LIMIT OF DITCH
TOE OF FILL
LIMIT OF DITCH
ROADWAY ROW
DRAINAGE DITCH (TYP)
R=15'
"FRES" 55+00.00 PI
5910+00
5915+00
BNSF
SR 43
LIMIT OF DITCH
REMOVE EXIST
AT-GRADE CROSSING
LIMIT OF DITCH
TOE OF FILL
MBGR (TYP)
FRESNO AVE
3
"FRES" LINE
R=30'
5920+00
EB
EP
CONFORM
TCE
CONFORM
TCE
LIMIT OF DITCH
LIMIT OF DITCH
TOE OF FILL
ROADWAY ROW
MATCH LINE - SEE SHEET CT1909
BB
5925+00
ROADWAY ROW
LIMIT OF DITCH
LIMIT OF DITCH
TOE OF FILL
"WS1" LINE
5930+00
HST ROW
"FRES" 54+00.00 PI
CONFORM
100 0 100 200
SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
FRESNO AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1910
SCALE AS SHOWN
SHEET NO. 10 OF 67

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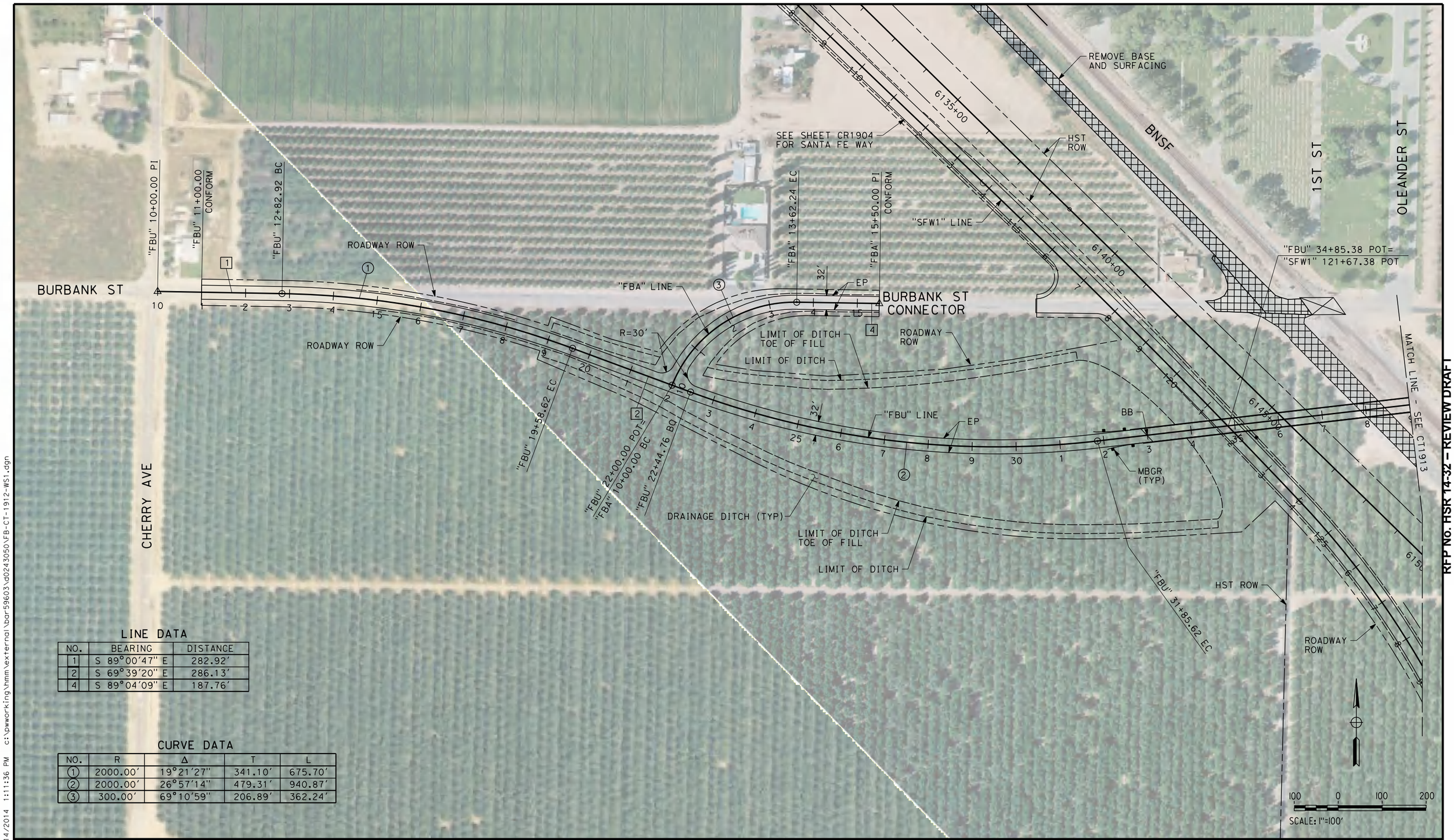
BAR59603



LINE DATA

NO.	BEARING	DISTANCE
1	S 89°00'47" E	282.92'
2	S 69°39'20" E	286.13'
4	S 89°04'09" E	187.76'

CURVE DATA

NO.	R	Δ	T	L
①	2000.00'	19°21'27"	341.10'	675.70'
②	2000.00'	26°57'14"	479.31'	940.87'
③	300.00'	69°10'59"	206.89'	362.24'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
BURBANK ST

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1912
SCALE AS SHOWN
SHEET NO. 11 OF 67

RFP No. HSR 14-32 – REVIEW DRAFT

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LINE DATA

NO.	BEARING	DISTANCE
5	N 83°23'26" E	2225.00'
6	S 89°12'51" E	245.42'

CURVE DATA

NO.	R	Δ	T	L
④	2000.00'	07°23'43"	129.25'	258.14'

1ST ST

OLEANDER ST

MENDOTA ST

BURBANK ST

BNSF

MATCH LINE - SEE CT1912

ACCESS ROAD

DRAINAGE DITCH (TYP)

LIMIT OF DITCH

LIMIT OF DITCH TOE OF FILL

R=84'

R=108'

R=30'

R=30'

ROADWAY ROW

"FBU" 54+10.62 BC

"FBU" 56+68.77 EC

"FBU" 58+00.00 CONFORM

"FBU" 59+14.19 PI

"FBU" LINE

TOE OF FILL

ROADWAY ROW

EB

EP

MBGR (TYP)

LIMIT OF DITCH

LIMIT OF DITCH TOE OF FILL

"WS1" LINE

HST ROW

REMOVE BASE AND SURFACING

"SFW1" LINE

SEE SHEET CR1904 FOR SANTA FE WAY

100 0 100 200

SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

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BAR59603

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

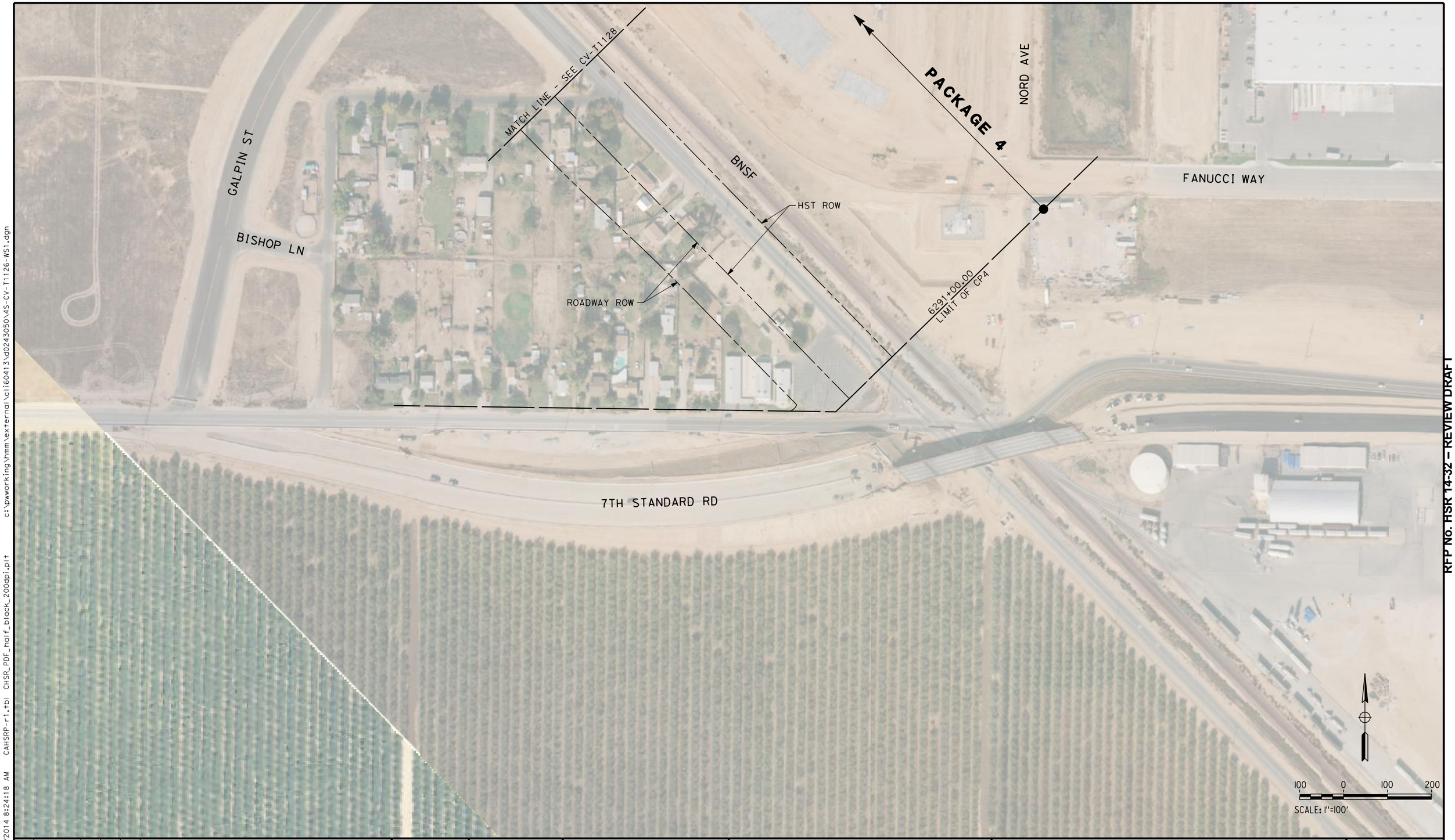
RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
BURBANK ST

CONTRACT NO. HSR 06-0003
DRAWING NO. CT1913
SCALE AS SHOWN
SHEET NO. 12 OF 67



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION LAYOUT
7TH STANDARD RD

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1126
SCALE AS SHOWN
SHEET NO. 13 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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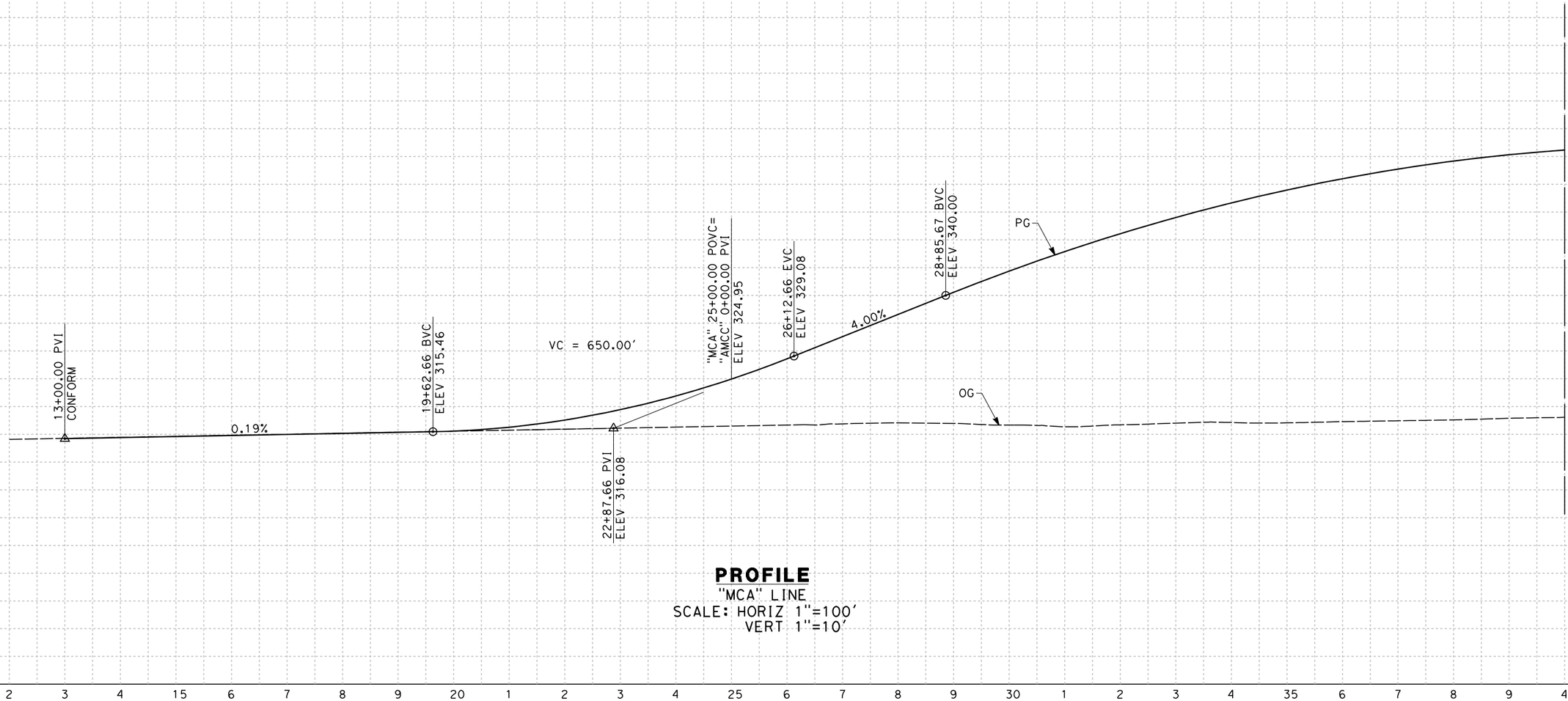
CLI60413

NOTES:
1. MINIMUM VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL
2. MINIMUM VERTICAL CLEARANCE OVER BNSF IS 24.0' FROM TOP OF RAIL
3. MINIMUM VERTICAL CLEARANCE UNDER STRUCTURE IS 16.5' FROM ROAD SURFACE



PROFILE
"MCA" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	35	6	7	8	9	40	TOTAL
CY Exc																														
CY Emb																														

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
MCCOMBS AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2900
SCALE AS SHOWN
SHEET NO. 17 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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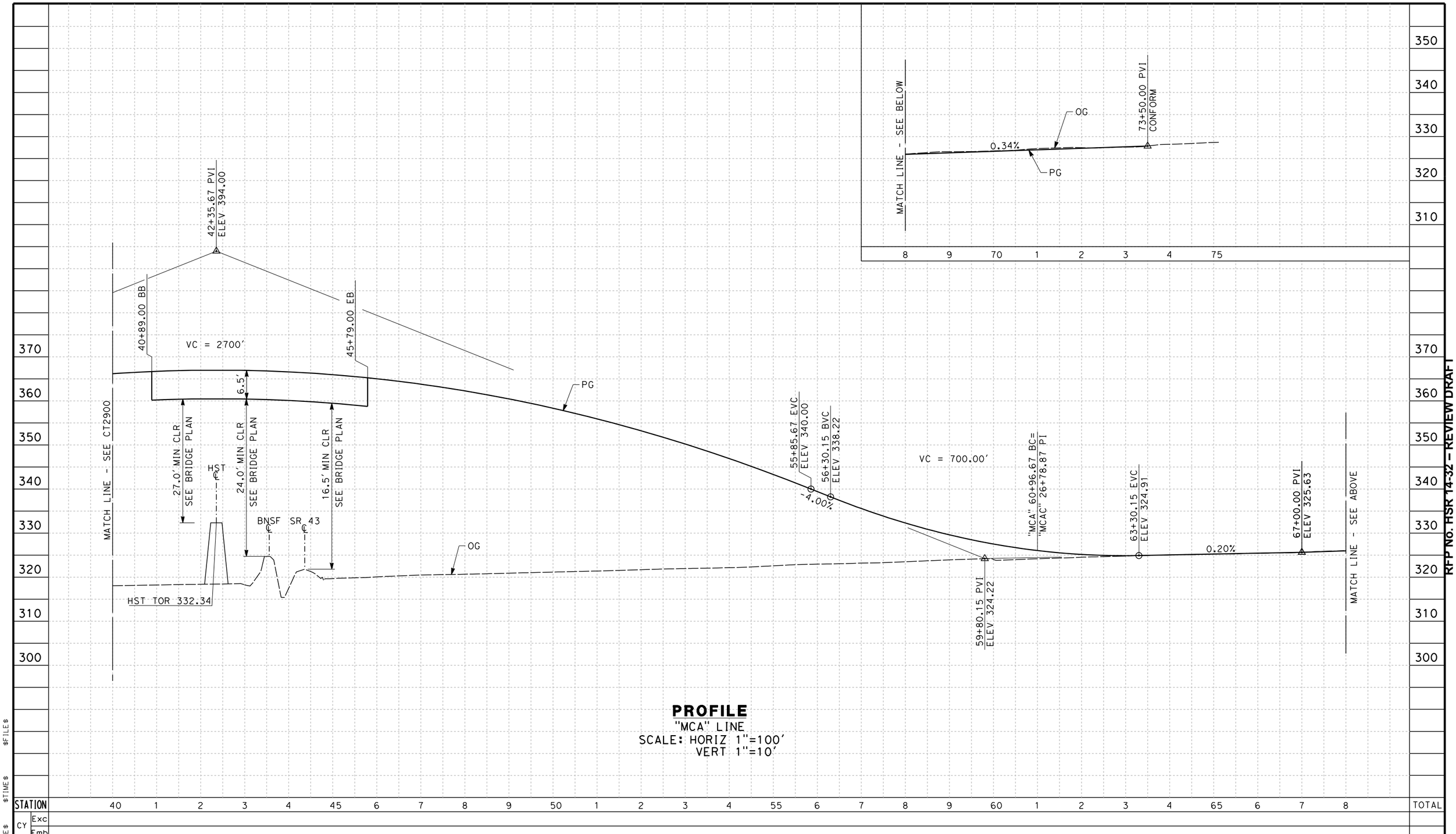
eron.sudhausen



PROFILE

"MCA" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

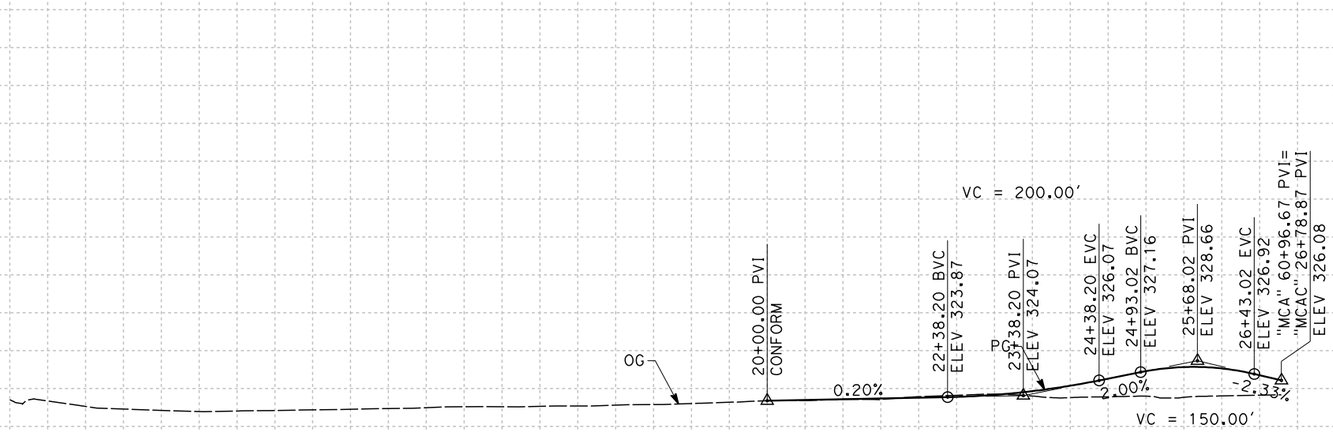
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
MCCOMBS AVE

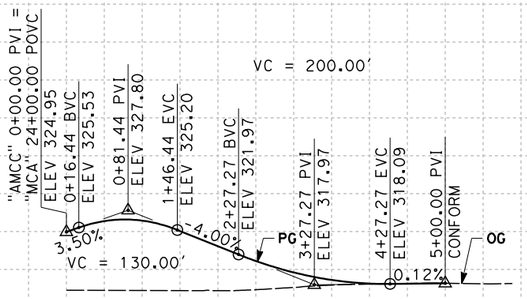
CONTRACT NO. HSR 06-003
DRAWING NO. CT2901
SCALE AS SHOWN
SHEET NO. 18 OF 67

RFP No. HSR 14-32 – REVIEW DRAFT

$FILE$ $TIME$ $DATE$ $USER$



PROFILE
"MCAC" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'



PROFILE
"AMCC" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	0	1	2	3	4	5	6	7	TOTAL
CY Exc																											
CY Emb																											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

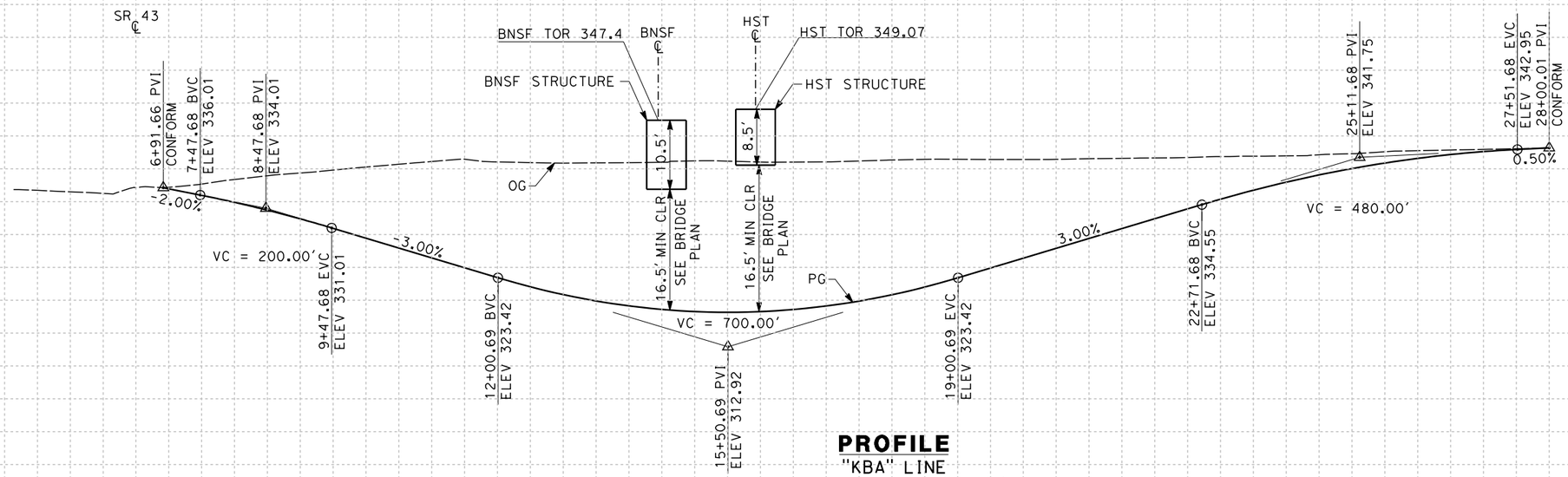
CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
ANNIN CONNECTOR AND MCCOMBS CONNECTOR

CONTRACT NO. HSR 06-003
DRAWING NO. CT2902
SCALE AS SHOWN
SHEET NO. 19 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

$FILE$ $TIME$ $DATE$ $USER$

NOTES:
1. MINIMUM VERTICAL CLEARANCE BELOW HST AND BNSF STRUCTURE IS 16.5' FROM ROAD SURFACE



PROFILE
"KBA" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	6	7	8	9	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	TOTAL
CY Exc																								
CY Emb																								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
KIMBERLINA RD

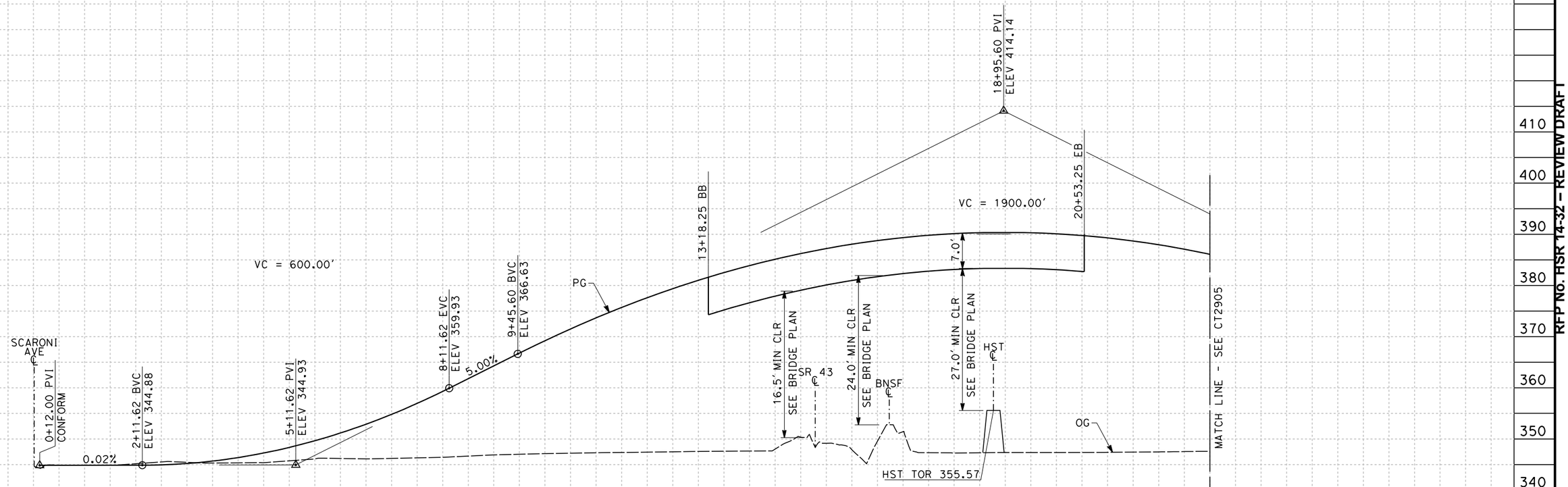
CONTRACT NO. HSR 06-003
DRAWING NO. CT2903
SCALE AS SHOWN
SHEET NO. 20 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

$FILE$ $TIME$ $DATE$ $USER$

NOTES:

1. MINIMUM VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL
2. MINIMUM VERTICAL CLEARANCE OVER BNSF IS 24.0' FROM TOP OF RAIL
3. MINIMUM VERTICAL CLEARANCE UNDER STRUCTURE IS 16.5' FROM ROAD SURFACE



PROFILE
"MER" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	15	6	7	8	9	20	1	2	3	TOTAL
CY Exc																									
CY Emb																									

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
MERCED AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2904
SCALE AS SHOWN
SHEET NO. 21 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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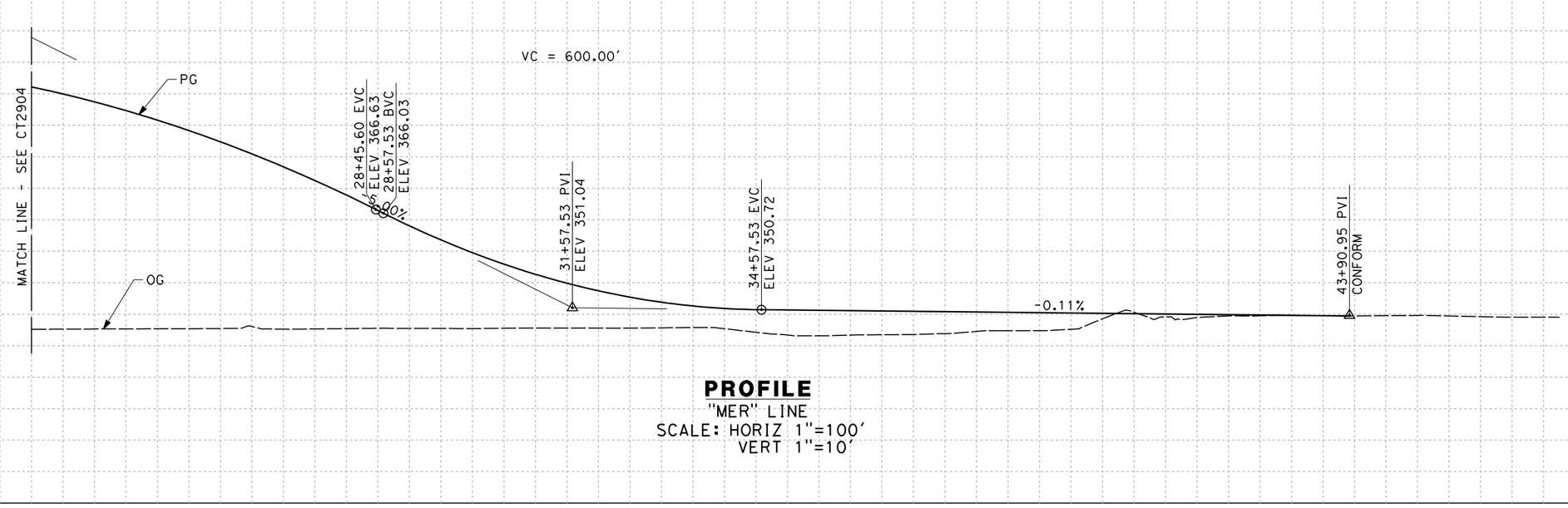

PROFILE
"MER" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	3	4	25	6	7	8	9	30	1	2	3	4	35	6	7	8	9	40	1	2	3	4	45	6	7	8	TOTAL
CY Exc																											
CY Emb																											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
MERCED AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2905
SCALE AS SHOWN
SHEET NO. 22 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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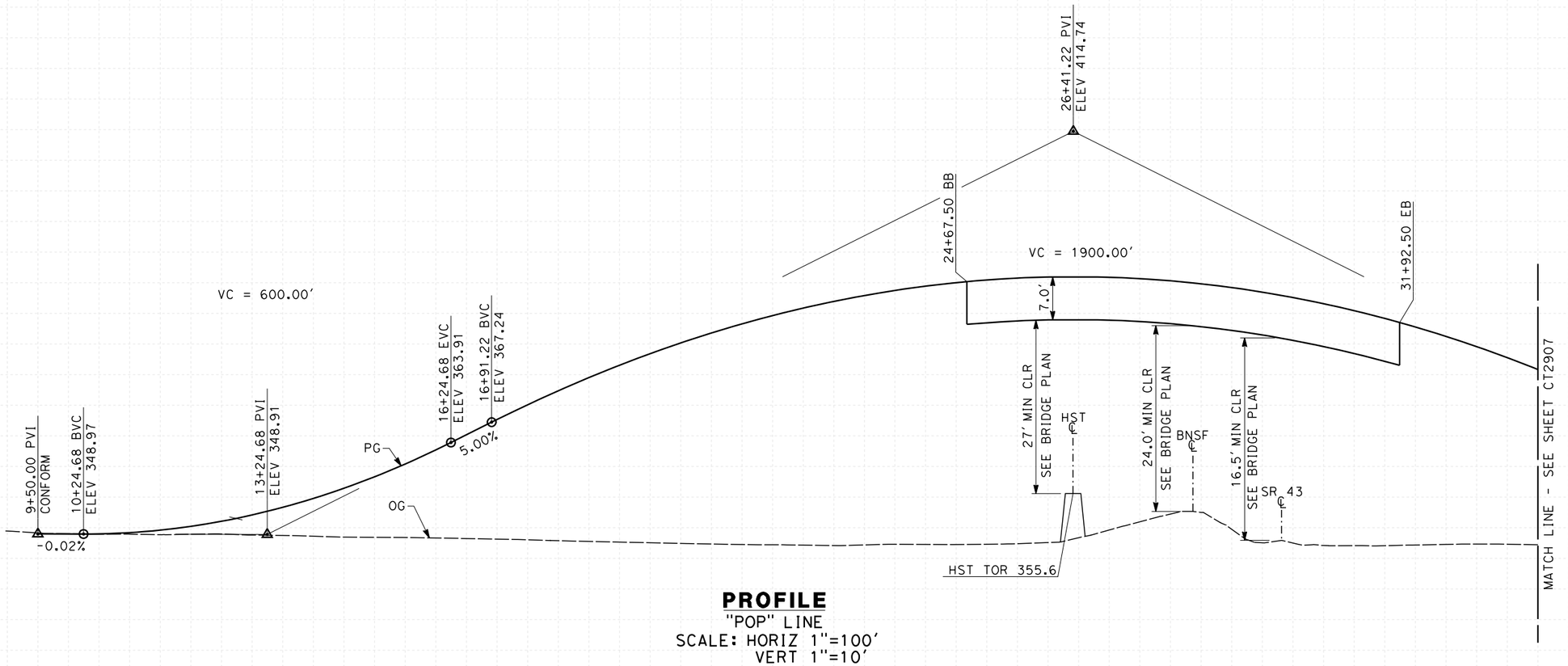
NOTES:

1. MINIMUM VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL
2. MINIMUM VERTICAL CLEARANCE OVER BNSF IS 24.0' FROM TOP OF RAIL
3. MINIMUM VERTICAL CLEARANCE UNDER STRUCTURE IS 16.5' FROM ROAD SURFACE



PROFILE
"POP" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	9	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	TOTAL
CY Exc																											
CY Emb																											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
POPLAR AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2906
SCALE AS SHOWN
SHEET NO. 23 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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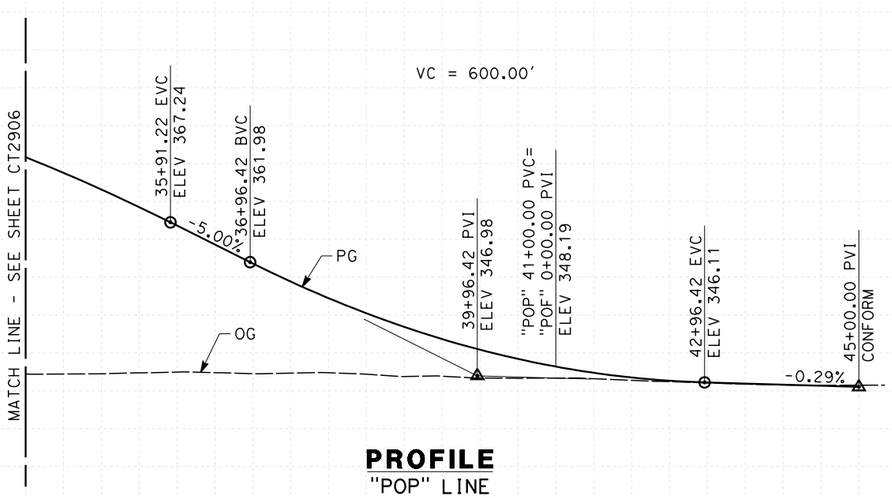
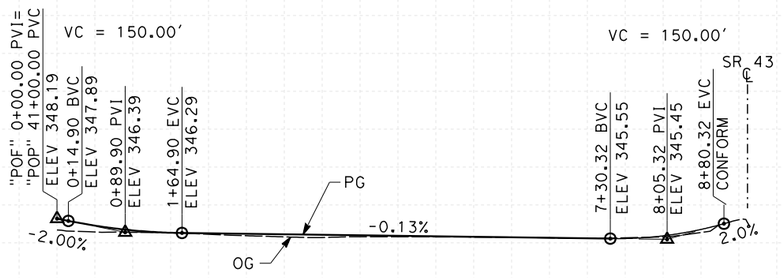


PROFILE
"POP" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'



PROFILE
"POF" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	4	35	6	7	8	9	40	1	2	3	4	45	0	1	2	3	4	5	6	7	8	9	TOTAL
CY Exc																							
CY Emb																							

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
POPLAR AVE AND POPLAR CONNECTOR

CONTRACT NO. HSR 06-003
DRAWING NO. CT2907
SCALE AS SHOWN
SHEET NO. 24 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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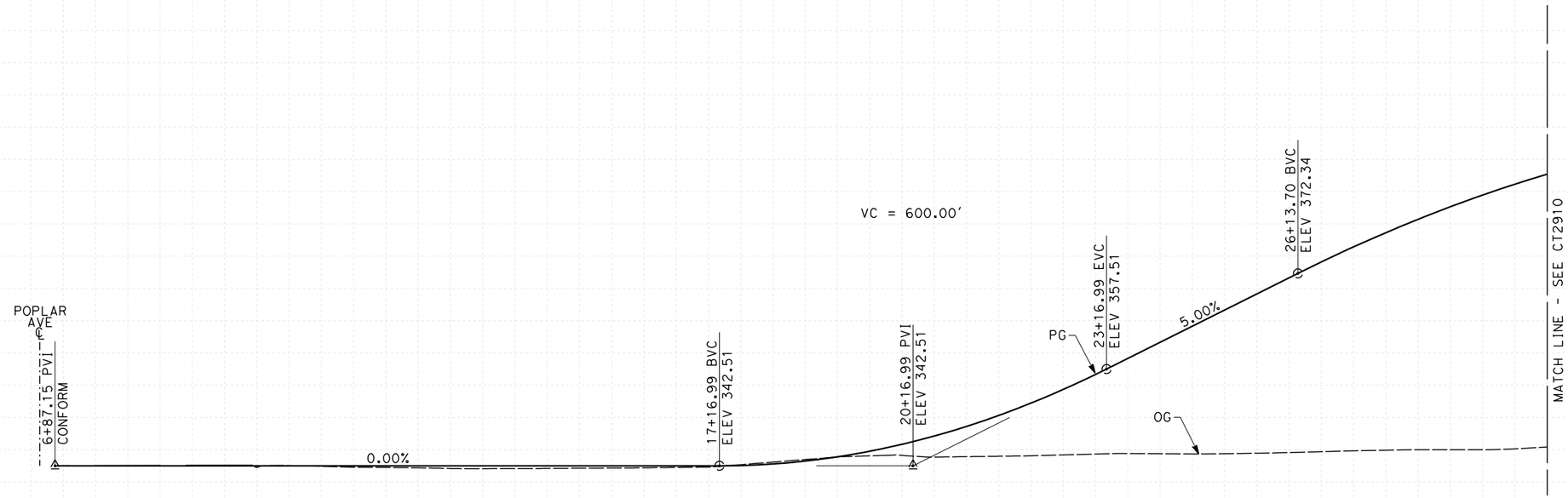
CL160413

NOTES:

1. MINIMUM VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL
2. MINIMUM VERTICAL CLEARANCE OVER BNSF IS 24.0' FROM TOP OF RAIL
3. MINIMUM VERTICAL CLEARANCE UNDER STRUCTURE IS 16.5' FROM ROAD SURFACE



PROFILE
"FRES" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION		6	7	8	9	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	TOTAL
CY	Exc																										
	Emb																										

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

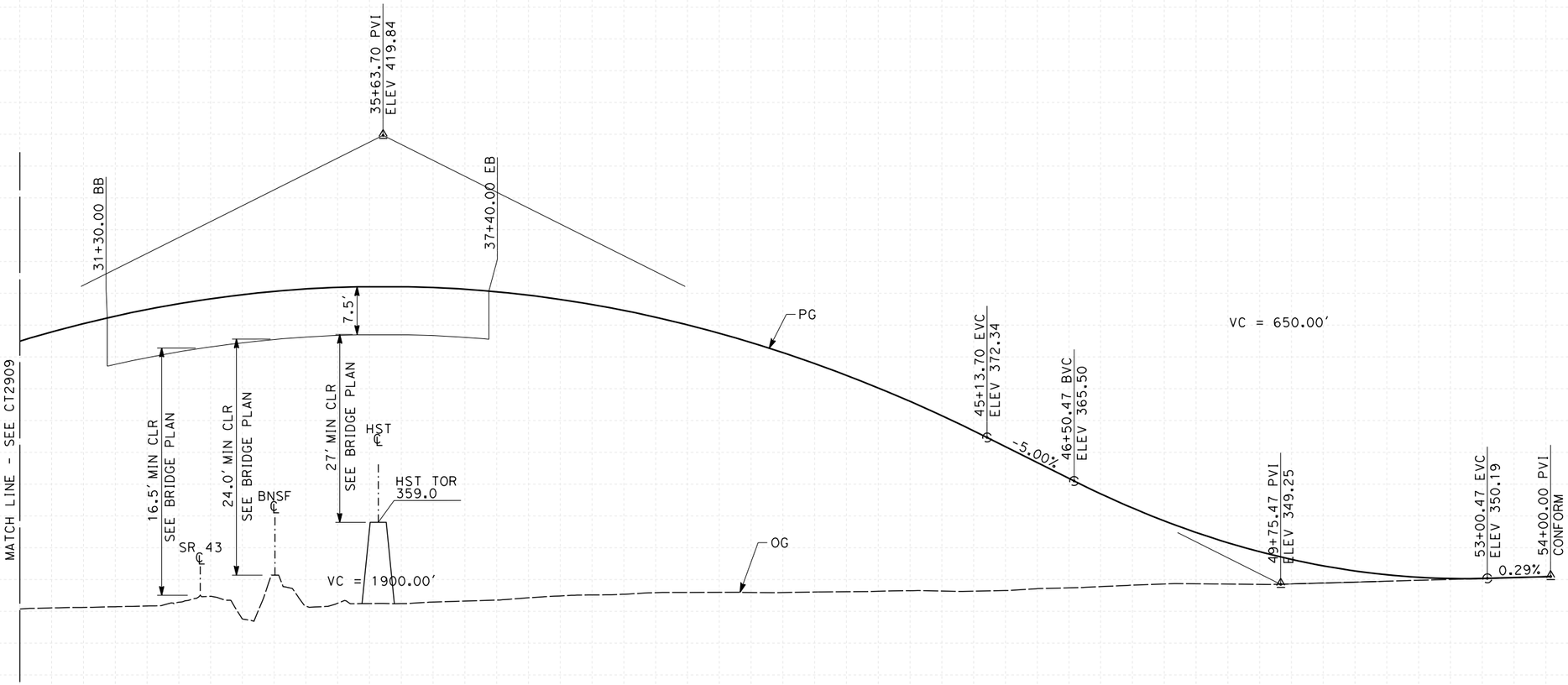
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
FRESNO AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2909
SCALE AS SHOWN
SHEET NO. 25 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

9/23/2014 5:32:11 PM c:\pwworking\hmm\external\cli60413\d0243050\FB-CT-2909-WS1.dgn
CLI60413



PROFILE
"FRES" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	30	1	2	3	4	35	6	7	8	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	TOTAL
CY Exc																											
CY Emb																											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
FRESNO AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2910
SCALE AS SHOWN
SHEET NO. 26 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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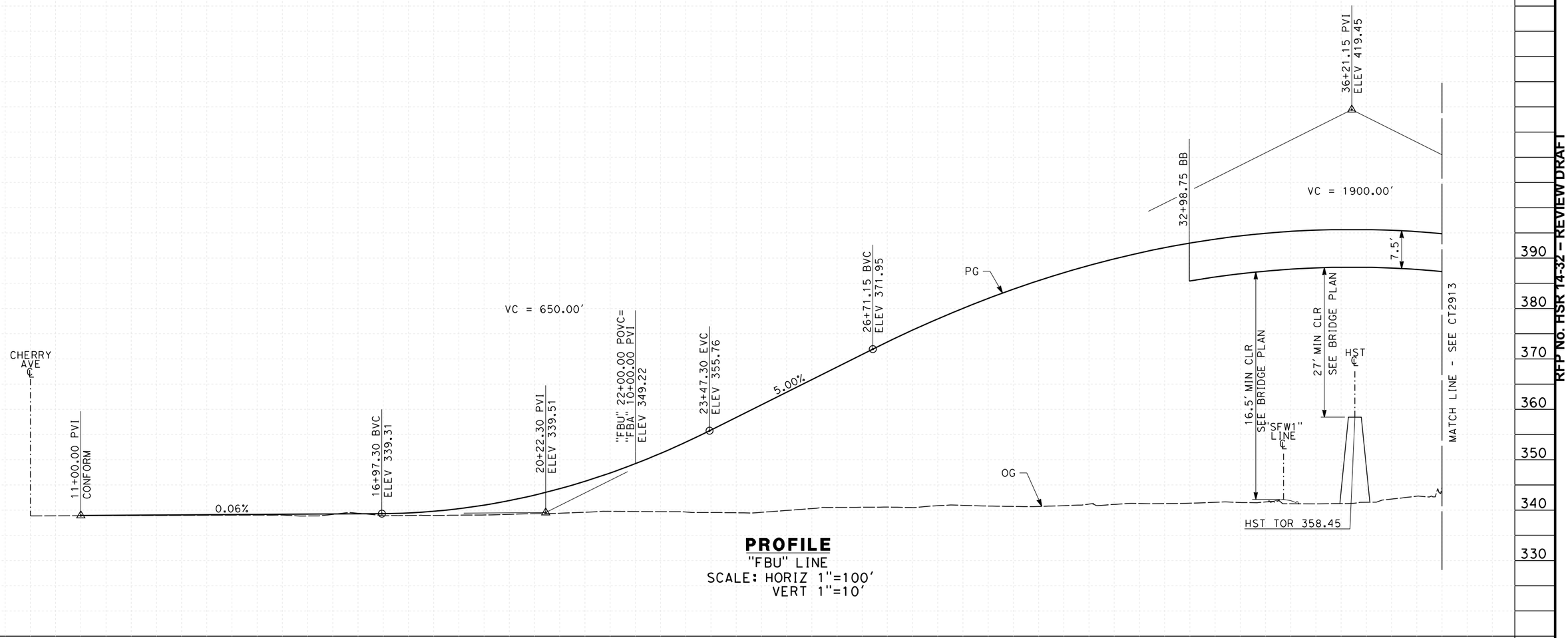
CLI60413

NOTES:

1. MINIMUM VERTICAL CLEARANCE OVER HST IS 27' FROM TOP OF RAIL
2. MINIMUM VERTICAL CLEARANCE OVER BNSF IS 24' FROM TOP OF RAIL
3. MINIMUM VERTICAL CLEARANCE UNDER STRUCTURE IS 16.5' FROM ROAD SURFACE



PROFILE

"FBU" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	35	6	7	8	TOTAL
CY Exc																														
CY Emb																														

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

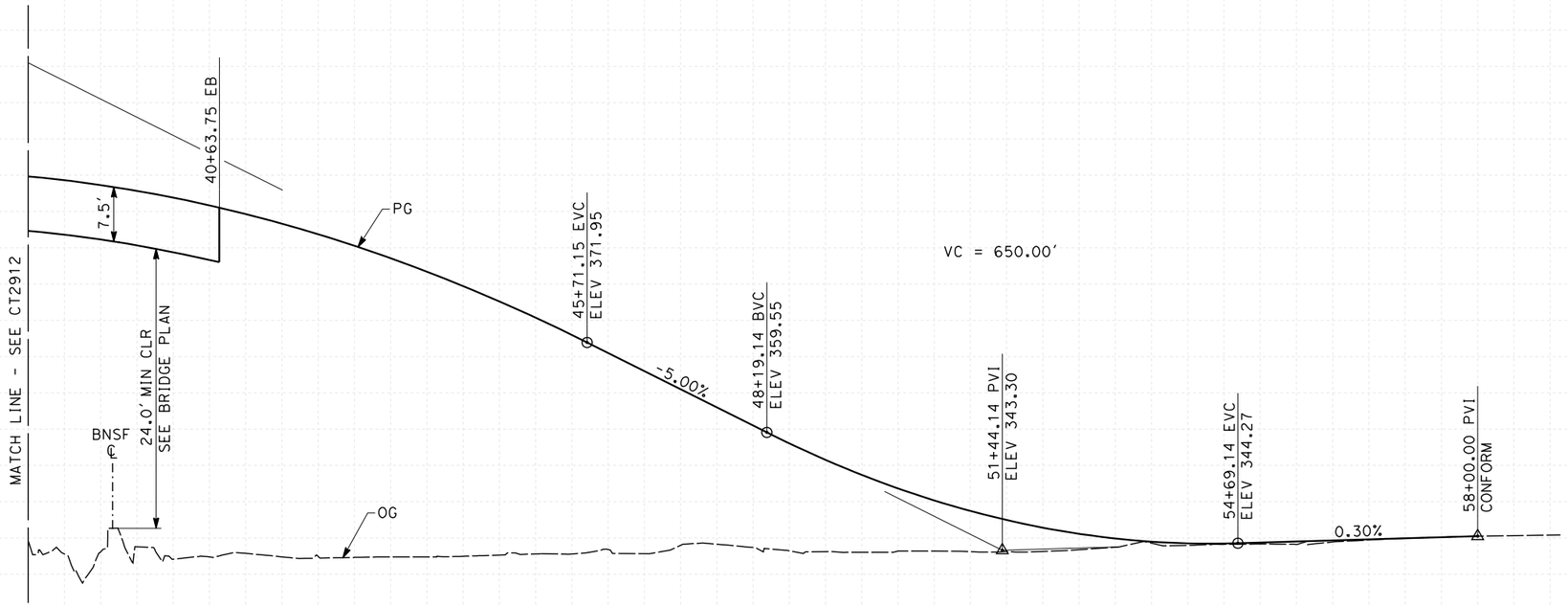
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
BURBANK ST & CHERRY AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CT2912
SCALE AS SHOWN
SHEET NO. 27 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

9/23/2014 5:34:46 PM c:\pwworking\hmm\external\cli60413\d0243050\FB-CT-2912-WS1.dgn
CLI60413



PROFILE

"FBU" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	8	9	40	1	2	3	4	45	6	7	8	9	50	1	2	3	4	55	6	7	8	9	60	TOTAL
CY Exc																								
CY Emb																								

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
BURBANK ST

CONTRACT NO. HSR 06-003
DRAWING NO. CT2913
SCALE AS SHOWN
SHEET NO. 28 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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CLI60413

RFP NO. HSR 14-32 – REVIEW DRAFT

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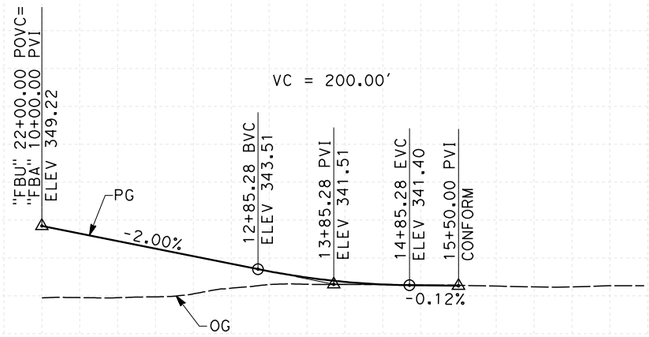
390
380
370
360
350
340
330



PROFILE

"FBA" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION		10	1	2	3	4	15	TOTAL
CY	Exc							
	Emb							

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
GRADE SEPARATION PROFILE
BURBANK CONNECTOR

CONTRACT NO. HSR 06-003
DRAWING NO. CT2914
SCALE AS SHOWN
SHEET NO. 29 OF 67

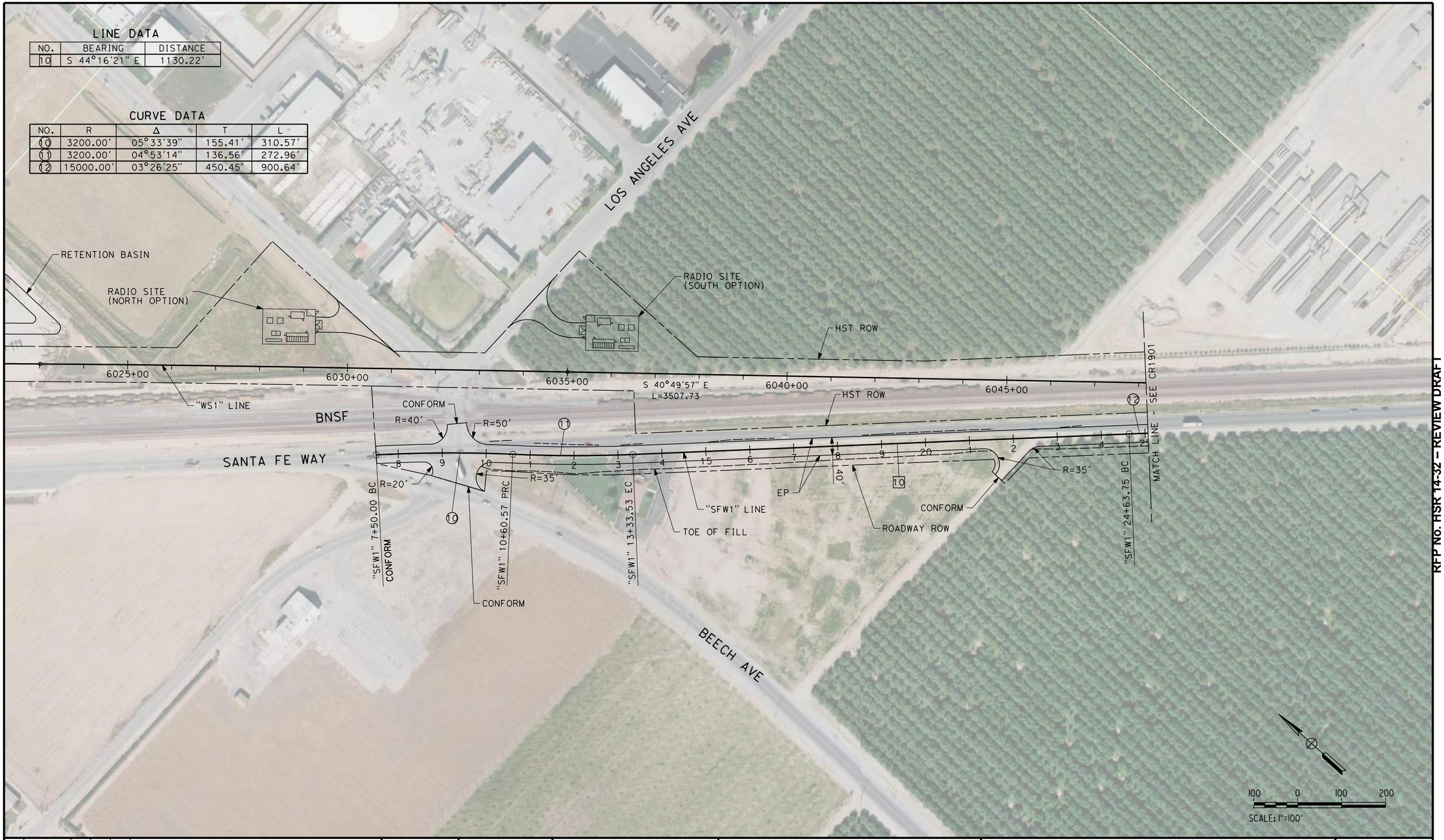
CLI60413

LINE DATA

NO.	BEARING	DISTANCE
10	S 44°16'21" E	1130.22'

CURVE DATA

NO.	R	Δ	T	L
10	3200.00'	05°33'39"	155.41'	310.57'
11	3200.00'	04°53'14"	136.56'	272.96'
12	15000.00'	03°26'25"	450.45'	900.64'



RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CR1900
SCALE AS SHOWN
SHEET NO. 35 OF 67

$FILE$ $TIME$ $DATE$ $USER$

LINE DATA

NO.	BEARING	DISTANCE
11	S 40°49'57" E	3066.61'

CURVE DATA

NO.	R	Δ	T	L
12	15000.00'	03°26'25"	450.45'	900.64'

RFP No. HSR 14-32 – REVIEW DRAFT

$FILE$
$TIME$
$DATE$
$USER$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

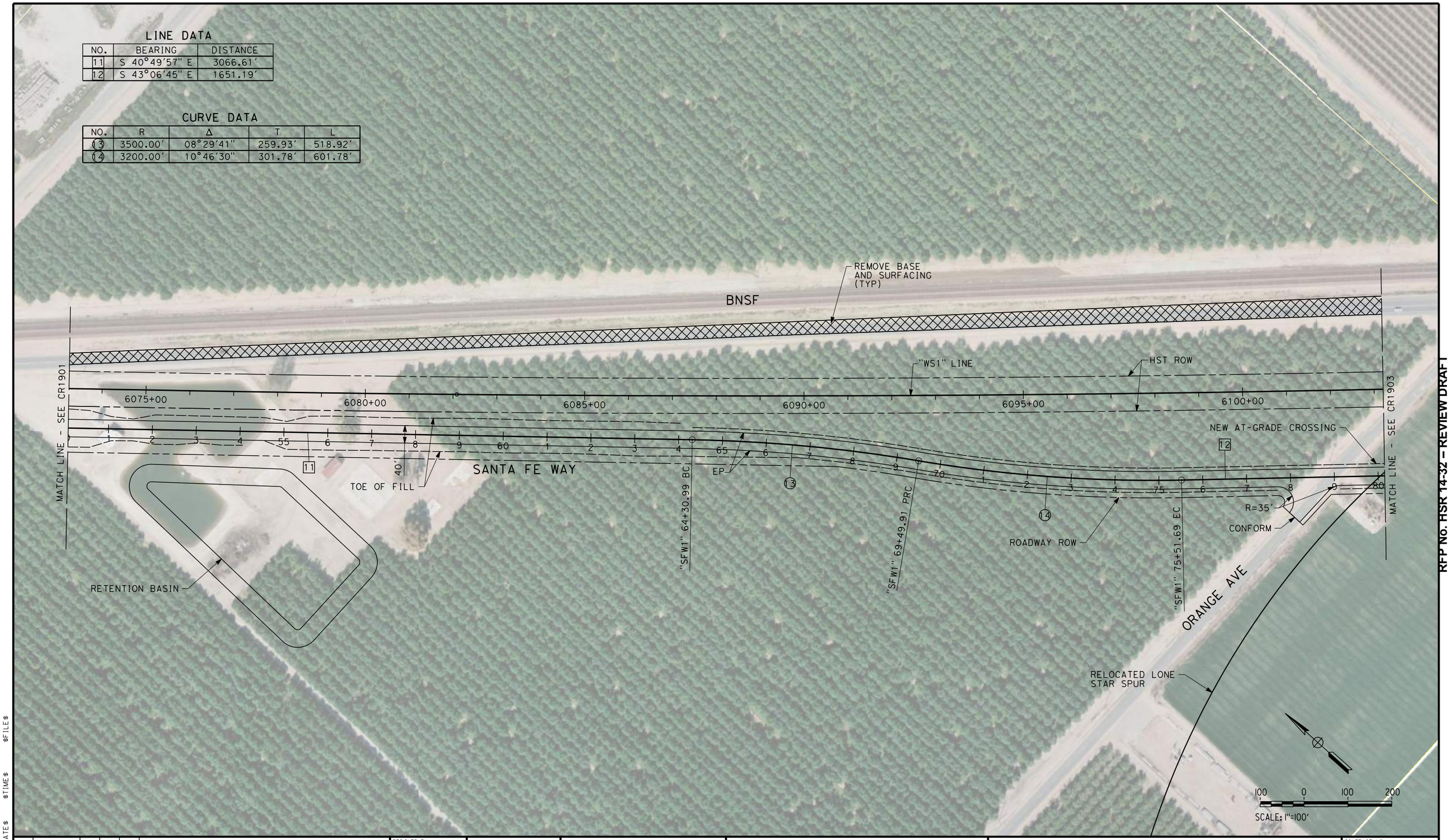
CONTRACT NO. HSR 06-0003
DRAWING NO. CR1901
SCALE AS SHOWN
SHEET NO. 36 OF 67

LINE DATA

NO.	BEARING	DISTANCE
11	S 40°49'57" E	3066.61'
12	S 43°06'45" E	1651.19'

CURVE DATA

NO.	R	Δ	T	L
13	3500.00'	08°29'41"	259.93'	518.92'
14	3200.00'	10°46'30"	301.78'	601.78'



RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CR1902
SCALE AS SHOWN
SHEET NO. 37 OF 67

$FILE$ $TIME$ $DATE$ $USER$

LINE DATA

NO.	BEARING	DISTANCE
12	S 43°06'45" E	1651.19'
13	S 46°16'12" E	1037.51'
20	S 01°19'43" W	2000.00'

CURVE DATA

NO.	R	Δ	T	L
15	3200.00'	11°24'34"	319.67'	637.22'
16	3500.00'	08°15'07"	252.48'	504.08'

"CHY" 0+00.00 PT

CHERRY AVE

"CHY" LINE

"CHY" 7+50.00 CONFORM

NEW AT-GRADE RR CROSSING

RELOCATED LONE STAR SPUR

REMOVE BASE AND SURFACING (TYP)

BNSF

"WS1" 6109+75.00 POC= "CHY" 10+31.04 POT

HST ROW

"WS1" LINE

6105+00

6110+00

6115+00

6120+00

6125+00

6130+00

MATCH LINE - SEE CR1902

ROADWAY ROW

R=35'

R=50'

SANTA FE WAY

EP

"SFW1" LINE

NEW AT-GRADE RR CROSSING

"SFW1" 88+74.32 POT= "CHY" 13+17.24 POT

TOE OF FILL

"SFW1" 92+02.88 BC

"CHY" 17+50.00 CONFORM

"SFW1" 98+40.10 PRC

ROADWAY ROW

"SFW1" 103+44.18 EC

TOE OF FILL

MATCH LINE - SEE CR1904

"CHY" 20+00.00 PI

CHERRY AVE

100 0 100 200

SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CR1903
SCALE AS SHOWN
SHEET NO. 38 OF 67

$FILE$ $TIME$ $DATE$ $USER$

LINE DATA

NO.	BEARING	DISTANCE
13	S 46°16'12" E	1037.51'
14	S 20°29'05" E	257.03'

CURVE DATA

NO.	R	Δ	T	L
17	20000.00'	02°55' 35"	510.84'	1021.46'
18	2000.00'	22°51'53"	404.34'	797.93'
19	3200.00'	23°45'20"	673.05'	1326.76'

OLEANDER ST
1ST ST
ROADWAY ROW
SEE SHEETS CT1912 & CT1913 FOR BURBANK ST
REMOVE EXIST AT-GRADE CROSSING
CONFORM
REMOVE BASE AND SURFACING
BNSF
"FBU" LINE
ROADWAY ROW
REMOVE BASE & SURFACING
"WS1" LINE
6160+00
6155+00
6150+00
6145+00
6140+00
6135+00
"SFW1" 113+81.69 BC
HST ROW
"SFW1" 124+03.14 BCC
"SFW1" LINE
SANTA FE WAY
EP
"FBU" 36+12.95 POT=
"WS1" 6145+39.29 POT
R=50'
CONFORM
ROADWAY ROW
"FBU" 34+85.38 POT=
"SFW1" 121+67.38 POT
"FBU" 31+85.62 EC
"SFW1" 132+01.07 EC
"SFW1" 134+58.10 BC
TOE OF FILL
EXIST LONE STAR SPUR TO BE RELOCATED
ROADWAY ROW
MATCH LINE - SEE CR1903
MATCH LINE - SEE CR1905
BURBANK CONNECTOR
BURBANK ST
HST ROW

100 0 100 200
SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CR1904
SCALE AS SHOWN
SHEET NO. 39 OF 67

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BAR59603

BNSF

REMOVE BASE AND SURFACING

HST ROW

"WS1" LINE

6165+00 6170+00 6175+00 6180+00 6185+00 6190+0

HST ROW HST ROW HST ROW

MATCH LINE - SEE CR1904

MATCH LINE - SEE CR1906

TOE OF FILL EP 40' ROADWAY ROW

SANTA FE WAY

"SFW1" 147+84.86 EC

"SFW1" 160+15.46 BC

"SFW1" 169+28.12 EC

LINE DATA

NO.	BEARING	DISTANCE
15	S 44°14'25" E	1230.60'
16	S 61°22'26" E	1175.20'

CURVE DATA

NO.	R	Δ	T	L
19	3200.00'	23°45'20"	673.05'	1326.76'
20	3200.00'	17°08'01"	482.06'	956.92'

100 0 100 200

SCALE: 1"=100'

RFP No. HSR 14-32 – REVIEW DRAFT

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BAR59603

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

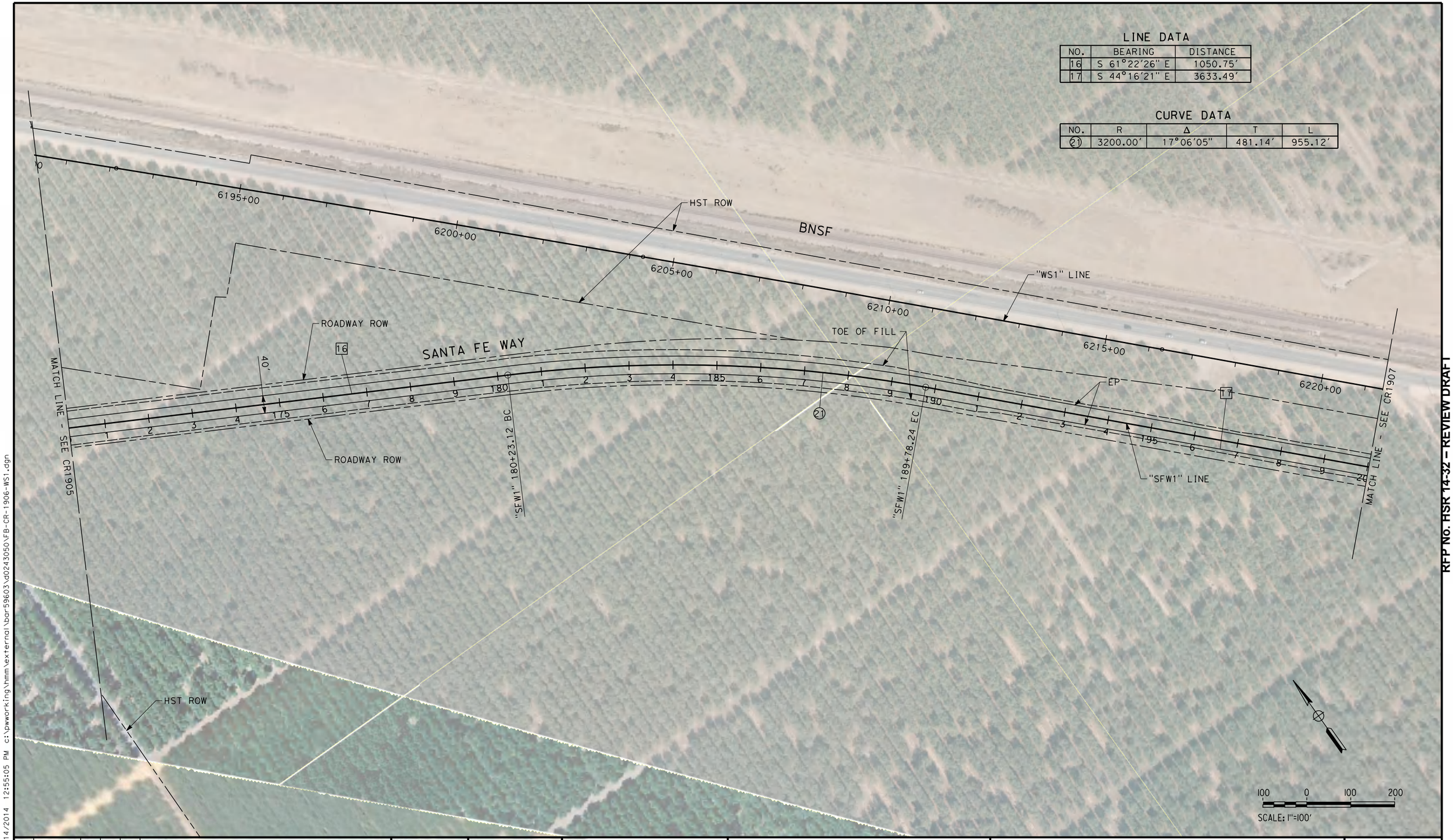
CONTRACT NO. HSR 06-0003
DRAWING NO. CR1905
SCALE AS SHOWN
SHEET NO. 40 OF 67

LINE DATA

NO.	BEARING	DISTANCE
16	S 61°22'26" E	1050.75'
17	S 44°16'21" E	3633.49'

CURVE DATA

NO.	R	Δ	T	L
21	3200.00'	17°06'05"	481.14'	955.12'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CR1906
SCALE AS SHOWN
SHEET NO. 41 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

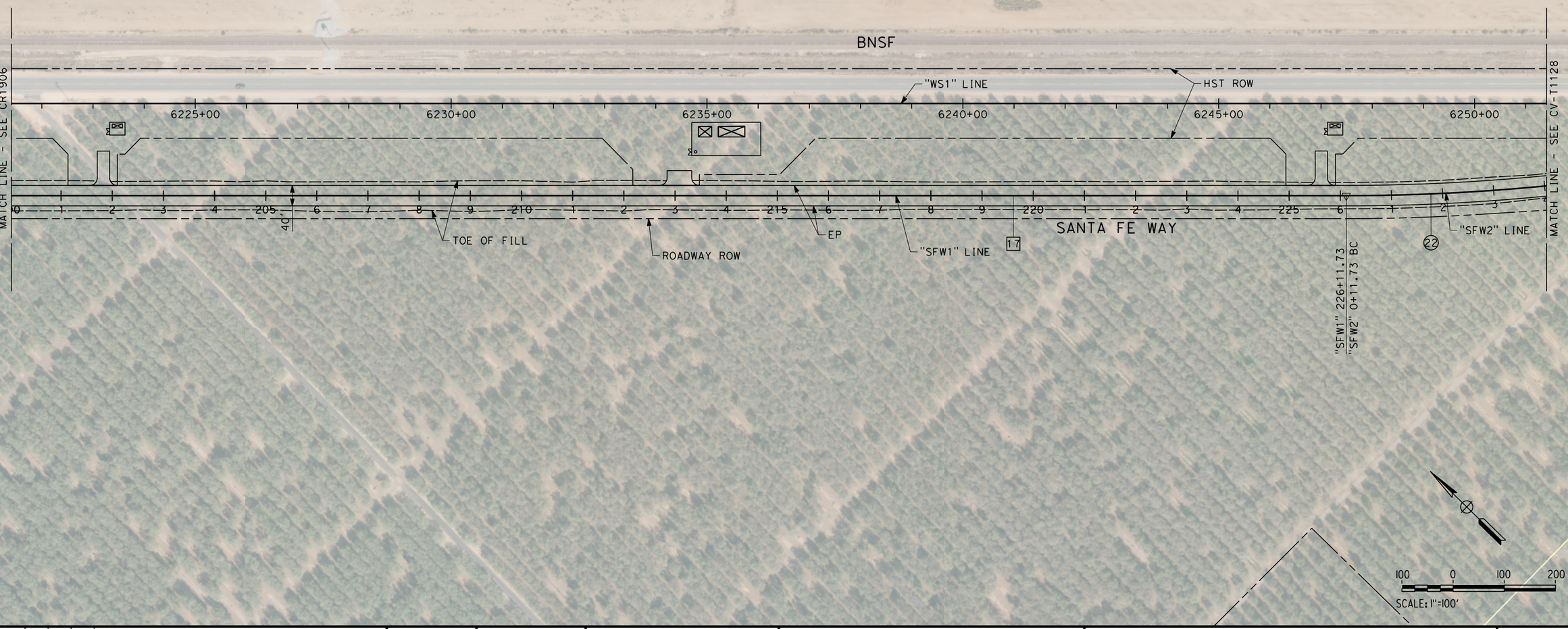
BAR59603 7/14/2014 12:55:05 PM c:\pwworking\hmm\external\bar59603\d0243050\FB-CR-1906-WS1.dgn

LINE DATA

NO.	BEARING	DISTANCE
17	S 44°16'21" E	3633.49'

CURVE DATA

NO.	R	Δ	T	L
22	4000.00'	10°14'31"	358.47'	715.02'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY T. CLIFFORD
DRAWN BY D. MORENO
CHECKED BY B. RAWSON
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1127
SCALE AS SHOWN
SHEET NO. 42 OF 67

RFP No. HSR 14-32 – REVIEW DRAFT

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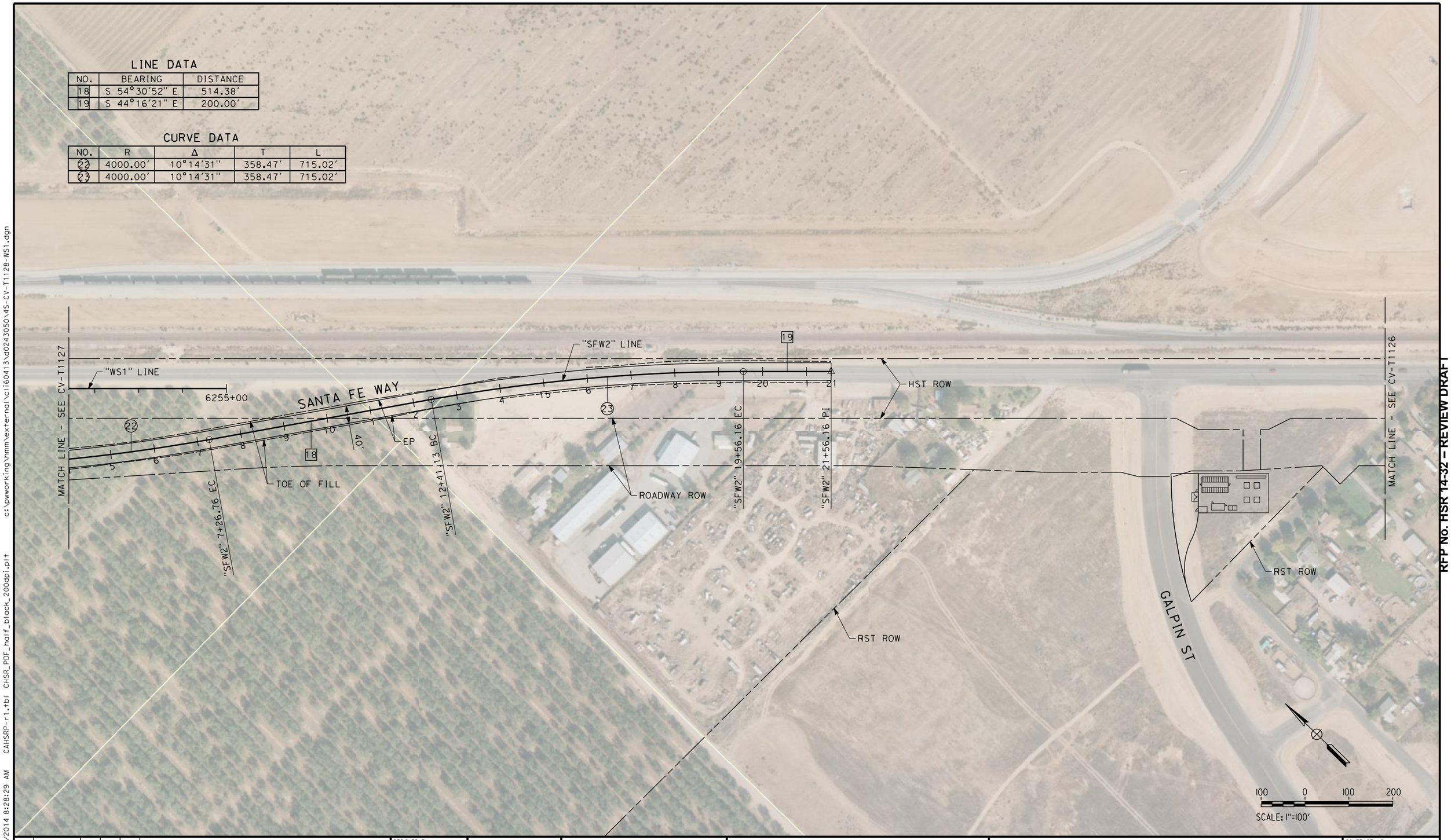
9/24/2014 11:19:11 AM CAHSRP-r1.tbl CHSR_PDF_half_black.plt
CLI60413

LINE DATA

NO.	BEARING	DISTANCE
18	S 54°30'52" E	514.38'
19	S 44°16'21" E	200.00'

CURVE DATA

NO.	R	Δ	T	L
22	4000.00'	10°14'31"	358.47'	715.02'
23	4000.00'	10°14'31"	358.47'	715.02'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY T. CLIFFORD
DRAWN BY D. MORENO
CHECKED BY B. RAWSON
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

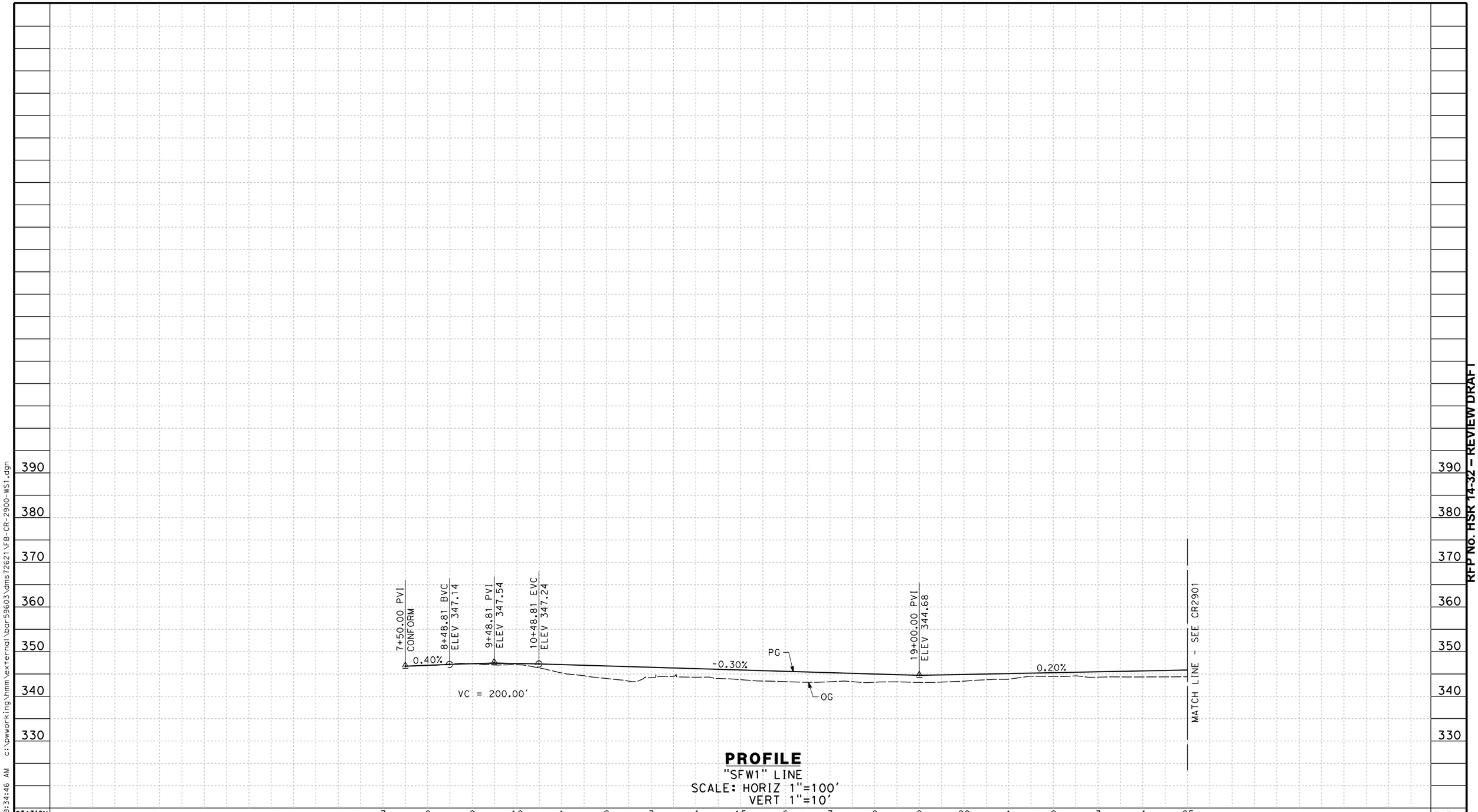
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY LAYOUT
SANTA FE WAY

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1128
SCALE AS SHOWN
SHEET NO. 43 OF 67

RFP No. HSR 14-32 – REVIEW DRAFT

c:\pwworking\hmm\external\cl160413\d0243050\4S-CV-T1128-WS1.dgn
9/19/2014 8:28:29 AM CAHSRP-r1.tbl CHSR_PDF_half_black_200dpi.plt
CL160413



PROFILE
"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	7	8	9	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	TOTAL
CY Exc																				
CY Emb																				

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CR2900
SCALE AS SHOWN
SHEET NO. 50 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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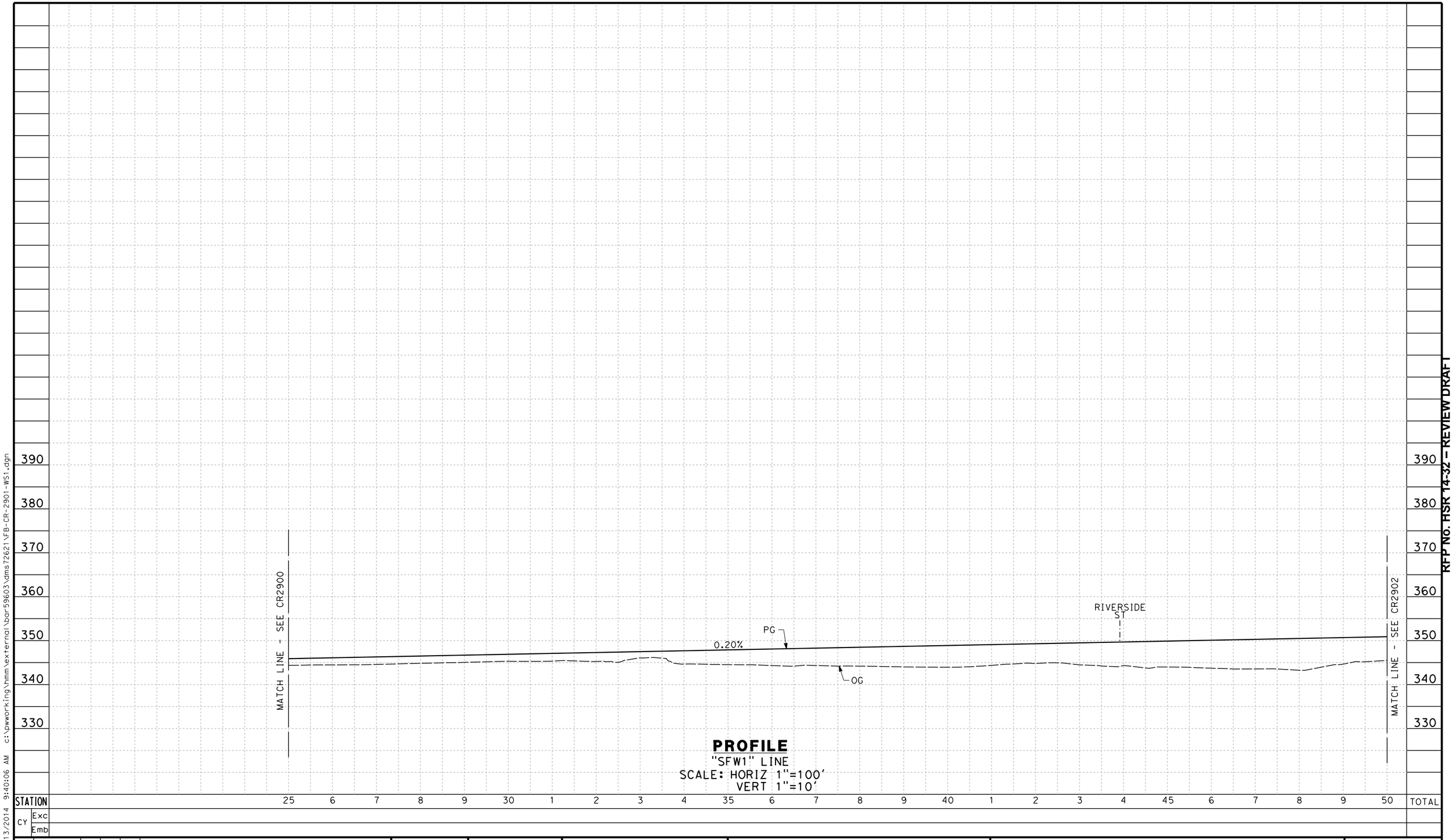
BAR59603

RFP NO. HSR 14-32 – REVIEW DRAFT



PROFILE
"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	25	6	7	8	9	30	1	2	3	4	35	6	7	8	9	40	1	2	3	4	45	6	7	8	9	50	TOTAL
CY Exc																											
CY Emb																											

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CR2901
SCALE AS SHOWN
SHEET NO. 51 OF 67

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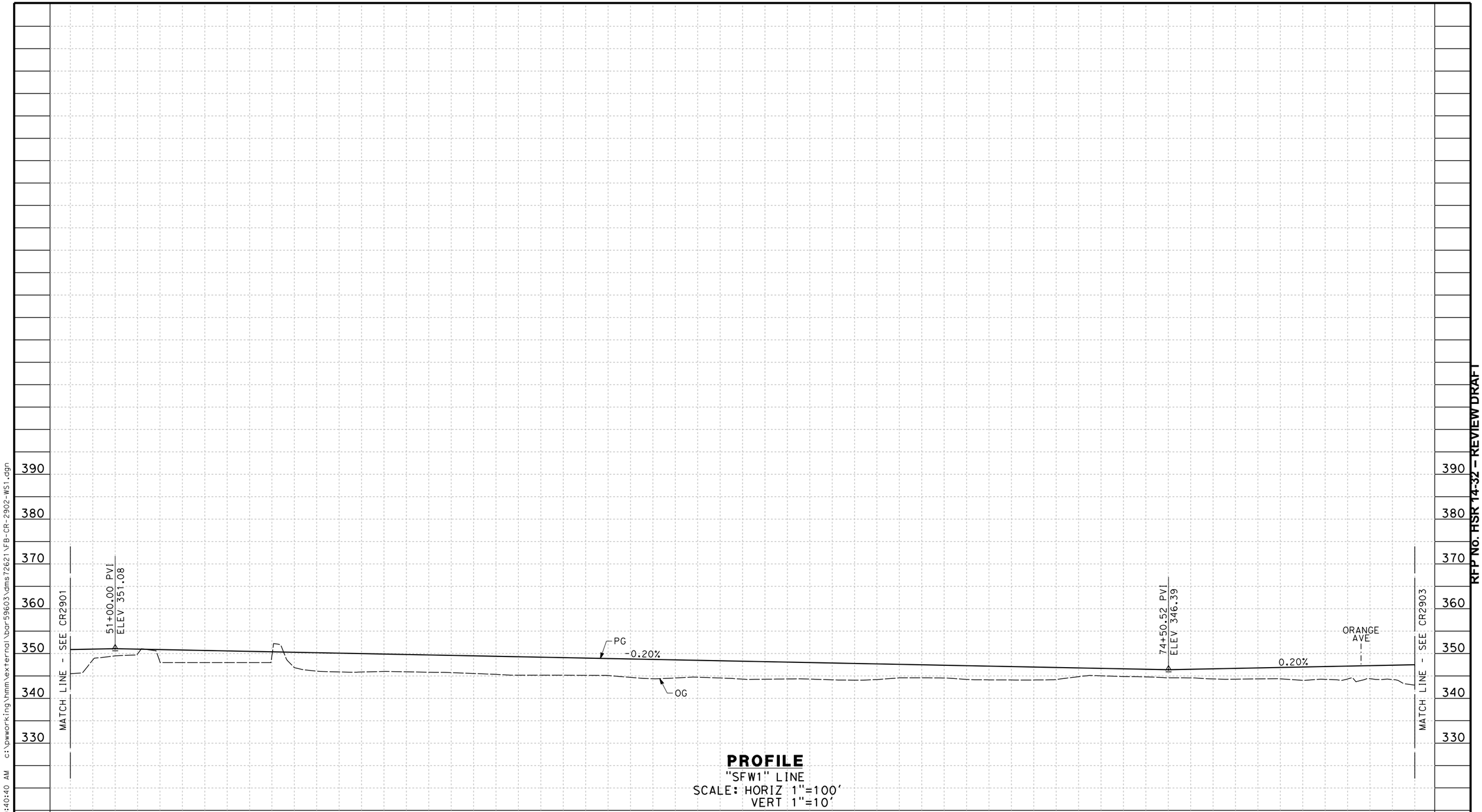
BAR59603



PROFILE

"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

RFP NO. HSR 14-32 – REVIEW DRAFT

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CR2902
SCALE AS SHOWN
SHEET NO. 52 OF 67

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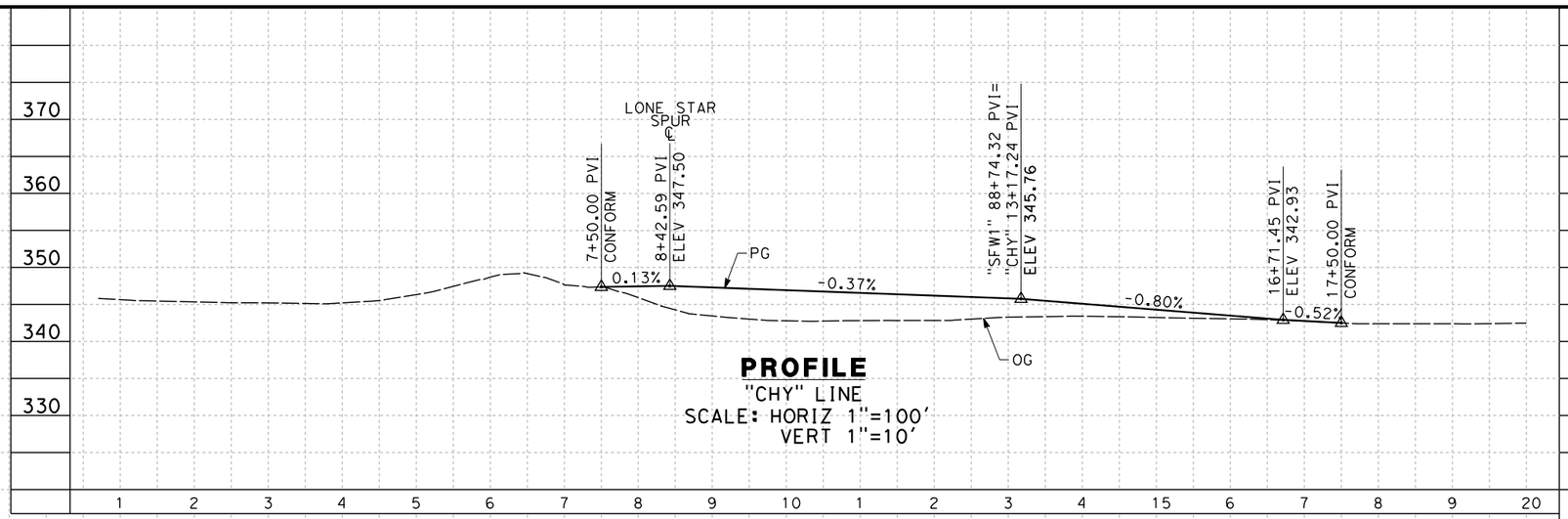
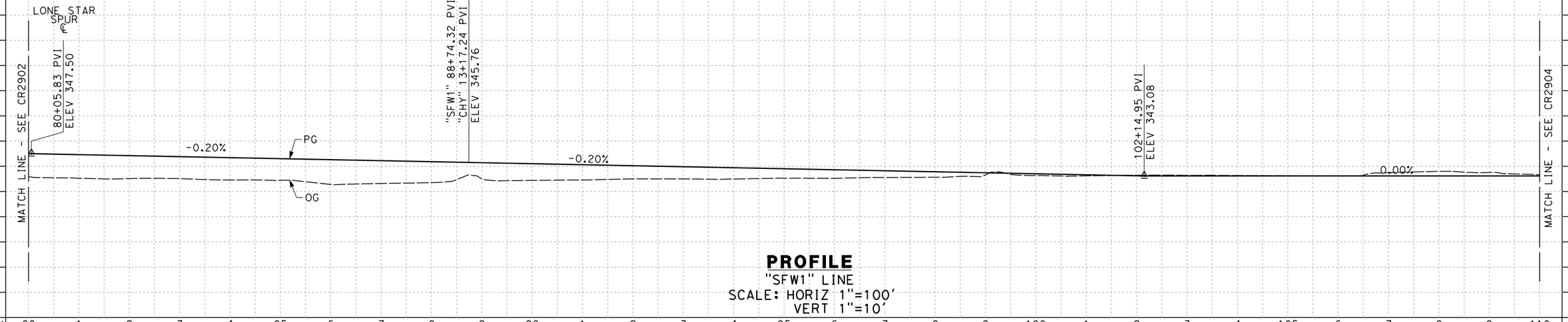


PROFILE
"CHY" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'



PROFILE
"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY S. BROWN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY & W CHERRY AVE

CONTRACT NO. HSR 06-003
DRAWING NO. CR2903
SCALE AS SHOWN
SHEET NO. 53 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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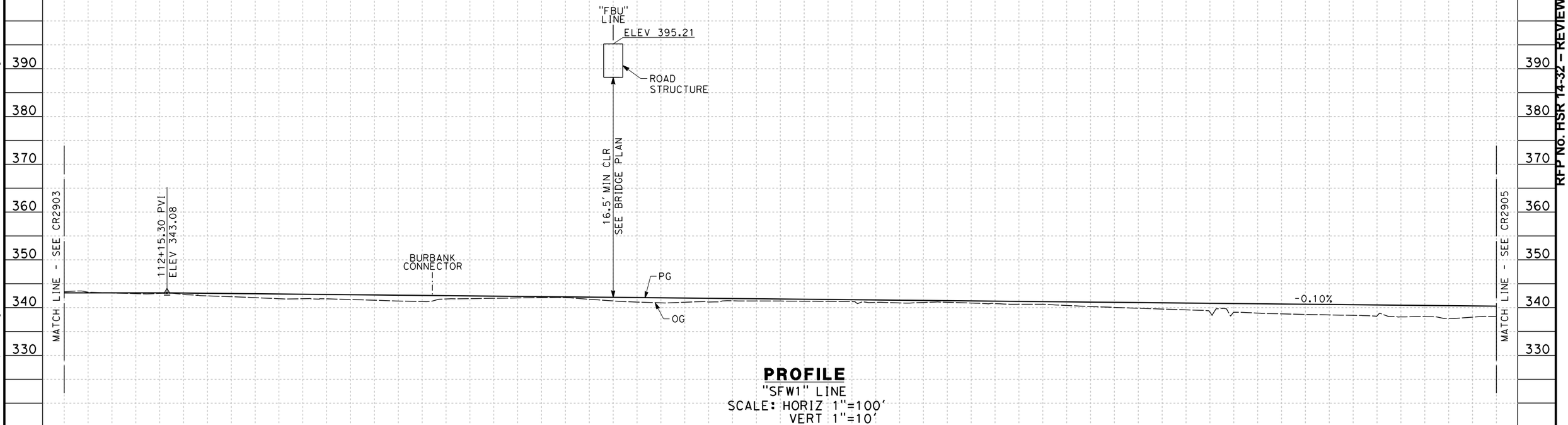
BAR59603



PROFILE
"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	110	1	2	3	4	115	6	7	8	9	120	1	2	3	4	125	6	7	8	9	130	1	2	3	4	135	6	7	8	9	140	TOTAL
CY Exc																																
CY Emb																																

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CR2904
SCALE AS SHOWN
SHEET NO. 54 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT

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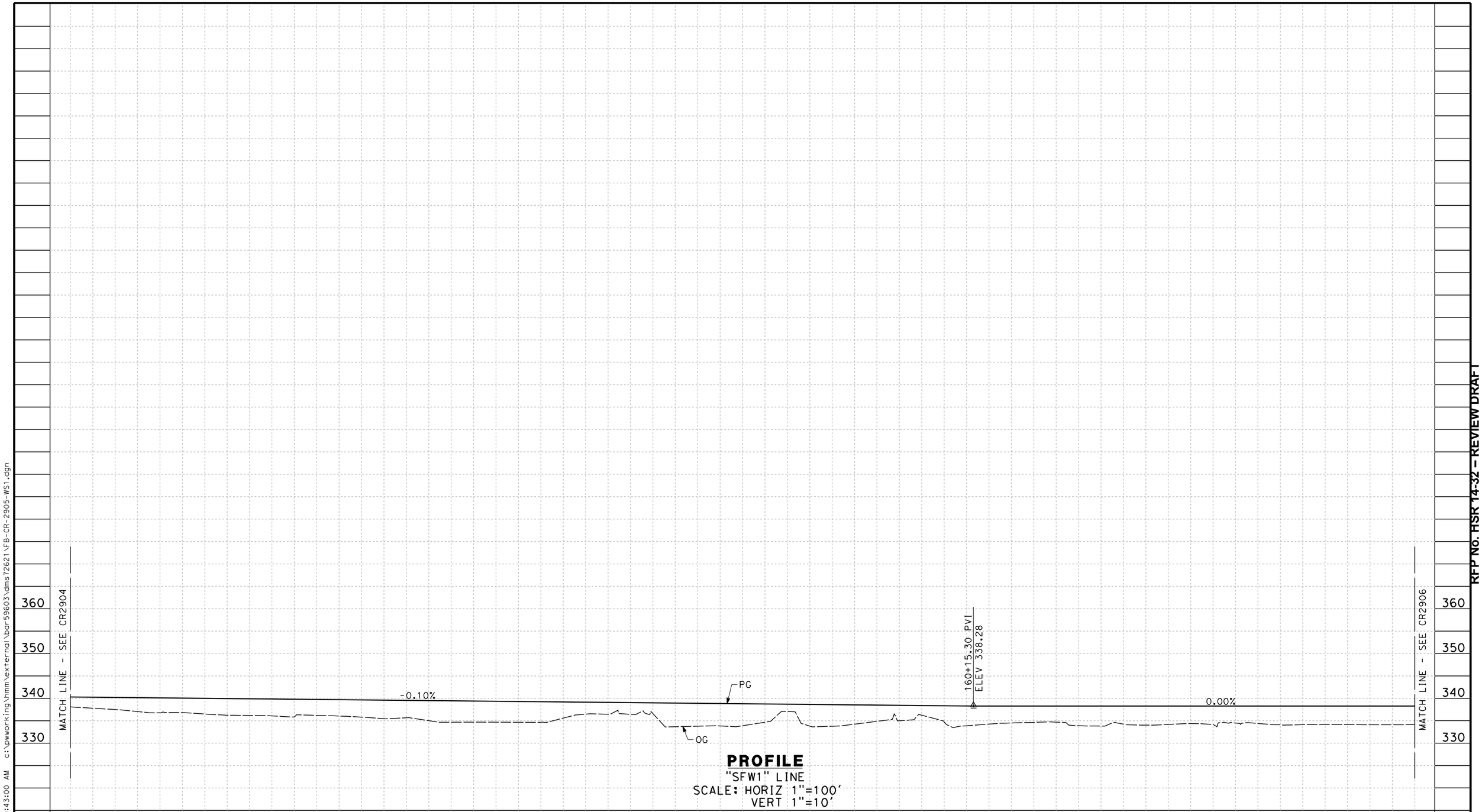
BAR59603



PROFILE
"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

RFP NO. HSR 14-32 – REVIEW DRAFT

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BAR59603

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

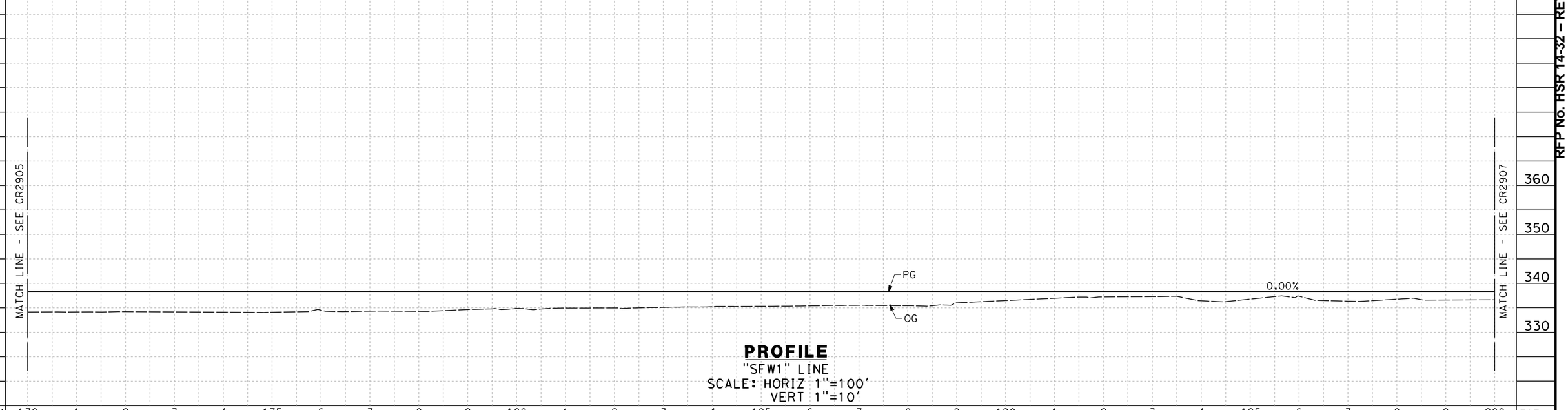
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CR2905
SCALE AS SHOWN
SHEET NO. 55 OF 67

RFP NO. HSR 14-32 – REVIEW DRAFT



PROFILE
"SFW1" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	170	1	2	3	4	175	6	7	8	9	180	1	2	3	4	185	6	7	8	9	190	1	2	3	4	195	6	7	8	9	200	TOTAL
CY Exc																																
CY Emb																																

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 05/23/14

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CR2906
SCALE AS SHOWN
SHEET NO. 56 OF 67

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BAR59603

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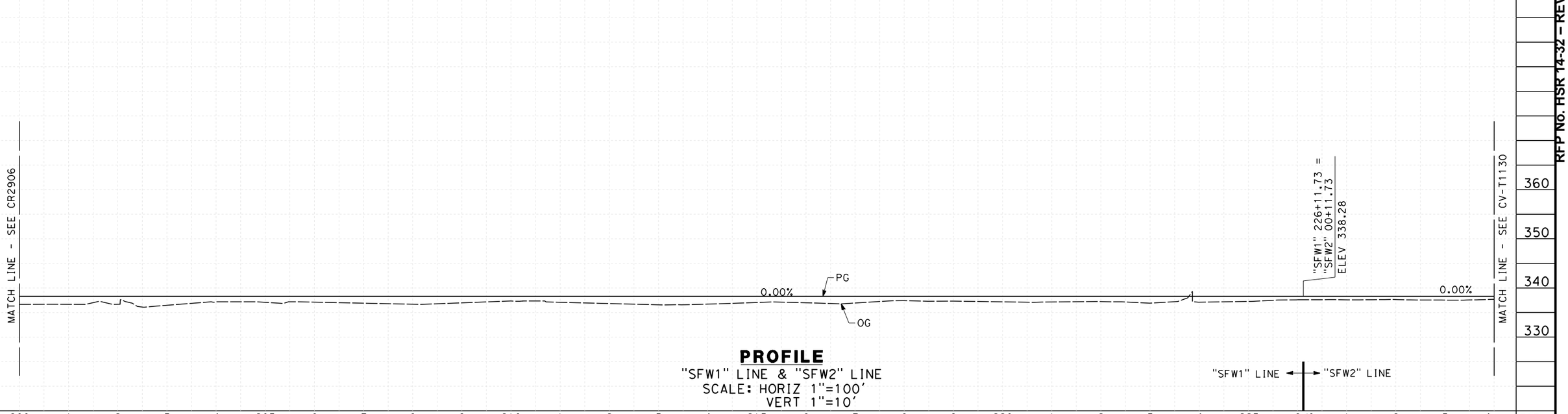
CLI60413



PROFILE

"SFW1" LINE & "SFW2" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY T. CLIFFORD
DRAWN BY D. MORENO
CHECKED BY B. RAWSON
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CV-T1129
SCALE AS SHOWN
SHEET NO. 57 OF 67

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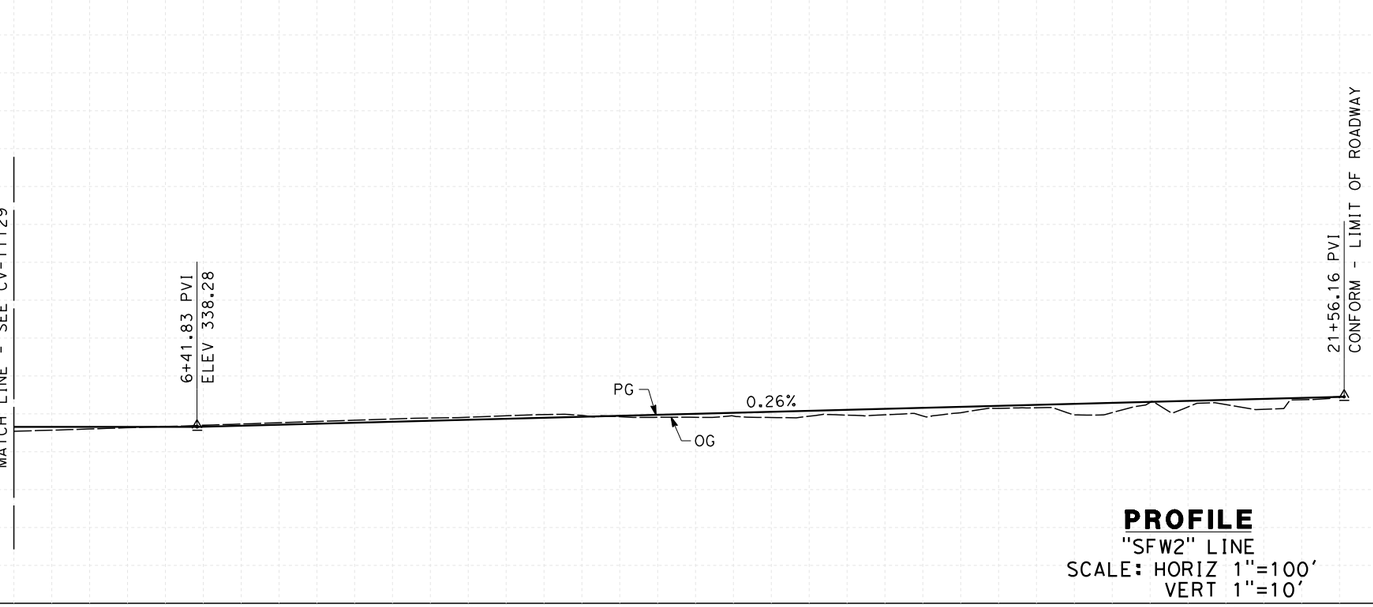


PROFILE

"SFW2" LINE
SCALE: HORIZ 1"=100'
VERT 1"=10'

STATION	4	5	6	7	8	9	10	1	2	3	4	15	6	7	8	9	20	1	2	3	4	25	6	7	8	9	30	1	2	3	4	TOTAL
CY Exc																																
CY Emb																																

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY T. CLIFFORD
DRAWN BY D. MORENO
CHECKED BY B. RAWSON
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
California High-Speed Train

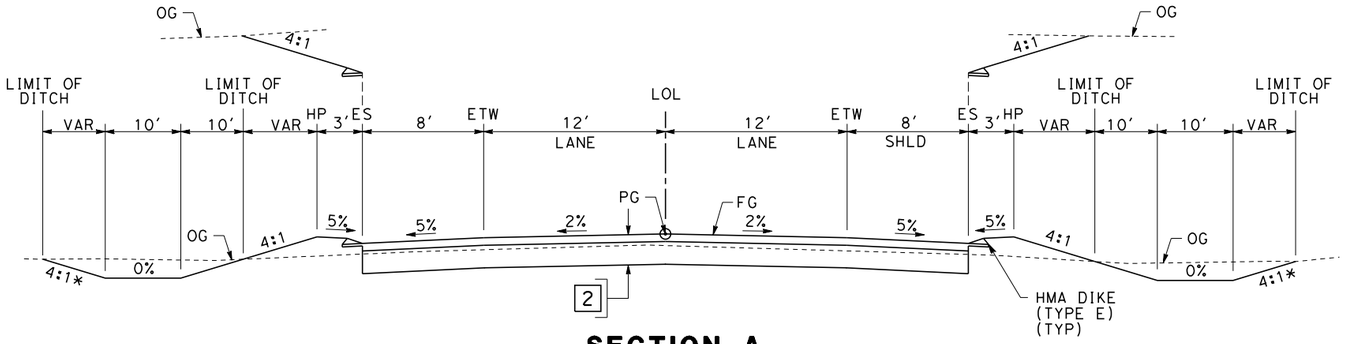
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY PROFILE
SANTA FE WAY

CONTRACT NO. HSR 06-003
DRAWING NO. CV-T1130
SCALE AS SHOWN
SHEET NO. 58 OF 67

TABLE OF DESIGN SPEEDS

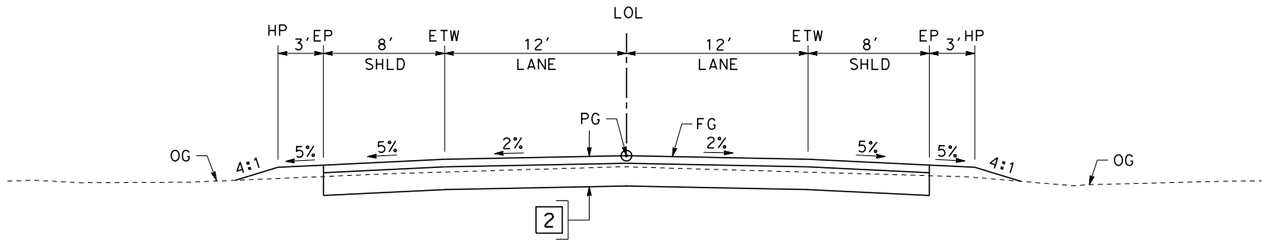
STREET NAME	ALIGNMENT DESIGNATION	DESIGN SPEED	CRITERIA/JURISDICTION
MCCOMBS AVE	MCA	65	KERN COUNTY/KERN COUNTY
ANNIN CONNECTOR AND MCCOMBS CONNECTOR	AMCC / MCAC	25	KERN COUNTY/KERN COUNTY
KIMBERLINA RD	KBA	55	KERN COUNTY/KERN COUNTY
MERCED AVE	MER	55	CITY OF SHAFTER/CITY OF SHAFTER
POPLAR AVE	POP	55	CITY OF SHAFTER/CITY OF SHAFTER
POPLAR CONNECTOR	POF	35	CITY OF SHAFTER/CITY OF SHAFTER
FRESNO AVE	FRES	55	CITY OF SHAFTER/CITY OF SHAFTER
BURBANK AVE	FBU	55	CITY OF SHAFTER/CITY OF SHAFTER
BURBANK CONNECTOR	FBA	25	CITY OF SHAFTER/CITY OF SHAFTER
~~7TH STANDARD RD~~	~~7TH~~	~~55~~	~~KERN COUNTY/KERN COUNTY~~
~~KRATZMEYER RD~~	~~KRT~~	~~55~~	~~CITY OF BAKERSFIELD/CITY OF BAKERSFIELD~~
~~KRATZMEYER CONNECTOR~~	~~KRF~~	~~30~~	~~CITY OF BAKERSFIELD/CITY OF BAKERSFIELD~~
~~RENFRO RD~~	~~FRN~~	~~65~~	~~KERN COUNTY/KERN COUNTY~~
~~NORIEGA RD~~	~~FNO~~	~~30~~	~~KERN COUNTY/KERN COUNTY~~
SANTA FE WAY	SFW1	65	KERN CO AND BAKERSFIELD/KERN CO AND BAKERSFIELD
CHERRY AVE	CHY	65	KERN COUNTY/KERN COUNTY



SECTION A

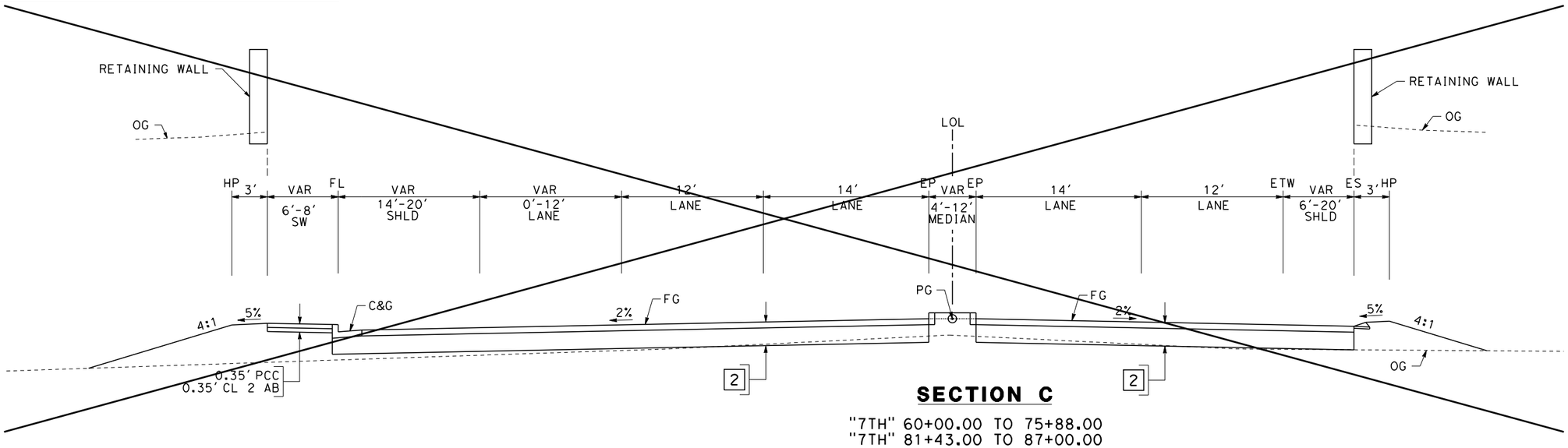
"MCA" 21+00.00 TO 40+89.00
"MCA" 45+79.00 TO 62+00.00
*"FRES" 18+00.00 TO 31+30.00
"FRES" 37+40.00 TO 51+00.00
~~"KRT" 25+50.00 TO 35+53.00~~
~~"KRT" 42+58.00 TO 53+50.00~~

* VARIES
4:1 TYPICAL
2:1 MAXIMUM



SECTION B

"MCA" 13+00.00 TO 21+00.00
"MCA" 62+00.00 TO 73+50.00
"FRES" 6+87.15 TO 18+00.00
"FRES" 51+00.00 TO 54+00.00
~~"KRT" 21+00.00 TO 25+50.00~~
~~"KRT" 53+50.00 TO 56+00.00~~



SECTION C

"7TH" 60+00.00 TO 75+88.00
"7TH" 81+43.00 TO 87+00.00

STRUCTURAL SECTIONS

TYPICAL ROADWAY

1 — 0.30' HMA (TYPE A)
1.40' CL 2 AB

2 — 0.50' HMA (TYPE A)
1.50' CL 2 AB

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY / GRADE SEPARATION
TYPICAL CROSS SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1133
SCALE NO SCALE
SHEET NO. 66 OF 67

RFP No. HSR 14-32 – REVIEW DRAFT

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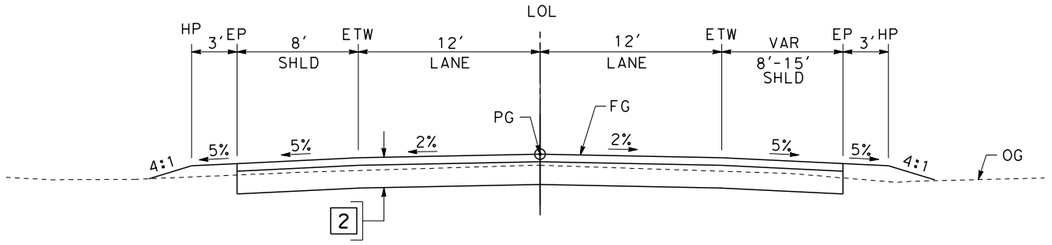
CLI60413

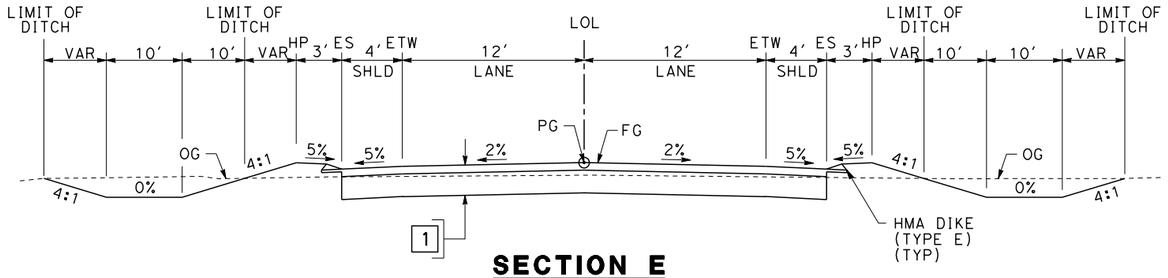
NOTES:

1. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
2. PAVEMENT SECTIONS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. EXACT DIMENSIONS AND MATERIAL OF THE PAVEMENT SECTION TO BE CONFIRMED.
3. PEDESTRIAN FACILITIES WILL BE DESIGNED TO COMPLY WITH ADA REQUIREMENTS.



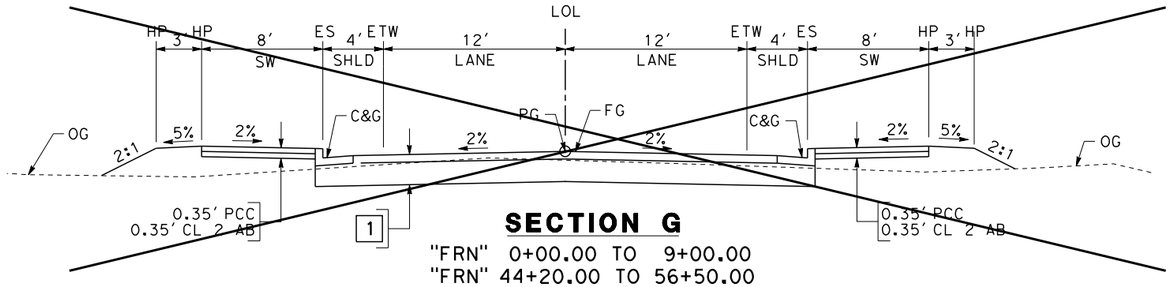
SECTION D

"SFW1" 7+50.00 TO 226+11.73
"SFW2" 0+11.73 TO 21+56.16



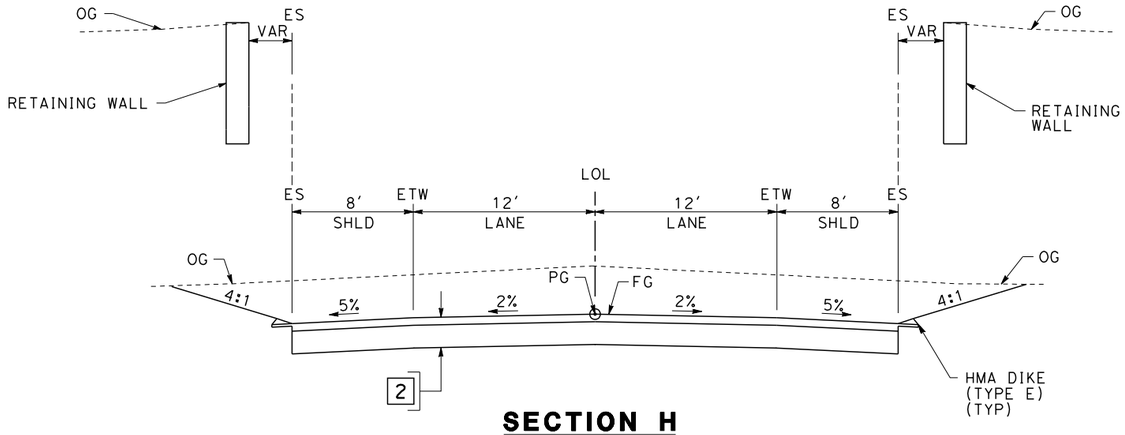
SECTION E

"MER" 3+00.00 TO 13+18.25
"MER" 20+53.25 TO 33+15.00
"POP" 12+00.00 TO 24+67.50
"POP" 31+92.50 TO 42+00.00
"FBU" 19+00.00 TO 32+98.75
"FBU" 40+63.75 TO 52+00.00



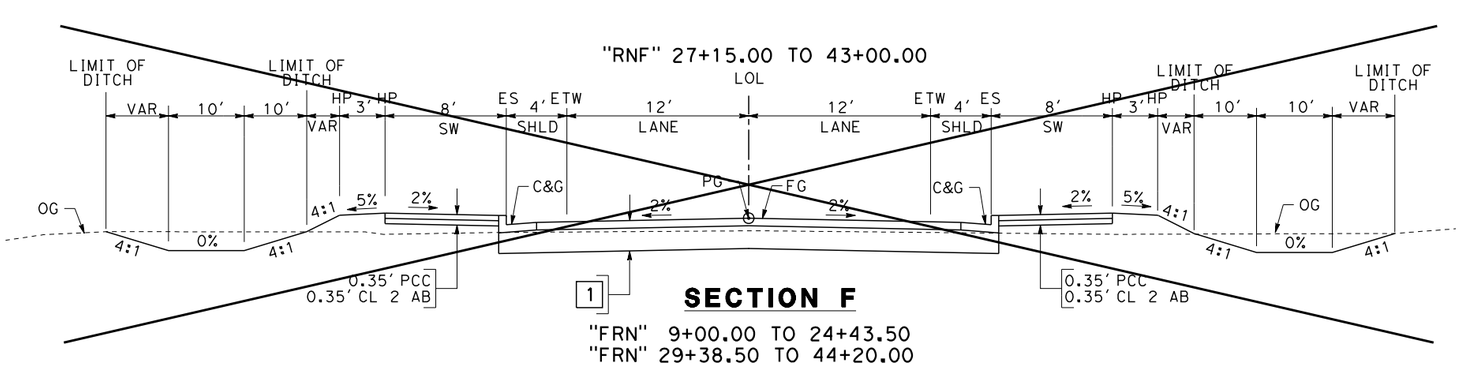
SECTION G

"FRN" 0+00.00 TO 9+00.00
"FRN" 44+20.00 TO 56+50.00



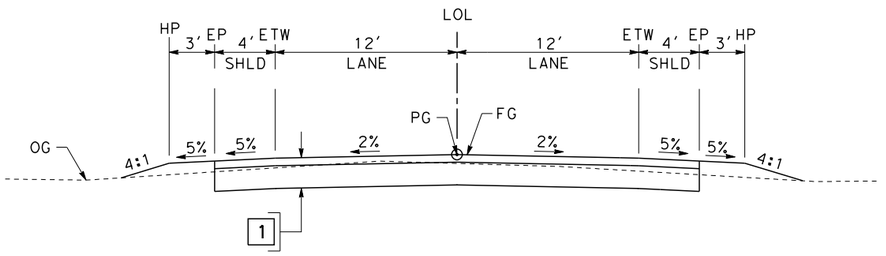
SECTION H

"KBA" 6+91.66 TO 28+00.00



SECTION F

"FRN" 9+00.00 TO 24+43.50
"FRN" 29+38.50 TO 44+20.00



SECTION I

"MER"	0+12.00 TO 3+00.00	"FBU"	11+00.00 TO 19+00.00
"MER"	33+15.00 TO 43+90.95	"FBU"	52+00.00 TO 58+00.00
"POP"	9+50.00 TO 12+00.00	"MCAC"	20+00.00 TO 26+78.87
"POP"	42+00.00 TO 45+00.00	"CHY"	7+50.00 TO 17+50.00
"POF"	0+00.00 TO 8+80.32	"AMCC"	0+00.00 TO 5+00.00
~~"KRF"~~	~~0+00.00 TO 9+90.85~~	~~"FNO"~~	~~10+00.00 TO 16+59.21~~
~~"FBA"~~	~~10+00.00 TO 15+50.00~~		

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY A. CANNON
DRAWN BY E. SUDHAUSEN
CHECKED BY J. MONG
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
ROADWAY / GRADE SEPARATION
TYPICAL CROSS SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. CV-T1131
SCALE NO SCALE
SHEET NO. 67 OF 67

RFP No. HSR 14-32 – REVIEW DRAFT

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CALIFORNIA HIGH-SPEED TRAIN

Roadway Structure Plans

RECORD SET 15% DESIGN SUBMISSION

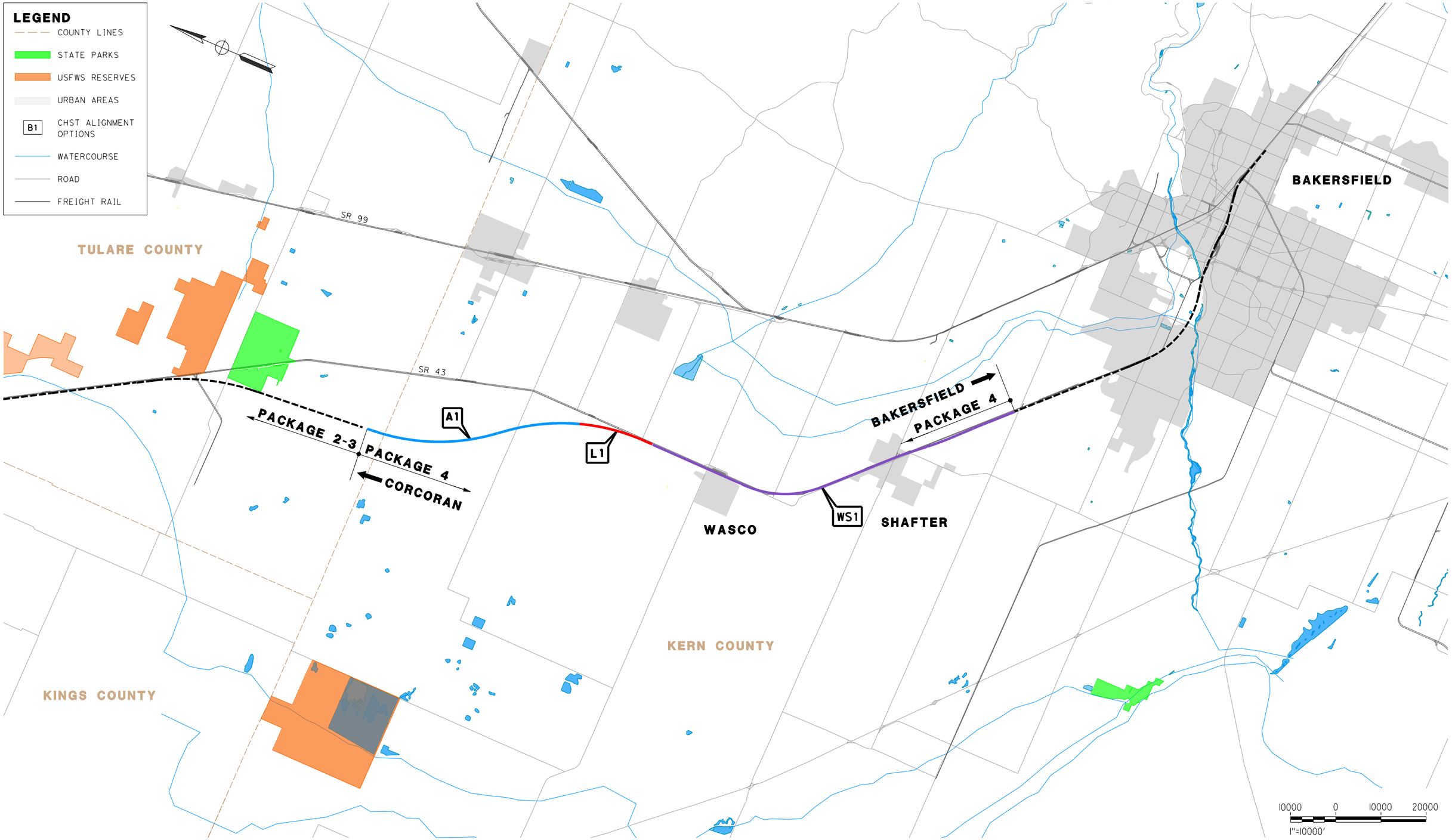
Fresno to Bakersfield

Overhead Planning Studies

May 2014

CALIFORNIA High-Speed Rail Authority

RFP No. HSR 14-32 – REVIEW DRAFT



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY K. SEYMOUR
DRAWN BY P. TONKIN
CHECKED BY S. BURGES
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
PACKAGE 4
ALIGNMENT
LOCATION MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. TT-B1100
SCALE AS SHOWN
SHEET NO. 1 OF 4

RFP No. HSR 14-32 – REVIEW DRAFT

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GENERAL SHEETS

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
TT-B1100		ALIGNMENT - LOCATION MAP	1 OF 4
GE-A0032		ROADWAY STRUCTURES - INDEX OF SHEETS - SHEET 1 OF 1	2 OF 4
CB0010		GENERAL - ABBREVIATIONS & LEGENDS - SHEET 1 OF 2	3 OF 4
CB0011		GENERAL - ABBREVIATIONS & LEGENDS - SHEET 2 OF 2	4 OF 4

ALIGNMENT A1 - ALLENSWORTH BYPASS SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SB0100	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY ST-K1100	-
ST-K1100		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - OVERHEAD PLANNING STUDY - KEY MAP	1 OF 5
~~ST2501~~		~~ALLENSWORTH BYPASS SUBSECTION~~	~~2 OF 5~~
ST2511	SS	THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY ST-K1101	-
ST-K1101		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - OVERHEAD PLANNING STUDY - GARCES HWY	3 OF 5
ST2521		ALLENSWORTH BYPASS SUBSECTION	4 OF 5
ST2531		THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY ST-K1102	-
ST-K1102		ALLENSWORTH BYPASS SUBSECTION - ALIGNMENT A1 - OVERHEAD PLANNING STUDY - PETERSON RD	5 OF 5

ALIGNMENT WS1 - THROUGH WASCO-SHAFTER SUBSECTION

DRAWING No	REV	DRAWING DESCRIPTION	SHEET No
SB0170		THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY ST-K1150	-
ST-K1150		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - KEY MAP	1 OF 14
ST2900		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - McCOMBS AVE	2 OF 14
ST2911		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - MERCED AVE	3 OF 14
ST2912		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - MERCED AVE	4 OF 14
ST2913		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - POPLAR AVE	5 OF 14
ST2914		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - POPLAR AVE	6 OF 14
ST2915		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - FRESNO AVE	7 OF 14
ST2926		THIS SHEET IS SUPERSEDED AND NOT IN THIS PACKAGE - REPLACED BY ST-K1151	-
ST-K1151		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - BURBANK ST	8 OF 14
ST2927		THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - BURBANK ST	9 OF 14
~~ST2917~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - 7TH STANDARD RD~~	~~10 OF 14~~
~~ST2918~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - TYPICAL SECTIONS - 7TH STANDARD RD~~	~~11 OF 14~~
~~ST2921~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - KRATZMEYER RD~~	~~12 OF 14~~
~~ST2922~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - KRATZMEYER RD~~	~~13 OF 14~~
~~ST2925~~		~~THROUGH WASCO-SHAFTER SUBSECTION - ALIGNMENT WS1 - OVERHEAD PLANNING STUDY - RENFRO RD~~	~~14 OF 14~~

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY P. TONKIN
DRAWN BY P. TONKIN
CHECKED BY K. SEYMOUR
IN CHARGE S. BURGES
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
PACKAGE 4
ROADWAY STRUCTURES
INDEX OF SHEETS
SHEET 1 OF 1

CONTRACT NO. HSR 06-0003
DRAWING NO. GE-A0032
SCALE NO SCALE
SHEET NO. 2 OF 4

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A

AB	AGGREGATE BASE
ABBC	ASBESTOS BONDED BITUMINOUS COATED
ABM	AIR-BLOWN MORTAR
ABN	ABANDON
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
ACB	ASPHALT CONCRETE BASE
ACP	ASBESTOS CEMENT PIPE
ADL	ADDED DEAD LOAD
ADJ	ADJUST
AFES	ALTERNATIVE FLARED END SECTION
AHD	AHEAD
ALT	ALTERNATE
AM	TIME FROM MIDNIGHT TO NOON
AP	ALTERNATIVE PIPE
APC	ALTERNATIVE PIPE CULVERT
APPROX	APPROXIMATE
APU	ALTERNATIVE PIPE UNDERDRAIN
ARS	ACCELERATION RESPONSE SPECTRUM
AR	ACCESS RESTRICTION
AS	AGGREGATE SUBBASE
ASRP	ALUMINUM SPIRAL RIB PIPE
ASSY	ASSEMBLY
ATPB	ASPHALT TREATED PERMEABLE BASE
ATPM	ASPHALT TREATED PERMEABLE MATERIAL
AVE	AVENUE
AVG	AVERAGE
@	AT

B

BAGR	BRIDGE APPROACH GUARD RAILING
BB	BEGINNING OF BRIDGE
BC	BEGIN HORIZONTAL CURVE
BCC	BALANCED CANTILEVER CONSTRUCTION
BCR	BEGIN CURB RETURN
BEG	BEGIN
BIT CTD	BITUMINOUS COATED
BK	BACK
BKF	BACKFILL
BLDG	BUILDING
BLM	BRIDGE-LOG MILE
BLVD	BOULEVARD
BM	BENCH MARK
BND	BOUND
BNSF	BURLINGTON NORTH & SANTA FE
BOT	BOTTOM
BR	BRIDGE
BRG	BEARING
BTU	BRITISH THERMAL UNIT
BVC	BEGIN VERTICAL CURVE
BW	BARBED WIRE

C

CAA	CABLE ANCHOR ASSEMBLY
CAP	CORRUGATED ALUMINUM PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CAS	CONSTRUCTION AREA SIGN
CB	CONCRETE BARRIER
CBW	CONCRETE BLOCK WALL
C-C	CENTER TO CENTER

C CONTINUED

CHSRA	CALIFORNIA HIGH SPEED RAIL AUTHORITY
CHST	CALIFORNIA HIGH SPEED TRAIN
CHSR	CALIFORNIA HIGH SPEED RAIL
CG	CENTER OF GRAVITY
CHNL	CHANNEL
CI	CAST IRON
CIDH	CAST-IN-DRILLED-HOLE
CIP,C-I-P	CAST-IN-PLACE, CAST IRON PIPE
CIPCP	CAST IN PLACE CONCRETE PIPE
CISS	CAST-IN-STEEL-SHELL
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE, CLASS
CL2	CLASS 2
CL-6	CHAIN LINK FENCE (6 FT)
CLR	CLEAR, CLEARANCE
CM	CORRUGATED METAL
CMP	CORRUGATED METAL PIPE
CO	COUNTY
COL	COLUMN
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTOR
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CP	CLEARANCE POINT
CR	CREEK
CRCP	CONTINUOUS REINFORCED CONCRETE PAVEMENT
CRSP	CONCRETED ROCK SLOPE PROTECTION
CS	CURVE TO SPIRAL
CSP	CORRUGATED STEEL PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CTB	CEMENT TREATED BASE
CTPB	CEMENT TREATED PERMEABLE BASE
CTPM	CEMENT TREATED PERMEABLE MATERIAL
CTRS	CENTERS
CVFPB	CENTRAL VALLEY FLOOD PROTECTION BOARD
CULV	CULVERT
℄	CENTERLINE

D

D	DEPTH
DD	DOWNDRAIN, DIRECTIVE DRILLING
DBL	DOUBLE
DEG	DEGREE
DEL	DELINEATOR
DET	DETAIL, DETOUR
DF	DOUGLAS FIR
DI	DRAINAGE INLET, DROP INLET
DIA	DIAMETER
DIAPH	DIAPHRAGM
DIST	DISTANCE, DISTRICT
DMBB	DOUBLE METAL BEAM BARRIER
DR	DRIVE
DTBB	DOUBLE THRIE BEAM BARRIER
DWY	DRIVEWAY

E

E	EAST, EASTING
EA	ACTUAL SUPERELEVATION
EU	UNBALANCED SUPERELEVATION

E CONTINUED

EASE	EASEMENT
EB	END OF BRIDGE, EASTBOUND
EC	END HORIZONTAL CURVE
ECR	END CURB RETURN
ED	EDGE DRAIN
EDC	EDGE DRAIN CLEANOUT
EDO	EDGE DRAIN OUTLET
EDV	EDGE DRAIN VENT
ELEC	ELECTROLIER
ELECT	ELECTRIC
ELEV	ELEVATION
EMB	EMBANKMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EP	EDGE OF PAVEMENT
EQ	EQUATION, EQUAL
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICAL CURVE
EW	ENDWALL
EXC	EXCAVATION
EXIST, EX.	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXWY	EXPRESSWAY
EXT	EXTERIOR

F

F & C	FRAME AND COVER
F & G	FRAME AND GRATE
FB	FLOOR BEAM
F-B	FRESNO TO BAKERSFIELD
FDN	FOUNDATION
FEBT	FACING EASTBOUND TRAFFIC
FES	FLARED END SECTION
FF	FILTER FABRIC
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FL	FLOW LINE
FNBT	FACING NORTHBOUND TRAFFIC
FOC	FACE OF CONCRETE
FR RD	FRONTAGE ROAD
FS	FAR SIDE, FINISHED SURFACE
FSBT	FACING SOUTHBOUND TRAFFIC
FT	FOOT, FEET
FTG	FOOTING
FWBT	FACING WESTBOUND TRAFFIC
FWY	FREEWAY
FPLM	FULL SPAN PRECAST LAUNCHING METHOD

G

G	ACCELERATION DUE TO GRAVITY
GA	GAGE
GALV	GALVANIZED
GP	GRADING PLANE
GR	GUARD RAILING
GSP	GALVANIZED STEEL PIPE
GTR	GUTTER

H

H	HEIGHT
HR	HOUR
HD	HORIZONTAL DRAIN
HDWL	HEADWALL
HEX HD	HEXAGONAL HEAD
HMA	HOT MIXED ASPHALT
HORIZ	HORIZONTAL
HP	HINGE POINT, HORSEPOWER
HPS	HIGH PERFORMANCE STEEL
HS	HIGH STRENGTH
HST	HIGH SPEED TRAIN
HSR	HIGH SPEED RAIL
HW	HEADWALL, HIGH WATER
HWM	HIGH WATER MARK
HWY	HIGHWAY

I

IB	IMPORTED BORROW
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH, INCHES
INT	INTERIOR
INV	INVERT
IRR	IRRIGATION

J

JCT	JUNCTION
JP	JOINT POLE
JPCP	JOINTED PLAIN CONCRETE PAVEMENT
JS	JUNCTION STRUCTURE
JT	JOINT

K

K	DISTANCE TO ACHIEVE 1% GRADE CHANGE

L

L	LENGTH
LAT	LATITUDE
LCB	LEAN CONCRETE BASE
LN	LANE
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDE
LONGIT	LONGITUDINAL
LS	LENGTH OF SPIRAL
LC	LENGTH OF CURVE
LT	LEFT

M

MAINT	MAINTENANCE
MAX	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
MED	MEDIAN
M-F	MERCED TO FRESNO
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MISC I & S	MISCELLANEOUS IRON AND STEEL
MKR	MARKER
M/L	MAIN LINE (RAILWAY)

M CONTINUED

MOD	MODIFIED, MODIFY
MON	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MPH	MILES PER HOUR
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EARTH
MTL	MATERIAL
MSS	MOVING SCAFFOLDING SYSTEM

N

N	NORTH, NORTHING
NB	NORTHBOUND
NO.	NUMBER (MUST HAVE PERIOD)
NOS.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NTS	NOT TO SCALE
N/A	NOT APPLICABLE

O

OBLR	OBLITERATE
OC	OVERCROSSING
OCS	OVERHEAD CONTACT SYSTEM
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OH	OVERHEAD
O-O	OUT TO OUT
OPP	OPPOSITE

P

P	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PED	PEDESTRIAN
PED OC	PEDESTRIAN OVERCROSSING
PED UC	PEDESTRIAN UNDERCROSSING
PERM MTL	PERMEABLE MATERIAL
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
℄,PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POB	POINT OF BEGINNING
POC	POINT OF HORIZONTAL CURVE
POE	POINT OF ENDING
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE

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IN CHARGE R. COFFIN
DATE 12/31/13

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URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 1 OF 2

CONTRACT NO. HSR 06-0003
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SCALE NO SCALE
SHEET NO. 3 OF 4

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P CONTINUED

PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED, PARALLEL STATION
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVP	MAINTENANCE VEHICLE PULLOUT

Q

QTY	QUANTITY

R

R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROAD
REINF	REINFORCED, REINFORCEMENT, REINFORCING
REL	RELOCATE
REPL	REPLACEMENT
RET	RETAINING
REV	REVISED
RDWY	ROADWAY
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RTE	ROUTE
RW	REDWOOD, RETAINING WALL
R/W, ROW	RIGHT OF WAY
RWY	RAILWAY

S

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
SALV	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SPIRAL TO CURVE
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SEP	SEPARATION
SG	SUBGRADE
SHLD	SHOULDER
SHT	SHEET
SIM	SIMILAR
S	STATION LINE
SM	SELECTED MATERIAL
SPEC	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE, SPIRAL TO SPIRAL

S CONTINUED

SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
SR	STATE ROUTE
ST	STREET, SPIRAL TO TANGENT
STA	STATION
STBB	SINGLE THRIE BEAM BARRIER
STD	STANDARD
STR	STRUCTURE
SRS	STAND ALONE RADIO SITE
SURF	SURFACING
SW	SIDEWALK, SOUND WALL
SWR	SEWER
SWS	SWITCHING STATION
SYM	SYMMETRICAL
S4S	SURFACE 4 SIDES
SJVR	SAN JOAQUIN VALLEY RAILROAD

T

T	SEMI-TANGENT
TAB	TABLET
TAN	TANGENT
TBB	THRIE BEAM BARRIER
TBR	TIMBER
TC	TOP OF CURB, TANGENT TO CURVE
TCB	TRAFFIC CONTROL BOX
TEL	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GRADE
TOT	TOTAL
TM	TECHNICAL MEMORANDUM
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
TPSS	TRACTION POWER SUPPLY STATION
TRANS	TRANSITION, TRANSVERSE
TS	TRAFFIC SIGNAL, TUBULAR STEEL, TANGET TO SPIRAL
TYP	TYPICAL
TOR	TOP OF RAIL

U

UC	UNDERCROSSING
UD	UNDERDRAIN
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
UPRR	UNION PACIFIC RAILROAD
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

V

V	VALVE, DESIGN SPEED
VAR	VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIA	VIADUCT
VOL	VOLUME

W

W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
WT	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE
W/	WITH

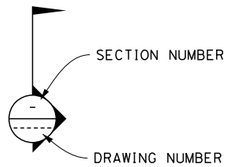
X

X SEC	CROSS SECTION
XING	CROSSING

Y

YR	YEAR
YRS	YEARS

LEGEND



-E- PROPOSED ELECTRICITY LINE

-e- EXISTING ELECTRICITY LINE

-e-(oh)- EXISTING OVERHEAD ELECTRICITY LINE

-E-(OH)- PROPOSED OVERHEAD ELECTRICTY LINE

PROPOSED HST RIGHT OF WAY

PROPOSED HST TRACK CENTERLINE

RETAINING WALL

TOE OF SLOPE / TOP OF CUT

CONTROL LINE EXAMPLE "A" LINE
255+00 260+00 265+00

OR TRACK (PLAN AND ELEVATION)

REL TRACK TO BE REMOVED AND RELOCATED PER BNSF

REMOVE BASE & SURFACING

SOUND BARRIER (POTENTIAL)

DIRECTION OF FLOW

WATER SURFACE

GENERAL NOTES

1. TRACK PROFILE IS DESIGNED AS TOP OF THE LOW RAIL. VERTICAL CLEARANCE REQUIREMENTS ARE MEASURED FROM THE TOP OF THE HIGH RAIL ON SUPERELEVATED TRACK. THE CLEARANCE ENVELOPES SHOWN DEMONSTRATE THE MINIMUM CLEARANCE REQUIREMENTS.

2. MINIMUM VERTICAL CLEARANCE REQUIREMENTS TO CANALS AND DITCHES ARE NOT KNOWN. FURTHER CONSULTATION WITH THE WATERCOURSE OWNERS WILL BE REQUIRED TO DETERMINE NECESSARY CLEARANCES.

3. THE FOLLOWING ARE ROADWAY DESIGN STANDARDS AND GUIDELINES:
   A. CALTRANS HIGHWAY DESIGN MANUAL (2012)
   B. AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (2011)
   C. AASHTO ROADSIDE DESIGN GUIDE (2011)
   D. APPLICABLE LOCAL DESIGN STANDARD AND GUIDELINES (I.E., CITY OF FRESNO)

4. THE FEMA FLOODPLAIN BOUNDARIES ARE CALLED OUT AS "LIMIT OF 100YR FEMA FLOODPLAIN". THE LIMITS OF THE MODELED 100 YEAR WATER SURFACE ELEVATIONS (WSE) ARE APPROXIMATE AND ARE MARKED WITH THE NAME OF THE WATERBODY ASSOCIATED WITH THE MODELED FLOODING, E.G. "LIMIT OF POSO CREEK FLOODPLAIN".

5. THE STRUCTURE DESIGN ASSUMES THAT THE DEPTH FROM TOR TO TOP OF DECK IS 2'-6" THROUGHOUT. HOWEVER, WHERE BALLASTED TRACK FORM IS USED, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-9" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE, AND PROTECTION LAYER IF REQUIRED. FOR SLAB TRACKFORM, THE HEIGHT FROM TOR TO DECK SHALL BE 2'-6" PLUS AN ALLOWANCE FOR WATERPROOF MEMBRANE AND PROTECTION LAYER IF REQUIRED.

6. WHERE THE VERTICAL ALIGNMENT GRADE IS LESS THAN 0.5% THE UPPER SURFACE OF THE VIADUCT STRUCTURE SHALL BE PROFILED TO GIVE A MINIMUM LONGITUDINAL FALL OF 0.5%. TYPICALLY FOR A SPAN OF 120'-00" ON A 0% GRADE SECTION OF VIADUCT THIS COULD BE ACHIEVED BY MODIFYING THE CROSS SLOPE OF THE GIRDER LINEARLY BETWEEN 0.8% AT MID-SPAN TO 2% AT EACH END.

7. WHEN LATERAL SEPARATION BETWEEN THE CONVENTIONAL RAILROAD AND HST SYSTEM IS LESS THAN 102', A SITE SPECIFIC HAZARD ANALYSIS WILL BE CONDUCTED TO DETERMINE WHAT SPECIFIC COLLISION PROTECTION MEASURES MAY NEED TO BE IMPLEMENTED.

8. RIP-RAP PROTECTION IS REQUIRED FOR EMBANKMENTS WITHIN FEMA SPECIAL FLOOD HAZARD ZONES, IN ACCORDANCE WITH DESIGN CRITERIA.

9. HST ALIGNMENT CONTROL LINE IS DESIGNED AS THE CENTERLINE BETWEEN THE TWO MAINLINE TRACKS.

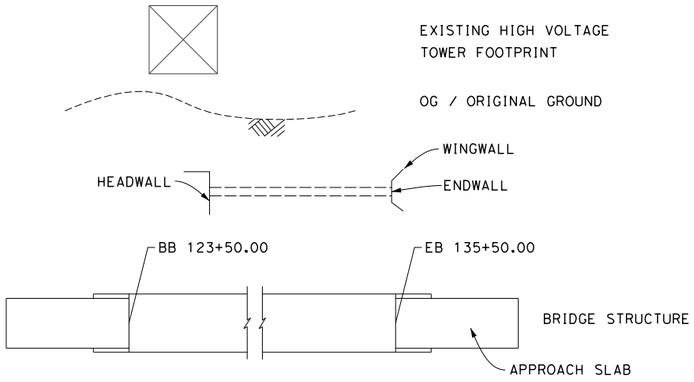
10. TRACK FORM USED IN TYPICAL SECTIONS IS INDICATIVE.

DIRECTION OF TRAFFIC

POINT OF MINIMUM VERTICAL CLEARANCE
ROAD CLOSURE (ROADWAYS)

[1] LINE DATA

(1) (3) CURVE DATA (ALIGNMENTS)
CURVE DATA (STRUCTURES)



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CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
GENERAL
ABBREVIATIONS AND LEGENDS
SHEET 2 OF 2

CONTRACT NO. HSR 06-0003
DRAWING NO. CB0011
SCALE NO SCALE
SHEET NO. 4 OF 4

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$FILE$ $PLTDRVS$ $PENTBLS$ $TIME$ $DATE$ $USER$

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY E. MORAN
DRAWN BY D. BARNHART
CHECKED BY L. SMITH
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

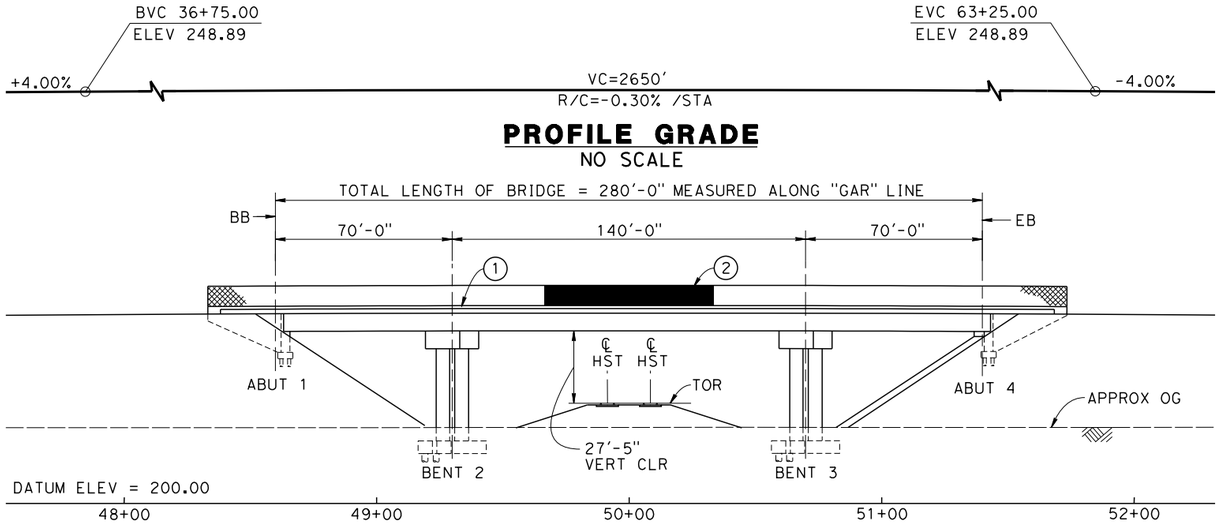
NOT FOR CONSTRUCTION

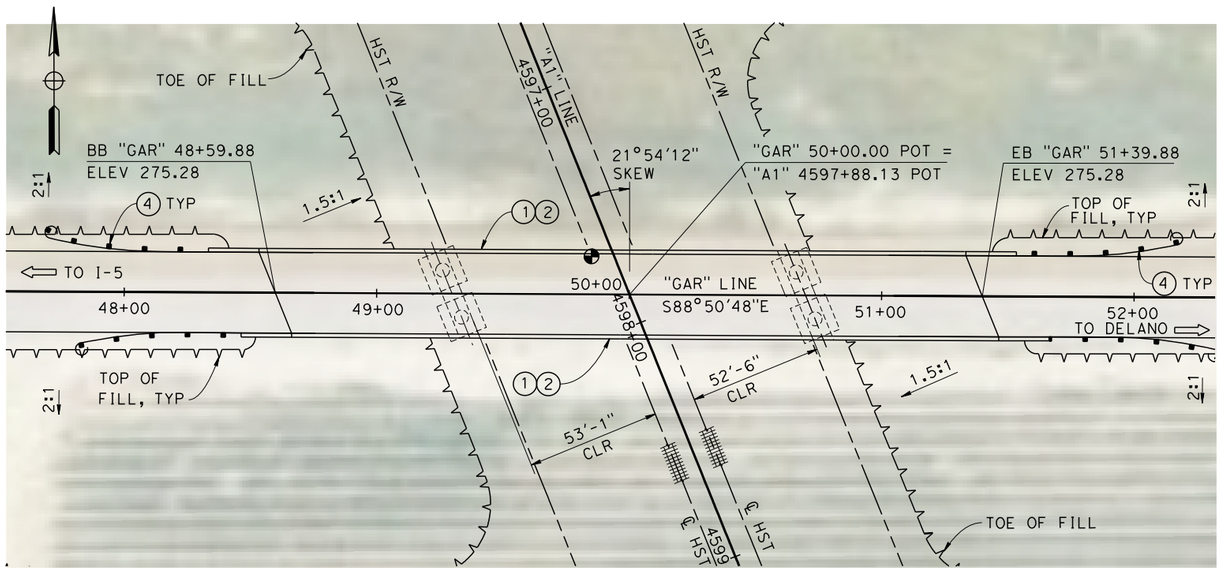
URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

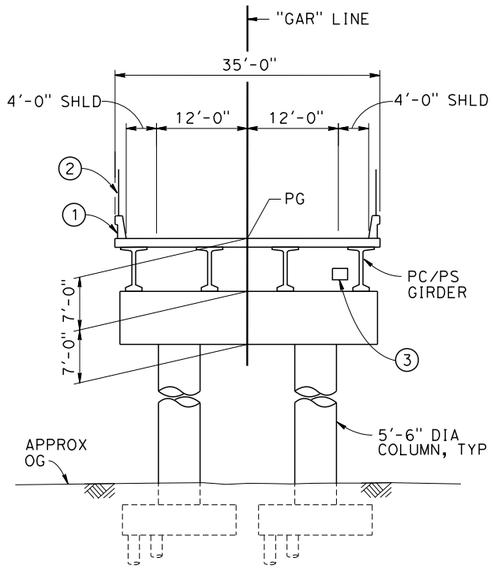
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
OVERHEAD PLANNING STUDY
KEY MAP

CONTRACT NO. HSR 06-0003
DRAWING NO. ST-K1100
SCALE AS SHOWN
SHEET NO. 1 OF 5







TYPICAL SECTION
SCALE:1"=10'

NOTES:

1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:

(1) CONCRETE BARRIER WITH AR FENCE
(2) AR FENCE WITH SOLID PLATE OVER HST
(3) FUTURE UTILITY ENCASEMENT OPENING
(4) MBGR

10 0 10 20
SCALE: 1"=10'

30 0 30 60
SCALE: 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY E. MORAN
DRAWN BY D. BARNHART
CHECKED BY L. SMITH
IN CHARGE R. COFFIN
DATE 09/26/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

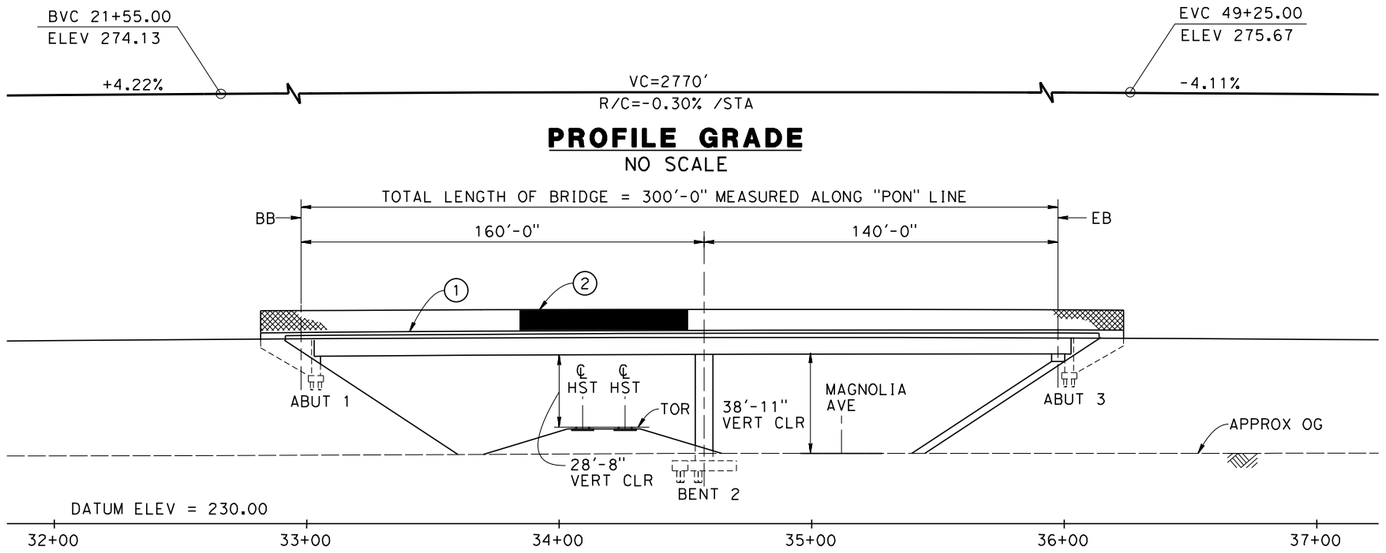
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
OVERHEAD PLANNING STUDY
GARCES HWY

CONTRACT NO. HSR 06-0003
DRAWING NO. ST-K1101
SCALE AS SHOWN
SHEET NO. 3 OF 5

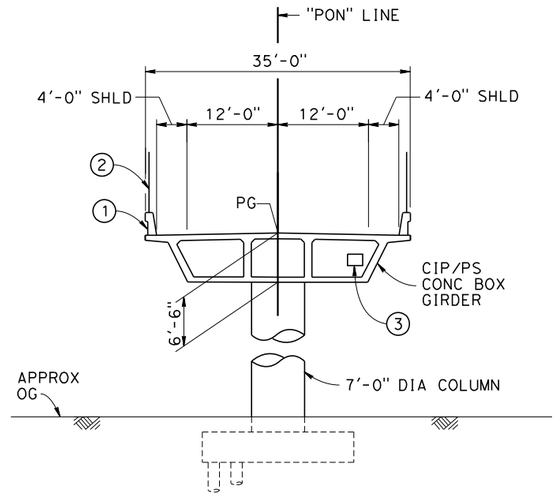
RFP NO. HSR 14-32 – REVIEW DRAFT

$FILE$ $PLTDRVS$ $PENTBLS$ $TIME$ $DATE$ $USER$

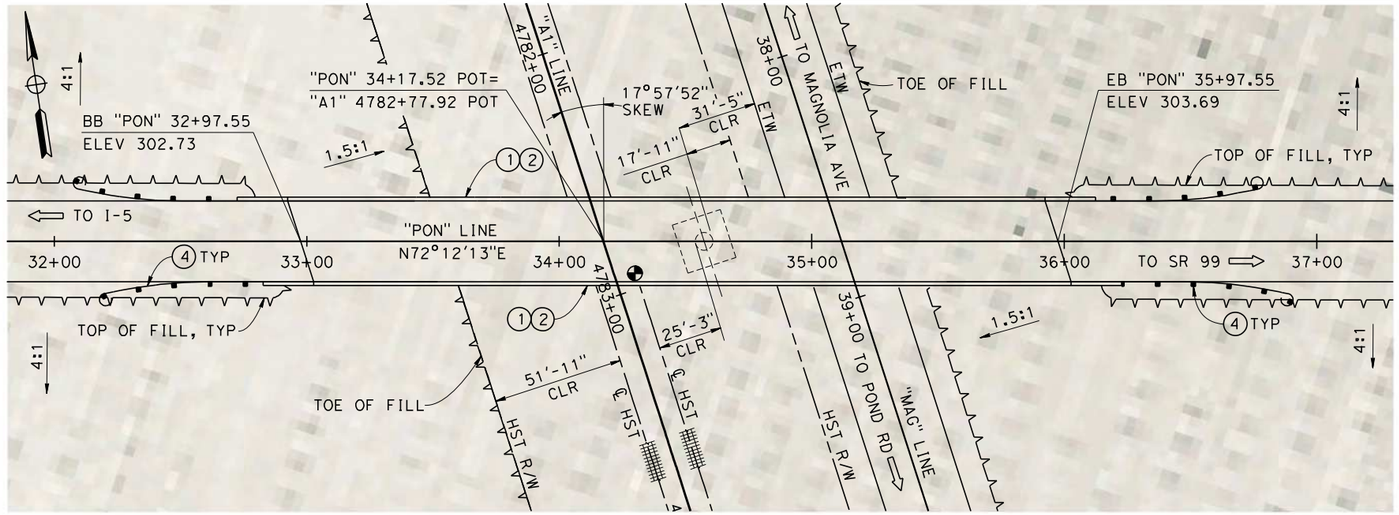


PROFILE GRADE
NO SCALE

ELEVATION
SCALE:1"=30'



TYPICAL SECTION
SCALE:1"=10'



PLAN
SCALE:1"=30'

NOTES:
1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:
1. CONCRETE BARRIER WITH AR FENCE
2. AR FENCE WITH SOLID PLATE OVER HST
3. FUTURE UTILITY ENCASEMENT OPENING
4. MBGR

10 0 10 20 — SCALE: 1"=10'

30 0 30 60 — SCALE: 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY E. MORAN
DRAWN BY D. BARNHART
CHECKED BY L. SMITH
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP

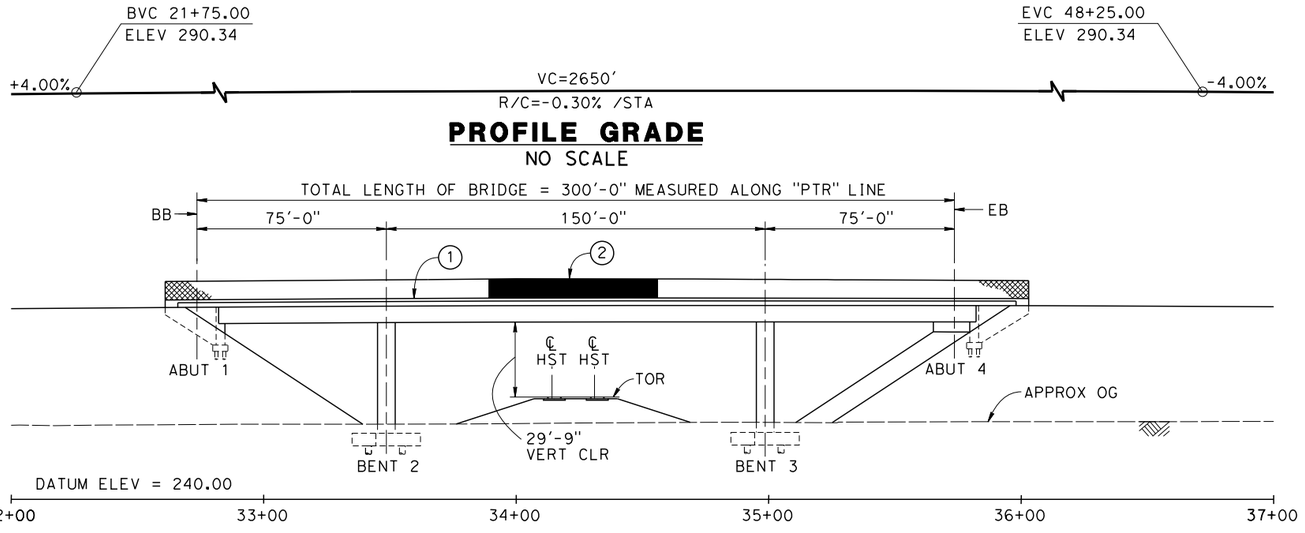
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
OVERHEAD PLANNING STUDY
POND RD

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2521
SCALE AS SHOWN
SHEET NO. 4 OF 5

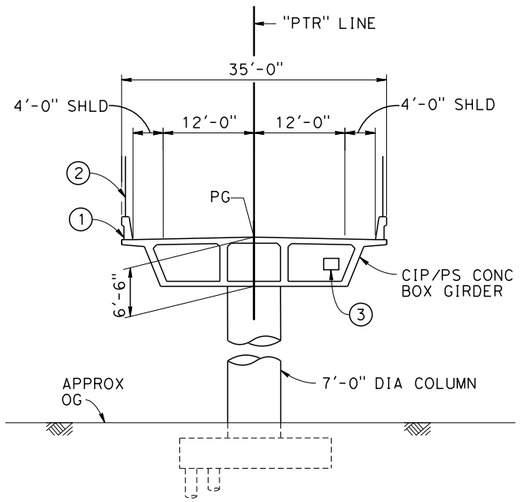
RFP NO. HSR 14-32 — REVIEW DRAFT

BAR50597 12/20/2013 7:50:24 AM CAHSRP-r1.tbl CHSR_PDF_half_black.plt c:\pwworking\hmm\external\bar50597\dms72594\FB-ST-2521-A1.dgn

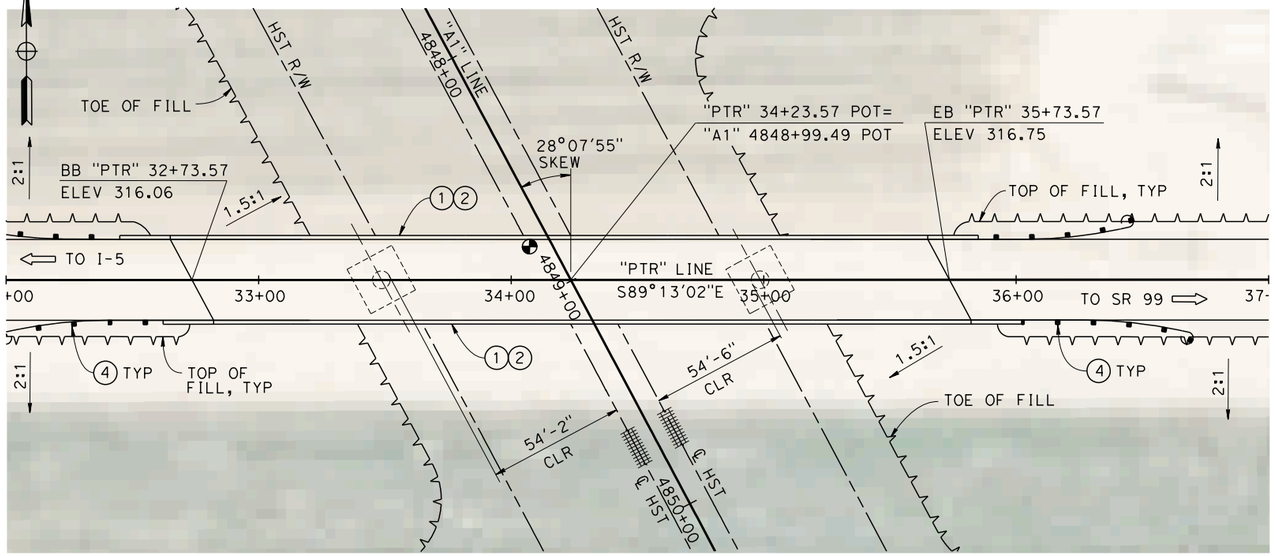


PROFILE GRADE
NO SCALE

ELEVATION
SCALE:1"=30'



TYPICAL SECTION
SCALE:1"=10'



PLAN
SCALE:1"=30'

NOTES:
1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:
1. CONCRETE BARRIER WITH AR FENCE
2. AR FENCE WITH SOLID PLATE OVER HST
3. FUTURE UTILITY ENCASEMENT OPENING
4. MBGR

10 0 10 20
SCALE: 1"=10'

30 0 30 60
SCALE: 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY E. MORAN
DRAWN BY D. BARNHART
CHECKED BY L. SMITH
IN CHARGE R. COFFIN
DATE 09/26/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
ALLENSWORTH BYPASS SUBSECTION
ALIGNMENT A1
OVERHEAD PLANNING STUDY
PETERSON RD

CONTRACT NO. HSR 06-0003
DRAWING NO. ST-K1102
SCALE AS SHOWN
SHEET NO. 5 OF 5

RFP NO. HSR 14-32 – REVIEW DRAFT

$FILE$ $PLTDRVS$ $PENTBLS$ $TIME$ $DATE$ $USER$

SUBSECTION L1/L2/L3/L4

MCCOMBS AVE

ST2900

5450 5500 5550 5600 5650 5700 5750 5800 5850 5900 5950 6000 6050 6100 6150 6200 6250 6300 6350 6400 6450 6500

"WS1" LINE

MERCED AVE

POPLAR AVE

FRESNO AVE

ST2911 ST2912 ST2913 ST2914 ST2915

BURBANK ST

ST-K1151

ST2927

SANTA FE WAY

END PACKAGE CP 4

PACKAGE 4

7TH STANDARD RD

ST2917

KRATZMEYER RD

RENFRO RD

ST2921 ST2922 ST2925

SUBSECTION B1/B2

LEGEND

EXISTING FREIGHT RAILROAD

PROPOSED CHST

3000 0 3000 6000

1"=3000'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY D. BARNHART
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 09/24/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

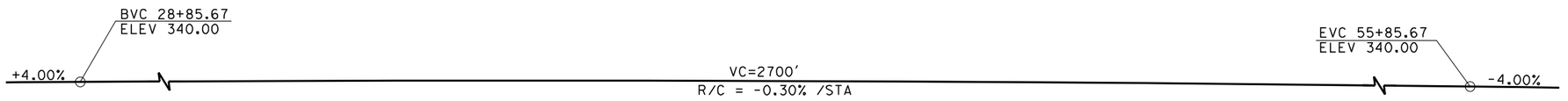
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
KEY MAP

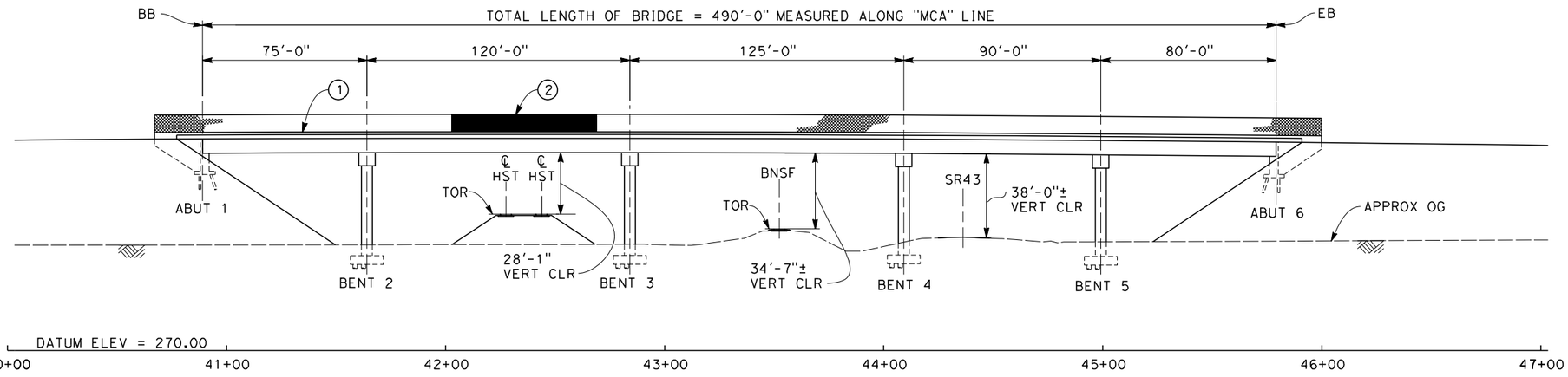
CONTRACT NO. HSR 06-0003
DRAWING NO. ST-K1150
SCALE AS SHOWN
SHEET NO. 1 OF 14

RFP NO. HSR 14-32 – REVIEW DRAFT

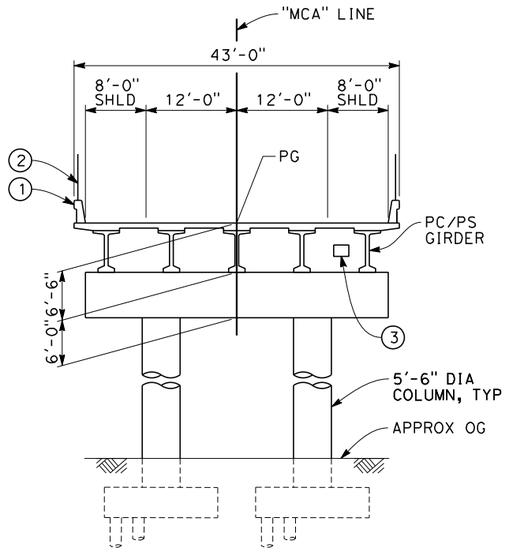
$FILE$ $PLTDRVS$ $PENTBLS$ $TIME$ $DATE$ $USER$



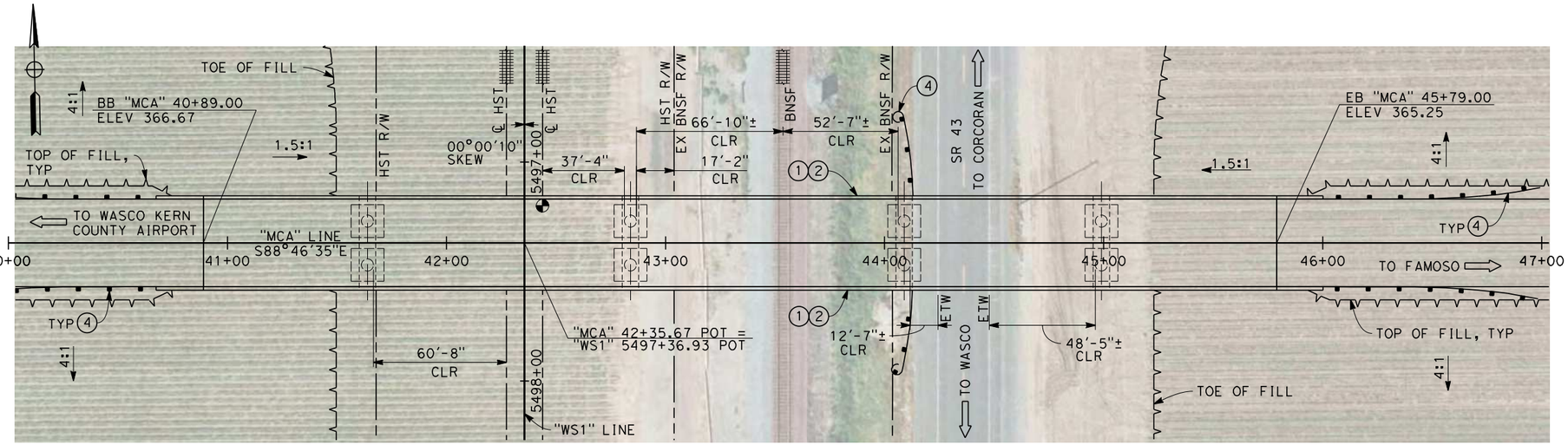
PROFILE GRADE
NO SCALE



ELEVATION
SCALE: 1"=30'



TYPICAL SECTION
SCALE: 1"=10'



PLAN
SCALE: 1"=30'

NOTES:
1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:
1. CONCRETE BARRIER WITH AR FENCE
2. AR FENCE WITH SOLID PLATE OVER HST
3. FUTURE UTILITY ENCASEMENT OPENING
4. MBGR

10 0 10 20 — 1"=10'
30 0 30 60 — 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
McCOMBS AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2900
SCALE AS SHOWN
SHEET NO. 2 OF 14

RFP No. HSR 14-32 – REVIEW DRAFT

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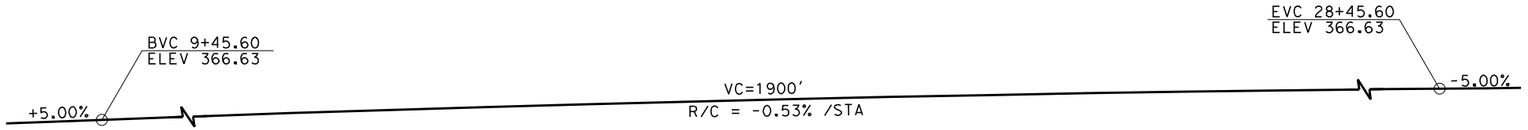
AND52110



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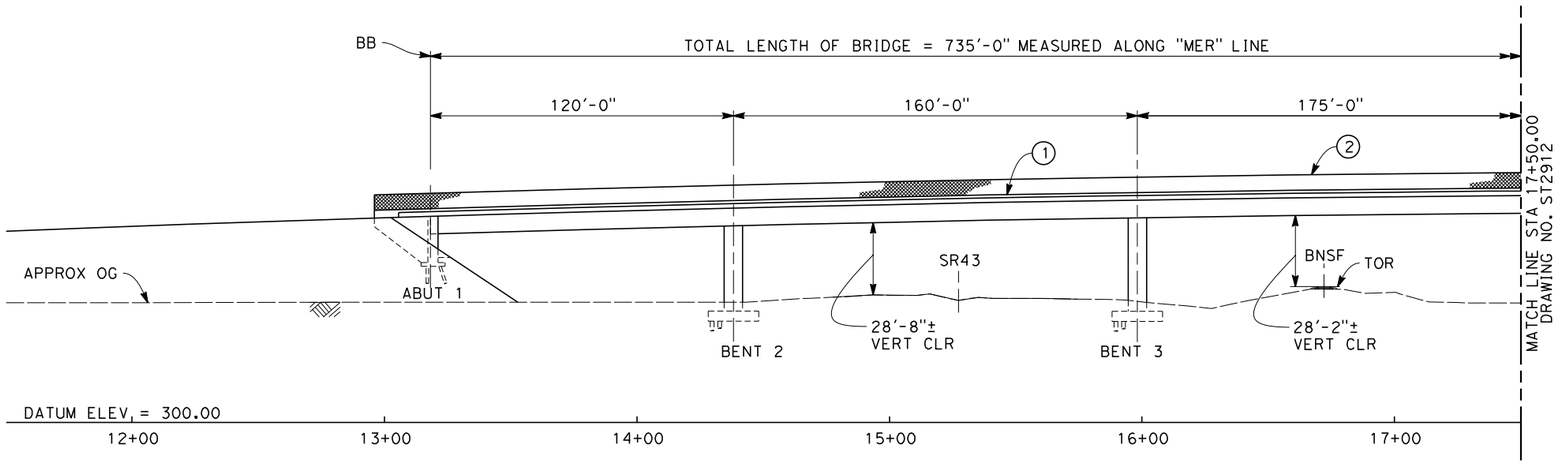
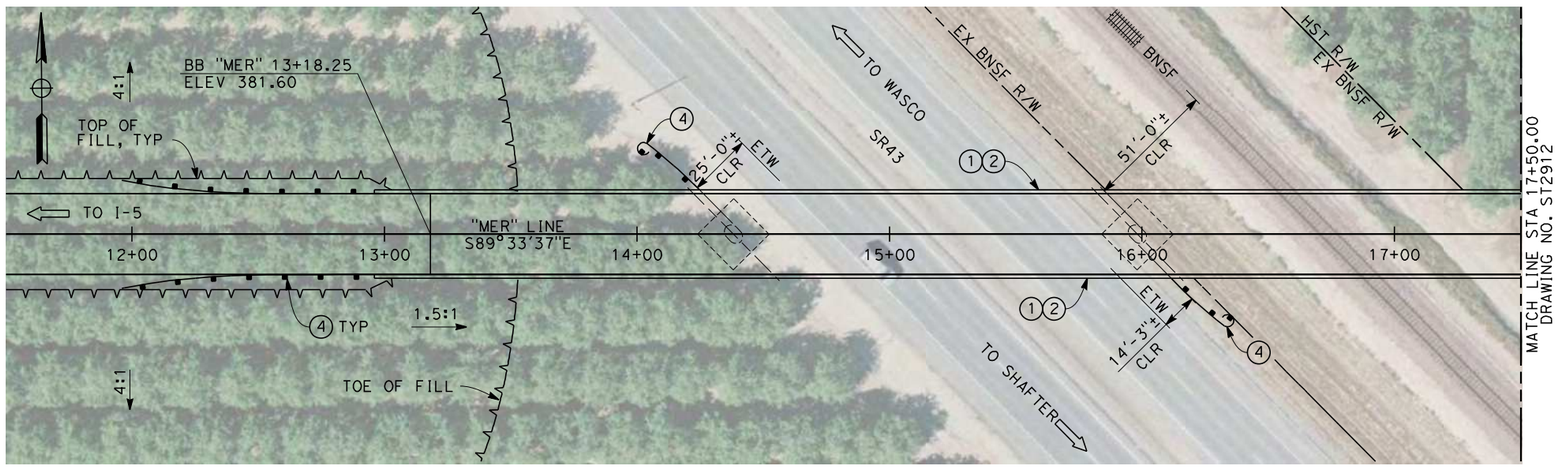
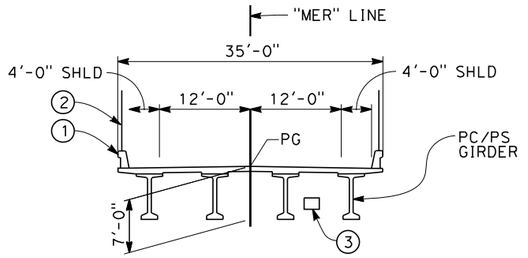


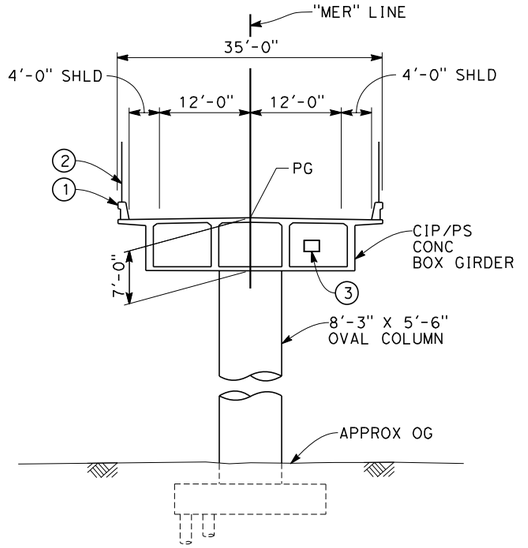
ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'



SECTION OVER BNSF



TYPICAL SECTION
SCALE: 1"=10'

NOTES:
1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:

(1) CONCRETE BARRIER WITH AR FENCE
(2) AR FENCE WITH SOLID PLATE OVER HST
(3) FUTURE UTILITY ENCASEMENT OPENING
(4) MBGR
(5) RETAINING WALL

10 0 10 20 — 1"=10'

30 0 30 60 — 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
MERCED AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2911
SCALE AS SHOWN
SHEET NO. 3 OF 14

RFP NO. HSR 14-32 – REVIEW DRAFT

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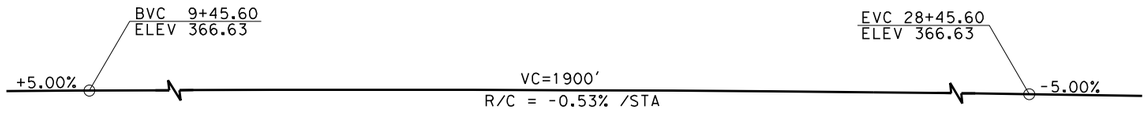

PROFILE GRADE
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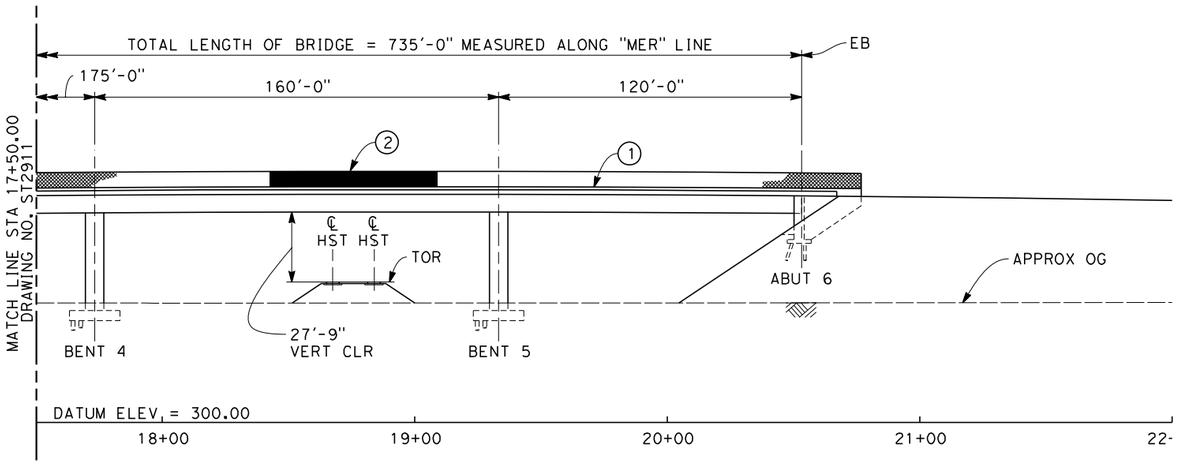
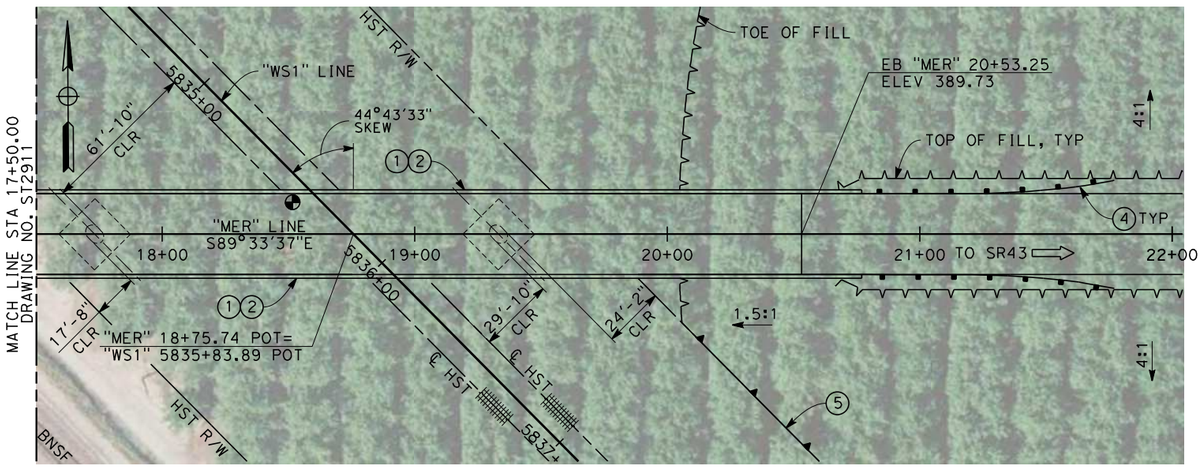


ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'

30 0 30 60
1"=30'

FOR NOTES AND LEGEND,
SEE SHEET ST2911

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
MERCED AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2912
SCALE AS SHOWN
SHEET NO. 4 OF 14

RFP No. HSR 14-32 – REVIEW DRAFT

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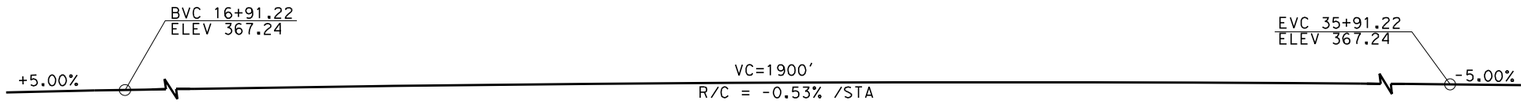

PROFILE GRADE
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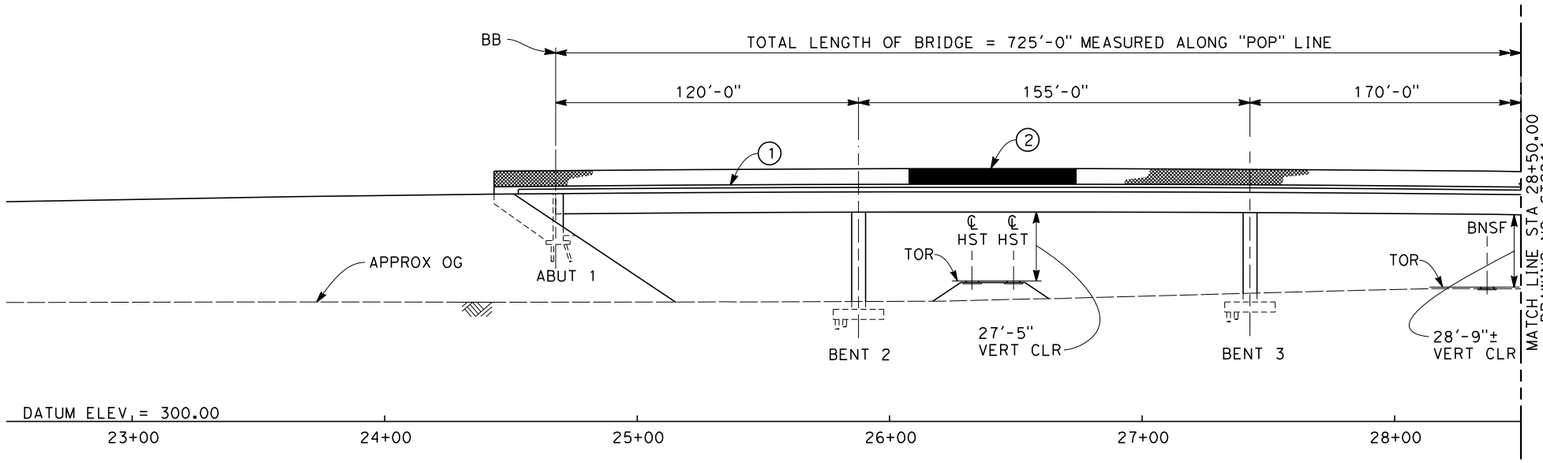
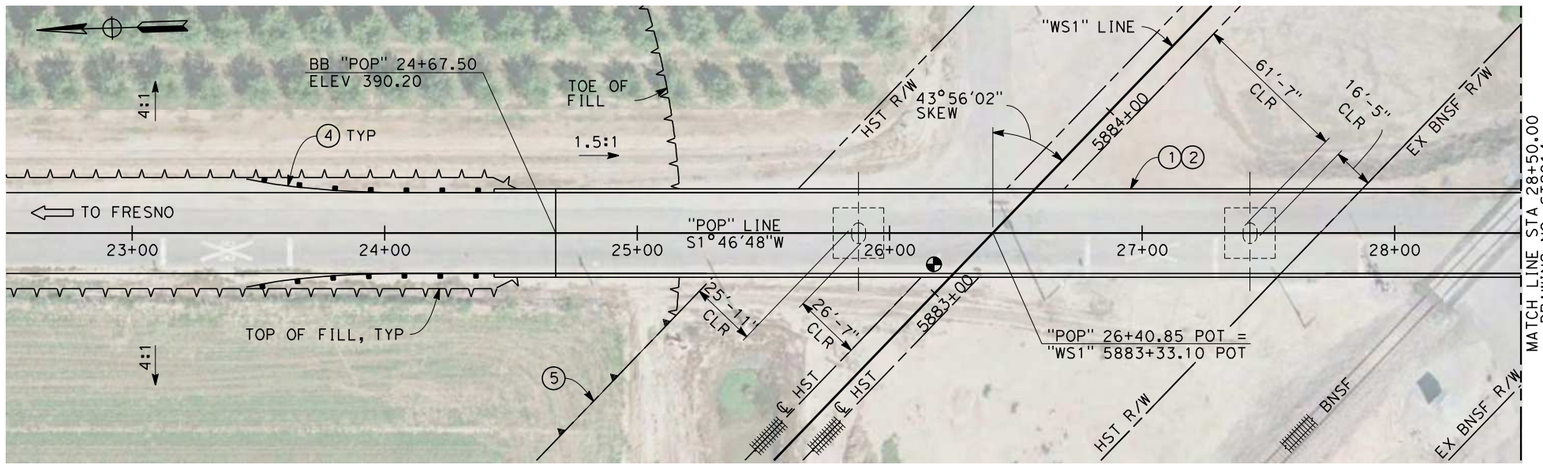
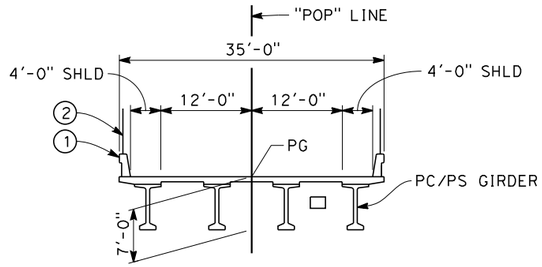


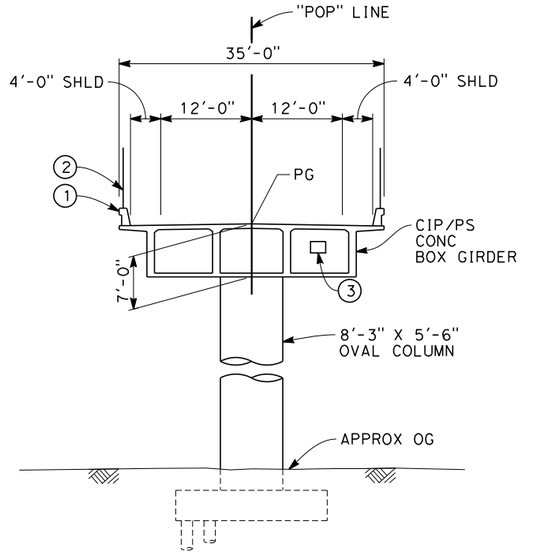
ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'



SECTION OVER BNSF



TYPICAL SECTIONS
SCALE: 1"=10'

NOTES:
1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:

(1) CONCRETE BARRIER WITH AR FENCE
(2) AR FENCE WITH SOLID PLATE OVER HST
(3) FUTURE UTILITY ENCASEMENT OPENING
(4) MBGR
(5) RETAINING WALL

10 0 10 20 — 1"=10'
30 0 30 60 — 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
POPLAR AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2913
SCALE AS SHOWN
SHEET NO. 5 OF 14

RFP No. HSR 14-32 – REVIEW DRAFT

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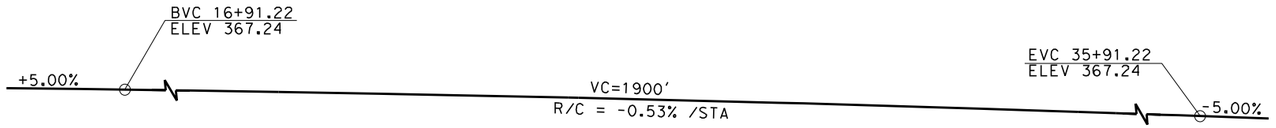
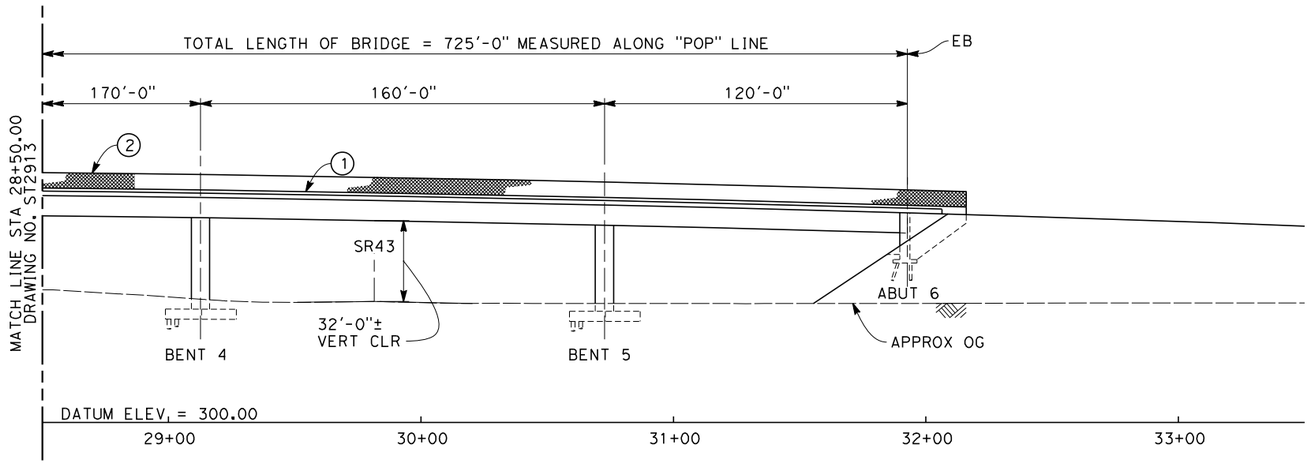
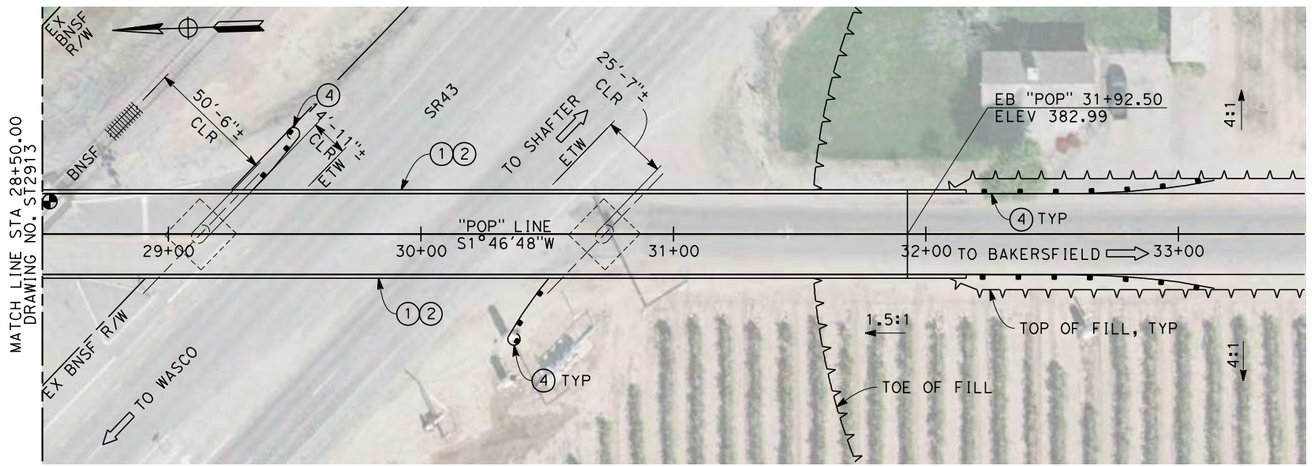


PROFILE GRADE
NO SCALE

FOR NOTES AND LEGEND,
SEE SHEET ST2913



ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'

30 0 30 60
1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

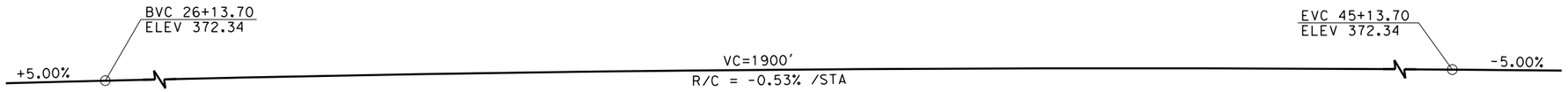
CALIFORNIA
HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
POPLAR AVE

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2914
SCALE AS SHOWN
SHEET NO. 6 OF 14

AND52110 12/20/2013 10:43:49 AM c:\pwworking\hmm\external\and52110\dms86725\FB-ST-2914-WS1.dgn

RFP No. HSR 14-32 – REVIEW DRAFT



PROFILE GRADE
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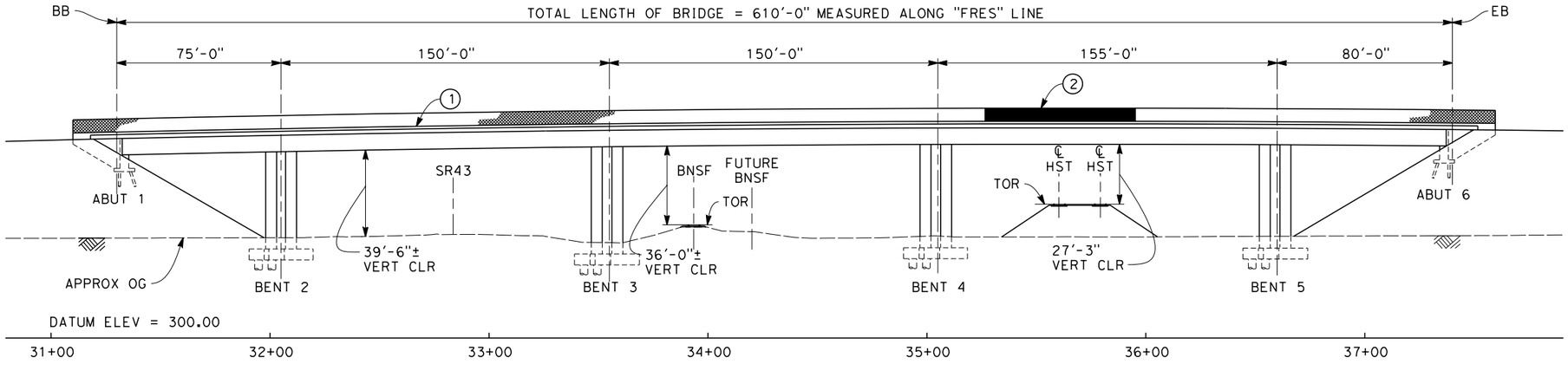
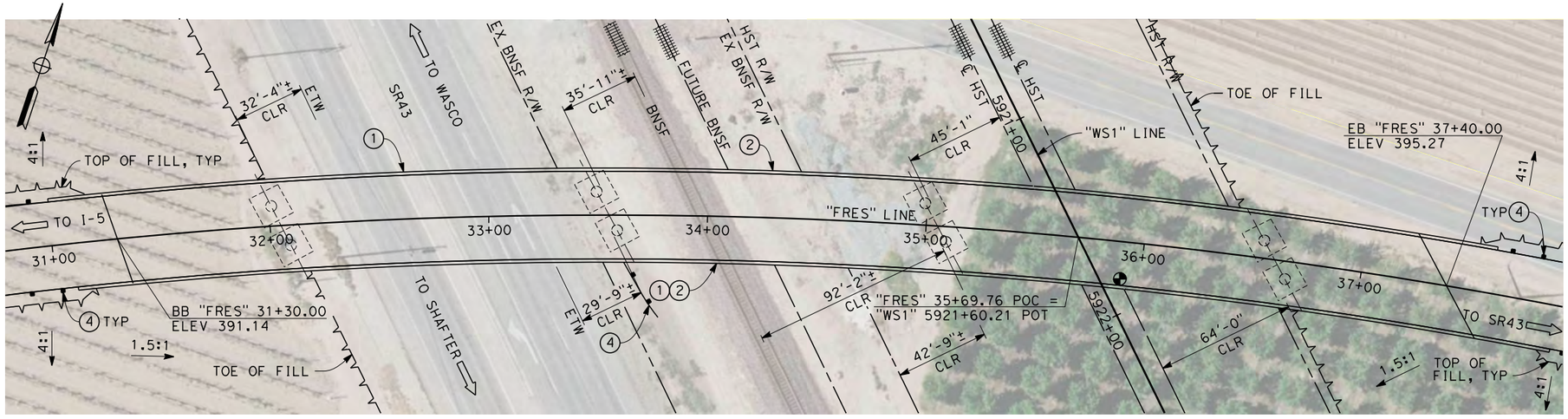
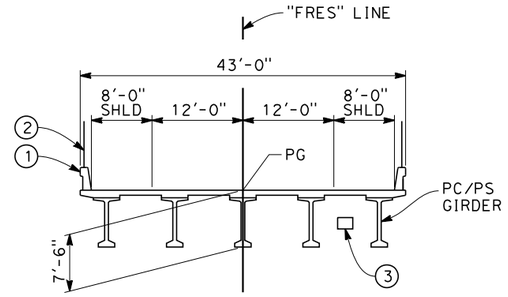


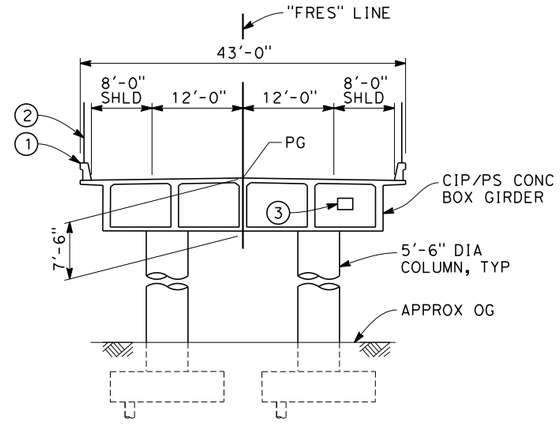
ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'



SECTION OVER BNSF



TYPICAL SECTION
SCALE: 1"=10'

NOTES:
1. ALL PILES NOT SHOWN.
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:
1. CONCRETE BARRIER WITH AR FENCE
2. AR FENCE WITH SOLID PLATE OVER HST
3. FUTURE UTILITY ENCASEMENT OPENING
4. MBGR

10 0 10 20 — 1"=10'
30 0 30 60 — 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

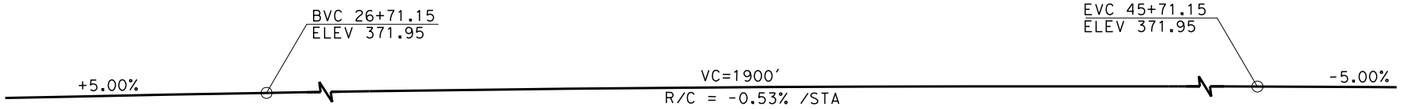
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
FRESNO AVE

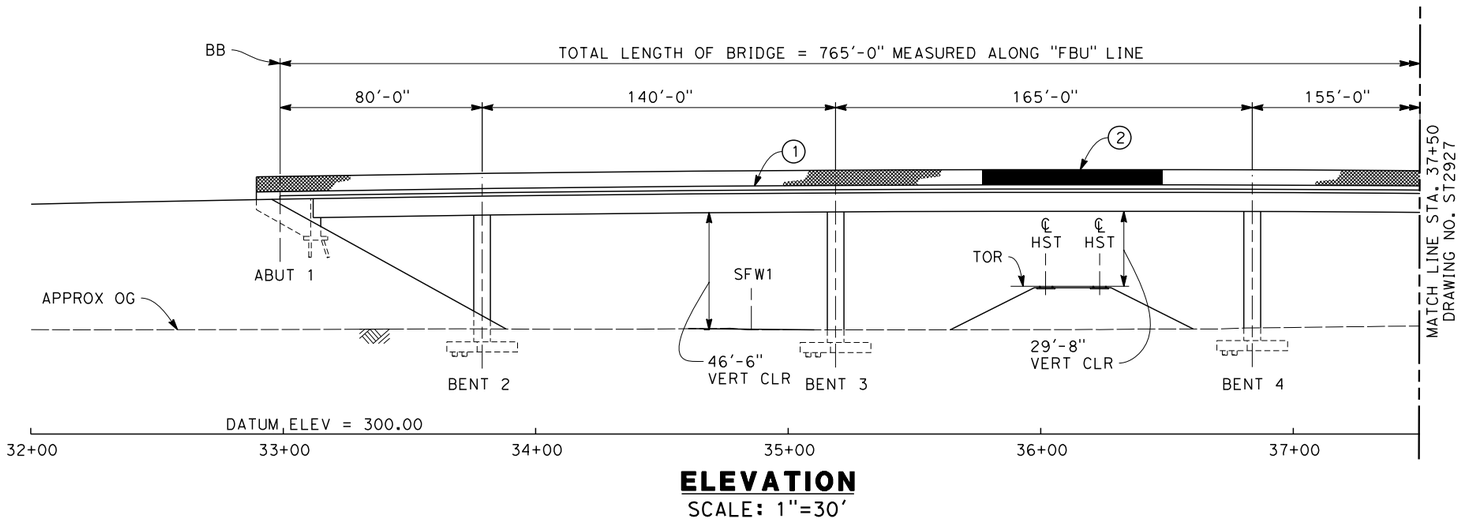
CONTRACT NO. HSR 06-0003
DRAWING NO. ST2915
SCALE AS SHOWN
SHEET NO. 7 OF 14

RFP No. HSR 14-32 – REVIEW DRAFT

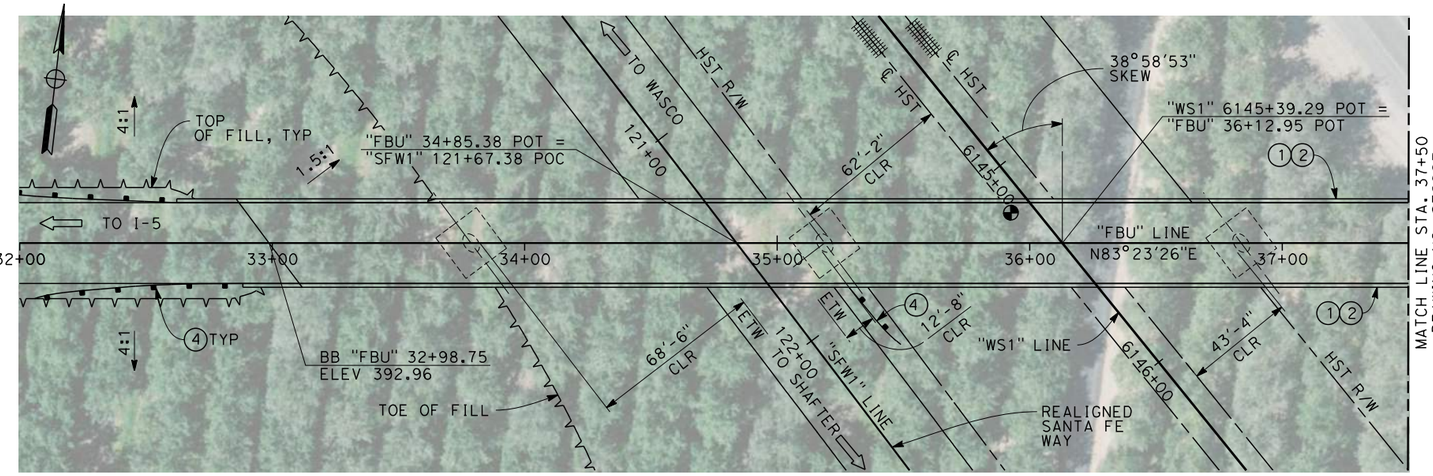
12/27/2013 9:09:22 AM c:\pwworking\hmm\external\pro39009\dms86725\VFB-ST-2915-WS1.dgn
Clark



PROFILE GRADE
NO SCALE



ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'

NOTES:
1. ALL PILES NOT SHOWN
2. FOR MINIMUM VERTICAL CLEARANCES, HORIZONTAL CURVE DATA, AND DETAILS NOT SHOWN, SEE ROADWAY PLANS.

LEGEND:
1. CONCRETE BARRIER WITH AR FENCE
2. AR FENCE WITH SOLID PLATE OVER HST
3. FUTURE UTILITY ENCASEMENT OPENING
4. MBGR

30 0 30 60
1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 08/08/14

PROPOSED PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

URS | HMM | ARUP
CALIFORNIA HIGH-SPEED TRAIN

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

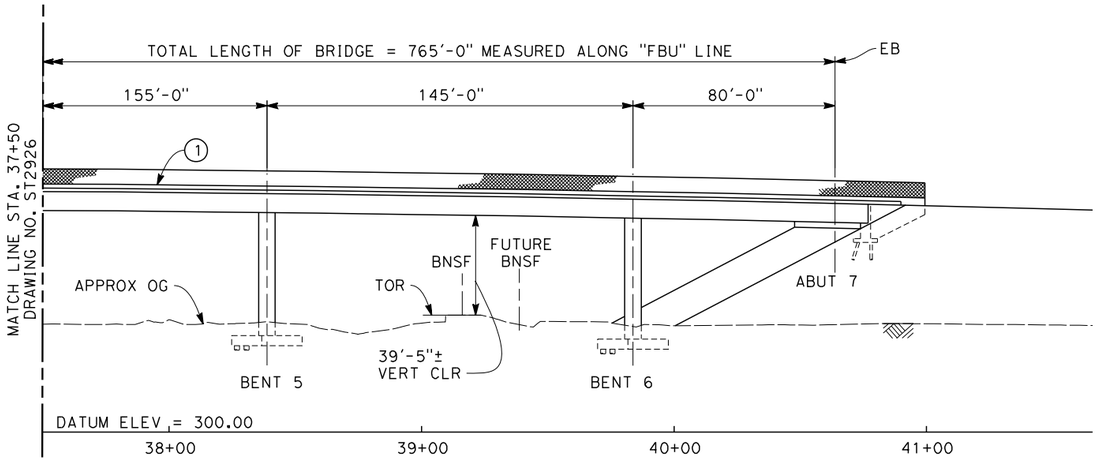
CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
BURBANK ST

CONTRACT NO. HSR 06-0003
DRAWING NO. ST-K1151
SCALE AS SHOWN
SHEET NO. 8 OF 14

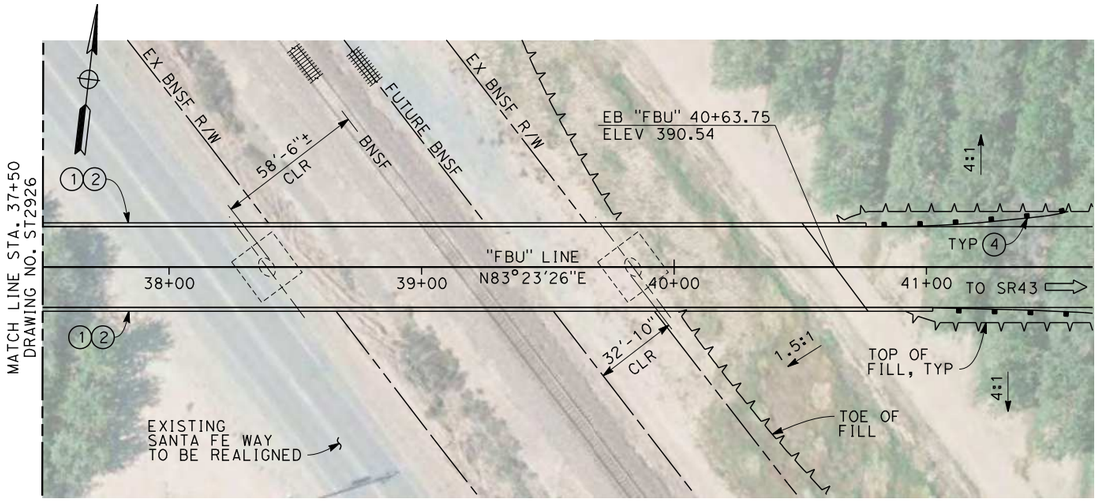
RFP NO. HSR 14-32 – REVIEW DRAFT

BAR59603 8/1/2014 7:51:40 AM CAHSRP-r1.tbl CHSR_PDF_half_black_200dpi.plt c:\pwworking\hmm\external\bar59603\d0246789\45-ST-K1151-WS1.dgn

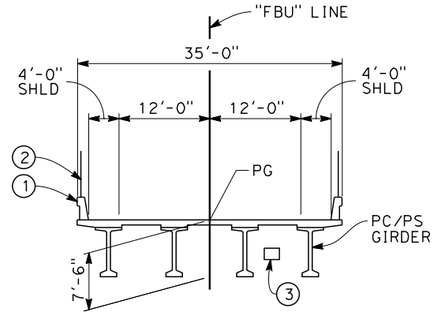
PROFILE GRADE
NO SCALE



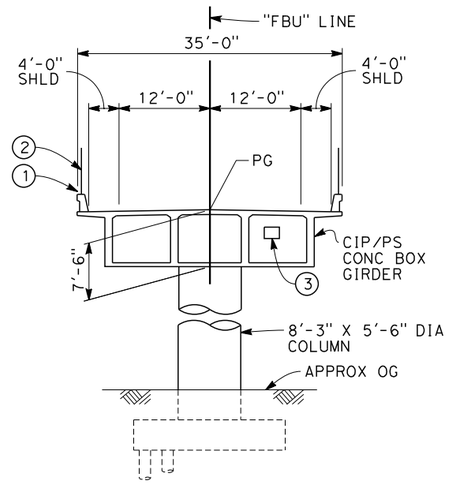
ELEVATION
SCALE: 1"=30'



PLAN
SCALE: 1"=30'



SECTION OVER BNSF



TYPICAL SECTION
SCALE: 1"=10'

FOR NOTES AND LEGEND, SEE SHEET ST2926.

10 0 10 20 — 1"=10'

30 0 30 60 — 1"=30'

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY L. SMITH
DRAWN BY T. PRETZER
CHECKED BY E. MORAN
IN CHARGE R. COFFIN
DATE 12/31/13

RECORD SET 15% DESIGN SUBMISSION - NOT FOR CONSTRUCTION

URS | HMM | ARUP

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
THROUGH WASCO-SHAFTER SUBSECTION
ALIGNMENT WS1
OVERHEAD PLANNING STUDY
BURBANK ST

CONTRACT NO. HSR 06-0003
DRAWING NO. ST2927
SCALE AS SHOWN
SHEET NO. 9 OF 14

RFP No. HSR 14-32 – REVIEW DRAFT

12/20/2013 5:59:45 PM c:\pwworking\hmm\external\bar59603\dms86725\FB-ST-2927-WS1.dgn

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