

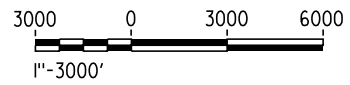
12/23/2013 12:22:16 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125274\FB-SV-1500-A1.dgn frank.palermo



**LEGEND**

---+---+---+ EXISTING FREIGHT RAILROAD

———— PROPOSED CHST



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 ALLENSWORTH BYPASS SUBSECTION  
 ALIGNMENT A1  
 DEER CREEK VIADUCT  
 KEY MAP

CONTRACT NO.  
HSR 06-0003

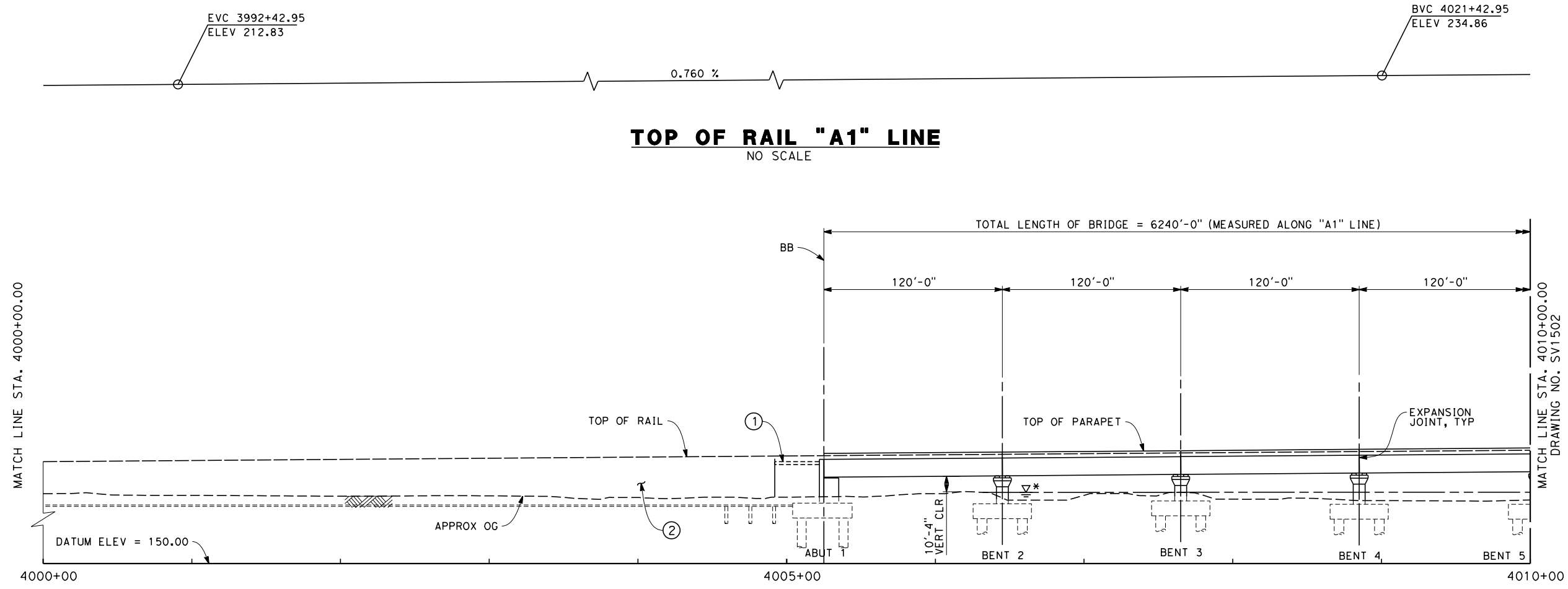
DRAWING NO.  
SV1500

SCALE  
AS SHOWN

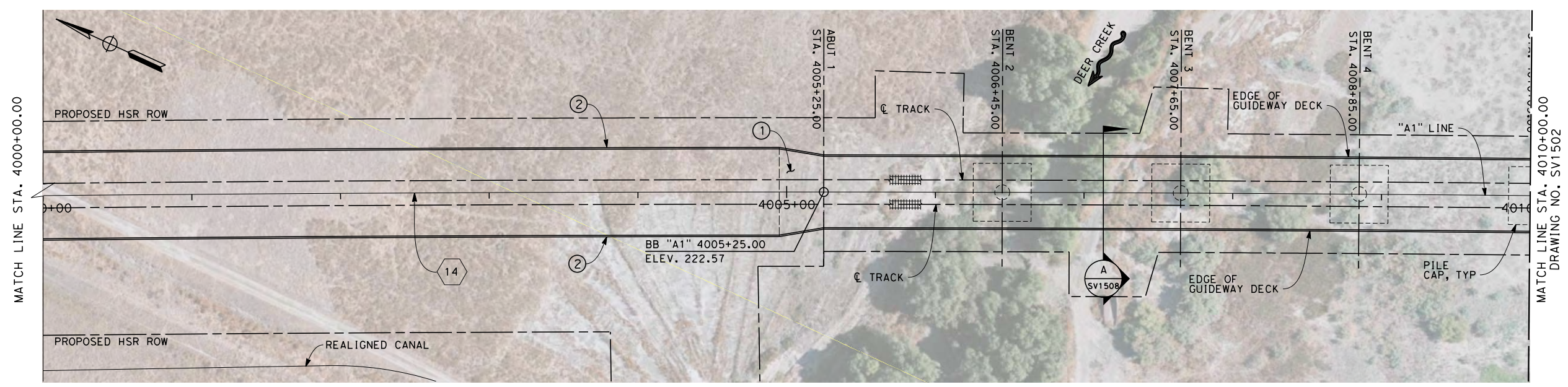
SHEET NO.  
1 OF 9



c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125274\FB-SV-1501-A1.dgn 12/28/2013 1:15:53 PM frank.palermo



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

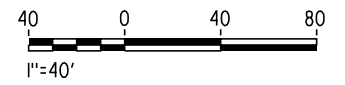
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON  
 SIMPLE SPANS - MSS OR FLPM  
 CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
 STEEL TRUSS - INSITU, SLID OR LAUNCHED  
 ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO BE DETERMINED
  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**

14

R = 50500.0'  
 $\Delta = 24^\circ 16' 19.0"$   
 T = 10859.4'  
 L = 21393.1'



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 ALLENSWORTH BYPASS SUBSECTION  
 ALIGNMENT A1  
 DEER CREEK VIADUCT  
 PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

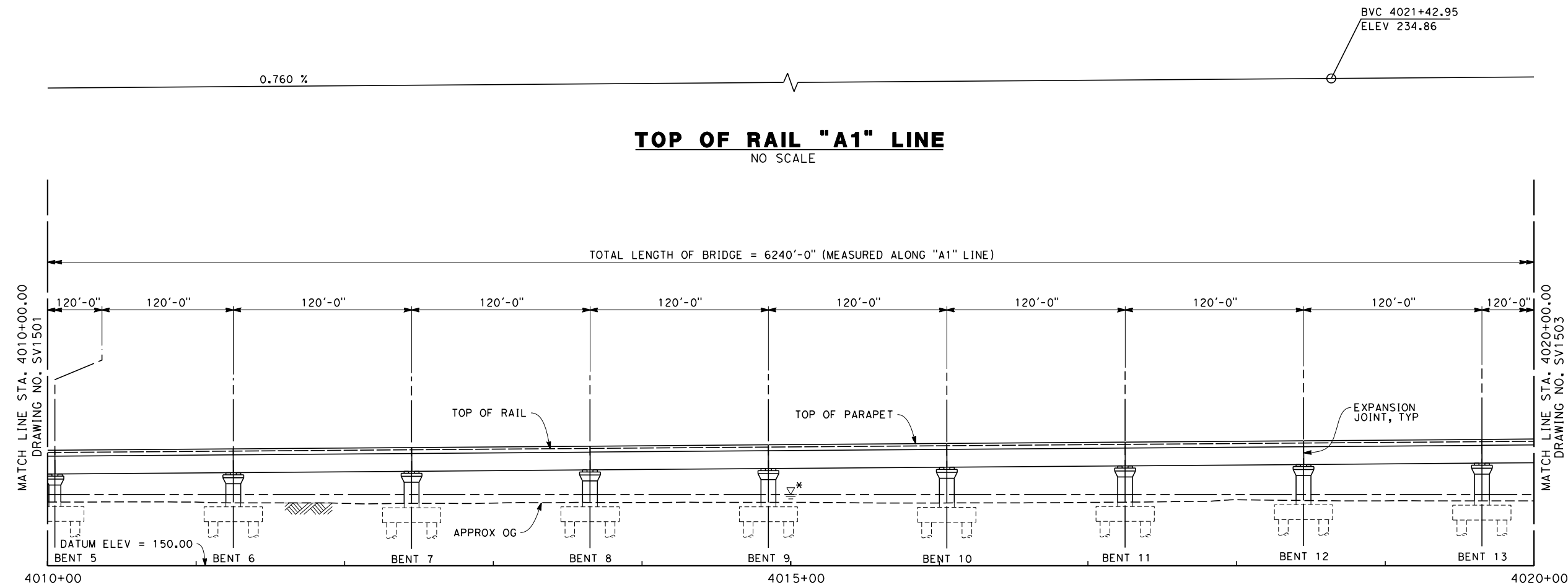
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SV1501

SCALE  
AS SHOWN

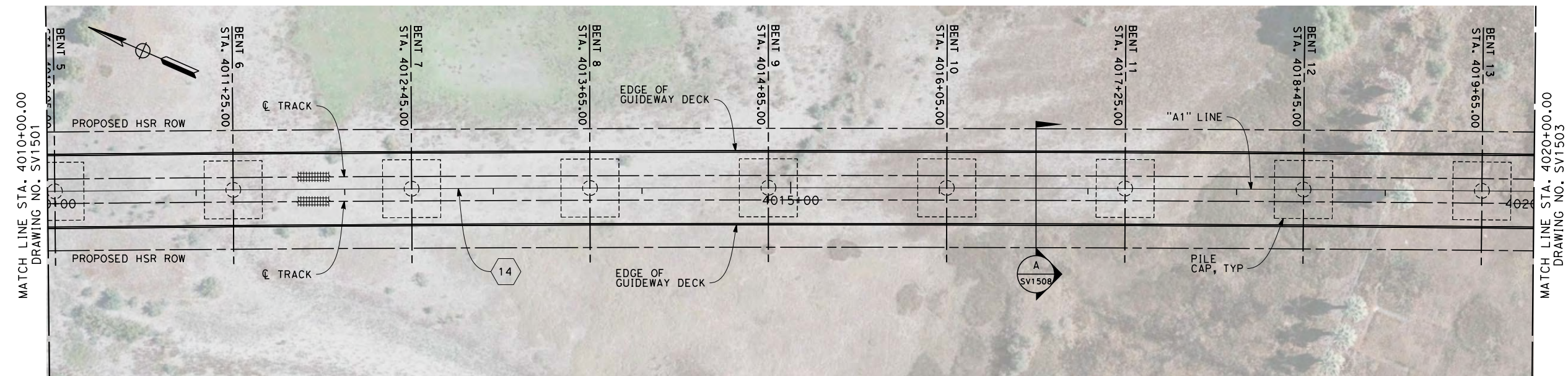
SHEET NO.  
2 OF 9



c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125274\FB-SV-1502-A1.dgn 12/28/2013 1:04:14 PM frank.palermo



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

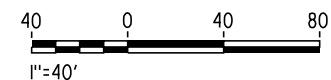
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO BE DETERMINED
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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**

⑭

R = 50500.0'  
 $\Delta = 24^\circ 16' 19.0''$   
 T = 10859.4'  
 L = 21393.1'



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 ALLENSWORTH BYPASS SUBSECTION  
 ALIGNMENT A1  
 DEER CREEK VIADUCT  
 PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

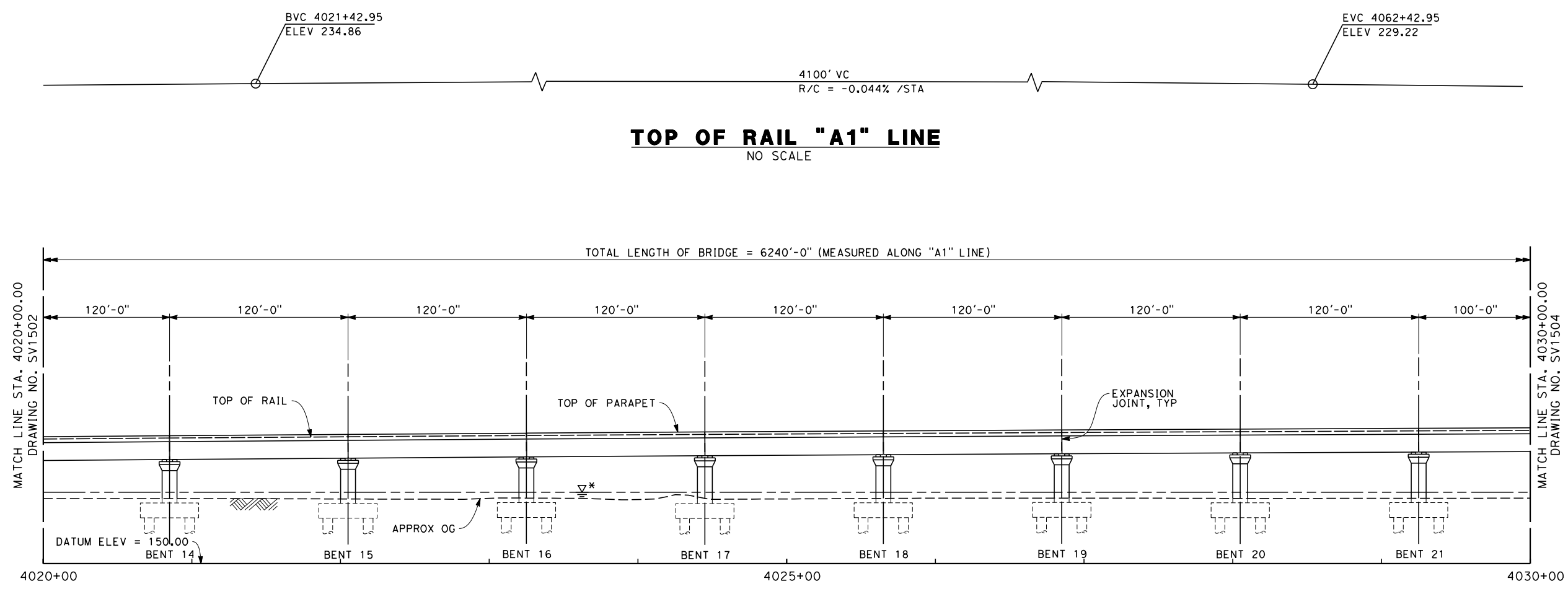
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SV1502

SCALE  
AS SHOWN

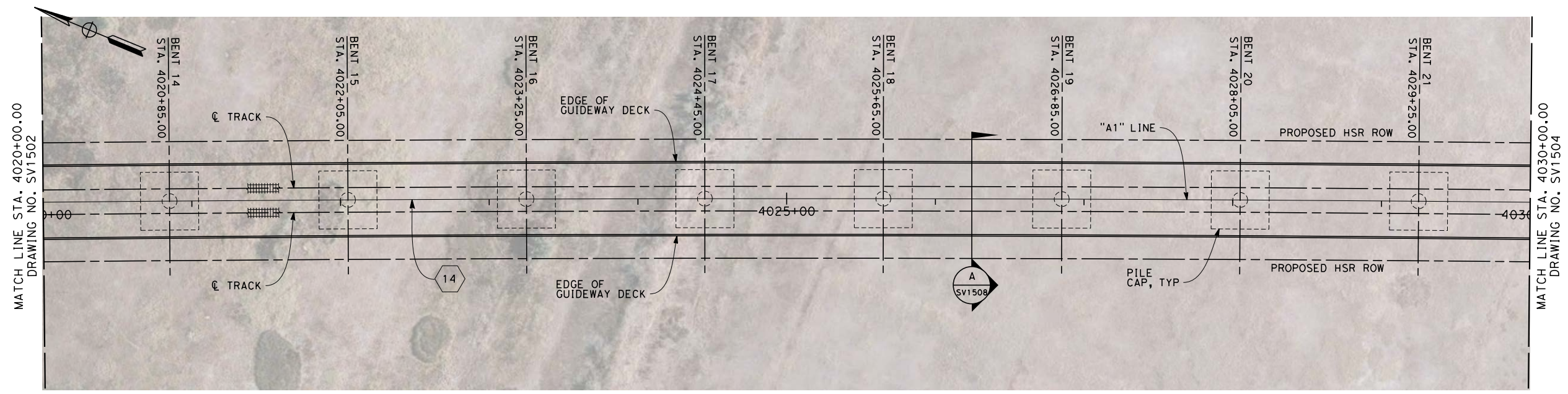
SHEET NO.  
3 OF 9

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- 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'



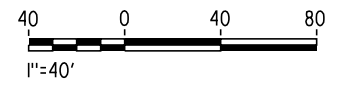
**PLAN**  
SCALE 1" = 40'

- 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**

14

R = 50500.0'  
 $\Delta = 24^\circ 16' 19.0"$   
 T = 10859.4'  
 L = 21393.1'



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 ALLENSWORTH BYPASS SUBSECTION  
 ALIGNMENT A1  
 DEER CREEK VIADUCT  
 PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1503

SCALE  
AS SHOWN

SHEET NO.  
4 OF 9

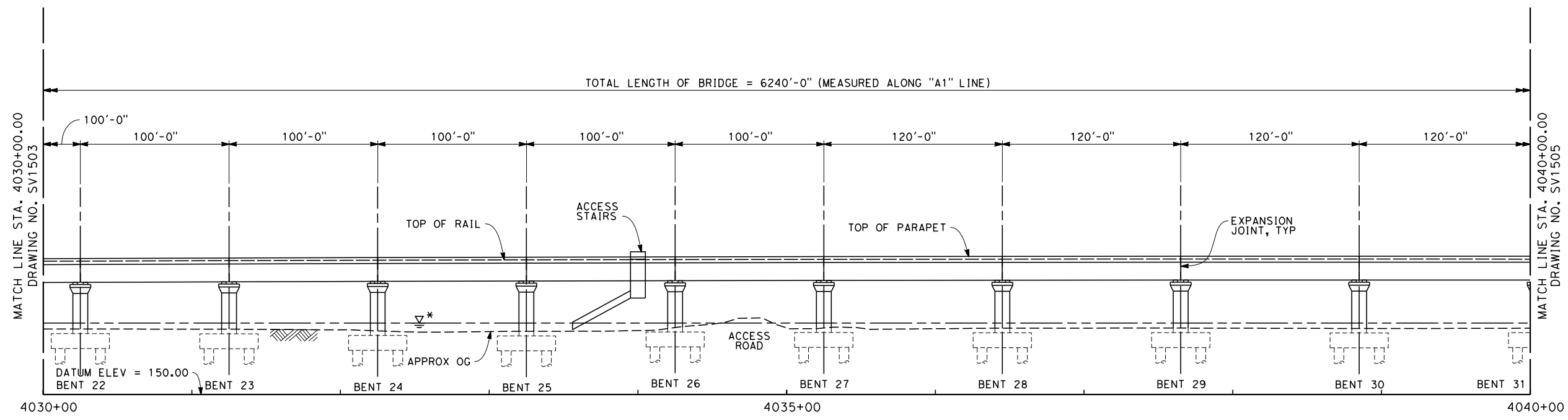


BVC 4021+42.95  
ELEV 234.86

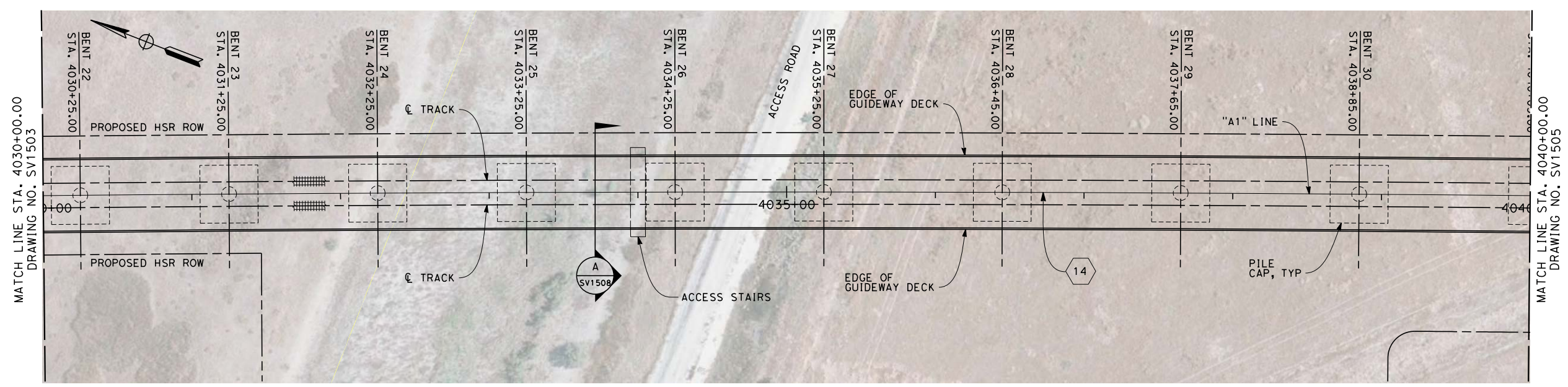
EVC 4062+42.95  
ELEV 229.22

4100' VC  
R/C = -0.044% /STA

**TOP OF RAIL "A1" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

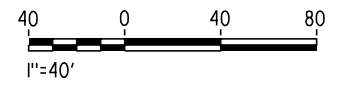
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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**

14

R = 50500.0'  
Δ = 24° 16' 19.0"  
T = 10859.4'  
L = 21393.1'



12/23/2013 12:27:57 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125274\FB-SV-1504-A1.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
ALLENSWORTH BYPASS SUBSECTION  
ALIGNMENT A1  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

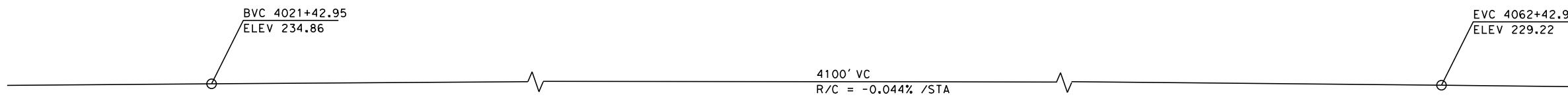
DRAWING NO.  
SV1504

SCALE  
AS SHOWN

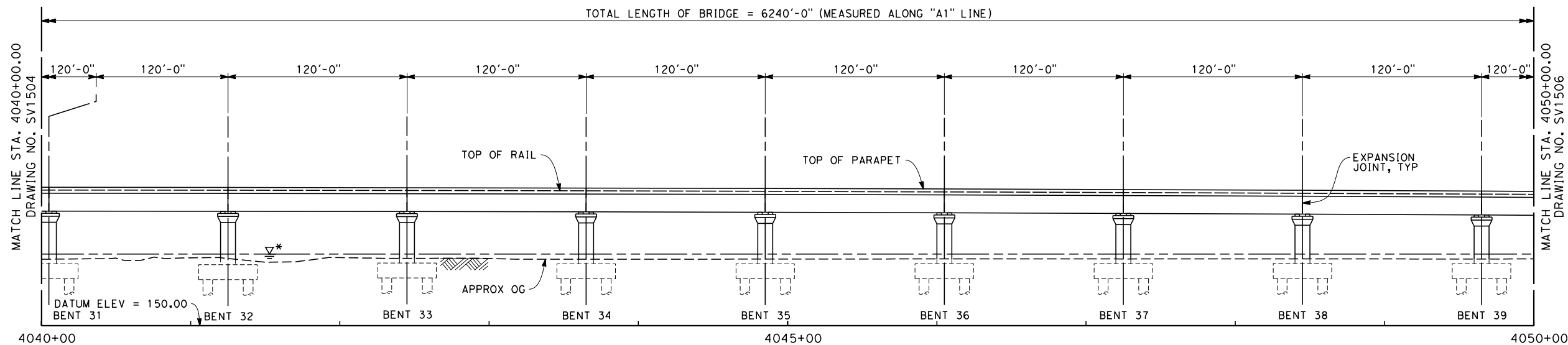
SHEET NO.  
5 OF 9



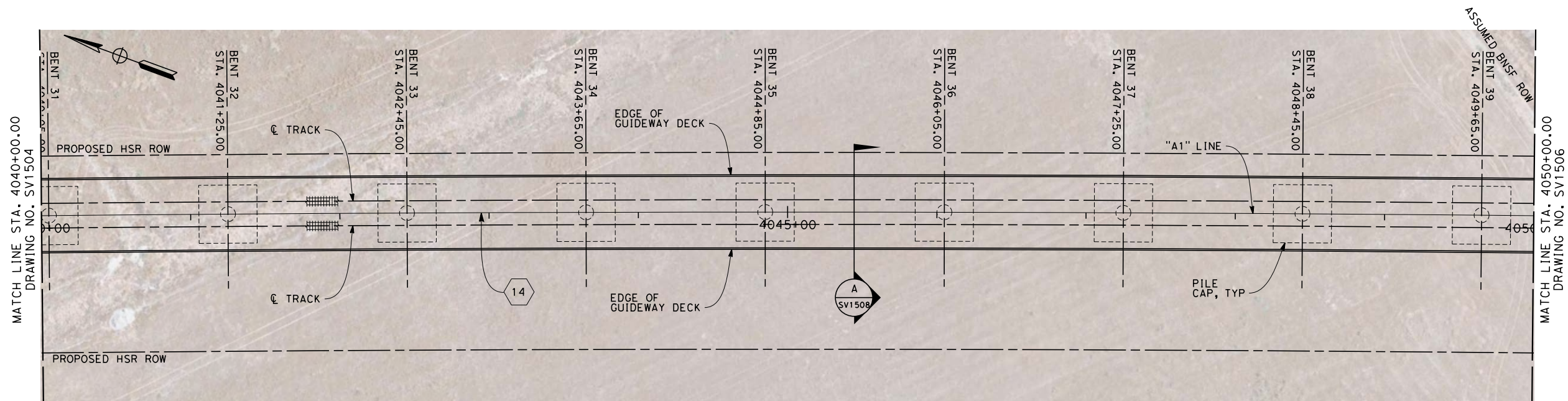
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**TOP OF RAIL "A1" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

**NOTES**

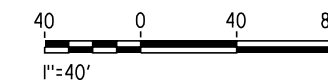
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
  - SIMPLE SPANS - MSS OR FLPM
  - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
  - STEEL TRUSS - INSITU, SLID OR LAUNCHED
  - ELEVATED SLABS - PC BEAM AND INSITU SLAB
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5. 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**

14  
 R = 50500.0'  
 $\Delta = 24^\circ 16' 19.0''$   
 T = 10859.4'  
 L = 21393.1'



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**

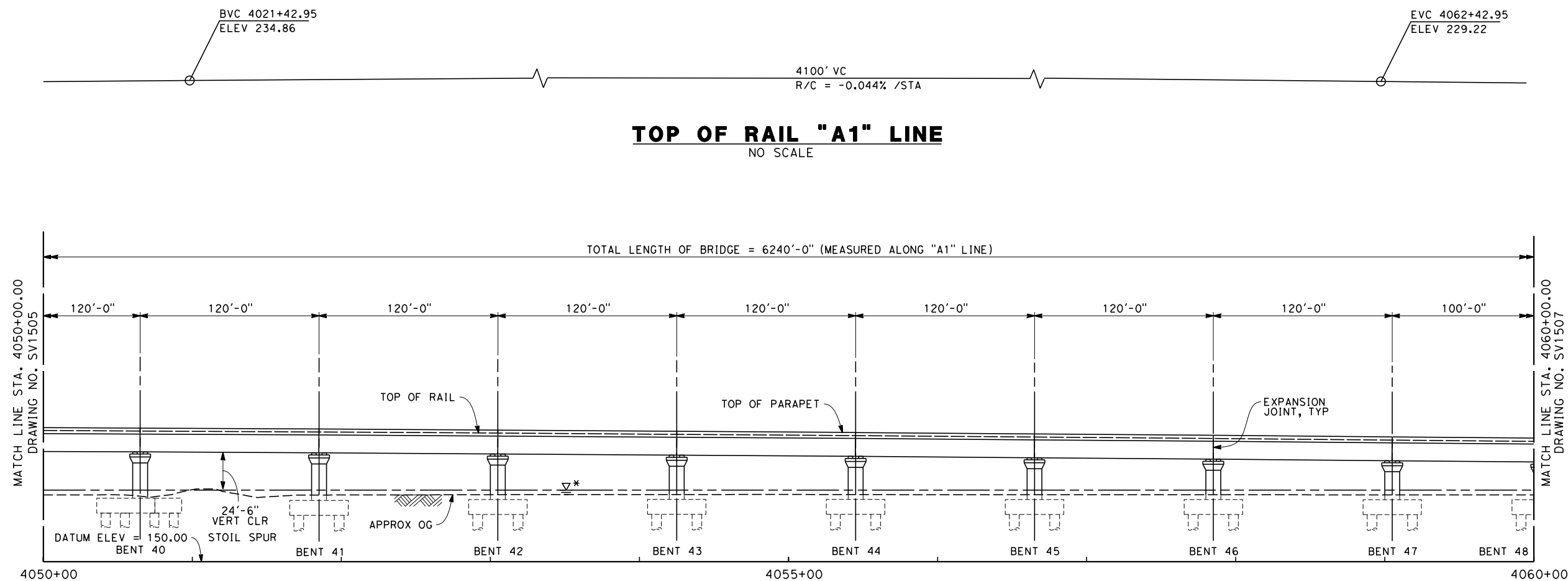


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 ALLENSWORTH BYPASS SUBSECTION  
 ALIGNMENT A1  
 DEER CREEK VIADUCT  
 PLAN AND ELEVATION

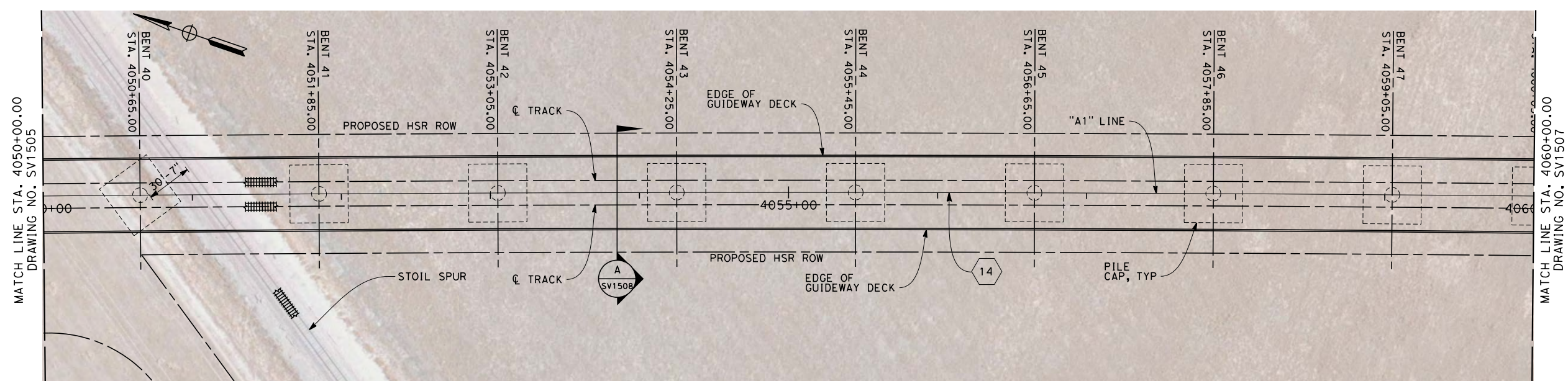
CONTRACT NO.  
HSR 06-0003  
 DRAWING NO.  
SV1505  
 SCALE  
AS SHOWN  
 SHEET NO.  
6 OF 9



12/23/2013 12:33:37 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125274\FB-SV-1506-A1.dgn



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

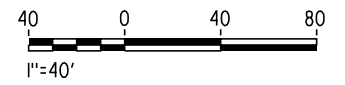
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
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- 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**

14

R = 50500.0'  
 $\Delta = 24^\circ 16' 19.0''$   
 T = 10859.4'  
 L = 21393.1'



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 ALLENSWORTH BYPASS SUBSECTION  
 ALIGNMENT A1  
 DEER CREEK VIADUCT  
 PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1506

SCALE  
AS SHOWN

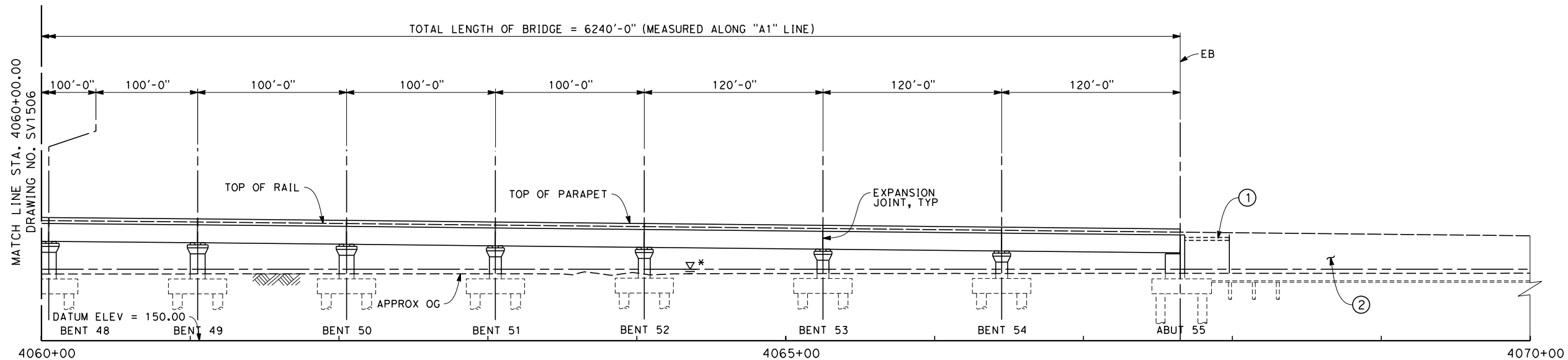
SHEET NO.  
7 OF 9



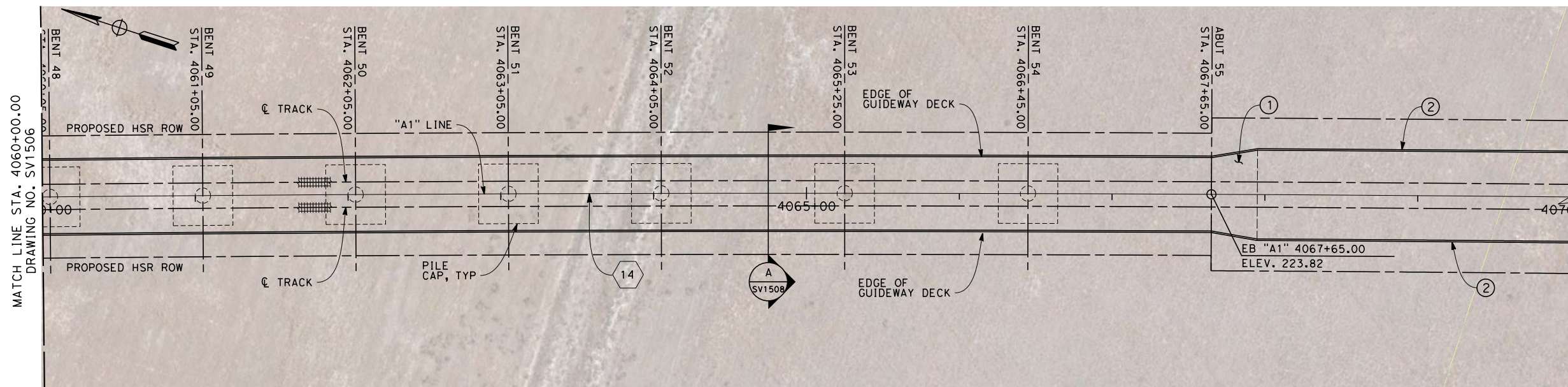
EVC 4062+42.95  
ELEV 229.22

-1.034 %

**TOP OF RAIL "A1" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

**NOTES**

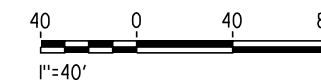
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON  
SIMPLE SPANS - MSS OR FLPM  
CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
STEEL TRUSS - INSITU, SLID OR LAUNCHED  
ELEVATED SLABS - PC BEAM AND INSITU SLAB
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**LEGEND:**

- 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**

14  
R = 50500.0'  
Δ = 24° 16' 19.0"  
T = 10859.4'  
L = 21393.1'



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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**

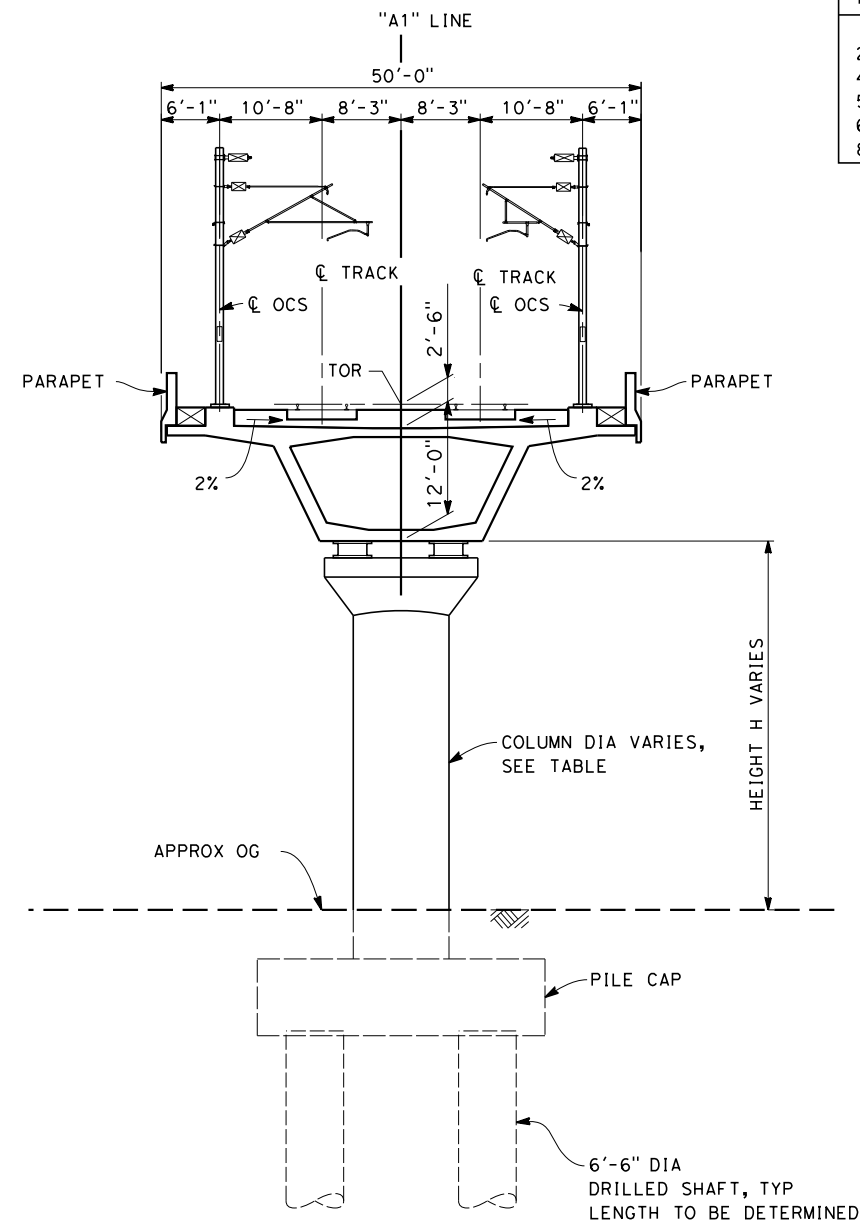


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
ALLENSWORTH BYPASS SUBSECTION  
ALIGNMENT A1  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1507  
SCALE  
AS SHOWN  
SHEET NO.  
8 OF 9



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COLUMN DIAMETERS	
COLUMN HEIGHT	DIAMETER
0-80	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 4005+25 THROUGH 4067+65



REV	DATE	BY	CHK	APP	DESCRIPTION

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

**RECORD SET 15%  
DESIGN SUBMISSION**

**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

ALLENSWORTH BYPASS SUBSECTION  
ALIGNMENT A1  
DEER CREEK VIADUCT  
TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1508
SCALE AS SHOWN
SHEET NO. 9 OF 9

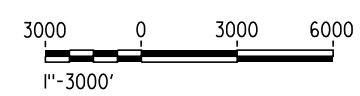


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**LEGEND**

- EXISTING FREIGHT RAILROAD
- PROPOSED CHST



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
E. MORAN

DRAWN BY  
D. BARNHART

CHECKED BY  
B. LUSCOMBE

IN CHARGE  
R. COFFIN

DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**

**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 THROUGH ALLENSWORTH SUBSECTION  
 ALIGNMENT A2  
 DEER CREEK VIADUCT  
 KEY MAP

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1530

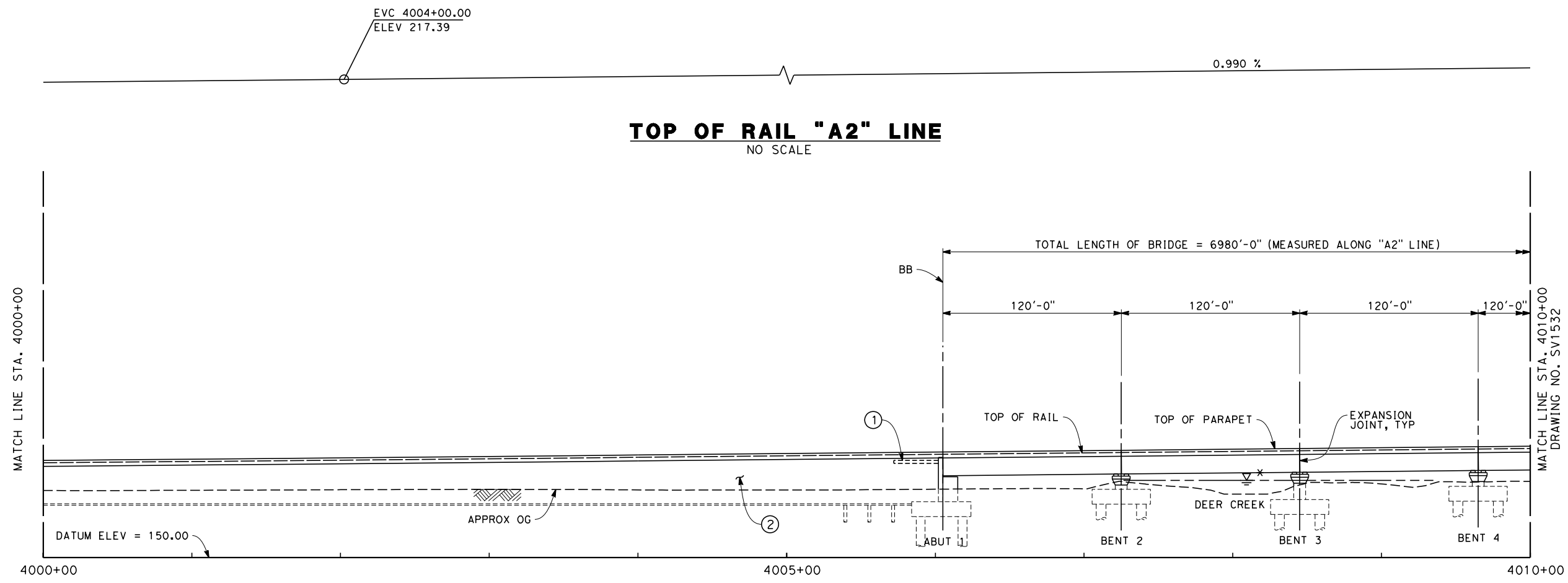
SCALE  
AS SHOWN

SHEET NO.  
1 OF 10

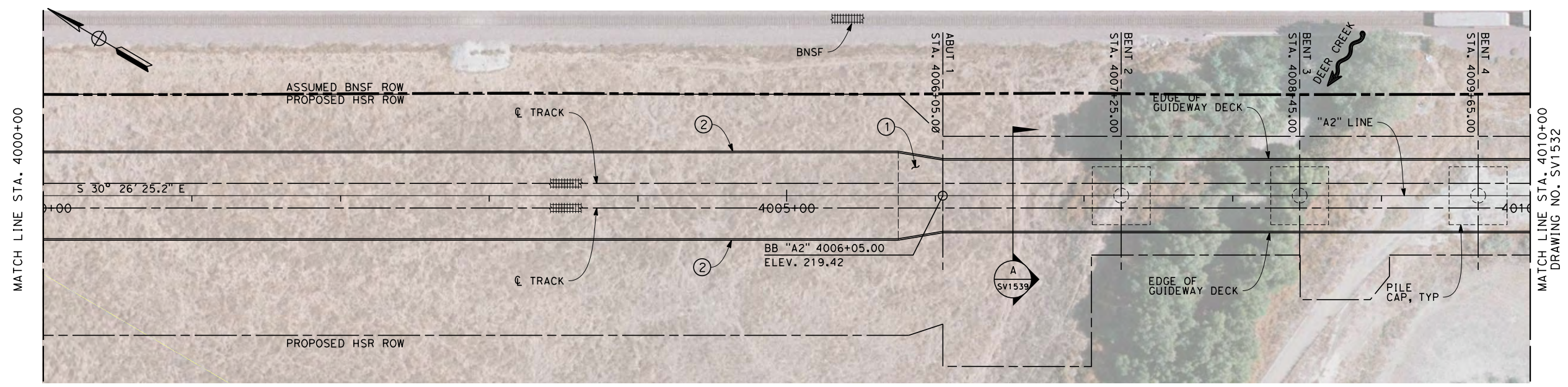


12/28/2013 12:51:26 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125272\FB-SV-1531-A2.dgn

- 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.

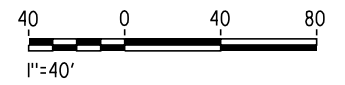


**ELEVATION**  
SCALE 1" = 40'



**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".



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1531  
SCALE  
AS SHOWN  
SHEET NO.  
2 OF 10

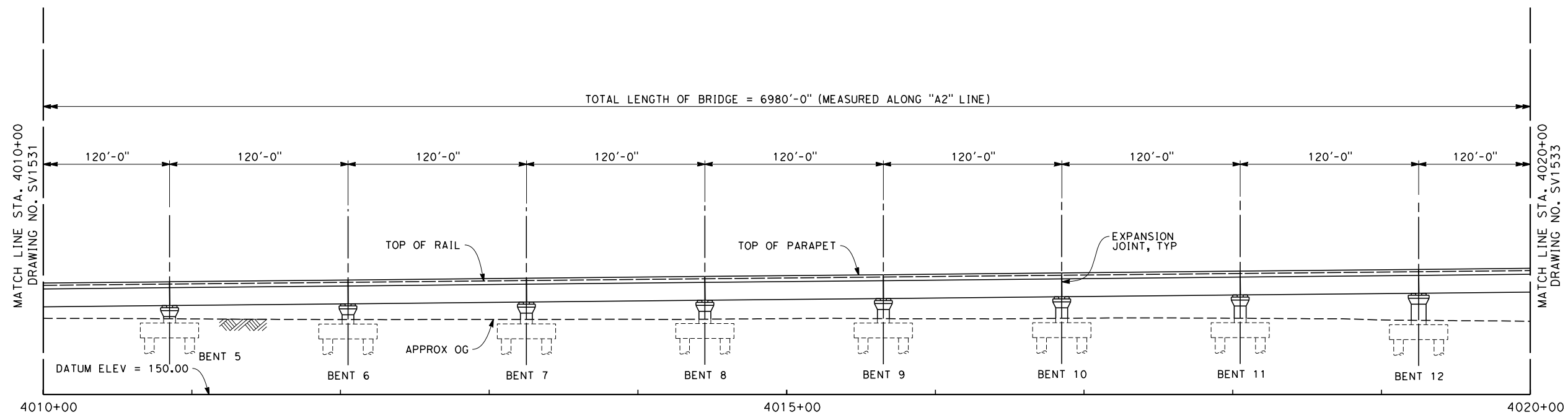


andrew.armstrong 2/12/2013 10:37:46 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1532-A2.dgn

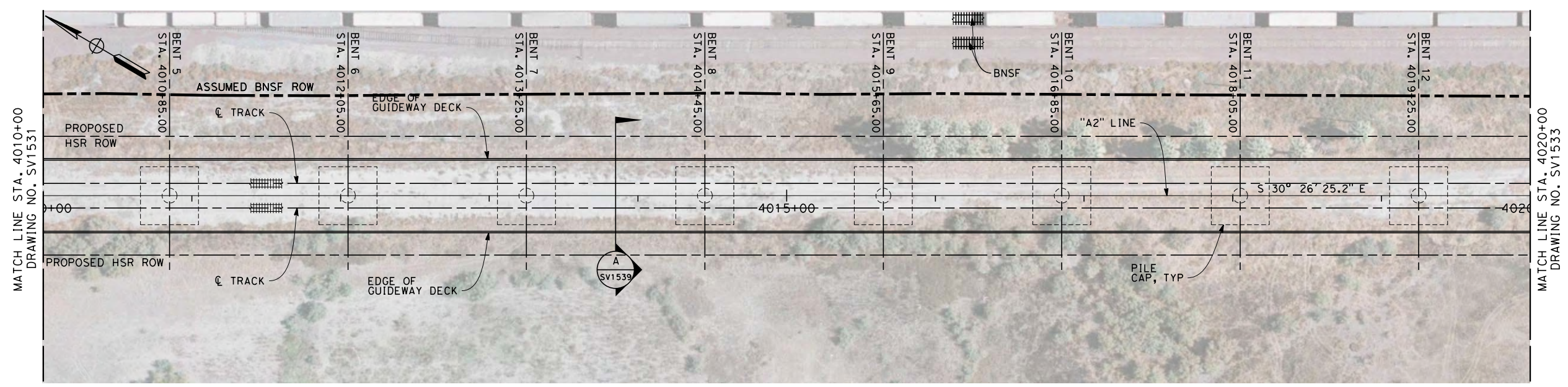
BVC 4020+50.00  
ELEV 233.73

0.990 %

**TOP OF RAIL "A2" LINE**  
NO SCALE



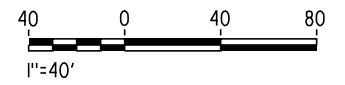
**ELEVATION**  
SCALE 1" = 40'



**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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

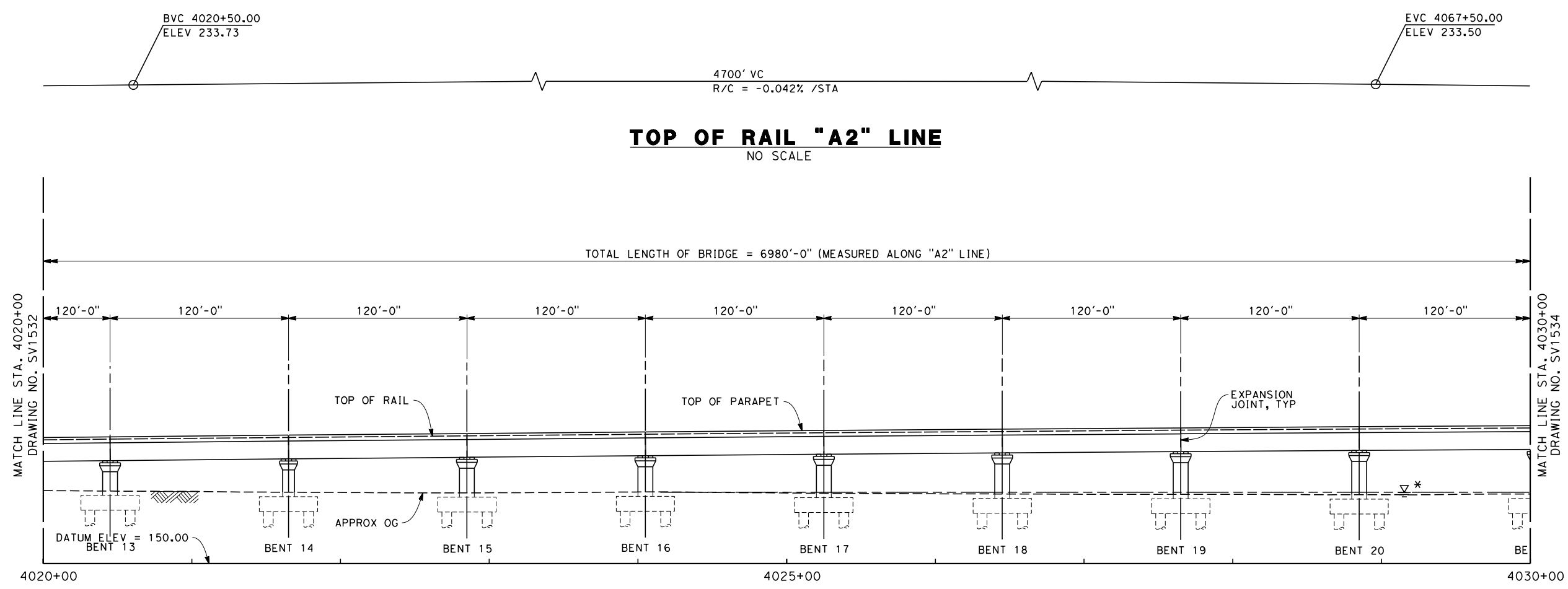
DRAWING NO.  
SV1532

SCALE  
AS SHOWN

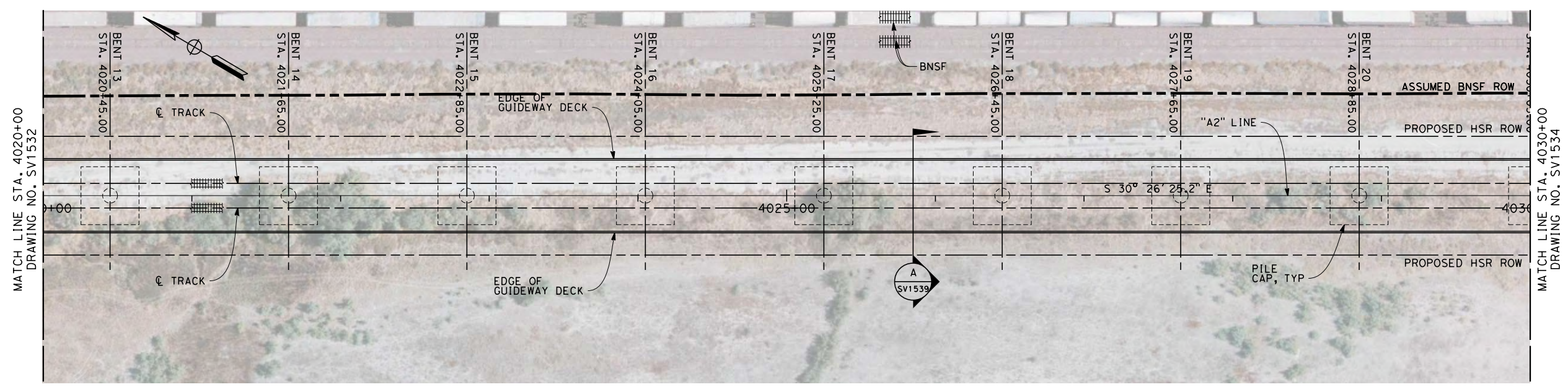
SHEET NO.  
3 OF 10



- 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
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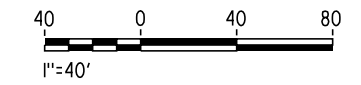


**ELEVATION**  
SCALE 1" = 40'



**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".



andrew.armstrong 2/12/2013 10:38:02 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1533-A2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1533

SCALE  
AS SHOWN

SHEET NO.  
4 OF 10

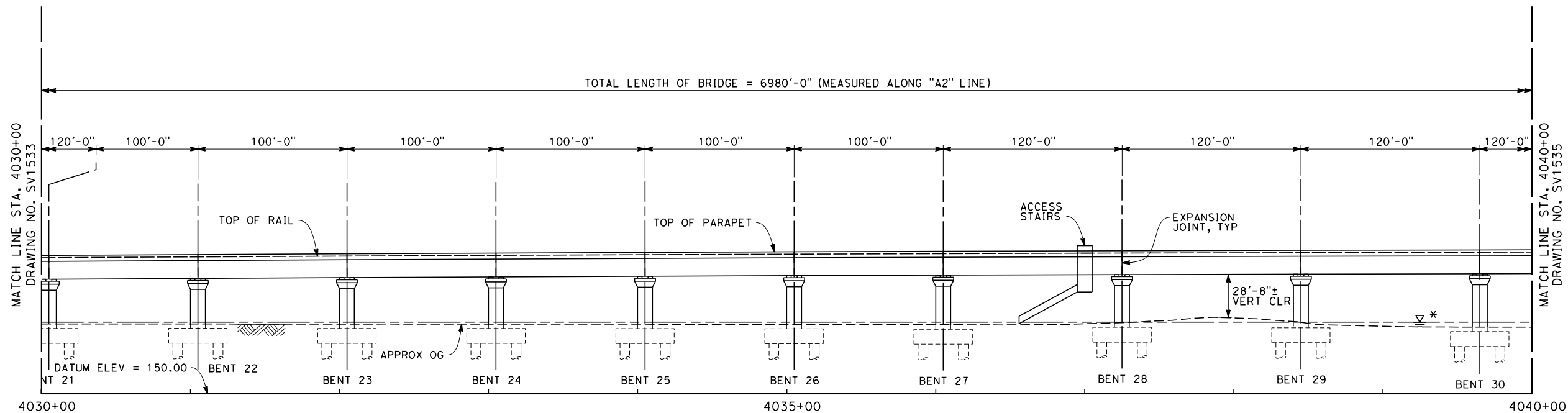


BVC 4020+50.00  
ELEV 233.73

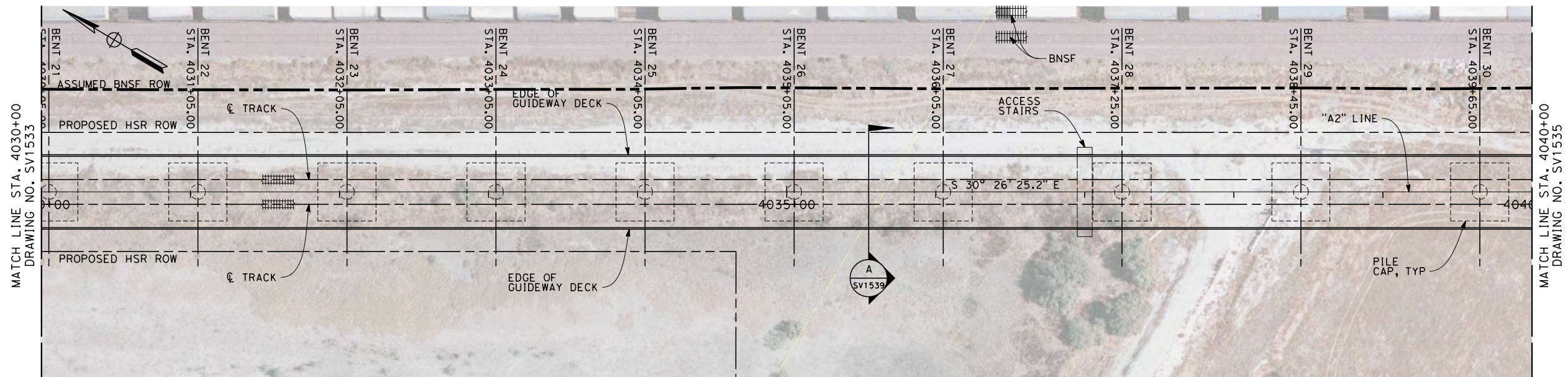
EVC 4067+50.00  
ELEV 233.50

4700' VC  
R/C = -0.042% /STA

**TOP OF RAIL "A2" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



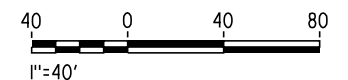
**PLAN**  
SCALE 1" = 40'

**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".



andrew.armstrong 2/12/2013 10:38:19 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1534-A2.dgn

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**

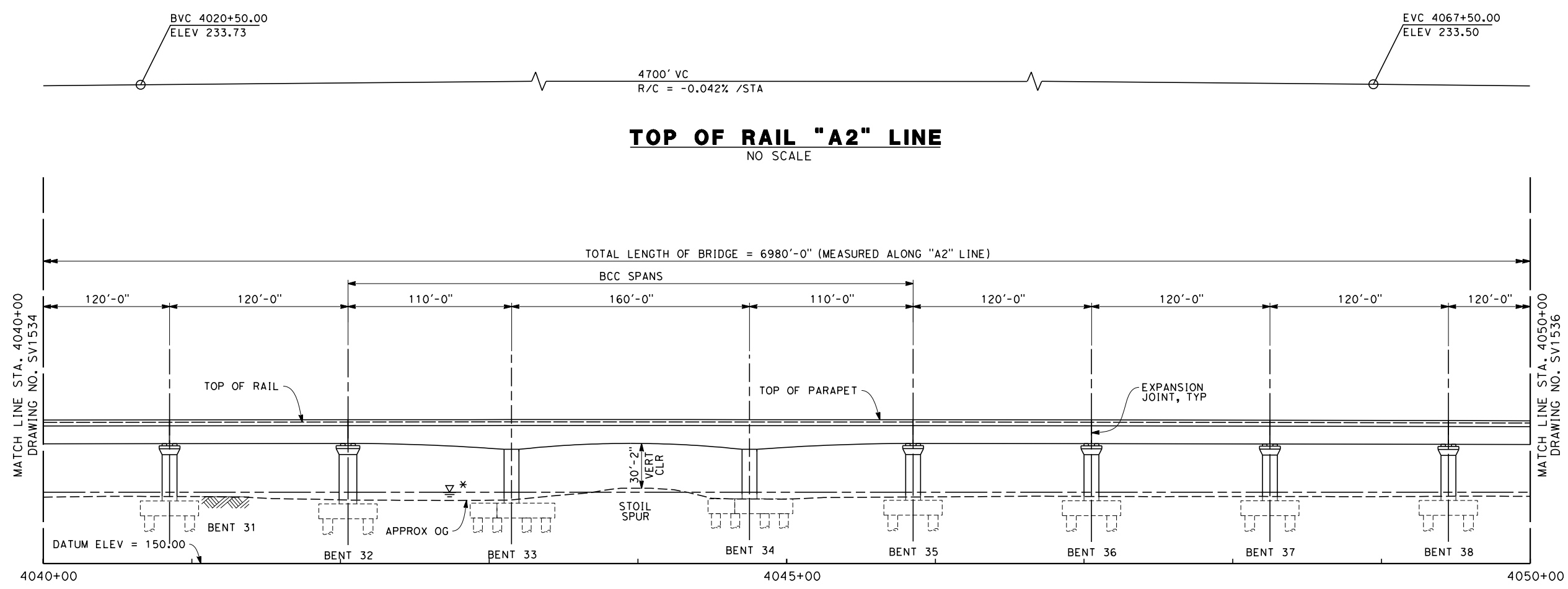


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

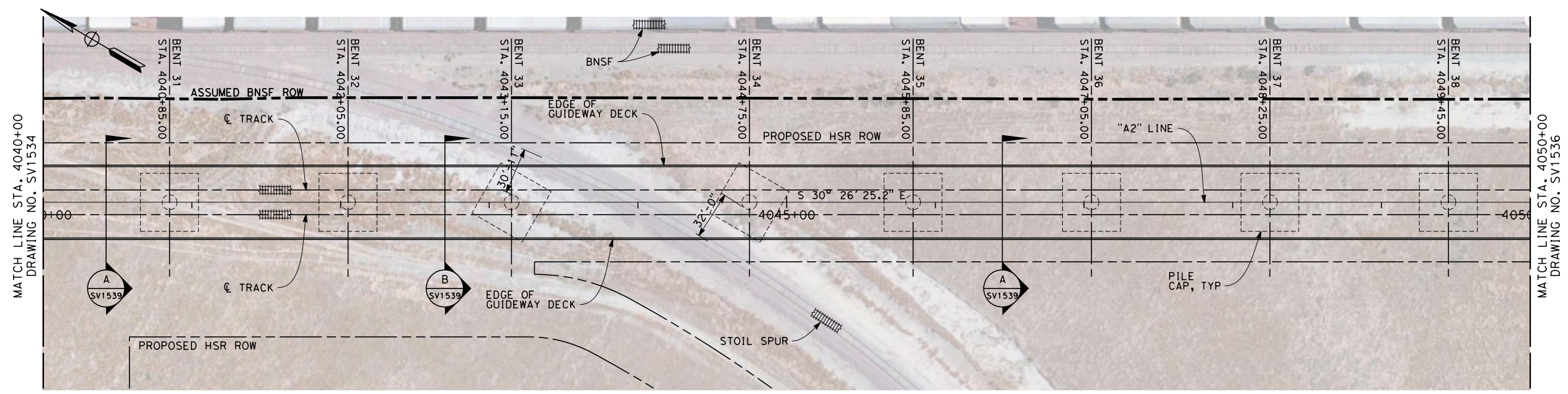
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1534
SCALE AS SHOWN
SHEET NO. 5 OF 10



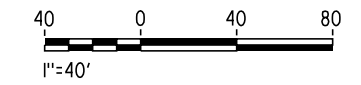
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO BE DETERMINED
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**ELEVATION**  
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".



andrew.armstrong 2/12/2013 10:38:35 AM c:\pwworking\hmm\external\andrew.armstrong\d0125272\FB-SV-1535-A2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1535

SCALE  
AS SHOWN

SHEET NO.  
6 OF 10

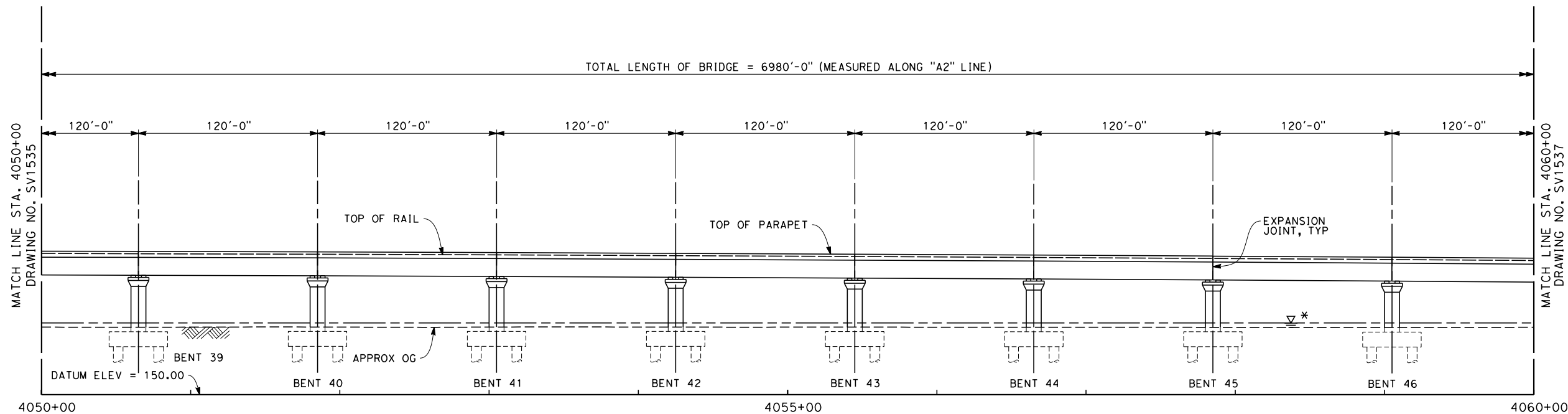


BVC 4020+50.00  
ELEV 233.73

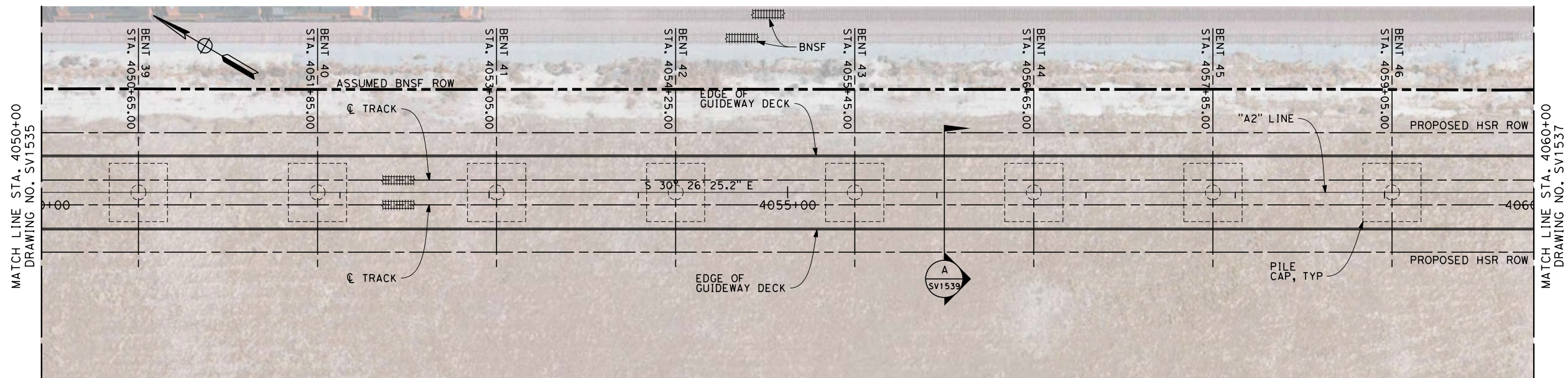
EVC 4067+50.00  
ELEV 233.50

4700' VC  
R/C = -0.042% /STA

**TOP OF RAIL "A2" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



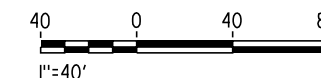
**PLAN**  
SCALE 1" = 40'

**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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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".



andrew.armstrong 2/12/2013 10:38:52 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1536-A2.dgn

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**

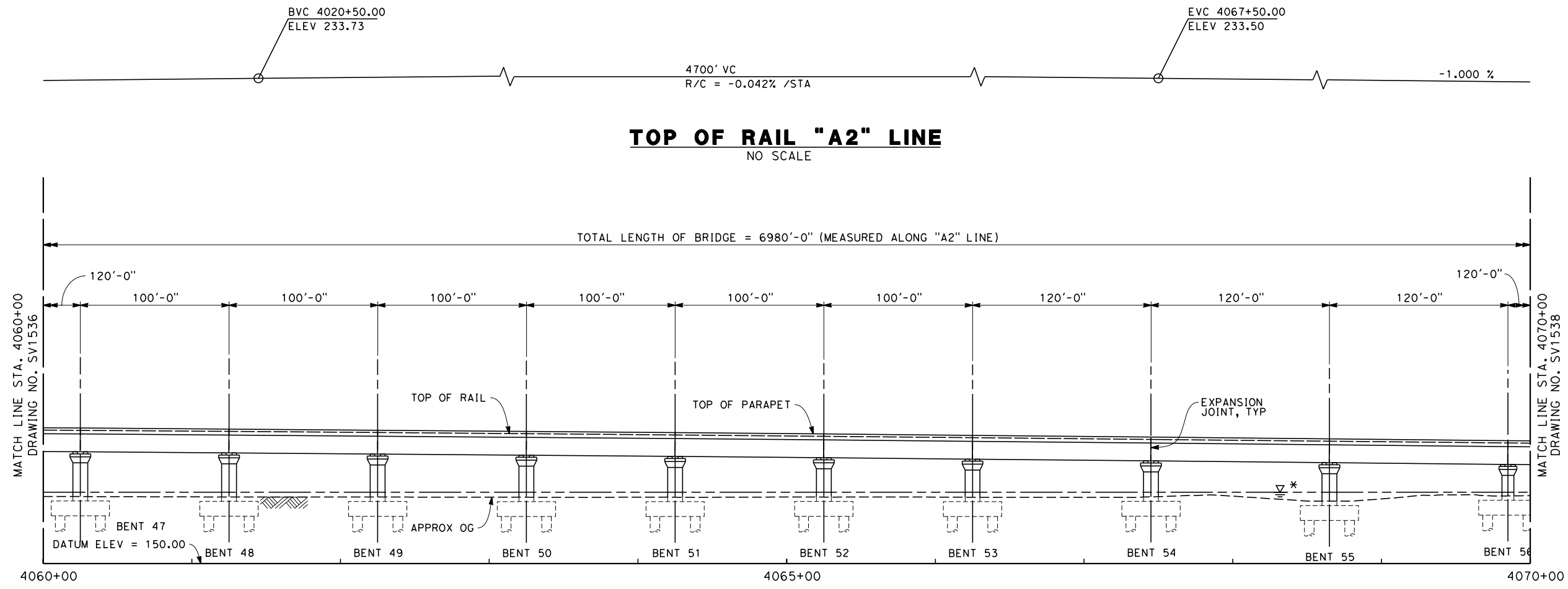


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

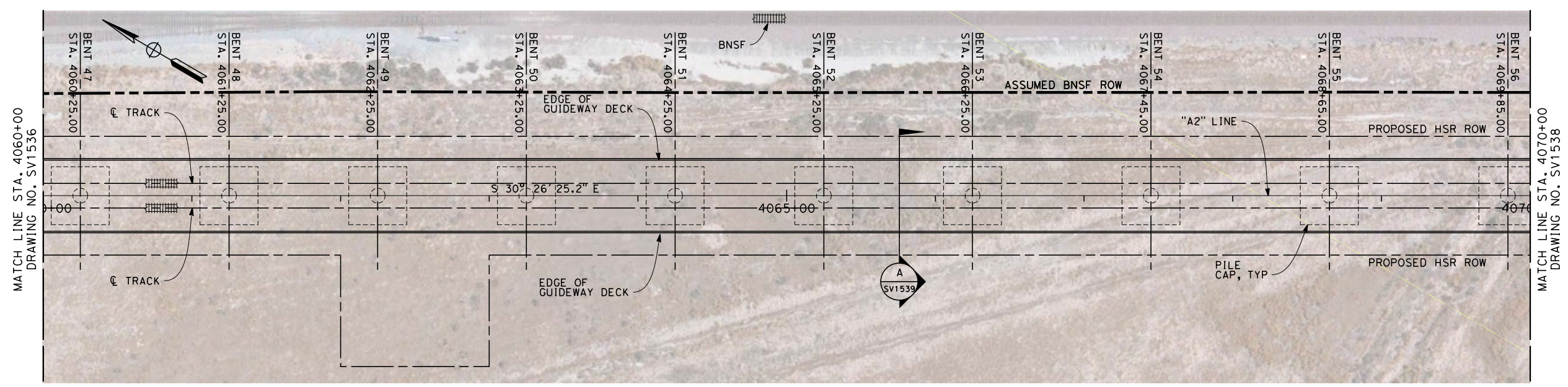
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1536  
SCALE  
AS SHOWN  
SHEET NO.  
7 OF 10



andrew.armstrong 2/12/2013 10:39:14 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1537-A2.dgn



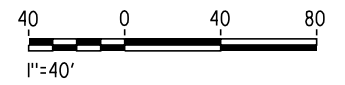
**ELEVATION**  
SCALE 1" = 40'



**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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

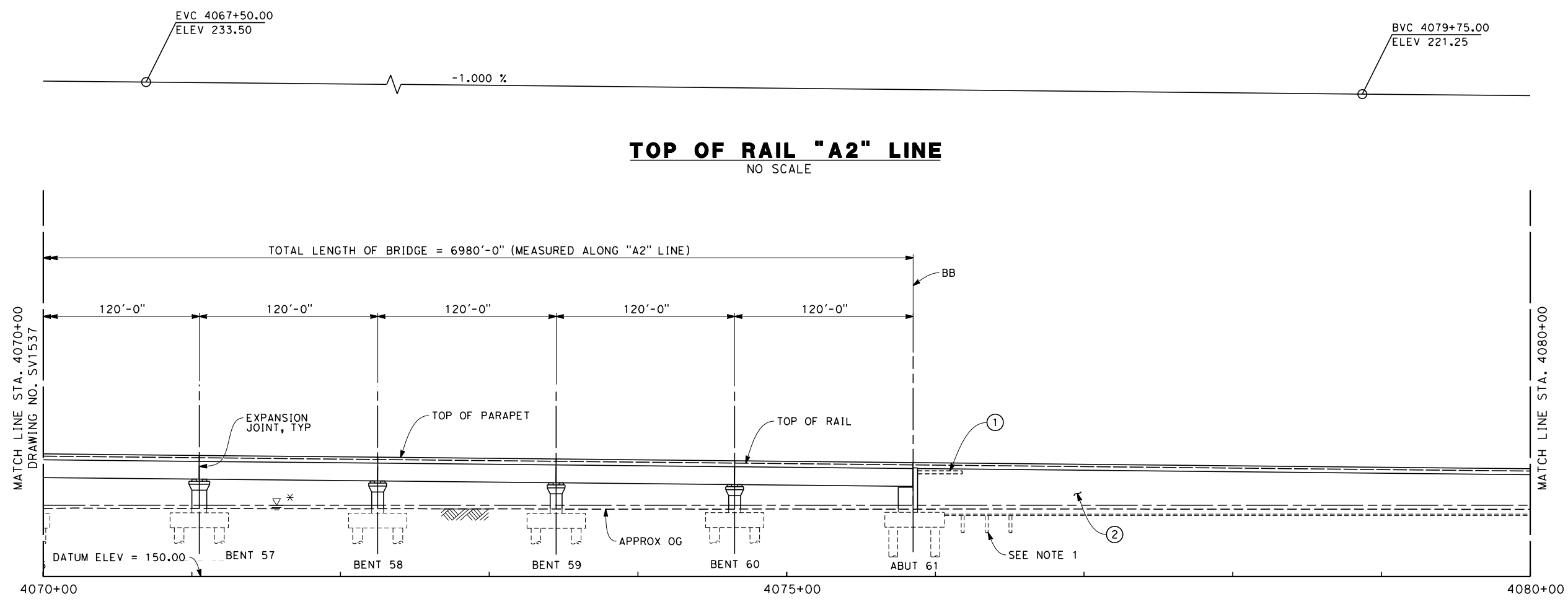
DRAWING NO.  
SV1537

SCALE  
AS SHOWN

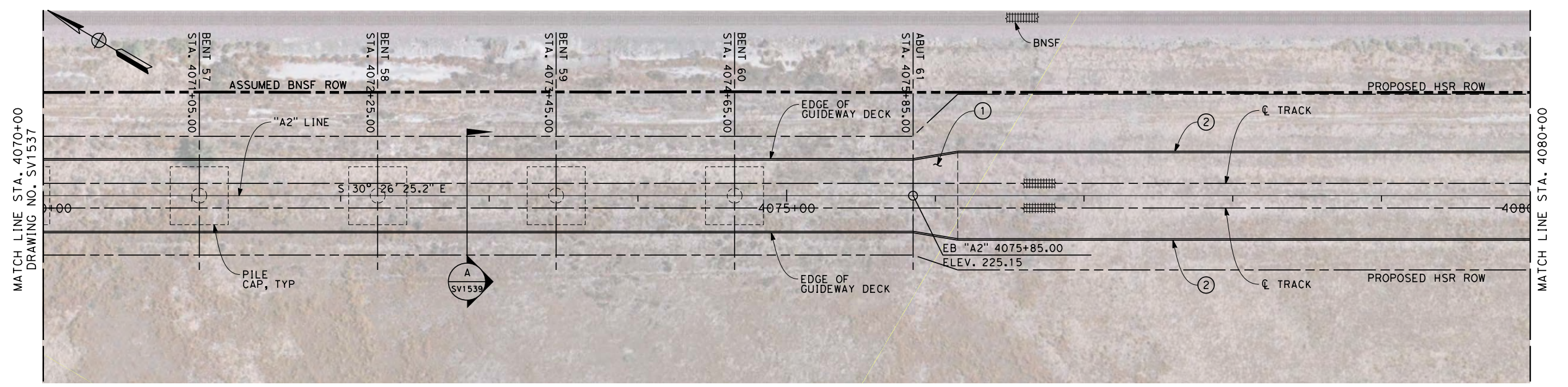
SHEET NO.  
8 OF 10



andrew.armstrong 2/12/2013 10:39:31 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1538-A2.dgn



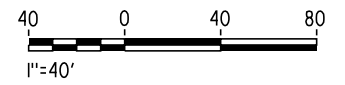
**ELEVATION**  
SCALE 1" = 40'



**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".



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**

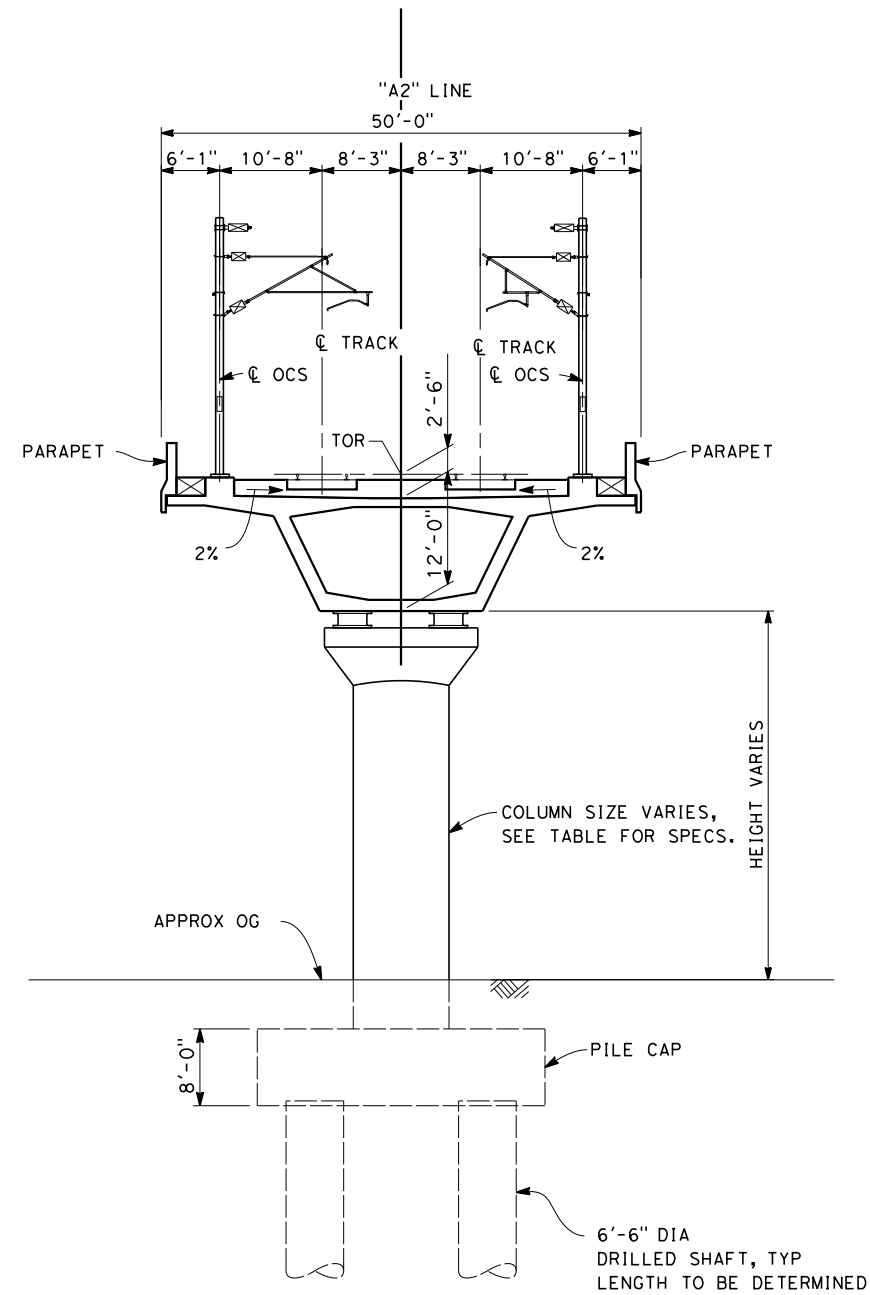


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1538  
SCALE  
AS SHOWN  
SHEET NO.  
9 OF 10



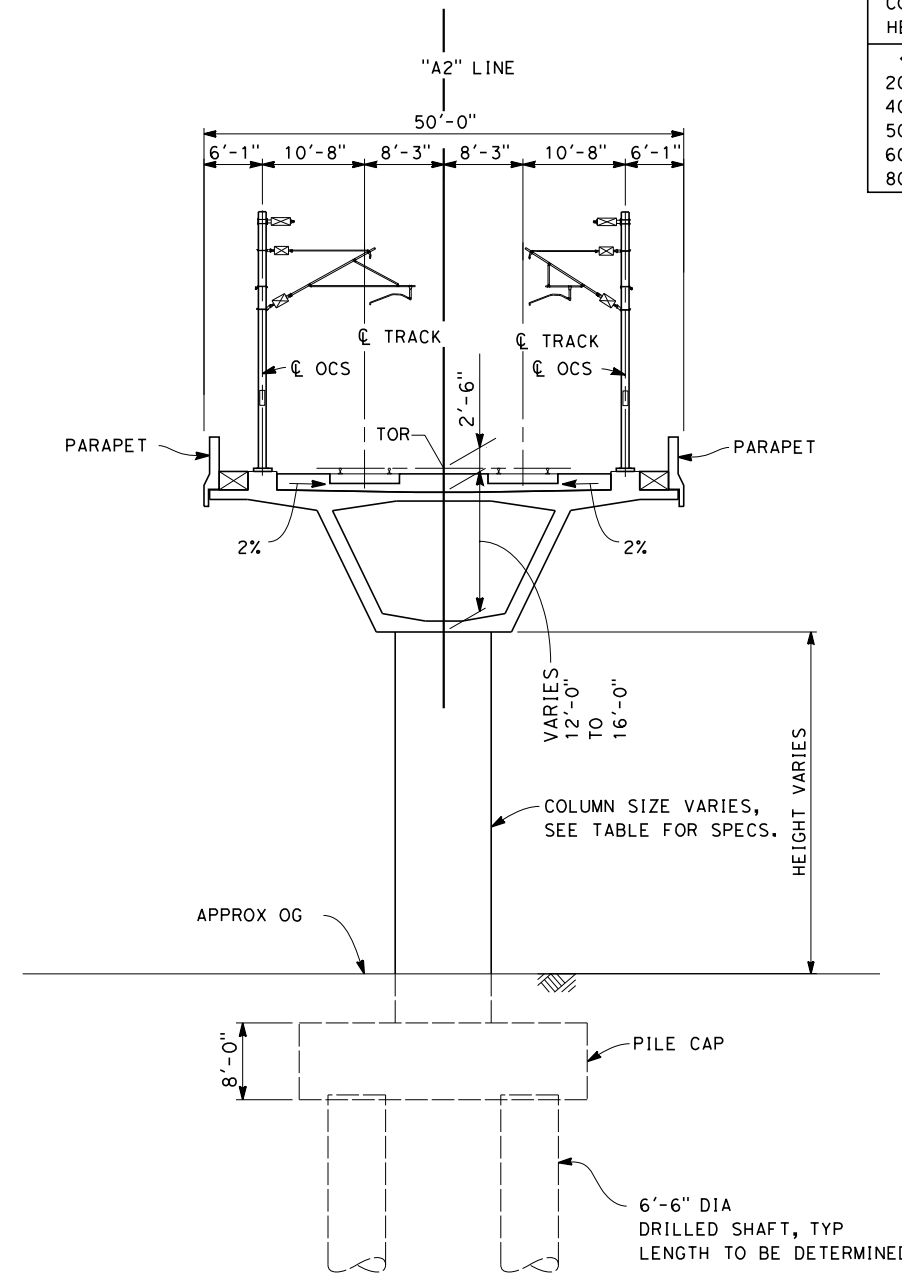
COLUMN DIAMETERS	
COLUMN HEIGHT	DIAMETER
< 20	8 FT
20-40	10 FT
40-50	12 FT
50-60	15 FT
60-80	20 FT
80-100	25 FT



**SECTION A**

SCALE: 1" = 10'

STA 4006+05 THROUGH 4042+05  
STA 4045+85 THROUGH 4075+85



**SECTION B**

SCALE: 1" = 10'

STA 4042+05 THROUGH 4045+85

NOTE:

1. MINIMUM DIMENSION FROM SOFFIT TO TOP OF FOUNDATION SHALL BE 16'.



c:\pwworking\hmm\external\jojo.valenzuela-arup.com\d0125272\FB-SV-1539-A2.dgn 12/28/2013 4:01:28 PM jojo.valenzuela

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY S. SHEIKH
DRAWN BY E. TANAKA
CHECKED BY A. ARMSTRONG
IN CHARGE R. COFFIN
DATE 12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**

**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
DEER CREEK VIADUCT  
TYPICAL SECTIONS

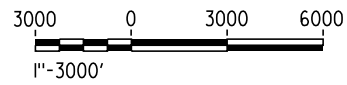
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1539
SCALE AS SHOWN
SHEET NO. 10 OF 10

c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1560-A2.dgn



**LEGEND**

- EXISTING FREIGHT RAILROAD
- PROPOSED CHST



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
S. SHEIKH  
DRAWN BY  
E. TANAKA  
CHECKED BY  
A. ARMSTRONG  
IN CHARGE  
R. COFFIN  
DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**

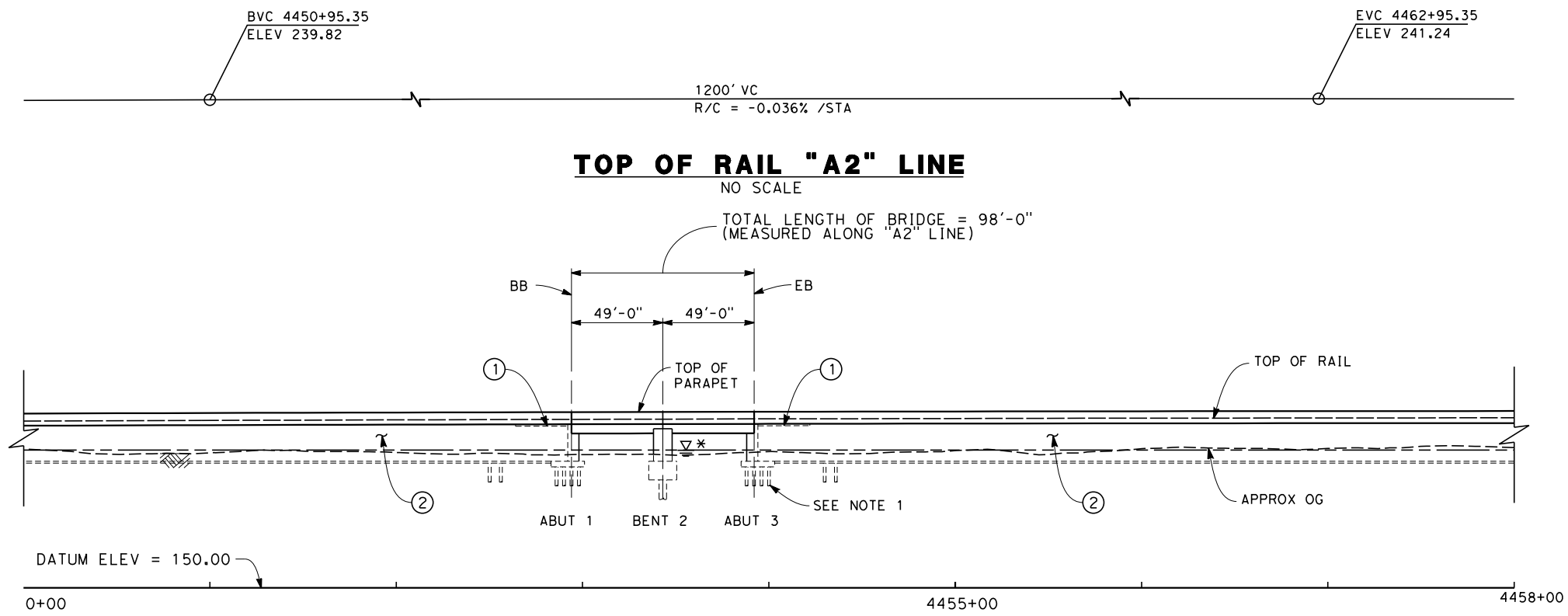
**NOT FOR  
CONSTRUCTION**



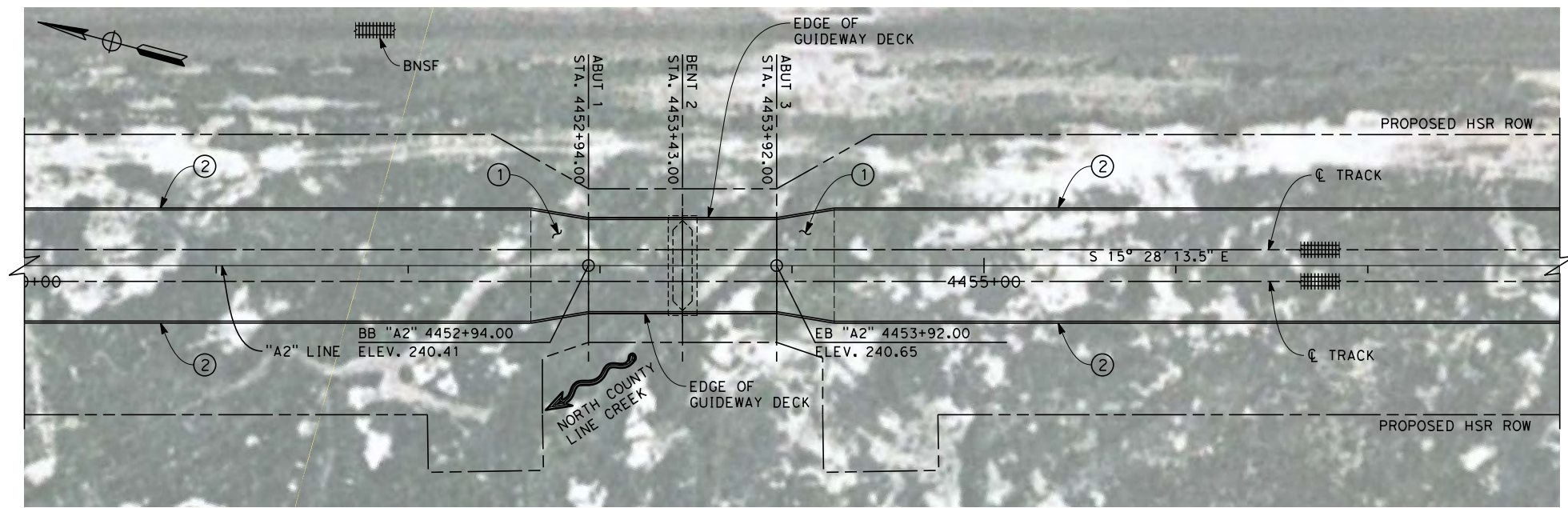
**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
NORTH COUNTY LINE CREEK BRIDGE  
KEY MAP

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1560  
SCALE  
AS SHOWN  
SHEET NO.  
1 OF 2

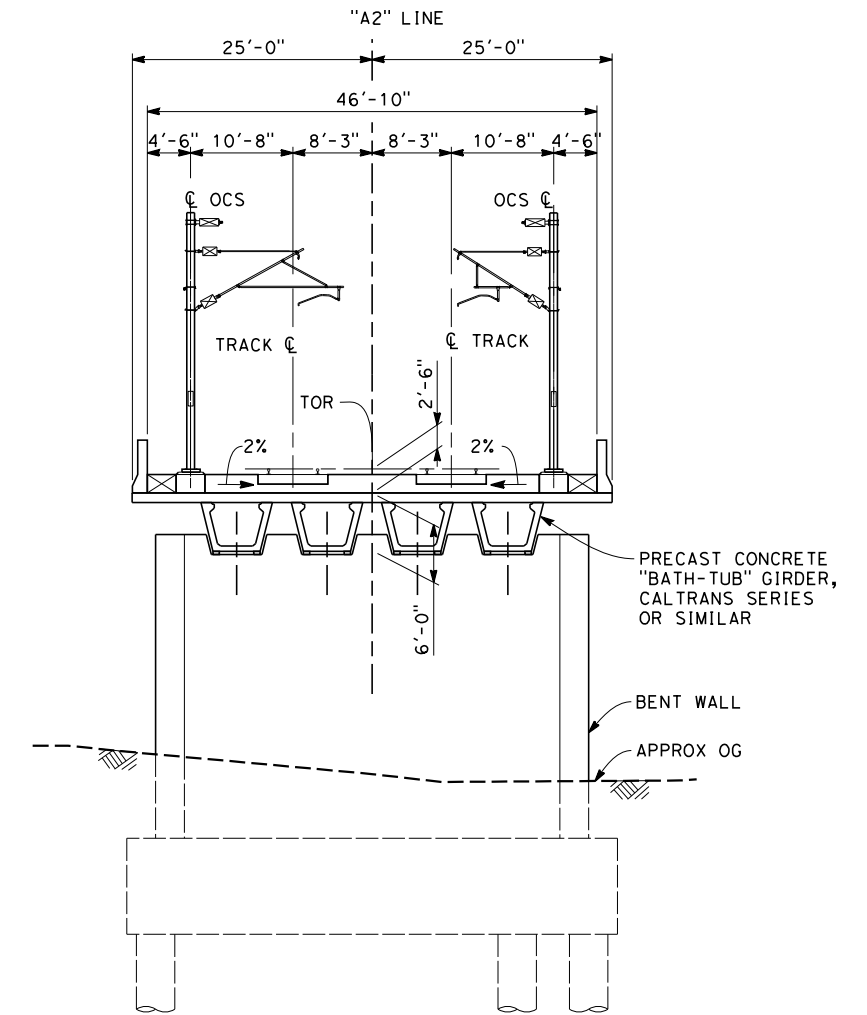




**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'



**TYPICAL SECTION**  
SCALE 1" = 10'

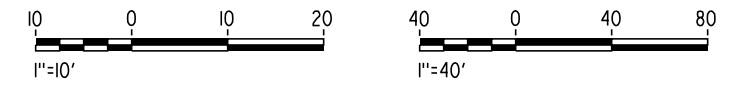
**NOTES:**

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

**LEGEND:**

- ① STRUCTURE APPROACH SLAB
- ② RETAINING WALL

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



12/28/2013 12:45:50 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125272\FB-SV-1561-A2.dgn

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
S. SHEIKH  
DRAWN BY  
J. REILLY  
CHECKED BY  
A. ARMSTRONG  
IN CHARGE  
R. COFFIN  
DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**  
  
**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
NORTH COUNTY LINE CREEK BRIDGE  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1561  
SCALE  
AS SHOWN  
SHEET NO.  
2 OF 2

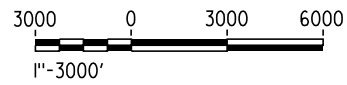


c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1562-A2.dgn



**LEGEND**

- +—+—+ EXISTING FREIGHT RAILROAD
- PROPOSED CHST



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
S. SHEIKH  
DRAWN BY  
E. TANAKA  
CHECKED BY  
A. ARMSTRONG  
IN CHARGE  
R. COFFIN  
DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**

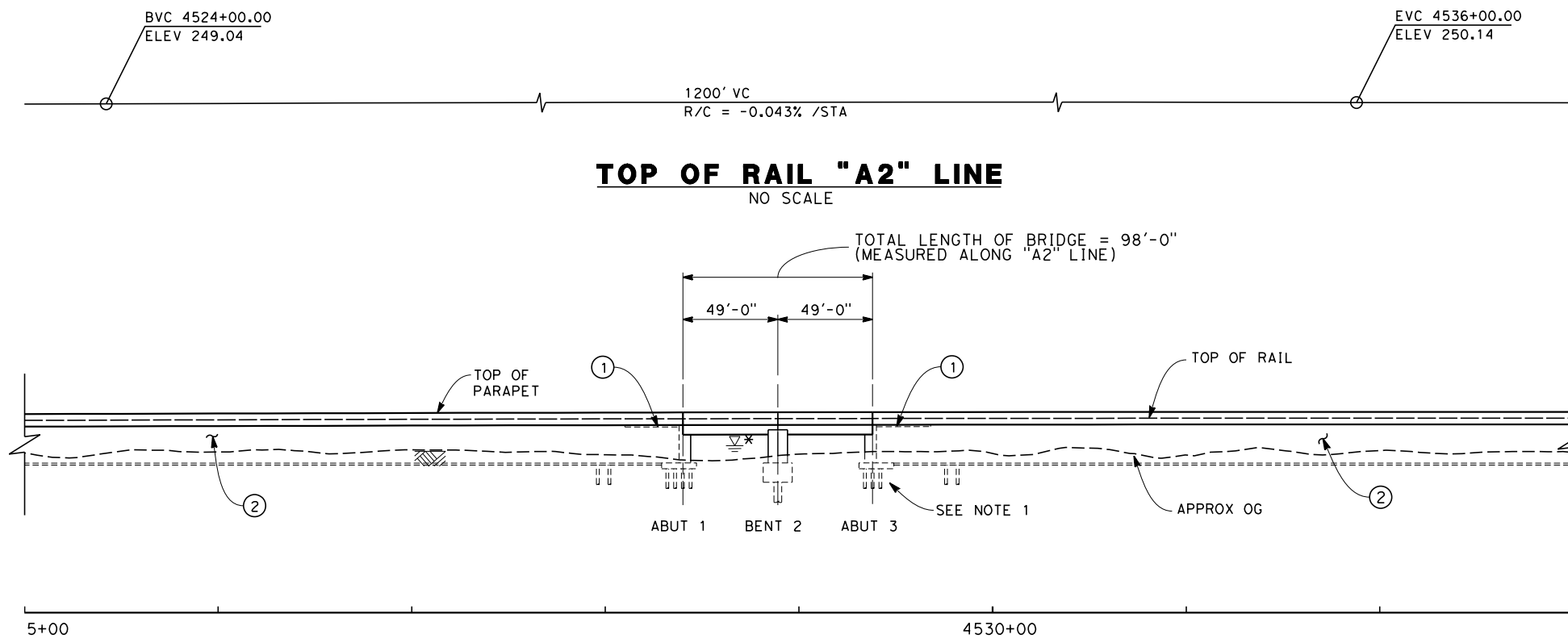
**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
SOUTH COUNTY LINE CREEK BRIDGE  
KEY MAP

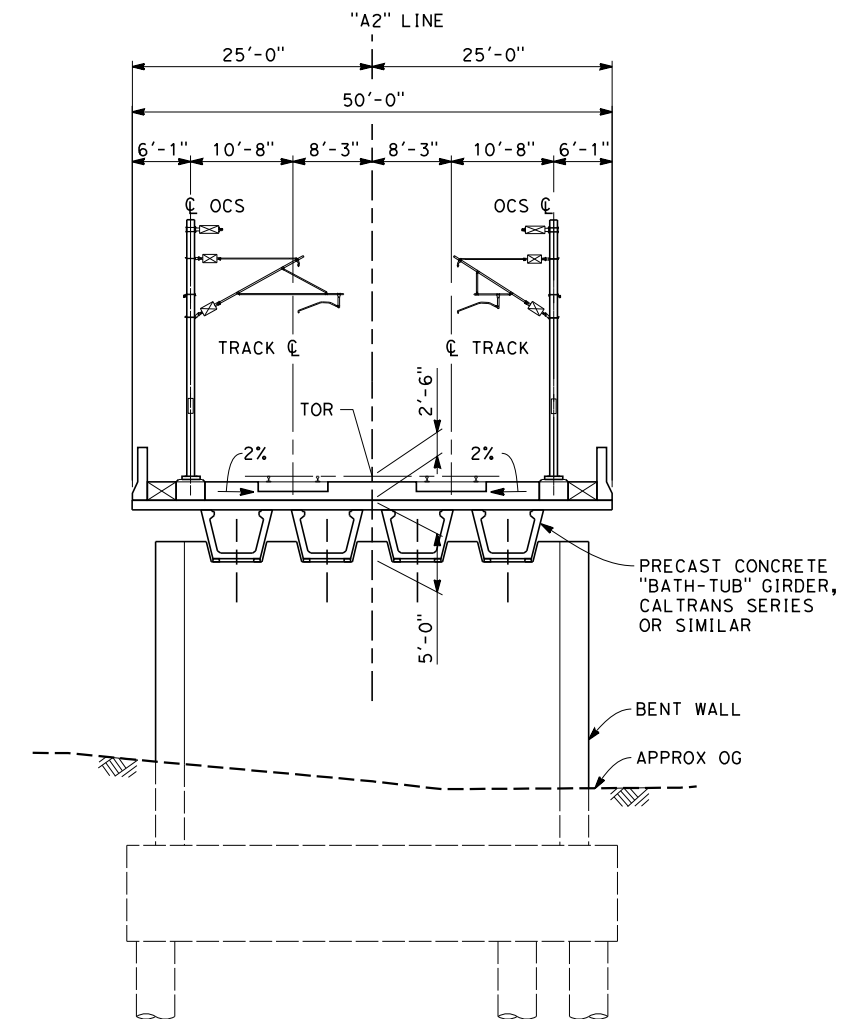
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1562  
SCALE  
AS SHOWN  
SHEET NO.  
1 OF 2





**TOP OF RAIL "A2" LINE**  
NO SCALE

**ELEVATION**  
SCALE 1" = 40'

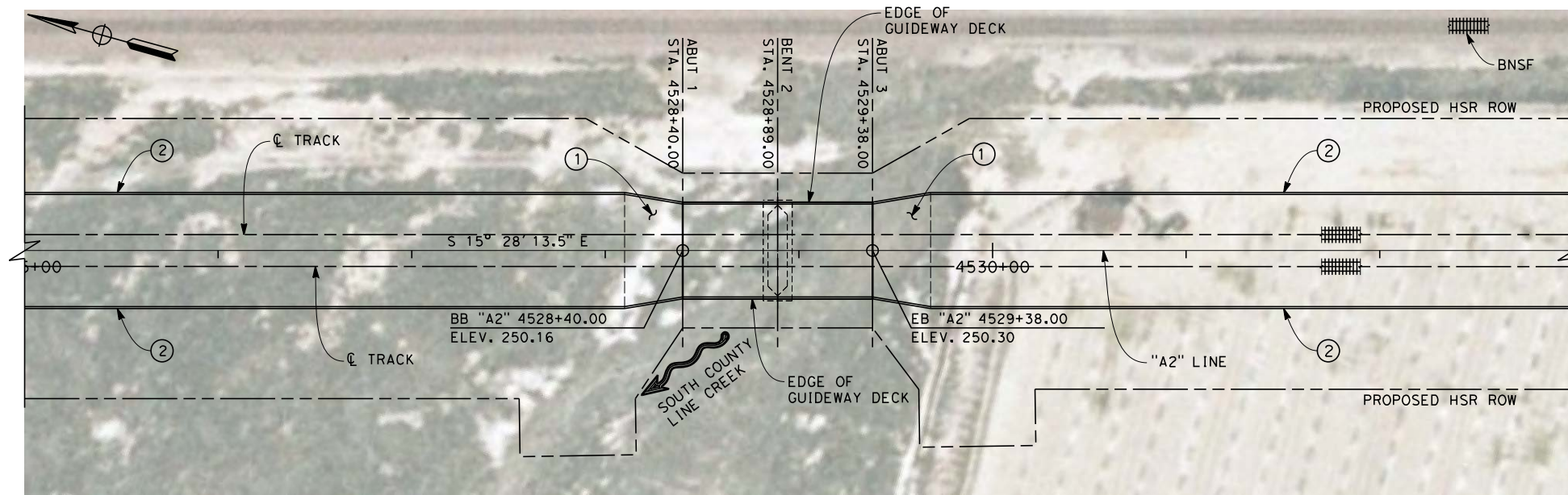


**TYPICAL SECTION**  
SCALE 1" = 10'

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

- LEGEND:
- ① STRUCTURE APPROACH SLAB
  - ② RETAINING WALL

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



**PLAN**  
SCALE 1" = 40'

andrew.armstrong 2/12/2013 10:48:15 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125272\FB-SV-1563-A2.dgn

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
S. SHEIKH  
DRAWN BY  
J. REILLY  
CHECKED BY  
A. ARMSTRONG  
IN CHARGE  
R. COFFIN  
DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**  
  
**NOT FOR  
CONSTRUCTION**



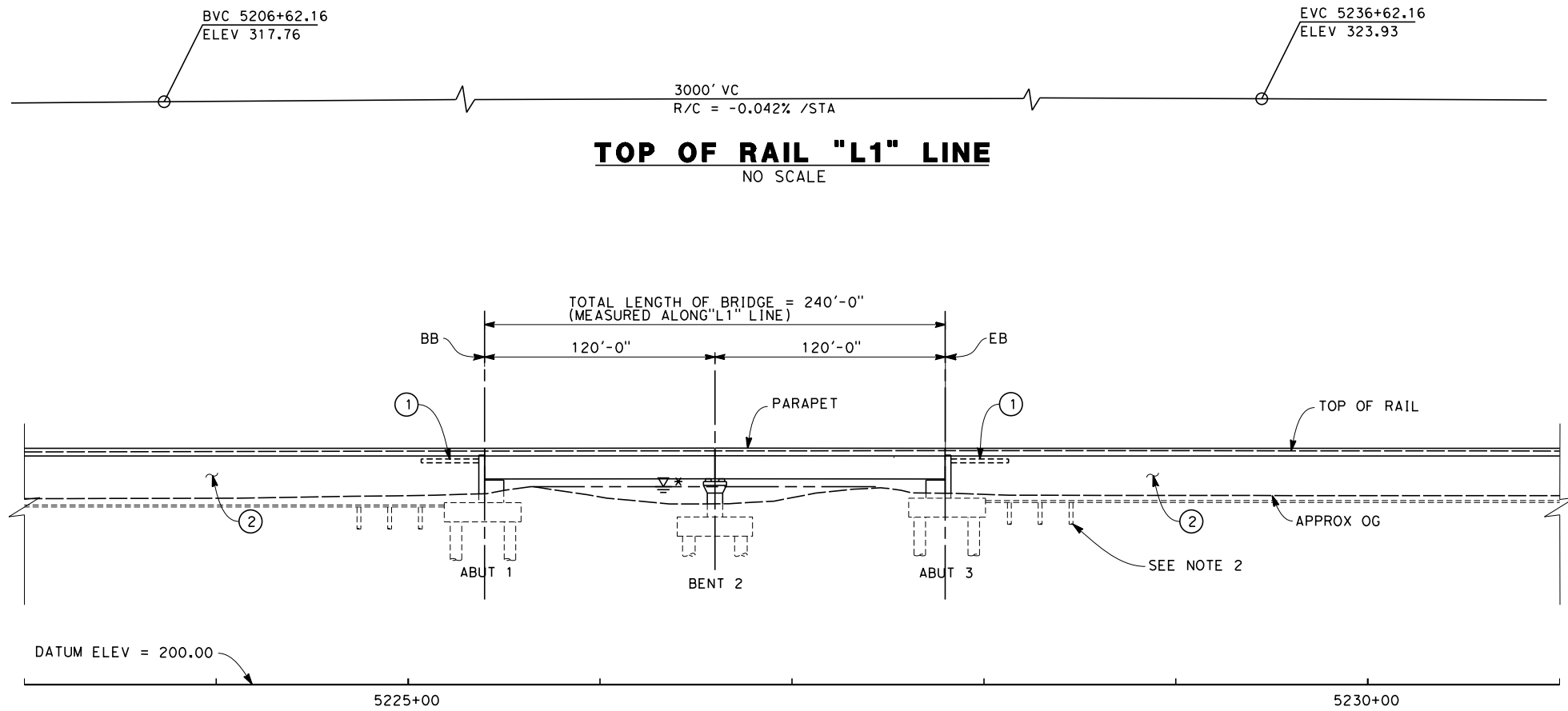
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH ALLENSWORTH SUBSECTION  
ALIGNMENT A2  
SOUTH COUNTY LINE CREEK BRIDGE  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1563  
SCALE  
AS SHOWN  
SHEET NO.  
2 OF 2

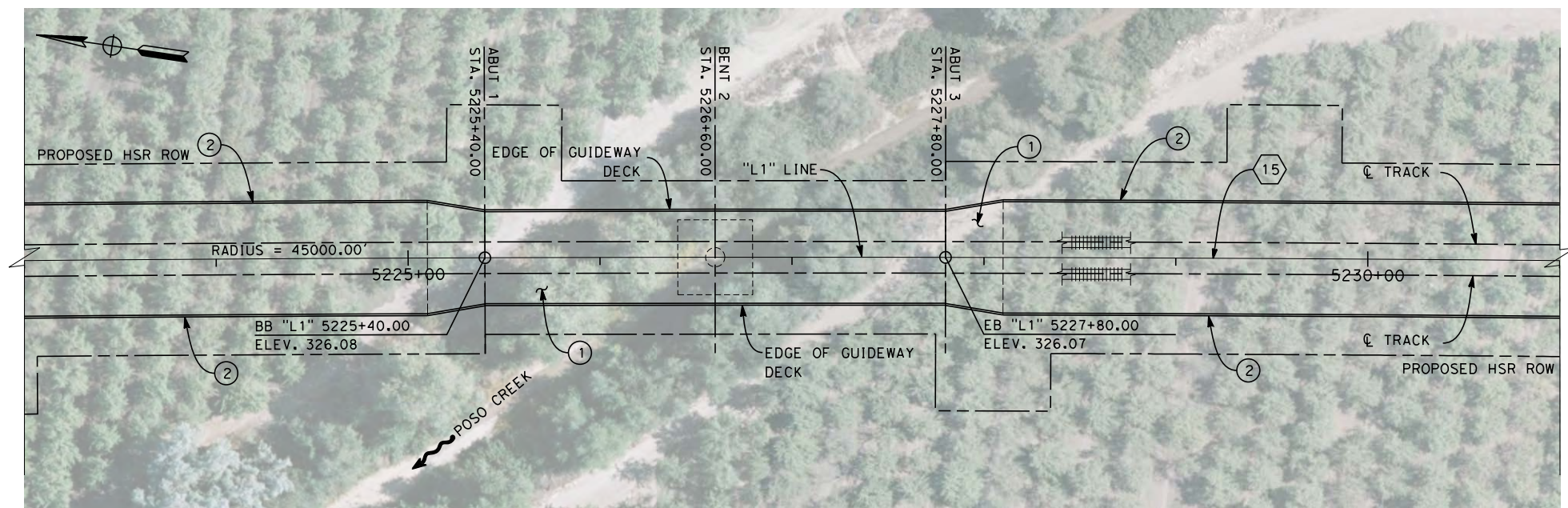




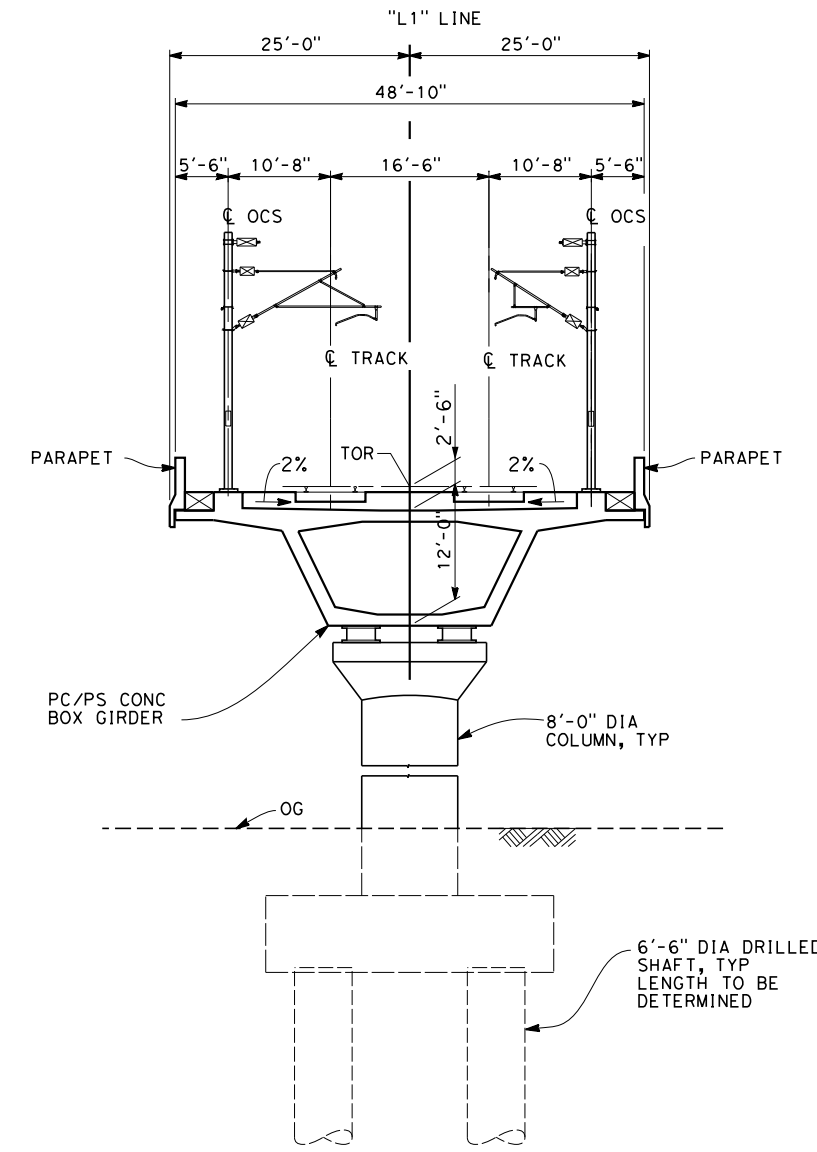




**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'



**TYPICAL SECTION**  
SCALE 1" = 10'

NOTES:

- PILE LENGTH TO BE DETERMINED
- ALL PILES ARE NOT SHOWN

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

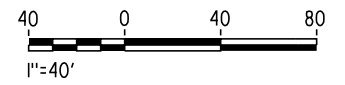
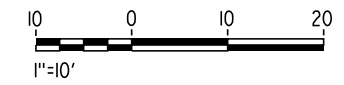
LEGEND:

- ① STRUCTURE APPROACH SLAB
- ② RETAINING WALL

CURVE DATA



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



andrew.armstrong 2/12/2013 11:59:23 AM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125234\FB-SV-1601-L1.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

POS0 CREEK SUBSECTION  
ALIGNMENT L1  
POS0 CREEK BRIDGE  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1601

SCALE  
AS SHOWN

SHEET NO.  
2 OF 2



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 andrew.armstrong 2/12/2013 12:03:27 PM



**LEGEND**

EXISTING FREIGHT RAILROAD  
 PROPOSED CHST

2000 0 2000 4000  
 1"=2000'

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L2  
 POSO CREEK VIADUCT  
 KEY MAP

CONTRACT NO.  
 HSR 06-0003  
 DRAWING NO.  
 SV1620  
 SCALE  
 AS SHOWN  
 SHEET NO.  
 1 OF 12

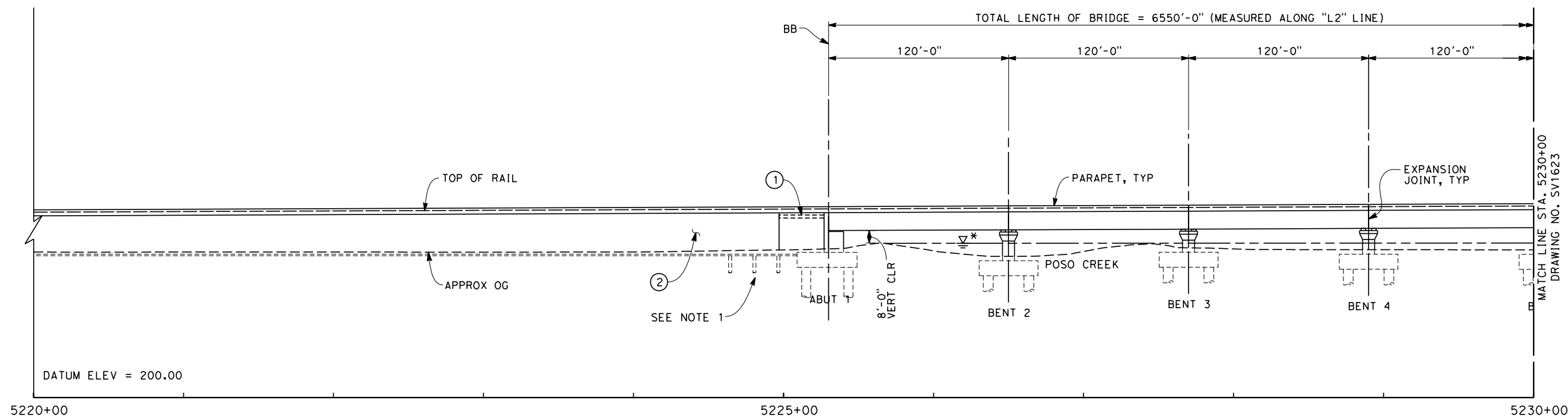


EVC 5213+89.95  
ELEV 321.15

BVC 5267+53.27  
ELEV 342.79

0.404 %

**TOP OF RAIL "L2" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'

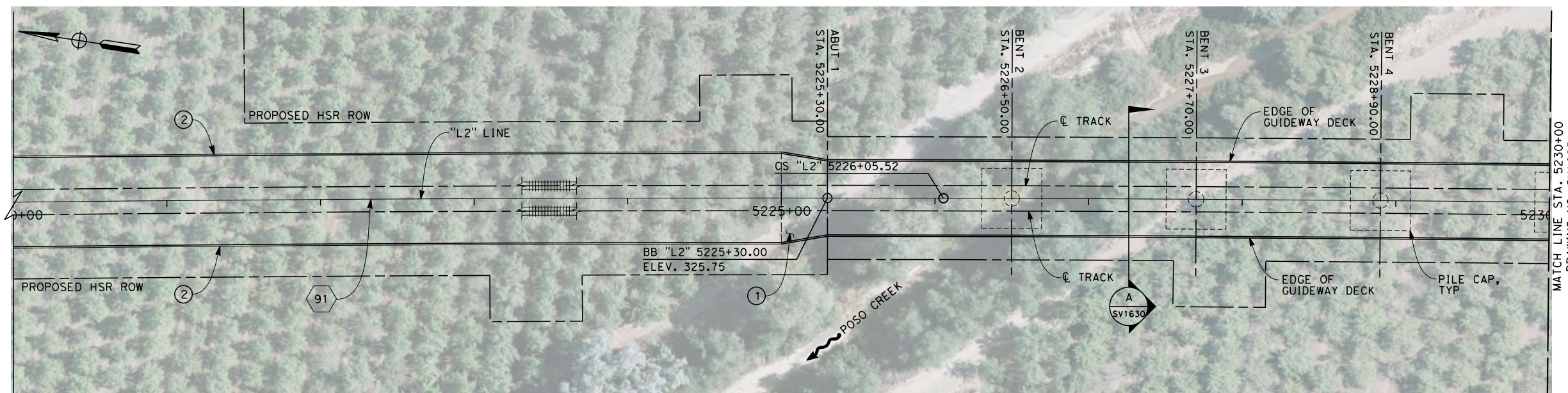
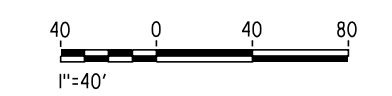
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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**

91

R = 45000.00'  
 $\Delta = 09^\circ 06' 38.5''$   
 T = 3585.3'  
 L = 7155.5'



**PLAN**  
SCALE 1" = 40'

12/28/2013 11:12:09 AM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125233\FB-SV-1622-L2.dgn

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
M. FISHER

DRAWN BY  
F. PALERMO

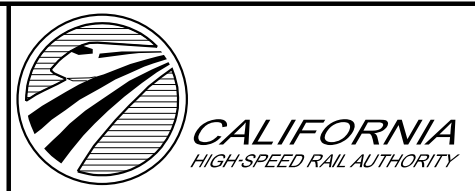
CHECKED BY  
A. ARMSTRONG

IN CHARGE  
R. COFFIN

DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**

**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1622

SCALE  
AS SHOWN

SHEET NO.  
2 OF 12



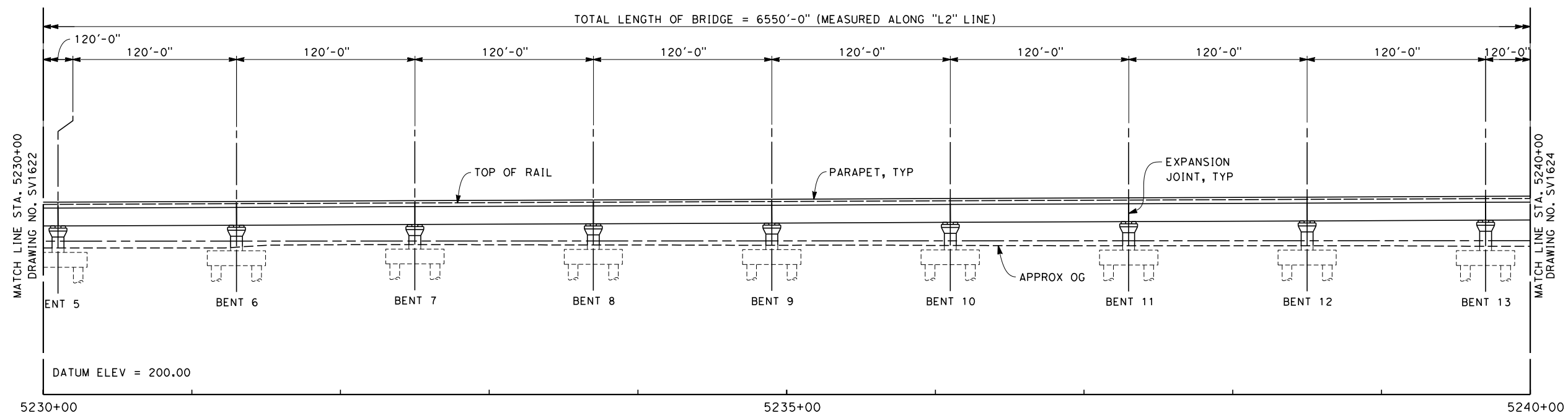
EVC 5213+89.95  
ELEV 321.15

BVC 5267+53.27  
ELEV 342.79

0.404 %

**TOP OF RAIL "L2" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 6550'-0" (MEASURED ALONG "L2" LINE)



**ELEVATION**  
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**

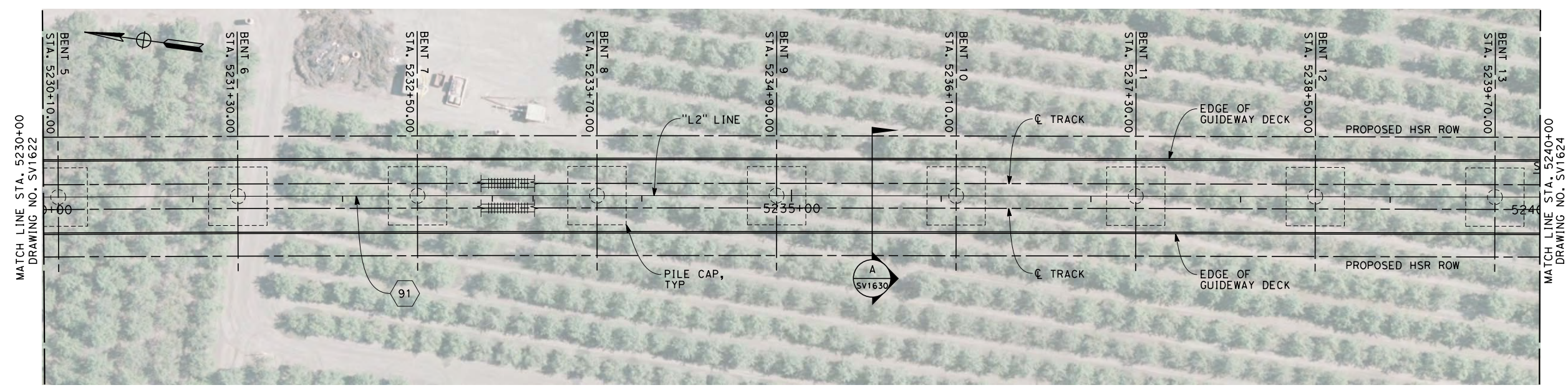
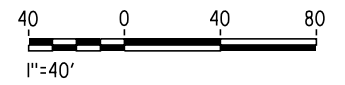
91

R = 45000.00'

Δ = 09° 06' 38.5"

T = 3585.3'

L = 7155.5'



**PLAN**  
SCALE 1" = 40'

andrew.armstrong/2/12/2013 12:04:03 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d01252333\FB-SV-1623-L2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1623

SCALE  
AS SHOWN

SHEET NO.  
3 OF 12



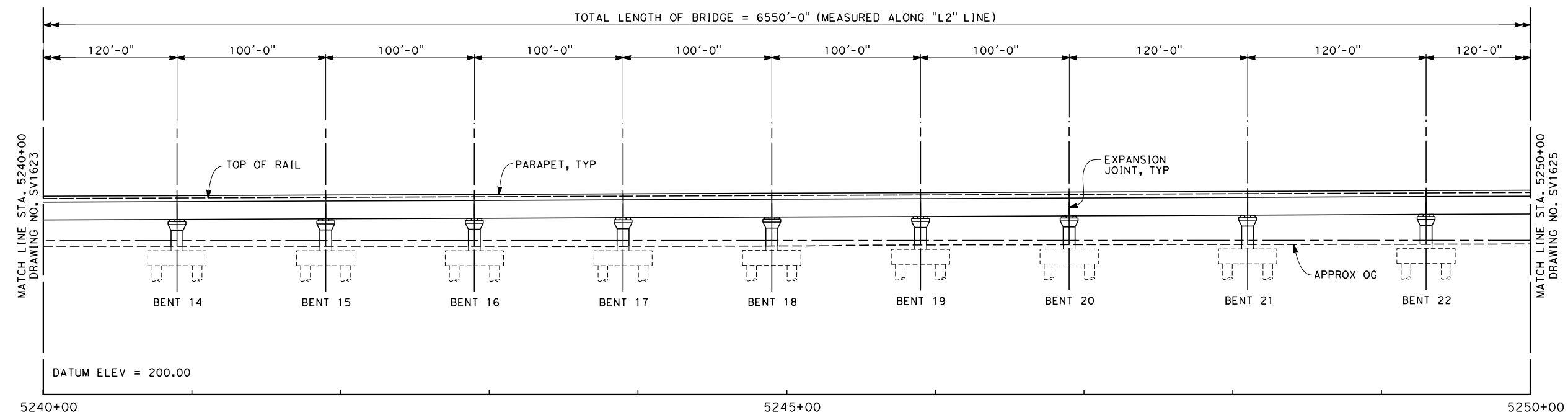
EVC 5213+89.95  
ELEV 321.15

BVC 5267+53.27  
ELEV 342.79

0.404 %

**TOP OF RAIL "L2" LINE**  
NO SCALE

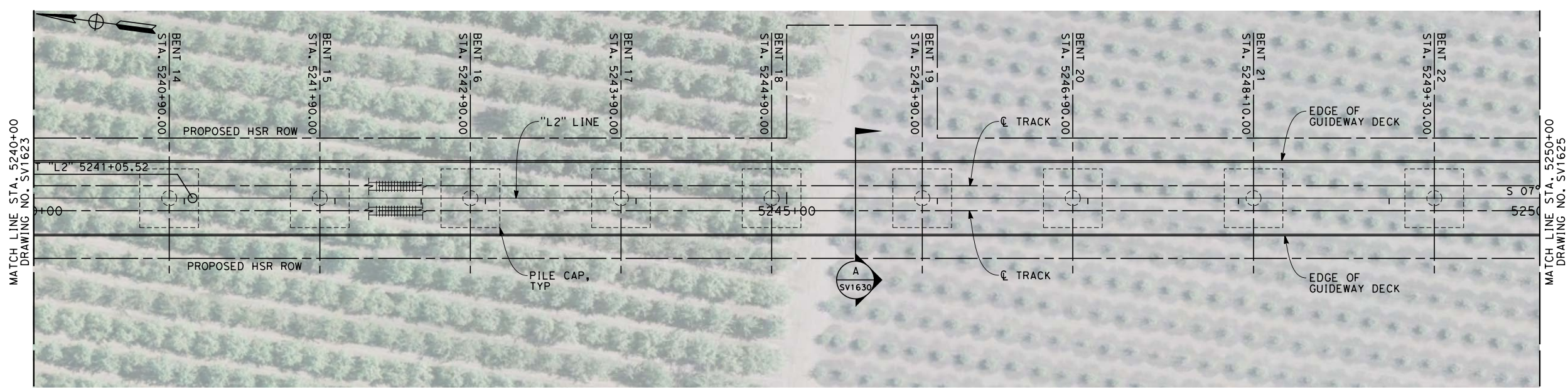
TOTAL LENGTH OF BRIDGE = 6550'-0" (MEASURED ALONG "L2" LINE)



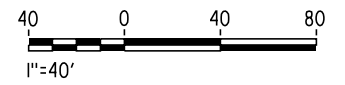
**ELEVATION**  
SCALE 1" = 40'

- 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".



**PLAN**  
SCALE 1" = 40'



andrew.armstrong 2/12/2013 12:04:16 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d01252333\FB-SV-1624-L2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1624

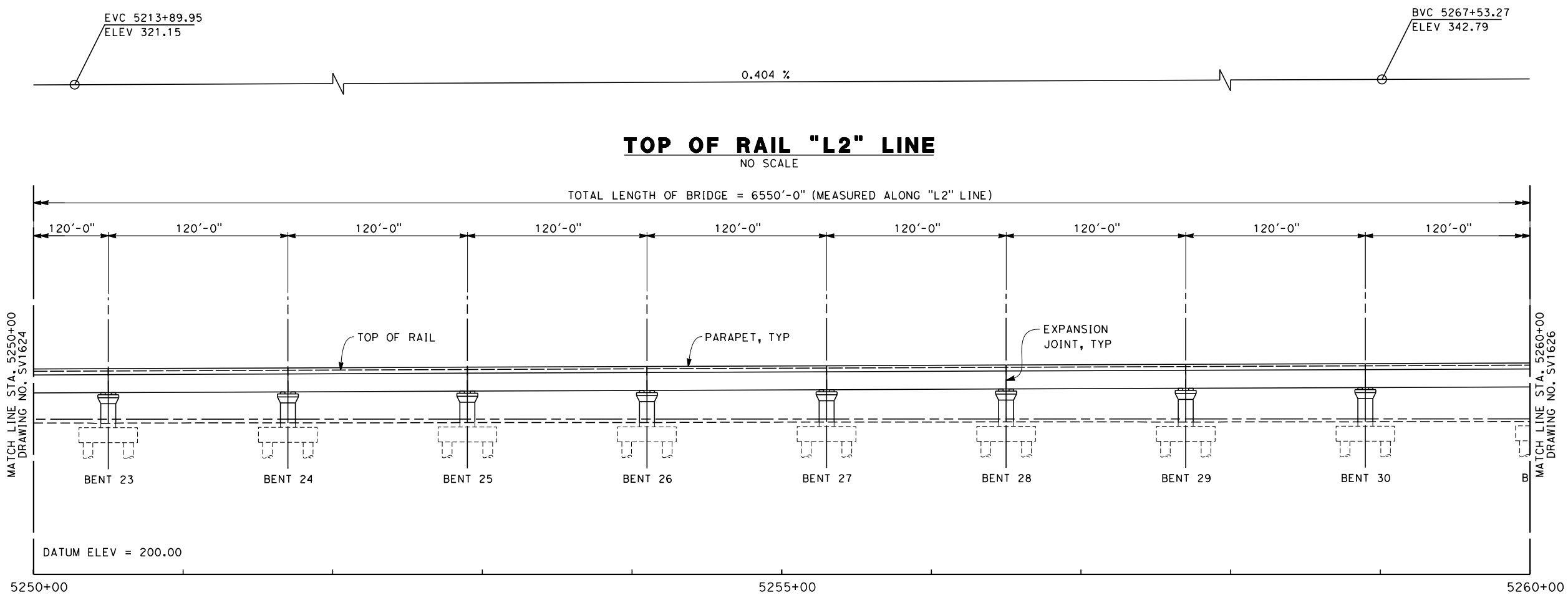
SCALE  
AS SHOWN

SHEET NO.  
4 OF 12

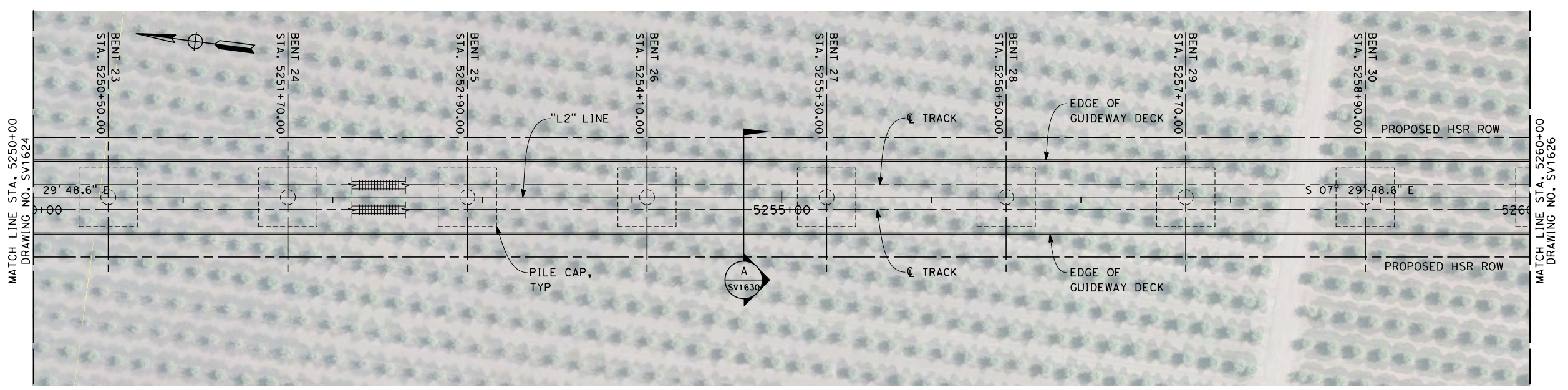


- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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.

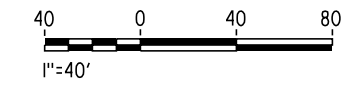
- LEGEND:**
- ① STRUCTURE APPROACH SLAB
  - ② RETAINING WALL
  - \* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'



andrew.armstrong 2/12/2013 12:04:28 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125233\FB-SV-1625-L2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1625

SCALE  
AS SHOWN

SHEET NO.  
5 OF 12

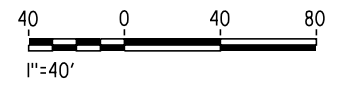
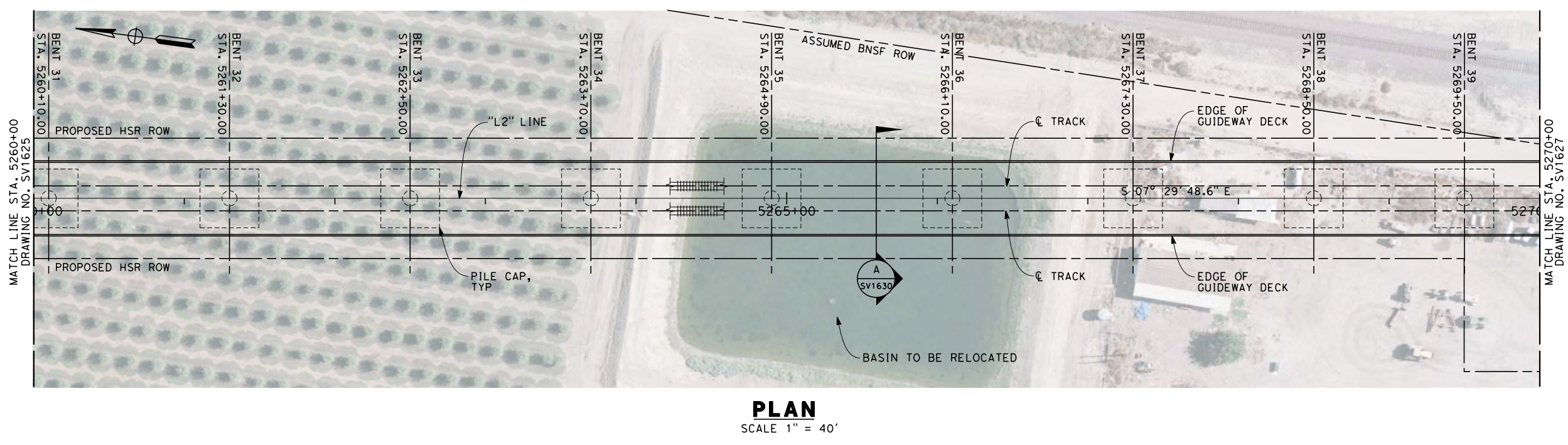
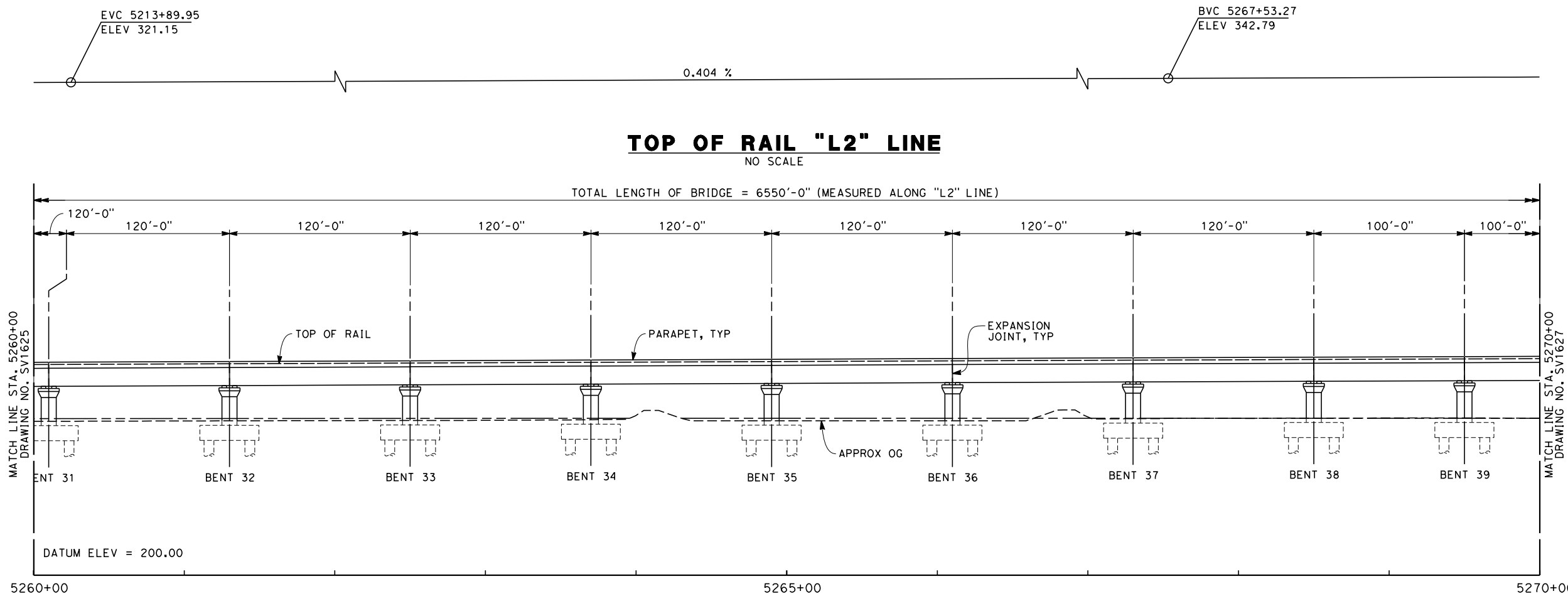


**NOTES**

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".



12/28/2013 11:21:27 AM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125233\FB-SV-1626-L2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1626

SCALE  
AS SHOWN

SHEET NO.  
6 OF 12

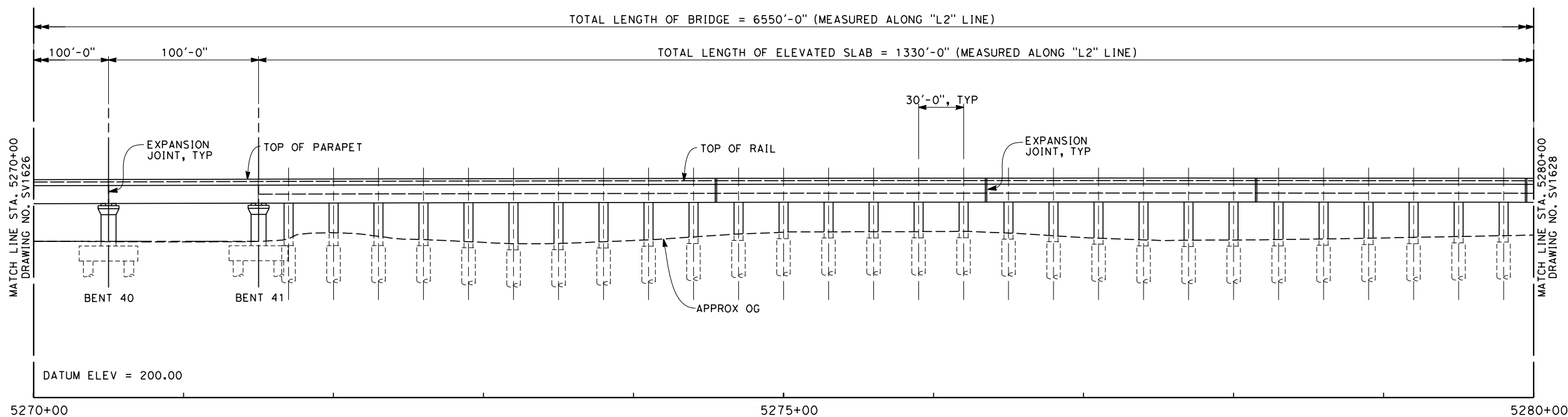


BVC 5267+53.27  
ELEV 342.79

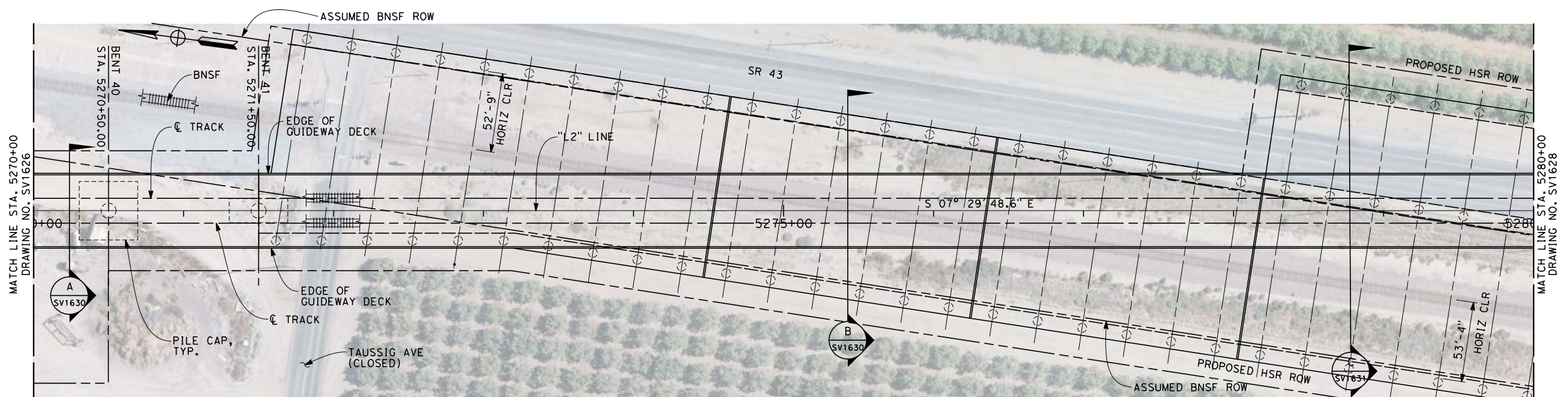
EVC 5288+53.27  
ELEV 341.87

2100' VC  
R/C = -0.043% /STA

**TOP OF RAIL "L2" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



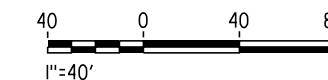
**PLAN**  
SCALE 1" = 40'

**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".



andrew.armstrong/2/12/2013 12:04:52 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125233\FB-SV-1627-L2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1627

SCALE  
AS SHOWN

SHEET NO.  
7 OF 12

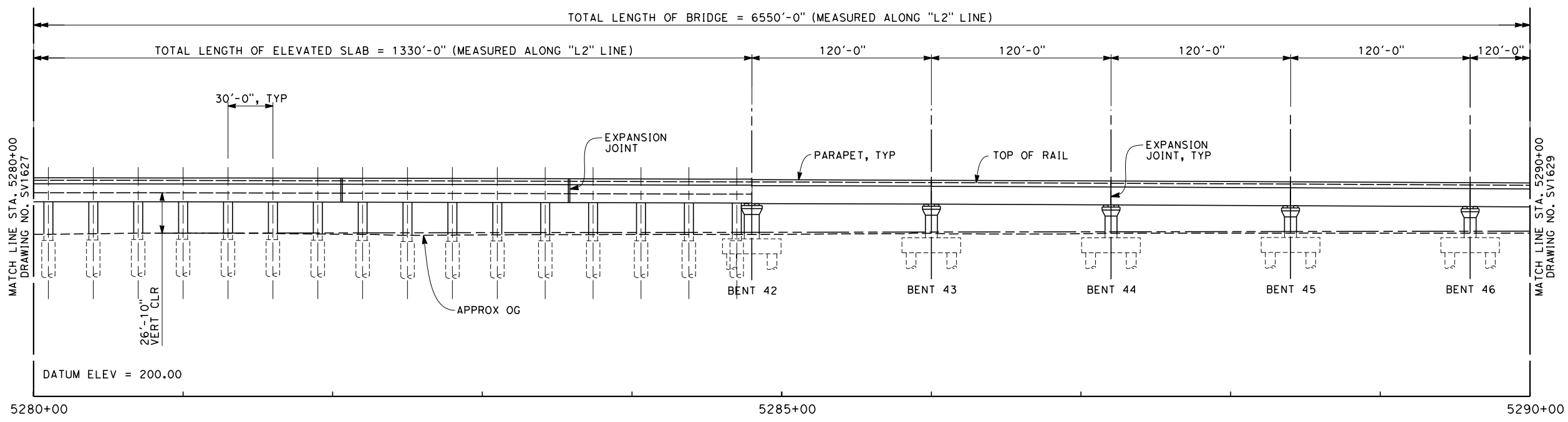


BVC 5267+53.27  
ELEV 342.79

EVC 5288+53.27  
ELEV 341.87

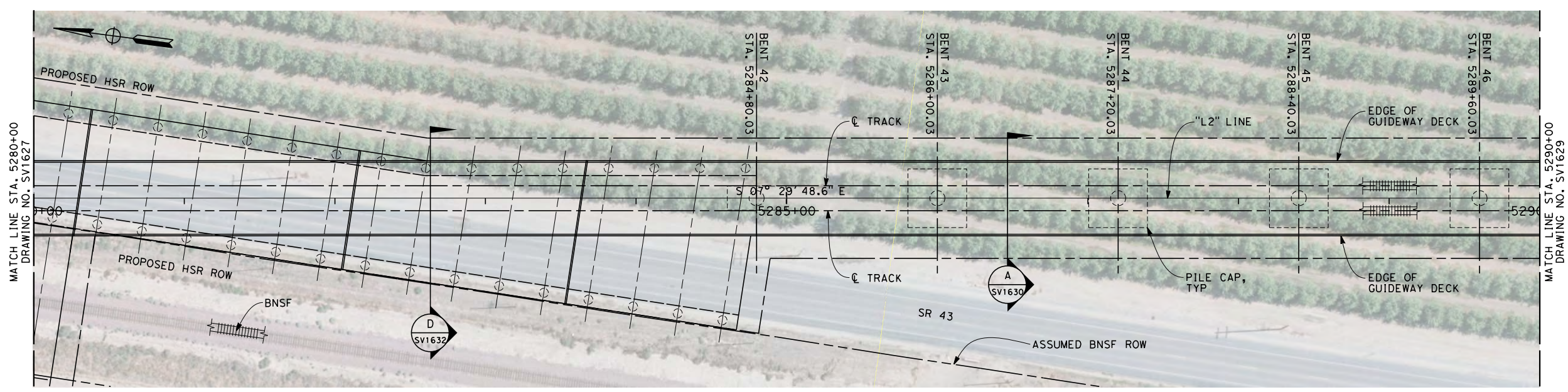
2100' VC  
R/C = -0.043% /STA

**TOP OF RAIL "L2" LINE**  
NO SCALE



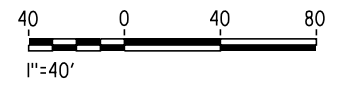
**ELEVATION**  
SCALE 1" = 40'

- 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.



**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".



andrew.armstrong 2/12/2013 12:05:04 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125233\FB-SV-1628-L2.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1628

SCALE  
AS SHOWN

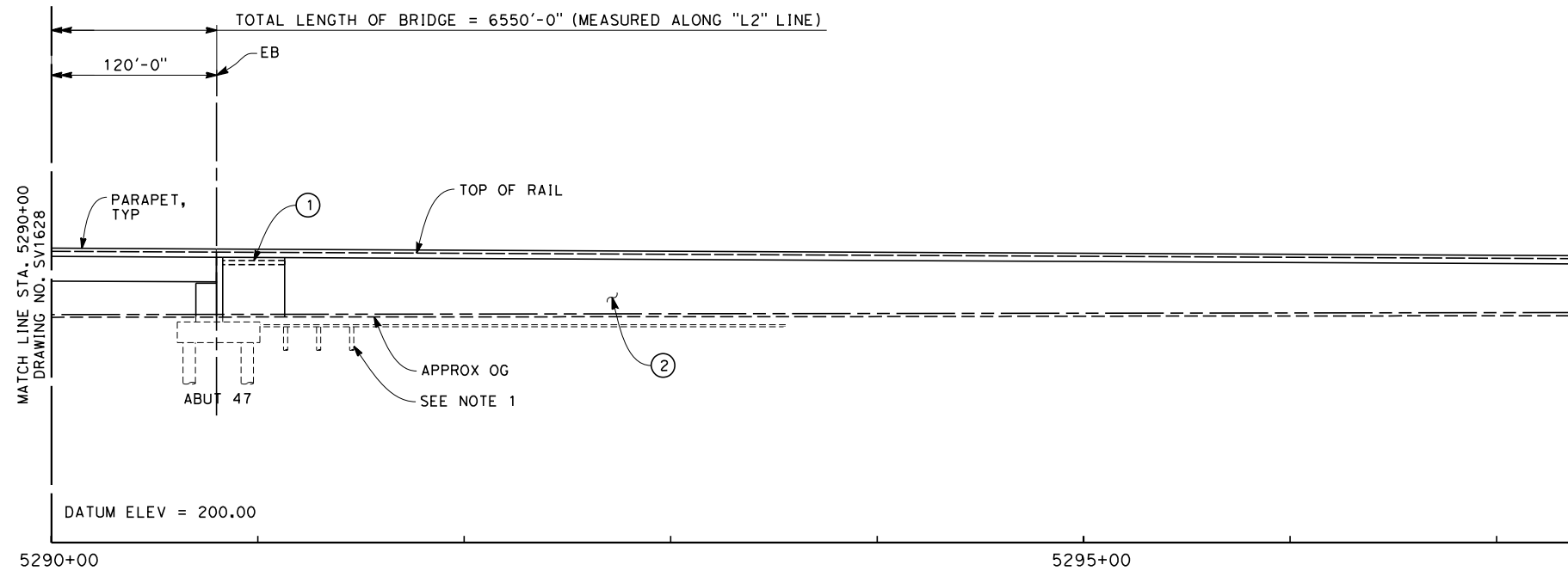
SHEET NO.  
8 OF 12



EVC 5288+53.27  
ELEV 341.87

-0.490 %

**TOP OF RAIL "L2" LINE**  
NO SCALE



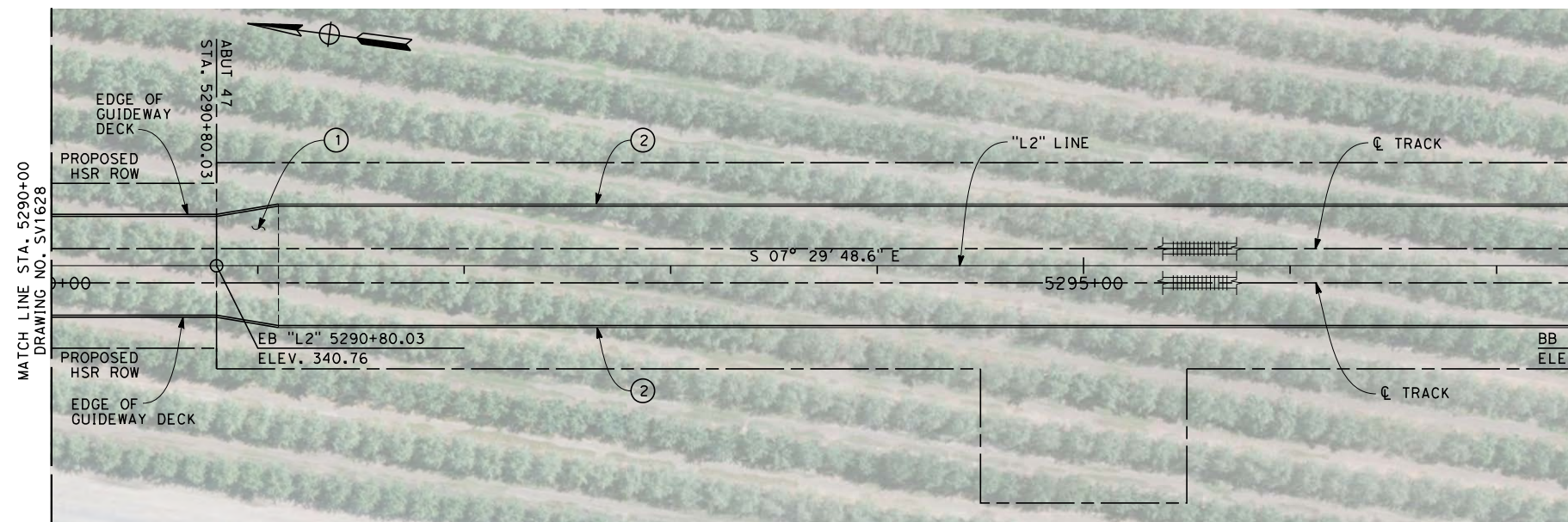
**ELEVATION**  
SCALE 1" = 40'

**NOTES**

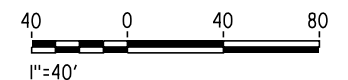
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON
  - SIMPLE SPANS - MSS OR FLPM
  - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
  - STEEL TRUSS - INSITU, SLID OR LAUNCHED
  - ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS 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".



**PLAN**  
SCALE 1" = 40'



c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125233\FB-SV-1629-L2.dgn

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**



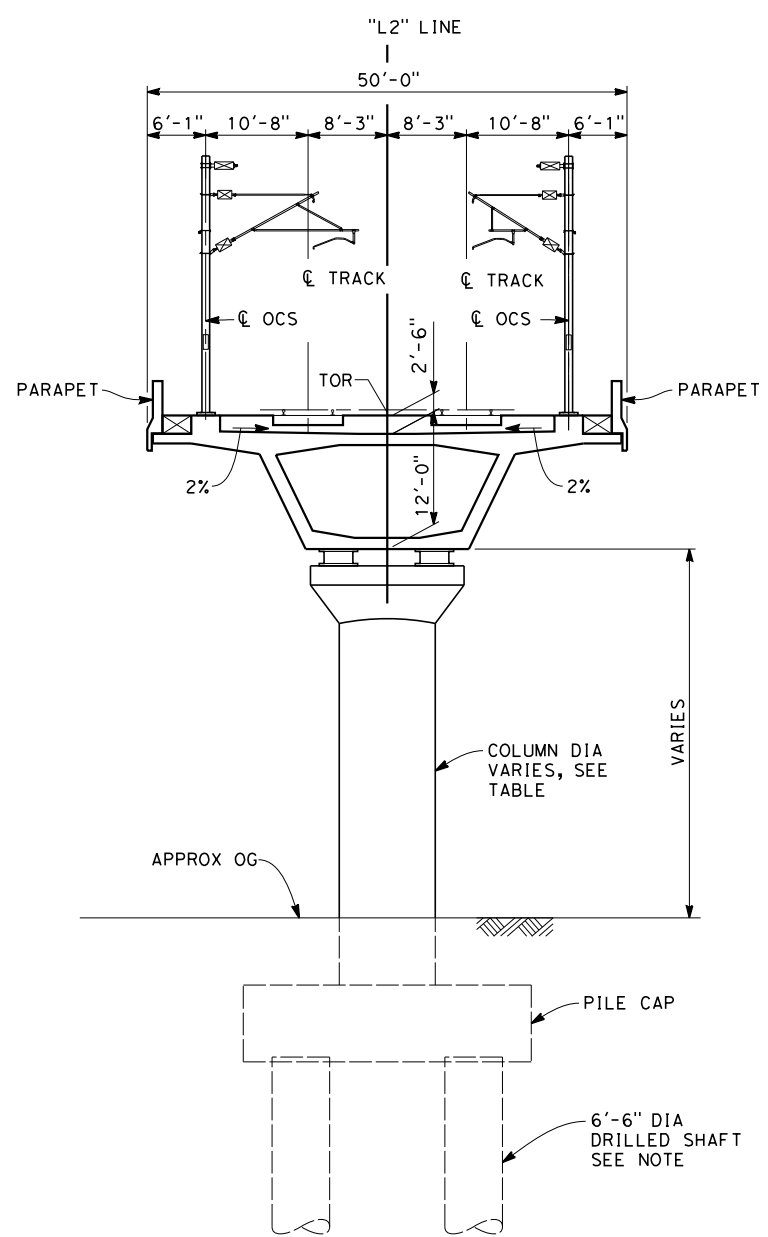
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1629  
SCALE  
AS SHOWN  
SHEET NO.  
9 OF 12



c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125233\FB-SV-1630-L2.dgn  
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 frank.palermo

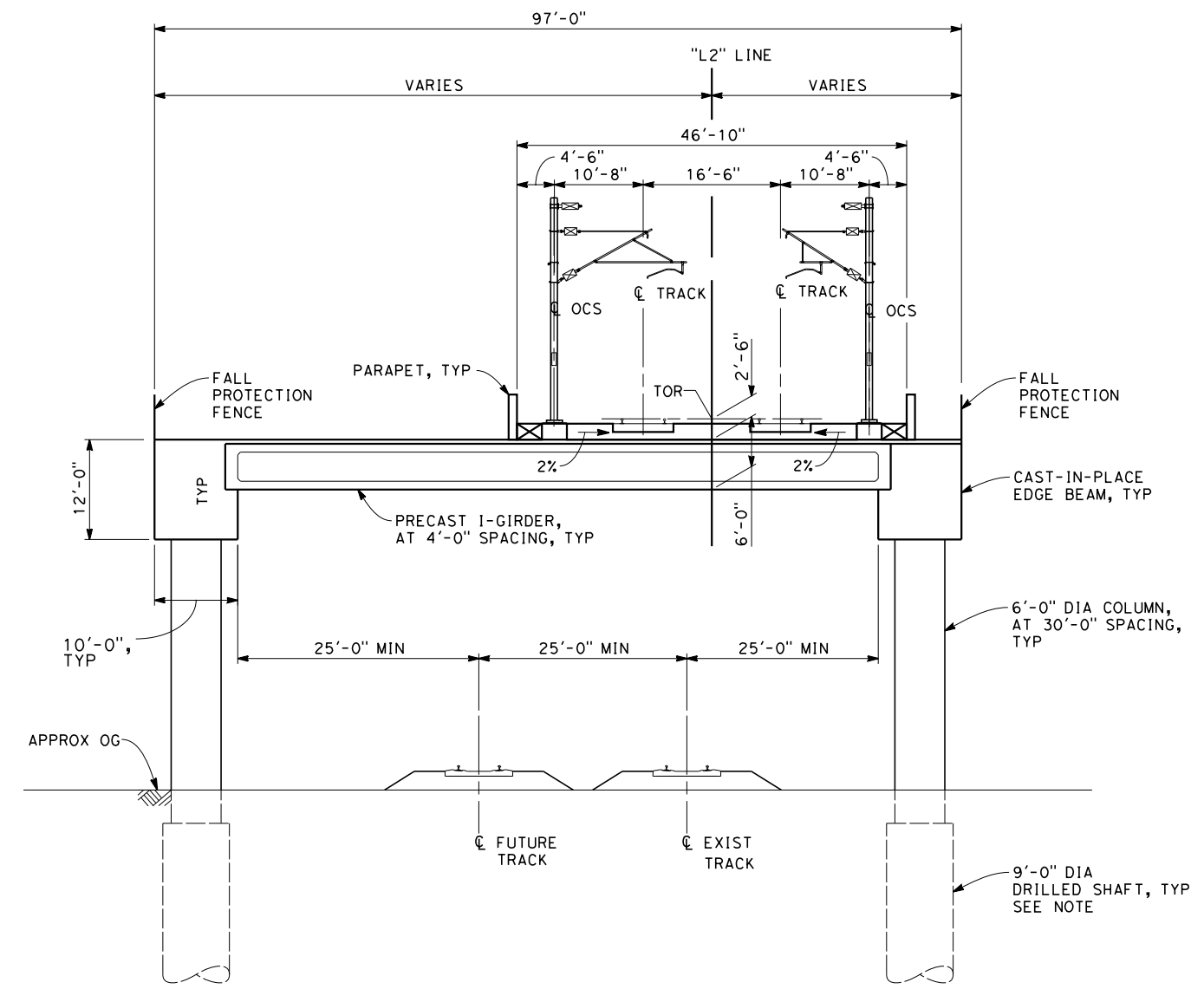


**SECTION A**  
 SCALE: 1" = 10'

STA 5225+30 THROUGH STA 5272+50  
 STA 5284+80 THROUGH STA 5290+80

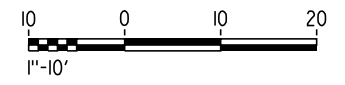
COLUMN DIAMETERS	
HEIGHT TO SOFFIT	DIAMETER
0-20	8 FT
20-40	10 FT
40-50	12 FT
50-60	15 FT
60-80	20 FT
80-100	25 FT

NOTE: DRILLED SHAFT LENGTH TO BE DETERMINED



**SECTION B**  
 SCALE: 1" = 10'

STA 5272+50 THROUGH STA 5278+20



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**

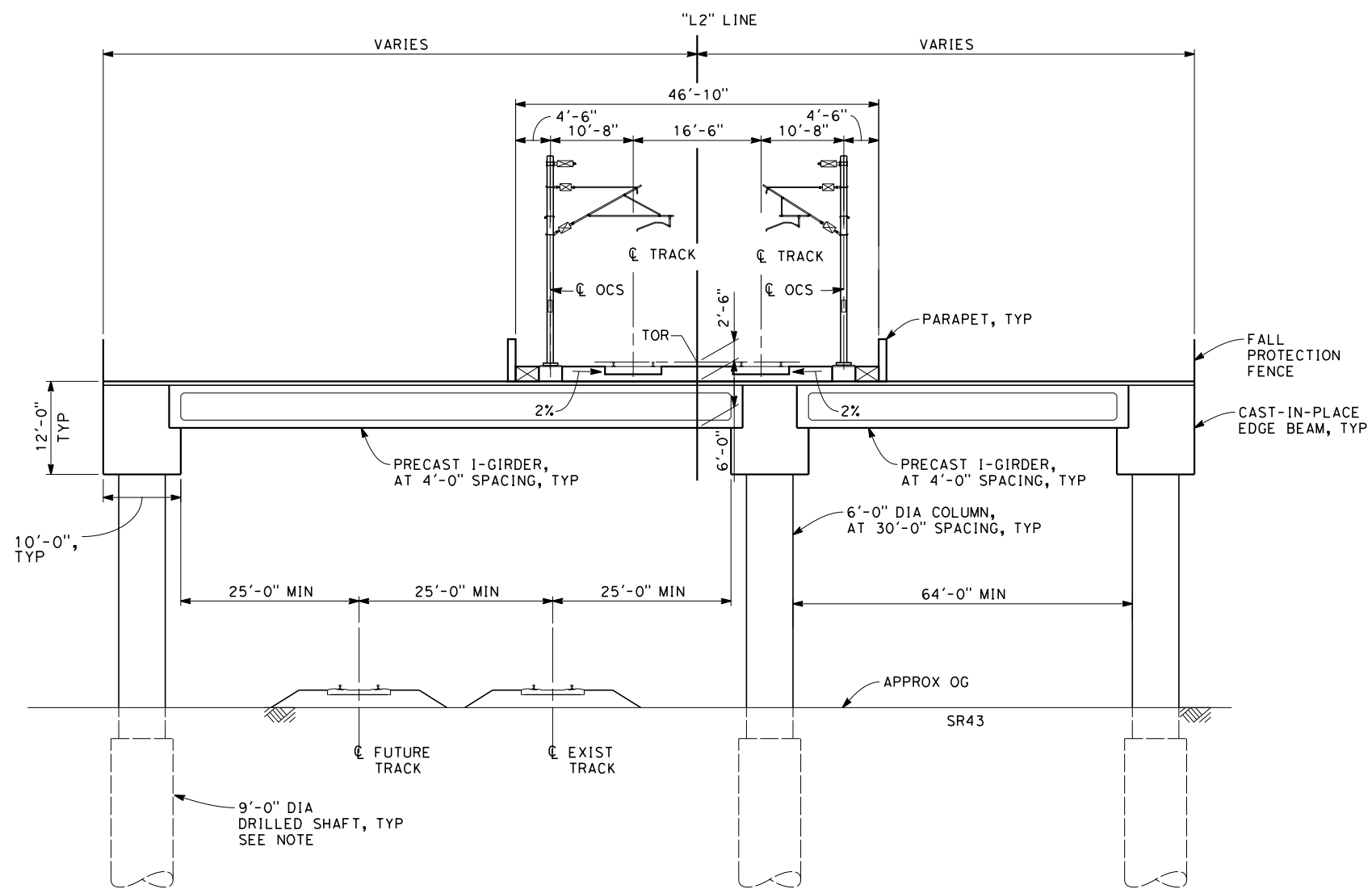


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L2  
 POSO CREEK VIADUCT  
 TYPICAL SECTIONS

CONTRACT NO.  
 HSR 06-0003  
 DRAWING NO.  
 SV1630  
 SCALE  
 AS SHOWN  
 SHEET NO.  
 10 OF 12



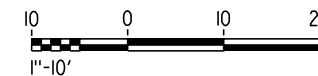
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 frank.palermo



**SECTION C**  
 SCALE: 1" = 10'

STA 5278+20 THROUGH STA 5280+10

- NOTES:  
 1. DRILLED SHAFT LENGTH TO BE DETERMINED  
 2. PIER PROTECTION IS REQUIRED WHERE COLUMN FACE IS CLOSER THAN 52 FT FROM ROADWAY.



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

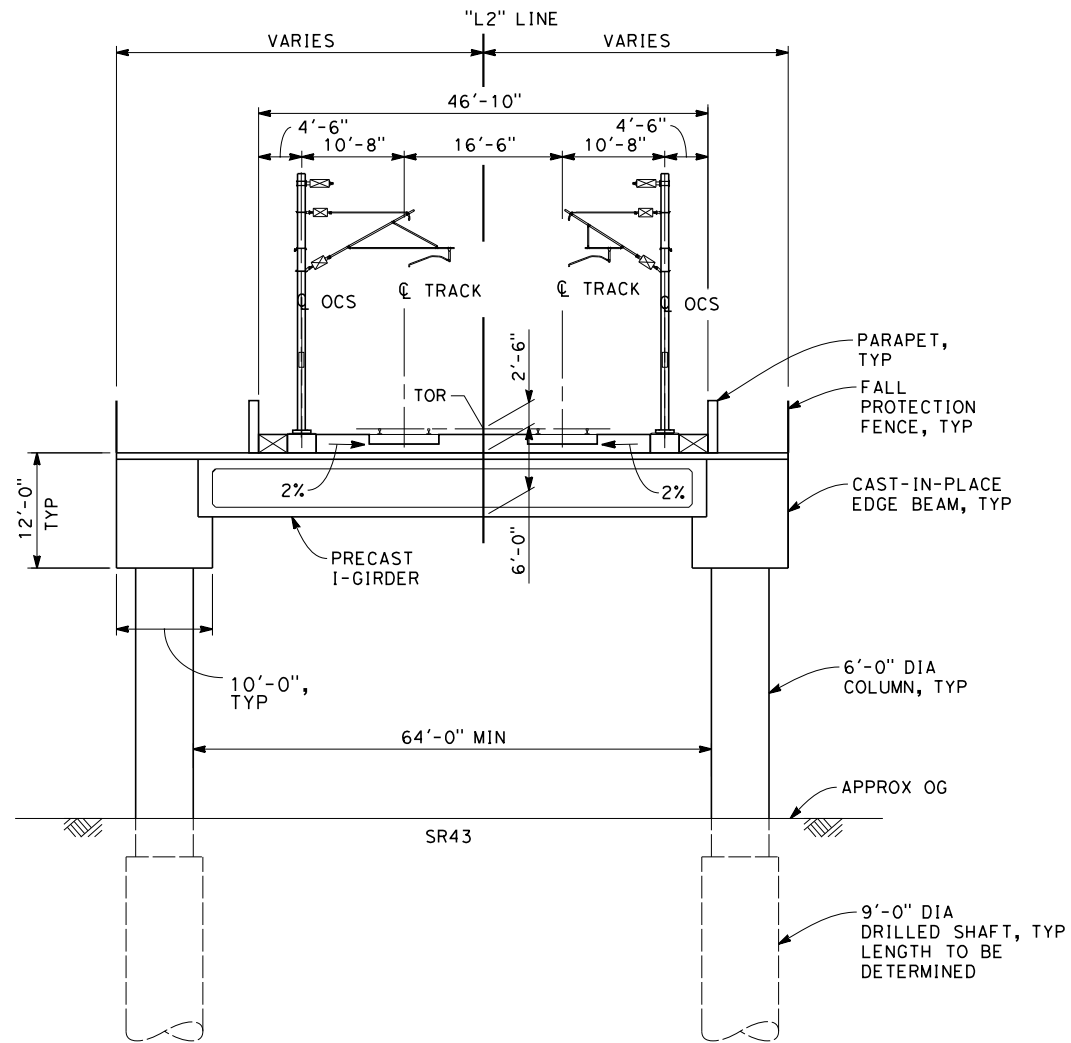
**RECORD SET 15%  
 DESIGN SUBMISSION**  
  
**NOT FOR  
 CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L2  
 POSO CREEK VIADUCT  
 TYPICAL SECTIONS

CONTRACT NO.  
 HSR 06-0003  
 DRAWING NO.  
 SV1631  
 SCALE  
 AS SHOWN  
 SHEET NO.  
 11 OF 12

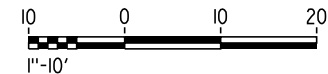




**SECTION D**

SCALE: 1" = 10'

STA 5280+10 THROUGH STA 5284+80



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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**

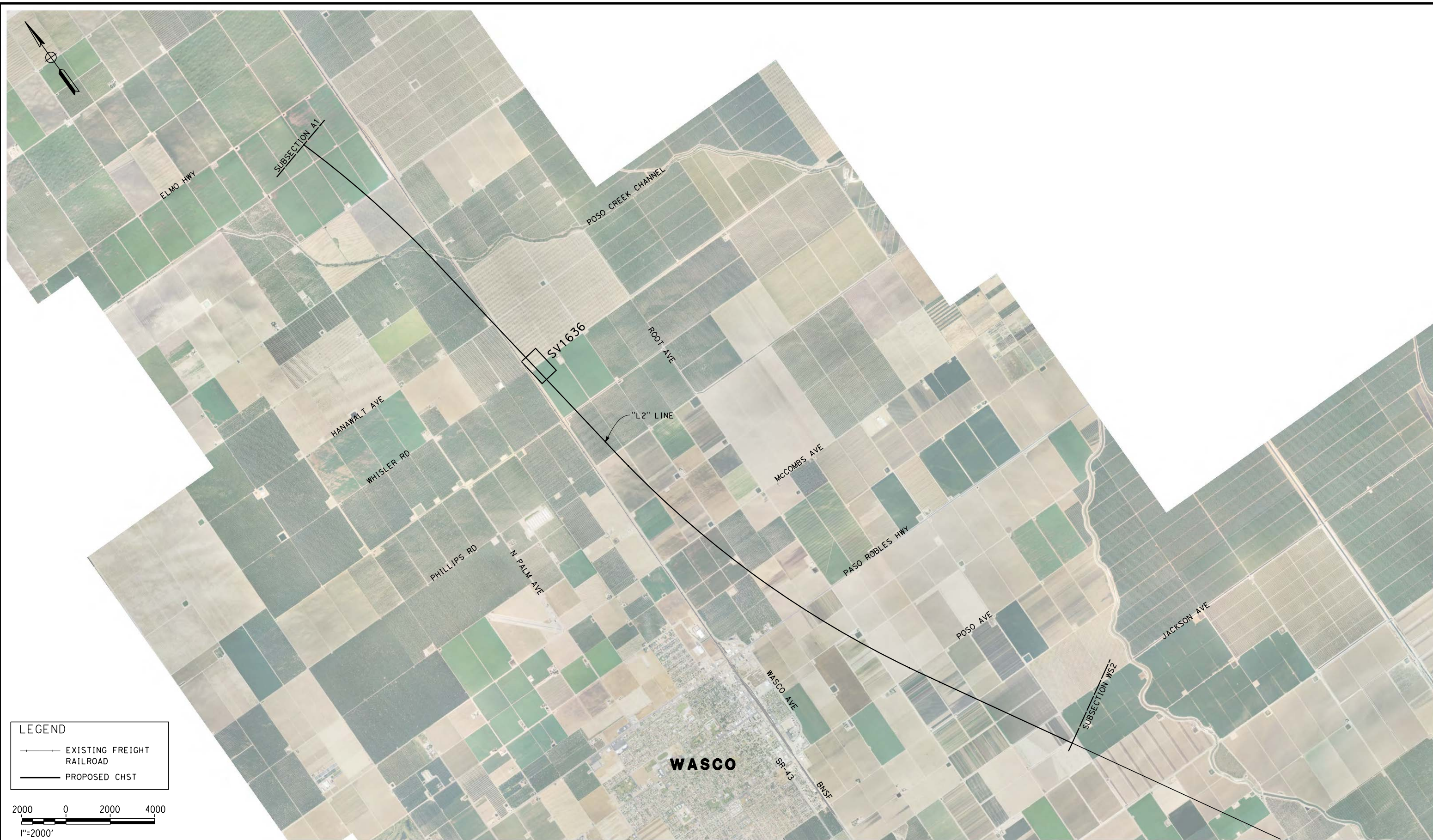


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L2  
POSO CREEK VIADUCT  
TYPICAL SECTIONS

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1632  
SCALE  
AS SHOWN  
SHEET NO.  
12 OF 12



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**LEGEND**

- EXISTING FREIGHT RAILROAD
- PROPOSED CHST



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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L2  
 WHISLER ROAD UNDERPASS  
 KEY MAP

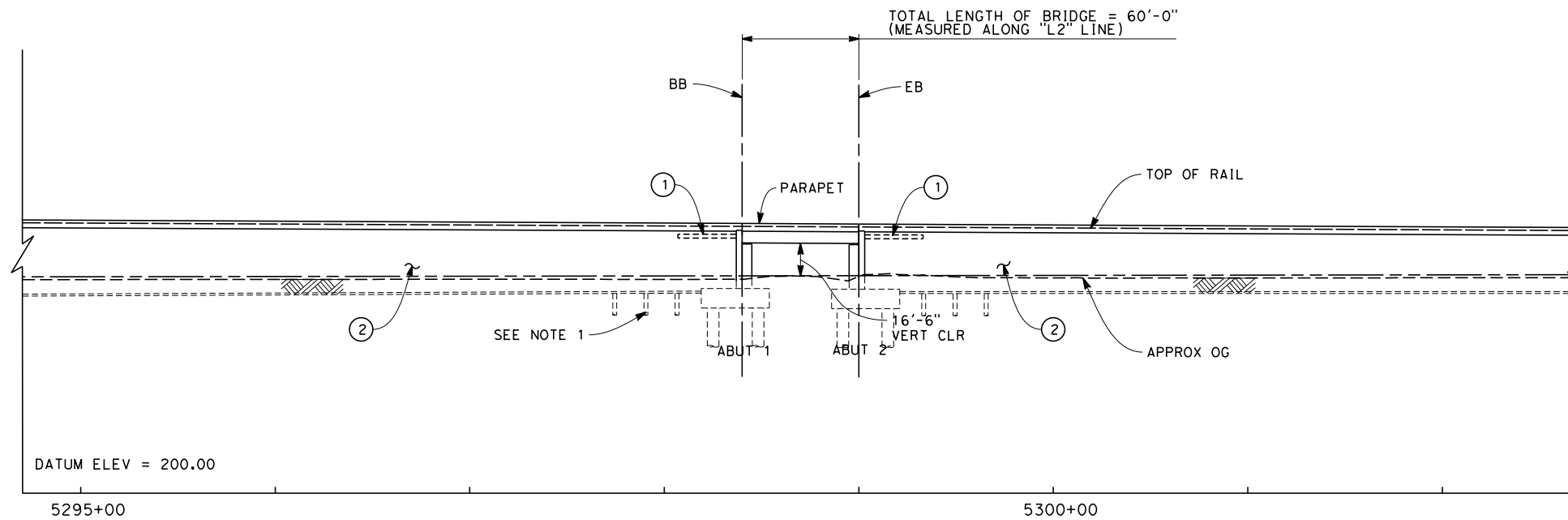
CONTRACT NO.  
HSR 06-0003  
 DRAWING NO.  
SV1635  
 SCALE  
AS SHOWN  
 SHEET NO.  
1 OF 2



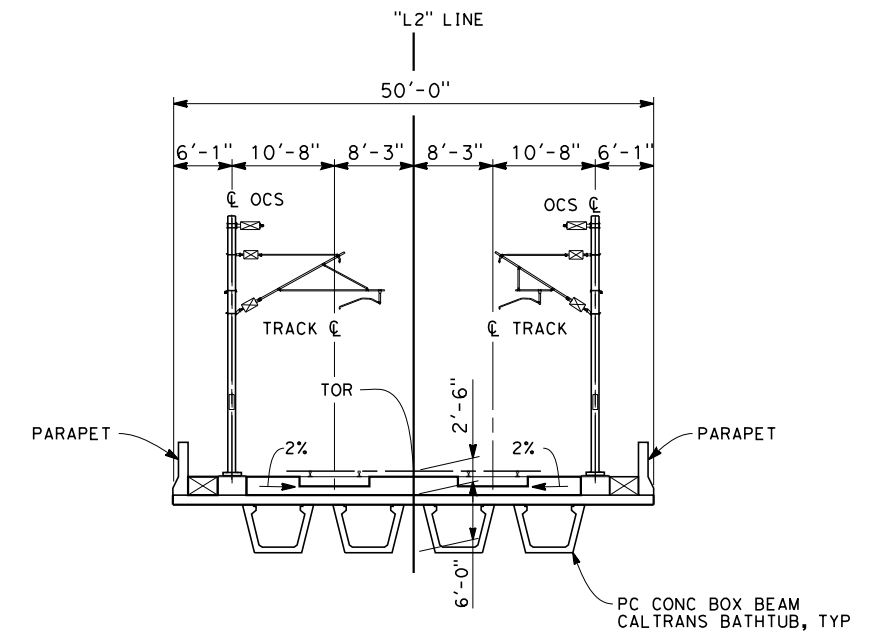
EVC 5288+53.27  
ELEV 341.87

-0.490 %

**TOP OF RAIL "L2" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



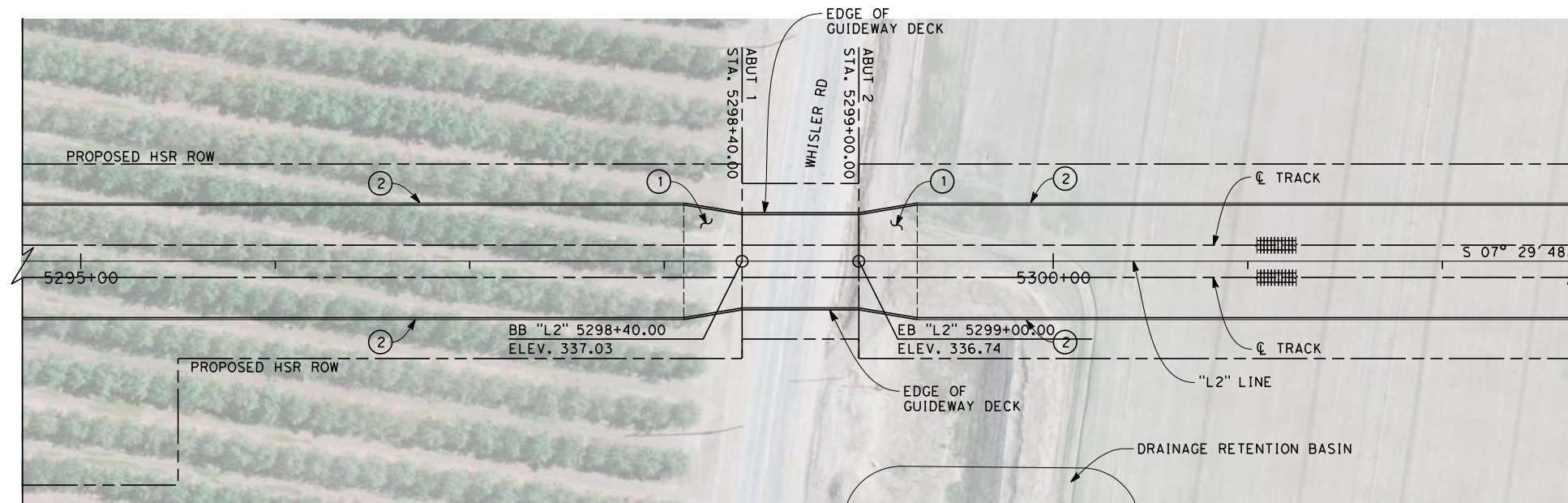
**TYPICAL SECTION**  
SCALE: 1" = 10'

NOTES:

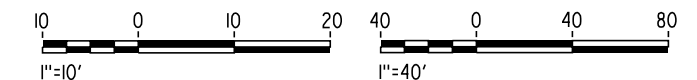
1. ALL PILES NOT SHOWN
2. PILE LENGTH TO BE DETERMINED

LEGEND:

- ① STRUCTURE APPROACH SLAB
- ② RETAINING WALL



**PLAN**  
SCALE 1" = 40'



andrew.armstrong 2/12/2013 12:06:14 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d01252333\FB-SV-1636-L2.dgn

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**



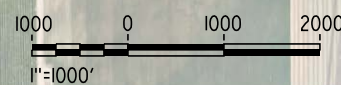
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L2  
WHISLER ROAD UNDERPASS  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1636  
SCALE  
AS SHOWN  
SHEET NO.  
2 OF 2





**LEGEND**  
 + + + EXISTING FREIGHT RAILROAD  
 ——— PROPOSED CHST



andrew.armstrong 12/12/2013 12:14:25 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d01252332\FB-SV-1640-L3.dgn

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

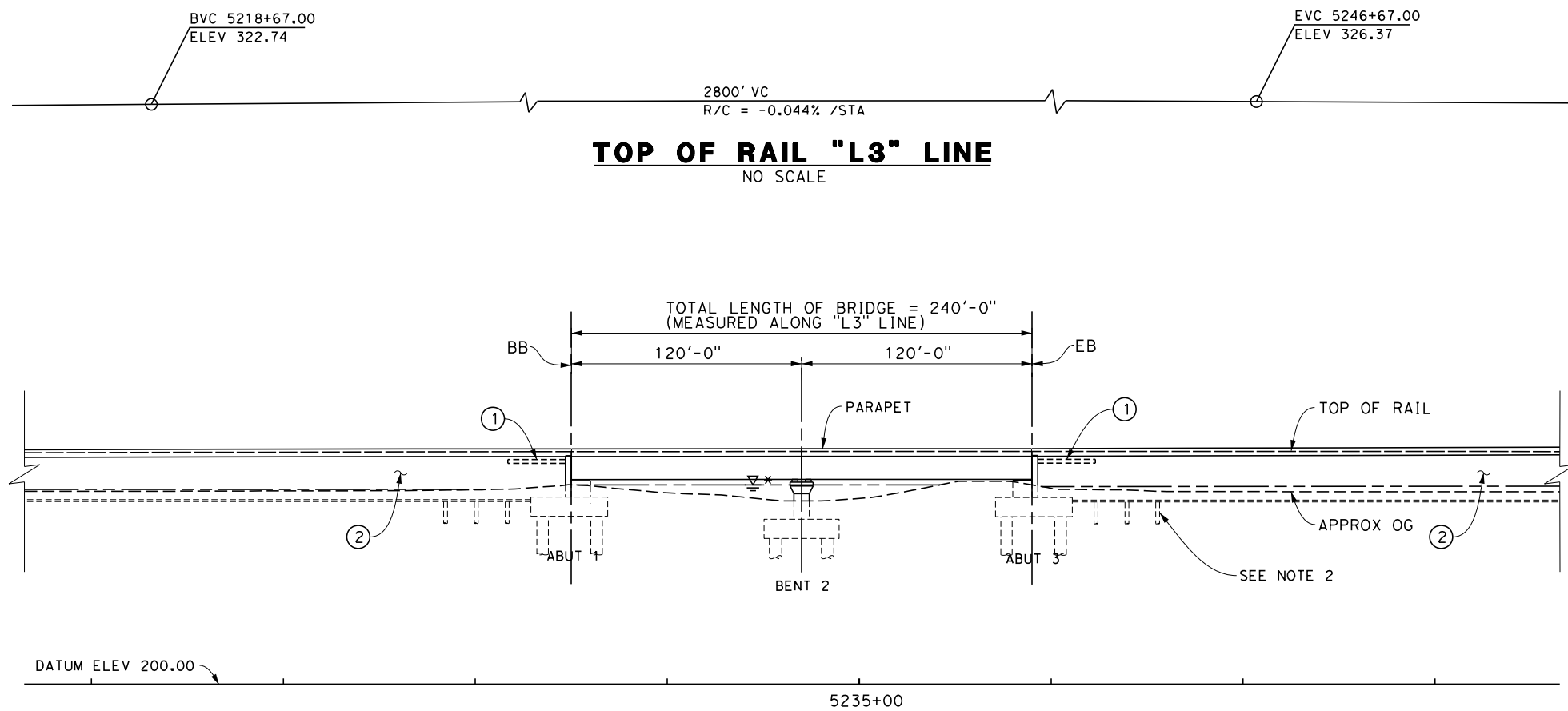
**RECORD SET 15%  
 DESIGN SUBMISSION**  
 NOT FOR  
 CONSTRUCTION



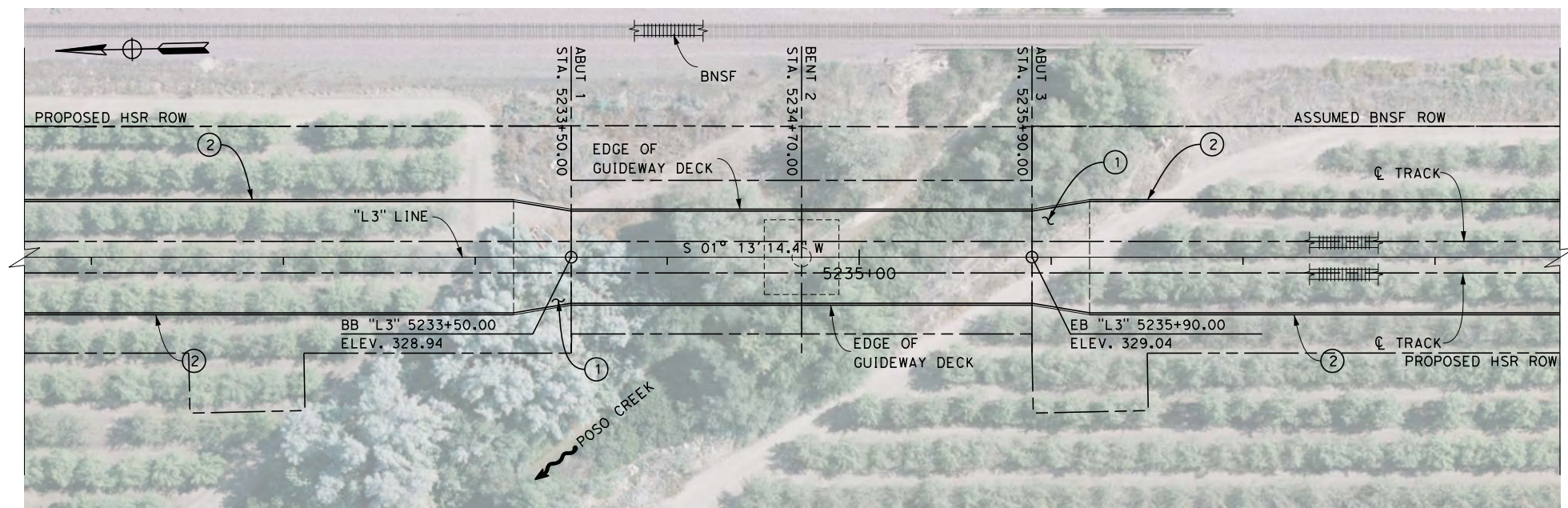
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L3  
 POSO CREEK BRIDGE  
 KEY MAP

CONTRACT NO.  
HSR 06-0003  
 DRAWING NO.  
SV1640  
 SCALE  
AS SHOWN  
 SHEET NO.  
1 OF 2

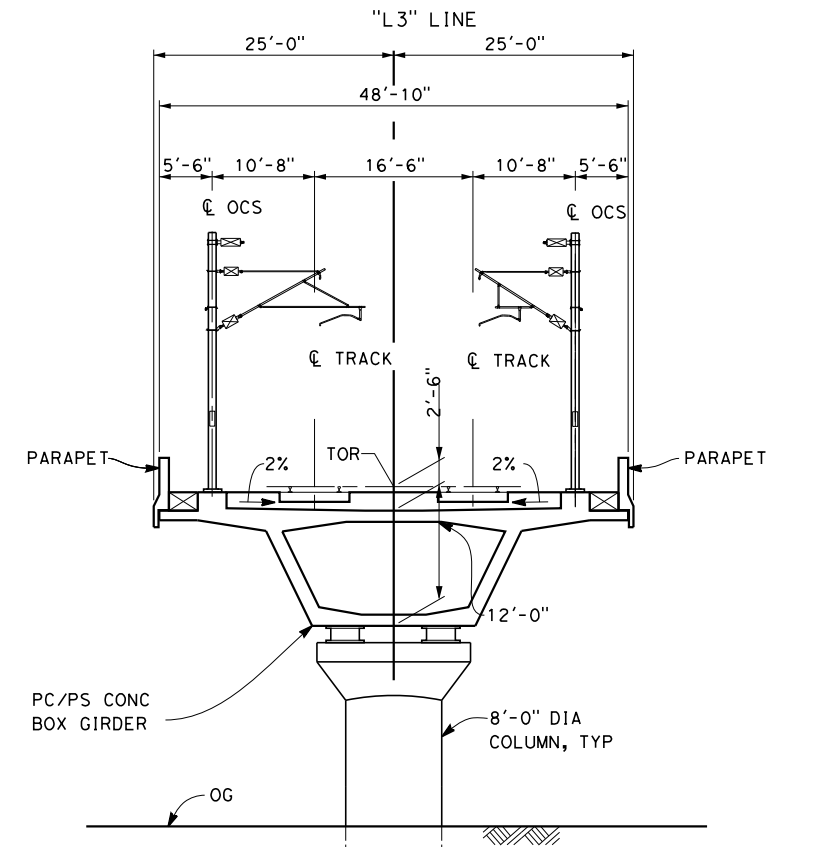




**ELEVATION**  
SCALE 1" = 40'



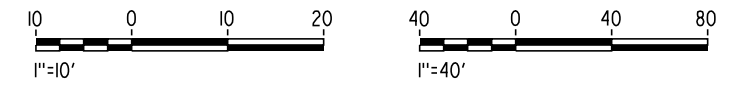
**PLAN**  
SCALE 1" = 40'



**TYPICAL SECTION**  
SCALE 1" = 10'

- NOTES:
- PILE LENGTH TO BE DETERMINED
  - ALL PILES ARE NOT SHOWN
- \* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT"

- LEGEND:
- ① STRUCTURE APPROACH SLAB
  - ② RETAINING WALL



andrew.armstrong 12/12/2013 12:14:50 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d01252332\FB-SV-1641-L3.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L3  
POSO CREEK BRIDGE  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1641  
SCALE  
AS SHOWN  
SHEET NO.  
2 OF 2



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**LEGEND**

- +—+—+ EXISTING FREIGHT RAILROAD
- PROPOSED CHST

2000 0 2000 4000  
1"=2000'

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**

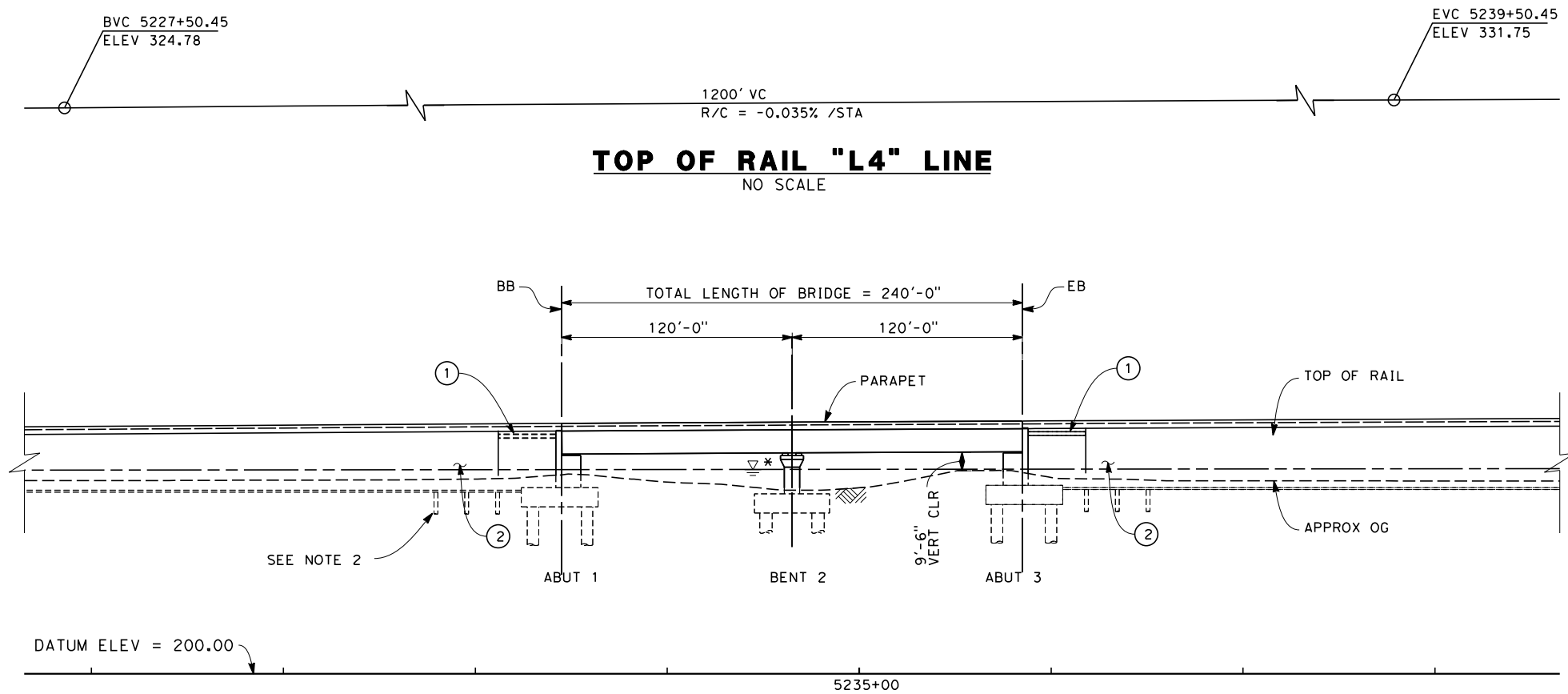


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

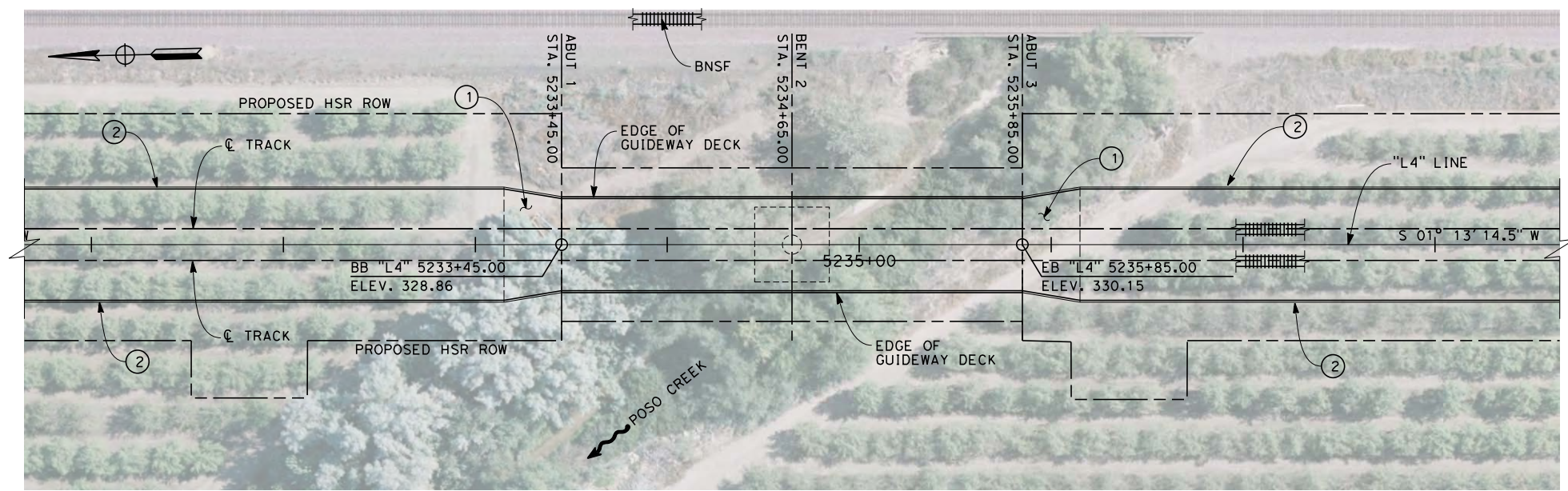
POSO CREEK SUBSECTION  
ALIGNMENT L4  
POSO CREEK BRIDGE  
KEY MAP

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1675  
SCALE  
AS SHOWN  
SHEET NO.  
1 OF 2

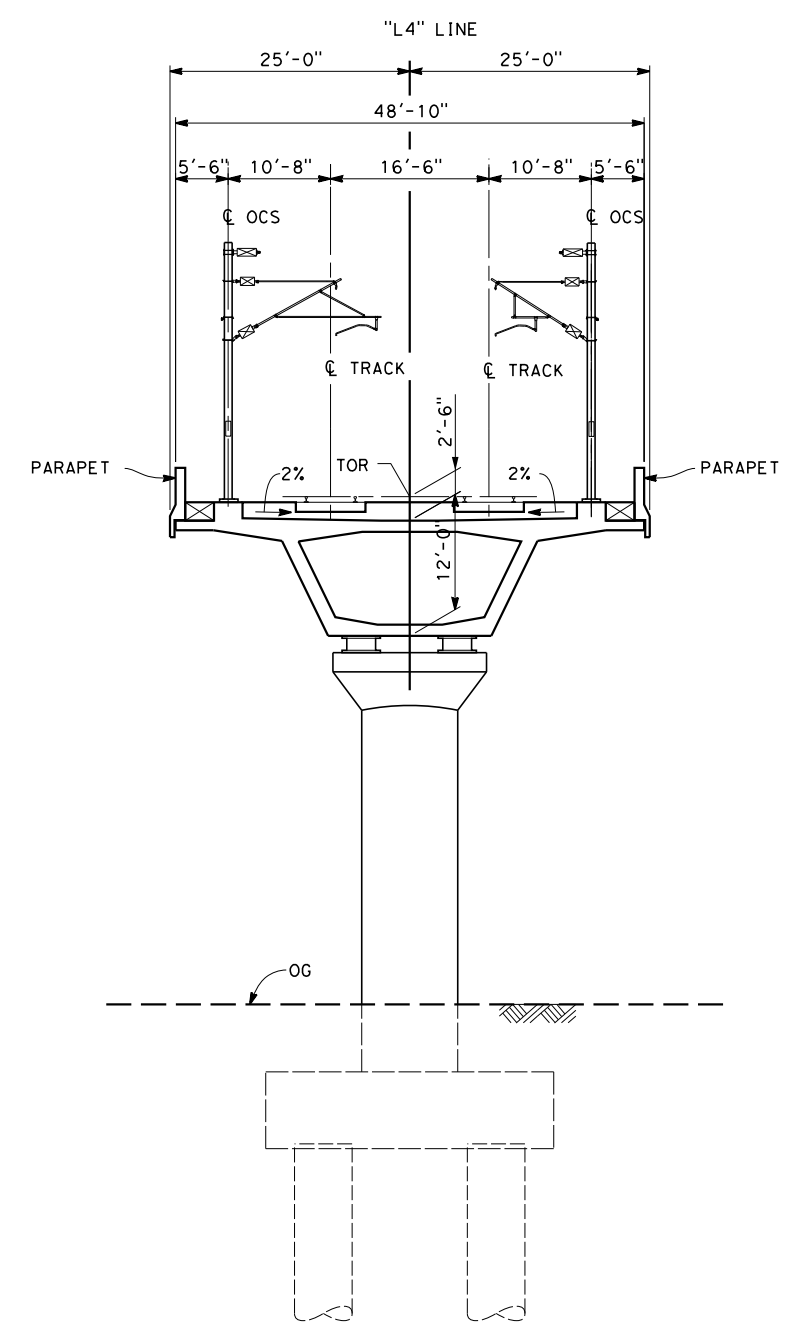




**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

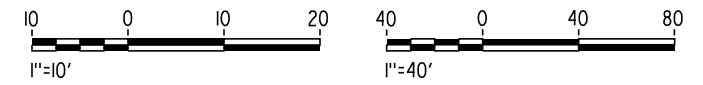


**TYPICAL SECTION**  
SCALE: 1" = 10'

**NOTES:**

1. PILE LENGTH TO BE DETERMINED
  2. ALL PILES ARE NOT SHOWN
- \* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT"

- LEGEND:**
- ① STRUCTURE APPROACH SLAB
  - ② RETAINING WALL



12/28/2013 12:29:48 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125231\FB-SV-1676-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L4  
POSO CREEK BRIDGE  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1676

SCALE  
AS SHOWN

SHEET NO.  
2 OF 2



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**LEGEND**

EXISTING FREIGHT RAILROAD  
 PROPOSED CHST

2000 0 2000 4000  
 1"=2000'

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**



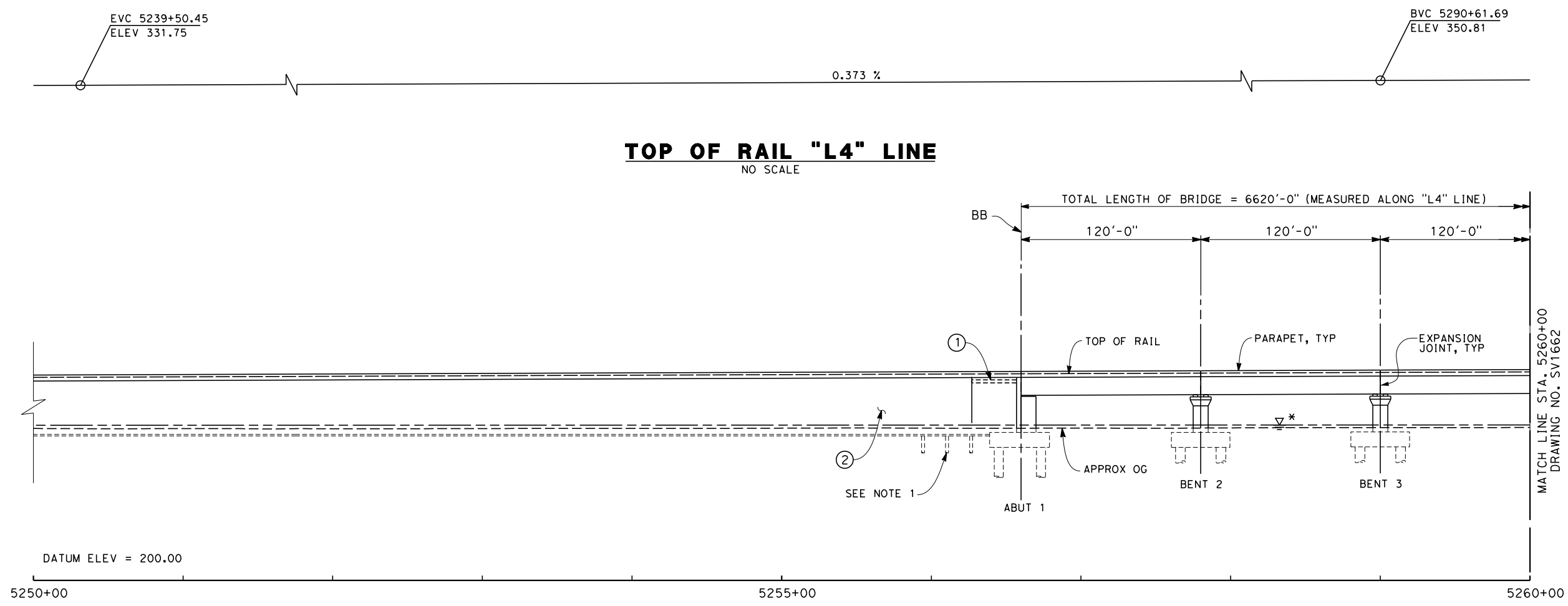
**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L4  
 BNSF VIADUCT  
 KEY MAP

CONTRACT NO.  
 HSR 06-0003  
 DRAWING NO.  
 SV1660  
 SCALE  
 AS SHOWN  
 SHEET NO.  
 1 OF 12

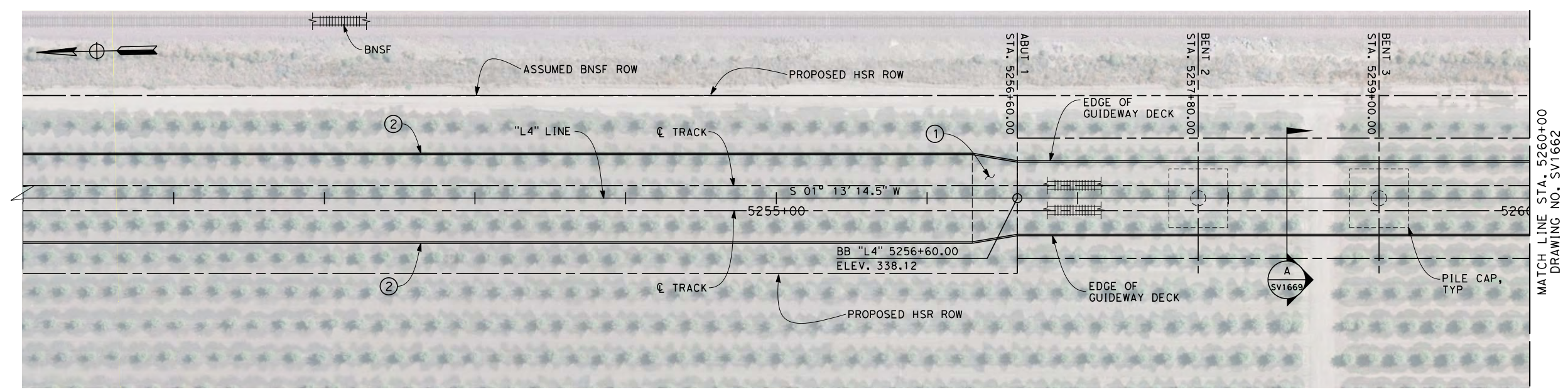


- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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.

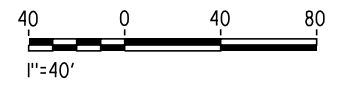
- LEGEND:**
- ① STRUCTURE APPROACH SLAB
  - ② RETAINING WALL
  - \* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'



12/28/2013 11:54:49 AM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125231\FB-SV-1661-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1661

SCALE  
AS SHOWN

SHEET NO.  
2 OF 12



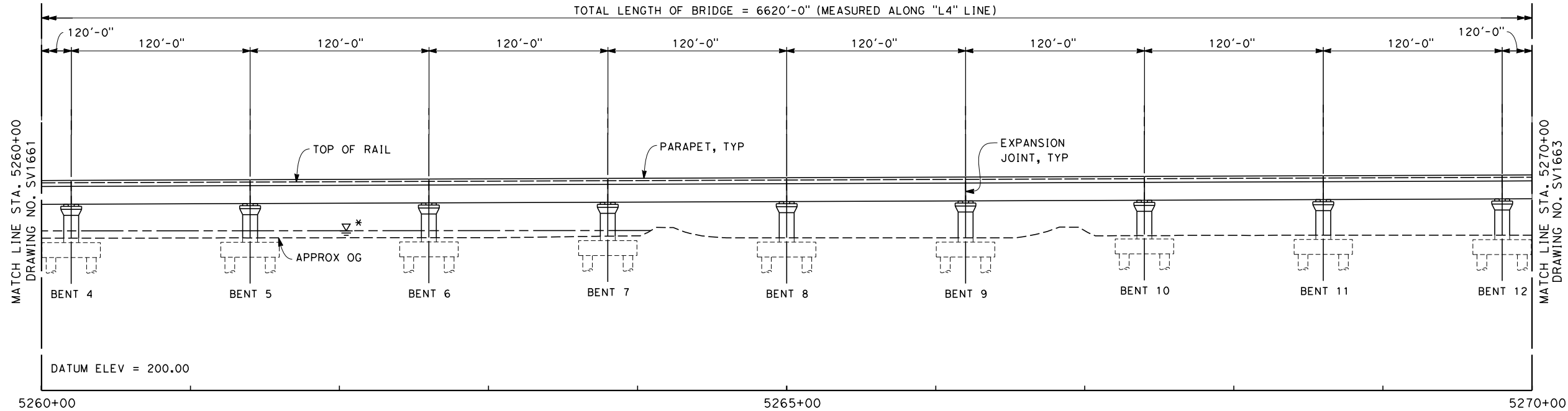
EVC 5239+50.45  
ELEV 331.75

BVC 5290+61.69  
ELEV 350.81

0.373 %

**TOP OF RAIL "L4" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 6620'-0" (MEASURED ALONG "L4" LINE)



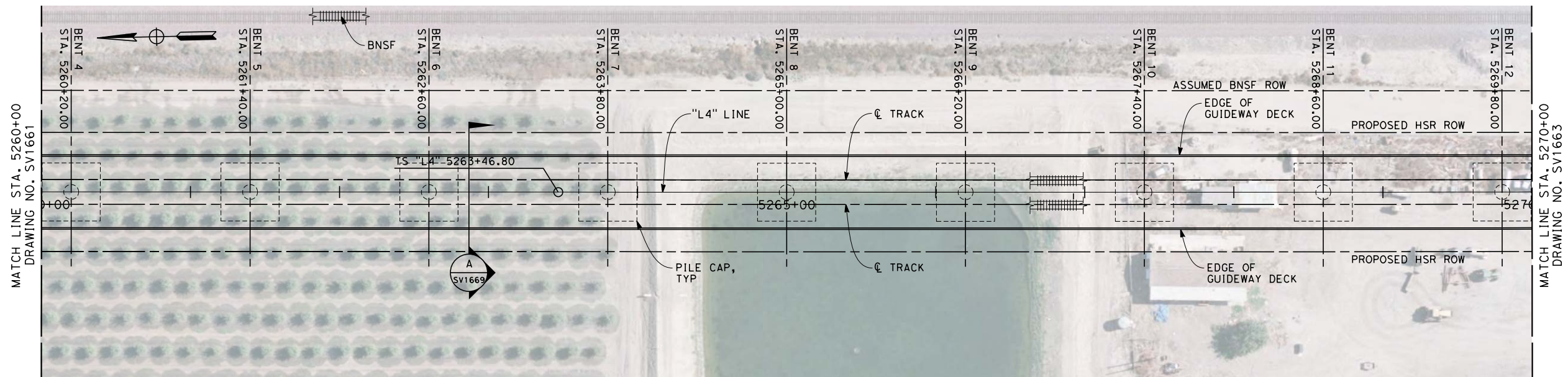
**ELEVATION**  
SCALE 1" = 40'

**NOTES**

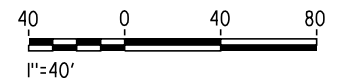
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON  
 SIMPLE SPANS - MSS OR FLPM  
 CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
 STEEL TRUSS - INSITU, SLID OR LAUNCHED  
 ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
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**LEGEND:**

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



**PLAN**  
SCALE 1" = 40'



12/28/2013 12:09:35 PM c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125231\FB-SV-1662-L4.dgn

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**

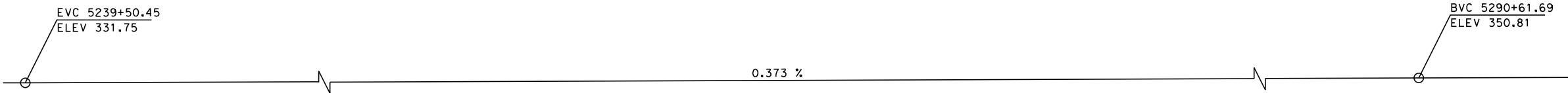
**RECORD SET 15%  
DESIGN SUBMISSION**  
  
**NOT FOR  
CONSTRUCTION**



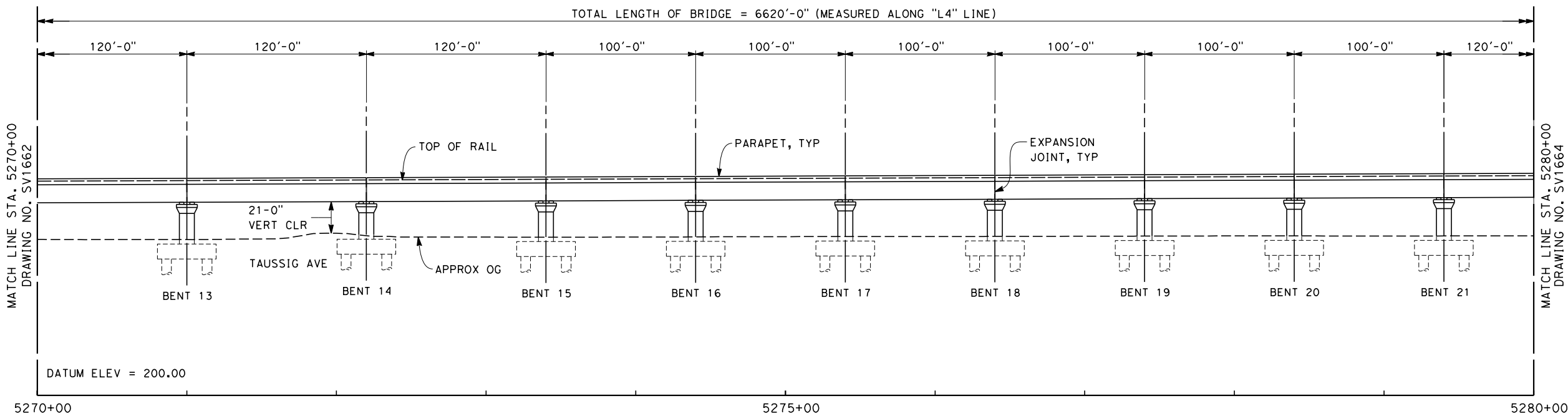
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1662
SCALE AS SHOWN
SHEET NO. 3 OF 12



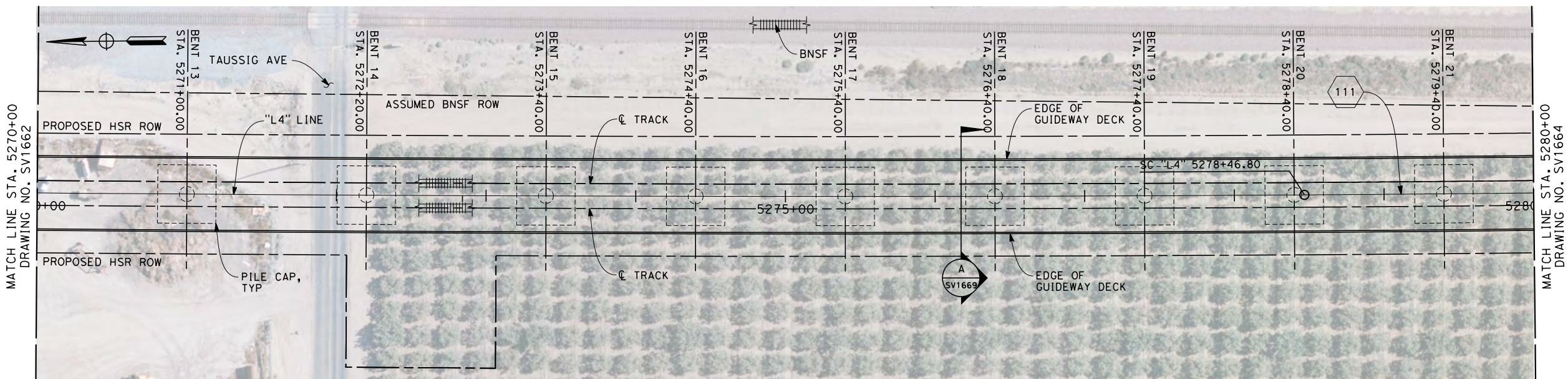


**TOP OF RAIL "L4" LINE**  
NO SCALE



**ELEVATION**  
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.



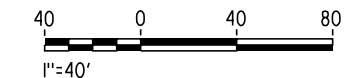
**PLAN**  
SCALE 1" = 40'

- 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**

⑪

R = 45000.00'  
 $\Delta$  = 28°41'37.5"  
 T = 11509.6'  
 L = 22536.0'



andrew.armstrong 2/12/2013 12:17:55 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125231\FB-SV-1663-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L4  
 BNSF VIADUCT  
 PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1663

SCALE  
AS SHOWN

SHEET NO.  
4 OF 12



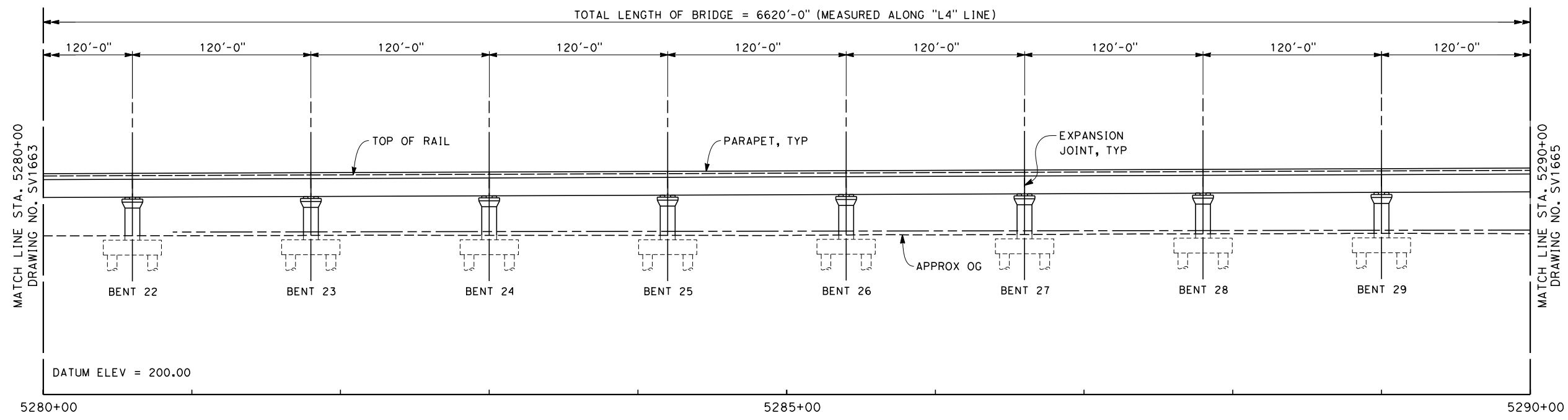
EVC 5239+50.45  
ELEV 331.75

BVC 5290+61.69  
ELEV 350.81

0.373 %

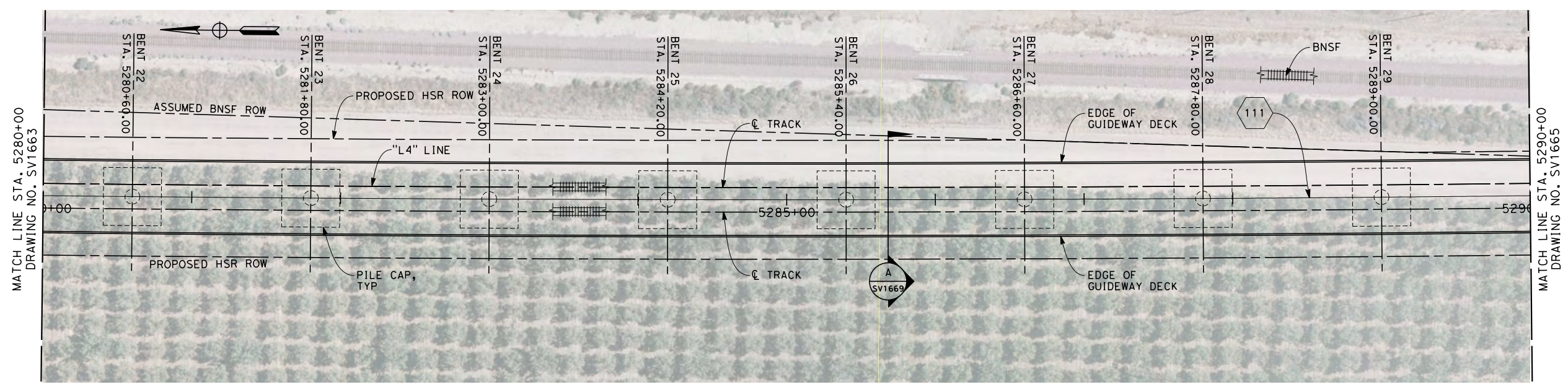
**TOP OF RAIL "L4" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 6620'-0" (MEASURED ALONG "L4" LINE)



**ELEVATION**  
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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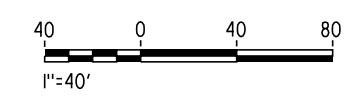
**PLAN**  
SCALE 1" = 40'

- 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**

① 111

R = 45000.00'  
Δ = 28°41'37.5"  
T = 11509.6'  
L = 22536.0'



andrew.armstrong 2/12/2013 12:18:07 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125231\FB-SV-1664-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1664

SCALE  
AS SHOWN

SHEET NO.  
5 OF 12

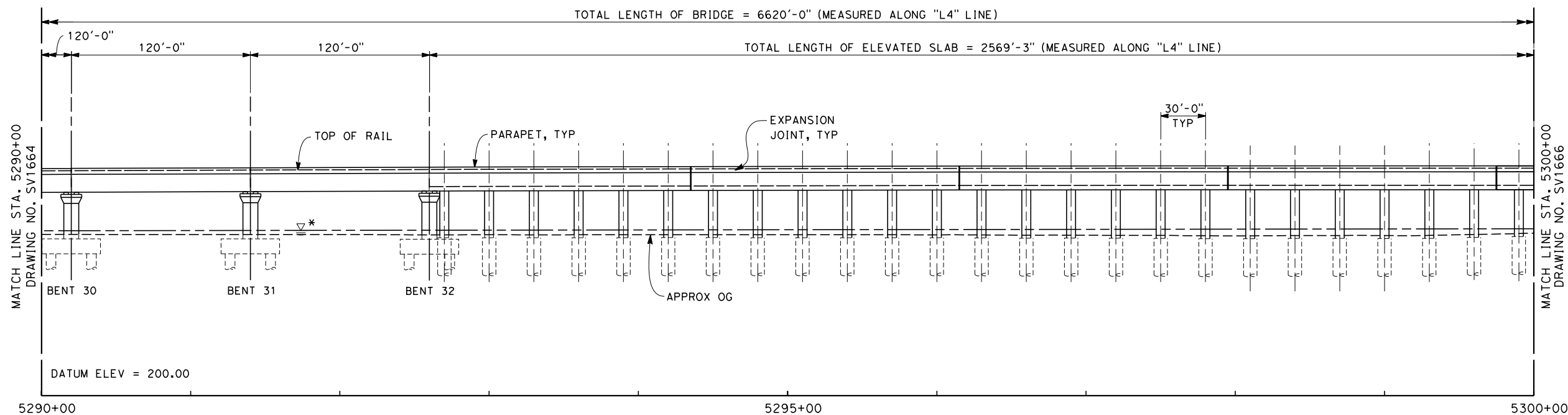


BVC 5290+61.69  
ELEV 350.81

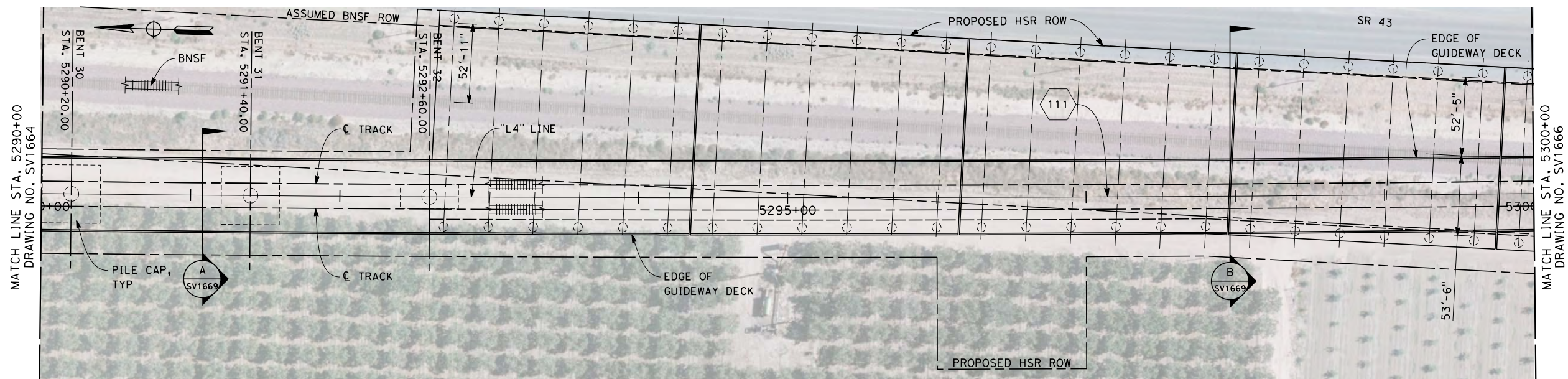
EVC 5317+61.69  
ELEV 344.77

2700' VC  
R/C = -0.044% /STA

**TOP OF RAIL "L4" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

**NOTES**

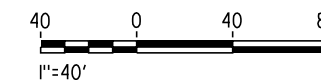
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON  
SIMPLE SPANS - MSS OR FLPM  
CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
STEEL TRUSS - INSITU, SLID OR LAUNCHED  
ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS 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**

①  
R = 45000.00'  
Δ = 28°41'37.5"  
T = 11509.6'  
L = 22536.0'



andrew.armstrong 2/12/2013 12:18:20 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125231\FB-SV-1665-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1665  
SCALE  
AS SHOWN  
SHEET NO.  
6 OF 12



BVC 5290+61.69  
ELEV 350.81

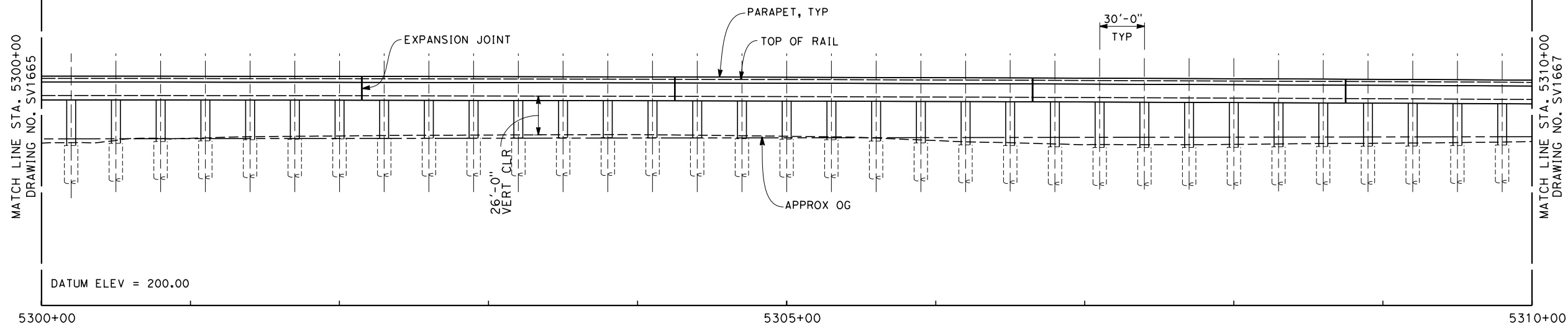
EVC 5317+61.69  
ELEV 344.77

2700' VC  
R/C = -0.044% /STA

**TOP OF RAIL "L4" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 6620'-0" (MEASURED ALONG "L4" LINE)

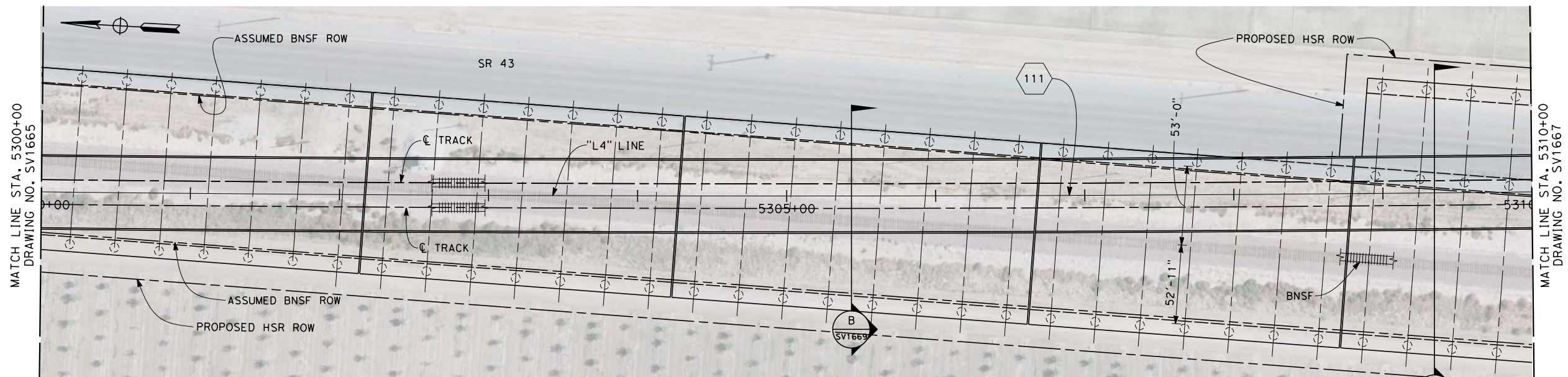
TOTAL LENGTH OF ELEVATED SLAB = 2569'-3" (MEASURED ALONG "L4" LINE)



**ELEVATION**  
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
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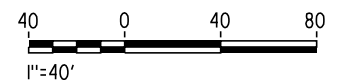
**PLAN**  
SCALE 1" = 40'

**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**

111  
R = 45000.00'  
Δ = 28°41'37.5"  
T = 11509.6'  
L = 22536.0'



andrew.armstrong/2/12/2013 12:18:32 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125231\FB-SV-1666-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1666  
SCALE  
AS SHOWN  
SHEET NO.  
7 OF 12

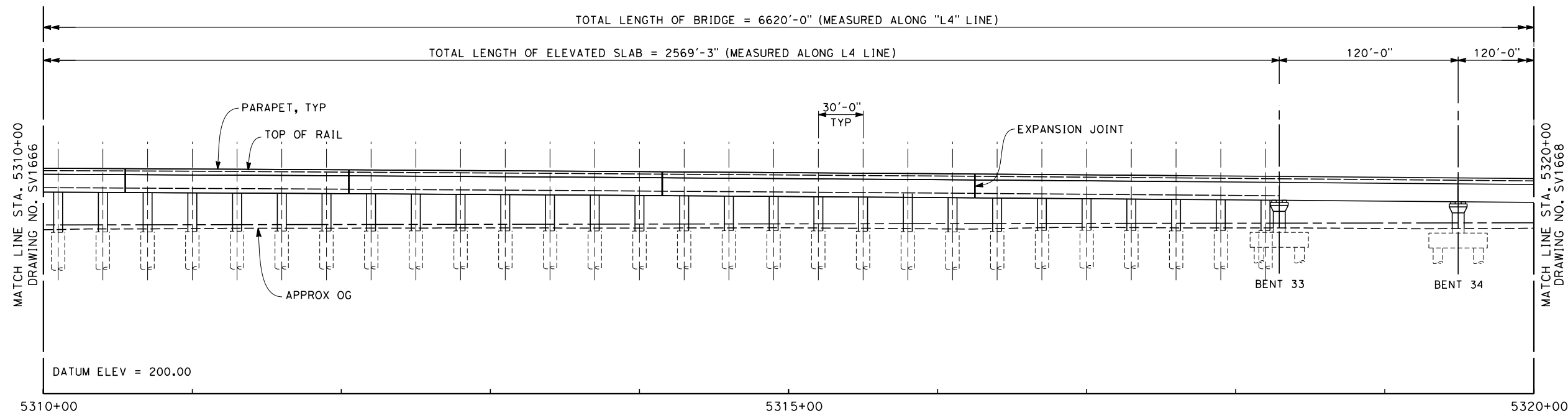


BVC 5290+61.69  
ELEV 350.81

EVC 5317+61.69  
ELEV 344.77

2700' VC  
R/C = -0.044% /STA

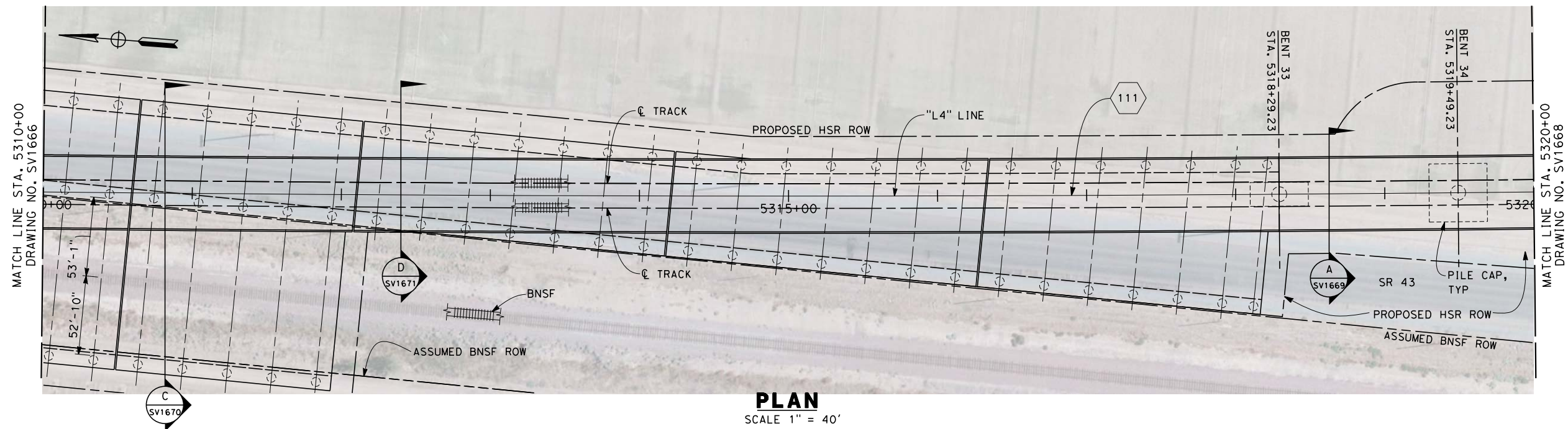
**TOP OF RAIL "L4" LINE**  
NO SCALE



**ELEVATION**  
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.



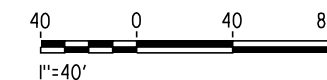
**PLAN**  
SCALE 1" = 40'

**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**

①  
R = 45000.00'  
Δ = 28°41'37.5"  
T = 11509.6'  
L = 22536.0'



andrew.armstrong/2/12/2013 12:18:44 PM c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125231\FB-SV-1667-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

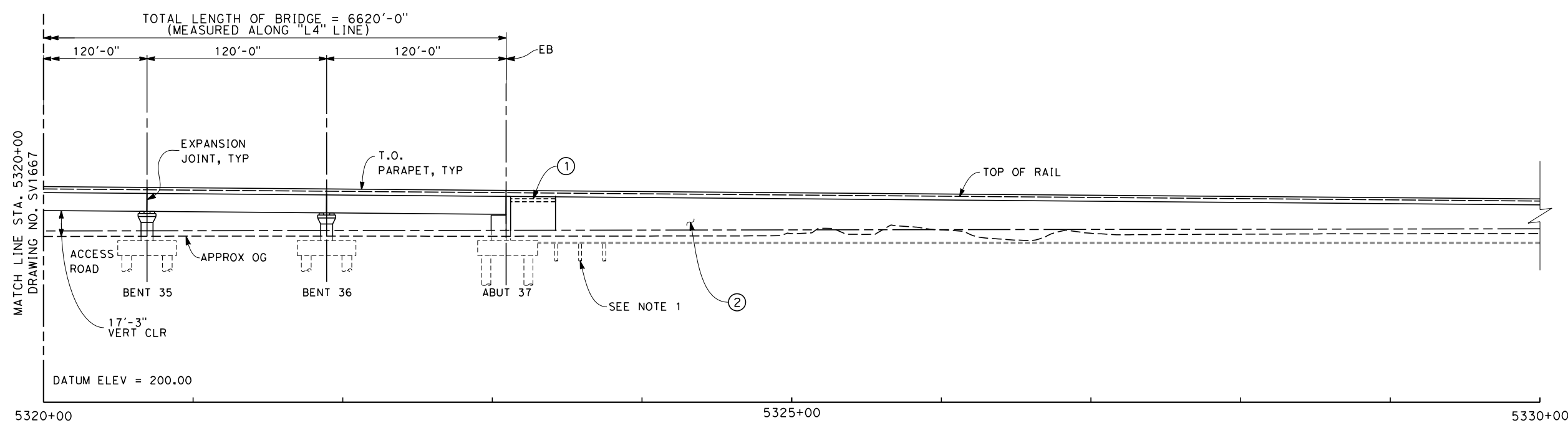
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1667  
SCALE  
AS SHOWN  
SHEET NO.  
8 OF 12



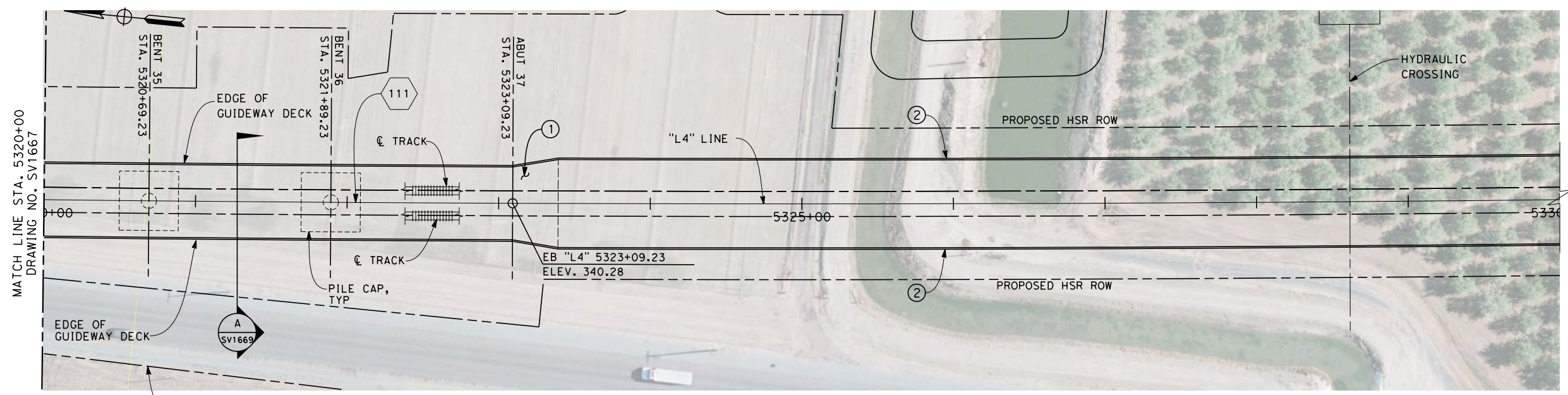
EVC 5317+61.69  
ELEV 344.77

-0.820 %

**TOP OF RAIL "L4" 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**

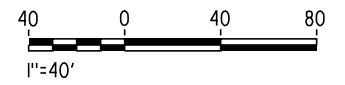
111

R = 45000.00'

Δ = 28°41'37.5"

T = 11509.6'

L = 22536.0'



c:\pwworking\hmm\external\andrew.armstrong-arup.com\d0125231\FB-SV-1668-L4.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
PLAN AND ELEVATION

CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1668

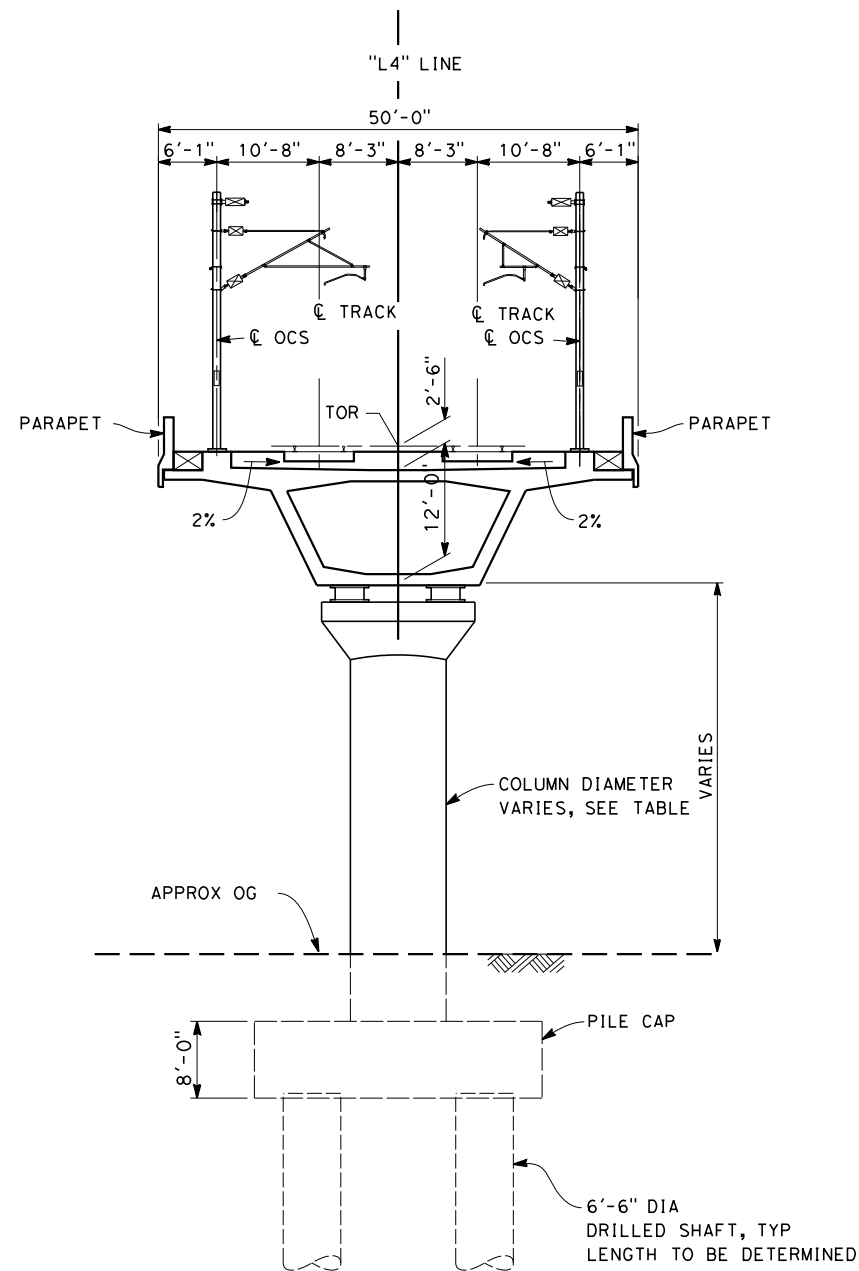
SCALE  
AS SHOWN

SHEET NO.  
9 OF 12



c:\pwworking\hmm\external\frank.palermo01-arup.com\d0125231\FB-SV-1669-L4.dgn  
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 frank.palermo

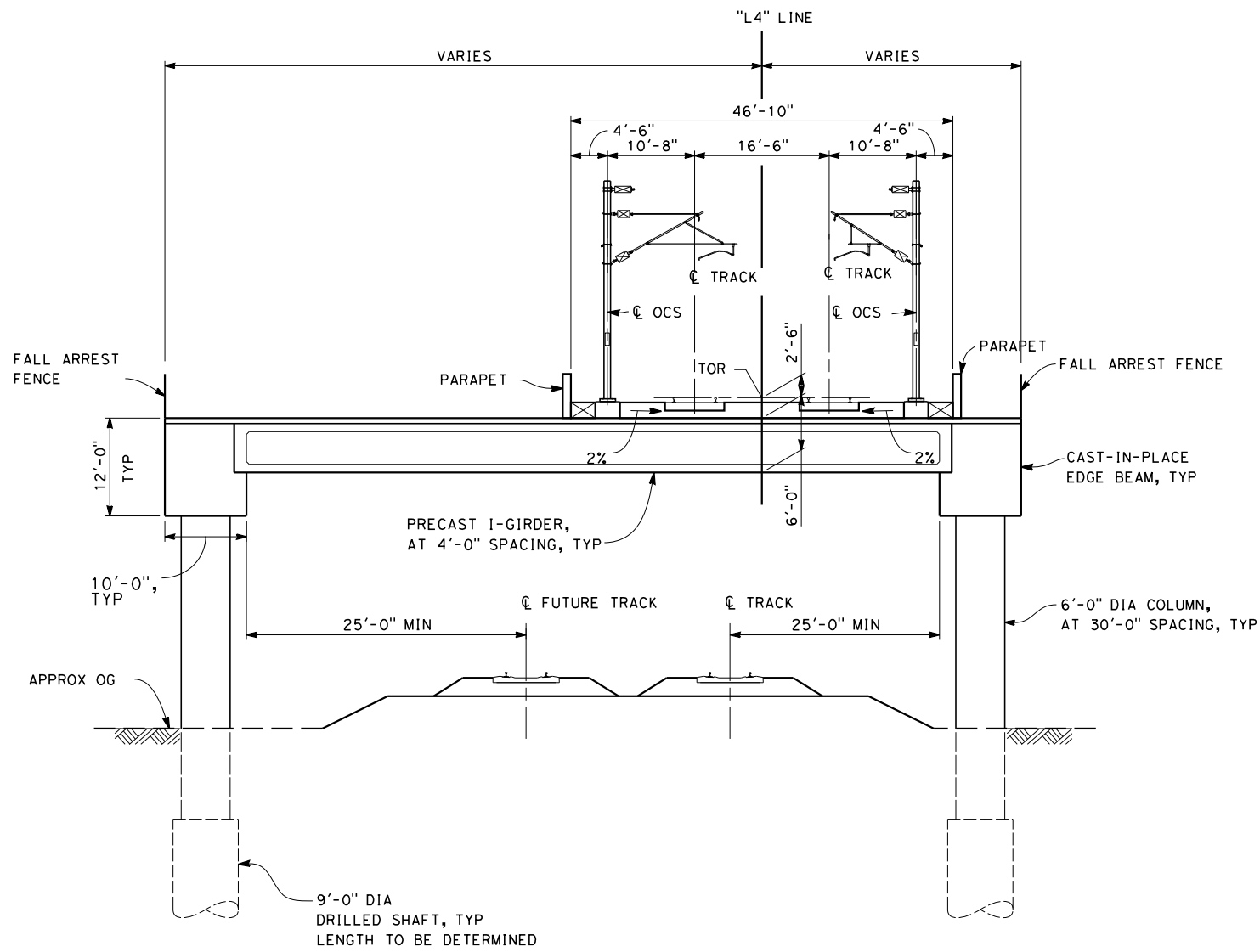
COLUMN DIAMETERS	
COLUMN HEIGHT	DIAMETER
0-20	8 FT
20-40	10 FT
40-50	12 FT
50-60	15 FT
60-80	20 FT
80-100	25 FT



**SECTION A**

SCALE: 1" = 10'

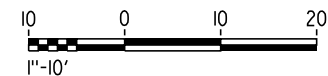
STA 5256+60 THROUGH STA 5297+40  
 STA 5318+29 THROUGH STA 5323+09



**SECTION B**

SCALE: 1" = 10'

STA 5297+40 THROUGH STA 5308+90



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**

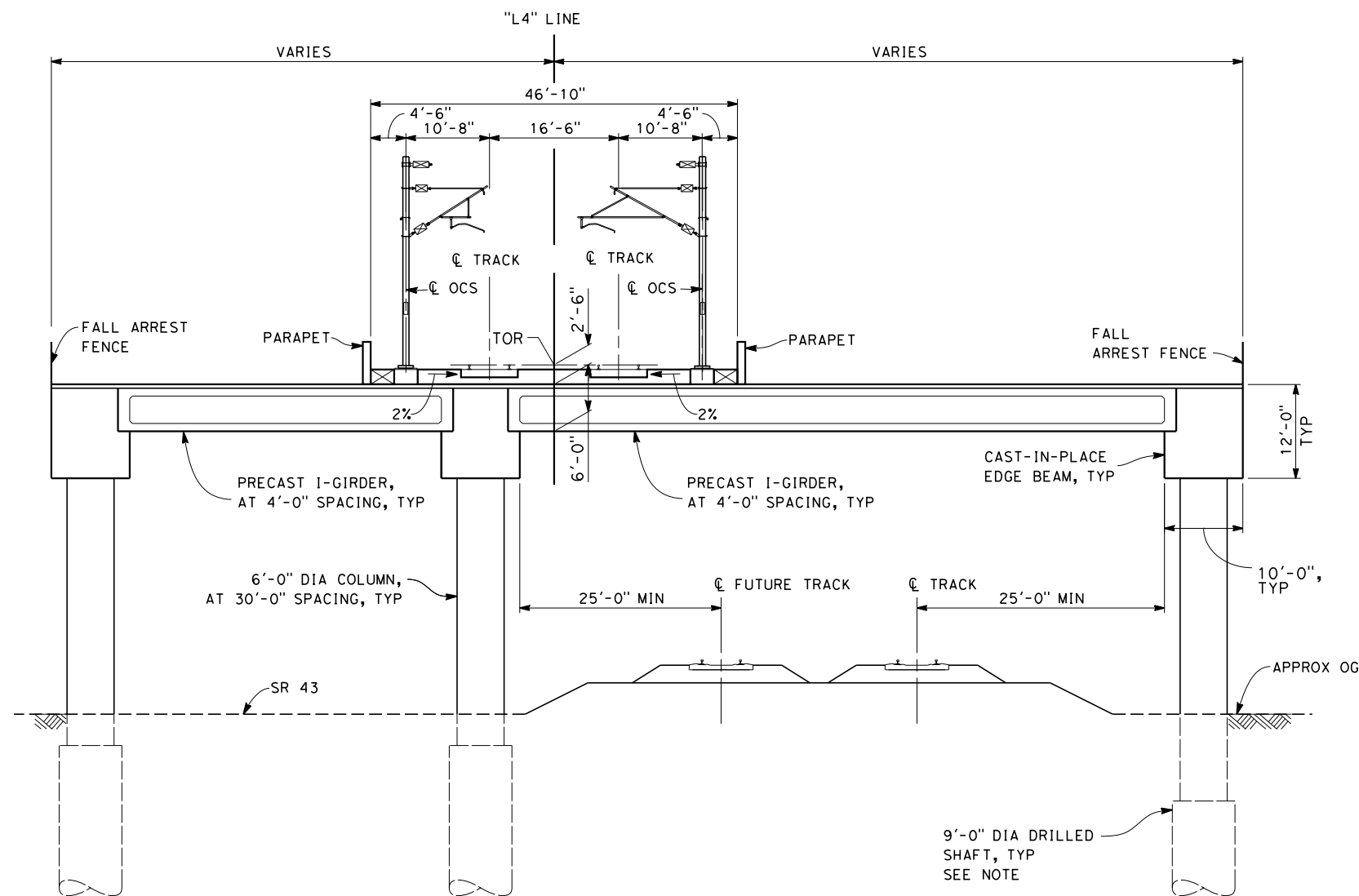


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 FRESNO TO BAKERSFIELD**  
 POSO CREEK SUBSECTION  
 ALIGNMENT L4  
 BNSF VIADUCT  
 TYPICAL SECTIONS

CONTRACT NO. HSR 06-0003
DRAWING NO. SV1669
SCALE AS SHOWN
SHEET NO. 10 OF 12



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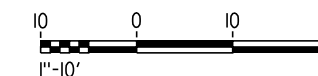
**SECTION C**

SCALE: 1" = 10'

STA 5308+90 THROUGH STA 5312+00

NOTES:

1. DRILLED SHAFT LENGTH TO BE DETERMINED
2. PIER PROTECTION IS REQUIRED WHERE COLUMN FACE IS CLOSER THAN 40 FT FROM ROADWAY.



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

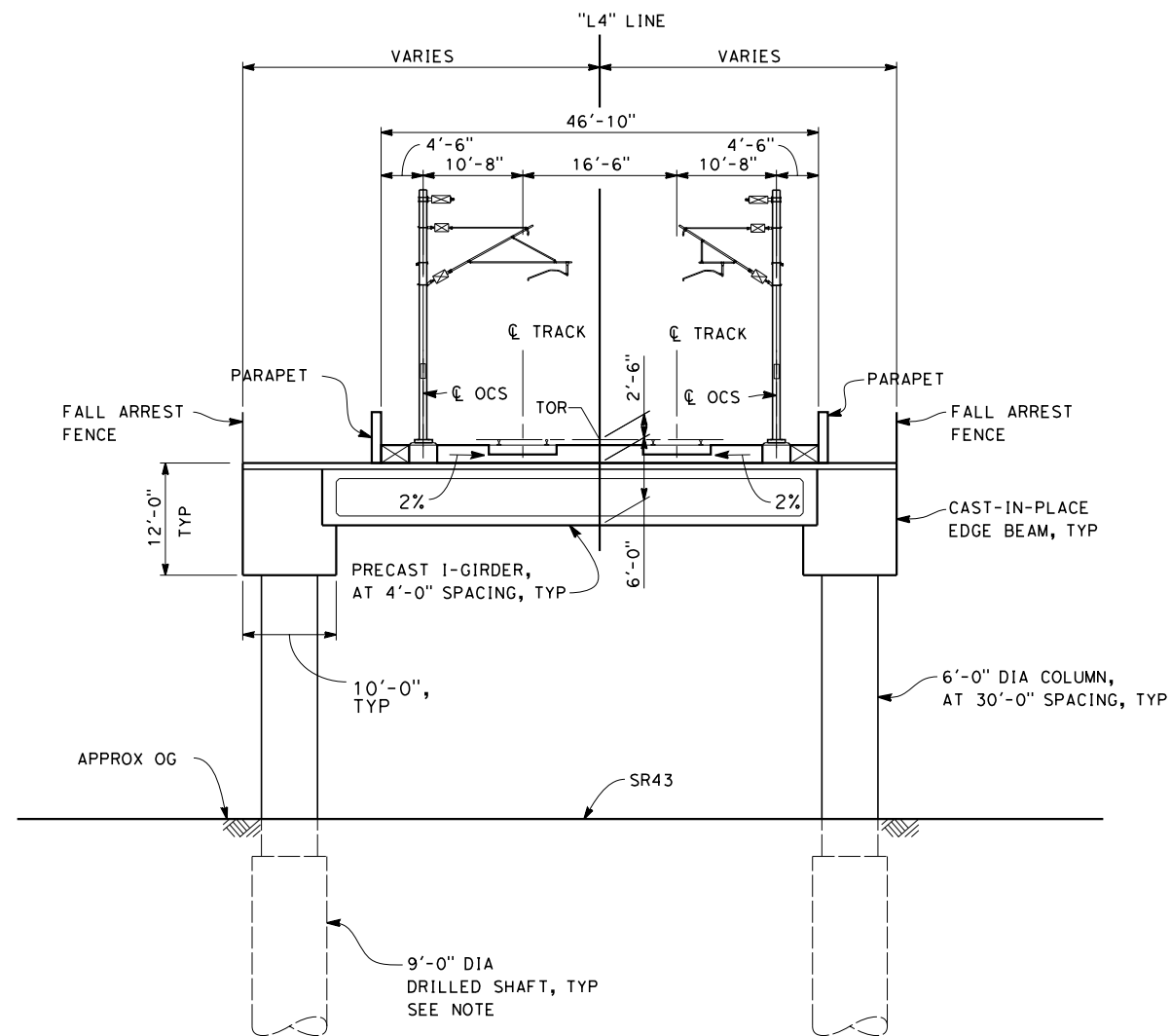
**RECORD SET 15%  
DESIGN SUBMISSION**  
  
**NOT FOR  
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
TYPICAL SECTIONS

CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1670  
SCALE  
AS SHOWN  
SHEET NO.  
11 OF 12



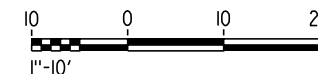


**SECTION D**  
SCALE: 1" = 10'

STA 5312+00 THROUGH STA 5318+29

NOTES:

1. DRILLED SHAFT LENGTH TO BE DETERMINED
2. PIER PROTECTION IS REQUIRED WHERE COLUMN FACE IS CLOSER THAN 40 FT FROM ROADWAY.



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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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

POSO CREEK SUBSECTION  
ALIGNMENT L4  
BNSF VIADUCT  
TYPICAL SECTIONS

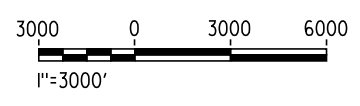
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1671
SCALE AS SHOWN
SHEET NO. 12 OF 12





**LEGEND**

	EXISTING FREIGHT RAILROAD
	PROPOSED CHST



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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**



**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



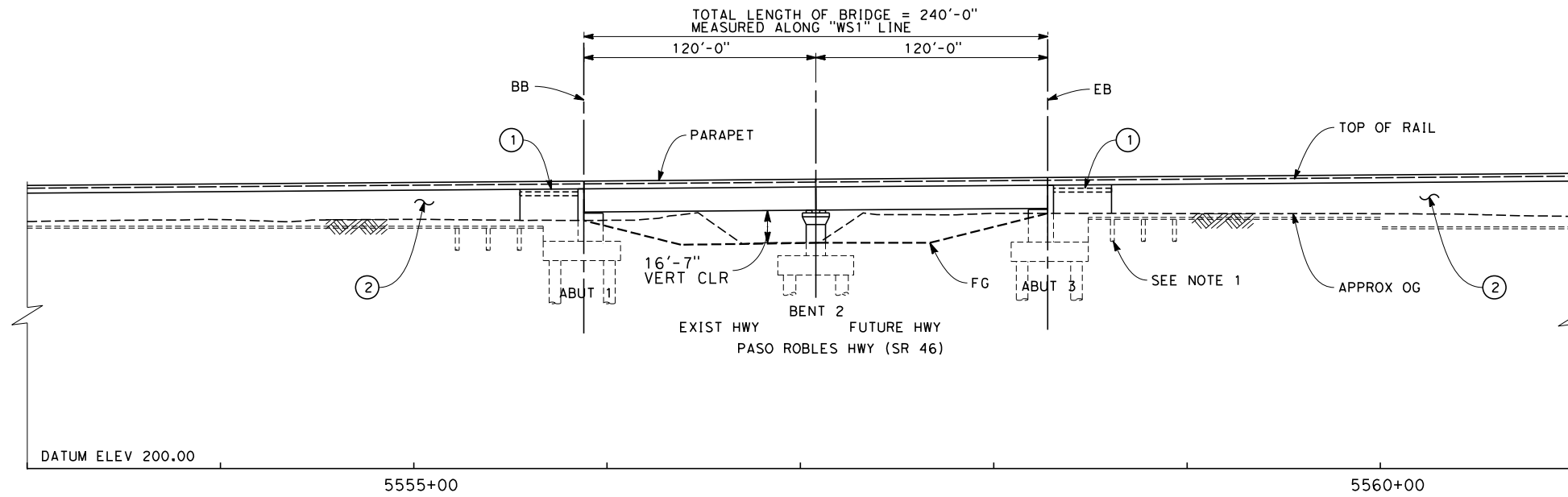
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ELEV 343.41

BVC 5570+62.62  
ELEV 358.73

0.773 %

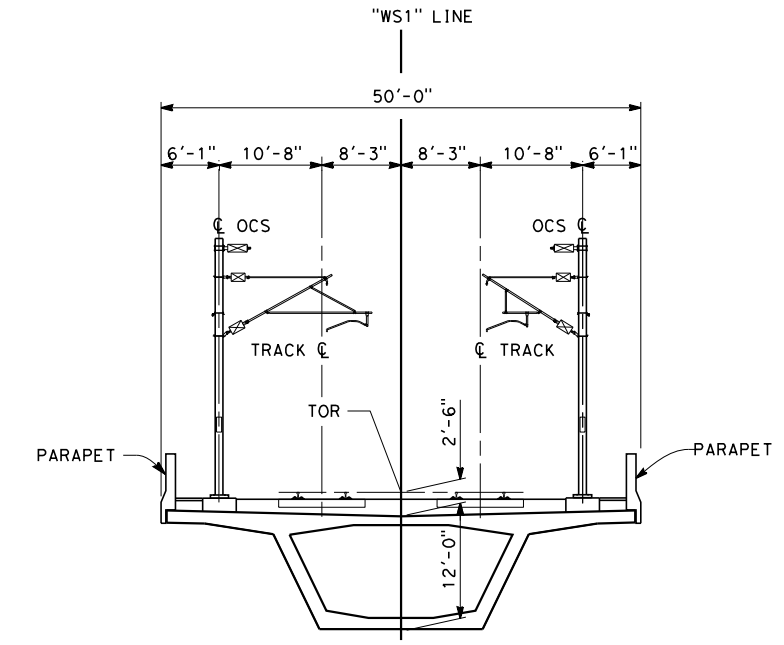
**TOP OF RAIL "WS1" LINE**

NO SCALE



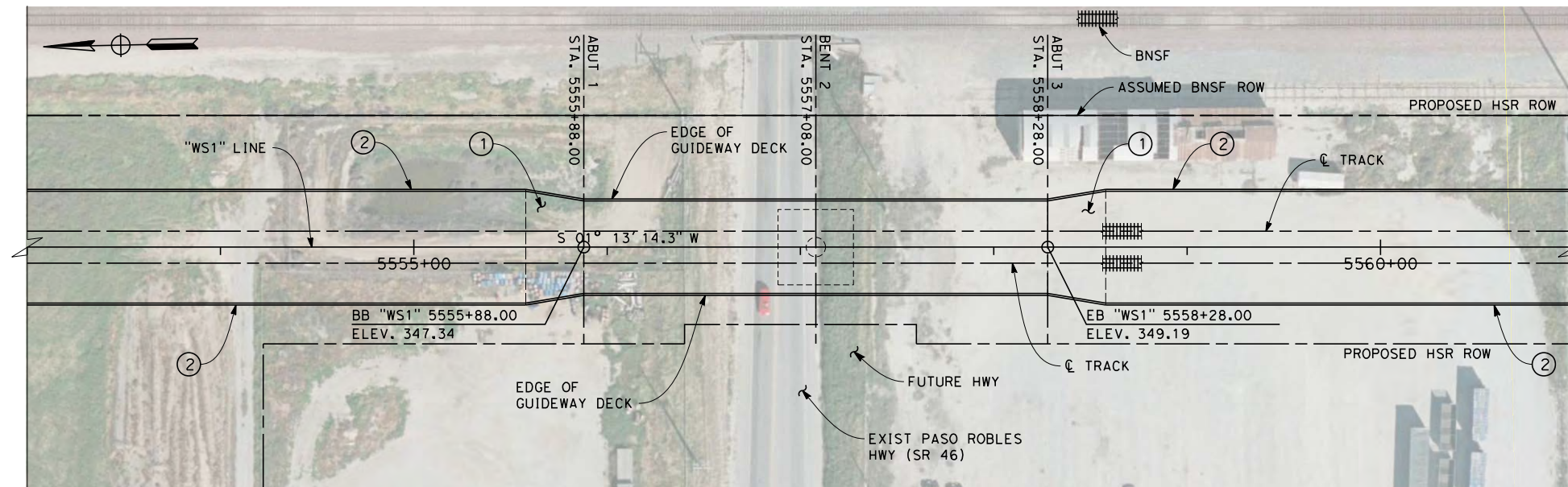
**ELEVATION**

SCALE 1" = 40'



**TYPICAL SECTION**

SCALE: 1" = 10'



**PLAN**

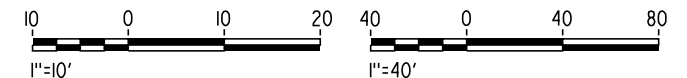
SCALE 1" = 40'

NOTES:

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

LEGEND:

- ① STRUCTURE APPROACH SLAB
- ② RETAINING WALL



Nadine.Hutton 12/12/2013 7:03:14 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1699-WS1.dgn

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**



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

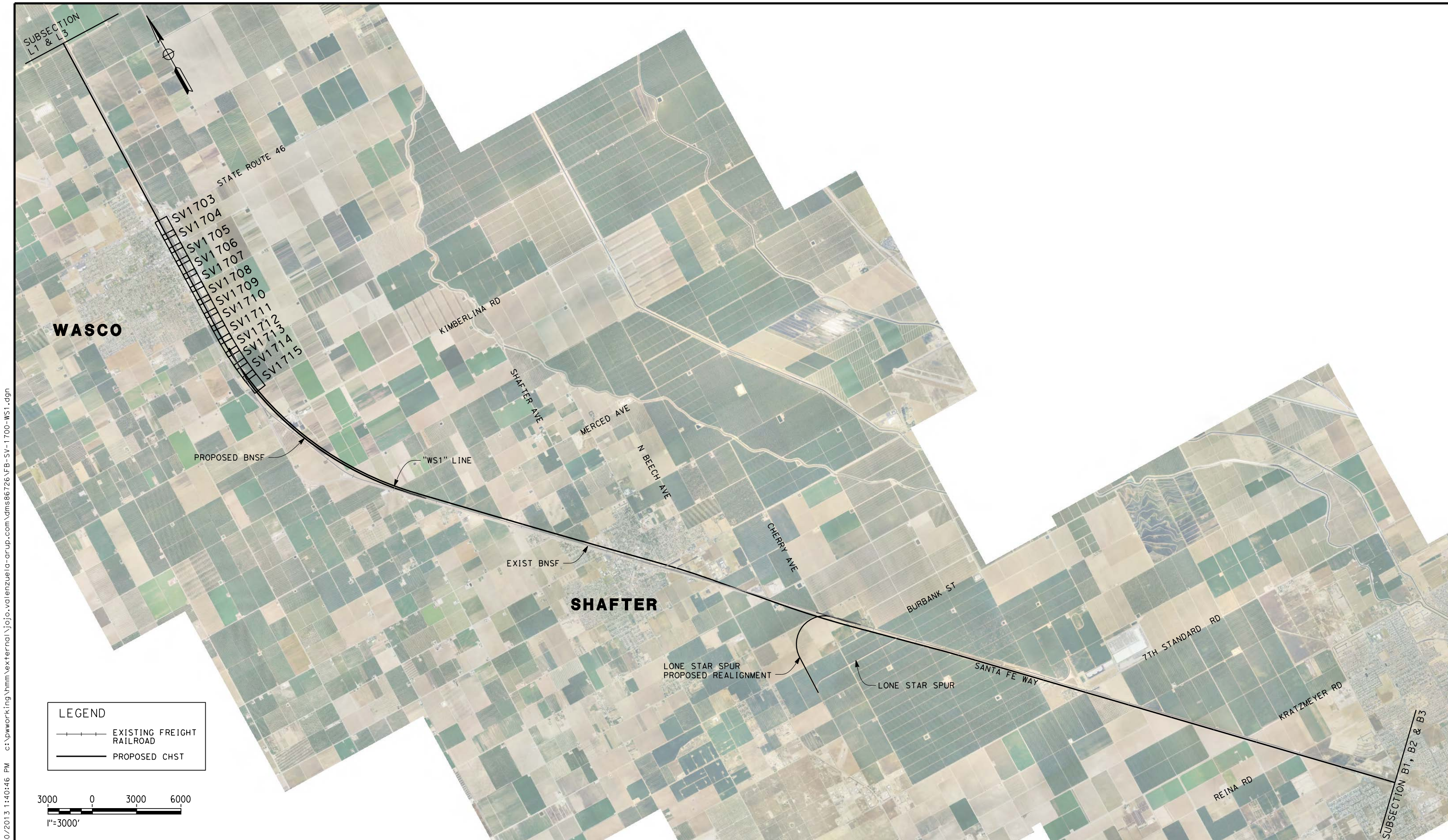
CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1699

SCALE  
AS SHOWN

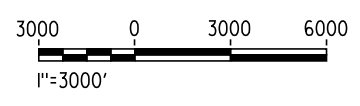
SHEET NO.  
2 OF 2





**LEGEND**

	EXISTING FREIGHT RAILROAD
	PROPOSED CHST



c:\pwworking\hmm\external\jojo.valenzuela-arup.com\dms86726\FB-SV-1700-WS1.dgn 12/30/2013 1:40:46 PM

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**

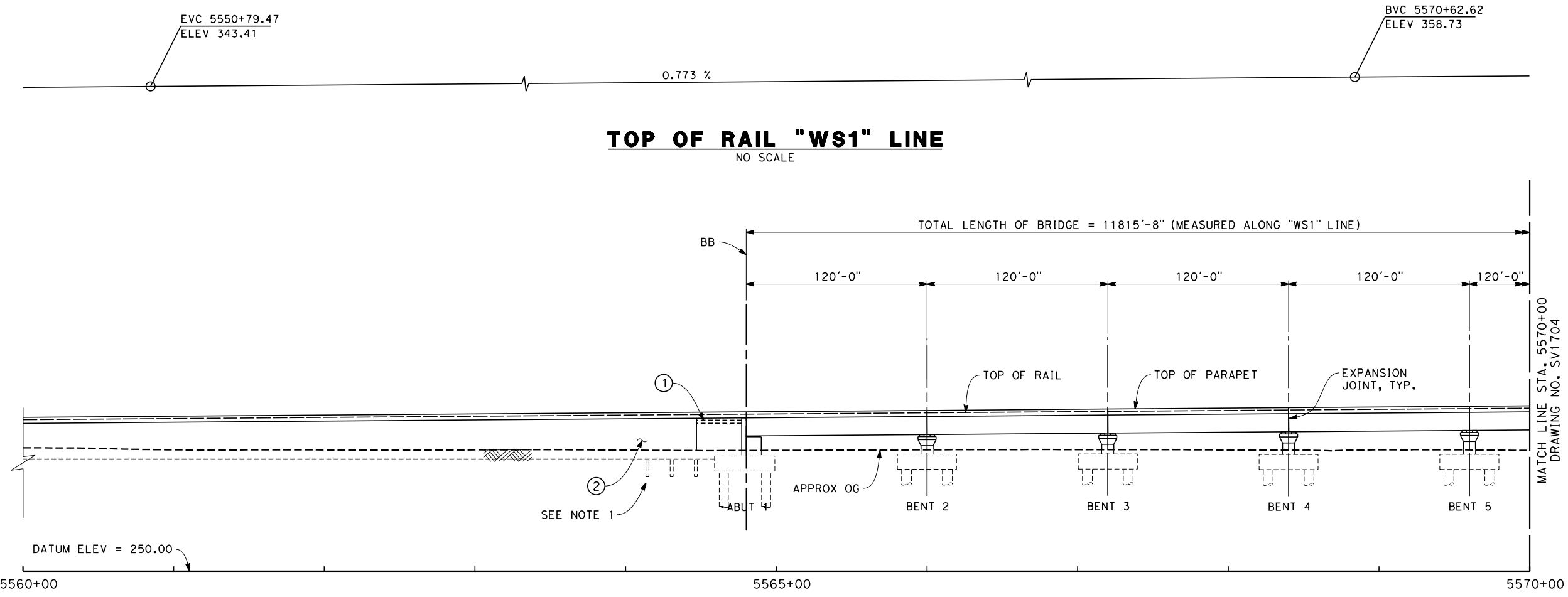


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

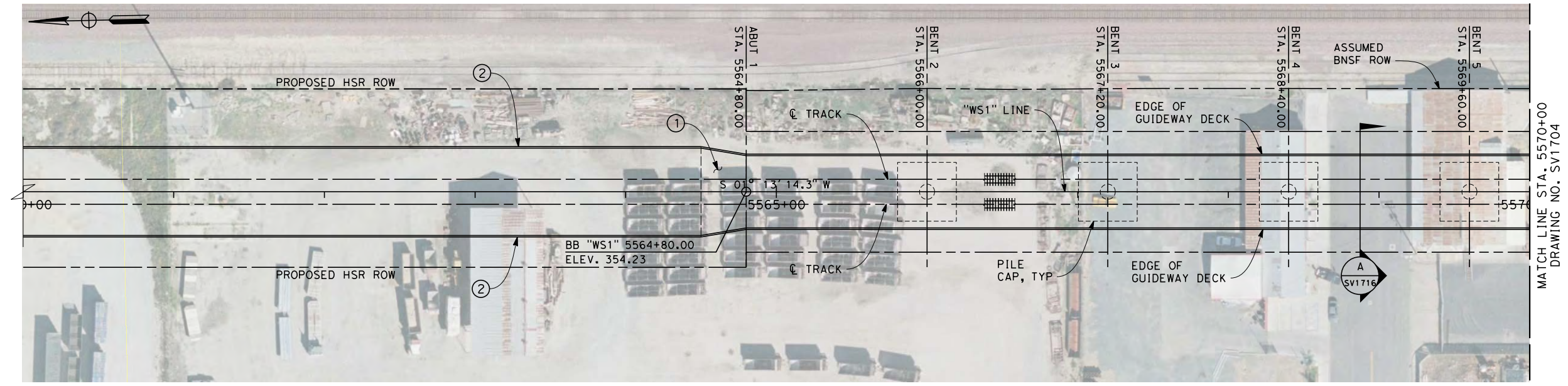
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
WASCO VIADUCT  
KEY MAP

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





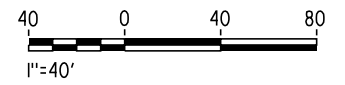
**ELEVATION**  
SCALE 1" = 40'



**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".



Nadine.Hutton 12/12/2013 7:05:36 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1703-WS1.dgn

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**

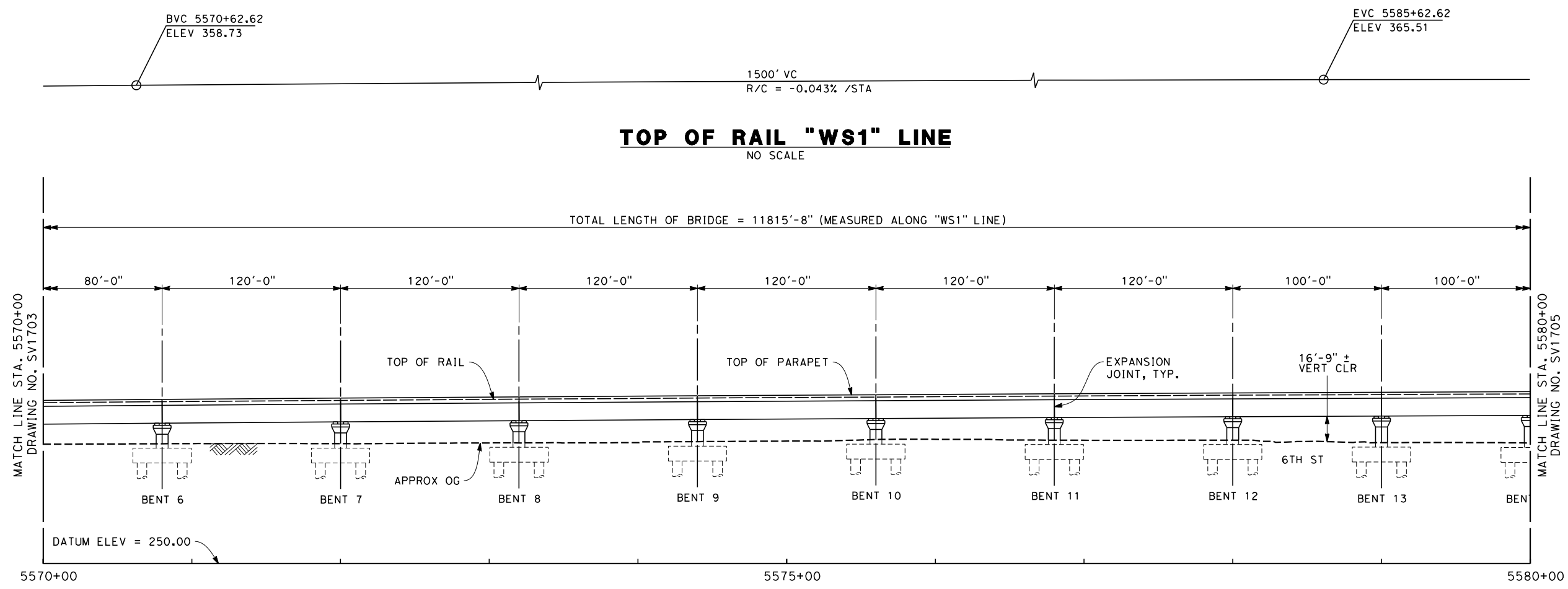


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
 FRESNO TO BAKERSFIELD**  
 THROUGH WASCO-SHAFTER SUBSECTION  
 ALIGNMENT WS1  
 WASCO VIADUCT  
 PLAN AND ELEVATION

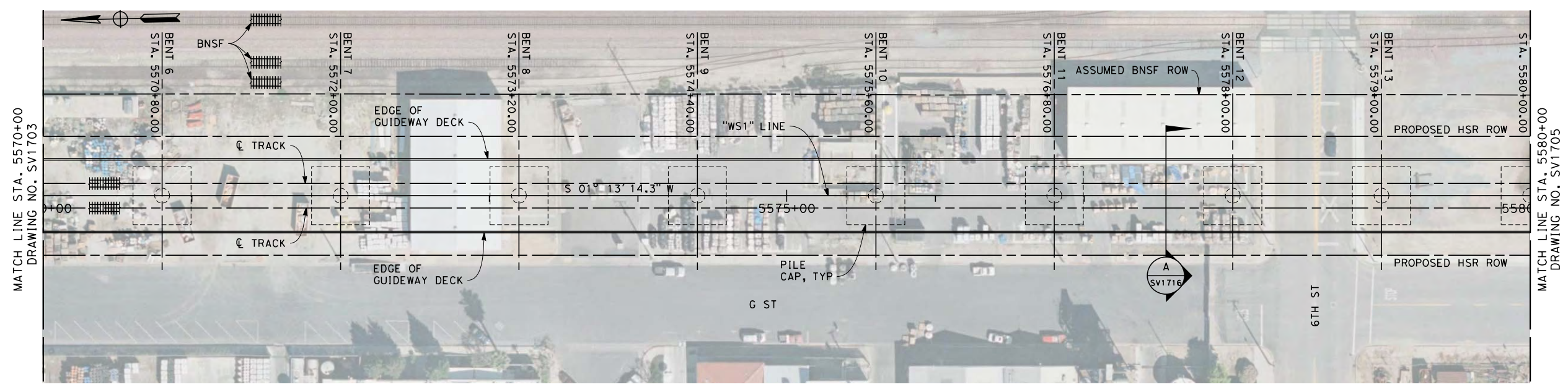
CONTRACT NO.  
HSR 06-0003  
 DRAWING NO.  
SV1703  
 SCALE  
AS SHOWN  
 SHEET NO.  
2 OF 15



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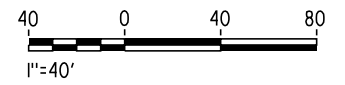
**ELEVATION**  
SCALE 1" = 40'



**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**



**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

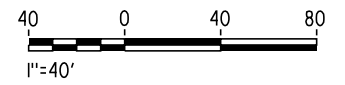
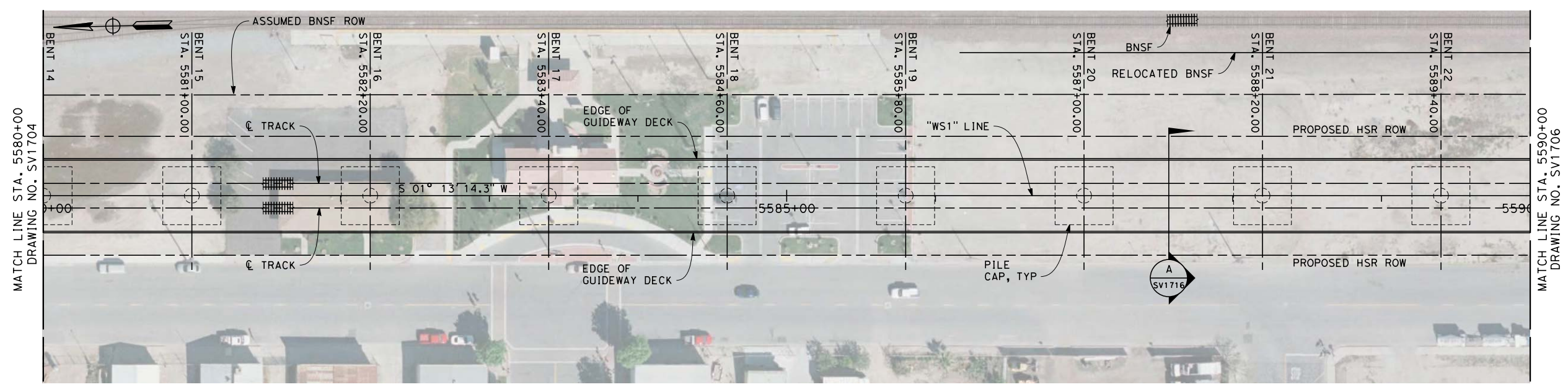
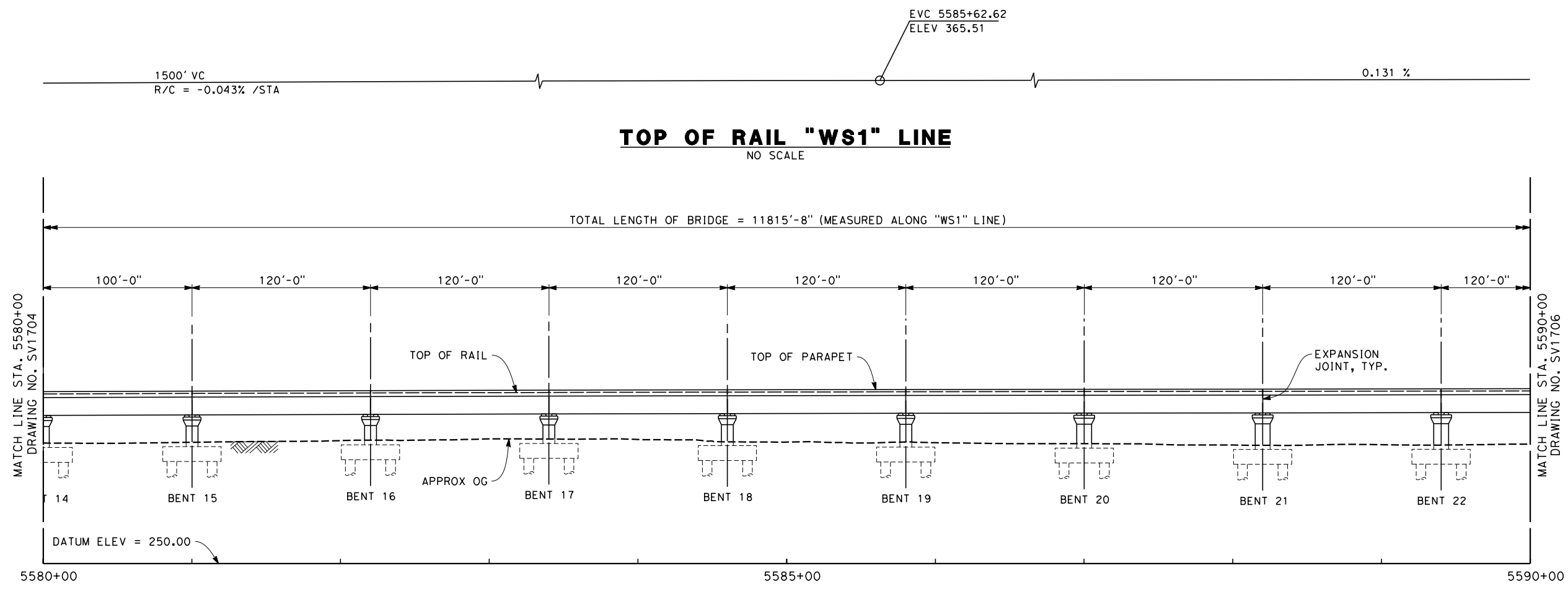


**NOTES**

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
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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".



Nadine.Hutton 12/12/2013 7:06:46 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1705-WS1.dgn

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**

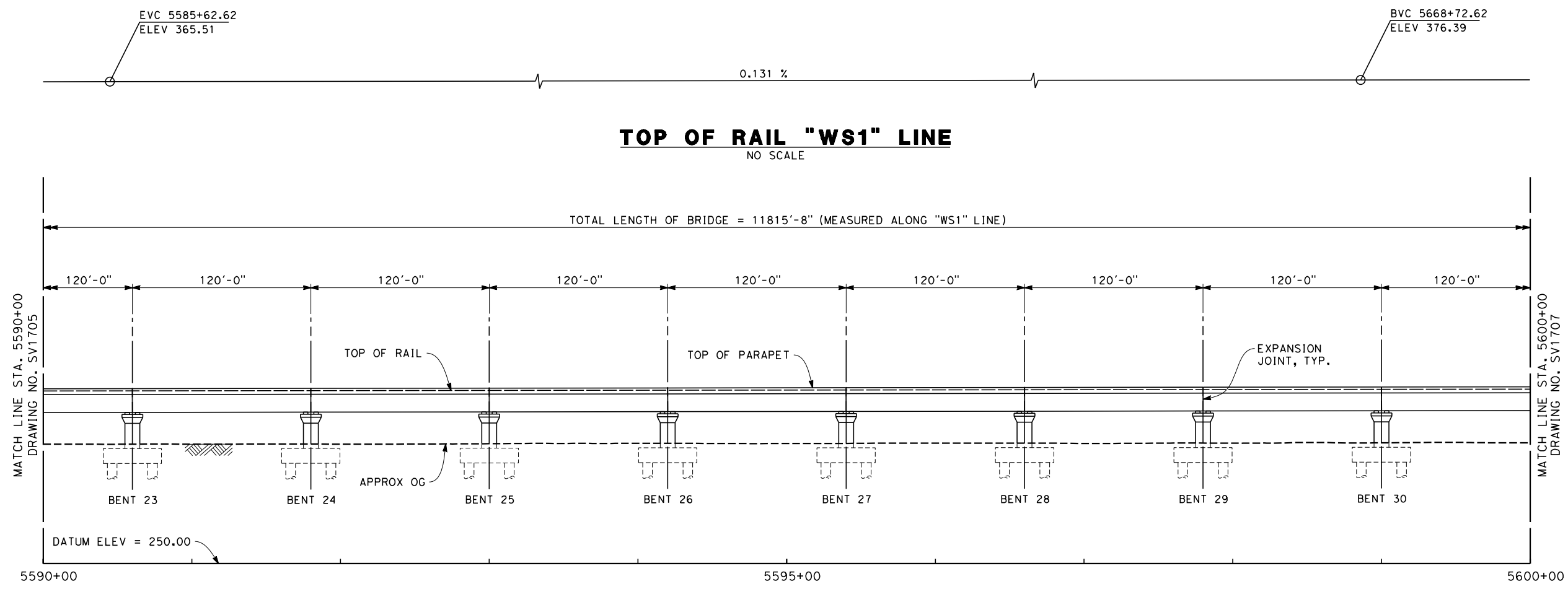


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 THROUGH WASCO-SHAFTER SUBSECTION  
 ALIGNMENT WS1  
 WASCO VIADUCT  
 PLAN AND ELEVATION

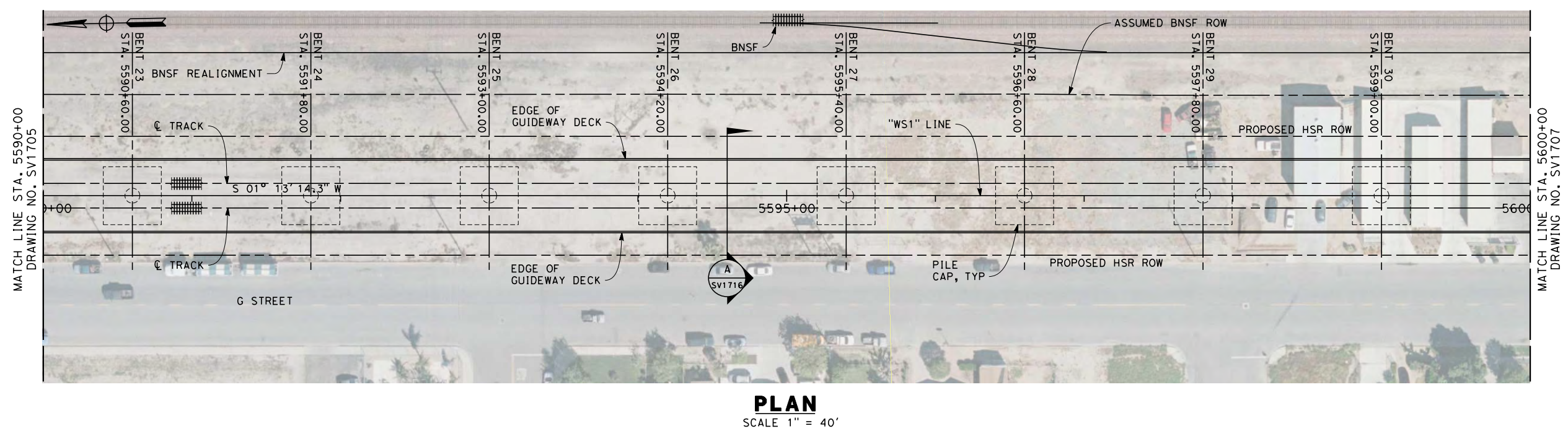
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HSR 06-0003  
 DRAWING NO.  
SV1705  
 SCALE  
AS SHOWN  
 SHEET NO.  
4 OF 15



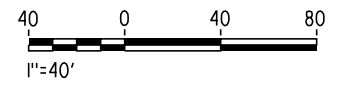
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- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS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



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

CONTRACT NO.  
HSR 06-0003

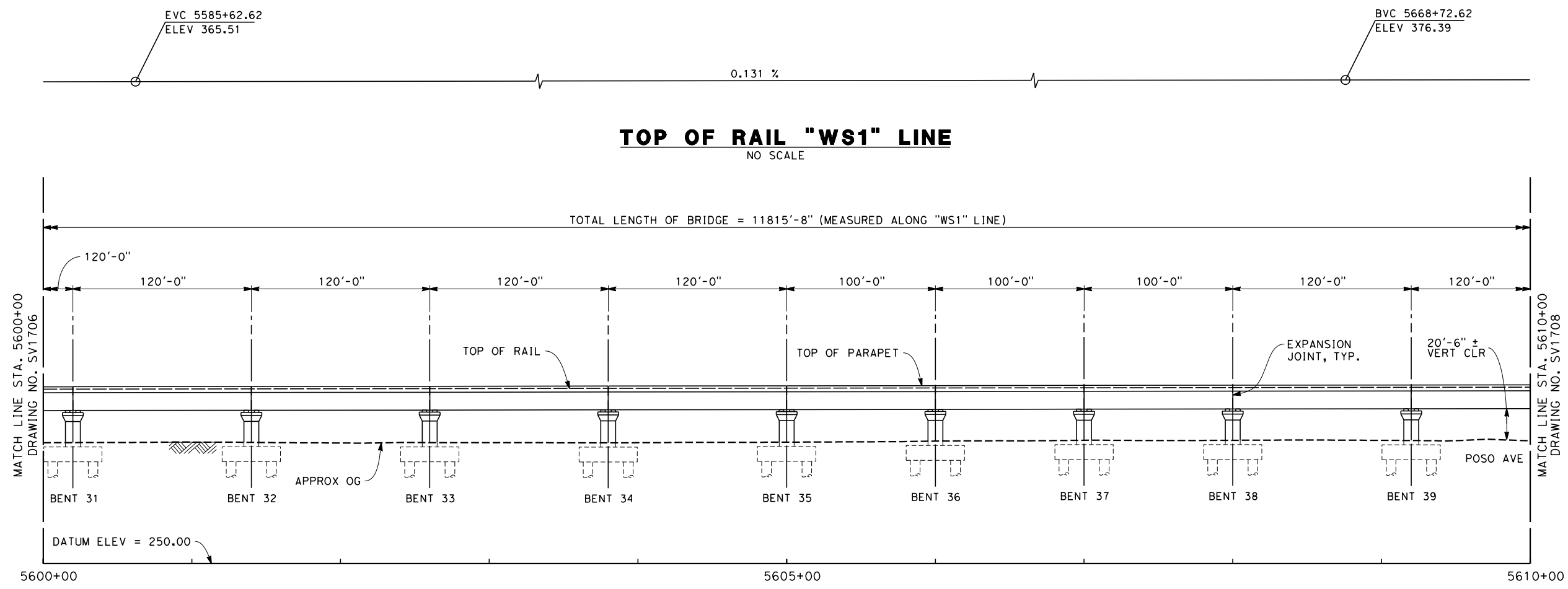
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SV1706

SCALE  
AS SHOWN

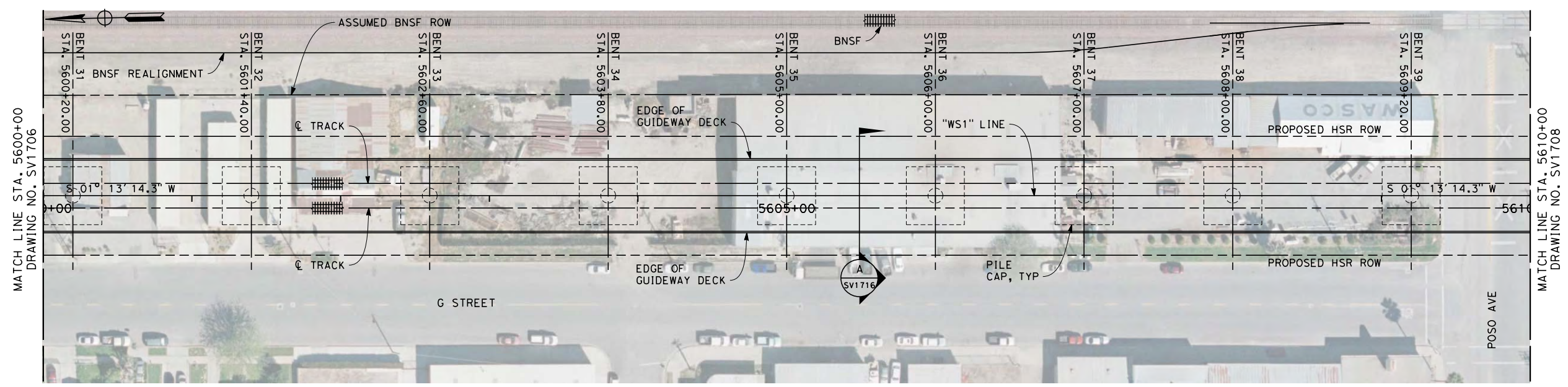
SHEET NO.  
5 OF 15



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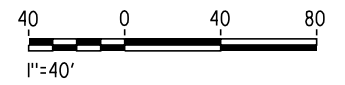
**ELEVATION**  
SCALE 1" = 40'



**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
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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".



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**



**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



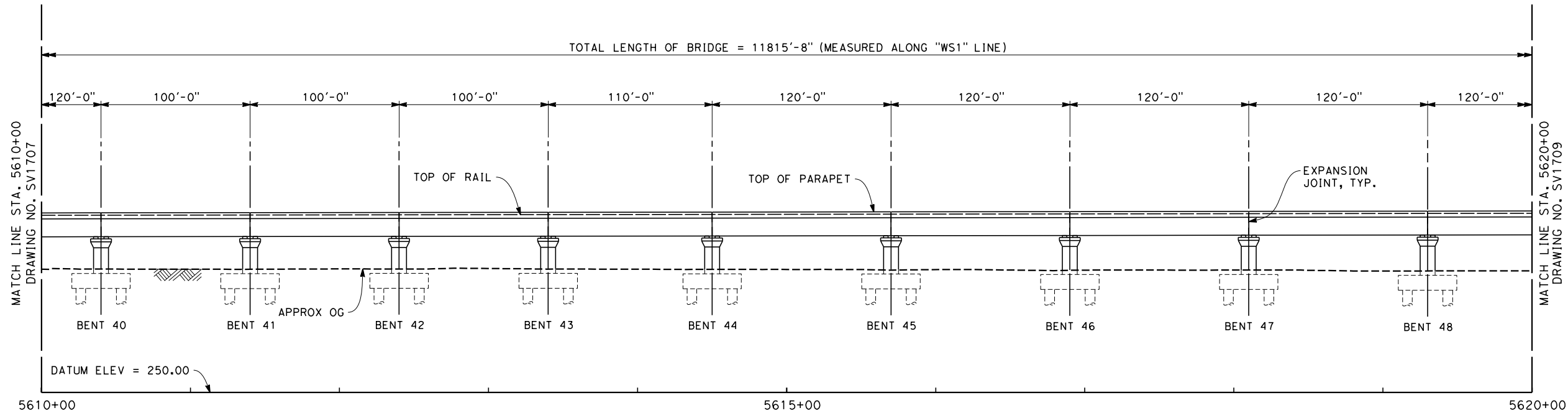
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ELEV 365.51

BVC 5668+72.62  
ELEV 376.39

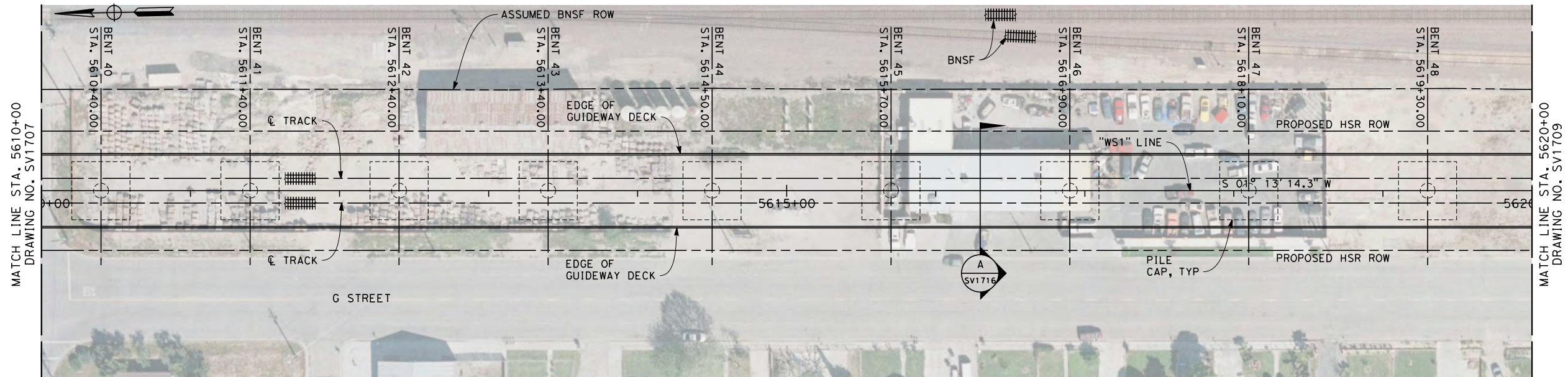
0.131 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 11815'-8" (MEASURED ALONG "WS1" LINE)



**ELEVATION**  
SCALE 1" = 40'



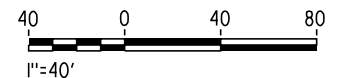
**PLAN**  
SCALE 1" = 40'

**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
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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".



Nadine.Hutton 12/12/2013 7:08:29 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1708-WS1.dgn

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**

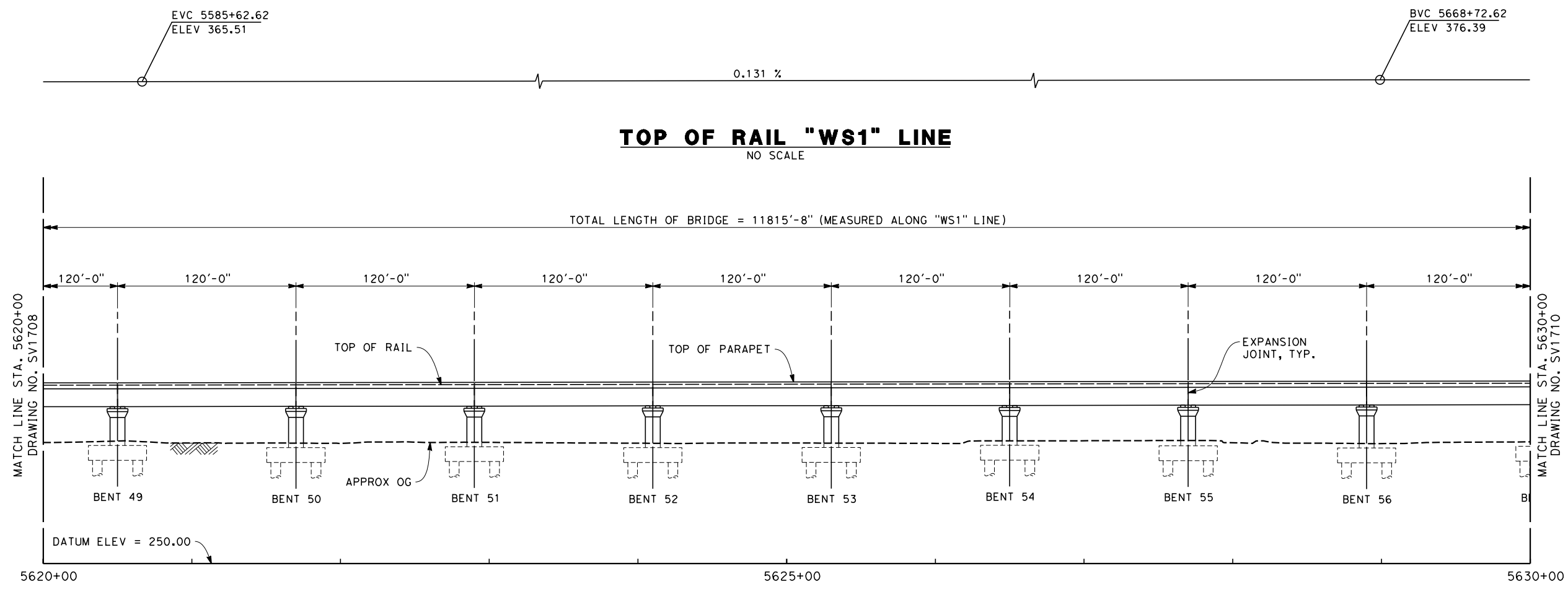


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
WASCO VIADUCT  
PLAN AND ELEVATION

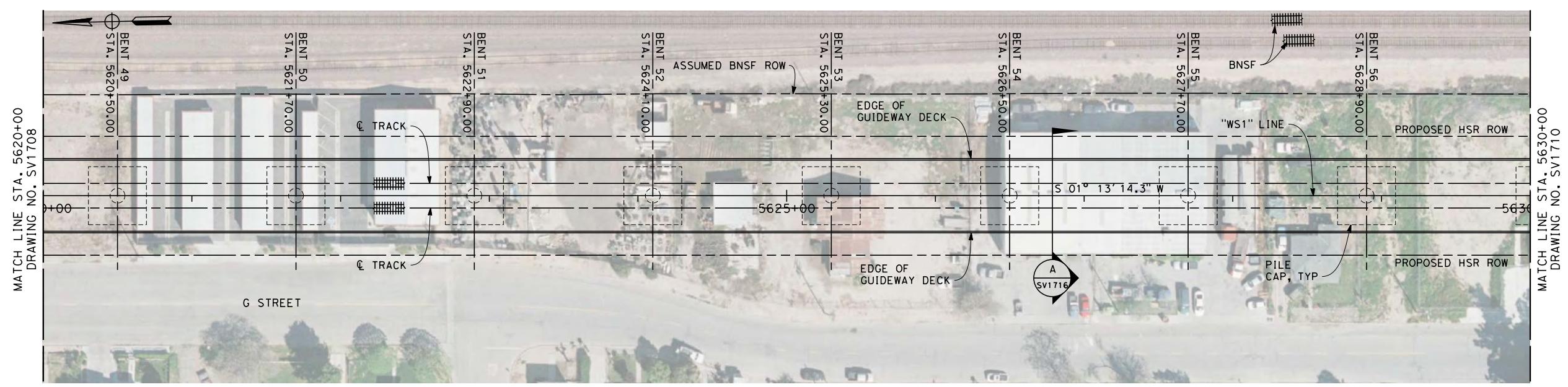
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1708  
SCALE  
AS SHOWN  
SHEET NO.  
7 OF 15



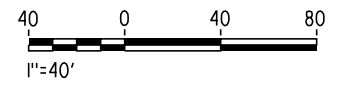
12/12/2013 7:08:49 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1709-WS1.dgn



- NOTES**
- NOT ALL PILES SHOWN
  - PILE LENGTH TO BE DETERMINED
  - 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
  - UTILITY LOCATIONS TO BE DETERMINED
  - 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**



**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



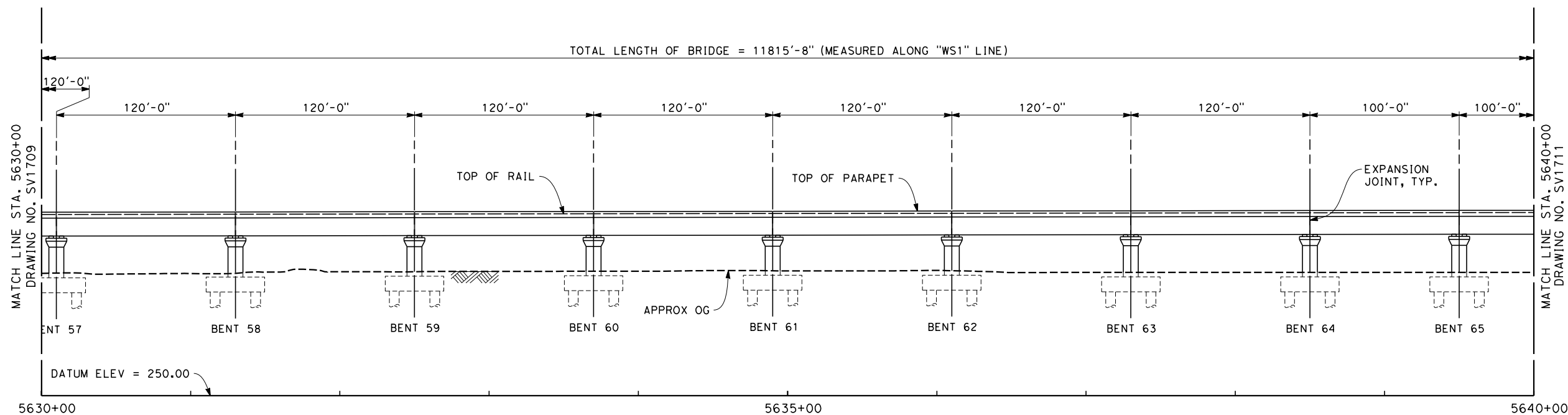
EVC 5585+62.62  
ELEV 365.51

BVC 5668+72.62  
ELEV 376.39

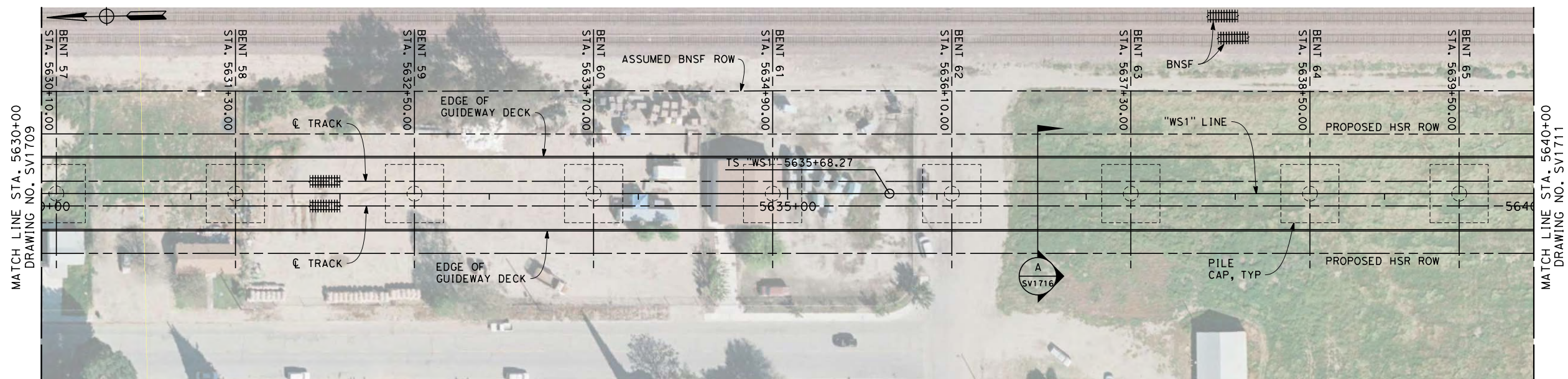
0.131 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 11815'-8" (MEASURED ALONG "WS1" LINE)



**ELEVATION**  
SCALE 1" = 40'



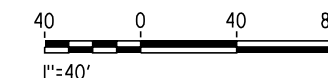
**PLAN**  
SCALE 1" = 40'

**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".



Nadine.Hutton 12/12/2013 7:09:22 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1710-WS1.dgn

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**



**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



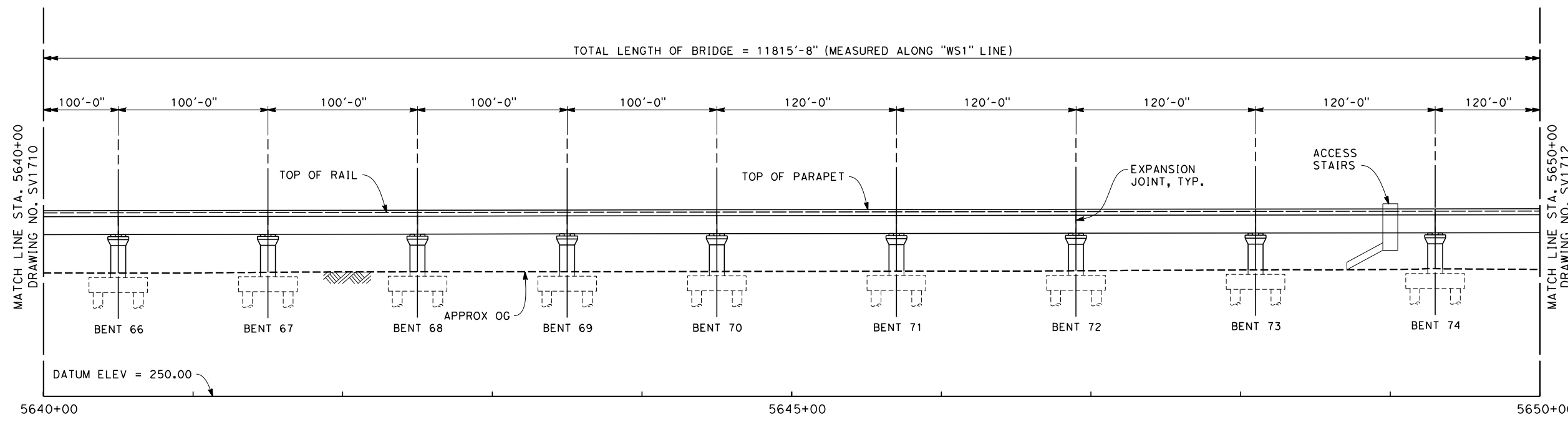
EVC 5585+62.62  
ELEV 365.51

BVC 5668+72.62  
ELEV 376.39

0.131 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE

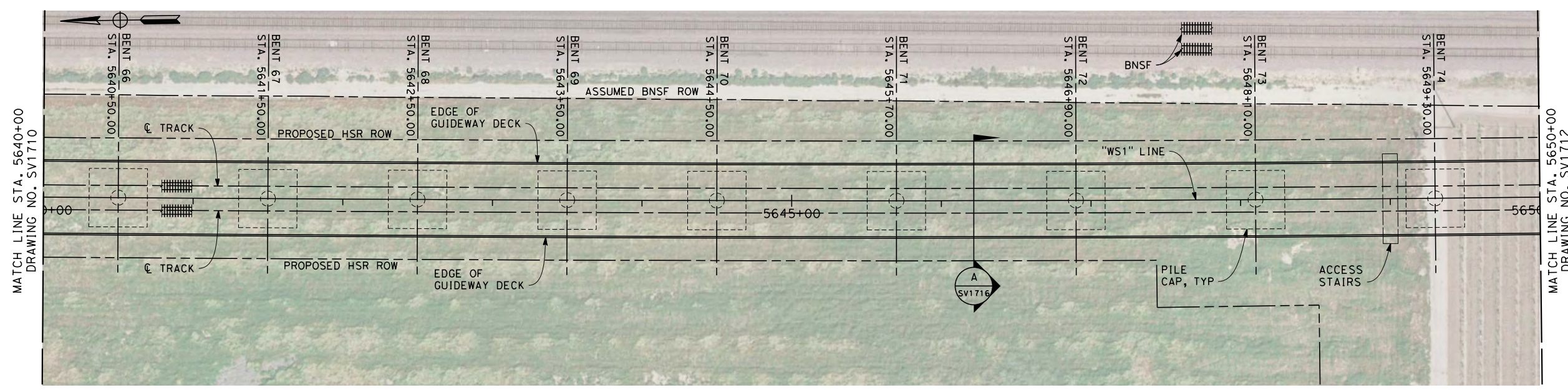
TOTAL LENGTH OF BRIDGE = 11815'-8" (MEASURED ALONG "WS1" LINE)



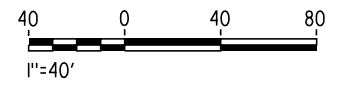
**ELEVATION**  
SCALE 1" = 40'

- 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".



**PLAN**  
SCALE 1" = 40'



c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1711-WS1.dgn

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**

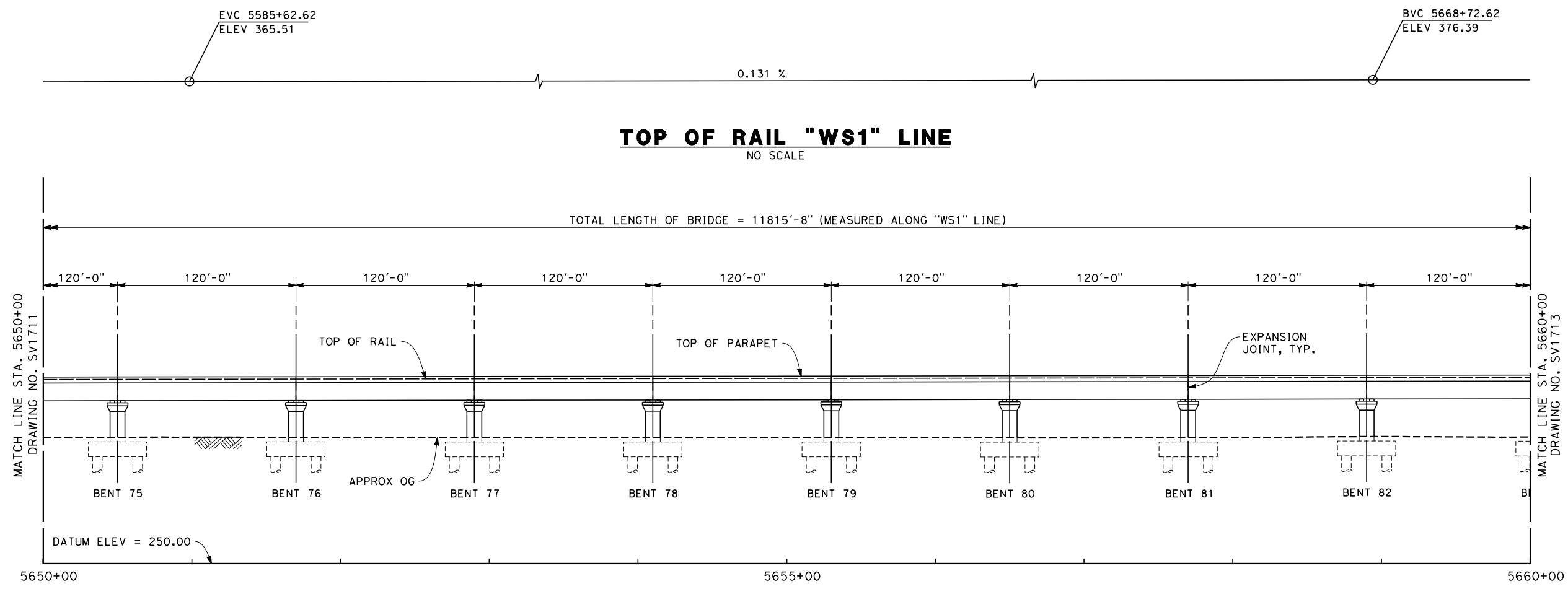


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
WASCO VIADUCT  
PLAN AND ELEVATION

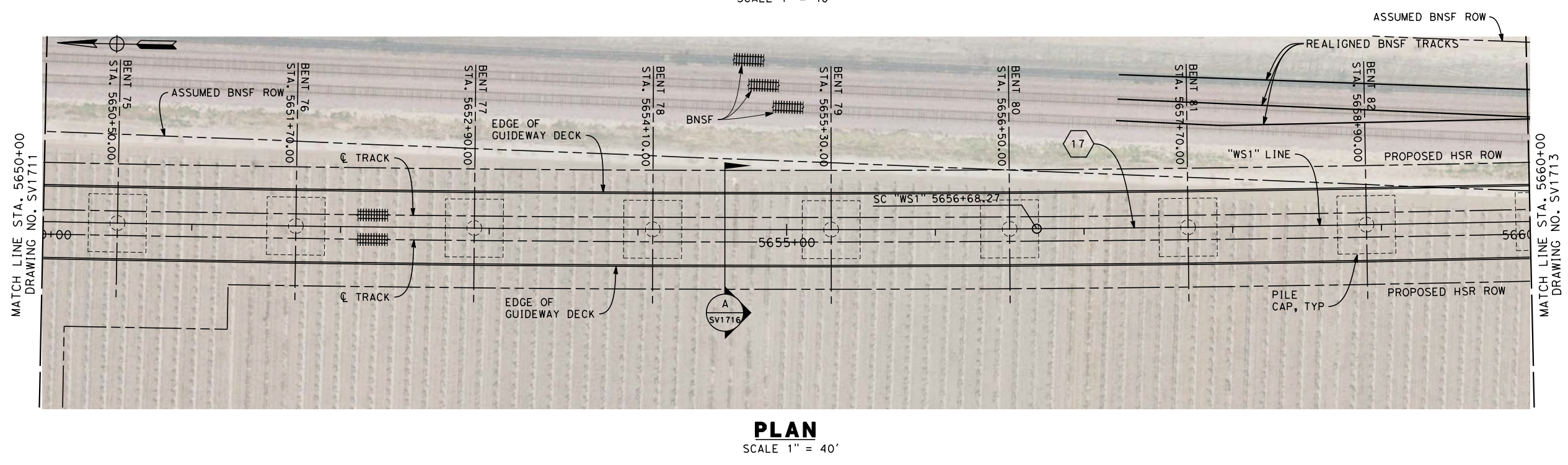
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1711  
SCALE  
AS SHOWN  
SHEET NO.  
10 OF 15



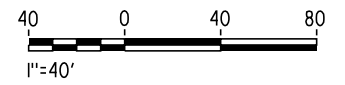
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- NOTES**
- NOT ALL PILES SHOWN
  - PILE LENGTH TO BE DETERMINED
  - SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  - UTILITY LOCATIONS TO BE DETERMINED
  - 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  
 $\Delta = 40^{\circ}02'15"$   
 T = 8016  
 L = 15373



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**



**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

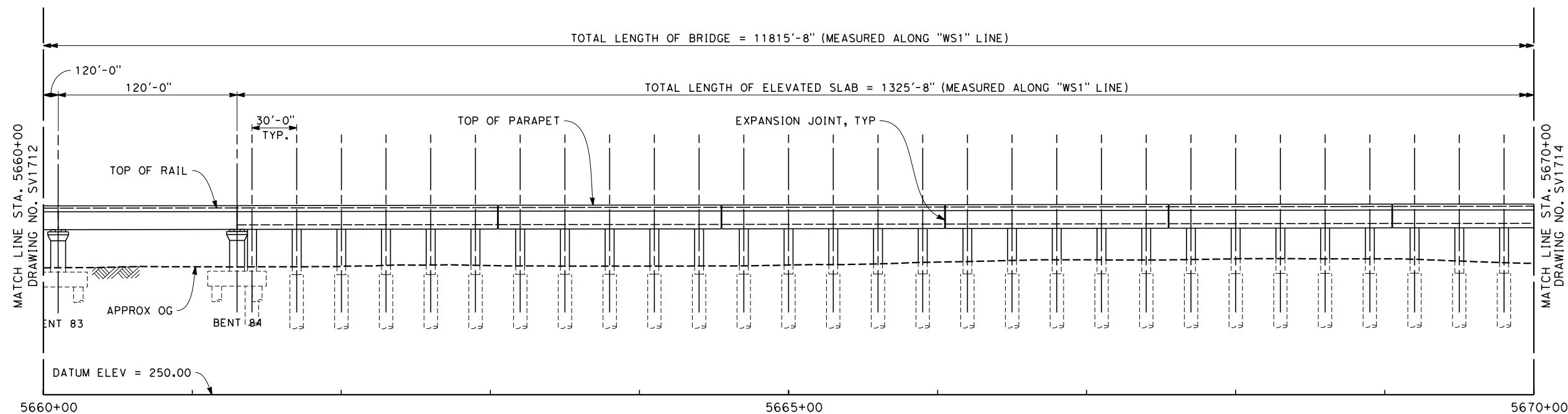


EVC 5585+62.62  
ELEV 365.51

BVC 5668+72.62  
ELEV 376.39

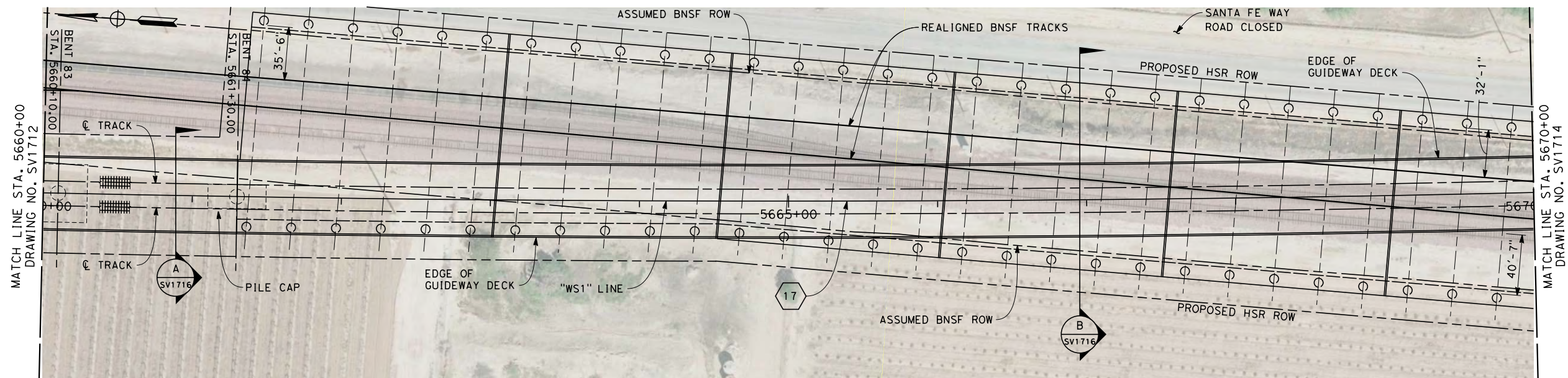
0.131 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'

- NOTES**
- NOT ALL PILES SHOWN
  - PILE LENGTH TO BE DETERMINED
  - 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
  - UTILITY LOCATIONS TO BE DETERMINED
  - 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.



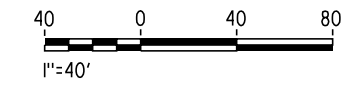
**PLAN**  
SCALE 1" = 40'

- 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**

17

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



Nadine.Hutton 12/12/2013 7:10:47 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1713-WS1.dgn

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**



**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

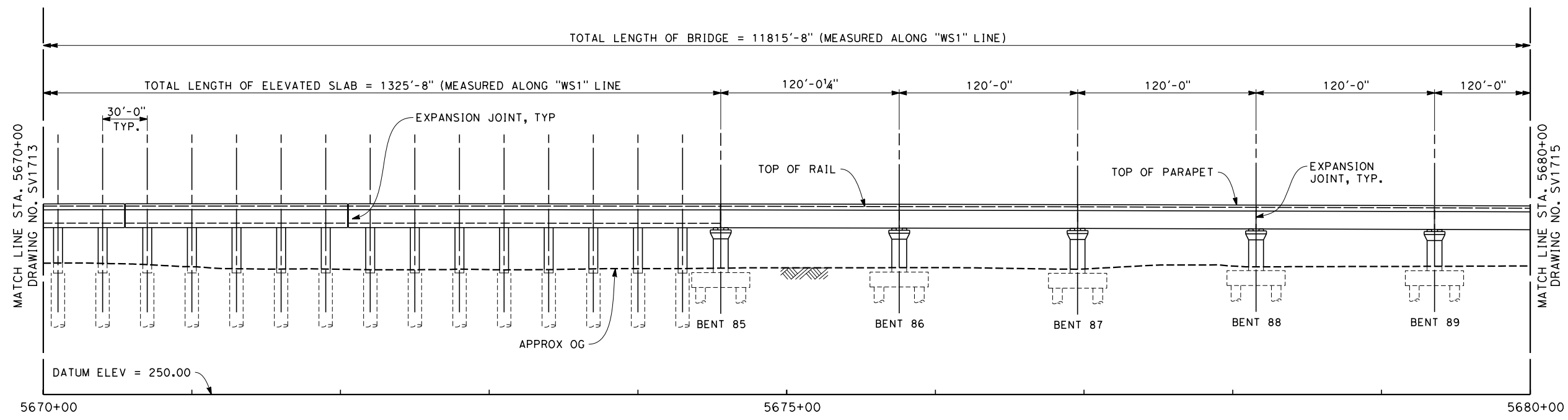


BVC 5668+72.62  
ELEV 376.39

EVC 5692+72.62  
ELEV 367.26

2400' VC  
R/C = -0.043% /STA

**TOP OF RAIL "WS1" LINE**  
NO SCALE



**ELEVATION**  
SCALE 1" = 40'

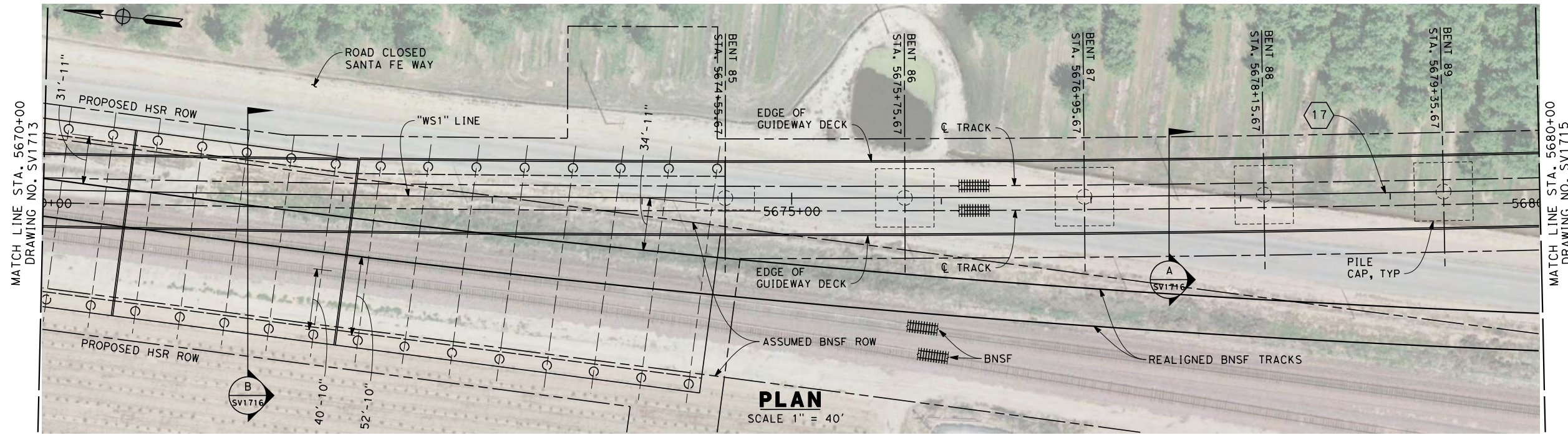
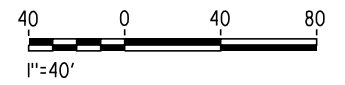
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON  
SIMPLE SPANS - MSS OR FLPM  
CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
STEEL TRUSS - INSITU, SLID OR LAUNCHED  
ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO BE DETERMINED
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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



**PLAN**  
SCALE 1" = 40'

12/12/2013 7:11:10 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1714-WS1.dgn

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**



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

CONTRACT NO.  
HSR 06-0003

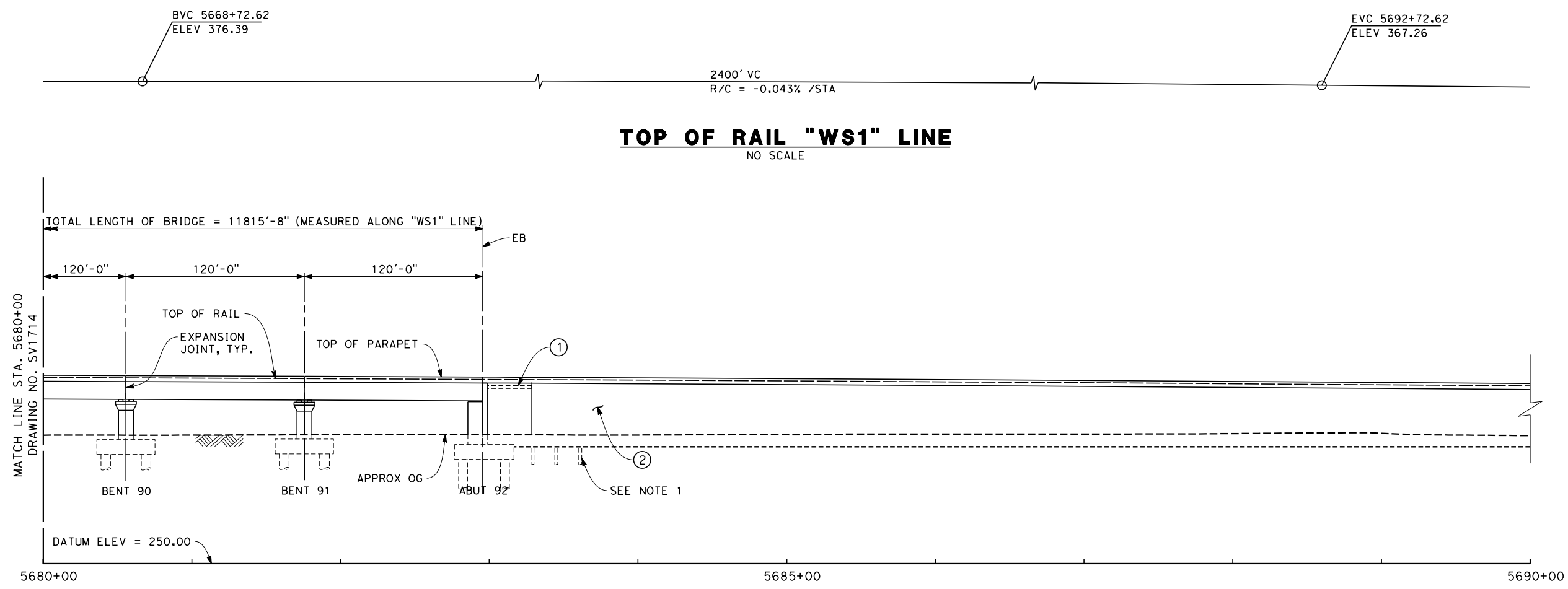
DRAWING NO.  
SV1714

SCALE  
AS SHOWN

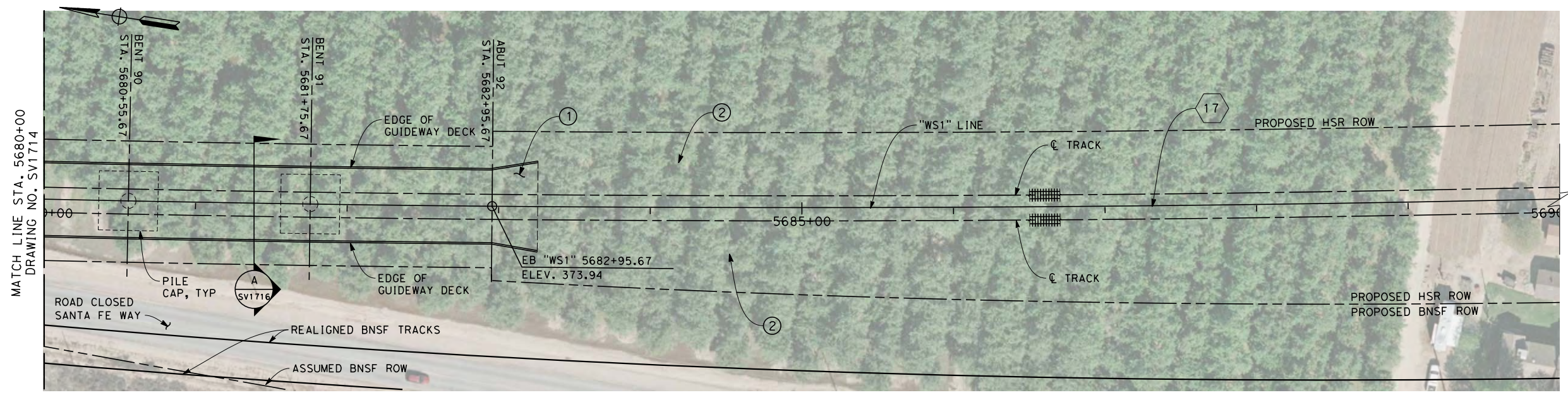
SHEET NO.  
13 OF 15



12/12/2013 7:11:39 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1715-WS1.dgn



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

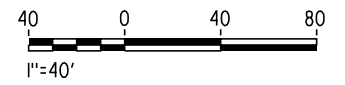
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON  
SIMPLE SPANS - MSS OR FLPM  
CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
STEEL TRUSS - INSITU, SLID OR LAUNCHED  
ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO BE DETERMINED
  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



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**



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

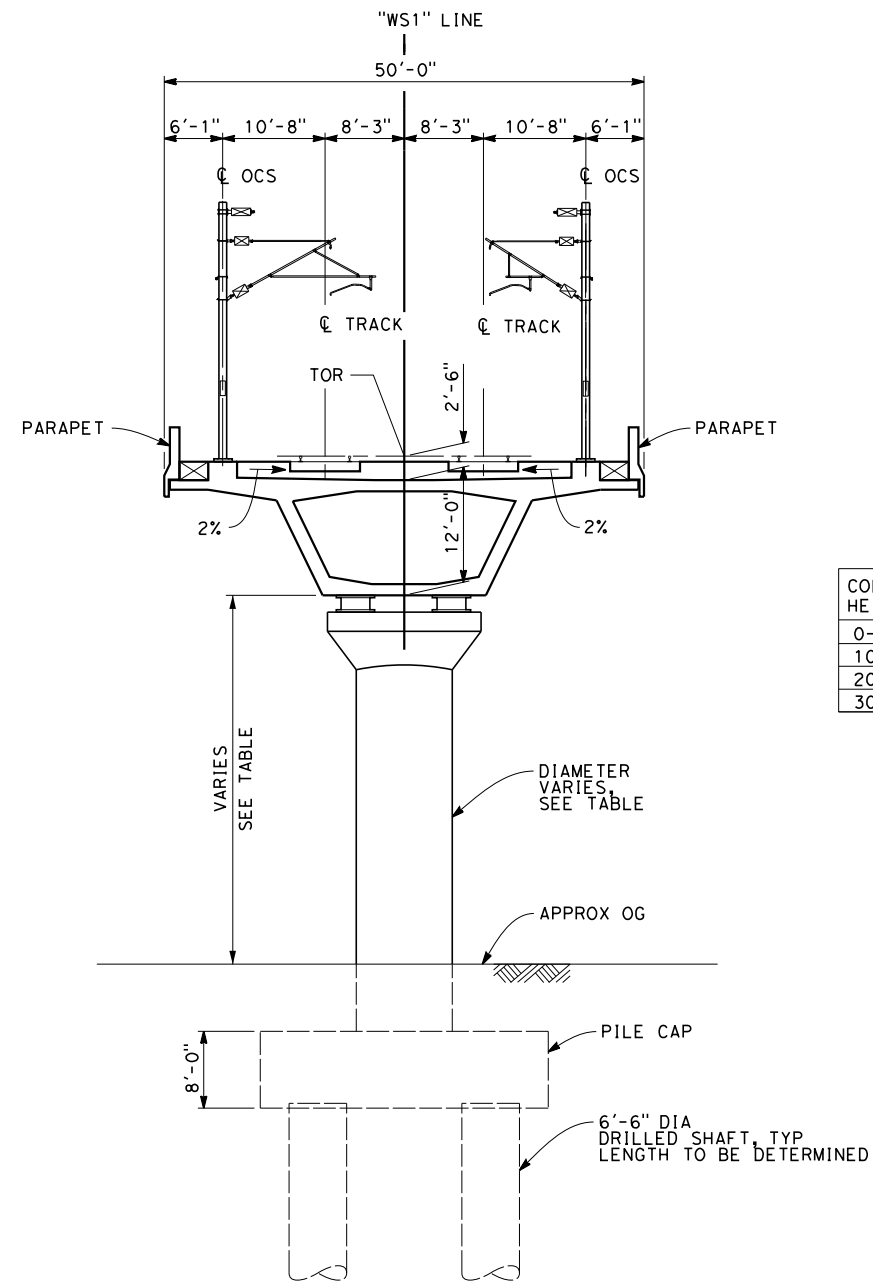
CONTRACT NO.  
HSR 06-0003

DRAWING NO.  
SV1715

SCALE  
AS SHOWN

SHEET NO.  
14 OF 15

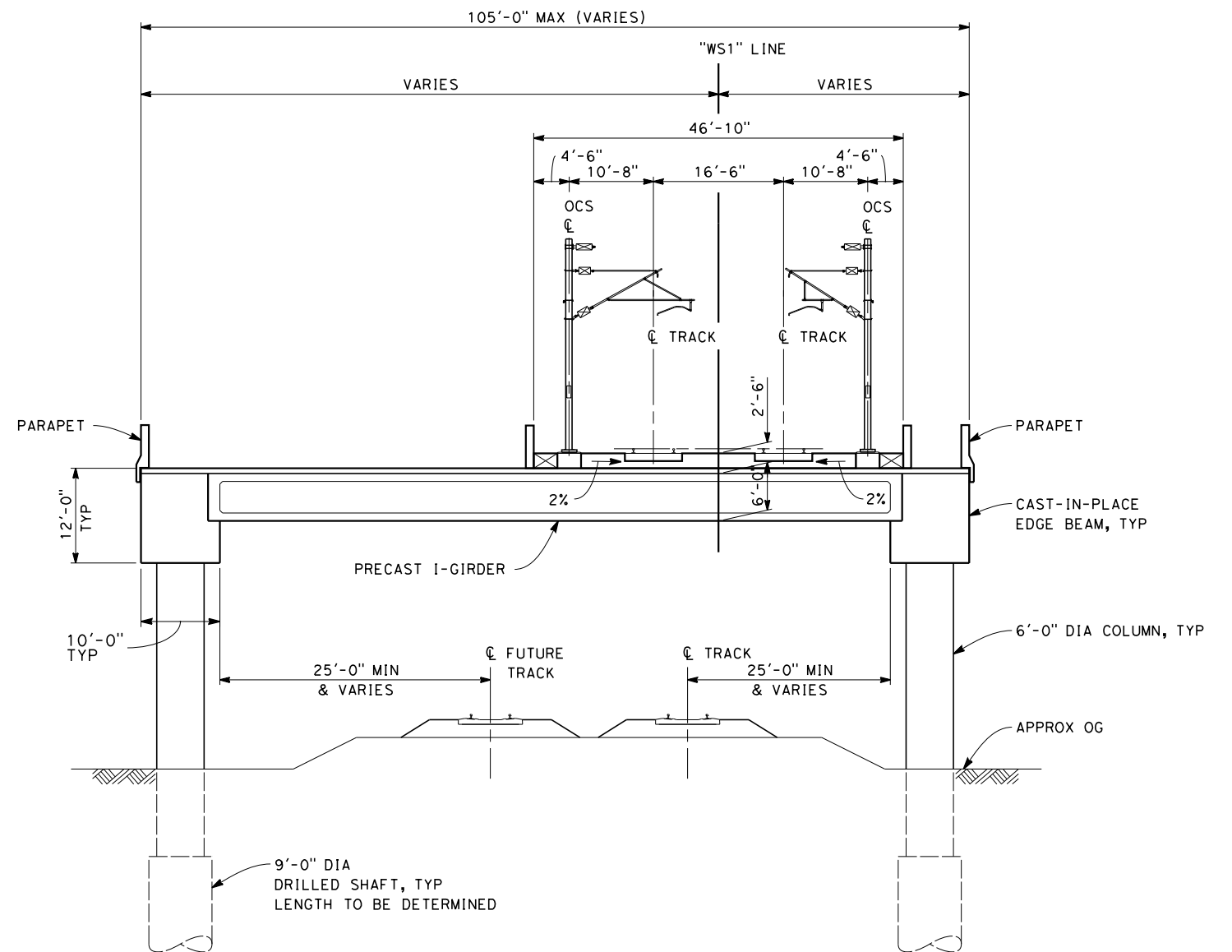




COLUMN HEIGHT	COLUMN DIA.
0-10'	8'
10-20'	8'
20-30'	10'
30-40'	10'

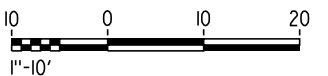
**SECTION A**  
SCALE: 1" = 10'

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



**SECTION B**  
SCALE: 1" = 10'

STA 5661+30 THROUGH 5674+56



12/12/2013 7:11:52 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1716-WS1.dgn

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**



**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
WASCO VIADUCT  
TYPICAL SECTIONS

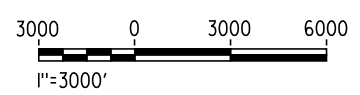
CONTRACT NO. HSR 06-0003
DRAWING NO. SV1716
SCALE AS SHOWN
SHEET NO. 15 OF 15





**LEGEND**

	EXISTING FREIGHT RAILROAD
	PROPOSED CHST



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

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

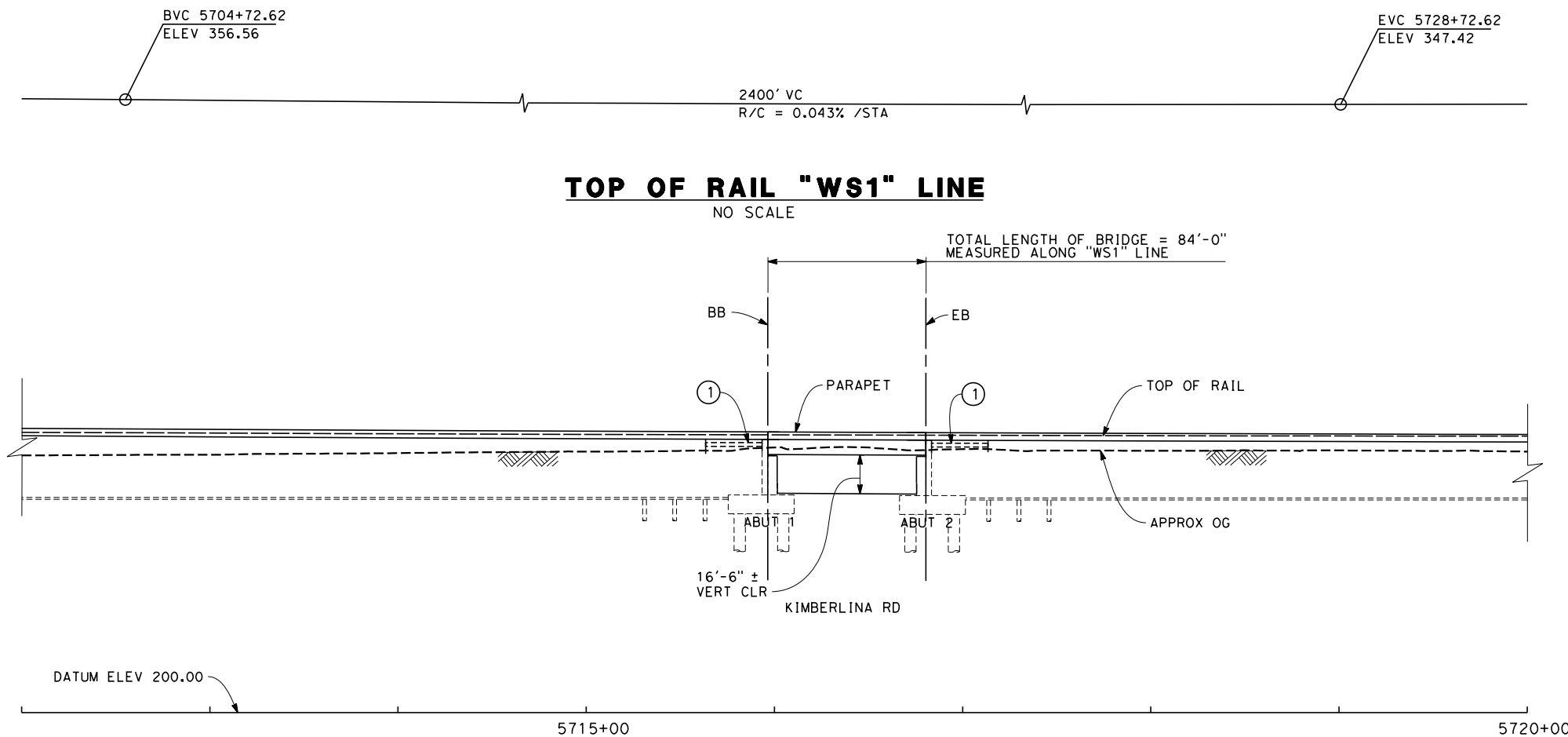
**RECORD SET 15%  
DESIGN SUBMISSION**  
  
**NOT FOR  
CONSTRUCTION**



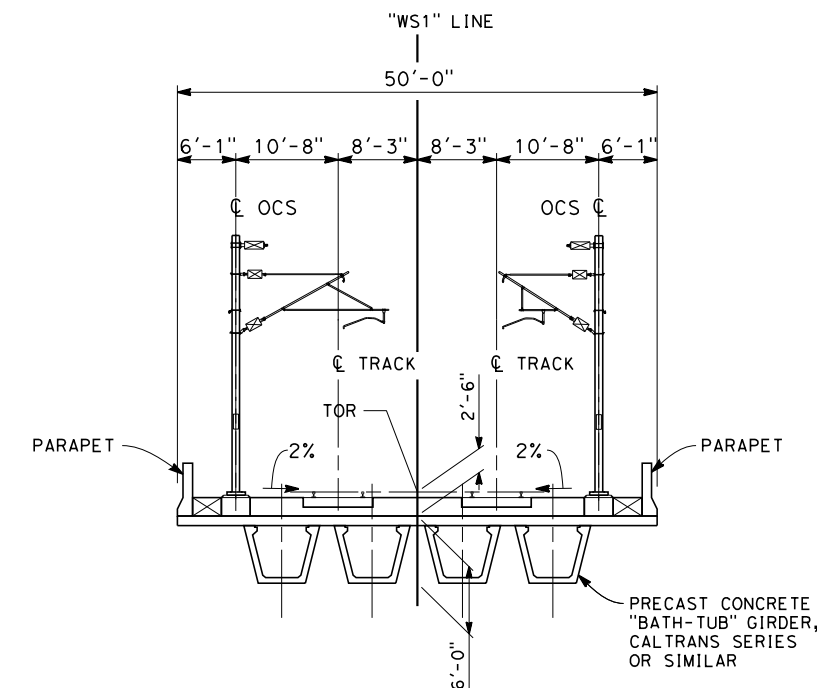
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
KIMBERLINA ROAD UNDERPASS  
KEY MAP

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





**ELEVATION**  
SCALE 1" = 40'



**TYPICAL SECTION**  
SCALE: 1" = 10'

CURVE DATA

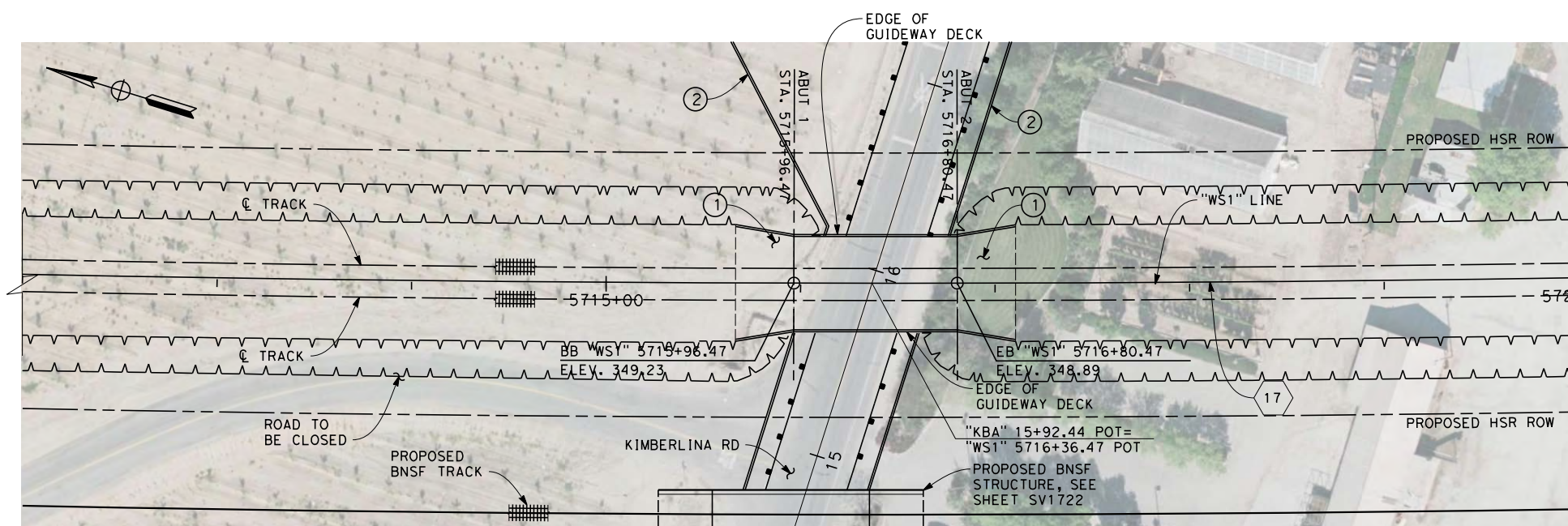
$R = 22000.00'$   
 $\Delta = 40^\circ 02' 15.1''$   
 $T = 8015.5'$   
 $L = 15373.3'$

NOTES:

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

LEGEND:

- ① STRUCTURE APPROACH SLAB
- ② RETAINING WALL



**PLAN**  
SCALE 1" = 40'

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

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**

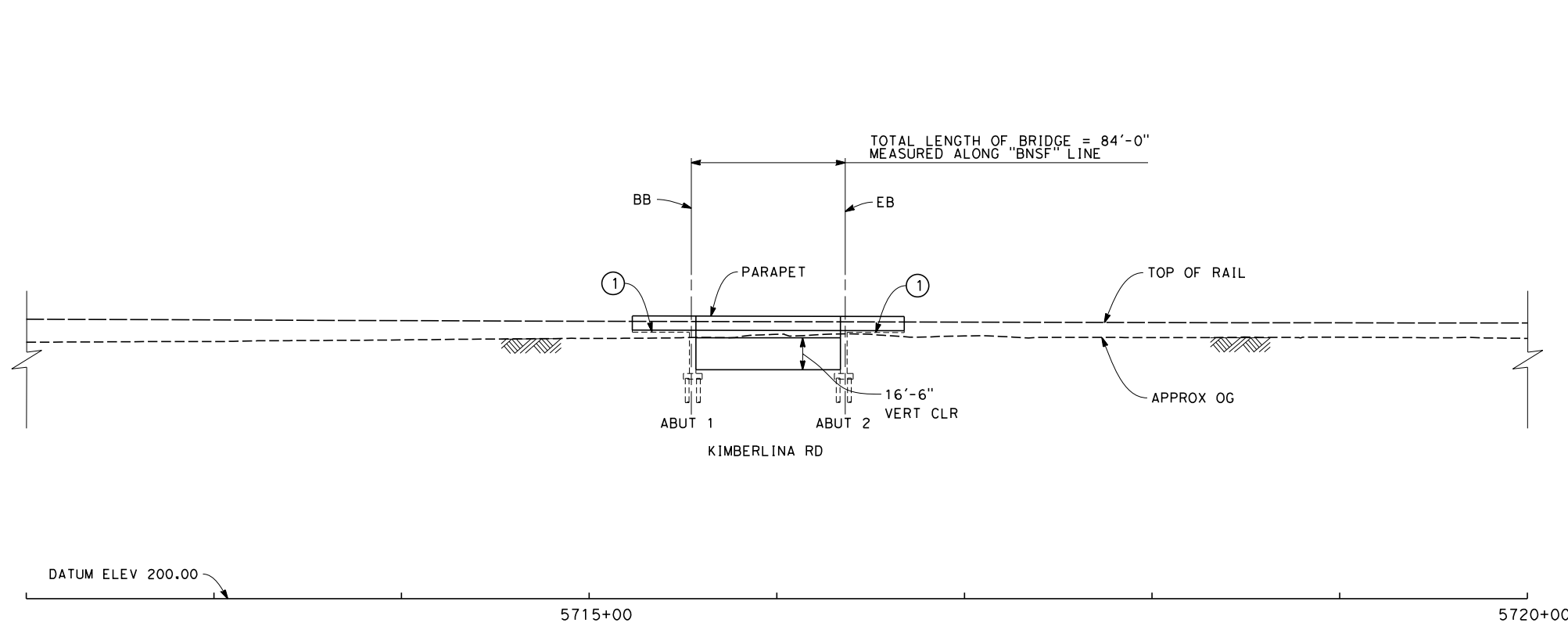


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 THROUGH WASCO-SHAFTER SUBSECTION  
 ALIGNMENT WS1  
 KIMBERLINA ROAD UNDERPASS  
 PLAN AND ELEVATION

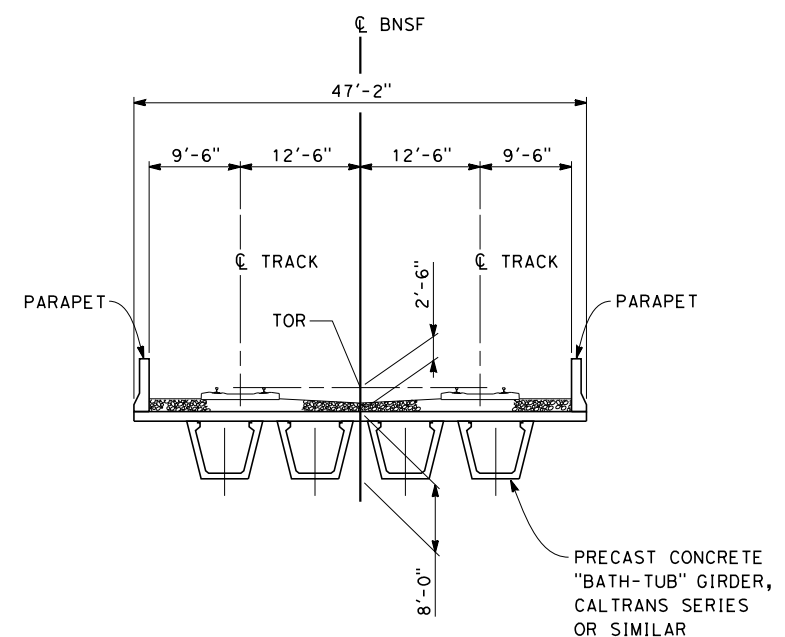
CONTRACT NO.  
HSR 06-0003  
 DRAWING NO.  
SV1721  
 SCALE  
AS SHOWN  
 SHEET NO.  
2 OF 3



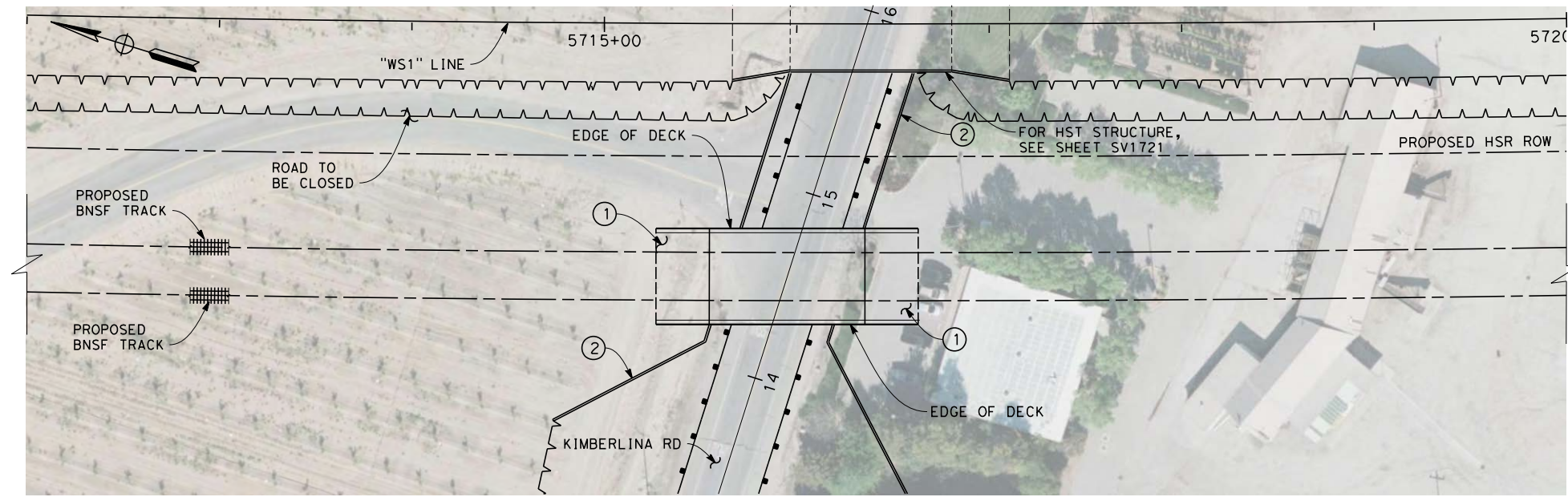
12/12/2013 7:14:54 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1722-WS1.dgn



**ELEVATION**  
SCALE 1" = 40'



**TYPICAL SECTION**  
SCALE: 1" = 10'



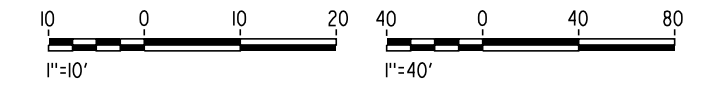
**PLAN**  
SCALE 1" = 40'

**NOTES:**

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

**LEGEND:**

- ① STRUCTURE APPROACH SLAB
- ② RETAINING WALL



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**



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

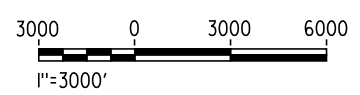
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1722  
SCALE  
AS SHOWN  
SHEET NO.  
3 OF 3





**LEGEND**

	EXISTING FREIGHT RAILROAD
	PROPOSED CHST



c:\pwworking\hmm\external\jojo.valenzuela-arup.com\dms86726\FB-SV-1750-WS1.dgn 12/30/2013 1:46:58 PM

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**



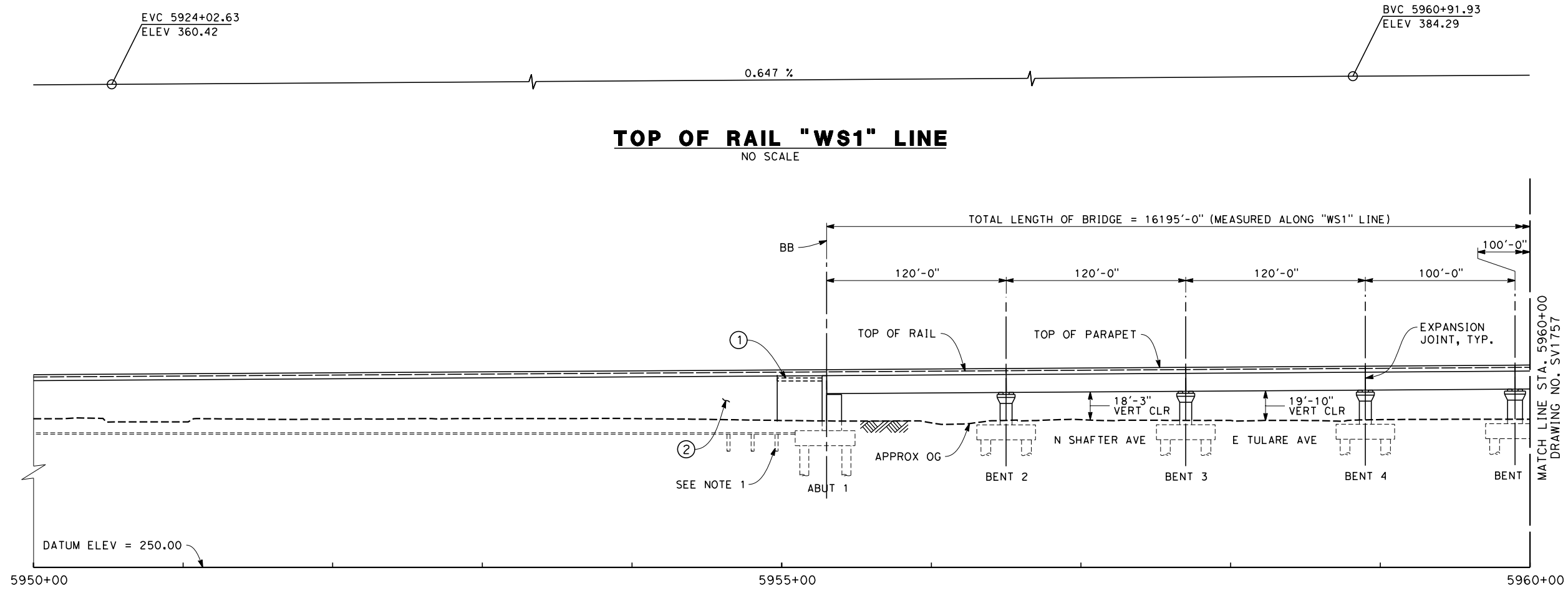
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
SHAFTER VIADUCT  
KEY MAP

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

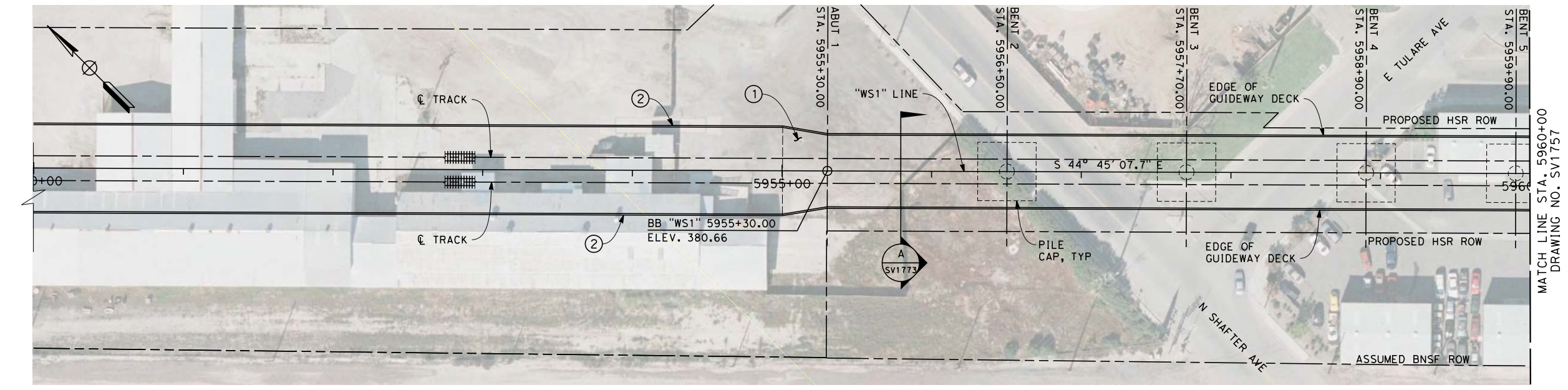


- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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.

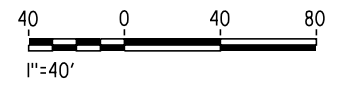
- LEGEND:**
- ① STRUCTURE APPROACH SLAB
  - ② RETAINING WALL
  - \* ESTIMATED 100-YEAR FLOOD ELEVATION, SEE "FRESNO TO BAKERSFIELD CORRIDOR HYDROLOGY, HYDRAULICS AND DRAINAGE 15% DRAFT REPORT".



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'



c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1756-WS1.dgn

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**

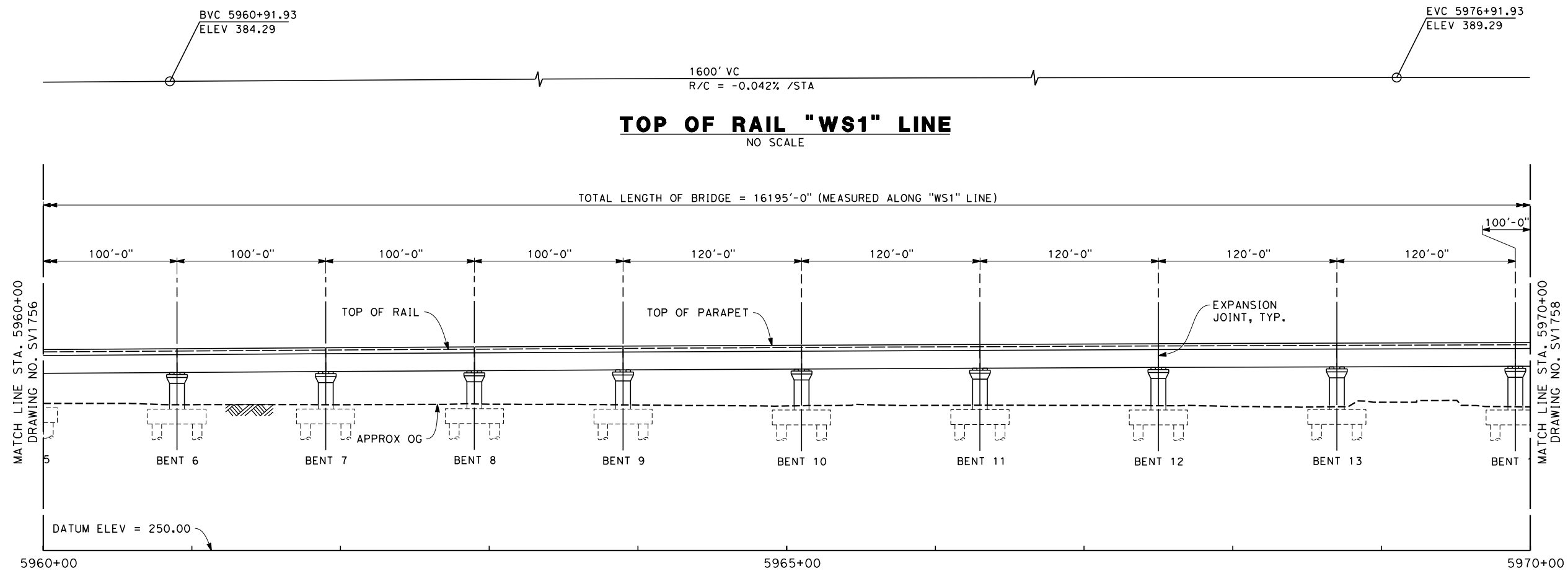


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
SHAFTER VIADUCT  
PLAN AND ELEVATION

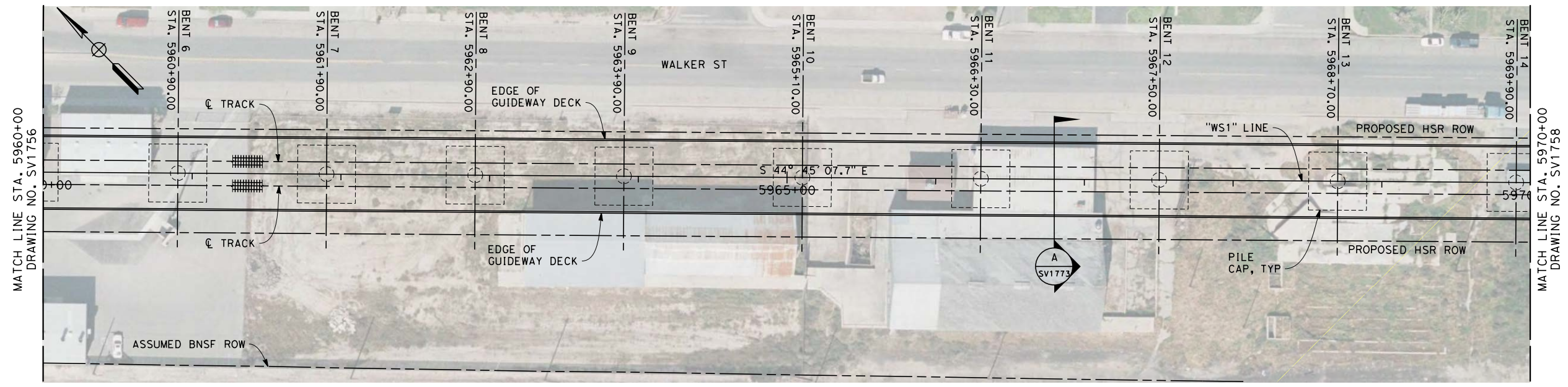
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1756  
SCALE  
AS SHOWN  
SHEET NO.  
2 OF 20



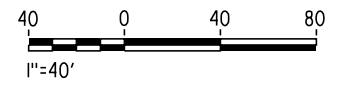
c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1757-WS1.dgn 12/12/2013 7:19:00 PM Nadine.Hutton



- NOTES**
- NOT ALL PILES SHOWN
  - PILE LENGTH TO BE DETERMINED
  - 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
  - UTILITY LOCATIONS TO BE DETERMINED
  - 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**



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

CONTRACT NO.  
HSR 06-0003

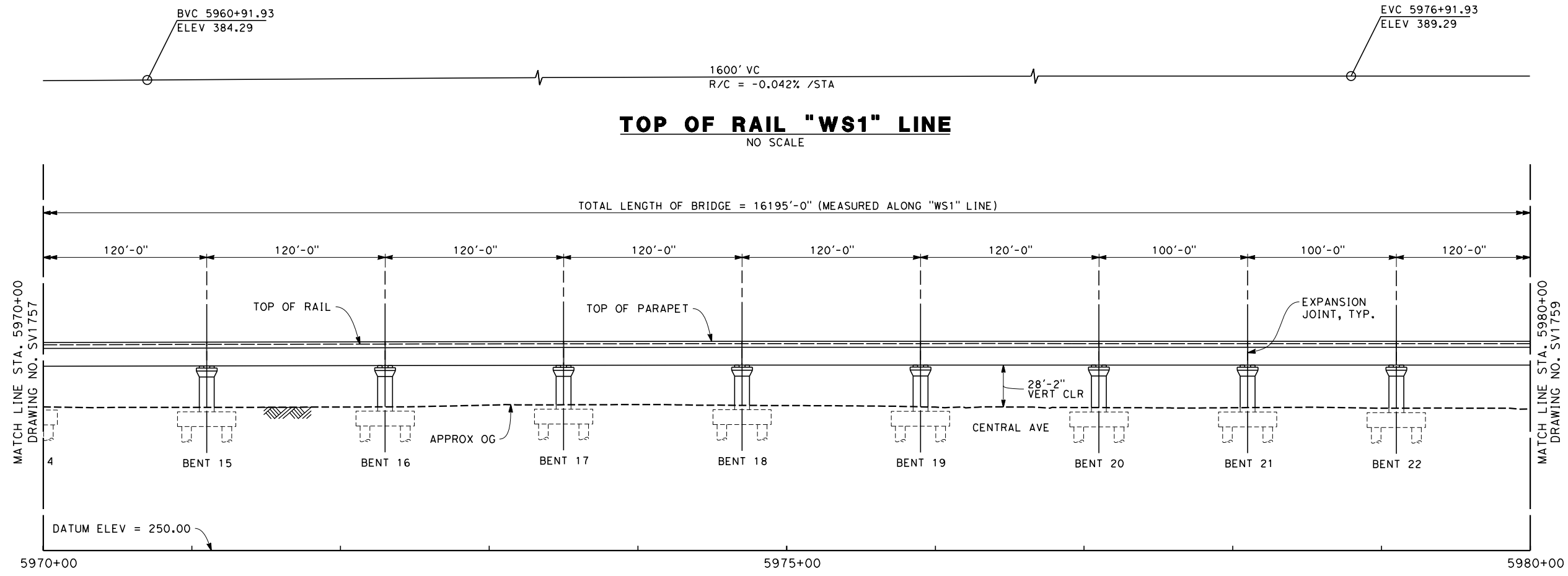
DRAWING NO.  
SV1757

SCALE  
AS SHOWN

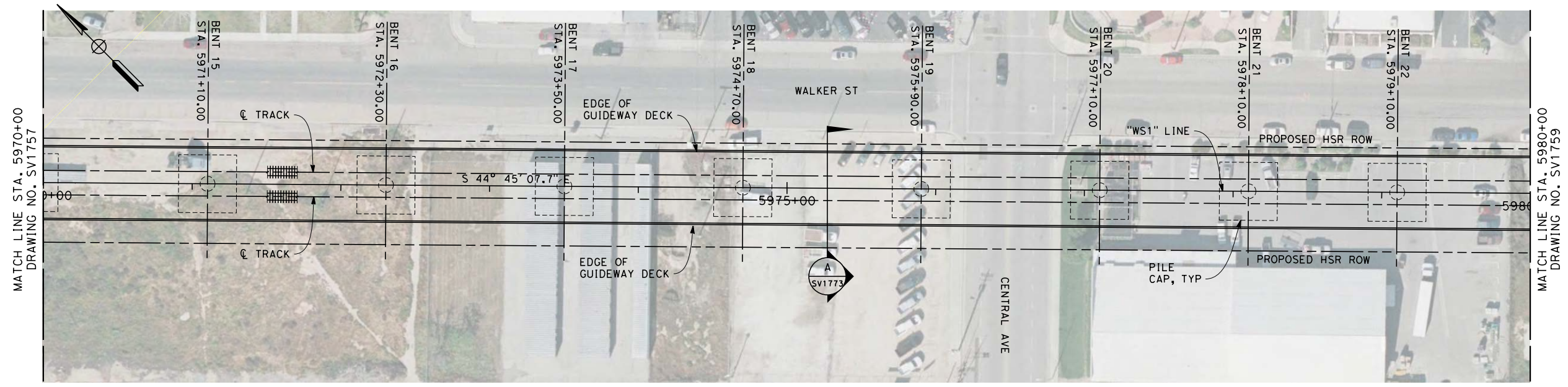
SHEET NO.  
3 OF 20



- 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.

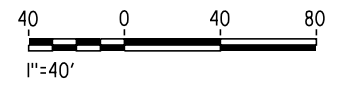


**ELEVATION**  
SCALE 1" = 40'



**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".



Nadine.Hutton 12/12/2013 7:19:52 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1758-WS1.dgn

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**



**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

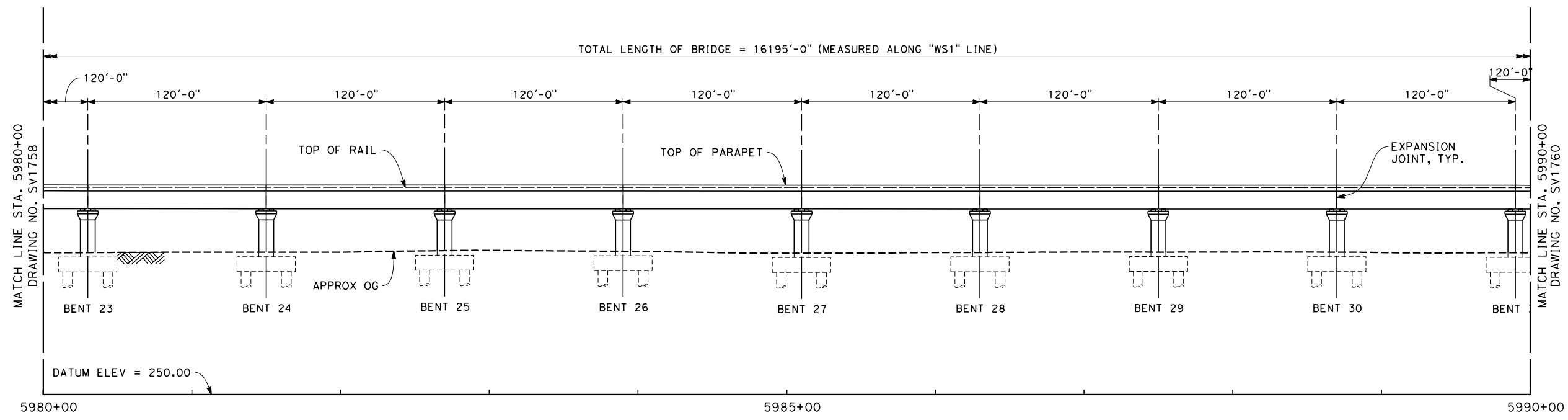


EVC 5976+91.93  
ELEV 389.29

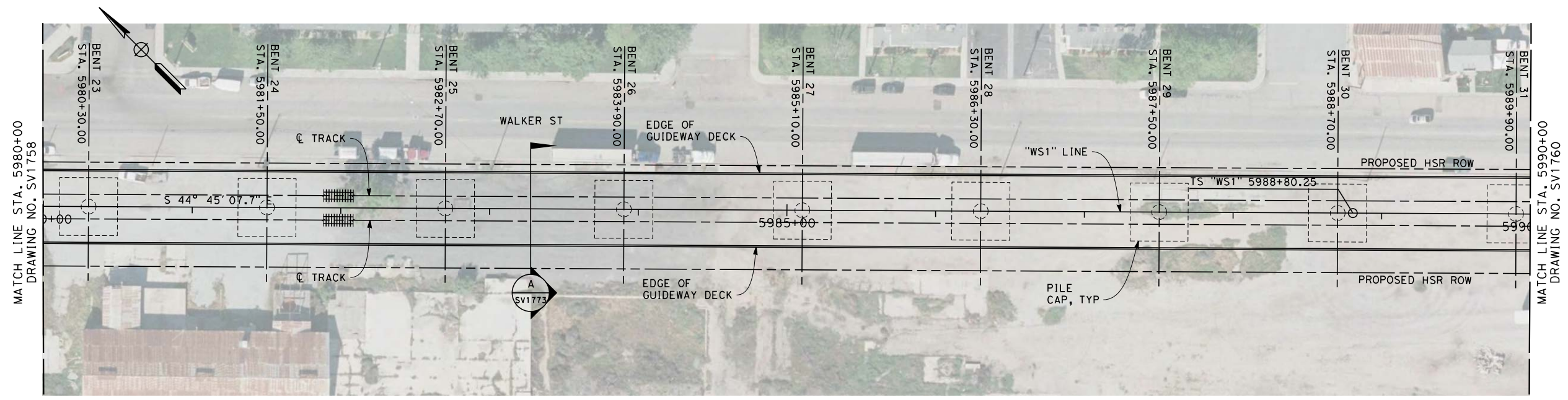
BVC 6046+50.63  
ELEV 387.74

-0.022 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE



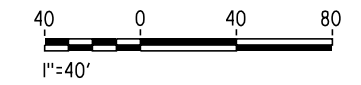
**ELEVATION**  
SCALE 1" = 40'



**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".



Nadine.Hutton 12/12/2013 7:20:27 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1759-WS1.dgn

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**



**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

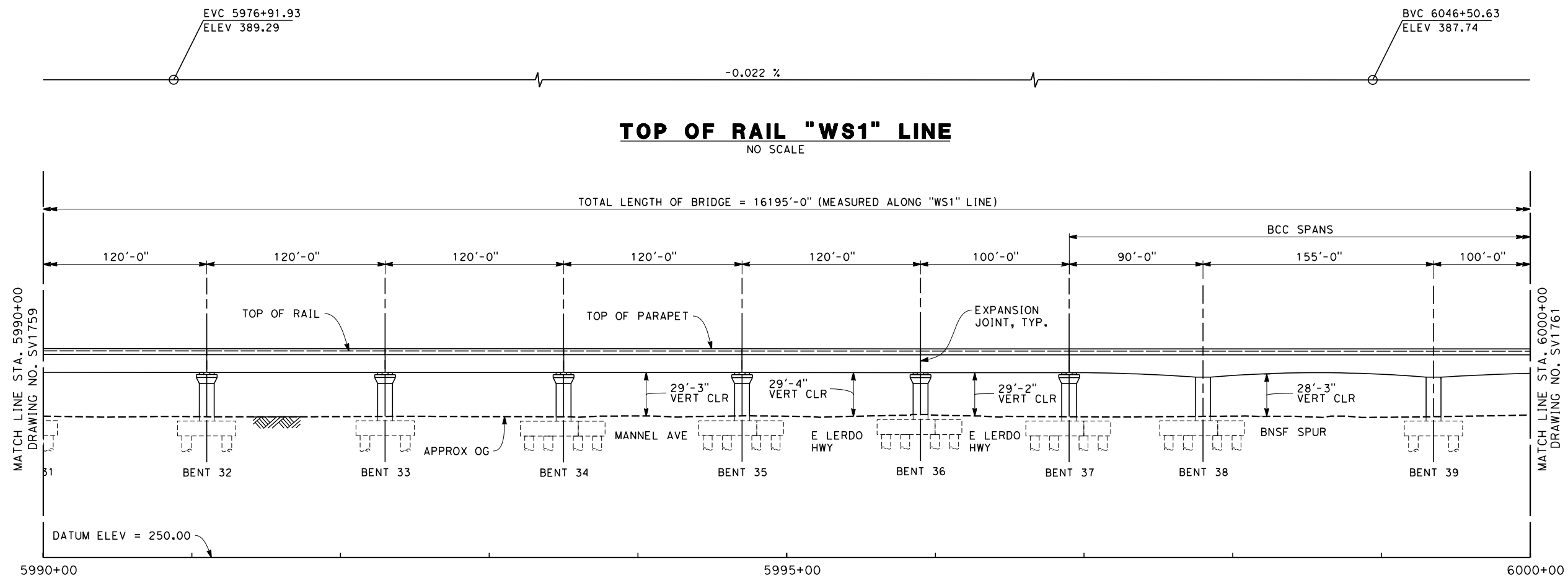
SCALE  
AS SHOWN

SHEET NO.  
5 OF 20

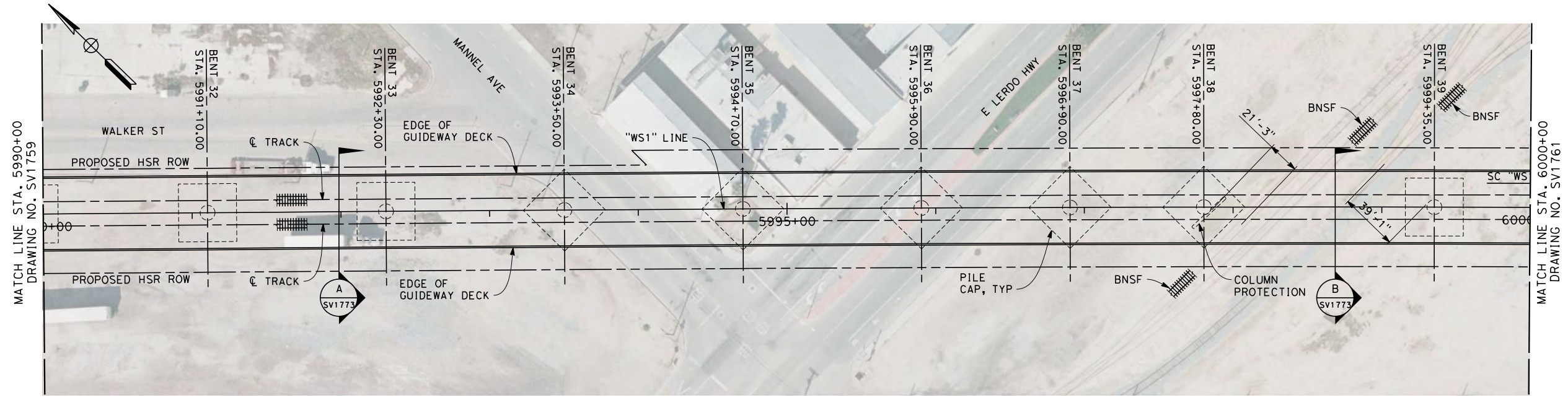


**NOTES**

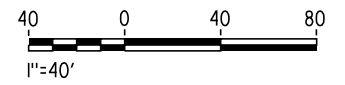
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON  
 SIMPLE SPANS - MSS OR FLPM  
 CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
 STEEL TRUSS - INSITU, SLID OR LAUNCHED  
 ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS 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'



- 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".



Nadine.Hutton 12/12/2013 7:20:56 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1760-WS1.dgn

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**



**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



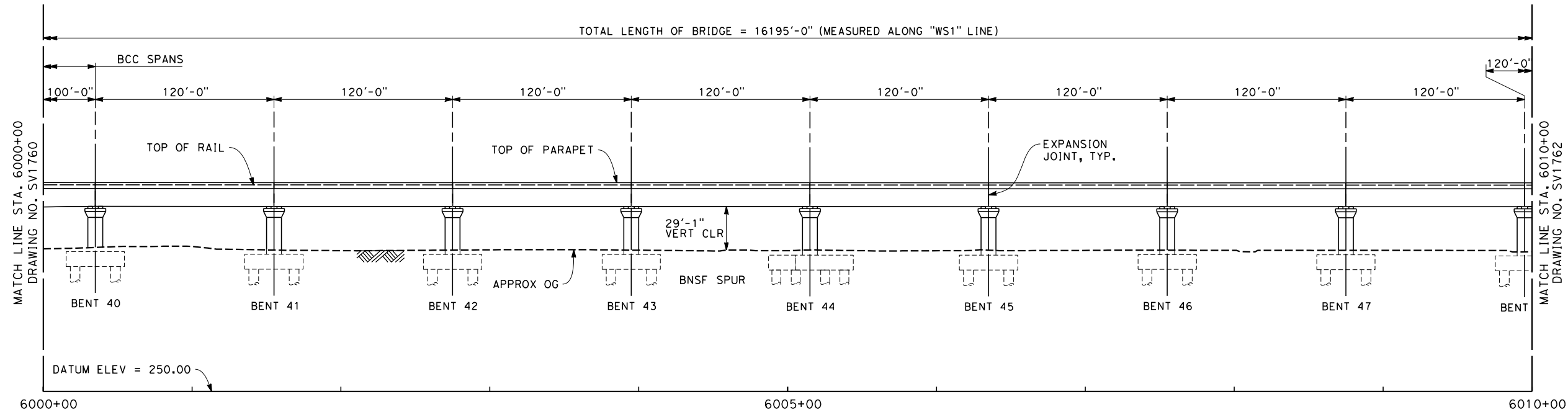
EVC 5976+91.93  
ELEV 389.29

BVC 6046+50.63  
ELEV 387.74

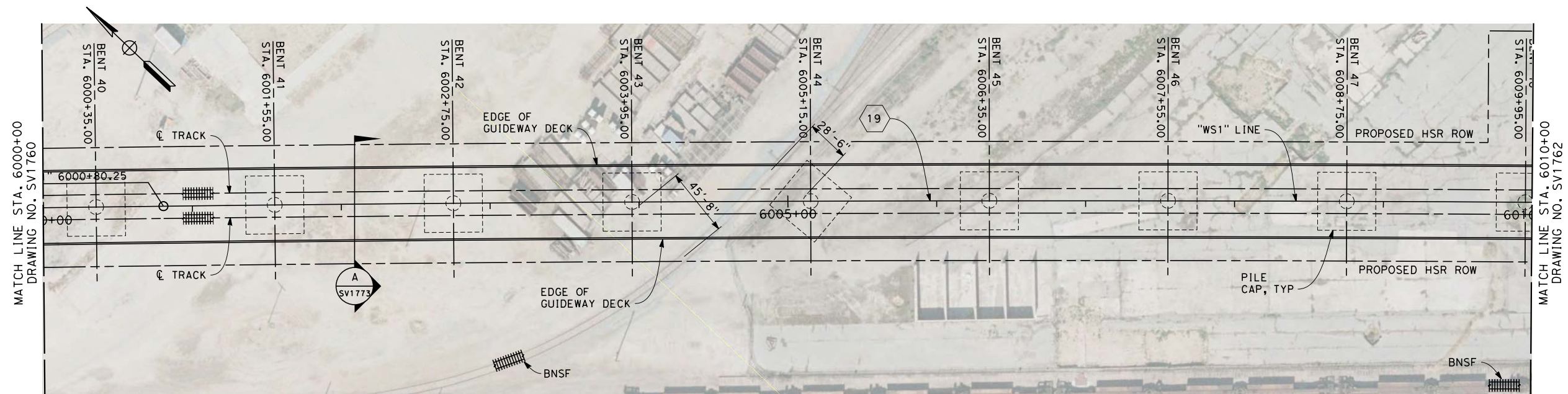
-0.022 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 16195'-0" (MEASURED ALONG "WS1" LINE)



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

**NOTES**

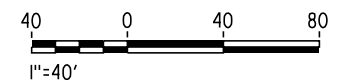
1. NOT ALL PILES SHOWN
2. PILE LENGTH TO BE DETERMINED
3. SUPERSTRUCTURE CONSTRUCTION, UON  
SIMPLE SPANS - MSS OR FLPM  
CONTINUOUS SPANS - BCC - PRECAST IN-SITU  
STEEL TRUSS - INSITU, SLID OR LAUNCHED  
ELEVATED SLABS - PC BEAM AND INSITU SLAB
4. UTILITY LOCATIONS TO BE DETERMINED
5. ACCESS STAIRWAYS 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**

①  
R = 50000  
Δ = 02°32'40.6"  
T = 1110.5'  
L = 2220.6'



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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**

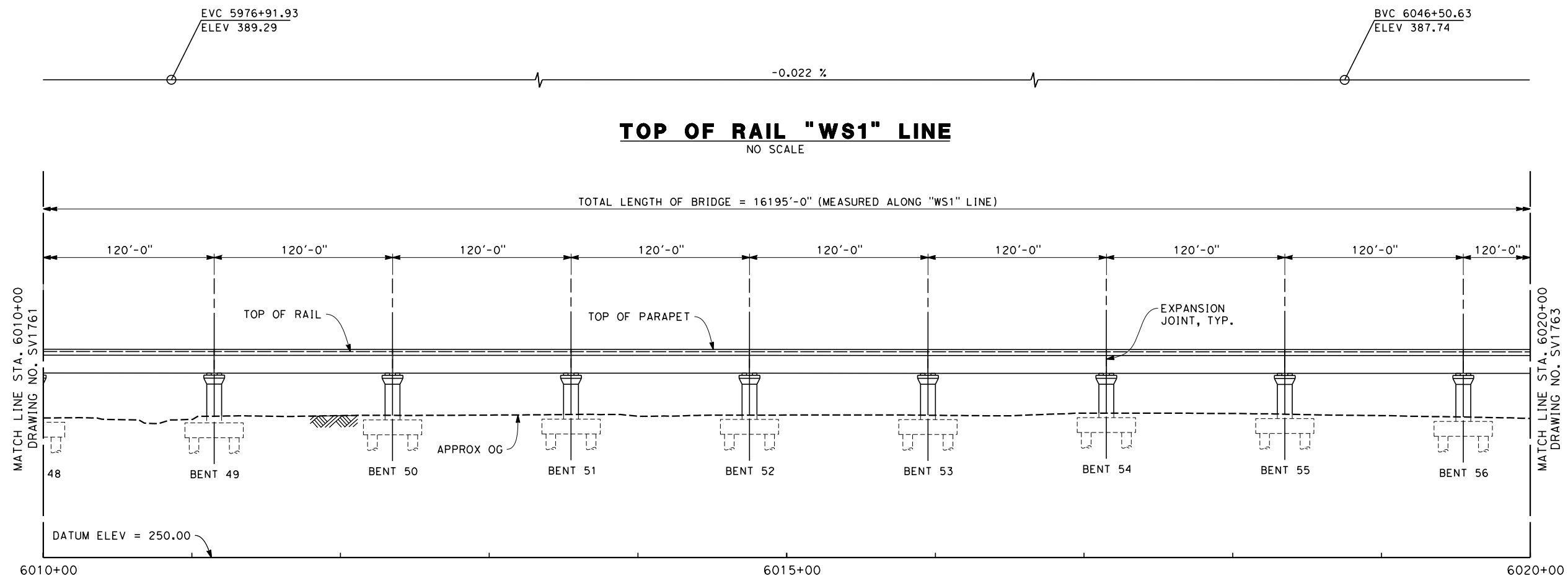


**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**  
THROUGH WASCO-SHAFTER SUBSECTION  
ALIGNMENT WS1  
SHAFTER VIADUCT  
PLAN AND ELEVATION

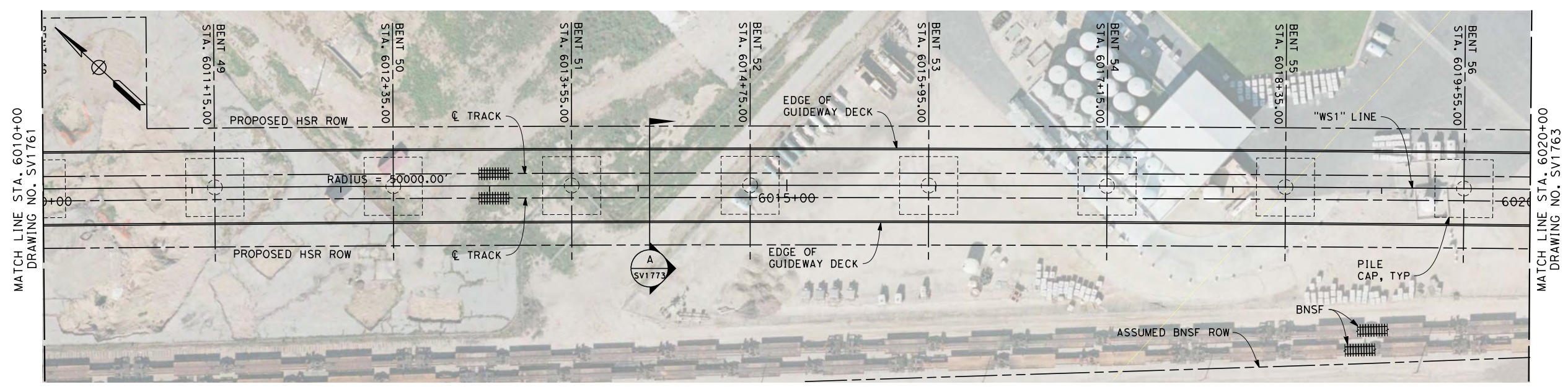
CONTRACT NO.  
HSR 06-0003  
DRAWING NO.  
SV1761  
SCALE  
AS SHOWN  
SHEET NO.  
7 OF 20



12/12/2013 7:22:30 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1762-WS1.dgn



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

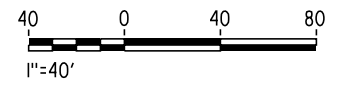
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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  
 $\Delta = 02^{\circ}32'40.6''$   
 T = 1110.5'  
 L = 2220.6'



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**



**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



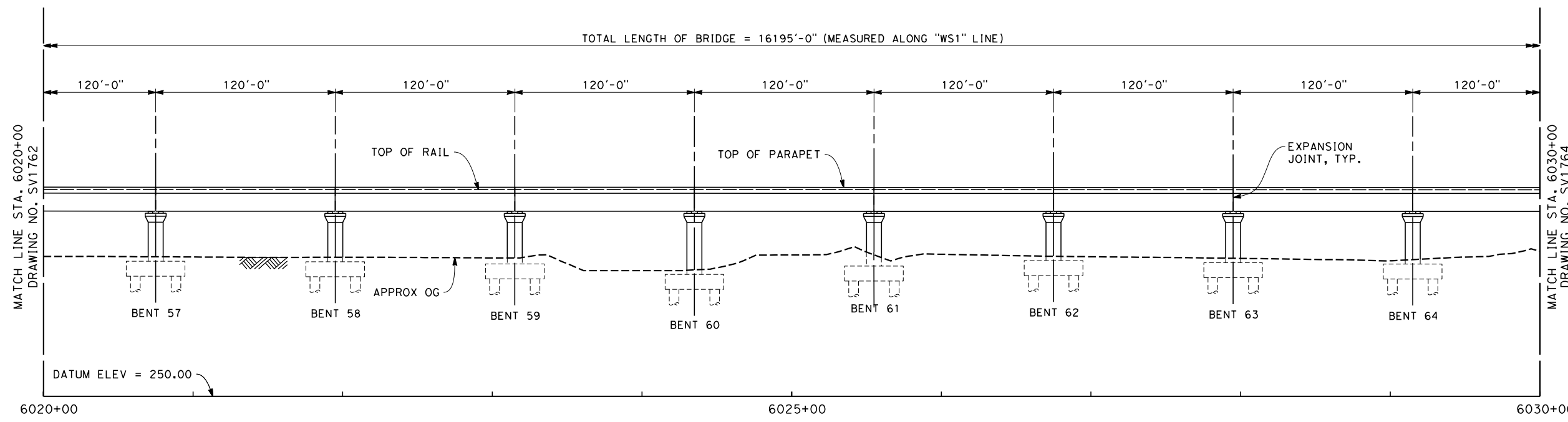
EVC 5976+91.93  
ELEV 389.29

BVC 6046+50.63  
ELEV 387.74

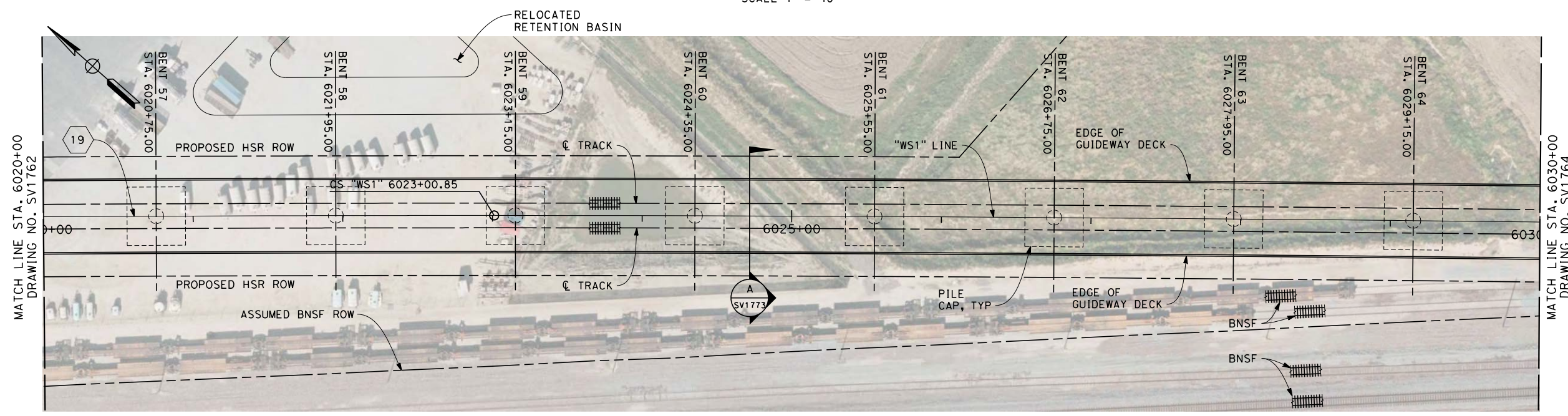
-0.022 %

**TOP OF RAIL "WS1" LINE**  
NO SCALE

TOTAL LENGTH OF BRIDGE = 16195'-0" (MEASURED ALONG "WS1" LINE)



**ELEVATION**  
SCALE 1" = 40'



**PLAN**  
SCALE 1" = 40'

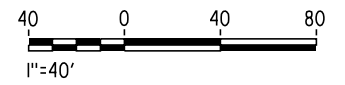
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO 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  
 $\Delta = 02^{\circ}32'40.6''$   
 T = 1110.5'  
 L = 2220.6'



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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**



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

CONTRACT NO.  
HSR 06-0003

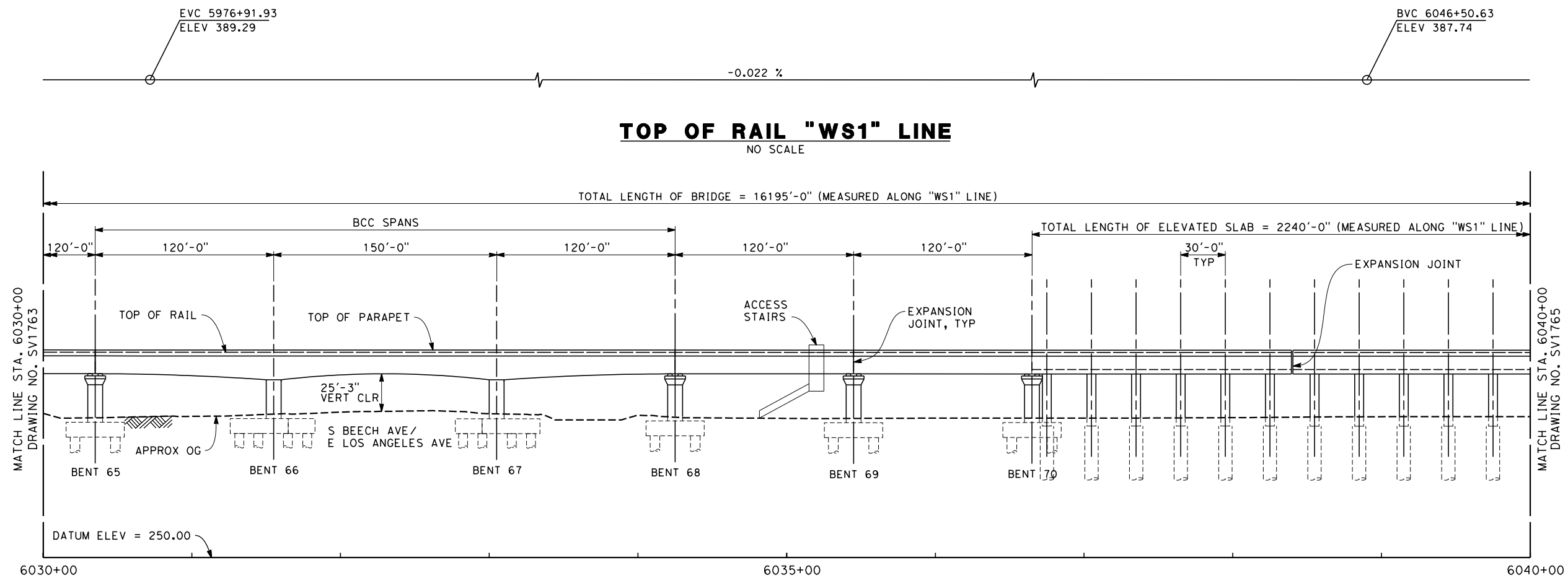
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SV1763

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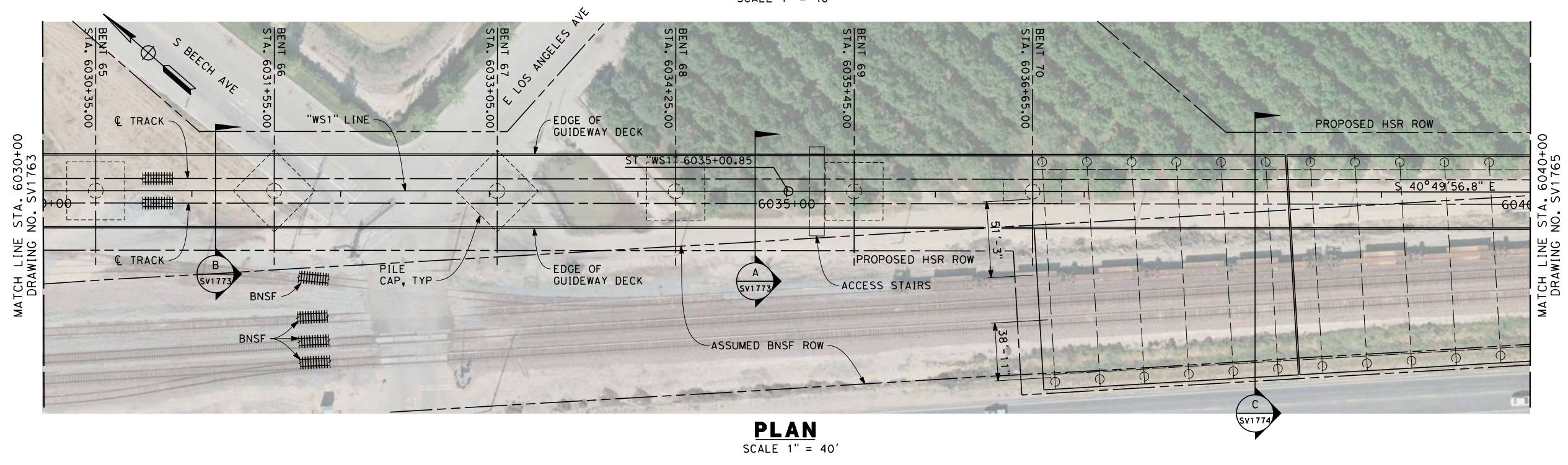
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9 OF 20



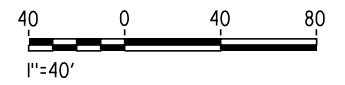
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- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS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



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

CONTRACT NO.  
HSR 06-0003

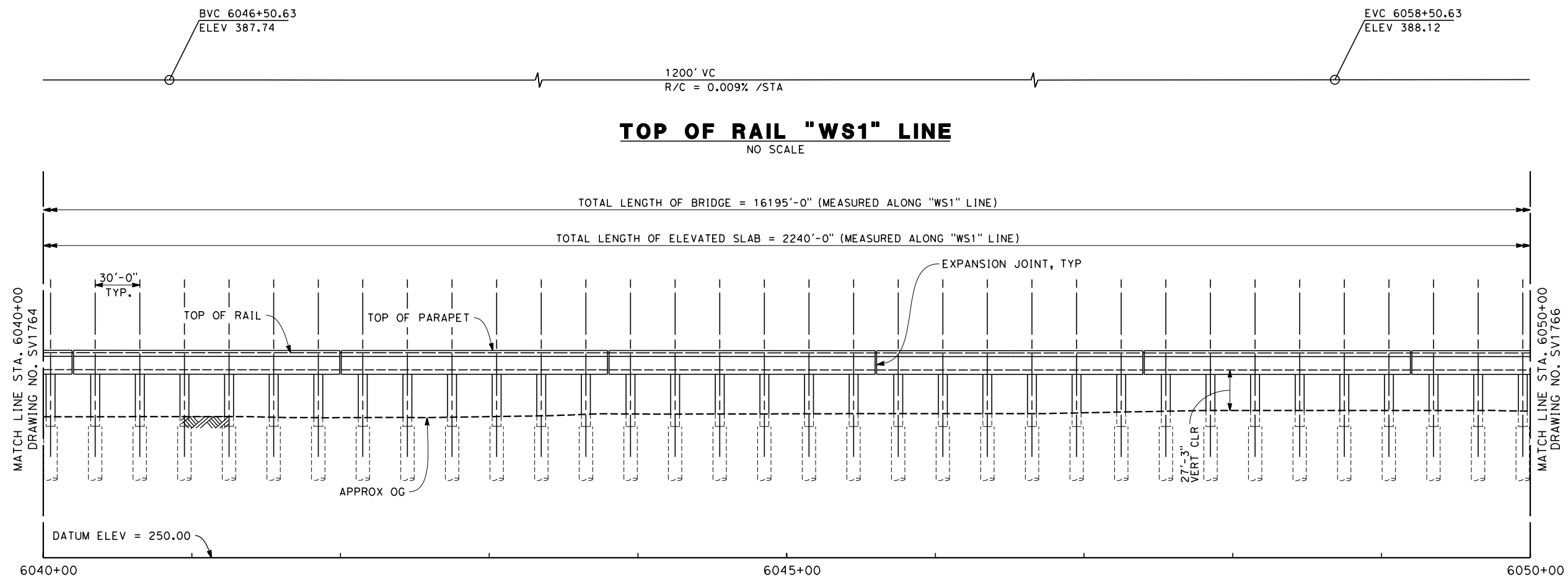
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SV1764

SCALE  
AS SHOWN

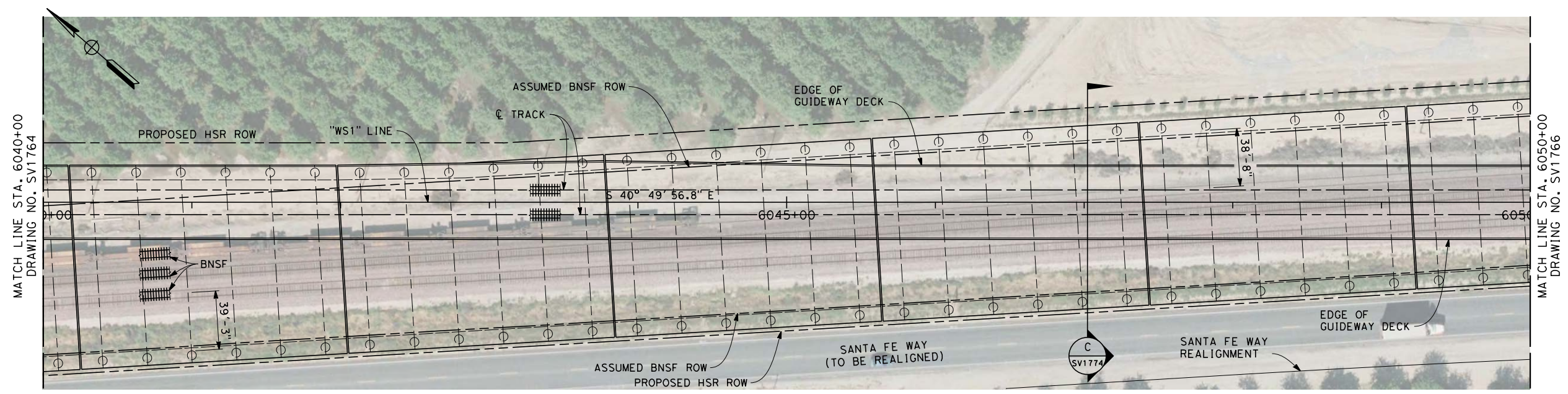
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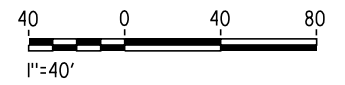
**ELEVATION**  
SCALE 1" = 40'



**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".



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY  
M. FISHER

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A. ARMSTRONG

IN CHARGE  
R. COFFIN

DATE  
12/31/13

**RECORD SET 15%  
DESIGN SUBMISSION**

**NOT FOR  
CONSTRUCTION**



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

CONTRACT NO.  
HSR 06-0003

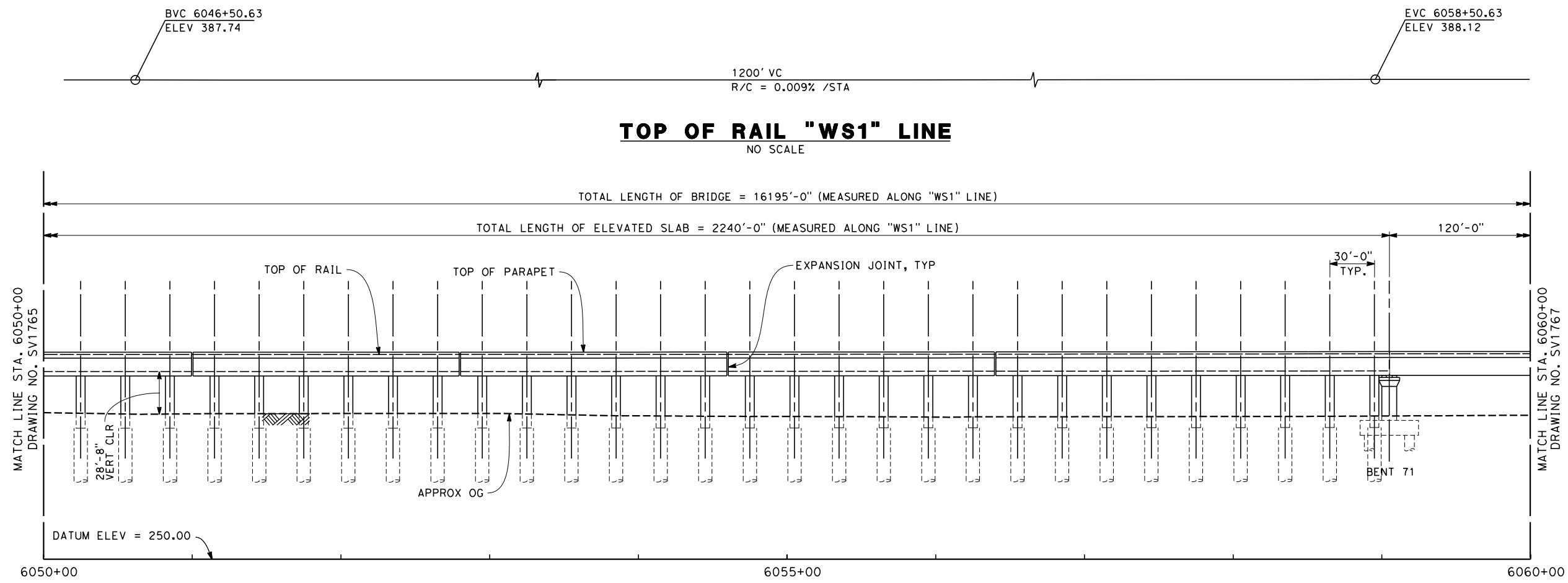
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SV1765

SCALE  
AS SHOWN

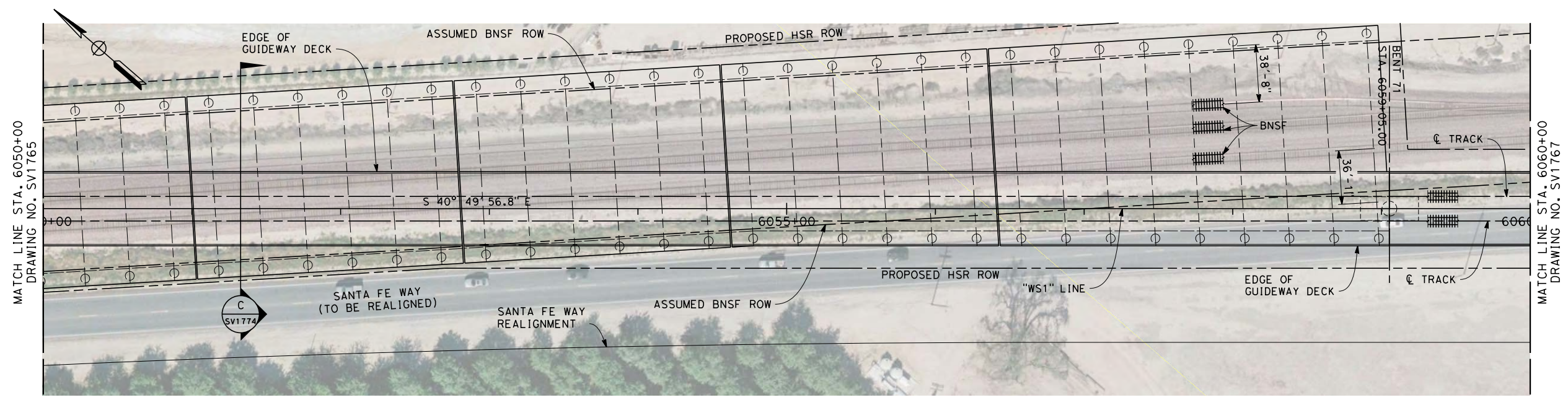
SHEET NO.  
11 OF 20



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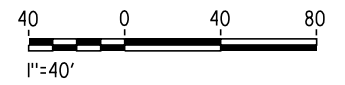
**ELEVATION**  
 SCALE 1" = 40'



**PLAN**  
 SCALE 1" = 40'

- NOTES**
- NOT ALL PILES SHOWN
  - PILE LENGTH TO BE DETERMINED
  - 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
  - UTILITY LOCATIONS TO BE DETERMINED
  - 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**

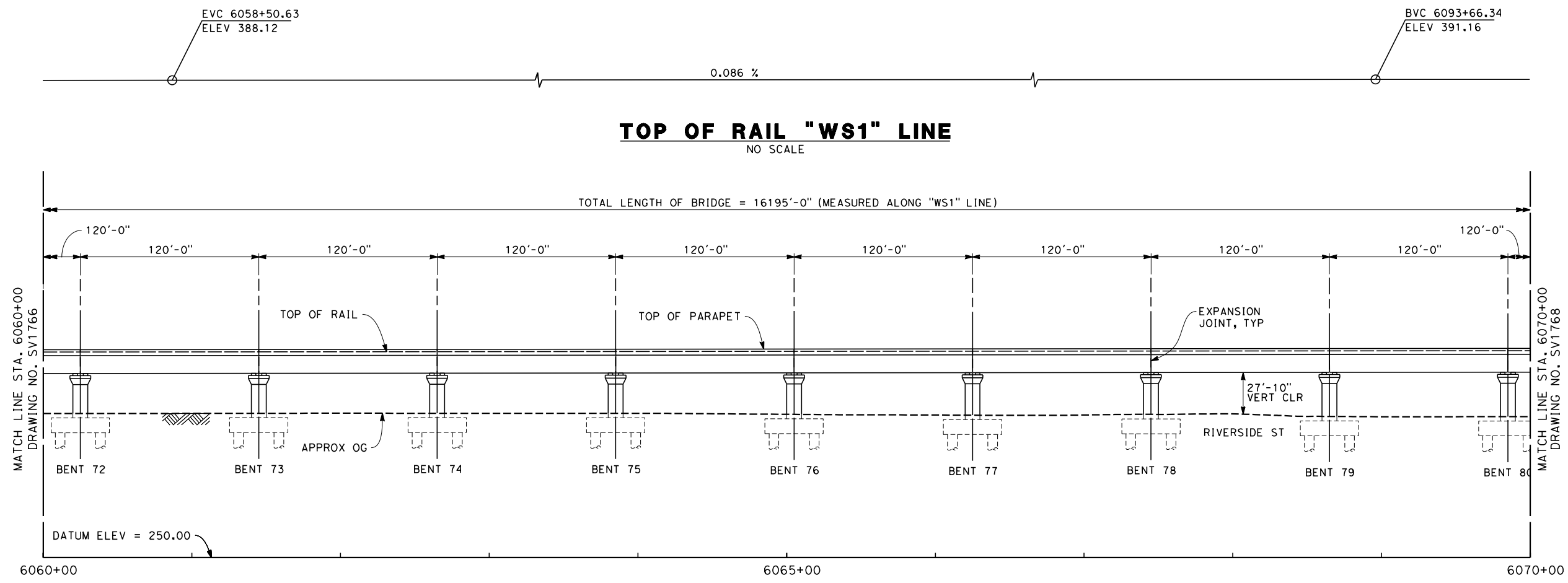


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 THROUGH WASCO-SHAFTER SUBSECTION  
 ALIGNMENT WS1  
 SHAFTER VIADUCT  
 PLAN AND ELEVATION

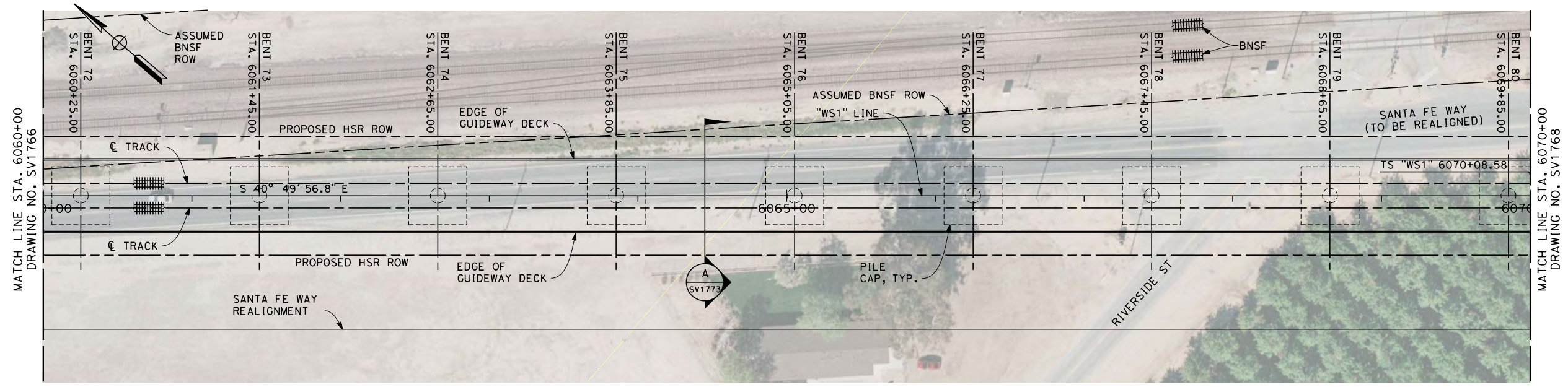
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 SCALE  
 AS SHOWN  
 SHEET NO.  
 12 OF 20



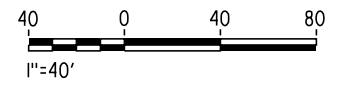
- NOTES**
1. NOT ALL PILES SHOWN
  2. PILE LENGTH TO BE DETERMINED
  3. SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  4. UTILITY LOCATIONS TO BE DETERMINED
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**ELEVATION**  
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".



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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**



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

CONTRACT NO.  
HSR 06-0003

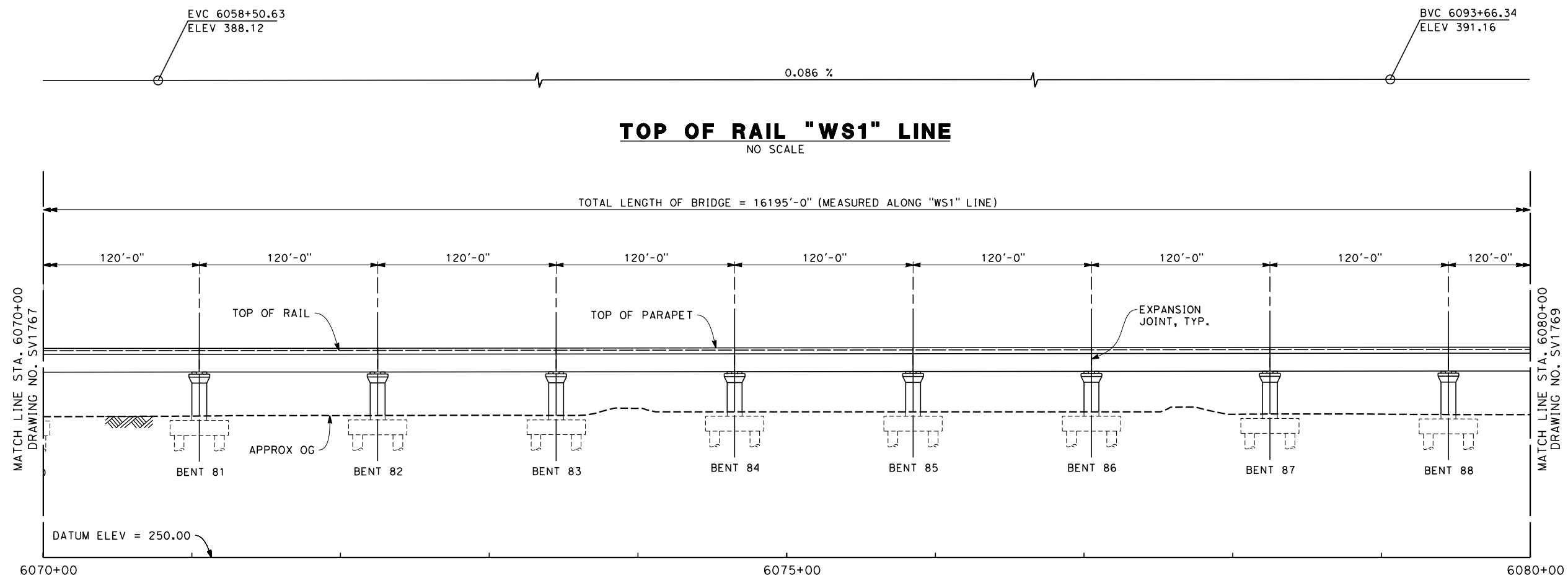
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SV1767

SCALE  
AS SHOWN

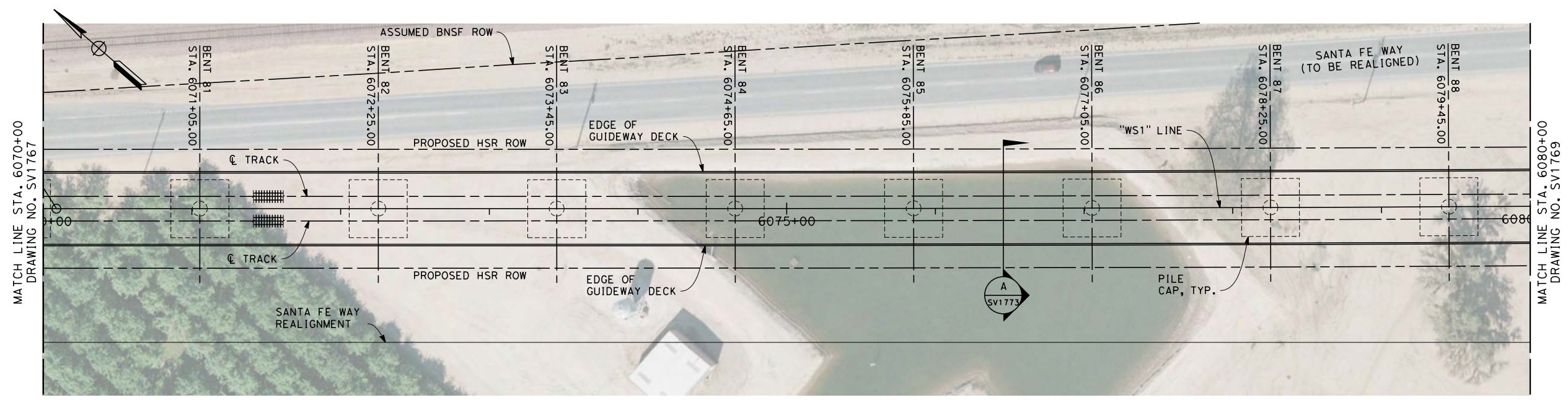
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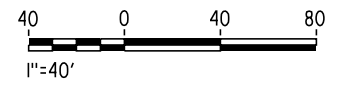
**ELEVATION**  
SCALE 1" = 40'



**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**



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

CONTRACT NO.  
HSR 06-0003

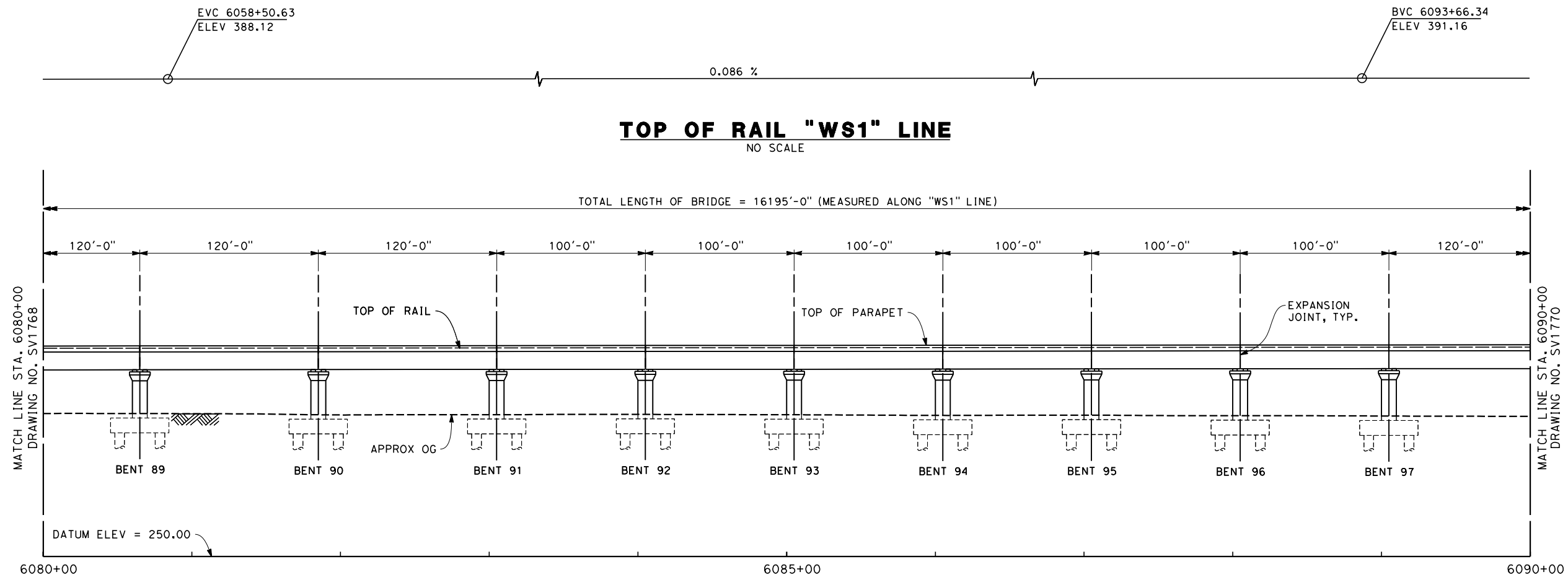
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SCALE  
AS SHOWN

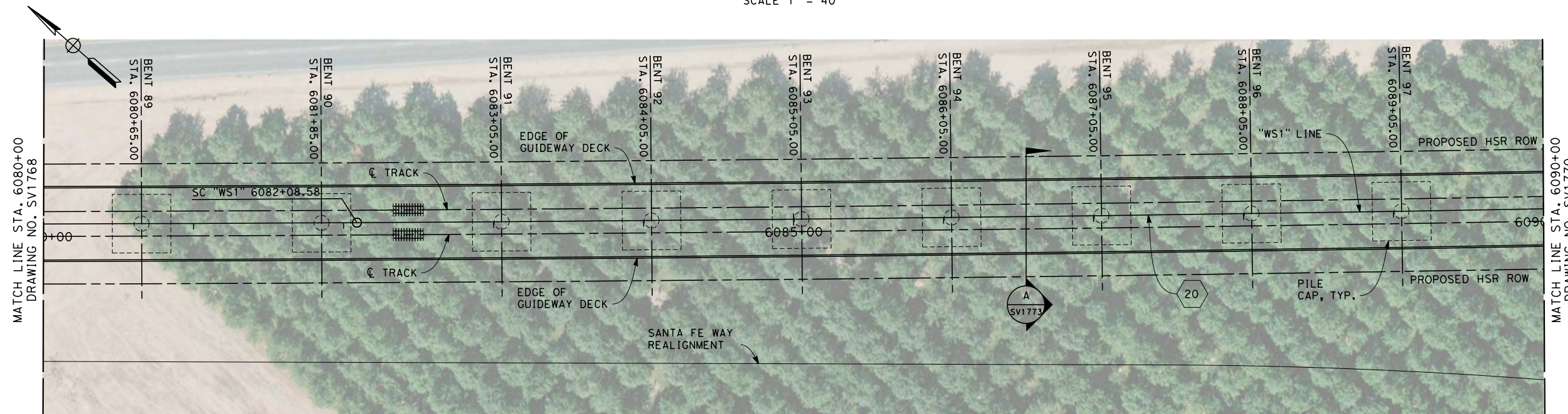
SHEET NO.  
14 OF 20



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**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
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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**

20

R = 68000.00'  
 $\Delta = 03^\circ 44' 50.00''$   
 T = 2224.4'  
 L = 4447.3'



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**



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

CONTRACT NO.  
HSR 06-0003

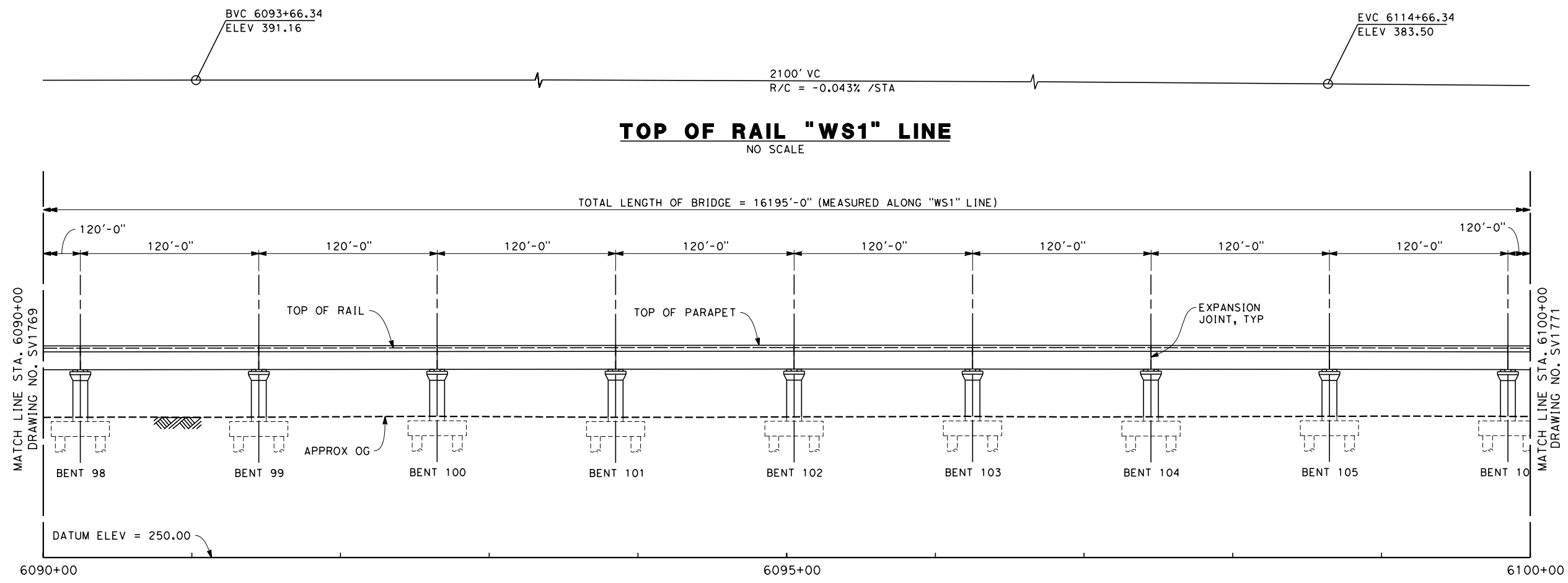
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SV1769

SCALE  
AS SHOWN

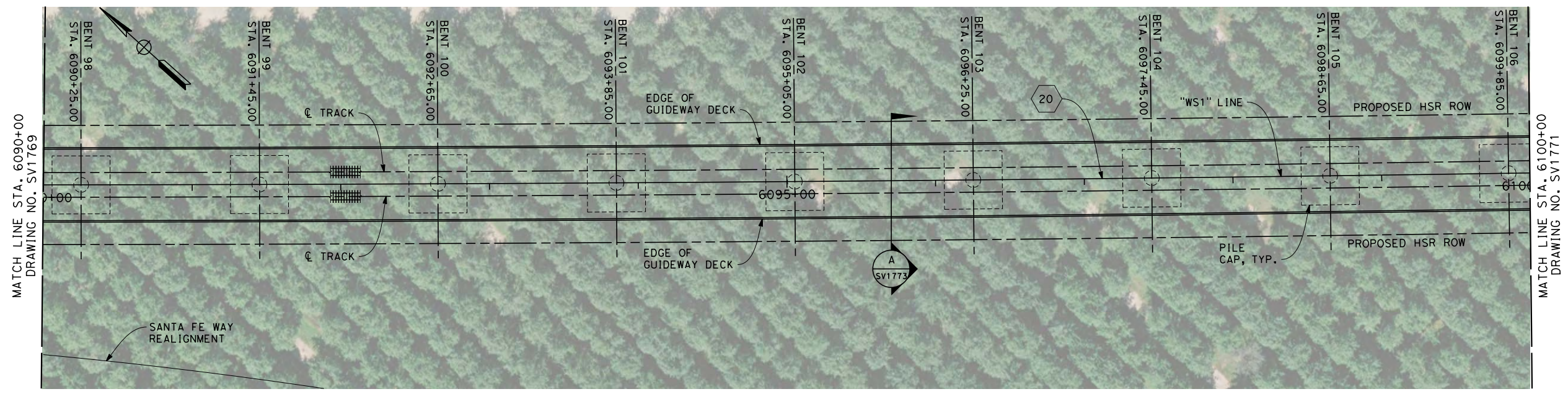
SHEET NO.  
15 OF 20



- 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'



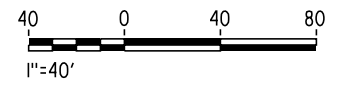
**PLAN**  
SCALE 1" = 40'

- 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**

20

R = 68000.00'  
 $\Delta$  = 03° 44' 50.0"  
 T = 2224.4'  
 L = 4447.3'



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

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**



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

CONTRACT NO.  
HSR 06-0003

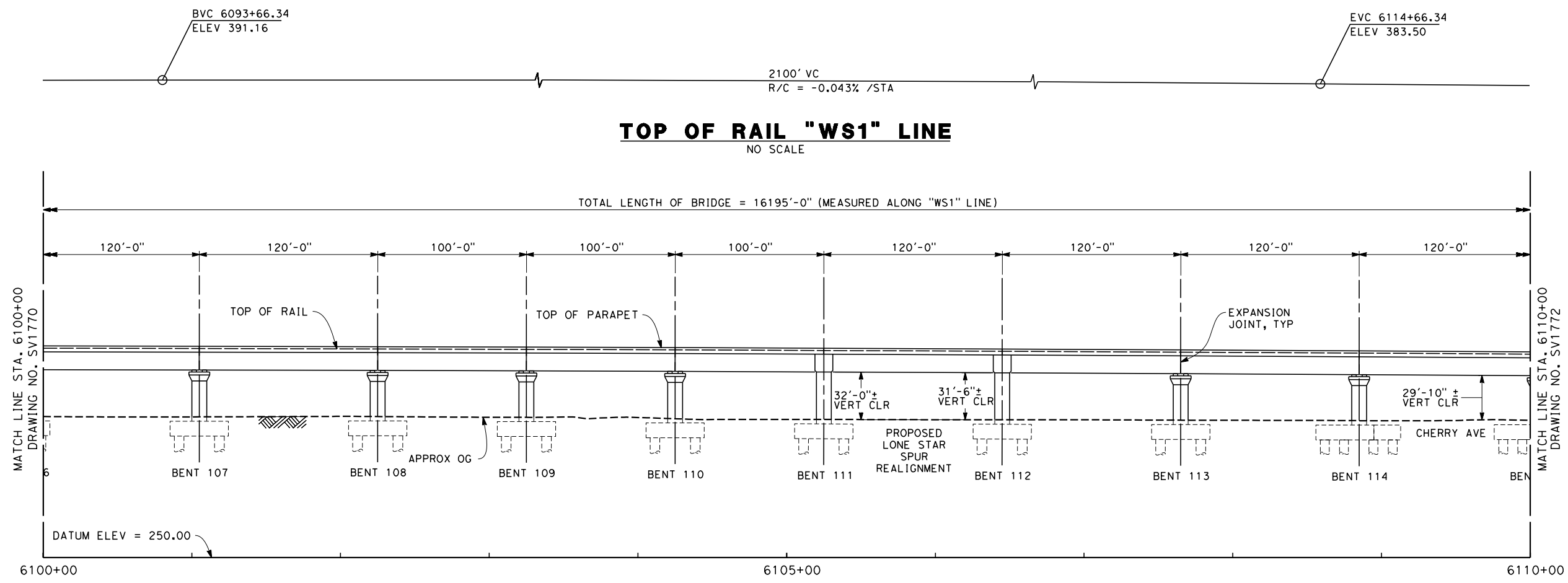
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SV1770

SCALE  
AS SHOWN

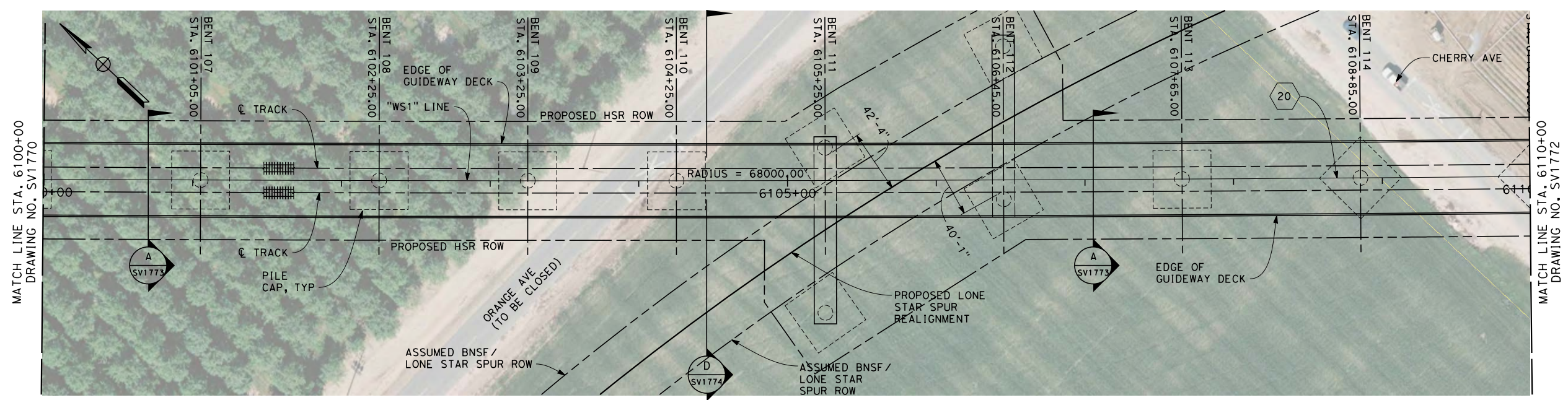
SHEET NO.  
16 OF 20



- 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'



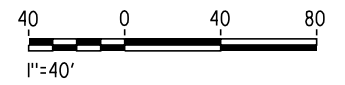
**PLAN**  
SCALE 1" = 40'

- 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**

②0

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



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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**



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

CONTRACT NO.  
HSR 06-0003

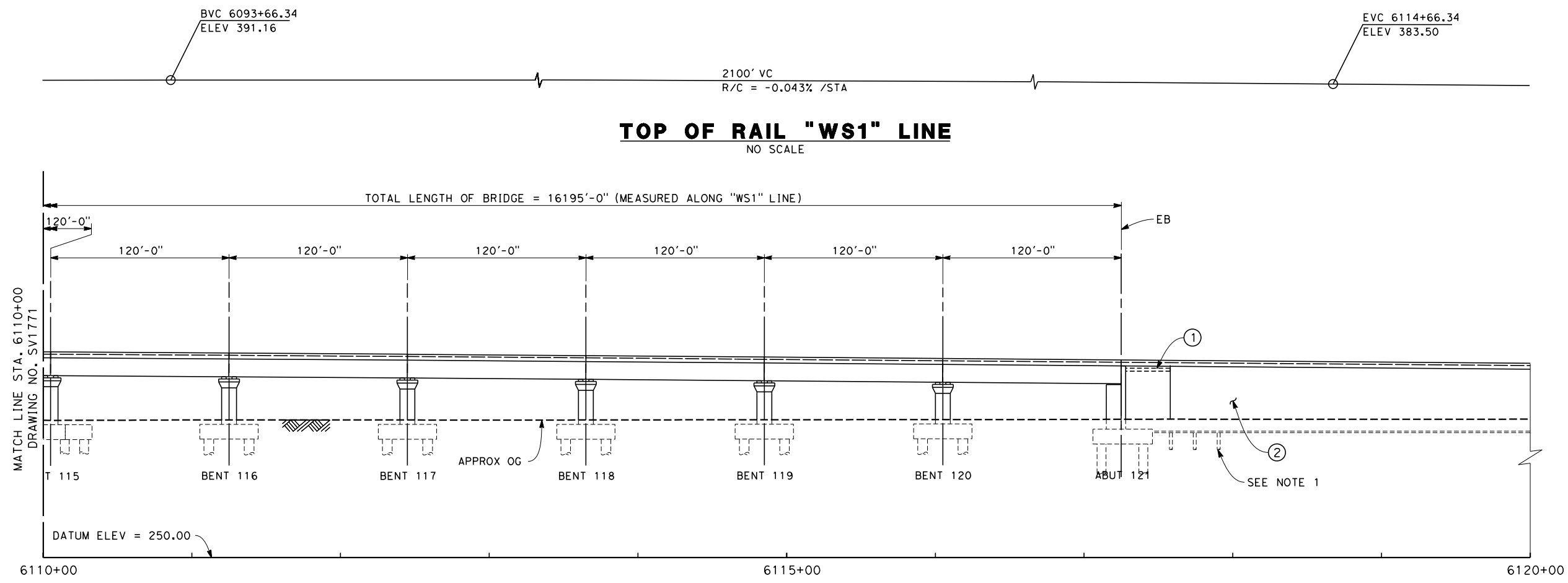
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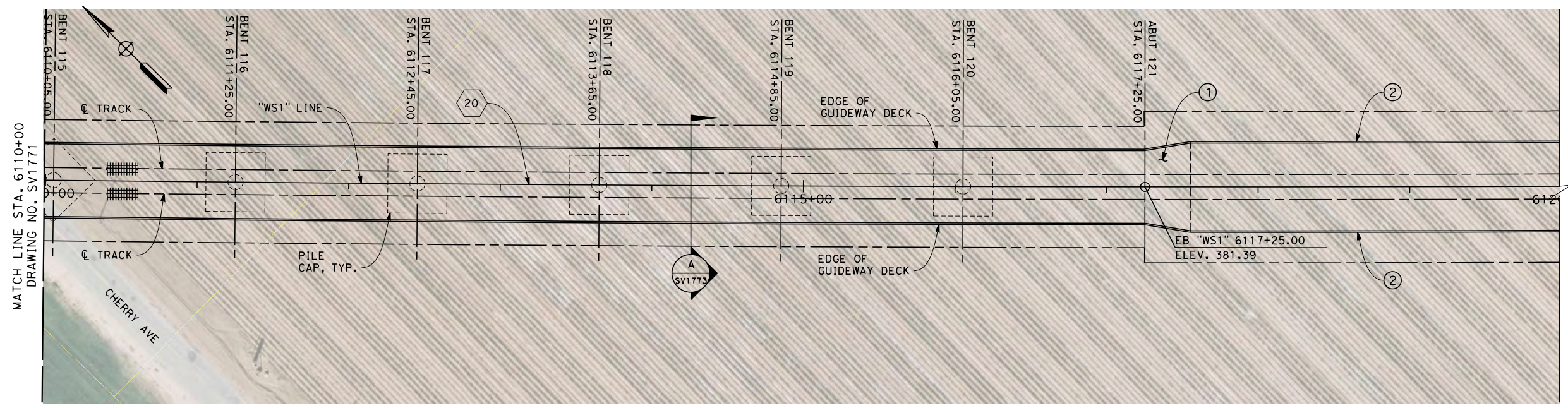
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17 OF 20



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**ELEVATION**  
SCALE 1" = 40'



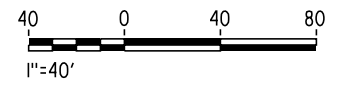
- NOTES**
- NOT ALL PILES SHOWN
  - PILE LENGTH TO BE DETERMINED
  - SUPERSTRUCTURE CONSTRUCTION, UON
    - SIMPLE SPANS - MSS OR FLPM
    - CONTINUOUS SPANS - BCC - PRECAST IN-SITU
    - STEEL TRUSS - INSITU, SLID OR LAUNCHED
    - ELEVATED SLABS - PC BEAM AND INSITU SLAB
  - UTILITY LOCATIONS TO BE DETERMINED
  - 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'  
 $\Delta = 03^\circ 44' 50.0''$   
 T = 2224.4'  
 L = 4447.3'



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**

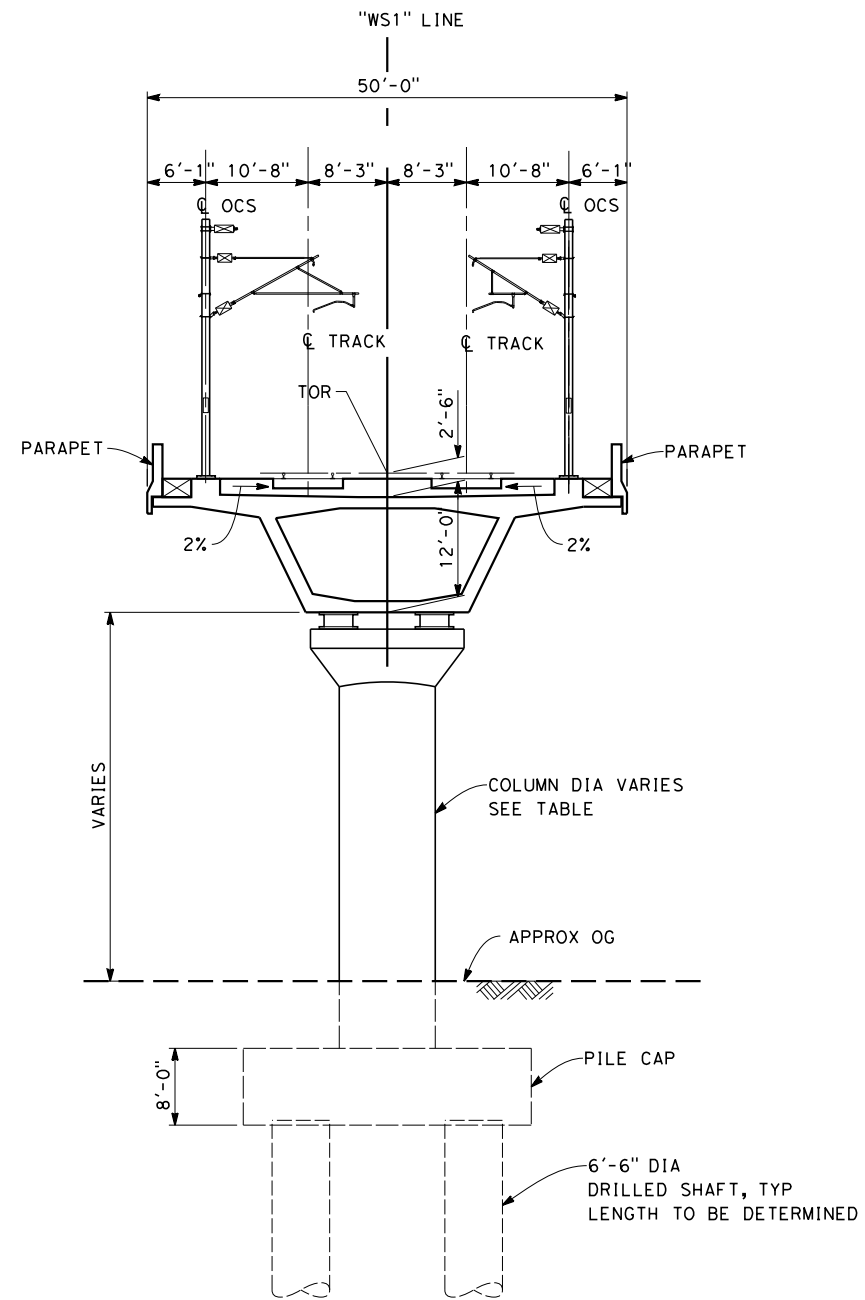


**CALIFORNIA HIGH-SPEED TRAIN PROJECT**  
**FRESNO TO BAKERSFIELD**  
 THROUGH WASCO-SHAFTER SUBSECTION  
 ALIGNMENT WS1  
 SHAFTER VIADUCT  
 PLAN AND ELEVATION

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

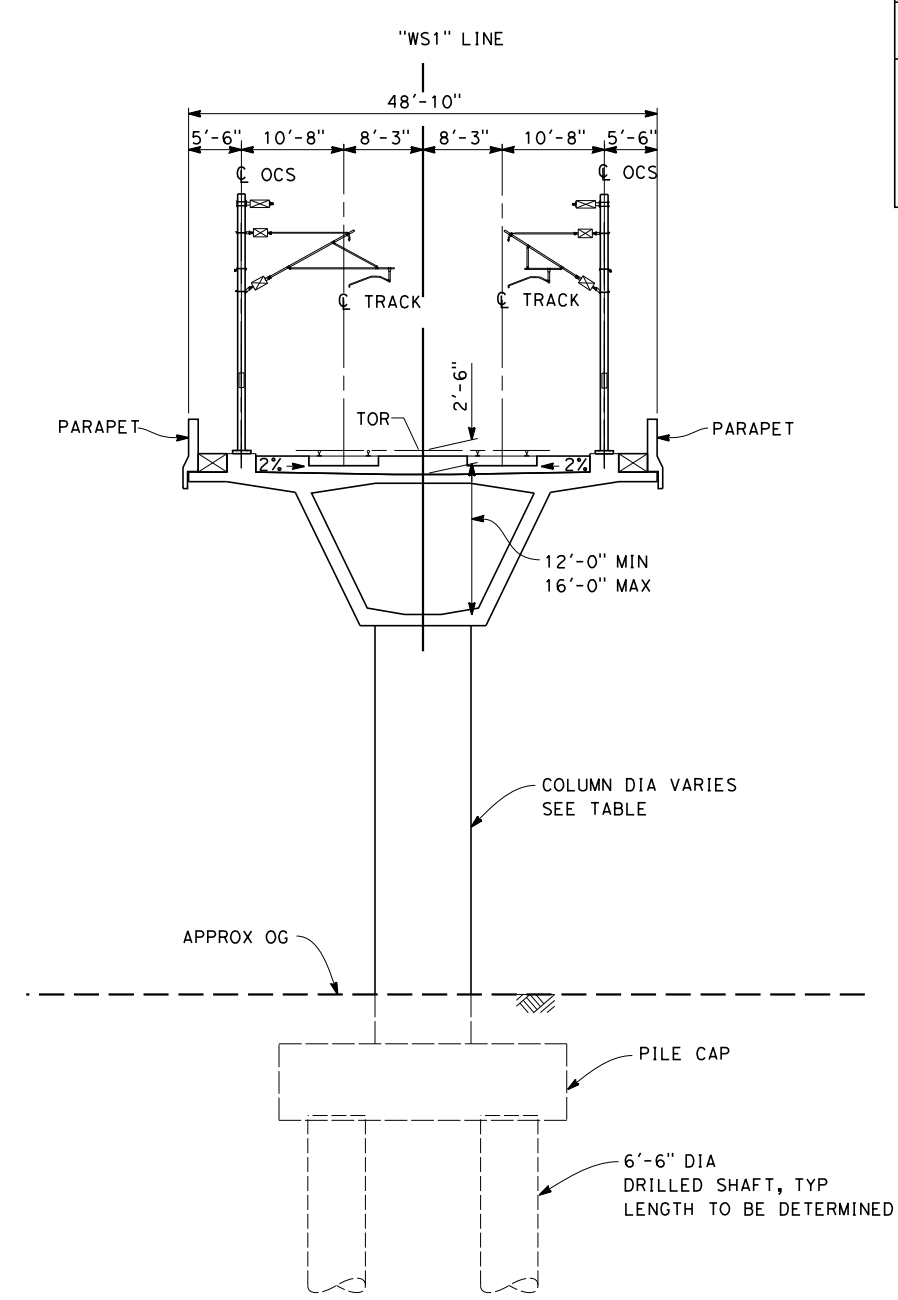


COLUMN DIAMETERS	
COLUMN HEIGHT	DIAMETER
0-20	8 FT
20-40	10 FT
40-50	12 FT
50-60	15 FT
60-80	20 FT
80-100	25 FT



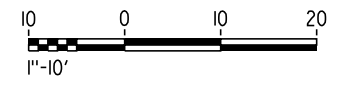
**SECTION A**  
SCALE: 1" = 10'

STA 5955+30 THROUGH 5996+90  
 STA 6000+35 THROUGH 6030+35  
 STA 6034+25 THROUGH 6036+65  
 STA 6059+05 THROUGH 6117+25



**SECTION B**  
SCALE: 1" = 10'

STA 5996+90 THROUGH 6000+35  
 STA 6030+35 THROUGH 6034+25



12/12/2013 7:28:26 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1773-WS1.dgn

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**



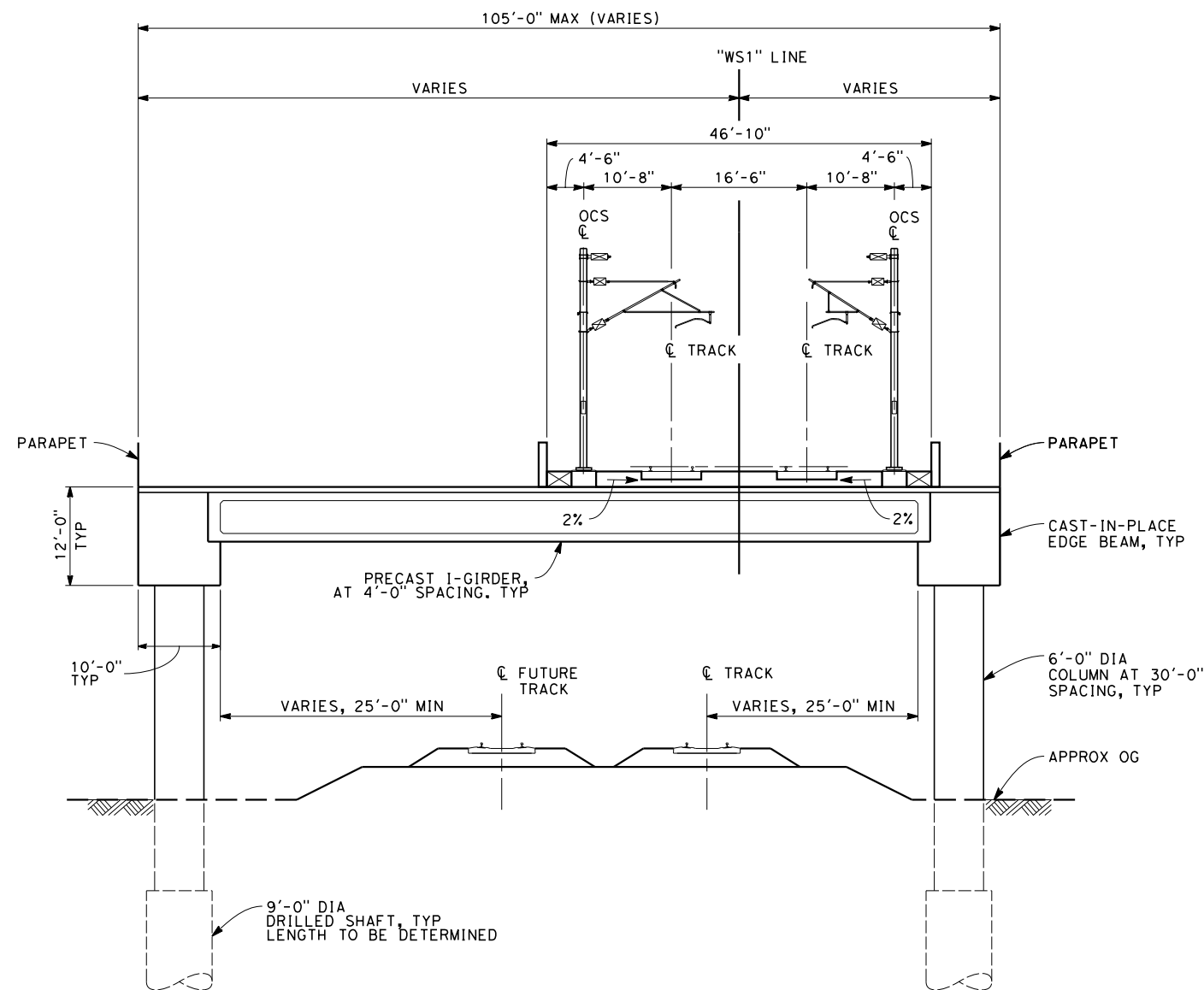
**CALIFORNIA HIGH-SPEED TRAIN PROJECT  
FRESNO TO BAKERSFIELD**

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



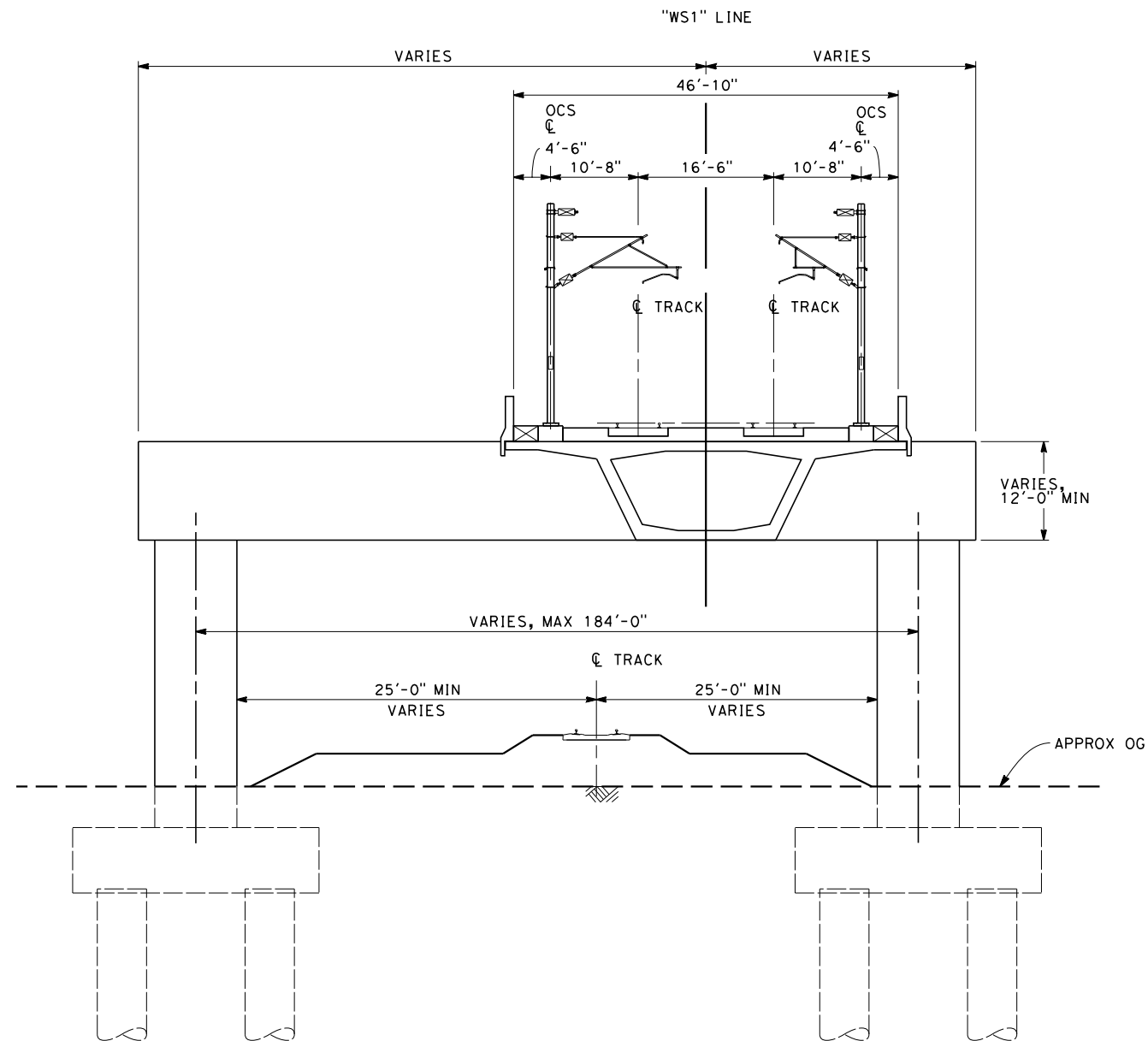
12/12/2013 7:28:33 PM c:\pwworking\hmm\external\nadine.hutton-arup.com\dms86726\FB-SV-1774-WS1.dgn



**SECTION C**

SCALE: 1" = 10'

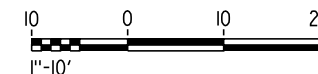
STA 6036+65 THROUGH 6059+05



**SECTION D**

SCALE: 1" = 10'

STA 6105+25 THROUGH 6106+45



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**



**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