

PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
DRAWN BY
A. RIVERA
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

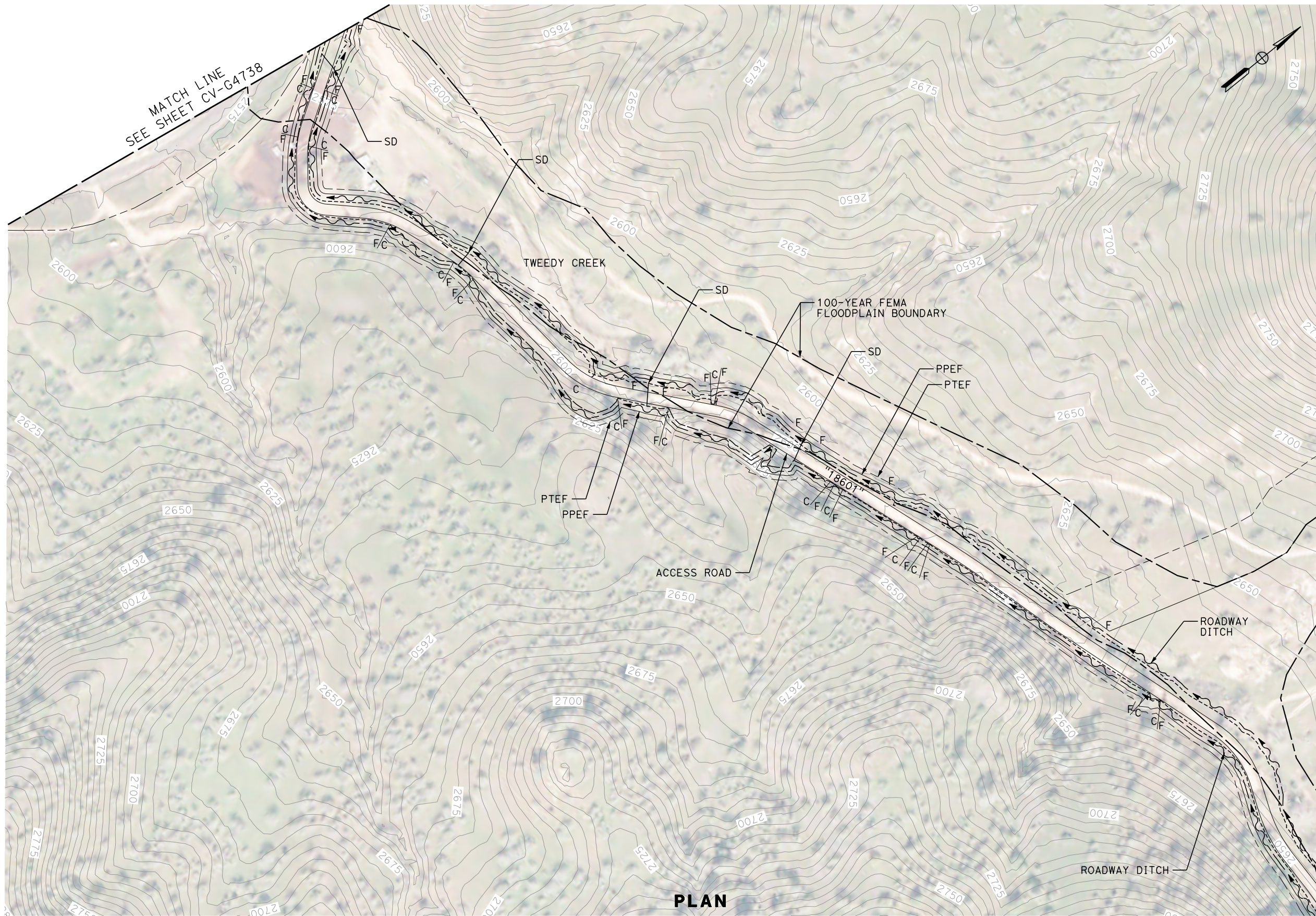
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
GRADING AND DRAINAGE
PLAN
ACCESS ROAD STA 18601+00

CONTRACT NO.
HSR13-44
DRAWING NO.
CV-G4738
SCALE
AS SHOWN
SHEET NO.
154

Projects\701206.00_CHSRBP\00_CADD\CCNM Op\1ion D\Sheets\CV\G\BP-CV-G4739
 1:20:17 AM
 12/22/2020
 Glenn.Yamanaka@tylin.com



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

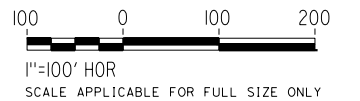
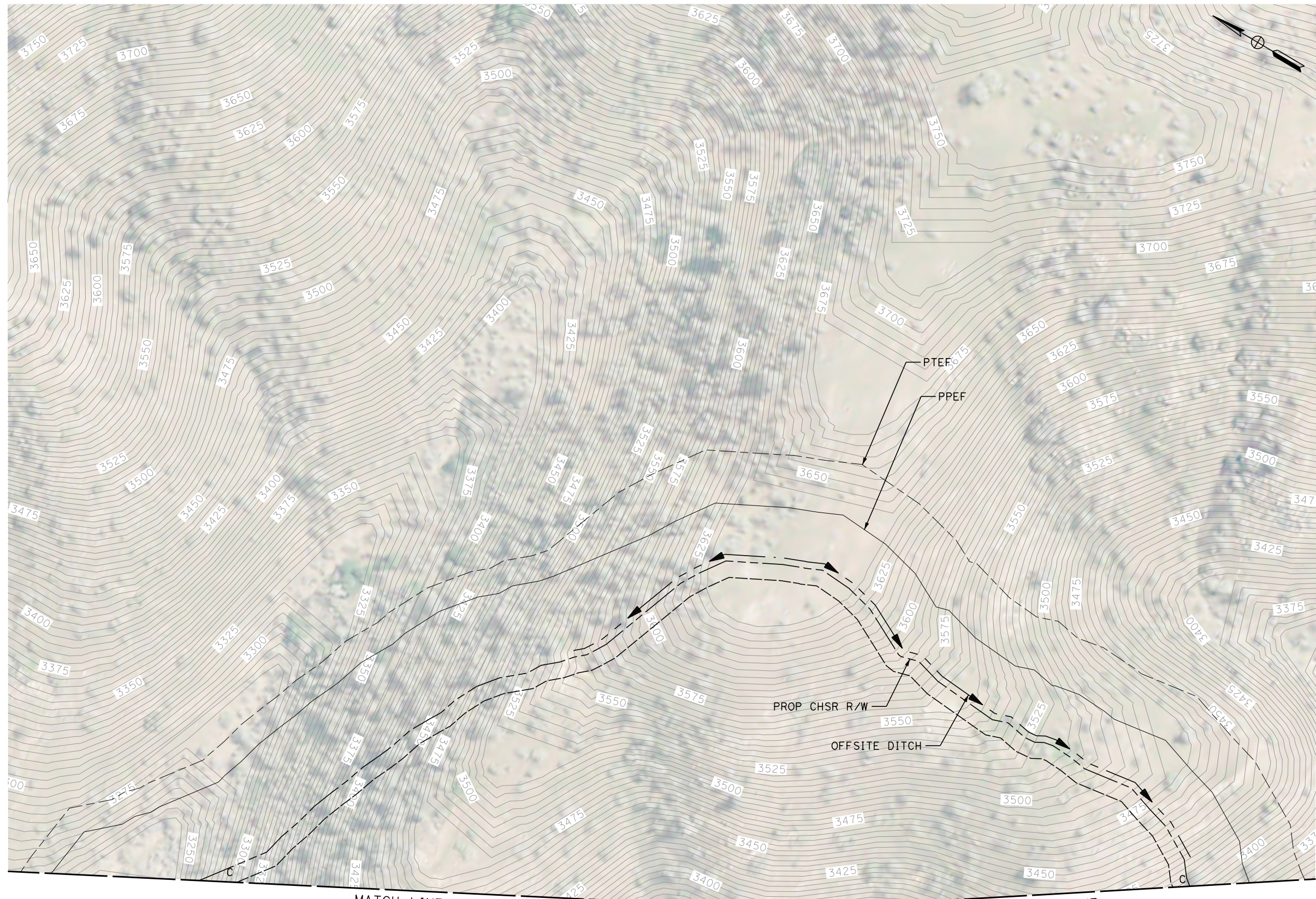
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 PEPD
 SUBMITTAL**

**NOT FOR
 CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
 BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 ACCESS ROAD STA 18601+00

CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4739
 SCALE
AS SHOWN
 SHEET NO.
155



MATCH LINE
SEE SHEET CV-G4717

PLAN

MATCH LINE
SEE SHEET CV-G4718

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
DRAWN BY
A. RIVERA
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

TYLIN INTERNATIONAL

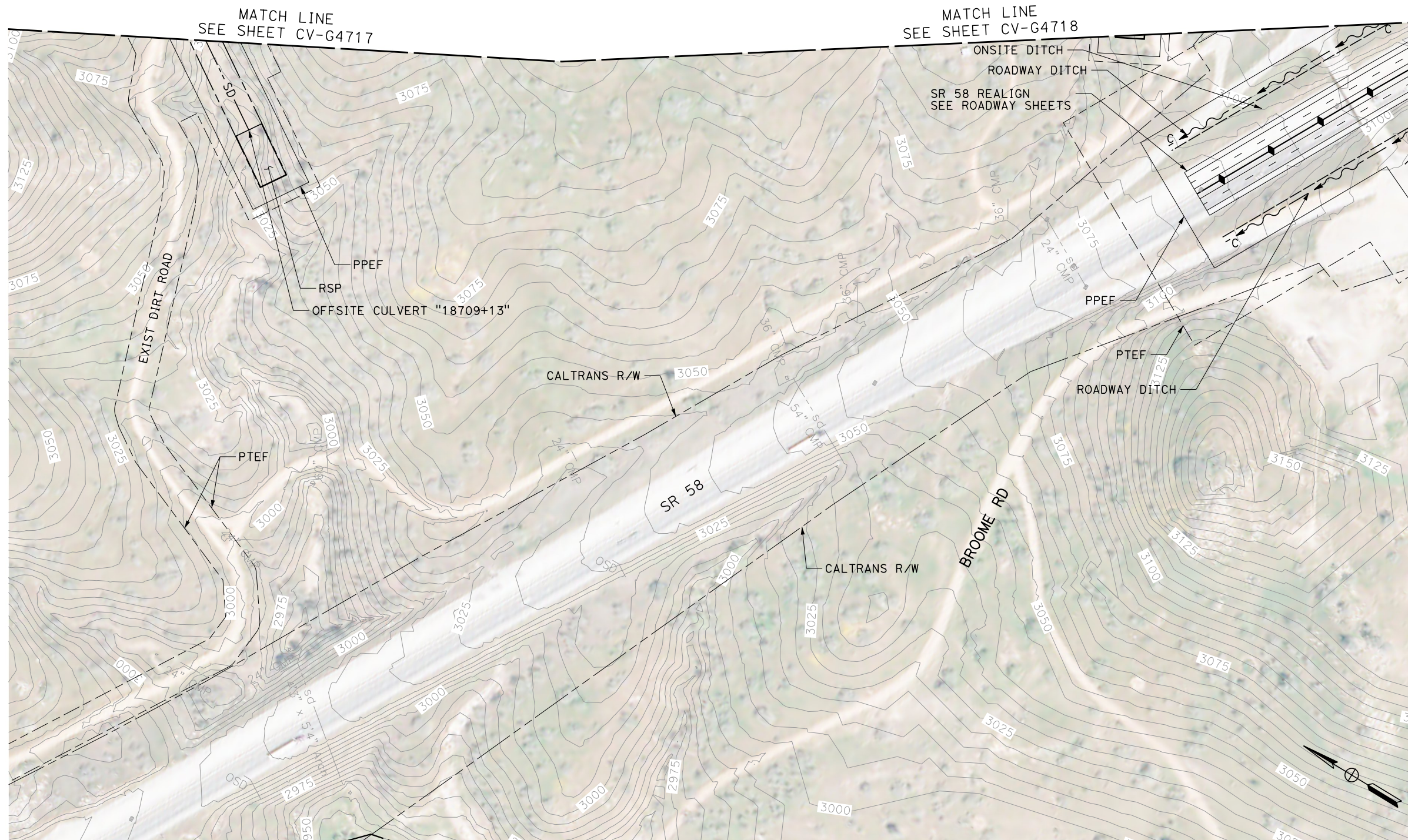


**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
GRADING AND DRAINAGE
PLAN
STA 18705+00 TO 18730+00

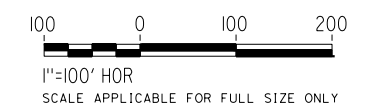
CONTRACT NO.
HSR13-44
DRAWING NO.
CV-G4740
SCALE
AS SHOWN
SHEET NO.
156

12/22/2020 1:22:19 AM Projects\701206.00_CADD\CCNM Option D\Sheets\CV\G\BP-CV-G4741

Glenn.Yamanaka@tylin.com



MATCH LINE SEE SHEET CV-G4742



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA

DRAWN BY
A. RIVERA

CHECKED BY
G. CAMPBELL

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

RECORD SET

PEPD

SUBMITTAL

NOT FOR

CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT

BAKERSFIELD TO PALMDALE

REFINED CCNM DESIGN OPTION

GRADING AND DRAINAGE

PLAN

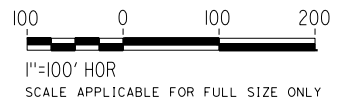
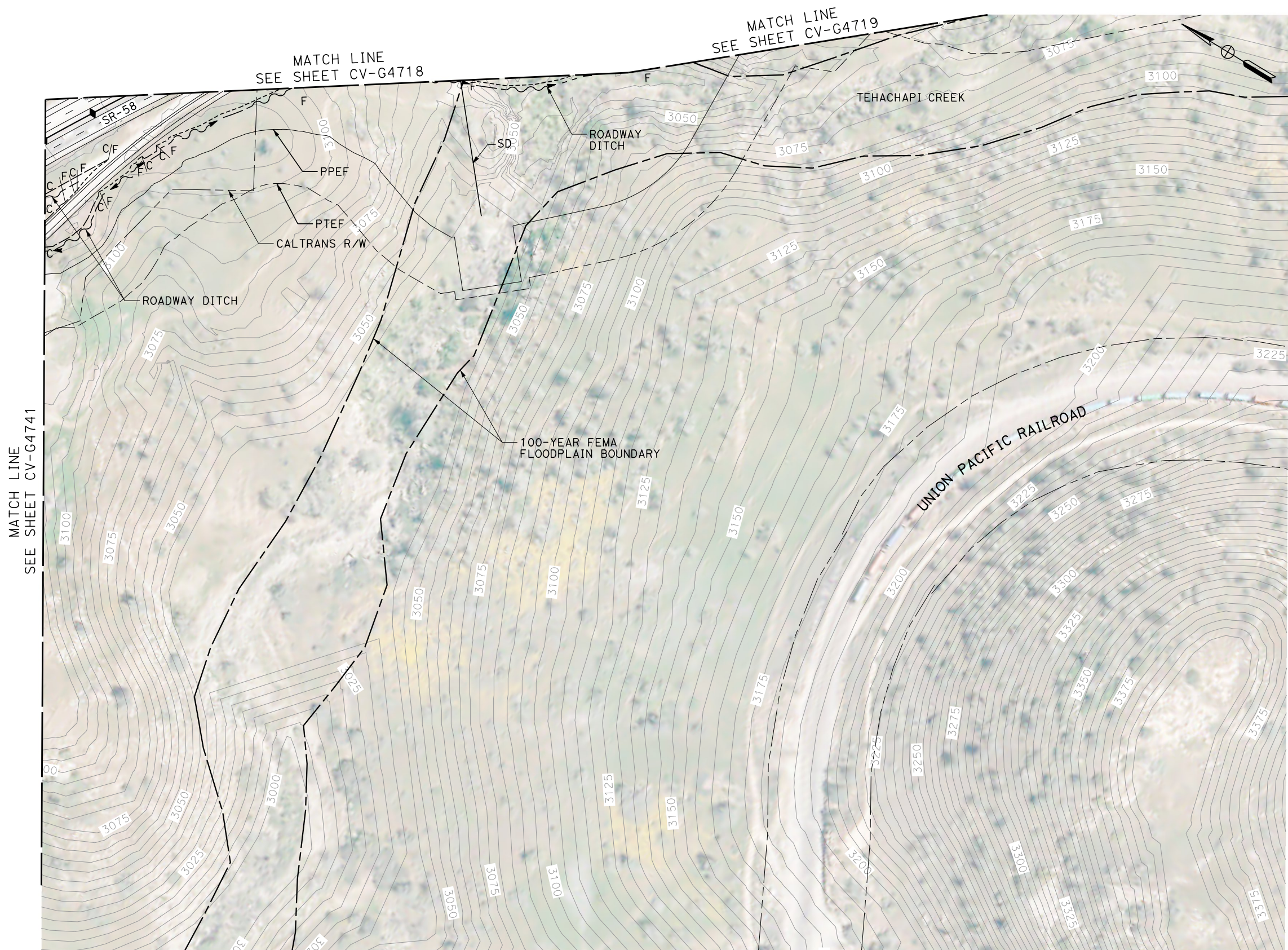
STA 18710+00 TO 18735+00

CONTRACT NO.
HSR13-44

DRAWING NO.
CV-G4741

SCALE
AS SHOWN

SHEET NO.
157



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD SET
 PEPD
 SUBMITTAL**

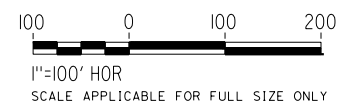
**NOT FOR
 CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
 BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 STA 18735+00 TO 18755+00

CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4742
 SCALE
AS SHOWN
 SHEET NO.
158

MATCH LINE
SEE SHEET CV-G4721



PLAN

Projects\701206.00_CHSRBP\00_CADD\CCNM Op\1ion D\Sheets\CV\G\BP-CV-G4743

1:20:41 AM

12/22/2020

Glenn.Yamanaka@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
DRAWN BY
A. RIVERA
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

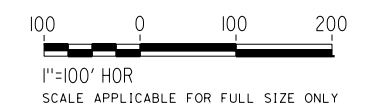
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
GRADING AND DRAINAGE
PLAN
STA 18795+00 TO 18820+00

CONTRACT NO.
HSR13-44
DRAWING NO.
CV-G4743
SCALE
AS SHOWN
SHEET NO.
159

Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\CV\G\BP-CV-G4744
 12/22/2020 1:21:59 AM



MATCH LINE
 SEE SHEET CV-G4722

PLAN

Glenn.Yamanaka@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD SET
 PEPD
 SUBMITTAL**

**NOT FOR
 CONSTRUCTION**

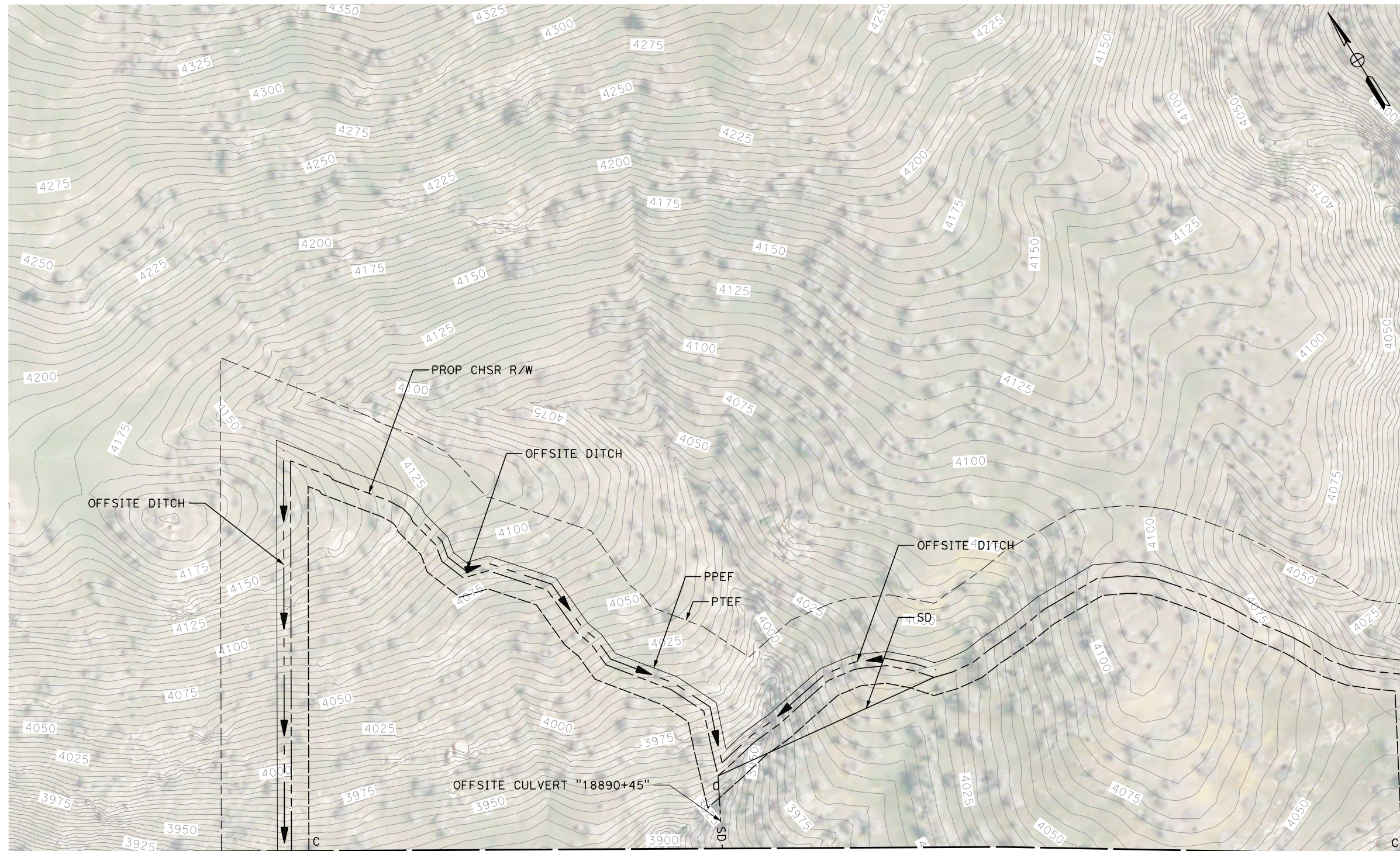


**CALIFORNIA HIGH-SPEED RAIL PROJECT
 BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 STA 18820+00 TO 18845+00

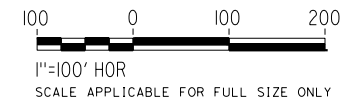
CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4744
 SCALE
AS SHOWN
 SHEET NO.
160

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option_D\Sheets\CV\G\BP-CV-G4745
 1:20:35 AM
 12/22/2020

Glenn.Yamanaka@tylin.com



MATCH LINE
SEE SHEET CV-G4746



MATCH LINE
SEE SHEET CV-G4724

MATCH LINE
SEE SHEET CV-G4725

PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

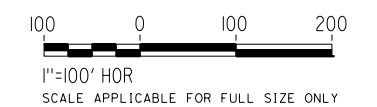
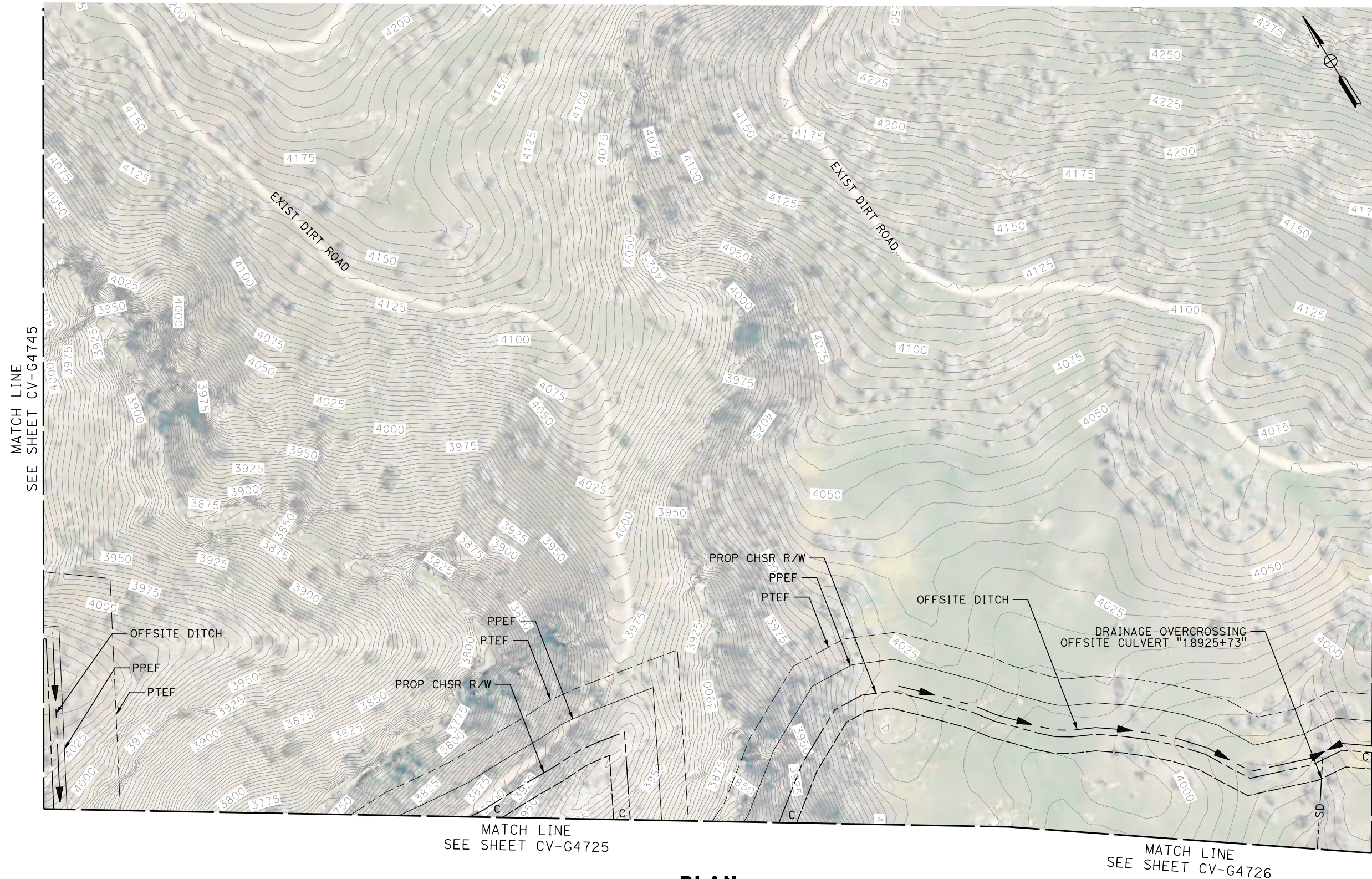
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
 BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 STA 18875+00 TO 18905+00

CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4745
 SCALE
AS SHOWN
 SHEET NO.
161

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\CV\G\BP-CV-G4746
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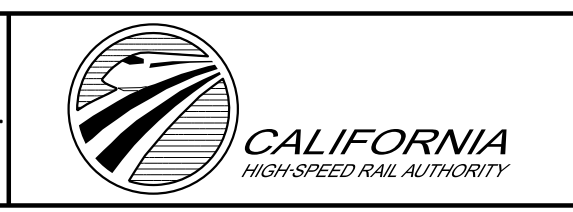
PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
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G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD SET
 PEPD
 SUBMITTAL**

**NOT FOR
 CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
 BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 STA 18905+00 TO 18930+00

CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4746
 SCALE
AS SHOWN
 SHEET NO.
162



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
DRAWN BY
A. RIVERA
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

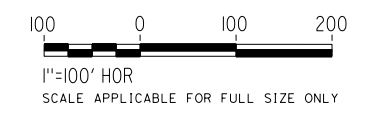
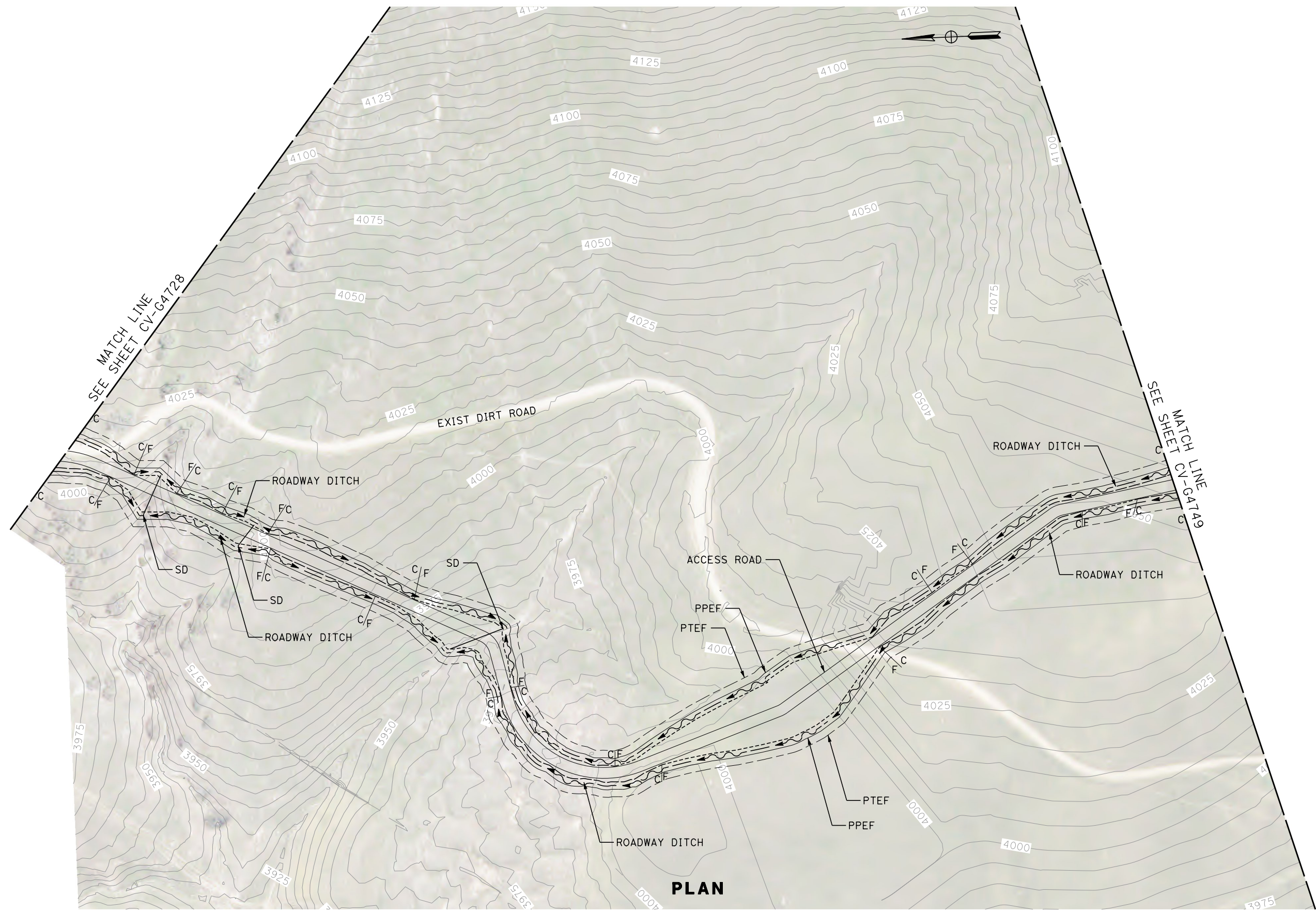
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
GRADING AND DRAINAGE
PLAN
STA 18930+00 TO 18944+00

CONTRACT NO.
HSR13-44
DRAWING NO.
CV-G4747
SCALE
AS SHOWN
SHEET NO.
163

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option_D\Sheets\CV\G\BP-CV-G4748
 12/22/2020 1:21:03 AM Glenn.Yamanaka@tylin.com



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

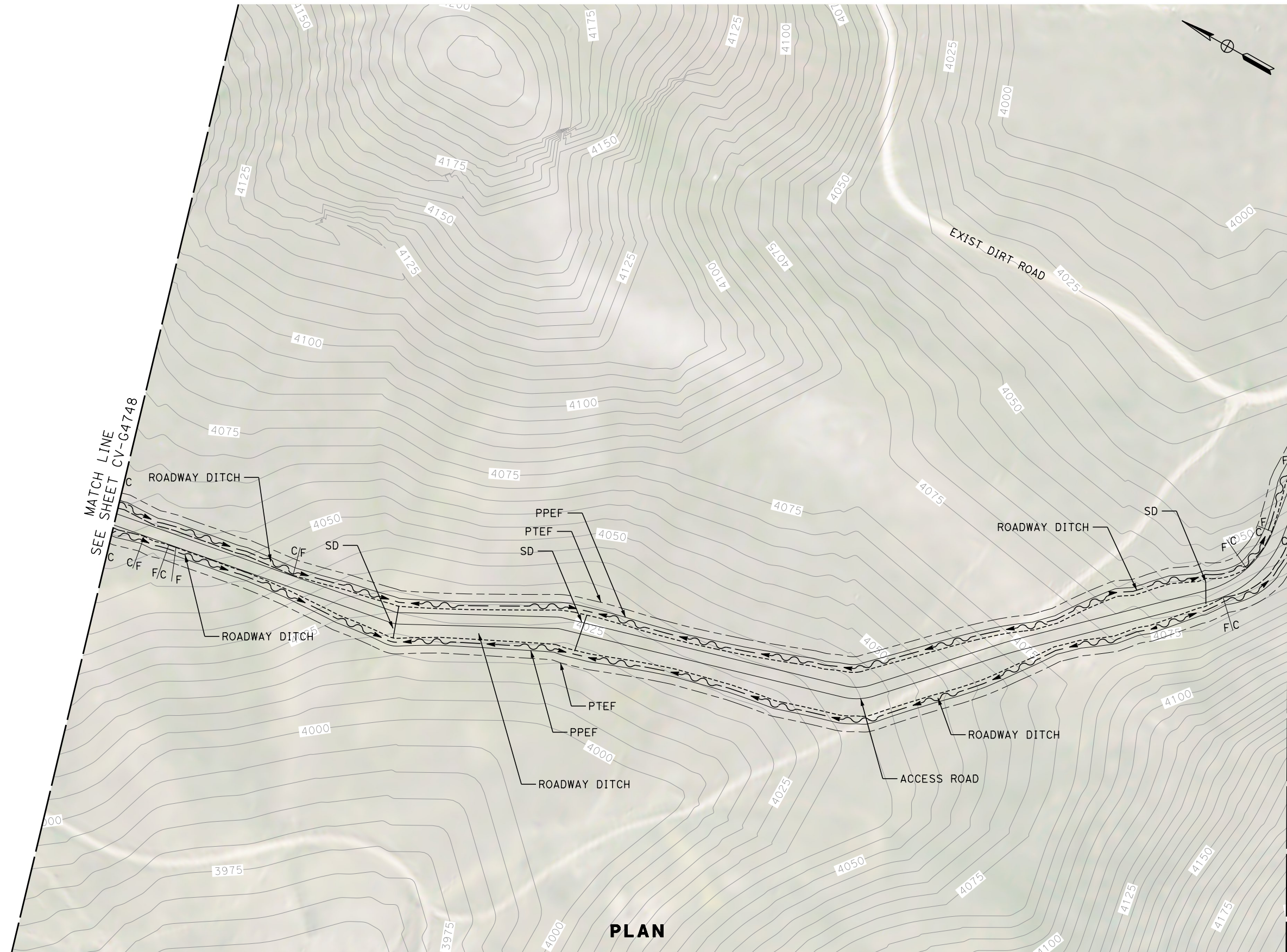
RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION

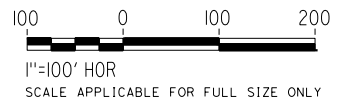


CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 ACCESS ROAD STA 18920+00

CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4748
 SCALE
AS SHOWN
 SHEET NO.
164



PLAN



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
DRAWN BY
A. RIVERA
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

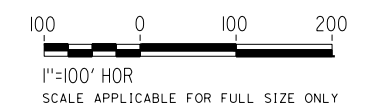
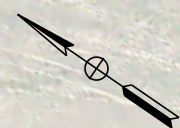
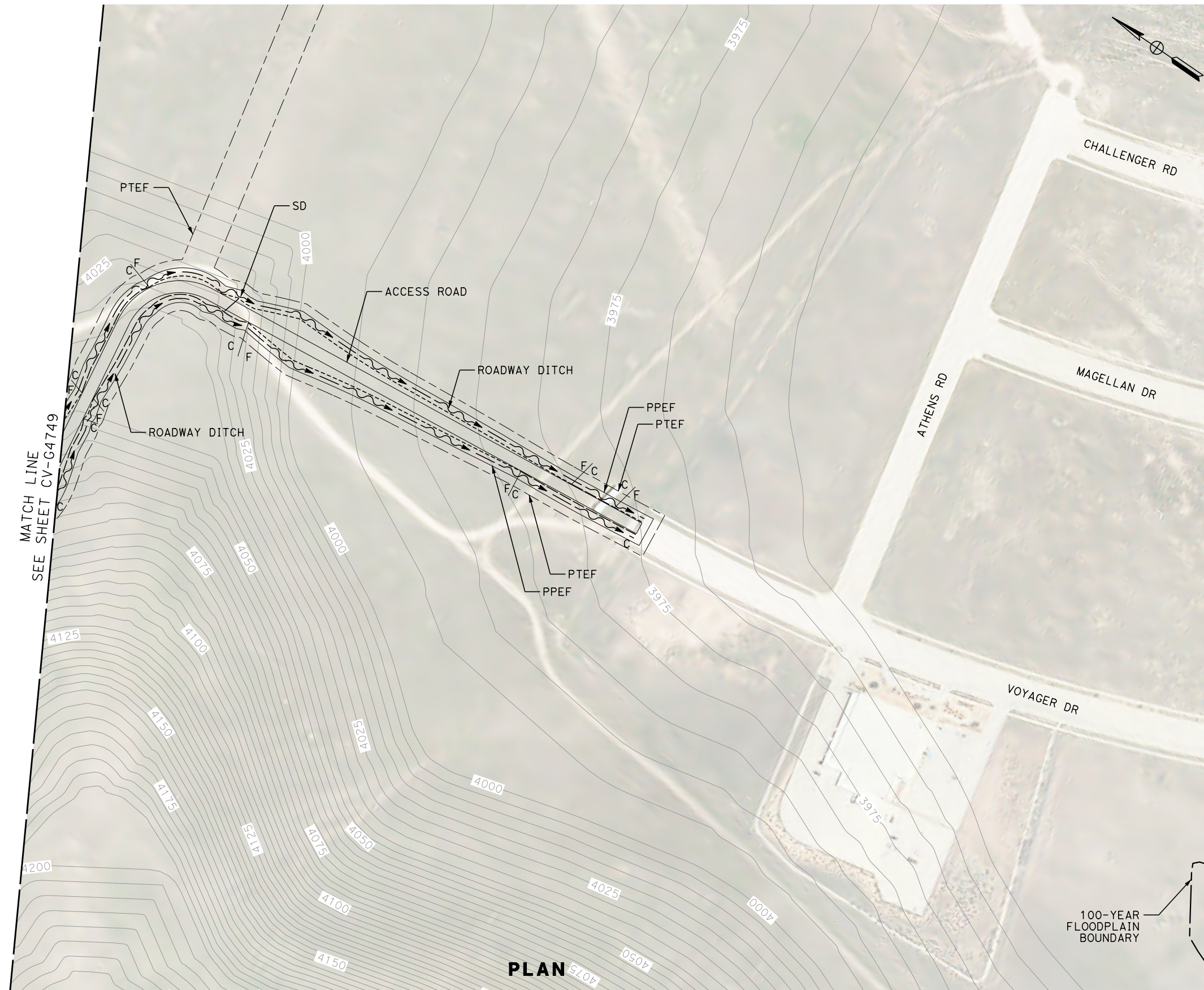
**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
GRADING AND DRAINAGE
PLAN
ACCESS ROAD STA 18920+00

CONTRACT NO.
HSR13-44
DRAWING NO.
CV-G4749
SCALE
AS SHOWN
SHEET NO.
165



100-YEAR FLOODPLAIN BOUNDARY

PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
DRAWN BY
A. RIVERA
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

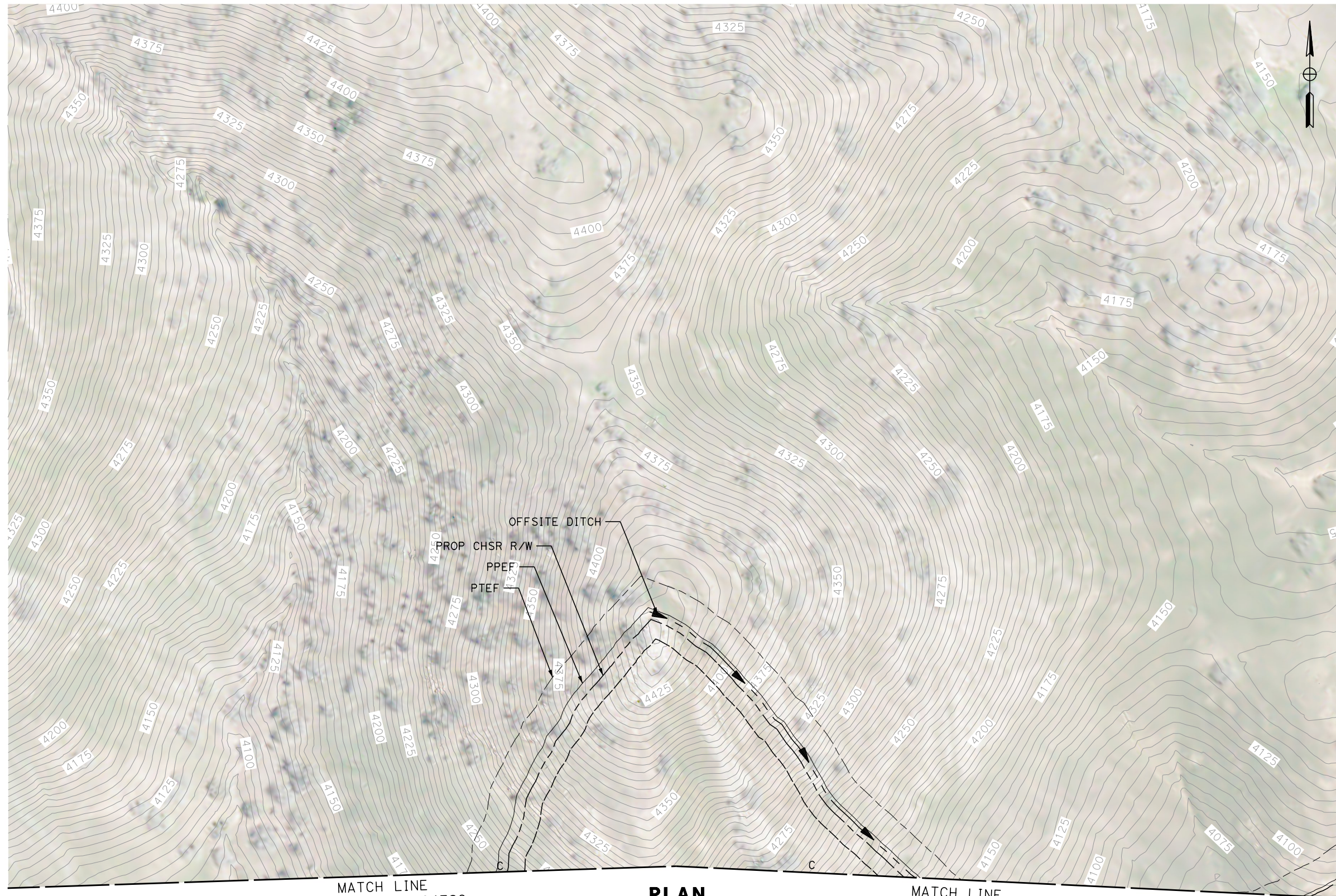


**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
GRADING AND DRAINAGE
PLAN
ACCESS ROAD STA 18920+00

CONTRACT NO.
HSR13-44
DRAWING NO.
CV-G4750
SCALE
AS SHOWN
SHEET NO.
166

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\CV\G\BP-CV-G4751
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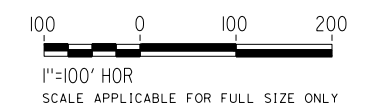
Glenn.Yamanaka@tylin.com



MATCH LINE
SEE SHEET CV-G4729

PLAN

MATCH LINE
SEE SHEET CV-G4730



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
G. YAMANAKA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD SET
 PEPD
 SUBMITTAL**

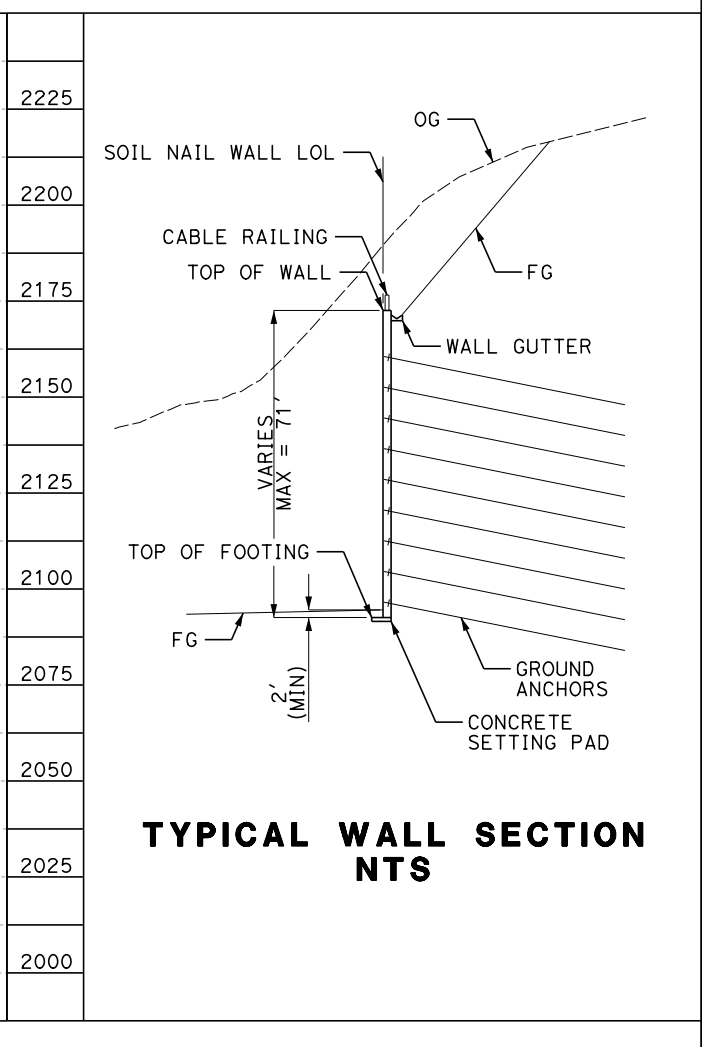
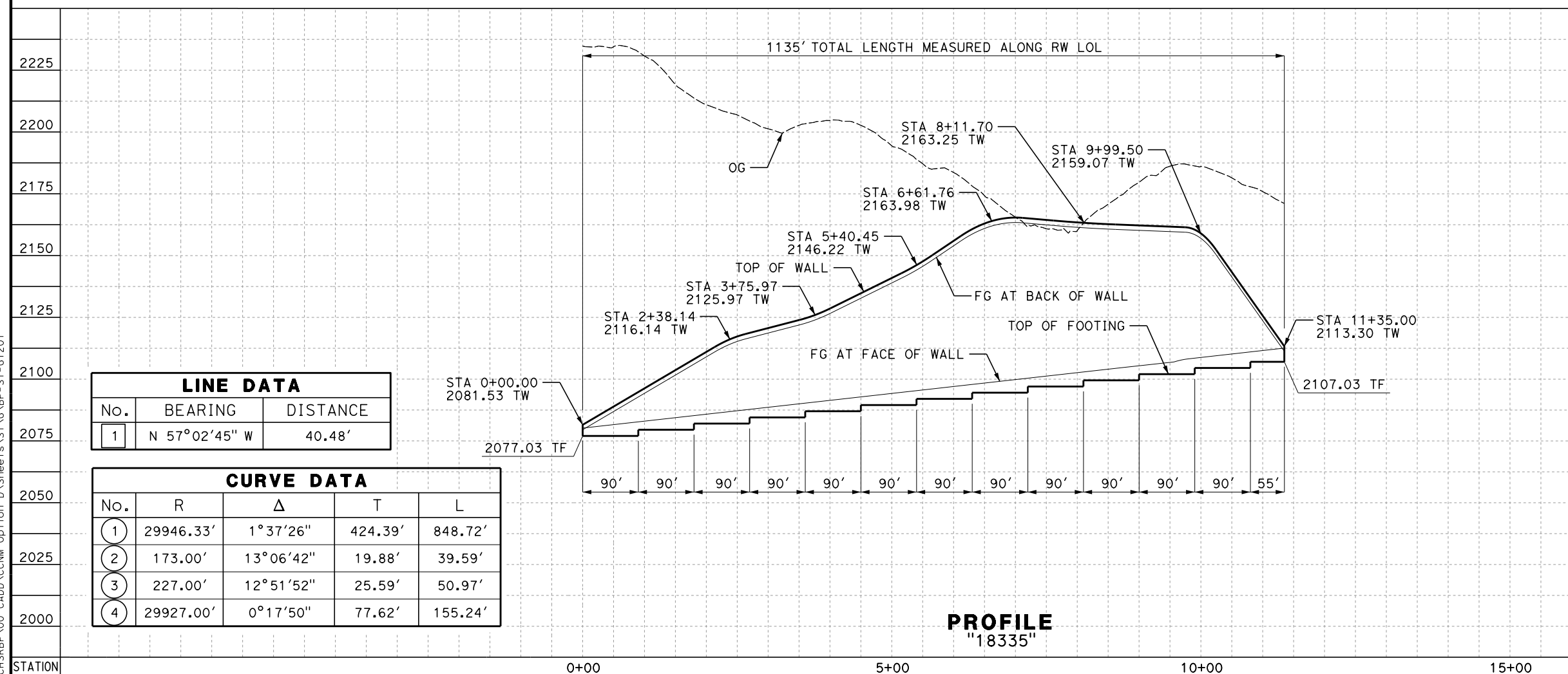
**NOT FOR
 CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
 BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 GRADING AND DRAINAGE
 PLAN
 STA 19015+00 TO 19025+00

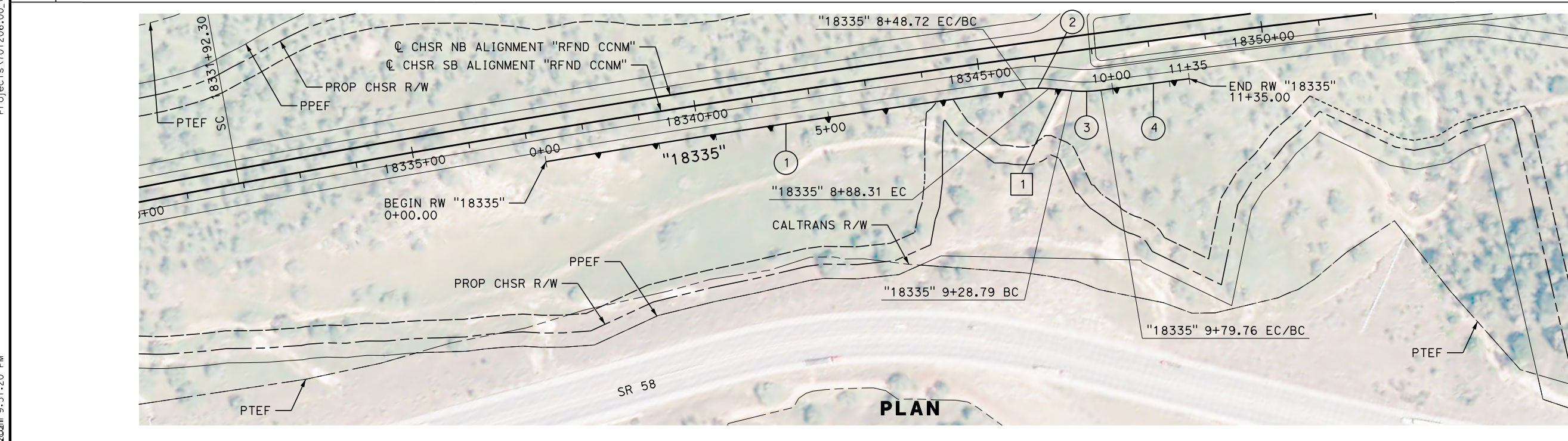
CONTRACT NO.
HSR13-44
 DRAWING NO.
CV-G4751
 SCALE
AS SHOWN
 SHEET NO.
167

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option_D\Sheets\ST\NG\BP-ST-G1201
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PROFILE
"18335"

TYPICAL WALL SECTION
NTS



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. RIVERA
 DRAWN BY
A. RIVERA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

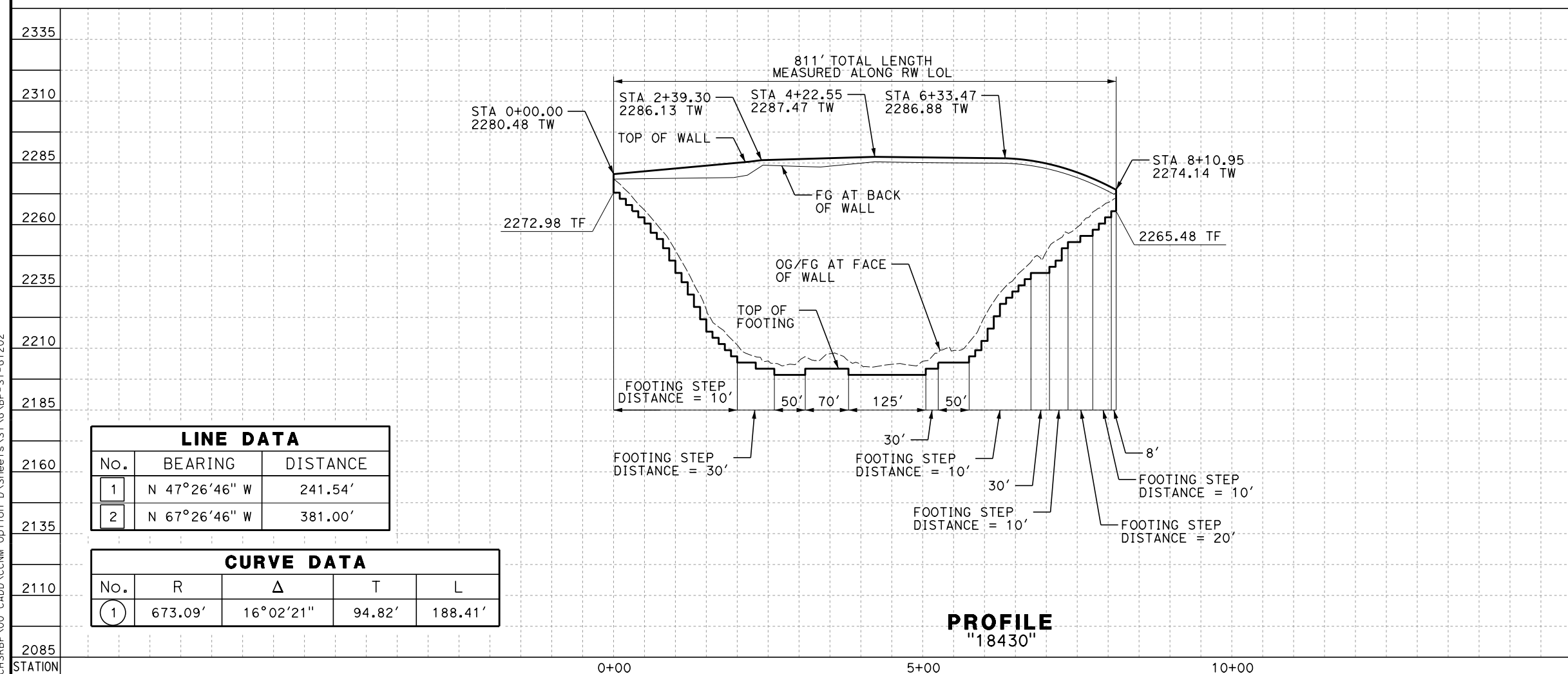
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 RETAINING WALL
 18335
 PLAN AND PROFILE

CONTRACT NO.
HSR13-44
 DRAWING NO.
ST-G1201
 SCALE
AS SHOWN
 SHEET NO.
168

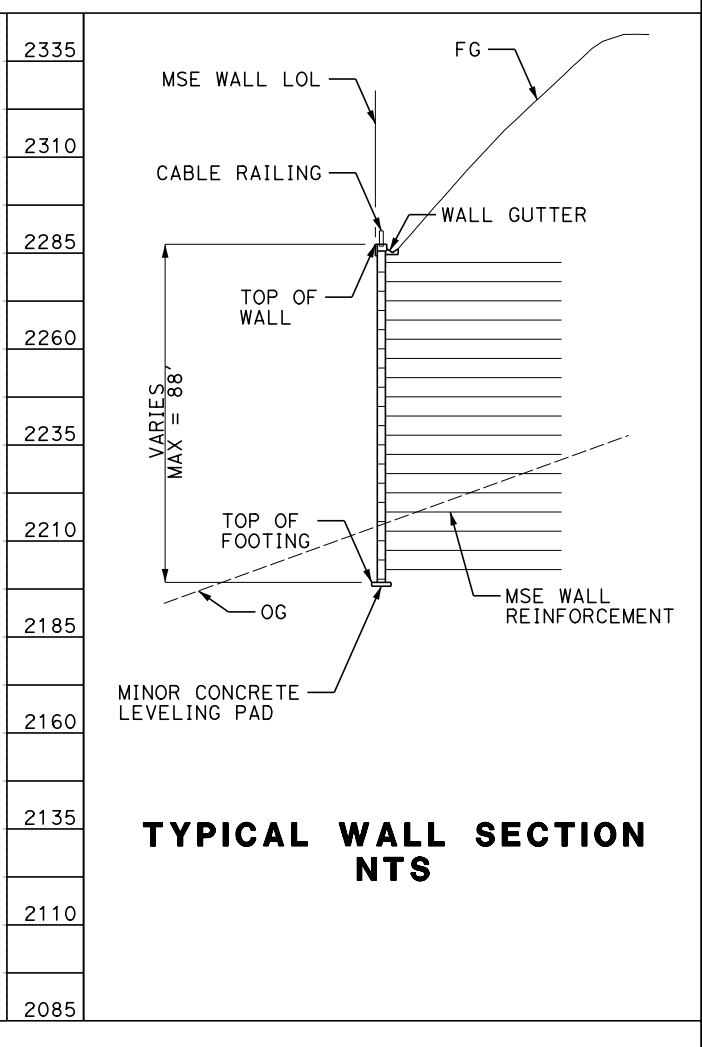
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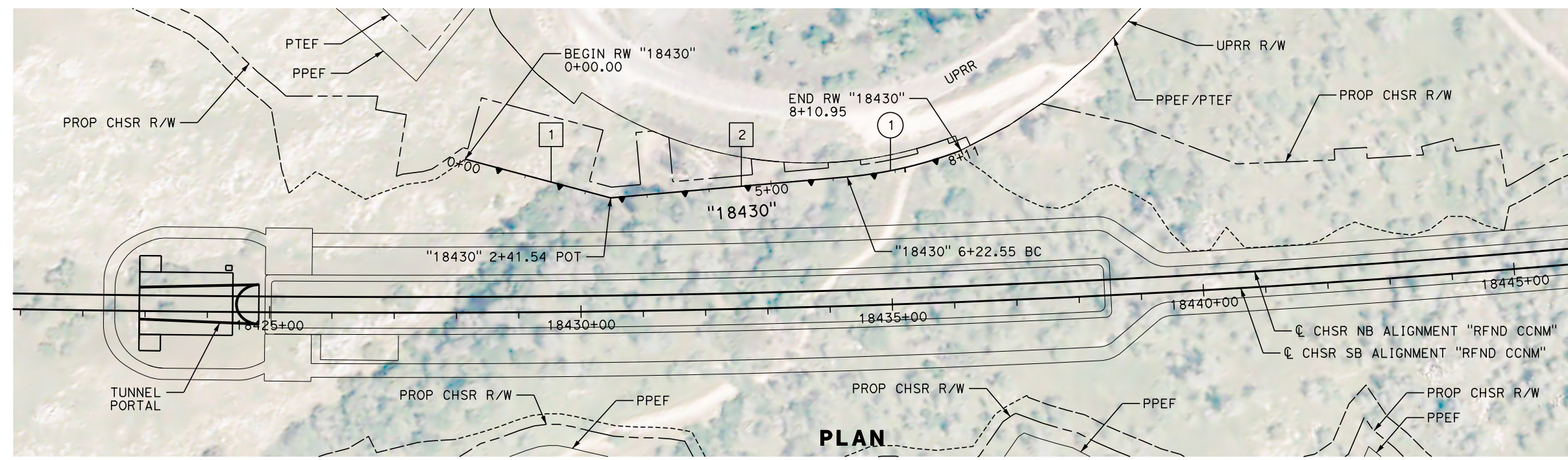
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No.	BEARING	DISTANCE
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CURVE DATA				
No.	R	Δ	T	L
1	673.09'	16°02'21"	94.82'	188.41'

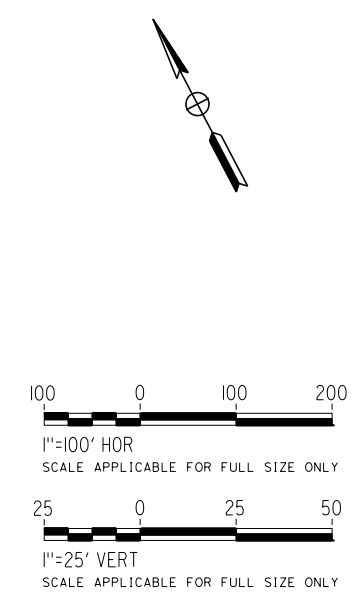
PROFILE
"18430"



TYPICAL WALL SECTION
NTS



PLAN



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. BAKER
DRAWN BY
K. BAKER
CHECKED BY
G. CAMPBELL
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

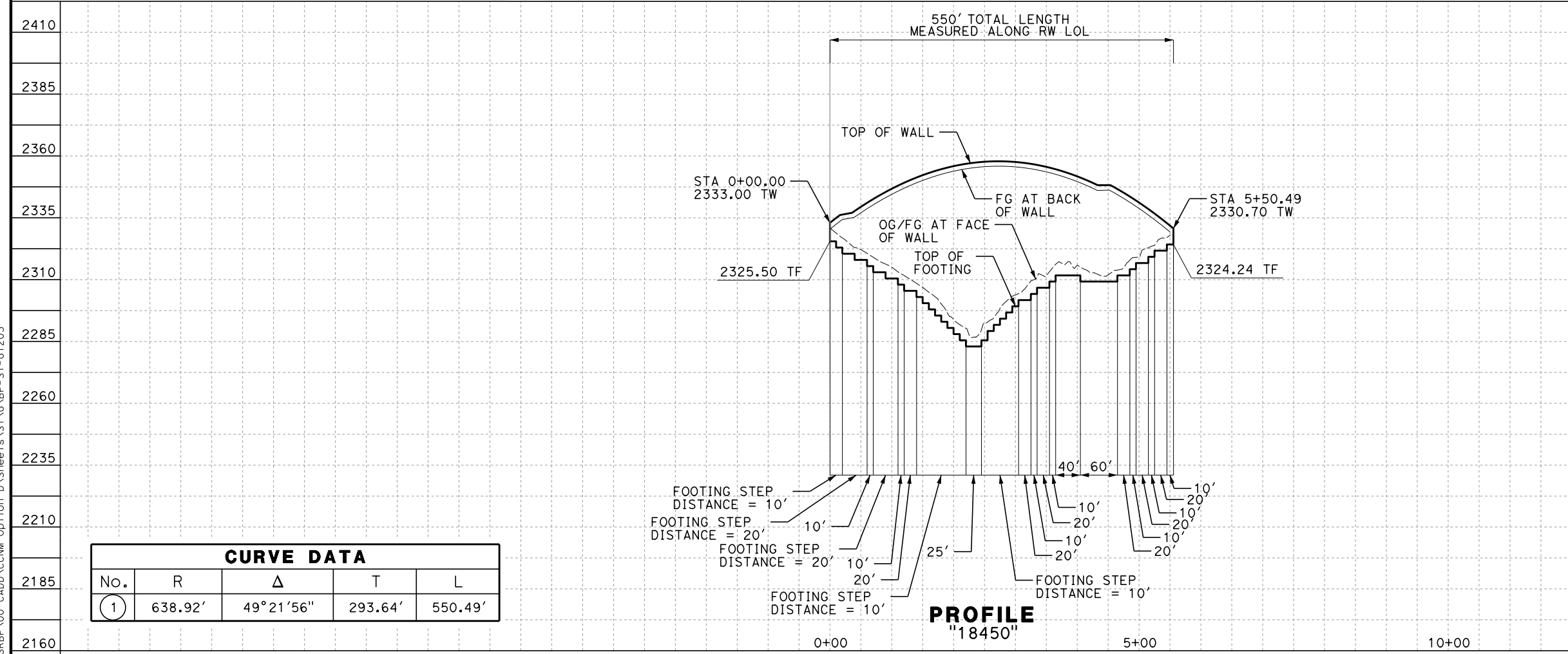
NOT FOR
CONSTRUCTION



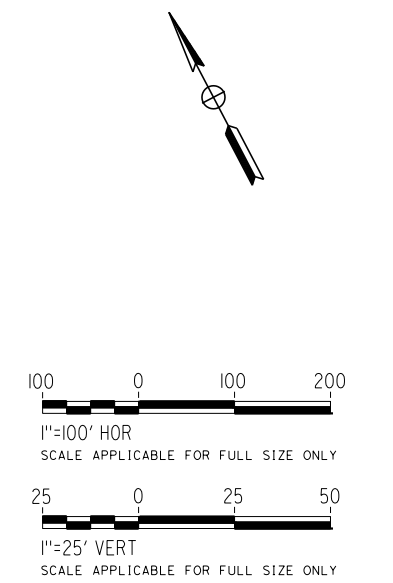
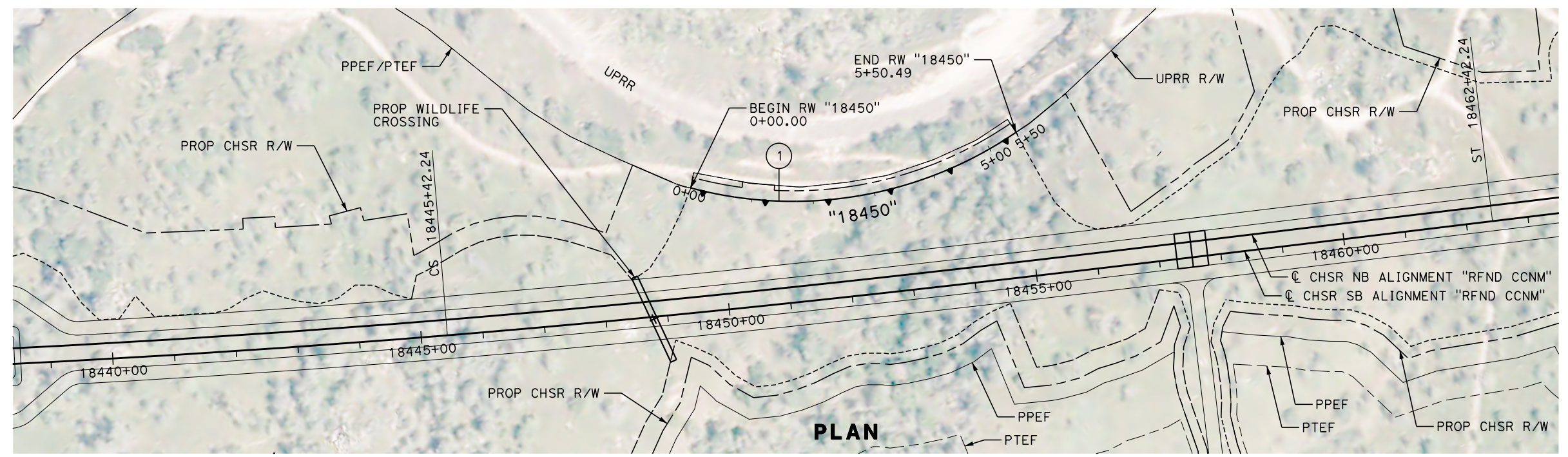
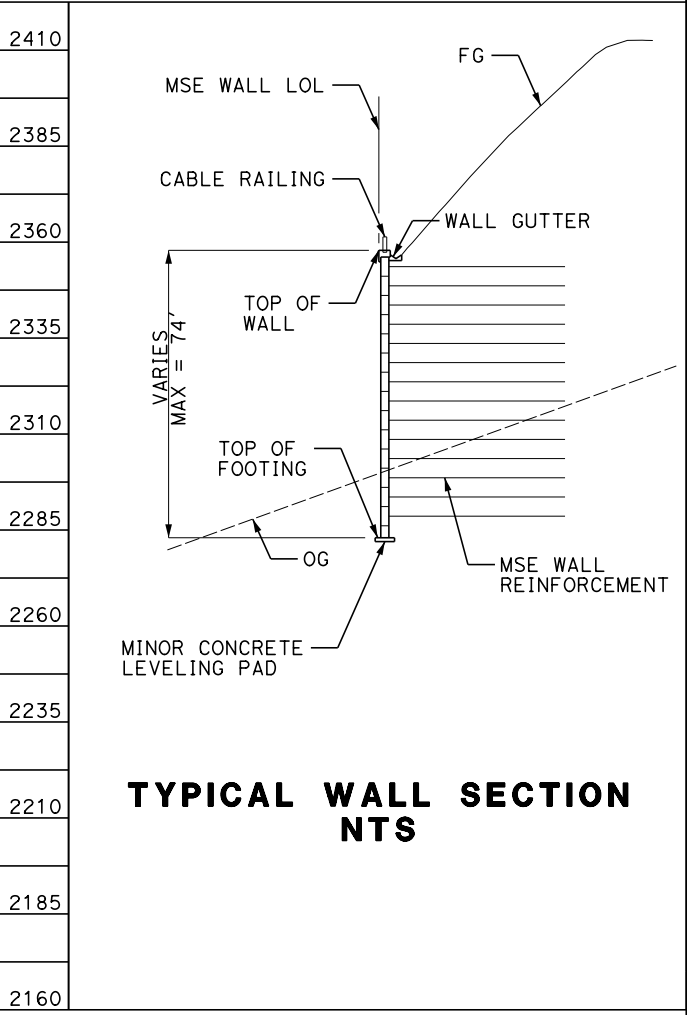
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
RETAINING WALL
18430
PLAN AND PROFILE

CONTRACT NO.
HSR13-44
DRAWING NO.
ST-G1202
SCALE
AS SHOWN
SHEET NO.
169

Projects\701206.00_CHSRBP_V00_CADD\CCNM_Option_D\Sheets\ST\NG\BP-ST-G1203
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CURVE DATA				
No.	R	Δ	T	L
1	638.92'	49°21'56"	293.64'	550.49'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. BAKER
 DRAWN BY
K. BAKER
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

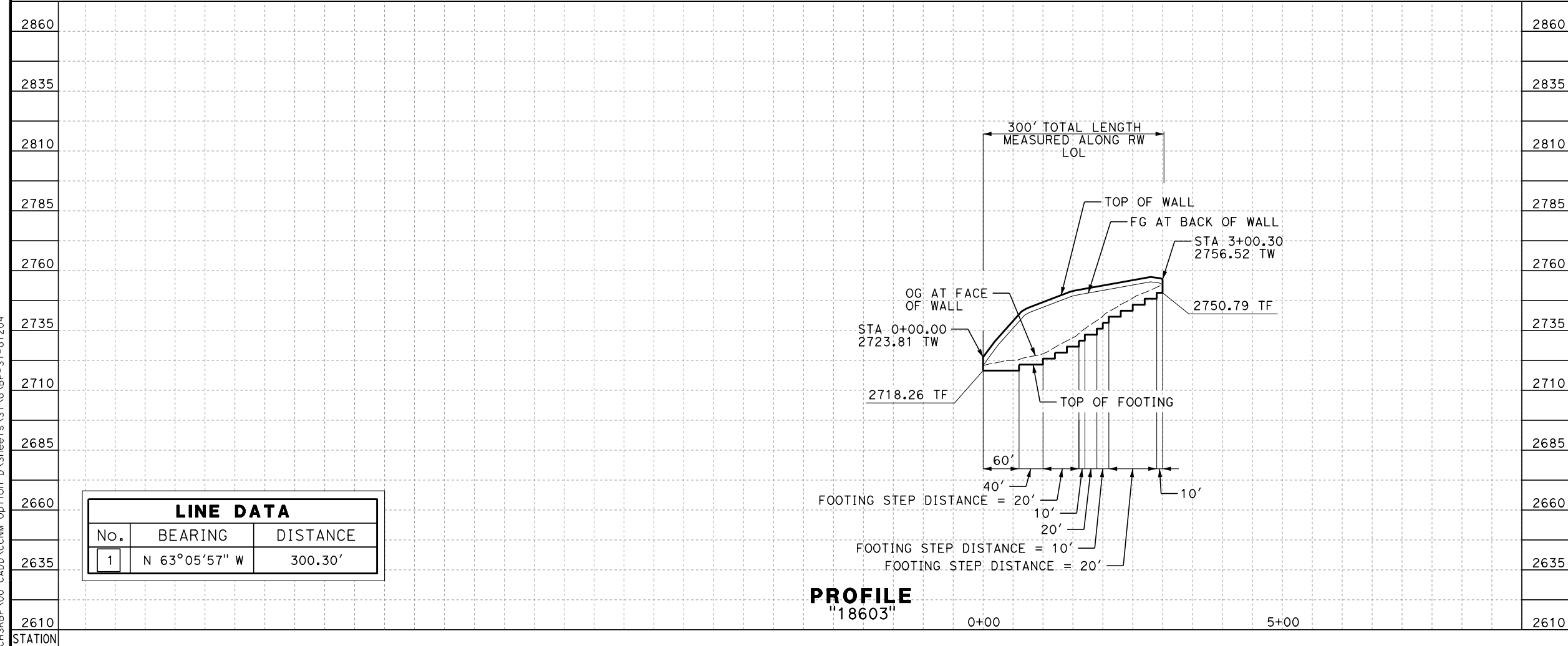
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 RETAINING WALL
 18450
 PLAN AND PROFILE

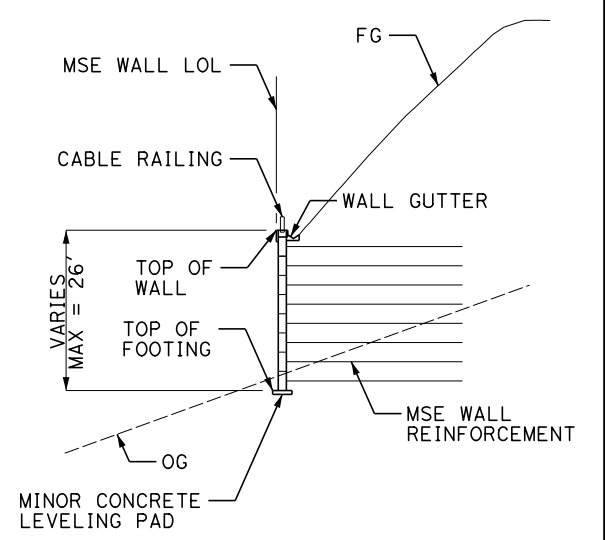
CONTRACT NO.
 HSR13-44
 DRAWING NO.
 ST-G1203
 SCALE
 AS SHOWN
 SHEET NO.
 170

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option_D\Sheets\ST\G\BP-ST-G1204
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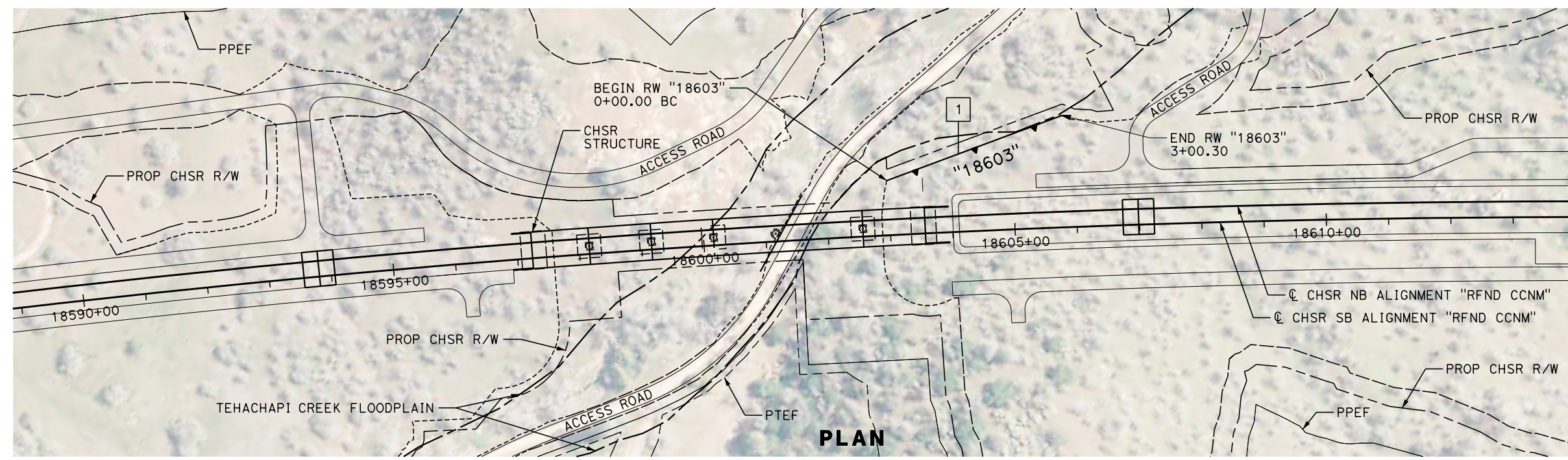


LINE DATA		
No.	BEARING	DISTANCE
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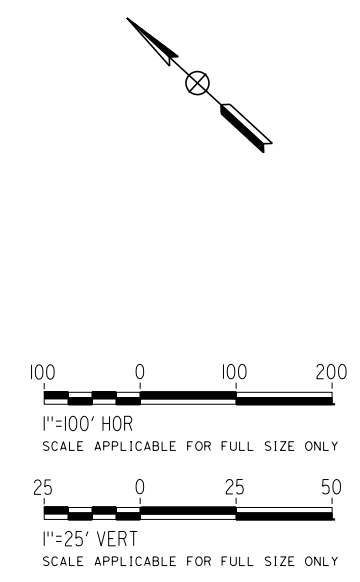
PROFILE
"18603"



TYPICAL WALL SECTION
NTS



PLAN



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. BAKER
 DRAWN BY
K. BAKER
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

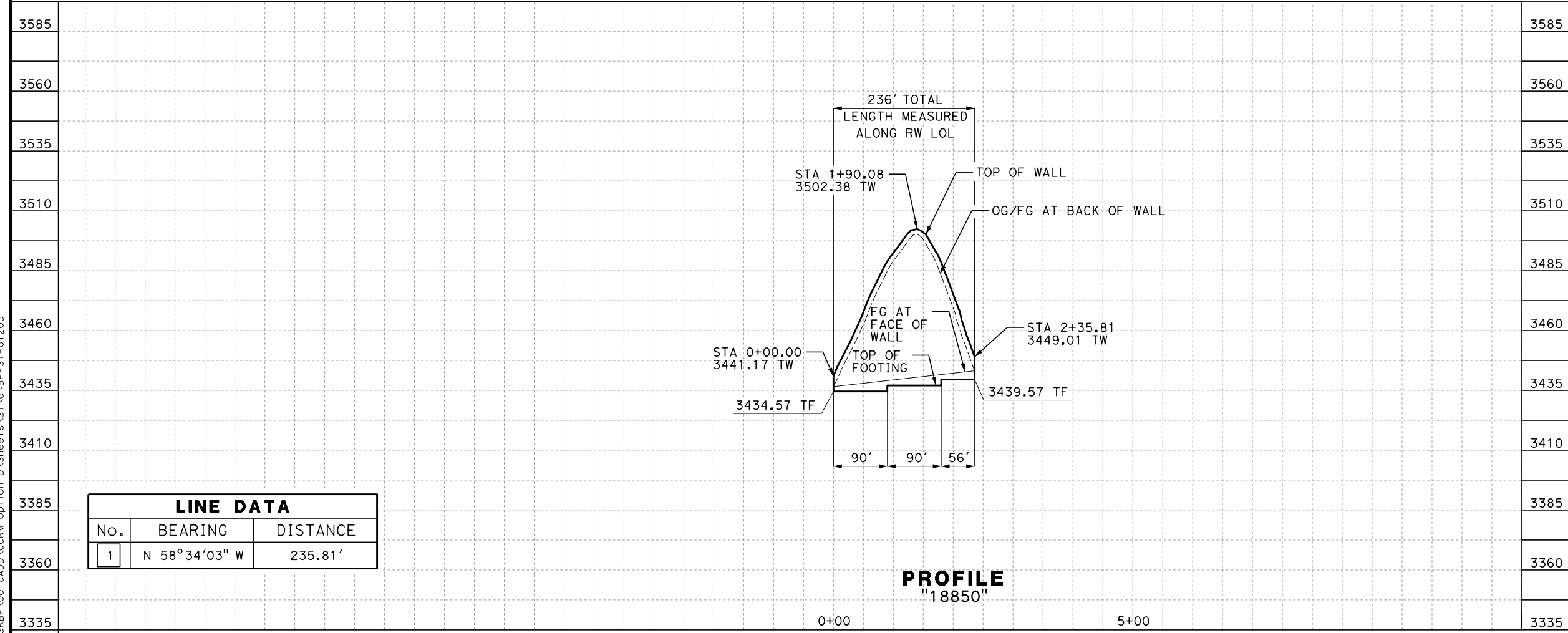
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 RETAINING WALL
 18603
 PLAN AND PROFILE

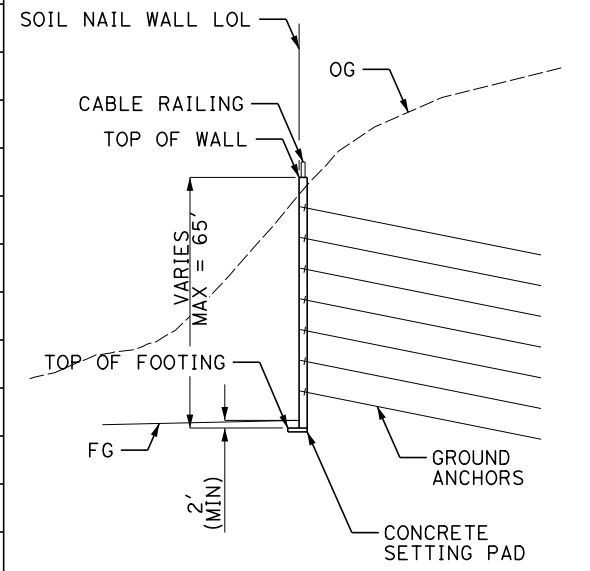
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HSR13-44
 DRAWING NO.
ST-G1204
 SCALE
AS SHOWN
 SHEET NO.
171

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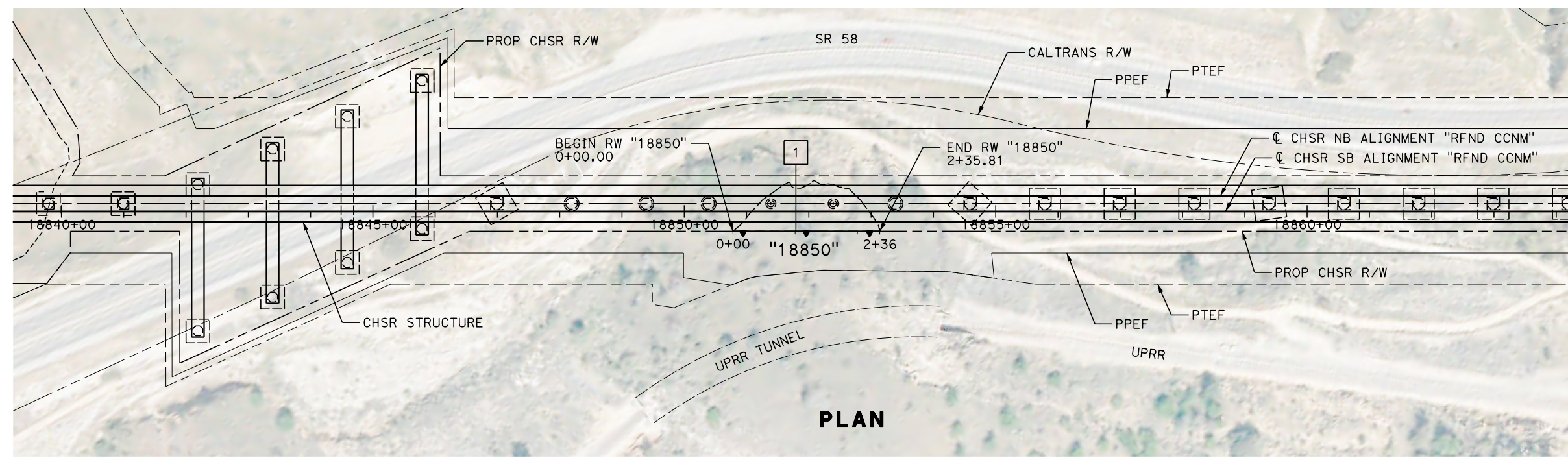


LINE DATA		
No.	BEARING	DISTANCE
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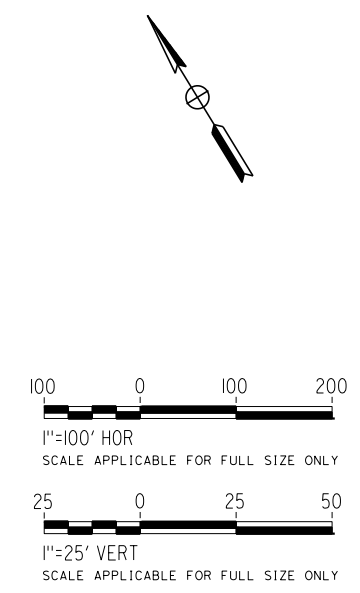
PROFILE
"18850"



TYPICAL WALL SECTION
NTS



PLAN



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. BAKER
 DRAWN BY
K. BAKER
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

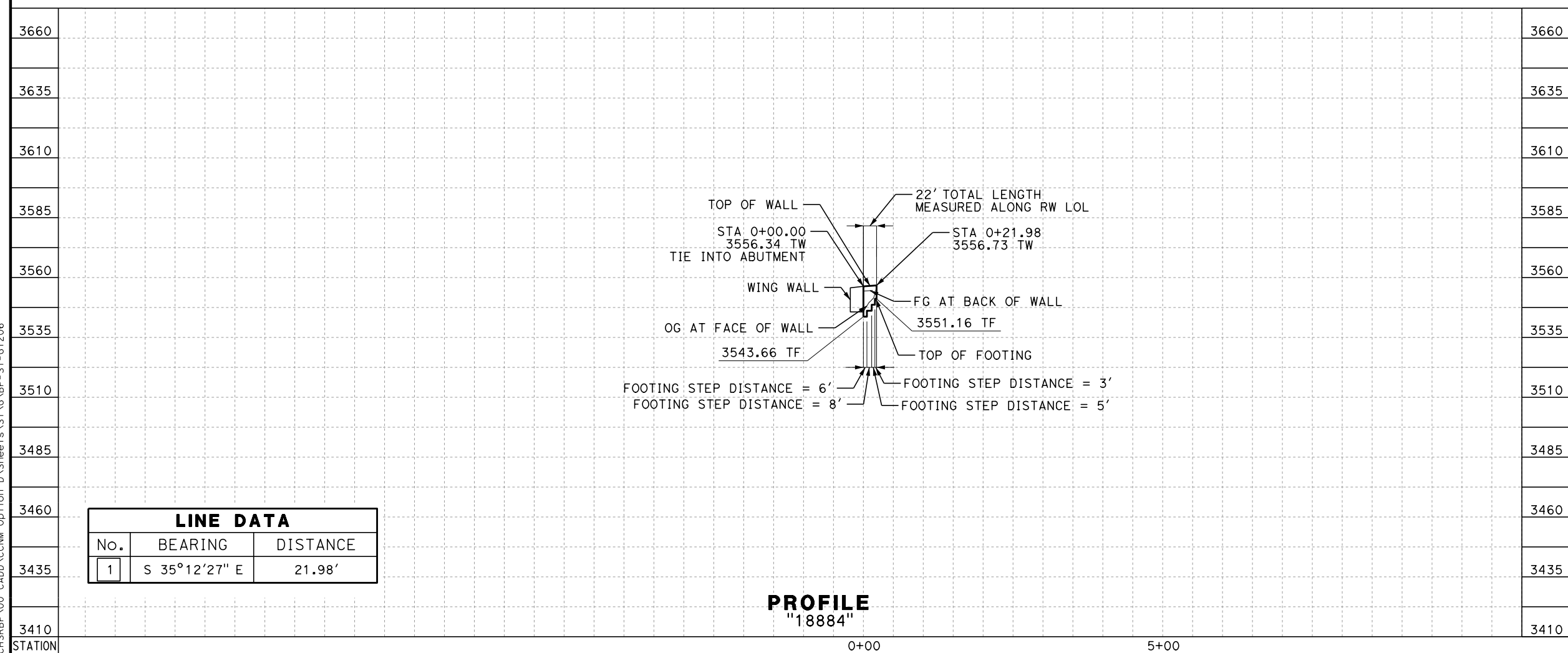
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 RETAINING WALL
 18850
 PLAN AND PROFILE

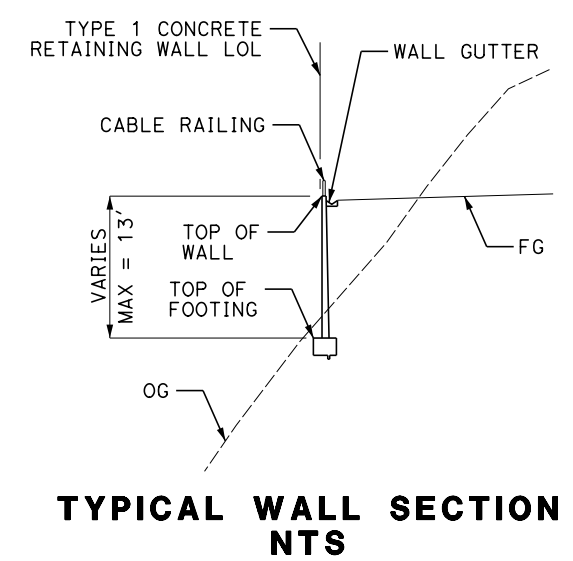
CONTRACT NO.
HSR13-44
 DRAWING NO.
ST-G1205
 SCALE
AS SHOWN
 SHEET NO.
172

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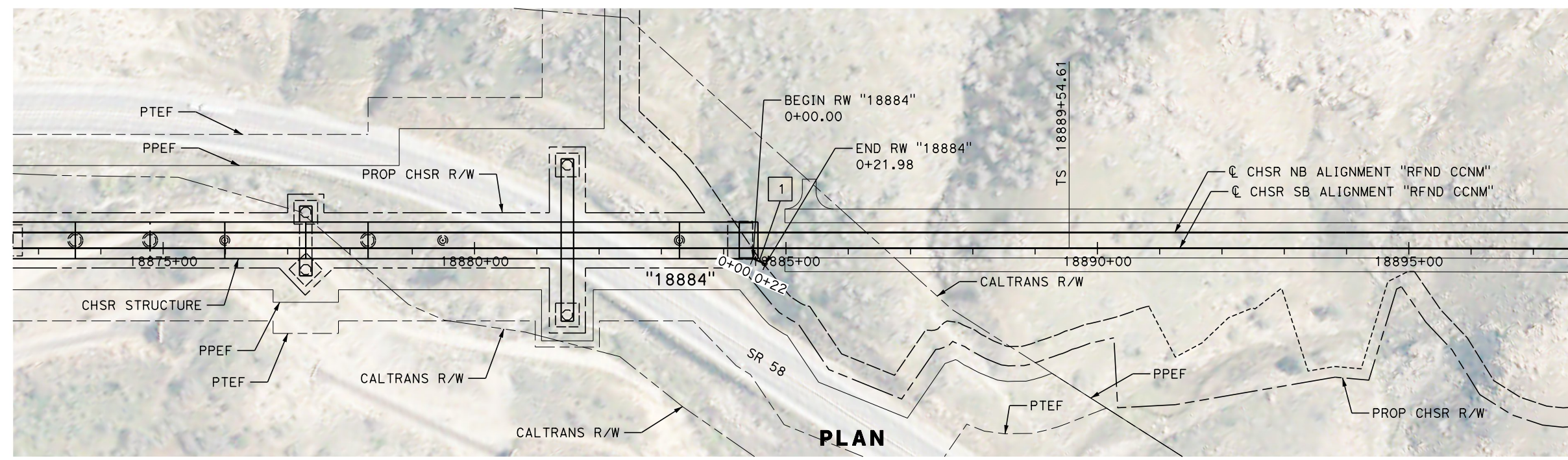


LINE DATA		
No.	BEARING	DISTANCE
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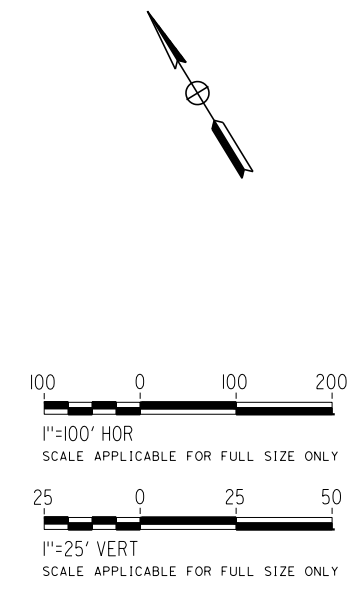
PROFILE
"18884"



TYPICAL WALL SECTION
NTS



PLAN



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. BAKER
 DRAWN BY
R. GARCIA
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

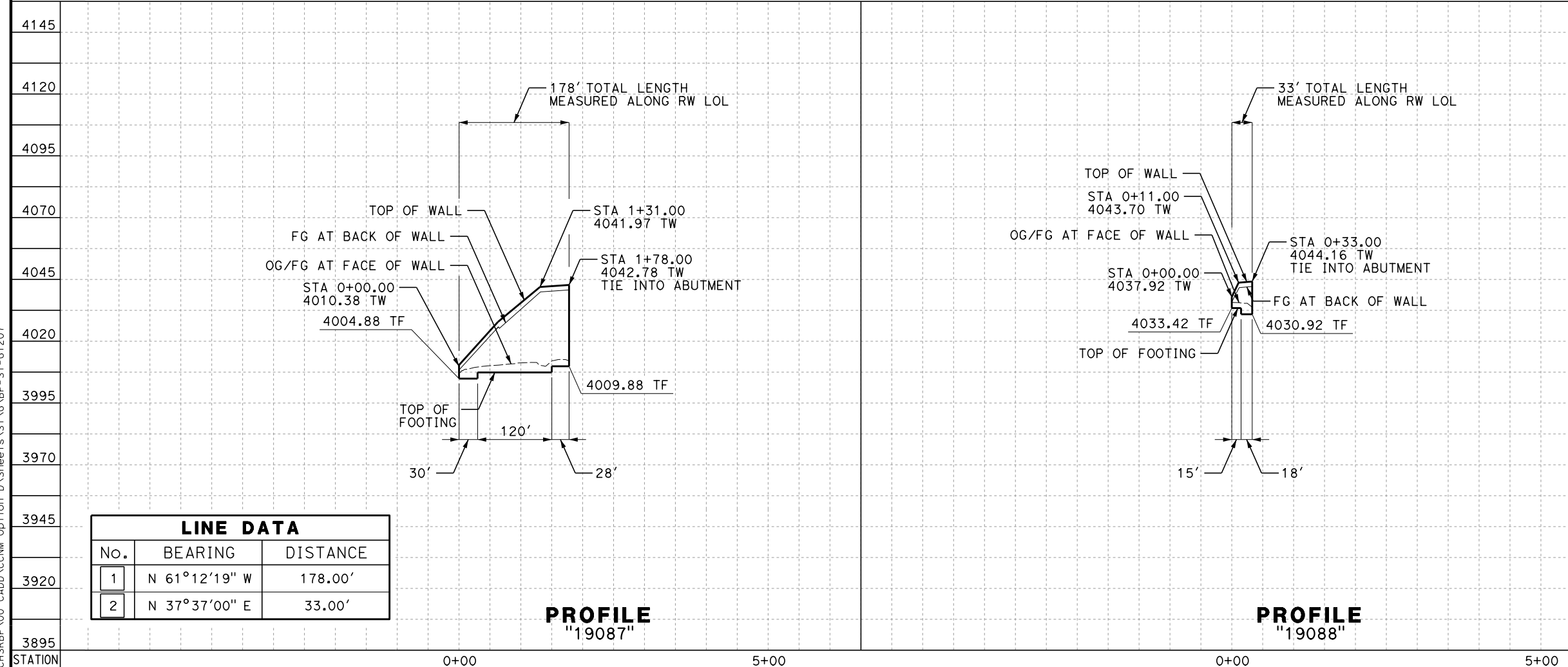
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 RETAINING WALL
 18884
 PLAN AND PROFILE

CONTRACT NO.
HSR13-44
 DRAWING NO.
ST-G1206
 SCALE
AS SHOWN
 SHEET NO.
173

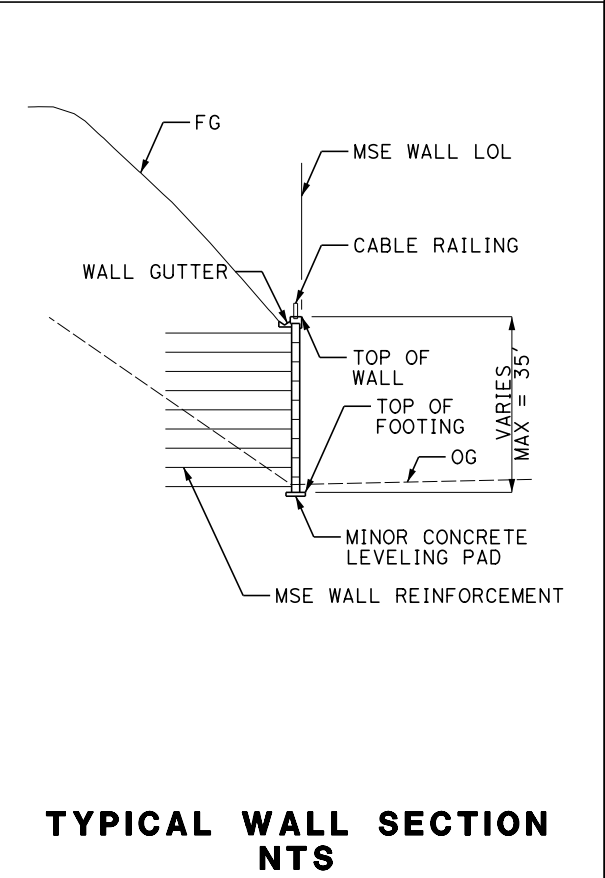
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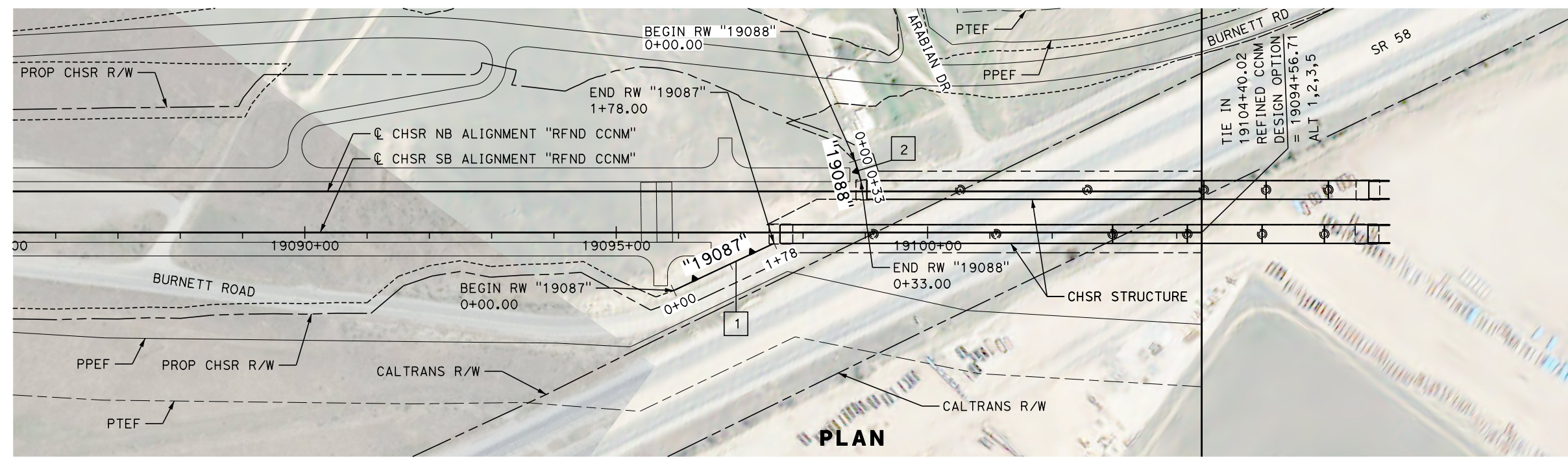
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No.	BEARING	DISTANCE
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2	N 37°37'00" E	33.00'

PROFILE
"19087"

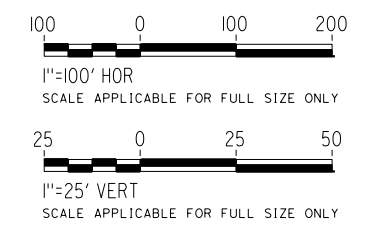
PROFILE
"19088"



TYPICAL WALL SECTION
NTS



PLAN



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
K. BAKER
 DRAWN BY
K. BAKER
 CHECKED BY
G. CAMPBELL
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 RETAINING WALL
 19087" AND "19088
 PLAN AND PROFILE

CONTRACT NO.
HSR13-44
 DRAWING NO.
ST-G1207
 SCALE
AS SHOWN
 SHEET NO.
174

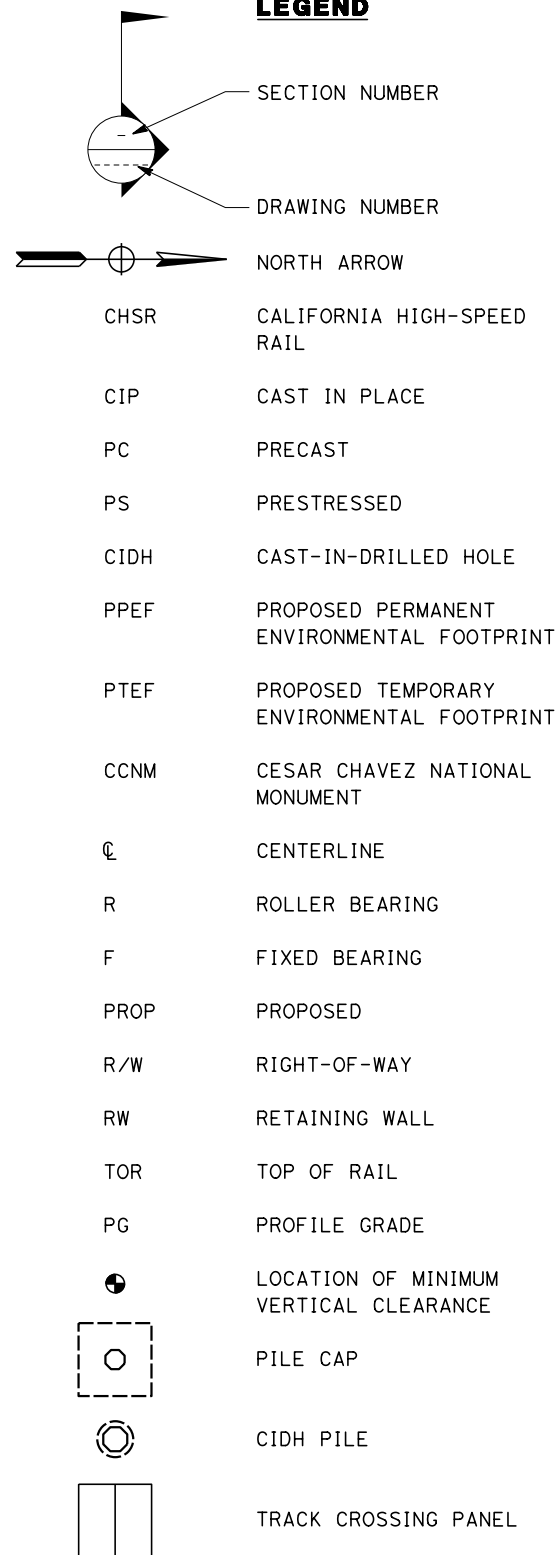
Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-B0101

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LEGEND



- ① CONCRETE BARRIER INTRUSION PROTECTION
- ② PROPOSED RETAINING WALL
- RFND = REFINED
- OG ORIGINAL GROUND
- FG FINISHED GRADE
- ∨ TOP OR TOE OF SLOPE
- ▾ RETAINING WALL
- W-- WATERLINE

GENERAL NOTES

- A. UTILITY LOCATIONS TO BE DETERMINED.
- B. FOR DETAILS NOT NOTED ON PLAN AND ELEVATION SHEETS, SEE TYPICAL SECTION SHEETS FOR TRACK STRUCTURES.
- C. GRADE ELEVATIONS SHOWN ARE AT TOP OF RAIL.
- D. ALL COLUMNS ARE NORMAL TO THE STATION LINE UNLESS OTHERWISE SHOWN.
- E. REFER TO TRACK ALIGNMENT DRAWINGS FOR CURVE AND TANGENT INFORMATION.
- F. NOT ALL PILES ARE SHOWN.
- G. PILE SIZES AND LENGTHS TO BE DETERMINED.
- H. SUPERSTRUCTURE CONSISTS OF PRECAST CONCRETE GIRDERS UNLESS OTHERWISE NOTED.
- I. BEARINGS ARTICULATION FOR PC GIRDER SPANS ARE FIXED-ROLLER AT OPPOSING SPAN ENDS UNLESS OTHERWISE NOTED.
- J. REFER TO TRACK ALIGNMENT DRAWINGS FOR LIMITS OF RETAINING WALLS, UNLESS OTHERWISE SHOWN.
- K. PROPOSED 4" CHSR FIRE WATER PIPELINE ROUTES THROUGH STRUCTURES FROM STATION 18035+00 TO STA 19590+00.
- L. PROPOSED CHSR ELECTRIC POWER CONDUIT ROUTES THROUGH STRUCTURES FROM STATION 18035+00 TO STA 19590+00.

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

DRAWN BY
Y. WANG

CHECKED BY
R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
GENERAL NOTES AND LEGEND

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-B0101

SCALE
NO SCALE

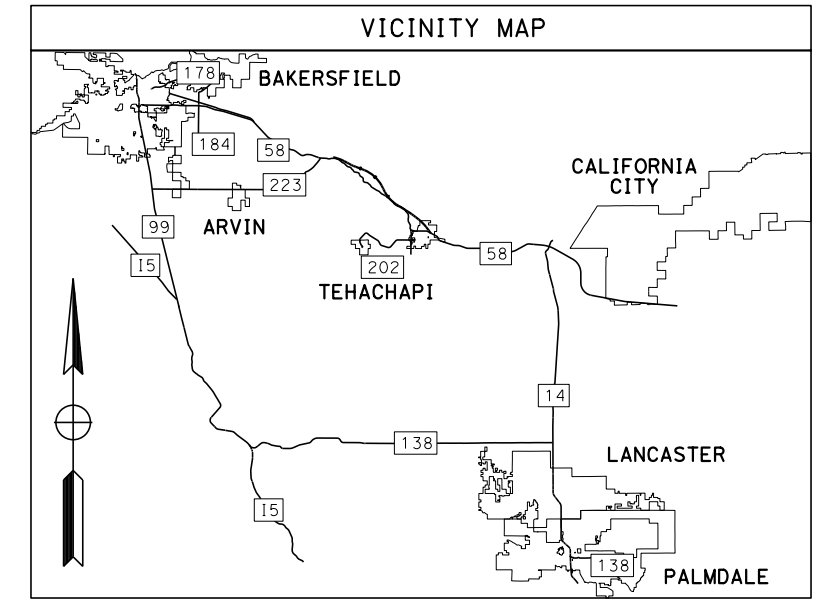
SHEET NO.
175

Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-B0102

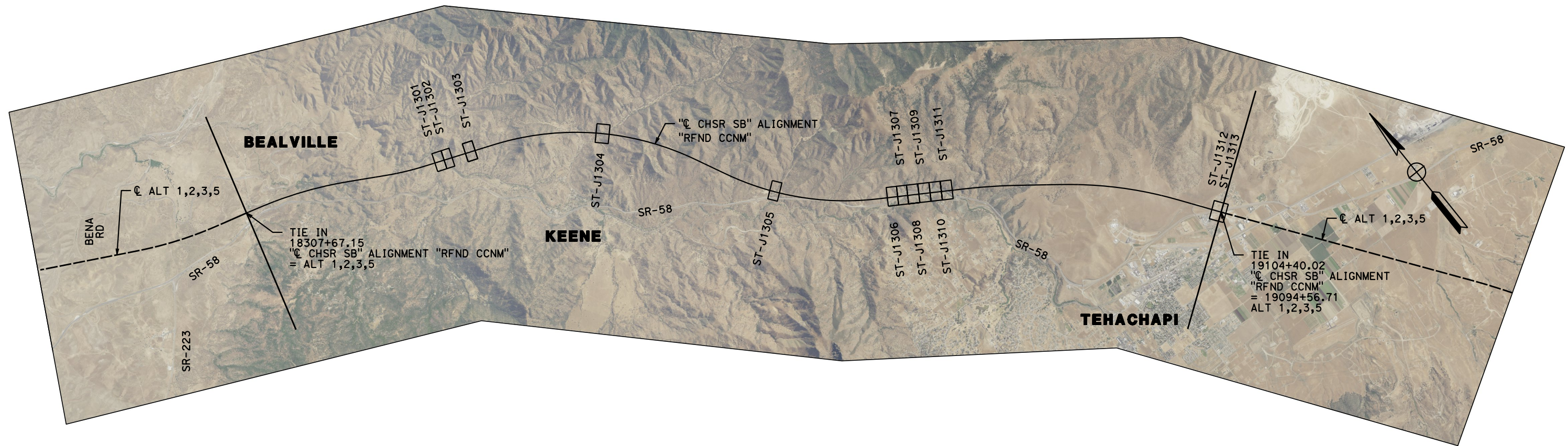
10:44:51 PM

1/11/2021

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REFINED CCNM DESIGN OPTION



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
KEY MAP

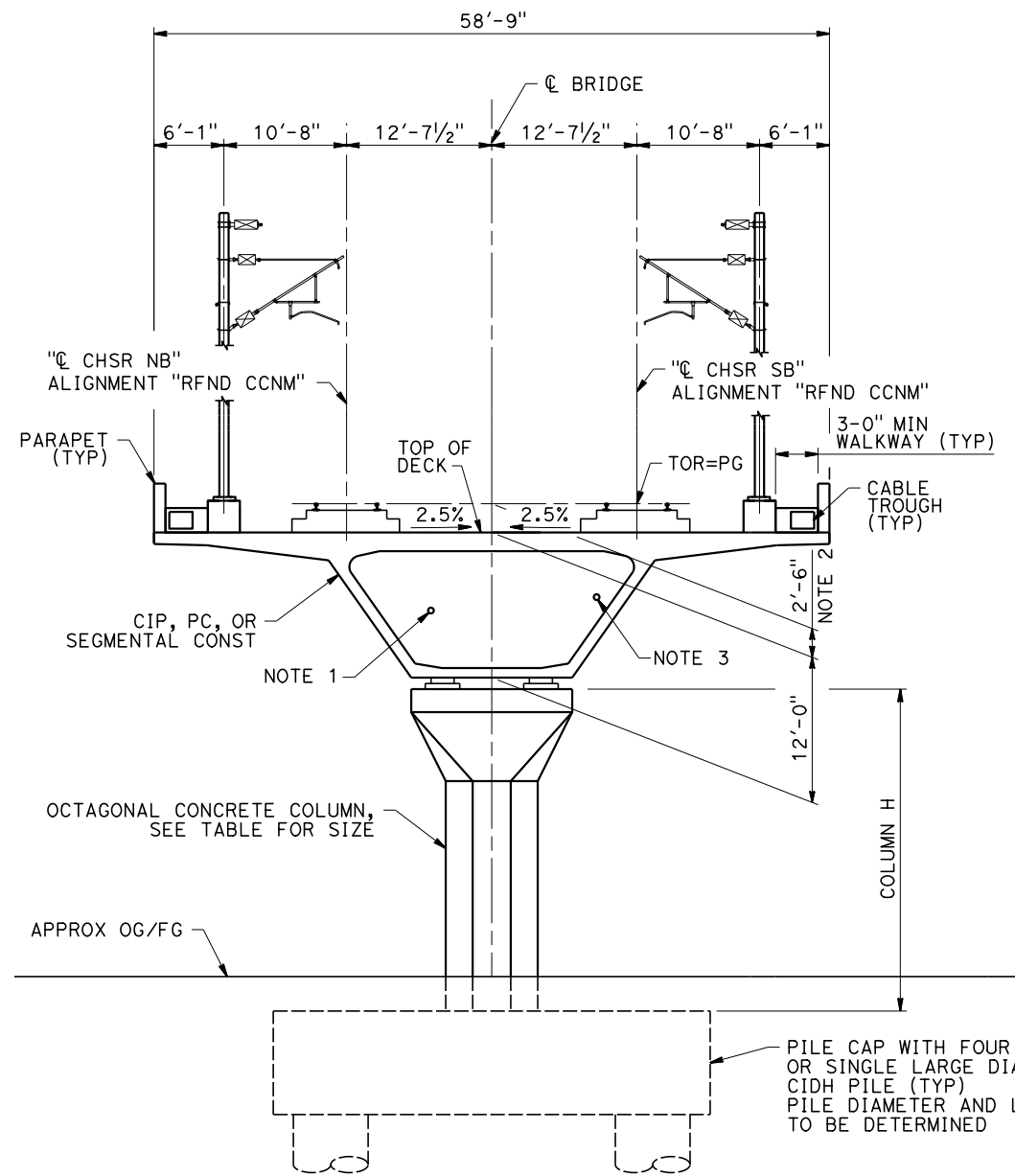
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HSR13-44
DRAWING NO.
ST-B0102
SCALE
AS SHOWN
SHEET NO.
176

Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3101

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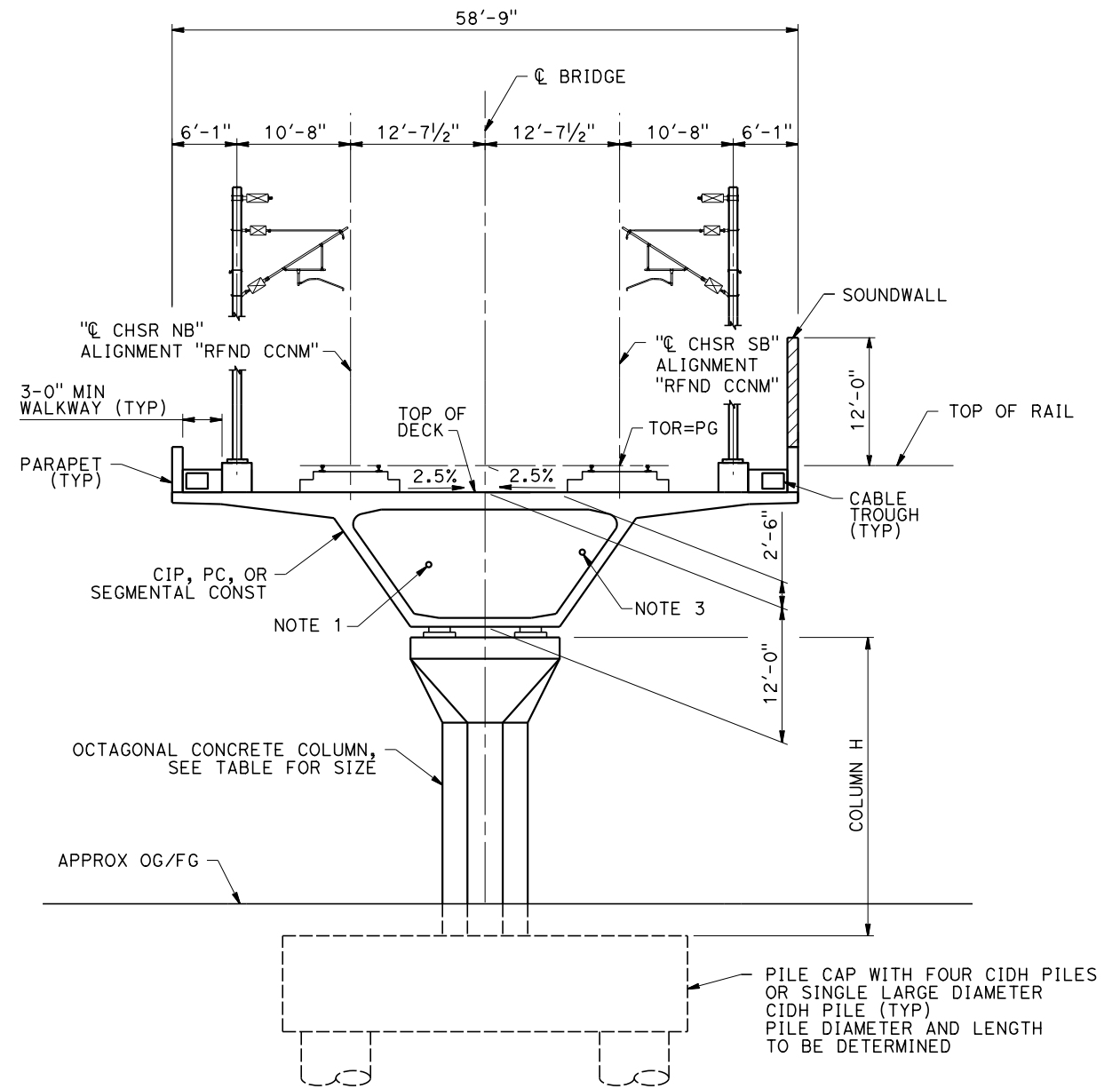


SECTION A

SCALE: 1/2"=1'-0"

STA 18465+50	TO	STA 18467+45	(REFINED CCNM DESIGN OPTION)
STA 18491+62	TO	STA 18493+45	(REFINED CCNM DESIGN OPTION)
STA 18744+33	TO	STA 18746+98	(REFINED CCNM DESIGN OPTION)
STA 18838+59	TO	STA 18842+19	(REFINED CCNM DESIGN OPTION)
STA 18845+79	TO	STA 18870+19	(REFINED CCNM DESIGN OPTION)
STA 18871+39	TO	STA 18877+29	(REFINED CCNM DESIGN OPTION)
STA 18883+29	TO	STA 18884+25	(REFINED CCNM DESIGN OPTION)

COLUMN SIZE	
COLUMN H	SIZE
0-29'	8'
30-40'	10'
40-60'	12'
60-100'	16'
100-150'	18'



SECTION A-2

SCALE: 1/2"=1'-0"

STA 18597+24 TO STA 18603+56 (REFINED CCNM DESIGN OPTION)

NOTES:

1. PROPOSED 4" CHSR WATERLINE. FROM STATION 18035+00 TO 19590+00.
2. STRUCTURES SHORTER THAN 1000 FEET SUPPORT BALLASTED TRACKS. THE DISTANCE BETWEEN TOP OF RAIL AND TOP OF DECK IN BALLASTED TRACK STRUCTURES WILL BE SLIGHTLY HIGHER AND BETWEEN 2'-6" AND 3'-0".
3. PROPOSED CHSR ELECTRICAL POWER FROM STATION 18035+00 TO 19590+00.

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY R. GOLCHOBIAN
DRAWN BY Y. WANG
CHECKED BY R. BARTON
IN CHARGE G. CAMPBELL
DATE 01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
TYPICAL SECTIONS
SHEET 1 OF 7

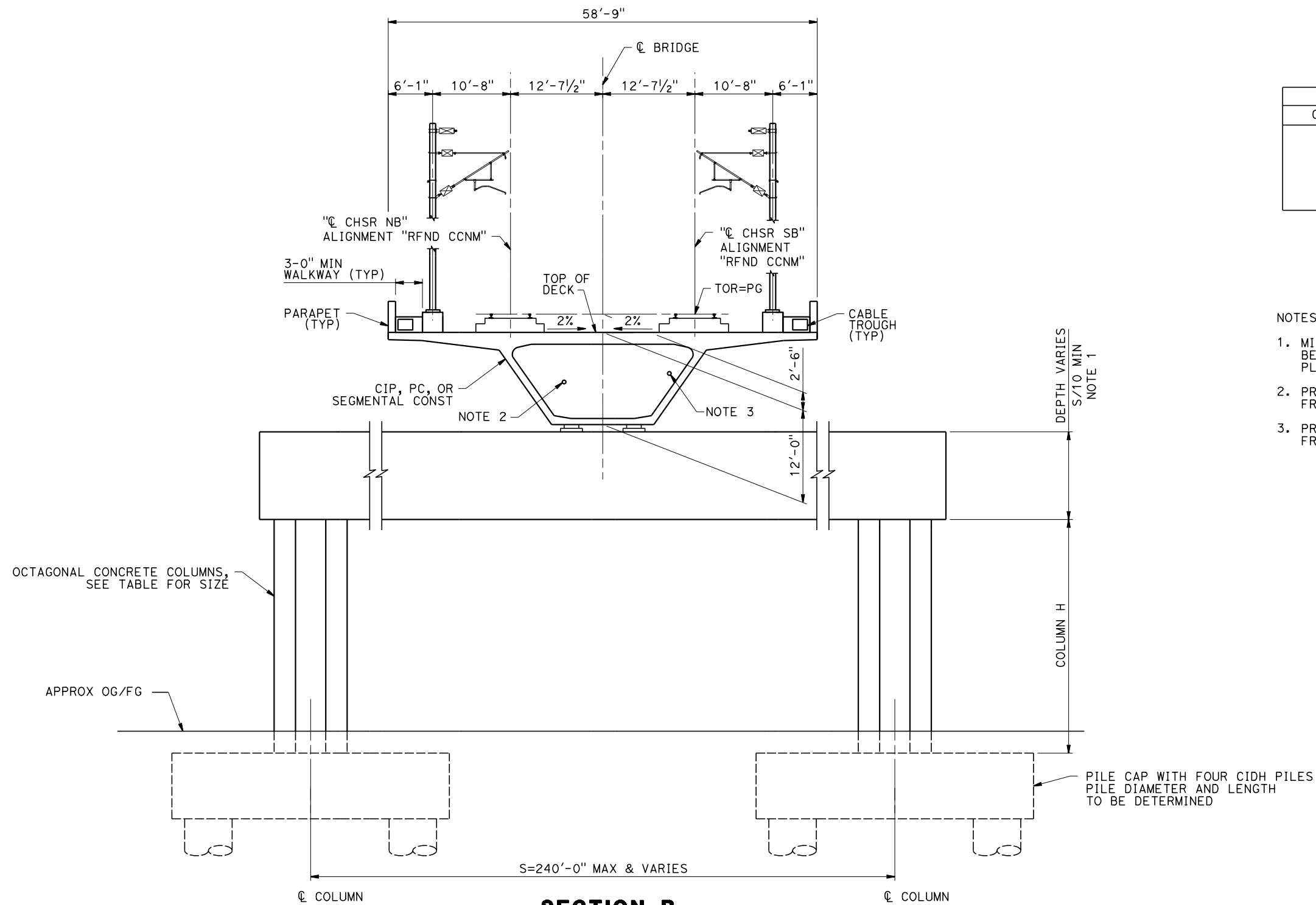
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DRAWING NO. ST-B3101
SCALE AS SHOWN
SHEET NO. 177

Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3102

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COLUMN SIZE	
COLUMN H	SIZE
0-29'	8'
30-40'	10'
40-60'	12'
60-100'	16'

- NOTES:
1. MINIMUM SEAT WIDTH OF STRADDLE BENT SHALL BE EQUAL TO COLUMN SIZE PLUS 2 FT.
 2. PROPOSED 4" CHSR WATERLINE, FROM STATION 18035+00 TO 19590+00.
 3. PROPOSED CHSR ELECTRICAL POWER FROM STATION 18035+00 TO 19590+00.

SECTION B
SCALE: 1/2"=1'-0"

STA 18842+19 TO STA 18845+79 (REFINED CCNM DESIGN OPTION)
 STA 18870+19 (REFINED CCNM DESIGN OPTION)
 STA 18877+29 (REFINED CCNM DESIGN OPTION)

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
 DRAWN BY
Y. WANG
 CHECKED BY
R. BARTON
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 TRACK STRUCTURES
 TYPICAL SECTIONS
 SHEET 2 OF 7

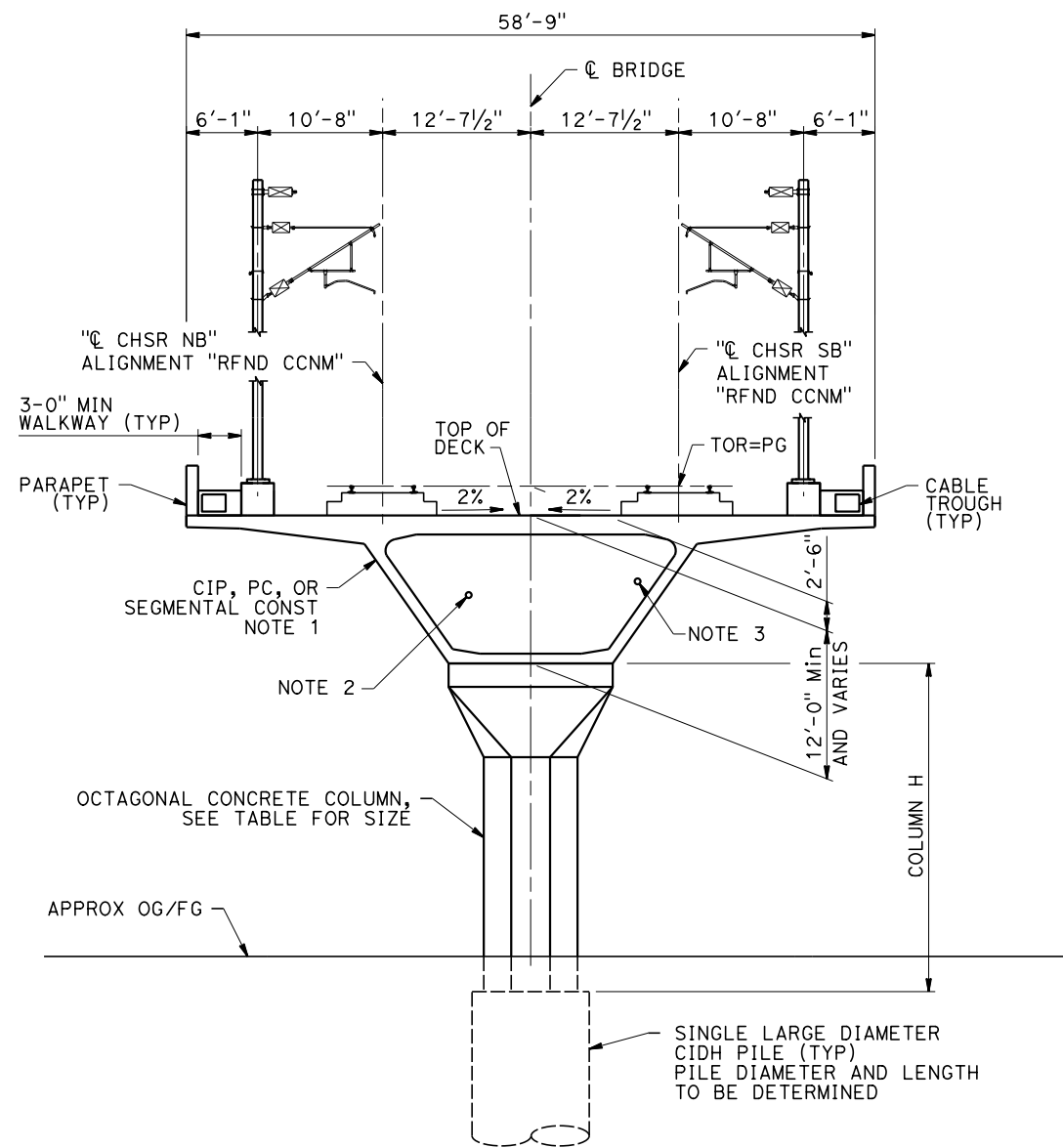
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HSR13-44
 DRAWING NO.
ST-B3102
 SCALE
AS SHOWN
 SHEET NO.
178

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3103

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1/11/2021

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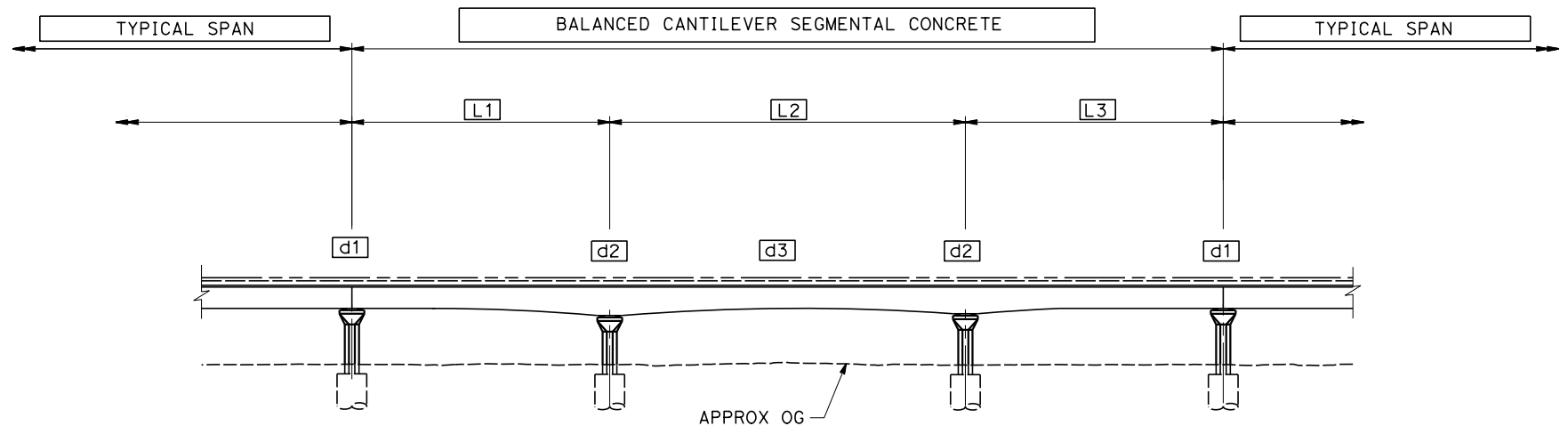
SECTION C
SCALE: 1/2"=1'-0"

STA 18878+29 TO STA 18883+29 (REFINED CCNM DESIGN OPTION)

COLUMN SIZE	
COLUMN H	SIZE
0-29'	8'
30-40'	10'
40-60'	12'
60-100'	16'
100-150'	18'

NOTES:

- GIRDER SIDE SLOPE VARIES DEPENDING ON STRUCTURE DEPTH AT SUPPORT.
- PROPOSED 4" CHSR WATERLINE. FROM STATION 18035+00 TO 19590+00.
- PROPOSED CHSR ELECTRICAL POWER FROM STATION 18035+00 TO 19590+00.



BALANCED CANTILEVER SEGMENTAL
SCALE: 1/4"=1'-0"

- d1 = 12'-0"
- d2 = L2/12
- d3 = L2/20

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY R. GOLCHOBIAN
DRAWN BY Y. WANG
CHECKED BY R. BARTON
IN CHARGE G. CAMPBELL
DATE 01/29/2021

**RECORD
PEPD
SUBMITTAL**

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CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
TYPICAL SECTIONS
SHEET 3 OF 7

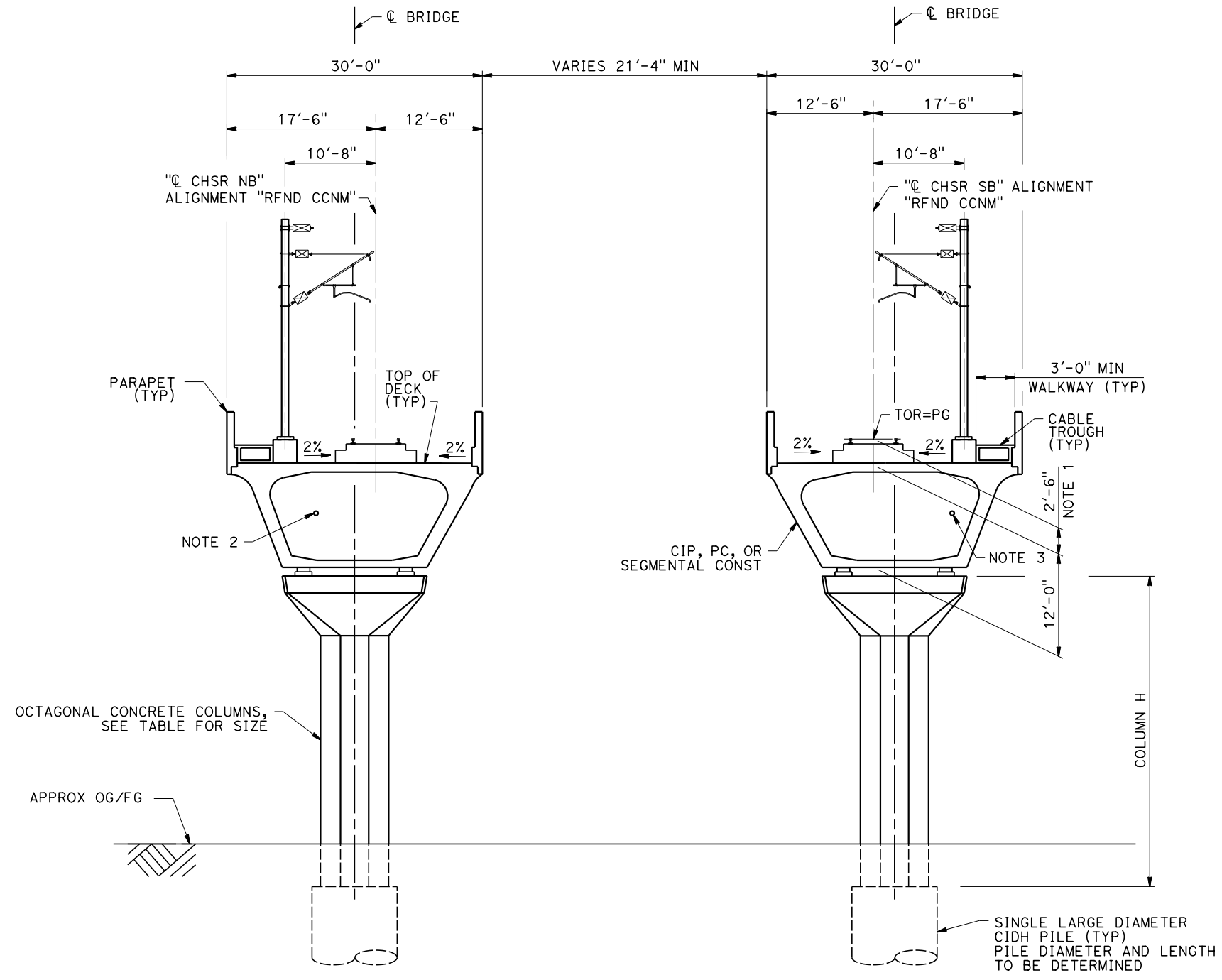
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DRAWING NO. ST-B3103
SCALE AS SHOWN
SHEET NO. 179

Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3104

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COLUMN SIZE	
COLUMN H	SIZE
0-29'	8'
30-40'	10'
40-60'	12'

NOTES:

- STRUCTURES SHORTER THAN 1000 FEET SUPPORT BALLASTED TRACKS. THE DISTANCE BETWEEN TOP OF RAIL AND TOP OF DECK IN BALLASTED TRACK STRUCTURES WILL BE SLIGHTLY HIGHER AND BETWEEN 2'-6" AND 3'-0".
- PROPOSED 4" CHSR WATERLINE, FROM STATION 18035+00 TO 19590+00.
- PROPOSED CHSR ELECTRICAL POWER FROM STATION 18035+00 TO 19590+00.

SECTION D

SCALE: 1 1/2"=1'-0"

STA 19075+84 TO STA 19077+84 (REFINED CCNM DESIGN OPTION)
 STA 19076+14 TO STA 19078+14 (REFINED CCNM DESIGN OPTION)
 STA 19102+97 SB (REFINED CCNM DESIGN OPTION) TO STA 19097+23.69 SB (ALT 1,2,3,5)
 STA 19104+73 NB (REFINED CCNM DESIGN OPTION) TO STA 19097+54.69 NB (ALT 1,2,3,5)

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
 DRAWN BY
Y. WANG
 CHECKED BY
R. BARTON
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

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CONSTRUCTION**

TYLIN INTERNATIONAL



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TRACK STRUCTURES
 TYPICAL SECTIONS
 SHEET 4 OF 7

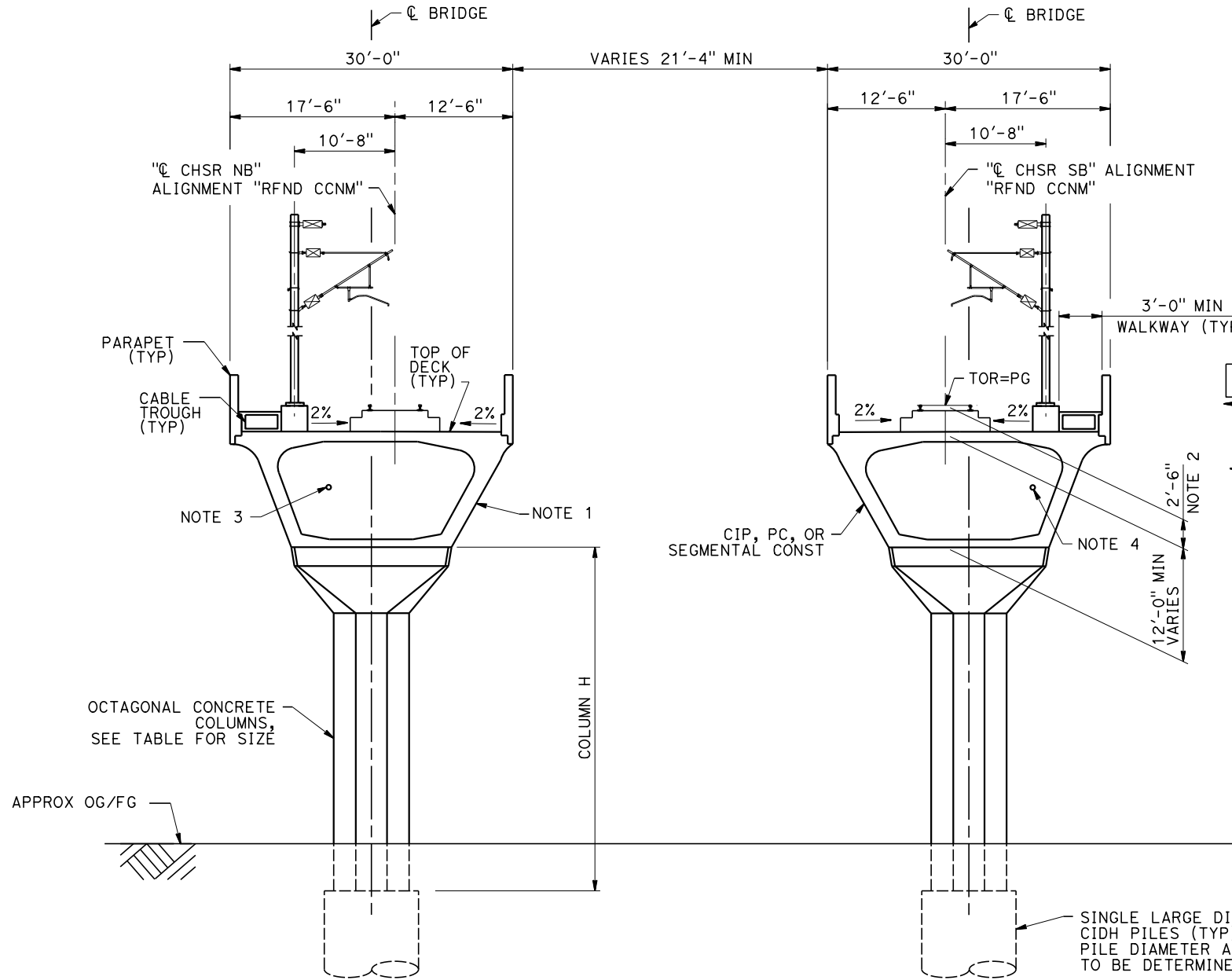
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 DRAWING NO.
ST-B3104
 SCALE
AS SHOWN
 SHEET NO.
180

Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3105

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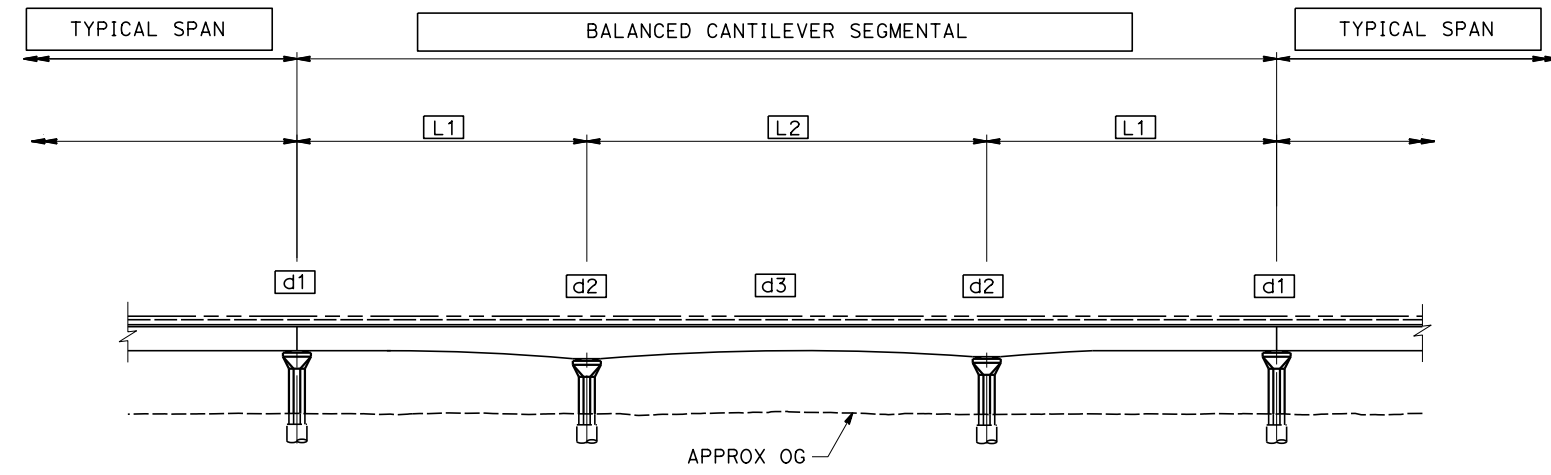
1/11/2021

y.hong.wang@tylin.com



COLUMN SIZE	
COLUMN H	SIZE
0-29'	8'
30-40'	10'
40-60'	12'

- NOTES:
- GIRDER SIDE SLOPE VARIES DEPENDING ON STRUCTURE DEPTH AT SUPPORT.
 - STRUCTURES SHORTER THAN 1000 FEET SUPPORT BALLASTED TRACKS. THE DISTANCE BETWEEN TOP OF RAIL AND TOP OF DECK IN BALLASTED TRACK STRUCTURES WILL BE SLIGHTLY HIGHER AND BETWEEN 2'-6" AND 3'-0".
 - PROPOSED 4" CHSR WATERLINE. FROM STATION 18035+00 TO 19590+00.
 - PROPOSED CHSR ELECTRICAL POWER FROM STATION 18035+00 TO 19590+00.



BALANCED CANTILEVER SEGMENTAL
SCALE: 1/4"=1'-0"

- d1 = 12'-0"
- d2 = L2/12
- d3 = L2/20

SECTION E
SCALE: 1/4"=1'-0"

STA 19097+53 TO STA 19102+97 SB (REFINED CCNM DESIGN OPTION)
STA 19099+32 TO STA 19104+73.61 NB (REFINED CCNM DESIGN OPTION)

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
TYPICAL SECTIONS
SHEET 5 OF 7

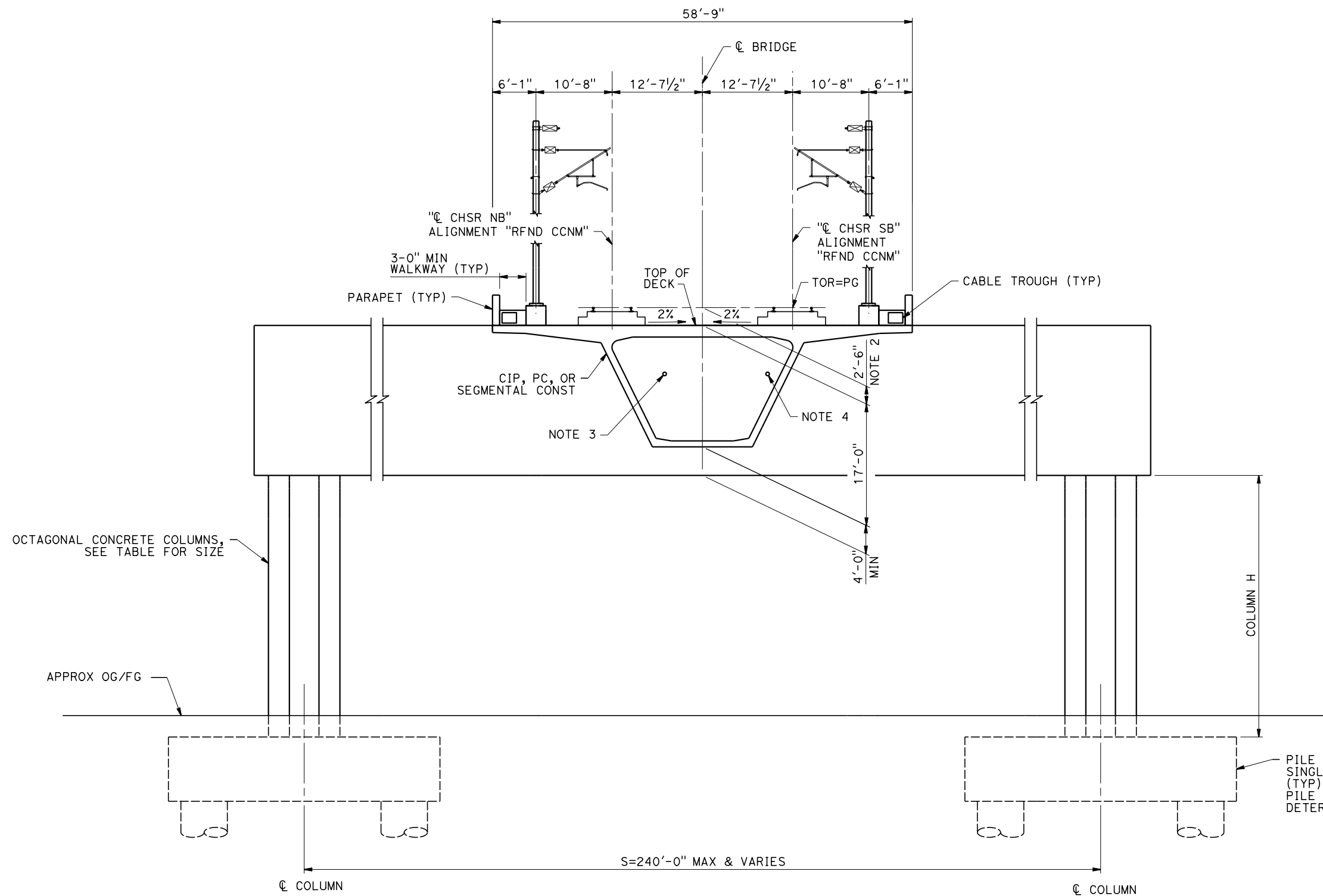
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HSR13-44
DRAWING NO.
ST-B3105
SCALE
AS SHOWN
SHEET NO.
181

Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3106

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1/11/2021

yihong.wang@tylin.com



- NOTES:
1. MINIMUM WIDTH OF STRADDLE BENT SHALL BE EQUAL TO COLUMN SIZE PLUS 2FT.
 2. STRUCTURES SHORTER THAN 1000 FEET SUPPORT BALLASTED TRACKS. THE DISTANCE BETWEEN TOP OF RAIL AND TOP OF DECK IN BALLASTED TRACK STRUCTURES WILL BE SLIGHTLY HIGHER AND BETWEEN 2'-6" AND 3'-0".
 3. PROPOSED 4" CHSR WATERLINE. FROM STATION 18035+00 TO 19590+00.
 4. PROPOSED CHSR ELECTRICAL POWER FROM STATION 18035+00 TO 19590+00.

SECTION F
SCALE: 1/2"=1'-0"

STA 18880+49 (REFINED CCNM DESIGN OPTION)

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

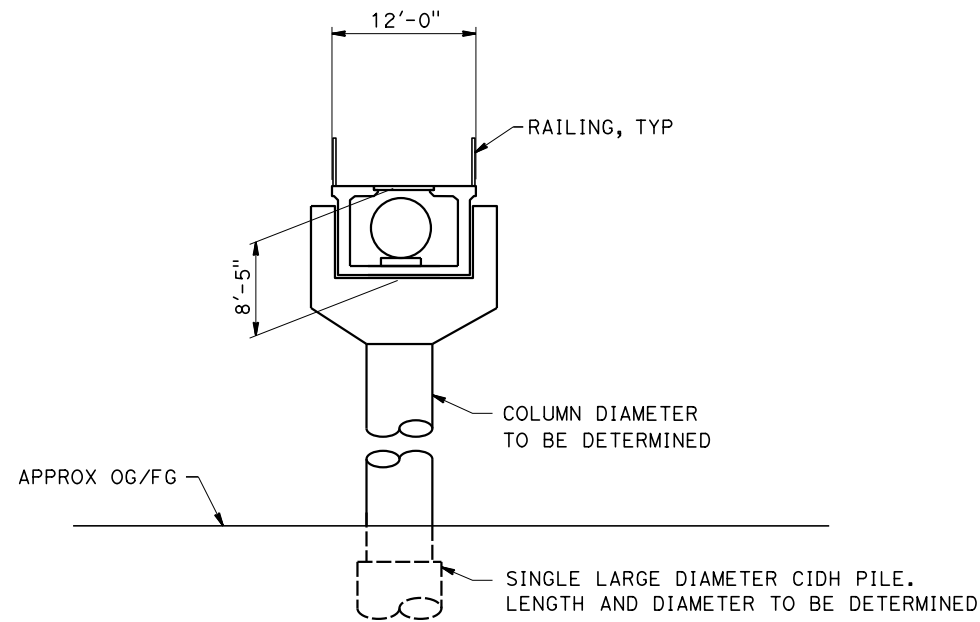
**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
TYPICAL SECTIONS
SHEET 6 OF 7

CONTRACT NO.
HSR13-44
DRAWING NO.
ST-B3106
SCALE
AS SHOWN
SHEET NO.
182



SECTION G

SCALE: 1/2"=1'-0"

ELEVATED UTILITY CROSSINGS

NOTE:

FOR LOCATIONS OF CROSSINGS
SEE CV-G SHEETS.

Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-B3107

1/11/2021 10:44:56 PM

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

DRAWN BY
Y. WANG

CHECKED BY
R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

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CONSTRUCTION**

TYLIN INTERNATIONAL



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

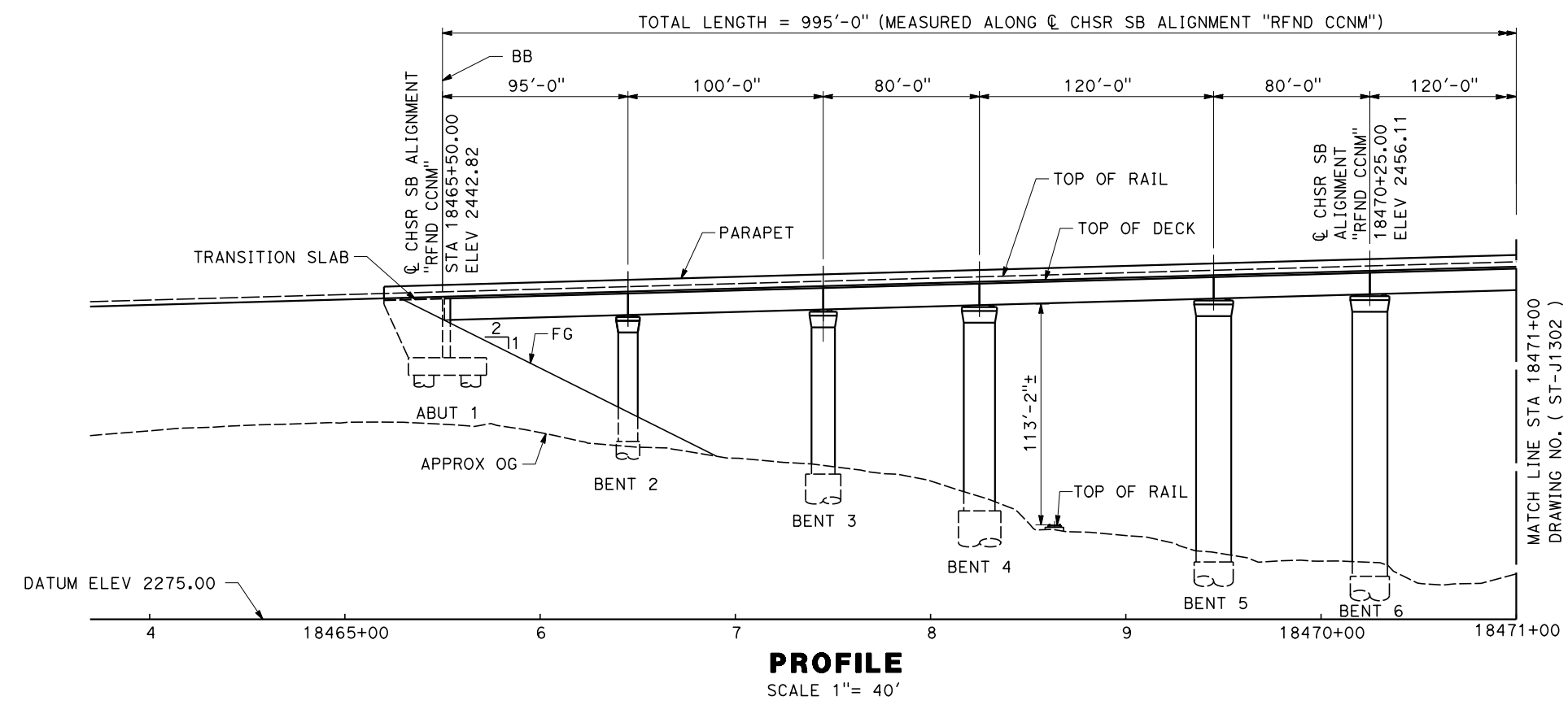
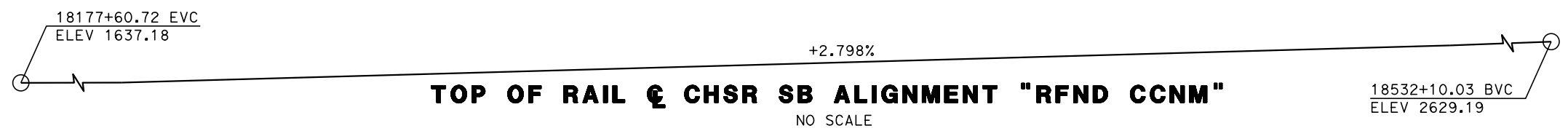
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
TYPICAL SECTIONS
SHEET 7 OF 7

CONTRACT NO.
HSR13-44

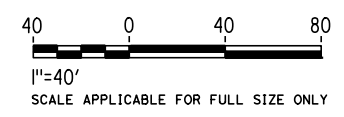
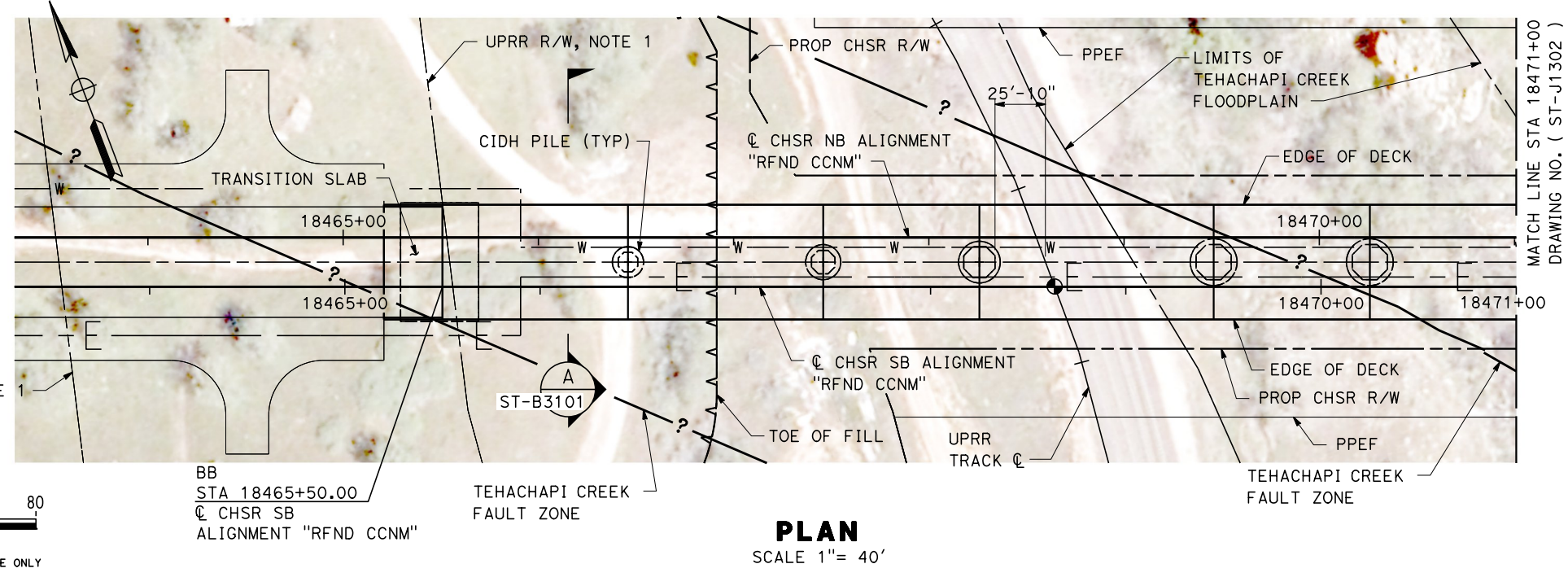
DRAWING NO.
ST-B3107

SCALE
AS SHOWN

SHEET NO.
183



NOTE:
1. RECORD RIGHT-OF-WAY IS NOT CORRECT IN RELATION TO THE LOCATION OF RAILROAD TRACKS.



Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1301

1/11/2021 10:34:35 PM

yihong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

DRAWN BY
Y. WANG

CHECKED BY
R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18465+50 TO 18475+65
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1301

SCALE
AS SHOWN

SHEET NO.
184

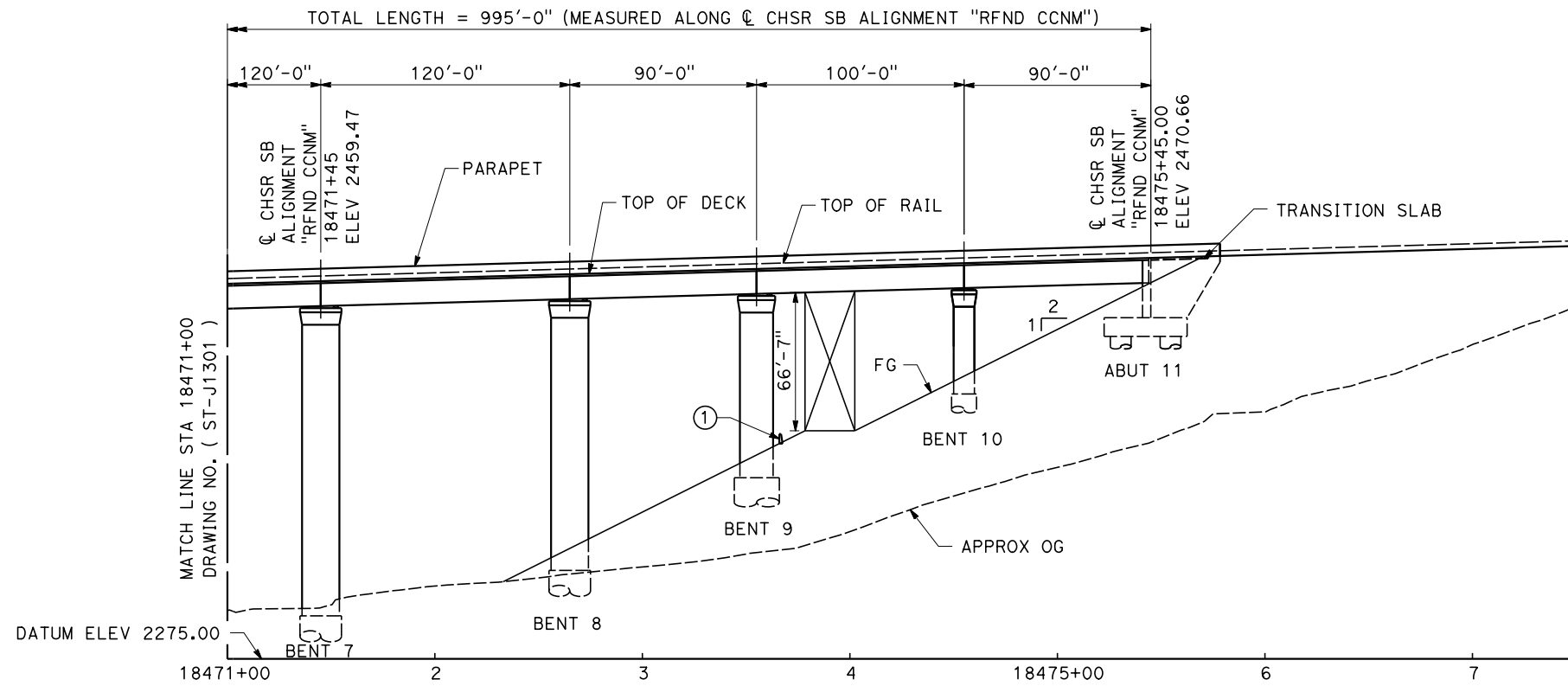
18177+60.72 EVC
ELEV 1637.18

+2.798%

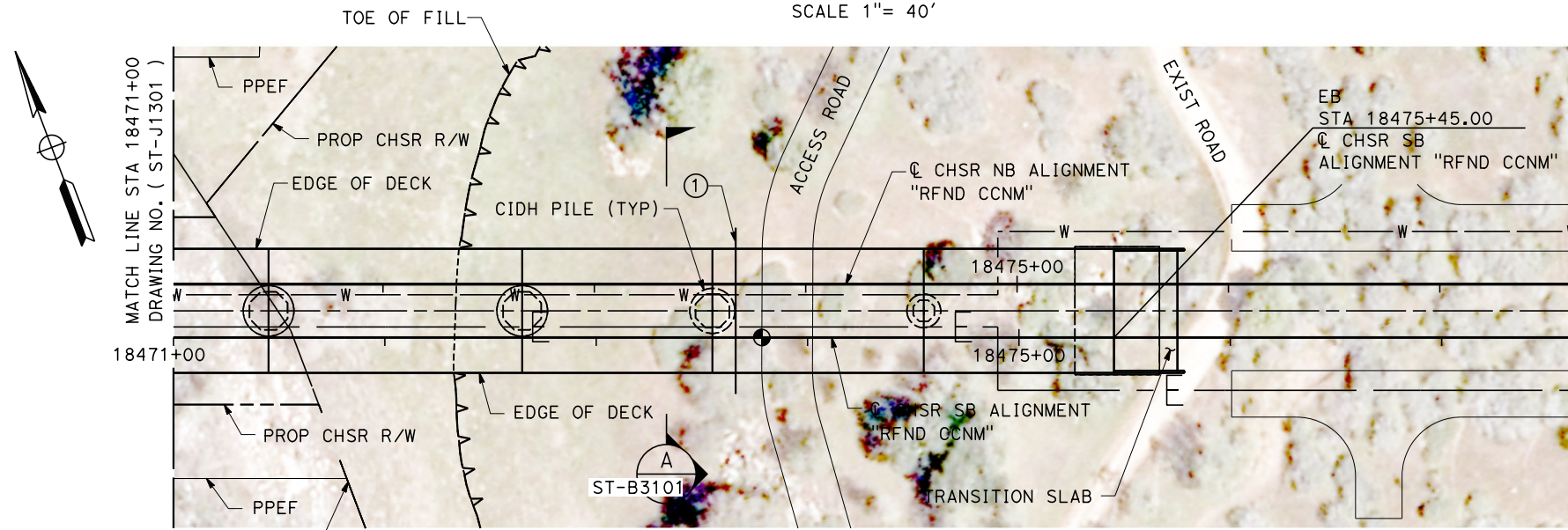
TOP OF RAIL @ CHSR SB ALIGNMENT "RFND CCNM"

NO SCALE

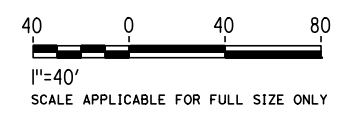
18532+10.03 BVC
ELEV 2629.19



PROFILE
SCALE 1" = 40'



PLAN
SCALE 1" = 40'



Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1302

10:34:35 PM

1/11/2021

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

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G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

TYLIN INTERNATIONAL



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18465+50 TO 18475+65
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1302

SCALE
AS SHOWN

SHEET NO.
185

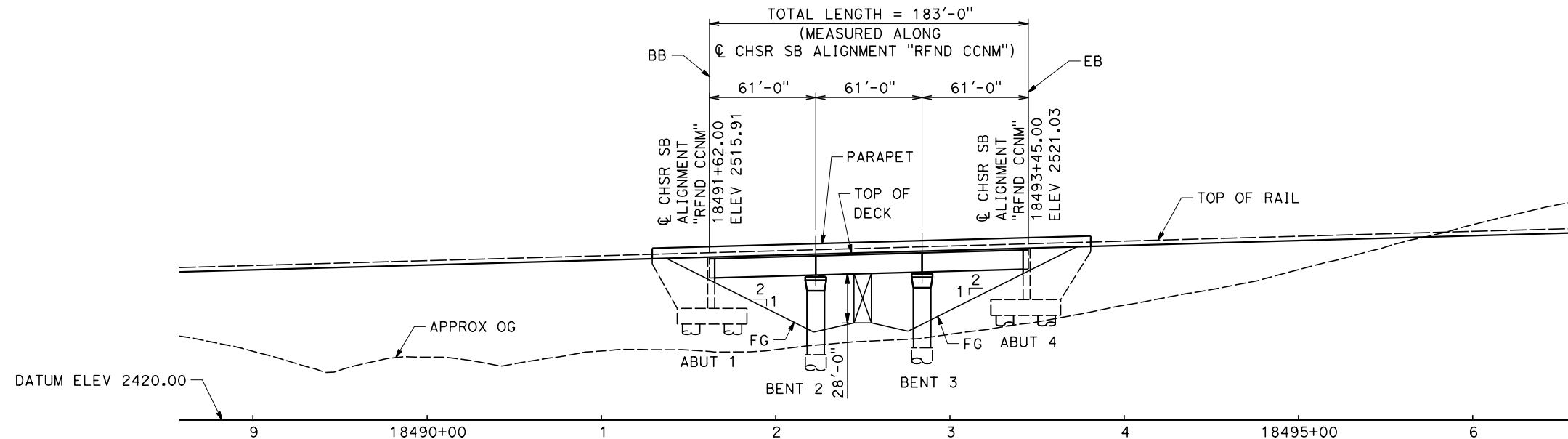
18177+60.72 EVC
ELEV 1637.18

+2.798%

18532+10.03 BVC
ELEV 2629.19

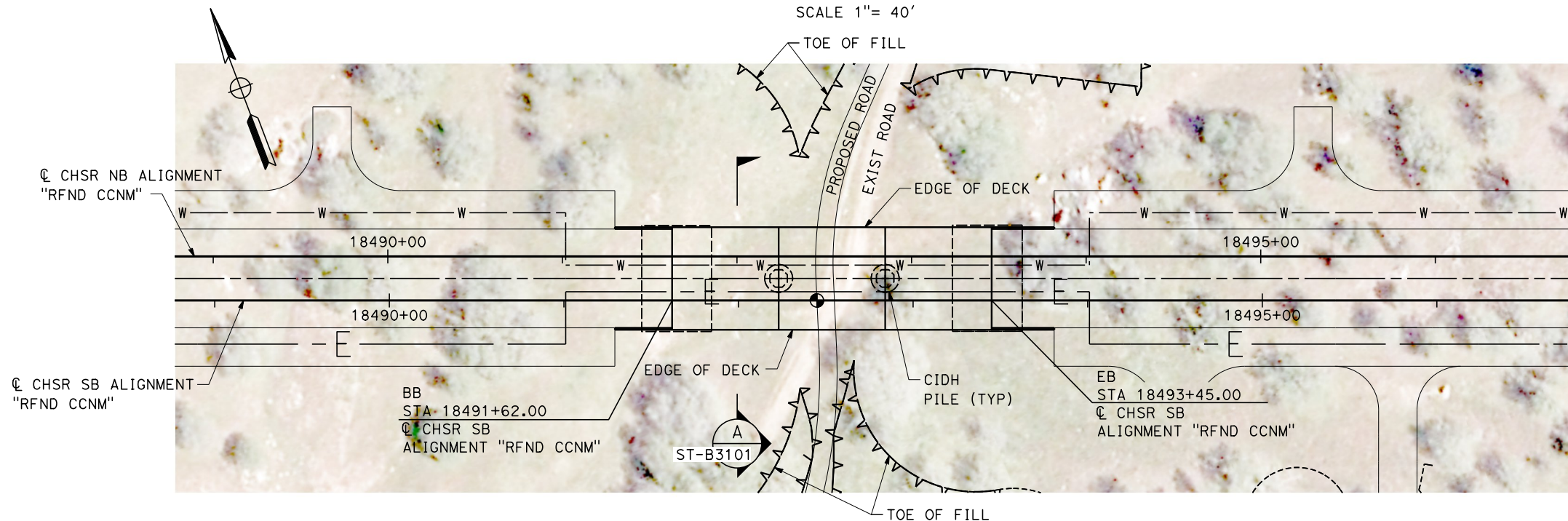
TOP OF RAIL @ CHSR SB ALIGNMENT "RFND CCNM"

NO SCALE



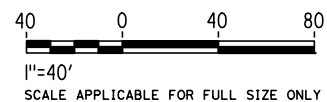
ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1303

10:34:35 PM

1/11/2021

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
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IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

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CONSTRUCTION**

TYLIN INTERNATIONAL



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18491+62 TO 18493+45
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1303
SCALE
AS SHOWN
SHEET NO.
186

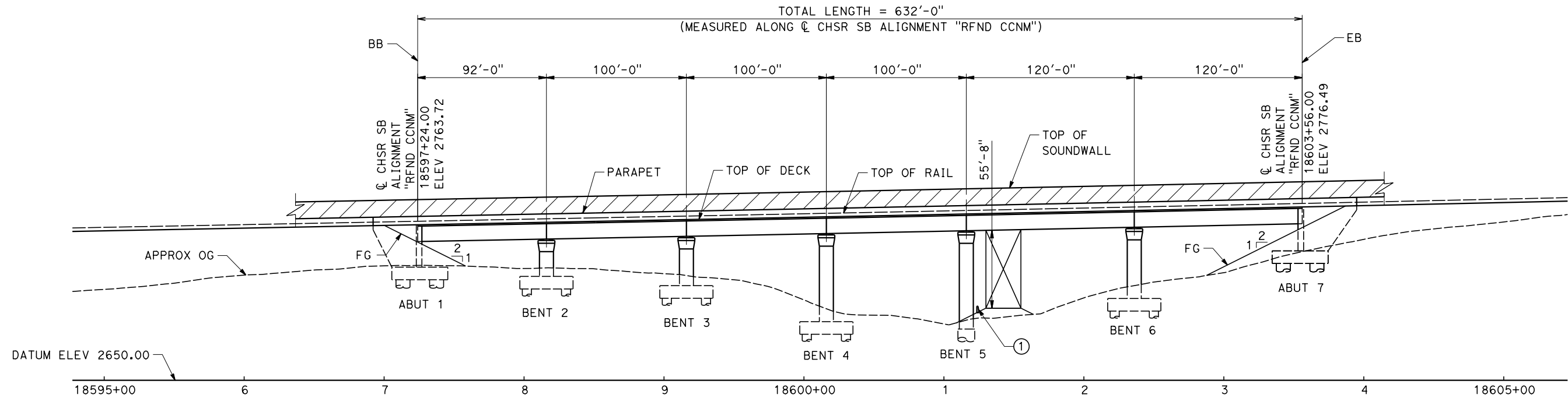
Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1304

1/11/2021 10:34:36 PM

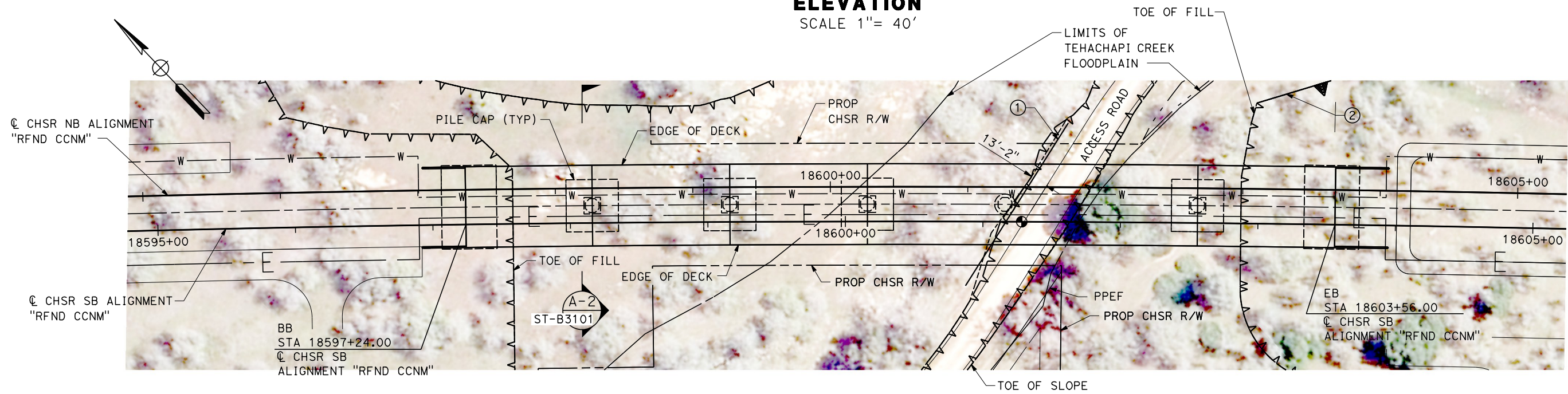
yihong.wang@tylin.com



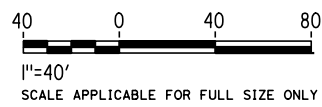
TOP OF RAIL & CHSR SB ALIGNMENT "RFND CCNM"
NO SCALE



ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'

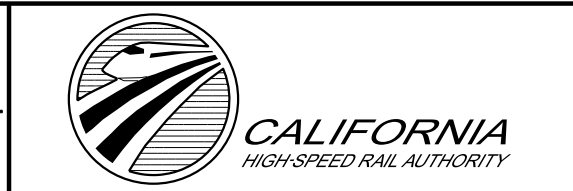


REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18597+24 TO 18603+56
PLAN AND ELEVATION

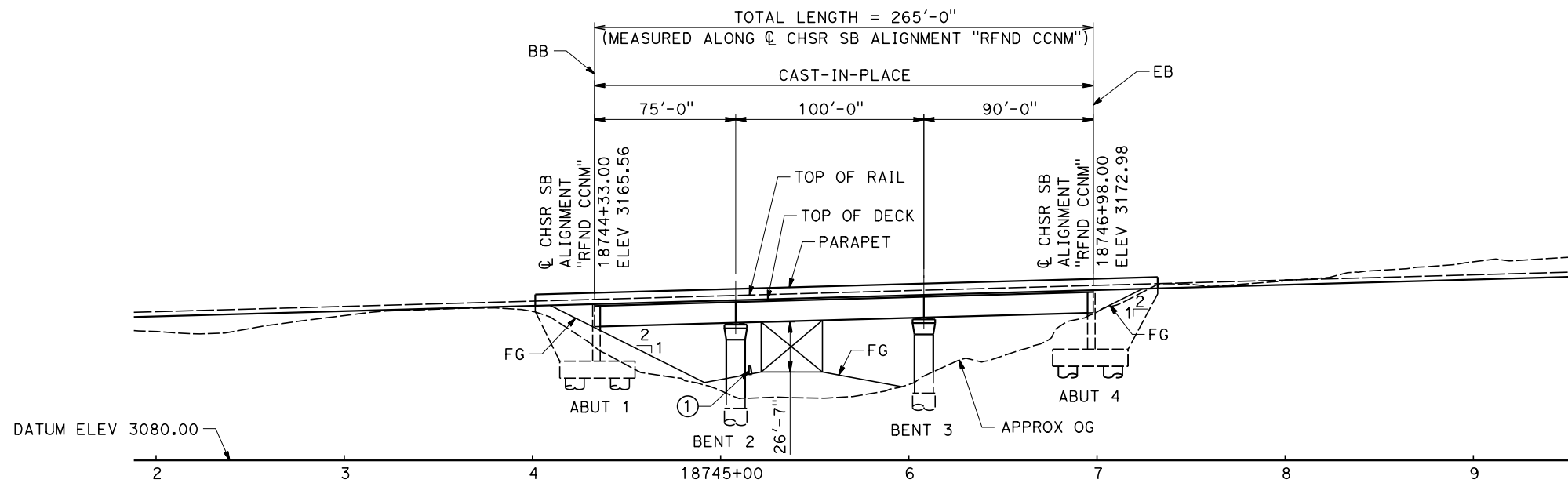
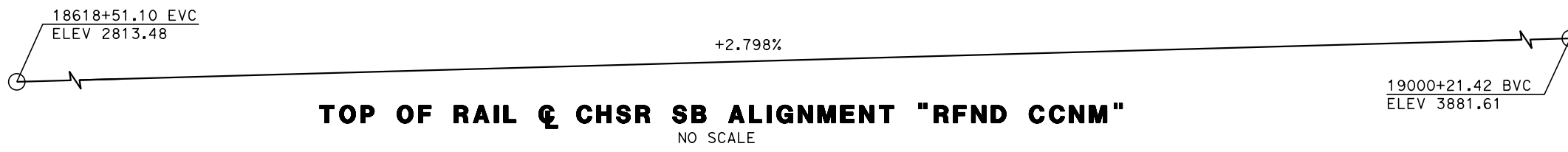
CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1304
SCALE
AS SHOWN
SHEET NO.
187

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1305

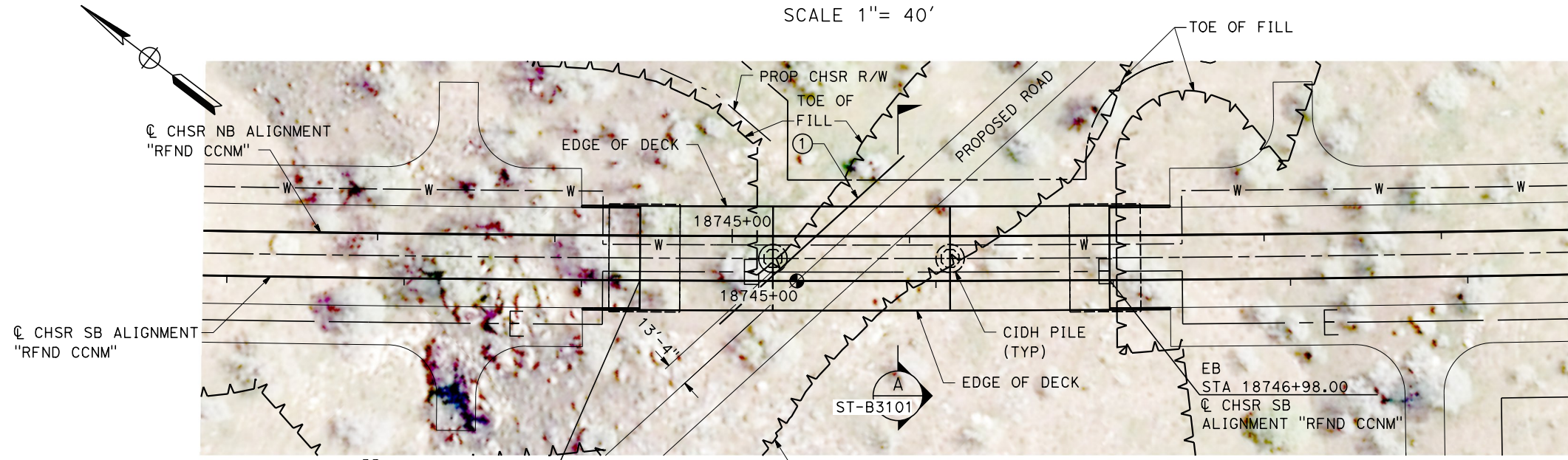
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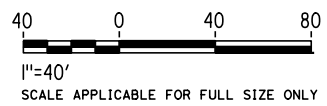
yihong.wang@tylin.com



ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'



BB
STA 18744+33.00
& CHSR SB
ALIGNMENT "RFND CCNM"

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18744+33 TO 18746+98
PLAN AND ELEVATION

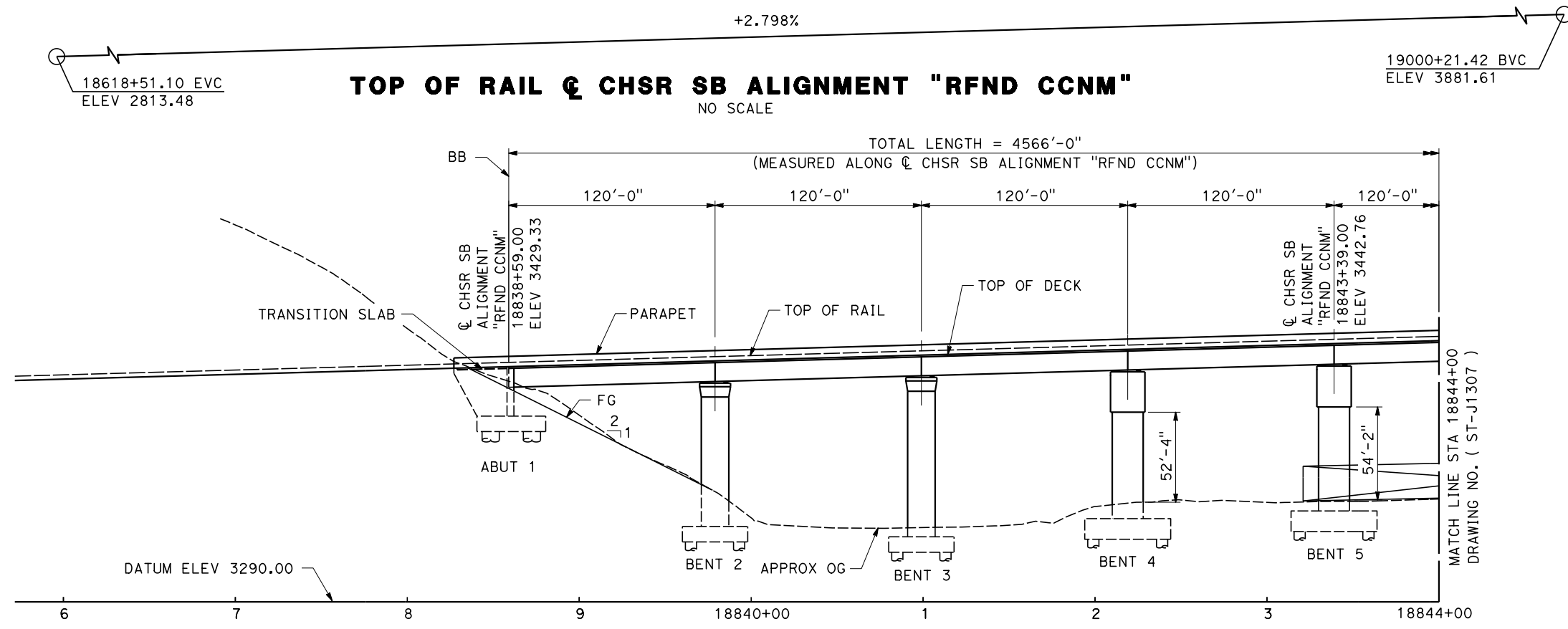
CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1305
SCALE
AS SHOWN
SHEET NO.
188

Projects\701206.00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1306

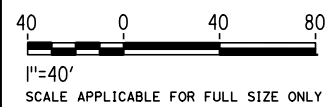
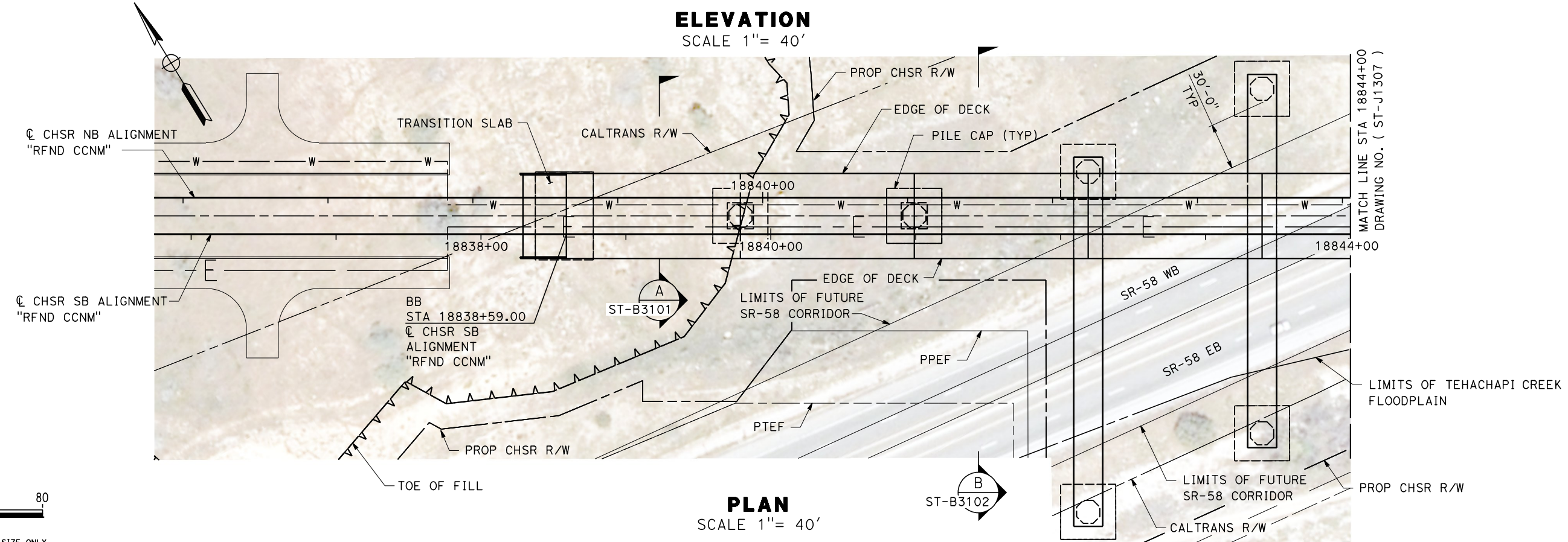
10:35:33 PM

1/11/2021

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ELEVATION
SCALE 1" = 40'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
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CHECKED BY
R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
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SUBMITTAL**

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CONSTRUCTION**



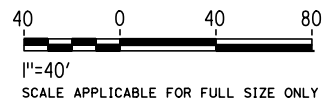
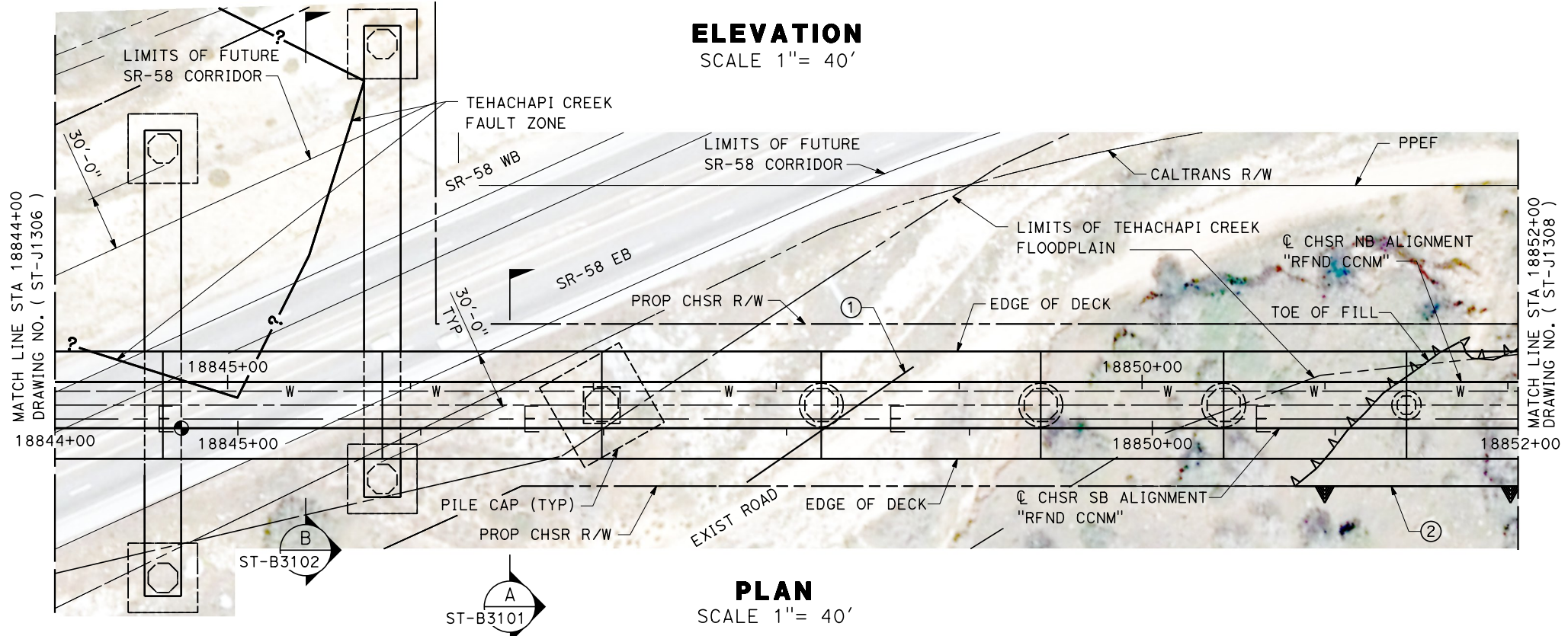
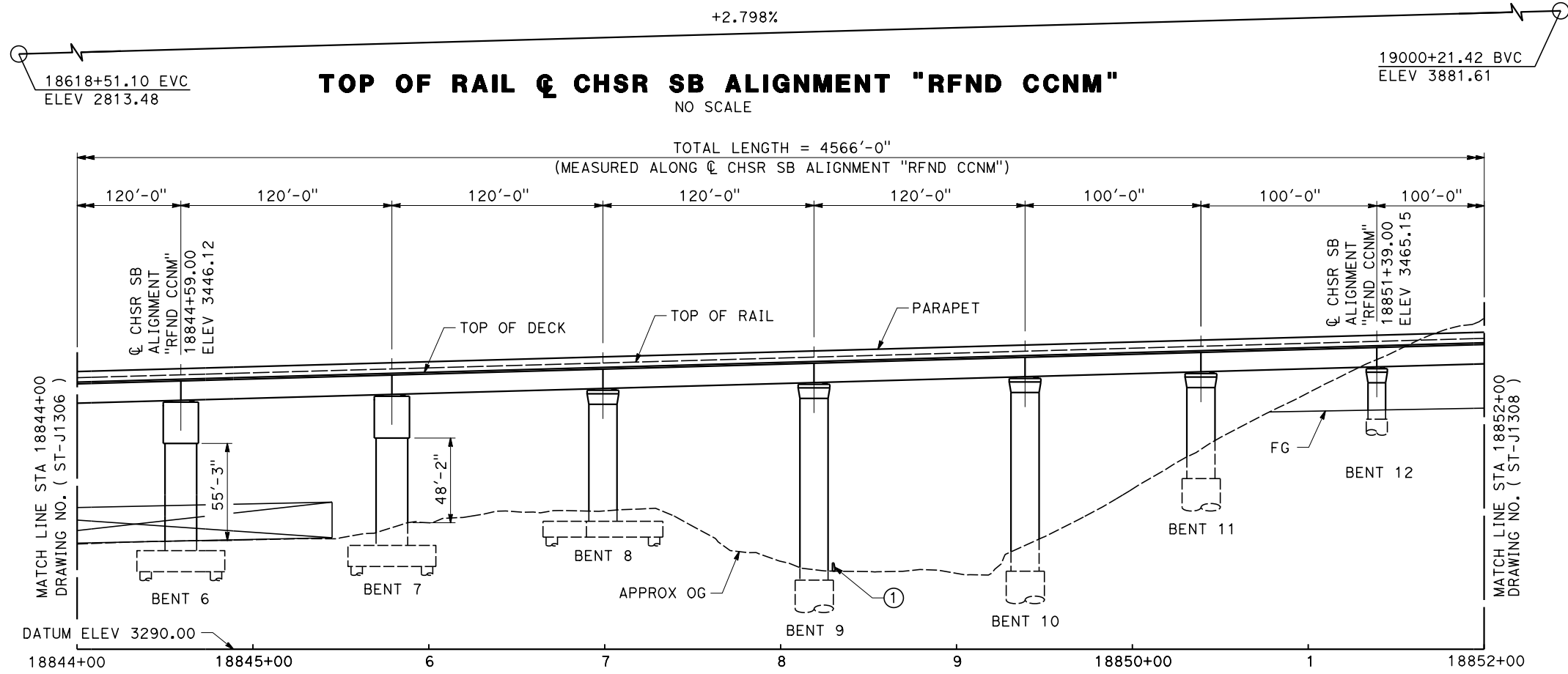
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18838+59 TO 18884+25
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1306

SCALE
AS SHOWN

SHEET NO.
189



Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1307

1/11/2021 10:35:35 PM

y.hong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

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IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18838+59 TO 18884+25
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1307

SCALE
AS SHOWN

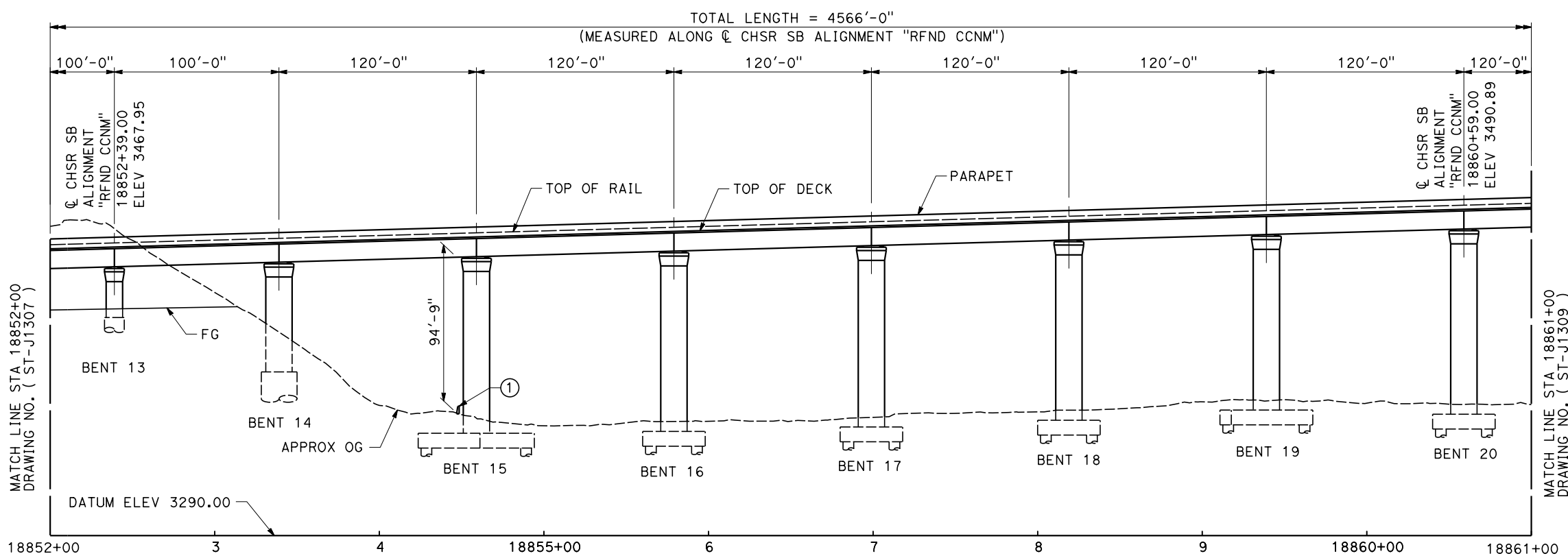
SHEET NO.
190

Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1308

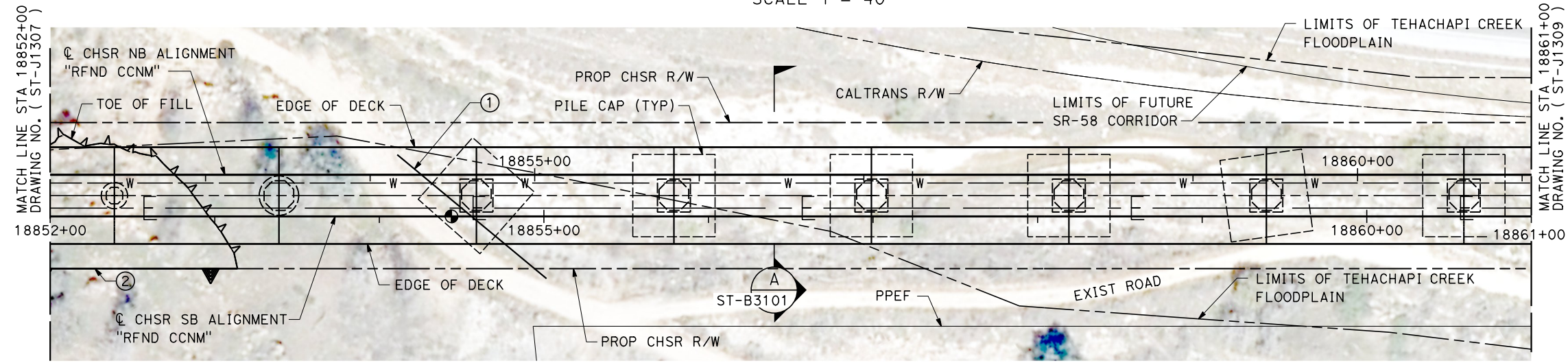
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1/11/2021

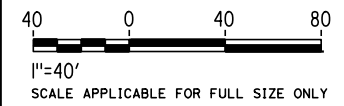
yihong.wang@tylin.com



ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

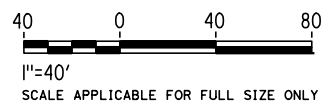
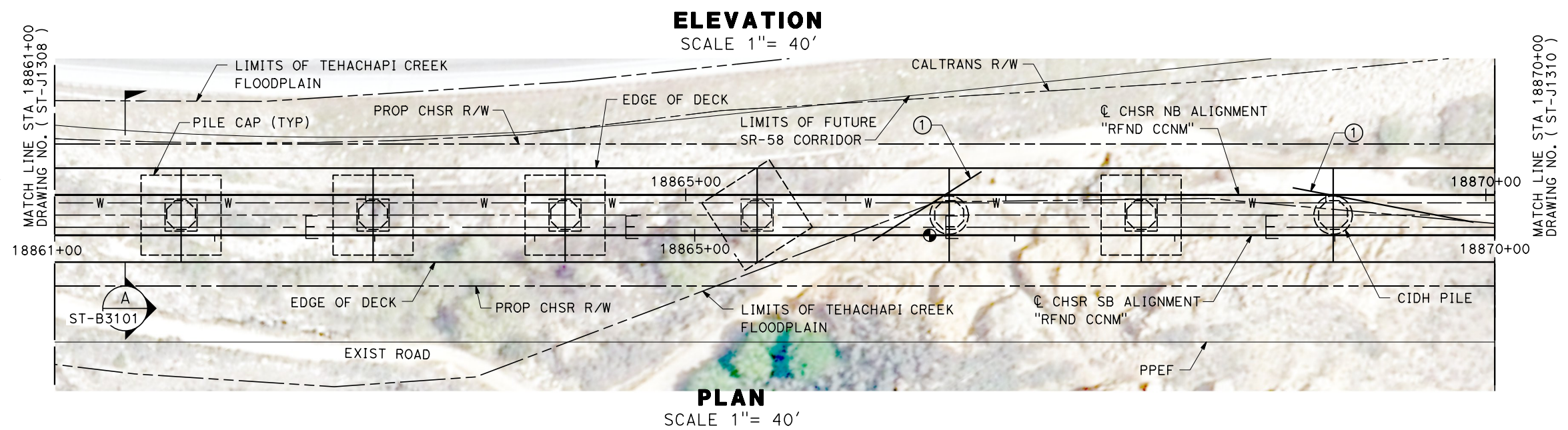
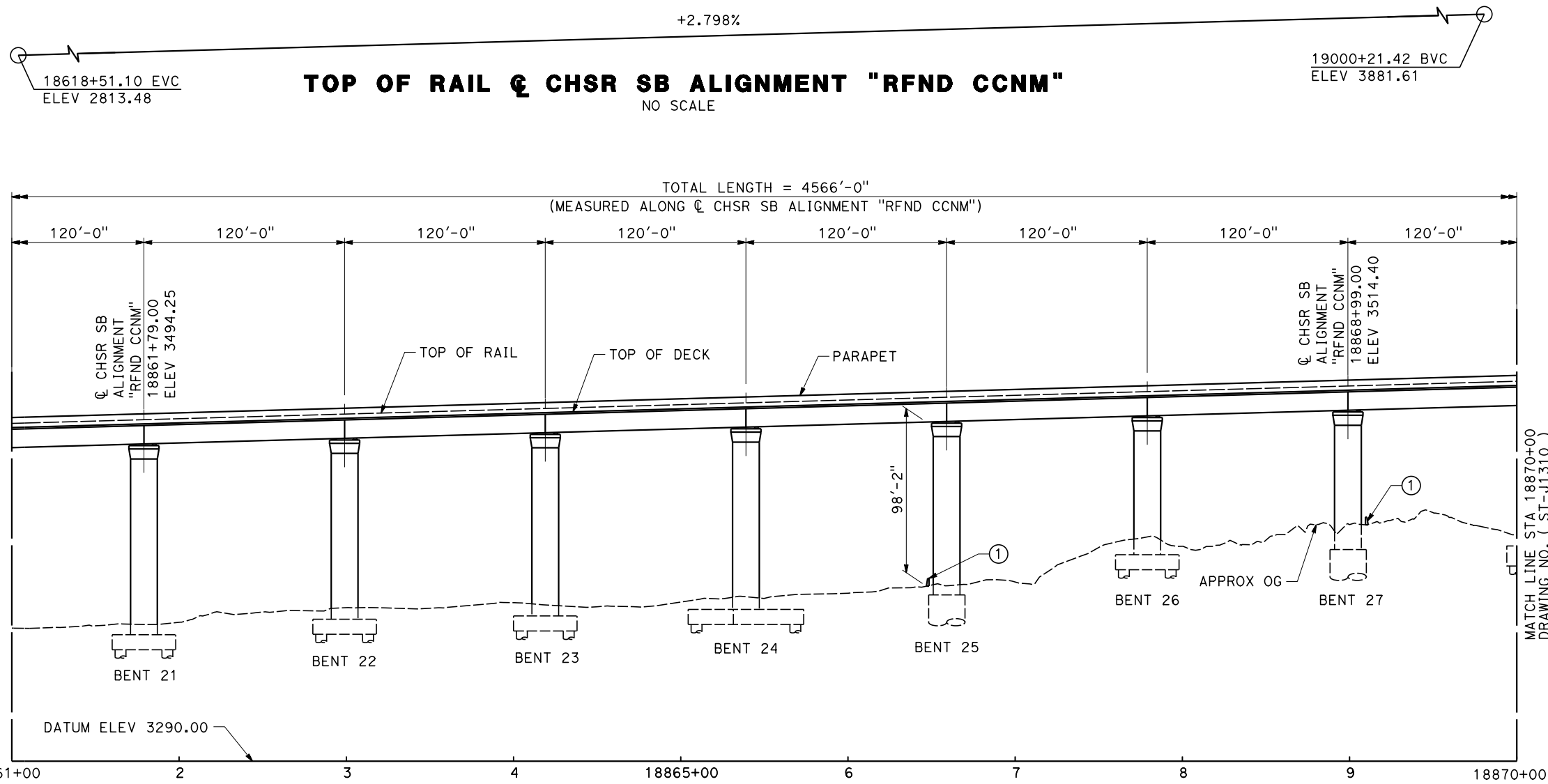
**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18838+59 TO 18884+25
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1308
SCALE
AS SHOWN
SHEET NO.
191



Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1309

1/11/2021 10:35:22 PM

y.hong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

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Y. WANG

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R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18838+59 TO 18884+25
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1309

SCALE
AS SHOWN

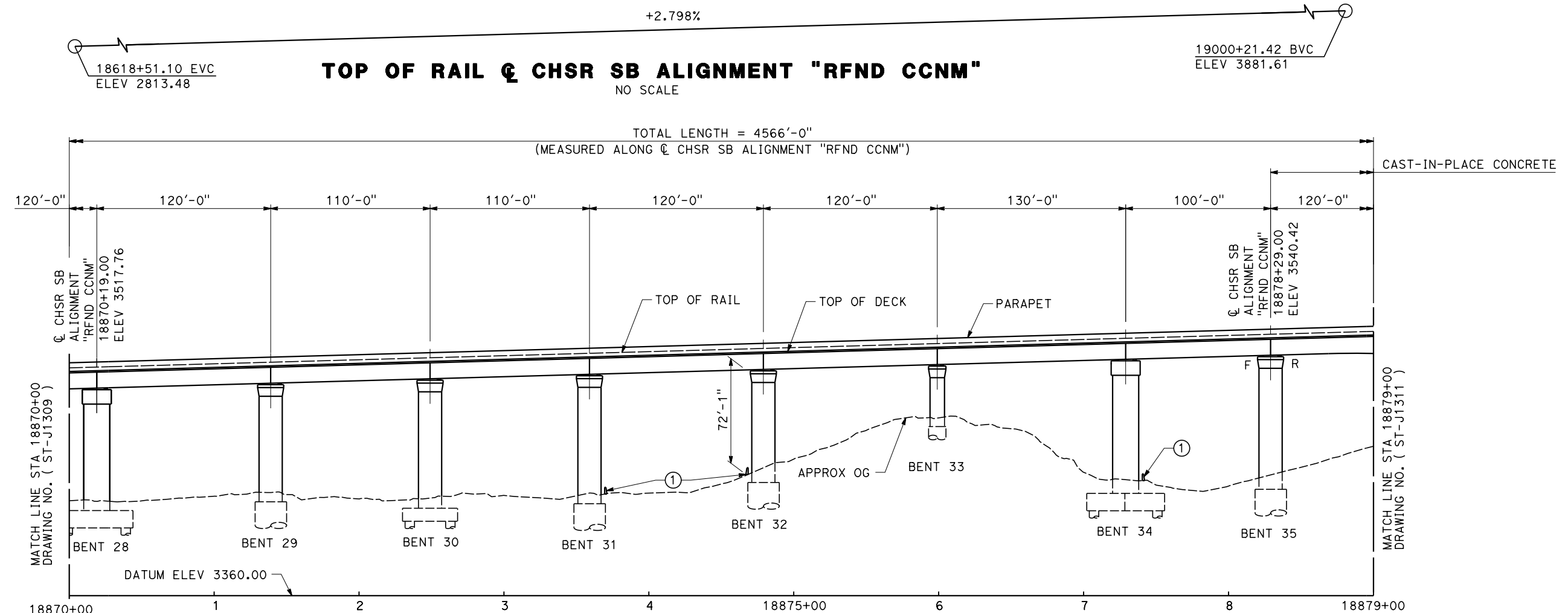
SHEET NO.
192

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1310

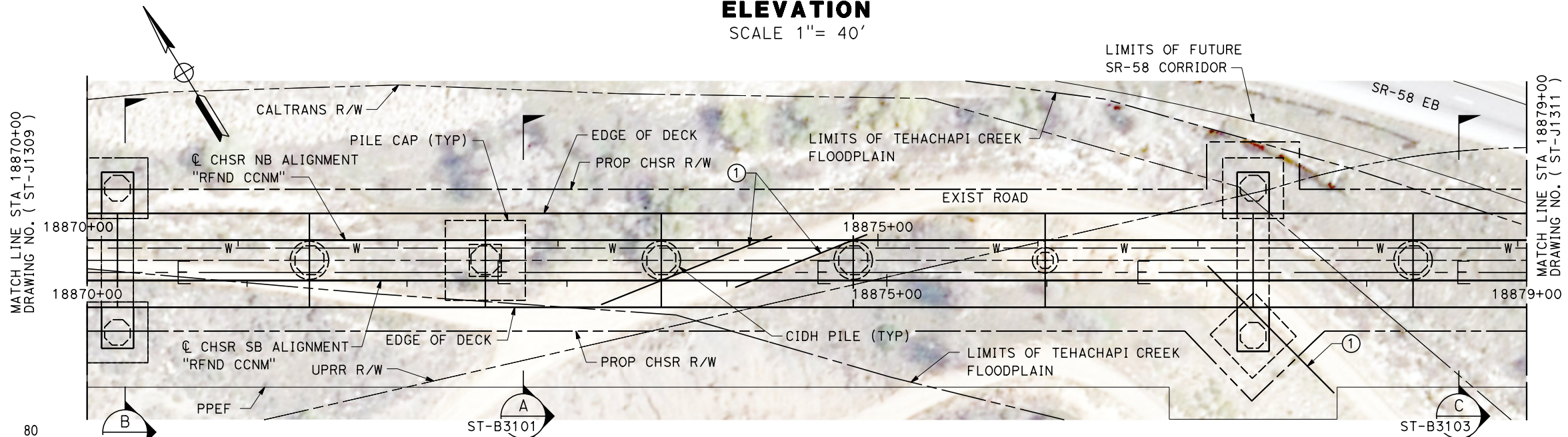
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1/11/2021

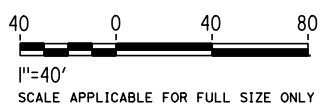
yihong.wang@tylin.com



ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

DRAWN BY
Y. WANG

CHECKED BY
R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



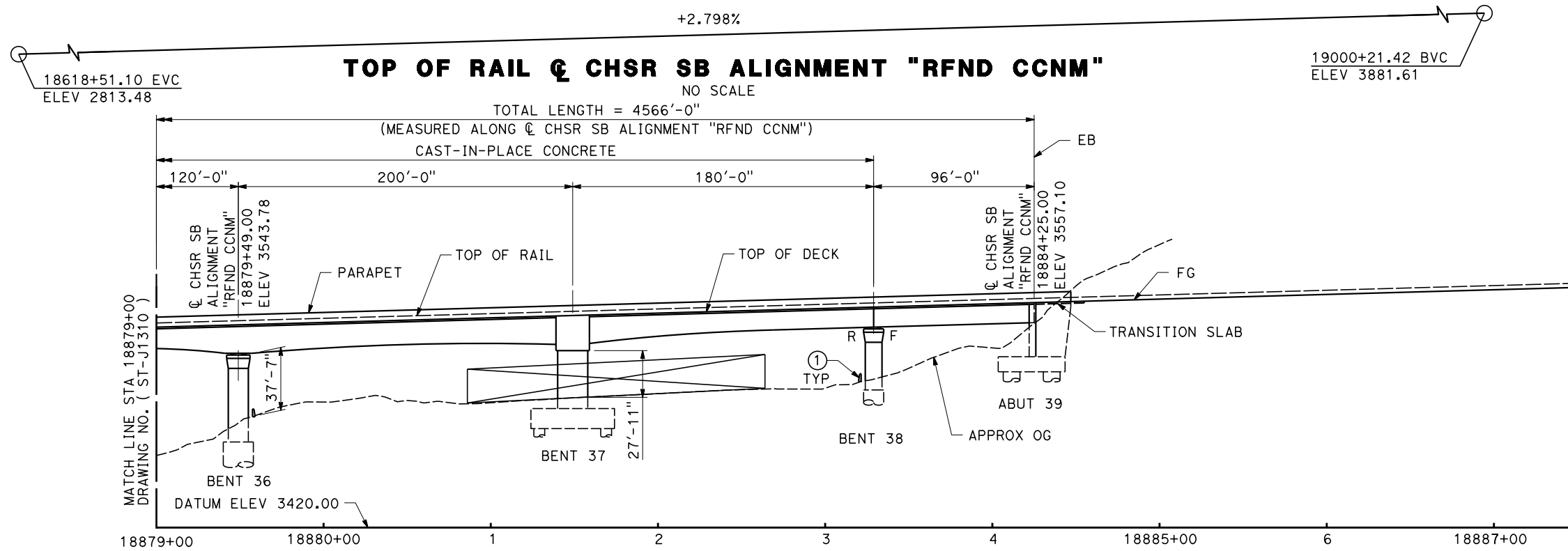
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18838+59 TO 18884+25
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

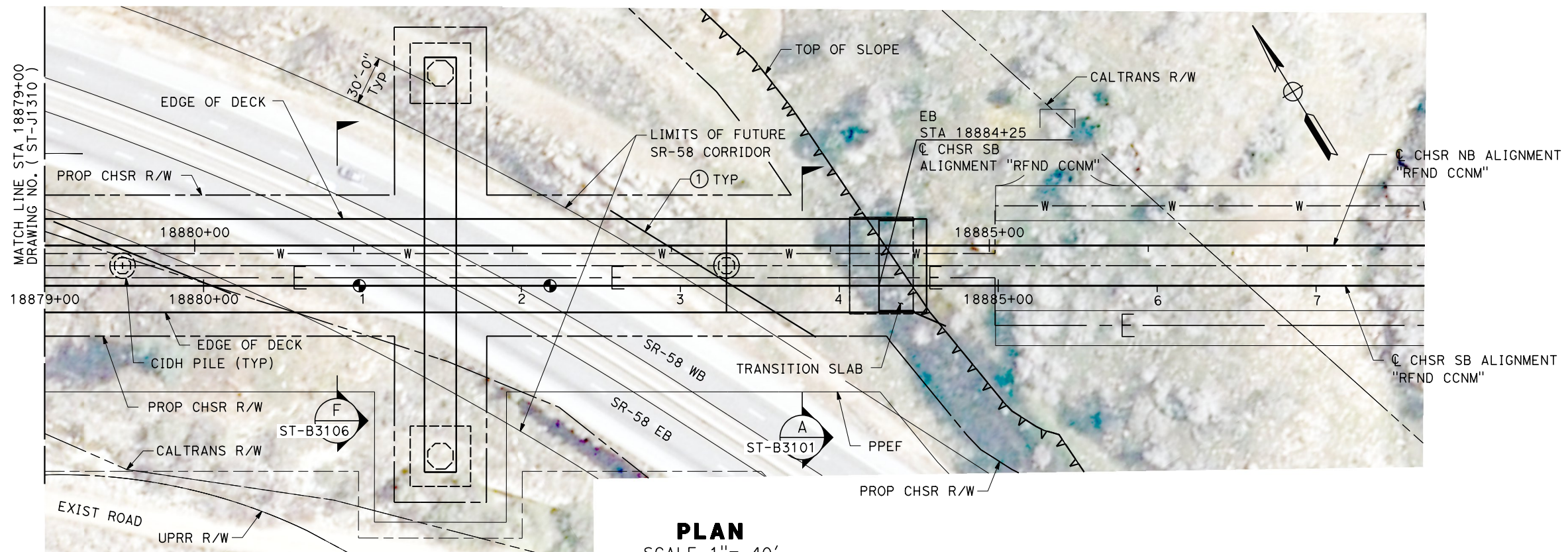
DRAWING NO.
ST-J1310

SCALE
AS SHOWN

SHEET NO.
193



ELEVATION
 SCALE 1" = 40'



PLAN
 SCALE 1" = 40'

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1311

1/11/2021 10:35:35 PM

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

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CHECKED BY
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IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
 PECD
 SUBMITTAL**

**NOT FOR
 CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TRACK STRUCTURES
 VIADUCT STATION 18838+59 TO 18884+25
 PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1311

SCALE
AS SHOWN

SHEET NO.
194

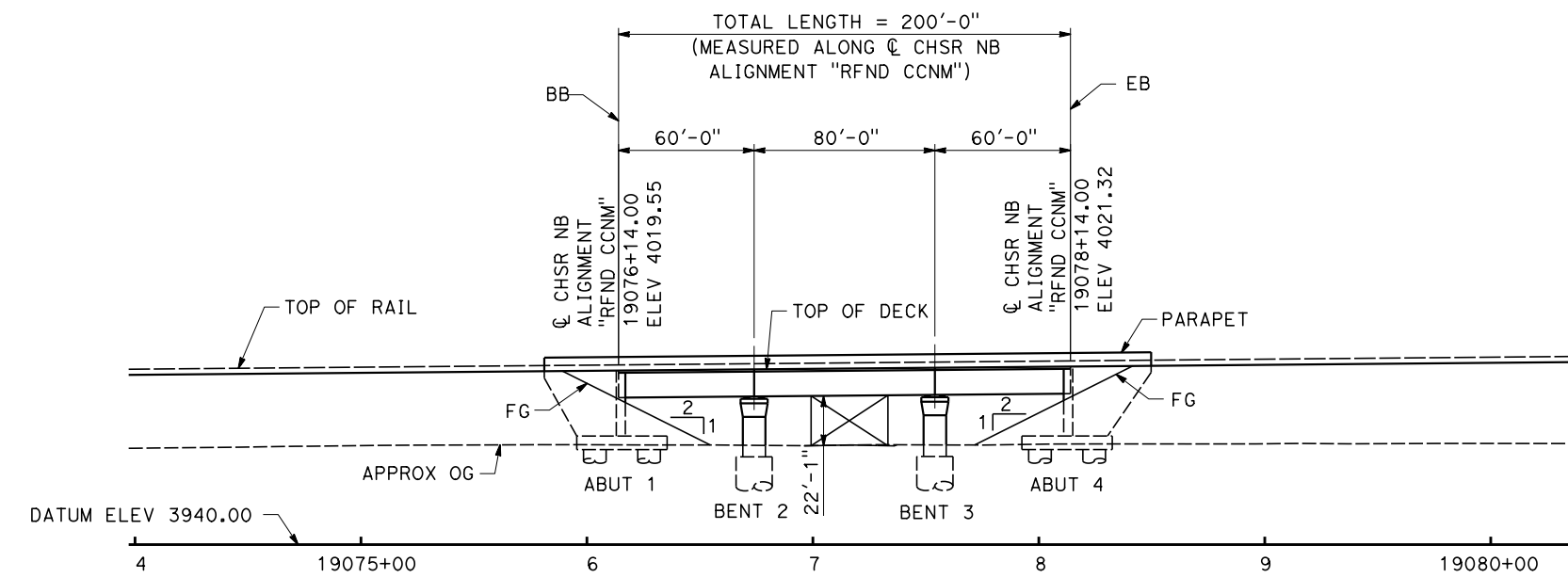
19055+34.38 EVC
ELEV 4001.14

0.886%

19104+69.61 REFINED CCNM =
19094+86.31 ALT 1,2,3,5
ELEV 4044.88

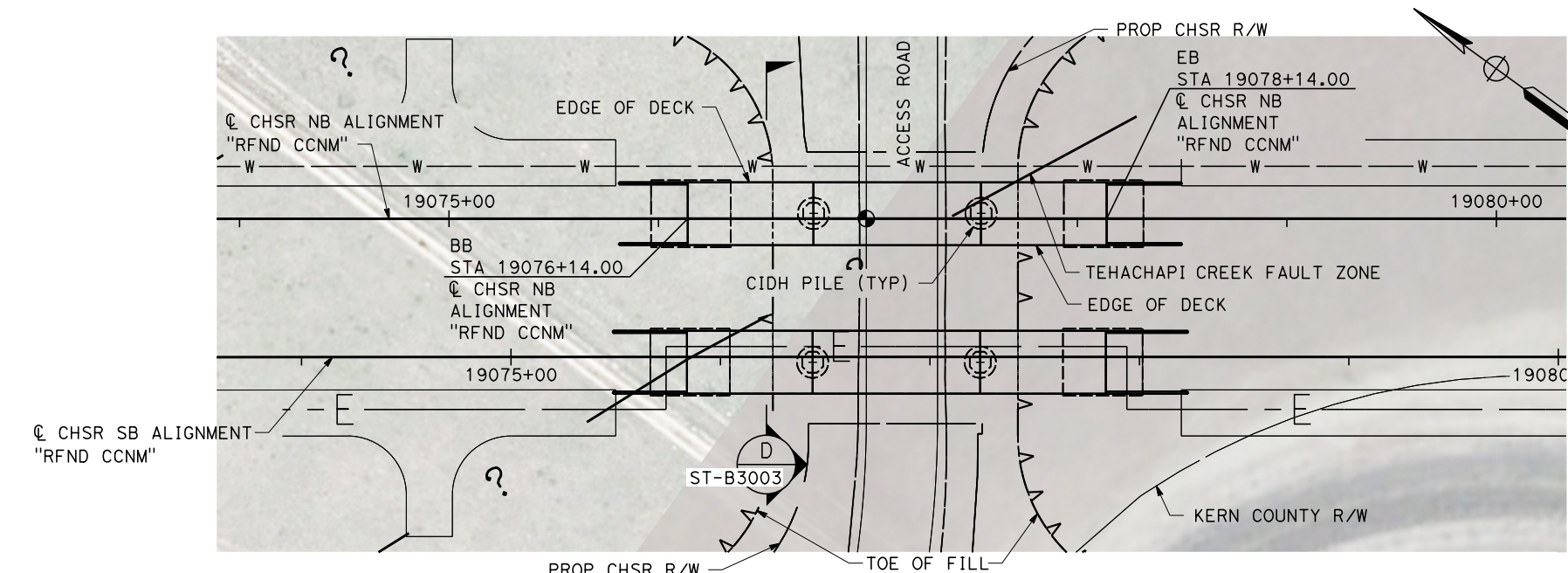
TOP OF RAIL ϕ CHSR NB ALIGNMENT "RFND CCNM"

NO SCALE



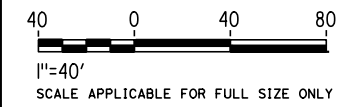
ELEVATION

SCALE 1" = 40'



PLAN

SCALE 1" = 40'



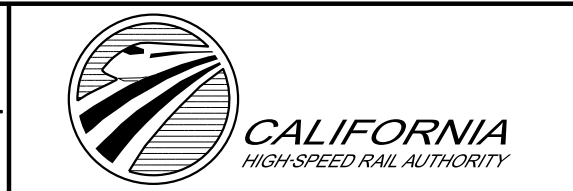
Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1311A 1/11/2021 10:45:07 PM yihong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
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Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
NORTH VIADUCT STA 19076+14.00 TO 19078+14.00
PLAN AND ELEVATION

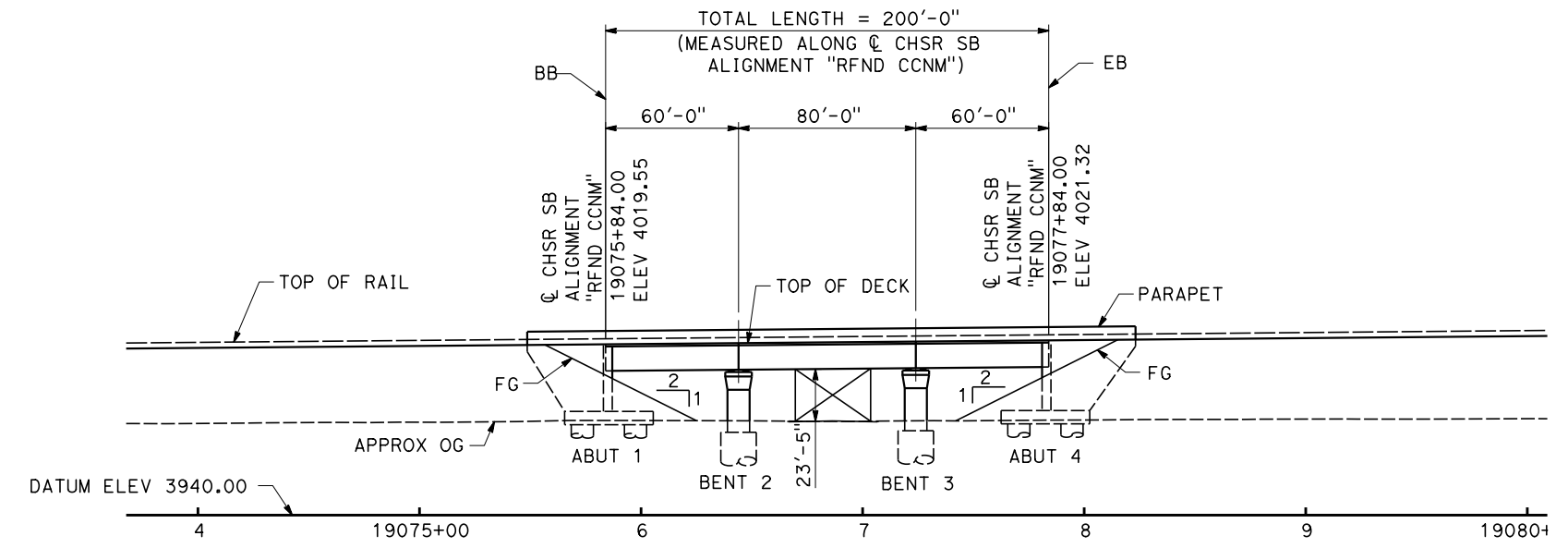
CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1311A
SCALE
AS SHOWN
SHEET NO.
195

19055+04.79 EVC
ELEV 4001.14

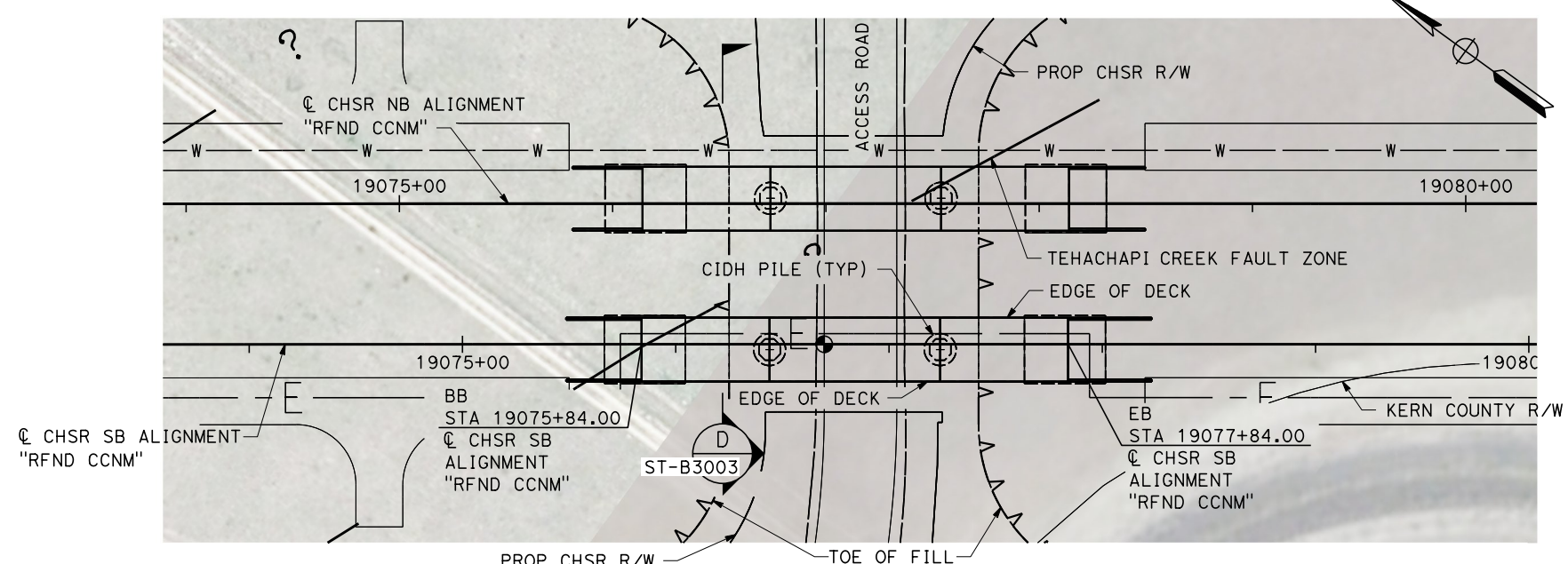
0.886%

19104+40.02 REFINED CCNM =
19094+56.71 ALT 1,2,3,5
ELEV 4044.84

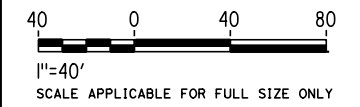
TOP OF RAIL & CHSR SB ALIGNMENT "RFND CCNM"
NO SCALE



ELEVATION
SCALE 1" = 40'



PLAN
SCALE 1" = 40'



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1311B
1/11/2021 10:36:29 PM
y.hong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

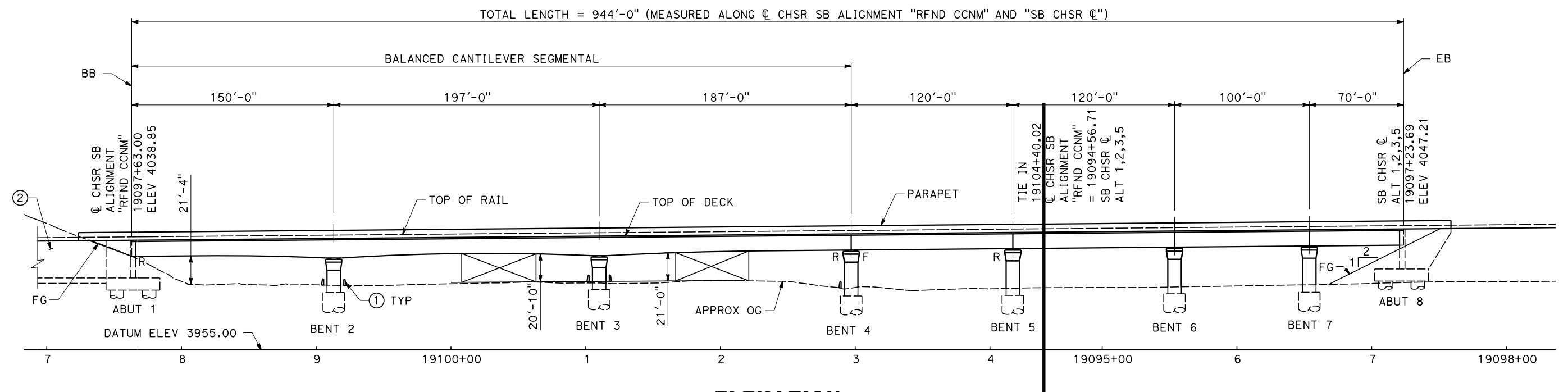


**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
SOUTH VIADUCT STA 19075+84.00 TO 19077+84.00
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1311B
SCALE
AS SHOWN
SHEET NO.
196

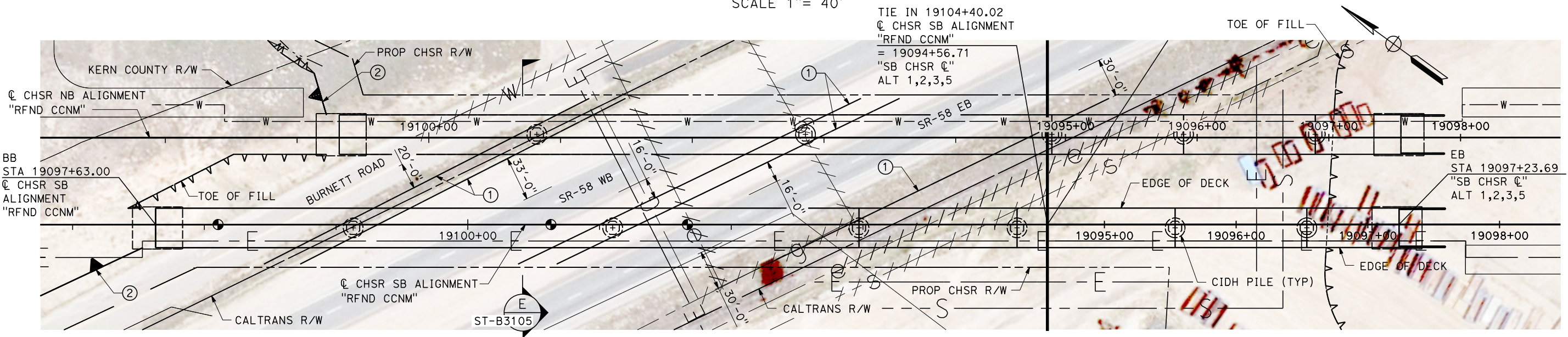
19055+04.79 EVC ELEV 4001.14 0.886% 19104+40.02 EVC ELEV 4044.84 0.886% 19380+04.90 BVC ELEV 4297.66

TOP OF RAIL & CHSR SB ALIGNMENT "RFND CCNM"
NO SCALE

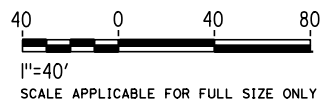


ELEVATION
SCALE 1" = 40'

TIE IN 19104+40.02
& CHSR SB ALIGNMENT
"RFND CCNM"
= 19094+56.71
"SB CHSR &"
ALT 1,2,3,5



PLAN
SCALE 1" = 40'



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1312

1/11/2021 10:35:56 PM yihong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN

DRAWN BY
Y. WANG

CHECKED BY
R. BARTON

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



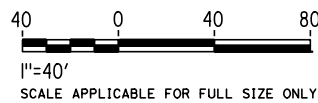
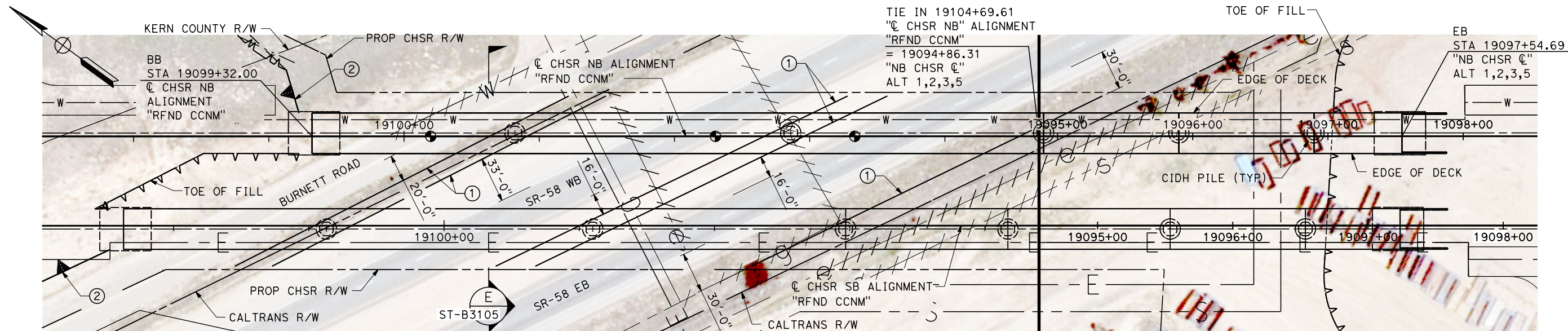
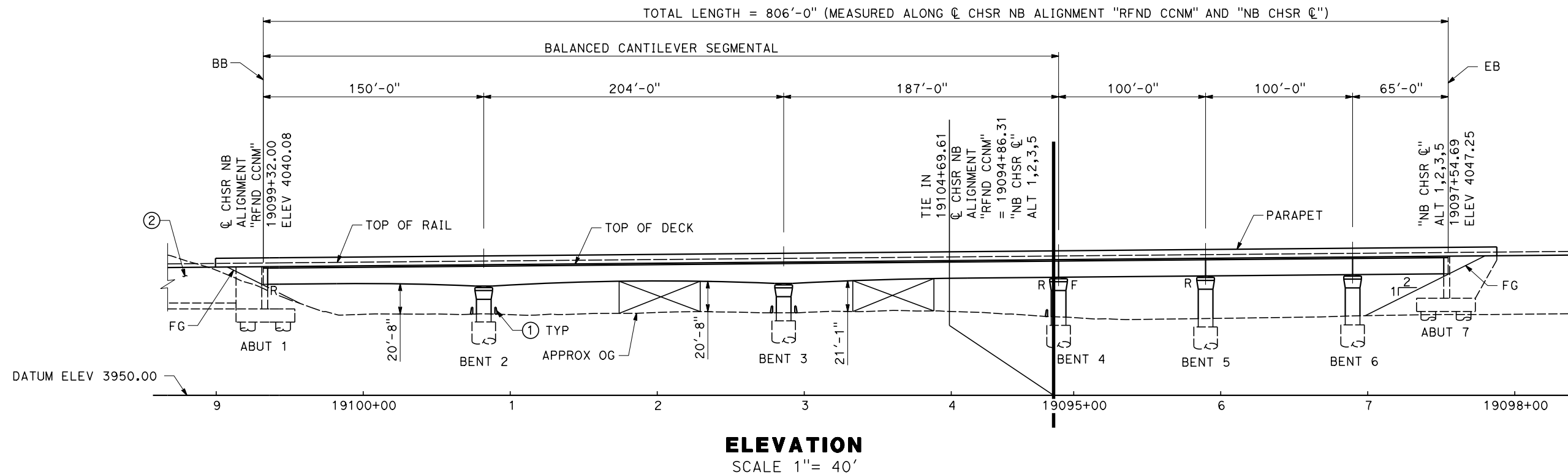
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
SOUTH VIADUCT STA 19097+53 TO 19097+39.69 ALT 1,2,3,5
PLAN AND ELEVATION

CONTRACT NO.
HSR13-44

DRAWING NO.
ST-J1312

SCALE
AS SHOWN

SHEET NO.
197



PLAN
SCALE 1" = 40'

Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\ST\BP-ST-J1313

1/11/2021 10:35:56 PM

y.hong.wang@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
R. GOLCHOBIAN
DRAWN BY
Y. WANG
CHECKED BY
R. BARTON
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

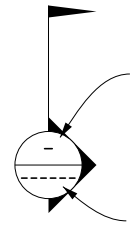



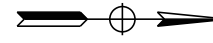

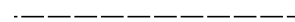

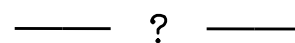

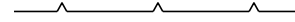


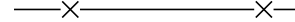











CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACK STRUCTURES
NORTH VIADUCT STA 19099+22 TO 19097+68.69 ALT 1,2,3,5
PLAN AND ELEVATION






CONTRACT NO.
HSR13-44
DRAWING NO.
ST-J1313
SCALE
AS SHOWN
SHEET NO.
198

LEGEND:



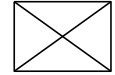
PLAN

-  SECTION NUMBER
DRAWING NUMBER
-  CURVE DATA (ALIGNMENTS, ROADWAYS)
-  CURVE DATA (STRUCTURES)
-  LINE DATA (ALIGNMENTS, ROADWAYS)
-  NORTH ARROW
-  EXIST RIGHT OF WAY
-  LIMITS OF EXCAVATION (CUT)
-  LIMITS OF EMBANKMENT (FILL)
-  FAULT ZONE
-  EXIST CALTRANS RIGHT OF WAY
-  EXIST RETAINING WALL
-  PPEF
-  PROPOSED COLUMN/FOOTING
-  PROPOSED FENCE
-  PROPOSED RETAINING WALL
-  PROPOSED CONCRETE BARRIER
-  PROPOSED RIGHT OF WAY
-  PROPOSED TUNNEL
-  PTEF
-  SRS
STANDALONE RADIO SITE
-  AUTOMATIC TRAIN CONTROL SYSTEM SITE A
-  AUTOMATIC TRAIN CONTROL SYSTEM SITE B
-  AUTOMATIC TRAIN CONTROL SYSTEM SITE D

PLAN

-  AUTOMATIC TRAIN CONTROL SYSTEM SITE E
-  TRACK CROSSING PANEL
-  SUBSTATION
-  SWITCHING STATION
-  PARALLELING STATION

PROFILE

-  ORIGINAL GROUND
-  PROPOSED CHSR ELEVATION
-  STRUCTURAL CLEARANCE ENVELOPE

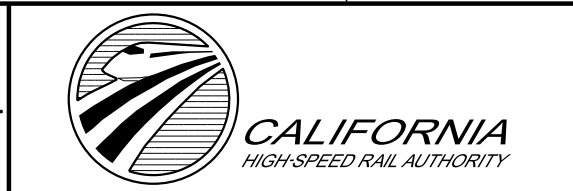
Projects\701206.00_CHSRBP\00_CADD\CCNM_Option_D\Sheets\TP\BP-TP-B0201 9:57:08 PM 1/13/2021 e.laina.baldwin@tylin.com

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
DRAWN BY
A. CARSON
CHECKED BY
S. LANDOLT
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



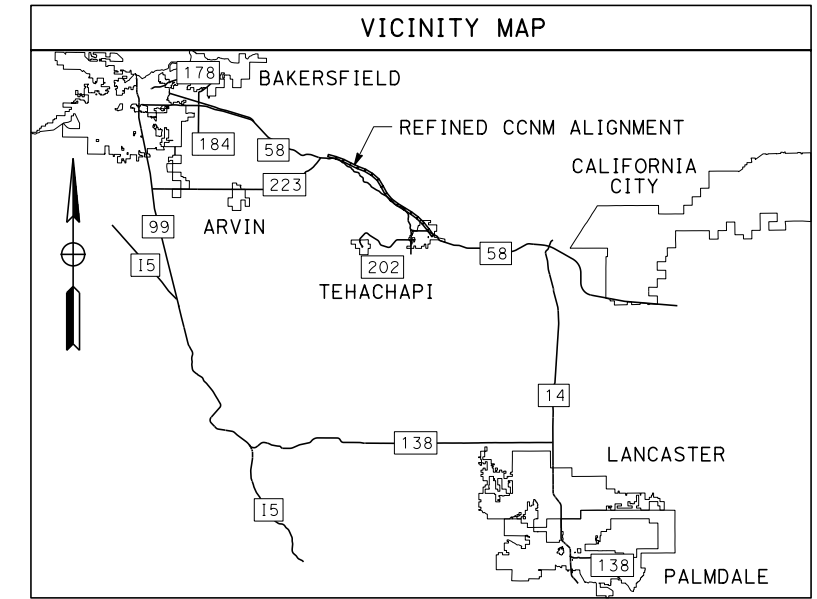
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACTION POWER GENERAL
LEGEND

CONTRACT NO.
HSR13-44
DRAWING NO.
TP-B0201
SCALE
NO SCALE
SHEET NO.
199

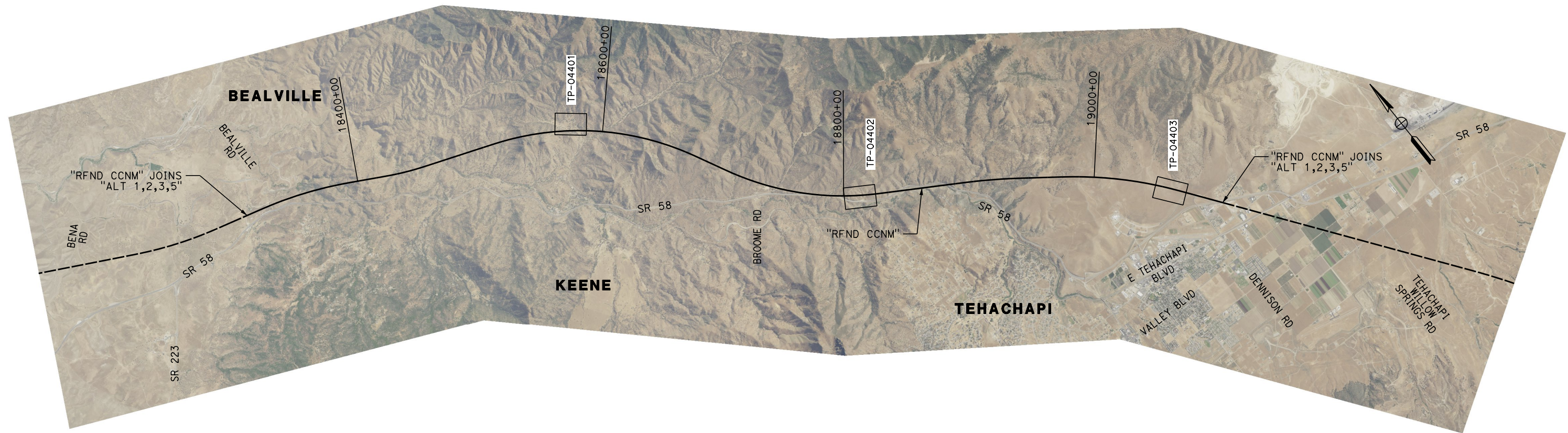
Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-B0202

10:09:01 PM

e.laina.baldwin@tylin.com
1/13/2021



REFINED CCNM DESIGN OPTION

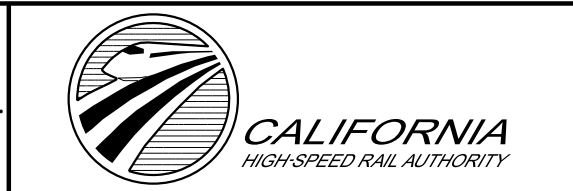


REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
DRAWN BY
A. CARSON
CHECKED BY
S. LANDOLT
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

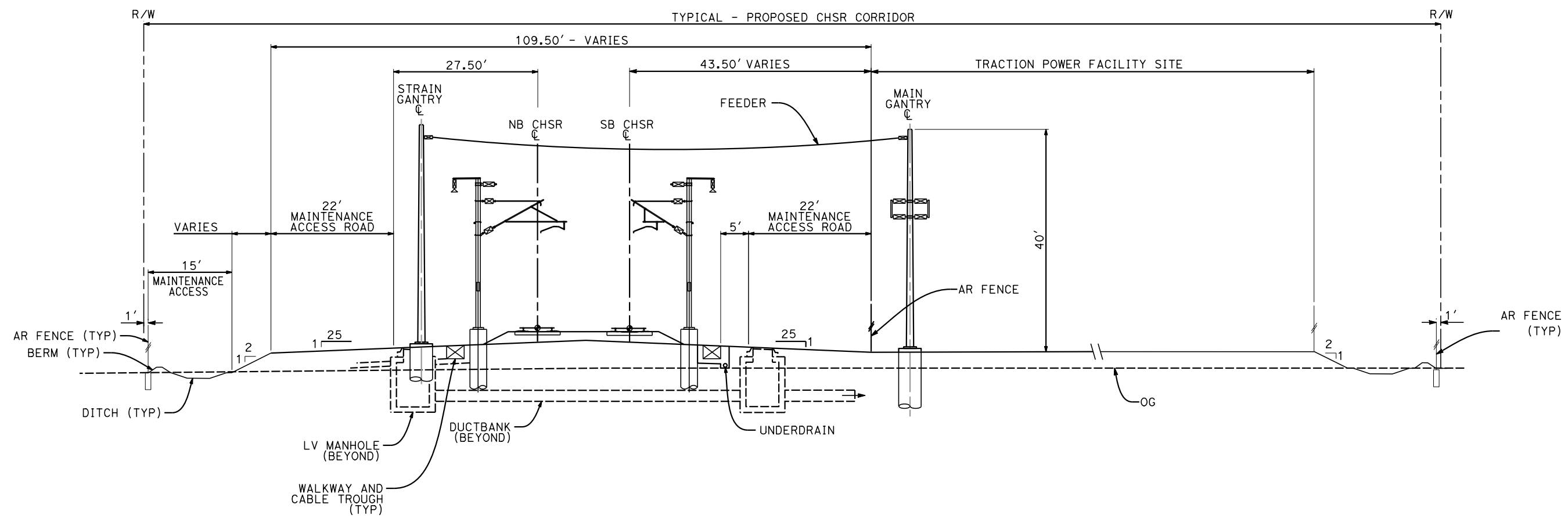


**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
TRACTION POWER GENERAL
KEY MAP

CONTRACT NO.
HSR13-44
DRAWING NO.
TP-B0202
SCALE
AS SHOWN
SHEET NO.
200

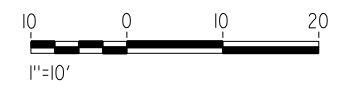
Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-B3201
 10:09:11 PM
 1/13/2021
 elaina.baldwin@tylin.com



- NOTES:**
- FOR STRUCTURAL DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
 - TRACKFORM SHOWN IS INDICATIVE
 - SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE TABLES
 - SECTION IS REPRESENTATIVE; DOES NOT ACCURATELY PORTRAY TRACK PROFILE RELATIVE TO EXISTING GROUND.

SECTION B

STA 18815+57.13 PARALLELING STATION (RFND CCNM)

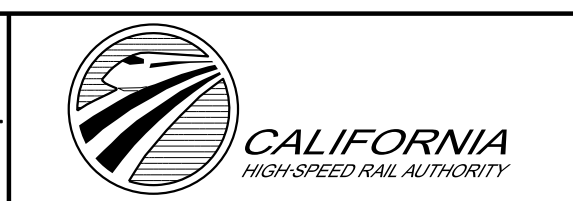


REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
 DRAWN BY
A. CARSON
 CHECKED BY
S. LANDOLT
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

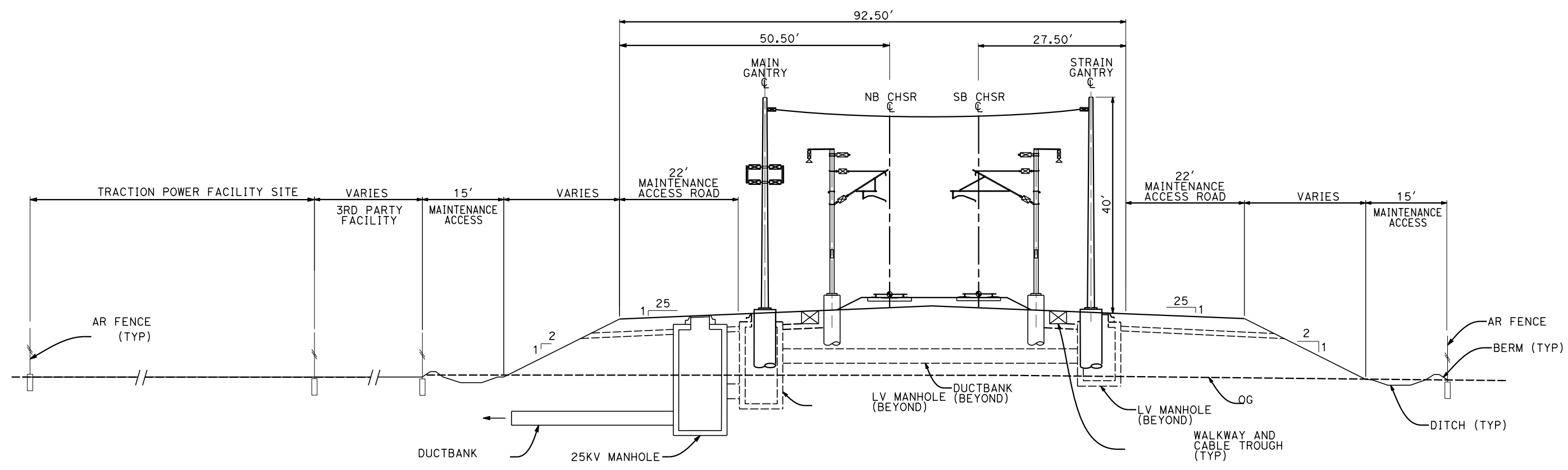
RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TRACTION POWER GENERAL
 TYPICAL SECTIONS
 SHEET 1 OF 2

CONTRACT NO.
 HSR13-44
 DRAWING NO.
 TP-B3201
 SCALE
 AS SHOWN
 SHEET NO.
 201

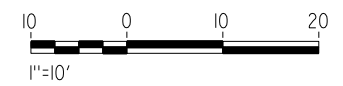


NOTES:

1. FOR STRUCTURAL DIMENSIONS SEE STRUCTURAL CROSS SECTIONS
2. TRACKFORM SHOWN IS INDICATIVE
3. SUPERELEVATION IS NOT SHOWN. THE AMOUNT OF APPLIED SUPERELEVATION IS SHOWN IN THE CURVE TABLES
4. SECTION IS REPRESENTATIVE; DOES NOT ACCURATELY PORTRAY TRACK PROFILE RELATIVE TO EXISTING GROUND.

SECTION C

STA 18575+96.67 PARALLELING STATION (RFND CCNM)
 STA 19059+85.00 SUBSTATION (RFND CCNM)



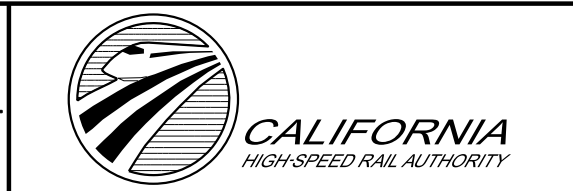
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 9:57:12 PM
 elaina.baldwin@tylin.com 1/13/2021

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
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A. CARSON
 CHECKED BY
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G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

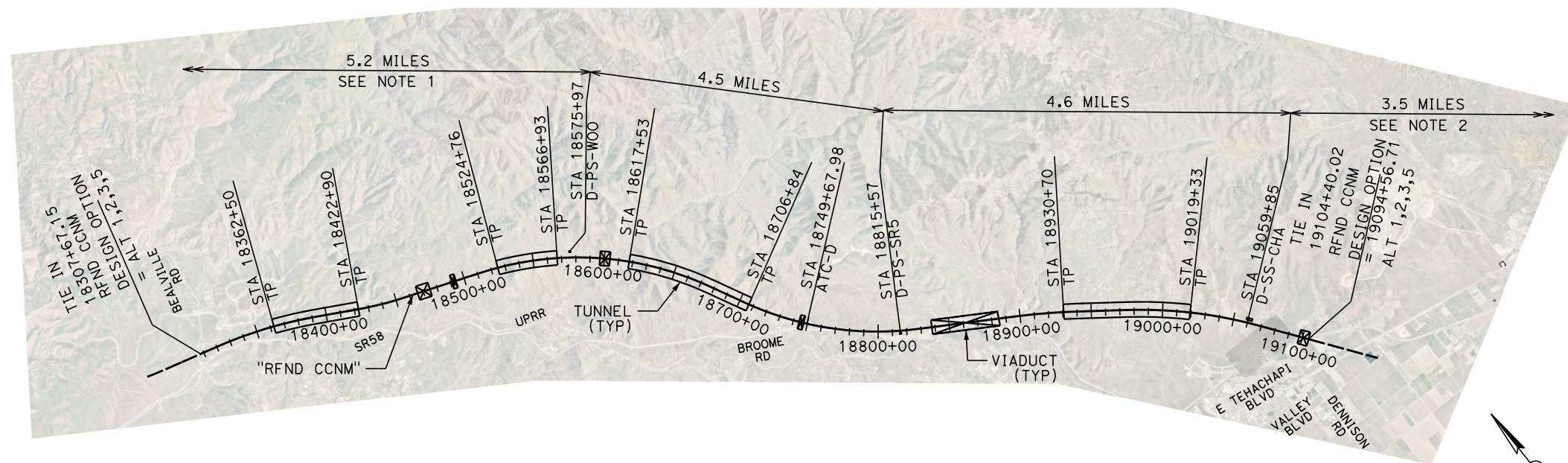
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TRACTION POWER GENERAL
 TYPICAL SECTIONS
 SHEET 2 OF 2

CONTRACT NO.
 HSR13-44
 DRAWING NO.
 TP-B3202
 SCALE
 AS SHOWN
 SHEET NO.
 202

REFINED CCNM DESIGN OPTION



NOTES:

1. SEE "ALT 1,2,3,5" FOR D-PS-BEA STA 18302+00.
2. SEE "ALT 1,2,3,5" FOR D-PS-HIG STA 19234+50.

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-D0201

10:09:09 PM

e.laina.baldwin@tylin.com
1/13/2021

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON

DRAWN BY
A. CARSON

CHECKED BY
S. LANDOLT

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TRACTION POWER FACILITY LAYOUT

CONTRACT NO.
HSR13-44

DRAWING NO.
TP-D0201

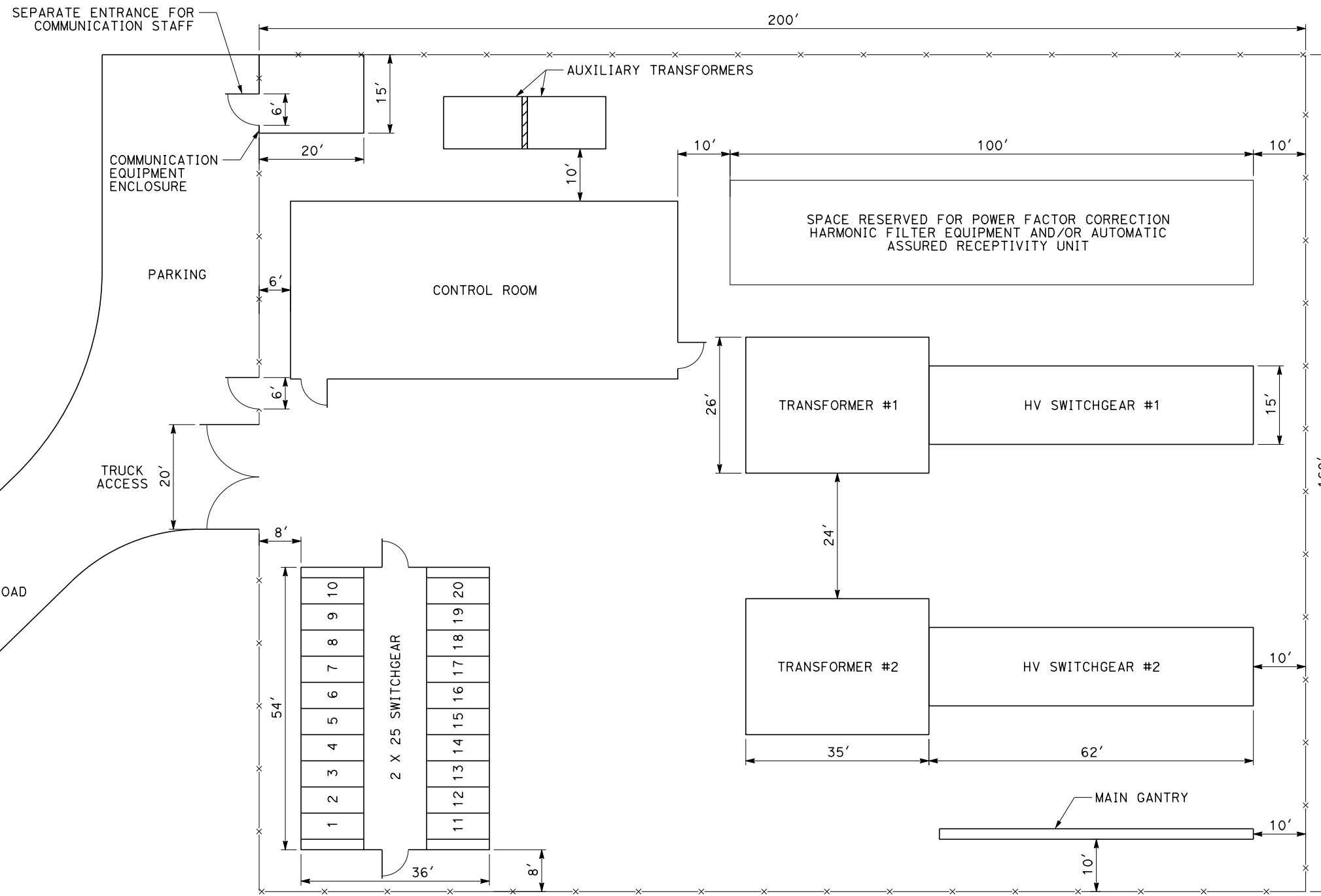
SCALE
AS SHOWN

SHEET NO.
203

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-E4201

9:57:09 PM

e.laina.baldwin@tylin.com
1/13/2021



NOTES:

1. THIS IS A TYPICAL LAYOUT AND THE ORIENTATION OF THE STATION WITH RESPECT TO TRACK, LOCATION OF UTILITY SUPPLY CIRCUITS, EQUIPMENT, AND ROAD ACCESS TO BE DETERMINED ON A SITE-BY-SITE BASIS.
2. THE MAIN GANTRY POSITION SHALL BE PARALLEL AND ADJACENT TO THE TRACK.
3. THERE WILL BE A STRAIN GANTRY LOCATED WITHIN THE RAILROAD R/W, PARALLEL TO AND ON THE OPPOSITE SIDE OF THE TRACK WITH FOOTPRINTS EXACTLY EQUAL TO THAT OF THE MAIN GANTRY.
4. IF THE TPF IS LOCATED AWAY FROM THE TRACK, THE MAIN GANTRY WILL BE LOCATED WITHIN THE RAILROAD R/W, PARALLEL TO AND TOWARDS TPF SIDE OF THE TRACK. IN THIS CASE AN ADDITIONAL 40' WIDE STRIP OF LAND WILL BE REQUIRED FROM THE TPF TO THE RAILROAD R/W FOR LAYING UNDERGROUND DUCT BANKS AND MANHOLES.
5. THE COMMUNICATION EQUIPMENT ROOM SHALL HOUSE COMMUNICATION INTERFACE EQUIPMENT FOR SCADA SYSTEM AND OTHER WAYSIDE COMMUNICATION EQUIPMENT.
6. THE GANTRIES SHALL BE 40' HIGH.
7. THIS LAYOUT IS PER TM 3.1.1.3-A AND SHOWN HERE FOR REFERENCE AND COMPLETENESS



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
DRAWN BY
A. CARSON
CHECKED BY
S. LANDOLT
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

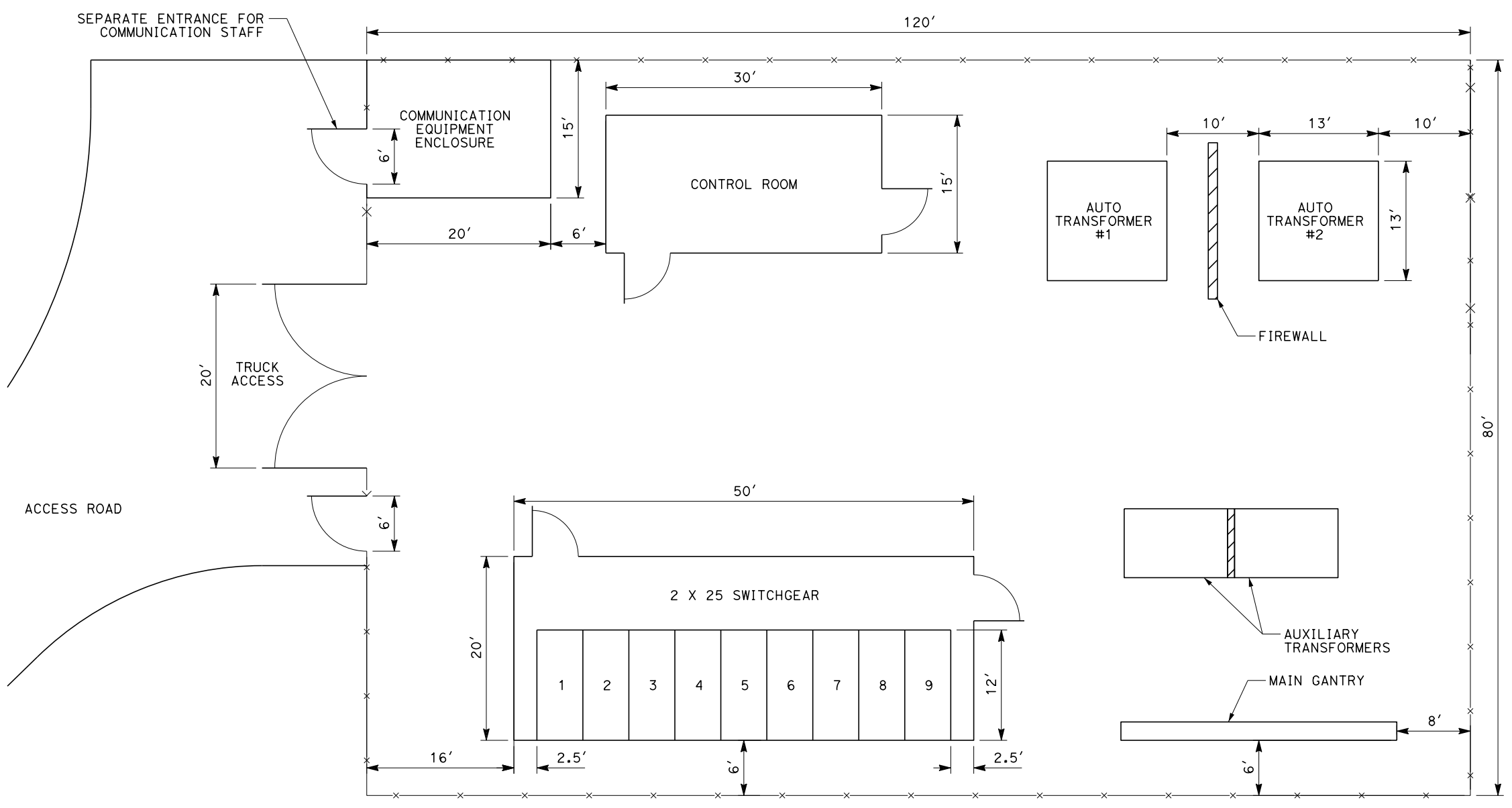
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TYPICAL LAYOUT
TRACTION POWER SUBSTATION
WITH 2 HIGH VOLTAGE TRANSFORMERS

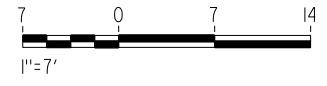
CONTRACT NO.
HSR13-44
DRAWING NO.
TP-E4201
SCALE
AS SHOWN
SHEET NO.
204

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 10:09:07 PM
 1/13/2021
 elaina.baldwin@tylin.com



NOTES:

1. THIS IS A TYPICAL LAYOUT AND THE ORIENTATION OF THE STATION WITH RESPECT TO TRACK, LOCATION OF UTILITY SUPPLY CIRCUITS, EQUIPMENT, AND ROAD ACCESS TO BE DETERMINED ON A SITE-BY-SITE BASIS.
2. THE MAIN GANTRY POSITION SHALL BE PARALLEL AND ADJACENT TO THE TRACK.
3. THERE WILL BE A STRAIN GANTRY LOCATED WITHIN THE RAILROAD R/W, PARALLEL TO AND ON THE OPPOSITE SIDE OF THE TRACK WITH FOOTPRINTS EXACTLY EQUAL TO THAT OF THE MAIN GANTRY.
4. IF THE TPF IS LOCATED AWAY FROM THE TRACK, THE MAIN GANTRY WILL BE LOCATED WITHIN THE RAILROAD R/W, PARALLEL TO AND TOWARDS TPF SIDE OF THE TRACK. IN THIS CASE AN ADDITIONAL 40' WIDE STRIP OF LAND WILL BE REQUIRED FROM THE TPF TO THE RAILROAD R/W FOR LAYING UNDERGROUND DUCT BANKS AND MANHOLES.
5. THE COMMUNICATION EQUIPMENT ROOM SHALL HOUSE COMMUNICATION INTERFACE EQUIPMENT FOR SCADA SYSTEM AND OTHER WAYSIDE COMMUNICATION EQUIPMENT.
6. THE GANTRIES SHALL BE 40' HIGH.
7. THIS LAYOUT IS PER TM 3.1.1.3-D AND SHOWN HERE FOR REFERENCE AND COMPLETENESS



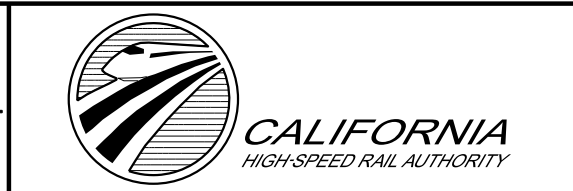
PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
 DRAWN BY
A. CARSON
 CHECKED BY
S. LANDOLT
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION



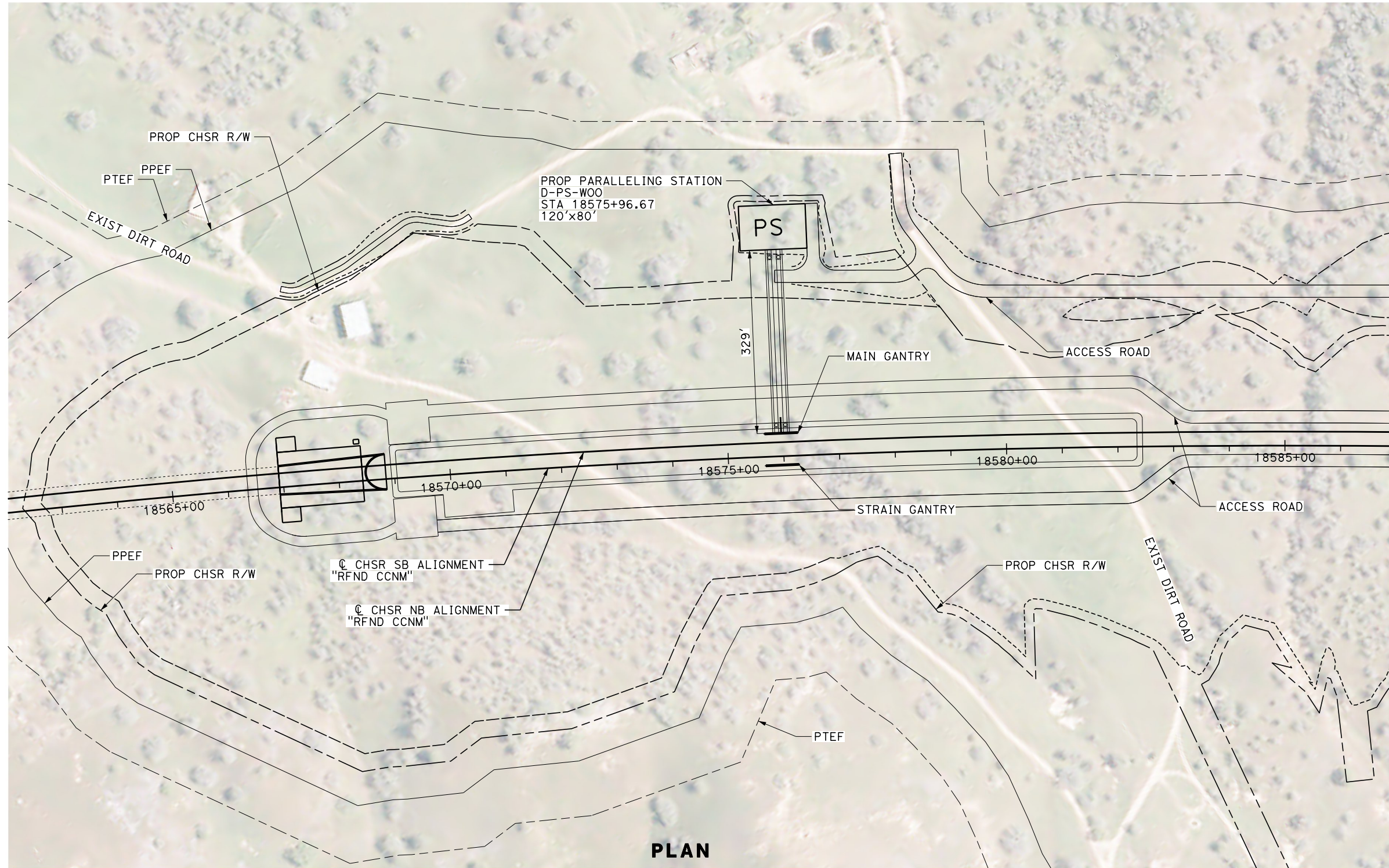
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TYPICAL LAYOUT
 PARALLELING STATION
 WITH 2 AUTOTRANSFORMERS

CONTRACT NO.
 HSR13-44
 DRAWING NO.
 TP-E4202
 SCALE
 AS SHOWN
 SHEET NO.
 205

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-04401

10:02:54 PM

e.laina.baldwin@tylin.com
1/13/2021



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
DRAWN BY
A. CARSON
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S. LANDOLT
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION



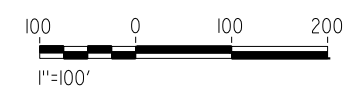
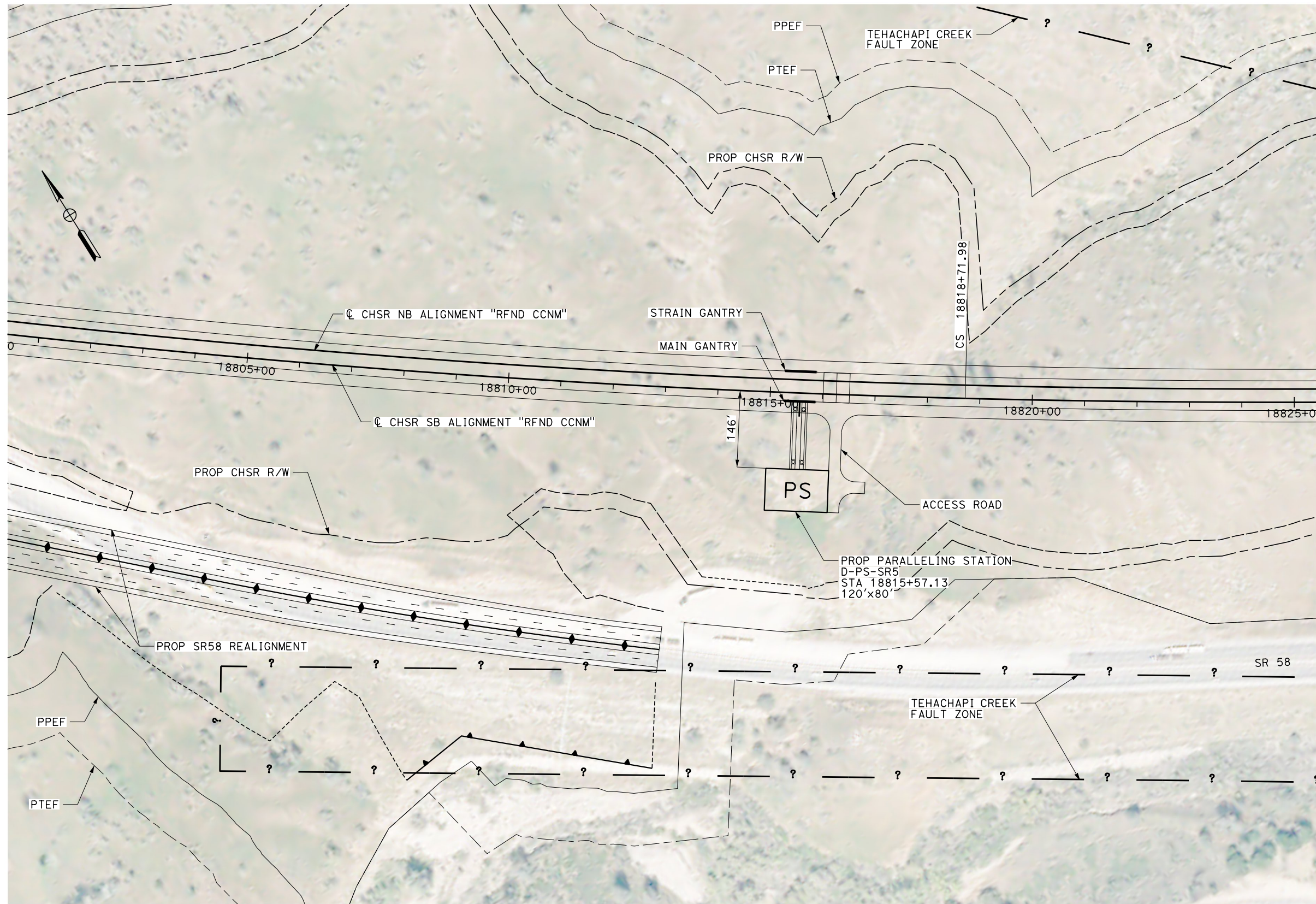
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TRACTION POWER SITE PLAN
PROPOSED PARALLELING STATION 3

CONTRACT NO.
HSR13-44
DRAWING NO.
TP-04401
SCALE
AS SHOWN
SHEET NO.
206

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-04402

10:03:19 PM

e.laina.baldwin@tylin.com 1/13/2021



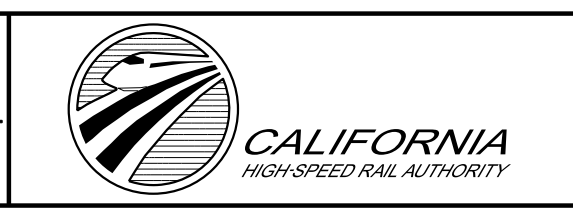
PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
DRAWN BY
A. CARSON
CHECKED BY
S. LANDOLT
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

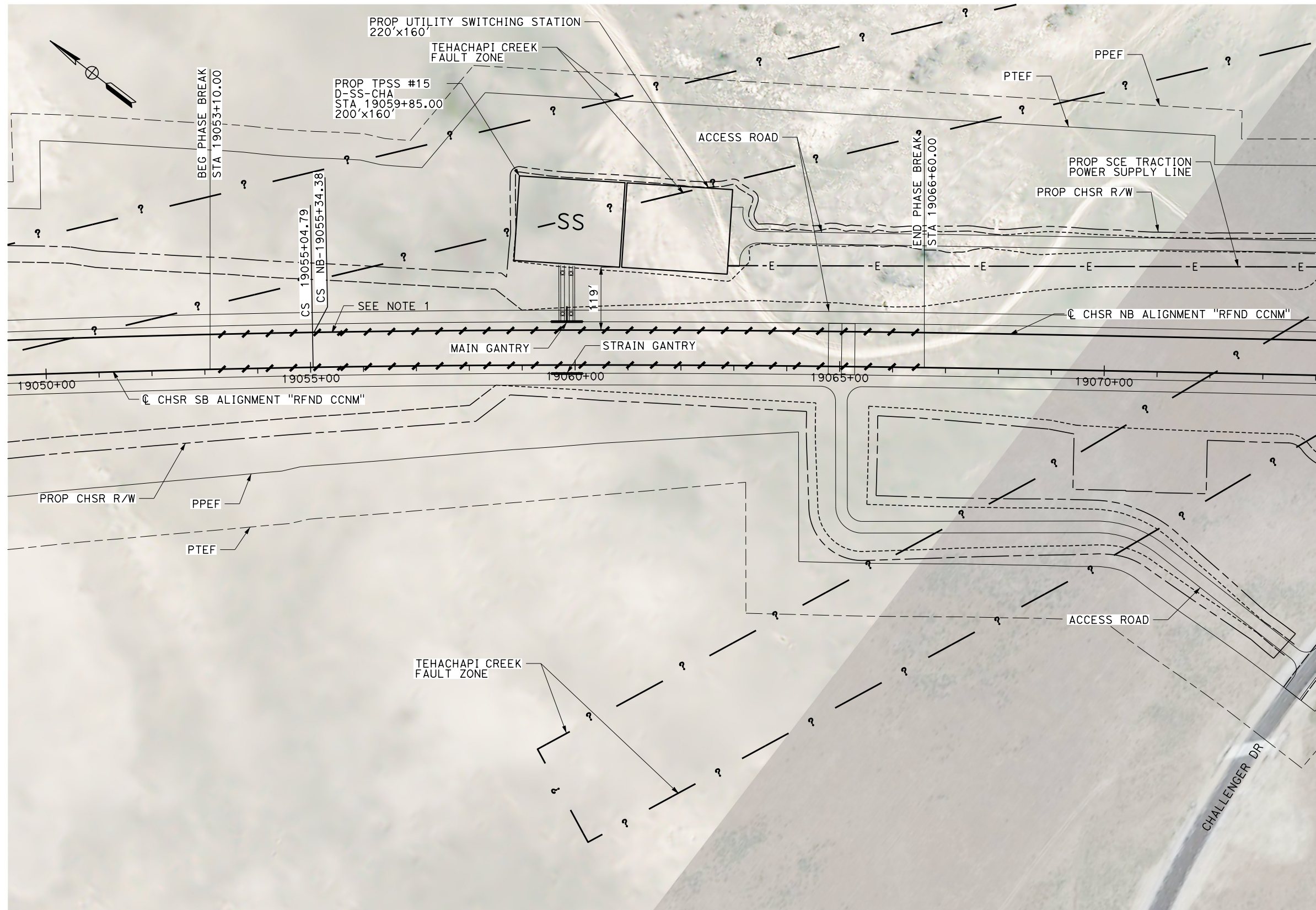
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CONSTRUCTION**



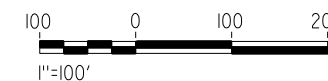
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TRACTION POWER SITE PLAN
PROPOSED PARALLELING STATION 4

CONTRACT NO.
HSR13-44
DRAWING NO.
TP-04402
SCALE
AS SHOWN
SHEET NO.
207

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TP\BP-TP-04403
 10:09:37 PM
 1/13/2021
 elaina.baldwin@tylin.com



NOTES
 1. PROPOSED TRACK GRADE THROUGH PHASE BREAK VARIES FROM 0.89% TO 0.99%



PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
 DRAWN BY
A. CARSON
 CHECKED BY
S. LANDOLT
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION


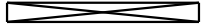
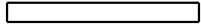

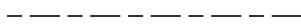

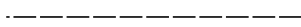
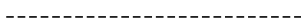







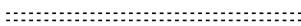
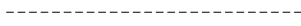









CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TRACTION POWER SITE PLAN
 PROPOSED TPSS #15

CONTRACT NO.
HSR13-44
 DRAWING NO.
TP-04403
 SCALE
AS SHOWN
 SHEET NO.
208

LEGEND:

PLAN

-  NORTH ARROW
-  BRIDGE
-  VIADUCT
-  TUNNEL
-  PROPOSED RIGHT OF WAY
-  EXIST RIGHT OF WAY
-  LIMITS OF EXCAVATION (CUT)
-  LIMITS OF EMBANKMENT (FILL)
-  FAULT ZONE
-  EXIST RETAINING WALL
-  PPEF
-  PROPOSED COLUMN
-  PROPOSED FENCE
-  PROPOSED PHASE BREAK
-  PROPOSED RETAINING WALL
-  PROPOSED TUNNEL
-  PTEF
-  PROPOSED TURNOUT
-  SRS
STANDALONE RADIO SITE - SIZE: 40' X 25'
-  A
AUTOMATIC TRAIN CONTROL SYSTEM SITE A - SIZE: 70' X 35'
-  B
AUTOMATIC TRAIN CONTROL SYSTEM SITE B - SIZE: 30' X 35'
-  D
AUTOMATIC TRAIN CONTROL SYSTEM SITE D - SIZE: 100' X 65'
-  E
AUTOMATIC TRAIN CONTROL SYSTEM SITE E - SIZE: 110' X 65'
-  TRACK CROSSING PANEL

PLAN

 -E- PROPOSED TRACTION POWER SUPPLY LINE

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TC\BP-TC-B0201

_ics_user_117609 1/20/2021 6:25:00 AM

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
DRAWN BY
A. CARSON
CHECKED BY
S. LANDOLT
IN CHARGE
G. CAMPBELL
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

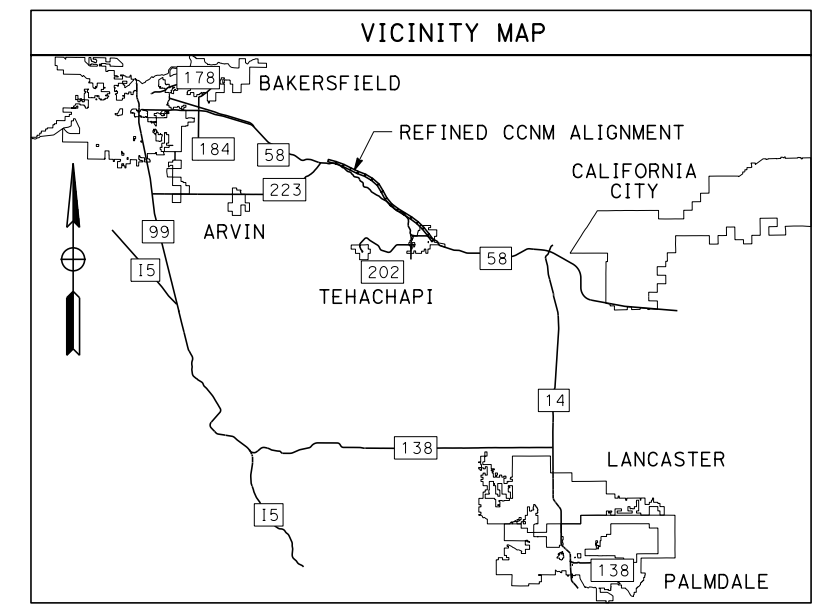
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CONSTRUCTION**



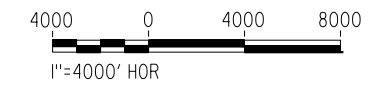
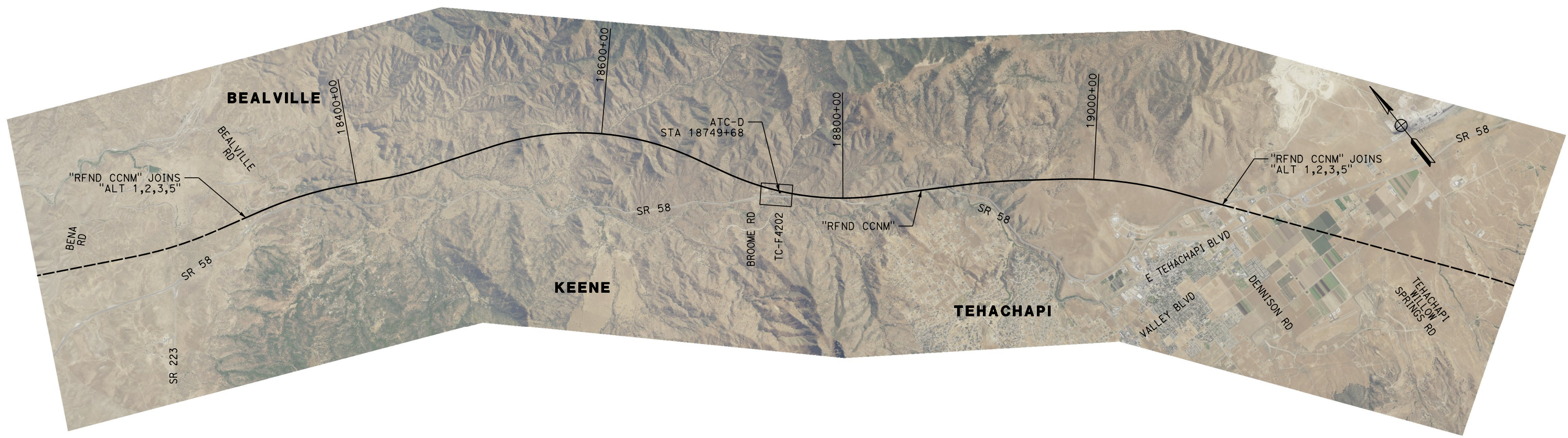
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
AUTOMATIC TRAIN CONTROL GENERAL
ABBREVIATIONS AND LEGEND

CONTRACT NO.
HSR13-44
DRAWING NO.
TC-B0201
SCALE
NO SCALE
SHEET NO.
209

_ics_user_117609 1/20/2021 6:08:51 AM Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TC\BP-TC-B0202



REFINED CCNM DESIGN OPTION



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
 DRAWN BY
A. CARSON
 CHECKED BY
S. LANDOLT
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

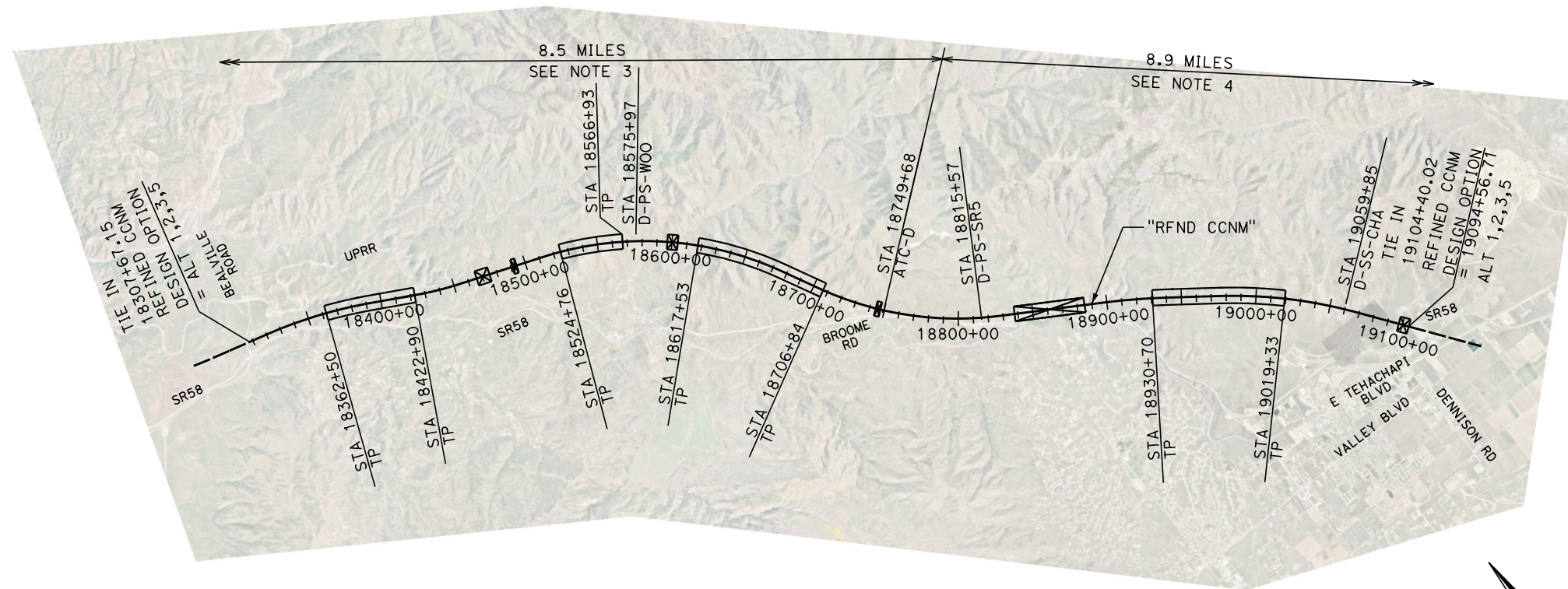
NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 AUTOMATIC TRAIN CONTROL GENERAL
 KEY MAP

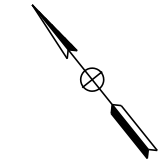
CONTRACT NO.
HSR13-44
 DRAWING NO.
TC-B0202
 SCALE
AS SHOWN
 SHEET NO.
210

REFINED CCNM DESIGN OPTION



NOTES:

1. TP (TUNNEL PORTAL) SITES HAVE RADIO ANTENNAS
2. TP (TUNNEL PORTAL) SITE 18566+93 USES ANTENNA FROM PS#2.
3. SEE "ALT 1,2,3,5" FOR ATC-D STA 18302+00.
4. SEE "ALT 1,2,3,5" FOR ATC-E STA 19208+50.



_ics_user_117609 1/20/2021 6:42:04 AM Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\TC\BP-TC-B0203

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON

DRAWN BY
A. CARSON

CHECKED BY
S. LANDOLT

IN CHARGE
G. CAMPBELL

DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
AUTOMATIC TRAIN CONTROL LAYOUT

CONTRACT NO.
HSR13-44

DRAWING NO.
TC-B0203

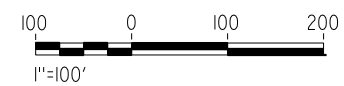
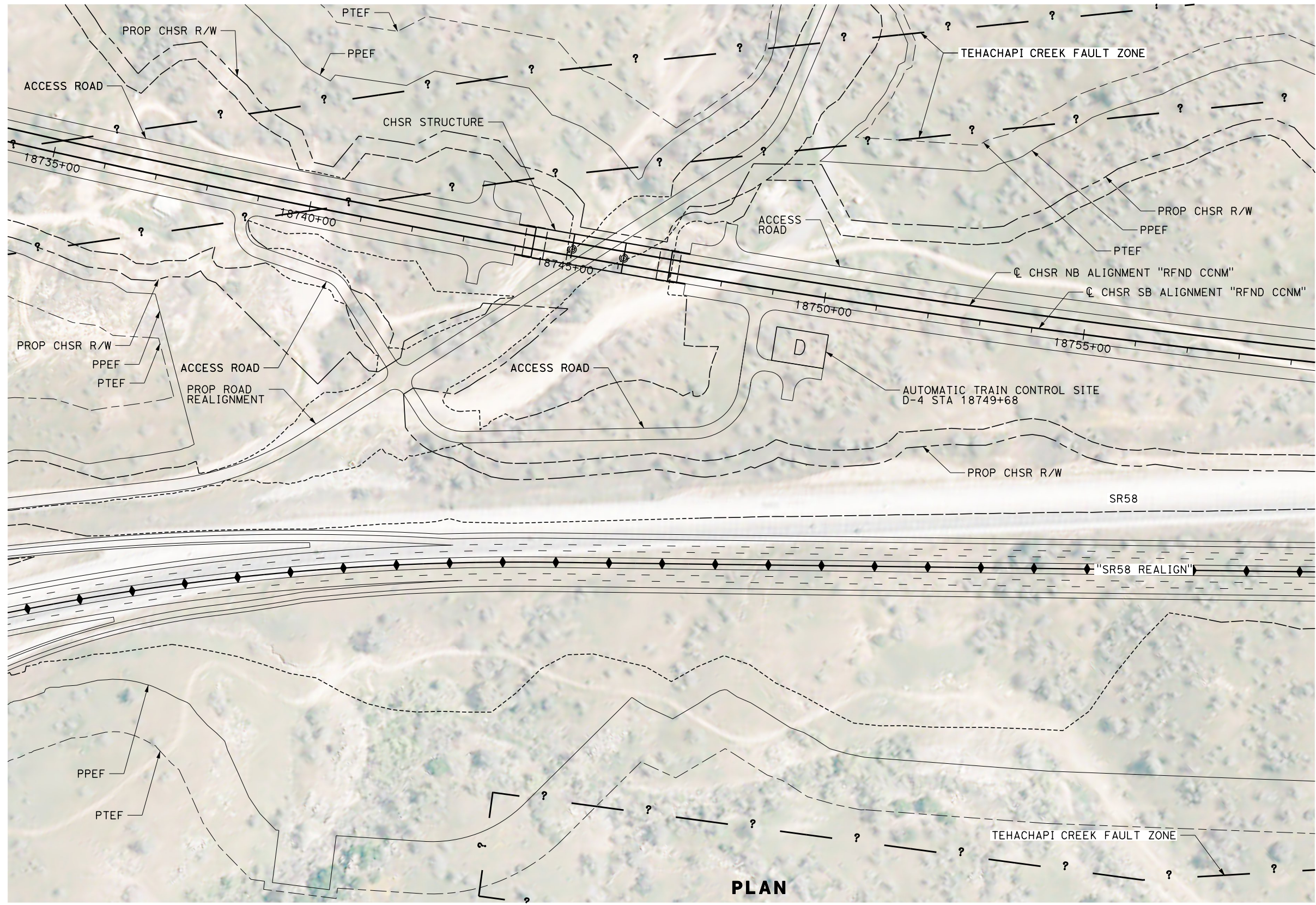
SCALE
AS SHOWN

SHEET NO.
211

Projects\701206.00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TC\BP-TC-F4201

6:27:26 AM

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PLAN

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
A. CARSON
 DRAWN BY
A. CARSON
 CHECKED BY
S. LANDOLT
 IN CHARGE
G. CAMPBELL
 DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

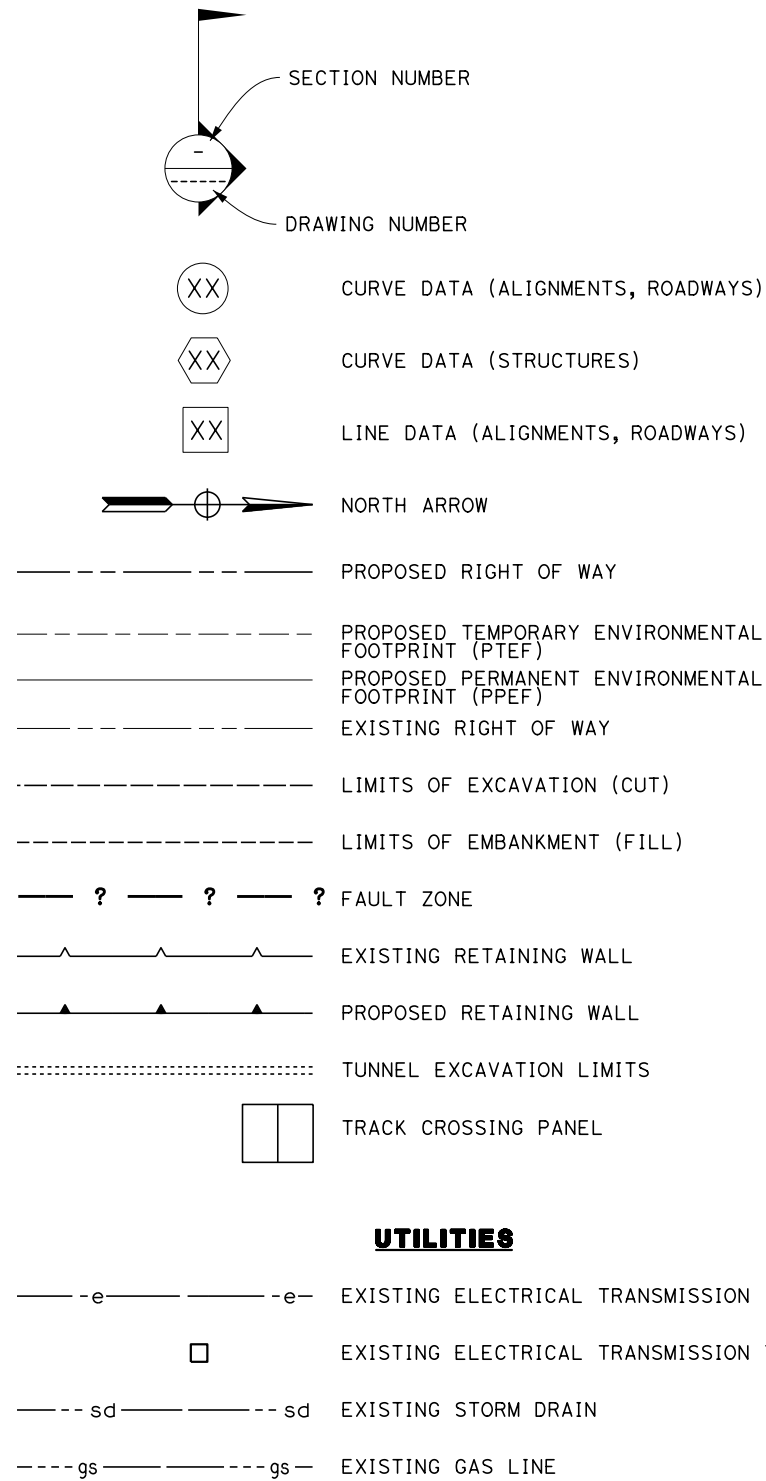


**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
 REFINED CCNM DESIGN OPTION
 AUTOMATIC TRAIN CONTROL SITE PLAN
 SITE @ 18749+68

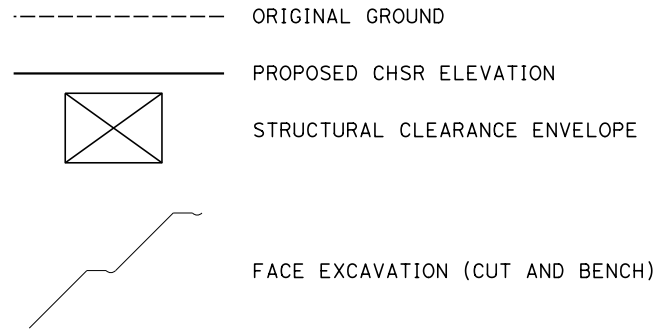
CONTRACT NO.
HSR13-44
 DRAWING NO.
TC-F4201
 SCALE
AS SHOWN
 SHEET NO.
212

TUNNEL LEGEND

PLAN



PROFILE



GENERAL NOTES

1. ROADWAY IMPROVEMENTS NOT PART OF THIS SET.
2. FOR PROPOSED RETAINING WALL SEE SHEET SERIES ST-G.

Projects\701206_00_CHSRBP\00_CADD\CCNM_Option_D\Sheets\TN\TN-B0201 6:10:34 AM 1/20/2021 jcs_user_17609

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

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CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL LEGEND

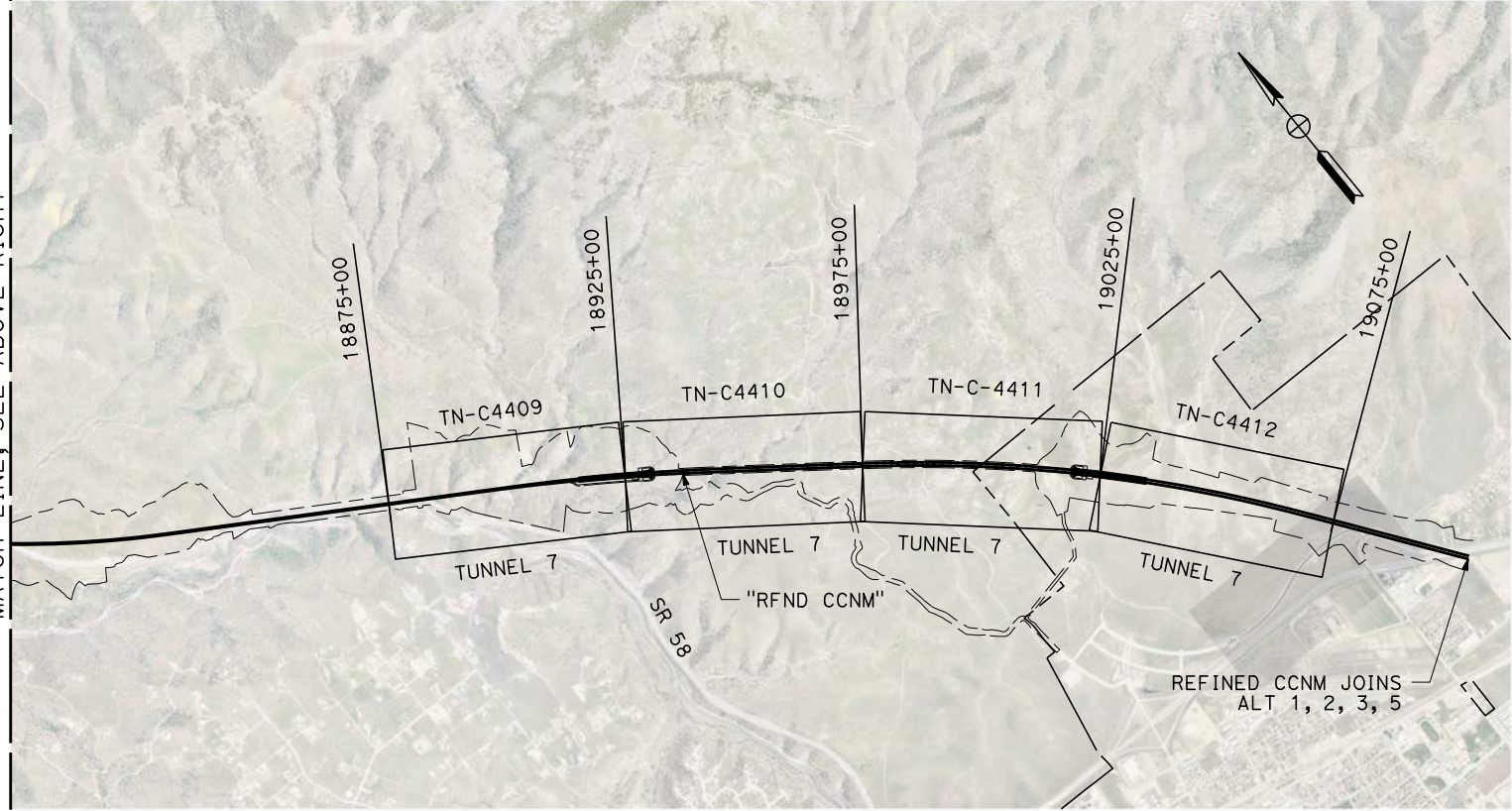
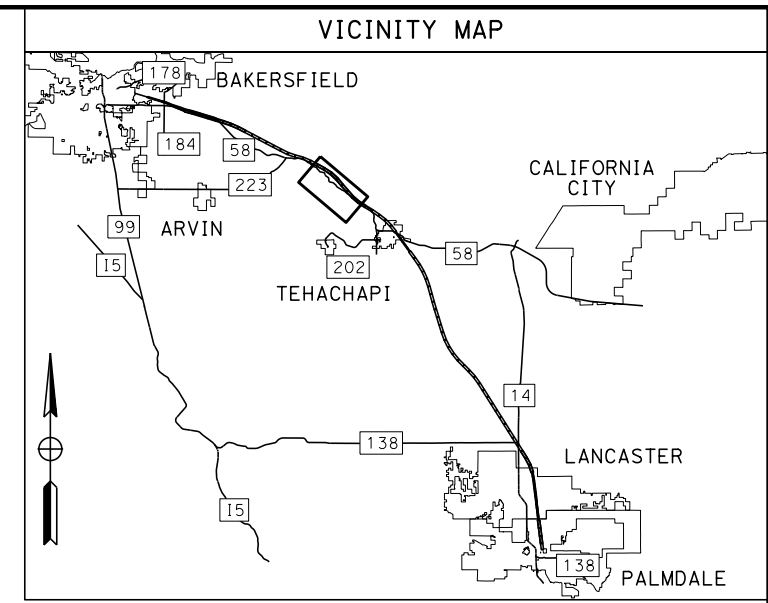
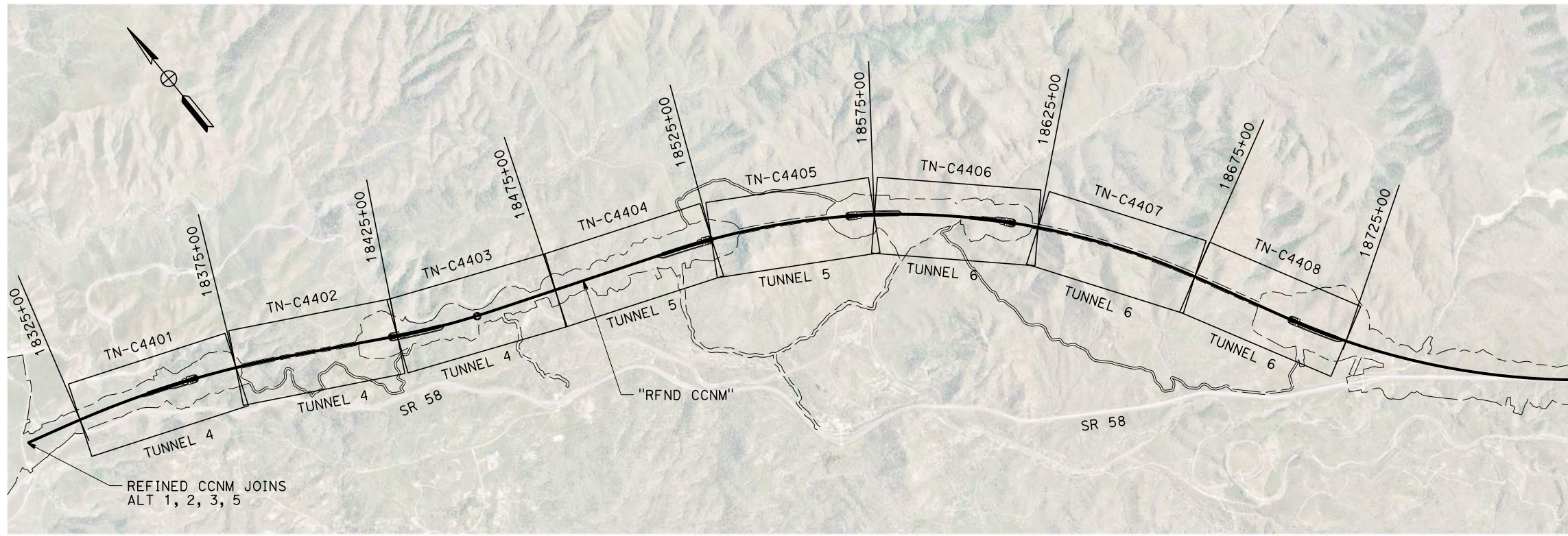
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Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN\TN-B0202

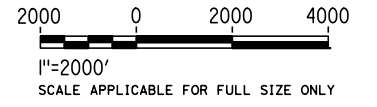
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1/20/2021

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REFINED CCNM DESIGN OPTION



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



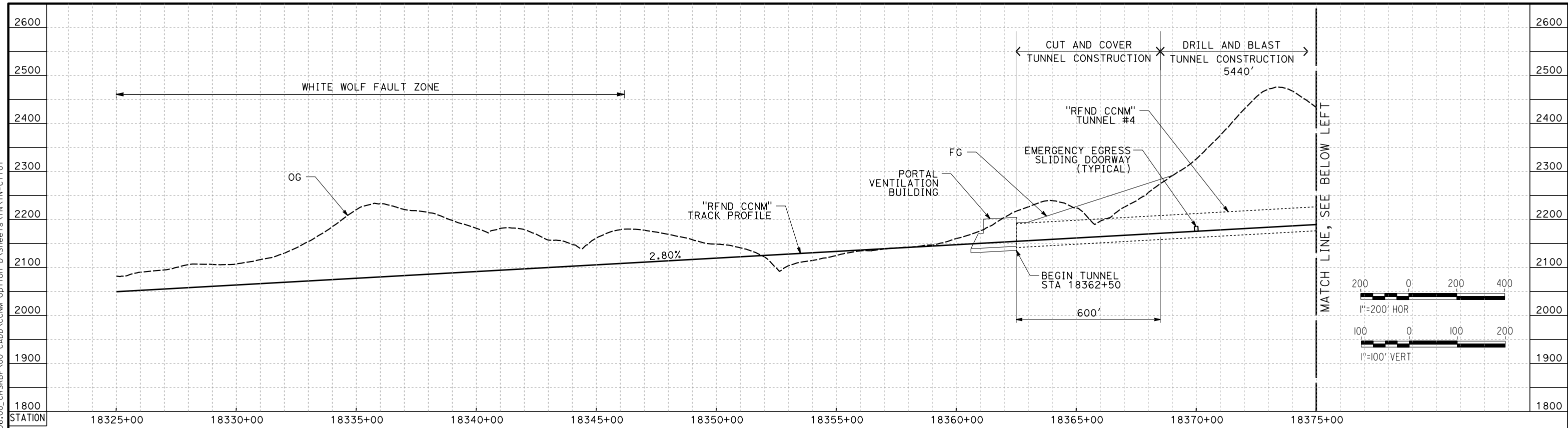
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BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
KEY MAP
ALIGNMENT TUNNELS

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HSR13-44
DRAWING NO.
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214

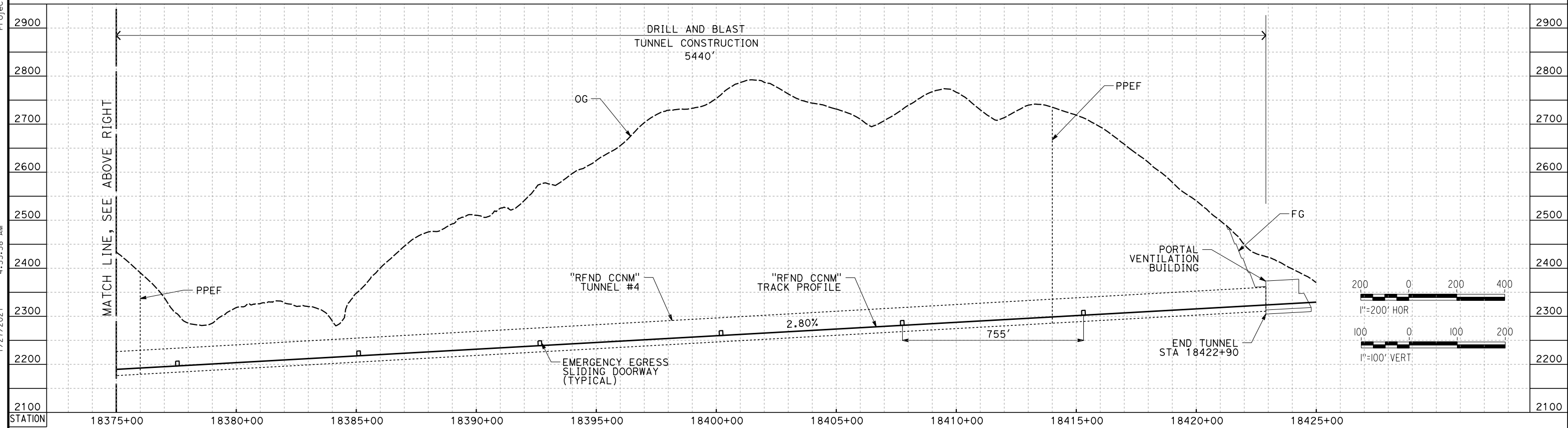
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1/27/2021 4:55:58 AM

jcs_user_17609



TUNNEL 4



TUNNEL 4

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

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**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
TUNNEL PROFILES - TUNNEL 4

CONTRACT NO.
HSR13-44

DRAWING NO.
TN-C1101

SCALE
AS SHOWN

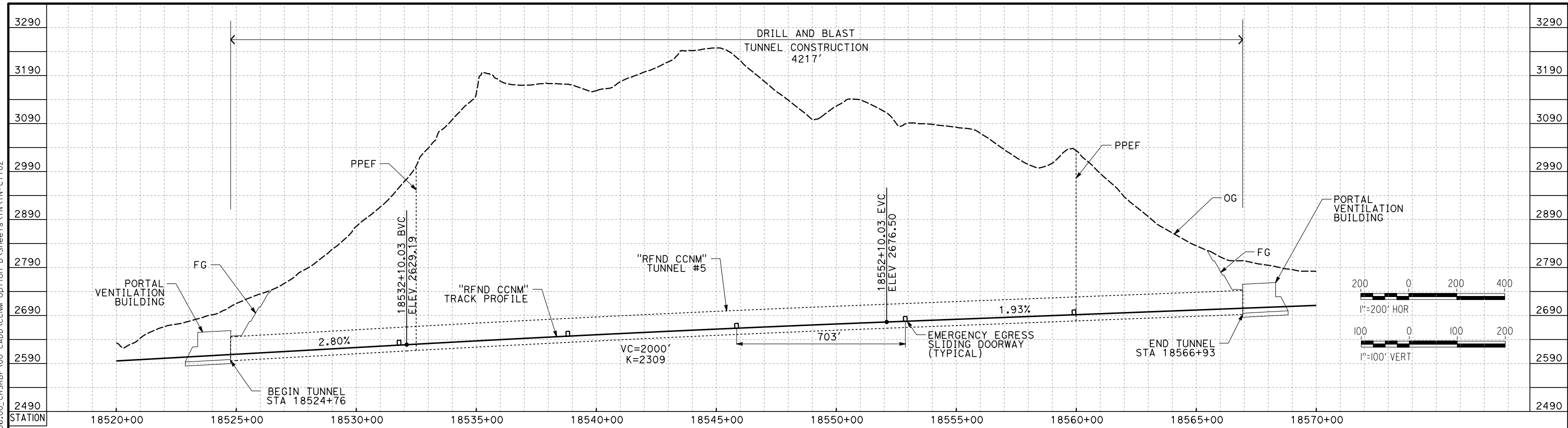
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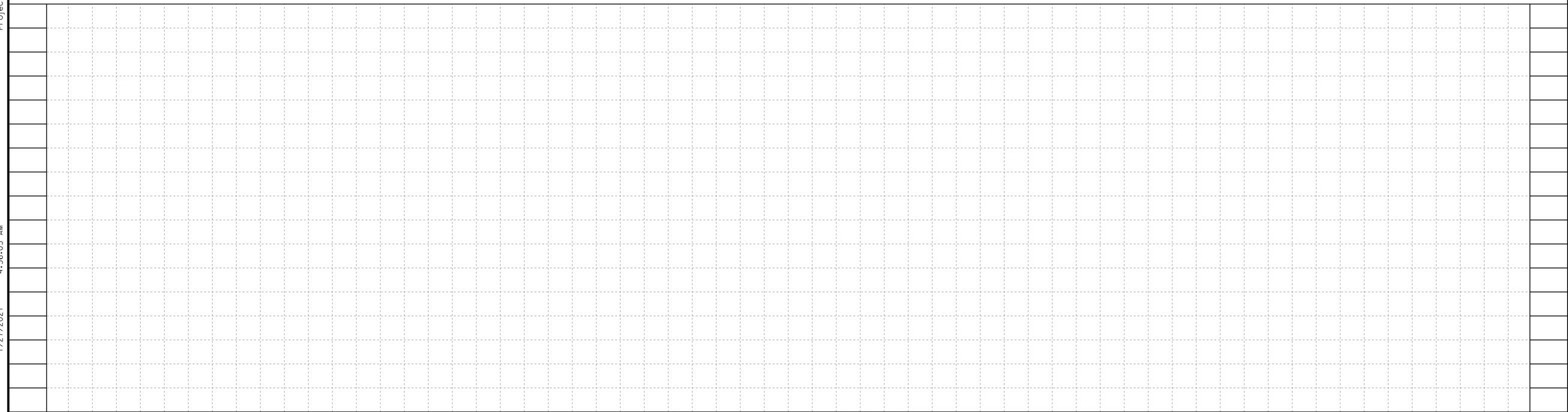
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1/27/2021

jcs_user_17609



TUNNEL 5



STATION

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TUNNEL PROFILES - TUNNEL 5

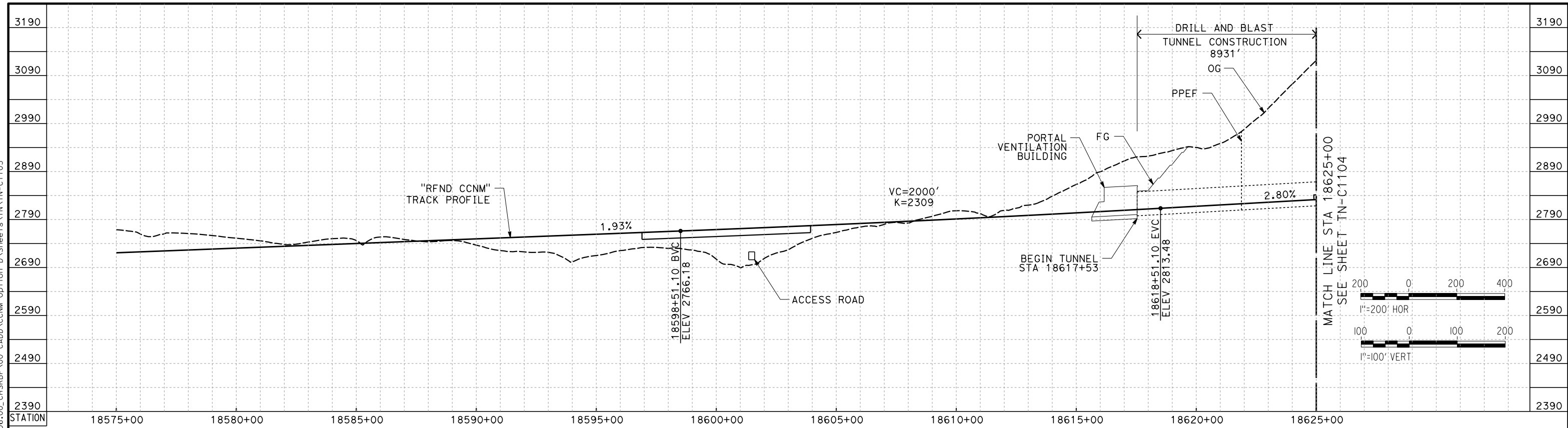
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DRAWING NO.
TN-C1102
SCALE
AS SHOWN
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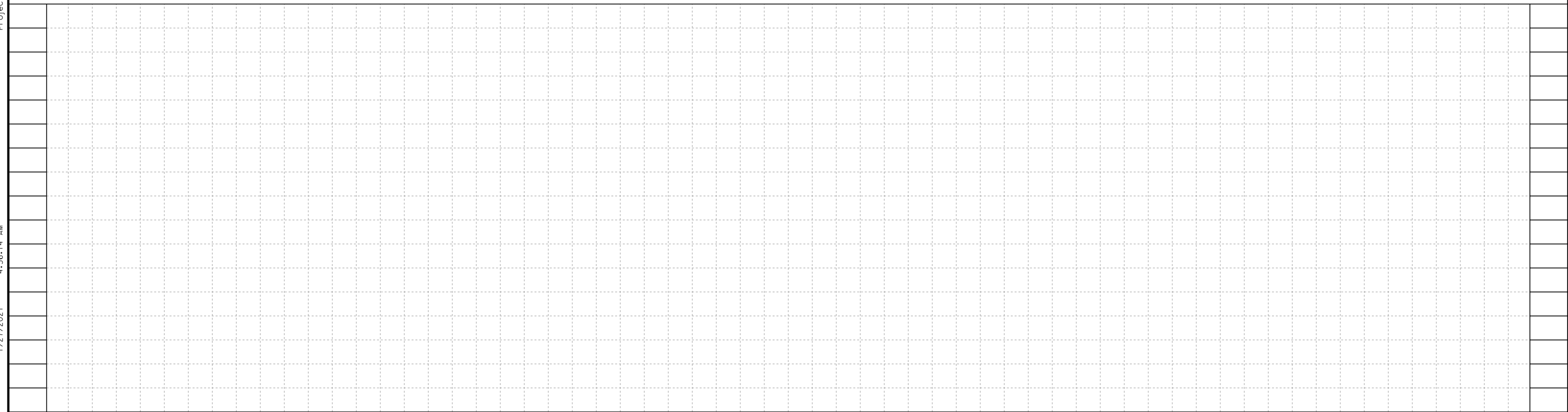
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1/27/2021

jcs_user_17609



TUNNEL 6



STATION

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

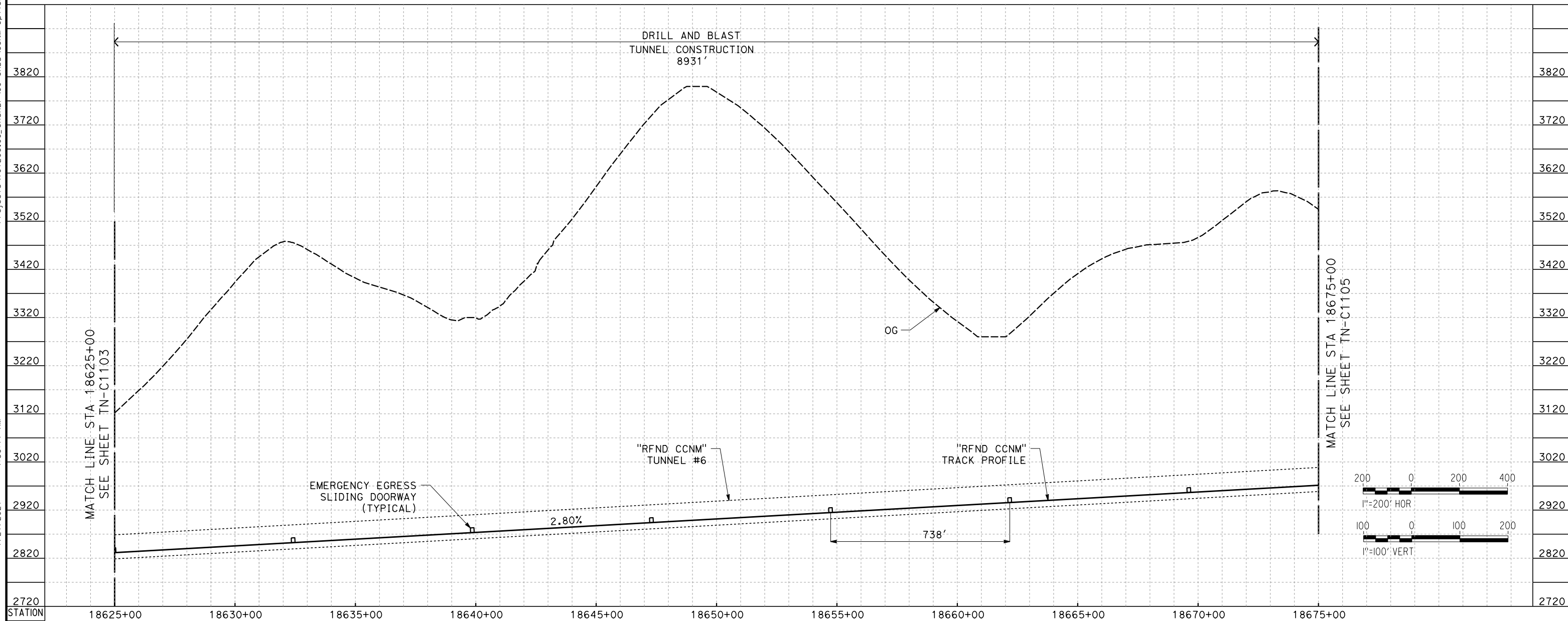
**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFILED TO PALMDALE**
REFINED CCNM DESIGN OPTION
TUNNEL PROFILES - TUNNEL 6

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-C1103
SCALE
AS SHOWN
SHEET NO.
217



TUNNEL 6

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TUNNEL PROFILES - TUNNEL 6

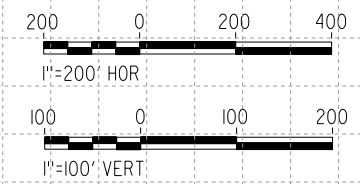
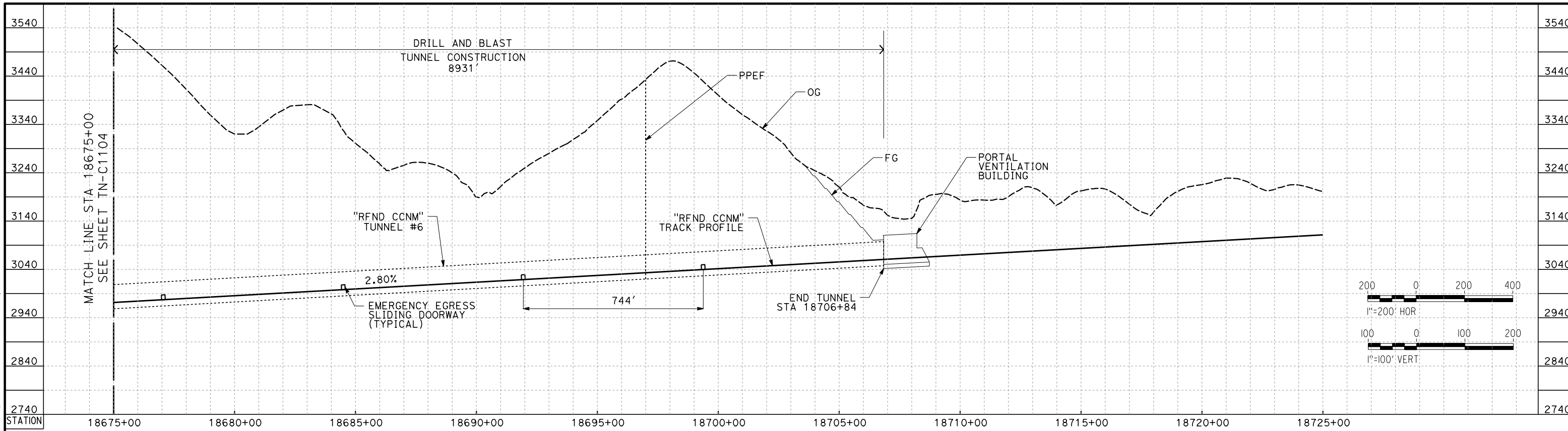
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DRAWING NO.
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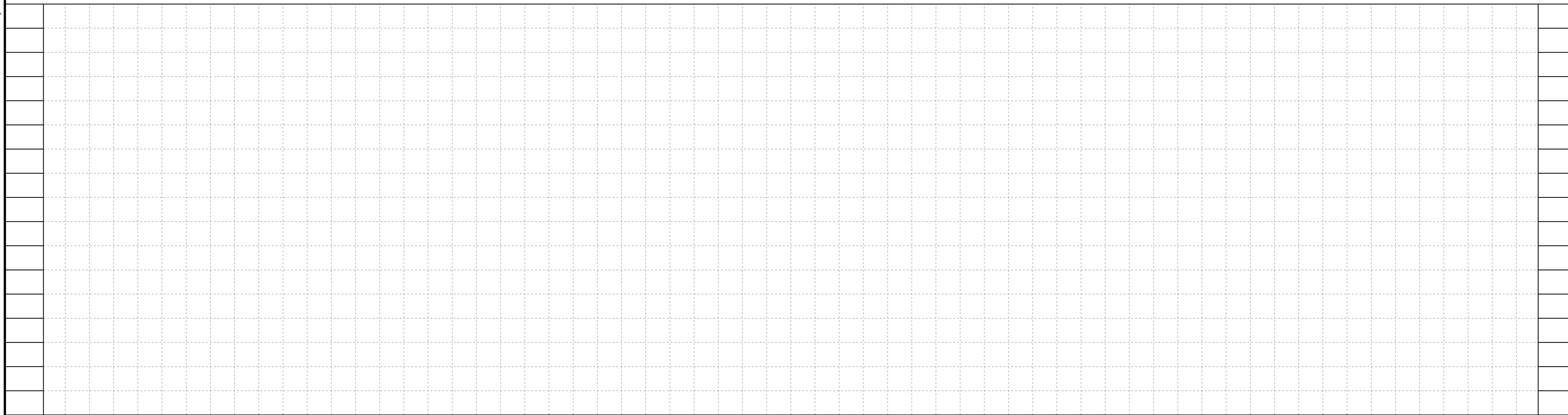
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1/27/2021

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TUNNEL 6



STATION

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFILED TO PALMDALE**
REFINED CCNM DESIGN OPTION
TUNNEL PROFILES - TUNNEL 6

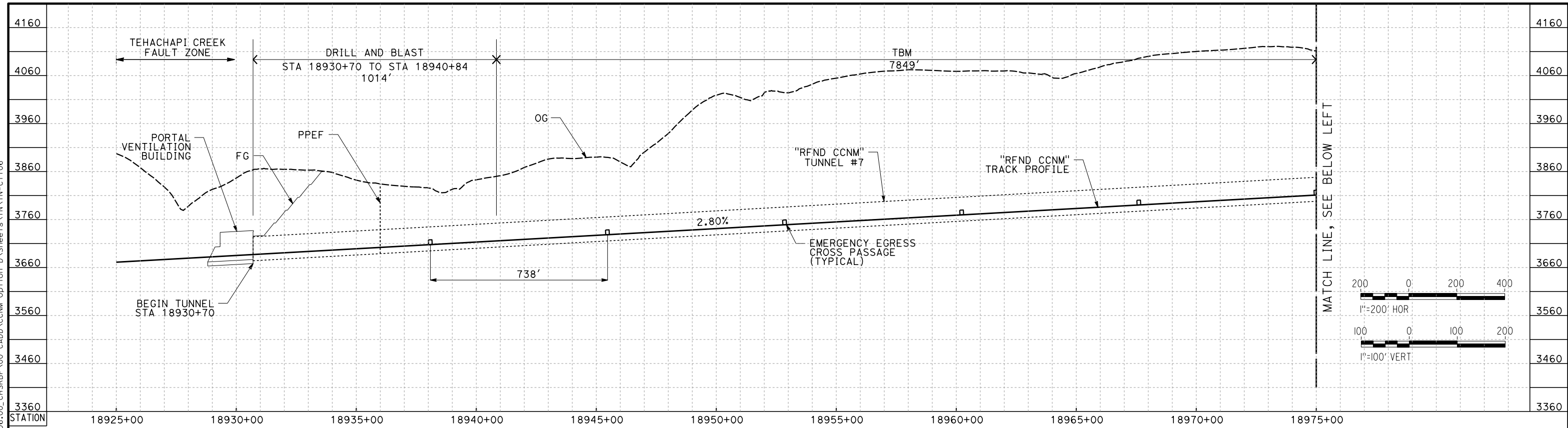
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Projects\701206_00_CHSRBP\00_CADD\CCNM_Option D\Sheets\TNTN-C1106

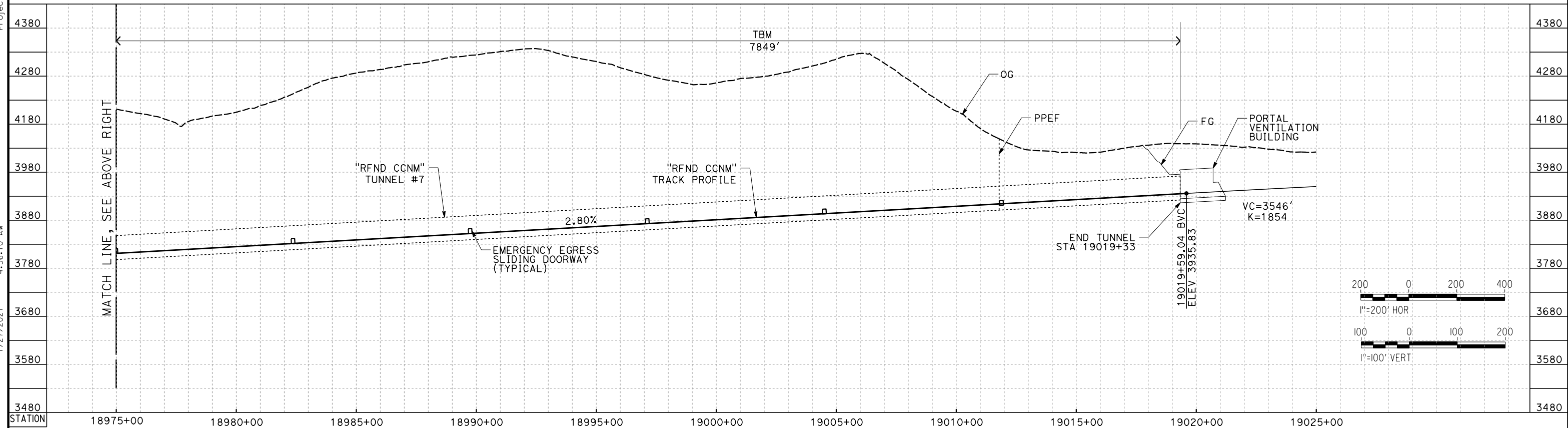
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1/27/2021

jcs_user_17609



TUNNEL 7



TUNNEL 7

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

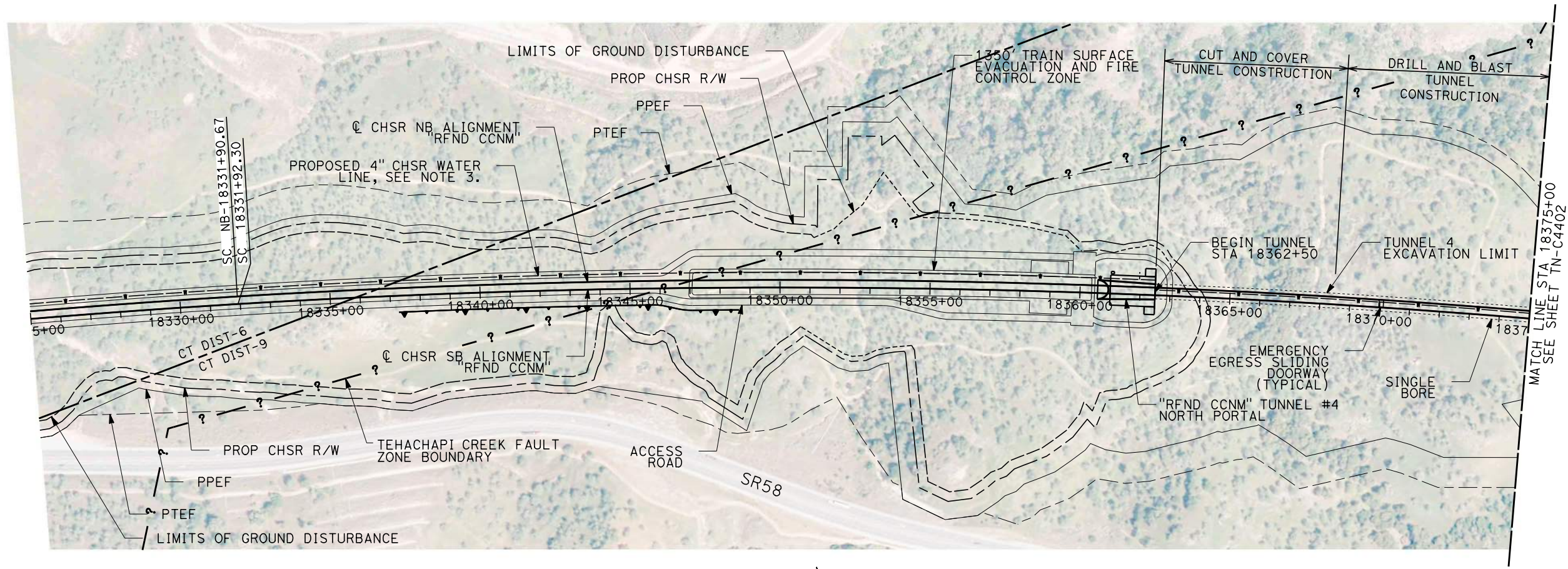
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SUBMITTAL

NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL PROFILES - TUNNEL 7

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-C1106
SCALE
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SHEET NO.
220

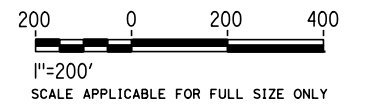


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1101.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.
4. TUNNEL 4 WILL BE CONSTRUCTED BY CUT AND COVER METHODS BETWEEN STATION 18362+50 TO 18368+50.



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN\TN-C4401

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1/20/2021

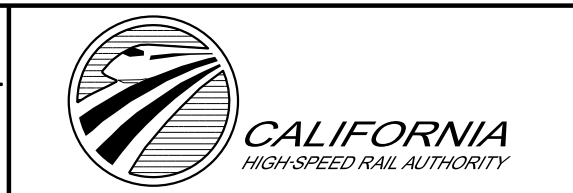
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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Z. SKOVAJSOVA
DRAWN BY K. BUNGER
CHECKED BY R. KUNDU
IN CHARGE J. MORRISON
DATE 01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

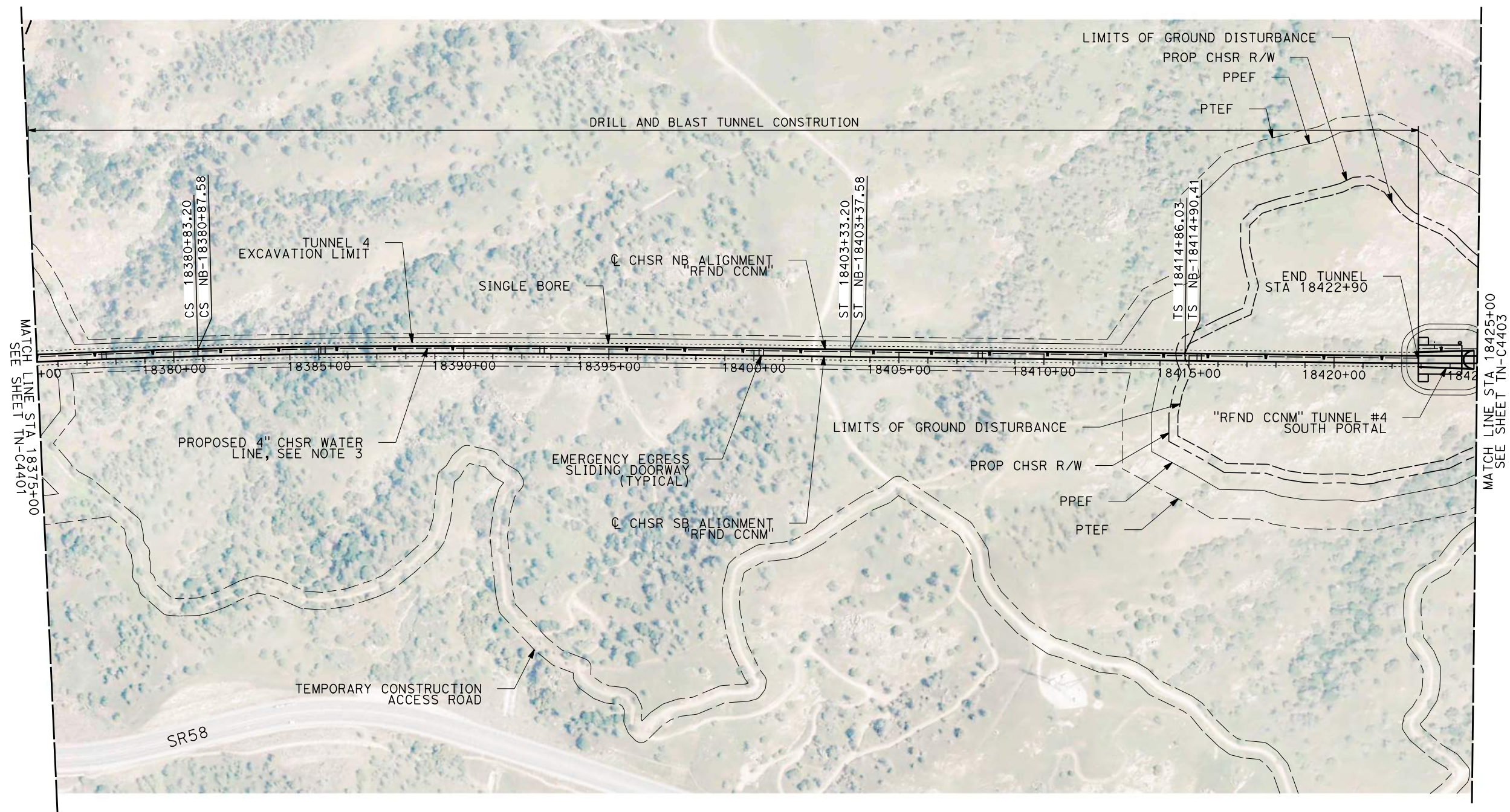
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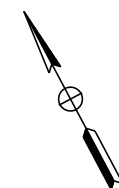
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFILED TO PALMDALE**

REFINED CCNM DESIGN OPTION
TUNNEL 4
STA 18325+00 TO STA 18375+00

CONTRACT NO. HSR13-44
DRAWING NO. TN-C4401
SCALE AS SHOWN
SHEET NO. 221

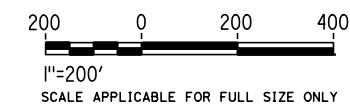


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1101.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.
4. TUNNEL 4 WILL BE CONSTRUCTED BY CUT AND COVER METHODS BETWEEN STATION 18362+50 TO 18368+50.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Z. SKOVAJSOVA
DRAWN BY K. BUNGER
CHECKED BY R. KUNDU
IN CHARGE J. MORRISON
DATE 01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

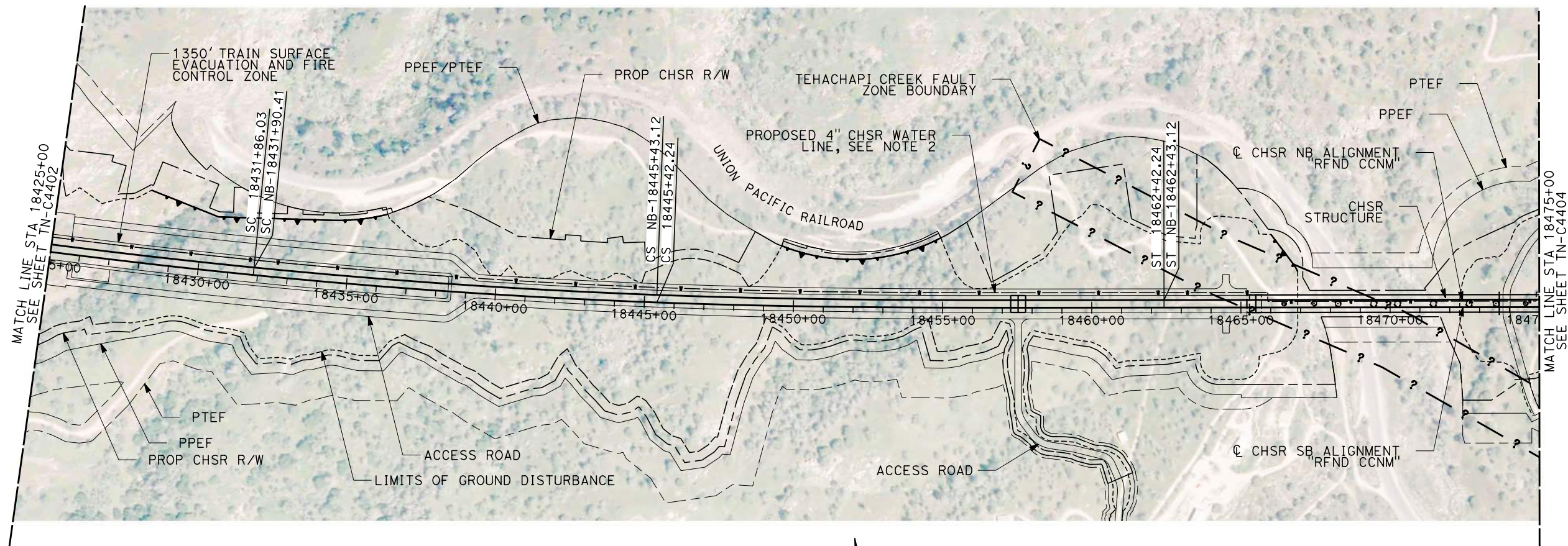
**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFILED TO PALMDALE**

REFINED CCNM DESIGN OPTION
TUNNEL 4
STA 18375+00 TO STA 18425+00

CONTRACT NO. HSR13-44
DRAWING NO. TN-C4402
SCALE AS SHOWN
SHEET NO. 222

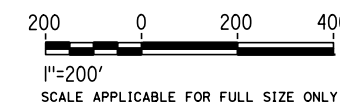


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
3. TUNNEL 4 WILL BE CONSTRUCTED BY CUT AND COVER METHODS BETWEEN STATION 18362+50 TO 18368+50. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN\TN-C4403

6:10:45 AM

1/20/2021

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DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

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PEPD
SUBMITTAL

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CONSTRUCTION



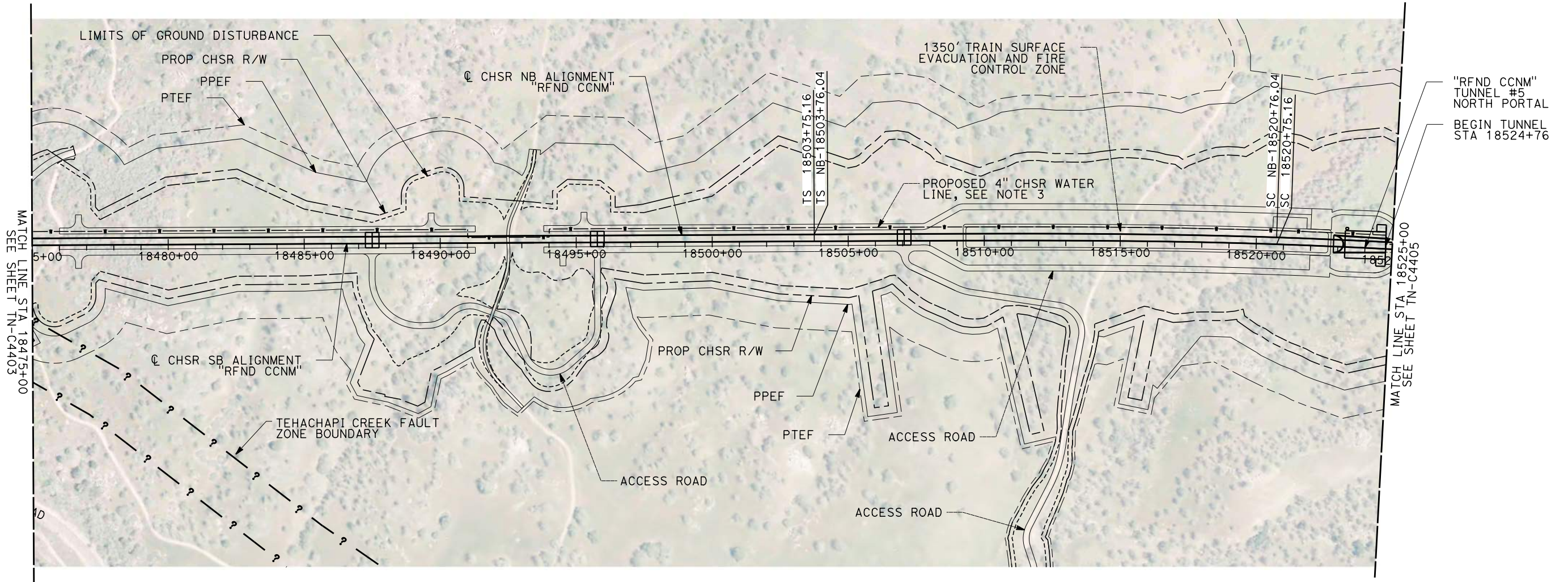
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL 4
STA 18425+00 TO STA 18475+00

CONTRACT NO.
HSR13-44

DRAWING NO.
TN-C4403

SCALE
AS SHOWN

SHEET NO.
223

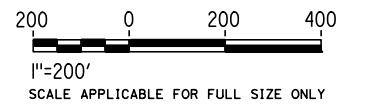


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1102.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-TN-C4404 1/20/2021 6:47:36 AM jcs_user_17609

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Z. SKOVAJSOVA
DRAWN BY K. BUNGER
CHECKED BY R. KUNDU
IN CHARGE J. MORRISON
DATE 01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

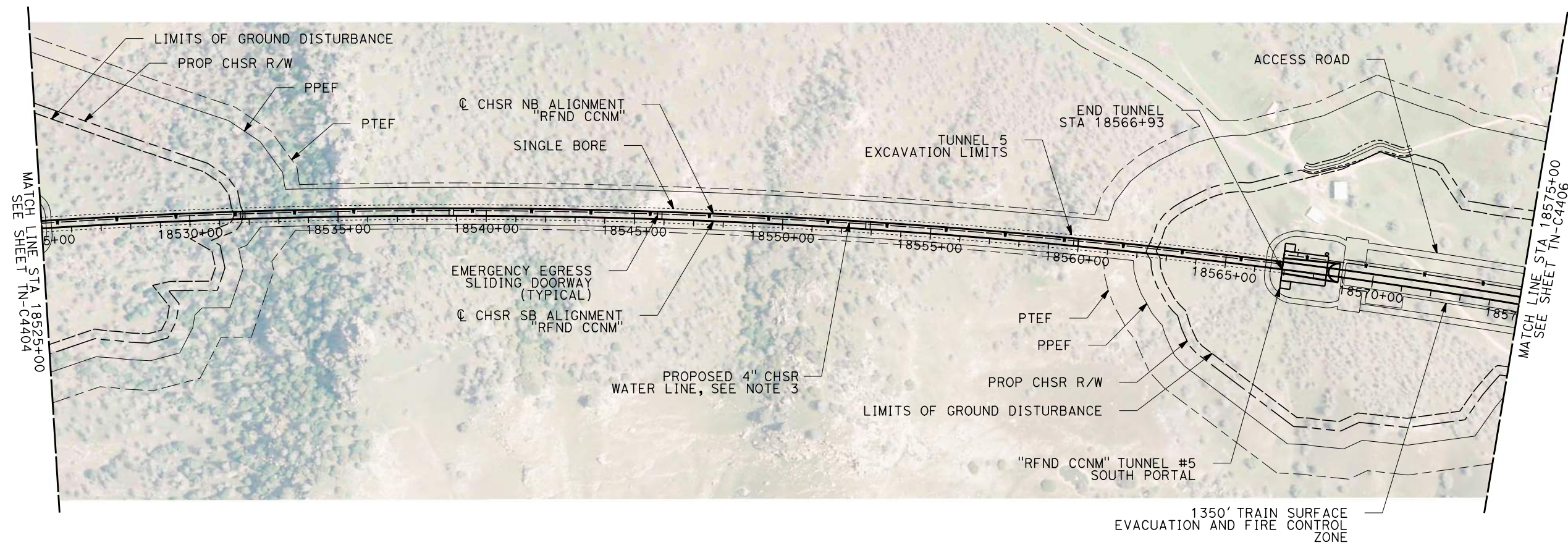
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CONSTRUCTION**



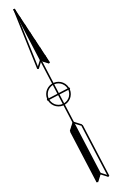
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**

REFINED CCNM DESIGN OPTION
TUNNEL 5
STA 18475+00 TO STA 18525+00

CONTRACT NO. HSR13-44
DRAWING NO. TN-C4404
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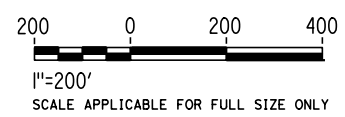


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1102.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Z. SKOVAJSOVA
DRAWN BY K. BUNGER
CHECKED BY R. KUNDU
IN CHARGE J. MORRISON
DATE 01/29/2021

**RECORD SET
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SUBMITTAL**

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CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFILED TO PALMDALE**

REFINED CCNM DESIGN OPTION
TUNNEL 5
STA 18525+00 TO STA 18575+00

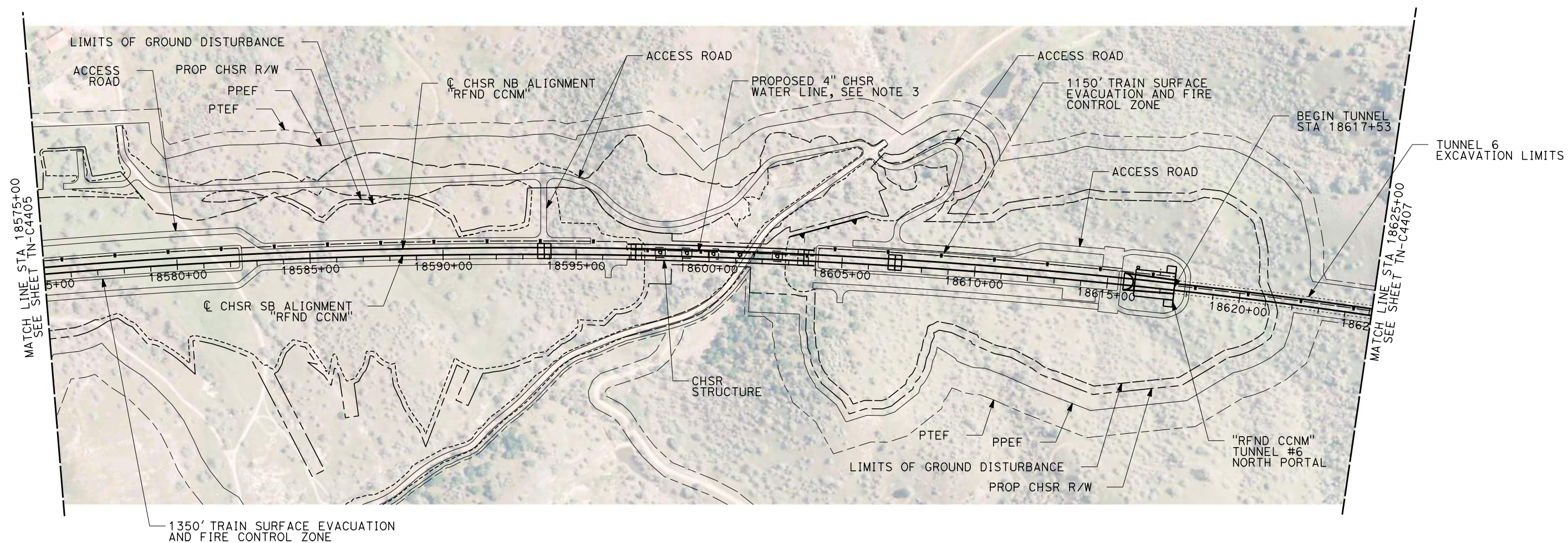
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DRAWING NO. TN-C4405
SCALE AS SHOWN
SHEET NO. 225

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-TN-C4406

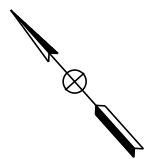
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1/20/2021

ics_user_17609

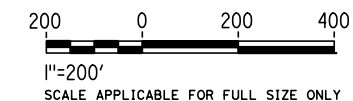


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1103.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IS IT INSTALLED BELOW THE EMERGENCY WALKWAY.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

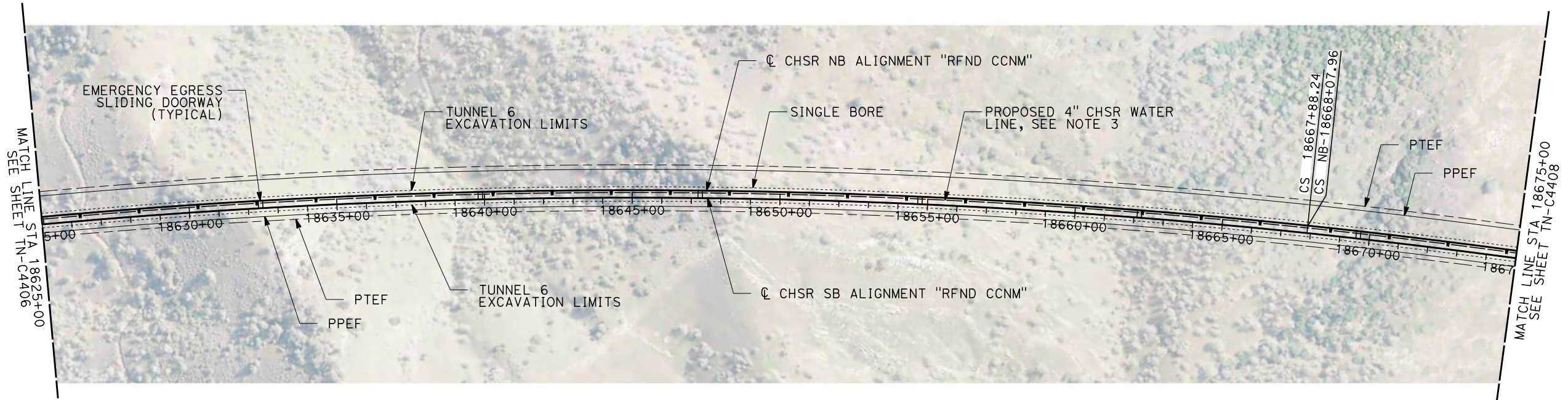
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PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

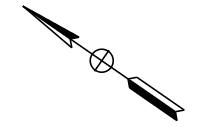


CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL 6
STA 18575+00 TO STA 18625+00

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-C4406
SCALE
AS SHOWN
SHEET NO.
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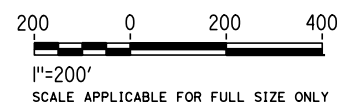


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1104.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN\TN-C4407

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

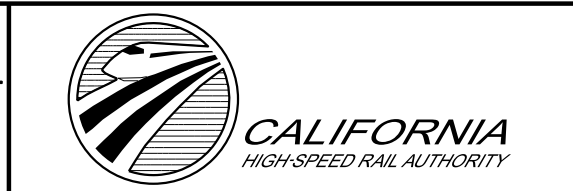
CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION



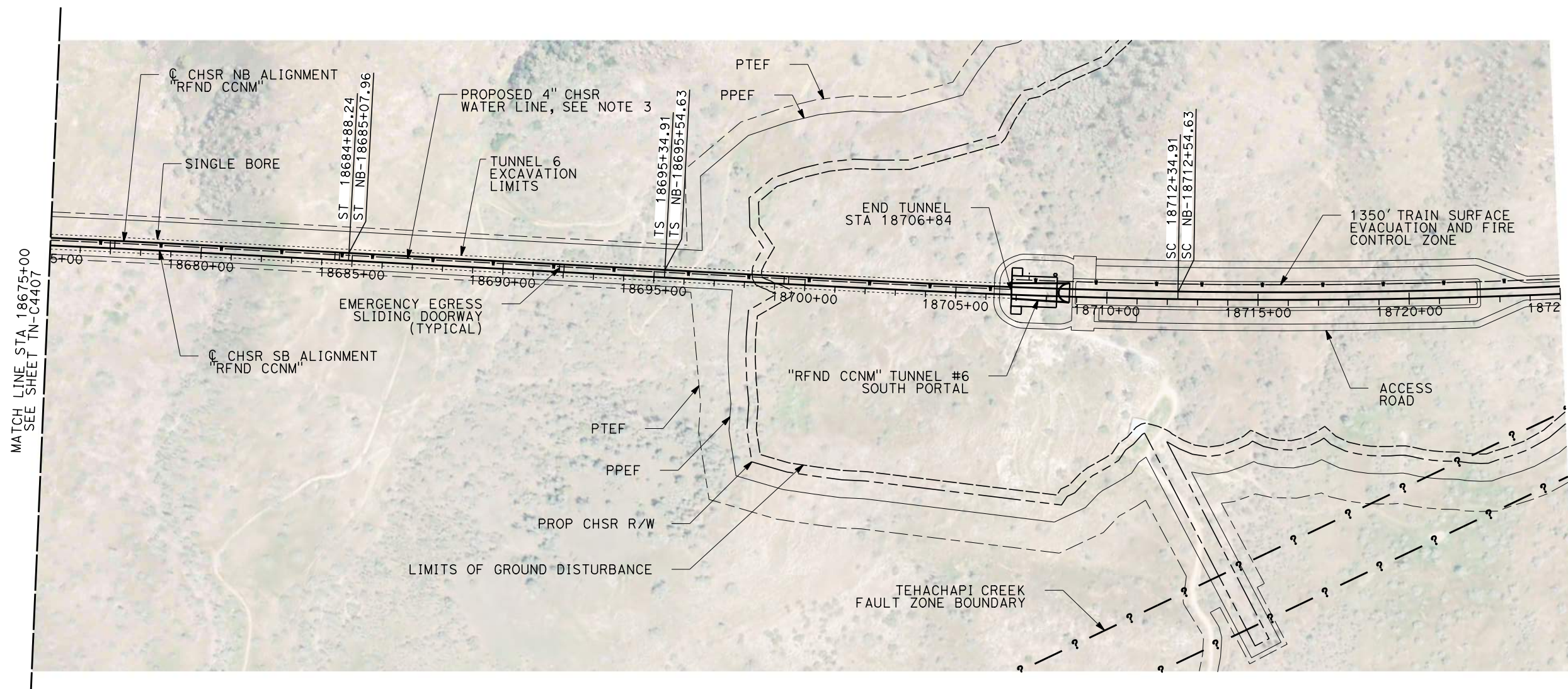
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL 6
STA 18625+00 TO STA 18675+00

CONTRACT NO.
HSR13-44

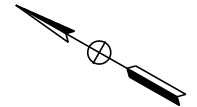
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TN-C4407

SCALE
AS SHOWN

SHEET NO.
227

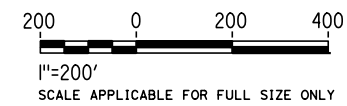


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1105.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Z. SKOVAJSOVA
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CHECKED BY R. KUNDU
IN CHARGE J. MORRISON
DATE 01/29/2021

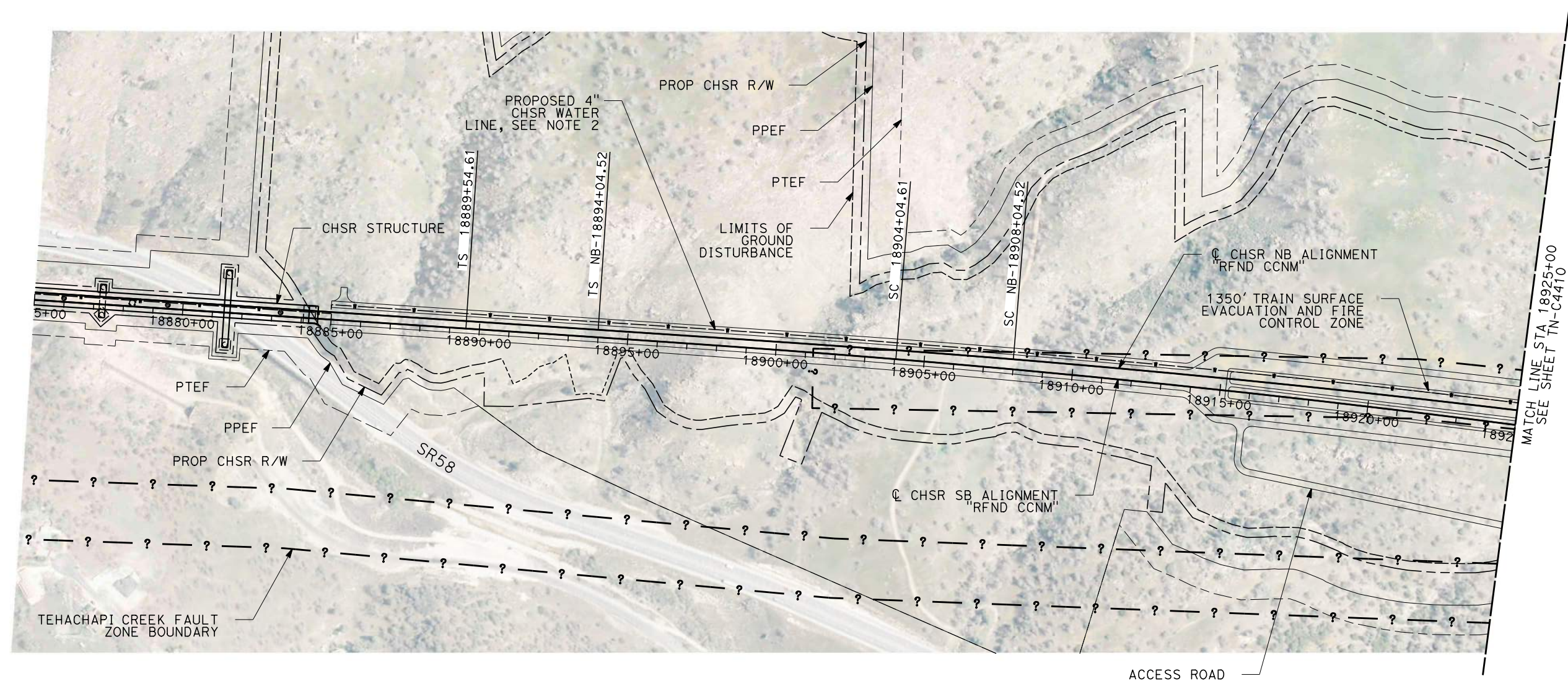
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PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

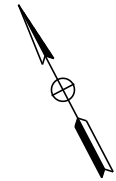


CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TUNNEL #6
 STA 18675+00 TO STA 18725+00

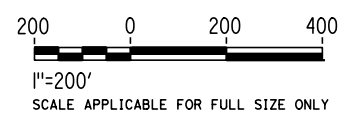
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DRAWING NO. TN-C4408
SCALE AS SHOWN
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PLAN



- NOTES:**
1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
 2. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET
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SUBMITTAL

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CONSTRUCTION



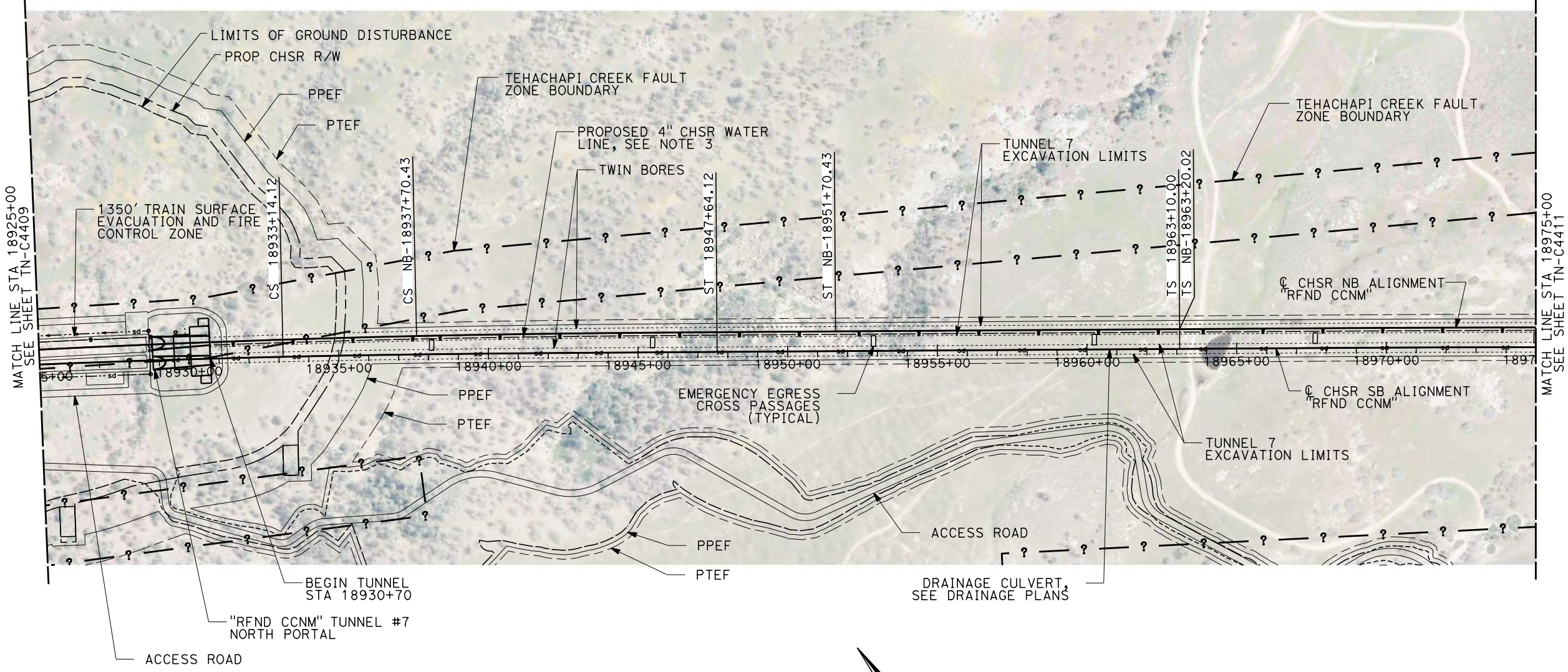
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL 7
STA 18875+00 TO STA 18925+00

CONTRACT NO.
HSR13-44

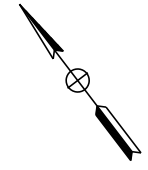
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SCALE
AS SHOWN

SHEET NO.
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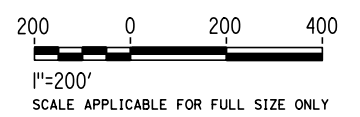


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1106.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-TN-C4410

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1/20/2021

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

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K. BUNGER

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R. KUNDU

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J. MORRISON

DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

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CONSTRUCTION



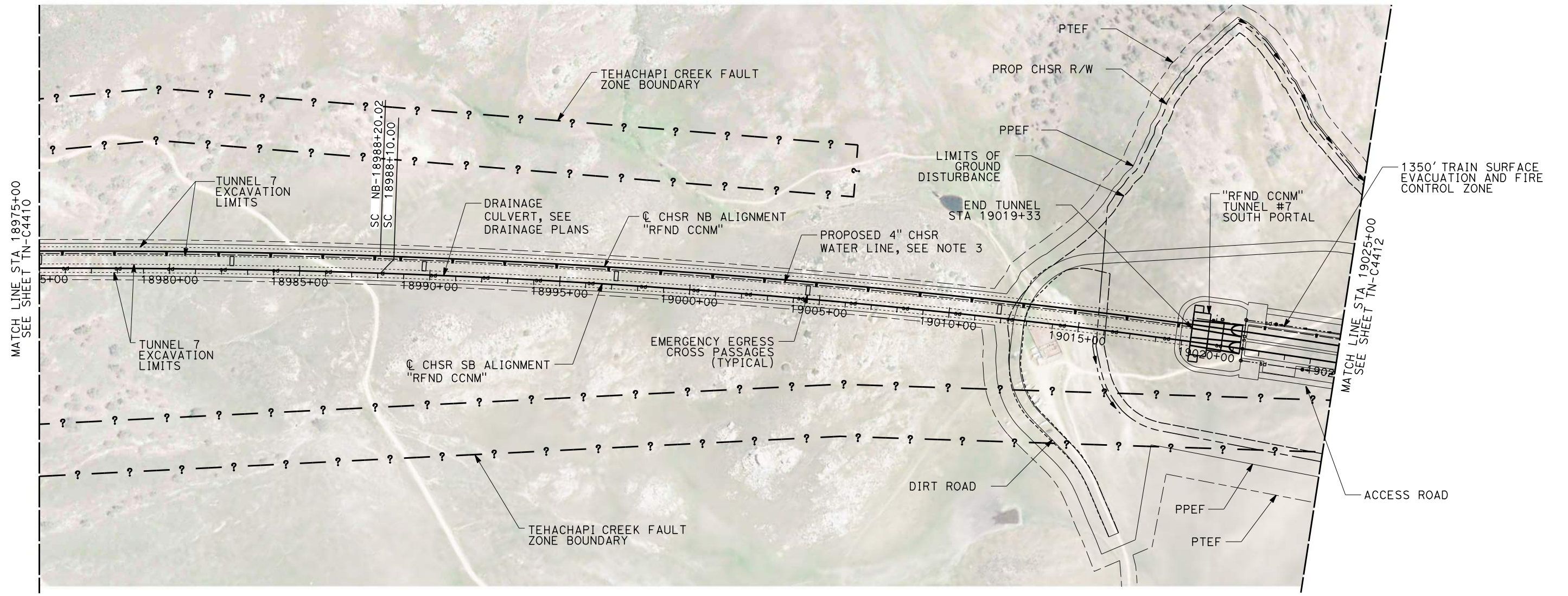
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL 7
STA 18925+00 TO STA 18975+00

CONTRACT NO.
HSR13-44

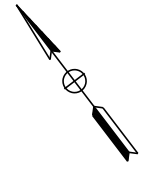
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SCALE
AS SHOWN

SHEET NO.
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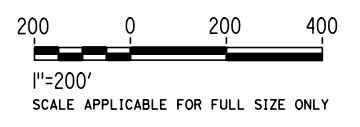


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1106.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

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CONSTRUCTION**



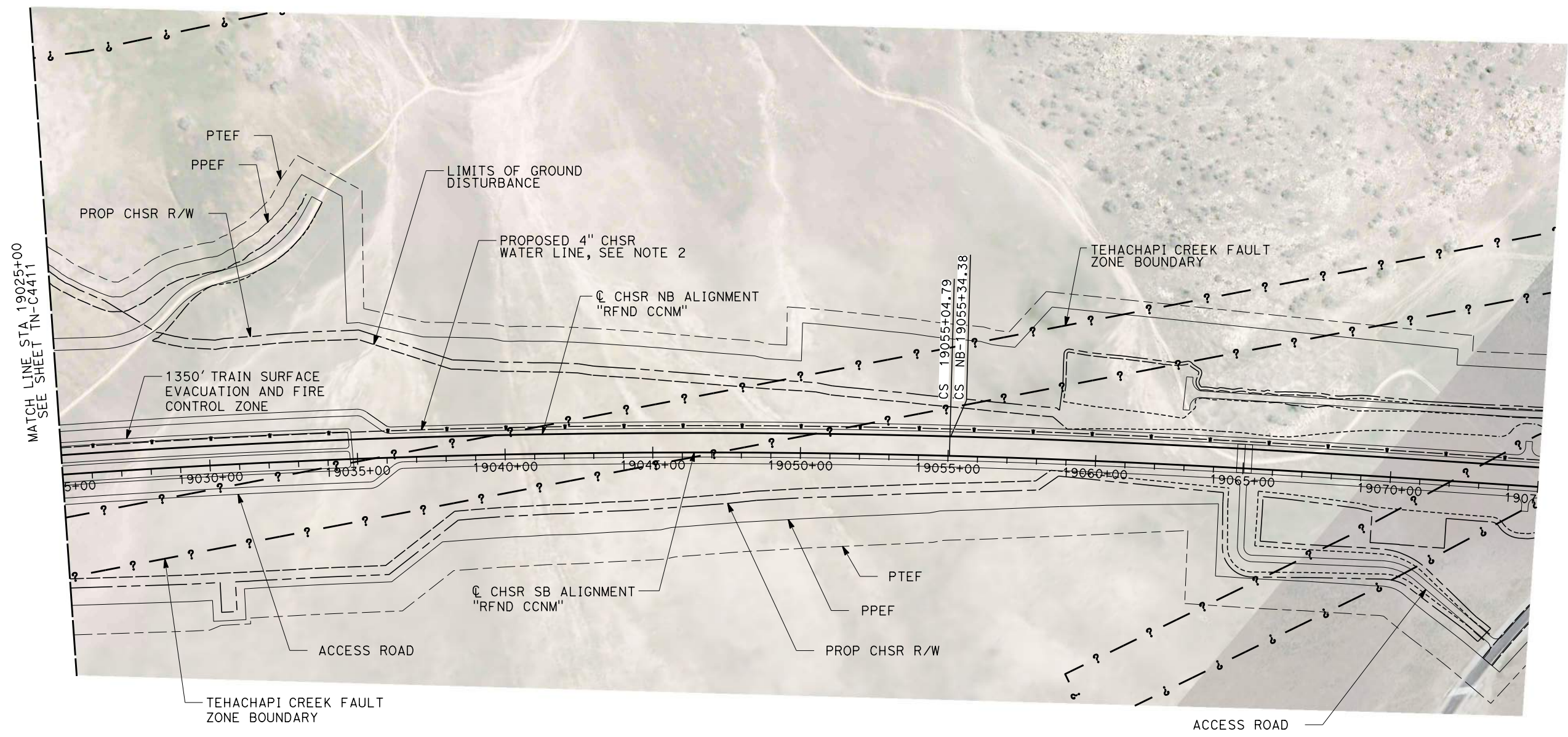
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TUNNEL 7
 STA 18975+00 TO STA 19025+00

CONTRACT NO.
HSR13-44

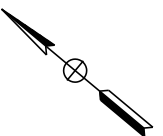
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TN-C4411

SCALE
AS SHOWN

SHEET NO.
231

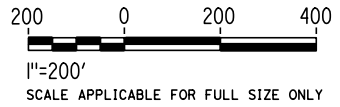


PLAN



NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00. IN THE TUNNEL IT IS INSTALLED BELOW THE EMERGENCY WALKWAY.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY Z. SKOVAJSOVA
DRAWN BY K. BUNGER
CHECKED BY R. KUNDU
IN CHARGE J. MORRISON
DATE 01/29/2021

**RECORD SET
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SUBMITTAL**

**NOT FOR
CONSTRUCTION**



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
 REFINED CCNM DESIGN OPTION
 TUNNEL 7
 STA 19025+00 TO STA 19075+00

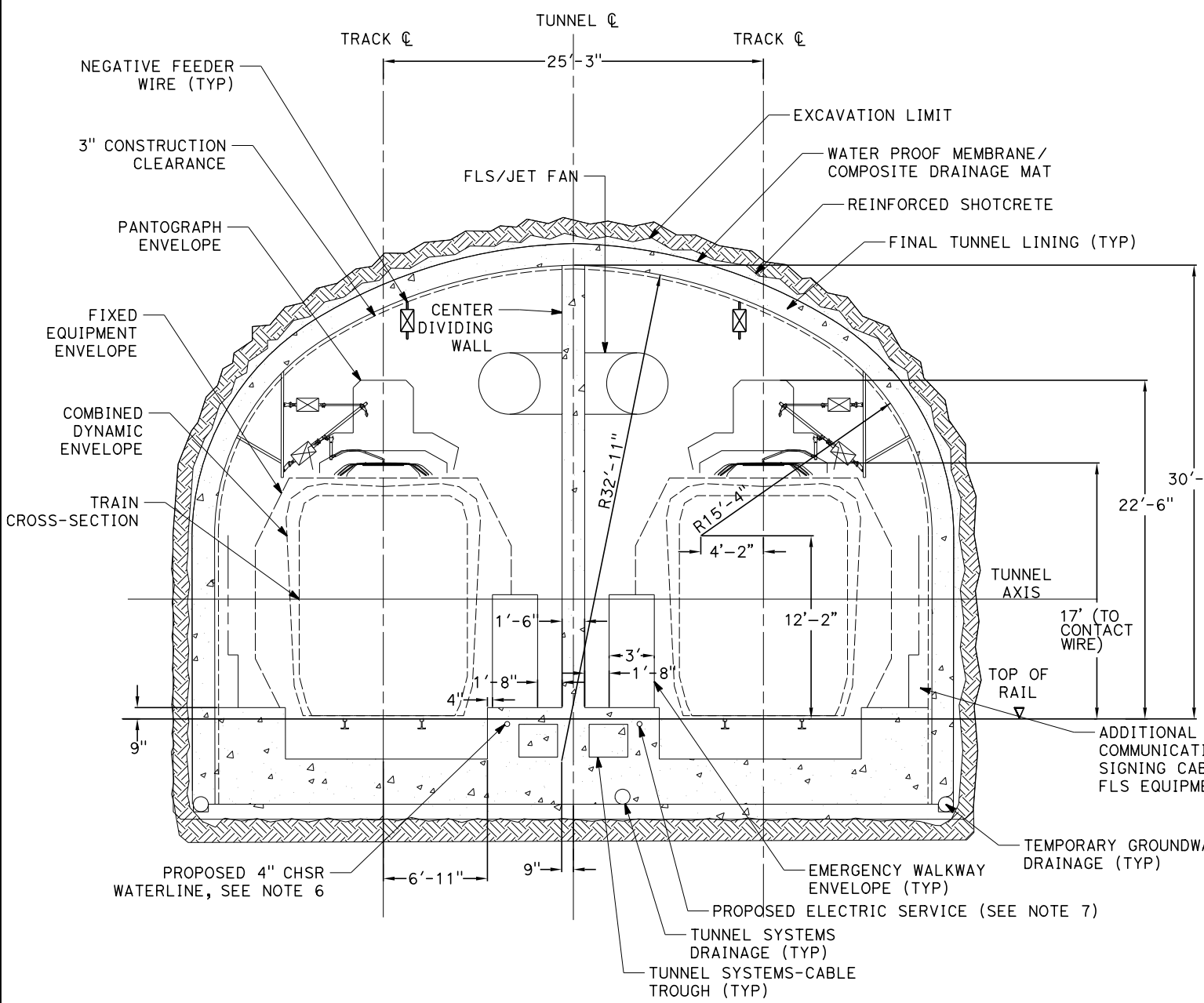
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SCALE AS SHOWN
SHEET NO. 232

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-D3101

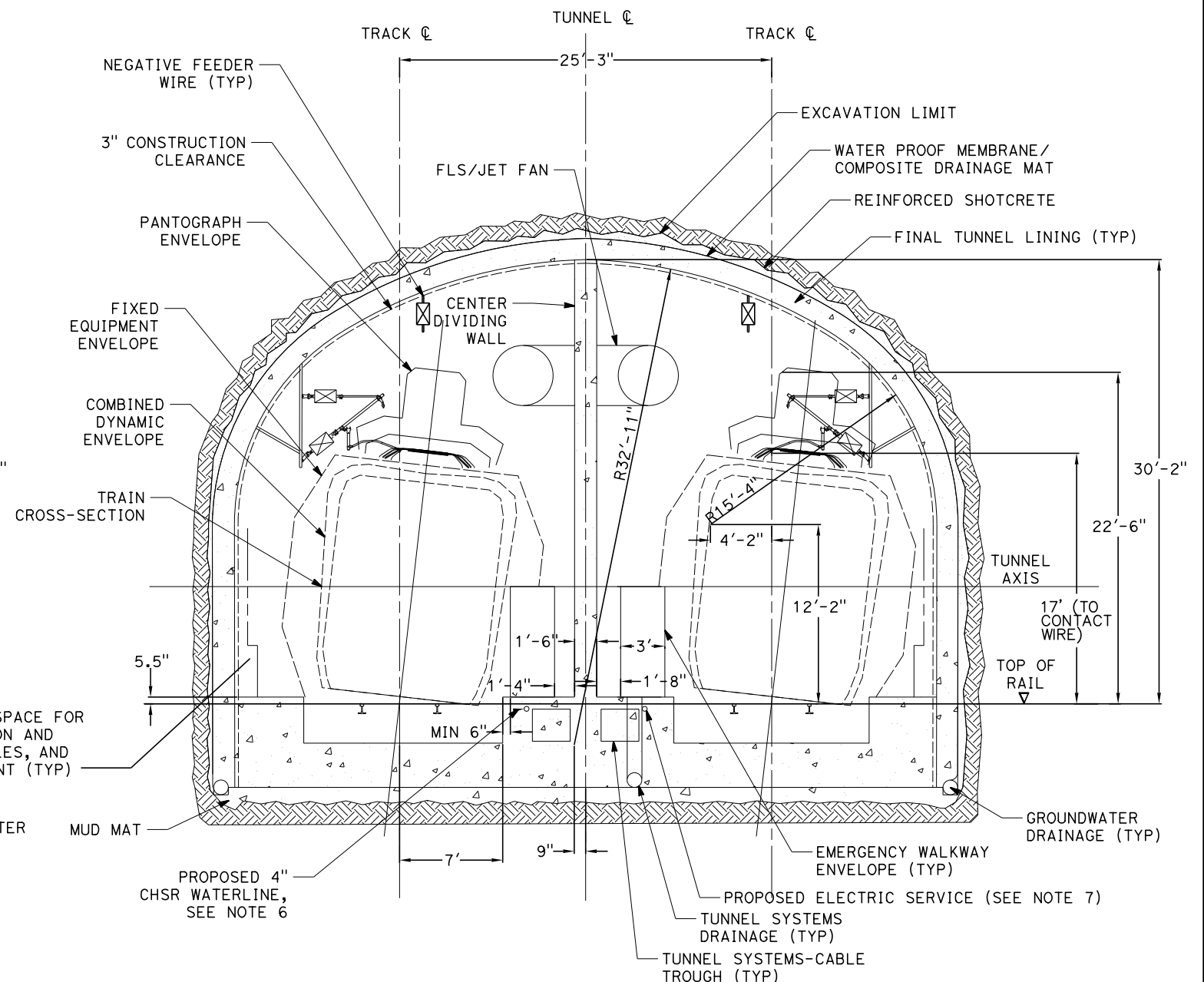
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1/20/2021

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TANGENT TRACK



SUPER ELEVATED TRACK

GENERAL NOTES:

1. DRILL AND BLAST METHOD IS IDENTIFIED FOR THE 15% IN-PROGRESS DESIGN OF DOUBLE TRACK TUNNEL FOR TUNNEL 4, 5, AND 6 IN HARD ROCK UNITS.
2. EXCAVATION, GROUND SUPPORT, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND TUNNEL-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.
5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM1.1.10-A AND C.
6. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
7. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET

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CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT

BAKERSFIELD TO PALMDALE

REFINED CCNM DESIGN OPTION

TUNNEL DRILL AND BLAST METHOD

SINGLE TUNNEL CLEARANCE DIAGRAM

CONTRACT NO.
HSR13-44

DRAWING NO.
TN-D3101

SCALE
AS SHOWN

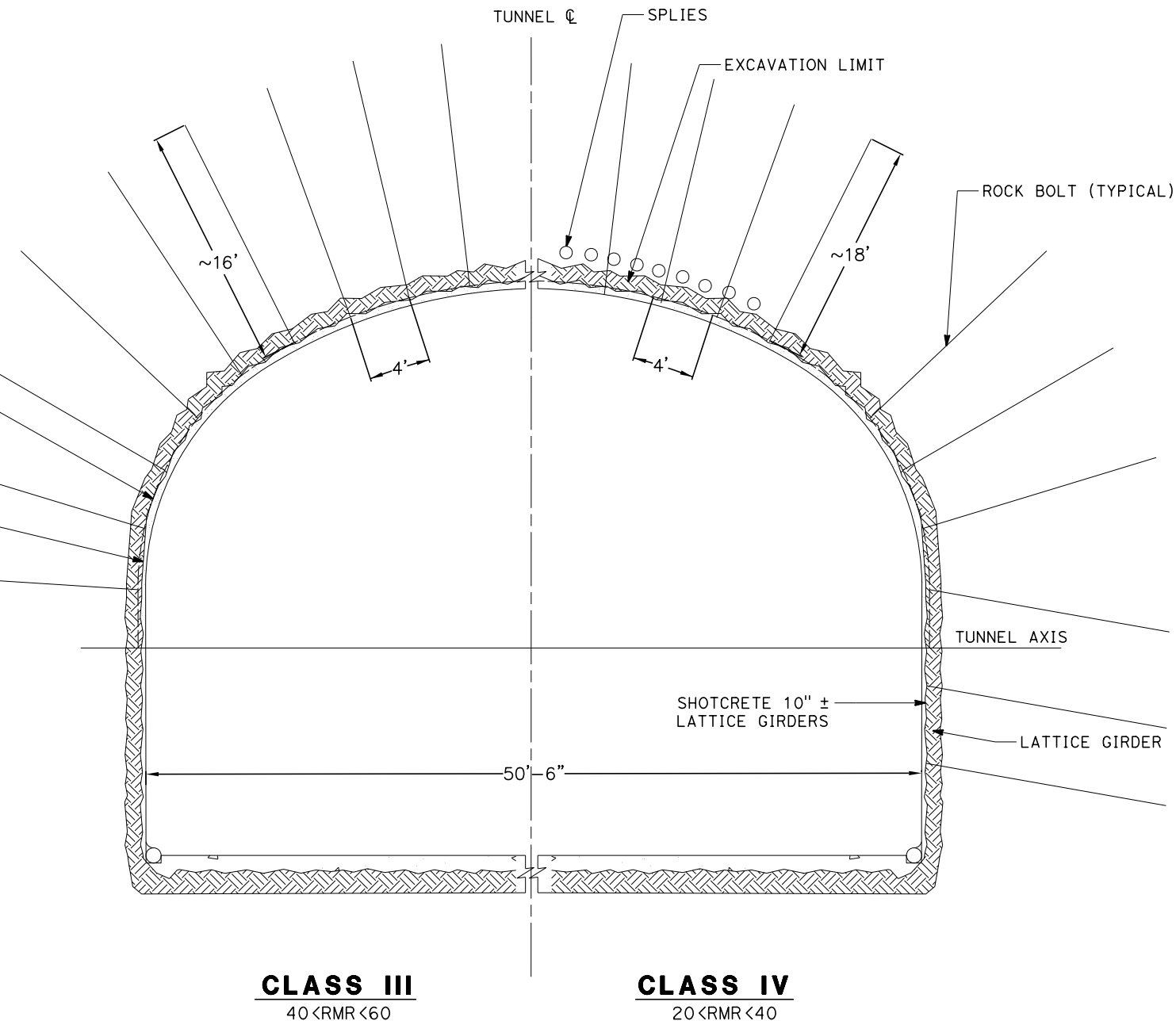
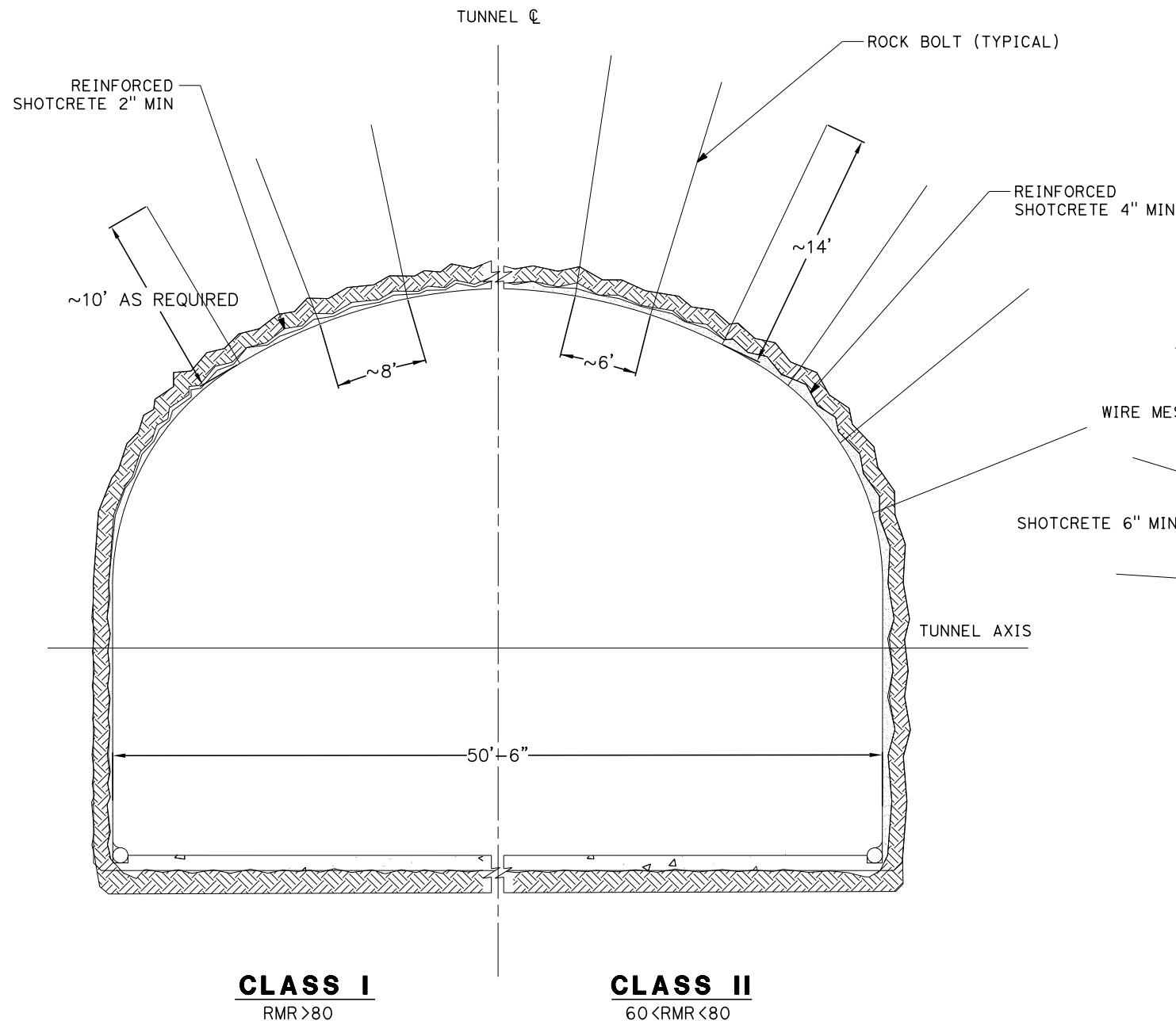
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233

Projects\701206.00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-D3102

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CLASS I
RMR > 80

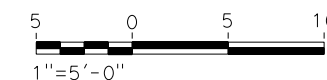
CLASS II
60 < RMR < 80

CLASS III
40 < RMR < 60

CLASS IV
20 < RMR < 40

GENERAL NOTES:

1. A DRILL AND BLAST OPTION IS IDENTIFIED FOR THE 15% IN-PROGRESS DESIGN OF TWIN, SINGLE TRACK TUNNELS FOR TUNNEL 4, 5, AND 6 IN HARD ROCK UNITS.
2. EXCAVATION, GROUND SUPPORT, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND TUNNEL-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. CLASS I AND II MAY BE EXCAVATED FULL FACE. CLASS III MAY REQUIRE HEADING AND BENCH EXCAVATION WITH FACE SUPPORT AS REQUIRED. CLASS IV MAY REQUIRE TOP HEADING AND BENCH WITH SIDE SLASH, SPILES, AND FACE SUPPORT AS NEEDED. CLASS IV MAY REQUIRE A CHANGE IN EXCAVATION METHOD TO AN SEM CONSTRUCTION ALTERNATIVE.
5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM1.1.10-A AND C.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

RECORD SET
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SUBMITTAL

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CONSTRUCTION



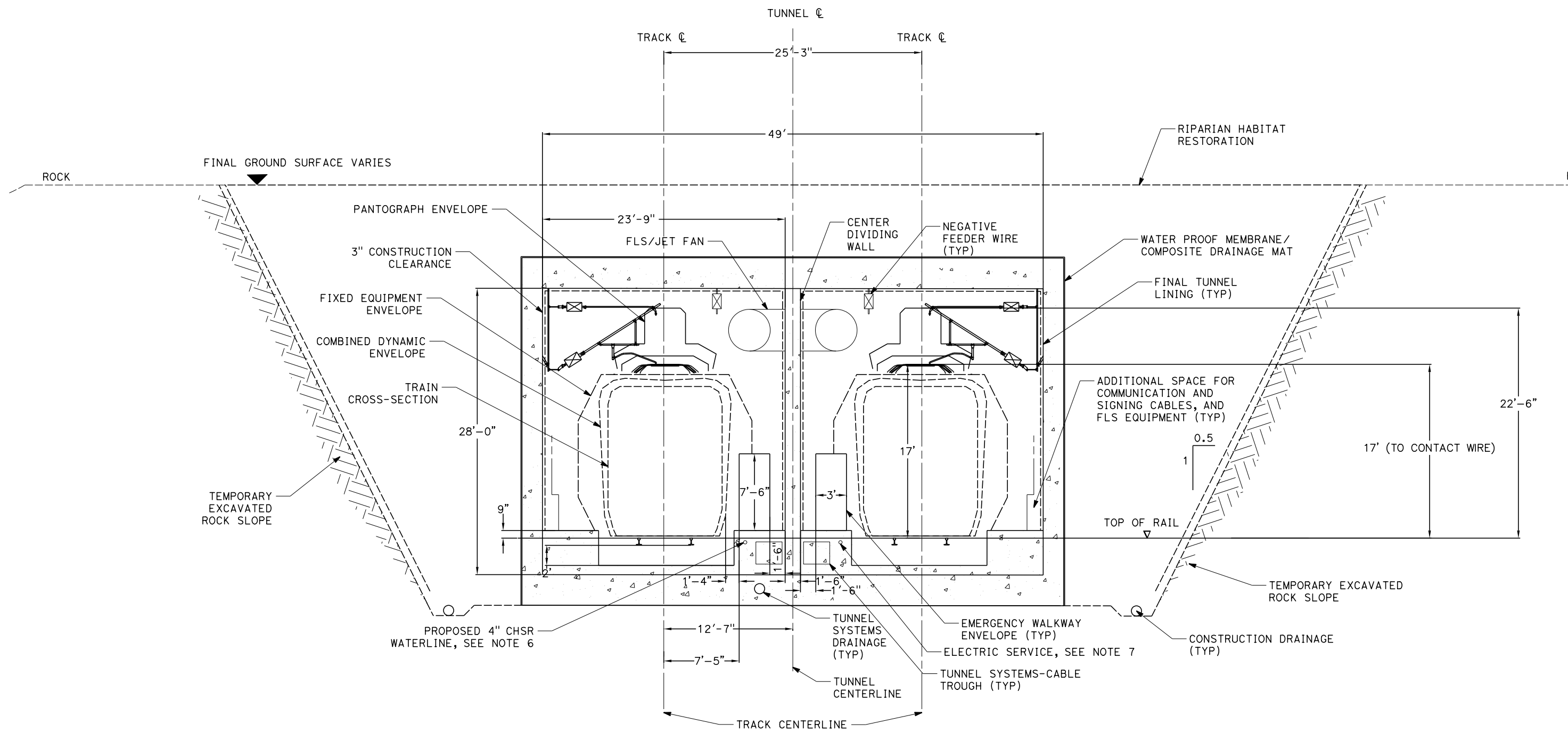
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL DRILL AND BLAST METHOD
SINGLE TUNNEL - INITIAL SUPPORT

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-D3102
SCALE
AS SHOWN
SHEET NO.
234

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-D3103

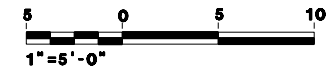
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1/20/2021

jcs_user_17609



GENERAL NOTES:

1. TEMPORARY SLOPE AND BENCH GEOMETRIES SHOWN ARE BASED ON GUIDANCE PROVIDED IN TM 2.6.7.
2. SLOPE PROTECTION, DRAINAGE, STRUCTURAL DIMENSIONS, AND STABILIZATION PROVISIONS WILL BE DEVELOPED BASED ON SITE INVESTIGATION RESULTS AND SLOPE-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. EXCAVATION, GROUND SUPPORT, LINING AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND CUT AND COVER-SPECIFIC DESIGN WORK.
5. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.
6. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
7. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET
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SUBMITTAL

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CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL CUT AND COVER BOX
CLEARANCE DIAGRAM - TANGENT TRACK

CONTRACT NO.
HSR13-44

DRAWING NO.
TN-D3103

SCALE
AS SHOWN

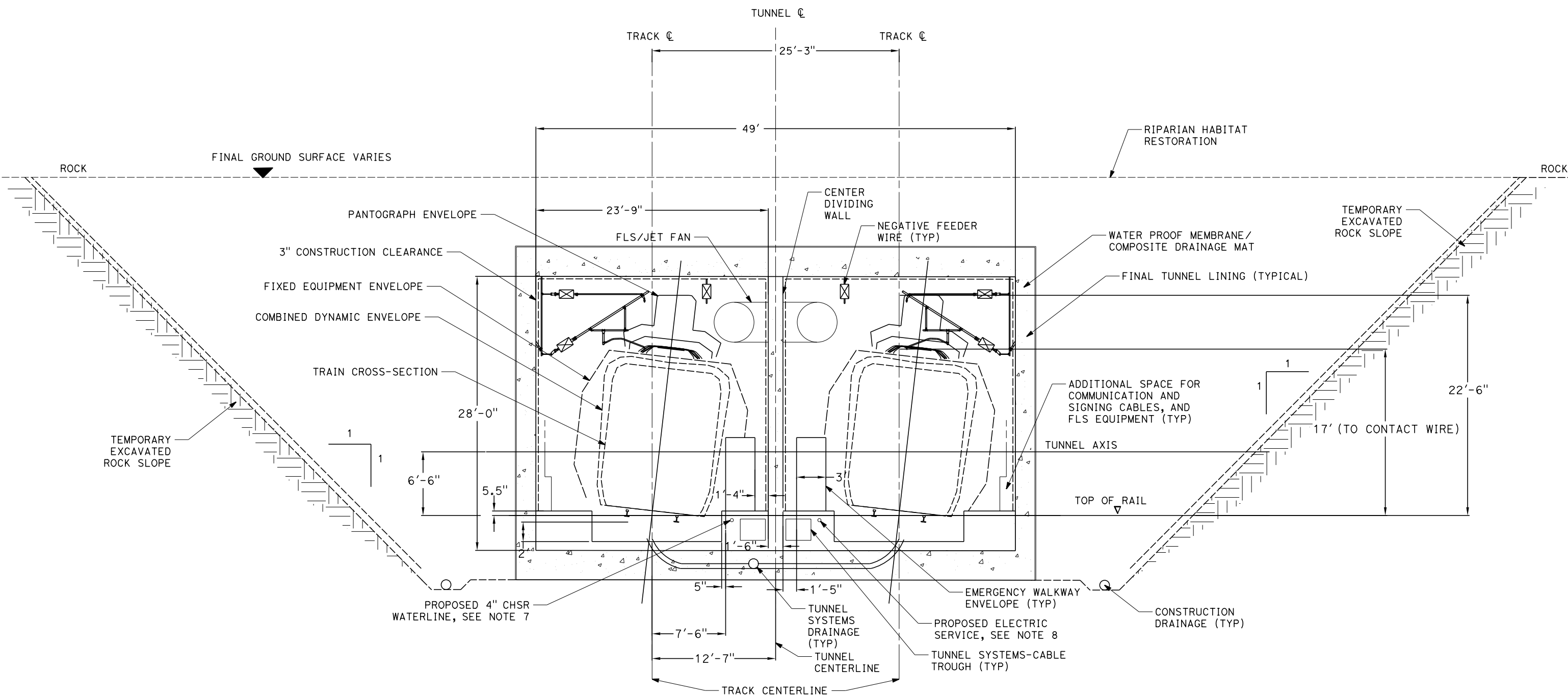
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235

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6:29:52 AM

1/20/2021

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GENERAL NOTES:

1. TEMPORARY SLOPE AND BENCH GEOMETRIES SHOWN ARE BASED ON GUIDANCE PROVIDED IN TM 2.6.7
2. SLOPE PROTECTION, DRAINAGE, STRUCTURAL DIMENSIONS, AND STABILIZATION PROVISIONS WILL BE DEVELOPED BASED ON SITE INVESTIGATION RESULTS AND SLOPE-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. EXCAVATION, GROUND SUPPORT, LINING AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND CUT AND COVER-SPECIFIC DESIGN WORK.
5. CUT AND COVER BOX TYPICAL SECTION TO BE USED AT TUNNEL 4, STATION 18362+50 TO 18368+50.
6. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 101 AND HAVE A 2 HOUR FIRE RATING.
7. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
8. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET

PEPD

SUBMITTAL

NOT FOR

CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT

BAKERSFIELD TO PALMDALE

REFINED CCNM DESIGN OPTION

TUNNEL CUT AND COVER BOX

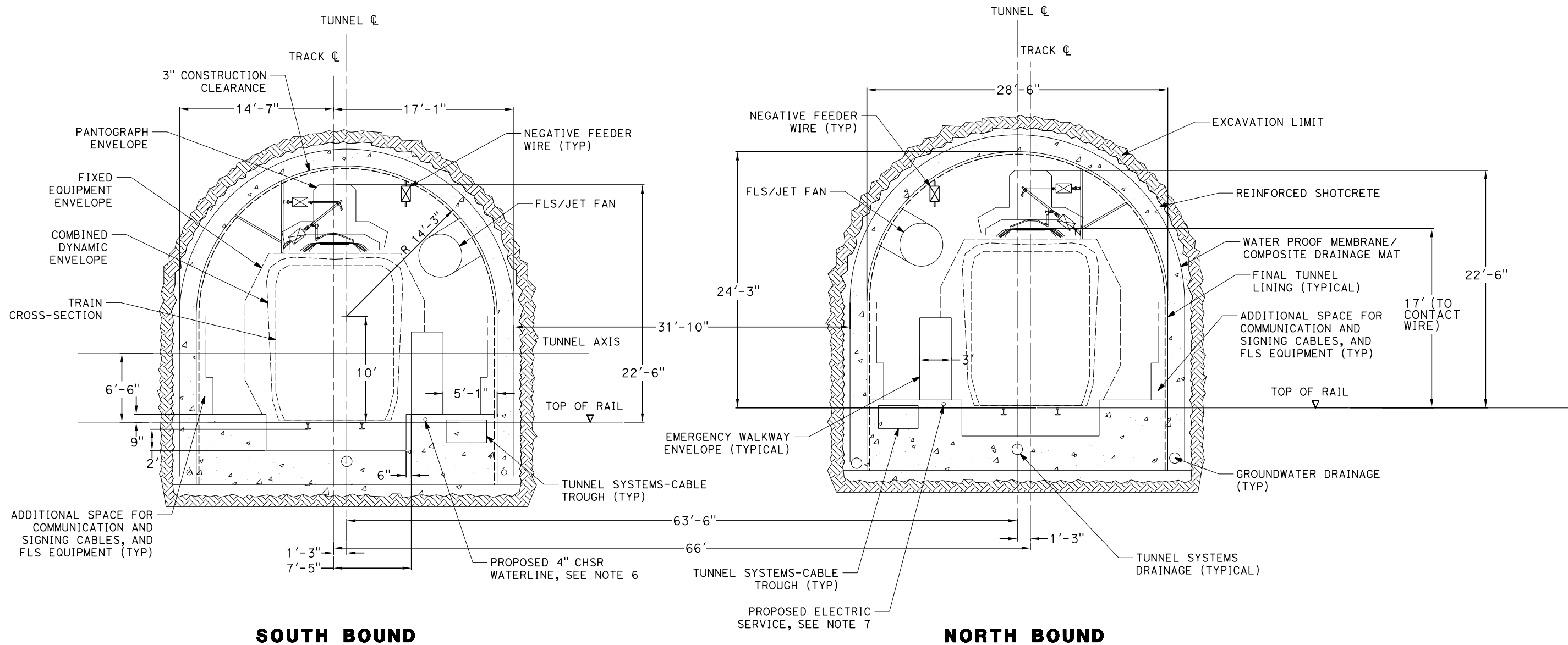
CLEARANCE DIAGRAM - SUPER ELEVATED TRACK

CONTRACT NO.
HSR13-44

DRAWING NO.
TN-D3104

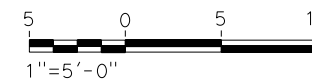
SCALE
AS SHOWN

SHEET NO.
236



GENERAL NOTES:

1. A DRILL AND BLAST OPTION IS IDENTIFIED FOR THE 15% IN-PROGRESS DESIGN OF TWIN, SINGLE TRACK TUNNELS FOR TUNNEL 7 THROUGH THE TEHACHAPI FAULT ZONE.
2. EXCAVATION, GROUND SUPPORT, PILLAR WIDTH, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND TUNNEL-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. PILLAR WIDTH BETWEEN TUNNELS TO BE ONE TUNNEL DIAMETER OR MORE BASED ON GUIDANCE IN TM 2.4.6.
5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM 1.1.10-A AND C.
6. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
7. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TWIN TUNNEL DRILL AND BLAST METHOD
CLEARANCE DIAGRAM - TANGENT TRACK

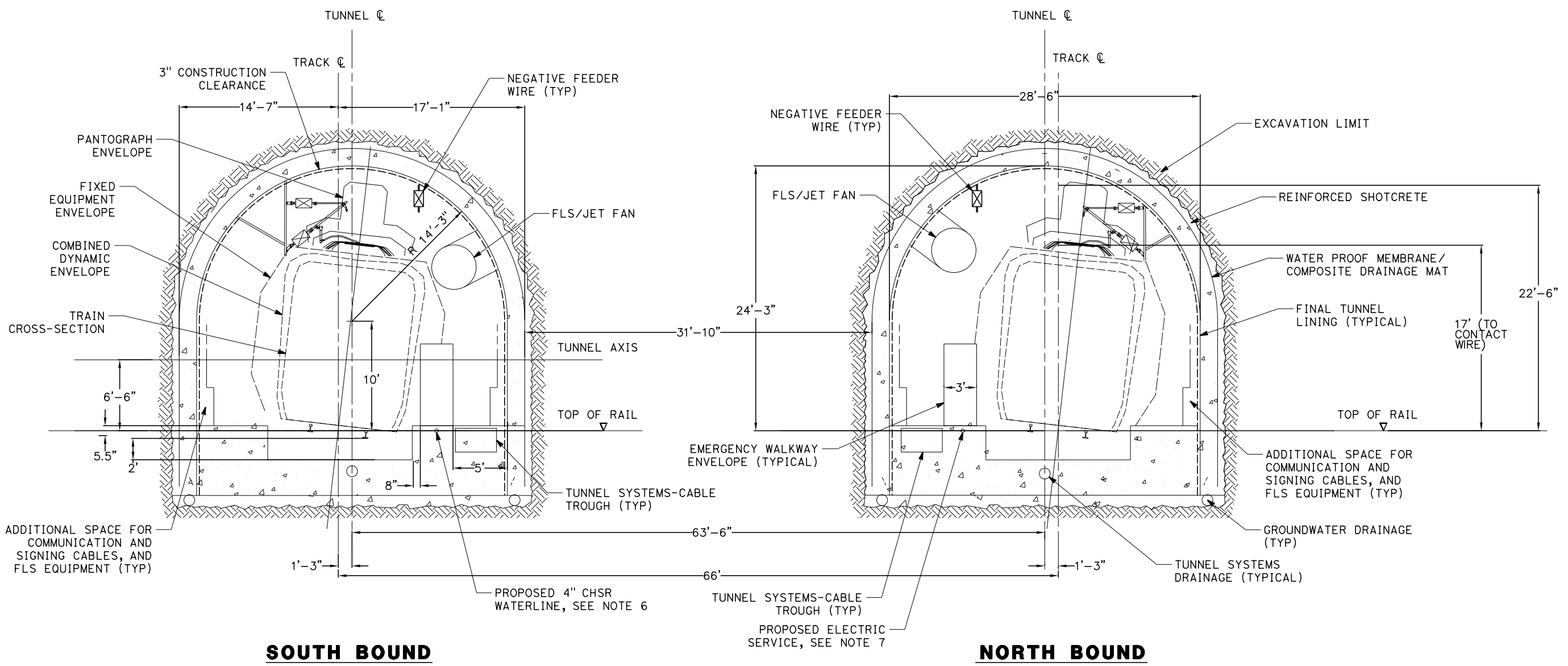
CONTRACT NO.
HSR13-44
DRAWING NO.
TN-D3105
SCALE
AS SHOWN
SHEET NO.
237

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SOUTH BOUND

NORTH BOUND

GENERAL NOTES:

1. A DRILL AND BLAST OPTION IS IDENTIFIED FOR THE 15% IN-PROGRESS DESIGN OF TWIN, SINGLE TRACK TUNNELS FOR TUNNEL 7 THROUGH THE TEHACHAPI FAULT ZONE.
2. EXCAVATION, GROUND SUPPORT, PILLAR WIDTH, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND TUNNEL-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. PILLAR WIDTH BETWEEN TUNNELS TO BE ONE TUNNEL DIAMETER OR MORE BASED ON GUIDANCE IN TM 2.4.6.
5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM 1.1.10-A AND C.
6. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
7. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
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DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
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J. MORRISON
DATE
01/29/2021

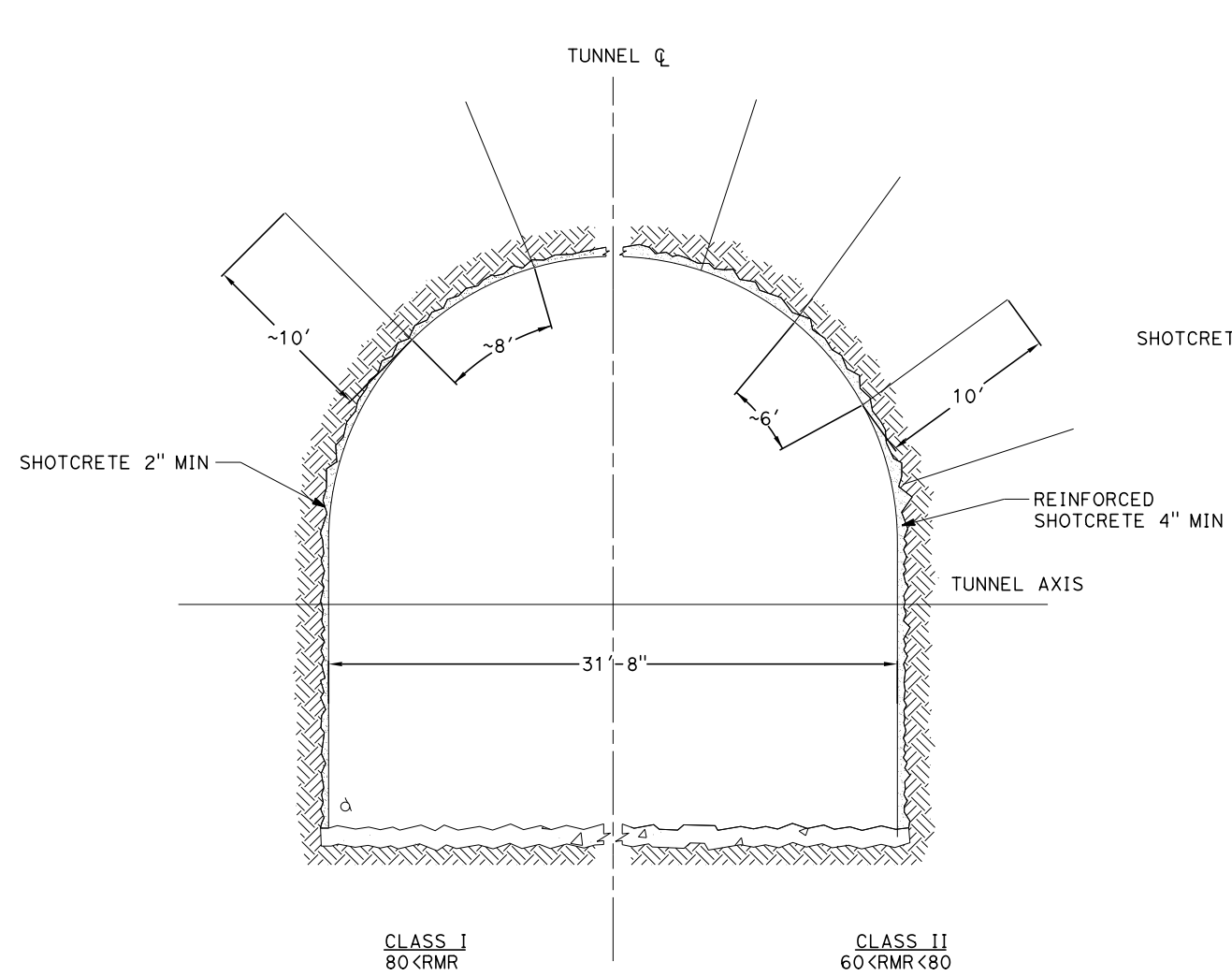
**RECORD SET
PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**

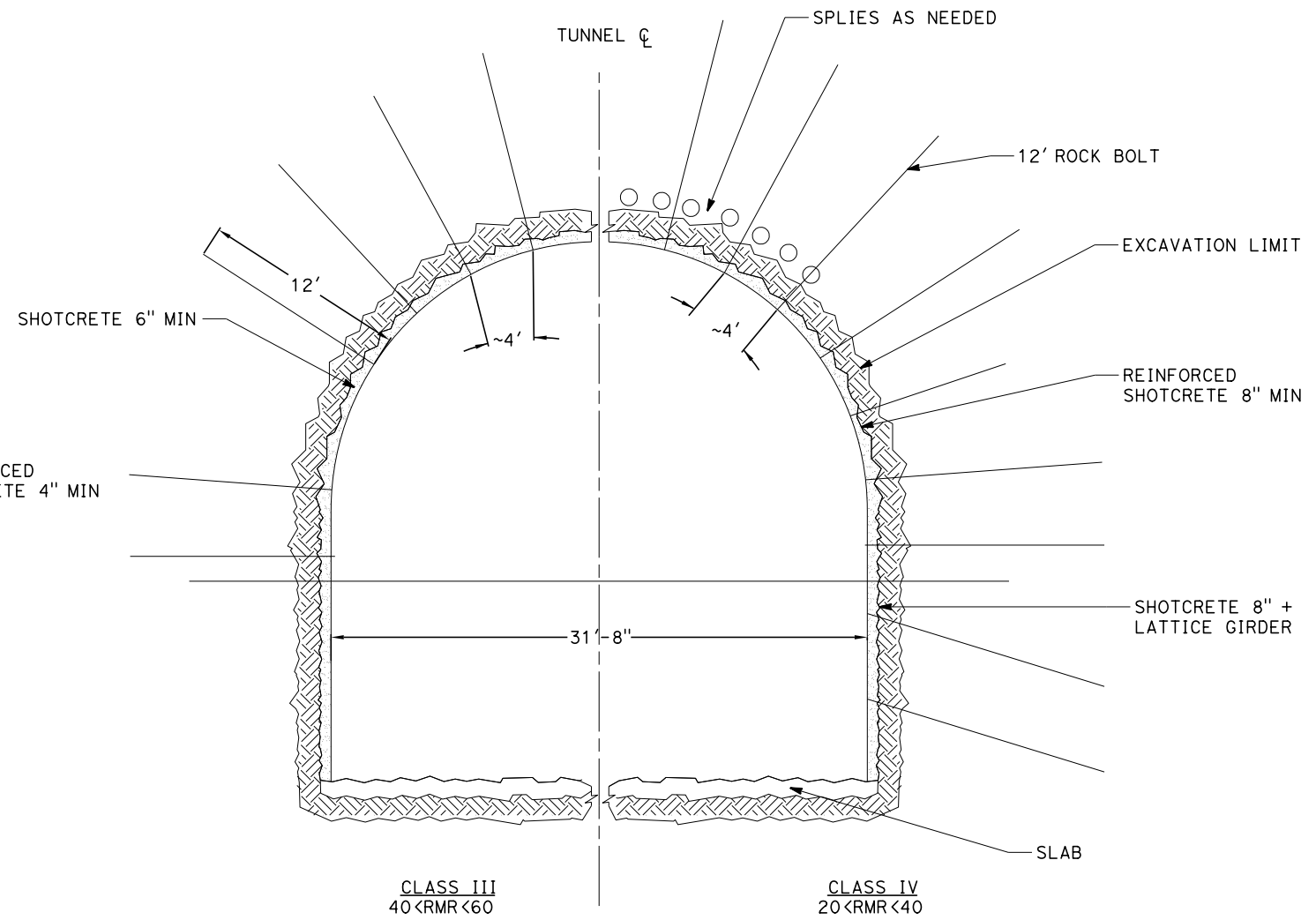


**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TWIN TUNNEL DRILL AND BLAST METHOD
CLEARANCE DIAGRAM - SUPER ELEVATED TRACK

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-D3106
SCALE
AS SHOWN
SHEET NO.
238



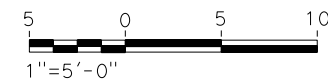
SOUTH BOUND



NORTH BOUND

GENERAL NOTES:

1. DRILL AND BLAST OPTION IS IDENTIFIED FOR THE 15% IN-PROGRESS DESIGN OF TWIN, SINGLE TRACK TUNNELS FOR TUNNEL 7 THROUGH THE TEHACHAPI FAULT ZONE FROM STA 18930+70 TO STA 18940+84.
2. EXCAVATION, GROUND SUPPORT, PILLAR WIDTH, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULTS AND TUNNEL-SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. PILLAR WIDTH BETWEEN TUNNELS TO BE ONE TUNNEL DIAMETER OR MORE BASED ON GUIDANCE IN TM 2.4.6
5. CLASSES I AND II MAY BE EXCAVATED FULL FACE. CLASS III MAY REQUIRE HEADING AND BENCH EXCAVATION WITH FACE SUPPORT AS REQUIRED. CLASS IV MAY REQUIRE TOP HEADING AND BENCH WITH SIDE SLASH, SPILES, AND FACE SUPPORT AS NEEDED. CLASS IV MAY REQUIRE A CHANGE IN EXCAVATION METHOD TO AN SEM CONSTRUCTION ALTERNATIVE.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
K. BUNGER
CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

RECORD SET
PEPD
SUBMITTAL

NOT FOR
CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TWIN TUNNEL DRILL AND BLAST METHOD
INITIAL SUPPORT

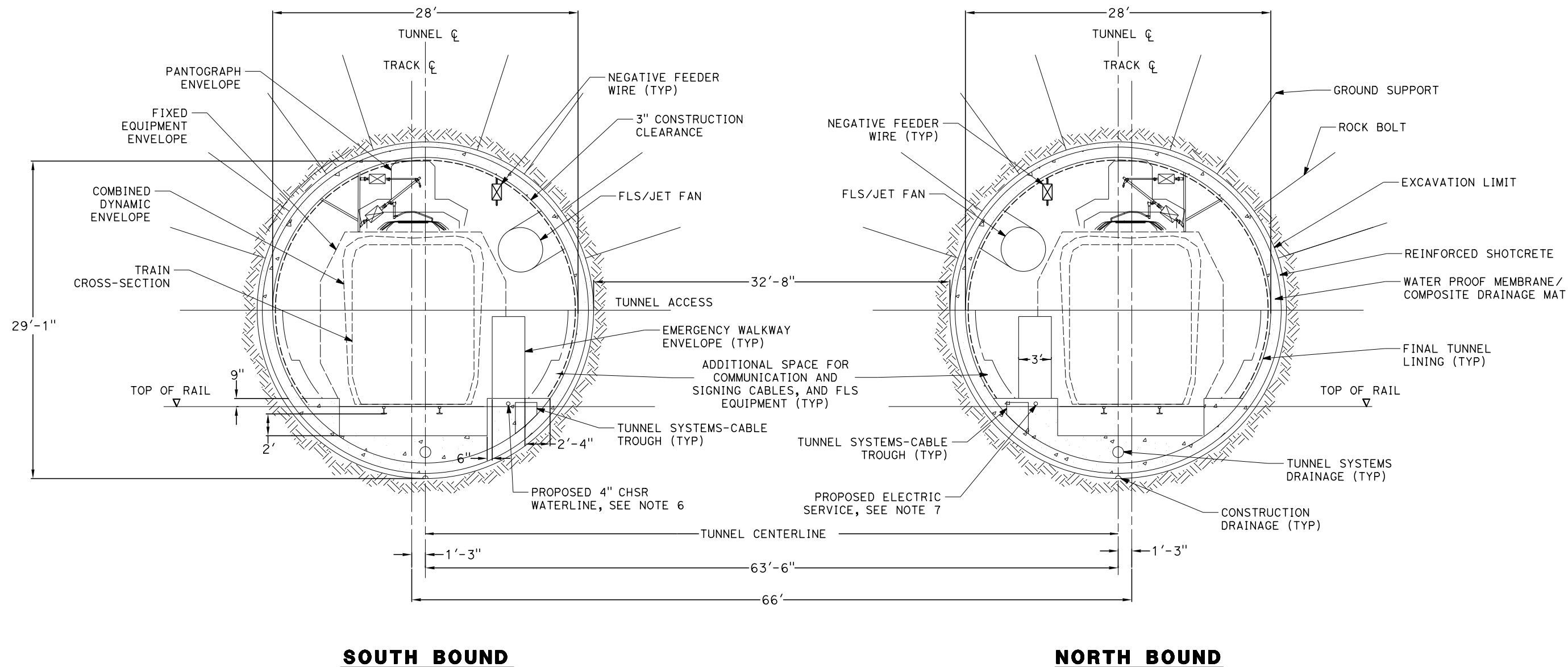
CONTRACT NO.
HSR13-44
DRAWING NO.
TN-D3107
SCALE
AS SHOWN
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239

Projects\701206_00_CHSRBP\00_CADD\CCNM Option D\Sheets\TN-D3108

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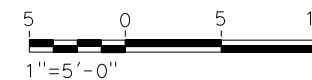
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GENERAL NOTES:

1. OPEN TBM METHODS ARE ADOPTED FOR THE 15% IN-PROGRESS DESIGN OF THE LONGER (GREATER THAN 1 MILE) TWIN, SINGLE TRACK 7, SITED IN HARD ROCK UNITS.
2. EXCAVATION, GROUND SUPPORT, PILLAR WIDTH, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULT AND TUNNEL SPECIFIC DESIGN WORK
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. PILLAR WIDTH BETWEEN TUNNELS TO BE ONE TUNNEL DIAMETER OR MORE BASED ON GUIDANCE IN TM 2.4.6.
5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM 1.1.10-A AND C.
6. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
7. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA
DRAWN BY
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CHECKED BY
R. KUNDU
IN CHARGE
J. MORRISON
DATE
01/29/2021

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PEPD
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CONSTRUCTION**



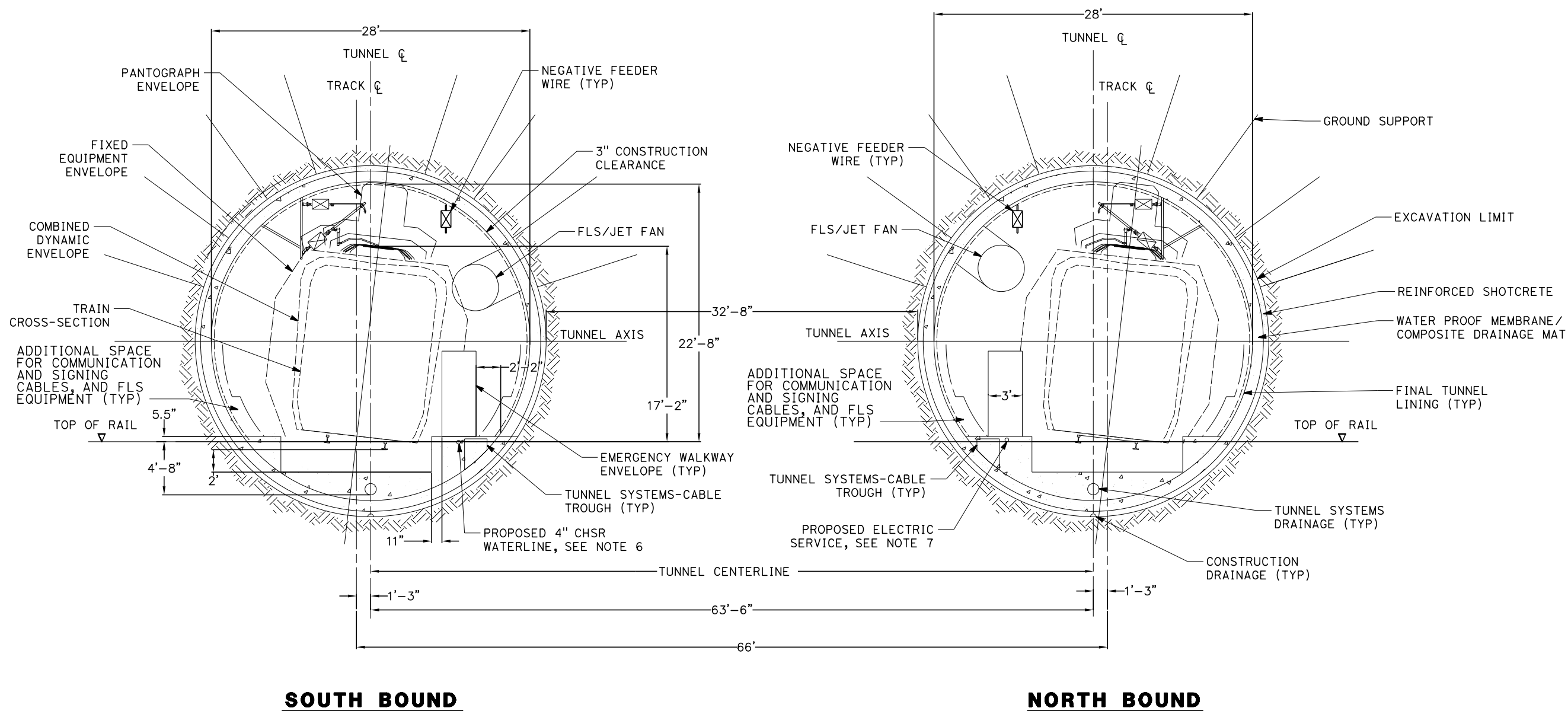
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TUNNEL TWIN TBM BORED TUNNELS
CLEARANCE DIAGRAM - TANGENT TRACK

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-D3108
SCALE
AS SHOWN
SHEET NO.
240

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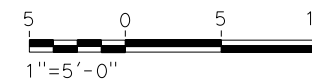


SOUTH BOUND

NORTH BOUND

GENERAL NOTES:

1. OPEN TBM METHODS ARE ADOPTED FOR THE 15% IN-PROGRESS DESIGN OF THE LONGER (GREATER THAN 1 MILE) TWIN, SINGLE TRACK 7, SITED IN HARD ROCK UNITS.
2. EXCAVATION, GROUND SUPPORT, PILLAR WIDTH, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULT AND TUNNEL SPECIFIC DESIGN WORK
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. PILLAR WIDTH BETWEEN TUNNELS TO BE ONE TUNNEL DIAMETER OR MORE BASED ON GUIDANCE IN TM 2.4.6.
5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM 1.1.10-A AND C.
6. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.
7. PROPOSED ELECTRIC SERVICE PARALLELS ALIGNMENT FROM STATION 18034+00 TO 19591+00.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
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K. BUNGER
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J. MORRISON
DATE
01/29/2021

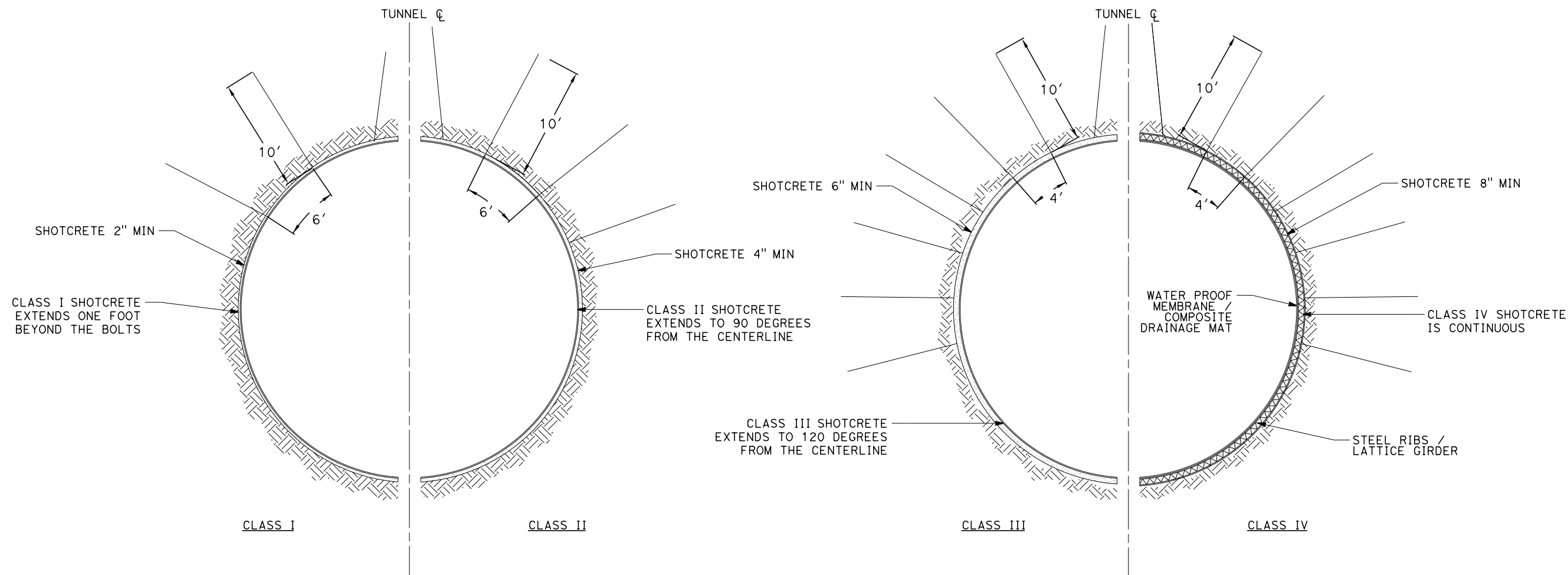
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PEPD
SUBMITTAL**

**NOT FOR
CONSTRUCTION**



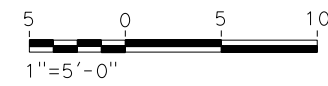
**CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE**
REFINED CCNM DESIGN OPTION
TUNNEL TWIN TBM BORED TUNNELS
CLEARANCE DIAGRAM - SUPER ELEVATED TRACK

CONTRACT NO.
HSR13-44
DRAWING NO.
TN-D3109
SCALE
AS SHOWN
SHEET NO.
241



GENERAL NOTES:

1. OPEN TBM METHODS ARE ADOPTED FOR THE 15% IN-PROGRESS DESIGN OF THE LONGER (GREATER THAN 1 MILE) TWIN, SINGLE TRACK 7, SITED IN HARD ROCK UNITS.
2. EXCAVATION, GROUND SUPPORT, PILLAR WIDTH, LINING THICKNESS AND WATERTIGHTNESS PROVISIONS WILL BE OPTIMIZED BASED ON SITE INVESTIGATION RESULT AND TUNNEL SPECIFIC DESIGN WORK.
3. TYPICAL CROSS-SECTION REQUIRES FURTHER STUDY TO EVALUATE DYNAMIC AIRFLOW/PRESSURE LEVELS UNDER HIGH SPEED OPERATING CONDITIONS, AND TO FURTHER REFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.
4. PILLAR WIDTH BETWEEN TUNNELS TO BE ONE TUNNEL DIAMETER OR MORE BASED ON GUIDANCE IN TM 2.4.6.



REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY
Z. SKOVAJSOVA

DRAWN BY
K. BUNGER

CHECKED BY
R. KUNDU

IN CHARGE
J. MORRISON

DATE
01/29/2021

RECORD SET
PEPD
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CONSTRUCTION



CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
REFINED CCNM DESIGN OPTION
TUNNEL TWIN TBM BORED TUNNELS
INITIAL SUPPORT

CONTRACT NO.
HSR13-44

DRAWING NO.
TN-D3110

SCALE
AS SHOWN

SHEET NO.
242