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 roadway drawings for geometric information of roadway structures.

K. Extend solid fence 30 feet from centerline of outermost track or 10 feet beyond the outermost energized conductor or component, whichever is greater.

L. Refer to track alignment drawings for limits of retaining walls, unless otherwise shown.
SECTION A-1

SCALE: 1" = 1'-0"

FILE CAP WITH FOUR 6'-6" DIAMETER CIDH PILES OR SINGLE LARGE DIAMETER CIDH PILES (TYP)
FILE DIAMETER AND LENGTH TO BE DETERMINED

NOTE:
1. PROPOSED 4" CHSR WATERLINE FROM STATION 18034+00 TO 19591+00.

SECTION A-2

SCALE: 1" = 1'-0"

FILE CAP WITH FOUR 6'-6" DIAMETER CIDH PILES OR SINGLE LARGE DIAMETER CIDH PILES (TYP)
FILE DIAMETER AND LENGTH TO BE DETERMINED
**SECTION B**

### OCTAGONAL CONCRETE COLUMNS, AS SHOWN

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<th>COLUMN SIZE</th>
<th>COLUMN H</th>
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<td>30-40'</td>
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<td>10'</td>
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<tr>
<td>40-60'</td>
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<td>12'</td>
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<tr>
<td>60-100'</td>
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<td>14'</td>
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**NOTES:**

1. Minimum seat width of straddle bent shall be equal to column size plus 2 ft.

2. Proposed 4" CHSR waterline from Station 18725494 to 19591400.

---

**SCALE: 1" = 1'-0"**

**STA 18725494 TO STA 18735494 (CCNM DESIGN OPTION)**
SECTION C  
Scales: 1/4"=1'-0"

**NOTES:**
1. Griwer side slope varies depending on structure depth at support.
2. Where 4-spans arrangements are shown, there are 2 center spans and 2 center columns with structure depth equal to 02 above the columns.
3. Proposed 4" chsr waterline from station 18034+00 to 19594+00.
4. Shoulder on barrier not shown for clarity; see section A-2 on drawing ST-J0005.

**COLUMN SIZE**

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<td>30-40'</td>
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<tr>
<td>40-60'</td>
<td>12'</td>
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<td>60-100'</td>
<td>14'</td>
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<tr>
<td>100+</td>
<td>16'</td>
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**FILE CAP WITH FOUR 6'-6" DIAMETER**

**PILE DIAMETER AND LENGTH TO BE DETERMINED**

**FILE CAP WITH FOUR 6'-6" DIAMETER**

**NOTE 3**

**SEGMENTAL CONSTRUCTION**

**NOTE 4**

**BALANCED CANTILEVER SEGMENTAL CONCRETE**

**SCALE: 1/4"=1'-0"**

**STA 18469+10 TO STA 18474+20** [CCNM DESIGN OPTION]

**STA 18571+43 TO STA 18577+30** [CCNM DESIGN OPTION]

**STA 18719+44 TO STA 18724+54** [CCNM DESIGN OPTION] - NOTE 4

**SECTION A**

**SECONDARY ALIGNMENT "CCNM"**

**TOP OF DECK**

**CABLE ТРООТХ**

**NOTE 4**

**TYPICAL SPAN**

**BALANCED CANTILEVER SEGMENTAL**

**SCALE: 1/4"=1'-0"**

**NOTE 4**

**TOP OF DECK**

**CABLE ТРООТХ**

**NOTE 4**

**TYPICAL SPAN**

**APPROX OG/FG**
TOP OF RAIL & CHSR SB ALIGNMENT "CCNM"

TOTAL LENGTH = 1150'-0" (MEASURED ALONG & CHSR SB ALIGNMENT "CCNM")

PROFILE
SCALE 1"= 40'

PLAN
SCALE 1"= 40'

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

LEGEND
© SEE DRAWING ST-J0001

CALEIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18463+56 TO 18475+16
PLAN AND ELEVATION

DRAWING NO. (ST-J1201)
MATCH LINE STA 18470+00
DATE 03/06/2019

DRAWN BY YIHONG WANG
DESIGNED BY ROB BARTON
CHECKED BY R. GOLCHOOBIAN
IN CHARGE TYLEY WANG

42.80%}

SCALE 1"= 40'
ELEV 2071.87

TOTAL LENGTH = 1150'-0" (MEASURED ALONG & CHSR SB ALIGNMENT "CCNM")

BALANCED CANTILEVER SEGMENTAL

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

LEGEND
© SEE DRAWING ST-J0001

CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
CCNM DESIGN OPTION
TRACK STRUCTURES
VIADUCT STATION 18463+56 TO 18475+16
PLAN AND ELEVATION

DRAWING NO. (ST-J1201)
MATCH LINE STA 18470+00
DATE 03/06/2019

DRAWN BY YIHONG WANG
DESIGNED BY ROB BARTON
CHECKED BY R. GOLCHOOBIAN
IN CHARGE TYLEY WANG
**TOP OF RAIL & CHSR SB ALIGNMENT "CCNM"**

**NO SCALE**

**TOTAL LENGTH = 2144'-0" (MEASURED ALONG CHSR SB ALIGNMENT "CCNM")**

**ELEVATION SCALE 1"= 40'**

**PLAN SCALE 1"= 40'**

---

**LEGEND**
- ① SEE DRAWING ST-J0001
- ② DESIGN OPTION
- ③ SOUNDWALL
- ④ TRANSITION SLAB

---

**TOP OF RAIL**
- ① PARAPET
- ② TOP OF DECK
- ③ TOP OF SOUNDWALL
- ④ TRANSITION SLAB

**PLAN**
- ① EDGE OF DECK
- ② ACCESS ROAD
- ③ DRAWING NO. ST-J1205
- ④ PILE CAP (TYP)
- ⑤ TOP OF CUT
- ⑥ PROP CHSR N/W
- ⑦ CHSR SB ALIGNMENT "CCNM"
- ⑧ EDGE OF DECK
- ⑨ TRANSITION SLAB

**ELEVATION**
- ① DATUM ELEV 2550.00
- ② 18621+00.00 BVC
- ③ ELEV 3012.87

---

**DRAWING NO. (ST-J1204)**

**MATCH LINE STA 18579+00**

**DATA**
- 18375+00
- 18564+00
- 18585+00

**Sheet No.**
- ① 18579+00
- ② 18580+00
- ③ 18581+00
- ④ 18582+00
- ⑤ 18583+00
- ⑥ 18584+00
- ⑦ 18585+00
- ⑧ 18586+00

---

**CALIFORNIA HIGH-SPEED RAIL PROJECT**

**BAKERSFIELD TO PALMDALE**

**CCNM DESIGN OPTION**

**VIA UTILITY STATION 18564+23 TO 18585+67**

**PLAN AND ELEVATION**
PROFILE GRADE
NO SCALE

ELEVATION
SCALE 1" = 40'

PLAN
SCALE 1" = 40'

LEGEND
SEE DRAWING ST-J0001

CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
CONSTRUCTION NOT FOR SUBMITAL

CALTRANS R/W
PROP SR-58
ELEV 3385.80
18790.00

TOP OF FENCE
TOP OF DECK
TOP OF BARRIER

APPROX OG

TOTAL LENGTH OF BRIDGE = 820'-0"
MEASURED ALONG "SR58EB" LINE

127400
128400
129400
130400
131400
132400
133400
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 D

STA 18562+05.59 PARALLELING STATION
STA 18806+83.08 PARALLELING STATION
NOTES:
1. SEE "ALT 1,2,3,5" FOR SW #2 STA 18556+00.
2. SEE "ALT 1,2,3,5" FOR SS #1 STA 18600+00.
3. SEE "ALT 1,2,3,5" FOR SS #1 STA 18420+50.
4. SEE "ALT 1,2,3,5" FOR TP STA 18940+50.
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 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 ganttries shall be 40' high.
7. This layout is per TH 3.1.1.13-0 and shown here for reference and completeness.
NOTES:
1. TP (TUNNEL PORTAL) SITES HAVE RADIO ANTENNAS.
2. SEE "ALT 1,2,3,5" FOR ATC-D STA 18310400.
3. SEE "ALT 1,2,3,5" FOR ATC-E STA 19185400.
4. SEE "ALT 1,2,3,5" FOR TP STA 18520770.
5. SEE "ALT 1,2,3,5" FOR TP STA 18806830.
CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE
CONM DESIGN OPTION
TUNNEL LEGEND

LEGEND:

PLAN

PROFILE

GENERAL NOTES

1. ROADWAY IMPROVEMENTS NOT PART OF THIS SET.

2. FOR PROPOSED RETAINING WALL SEE SHEET SERIES ST-G.

UTILITY:

EXISTING ELECTRICAL TRANSMISSION

EXISTING ELECTRICAL TRANSMISSION TOWER

EXISTING STORM DRAIN

EXISTING GAS LINE

1. ROADWAY IMPROVEMENTS NOT PART OF THIS SET.

2. FOR PROPOSED RETAINING WALL SEE SHEET SERIES ST-G.
NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE, TO BE CONFIRMED.
2. PROFILE INFORMATION SEE SHEET TN-C1001.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18458+80 TO 18822+99.

SCALE APPLICABLE FOR FULL SIZE ONLY

CALIFORNIA HIGH-SPEED RAIL PROJECT
BAKERSFIELD TO PALMDALE

TUNNEL 5 - NORTH AND SOUTH PORTALS
STA 18505+00 TO STA 18566+00

TN-C4301

PROPOSED CHSR R/W

PLANNING + INTERNATIONAL

NOT FOR CONSTRUCTION
NOTES:
1. Fault zone locations are approximate, to be confirmed.
2. For profile information see sheet TN-C1001.
3. Proposed 4" water line parallels alignment from Station 18458+80 to 18822+99.

SCALE APPLICABLE FOR FULL SIZE ONLY

1"=200'

STA 18566+00 TO STA 18630+00
TUNNEL 6 - NORTH PORTAL

ACCESS ROAD

LIMITS OF GROUND DISTURBANCE

ACCESS ROAD

DIRT ROAD

PROP CHSR R/W

1350' TRAIN SURFACE

EXCAVATION AND FIRE
CONTROL ZONE

PROP CHSR R/W

ACCESS ROAD

18565

18570

18575

18580

18585

18590

18595

18600

18605

18610

18615

18620

18630

STA 18566+00 TO STA 18630+00
TUNNEL 6 - NORTH PORTAL

NOT FOR SUBMITTAL

PEPD

RECORD
NOTES:

1. FAULT ZONE LOCATIONS ARE APPROXIMATE. TO BE CONFIRMED.
2. FOR PROFILE INFORMATION SEE SHEET TN-C1001.
3. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18458+80 TO 18822+99.

SCALE APPLICABLE FOR FULL SIZE ONLY
GENERAL NOTES:

1. DRILL AND BLAST METHOD IS IDENTIFIED FOR THE 15% IN-PROGRESS DESIGN OF DOUBLE TRACK TUNNEL FOR TUNNEL 5 AND 6 IN HARD ROCK UNITS.

2. EXCAVATION, GROUND SUPPORT, LINING THICKNESS AND WATERPROOFNESS 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 INVESTIGATION RESULTS AND TUNNEL-SPECIFIC DESIGN WORK.

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" WATERLINE PARALLELS ALIGNMENT FROM STATION 18458+80 TO 18822+99.

7. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM1.1.10-A AND C.

8. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.

9. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM1.1.10-A AND C.

10. PROPOSED 4" WATERLINE PARALLELS ALIGNMENT FROM STATION 18458+80 TO 18822+99.

11. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM1.1.10-A AND C.

12. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.
GENERAL NOTES:

1. A DRILL AND BLAST OPTION IS IDENTIFIED FOR THE 150 IN-PROGRESS DESIGN OF TWIN, SINGLE TRACK TUNNELS FOR TUNNEL 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 REQUIREMENTS FOR TUNNEL 5 AND 6 IN HARD ROCK UNITS.

4. FOR TUNNEL 5 AND 6 IN HARD ROCK UNITS.

5. THE COMPOSITE VEHICLE STATIC AND DYNAMIC ENVELOPES SHOWN FOLLOW TM1.1.10-A AND C.
GENERAL NOTES:

1. TEMPORARY SLOPE AND BENCH GEOMETRIES SHOWN ARE BASED ON GUIDANCE PROVIDED IN TM 2.6.7. 
   TEMPORARY CUT AND COVER BOX TYPICAL SECTION TO BE USED AT TUNNEL 5 STATION 18550+00 TO 18556+00.

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 AND TO FURTHER DEFINE SPACE ALLOTTED FOR STRUCTURES, EQUIPMENT, AND EGRESS.

4. TEMPORARY GROUND SURFACE, CUT AND COVER BOX TYPICAL SECTION TO BE USED AT TUNNEL 5 STATIONS 18550+00 TO 18556+00.

5. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.

6. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.

7. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18458+80 TO 18822+99.

8. WATER LINE, SEE NOTE 7.

9. PROPOSED 4" WATER LINE PARALLELS ALIGNMENT FROM STATION 18458+80 TO 18822+99.

10. CENTER DIVIDING WALL SHALL CONFORM TO NFPA 130 AND HAVE A 2 HOUR FIRE RATING.

11. TEMPORARY SLOPE AND BENCH GEOMETRIES SHOWN ARE BASED ON GUIDANCE PROVIDED IN TM 2.6.7.
California High-Speed Rail Authority

Bakersfield to Palmdale

Revised Record Set Submittal
Cesar Chavez National Monument (CCNM) Design Option

Drawings Addendum
Preliminary Engineering for Project Definition – March 2019

Volume 4
<table>
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<td>Metal Plate Guard Railing</td>
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<td>Maintenance Vehicle Pullout</td>
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<td>C</td>
<td>Point of Beginning</td>
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<td>C/A</td>
<td>Move to Absolute</td>
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<td>California High-Speed Rail Project</td>
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<td>Junction Structure</td>
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<td>Raise</td>
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### Abbreviations

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### Engineering Symbols

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<td>Thrie Beam Barrier</td>
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<td>TCB</td>
<td>Traffic Control Box</td>
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<td>TEMP</td>
<td>Temporary</td>
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### Notes

- Sheet 3 of 3
- Bakersfield to Palmdale
- HSR13-44
- General ABBREVIATIONS
- Sheet 3 of 3
### Utility Owners

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### Utility Owners Cont.

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<th>Owner</th>
<th>Abbreviation</th>
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<tr>
<td>Time Warner</td>
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<tr>
<td>United States Bureau of Reclamation</td>
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<td>VWMC</td>
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<td>Vausur Energy</td>
<td>VAUSUR</td>
</tr>
<tr>
<td>Verizon</td>
<td>VERIZON</td>
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</table>

### General Notes

1. Existing underground utilities and improvements are shown in their approximate location based upon record information available at the time of preparation of these plans. The location of existing utilities is based on four sources:
   1. Topographic survey
   2. GPS
   3. As-built drawings
   4. Limited field reconnaissance
   The contractor shall conduct its own survey and verify the location of existing utilities and reconcile the survey data and GIS data.

2. Service laterals for potable water, sanitary sewer and natural gas are not shown.

3. Existing utilities identified with the disposition "relocate" and "remove" pertain to only that portion of the utility within the proposed ROW or impacted by proposed improvements.

4. Abandonment of existing oil wells shall conform to the requirements of agencies having jurisdiction regarding decommissioning of existing oil wells and appurtenant equipment.

### High Voltage Transmission Line Relocation Notes

1. Electrical tower and wire heights are not based on field survey and may not represent actual field conditions.

2. Aouda vertical clearance from OCS pole negative feeder wire to lowest high voltage electrical conductors Aouda DG 95 Rule 38 Table 2 (Case 12).

3. Electrical transmission towers/poles subject to additional clearance need by utility owner.

4. Proposed MVC transmission towers represented conceptually.

5. Negative feeder wire distance above top rail: 30' for 2 track configuration, 35' for 3 or more track configuration.

### Drainage System and Relocation Notes

Existing storm drainage pipes, culverts, or channels are shown for information only. Refer to grading and drainage plans for detailed drainage information.
## Utility Information

<table>
<thead>
<tr>
<th>No.</th>
<th>Facility</th>
<th>Size</th>
<th>Owner</th>
<th>Disposition</th>
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<tbody>
<tr>
<td>1</td>
<td>Fire Water</td>
<td>4&quot;</td>
<td>CHSR</td>
<td>NEW</td>
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</table>

### Facility: Fire Water
- Size: 4"
- Owner: CHSR
- Disposition: NEW

---

*Note: The diagram includes various elements such as utility lines, facility locations, and alignment details.*
## Utility Information

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<thead>
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### Notes
- CHSR NB Alignment "CCNM"
- CHSR SB Alignment "CCNM"

### Plan

- Prop CHSR R/W
- Prop CHSR R/W
- Prop Crop Road
- Prop Crop Road
- Match Exist
- Match Line (UT-C4606)
- Match Line (UT-C4608)

### Scale

1" = 100' Hor Scale applicable for full size only

### Date

03/06/2019

### Design

- D. Aruta
- A. Rivera

### Company

- T.Y.林国际
- California High-Speed Rail Authority
UTILITY INFORMATION

<table>
<thead>
<tr>
<th>NO.</th>
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<th>DISPOSITION</th>
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<tr>
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<td>4&quot;</td>
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</table>

CALIFORNIA HIGH-SPEED RAIL PROJECT
Bakersfield to Palmdale
COMPOSITE UTILITY PLAN
STA 18685+00 TO 18710+00

MATCH LINE (UT-C4610)

PTEF

PPEF

MATCH EXIST

BOX CULVERT CROSSING

---

DRAWING NO. 03/06/2019
SCALE 1"=100' HOR
NOT FOR SUBMITTAL

CALIFORNIA HIGH-SPEED RAIL PROJECT
CONSTRUCTION
NOT FOR CONSTRUCTION

---
**UTILITY INFORMATION**

<table>
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<tr>
<th>NO</th>
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<td>NER</td>
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</table>

---

**COMPOSITE UTILITY PLAN**

- CHSR NB ALIGNMENT "CCNM"
- CHSR SB ALIGNMENT "CCNM"

**ACCESS ROAD**

**PROPS ROADWAY STRUCTURE**

**CALTRANS R/W**

**PROP CHSR R/W**

**PTEF**

**PPEF**

**MATCH LINE (UT-C4612)**

---

**DATE**

- 03/06/2019

**DRAWN BY**

- D. ARUTA

**DESIGNED BY**

- G. CAMPBELL

**CHECKED BY**

- D. ARUTA

**IN CHARGE**

- G. CAMPBELL

---

**CALIFORNIA HIGH-SPEED RAIL PROJECT**

- BAKERSFIELD TO PALMDALE

**CCNM DESIGN OPTION**

**COMPOSITE UTILITY PLAN**

STA 18760+00 TO 18785+00

PLAN

---

**NOT FOR CONSTRUCTION**