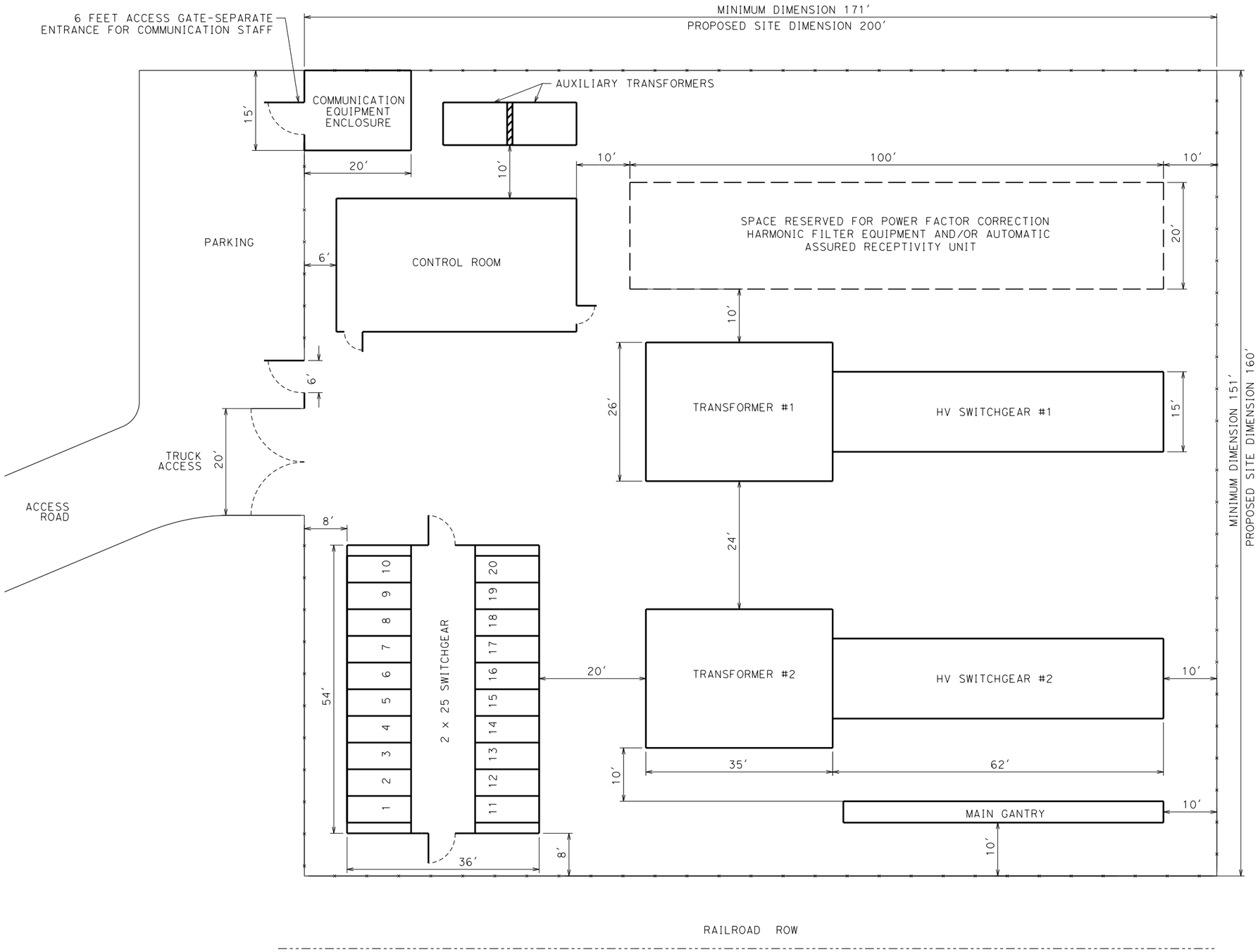


NOTES:

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 TO AND ADJACENT TO THE TRACK.
3. THERE WILL BE A STRAIN GANTRY LOCATED WITHIN THE RAILROAD RIGHT-OF-WAY (ROW), PARALLEL TO AND ON THE OPPOSITE SIDE OF THE TRACK WITH FOOTPRINTS EXACTLY EQUAL TO THAT OF THE MAIN GANTRY.
4. IF THE TRACTION POWER FACILITY (TPF) IS LOCATED AWAY FROM THE TRACK, THE MAIN GANTRY WILL BE LOCATED WITHIN THE RAILROAD ROW, 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 ROW FOR LAYING UNDERGROUND DUCT BANKS AND MANHOLES.
5. FOR DUCT BANK AND MANHOLE DETAILS, SEE DWG. TM 3.1.1.3-E AND TM 3.1.1.3-F.
6. THE COMMUNICATION EQUIPMENT ROOM SHALL HOUSE COMMUNICATION INTERFACE EQUIPMENT FOR SCADA SYSTEM AND OTHER WAYSIDE COMMUNICATION EQUIPMENT.
7. THE GANTRIES SHALL BE 40 FEET HIGH.

10 0 10 20
1"=10′

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
A	11/05/09				

DESIGNED BY V. SIBAL
DRAWN BY S. BURDEYNIK
CHECKED BY M. PAZ
IN CHARGE R. SCHMEDES
DATE 05-26-10

PB PARSONS BRINCKERHOFF

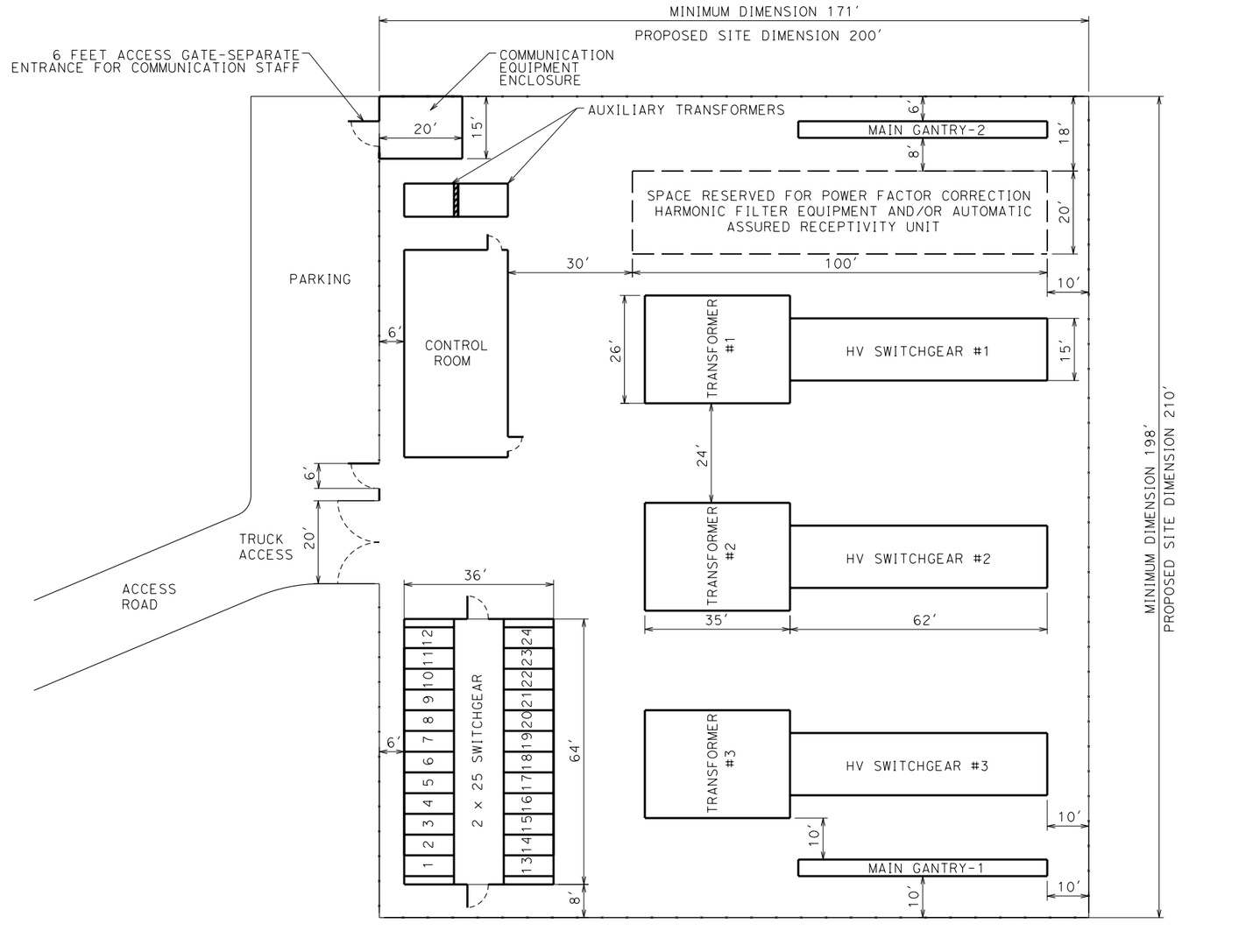
CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLY CALIFORNIA
Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

CONCEPTUAL LAYOUT
TRACTION POWER SUBSTATION
WITH 2 HIGH VOLTAGE TRANSFORMERS

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-A
SCALE 1"=10′-0"
SHEET NO. 001 OF 007

5/26/2010 2:09:28 PM T:\13259-CAHSR\CADD\TP\TEMP\AFTER COMMENTS\TM 3.1.1.3-A.dgn
burdeynik



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. THERE IS A PROVISION FOR INSTALLING TWO MAIN GANTRIES FOR FACILITATING CONNECTIONS WITH OVERHEAD CONTACT SYSTEM OF DIFFERENT SECTIONS.
3. THERE WILL BE A STRAIN GANTRY LOCATED WITHIN THE RAILROAD RIGHT-OF-WAY (ROW), PARALLEL TO AND ON THE OPPOSITE SIDE OF THE TRACK WITH FOOTPRINTS EXACTLY EQUAL TO THAT OF THE MAIN GANTRY.
4. IF THE TRACTION POWER FACILITY (TPF) IS LOCATED AWAY FROM THE TRACK, THE MAIN GANTRY WILL BE LOCATED WITHIN THE RAILROAD ROW, 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 ROW FOR LAYING UNDERGROUND DUCT BANKS AND MANHOLES.
5. FOR DUCT BANK AND MANHOLE DETAILS, SEE DWG. TM 3.1.1.3-E AND TM 3.1.1.3-F.
6. THE COMMUNICATION EQUIPMENT ROOM SHALL HOUSE COMMUNICATION INTERFACE EQUIPMENT FOR SCADA SYSTEM AND OTHER WAYSIDE COMMUNICATION EQUIPMENT.
7. THE GANTRIES SHALL BE 40 FEET HIGH.

16 0 16 32
1/16"=1'-0"

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
A	11/05/09				

DESIGNED BY V. SIBAL
DRAWN BY S. BURDEYNIK
CHECKED BY M. PAZ
IN CHARGE R. SCHMEDES
DATE 05-26-10

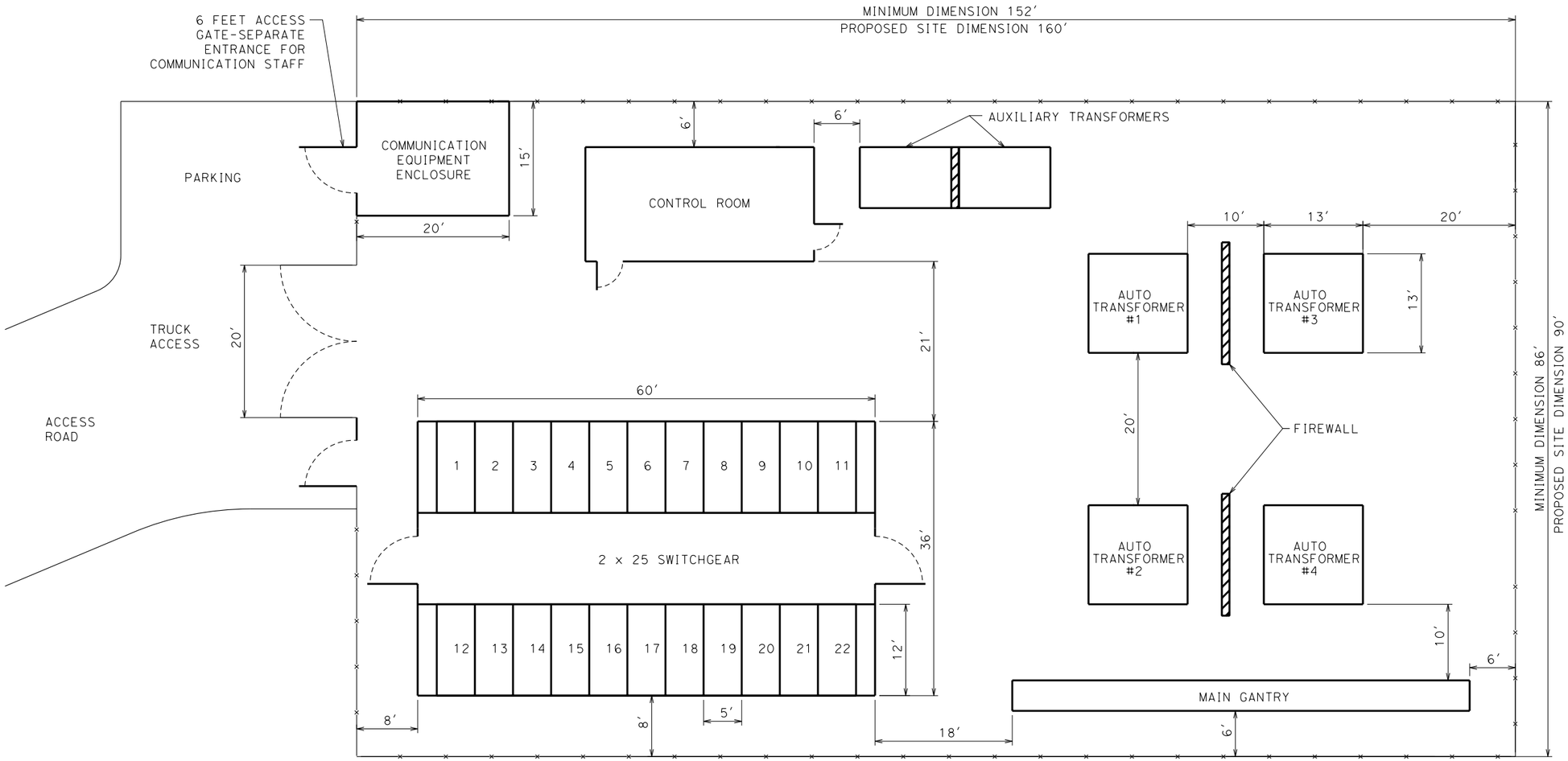
PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLYCALIFORNIA
Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

CONCEPTUAL LAYOUT
TRACTION POWER SUBSTATION
WITH 3 HIGH VOLTAGE TRANSFORMERS

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-B
SCALE 1/16"=1'-0"
SHEET NO. 002 OF 007



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.
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5. FOR DUCT BANK AND MANHOLE DETAILS, SEE DWG. TM 3.1.1.3-E AND TM 3.1.1.3-F.
6. THE COMMUNICATION EQUIPMENT ROOM SHALL HOUSE COMMUNICATION INTERFACE EQUIPMENT FOR SCADA SYSTEM AND OTHER WAYSIDE COMMUNICATION EQUIPMENT.
7. THE GANTRIES SHALL BE 40 FEET HIGH.

8 0 8 16
1/8"=1'-0"

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
A	11/05/09				

DESIGNED BY V. SIBAL
DRAWN BY S. BURDEYNIK
CHECKED BY M. PAZ
IN CHARGE R. SCHMEDES
DATE 05-26-10

PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLY CALIFORNIA Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

CONCEPTUAL LAYOUT
SWITCHING STATION
WITH 4 AUTOTRANSFORMERS

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-C
SCALE 1/8"=1'-0"
SHEET NO. 003 OF 007

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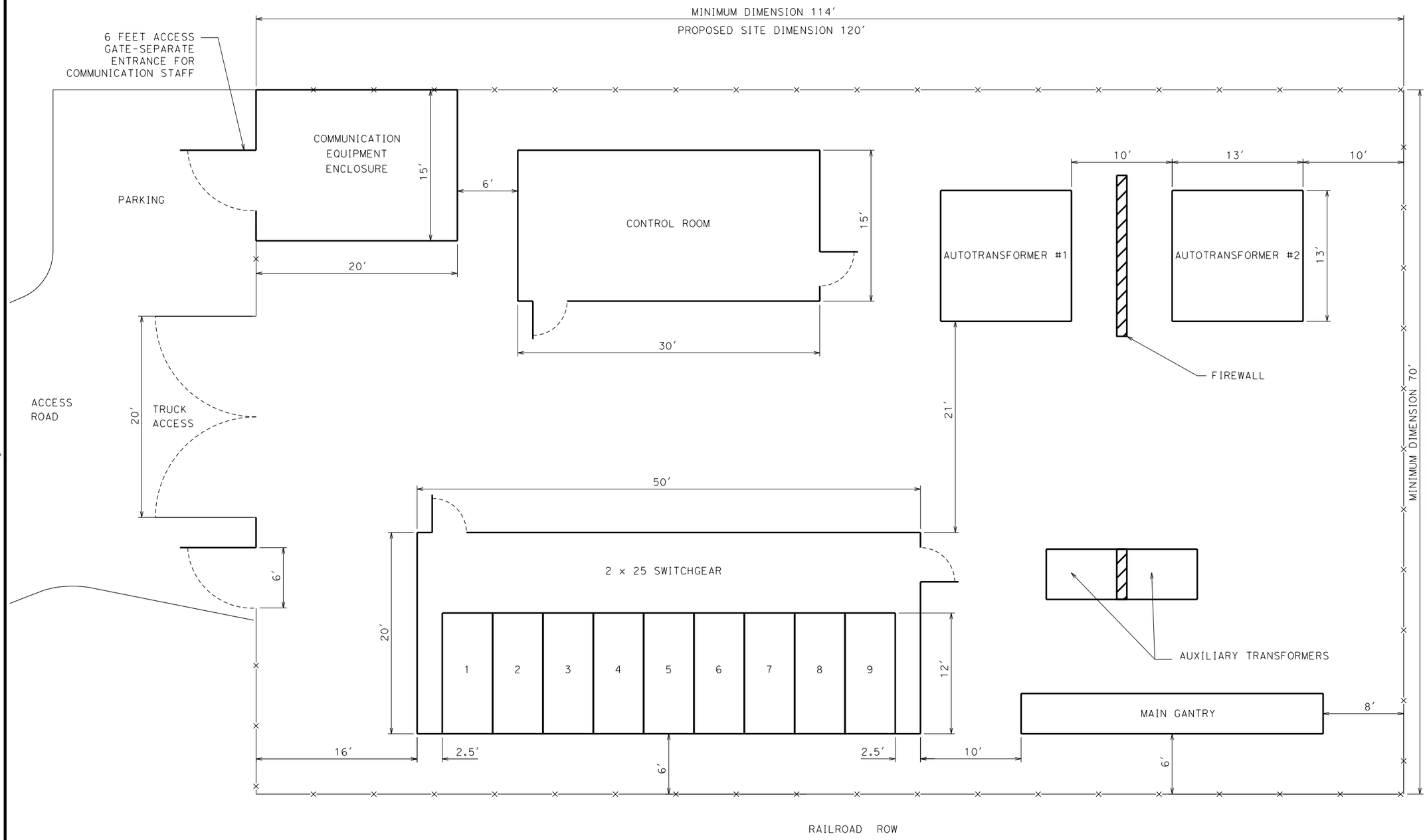

NOTES:

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.
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4. IF THE TRACTION POWER FACILITY (TPF) IS LOCATED AWAY FROM THE TRACK, THE MAIN GANTRY WILL BE LOCATED WITHIN THE RAILROADROW, 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 ROW FOR LAYING UNDERGROUND DUCT BANKS AND MANHOLES.
5. FOR DUCT BANK AND MANHOLE DETAILS,SEE DWG. TM 3.1.1.3-E AND TM 3.1.1.3-F.
6. THE COMMUNICATION EQUIPMENT ROOM SHALL HOUSE COMMUNICATION INTERFACE EQUIPMENTFOR SCADA SYSTEM AND OTHER WAYSIDE COMMUNICATION EQUIPMENT.
7. THE GANTRIES SHALL BE 40 FEET HIGH.

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
A	11/05/09				

DESIGNED BY V. SIBAL
DRAWN BY S. BURDEYNIK
CHECKED BY M. PAZ
IN CHARGE R. SCHMEDES
DATE 05-26-10

PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLY CALIFORNIA
Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

CONCEPTUAL LAYOUT
PARALLELING STATION
WITH 2 AUTOTRANSFORMERS

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-D
SCALE 1"= 5′-0"
SHEET NO. 004 OF 007

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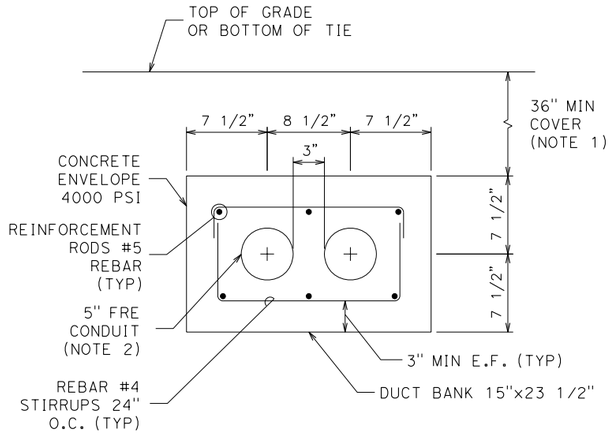
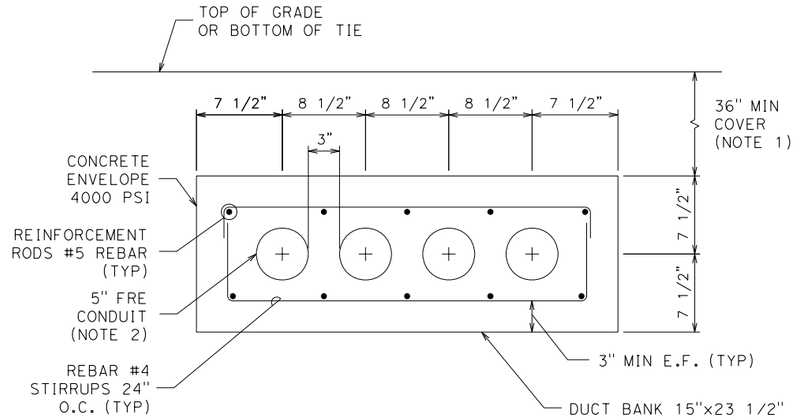


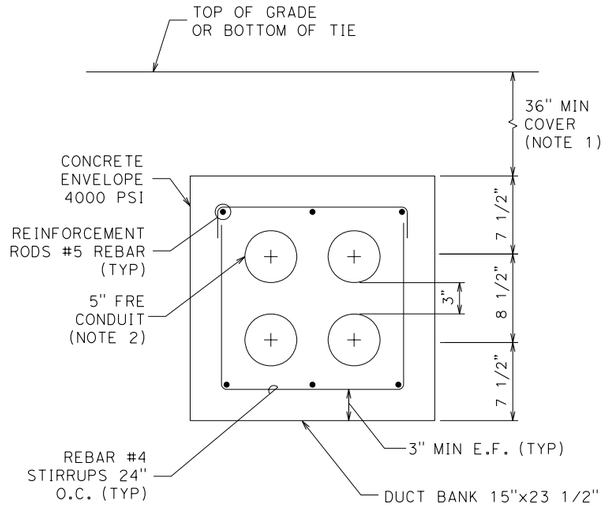
2-WAY DUCT BANK

A DETAIL
– SCALE: NTS



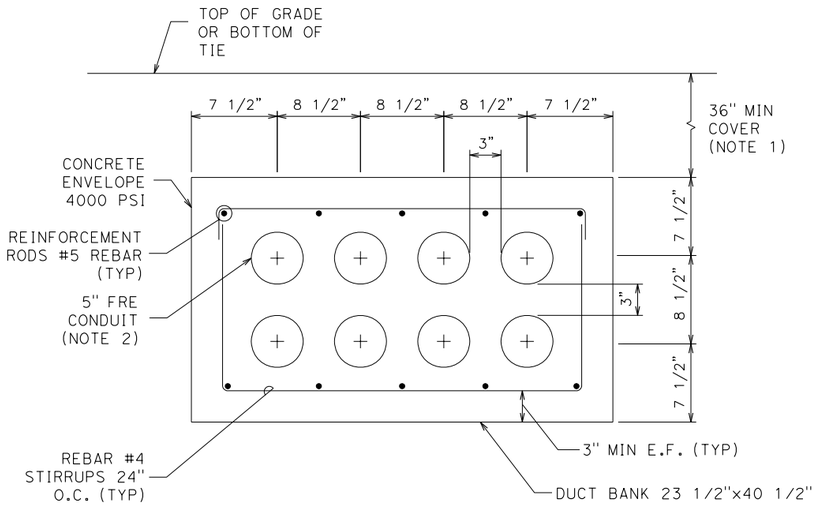
4-WAY DUCT BANK

B DETAIL
– SCALE: NTS



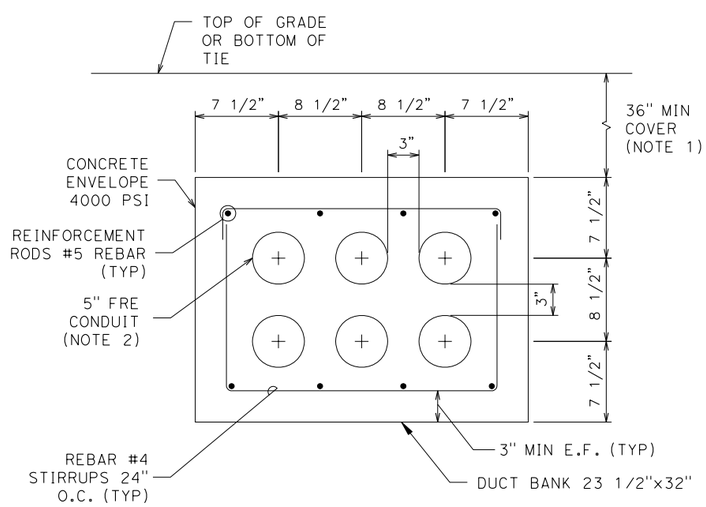
4-WAY DUCT BANK

C DETAIL
– SCALE: NTS



8-WAY DUCT BANK

D DETAIL
– SCALE: NTS



6-WAY DUCT BANK

E DETAIL
– SCALE: NTS

NOTES:

1. A 36" MINIMUM COVER SHALL BE MAINTAINED FROM TOP OF GRADE TO TOP OF DUCT BANK, WHEN NOT GOING UNDER TRACK, AND A MINIMUM 5'-6" UNDER RAILROAD TRACKS FROM THE BOTTOM OF TIE.
2. THE CONDUIT MATERIAL MAY BE PVC OR FRE.

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
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DESIGNED BY V. SIBAL
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CHECKED BY M. PAZ
IN CHARGE R. SCHMEDES
DATE 05-26-10

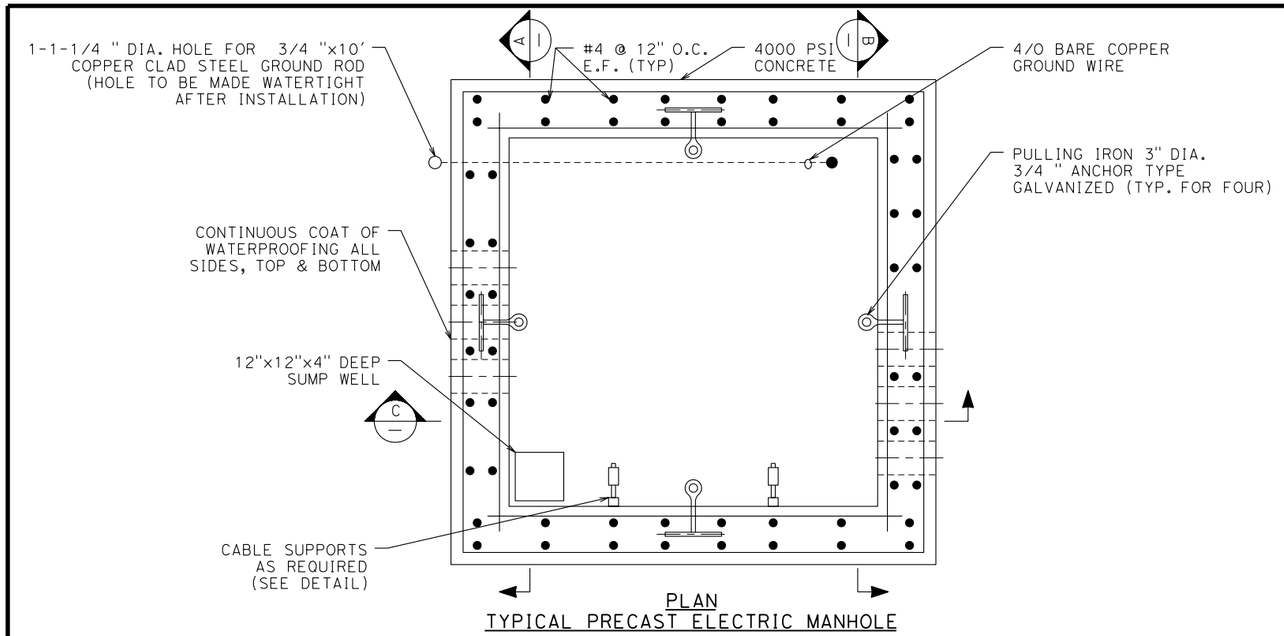
PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLYCALIFORNIA
Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

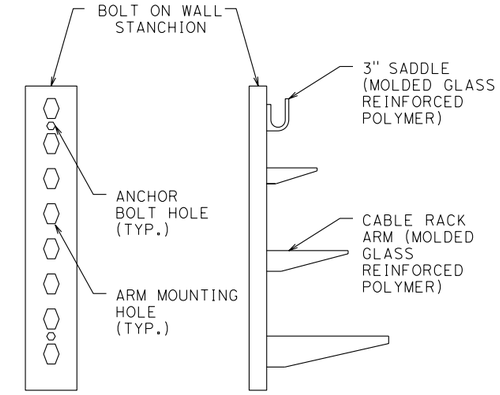
TYPICAL DUCT BANK DETAILS

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-E
SCALE NOT TO SCALE
SHEET NO. 005 OF 007



PLAN

TYPICAL PRECAST ELECTRIC MANHOLE

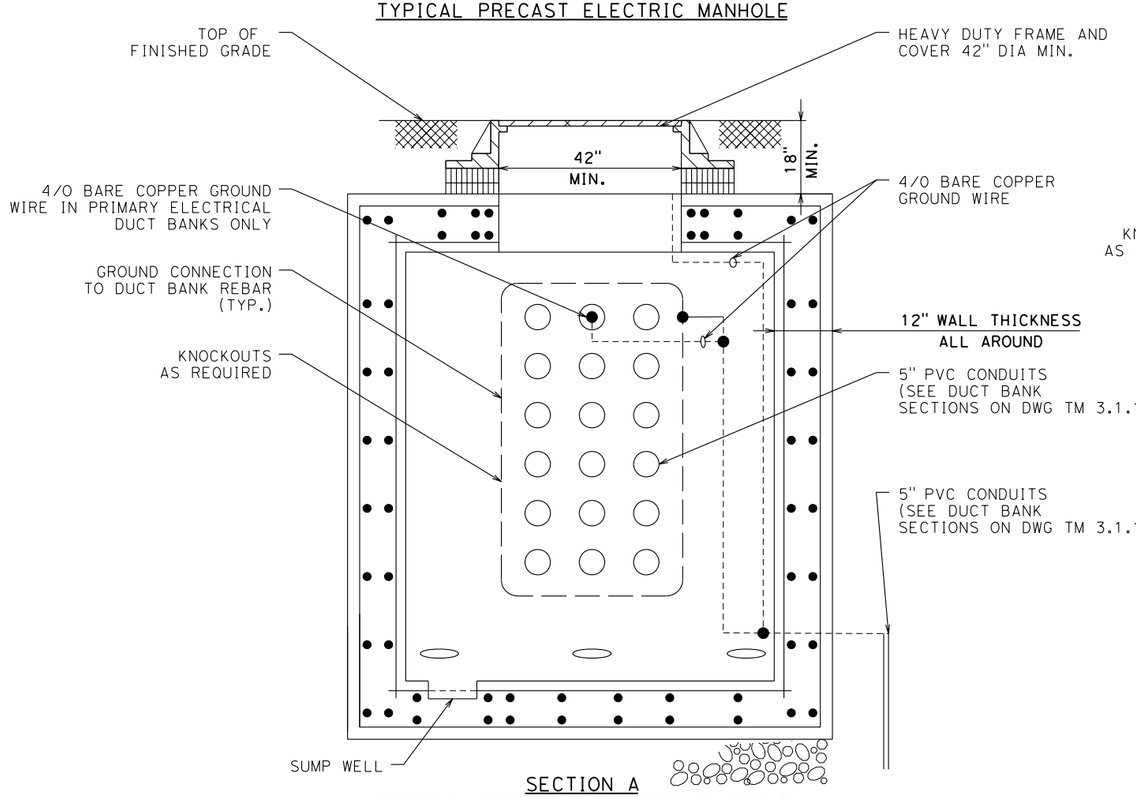


FRONT VIEW SIDE VIEW

MANHOLE CABLE SUPPORT DETAIL

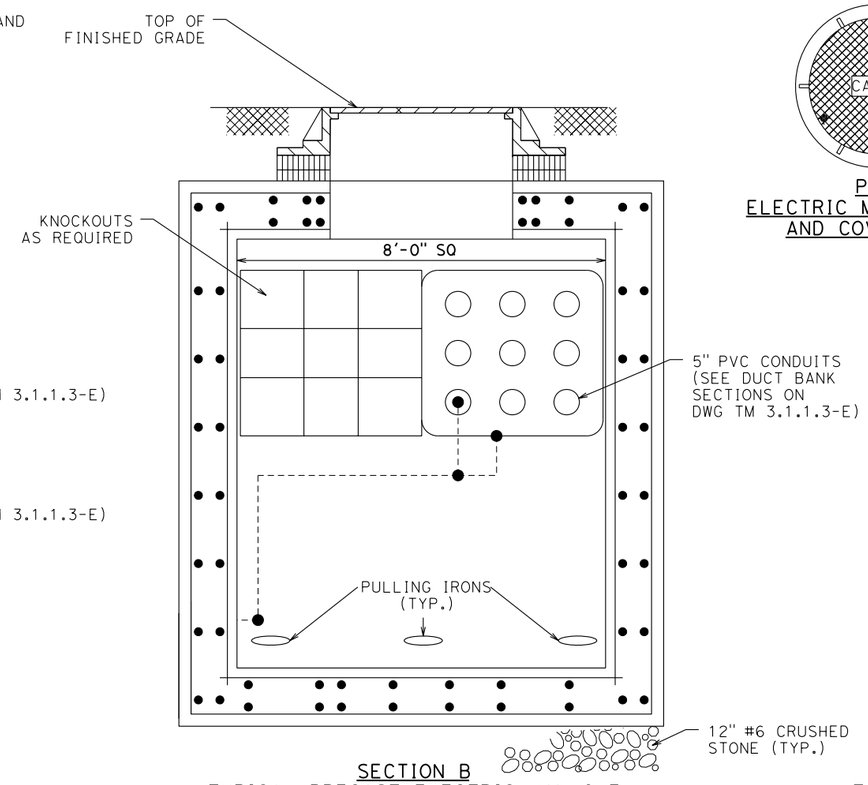
NOTES:

1. THIS DRAWING SHOWS TYPICAL DUCTBUNK KNOCKOUTS IN A PRECAST MANHOLE. EXACT DETAILS WILL BE WORKED OUT AT DETAILED DESIGN LEVEL.
2. ALL TRACTION POWER MANHOLES SHALL BE 8'-0"L X 8'-0"W X 9'-0" DEEP (INSIDE DIMENSIONS) AND BE WATERTIGHT WITH SILICON SEALING COMPOUND, OR APPROVED EQUAL.
3. THE MANHOLE FRAME SHALL BE GROUTED TO THE ROOF SLAB.
4. THICKNESS OF MANHOLE WALL SHALL BE 8" MINIMUM (TYP.).
5. REINFORCING STEEL PER ASTM A706, GRADE 60 FOR REBAR AND PER ASTM A185 FOR WELDED WIRE FABRIC (W.W.F.).
6. APPROVED CABLE RACK ARMS TO BE INSTALLED TO ACCOMODATE CABLE, MINIMUM 2 RACKS PER WALL.
7. PULLING HOOKS TO BE GALVANIZED STEEL, SUPPLIED AND CAST INTO WALLS BY PRECASTER. ANCHORED BEHIND REINFORCEMENT, QUANTITY AND LOCATION TO SUIT.
8. MEET ASTM C858 AND ACI 318 WITH AASHTO HS-20 LOADING.
9. CONNECT ALL METALLIC PARTS, FRAME, PULLING HOOKS, ETC., TO THE TRACTION POWER FACILITY GROUND GRID OR GROUND ROD.



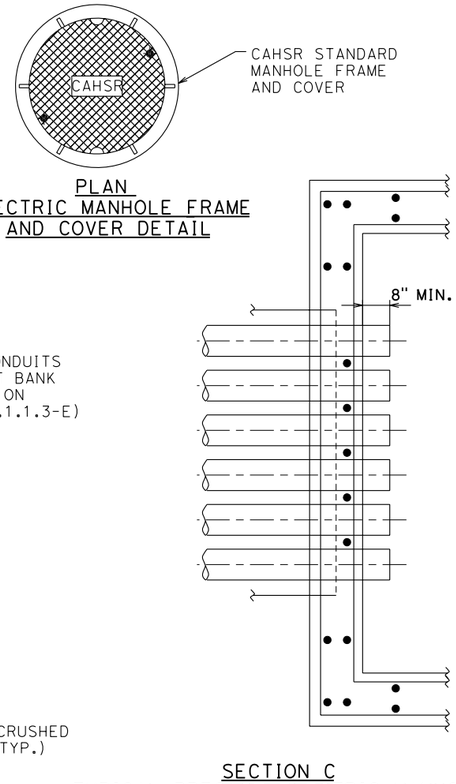
SECTION A

TYPICAL PRECAST ELECTRIC MANHOLE



SECTION B

TYPICAL PRECAST ELECTRIC MANHOLE



PLAN

ELECTRIC MANHOLE FRAME AND COVER DETAIL

SECTION C

TYPICAL PRECAST ELECTRIC MANHOLE

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
A	11-09-09				

DESIGNED BY V. SIBAL
DRAWN BY S. BURDEYNIK
CHECKED BY M. PAZ
IN CHARGE R. SCHMEDES
DATE 05-26-10

PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

FLY CALIFORNIA Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

TYPICAL MANHOLE DETAILS

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-F
SCALE NTS
SHEET NO. 006 OF 007

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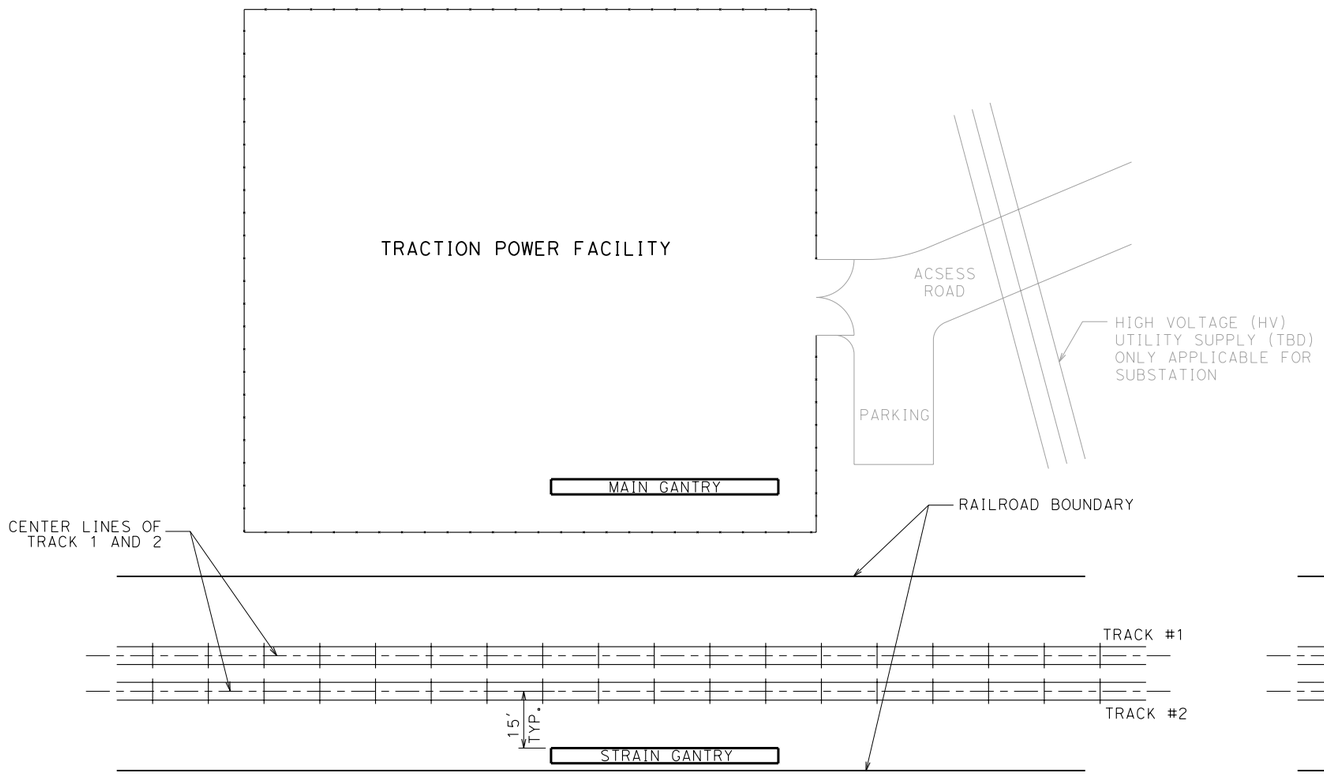
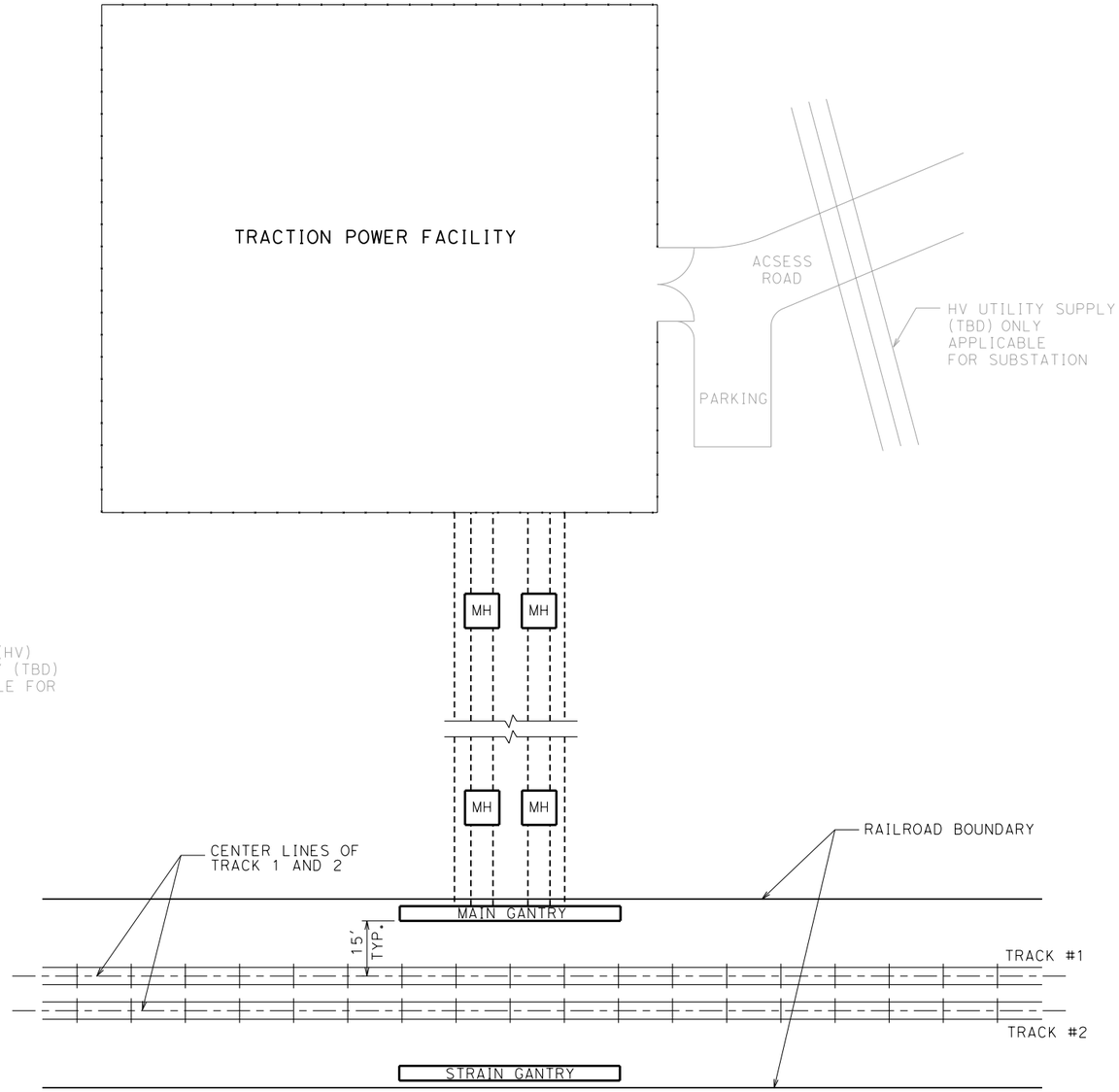
NOTES:

1. ALTERNATIVE 1 IS THE PRFERRED OPTION. ALTERNATIVE 2 MAY BE USED IF ADEQUATE LAND IS NOT AVAILABLE ADJACENT TO RAILROAD ROW.
2. THE SPACING OF MANHOLE IS INDICATIVE ONLY. ACTUAL LAYOUT WILL DEPEND UPON THE SITE CONDITIONS.
3. THE WIDTH OF THE STRIP OF LAND REQUIRED FOR LAYING OF DUCT BANKS SHALL BE 40′ FOR SUBSTATIONS AND SWITCHING STATIONS, AND 30′ FOR PARALLELING STATIONS.
4. THE MAIN GANTRY AND THE STRAIN GANTRY SHALL BE 4′ WIDE AND 40′ HIGH. SEE DRAWINGS TM 3.1.1.3-A, TM 3.1.1.3-B, TM 3.1.1.3-C AND TM 3.1.1.3-D FOR THE LENGTHS OF THESE GANTRIES.



ALTERNATIVE #1: TPF LOCATED ADJACENT TO RAILROAD ROW



ALTERNATIVE #2: TPF LOCATED AWAY FROM RAILROAD ROW

20 0 20 40
1"=20′

REV	DATE	BY	CHK	APP	DESCRIPTION
B	05/26/10				
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DESIGNED BY V. SIBAL
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PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLYCALIFORNIA
Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

ALTERNATIVE CONCEPTUAL LOCATIONS OF TRACTION POWER FACILITIES RELATIVE TO RAILROAD ROW

CONTRACT NO. 13259D
DRAWING NO. TM 3.1.1.3-G
SCALE 1"=20′-0"
SHEET NO. 007 OF 007

5/26/2010 2:11:59 PM T:\13259-CAHSR\CADD\TP\TEMP\AFTER COMMENTS\TM 3.1.1.3-G.dgn burdeynik