Yerba Buena Crossing (Contract No. 04-5)

The as-built drawings, which are contained in these CDs, are scanned from drawings of the existing structure for the convenience of the contractor and as a means to convey to the contractor the available information regarding the existing structure. It is to be understood that no claim is being made as to the accuracy or completeness of the said information and that the State of California or its officers or agents shall not be responsible for the manner in which the contractor interprets and uses this information or for the accuracy, currency or completeness of these scanned as-built drawings. The contractor shall be responsible to obtain, at the contractor's expense, any additional information that the contractor deems necessary for completely and accurately assessing the existing conditions of the structure. The contractor shall not be entitled to any compensation for any claim arising from inaccuracy or insufficiency of these as-built drawings or in anyway related to these drawings.

1. Yerba Buena Crossing General Plan & Elev.
2. Yerba Buena Crossing Borings
3. Yerba Buena Crossing Masonry Plan
4. Yerba Buena Crossing Plan & Elev. of Cable Anchor.
5. Yerba Buena Crossing Cross Sections of Cable Anchor.
6. Yerba Buena Crossing Cable Anchor Sects.-Beam Details
7. Yerba Buena Crossing Cable Anchor. Lower Deck Framing-Beam Details
8. Yerba Buena Crossing Details of Conc Bents in Cable Anchorage
9. Yerba Buena Crossing Details of Conc Bents in Cable Anchorage
10. Yerba Buena Crossing Upper Deck Balustrade Details
11. Yerba Buena Crossing Cable Anchorage Detail of Exposition Rd Connection
12. Yerba Buena Crossing Cable Anchorage Detail of Exposition Rd Connection
13. Yerba Buena Crossing Cable Anchorage Detail of Exposition Rd Connection
14. Yerba Buena Crossing Cable Anchorage Detail of Exposition Rd Connection
15. Yerba Buena Crossing Cable Anchorage Detail of Exposition Rd Connection
16. Yerba Buena Crossing Anchorage Tunnels
17. Yerba Buena Crossing Anchor Girders
18. Yerba Buena Crossing Eye Bar Chain
19. Yerba Buena Crossing Plans & Profile Sta. 152+70.0 to Sta. 159+36.5
20. Yerba Buena Crossing Plans & Profile Sta. 159+36.5 to Sta. 165+00.5
21. Yerba Buena Crossing Plans & Profile
22. Yerba Buena Crossing Viaduct Details
23. Yerba Buena Island Viaduct Footing Data
24. Yerba Buena Crossing Viaduct Details
25. Yerba Buena Crossing Viaduct Details
26. Yerba Buena Crossing Tunnel Section and Details
27. Yerba Buena Crossing West Portal Tunnel General Details
28. Yerba Buena Crossing West Portal Tunnel General Details
29. Yerba Buena Crossing East Portal Tunnel General Details
30. Yerba Buena Crossing East Portal Tunnel General Details
31. Yerba Buena Crossing Viaduct Details
32. Yerba Buena Crossing Viaduct Details
33. Yerba Buena Crossing Road "A" Apron Approach
34. Yerba Buena Crossing Viaduct Details
35. Yerba Buena Crossing Typ. Sections East of Tunnel
36. Yerba Buena Crossing Upper Deck Details

37. Yerba Buena Crossing Viaduct Details Upper Deck Longitudinal Girders
38. Yerba Buena Crossing Skew Bents Bents 50A & 50B
39. Yerba Buena Crossing Bents 51 & 52 Details
40. Yerba Buena Crossing Lower Deck Girders & Stringers
41. Yerba Buena Crossing Retaining Walls
42. Yerba Buena Crossing East Viaduct Lower Deck Beam & Stair Details
43. Yerba Buena Crossing Pier YB1 Details
44. Yerba Buena Crossing Pier YB1 Cylinders & Liner Plates
45. Yerba Buena Crossing Piers YB2 YB3 YB4 and E1 Plans and Elevations
46. Yerba Buena Crossing Piers YB2-YB3-YB4 Details
47. Yerba Buena Crossing Details Pier E1
48. Yerba Buena Crossing Pavement Details
49. Yerba Buena Crossing Drainage Details
50. Yerba Buena Island Layout Roads “A” “B” & “E”
51. Yerba Buena Island Layout of Road “F” with Retaining Walls
52. Yerba Buena Island Lay-out of Road “G” As Built
53. Yerba Buena Island Layout of Road “H”
54. Yerba Buena Island Buildings As Built
55. Yerba Buena Crossing Electrical Conduits
56. Yerba Buena Crossing Details of Add’l Conduits
57. Yerba Buena Crossing Relocation of Conduits Yerba Buena Anchorage
58. Yerba Buena Crossing Electrical Conduits
59. Yerba Buena Anchorage Rock Contours & Profile
60. Yerba Buena Anchorage Erection Diagram E1
61. Yerba Buena Anchorage Erection Diagram F4
62. Yerba Buena Anchorage Erection Diagram F1 F2 & F3
63. Yerba Buena Anchorage Erection Diagram F5 F6 & F7
64. Yerba Buena Anchorage Erection Diagram F12
65. Yerba Buena Anchorage Erection Diagram F9 F10 & F11
66. Yerba Buena Anchorage Erection Diagram E2
67. Girders For Yerba Buena Anchorage
68. Yerba Buena Anchorage Erection Diagram F3 & F4
69. Yerba Buena Anchorage Erection Diagram F1 F2 & F3
70. Yerba Buena Anchorage Erection Diagram F5 F6 & F7

▲NOTES ON PAYMENT ITEMS

Excavation:

Roadway Cuts: Slopes of 1 to 1 in rock and 1½ to 1 in sand or other loose material are to be maintained. Payment will be made for the volume determined by these slopes as shown on the plans at the unit price bid for Item No.1.

Pier Wall and Column Footings: Volume of excavation will be determined by vertical planes through the outside lines of footings, except where it is necessary to maintain or extend the roadway cut slopes. Payment will be made at the price bid for Item No.1.

Anchorage Tunnels: The cost of all excavation necessary for the construction of the anchorage tunnels in excess of the amount necessary for roadway cuts, pier, column and wall footings to be included in the lump sum bid for Item No.2.

Main Tunnel: The cost of all excavation between faces of portals in the tunnel to be included in the lump sum bid for Item No.9.

Concrete in Anchorage Tunnels:

The cost of concrete placed in the anchorage tunnels in the three stages shown on Drawing No.9 to be included in the lump sum bid for Item No.2.

Reinforcing Steel:

All reinforcing steel except hexagonal to be paid for at the unit bid for Item No.17.

PAYMENT ITEMS

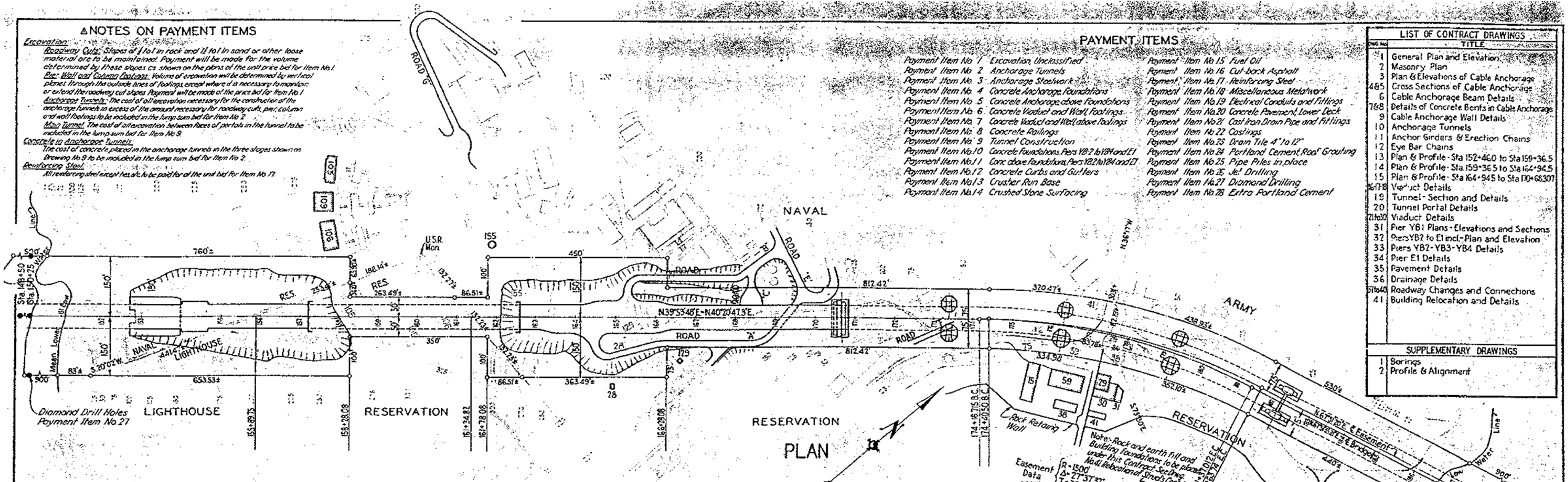
Payment Item No 1 Excavation, Unclassified
Payment Item No 2 Anchorage Tunnels
Payment Item No 3 Anchorage Steelwork
Payment Item No 4 Concrete Anchorage Foundations
Payment Item No 5 Concrete Anchorage above Foundations
Payment Item No 6 Concrete Viaduct and Wall Footings
Payment Item No 7 Concrete Viaduct and Wall above Footings
Payment Item No 8 Concrete Railings
Payment Item No 9 Tunnel Construction
Payment Item No 10 Concrete Foundations, Piers YB-2 to YB4 and E1
Payment Item No 11 Conc above Foundations, Piers YB2 to YB4 and E1
Payment Item No 12 Concrete Curbs and Gutters
Payment Item No 13 Crusher Run Base
Payment Item No 14 Crushed Stone Surfacing
Payment Item No 15 Fuel Oil
Payment Item No 16 Cut-back Asphalt
Payment Item No 17 Reinforcing Steel
Payment Item No 18 Miscellaneous Metalwork
Payment Item No 19 Electrical Conduits and Fittings
Payment Item No 20 Concrete Pavement, Lower Deck
Payment Item No 21 Cast Iron Drain Pipe and Fittings
Payment Item No 22 Castings
Payment Item No 23 Drain Tile 4" to 12"
Payment Item No 24 Portland Cement Roof Grouting
Payment Item No 25 Pipe Piles in place
Payment Item No 26 Jet Drilling
Payment Item No 27 Diamond Drilling
Payment Item No 28 Extra Portland Cement

LIST OF CONTRACT DRAWINGS

Dwg No.	TITLE
1	General Plan and Elevation
2	Masonry Plan
3	Plan & Elevations of Cable Anchorage
4&5	Cross Sections of Cable Anchorage
6	Cable Anchorage Beam Details
7&8	Details of Concrete Bents in Cable Anchorage
9	Cable Anchorage Wall Details
10	Anchorage Tunnels
11	Anchor Girders & Erection Chains
12	Eye Bar Chains
13	Plan & Profile - Sta 152+40.0 to Sta 159+36.5
14	Plan & Profile - Sta 159+36.5 to Sta 164+94.5
15	Plan & Profile - Sta 164+94.5 to Sta 170+68.307
16&17	Viaduct Details
18	Tunnel - Section and Details
19	Tunnel Portal Details
20&20a	Viaduct Details
21	Pier YB1 Plans - Elevations and Sections
22	Piers YB2 to E1 incl. - Plan and Elevation
23	Piers YB2 - YB3 - YB4 Details
24	Pier E1 Details
25	Pavement Details
26	Drainage Details
27&40	Roadway Changes and Connections
41	Building Relocation and Details

SUPPLEMENTARY DRAWINGS

1	Borings
2	Profile & Alignment



PROFILE

GENERAL NOTES

All concrete in Cable Anchorage above footings, all Viaduct structure including footings, Walls, Tunnel lining and Portals, pavement slab and all of Pier YB1 to be Class 'A' Conc in Upper Deck handrail to be Class A-A.

Concrete in Cable Anchorage Footings, Anchorage Tunnels, Piers YB2, YB3, YB4 and E1 to be Class 'B'.

All corners not otherwise shown to be chamfered ¾".

All slabs to be finished to line and grade set by Engineer.

Construction joints in slabs and beams to have vertical headers with keys and to be located at points satisfactory to Engineer.

Copper water stops, downspouts and asphaltic joint filler to be included in price bid for Payment Item No.7.

All reinforcing bars where spliced shall lap 40 diameters.

Top beam bars to splice near center of span. Bottom beam bars to splice at supports. Slab bar splices to be staggered.

Main bars less than 40 ft. long not to be spliced.

Approved for the Navy under joint permit dated August 20, 1932

Secretary of the Navy

Date	Revision	By	Chkd
7-15-33	▲ Notes on Payment Items Added	H.L.M.	J.W.S.

BOARD OF CONSULTING ENGINEERS

CORRECT: Glenn B. Woodruff, Engineer of Design

APPROVED: Chief Engineer; Bridge Engineer; Steel Engineer; Engineer of Tests; Engineer of Maintenance; Architect; Landscape Architect

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

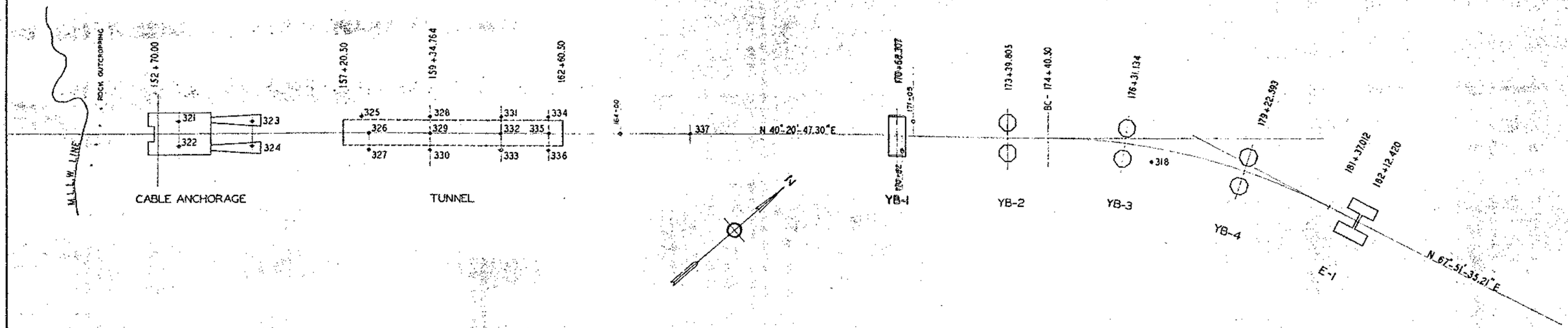
SAN FRANCISCO-OAKLAND BAY BRIDGE

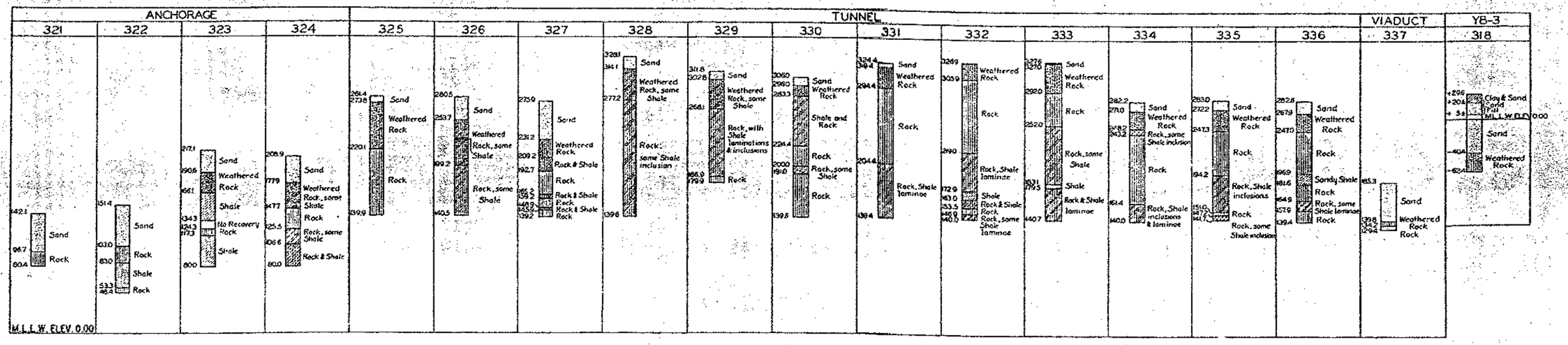
YERBA BUENA CROSSING
GENERAL PLAN & ELEVATION

SCALE IN FEET 100 50 0 100 200 300

CONTRACT NO.5 DRAWING NO. 1

JANUARY 1933





STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

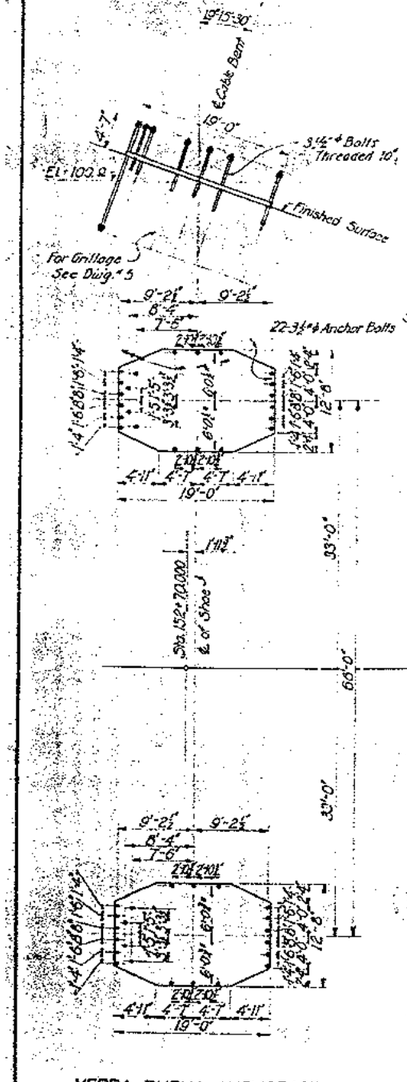
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
BORINGS

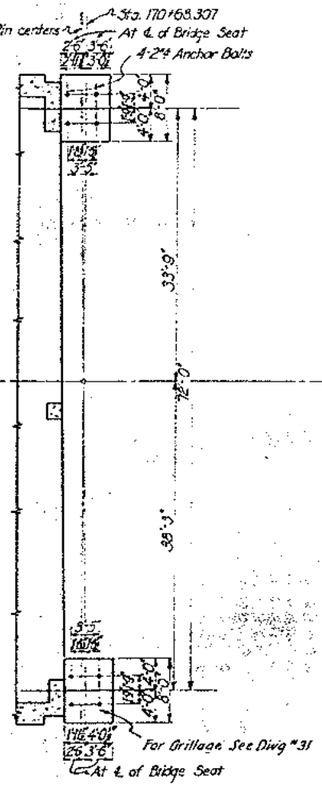
SCALE, IN FEET
100 50 0 100 200 - PLAN
50 25 0 50 100 - BORING

DATE	REVISION	BY	CHKD
7-26-39	Corrected to Construction Revisions	H.C.	

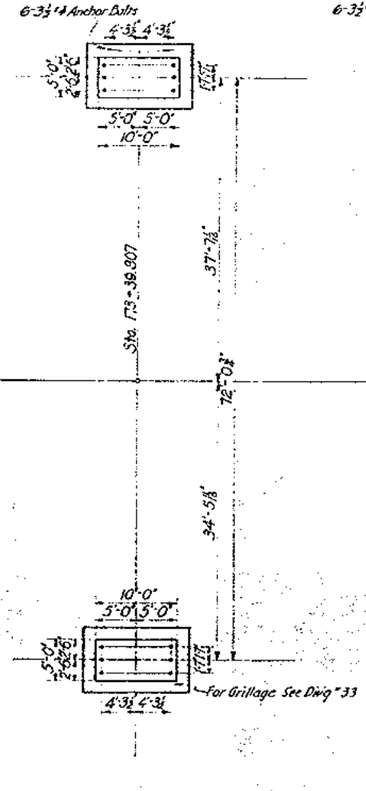
CONTRACT NO. 5 SUP. DWG. NO. 1
JANUARY - 1933



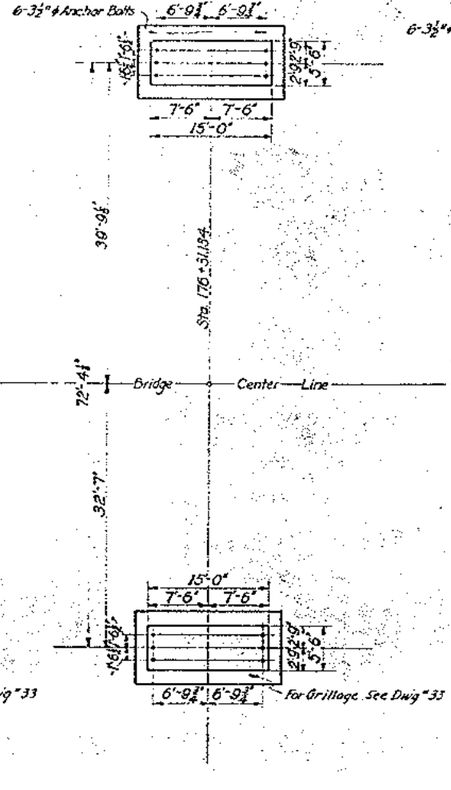
YERBA BUENA ANCHORAGE



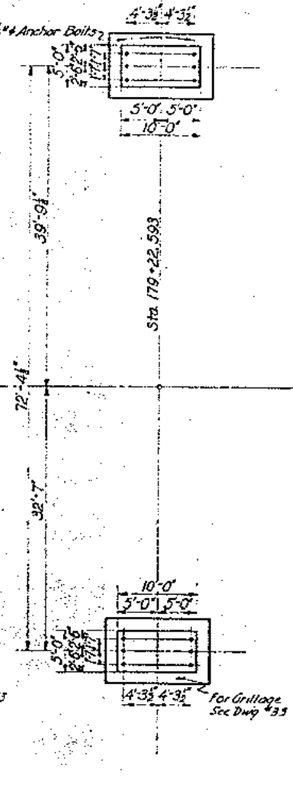
PIER YB1



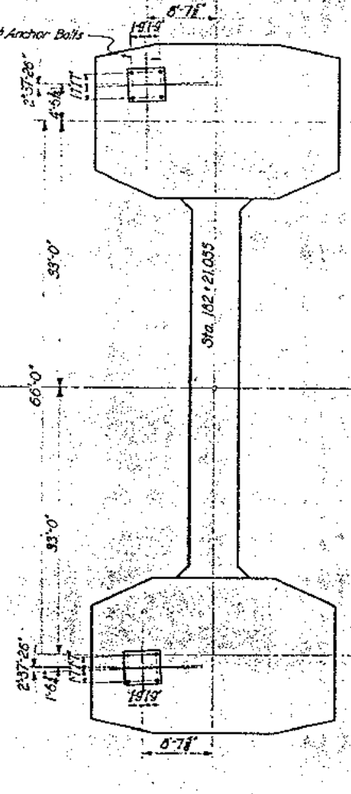
PIER YB2



PIER YB3



PIER YB4



PIER E1

GENERAL NOTE

Bridge seats to be built monolithic with the copings and to a higher elevation than the finished bridge seats and after the concrete has hardened, the areas of the bridge seats shall be dressed so that at no point shall there be a variation of more than one sixteenth inch (1/16") from a true plane nor a variation of more than one fourth inch (¼") from the elevation specified

BOARD OF CONSULTING ENGINEERS

CORRECT: Glenn B. Woodruff

APPROVED:

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

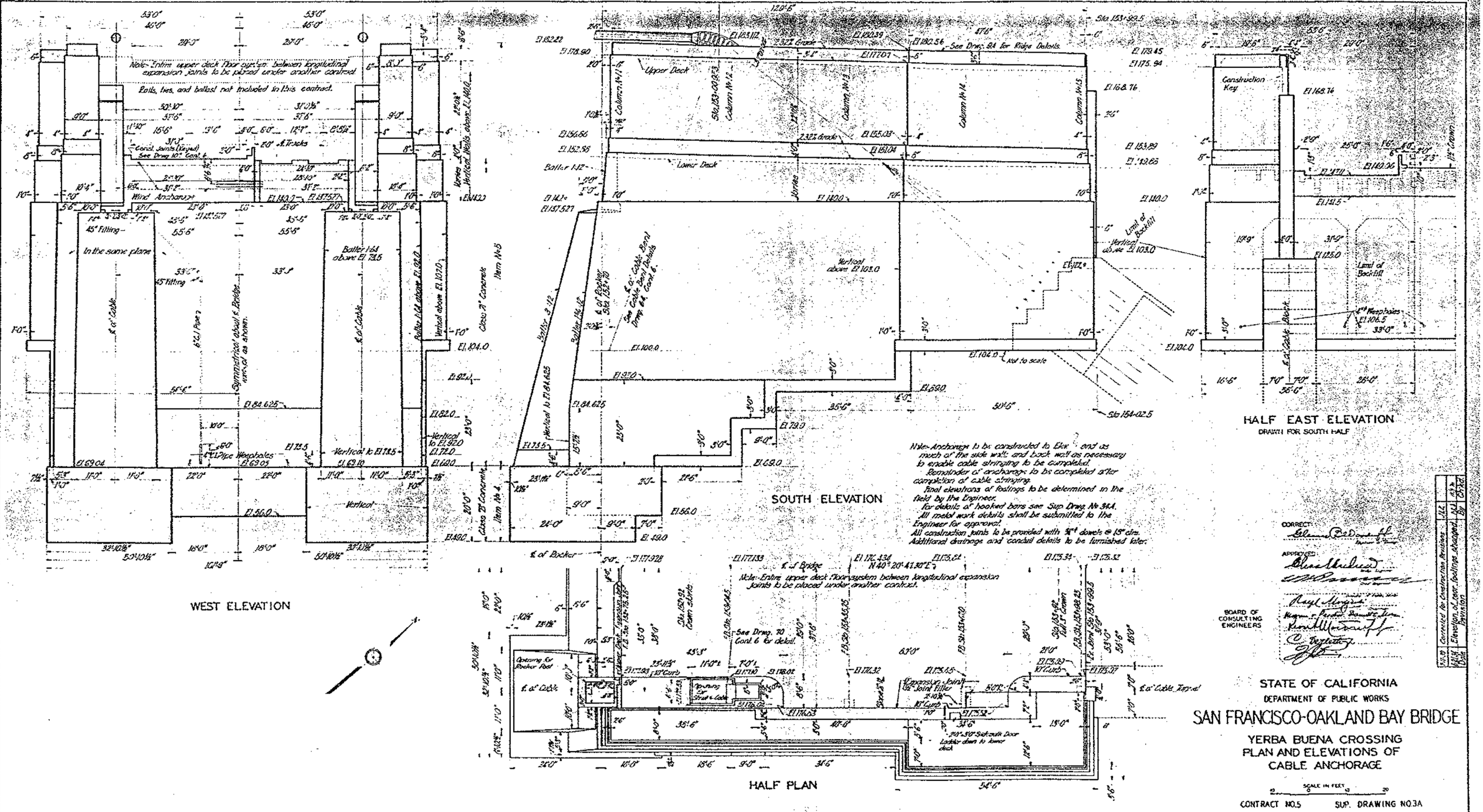
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
MASONRY PLAN

SCALE IN FEET 4 0 4 8 12 16 20

CONTRACT NO. 5 DRAWING NO. 2

N-T JANUARY - 1933


WEST ELEVATION
SOUTH ELEVATION
HALF EAST ELEVATION
DRAWN FOR SOUTH HALF
HALF PLAN
Note:- Entire upper deck floor system between longitudinal expansion joints to be placed under another contract.
Rails, ties, and ballast not included in this contract.
Note:- Anchorage to be constructed to Elev. and as much of the side walls and back wall as necessary to enable cable stringing to be completed.
Remainder of anchorage to be completed after completion of cable stringing.
Final elevations of footings to be determined in the field by the Engineer.
For details of hooked bars see Sup. Drwg. No. 34A.
All metal work details shall be submitted to the Engineer for approval.
All construction joints to be provided with ¾" dowels @ 18" ctrs.
Additional drainage and conduit details to be furnished later.
Note:- Entire upper deck floor system between longitudinal expansion joints to be placed under another contract.
Construction Key
Limit of Backfill
Not to scale
Upper Deck
Lower Deck
Vertical above El. 103.0
Vertical to El. 73.5
Vertical
Wind Anchorage
Symmetrical about ℄ Bridge except as shown.
Class "A" Concrete
Class "B" Concrete
Item No. 5
Item No. 4
Opening for Rocker Post
Opening for Strut & Cable
Expansion Joint
Sidewalk Door Ladder down to lower deck
℄ of Rocker
℄ of Bridge
℄ of Cable
℄ of Cable Tunnel
Elevation of rear footings changed
Corrected for Construction Revisions
Revision
Date
By
Ch'kd.
BOARD OF CONSULTING ENGINEERS
CORRECT:
APPROVED:
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
PLAN AND ELEVATIONS OF
CABLE ANCHORAGE
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 3A
FEBRUARY - 1934

CORRECT

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

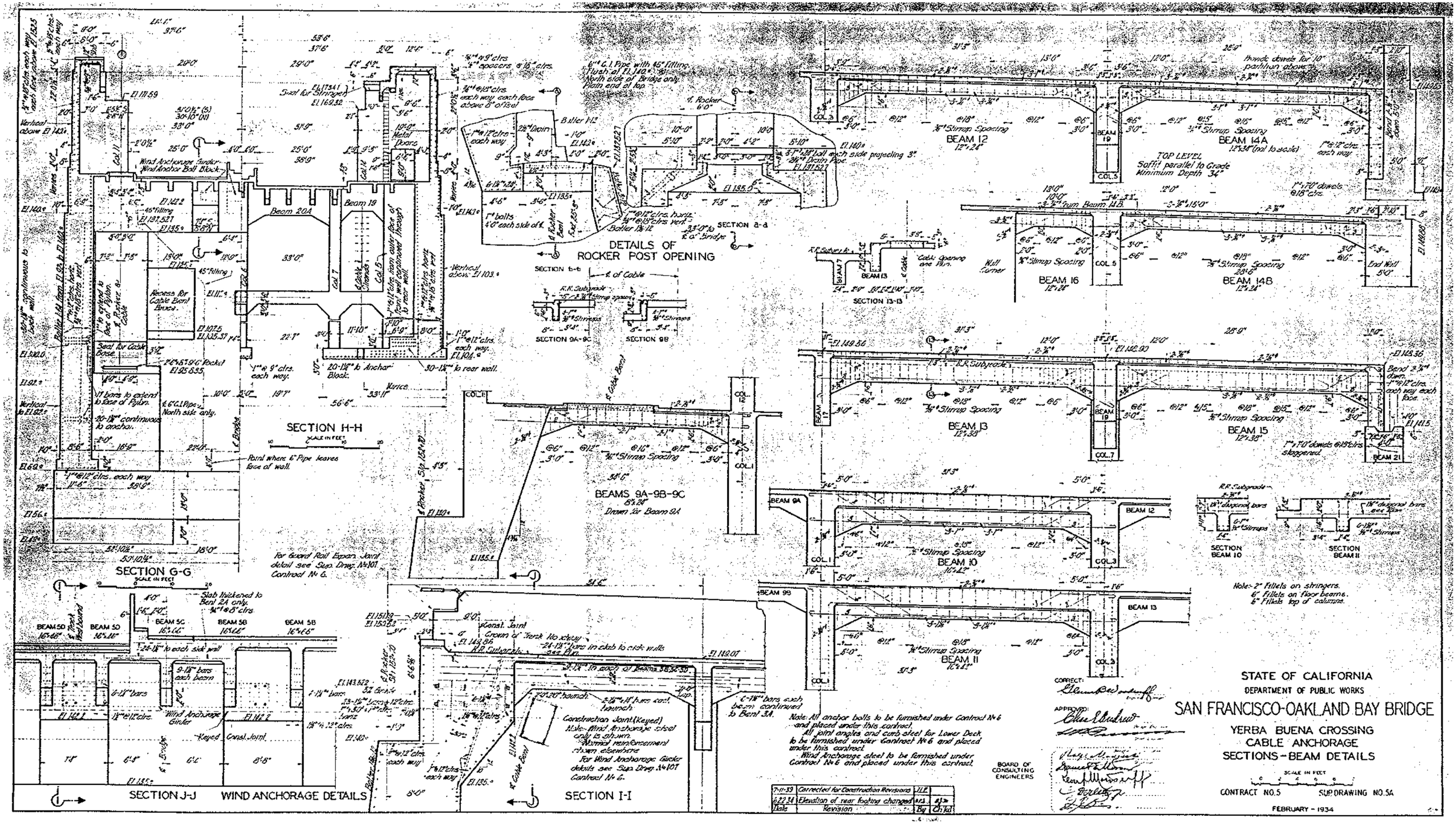
YERBA BUENA CROSSING

CROSS SECTIONS OF CABLE ANCHORAGE

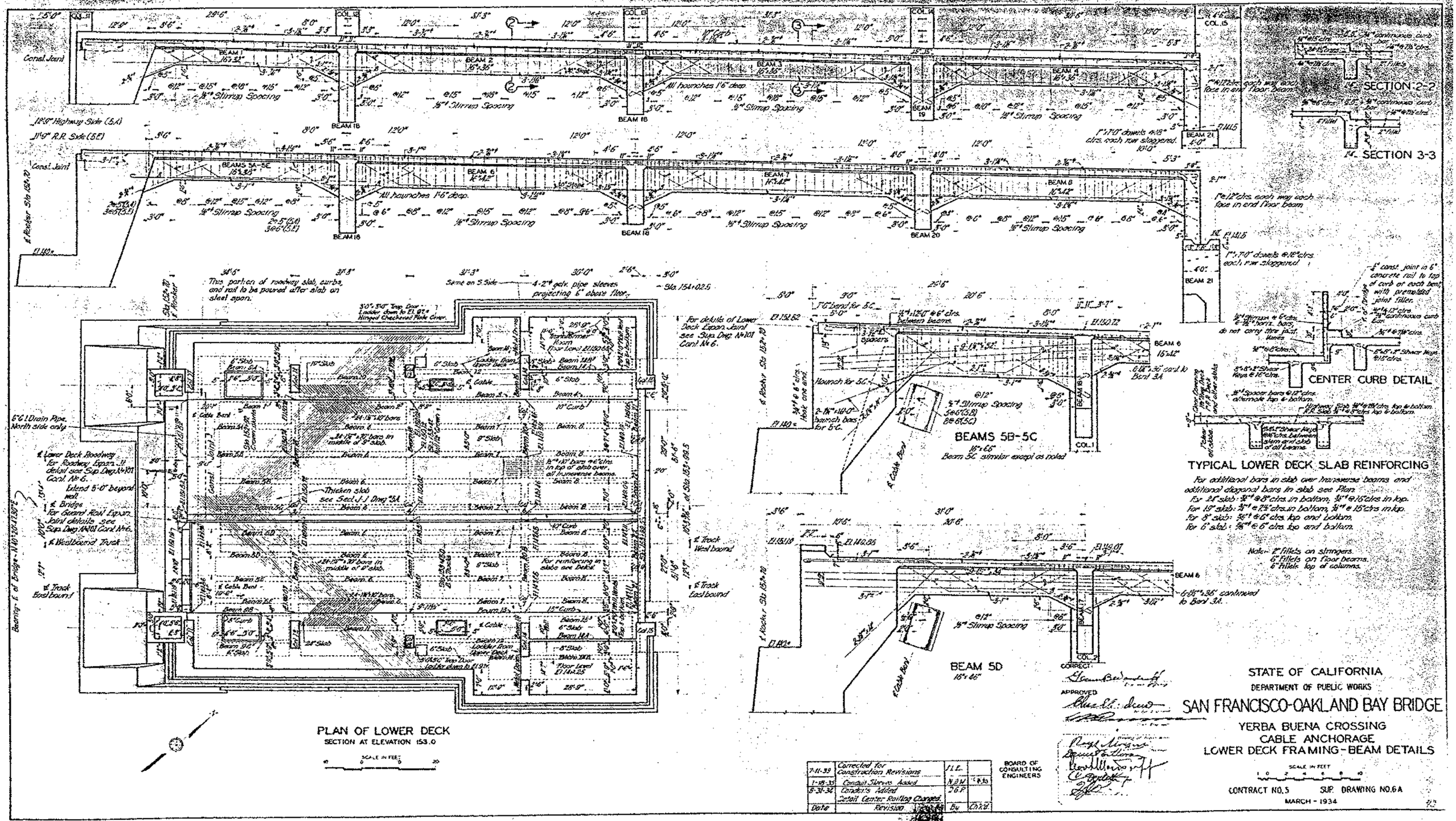
SCALE IN FEET

CONTRACT NO.5 SUP. DRAWING NO. 4A

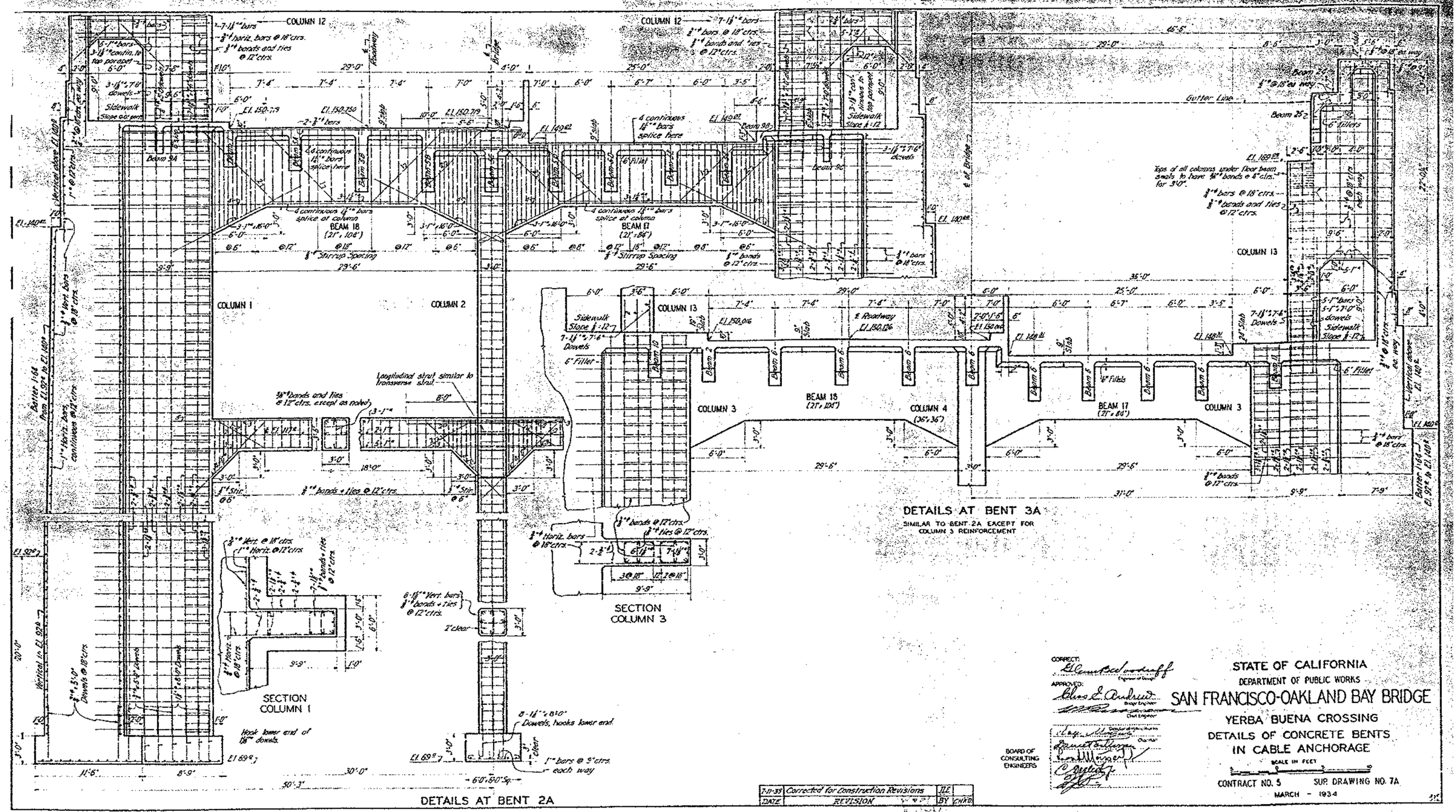
FEBRUARY - 1934



SECTION H-H
SECTION G-G
SECTION J-J
WIND ANCHORAGE DETAILS
SECTION I-I
DETAILS OF ROCKER POST OPENING
SECTION a-a
SECTION b-b
SECTION 9A-9C
SECTION 9B
SECTION 13-13
BEAMS 9A-9B-9C
BEAM 12
BEAM 14A
BEAM 16
BEAM 14B
BEAM 13
BEAM 15
BEAM 10
BEAM 11
SECTION BEAM 10
SECTION BEAM 11
TOP LEVEL
Soffit parallel to Grade
Minimum Depth 34"
Note: 2" Fillets on stringers.
6" Fillets on floor beams.
6" Fillets top of columns.
Note: All anchor bolts to be furnished under Contract No 6 and placed under this contract.
All joint angles and curb steel for Lower Deck to be furnished under Contract No 6 and placed under this contract.
Wind Anchorage steel to be furnished under Contract No 6 and placed under this contract.
Construction Joint (Keyed)
Note: Wind Anchorage steel only is shown.
Normal reinforcement shown elsewhere
For Wind Anchorage Girder details see Sup. Drwg. No 107 Contract No 6.
For Guard Rail Expan. Joint detail see Sup. Drwg. No 107 Contract No 6.
Correct:
Approved:
BOARD OF CONSULTING ENGINEERS
7-11-39 Corrected for Construction Revisions
6.22.34 Elevation of rear footing changed
Date Revision By Ch'kd
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
CABLE ANCHORAGE
SECTIONS - BEAM DETAILS
SCALE IN FEET
CONTRACT NO.5
SUP. DRAWING NO.5A
FEBRUARY - 1934



SECTION 2-2
SECTION 3-3
CENTER CURB DETAIL
TYPICAL LOWER DECK SLAB REINFORCING
For additional bars in slab over transverse beams and additional diagonal bars in slab see Plan.
For 24" slab: 3/4"φ @ 8" ctrs. in bottom, 3/4"φ @ 16" ctrs. in top.
For 19" slab: 3/4"φ @ 7½" ctrs. in bottom, 3/4"φ @ 15" ctrs. in top.
For 8" slab: 5/8"φ @ 6" ctrs. top and bottom.
For 6" slab: 5/8"φ @ 6" ctrs. top and bottom.
Note:- 2" fillets on stringers.
6" fillets on floor beams.
6" fillets top of columns.
BEAMS 5B-5C
16"x66"
Beam 5C similar except as noted
BEAM 5D
16"x46"
PLAN OF LOWER DECK
SECTION AT ELEVATION 153.0
SCALE IN FEET
CORRECT:
APPROVED
BOARD OF CONSULTING ENGINEERS
7-11-39 Corrected for Construction Revisions J.L.E.
1-18-35 Conduit Sleeves Added N.B.M.
8-31-34 Conduits Added Detail Center Railing Changed. J.G.P.
Date Revision By Ch'k'd.
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
CABLE ANCHORAGE
LOWER DECK FRAMING-BEAM DETAILS
SCALE IN FEET
CONTRACT NO. 5 SUP. DRAWING NO. 6A
MARCH - 1934



CORRECT:
Engineer of Design

APPROVED:
Bridge Engineer
Chief Engineer

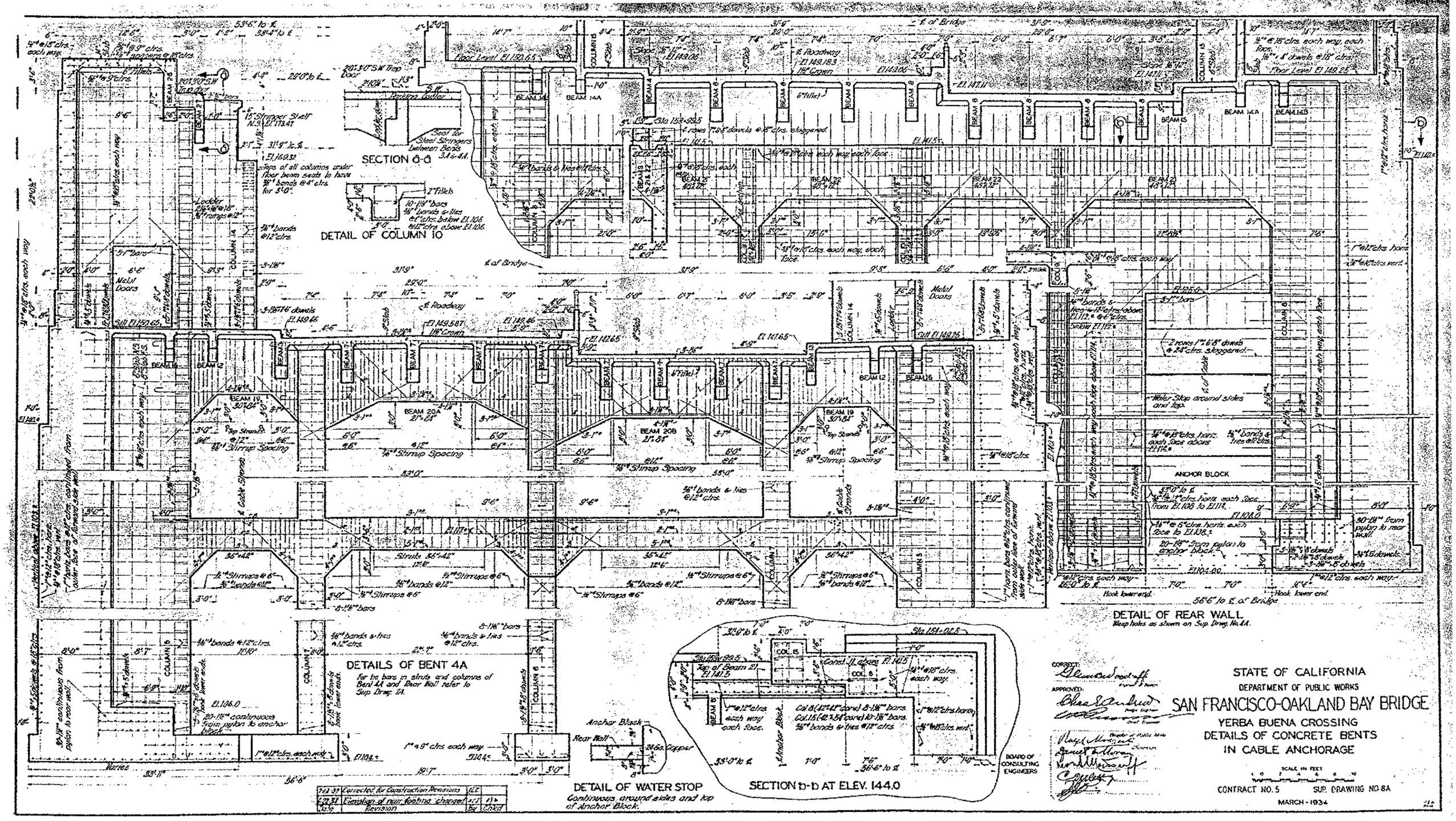
BOARD OF CONSULTING ENGINEERS
Director of Public Works
Chairman

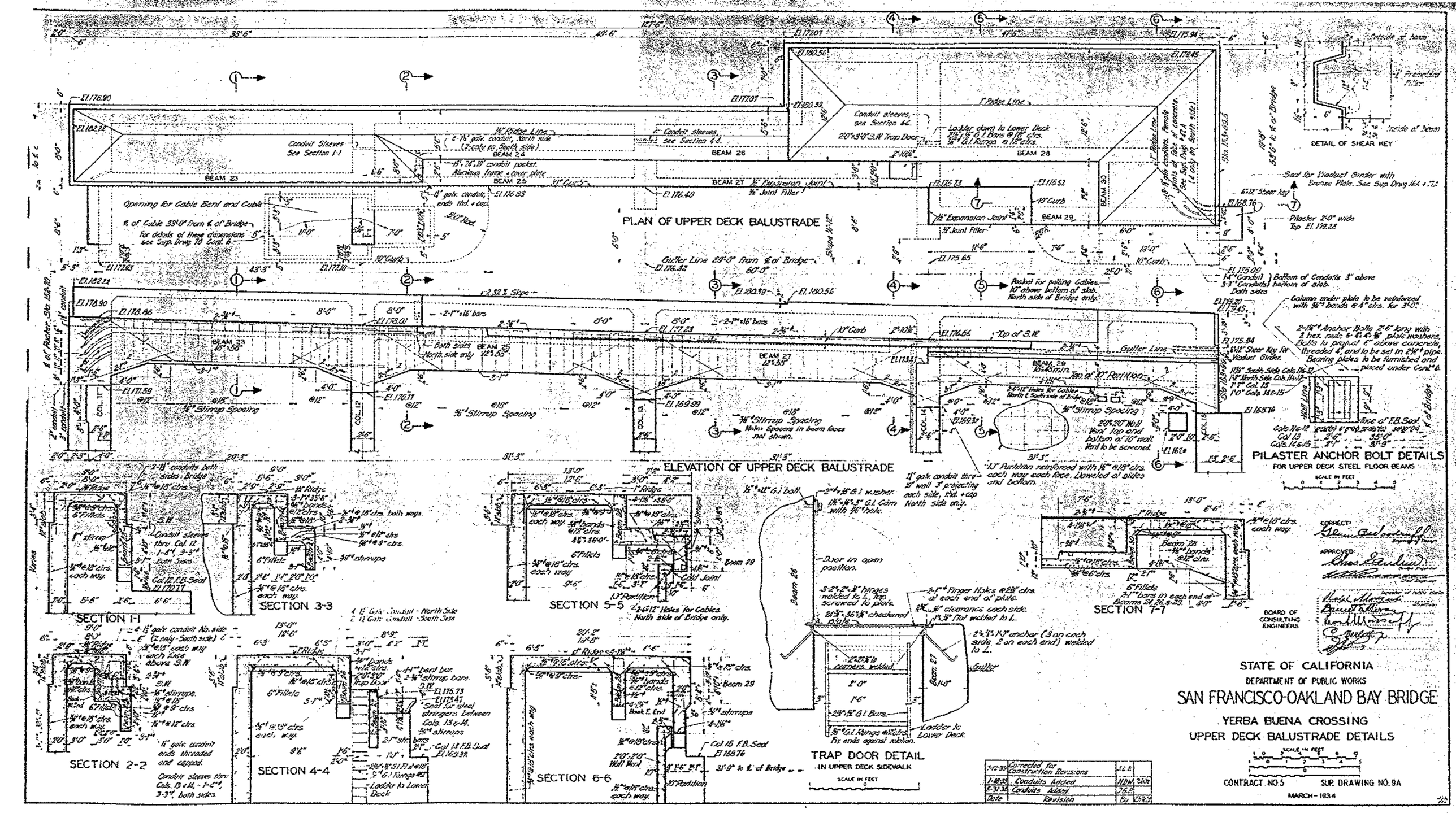
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
DETAILS OF CONCRETE BENTS IN CABLE ANCHORAGE

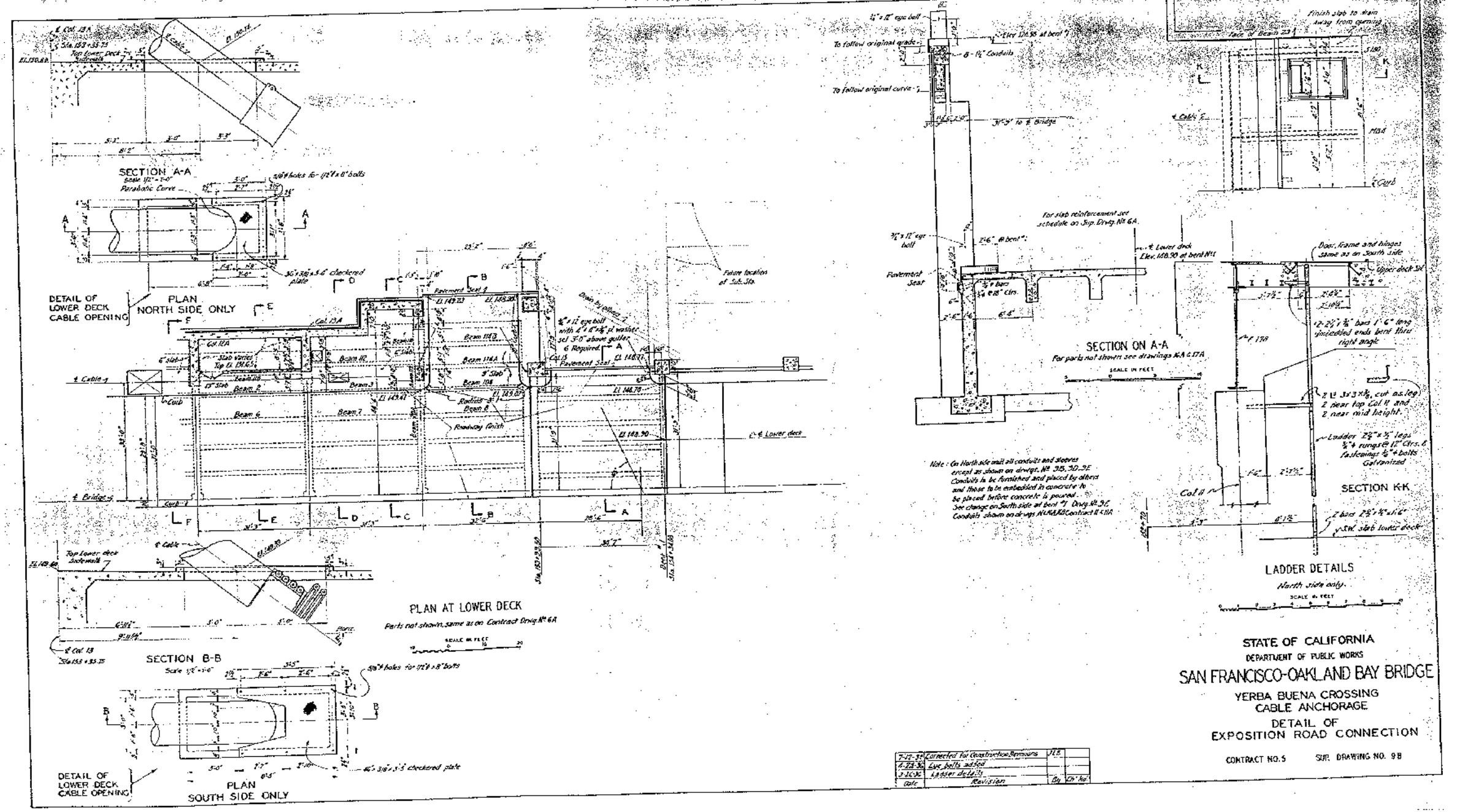
SCALE IN FEET

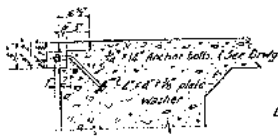
CONTRACT NO. 5 SUP. DRAWING NO. 7A
MARCH - 1934

DATE	REVISION	BY	CHKD
7-11-39	Corrected for Construction Revisions	JLE	

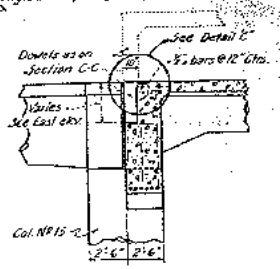

SECTION a-a
DETAIL OF COLUMN 10
DETAILS OF BENT 4A
For tie bars in struts and columns of Bent 4A and Rear Wall refer to Sup. Drwg. 2A.
DETAIL OF WATER STOP
Continuous around sides and top of Anchor Block.
SECTION b-b AT ELEV. 144.0
DETAIL OF REAR WALL
Weep holes as shown on Sup. Drwg. No. 4A.
ANCHOR BLOCK
Water Stop around sides and top.
Hook lower end.
Anchor Block
Rear Wall
BOARD OF CONSULTING ENGINEERS
Corrected for Construction Revisions
Elevation of rear footing changed
Revision
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
DETAILS OF CONCRETE BENTS
IN CABLE ANCHORAGE
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 8A
MARCH - 1934


PLAN OF UPPER DECK BALUSTRADE
ELEVATION OF UPPER DECK BALUSTRADE
DETAIL OF SHEAR KEY
PILASTER ANCHOR BOLT DETAILS
FOR UPPER DECK STEEL FLOOR BEAMS
SECTION 1-1
SECTION 2-2
SECTION 3-3
SECTION 4-4
SECTION 5-5
SECTION 6-6
SECTION 7-7
TRAP DOOR DETAIL
IN UPPER DECK SIDEWALK
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
UPPER DECK BALUSTRADE DETAILS
BOARD OF CONSULTING ENGINEERS
CONTRACT NO. 5
SUP. DRAWING NO. 9A
MARCH - 1934

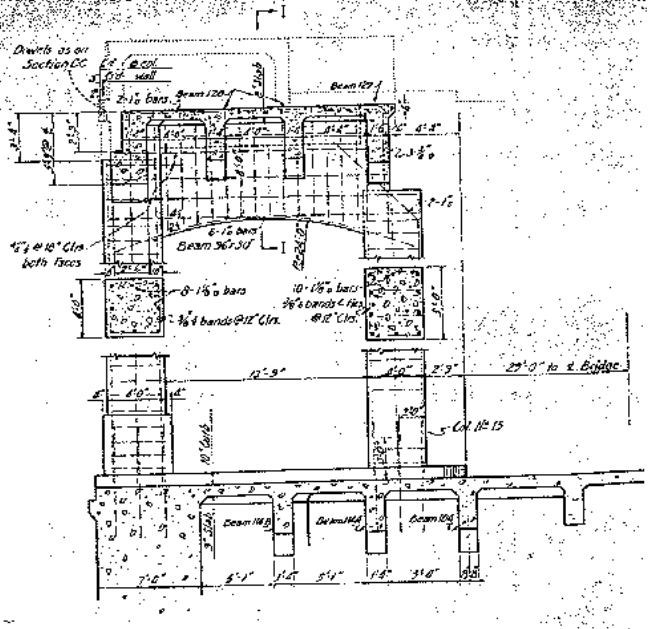

SECTION A-A
PLAN
NORTH SIDE ONLY
DETAIL OF
LOWER DECK
CABLE OPENING
PLAN AT LOWER DECK
Parts not shown, same as on Contract Drwg. No. 6A
SECTION B-B
PLAN
SOUTH SIDE ONLY
DETAIL OF
LOWER DECK
CABLE OPENING
SECTION ON A-A
For parts not shown see drawings 16A & 17A
SCALE IN FEET
SECTION K-K
LADDER DETAILS
North side only.
SCALE IN FEET
Note: On North side omit all conduits and sleeves except as shown on drwgs. No. 9B, 9D, 9E. Conduits to be furnished and placed by others and those to be embedded in concrete to be placed before concrete is poured. See change on South side at bent #1 Drwg. No. 9E. Conduits shown on drwgs. No. 16A, 16B, Contract 11 & 11A
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
CABLE ANCHORAGE
DETAIL OF
EXPOSITION ROAD CONNECTION
CONTRACT NO. 5
SUP. DRAWING NO. 9B
7-12-35 Corrected for Construction Revisions
4-28-36 Eye bolts added
3-30-36 Ladder details
Date Revision By Ch'kd



DETAIL C

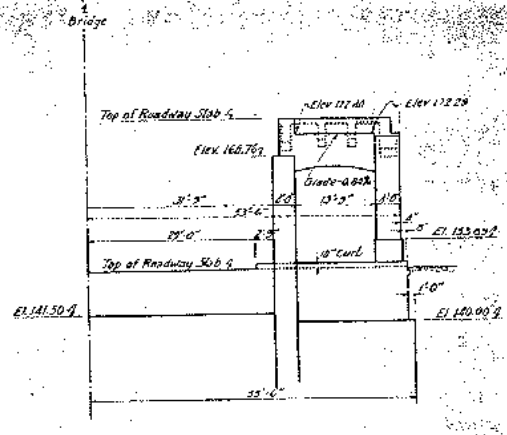


SECTION ON I-I



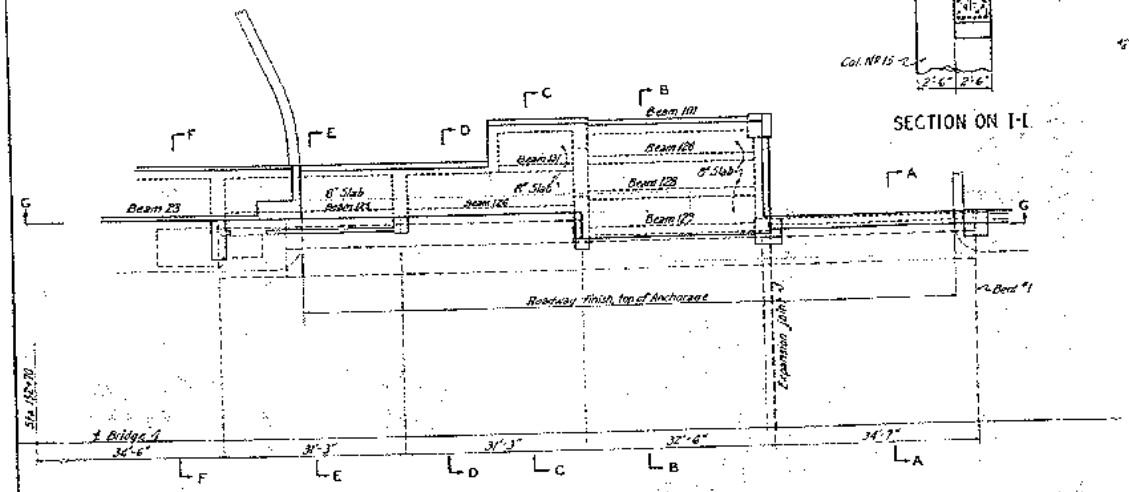
SECTION ON B-B

For parts not shown see Sec. E-E Drwg. № 4A, Drwg. № 8A



NORTH HALF EAST ELEVATION

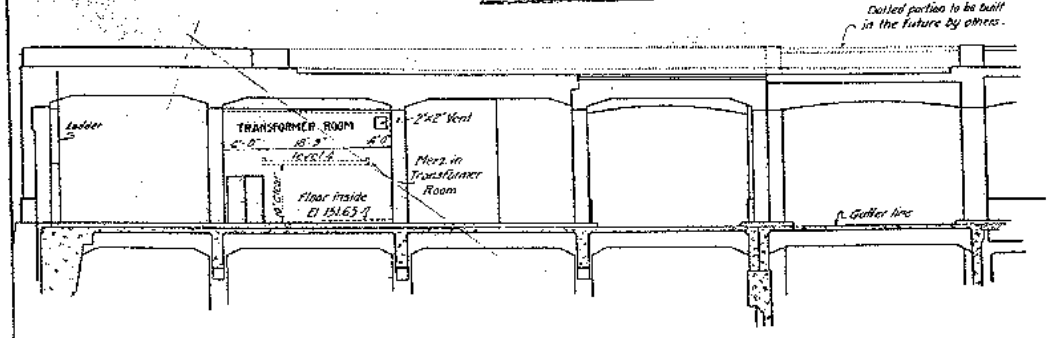
For parts not shown see drawing № 3A



PLAN UPPER DECK

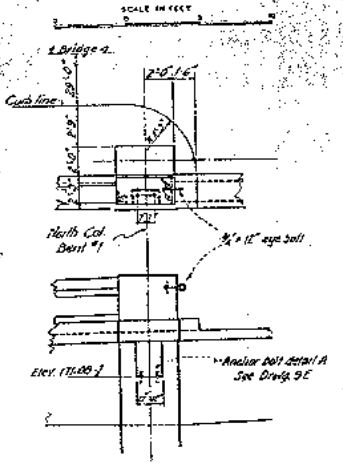
For Parts not shown see Drawing № 3A

SCALE IN FEET



SECTION ON G-G

Along Expansion Joint.
South side Opposite Hand to Sec. DD Drwg. "8A

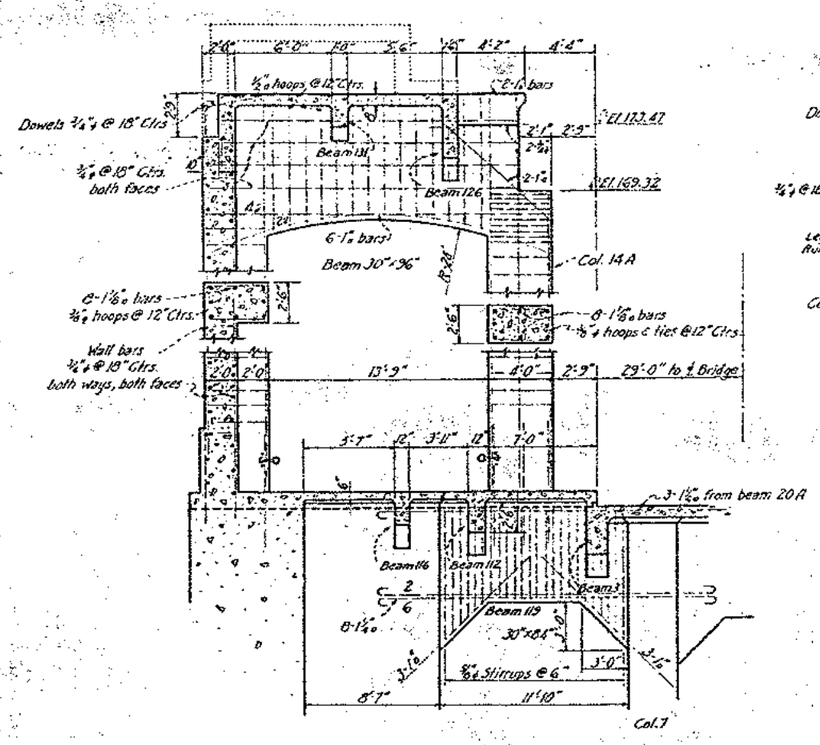


DETAIL OF RECESS IN NORTH COLUMN BENT NO. ONE

Date	Revision	By	Ck'd
7-12-38	As Constructed		
6-26-36	Anchor Bolts, Detail "C" & Eye bolts		
3-26-36	Table added, Dimensions Point, Sec. B-B		

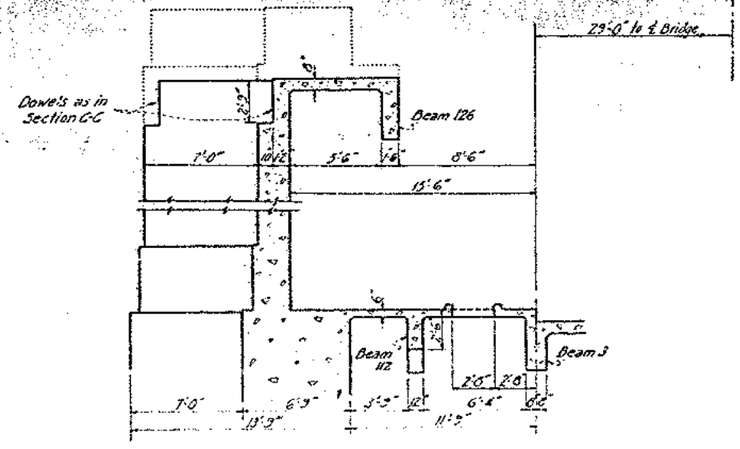
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
CABLE ANCHORAGE
DETAIL OF
EXPOSITION ROAD CONNECTION

CONTRACT NO 5 SUP. DRAWING NO. 9C

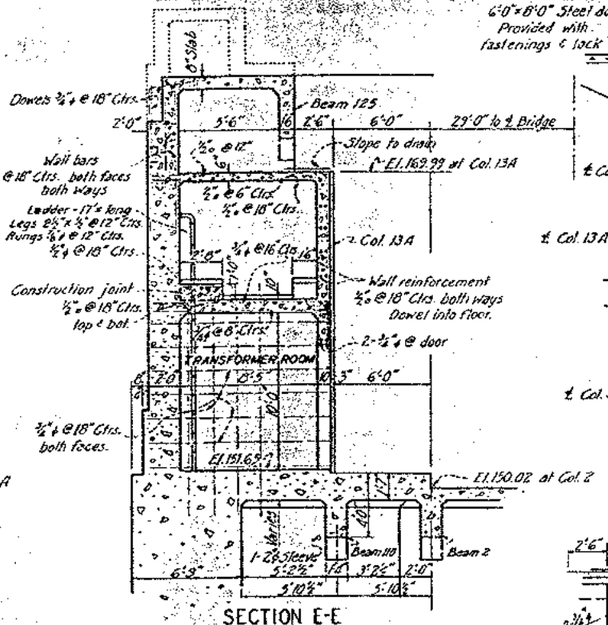


SECTION C-C

For parts not shown See Detail Bent 4A Drwg. No 8A

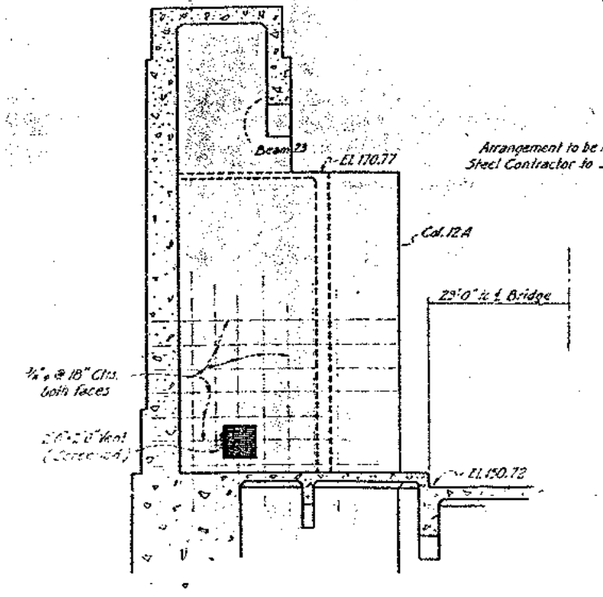


SECTION D-D



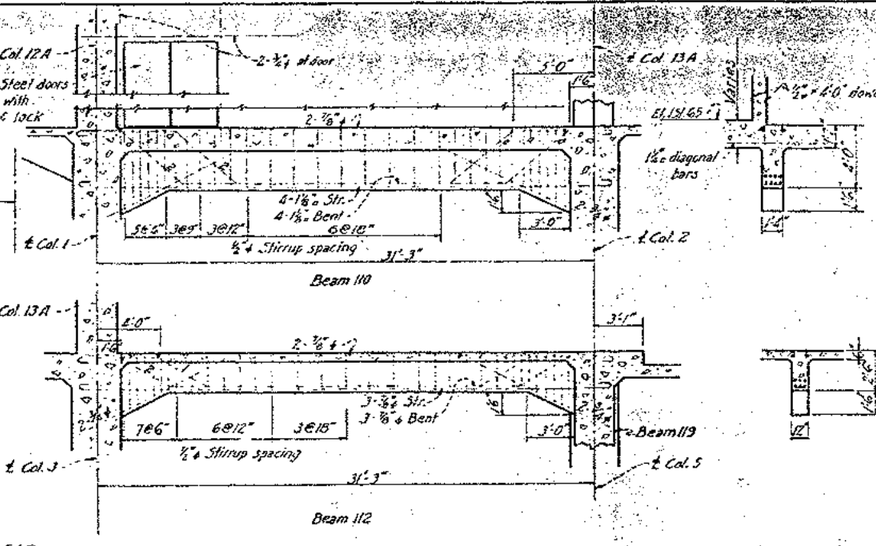
SECTION E-E

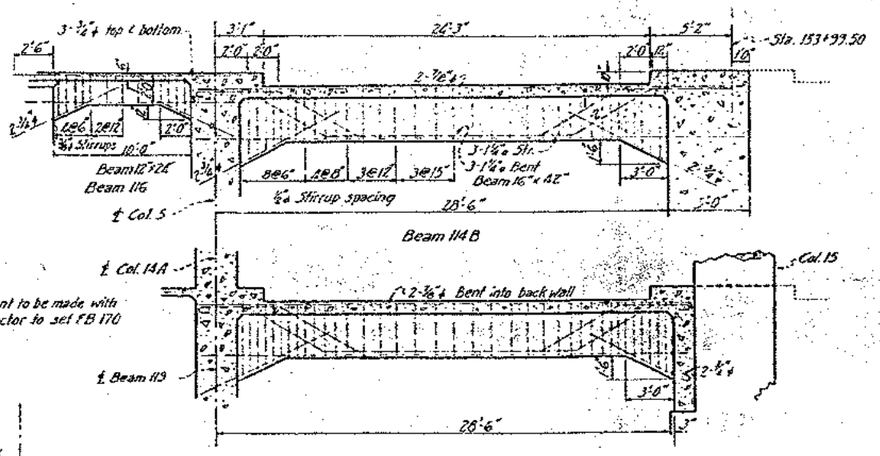
Parts not shown same as shown on Drwg. 7A



SECTION F-F

Parts not shown same as Drwg. 7A





Parts not shown like 114B

Arrangement to be made with Steel Contractor to set FB 170

Date	Revision	By	Ch'kd.
7-17-39	As Constructed	LL	
4-28-36	Eye bolts added		
3-26-36	Dimensions Sec. CC, EE, DD Reinforcing steel Sec. CC.		
3-5-36	Transformer Room Ladder Added		

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING

CABLE ANCHORAGE

DETAIL OF

EXPOSITION ROAD CONNECTION

SCALE IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 9D

LOWER DECK BEAMS

ANCHOR BOLT DETAIL A
Required 11

ANCHOR BOLT DETAIL B
Required 1

REARRANGEMENT OF CONDUITS AT BENT NO 1.
For parts not shown see drawing Nº 42A

PLAN OF UPPER DECK
Parts not shown like shown on Drwg. Nº 9A

ELEVATION AT UPPER DECK
Parts not shown like shown on Drwgs. Nos. 9A, 16A & 17A

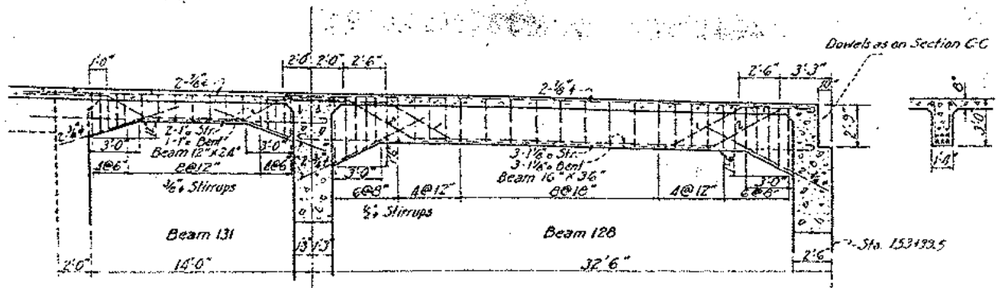
SECTION 1-1

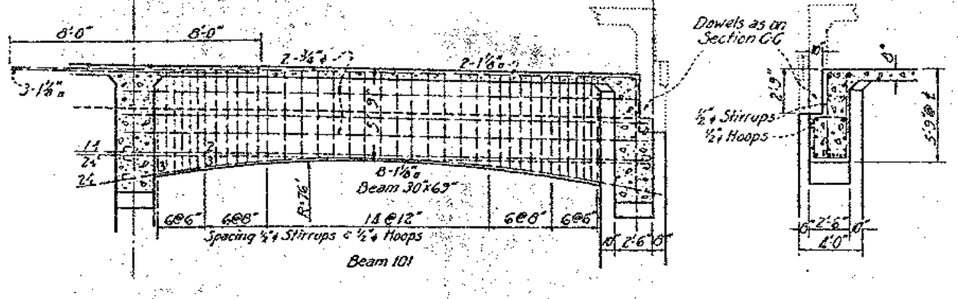
SECTION 2-2

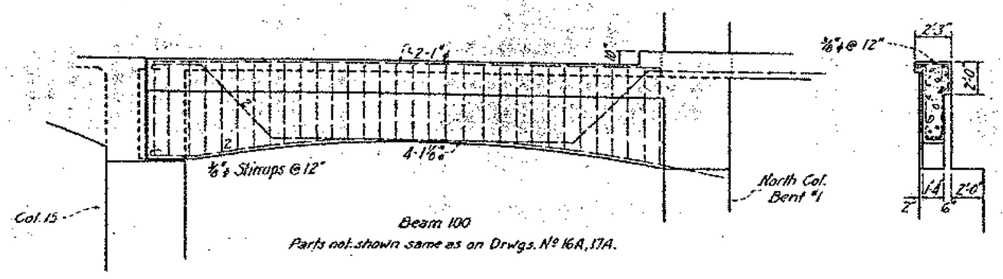
Date	Revision	By	Ch'kd
7-17-35	As Constructed	JLE	
4-24-36	Eye bolts & Socket added		
3-24-36	Anchor bolt details added.		
	Ladder added. Dimension Sch.		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
CABLE ANCHORAGE
DETAIL OF
EXPOSITION ROAD CONNECTION
SCALE IN FEET

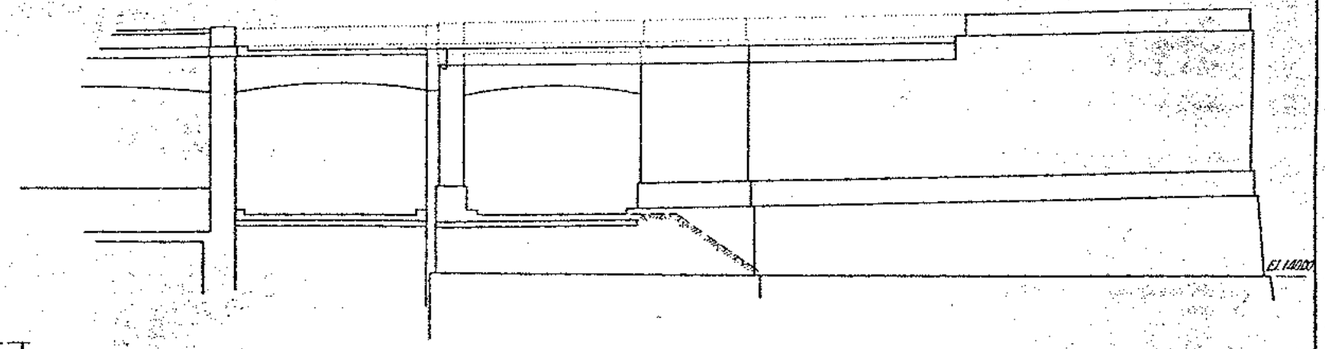
CONTRACT NO. 5 SUP. DRAWING NO. 9E





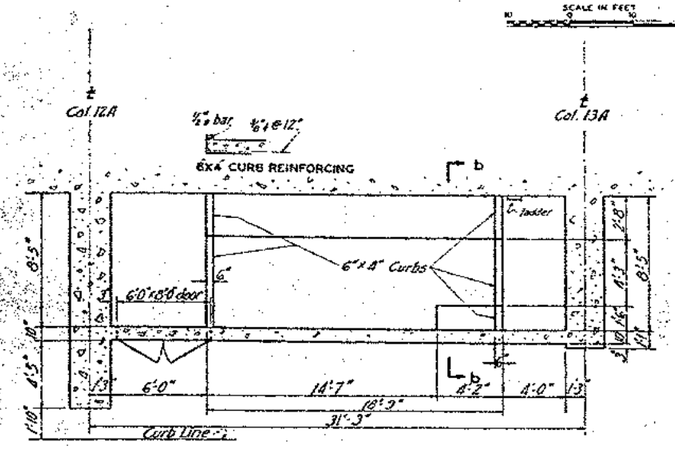


Dotted portion to be built by others at a future date.

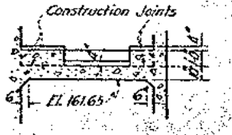


NORTH ELEVATION

For parts not shown see Drwgs. N° 3A.16A.



PLAN OF MEZZANINE FLOOR
IN TRANSFORMER ROOM



SECTION b b

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

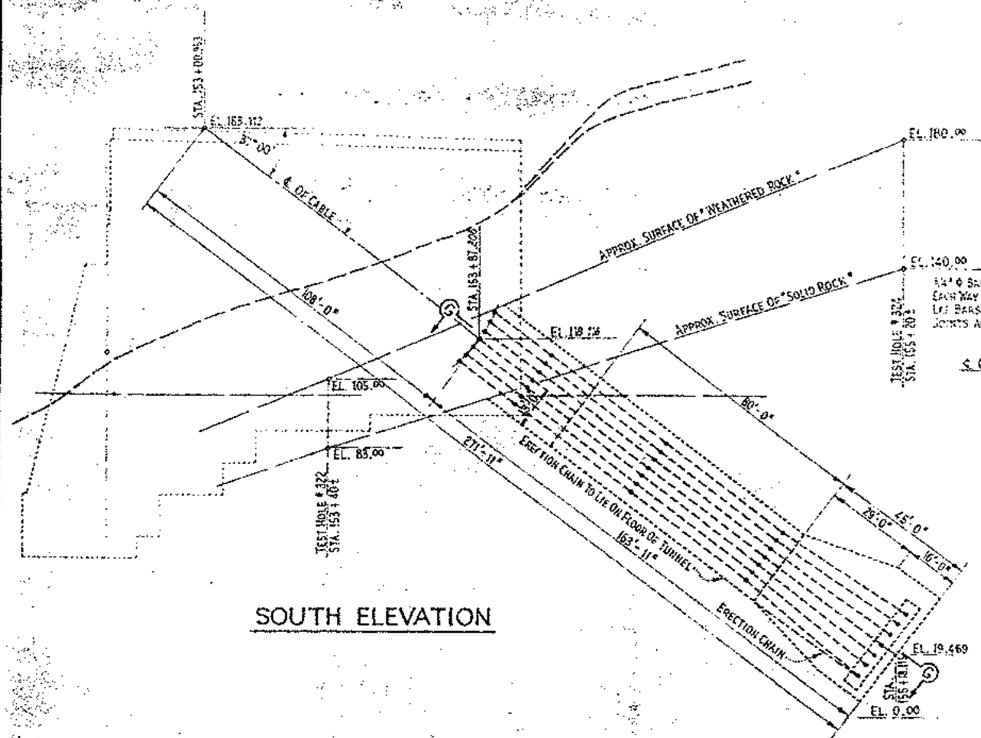
YERBA BUENA CROSSING
CABLE ANCHORAGE

DETAIL OF
EXPOSITION ROAD CONNECTION

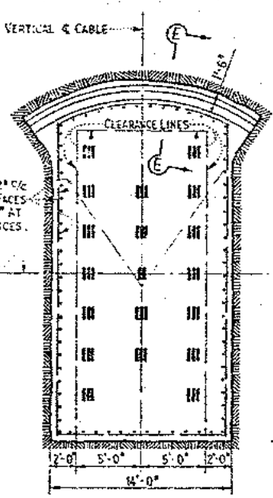
SCALE IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 9F

Date	Revision	By	Ck'd.
7-17-39	As Constructed		
3-5-36	Transformer Room Ladder Added		

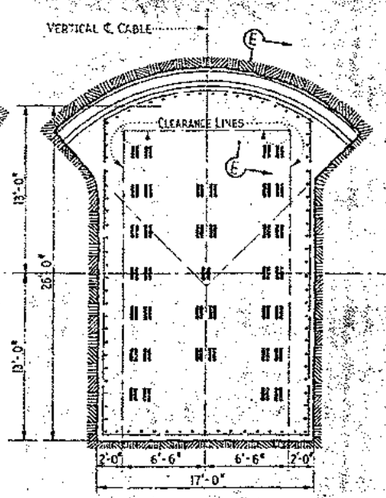


SOUTH ELEVATION



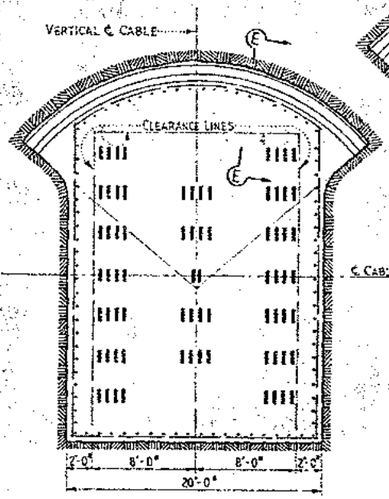
SECTION A-A

TYPICAL FOR TUNNEL SEC. "A".



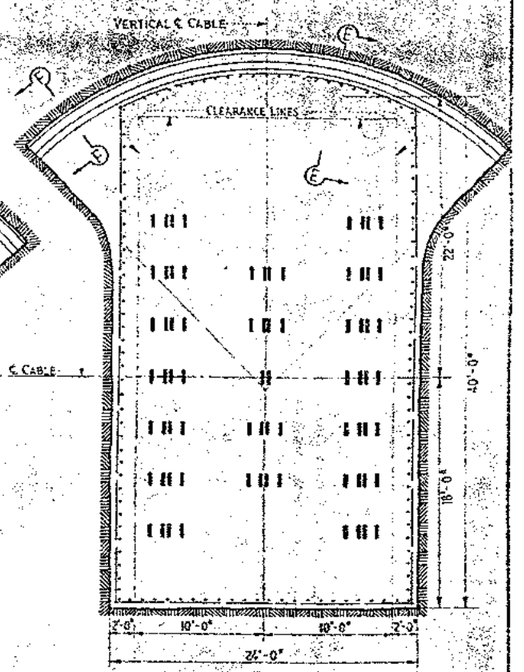
SECTION B-B

TYPICAL FOR TUNNEL SEC. "B".



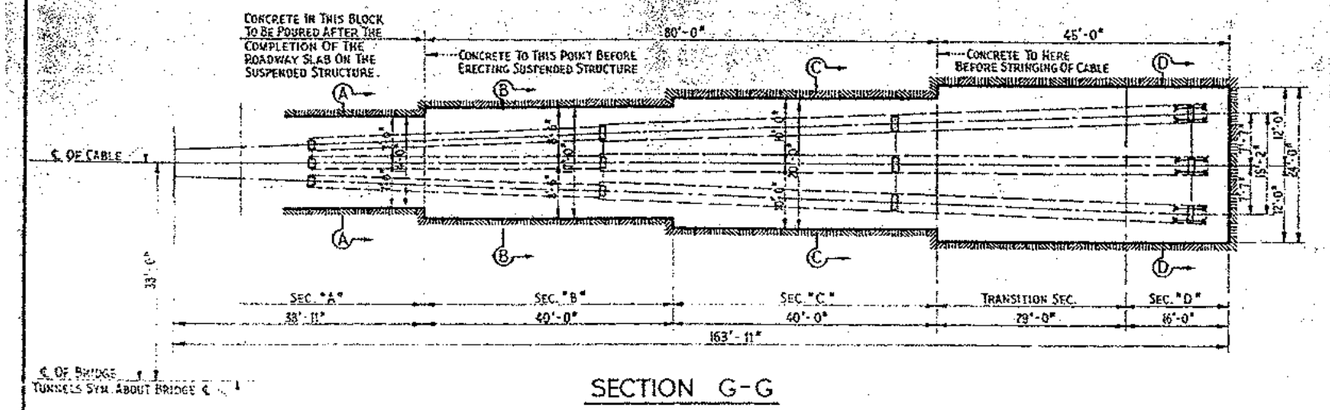
SECTION C-C

TYPICAL FOR TUNNEL SEC. "C".



SECTION D-D

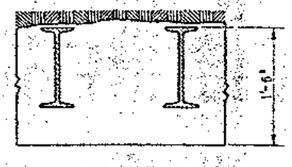
TYPICAL FOR TUNNEL SEC. "D".
ROOF TYPICAL FOR TRANSITION SEC.



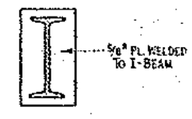
SECTION G-G

NOTE: EXCAVATION MAY BE MADE ON A STRAIGHT TAPER ELIMINATING OFFSETS AT THE OPTION OF THE CONTRACTOR.

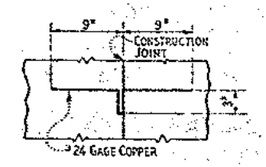
1'-6" MIN. THICKNESS CONCRETE ROOF TO BE PLACED AFTER TUNNEL IS EXCAVATED, BEGINNING AT THE BOTTOM OF THE TUNNEL.



SECTION E-E



SECTION F-F



WATER STOP

WATER STOP TO COMPLETELY ENCIRCLE "I BAR CHAIN" AT ALL CONSTRUCTION JOINTS IN THE TUNNEL. ALL JOINTS IN COPPER SHEETS TO BE SOLDERED.

GENERAL NOTES

THE CONTRACTOR SHALL FURNISH AND PLACE SUCH STEEL REINFORCING AS MAY BE NECESSARY TO HOLD THE ROOF DURING EXCAVATION. THE AMOUNT AND SHAPE OF STEEL IN THE ROOF TO BE DETERMINED BY THE CONTRACTOR. NO TIMBER STRUTS OR LAGGING MAY BE LEFT IN THE COMPLETED WORK.

Date	Revision	By	Ch'kd
7-18-33	As Constructed	J.L.C.	
7-18-34	Elevation & Station on Cable ℄ changed		

NOTE: ELEVATIONS, STATIONS AND SECTIONS REVISED TO MARCH 2, 1934.

BOARD OF CONSULTING ENGINEERS

CORRECT:

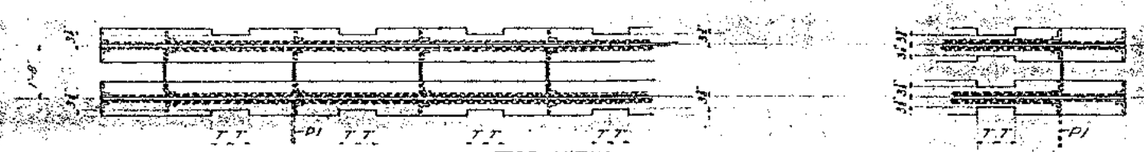
APPROVED:

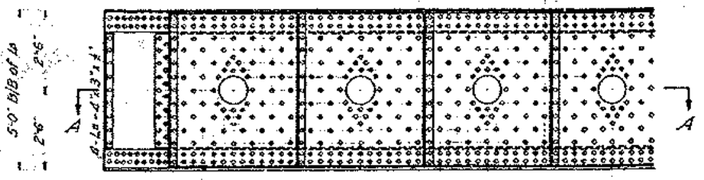
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
ANCHORAGE TUNNELS

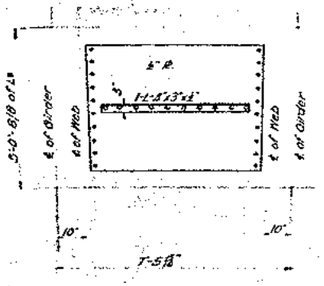
SCALE IN FEET

CONTRACT NO 5. DRAWING NO. 10 A.

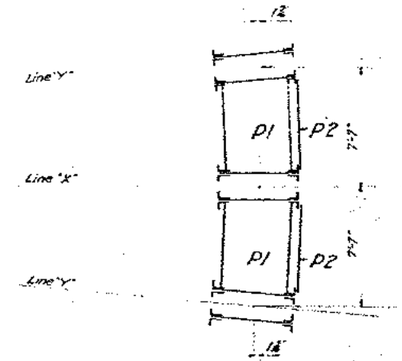
JUNE - 1933

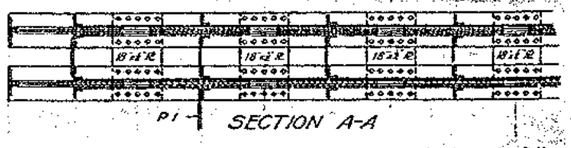




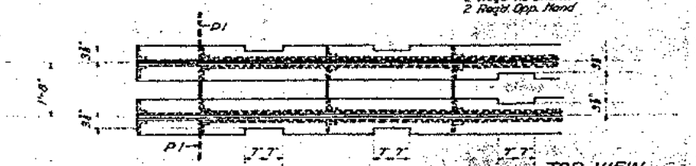


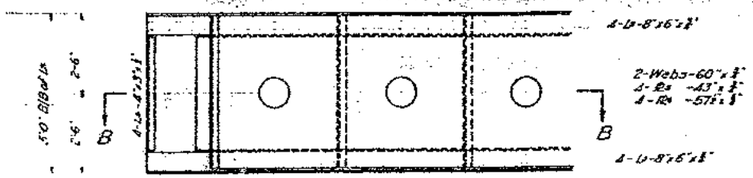
DIAPHRAGM – P 1
8 Reqd

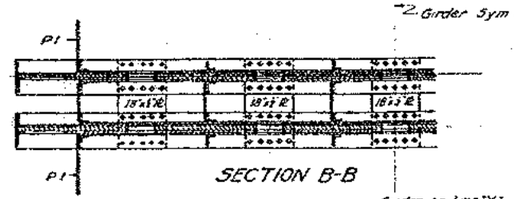


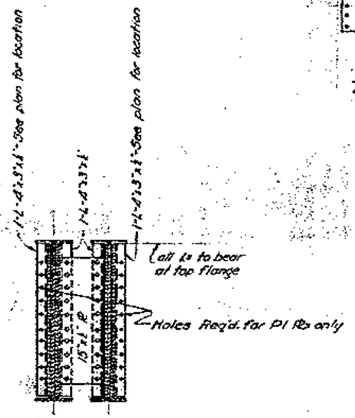


Girder on Line "Y"
2 Reqd As Shown
2 Reqd Opp. Hand

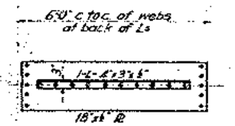








TYPICAL SECTION
Showing Diaphragm



TIE PLATE-P2
8 Reqd.
Bend to Suit

Note:
All Rivets ⅞" ϕ
All Holes Punched ⅝" ϕ and Reamed to ⅞" ϕ
Pin Holes 10½" Dia
Girders to be Riveted in Pairs Before Boring Pin Holes.

BOARD OF CONSULTING ENGINEERS

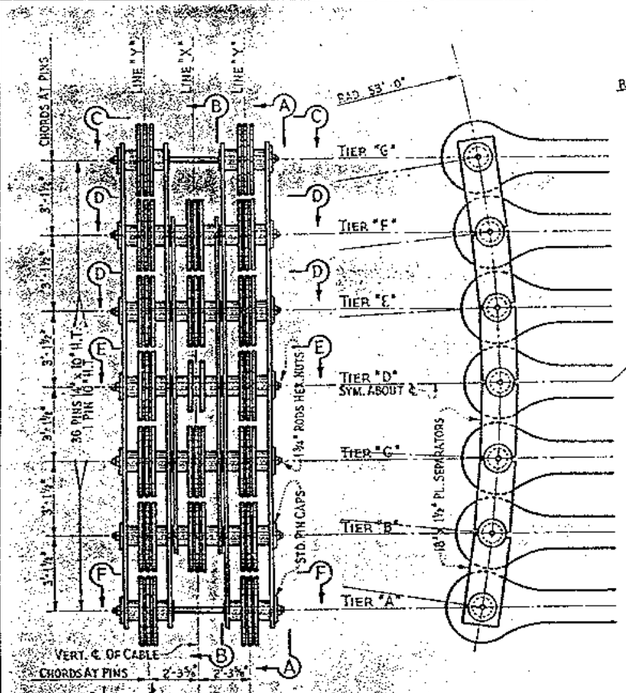
CORRECT:
APPROVED:

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
ANCHOR GIRDERS

SCALE IN FEET
0 1 2 3 4 5

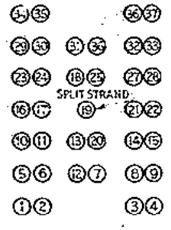
CONTRACT NO 5 SUP DRAWING NO 11A
JULY – 1933

Ref. A.B.Co. Drawing No. B 364

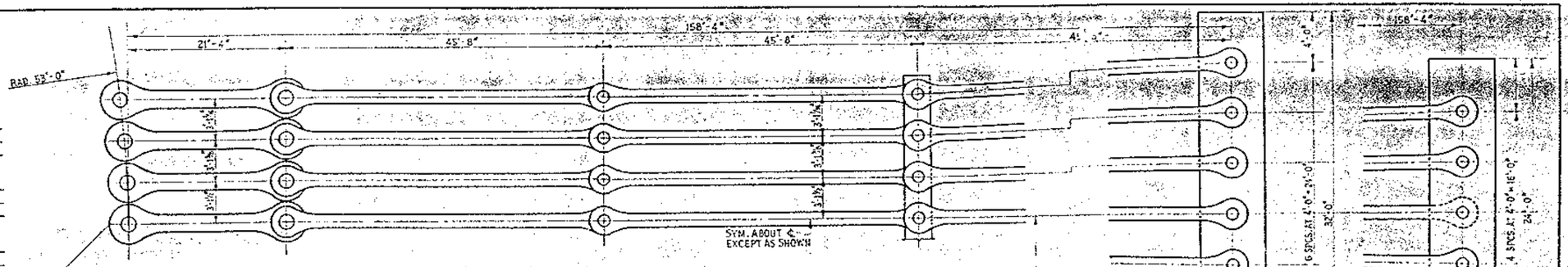


BAR ASSEMBLY AT CABLE CONNECTION

STRANDS IN CABLE



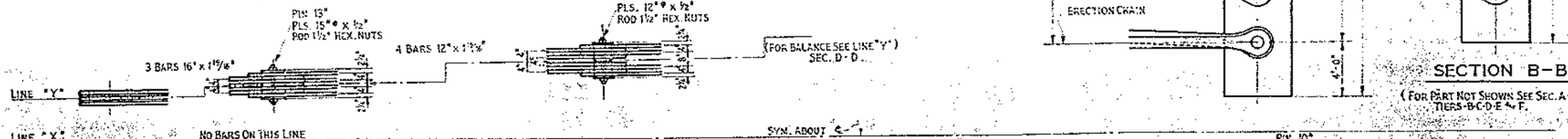
STRANDS IN ANCHORAGE



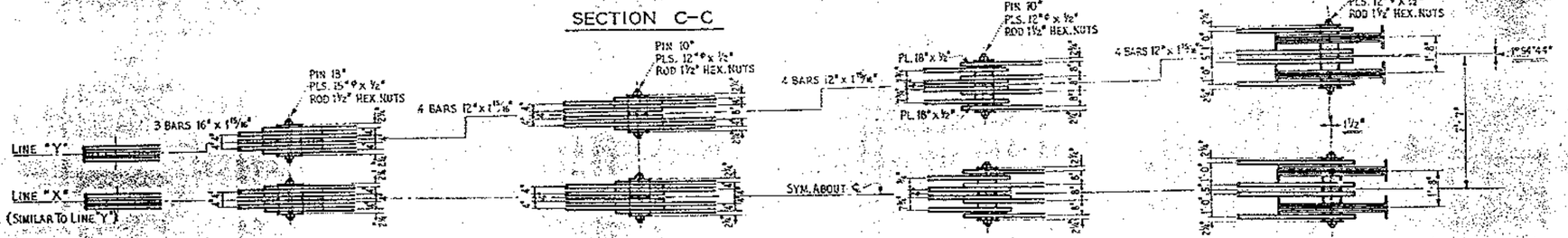
SECTION A-A

SECTION B-B

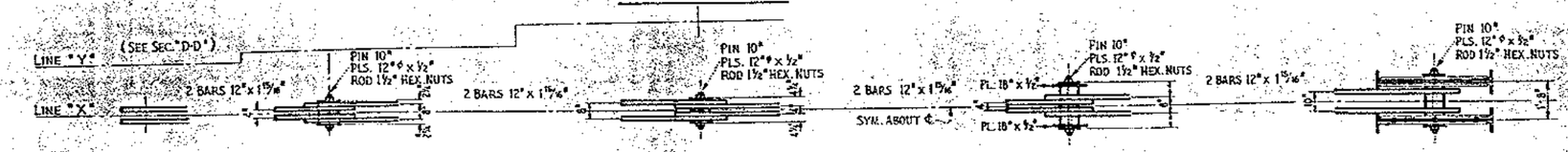
(FOR PART NOT SHOWN SEE SEC. A-A) TIERS B-C-D-E & F.



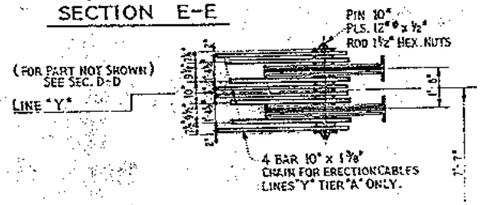
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

NOTES:

ALL PINS CARBON STEEL EXCEPT AS NOTED H.T. (HEAT TREATED). EYE BARS AND PLATES-CARBON STEEL. ALL PINS TO BE COUNTERBORED 2". PINS, PLATES AND RODS AT CABLE CONNECTION FURNISHED BUT NOT ERECTED UNDER THIS CONTRACT. PROTECTIVE COATING AS DIRECTED.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING

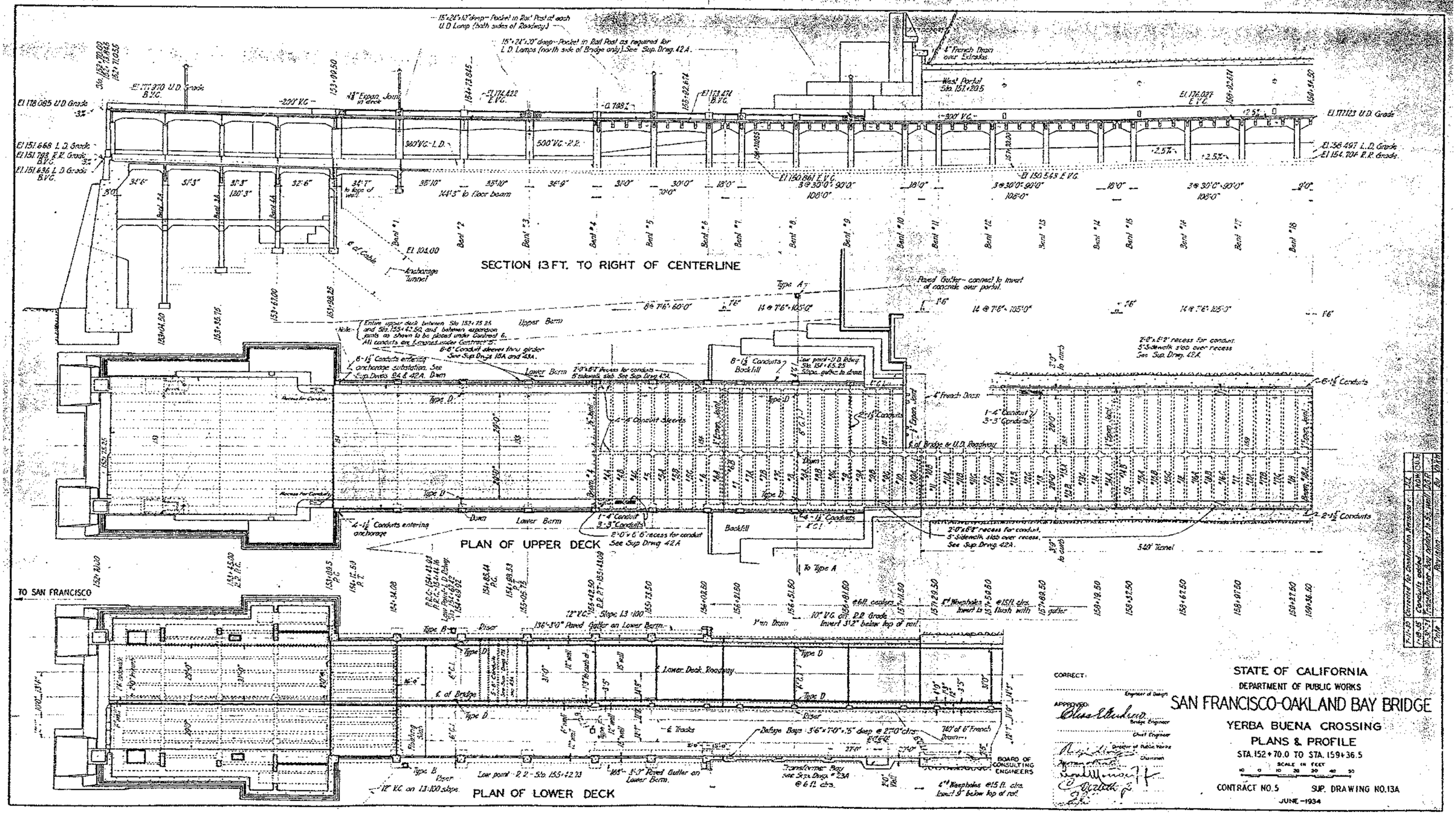
EYE BAR CHAIN

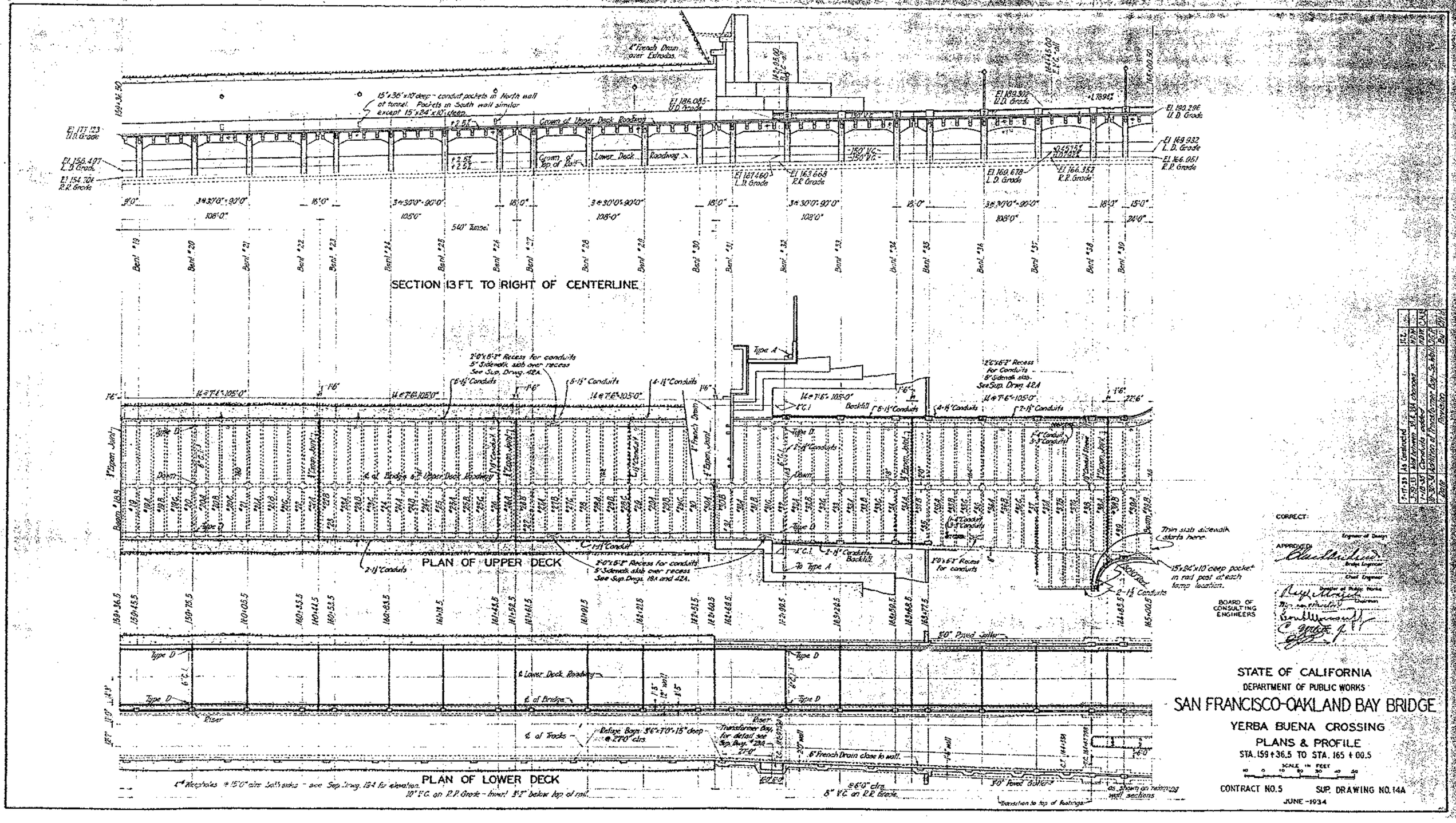
SCALE IN FEET

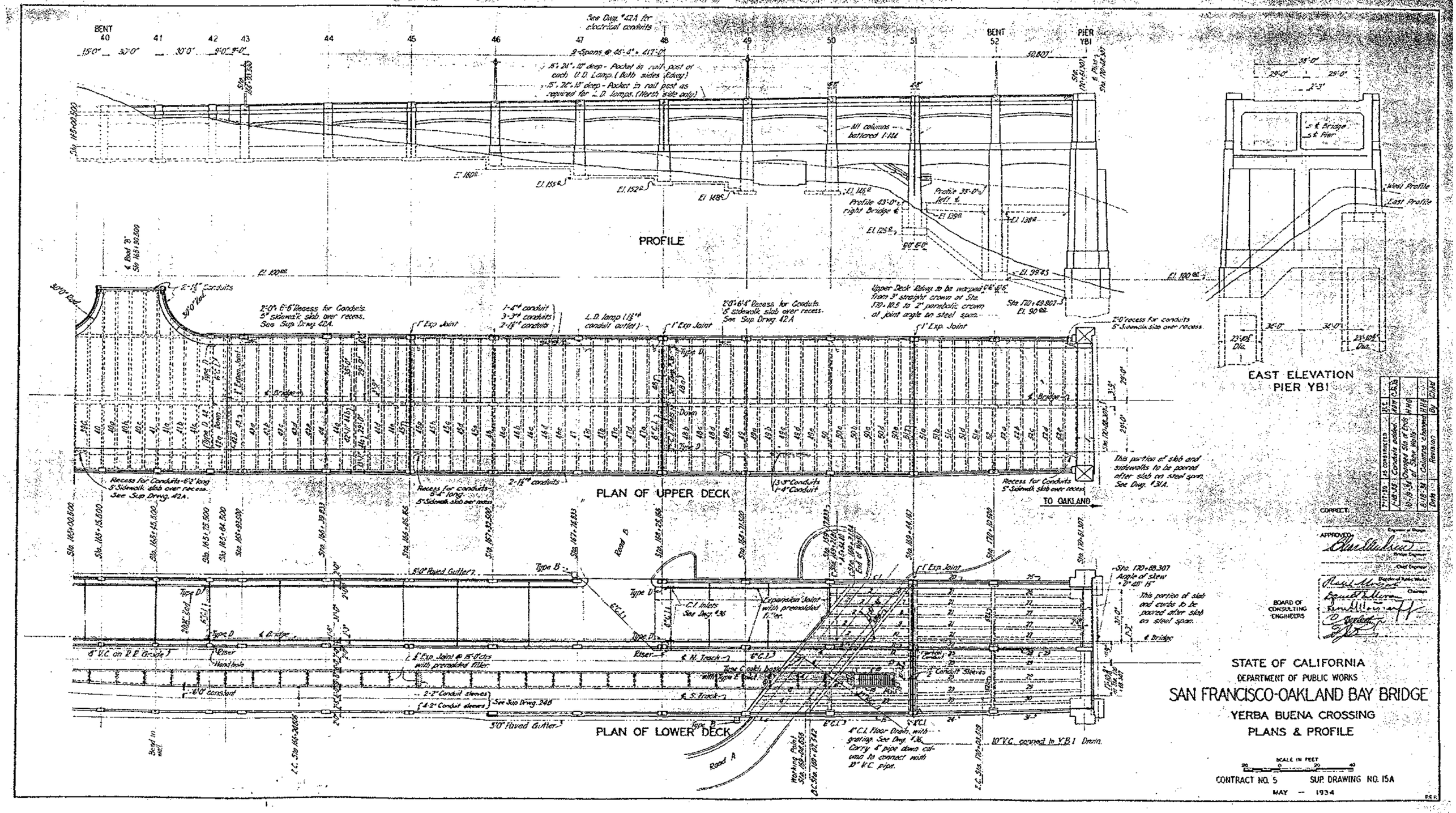
CONTRACT NO 5. SUP. DRAWING NO. 12A.

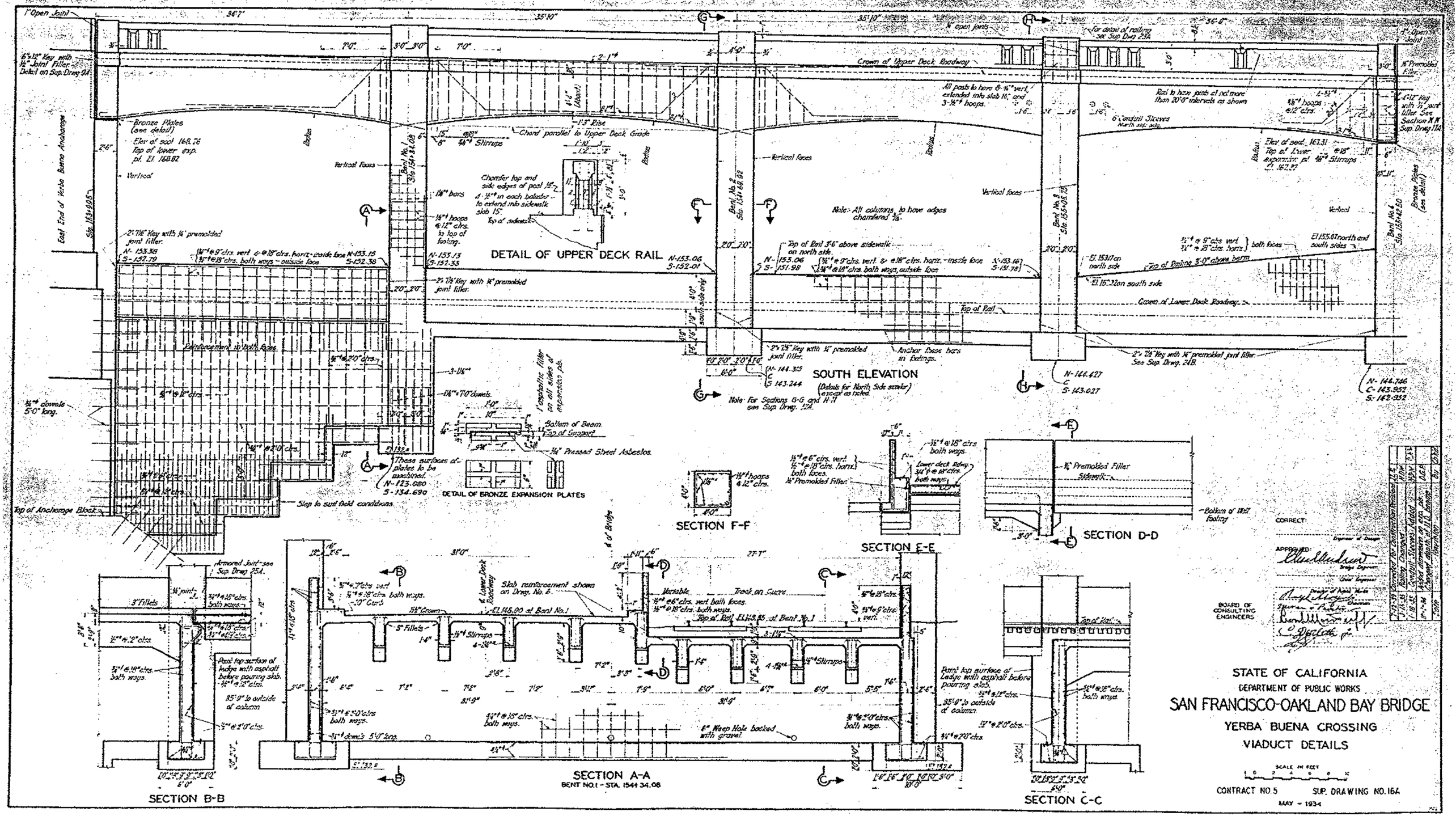
JUNE - 1933

7-17-33	AS constructed	LLC		
1-15-34	DIMENSIONS AND ANGLES CORRECTED	C.W.Y.		
11-14-34	STRANDING OF EYE BARS CORRECTED	C.W.Y.		
1-8-35	Economy Plate & Number changed	C.S.	JHG	
Date	Revision	By	Checked	


SECTION 13 FT. TO RIGHT OF CENTERLINE
PLAN OF UPPER DECK
PLAN OF LOWER DECK
TO SAN FRANCISCO
Upper Berm
Lower Berm
Backfill
Anchorage Tunnel
Paved Gutter - connect to invert of concrete over portal.
4" French Drain over Extrados
West Portal Sta. 151+20.5
El 178.085 U.D. Grade
El 151.668 L.D. Grade
El 151.793 R.R. Grade
El 151.636 L.D. Grade
El 177.970 U.D. Grade
El 177.123 U.D. Grade
El 158.497 L.D. Grade
El 154.704 R.R. Grade
El 150.861 E.V.C.
El 150.543 E.V.C.
El 104.00
Type A
Type B
Type D
Riser
Low point - R.R. - Sta. 155+42.73
12" V.C. on 1:100 slope
Transformer Bay see Sup. Drwg. #23A @ 6 ft. ctrs.
4" Weepholes @ 15 ft. ctrs. Invert 9" below top of rail
BOARD OF CONSULTING ENGINEERS
CORRECT:
Engineer of Design
APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
PLANS & PROFILE
STA. 152+70.0 TO STA. 159+36.5
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 13A
JUNE - 1934

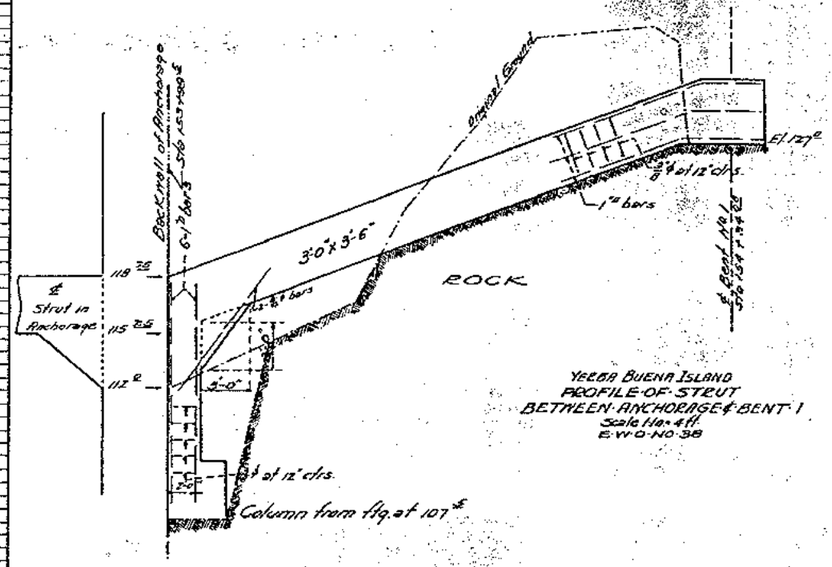

SECTION 13 FT. TO RIGHT OF CENTERLINE
PLAN OF UPPER DECK
PLAN OF LOWER DECK
Crown of Upper Deck Roadway
Crown of Top of Rail
Lower Deck Roadway
540' Tunnel
Thin slab sidewalk starts here.
15"x24"x10" deep pocket in rail post at each lamp location.
2-1½" Conduits
3'0" Paved Gutter
6" French Drain close to wall.
Transition to top of footings
CORRECT:
Engineer of Design
APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
PLANS & PROFILE
STA. 159+36.5 TO STA. 165+00.5
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 14A
JUNE - 1934


PROFILE
PLAN OF UPPER DECK
PLAN OF LOWER DECK
EAST ELEVATION
PIER YB1
BENT 40
BENT 52
PIER YB1
See Dwg. #42A for electrical conduits
9-Spans @ 45'-4" = 417'-0"
All columns battered 1:144
Profile 33'-0" left ℄
Profile 43'-0" right Bridge ℄
Upper Deck Rdwy to be warped 6"-6"-6" from 3" straight crown at Sta. 170 + 10.5 to 2" parabolic crown at joint angle on steel span.
2'-0" 6"-6" Recess for Conduits. 5" sidewalk slab over recess. See Sup. Drwg. 42A.
1" Exp. Joint
L.D. lamp (1½" conduit outlet)
2'-0" 6"-4" Recess for Conduits. 5" sidewalk slab over recess. See Sup. Drwg. 42A
2'-0" recess for conduits 5" Sidewalk slab over recess.
This portion of slab and sidewalks to be poured after slab on steel span. See Dwg. #31A.
TO OAKLAND
Recess for Conduits 5" Sidewalk slab over recess
Recess for Conduits-6'2" long 5" Sidewalk slab over recess. See Sup. Drwg. 42A.
Recess for conduits 5'-4" long. 5" Sidewalk slab over recess
2-1½" conduits
3-3" Conduits 1-4" Conduit
5'0" Paved Gutter
Type B
Type D
C.I. Inlets See Dwg. #36
Expansion Joint with premolded filler.
Sta. 170 + 68.307 Angle of skew 0° 48' 15"
This portion of slab and curbs to be poured after slab on steel span.
8" V.C. on R.R. Grade
Riser
Hand hole
¼" Exp. Joint @ 15'-0" ctrs with premolded filler.
N. Track
S. Track
Type C cast basin with Type E inlet
½" Conduit Sleeves
2-2" Conduit sleeves
4-2" Conduit sleeves
See Sup. Drwg. 24B
6'0" constant
Road A
Road B
Working Point Sta. 169+24.656
4" C.I. Floor Drain, with grating. See Dwg. #36. Carry 4" pipe down column to connect with 10" V.C. pipe.
10" V.C. connect to YB1 Drain.
West Profile
East Profile
℄ Bridge
℄ Pier
23'-10½" Dia.
34'-0"
58'-0"
29'-0"
2'-3"
CORRECT:
Engineer of Design
APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
PLANS & PROFILE
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 15A
MAY — 1934
Date
Revision
By
Chkd
7-17-35
15 Conduits added
N.B.W.
C.J.B.
10-19-34
Changed Sta. of Ends of Skew Walls
H.W.G.
8-18-34
Columns changed
H.H.G.

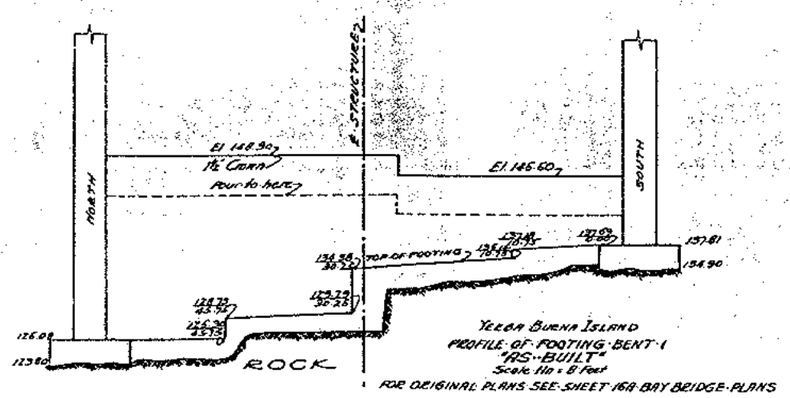

DETAIL OF UPPER DECK RAIL
SOUTH ELEVATION
(Details for North Side similar except as noted.)
Note: For Sections G-G and H-H see Sup. Drwg. 17A.
DETAIL OF BRONZE EXPANSION PLATES
SECTION F-F
SECTION E-E
SECTION D-D
SECTION A-A
BENT NO.1 - STA. 154+34.08
SECTION B-B
SECTION C-C
Crown of Upper Deck Roadway
Crown of Lower Deck Roadway
Note: All columns to have edges chamfered 3/4.
Bronze Plates (see detail)
Top of Anchorage Block
Step to suit field conditions.
Reinforcement in both faces.
Slab reinforcement shown on Drwg. No. 6.
Track on Curve
Paint top surface of ledge with asphalt before pouring slab.
Armored Joint - see Sup. Drwg. 25A.
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
VIADUCT DETAILS
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 16A
MAY - 1934

FOOTING ELEVATIONS & CLASSIFICATION

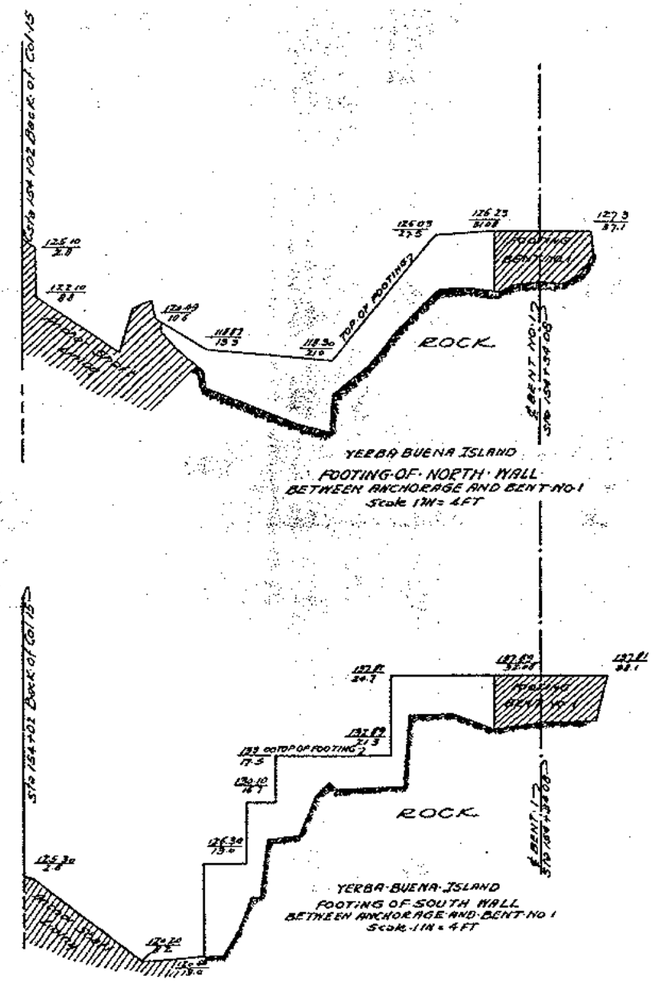
LOCATION	SIZE	ELEV. BOT FOOTINGS	CLASSIFICATION
BENT NO 1			
N	6'X10'X3'	123.08	ROCK
S	6'X10'X3'	124.69	ROCK
BENT NO 2			
N	6'X10'X3'	144.315	ROCK
S	6'X10'X3'	143.244	ROCK
BENT NO 3			
N	6'X10'X3'	144.427	ROCK
S	6'X10'X3'	143.027	ROCK
BENT NO 4			ROCK
N	6'X10'X3'	144.746	ROCK
C	6'5"X10'X2'	145.952	ROCK
S	6'X10'X3'	142.952	ROCK
BENT NO 5			
N	6'X10'X3'	145.174	ROCK
C		143.004	ROCK
S	6'X10'X3'	143.004	ROCK
BENT NO 6			
N	6'X10'X3'	145.730	ROCK
C		143.125	ROCK
S	6'X10'X3'	143.125	ROCK
	4'X2' MIN'L. FOOTING ON ROCK FOUNDATION		
	BETWEEN BENTS 6 AND 37		
BENT NO 37			
S	6'X8'X2'	162.50	ROCK
BENT NO 38			
N	8'X8'X2'	165.4	ROCK
C	8'X10'X2'	162.6	ROCK
S	10'X9'X2'	162.9	ROCK
BENT NO 39			
N	8'X10'X2'	166.6	ROCK
C	8'X10'X2'	163.0	ROCK
S	6'X8'X2'	163.0	ROCK
BENT NO 40			
N	9'X10'X2'-6"	166.0	ROCK
C	8'X10'X2'-0"	163.6	ROCK
S	8'X8'X2'-0"	163.6	ROCK
BENT NO 41			
N	9'X10'X2'-6"	166.0	ROCK
C	8'X10'X2'-0"	163.6	ROCK
S	8'X8'X2'-0"	163.6	ROCK
BENT NO 42			
N	8'X10'X2'	168.0	ROCK
C	8'X10'X2'	163.6	ROCK
S	8'X8'X2'	164.0	ROCK
BENT NO 43			
N	8'X10'X2'	166.0	ROCK
C	10'X12'X2'-6"	163.6	ROCK
S	10'X8'X2'	164.0	ROCK
BENT NO 44			
N	8'X10'X2'	166.6	ROCK
C	10'X12'X2'-6"	164.6	ROCK
S	10'X8'X2'	165.0	ROCK
BENT NO 45			
N	8'X10'X2'	166.6	ROCK
C	10'X12'X2'-6"	164.6	ROCK
S	10'X8'X2'	165.0	CLAY
BENT NO 46			
N	8'X10'X2'	168.5	ROCK
C	10'X12'X2'-6"	164.0	SAND
S	10'X8'X2'	160.0	SAND
BENT NO 47			
N	8'X10'X2'	160.0	SAND
C	10'X12'X2'-6"	159.5	SAND
S	10'X8'X2'	159.0	SAND
BENT NO 48			
N	8'X10'X2'	160.0	SAND
C	10'X12'X2'-6"	158.0	SAND
S	10'X8'X2'	152.0	SAND
BENT NO 49			
N	8'X10'X2'	157.0	SAND
C	10'X12'X3'-5"	152.6	SAND
S	10'X8'X2'	150.0	SAND
YB-1			
N	24" DIA.	3.0	ROCK
S	24" DIA.	4.9	ROCK
YB-2			
N		35.0	ROCK
S		24.2	ROCK
YB-3			
N		19.5	ROCK
S		10.0	ROCK
YB-4			
N		15.5	ROCK
S		~ 16.2	ROCK
E-1			
N			ROCK
S			ROCK



YERBA BUENA ISLAND
PROFILE OF STRUT
BETWEEN ANCHORAGE & BENT 1
Scale Hor. 4 ft.
E.W.O. NO. 38



YERBA BUENA ISLAND
PROFILE OF FOOTING BENT 1
"AS-BUILT"
Scale Hor. = 8 Feet
FOR ORIGINAL PLANS SEE SHEET 168 BAY BRIDGE PLANS



YERBA BUENA ISLAND
FOOTING OF NORTH WALL
BETWEEN ANCHORAGE AND BENT NO 1
Scale 1 IN = 4 FT

YERBA BUENA ISLAND
FOOTING OF SOUTH WALL
BETWEEN ANCHORAGE AND BENT NO 1
Scale 1 IN = 4 FT

SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA ISLAND
VIADUCT
FOOTING DATA
Scales as shown

7-28-39	AS CONSTRUCTED	J.T.C.	
DATE	REVISION	BY	CHK'D

CONTRACT 5 · DRAWING NO. 16 B
FEB. 1937

BENT NO. 4
STA. 155+42.50
SECTION AT TOP OF CENTER COLUMN
24"-100" CB and steel columns to be placed under Contract #6.
Note: All 12" walls on Lower Deck to be keyed into columns with 2"x7½" key as shown on Sup Drwg 24B.
Lower Berm El 152.± at Bent No. 4
℄ Lower Deck Roadway
El 149.25 at Bent No. 4
Top of Rail El 147.70 at Bent No. 4
Tracks on curve
SECTION M-M
Note: Key at outside edge of girder at anchorage. See Sup. Drwg. No. 9A.
SECTION K-K
Upper Deck placed under Cont. 6 to here.
Construction Joint Elev 167.20 @ Center Col.
El. of seat 167.31
Bronze Bearing Plates. See detail Sup Drwg No. 16A
Top of Lower Exp. Pl. El. 167.37
For detail of railing see Sup Drwg 23A
3'0" above Lower Berm
2"x7½" Key with ½" premolded joint filler.
Upper Deck placed under Contract No. 6.
El 174.45 at Bent No. 2
El 174.17 at Bent No. 3
67" Girder.
65'6" c.-c. bearing & anchor bolts.
SECTION L-L
Top of Beam Seat.
El 169.243 at Bent No. 1
El 167.871 at Bent No. 2
El 167.585 at Bent No. 3
El 148.82 at Bent No. 2
El 148.93 at Bent No. 3
El 147.09 at Bent No. 2
El 147.76 at Bent No. 3
Lower Berm El 148.± at Bent No. 2, El 149.± at Bent No. 3
Sand Cushion Minimum thick. 4"
6" Conduits - Located at Sta 154+80, 154+85, 154+90, 154+95, 155+00
SECTIONS G-G & H-H
BENT NOS. 2 & 3 RESPECTIVELY
67'6" c. to c. of columns
Armored Joint. See Sup. Drwg 25A.
East face of Yerba Buena Anchorage
Floating Slab on Rdwy. Side only
LOWER DECK STRINGERS
BETWEEN BACK OF ANCHORAGE & BENT NO.1
Notes:- Anchor Bolts at Bent #4 to be 2'0" long and set in 2" pipe.
Bolts to have 4" threads, 2 hex nuts, and extend 5" above concrete.
Grout bolts in pipes.
Dress all seats for steel beams.
For structural steel details refer to Sup Dwgs #70 & #113, Contract #6.
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
VIADUCT DETAILS
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 17A
MAY - 1934

SOUTH ELEVATION

(North elevation similar except as noted)

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SECTION E-E

TYPICAL PLAN OF SLAB & SIDEWALK REINFORCEMENT - UPPER DECK

UPPER DECK SLAB IN TUNNEL IS SIMILAR

Date	Revision	By	Chkd
6-20-35	Upper deck cut loose from walls	HDM	
3-16-38	Railing changed	HDM	
7-12-39	Corrected for Construction Revisions	JLE	

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING

VIADUCT DETAILS

SCALE IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 18A

MAY-1934

GROUT HOLE LAYOUT
SCALE IN FEET

Area to be solidified

NOTES FOR GROUTING

Holes are to extend approximately 200' from Sta. 157+20± to Sta. 159+20±. After completion of drilling, holes are to be filled with a 1:2 cement grout to a pressure of not less than 100 lbs. per sq. in.

Grouting will be paid for at the price bid for cement under Payment Item #24. All other work to be paid for under Payment Item #9.

VENTILATION GRATINGS (UPPER DECK)

SECTION X-X

Frames and gratings to be galvanized. Z23 required.

DETAIL OF FOOTING
SCALE IN INCHES

SEC. B-B

SEC. C-C

SEC. D-D

SEC. E-E

SECTION A-A

Pack space outside of liner plates with rock or gravel and grout at 40 lbs. pressure. (1st grouting)

Grouting pipes - ½" ø in each course every 6th plate for 1st grouting, in every 5th course and every 12th plate for 3rd grouting.

SLAB DETAIL
SCALE IN FEET

For further details of steel in upper deck slab, see Dwg. #18A

For pavement details and reinforcement, see Dwg. No. 35

STANDARD TUNNEL SECTION

(Vertical dimensions constant from Sta. 158+92.6± to Sta. 162+60±)

TUNNEL LINING
SCALE IN INCHES

CORRECT:

APPROVED:

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

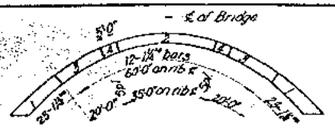
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
TUNNEL SECTION AND DETAILS

SCALE IN FEET

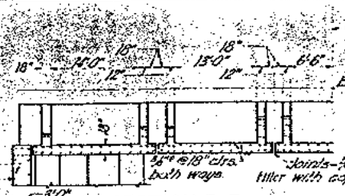
CONTRACT NO. 5 SUP. DRAWING NO. 19A
JUNE - 1934

7-17-35	Corrected for Construction Revisions	J.L.C.	BOARD OF CONSULTING ENGINEERS
4-11-35	Vent Gratings removed - Conduits added	A.P.W.	
9-15-34	Vent Gratings changed	"	
7-30-34	Spacing of 3rd grouting pipes corrected	J.L.P.	
Date	Revision	By	Chkd

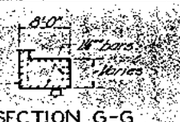


POURING SCHEDULE
FOR UPPER ARCH

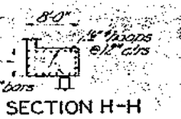
POURING SCHEDULE
FOR LOWER ARCH



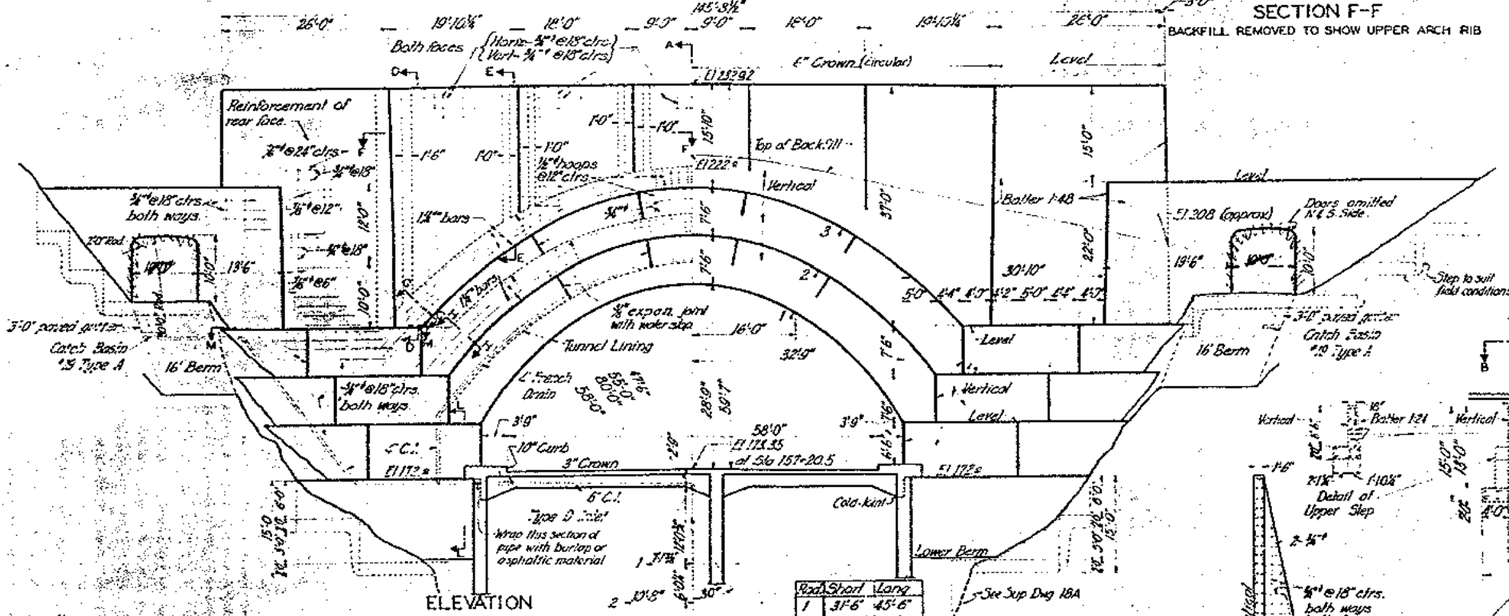
SECTION F-F
BACKFILL REMOVED TO SHOW UPPER ARCH RIB



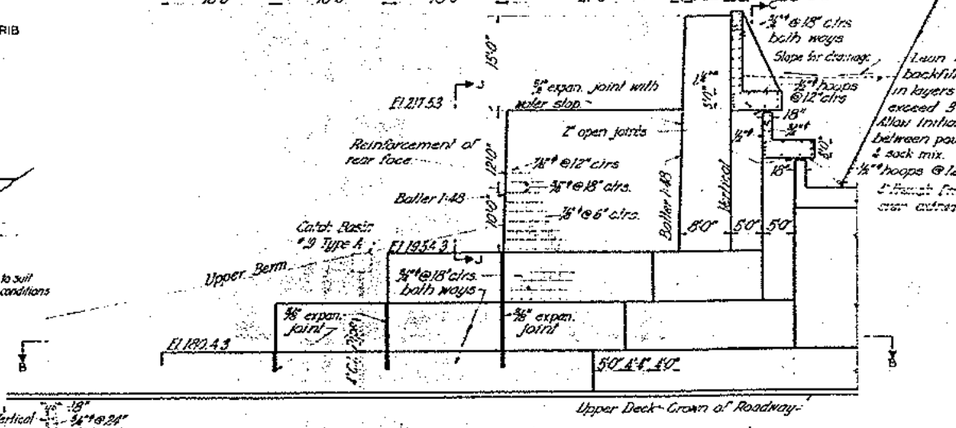
SECTION G-G



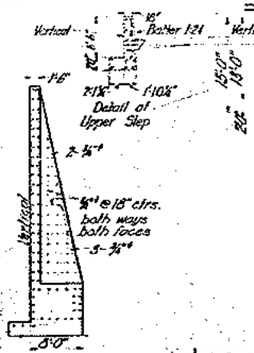
SECTION H-H



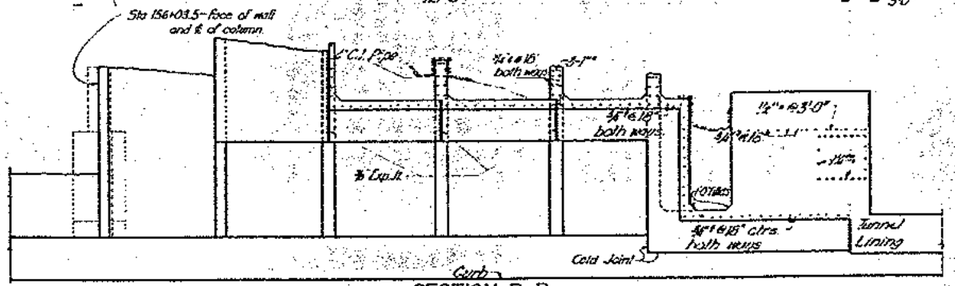
ELEVATION



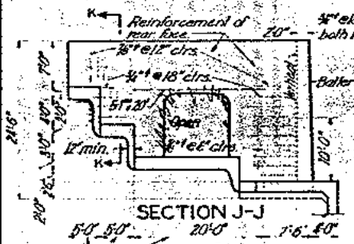
SECTION A-A



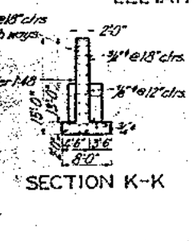
SECTION D-D



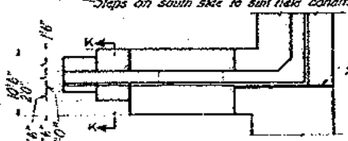
SECTION B-B



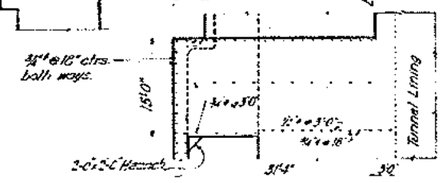
SECTION J-J



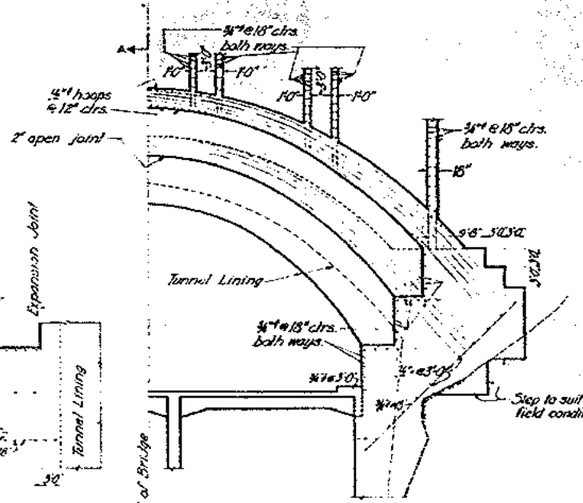
SECTION K-K



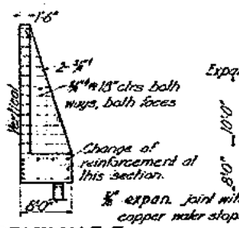
PLAN



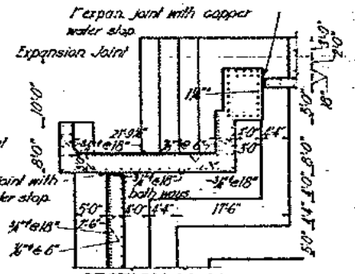
SECTION L-L



SECTION C-C



SECTION E-E
TOP COUNTERFORTS SIMILAR



SECTION M-M

Note:- Line forms with 3 ply veneer on all exposed faces.
Chamfer all edges ¾" unless otherwise noted.
Concrete-Class "B".
All expansion joints to be filled with asphaltic filler.
All surfaces shown as level shall have approx. ½:1'0" slope for drainage.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

Corrected for Permanent Construction	JJC	
6-30-36	Corrected as shown for wat.	CDM
2-2-36	Contract changed & filled	JJC
1-8-36	Drawing filed & changed	TH.H

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

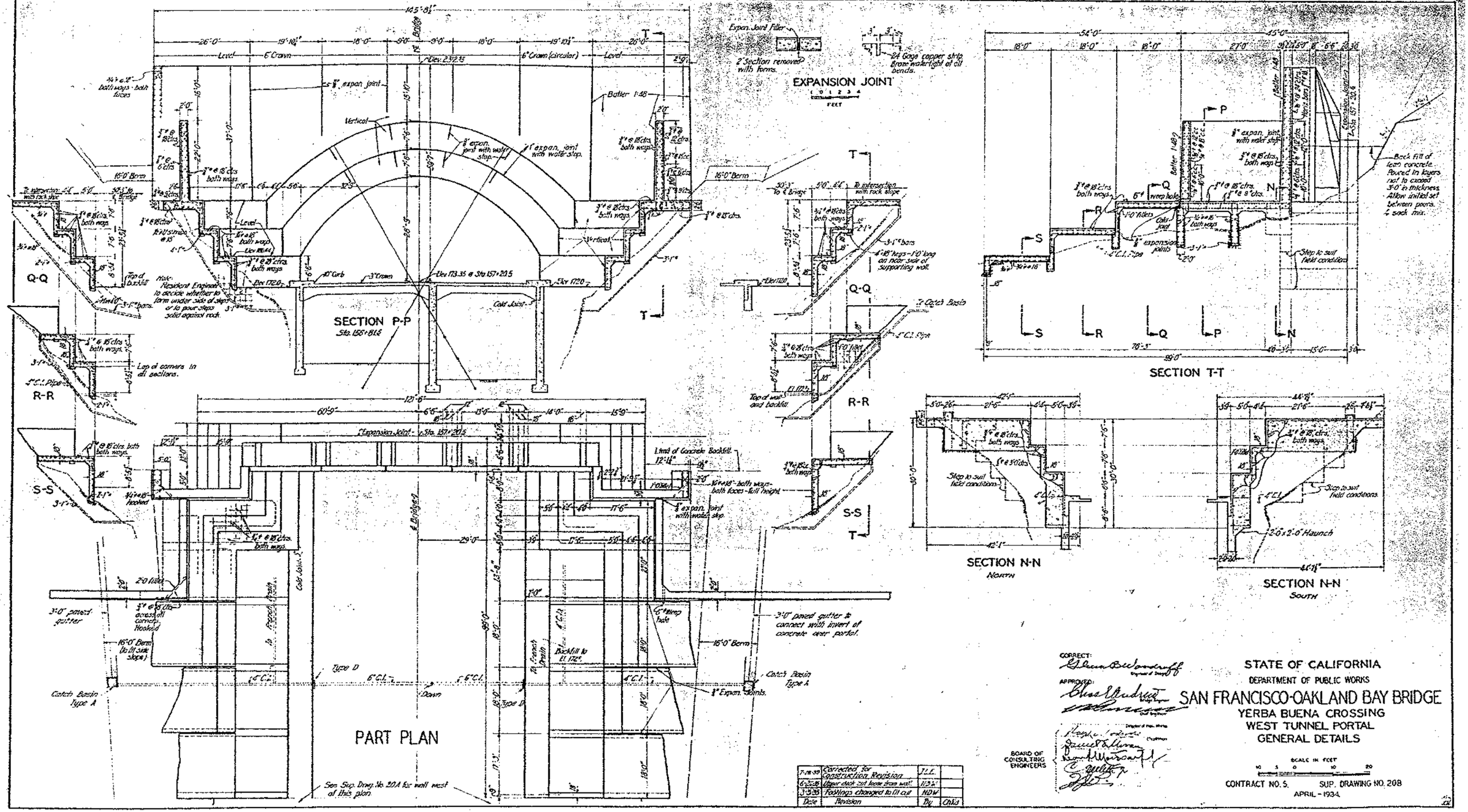
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
WEST TUNNEL PORTAL
GENERAL DETAILS

SCALE IN FEET 0 10 20

CONTRACT NO. 5 SUP. DRAWING NO. 20A

APRIL - 1934



Date	Revision	By	Chkd
7-28-39	Corrected for Construction Revision	T.L.C.	
6-26-39	Upper deck cut loose from wall	H.S.K.	
3-3-39	Footings changed to fit cut	N.D.W.	

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

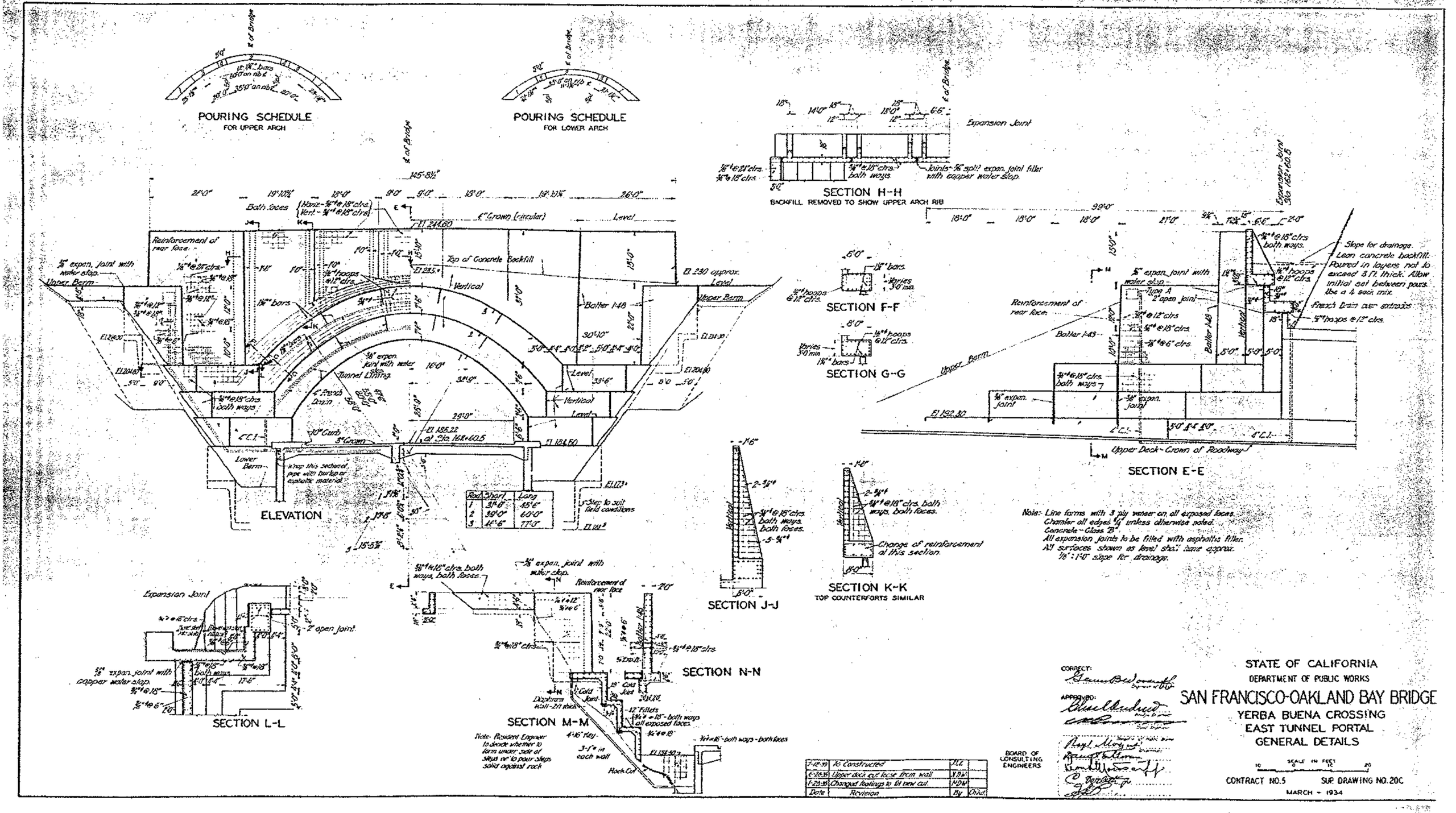
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

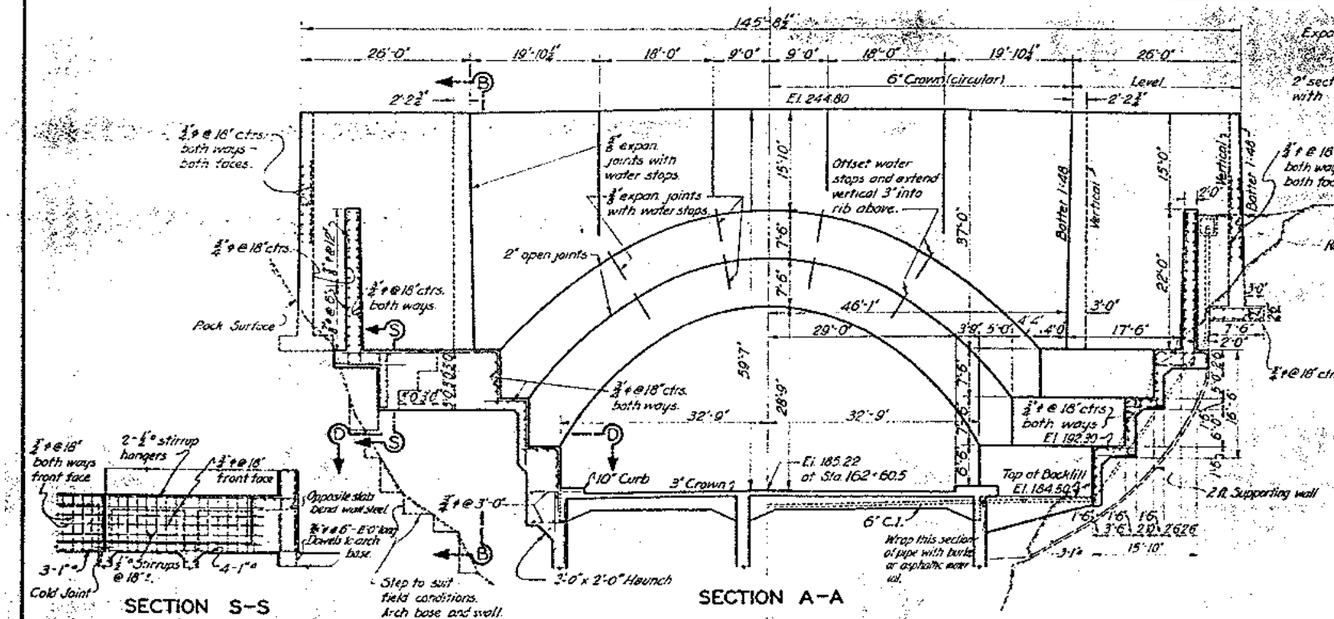
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
WEST TUNNEL PORTAL
GENERAL DETAILS

SCALE IN FEET
10 5 0 10 20

CONTRACT NO. 5. SUP. DRAWING NO. 20B
APRIL - 1934.


POURING SCHEDULE
FOR UPPER ARCH
POURING SCHEDULE
FOR LOWER ARCH
SECTION H-H
BACKFILL REMOVED TO SHOW UPPER ARCH RIB
Expansion Joint
Joints - 5/8" split expan. joint filler with copper water stop.
SECTION F-F
SECTION G-G
SECTION E-E
Upper Deck - Crown of Roadway
Slope for drainage.
Lean concrete backfill. Poured in layers not to exceed 3 ft. thick. Allow initial set between pours. Use a 4 sack mix.
French Drain over extrados
Reinforcement of rear face.
Upper Berm
Batter 1:48
Vertical
Top of Concrete Backfill
Tunnel Lining
Lower Berm
Wrap this section of pipe with burlap or asphaltic material
ELEVATION
Rod | Short | Long
1 | 31'-0" | 45'-6"
2 | 39'-0" | 60'-0"
3 | 46'-6" | 77'-0"
Step to suit field conditions
SECTION J-J
SECTION K-K
TOP COUNTERFORTS SIMILAR
Change of reinforcement at this section.
Note: Line forms with 3 ply veneer on all exposed faces.
Chamfer all edges 1/4" unless otherwise noted.
Concrete - Class "B".
All expansion joints to be filled with asphaltic filler.
All surfaces shown as level shall have approx. 1/8" : 1'-0" slope for drainage.
Expansion Joint
2" open joint
SECTION L-L
SECTION M-M
SECTION N-N
Note: Resident Engineer to decide whether to form under side of steps or to pour steps solid against rock
Cold Joint
Diaphragm Wall - 2 ft thick
12" Fillets
Rock Cut
BOARD OF CONSULTING ENGINEERS
7-18-39 | As Constructed | JLL
6-26-35 | Upper deck cut loose from wall | NDW
1-28-35 | Changed footings to fit new cut. | NDW
Date | Revision | By | Chkd.
CORRECT:
APPROVED:
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
EAST TUNNEL PORTAL
GENERAL DETAILS
SCALE IN FEET
CONTRACT NO. 5
SUP. DRAWING NO. 20C
MARCH - 1934



Date	Revision	By	Ch'd
7-18-35	Corrected for Construction Revisions	J.T.C.	
6-20-35	Upper deck cut loose from wall	J.J.W.	

BOARD OF CONSULTING ENGINEERS

CORRECT:

APPROVED

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

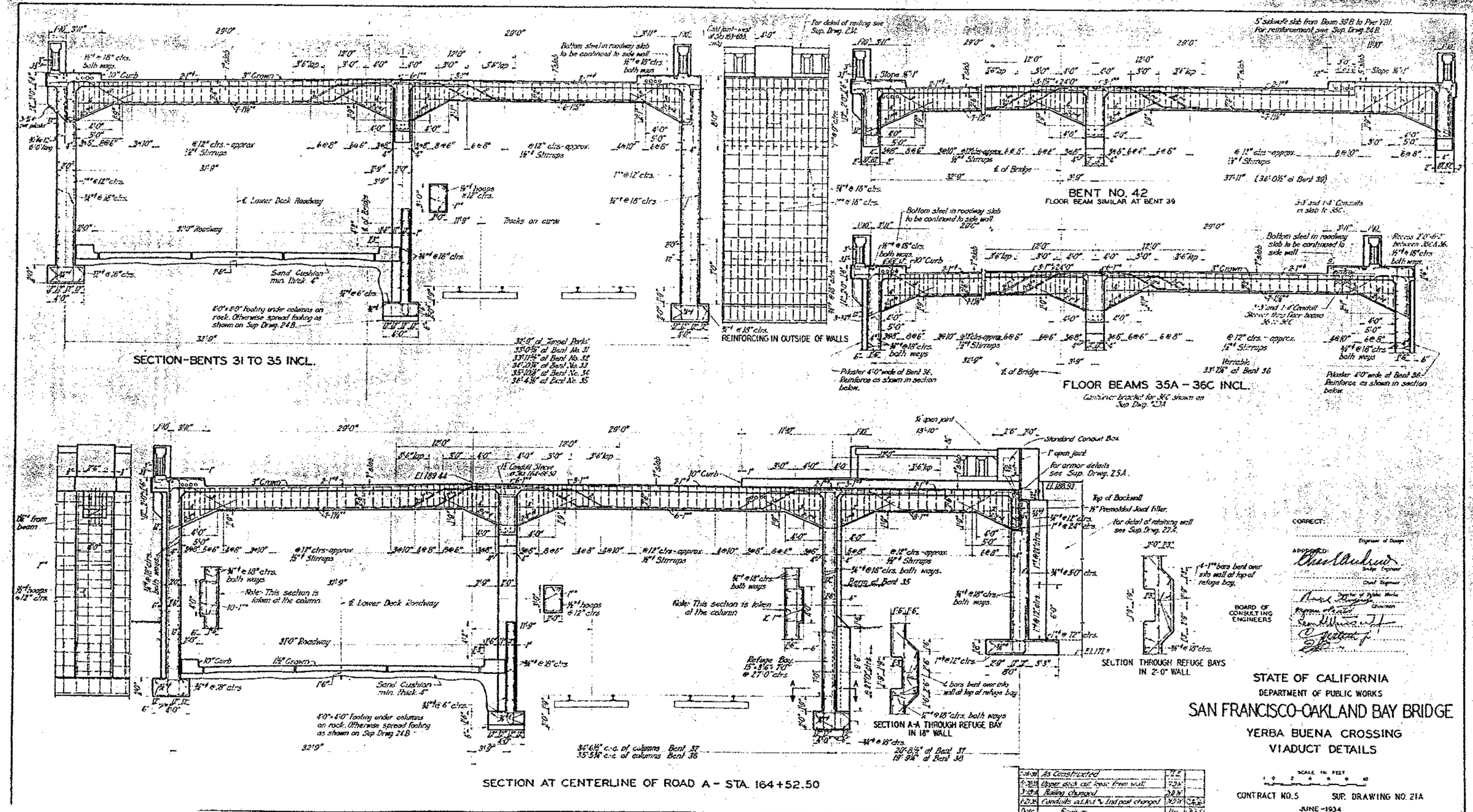
SAN FRANCISCO-OAKLAND BAY BRIDGE

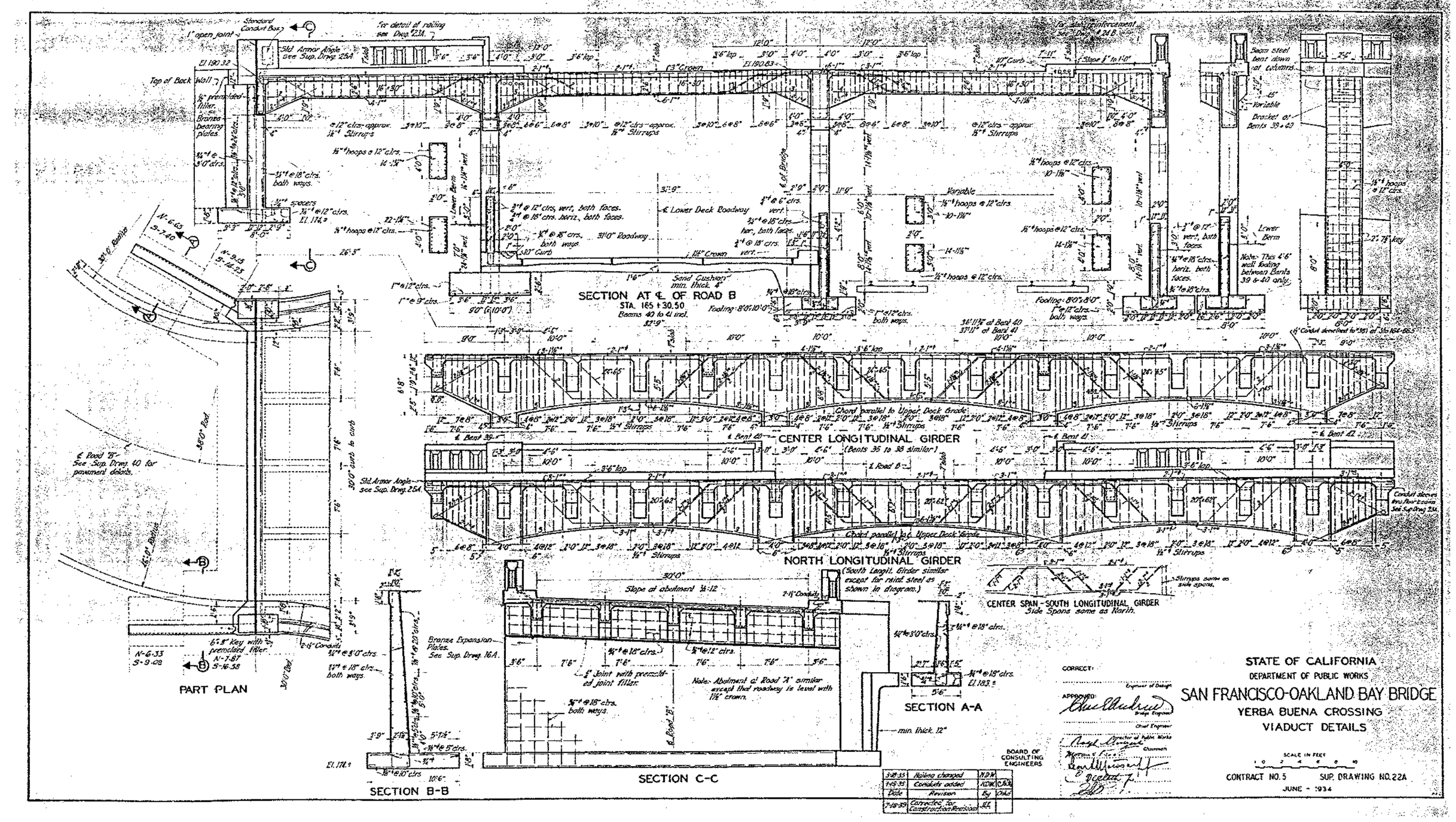
YERBA BUENA CROSSING
EAST TUNNEL PORTAL
GENERAL DETAILS

SCALE IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 200

JANUARY - 1935


SECTION-BENTS 31 TO 35 INCL.
REINFORCING IN OUTSIDE OF WALLS
BENT NO. 42
FLOOR BEAM SIMILAR AT BENT 39
FLOOR BEAMS 35A - 36C INCL.
SECTION AT CENTERLINE OF ROAD A - STA. 164+52.50
SECTION A-A THROUGH REFUGE BAY IN 18" WALL
SECTION THROUGH REFUGE BAYS IN 2'-0" WALL
BOARD OF CONSULTING ENGINEERS
CORRECT:
APPROVED:
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
VIADUCT DETAILS
SCALE IN FEET
CONTRACT NO.5
SUP. DRAWING NO. 21A
JUNE-1934
As Constructed
Upper deck cut loose from wall
Railing changed
Conduits added & End post changed
Date
Revision



3-18-35	Railing changed	N.D.W.
1-15-35	Conduits added	N.D.W. C.S.S.
Date	Revision	By Chkd
7-18-39	Corrected for Construction Revision	R.E.

BOARD OF CONSULTING ENGINEERS

CORRECT:

Engineer of Design

APPROVED:

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

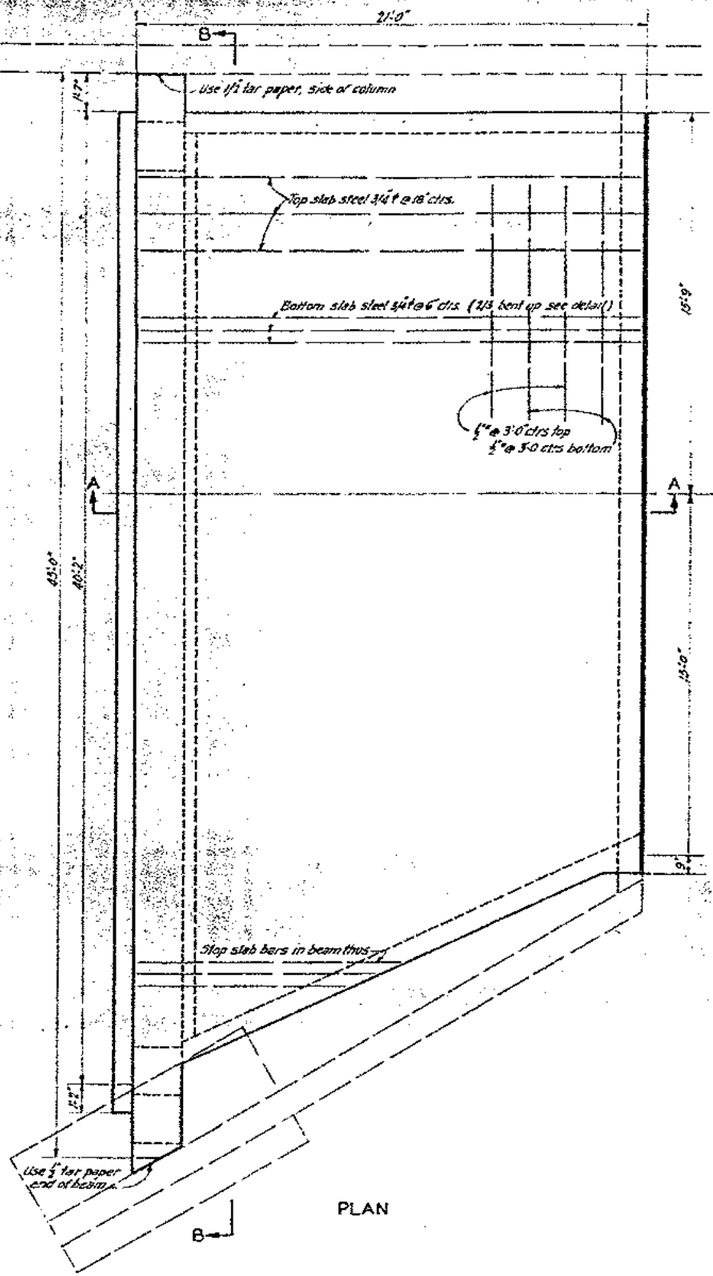
SAN FRANCISCO-OAKLAND BAY BRIDGE

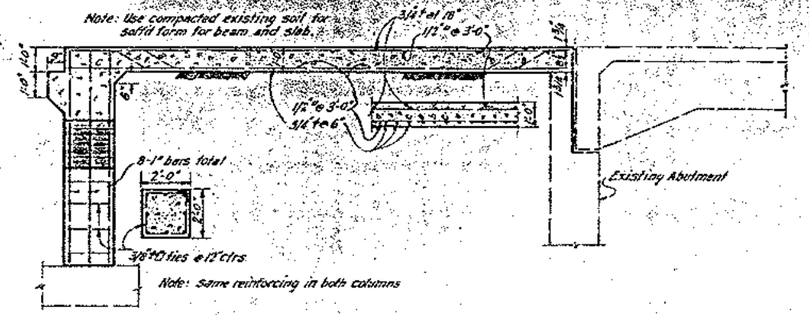
YERBA BUENA CROSSING
VIADUCT DETAILS

SCALE IN FEET
0 2 4 6 8 10

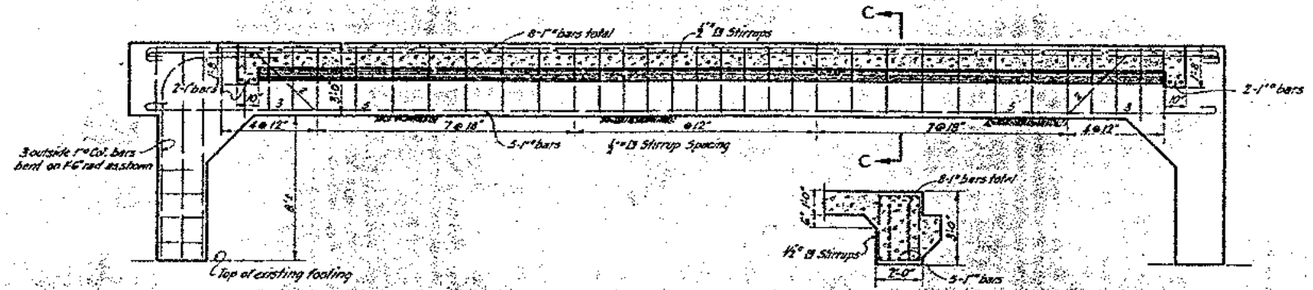
CONTRACT NO. 5 SUP. DRAWING NO. 22A

JUNE - 1934





SECTION A-A



SECTION B-B

SECTION C-C

Note: All work performed in connection with this Drawing to be in accordance with the Specifications for Contract "5".

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

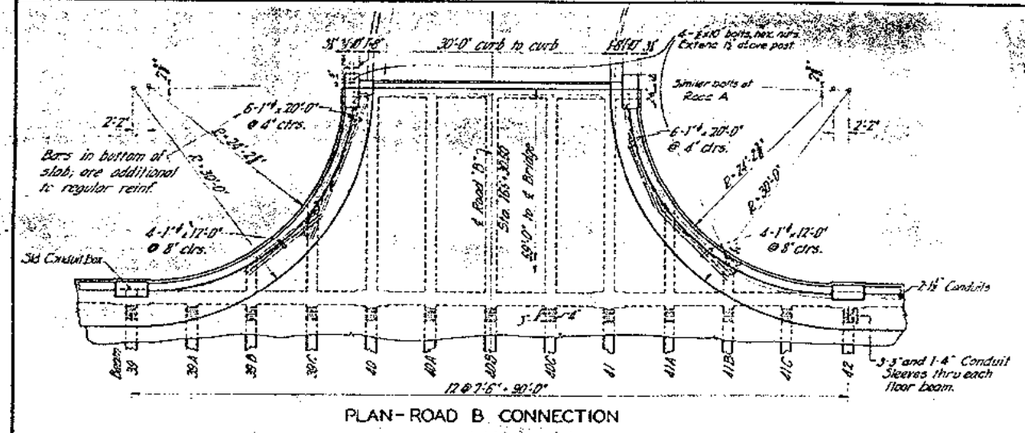
YERBA BUENA CROSSING
ROAD "A" APRON APPROACH

SCALE IN FEET

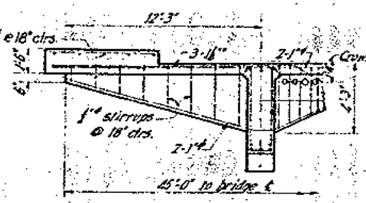
CONTRACT NO. 5 SUP. DRAWING NO. 228

JULY 1936

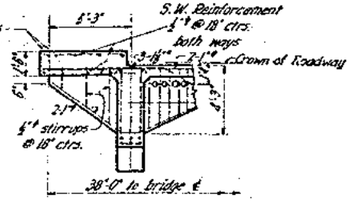
DATE	REVISION	BY	CHKD
7-25-39	As Constructed	T.E.	



PLAN - ROAD B CONNECTION

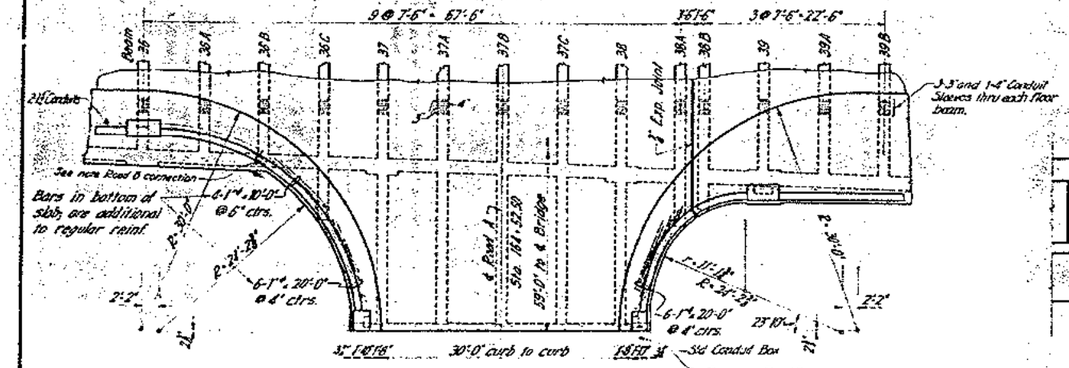


ON BMS. 39C & 41A



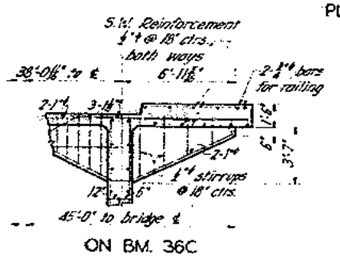
ON BMS. 39B & 41B

CANTILEVER BEAMS

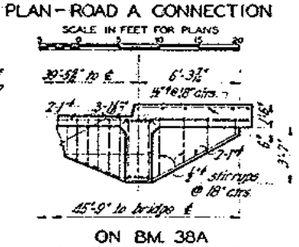


PLAN - ROAD A CONNECTION

SCALE IN FEET FOR PLANS

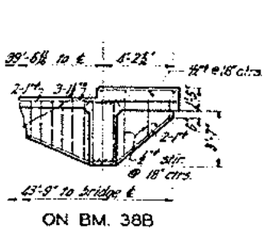


ON BM. 36C

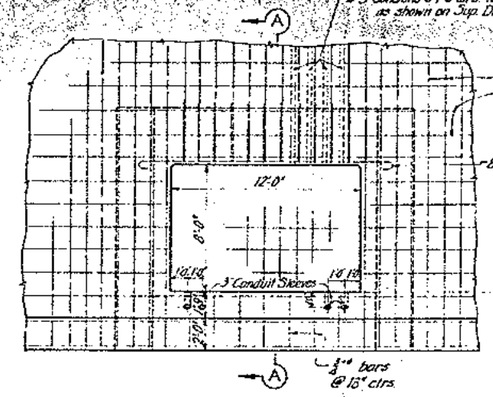


ON BM. 38A
CANTILEVER SEAMS

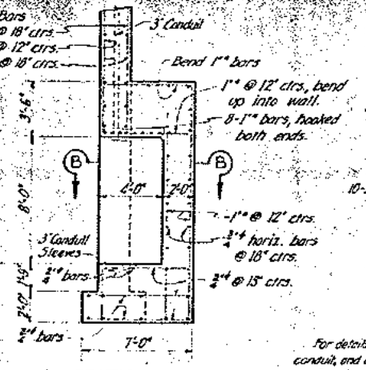
SCALE IN FEET FOR SECTIONS



ON BM. 38B



ELEVATION
(Reinforcing bars in near side of wall.)

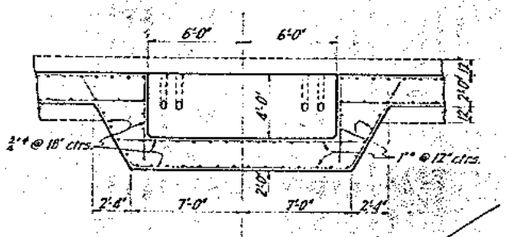


SECTION A-A

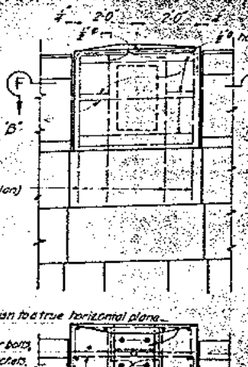
DETAIL OF TRANSFORMER BAY

SCALE IN FEET

Note: For location of Transformer Bays see Sup. Dwgs #13A and #18.



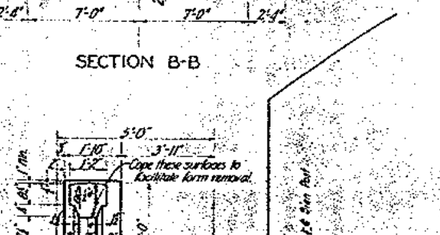
SECTION B-B

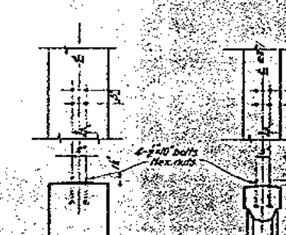


SECTION F-F

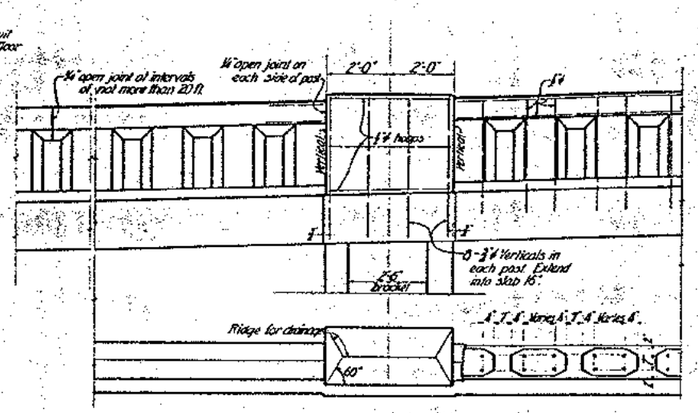
DETAILS AT LAMP POSTS

SCALE IN FEET





DETAIL OF ANCHOR BOLTS FOR SIGN POSTS



DETAIL OF RAILING

SCALE IN FEET

Date	Revision	By	Ch'k'd
7-18-39	As-Constructed	JLE	
1-24-38	Location of signs changed, list of anchor bolts added	WGC	EVL
11-15-35	Bolts for traffic signs	WGC	EVL
10-10-35	Details at lamp posts added	WGC	EVL
3-15-35	Railing changed & detail added	RDW	
1-21-35	Conduits added - End posts changed	RDW	CRR
10-30-34	Detail of transformer bay added	DGP	

BOARD OF CONSULTING ENGINEERS

CORRECT:

Engineer of Design

APPROVED:

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

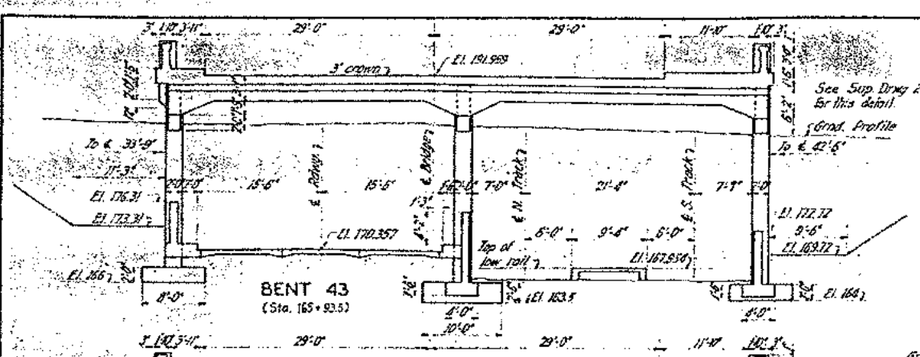
SAN FRANCISCO-OAKLAND BAY BRIDGE

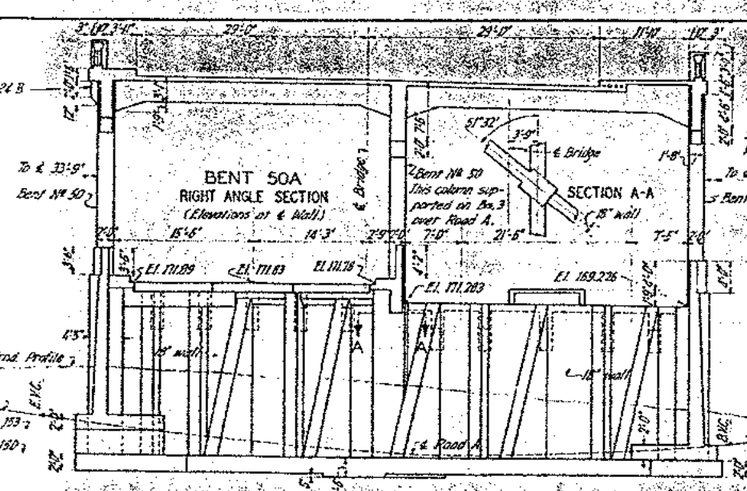
YERBA BUENA CROSSING VIADUCT DETAILS

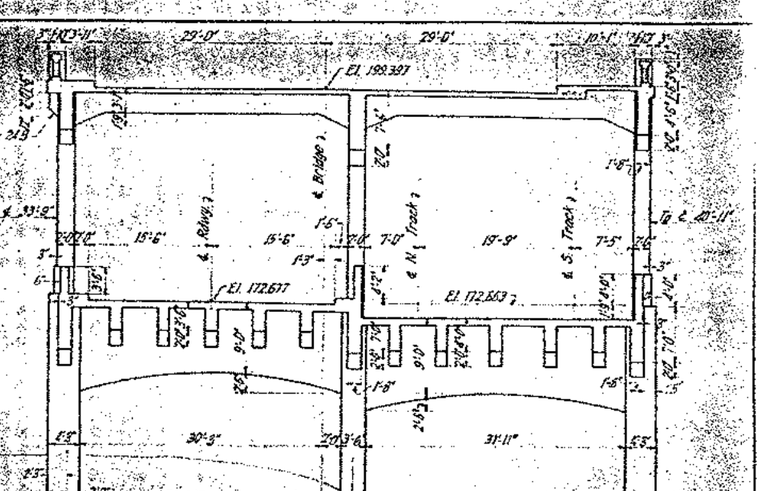
SCALES AS SHOWN

CONTRACT NO. 5 SUP. DRAWING NO. 23A

JULY - 1934







BOARD OF CONSULTING ENGINEERS

CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
TYPICAL SECTIONS
EAST OF TUNNEL

SCALE IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 24A

MAY - 1934

Date	By	Revision
7-18-35	KS	As Constructed
1-15-35	JDW	Railing changed
1-10-35	CRCB	Conduits added
9-15-34	HHB	Columns changed
Date	By	Revision

SECTION A-A

VARIABLE LENGTH FLOOR BEAM
(BEAMS 50A TO 52E INCL.)
Reinforcing same as standard floor beam excepting for dimension "C"

STANDARD FLOOR BEAM
(DETAIL AT BENT 45)
Dimensions constant from 42b to 50 inclusive

UPPER DECK FLOOR BEAM

SECTION B-B

Section CC similar to Section D-D

SECTION D-D

SECTION F-F

SECTION E-E

Bm. No.	A	B	C
50A	37'-10½"	12'-5¾"	17'-3 3/16"
" B	37'-9"		17'-10"
" C	37'-7⅞"		17'-8 13/16"
" D	37'-6⅝"		17'-7⅝"
" E	37'-5⅜"		17'-6 7/16"
51A	37'-4⅛"	11'-11⅛"	17'-5 9/16"
" B	37'-3"	11'-11⅛"	17'-5 5/16"
" C	37'-1⅝"		17'-3 11/16"
" D	37'-0"		17'-2"
" E	36'-9⅛"		16'-10¼"
" F	36'-2⅛"		16'-7"
" G	36'-3⅝"		16'-4 3/16"
52	36'-0"	10'-8"	16'-2⅝"
" A	35'-11⅝"		16'-0 13/16"
" B	35'-8⅛"		15'-9 1/16"
" C	35'-5⅝"		15'-6 5/16"
" D	35'-2⅛"		15'-3 9/16"
" E	34'-11"	9'-6"	15'-0"

DIMENSION TABLE

Date	By	Revision
10-20-34	H.H.D.	Changed dimension of Columns SECTION E-E
1-19-35	C.A.D.	Conduits added
3-18-35	M.D.M.	Railing changed
5-18-35	J.L.C.	Corrected for Construction Revisions

CORRECT:

APPROVED:

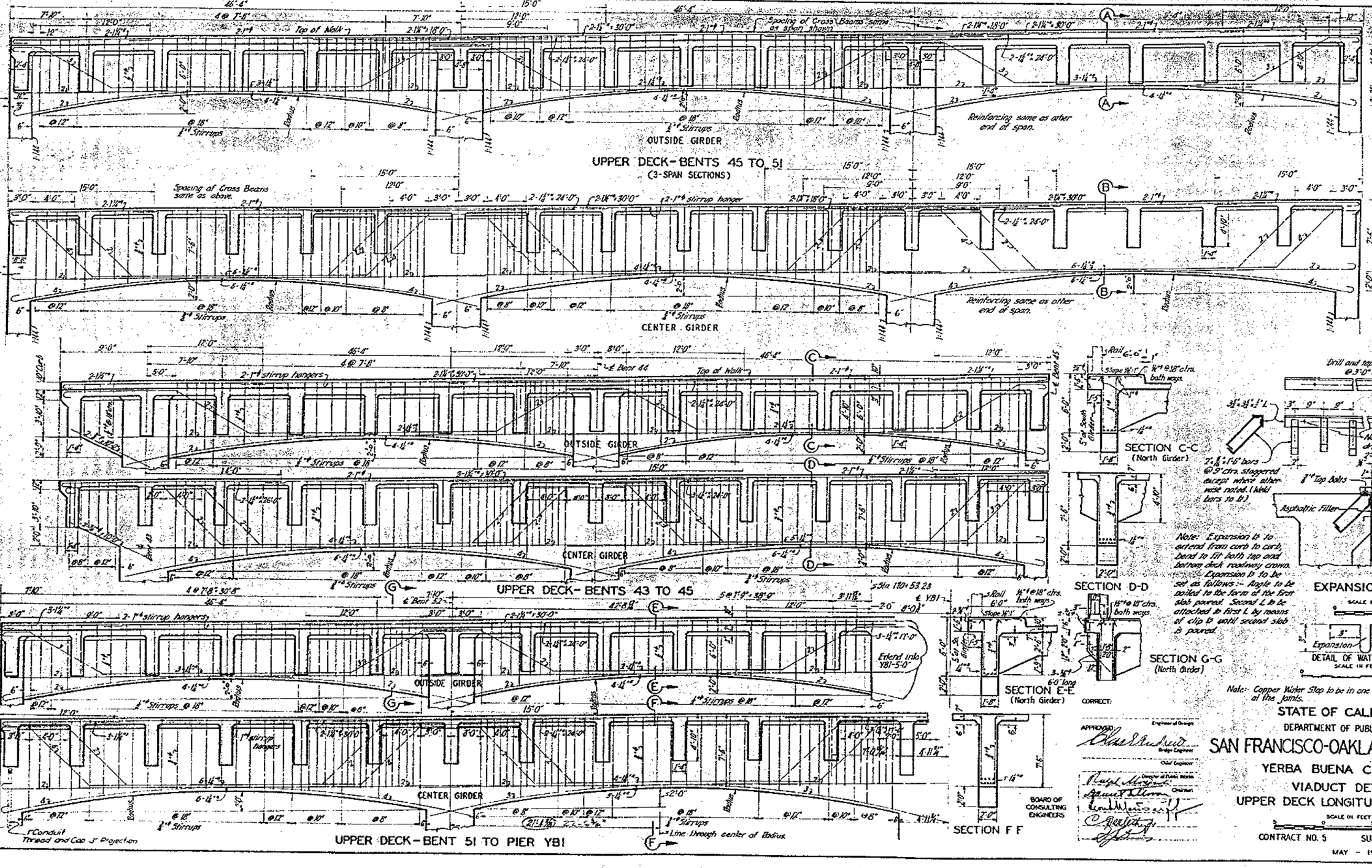
BOARD OF CONSULTING ENGINEERS

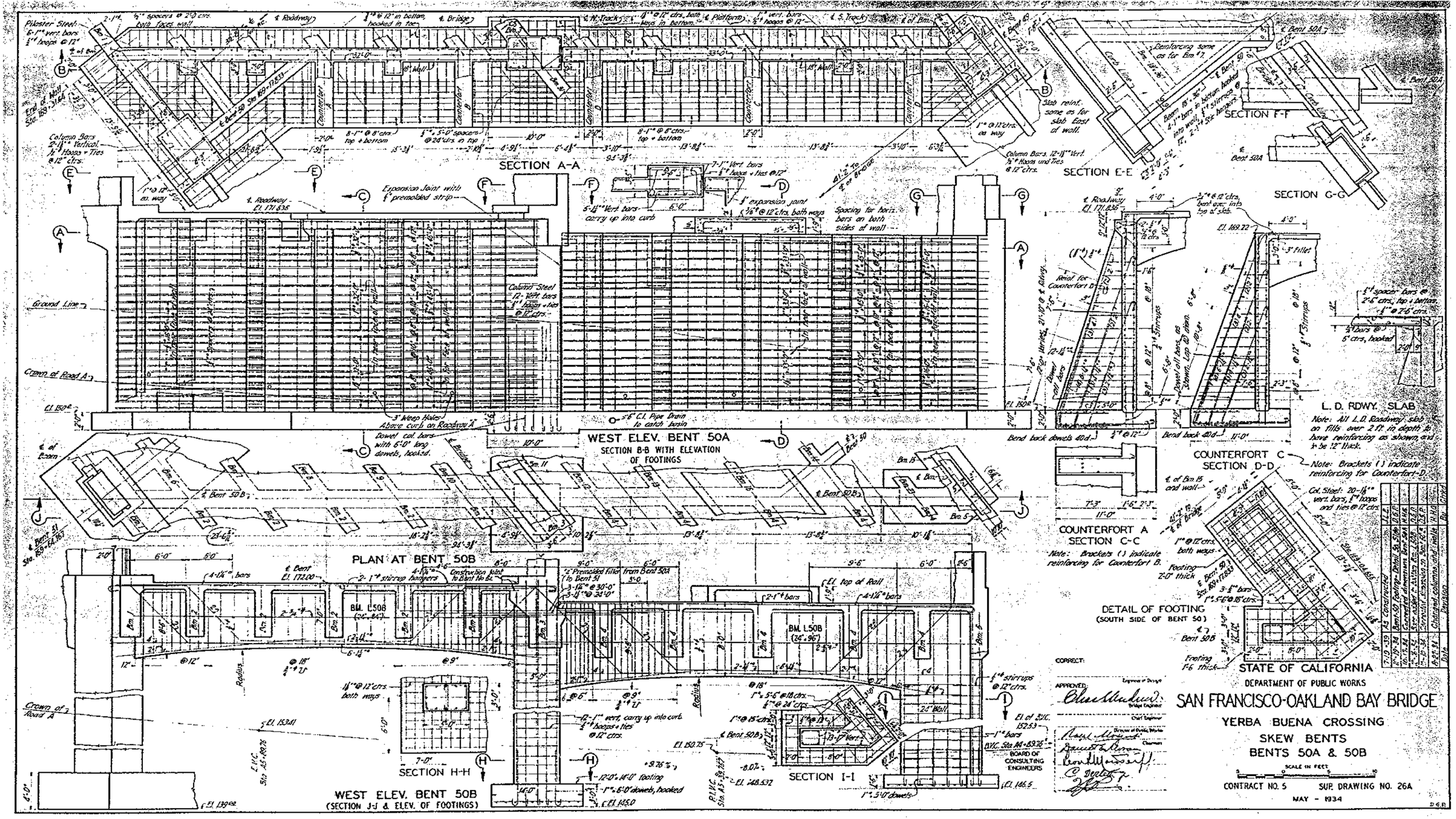
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
UPPER DECK DETAILS

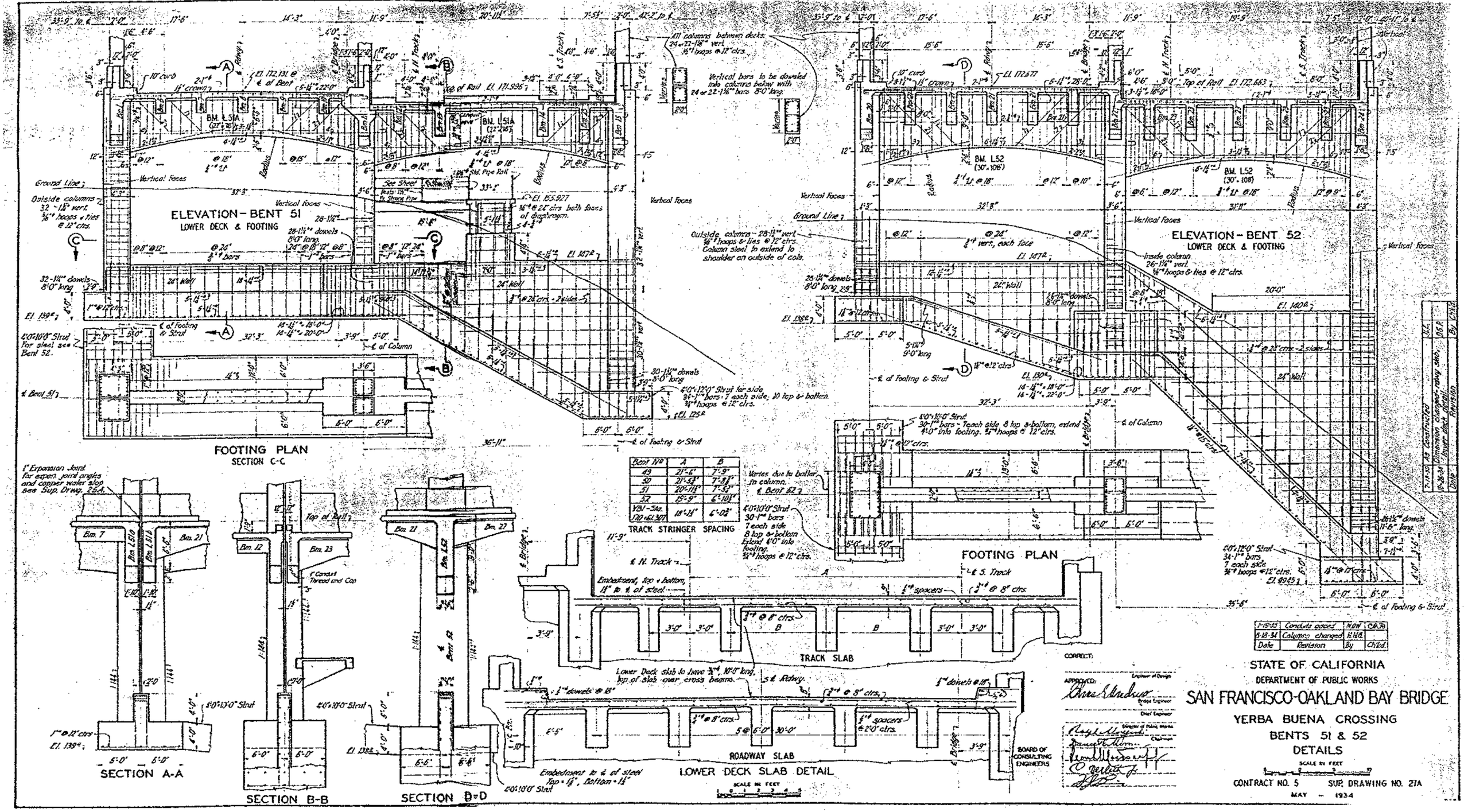
SCALE IN FEET 0 1 2 3 10

CONTRACT NO. 5 SUP. DRAWING NO. 24B

MAY - 1934


OUTSIDE GIRDER
UPPER DECK-BENTS 45 TO 51
(3-SPAN SECTIONS)
CENTER GIRDER
OUTSIDE GIRDER
CENTER GIRDER
UPPER DECK-BENTS 43 TO 45
OUTSIDE GIRDER
CENTER GIRDER
UPPER DECK-BENT 51 TO PIER YB1
SECTION A-A
(North Girder)
SECTION B-B
SECTION C-C
(North Girder)
SECTION D-D
SECTION E-E
(North Girder)
SECTION G-G
(North Girder)
SECTION F F
EXPANSION ANGLES
DETAIL OF WATER STOP
BOARD OF CONSULTING ENGINEERS
CORRECT:
APPROVED:
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
VIADUCT DETAILS
UPPER DECK LONGITUDINAL GIRDERS
CONTRACT NO. 5
SUB DRAWING NO. 25A
MAY - 1934
D.G.P.


SECTION A-A
SECTION E-E
SECTION F-F
SECTION G-G
WEST ELEV. BENT 50A
SECTION B-B WITH ELEVATION OF FOOTINGS
L. D. RDWY. SLAB
COUNTERFORT C
SECTION D-D
COUNTERFORT A
SECTION C-C
PLAN AT BENT 50B
DETAIL OF FOOTING
(SOUTH SIDE OF BENT 50)
SECTION H-H
SECTION I-I
WEST ELEV. BENT 50B
(SECTION J-J & ELEV. OF FOOTINGS)
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
SKEW BENTS
BENTS 50A & 50B
CONTRACT NO. 5
SUP. DRAWING NO. 26A
MAY - 1934
BOARD OF CONSULTING ENGINEERS


ELEVATION – BENT 51
LOWER DECK & FOOTING
ELEVATION – BENT 52
LOWER DECK & FOOTING
FOOTING PLAN
SECTION C-C
FOOTING PLAN
TRACK STRINGER SPACING
SECTION A-A
SECTION B-B
SECTION D-D
TRACK SLAB
ROADWAY SLAB
LOWER DECK SLAB DETAIL
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
BENTS 51 & 52
DETAILS
CONTRACT NO. 5
SUP. DRAWING NO. 27A
MAY – 1934

SECTION A-A

SECTION B-B

NORTH GIRDER
LOWER DECK

SECTION C-C

CENTER GIRDER
LOWER DECK - BENTS 49 TO 51

CENTER GIRDER
LOWER DECK - BENT 51 TO YBI

SOUTH GIRDER
LOWER DECK - BENTS 49 TO 51

TRACK STRINGER

TRACK STRINGER

ROAD STRINGER

ROAD STRINGER

7-15-39	CORRECTED FOR CONSTRUCTION REVISIONS	J.L.E.	
1-17-35	Conduits added	N.D.W.	Ch'd.
10-16-34	Bars added to bottom of curved beams Changed depth of Bm. 24 & 31	D.G.P.	
9-18-34	Outside Girders changed Columns changed	H.H.G.	
Date	Revision	By	Ch'd

BOARD OF CONSULTING ENGINEERS

CORRECT:

APPROVED: Engineer in Charge

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
LOWER DECK GIRDERS & STRINGERS

SCALE IN FEET

CONTRACT NO. 5 SUR DRAWING NO. 28A

MAY - 1934

FOOTING PLAN - SOUTH SIDE

FOOTING PLAN - NORTH SIDE

SOUTH ELEVATION

STEEL SHOWN IN BACK OF WALL

NORTH ELEVATION

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SECTION E-E

SECTION F-F

SECTION G-G

CORRECT:

APPROVED: Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman Finance Committee

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

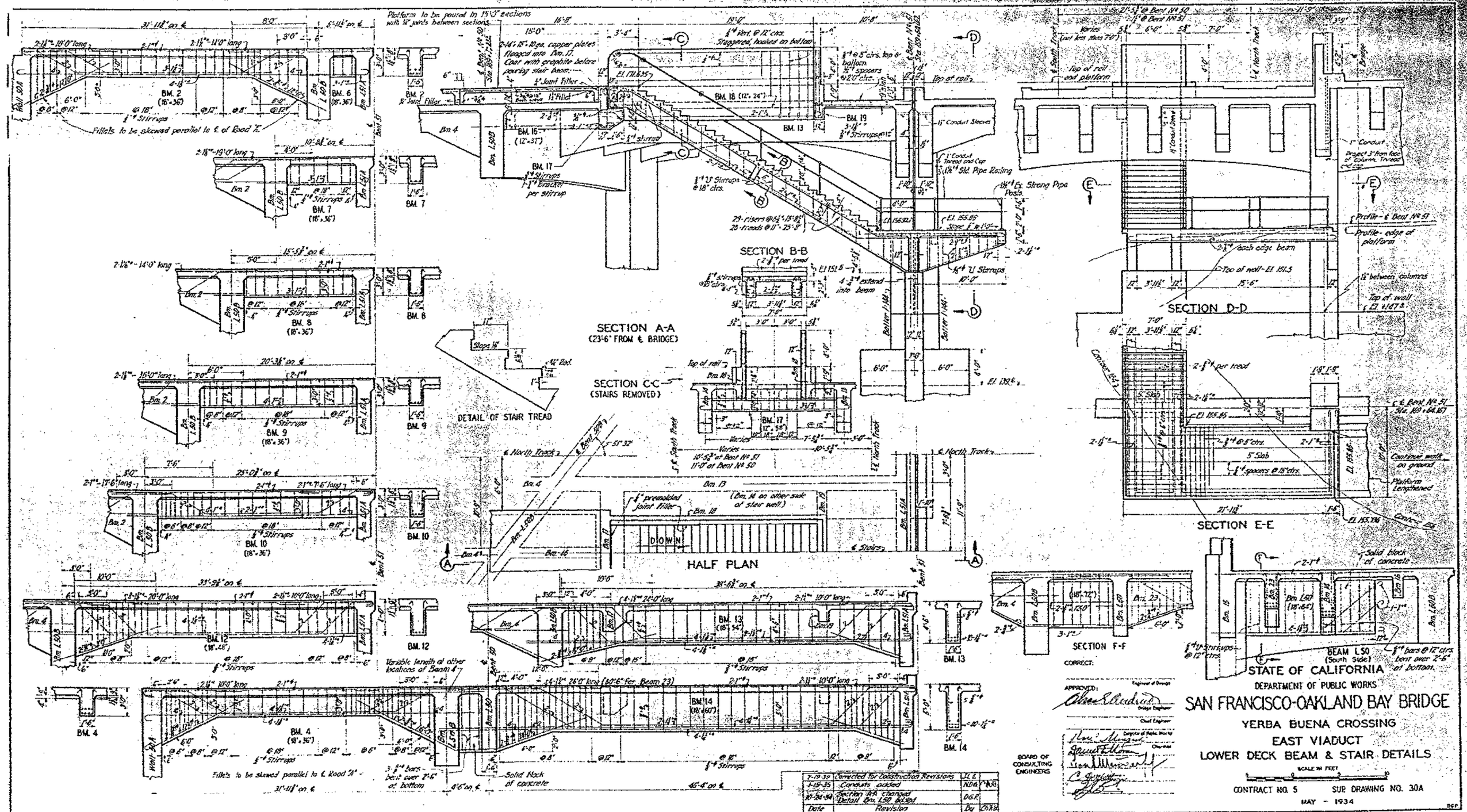
YERBA BUENA CROSSING

RETAINING WALLS

SCALE IN FEET

CONTRACT NO. 5 SUB DRAWING NO. 29A

AUGUST - 1934


SECTION A-A
(23'-6" FROM ℄ BRIDGE)
SECTION B-B
SECTION C-C
(STAIRS REMOVED)
SECTION D-D
SECTION E-E
SECTION F-F
DETAIL OF STAIR TREAD
HALF PLAN
DOWN
BEAM L50
(South Side)
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
EAST VIADUCT
LOWER DECK BEAM & STAIR DETAILS
SCALE IN FEET
CONTRACT NO. 5
SUB DRAWING NO. 30A
MAY - 1934
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS
7-19-39 Corrected for Construction Revisions
1-15-35 Conduits added
10-24-34 Section A-A changed Detail Bm. L50 added
Date Revision By Ch'k'd

Date	Revision	By	Chkd.
7-19-39	As Constructed		
1-16-35	Conduits added.	KHA	C.S.D.
3-31-34	Change in location of drain pipe.	J.G.P.	
7-2-34	Change in So. wall of Pier, L.D. beams, railings. Addition of skid girder.	B.G.P.	
?-11-34	Changed Elevations of shoulders on Pier Shafts North & South sides.	KHA	
8-13-34	Changed outside beams Lower Deck	H.H.D.	

CORRECT:

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING

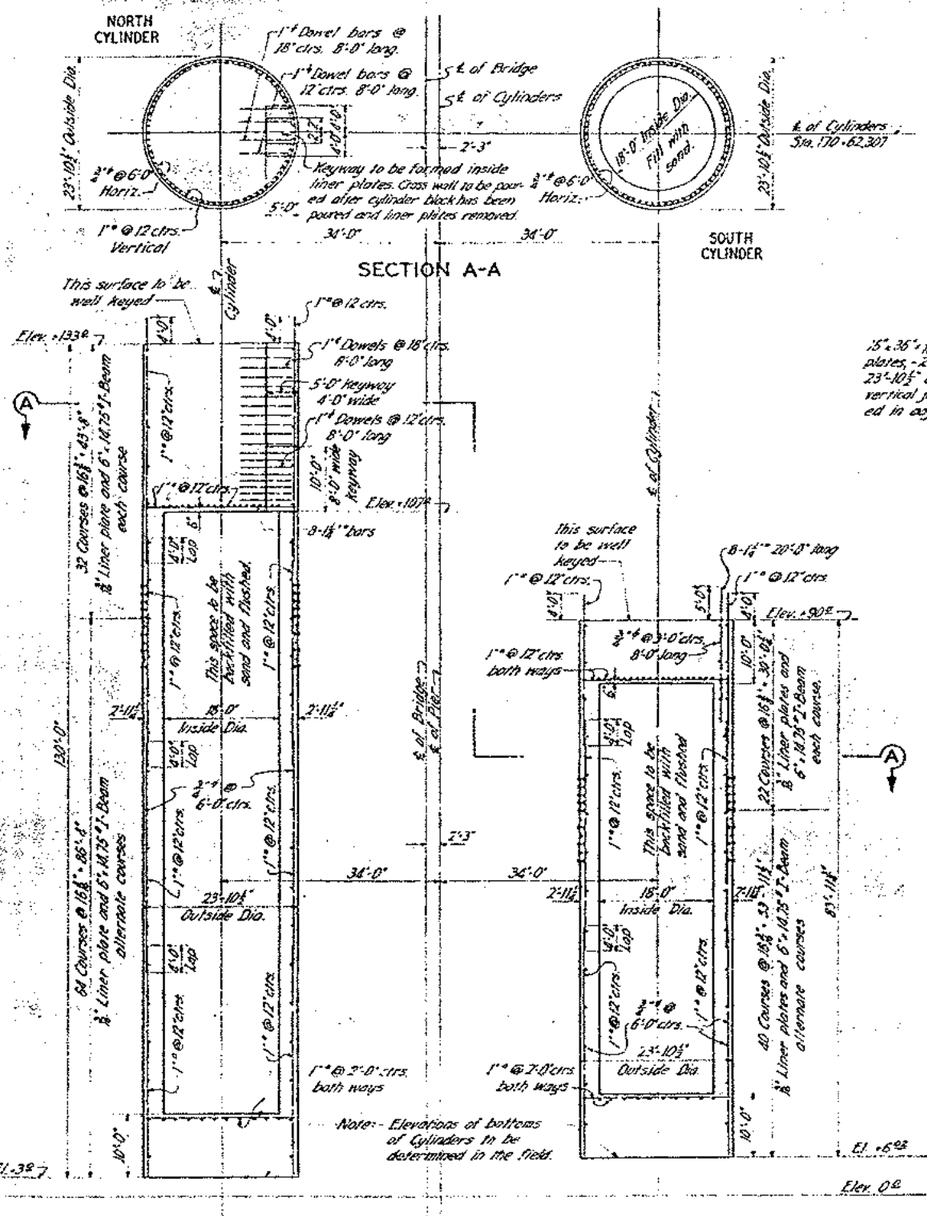
PIER YB1

DETAILS

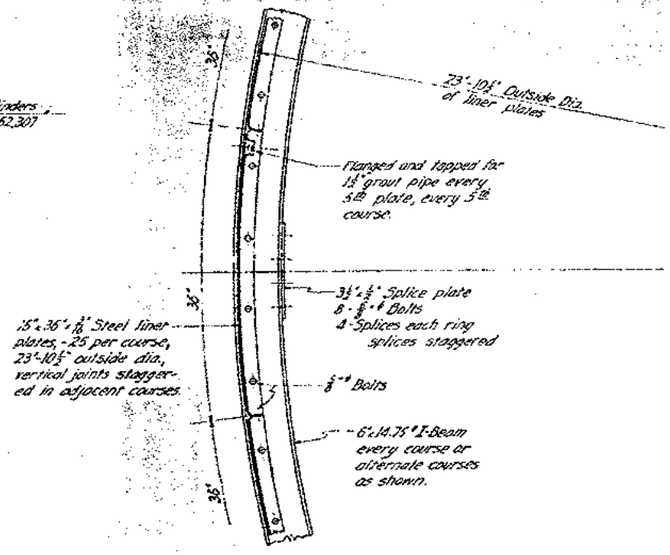
SCALE IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 31A

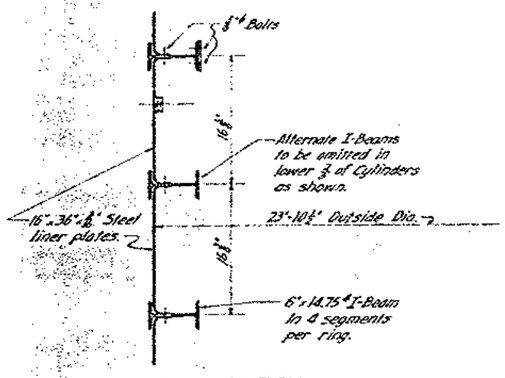
FEBRUARY 1934



TRANSVERSE SECTION
THRU CYLINDERS



HORIZONTAL SECTION
THRU SHELL



VERTICAL SECTION
THRU SHELL

DETAIL OF LINER PLATES
AND RIBBING

SCALE IN FEET 0 1 2

Note: All concrete shown to be Class B.

CORRECT:
APPROVED:

BOARD OF CONSULTING ENGINEERS

DATE	REVISION	BY	CHKD
7-19-39	As Constructed	T.T.F.	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

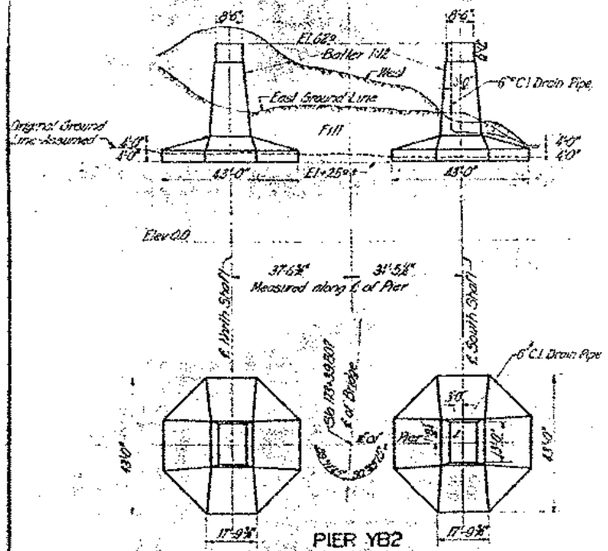
SAN FRANCISCO-OAKLAND BAY BRIDGE

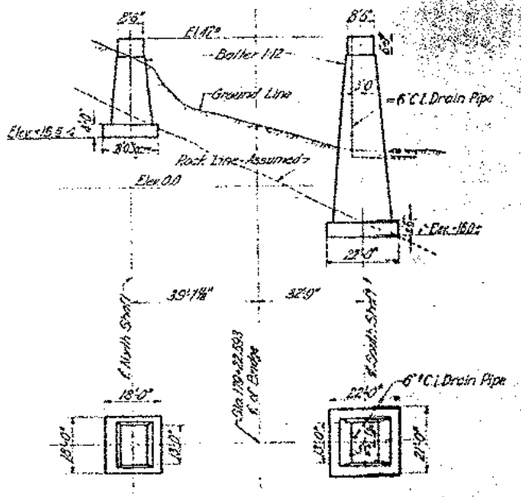
YERBA BUENA CROSSING
PIER YB1
CYLINDERS & LINER PLATES

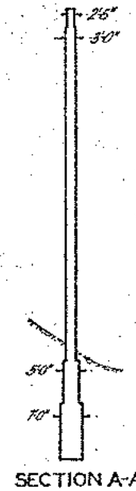
SCALE IN FEET 10 0 10 20

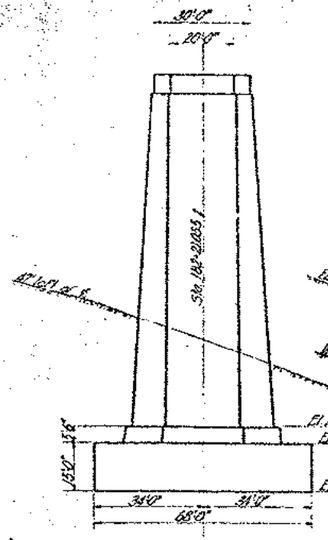
CONTRACT NO. 5 SUP. DRAWING NO. 31B
FEBRUARY - 1934

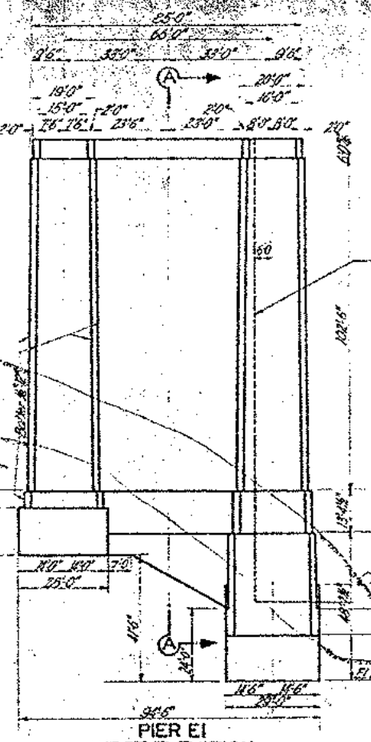
42
36

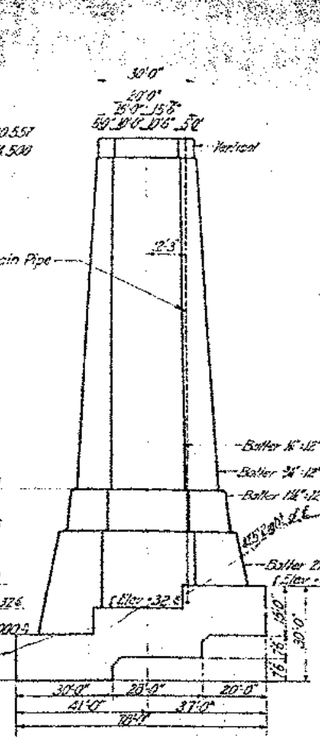


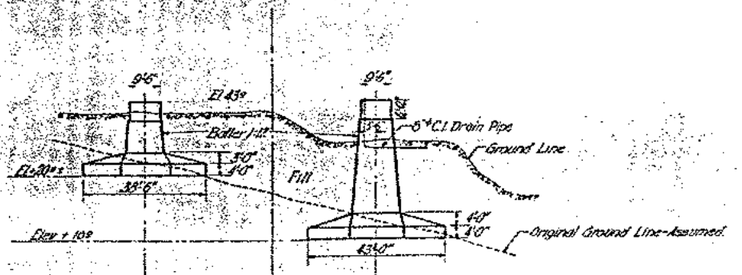












Note: Exact footing elevations are to be determined in the field by the Engineer.
See Dwg No 1 for details of alignment.
Cast iron drain pipes to extend approximately 10'-0 outside of concrete. Vitrified clay pipe to be installed to carry drainage from C.I. pipe to existing sewer lines at to the Bay.

No.	Revision	By	Date
1	Art Contractive	JLLS	
2	Batter YB4 corrected	AS	
3	C.I. Drain corrected	CS	
4	Rev E-1 footing corrected	CS	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING

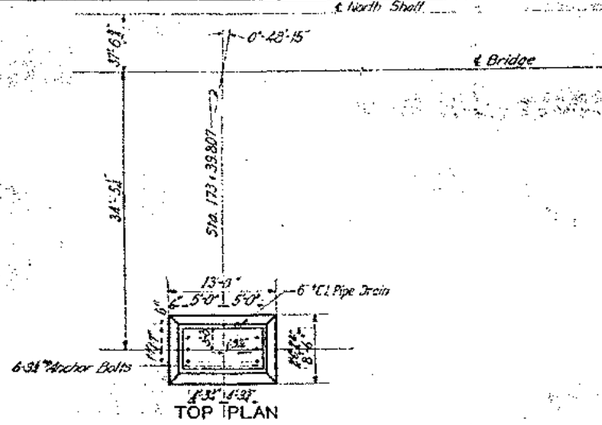
PIERS YB2 YB3 YB4 AND E1
PLANS AND ELEVATIONS

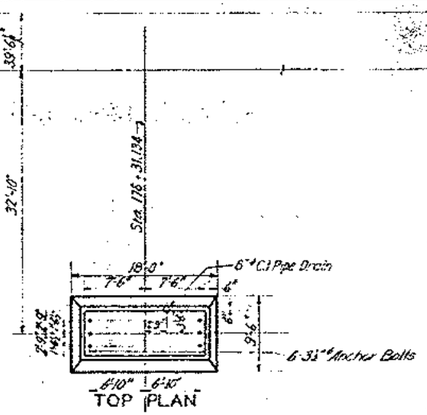
SCALE IN FEET
40 0 10 20 30 40

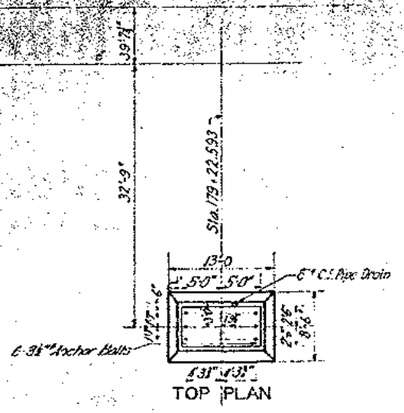
CONTRACT NO. 5 SUP. DRAWING NO. 32A

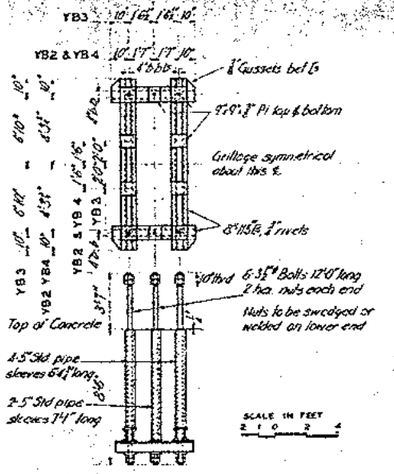
JANUARY - 1934

CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS







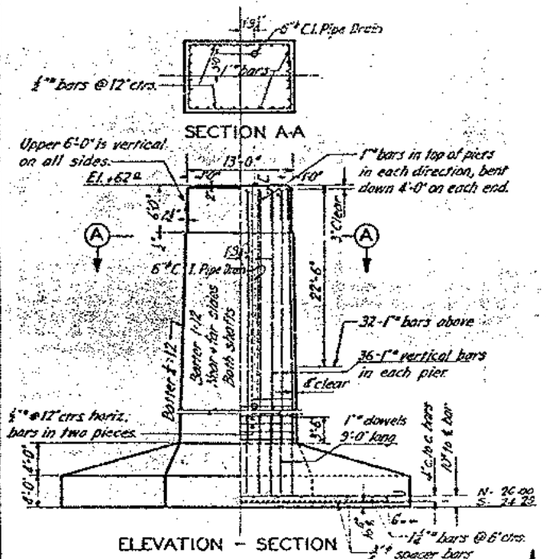


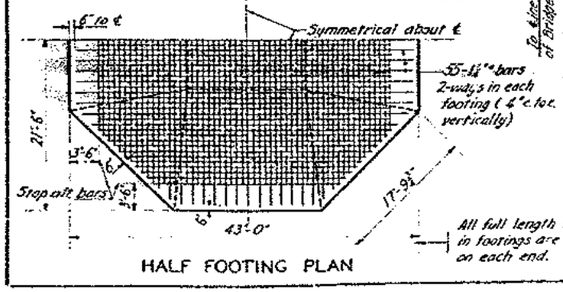
ANCHOR BOLTS AND GRILLAGES

2 REQ'D. PIER YB2
2 REQ'D. PIER YB3
2 REQ'D. PIER YB4

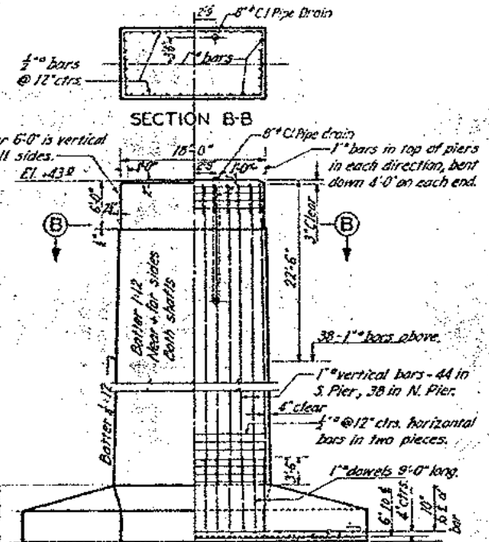
Note: Elevations of bottom of footings to be determined by the Engineer in the field.
Splices in reinforcing to be lapped 40 diameters.
Hooks as per Sup. Dwg. 34A.
Drainage lines on South Piers as per Sup. Dwg. 32A.

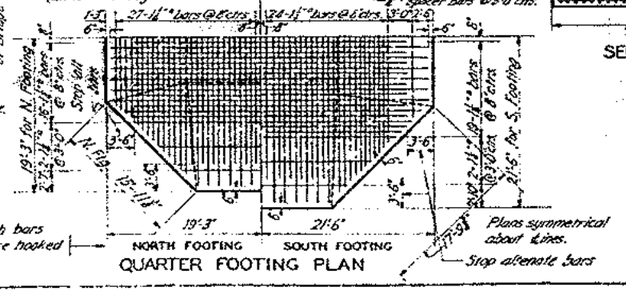
PIER YB2



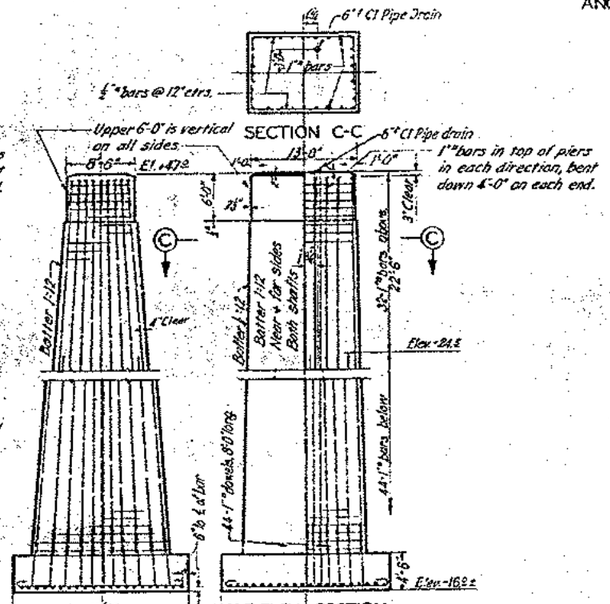


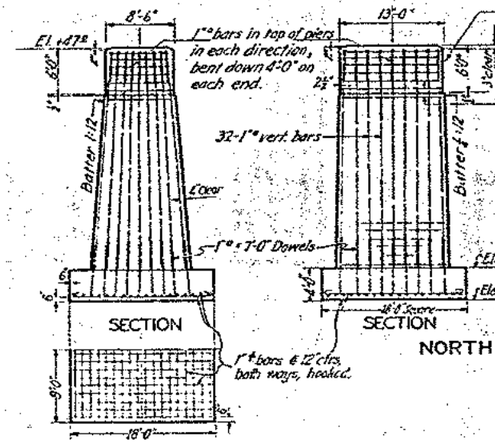
PIER YB3





PIER YB4





12-30-33	Construction Revisions	RE
11-1-33	Anchor Bolts Lengthened	HH
10-31-33	one inch	
10-20-33	Adding Hd. cutwater	JH
10-7-33	Adding Hd. cutwater	JH
9-29-33	C.I. Pipe Drains added	JH
Date	Revision	By

CORRECT:
Glenn Billingsley
APPROVED:
Chas. H. Purcell
M. M. Sinnen
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
PIERS YB2-YB3-YB4
DETAILS

SCALE IN FEET
CONTRACT NO. 5 — SUP. DRAWING NO. 33A
DECEMBER - 1933

PLAN–TOP OF PIERS

WATERPROOFING DETAIL AT CENTER OF PIER TOP

SECTION A–A

PLAN OF FOOTINGS

SECTION B–B

SECTION C–C

TYPICAL HOOK

SECTION D–D

EAST ELEVATION

SOUTH ELEVATION

PLAN OF NORTH SHAFT

SECTION OF NORTH SHAFT AT BOTTOM OF EYE BAR ANCHORAGE

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

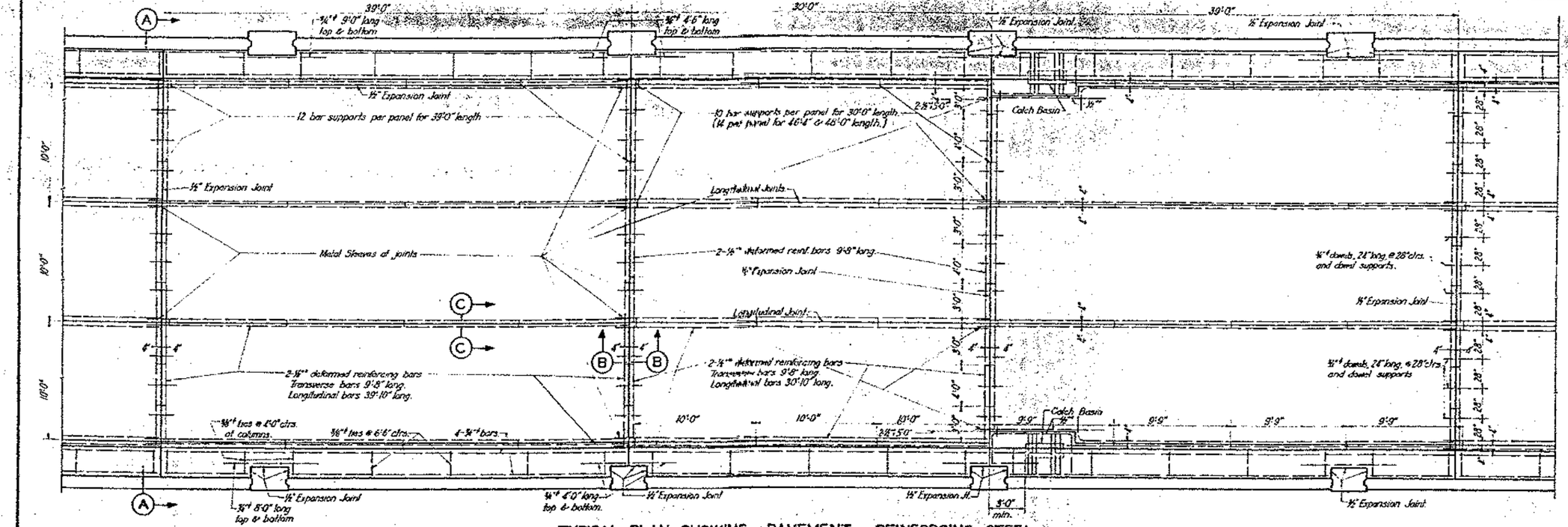
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING

DETAILS PIER E1

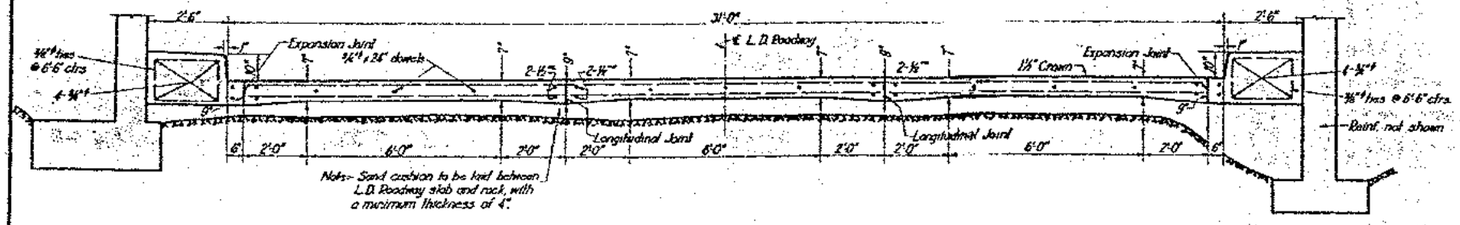
CONTRACT NO. 5 SUP. DRAWING NO. 34A

JANUARY - 1934



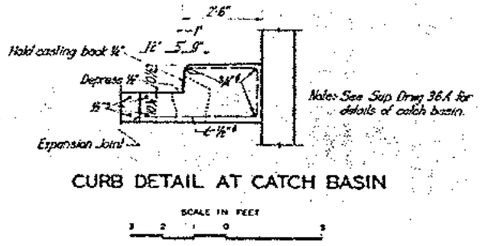
TYPICAL PLAN SHOWING PAVEMENT REINFORCING STEEL
LOWER DECK

SCALE IN FEET
3 2 1 0 3



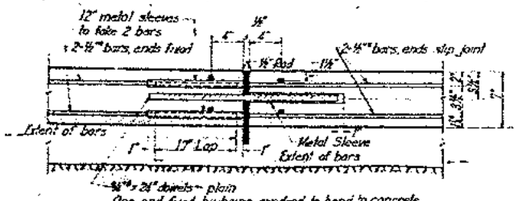
SECTION A-A

SCALE IN FEET
3 2 1 0 3



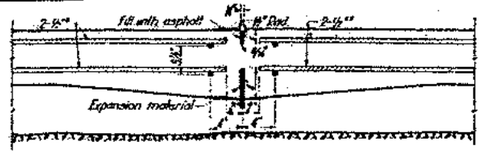
CURB DETAIL AT CATCH BASIN

SCALE IN FEET
3 2 1 0 3



SECTION B-B

SCALE IN INCHES
12 0 6 3 0 12



SECTION C-C
(SHOWING LONG. WEAKENED PLANE JOINT)

SCALE IN INCHES
12 0 6 3 0 12

Note- All bars to be wired at points of contact with 14 gauge wire.

BOARD OF CONSULTING ENGINEERS

CORRECT:

APPROVED:

Engineer in charge

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

DATE	REVISION	BY	CHK'D.
7-29-39	As Constructed	J.L.	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

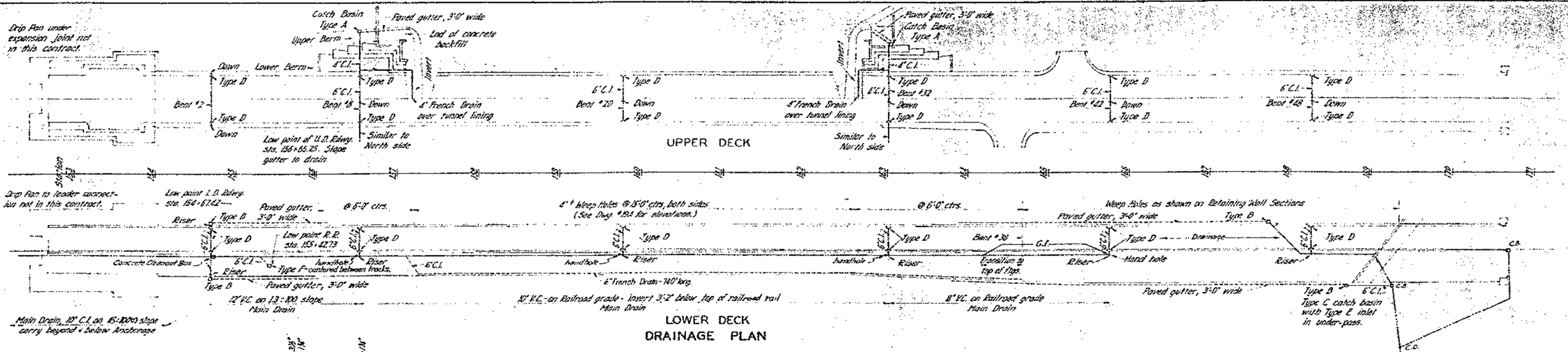
SAN FRANCISCO-OAKLAND BAY BRIDGE

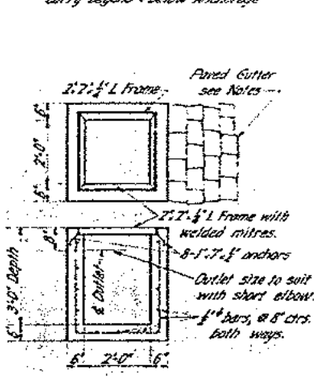
YERBA BUENA CROSSING
PAVEMENT DETAILS

SCALE AS SHOWN

CONTRACT NO. 5 SUP. DRAWING NO. 35A

SEPTEMBER - 1934

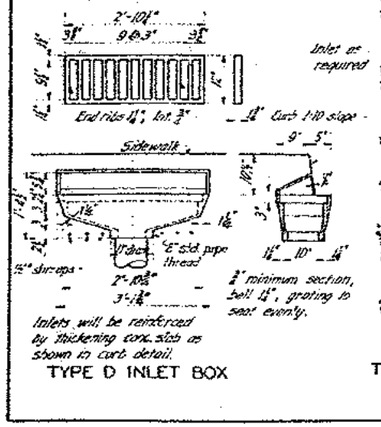




TYPE A CATCH BASIN

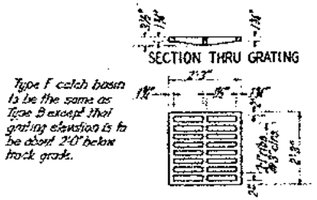
Type B catch basin similar to Type A with 2'-3" depth.

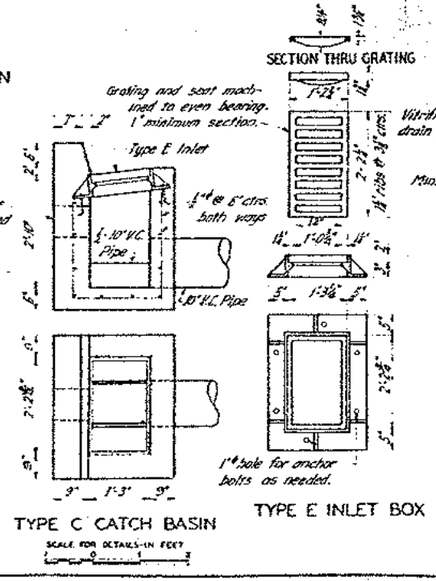
SCALE IN FEET



Inlets will be reinforced by thickening conc. slab as shown in curb detail.

TYPE D INLET BOX

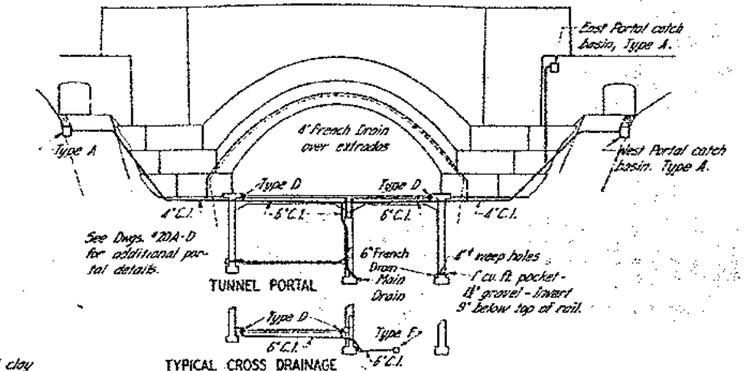


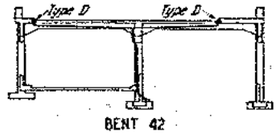


TYPE C CATCH BASIN

SCALE FOR DETAILS IN FEET

TYPE E INLET BOX



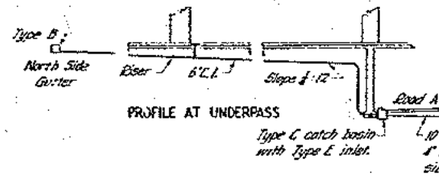


BENT 42

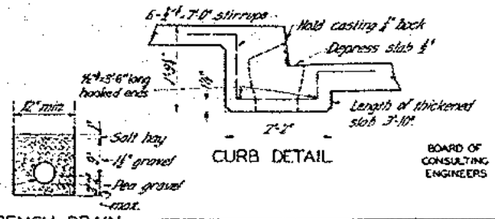
BENT 2

SECTIONS

SCALE IN FEET



PROFILE AT UNDERPASS



FRENCH DRAIN

CURB DETAIL

NOTES

For additional drainage details see drawing #38.

See structural plans and details for location and size of columns, walls, beams and slabs. Locate inlets using standard fittings.

Suspended pipe shall have maximum grades obtainable without impairing clearances. All other drains shall be graded as shown on plans and where grades are not specified shall have a fall to fit ground with a minimum of ¼" to 1'-0".

All cast iron pipe shall be Class A bell and spigot. Fittings shall be long turn pattern except into catch basins, Type A and D, and where clearances will be impaired. T or Y cleanouts shall be located at top of risers. Pipe hangers, beam clamps, concrete inserts, wall and ceiling brackets shall be Grinnell Co's malleable or cast iron, or equal. Clean out plugs are to be brass with standard thread.

Under interurban tracks cast iron pipe is to be covered with a minimum 4" of concrete. All suspended pipe is to be supported at each joint and at not more than 10 ft. intervals.

Vitrified clay pipe is to be laid in a cradle of lean concrete, 1:9, minimum thickness 3" except at bell. Connections are to be made with proper Y's and T's and above the center of the main sewer where practical.

Wrought iron pipe is to be used for concrete sleeves and for two weep holes in Yerba Buena Cable Anchorage.

Castings are of medium cast iron.

Paved Gutters are to be replaced by Concrete - See A.W.O. #19

CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

BOARD OF CONSULTING ENGINEERS

DATE	REVISION	BY	CHKD.
7-30-34	Corrected for Construction Revisions	V.L.E.	

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

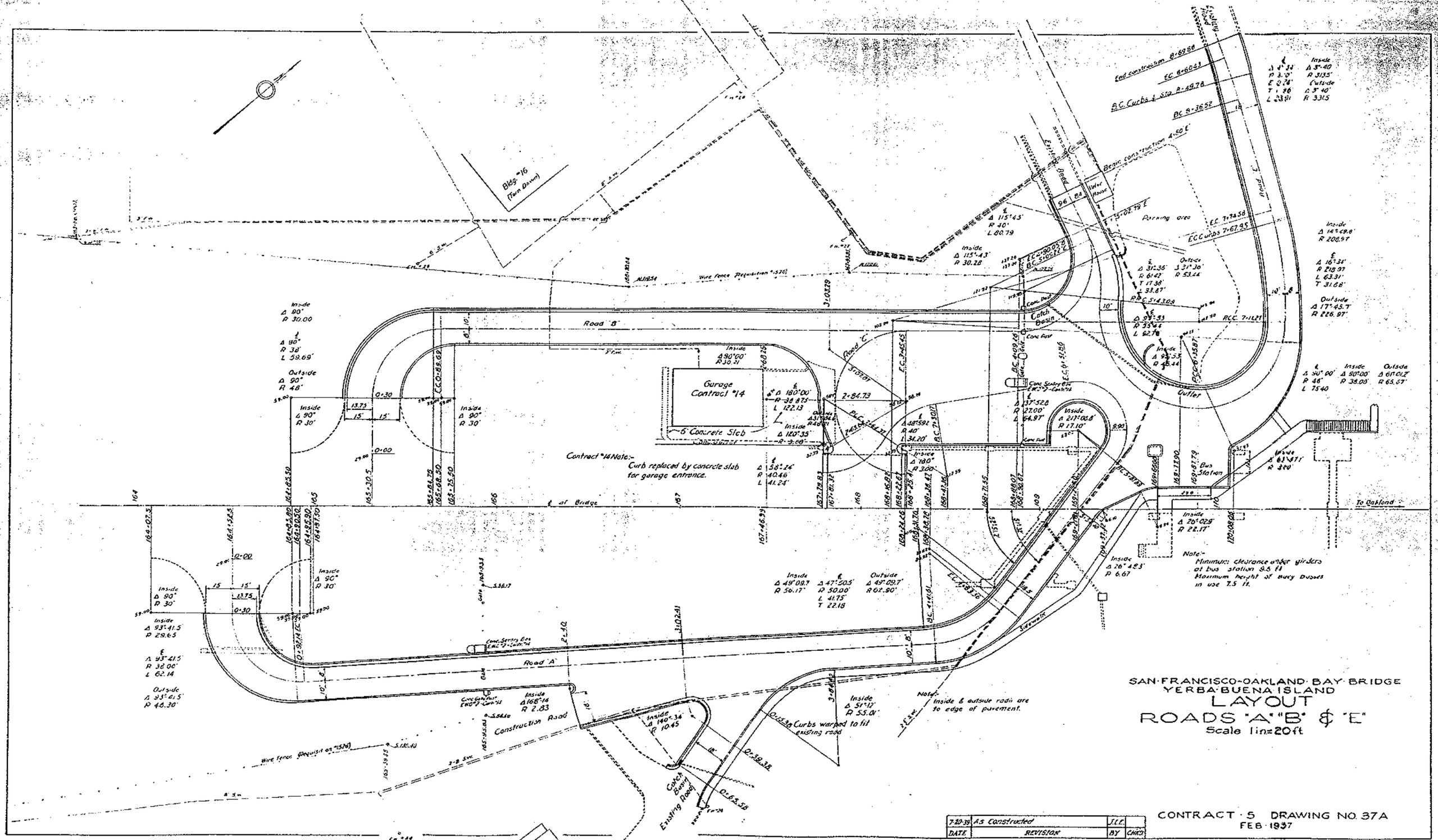
YERBA BUENA CROSSING

DRAINAGE DETAILS

SCALE FOR PLANS IN FEET

CONTRACT NO. 5 SUP. DRAWING NO. 36A

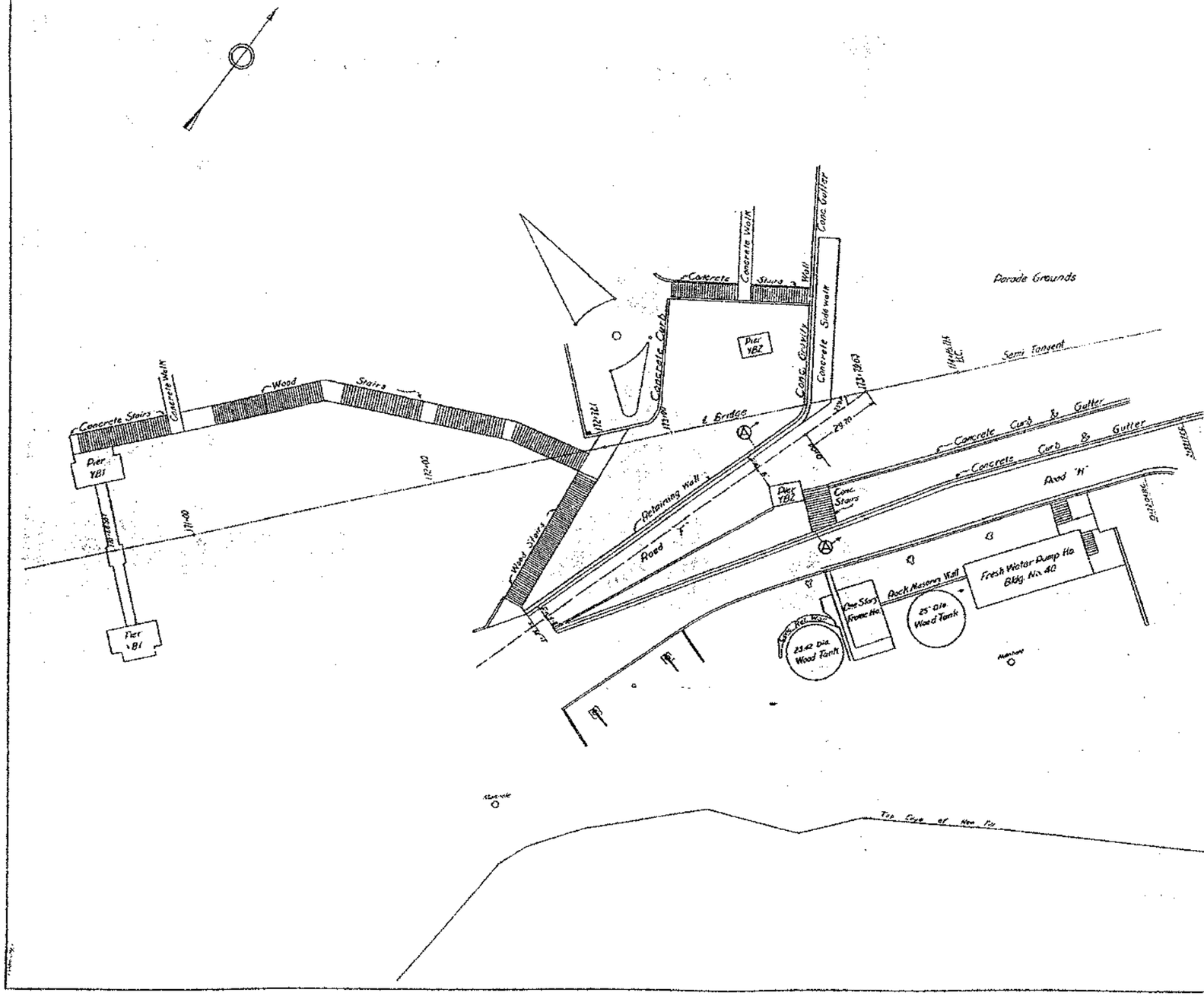
AUGUST - 1934

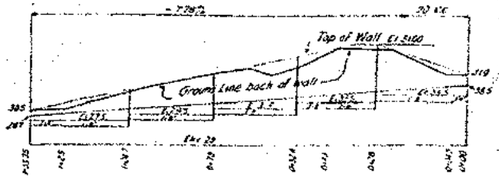


SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA ISLAND
LAYOUT
ROADS "A" "B" & "E"
Scale 1 in = 20 ft

DATE	REVISION	BY	CHKD
7-20-39	As Constructed	J.L.E.	

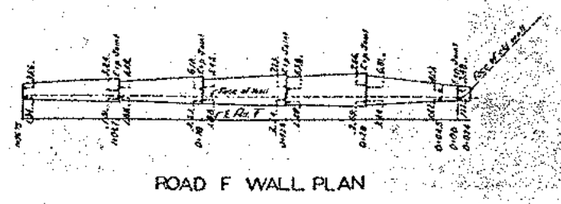
CONTRACT 5 DRAWING NO. 37A
FEB 1937





ROAD F PROFILE

SECTION A-A

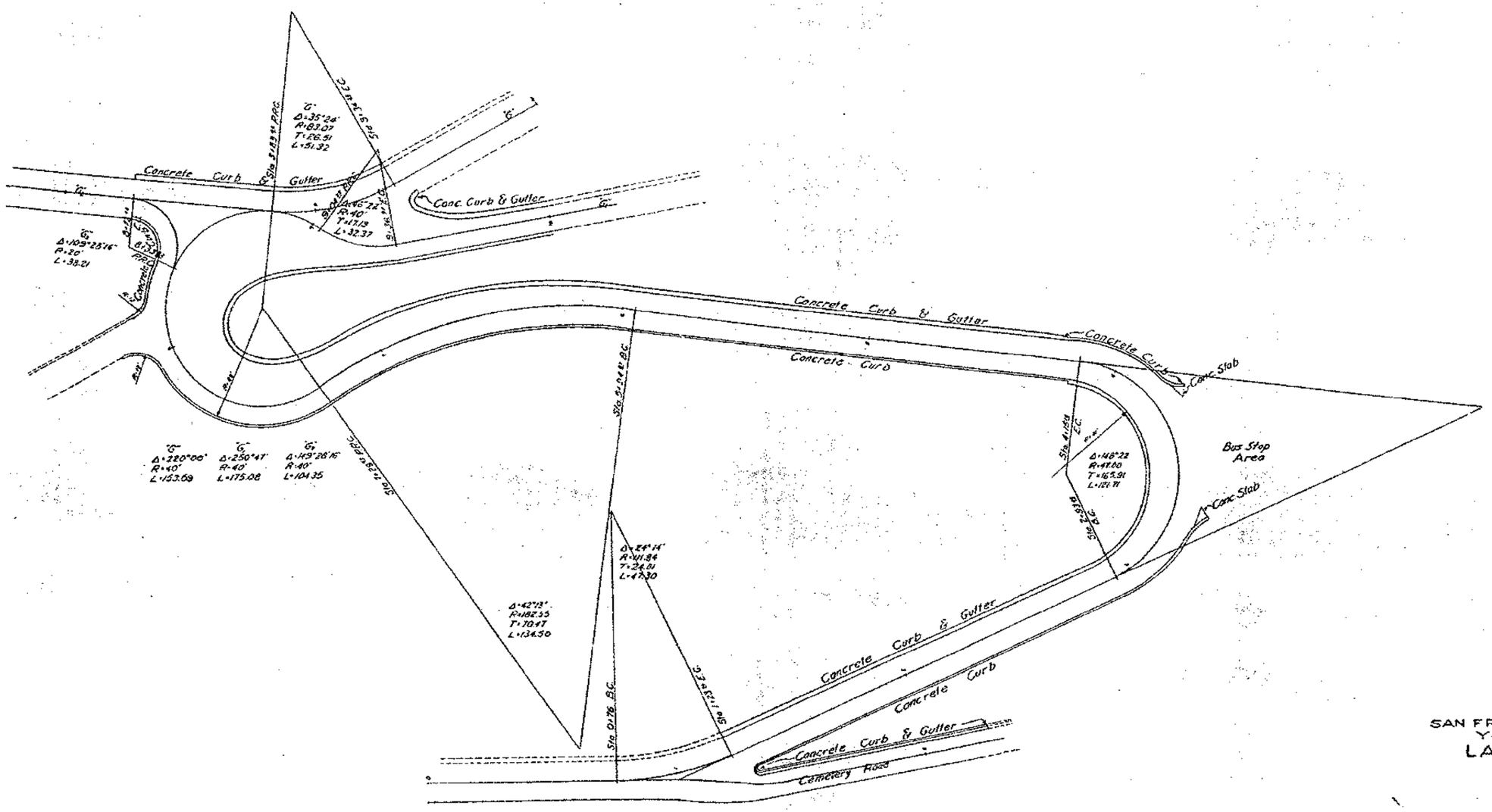


ROAD F WALL PLAN

SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA ISLAND
LAY-OUT OF ROAD "F"
WITH RETAINING WALLS
Scale 1 in. = 20 ft.

DATE	REVISION	BY	CHKD
7-20-39	As Constructed	JEE	

CONTRACT · 5 · DRAWING NO. 38A
FEB · 1937

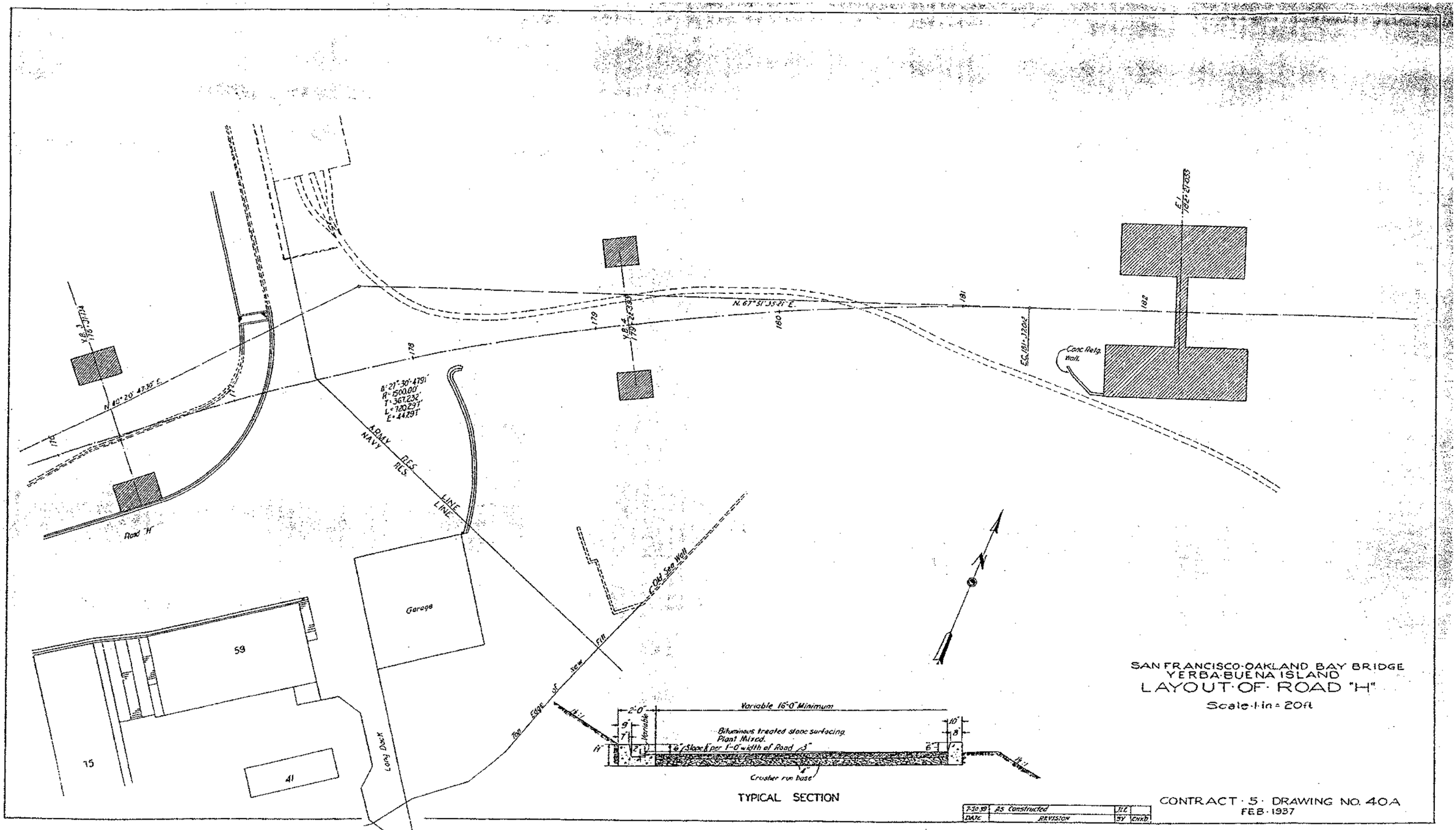


SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA ISLAND
LAY-OUT OF ROAD "G"
AS BUILT
Scale 1 in. = 20 ft.

Legend:-
As Built ——
Existing ------

DATE	REVISION	BY	CHKD.
7-30-38	As Constructed	JJZ	

CONTRACT · 5 · DRAWING NO. 39A
FEB · 1937



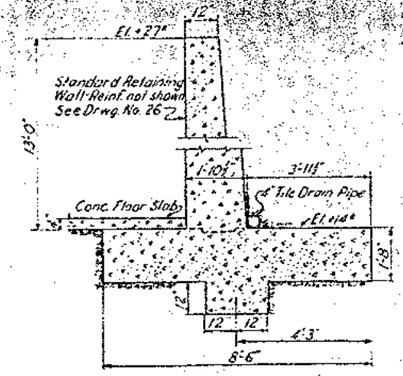
N. 67° 51' 35.21" E.
N. 40° 20' 47.30" E.
Conc. Retg. Wall
Road "H"
ARMY RES. LINE
NAVY RES. LINE
Garage
Old Sea Wall
Top Edge of New Fill
Long Dock
59
75
41
Variable 16'-0" Minimum
Bituminous treated stone surfacing. Plant Mixed.
Slope ⅛" per 1'-0" width of Road
Crusher run base
TYPICAL SECTION
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA-BUENA ISLAND
LAYOUT OF ROAD "H"
Scale 1 in = 20 ft
CONTRACT · 5 · DRAWING NO. 40A
FEB · 1937
7-20-39 AS Constructed
DATE REVISION BY CHKD

SECTION A-A

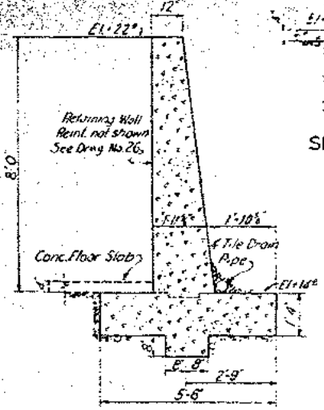
SECTION B-B

SECTION C-C

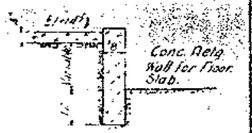
SECTION E-E
(BLDG. No. 59)



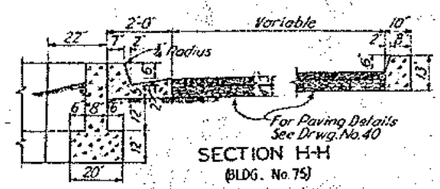
SECTION F-F
(BLDG. No. 59)



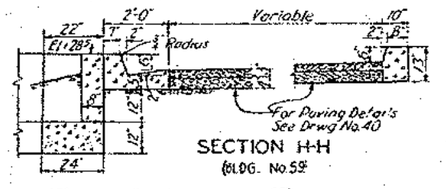
SECTION D-D
(BLDG. No. 75)



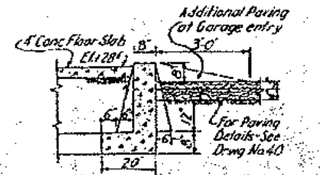
SECTION N-N
(BLDG. No. 41)



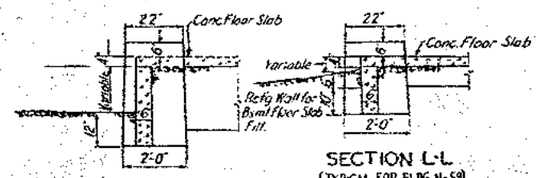
SECTION H-H
(BLDG. No. 75)



SECTION H-H
(BLDG. No. 59)

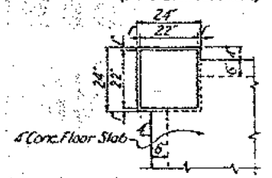


SECTION M-M

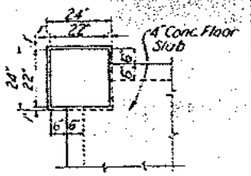


SECTION L-L
(TYPICAL FOR BLDG. No. 59)

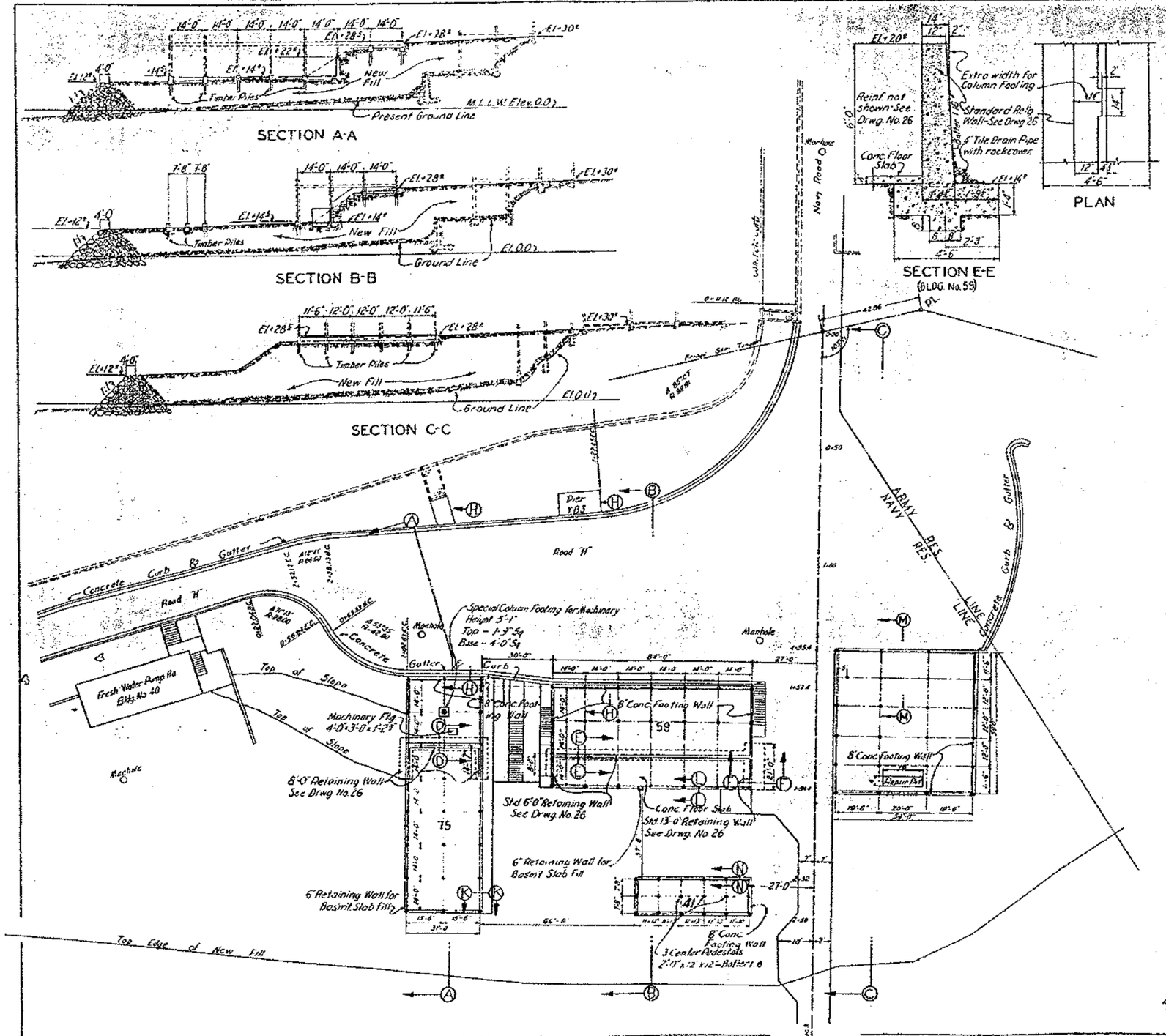
SECTION K-K
(TYPICAL FOR BLDG. No. 75)



PLAN



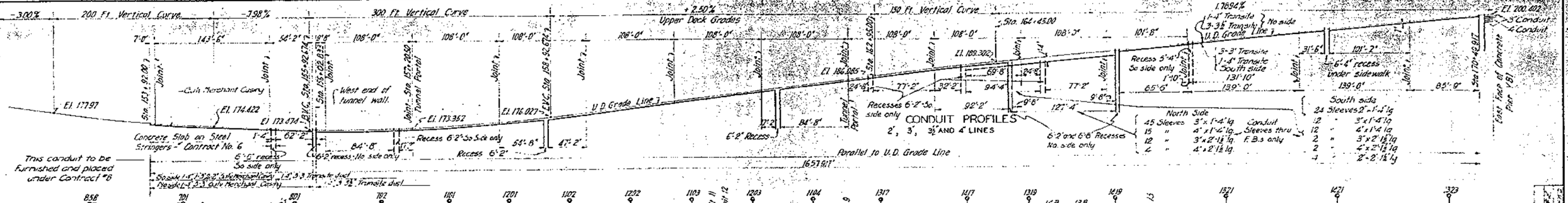
PLAN



SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA ISLAND
BUILDINGS
AS BUILT
Scale 1in = 20ft.

DATE	REVISION	BY	CHKD
7-20-39	As Constructed	H.E.	

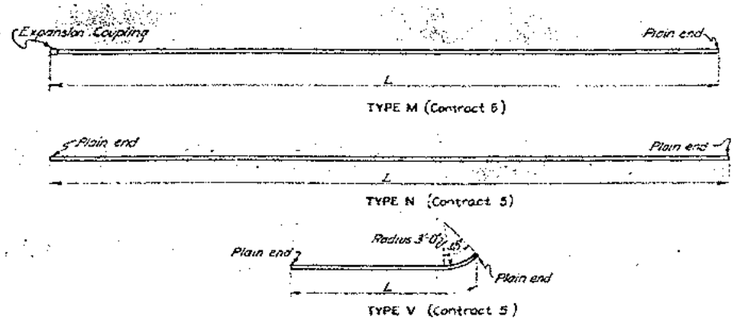
CONTRACT 5 · DRAWING NO. 41A
FEB. 1937



DATE	REVISION	BY	CHKD.
4-16-35	Conduit changed	R.S.A.	C.H.D.
7-25-35	Conduit runs slightly changed	R.S.A.	C.H.D.
1-19-36	Conduit sizes, location revised	R.S.A.	C.H.D.
10-8-36	3 and 4 Conduit location revised	R.S.A.	C.H.D.
1-20-38	As Constructed	R.S.A.	C.H.D.
10-10-39	Limit exception changed	R.S.A.	C.H.D.

CORRECT:
Engineer of Design
APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman
BOARD OF CONSULTING ENGINEERS

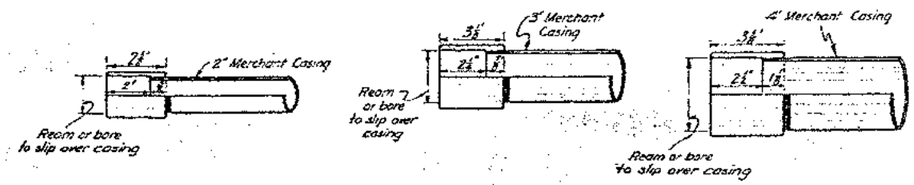
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
ELECTRICAL CONDUITS
SCALE IN FEET - FOR PLANS
SCALE IN FEET - FOR SECTIONS
CONTRACT NO. 5 SUP. DRAWING NO. 42A
SEPTEMBER - 1934



MERCHANT CASING

REQUIRED DIMENSIONS OF PIPE

NOMINAL SIZE	2"	3"	4"	6"
INSIDE DIAMETER	2.050"	3.010"	3.974"	6.287"
OUTSIDE DIAMETER	2.250"	3.250"	4.250"	6.625"



EXPANSION COUPLINGS
(Contract 6)

TABLE OF CONDUIT DATA

NO. REQUIRED 2"	NO. REQUIRED 3"	NO. REQUIRED 4"	NO. REQUIRED 6"	LOCATION	TYPE	LENGTH	MARK
2	4	2		153	N	5'-0"	N 5-0
6	12	6		153-154	N	2'-8"	N 2-8
2	4	2		154	M	7'-1"	M 7-1
2	4	2		154-155	M	143'-8"	M 143-8
2	1	1		155 S.	N	1'-7"	N 1-7
	8	1		155-156N.	N	54'-5"	N 54-5
~~2~~	~~1~~	~~1~~		~~155-156S.~~	~~M~~	~~68'-3"~~	~~M 68-3~~
~~2~~	~~1~~	~~1~~		~~156-157S.~~	~~N~~	~~84'-11"~~	
~~2~~	~~1~~	~~1~~		~~162-163S.~~	~~N~~	~~84'-11"~~	~~N 84-11~~
~~2~~	~~1~~	~~1~~		~~163S.~~	~~M~~	~~84'-9"~~	~~M 84-9~~
~~2~~	~~1~~	~~1~~		~~163-164S.~~	~~N~~	~~77'-5"~~	~~N 77-5~~
~~2~~	~~1~~	~~1~~		~~164S.~~	~~M~~	~~38'-3"~~	~~M 38-3~~
24	57	27		164-166	N	1'-6"	N 1-6
4	14	6		164-166	N	2'-2½"	N 2-3
~~2~~	~~1~~	~~1~~		~~165-166S.~~	~~N~~	~~77'-5"~~	~~N 77-5~~
~~2~~	~~1~~	~~1~~		~~166-167S.~~	~~M~~	~~101'-10"~~	~~M 101-10~~
~~2~~	~~1~~	~~1~~		~~167S.~~	~~M~~	~~1'-11"~~	~~M 1-11~~
~~2~~	~~1~~	~~1~~		~~167-168S.~~	~~N~~	~~132'-1"~~	~~N 132-1~~
~~2~~	~~1~~	~~1~~		~~168-169S.~~	~~M~~	~~31'-7"~~	~~M 31-7~~
~~2~~	~~1~~	~~1~~		~~169S.~~	~~N~~	~~101'-5"~~	~~N 101-5~~
~~2~~	~~1~~	~~1~~		~~170S.~~	~~M~~	~~85'-10"~~	~~M 85-10~~
	3	1		YBI N.	N	10'-0"	N 10-0
2	3	1		YBI S.	V	12'-0"	V 12-0
4	4			157, 163			
8				157, 163	N	2'-6"	N 2-6
		2		YBAn	N	8'-3"	N 8-3
		4		155	N	1'-10"	N 1-10
2				167	N	10'-0"	N 10-0
4				167	N	1'-2"	N 1-2
			5	155	N	38'-0"	N 38-0
			6	155	N	1'-6"	N 1-6
~~48~~		~~16~~			~~N~~	~~0'-7"~~	~~N 0-7~~

Furnished and installed in Contract No 6
All others are Contract 5.

NOTES

2", 3", 4" and 6" pipe shall be of wrought steel, hot dip galvanized inside and outside, and ends of each piece of pipe reamed to provide smooth entrance for electric cable.

Pipe shall be furnished in such lengths and with threads and couplings, as will assemble to lengths as specified. Each piece shall be clearly marked, by tag or otherwise, with the mark specified for that section.

Lengths given are prepared for the guidance of the Contractor and are believed to be correct. Contractor shall check same and be responsible for the correct installation as Field conditions may require.

The Contractor is permitted to install standard IPS galvanized conduit in the place of any of the above specified lengths of galvanized merchant casing, with no increase in the cost to the State.

7-20-35	As Constructed	J.L.L.	C.A.B.
4-1-35	Note added	K.M.Q.	C.A.B.
3-15-35	Certain conduits omitted		B.F.
DATE	REVISION		CHKD

CORRECT:
Engineer of Design

APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman

BOARD OF CONSULTING ENGINEERS

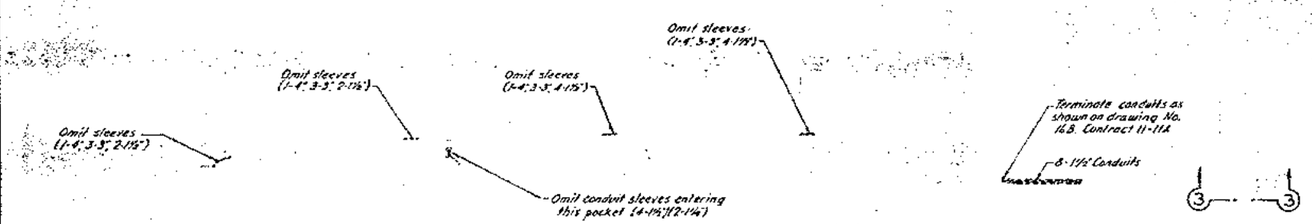
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA CROSSING
DETAILS OF ADDITIONAL CONDUITS

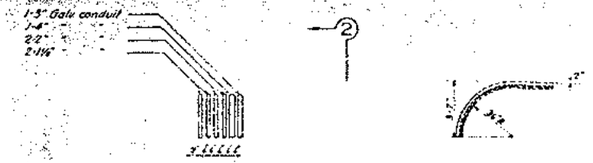
NO SCALE

CONTRACT NO. 6 SUP. DRAWING NO.
CONTRACT NO. 5 SUP. DRAWING NO. 428

FEBRUARY – 1935

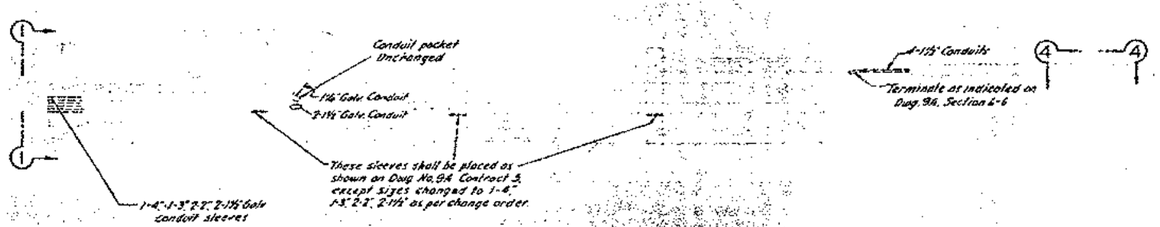
F.S.S.



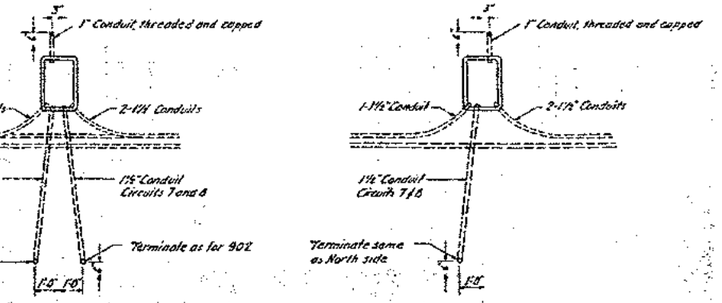


SECTION 1-1

SECTION 2-2



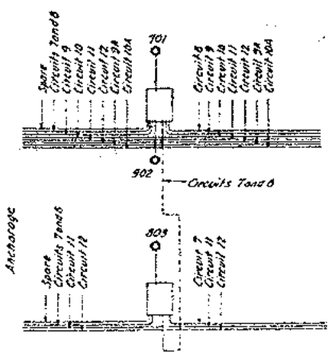
PLAN OF UPPER DECK - YERBA BUENA ANCHORAGE



SECTION 3-3

SECTION 4-4

CONDUIT POCKETS
BENT NO. 1



REARRANGEMENT OF CONDUITS
AT RAIL POCKETS
BENT NO. 1

7-21-39	As Constructed	JLE	
DATE	REVISION	BY	CHKD

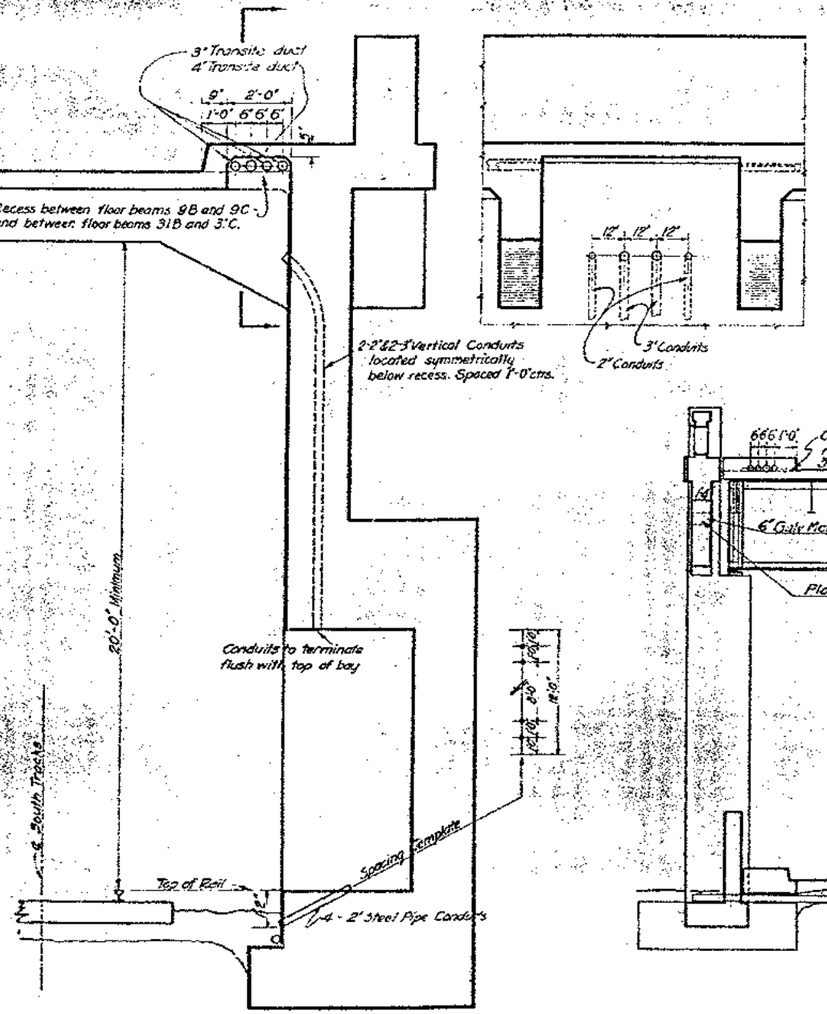
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
RELOCATION OF CONDUITS
YERBA BUENA ANCHORAGE

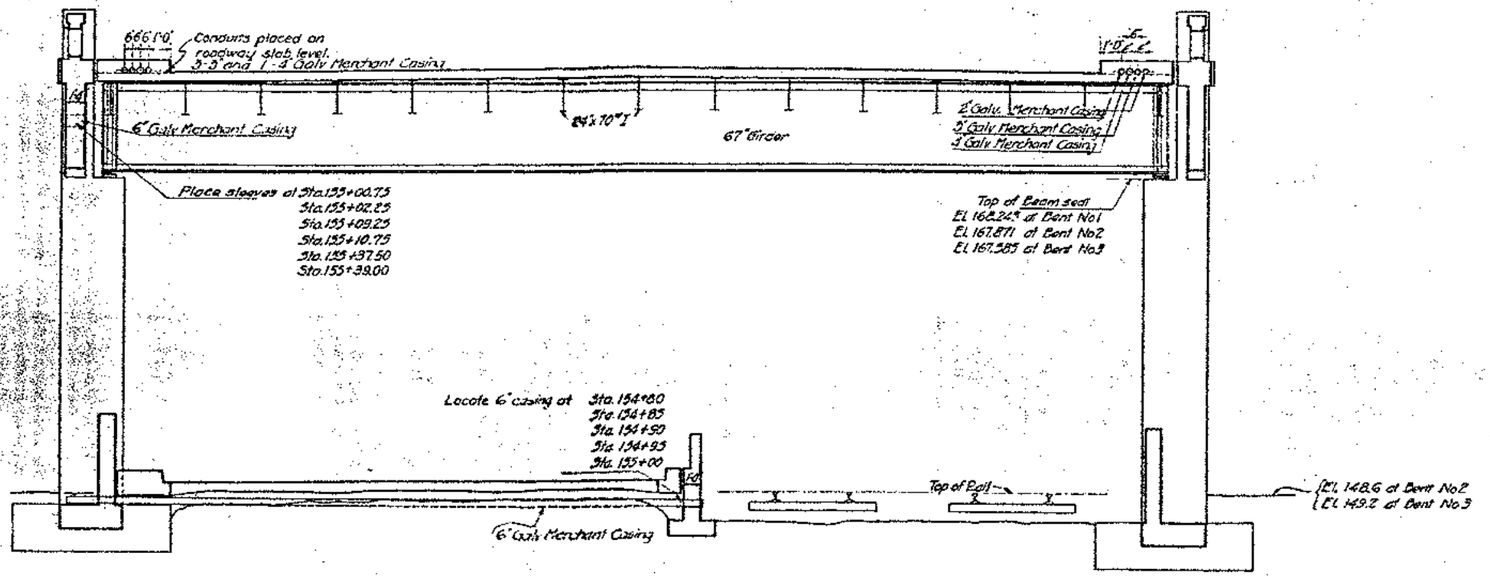
SCALE IN FEET
0 5 10 20

CONTRACT NO. 5 SUP. DRAWING NO. 42C
FEBRUARY -- 1936



SECTION THROUGH TRANSFORMER BAY

SCALE IN FEET 0 1 2 3 4 5



SECTION THROUGH BENTS 2 OR 3

SCALE IN FEET 0 1 2 3 4 5

DATE	REVISION	BY
2-10-39	As Constructed	J.L.C.
7-20-40	Cassula arrangement	C.T.D.
2-10-55	Conduits changed section added	P.S.B.
1-21-35	Conduit location revised	R.S.B.

CORRECT

Engineer of Design

APPROVED

Bridge Engineer

Chief Engineer

Director of Public Works

Bureau

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

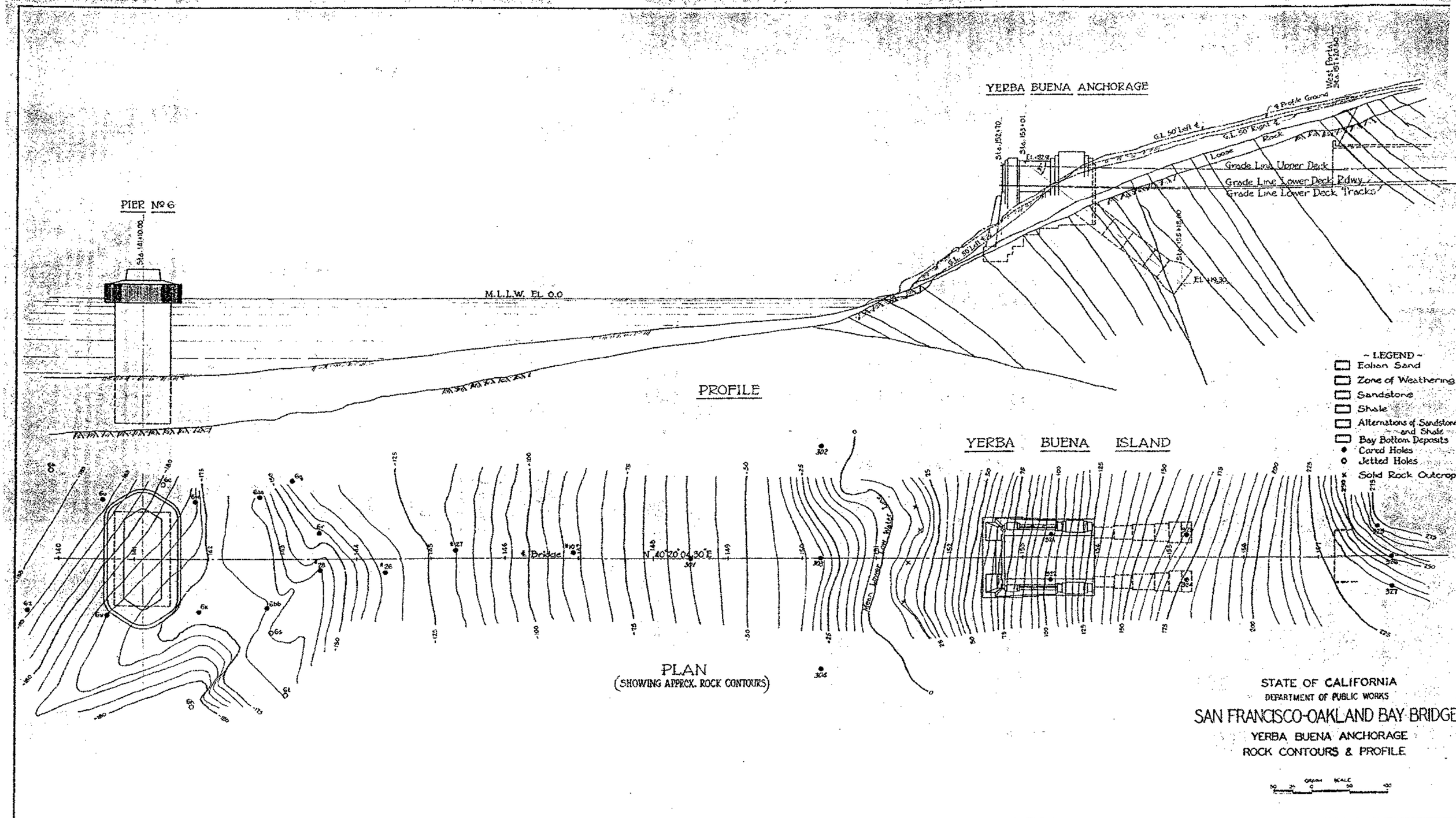
SAN FRANCISCO-OAKLAND BAY BRIDGE

YERBA BUENA CROSSING
ELECTRICAL CONDUITS

SCALES AS SHOWN

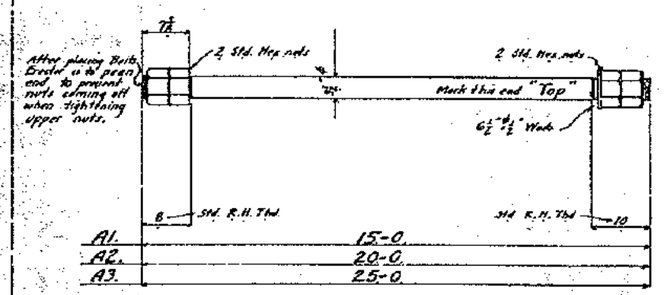
CONTRACT NO 5 SUP DRAWING NO 43A

DECEMBER — 1934


YERBA BUENA ANCHORAGE
West Portal Sta. 157+20.50
℄ Profile Ground
G.L. 50' Left ℄
G.L. 50' Right ℄
Loose Rock
Grade Line Upper Deck
Grade Line Lower Deck Rdwy.
Grade Line Lower Deck Tracks
Sta. 152+70
Sta. 153+01
Sta. 155+18.80
El. +19.30
PIER Nº 6
Sta. 141+10.00
M.L.L.W. EL. 0.0
PROFILE
YERBA BUENA ISLAND
℄ Bridge
N 40°20'04.30"E
Mean Lower Low Water Line
PLAN
(SHOWING APPROX. ROCK CONTOURS)
~ LEGEND ~
Eolian Sand
Zone of Weathering
Sandstone
Shale
Alternations of Sandstone and Shale
Bay Bottom Deposits
Cored Holes
Jetted Holes
Solid Rock Outcrop
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
YERBA BUENA ANCHORAGE
ROCK CONTOURS & PROFILE
GRAPH SCALE

SKETCH SHEET

AMERICAN BRIDGE COMPANY



Sept. 13, 1933

Rev 8-23-33

NO. PCS.	MATERIAL SHAPE	LENGTH ft.	LENGTH in.	MARK	ORDERED	ITEM
36	rods 3½" ø	15	0	A1	15-0	9
144	3¼ Hex nuts tapped 3½"				c.s.w.h.	
4	rods 3½" ø	20	0	A2	20-0	8
16	Std. Hex nuts tapped 3½"				c.s.w.h.	
4	rods 3½" ø	25	0	A3	25-0	7
16	Std Hex nuts tapped 3½"				c.s.w.h.	11
44	Washers 6½" x 6½" x ½" thick			22 for M1 22 for M2		5

Anchor Bolts - Yerba Buena Cable Boat

Carbon Oil Steel — Copper Bearing — John M. Bailey Insp. — No Paint - This sealed with Epoxy Resin on nuts & bolts after acceptance. (N threaded end only)

Slots of Cd Cast Steel Spec

WASHERS: PL ½ — HOLES: STR

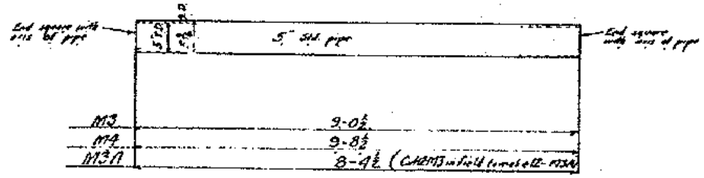
Amb #2 — Fabrication: Pmb — Balke ORDER NO. G4872 — SHEET No. F1

Allowance Shipment Date of order subject to Nov 1 1933

Yerba Buena Crossing Anch., San Francisco, Oakland Bay Bridge - Cont. #5 - Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



Rev 3-23-33 (2 pcs: M3 changed to M3A 1-3-34)

Aug. 28, 1933

Rev 3-23-33

NO. PCS.	MATERIAL SHAPE	LENGTH ft.	LENGTH in.	MARK	ORDERED	ITEM
24	5" Std pipes	9	0¢	M3	Amb Bldg 7997	
8	5" Std pipes	9	8½	M4	Amb Bldg 7997	
12	5" Std pipes	8	4½	M3A		
	Note: 12 pcs the 24 pcs M3 were cut to 9'-0" made 18 pcs					
	Pipe Sleeves	Yerba Buena	Cable Boat			

Carbon Oil Steel — Copper Bearing — John M. Bailey Insp. — No Paint.

Slots of Cd Cast Steel Spec

WASHERS: PL ⅜ — HOLES: STR

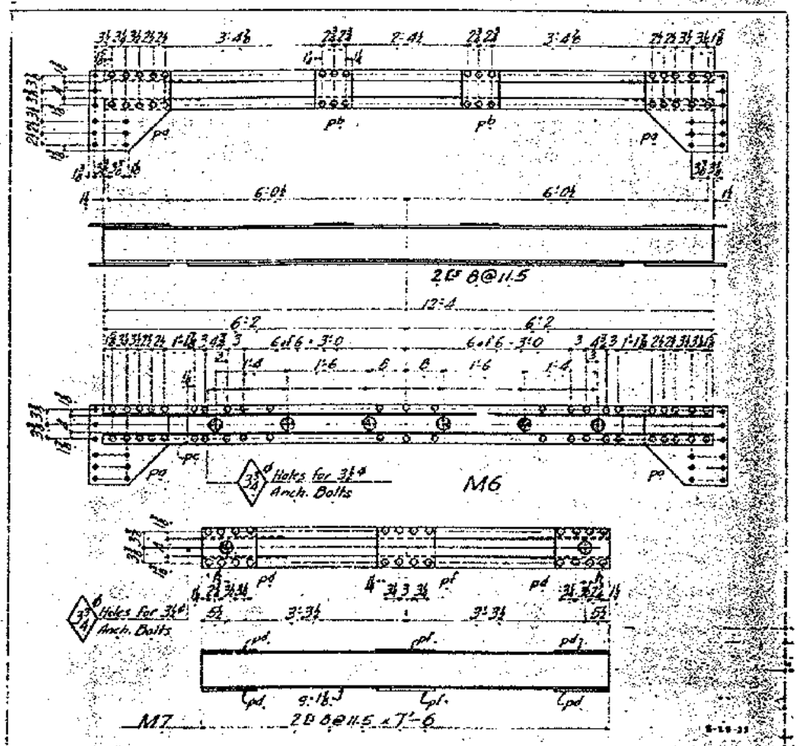
Amb #2 — Fabrication: Amb. — Balke ORDER NO. G4872 — SHEET No. F2

Allowance Shipment Date of order subject to Nov 1 1933

Yerba Buena Crossing Anch., San Francisco - Oakland Bay Bridge Contract #5, Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



No Paint

Rev 8-23-33

NO. PCS.	MATERIAL SHAPE	LENGTH ft.	LENGTH in.	MARK	ORDERED	ITEM
	2 Grillages - M6					
4	PL 8 @ 11.5	12	4		12'-4	3
8	PL 18 ¾	1	6	pa.	18-1	11
4	PL 9 ¾	0	8	pb	26-9	14
2	PL 9 ⅝	6	0	pc	16-0	18

NO. PCS.	MATERIAL SHAPE	LENGTH ft.	LENGTH in.	MARK	ORDERED	ITEM
	2 Grillages - M7					
4	PL 8 @ 11.5	7	6			7-G 4
8	PL 9 ¾	1	0	pd.		32-1 12
4	PL 9 ¾	1	0	pf		12

Allowance Shipment 40 lbs at Nov 1 1933

Grillage for Yerba Buena Cable boat. Carbon Oil Steel - Copper Bearing - Nickel Cast Steel Spec - John M. Bailey Insp.

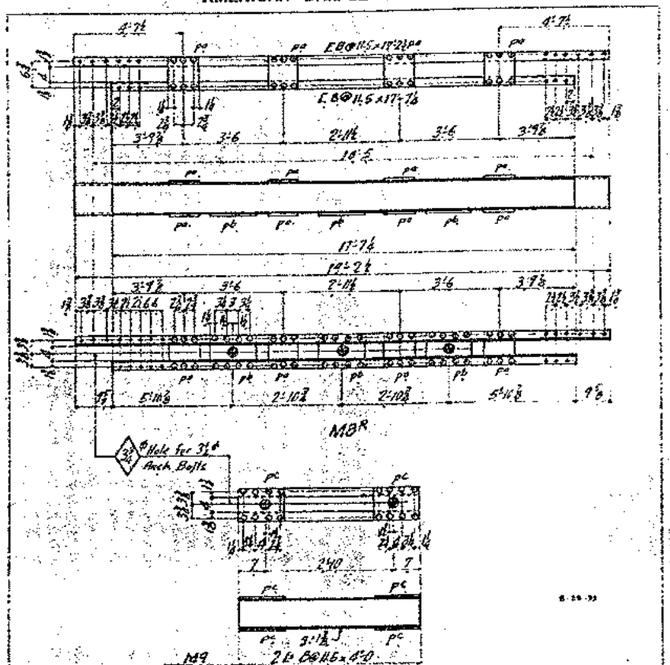
WASHERS: PL ¾ — HOLES: Punched Marked — PL ⅞ — STR

Amb #2 — Fabrication: Amb. — Balke ORDER NO. G4872 — SHEET No. F3

Yerba Buena Crossing Anch., San Francisco - Oakland, Bay Bridge Contract 5, Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



MATERIAL				ORDERED			MATERIAL			ORDERED		
SHAPE	LENGTH	MARK			ITEM		SHAPE	LENGTH	MARK			ITEM
2 GRILLAGES - M8R							2 GRILLAGES - M9					
2 " " - M8L												
							4 C. @ 15	42.0			420	L
4 C. @ 15	17'-7½			1435	1		8 PL. 9 x ½	1.10	pc		324	12
4 " "	17'-7½			1293½	2							
32 PL. 9 x ½	C.L.	pc		76-9	12							
12 PL. 9 x ½	1.0.	pb		324	12							

Carbon Gr Steel - Copper Bearing
Slabs in Bailey Insp.
Stock at Col Steel Contract 5
Grillage for Yerba Buena Cable Anch.

Rev. 8-25-33

Rev. 8-25-33

NAME OF STRUCTURE: Yerba Buena Crossing Anch. - San Francisco-Oakland Bay Bridge - Cont 5 - Columbia Steel Co.

Balke ORDER No. G4872

SHEET No. F5

FIELD RIVETS AND BOLTS

AMERICAN BRIDGE COMPANY

PC. PER PCS.	DIAM.	RIVETS		BOLTS: LENGTH UNDER HEAD	BOLTS: HEAD	BOLTS: NUT	BOLTS: WASHER OR	BOLTS: TYPE OF BOLT	GRIP	REMARKS	ITEM	MATERIAL WEIGHT	SHIPMENTS
130	¾	2½							3	Nuts to M8 Temp. Bolts to M8 L	S		
67	¾	2½		Anchorage for Cable Boot					1	Bolts M8 & M8 L to M8	S		
130	¾	2½							1	Diaphram Plates M8 to Anchorage Slab	S		
98	¾	3½		Cable Anchorage					18	Diaphram Plates M8 to Anchorage Slab	S		

APPROVED

Rivets on line 2 & 4 are for advance shipment with Yerba Buena Boot Arch Bolts to be at site Nov 1, 1933.

Rivets on lines 6 & 8 are to be shipped with 1st Div of Yerba Bu Arch Mat.

No of rivets given includes 5% or 25 of 10% + 10

Rev 9-22-33

FIELD RIVETS AND BOLTS

Material:- O.H. Carbon Steel, Copper Bearing

NAME OF STRUCTURE: Yerba Buena Crossing Anchorage - San Francisco - Oakland Bay Bridge

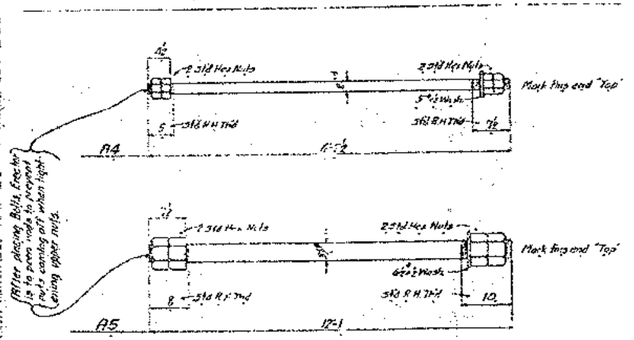
Columbia Steel Co. Cont. No. 5

Amb #2 Anchorage

Balke ORDER No. G 4872

PAGE No. F6

AMERICAN BRIDGE COMPANY



3-6-34

MATERIAL			ORDERED			MATERIAL			ORDERED		
SHAPE	LENGTH	MARK		ITEM		SHAPE	LENGTH	MARK		ITEM	
8 Rods	12'-6"			22							
32 3/4" Hex Nuts		A4	Req'd	10							
8 Washers 5" x 5" x 3/4" Thick				5							
36 Rods	12'-1"			21							
104 3/4" Hex Nuts		A5	Req'd	10							
36 Washers 4" x 4" x 3/4" Thick				3							

Copper Bearing Carbon O.H. Steel
Stock in Bailey Insp.
NO PAINT This coated with spec. thickness, white lead & Tallow after erection. (Two coats total)

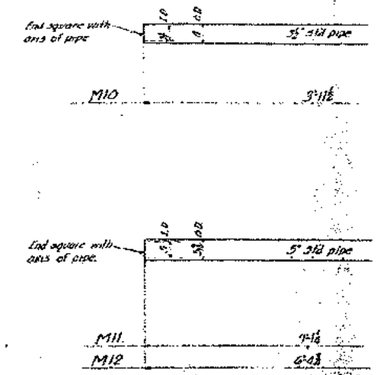
Amb 2 Amb.

Balke ORDER No. G4872

SHEET No. F 7

Yerba Buena Crossing Anch. San Francisco-Oakland Bay Bridge - Cont. 5 Columbia Steel Co.

AMERICAN BRIDGE C



8	5" 31# pipes	3'-11½	M10	Req'd	
12	5" 31# pipes	7'-1½	M11	Req'd	
24	5" 31# pipes	6'-4¾	M12	Req'd	

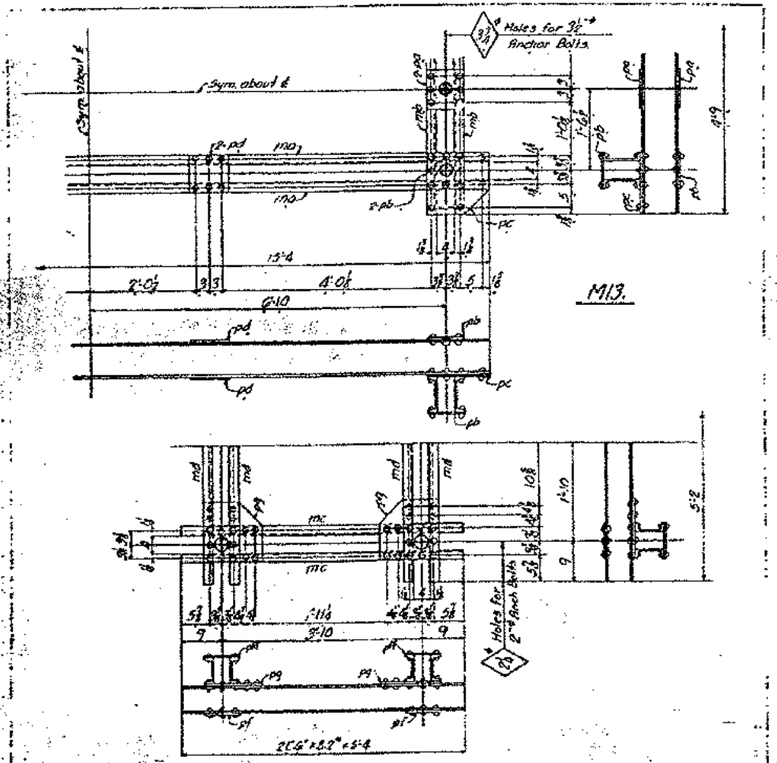
Copper Bearing Carbon O.H. Steel
State of Cal Cont. No.

John M. Bailey Insp.
NO PAINT

Yerba Buena Crossing Anch. San Francisco-Oakland Bay

SKETCH SHEET

AMERICAN BRIDGE COMPANY



NO PAINT

3-6-34

No. Pcs.	Material Shape	Length	Mark	Ordered	Item
	2-Grillages M13				
8	[8"×11.5	15-4	ma		15
8	[8"×11.5	4-9	mb		18
8	R. 9 ⅜	0-9	pa	3-30-1	23
16	R. 9 ⅜	0-9	pb	30-1	23
8	R. 14½ ⅜	1-2½	pc	1-32-1	25
16	R. 9 ⅜	0-9	pd	30-1	23

No. Pcs.	Material Shape	Length	Mark	Ordered	Item
	2-Grillages M14				
8	[6"×8.2	5-4	mc		19
8	R. 8 ½	0-8	pf		3
8	[6"×8.2	5-2	md		20
8	R. 14½ ⅜	1-4¾	pg	1-11-3	24
8	pl. 8 ¼	8	pff		5

Copper Bearing Carbon O.H. Steel
State of Cal. Spec. Cont. 5
John M. Bailey Insp.

Amb. 2 / Amb.

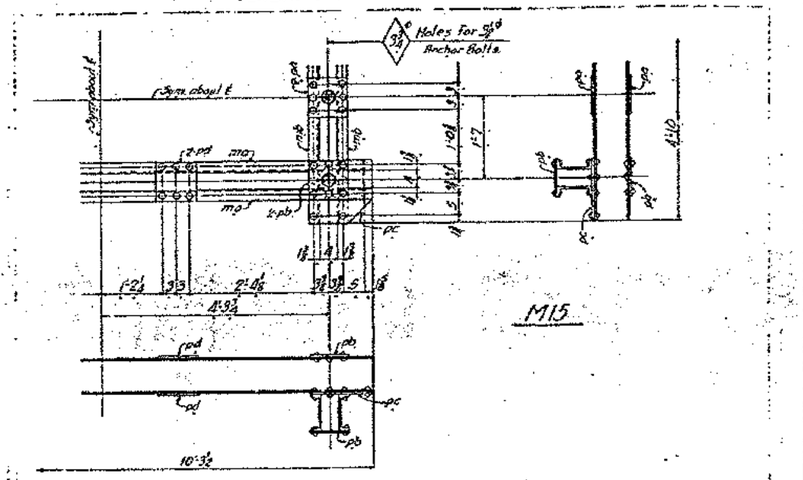
Balke ORDER No. G4872

SHEET No. F 9

Yerba Buena Crossing Anch. San Francisco-Oakland Bay Bridge Cont. 5 Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



NO PAINT

4-5-34

No. Pcs.	Material Shape	Length	Mark	Ordered	Item
	4-Grillages M15				
16	[8"×11.5	10-3½	ma		16
16	[8"×11.5	4-10	mb		17
16	R. 9 ⅜	0-9	pa	30-1	23
32	R. 9 ⅜	0-9	pb	30-1	23
16	R. 14½ ⅜	1-2½	pc	25-1	25
32	R. 9 ⅜	0-9	pd	30-1	23

Copper Bearing Carbon O.H. Steel
State of Cal. Spec. Cont. 5
John M. Bailey Insp.

Amb. 2 / Amb.

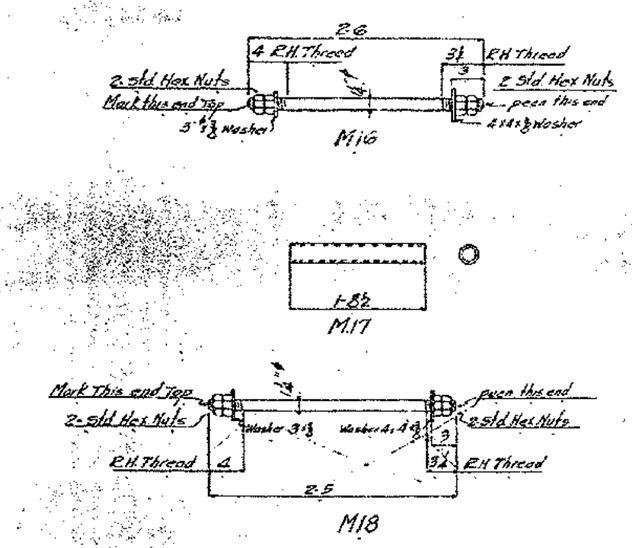
Balke ORDER No. G4872

SHEET No. F 10

Yerba Buena Crossing Anch. San Francisco-Oakland Bay Bridge Cont. 5 Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



No Paint

No. Pcs.	Material Shape	Length	Mark	Ordered	Item
	32-Anchor Bolts M16				
32	Rods 1¼"	2-6	Threaded		5
128	Std. Hex Nuts 1¼ Tap				5
32	Washers 4×4×⅜×1 5/16 Hole				5
32	Washers 3×3×⅜×1 5/16 Hole				5
	44-Pipe M17				
44	2½" pipe	1-8½			5

No. Pcs.	Material Shape	Length	Mark	Ordered	Item
	12-Anchor Bolts M18				
12	Rods 1¼"	2-8			5
48	Std. Hex Nuts 1¼ Tap				5
12	Washers 4×4×⅜×1 5/16 Hole				5
12	Washers 3×3×⅜×1 5/16 Hole				5

Mat. Copper Bearing O.H. Steel
Spec. State of Cal. Special
Insp. J.M. Bailey Chief Insp.
Yerba Buena Anchorage

J&M 6-1-34

Amb. #2 / Amb.

Balke ORDER No. G4872.

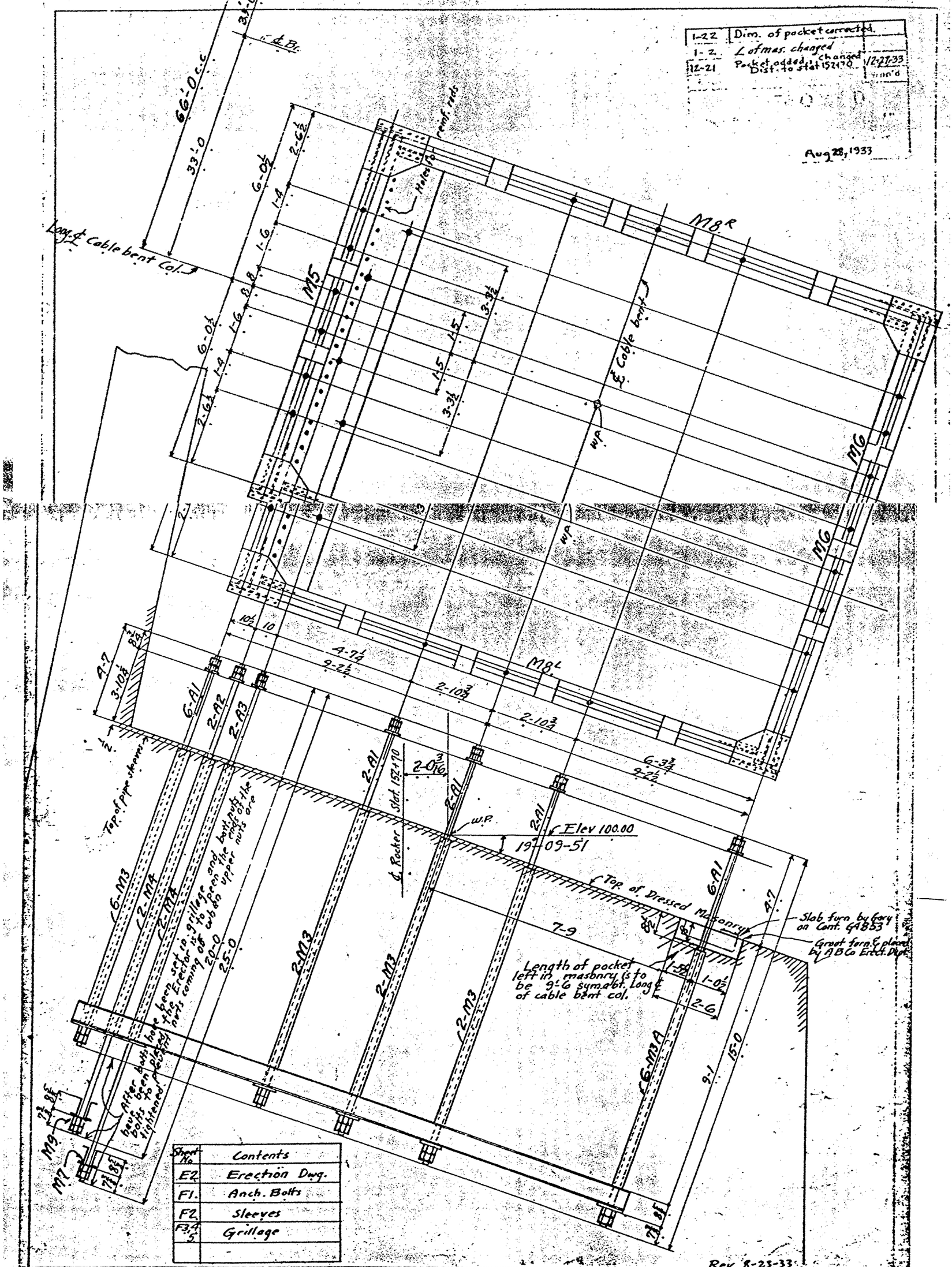
SHEET No. F11

San Francisco-Oakland Bay Bridge

APPROVED

7-12-34

AMERICAN BRIDGE COMPANY



Sheet No.	Contents
E2	Erection Dwg.
F1.	Anch. Bolts
F2	Sleeves
F3, 4, 5	Grillage

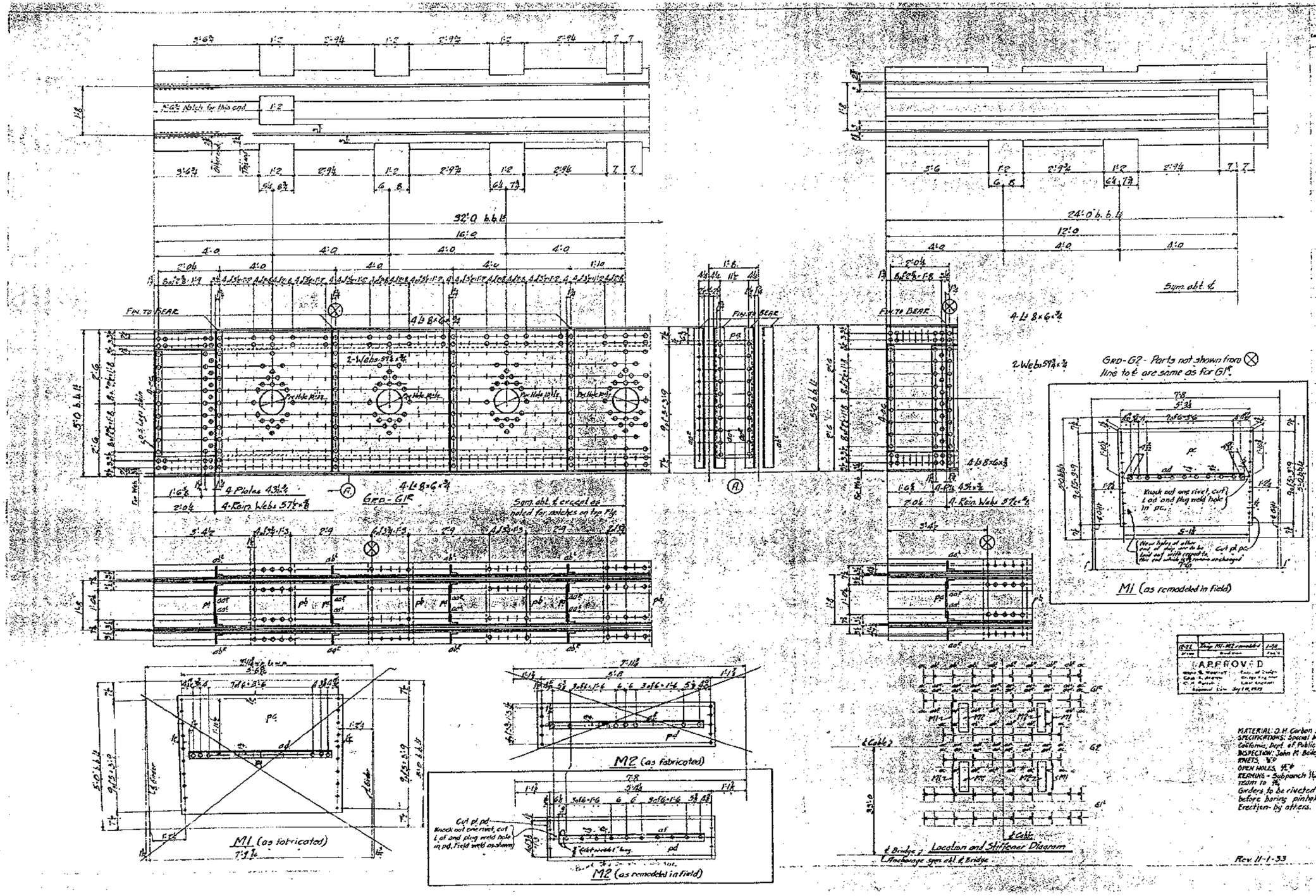
Rev 8-23-33

Anchor Bolt Erection Dwg. for Yerba Buena Cable Bent.	RIVETS	HOLES	DATE 8/29	DATE 8/22 1933	DRAWINGS Amb #2 FABRICATION Amb	Bolke ORDER No. G4872 SHEET No. E2

NAME OF STRUCTURE

Yerba Buena Crossing Anchorage San Francisco - Oakland Bay Bridge Contract #5

Columbia Steel Co.



DRAWING WITH BILL

AMERICAN BRIDGE COMPANY

Mark	Material: Shape	Material: Length	Material: Sheet	Material: Length	Material: Weight	Remarks	Ordered	Item	Delivered
4-Girders-2-G1R, 2-G1L									
32 L	8	6	¾	32	0		32-0½	1001	
8 Webs	57¾	¾		32	0		32-0½	1008	
16 Webs	57½	⅝		27	11½		28-0	1010	
16 Pls.	45½	¾		28	10¾		28-11¼	1013	
72 L	4	3	½	4	10	36 cor. 36 ob. Fwd.	39-1	1003	
56 L	4	3	½	4	10	28 cor. 28 ob. Fwd.		1003	
32 L	4	3	½	3	7½	ac.	29-1	1007	
32 Pls.	15	½		4	0	pa.	16-1	1017	
28 Pls.	18	½		2	8¾	pb.	35-7	1015	
2-Girders-G2									
16 L	8	6	¾	24	0		24-0½	1002	
4 Webs	57¾	¾		24	0		24-0½	1009	
8 Webs	57½	⅝		19	11½		20-0	1011	
8 Pls.	45½	¾		20	10¾		20-11¼	1014	
32 L	4	3	½	4	10	16 cor. 16 ob. Fwd.	39-1	1003	
16 L	4	3	½	4	10	8 cor. 8 ob. Fwd.		1003	
16 L	4	3	½	3	7½	ac.	29-1	1007	
12 Pls.	15	½		4	0	pa.	16-1	1017	
10 Pls.	18	½		2	8¾	pb.	35-7	1015	
8-Diaphragms-M1									
8 Pls.	48	½		5	9⅞	pc.	23-5	1018	
8 L	4	3½	½	5	0¼	ad.		5	
8-Tie Plates-M2									
8 Pls.	18	½		5	11	pd.	23-9	1019	
8 L	4	3½	½	5	1¾	af.		5	

APPROVED

MATERIAL: O.H. Carbon Steel Copper Brg.
SPECIFICATIONS: Special by State of California, Dept. of Public Works, Cont. #5
INSPECTION: John M. Bailey, Chief Insp.
RIVETS, ⅝"φ
OPEN HOLES, 15/16"φ
REAMING - Subpunch 1¼" and ream to 15/16"
Girders to be riveted in pairs before boring pinholes.
Erection - by others.

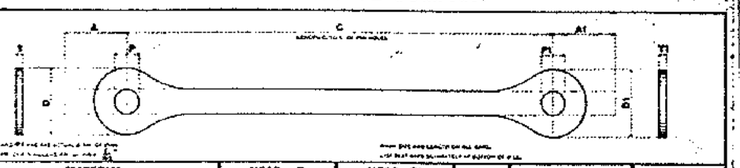
State of California
Department of Public Works
San Francisco-Oakland Bay Bridge
CONTRACT NO. 5
Substructure-West Bay Crossing
Girders for Yerba Buena Anchorage

AMERICAN BRIDGE CO.
AMBRIDGE PLANT
Dwgr. made at Ambridge No. 2 in charge of Balke
Detailed by [illegible] Date [illegible] Checked by [illegible] Date 8-16-33
Fin. corr. chk. by Date
ORDER NO. G4872 SHEET NO. 1

Rev. 11-1-33

EYE BARS

AMERICAN BRIDGE COMPANY



SHEET No.	NO. PCS.	MARK	MATERIAL SIZE OF BAR WIDTH	MATERIAL SIZE OF BAR THICK.	LENGTH C FT.	LENGTH C IN.	HEAD D	HEAD T	HEAD P	HEAD A	HEAD D1	HEAD T1	HEAD P1	HEAD A1	ORDERED LENGTH FT.	ORDERED LENGTH IN.	ORDERED ITEM	SHIPMENTS
1	20	B1	12	1 15/16	45	7 15/16	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	92	8	1008	
2	48	B2	12	1 15/16	45	8 3/32	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	92	8	1009	
3	48	B3	12	1 15/16	45	8 3/32	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	92	8 1/2	1002	
4	32	B4	12	1 15/16	45	8 3/32	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	92	9	1001	
5	152	B5	12	1 15/16	45	7 3/32	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	92	8	1004	
6	144	B6	12	1 15/16	45	7 3/32	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	13	4-8	93	10	1005	
7	4	B7	12	1 15/16	21	3 3/32	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	38	4	1007	
8	12	B8	16	1 15/16	21	3 3/32	36	1 15/16	13	4-9	36	1 15/16	14	4-9	30	10	1002	
9	36	B9	16	1 15/16	21	5 3/32	36	1 15/16	13	4-9	36	1 15/16	14	4-9	30	11 1/2	1004	
10	36	B10	16	1 15/16	21	8 3/32	36	1 15/16	13	4-9	36	1 15/16	14	4-9	31	2 1/2	1003	
11	24	B11	16	1 15/16	22	1 3/32	36	1 15/16	13	4-9	36	1 15/16	14	4-9	31	8	1001	
12	16	B12	10	1 3/8	45	7 15/16	24	1 3/8	10	3-9	24 1/2	1 3/8	8 1/2	3-2 1/2	52	7 1/2	1003	
13	8	B13	10	1 3/8	45	7 3/32	24 1/2	1 3/8	8 1/2	3-2 1/2	24 1/2	1 3/8	8 1/2	3-2 1/2	52	1	1009	
14	8	B14	10	1 3/8	21	3 3/32	24 1/2	1 3/8	10	3-9	24 1/2	1 3/8	8 1/2	3-2 1/2	24	1	1008	
15								TEST	BARS									
16	16*	Bars	12	1 15/16	45	7 15/16	16 1/2	1 15/16	10	3-6	16 1/2	1 15/16	10	3-6	92	8	1006	
17	4	Bars	16	1 15/16	21	3 3/32	36	1 15/16	13	4-9	36	1 15/16	14	4-9	30	10	1007	
18	1	Bar	10	1 3/8	21	3 3/32	24	1 3/8	10	3-9	24 1/2	1 3/8	8 1/2	3-2 1/2	24	3 1/2	1008	

* Make 8 with one for the present.

The lengths of these bars do not include allowances for elongation under stress. The bars in panel 4 have been shortened 1/2" which accounts for pin play of 4 pins. Bars 2, 3 & 4 have been shortened 1/4" each which accounts for pin play at pins 4 & 5 end of chord.

To ensure eyebars of each group being as exactly alike as possible for center to center of pin holes, eyebars are to be grouped and marks marked as follows:

APPROVED

Chief Engineer

Approved Date Aug 21, 1933

SHEET No.	MEMBER NO. PCS.	MEMBER MARK	BAR NO. PCS.	BAR WIDTH	BAR THICK.	HEAD D	HEAD T	HEAD P	HEAD A	UPSET U	UPSET W	UPSET ADD	ORDERED LENGTH FT.	ORDERED LENGTH IN.	ORDERED ITEM	SHIPMENTS
1	Note: To Ship B1-B7-B9-B12 grd B12 as required															
2	Note: Make 2 extra (1 spare) of each mark in panel 4															

EYE BARS

Carbon O.H. Steel (Annealed) State of Cal. Spec. Cal. Bay Br. Contr. 5

Insp. John M. Bailey

Paint No Paint

Hoist by Bmk

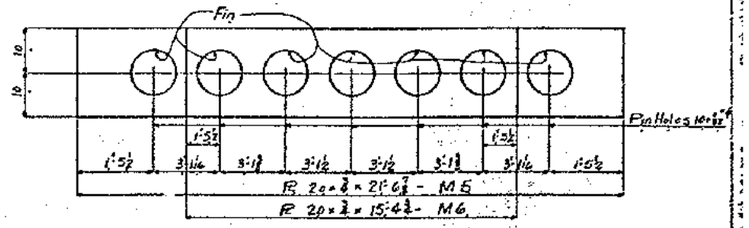
Bolts Bolke ORDER No. G4873

Yerba Buena Crossing Anchorage, San Francisco-Oakland Bay Bridge [A&B]

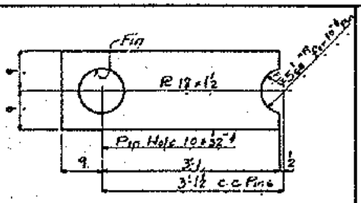
Contract No. 5 Columbia Steel Co.

SKETCH SHEETS

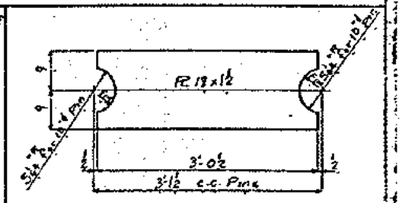
AMERICAN BRIDGE COMPANY



SEPARATORS M5 + M6



SEPARATOR M3



SEPARATOR M4

SHEET No.	NO. PCS.	MATERIAL SHAPE	MATERIAL LENGTH FT.	MATERIAL LENGTH IN.	MARK	ORDERED	ORDERED ITEM
1	24	P. 18" x ⅝"	5	10	M3	32-9½	2015
1	40	P. 18" x ⅝"	5	10½	M4	36-6¾	2014
1	8	P. 20" x ¾"	21	6½	M5	21-7	1009
1	4	P. 20" x ¾"	15	4½	M6	15-4½	1010

NOTE:

Finished surfaces to be painted immediately after acceptance with 1 coat of white lead and tallow mixed 4 parts tallow, 1 pt linseed oil and 2 parts white lead

Mill - Carbon O.H. Steel (Upper Bay)

Spec. - State of Cal - S.F.-Oak. Bay Br. Cont. 5

Insp. - John M. Bailey, Chief Insp.

Paint - No Point

Aug 21, 1933

Bolts Bolke ORDER No. G-4873

Hoist by Amb #2

Ambridge

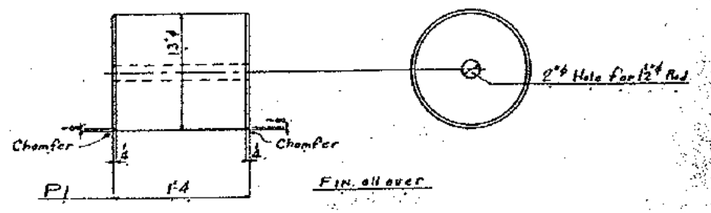
SHEET No. F2

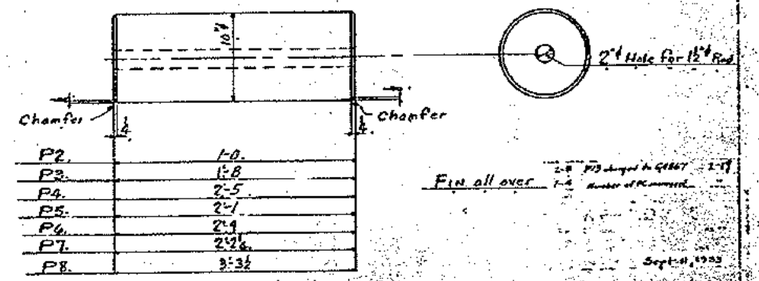
Yerba Buena Crossing Anchorage, San Francisco-Oakland Bay Bridge

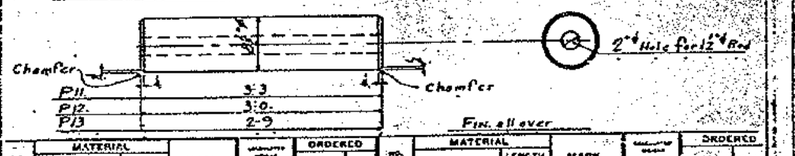
Contract No. 5 Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY







SHEET No.	NO. PCS.	MATERIAL SHAPE	MATERIAL LENGTH FT.	MATERIAL LENGTH IN.	MARK	ORDERED	ORDERED ITEM
1	36	Plate	18	1	P1	Amb Rq	1998
1	4	"	10	1	P2	2875 lbs	2015
1	36	"	10	1	P3	2386 lbs	2010
1	36	"	10	2	P4	2486 lbs	2016
1	2	"	10	2	P5	2812 lbs	2015
1	38	"	10	2	P6	2912 lbs	2013
1	2	"	10	2	P7	3315 lbs	2013
1	4	"	10	3	P8	2546 lbs	2011
1	4	"	10	3	P11	3715 lbs	2018

Mill - Carbon O.H. Steel (Annealed)

Spec. - State of Cal-S.F.-Oak. Bay Br. Cont. 5

Insp. - John M. Bailey, Chief Insp.

Paint - No Point

Aug 21, 1933

SHEET No.	NO. PCS.	MATERIAL SHAPE	MATERIAL LENGTH FT.	MATERIAL LENGTH IN.	MARK	ORDERED	ORDERED ITEM
1	4	Plate	18	1	P12	1400 lbs	2021
1	4	"	10	2	P13	1200 lbs	2022

NOTE:

Finished surfaces to be painted immediately after acceptance with 1 coat of white lead and tallow mixed 4 parts tallow, 1 part linseed oil and 2 parts white lead

Bolts Bolke ORDER No. G 4873

Hoist by Amb #2

Ambridge

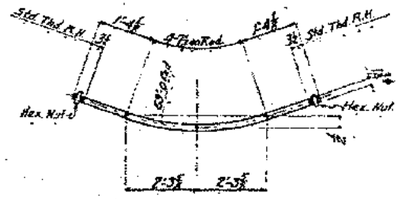
SHEET No. F3

Yerba Buena Crossing Anchorage, San Francisco-Oakland Bay Bridge

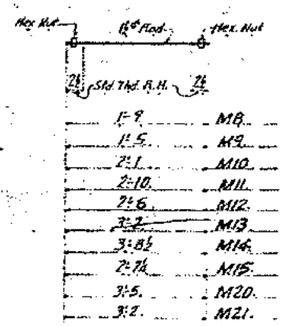
Contract No. 5 Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



M7



1'-9"	M8.
1'-5"	M9.
2'-1"	M10.
2'-10"	M11.
2'-6"	M12.
3'-2"	M13.
3'-8½"	M14.
2'-7½"	M15.
3'-5"	M20.
3'-2"	M21.

Sept. 15, 1933

Saving all rods M7 made off this sheet before rev of Dec 11.

6 rods M8-18'-4" as fabricated on Sheet F7 64873 before revision of Dec 11/33 may be returned M7 and substituted to this contract. Over allowance for this returned as M7.

Rev. 2-5-34

NO. PCS.	MATERIAL SHAPE	LENGTH	MARK	ORDERED	ITEM
14	Rods 1¾"	7' 3½"	M7	72-9	2015
20	Hex Nuts 1¾"	Top & Bot Std. Thd.		40#	2016
4	Rods 1¼"	3' 5"	M20	15-9	2017
8	Rods 1¼"	3' 2"	M21	18-5	2018

NO. PCS.	MATERIAL SHAPE	LENGTH	MARK	ORDERED	ITEM
36	Rods 1¼"	1' 9"	M8	47-1	2019
4	Rods 1¼"	1' 5"	M9	12-5	2020
36	Rods 1¼"	2' 1"	M10	56-10	2021
36	Rods 1¼"	2' 10"	M11	77-2	2022
2	Rods 1¼"	2' 6"	M12	10-5	2023
32	Rods 1¼"	3' 2"	M13	68-5	2024
8	Rods 1¼"	3' 8½"	M14	39-2	2025
8	Rods 1¼"	2' 7½"	M15	27-2	2026
344	Hex Nuts 1¼"	Top & Bot Std. Thd.		344#	2027

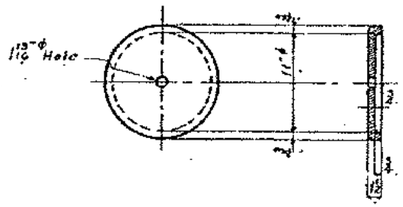
Mill - Carbon, OH Steel, Copper Bg.
Spec - State of Cal - SF-Oak Bay Br. Cat 5
Insp - John M Barkley, Chief Insp
Fabt - No Paint

Amb #2 — Amb — 64873

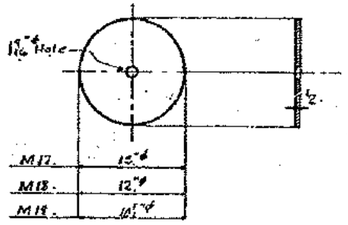
Yerba Buena Crossing Anchorage, San Francisco-Oakland Bay Bridge
Contract No. 5 — Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



Standard Pin Cap M16 (Pressed Steel)
For 10" ϕ Pin



M17.	15"ϕ
M18.	12"ϕ
M19.	10½"ϕ

Sept 11, 1933

NO. PCS.	MATERIAL SHAPE	LENGTH	MARK	ORDERED	ITEM
28	Std Pin Cap for 10"ϕ Pin		M16	57-9	2015
72	ℝ 15" ½		M17	31-1	2017
240	ℝ 12" ½		M18	88-11	2018
20	ℝ 10½" ½		M19	22-1	2012

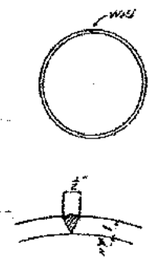
Mill - Carbon, OH Steel Copper Bg.
Spec - State of Cal - SF-Oak Bay Br. Cat 5
Insp - John M Barkley Chief Insp
Fabt - No Paint

Amb #2 — Ambridge — Balke Or. No. G-4873 — Sheet No. F6

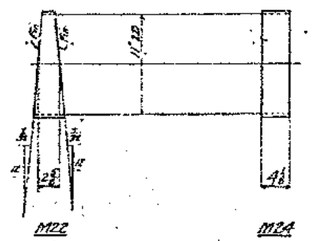
Yerba Buena Crossing Anchorage - San Francisco-Oakland Bay Bridge
Contract No. 5 — Columbia Steel Co.

SKETCH SHEET

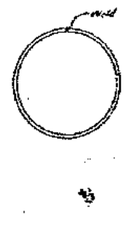
AMERICAN BRIDGE COMPANY

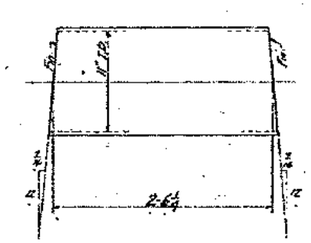


Large Views of longitudinal weld



M22 M24





M23

Sept. 15, 1933

2nd Dr.

20	Separators M22
20 pl	20" x ½" x 3'-0" Bent for radius bending and welding
4	Separators M23
4 pl	30" x ½" x 3'-0" Bent for radius bending and welding
2	Separators M24
2 pl	48" x ½" x 3'-0"

Mill - Carbon OH Steel, Copper Bg.
Spec - State of Cal SF-Oak Bay Br Cat 5
Insp - State M Barkley
Fabt - No Paint

Amb #2 — Balke Order No. 64873 — Sheet No. F7

Yerba Buena Crossing Anchorage - San Francisco-Oakland Bay Bridge
Contract No. 5 — Columbia Steel Co.

SKETCH SHEET

ERICAN BRIDGE COMPANY

Rev 8-23-33

ORDERED	ITEM	NO. PCS.	MATERIAL SHAPE	LENGTH FT.	LENGTH IN.	MARK	CALCULATED WEIGHT	ORDERED	ITEM
			2-GRILLAGES-M7						
12'-4	3	4	[8@11.5	7	6			7-6	4
13-1	11	8	Pl 9 5/8	1	0	pd		32-1	12
26-9	14	4	Pl 9 5/8	1	0	pf			12
14-0	13								

Advance Shipment To be at site on or before Nov 1 1933

Drawings Amb #2 — Fabrication Amb. — Balke ORDER No. 64872 — SHEET No. F3

NAME OF STRUCTURE: ...n Francisco - Oakland, Bay Bridge Contract 5 Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY

NO PAINT

Rev 8-23-33

NO. PCS.	MATERIAL SHAPE	LENGTH FT.	LENGTH IN.	MARK	CALCULATED WEIGHT	ORDERED	ITEM	NO. PCS.	MATERIAL SHAPE	LENGTH	MARK	CALCULATED WEIGHT	ORDERED	ITEM
	2-GRILLAGES - M5													
4	[8@11.5	12	4			12-4	3							
2	Pl 30 5/8	12	11½			25-9	10							
4	Pl 16 5/8	1	6	pa		13-1	11							
4	Pl [illegible] 5/8	0	8	pb		26-9	14							

Advance Shipment To be at site on or before Nov 1 1933

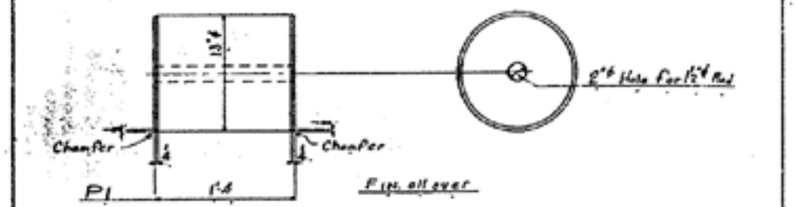
Carbon O.H. Steel - Copper Brg. ... State of Cal. Spec. Contract 5
Grillage for Yerba Buena Cable Bent.

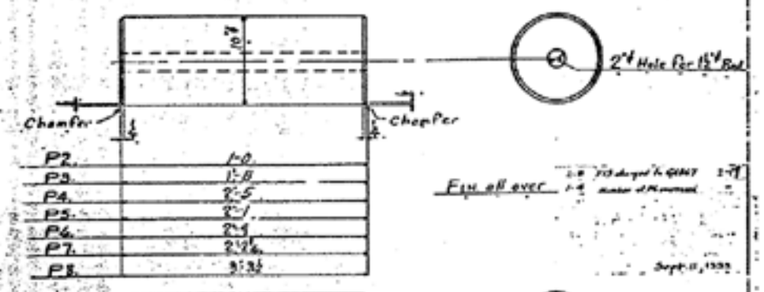
Rivets 3/4 — Holes 13/16 unless noted — Drawings Amb #2 — Fabrication Amb — Balke ORDER No. 64872 — SHEET No. F4

NAME OF STRUCTURE: Yerba Buena Crossing Anch. San Francisco - Oakland, Bay Bridge. Cont 5 — Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY





No. Pcs.	Material: Shape	Length: ft.	in.	Mark	Ordered	Item
36	Plate	13	4	P1	Bal Req	7956
4	⊢	10	4	P2	1885	1005
36	⊢	10	4	P3	2380	2010
36	⊢	10	4	P4	2688	1006
2	⊢	10	4	P5	285	1015
38	⊢	10	4	P6	3375	1013
2	⊢	10	4	P7	357	1018
4	⊢	10	4	P8	2360	1017
4	⊢	10	4	P11	1715	1008

No. Pcs.	Material: Shape	Length: ft.	in.	Mark	Ordered	Item
4	Bars	3	0	P12		
4	Flats	2	9	P13		

NOTE:
Finished surfaces to be coated immediately after acceptance with a hot mixture of white lead and yellow, mixed 4# to gal. of boiled oil and 2# white lead.

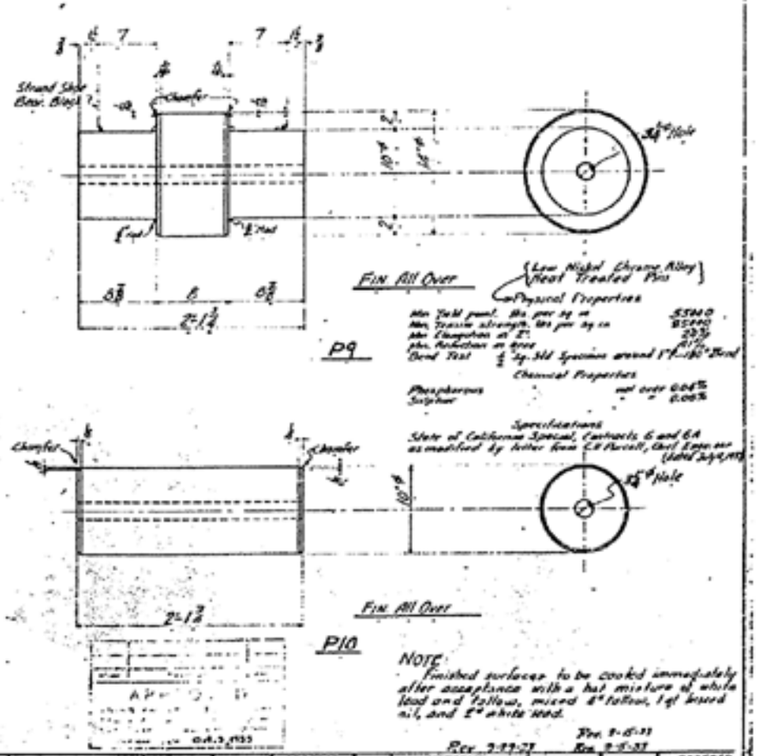
Mill: Carbon & H Steel (Annealed)
Shop: Columbia Steel Co. Pittsburg, Calif.
Engr: John M. Bailey, Chief Engr.
Shop No. Print

Rec'd Mar. 2, 1933
Ambridge
Balke ORDER No. G 4873
SHEET No. F3

Yerba Buena Crossing Anchorage, San Francisco-Oakland Bay Bridge
Contract No. 5
Columbia Steel Co.

SKETCH SHEET

AMERICAN BRIDGE COMPANY



(Low Nickel Chrome Alloy Heat Treated Pins)

Physical Properties

Min. Yield point, lbs. per sq. in.	55,000
Min. Tensile strength, lbs. per sq. in.	85,000
Min. Elongation in 2".	22%
Min. Reduction of Area	45%
Bend Test	½" Sq. Std Specimen around 1" dia. 180° Bend

Chemical Properties

Phosphorous	not over 0.04%
Sulphur	" " 0.04%

Specifications

State of California Special Contracts 6 and 6A as modified by letter from C.H. Purcell, Chief Engineer (dated July 6, 1933)

NOTE:
Finished surfaces to be coated immediately after acceptance with a hot mixture of white lead and yellow, mixed 4# tallow, 1 qt boiled oil, and 2# white lead.

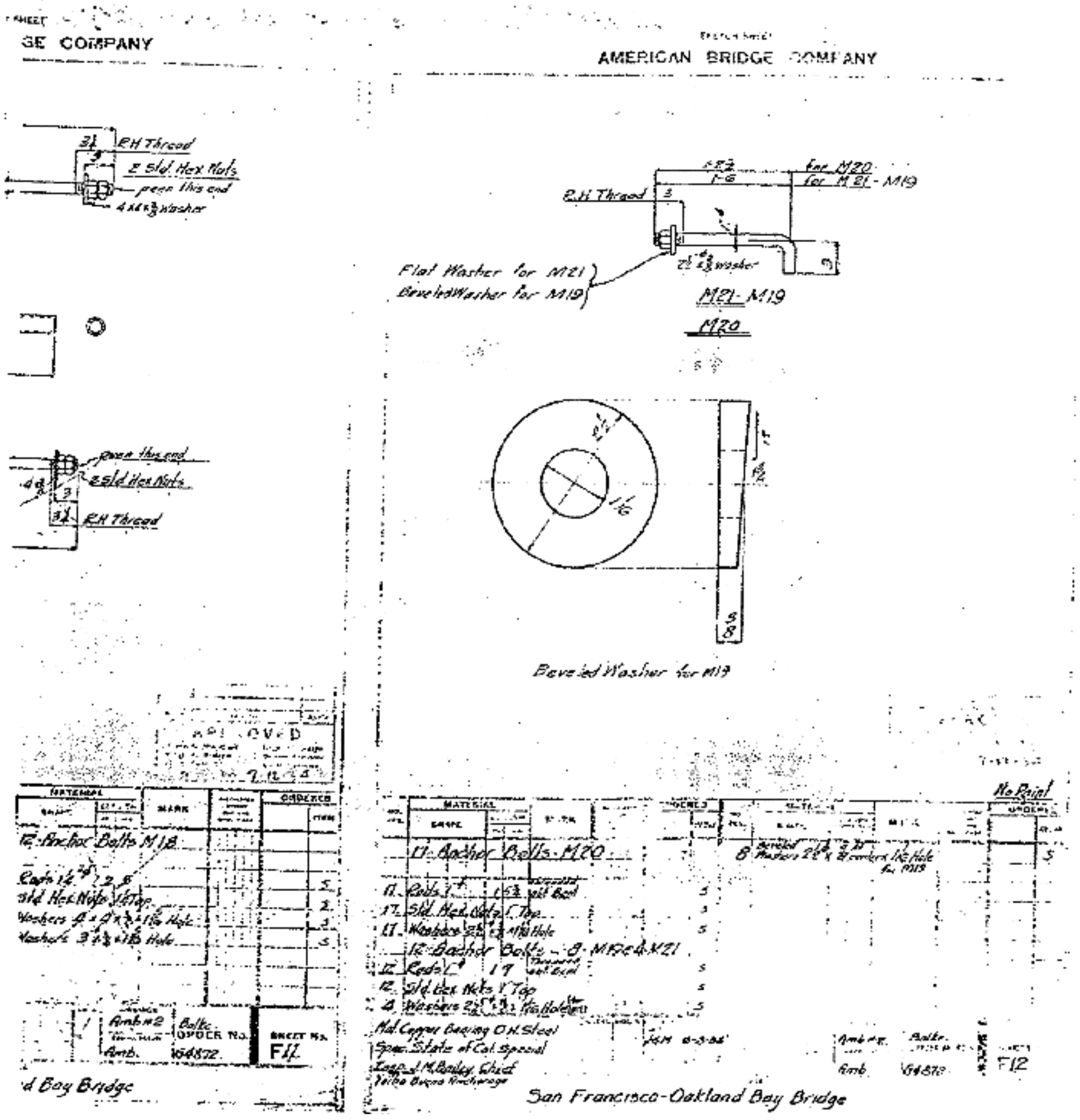
Rev. 7-17-33
Rev. 8-15-33

No. Pcs.	Material: Shape	Length: ft.	in.	Mark	Ordered	Item
36	Plate	10	4	P9	Bal Req	
2	Plate	10	4	P10	Bal Req	

Mill: Alloy Steel (Heat treated)
Shop: State of California Special Contracts 6 and 6A
Engr: John M. Bailey, Chief Engr.
Shop No. Print

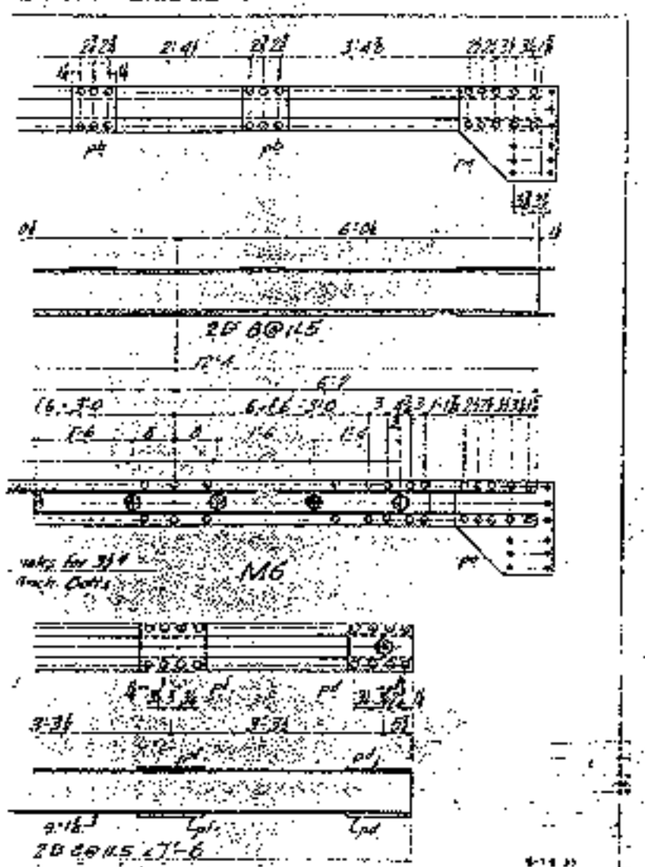
Rec'd Mar. 2, 1933
Ambridge
Balke ORDER No. G 4873
SHEET No. F4

Yerba Buena Crossing Anchorage, San Francisco-Oakland Bay Bridge
Contract No. 5
Columbia Steel Co.



GE COMPANY
AMERICAN BRIDGE COMPANY
R.H. Thread
2 Std. Hex Nuts
peen this end
4 x 4 x 3/8 Washer
peen this end
2 Std Hex Nuts
R.H. Thread
for M20
for M21 - M19
R.H. Thread
Flat Washer for M21
Beveled Washer for M19
M21 - M19
M20
Beveled Washer for M19
APPROVED
MATERIAL
MARK
ORDERED
12 Anchor Bolts M18
Rods 1 1/4 x 2 6
Std Hex Nuts 1 1/4 Top
Washers 4 x 4 x 3/8 x 1 1/16 Hole
Washers 3 x 3/8 x 1 1/16 Hole
Amb #2
Amb.
Balke
ORDER No.
64872
SHEET No.
F11
d Bay Bridge
No Paint
17 Anchor Bolts M20
Rods 1 1/4 1 5 3/4 Threaded Hot Bent
Std Hex Nuts 1 Top
Washers 2 1/2 x 3/8 x 1 1/16 Hole
12 Anchor Bolts - 8 M19 & 4 M21
Rods 1 1/4 1 9 Threaded Hot Bent
Std Hex Nuts 1 Top
Washers 2 1/2 x 3/8 x 1 1/16 Hole
Mat Copper Bearing O.H. Steel
Spec. State of Cal. Special
Insp. J.M. Bailey Chief
Yerba Buena Anchorage
Amb #2
Amb.
Balke
64872
F12
San Francisco-Oakland Bay Bridge

AMERICAN BRIDGE COMPANY



Rev 8-27-53

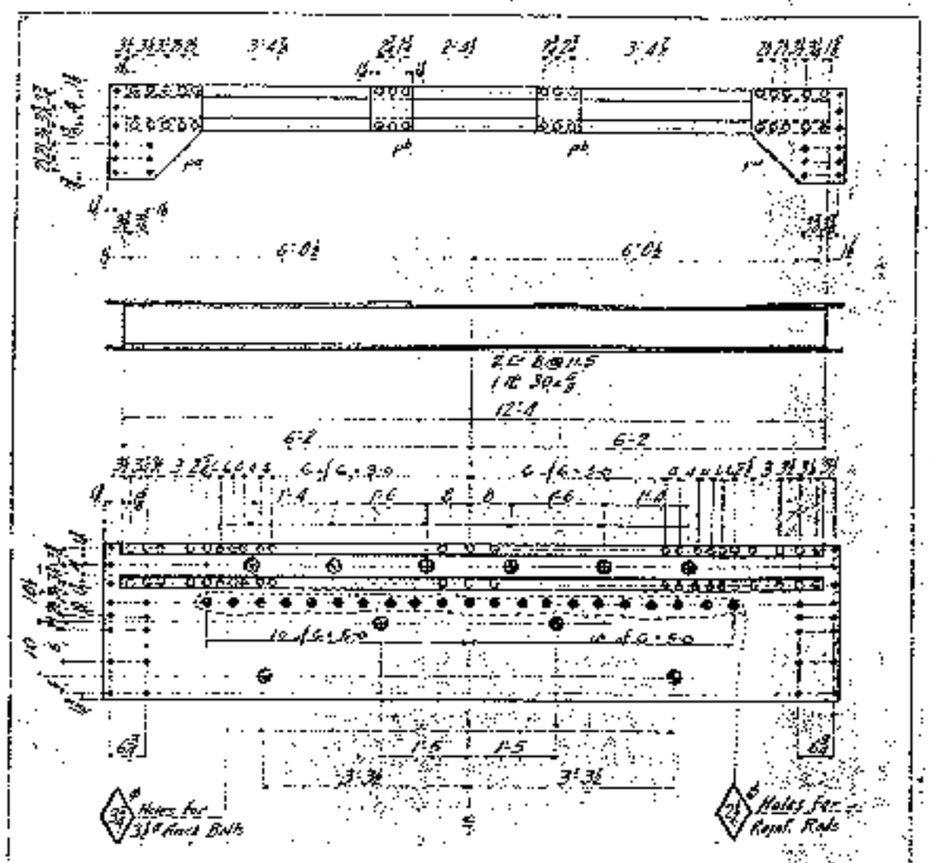
SHOP LOCATION				MATERIAL					ORDERED	
		ITEM	NO. PCS.	SHAPE	LENGTH	MARK				ITEM
2 GRILLAGES - M7										
12'-4	5	A	2	PL 8 @ 11.5	7 6				T-6	4
18'-1	11	B	2	PL 8	1 0	pd			32-1	12
26'-9	10	C	2	PL 8	1 0	pl				12
16'-0	13									

Absence shipment of Pl. at sill

7	15	1					1		Amb 72 Amb	Belke ORDER No. 64872	SHOP No. F3
2	11	1								

Point of Structure: San Francisco - Oakland Bay Bridge Contract 5 — Columbia Steel Co.

AMERICAN BRIDGE COMPANY



NO PAINT

Rev 8-27-53

SHOP LOCATION				MATERIAL					ORDERED	
		ITEM	NO. PCS.	SHAPE	LENGTH	MARK				ITEM
2 GRILLAGES - M5										
A	9	A	2	PL 8 @ 11.5	12 4				12'-4	3
B	10	B	2	PL 30 x ⅝	23 9				23'-9	10
A	15	B	2	PL 8	15 1	pd			15'-1	11
A	15	B	2	PL 8	14 9	pl			14'-9	14

Absence shipment of Pl. at sill

3	13	1					1		Amb 72 Amb	Belke ORDER No. 64872	SHOP No. F4
2	10	1								

Point of Structure: Yerba Buena Crossing Anch. San Francisco - Oakland, Bay Bridge, Cont 5 — Columbia Steel Co.