PMA 2018-F
Unit 2

Dist.	County	Route	Postmile	Total Sheets	Sheet No.
IV	SF	56	SF	1	29

December 21, 1998

Approved for Continuity Control, 3rd Dist.

Registered Civil Engineer

Date

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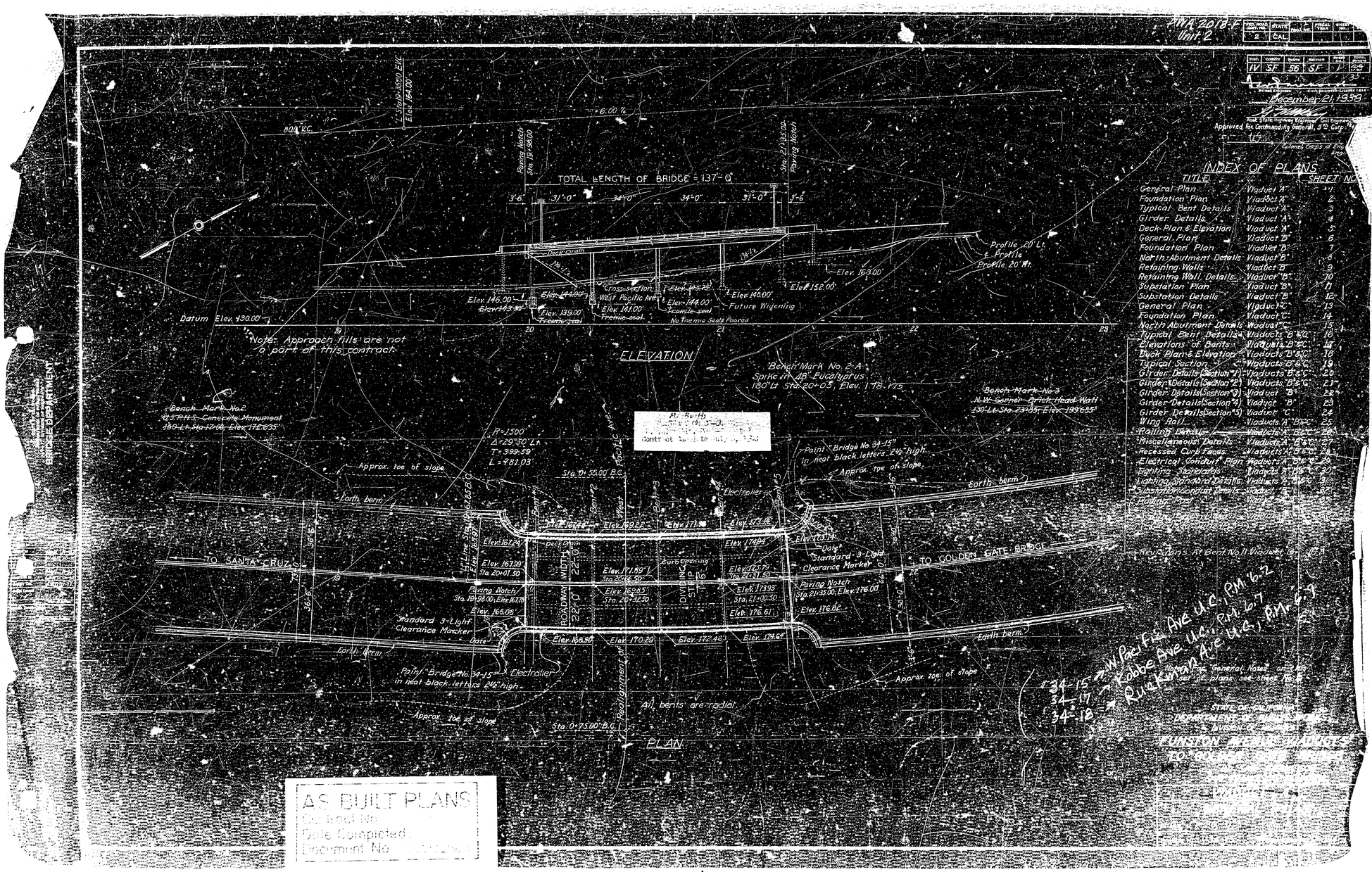
Revisions: Alt Bent No. 11 Viaduct 'B' (1)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE REPRESENTATIVE
CO. ENGINEER



AS BUILT PLANS
Contractor
Date Completed
Document No.

PWA 2013 F
Unit 2
FED. ROAD DIST. NO. 2 STATE CAL
DIST. IV COUNTY SF ROUTE 56 SECTION SF SHEET NO. 2 TOTAL SHEETS 33
BRIDGE ENGINEER CIVIL ENGINEER—LICENSE 1414
APPROVED December 21, 1938
Approved for Commanding General 9th. Corps Area
Colonel, Corps of Engineers Engineer
STATE OF CALIFORNIA DEPARTMENT OF PUBLIC WORKS DIVISION OF HIGHWAYS
BRIDGE DEPARTMENT
Temporary R/W Lines
R = 75.00'
Δ = 76°00'00"
T = 58.60'
L = 99.48'
Sta. 1+54.48 E.C.
R = 1500'
Δ = 29°50'00" L
T = 399.59
L = 781.03
Flow Elev. 174.0'
18" V.C. Culvert
Flow Elev. 175.5'
Well
Sta. 0+55.00 B.C.
"L" Sta. 19+67.85 B.C.
Sta. 20+01.5 Bent #1
Sta. 20+32.5 Bent #2
Sta. 20+66.5 Bent #3
Sta. 21+08.5 Bent #4
Sta. 21+41.5 Bent #5
36'-6" Lt.
R = 11'-10"
60°56'
Elev. 146.0'
Elev. 160.0'
TO SANTA CRUZ
"L" Line
N. 30°40'16" E.
19
Crossing Sta. 20+50
Sta. 19+98.0 Paving Notch
Sta. 21+35.0 Paving Notch
22
23
TO GOLDEN GATE BRIDGE
2'-0"
Elev. 146.0'
R = 11'-10"
36'-6" Rt.
Elev. 139.00'
Elev. 141.00'
Elev. 144.00'
Elev. 148.00'
Elev. 152.00'
Abandoned Well to be backfilled
All bents are radial
B.M. No. 2
U.S.P.H.S. Conc. Mon. 180' Lt.
Sta. 17+00. Elevation 172.635
Note: Elevation of footings may be changed by the Engineer to suit conditions encountered in the field.
Maximum foundation pressure = 2 tons/sq. ft.
Bench Mark No 2-A
Spike in 48" Eucalyptus
180' Lt Sta. 20+05
Elev. 178.175
Sta. 0+75.00 B.C.
R = 100.00'
Δ = 86°00'00"
T = 93.25'
L = 150.10'
℄ of Realignment of West Pacific Ave.
FOUNDATION PLAN
Scale 1" = 20'-0"
145
150
155
160
165
170
175
2'-10⅞"
6'-11¾"
15 panels @ 7'-2" = 107'-6"
7'-4"
End panel 7'-1¾"
2'-10⅞"
℄ Sta. 21+24.70 Electrolier
End of Concrete End Post
℄ Roadway
1'-6⅞"
16 panels @ 7'-2" = 114'-8"
7'-4"
End panel 7'-7¼"
6'-11¾"
See sheet No. 26 for Rail Details
See sheet No. 30 for electroliers
Sta. 19+98.00 Paving Notch
℄ Sta. 20+06.57 Electrolier
Sta. 21+35.00 Paving Notch
RAIL POST SPACING
Scale None
0.2275' Crown
Sta. 18+17.85 B.V.C. (for transition)
Sta. 18+67.85 P.I.
Sta. 19+17.85 E.V.C. for transition
Sta. 19+35.00 E.V.C. for ℄
Sta. 19+67.85 B.C.
Sta. 19+98.00 Paving Notch
Sta. 21+00.00 B.V.C. (for transition)
Sta. 21+35.00 Paving Notch
Sta. 21+50.00 P.I.
Sta. 22+00.00 E.V.C. (for transition)
Elev. 157.52'
Elev. 157.29'
100' V.C.
Elev. 160.15
Elev. 160.02
Elev. 159.84'
Elev. 162.98'
Elev. 162.95'
Elev. 164.00
Elev. 162.63'
Elev. 166.15'
Elev. 168.08'
+6.403%
Right Gutter
℄ Grade +6.00%
Elev. 165.97'
Elev. 167.78'
Left Gutter +5.758%
Elev. 167.24'
Elev. 165.50'
Viaduct
Elev. 174.61'
Elev. 173.90'
Elev. 176.92'
Elev. 177.76'
Elev. 179.90'
Elev. 176.90'
Elev. 176.00'
Elev. 176.02'
Elev. 175.14'
Elev. 173.11'
Elev. 180.81'
+6.00% Grade
Elev. 178.99'
0.91
1.82
Superelevation
SUPERELEVATION TRANSITION
Scale None
FUNSTON AVENUE VIA[DUCT]
TO GOLDEN GATE [BRIDGE]
VIADUCT "A"
FOUNDATION [PLAN]
SCALE As Shown
Bridge No. 34-15
AS BUILT
AS BUILT PLANS
Contract No
Date Completed
Document No

PWA. 2013 F
Unit 2

FED. PROJECT NUMBER	STATE	COUNTY	ROUTE	SHEET	SHEETS
2	CAL.	IV SF	56	5	5

Approved for Commanding General
9th. Corps Area
Colonel, Corps of Engineers
Engineer
December 1935

BRIDGE DEPARTMENT

Class 'A' P.C.C. Structure
(Bents #1, #2 and #3 only)

Class 'A' R.C.C. Structure
Bents #1, #2, #3

Railing not shown

25'-6"
22'-9"
2'-9"
2"
2'-3"
4"
3'-3"
5'-0"
4-1¼"ᵘ (AB₂) bars — 36'-3" long.
8'-0"
(AB₁)
Railing not shown
6% Grade
9"
R-24'-0"
5'-4"
5'-6"
2-(AB₅) bars, Total 4 each column
2-1¼"ᵃ (AB₂) bars — 45'-0" lng. Total 4
4'-0"
⅝"ᵘ (AB₃) stirrups @ 16" ctrs.
2-1¼"ᵃ (AB₂) bars ← 22'-0" lng
2-1¼"ᵇ (AB₂) bars ← 30'-6" lng.
Total 4
4'-3"
2-(AB₄) bars
1-(AB₂) bars
2-(AB₂) bars
½"ᵘ (AB₃) hoops, @ 12" ctrs.
2-1"ᵘ (AB₂) bars
3-1"ᵃ (AB₂) bars
1-1"ᵘ (AB₂) bar
Note: Soffit of cap to be on a straight grade between outside of exterior girders. Gunite ceiling is not shown.
(AB₃) hoops
2-(AB₂) bars
1-(AB₂) bar
5'-0"
2'-0"
22'-0"
2'-0"
22'-0"
Splice (AB₂) bars alternate splices.
½"ᵘ (AB₃) stirrups @ 12" ctrs.
⊓, 12'-4" lg.
3-1"ᵘ (AB₂) bars, 53'-4" lg. Total 6
3'-4"
2'-10½"
2'-10½"
2'-10½"
2'-10½"
2'-10½"
2'-10½"
1"ᵘ (AB₂) dowels 5'-0" lg. Total 48 each column
Keyed construction joint
1"ᵃ (AB₂) bars, 63'-0" lg.
½"ᵘ (AB₃) bars @ 12" ctrs.
3'-7½" lg.
Splice (AB₂) bars alternate splices
(AB₂) dowels
3'-0"
30'-0"
30'-0"
Tremie Seal to be poured only if directed by the Engineer. Thickness of seal to be 0.43 of the hydrostatic head with a minimum of 1'-6". No seals poured.
PART ELEVATION
Scale: ⅜"=1'-0"
AS BUILT
Contract No. 08-08-Mun
Mun. Title 2013-F Unit 2
Contract Complete July 9, 1940
PART PLAN
Scale: ⅜"=1'-0"
(AB₂) dowels
(AB₂) bars
(AB₂) stirrups
(AB₂) dowels
(AB₂) bars
(AB₂) bars
2'-0"
2½"
2½"
1'-0"
END ELEVATION
Scale: ⅜"=1'-0"
SECTION C-C
Scale: ¾"=1'-0"

Elev. 68.30
Elev. 67.99
Elev. 67.44
70.29
69.65
Elev. 69.22
72.46
71.89
Elev. 171.18
El. 144.95
El. 139.00
Tremie Seal
BENT #1
El. 144.00
El. 141.00
BENT #2
Tremie Seal
El. 145.75
El. 144.00
BENT #3
Tremie
74.64
73.93
Elev. 173.14
76.81
75.79
Elev. 174.94
El. 144.00
BENT #4
El. 152.00
BENT #5
ELEVATIONS OF BENTS
Scale: 1"=20'-0"
4 Bent
(AB₂) ⇦ 5'-6" long.
(AB₂) bars
(AB₂) Stirrups 1'-6" lng.
(AB₂) bars
2½"
Equal Spcs.
2½"
Laitles 2½" min.
SECTION A-A
Scale: ¾"=1'-0"
2'-0"
2'-0"
2'-0"
(AB₂) bars
(AB₂) bars
(AB₂) hoops
(AB₂) bars
SECTION B-B
Scale: ¾"=1'-0"
5'-0"
2'-10"
22'-0"
2'-0"
2'-0"
½"ᵘ (AB₃) bars @ 18" ctrs. each face
Elev. 157.00
4-1"ᵘ (AB₂) bars
30'-0"
Keyed construction joint
4-1"ᵘ (AB₂) bars
CURTAIN WALL AT BENT NO. 4
PART ELEVATION
Scale: ¼"=1'-0"
(AB₂) bars
(AB₂) bars
(AB₂) dowels
(AB₂) bars
3'-0"
SECTION

A.S. BUILT PLANS
Contract No.
Date Completed
Document No.

PWA 2013-F
Unit 2

Dist.	County	Route	Section	Sheet No.	Total Sheets
IV	SF	56	SF	4	23

Bridge Engineer — Civil Engineer-Lieut. Col. U.S.A.

Approved December 21 1938

Approved for Commanding General 9th Corps Area

Colonel, Corps of Engineers
Engineer

Structure symmetrical about this ℄ except superelevation & grade.

3-⅞"ø ⑤ bars

3-¾"ø hoops 6'0" lg. under each Curb

1-1½"ø ⑥ bar 10'-6" long.

2-1½"ø ⑥ bars 29'-0" long.

81'-0"

6"x6" fillets

2-1½"ø ⑤ bars, 21'-0" lg. Exterior girders
3-1½"ø ⑤ bars 21'-0" long. Interior girders
2-1½"ø ⑤ bars 24'-0" long.

2-1½"ø ⑤ bars, 14'-0" lg.

2-1"ø ⑤ bars 17'-6" long.

34'-0"

3-⅞"ø bars, aft. 52'-10" lg. Splice 26'-5"

¾"ø stirrups @ 12" ctrs. between girders

13'-9" long

2-1½"ø ⑤ bars, 22'-6" lg.

2-1½"ø ⑤ bars 31'-0" long, Interior girders
Exterior girders

3-1½"ø ⑤ bars 37'-3" long, Interior girders
Exterior girders

2-1½"ø ⑤ bar 20'-0" long, Interior girders only.

2-1½"ø ⑤ bars 27'-0" long.

2-1½"ø ⑤ bars 40'-0" long.

Stirrup Spacing

Bent #1 — Bent #2 — Bent #3

NOTE:—
Girders are on curves parallel to ℄ Roadway.
Dimensions shown are for center girder.
Reinforcing is typical for all girders except as noted.

GIRDER ELEVATION
Scale: ⅜"=1'-0"

⑤ bars @ 18" ctrs

20' 32'-0" long 24'-6"
28'-3" 34'-3"
26'-4" 26'-4" 52'-8" long

54'-3" long
54'-3" long

Symm. about ℄ except as shown

25'-6"

22'-0"

10" x 14" sheet ctrs @ 18" ctrs

Splice of reports ⑤ bars on tapered Splice of 2 girders

4 Galvanized wire hangers @ 24" ctrs each

Strap hangers "See detail"

Splice of bars

1" bars @ 12" ctrs

½" x 6" Plate

½" Girders

Note: Omit ceiling between end diaphragms and end bents.

1½"x¾"x⅛" Galvanized ℄'s @ 2'-6" ctrs.

TRANSVERSE SECTION Ⓐ Ⓐ
Scale ½"=1'-0"
NORMAL TO ℄ OF BRIDGE

Ceiling Notes.
Expanded metal mesh cut from 18 ga. galvanized sheets and expanded to 1½"x3" mesh Wt = 36" lbs/sq. yd. Metal mesh to be lapped 1½" mesh at joints. Metal mesh to be placed 3" below backing and fastened to each ℄ intersection and to each channel @ 6" ctrs. with 18 ga. double annealed galvanized wire.

Inside face of exterior girder

14 ga. double annealed wire @ 12 ctrs.

Channel

Backing

Metal Mesh Lath

Gunite

SECTION Ⓒ Ⓒ
No scale

¾"x1" Douglas blocking on 2"x6" cleats

Concrete form

DETAIL OF STRAP HANGERS
Scale 1"=1'-0"

AS BUILT
Contract Complete July 5, 1940

Grout

7/8" hole
1¼" spacer bar

½" bars @ 18" ctrs

3'-0" long

1¼" spacer bar

2-1" bars 6'-0" long

Slab

Grout

½"ø dowels @ 18" ctrs. 1'-6" long

CURB DETAIL
Scale: 1"=1'-0"

Chief of Sections

1'-5"

4'-0" lg.

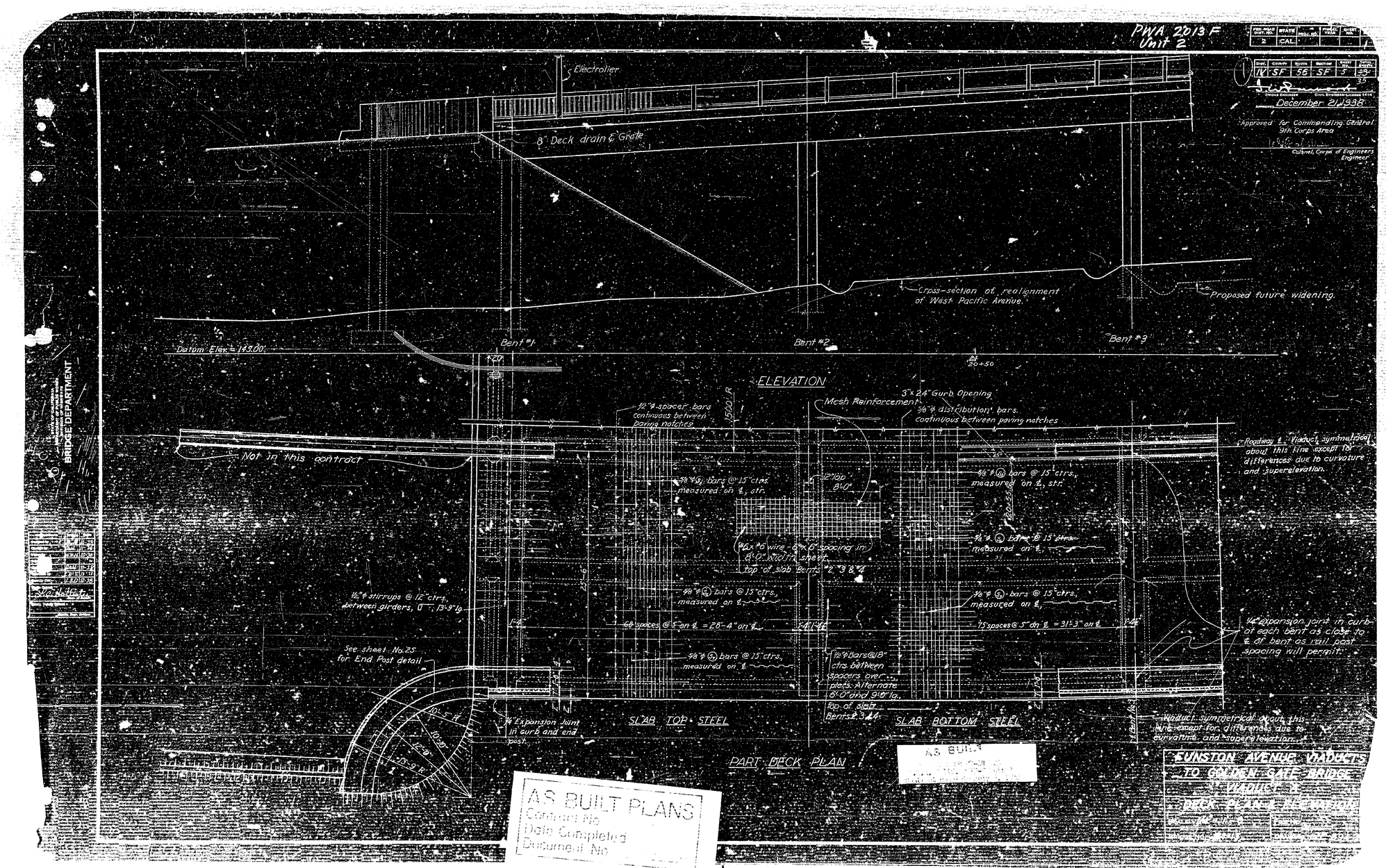
¾" Stirrups

2'-0"

5'-1'-6" lg.

FUNSTON AVENUE APPROACH
TO GOLDEN GATE BRIDGE
VIADUCT
SUPERSTRUCTURE
General Plan

AS BUILT PLANS
Sheet No.
Dist. Drawing No.
Spec. Book No.


PWA 2013 F
Unit 2
December 21, 1938
Approved for Commanding General 9th Corps Area
Colonel, Corps of Engineers Engineer
Electrolier
8" Deck drain & Grate
Cross-section of realignment of West Pacific Avenue.
Proposed future widening.
Datum Elev. = 143.00
Bent #1
Bent #2
Bent #3
ELEVATION
3"x24" Curb Opening
Mesh Reinforcement
Not in this contract
See sheet No. 25 for End Post detail
SLAB TOP STEEL
SLAB BOTTOM STEEL
PART DECK PLAN
AS BUILT PLANS
Contract No
Date Completed
Document No
BRIDGE DEPARTMENT
EUNSTON AVENUE VIADUCTS
TO GOLDEN GATE BRIDGE

PWA 2013-F
Unit 2

Proj.	Account	Route	Segment	Log Mile	Segment No.
HW	SF 56	SF	6	33	

Proj. Segment Identification No.	Date	Mileage	Total	Segment No.
2	CAL			

December 21, 1938

Approved for Commanding General 9th Corps Area

Colonel, Corps of Engineers, U.S. Engineer

TOTAL LENGTH OF BRIDGE - 707'-0"

11 Spans @ 55'-0" 605'-0"

6%

60'-0" V.C.

EVC Sta 23+44.33 Elev. 224.56

Sta. 43+44.33 Elev. 224.56

44'-0"

47'-0"

Retaining Wall 59'-0"

Wingwall

Sub-station Elev. 205.00

#1 Elev. 195.00

#2 Elev. 188.00

#3 Elev. 180.00

#4 Elev. 176.00

#5 Elev. 168.00

#6 Elev. 168.00

#7 Elev. 167.00

Profile 20'1"

& Profile

#8

#9 Elev. 160.00

#10 Elev. 157.00

Elev. 160.09 Varies

#11

Profile 20' ±

#12 Elev. 159.00

#13 Elev. 160.00

Datum Line Elev. 160.0

45 46 47 48 49 50 51 52 53

Note: Approach Fills not a part of this contract

See Sheet 17

For Elevation see sheet #9

ELEVATION

B.M. No. 6A
Elevation ~~224.348~~ 222.174
Nail in 24" Eucalyptus Tree
~~155'~~ Rt. of Sta. ~~44+50~~ 45+20
~~50'~~

Bench Mark
Spike in Stump 55' Lt Sta. 52+21
Elev. 183.075

Note: Drainage installation included in this contract ends at face of drop inlet. Drop inlets and pipe ahead of this point not a part of this contract.

Point of Bridge No. 34-171 in neat black letters 2" high

Note: Drop inlets and pipe back of this point are not a part of this contract. Drainage installation included in this contract starts at face of drop inlet.

Sub-station (Under) Elev. 205.00

Standard drop inlet Sta. 41+20.0 Elev. 26.00

Standard 3 Lt. Clearance Unit

6" P.M.P. Standard drop inlet

Expansion Joint

Electrolier

Sta. 52+86.0

Elev. 183.60

42" C.M.P.

Standard drop inlet

TO SANTA CRUZ

TO GOLDEN GATE BRIDGE

Electrolier

Expansion Joint

N.O. 54' 16½"

Drain

Sta. 52+21.0

6% Merchant Casing Cross Drain

Point No. 10

Point No. 11

Point No. 12

Point No. 13

Point No. 5

Point No. 6

Point No. 8

Point No. 9

Point No. 3

Point No. 4

Point No. 2

Point No. 1

Sta. 43+44.33

Elev. 224.56

12" C.M.P. Electrolier

12" Storm Sewer Outlet

Approx. toe of slope

POST ROAD

KOBBE AVE.

KOBBE BLVD.

PARK

PLAN

AS BUILT PLANS
Contract No.
Job Compact No.
Drawing No.

AS BUILT
Contract Change Order No.
Date
Initials

BRIDGE DEPARTMENT

PWA-2013 F
Unit 2
FED. ROAD DIST. NO. 2 STATE CAL.
DIST. IV COUNTY SF ROUTE 56 SECTION SF SHEET NO. 7 TOTAL SHEETS 35
BRIDGE ENGINEER · CIVIL ENGINEER LICENSE 1614
APPROVED December 21, 1938.
Approved For Commanding General 9th Corps Area
Colonel, Corps of Engineers Engineer
BM No. 7
Elevation 184.730
"X" Cut in Lamp Hole Ring
90' Lt. of Sta. 48+40
Bench Mark
Spike in Stump 55' Lt. Sta. 52+21
Elev. 183.075
BRIDGE DEPARTMENT
To SANTA CRUZ
TO GOLDEN GATE BRIDGE
N 0° 50' 16" E
4" V.C. drain pipe with end headwall and copper screen at ground surface
Conc. Pull Box
8 Wire Power Line
Construct New Underground Conduit
4'-0" sq. footings
For sub-station details see sheet No. 11
Concrete Pull Box
Eucalyptus
B.M. No. 6-A
Elevation 224.340 222.174
Nail in 24" Eucalyptus Tree
50 155' Rt. of Sta. 44+59 45+20
6" Concrete Curb
Existing power poles to be abandoned and salvaged.
KOBBE AVE
POST ROAD
PARK BLVD.
Cypress Grove
Cannon on Conc. Base
Manhole
Timber Guard Rail
Remove existing aerial Power and Signal lines
Install Power and Signal lines in new underground conduit.
Existing under-ground lead cable to be extended northerly to pole 50' Rt. of Sta. 49+00
8" Water Main
Pipe El. 181.8
L.H. El. 194.7
Pipe Elev. 186.9
Layout Line
Elev. 158.5
Elev 156.0
Note:- For details of Abutment footings see sheet No. 8
For details of Retaining Wall footings see sheet No. 9
Elevation of footings may be changed by the Engineer to suit conditions encountered in the field.
Maximum foundation pressure = 2 tons/sq. ft.
4" V.C. pipe
Concrete Headwall
1½" x 1½" x ¼" L 0'-6" lg. with ⅜" φ drilled and tapped hole.
(2) ⅜" φ machine screw
3 mesh 10 ga. (.134") copper cloth brazed to frame.
¼" x 1" copper frame (Braze at corners)
No headwalls placed
DRAIN HEADWALL AND SCREEN
Scale 1" = 1'-0"
Note: Location to be determined by Engineer
Primary 3 Phase 4400 V
Primary Single Phase 220 V
Transformer
Ground
Fire Alarm Line in 1¼" Conduit
Leaded Cable to Electrolier
Pull Box
To Electrolier
EXISTING AERIAL LINES
Limits of Structure Excavation and backfill.
2-#10-1 Cond. 600 V RCLC
2-#6-1 Cond. 5 KV-RCLC
Primary 3 Phase 4400 V Line in 3" Conduit
1-#4-4 Cond. 5 KV-VCLC
Primary Single Phase 220 V Line in 2" Conduit
Underground Conduit Encased in Class "B" Concrete
NEW UNDERGROUND LINES
Scale 3/16" = 1"
KOBBE AVENUE
Secondary Single Phase 220 V Line in 2" Conduit
1-#6 W.P. Strd. 35#
2-#6-1 Cond. 600 V-RCLC
2-#6-1 Cond. 5 KV-RCLC
Sta. 45+21.35 Beg. Steel Rail
Sta. 45+21.19 Beg. Steel Rail
Sta. 45+20.00 Paving Notch
Sta. 52+27.00 Paving Notch
Sta. 52+81.65 End of Steel Rail
Sta. 52+81.48 End of Steel Rail
6@7'-2" = 43'-0"
8@7'-2" = 57'-4"
20@7'-2" = 143'-4"
129'-0"
18 panels
21@7'-2" = 150'-6"
28@7'-2" = 200'-8"
19@7'-2" = 136'-2"
16@7'-2" = 114'-8"
RAIL POST SPACING
No Scale
CONCRETE COVER
Secondary Single Phase 220 V
1-#6 W.P. Strd. Wire 101#
Secondary 220 V Line in 1½" Conduit
Underground Conduit Encased in Class "B" Concrete
No Scale
EXISTING AERIAL LINES
NEW UNDERGROUND LINES
STORY AVENUE
Limits for structure excavation and backfill
3'-0"
4'-0"
No. Side Kobbe Av.
Cover not shown
Concrete Cover (See details)
Conduit
4" V.C. Drain Pipe
PLAN
SECTIONAL ELEVATION
CONCRETE PULL BOX
AS BUILT
AS BUILT PLANS

PWA 2013 P
Unit 2

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
8	CAL.			

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SF.	56	SF.	8	32

Approved December 21, 1935
Chief, Corps of Engineers

Approved for Commanding General 9th Corps Area
Colonel, Corps of Engineers
Engineer

BRIDGE DEPARTMENT

REAR ELEVATION
Scale 1/4" = 1'-0"

Reinforcement in retaining walls not shown.

SECTION (B)(B)
Scale 1/4" = 1'-0"

SECTION (A)(A)
Scale 1/4" = 1'-0"

PLAN
Scale 1/4" = 1'-0"

ELEVATION

Abutment to be backfilled to this elevation before girders are poured.

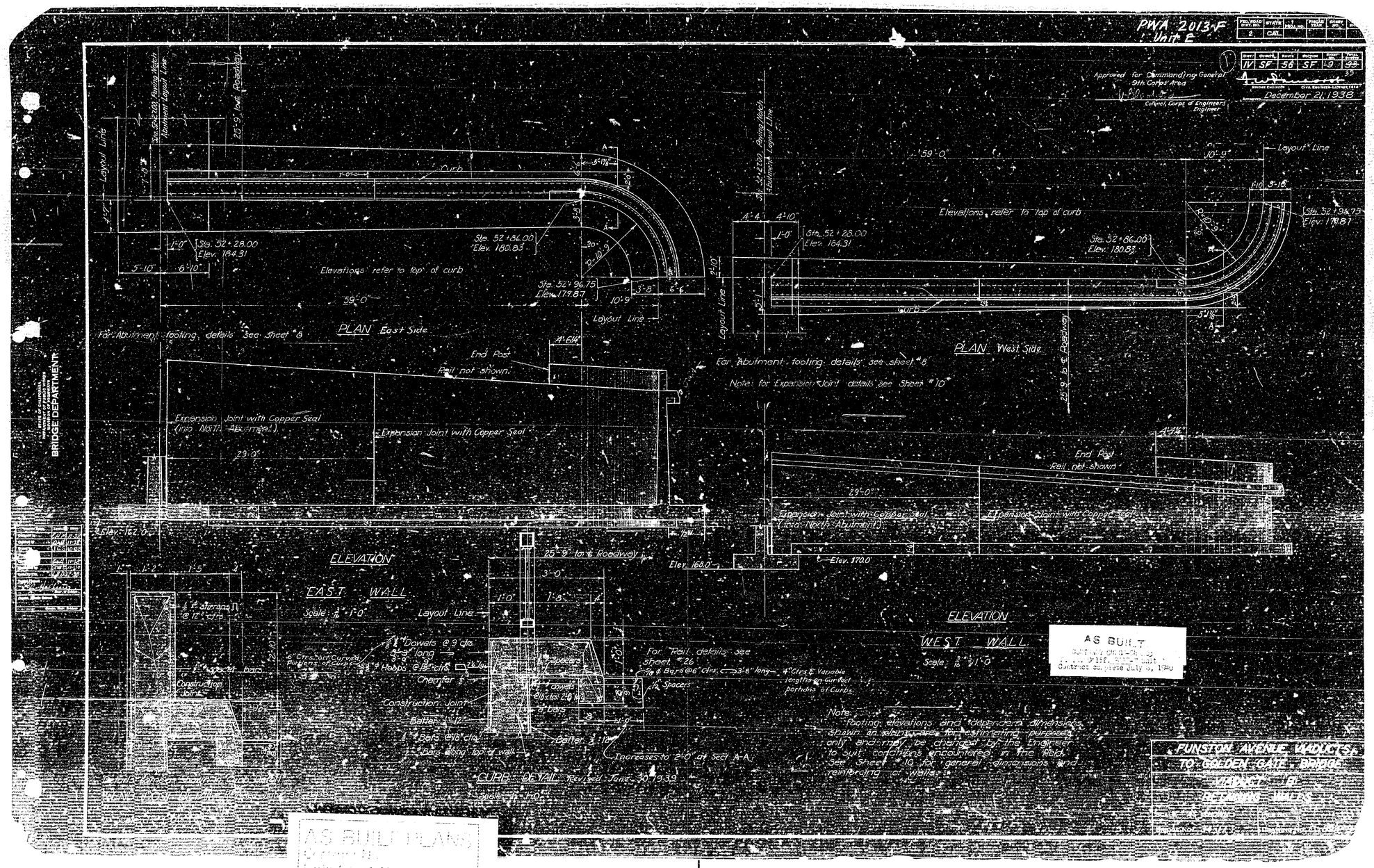
For Retaining Wall details see Sheet No. 9

TABLE OF REINFORCING STEEL AND DIMENSIONS

"H"	22'-0"	20'-0"	18'-0"	16'-0"	14'-0"	12'-0"	10'-0"	8'-0"	6'-0"
"W"	13'-11"	12'-8"	11'-6"	10'-3"	9'-2"	8'-0"	6'-10"	5'-8"	4'-6"
"C"	6'-4"	5'-10"	5'-4"	4'-10"	4'-4"	3'-10"	3'-5"	2'-11"	2'-5"
"B"	7'-5"	6'-10"	6'-3"	5'-8"	5'-1"	4'-7"	4'-1"	3'-6"	2'-11"
"a" bars	1'-5" @ 7"	1'-3" @ 7"	1'-2" @ 7"	1'-0" @ 7"	0'-11" @ 7"	0'-9" @ 7"	0'-8" @ 7"	0'-7" @ 7"	0'-6" @ 7"
"b" bars	1'-8" @ 7"	1'-6" @ 7"	1'-4" @ 7"	1'-2" @ 7"	1'-0" @ 7"	0'-11" @ 7"	0'-9" @ 7"	0'-8" @ 7"	0'-7" @ 7"

AS BUILT PLANS
Corrections
Per Company's
Document No.

FULTON STREET AVENUE VIADUCTS
TO GOLDEN GATE PARK
SAN FRANCISCO


PWA 2013-F
Unit E
Approved for Commanding General
9th Corps Area
Colonel, Corps of Engineers
Engineer
December 21, 1938
PLAN East Side
PLAN West Side
Elevations refer to top of curb
For Abutment footing details see sheet #8
Note: for Expansion Joint details see sheet #10
Expansion Joint with Copper Seal
(into North Abutment)
End Post
Rail not shown
ELEVATION
EAST WALL
ELEVATION
WEST WALL
CURB DETAIL
Revised June 30, 1939
Note:
Footing elevations and dependent dimensions shown on plans are for estimating purposes only and may be changed by the Engineer to suit conditions encountered in the field. See Sheet #10 for general dimensions and reinforcing of walls.
AS BUILT
AS BUILT PLANS
BRIDGE DEPARTMENT
FUNSTON AVENUE VIADUCTS
TO GOLDEN GATE BRIDGE

PWA 2013 F
Unit 2

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEARS	SHEET NO.
4	CAL			

Dept.	District	Route	Section	Sheet No.	Sheets in Set
IV	SF	56	SF	10	35

Approved
Division Engineer — Civil Engineer — Colonel Date
Approved December 21, 1938

Approved for Commanding General
9th Corps Area

Colonel, Corps of Engineers
Engineer

DEPARTMENT OF PUBLIC WORKS
DIVISION OF ARCHITECTURE
BRIDGE DEPARTMENT

25°-3" To ℄ Highway

3'-0"
12"
2'-0"

Rail (Refer to sheet #26 for details)
Layout Line
For details of curb see sheet #9

6" Bars along top of wall

2 Dia. 1½" Min.

4" ϕ Drains @ 6'-0" ctrs. at height of outside ground. Provide suitable stone backing.

Construction joint

8 Bars

B
C
W

6" Bars
8 Bars

2 Dia. 1" Min. Step short 6" bars

Omit key when founded on rock or when so directed by the Engineer.

SECTION

El. 232.173
17'-6"
El. 230.275
El. 226.80
El. 224.94
44+73.00 ℄
45+06.25
Sta. 44+23.00
ELEV.
Scale: ¼" = 1'-0"

H = 22'-0"
H = 20'-0"
H = 18'-0"
H = 16'-0"
H = 14'-0"
H = 12'-0"
H = 10'-0"
H = 8'-0"

13'-11" Long
12'-8" Long
11'-7" Long
10'-5" Long
9'-3" Long
8'-2" Long
7'-0" Long

6 Bars straight with dowels bent into footing

30 Dia.

8 Bar dowels

Short 6 bars

6 Bars bent into footing

ELEVATION

TABLE OF REINFORCING STEEL DIMENSIONS & DATA

H.	22'	20'	18'	16'	14'	12'	10'	8'	6'
W	13'-6"	12'-4"	11'-3"	10'-2"	9'-0"	7'-11"	6'-9"	5'-8"	4'-8"
C	5'-0"	4'-6"	4'-1"	3'-8"	3'-2"	2'-9"	2'-3"	1'-10"	1'-4"
B	8'-6"	7'-10"	7'-2"	6'-6"	5'-10"	5'-2"	4'-6"	3'-10"	3'-2"
C	2'-2"	2'-0"	2'-0"	1'-8"	1'-8"	1'-6"	1'-6"	1'-6"	1'-2"
S_1	5¼	5"	4¾	4"	5½	5"	2½	2"	1¾"
S_2	1'-8¾"	1'-7½"	1'-6½"	1'-6"	1'-5¼"	1'-4½"	1'-3¾"	1'-3"	1'-2¼"
O Bars	11"ϕ @7"	11"ϕ @7"	1"ϕ @7"	1"ϕ @7"	⅞"ϕ @7"	¾"ϕ @6"	¾"ϕ @8"	¾"ϕ @8"	¾"ϕ @10"
O Bars	11"ϕ @7"	11"ϕ @7"	1"ϕ @7"	1"ϕ @7"	¾"ϕ @7"	¾"ϕ @3"	⅝"ϕ @8"	¾"ϕ @8"	¾"ϕ @10"

Note: key omitted from above quantities

PLAN
Scale: ¼" = 1'-0"

Note
East and West wall are alike.

Tunnel Wall

Bottom Elev. of footing 226.80

35'-4" from ℄ roadway

1:2

33'-3"

Sta. 45+10.25

¾" Expansion Joint Material

S.W. Wing wall Viaduct "B"

Bottom Elev. of footing 226.94

½" ϕ stirrups @ 12" ctrs.

½" ϕ spacers

3'-0"

1'-7"

Roadway

Surface

½" ϕ spacer bars

½" ϕ bars @ 12" ctrs.

Footing Elev. as given in Plan.

TYPICAL SECTION OF WALL
Scale: 1" = 1'-0"

CONNECTION WALLS TO TUNNEL

W
C
B
½" ϕ Spacer bars

1" Expansion joint, fill with premolded expansion joint filler joint to extend throughout height of wall only, locate joints at 20'-0" ctrs. or as directed by the Engineer.

PLAN ONE EXPANSION JOINT

Sheet Copper #22 Stub Beaded

1" Dia.

1" Sheet Expan. fill

Sheet Copper #22 Stub Beaded

1" Sheet Expan. fill

COPPER SEAL

AS BUILT PLANS
Contract No.
Date Completed
Document No.

FUNSTON AVENUE PROJECT

1/2" Watertight Expansion Joint with copper seal plate (See detail)
Note: Reinforcing and girders shown elsewhere
SECTION B-B
See Section C-C for reinforcing in this wall
Paint this face with asphalt
Outside Face
Inside Face
Reinforcing
COPPER SEAL

PWA 2013-F
Unit 2

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
2	CAL.			

DRWN.	CHKD.	TRACED	CHKD.	DATE	SUBM.
IV SF	56	SF	12		

BRIDGE DEPARTMENT

Approved December 21, 1938
Approved for Commanding General 9th Corps Area.
Colonel, Corps of Engineers
Engineer

Elev. 226.14
Slope 1"
½"ϕ bars @ 6" ctrs. 6'-0" lg.
½"ϕ bars — @12" ctrs.
¾"ϕ bar 18'-9" lg. (both faces)
½"ϕ bars — @12" ctrs. (both ways-inside face)
¾"ϕ bars — @12" ctrs. (outside face)
Railing around outside of stairs is not shown.
½"ϕ bars
Vertical reinforcing
3-¾"ϕ bars @6" ctrs.
13-⅜"ϕ bars @6" ctrs.
El. 216.81
El. 215.73
3¾" step in landing
2-¾"ϕ bars — 7'-0" lg.
2-¾"ϕ bars — 10'-0" lg.
7'-10"
Elev. 212.50
10½"
7½"
½"ϕ bars @ 6" ctrs. 10'-0" lg.
7'-5"
11'-11"
Reinforcing Outside face
½"ϕ bars 4'-5" lg. (each tread)
½"ϕ bars @12" ctrs. 7'-6" lg.

SECTION C-C
Scale ⅜"=1'-0"

Earth backfill
Rock filling material
90-10" (20-1½ of 8" Perforated Metal Pipe for sub-drains.
Inv. El. 216.8
Inv. El. 210.0
17'-0"
22'-0"
Down
Invert El. 212.4
Slope 2"
28'-0"
Inv. El. 211.5
℄ Bent No 1
Sta. 45+34
Paving Notch
Sta. 45+20
Slope ¾"
27'-0"
End 8" sub-drain
Rockdrain Pocket below Surface
℄ of Bridge

SECTION E-E

DRAINAGE LAYOUT
Scale 1"=10'-0"

2½"x2½"x⅜" tubing with cap for end post
(At 2½"x2½" end posts)
(At intermediate posts)
2½"x½"x.120" tubing for rails and intermediate posts
(At intermediate posts)
(At 2½"x2½" end posts)
Note: All exposed welds to be ground flush with outside surface.
Vertical dimensions as given on Sections C-C and F-F
Top of Wall
Posts grouted in 4"x4" holes.

DETAIL OF STEEL RAILING
Scale 3"=1'-0"

AS BUILT
CONTRACT NO. DA-04-193-CIVENG-38-1-3
P.W.A. 2013-F Unit 2
Contract Completed June 6, 1940

8" SWR connecting to sub-drain (See drainage layout)

Steel Railing 8" edge wall
3'-0"
R=40'
2'-8"
90°
Curb

PLAN OF GATE

Construction Joint
El. 225.64
2-¾"ϕ bars — 19'-0" lg.
Edger finish 6" edge wall and metal railing to continue to meet face of wing rails. Enclosed area to be covered with 4" P.C.C. sidewalk (blocked into 2:6 squares). For details of wing rail see Sheet # 25
Rise 7"
Tread 10½"
2-¾"ϕ bars 22'-0" lg.
½"ϕ bars @6" ctrs. 22'-0" lg.
½"ϕ bars — @12" ctrs. 3'-9" lg.
Steel Railing (See Sub-Station Plan for extent of railing)
2-¾"ϕ bars — 6'-6" lg.
3'-7"
½"ϕ bar 3'-9" lg. (each tread)
El. 216.81
El. 215.73
½"ϕ bars — @12" ctrs. (both faces)
14'-8"
4'-8"

SECTION F-F
Scale ⅜"=1'-0"

Note: For location of Sections C-C, E-E, and F-F see "Plan of Sub-station", sheet # 11

Built-in brass lock calling for the same key as the door key to the sub-station. Six keys to be furnished with the lock.
2'-10"
Hinge
Top of curb
Roadway
½"ϕ bars 11'-9" lg.
¾"ϕ bars 11'-9" lg.

ELEVATION OF GATE
Scale ¾"=1'-0"

Note: Steel railing and gate to be galvanized after shop fabrication is complete.

SECTION E-F
Scale ½"=1'-0"

Grating frame 1½"x1½"x¼" L mitered and welded at corners. Frame to be galvanized after assembly

PLAN OF DRAIN
Scale ½"=1'-0"

1¼"x¾" bars 9¼" lg. fix at bar

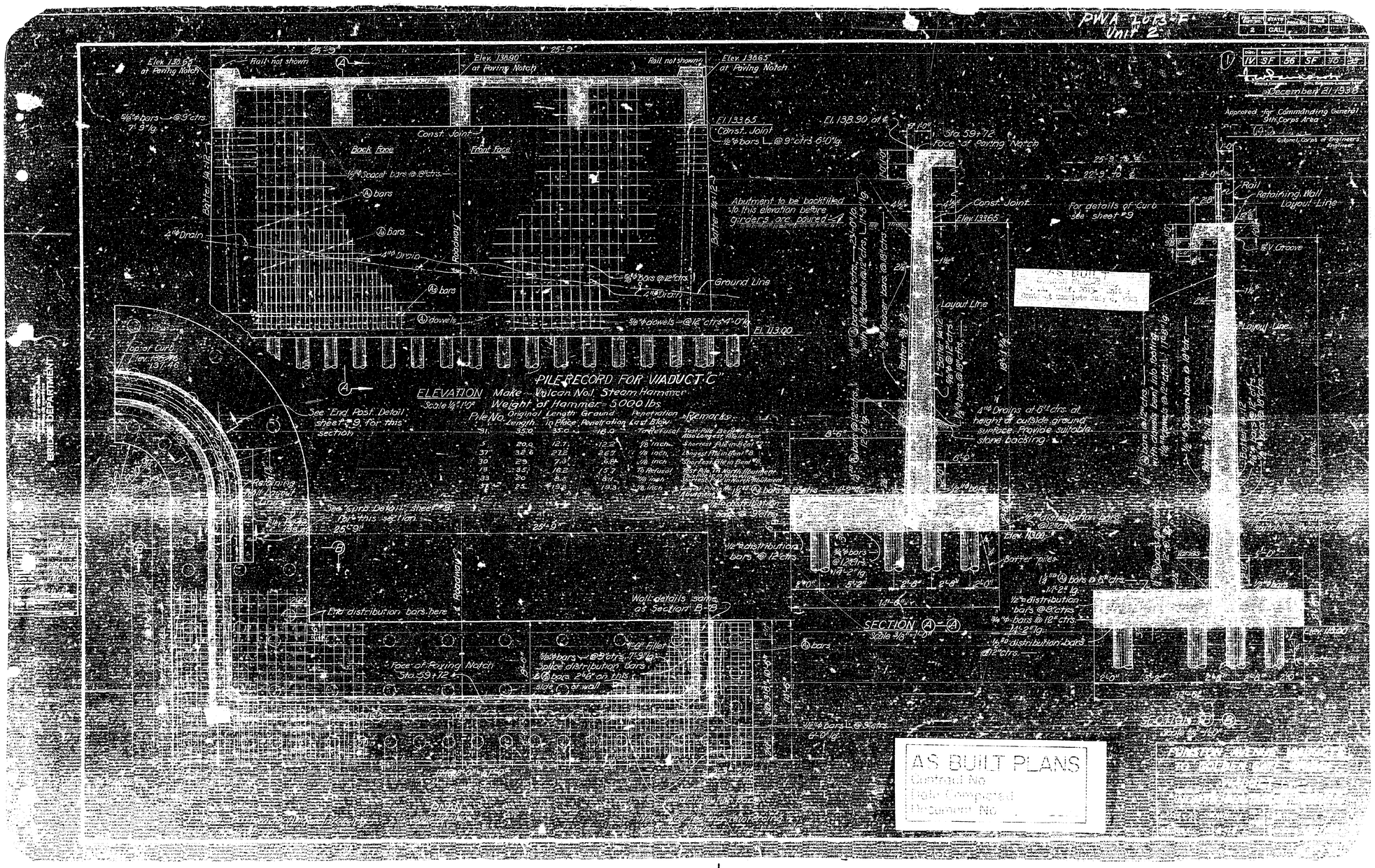
DRAIN GRATING
Scale ½"=1'-0"
Grating to fit in angle frame. Bars removable. Grating to be galvanized after assembly

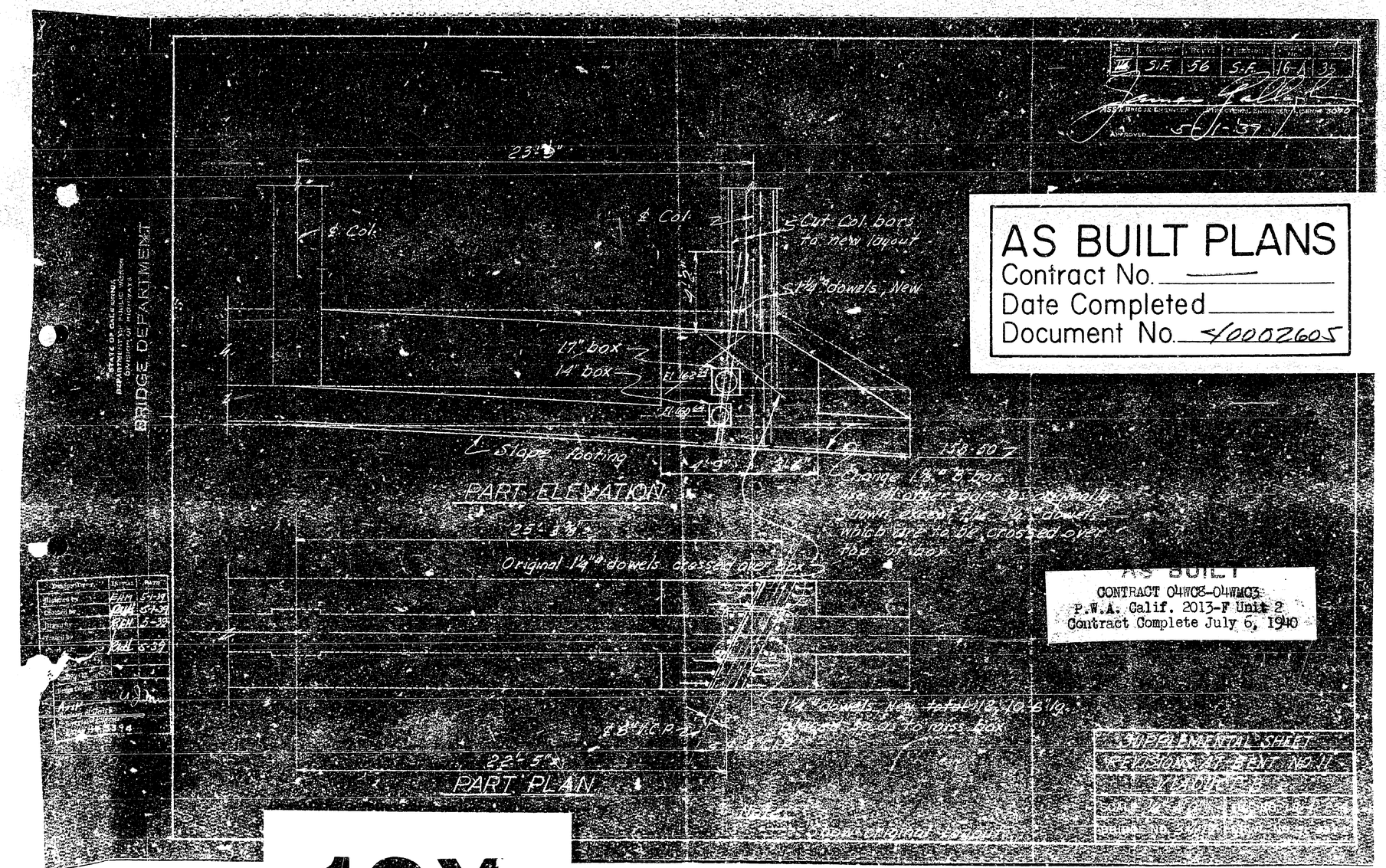
FUNSTON AVENUE VIADUCT
Project No. [illegible]
Roadway [illegible]
Sheet No. [illegible]

AS BUILT PLANS
Contract No
Date Completed
Document No

PWA 2013-F
Unit 2
December 21, 1938
Approved for Commanding General
9th Corps Area
Colonel, Corps of Engineers
Engineer
Grade -6.00%
TOTAL LENGTH OF BRIDGE = 444'-0"
7 spans @ 55'-0" = 385'-0"
18'-0"
41'-0"
Profile 20' Lt.
Profile ℄
Profile 20' Rt.
Bench Mark
Spike in Stump 53' Lt. Sta. 55+21
Elev. 166.647
Bent No. 1
El. 134.0
El. 131.0
El. 126.0
El. 118.0
El. 110.0
El. 106.0
El. 109.0
El. 113.0
Grade
El. 121.13
Datum Elevation 100.00
B.M. No. 8
Nail at base of 18" Pine
137' Lt. Sta. 55+85
Elev. 163.505
Note: Approach fills not a part of this contract.
Sta. 58+52.00 ℄ of
Story Ave. relocation
Retaining Wall built
under previous contract
Treated timber piles
(Ave. length for
estimating = 30')
See Sheet 14 for test piles
ELEVATION
B.M. #9
Nail at base of 24" Eucalyptus 85' Lt.
Sta. 60+57 Elev. 124.335
Drainage installation under this
contract ends at face of drop inlet.
Drop inlets and pipe ahead of this
point are not a part of this
contract.
Note: Drop inlets and pipe back of
this point not a part of this
contract. Drainage installation
under this contract begins
at face of drop inlet.
AS BUILT
Relocation of
Story Ave.
STORY
Paint Bridge No. 34-18 in
neat black letters 2½" high
Standard 3 Light Clearance Marker
Approx. top of excavation
Approx. toe
of fill
Berm 1' high
Drop inlet
12" C.M.P. (drain)
Sta. 55+28.00
Elev. 165.54
TO SANTA CRUZ
N-0° 50' 16" E
Date
12" CMP
Standard 3 light clearance marker
Drop inlet
Berm 1' high
Approx. toe of fill
Paint Bridge No. 34-18 in
neat black letters 2½" high
Expansion Joint
12" merchant casing
Electrolier
Deck Drain
ROADWAY WIDTH
DIVIDING STRIP
Deck drain
Electrolier
5⅝" Merchant Casing
Cross Drain
Bent No. 1
Bent No. 2
Bent No. 3
Bent No. 4
Bent No. 5
Bent No. 6
Bent No. 7
Bent No. 8
Bent No. 9
Sta. 59+72.00
Elev. 138.90
TO GOLDEN GATE BRIDGE
Drop inlet
Retaining Wall built
under previous contract
PLAN
LINCOLN
BRIDGE DEPARTMENT
AS BUILT PLANS
Contract No.
Date Completed
Document No.

AS BUILT PLANS
Contract No.
Date Completed
Document No.

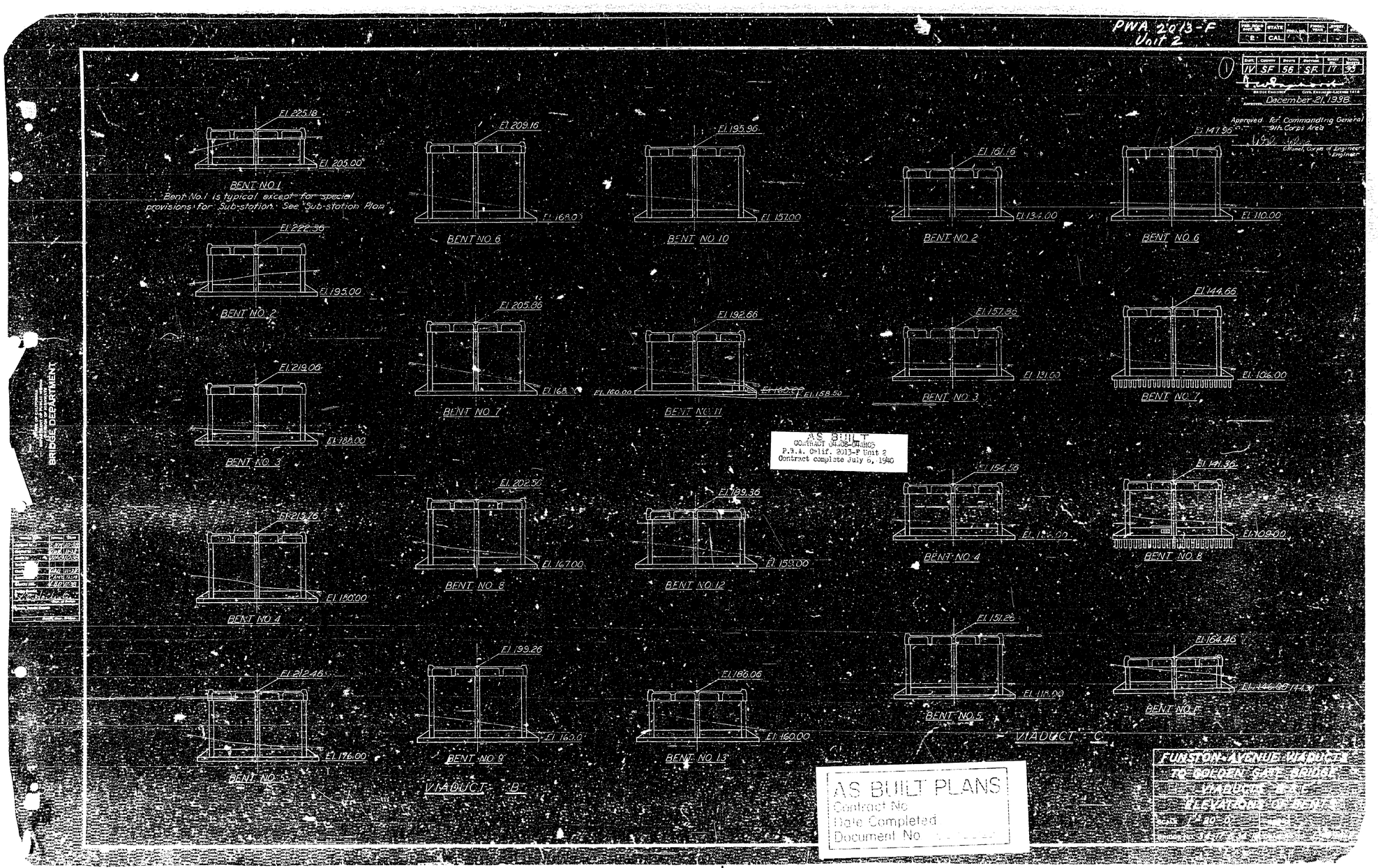

PWA Lots "F"
Unit 2
December 21, 1938
Approved for Commanding General
9th Corps Area
Colonel, Corps of Engineers
Engineer
Elev. 138.65 at Paving Notch
Rail not shown
Elev. 138.90 at Paving Notch
Elev. 138.65 at Paving Notch
Const. Joint
Back Face
Front Face
Abutment to be backfilled to this elevation before girders are poured
Ground Line
Layout Line
For details of Curb see sheet #9
Retaining Wall Layout Line
Top of Curb
PILE RECORD FOR VIADUCT "C"
ELEVATION Make - Vulcan No. 1 Steam Hammer
Weight of Hammer - 5000 lbs.
See End Post Detail sheet #9 for this section
See Curb Detail sheet #9 for this section
End distribution bars here
Wall details same as Section B-B
Face of Paving Notch Sta. 59+72
SECTION A-A
Scale 3/8"=1'-0"
Batter piles
AS BUILT PLANS
Contract No.
Date Completed
Document No.

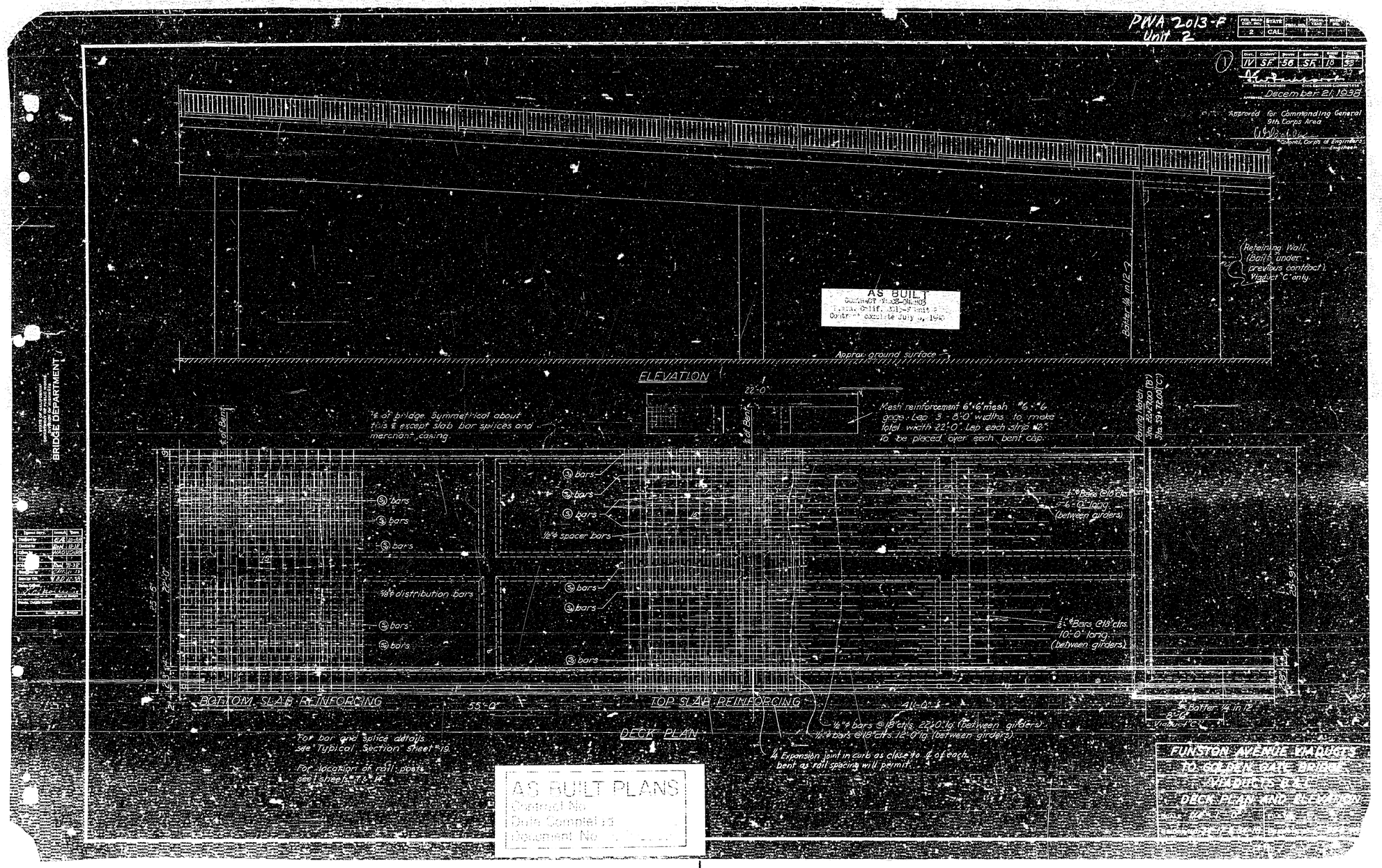


AS BUILT PLANS
Contract No. ——
Date Completed
Document No. 40002605
AS BUILT
CONTRACT 04WC8-04WMC3
P.W.A. Calif. 2013-F Unit 2
Contract Complete July 6, 1940
BRIDGE DEPARTMENT
PART ELEVATION
PART PLAN
Slope footing
Original 1¼" dowels crossed over box
Cut Col. bars to new layout
1¼" dowels, New
17" box
14" box

16X

PWA 2013-F
Unit 2
IV SF 56 SF 16 35
Approved for Commanding General 9th Corps Area
Colonel, Corps of Engineers Engineer
December 21, 1938
BRIDGE DEPARTMENT
AS BUILT
Symmetrical about ℄ roadway
Railing not shown
Profile grade
Soffit level
Railing not shown.
2 B8 Bars Total 4 each exterior column.
3 B8 Bars Total 6 each interior column.
Radius 2'-0"
1 B10 Bar, Exterior col.
4 B7 Bars, all columns.
2 B7 Bars, all columns.
B9 Hoops @ 12" ctrs. all columns.
B6 Dowels
Class A Structure concrete
Keyed const joint
PART ELEVATION
Scale ¼"=1'-0"
END ELEVATION
Scale ¼"=1'-0"
℄ Bent
B8 Bars
B7 Bars
B9 Hoops
SECTION A-A
Scale ½"=1'-0"
These sections typical for all columns.
SECTION B-B
Scale ½"=1'-0"
SECTION E-E
Scale ½"=1'-0"
℄ Roadway
Symmetrical about this ℄
Reinforcement similar to bents without piles.
Keyed construction joint
PART ELEVATION
Scale ¼"=1'-0"
END ELEVATION
Scale ¼"=1'-0"
2'x2' Opening for 18" VCP Bent No. 8 only
16 Spaces @ 1'-8" = 30'-0"
Column steel not shown
Keyed construction joint
PART PLAN
Scale ¼"=1'-0"
SECTION C-C
Scale ½"=1'-0"
PART PLAN
Scale ¼"=1'-0"
SECTION D-D
TYPICAL BENT - WITHOUT PILES
Use for bents "2" to "13" inclusive - Viaduct "B"
" " " "1" to "6" inclusive - Viaduct "C"
For Bent No. 11 - Viaduct "B" See Sheet 16 A
TYPICAL BENT - WITH PILES
Use for bents "7" and "8" ~ Viaduct "C"
Corrected Pile Spacing for both bents
Revisions to Curtain wall at Bent No. 8 only
Note: for elevations of bents see sheet 17
AS BUILT PLANS
Contract No.
Date Completed
Document No.


PWA 2013-F
Unit 2
Dist. IV Copy SF Sheet 56 Section SF Total 17 Sheet 33
Approved December 21, 1938
Approved for Commanding General
9th Corps Area
Colonel, Corps of Engineers
Engineer
BENT NO 1
Bent No.1 is typical except for special provisions for Sub-station. See "Sub-station Plan"
BENT NO 2
BENT NO 3
BENT NO 4
BENT NO 5
BENT NO 6
BENT NO 7
BENT NO 8
BENT NO 9
BENT NO 10
BENT NO 11
BENT NO 12
BENT NO 13
VIADUCT "B"
VIADUCT "C"
AS BUILT
CONTRACT 04-08-04-H05
P.W.A. Calif. 2013-F Unit 2
Contract complete July 6, 1940
AS BUILT PLANS
Contract No
Date Completed
Document No
FUNSTON AVENUE VIADUCT
TO GOLDEN GATE BRIDGE
BRIDGE DEPARTMENT


PWA 2013-F
Unit 2
December 21, 1938
Approved for Commanding General
9th Corps Area
Retaining Wall (Built under previous contract) Viaduct "C" only.
AS BUILT
Approx. ground surface
ELEVATION
22'-0"
Mesh reinforcement 6"x6" mesh #6 x #6 gage. Lap 3 - 8'-0" widths to make total width 22'-0". Lap each strip 12". To be placed over each bent cap.
℄ of bridge. Symmetrical about this ℄ except slab bar splices and merchant casing.
℄ of Bent
Paving Notch
Sta. 22+27.00 (B)
Sta. 59+72.00 (C)
1/2"φ spacer bars
5/8"φ distribution bars
1/2"φ Bars @18" ctrs. 6'-0" long (between girders)
1/2"φ Bars @18" ctrs. 10'-0" long (between girders)
BOTTOM SLAB REINFORCING
55'-0"
TOP SLAB REINFORCING
41'-0"
DECK PLAN
For bar and splice details see "Typical Section" Sheet #19.
For location of rail posts see sheets #7 & #14.
1/4" Expansion joint in curb as close to ℄ of each bent as rail spacing will permit.
Batter 1/4 in 12
Viaduct "C"
FUNSTON AVENUE VIADUCTS
TO GOLDEN GATE BRIDGE
VIADUCTS C & F
DECK PLAN AND ELEVATION
BRIDGE DEPARTMENT
AS BUILT PLANS
Contract No.
Date Completed
Document No.

PWA 2013-F
Unit 2

Dist.	County	Route	Mileage	Sheet	Total Sheets
IV	SF	36	SF	20	

Bridge Division

San Francisco, California
December 21, 1938

Approved for Commanding General
9th Corps Area
U.S.P.
Colonel, Corps of Engineers
Engineer

22'-0"

78'-0"

18'-0"

3-1¼"ⓐ bars, str., 36'-0" long
3-1¼"ⓑ bars, ⌒ 38'-0" long
2-1½"ⓒ bars, str., 21'-0" long
2-1½"ⓓ bars, ⌒ 22'-0" long

2-1¾"Ⓐ bars ⌒ 30'-0" long

3'-0" 5'-0" 5'-6" 5'-6" 5'-0" 3'-0"

3'-4"

-6 %

2-1¾"Ⓘ bars, str., 25'-8" long

6" fillets

3-1¼"ⓐ bars, ⌒ 44'-0" long
3-1¼"ⓑ bars, ⌒ 38'-0" long
2-1½"ⓒ bars, ⌒ 35'-0" long

Construction Joint, for details see sheet No 23

3-1¼"ⓐ bars, str. 13'-4" long

Construction Joint, for details see sheet No 23

3-1¼"ⓐ bars, str. 45'-0" long
3-1¼"ⓑ bars, ⌒ 43'-0" long
2-1½"ⓓ bars, ⌒ 35'-0" long

17'-6"

4'-0"

9'-2"

1'-3" 1'-3"

2'-2"

4'-0"

12'-0"

6 Sp. @ 3'-0" 2 @ 1'-0" 2 @ 1'-3" 3 Sp. @ 1'-6" 6 Equal Spaces 3 Sp. @ 1'-6" 2 @ 1'-3" 2 @ 1'-0" 6 Sp. @ 3'-0" 4½" 2'-6" 4½" 6 Sp. @ 3'-0" 3 Sp. @ 1'-0" 3 Sp. @ 1'-3" 3 Sp. @ 1'-6" 2 Sp. @ 2'-0" 4 Equal Spaces

Expansion Joint

⅝" Stirrups ⊓ 5'-0" long
⊔ 11'-10" long

This span symmetrical about ℄

44'-0"

27'-6"

27'-6"

Note:— Reinforcing for exterior Girders same as for interior girders except as noted below.

℄ Span	℄ Bent	℄ Span	℄ Bent (Symmetrical about this bent ℄)
3-ⓐ bars	3-ⓐ bars	3-ⓒ bars	3-ⓐ bars
3-ⓑ bars	3-ⓑ bars	3-ⓓ bars	3-ⓑ bars
No ⓓ bars	No ⓒ bars	No ⓓ bars	No ⓒ bars
	2-Ⓔ bars		2-Ⓔ bars

℄ Bents #3 & 9 Viaduct "B"
℄ Bent #2 Viaduct "C"

℄ Bents #4 & 10 Viaduct "B"
℄ Bent #5 Viaduct "C"
Section No. 1 symmetrical about this ℄

Bent No 1 | No 2 | No 3 | No 4 | No 5 | No 6 | No 7 | No 8 | No 9 | No 10 | No 11 | No 12 | No 13 | N. Abut.

Expansion Joints

VIADUCT "B"

Section No 1 | Section No 2

Expansion Joints

VIADUCT "C"

Pour No. 1
Pour No. 2
Pour No. 3

Note:— Any one section may be poured complete before starting pours in other sections providing the individual pours are made in the order as shown, except as the Expansion Bearing details govern.
No falsework is to be removed in any span until the two adjacent consecutive spans, or both ends have been completely poured and the last concrete placed in these spans has been cured according to the Standard Specifications.

KEY TO SECTIONS AND POURING DIAGRAM
No scale

INTERIOR GIRDER DETAILS
SECTION NO. 1
Scale: ⅜"=1'-0"

1"ⓖ bars
⅝" Stirrup ⊓ 5'-0" long
⊔ 11'-10" long
2'-0"
See note below
4'-0"
1½"ⓖ bars
Varies 2" min.
2 Seq. spcs.

SECTION A-A

⅝" Stirrup ⊓ 5'-0" long
⊔ 11'-10" long
2'-0"
See note below
4'-0"
Varies 2" min.
2 Seq. spcs.

SECTION B-B

⅝" Stirrup ⊓ 5'-0" long
⊔ 11'-10" long
Ⓘ bars
2'-0"
4'-0"
2 Seq. spcs.

SECTION C-C

Scale ½"=1'-0"

Note:— Depth of Exterior, Interior and Middle girders differ by the amount of the crown slope between girders.
Exterior girder depth = 5'-0"
Intermediate girder = 5'-1½"
Middle girder = 5'-3"
Reinforcing steel depth is the same for all girders.

AS BUILT PLANS
Changes
Not Required
See Field Notes

FUNSTON AVENUE VIADUCT
SAN FRANCISCO, CALIFORNIA

PWA 2013-F
Unit 2

Sheet	Number	Sheets	Number	Job	Number
IV	SF-56	SF-	21	SF-	23

December 21, 1938.

Approved, for Commanding General
9th Corps Area

Colonel, Corps of Engineers
Engineer.

BRIDGE DEPARTMENT

50'-0" Arc
5'-6" Intermediate arcs
2'-6" Middle arcs

1-1¼"ⓚ bar, 35'-6" long
2-1¼"ⓙ bars, 42'-9" long
3-1¼"ⓓ bars, 37'-0" long
3-1¼"ⓖ bars, 20'-0" long
3-1¼"ⓕ bars, 22'-0" long

2-1¼"ⓜ bar, str. 36'-0" long
2-1¼"ⓐ bars, str. 45'-0" long
2-1¼"ⓝ bars, 38'-0" long
2-1¼"ⓞ bars, str. 21'-0" long
2-1¼"ⓟ bars, 22'-0" long

For details of expansion joint, see sheet no. 22.

3-1¼"ⓒ bars, str. 12'-0" long
3-1¼"ⓐ bars, str. 20'-3" long

⅝" Stirrups
16 Spaces @ 6"

4 Bent No. 12, Viaduct B
No. 7 Viaduct C
6 Spa @ 9" 3 Spa @ 1'-0" 3 Spa @ 1'-3" 3 Spa @ 1'-6" 2 Spa @ 2'-0"

Construction Joint, for details see sheet No. 22

3-1¼"ⓒ bars, str. 45'-0" long
3-1¼"ⓑ bars, 43'-0" long
2-1¼"ⓓ bars, 35'-0" long

4 Equal Spaces
⅝" Stirrups 5'-0" long 11'-10" long

Construction Joint, for details see sheet No. 23

3-1¼"ⓒ bars, str. 18'-4" long

4 Bent No. 13, Viaduct B
No. 8 Viaduct C

2 Spa @ 2'-0" 3 Spa @ 1'-6" 3 Spa @ 1'-3" 3 Spa @ 1'-0" 5 Spa @ 9"

ELEVATION
INTERIOR GIRDER DETAILS

AS BUILT
REVISED "AS BUILT"
P.W.A. 2013-F Unit 2
Contract Complete July 6, 1940

Note: Reinforcement of Exterior Girders same as above except as noted below.

Reinforcement for exterior girders

2-1¼"ⓐ bars
No. ⓒ bars
2-1¼"ⓐ bars
3-1¼"ⓒ bars

℄ Bent No. 12 & 7

2-1¼"ⓟ bars
No. ⓒ bars
2-1¼"ⓐ bars
3-1¼"ⓒ bars

℄ Girder

℄ Bent No. 13 & 8

No change

3-1¼"ⓒ bars, str. 18'-4" long

No. 9 Viaduct C
℄ Bent No. 13 Viaduct B

6 Spa @ 9" 2 @ 1'-0" 2 @ 1'-3" 2 @ 1'-6" 2 Spa @ 2'-0" 2 Eq. Spaces 2 Spa @ 2'-0" 2 @ 1'-6" 2 @ 1'-3" 2 @ 1'-0" 7 Spa @ 8"

⅝" Stirrups 8'-0" long 11'-10" long

2-1¼"ⓒ bars, 34'-0" long
2-1¼"ⓐ bars, 38'-9" long
3-1¼"ⓖ bars, 37'-0" long

Construction Joint for detail see sheet No. 15

Batter 1" to 12

Batter 1" to 12

Paving Notch North Abutment

℄ Bent No. 13 & 8 ℄ Girder North Abutment

Note:- Depths of Exterior, Intermediate and Middle girders, differ by the amount of the crown slope between girders. Reinforcement same depth for all girders.

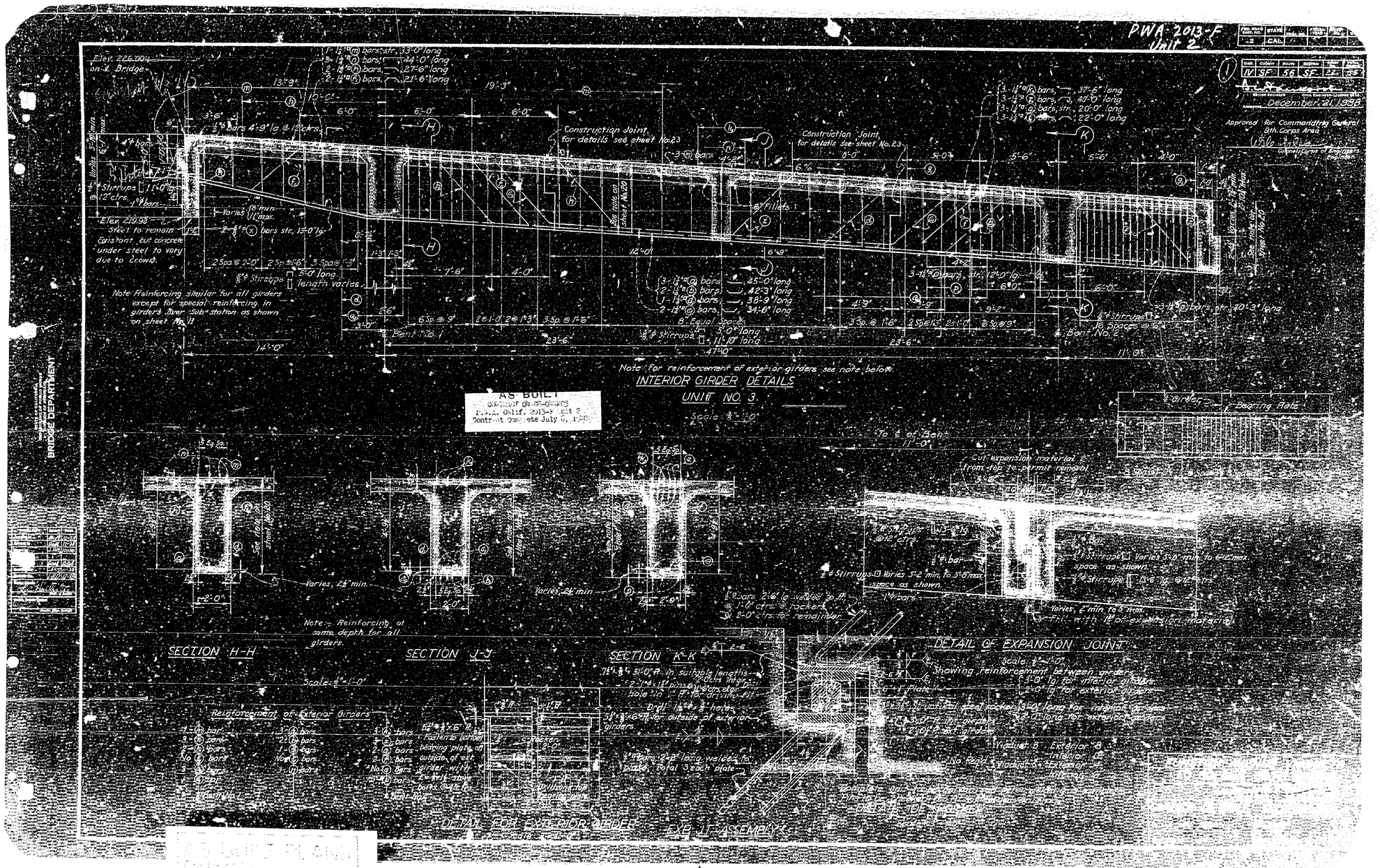
ELEVATION
INTERIOR GIRDER DETAILS

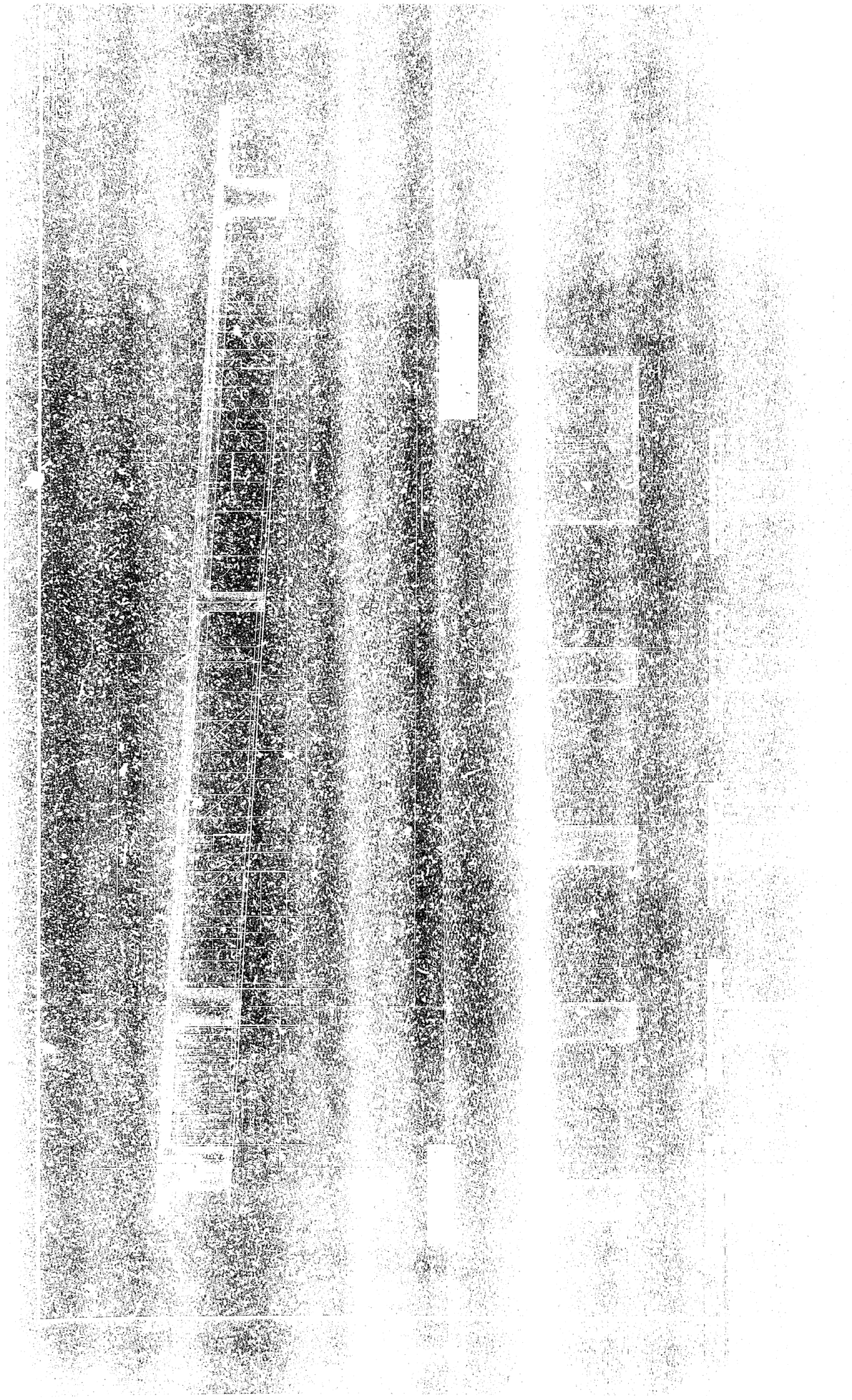
Note:- For Sections: D-D, E-E, F-F & G-G see sheet No. 23

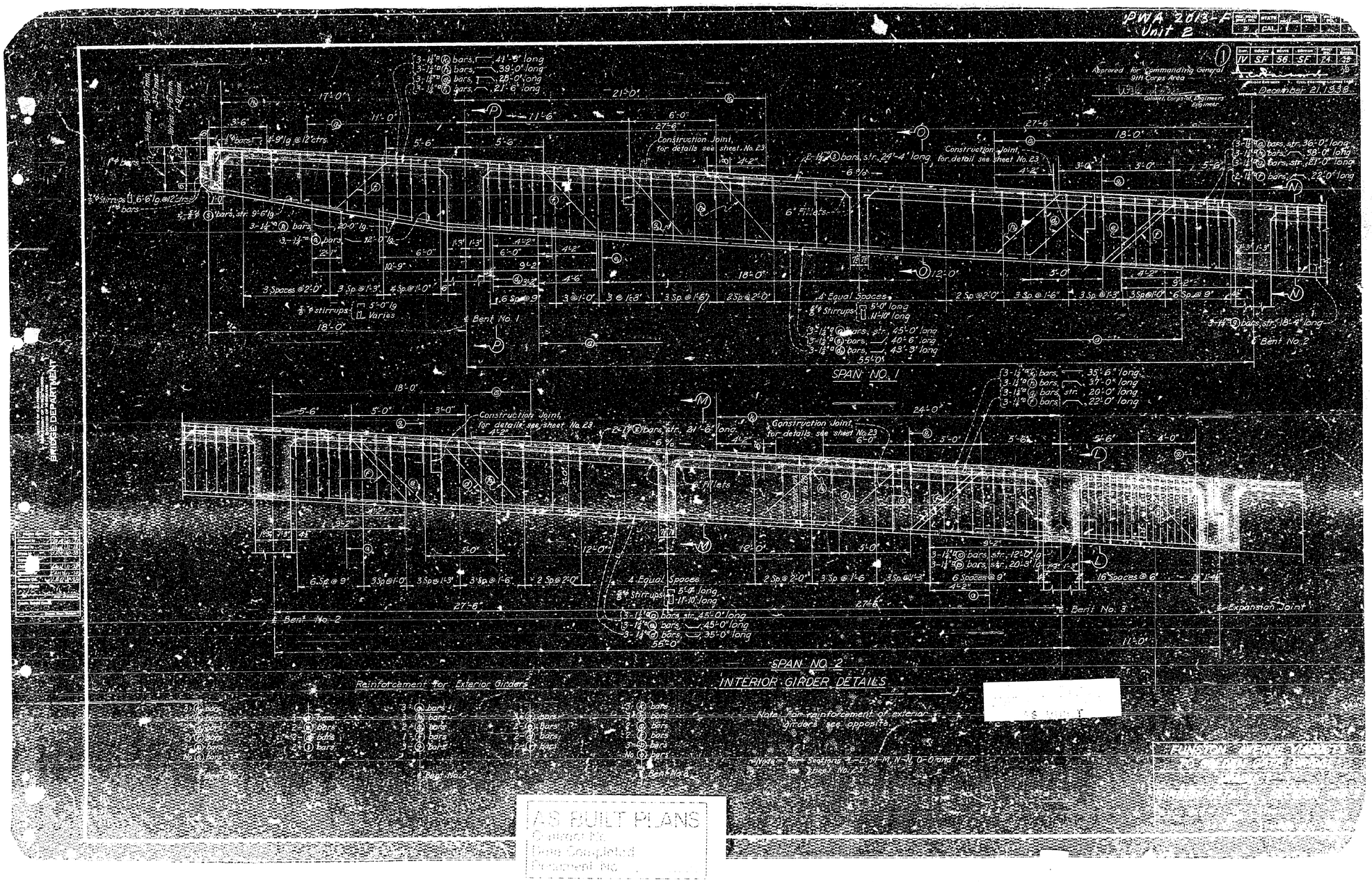
AS BUILT PLANS
Corrected
Dec. Completion
As Built

WINSTON AVENUE VIADUCT

PWA 2013-F
Unit 2






PWA 2013-F
Unit 2
Approved for Commanding General
9th Corps Area
Colonel, Corps of Engineers
Engineer
December 21, 1938
SPAN NO. 1
SPAN NO. 2
INTERIOR GIRDER DETAILS
Reinforcement for Exterior Girders
Note: For reinforcement of exterior girders see opposite.
Bent No. 1
Bent No. 2
Bent No. 3
Expansion Joint
Construction Joint, for details see sheet No. 23
6" Fillets
4 Equal Spaces
3 Spaces @ 2'-0"
16 Spaces @ 6"
AS BUILT PLANS
Contract No.
Date Completed
Document No.

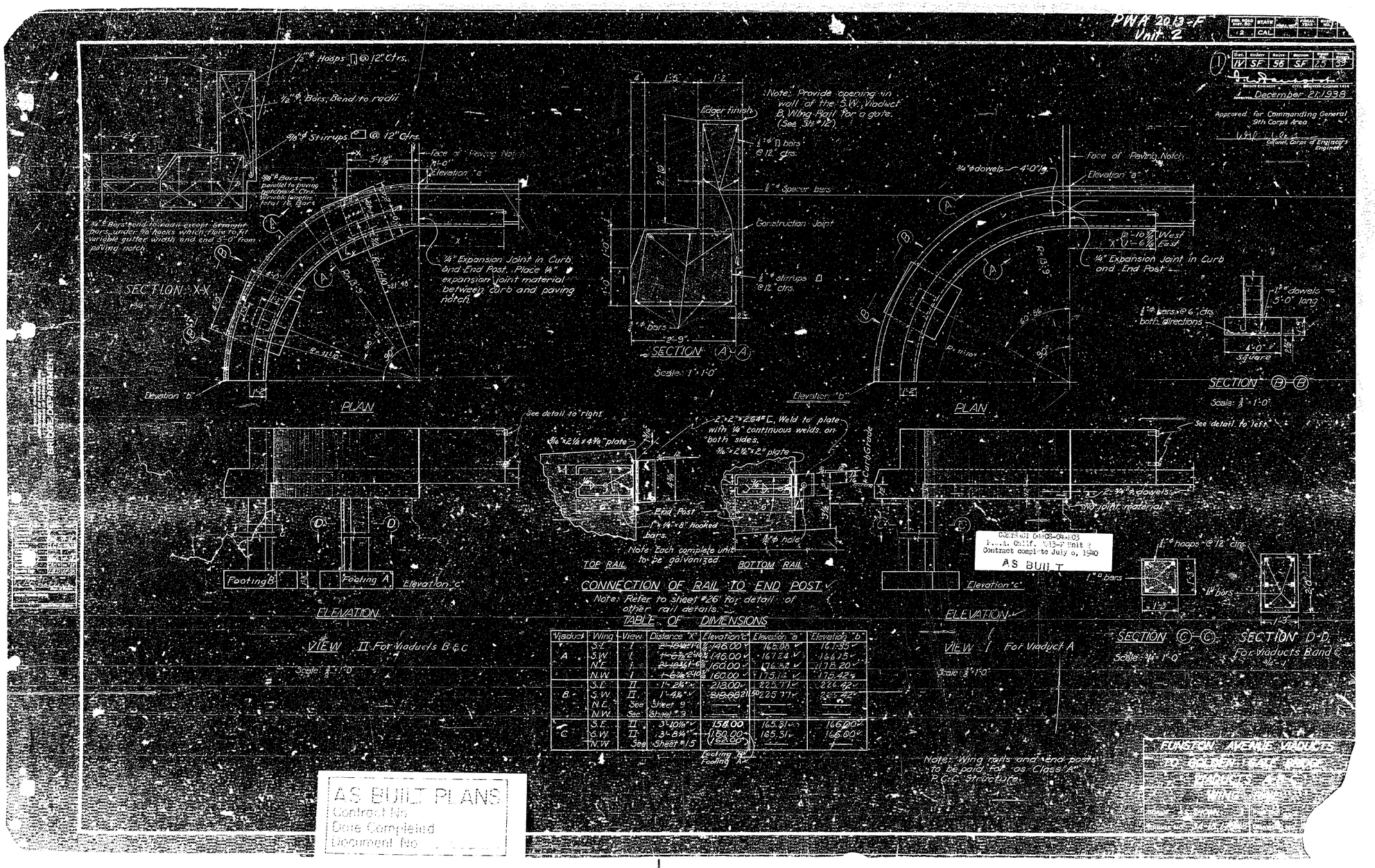


TABLE OF DIMENSIONS

Viaduct	Wing	View	Distance "X"	Elevation "c"	Elevation "a"	Elevation "b"
A	S.E.	I	~~2'-10¾"~~ 1'-6⅞"	146.00	165.08	167.35
	S.W.	I	~~1'-6⅞"~~ 2'-10¾"	146.00	167.24	166.75
	N.E.	I	~~2'-10¾"~~ 1'-6⅞"	160.00	176.82	178.20
	N.W.	I	~~1'-6⅞"~~ 2'-10¾"	160.00	175.14	175.42
B	S.E.	II	1'-2¼"	213.00	225.77	226.42
	S.W.	II	1'-4¼"	~~213.00~~ 211.50	225.77	226.42
	N.E.	See	Sheet 9			
	N.W.	See	Sheet 9			
C	S.E.	II	3'-10⅛"	158.00	165.31	166.00
	S.W.	II	3'-8¼"	160.00 (162.00)	165.31	166.00
	N.W.	See	Sheet #15			

P.W.A. 2013-F
Unit 2

Sheet No.	Total Sheets	Plans No.	Prints No.
2	CAL		

Work	Highway	District	Route	Section	Sheet No.
IV	1-E	56	S.E.	25	29.3

December 21, 1936

Approved for Commanding General,
9th Corps Area

Colonel, Corps of Engineers
Engineer

DIVISION OF HIGHWAYS
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

7'-1½" between End Post & ℄ Electrolier
6'-11⅝" between End Post & ℄ Rail Post

7'-4" between ℄ Electrolier & ℄ Rail Post
7'-2" between ℄ Rail Post & ℄ Rail Post

A
Rail Post for Electrolier

PLAN
Scale: 3/4"=1'-0"

For details of Electrolier and its mounting, see sheet No. 30

See sheet #25 for connection to concrete end post

PANEL BETWEEN ELECTROLIER AND END POST

ELEVATION
Scale: 3/4"=1'-0"

PANEL BETWEEN ELECTROLIER AND STANDARD RAIL POST

AS BUILT
Corrected Changes Noted
Public Works Office
Contract Completed July 6, 1940

⅜" Cap
2"ø x 9/16" I.P. @ 1'-0"
2" ø Steel Tubing
2"ø x 9/16" I.P. @ 1'-0"
Top of Concrete
4"x4"x⅜" Steel Rail Post
⅝" bars 'D' around each post
2" Grout
Rammed Sand
⅜"x4"x3'-3" Steel Tubing
6" Grout Deck
2-⅝" bars
2"
7"
1'-8"

TYPICAL SECTION
Scale: 1"=1'-0"

Pay length of bridge railing to be calculated from face to face of end posts without deducting for space occupied by Electrolier.

⅛" hole in
⅜"x2½"x3¼" Pl.
2"x4"x2'-6½" L. Weld to post with continuous ⅜" fillet welds.
⅜"x3"x3¼" Pl. Weld inside rail with 3-½"x⅜" fillet weld.
Steel Tubing Post

SECTION E-E
Scale: 3"=1'-0"

⅜"x3"x3¼" Pl. Weld inside rail with 3-½"x⅜" fillet weld.
⅜" Steel Tubing Rail

SECTION F-F
Scale 3"=1'-0"

3½"x3½"x¼" Steel Tube welded to post with 4-1"x¼" fillet welds.

SECTION C-C
Scale: 3"=1'-0"

4"x4"x3/16" Steel Tube Rail
⅜"
Weld cap to post with 3/16" fillet weld. Grind exposed corners to same radius as rail

Ends of balusters welded with 4"x½"x½" fillet welded into 2"x9/16" I.P.

1½"x1½"16 Ga. Steel Tubing Balusters

Cut out bottom of tube 2¾" wide

Punch 1 1/16" holes in channel to receive balusters.

4½"x½" fillet weld

Weld 2"x½" to rail with 1"x¼" fillet welds @ 6" c/s, alternate sides of 1

Cut out bottom of tube 2¾" wide

Top of Concrete

Refer to Sheet #33 for details

SECTION A-A
Scale: 3"=1'-0"

SECTION AT EXPANSION JOINT OF RAIL
Scale: 3"=1'-0"

2½"x3½" Steel Tube welded to post with 4-1"x¼" fillet welds

NOTE:
Railing to be galvanized after fabrication.
Railing posts and balusters to be set vertical.
All welds to be shop welds.
Tubing may be manufactured in halves, welded continuously at seams, and finished flush with surface. When fabricated in this manner, the seams in the posts shall be placed in faces normal to the railing; seams in top and bottom rails shall be in side faces.
Railing panels shall be straight and true to dimension. The ends of adjacent panels shall be set parallel to each other and to the end of the bridge. Expansion joints shall be provided at the ends of the bridge and at such other points as may be necessary to accommodate the movement of the bridge. Expansion joints shall be made by leaving a space of one-half inch between the ends of the rails and inserting a piece of ½" thick felt between the ends of the posts. One complete panel shall be erected before the railing is placed in the presence of the Engineer.

AS BUILT PLANS
Corrected to
Date Approved
Resident Engr.

PWA 2013-F
Unit 2

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
1/1	S.F.	56	S.F.	27	32

December 21, 1938

Approved for Commanding General
5th Corps Area

Colonel, Corps of Engineers
Engineer

4 Dia. backing for all bars except those in bottom of girders which shall be 2 dia.

Overall

Fill in between forms to make key.

SECTION (A)-(A)

1" Chamfer

3" Ruby Reflector

6"x6" 5'-0" S4S Redwood Post

Roadway Grade

1938

DATE

Scale: 3"=1'-0"

AS BUILT
Contract Completed
Date Completed

HOOKED BAR DATA

4 DIA. BACKING		ALL HOOKS		2 DIA. BACKING		
SIZE OF BAR	MINIMUM A	B	D	MINIMUM A	SIZE OF BAR
½"	1'-7½"	1¼"	2"	3¼"	½"
⅝"	1'-11½"	1⅝"	2½"	3¾"	⅝"
¾"	2'-3½"	1⅞"	3"	4¼"	¾"
⅞"	2'-7½"	2¼"	3½"	4¾"	⅞"
1"	2'-11½"	2½"	4"	5¼"	1"
1⅛"	3'-3½"	2⅞"	4½"	5¾"	1⅛"
1¼"	3'-7½"	3⅛"	5"	6¼"	1¼"

⊕ Amount to be added to overall dimension of concrete member to give the length of the hooked reinforcing bars hooked at each end.

Where girder stems and slabs are poured separately, raised keys shall be used. The 1'-6" dimension is to be approximated as closely as stirrups will permit. After concrete in stem is poured, key forms of 2"x4" lumber cut to fit shall be placed immediately and keys poured. Concrete surfaces shall all be thoroughly cleaned by wire brush & air and water pressure jets. This shall be done as soon as the concrete has hardened sufficiently to allow removal of the surface slickings and to expose clean aggregate.

KEYS - SLAB TO GIRDER

Clearance Markers to be set on right hand side of roadway as structure is approached with clearances as shown on Sheet No. 1

STANDARD 3 LIGHT CLEARANCE MARKER

6 Required
Scale: 1"=1'-0"

AS BUILT
Contract No.
Date Completed
Contractor

Sta. 45+95 — See Note — Sta. 47+87 — Sta. 49+25 — See Note — Sta. 51+17

Inside face of end diaphragm — 8¼" Merchant Casing — Approved watertight expansion joint — 10¾" Merchant Casing — Inside face of end diaphragm — Join 8¼" Merchant Casing with 12" C.M.P. Sta. 52+28

Joint detail below — Drain — Drain — Joint detail below — 12" C.M.P. — Drop Inlet — 12" C.M.P.

8" P.M.P. 8" C.M.P. — Drop Inlet — Drop Inlet — 8" P.M.P. — 12" C.M.P. — Sta. 45+21.5 — Sta. 47+49 — ℄ Roadway & Viaduct — 5⅝" Merchant Casing — Drain — Drains — 12" C.M.P. — Drop Inlet

VIADUCT B — Sta. 52+18.5 — Sta. 56+10 — Sta. 50+98 — Sta. 58+62

Drop inlets and pipe back of this point not a part of this contract. Drainage installation under this contract begins at face of drop inlet.

Inside face of end diaphragm — Approved watertight expansion joint — See Note — Inside face of end diaphragm — Drainage installation under this contract ends at face of drop inlet. Drop inlets and pipe ahead of this point not a part of this contract.

12" C.M.P. — Drop Inlet — 12½" Merchant Casing — Drain — Sta. 54+29.5 — Joint detail below — Sta. 57+62 — Sta. 59+62 — 12" C.M.P. — Drop Inlet — ℄ Roadway & Viaduct — 5⅝" Merchant Casing — Drain — Drop Inlet

VIADUCT C

Note: All drain pipe and fittings to be galvanized after shop fabrication, no field welding allowed. All field joints are to be watertight screwed connections except where flanged connections are necessary for erection.

Contractor to furnish details of pipe lay out for approval by the Engineer before fabricating. All pipes to be in place before concrete is poured.

Distance X to be determined by Contractor to suit details but not to exceed 6'-0".

Cross Drains to have minimum slope of ⅛" in 12" = 6'-0"

DRAINAGE PIPE DIAGRAMS

Scale: none

12" C.M.P. (short section) — 12" C.M.P. Band coupler — 12" C.M.P. — ¼" steel plate cut to fit end of 12" C.M.P. with hole cut to fit outside diameter of 8¼" Merchant Casing.

VIADUCT B NORTH END

EUNSTON AVENUE VIADUCTS TO GOLDEN GATE BRIDGE
VIADUCTS A, B & C
MISCELLANEOUS DETAILS
SCALE: As Noted — FILE NO:
BRIDGE NO. 34-5.1/16 — DRWG. NO. S-2328

BRIDGE DEPARTMENT

Overall Width ... 1'-0"
Clearance ... 5.44
Panels @ ... 7'-6"
Stringers ... 5
Stringer Size ... 6"x16"
Floor Beam Size ... 6"x12"
Posts, etc. ... 6"x6"

Bent No. 1 | Bent No. 2

PLAN

¾" Bars, 1'-3" long — 6¾" — 12-3/4" @ 12-3/4" @ 12-3/4" — ℄ Curb — Const. Jt. — Roadway Surface — ⅜ Fillet welds — ¾" Bars, 1'-9" long — 5⅝" Merchant Casing — Drain

Note: Drain to be galvanized after all welding is completed.

7½" — 1'-3" — 7½" — Slope Concrete 1:1 — ⅜ Fillet welds — 5⅝" Merchant Casing

Note: Connection to merchant casing and cross drain to be detailed by pipe fabricator

SECTION (B)-(B)

DRAIN DETAIL
5/10 Required
Scale 3"=1'-0"

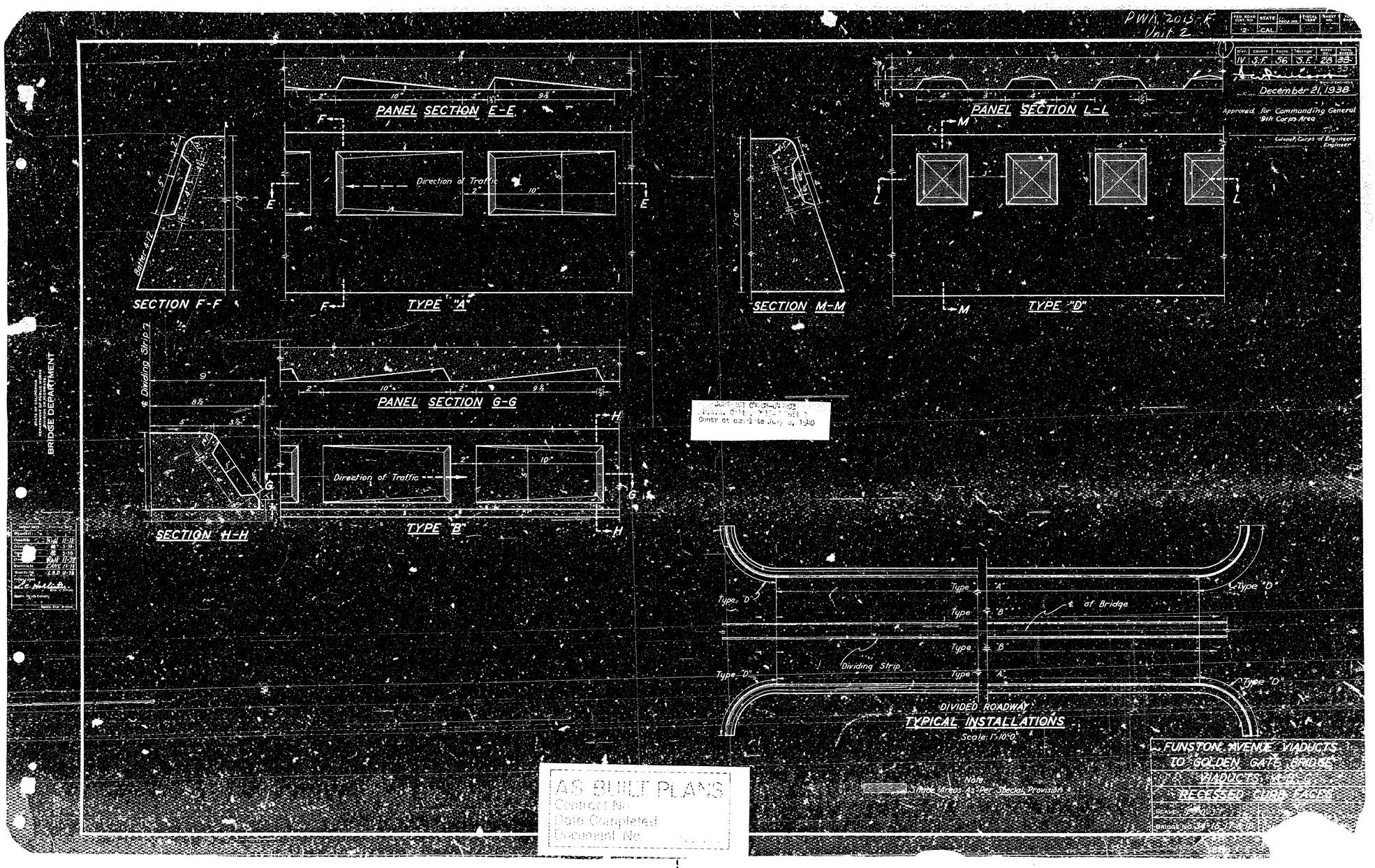
SECTION (A)-(C)

End diaphragm — 8¼" C.M.P. — Fillet weld all around nipple set inside end of 8" C.M.P. and welded all around — 8¼" Merchant Casing coupling — End diaphragm — 12" C.M.P. — ⅜"x5" sleeve welded all around to first crest of 12" C.M.P. and to 12¼" Merchant Casing nipple — 12¼" Merchant Casing nipple — 12¼" Merchant Casing coupling — End diaphragm — 8¼" Merching Casing — Fillet weld all around

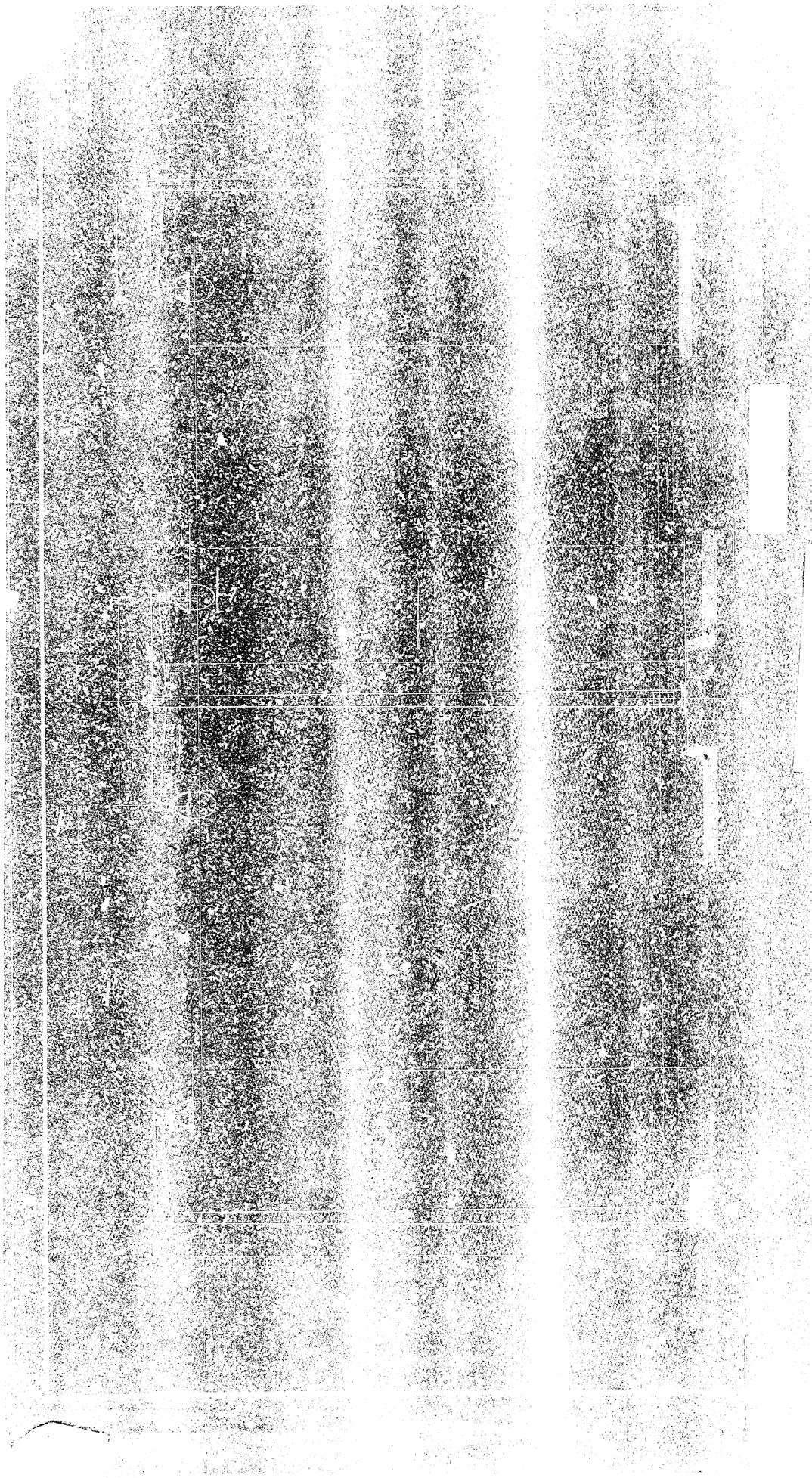
VIADUCT B SOUTH END — VIADUCT C

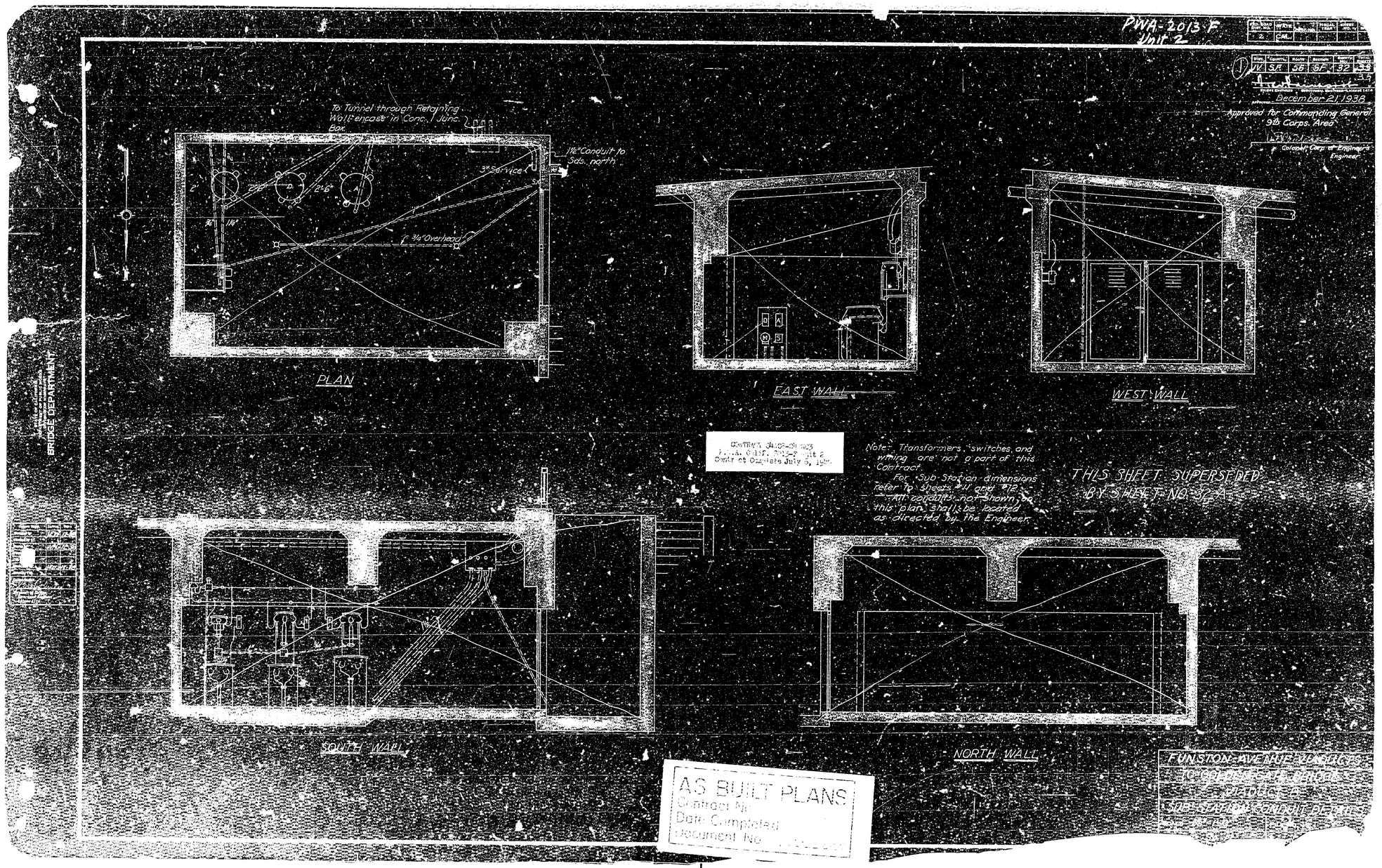
JOINTS AT ENDS OF BRIDGE
Scale: none

AS BUILT PLANS
Contract No.
Date Completed
Engineer


PWA 2013-F
Unit 2
December 21, 1938
Approved for Commanding General
9th Corps Area
Colonel, Corps of Engineers
Engineer
PANEL SECTION E-E
PANEL SECTION L-L
SECTION F-F
TYPE "A"
SECTION M-M
TYPE "D"
PANEL SECTION G-G
SECTION H-H
TYPE "B"
Direction of Traffic
Batter 4:12
℄ Dividing Strip
Type "A"
Type "B"
Type "D"
℄ of Bridge
Dividing Strip
DIVIDED ROADWAY
TYPICAL INSTALLATIONS
Scale: 1"=10'-0"
Note
Shade Areas As Per Special Provision
FUNSTON AVENUE VIADUCTS
TO GOLDEN GATE BRIDGE
VIADUCTS
RECESSED CURB FACES
BRIDGE DEPARTMENT
AS BUILT PLANS
Contract No.
Date Completed
Document No.

PWA 2013-F
Unit 2
FED. ROAD DIST. NO. 2
STATE CAL.
IV SF 56 SF 29 33
BRIDGE ENGINEER
CIVIL ENGINEER—LICENSE 1414
APPROVED December 21, 1938
Approved for Commanding General 9th. Corps Area
Colonel, Corps of Engineers Engineer.
BRIDGE DEPARTMENT
Sub-Station under
Paving Notch
45+40.5
Expansion Joint Sta 45+92.00
Electrolier Sta 46+36.00
Gap conduits 1'-6" below grade Sta. 44+15 at end of wall
2-2" Conduit
2-3"
2-1½"
5-1"
2-3",2-2",5-1" Conduits
45
Pull Box
Electrolier Sta 45+08.33
2-2" & 1-1½" Conduits brought back out of substation and capped 1'-6" below grade on E.W.O. No. 4844-A
47+77
Expansion Joint Sta 47+90.00
Pull Box
Bridge
Electrolier Sta 48+01.00
Expansion Joint Sta 49+22.00
Electrolier Sta 49+66.00
1½" Conduit
2" Conduit
3" Conduit
2" Conduit
1½" Conduit
50+29
50
Expansion Joint Sta 51+20.00
Electrolier Sta 51+31.00
Paving Notch
Expansion Joint Sta 52+57.00
Electrolier Sta 52+74.49
52+78
Cap conduits 1'-6" below grade
VIADUCT "B"
Scale 1"=30'
AS BUILT
Contract complete July
TO SANTA CRUZ
B.C. Sta 19+67.85
Paving Notch
Pull Box
2" Conduit
Cap Conduits 1'-6" below grade
Bridge
1½" Conduit
Electrolier Sta 21+24.19
Paving Notch
20+02.5
Electrolier Sta 20+06.57
1½" Conduit
2" Conduit
Cap Conduits 1'-6" below grade
21+30.5
VIADUCT "A"
Scale 1"=30'
Insulating end bushings
2"×2"×¼" L
4"×¼"×0'-9" PL
1"×¼"×0'-9" PL
1/16" drill
Bond
Railing
10"×¼"×1'-4" PL
⅝" Bolts
1¼" Conduit (Lighting)
2" Conduit
3" Conduit
Curb
Solder galvanized screen at inlet end
1" Galv. Pipe drain
PULL BOX DETAIL
SECTION A-A
55+34.5
Electrolier Sta 55+46.00
Cap conduits 1'-6" below grade
Pull Box
55
57+27.5
1½" Conduit
2" Conduit
3" Conduit
TO GOLDEN GATE BRIDGE
1½" conduit cross-over
Electrolier Sta 58+76.00
59+71
60
Connect to 2" & 1½" conduits in wall
Paving Notch
Expansion Joint Sta 56+67.00
Electrolier Sta 57+11.00
Expansion Joint Sta 58+65.00
VIADUCT "C"
Scale 1"=30'
1" Galv. pipe drain. Solder copper screen on inlet end.
Transformer Vault 10"×18"×0' Flanged C.I. Box with checker plate cover and rubber gasket. Drill and tap as required.
Electrolier
1" Galv. pipe drains, solder galvanized screen on inlet end.
½" min. clear
Bond
2" Grout
1" Anchor bolts 14" long square head and hex nuts
DETAIL AT ELECTROLIER BASE
AS BUILT PLANS
Contract No
Date Completed
Document No.
Slab Expansion Joint material
Packing
Bond
Crouse-Hinds Type XJ conduit or equal
CONDUIT EXPANSION JOINT DETAIL
No Scale
FUNSTON AVENUE VIADUCTS
TO GOLDEN GATE BRIDGE
ELECTRICAL CONDUIT PLAN




PWA-2013-F
Unit 2
December 21, 1938
Approved for Commanding General
9th Corps. Area
Colonel, Corp of Engineers
Engineer
To Tunnel through Retaining Wall encase in Conc. Junc. Box
1½" Conduit to Sds. north
3" Service
¾" Overhead
PLAN
EAST WALL
WEST WALL
Note: Transformers, switches, and wiring are not a part of this Contract.
For Sub-Station dimensions refer to sheets #11 and #12.
All conduits not shown on this plan shall be located as directed by the Engineer.
THIS SHEET SUPERSEDED BY SHEET NO. 32-A
SOUTH WALL
NORTH WALL
AS BUILT PLANS
Contract No.
Date Completed
Document No.
BRIDGE DEPARTMENT

Sheet No. 32A of 3

CONDUIT ENCASEMENT DETAIL

This cond. to be turned out to electroliers.

Cinch anchors & clamps

Cond. Sizes

Conduits to be placed 6" apart.
Conduits shall have 4" min. cover Class B. Concrete.
Conduits shall be installed on West side of highway back of curb.
Viaduct A, B & C Contractor to place above conduit between Substation & Sta. 43+75 ~~& place a 12"-3C-10 Conc. Pull Box with 2-2"x2" angle iron frames, 5-6"x4"-35# separators & steel cover. Galvanize all iron & steel. (Sta. 43+75)~~

2-2" & 1-1¼" Conduits installed on ENG. #844-A. See Sheet No. 29

Place 3"x2½" & 2"x1½"x12'-0" angles 6' from wall. Weld 3-12" pieces to each angle & anchor in with Galvanized steel.

2-7" & 1-1¼" Conduit crossings (Cap 8' inside Substa.)

3" Cond.

2-3"&5-1" Conduits from Tunnel Stub, cut 2" & Cap.

3" Conc. cover around conduit

3"/2" & 1¼" Conduits from North

1¼" Cond. to Tunnel. See Detail for Arrangement

1¼" Conduit to Sta. north

2-3"&5-1" Cond.

Vault

2-2" Conduits

2-2" Conduits

PLAN

CT

LINE

IV-SF-SB-SF.
PROPOSED FUNSTON AVE. APPROACH
SUBSTATION DETAILS
Scale, ⅜"=1'-0" December 1938
Revised June 1939

AS BUILT PLANS
Contract No.
Date Completed
Voucher No.