

## WEST BAY CROSSING

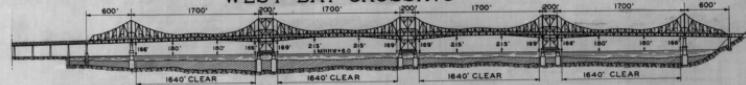


FIGURE "A"

## EAST BAY CROSSING

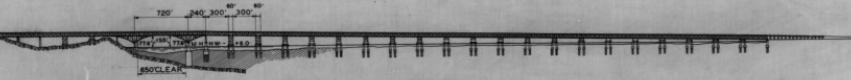


FIGURE "K"



FIGURE "B"

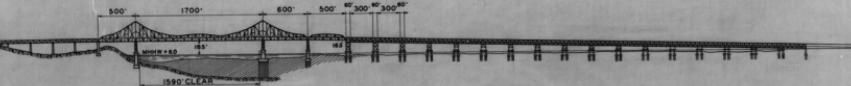


FIGURE "L"



FIGURE "C"

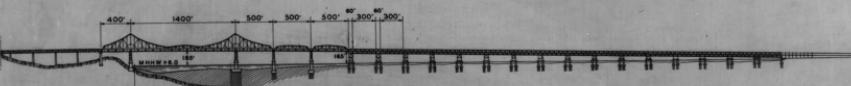


FIGURE "M"



FIGURE "D"

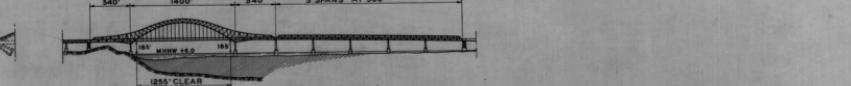


FIGURE "N"



FIGURE "E"

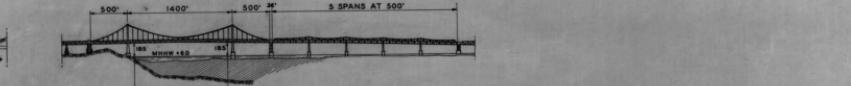


FIGURE "O"

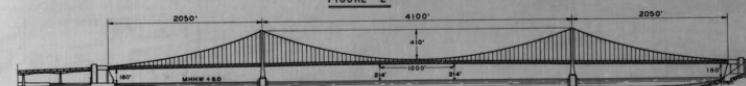


FIGURE "F"

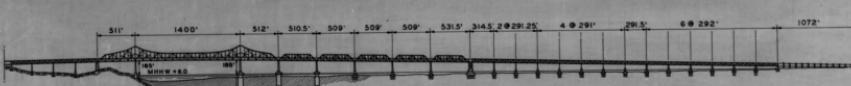


FIGURE "P"

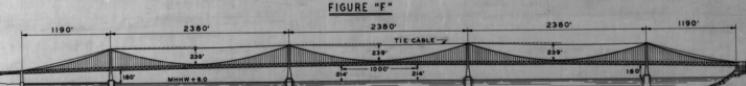


FIGURE "G"

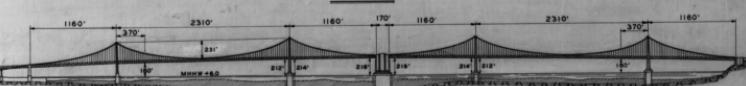


FIGURE "H"

**MICROFILMED**

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE

PRELIMINARY LAYOUT STUDIES

SCALE IN FEET  
0 300 600 900 1200 1500 1800 2100 2400 2700

## SAN FRANCISCO



## PLAN DATA

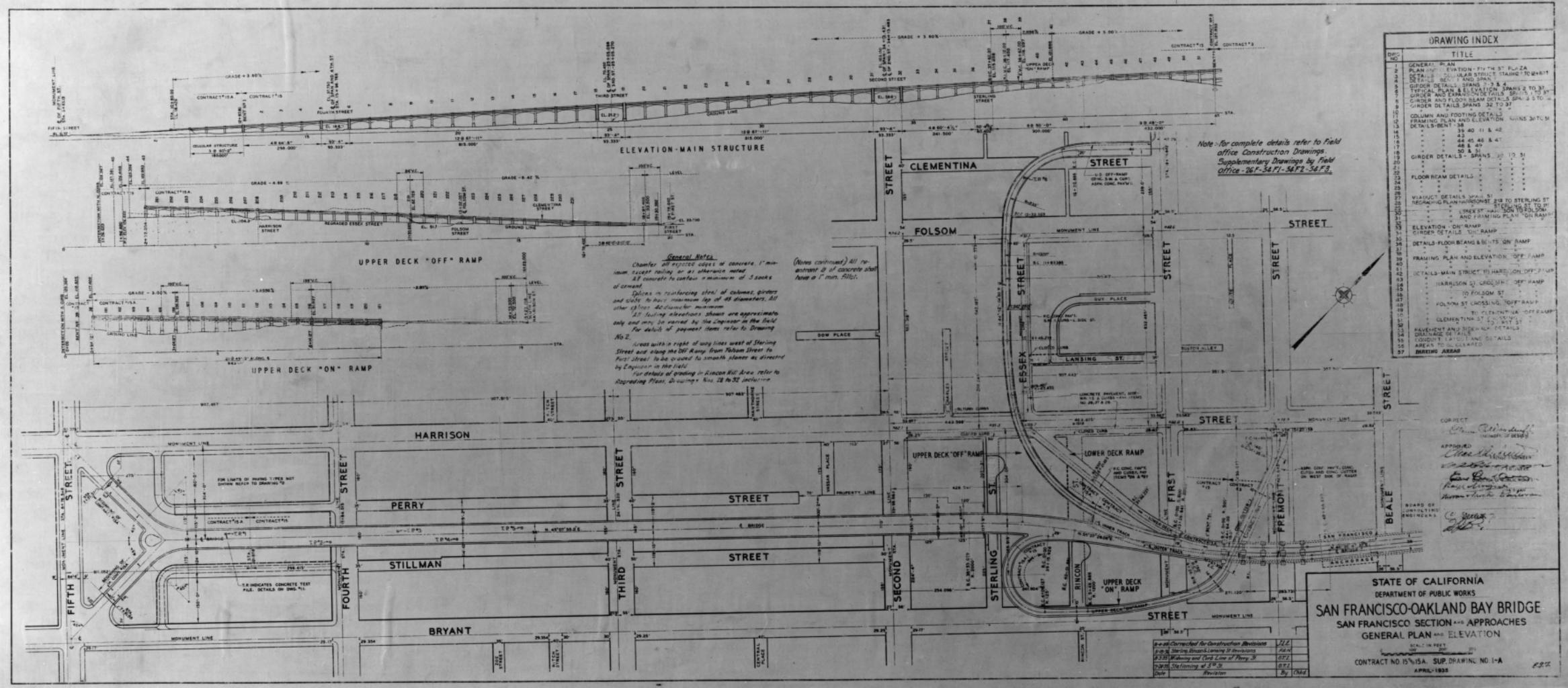
PLAN DIMENSIONS OF CAISSON	164'-6" x 108'-0"	28' x 104'-3"	28' x 104'-6"	56' x 112'	52' x 121' 4"	74' 6" x 127' 0"	197' 0" x 92' 0"	157' 0" x 127' 0"	174' 6" x 127' 0"	156' 6" x 101' 9"
TYPE OF CAISSON	COFFERDAM	COFFERDAM	COFFERDAM	COFFERDAM	DOME	DOME	DOME	DOME	DOME	DOME
NUMBER OF CAISSONS					4 x 7 = 28	5 x 11 = 55	3 x 7 = 21	4 x 7 = 28		
SIZES OF WELLS					4 x 7 = 28	5 x 11 = 55	3 x 7 = 21	4 x 7 = 28		
AREA OF CAISSON - IN SQUARE FEET	19000	2919	2931	6272	6309	9452	18142	7239	8662	15648
AREA OF WELLS - IN SQUARE FEET					4938	18142	9452	7239	8662	15648
CONCRETE AREA - PER CENT OF TOTAL					100	42.8	42.3	54.3	50.1	42.8
CONCRETE C.Y.D.S. PER VERTICAL FOOT						4.0	3.6	4.2	3.6	4.0
PERIMETER OF CAISSON						4.0	3.6	4.2	3.6	4.0
PLAN DIMENSIONS OF FENDER						109'9" x 189'3"	236'3" x 141'3"	96'3" x 186'3"	103'9" x 186'3"	

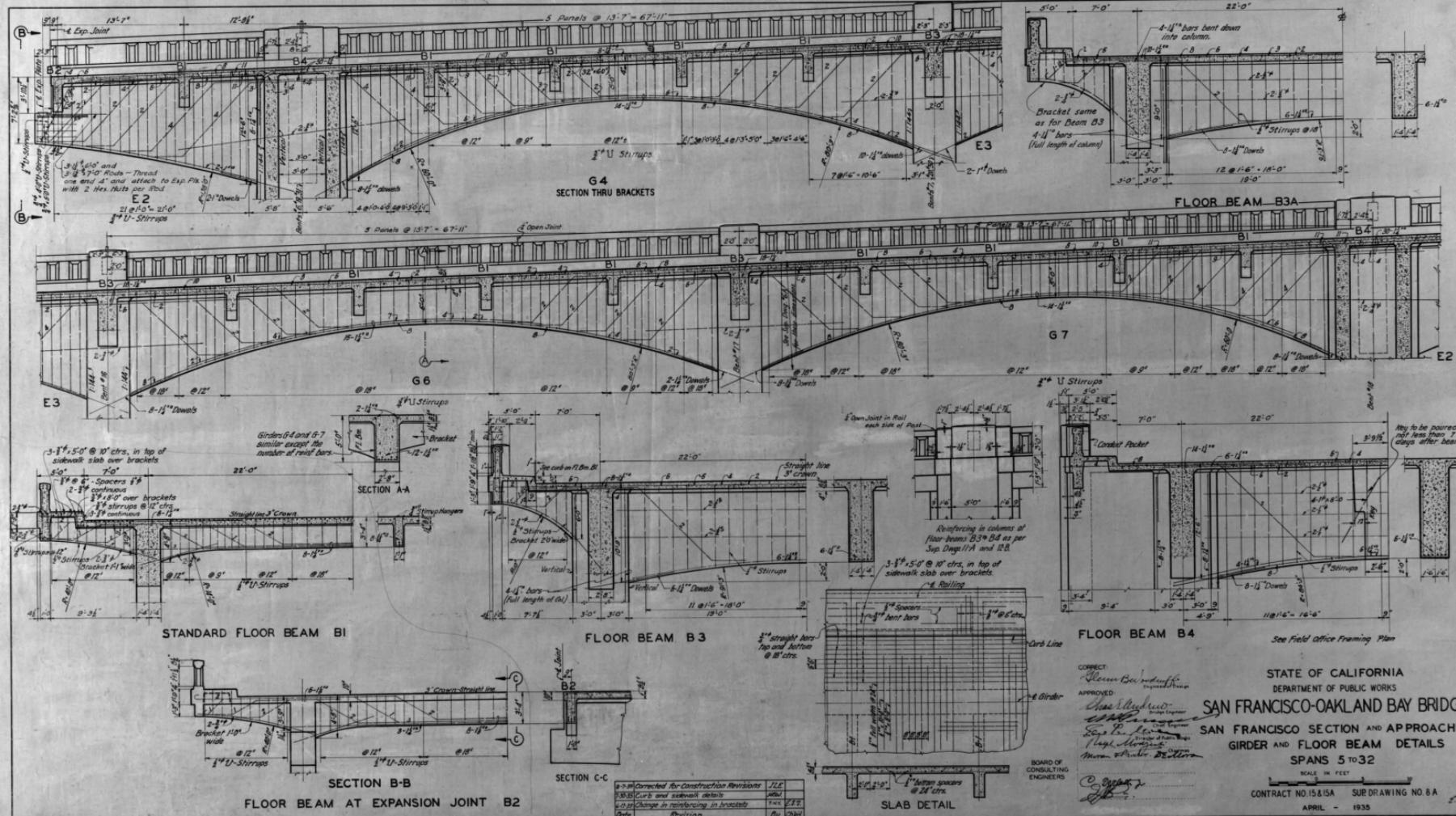
## LOADING DATA

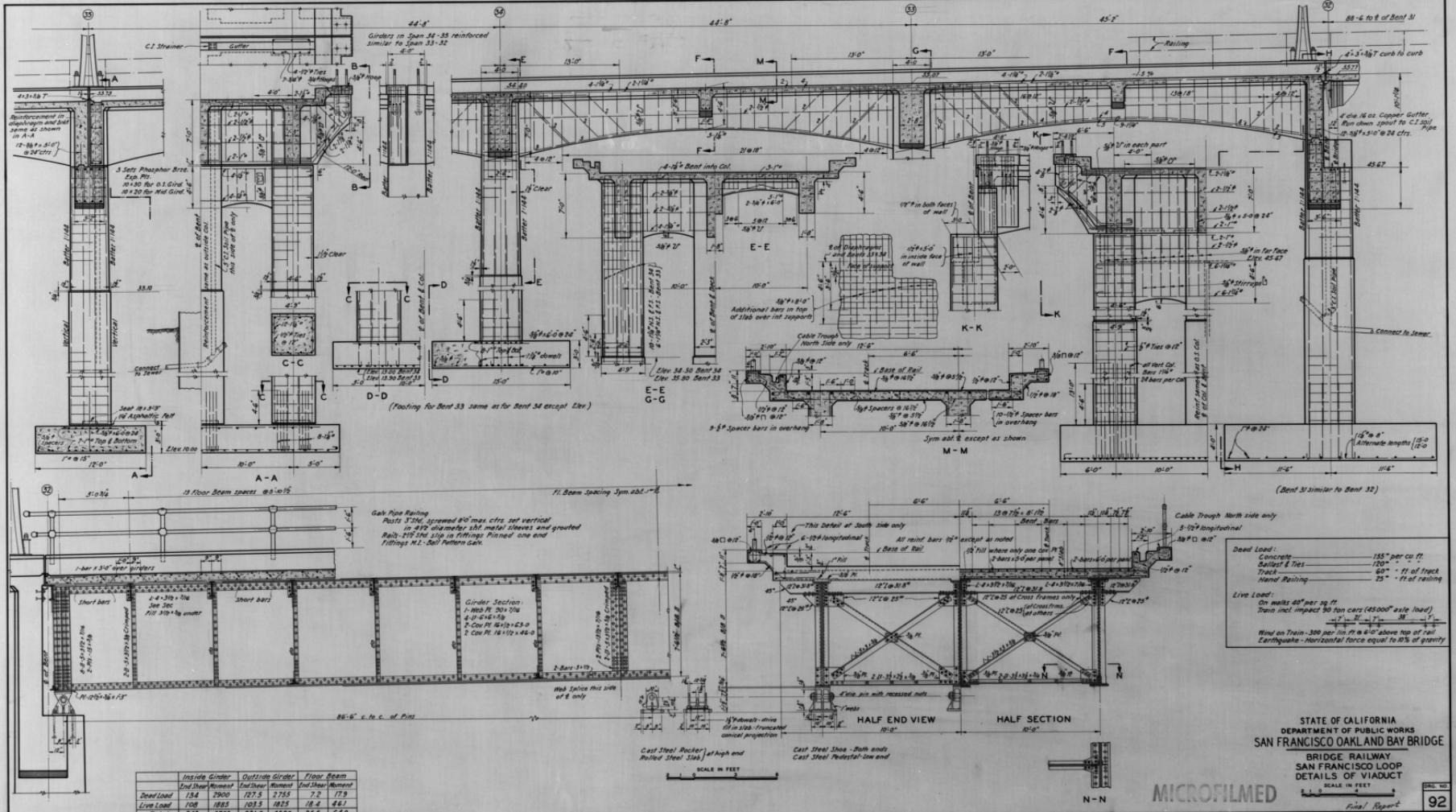
DEAD LOAD	IN TONS	1380	3920	3920	8130	22750	22700	440	22700	22750
LIVE LOAD	IN TONS	3670				4790	5690	220	8020	8020
TOWER LOAD	IN TONS					4790	5690	220	8020	8020
PILER SHAFT	IN TONS	133190	3065	3065	42990	4700	3000	93300	3000	3000
CAISSON	IN TONS					50240	125000	232310	64050	105200
TOTAL	IN TONS	130900	6985	6985	51120	90470	163970	326270	102400	151500
BUOYANCY	IN TONS	10450	995	995	1400	88500	66100	144500	29300	51500
NET LOAD ON ROCK	IN TONS	120450	5990	5990	3920	7100	9100	21700	48760	92250
AVER LOAD ON ROCK-TONS PER SQ.FT.		6.3	2.0	2.0	6.7	11.4	10.3	12.2	10.9	9.75
MAX. LOAD ON ROCK-TONS PER SQ.FT.		10.4			9.4	21.5	41.0	51.3	22.0	27.2

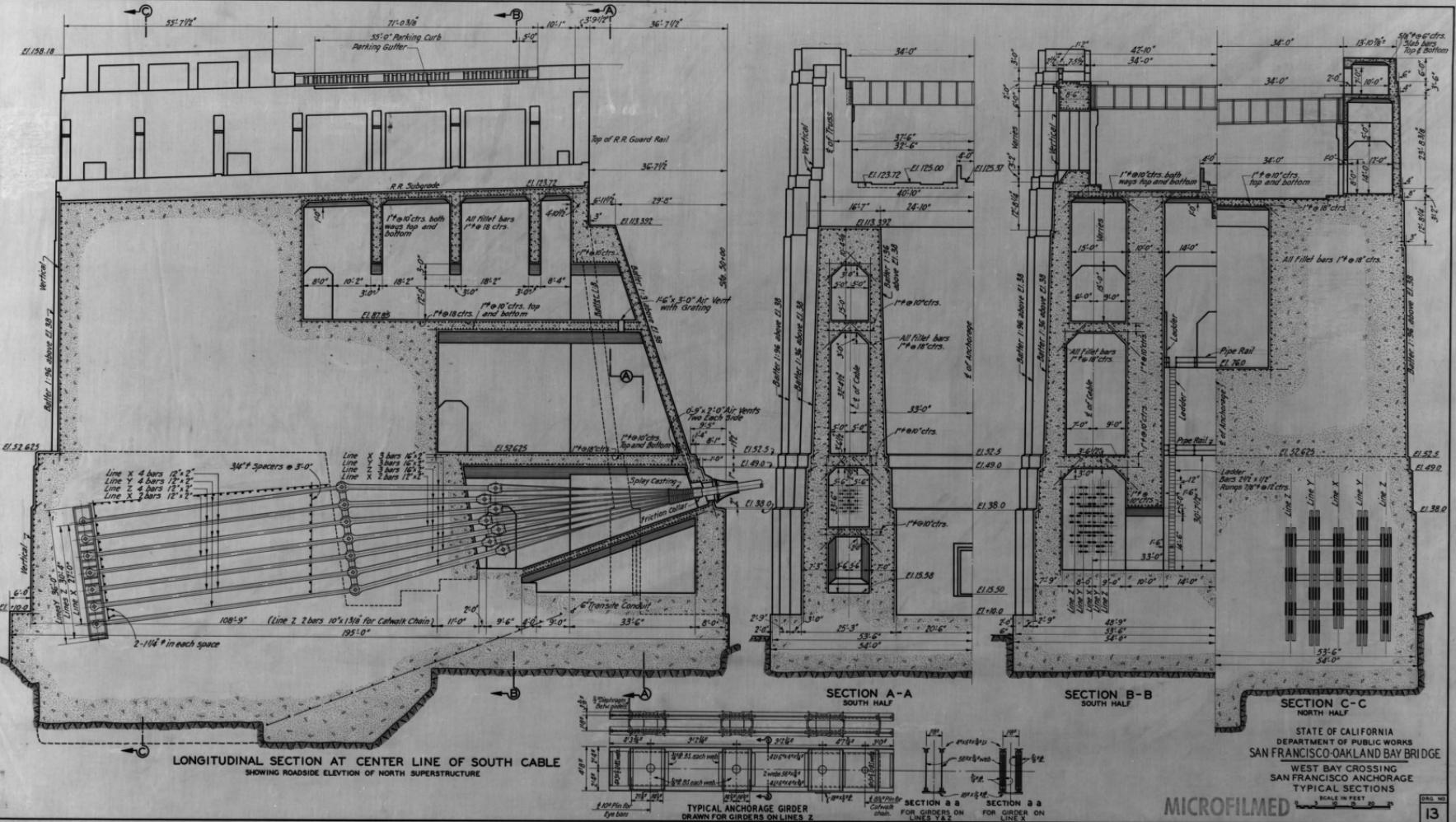
## YERBA BUENA ISLAND

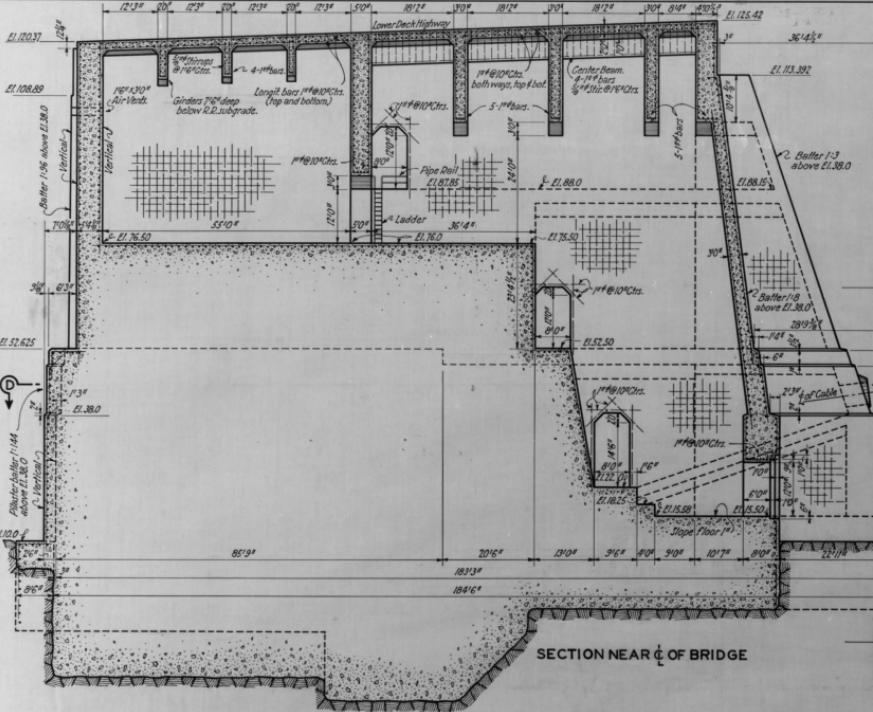
YERBA BUENA ISLAND	1400' CANTILEVER	EAST BAY CROSSING	KEY ROUTE FILL
VIADUCT	191' 0.00 MLLW	191'	191' 0.00 MLLW
Y.B. Y.B. Y.B. E E	1400' CAISSON	504' SPANS	288' SPANS
Y.B. Y.B. Y.B. E E	CAISSON E.3 512' E.4 510'-6" E.5 509'	Y.B. Y.B. Y.B. E E	Y.B. Y.B. Y.B. E E
Y.B. Y.B. Y.B. E E	508'-6" 1400' CAISSON E.6 509' 7 509' 8 506'-6" 9 289' 10 292' 11 292' 12 291' 13 291' 14 291' 15 291' 16 291' 17 291' 18 292' 19 292' 20 292' 21 292' 22 292' 23 292' 24 292' 25 292' 26 292' 27 292' 28 292' 29 292' 30 292' 31 292' 32 292' 33 292' 34 292' 35 292' 36 292' 37 292' 38 292' 39 292' 40 292' 41 292' 42 292' 43 292' 44 292' 45 292' 46 292' 47 292' 48 292' 49 292' 50 292' 51 292' 52 292' 53 292' 54 292' 55 292' 56 292' 57 292' 58 292' 59 292' 60 292' 61 292' 62 292' 63 292' 64 292' 65 292' 66 292' 67 292' 68 292' 69 292' 70 292' 71 292' 72 292' 73 292' 74 292' 75 292' 76 292' 77 292' 78 292' 79 292' 80 292' 81 292' 82 292' 83 292' 84 292' 85 292' 86 292' 87 292' 88 292' 89 292' 90 292' 91 292' 92 292' 93 292' 94 292' 95 292' 96 292' 97 292' 98 292' 99 292' 100 292' 101 292' 102 292' 103 292' 104 292' 105 292' 106 292' 107 292' 108 292' 109 292' 110 292' 111 292' 112 292' 113 292' 114 292' 115 292' 116 292' 117 292' 118 292' 119 292' 120 292' 121 292' 122 292' 123 292' 124 292' 125 292' 126 292' 127 292' 128 292' 129 292' 130 292' 131 292' 132 292' 133 292' 134 292' 135 292' 136 292' 137 292' 138 292' 139 292' 140 292' 141 292' 142 292' 143 292' 144 292' 145 292' 146 292' 147 292' 148 292' 149 292' 150 292' 151 292' 152 292' 153 292' 154 292' 155 292' 156 292' 157 292' 158 292' 159 292' 160 292' 161 292' 162 292' 163 292' 164 292' 165 292' 166 292' 167 292' 168 292' 169 292' 170 292' 171 292' 172 292' 173 292' 174 292' 175 292' 176 292' 177 292' 178 292' 179 292' 180 292' 181 292' 182 292' 183 292' 184 292' 185 292' 186 292' 187 292' 188 292' 189 292' 190 292' 191 292' 192 292' 193 292' 194 292' 195 292' 196 292' 197 292' 198 292' 199 292' 200 292' 201 292' 202 292' 203 292' 204 292' 205 292' 206 292' 207 292' 208 292' 209 292' 210 292' 211 292' 212 292' 213 292' 214 292' 215 292' 216 292' 217 292' 218 292' 219 292' 220 292' 221 292' 222 292' 223 292' 224 292' 225 292' 226 292' 227 292' 228 292' 229 292' 230 292' 231 292' 232 292' 233 292' 234 292' 235 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292' 347 292' 348 292' 349 292' 350 292' 351 292' 352 292' 353 292' 354 292' 355 292' 356 292' 357 292' 358 292' 359 292' 360 292' 361 292' 362 292' 363 292' 364 292' 365 292' 366 292' 367 292' 368 292' 369 292' 370 292' 371 292' 372 292' 373 292' 374 292' 375 292' 376 292' 377 292' 378 292' 379 292' 380 292' 381 292' 382 292' 383 292' 384 292' 385 292' 386 292' 387 292' 388 292' 389 292' 390 292' 391 292' 392 292' 393 292' 394 292' 395 292' 396 292' 397 292' 398 292' 399 292' 400 292' 401 292' 402 292' 403 292' 404 292' 405 292' 406 292' 407 292' 408 292' 409 292' 410 292' 411 292' 412 292' 413 292' 414 292' 415 292' 416 292' 417 292' 418 292' 419 292' 420 292' 421 292' 422 292' 423 292' 424 292' 425 292' 426 292' 427 292' 428 292' 429 292' 430 292' 431 292' 432 292' 433 292' 434 292' 435 292' 436 292' 437 292' 438 292' 439 292' 440 292' 441 292' 442 292' 443 292' 444 292' 445 292' 446 292' 447 292' 448 292' 449 292' 450 292' 451 292' 452 292' 453 292' 454 292' 455 292' 456 292' 457 292' 458 292' 459 292' 460 292' 461 292' 462 292' 463 292' 464 292' 465 292' 466 292' 467 292' 468 292' 469 292' 470 292' 471 292' 472 292' 473 292' 474 292' 475 292' 476 292' 477 292' 478 292' 479 292' 480 292' 481 292' 482 292' 483 292' 484 292' 485 292' 486 292' 487 292' 488 292' 489 292' 490 292' 491 292' 492 292' 493 292' 494 292' 495 292' 496 292' 497 292' 498 292' 499 292' 500 292' 501 292' 502 292' 503 292' 504 292' 505 292' 506 292' 507 292' 508 292' 509 292' 510 292' 511 292' 512 292' 513 292' 514 292' 515 292' 516 292' 517 292' 518 292' 519 292' 520 292' 521 292' 522 292' 523 292' 524 292' 525 292' 526 292' 527 292' 528 292' 529 292' 530 292' 531 292' 532 292' 533 292' 534 292' 535 292' 536 292' 537 292' 538 292' 539 292' 540 292' 541 292' 542 292' 543 292' 544 292' 545 292' 546 292' 547 292' 548 292' 549 292' 550 292' 551 292' 552 292' 553 292' 554 292' 555 292' 556 292' 557 292' 558 292' 559 292' 560 292' 561 292' 562 292' 563 292' 564 292' 565 292' 566 292' 567 292' 568 292' 569 292' 570 292' 571 292' 572 292' 573 292' 574 292' 575 292' 576 292' 577 292' 578 292' 579 292' 580 292' 581 292' 582 292' 583 292' 584 292' 585 292' 586 292' 587 292' 588 292' 589 292' 590 292' 591 292' 592 292' 593 292' 594 292' 595 292' 596 292' 597 292' 598 292' 599 292' 600 292' 601 292' 602 292' 603 292' 604 292' 605 292' 606 292' 607 292' 608 292' 609 292' 610 292' 611 292' 612 292' 613 292' 614 292' 615 292' 616 292' 617 292' 618 292' 619 292' 620 292' 621 292' 622 292' 623 292' 624 292' 625 292' 626 292' 627 292' 628 292' 629 292' 630 292' 631 292' 632 292' 633 292' 634 292' 635 292' 636 292' 637 292' 638 292' 639 292' 640 292' 641 292' 642 292' 643 292' 644 292' 645 292' 646 292' 647 292' 648 292' 649 292' 650 292' 651 292' 652 292' 653 292' 654 292' 655 292' 656 292' 657 292' 658 292' 659 292' 660 292' 661 292' 662 292' 663 292' 664 292' 665 292' 666 292' 667 292' 668 292' 669 292' 670 292' 671 292' 672 292' 673 292' 674 292' 675 292' 676 292' 677 292' 678 292' 679 292' 680 292' 681 292' 682 292' 683 292' 684 292' 685 292' 686 292' 687 292' 688 292' 689 292' 690 292' 691 292' 692 292' 693 292' 694 292' 695 292' 696 292' 697 292' 698 292' 699 292' 700 292' 701 292' 702 292' 703 292' 704 292' 705 292' 706 292' 707 292' 708 292' 709 292' 710 292' 711 292' 712 292' 713 292' 714 292' 715 292' 716 292' 717 292' 718 292' 719 292' 720 292' 721 292' 722 292' 723 292' 724 292' 725 292' 726 292' 727 292' 728 292' 729 292' 730 292' 731 292' 732 292' 733 292' 734 292' 735 292' 736 292' 737 292' 738 292' 739 292' 740 292' 741 292' 742 292' 743 292' 744 292' 745 292' 746 292' 747 292' 748 292' 749 292' 750 292' 751 292' 752 292' 753 292' 754 292' 755 292' 756 292' 757 292' 758 292' 759 292' 760 292' 761 292' 762 292' 763 292' 764 292' 765 292' 766 292' 767 292' 768 292' 769 292' 770 292' 771 292' 772 292' 773 292' 774 292' 775 292' 776 292' 777 292' 778 292' 779 292' 780 292' 781 292' 782 292' 783 292' 784 292' 785 292' 786 292' 787 292' 788 292' 789 292' 790 292' 791 292' 792 292' 793 292' 794 292' 795 292' 796 292' 797 292' 798 292' 799 292' 800 292' 801 292' 802 292' 803 292' 804 292' 805 292' 806 292' 807 292' 808 292' 809 292' 810 292' 811 292' 812 292' 813 292' 814 292' 815 292' 816 292' 817 292' 818 292' 819 292' 820 292' 821 292' 822 292' 823 292' 824 292' 825 292' 826 292' 827 292' 828 292' 829 292' 830 292' 831 292' 832 292' 833 292' 834 292' 835 292' 836 292' 837 292' 838 292' 839 292' 840 292' 841 292' 842 292' 843 292' 844 292' 845 292' 846 292' 847 292' 848 292' 849 292' 850 292' 851 292' 852 292' 853 292' 854 292' 855 292' 856 292' 857 292' 858 292' 859 292' 860 292' 861 292' 862 292' 863 292' 864 292' 865 292' 866 292' 867 292' 868 292' 869 292' 870 292' 871 292' 872 292' 873 292' 874 292' 875 292' 876 292' 877 292' 878 292' 879 292' 880 292' 881 292' 882 292' 883 292' 884 292' 885 292' 886 292' 887 292' 888 292' 889 292' 890 292' 891 292' 8		



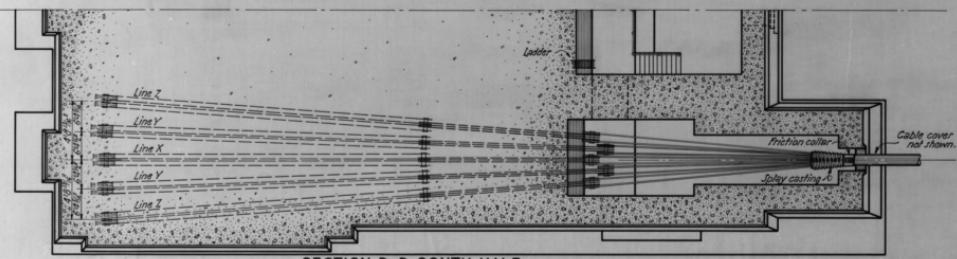




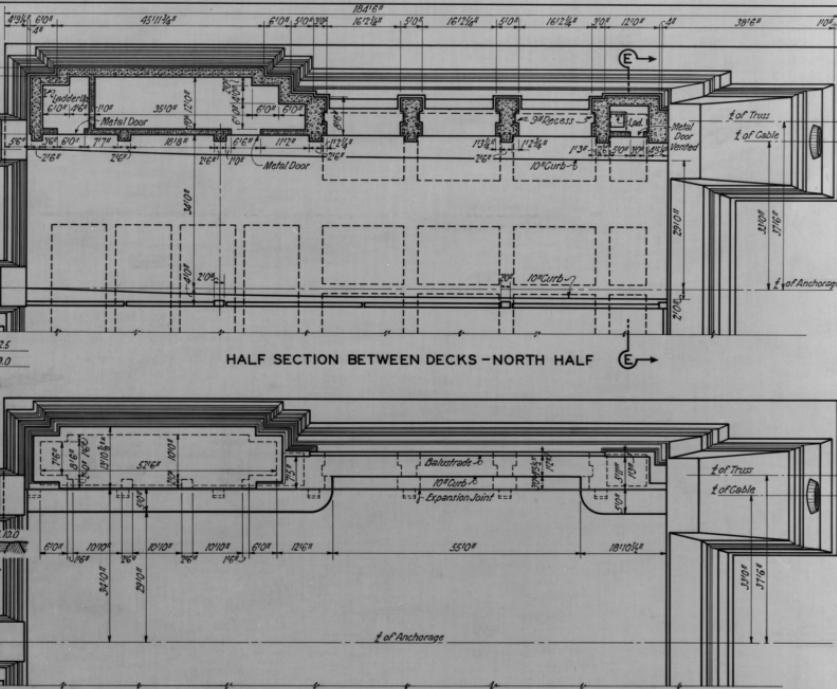




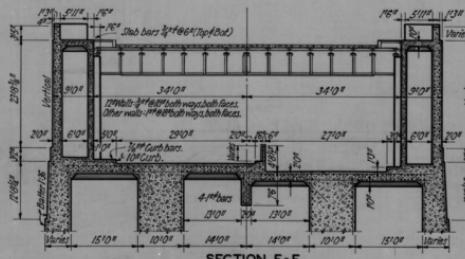
**SECTION NEAR C OF BRIDGE**



**SECTION D-D SOUTH HALF**

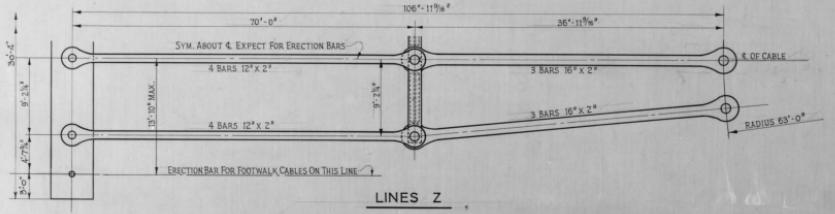


### HALF PLAN UPPER DECK

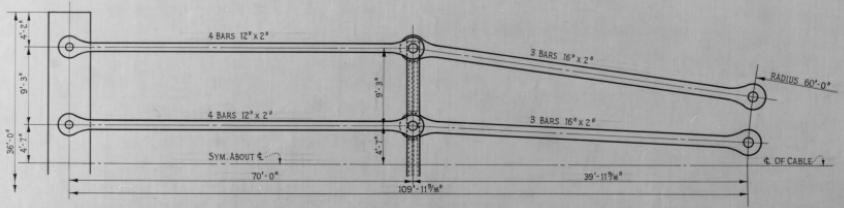


SECTION E-E

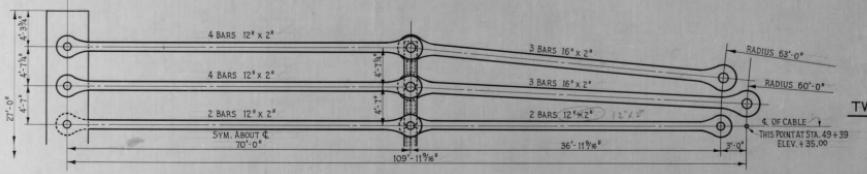
**MICROFILMED**  
STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
**SAN FRANCISCO-OAKLAND BAY BRIDGE**  
WEST BAY CROSSING  
SAN FRANCISCO ANCHORAGE  
TYPICAL SECTIONS



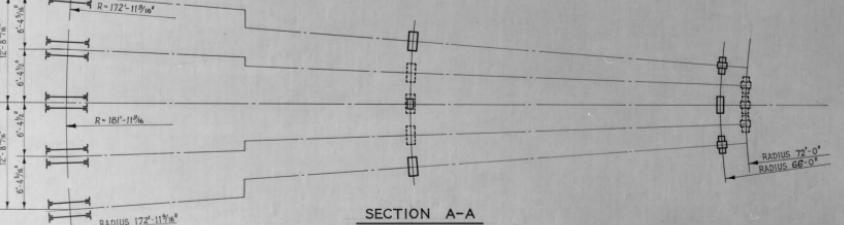
LINES Z



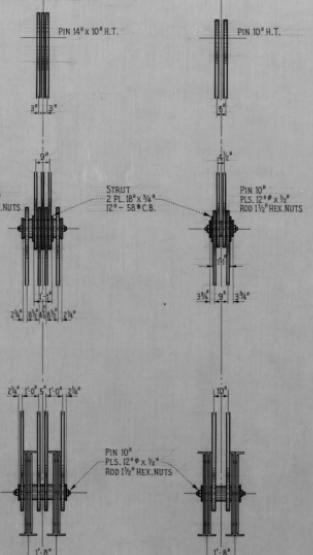
LINES Y



LINE X



SECTION A-A

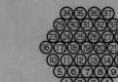
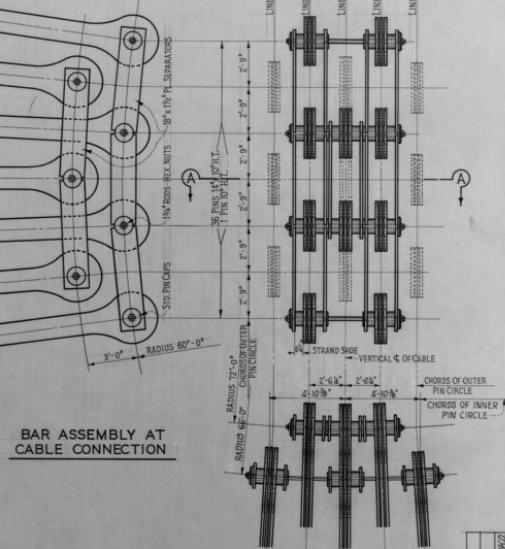


TWO STRAND CHAIN

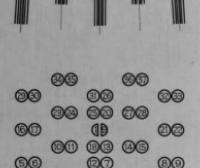
ONE STRAND CHAIN

NOTE:  
ALL PINS CARBON STEEL EXCEPT AS  
NOTED. H (HEAT TREATED),  
EVE BANDS, OTHER MATERIAL  
CARBON STEEL.  
ALL PINS COUNTERBORED 2".

See A CO DRAWING NO. G-4870-7-E.



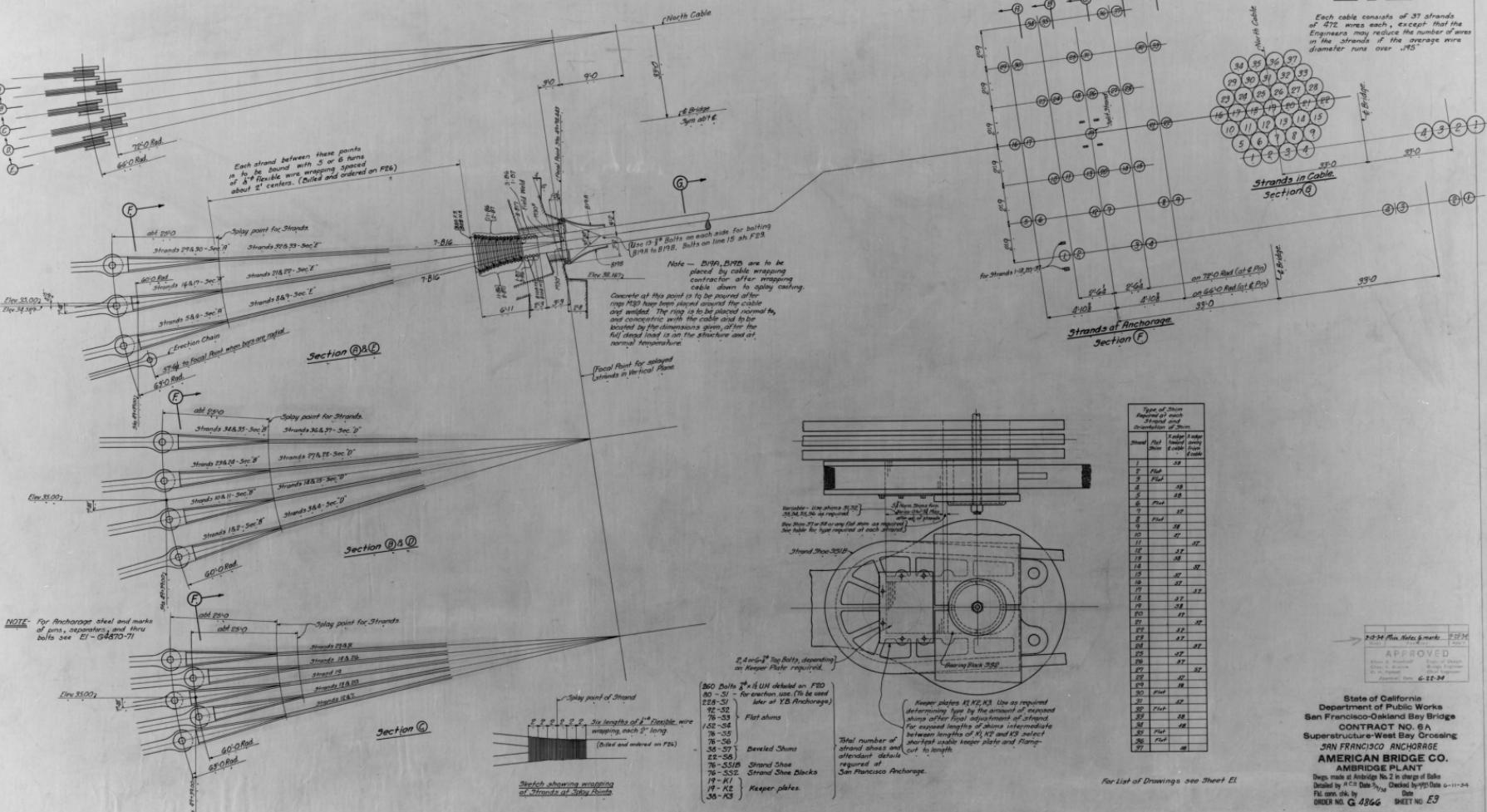
STRANDS IN CABLE

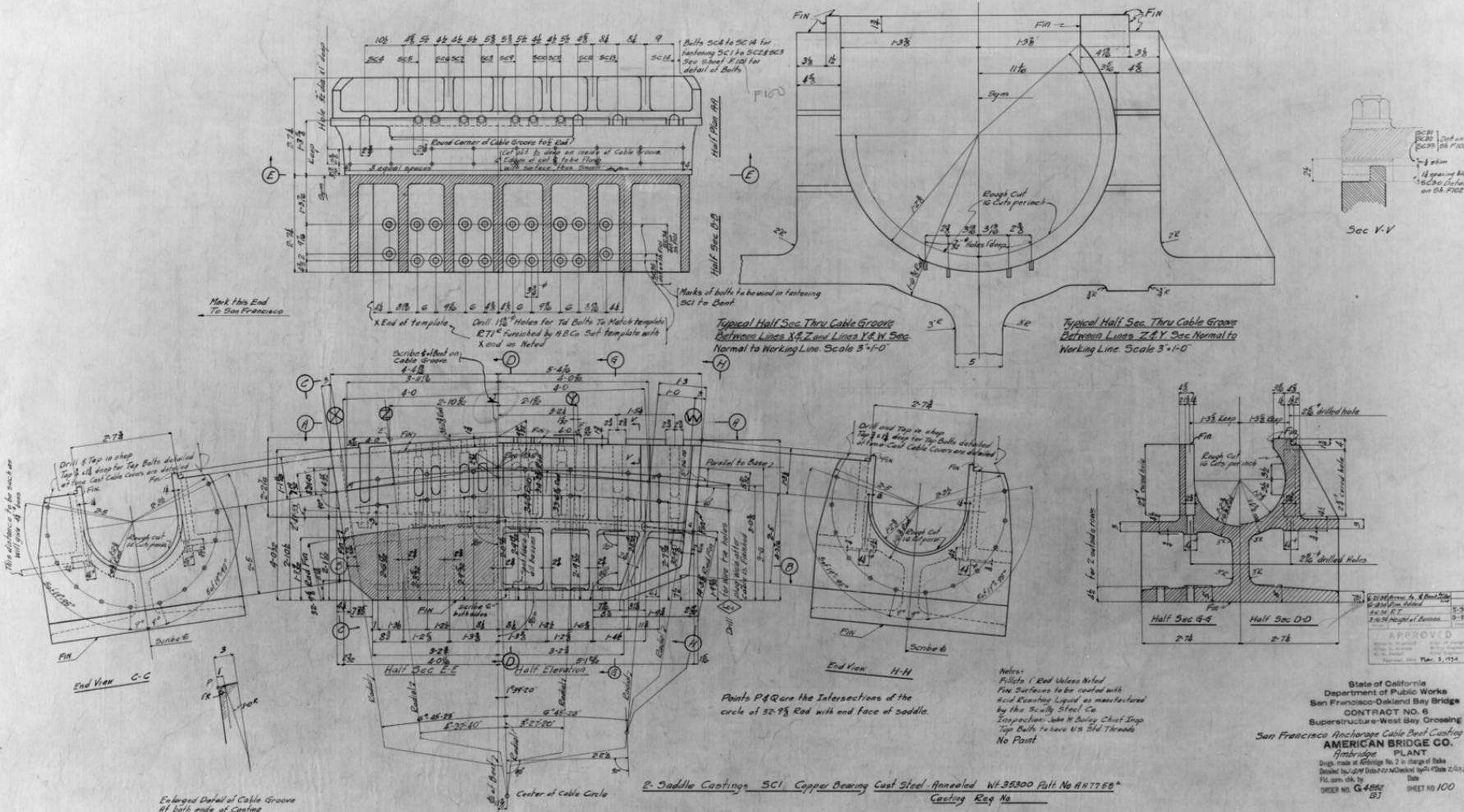


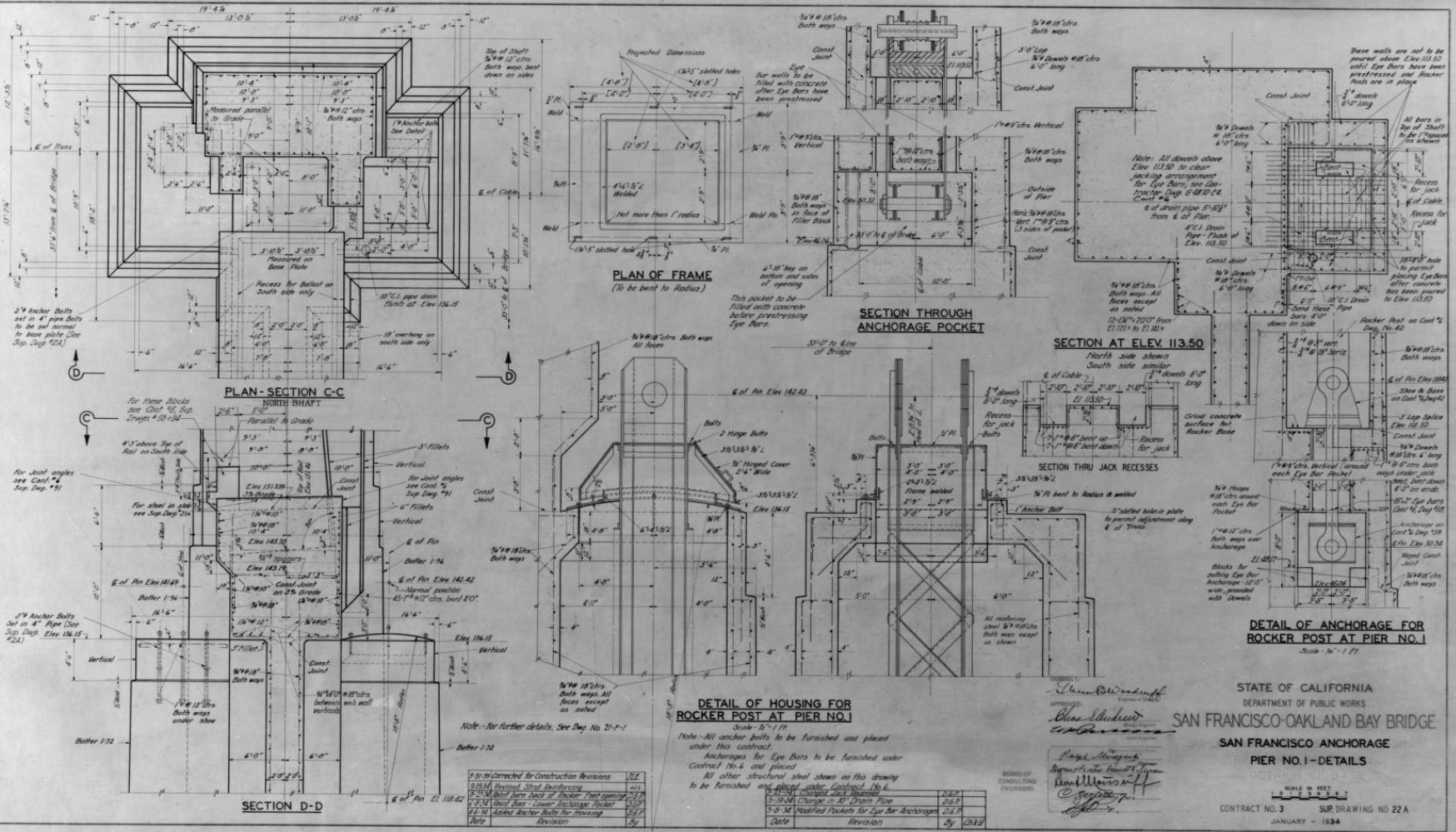
STRANDS IN ANCHORAGE

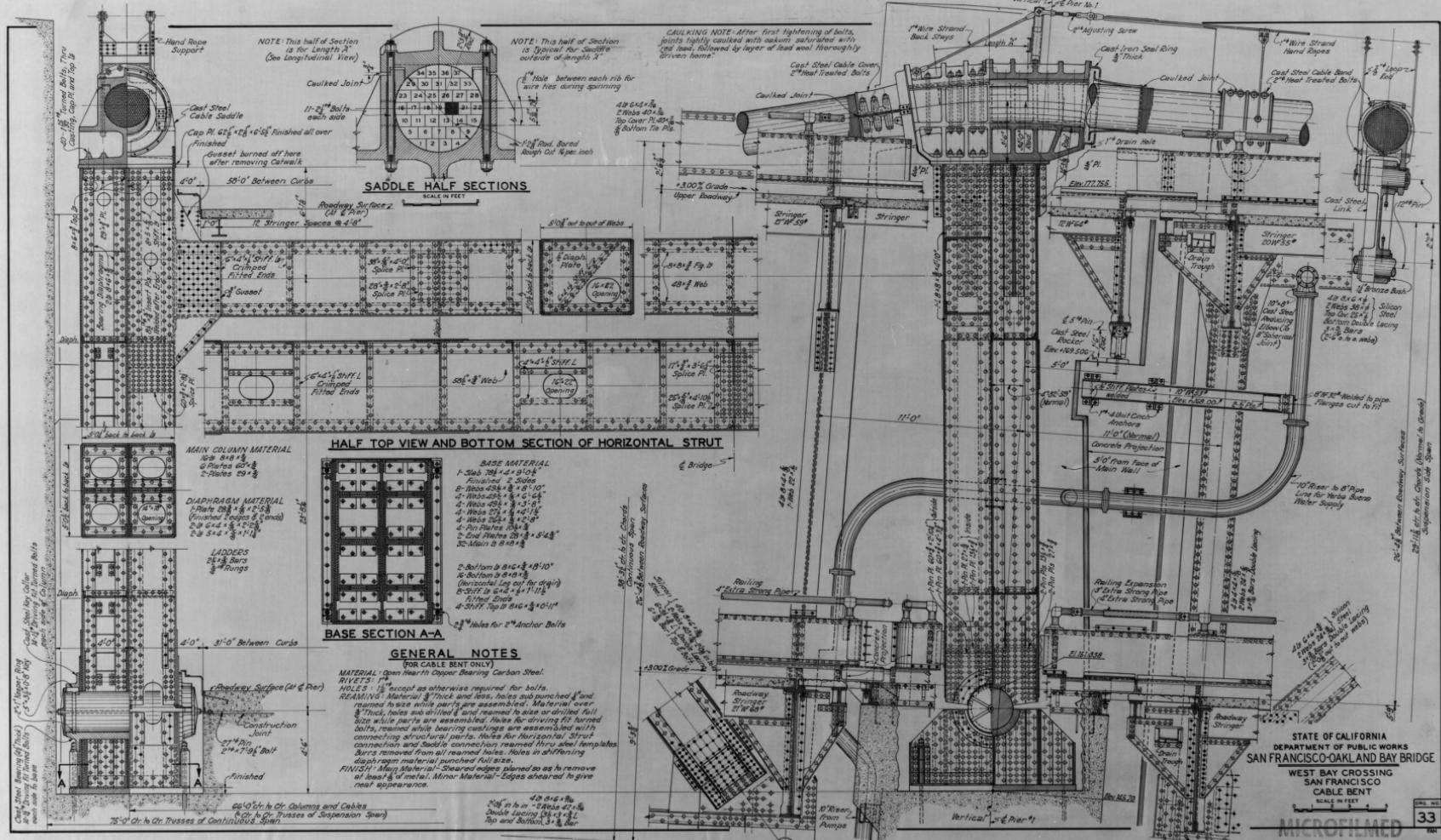
CORRECT: *Glenn Beale*  
APPROVED: *Glenn Beale*  
Director of Public Works  
State of California  
San Francisco-Oakland Bay Bridge  
San Francisco Anchorage  
Eye Bar Anchor Chain  
Board of Consulting Engineers  
*Frank M. Johnson*  
*Walter C. Miller*  
*C. C. Holt*

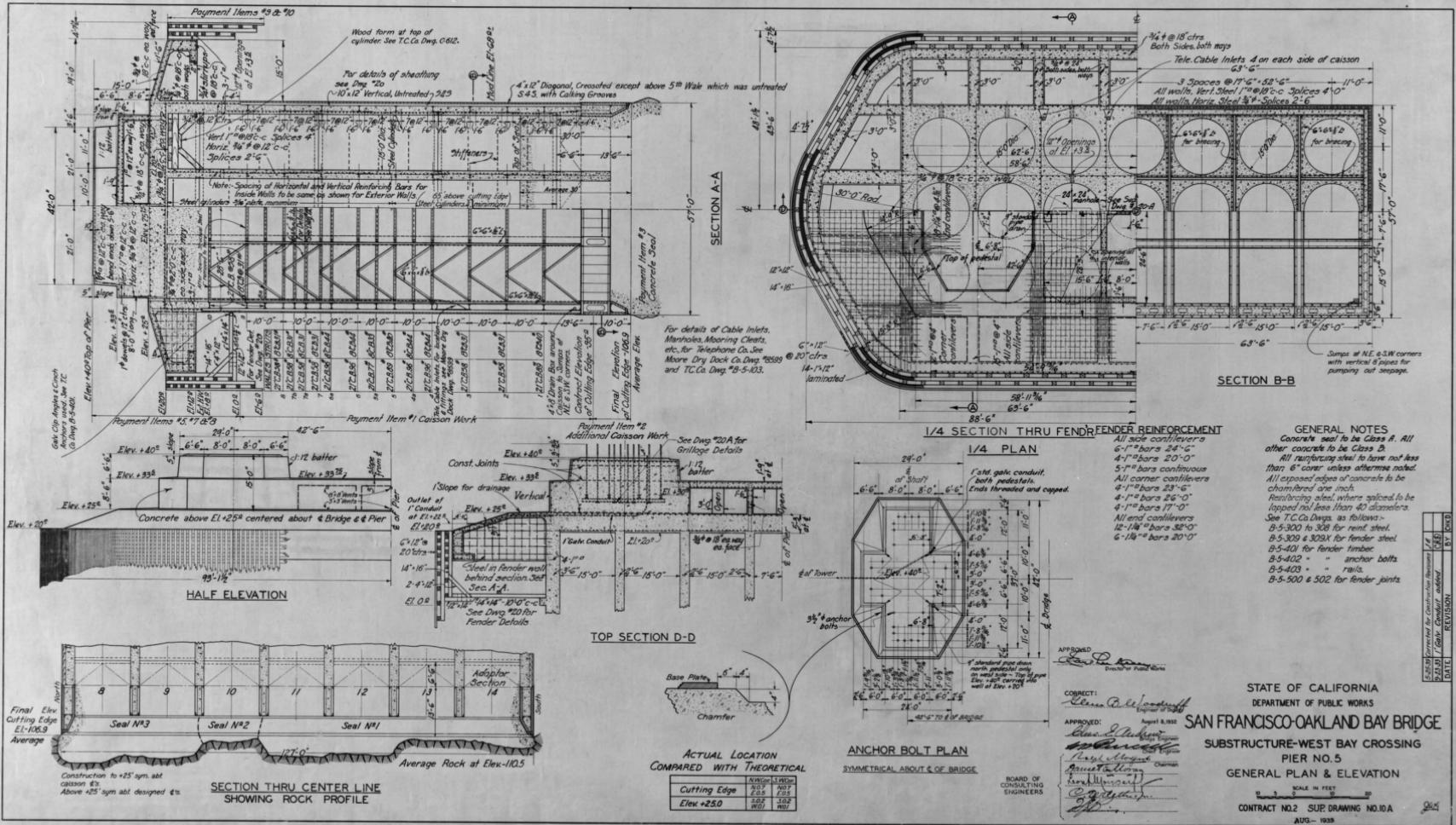
G-7-59 Corrected for Construction Drawing No. 4870-7-E  
1/1-7-30 Actual and dimensions changed 6/25  
Date 2/24/22

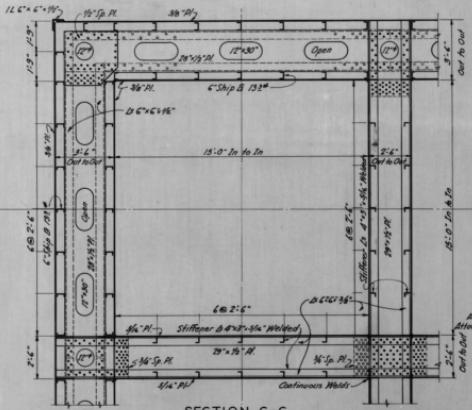




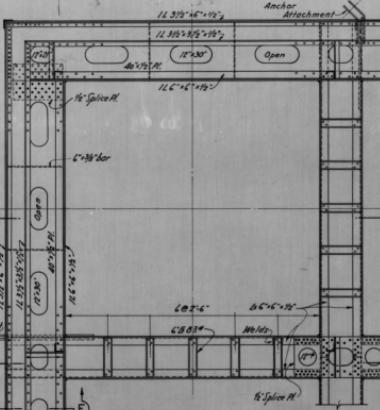




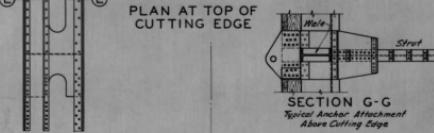
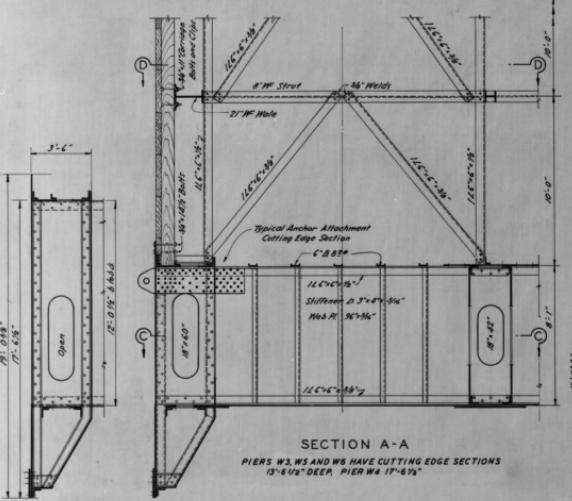




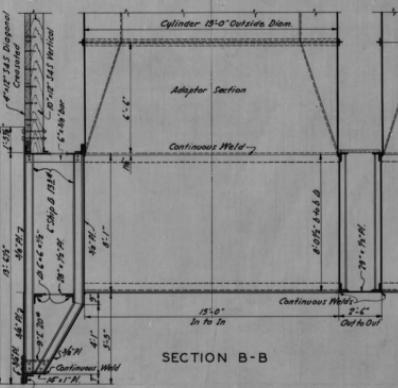
SECTION C-C



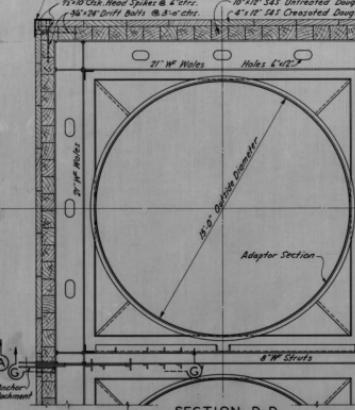
PLAN AT TOP OF CUTTING EDGE

SECTION G-G  
Typical Anchor Attachment  
Above Cutting Edge

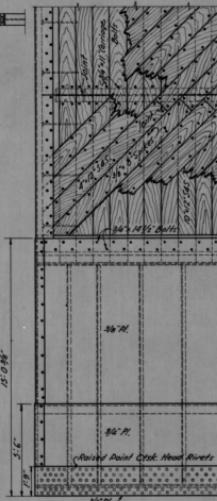
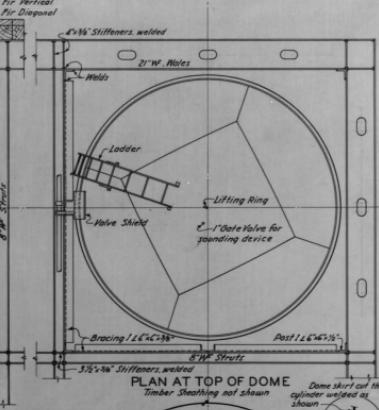
SECTION A-A

PIERS W-3, W-5 AND W-6 HAVE CUTTING EDGE SECTIONS  
13'-6 1/2" DEEP. PIER W-4 17'-6 1/2"

SECTION B-B



SECTION D-D

PART SIDE ELEVATION  
AT CORNER

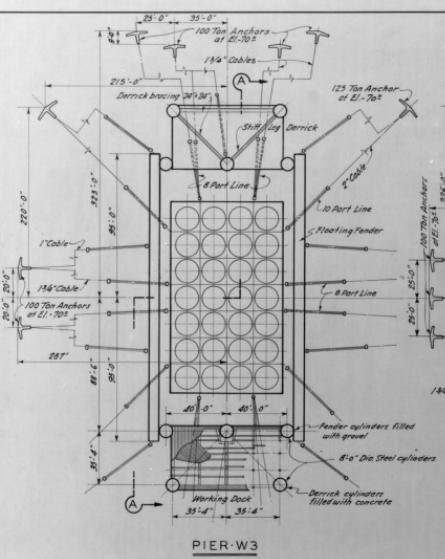
PLAN AT TOP OF DOME

Timber Sheathing not shown

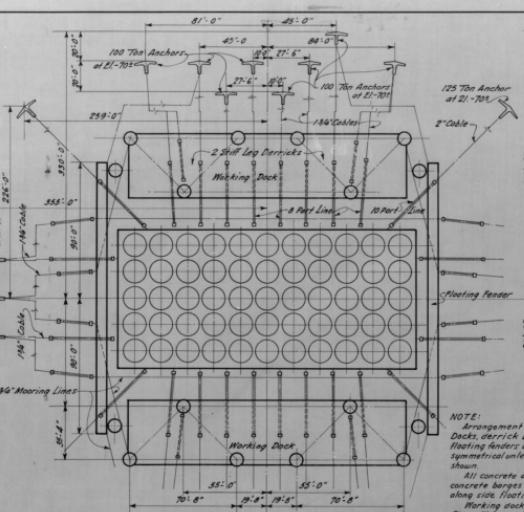
STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
TYPICAL CAISSON DETAILS  
PIERS W-3, W-4, W-5, & W-6

MICROFILMED

SCALE IN FEET

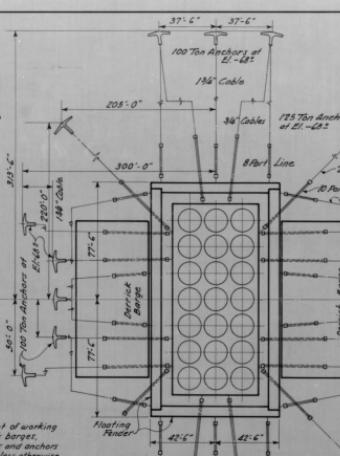


PIER-W3

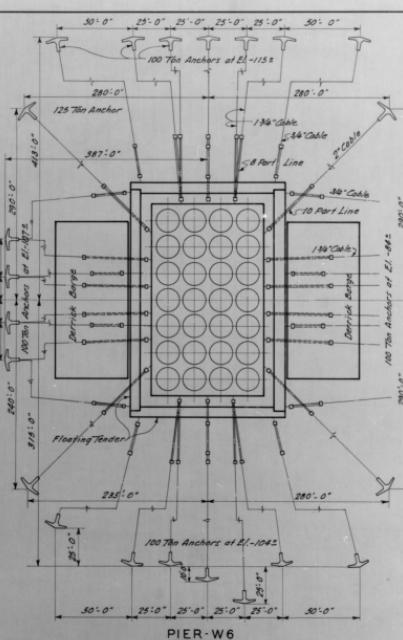


PIER-W4

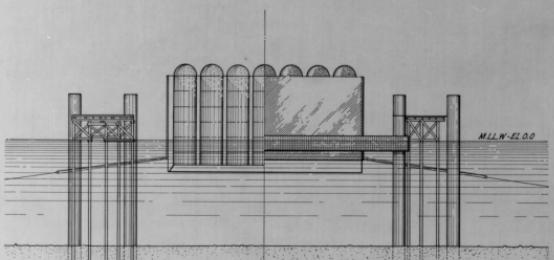
**NOTE:**  
Arrangement of working  
Docks, derrick barges,  
floating fenders and anchors  
symmetrical unless otherwise  
shown.  
All concrete done from  
concrete barges moored  
along floating working piers.  
Working docks used for  
Piers W-3 and W-4. Floating  
equipment used for Piers  
W-5 and W-6.



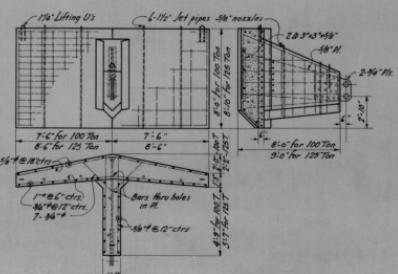
PIER-W5



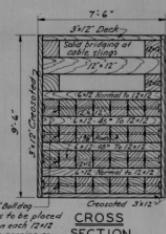
PIER-W



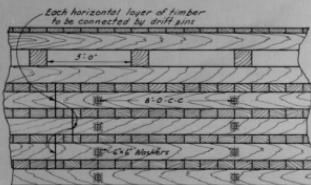
**SECTION A - A**



DETAILS OF CONCRETE ANCHOR  
DRAWN FOR 125 TON ANCHORAGE



*Creosoted*  
CROSS  
SECTION

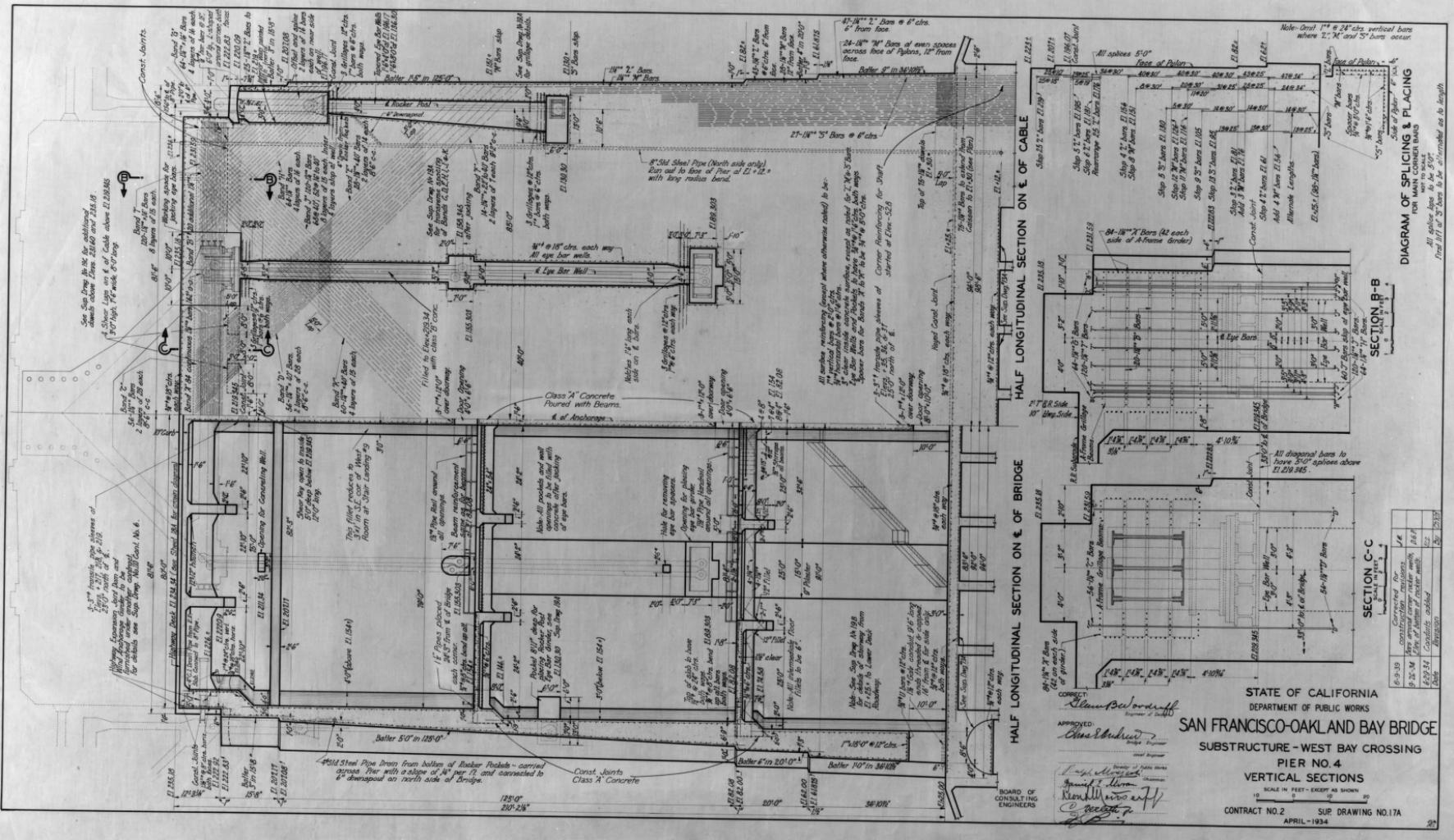


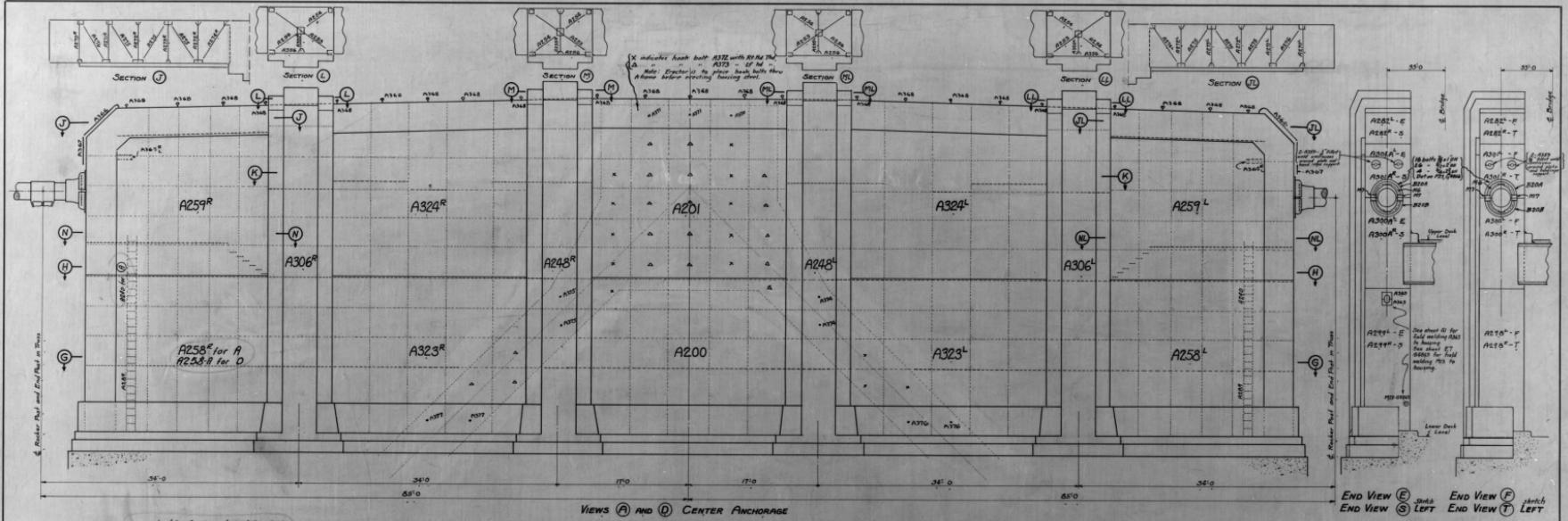
LONGITUDINAL SECTION

#### FENDER DETAILS

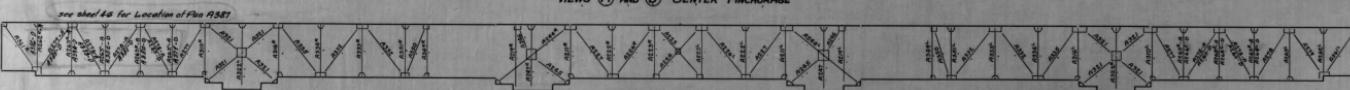
STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
WEST BAY CROSSING  
CAISSON ANCHORAGE



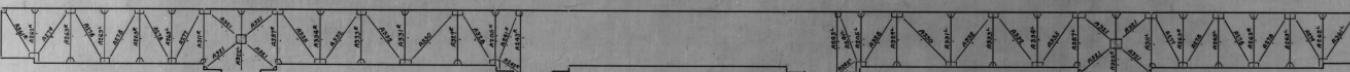




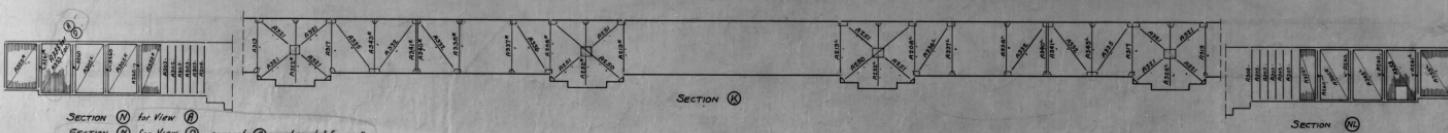
Views A and B CENTER ANCHORAGE



SECTION (G) for View A  
SECTION (G) for View D Same as for (A) except as noted for marks.



SECTION (H)



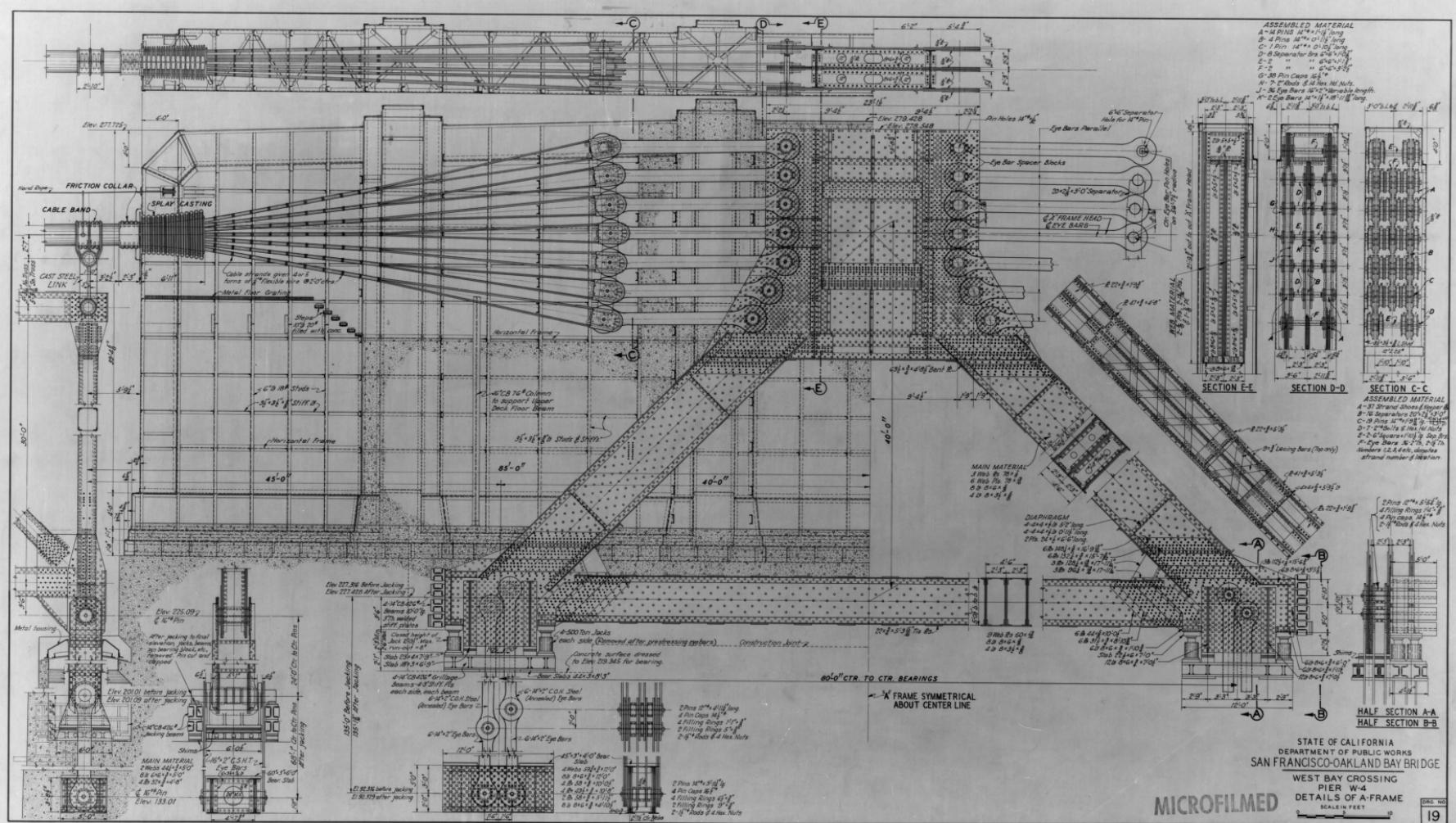
SECTION (N) for View (A)  
SECTION (N) for View (D) same as for (A) except as noted for marks

*Use sheets E7-E8-E9 together.*



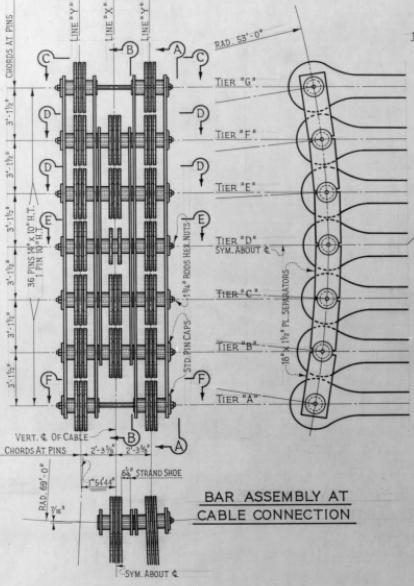
State of California  
Department of Public Works  
San Francisco-Oakland Bay Bridge  
CONTRACT NO. 6  
Superstructure-West Bay Crossing  
*Outside Elevation of Housing*  
Center Anchorage - Pier No. 4  
AMERICAN BRIDGE CO.

**AMERICAN BRIDGE CO.**  
**AMBRIDGE PLANT**  
Dwgs. made at Ambridge No. 2 in charge of Balke  
Detailed by J.W.P. Date 8-1 Checked by J.W.B. Date 9-24-54  
File conn. chk. by Date  
**ORDER NO. G4854-X!** **SHEET NO E8**



STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
WEST BAY CROSSING  
PIER W-4  
DETAILS OF A-FRAME  
SCALE IN FEET

**MICROFILMED**



## BAR ASSEMBLY AT CABLE CONNECTION

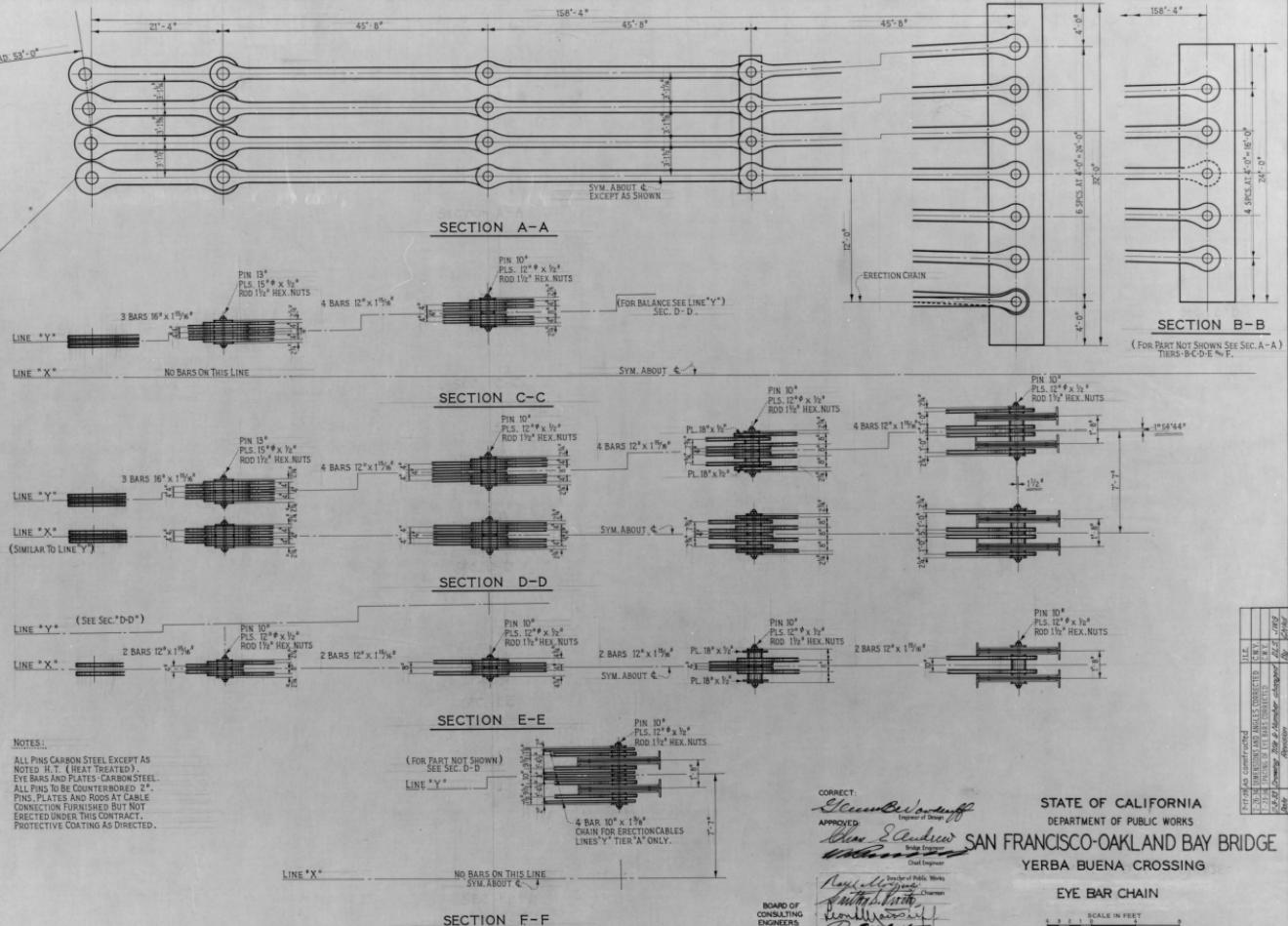


## STRANDS IN CABLE



## Note

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:**  
Glen Bell Woodruff  
Engineer of Design

APPROVED: *Clara E. Andrew*  
Engineer in Design  
Reserve Engineer

W. C. D. -  
Chief Engineer

May 10, 1942  
Fathers' Party  
Meeting  
Chairman

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS

FRANCISCO OAKI AND RAY BRIDGES

# FRANCISCO-OAKLAND BAY BRIDGE

## **YERBA BUENA CROSSING**

## EYE BAR CHAIN

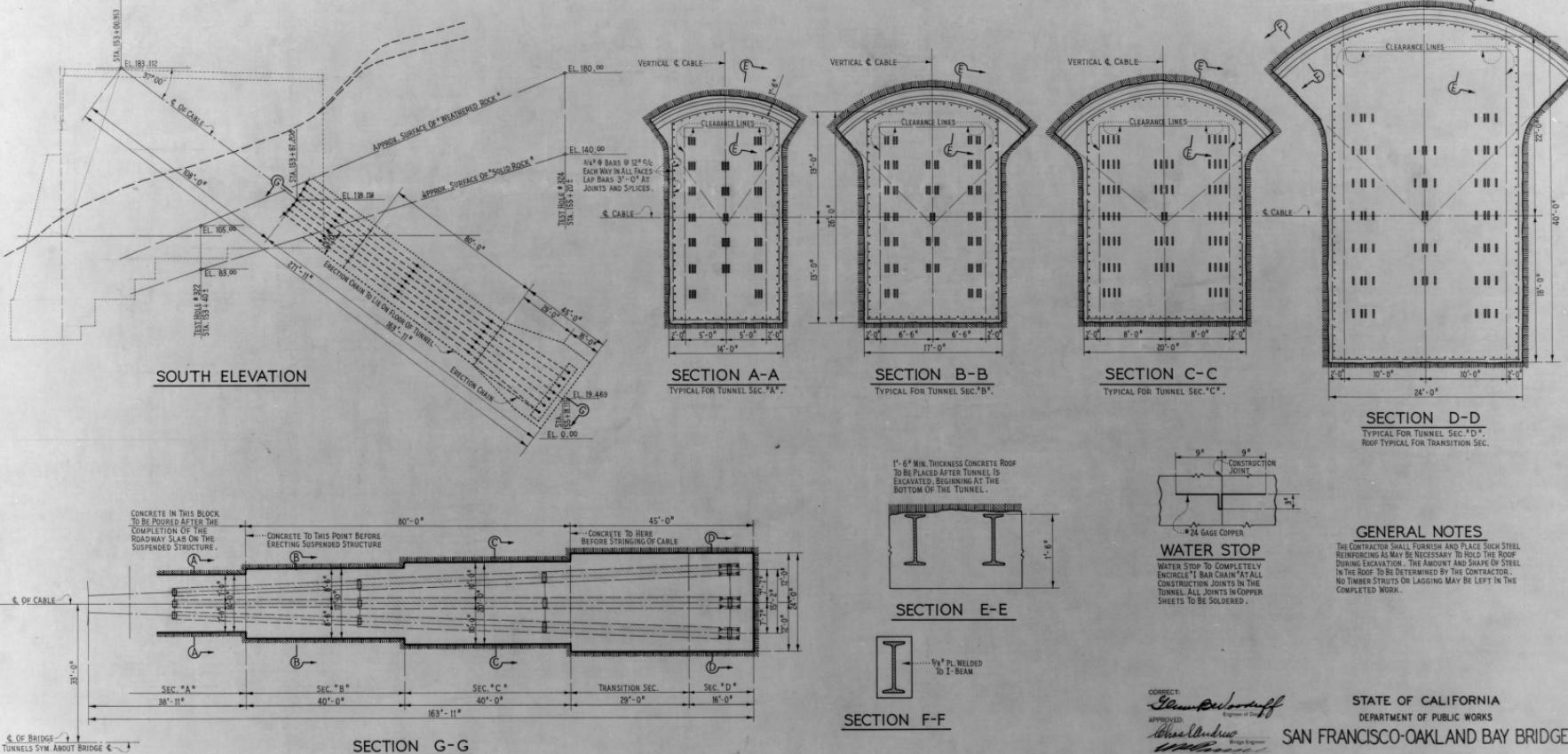
SCALE IN FEET

Figure 1. Schematic diagram of the *luciferase reporter assay* system. The *luciferase reporter construct* contains the *SV40* promoter, the *SV40* polyA signal, and the *luciferase* gene. The *luciferase* gene is under the control of the *SV40* promoter. The *luciferase reporter construct* is transfected into the cells. The *luciferase* gene is expressed and produces *luciferase* enzyme. The *luciferase* enzyme converts the substrate (*luciferin*) into light energy, which is measured by a luminometer.

TRACT NO. 5. SUP. DRAWING NO. 12A.

JUNE - 1933

*Journal of Health Politics, Policy and Law*, Vol. 29, No. 4, December 2004  
ISSN 0361-6878 • 10.1215/03616878-29-4 © 2004 by The University of Chicago



7-18-32	As Constructed	JL
7-18-32	Elevation & Station on Cable & changed	as is
Date	Revision	By

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

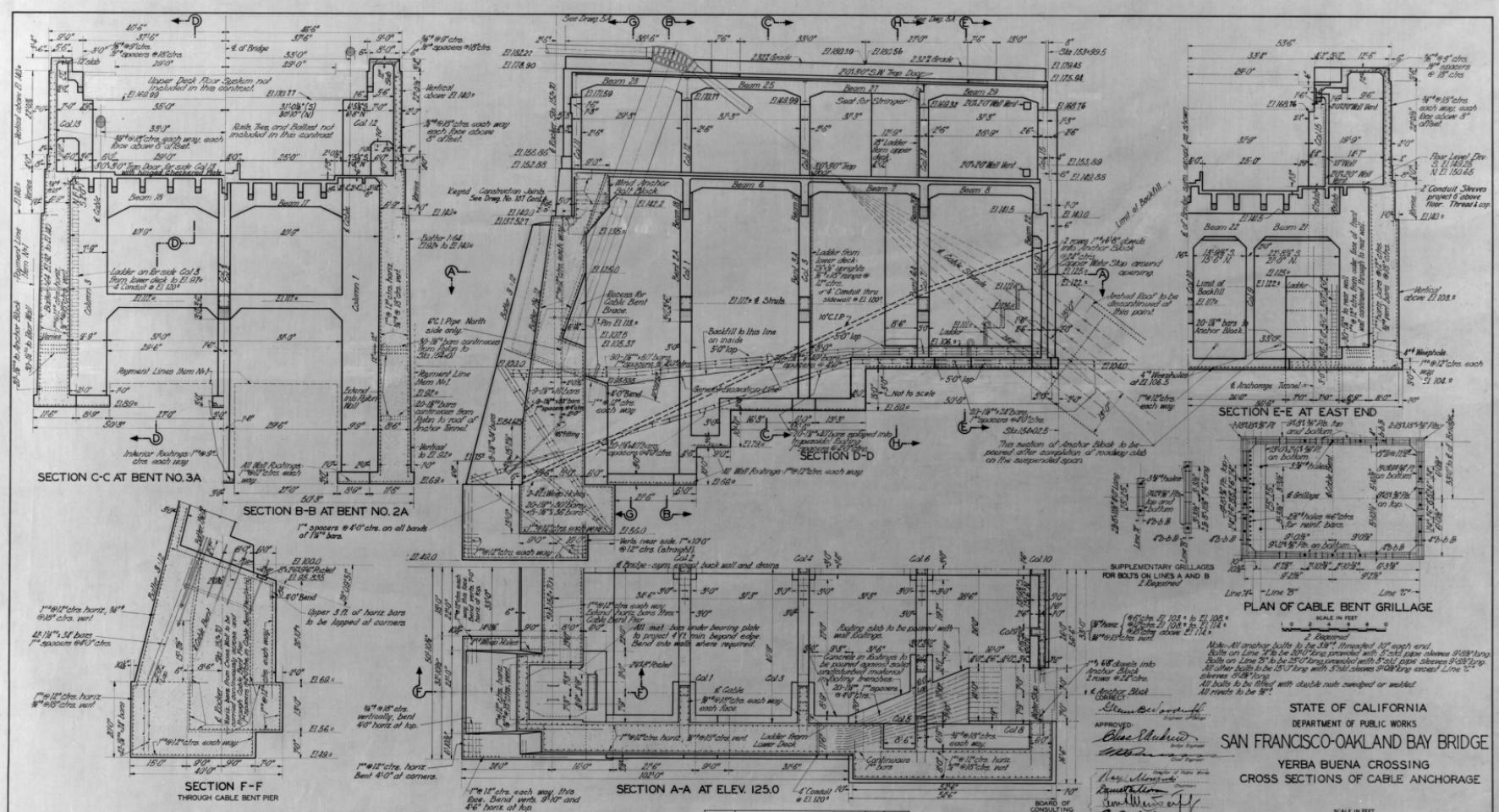
BOARD OF  
CONSULTING  
ENGINEERS

CORRECT:  
*James B. Edwards*  
APPROVED:  
*Chas. Edwards*  
Bridge Engineer  
Chief Engineer  
General Public Works  
Engineering Department  
State of California  
San Francisco-Oakland Bay Bridge

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

SCALE IN FEET  
4 8 12 16 20 24 28 32 36 40

CONTRACT NO. 5. DRAWING NO. 10A.  
JUNE - 1933



N FRANCISCO-OAKLAND BAY BRIDGE  
YERBA BUENA CROSSING  
CROSS SECTIONS OF CABLE ANCHORAGE

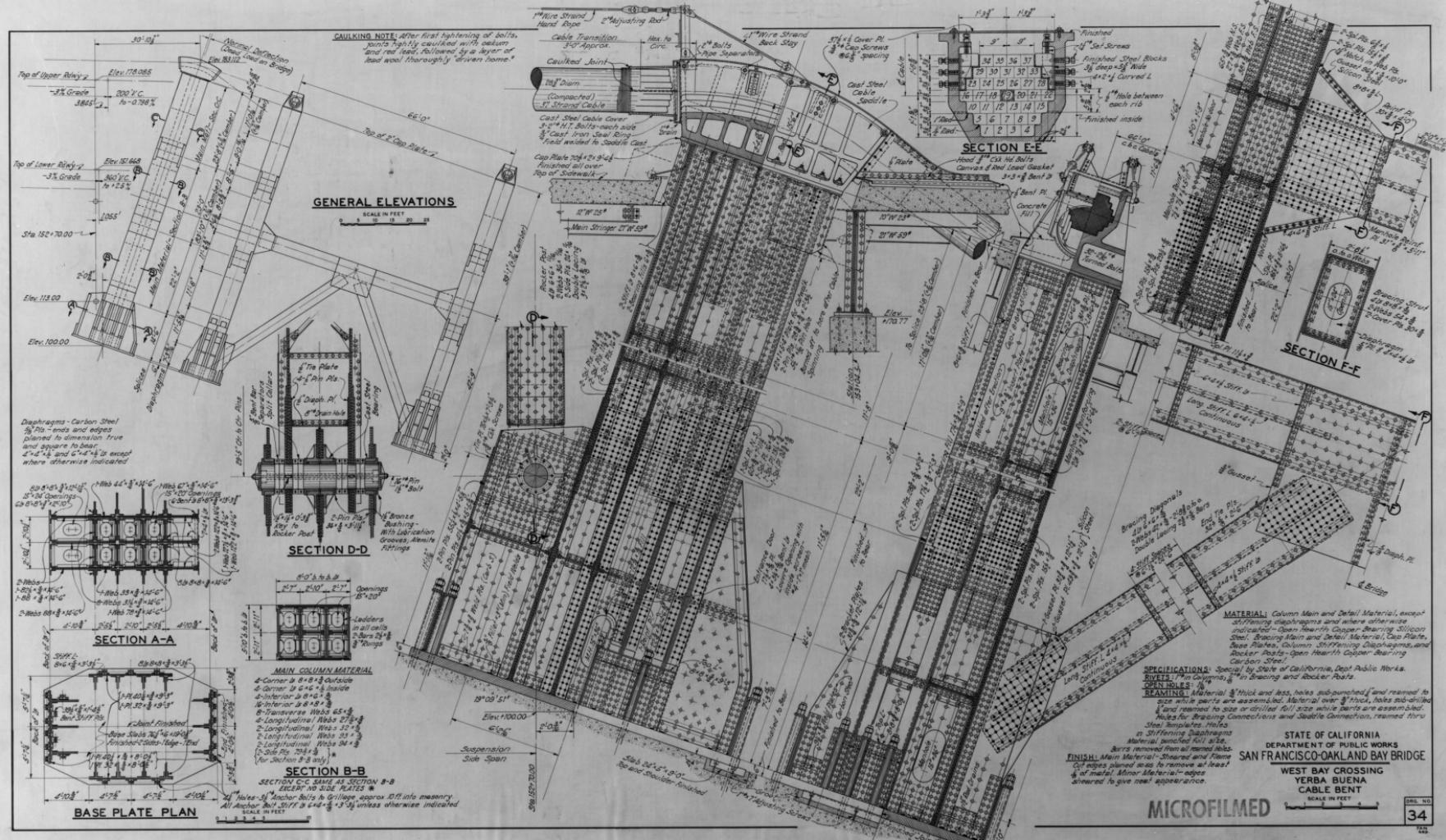
#### CROSS SECTIONS OF CABLE AND

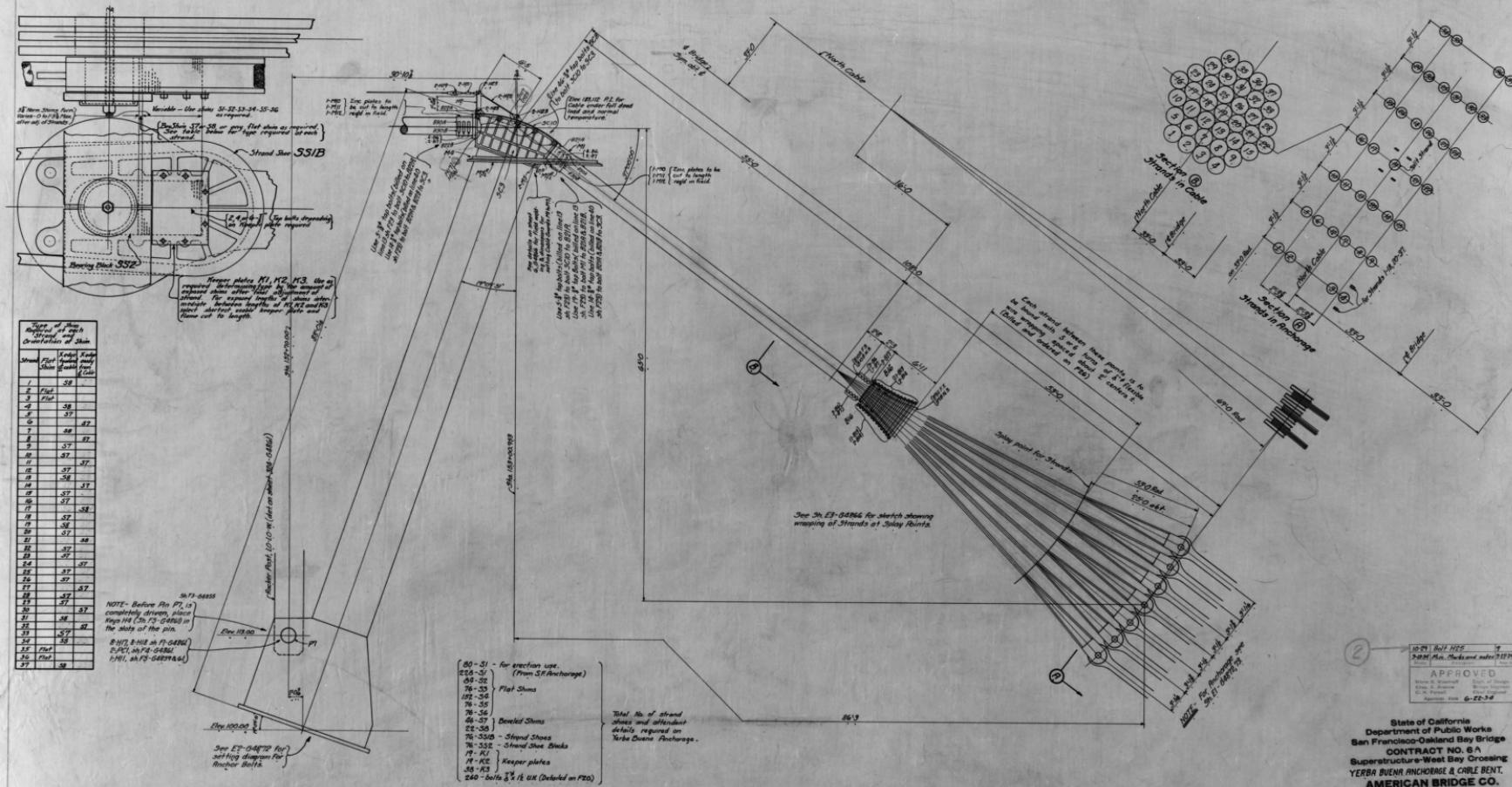
SCALE IN FEET

CONTRACT NO 5 SUP DRAWING NO 4A

FEBRUARY - 1934

February 1984



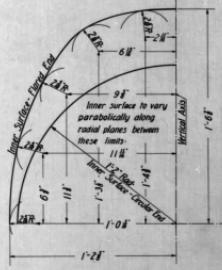


*For List of Drawings, see Sheet 1*

**APPROVED**  
 Glenn S. Viningoff  
 Chief, Structures  
 C. H. Forrest  
 Project Manager  
 Dept. of Design  
 Bridge Engineer  
 Civil Engineer

State of California  
Department of Public Works  
San Francisco-Oakland Bay Bridge  
CONTRACT NO. 6 A  
Superstructure-West Bay Crossing  
YERBA BUENA ANCHORAGE & CABLE BENT.  
**AMERICAN BRIDGE CO.**

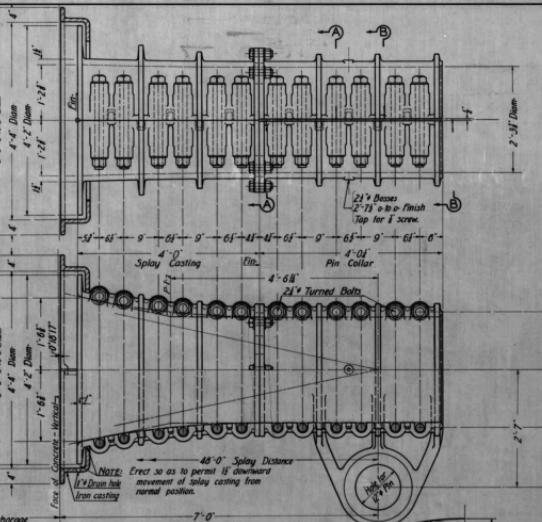
**AMBRIDGE PLANT**  
Dwgs. made at Ambridge No. 2 in charge of Balke  
Detailed by A.C.S Date 7/13 Checked by J.P. Date 6-11-  
Fwd. comp. chkd. by Date  
**ORDER NO. G 4866 SHEET NO E4**



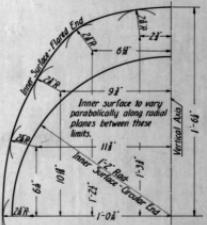
## SPLAY CONTOUR



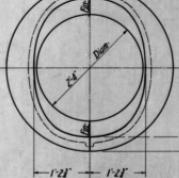
*sion bolt  
and gasket  
of concrete.*



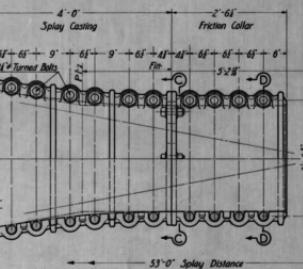
## CENTER ANCHORAGE SPLAY



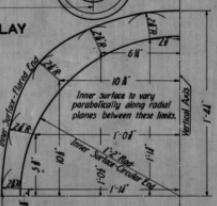
#### SPLAY CONTOUR



YERBA BUENA ANCHORAGE SPLAY



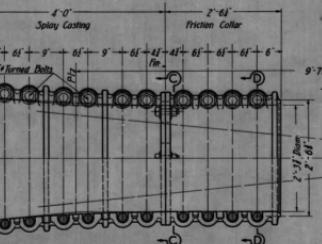
HALF SEC. G-C HALF SEC. D-D



#### DISPLAY CONTOUR



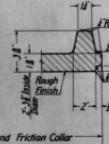
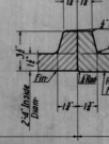
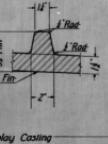
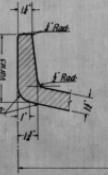
SAN FRANCISCO ANCHORAGE SPLASH



**SAN FRANCISCO-OAKLAND BAY BRIDGE**  
**CABLES & ATTACHMENTS-WEST BAY CROSSING**  
**SPLAY CASTINGS**

SCALE IN FEET  
CONTRACT NO. 6A DRAWING NO. 4  
DECEMBER - 1932

## TYPICAL RIB DETAILS



## GENERAL NOTES

Materials: Cast Steel except where otherwise noted and except  
2 $\frac{1}{2}$ " bolts which are High Tensile Steel and 1 $\frac{1}{2}$ " bolts  
which are Carbon Steel.

All dimensions pertaining to inside diameter and contour of castings are tentative only and to be verified or revised after exact compacted size of cable and order of splicing strands has been agreed upon with cable contractor.

*Inside surfaces of all Spray Castings are to be finished smooth. Inside surfaces of all Pin Collars and Friction Collars are to be rough finished, 16 cuts to an inch.*

**SECTION A-A**

**SECTION B-B**

BOARD OF  
CONSULTING

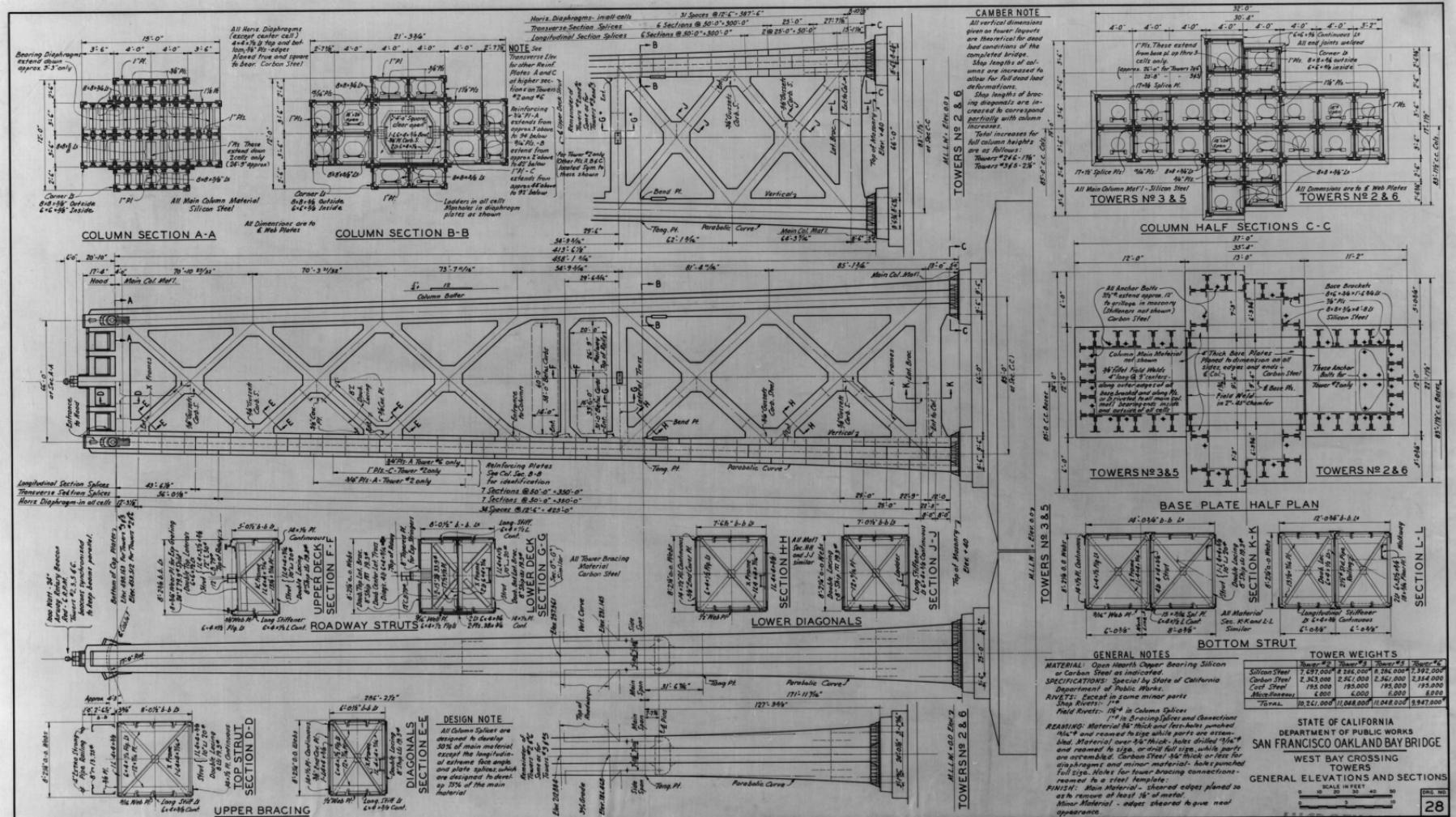
APPROVED: *John L. Koenig*  
Director of Plant Ops  
CORRECT: *Glenn Bell* *Engineering*  
Engineer  
APPROVED: *Steve Blundell*  
*Engineering*  
*John Morris*  
*Plant Manager*  
*Mark Miller* *CFO*  
*John L. Koenig*

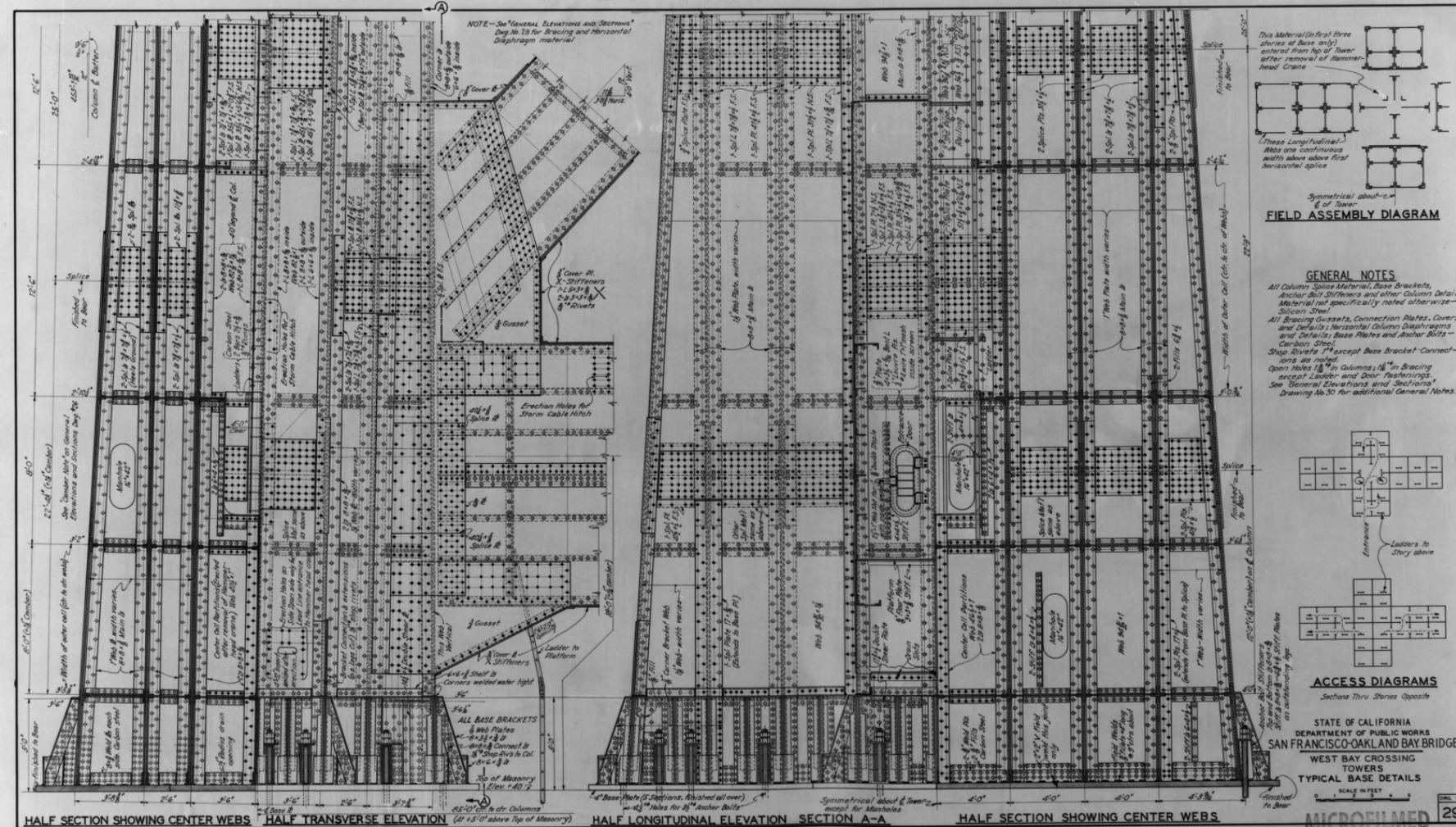
~~STATE OF CALIFORNIA~~  
DEPARTMENT OF PUBLIC WORKS

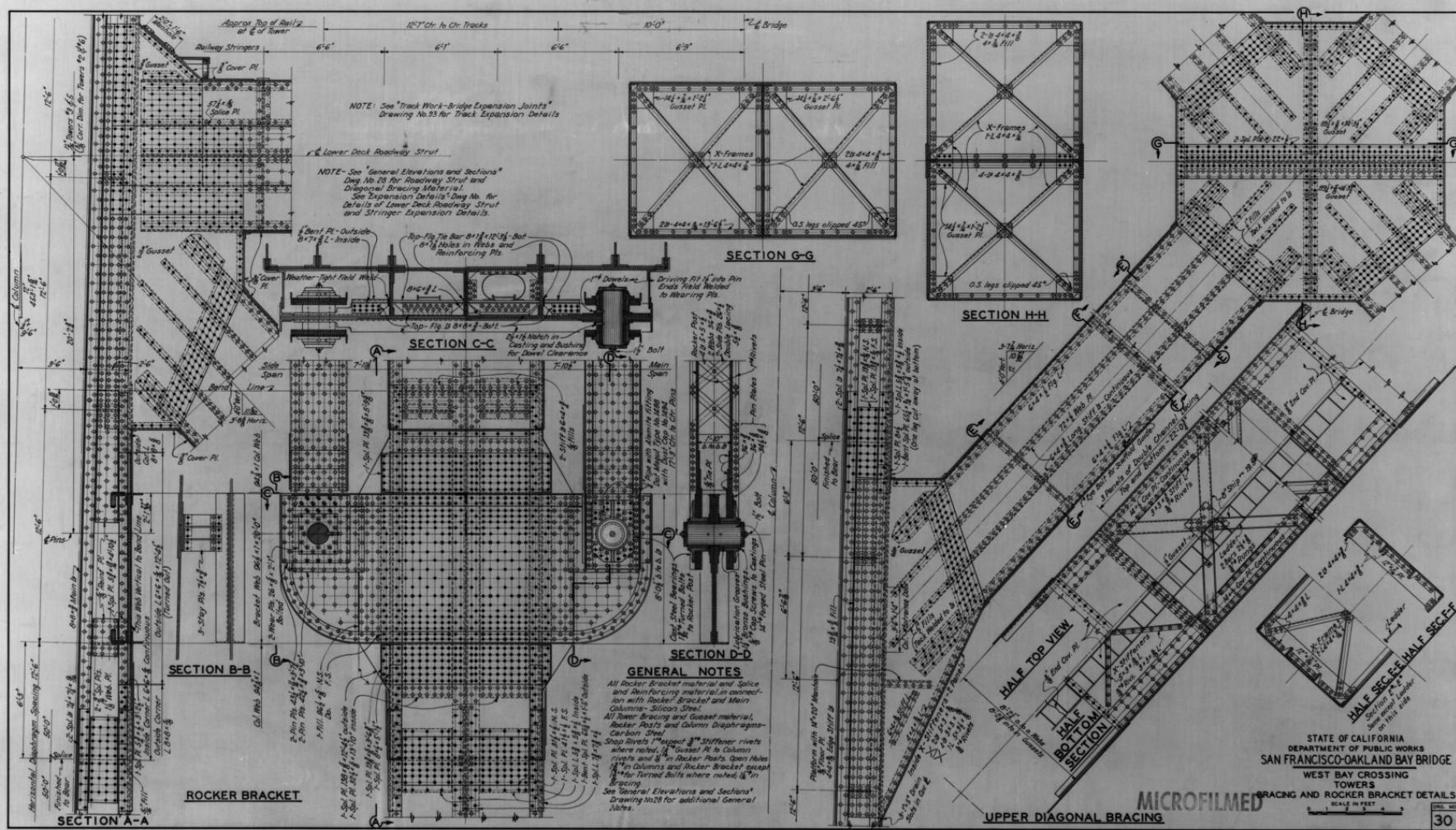
SAN FRANCISCO-OAKLAND BAY BRIDGE  
CABLES & ATTACHMENTS-WEST BAY CROSSING  
SPLAY CASTINGS

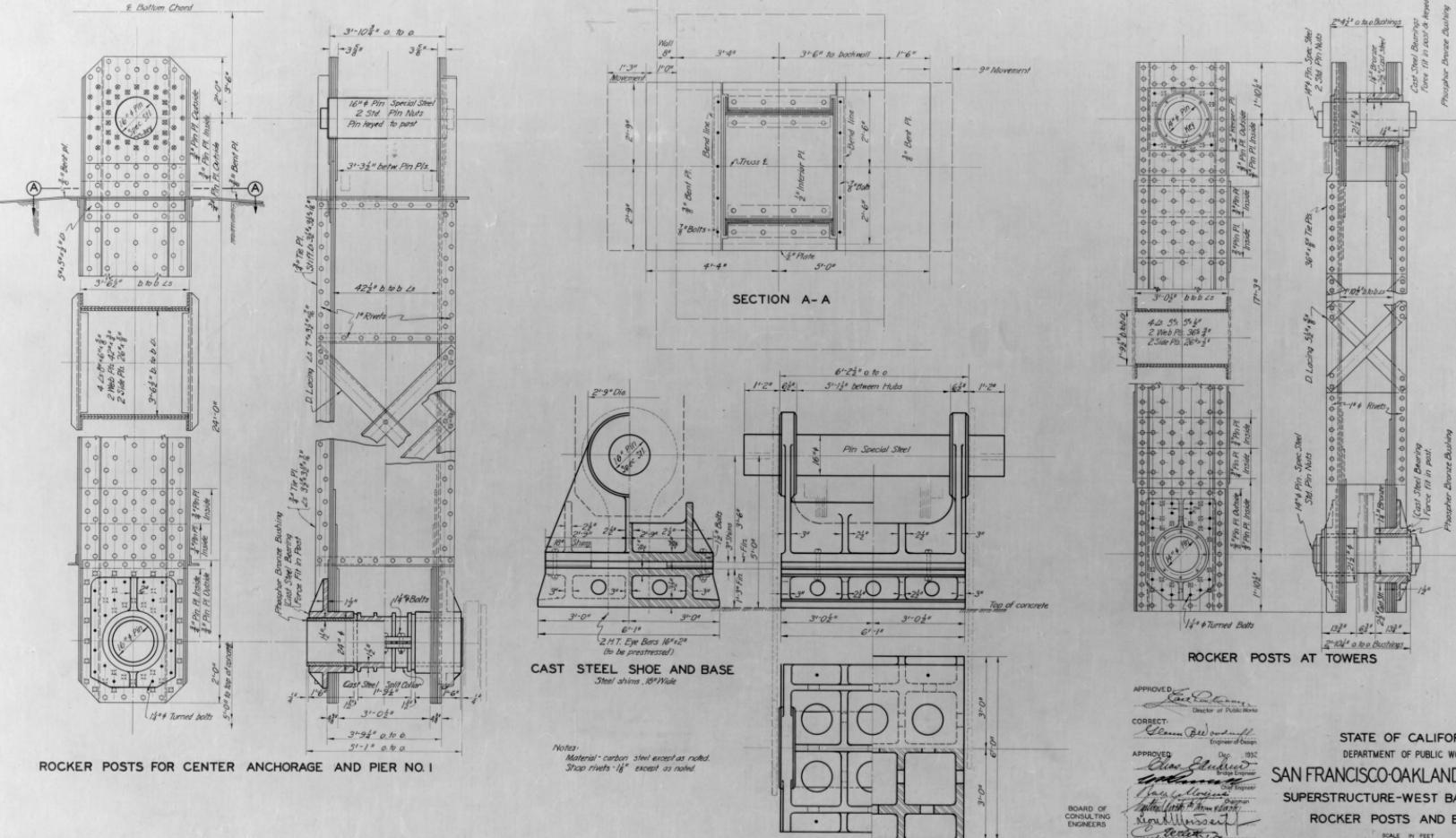






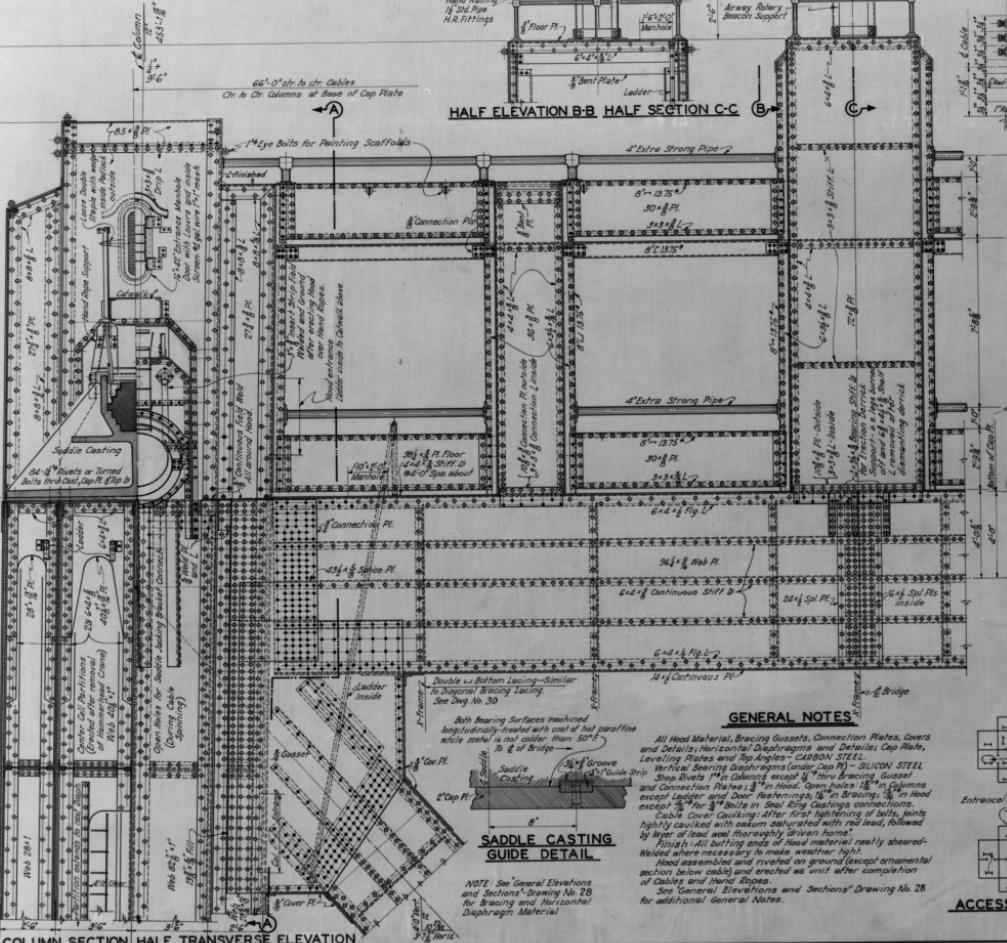






Bolted or Riveted  
All Column and Head Material Riveted to Base  
17-1/2" Head

12-1/2" Column  
Fastened to Required Distances for each segment



HALF COLUMN SECTION  
HALF TRANSVERSE ELEVATION

### HALF ELEVATION B-B. HALF SECTION C-C

A

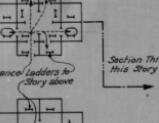
B

C

### ACCESS DIAGRAM

HALF LONGITUDINAL ELEVATION  
SECTION A-A

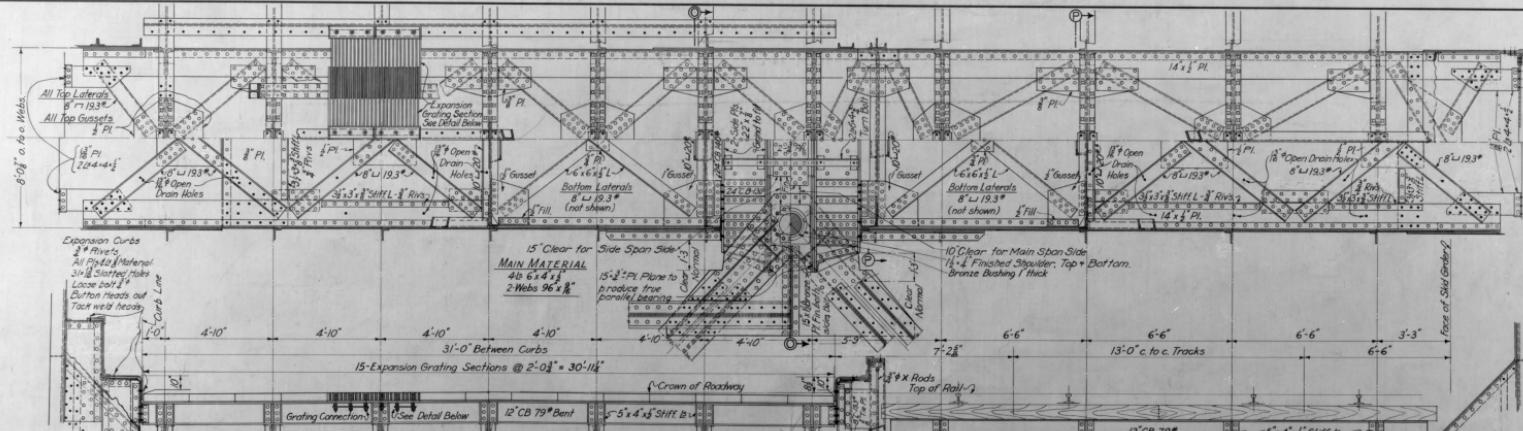
### SIDE SPAN



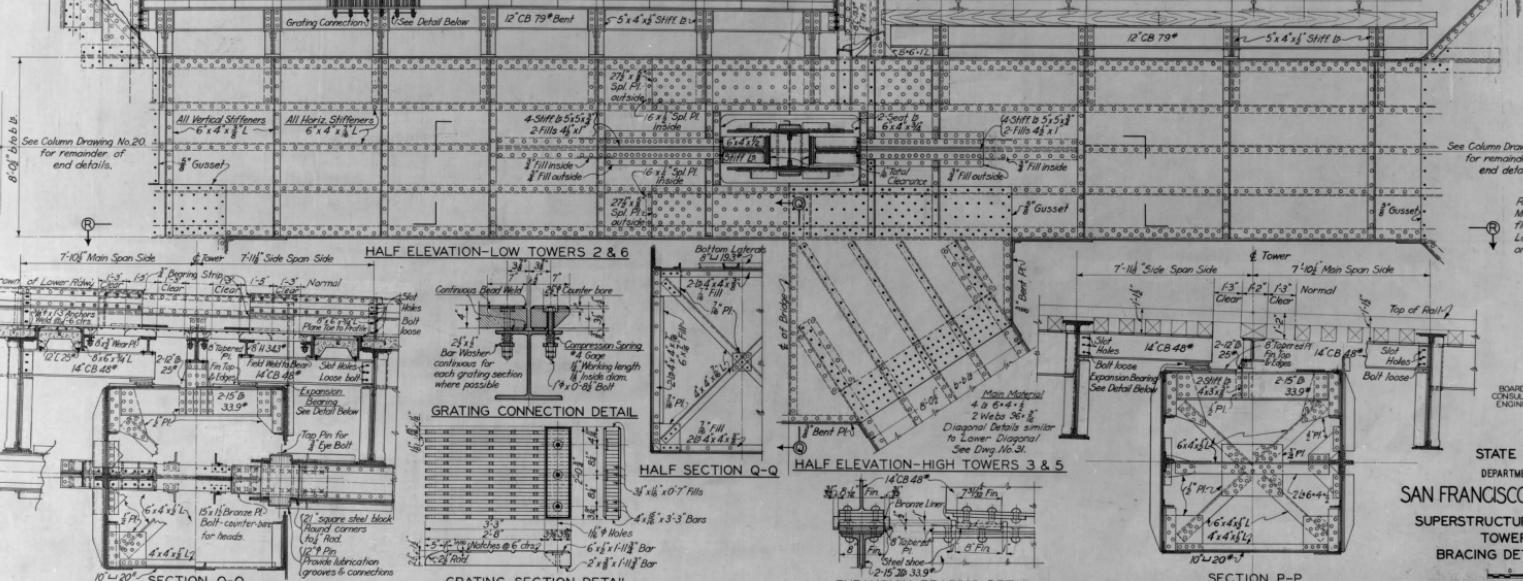
Section Thru this Story

Entrance Ladders to Story above

Section Thru Story Below



**HALF TOP VIEW**



APPROVED   
Lester L. Harvey  
Director of Public Works

**GENERAL NOTE**

Welds 1/8 unless otherwise noted.  
Material: Carbon Steel except end  
floor beams which are Silicon Steel.  
adders and walkways not shown.  
On this drawing- See Drawing No. 35

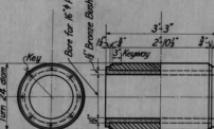
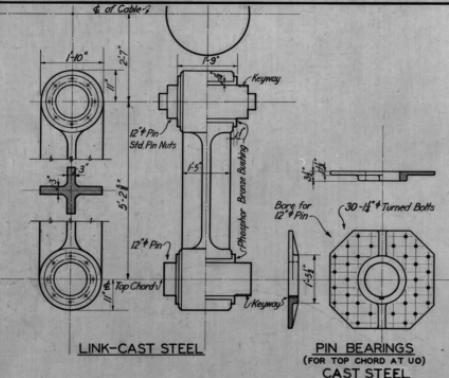
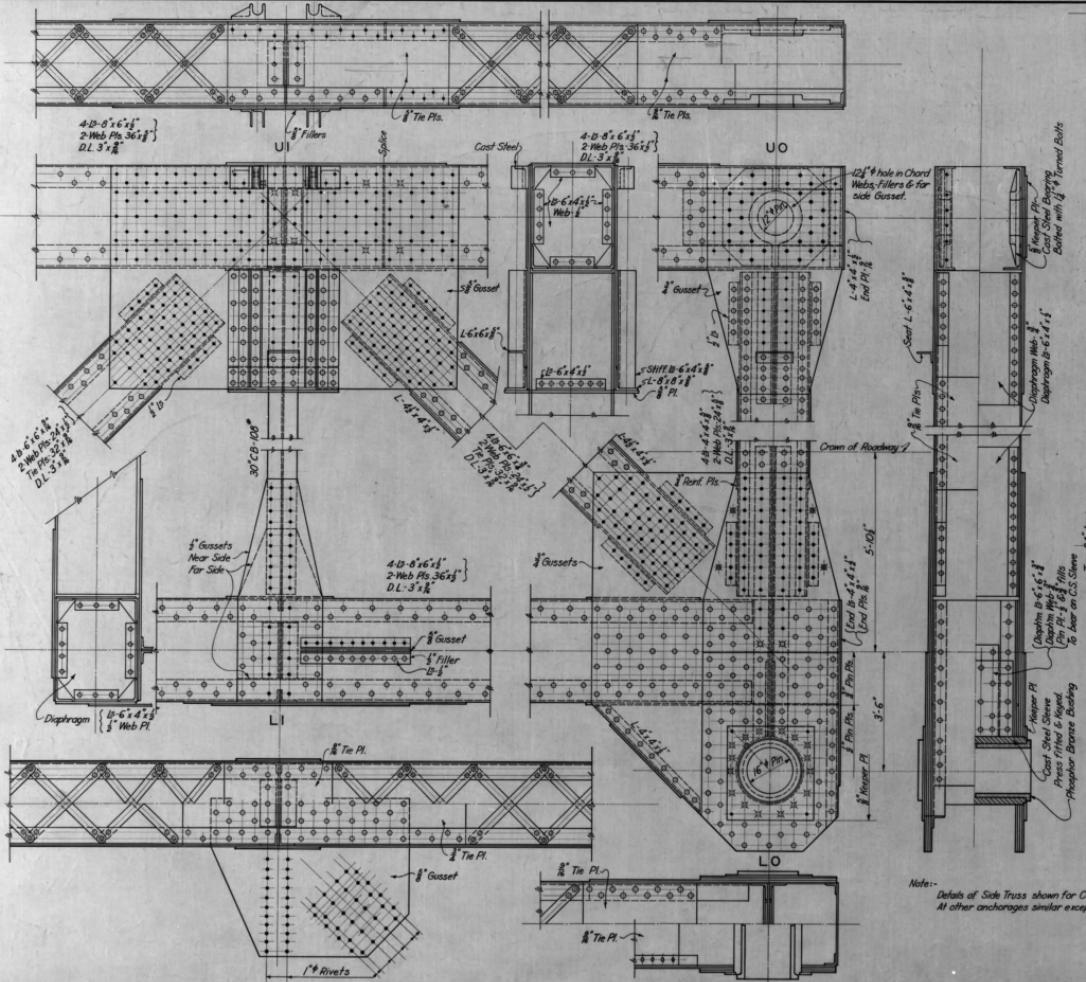
**CORRECT:**  
Steve B. Wood

APPROVED: *Chas. E. Andrus*  
August 19  
*M. L. Parker* Bridge Engineer  
*Playa Mowitch* Chief Engineer  
*W. H. Smith* Chaplain  
*W. H. Miller* Commissary

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE  
SUPERSTRUCTURE-WEST BAY CROSSING  
TOWERS 2,3,5 & 6  
BRACING DETAILS-LOWER DECK

SCALE IN FEET  
CONTRACT NO. 6 DRAWING NO. 27



**SLEEVE-CAST STEEL  
PHOSPHOR BRONZE BUSHING  
(FOR BOTTOM CHORD AT L.C.)**

NOTE

Material - as noted  
Silicon steel marked "S."  
Carbon steel marked "C."  
Shop Rivets - 1 $\frac{1}{8}$ " except as noted  
Field Rivets - 1 $\frac{1}{8}$ " manganese steel  
or 1 $\frac{1}{4}$ " carbon steel except  
as noted

APPROVED: 

**CORRECT:** Glenn B. Woodward

APPROVED:

~~\_\_\_\_~~ \_\_\_\_\_ Chief Engine

~~South Park Apartments~~  
South Park Apartments

*C. verreauxi*, p  
216.

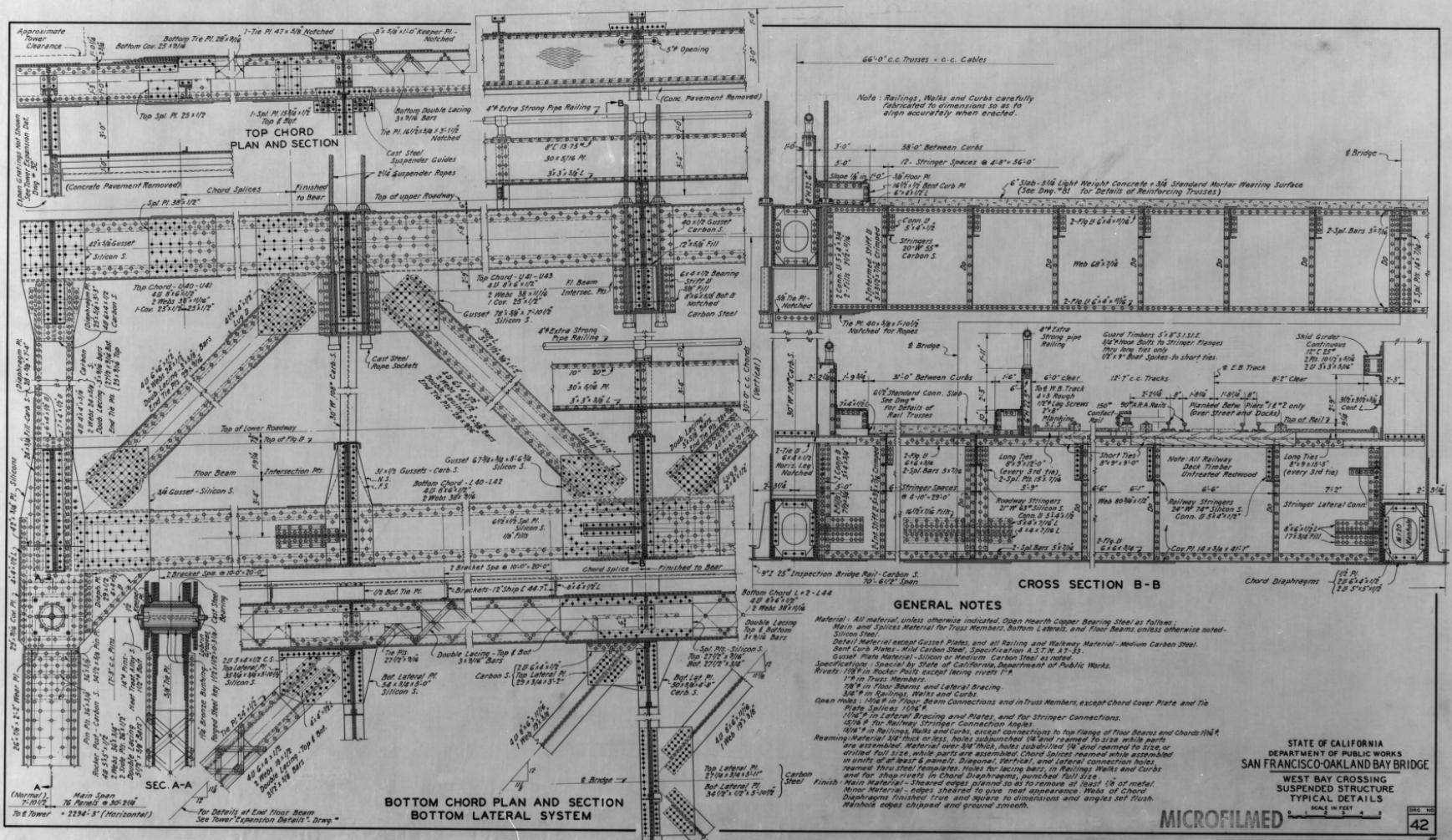
STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS

**SAN FRANCISCO-OAKLAND BAY BRIDGE  
SUPERSTRUCTURE-WEST BAY CROSSING  
SUSPENDED STRUCTURE  
SIDE SPAN TRUSSES AT ANCHORAGES**

CONTRACT NO.6 DRAWING NO. 4

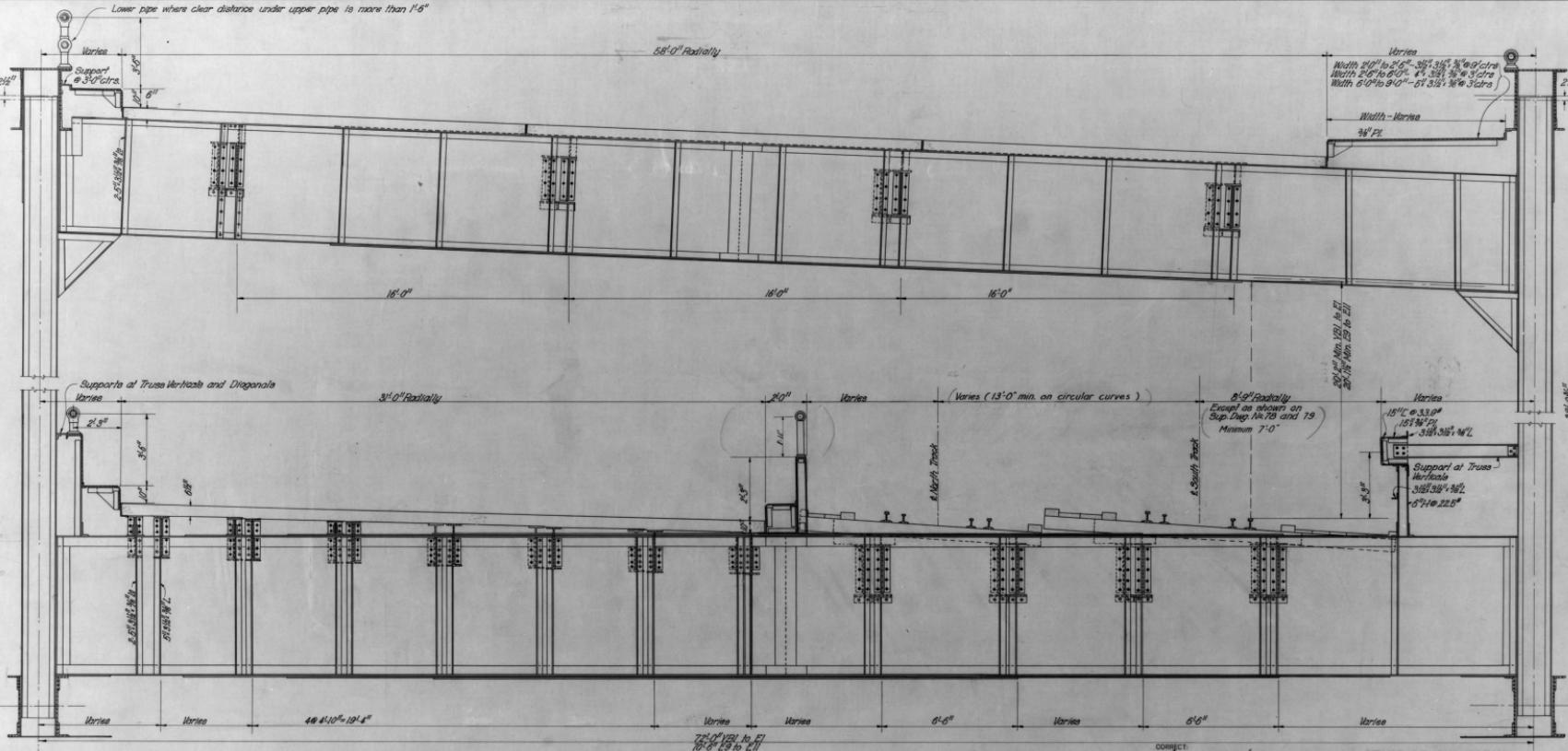
DECEMBER 193

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STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
WEST BAY CROSSING  
SUSPENDED STRUCTURE  
TYPICAL DETAILS

MICROFILMED



#### TYPICAL CROSS-SECTION

Details which are not shown are the same  
as those shown.  
For materials see Sup. Drawg. No. 6.  
for grades and layout see Sup. Drawg. Nos. 78 & 79.

RECORDED  
*Glenn Beckwith*  
Engineer of Design

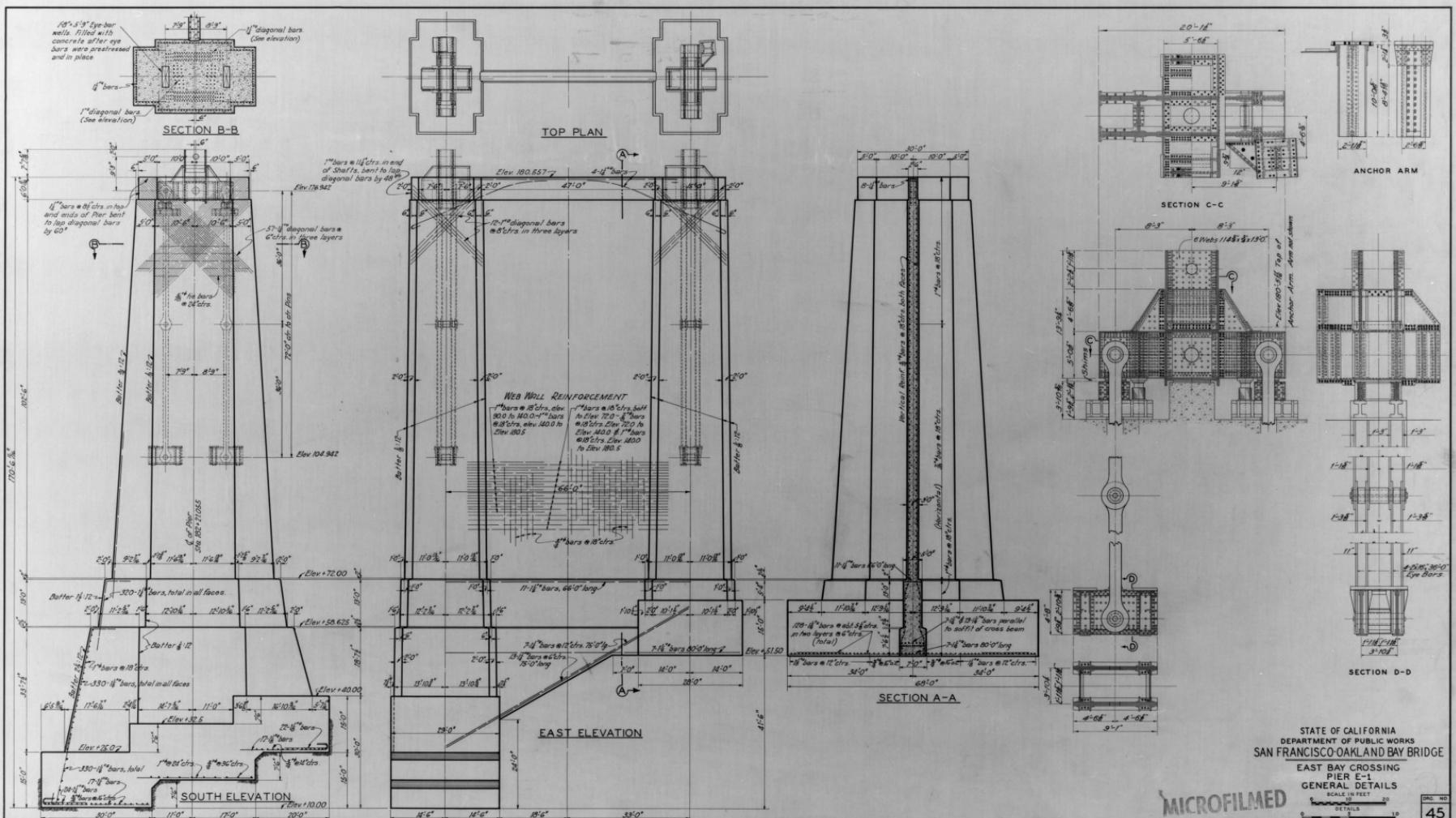
APPROVED  
*Bob Culver*  
Architect

Chief Engineer  
Director of Public Works  
Chairman

BOARD OF  
CONSULTING  
ENGINEERS

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
SUPERSTRUCTURE - EAST BAY CROSSING  
SPANS YB1 TO E1 - E9 TO E11  
TYPICAL CROSS - SECTION

SCALE IN FEET  
CONTRACT NO. 7 SUP. DRAWING NO. 82  
OCTOBER - 1933



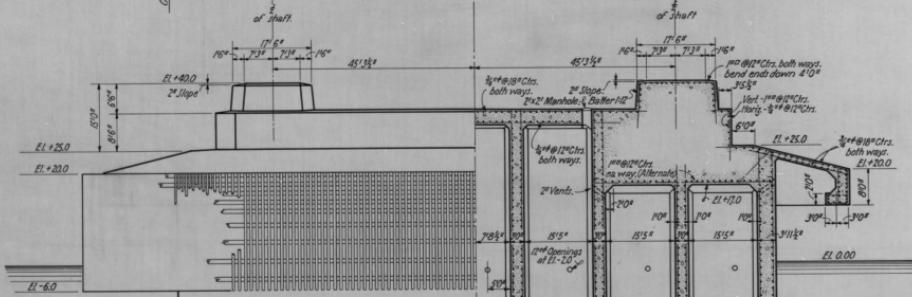
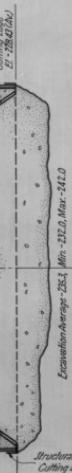
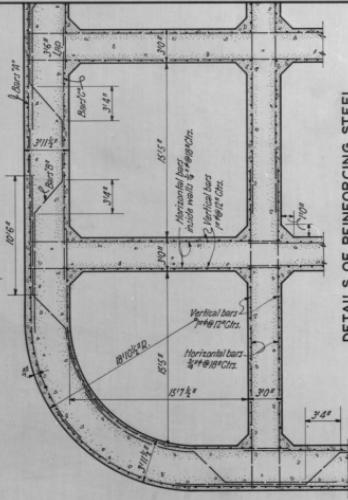
STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
EAST BAY CROSSING  
PIER E-1  
GENERAL DETAILS

MICROFILMED



## DETAILS OF REINFORCING STEEL IN CAISSON

SCALE IN FEET



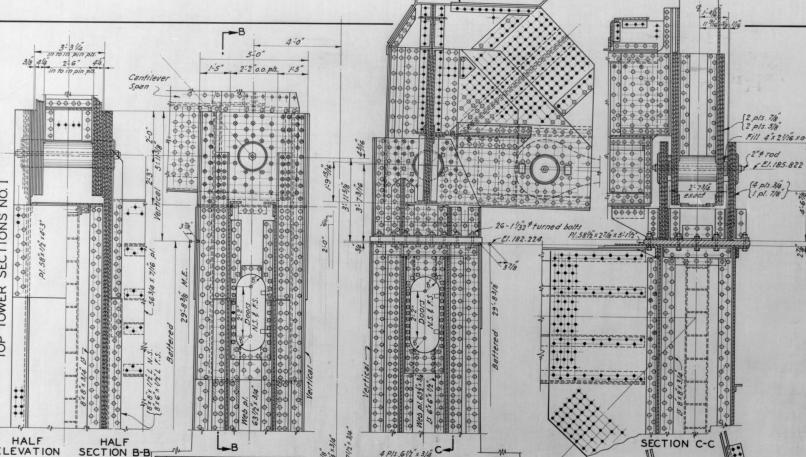
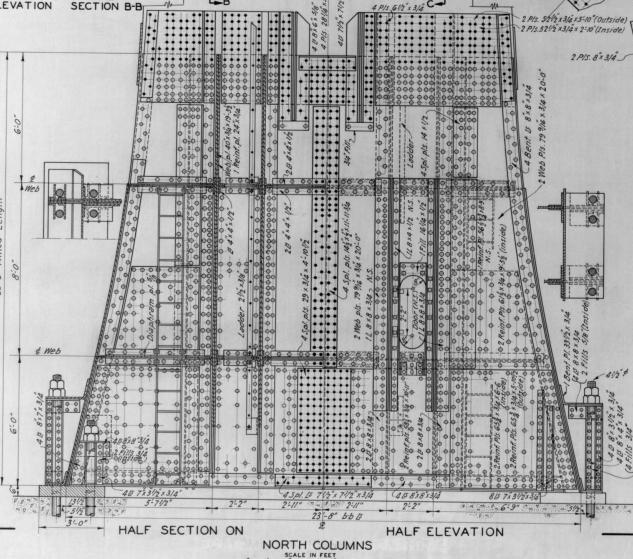
PART ELEVATION-PART SECTION B-

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO OAKLAND BAY BRIDGE  
EAST BAY CROSSING  
PIER • E3  
GENERAL DETAILS

MICROFILMED



## TOP TOWER SECTIONS NO. 1

BOTTOM TOWER SECTION NO. 4  
20'-0" Walled Length

## HALF ELEVATION

## HALF SECTION B-B

## SECTION C-C

## SECTION D-D

## SECTION E-E

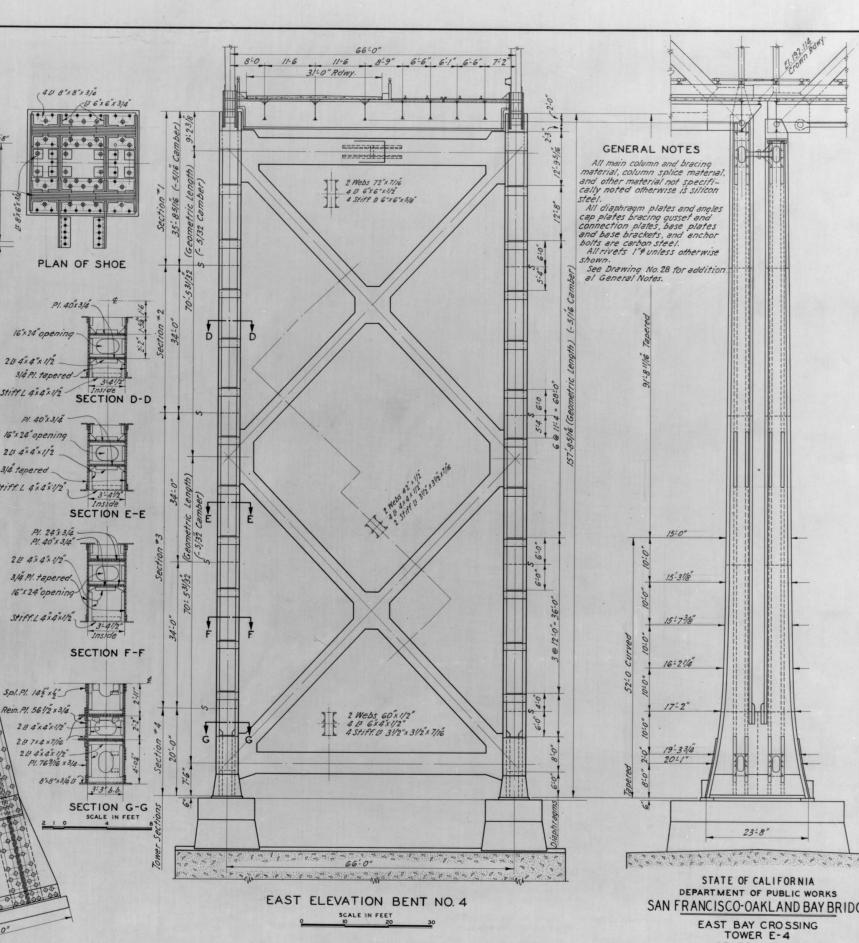
## SECTION F-F

## SECTION G-G

## SECTION H-H

NORTH COLUMNS  
SCALE IN FEET

## HALF ELEVATION



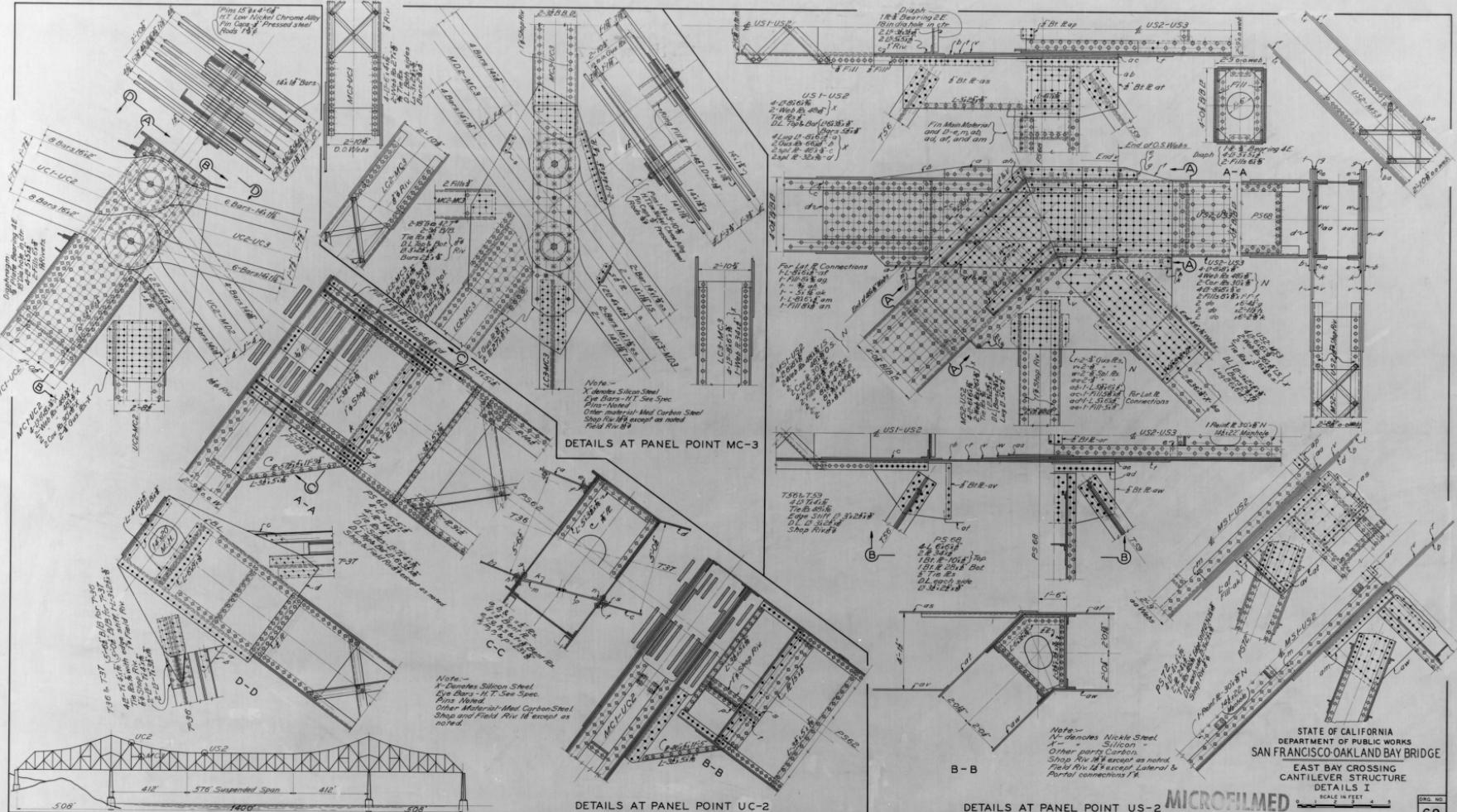
EAST ELEVATION BENT NO. 4

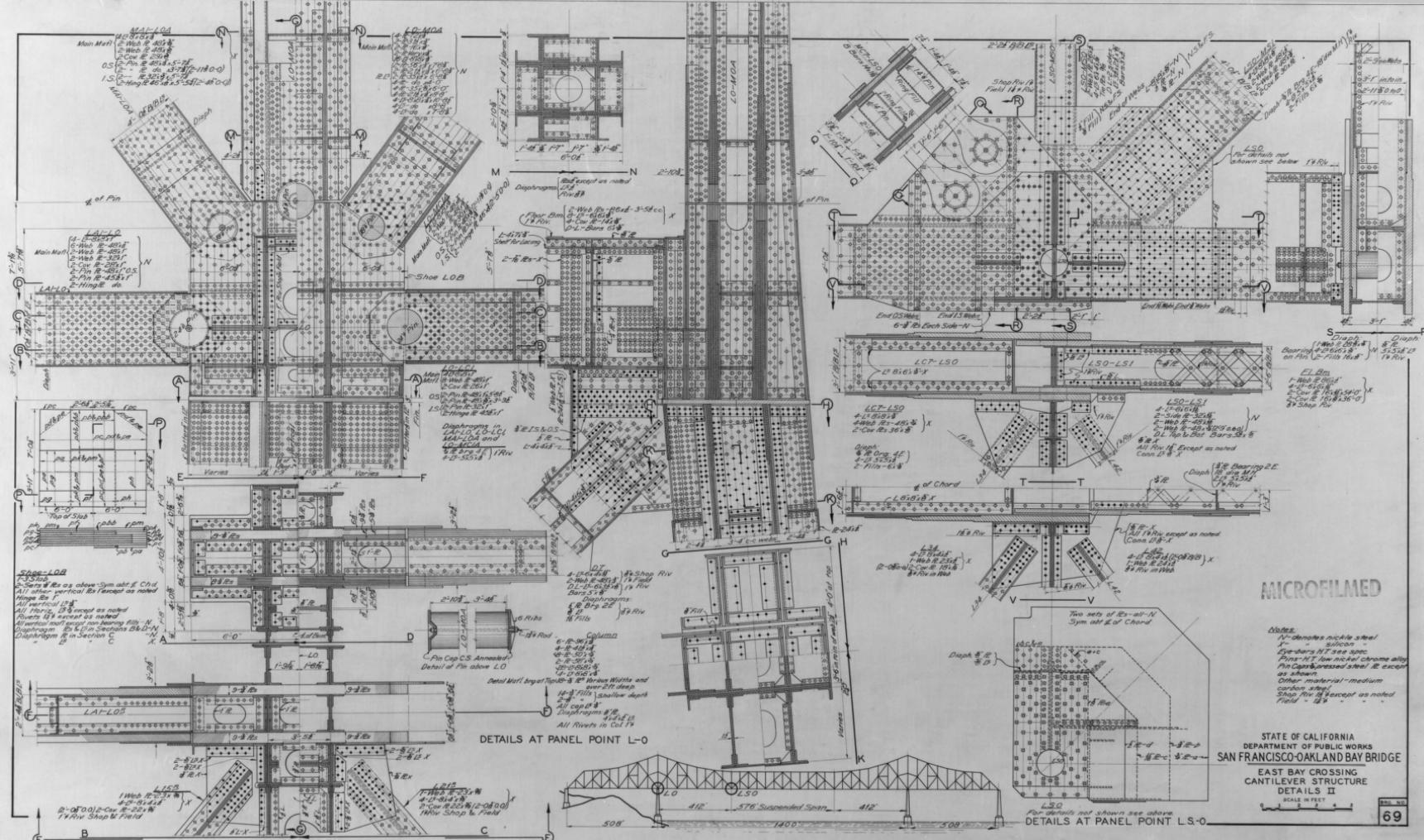
SCALE IN FEET

0 20 40

MICROFILMED

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
EAST BAY CROSSING  
TOWER E-4  
GENERAL PLAN  
SCALE AS SHOWN

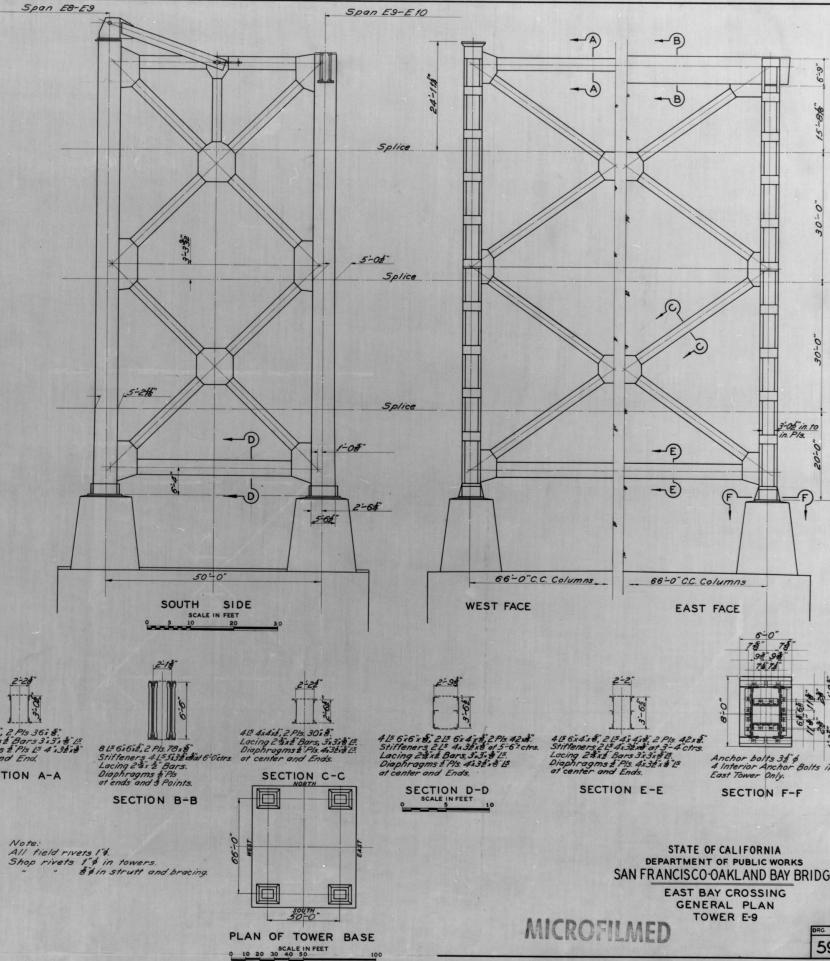
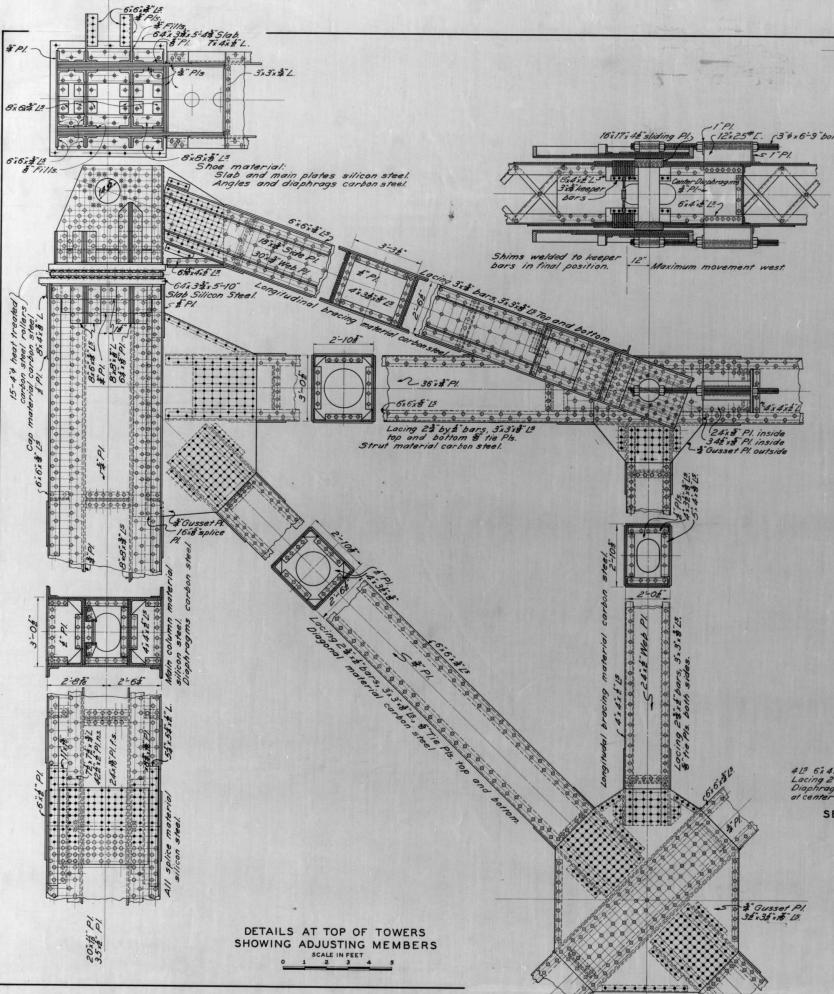




MICROFILMED

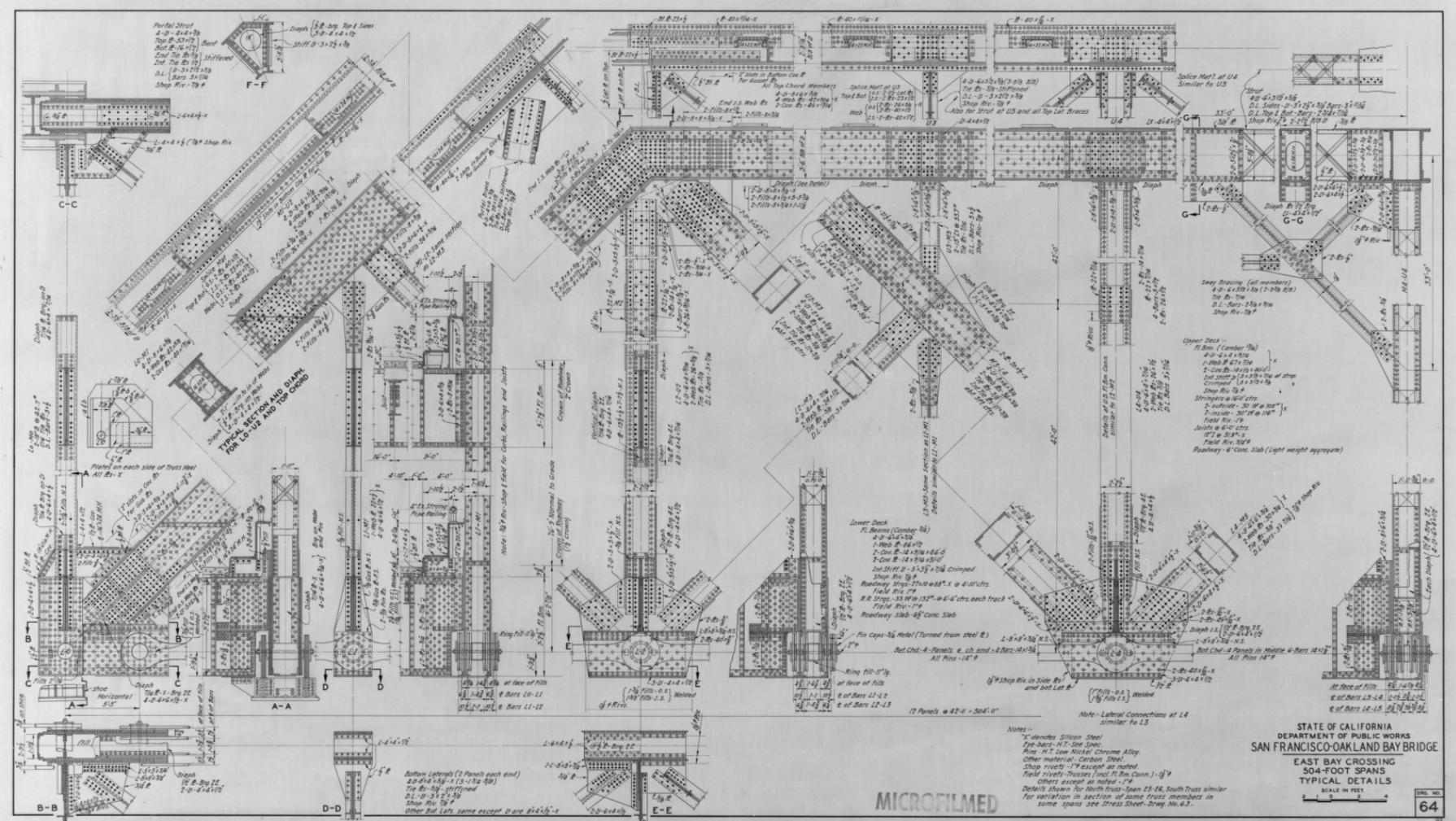
*Notes:*  
 N = denotes nickel steel  
 X = silicon  
 Eye-bars H.T. see spec.  
 Pins-H.T. low nickel chrome alloy  
 Pin Caps & pressed steel P except  
 as shown.  
 Other material - medium  
 carbon steel  
 Shop Riv 18% except as noted.  
 Field 18% - -

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
EAST BAY CROSSING  
CANTILEVER STRUCTURE  
DETAILS II

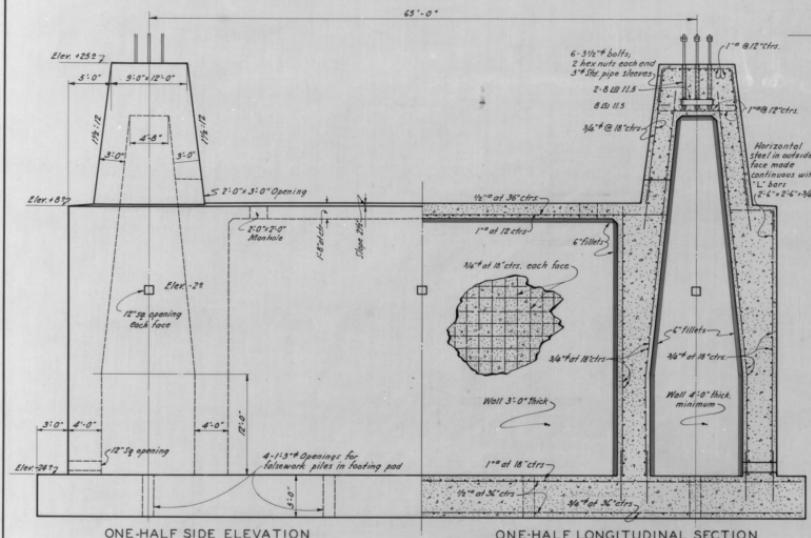


STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO-OAKLAND BAY BRIDGE  
EAST BAY CROSSING  
GENERAL PLAN  
TOWER E-9

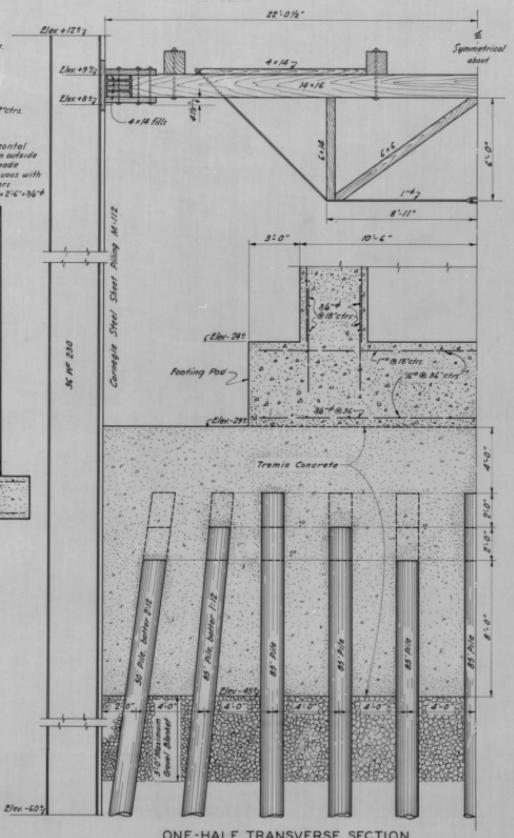
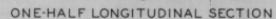
**MICROFILMED**



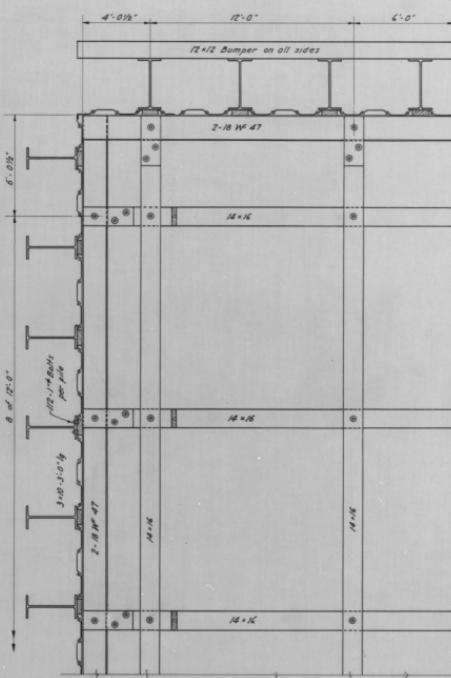
MICROFILMED



ONE-HALF SIDE ELEVATION



ONE-HALF TRANSVERSE SECTION

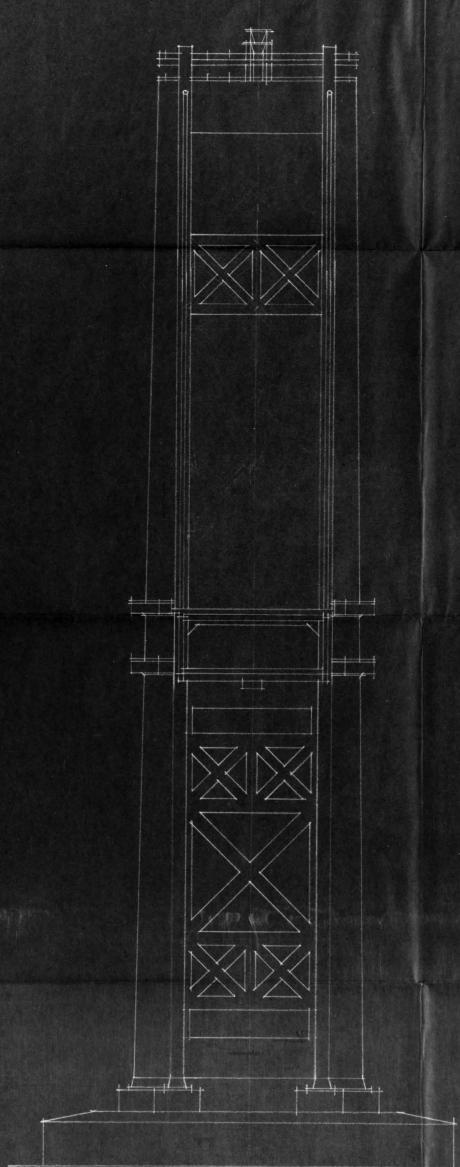


## PART PLAN OF COFFERDAM

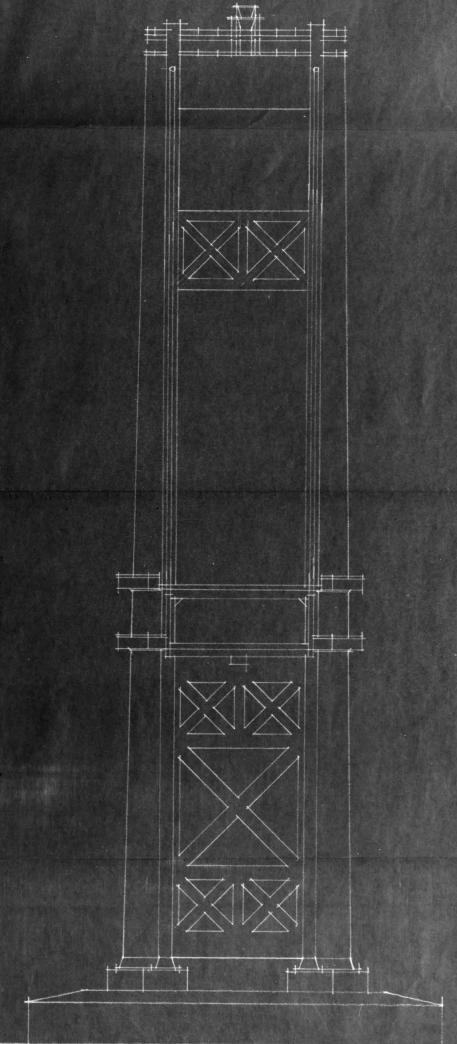
STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
SAN FRANCISCO OAKLAND BAY BRIDGE  
EAST BAY CROSSING  
PIER E-6 TO E-23  
TYPICAL DETAILS

**MICROFILMED**





TOWERS № 3 & 5.

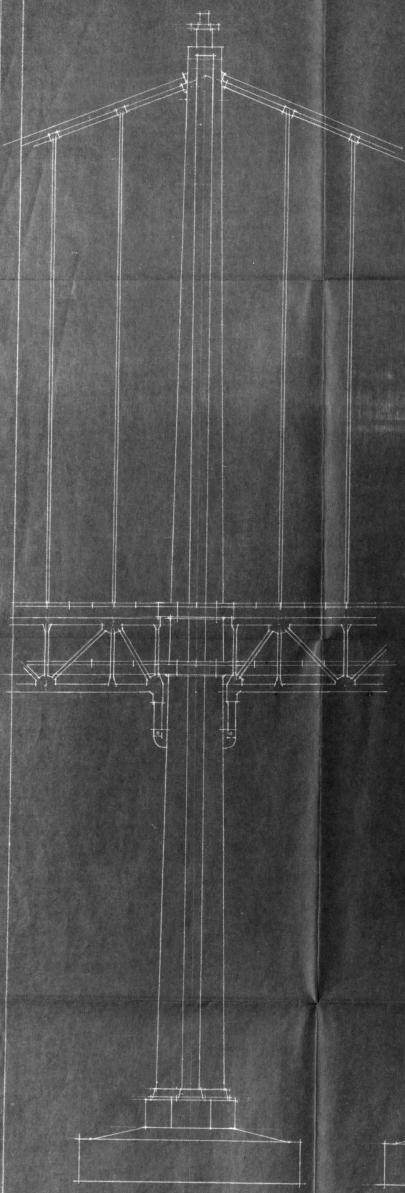


TOWERS № 2 & 6.

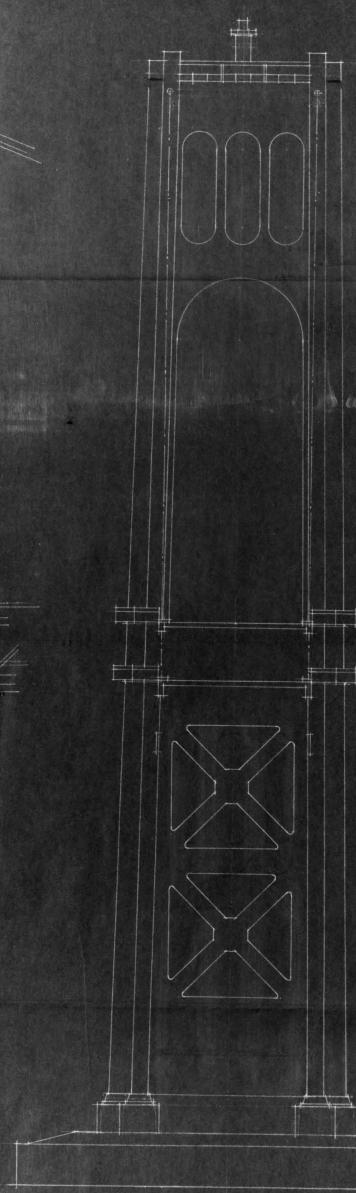
STUDY FOR SUSPENSION TOWERS.  
SAN FRANCISCO-OAKLAND BAY BRIDGE.  
TIMOTHY L. PFLUEGER, ARTHUR BROWN JR., JOHN J. DONOVAN,  
SCHEDE. CONSULTING ARCHITECTS. I.A.

OFFICE COPY

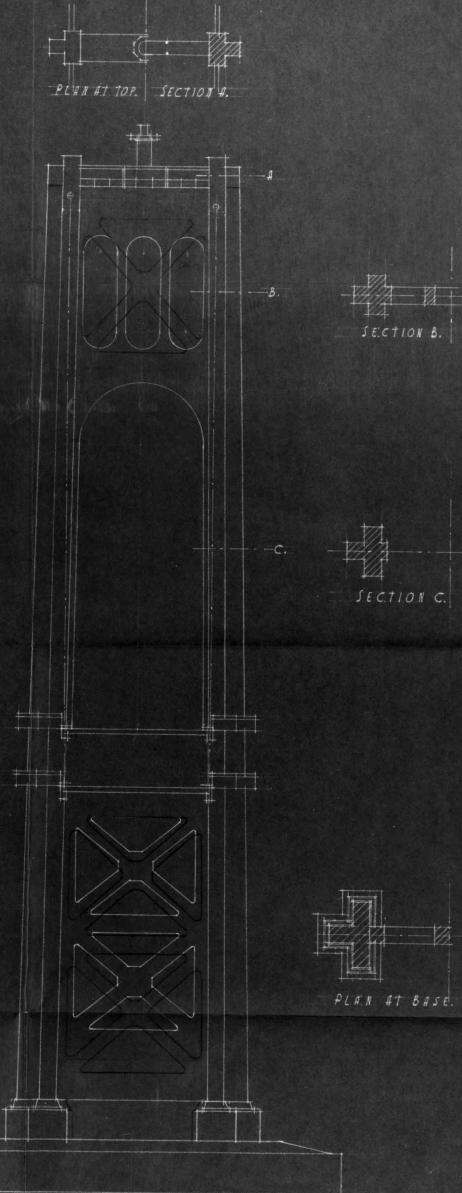
S. 1. 26. I.A.



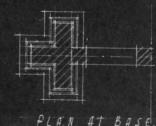
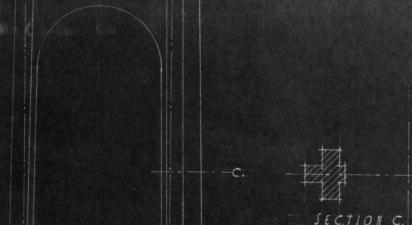
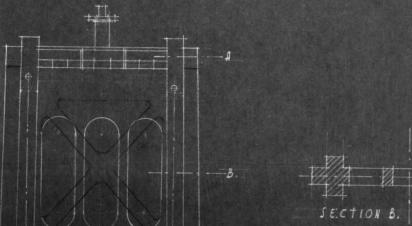
SIDE ELEVATION.



TOWERS № 3 & 5.



TOWERS № 2 & 6.



STUDY FOR SUSPENSION TOWERS.  
SAN FRANCISCO-OAKLAND BAY BRIDGE.  
OFFICE COPY

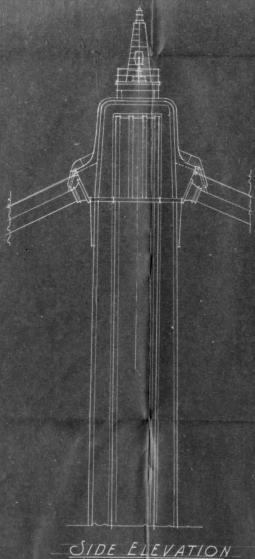
TIMOTHY L. PFLUEGER  
ARTHUR BROWN JR.  
JOHN J. DOKOVAN

BOARD OF  
CONSULTING ARCHITECTS

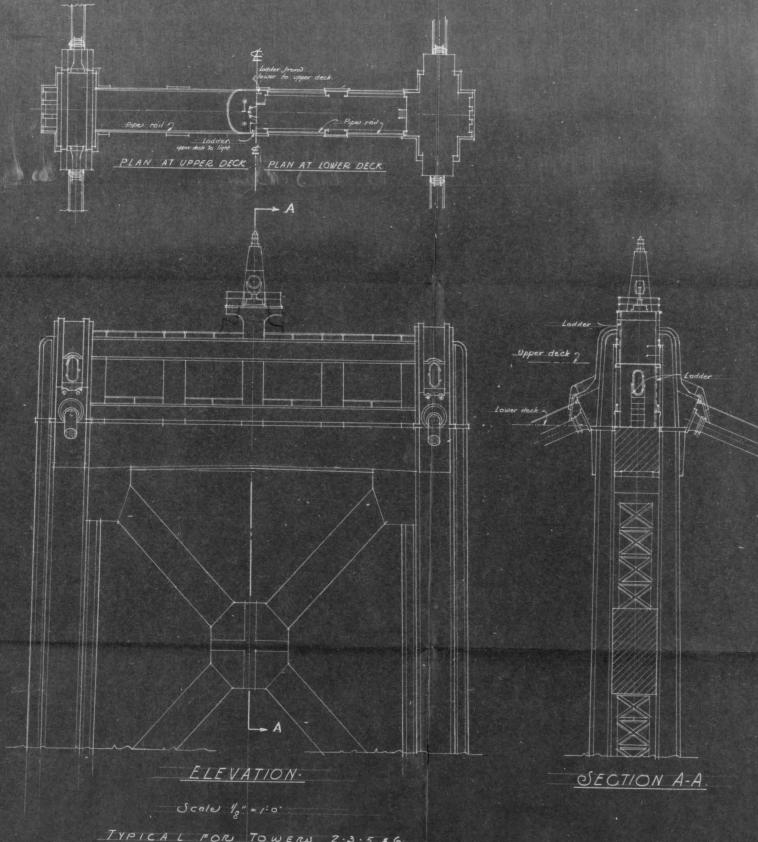
SCHEME.

(2)

Clarification -  
Additional Information



SIDE ELEVATION



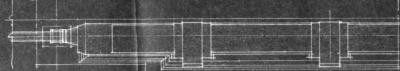
Scale 1" = 1:0  
TYPICAL TOWER 23-586

SECTION A-A

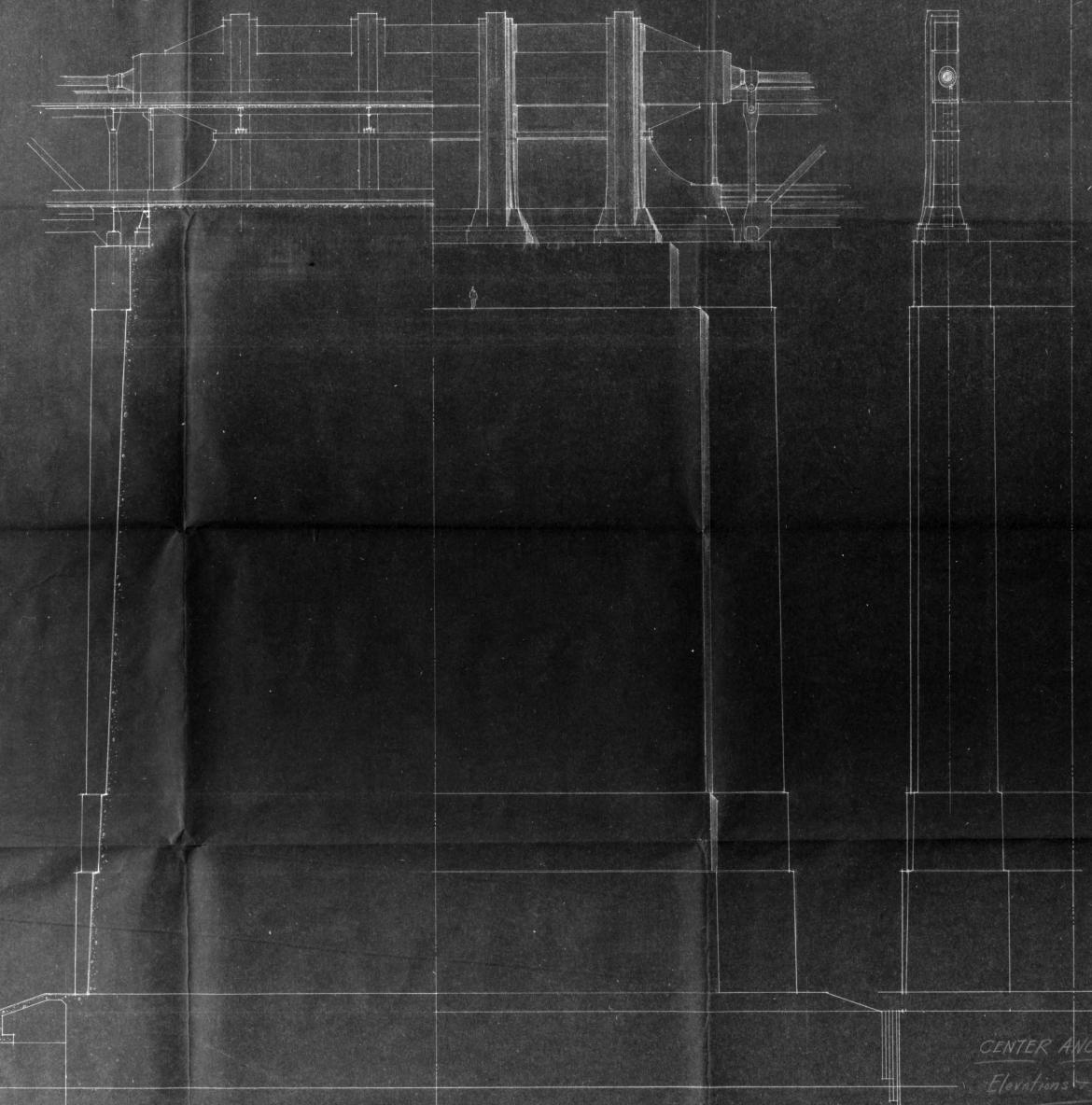
OFFICE COPY

STUDY FOR TOP-OF-SUSPENSION-TOWERS  
SAN FRANCISCO-OAKLAND BAY BRIDGE

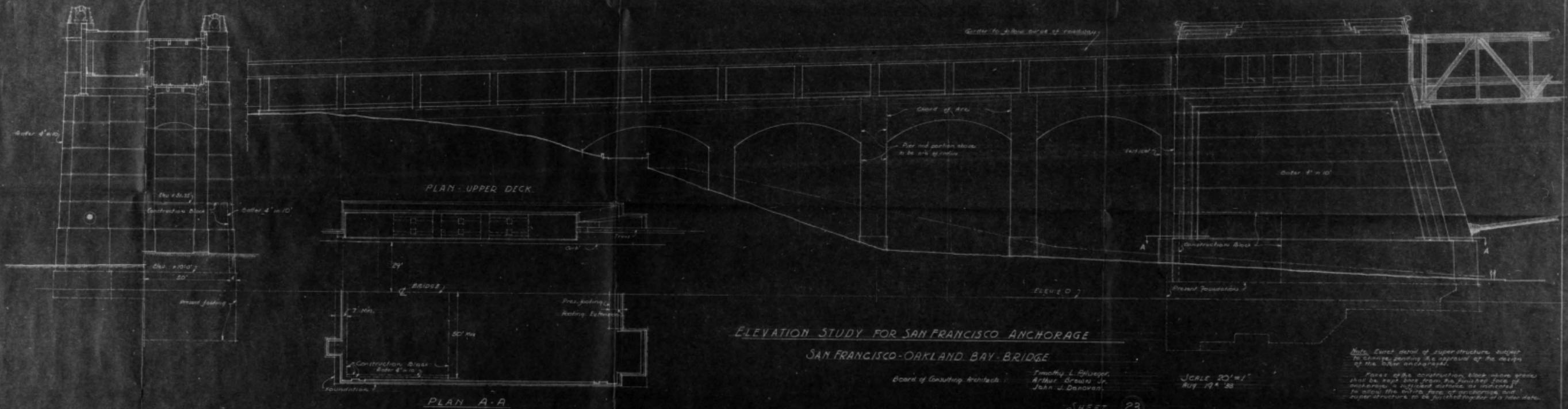
TIMOTHY L. PELLEGRIN,  
ARTHUR BROWN JR., BOARD OF  
JOHN J. DONOVAN, CONSULTING ARCHITECTS  
7-A

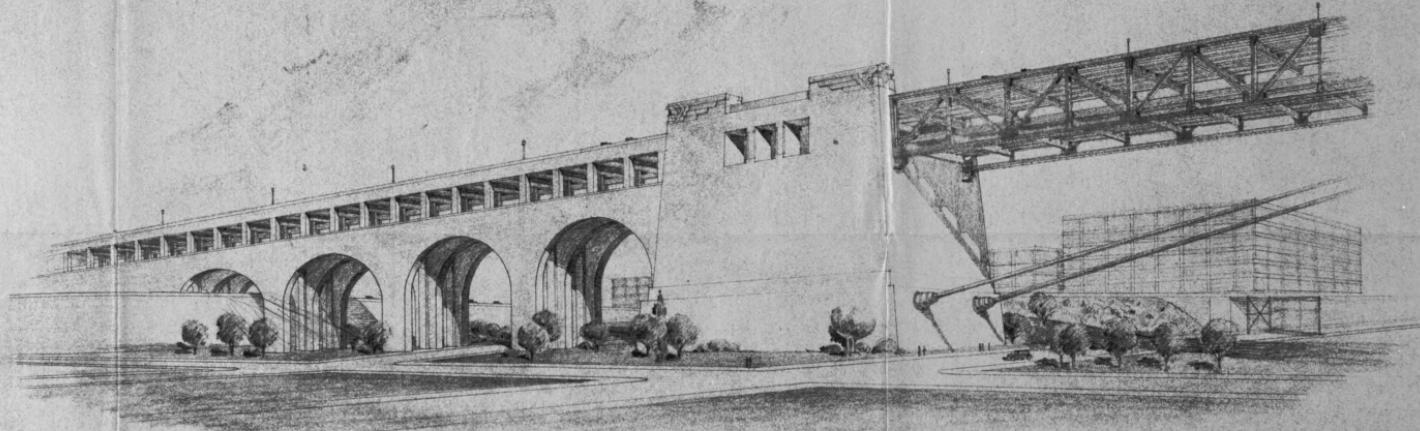


PART PLAN TOP DECK



CENTER ANCHORAGE  
Elevations & Sections



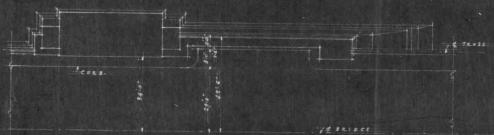


PERSPECTIVE STUDY OF SAN FRANCISCO ANCHORAGE  
SAN FRANCISCO-OAKLAND BAY BRIDGE

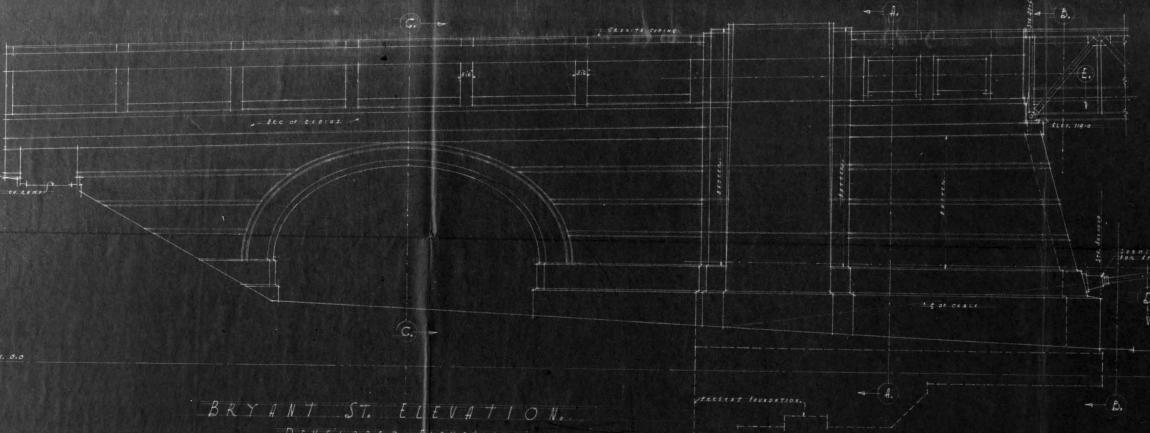
TIMOTHY L. PFLEUGER,  
ARTHUR BROWN JR.,  
JOHN J. DONOVAN  
BOARD OF  
CONSULTING ARCHITECTS.

JULY 11, 1933

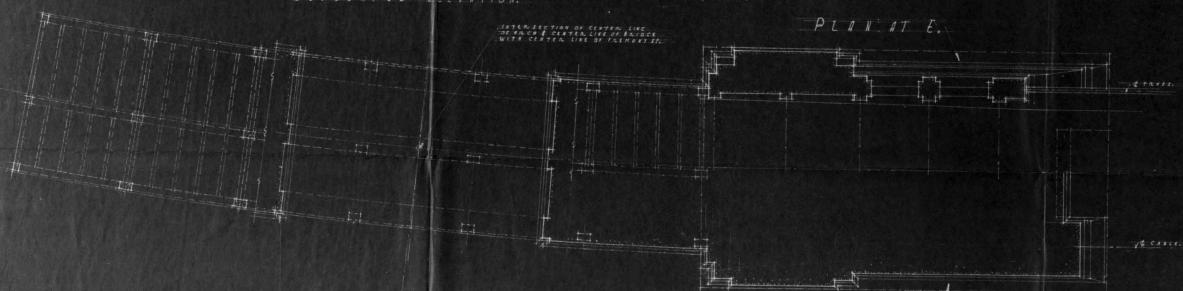
SHEET 12



1/2 PLAN OF UPPER DECK AT ANCHOR.



BRYANT ST. ELEVATION.  
DEVELOPED ELEVATION.



PLAN OF UPPER DECK BEAMS. PLAN THRU IRCH.

PLAN AT D.

NOTES.

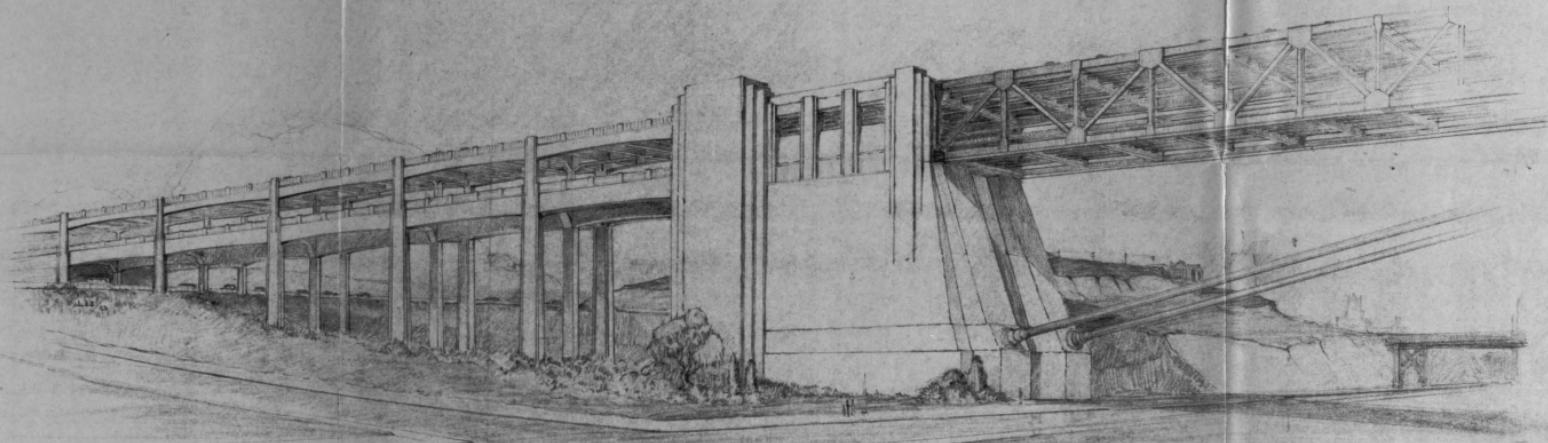
ENGINEERING DESIGN SHOWING ARCHITECTURAL FEATURES  
FOR APPROVAL BY THE BOARD OF CONSERVING ARCHITECTURE  
IN CONNECTION WITH THE CONSTRUCTION OF THE SAN FRANCISCO-OAKLAND  
BRIDGE.

SECTION C-C.

SAN FRANCISCO-OAKLAND BAY BRIDGE,  
STUDY FOR SAN FRANCISCO ANCHORAGE,  
SCALE 1/4 INCH = 100 FEET.

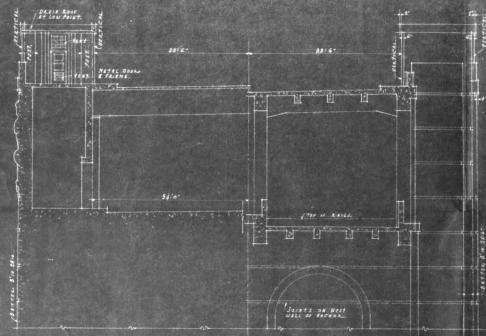
TOMMY L. PELLEGRA, LEONARD BROWN JR., BOARD OF CONSULTING  
JOSE J. DODD, ARCHITECTS. DEPT. OF HIGHWAYS. SECT. NO. 26



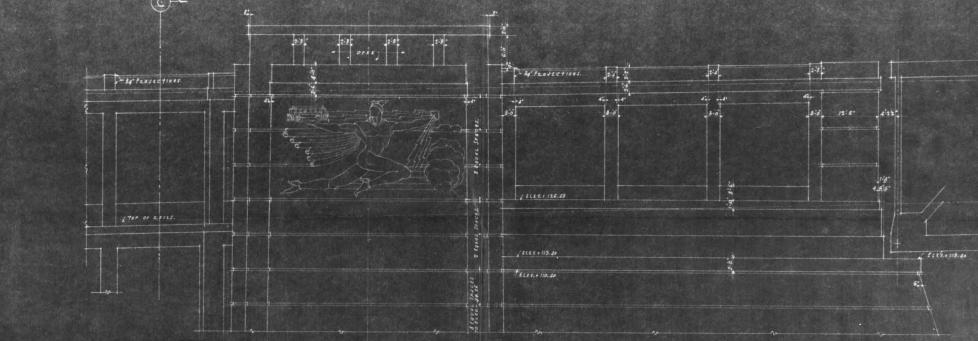


SAN FRANCISCO ANCHORAGE  
SAN FRANCISCO OAKLAND BAY BRIDGE

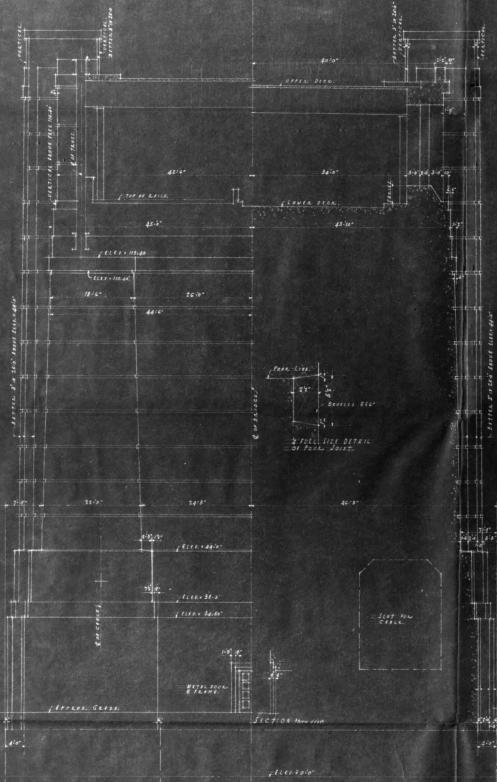
"A"



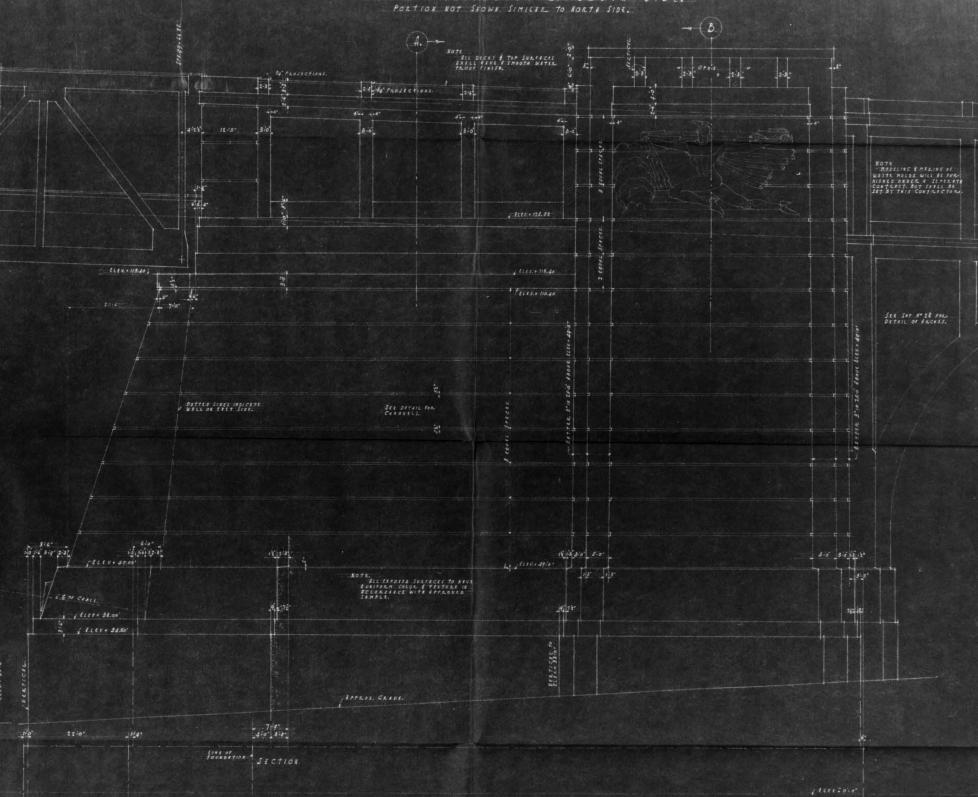
SECTION B-B.



SECTION C-C.



ELEVATION OF EAST END.



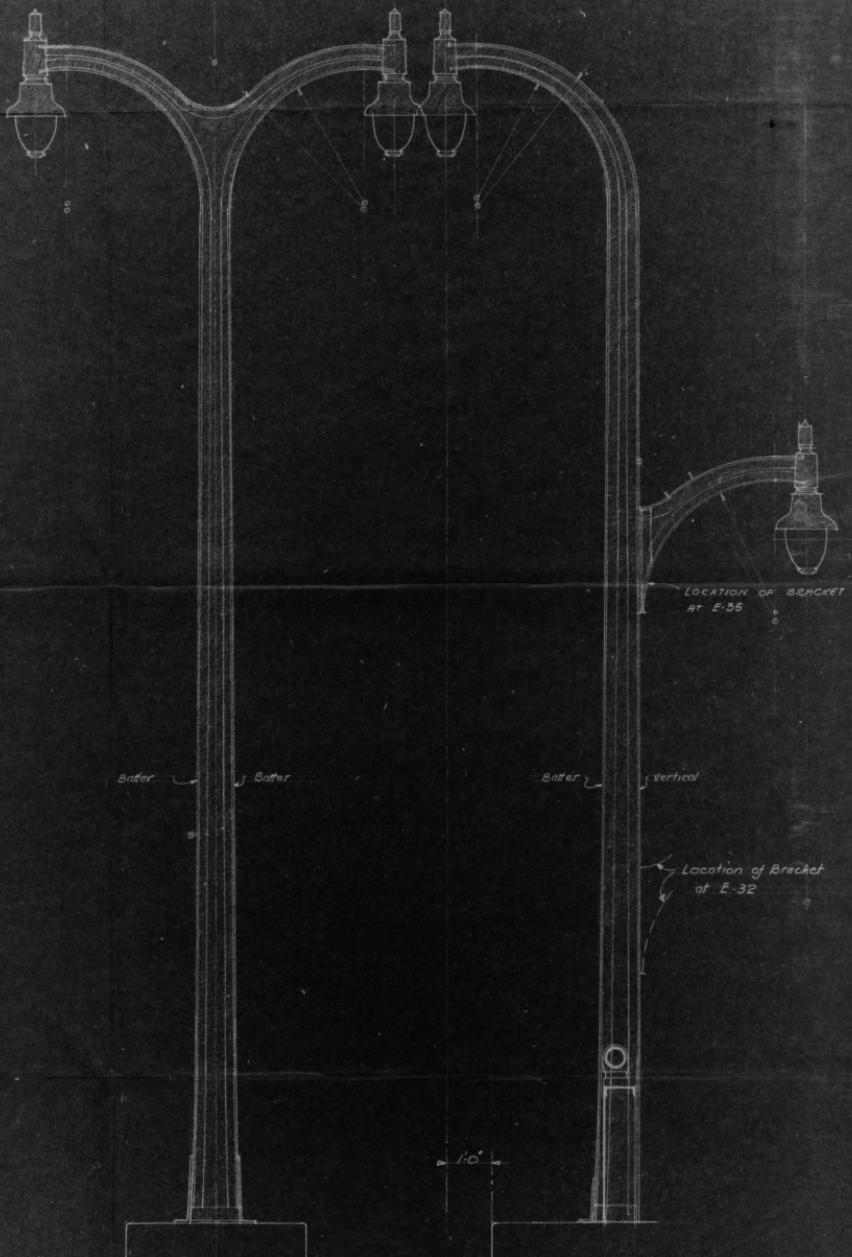
SECTION A-A.

ELEVATION OF NORTH SIDE.

8 SCALE DETAIL STUDY OF S.E. ANCHORAGE.  
SAN FRANCISCO-OAKLAND BAY BRIDGE.  
TOMMY L. PELLEGRINA  
ESTATE BROWN JR. BOARD OF CONSULTING ARCHITECTS  
JOHN J. BOYD JR.



MAY 1, 1958.



ELECTROLIERS BETWEEN E-39 AND  
TOLL PLAZA

ELECTROLIER AT E-35 & E-32

SAN FRANCISCO-OAKLAND BAY BRIDGE

SCALE  $\frac{3}{4}'' = 1'-0''$

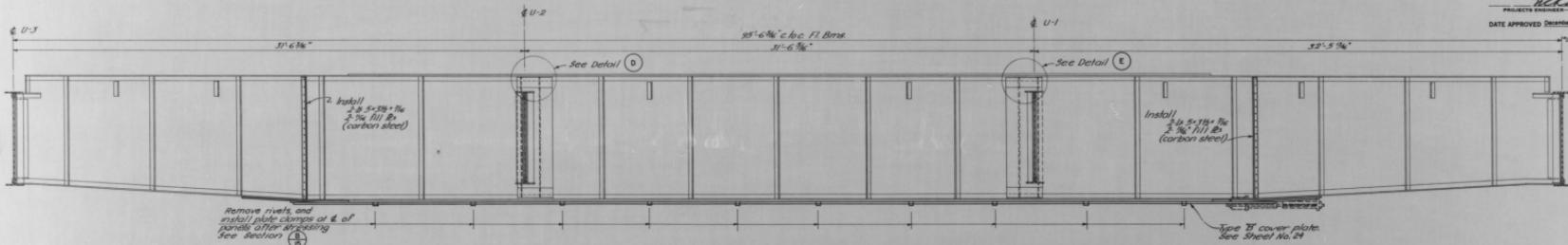
Board of Consulting Architects  
T.L. Pfleuger  
Arthur Brown Jr.  
John J. Donavan

Dec. 22, 1933

DRAWING NO.

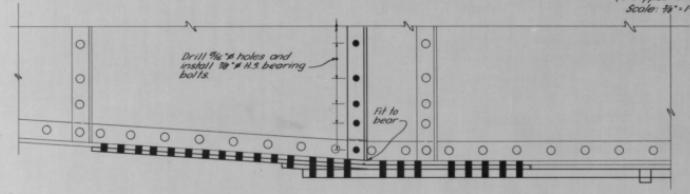
42

OFFICE COPY



Remove rivets and  
install plate clamps or  $\frac{1}{2}$ "  
panels after stressing  
See Detail **D**

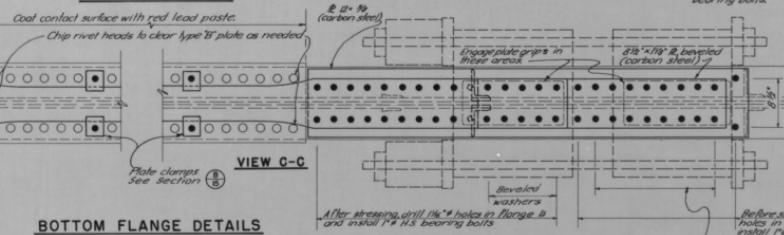
**ELEVATION G-1**  
(6-2 opposite hand)  
Scale:  $\frac{1}{16}$ " = 1'-0"



Drill  $\frac{1}{8}$ " holes and  
install 3/8" H.S.  
bearing bolts

**FIXED END OF COVER PLATE**

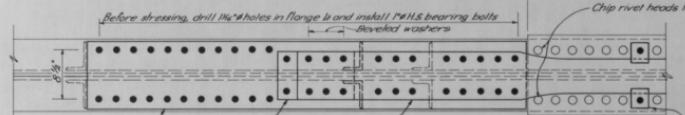
**PART ELEVATION**



**STRESSING END OF COVER PLATE**

**NOTES**

Use elevation procedure for type B plates (See sheet No. 18) except use assembly shear, or similar, in lieu of flange grip.  
2 Longitudinal girders to be strengthened  
after floor beams U1 and U2.

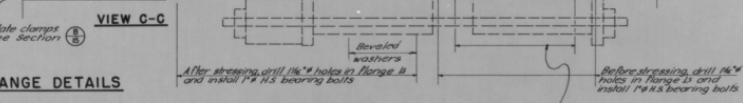


Before stressing, drill  $\frac{1}{8}$ " holes in flange B and install 1/2" H.S. bearing bolts

Bevelled washers

**VIEW B-B**

**BOTTOM FLANGE DETAILS**



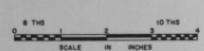
After stressing, drill  $\frac{1}{8}$ " holes in flange B and install 1/2" H.S. bearing bolts

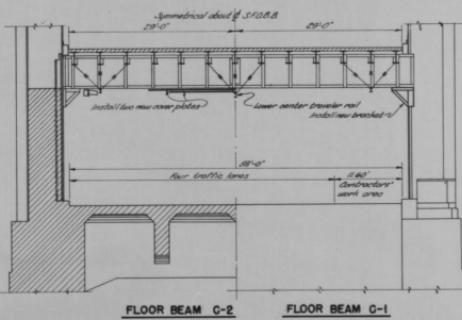
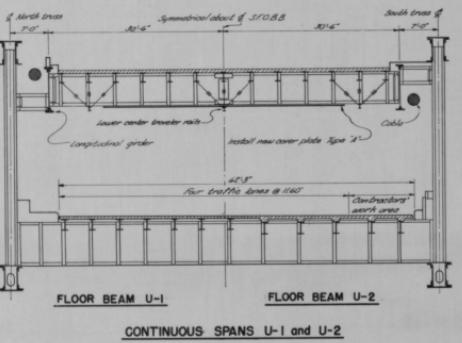
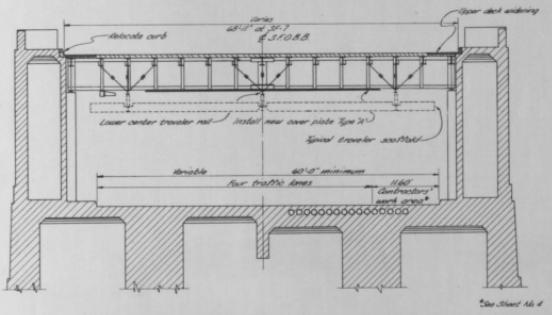
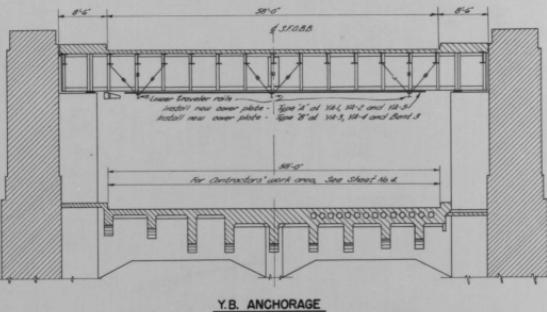
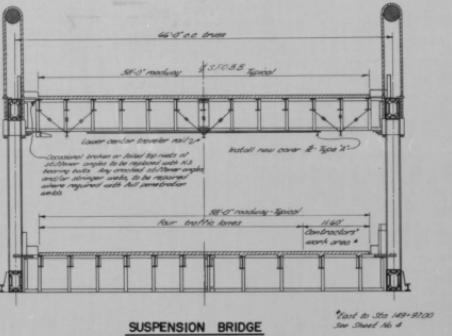
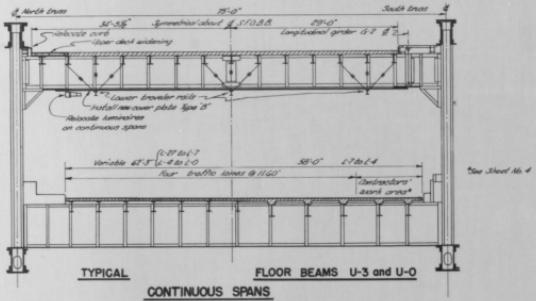
Drill  $\frac{1}{8}$ " holes in flange B and temporarily attach plates and bearing plate grip sets for H.S. bearing plates. After stressing, remove bevelled plate grip sets and install 1/2" H.S. bearing bolts.

Before stressing, drill  $\frac{1}{8}$ " holes in flange B and install 1/2" H.S. bearing bolts

Bevelled washers

**DETAIL D** As shown  
**DETAIL E** Opposite hand



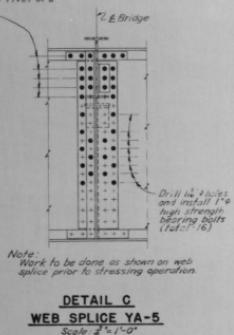
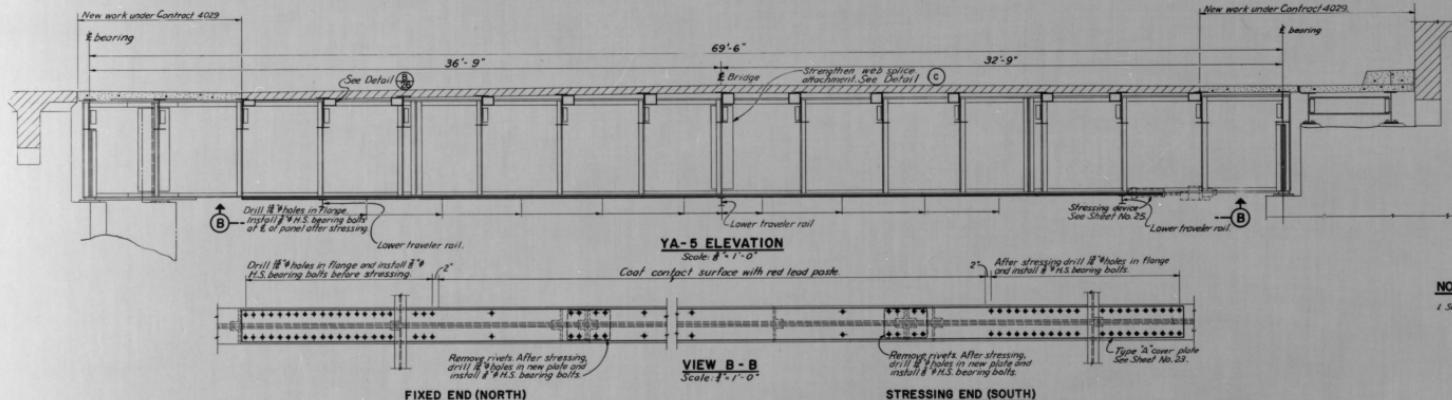
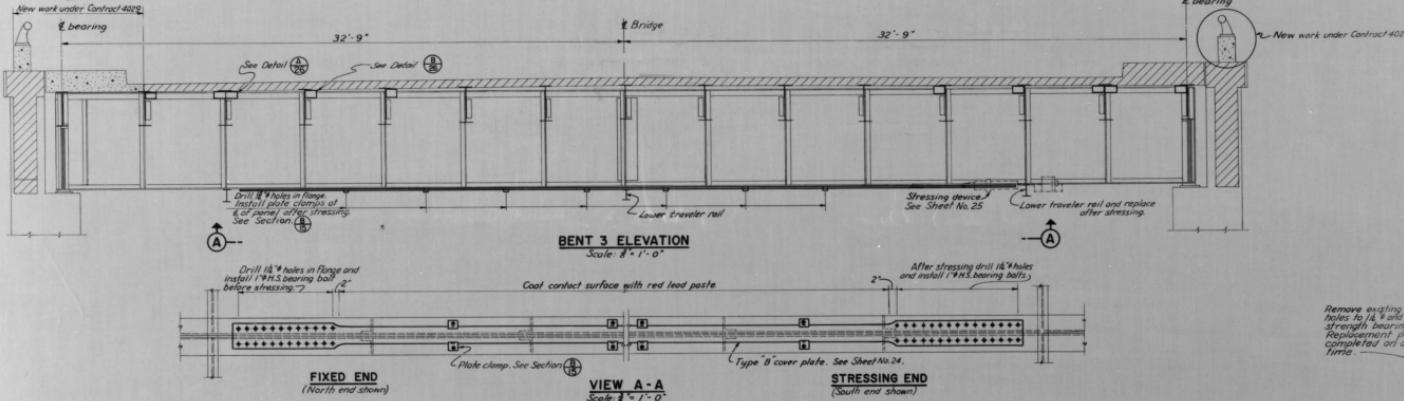


**PIER W-4**

8 THS      10 THS  
SCALE IN INCHES

E.C. 42		As built without revisions		E.C. 42	
MARK	DATE	DESCRIPTION	REVISION	BY	G.H.K.
				33-25	
				34-03	
				BRIDGE	
				34-04	
				SHEET NO. 5	
				DRAWING C-402B	

STATE OF CALIFORNIA  
DIVISION OF HIGHWAYS  
DIVISION OF SAN FRANCISCO BAY TOLL CROSSING  
**SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION STEEL WORK - WEST BAY TYPICAL SECTIONS**



**NOTES:**

1. See Sheet No. 15 for erection procedure.

