Reconstruction Deck Paving - East Bay (Contract No. 04-4011)

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

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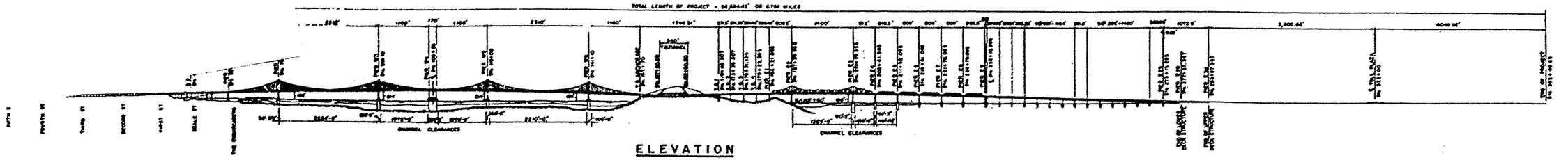
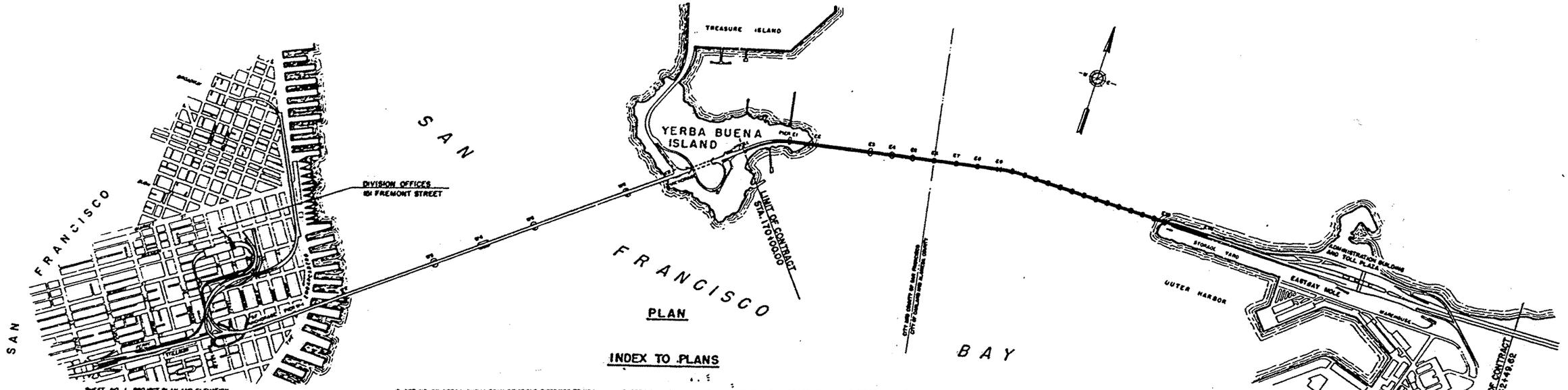
PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960

DIRECTOR OF PUBLIC WORKS



ELEVATION



PLAN

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER
LICENSE 1181

REVISION	BY	DATE	CHECKED
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0 6 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
△	11.63	As built with revisions Sheet No. 125 to 133 added	SB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING - EAST BAY

PROJECT PLAN AND ELEVATION

SCALE 1" = 1000' | BRIDGE 33-25 34-03 34-04 | SHEET NO. 1 | DRAWING C-4011-IR

APPROVAL RECOMMENDED BY [illegible]
SUPERVISING BRIDGE ENGINEER
LICENSE [illegible]

DESIGN	[illegible]
DETAILS	[illegible]
QUANTITIES	[illegible]
TRACED	[illegible]
DESIGN AND DETAILS REVIEWED BY	[illegible]

NO.	BID ITEM	QUAN.	UNIT	DESCRIPTION
1	timber barricades to remain in place. △ See Contract Change Order No. 22	44 △	each	Shall conform to the details shown on the plans and shall consist of furnishing construction grade Douglas fir timber barricades which are to remain in place upon completion of the work as shown on the plans and as specified. Exposed surfaces of the barricades shall be painted with two coats of yellow paint conforming to the requirements of State Specification 54-G-13.
2	removing existing traffic stripe.	23,125 △	linear feet	Where shown on the plans or directed by the Engineer, existing traffic stripe and existing roadway markings shall be removed by sandblasting, burning, or other approved methods. Removing traffic stripe shall be measured and paid for as linear feet of removing existing four-inch traffic stripe, not including gaps, and removing existing roadway markings shall be measured and paid for as equivalent area of traffic stripe.
3	traffic stripe to remain in place.	36,219 △	linear feet	Shall consist of furnishing and applying traffic stripe and roadway markings which will all remain in place upon completion of the work as shown on the plans and as specified. White traffic line lacquer shall conform to State Specification 55-G-95, shall be applied to clean dry surfaces in accordance with the requirements of Sections 32 and 33, and shall be measured and paid for as linear feet of four-inch traffic stripe, not including gaps. Roadway markings which are to remain in place upon completion of the work, shall be measured and paid for as equivalent area of traffic stripe.
4	removing and storing rails and track fastenings (3,500,000 pounds rails and 1,100,000 pounds fastenings).	4,492,710 △	pounds	Shall consist of removing and storing all rails, track fastenings, and all appurtenant metal not included in other bid items. All track and tie fastenings and fittings including rail guard brackets and other appurtenant attachments are included in this item except those specifically included in Bid Items 5, 6, 7, 8, and 9. Contact rail shall be cut at welded joints with a power saw. Cutting with a chisel or gas torch will not be permitted. Rails shall be freed of all attachments and different sizes shall be stored in separate stacks. Guard rails shall be stored in separate stacks from running rails. The Contractor shall remove from the rails and store all copper bonding wire and contact bars and full compensation therefor shall be included in the price paid for this item.
5	removing and storing contact rail insulator assemblies.	1,824 △	each	Shall consist of removing and storing contact rail insulator assemblies including fastenings and fittings. Porcelain insulators shall be packed in excelsior filled boxes provided under the bid item for wooden storage facilities.
6	removing and storing contact rail anchor assemblies.	44	each	Shall consist of removing and storing clamps, wood insulators, micarta separators, anchor plates, fastenings, and appurtenant hardware as shown on the plans and as specified.
7	removing and storing rail expansion joint assemblies.	6	each	Shall consist of removing and storing rail expansion joint assemblies together with rails, plates, wheel replacer castings and all other materials specially worked, fabricated, or adapted for use with the expansion assemblies, and their appurtenant rail fastenings, hardware, micarta, and other accessories. Assemblies shall be dismantled without cutting, into the largest sub-assemblies practicable. The Contractor shall submit a plan of procedure to the Engineer for approval. All components shall be match marked, except that nuts, bolts, washers, and rail fastenings removed in dismantling shall be segregated, boxed, and the boxes permanently labeled. All components shall be stored together in complete reassemblable units as shown on the plans and as specified.
8	removing and storing frogs.	6	each	Shall consist of removing and storing frogs together with all metallic parts specially worked, fabricated, or adapted for use therewith.
9	removing and storing hand-operated switch stands.	6	each	Shall consist of removing and storing in reassembled units the hand-operated switch stands as shown on the plans and as specified. Switch rods and gage plates shall be stored with the reassembled units and full compensation therefor shall be included in the price paid for removing and storing such rods and plates under the bid item for removing and storing rails and track fastenings.
10	removing and storing railroad ties.	20,378 △	each	Shall consist of removing and storing the railroad ties, including freeing the ties of all metal and other foreign materials, as shown on the plans and as specified.
11	removing and storing lumber.	432.83 △	thousand feet board measure	Shall consist of removing and storing all lumber, except as otherwise specifically provided, including freeing the lumber of all metal and other foreign materials, all as shown on the plans and as specified. The quantity to be paid for shall be determined from nominal widths and thicknesses and the actual lengths of the pieces removed and stored.
12	removing and placing railroad ballast.	523 △	cubic yards	Shall consist of removing railroad ballast from the lower deck railway approach ramps and placing the ballast as shown on the plans and as specified. Measurement shall be by the cubic yard in the vehicle.

GENERAL NOTES — ALL WORK

1. Section numbers used on the plans refer to the particular Standard Specification Sections as prepared by the Division.

2. All plans used for existing construction and pertaining to the work involved and other relevant information will be made available to those interested, at the Division's office.

3. Details, dimensions and elevations of existing structures shown on the plans are from original construction drawings and are representative of typical conditions; minor variations therefrom are to be anticipated. Where new work is to join existing construction, the Contractor shall verify all controlling conditions and dimensions in the field prior to the preparation of details of the work to be submitted for the Engineer's approval.

4. The first phase of work under this contract shall be the installation of utility facilities as shown on the plans and specified. Each unit of such facilities shall be made available for use by the Contractor and others immediately upon its completion.

5. Existing electrical and mechanical systems and other utilities shall be maintained in operable condition equivalent in the opinion of the Engineer to that existing at the time construction is begun, and full compensation for such maintenance including the installation and removal of temporary facilities required to provide uninterrupted services shall be considered as included in the prices paid for the various contract items of work and no additional payment will be allowed therefor.

6. Utility services through outlets indicated on the plans will be furnished to the Contractor free of charge as soon as facilities are made available by work now under contract. Any boosting of pressure for services across the bridge must be done at the Contractor's expense and by such means as are approved by the Engineer.

7. Approximately 30 State-furnished timber barricades are available for installation by the Contractor where barricades to remain in place upon completion of the work are indicated. Such State-furnished timber barricades shall be installed before furnishing and installing new timber barricades to remain in place under bid Item 1.

8. Materials designated to be removed and relocated, reinstalled, or stored shall be removed with all reasonable care and cleaned of all foreign material, ready for storage or re-use. Materials to be stored and not reinstalled shall be transported to, and stored in the Division's Storage Yard on the East Bay Mole in locations to be designated and as directed by the Engineer. Any materials designated to be removed and re-used or stored which are unnecessarily damaged by the Contractor or by others while under his control, shall either be repaired to the Engineer's satisfaction or shall be replaced in kind at the Contractor's expense.

Materials designated to be stored shall be segregated according to size, type, shape or other category and shall be properly identified by tag, stencil mark, and/or other means approved by the Engineer. All bolts shall be stored with washers attached and nuts securely screwed on. Materials designated to be removed and stored will be measured for payment after they have been placed in storage and the Engineer has ascertained that they have not been unnecessarily damaged as a result of the Contractor's operations.

Stored materials designated to be installed shall be removed from storage, cleaned, and transported to the installation site and full compensation therefor shall be included in the prices paid for the items requiring the installation of such materials.

Stored materials shall not be placed over soil and water pipes. Stacks shall be grouped as shown on the plans or as designated by the Engineer and stack groups shall be separated by a distance of not less than 20 feet in each direction.

Temporary storage or stockpiling of any materials to be stored or re-used en route to their final locations as shown on the plans or as specified will not be measured but full compensation for such temporary storage or stockpiling shall be considered as included in the respective bid prices and no additional compensation will be allowed therefor except that stockpiling of materials excavated under Bid Items 19 and 20 which are designated by the Engineer to be stockpiled shall be measured and paid for as provided under such bid items.

Materials excavated under Bid Items 19 and 20 which are stockpiled as directed by the Engineer shall be removed from the stockpile as directed by the Engineer and shall be dumped and spread in the disposal area on top of concrete removed and disposed of under this or other contracts and such work shall be measured and paid for under Bid Item 19.

9. For the work covered in Bid Items 1, 35, 36, 37, and 74, no adjustment to the unit price paid will be made because of an increase or decrease of more than 25 percent in the contract quantities.

10. Full compensation for furnishing and installing any new materials and doing all the work required to adapt new or State-furnished materials to locations shown on the plans shall be included in the prices paid for the various items of work. Wherever suitable State-furnished materials are not available, the Contractor shall provide new materials as required in accordance with the specifications.

11. Full compensation for placing ties for use as pads or spacers in stacks of stored materials shall be included in the prices paid for removing and storing the respective materials and no additional compensation will be made therefor.

12. Shoring shall be designed so that added loads imposed upon existing structures during construction plus the existing dead loads and full theoretical live loads will not stress any part of the structures more than the current AASHO basic stress plus 25 percent. The design of the shoring including details of load distribution on existing structures shall be submitted to the Engineer for approval.

13. The removal and disposal of materials not re-used or stored shall comply with the requirements of Section 10 and the following modifications.

Removed concrete shall be broken into pieces not larger than three feet in greatest dimension and all reinforcing steel projecting therefrom shall be cut off flush.

Materials to be disposed of shall be dumped and spread in the disposal area shown on the plans in such a manner that usable graded approaches will be available for end-dumping and spreading of materials from this and other contracts, except as otherwise specifically provided, and full compensation therefor shall be included in the prices paid for the various bid items involved.

The Contractor shall cooperate with other contractors disposing of removed materials.

14. Structural steel and other materials removed and not reinstalled under Bid Items 16, and 45, as shown on the plans and as specified, shall become the property of the Contractor and shall be disposed of by him outside of the contract limits and full compensation therefor shall be included in the unit prices paid for the respective bid items.

15. The cost of watering wherever required shall be included in the bid prices paid and no additional compensation will be allowed therefor.

16. Full compensation for making saw cuts for removal of concrete where required and as shown on the plans shall be included in the unit prices paid for removing concrete and no additional compensation will be allowed therefor.

17. Grout, including dry-pack grout, shall conform to the applicable requirements of Sections 26, 27, and the following. Grout, including dry-pack grout, shall consist of one part by volume of Type II portland cement to two parts of clean sand and only sufficient water to permit proper placement under the specified conditions. All grout shall have a compressive strength of 3,000 psi at the end of 28 days and match in color the adjacent concrete surfaces. Dry-pack grouting of reinforcing bars shall be such as to insure that, by the end of 28 days after placement, the resistance to bar pullout shall not be less than the ultimate tensile strength of the bar. The pullout resistance shall be determined by not less than two satisfactory tests made by the Contractor using bar and hole sizes shown on the plans and methods and procedures proposed for dry-packing the grout in place. Following satisfactory tests, the same methods and procedures shall be used at the site. Full compensation for furnishing and placing grout of all types and for performing specified tests shall be included in the prices paid for the various items of work and no additional allowance will be made therefor.

18. In preparation for bonding new concrete or grout to concrete, surfaces of the existing concrete shall be roughened by wet sandblasting or, where the finished surface is to be less than one inch above the surface of existing concrete, by chipping to a minimum depth of one inch below the finished surface and flushing with a high pressure air-water jet so that a clean surface of sound concrete is exposed. The surface so exposed shall be kept continuously wet for not less than 24 hours before placing new concrete or grout and, at the time of placing, shall be clean and slightly damp, except that in areas to receive epoxy-thiokol adhesive coatings, the sandblasted or chipped areas shall be allowed to dry. Surfaces of holes drilled for dry-pack grouting of reinforcing bars shall be treated in the same manner as provided for surfaces receiving grout or new concrete, except for cleaning, which shall be done with high pressure air-water jets to remove all foreign and loose materials. Full compensation for preparing concrete surfaces for bonding as shown on the plans and specified shall be included in the prices paid for the various bid items and no additional compensation will be allowed therefor. Chipping required for shear keys and curb dowels as shown on the plans and as specified shall be measured and paid for under the bid item for removing concrete (structure) and no additional compensation will be allowed therefor.

19. An epoxy-thiokol adhesive coating to bond new concrete or grout to old concrete shall be applied to existing prepared concrete surfaces as a brushed coating not less than 1/16-inch thick in areas where the finished surface is to be less than 3 inches above the surface of existing concrete, and shall be followed by placement of grout or concrete of 1-1/2 inch maximum slump at such times and in such a manner as to secure the most effective bond between new concrete or grout and old concrete.

Epoxy-thiokol adhesive coating shall be prepared as follows:

Description	Composition by Weight	
Can A	Each	Combined Mix
Shell Epon Resin 828, or equal	100%	60.7%
Can B		
Thiokol LP-3, or equal	80%	26.6%
DMP-30, or equal	20%	6.7%
	100%	100.0%

Into the combined mix of Cans A and B, add Marter White Silica, or equal, to produce the proper consistency for application as an adhesive coating. No epoxy-thiokol adhesive shall be applied when either the ambient or concrete temperature is lower than 60° Fahrenheit. The maximum time between the mixing of epoxy-thiokol adhesive and its use shall not exceed 60 minutes.

Concrete placed on surfaces coated in this manner shall be measured and paid for under the bid items for new concrete. Full compensation for the required epoxy-thiokol adhesive coating shall be included in the prices paid for concrete, and no additional allowance will be made therefor.

20. The Contractor shall provide such bracing, supports, or other temporary reinforcement as may be required to prevent excessive deflections or cracking of precast concrete units during the transportation, storing, handling, and erecting, including the use of stiffened truck beds, and full compensation therefor shall be included in the prices paid for the various bid items. Cracked or damaged units will be rejected.

21. Concrete curing shall conform to the requirements of Section 27 except that a steam curing process yielding equal results may be used.

Methods and equipment of a steam curing process, if used must be approved in advance by the Engineer and conform to the following requirements:

a. Steam shall not be applied until the concrete has been continuously water cured for four hours.

b. Steam shall be furnished to the hood in a saturated low pressure condition and distributed by a method that will produce a uniform flow of heat and moisture over the entire surface of concrete.

c. Temperature of steam shall not exceed 165° F. and the temperature rise and fall shall not be greater than 20° F. per hour.

d. Hoods shall be equipped with calibrated time-temperature recording devices providing permanent continuous records for each unit, at points designated by the Engineer.

e. A certified copy of each time-temperature record covering the complete steam curing period shall be furnished to the Engineer.

22. Rivet and bolt heads installed on longitudinal members shall face the center line of the bridge, and on transverse members shall face the traffic flow of the completed bridge.

23. The Contractor shall provide temporary shimming and bolting of the railing posts to the longitudinal girder as shown on the plans and as specified. Furnishing, installing, maintaining, and removing all materials required will not be measured, but shall be considered to be required for public safety and full compensation therefor shall be included in the prices paid for the various bid items.

24. Wherever reference is made in the Standard Specifications for repairing abraded or damaged galvanized coatings, the requirements for such work are hereby revised as follows. Damaged spelter coating shall be repaired by thoroughly wire brushing the damaged area and removing all loose and cracked spelter coating, after which the cleaned area shall be painted with two coats of paint conforming to the requirements of Federal Specifications MIL-P-21035.

25. Electrical work shall conform to the requirements of Sections 60 and 61, and mechanical work shall conform to the requirements of Section 62, as modified.

26. Full compensation for galvanizing, cleaning, and painting required for electrical work and the low voltage equipment enclosure shall be considered as included in the unit and lump sum prices paid for Bid Items 59 through 61, inclusive.

27. All exposed surfaces of ferrous electrical materials and the weather-proofed equipment enclosure installed under this contract shall be cleaned and painted in accordance with the requirements of Sections 32 and 33 and the following modifications:

a. Sandblast cleaning, or an equivalent method approved by the Engineer shall be used except that galvanized materials shall not be sandblast cleaned but shall be thoroughly cleaned of all soil, oil, grease, and other foreign materials.

b. Pretreatment vinyl wash primer, No. 52-G-52 shall be applied immediately after cleaning.

c. The outside surfaces of the weather-proofed equipment enclosure and sub-flooring of the metal-clad 15-KV power center, the 150-KVA transformer, and the weather-proofed equipment enclosure shall then receive one coat of a vinyl bonding and sealing primer not less than 1-1/2 mils thick and a stretcher and color coat or coats with an additional thickness of not less than 15 mils. The inside of the weather-proofed equipment enclosure shall receive a stretcher and color coat or coats with a thickness of not less than five mils. The material shall be Cocoon, Ply-On or Zelon flexible vinyl plastic protective coating, and the first quality product of the manufacturer. Outside and inside surfaces shall match light gray, No. 61, ASA Standard No. Z55. 1-1950. Coatings shall be tested for pinholes by means of a pinhole detector manufactured by the K-D Company, 2091 Cornell Street, Palo Alto, California and for thickness by removing and measuring samples of the finished coating at locations designated by the Engineer. Removed samples shall be replaced and sealed in place with fresh coating material. Full compensation for removing, testing, and replacing samples shall be included in the prices paid for Bid Items 59, 60, and 63.

d. Electrical equipment provided under Bid Items 60, 61, 62, and 63 shall then be painted with a factory applied baked enamel finish or, at the Contractor's option, an epoxy paint, all matching color of light gray, No. 61, ASA Standard No. Z55. 1-1950.

Immediately after sandblast cleaning, the surfaces to receive epoxy paint shall be given a pretreatment acid wash, State Specification 52-I-05 and then primed with an approved metal primer which is compatible with the specified epoxy finish coats.

Epoxy resin paint such as Nitro-Dur, Kelseo Pontex, or Devran Chemfast 500 will be considered as meeting the requirements of Sections 32 and 33. After the addition of the curing agent the paint shall have a usable pot life of not less than four hours at 75 degrees Fahrenheit.

A minimum of two coats of epoxy resin paint shall be applied, and each coat shall be dried for at least 16 hours before the next coat is applied. The total dry thickness of the finished coating shall not be less than five mils.

e. All exposed ferrous material included in Bid Items 64, 66, 67, and 78-80 inclusive, shall be painted in accordance with the paint system provided for structural steel in Bid Item 53, article (d).

28. Each fresh coat of paint shall be pigmented with approved compatible pigments as required to distinguish it from previous coats.

29. The Contractor shall install porcelain enamel "High Voltage" signs with two-inch letters on the south side of skid girder at intervals shown on the plans and as specified. Full compensation for furnishing and installing the signs shall be considered as included in the lump sum price paid for miscellaneous electrical work and no additional allowance will be made therefor.

30. After installation and water flushing of pipe, the Contractor shall test all steel pipe lines by hydrostatic tests made by pumping to a pressure of 300 psig, sealing inlet, and holding the pressure for four hours with a pressure drop not exceeding five psi. Allowance will be made for temperature changes during the test. Should the system not meet the test requirements, all defective parts shall be repaired or replaced by the Contractor and the test repeated at no additional cost to the State.

31. The Contractor shall furnish and install all ferrous and non-ferrous fastenings, supports, clamps, anchors, rollers, and roller chairs required to provide pipe, conduit, and/or cable whether new, State-furnished, or relocated, complete in place and in operable condition as shown on the plans and specified and full compensation therefor shall be included in the prices paid per linear foot for the respective pipe, conduit or cable items. All such ferrous fastenings and supports shall be hot-dip galvanized.

The interior of each conduit shall be clean before installation of cable or wire, and full compensation therefor shall be considered as included in the price paid per linear foot for the cable or wire to be installed.

32. The Contractor shall furnish and install an approved insulating material between dissimilar metals to prevent galvanic action.

33. All new materials and equipment in electrical and mechanical work furnished by the Contractor shall match existing materials in the project.

34. Full compensation for all additional labor and materials not shown on the plans or called for herein and for furnishing and installing materials shown on the plans but not covered under specific bid items, but which are necessary to provide the electrical and mechanical work complete and in satisfactory operating condition shall be considered as included in the prices paid for the electrical and mechanical work or units thereof and no additional compensation will be allowed therefor. The use of State-furnished materials does not relieve the Contractor of his responsibility to provide the electrical and mechanical systems complete and in satisfactory operating condition.

35. Welding shall conform to the requirements of Section 67 except as modified by the plans and specifications.

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PROJECTS ENGINEER—LICENSE [illegible]
DATE APPROVED September 23, 1960

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	AB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING—EAST BAY

CONTRACT WORK-BID ITEMS 1 TO 12

SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 2 | DRAWING C-4011-2R

APPROVAL RECOMMENDED BY [illegible signature] SUPERVISING BRIDGE ENGINEER

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN AND DETAILS REVIEWED BY [illegible initials and dates]

[illegible signature]
PROJECTS ENGINEER—LICENSE [illegible]

DATE APPROVED September 23, 1960

NO	BID ITEM	QUAN.	UNIT	DESCRIPTION
13	removing concrete (structure).	647.07 △	cubic yards	Shall consist of all concrete removal not specifically included in other bid items as shown on the plans and as specified. The quantity to be measured shall be computed from dimensions shown on the plans, except that where such dimensions are not shown, field measurements shall be used.
14	removing concrete (pavement).	352.7 △	cubic yards	Shall consist of removing concrete pavement slabs resting directly on the ground or on a prepared base or subgrade. The quantity to be measured shall be computed from dimensions shown on the plans, except that where such dimensions are not shown, field measurements shall be used. The removal of plant-mixed surfacing on concrete pavement or structures removed shall be measured and paid for under this item.
15	removing and storing chain link fence.	254.6 △	linear feet	Shall conform to the requirements of Section 11. The quantity to be paid for shall be the length of fence removed, including gates, as shown on the plans and as specified, measured before removal. The Contractor shall clean the removed fence and gates of all concrete and other foreign materials and shall backfill holes to grade, and full compensation therefor shall be included in the price paid per linear foot for this item.
16	removing structural steel.	881,770 △	pounds	Shall consist of all removing and disposing of structural steel which is not specifically designated to be reinstalled or stored as shown on the plans and as specified. Measurement shall be by the pound, scale weight. The Contractor shall submit his plan of procedure for cutting steel to be removed from existing structures. All cut edges shall be ground smooth. Cutting holes and notches in structural steel and removing lengths of angles for electrical and mechanical work shall be measured and paid for under this item. Where designated by the Engineer, corroded or otherwise damaged structural steel shall be removed by the Contractor and such removal shall be measured and paid for under this item.
17	removing and storing steel pipe bridge railing.	22,580 △	pounds	Shall consist of removing steel pipe bridge railing and supporting hardware from lower deck railway approach ramps, and storing in disassembled and segregated units as shown on the plans and as specified. Measurement shall be by the pound scale weight. Full compensation for freeing all tack welded fittings shall be included in the unit price paid for this item, and no additional allowance will be made therefor. Cutting with a gas torch will not be permitted.
18	removing and storing deck drains.	25,000 △	pounds	Shall consist of removing and storing deck drain inlets from steel curbs, including six-inch diameter drain pipe welded to the drain inlets, and removing, cleaning, and storing deck drain inlets embedded in concrete curbs. The quantity to be measured shall be pounds, scale weight, of deck drains actually removed, cleaned of all concrete and other foreign materials, and stored as shown on the plans and as specified.
19	roadway excavation.	2,900.5 △	cubic yards	Shall conform to the requirements of Section 13. Excavation slopes shall be Class B. Material removed and not re-used shall be stockpiled or disposed of in the disposal area as shown on the plans and specified and full compensation therefor shall be included in the price paid per cubic yard under this item.
20	structure excavation.	91.4 △	cubic yards	Shall conform to the applicable requirements of Section 13, and will be measured as shown on the plans. Materials removed and not re-used shall be disposed of in the disposal area shown on the plans by placing on top of concrete removed and disposed of under this or other contracts, or shall be stockpiled as directed by the Engineer.
21	structure backfill.	93.5 △	cubic yards	
22	imported subbase material.	1,062.88 △	tons	Shall conform to the requirements of Section 13, Chapter VII for imported borrow and these provisions. The material shall be clean and free from roots, vegetable matter, and other deleterious substances and shall be of such quality that it will bind readily to form a firm, stable subbase. All oversize material shall be removed before delivery to the roadbed. The percentage composition by weight as determined by laboratory sieves shall conform to the following grading. Sieve Size — Percentage Passing Sieve 2-1/2" — 100 No. 4 — 35-60 No. 200 — 3-13 Binder, if required, shall be mixed with the material by blending and mixing until uniform throughout. The amount of binder added shall be the minimum amount required to obtain a mixture that will meet the above requirements when tested in accordance with the methods described in Section 6, Chapter II. The imported subbase material shall have a resistance value ("R" value) of not less than 60 and in addition shall conform to any one of the following quality requirements. Sand equivalent . . . . 25 Minimum Plasticity Index. . . . . 6 Maximum Plasticity Index, which shall not exceed 15 times the percentage passing the No. 200 sieve . . . . 90 Maximum
23	compacting original ground.	2,929 △	square yards	Shall conform to the applicable requirements of Section 13.
24	preparing Class B subgrade.	4,162.6 △	square yards	Railroad ballast in place in areas specifically designated by the Engineer or placed under Bid Item 12 shall be prepared as subgrade in accordance with the requirements of Section 15, Chapters I and III and the following modifications. a. Spreading of rock ballast to line and grade ready for subgrade treatment is included in the work. b. Loosening of subgrade to a depth of 0.5 foot, removal of rocks larger than 2-1/2 inches in greatest dimension, and bringing loosened subgrade material to a finely divided condition will not be required. c. Mixing of fines and watering will not be required. d. Relative compaction which, in the opinion of the Engineer, is equivalent to 95 percent, shall be obtained by means of a towed, variable frequency, steel-tired, roller type compactor as approved by the Engineer.
25	mineral aggregate (cement treated base).	1,650.35 △	tons	Shall conform to the requirements of Section 17 for Class A cement treated base.
26	Type II portland cement (cement treated base).	526.7 △	barrels	
27	mixing, spreading, and compacting cement treated base.	4,383.4 △	square yards	
28	mineral aggregate (open graded plant-mixed surfacing).	398.97 △	tons	Plant-mixed surfacing shall conform to the requirements of Section 20. Mineral aggregate for dense graded plant-mixed surfacing shall be 1/2-inch maximum aggregate as specified for Type A plant-mixed surfacing. Mineral aggregate for open graded plant-mixed surfacing shall conform to the following gradation. Sieve Size — Percentage Passing Sieve 3/4" . . . . 100 1/2" . . . . 90-100 3/8" . . . . 65- 80 No. 4. . . . . 20- 40 No. 8. . . . . 12- 25 No. 16. . . . . 0- 12 No. 200. . . . . 0- 3
29	mineral aggregate (dense graded plant-mixed surfacing).	1,396.75 △	tons	
30	paving asphalt (plant-mixed surfacing).	87.77 △	tons	Bituminous binder to be mixed with mineral aggregate shall be grade 85-100 paving asphalt conforming to the requirements of Section 54. Bituminous material for paint binder and for seal coats shall be a penetration type asphaltic emulsion conforming to the requirements of Section 56. Application shall be as specified in Sections 18, 20, and 23 except that for open graded plant-mixed surfacing the amount of bituminous binder to be added to the mineral aggregate shall be between three and four percent by weight of the dry mineral aggregate.
31	asphaltic emulsion (paint binder, curing seal for cement treated base, and seal coat).	4.46 △	tons	
32	coarse screenings (seal coat).	8.78 △	tons	Shall conform to the requirements of Section 23 for coarse screenings.
33	Class L concrete.	6,861.78 △	cubic yards	Shall conform to the requirements of Sections 25, 26, and 27, and shall consist of all concrete required for the work except as provided under Bid Item 56 as shown on the plans and as specified. All portland cement concrete provided under this item shall be Class L and shall have a compressive strength of not less than 3,000 psi and an air dry weight of not more than 105 pounds per cubic foot at the end of 28 days. Precast deck units shall be cast, set to grade, and installed in place in such a manner that the straightedge and all other applicable requirements of Section 25 are met. The wearing surface shall be floated and broom-finished in accordance with the requirements of Section 25. Reinforcing steel projecting from existing structures which is to be encased in new concrete shall be bent into place, and shall conform to the applicable requirements of Section 28, and full compensation for all work required therefor shall be considered as included in the price paid per cubic yard for Class L concrete. Forms for cylindrical voids in locations shown on the plans shall be subject to the approval of the Engineer, and such approved forms may remain in place. The volume of cylindrical voids shall not be measured or paid for.
34	drilling 1-3/4 inch and two-inch diameter holes in concrete for prestressing.	321.63 △	linear feet	Shall consist of core drilling holes in concrete for prestressing as shown on the plans and as specified. The length of hole to be paid for shall be the centerline length of hole actually drilled. Full compensation for drilling holes in concrete for dowels, metal safety railing, and any other purpose other than prestressing shall be included in the prices paid for the various bid items.
35	upper deck grade adjustments, Bents E35 to E39, inclusive.	27	each	Each grade adjustment to be measured shall consist of jacking the end of a structure span to the final position shown on the plans or to an intermediate position determined by the Engineer. Only the adjustments ordered by the Engineer shall be measured and paid for. For estimating purposes it is assumed that the end of each lower deck structure span will be jacked to the final position in one grade adjustment, the ends of the upper deck structure spans will be jacked to the final position in the number of grade adjustments shown on the plans. Upper deck grade adjustments of adjacent spans at each bent shall be performed simultaneously so that the difference in elevation across a joint does not exceed 1/8-inch. The maximum grade change between adjacent slabs after any adjustment shall not exceed two percent. All transverse deck joints shall be cleaned to a depth of 1-1/2 inches from the surface and asphalt-latex emulsion joint sealing compound complying with the requirements of Section 58 shall be applied immediately with a pressure gun in such a manner as to fill and completely seal the joints to 1/4-inch from the surface. The top 1/4-inch of the joints shall be filled with fine sand complying with the specifications for grout sand. Full compensation for cutting deck structure free from bent caps, pressure grouting, furnishing and installing expansion material, asphalt-latex joint sealing compound, sand, and all other materials, shoring, and doing all the work required to set the roadway at the line and grade shown on the plans and to provide the supporting structure complete in place, all as shown on the plans and as specified shall be included in the unit prices paid under these items, except that concrete removal, Class L concrete, bar reinforcing steel, removing and relocating bronze expansion bearing plates, and filling voids under floating slab and behind diaphragms at Bent E39 shall be measured and paid for under the respective bid items for such work, and electrical work shall be measured and paid for as otherwise specifically provided. Upon completion of all other work, joints between roadway stringers and new pedestals shall be sandblast cleaned, primed with a compatible primer, and caulked with thiokol joint sealing compound, Hornflex LP32 to a depth of not less than 3/4-inch and full compensation therefor shall be included in the price paid for this item. Before starting work, the Contractor shall submit for the Engineer's approval detailed plans of equipment to be used and procedures to be followed. No work shall be performed except in the presence of the Engineer.
36	lower deck grade adjustments, Bents E23 to E28, inclusive.	21	each	
37	filling voids under floating slab and behind diaphragms at Bent E39.	36 △	cubic yards	Shall consist of completely filling voids under the floating slab at Bent E39 including removing earth beneath the slab to the level of the top of the bent cap, compacting the earth to a depth of not less than two feet by jetting or other means, furnishing and placing sand fill, shoring, and furnishing all materials and doing all work required to provide the sand fill material complete in place as shown on the plans and as specified, except that removing concrete, adjusting upper deck grade, and new pavement shall be measured and paid for under the respective items for such work. Before starting work, the Contractor shall submit for the Engineer's approval detailed plans of equipment to be used and procedures to be followed. No work shall be performed except in the presence of the Engineer. Sand shall conform to the requirements of Section 26 for fine aggregate. Pressures provided by pumps for placing sand shall be such as will fill all voids without lifting or moving the floating slab.

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	OB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT WORK-BID ITEMS 13 TO 37

SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET NO. 3 | DRAWING C-4011-3R

NO.	BID ITEM	QUAN.	UNIT	DESCRIPTION
38	bar reinforcing steel.	2,198,215 △1	pounds	Shall conform to the requirements of Section 24 for intermediate grade steel, except that plain bars for bar reinforcing steel trusses shall be structural grade steel with a maximum carbon content of 0.30 percent. Welding shall conform to the requirements of Section 67. Welds of bar reinforcing steel trusses shall be arc or resistance welds which shall resist without failure loads of 2,000 pounds in double shear. Before welding reinforcing bars to silicon steel stringers, the tops of the stringers and reinforcing bars shall be preheated to 200° Fahrenheit.
39	removing and reinstalling steel cover plates.	40	each	Shall conform to the requirements of Section 31 and shall include modifications to railing posts and gusset plates, and performing all work required to provide the reinstalled cover plates, railing posts, and gusset plates complete in place as shown on the plans and as specified, except that removal of structural steel not to be reinstalled and furnishing and installing new structural steel shall be measured and paid for under Bid Items 16 and 47.
40	removing, altering, and reinstalling steel stringers.	9	each	Shall conform to the requirements of Section 31 and shall include modifications of attached expansion joint brackets and all other work required to provide the reinstalled steel stringers complete in place in the same or different locations as shown on the plans and as specified, except that removal of structural steel not to be reinstalled and furnishing and installing new structural steel shall be measured and paid for under Bid Items 16 and 47. Measurement under this item shall be made after reinstallation.
41	removing, altering, and reinstalling steel skid girder.	1,713.87 △1	linear feet	Shall conform to the requirements of Section 31 and shall include all work required to provide the reinstalled skid girder complete in place as shown on the plans and as specified except that removal of structural steel not to be reinstalled and furnishing and installing new structural steel shall be measured and paid for under Bid Items 16 and 47. Measurement under this item shall be made along the slope after reinstallation. The quantity to be measured shall be the quantity specifically designated on the plans to be removed, altered, and reinstalled and shall not include the length of skid girder designated or required to be adjusted or realigned. The Contractor shall realign the skid girder in locations designated on the plans or by the Engineer and full compensation therefor shall be included in the price paid per linear foot for removing, altering, and reinstalling steel bridge curb and railing.
42	removing, altering, and reinstalling steel bridge curb and railing.	10,218.42 △1	linear feet	Shall conform to the requirements of Section 31 and shall consist of removing, altering and reinstalling steel bridge curb and railing, including realignment and adjustment of skid girder as required to provide a smooth and regular top surface where such work is not specifically included under Bid Item 41, and all other work required to provide the reinstalled steel bridge curb and railing complete in place as shown on the plans and as specified, except that removal of structural steel not to be reinstalled and furnishing and installing new structural steel shall be measured and paid for under Bid Items 16 and 47. Measurement under this item shall be made along the slope after reinstallation. Welding shall conform to the requirements of Section 67.
43	removing, altering, and reinstalling steel maintenance platforms.	14 △1	each	Shall conform to the applicable requirements of Sections 31 and 67 and shall include all work required to provide the reinstalled platforms complete and in place as shown on the plans and as specified except that removal of structural steel not to be reinstalled and furnishing and installing new structural steel shall be measured and paid for under Bid Items 16 and 47. New pipe handrailing required for the reinstalled platforms shall conform to the requirements of Section 42 except that furnishing and installing such handrailing as shown on the plans and as specified shall be measured and paid for under the bid item for structural carbon steel. The quantity to be paid for under this item shall be the number of maintenance platforms actually reinstalled as shown on the plans and as specified.
44	removing and reinstalling steel and bronze bearing assemblies.	2,217 △1	pounds	Shall conform to the requirements of Section 31 and shall consist of removing and reinstalling sole plates, bearing assemblies, anchor bolts, and bronze expansion plates, as shown on the plans and as specified. Full compensation for cleaning the removed materials of all concrete and other foreign matter before measurement shall be included in the price paid per pound for this item. The quantity to be measured shall be the pounds scale weight of cleaned sole plates, bearing assemblies, anchor bolts, and bronze expansion plates actually reinstalled complete in place as shown on the plans and as specified. Removing and reinstalling angles on traveler rails as shown on the plans and as specified will be measured and paid for under this item.
45	replacing broken or failed rivets.	449 △1	each	Shall conform to the requirements of Section 31 and the following. Existing broken or failed rivets shall be removed by shearing off the heads and driving or drilling out the shanks. Removed rivets shall be replaced with new high strength bearing bolts, nuts, and carburized washers, of the same size except that where reaming to a larger size is required to provide fair holes larger high strength bearing bolts shall be used, all as shown on the plans and as specified. Burning will not be permitted except by written permission from the Engineer. Furnishing and installing new high strength bearing bolts, nuts, and carburized washers shall be measured and paid for under the bid item for structural carbon steel. Removed materials shall be measured and paid for under Bid Item 16.
46	repairing stringer web and stiffener angle fractures.	8 △1	linear inches	Shall conform to the requirements of Sections 31 and 67 and shall consist of preparing surfaces for welding, drilling holes, grinding out grooves, welding and all other work required to repair the stringer web and stiffener angle fractures as shown on the plans and as specified. Pre-heating shall be applied to silicon steel as required to provide and maintain a temperature of 400 to 500 degrees Fahrenheit in the area to be welded during the time welding is being performed. After welding, the rate of cooling in the weld area shall be controlled by gradually decreasing application of heat. Low hydrogen electrodes, E-6015 or E-6016, shall be used. Measurement shall be by the linear inch of crack repaired, measured from the center of the hole at the termination of the crack as located by the Engineer, along the crack to the end thereof. Burning will not be permitted. The Contractor shall submit his plan of procedure for work under this item to the Engineer for approval before starting the contract work.
47	structural carbon steel.	935,913 △1	pounds	Shall conform to the requirements of Sections 31 and 67 except as modified herein and shall consist of furnishing and installing all new structural steel not specifically included in other bid items, complete in place as shown on the plans and as specified. All shapes and plates to be furnished and installed under this item shall be ASTM Designation: A7. Furnishing and installing high strength bolts, high strength bearing bolts, nuts, and hardened washers shall conform to the Specifications for Structural Joints Using ASTM A325 Bolts Approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, March 1960. High strength bearing bolts shall be of the interference-body type as manufactured by Lamson and Sessions, Cleveland, Ohio. All rivets whether for carbon or silicon steel shall be ASTM Designation: A141, and the weight of all rivet heads shall be computed and paid for under this item. The Contractor shall submit for the Engineer's approval details and procedures for removing existing lateral bracing and installing new bracing. All ferrous materials required for slab expansion dams shall be measured and paid for under this item. Automatic welding anchor studs shall be as manufactured by Nelson Stud Welding Division, Gregory Industries, Inc., and their installation shall conform to the applicable requirements of Section 67 and the recommendations of the manufacturer. Materials and procedures shall be submitted to the Engineer for approval. Full compensation for furnishing and installing new structural steel to replace corroded or otherwise damaged material removed under Bid Item 16 as shown on the plans and as specified, shall be included in the price paid per pound for the new material under this item. The Contractor shall submit details of all such repairs for the approval of the Engineer. Open holes left in existing members by the removal of bolts or rivets shall be left open except as otherwise specifically provided.
48	structural silicon steel.	154,250 △1	pounds	Shall conform to the requirements of Section 31 and shall consist of furnishing and installing structural silicon steel shapes and plates in locations specifically indicated complete in place as shown on the plans and as specified. All structural silicon steel shall conform to the requirements of ASTM Designation: A94.
49	structural T-1 steel.	59,314 △1	pounds	Shall conform to the applicable requirements of Sections 31 and 67 and the Prestressing Requirements, and shall consist of fabricating, furnishing, and installing T-1 steel together with prestressing operations and other work required to provide the T-1 steel complete in place as shown on the plans and as specified. Flange to web welds on T-1 steel prestressing girders shall be made by an automatic process conforming to the requirements of Section 67 and the recommendations of the steel manufacturer.
50	prestressing steel and accessories.	23,777 △1	pounds	Shall conform to the applicable requirements of Sections 31 and 67 and the Prestressing Requirements.
51	miscellaneous iron and steel.	17,289 △1	pounds	Shall conform to the requirements of Section 31 and shall consist of furnishing and installing open steel grid flooring for substation, grates for drop inlets, pull box frames and covers, cable expansion enclosures, bronze expansion assemblies, and all other metallic materials not specifically included under other bid items complete in place as shown on the plans and as specified. All ferrous metal parts except cast iron shall be hot-dip galvanized after fabrication. Measurement of miscellaneous iron and steel will be by the pound, scale weight, including welds and galvanizing.
52	shear lug assemblies.	176 △1	each	Shall consist of furnishing and installing, complete in place as shown on the plans and as specified shear lug assemblies, each consisting of one self-drilling concrete fastener, Type 834 as manufactured by Phillips Drill Company, and one 3/4-inch diameter by six-inch long machine bolt complying with the requirements of Section 31. Furnishing and installing other concrete fasteners will not be measured or paid for under this bid item but full compensation therefor shall be included in the prices paid for the various bid items for which they are required.
53	Cleaning and painting structural steel.		Lump Sum	All exposed surfaces of ferrous materials installed under this contract (except as otherwise specifically provided) and painted or bare surfaces of certain designated existing steel shall be cleaned and painted in accordance with the requirements of Sections 32 and 33 and the following modifications: a. Pipe interiors and cast iron need not be sandblast cleaned or painted.
53	Cleaning and painting structural steel (Contd.)			b. Pipe installed under Bid Items 63 and 64 shall be cleaned of all soil, oil, grease, loose paint, and rust and shall be painted with the paint system specified for structural steel in d, below. c. All exposed prestressing steel and accessories for prestressing concrete shall be coated with three coats of Inertol, Standard Thick, as made by the Inertol Company over an approved primer in accordance with the manufacturer's recommendations, as shown on the plans, and as specified. A 48-hour drying period shall be allowed between coats. d. All exposed surfaces of new structural steel, exposed surfaces of relocated or reinstalled structural steel, steel paint surfaces damaged as a result of contract operations, and painted or bare structural steel surfaces exposed by the removal of materials shall be cleaned and painted in accordance with the following provisions: sandblast cleaning or an equivalent method approved by the Engineer shall be used; the paint system shall consist of a pretreatment vinyl wash primer, State Specification No. 52-G-52 and two coats of semi-quick drying red lead paint primer State Specification No. 52-G-53. e. Steel platforms shown on the plans to be removed, altered, and reinstalled or repaired shall be sandblast cleaned, the opening between raised pattern plates and angles caulked with an approved elastic caulking compound, and painted in accordance with the paint system specified in d, above. f. Galvanized materials shall not be sandblast cleaned after galvanizing but shall be thoroughly cleaned of all soil, oil, grease, and other foreign materials, and painted in accordance with the paint system specified in d, above unless otherwise specifically provided. g. All surfaces of contact between steel to be installed and existing steel members shall be sandblast cleaned and coated with pretreatment vinyl wash primer, State Specification No. 52-G-52. h. Tops of stringers and floor beams to be encased in concrete shall be cleaned by sandblasting or such other means as may be required to remove all materials deleterious to the bond between steel and concrete. All welding of structural steel or of reinforcing bars to structural steel shall be completed and burned areas wire-brush cleaned to the satisfaction of the Engineer prior to cleaning and painting. Paint, if sprayed on, shall be brushed out around rivet and bolt heads and exposed edges to avoid bridging over crevices and re-entrant corners, and to insure even paint coats of the specified thickness.
54	wooden storage facilities.	0.782 △1	thousand feet board measure	Shall consist of constructing reels and other wooden storage facilities including furnishing lumber, hardware, preservative treatment, and all incidental materials required therefor complete and ready for use as shown on the plans and as specified. All lumber shall be new Douglas fir, construction grade. Pentachlorophenol preservative treatment shall be applied. The Contractor shall submit shop drawings for approval by the Engineer. The quantity to be paid for shall be determined from nominal widths and thicknesses and the actual lengths of the pieces in the finished structure. Plywood shall be grade C-C and will be measured as one board foot per square foot. The use of railroad ties as dunnage will not be paid for under this item.
55	metal safety railing.	962.5 △1	linear feet	Shall conform to the requirements of Section 42.
56	chain link fence and gates.	961.5 △1	linear feet	Shall conform to the requirements of Section 44 and shall consist of furnishing and installing galvanized 72-inch chain link fence and gates complete in place as shown on the plans and as specified. Gate widths and spacing of posts shall be as shown on the plans. Except as specified for repair of damaged galvanizing, no painting will be required. The new chain link fence shall match the existing fence to which it is connected. Full compensation for connecting new to existing fence shall be included in this bid item. All portland cement concrete provided under this item shall conform to the requirements of Sections 26 and 27 and shall be Class L and shall have a compressive strength of not less than 3,000 psi.

APPROVAL RECOMMENDED BY

PROJECTS ENGINEER—LICENSE 1479

DATE APPROVED September 23, 1960

MARK	DATE	DESCRIPTION	BY	CH'K
△1	7.1.63	As built with revisions	CB	J.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING- EAST BAY

CONTRACT WORK-BID ITEMS 38 TO 56

SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 4 | DRAWING C-4011-4R

PROJECTS ENGINEER - LICENSE [illegible]

DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY [signature]
SUPERVISING BRIDGE ENGINEER
LICENSE [illegible]

DESIGN	[illegible]	Date	[illegible]
DETAILS	[illegible]	Date	[illegible]
QUANTITIES	[illegible]	Date	[illegible]
TRACED	[illegible]	Date	[illegible]
DESIGN AND DETAILS REVIEWED BY	[illegible]		

NO.	BID ITEM	QUAN.	UNIT	DESCRIPTION
57	12-inch diameter corrugated metal pipe.	48.53 △	linear feet	Shall conform to the requirements of Section 47 and shall be 16-gage asbestos-bonded asphalt-dipped corrugated metal pipe.
58	raised traffic bars.	442.5 △	linear feet	Shall conform to the requirements of Section 59. The white traffic line paint shall conform to the requirements of Section 32, Chapter V, for white traffic line lacquer, State Specification No. 55-G-95.
59	Weatherproofed low voltage equipment enclosure.		Lump Sum	Shall consist of removing, altering, installing, cleaning, painting, and weatherproofing the State-furnished weatherproof low voltage equipment enclosure for the substation at Pier E9, including furnishing and installing all new materials required to provide the enclosure complete in place, but open steel grid flooring will be measured and paid for under Bid Item 51 as shown on the plans and as specified. The Contractor shall remove, and store the traffic count booths at Bent E31 as shown on the plans and as specified and full compensation therefor shall be included in the price paid for this item.
60	Metal-clad 15-KV power center.		Lump Sum	Shall consist of furnishing and installing 15-KV weatherproof outdoor metal-clad 500-MVA, free standing switchgear S & C Electric Co., including load interrupters, power fuses, motor, and motor operator complete in place, painted, and in operable condition as shown on the plans and as specified. Switchgear shall be assembled, fabricated, and tested by the manufacturer of the motor operated switch and fuse compartments. The enclosures shall be constructed of 11-gage cold-rolled sheet steel. All structural joints shall be welded. Each enclosure shall have a built-in receptacle on the inside of the fuse compartment door to store spare fuse units, and shall be provided with adequate rainproof and screened louvers to provide for air circulation and to prevent pressure build-up under fault. Each compartment shall be provided with strip heaters and lights. The Contractor shall submit shop drawings for the enclosures to the Engineer for approval before starting work. Laminated safety-glass gasket-mounted inspection windows shall be provided for all load interrupters, and shall be so located that open and closed positions of the load interrupter can be clearly seen. Three-quarter length bulkhead doors shall be provided for access to front and rear of each fused load interrupter unit. These doors shall be mechanically interlocked with the load interrupter switches so that the load interrupter must be opened before the access door can be opened, and the door must be closed before load interrupter can be closed. All hardware and all operating mechanism parts and other parts subject to abrasive action from mechanical motion shall be of either approved non-ferrous materials, or galvanized ferrous materials. Cadmium plated ferrous parts will not be permitted. After fabrication, the units shall be cleaned free of all dirt, dust, grease, and oil, phosphatized, and painted. A heavy coat of approved insulating compound shall be applied to the inside surface of the roof structure to prevent condensation of moisture thereon. Underseal shall be applied underneath roof and floor of the enclosure. Bussing shall be aluminum bar continuously silver plated. All bus shall have a minimum capacity of 600 amperes, and shall be installed to withstand 95-KV BIL, in accordance with the applicable AIEE Standards. Load interrupters shall be S & C Electric Co., group operated Alduti Load Interrupters, heavy duty, and fused. The switches shall be quick make--quick break, and capable of closing into 40,000 ampere momentary fault with no damage to the interrupter. The switches shall be operable after closing into 40,000 ampere momentary fault and shall demonstrate ability to interrupt the rated 600-ampere load. Test data shall be submitted to support these ratings. One complete set of S & C Electric Co., Type SM-5e, size 15E power fuses rated 500-MVA, shall be furnished and installed in place and two spare sets of power fuse refill units, size 15E, shall be provided. The motor operator and auxiliary control equipment shall be S & C Electric Co., Type SPS-7-1130 for 120-volt D.C. operation and shall be installed with eight stage auxiliary switch and in a compartment isolated from the high voltage equipment and accessible from the front of the switchgear. Provisions for manual operation of switch shall be made. The following tests shall be conducted by the Contractor in the presence of the Engineer. a. Conduct megger tests phase to phase and phase to ground. b. Dielectric test in accordance with the American Standard for Switchgear Assemblies and Metal Enclosed Bus, ASA Standard C37.20, 1955, paragraph 27-304, and all data shall be submitted to the Engineer, but field tests of twice operating voltage of 12-KV plus 1,000 volts shall be made on equipment installed. c. Close and trip each load interrupter with manually operated control. d. Close and trip load interrupter with motor operator.
61	Low voltage control center.		Lump Sum	Shall consist of furnishing and installing low voltage control center including main circuit breaker, feeder circuit breakers, magnetic contactors, control devices and auxiliary relays, self-regulating battery charger, 25-KVA dry type transformer, automatic transfer contactor, D.C. distribution panelboard and A.C. distribution panelboard complete in place, painted and in operable condition as shown on the plans and as specified. The low voltage control center shall be Westinghouse Class 11-350, totally enclosed, free standing type, composed of basic unit structures 20-inches wide, 20-1/4 inches deep, and 90-3/8 inches high. The basic unit structures shall be joined to form one complete connected assembly. The structures shall be fabricated from 11-gage sheet steel and 1/8-inch x 2-inch structural
61	Low voltage control center (Contd.)			angles. The entire assembly shall be furnished with two continuous horizontal wiring raceways, one at the top and the other at the bottom. Each 20-inch wide unit shall be furnished with a vertical wiring space equipped with cable tie supports. The main bus shall be rated at 600 amperes and shall consist of three 1/4-inch x 2-inch copper bus bars supported at the bottom of each structure with bus supports. Each 20-inch wide unit, unless otherwise shown on the plans, shall be furnished with three 1/4-inch x 1-1/2 inch copper vertical buses to distribute three phase power to each feeder circuit breaker and contactor unit. All magnetic contactors or circuit breakers shall be built-in interchangeable modular units. All units shall be line plug-in lock-out type, with silver plated pressure type disconnecting stabs. Provisions shall be made to padlock each individual contactor unit in the disconnected position. Individual 480/120-volt control transformers shall be provided for each contactor. Each circuit shall have a suitable cardholder to designate the purpose of the circuit. The motor control center shall be constructed in compliance with the National Association of Electrical Manufacturer's Standards for Type B, Class II construction. The main circuit breaker and feeder circuit breakers shall be Type AB and shall conform to the provisions of Section 61. The incoming section shall include the current and potential transformers, ammeter, voltmeter, instrument switches and undervoltage relays as shown on the plans. The magnetic contactor shall be NEMA size 2, 600-volt, 60-cycle three-pole, full voltage, 50-ampere rating at eight hours continuous duty with two normally open and one normally closed auxiliary contacts in addition to the normally open holding interlock. The control transformers shall be 60-cycle, 55° C. rise single phase, 200 volt amperes, 480-volt primary, and 120-volt secondary. The self-regulating battery charger shall consist of a full wave selenium rectifier unit, insulating transformer, regulating reactors, pilot auxiliary rectifier, terminal board, voltmeter, ammeter, voltage control rheostat, fuses and capacitator. Input shall be 120/240 volts, single phase, 60-cycle A.C. and output for 60-cell lead-acid station battery at 2.13 to 2.27 volts per cell. Charging rate shall be 0.6 to 6.0 amperes. The 25-KVA transformer shall be 480-volt primary, single phase, 120/240-volt secondary, dry type with two 5-percent full current below normal taps. Automatic transfer switch shall be Automatic Switch Co., Catalog No. 4618 for A.C. normal source to D.C. emergency source, 60-ampere, continuous duty, magnetically held. The D.C. panelboard shall be four circuit, two wire, with 100-ampere mains and type NAIB circuit breakers and without a neutral bar. The A.C. panelboard shall be ten circuit, three wire with 100-ampere mains and type NLAB circuit breakers. The A.C.-D.C. panelboard shall be six circuit, two wire, with 100-ampere mains, and type NAIB circuit breakers.
62	Sixty-cell lead-acid battery and rack.		Lump Sum	Shall consist of furnishing and installing new 60-cell lead-acid battery and three-step steel rack, Gould National Batteries, Incorporated, Planté type DPR-13.
63	Remodeling and installing State-furnished 150-KVA transformer.		Lump Sum	Shall consist of remodeling and installing the State-furnished 150-KVA transformer including removing and disposing of materials, modifying the primary and secondary terminal chambers, testing, and furnishing and installing all materials and doing all work required to provide the transformer complete in place, painted and in operable condition as shown on the plans and as specified, and furnishing and installing steel base. Dispose of drained oil outside the contract limits. Remove covers, bushings, core and coil assembly and all miscellaneous parts from tank and terminal chambers. Excessively corroded parts shall be replaced with new parts. Clean tank, terminal chambers, and covers by sandblasting. Check tank for leaks by compressed air method, patch by welding all leaks found and grind welds to a smooth finish. Modify primary and secondary terminal chambers for side on top entry with four-inch rigid steel conduit. Install oil temperature and oil level indicators with alarm contacts and 3/4-inch rigid steel conduit connections to secondary terminal chamber. All holes not in use in terminal chambers shall be welded closed and ground smooth. Tank interior shall be prime coat painted, only, and paint shall be allowed to dry at least 72 hours before coming in contact with oil. Remove existing coils from core and install new winding for 150-KVA, three-phase, 60-cycle, 12,000-volt delta primary with two 2-1/2 percent taps above and below rated voltage and for 480-volt delta secondary transformer. Provide cable clamps on each primary terminal for a single No. 1/0 AWG conductor. Provide cable clamps on each primary and each secondary terminal for a single 250-MCM conductor. Immediately prior to reinstallation, coil and core assembly shall be oil impregnated at 28-inches Hg vacuum for four hours. Furnish and install new bushings and cover gaskets, Westinghouse WEMCO Type C universal oil, and new name plate. Insulating oil shall not exceed 50° C. rise at 150-KVA continuous operation in 40° C. ambient temperature. The following tests shall be conducted by the Contractor when ordered by, and in the presence of the Engineer. a. Check coil voltage, tap ratios and terminal markings. b. Conduct primary high potential tests at twice the rated voltage plus 1,000 volts for sixty seconds at completion of vacuum process. c. Conduct megger tests of primary and secondary coil terminals phase to phase and phase to gound.
64	utility outlet stations.	44	each	Shall consist of furnishing and installing utility outlet station including galvanized metal enclosure with 3-KVA transformer, primary and secondary circuit breakers, power and communication cable terminal blocks, power receptacles, telephone outlets, and all necessary internal wiring complete in place, painted and in operable condition as shown on the plans and as specified. The rain-tight galvanized metal enclosure shall be fabricated of 12-gage sheet steel and shall be painted inside and outside. The metal enclosures shall be installed complete in place with steel barrier plates, insulated bushings, door, hinges, lock, and cable terminators. The cable terminators shall be O.Z. Type PKS 200-25 and O.Z. Type PKS 220-25. The locks shall match those of the existing utility outlet stations on the west suspension spans; and shall be keyed alike. The Contractor shall submit shop drawings of metal enclosures to the Engineer for his approval before work under this item is started. The 3-KVA transformer shall be General Electric Type 21Y33 with 480-volt primary, 120/240-volt secondary with two five-percent full current below normal taps. The primary circuit breaker shall be two-pole, 20-ampere, Type AB and the secondary circuit breakers shall be one-pole, 20-ampere, Type AB with handle tie on center units and shall conform to the provisions of Section 61. The 25-ampere communications cable terminal block and the 50-ampere, 480-volt power terminal block shall be as shown in Westinghouse Bulletin 16-900 and each terminal shall be numbered. The receptacles for the 120-volt outlets shall be polarized, two-wire, three-pole, 20-ampere, with Crouse Hinds DS-96 housing and threaded cap. The receptacles for 240-volt outlets shall be polarized, two-wire, three-pole, 20-ampere, twist lock with Crouse Hinds DS-236 housing and threaded cap. The telephone jacks shall be Switch-Craft Type SF-JAL-22B and shall be housed in Amphenol Type No. 97-161-125 shell with No. 9760-12 cap and chain. The permanent telephone connection shall be Amphenol No. MS 3102A-10SL-3P. Existing signal and 480-volt power cables shall be terminated at each utility outlet station. Each termination shall be identified and incorporated in its respective electrical system. All stations plus intervening cables shall be tested for continuity and shall be meggered for proper insulation. Unsatisfactory test results shall be corrected to the satisfaction of the Engineer.
65	removing and storing bracket mounted sodium vapor luminaires.	7	each	Shall consist of removing, dis-assembling, transporting, and storing as shown on the plans and specified, the existing bracket mounted sodium vapor lighting installations including luminaires, brackets, transformers, and secondary wiring and conduit. Brackets shall be stored outdoors. Luminaires and isolating transformers shall be stored in the Key System Car Inspection Building.
66	installing State-furnished bracket mounted fluorescent luminaires.	20	each	Shall consist of installing the State-furnished bracket mounted fluorescent luminaires together with furnishing and installing brackets, fastenings, secondary wiring, and all other materials required to provide the luminaires complete in place, painted and in operating condition as shown on the plans and as specified.
67	installing State-furnished pole mounted fluorescent luminaires.	2	each	Shall consist of installing State-furnished pole mounted fluorescent luminaires together with altering and installing State-furnished poles, and furnishing and installing fastenings, secondary wiring, and all other materials required to provide the luminaires complete in place, painted and in operating condition as shown on the plans and as specified, except that excavation, backfill, concrete, and reinforcing steel shall be measured and paid for under the respective items for such work. Shop drawings of all alterations and new materials shall be submitted to the Engineer for approval.
68	removing and storing electrical materials.	9,620 △	pounds	Shall consist of removing and storing all electrical materials which are not to be reinstalled except as specifically provided under other bid items including electrical wire, cable, and conduit together with their supports and fastenings, telephone boxes, and junction boxes, all as shown on the plans and as specified. Cable and wire over 20 feet in length shall be continuously reeled on reels provided under Bid Item 54. Cable and wire 20 feet or less in length shall be stored in bins in the warehouse. Measurement shall be by the pound, scale weight, of electrical materials actually removed and stored but not reinstalled.

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	OB	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING- EAST BAY

CONTRACT WORK-BID ITEMS 57 TO 68

SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 5 | DRAWING C-4011-5R

NO	BID ITEM	QUAN.	UNIT
69	installing State-furnished cable.	820.3 △	linear feet
70	removing and relocating cable.	43,423 △	pounds
71	high voltage power cable, Type F.	3,743.5 △	linear feet
72	high voltage armored power cable, Type F.	10,346.8 △	linear feet
73	low voltage street lighting cable, Type L.	19,711.6 △	linear feet
74	repairing cable.	6,130.2 △	linear feet
75	one-conductor TW 600-volt No. 8 AWG building wire.	6,352.5 △	linear feet
76	one-conductor TW 600-volt No. 12 AWG building wire.	804.9 △	linear feet
	See Contract Change Order No. 58 △		

DESCRIPTION (Bid Items 69 to 77):

Cable and wiring materials, construction and tests, unless otherwise noted or subsequently specified, shall conform to the requirements of IPCEA Standard S-19-81, Third Edition, March 1957, entitled "Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy". All new cable shall be as manufactured by any of the following manufacturers: the Anaconda Wire and Cable Company; the Construction Materials Division of the General Electric Company; the Okonite Company; the Rome Cable Corporation; the General Cable Company; and the Simplex Wire and Cable Company.

All tests, as specified by the aforementioned regulating agency and herein, shall be made, certified and submitted for approval. Samples and supplemental data shall be submitted for all stock cable and wiring materials demonstrating that these meet the specifications. Statements of compliance with specifications will not be considered sufficient. All the above information shall be submitted in duplicate for the Engineer's approval; and any material purchased, labor performed, or delay to the work prior to approval shall be the liability of the Contractor.

Where polyethylene is specified the material used shall be as manufactured by E. I. Du Pont de Nemours & Co., Inc. (1) Alathon 3-DE-10 or Bakelite DYD 4095 for insulation. The thickness of polyethylene insulation shall be neither less than 97 percent nor more than 110 percent of the nominal thickness specified, and shall be concentric around the conductor or conductors as shown on the plans. No additive will be permitted in the manufacture of the insulation of the polyethylene insulated cables. The thickness of polyvinyl chloride jacket shall be neither less than 95 percent nor more than 110 percent of the nominal thickness specified and shall be concentric around the conductor or conductors, as shown on the plans. See Contract Change Order No. 8

Semiconducting non-supported bedding and copper shielding tapes on the 15-KV polyethylene insulated power cable shall be as manufactured by the Anaconda Wire and Cable Company "Resilient Shielding Method".

In addition to the aforementioned factory tests for cables, where polyethylene is used in cable of the high voltage power distribution class, corona-voltage extinction level tests shall be performed on reel lengths of the power cable. Such tests shall show extinction levels of not less than 125 percent of the operating voltage shown on the plans. Where rubber is used for insulation of high-voltage cable, such material shall be butyl rubber with a K-factor of not less than 20,000.

Cable splices shall be located in manholes and junction boxes or in other accessible locations. All cable and wiring installation work, pulling, splicing, and terminating operations shall be performed in the presence of the Engineer. Information and necessary drawings for all such operations shall be submitted to the Engineer for approval before actual installation.

Armor, where specified, shall be an interlocking type of bronze armor with a tensile strength of not less than 40,000 psi and shall be of commercial bronze of uniform cross section and free from defects. The width and thickness shall be as required by ASA Bulletin C8.15-1956. Bronze interlocking armor shall be applied by such means as will insure tight fitting and firm contact between the armor and underlying material and shall be applied helically so that there will be a minimum overlap of 50 percent. Continuously welded corrugated bronze armor sealed-in cable with the bronze conforming to the specifications for the bronze of the interlocking armor as stated above will be accepted as an approved equal to the bronze interlocked armored cable.

All type TW wire shall be manufactured as required by Column B, Table 1, Appendix I of the IPCEA Standard and shall meet Machine Tool Electrical Standards. All No. 8 AWG wire and larger shall be stranded. Two-conductor twisted-pair No. 16 AWG duct telephone wire shall be rubber insulated neoprene jacketed, as manufactured by the General Cable Company, Alphaduct No. 2-162-70C-26. RHW wire shall be manufactured as required by Section 3.23 of the IPCEA Standard.

Prior to completion and acceptance of the work, the following tests shall be made on all cable and wiring installations in the presence of the Engineer: Continuity of each circuit; check for grounds in each circuit; megger each circuit between circuit and ground (insulation resistance shall be not less than the values specified in article 310-17 of the National Electrical Code); functional tests in which it is demonstrated that each and every part of the wiring system functions as intended; and an applied high voltage D.C. test of the new cables installed to 80 percent of the comparable factory test. For existing cables installed, a high voltage D.C. test shall be applied equal to twice the operating voltage plus 1,000 volts for 5-KV or plus 100 volts for 600-volt cable.

Wire and cable shall be measured in a straight line along the slope from center to center of splice, junction or termination. Where slack is required in the cable, the additional length will not be measured, but full compensation therefor shall be included in the unit prices paid for the cable measured in a straight line as specified.

The quantity to be measured and paid for under Bid Item 70 shall be computed from the lengths of removed and relocated cable measured in a straight line as specified times unit weights of 1.80, 0.95, 4.0, and 0.65 pounds per linear foot for Types L, N, F, and the bronze armored, 5-KV series street lighting cable, respectively, which is specifically designated on Sheets 104 and 115 to be relocated except that removing and relocating of conduits and cables as specified in Notes 6 and 7 on Sheet No. 115 will be measured and paid for under Bid Item 81.

Under Bid Item 74, worn and injured insulation on State-furnished or existing cables shall be repaired in locations designated by the Engineer. All loose or unsound material of the outer jacket shall be removed from the cable in the areas designated to be repaired. The exposed surface underneath the removed material shall be cleaned by scraping, and shall be given a protective coating as follows:

a. Apply two lapped layers of Scotch No. 22 or Permacel No. 30 electric tape around cable so as to provide a quadruple thickness of tape over repaired areas.

b. Apply two coats of Scotchkote electrical varnish over the taped area, the second coat applied after the first coat has dried.

NO	BID ITEM	QUAN.	UNIT	DESCRIPTION
69,	70, 71, 72, 73, 74, 75, 76, and 77 (Continued)			All repairs shall be made in the presence of the Engineer. Repairing damaged cable jacket shall be measured and paid for as linear feet of cable actually cleaned, taped, and varnished as shown on the plans and as specified.
78	3/4-inch diameter galvanized steel conduit.	1,565.1 △	linear feet	Shall consist of furnishing and installing hot-dip galvanized rigid steel conduit of the designated sizes complete in place as shown on the plans and as specified. The materials and work shall conform to the requirements of the NEC Sections 346 and 350. All bends in conduit shall have not less than the radius specified in Table 346-10 of the NEC for conductors with lead sheathing, unless otherwise shown on the plans or unless larger radius bends are required to conform to the provisions of the IPCEA Standards for pulling cable under tension. Conduit shall be measured along the centerline to the nearest tenth of a foot.
79	1-1/2 inch diameter galvanized steel conduit.	807.7 △	linear feet	
80	four-inch diameter galvanized steel conduit.	535.2 △	linear feet	
81	Miscellaneous electrical work.		Lump Sum	Shall consist of providing the platform and ladder lighting system, the grounding system, conductors and conduit not specifically included under other bid items, space heater, and photo-electric cell, all complete in place and in operable condition as shown on the plans and as specified. Providing the platform and ladder lighting system shall include removing and relocating or removing and storing existing lighting fixtures, and furnishing and installing Types A and B lighting fixtures, outlets, switches, and all other materials required. Providing the grounding system shall consist of installing State-furnished grounding conductors and electrodes and furnishing and installing conduit, clamps, connectors, splicing materials, and all other materials required. Conductors to be furnished and installed under this bid item shall include No. 4/0 and No. 6 AWG Type TW conductor and all other conductor required but not included under other bid items. All such conductors shall conform to the requirements of Bid Items 69 through 77, inclusive except that full compensation therefor shall be included in the price paid for this item. The Contractor shall relocate conduits and cables as required under Notes 6 and 7 on Sheet 115 of the Plans and full compensation therefor shall be included in the price paid for this item. The Contractor shall do all electrical work required due to structure grade adjustments between Piers E34 and E39 for existing 5-KV power cable, 5-KV series street lighting cable, and 168 conductor control cable designated to remain in place and full compensation therefor shall be included in the lump sum price paid for this item. Providing 1000-watt 240-volt space heater for wall mounting Chromalux Catalog No. EH-1801 shall include furnishing and installing room thermostat with adjustable temperature setting range of 40 to 80 degrees Fahrenheit, Wesco Type WR, Catalog No. 1214609, and all materials incidental thereto which are not included under other bid items. The photo-electric cell shall be Fisher-Pierce Co., Series 6300C having load contacts rated 30 amperes at 120 volts A.C. with mounting bracket and shielding hood.
82	four-inch diameter schedule 40 galvanized steel pipe.	10,275.18	linear feet	Pipe shall be ASTM Designation: A53, Grade A or Grade B, with screwed joints and recessed couplings. The price paid per linear foot shall include full compensation for furnishing and installing all pipe, valves, fittings, expansion joints, flanges, traps, fastenings and supports except those specifically provided under Bid Item 85, and all other materials required to provide the pipelines complete, in place, painted, flush cleaned, hydrostatically tested, and in operable condition as shown on the plans and as specified.
83	removing and reinstalling six-inch diameter steel pipe.	122.0	linear feet	Shall consist of removing and reinstalling six-inch diameter steel pipe together with its supports, fastenings, and fittings, including making connections to existing pipes and drain inlets, cutting and welding required to adapt the pipe to its new location, and furnishing and installing all materials required to provide the relocated pipelines complete in place as shown on the plans and as specified. Measurement shall be by the linear foot along the centerline of pipe actually reinstalled.
84	installing State-furnished four-inch diameter steel pipe.	10,277.31	linear feet	Shall consist of installing State-furnished four-inch diameter schedule 80 black steel pipe with available State-furnished fittings including cutting off and beveling ends of pipe and fittings, plugging holes by welding, removing sharp projections, making welded joints and furnishing and installing all new valves, expansion joints, welding flanges, fittings, traps, incidental piping and cocks and all new ferrous and other material required to provide the pipelines complete, in place flush-cleaned, hydrostatically tested, and in operable condition as shown on the plans and as specified. Pipe will be measured for payment along the centerline in place.

PROJECTS ENGINEER—LICENSE 1478

DATE APPROVED September 23, 1960

NO	BID ITEM	QUAN.	UNIT	DESCRIPTION
85	cable and pipe struts.	2,389 △	each	Shall consist of furnishing, installing and adapting supports for cable and pipe which are designated on the plans to include Unistrut P1001 channels together with their fastenings and all new ferrous and other materials required to provide the supports complete in place as shown on the plans and as specified. All ferrous material shall be hot-dip galvanized in accordance with the requirements of Section 31.
86	Miscellaneous mechanical work.		Lump Sum	Shall consist of: removing and reinstalling valves and cocks for air and water outlets at Piers E25A and E26; removing and reinstalling 3/4-inch air relief piping on Pier E23; and furnishing and installing 1-1/2 inch pipe, fittings and all other materials incidental thereto which are not included under other bid items, all as shown on the plans and as specified.

APPROVAL RECOMMENDED BY: SUPERVISING BRIDGE ENGINEER

DESIGN	
DETAILS	
QUANTITIES	
TRACED	
DESIGN AND DETAILS REVIEWED BY	

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	CB	A L
REVISION				

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT WORK-BID ITEMS 69 TO 86

SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 6 | DRAWING C-4011-6R

PROJECTS ENGINEER—LICENSE 1079

DATE APPROVED September 23, 1960

PRESTRESSING REQUIREMENTS

A. GENERAL

All prestressing work shall be done in accordance with the applicable requirements of Sections 31 and 67, as shown on the plans and as specified.

The Contractor shall submit detail drawings to the Engineer for approval showing complete details of materials, proposed equipment, and procedures for the prestressing work.

All prestressing steel and accessories shall be kept free at all times after fabrication of dirt, grease, and other deleterious substances and shall be continuously protected from abrasion, rust, or other corrosion.

Prestressing steel and accessories, excluding metal enclosures, shall be assigned individual lot numbers for each size or diameter and for each mill heat, and shall be tagged for identification at the site.

Samples of prestressing steel and accessories, as specified herein, shall be furnished by the Contractor for testing and approval by the Engineer. Materials shall not be used until the samples have been approved. All samples shall be accompanied by a certification from the vender that the samples were taken from and are representative of each lot number to be furnished and shall be identified by the lot number from which taken.

Hydraulic jacks used for tensioning shall have accurately calibrated pressure gages to determine the force on the prestressing steel at any time during tensioning operations. The Contractor shall maintain the accuracy of all equipment. Certified calibration curves shall accompany each piece of equipment.

Installation and prestressing operations shall not be conducted except in the presence of the Engineer.

Tensioning and retensioning processes shall be such that, tension being applied may be determined at all times by jack gage readings and measured elongations.

B. CONCRETE PRESTRESSING

Tensioning of prestressing bars for concrete prestressing shall be performed in such stages, and in such sequences as to obtain nearly uniform distribution of stress and minimize local stress concentrations during all stages of the operations.

After completion of tensioning and retensioning operations upon any group of bars, the stress in each bar in the group shall be the initial tension called for on the plans.

No bars shall be tensioned until all new concrete to be stressed by such tensioning has attained a minimum compressive strength of 3,000 psi, nor until it has been determined that the bar moves freely in its enclosure.

1. Materials

Prestressing Bars shall consist of heat-treated or cold worked high tensile alloy steel with the following properties.

Property	Nominal Diameter of Bars, inches	
	1-1/8	1
Area, square inches.	0.994	0.785
Weight, pounds per linear foot (for payment).	3.382	2.670
Minimum ultimate tensile strength, psi.	145,000	145,000
Minimum yield strength at 0.2 percent offset, psi . .	130,000	130,000
Minimum elongation at rupture in 20 diameters, percent . . .	4	4
Minimum reduction of area at rupture, percent.	35	35

Bars shall be fabricated within the permissible tolerances for heat-treated alloy bars specified in ASTM Designation: A434. Each bar shall be proof-stressed to not less than 130,000 psi. Bars shall be full length without splices.

Accessories shall consist of bearing plates, bearing brackets, anchorage assemblies (grip nuts, bushings, and washers), metal enclosures (steel pipes and/or flexible tubing), and bolts designated on the plans as prestressing bolts.

Welded steel bearing brackets shall be fabricated from steel of ASTM Designation: A242 and shall be stress relieved by uniformly heating to 1150° F., holding at that temperature for two-hours, and reducing the temperature gradually or as recommended by the manufacturer. Accurate time-temperature recorder charts shall be made of the heating and cooling cycle for each charge and copies thereof furnished to the Engineer.

Grip nuts and their bushings shall be Howlett grip type fabricated from steel of AISI Designation: 8620 and shall be case hardened and tempered.

Washers for grip nuts shall be fabricated from steel of AISI Designation: 1040. Each anchorage assembly shall develop without exceeding the yield point of any part therein, the respective minimum strengths of 144,000 pounds for 1-1/8 inch diameter bars and 113,700 pounds for one-inch diameter bars.

All grip nuts and their bushings and washers shall be magnetic particle inspected by the "Magna-Glo" process.

Steel pipe for metal enclosures shall be schedule 40 conforming to ASTM Designation: A53, Grade A or Grade B. Flexible metal tube enclosures shall be Duoflex as manufactured by Flexico Products Incorporated.

Prestressing bolts shall be high strength bolts with washers and nuts conforming to the requirements of ASTM Designation: A325 with threads, nuts and hardened washers conforming to the Specifications for Structural Joints Using ASTM Bolts, Approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, March 1960.

Samples shall be furnished by the Contractor as follows:

For bars, not less than two five-foot lengths of each diameter from each lot.

For anchorage assemblies, not less than two completed assemblies for each diameter of bar.

Grout for bar enclosures shall be portland cement and water and shall be of a suitable consistency for pumping with specified high pressure grouting equipment and shall develop a strength in compression of not less than 3,000 psi in 28 days. An intrusion admixture may be used subject to the Engineer's approval.

2. Installation

Preparation and Equipment.—Two-inch and 1-3/4 inch holes through existing concrete shall be drilled with core drilling equipment. The deviation of two-inch hole centerline from the location shown on the plans shall not exceed 1/4-inch.

All metal enclosures shall be accurately located and firmly secured and be sufficiently rigid to resist displacement or deformations during the concrete placing operations. Each enclosure shall be thoroughly cleaned by blowing out with compressed air prior to grouting. All metal enclosures shall be mortar tight.

Equipment for grouting enclosures shall be capable of producing a pressure of at least 2,000 psi.

Prestressing Columns at Bents E26 and E27.—The bars shall be tensioned to 101,000 pounds by jacking simultaneously each pair of prestressing bars in the prestressing sequence shown on the plans. The same order used in initially tensioning the bars shall be used in retensioning to bring all bars up to the initial tension specified.

Upper Deck Strengthening—Bents E33 to E39.—Grout used for setting the bearing brackets shall attain a minimum compressive strength of 2,000 psi before tightening the prestressing bolts. The prestressing bolts shall be tightened to 50,000 pounds and grouted before tensioning the prestressing bars. Prestressing bars shall be tensioned and retensioned to 72,000 pounds. Tensioning and retensioning operations shall be completed before jacking for upper deck grade adjustments is begun.

3. Measurement and Payment

Prestressing Steel and Accessories for Concrete Prestressing shall be measured and paid for under Bid Item 50 and as follows.

The weight of prestressing steel bars to be measured for payment shall be computed by multiplying the length of bar determined from dimensions shown on the plans, allowing seven inches beyond the inside bearing face of the grip nut at each anchorage by the unit weight specified herein. Full compensation for furnishing such additional length of bar as may be required for gripping or for other reasons shall be considered as included in the unit price paid per pound for prestressing steel bars measured as above specified.

Prestressing steel accessories shall be measured for payment as provided in Section 31 for measurement of structural steel.

The unit price paid per pound for prestressing steel and accessories shall include full compensation for furnishing all labor, materials, samples, tools, and equipment, and doing all the work involved in prestressing the concrete, including all materials and work incidental thereto.

Drilling of Holes in Concrete for prestressing shall be measured and paid for as specified under Bid Item 34.

C. STEEL GIRDER PRESTRESSING

1. Materials

Steel Prestressing Girders shall be fabricated of T-1 steel having the following properties.

Minimum ultimate tensile strength, psi. .	115,000
Minimum yield strength at 0.2 percent offset, psi	100,000
Minimum elongation at rupture in 2-inches, percent.	18
Minimum reduction in area at rupture, percent	50
Charpy keyhole impact test in accordance with ASTM Designation: A300 at minus 50 degrees Fahrenheit, foot pounds	15
Modulus of Elasticity, psi.	30,000,000
Heat treatment-wash quench between temperatures, degrees Fahrenheit. . .	1650 to 1750
Temper between temperatures, degrees Fahrenheit.	1100 to 1275
Bend Test - cold bend 180 degrees at an inside radius of twice the thickness of plate without showing visible cracks.	

Prestressing Steel Accessories for Steel Girders shall consist of bolts designated on the plans as prestressing bolts. Prestressing bolts shall be high strength bolts with washers and nuts conforming to the requirements of ASTM Designation: A325 with threads, nuts and hardened washers conforming to the Specifications for Structural Joints Using ASTM Bolts, Approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, March 1960.

Samples and Testing.—Samples of T-1 steel shall consist of two pieces two feet long of each thickness used taken from each mill heat and each heat treating charge and shall be tagged with the identifying numbers of the mill heat and heat treating charge from which they are taken. Test coupons from plate samples shall be prepared in accordance with the requirements of ASTM Designation: A6 and shall be tested in accordance with the applicable requirements of ASTM Designation: A370.

Each T-1 plate sample shall be given a minimum of one longitudinal ultimate tensile strength test and one longitudinal bend test.

2. Fabrication and Installation

Welding of T-1 steel shall conform to the requirements of Section 67 for welding high yield strength alloy steels or the steel manufacturer's recommendations, as approved by the Engineer, and the following modifications. Fully automatic submerged arc welds shall be used except as may be otherwise approved by the Engineer. Class E100 electrodes shall be used for fillet welding and Class E120 for butt welding. Details of welds and welding procedures, including methods of controlling heat input, shall be submitted to the Engineer for approval before starting work.

The welded T-1 steel undergirders shall be fabricated to the tolerances specified by the AISC for rolling and cutting wide flange shapes modified as follows:

The webs shall be cut to conform to the camber curves shown in the plans with a tolerance at any ordinate of plus or minus 1/8-inch and the total deviation from the curves, in any ten foot length, shall not exceed 1/8-inch.

The flanges shall be welded perpendicular to the webs with a tolerance of 1/16-inch in the full flange width.

Prestressing devices shall provide for rotation of the bearing surfaces during prestressing operations.

The Contractor shall provide temporary flange guides to stay the compression flange of the prestressing girders during prestressing operations.

During the installation of a T-1 steel prestressing girder no shoring of adjacent longitudinal girders in preparation for jacking of the adjacent longitudinal girders will be permitted.

Steel Girder Prestressing—Bents E25, E26 and E27.—After the center of the T-1 steel prestressing girder is lifted into contact with the existing steel girder, the prestressing girder shall be stressed by simultaneously tightening the four 1-1/8 inch prestressing bolts to a tension of 50,000+pounds each. The prestressing girder shall then be bolted to the existing girder with high strength bearing bolts.

Steel Girder Prestressing—Bent E28.—After the ends of the T-1 steel prestressing girder are lifted into contact with the existing steel girder, the prestressing girder shall be stressed by simultaneously tightening the two 1-3/8 inch prestressing bolts to a tension of 75,000+ pounds each. The prestressing girder shall then be bolted to the existing girder with high strength bearing bolts.

3. Measurement and Payment

Prestressing Steel and Accessories for Steel Girder Prestressing shall be measured and paid for under Bid Item 50 and as follows.

Prestressing steel accessories shall be measured for payment as provided in Section 31 for measurement of structural steel.

The price paid per pound for prestressing steel and accessories shall include full compensation for furnishing all labor, materials, samples and their testing, tools and equipment, and doing all the work involved in providing the prestressing steel and accessories complete, in place, as shown on the plans and as specified.

T-1 Steel for Steel Girder Prestressing shall be measured and paid for under Bid Item 49 and as follows.

T-1 steel shall be measured for payment as provided in Section 31 for measurement of structural steel.

The price paid per pound for T-1 steel under Bid Item 49 shall include full compensation for furnishing all labor, materials, samples and their testing, tools and equipment, and doing all the work involved in fabricating and installing the steel prestressing girders complete, in place, as shown on the plans and as specified including providing temporary compression flange guides.

Prestressing Operations.—Full compensation for all prestressing operations and all other work necessary to provide the steel prestressing girders complete in place as shown on the plans and as specified shall be included in the unit prices paid under Bid Items 49 and 50 and no additional compensation will be allowed therefor.

APPROVAL RECOMMENDED BY

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built without revisions	GB	A L.

REVISION

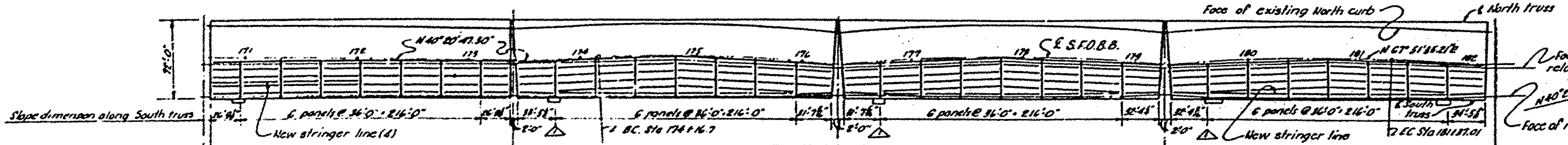
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CONTRACT WORK-PRESTRESSING REQUIREMENTS

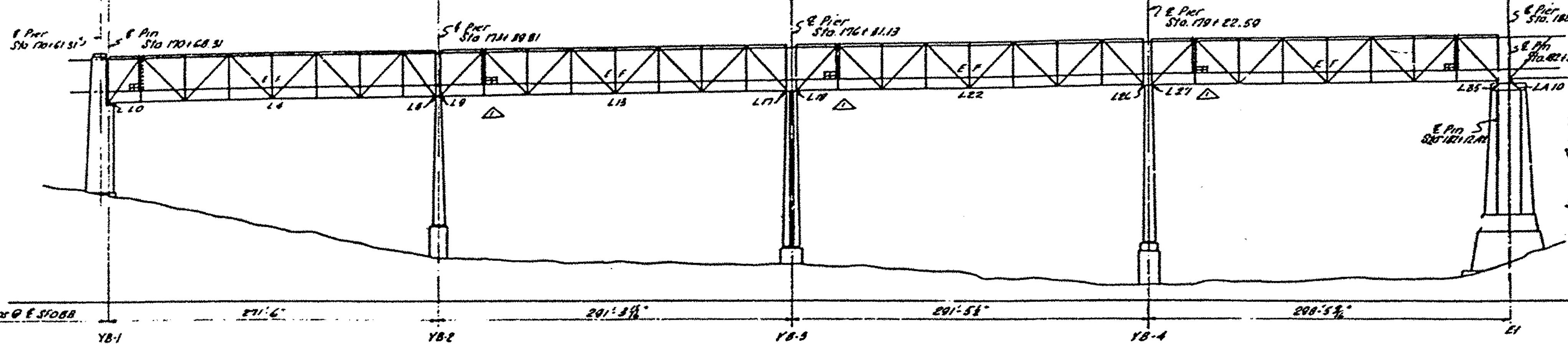
SCALE NONE | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 7 | DRAWING C-4011-7R

PROJECTS ENGINEER – LICENSE 1459
DATE APPROVED September 23, 1960

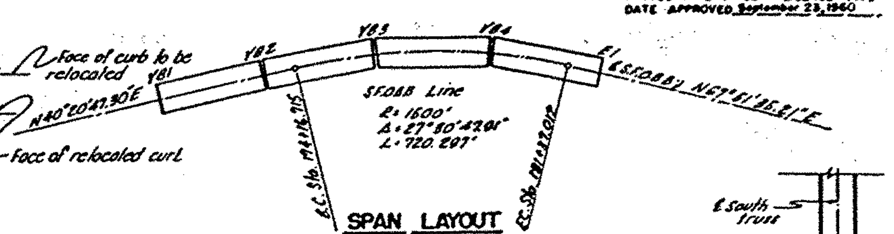


PLAN-LOWER DECK

Note: Curve sections rotated about ℄ SFOBB and ℄ Pier.

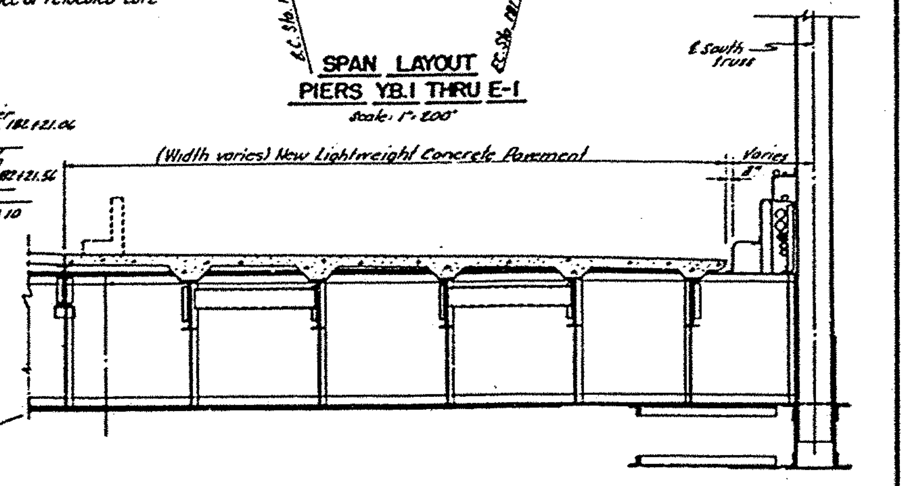


ELEVATION



SPAN LAYOUT PIERS YB.1 THRU E-1

Scale: 1" = 200'



TYPICAL RECONSTRUCTED ROADWAY

Scale: ½" = 1'-0"

TABULATION OF QUANTITIES

NO.	BID ITEM	UNIT	L0	L1	L2	L3	L4	L5	L6	L7	L8 L9	L10	L11	L12	L13	L14	L15	L16	L17 L18	L19	L20	L21	L22	L23	L24	L25	L26 L27	L28	L29	L30	L31	L32	L33	L34	L35 LA10	Amendment (1) Total This Sheet	Amendment (1) Accumulated Total
1	Timber parapets	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Removing traffic stripes	L.F.	54	70	83	83	83	83	83	65	82	83	83	83	83	83	83	76	76	83	83	83	83	83	83	78	78	83	83	83	83	83	83	78	19	2,565	2,565
3	Traffic stripe	L.F.	0	182	187	187	187	187	187	185	161	163	163	163	163	163	163	159	159	163	163	163	163	163	163	162	162	163	163	163	163	163	163	162	52	4803	4803
4	Removing rails & fasteners	Lbs	11,798	15,697	15,764	15,821	15,661	15,764	15,703	11,716	16,808	15,857	15,841	15,655	15,722	16,521	16,093	9,965	8,607	15,587	16,485	15,874	15,697	15,697	15,824	16,028	16,243	15,822	15,704	15,564	16,560	16,695	15,776	16,486	3,975	489,096	489,096
5	Removing contact rail insulators	Ea	5	7	7	7	7	7	7	5	7	7	7	7	8	10	10	8	6	10	10	8	7	7	7	7	7	7	7	7	7	[illegible]	7	12	3	242	242
6	Removing contact rail anchors	Ea	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	6	6
7	Removing rail expansion joints	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
8	Removing frogs	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Removing switch stands	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Removing railroad ties	Ea	54	70	70	70	70	70	70	80	76	70	70	70	70	70	70	65	73	70	70	70	70	70	70	65	70	70	70	70	70	70	70	69	16	2214	2214
11	Removing lumber	MBM	1.954	2.739	2.834	1.822	1.770	2.009	2.023	1.682	1.976	2.085	2.086	1.880	1.613	1.848	1.842	1.818	1.803	1.936	1.856	1.880	1.880	1.840	1.961	1.812	1.899	1.969	1.969	1.616	1.614	1.889	1.915	1.883	0.365	60.638	60.638
12	Removing & placing R.R. ballast	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Removing concrete (structure)	C.Y.	0.56	0.98	0.98	0.98	0.98	0.98	0.98	0.68	0.88	0.88	0.78	0.78	0.88	0.88	0.88	0.78	0.78	0.88	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.88	0.68	0.68	0.68	0.68	0.68	0.88	0	25.56	25.56
14	Removing concrete (pavement)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Removing chain link fence	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs	3196	2389	2385	2380	2386	2414	2416	2667	2378	2615	2643	2678	2646	2610	2576	7060	7844	2631	2649	2685	2602	2643	2636	7106	7188	2650	2339	2703	2808	2578	2647	3639	0	102,096	102,096
17	Removing bridge railing	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Removing deck drains	Lbs	375	0	0	0	0	0	0	0	1379	0	0	0	0	0	0	0	1353	0	0	0	0	0	0	0	1311	0	0	0	0	0	0	0	0	4,418	4,418
19	Roadway excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting original ground	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing Class B subgrade	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (C.T.B.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (C.T.B.)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact C.T.B.	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class L concrete	C.Y.	21.9	27.3	26.0	26.0	26.9	26.0	24.4	17.9	26.5	26.2	26.8	26.9	27.3	26.6	25.7	20.4	20.2	25.6	26.2	27.4	27.8	27.0	25.5	21.0	24.4	26.3	26.5	27.4	27.8	26.9	26.2	22.7	6.0	815.5	816.5
34	Drill 1¼" Ø holes in concrete	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Filling voids at pier [illegible]	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs	7030	8812	8810	8805	8809	8576	8668	6469	7812	8676	8676	8676	8676	8676	8676	7146	7139	8515	8515	8515	8515	8515	8515	7306	7300	8706	8706	8706	8706	8706	8706	7867	1176	265,808	265,808
39	Remove & reinstall cover plates	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & reinstall stringers	Ea	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	6	6
41	Remove & reinstall skid girder	L.F.	0	35.90	36.00	36.00	36.00	0	0	0	36	36	36	36	36	36	36	20.68	23.24	36	36	36	36	36	36	23.25	20.97	36	36	36	36	36	36	34.43	0	952.46	952.46
42	Remove & reinstall curb & rail	L.F.	36.17	36	36	36	36	36	36	28	30	36	36	36	36	36	36	23.87	29.88	36	36	36	36	36	36	33	33	36	36	36	36	36	36	37	0	1137.92	1137.92
43	Remove & reinstall platforms	Ea	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

*(1) Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 23

GENERAL DESIGN NOTES

LIVE LOAD:
H20-S16-44 of the AASHO

DEAD LOADS:
Existing top deck concrete slab (Reinforced) = 120 pcf
Other existing concrete (Reinforced) = 150 pcf
New lightweight concrete (Reinforced) = 125 pcf
Structural steel = 490 pcf

DESIGN STRESSES:

1. Reinforced Concrete: AASHO, 1957 Standard Specifications for Highway Bridges (Modified)
   - a. Existing Concrete: f'c (present) = 3000 psi; fc = 1200 psi; n = 10
   - b. New and Existing Lightweight Concrete: f'c = 3000 psi; fc = 1200 psi; n = 17
   - c. Reinforcement: Section 1.4.12
2. Structural Steel: AASHO, 1957 Standard Specifications for Highway Bridges (Modified)
   - a. A7 Structural Carbon Steel: Section 1.4.2
   - b. A94 Structural Silicon Steel: Section 1.4.6
   - c. "T-1" High Strength Structural Steel: fs = 46,000 psi; fy = 100,000 psi.
3. Prestressed Concrete: Tentative Recommendations for Prestressed Concrete - Joint Committee A.C.I.-A.S.C.E. (Modified).
   - a. Existing Concrete: f'c (present) = 4500 psi; fc = 1800 psi; n = 8
   - b. New Lightweight Concrete: f'c = 3000 psi; fc = 1200 psi; n = 17
   - c. Prestressing Bars: fs = 87,000 psi; fy = 145,000 psi.

REINFORCEMENT: Embedment shall be 2 inches clear to outside of any bar except as noted on the plans.

DATUM PLANE: Elevation datum is S.F.O.B.B. 1933 M.L.L.W. Datum (3.100' below U.S.C.&G.S. sea level datum of 1929.

EXISTING STRUCTURES: Dependent dimensions and elevations of the existing structures shall be verified by the Contractor in the field.

LEGEND:

New Construction:
Concrete — Outlines
Structural Steel — Hidden lines
Reinforcement

Existing Construction to Remain:
Concrete — Outlines
Structural Steel — Hidden lines
Reinforcement

Existing Structure to be Removed:
Concrete removal sheets
Structure sheets

0 — 1 — 2 — 3 — 4
8 THS — 10 THS
SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
(1)	7.1.63	As built with revisions	L.L.S.	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

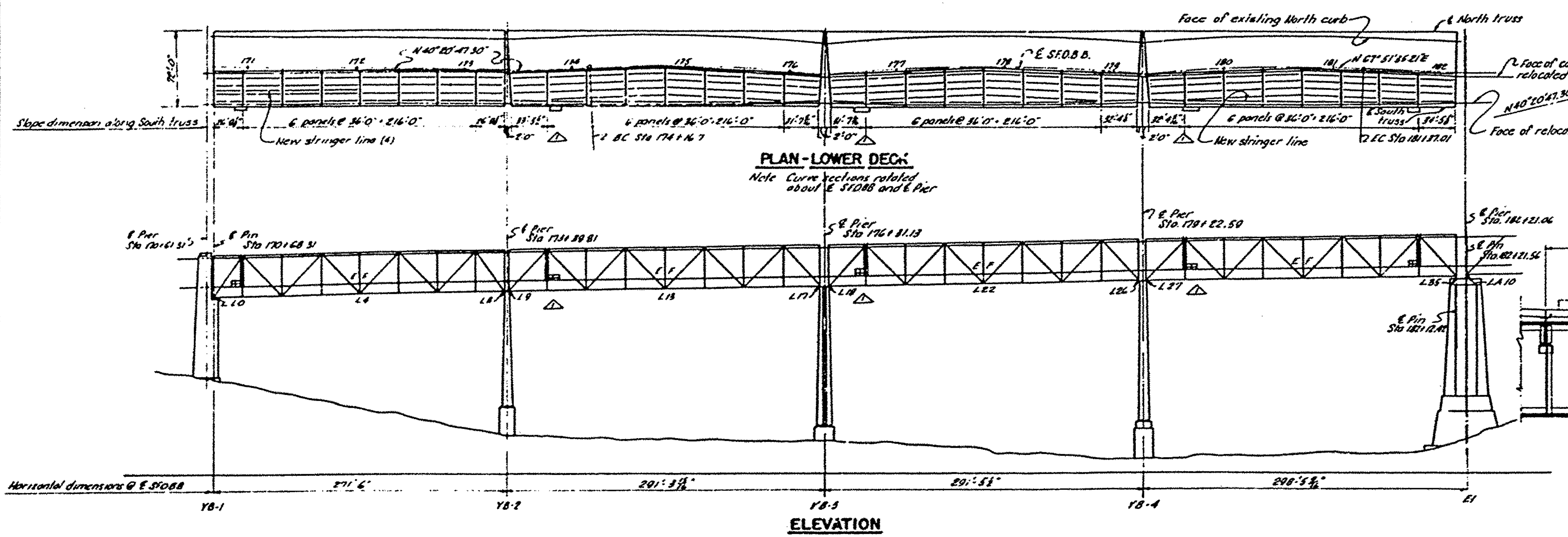
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 170+68 TO STA. 182+22
BID ITEMS 0 TO 43

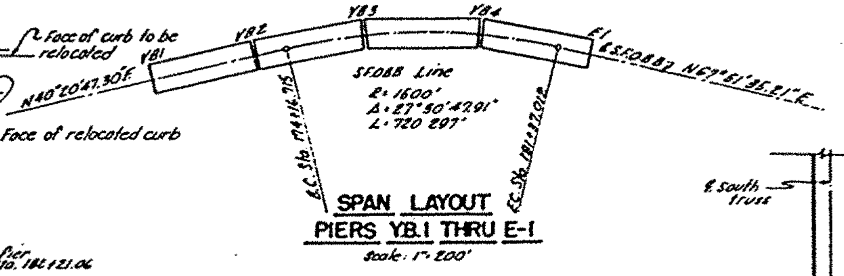
Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 8 | DRAWING C-4011-8R

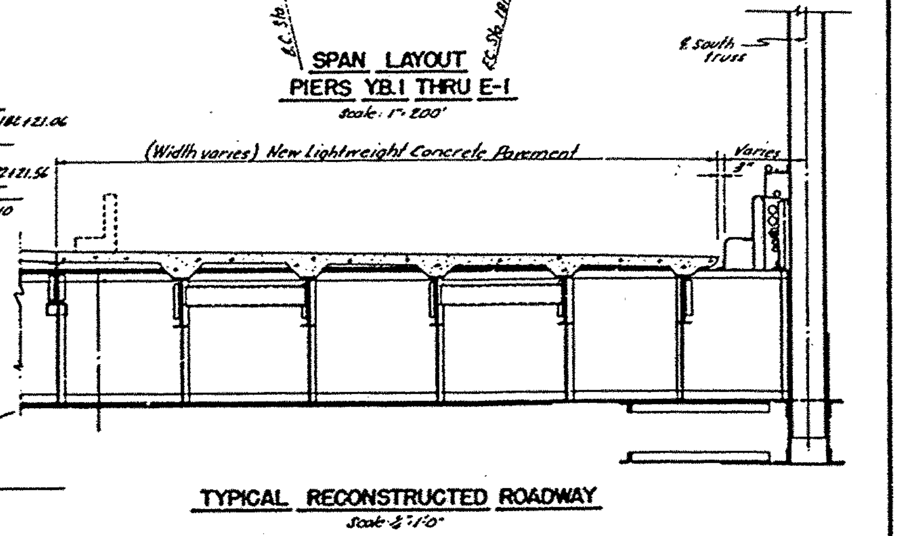
APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER LICENSE 7187

DESIGN / DETAILS / QUANTITIES / TRACED / BETH'S & BRIDGE ENGINEERS

PROJECTS ENGINEER – LICENSE 1478
DATE APPROVED September 22, 1960







TABULATION OF QUANTITIES

No.	Bid Item	Unit	L0	L1	L2	L3	L4	L5	L6	L7 L8	L9	L10	L11	L12	L13	L14	L15	L16	L17 L18	L19	L20	L21	L22	L23	L24	L25	L26 L27	L28	L29	L30	L31	L32	L33	L34	L35 LA10	Δ Approximate Total This Sheet	Δ Approximate Accumulated Total
44	Remove & reinstalling bearings	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*45	Replacing rivets	Ea	0	2	0	0	1	0	1	2	0	0	2	2	0	1	6	1	1	0	1	0	0	2	0	0	0	0	0	1	4	2	3	4	1	36	36
*46	Repairing fractures	Lin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
47	Structural carbon steel	Lbs	7919	4962	887	3640	840	870	870	394	4710	5052	4962	4986	4973	5061	5145	691	12,034	5044	4960	7080	5009	4468	5017	649	5533	5160	5066	4978	5055	4870	5034	3009	1849	146,187	146,187
48	Structural silicon steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous metal steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1085	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1085	1085
52	Shear lug assemblies	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	Clean & paint structural steel	L.S.	.00686	.00459	.00032	.00047	.00079	.00074	.00072	.00404	.00408	.00436	.00430	.00445	.00431	.00439	.00446	.00060	.01185	.00512	.00430	.00414	.00436	.00430	.00436	.00056	.00479	.00447	.00439	.00405	.00441	.00431	.00440	.00460	.00460	.16664	.16664
54	Wooden storage facilities	M.B.M.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gate	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	12" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Raised traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	Metal-clad 15 KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	Remodel 150 KVA state transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	Utilities outlet stations	Ea	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	5	5
65	Removing existing luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install state bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install state pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*69	Installing state cable	L.F.	208.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208.6	208.6
*70	Removing & relocating cable	Lbs	136	116	116	116	300	300	300	226	280	300	300	300	300	300	300	260	238	300	300	300	300	300	300	273	273	300	300	300	300	300	300	300	183	8,884	8,884
71	Power cable Type "J"	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*72	Armored power cable Type "K"	L.F.	30	36	36	36	35	36	35	27	34	36	36	36	35	36	36	33	33	36	35	36	35	36	35	34	33	36	35	36	35	36	35	34	9	1118	1118
*73	Street lighting cable Type "L"	L.F.	37	76	77	77	77	77	77	60	60	78	78	78	78	78	78	70	70	77	77	77	77	77	77	72	72	78	74	78	78	78	78	74	20	2,414	2,414
*74	Repairing cable	L.F.	17.6	22.5	22.5	22.6	22.6	22.6	22.6	17.5	17.5	21.5	21.5	21.6	21.6	21.5	21.5	20.5	20.5	22.5	22.5	22.5	22.5	22.6	22.5	20.6	20.5	22.5	22.5	22.6	22.6	22.5	22.6	22.6	9	700	700
75	1-cond TW 600V #8 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	1-cond TW 600V #12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2-cond #16 AWG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	¾" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	1½" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*80	4" galvanized steel conduit	L.F.	30.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.03	30.03
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*82	4" galvanized steel pipe	L.F.	.30	.40	.40	.40	.40	.40	.40	.40	.30	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	10.50	1,161.90	1,161.90
*83	Remove & reinstall 6" steel pipe	L.F.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*84	Install 4" State pipe	L.F.	76.80	.40	.40	.40	.40	.40	.40	.30	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.60	.40	.40	.40	.40	.40	.40	.40	.40	8.85	1,140.43	1,140.43
*85	Cable & pipe struts	Ea	7	9	8	9	8	8	8	7	6	9	8	9	8	9	8	8	7	9	8	9	8	9	8	9	8	9	8	9	8	9	8	8	3	267	267
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* Δ Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated total of all "as built" bid item quantities are shown on Sheet no 29

SCALE IN INCHES

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER LICENSE 7187

DESIGN	
DETAILS	
QUANTITIES	
TRACED	
BEGIN & DETAIL REVISED BY	

MARK	DATE	DESCRIPTION	BY	CH'K
Δ	7.1.63	As built with revisions		
		REVISION		

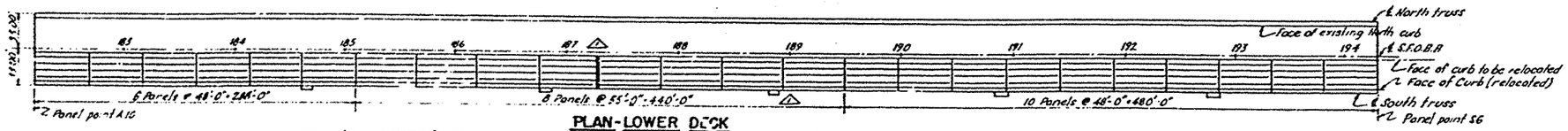
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

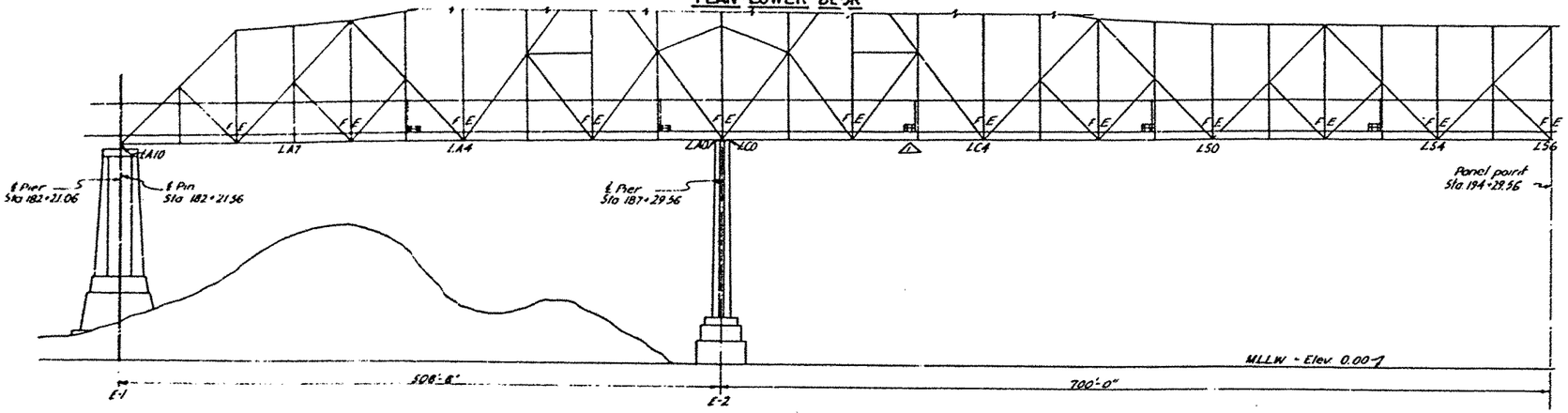
CONTRACT QUANTITIES - "S.F.O.B.B." STA. 170+68 TO STA. 182+22
BID ITEMS 44 TO 86

Unless noted SCALE 1" = 50'	BRIDGE 33-25 34-03 34-04	SHEET No. 9	DRAWING C-4011-9R

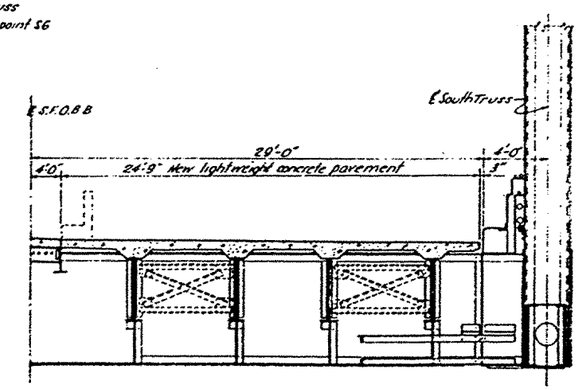
PROJECTS ENGINEER — LICENSE 1479
DATE APPROVED September 23, 1960



PLAN-LOWER DECK



ELEVATION



TYPICAL SECTION

Scale 6" = 1'-0"

TABULATION OF QUANTITIES

NO	BID ITEM	UNIT	LA0	LA9	LA8	LA7	LA6	LA5	LA4	LA3	LA2	LA1	LA0 LC0	LC1	LC2	LC3	LC4	LC5	LC6	LC7	LS0	LS1	LS2	LS3	LS4	LS5	LS6	△ APPROXIMATE TOTAL THIS SHEET	△ APPROXIMATE ACCUMULATED TOTAL
* 1	Timber barricades	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 2	Removing traffic stripe	LF	104	104	104	104	104	104	120	120	120	120	120	120	120	120	120	104	104	104	104	104	104	104	104	104	104	2672	5189
* 3	Traffic stripe	LF	144	144	144	144	144	144	187	187	187	187	187	187	187	187	187	144	144	144	144	140	140	140	140	140	140	4946	8849
* 4	Removing rivets & fastenings	Lbs	20,592	20,646	20,676	20,869	20,899	20,685	22,701	22,645	22,556	22,578	22,554	22,962	22,611	22,761	20,601	20,764	20,849	20,735	20,342	20,850	20,642	21,116	20,612	20,791	214,935	4,029,091
5	Removing contact rail insulators	Ea	10	9	9	9	9	9	9	10	9	11	11	10	11	9	9	9	9	9	9	9	9	9	9	9	9	227	469
6	Removing contact rail anchors	Ea	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	9
7	Removing rail expansion joints	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8	Removing trees	Ea	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Removing switch stand	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Removing railroad ties	Ea	94	94	94	94	94	94	104	104	104	104	104	104	104	104	92	94	94	94	94	94	94	94	94	94	94	2296	4248
* 11	Removing lumber	MBM	2493	2494	2001	2544	1941	2.311	2.220	2.866	2.220	2.826	1.867	2.326	1.927	2.488	1.442	2.179	1.702	2.183	1.442	2.183	1.662	2.148	1.442	2.183	52.170	112.808
12	Removing & placing RR ballast	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Removing concrete (structure)	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Removing concrete (pavement)	CY	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2536
15	Removing chain link fence	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs	4179	4287	4189	4267	4181	4243	4365	4264	4229	4294	4240	4122	4290	4193	4139	4227	4139	4264	4187	4277	4181	4249	4276	4163	112,483	221,589
17	Removing bridge railing	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Removing deck drains	Lbs	687	0	0	0	0	0	0	0	687	0	0	0	0	0	0	687	0	0	0	0	0	0	0	0	2011	6489
19	Roadway excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting ground ground	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing Class B subgrade	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (CTB)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (CTB)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread, & compact (CTB)	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open P.M.C)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense P.M.S)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (RMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class "A" Concrete	CY	22.6	22.9	22.6	22.9	22.6	22.9	23.6	23.4	23.6	23.4	22.8	23.9	23.6	23.6	22.6	22.9	22.6	22.9	22.6	22.9	22.6	22.9	22.6	22.9	272.1	1461.6
34	Drill 1¾" x 12" holes in concrete	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Filling voids at bent E39	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs	8793	8793	8793	8793	8793	8793	11,181	11,181	11,181	11,181	11,069	11,181	11,181	11,181	11,181	8793	8793	8793	8793	8793	8793	8793	8793	8793	241,064	496,832
39	Remove & reinstall cover plates	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & reinstall stringers	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 41	Remove & reinstall skid girder	LF	0	0	0	0	0	0	0	0	0	52.60	52.65	0	0	0	0	0	0	0	0	0	0	0	0	0	105.25	105.71
* 42	Remove & reinstall curb + rail	LF	48	48	48	48	48	48	55	55	55	52.66	52.66	55	55	55	48	48	48	48	48	48	48	48	48	48	1203.78	2341.20
* 43	Remove & reinstall jail forms	Ea	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	5	8

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	CK	A.L.

REVISION

* △ Quantities for these bid items only have been revised at each panel point to agree with "As built" quantities. Accumulated totals of all as built bid item quantities are shown on Sheet no. 10.

0 8 THS 10 THS 0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

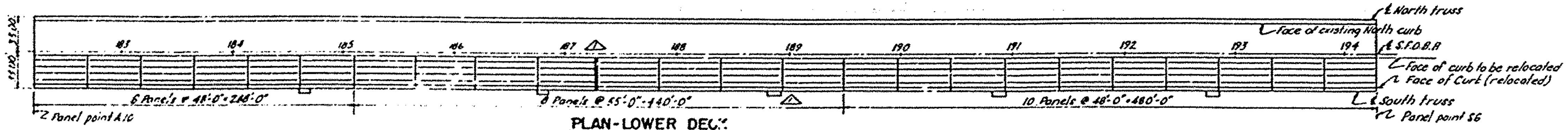
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT QUANTITIES-"S.F.O.B.B." STA. 182+22 TO STA. 194+30
BID ITEMS 0 TO 43

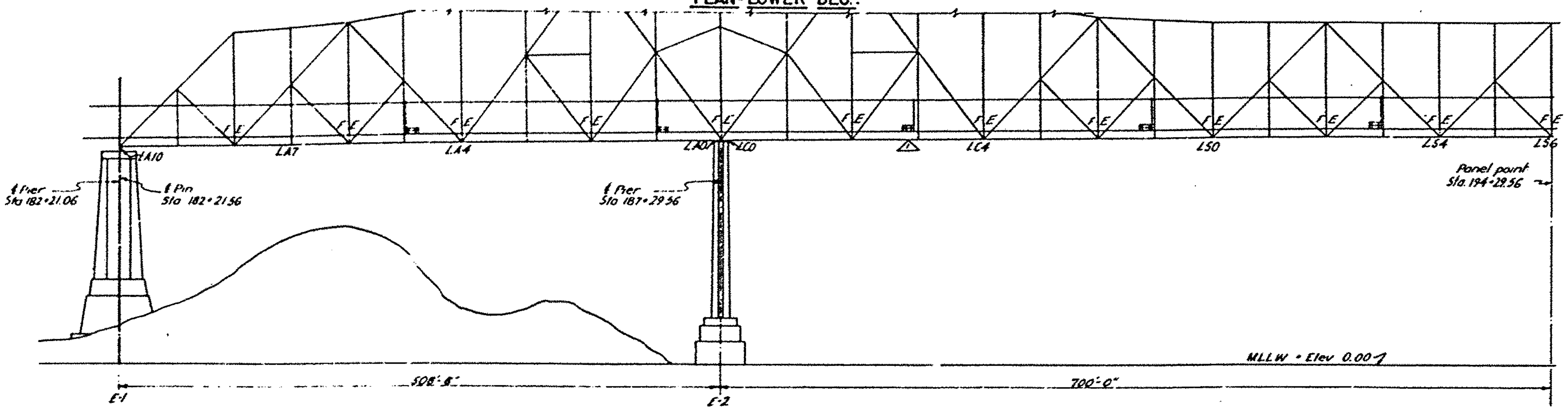
Unless noted SCALE 1" = 50'
Bridge 33-25, 34-03, 34-04
SHEET No. 10
DRAWING C-4011-10R

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER LICENSE 7157

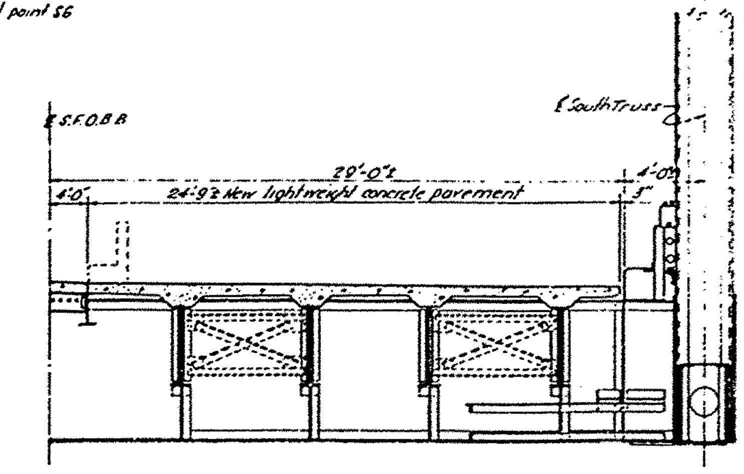
PROJECTS ENGINEER — LICENSE 1479
DATE APPROVED September 23, 1960



PLAN-LOWER DECK



ELEVATION



TYPICAL SECTION
Scale ¼" = 1'-0"

TABULATION OF QUANTITIES

NO	BID ITEM	UNIT	LA10–LA9	LA9–LA8	LA8–LA7	LA7–LA6	LA6–LA5	LA5–LA4	LA4–LA3	LA3–LA2	LA2–LA1	LA1–LA0	LC0–LC1	LC1–LC2	LC2–LC3	LC3–LC4	LC4–LC5	LC5–LC6	LC6–LC7	LC7–LS0	LS0–LS1	LS1–LS2	LS2–LS3	LS3–LS4	LS4–LS5	LS5–LS6	⚠1 Approximate total this sheet	⚠1 Approximate accumulated total
44	Remove & reinstalling bearings	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 45	Replacing rivets	Ea.	6	0	7	0	0	0	10	0	8	0	0	10	0	15	0	5	0	7	0	2	0	7	0	3	80	116
* 46	Repairing fractures	L.in.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
47	Structural carbon steel	Lbs.	3965	4069	5480	4659	5997	4459	6138	4679	6138	5137	6316	4469	6559	4679	5188	4409	6019	4054	5510	4054	5510	4666	5657	4201	120880	266,007
48	Structural silicon steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous iron & steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1085
52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	Clean & paint structural steel	L.S.	.00345	.00349	.00476	.00349	.00520	.00349	.00532	.00405	.00532	.00445	.00569	.00464	.00568	.00405	.00476	.00349	.00522	.00351	.00477	.00351	.00477	.00387	.00490	.00364	.10472	.53196
54	Wooden storage facilities	MBM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gate	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	6" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Formed traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	Metal-clad 15KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	Remodel 150 KVA state transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	Utilities control stations	Ea.	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	5	10
65	[illegible] vapor luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install state bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install state pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 69	Installing state cable	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208.6
* 70	Removing & relocating cable	Lbs.	313	137	137	137	137	137	148	148	148	416	416	148	148	148	136	136	136	136	136	136	136	136	136	136	3972	17862
71	Power cable, Type "F"	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 72	Armored power cable, Type "K"	L.F.	49.5	48.5	49.5	48.5	49.5	48.5	57	56	57	56	57	56	57	56	49.5	48.5	49.5	48.5	49.5	48.5	48.3	48.5	49.5	48.5	1236	2,354
* 73	Street lighting cable, Type "L"	L.F.	104	104	104	104	104	104	120	120	120	120	120	120	120	120	104	104	104	104	104	104	104	104	104	104	2,624	3,038
* 74	Repairing cable	L.F.	28	28	28	28	28	28	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	28	28	28	28	28	28	28	28	28	28	700	1,400
75	Furnish T.W. 600V 1/C #4 AWG wire	L.F.	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	Furnish T.W. 600V 1/C #12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2-cond #16 AWG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	¾" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	1½" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 80	4" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	46	74.03
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 82	4" galvanized steel pipe	L.F.	48	48	48	48	48	48	55	55	55	60.95	60.95	55	55	55	48	48	48	48	48	48	48	48	48	48	1219.90	2,361.80
* 83	Remove & reinstall 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15.2	0	0	15.2	15.2
* 84	Install 4" State pipe	L.F.	48	48	48	48	48	48	55	55	55	61.05	61.05	55	55	55	48	48	48	48	48	48	48	48	48	48	1,220.10	2,360.53
* 85	Cable & pipe struts	Ea.	10	11	11	11	11	11	13	13	13	13	13	13	13	13	12	12	12	12	12	12	12	12	12	11	288	355
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* ⚠1 Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no 29.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K.
⚠1	7.1.63	As built with revisions	OS	A.L.
		REVISION		

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER LICENSE 7187

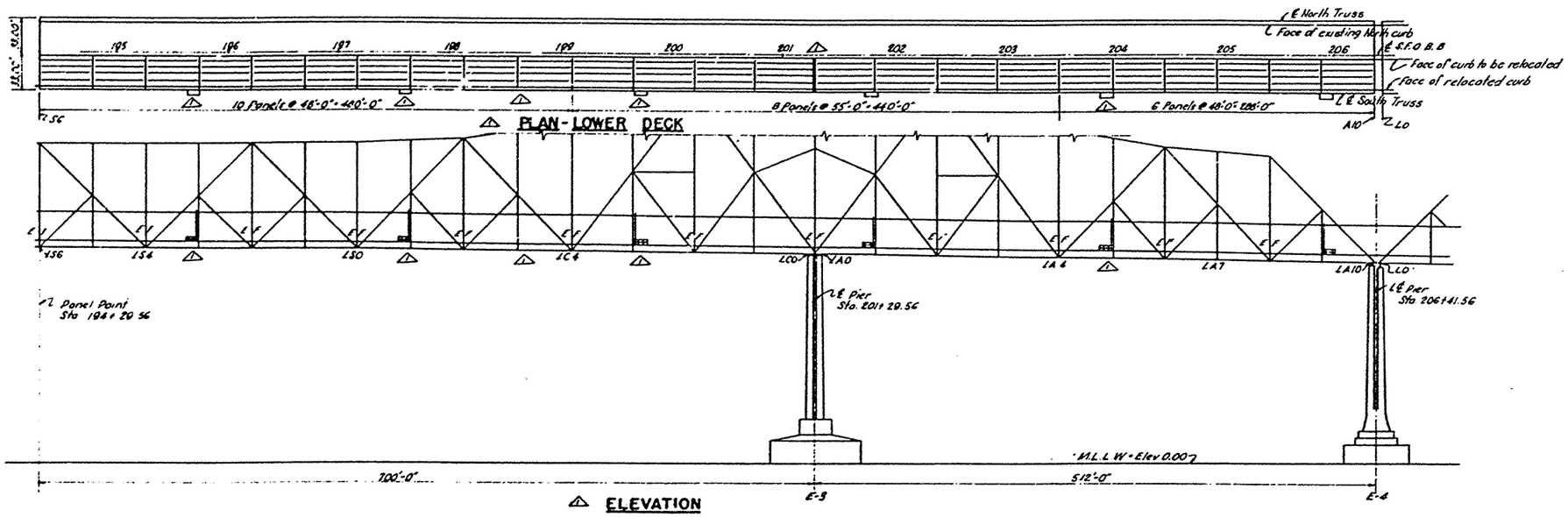
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT QUANTITIES-"S.F.O.B.B." STA.182+22 TO STA.194+30
BID ITEMS 44 TO 86

Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 11 | DRAWING C-4011-11R

PROJECTS ENGINEER—LICENSE 14179
DATE APPROVED [illegible] 23, 1950



ELEVATION

TABULATION OF QUANTITIES

NO	PANEL POINT / BID ITEM	UNIT	LS6	LS5	LS4	LS3	LS2	LS1	LS0	LC7	LC6	LC5	LC4	LC3	LC2	LC1	LC0/A0	LA1	LA2	LA3	LA4	LA5	LA6	LA7	LA8	LA9	LA10	L0	Approximate Total Unit Sheet	Approximate Accumulated Totals
* 1	Timber barricades	EA	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
* 2	Removing traffic stripes	L.F.	104	104	104	104	104	104	104	104	104	104	120	120	120	120	120	120	120	120	120	104	104	104	104	104	104	10	8,656	9,872
3	Traffic stripe	L.F.	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	25	3801	18,650
4	Removing curb & footwalks	L.F.	22,639	22,567	22,616	22,652	22,582	22,645	22,648	22,518	22,641	22,569	23,339	22,749	22,741	22,573	22,841	22,760	22,762	22,571	22,777	22,662	22,750	22,354	22,823	16,639	0	369,701	1,372,712
* 5	Removing contact rail brackets	EA.	9	9	9	9	10	9	9	9	9	9	9	11	9	10	9	10	9	12	9	9	9	11	12	7	0	227	696
6	Removing contact rail brackets	EA.	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	13
7	Removing rail expansion joints	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
8	Removing posts	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Removing switch stands	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Removing railroad rails	EA.	84	84	84	84	84	84	84	84	84	84	104	104	104	104	104	104	104	104	104	84	84	84	84	84	0	6935	6885
11	Removing timber	M.B.M.	1810	1822	2.109	1842	2.108	1842	2.126	1842	2.170	1842	2.482	1927	2.491	1867	2.455	1987	2.489	1867	2.187	1842	2.187	1842	2.088	2.097	2.036	0	48,282	161,090
12	Removing & placing R.R. ballast	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Removing concrete (structure)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75.56
14	Removing concrete (pavement)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Removing chain link fence	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	LBS.	4163	2060	4669	6101	4077	6187	8064	6189	4857	6159	8160	6890	6192	8440	6894	8289	6203	8844	8046	6120	8026	6188	8006	8715	0	155,142	246,691
17	Removing bridge railing	LBS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 18	Removing deck planks	LBS.	0	0	0	0	0	0	0	487	0	0	0	0	0	0	0	487	0	0	0	0	0	0	0	0	0	4,398	3,885
19	Roadway excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported borrow material	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacted granular material	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Prepacked class B concrete	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (C.T.B.)	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (C.T.B.)	BBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact (C.T.B.)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open P.M.)	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense P.M.)	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Prime asphalt (P.M.)	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Cover aggregate	TONS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class "A" concrete	C.Y.	296	296	299	296	299	296	299	296	299	296	339	336	336	338	354	336	339	336	299	296	299	296	299	299	0	7464	3340
34	Drill 1½" dia. holes in concrete	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Future weld at Pier L.99	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	LBS.	9293	9293	9293	9293	9293	9293	9293	9293	9293	9293	11,181	11,181	11,181	11,181	11,869	11,181	11,181	11,181	9293	9293	9293	9293	9293	9293	0	241,934	748,956
39	Remove & install sewer plates	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & install drainpipe	EA.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
* 41	Remove & install wind guards	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82.50	82.66	0	0	0	0	0	0	0	0	0	165.16	4,165.98
* 42	Remove & install curb & rail	L.F.	48	48	48	48	48	48	48	48	48	48	55	55	55	55.67	55.66	55	55	55	48	48	48	48	48	48	0	1,211.33	4,582.53
* 43	Remove & install platform	EA.	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	4	14

MARK	DATE	DESCRIPTION	BY	CH'K
43		As built with revisions	J.L.S.	A.L.

REVISION

* Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 22.

8 TONS 10 TONS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

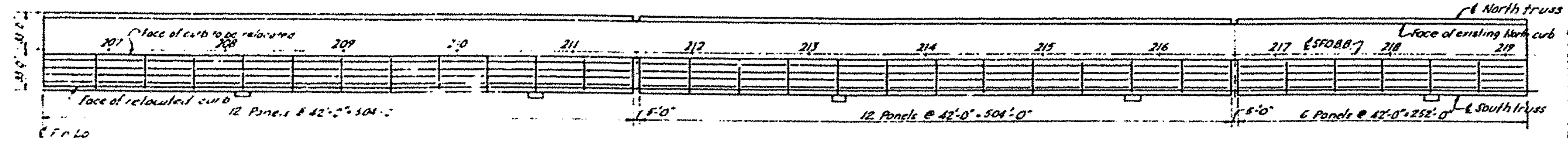
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT QUANTITIES "S.F.O.B.B." STA. 194+30 TO STA. 206+46
BID ITEMS 0 TO 43

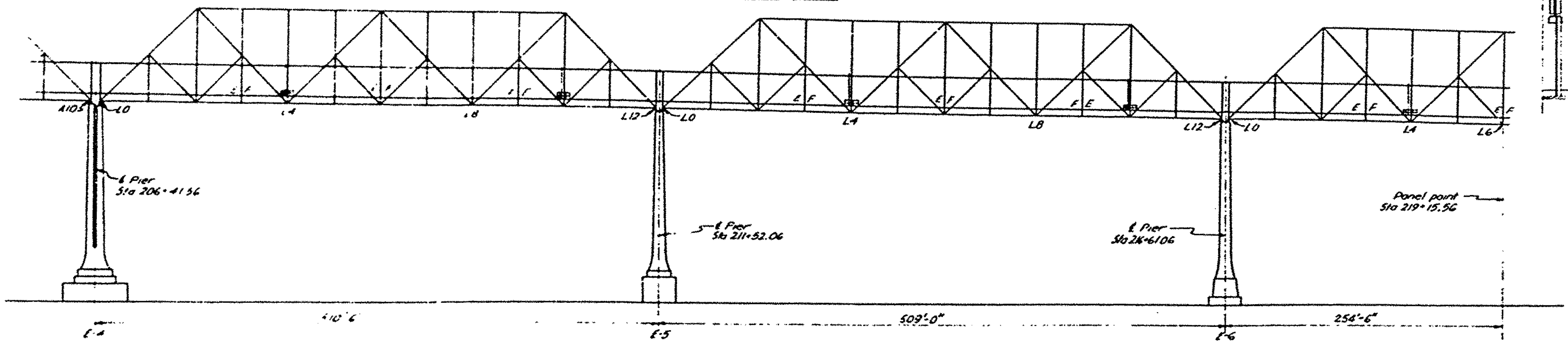
Unless noted SCALE 1" = 50'
BRIDGE 33-25 / 34-03 / 34-04
SHEET No. 12
DRAWING C-4011-12R

APPROVAL "RECOMMENDED BY" [illegible] BRIDGE ENGINEER LICENSE 7187

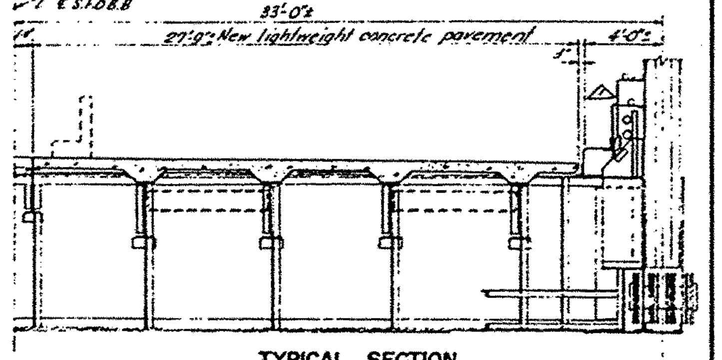
DESIGN	DETAILS	QUANTITIES	TRACED	CHECKED
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



PLAN-LOWER DECK



ELEVATION



TYPICAL SECTION

Scale ½" = 1'-0"

PROJECTS ENGINEER-LICENSE 1479
DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER LICENSE 7187

TABULATION OF QUANTITIES

No	Panel Point / Bid Item	Unit	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12 L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12 L0	L1	L2	L3	L4	L5 L6	Approximate Total This Sheet	Approximate Accumulated Total
* 1	Timber barricades	Ea	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	7
* 2	Removing traffic stripe	LF	90	90	90	90	90	90	90	90	90	90	90	85	85	90	90	90	90	90	90	90	90	90	90	95	95	90	90	90	89	69	2,718	10,541
3	Traffic stripe	LF	136	131	131	131	131	131	131	131	131	131	131	144	144	131	131	131	131	131	131	131	131	131	131	144	144	131	131	131	131	131	3407	16,637
* 4	Removing rails & fastenings	Lbs	14216	21,098	20,818	20,200	20,177	19,980	20,198	20,180	20,197	20,041	20,258	20,251	22,318	18,635	18,046	18,128	18,177	18,094	18,171	18,180	17,996	18,041	18,321	18,322	20,178	18,802	17,975	18,199	18,188	18,476	576,640	2,144,702
5	Removing contact rail insulators	Ea	6	12	14	0	6	0	6	0	6	0	6	0	0	9	6	0	6	0	6	0	6	0	6	0	0	0	6	0	6	11	226	922
6	Removing contact rail anchors	Ea	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	18
7	Removing rail expansion joints	Ea	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	0	4
8	Removing drains	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Removing switch stands	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
10	Removing railroad ties	Ea	83	82	82	82	82	82	82	82	82	82	82	82	90	82	82	82	82	82	82	82	82	82	82	80	90	82	82	82	82	82	2475	9958
* 11	Removing lumber	MBM	1.711	1.838	1.361	1.863	1.849	1.389	1.867	1.869	1.867	1.389	1.896	1.979	1.936	1.865	1.389	1.861	1.862	1.389	1.869	1.871	1.898	1.389	1.897	1.943	1.945	1.869	1.389	1.866	1.866	1.382	52.278	213.468
12	Removing & placing RR ballast	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 13	Removing concrete (structures)	CY	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	26.40	51.96
14	Removing concrete (pavement)	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Removing chain link fence	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs	7740	3268	3269	3268	4231	3272	3269	4231	3268	3268	3260	4730	5678	3268	3269	3268	4231	3272	3269	4231	3268	3268	3268	4730	5621	3234	3234	3232	4190	3235	114,976	461,667
17	Removing bridge railing	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 18	Removing deck drains	Lbs	0	0	0	0	0	0	0	0	734	0	0	0	0	0	0	0	0	640	0	0	0	0	0	0	0	659	0	0	0	0	2033	9918
19	Roadway excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported borrow material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting original ground	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing Class C subgrade	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (CTB)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (CTB)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact CTB	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class L concrete	CY	260	260	260	263	260	260	263	260	263	260	260	260	300	260	260	263	260	260	263	260	263	260	260	260	300	260	260	263	260	260	790.1	3098.1
34	Drill 1¼" ø E holes in concrete	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Filling joints at pier E-?	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs	8940	8940	8940	8940	8940	8940	8940	8940	8940	8940	8940	9173	9173	8940	8940	8725	8440	8440	8440	8440	8440	8440	8440	8670	8681	8440	8440	8440	8440	8440	242,122	1,010,476
39	Remove & reinstall cover plates	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & reinstall stringers	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
* 41	Remove & reinstall grid girder	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1162.93
* 42	Remove & reinstall curb & rail	LF	42	42	42	42	42	42	42	42	42	42	42	44	45	42	42	42	42	42	42	42	42	42	45	44	42	42	42	42	42	42	1270	4,822.53
* 43	Remove & reinstall posts	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

* ⚠1 Quantities for these bid items only have been revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid items quantities are shown on Sheet No 28.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
⚠1	7-1-63	As built with revisions	OB	A.L.
REVISION				

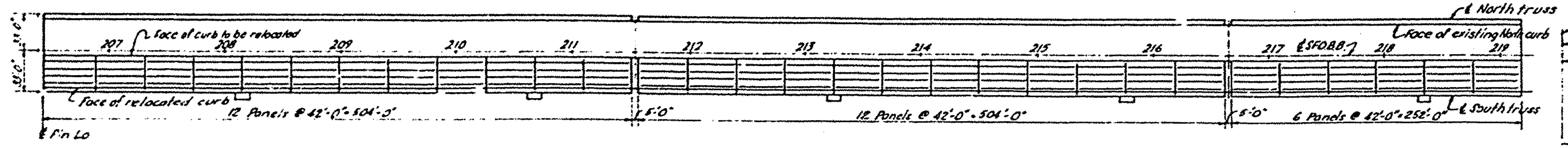
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING-EAST BAY

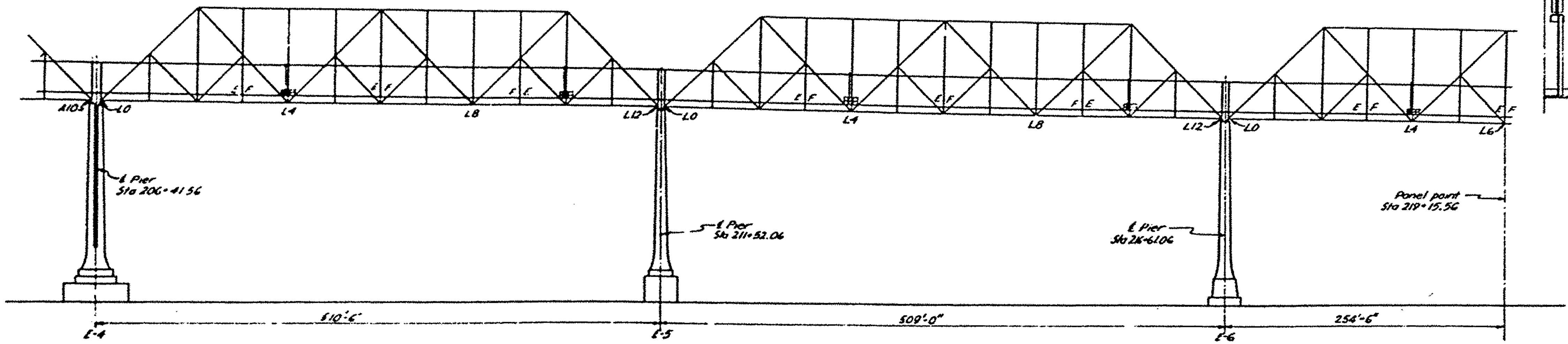
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 206+46 TO STA. 219+16
BID ITEMS 0 TO 43

Unless noted Scale 1" = 50' | Bridge 33-25, 34-03, 34-04 | Sheet No 14 | Drawing C-4011-14R

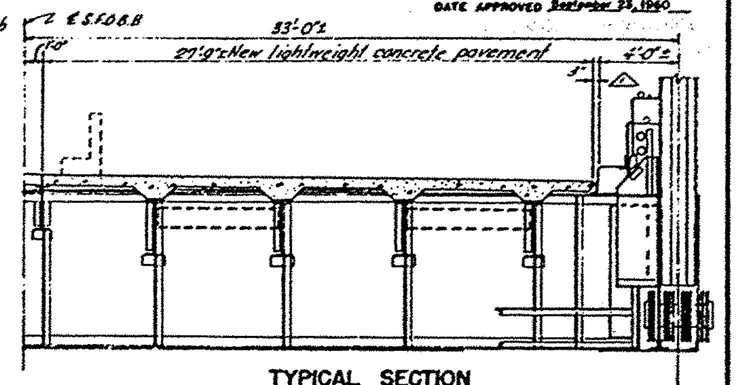
Projects Engineer—License 1479
Date approved September 23, 1960



PLAN-LOWER DECK



ELEVATION



TYPICAL SECTION
Scale 1/4" = 1'-0"

TABULATION OF QUANTITIES

No.	Bid Item (Panel Point)	Unit	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12 L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12 L0	L1	L2	L3	L4	L5 L6	Approximate total this sheet	Approximate accumulated total
44	Remove & re-installing bearings	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*45	Replacing rivets	Ea.	0	5	3	1	5	5	7	5	5	3	6	6	0	6	9	1	4	8	0	2	2	0	4	10	3	3	6	2	9	6	124	311
*46	Repairing fractures	L.In.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
47	Structural carbon steel	Lbs.	957	957	2491	2668	957	2491	957	957	957	4817	957	913	4616	957	2491	2628	957	2491	957	957	957	3071	937	913	4681	957	2491	2628	957	2491	55,226	483,195
48	Structural silicon steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous iron & steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2060
53	Clean & paint structural steel	L.S.	.00080	.00080	.00516	.00528	.00080	.00516	.00080	.00080	.00080	.00266	.00080	.00082	.00410	.00080	.00516	.00528	.00080	.00516	.00080	.00080	.00080	.00266	.00080	.00097	.00416	.00080	.00516	.00528	.00080	.00516	.04876	.45133
54	Wooden storage facilities	M.B.M.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gates	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	11" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Raised traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	Metal-clad 15 KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	Remodel 150 KVA State transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	Utility outlet stations	Ea.	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	5	81
65	Removing sodium vapor luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install State bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install State pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	Installing State cable	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,086
*70	Removing & relocating cable	Lbs.	126	126	126	126	126	126	126	126	126	126	126	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	3856	20,897
71	Power cable, Type "J"	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*72	Armored power cable, Type "K"	L.F.	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	45	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.3	42.6	42.5	45	45	47.5	42.5	47.5	42.5	47.3	1285	4,883
*73	Street lighting cable, Type "L"	L.F.	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	83.5	83.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	83.5	83.5	90.5	90.5	90.5	90.5	90.5	2,727	10,407
*74	Repairing cable	L.F.	25.5	25.5	25.5	25.5	25.5	25	25.5	25.5	25.5	25.5	25.6	28	28	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	27	28	25.5	25.5	25.5	25.5	25.5	764	2,873
75	1-cond TW 600V No.8 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	1-cond TW 600V No.12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2-cond No.16 AWG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	3/4" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	1½" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*80	4" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122.03
*82	4" galvanized steel pipe	L.F.	42.45	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.45	42.45	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.45	42.45	42.41	42.41	42.41	42.41	42.41	1,272.50	4868.60
*83	Remove & reinstall 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.5
*84	Install 4" State pipe	L.F.	42.45	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.45	42.45	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.45	42.45	42.41	42.41	42.41	42.41	42.41	1,272.50	4870.93
*85	Cable & pipe struts	Ea.	10	10	10	10	10	10	9	10	10	10	10	10	10	9	10	10	10	10	10	10	9	10	10	10	9	10	9	10	9	10	294	1,130
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*△ Quantities for these bid items only have been revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid item quantities are shown on Sheet No. 29.

0 1 2 3 4 — 8 THS 10 THS — SCALE IN INCHES

Mark	Date	Description	By	Ch'k
△1	7.1.63	As built with revisions		A.L.
		REVISION		

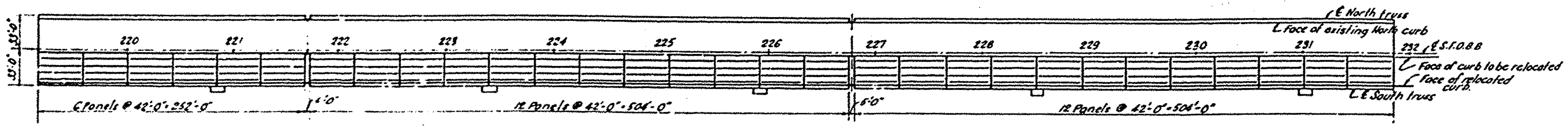
Approval recommended by —— Supervising Bridge Engineer License 7187

State of California
Department of Public Works
Division of San Francisco Bay Toll Crossings

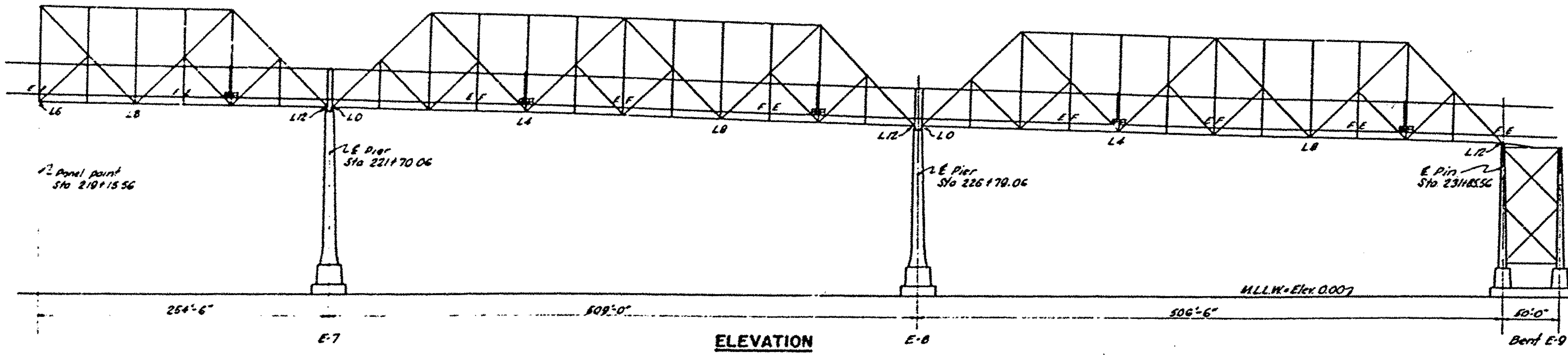
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT QUANTITIES-S.F.O.B.B. STA. 206+46 TO STA. 219+16
BID ITEMS 44 TO 86

Unless noted Scale 1" = 50' | Bridge 33-25, 34-03, 34-04 | Sheet No. 15 | Drawing C-4011-15R



PLAN-LOWER DECK



ELEVATION

TABULATION OF QUANTITIES

NO.	PANEL POINT / BID ITEM	UNIT	L6–L7	L7–L8	L8–L9	L9–L10	L10–L11	L11–L12	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L8–L9	L9–L10	L10–L11	L11–L12	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L8–L9	L9–L10	L10–L11	L11–L12	Approximate total this sheet	Approximate accumulated total
1	Timber barricades	Ea	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	11
* 2	Removing traffic stripe	LF	90	90	90	90	90	95	95	90	90	90	90	90	90	90	90	90	90	95	96	90	90	90	90	90	90	90	90	90	89	89	2,719	12,860
3	Traffic stripe	LF	131	131	131	131	131	144	141	131	131	131	131	131	131	131	131	131	131	144	141	131	131	131	131	131	131	131	131	131	131	131	3976	20,619
4	Removing rails & fastenings	Lbs	18,192	18,792	18,606	18,608	18,131	17,136	18,159	18,090	18,719	18,861	18,188	19,404	18,202	18,179	17,766	17,073	18,467	18,320	20,166	18,509	17,968	18,197	18,173	18,125	18,103	18,183	18,188	18,045	18,068	18,042	554,407	2,699,199
* 5	Removing contact rail insulators	Ea	13	9	9	12	12	7	7	12	12	9	9	13	11	6	9	6	9	9	9	6	9	6	9	6	9	6	9	6	9	6	264	4186
6	Removing contact rail anchors	Ea	0	1	1	0	1	0	0	1	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	8	26
7	Removing rail expansion joints	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8	Removing frogs	Ea	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
9	Removing switch stands	Ea	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
10	Removing railroad ties	Ea	85	43	43	85	81	85	85	81	85	43	43	85	82	82	82	82	82	82	90	82	82	82	82	82	82	82	82	82	82	82	2296	11,644
* 11	Removing lumber	MBM	1,760	1,866	1,847	1,876	1,857	1,911	1,931	1,789	1,872	1,803	1,889	1,825	1,743	1,861	1,863	1,889	1,903	1,958	1,956	1,906	1,889	1,873	1,874	1,889	1,869	1,871	1,876	1,889	1,905	1,895	56,390	263,858
12	Removing & placing R.R. ballast	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 13	Removing concrete (structure)	CY	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	26.40	78.36
14	Removing concrete (pavement)	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Removing chain link fence	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs	3,531	4,190	3,836	4,440	4,460	4,695	2,660	3,364	3,366	3,268	4,331	3,872	3,872	4,331	3,872	3,268	3,872	4,750	2,665	3,268	3,269	3,268	4,331	3,872	3,872	4,331	3,268	3,268	3,872	4,335	113,783	575,450
17	Removing bridge railing	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 18	Removing deck drains	Lbs	0	0	0	659	0	0	0	0	0	0	0	640	0	0	0	0	0	0	0	640	0	0	0	0	0	0	0	640	0	0	2,579	12,095
19	Roadway excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting original ground	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing base to subgrade	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (C.T.B.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (C.T.B.)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact C.T.B.	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class "A" concrete	CY	26.3	26.0	26.3	26.0	26.0	26.0	24.1	26.0	26.0	26.3	26.0	26.0	26.3	26.0	26.3	26.0	26.0	26.0	30.1	26.0	26.0	26.3	26.0	26.0	26.3	26.0	26.3	26.0	26.0	26.0	780.6	3888.7
34	Drill 1 3/4" holes in concrete	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Filling voids at bent E-9	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs	8440	8440	8440	8440	8440	8670	8606	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	8677	8677	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	8442	254,356	1,264,894
* 39	Remove & reinstall cover plates	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & reinstall stringers	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
* 41	Remove & reinstall skid girder	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4162.93
* 42	Remove & reinstall curb & rail	LF	42	42	42	42	42	44	45	42	42	42	42	42	42	42	42	42	42	45	44	42	42	42	42	42	42	42	42	42	42	42	1870	6,097.53
* 43	Remove & reinstall platforms	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

⚠ * Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 2A

SCALE IN INCHES: 0, 1, 2, 3, 4 (8 THS, 10 THS)

PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960

SUPERVISING BRIDGE ENGINEER LICENSE 7157

APPROVAL — RECOMMENDED BY

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN & DETAILS REVIEWED BY

MARK	DATE	DESCRIPTION	BY	CH'K
⚠1	7-1-63	As built with revisions	L.L.S.	A.L.
		REVISION		

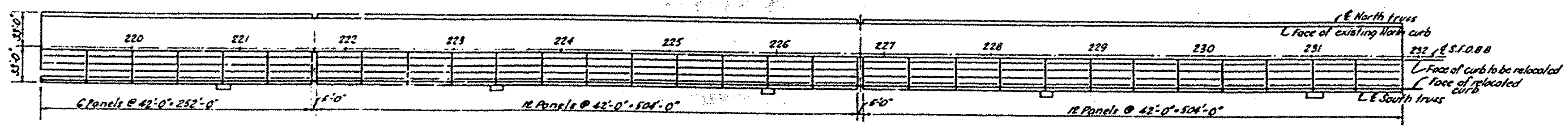
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

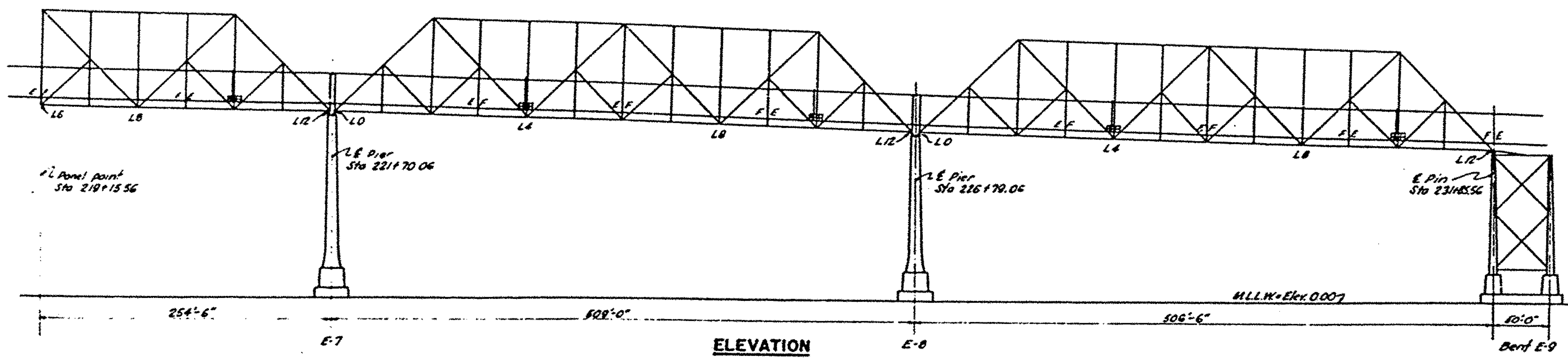
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 219+16 TO STA. 231+86
BID ITEMS 0 TO 43

Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 16 | DRAWING C-4011-16R

[signature]
PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960



PLAN-LOWER DECK



ELEVATION

TABULATION OF QUANTITIES

No.	Bid Item (Panel Point)	Unit	L6	L7	L8	L9	L10	L11	L12 L0	L1	L2	L3	L4	L5	L6	L7	L8
44	Remove & reinstalling bearings	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*45	Replacing rivets	Ea.	3	4	5	0	4	3	0	6	6	1	6	3	1	6	6
*46	Repairing fractures	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Structural carbon steel	Lbs.	957	957	957	2401	957	958	4619	957	2401	2668	957	2401	957	957	957
48	Structural silicon steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous iron & steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	Clean & paint structural steel	L.S.	.00080	.00080	.00080	.00216	.00080	.00082	.00240	.00080	.00216	.00258	.00080	.00216	.00080	.00080	.00080
54	Wooden storage facilities	MBM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gate	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	12" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Raised traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	Metal-clad 12 KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	Remodel 150 KVA State transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*64	Utilities outlet stations	Ea.	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
65	Removing sodium vapor luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install State bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install State pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	Installing State cable	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*70	Removing & relocating cable	Lbs.	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
71	Power cable, Type "J"	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*72	Armored power cable Type "K"	L.F.	47.5	47.5	47.5	47.5	47.5	45	45	47.5	47.6	47.5	47.6	47.6	47.6	47.6	47.5
*73	Street lighting cable Type "L"	L.F.	90.5	90.5	90.5	90.5	90.5	93.5	93.5	90.5	90.5	90.5	90.6	90.6	90.6	90.5	90.5
*74	Repairing cable	L.F.	25.5	25.6	25.5	25.5	25.6	27.5	24.5	24.6	24.6	24.5	24.5	24.5	24.5	24.6	24.5
75	1-cond 3W 600V 1/0 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	1-cond TW 600V #12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	2-cond #14 AWG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	3/4 galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	1½ galvanized steel conduit	L.F.	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*80	4 galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*82	4 galvanized steel pipe	L.F.	42.41	42.41	42.41	42.41	42.41	42.16	44.86	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41
*83	Remove & reinstall 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*84	Install 4" State pipe	L.F.	42.41	42.41	42.41	42.41	42.41	42.46	44.85	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41
*85	Cable & pipe struts	Ea.	9	10	9	10	9	10	10	10	10	10	9	10	10	10	10
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

No.	L9	L10	L11	L12 L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11 L12	△1 Approximate total this sheet	△1 Approximate accumulated total
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*45	3	3	5	1	12	7	0	6	6	2	6	8	1	5	3	126	437
*46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
47	3170	957	958	3616	957	2401	2668	957	2401	957	957	957	3170	957	958	49,946	531,141
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2050
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	.00275	.00080	.00082	.00319	.00080	.00216	.00258	.00080	.00216	.00080	.00080	.00080	.00275	.00080	.00080	.04323	.46456
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*64	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	86
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7086
*70	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	3,900	24,797
71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*72	47.5	47.6	45	46	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	1285	6168
*73	90.5	90.5	93.5	93.6	90.5	90.6	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	90.5	2,727	13,734
*74	24.5	24.6	27.6	26.3	25.5	25.5	25.5	25.5	25.6	25.5	25.5	25.5	25.5	25.6	25.5	761	3634
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122.08
*82	42.41	42.41	44.35	44.35	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	1,279.56	6,148.86
*83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.3
*84	42.41	42.41	44.85	44.85	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	42.41	1279.66	6,150.59
*85	9	10	10	10	10	9	10	10	10	10	9	10	10	10	10	293	1,423
86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* △1 Quantities for these bid items only have been revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid item quantities are shown on Sheet No. 29.

SCALE IN INCHES (0 1 2 3 4; 8 THS, 10 THS)

Mark	Date	Description	By	Ch'k.
△1	7.1.63	As built with revisions		

REVISION

APPROVAL RECOMMENDED BY — [signature] SUPERVISING BRIDGE ENGINEER LICENSE 7187

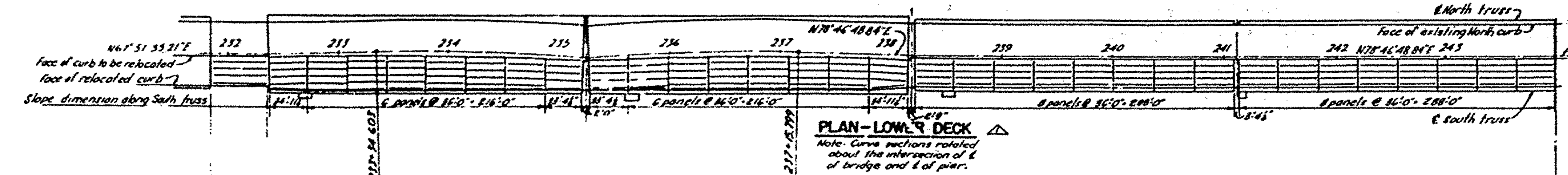
DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN & DETAILS CHECKED BY

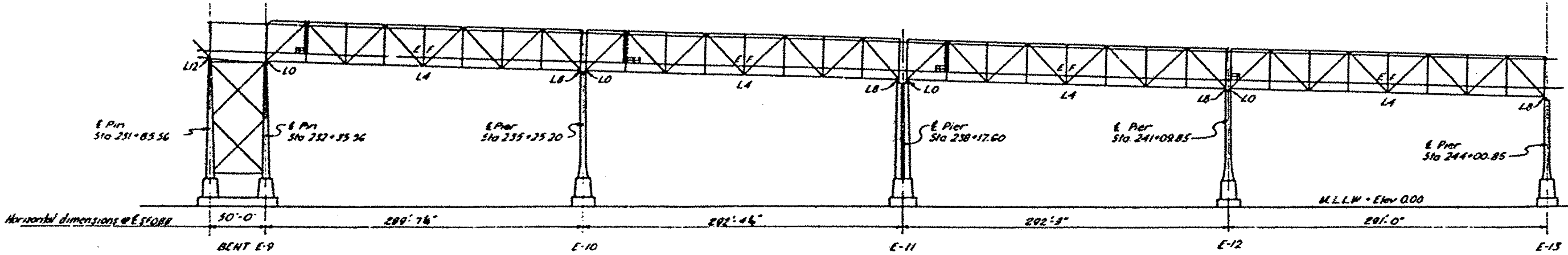
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

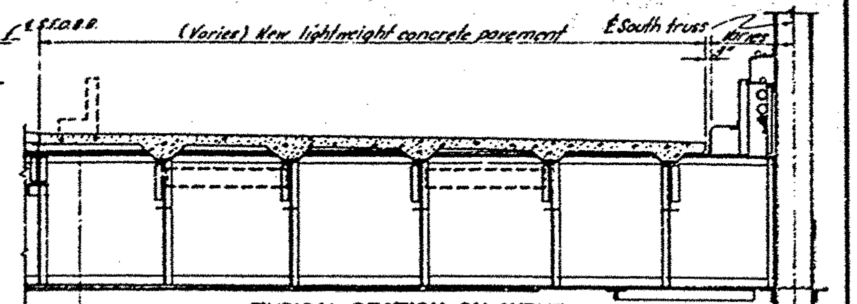
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 219+16 TO STA. 231+86
BID ITEMS 44 TO 86

Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 17 | DRAWING C-4011-17R

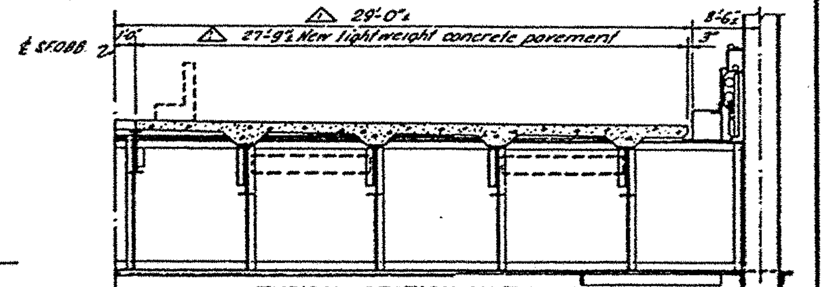




ELEVATION



TYPICAL SECTION ON CURVE
Scale: ¼" = 1'-0"

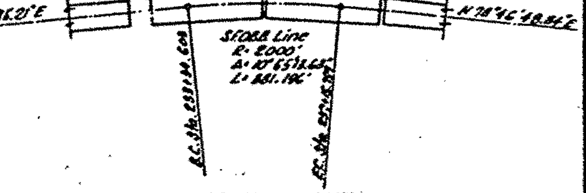


TYPICAL SECTION ON TANGENT
Scale: ¼" = 1'-0"

TABULATION OF QUANTITIES

No.	Bid Item	Unit	L12–L0	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8
*1	Timber barricades	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*2	Removing traffic stripe	L.F.	108	75	76	76	76	76	76	76	74	75	76	76	76	76	76	76	78
3	Traffic stripe	L.F.	161	109	112	112	112	112	112	112	111	112	112	112	112	112	112	112	117
*4	Removing rails & fastenings	Lbs.	22,661	16,608	16,676	16,609	16,581	16,642	16,609	16,712	16,197	16,858	16,676	16,341	16,618	16,871	16,472	16,846	9,960
*5	Removing contact rail insulators	Ea.	13	6	6	6	8	6	6	6	6	7	6	6	7	7	9	9	6
6	Removing contact rail anchors	Ea.	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0
7	Removing rail expansion joints	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8	Removing frogs	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Removing switch stands	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Removing railroad ties	Ea.	90	68	70	70	70	70	70	70	67	71	72	70	70	70	70	70	70
*11	Removing lumber	MBM	2,880	1,471	1,506	1,514	1,166	1,186	1,663	1,681	1,217	1,629	1,632	1,665	1,186	1,148	1,617	1,636	1,606
12	Removing & placing C.R. ballast	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*13	Removing concrete (structure)	C.Y.	0.90	0.78	0.78	0.68	0.68	0.68	0.68	0.88	0.88	0.88	0.88	0.68	0.68	0.68	0.68	0.68	0.78
14	Removing concrete (pavement)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Removing chain link fence	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs.	4300	3466	2715	2713	2713	2710	2713	2709	3461	4668	2647	2642	3463	2712	2712	2712	11,315
17	Removing bridge railing	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*18	Removing deck drains	Lbs.	0	0	0	0	0	0	0	805	0	0	0	0	0	0	0	0	0
19	Roadway excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting original ground	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing base & subgrade	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (C.T.B.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (C.T.B.)	Bbls.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact C.T.B.	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class "L" concrete	C.Y.	26.5	23.5	21.9	26.3	26.6	26.9	26.1	26.3	21.6	25.1	26.3	26.1	26.3	26.8	26.4	25.5	23.5
34	Drill 1½" & 2" holes in concrete	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Filling voids at bent E-9	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs.	10,513	8156	8413	8413	8413	8413	8413	8413	7525	7522	8438	8440	8440	8440	8440	8440	7762
39	Remove & reinstall cover plates	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & reinstall stringers	Ea.	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
*41	Remove & reinstall std. girder	L.F.	0	34.94	36	36	36	36	36	36	24.58	24.44	36	36	36	36	36	36	34.94
*42	Remove & reinstall curb & rail	L.F.	50	35	36	36	36	36	36	36	35	33	36	36	36	36	36	36	36
*43	Remove & reinstall platform	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

No.	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	Approximate total this sheet	Approximate accumulated total
*1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	3	14
*2	79	76	76	76	76	76	76	78	79	76	76	76	76	76	76	76	2,646	15,806
3	122	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	3756	24,369
*4	8,858	16,053	16,365	16,409	16,352	16,632	16,558	16,245	16,871	16,555	16,556	16,503	16,311	16,609	16,653	16,303	514,701	2,219,400
*5	6	8	9	8	6	6	6	6	7	6	6	7	6	6	6	6	225	6411
6	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	6	32
7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10	76	70	70	70	70	70	70	72	76	70	70	70	70	70	70	70	2346	14,000
*11	1,888	1,603	1,899	1,250	1,193	1,643	1,605	1,663	1,671	1,894	1,599	1,193	1,193	1,637	1,609	1,650	49,064	312,942
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*13	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	24.26	102.40
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	3888	2357	2357	2360	2362	2364	2364	3175	3292	2366	2356	2360	2364	2356	2366	3176	101,849	677,289
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*18	0	0	0	0	0	0	811	0	0	0	0	0	0	0	812	0	2,428	14,318
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	21.9	21.9	21.9	22.2	22.2	21.9	21.9	21.9	27.8	21.9	21.9	21.9	22.2	21.9	21.9	21.8	781.9	4680.6
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	7209	7209	7209	7209	7209	7209	7209	7209	7494	7209	7209	7209	7209	7209	7209	7209	258,213	1,523,047
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9
*41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	550.94	4713.87
*42	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38	1206	3293.53
*43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14



SPAN LAYOUT
PIERS E-9 THRU E-11
Scale 1" = 200'

⚠ * Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 28.

0 ⅛ THS 1 2 3 ⅒ THS 4
SCALE IN INCHES

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER LICENSE 787

MARK	DATE	DESCRIPTION	BY	CH'K
⚠	7-1-63	As built with revisions	L.L.S.	A.L.

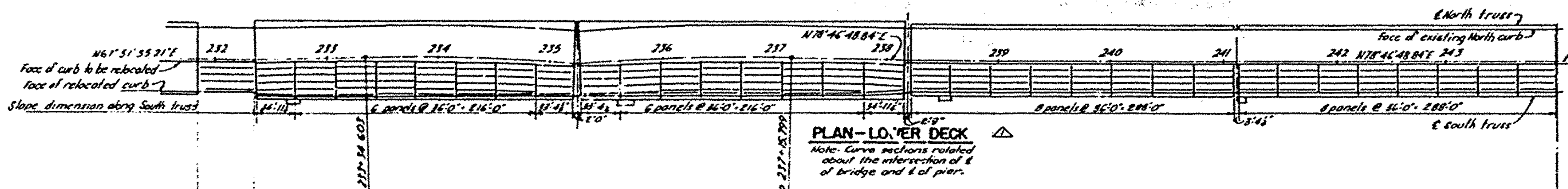
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

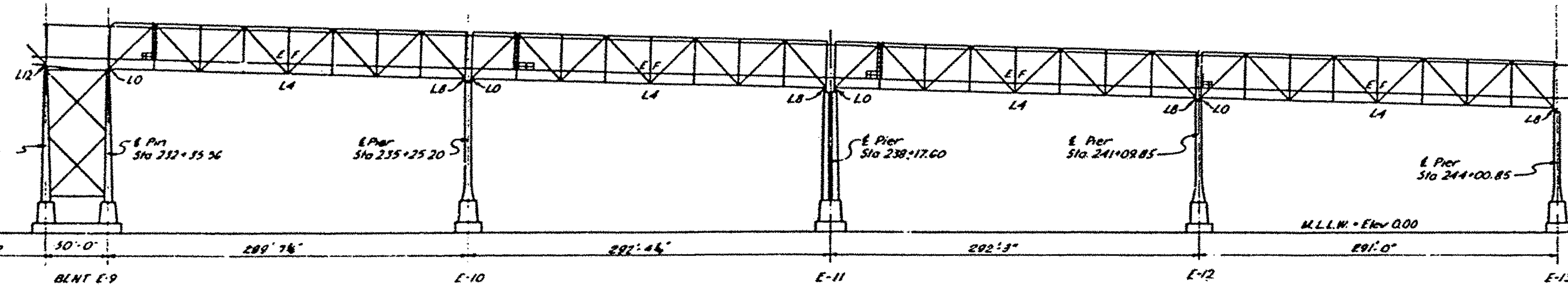
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 231+86 TO STA. 244+01
BID ITEMS 0 TO 43

Unless noted SCALE 1" = 50' | BRIDGE 33-25 34-03 34-04 | SHEET No. 18 | DRAWING C-4011-18R

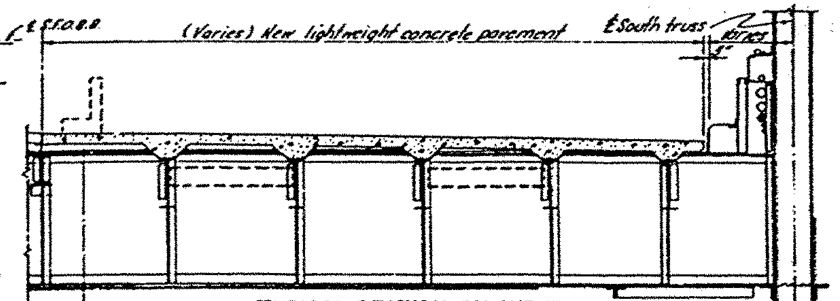


PLAN-LOWER DECK

Note: Curve sections rotated about the intersection of ℄ of bridge and ℄ of pier.

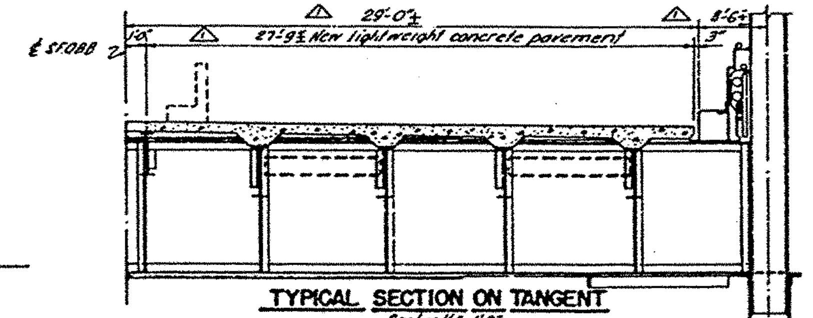


ELEVATION



TYPICAL SECTION ON CURVE

Scale: ¼" = 1'-0"

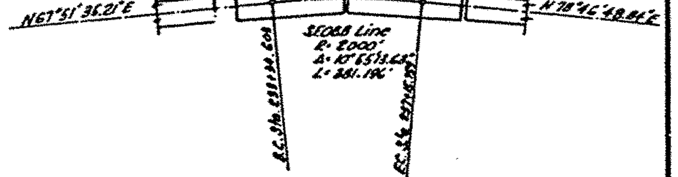


TYPICAL SECTION ON TANGENT

Scale: ¼" = 1'-0"

TABULATION OF QUANTITIES

No.	Panel Point / Bid Item	Unit	L12	L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7 L8	Total this sheet	Accumulated total
44	Remove & reinstalling bearings	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*45	Replacing rivets	Ea.	0	0	1	1	0	1	1	2	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	11	448
*46	Repairing fractures	Lin.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Structural carbon steel	Lbs.	86,053	6869	5846	5057	7003	5842	5141	5896	5075	5588	5836	5144	8994	5067	5172	5836	1066	31,309	859	859	5906	859	859	859	859	4462	859	859	5906	859	859	859	890	186,780	719,871
48	Structural silicon steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous iron & steel	Lbs.	11,056	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,111	14,161
52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	Clean & paint structural steel	L.S.	.05819	.00585	.00464	.00438	.00457	.00437	.00466	.00464	.00393	.00464	.00466	.00465	.00606	.00437	.00448	.00464	.00098	.02809	.00071	.00071	.00307	.00071	.00071	.00071	.00075	.00386	.00071	.00071	.00307	.00071	.00071	.00071	.00078	.17357	.63689
54	Wooden storage facilities	Item	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gate	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	12" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Raised traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
60	Metal-clad 15KV power center	L.S.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
61	Low voltage control center	L.S.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
62	Lead acid battery & rack	L.S.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
63	Remodel 150 KVA single transformer	L.S.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
*64	Utilities outlet stations	Ea.	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	30
65	Removing & salvaging luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install state bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install state pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*69	Installing state cable	L.F.	647	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	647	2268
*70	Removing & relocating cable	Lbs.	816	261	372	372	372	372	379	372	372	372	372	372	372	372	372	372	372	196	198	190	190	190	190	190	190	190	190	190	190	180	190	190	190	8,179	33,936
*71	Power cable Type "F"	L.F.	845.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	845.4	845.4
*72	Armored power cable Type "K"	L.F.	69.8	36.5	36.5	36.5	36.5	36.5	36.5	36.5	35.5	35.5	36.5	36.5	36.5	36.5	36.5	36.5	40	39	36.5	36.5	36.5	36.5	36.5	36.5	36.5	35.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	1,242.8	7370.8
*73	Street lighting cable Type "L"	L.F.	110	77.6	77.6	77.6	77.5	77.5	77.5	77.6	76	76	77.6	77.5	77.5	77.5	77.6	77.5	81	83	77.5	77.5	77.5	77.5	77.5	77.6	77.6	85	77.6	77.6	77.6	77.6	77.5	77.6	77.6	2,601.6	15,735.5
*74	Removing cable	L.F.	89	81.6	82	82	82	82	82	82	81.6	81.6	82	82	82	82	82	82	88	83.6	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82.5	783.5	6,367.5
*75	1-cond TW 600V #2/0 AWG wire	L.F.	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100
*76	1-cond TW 600V #12 AWG wire	L.F.	804.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	804.9	804.9
77	2-cond #19 AWG telephone c.	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*78	¾" galvanized steel conduit	L.F.	148.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148.6	148.6
*79	1½" galvanized steel conduit	L.F.	72.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72.3	72.3
80	2" galvanized steel conduit	L.F.	277.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277.7	399.73
81	Miscellaneous electrical work	L.S.	.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.75	0.75
*82	2" galvanized steel pipe	L.F.	109	36	36	36	36	36	36	36	35.20	35.20	36	36	36	36	36	36	35	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	1,205.49	8,364.05
*83	Remove & relocate 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.3
*84	Install 4" state pipe	L.F.	44	36	36	36	36	36	36	36	35.85	35.85	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	1,506.79	7,357.30
*85	Cable & pipe struts	Ea.	11	8	8	8	9	8	8	8	9	8	8	8	8	8	8	8	9	8	8	8	9	8	8	8	9	8	8	8	9	8	8	8	9	275	4498
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SPAN LAYOUT
PIERS E-9 THRU E-11

Scale 1" = 200'

* ⚠1 Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 20.

SCALE IN INCHES

PROJECTS ENGINEER — LICENSE 1479
DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER LICENSE 787

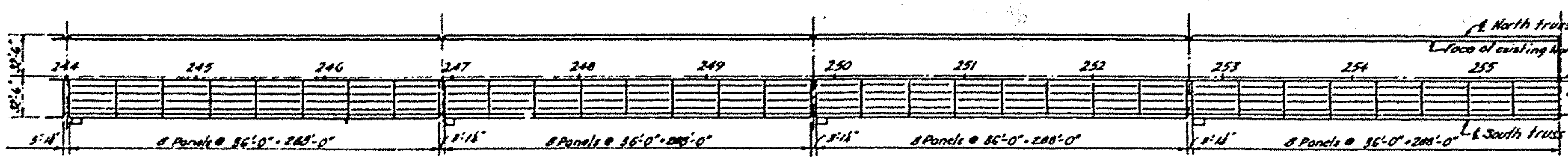
Mark	Date	Description	By	Ch'k
⚠1	7-1-63	As built with revisions	J.L.S.	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

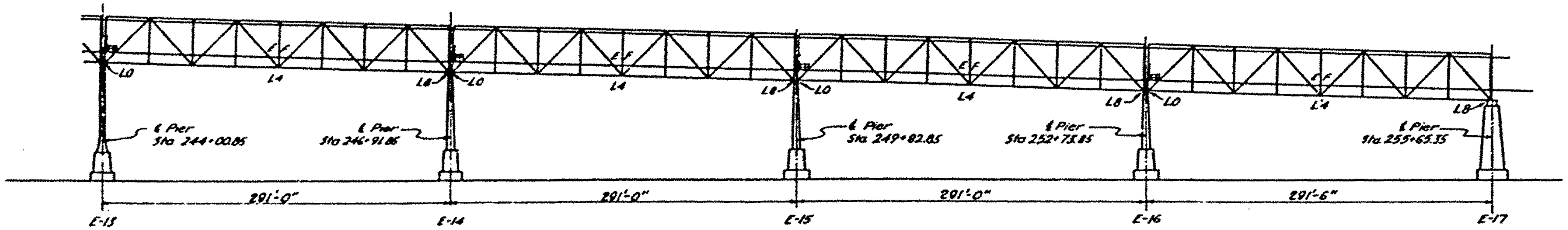
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT QUANTITIES-"S.F.O.B.B." STA 231+86 TO STA 244+01
BID ITEMS 44 TO 86

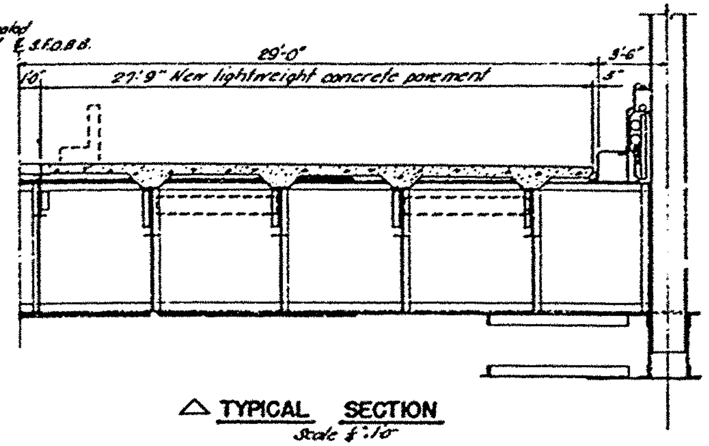
Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 19 | DRAWING C-4011-19R



PLAN - LOWER DECK



ELEVATION



△ TYPICAL SECTION
Scale ¼" = 1'0"

TABULATION OF QUANTITIES

No.	Bid Item	Unit	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L8–L0	△ Approximate Total This Sheet	△ Approximate Accumulated Total
*1	Timber barricades	Ea.	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	7	81
*2	Removing traffic stripe	L.F.	84	76	76	76	76	76	76	80	79	76	76	76	76	76	76	79	79	76	76	76	76	76	76	79	79	76	76	76	76	76	76	77		2,460	18,266
3	Traffic stripe	L.F.	122	112	112	112	112	112	112	117	122	112	112	112	112	112	112	117	122	112	112	112	112	112	112	117	122	112	112	112	112	112	112	112		3,639	28,448
4	Removing rails & fastenings	Lbs.	16,683	16,654	15,512	16,368	16,408	16,002	15,727	16,666	16,665	16,595	15,706	16,433	15,432	15,631	16,655	16,708	16,764	15,582	16,500	16,432	16,404	16,401	15,555	16,708	16,693	15,547	15,656	16,489	15,579	15,545	15,629	16,660		508,196	2,716,096
*5	Removing contact rail insulators	Ea.	9	6	6	9	6	6	6	6	6	6	6	9	6	6	6	6	6	9	6	9	6	6	6	6	6	6	6	8	6	6	6	6		209	1,620
6	Removing contact rail anchors	Ea.	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0		0	0		4	36
7	Removing rail expansion joints	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	6
8	Removing frogs	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	4
9	Removing switch stands	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	4
10	Removing railroad ties	Ea.	74	70	70	70	70	70	70	70	74	70	70	70	70	70	70	70	74	70	70	70	70	70	70	70	74	70	70	70	70	70	70	70		2256	16,256
*11	Removing lumber	MBM	1.654	1.599	1.599	1.193	1.193	1.597	1.641	1.653	1.685	1.602	1.601	1.193	1.193	1.602	1.613	1.647	1.650	1.598	1.625	1.193	1.269	1.608	1.603	1.656	1.656	1.602	1.606	1.193	1.249	1.604	1.602	1.666		48.618	361.560
12	Removing & placing R.R. ballast	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
*13	Removing concrete (structural)	C.Y.	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78		22.56	135.16
14	Removing concrete (pavement)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
15	Removing chain link fence	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
16	Removing structural steel	Lbs.	2892	2356	2356	2368	2364	2356	2356	3175	2892	2356	2356	2368	2364	2356	2356	3175	2892	2356	2356	2368	2364	2356	2356	3175	3894	2356	2356	2368	2364	2356	2356	3650		82,977	763,266
17	Removing bridge railing	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
*18	Removing deck drains	Lbs.	0	0	0	0	0	0	811	0	0	0	0	0	0	0	812	0	0	0	0	0	0	0	811	0	0	0	0	0	0	0	812	0		3246	16,164
19	Roadway excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
20	Structure excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
21	Structure backfill	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
23	Compacting original ground	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
24	Preparing Class B subgrade	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
25	Mineral aggregate (C.T.B.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
26	Type II portland cement (C.T.B.)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
27	Mix, spread & compact C.T.B.	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
28	Mineral aggregate (open P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
29	Mineral aggregate (dense P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
30	Paving asphalt (P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
33	Class L concrete	C.Y.	22.8	21.9	21.9	21.9	22.2	21.9	21.9	21.9	22.8	21.9	21.9	21.9	22.2	21.9	21.9	21.9	22.8	21.9	21.9	21.9	22.2	21.9	21.9	21.9	22.8	21.9	21.9	21.9	22.2	21.9	21.9	21.9		705.6	6,406.2
34	Drill 1¼" ø holes in concrete	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
35	Upper deck grade adjustments	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
36	Lower deck grade adjustments	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
37	Filling voids at bent [illegible]	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
38	Bar reinforcing steel	Lbs.	7434	7209	7209	7209	7209	7209	7209	7209	7434	7209	7209	7209	7209	7209	7209	7209	7434	7209	7209	7209	7209	7209	7209	7209	7434	7209	7209	7209	7209	7209	7209	7412		231,791	1,764,830
39	Remove & reinstall center plates	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0
40	Remove & reinstall stringers	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	9
*41	Remove & reinstall steel girder	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	1718.87
*42	Remove & reinstall curb & rail	L.F.	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38		1168	8466.33
*43	Remove & reinstall platforms	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	14

* △ Quantities for these bid items only have revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid item quantities are shown on Sheet No. 28.

0 — 1 — 2 — 3 — 4
8 THS — 10 THS
SCALE IN INCHES

APPROVAL RECOMMENDED BY [signature] SUPERVISING BRIDGE ENGINEER LICENSE 7187

Mark	Date	Description	By	Ch'k
△	2/63	As built with revisions	GB	A.L.

REVISION

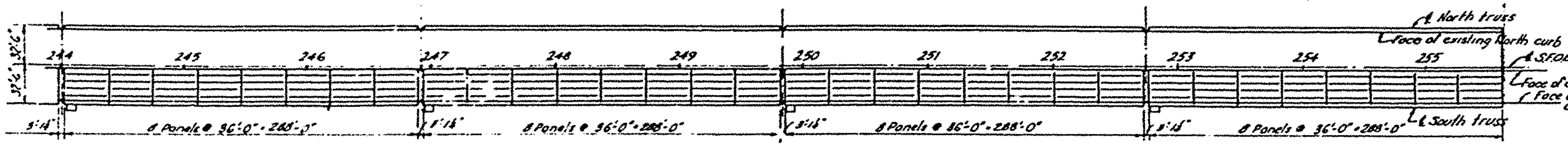
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING–EAST BAY

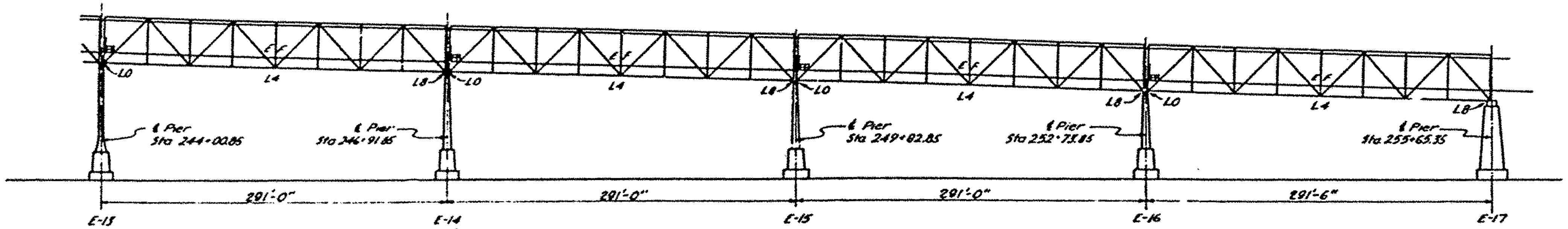
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 244+01 TO STA. 255+65
BID ITEMS 0 TO 43

Unless noted Scale 1" = 50'	Bridge 33-25, 34-03, 34-04	Sheet No. 20	Drawing C-4011-20

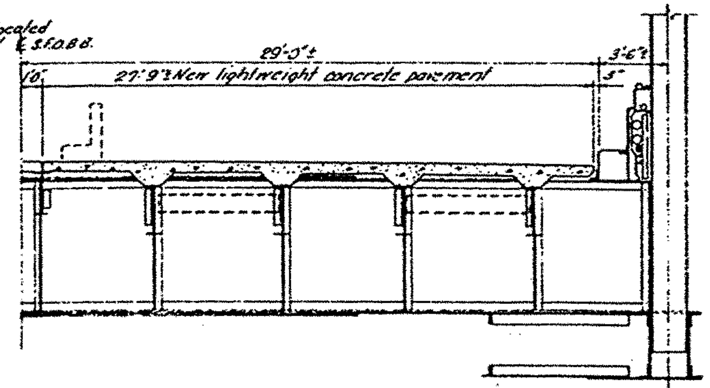
PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 22, 1960



PLAN - LOWER DECK



ELEVATION



TYPICAL SECTION

Scale ¼" = 1'-0"

TABULATION OF QUANTITIES

No.	Panel Point / Bid Item	Unit	L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	Accumulated total this sheet	Accumulated accumulated total
44	Remove & reinstalling bearings	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*45	Replacing rivets	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	448
*46	Repairing fractures	L.In.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
47	Structural carbon steel	Lbs.	8598	853	853	2306	853	853	853	839	4453	853	853	2387	853	853	853	839	4453	853	853	2387	853	853	853	839	4453	853	853	2387	853	853	853	839	46,320	765,191
48	Structural silicon steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous iron & steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14,161
52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	Clean & paint structural steel	L.S.	.00455	.00071	.00071	.00507	.00071	.00071	.00071	.00073	.00366	.00071	.00071	.00507	.00071	.00071	.00071	.00073	.00366	.00071	.00071	.00507	.00071	.00071	.00071	.00073	.00366	.00071	.00071	.00509	.00071	.00071	.00071	.00073	.03925	.67600
54	Wooden storage facilities	MBM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gates	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	12" dia. corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Raised traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
60	Metal-clad 15KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
63	Remodel 150 KVA State transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*64	Utility outlet stations	Ea.	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	34
65	Removing sodium vapor luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install State bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install State pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*69	Installing State cable	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	820.3
*70	Removing & relocating cable	Lbs.	194	190	190	190	190	190	190	194	194	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	6,092	40,086
*71	Power cable, Type "F"	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	845.4
*72	Armored power cable Type "F"	L.F.	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	1,168	8,538.8
*73	Street lighting cable Type "L"	L.F.	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	2,464	18,139.5
*74	Repairing cable	L.F.	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	704	5,071.5
*75	1-cond TW 600V #8 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
*76	1-cond TW 600V #12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	804.9
77	2-cond #16 AWG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*78	¾" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148.6
*79	1½" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77.3
*80	2" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	399.73
*81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.75
*82	2" galvanized steel pipe	L.F.	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	1,164	8,518.05
*83	Remove & reinstall 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.3
*84	Install 4" State pipe	L.F.	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	39	36	36	36	36	36	36	36	1,164	8,521.38
*85	Cable & pipe struts	Ea.	8	8	8	9	8	8	8	9	8	8	8	9	8	8	8	9	9	9	9	9	9	9	9	8	9	9	9	8	9	9	9	8	272	1,970
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* △1 Quantities for these bid items only have been revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid item quantities are shown on Sheet No. 29.

APPROVAL RECOMMENDED BY — Supervising Bridge Engineer License 7187

SCALE IN INCHES (0 – 4; 8 THS, 10 THS)

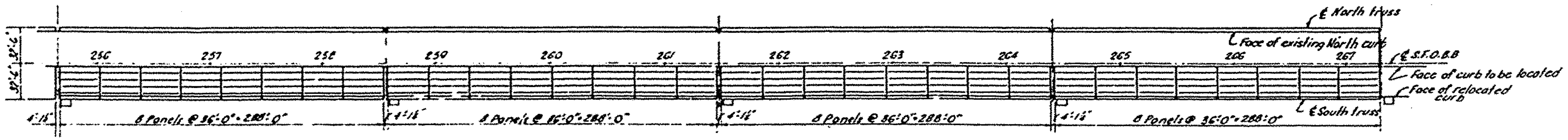
Mark	Date	Description	By	Chk
△1	7.1.63	As built with revisions	OB	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

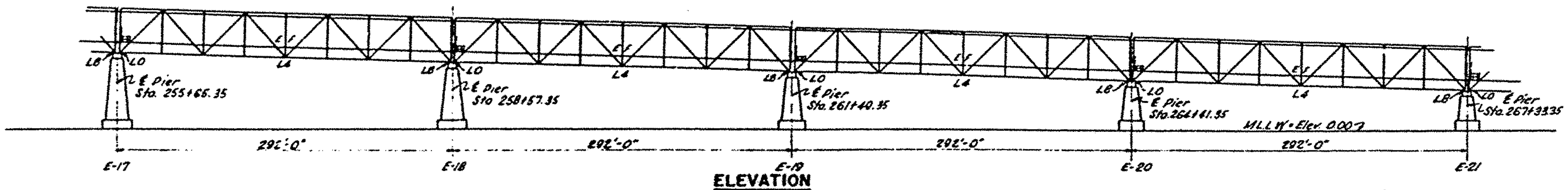
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING-EAST BAY

CONTRACT QUANTITIES - S.F.O.B.B. STA. 244+01 TO STA. 255+65
BID ITEMS 44 TO 86

Unless noted Scale 1" = 50' | Bridge 33-25, 34-03, 34-04 | Sheet No. 21 | Drawing C-4011-21R



PLAN - LOWER DECK



ELEVATION

TABULATION OF QUANTITIES

NO	PANEL POINT / BID ITEM	UNIT	L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7	L8 L0	L1	L2	L3	L4	L5	L6	L7 L8-L0	△ Approximate Total This Sheet	△ Approximate Accumulated Total
* 1	Timber barricades	Ea.	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	4	25
* 2	Removing traffic stripe	L.F.	86	76	76	76	76	76	76	81	81	76	76	76	76	76	76	81	81	76	76	76	76	76	76	81	81	76	76	76	76	76	76	77	2,473	20,739
3	Traffic stripe	L.F.	125	112	112	112	112	112	112	117	125	112	112	112	112	112	112	117	125	112	112	112	112	112	112	117	130	112	112	112	112	112	112	112	3,656	31,664
4	Removing rails & fastenings	Lbs.	17,622	16,547	16,699	16,482	16,408	16,555	16,746	16,662	17,074	16,547	16,656	16,486	16,406	16,554	16,557	16,766	17,672	16,516	16,653	16,496	16,492	16,669	16,671	16,734	17,089	16,598	16,769	16,497	16,485	16,622	16,702	16,726	505,516	4,221,612
5	Removing contact rail insulators	Ea.	6	6	7	9	6	6	6	6	6	6	6	8	6	6	6	6	8	6	6	6	6	8	6	6	6	6	6	8	6	6	6	6	204	1,824
6	Removing contact rail anchors	Ea.	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	4	40
7	Removing rail expansion joints	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8	Removing frogs	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
9	Removing switch stands	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10	Removing railroad ties	Ea.	74	70	70	70	70	70	70	70	74	70	70	70	70	70	70	70	74	70	70	70	70	70	70	70	74	70	70	70	70	70	70	70	2,256	18,512
* 11	Removing lumber	MBM	1666	1606	1635	1193	1193	1598	1646	[illegible]	1668	1598	1695	1193	1193	1598	1608	1666	1762	1598	1599	1193	1193	1696	1601	1666	1669	1596	1616	1193	1193	1596	1623	1661	46,628	410,180
12	Removing & placing R.R. ballast	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 13	Removing concrete (structure)	C.Y.	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	0.78	0.68	0.68	0.68	0.68	0.68	0.68	0.78	22.56	147.72
14	Removing concrete (pavement)	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Removing chain link fence	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs.	3755	2356	2356	2368	2364	2356	2356	3683	3755	2356	2356	2368	2364	2356	2356	3682	3756	2356	2356	2368	2364	2356	2356	3684	3756	2356	2356	2368	2364	2356	2356	3683	86,380	846,646
17	Removing bridge railing	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 18	Removing deck drains	Lbs.	0	0	0	0	0	0	811	0	0	0	0	0	0	0	812	0	0	0	0	0	0	0	811	0	0	0	0	0	0	0	812	0	3,246	21,410
19	Roadway excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting original ground	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing Class B subgrade	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (C.T.B.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type II portland cement (C.T.B.)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact C.T.B.	S.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (P.M.S.)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class A concrete	C.Y.	25.4	21.9	21.9	21.9	22.2	21.9	21.9	21.9	25.4	21.9	21.9	21.9	22.2	21.9	21.9	21.9	25.4	21.9	21.9	21.9	22.2	21.9	21.9	21.9	25.4	21.9	21.9	21.9	22.2	21.9	21.9	21.9	716.0	6,122.2
34	Drill 1¼" C.C. holes in concrete	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Upper deck grade adjustments	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Filling rack at bent E39	C.Y.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs.	7412	7209	7209	7209	7209	7209	7209	7412	7412	7209	7209	7209	7209	7209	7209	7412	7412	7209	7209	7209	7209	7209	7209	7412	7412	7209	7209	7209	7209	7209	7209	7412	232,312	1,887,150
39	Remove & reinstall cover plates	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Remove & reinstall stringers	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
* 41	Remove & reinstall sled girder	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,713.87
* 42	Remove & reinstall curb & rail	L.F.	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	38	1,168	8,634.53
* 43	Remove & reinstall platforms	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

* △ Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 28.

SCALE IN INCHES (0, 8THS, 1, 2, 3, 10THS, 4)

APPROVAL RECOMMENDED BY [signature]
SUPERVISING BRIDGE ENGINEER LICENSE 7187

DESIGN / DETAILS / QUANTITIES / TRACED / DESIGN & DETAILS REVIEWED

[signature]
PROJECTS ENGINEER - LICENSE 1470
DATE APPROVED September 23, 1960

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	U.S.	A.L.
		REVISION		

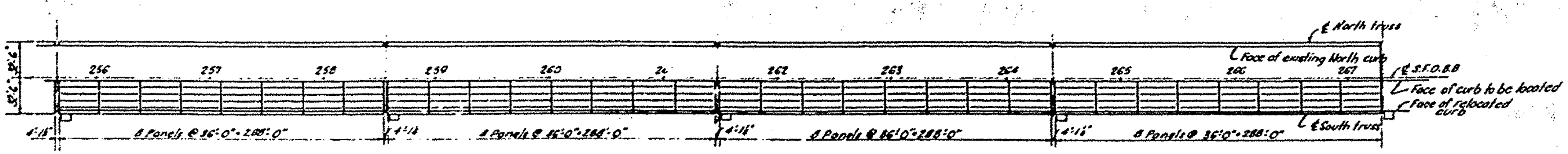
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING-EAST BAY

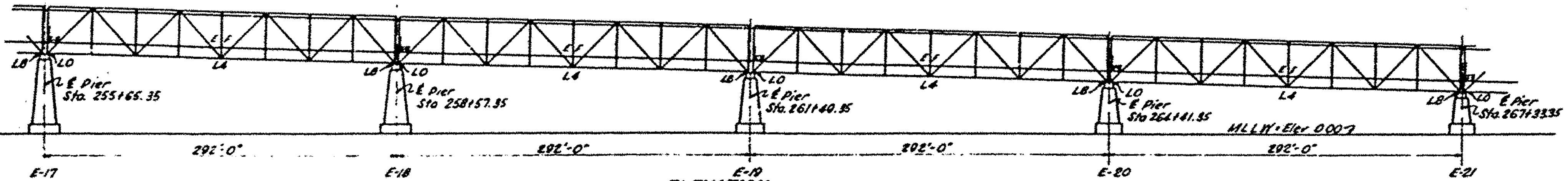
CONTRACT QUANTITIES-"S.F.O.B.B." STA. 255+65 TO STA. 267+33
BID ITEMS 0 TO 43

Unless noted SCALE 1" = 50'
BRIDGE 33-25, 34-03, 34-04
SHEET NO. 22
DRAWING C-4011-22R

PROJECTS ENGINEER - LICENSE 1475
DATE APPROVED September 23, 1960



PLAN - LOWER DECK



ELEVATION

TABULATION OF QUANTITIES

No.	Panel Point / Bid Item	Unit	L0	L1	L2	L3	L4	L5	L6	L7	L8/L0	L1	L2	L3	L4	L5	L6	L7	L8/L0	L1	L2	L3	L4	L5	L6	L7	L8/L0	L1	L2	L3	L4	L5	L6	L7 (L8/L0)	Accumulated total this sheet	Accumulated accumulated total
44	Removing & reinstalling bearings	Lb.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Replacing rivets	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	443
46	Repairing fractures	L.In.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
47	Structural carbon steel	Lb.	4640	853	853	2307	853	853	853	845	4640	853	853	2307	853	853	853	846	4640	853	853	2307	853	853	853	846	4640	853	853	2307	853	853	853	846	42,648	812,779
48	Structural silicon steel	Lb.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	Structural T-1 steel	Lb.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Prestressing steel & accessories	Lb.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	Miscellaneous iron & steel	Lb.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14,161
52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	Clean & paint structural steel	L.S.	.00393	.00071	.00071	.00209	.00071	.00071	.00071	.00073	.00393	.00071	.00071	.00209	.00071	.00071	.00071	.00073	.00393	.00071	.00071	.00209	.00071	.00071	.00071	.00073	.00393	.00071	.00071	.00209	.00071	.00071	.00071	.00073	.06120	.31768
54	Wooden storage facilities	M.B.M.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	Chain link fence & gate	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	12" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Raised traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
60	Metal clad 12KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
63	Encased 150 KVA State transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
64	Utilities outlet shelters	Ea.	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	35
65	Removing sodium vapor luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Install State bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Install State pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	Lbs.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	Installing State cable	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	820.3
70	Removing & relocating cable	Lin.	64	60	60	60	60	60	60	60	64	64	60	60	60	60	60	60	60	60	60	60	60	60	64	64	64	60	60	60	60	60	60	60	1842	42,030
71	Power cable, Type "F"	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	846.3
72	Armored power cable Type "K"	L.F.	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	1,168	8706.8
73	Street lighting cable Type "L"	L.F.	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	2,464	20,663.5
74	Removing cable	L.F.	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	704	5,775.5
75	1-cond TW 600V #8 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
76	1-cond TW 600V #12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	804.9
77	2-cond #19 AWG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	¾" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148.6
79	1½" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	723
80	2" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	389.75
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.75
82	4" galvanized steel pipe	L.F.	40	36	36	36	36	36	36	36	40	36	36	36	36	36	36	36	40	36	36	36	36	36	36	36	40	36	36	36	36	36	36	36	1,168	3686.05
83	Remove & reinstall 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30.3
84	Install 4" State pipe	L.F.	40	36	36	36	36	36	36	36	40	36	36	36	36	36	36	36	40	36	36	36	36	36	36	36	40	36	36	36	36	36	36	36	1168	9,689.36
85	Cable & pipe struts	Ea.	9	9	9	8	9	9	9	8	9	9	9	8	9	9	9	8	9	9	9	8	9	9	9	8	9	9	9	8	9	9	9	8	280	2,250
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* △ Quantities for these bid items only have been revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid items quantities are shown on Sheet No. 29.

SCALE IN INCHES: 0 – 4

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7.1.63	As built with revisions	CB	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

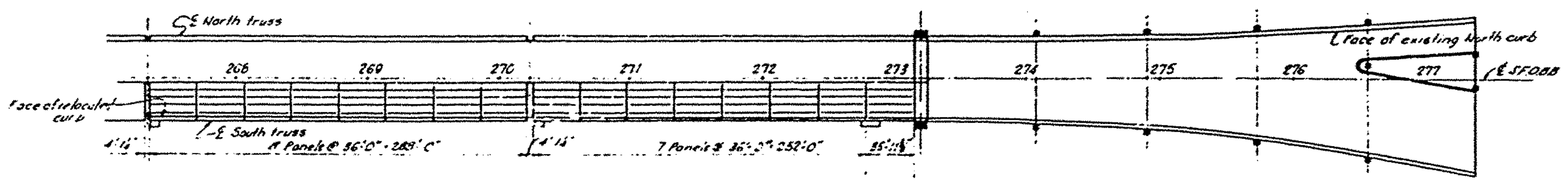
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING-EAST BAY

CONTRACT QUANTITIES-"S.F.O.B.B." STA. 255+65 TO STA 267+33
BID ITEMS 44 TO 86

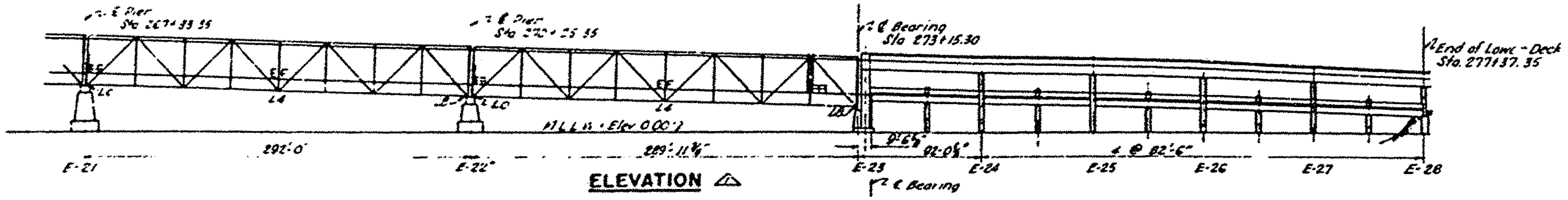
Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 23 | DRAWING C-4011-23R

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER

PROJECTS ENGINEER-LICENSE 1479
DATE APPROVED September 23, 1960



PLAN - LOWER DECK ⚠



ELEVATION ⚠

TABULATION OF QUANTITIES

NO.	BID ITEM	UNIT	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	L0–L1	L1–L2	L2–L3	L3–L4	L4–L5	L5–L6	L6–L7	L7–L8	E23–E24	E24–E25	E25–E26	E26–E27	E27–E28	⚠ Approximate Total this sheet	⚠ Approximate Accumulated Total
*1	Timber barricades	Ea	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	1	1	2	8	33
*2	Removing traffic stripe	LF	86	76	76	76	76	76	76	80	80	76	76	76	76	76	76	76	84	86	281	420	84	8,186	27,925
*3	Traffic stripe	LF	124	112	112	112	112	112	112	124	124	112	112	112	112	112	112	112	129	125	124	124	124	8,456	36,116
4	Removed rr & fasteners	LH	17,009	15,555	15,653	15,418	15,400	15,760	15,556	16,652	18,562	16,568	16,594	16,653	16,641	14,772	15,841	17,161	26,320	23,796	24,036	23,438	22,955	376,388	4,600,000
*5	Removing contact rail insulators	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4826
6	Removing contact rail anchors	Ea	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	4	44
7	Removing rail expansion joints	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8	Removing frogs	Ea	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	4	8
9	Removing switch stands	Ea	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	4	8
10	Removing railroad ties	Ea	76	70	70	70	70	70	70	70	76	36	38	38	35	69	71	72	106	94	96	97	96	1488	20,000
*11	Removing lumber	MBM	1660	1898	1894	1189	1189	1627	1587	1642	1692	1894	2043	2966	2940	1609	1614	1721	0	0	0	0	0	22,662	432,830
*12	Removing & placing R.R. ballast	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114.97	111.19	100.61	94.47	97.41	535	523
*13	Removing concrete (structures)	CY	2.70	2.68	2.68	2.68	2.68	2.68	2.68	2.70	2.70	2.68	2.68	2.68	2.68	2.68	2.68	2.68	32.9	47.8	60.0	60.8	72.07	879.16	
*14	Removing concrete (pavement)	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
15	Removing chain link fence	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Removing structural steel	Lbs	3786	2987	2987	2968	2964	2956	2956	3689	3755	2956	2956	2968	2964	2956	2956	3566	104	104	1066	1066	3474	48,866	895,512
*17	Removing bridge railing	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,366	4,805	5,896	5,896	5,417	23,680	23,380
*18	Removing deck drains	Lbs	0	0	0	0	0	0	84	0	0	0	0	0	0	0	811	0	892	894	894	894	894	5,690	25,444
19	Roadway excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Structure excavation	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Structure backfill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Imported subbase material	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Compacting original ground	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Preparing class B subgrade	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Mineral aggregate (CTB)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Type I portland cement (CTB)	Bbls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Mix, spread & compact CTB	SY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Mineral aggregate (open PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Mineral aggregate (dense PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Paving asphalt (PMS)	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Asphaltic emulsion	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Coarse screenings	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Class L concrete	CY	25.4	21.9	21.9	21.9	22.2	21.9	21.9	21.9	25.4	21.9	21.9	21.9	22.2	21.9	21.9	21.9	39.8	30.2	65.6	72.6	76.9	643.3	6,765.5
34	Drill 1¾" ... in concrete	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44.57	44.37	80.94	80.94
35	Upper deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Lower deck grade adjustments	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	4	4	6	21	21
37	Filling voids at bent E23	CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Bar reinforcing steel	Lbs.	7412	7209	7209	7209	7209	7209	7209	7412	7412	7209	7209	7209	7209	7209	7209	7409	3148	6599	16,280	18,319	18,905	179,444	2,166,554
39	Remove & reinstall cover plates	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	20	20
40	Remove & reinstall stringers	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
*41	Remove & reinstall skid girder	LF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,713.87
*42	Remove & reinstall curb & rail	LF	38	36	36	36	36	36	36	38	38	36	36	36	36	36	36	35.95	194	0	0	0	0	588.89	10,218.42
*43	Remove & reinstall platforms	Ea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

* ⚠ Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no 28.

SCALE IN INCHES (0 – 4; 8THS, 10THS)

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER LICENSE 7107

MARK	DATE	DESCRIPTION	BY	CH'K
⚠	7-1-63	As built with revisions	J.L.S.	A.L.
		REVISION		

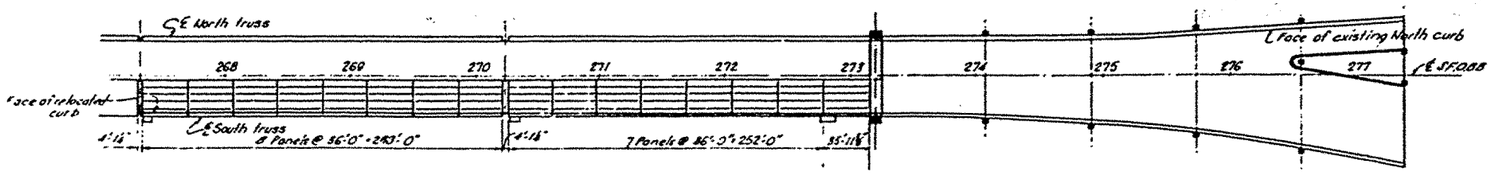
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

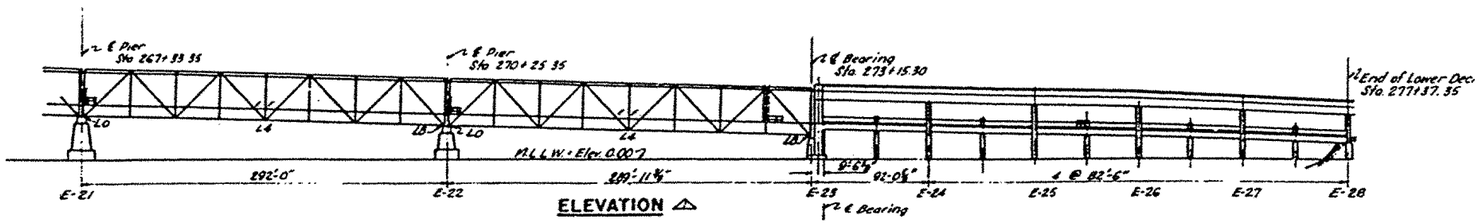
CONTRACT QUANTITIES - "S.F.O.B.B." STA. 267+33 TO STA. 277+37
BID ITEMS 0 TO 43

Unless noted SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET NO. 24 | DRAWING C-4C11-24R

PROJECTS ENGINEER-LICENSE 6470
DATE APPROVED September 23, 1960



PLAN - LOWER DECK △



ELEVATION △

TABULATION OF QUANTITIES

NO.	PANEL POINT / BID ITEM	UNIT	L0	L1	L2	L3	L4	L5	L6	L7	L8	L0	L1	L2	L3	L4	L5	L6	L7	L8	E24	E25	E26	E27	E28	△ Accumulated Total This Sheet	△ Accumulated Grand Total
*44	Remove & reinstalling barrings	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	128	128	800	745	4929	4929
*45	Replacing rivets	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	409
*46	Repairing fractures	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Structural carbon steel	Lbs	4540	863	863	2587	863	863	863	863	4540	863	863	863	2587	863	863	863	2696	863	3999	6240	9328	10,184	10,212	65,640	878,379
*48	Structural silicon steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14,021	15,379	14,205	20,639	14,993	84,657	84,657
*49	Structural T.I. steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13,140	20,800	12,160	13,814	59,814	59,814
*50	Prestressing steel & accessories	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	4,993	1,465	69	8,054	8,054
*51	Miscellaneous iron & steel	Lbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	371	50	50	50	99	620	14,781
*52	Shear lug assemblies	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	80	116	116
53	Clean & paint structural steel	L.S.	.00893	.00071	.00071	.00209	.00071	.00071	.00071	.00079	.00893	.00071	.00071	.00071	.00209	.00071	.00071	.00071	.00254	.00071	.04727	.03021	.04488	.03869	.03365	.02605	.93939
54	Wooden storage facilities	MBM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189.9	189.9	1559	1489	922.7	4162	922.8
*56	Chain link fence & gates	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82.4	82.4	82.4	82.4	329.8	329.8
57	8" dia corrugated metal pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Buried traffic bars	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
60	Metal clad 13.8 KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
63	Remodel 150 KVA State transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*64	Utilities outlet stations	Ea.	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	2	6	44
65	Removing sodium vapor luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	3
66	Install State bracket luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	15	15
67	Install State pole luminaires	Ea.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	Removing electrical materials	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	901	901	901	901	901	4,505	4,505
69	Installing State cable	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,203
70	Removing & relocating cable	L.S.	60	60	60	60	60	60	60	64	64	60	60	60	60	60	60	60	59	64	164	31	30	30	30	1,267	13,297
71	Power cable, type L	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	579.62	579.62	579.62	579.62	579.62	2,898.1	6,742.5
72	Armored power cable, type "K"	L.F.	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0	0	0	0	0	640	10,846.8
73	Street lighting cable, type "L"	L.F.	759	796	796	795	795	795	795	796	796	795	795	795	795	795	795	795	795	796	852	852	852	852	852	5,524.8	15,188.5
74	Repairing cable	L.F.	253	22	22	22	22	22	252	22	22	22	22.1	22	22	22	22	22	22	252	0	0	0	0	0	854.7	6,130.5
75	Install N.W. 600V 4/0 & 4 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	453.5	453.5	760.5	453.5	1,453.8	3,643.8	3,643.8
76	Install L.W. 600V 8/12 AWG wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	804.9
77	Install 18 AWG Telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	598.8	0	717.6	1,316.3	1,316.3
78	1½" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180	180	282.2	150	425.2	1,096.4	1,144
79	1¼" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74.16	0	131.5	205.65	272.76
80	4" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156.47	0	0	0	0	156.47	334.5
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.125	0	0	0	0	.125	.875
82	4" galvanized steel pipe	L.F.	40	34	34	34	32	34	34	32.73	38.40	34	34	34	34	34	34	34	34	41	0	0	0	0	0	389.13	10,725.48
83	Remove & reinstall 6" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	493	0	92.4	0	91.7	127
84	Install 4" State pipe	L.F.	40	34	34	34	34	34	34	32.73	38.40	34	34	34	34	34	34	34	34	39.80	0	0	0	0	0	389.93	14,277.31
85	Cable & pipe struts	Ea.	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0	0	0	0	180	6,389
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0.5	1	1

△ Accumulated Total This Sheet — △ Accumulated Grand Total

* △ Quantities for these bid items only have been revised at each panel point to agree with "final as built" quantities. Accumulated totals of all "as built" bid item quantities are shown on Sheet no. 28

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	L.L.S.	A.L.

REVISION

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

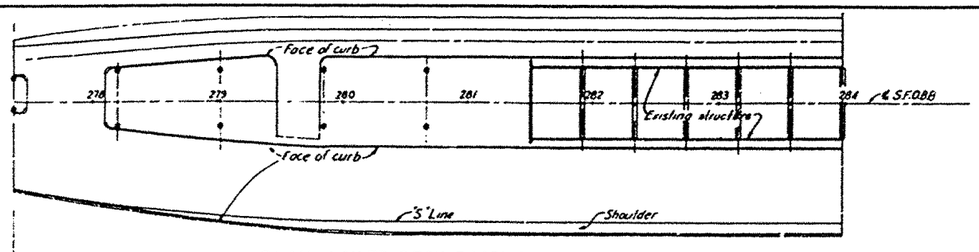
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

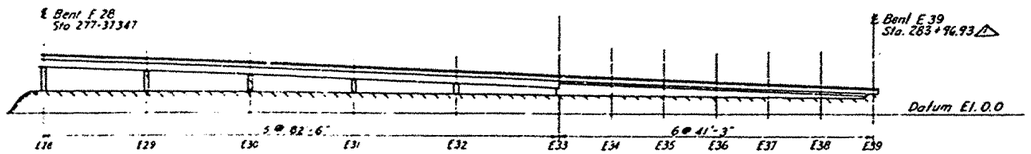
CONTRACT QUANTITIES - "S.F.O.B.B." STA. 267+33 TO STA. 277+37
BID ITEMS 44 TO 86

Unless noted SCALE 1" = 50'
BRIDGE 33-25, 33-03, 34-03, 34-04
SHEET No. 25
DRAWING C-4011-258

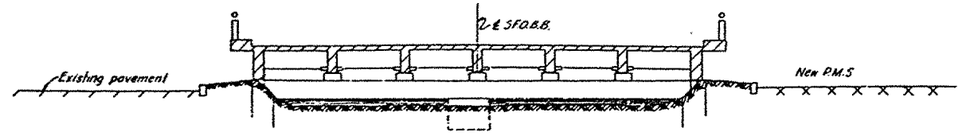
APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER
LICENSE 7107



PLAN- LOWER DECK ROADWAY

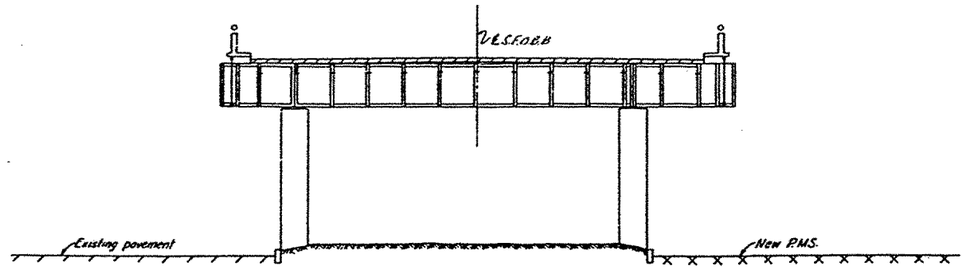


ELEVATION



TYPICAL SECTION - BENT E 33 TO BENT E 39

Scale: 1/8" = 1'-0"



TYPICAL SECTION - BENT E28 TO BENT E33

Scale: 1/8" = 1'-0"

TABULATION OF QUANTITIES

No	Bent No / Item	Unit	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37	E38	E39	Approximate Total This Sheet	Approximate Accumulated Total
* 1	[illegible]	EA.	1	0	1	0	1	0	0	1	0	0	0		4	97
* 2	[illegible]	L.F.	0	0	0	0	0	0	0	0	0	20	20		40	22,965
* 3	[illegible]	L.F.	78	78	78	78	81	78	78	78	78	78	78		517	34,635
4	[illegible]	LM	0	0	0	0	0	0	0	0	0	0	0		0	4,600,000
* 5	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	1,824
6	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	44
7	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	6
8	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	8
9	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	8
* 10	[illegible]	EA.	48	48	48	48	45	24	24	24	24	12	12		378	20,378
11	[illegible]	MBM	0	0	0	0	0	0	0	0	0	0	0		0	431.83
* 12	[illegible]	C.Y.	0	0	0	0	0	0	0	0	0	0	0		0	693
* 13	[illegible]	C.Y.	63.4	34.1	32.1	34.1	43	58	58	48	48	56	78		180.0	625.87
* 14	[illegible]	C.Y.	43.3	43.3	43.3	43.3	44.8	26.1	28.1	27.1	27.2	83	87		344.3	351.3
15	[illegible]	L.F.	0	81	90	84	46	14	0	0	0	0	0		315	2546
* 16	[illegible]	LM	4072	104	104	104	104	0	0	0	0	0	0		4488	888,970
* 17	[illegible]	LM	0	0	0	0	0	0	0	0	0	0	0		0	27,650
* 18	[illegible]	LM	0	0	0	0	0	0	0	0	0	0	0		0	25,000
* 19	[illegible]	C.Y.	672	418.4	513.6	436.5	36.9.8	146.6	87.9	158.7	67.8	0	0		2900.8	2900.8
* 20	[illegible]	C.Y.	18.5	1.8	11.0	0	1.9	0	0.8	1.4	1.4	1.4	16.8		54.5	54.5
* 21	[illegible]	C.Y.	15.0	2.4	7.0	2.8	2.4	0.5	3.6	1.4	2.9	8.2	18.3		61.6	61.6
* 22	[illegible]	Tons	183.00	167.00	164.96	167.20	168.96	86.48	65.52	68.78	38.00	0	0		1062.88	1062.88
* 23	[illegible]	S.Y.	227	248	271	286	410	358	290	273	180	0	0		2,272	2,272
* 24	[illegible]	S.Y.	349.7	415.1	437.4	435.3	426.2	321.1	254.0	232.6	172.2	0	0		3,162.6	4,162.6
* 25	[illegible]	Tons	353.58	213.09	223.32	231.09	234.88	117.04	100.04	104.38	66.06	0	0		1,650.36	1,650.36
* 26	[illegible]	Bags	112.8	68.0	71.4	73.7	75.0	37.3	34.0	33.4	21.1	0	0		524.7	524.7
* 27	[illegible]	S.Y.	804.6	670.4	618.4	614.6	639	311.3	286.6	278.9	172.6	0	0		4,383.4	4,383.4
28	[illegible]	Tons	0	0	0	0	0	0	0	0	0	0	0		0	0
* 29	[illegible]	Tons	186.88	117.01	121.89	125.40	127.76	63.97	57.84	56.87	34.44	0	0		893.60	893.60
* 30	[illegible]	Tons	9.75	8.86	6.86	6.86	6.85	3.97	3.93	3.39	1.95	0	0		43.88	43.88
* 31	[illegible]	Tons	1.30	0.84	0.44	0.48	0.87	0.35	0.30	0.28	0.12	0	0		5.67	5.67
* 32	[illegible]	Tons	4.34	0.46	0.84	1.0	1.08	1.6	0.36	0	0	0	0		8.78	8.78
33	[illegible]	C.Y.	18.6	21.6	18.2	18.2	21.6	9.7	4.9	5.3	5.8	2.3	1.0		135.6	689.1
* 34	[illegible]	L.F.	0	0	0	0	0	37.71	37.47	37.47	37.86	37.86	37.92		240.69	321.63
35	[illegible]	EA.	0	0	0	0	0	0	0	4	4	4	13		27	27
36	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	81
37	[illegible]	C.Y.	0	0	0	0	0	0	0	0	0	0	0		0	0
38	[illegible]	LM	2818	2002	1820	1770	1920	368	468	380	380	380	280		12,956	6,170,510
39	[illegible]	EA.	4	4	4	4	4	0	0	0	0	0	0		20	40
40	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	9
* 41	[illegible]	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	1,713.87
42	[illegible]	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	10,218.42
* 43	[illegible]	EA.	0	0	0	0	0	0	0	0	0	0	0		0	16

* ⚠ Quantities for these bid items only have been revised at each panel point to agree with final "As Built" quantities. Accumulated totals of all "As Built" bid item quantities are shown on Sheet No. 28.

MARK	DATE	DESCRIPTION	BY	CHK.
⚠	7.1.63	As built with revisions	OB	A.L.

REVISION

SCALE 0 THS 1 2 3 4 — 10 THS — INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY - ALL CROSSINGS

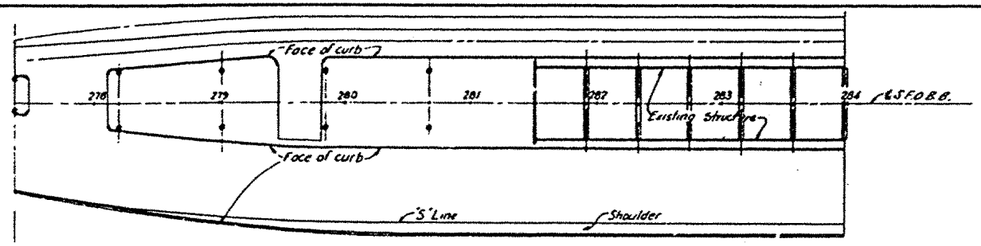
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CONTRACT QUANTITIES - S.F.O.B.B. STA. 277+37 TO STA. 283+97
BID ITEMS 0 TO 43

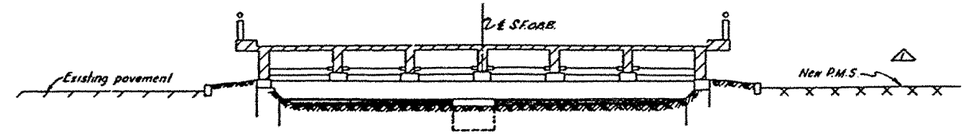
UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-26, 34-03, 34-04 | SHEET No 26 | DRAWING C-40(1-26)

PROJECT ENGINEER - LICENSE 1078

DATE APPROVED September 23, 1960

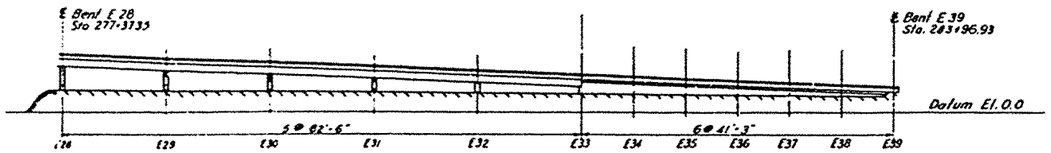


PLAN- LOWER DECK ROADWAY

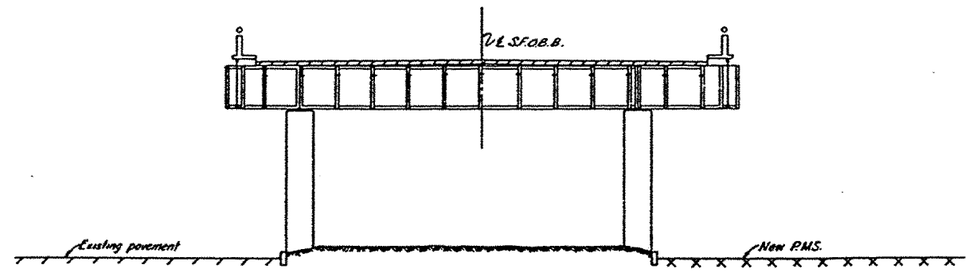


TYPICAL SECTION - BENT E 33 TO BENT E 39

Scale: 1/8" = 1'-0"



ELEVATION



TYPICAL SECTION - BENT E28 TO BENT E 33

Scale: 1/8" = 1'-0"

TABULATION OF QUANTITIES

	Bent No		E28	E29	E30	E31	E32	E33	E34	E35	E36	E37	E38	E39*	Approximate total this sheet	Approximate accumulated total
	BID ITEM	UNIT														
■ 44	Remove & reinstalling bearings	Lbs.	150	0	0	0	0	0	0	0	140	0	0		290	2,817
■ 45	Replacing rivets	Ea.	0	0	0	0	0	0	0	0	0	0	0		0	449
■ 46	Repairing fractures	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	0
■ 47	Structural carbon steel	Lbs.	9999	9999	9999	9999	9999	271	271	271	271	271	271		81621	935,913
■ 48	Structural silicon steel	Lbs.	15,929	15,929	15,929	15,913	15,913	0	0	0	0	0	0		63,615	134,250
■ 49	Structural T-1 steel	Lbs.	0	0	0	0	0	0	0	0	0	0	0		0	67,814
▲ 50	Prestressing stockassemblies	Lbs.	0	0	0	0	0	5,305	5,305	5,305	5,305	5,308	4,139		30,743	33,777
51	Miscellaneous iron & steel	Lbs.	0	0	219	0	0	0	0	0	0	0	0		219	18,000
■ 52	Shear lug assemblies	Ea.	14	0	0	0	0	0	0	0	0	0	26		40	176
■ 53	Clean & paint structural steel	L.S.	.01000	.01000	.01000	.01000	.01000	.00833	.00833	.00833	.00833	.00833	.00833		.06667	100%
54	Wooden storage facilities	MBM	0	0	0	0	0	0	0	0	0	0	0		0	0
■ 55	Metal safety railing	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	1427
■ 56	Chain link fence & gates	L.F.	84.1	143.1	143.1	69.8	82.6	41.2	16.0	0	0	0	0		614.8	921.8
■ 57	12" dia. corrugated metal pipe	L.F.	0	0	45.53	0	0	0	0	0	0	0	0		45.53	45.53
58	Raise trolley bars	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	0
59	Low voltage equipment enclosure	L.S.	0	0	0	0	0	0	0	0	0	0	0		0	1
60	Metal-clad 15 KV power center	L.S.	0	0	0	0	0	0	0	0	0	0	0		0	1
61	Low voltage control center	L.S.	0	0	0	0	0	0	0	0	0	0	0		0	1
62	Lead acid battery & rack	L.S.	0	0	0	0	0	0	0	0	0	0	0		0	1
63	Remodel 150 KVA Static transformer	L.S.	0	0	0	0	0	0	0	0	0	0	0		0	1
64	Utilities outlet stations	Ea.	0	0	0	0	0	0	0	0	0	0	0		0	44
65	Removing sodium vapor luminaires	Ea.	0	0	2	0	0	0	0	0	0	0	0		2	7
66	Inc'ntl Static bracket luminaires	Ea.	4	1	0	0	0	0	0	0	0	0	0		5	80
67	Install Static pole luminaires	Ea.	1	1	0	0	0	0	0	0	0	0	0		2	2
■ 68	Removing electrical materials	L.S.	0	0	0	0	0	852.5	852.5	852.5	852.5	852.5	852.5		5,115	9,250
■ 69	Installing Static cable	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	820.3
■ 70	Removing & relocating cable	L.F.	69	69	69	69	69	0	0	0	0	0	0		126	45,423
■ 71	Power cable, Type "P"	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	3,743.5
■ 72	Armored power cable, Type "R"	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	19,346.8
■ 73	Street lighting cable, Type "L"	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	89,188.3
■ 74	Repairing cable	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	6,190.5
■ 75	1-cond TW COPY UNLING wire	L.F.	710.5	710.5	852.5	852.5	852.5	852.5	852.5	0	0	0	0		5,605.5	6,932.5
■ 76	2-cond TW COPY UNLING wire	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	804.9
■ 77	3-cond TW & UNG telephone wire	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	4,104.3
■ 78	3/4" galvanized steel conduit	L.F.	161.0	160.1	0	0	0	0	0	0	0	0	0		321.1	4,566.1
■ 79	1½" galvanized steel conduit	L.F.	76.56	75.5	75.5	75.5	76.5	75.5	76.5	0	0	0	0		529.95	803.7
■ 80	4" galvanized steel conduit	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	836.2
81	Miscellaneous electrical work	L.S.	0	0	0	0	0	0.125	0	0	0	0	0		0.125	1
■ 82	4" galvanized steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	14,275.18
■ 83	Remove & reinstall 4" steel pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	162
■ 84	Install 4" Static pipe	L.F.	0	0	0	0	0	0	0	0	0	0	0		0	14,277.41
■ 85	Cable & pipe struts	Ea.	0	0	0	0	0	0	0	0	0	0	0		0	6,509
86	Miscellaneous mechanical work	L.S.	0	0	0	0	0	0	0	0	0	0	0		0	1

* ▲ Quantities for these bid items only have been revised at each panel point to agree with final "as built" quantities. Accumulated totals of all "as built" bid items are shown on Sheet no. 29

SCALE IN INCHES: 0, 1, 2, 3, 4 — 8 THS, 10 THS

MARK	DATE	DESCRIPTION	BY	CH'K
▲	7.1.63	As built with revisions	L.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

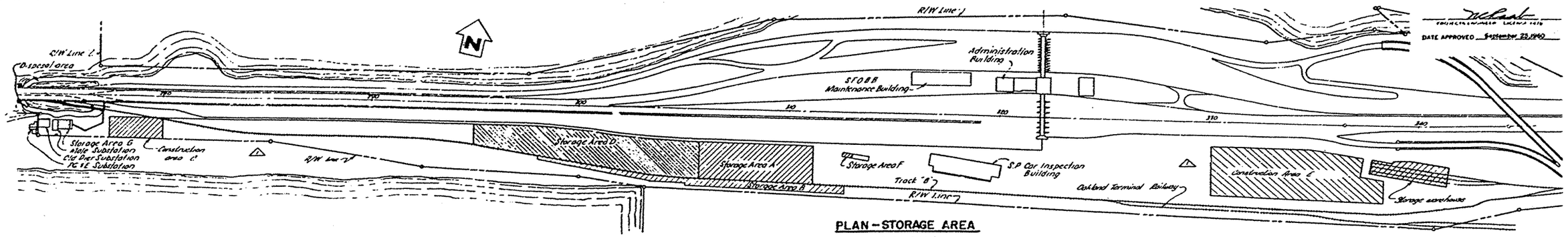
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CONTRACT QUANTITIES - S.F.O.B.B. STA. 277+37 TO STA. 283+97
BID ITEMS 44 TO 86

UNLESS NOTED SCALE 1" = 50' | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 27 | DRAWING C-4011-27R

APPROVAL RECOMMENDED BY:

ACTING ASSISTANT ENGINEER
DESIGN
TOLL FACILITIES
DESIGNING DEPARTMENT RECOMMENDS



PLAN – STORAGE AREA

Scale 1" = 200'

TABULATION OF QUANTITIES

NO	BID ITEM	UNIT	277+87.947			283+97.95	286	288	290	292	294	296	298	300	302	304	306	308	310	312	314	WAREHOUSE	ADDITIONAL TOTAL THIS SHEET	ACCUMULATED TOTAL
1	Timber barricades	Ea	–	–	–	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	44
2	Removing traffic stripe	L.F.	–	–	–	80	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	160	23,125
3	Traffic stripe	L.F.	–	–	–	810	774	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,584	36,818
4	Removing rails & fastenings	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,497,710
5	Removing contact rail insulators	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,824
6	Removing contact rail anchors	Ea	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66
7	Removing rail expansion joints	Ea	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8	Removing traps	Ea	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
9	Removing switch stands	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
10	Removing railroad ties	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,376
11	Removing lumber	M B.M.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	452.68
12	Removing & placing R.R. ballast	C.Y.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	529
13	Removing concrete (structure)	C.Y.	–	–	–	14.1	7.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21.2	447.07
14	Removing concrete (pavement)	C.Y.	–	–	–	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	352.7
15	Removing chain link fence	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254.6
16	Removing structural steel	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	838,970
17	Removing bridge railing	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27,500
18	Removing deck drains	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25,000
19	Roadway excavation	C.Y.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,900.6
20	Structure excavation	C.Y.	–	–	–	29.5	7.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.9	514
21	Structure backfill	C.Y.	–	–	–	26.4	5.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.8	93.5
22	Imported subbase material	Tons	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,065.00
23	Compacting original ground	S.Y.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,929
24	Preparing Class B subgrade	S.Y.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,162.6
25	Mineral aggregate (C.T.B.)	Tons	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,650.85
26	Type II portland cement (C.T.B.)	Bbls	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	826.7
27	Mix, spread, & compact (C.T.B.)	S.Y.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,393.4
28	Mineral aggregate (open P.M.S.)	Tons	–	–	–	515.98	83.66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	598.97	898.97
29	Mineral aggregate (dense P.M.S.)	Tons	–	–	–	276.32	272.06	8.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	507.65	3,296.25
30	Paving asphalt (P.M.S.)	Tons	–	–	–	28.28	15.61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.89	87.77
31	Asphaltic emulsion	Tons	–	–	–	.40	.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.79	4.46
32	Coarse screenings	Tons	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.78
33	Class "L" concrete	C.Y.	–	–	–	8.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.9	6,861.58
34	Drill 1½" & 2" holes in concrete	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	321.65
35	Upper deck grade adjustments	Ea	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71
36	Lower deck grade adjustments	Ea	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
37	Filling voids at bent E39	C.Y.	–	–	–	56.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56.00	56.00
38	Bar reinforcing steel	Lbs	–	–	–	490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	490	2,200,894
39	Remove & reinstall cover plates	Ea	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
40	Remove & reinstall stringers	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
41	Remove & reinstall skid girder	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,713.87
42	Remove & reinstall curb & rail	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14,918.42
43	Remove & reinstall platforms	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

* △ Quantities for these bid items only have been revised at each panel point to agree with final as built quantities. Accumulated totals of all as built bid items quantities are shown on Sheet no 28

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	A.L.S.	A.L.

REVISION

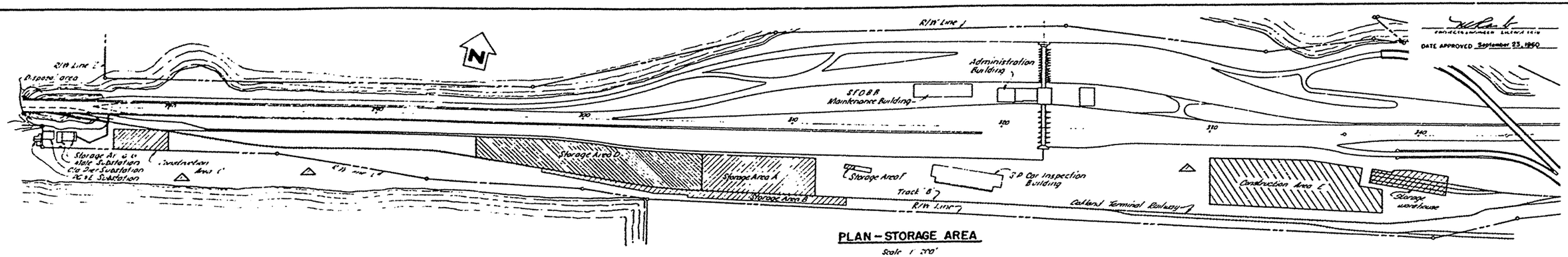
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING – EAST BAY

CONTRACT QUANTITIES "S.F.O.B.B." STA. 283+97 TO "M" STA. 345+00
BID ITEMS 0 TO 43

SCALE As Shown | BRIDGE 33-25, 34-03, 34-04 | SHEET No 28 | DRAWING C-4011-28R

APPROVAL RECOMMENDED BY



PLAN – STORAGE AREA

Scale 1" = 200'

TABULATION OF QUANTITIES

NO	BID ITEM	UNIT	271+57.347			281+97.35	286	288	290	292	294	296	298	300	302	304	306	308	310	312	314	WAREHOUSE	APPROXIMATE TOTAL THIS SHEET	ACCUMULATED TOTAL
44	Remove & reinstalling bearings	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2217
45	Replacing rivets	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	449
46	Repairing fractures	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
47	Structural carbon steel	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	935,818
48	Structural silicon steel	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	154,250
49	Structural T-1 steel	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29,314
50	Prestressing steel & accessories	Lbs.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23,777
51	Miscellaneous iron & steel	Lbs	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17,289
52	Shear lug assemblies	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176
53	Clean & paint structural steel	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
54	Wooden storage facilities	M.B.M.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.782	.782	.782
55	Metal safety railing	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	962.3
56	Chain link fence & gates	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	961.5
57	12" dia. galvanized metal pipe	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46.93
58	Painted traffic bars	L.F.	–	–	–	787.5	150.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	442.5	442.5
59	Low voltage equipment enclosure	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
60	Metal clad 15 KV power center	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61	Low voltage control center	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
62	Lead acid battery & rack	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
63	Remodel 150 KVA Stale transformer	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
64	Utilities outlet stations	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44
65	Removing sodium vapor luminaires	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
66	Install Stale bracket luminaires	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
67	Install Stale pole luminaires	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
68	Removing electrical materials	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9,620
69	Installing Stale cable	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,708
70	Removing & relocating cable	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45,435
71	Power cable, Type "T"	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,745.6
72	Armored power cable, Type "K"	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,346.8
73	Street lighting cable, Type "L"	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25,188.5
74	Repairing cable	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,130.2
75	1-cond TW 600V #6 AWG wire	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,952.5
76	1-cond TW 600V #12 AWG wire	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	804.9
77	2-cond #14 AWG telephone wire	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,106.3
78	3/4" galvanized steel conduit	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,525.1
79	1 1/4" galvanized steel conduit	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2077
80	4" galvanized steel conduit	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	534.2
81	Miscellaneous electrical work	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
82	4" galvanized steel pipe	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,275.18
83	Remove & reinstall 6" steel pipe	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122
84	Install 4" Stale pipe	L.F.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,275.51
85	Cable & pipe struts	Ea.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,989
86	Miscellaneous mechanical work	L.S.	–	–	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

△ Quantities for these bid items only have been revised at each panel point to agree with "as built" quantities. Accumulated totals of all "as built" and item quantities are shown on Sheet no 29.

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	J.L.S.	A.L.

REVISION

SCALE 0 5 FTS 10 FTS; 0 1 2 3 4 SCALE IN INCHES

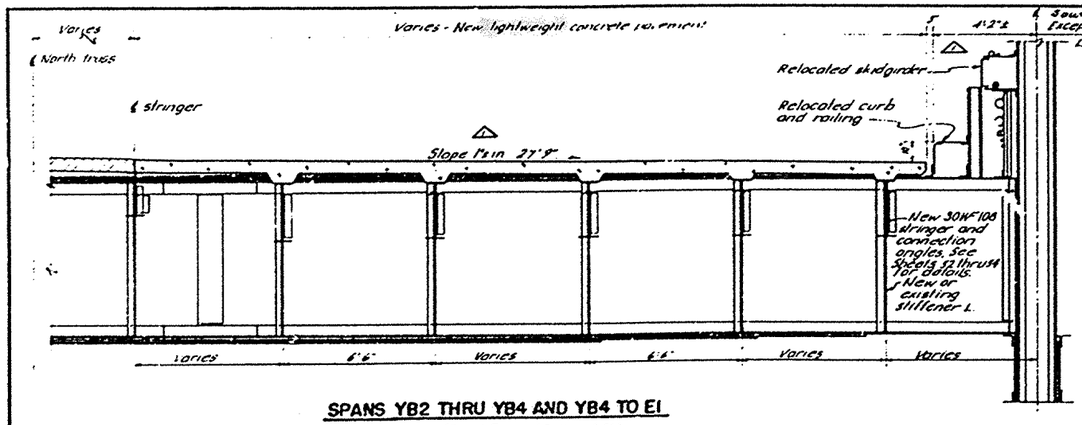
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

CONTRACT QUANTITIES–"S.F.O.B.B." STA. 283+97 TO "M" STA. 345+00
BID ITEMS 44 TO 86

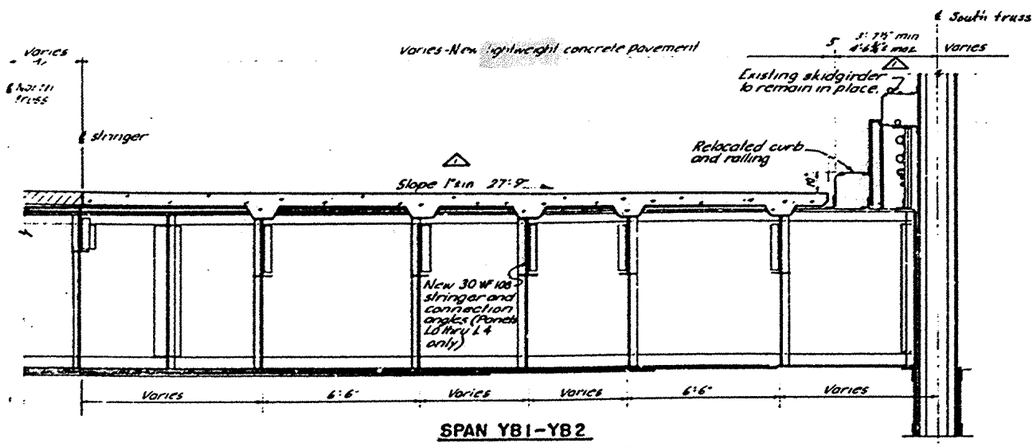
SCALE As Shown	BRIDGE 33-25 34-03 34-04	SHEET No 29	DRAWING C-4011-29

APPROVAL RECOMMENDED BY



SPANS YB2 THRU YB4 AND YB4 TO E1

(Panel Points L9 thru L35)

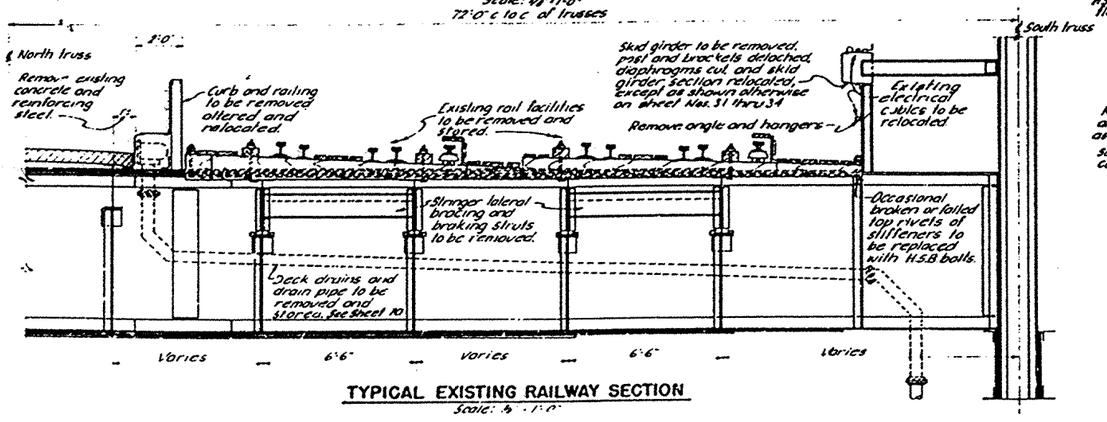


SPAN YB1-YB2

RECONSTRUCTED ROADWAY SECTIONS

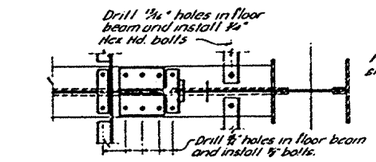
Scale: 1/8"=1'-0"

72'-0" c to c of trusses



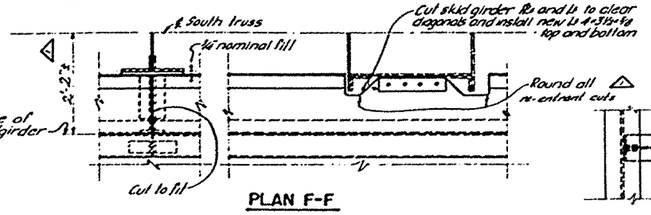
TYPICAL EXISTING RAILWAY SECTION

Scale: ½"=1'-0"

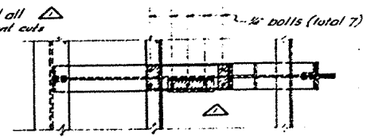


SECTION C-C

(Slab not shown)

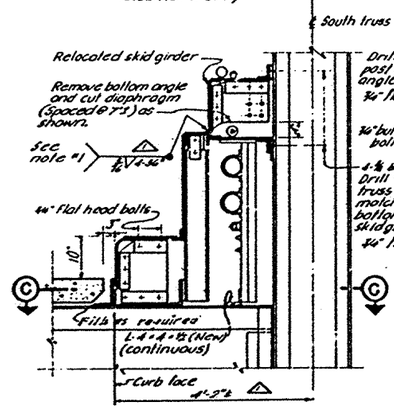


PLAN F-F

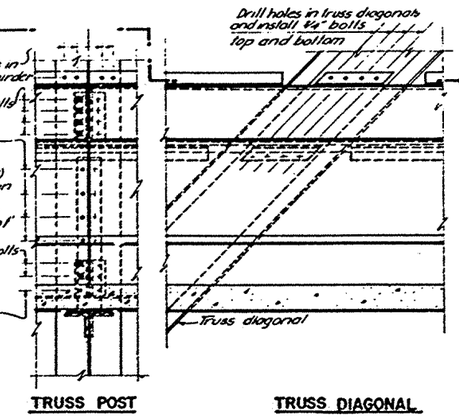


SECTION E-E

(Slab not shown)



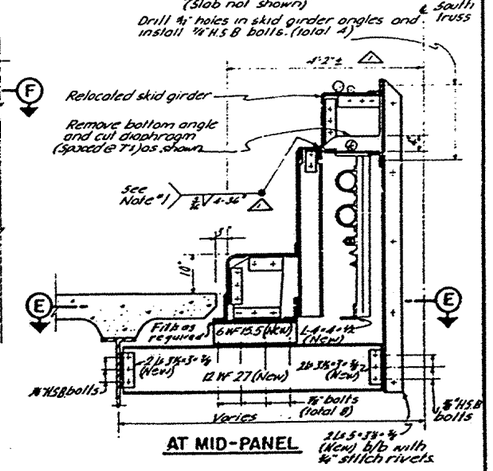
AT FLOOR BEAM



TRUSS POST

TRUSS DIAGONAL

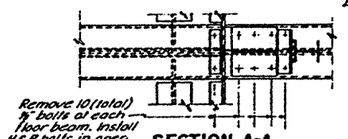
FRONT ELEVATION



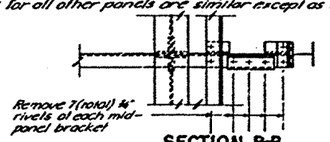
AT MID-PANEL

TYPICAL RELOCATED SKID GIRDER, CURB AND RAILING CONNECTION

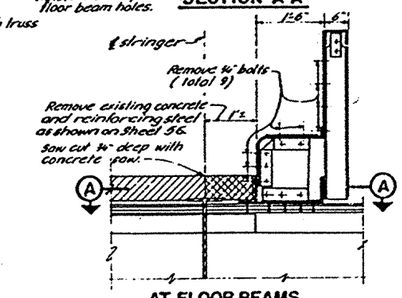
Note: Details shown are for typical interior panels between Piers YB2 to E1
Details for all other panels are similar except as shown otherwise on Sheet Nos. 31 thru 34.



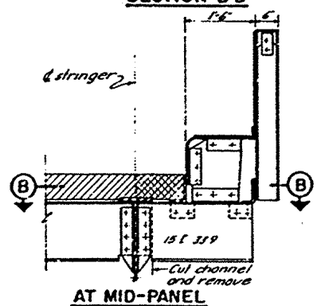
SECTION A-A



SECTION B-B



AT FLOOR BEAMS



AT MID-PANEL

EXISTING CURB AND RAILING CONNECTIONS

NOTES

1. Weld at each railing post and at intermediate points.
2. All bolts to be machine bolts with hex. head and nut except as noted.
3. Where H.S.B. bolts are indicated the use of rivets will be permitted.

0 THS 10 THS

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.65	As built with revisions	L.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

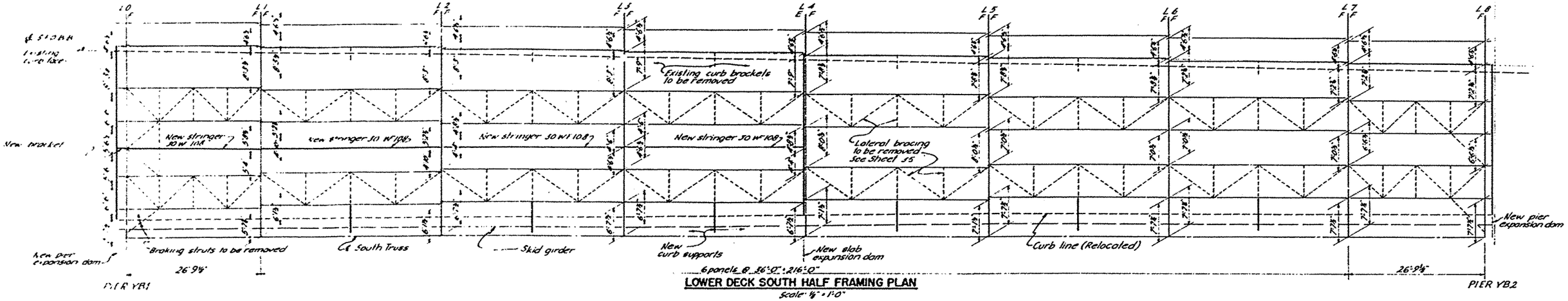
YERBA BUENA SPANS-ROADWAY REVISIONS

UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 30 | DRAWING C-4011-30R

DATE APPROVED September 23, 1960

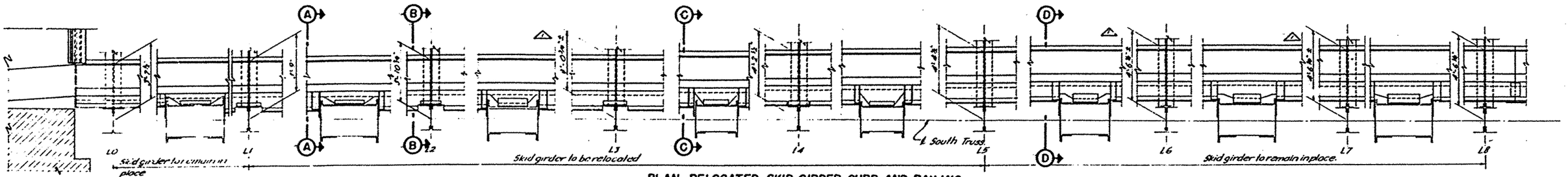
APPROVAL RE OVERHEAD, D.B.

DATE APPROVED September 23, 1960



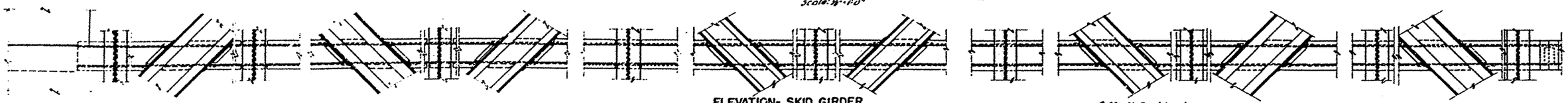
LOWER DECK SOUTH HALF FRAMING PLAN

Scale: ⅛" = 1'-0"



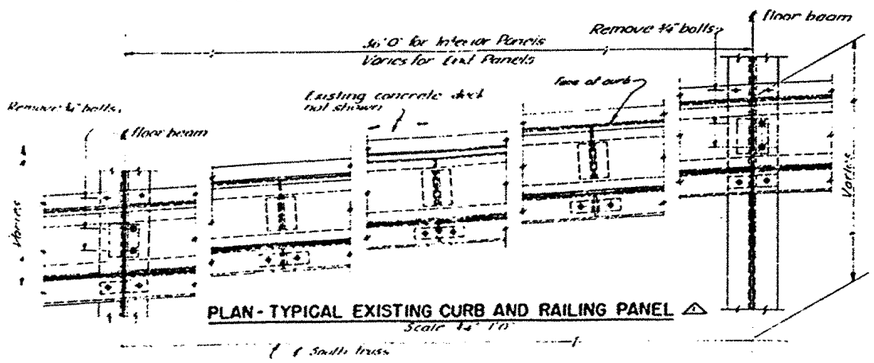
PLAN - RELOCATED SKID GIRDER, CURB AND RAILING

Scale: ⅛" = 1'-0"



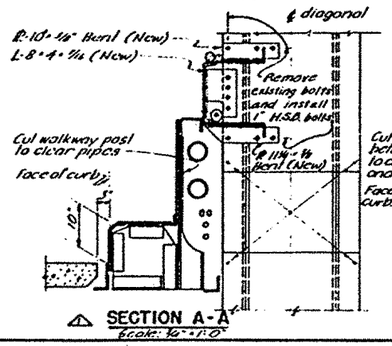
ELEVATION - SKID GIRDER

Scale: ¼" = 1'-0"



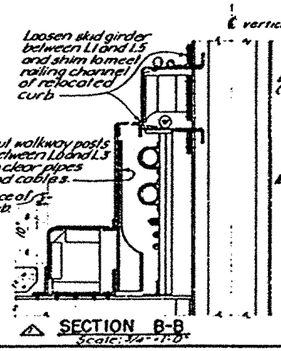
PLAN - TYPICAL EXISTING CURB AND RAILING PANEL △

Scale: ¼" = 1'-0"



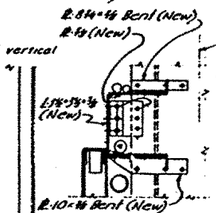
△ SECTION A-A

Scale: ¼" = 1'-0"



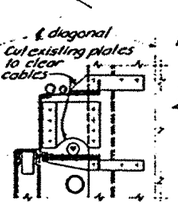
△ SECTION B-B

Scale: ¼" = 1'-0"



SECTION C-C △

Scale: ¼" = 1'-0"

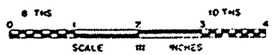


SECTION D-D

Scale: ¼" = 1'-0"

NOTES

1. All structural steel removed and not relocated including stringer, lateral bracing, bracing struts, skid girder post, struts, and cut outs to become the property of the contractor and disposed of.
2. See Sheet 33 for stringer and bracket details.



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

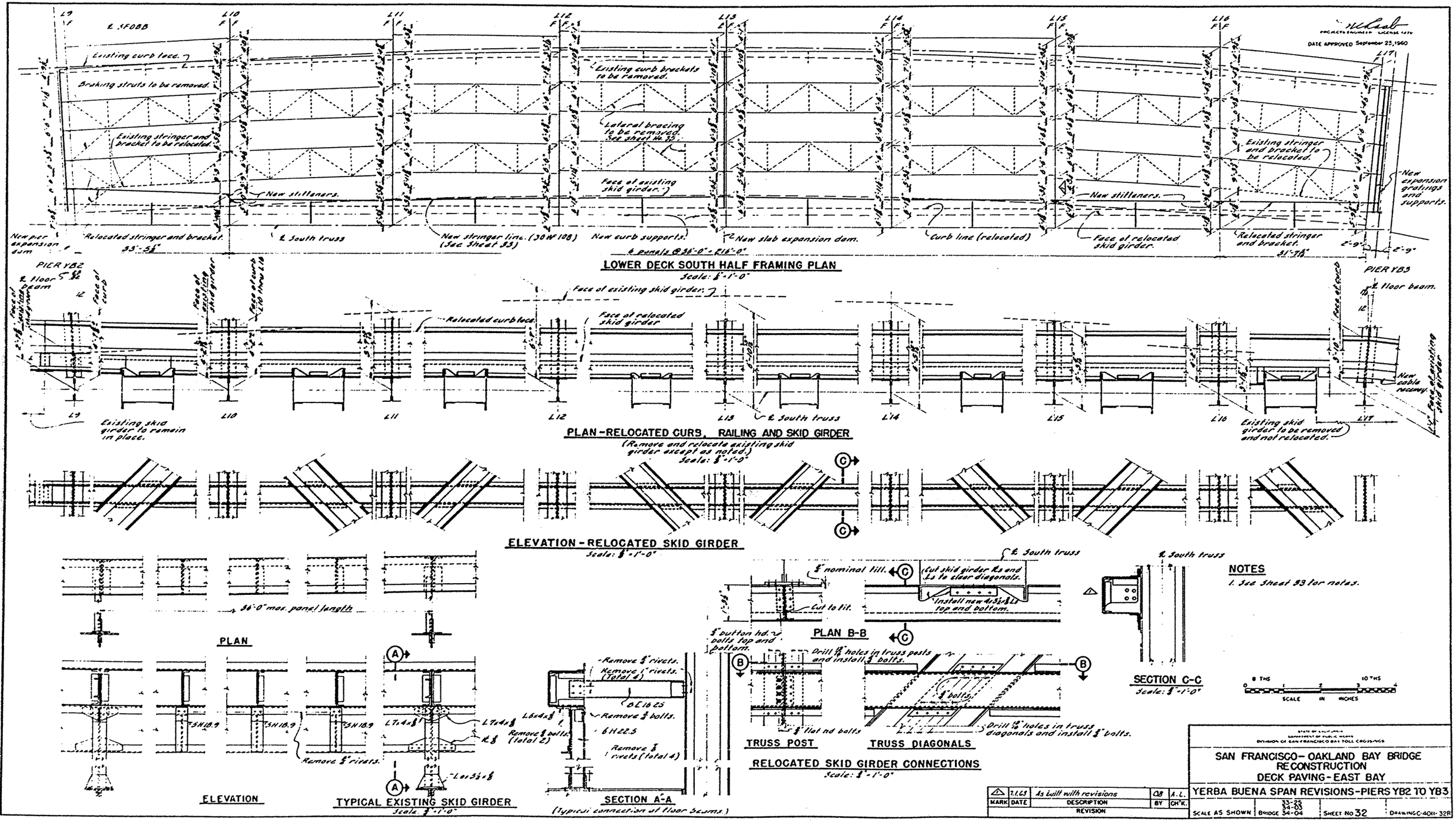
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING - EAST BAY

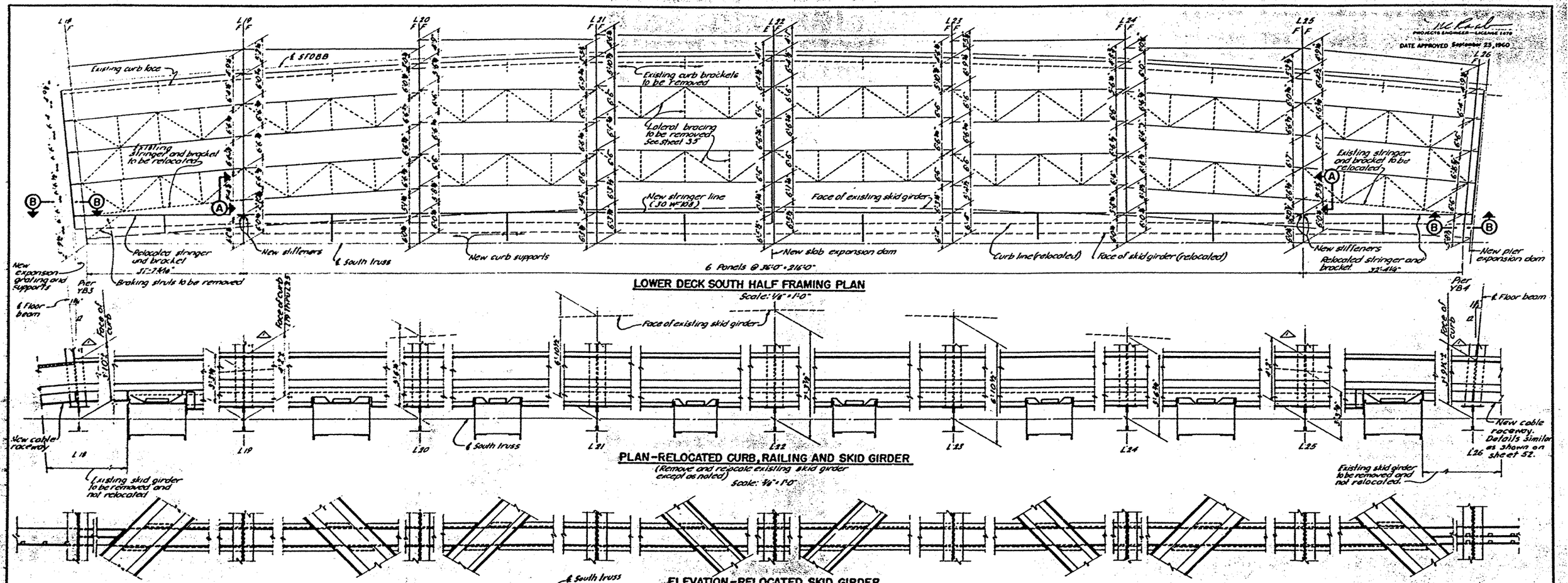
YERBA BUENA SPAN REVISIONS - PIERS YB1 TO YB2

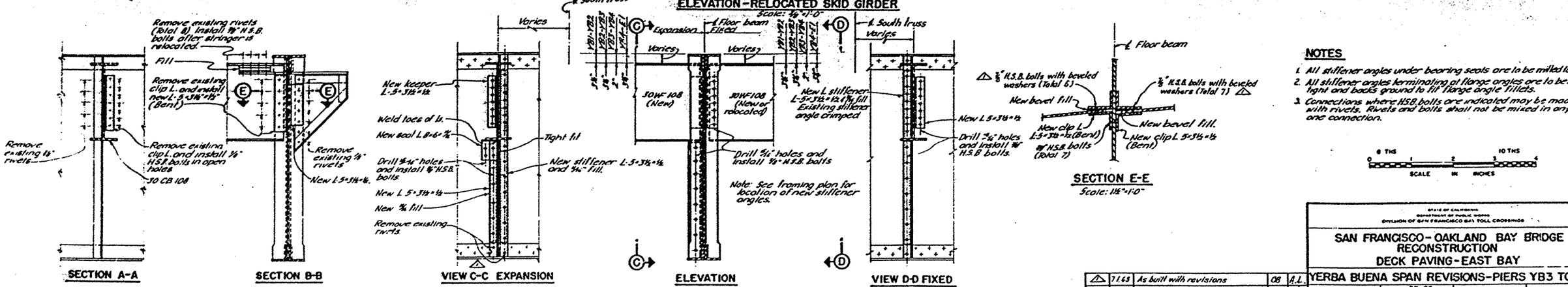
MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	J.L.S.	A.L.

REVISION

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET NO. 31 | DRAWING C-401-31R


DATE APPROVED September 23, 1960
℄ SFOBB
Existing curb face.
Bracing struts to be removed.
Existing stringer and bracket to be relocated.
New stiffeners.
Existing curb brackets to be removed.
Lateral bracing to be removed. See sheet No. 35.
Face of existing skid girder.
Existing stringer and bracket to be relocated.
New expansion gratings and supports.
New pier expansion dam
Relocated stringer and bracket.
35'-5½"
℄ South truss
New stringer line. (30WF108) (See Sheet 33)
New curb supports.
New slab expansion dam.
Curb line (relocated)
Face of relocated skid girder.
Relocated stringer and bracket.
31'-7½"
2'-9"
℄ panels @ 36'-0" = 216'-0"
LOWER DECK SOUTH HALF FRAMING PLAN
Scale: ⅛"=1'-0"
PIER YB2
PIER YB3
℄ Floor beam
Face of existing skid girder.
Relocated curb face.
Face of relocated skid girder
Existing skid girder to remain in place.
Existing skid girder to be removed and not relocated.
New cable raceway.
Face of existing skid girder
PLAN-RELOCATED CURB, RAILING AND SKID GIRDER
(Remove and relocate existing skid girder except as noted.)
Scale: ⅛"=1'-0"
ELEVATION-RELOCATED SKID GIRDER
Scale: ⅛"=1'-0"
36'-0" max. panel length
PLAN
ELEVATION
TYPICAL EXISTING SKID GIRDER
Scale: ⅛"=1'-0"
Remove ⅝" rivets.
Remove ⅞" rivets. (Total 4)
Remove ⅝" bolts.
Remove ⅝" bolts (Total 2)
Remove ⅝" rivets (Total 4)
SECTION A-A
(Typical connection at floor beams.)
⅝" nominal fill.
Cut to fit.
(Cut skid girder Rs and Ls to clear diagonals.
Install new 4x3½x⅜ Ls top and bottom.
PLAN B-B
⅝" button hd. bolts top and bottom.
Drill 13/16" holes in truss posts and install ⅝" bolts.
⅝" bolts.
⅝" flat hd bolts
Drill 13/16" holes in truss diagonals and install ⅝" bolts.
TRUSS POST
TRUSS DIAGONALS
RELOCATED SKID GIRDER CONNECTIONS
Scale: ⅛"=1'-0"
℄ South truss
SECTION C-C
Scale: ⅛"=1'-0"
NOTES
1. See Sheet 33 for notes.
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY
YERBA BUENA SPAN REVISIONS-PIERS YB2 TO YB3
MARK DATE DESCRIPTION BY CH'K.
7.1.65 As built with revisions CB A.L.
REVISION
SCALE AS SHOWN
BRIDGE 33-23 34-03 34-04
SHEET No. 32
DRAWING C-40H-32R





NOTES

1. All stiffener angles under bearing seats are to be milled to bear.
2. All stiffener angles terminating at flange angles are to be filled light and back ground to fit flange angle fillets.
3. Connections where H.S.B. bolts are indicated may be made with rivets. Rivets and bolts shall not be mixed in any one connection.

0 6 THS 10 THS
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

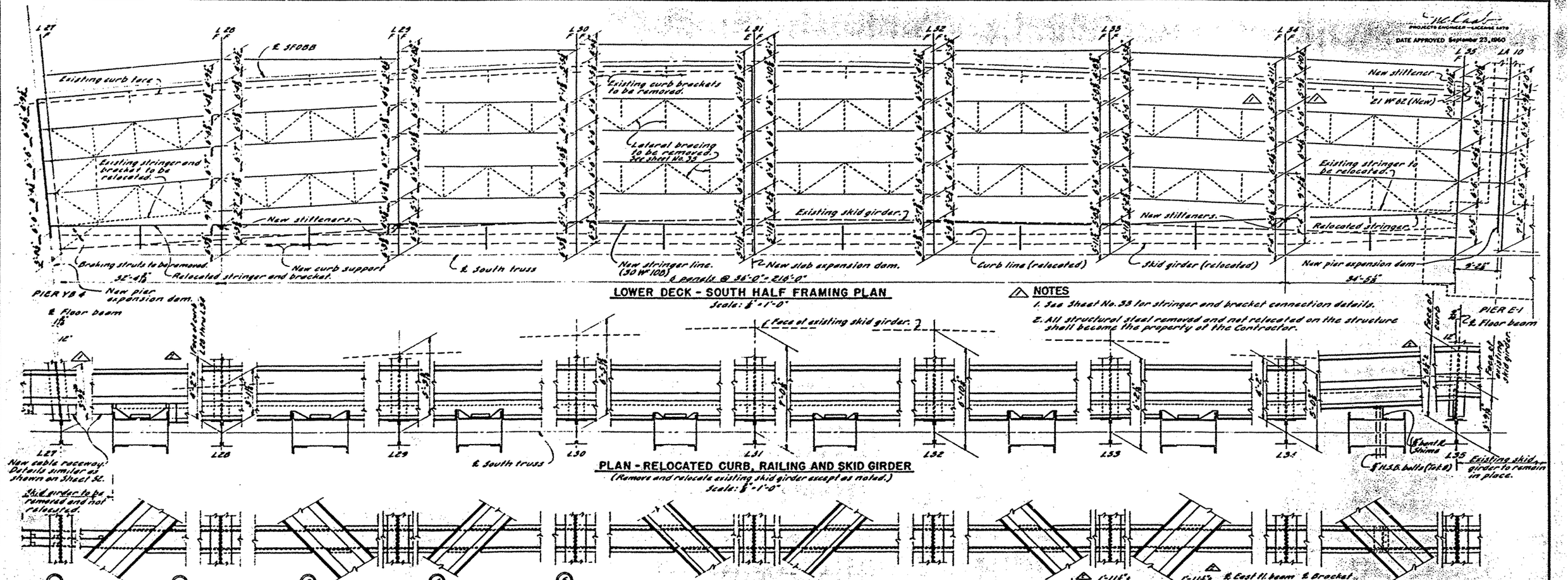
YERBA BUENA SPAN REVISIONS-PIERS YB3 TO YB4

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7/1/63	As built with revisions	OB	A.L.

REVISION

SCALE AS SHOWN	BRIDGE 33-25 34-03 34-04	SHEET No. 33	DRAWING C-4011-33R

APPROVAL BY COUNTER ED BY
DATE APPROVED September 23, 1960
PROJECT ENGINEER — LICENSE 5575



LOWER DECK - SOUTH HALF FRAMING PLAN

Scale: ⅛"=1'-0"

PLAN - RELOCATED CURB, RAILING AND SKID GIRDER

(Remove and relocate existing skid girder except as noted.)

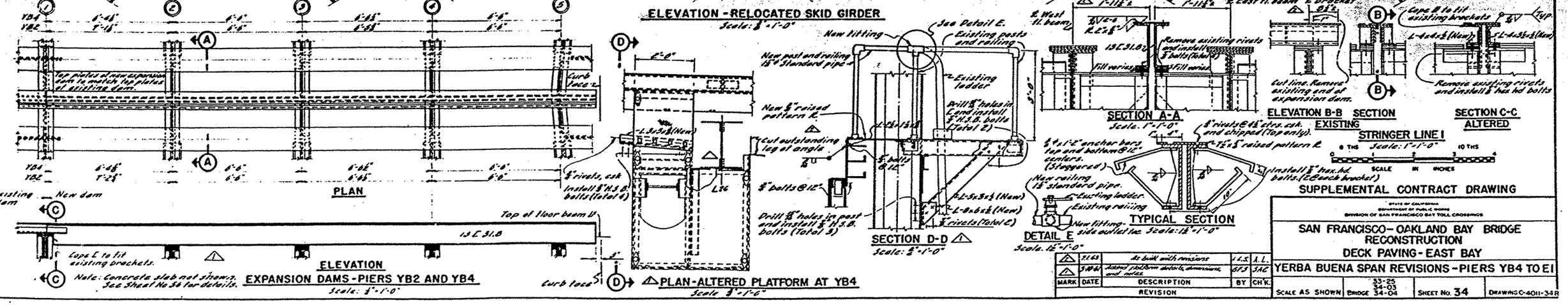
Scale: ⅛"=1'-0"

ELEVATION - RELOCATED SKID GIRDER

Scale: ⅛"=1'-0"

NOTES

1. See Sheet No. 33 for stringer and bracket connection details.
2. All structural steel removed and not relocated on the structure shall become the property of the Contractor.



PLAN

ELEVATION

EXPANSION DAMS - PIERS YB2 AND YB4

Scale: ⅜"=1'-0"

PLAN - ALTERED PLATFORM AT YB4

Scale: ⅜"=1'-0"

SECTION D-D

Scale: ⅜"=1'-0"

DETAIL E

Scale: 1½"=1'-0"

SECTION A-A

Scale: 1"=1'-0"

TYPICAL SECTION

Scale: 1½"=1'-0"

ELEVATION B-B EXISTING

SECTION C-C ALTERED

STRINGER LINE I

Scale: 1"=1'-0"

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K.
2	7.1.63	As built with revisions	J.L.S.	A.L.
1	5.10.61	Added platform details, dimensions and notes	S.F.S.	S.A.C.

REVISION

DATE APPROVED September 23, 1960

PROJECT ENGINEER — LICENSE NO.

APPROVAL RECOMMENDED BY

DESIGN DRAWN BY

TRACED

CHECKED

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

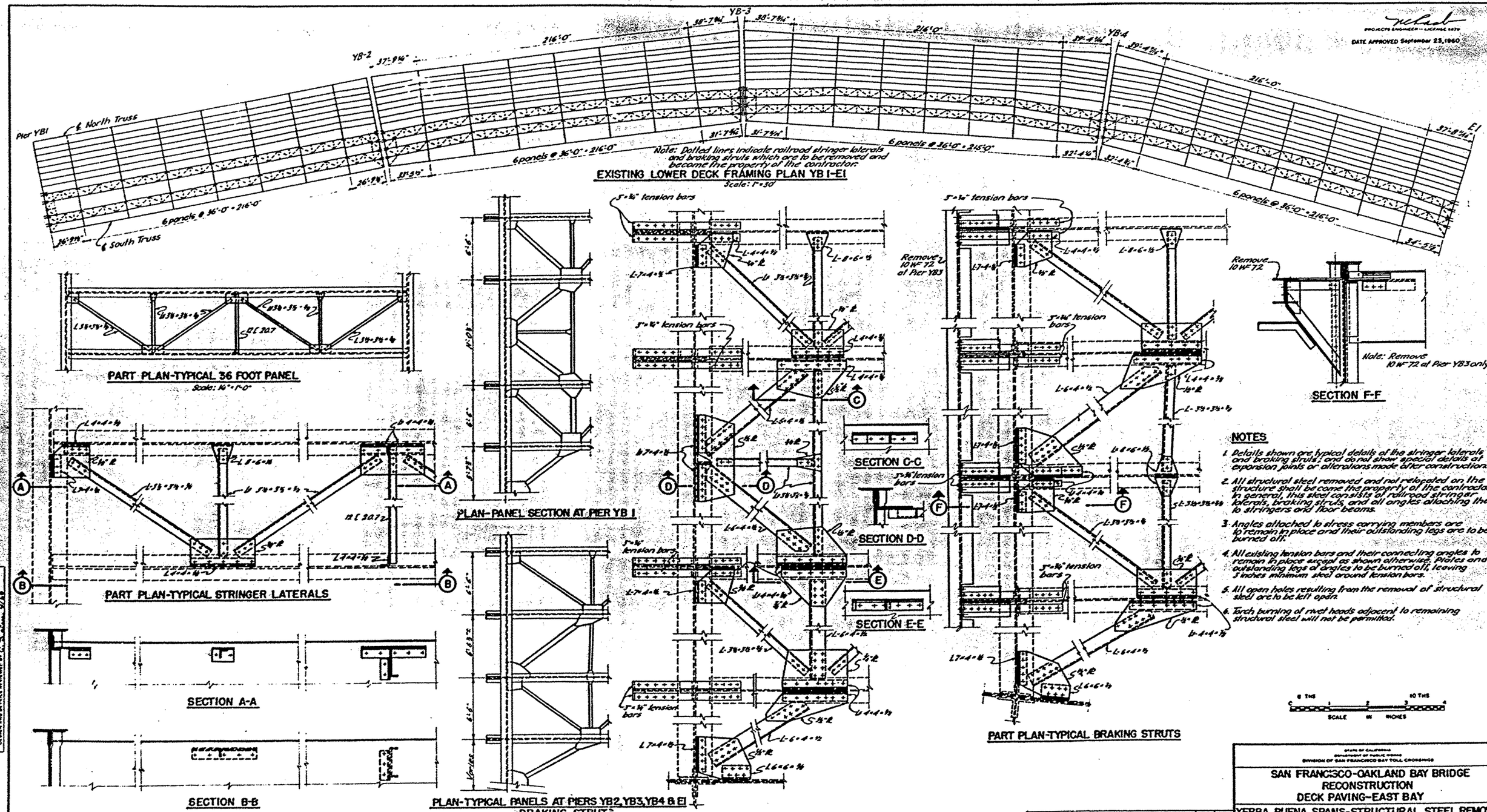
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

YERBA BUENA SPAN REVISIONS - PIERS YB4 TO E1

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 34 | DRAWING C-4011-34R

PROJECT ENGINEER — LICENSE DATE

DATE APPROVED September 23, 1960



NOTES

1. Details shown are typical details of the stringer laterals and bracing struts; and do not show special details at expansion joints or alterations made after construction.
2. All structural steel removed and not relocated on the structure shall become the property of the contractor. In general, this steel consists of railroad stringer laterals, bracing struts, and all angles attaching them to stringers and floor beams.
3. Angles attached to stress carrying members are to remain in place and their outstanding legs are to be burned off.
4. All existing tension bars and their connecting angles to remain in place except as shown otherwise. Welds and outstanding legs of angles to be burned off, leaving 3 inches minimum steel around tension bars.
5. All open holes resulting from the removal of structural steel are to be left open.
6. Torch burning of rivet heads adjacent to remaining structural steel will not be permitted.

MARK	DATE	DESCRIPTION	BY	CH'K.
1	7.1.65	As built without revisions	CB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

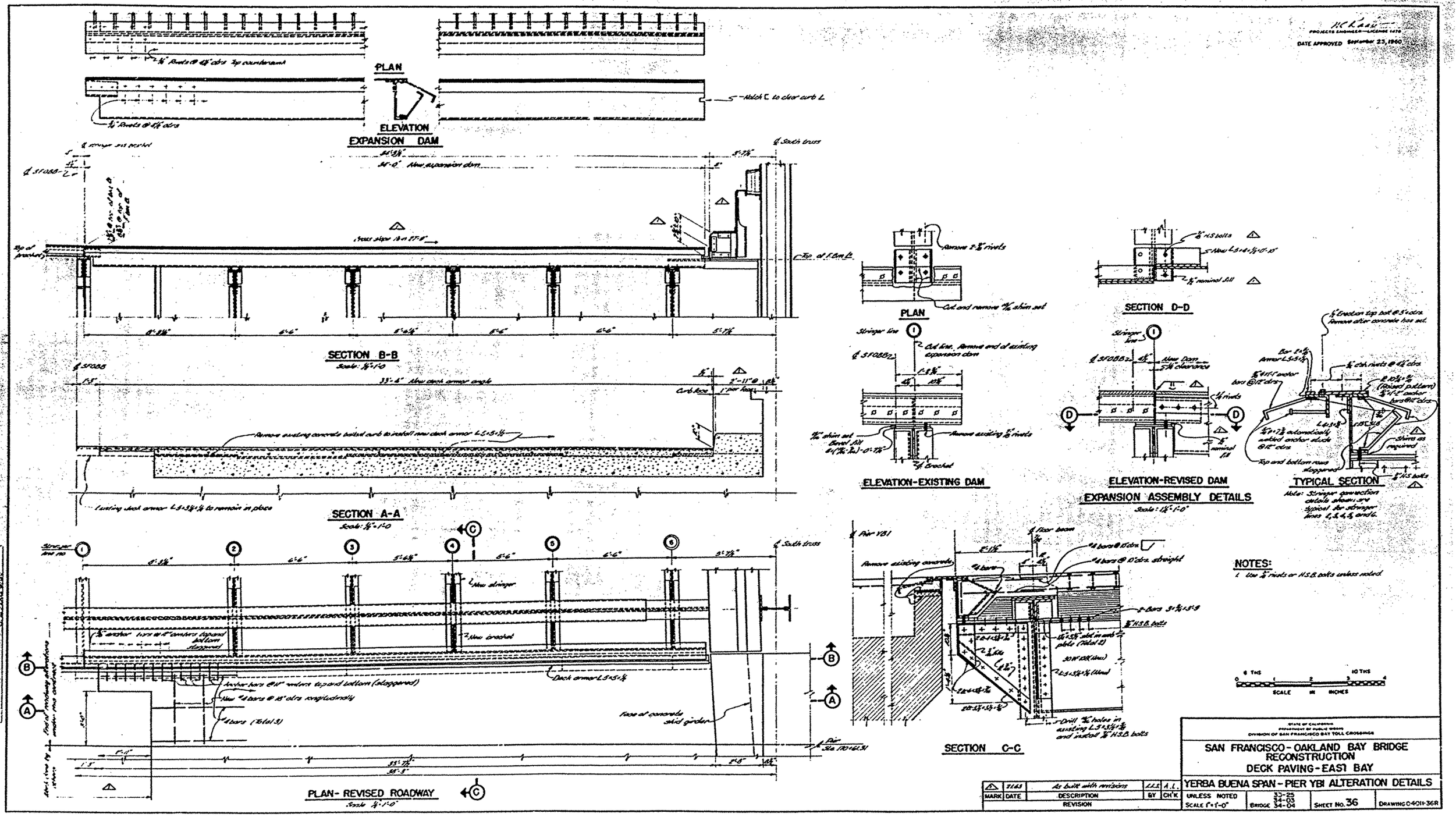
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

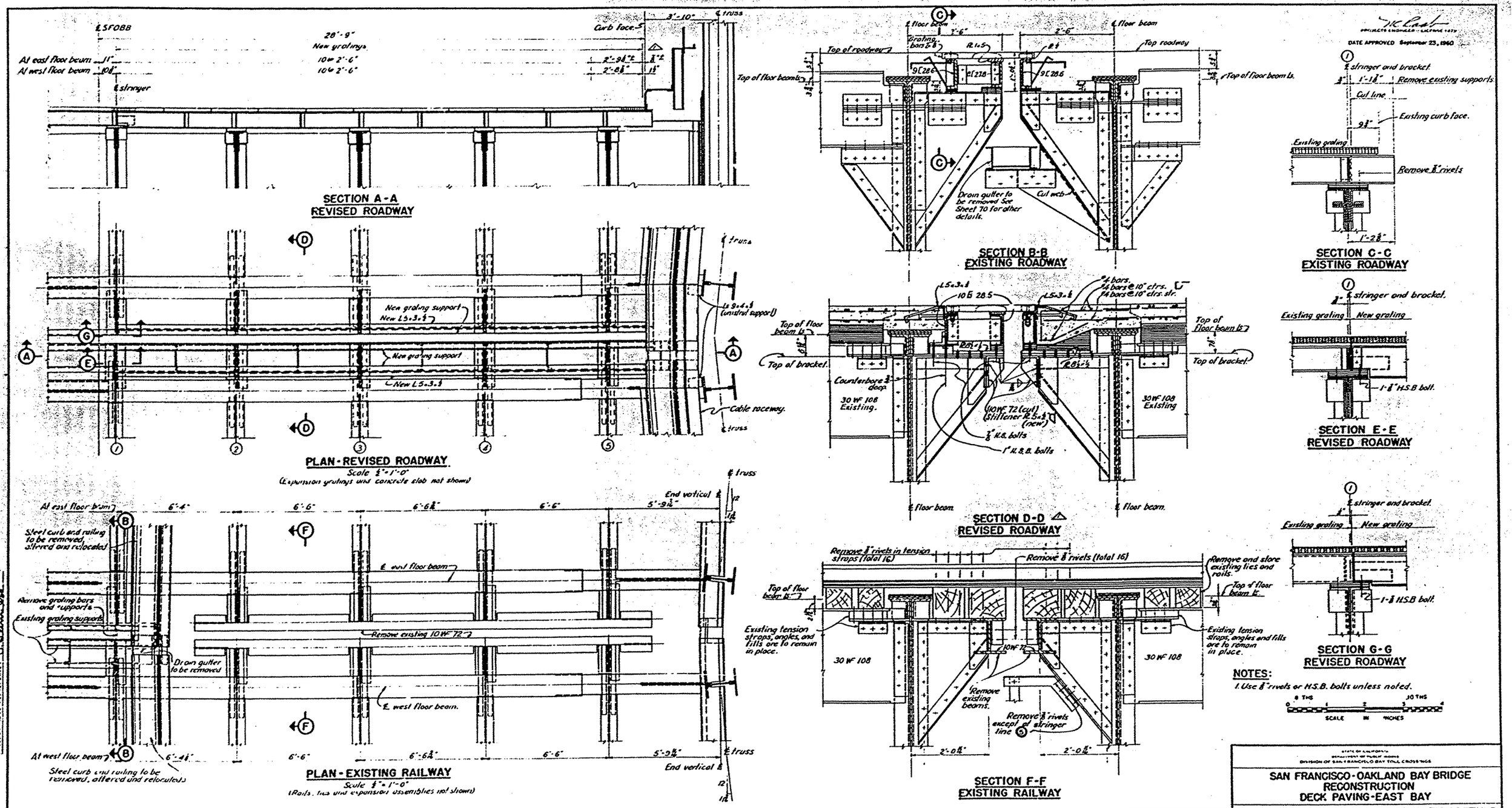
YERBA BUENA SPANS-STRUCTURAL STEEL REMOVAL

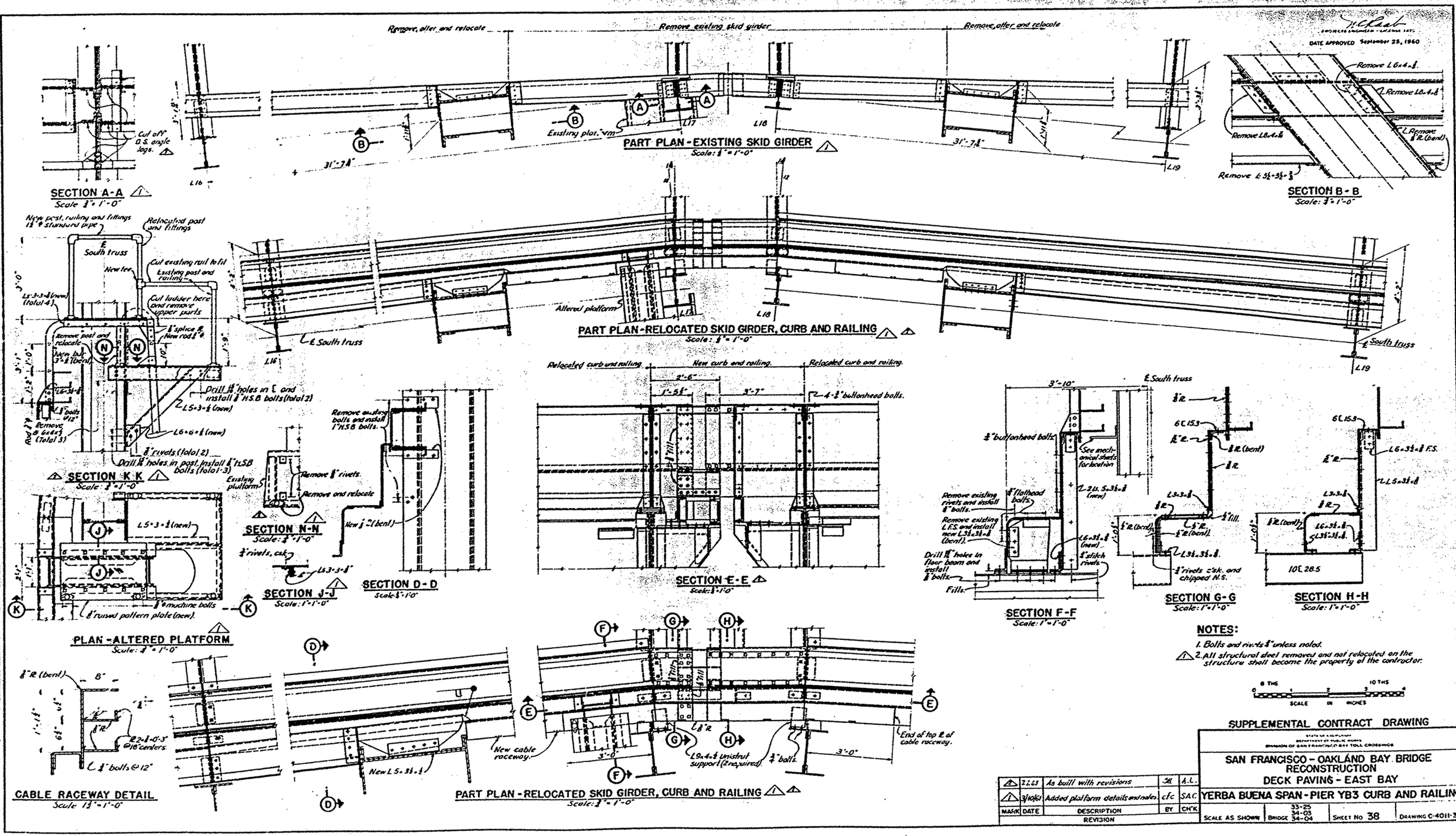
UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 35 | DRAWING C-40H-35R

APPROVAL RECOMMENDED BY

DESIGN		
CHECK		
QUANTITIES		
PRICED		
DESIGN AND DETAILS		


PLAN
ELEVATION
EXPANSION DAM
SECTION B-B
SECTION A-A
PLAN-REVISED ROADWAY
PLAN
ELEVATION-EXISTING DAM
SECTION D-D
ELEVATION-REVISED DAM
EXPANSION ASSEMBLY DETAILS
TYPICAL SECTION
SECTION C-C
NOTES:
1. Use 7/8" rivets or H.S.B. bolts unless noted.
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY
YERBA BUENA SPAN-PIER YB1 ALTERATION DETAILS
UNLESS NOTED
SCALE 1"=1'-0"
BRIDGE 33-25 34-03 34-04
SHEET NO. 36
DRAWING C-4011-36R
MARK DATE DESCRIPTION BY CH'K
REVISION
As built with revisions
DATE APPROVED September 23, 1960


SECTION A-A
REVISED ROADWAY
PLAN-REVISED ROADWAY
Scale 1/8" = 1'-0"
(Expansion gratings and concrete slab not shown)
PLAN-EXISTING RAILWAY
Scale 1/8" = 1'-0"
(Rails, ties and expansion assemblies not shown)
SECTION B-B
EXISTING ROADWAY
SECTION C-C
EXISTING ROADWAY
SECTION D-D
REVISED ROADWAY
SECTION E-E
REVISED ROADWAY
SECTION F-F
EXISTING RAILWAY
SECTION G-G
REVISED ROADWAY
NOTES:
1. Use 7/8" rivets or H.S.B. bolts unless noted.
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY
YERBA BUENA SPAN-PIER YB3 ALTERATION DETAILS
UNLESS NOTED
SCALE 1" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 37
DRAWING C-401-37R
MARK DATE DESCRIPTION BY CH'K.
7.1.63 As built with revisions
REVISION
DATE APPROVED September 23, 1960



NOTES:

1. Bolts and rivets ⅞" unless noted.
2. All structural steel removed and not relocated on the structure shall become the property of the contractor.

8 THS 10 THS
SCALE IN INCHES

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

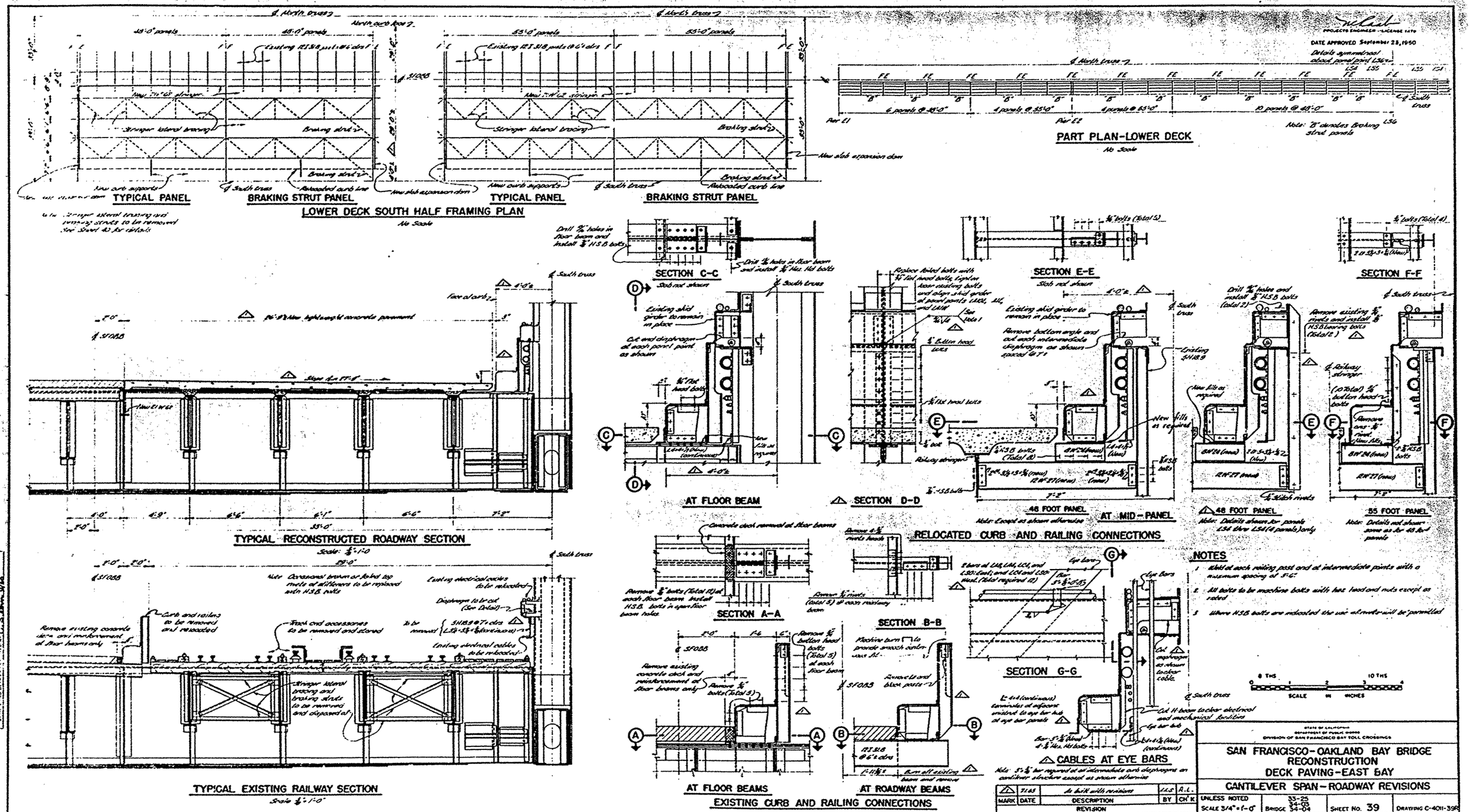
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

YERBA BUENA SPAN - PIER YB3 CURB AND RAILING

MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As built with revisions	JK	A.L.
1	3/10/61	Added platform details and notes	clc	SAC

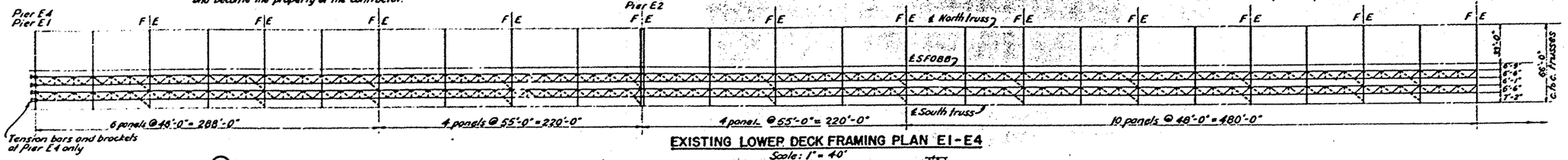
REVISION

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No 38 | DRAWING C-4011-38R


TYPICAL PANEL
BRAKING STRUT PANEL
LOWER DECK SOUTH HALF FRAMING PLAN
No Scale
PART PLAN-LOWER DECK
No Scale
DATE APPROVED September 28, 1950
SECTION C-C
SECTION E-E
SECTION F-F
AT FLOOR BEAM
SECTION D-D
48 FOOT PANEL
AT MID-PANEL
RELOCATED CURB AND RAILING CONNECTIONS
TYPICAL RECONSTRUCTED ROADWAY SECTION
Scale: 3/4"=1'-0"
TYPICAL EXISTING RAILWAY SECTION
Scale 3/4"=1'-0"
SECTION A-A
SECTION B-B
SECTION G-G
AT FLOOR BEAMS
AT ROADWAY BEAMS
EXISTING CURB AND RAILING CONNECTIONS
CABLES AT EYE BARS
NOTES
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY
CANTILEVER SPAN-ROADWAY REVISIONS
MARK DATE DESCRIPTION BY CH'K
REVISION
UNLESS NOTED
SCALE 3/4"=1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 39
DRAWING C-4011-39R

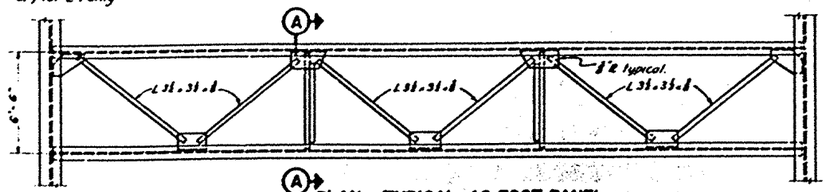
Note: Dotted lines indicate railroad stringer laterals and bracing struts which are to be removed and become the property of the contractor.

Details symmetrical about panel point LS6 except expansion joint at ℄ suspended span.



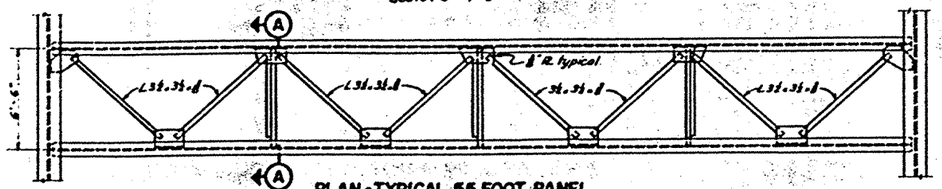
EXISTING LOWER DECK FRAMING PLAN E1-E4

Scale: 1" = 40'



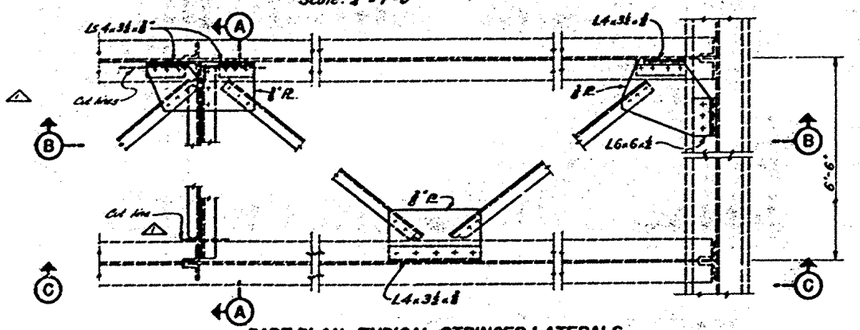
PLAN - TYPICAL 48 FOOT PANEL

Scale: ¼" = 1'-0"

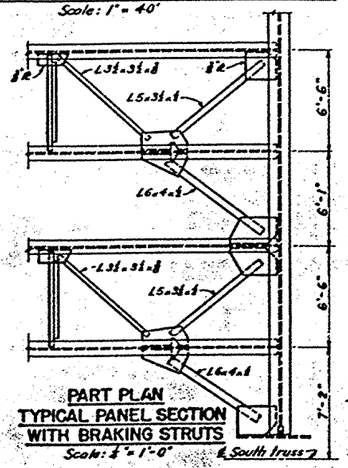


PLAN - TYPICAL 55 FOOT PANEL

Scale: ¼" = 1'-0"



PART PLAN - TYPICAL STRINGER LATERALS

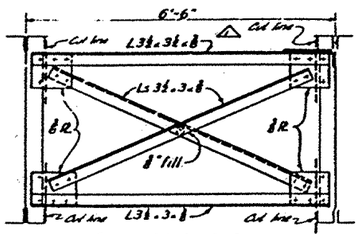


PART PLAN
TYPICAL PANEL SECTION
WITH BRACING STRUTS

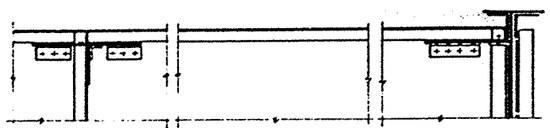
Scale: ¼" = 1'-0"

℄ South truss

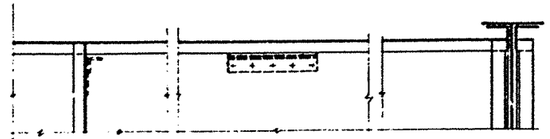
Note: Panels with bracing struts same as typical panels except as shown above.



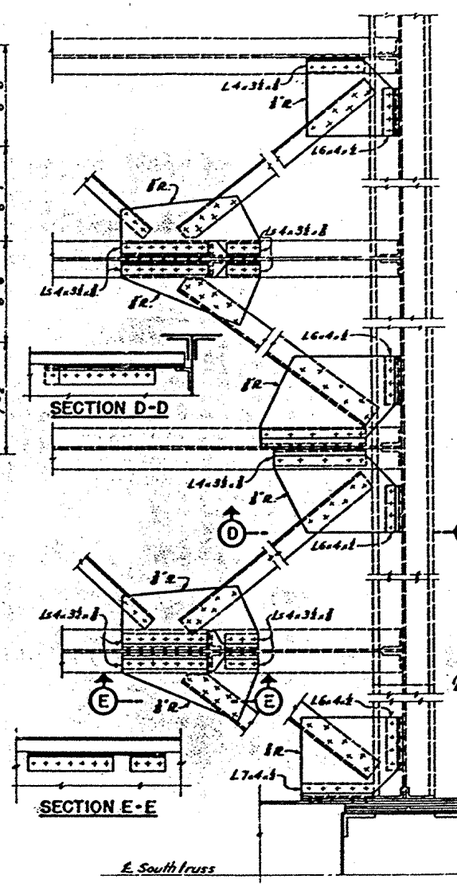
△ SECTION A-A



SECTION B-B



SECTION C-C

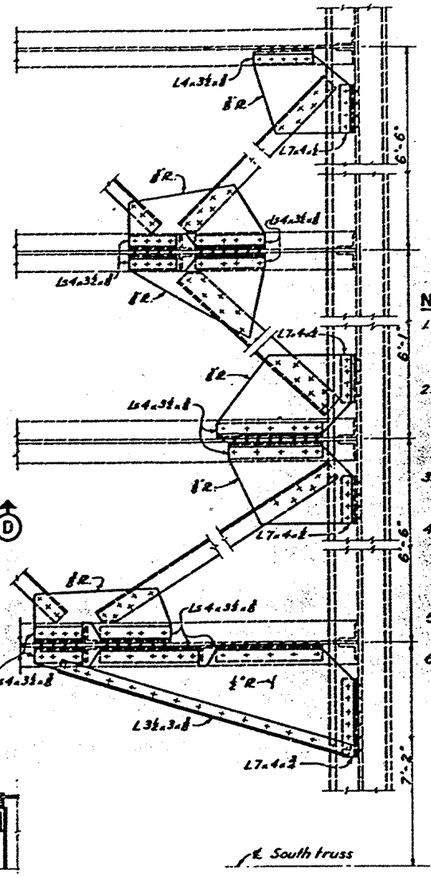


SECTION D-D

SECTION E-E

TYPICAL

PART PLAN BRACING STRUTS



PIERS E2 AND E3

NOTES:

1. Details shown are typical details of the stringer laterals and bracing struts and do not show special details at expansion joints or alterations made after construction.
2. All structural steel removed and not relocated on the structure shall become the property of the contractor. In general, this steel consists of railroad stringer laterals, bracing struts and all angles attaching them to stringers and floor beams.
3. Angles attached to stress carrying members are to remain in place and their outstanding legs are to be burned off.
4. All existing tension bars and their connecting angles to remain in place except as shown otherwise. Plates and outstanding legs of angles to be burned off leaving 3 inches minimum steel around tension bars.
5. All open holes resulting from the removal of structural steel are to be left open.
6. Torch burning of rivet heads adjacent to remaining structural steel will not be permitted.

6 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

DATE APPROVED September 23, 1960

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

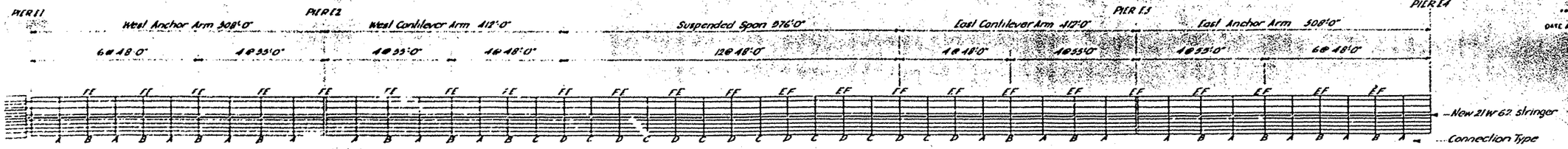
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CANTILEVER SPAN—STRUCTURAL STEEL REMOVAL

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7-1-65	As built with revisions	J.L.S.	A.L.

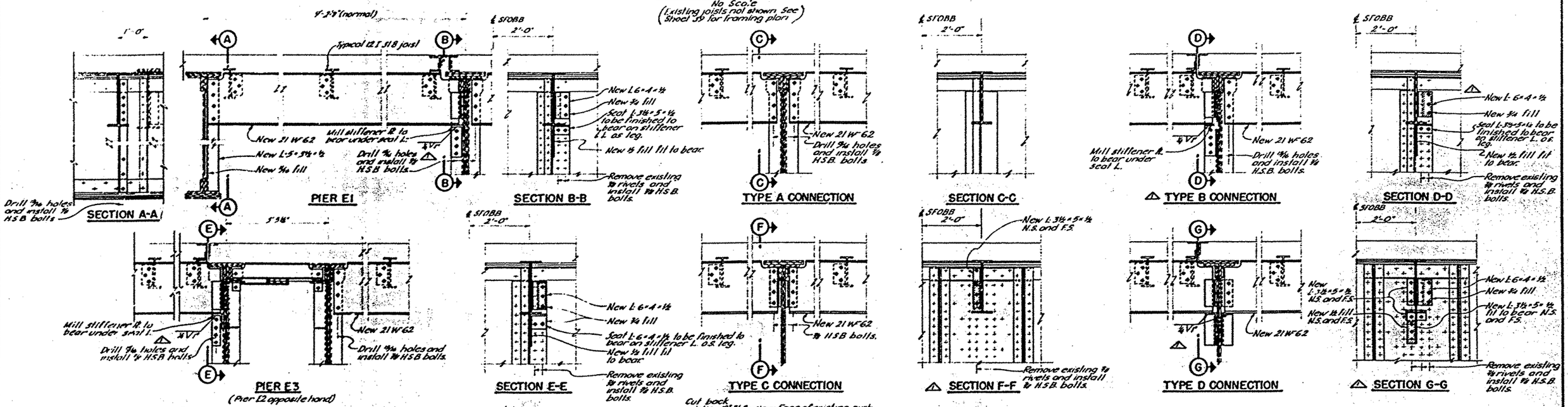
REVISION

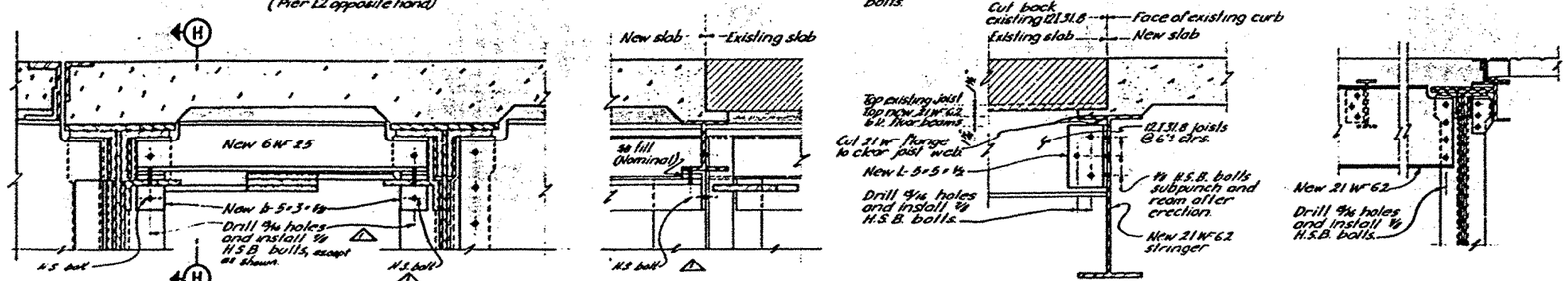
UNLESS NOTED
SCALE 3/4" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No 40
DRAWING C-40H-40-R



PLAN-CANTILEVER SPANS

No Scale
(Existing joists not shown. See Sheet 39 for framing plan)





NOTES

1. All bolts indicated for field connections to be 7/8 H.S.B. bolts except as noted.

MARK	DATE	DESCRIPTION	BY	CH'K.
1	7-1-69	As built with revisions	J.L.S.	A.L.

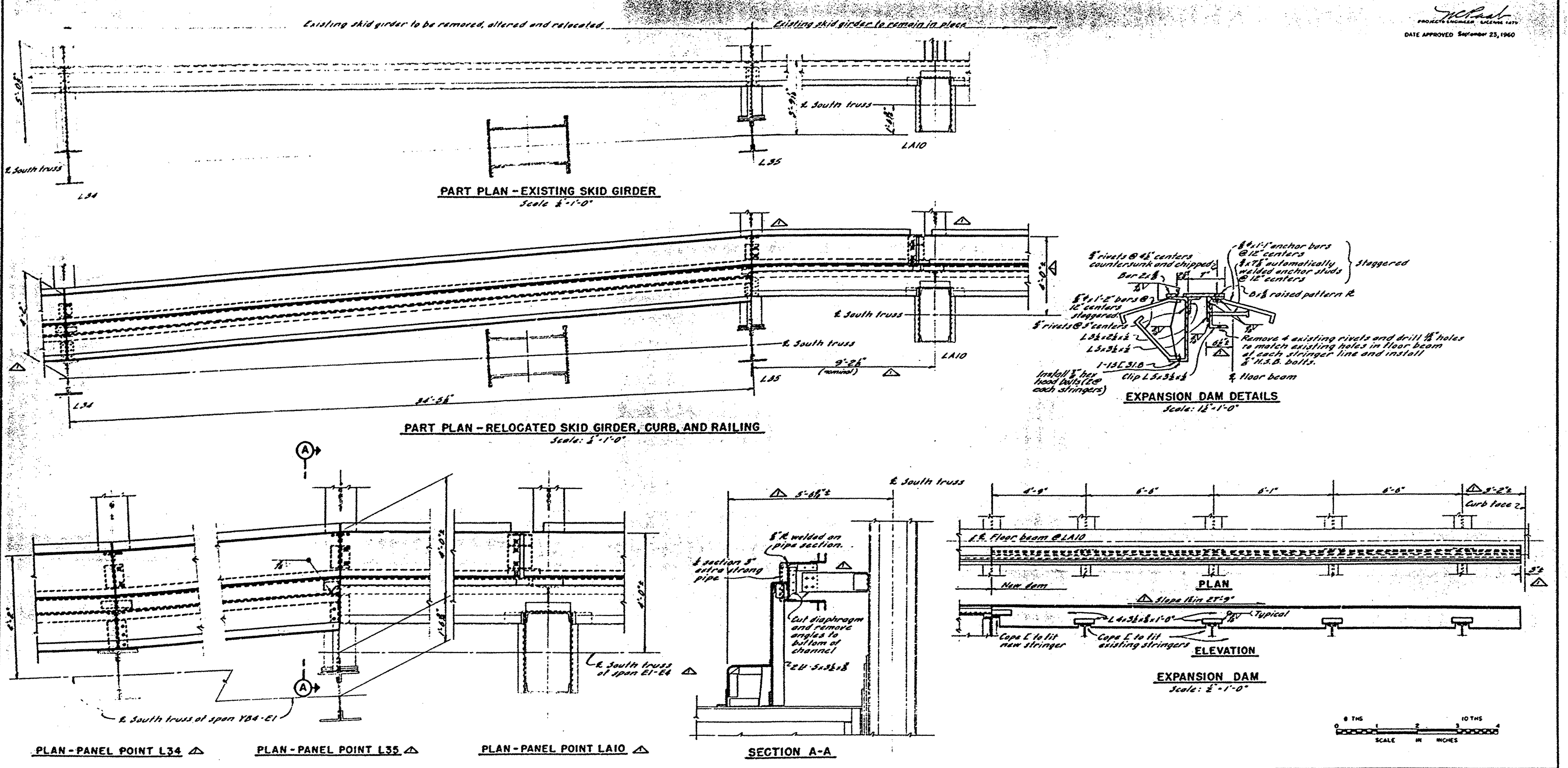
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

CANTILEVER SPAN - NEW STRINGER DETAILS

UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 41 | DRAWING C-401-41-R



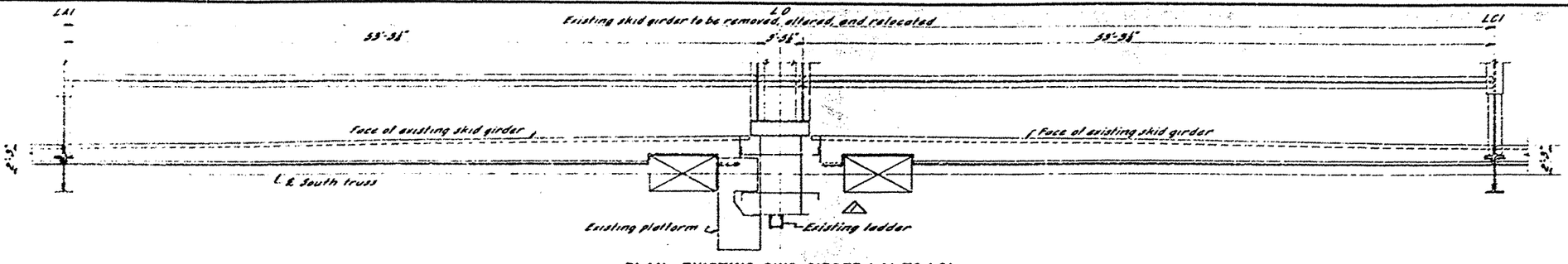
MARK	DATE	DESCRIPTION	BY	CH'K.
1	7.1.63	As built with revisions	J.L.S.	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CANTILEVER SPAN-PIER E1 ALTERATION DETAILS

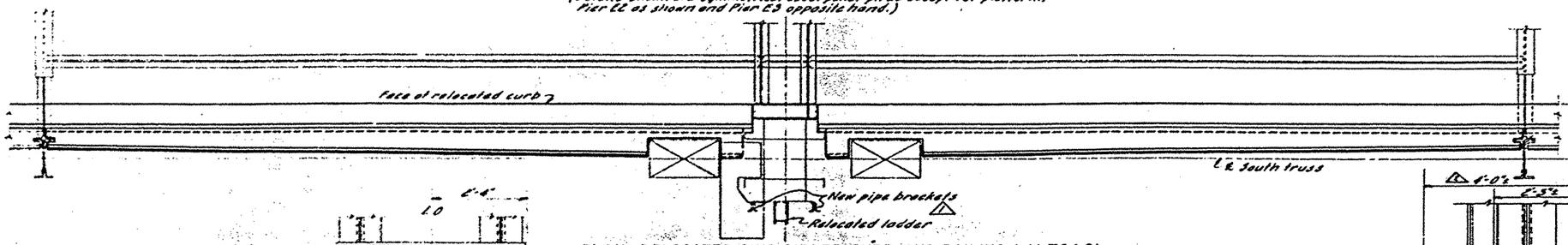
UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 42 | DRAWING C-4011-42-R



PLAN - EXISTING SKID GIRDER LA1 TO LC1

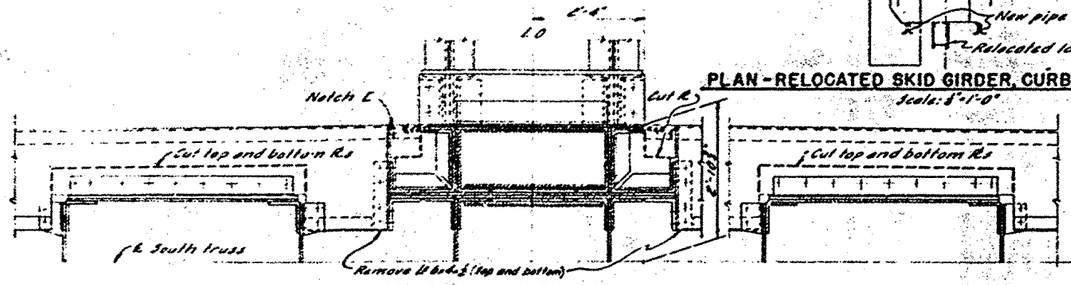
Scale: ¼"=1'-0"

(Details shown are symmetrical about panel pt. LO except for platform. Pier E2 as shown and Pier E3 opposite hand.)



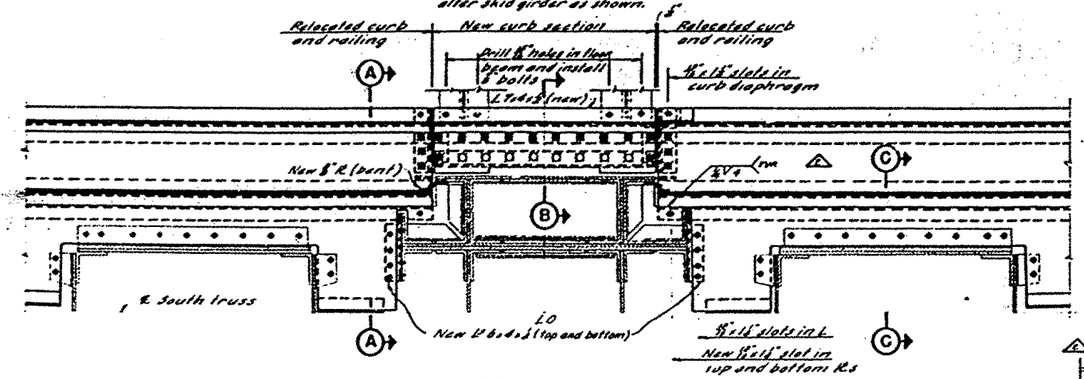
PLAN - RELOCATED SKID GIRDER, CURB, AND RAILING LA1 TO LC1

Scale: ¼"=1'-0"

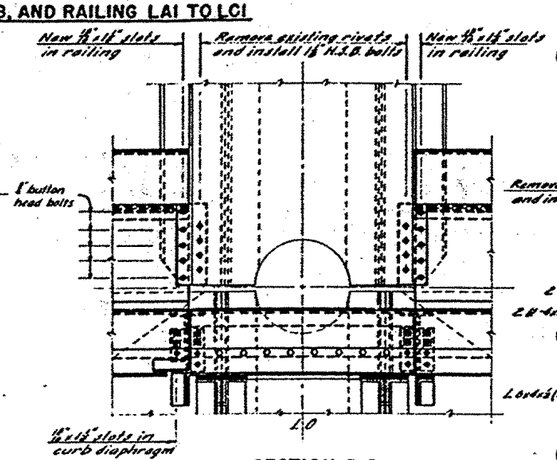


PART PLAN - EXISTING SKID GIRDER

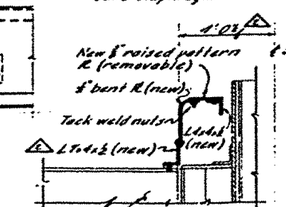
Note: Remove existing bolts or rivets and alter skid girder as shown.



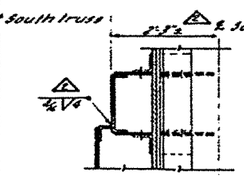
PART PLAN - RELOCATED SKID GIRDER, CURB, AND RAILING



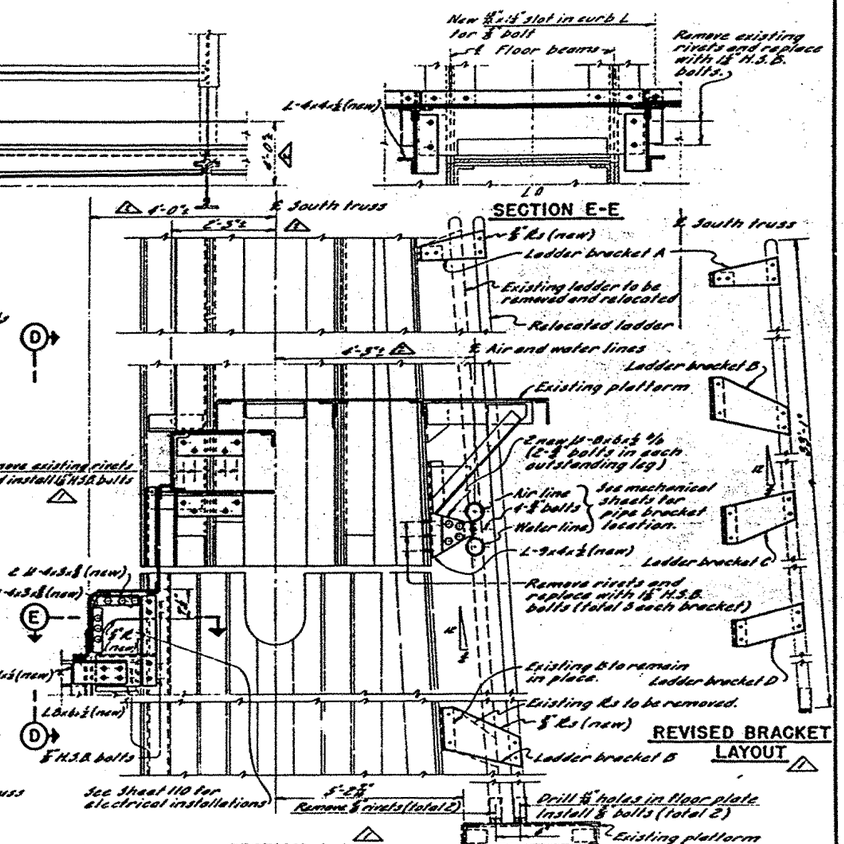
SECTION D-D



SECTION B-B



SECTION C-C



SECTION E-E

SECTION A-A

REVISED BRACKET LAYOUT

SUPPLEMENTAL CONTRACT DRAWING

SCALE 1/4 INCHES

DATE APPROVED September 23, 1960

NOTES

1. All rivets and bolts ⅝" unless noted.
2. All structural steel removed and not relocated on the structure shall become the property of the Contractor.
3. All bolts for ladder connection shall be ⅝" machine bolts.

MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As-built revisions	L.L.S.	A.L.
1	9.14.61	Relocated existing ladder and added notes.	B.F.S.	A.R.C.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

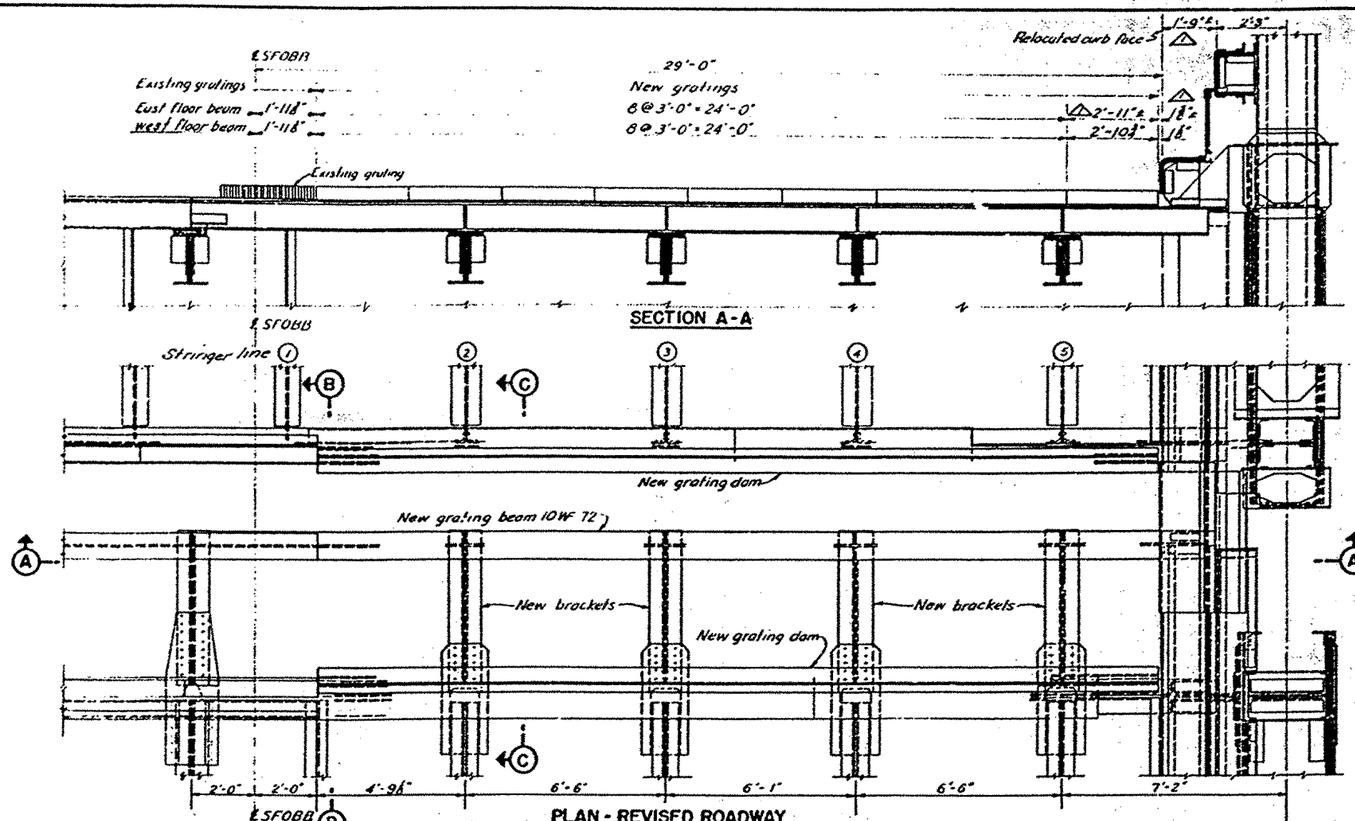
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

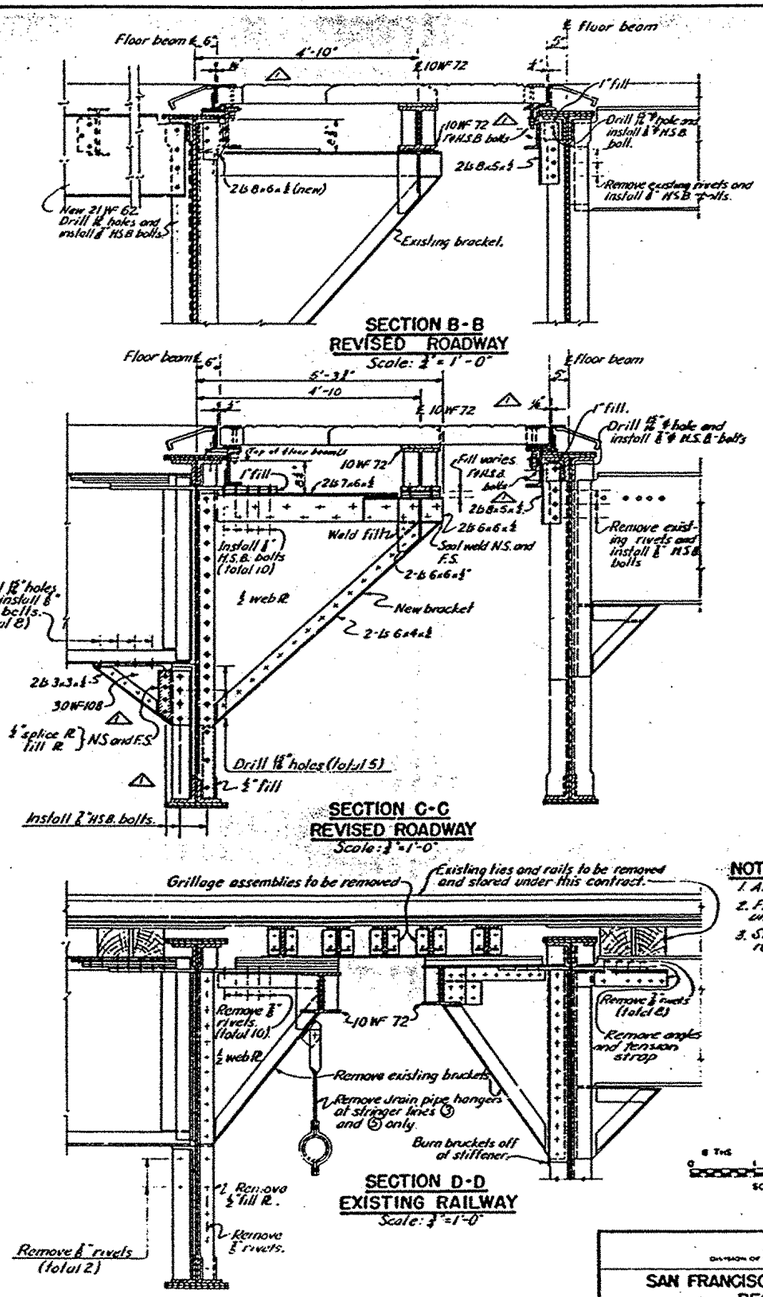
CANTILEVER SPAN DETAILS PIERS E2 AND E3

UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No 43 | DRAWING C-40H-43R

APPROVAL RECOMMENDED BY

PROJECT No. 1 Contract 3-65
Formerly No. 1 Contract 3-65
Formerly No. 1 Contract 3-65
Formerly No. 1 Contract 3-65
DATE 9-60
DRAWN C.S. Checked 9/60
DESIGN CHECKED BY
QUANTITIES CHECKED
DESIGN CHECKED BY





NOTES

1. All shop rivets ⅞"
2. Field connections ⅞" H.S.B. bolts unless noted
3. See sheet 70 for drainage removal.

DATE APPROVED September 25, 1960

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

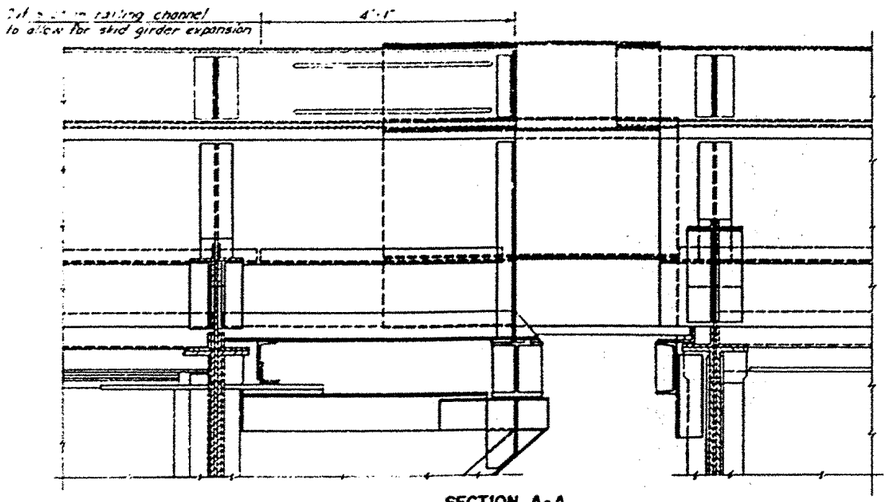
CANTILEVER SPAN PIER E4 ALTERATION DETAILS

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7163	As built with revisions	A.L.C.	A.L.

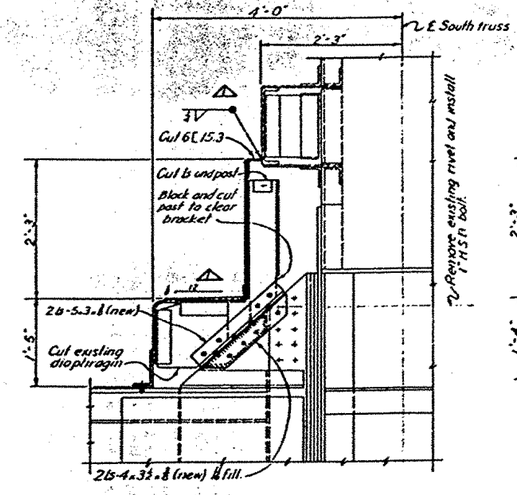
REVISION

UNLESS NOTED SCALE 1/2" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 44 | DRAWING C-4011-44-R

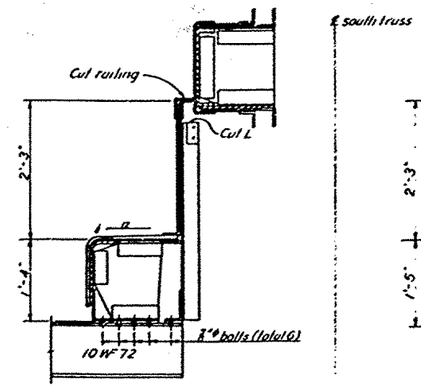
DATE APPROVED September 23, 1960



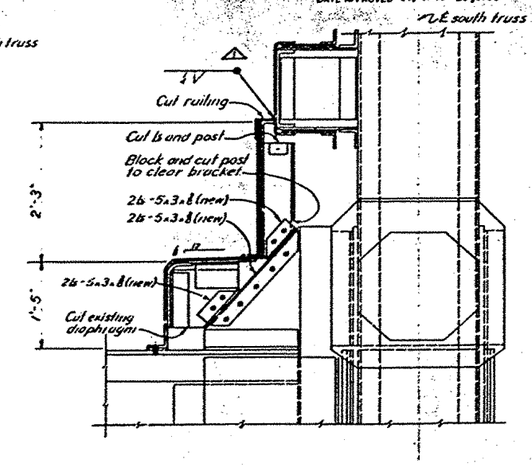
SECTION A-A



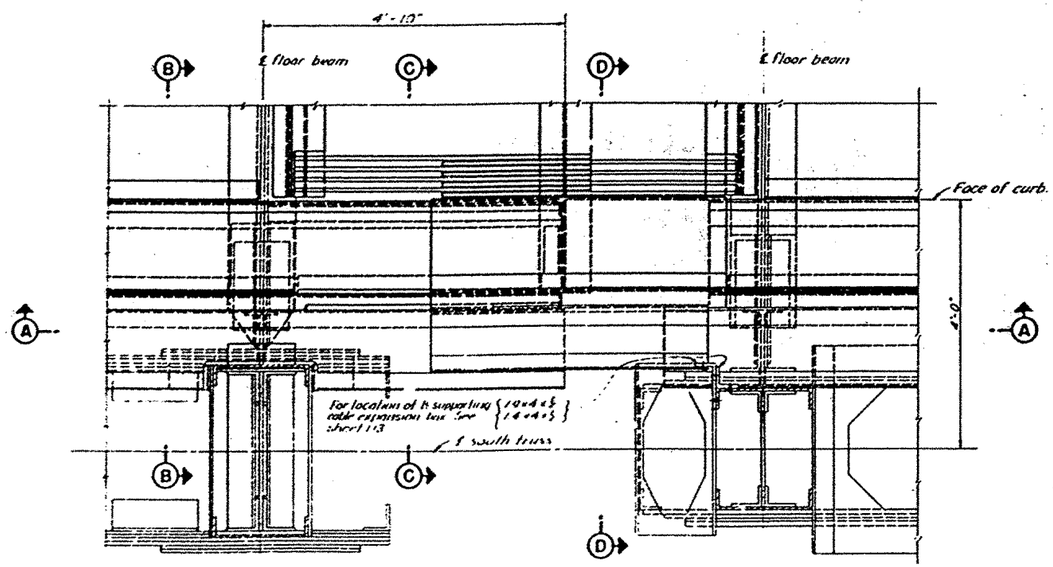
SECTION B-B



SECTION C-C



SECTION D-D



PART PLAN

NOTES:

1. All rivets and bolts are ⅞" ϕ unless noted otherwise.

8 THS 10 THS
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

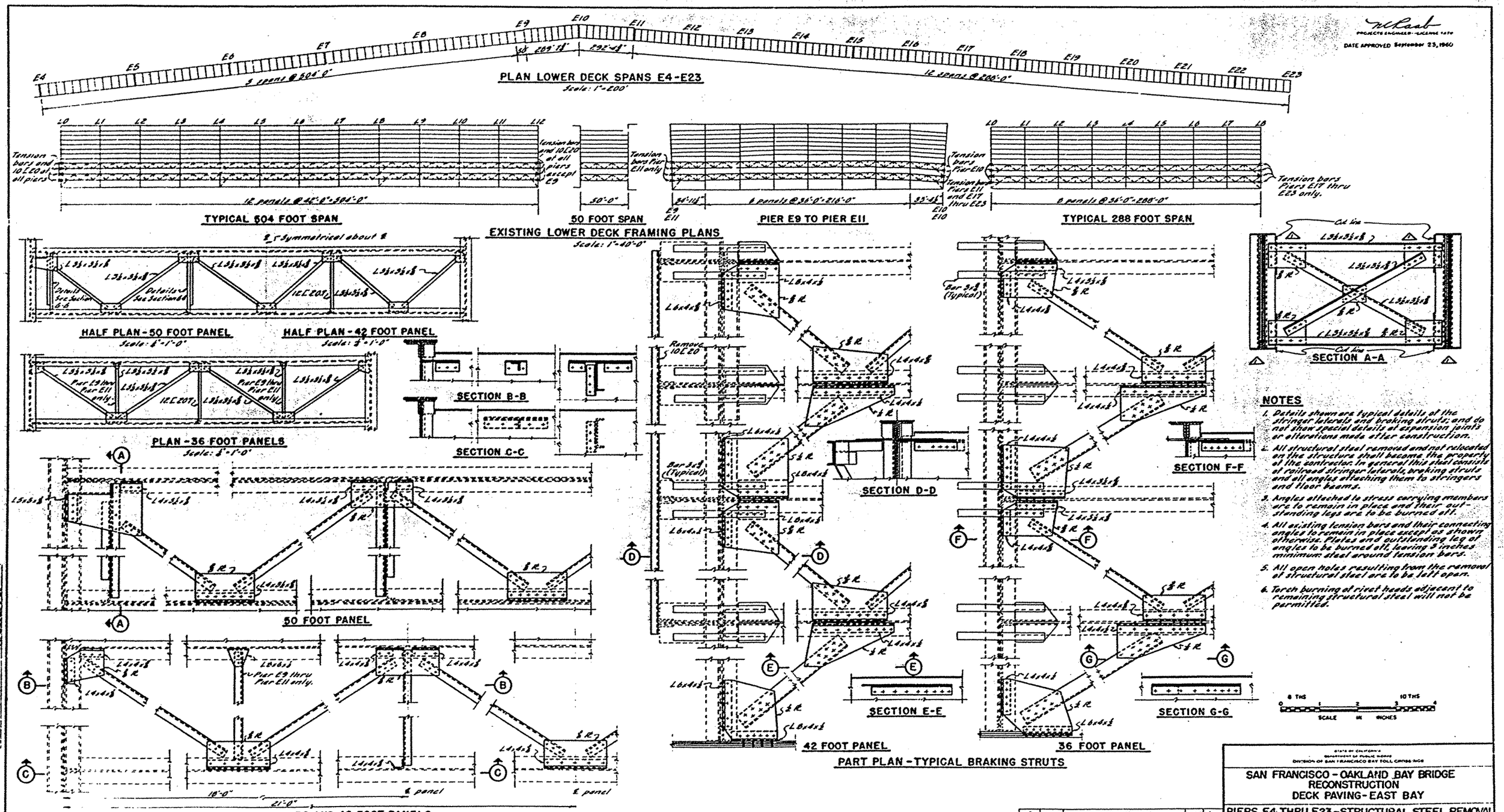
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CANTILEVER SPAN - PIER E4 CURB AND RAILING

MARK	DATE	DESCRIPTION	BY	CHK.
1	7-1-68	As built with revisions	A.L.S.	A.L.

REVISION

SCALE 1" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET NO 45 | DRAWING C-4011-45-R



DATE APPROVED September 23, 1960

NOTES

1. Details shown are typical details of the stringer laterals and braking struts, and do not show special details at expansion joints or alterations made after construction.
2. All structural steel removed and not relocated on the structure shall become the property of the contractor. In general this steel consists of railroad stringer laterals, braking struts and all angles attaching them to stringers and floor beams.
3. Angles attached to stress carrying members are to remain in place and their outstanding legs are to be burned off.
4. All existing tension bars and their connecting angles to remain in place except as shown otherwise. Plates and outstanding leg of angles to be burned off, leaving 3 inches minimum steel around tension bars.
5. All open holes resulting from the removal of structural steel are to be left open.
6. Torch burning of rivet heads adjacent to remaining structural steel will not be permitted.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

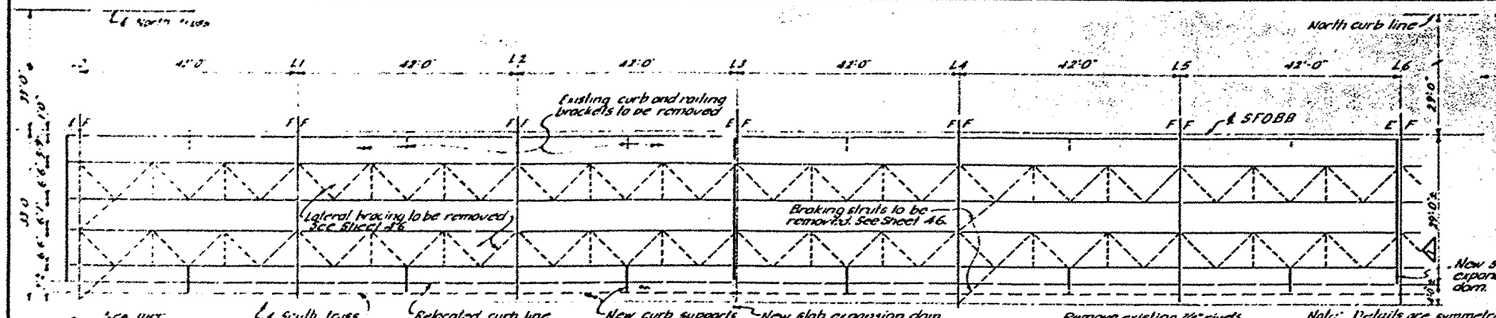
PIERS E4 THRU E23 - STRUCTURAL STEEL REMOVAL

MARK	DATE	DESCRIPTION	BY	CHK.
2	7-1-65	As built with revisions	J.L.B.	A.L.

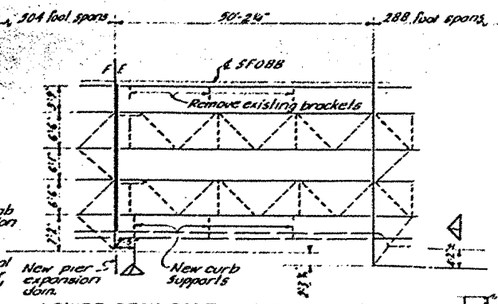
REVISION

UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 46 | DRAWING C-4011-46 R

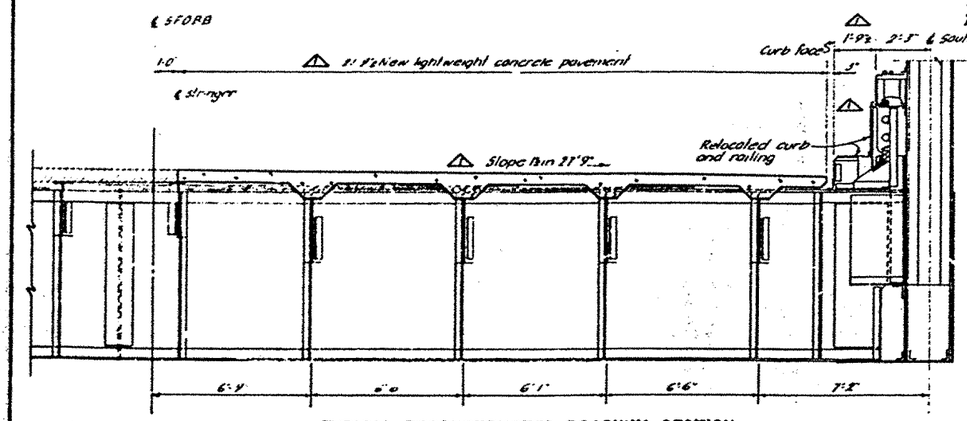
DATE APPROVED September 25, 1960



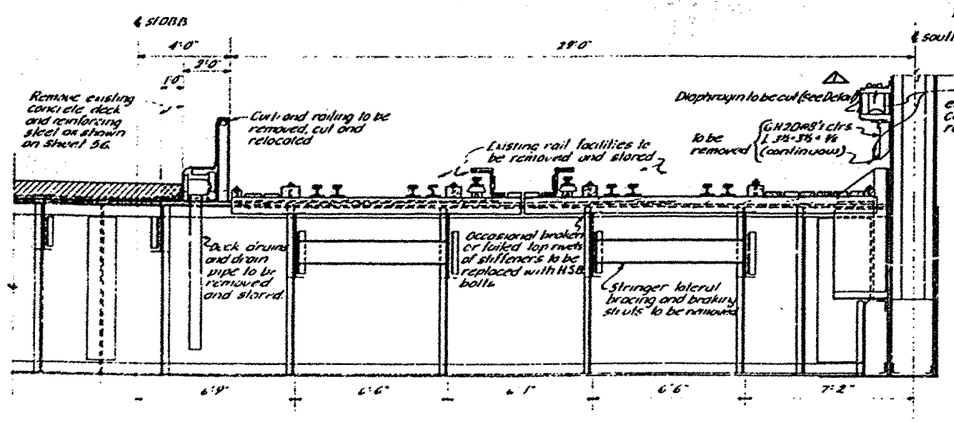
TYPICAL LOWER DECK SOUTH HALF FRAMING PLAN
PIERS E4-E9
No Scale



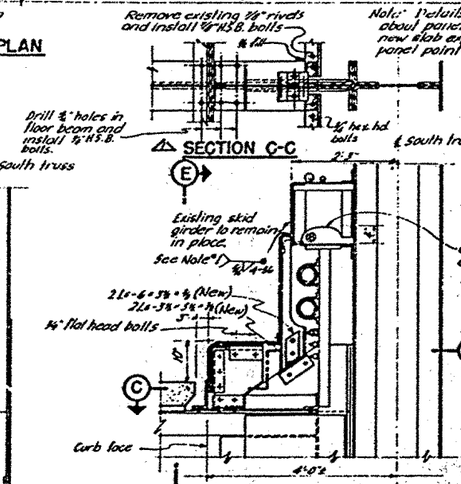
LOWER DECK SOUTH HALF FRAMING PLAN
PIER E9
No Scale



TYPICAL RECONSTRUCTED ROADWAY SECTION
Scale: ¼"=1'-0"



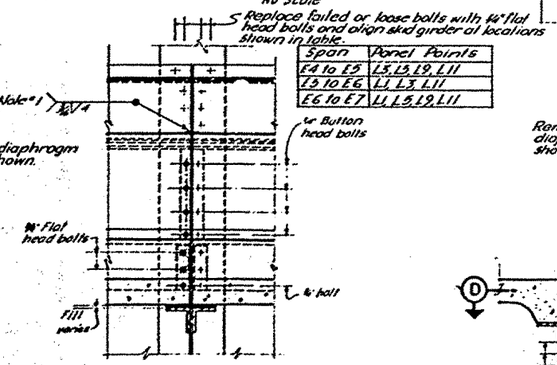
TYPICAL EXISTING RAILWAY SECTION
Scale ¼"=1'-0"



SECTION C-C

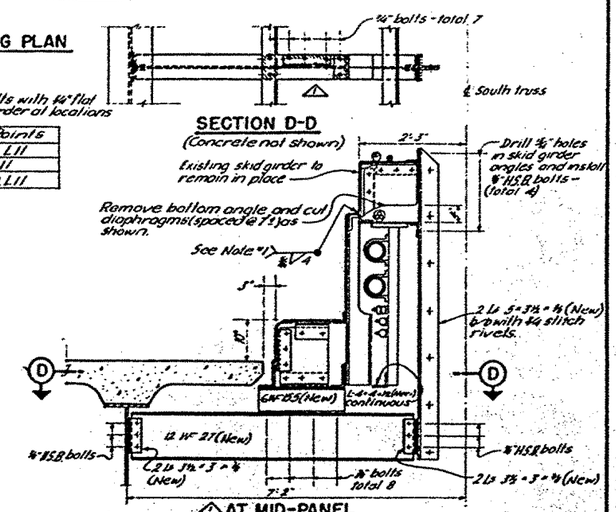
AT INTERMEDIATE FLOOR BEAMS

Note: For end floor beam connection see Sheet no. 45, section D-D.



Span	Panel Points
E4 to E5	L5, L9, L9, L11
E5 to E6	L1, L3, L11
E6 to E7	L1, L5, L9, L11

SECTION E-E

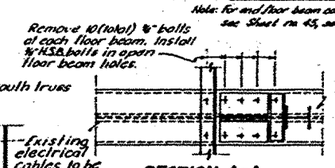


SECTION D-D
(Concrete not shown)

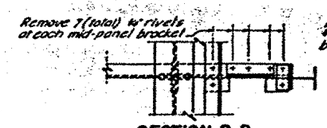
AT MID-PANEL

Note: Provide similar curb supports at Pier E9 (total 3)

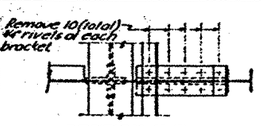
RELOCATED CURB AND RAILING CONNECTIONS



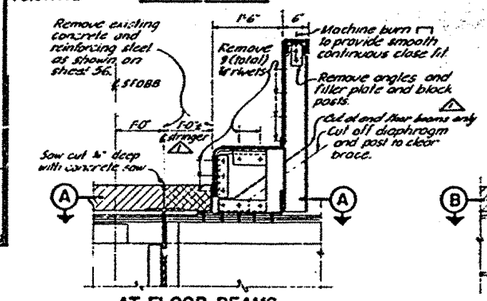
SECTION A-A



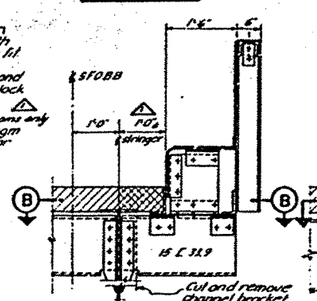
SECTION B-B



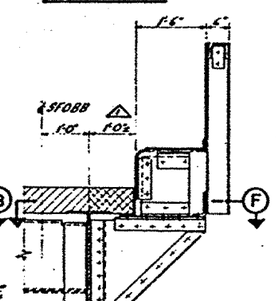
SECTION F-F



AT FLOOR BEAMS



AT MID-PANEL



AT PIER E9
(total 2)

EXISTING CURB AND RAILING CONNECTIONS

NOTES

1. Weld at each railing post and at intermediate points.
2. All bolts to be machine bolts with hex head and nuts except as noted.
3. Where H.S.B. bolts are indicated the use of rivets will be permitted.

MARK	DATE	DESCRIPTION	BY	CH'K
2	7/63	As built with revisions	L.L.S.	A.L.

REVISION

8 THS 10 THS

SCALE IN INCHES

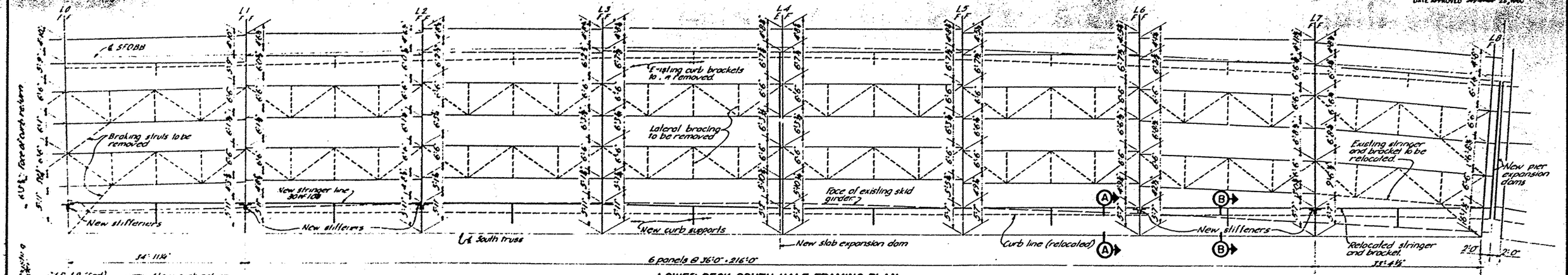
DIVISION OF SAN FRANCISCO-BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

504 FOOT SPANS-ROADWAY REVISIONS

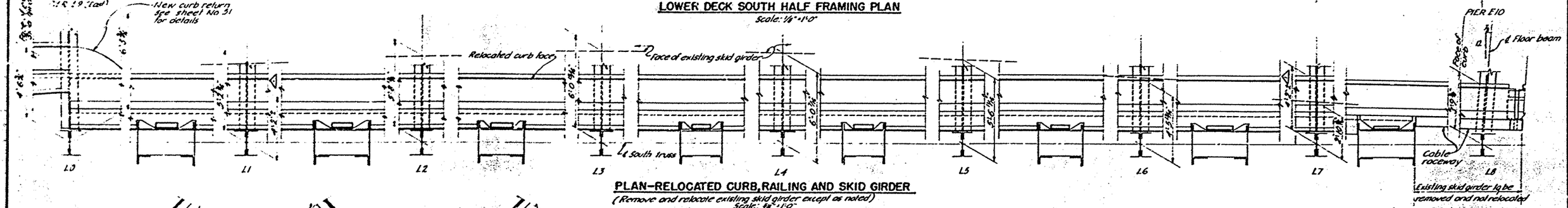
UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 47 | DRAWING C-401-47 B

DATE APPROVED September 23, 1960



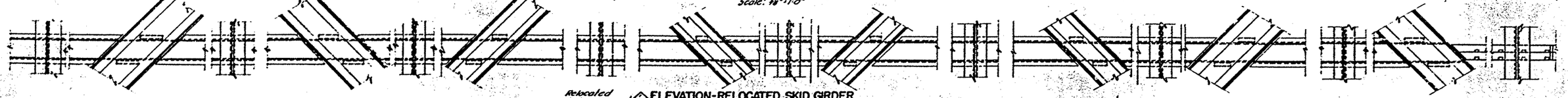
LOWER DECK SOUTH HALF FRAMING PLAN

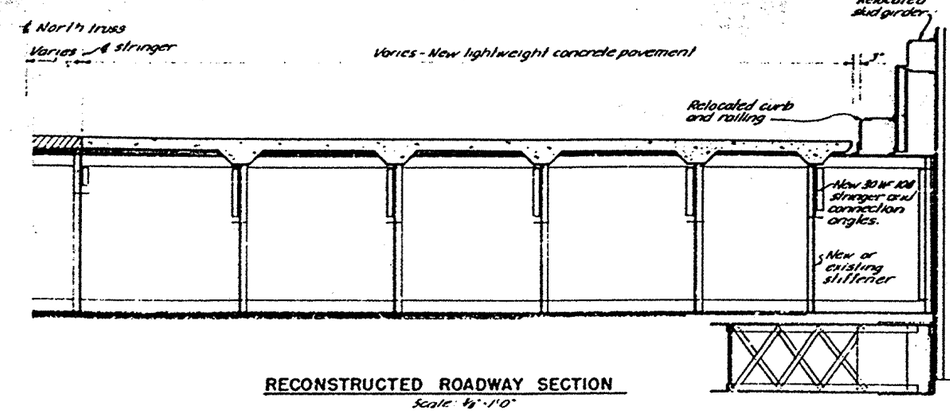
Scale: 1/8" = 1'-0"



PLAN-RELOCATED CURB, RAILING AND SKID GIRDER

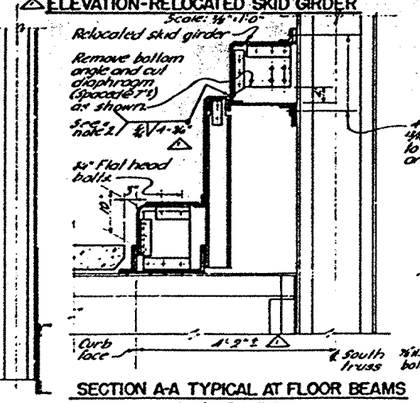
(Remove and relocate existing skid girder except as noted)
Scale: 1/8" = 1'-0"





RECONSTRUCTED ROADWAY SECTION

Scale: 1/2" = 1'-0"

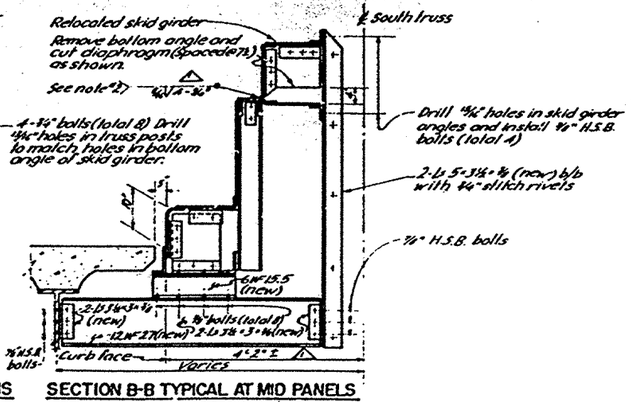


ELEVATION-RELOCATED SKID GIRDER

Scale: 1/8" = 1'-0"

SECTION A-A TYPICAL AT FLOOR BEAMS

Scale: 1/2" = 1'-0"



SECTION B-B TYPICAL AT MID PANELS

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

NOTES

1. For stringer and bracket connection details see Sheet 33.
2. Weld at each railing post and at intermediate points.

MARK	DATE	DESCRIPTION	BY	CH'K.
2	7.1.63	As built with revisions	OR	A.L.

REVISION

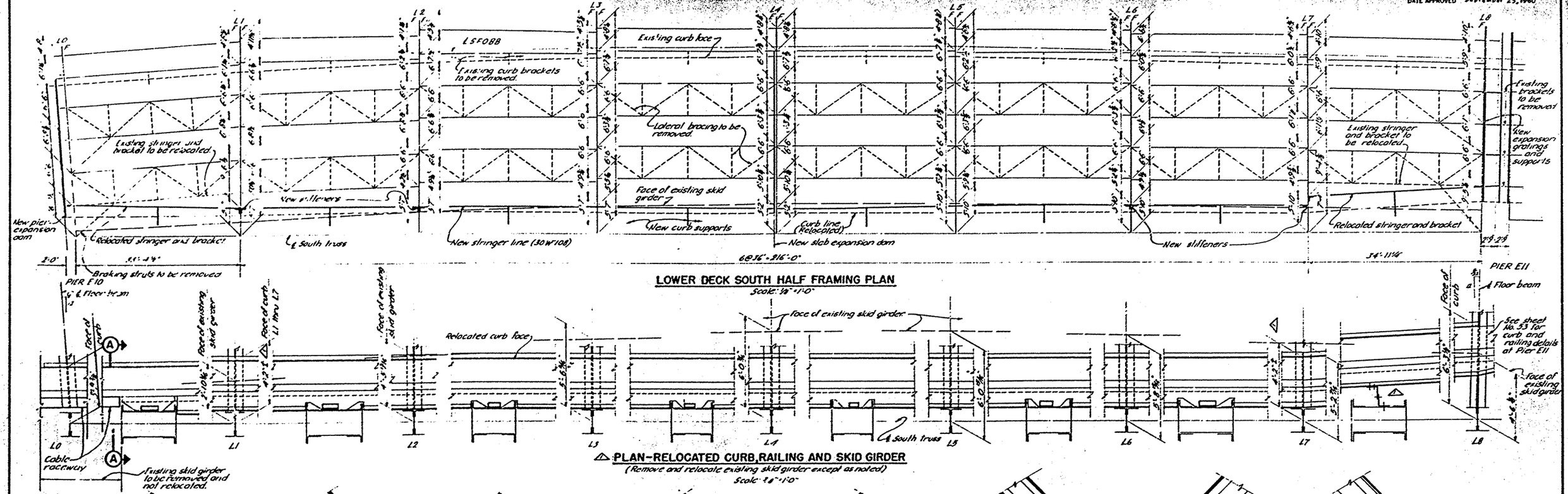
8 THS 16 THS 0 1 2 3 4 SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
288 FOOT SPAN - REVISIONS PIERS E9 TO E10

SCALE AS SHOWN	BRIDGE 33-25 34-03 34-04	SHEET No. 48	DRAWING C-4011-46

DATE APPROVED September 23, 1960



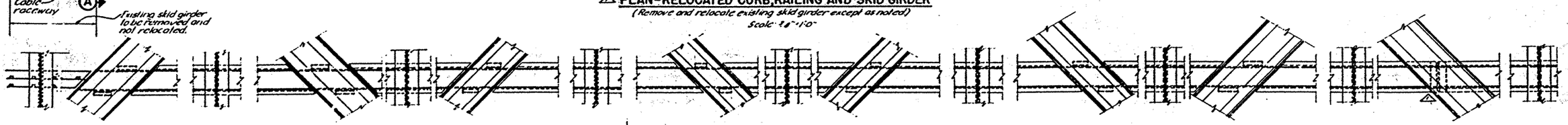
LOWER DECK SOUTH HALF FRAMING PLAN

Scale: 1/8" = 1'-0"

△ PLAN-RELOCATED CURB, RAILING AND SKID GIRDER

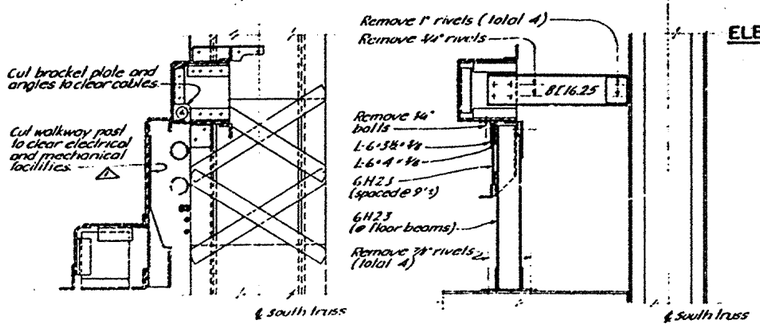
(Remove and relocate existing skid girder except as noted)

Scale: 1/8" = 1'-0"



ELEVATION-RELOCATED SKID GIRDER △

Scale: 1/8" = 1'-0"



SECTION A-A

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

TYPICAL EXISTING SKID GIRDER E9-E11

Scale: 1/2" = 1'-0"

NOTES

1. See Sheet 53 for stringer and bracket connection details.

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

288 FOOT SPAN-REVISIONS PIERS E10 TO E11

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7.1.63	As built with revisions	DB	A.L.

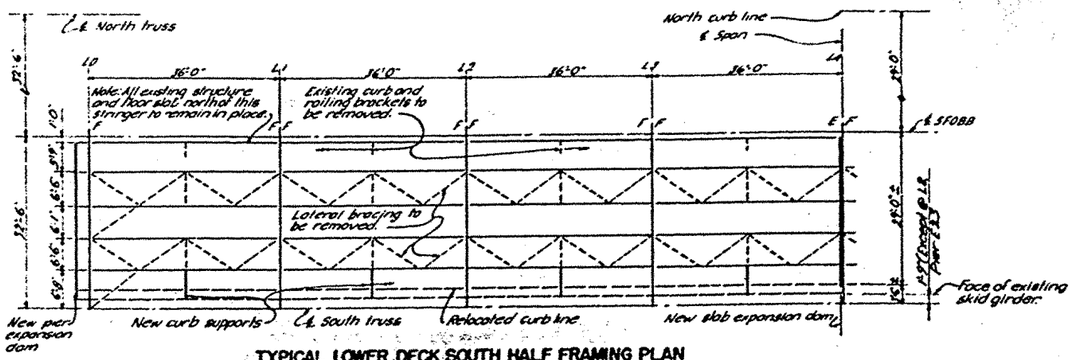
REVISION

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 49 | DRAWING C-4011-49 R

APPROVAL RECOMMENDED BY: A. L. Richey, SUPERVISING ENGINEER, BRIDGE & TUNNEL

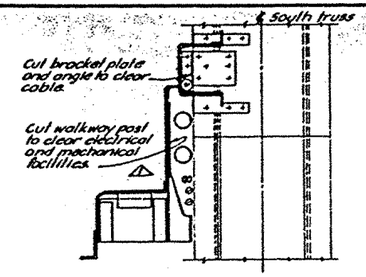
DESIGN
INITIAL
QUANTITIES
CHECKED
CHECKING QUANTITIES CHECKED BY

DATE APPROVED September 23, 1960

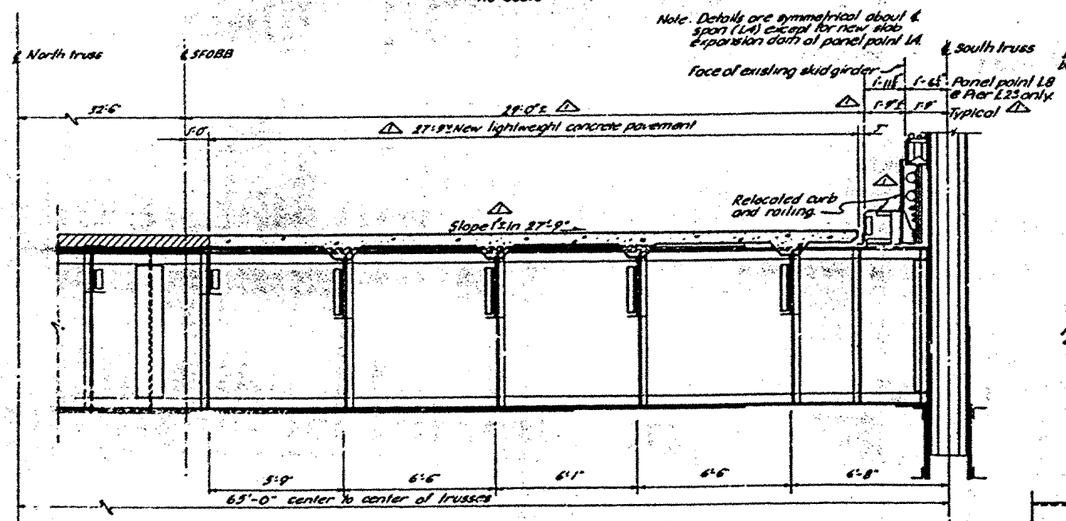


TYPICAL LOWER DECK SOUTH HALF FRAMING PLAN

No Scale

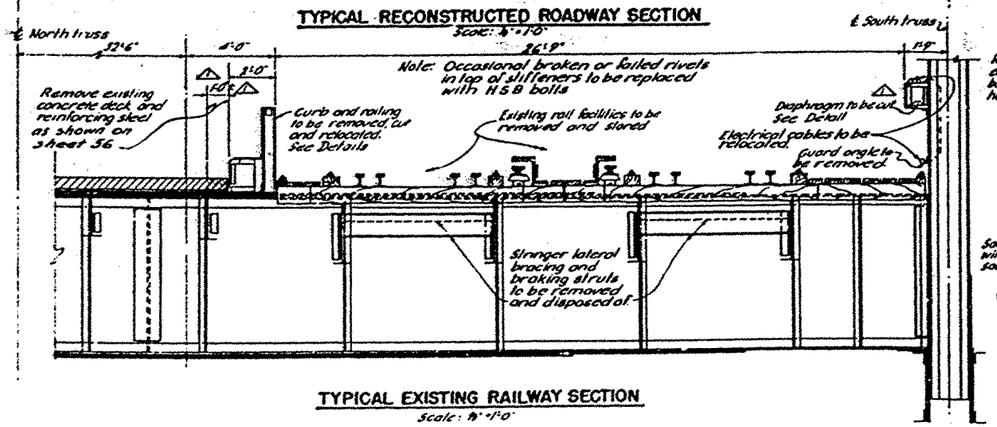


TYPICAL DETAIL AT DIAGONAL



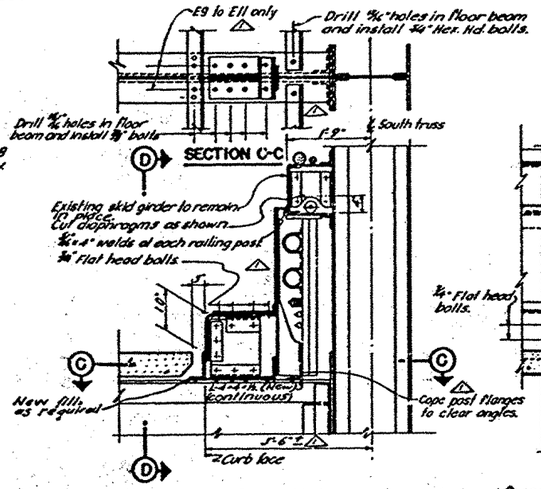
TYPICAL RECONSTRUCTED ROADWAY SECTION

Scale: 3/8"=1'-0"



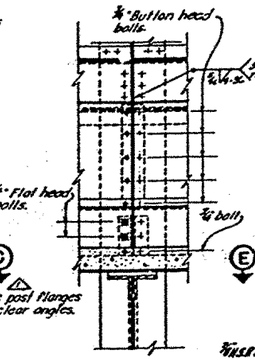
TYPICAL EXISTING RAILWAY SECTION

Scale: 3/8"=1'-0"

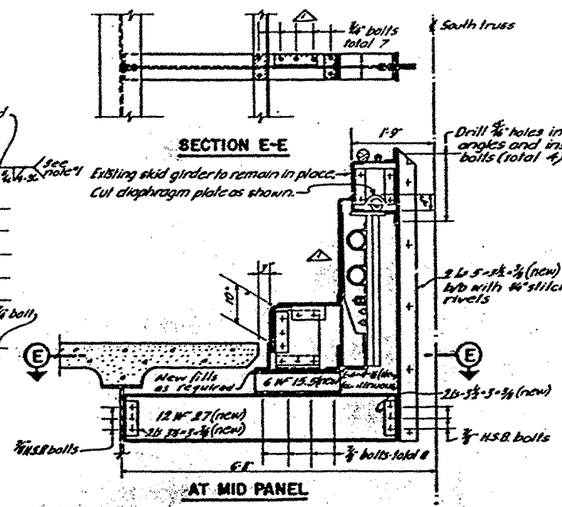


AT FLOOR BEAM

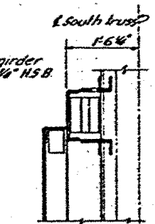
Note: Details are typical at all floor beams except as shown for L8, Pier E23.



SECTION D-D



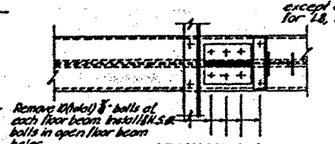
AT MID PANEL



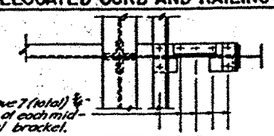
SKID GIRDER DETAIL

L8 PIER E 23

RELOCATED CURB AND RAILING CONNECTIONS



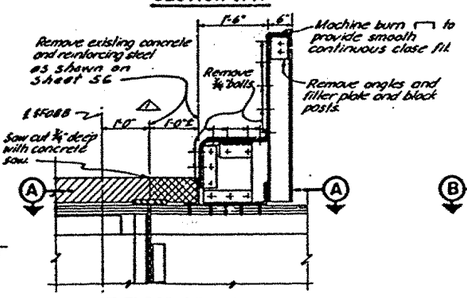
SECTION A-A



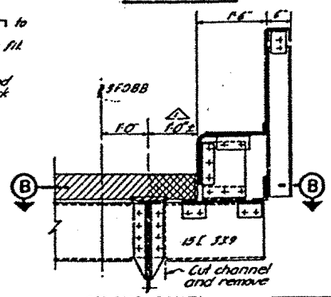
SECTION B-B

NOTES

1. Weld at each railing post and at intermediate points.
2. All bolts to be machine bolts with Hex. Hd. and nut except as noted.
3. Where H.S.B. bolts are indicated the use of rivets will be permitted.

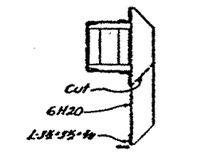


AT FLOOR BEAMS

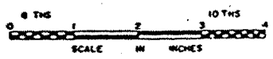


AT MID PANEL

EXISTING CURB AND RAILING CONNECTIONS



EXISTING SKID GIRDER



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

288 FOOT SPANS-ROADWAY REVISIONS E11 THRU E23

MARK	DATE	DESCRIPTION	BY	CH'K.
1	7.1.63	As built with revisions	JB	J.J.

REVISION

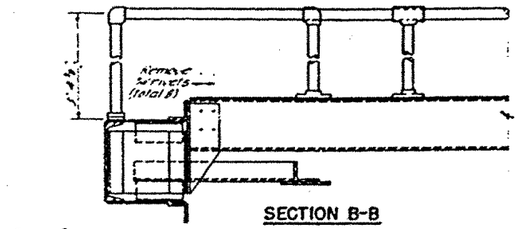
UNLES NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 50 | DRAWING C-4011-50 R

PROJECTS ENGINEER — LICENSE NO.

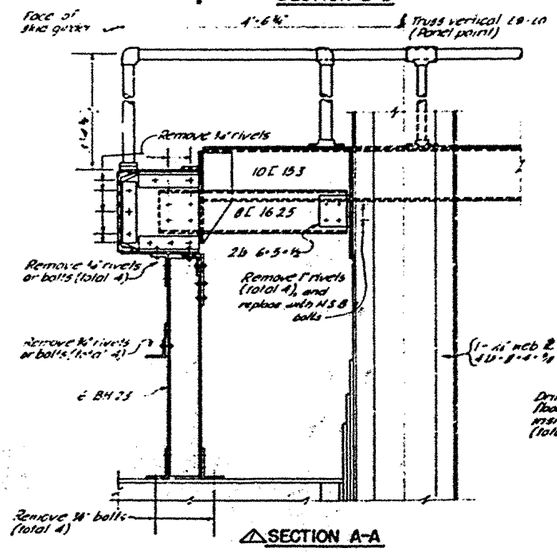
APPROVAL RE: [illegible]

DESIGN — DETAILS — QUANTITIES — TRACED — CHECKED

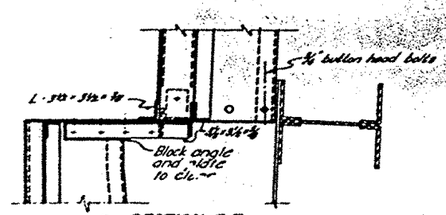
DESIGN — DETAILS REPORTED BY



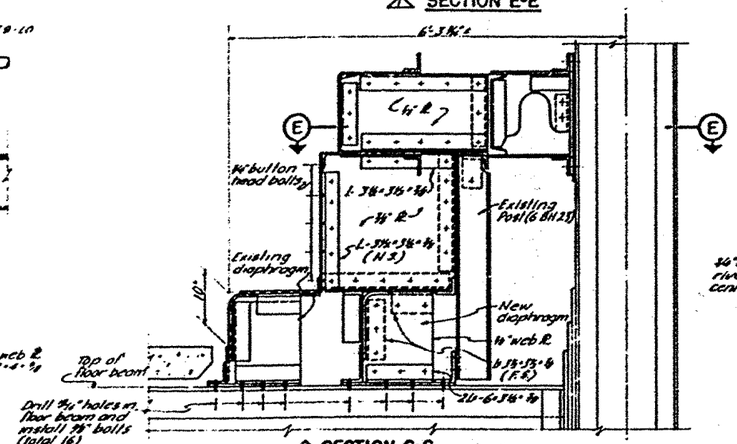
SECTION B-B



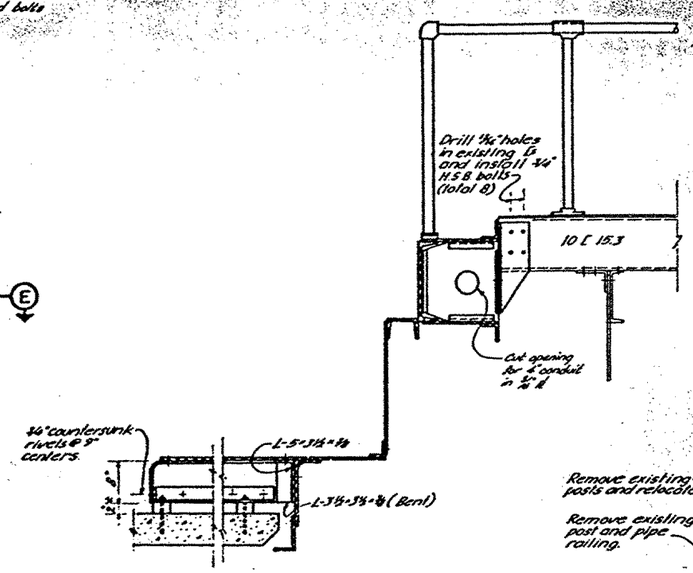
△ SECTION A-A



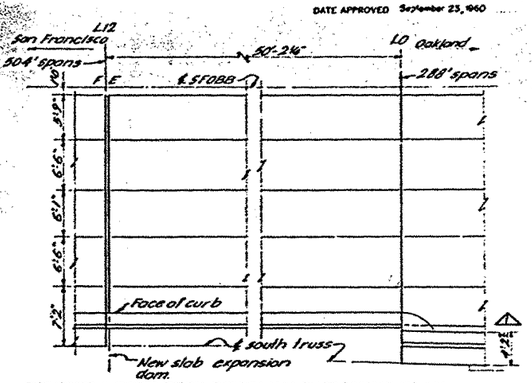
△ SECTION E-E



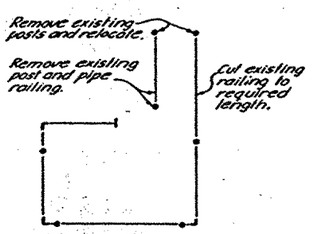
△ SECTION C-C



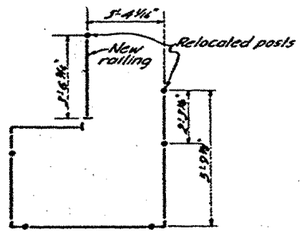
△ SECTION D-D



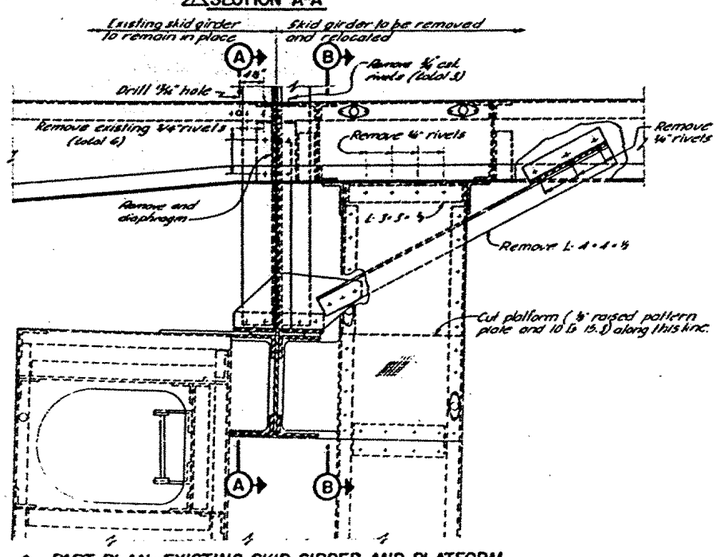
REVISED LOWER DECK SOUTH HALF FRAMING PLAN
PIER E9
Scale: 1/4" = 1'-0"



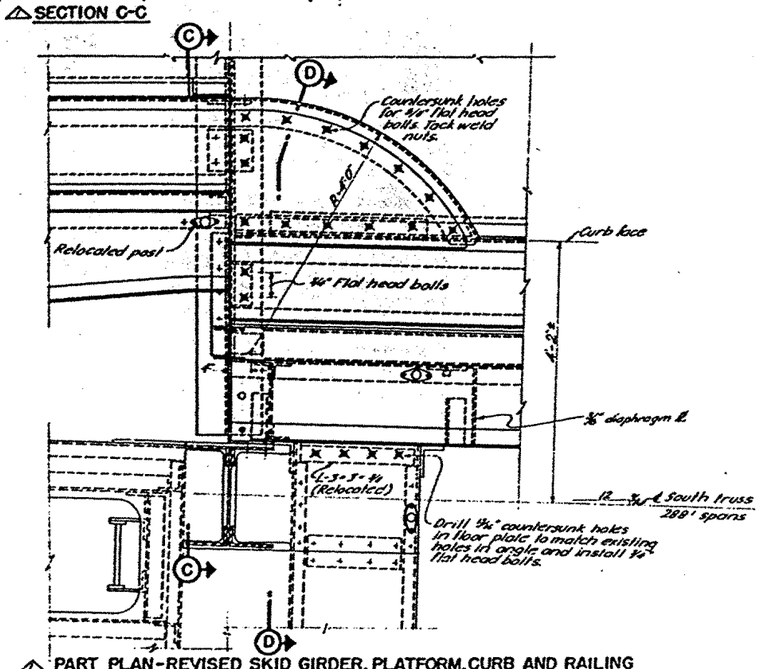
EXISTING PIPE RAILING
Scale: 3/8" = 1'-0"



REVISED PIPE RAILING
Scale: 3/8" = 1'-0"



△ PART PLAN-EXISTING SKID GIRDER AND PLATFORM
(Panel point L0)



△ PART PLAN-REVISED SKID GIRDER, PLATFORM, CURB AND RAILING
(Panel point L0)

MARK	DATE	DESCRIPTION	BY	CH'K
△	2 LLS	As built with revisions	LLS	A.L.
		REVISION		

PROJECT ENGINEER - LICENSE 1679
DATE APPROVED September 23, 1960

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

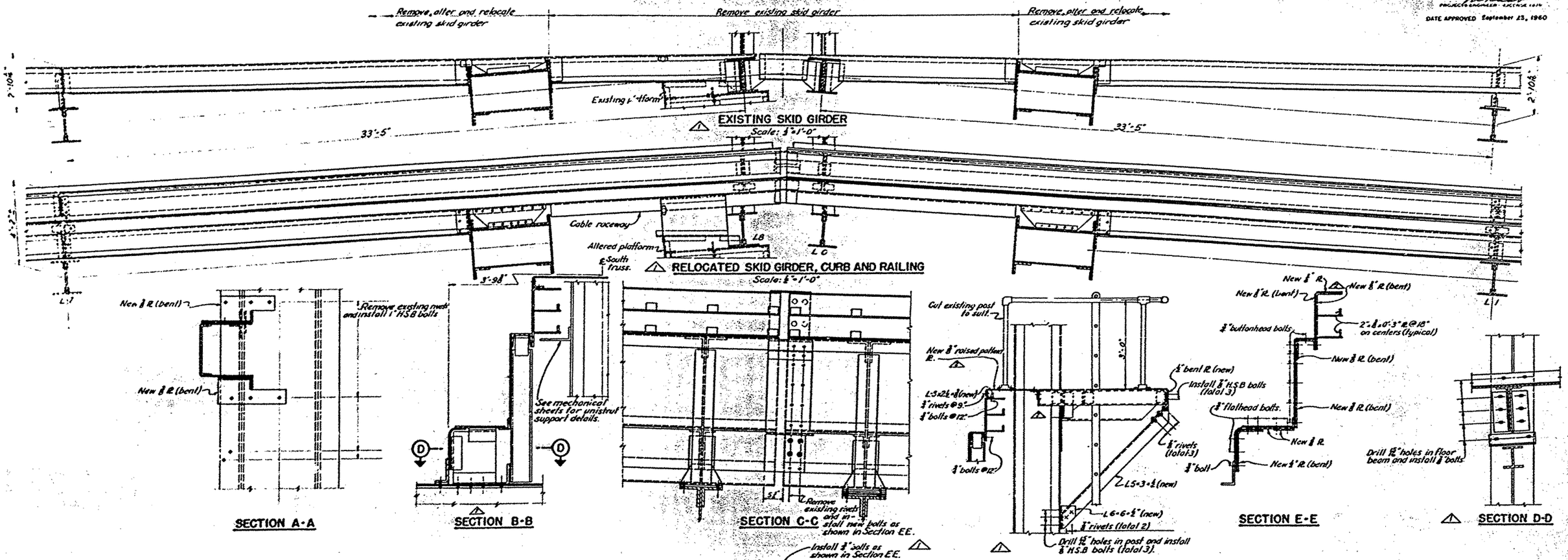
288 FOOT SPAN - PIER E9 ALTERATION DETAILS

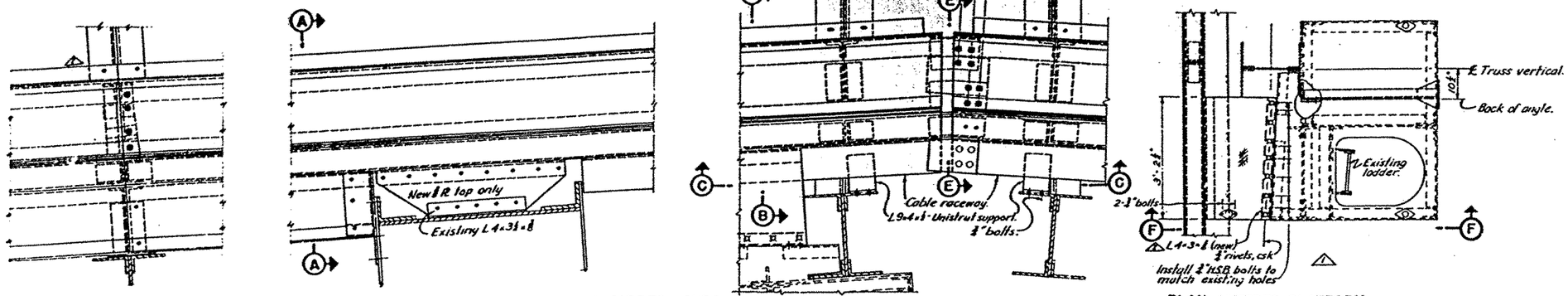
UNLESS NOTED SCALE 1" = 1'-0"
BRIDGE 33-25 / 34-03 / 34-04
SHEET No. 51
DRAWING C-4011-51R

APPROVAL RECOMMENDED BY

PROJECT ENGINEER - ELECTRICAL

DATE APPROVED September 23, 1960





PART PLAN-RELOCATED SKID GIRDER, CURB AND RAILING

PLAN-ALTERED PLATFORM
Scale: ¼"=1'-0"

NOTES

1. See Sheet 38 for typical cable raceway detail.
2. Bolts and nuts ¾" unless noted.
3. All structural steel removed and not relocated on the structure shall become the property of the contractor.

0 6 THS 10 THS 1 2 3 4
SCALE IN INCHES

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

288 FOOT SPAN - PIER E10 ALTERATION DETAILS

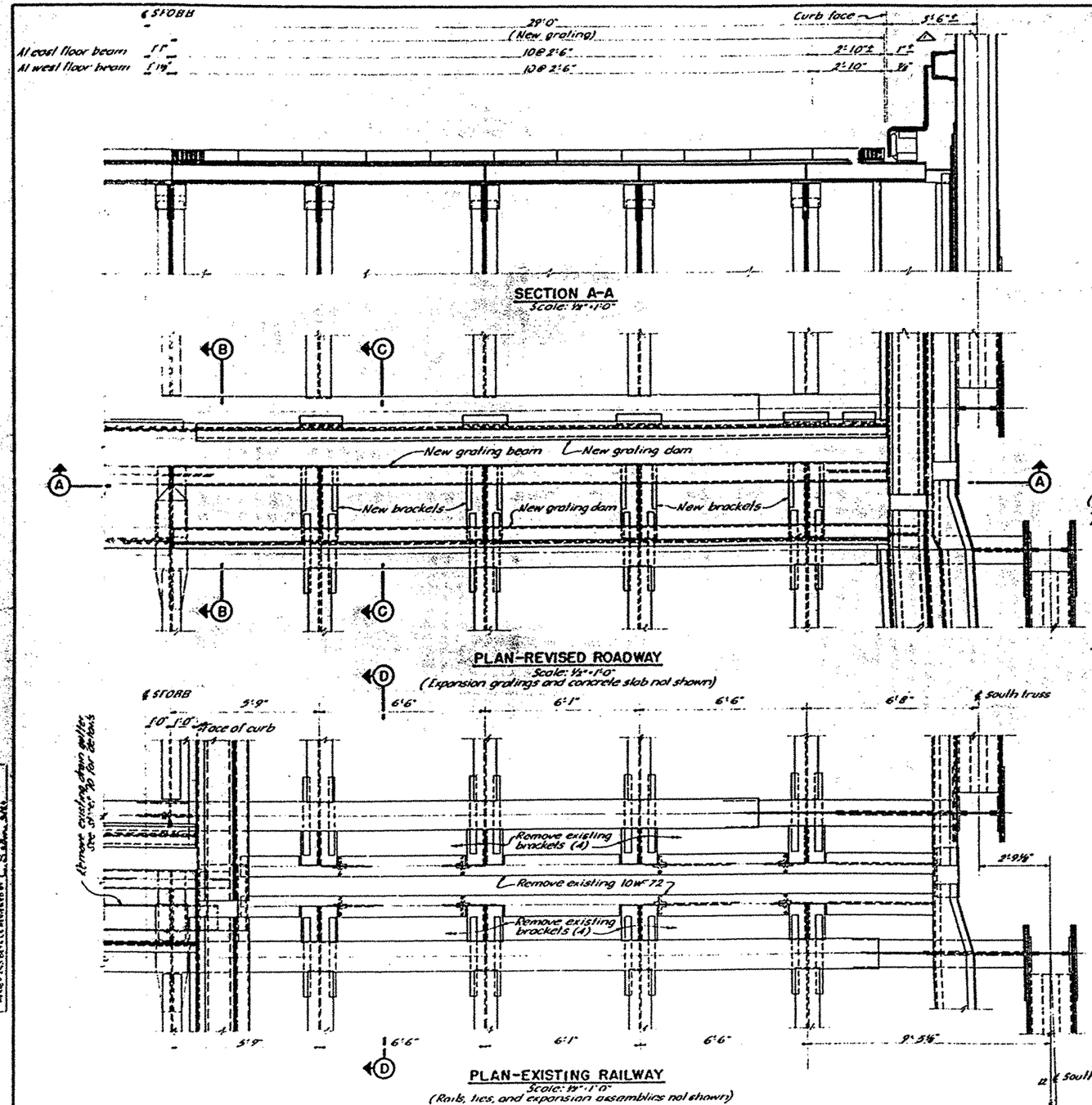
MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As built with revisions	OB	A.L.
1	3.10.61	Added platform details and notes	c/c	SJC

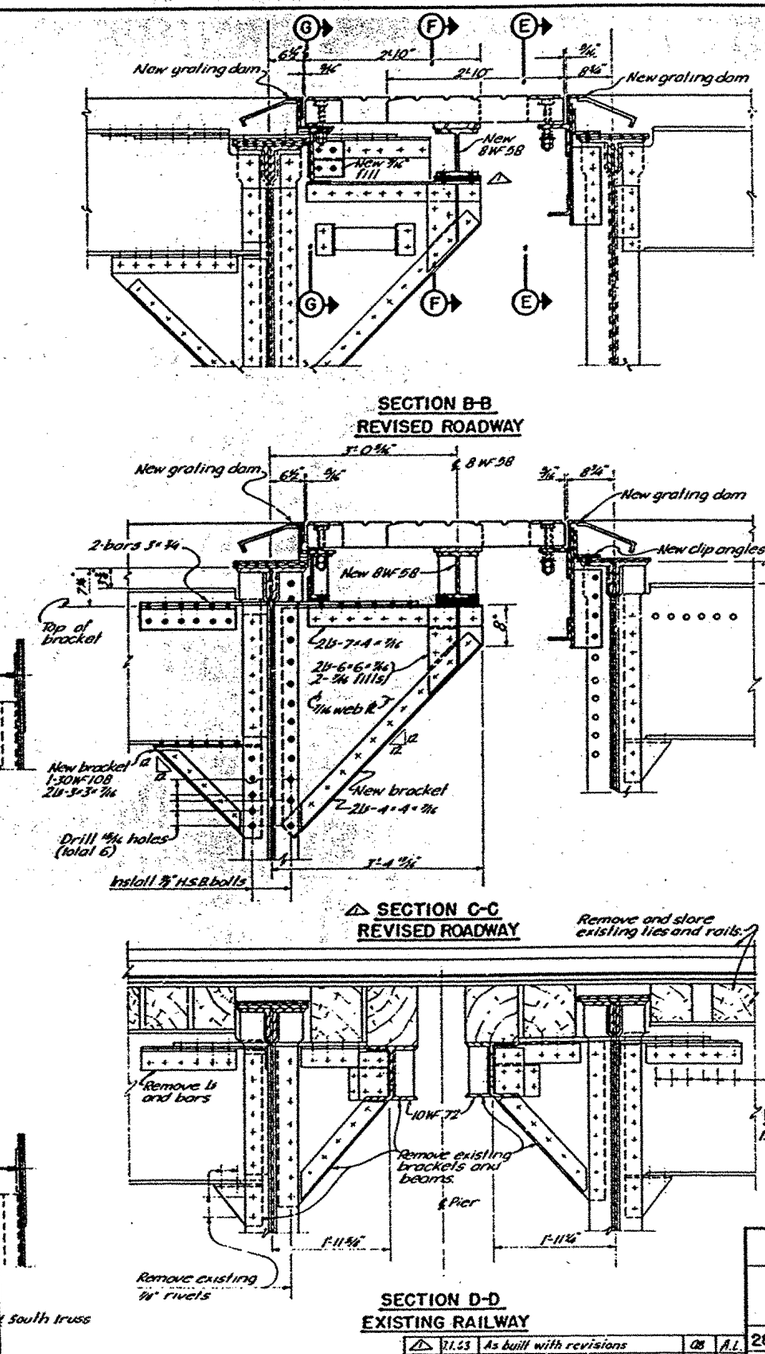
REVISION

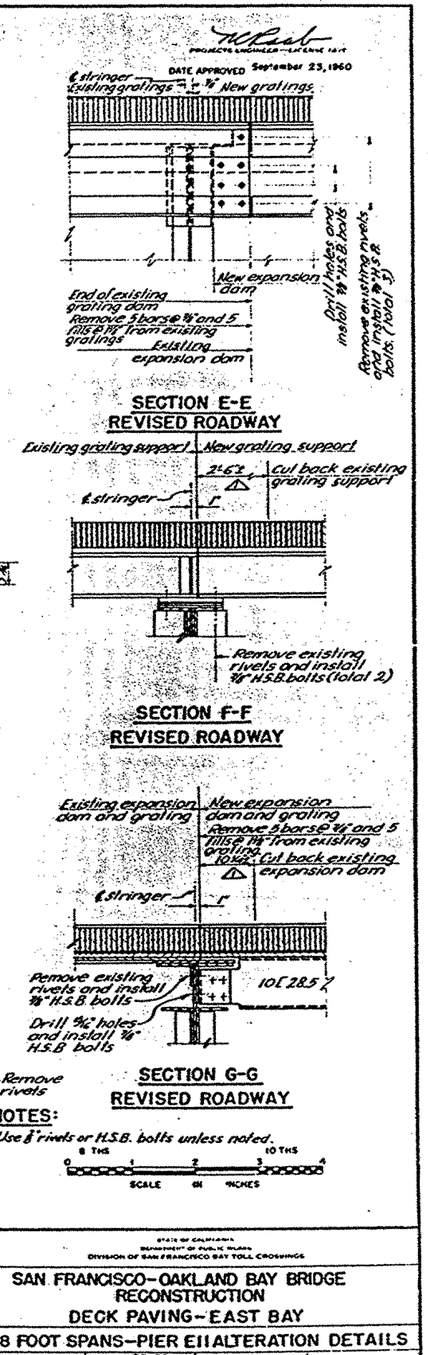
UNLESS NOTED SCALE 1"=1'-0" BRIDGE 33-25 34-03 34-04 SHEET No. 52 DRAWING C-40H-52R

APPROVAL RECOMMENDED BY

Chief Engineer







NOTES:

1. Use 7/8" rivets or H.S.B. bolts unless noted.

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING-EAST BAY
288 FOOT SPANS-PIER E11 ALTERATION DETAILS

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	GB	A.L.

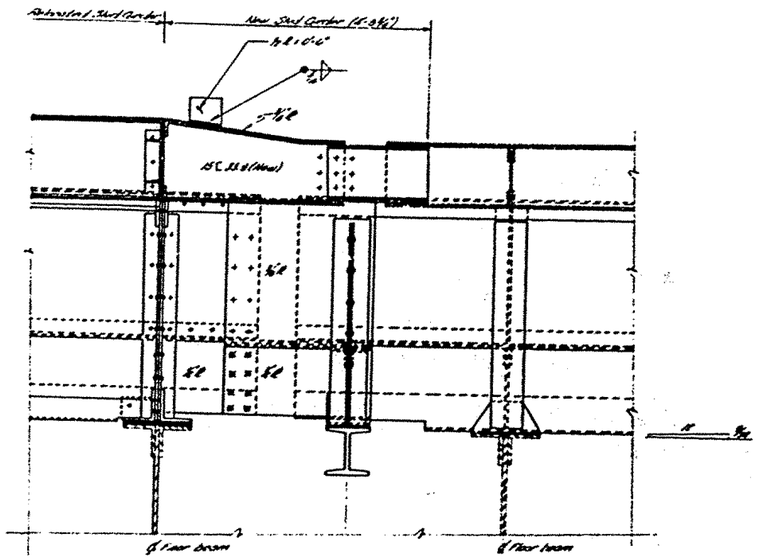
REVISION

UNLESS NOTED SCALE 1" = 1'-0"

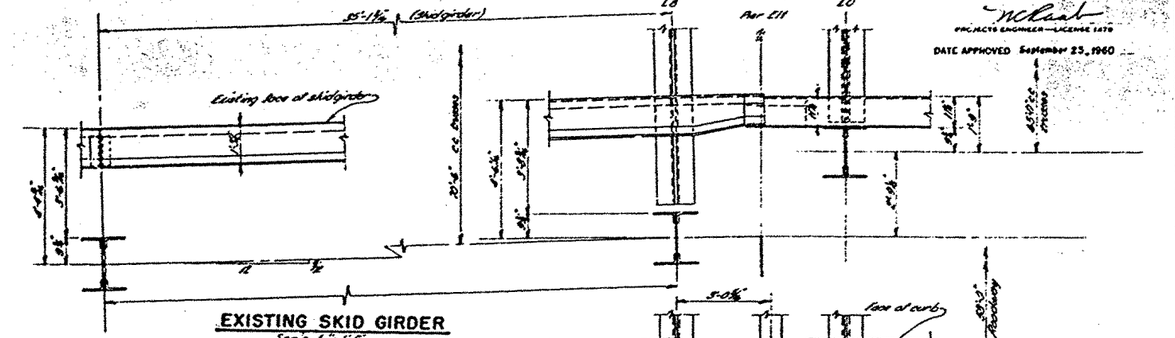
BRIDGE 33-25 / 34-03 / 34-04

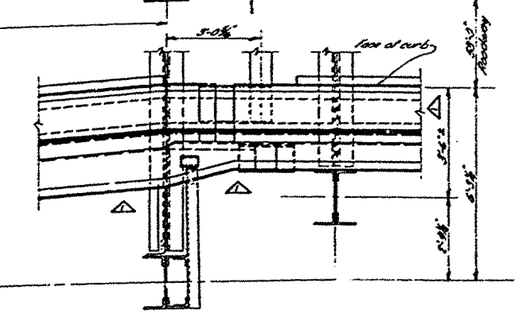
SHEET No. 53

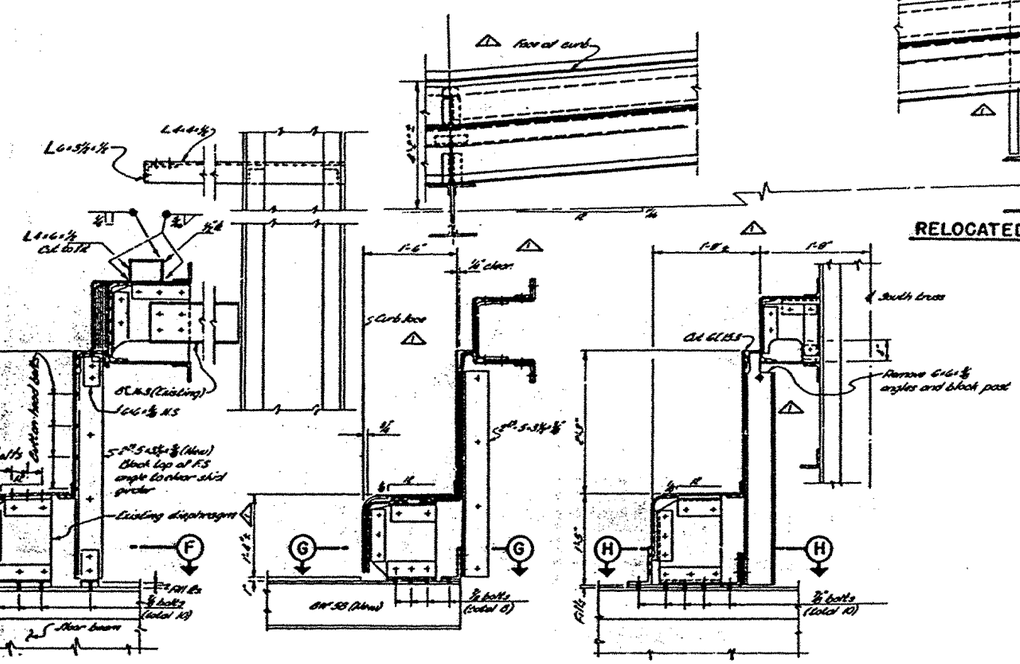
DRAWING C-40E1-53R

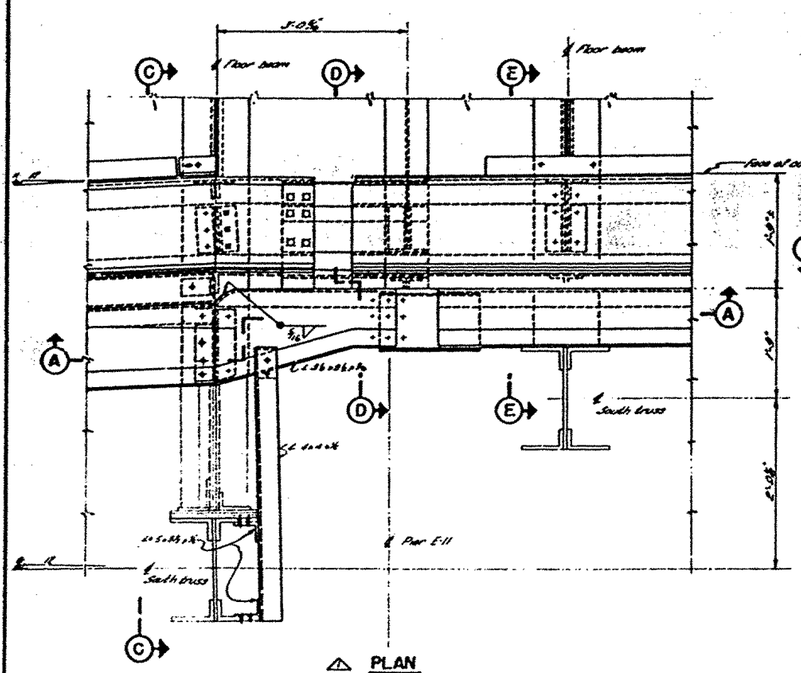


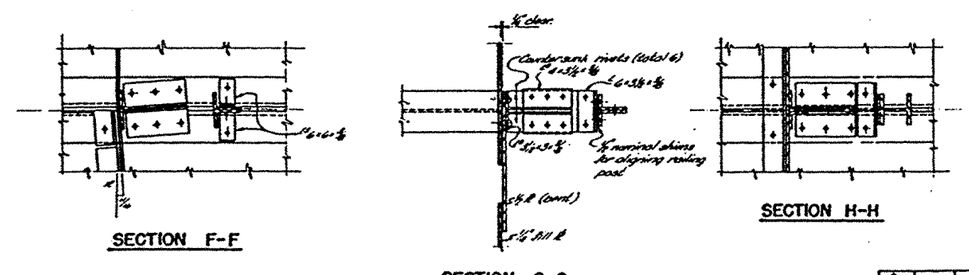
SECTION A-A











NOTES

1. All bolts and rivets to be ⅞" ø unless noted

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

288 FOOT SPAN-PIER E11 CURB AND RAILING DETAILS

MARK	DATE	DESCRIPTION	BY	CH'K
1	7-1-63	As built with revisions	J.L.S.	A.L.

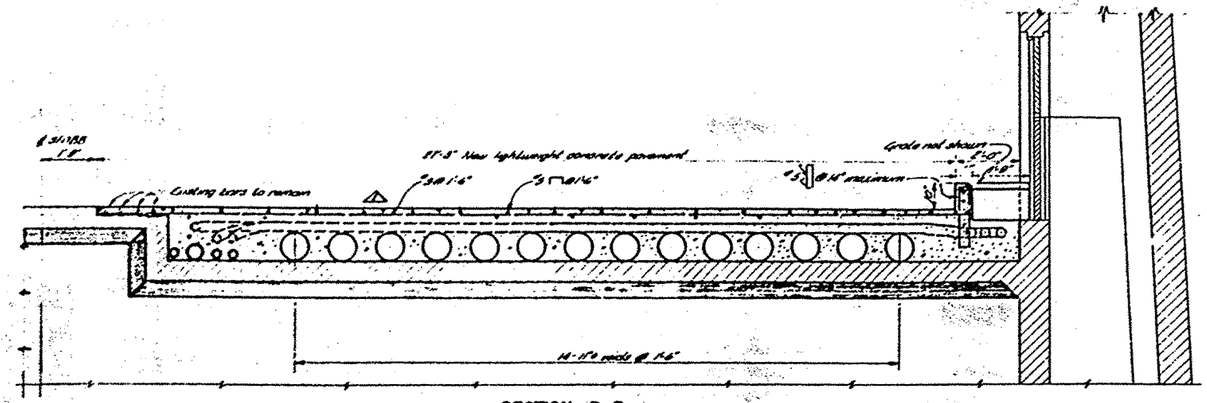
REVISION

UNLESS NOTED SCALE 1"=1'-0" | 33-25 34-03 BRIDGE 34-04 | SHEET No. 54 | DRAWING C-401:54R

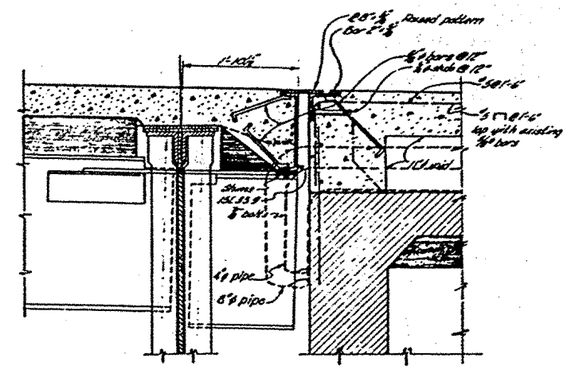
APPROVAL RECOMMENDED BY

PROJECTS ENGINEER — LICENSE NO.

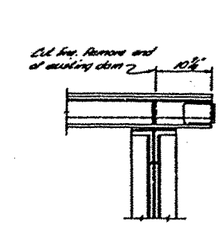
DATE APPROVED September 23, 1960



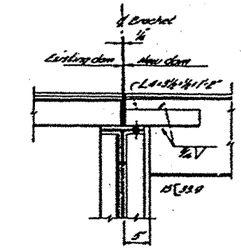
SECTION B-B



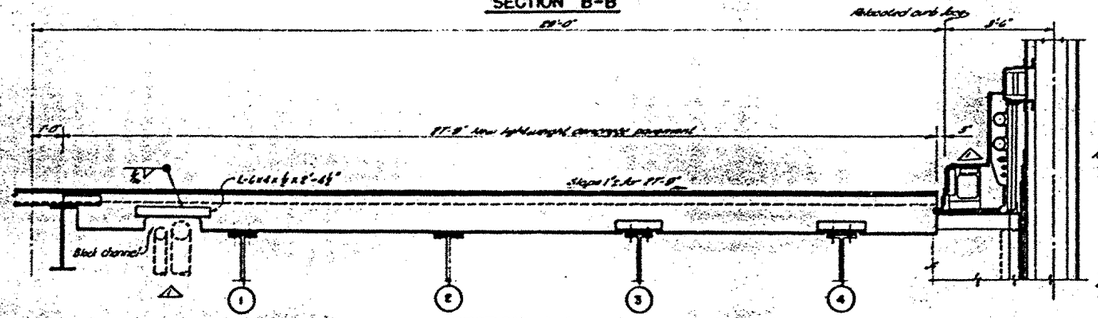
SECTION C-C
Scale: 1"=1'-0"



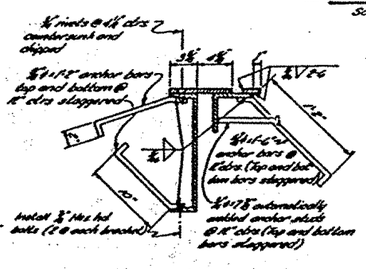
EXISTING DAM
Scale: 1"=1'-0"



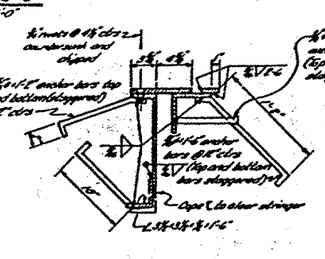
REVISED DAM
Scale: 1"=1'-0"



SECTION A-A

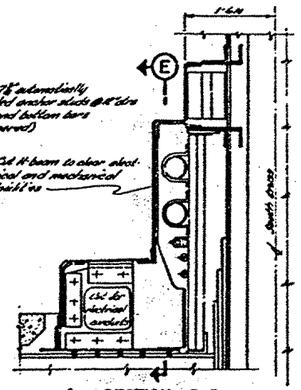


STRINGER 1 AND 2

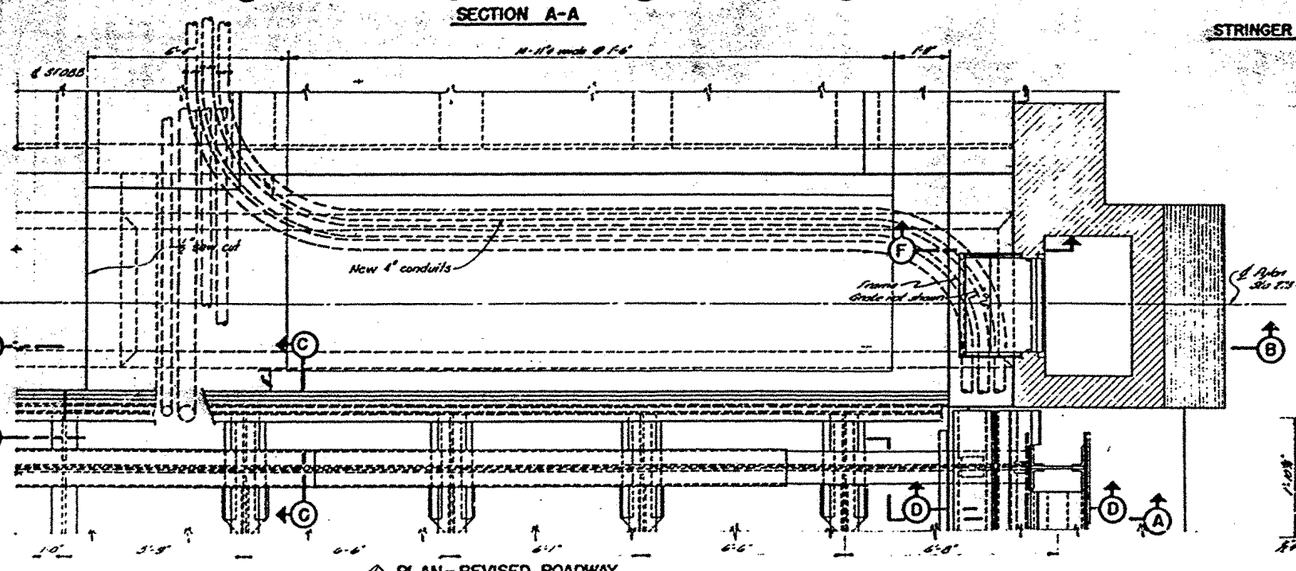


STRINGER 3 AND 4

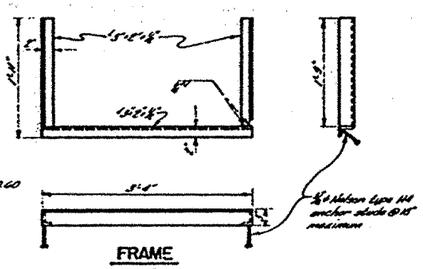
EXPANSION DAM DETAIL
Scale: 1½"=1'-0"



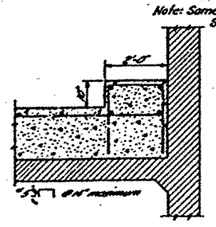
SECTION D-D
Scale: 1"=1'-0"
Note: Same as for adjacent diaphragm
See Sheet 114



PLAN-REVISED ROADWAY



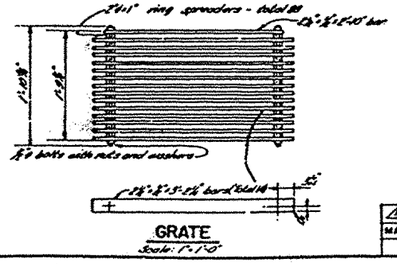
FRAME
Scale: 1"=1'-0"



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

NOTES

1. For concrete removal, See Sheet 85.
2. For construction details east of Bent E-23, See Sheet 87.
3. Frame and grate shall be galvanized after fabrication.
4. All rods are placed parallel to each other. Plug ends of rods with mortar tight couplers or plugs. Rod shall be held firmly in position while placing concrete.



GRATE
Scale: 1"=1'-0"

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING-EAST BAY

MARK	DATE	DESCRIPTION	BY	CH'K
2	2.1.63	As built with revisions.	CB	A.L.

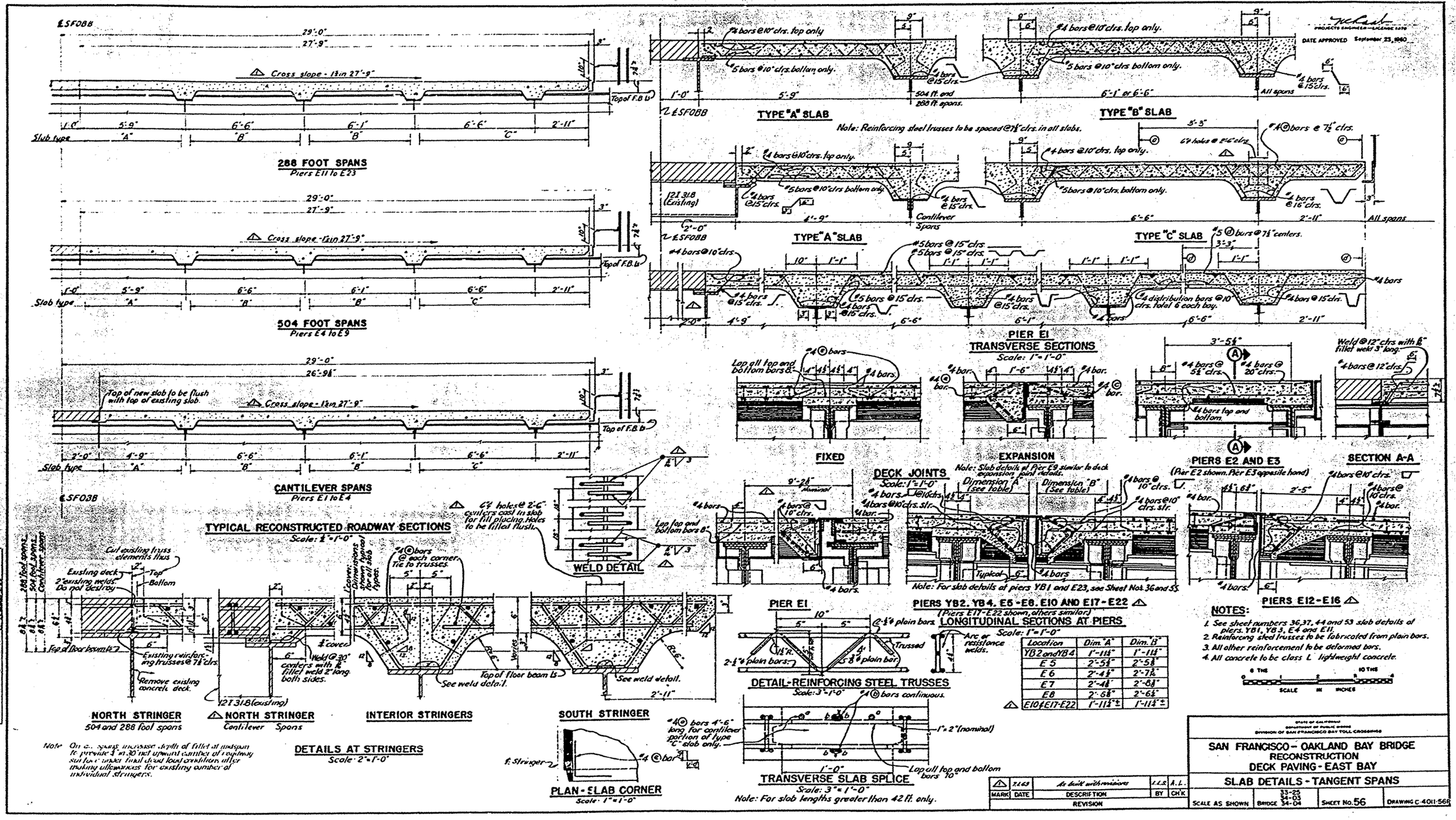
REVISION

288 FOOT SPAN PIER E23 ALTERATION DETAILS

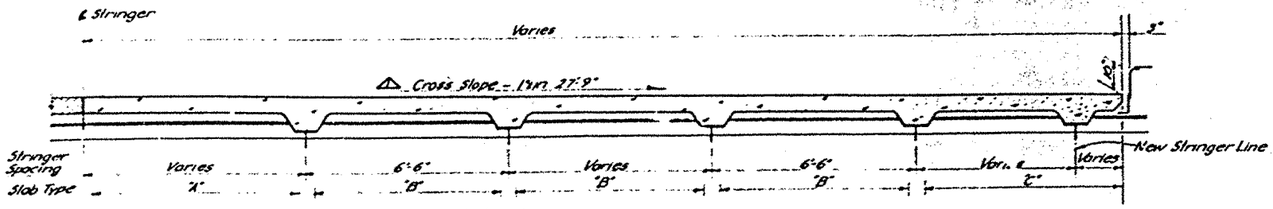
UNLESS NOTED SCALE 1/2"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 55 | DRAWING C-4011-55R

APPROVAL RECOMMENDED BY

DESIGN — DRAWN — QUANTITIES — CHECKED

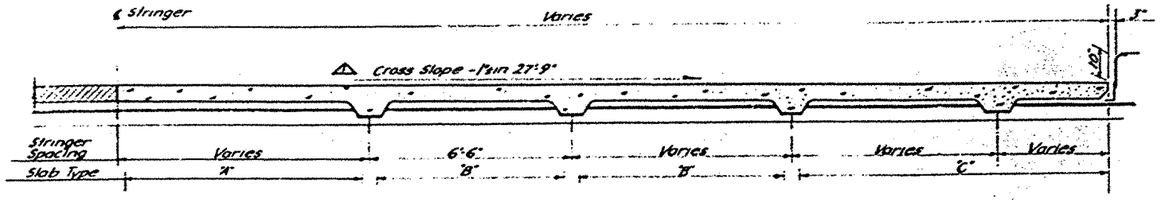

℄ SFOBB
29'-0"
27'-9"
Cross slope - 1¾in 27'-9"
Top of F.B. ⅊
Slab type
288 FOOT SPANS
Piers E11 to E23
504 FOOT SPANS
Piers E4 to E9
Top of new slab to be flush with top of existing slab.
26'-9¾"
CANTILEVER SPANS
Piers E1 to E4
℄ SFO3B
TYPICAL RECONSTRUCTED ROADWAY SECTIONS
Scale: ½"=1'-0"
Cut existing truss elements thus
Existing deck
2" existing welds. Do not destroy
Top
Bottom
Top of floor beam ⅊
Existing reinforcing trusses @ 7½" clrs.
Remove existing concrete deck.
12 I 31.8 (existing)
NORTH STRINGER
504 and 288 foot spans
NORTH STRINGER
Cantilever Spans
INTERIOR STRINGERS
SOUTH STRINGER
DETAILS AT STRINGERS
Scale: 2"=1'-0"
Note: On cantilever spans increase depth of fillet at midspan to provide ¼ in 30' net upward camber of roadway surface under final dead load condition after making allowances for existing camber of individual stringers.
4¾" holes @ 2'-6" centers cast in slab for fill placing. Holes to be filled flush.
WELD DETAIL
Lap top and bottom bars 8"
PLAN - SLAB CORNER
Scale: 1"=1'-0"
TYPE "A" SLAB
TYPE "B" SLAB
TYPE "A" SLAB
TYPE "C" SLAB
Note: Reinforcing steel trusses to be spaced @ 7½" clrs. in all slabs.
#4 bars @ 10" clrs. top only
#5 bars @ 10" clrs. bottom only
#4 bars @ 15" clrs.
#4 bars @ 16" clrs.
All spans
Cantilever Spans
#5 bars @ 15" clrs.
#4 distribution bars @ 10" clrs. total 6 each bay.
PIER E1
TRANSVERSE SECTIONS
Scale: 1"=1'-0"
FIXED
EXPANSION
PIERS E2 AND E3
(Per E2 shown. Per E3 opposite hand)
SECTION A-A
Weld @ 12" clrs with ⅜" fillet weld 3" long.
DECK JOINTS
Scale: 1"=1'-0"
Note: Slab details at Pier E9 similar to deck expansion joint details.
Dimension "A" (See table)
Dimension "B" (See table)
PIER E1
PIERS YB2, YB4, E6-E8, E10 AND E17-E22
(Piers E17-E22 shown, others similar)
LONGITUDINAL SECTIONS AT PIERS
Scale: 1"=1'-0"
Arc or resistance welds.
PIERS E12-E16
DETAIL-REINFORCING STEEL TRUSSES
Scale: 3"=1'-0"
#4 bars continuous.
#4 bars 4'-6" long for cantilever portion of type "C" slab only.
1"x2" (nominal)
Lap all top and bottom bars 10"
TRANSVERSE SLAB SPLICE
Scale: 3"=1'-0"
Note: For slab lengths greater than 42 ft. only.
NOTES:
1. See sheet numbers 36, 37, 44 and 53 slab details of piers YB1, YB3, E4 and E11.
2. Reinforcing steel trusses to be fabricated from plain bars.
3. All other reinforcement to be deformed bars.
4. All concrete to be class L lightweight concrete.
SCALE IN INCHES
DATE APPROVED September 23, 1940
APPROVAL RECOMMENDED BY
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
SLAB DETAILS - TANGENT SPANS
MARK DATE DESCRIPTION BY CH'K
REVISION
As built withrevisions
SCALE AS SHOWN
BRIDGE 33-25 34-03 34-04
SHEET No. 56
DRAWING C-4011-566

DATE APPROVED September 23, 1960



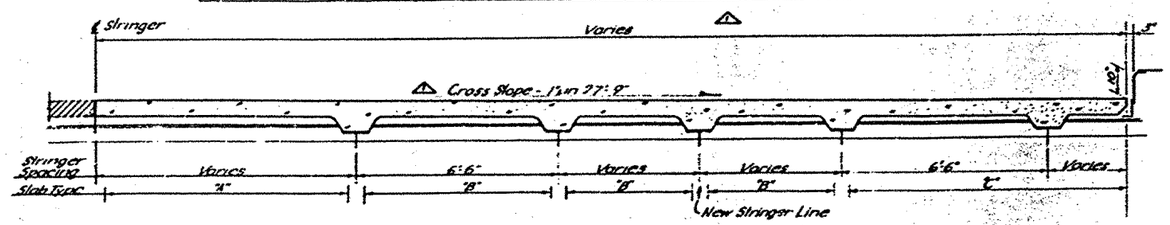
SPANS YB2-E1 AND E9-E11

Span	YB2 - YB3	YB3 - YB4	YB4 - E1	E9 - E10	E10 - E11
Panel	L10 thru L16	L19 thru L25	L28 thru L34	L0 thru L7	L1 thru L8



SPANS YB1-E1 AND E9-E11

Span	YB1 - YB2	YB2 - YB3	YB3 - YB4	YB4 - E1	E9 - E10	E10 - E11
Panel	L4 thru L8	L9-L10 and L16-L17, L18-L19 and L25-L26	L27-L28 and L34-L35	L7 - L4	L0-L1 and L7-L8	

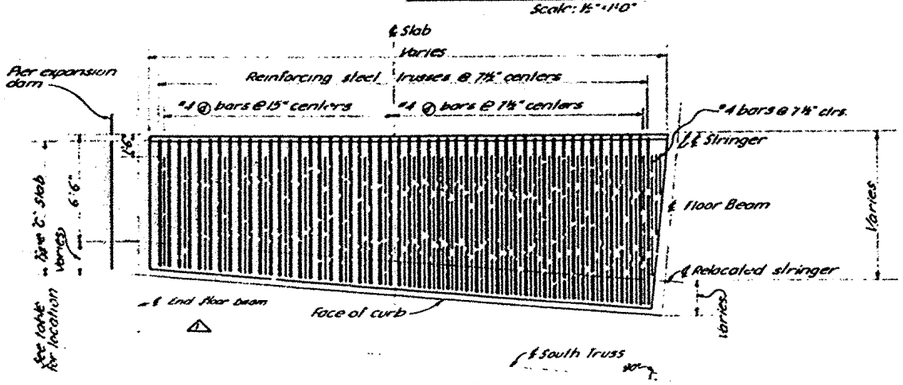


SPANS YB1-YB2

Note: For Panels L4 thru L4

RECONSTRUCTED ROADWAY SECTIONS

Scale: 1/8" = 1'-0"



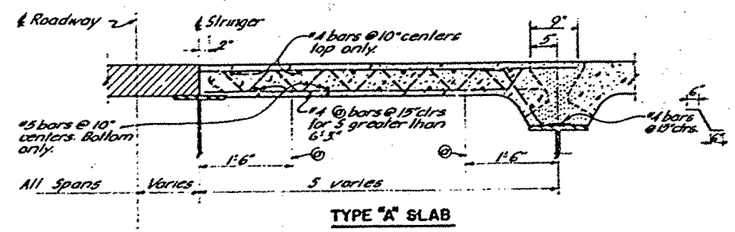
PLAN-BOTTOM STEEL REINFORCING

END PANEL TYPE "C" SLABS

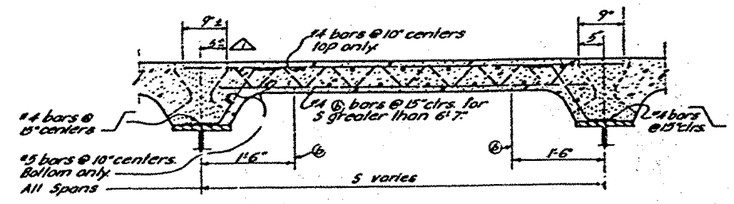
No Scale

Note: Longitudinal steel not shown

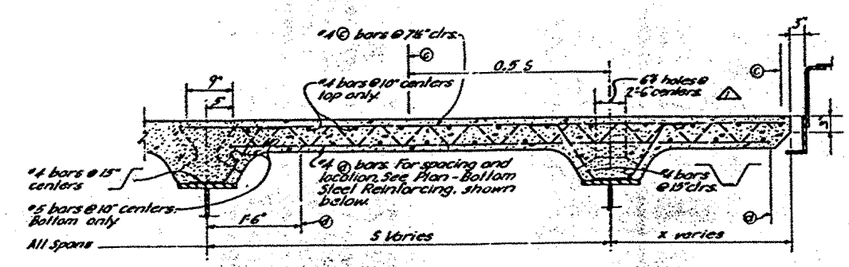
Span	YB2 - YB3	YB3 - YB4	YB4 - E1	E9 - E10	E10 - E11
Panel	L9-L10 and L16-L17	L18-L19 and L25-L26	L27-L28 and L34-L35	L7 - L8	L0-L1 and L7-L8



TYPE "A" SLAB



TYPE "B" SLAB



TYPE "C" SLAB

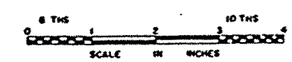
TRANSVERSE SECTIONS

Note: Reinforcing steel trusses to be spaced @ 7½" clrs. in all slabs

Scale: 1" = 1'-0"

NOTES

1. For general information and details not shown, See Sheet 56.
2. For variable dimensions, See Sheets 31 thru 34, 48, and 49.



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

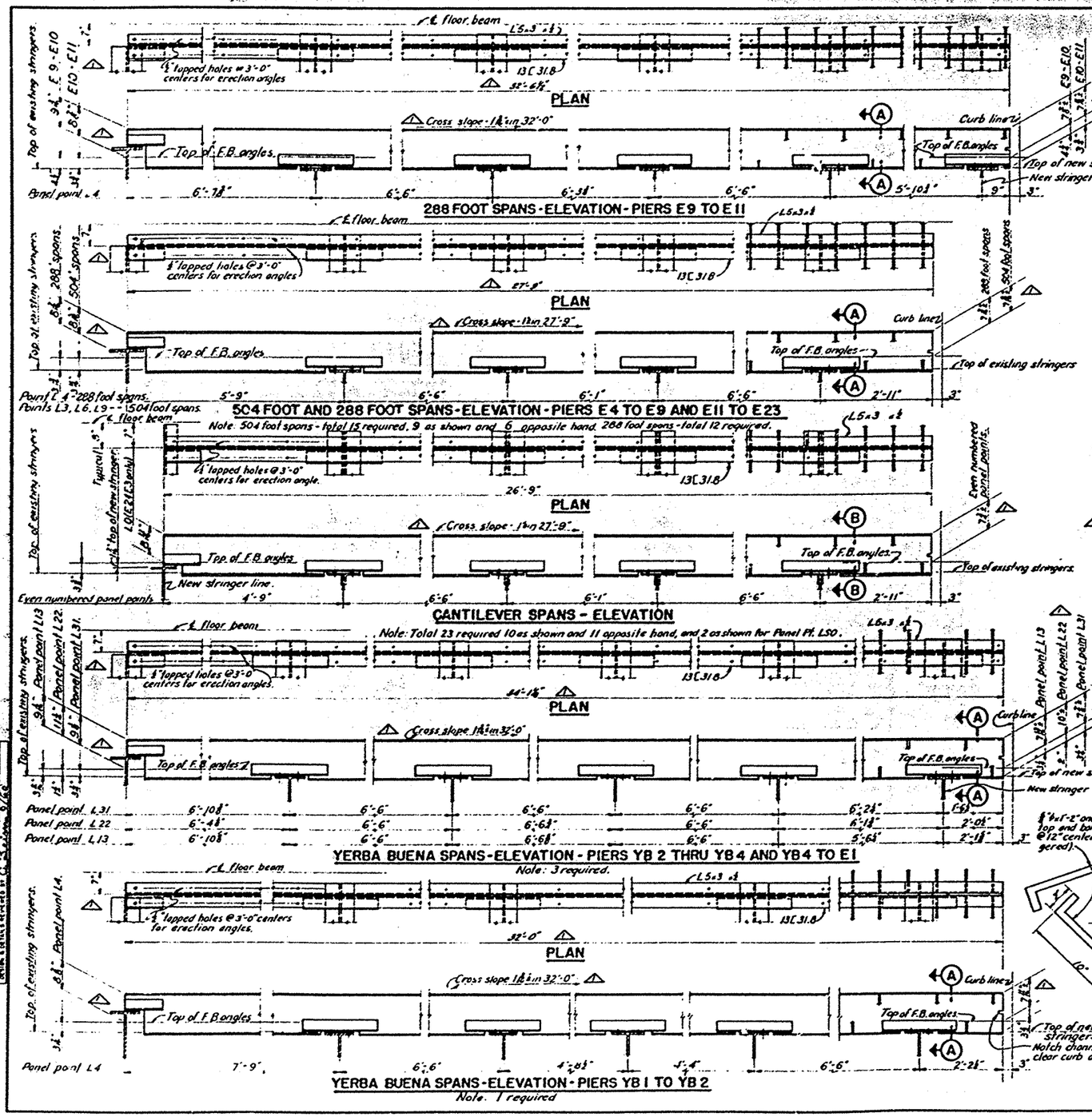
SLAB DETAILS - SPANS YB1 TO E1 AND E9 TO E11

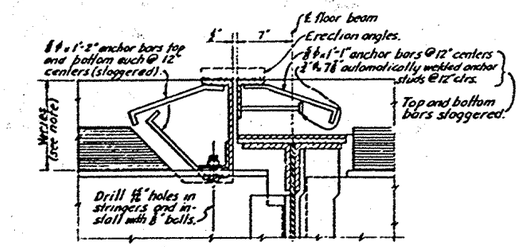
MARK	DATE	DESCRIPTION	BY	CH'K
1	7-1-65	As built with revisions	L.L.B.	A.L.

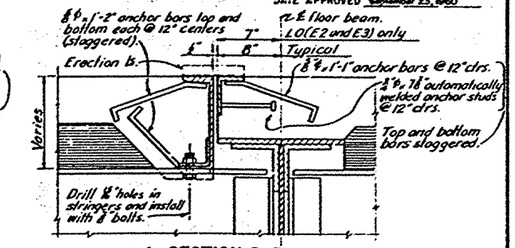
REVISION

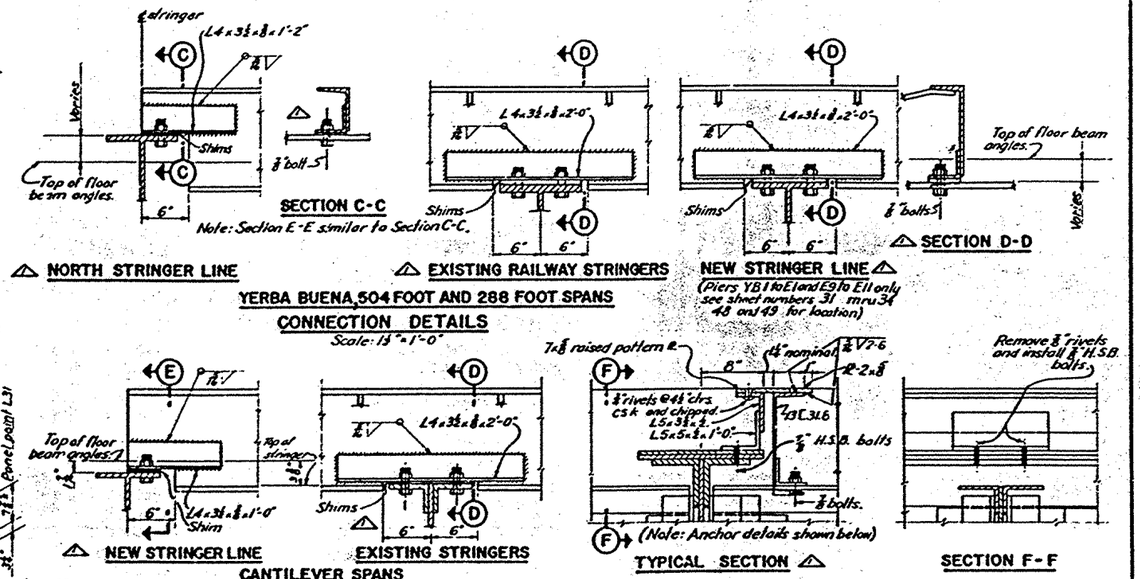
SCALE AS SHOWN | BRIDGE 33-25, 34-05, 34-04 | SHEET No. 57 | DRAWING C-401-57R

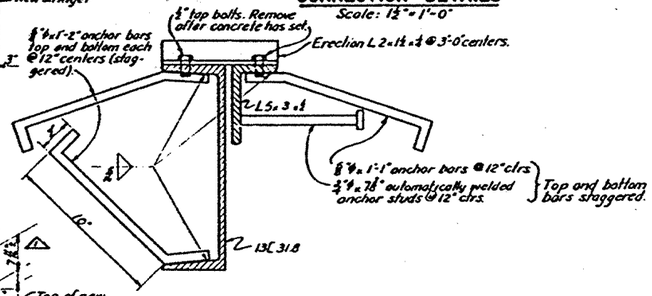
PROJECTS ENGINEER - LICENSE 1679
DATE APPROVED September 23, 1960











NOTES:

1. All installation bolts to be ⅞" with hex heads and nuts except as noted.
2. All elevations are shown looking east.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
△	2.2.65	As built with revisions	L.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

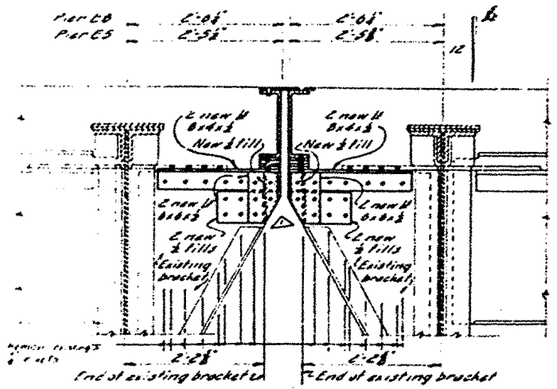
SLAB EXPANSION DAMS

UNLESS NOTED SCALE 3/4" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No 58 | DRAWING C-4011-58R

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER
LICENSE 1187

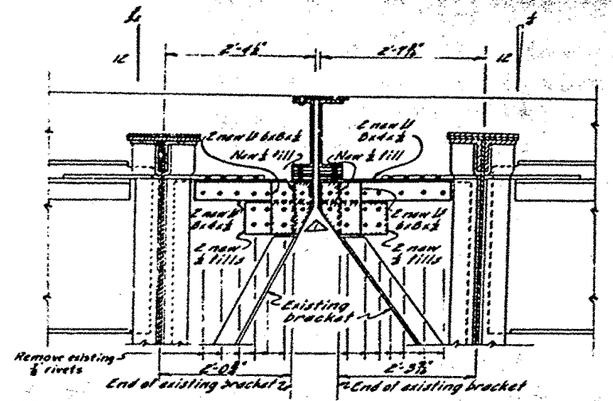
DESIGN			
DRAWN			
CHECKED			
TRACED			
CHECK & DETAILS REVIEWED BY			

PROJECTS ENGINEER - LICENSE 1475
DATE APPROVED September 25, 1940

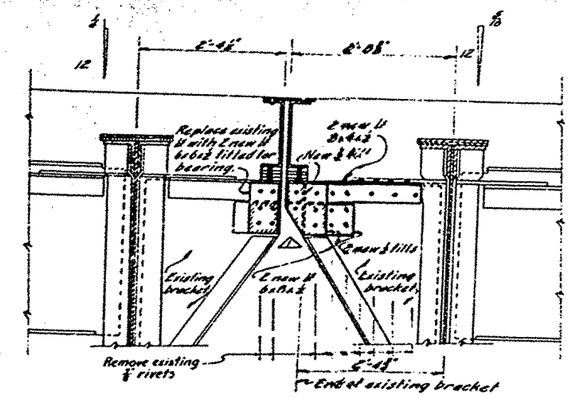


SECTION A-A
PIERS E5 AND E6
Scale: 1"=1'-0"

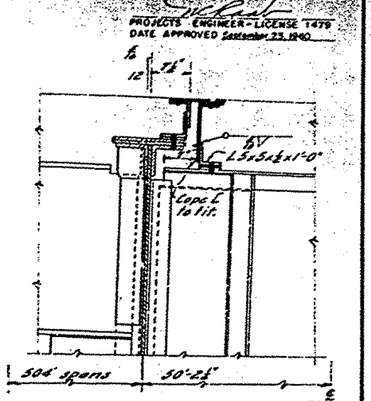
Note: Existing angles and fills to be removed and replaced with new ones as shown above. The legs of all bearing angles shall be fitted to bear on seat angles



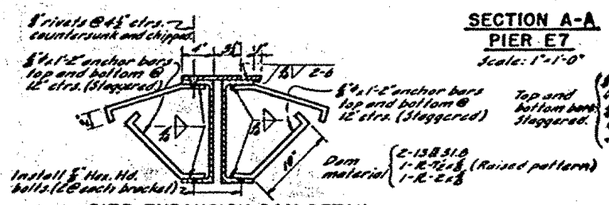
SECTION A-A
PIER E6
Scale: 1"=1'-0"



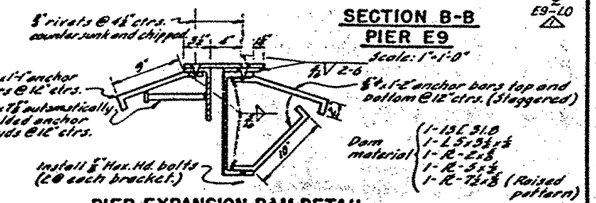
SECTION A-A
PIER E7
Scale: 1"=1'-0"



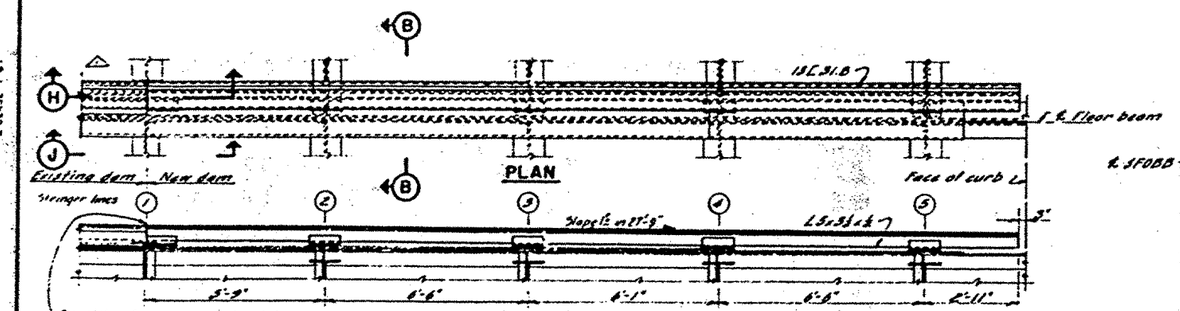
SECTION B-B
PIER E9
Scale: 1"=1'-0"



PIER EXPANSION DAM DETAIL
PIERS E5 THRU E8
Scale: 1½"=1'-0"

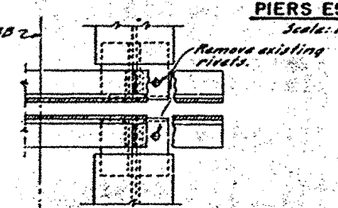


PIER EXPANSION DAM DETAIL
PIER E9
Scale: 1½"=1'-0"

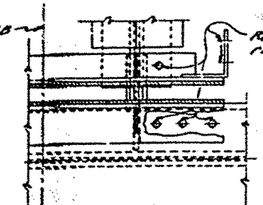


PLAN

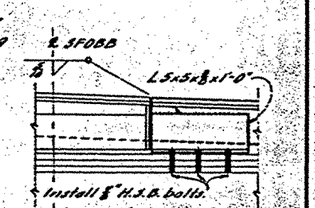
ELEVATION
PIER E9
Scale: ⅜"=1'-0"



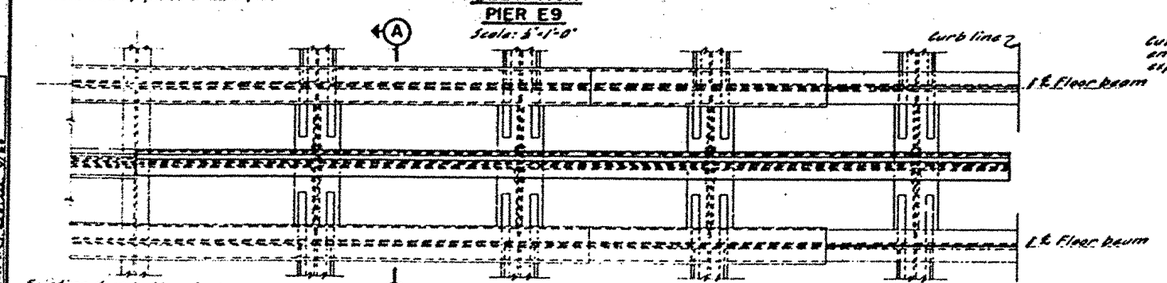
PLAN D-D



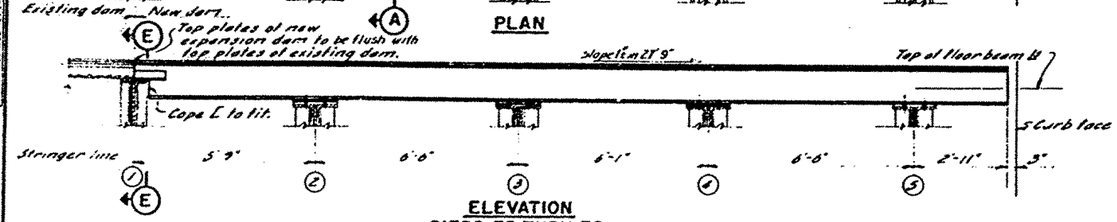
PLAN G-G



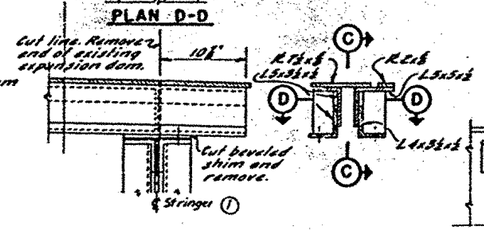
SECTION J-J



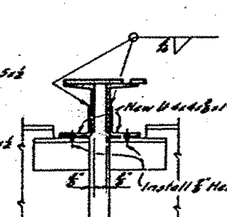
PLAN



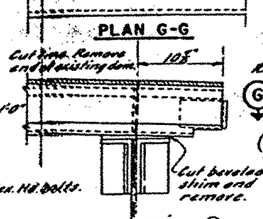
ELEVATION
PIERS E5 THRU E8
Scale: ⅜"=1'-0"



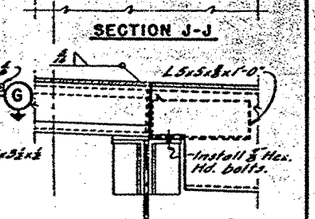
ELEVATION C-C **SECTION**
EXISTING DAM
(Piers E5 thru E8)



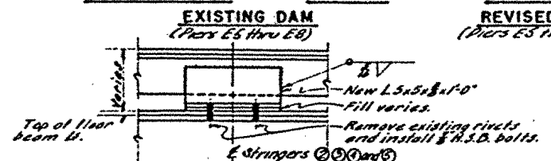
SECTION E-E
REVISED DAM
(Piers E5 thru E8)



ELEVATION F-F **SECTION**
EXISTING DAM
(Pier E9)



SECTION H-H
REVISED DAM
(Pier E9)



ELEVATION
(Pier E9)

STRINGER CONNECTION DETAILS
Scale: 1½"=1'-0"

NOTES

1. Use ⅞" H.S.B. bolts for all field connections unless shown otherwise.
2. Concrete slab not shown. See sheet 56 for details.

MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.53	As built with revisions	OK	AL

REVISION

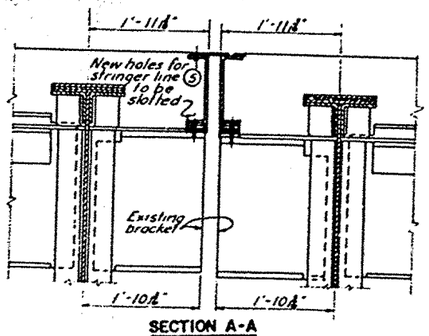
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

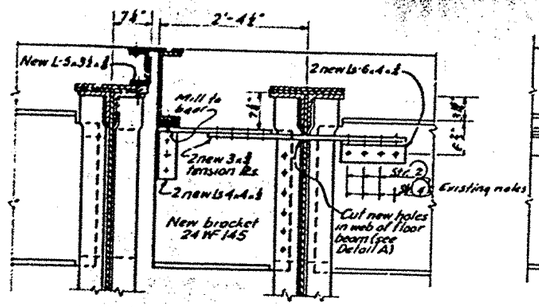
504 FT. SPANS - PIER EXPANSION DAMS

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 59 | DRAWING C-4011-59R

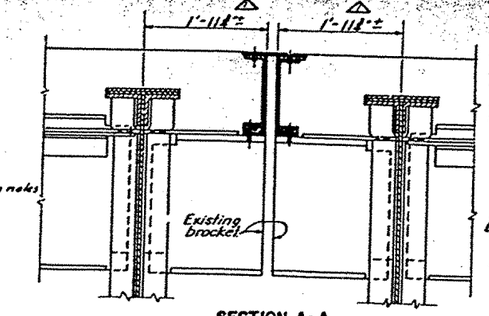
APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER
APPROVED — BRIDGE ENGINEER



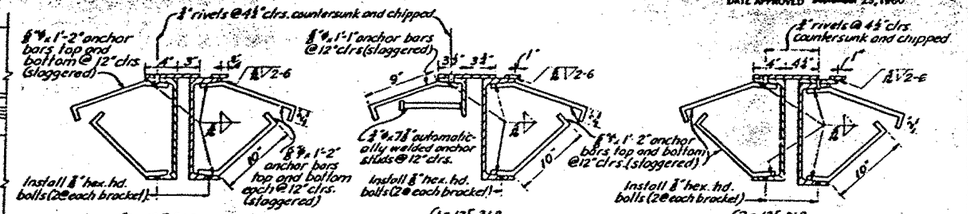
SECTION A-A
PIER E10
Scale: 1" = 1'-0"



SECTION B-B
PIER E12 THRU E16
Scale: 1" = 1'-0"

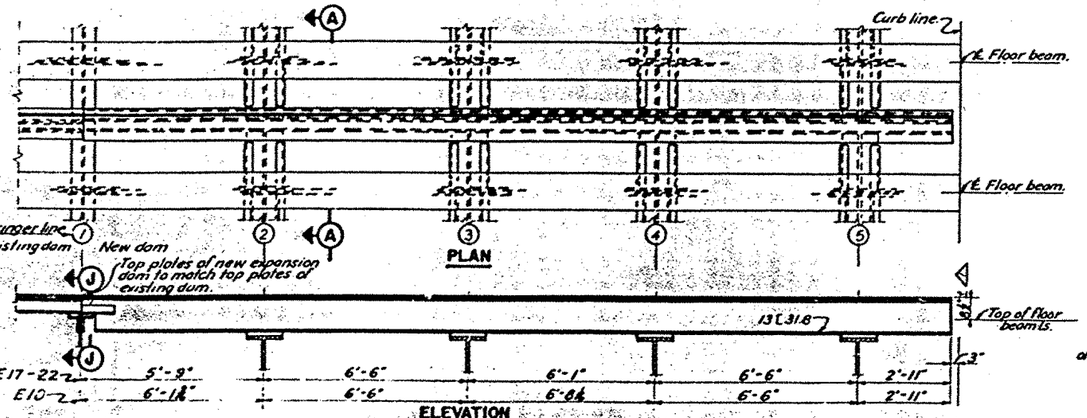


SECTION A-A
PIERS E17 THRU E22
Scale: 1" = 1'-0"



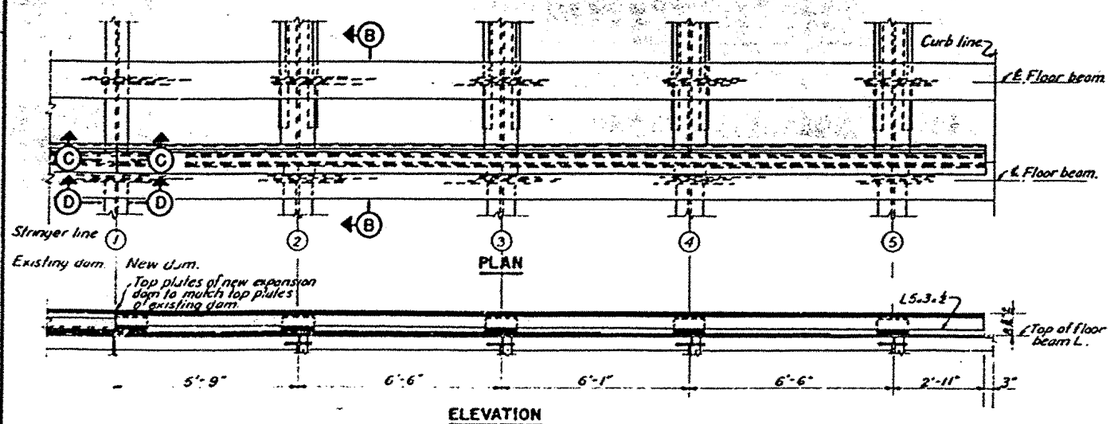
PIER E-10 | PIERS E-12 THRU E-16 | PIERS E-17 THRU E-22

EXPANSION DAM DETAIL
Scale: 1½" = 1'-0"



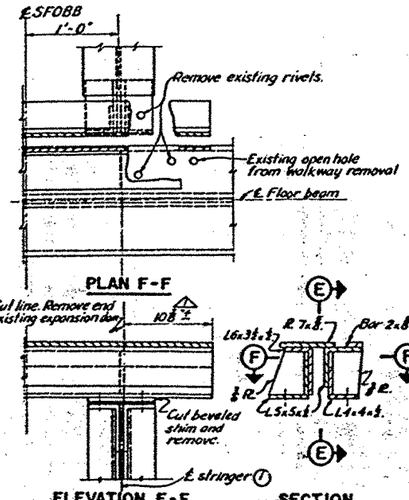
PLAN

ELEVATION
PIERS E10 AND E17 THRU E22



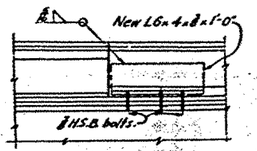
PLAN

ELEVATION
PIERS E12 THRU E16

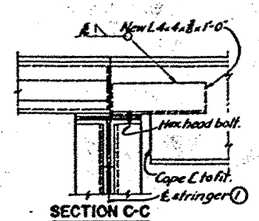


PLAN F-F

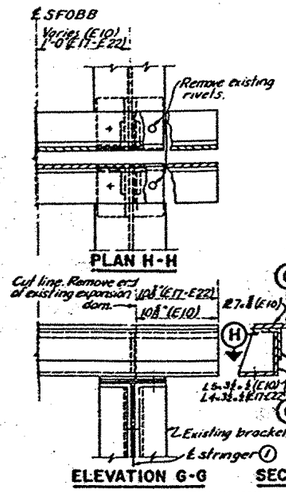
ELEVATION E-E | SECTION
EXISTING
(Piers E12 thru E16)



SECTION D-D

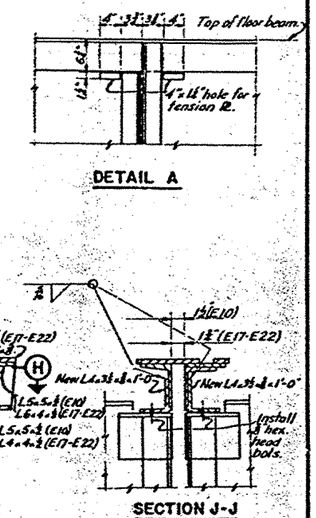


SECTION C-C
ALTERED



PLAN H-H

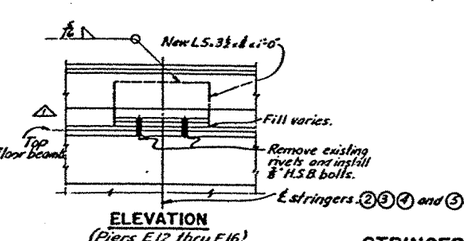
ELEVATION G-G | SECTION
EXISTING
(Piers E10 and E17 thru E22)



DETAIL A

SECTION J-J
ALTERED

(Note: Piers E17 thru E22 shown. Pier E10 similar)



ELEVATION
(Piers E12 thru E16)

STRINGER CONNECTION DETAILS
Scale: 1½" = 1'-0"

NOTES:

1. Use ⅜" H.S.B. bolts for all field connections unless shown otherwise.
2. Concrete slab not shown. See sheet 56 for details.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	CB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

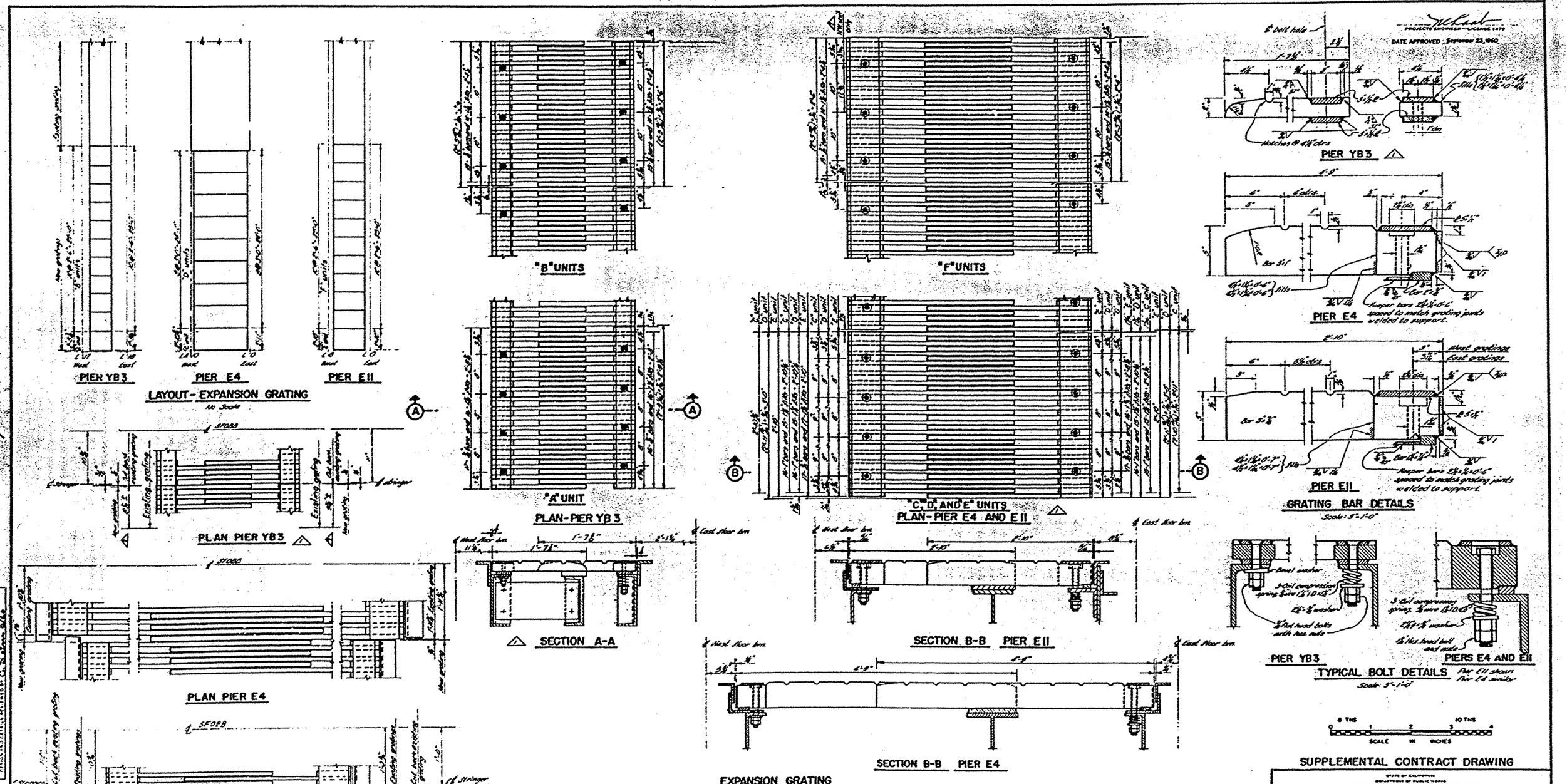
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

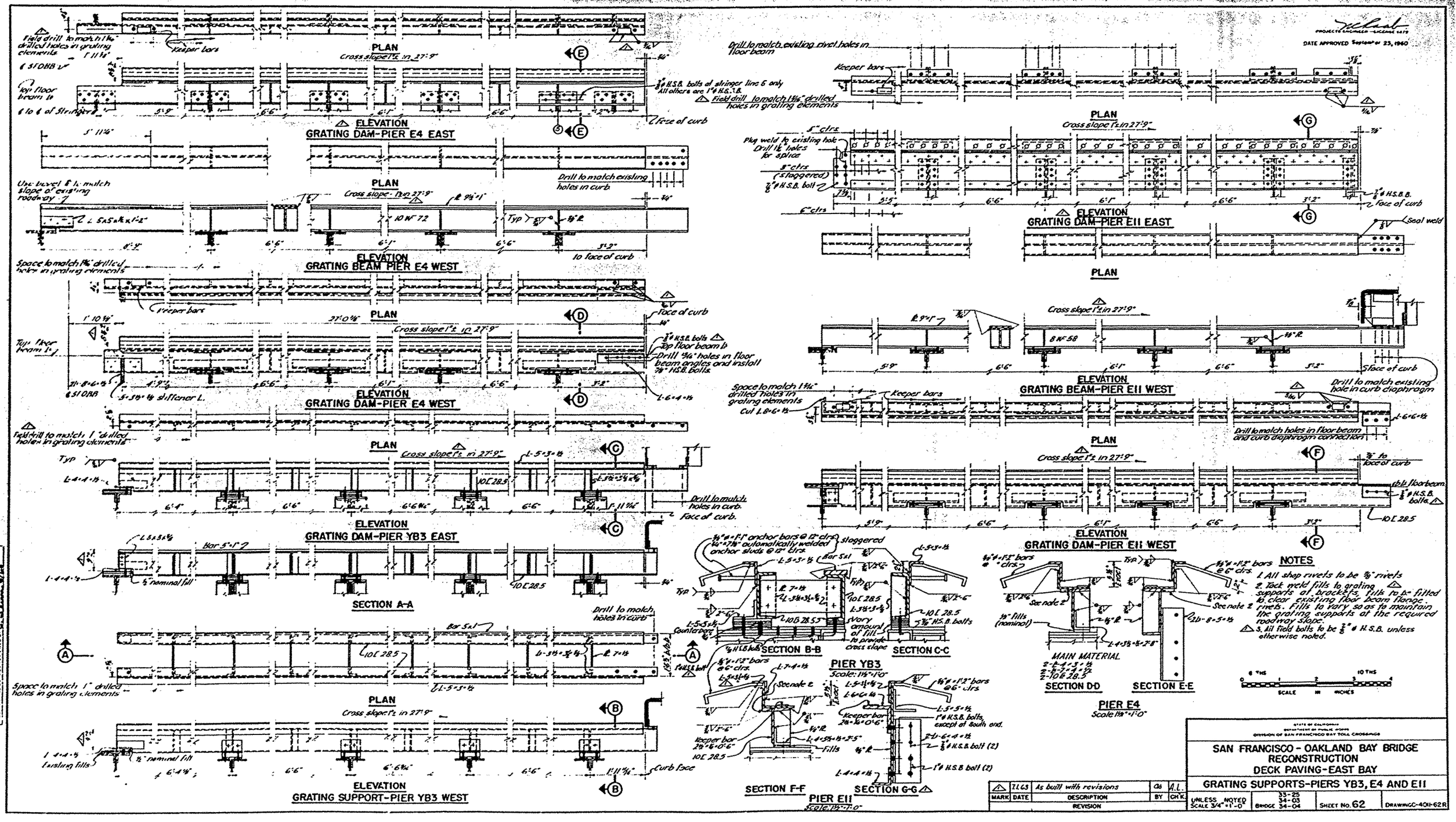
288 FOOT SPANS - PIER EXPANSION DAMS

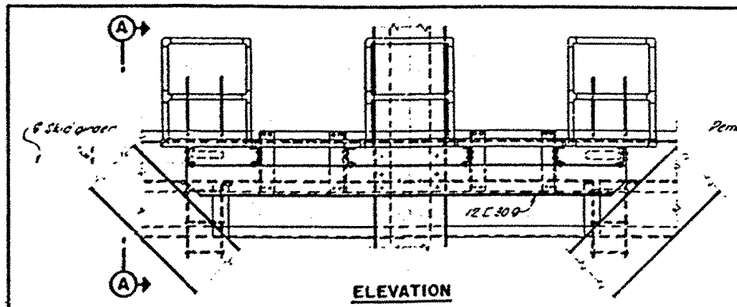
SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET NO. 60 | DRAWING C-4011-60R

DATE APPROVED September 23, 1960

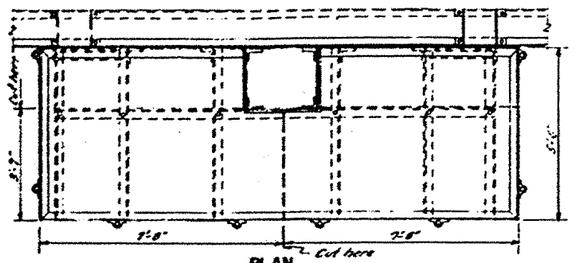
APPROVAL RECOMMENDED BY


PIER YB3
PIER E4
PIER E11
LAYOUT - EXPANSION GRATING
No Scale
"B" UNITS
"F" UNITS
"A" UNIT
PLAN - PIER YB3
"C", "D", AND "E" UNITS
PLAN - PIER E4 AND E11
PIER YB3
PIER E4
PIER E11
GRATING BAR DETAILS
Scale: 5"=1'-0"
PLAN PIER YB3
PLAN PIER E4
PLAN PIER E11
GRATING DETAILS AT CENTER LINE
Scale 1½"=1'-0"
SECTION A-A
SECTION B-B PIER E11
SECTION B-B PIER E4
EXPANSION GRATING
Scale: 1½"=1'-0"
Note: The bottom surface of each grating unit shall be a plane free of warps or distortions after fabrication and each grating bar shall have full bearing on support.
PIER YB3
PIER E4 AND E11
TYPICAL BOLT DETAILS
Scale: 5"=1'-0"
SCALE IN INCHES
SUPPLEMENTAL CONTRACT DRAWING
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
EXPANSION GRATINGS - PIERS YB3, E4 AND E11
MARK DATE DESCRIPTION BY CH'K
REVISION
2.1.63 As built with revisions DB A.L.
7-6-61 "C", "D" and "E" units at Pier E4 and E11 and dimensions at Pier YB3 and E11 changed SAC H.V.
SCALE AS SHOWN
BRIDGE 33-25 34-03 34-04
SHEET No. 61
DRAWING C-401-61R
DATE APPROVED: September 23, 1960
APPROVAL RECOMMENDED BY
PROJECT ENGINEER — LICENSE DATE


DATE APPROVED September 23, 1960
PLAN
Cross slope 1"/ft in 27'-9"
Field drill to match 1 1/16" drilled holes in grating elements
Keeper bars
Top floor beam is ℄ to ℄ of stringers
3/4" ø H.S.B. bolts at stringer line 6 only. All others are 1" ø H.S.B.
Field drill to match 1 1/16" drilled holes in grating elements
Face of curb
ELEVATION
GRATING DAM-PIER E4 EAST
Use bevel & to match slope of existing roadway
Drill to match existing holes in curb
10 WF 72
Typ
10 face of curb
ELEVATION
GRATING BEAM PIER E4 WEST
Space to match 1 1/16" drilled holes in grating elements
Keeper bars
Top floor beam is
3/4" ø H.S.B. bolts
Top floor beam is
Drill 9/16" holes in floor beam angles and install 3/4" H.S.B. bolts
Stiffener L.
ELEVATION
GRATING DAM-PIER E4 WEST
Field drill to match 1" drilled holes in grating elements
Typ
10 [28.5
Drill to match holes in curb. Face of curb.
ELEVATION
GRATING DAM-PIER YB3 EAST
Bar 5"x1"
1/2" nominal fill
SECTION A-A
Drill to match holes in curb
Space to match 1" drilled holes in grating elements
ELEVATION
GRATING SUPPORT-PIER YB3 WEST
1/2" nominal fill
Existing fills
Curb face
Drill to match existing circ. holes in floor beam
Keeper bars
Field drill to match 1 1/16" drilled holes in grating elements
5" clrs
Plug weld to existing hole. Drill 1 1/16" holes for splice
8" ctrs (staggered)
7/8" ø H.S.B. bolt
6" ctrs
3/4" ø H.S.B.B.
Face of curb
ELEVATION
GRATING DAM-PIER E11 EAST
Seal weld
Cross slope 1"/ft in 27'-9"
8 WF 58
Face of curb
ELEVATION
GRATING BEAM-PIER E11 WEST
Space to match 1 1/16" drilled holes in grating elements
Keeper bars
Cut L 8"x6"x1/2"
Drill to match existing hole in curb diaphragm
Drill to match holes in floor beam and curb diaphragm connection
3/4" to face of curb
tb floorbeam
3/4" ø H.S.B. bolts
10 [28.5
ELEVATION
GRATING DAM-PIER E11 WEST
3/4" ø x 1'-1" anchor bars @ 12" clrs. staggered
3/4" x 7 3/4" automatically welded anchor studs @ 12" clrs.
Bar 5x1
Vary amount of fill to provide cross slope
7/8" H.S.B. bolts
SECTION B-B
SECTION C-C
Countersink
Keeper bar 28"x3/4"x0'-6"
Fills
PIER YB3
Scale: 1 1/2" = 1'-0"
See note 2
1" ø H.S.B. bolts except at south end.
1" ø H.S.B. bolt (2)
SECTION F-F
SECTION G-G
PIER E11
Scale: 1 1/2" = 1'-0"
3/4" ø x 1'-2" bars @ 6" clrs.
1/2" fills (nominal)
MAIN MATERIAL
2-L 4"x3"x1/2"
2-L 7"x4"x3/8"
2-10 [28.5
SECTION D-D
SECTION E-E
PIER E4
Scale: 1 1/2" = 1'-0"
NOTES
1. All shop rivets to be 7/8" rivets
2. Tack weld fills to grating supports at brackets. Fills to be fitted to clear existing floor beam flange. Fills to vary so as to maintain the grating supports at the required roadway slope.
3. All field bolts to be 7/8" ø H.S.B. unless otherwise noted.
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY
GRATING SUPPORTS-PIERS YB3, E4 AND E11
MARK DATE DESCRIPTION BY CH'K.
REVISION
As built with revisions
UNLESS NOTED SCALE 3/4" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 62
DRAWING C-40H-62R



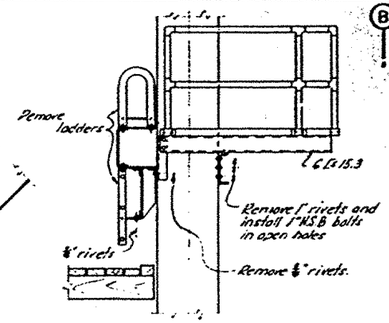
ELEVATION



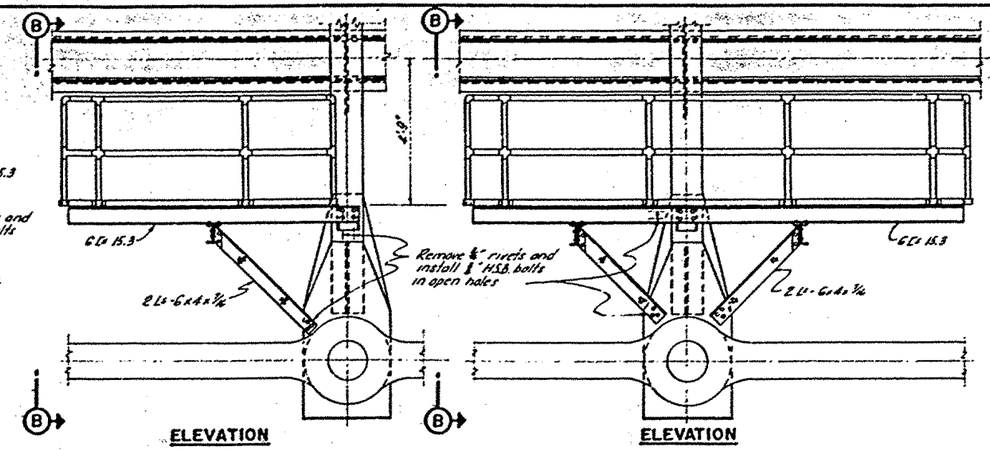
PLAN

Note: Remove, alter and relocate platform located at station 272+57
Remove platform located at station 220+94

504 FOOT SPAN PLATFORMS

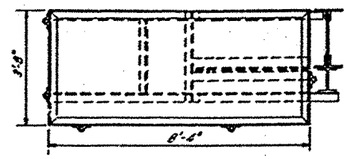


SECTION A-A



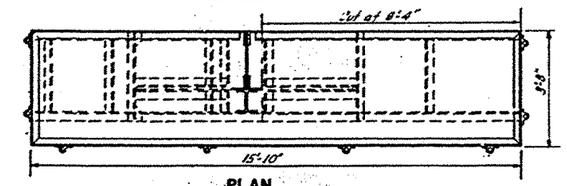
ELEVATION

ELEVATION



PLAN

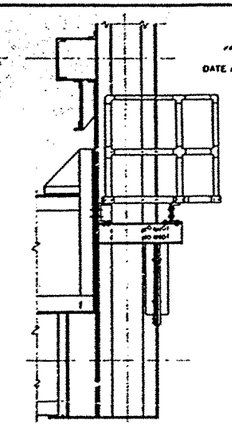
Note: Remove, alter and relocate 4 platforms located at stations 206+88, 261+39, 220+42 and 231+44



PLAN

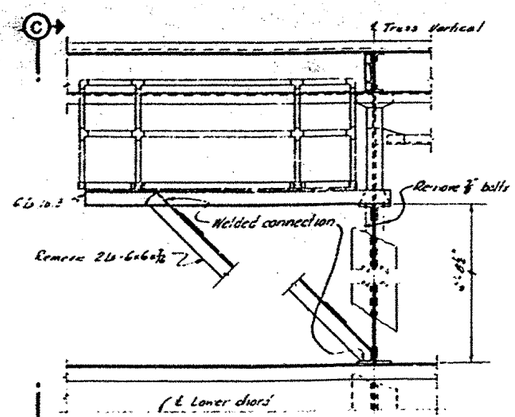
Note: Remove, alter and relocate 2 platforms located at stations 211+08 and 226+51.

504 FOOT SPAN PLATFORMS

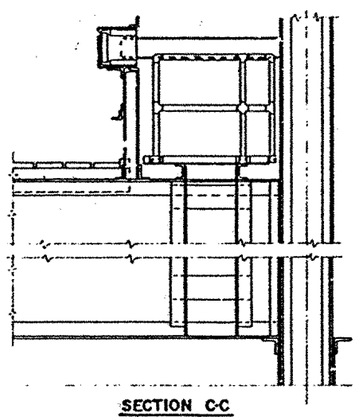


SECTION B-B

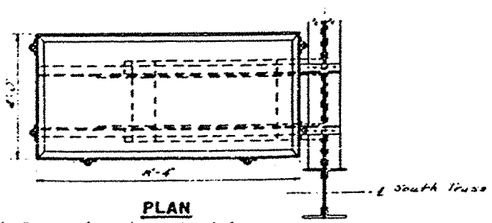
DATE APPROVED September 23, 1960



ELEVATION



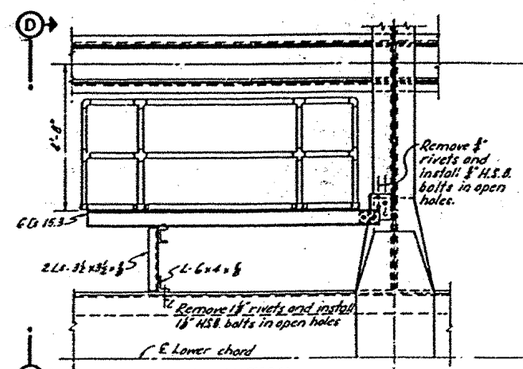
SECTION C-C



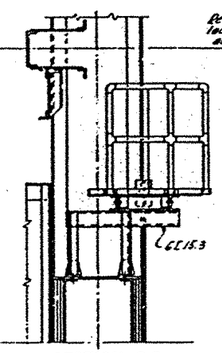
PLAN

Note: Remove, alter and relocate platform located at Station 174+47

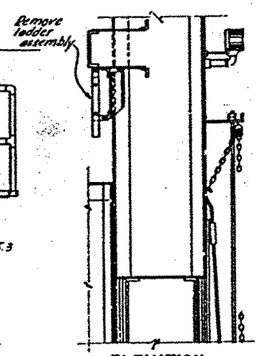
YERBA BUENA SPAN PLATFORM



ELEVATION



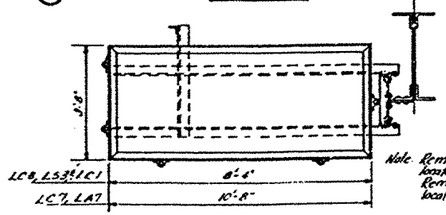
SECTION D-D



ELEVATION

504 AND CANTILEVER SPANS

Remove existing ladder attached to end girder at panel points L6, L4S and L6 (spans L4 and E5) - total 4



PLAN

Note: Remove, alter and relocate 2 platforms located at Stations 180+66 and 200+75.
Remove, repair and reinstall 3 platforms located at Stations 188+55, 197+86 and 197+66.

CANTILEVER SPAN PLATFORMS

NOTES

1. Remove rust between floor plate and toe angle, repair welds if damaged, and seal or caulk all openings between floor plate and toe angle on all reused platforms.
2. All structural steel removed and not relocated on the structure shall become the property of the contractor.
3. See sheets 64 and 65 for location and details of relocated platforms.

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

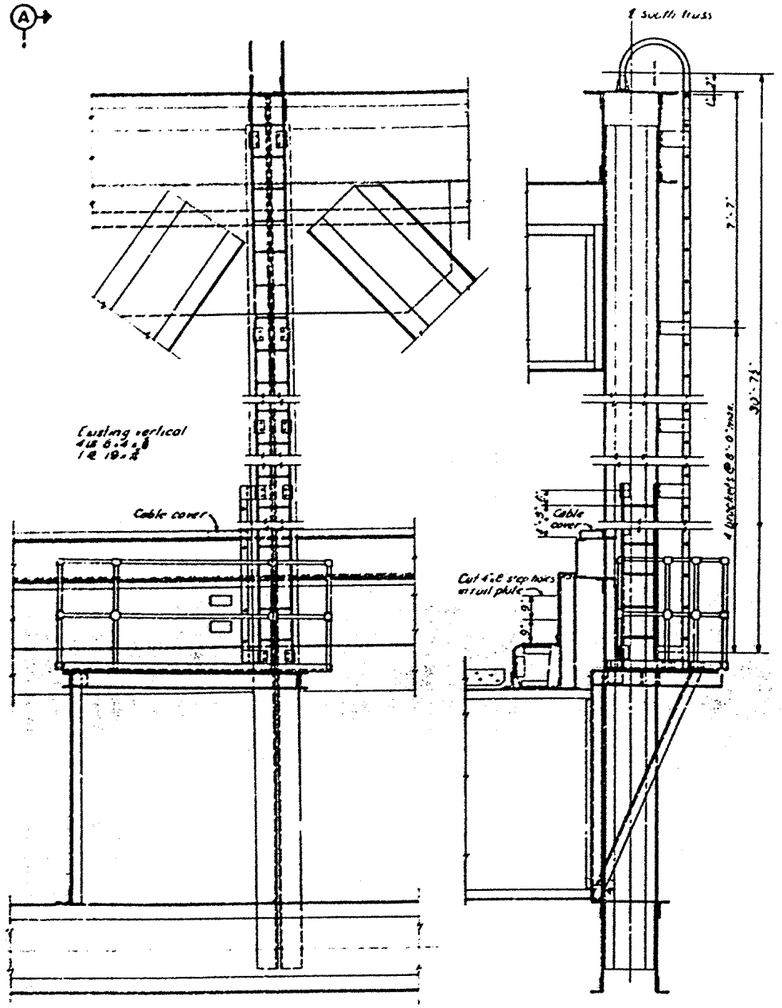
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

EXISTING PLATFORM REMOVAL

MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As built without revisions	J.A.S.	A.L.

REVISION

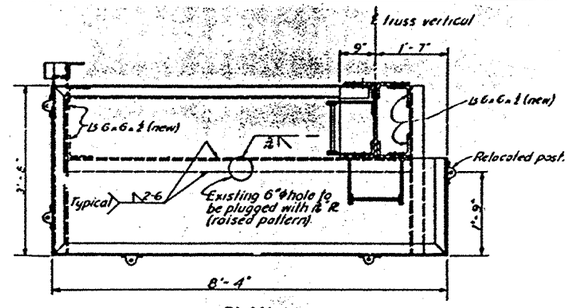
SCALE ½"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 63 | DRAWING C-4011-63R



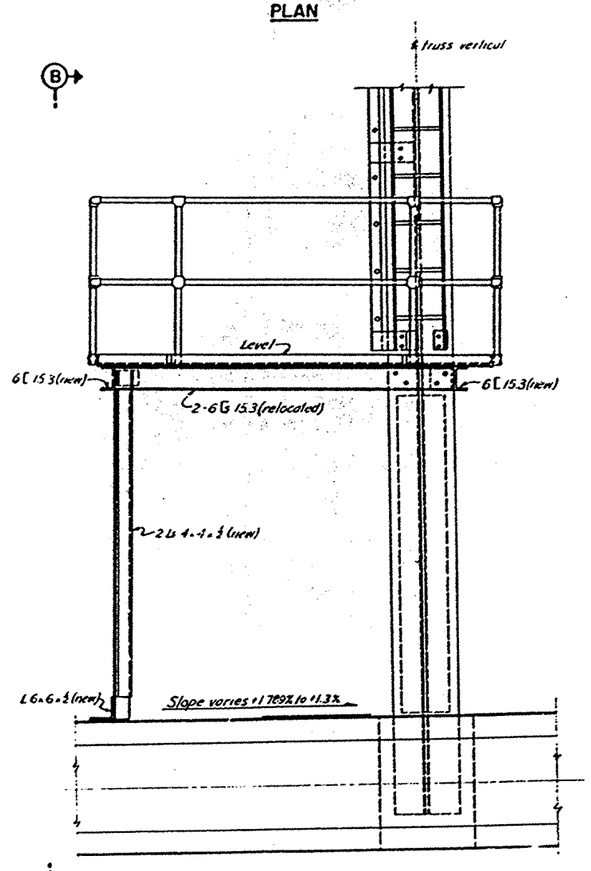
ELEVATION

SECTION A-A

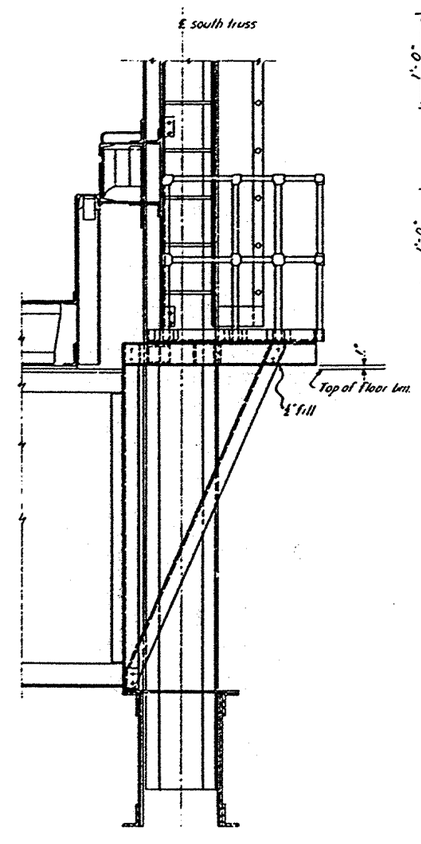
PLATFORM INSTALLATION
Scale 1" = 1'-0"



PLAN

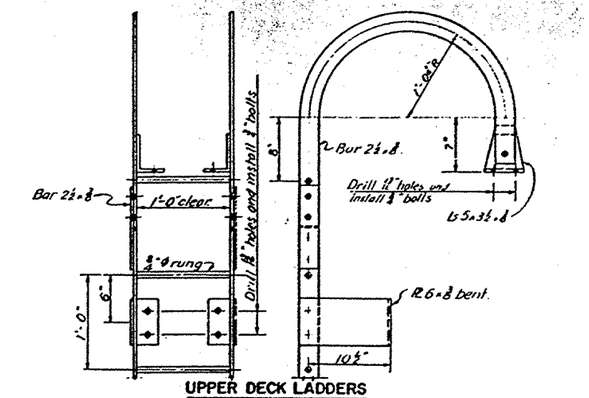


ELEVATION

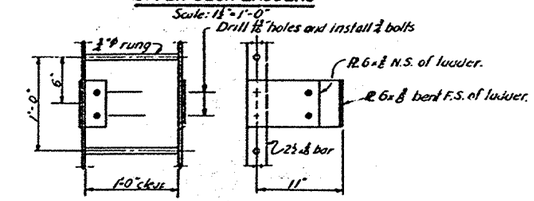


SECTION B-B

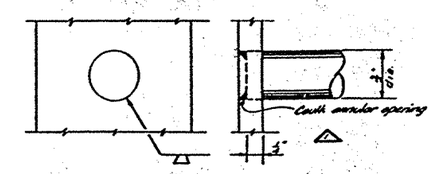
PLATFORM DETAILS
Scale: ¼" = 1'-0"



UPPER DECK LADDERS
Scale: 1½" = 1'-0"



LOWER DECK LADDERS
Scale: 1½" = 1'-0"



RUNG DETAIL
Full scale

LADDER DETAILS

Note: Ladder details as shown are for ladders on YB spans and 28B foot spans.

NOTES:

1. All field connections to be ¾" machine bolts with hex heads and nuts.
2. Shop connections to be ¾" rivets or welds as shown.

EXISTING PLATFORMS	RELOCATED PLATFORMS	TRUSS ← S F	VERTICAL OAK →
Stu 203+75 ± (LC1)	Stu 170+95 ± (L1)	☐	
Stu 206+88 ± (L1)	Stu 173+75 ± (L10)		☐
Stu 215+33 ± (L9)	Stu 170+65 ± (L19)	☐	

Note Install new platforms at Stu 179+57 ± (L28) and Stu 181+73 ± (L34) as shown on sheet no. 67

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.65	As built with revisions	L.L.S.	A.L.

REVISION

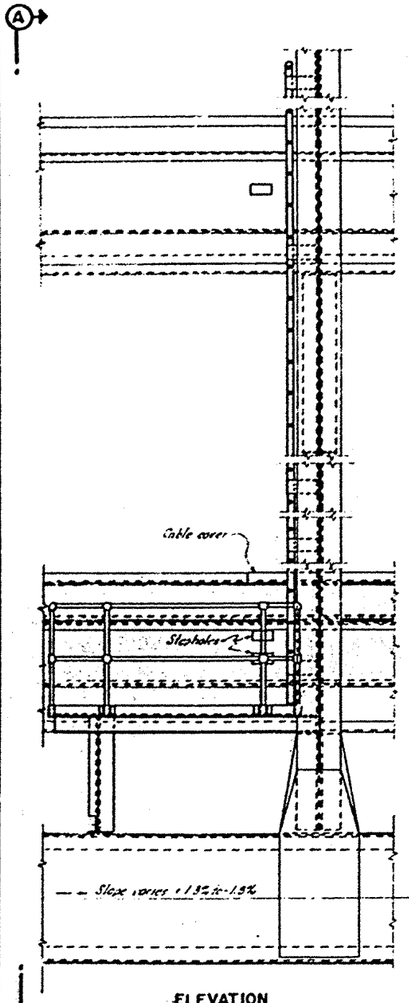
DATE APPROVED September 25, 1960

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

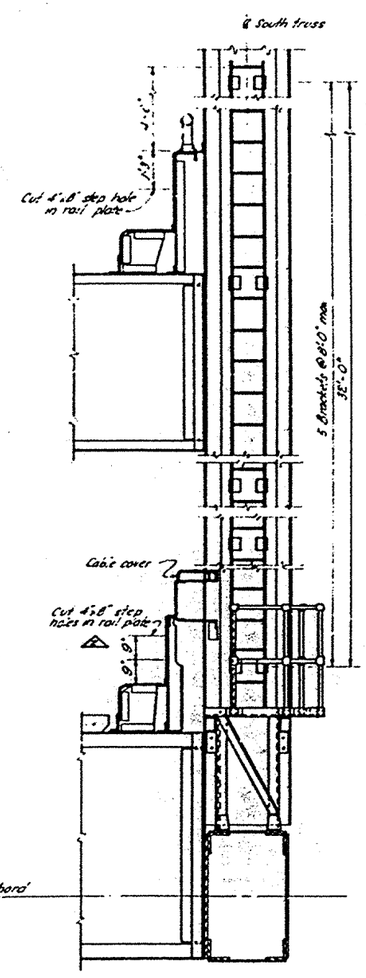
SAN FRANCISCO–OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

PLATFORMS AND LADDERS-YERBA BUENA SPANS

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 64 | DRAWING C-401F-64R



ELEVATION



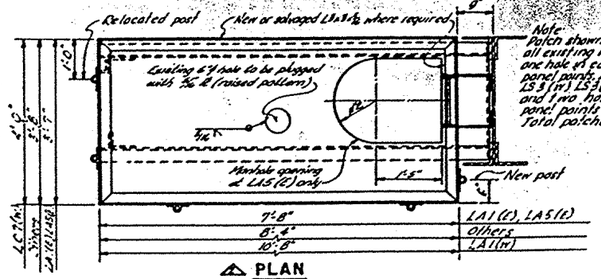
SECTION A-A

PLATFORM INSTALLATION

Scale ½" = 1'-0"

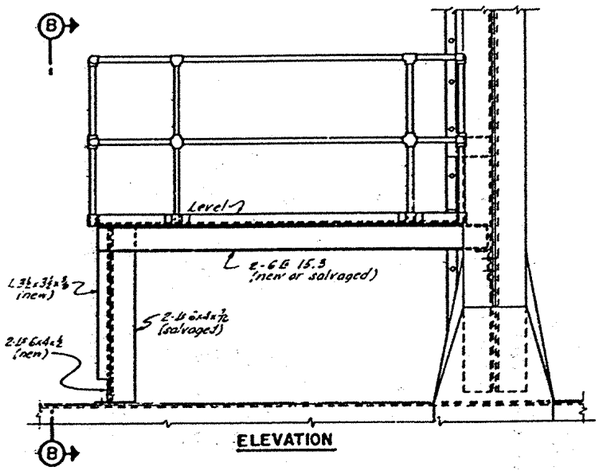
EXISTING PLATFORM	RELOCATED PLATFORM	TRUSS ← S.F.	VERTICAL ℄ OAK. →
Sta 211+08± (LL1)	Sta 184+62± (LA5)W		☐
Sta 183+66± (LA7)	Sta 186+75± (LA1)W		☐
Sta 174+47± (L12)	Sta 190+94± (LC7)W	☐	
Sta 220+42± (L9)	Sta 195+74± (LS3)E	☐	
Sta 231+44± (L11)	Sta 199+65± (LC3)E		☐
Sta 200+57± (L2)	Sta 201+85± (LA1)E	☐	
	Sta 203+98± (LA5)E	☐	
Sta 205+51± (L9)	Sta 205+90± (LA9)E		☐

Note: Ladders will be installed at all relocated platforms and at existing platforms located at panel points LC3 - Sta 198+95±, LS3 - Sta 192+86±, and LC7 - Sta 197+66±.

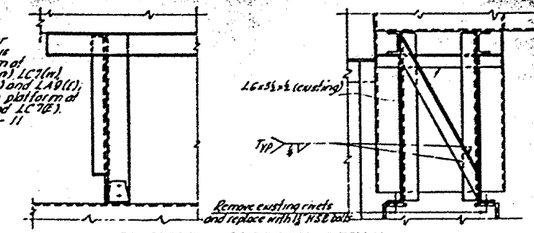


Note
Patch shown is typical for all existing holes. There is one hole at each platform at panel points LA9(W), LC7(W), LS3(W), LS3(E), LC3(E) and LA9(E); and two holes in each platform at panel points LA1(W) and LC7(E). Total patches required - 11

PLAN

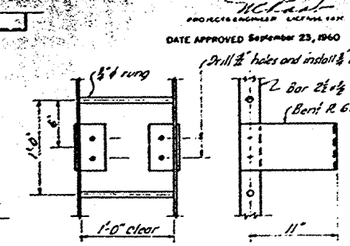


ELEVATION



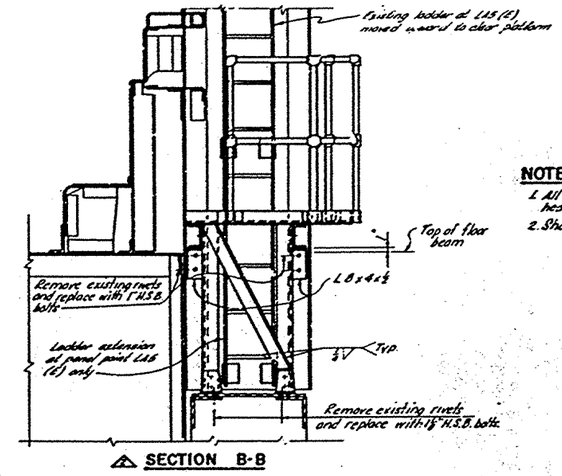
PLATFORM SUPPORT DETAIL

Note: Provide for platform at panel point LS9 only.



LADDER DETAILS

Scale 1½" = 1'-0"

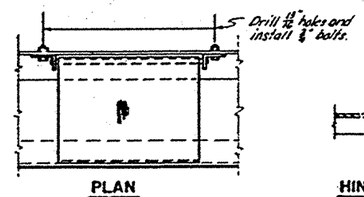


SECTION B-B

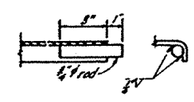
PLATFORM DETAILS

NOTES

1. All field connections to be ⅝" machine bolts with hex heads and nuts unless otherwise noted.
2. Shop connections to be ⅝" rivets or welds as shown.

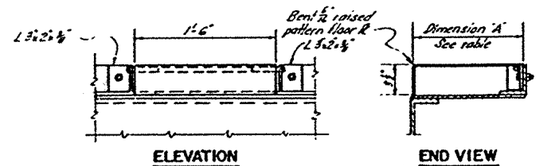


PLAN



HINGE DETAIL

Scale: 3" = 1'-0"



ELEVATION END VIEW

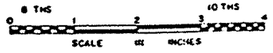
CABLE COVER DETAILS

Scale: 1½" = 1'-0"

TABLE FOR CABLE COVERS

SPANS	LOCATION	DIMENSION "A"
YB	All	1'-2"
Cantilever	LA5W	1'-2"
	LA1W	1'-3¾"
	LC1W	1'-9½"
	LC7W	1'-2"
	LS3W	1'-2"
	LS3E	1'-2"
	LC7E	1'-9½"
	LC3E	1'-3¾"
	LA1E	1'-6½"
	LA5E	1'-2"
	LA9E	1'-2"
504	All	1'-2"
286	L1(E9-E11)	1'-2"
	L1(E11-E12)	10"
	Others	10"

Note: Provide cover as shown at each new, existing, or relocated platform



SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

PLATFORM AND LADDER DETAILS - CANTILEVER SPANS

MARK	DATE	DESCRIPTION	BY	CH'K
2	7-1-68	As built with revisions	L.L.K.	A.L.
1	5/10/61	Revised platform location table	E.H.H.	S.A.C.

REVISION

UNLESS NOTED SCALE 3/8" = 1'-0"

BRIDGE 33-25, 34-03, 34-04

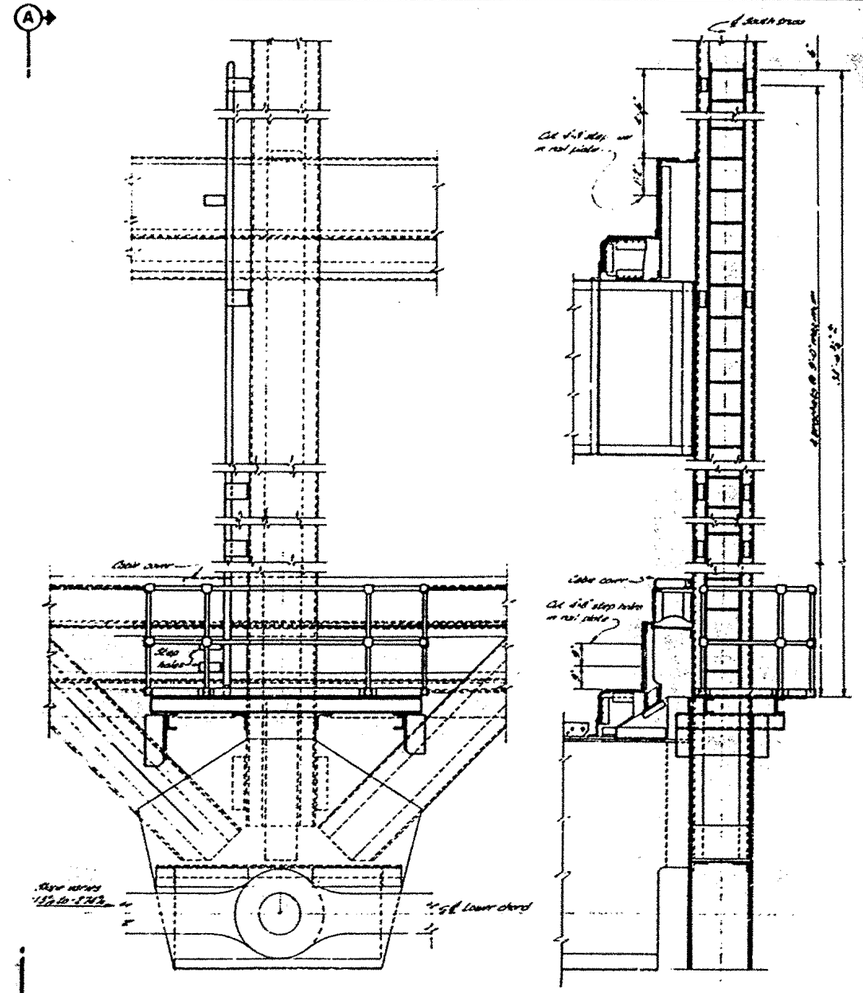
SHEET NO 65

DRAWING C-4011-65R

APPROVAL RECOMMENDED BY

APPROVED BY

DATE APPROVED September 23, 1960

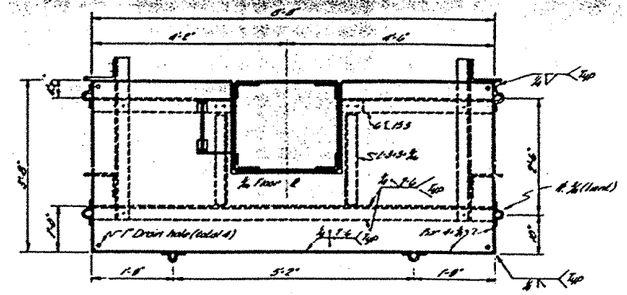


ELEVATION

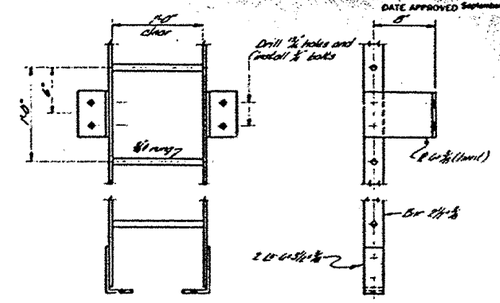
SECTION A-A

PLATFORM INSTALLATION

Scale 1/4"=1'-0"

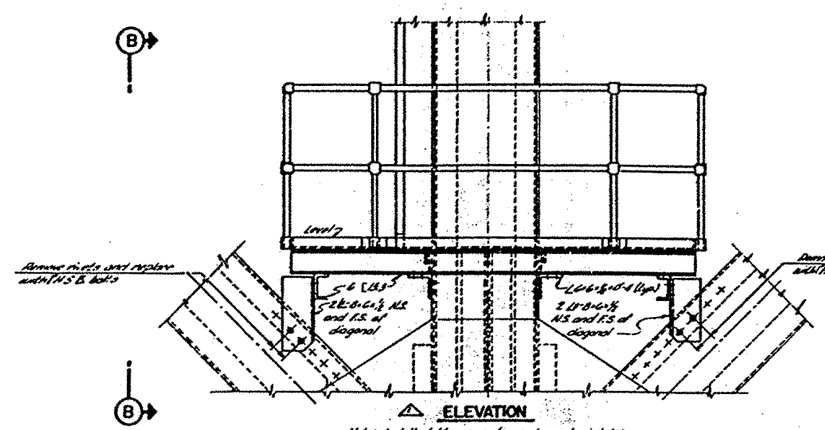


PLAN



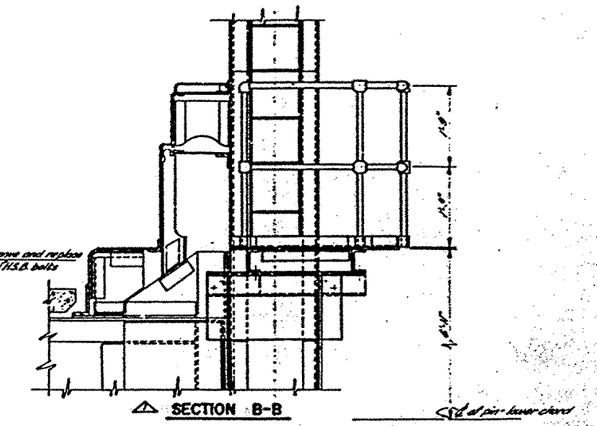
LADDER DETAILS

Scale 1/2"=1'-0"

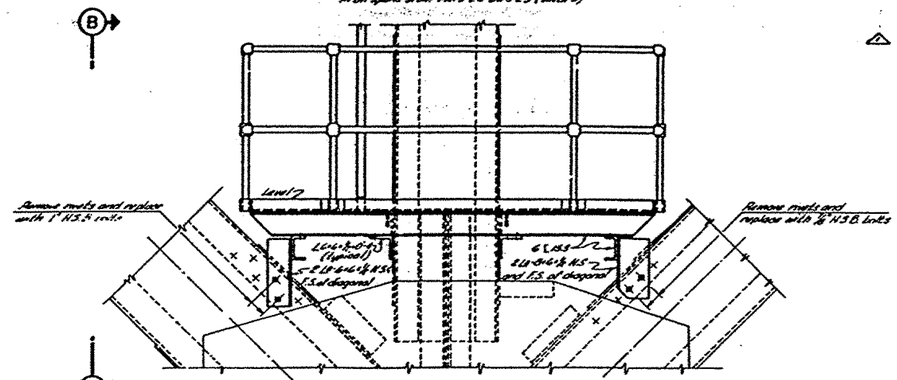


ELEVATION

Note: Install platforms as shown at panel point L0, in all spans from Pier L4 thru L9 (total 5)



SECTION B-B



ELEVATION

Note: Install platforms as shown at panel point L4, in all spans from: Pier L4 thru L9 (total 5)

PLATFORM DETAILS

NOTES:

1. All platforms are new units of welded construction. Use United States Steel section 5300 for floor plates.
2. Fabricate railing from 1½" black pipe with standard pipe rails and extra strong pipe posts. Use standard M1 fittings with threaded connections except where panel joints are required.
3. All bolts are ¾" unless noted.

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING EAST BAY

PLATFORM AND LADDER DETAILS - 504 FOOT SPANS

MARK	DATE	DESCRIPTION	BY	CH'K
7	7.1.68	As built with revisions	I.L.P.	A.L.

REVISION

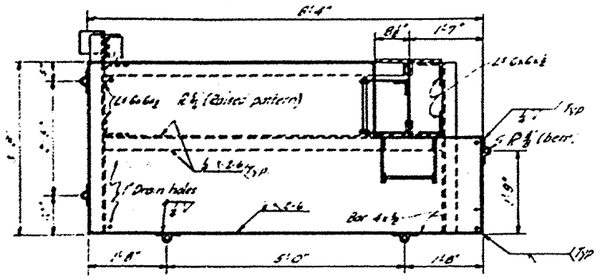
UNLESS NOTED SCALE 3/4"=1'-0"

BRIDGE 33-25 34-03 34-04

SHEET NO 66

DRAWING C-4011-66R

DATE APPROVED September 23, 1960

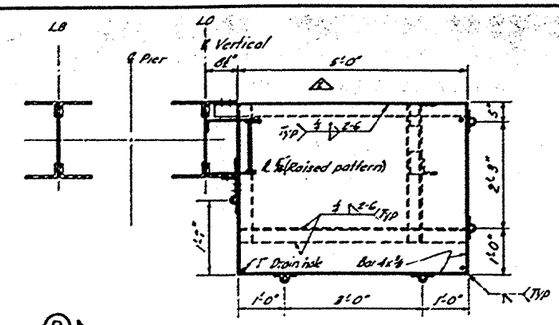


PLAN

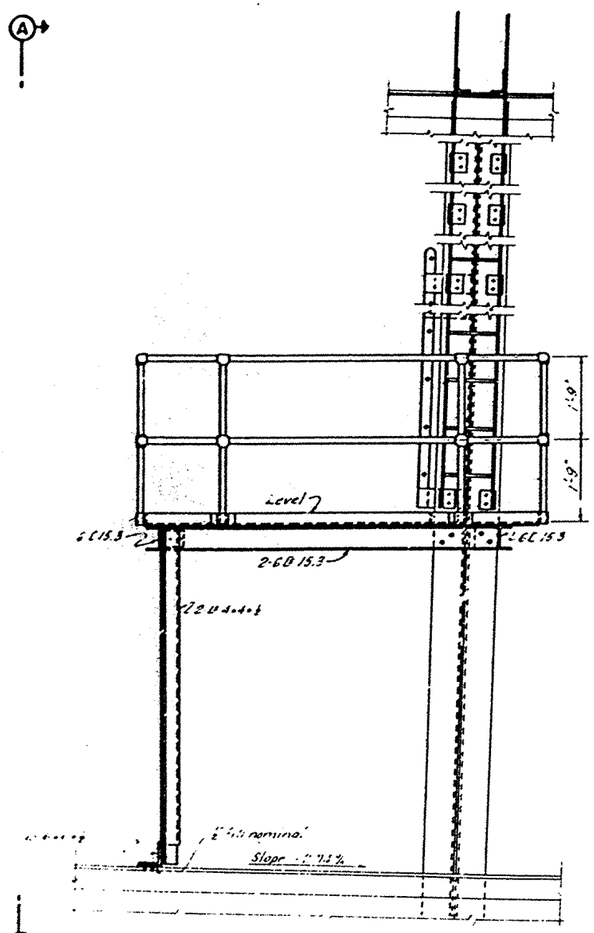
NEW PLATFORM LOCATIONS		TRUSS VERTICAL S.F.	TRUSS VERTICAL OAK
* 78 Spans	Sta 179+57± (L28)		
	Sta 181+75± (L34)		
288' Spans	Sta 232+70± (L1)		
	Sta 235+61± (L1)		
	Sta 238+56± (L1)		
	Sta 272+79± (L7)		

* Note: See Sheet No 64 for additional platform details.

△1

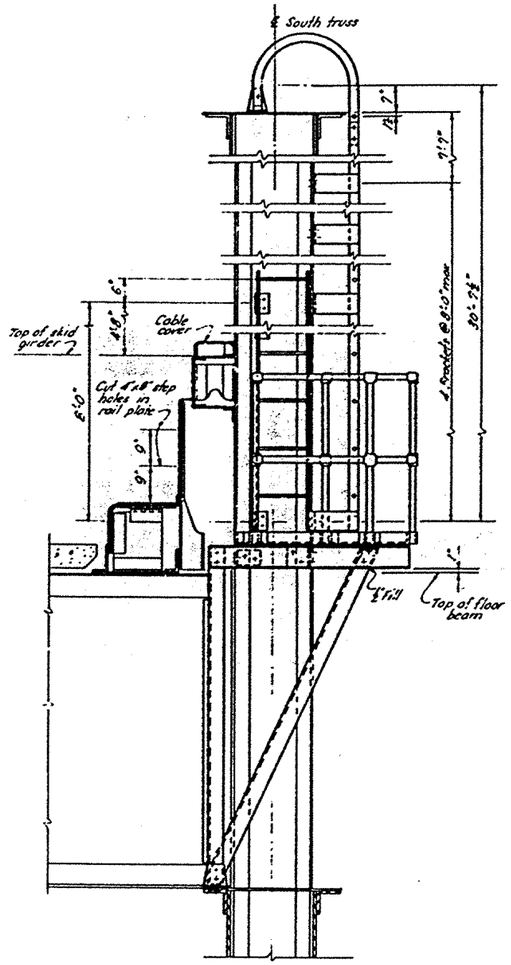


PLAN

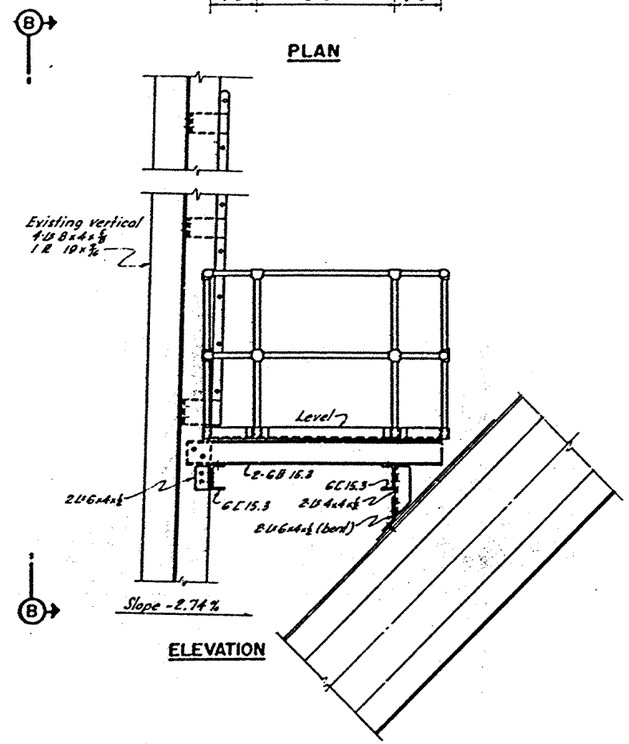


ELEVATION

△1

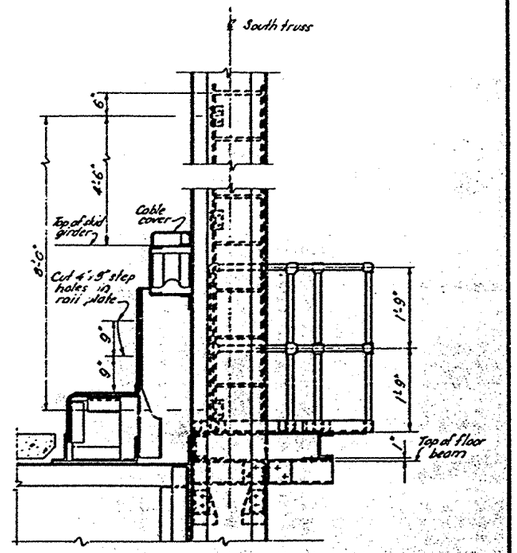


△2 SECTION A-A



ELEVATION

Note: Install platforms as shown at Piers E12 through E22 (total 11)



△2 SECTION B-B

NOTES

△2

1. All platforms are new units of welded construction. Use United States Steel section S.100 for floor plate.
2. Railing to be fabricated from 1½" black pipe with standard pipe rails and extra strong pipe posts. Fittings to be standard 411 fittings with threaded connections except where pinned joints are required.
3. All bolts are ¾" unless noted.
4. See sheet 64 for ladder details not shown.

0 1 2 3 4 — 8 TNS — 10 TNS — SCALE IN INCHES

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

PLATFORM AND LADDER DETAILS - 288 FOOT SPANS

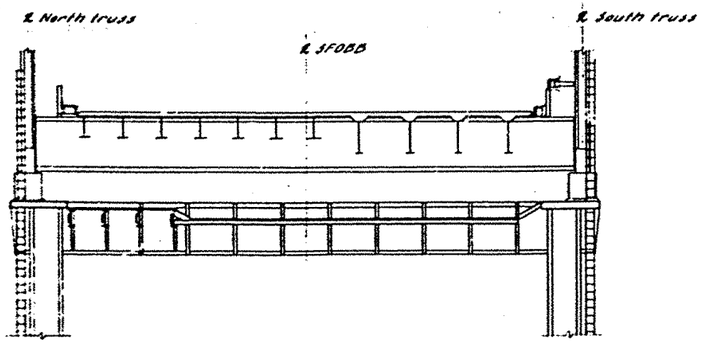
MARK	DATE	DESCRIPTION	BY	CH'K
△2	7-1-63	As built with revisions	L.L.S.	A.L.
△1	5/10/61	Removed note and added platform location table.	DWH	SAC

REVISION

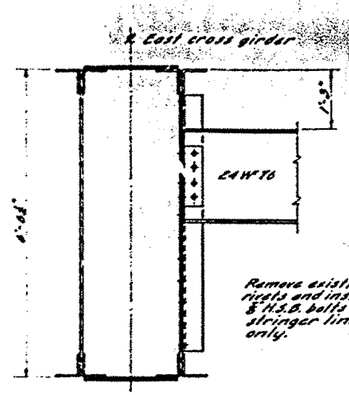
SCALE 3/4"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 67 | DRAWING C-4011-67R

APPROVAL RECOMMENDED BY

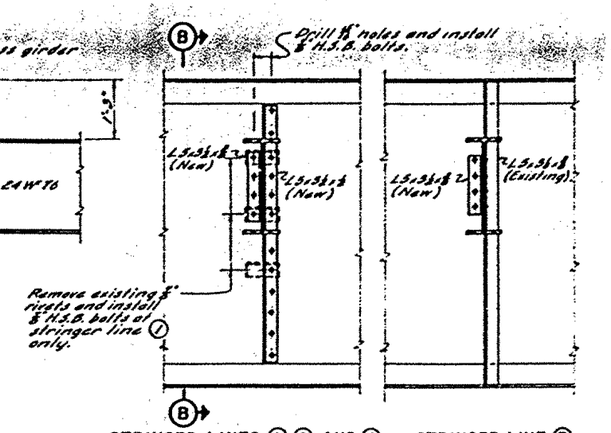
Maintenance Engineer
Bridge Engineer
Chief Engineer
Director of Public Works



SECTION A-A
Scale: 3/8"=1'-0"

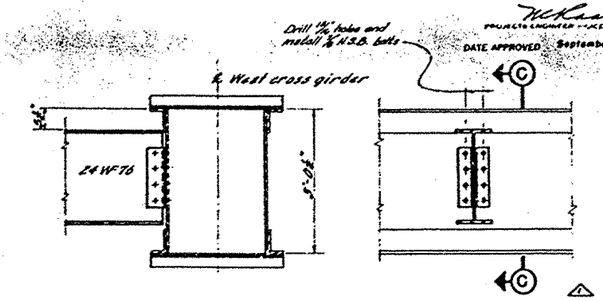


SECTION B-B



STRINGER LINES 1, 2, AND 4 — STRINGER LINE 3

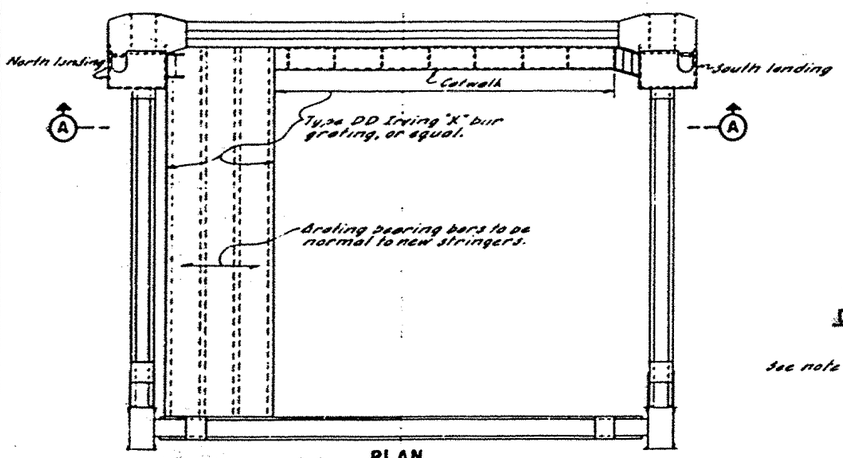
EAST CROSS GIRDER



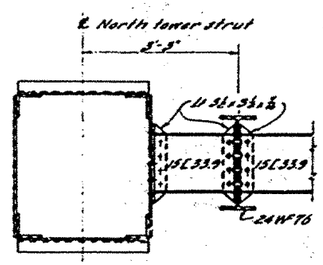
SECTION C-C — STRINGER LINES 1, 2, 3, AND 4

WEST CROSS GIRDER

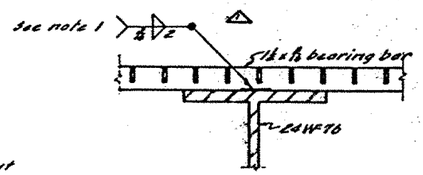
STRINGER CONNECTION DETAILS



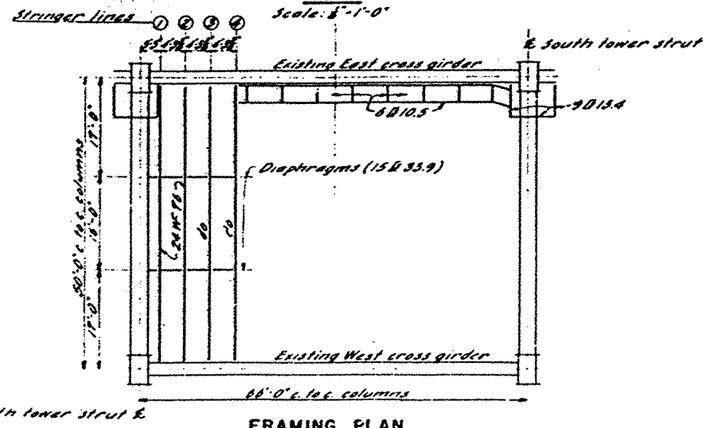
PLAN
Scale: 3/8"=1'-0"



DIAPHRAGM CONNECTION DETAIL



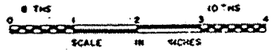
GRATING DETAIL
Scale: 3/8"=1'-0"



FRAMING PLAN
Scale: 3/32"=1'-0"

NOTES

1. Weld outside and center bearing bars at each panel at each new stringer.
2. The platform, landing and catwalk to be level.
3. See sheet 69 for landing, platform and catwalk details.



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

SUBSTATION PLATFORM DETAILS - PIER E9

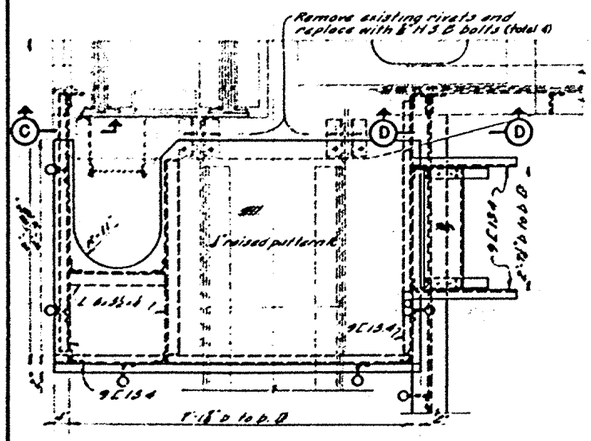
MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.68	As built with revisions	L.L.S.	A.L.

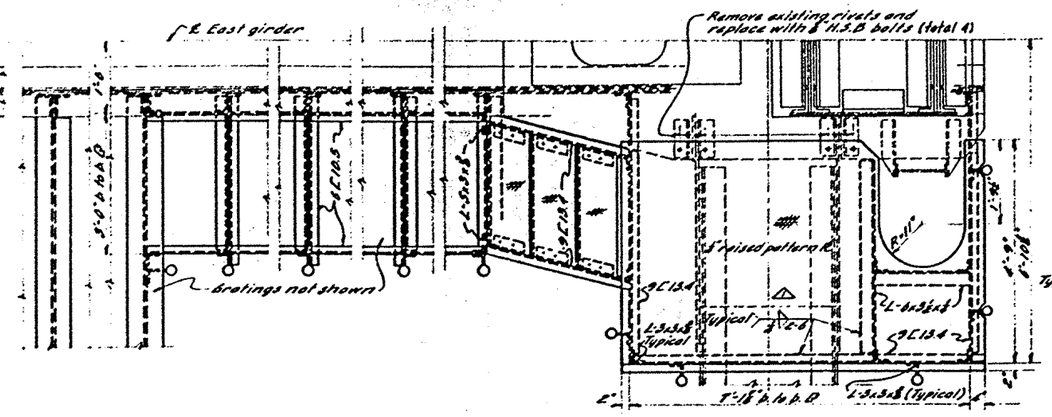
REVISION

UNLESS NOTED SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET NO. 68 | DRAWING C-4011-68R

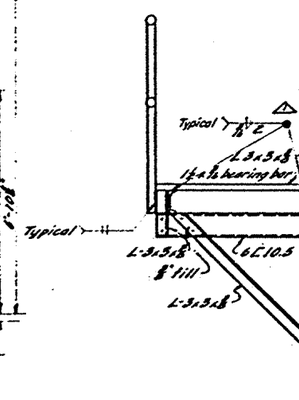
PROJECT ENGINEER – LICENSE DATE

DATE APPROVED September 23, 1960

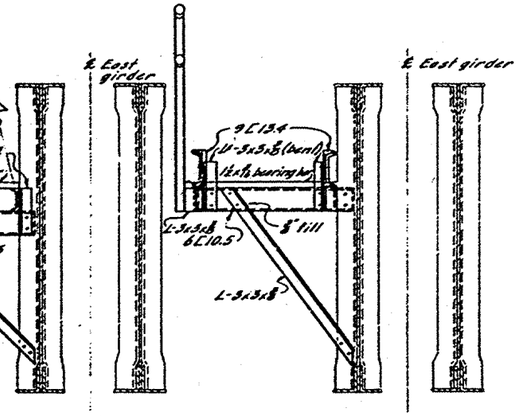




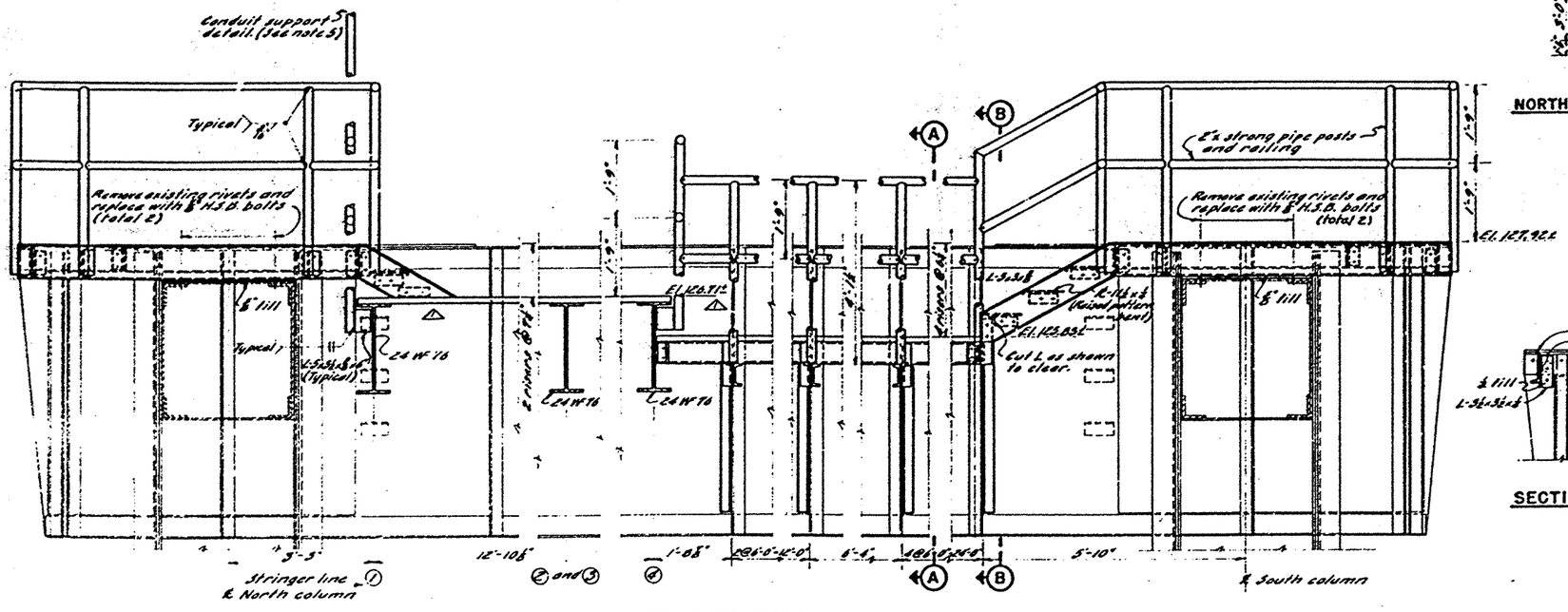
PLAN



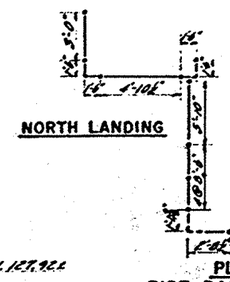
TYPICAL SECTION A-A



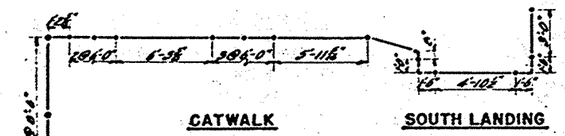
SECTION B-B



ELEVATION – EAST CROSS GIRDER



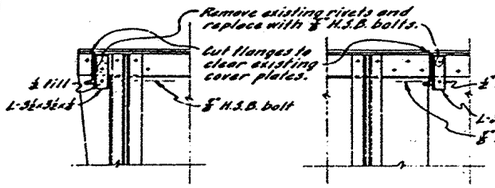
NORTH LANDING



CATWALK

SOUTH LANDING

PLATFORM
PIPE RAILING LAYOUT
No Scale



SECTION C-C

SECTION D-D

NOTES

1. Use ⅞" rivets or H.S.B. bolts for all connections except as shown otherwise.
2. All posts and railing to be 2" extra strong pipe. Weld and grind smooth all connections. All post ends to be plugged.
3. Bracing detail for catwalk see sheet 68.
4. Stringer connections see sheet 68.
5. Posts total (15) along north side of platform for supporting conduits. See conduit support detail, sheet 111.

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

LANDING AND CATWALK DETAILS – PIER E9

MARK	DATE	DESCRIPTION	BY	CH'K
1	11.63	As built with revisions	GB	A.L.

REVISION

SCALE 3/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 69 | DRAWING C-4011-69R

APPROVAL RECOMMENDED BY

DESIGN AND DETAILS REVIEWED BY

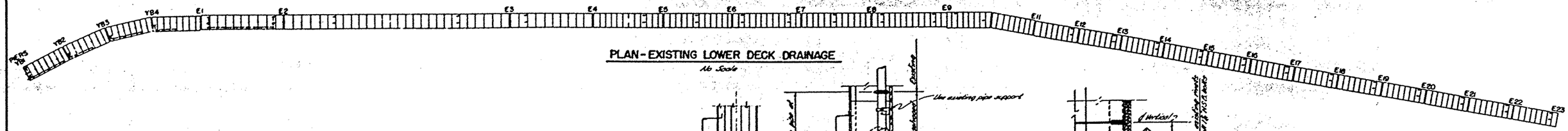
DESIGN AND DETAILS CHECKED BY

DESIGN AND DETAILS DESIGNED BY

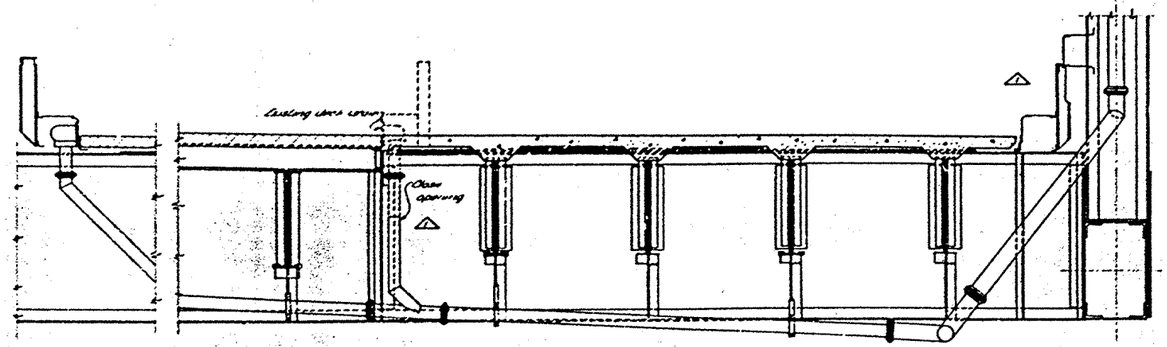
DESIGN AND DETAILS DRAWN BY

DESIGN AND DETAILS TRACED BY

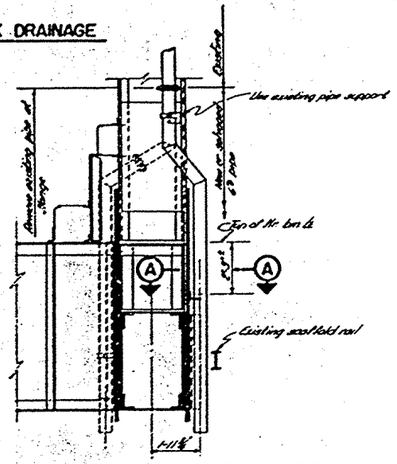
PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960



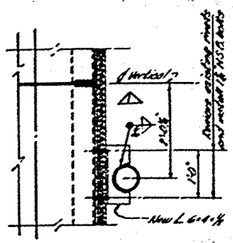
PLAN - EXISTING LOWER DECK DRAINAGE
No Scale



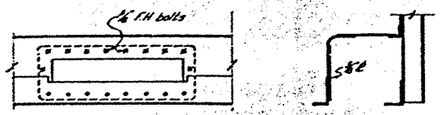
DRAIN DETAIL - SPAN E1 TO E2
Panels L8·L10, L8·L8 and L37·L8



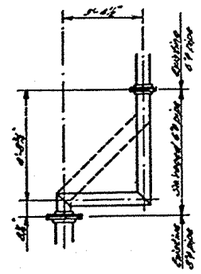
PANEL POINT LS4 EAST AND WEST
Note: LS4 (west) shown LS4 (east) opposite hand



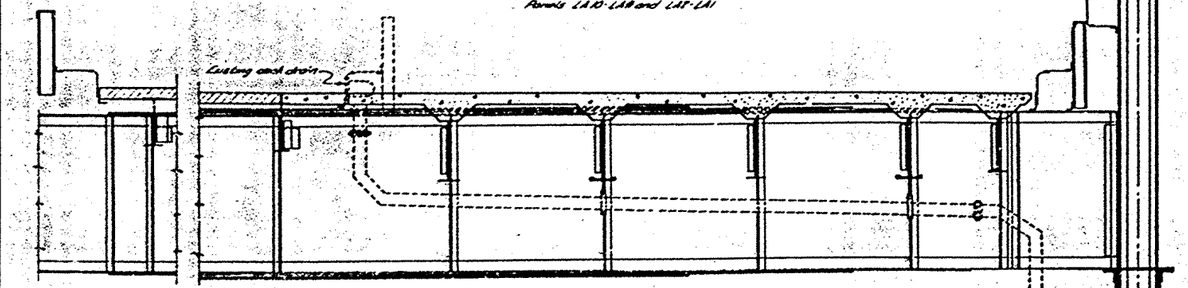
SECTION A-A
Scale: ½"=1'-0"



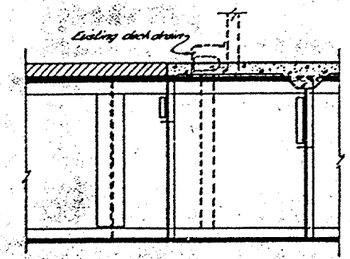
ELEVATION
SECTION
DRAIN CLOSURE DETAIL
Scale: ½"=1'-0"



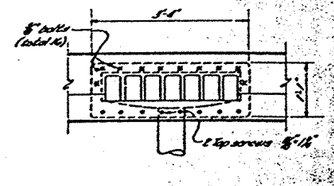
△ DETAIL - PIER E4



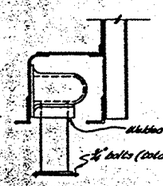
DRAIN DETAIL - SPANS YB2 THRU E1
Panels L8·L10, L8·L8 and L37·L8



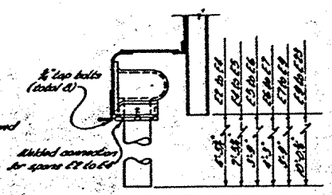
DRAIN DETAIL - SPANS E2 THRU E23



ELEVATION

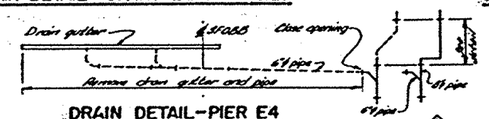


SECTION - SPANS YB1 THRU E2

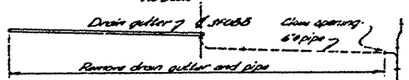


SECTION - SPANS E2 THRU E23

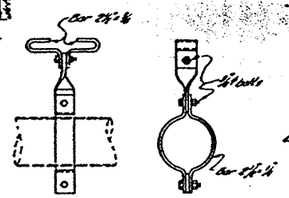
EXISTING DECK DRAINS
Scale: ½"=1'-0"



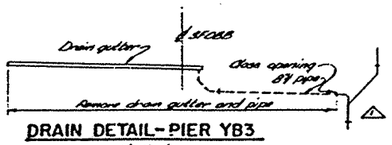
DRAIN DETAIL - PIER E4
No scale



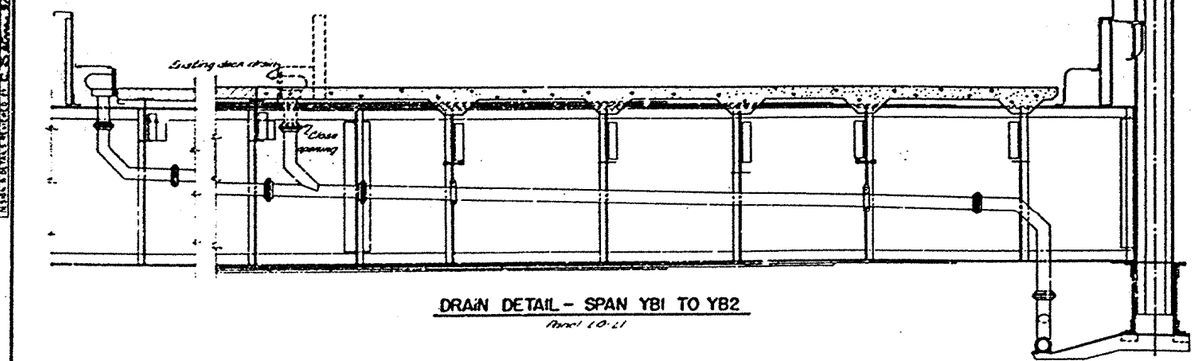
DRAIN DETAIL - PIER E11
No Scale



DRAIN FASTENER
Scale: 1½"=1'-0"



DRAIN DETAIL - PIER YB3
No Scale



DRAIN DETAIL - SPAN YB1 TO YB2
Panel L0·L1

NOTES

1. Existing deck drains on lower deck south curb line to be removed and stored
2. Deck drain openings to be closed with ⅜" plates bolted in place.
3. All drain pipe marked thus ==== to be removed and stored, including drain fasteners.
4. △ Resulting drain pipe opening to be closed with C.I. blind flange fitting or ⅜" welded plate.

8 THS 10 THS
SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.63	As built with revisions	L.L.S.	A.L.
		REVISION		

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

LOWER DECK DRAINAGE ALTERATIONS

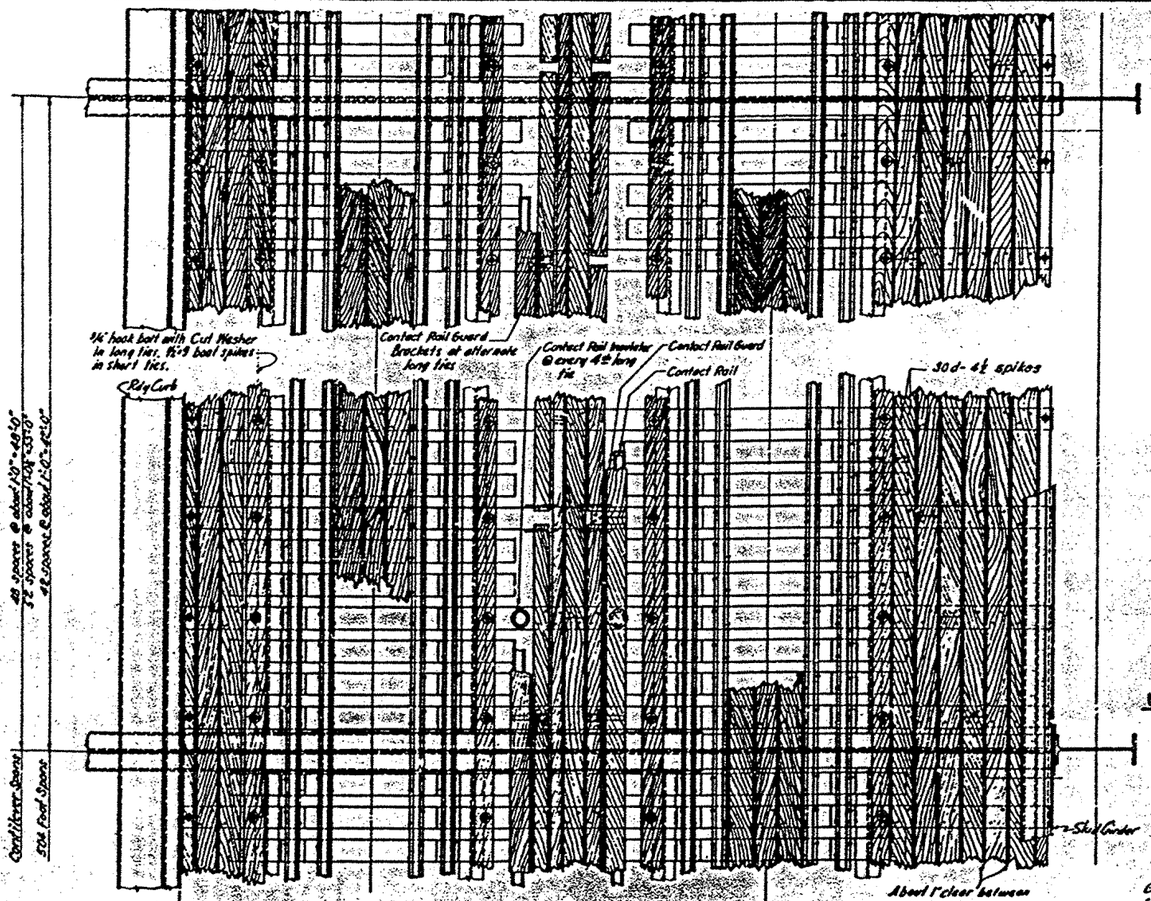
UNLESS NOTED SCALE 3/8" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No 70 | DRAWING C-401-70R

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER — LICENSE 1167

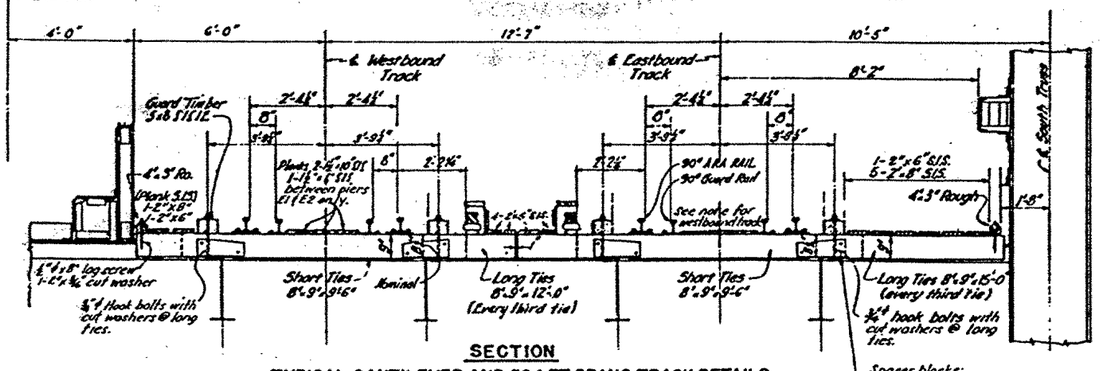
REVISIONS

PROJECT ENGINEER - LICENSE 14178
DATE APPROVED January 23, 1962

APPROVAL RECOMMENDED BY M. Rickert
ASSISTANT ENGINEER - BRIDGE
LICENSE 11187

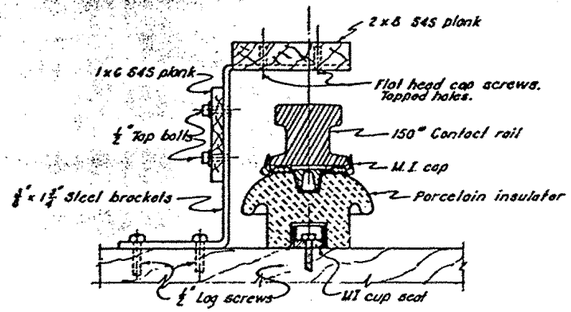


PLAN - TYPICAL PANELS

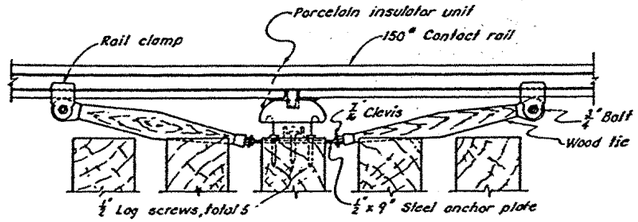


SECTION
TYPICAL CANTILEVER AND 504 FT. SPANS TRACK DETAILS
Scale: 1/4" = 1'-0"

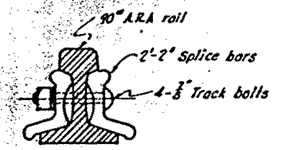
Note: Details shown are for cantilever and 504 foot spans. V.B. and E88 foot spans similar.



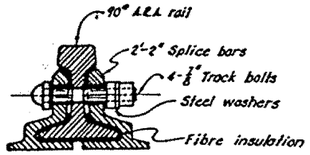
DETAIL OF CONTACT RAIL FACILITIES
Scale: 3" = 1'-0"



CONTACT RAIL ANCHOR ASSEMBLY
Scale: 1 1/2" = 1'-0"

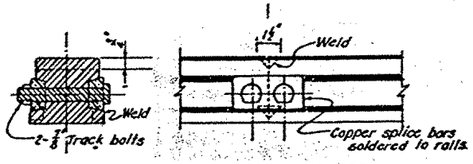


UNINSULATED RAIL JOINT

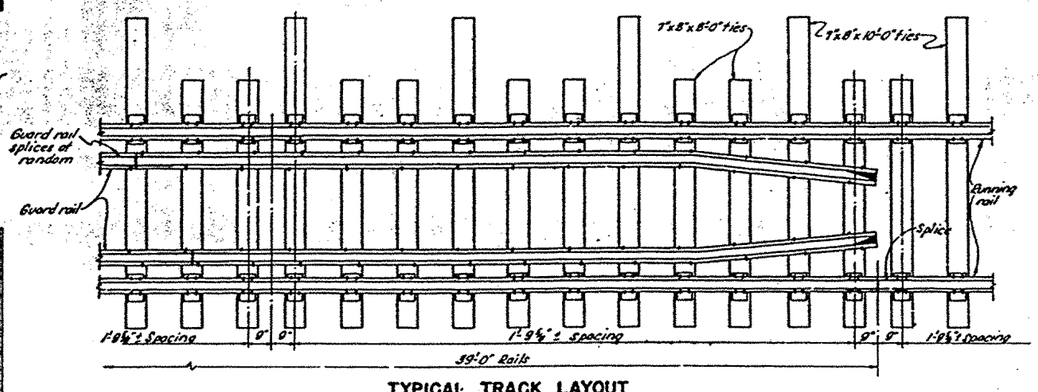


INSULATED RAIL JOINT

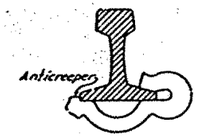
RUNNING AND GUARD RAIL JOINT DETAILS
Scale: 3" = 1'-0"



150 LB. CONTACT RAIL SPLICE
Scale: 3" = 1'-0"

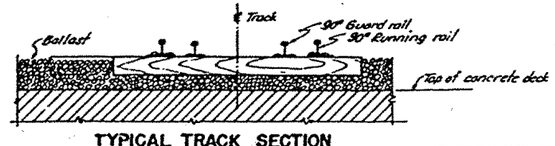


TYPICAL TRACK LAYOUT
FROM PIER E23 TO BENT E28
Scale: 1/4" = 1'-0"



ANTICREEPER
Scale: 3" = 1'-0"

Anticreeper plates are placed at a rate of 16 to each 39' running rail in the panels where spacer blocks are used.



TYPICAL TRACK SECTION
FROM PIER E23 TO BENT E28
Scale: 1/2" = 1'-0"

Bent E28 to Skb E89 similar except that ballasted track is on rock fill

SCALE IN INCHES: 0 — 8 INS — 1 — 2 — 3 — 10 INS — 4

MARK	DATE	DESCRIPTION	BY	CH'K
2	11.63	As built without revisions	OR	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

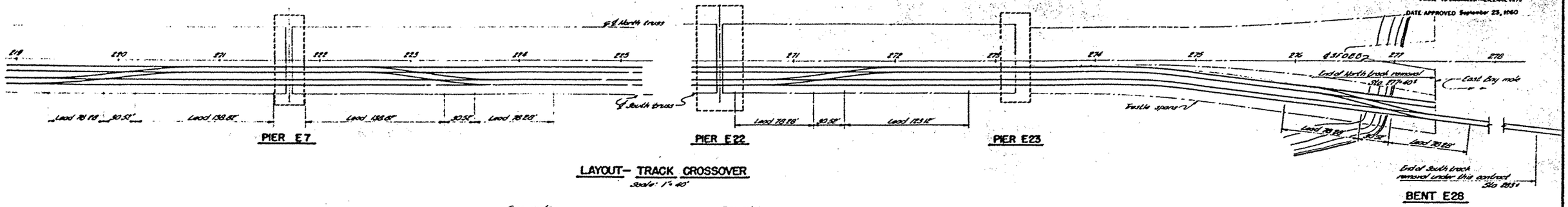
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

TRACK REMOVAL - TYPICAL BRIDGE RAILWAY

SCALE AS SHOWN | BRIDGE 33-28, 34-03, 34-04 | SHEET NO 71 | DRAWING C-4011-71R

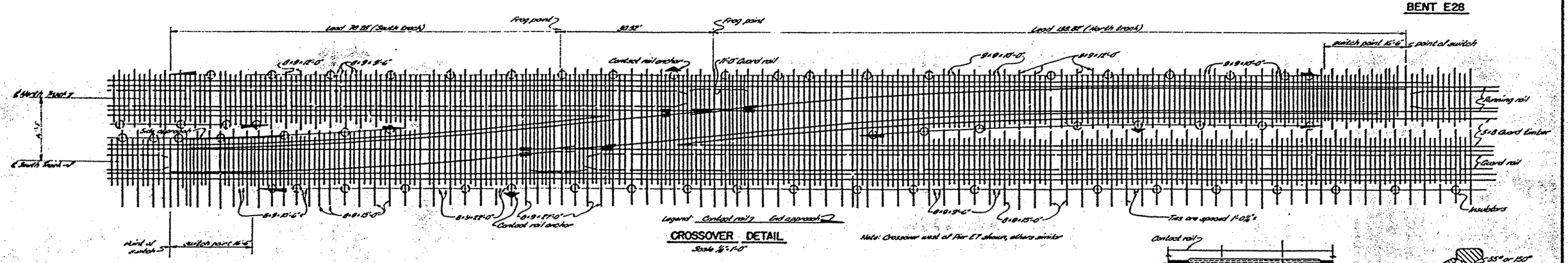
PROJECT ENGINEER — LICENSE DATE

DATE APPROVED September 23, 1960



LAYOUT– TRACK CROSSOVER

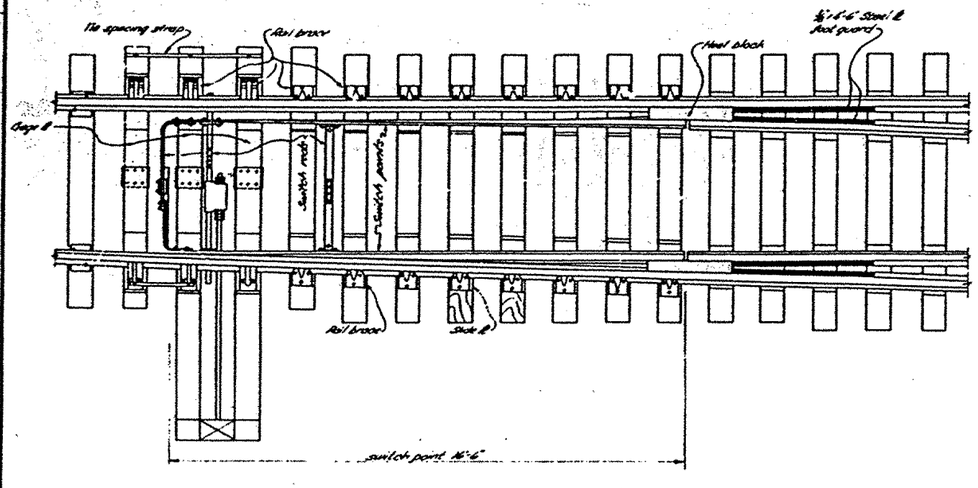
Scale: 1" = 40'



CROSSOVER DETAIL

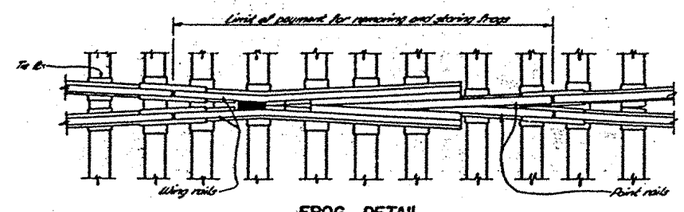
Scale: ½" = 1'-0"

Note: Crossover west of Pier E7 shown, others similar



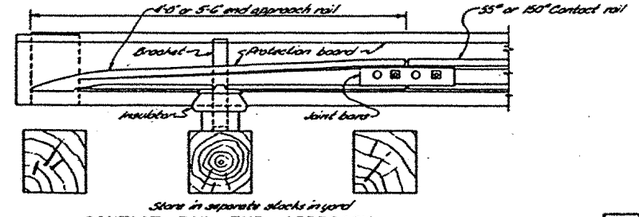
SWITCH DETAIL

Scale: ½" = 1'-0"



FROG DETAIL

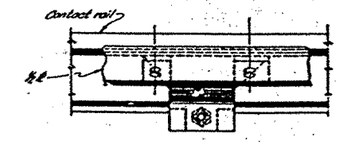
Scale: ½" = 1'-0"



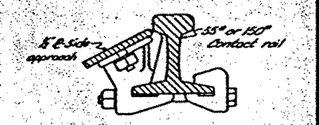
Store in separate stacks in yard

CONTACT RAIL END APPROACH

Scale: 1½" = 1'-0"



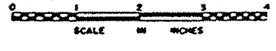
ELEVATION



SECTION

CONTACT RAIL SIDE APPROACH

Scale: 5" = 1'-0"



MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.65	As built without revisions	J.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

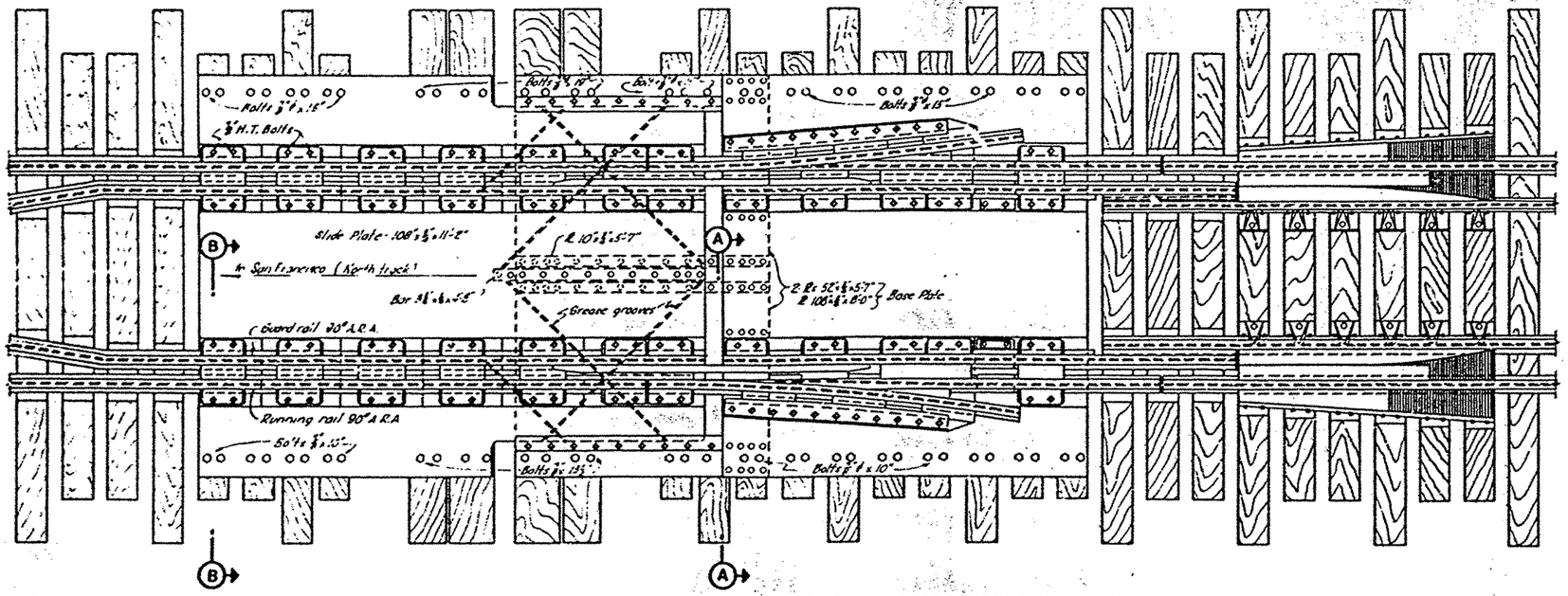
TRACK REMOVAL – CROSSOVER DETAILS

SCALE AS SHOWN	BRIDGE 33-25 34-03 34-04	SHEET No. 72	DRAWING C-4011-728

APPROVAL RECOMMENDED BY

DESIGN ENGINEER
CHECKED
DRAWN
TRACED

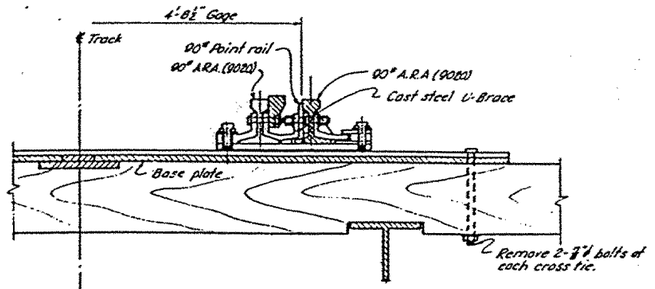
DATE APPROVED September 23, 1960



PART PLAN - RAIL EXPANSION ASSEMBLY - PIERS YB3, E4, AND E11

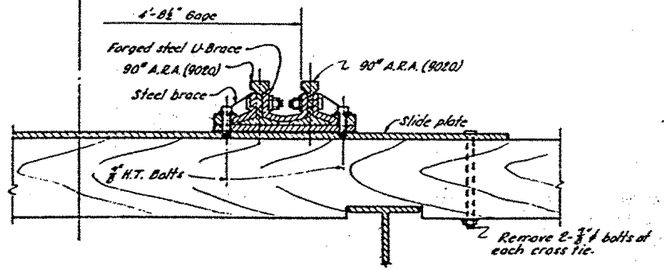
Scale ¼" = 1'-0"

Note: Pier YB 3 shown, E4 and E11 similar.
See rail expansion joint layout below for plate sizes and general layout of each pier expansion joint



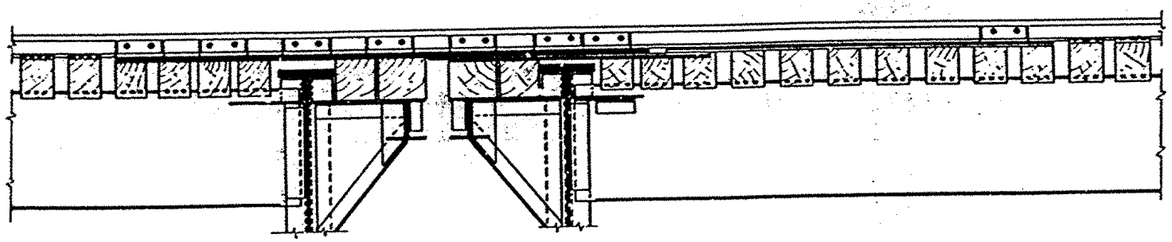
SECTION A-A

Scale 1½" = 1'-0"



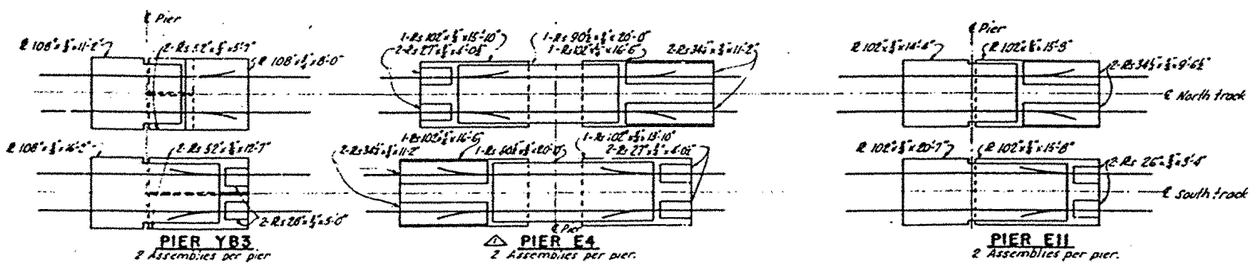
SECTION B-B

Scale 1½" = 1'-0"

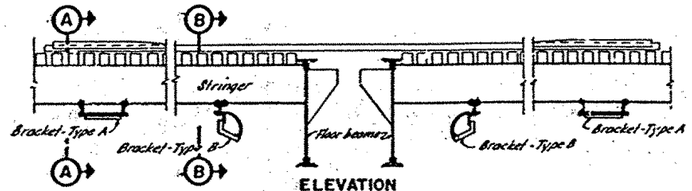


PART ELEVATION

Scale ¼" = 1'-0"

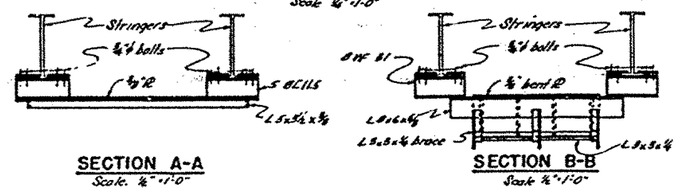


LAYOUT - RAIL EXPANSION ASSEMBLIES



ELEVATION

Scale ¼" = 1'-0"



SECTION A-A

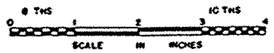
Scale ½" = 1'-0"

SECTION B-B

Scale ½" = 1'-0"

EXISTING CABLE BRACKET REMOVAL

Note: Cable brackets at Pier YB 3 as shown. Piers E4 and E11 similar.



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

TRACK REMOVAL - PIER EXPANSION JOINTS

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.68	As built with revisions	CB	A.L.

REVISION

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 73 | DRAWING C-401-73R

APPROVAL RECOMMENDED BY

DRAWN BY
DETAILS
CHECKED
PLACED

NOTES FOR TOPOGRAPHY SHEETS

The topography shown represents conditions at the completion of Contract 6020.

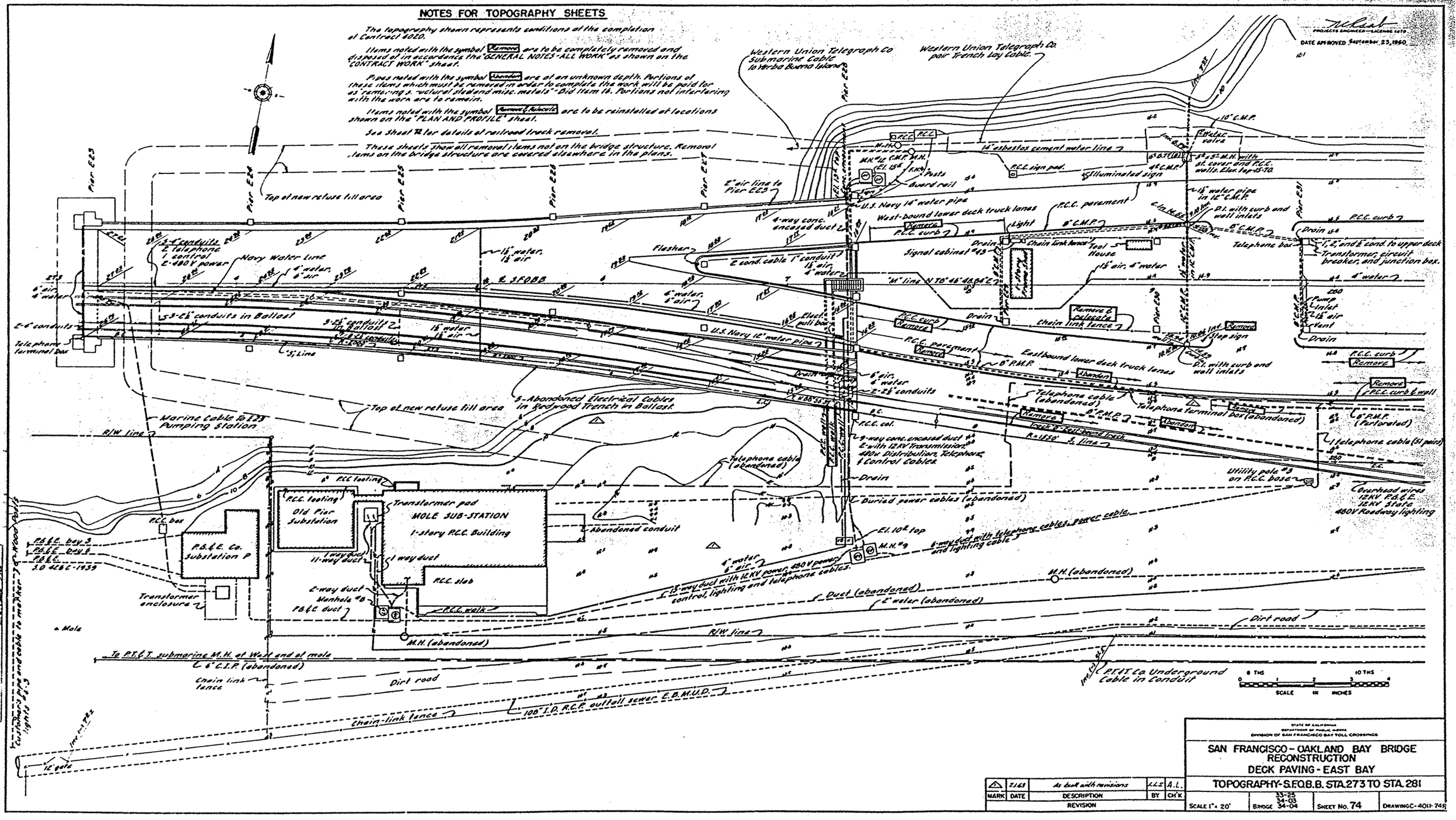
Items noted with the symbol Remove are to be completely removed and disposed of in accordance the "GENERAL NOTES-ALL WORK" as shown on the "CONTRACT WORK" sheet.

Pipes noted with the symbol Abandon are at an unknown depth. Portions of these items which must be removed in order to complete the work will be paid for as "removing structural steel and misc. metals"-Bid Item 16. Portions not interfering with the work are to remain.

Items noted with the symbol Remove & Relocate are to be reinstalled at locations shown on the "PLAN AND PROFILE" sheet.

See Sheet 72 for details of railroad track removal.

These sheets show all removal items not on the bridge structure. Removal items on the bridge structure are covered elsewhere in the plans.



APPROVAL RECOMMENDED BY

DATE APPROVED September 25, 1950

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	J.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

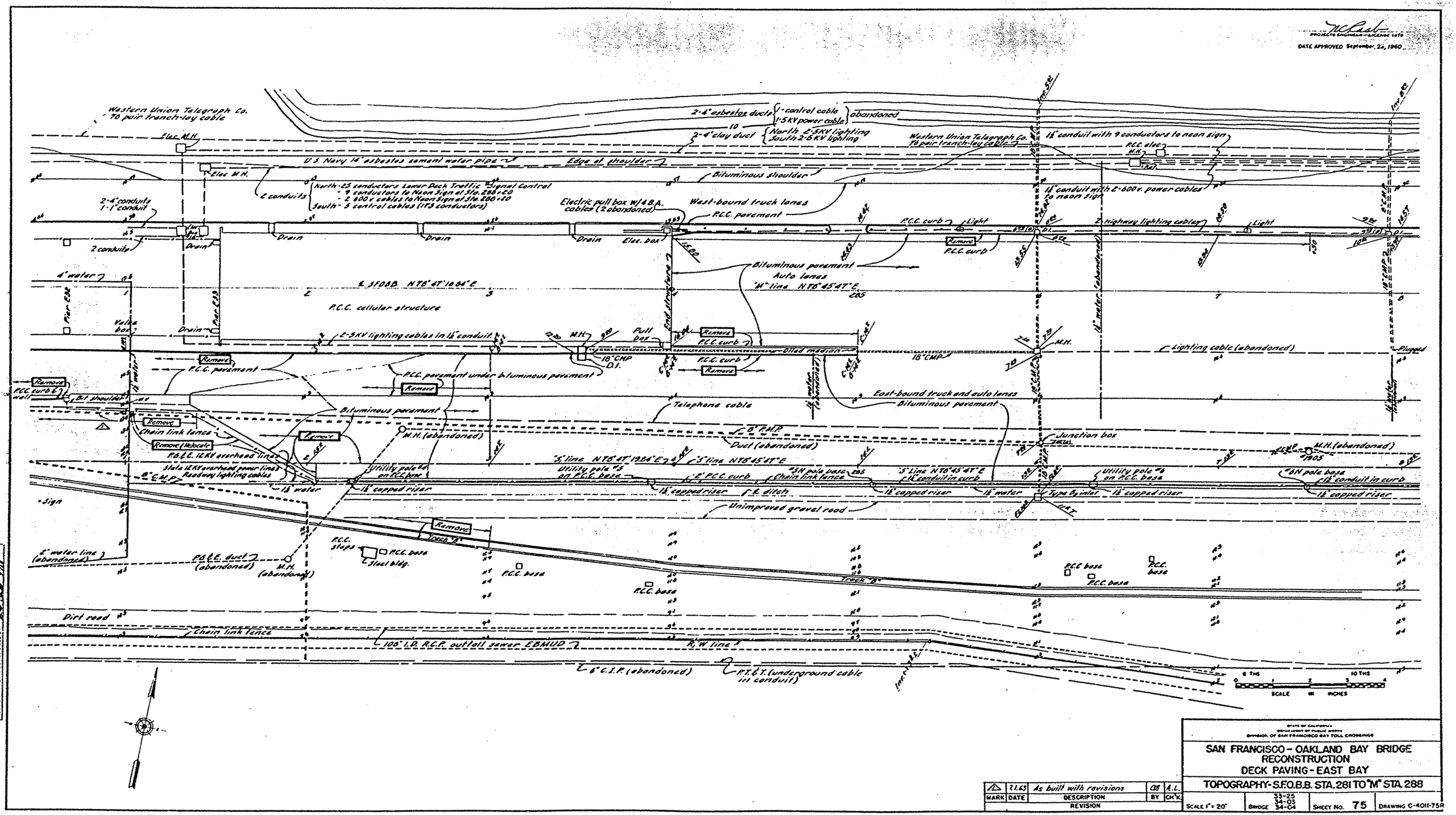
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

TOPOGRAPHY-S.F.O.B.B. STA.273 TO STA.281

SCALE 1" = 20' | BRIDGE 33-25 34-03 34-04 | SHEET No. 74 | DRAWING C-4011-74R

PROJECT ENGINEER — LICENSE 1670

DATE APPROVED September 26, 1960



MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	GB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING - EAST BAY

TOPOGRAPHY - S.F.O.B.B. STA. 281 TO "M" STA. 288

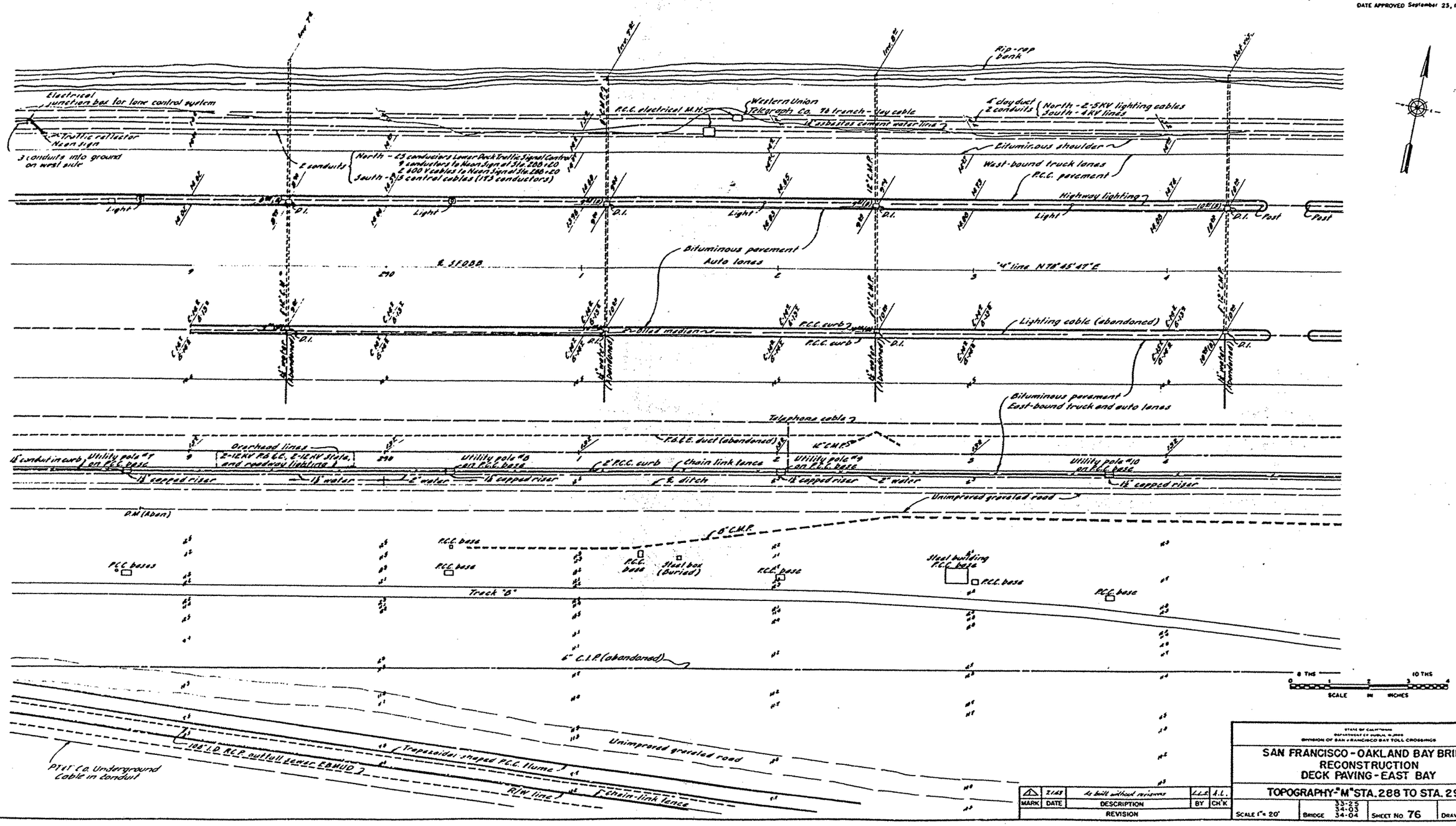
SCALE 1" = 20' | BRIDGE 33-25 34-03 34-04 | SHEET No. 75 | DRAWING C-4011-75R

PROJECT ENGINEER—LICENSE 1679

DATE APPROVED September 25, 1960

APPROVAL RECOMMENDED BY

CHIEF ENGINEER



MARK	DATE	DESCRIPTION	BY	CH'K
1	7-1-63	As built without revisions	L.L.S.	A.L.

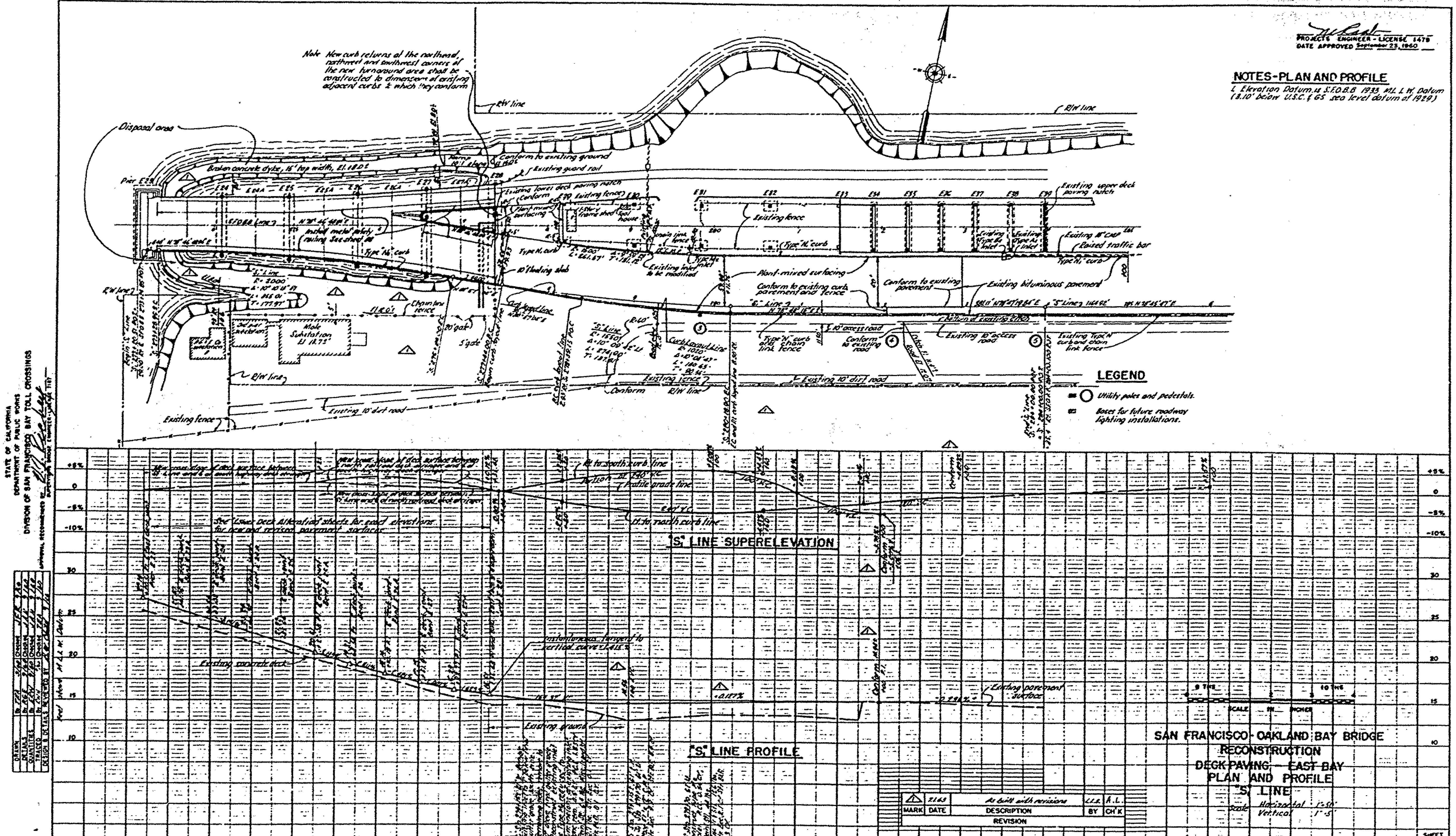
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

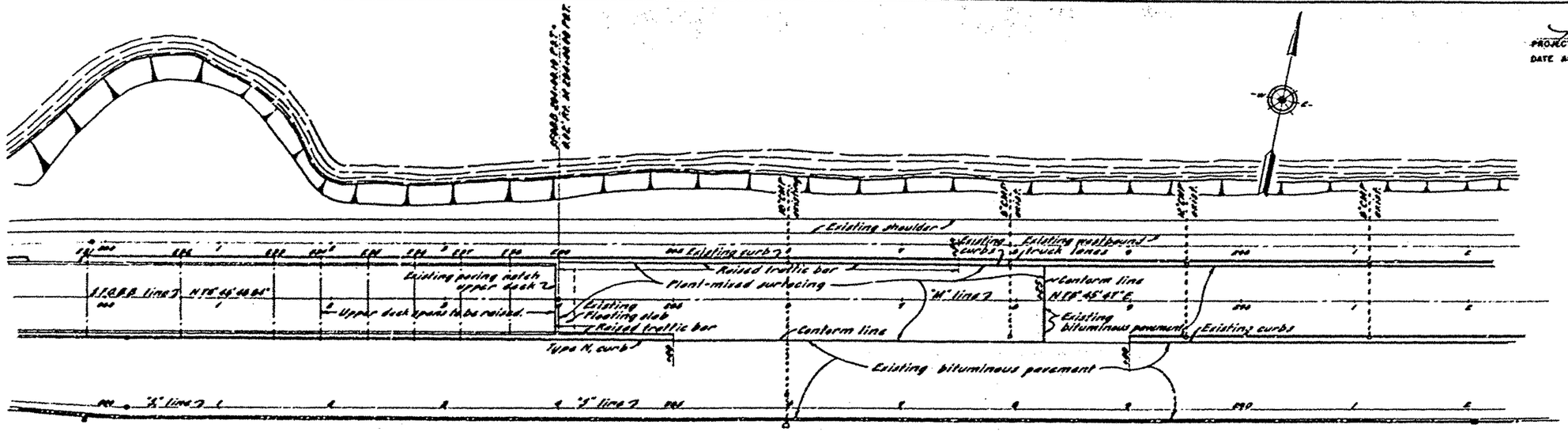
TOPOGRAPHY - "M" STA. 288 TO STA. 295

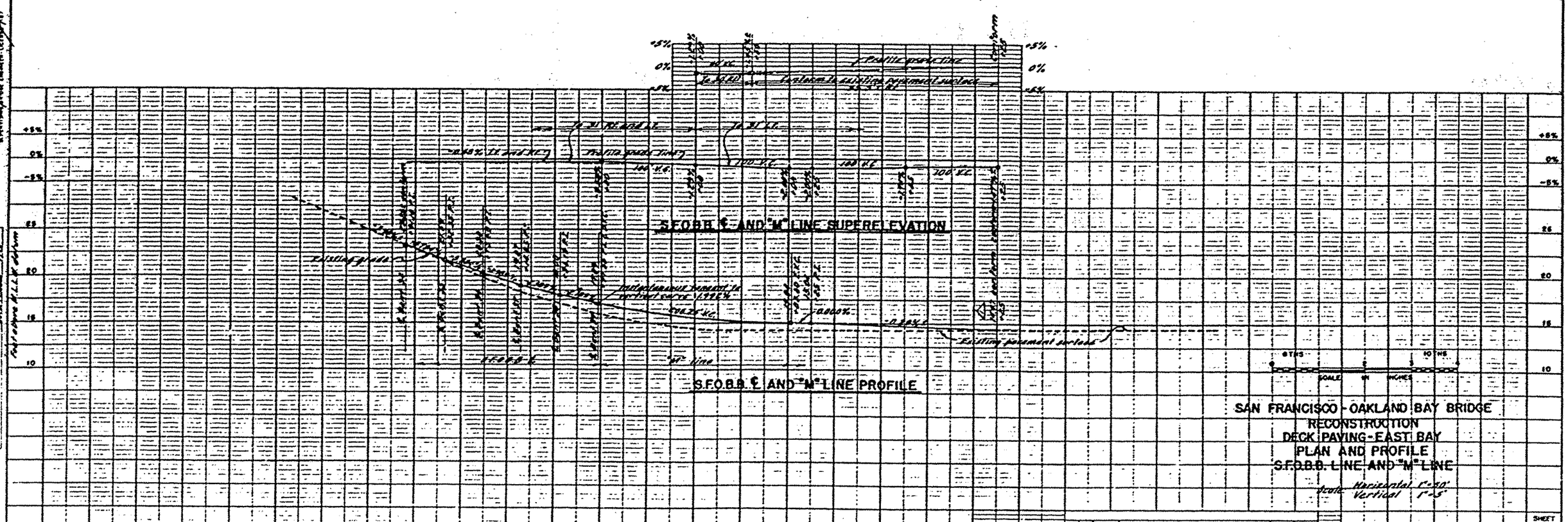
SCALE 1" = 20' | BRIDGE 33-25 34-03 34-04 | SHEET No. 76 | DRAWING C-4011-76R



PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960
NOTES-PLAN AND PROFILE
1. Elevation Datum is S.F.O.B.B. 1933 M.L.L.W. Datum (8.10' below U.S.C.& GS sea level datum of 1929)
Note: New curb returns at the northeast, northwest and southwest corners of the new turnaround area shall be constructed to dimensions of existing adjacent curbs to which they conform
Disposal area
Broken concrete dyke, 16' top width, El. 18.0±
Pier E23
R/W line
Conform to existing ground
Existing guard rail
Existing lower deck paving notch
Existing fence
Plant-mixed surfacing
Type "N" curb
10' floating slab
Existing inlet to be modified
Conform to existing curb pavement and fence
Conform to existing pavement
Existing bituminous pavement
Existing upper deck paving notch
Existing 18" CMP
Raised traffic bar
Existing fence
Chain link fence
20' gate
5' gate
Mole Substation El 18.72'
Existing 10' access road
Existing 10' dirt road
Type "N" curb and chain link fence
Existing Type N curb and chain link fence
Conform to existing road
Conform
LEGEND
Utility poles and pedestals.
Bases for future roadway lighting installations.
Existing concrete deck
Instantaneous tangent to vertical curve
Existing ground
Existing pavement surface
See "Lower Deck Alterations" sheets for exact elevations for new and revised pavement surfaces
Rt to south curb line
Profile grade line
Lt to north curb line
"S" LINE SUPERELEVATION
"S" LINE PROFILE
+5%
0
-5%
-10%
30
25
20
15
10
SCALE IN INCHES
MARK | DATE | DESCRIPTION | BY | CH'K
REVISION
As built with revisions
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
PLAN AND PROFILE
"S" LINE
Scale Horizontal 1"=50'
Vertical 1"=5'
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
DRAWN
DETAILS
QUANTITIES
TRACED
DESIGN & DETAILS REVIEWED BY
SHEET

PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1940





STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

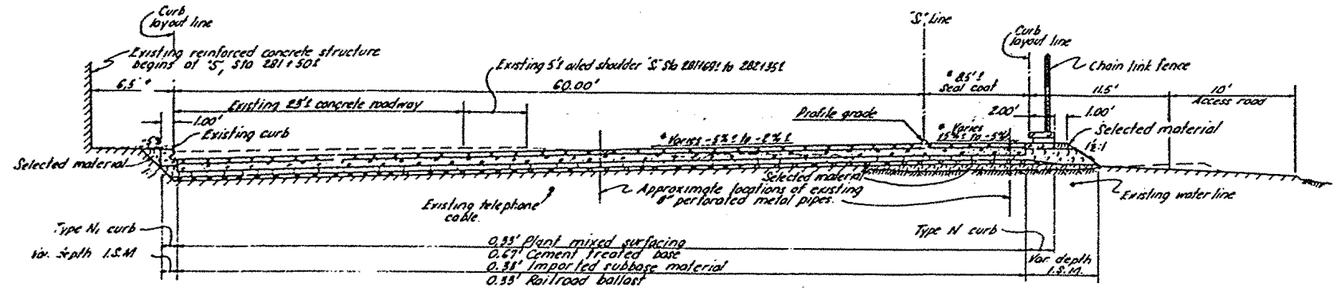
APPROVAL RECOMMENDED BY: [illegible] ENGINEER IN CHARGE

DRAWN	[illegible]	CHECKED	[illegible]
DETAILS	[illegible]	CHECKED	[illegible]
QUANTITIES	[illegible]	CHECKED	[illegible]
TRACED	[illegible]	CHECKED	[illegible]
DESIGN & DETAILS REVIEWED BY	[illegible]		

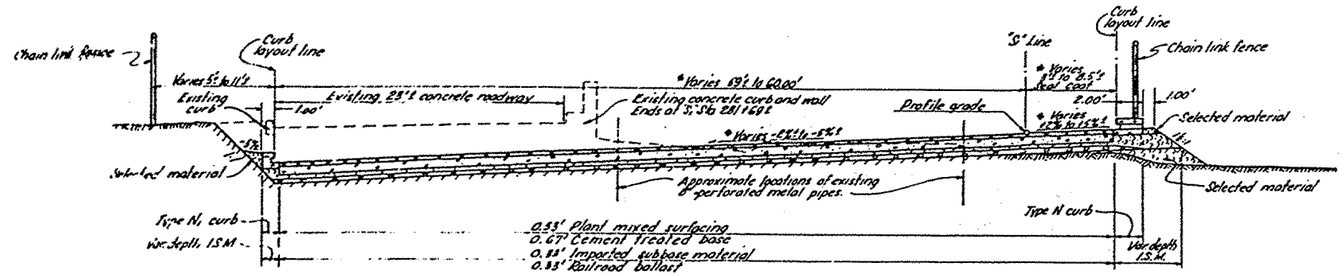
Full Above M.L.L.W. Datum

PROJECT ENGINEER — LICENSE NO. 16179

DATE APPROVED September 23, 1960



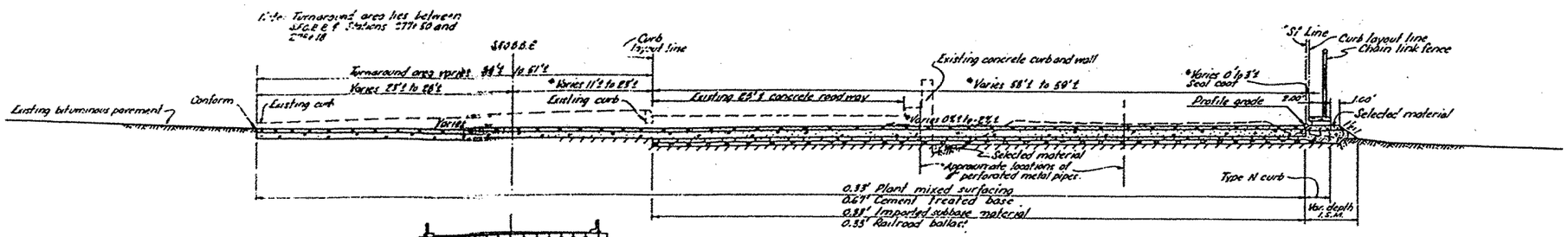
"S" STA. 280+20 TO "S" STA. 282+05



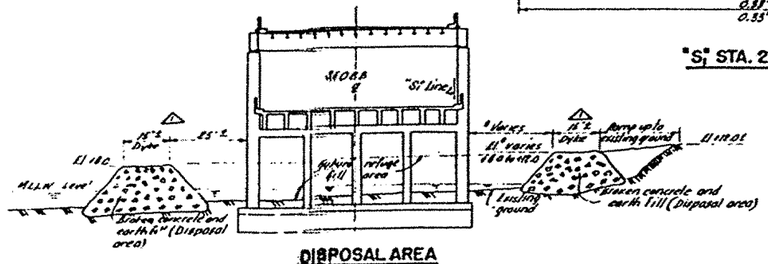
"S" STA 278+20 TO "S" STA 280+20

NOTES FOR TYPICAL SECTIONS

1. Station ranges shown on each section are for general location purposes only.
2. All plant mixed surfacing shall be dense-graded unless specifically noted as open graded.
3. All cement treated base shall be class A.
4. All dimensions, stations and slopes are normal to "S" Line unless specifically noted otherwise.
5. Variable dimensions and slopes shown with the symbol * are predetermined values which can be computed by reference to alignment or superelevation data shown on the "Plan and Profile" sheets. All other variable dimensions and slopes are undefined values which result from conforming to existing pavement surfaces and edges or other existing features.



"S" STA. 277+35 TO "S" STA. 278+20



DISPOSAL AREA

S.F.O.B.B. ℄ STA. 273+50 TO S.F.O.B.B. ℄ STA. 277+50

Scale 1" = 20'

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K.
2	7.1.63	As built with revisions	CB	J.L.

REVISION

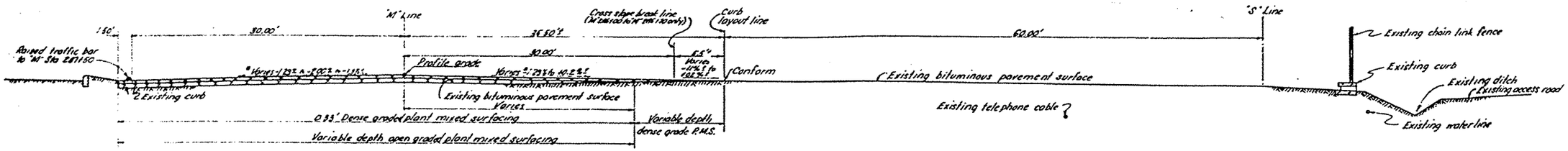
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

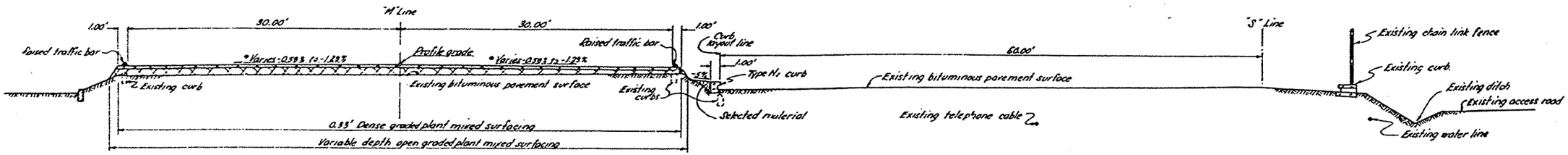
TYPICAL SECTIONS "S" STA. 277 TO STA. 282

SCALE 1" = 5'	33-25 34-03 BRIDGE 34-04	SHEET No. 79	DRAWING C-401-79R

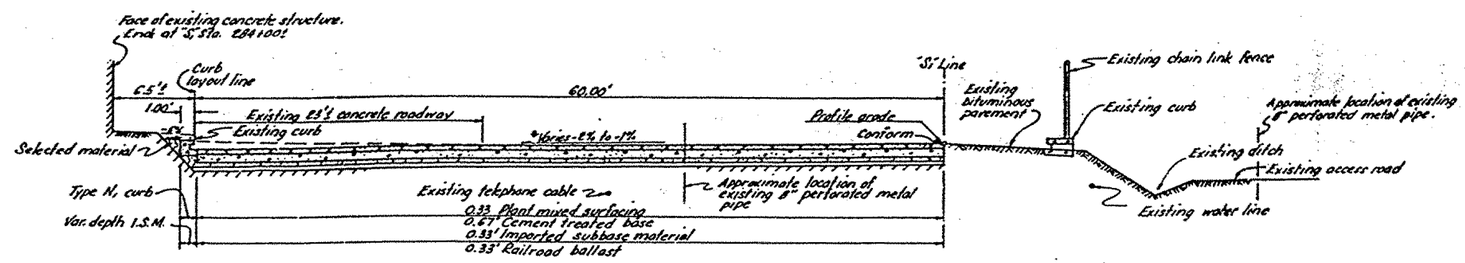
DATE APPROVED September 23, 1960



"M" STA. 285+00 TO "M" STA. 287+75



"M" STA. 284+00 TO "M" STA. 285+00



"S1" STA. 282+05 TO "S1" STA. 283+00

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

TYPICAL SECTIONS "S1" STA. 282 TO "M" STA. 288

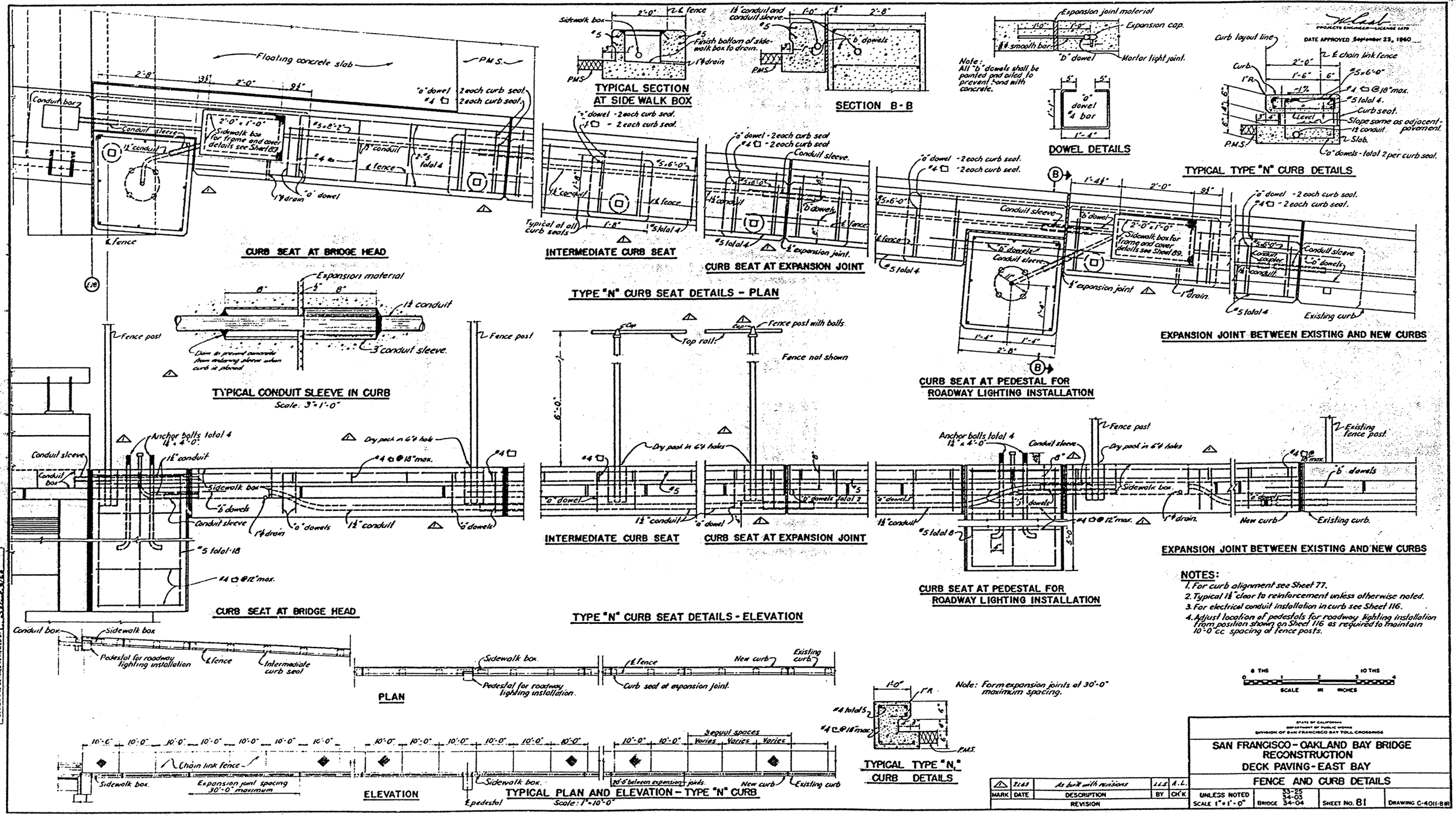
MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As built without revisions	CB	A.L.

REVISION

SCALE 1" = 5' | BRIDGE 33-25 34-03 34-04 | SHEET No 80 | DRAWING C-4011-80R

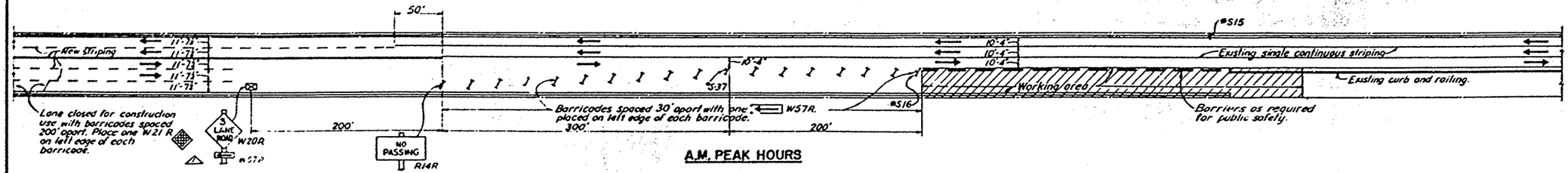
APPROVAL OF CONVENTION BY

DESIGN QUANTITIES CHECKED
DRAWING AND DETAILS REVIEWED BY

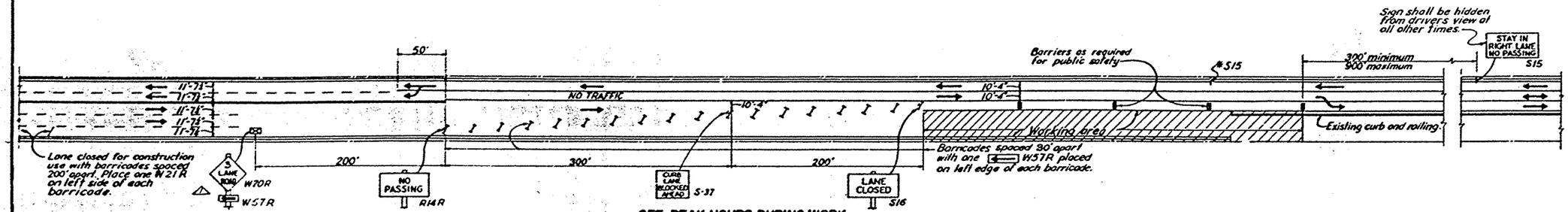

Floating concrete slab
P.M.S.
Conduit box
Conduit sleeve
1½" conduit
Sidewalk box for frame and cover details see Sheet 89
1" drain
"o" dowel
℄ fence
CURB SEAT AT BRIDGE HEAD
Sidewalk box
"5
Finish bottom of sidewalk box to drain.
1" drain
TYPICAL SECTION AT SIDE WALK BOX
1½" conduit and conduit sleeve.
"b" dowels
SECTION B-B
Expansion joint material
Expansion cap.
"b" dowel
Mortar light joint.
Note: All "b" dowels shall be painted and oiled to prevent bond with concrete.
"o" dowel "4 bar
DOWEL DETAILS
Curb layout line
℄ chain link fence
Curb
Level
Slope same as adjacent pavement.
Slab.
"o" dowels - total 2 per curb seat.
TYPICAL TYPE "N" CURB DETAILS
"o" dowel - 2 each curb seat.
"4 - 2 each curb seat.
Typical at all curb seats
INTERMEDIATE CURB SEAT
"b" dowels
℄ expansion joint.
CURB SEAT AT EXPANSION JOINT
TYPE "N" CURB SEAT DETAILS - PLAN
Conduit sleeve
Sidewalk box for frame and cover details see Sheet 89.
Existing curb
EXPANSION JOINT BETWEEN EXISTING AND NEW CURBS
CURB SEAT AT PEDESTAL FOR ROADWAY LIGHTING INSTALLATION
Expansion material
1½ conduit
Fence post
Dam to prevent concrete from entering sleeve when curb is placed.
3" conduit sleeve.
TYPICAL CONDUIT SLEEVE IN CURB
Scale: 3" = 1'-0"
Cap
Top rail.
Fence post with balls.
Fence not shown
Anchor bolts total 4
Dry pack in 6" holes
Sidewalk box
Conduit sleeve
1" drain
"5 total 18
"4 @ 12" max.
CURB SEAT AT BRIDGE HEAD
"b" dowels total 2
INTERMEDIATE CURB SEAT
CURB SEAT AT EXPANSION JOINT
"5 total 8
CURB SEAT AT PEDESTAL FOR ROADWAY LIGHTING INSTALLATION
Existing fence post.
New curb
Existing curb.
EXPANSION JOINT BETWEEN EXISTING AND NEW CURBS
TYPE "N" CURB SEAT DETAILS - ELEVATION
Pedestal for roadway lighting installation
Intermediate curb seat
PLAN
Curb seat at expansion joint.
Chain link fence
Expansion joint spacing 30'-0" maximum
ELEVATION
℄ pedestal
TYPICAL PLAN AND ELEVATION - TYPE "N" CURB
Scale: 1" = 10'-0"
Note: Form expansion joints at 30'-0" maximum spacing.
"4 total 5
"4 @ 18" max.
P.M.S.
TYPICAL TYPE "N" CURB DETAILS
APPROVED FOR PUBLIC WORKS
DATE APPROVED September 23, 1960
APPROVAL RECOMMENDED BY
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
FENCE AND CURB DETAILS
MARK | DATE | DESCRIPTION | BY | CH'K
REVISION
As built with revisions
UNLESS NOTED
SCALE 1" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 81
DRAWING C-4011-81R

PROJECT ENGINEER — LICENSE EXP.

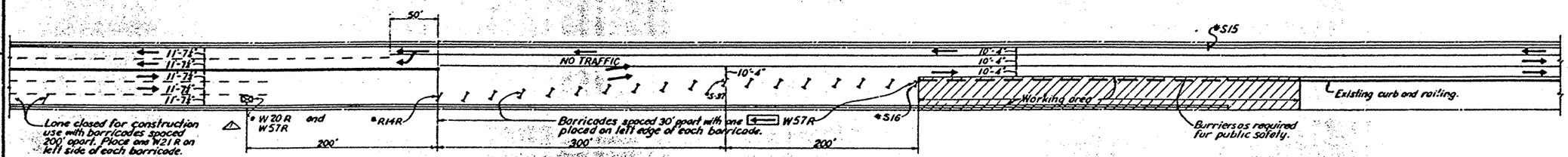
DATE APPROVED September 25, 1960



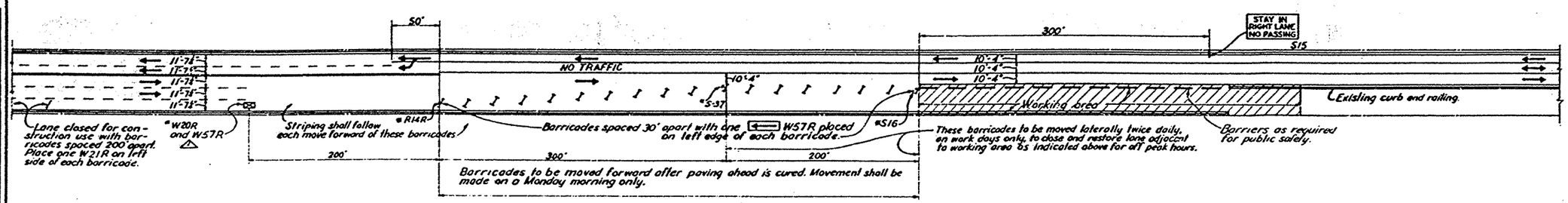
A.M. PEAK HOURS



OFF-PEAK HOURS DURING WORK



P.M. PEAK HOURS



OTHER OFF-PEAK HOURS

LEGEND

- * Sign to remain in place but with message hidden from drivers view.
- Timber barricade.
- Timber barricade with sign post and sign
- Portable sign support.
- Small portable barrier.
- — — Temporary barrier.

NOTES

1. See "Specific provisions" for further requirements regarding traffic and for information regarding payment for signs, barricades and traffic stripes.
2. Working drawings for sign mountings shall be submitted to the Engineer for approval prior to installation of signs.
3. All signs indicated to be mounted on barricade posts shall be installed with the bottom edge of the lowest sign at least 4'-0" above the roadway surface.
4. All signs not mounted on barricades shall be installed with the bottom edge of the lowest sign at least 14'-0" above the roadway surface.
5. The operation of hiding and exposing signs indicated by * and the installing and moving of signs on the north side of the Bridge and at other points which interfere with Bridge traffic lanes shall be performed under the contract but only with the collaboration of State authorities.
6. State Highway Construction "(JR) signs, "Construction Zone" (PR) signs and "End Construction Project (SR) signs shall be placed at each end of the work as directed by the Engineer.

0 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO- OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

TRAFFIC TRANSITION-SIGNING AND STRIPING

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	CB	J.L.

REVISION

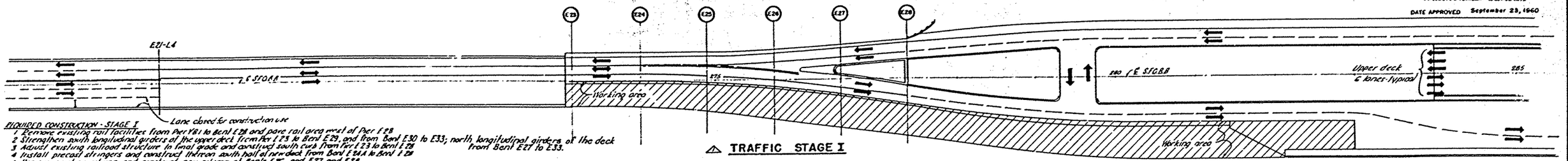
SCALE NO SCALE	BRIDGE 33-23 34-03 34-04	SHEET No. 82	DRAWING C-4011-82R

APPROVAL RECOMMENDED BY

DESIGN DETAILS			
QUANTITIES			
PROJECT ENGINEER			
DESIGN AND DETAIL REVIEWED BY			

PROJECT ENGINEER - DESIGN OF DECKS

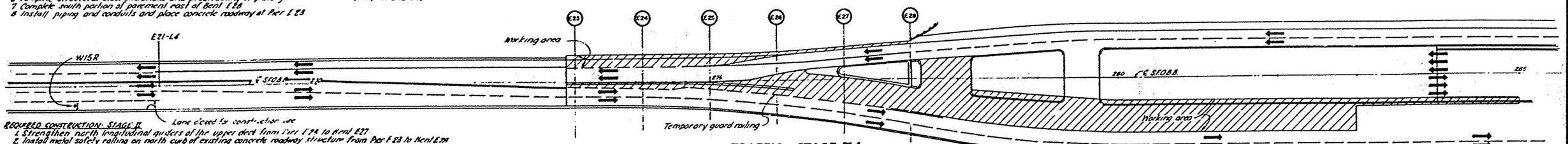
DATE APPROVED September 23, 1960



REQUIRED CONSTRUCTION - STAGE I

1. Remove existing rail facilities from Pier E21 to Bent E28 and pave rail area east of Pier E28
2. Strengthen south longitudinal girders of the upper deck from Pier E23 to Bent E29, and from Bent E30 to E33; north longitudinal girders of the deck from Bent E27 to E33.
3. Adjust existing railroad structure to final grade and construct south curb from Pier E23 to Bent E28
4. Install precast stringers and construct thereon south half of new deck from Bent E24A to Bent E28
5. Remove existing column and construct new column at Bents E26, and E27 and E28.
6. Complete structural steel alterations and prestressing of plate girder at Bents E25, E26, E27 and E28.
7. Complete south portion of pavement east of Bent E28
8. Install piping and conduits and place concrete roadway at Pier E23

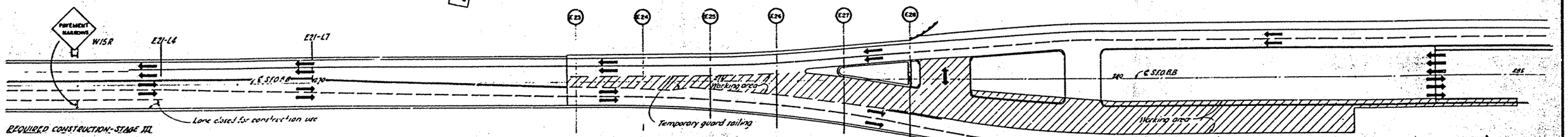
△ TRAFFIC STAGE I



REQUIRED CONSTRUCTION - STAGE II

1. Strengthen north longitudinal girders of the upper deck from Pier E24 to Bent E27
2. Install metal safety railing on north curb of existing concrete roadway structure from Pier E23 to Bent E28

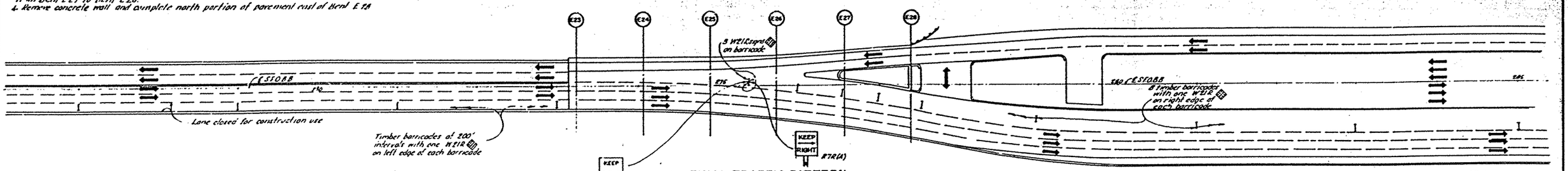
△ TRAFFIC STAGE IIA



REQUIRED CONSTRUCTION - STAGE III

1. Adjust existing concrete roadway structure to final grade at Bent E28
2. Complete new concrete deck between railway and roadway structures from Pier E23 to Bent E28
3. Complete installation of metal safety railing on curb of existing concrete roadway structure from Bent E27 to Bent E28.
4. Remove concrete wall and complete north portion of pavement east of Bent E28

△ TRAFFIC STAGE IIB



△ FINAL TRAFFIC PATTERN AT COMPLETION OF CONTRACT

NOTES

1. See Specific Provisions, article (g), Traffic Provisions, for additional traffic lane requirements.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
△	7.1.65	As built with revisions	CB	A.L.

REVISION

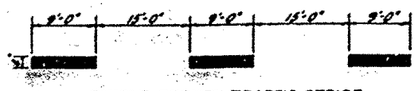
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

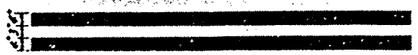
TRAFFIC STAGES - EAST OF PIER E 23

SCALE 1" = 50' | BRIDGE 33-25 34-03 34-04 | SHEET No 83 | DRAWING C-4011-83R

PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960

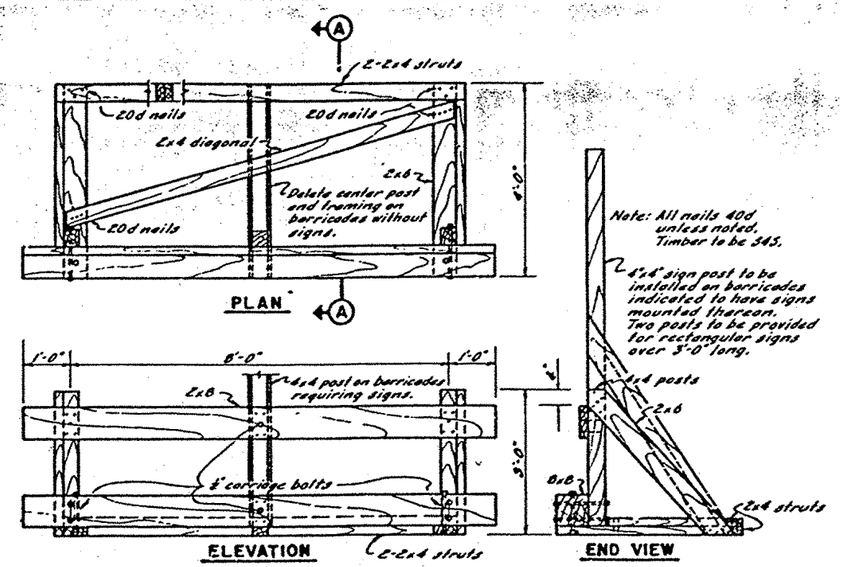


SINGLE BROKEN TRAFFIC STRIPE

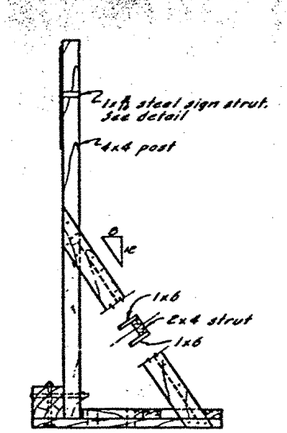


TWO-WAY BARRIER STRIPE

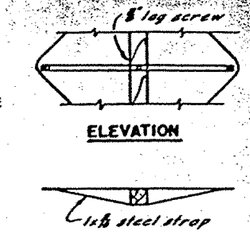
STANDARD TRAFFIC STRIPES
No Scale



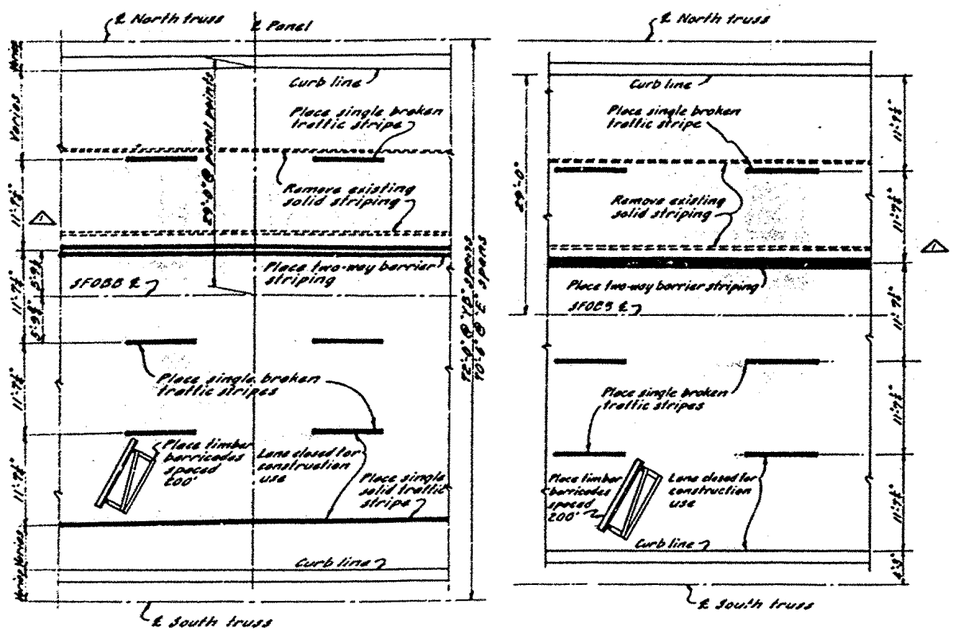
TIMBER BARRICADES
Scale: 3/8"=1'-0"



SECTION A-A
For timber barricades with signs mounted thereon.



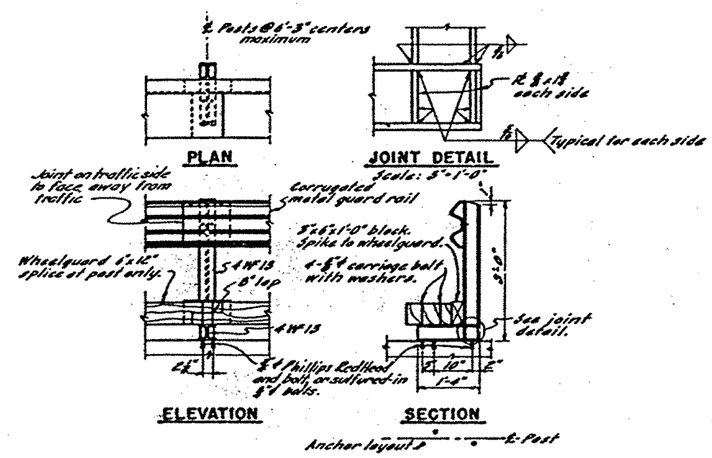
ELEVATION
PLAN
SIGN STRUT DETAIL



FOR CURVED SECTIONS

FOR TANGENT SECTIONS

TYPICAL TRAFFIC STRIPING PLAN
Scale: 3/8"=1'-0"



TEMPORARY GUARD RAIL
Scale: 3/8"=1'-0"

MARK	DATE	DESCRIPTION	BY	CH'K
1	8.1.63	As built with revisions	J.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

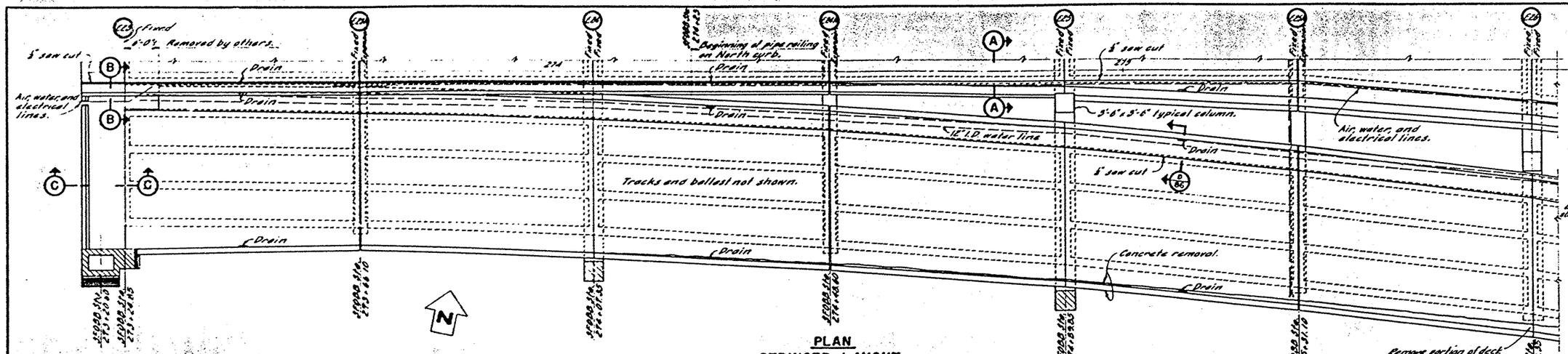
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

BARRICADE AND STRIPING DETAILS

SCALE As Shown	BRIDGE 33-25 34-03 34-04	SHEET No. 84	DRAWING C-4011-84R

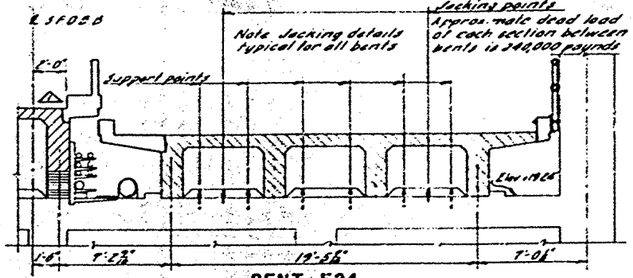
APPROVAL RECOMMENDED BY _____ SUPERVISING BRIDGE ENGINEER
LICENSE 1.8 ENGINEER

DESIGN			
DESIGNED			
QUANTITIES			
TRACED			
STRUCT. & DETAILS			

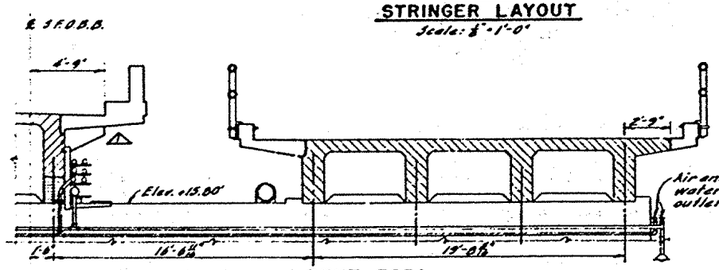


PLAN
STRINGER LAYOUT
Scale: 1/8" = 1'-0"

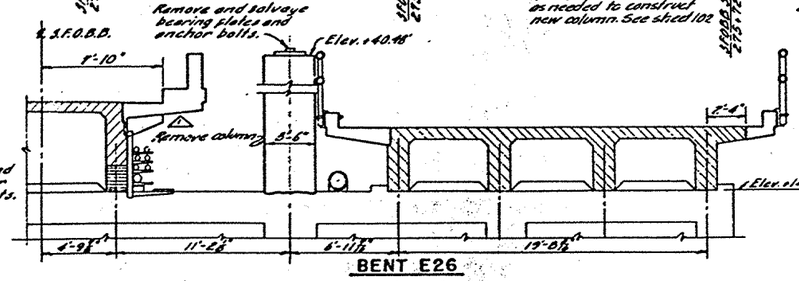
SECTION A-A
TYPICAL ROADWAY CURB
FROM PIER E23 TO BENT E25
Scale: 1/2" = 1'-0"



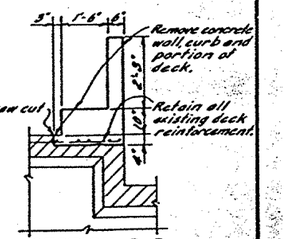
BENT E24



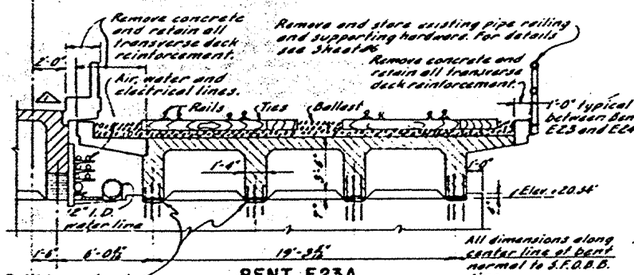
BENT E25A



BENT E26

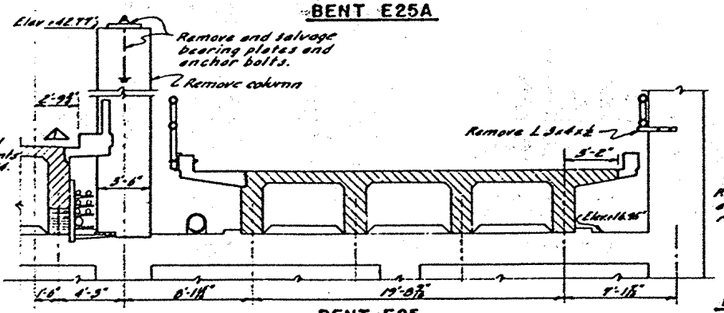


SECTION B-B
Scale: 1/2" = 1'-0"

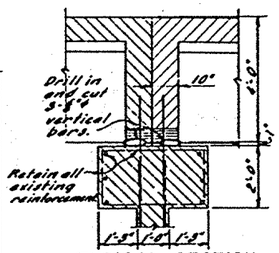


BENT E23A

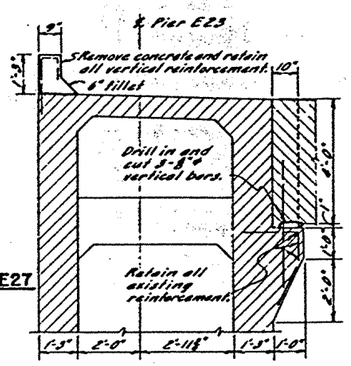
Typical for Pier E23 through Bent E27A except as noted. Track details and ballast are not shown in other sections. For track removal details see Sheets 71 and 72.



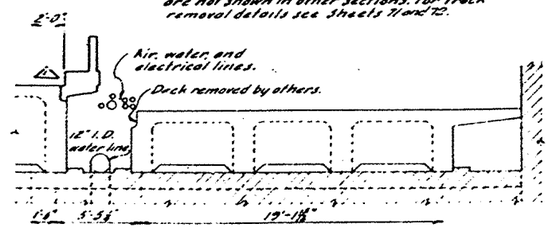
BENT E25



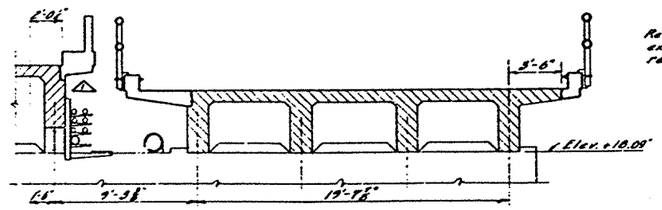
TYPICAL SECTION
AT BENTS E24, E25, E26 AND E27
Scale: 1/2" = 1'-0"



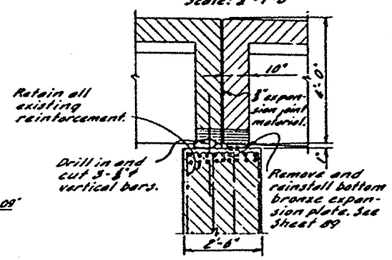
SECTION C-C
Scale: 1/2" = 1'-0"



PIER E23
SECTION AT STATION 273+24.85



BENT E24A



TYPICAL SECTION
AT BENTS E23A, E24A AND E25A
Scale: 1/2" = 1'-0"

NOTES

1. See Sheets 2 to 7 for additional notes and requirements.
2. All exposed surfaces at areas of concrete removal shall be cut in to depth of 2" and refinished with cement mortar to match adjacent concrete surfaces. Edges of concrete removal areas shall be cut at right angles to the plane of the surface.
3. Install temporary guard rail prior to removal of curbs and railing. See Sheet 83.
4. Remove tracks, ballast, pipe railing, and curbs to the limits shown prior to grade adjustments.
5. During grade adjustments the maximum allowable deflection at one corner of a span as measured by the vertical distance from a plane through the other three corners shall be 2".
6. Use supports adjacent to jacking points to limit drop to a maximum of 1/8 in case of jack failure.
7. The contractor shall be responsible for any damage to the structure and existing facilities during concrete removal and grade adjustment operations.
8. The contractor shall submit plans of the proposed jacking method and procedure for approval by the Engineer.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As built with revisions	L.L.B.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

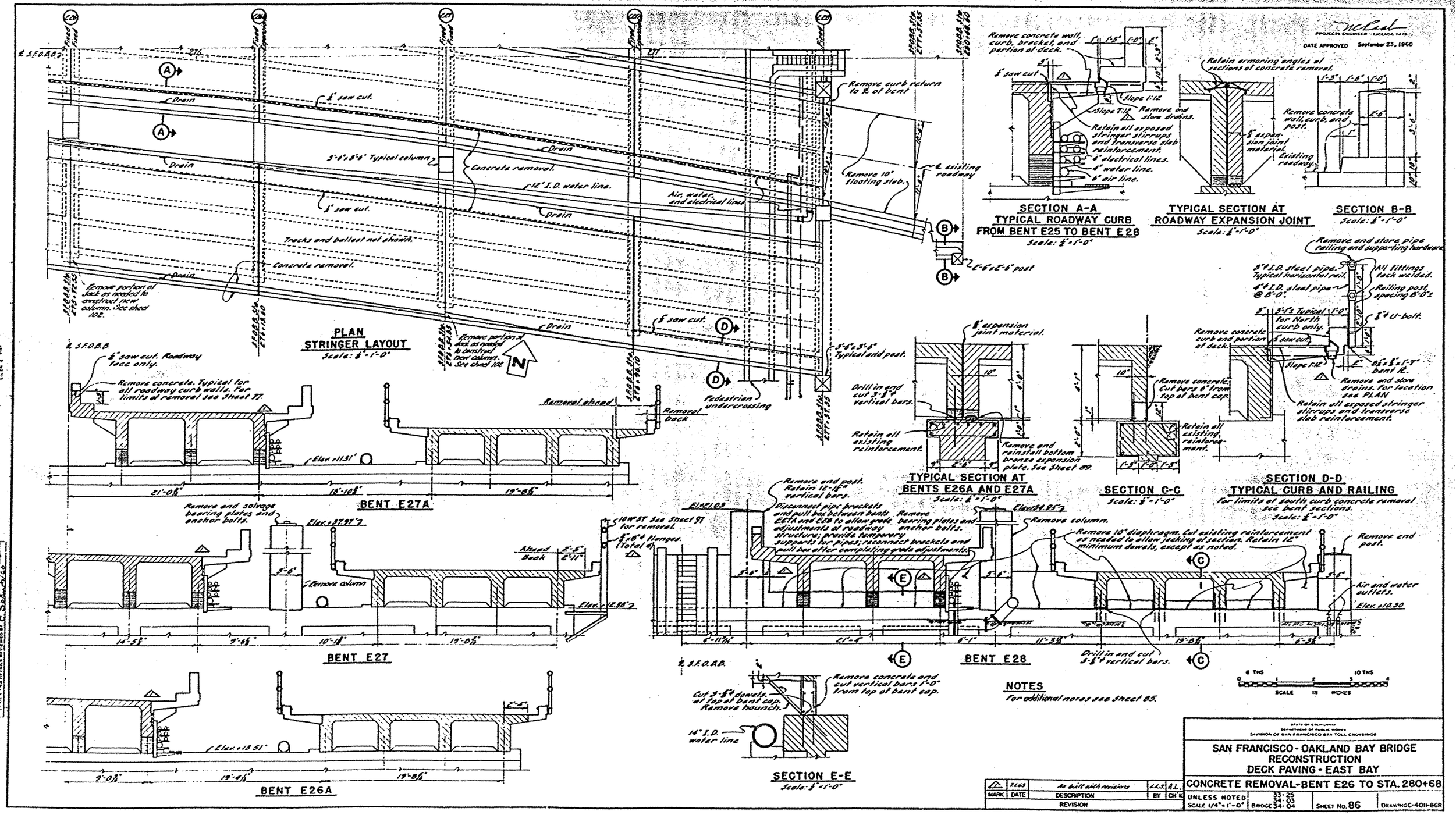
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CONCRETE REMOVAL - PIER E23 TO BENT E26

UNLESS NOTED SCALE 1/4" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 85
DRAWING GC-401-85R

DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY



DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY

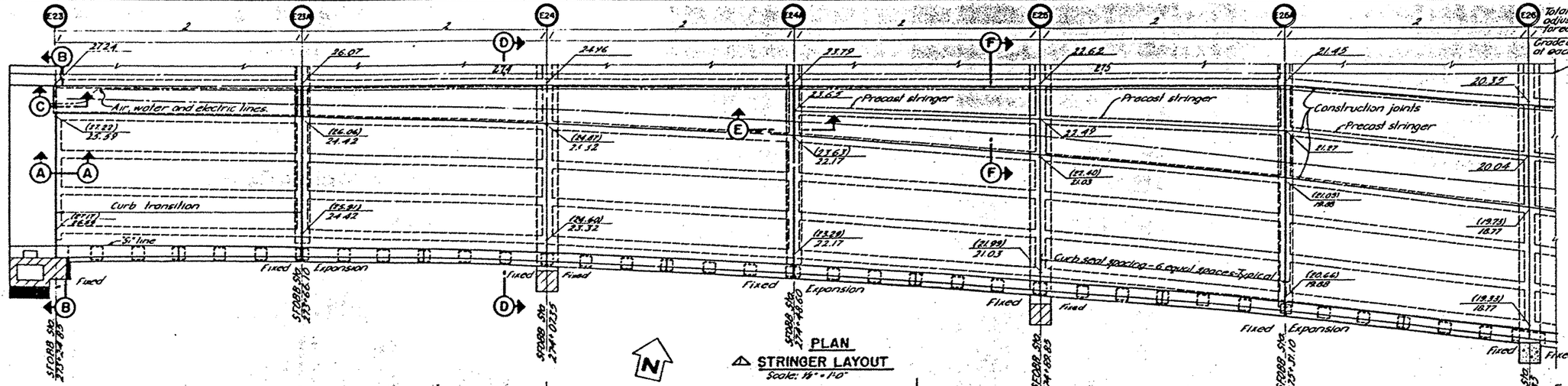
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

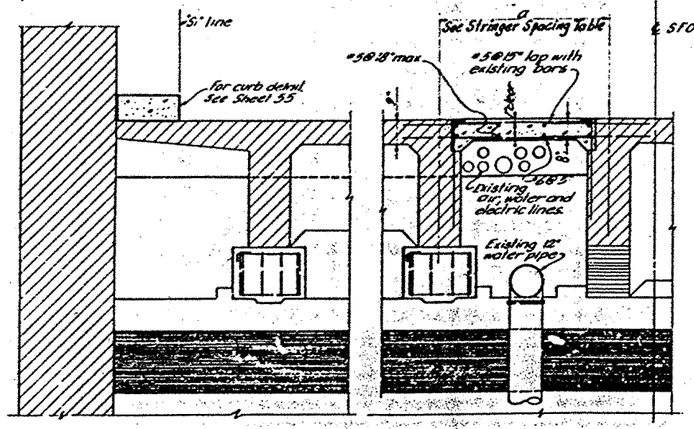
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

CONCRETE REMOVAL-BENT E26 TO STA. 280+68

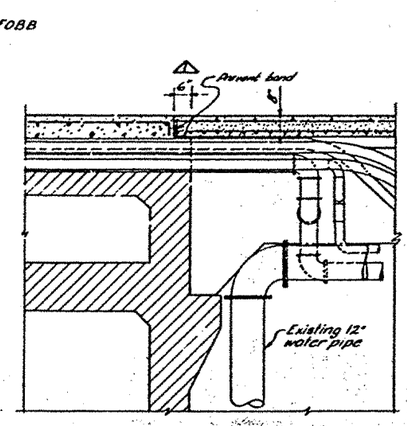
MARK	DATE	DESCRIPTION	BY	CH'K
2	7-1-63	As built with revisions	L.L.S.	A.L.
		REVISION		

UNLESS NOTED SCALE 1/4"=1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 86 | DRAWING C-401H-86R

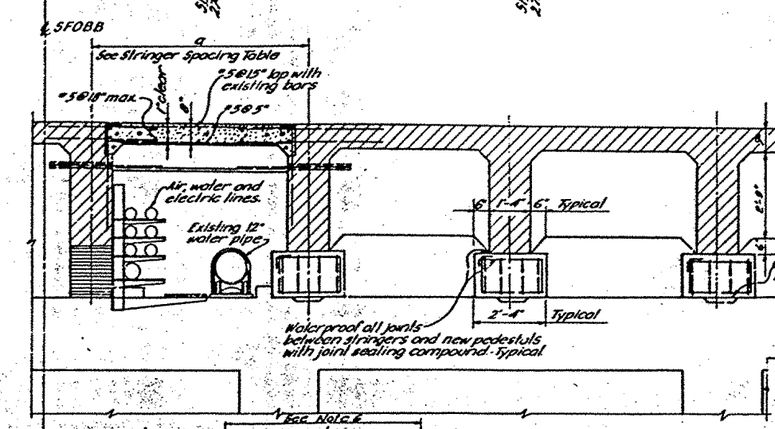




SECTION B-B

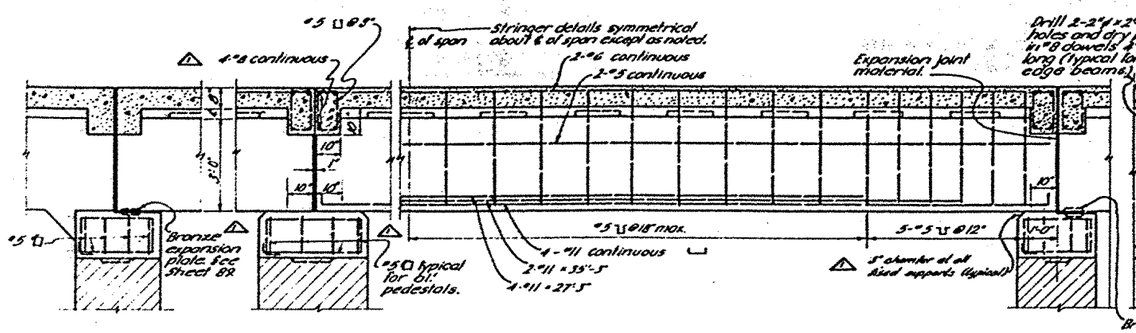


SECTION C-C



SECTION D-D

Typical Between Bents E23 and E24A

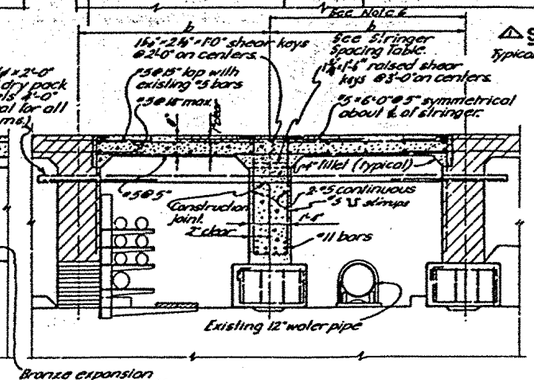


SECTION E-E

TYPICAL FOR FIXED SUPPORTS

TYPICAL PRECAST STRINGER

TYPICAL FOR EXPANSION SUPPORTS



SECTION F-F

Typical Between Bents E24A and E27A

STRINGER SPACING TABLE		
Bent	a	b
E23	5'-5 1/16"	
E23A	6'-0 3/16"	
E24	7'-2 3/16"	
E24A	9'-3 1/8"	4'-7 11/16"
E25		6'-2 7/16"
E25A		8'-3 3/16"
E26		9'-0 1/4"
E26A		9'-8"
E27		9'-10"
E27A West		9'-5 3/8"

See Section A-A Sheet 88 for bents E27A East and E28.

NOTES:

1. See sheets 2 to 7 for additional notes and requirements.
2. All transverse roadway and curb joints shall be cleaned and waterproofed with asphaltic latex.
3. See sheets 85 and 86 for concrete removal and grade adjustment details.
4. (20.63) indicates new elevations after grade adjustments have been completed. All other elevations are existing elevations.
5. Roadway elevations are top of deck elevations at intersections of centerlines of stringers and center lines of bents.
6. This portion of slab shall not be subjected to truck loadings during construction until remaining portion of slab is completed.

0 8 THS 1 2 3 10 THS 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

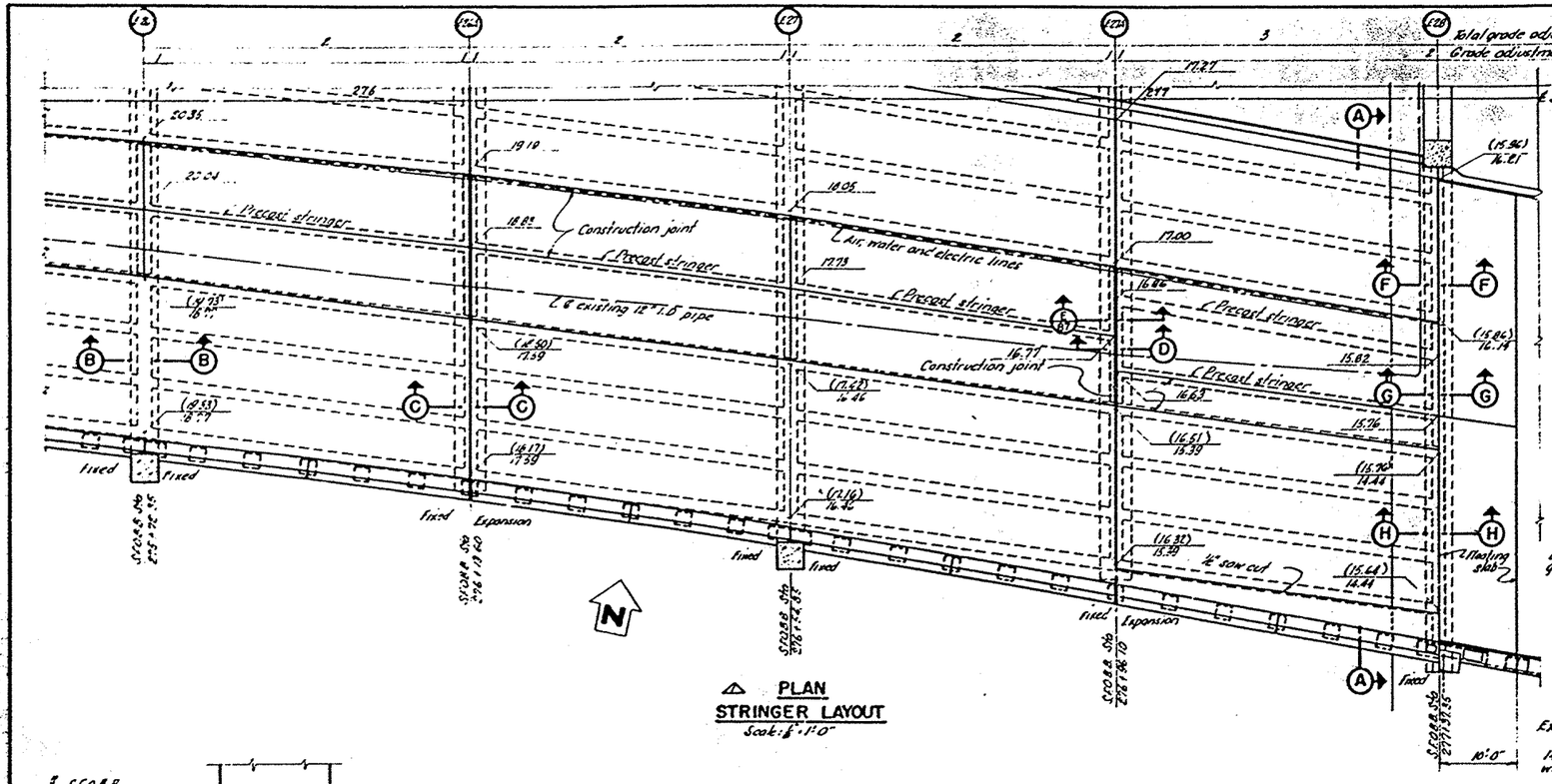
LOWER DECK ALTERATIONS-PIER E23 TO BENT E26

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.65	As built with revisions	L.L.S.	R.L.

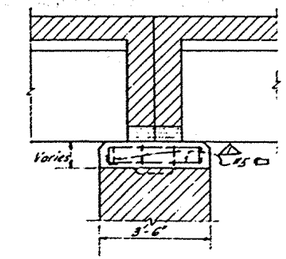
REVISION

UNLESS NOTED SCALE 1/2" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 87 | DRAWING C-401-87R

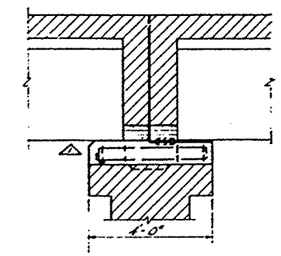
APPROVAL RECOMMENDED BY



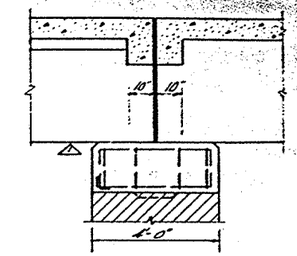
△ PLAN
STRINGER LAYOUT
Scale: 1/8" = 1'-0"



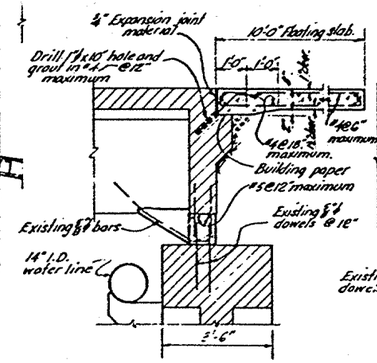
SECTION B-B
Typical pedestal reinforcement shown



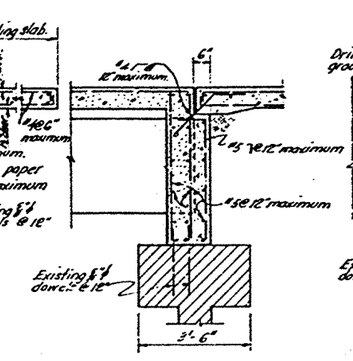
SECTION C-C



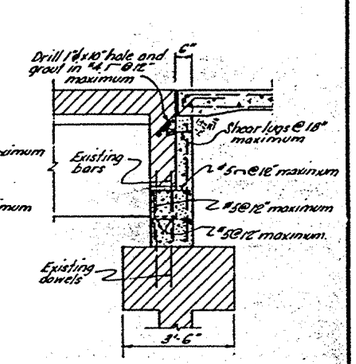
SECTION D-D



SECTION F-F
Typical floating slab reinforcement shown

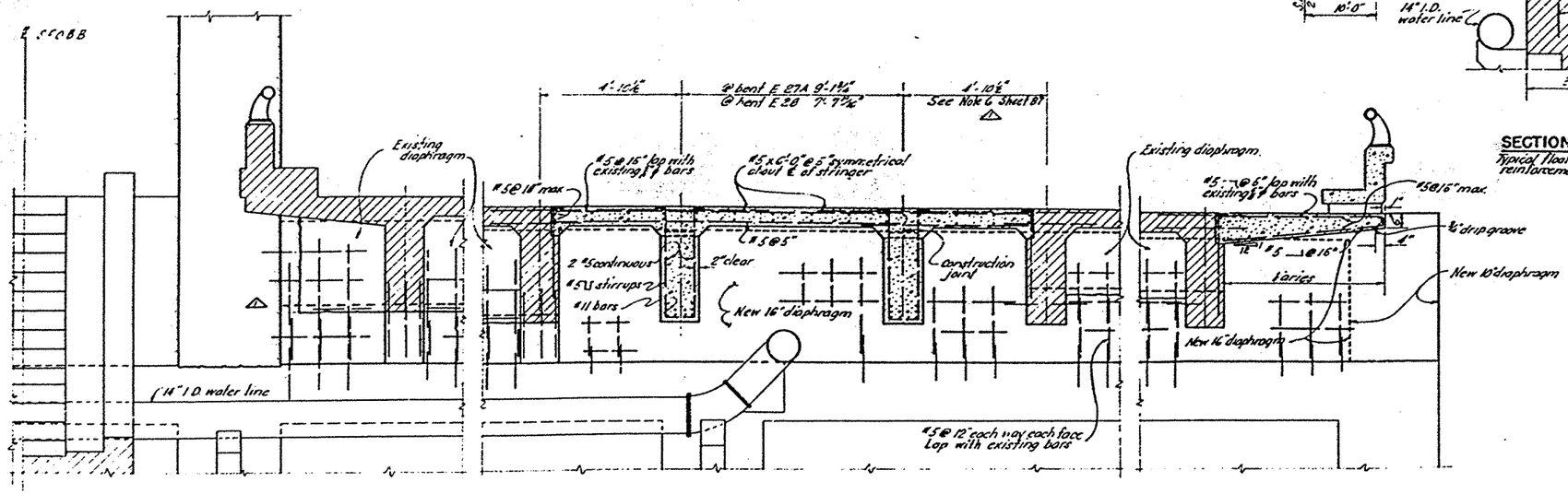


SECTION G-G



SECTION H-H

NOTES
1. See Sheet 87 for additional notes.



SECTION A-A

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7.1.63	As built with revisions	CB	A.L.

REVISION

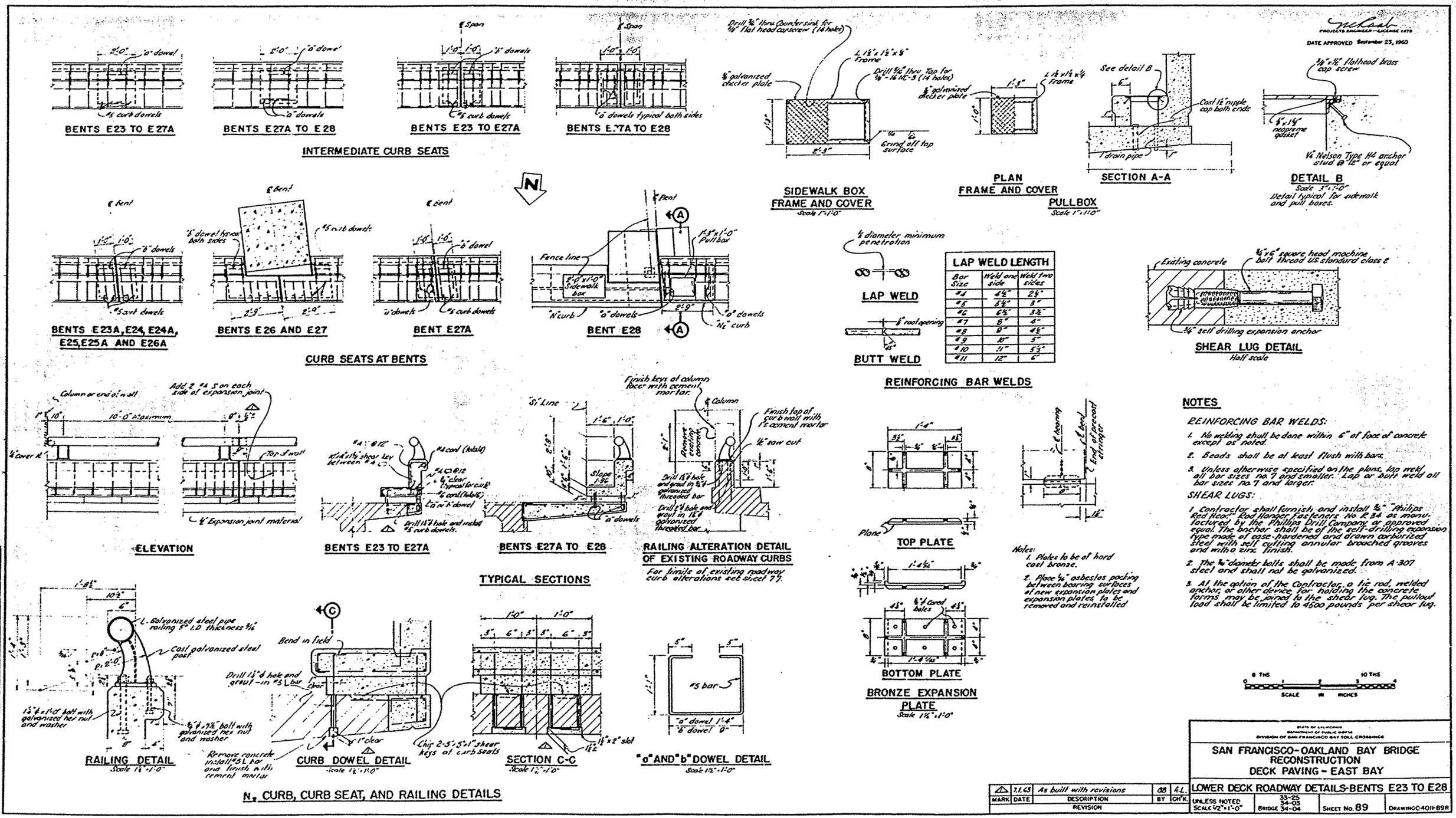
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

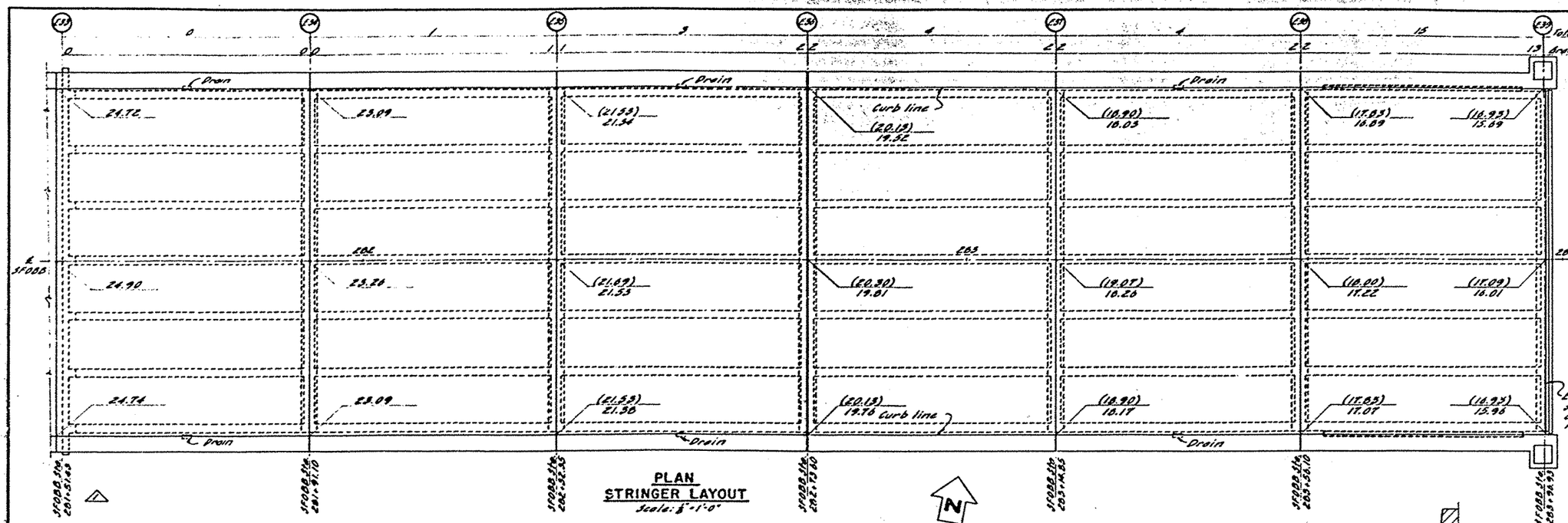
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

LOWER DECK ALTERATIONS - BENT E26 TO BENT E28

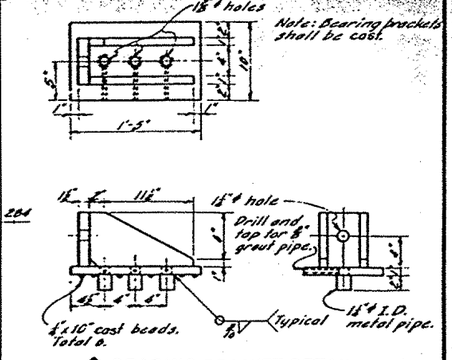
UNLESS NOTED SCALE 1/2" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 88
DRAWING C-40X-88R

DATE APPROVED September 23, 1960
PROJECT ENGINEER - LICENSE

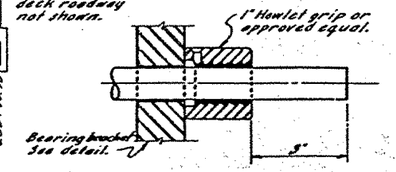

BENTS E23 TO E27A
BENTS E27A TO E28
BENTS E23 TO E27A
BENTS E27A TO E28
INTERMEDIATE CURB SEATS
SIDEWALK BOX FRAME AND COVER
Scale 1"=1'-0"
PLAN FRAME AND COVER
PULLBOX
Scale 1"=1'-0"
SECTION A-A
DETAIL B
Scale 3"=1'-0"
Detail typical for sidewalk and pull boxes.
DATE APPROVED September 23, 1960
BENTS E23A, E24, E24A, E25, E25A AND E26A
BENTS E26 AND E27
BENT E27A
BENT E28
CURB SEATS AT BENTS
LAP WELD
BUTT WELD
REINFORCING BAR WELDS
LAP WELD LENGTH
SHEAR LUG DETAIL
Half scale
ELEVATION
BENTS E23 TO E27A
BENTS E27A TO E28
RAILING ALTERATION DETAIL OF EXISTING ROADWAY CURBS
For limits of existing roadway curb alterations see sheet 79.
TOP PLATE
BOTTOM PLATE
BRONZE EXPANSION PLATE
Scale 1½"=1'-0"
TYPICAL SECTIONS
RAILING DETAIL
Scale 1½"=1'-0"
CURB DOWEL DETAIL
Scale 1½"=1'-0"
SECTION C-C
Scale 1½"=1'-0"
"a" AND "b" DOWEL DETAIL
Scale 1½"=1'-0"
N. CURB, CURB SEAT, AND RAILING DETAILS
NOTES
REINFORCING BAR WELDS:
1. No welding shall be done within 6" of face of concrete except as noted.
2. Beads shall be at least flush with bars.
3. Unless otherwise specified on the plans, lap weld all bar sizes no. 7 and smaller. Lap or butt weld all bar sizes no. 7 and larger.
SHEAR LUGS:
1. Contractor shall furnish and install ¾" "Philips Red Head" Rod Hanger Fasteners No. R 34 as manufactured by the Phillips Drill Company or approved equal. The anchor shall be of the self-drilling expansion type made of case-hardened and drawn carborized steel with self cutting annular broached grooves and with a zinc finish.
2. The ¾" diameter bolts shall be made from A-307 steel and shall not be galvanized.
3. At the option of the Contractor, a tie rod, welded anchor, or other device for holding the concrete forms may be joined to the shear lug. The pullout load shall be limited to 4500 pounds per shear lug.
Notes:
1. Plates to be of hard cast bronze.
2. Place ¼" asbestos packing between bearing surfaces of new expansion plates and expansion plates to be removed and reinstalled
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
LOWER DECK ROADWAY DETAILS-BENTS E23 TO E28
MARK DATE DESCRIPTION BY CH'K.
7.1.63 As built with revisions GB A.L.
REVISION
UNLESS NOTED SCALE 1/2"=1'-0"
BRIDGE 34-04
SHEET No. 89
DRAWING C-4011-89R



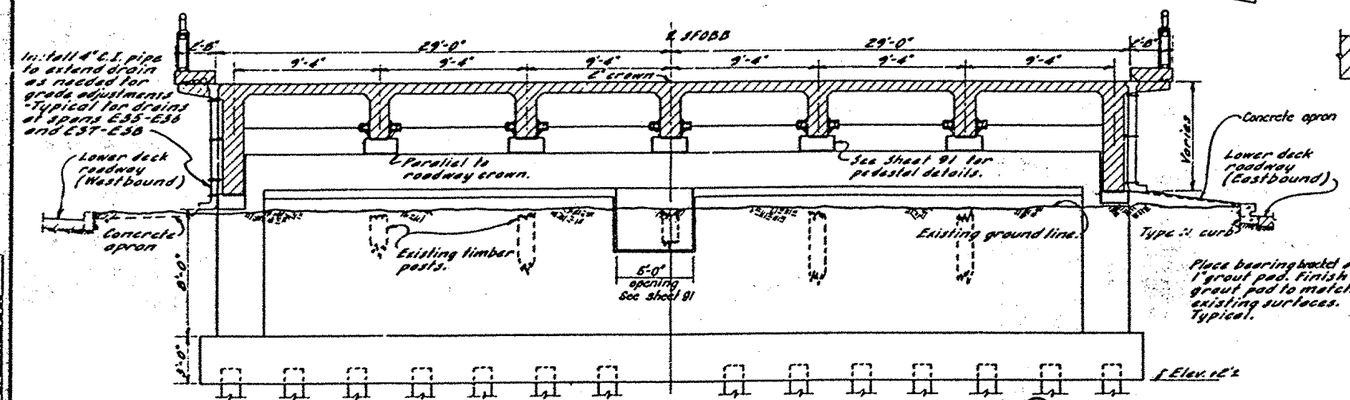
PLAN
STRINGER LAYOUT
Scale: 1/8"=1'-0"



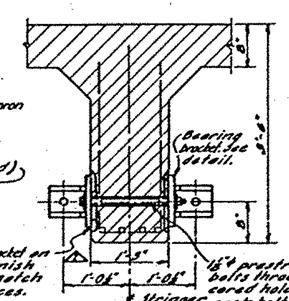
BEARING BRACKET DETAIL
Scale: 1 1/2"=1'-0"



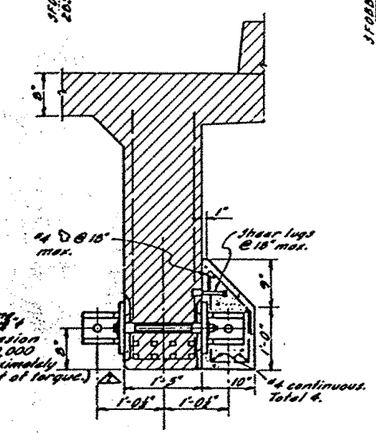
ANCHORAGE ASSEMBLY
FOR 1" PRESTRESSING BARS
Scale: 6"=1'-0"



TYPICAL SECTION
FROM BENT E33 TO BENT E39
Scale: 1/8"=1'-0"



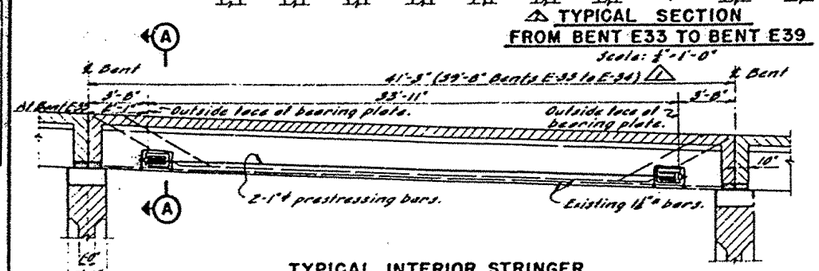
SECTION A-A
Scale: 1"=1'-0"



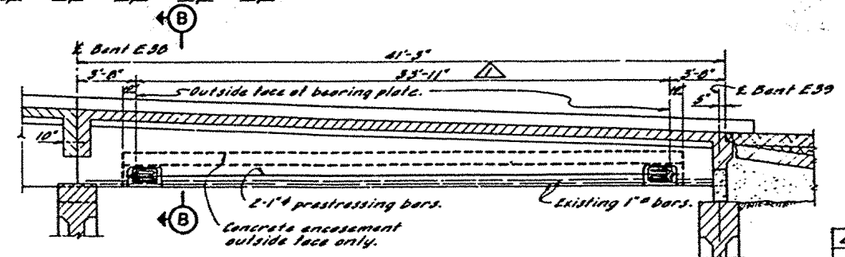
SECTION B-B
Scale: 1"=1'-0"

NOTES

1. Tension and retension each prestressing bar to 72,800 pounds.
2. Grout prestressing bolts after tightening and before tensioning prestressing bars.
3. See Sheet 91 for grade adjustments and procedures.
4. All exposed steel shall be primed and coated with three coats of INERTOL Standard Thick or approved equal. Each coat shall be allowed to dry 48 hours before applying the next coat. Extend coatings on concrete 3 inches beyond edges of bearing brackets.
5. All prestressing operations shall be performed before grade adjustments.
6. (16.93) indicates new elevation after grade adjustments have been completed. All other elevations are existing elevations.
7. See Sheets 2 to 7 for additional notes and requirements.



TYPICAL INTERIOR STRINGER
Scale: 1/8"=1'-0"



EXTERIOR STRINGER
Bents E38 to E39 only.
Scale: 1/8"=1'-0"

MARK	DATE	DESCRIPTION	BY	CH'K
2	7.1.63	As built with revisions.	DB	A.L.
1	1-10-61	Revised stationing of Bent E35. Revised the length of prestressing bars for exterior stringer Bent E39 E38.	A.Q.	H.K.

REVISION

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

UPPER DECK STRENGTHENING-BENTS E33 TO E39

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 90 | DRAWING C-40XI-90R

APPROVAL RECOMMENDED BY

DESIGN DETAILS, QUANTITIES, AND DETAILS REVISED BY

PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY — SUPERVISING BRIDGE ENGINEER — LICENSE 1187

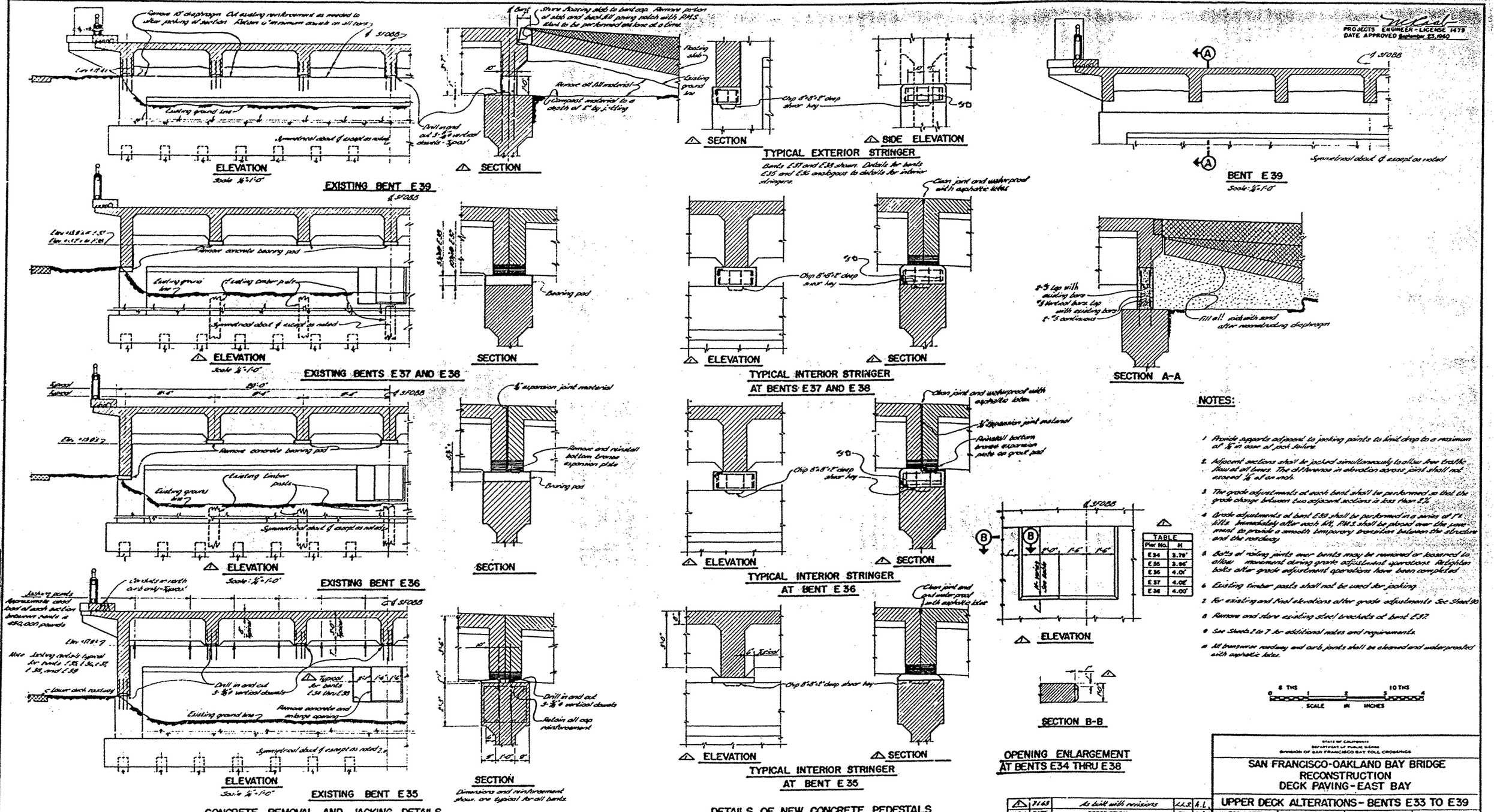


TABLE	
Pier No.	H
E34	3.79'
E35	3.96'
E36	4.01'
E37	4.08'
E38	4.00'

NOTES:

1. Provide supports adjacent to jacking points to limit drop to a maximum of ½" in case of jack failure.
2. Adjacent sections shall be jacked simultaneously to allow free traffic flow at all times. The difference in elevation across joint shall not exceed ½" at an inch.
3. The grade adjustments at each bent shall be performed so that the grade change between two adjacent sections is less than 2%.
4. Grade adjustments at bent E39 shall be performed in a series of 1" lifts. Immediately after each lift, RMS shall be placed over the pavement to provide a smooth temporary transition between the structure and the roadway.
5. Bolts at roling joints over bents may be removed or loosened to allow movement during grade adjustment operations. Retighten bolts after grade adjustment operations have been completed.
6. Existing timber posts shall not be used for jacking.
7. For existing and final elevations after grade adjustments See Sheet 90.
8. Remove and store existing steel brackets at bent E37.
9. See Sheets 2 to 7 for additional notes and requirements.
10. All transverse roadway and curb joints shall be cleaned and waterproofed with asphaltic latex.

MARK	DATE	DESCRIPTION	BY	CH'K
△	7/63	As built with revisions	L.L.S.	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

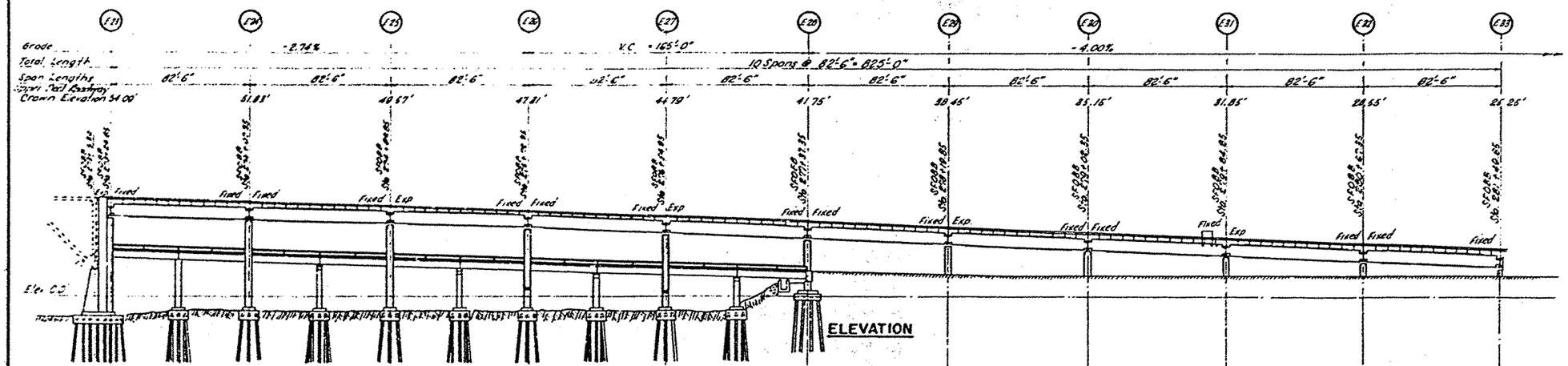
UPPER DECK ALTERATIONS - BENTS E33 TO E39

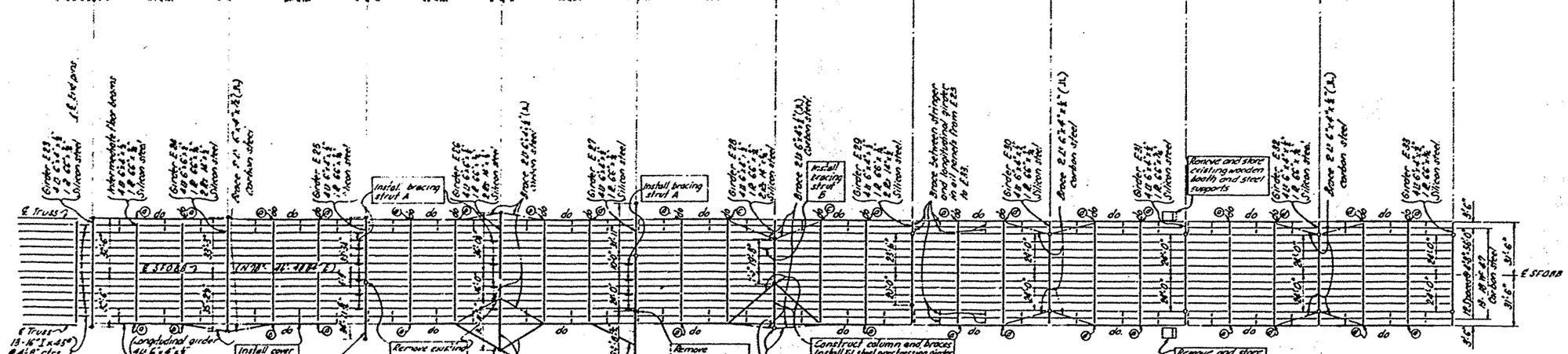
UNLESS NOTED — SCALE 1/2"=1'-0" — BRIDGE 33-33, 34-03, 34-04 — SHEET No 91 — DRAWING C-4011-91R

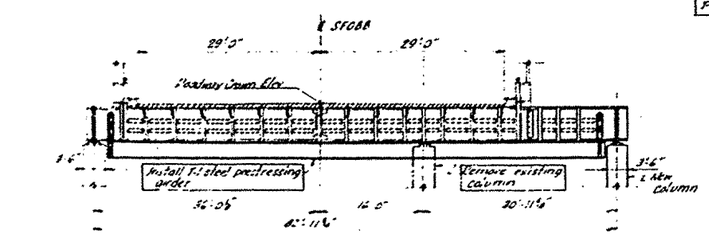
PROJECT ENGINEER - LICENSE 1870

DATE APPROVED September 23, 1960

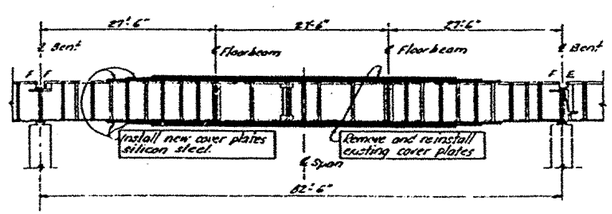
APPROVAL RECOMMENDED BY







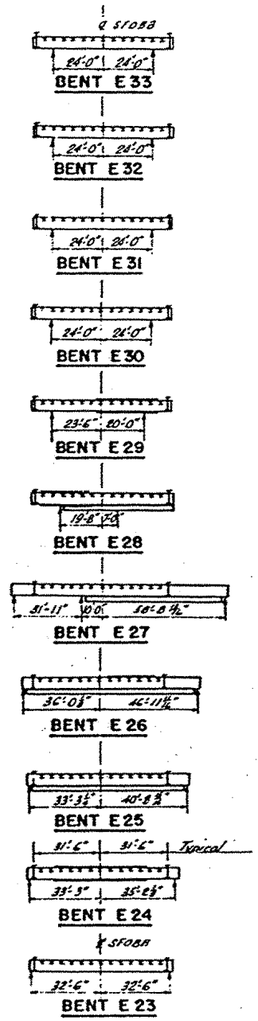
TYPICAL ROADWAY SECTION
BENT E26
Scale: 1" = 10'



TYPICAL LONGITUDINAL GIRDER
Scale: 1" = 10'

NOTES

1. ⊕ indicates types of existing gusset plates. For details see Sheet 103.
2. Unless otherwise noted all existing steel is carbon steel including stiffeners and details of built-up sections.



SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

UPPER DECK FRAMING PLAN-BENTS E23 TO E33

MARK	DATE	DESCRIPTION	BY	CK'K
2	2143	As built without revisions	J.L.S.	A.L.

REVISION

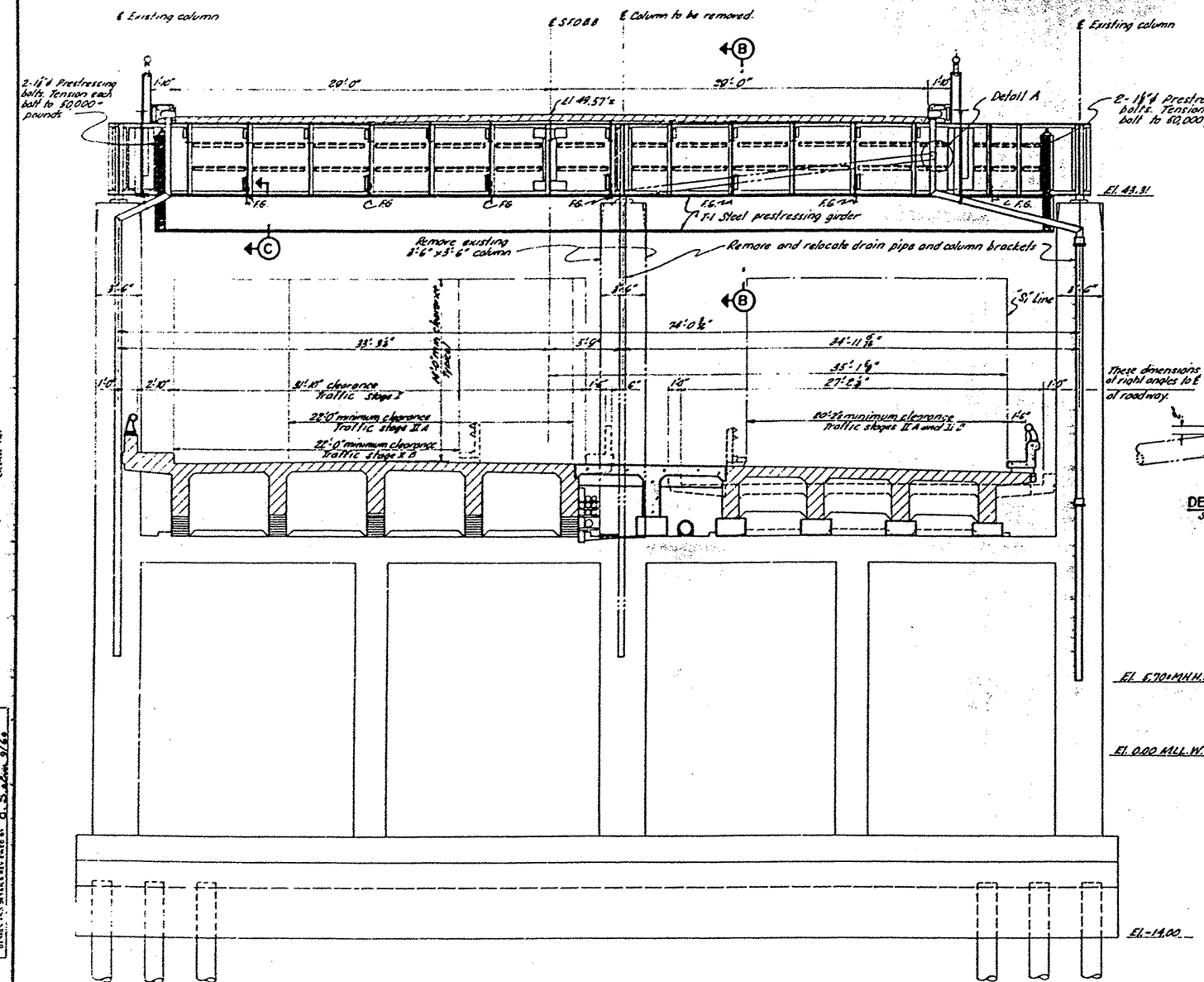
UNLESS NOTED SCALE 1" = 30'

BRIDGE 33-25 34-03 34-04

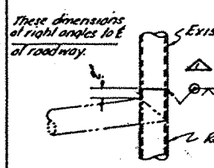
SHEET No. 92

DRAWING C-4011-92R

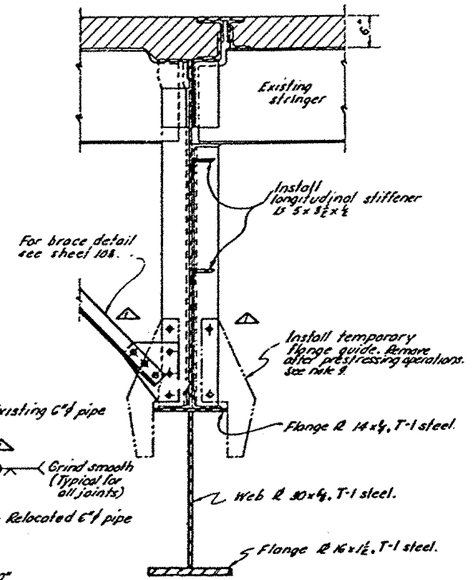
PROJECT ENGINEER — DATE APPROVED September 23, 1940



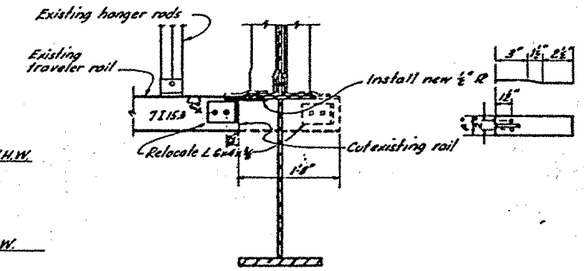
ELEVATION △



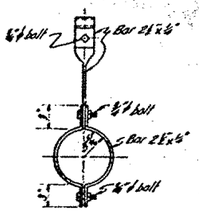
DETAIL A
Scale: ¼"=1'-0"



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



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



PIPE HANGER
Scale: ½"=1'-0"

NOTES FOR STEEL STRUCTURE-BENTS E 23 TO E 33

1. The prestressing girder webs, flange plates, stiffeners and anchor plates and all other plates welded to the prestressing girders, shall be T-1 steel.
2. Steel designated on the plans as silicon steel shall be ASTM-A94. The prestressing bolts shall be ASTM-A325. All other steel not specifically designated on the plans shall be carbon steel ASTM-A7.
3. All shop connections shall be made with ¾"ϕ rivets, unless otherwise noted.
4. All field connections shall be made with ¾"ϕ high strength bearing bolts, unless otherwise noted.
5. New rivets and bolts shall be placed on existing horizontal page lines, unless otherwise noted.
6. For locating holes, allowance shall be made for elastic deformations of the girder flanges due to prestressing. Holes shall be ⅛" larger than the nominal diameter of the H.S.B. bolts.
7. All new stiffeners and braces shall be installed prior to the start of prestressing operations.
8. During prestressing operations at Bents E26 and E28 and during installation of new cover plates on the bottom flanges of all longitudinal girders, not more than one pair (at each bent) of existing diagonal bracing struts framing into a column shall be removed or disconnected.
9. Install temporary flange guides at locations marked FG. on the first sheet. Flange guides shall be designed to apply a lateral force of 10,000 pounds to the top flange of the prestressing girder.
10. Jacking of longitudinal girders adjacent to a bent during the installation of the prestressing girder will not be permitted. See sheet 101.
11. See sheets 2 to 7, Contract Work, for additional notes and requirements.

NOTES

1. Release the anchor bolts on the south and center columns before shoring the south longitudinal girder.
2. Shore the south longitudinal girder prior to removing the center column. Jack at shoring until an upward deflection of 1/4" is obtained between the bearing bar and the bearing plate of the south column. Design shoring for a total load of 320,000 pounds.
3. The girder shall be free to deflect downward a minimum of 1/4" at the south column during prestressing operations.
4. Lower the girder back onto the bearing plate at the south column after prestressing operations are completed.
5. See sheet 92 for framing plan.

8 THS — 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

BENT E 25

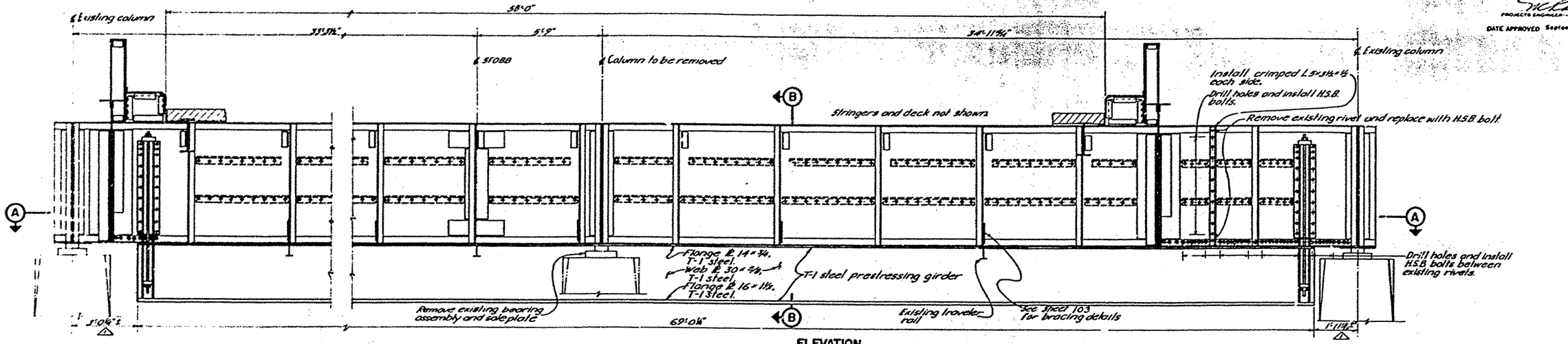
MARK	DATE	DESCRIPTION	BY	CHK.
△	7.1.43	As built with revisions	J.L.S.	A.I.

REVISION

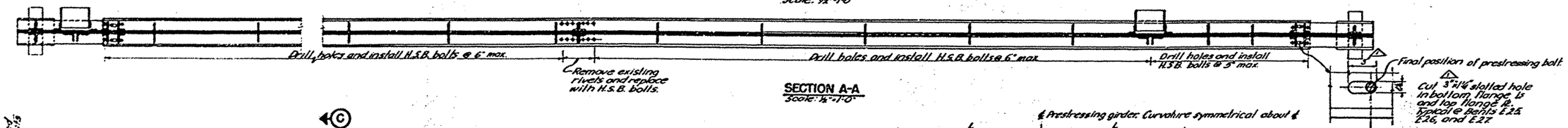
UNLESS NOTED SCALE 1/4" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 93 | DRAWING C-401-93R

APPROVAL RECOMMENDED BY — W. H. Rickert

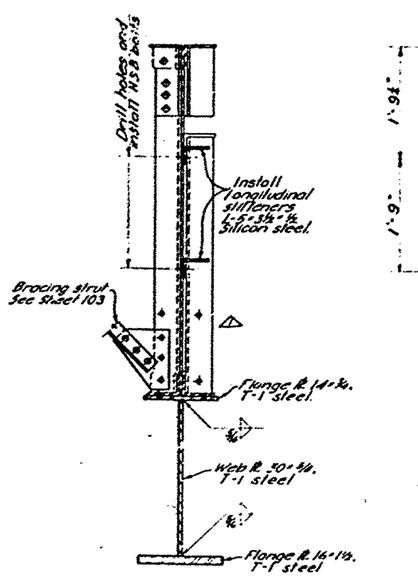
DATE APPROVED September 23, 1960



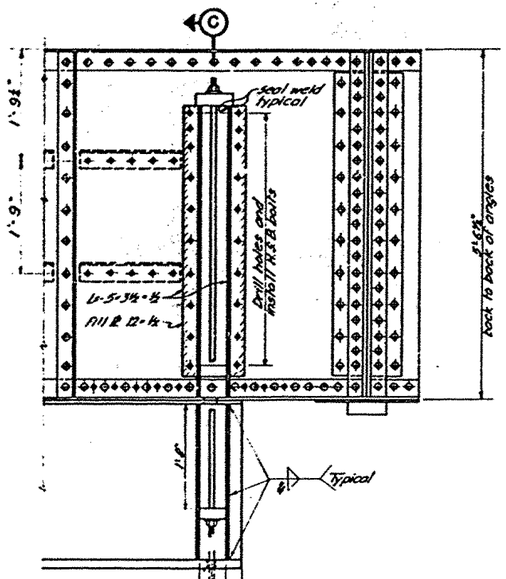
ELEVATION
Scale: ½"=1'-0"



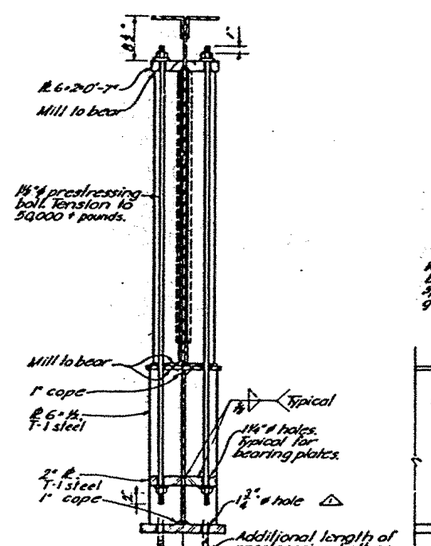
SECTION A-A
Scale: ½"=1'-0"



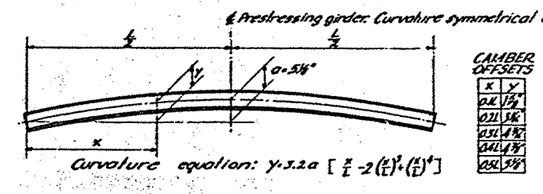
SECTION B-B
Scale: 1"=1'-0"



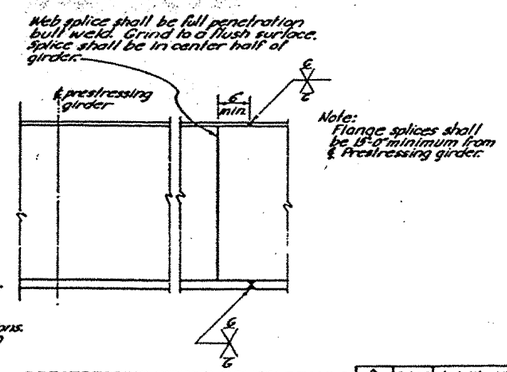
ANCHORAGE DETAIL
Scale: 1"=1'-0"
South anchorage shown. North anchorage similar.



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



PRESTRESSING GIRDER CAMBER DIAGRAM
No Scale
Curvature prior to erection



PRESTRESSING GIRDER SPLICE DETAILS
Scale: 1"=1'-0"
Location of splices to be approved by the Engineer.

NOTES
1. See Sheet 93 for additional notes.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CHK
2	7.1.63	As built with revisions	OB	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

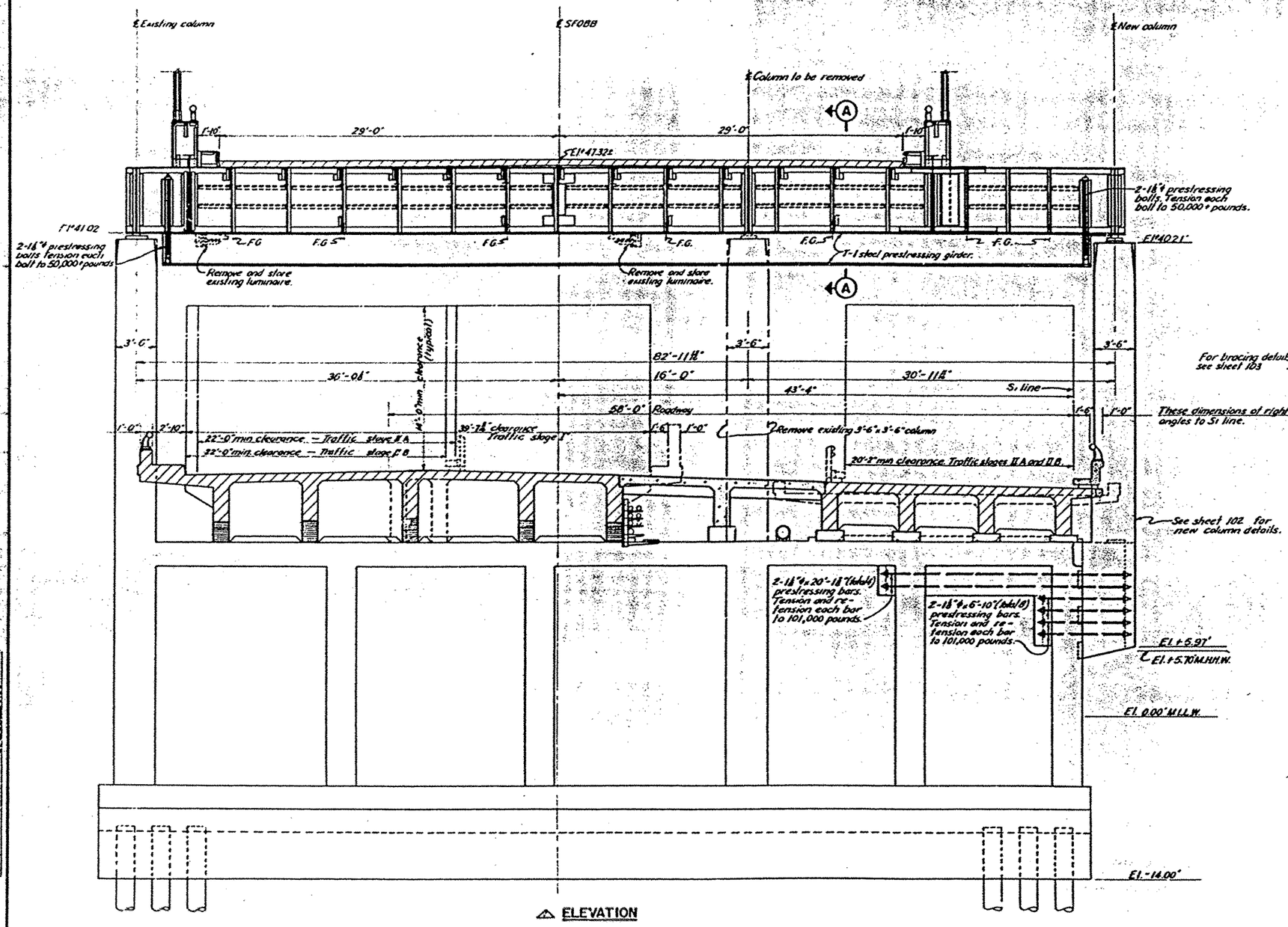
BENT E25 - STEEL DETAILS

SCALE AS SHOWN | BRIDGE 33-23, 34-03, 34-04 | SHEET No. 94 | DRAWING C-4011-94R

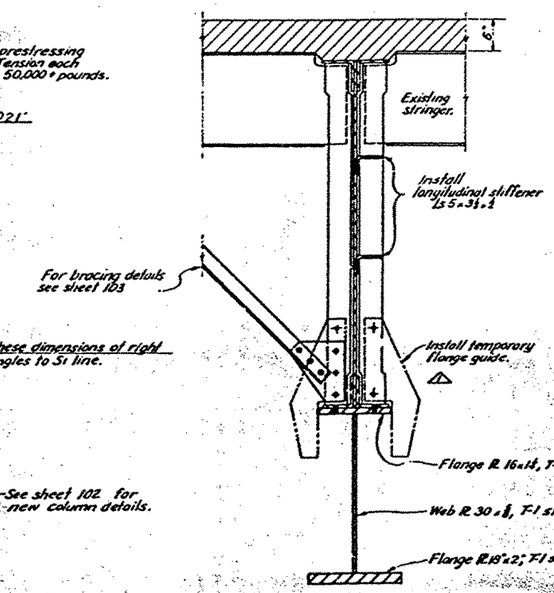
APPROVAL RECOMMENDED BY

PROJECT ENGINEER — LICENSE 1879

DATE APPROVED: September 23, 1960



△ ELEVATION



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

NOTES:

1. See sheet 93 for additional notes.
2. Release anchor bolts on the existing south column before shoring the south longitudinal girder.
3. Shore the south longitudinal girder prior to removing the existing south column jack until an upward deflection of ½" is obtained at the shoring. Design shoring for a total load of 330,000 pounds. △
4. The girder expansion shall be free to deflect downward a minimum of 2" at the south column during prestress operations.
5. Bring bearing plate at south column into full contact and dry pack after bolting the girders together and prior to removing shoring.
6. See sheet 92 for framing plan.

0 — 5 TONS — 10 TONS
SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CHK
△	7-1-65	As built with revisions.	clc	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

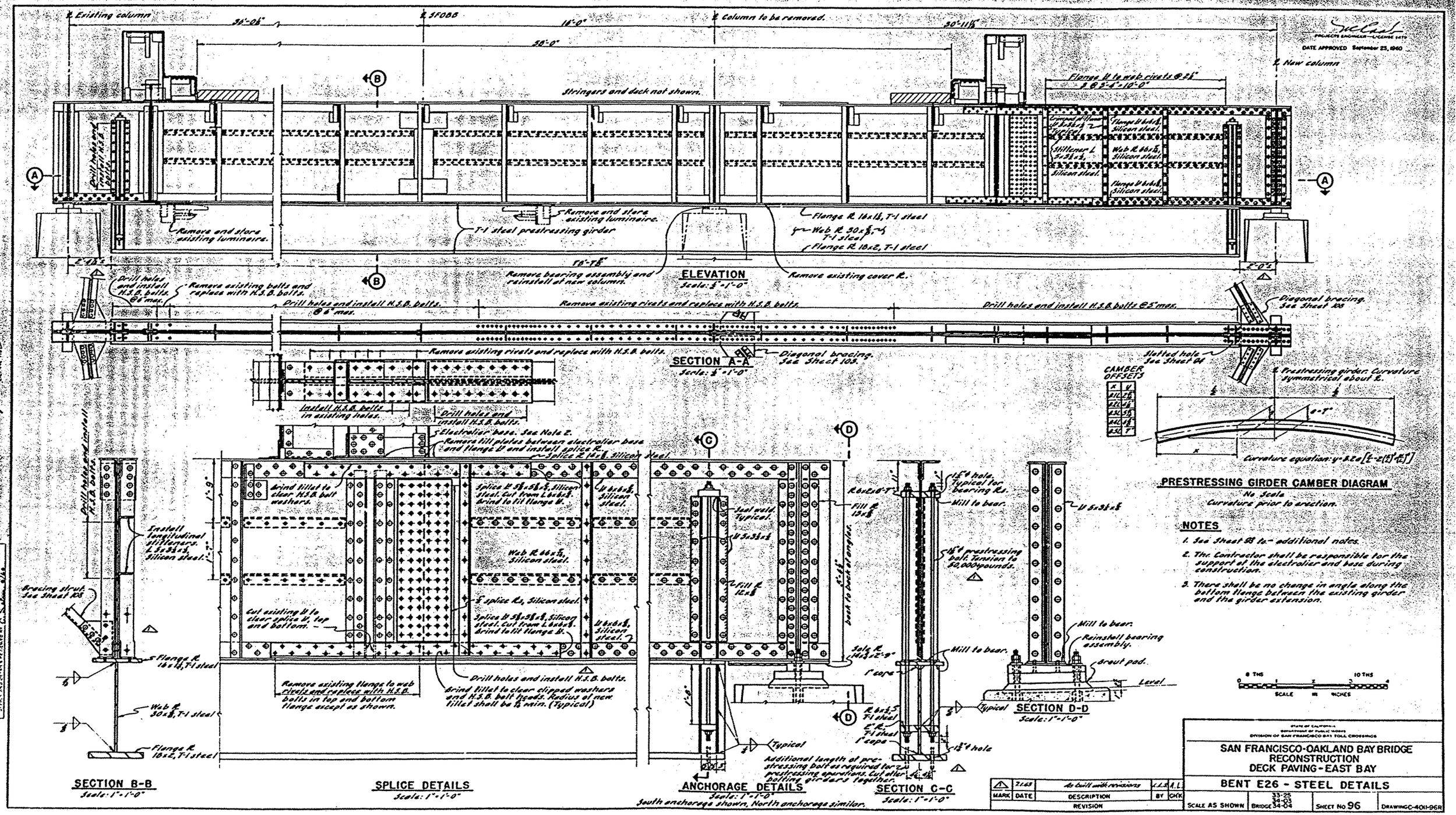
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING - EAST BAY

BENT E 26

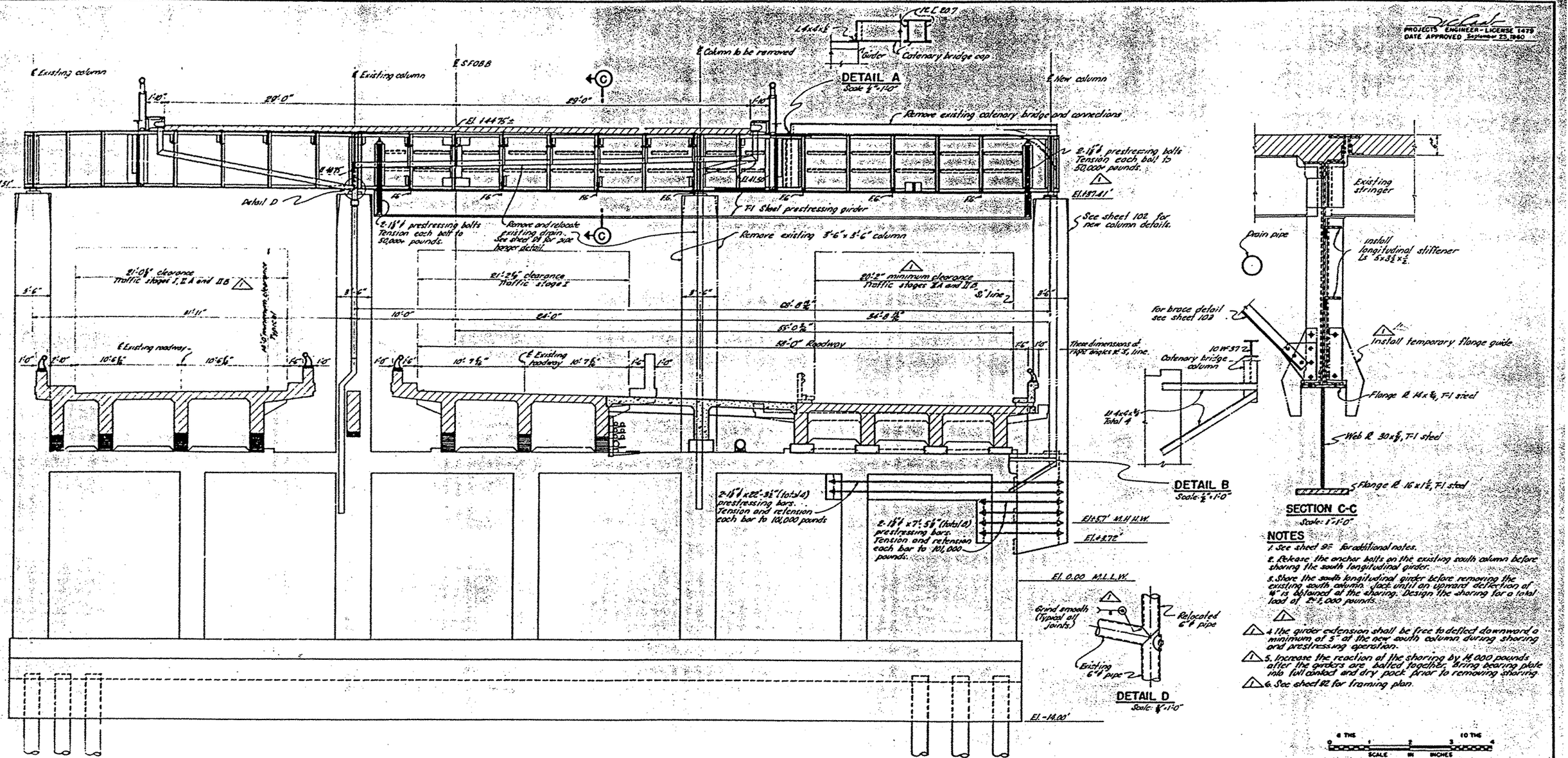
UNLESS NOTED SCALE ¼" = 1'-0" | BRIDGE 33-23 34-03 34-04 | SHEET NO. 95 | DRAWING C-4011-95R

APPROVAL RECOMMENDED BY: W. D. Rocker, Assistant Engineer, Bridge Office

INDICATES DETAILS, QUANTITIES, TRACED ON DETAILS AND DETAILS ARE CHECKED


℄ Existing column
℄ SFOBB
℄ Column to be removed.
℄ New column
34'-0½"
16'-0"
30'-11½"
38'-0"
Stringers and deck not shown.
Flange U to web rivets @ 2½" 3 @ 3'-4"=10'-0"
Remove and store existing luminaire.
T-1 steel prestressing girder
Remove and store existing luminaire.
Flange R 16x1½, T-1 steel
Web R 30x⅜, T-1 steel
Flange R 16x2, T-1 steel
Remove existing cover R.
Remove bearing assembly and reinstall at new column.
ELEVATION
Scale: ⅛"=1'-0"
2'-10½"
78'-7⅝"
2'-0½"
Drill holes and install H.S.B. bolts @8 max.
Remove existing bolts and replace with H.S.B. bolts.
Drill holes and install H.S.B. bolts @6" max.
Remove existing rivets and replace with H.S.B. bolts.
Drill holes and install H.S.B. bolts @5" max.
Diagonal bracing. See Sheet 100
Remove existing rivets and replace with H.S.B. bolts.
Diagonal bracing. See Sheet 103.
SECTION A-A
Scale: ⅛"=1'-0"
Slotted hole See Sheet 84
CAMBER OFFSETS
℄ Prestressing girder curvature symmetrical about ℄.
Curvature equation: y=8.20[L-2(L²/L)]
PRESTRESSING GIRDER CAMBER DIAGRAM
No Scale
Curvature prior to erection.
NOTES
1. See Sheet 88 for additional notes.
2. The Contractor shall be responsible for the support of the electrolier and base during construction.
3. There shall be no change in angle along the bottom flange between the existing girder and the girder extension.
Install H.S.B. bolts in existing holes.
Drill holes and install H.S.B. bolts.
Electrolier base. See Note 2.
Remove till plates between electrolier base and flange U and install splice R.
Splice R 12x⅜, Silicon steel.
Grind fillet to clear H.S.B. bolt washers.
Install longitudinal stiffeners. L 3x3x⅜, Silicon steel.
Web R 66x⅜, Silicon steel.
Bracing strut. See Sheet 105
Cut existing U to clear splice U, top and bottom.
Splice R, Silicon steel.
Flange R 16x1½, T-1 steel
Remove existing flange to web rivets and replace with H.S.B. bolts in top and bottom flange except as shown.
Drill holes and install H.S.B. bolts.
Grind fillet to clear clipped washers and H.S.B. bolt heads. Radius of new fillet shall be ⅞ min. (Typical)
Web R 30x⅜, T-1 steel
Flange R 16x2, T-1 steel
SECTION B-B
Scale: 1"=1'-0"
SPLICE DETAILS
Scale: 1"=1'-0"
Typical
ANCHORAGE DETAILS
Scale: 1"=1'-0"
South anchorage shown, North anchorage similar.
Fill R 12x⅜
Fill R 13x⅜
Sole R 14x3x2'-9"
Additional length of prestressing bolt as required for prestressing operations. Cut after bolting girders together.
SECTION C-C
Scale: 1"=1'-0"
1⅝" ϕ hole, Typical for bearing R.
Mill to bear.
1⅝" ϕ prestressing bolt. Tension to 50,000 pounds.
Mill to bear.
Reinstall bearing assembly.
Grout pad.
Level
SECTION D-D
Scale: 1"=1'-0"
8 TONS
10 TONS
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
BENT E26 - STEEL DETAILS
MARK | DATE | DESCRIPTION | BY | CHK
REVISION
7.1.65 | As built with revisions | L.L.S. | A.L.
SCALE AS SHOWN
BRIDGE 33-25 34-03 34-04
SHEET No. 96
DRAWING C-401-96R
DATE APPROVED September 23, 1960
APPROVAL RECOMMENDED BY
ORIGINAL DESIGNED BY
REVISED BY

PROJECTS ENGINEER - LICENSE 1479
DATE APPROVED September 23, 1960



ELEVATION

NOTES

1. See sheet 95 for additional notes.
2. Release the anchor bolts on the existing south column before shoring the south longitudinal girder.
3. Shore the south longitudinal girder before removing the existing south column. Jack until an upward deflection of 1/4" is obtained at the shoring. Design the shoring for a total load of 2[illegible],000 pounds.
4. The girder extension shall be free to deflect downward a minimum of 5" at the new south column during shoring and prestressing operation.
5. Increase the reaction at the shoring by 14,000 pounds after the girders are bolted together. Bring bearing plate into full contact and dry pack prior to removing shoring.
6. See sheet 92 for framing plan.

MARK	DATE	DESCRIPTION REVISION	BY	CK'K
1	7/1/63	As built with revisions	RZ.	R.L.

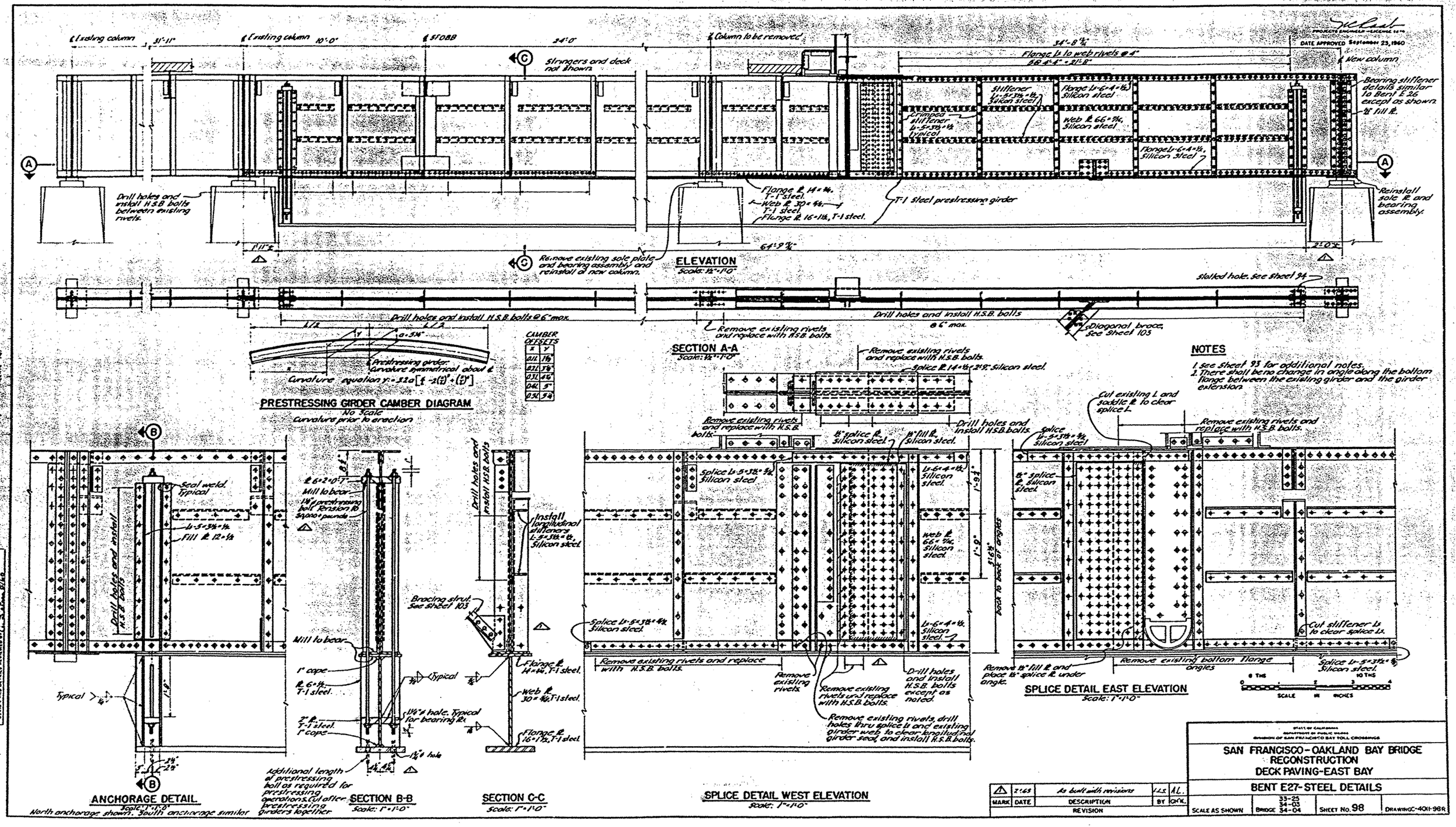
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

BENT E27

UNLESS NOTED SCALE 1/4" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET NO. 97 | DRAWING C-4011-97R

APPROVAL RECOMMENDED BY
SUPERVISING BRIDGE ENGINEER
LICENSE 1787



NOTES

1. See Sheet 93 for additional notes.
2. There shall be no change in angle along the bottom flange between the existing girder and the girder extension.

DATE APPROVED September 25, 1960

MARK	DATE	DESCRIPTION	BY	CK'K.
1	2-63	As built with revisions	J.L.S.	A.L.

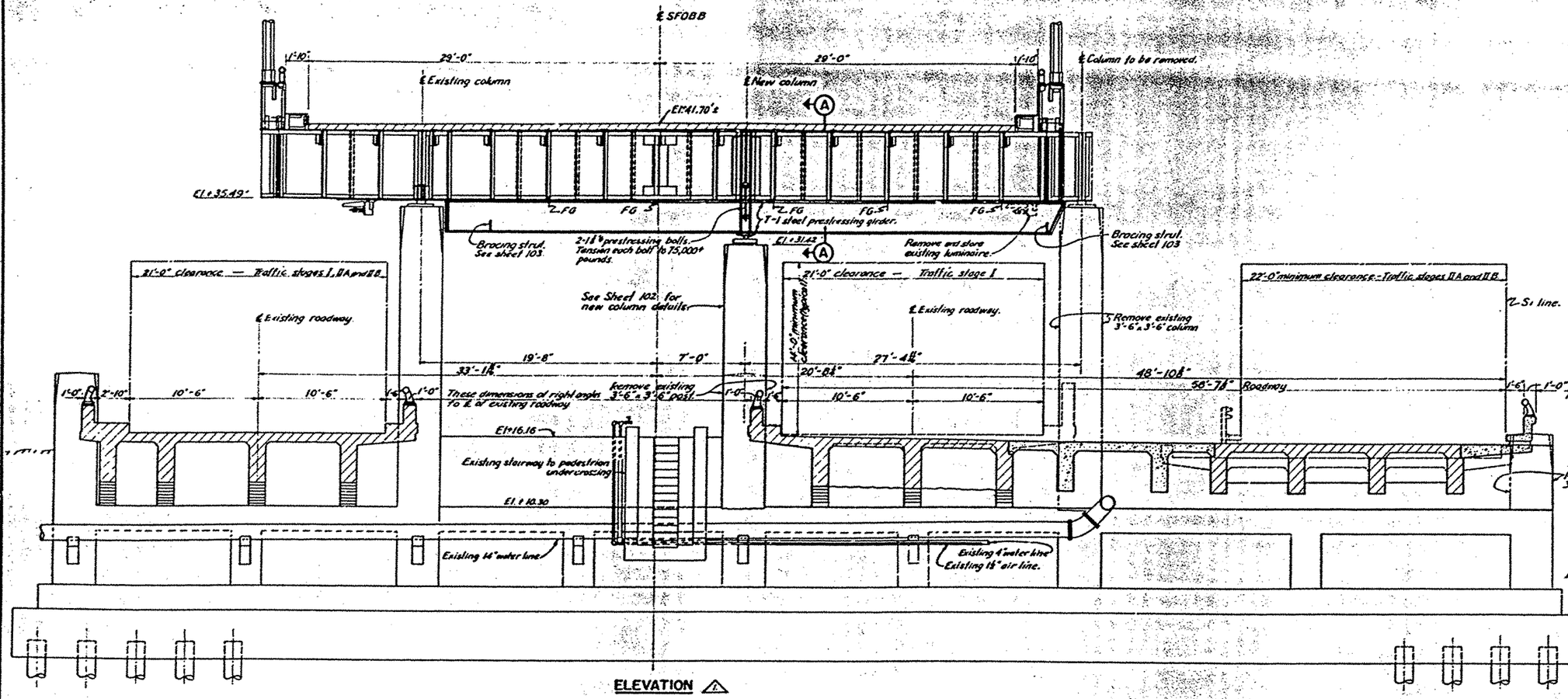
REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

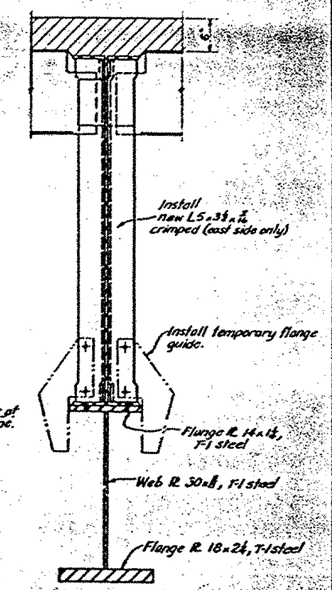
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

BENT E27-STEEL DETAILS

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 98 | DRAWING C-40(1-98R)



ELEVATION △1



SECTION A-A △1
Scale: 1"=1'-0"

NOTES

1. See sheet 98 for additional notes.
2. △1 Release anchor bolts at south column, shore at longitudinal girders, and jack until an upward deflection of 1" is obtained at the column. Design shoring for a total load of 230,000 pounds.
3. Bring bearing plate at new column in full contact and drypack after bolting the girders together and prior to releasing the shoring at the south longitudinal girders.
4. See sheet 92 for framing plan.

0 6 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY: W. Rie Ley

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

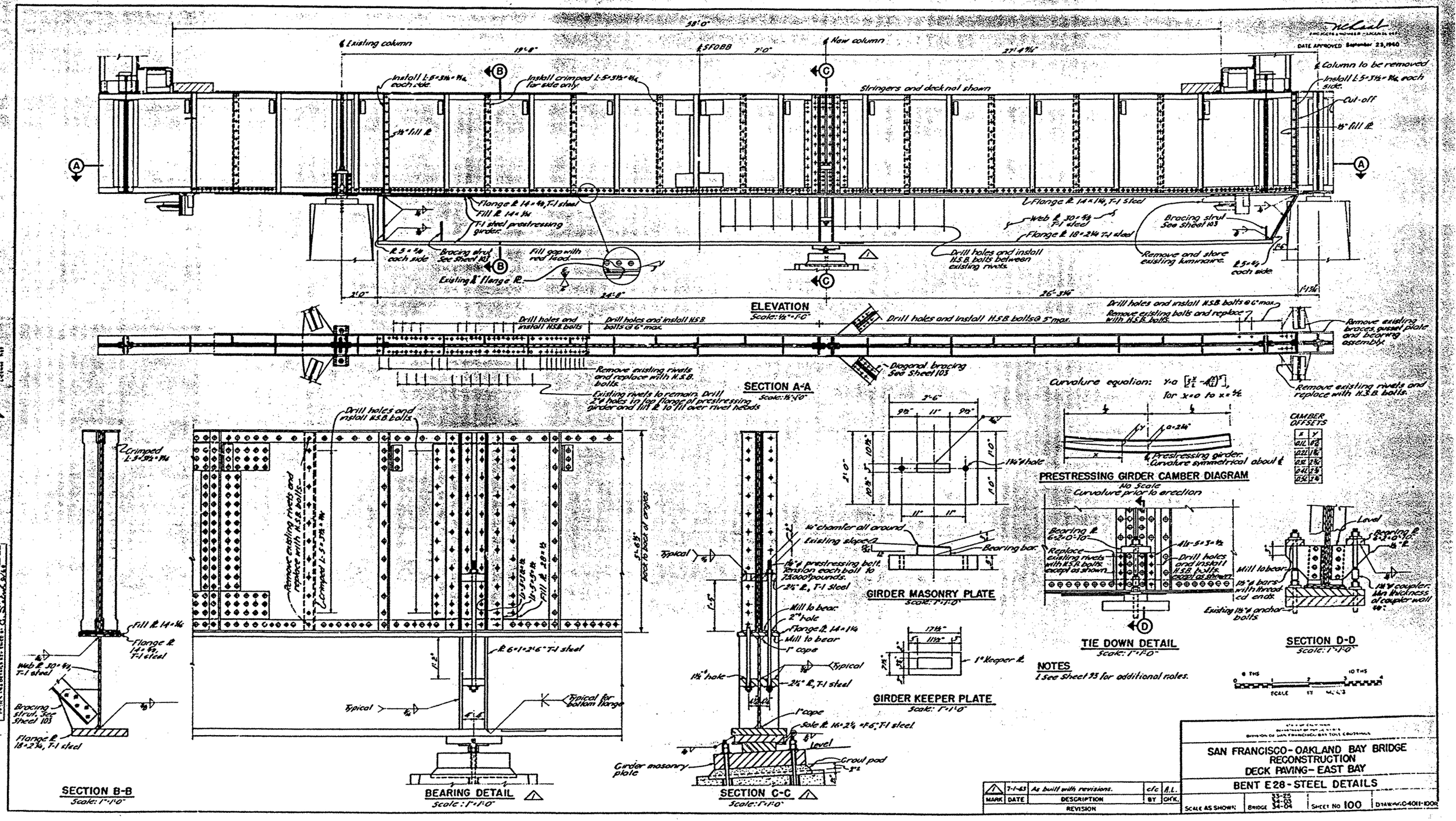
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

BENT E 28

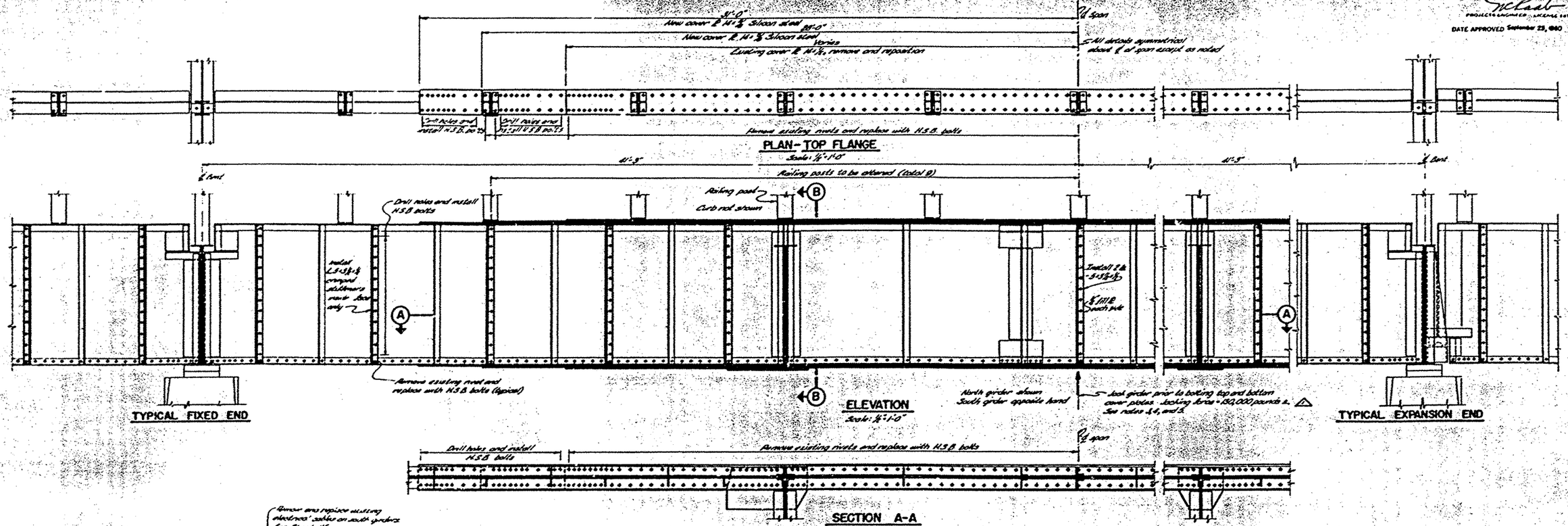
MARK	DATE	DESCRIPTION	BY	CH'K.
△1	7-1-63	As built with revisions.	cfc	A.L.

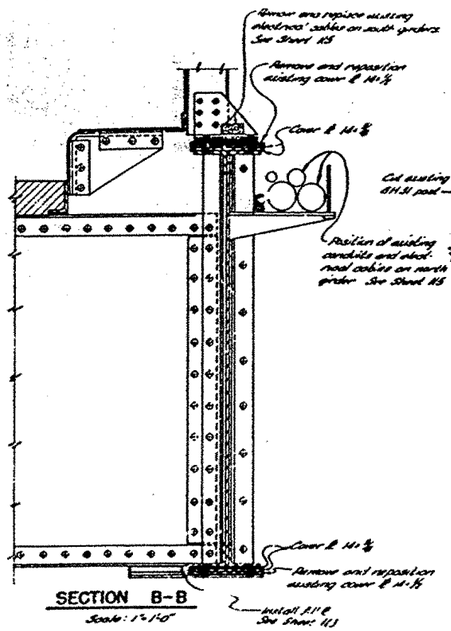
REVISION

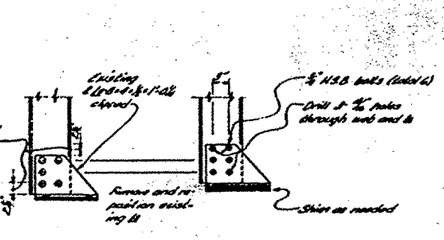
UNLESS NOTED SCALE 1/4"=1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET NO 99 | DRAWING C-401-99R

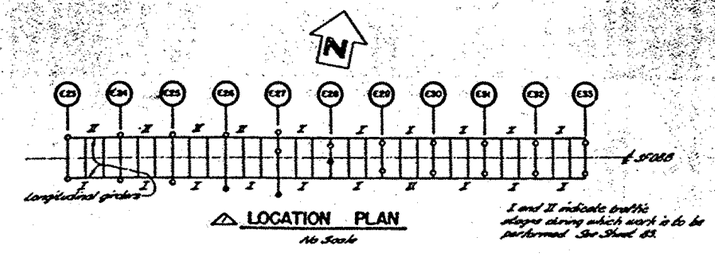

ELEVATION
Scale: 1/4" = 1'-0"
SECTION A-A
Scale: 1/2" = 1'-0"
SECTION B-B
Scale: 1" = 1'-0"
BEARING DETAIL
Scale: 1" = 1'-0"
SECTION C-C
Scale: 1" = 1'-0"
GIRDER MASONRY PLATE
Scale: 1" = 1'-0"
GIRDER KEEPER PLATE
Scale: 1" = 1'-0"
PRESTRESSING GIRDER CAMBER DIAGRAM
No Scale
Curvature prior to erection
TIE DOWN DETAIL
Scale: 1" = 1'-0"
SECTION D-D
Scale: 1" = 1'-0"
Curvature equation: y = a [x²/L² - (x/L)⁴], for x = 0 to x = L/2
CAMBER OFFSETS
NOTES
1 See Sheet 95 for additional notes.
DATE APPROVED September 23, 1940
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
BENT E28 - STEEL DETAILS
SCALE AS SHOWN
BRIDGE 33-25 34-03 34-04
SHEET NO 100
DRAWING C-4011-100R
MARK DATE DESCRIPTION BY CHK.
7-1-63 As built with revisions. c/c A.L.
REVISION

DATE APPROVED September 23, 1960



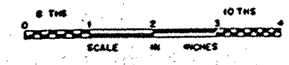






NOTES

1. For bracing detail see Sheet 103.
2. Jack each girder prior to bolting top and bottom cover plates.
3. △ Indicated jacking force is based on dead load only. This force shall not vary more than ±10,000 pounds during jacking operations.
4. The Contractor shall provide means for indicating the jacking force at all times during the jacking operations.
5. The Contractor shall submit complete plans of shoring details and jacking procedure for each girder for approval by the Engineer.
6. Immediately after altering, each railing post shall be temporarily fastened rigidly in place by means of bolts and shims, and shall so remain until the top cover plates are installed. Each railing post shall be bolted permanently in place immediately after placing top cover plates.
7. See Sheets 3 to 7 and Sheets 83 for additional notes and requirements.



MARK	DATE	DESCRIPTION	BY	CH'K.
△	7.1.65	As built with revisions	L.L.R.	A.L.
		REVISION		

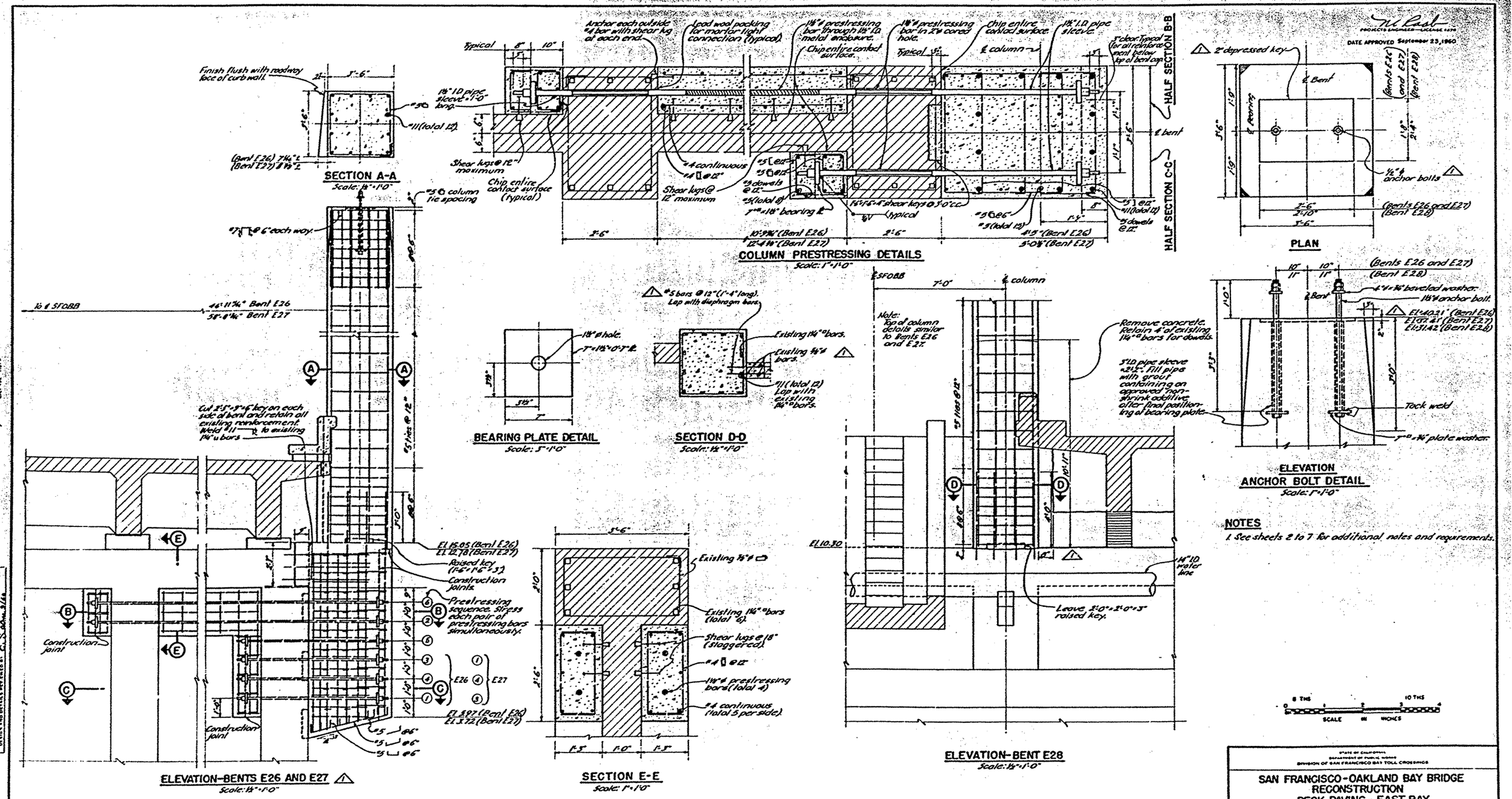
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

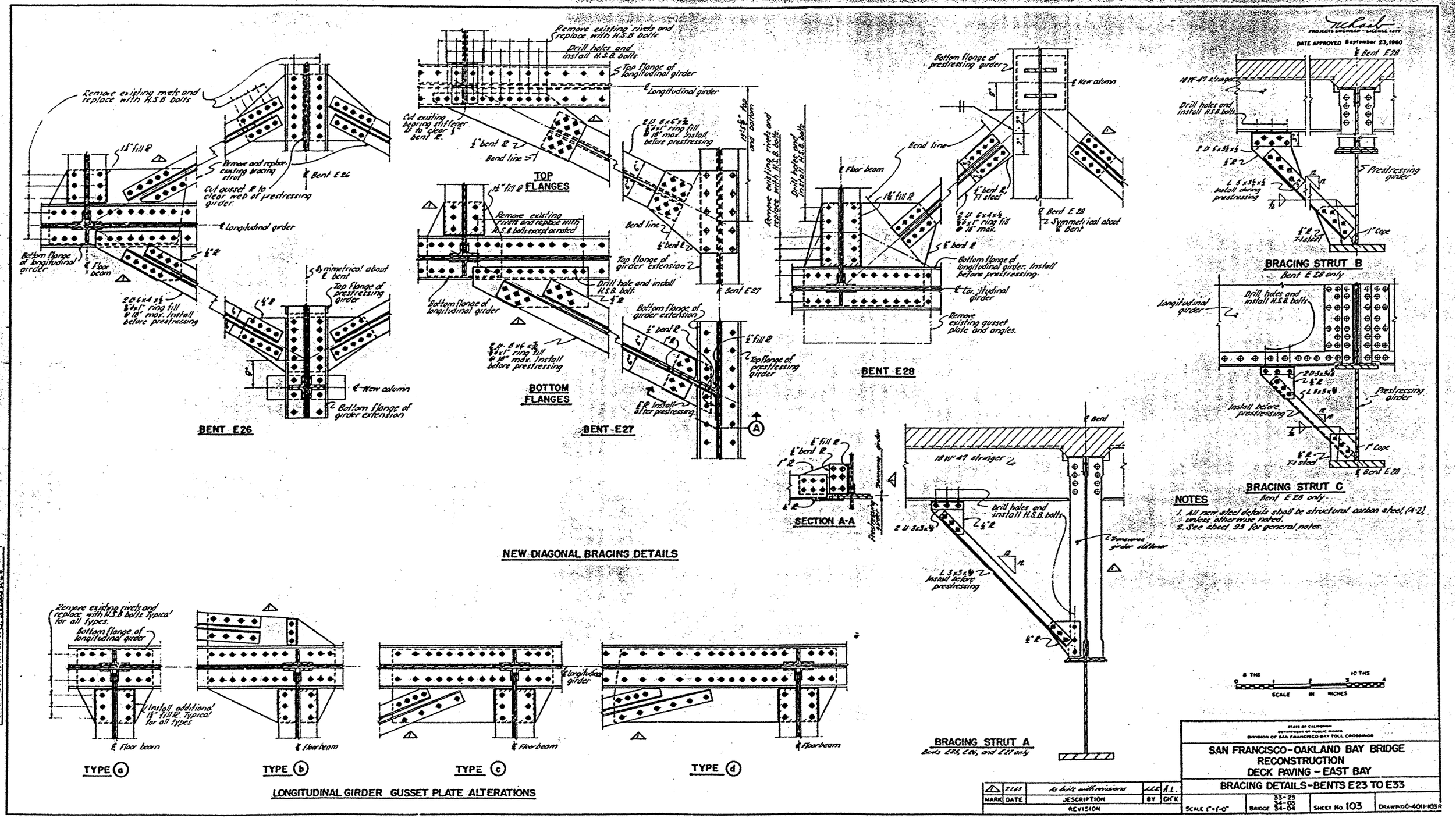
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

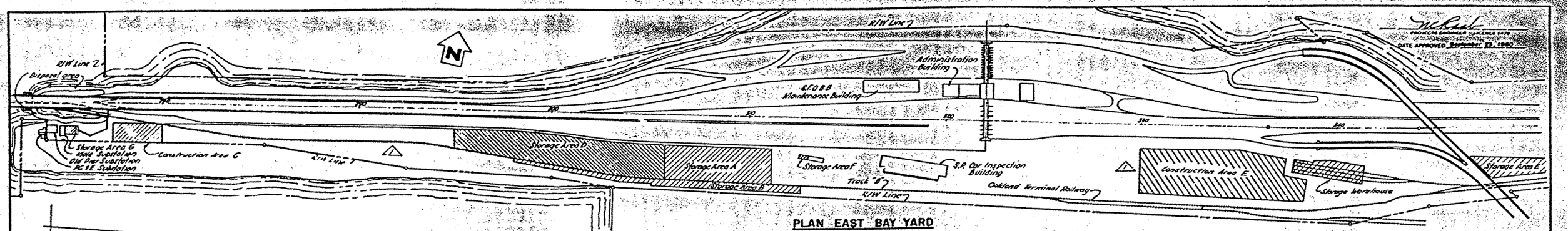
LONGITUDINAL GIRDERS - STEEL DETAILS

SCALE AS SHOWN | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 101 | DRAWING C-4011-101R

AS-BUILT
DETAILS
QUANTITIES
PLACED
DESIGN CONSTRUCTION DIVISION
U.S. Rucker
C. E. 1126
APPROVAL RECOMMENDED D.E.

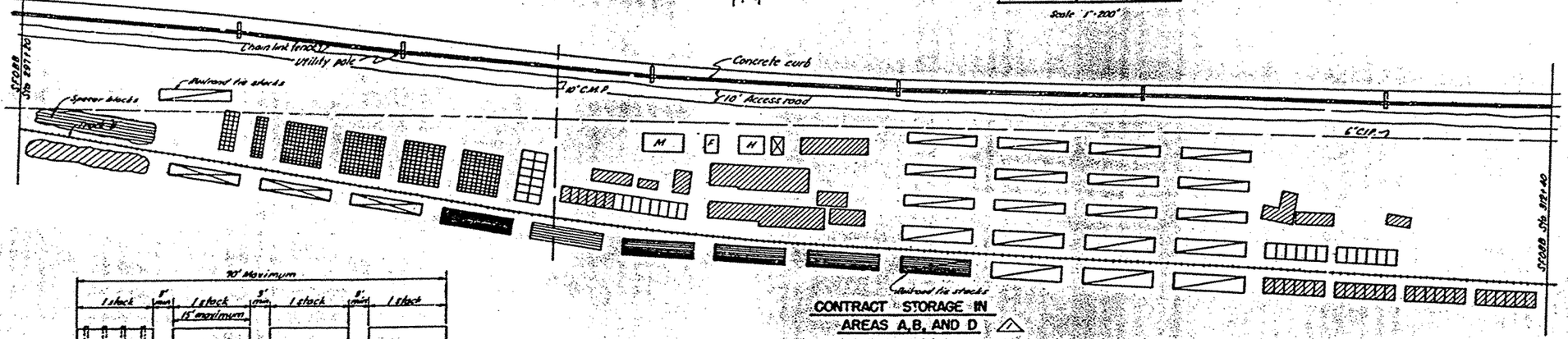

SECTION A-A
Scale: 1½"=1'-0"
Finish flush with roadway face of curb wall.
(Bent E26) 7¾"±
(Bent E27) 8¾"±
COLUMN PRESTRESSING DETAILS
Scale: 1"=1'-0"
Anchor each outside #4 bar with shear lug at each end.
Lead wool packing for mortar tight connection (typical).
1¼"ø prestressing bar through 1¼" I.D. metal anchorage.
Chip entire contact surface.
1¼"ø prestressing bar in 2¼" cored hole.
1¼" I.D. pipe sleeve.
℄ column
HALF SECTION B-B
HALF SECTION C-C
℄ bent
Shear lugs @ 12" maximum
Chip entire contact surface (typical)
#4 continuous
#4 @ 12"
#9 dowels @ 12"
#5 (total 8)
1¼"ø x 18" bearing ℄
1¼"x1¼"x1¼" shear keys @ 3'-0" c.c.
#5 (total 12)
#11 (total 12)
#9 dowels @ 12"
#5 @ 6" each way
#5 @ column tie spacing
#5 Hoes @ 12"
10'-9¾" (Bent E26)
12'-4¾" (Bent E27)
4'-11¾" Bent E26
5'-8¾" Bent E27
10 ℄ SFOBB
Cut 2'-5"x2'-5"x6" key on each side of bent and retain all existing reinforcement. Weld #11 to existing 1¼"ø bars
Construction joint
Construction joint
Construction joint
ELEVATION-BENTS E26 AND E27
Scale: 1½"=1'-0"
1¼"ø hole.
BEARING PLATE DETAIL
Scale: 5"=1'-0"
#5 bars @ 12" (1'-4" long). Lap with diaphragm bars.
Existing 1¼"ø bars.
Existing ⅝"ø bars.
#11 (total 12) Lap with existing 1¼"ø bars.
SECTION D-D
Scale: 1½"=1'-0"
EL 15.05 (Bent E26)
EL 12.78 (Bent E27)
Raised key (1'-6"x1'-6"x3")
Construction joints.
Prestressing sequence. Stress each pair of prestressing bars simultaneously.
E26
E27
EL 3.97 (Bent E26)
EL 3.72 (Bent E27)
Existing ⅝"ø
Existing 1¼"ø bars (total 4).
Shear lugs @ 18" (staggered).
#4 @ 12"
1¼"ø prestressing bars (total 4)
#4 continuous (total 5 per side).
SECTION E-E
Scale: 1"=1'-0"
Note: Top of column details similar to Bents E16 and E27.
7'-0"
℄ column
EL 10.30
Remove concrete. Retain 4' of existing 1¼"ø bars for dowels.
5'-0" pipe sleeve x 2'-1". Fill pipe with grout containing an approved non-shrink additive after final positioning of bearing plate.
1¼" I.D. water line
Leave 2'-0"x2'-0"x3" raised key.
ELEVATION-BENT E28
Scale: 1½"=1'-0"
2" depressed key
℄ Bent
℄ Bearing
½"ø anchor bolts
(Bents E26 and E27)
(Bent E28)
PLAN
(Bents E26 and E27)
(Bent E28)
4"x¼" beveled washer.
1¼"ø anchor bolt.
EL 40.21' (Bent E26)
EL 37.41' (Bent E27)
EL 31.42' (Bent E28)
Tack weld
7"ø x ¼" plate washer.
ELEVATION
ANCHOR BOLT DETAIL
Scale: 1"=1'-0"
NOTES
1. See sheets 2 to 7 for additional notes and requirements.
8 THS
10 THS
SCALE IN INCHES
DATE APPROVED September 23, 1960
APPROVAL RE CHG "BOL-1"
DESIGN
CHECKED
QUANTITIES
TRACED
DESIGN AND DETAILS APPROVED
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
COLUMN DETAILS BENTS E26, E27 AND E28
MARK
DATE
DESCRIPTION
BY
CH'K.
REVISION
63
As built with revisions.
c/c
A.L.
SCALE AS SHOWN
BRIDGE 34-04
33-25
34-03
SHEET No. 102
DRAWING C-401-102R


Remove existing rivets and replace with H.S.B. bolts
15" fill ℞
Remove and replace existing bracing strut
Cut gusset ℞ to clear web of prestressing girder.
℄ Bent E26
℄ Longitudinal girder
Bottom flange of longitudinal girder
℄ Floor beam
Symmetrical about ℄ bent
Top flange of prestressing girder
2 Ls 6x4x½ ⅝"x1" ring fill @ 18" max. Install before prestressing
℄ New column
Bottom flange of girder extension
BENT E26
Remove existing rivets and replace with H.S.B. bolts.
Drill holes and install H.S.B. bolts
Top flange of longitudinal girder
℄ Longitudinal girder
Cut existing bearing stiffener 15" to clear ½" bent ℞.
½" bent ℞
Bend line
TOP FLANGES
½" fill ℞
Remove existing rivets and replace with H.S.B. bolts except as noted
Drill hole and install H.S.B. bolt
Bottom flange of longitudinal girder
2 Ls 8x6x¾ ⅝"x1" ring fill @ 18" max. Install before prestressing
BOTTOM FLANGES
15"x⅝" top and bottom
Bend line
½" bent ℞
Top flange of girder extension
℄ Bent E27
Bottom flange of girder extension
½" bent ℞
½" fill ℞
Top flange of prestressing girder
℄ ℞ Install after prestressing
BENT E27
A
Remove existing rivets and replace with H.S.B. bolts.
Drill holes and install H.S.B. bolts
Bottom flange of prestressing girder
℄ New column
Bend line
℄ Floor beam
1⅝" fill ℞
½" bent ℞, F1 steel
2 Ls 6x4x¾ ⅝"x1" ring fill @ 18" max.
℄ Bent E28
Symmetrical about ℄ Bent
½" bent ℞
Bottom flange of longitudinal girder. Install before prestressing.
Longitudinal girder
Remove existing gusset plate and angles.
BENT E28
DATE APPROVED September 23, 1960
℄ Bent E28
18 WF 47 stringer
Drill holes and install H.S.B. bolts
2 Ls 6x3½x½
½" ℞
L 5x3½x½ install during prestressing
Prestressing girder
1" Cope
½" ℞ F1 steel
BRACING STRUT B
Bent E28 only
Longitudinal girder
Drill holes and install H.S.B. bolts
2 Ls 3x3x⅜
½" ℞
L 8x5x⅝
Install before prestressing
Prestressing girder
1" Cope
½" ℞ F1 steel
℄ Bent E28
BRACING STRUT C
Bent E28 only
½" fill ℞
½" bent ℞
1" ℞
½" ℞
SECTION A-A
Prestressing strut
℄ Bent
18 WF 47 stringer
Drill holes and install H.S.B. bolts
2 Ls 3x3x⅜
½" ℞
Transverse girder stiffener
L 3x3x⅜ install before prestressing
½" ℞
BRACING STRUT A
Bents E25, E26, and E27 only
NOTES
1. All new steel details shall be structural carbon steel, (A-7), unless otherwise noted.
2. See sheet 99 for general notes.
NEW DIAGONAL BRACING DETAILS
Remove existing rivets and replace with H.S.B. bolts Typical for all types.
Bottom flange of longitudinal girder
Install additional ½" fill ℞ Typical for all types
℄ Floor beam
TYPE (a)
℄ Floorbeam
TYPE (b)
℄ Longitudinal girder
℄ Floorbeam
TYPE (c)
℄ Floorbeam
TYPE (d)
LONGITUDINAL GIRDER GUSSET PLATE ALTERATIONS
0 6 THS 1 2 3 4 10 THS
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
BRACING DETAILS-BENTS E23 TO E33
MARK | DATE | DESCRIPTION | BY | CH'K
7-1-65 | As built with revisions | J.L.S. | A.L.
REVISION
SCALE 1"=1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 103
DRAWING C-4011-103R



PLAN EAST BAY YARD

Scale 1"=200'

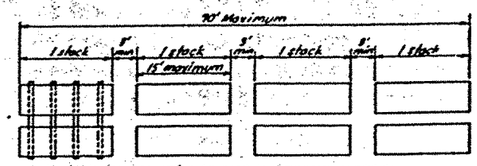


CONTRACT STORAGE IN AREAS A, B, AND D

Scale: 1"=50'

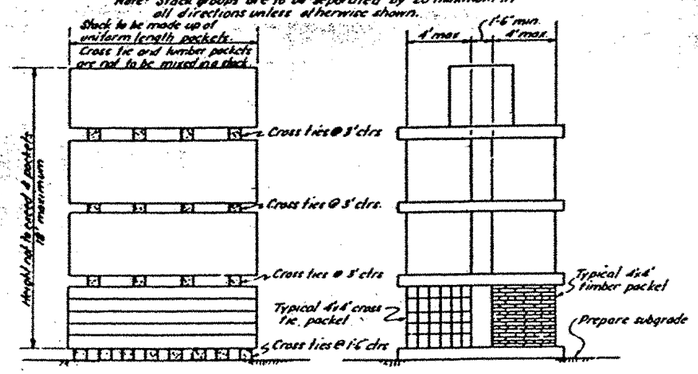
LEGEND

- Rail stacks
- Railroad ties
- Existing storage bins
- Lumber
- Rail expansion assemblies
- Frogs
- Hand-operated switch assemblies.
- Miscellaneous iron and steel not stored in bins.
- Existing materials and storage facilities to remain in place.



PLAN FOR TYPICAL STACK GROUP

Note: Stack groups are to be separated by 20' minimum in all directions unless otherwise shown.

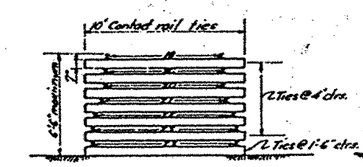


STACK ELEVATION

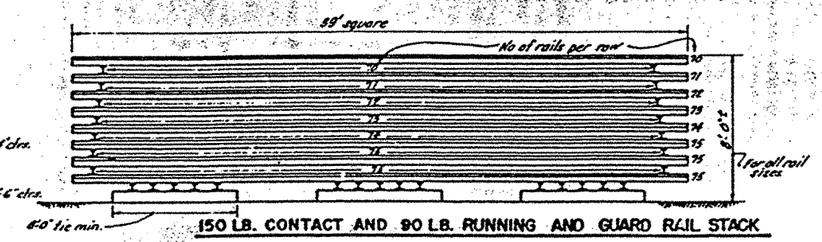
STACK CROSS SECTION

TYPICAL CROSS TIE AND LUMBER STORAGE

Scale: 1/8"=1'-0"



55 LB CONTACT RAIL STACK



150 LB. CONTACT AND 90 LB. RUNNING AND GUARD RAIL STACK

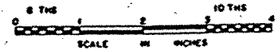
Note: Detail drawn for 90# rails. Rails of respective sizes shall be kept in separate stacks: also 90# running rails and guard rails are to be stockpiled in separate stacks. Foundation pressure shall not exceed 2000# /ft².

TYPICAL STORAGE FOR RAILS

Scale: 1/8"=1'-0"

NOTES

1. The Contractor shall complete existing partially filled stacks and bins as directed by the Engineer.
2. Foundation pressure shall not exceed 2000#/ft².



MARK	DATE	DESCRIPTION	BY	CH'K
1	7/1/63	As built with revisions.	AE	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

STORAGE AREA LAYOUT AND DETAILS

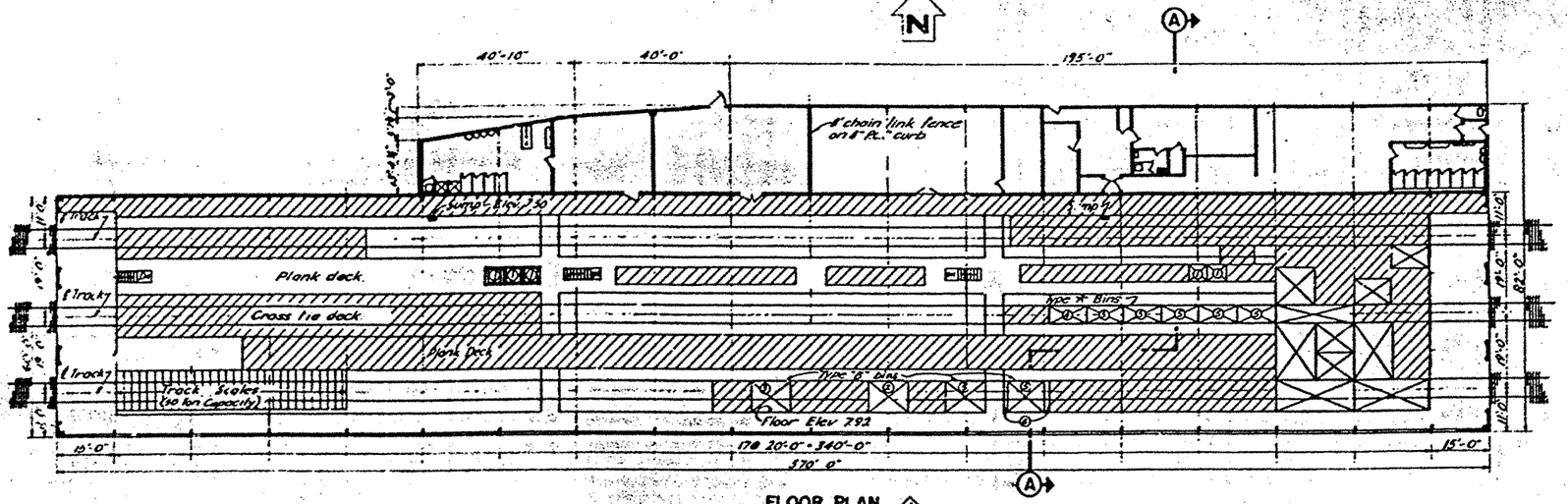
SCALE As Shown | BRIDGE 33-25 34-03 34-04 | SHEET No 104 | DRAWING C-4011-1048

APPROVED BY — Supervising Engineer (Acting)

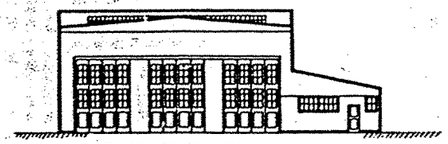
APPROVAL RECOMMENDED BY — Supervising Engineer (Acting)

DESIGN			
DETAILS			
QUANTITIES			
CHECKED			
DESIGN UNDER SUPERVISION OF			

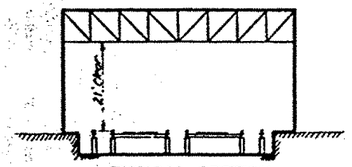
PROJECT'S ENGINEER - LICENSE 1478
DATE APPROVED September 23, 1960



FLOOR PLAN
Scale: 1/16" = 1'-0"



EAST ELEVATION
Scale: 1/16" = 1'-0"



TYPICAL SECTION
Scale: 1/16" = 1'-0"

STORAGE TABLE

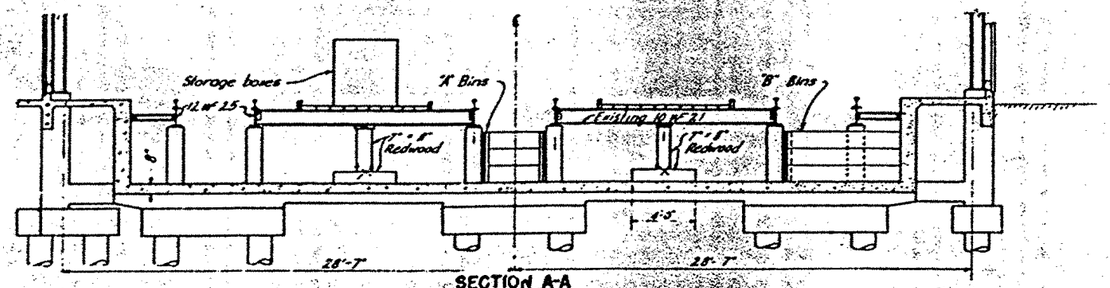
MARK	MATERIAL	HOW STORED
1	Contact rail insulators	Boxes on platform.
2	Contact rail insulator assembly fittings.	pieces in bins.
3	Contact rail anchor assemblies.	pieces in bins.
4	Lag screws	pieces in bins.
5	Rail fastenings (bolts)	pieces in bins.
6	Contact rail copper splice bars.	pieces in bins.

LEGEND

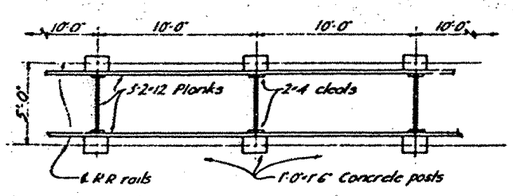
- Occupied storage area.
- Existing bins or boxes.
- Insulator boxes to be built.

NOTES

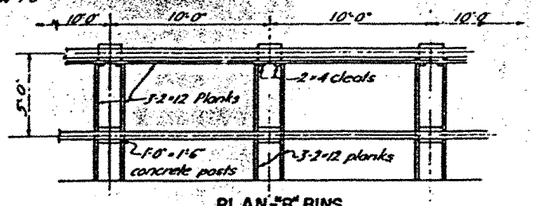
1. The storage loading of areas in the warehouse shall not exceed 225 lbs per square foot
2. All items stored shall be segregated according to size, type, shape or other category and shall be properly identified by tag, stencil, and/or other means approved by the Engineer.
3. Porcelain insulators shall be packed in excelsior filled boxes.



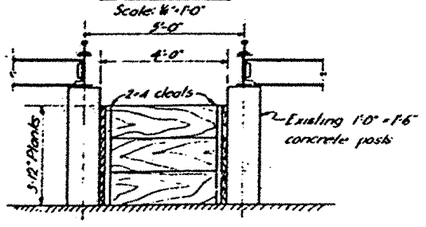
SECTION A-A
Scale 1/16" = 1'-0"



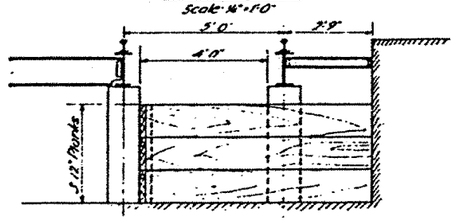
PLAN - "A" BINS
Scale: 1/16" = 1'-0"



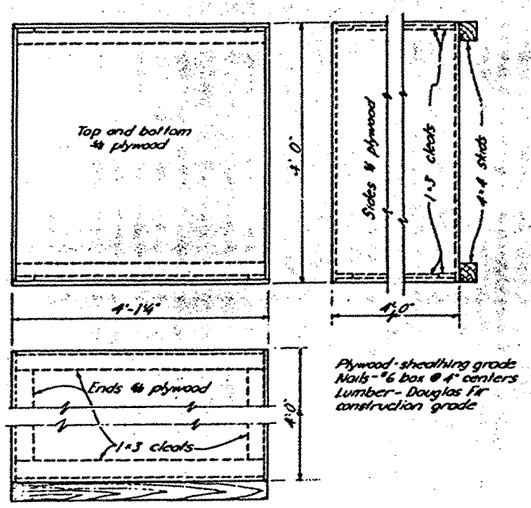
PLAN - "B" BINS
Scale: 1/16" = 1'-0"



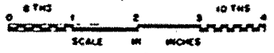
SECTION - "A" BINS
Scale 1/2" = 1'-0"



SECTION - "B" BINS
Scale: 1/2" = 1'-0"



INSULATOR STORAGE BOXES
Scale: 1" = 1'-0"



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

WAREHOUSE LAYOUT AND DETAILS

MARK	DATE	DESCRIPTION	BY	CH'K.
1	7-1-63	As built with revisions.	c/c	A.L.

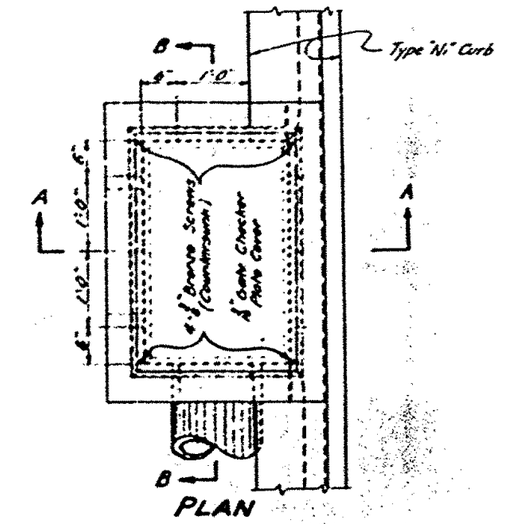
REVISION

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 105 | DRAWING C-401-105R

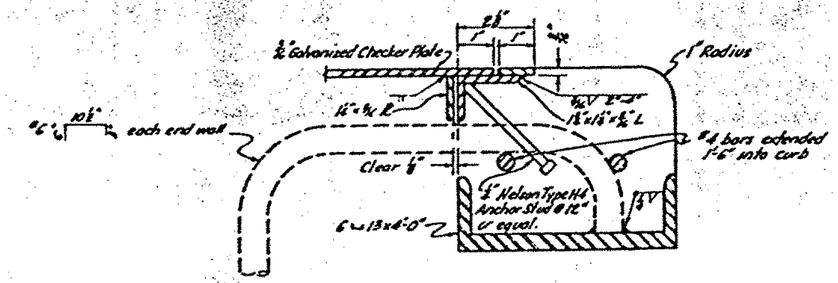
APPROVAL RECOMMENDED BY: SUPERVISING ENGINEER LICENSE 11187

REVISIONS	DATE	BY	CHECKED
REVISED DETAILS	1-1-63		
REVISED DETAILS	1-1-63		
REVISED DETAILS	1-1-63		
REVISED DETAILS	1-1-63		

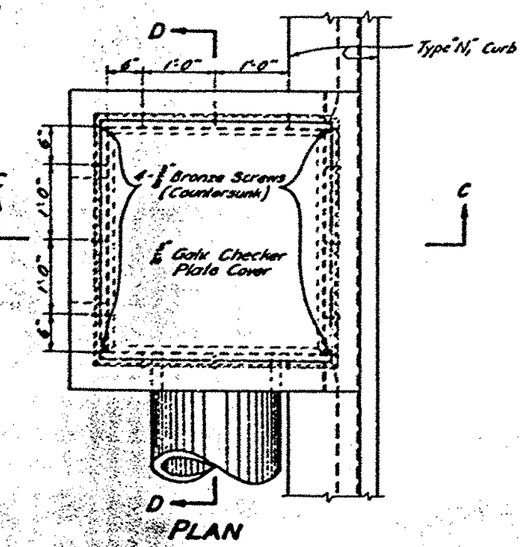
PROJECTS ENGINEER-LICENSE 1479
DATE APPROVED September 23, 1960



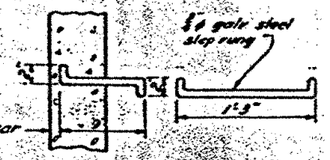
PLAN



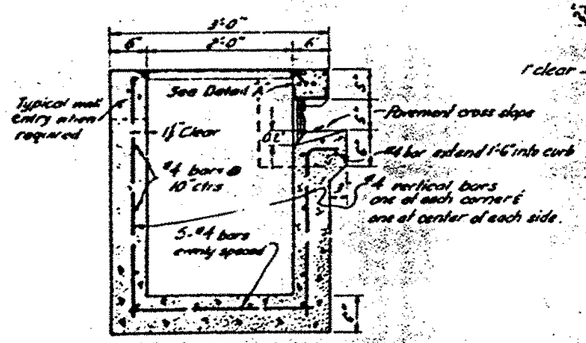
DETAIL "A"
Scale: 6" = 1'-0"



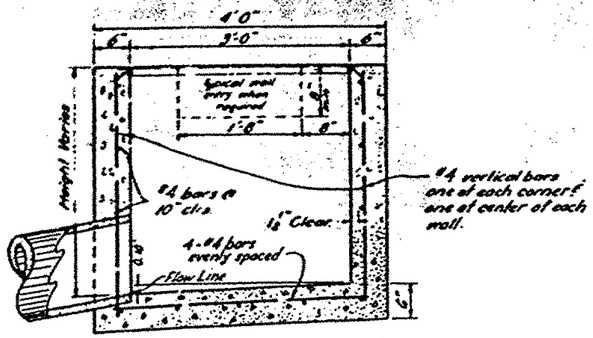
PLAN



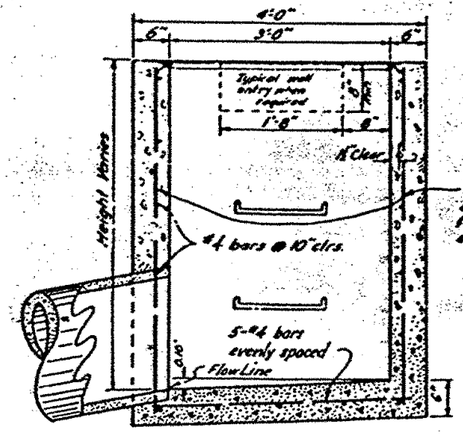
STEP RUNG DETAIL
Scale: 1½" = 1'-0"



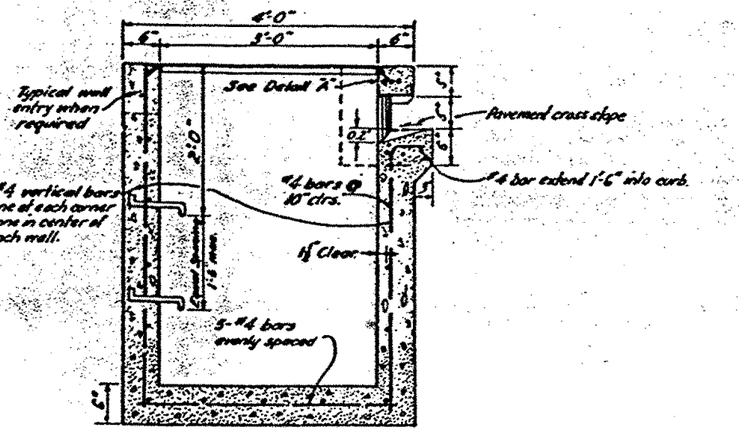
SECTION A-A



SECTION B-B



SECTION D-D



SECTION C-C

TYPE "M3" INLET
Scale: 1" = 1'-0"

TYPE "M2" INLET
Scale: 1" = 1'-0"

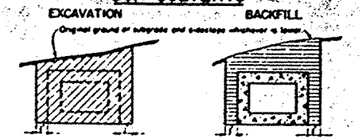
Notes:
1. Where "H" < 3'-6" step rungs shall be omitted.
2. Where "H" ≥ 3'-6" use Type "M3" Inlet.
3. All miscellaneous iron & steel to be galvanized after fabrication.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO- OAKLAND BAY BRIDGE

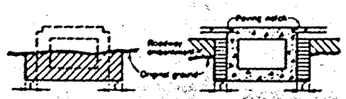
BOX CULVERTS

EXCAVATION BACKFILL



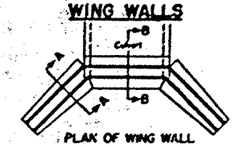
CULVERT IN TRENCH

CULVERT IN EMBANKMENT



GRADE TOP CULVERT

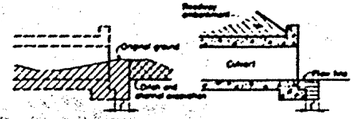
WING WALLS



PLAN OF WING WALL

EXCAVATION BACKFILL

SECTION A-A

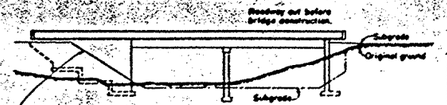


SECTION B-B

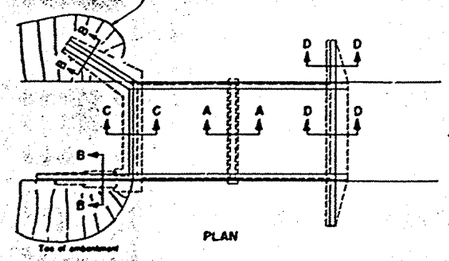
RETAINING WALLS
(CANTILEVER OR COUNTERFORT TYPES)

BRIDGE ABUTMENTS AND ADJOINING WING WALLS

Note: If no roadway excavation is involved at the bridge structure excavation will be measured from the original ground.

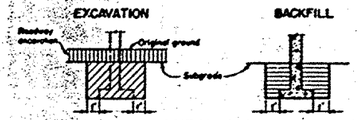


ELEVATION



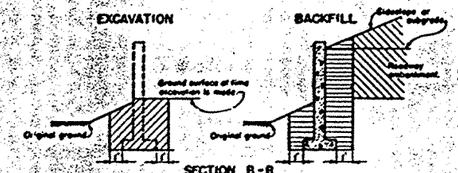
PLAN

EXCAVATION BACKFILL

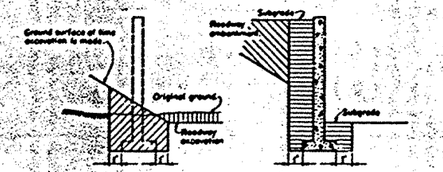


SECTION A-A

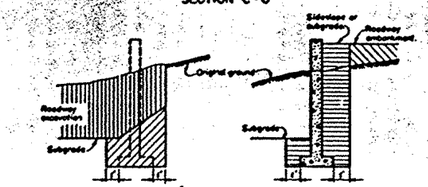
EXCAVATION BACKFILL



SECTION B-B



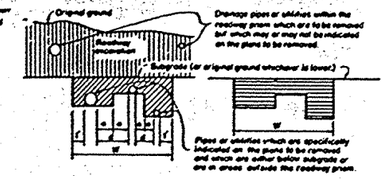
SECTION C-C



SECTION D-D

REMOVAL OF EXISTING DRAINAGE PIPES, UTILITY PIPES, ELECTRICAL CABLES AND CONDUITS

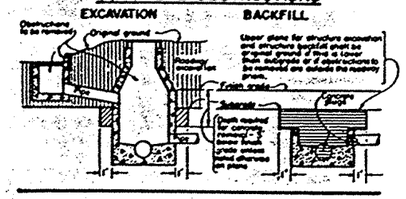
EXCAVATION BACKFILL



Note: If d in any case is greater than 3' work on each side of this dimension shall be considered as separate trenches.
* Dimensions shall be d/2 unless d is greater than 3' in which case the respective dimensions shall be 1'.

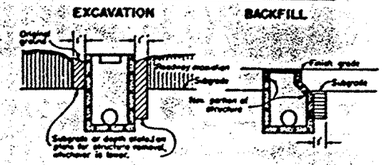
REMOVAL OF EXISTING DRAINAGE INLETS, MANHOLES AND CONCRETE OBSTRUCTIONS

EXCAVATION BACKFILL

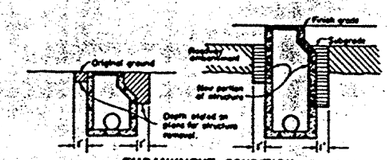


MODIFICATION OF EXISTING DRAINAGE INLETS AND MANHOLES

EXCAVATION BACKFILL



EXCAVATION CONDITION

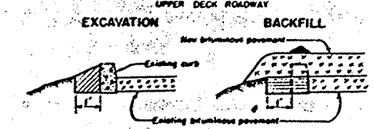


EMBANKMENT CONDITION

CURB REMOVAL

UPPER DECK ROADWAY

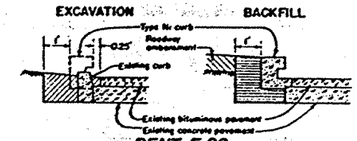
EXCAVATION BACKFILL



TYPE "N1" CURB

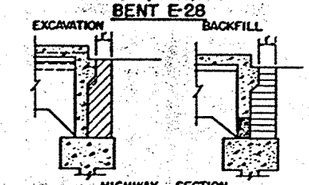
"B" STA. 283 TO "B" STA. 285

EXCAVATION BACKFILL



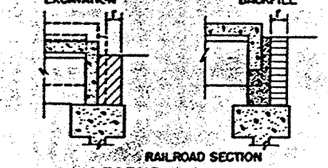
BENT E-28

EXCAVATION BACKFILL



HIGHWAY SECTION

EXCAVATION BACKFILL



RAILROAD SECTION

LEGEND

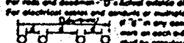
- Structure excavation.
- Structure backfill.
- Ditch and channel excavation.
- Roadway embankment.
- Roadway excavation.

Note: Subgrade shall be lowest subgrade as defined in the Specifications.

DRAINAGE PIPES, UTILITY PIPES, ELECTRICAL CABLES AND CONDUITS RODS AND DEADMEN

(Under drains and down drains not included.)

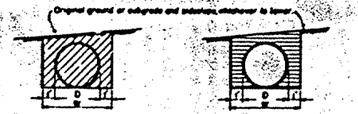
For structure excavation and backfill payment quantities "D" shall be as follows:
For CMP "D" = nominal diameter.
For bolt and rivet pipe "D" = actual outside diameter of bolt.
For all other pipes "D" = actual outside diameter of pipe placed
For rods and deadmen "D" = defined outside diameter.
For electrical cables and conduits or multiple pipes "D" is as shown below.



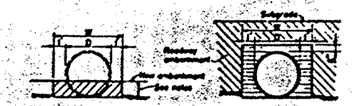
If "d" in any case is greater than 3' work on each side of this dimension shall be considered as separate trenches.

When "D" is less than 6", "W" shall be as follows:
For pipes, rods and deadmen "W" = 2.5'.
For electrical cables and conduits "W" = 1.0'.

EXCAVATION BACKFILL



TRENCH CONDITION



EMBANKMENT CONDITION

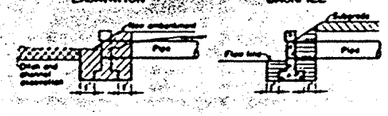
Height of top of embankment before excavating for pipe shall be as follows:

For pipes 24" or less in diameter	6" above top of pipe cable or conduit
For electrical cables and conduits	
For CMP over 24" to 90" in diameter	30" above bottom of pipe
For RCP over 24" in diameter	
For CMP and 90" in diameter	
For field assembled plate culverts	1/3 of diameter above bottom of pipe.

Structure backfill shall be placed to 6" above top of pipe cable or conduit.

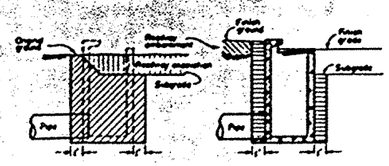
PIPE HEADWALLS

EXCAVATION BACKFILL

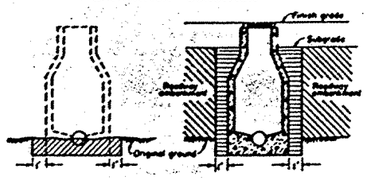


DRAINAGE INLETS AND MANHOLES

EXCAVATION BACKFILL



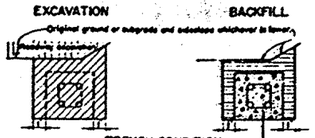
EXCAVATION CONDITION



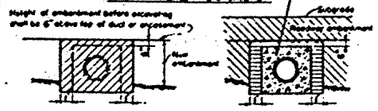
EMBANKMENT CONDITION

ELECTRICAL DUCTS AND ENCASED PIPES

EXCAVATION BACKFILL



TRENCH CONDITION
(PREFABRICATED OR CAST IN PLACE DUCT OR CAST IN PLACE PIPE ENCASEMENT)



EMBANKMENT CONDITION

APPROVAL RECOMMENDED BY

DATE APPROVED September 25, 1940

PROJECT ENGINEER — ACTING

1	THB	As built without revisions.	HS	A.L.	
MARK	DATE	DESCRIPTION	BY	CH'K.	
		REVISION			

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

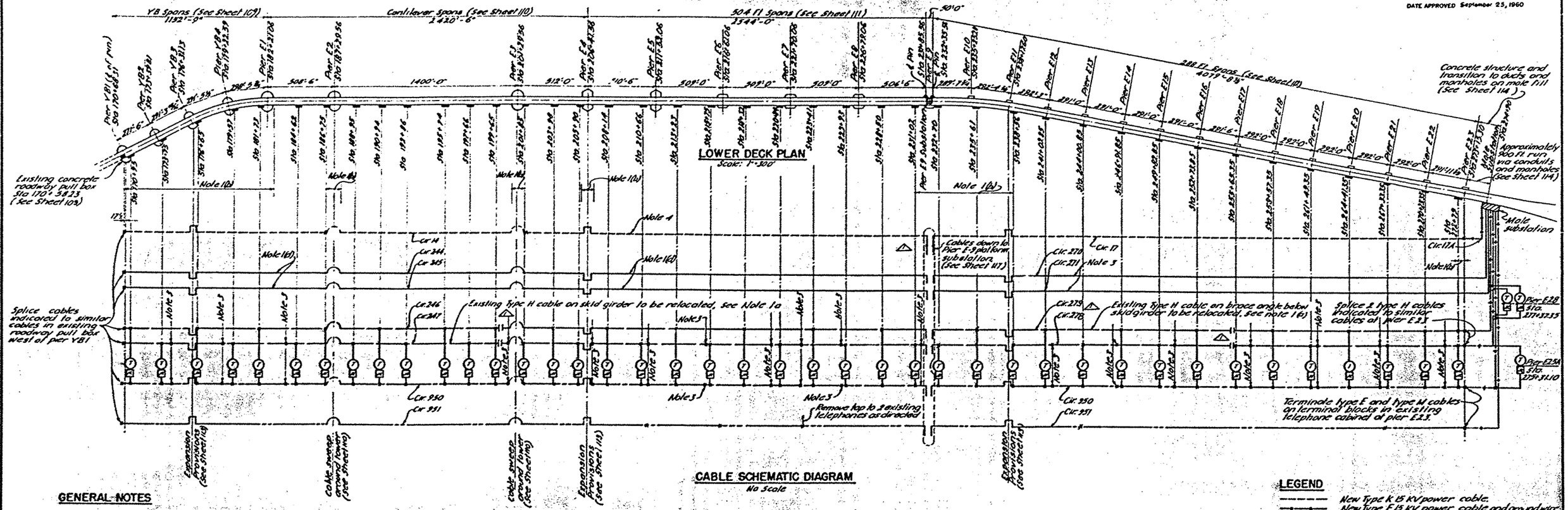
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

STRUCTURE EXCAVATION AND STRUCTURE BACKFILL

SCALE NONE | BRIDGE 33-25 34-03 34-04 | SHEET No. 107 | DRAWING C-4011-107R

PROJECT ENGINEER — LICENSE 1216

DATE APPROVED September 25, 1960



CABLE SCHEMATIC DIAGRAM

No Scale

GENERAL NOTES

1. Contractor shall relocate existing and install new cables and shall construct new facilities as follows:

   (a) Remove and relocate the existing type H cables on top of the skid girder and on brace angle as shown.

   (b) Remove and relocate portions of the existing types E and M cable from present locations on I through lattices of bridge structure diagonals; temporarily suspend portions shown on cable schematic diagram above work area to permit construction and relocation of skid girder and develop continuous runs of cable on top of skid girder free of excess slack.

   (c) Remove portions of diaphragms in, and diagonal flange connections on top of skid girder. Fabricate new bottom plates for skid girder in areas of diagonals at posts where absent; and install types E and M cables as shown.

   (d) Install 2 type L cables on cable and pipe struts with 2.5 ft slack evenly distributed along the runs between Piers YB1 to E23.

   (e) Terminate types L and H cables at each Utilities Outlet Station.

   (f) Install new and state furnished cable to Pier E9 substation.

   (g) Install new and remodeled equipment in Pier E9 Substation

   (h) Install types F and L cables in existing raceway system from Pier E23 to Male Substation and terminate as shown on Sheet 114.

   (i) Remove existing lower deck roadway lighting between Piers E23 and E39 and construct new roadway lighting installations between E23 and Sta. 282+00 as shown on sheet 116.

2. Contractor shall repair existing state cable on skid girder by wrapping with 2 layers of Permacel #30 or M M M Co. Scotch No. 22 two inch (2") wide polyvinyl Chloride tape in half-lap wrapping and sealing with Bakelite paint on damaged portions as directed by the Engineer. △1

3. All locations shown, existing cables are now cut. Contractor may splice or relocate cables to terminate at Utilities Outlet Stations, but, splicing or relocating the type E cable at other than 1(a) locations on the above schematic shall not be considered Removing and Relocating Cable, Item 10, sheet 6

4. Contractor shall install porcelain enamel "HIGH VOLTAGE" signs with 2" letters on the South side of the skid girder at 100' intervals and at all platforms.

5. Contractor shall furnish, complete two or three line schematics and wiring diagrams for 15 KV, metalclad power center, low voltage control center, utility outlet stations, and communication terminal cabinets.

6. Contractor shall install Brady B-184 aluminum foil tape, wire markers on all conductors of each terminal point within the Pier E9 Substation. Install 1/4" # brass tags on all conductors on cable at junction and terminal boxes, tags or wire marker shall indicate circuit numbers, as shown on schedule, See Sheet 120.

7. Contractor shall conduct his installation and relocation of cables to avoid unnecessary and delayed interruption of live (E) circuits in use in the type H telephone cable. Terminations, etc. shall be made as shown on cable schematic and as directed by the Engineer as Removing and Relocating cable Item 10 sheet 6

8. Contractor shall clamp type K, 15 KV Power cable to bottom of skid girder at approximately 100' intervals throughout run with T and B clamps, # 16306 grooved to fit armored cable, and # 10206 bracket.

LEGEND

- New Type K 15 KV power cable.
- New Type F 15 KV power cable and ground wire.
- New Type L 600v roadway lighting cable.
- Existing Type H 480 v power cable.
- Existing Type E signal cable.
- Existing Type M telephone cable.
- Utilities Outlet Station with 3 weatherproof convenience outlets and 3 weatherproof telephone jacks. For details, see Sheet 120.
- Indicates location of Bridge Service Platform at Station shown.
- Cable splice or tap. (New and existing)
- Cable expansion loop.
- Cable installed by others in existing raceways.

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K.
1	7-1-65	As built with revision.	dfr	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

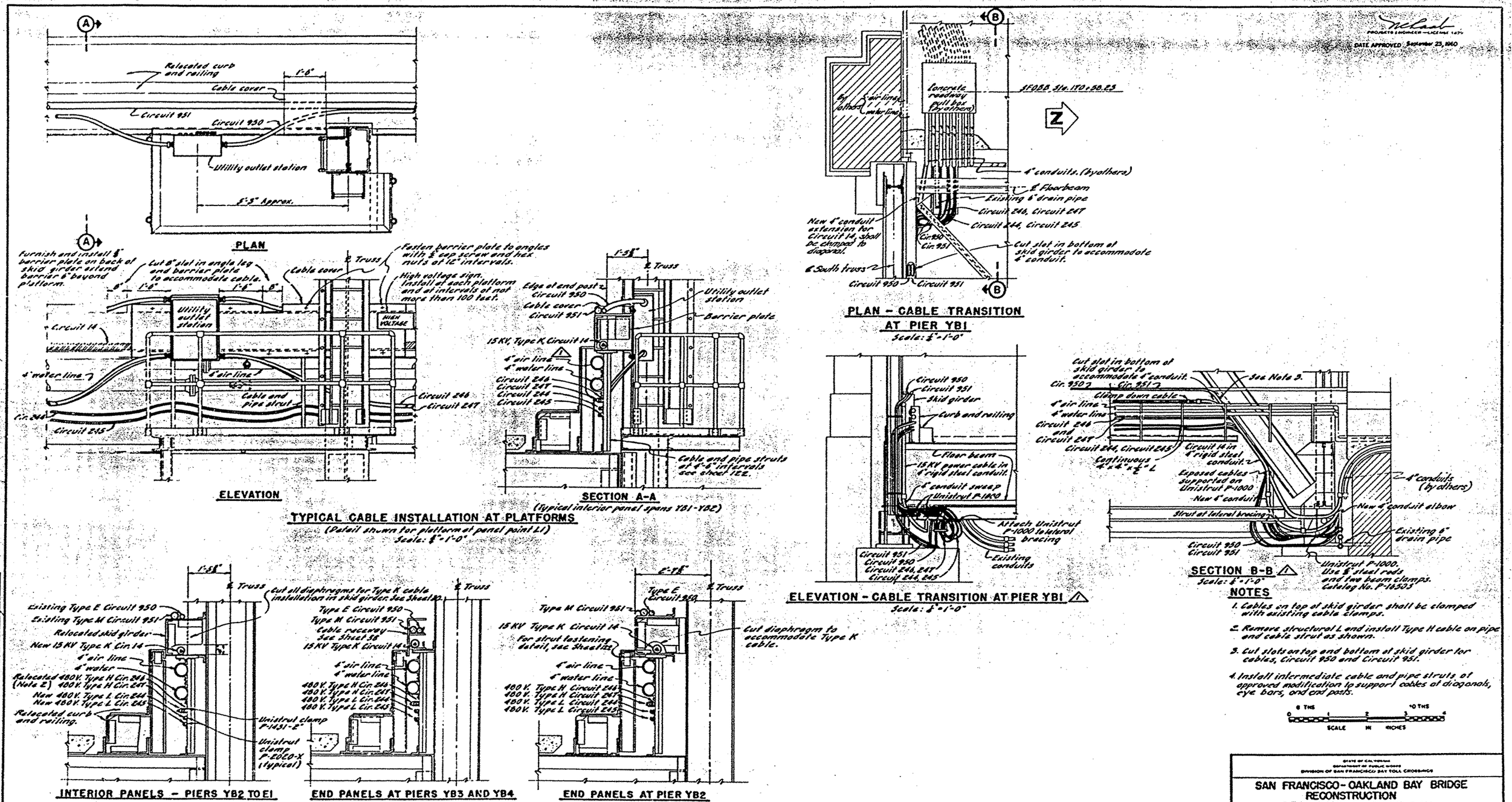
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING EAST BAY

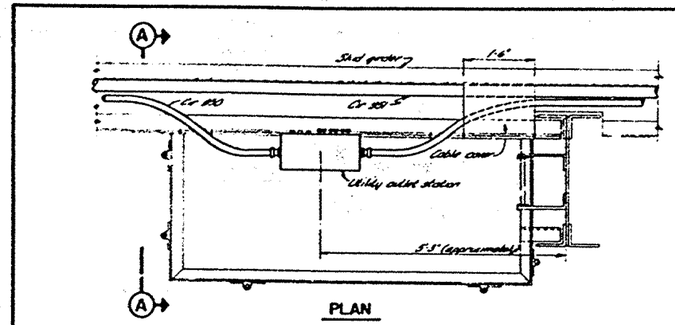
ELECTRICAL-GENERAL

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 108 | DRAWING C-4011-108R

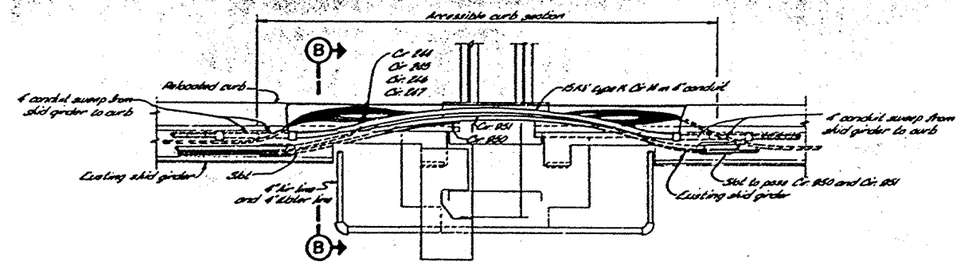
APPROVAL & CONCURRENCE BY

M. Rehm


PLAN
Relocated curb and railing
Cable cover
Circuit 951
Circuit 950
Utility outlet station
8'-3" Approx.
ELEVATION
Furnish and install ⅜" barrier plate on back of skid girder extend barrier 4" beyond platform.
Cut 8" slot in angle leg and barrier plate to accommodate cable.
Cable cover
℄ Truss
Fasten barrier plate to angles with ¾" cap screw and hex nuts at 12" intervals.
High voltage sign. Install at each platform and at intervals of not more than 100 feet.
HIGH VOLTAGE
Circuit 14
4" water line
4" air line
Cable and pipe strut
Circuit 246
Circuit 247
Circuit 245
SECTION A-A
(Typical interior panel spans YB1-YB2)
Edge of end post
Circuit 950
Cable cover
Circuit 951
Utility outlet station
Barrier plate
15 KV, Type K, Circuit 14
4" air line
4" water line
Circuit 246
Circuit 247
Circuit 244
Circuit 245
Cable and pipe struts at 4'-6" intervals see sheet 122.
TYPICAL CABLE INSTALLATION AT PLATFORMS
(Detail shown for platform at panel point L1)
Scale: ¼"=1'-0"
PLAN - CABLE TRANSITION AT PIER YB1
Scale: ¼"=1'-0"
Concrete roadway pull box (by others)
SFOBB, Sta. 150+50.23
4" conduits. (by others)
Existing 6" drain pipe
Circuit 246, Circuit 247
Circuit 244, Circuit 245
New 4" conduit extension for Circuit 14, shall be clamped to diagonal.
Cut slot in bottom of skid girder to accommodate 4" conduit.
6" South truss
Circuit 950
Circuit 951
ELEVATION - CABLE TRANSITION AT PIER YB1
Scale: ¼"=1'-0"
Circuit 950
Circuit 951
Skid girder
Curb and railing
Floor beam
15 KV power cable in 4" rigid steel conduit.
4" conduit sweep
Unistrut P-1000
Attach Unistrut P-1000 lateral bracing
Existing conduits
Circuit 951
Circuit 950
Circuit 246, 247
Circuit 244, 245
Cut slot in bottom of skid girder to accommodate 4" conduit.
See Note 3.
Clamp down cable
4" air line
4" water line
Circuit 246 and Circuit 247
Circuit 244, Circuit 245
Continuous 4"x4"x¼" L
Circuit 14 in 4" rigid steel conduit.
Exposed cables supported on Unistrut P-1000
New 4" conduit
Strut at lateral bracing
New 4" conduit elbow
Existing 6" drain pipe
Circuit 950
Circuit 951
Unistrut P-1000. Use ⅜" steel rods and two beam clamps. Catalog No. P-1850S
SECTION B-B
Scale: ¼"=1'-0"
NOTES
1. Cables on top of skid girder shall be clamped with existing cable clamps.
2. Remove structural L and install Type H cable on pipe and cable strut as shown.
3. Cut slots on top and bottom of skid girder for cables, Circuit 950 and Circuit 951.
4. Install intermediate cable and pipe struts of approved modification to support cables of diagonals, eye bars, and end posts.
Existing Type E Circuit 950
Existing Type M Circuit 951
Relocated skid girder
New 15 KV Type K Cir. 14
4" air line
4" water
Relocated 480 V. Type H Cir. 246 (Note 2)
480 V. Type H Cir. 247
New 480 V. Type L Cir. 244
New 480 V. Type L Cir. 245
Relocated curb and railing.
Cut all diaphragms for Type K cable installation in skid girder. See Sheet 120
Unistrut clamp P-1451-2"
Unistrut clamp P-2060-X (typical)
INTERIOR PANELS - PIERS YB2 TO E1
Type E Circuit 950
Type M Circuit 951
Cable raceway See Sheet 58
15 KV Type K Circuit 14
4" air line
4" water line
480 V. Type H Cir. 246
480 V. Type H Cir. 247
480 V. Type L Cir. 244
480 V. Type L Cir. 245
END PANELS AT PIERS YB3 AND YB4
Type M Circuit 951
15 KV Type K Circuit 14
For strut fastening detail, see Sheet 122
Cut diaphragm to accommodate Type K cable.
4" air line
4" water line
480 V. Type H Circuit 246
480 V. Type H Circuit 247
480 V. Type L Circuit 244
480 V. Type L Circuit 245
END PANELS AT PIER YB2
TYPICAL CABLE INSTALLATIONS
Scale: ¼"=1'-0"
SCALE IN INCHES
SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
ELECTRICAL - YERBA BUENA SPANS
MARK DATE DESCRIPTION BY CHK.
1 7-1-65 As built with revisions. cfc A.L.
REVISION
SCALE AS SHOWN
BRIDGE 33-25 34-03 34-04
SHEET No. 109
DRAWING C-4011-1099

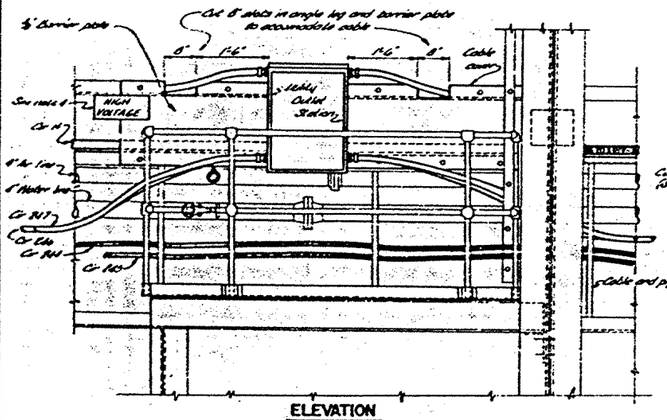


PLAN

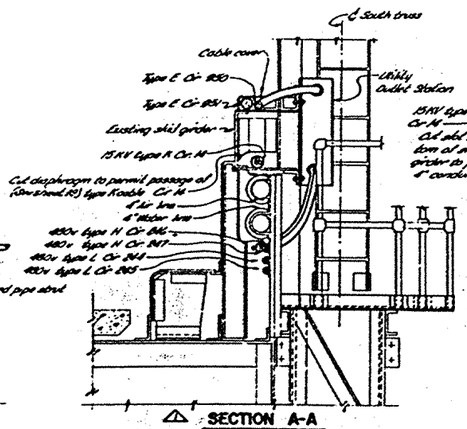


PLAN

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

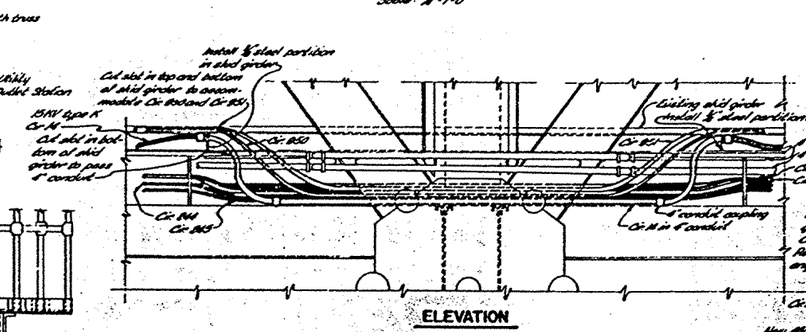


ELEVATION



△ SECTION A-A

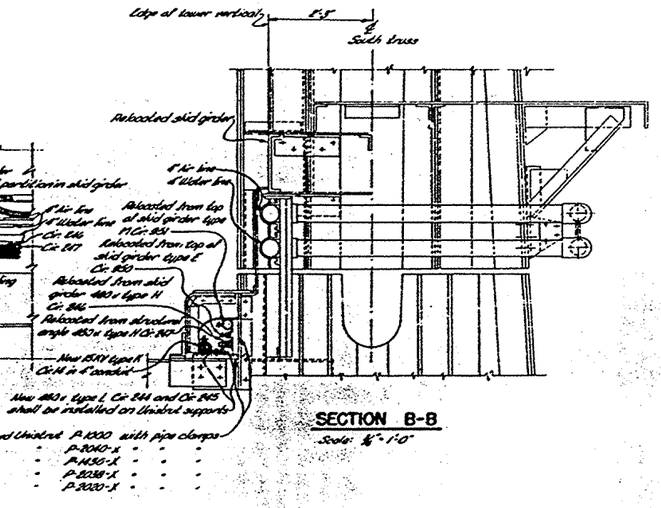
TYPICAL CABLE INSTALLATIONS AT PLATFORMS



ELEVATION

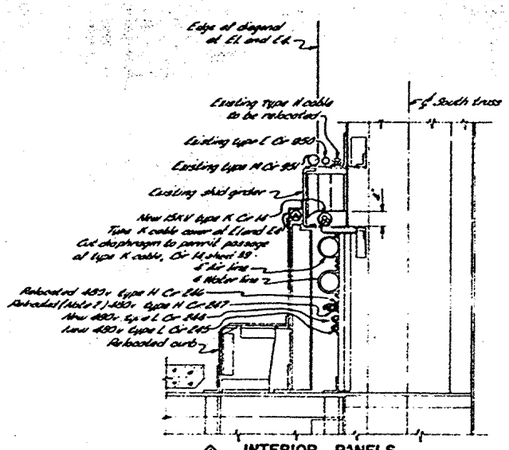
CABLE INSTALLATIONS AT PIERS E2 AND E3

Scale: 1/4" = 1'-0" (See Sheet 46)

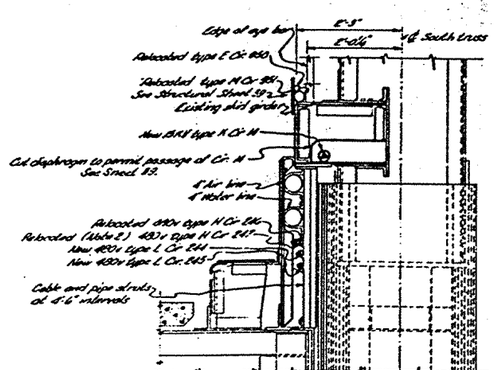


SECTION B-B

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



△ INTERIOR PANELS



△ EYE BAR PANELS

(L18, L17, L16, L15, LC5, LC4, and LC7-L30)

TYPICAL CABLE INSTALLATIONS

Scale 1/4" = 1'-0"

NOTES:

1. For sectional platforms, see Sheet 108.
2. Remove cable type H from structural L and install on cable and pipe strut as shown
3. For cable and pipe strut, see Sheet 122.
4. Contractor shall install 7"x16" porcelain enamelled steel "High Voltage" signs as identify the Skid Girder necessary signs must be fastened on the Skid Girder in all hazardous locations and generally every 100' and at platforms.

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

ELECTRICAL - CANTILEVER SPANS

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7.1.65	As built with revisions	J.L.S.	A.L.

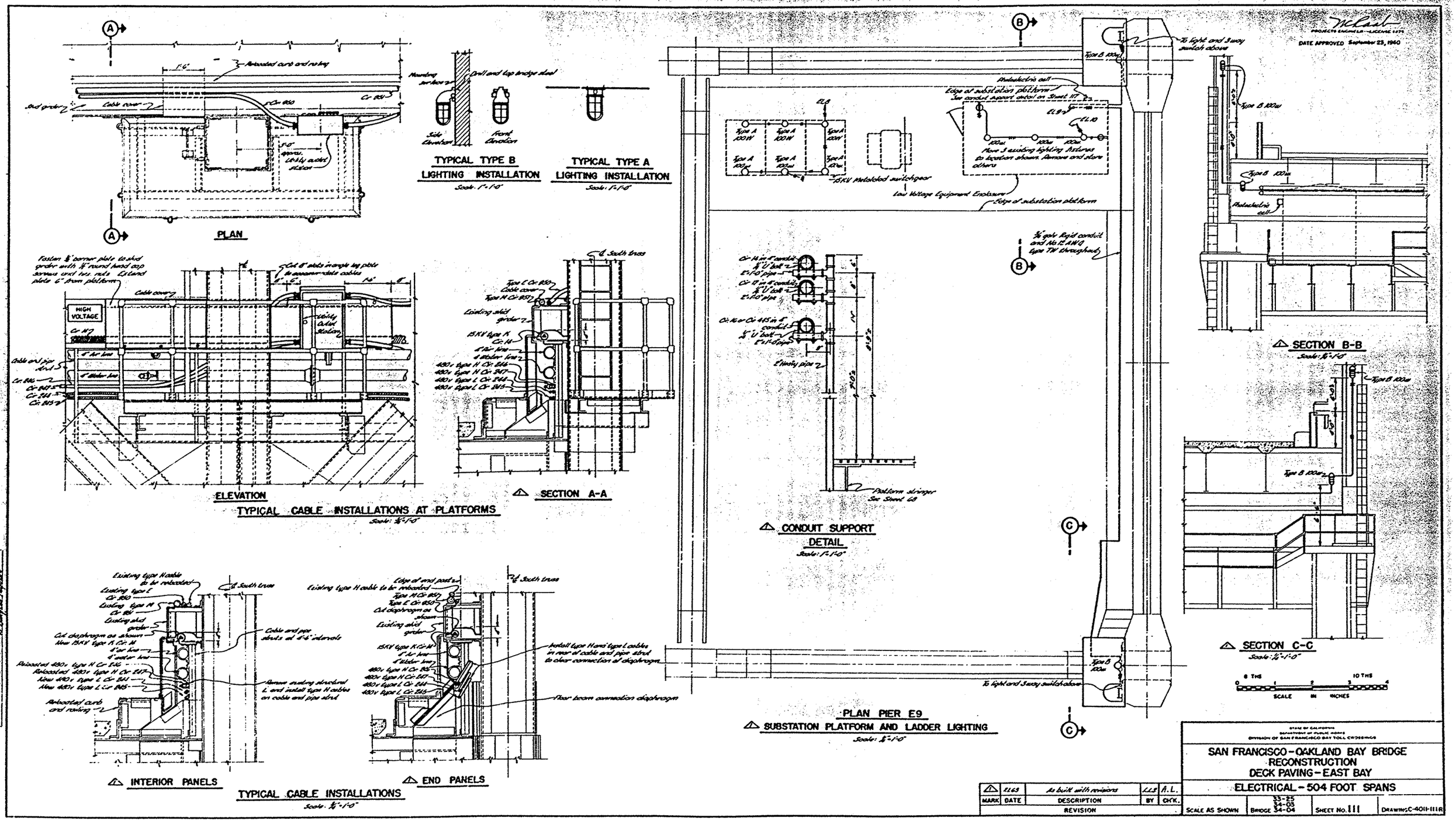
REVISION

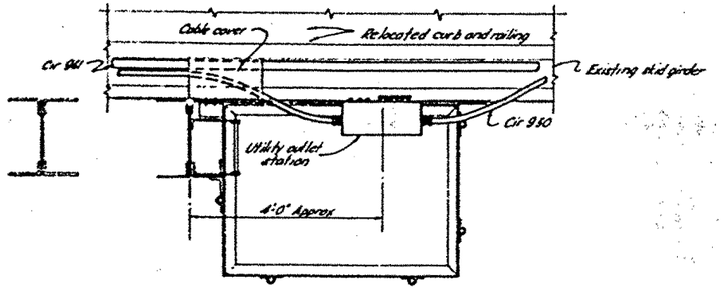
SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No 110 | DRAWING C-4011-110R

McHead
PROJECTS ENGINEER—LICENSE 1879
DATE APPROVED September 23, 1960

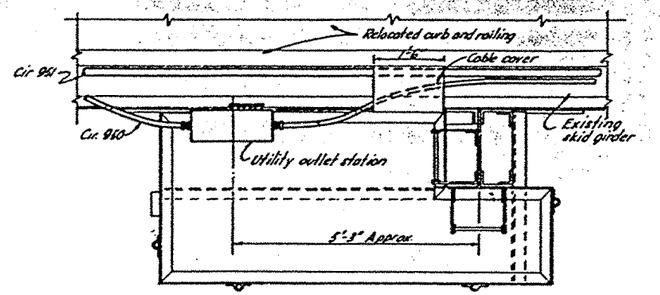
APPROVAL RECOMMENDED BY
M. A. Reichert
Supervising Electrical Engineer

DESIGN			
DETAILS			
QUANTITIES			
TRACED			

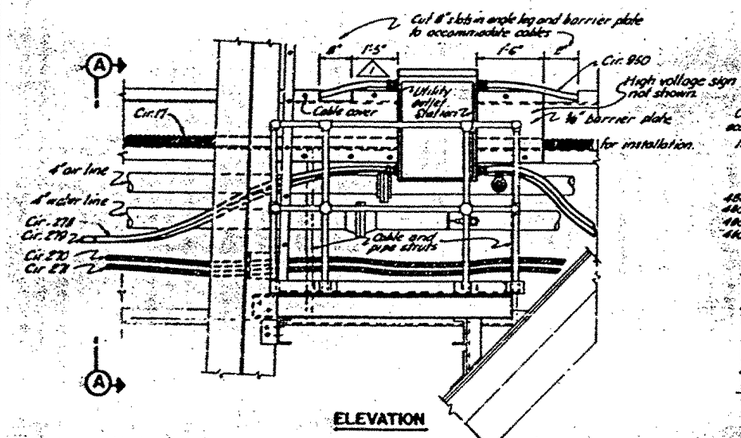

PLAN
TYPICAL TYPE B LIGHTING INSTALLATION
Scale: 1"=1'-0"
TYPICAL TYPE A LIGHTING INSTALLATION
Scale: 1"=1'-0"
ELEVATION
SECTION A-A
TYPICAL CABLE INSTALLATIONS AT PLATFORMS
Scale: 1/2"=1'-0"
CONDUIT SUPPORT DETAIL
Scale: 1"=1'-0"
SECTION B-B
Scale: 1/2"=1'-0"
SECTION C-C
Scale: 1/2"=1'-0"
PLAN PIER E9
SUBSTATION PLATFORM AND LADDER LIGHTING
Scale: 1/2"=1'-0"
INTERIOR PANELS
END PANELS
TYPICAL CABLE INSTALLATIONS
Scale: 1/2"=1'-0"
DATE APPROVED September 23, 1960
SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY
ELECTRICAL-504 FOOT SPANS
MARK DATE DESCRIPTION BY CH'K.
REVISION
SCALE AS SHOWN
BRIDGE 33-25 34-03 34-04
SHEET No. 111
DRAWING C-4011-111R



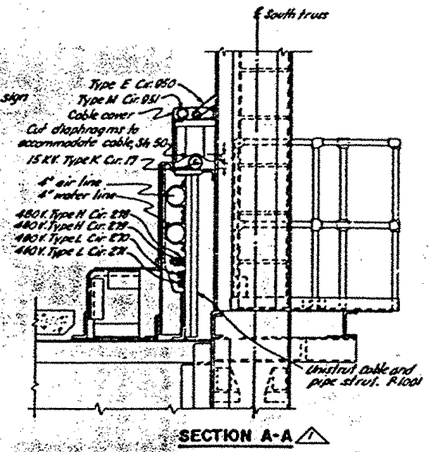
PLAN



PLAN



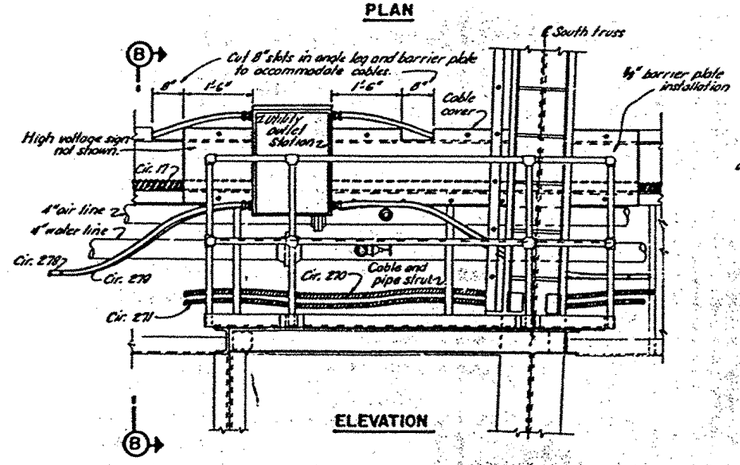
ELEVATION



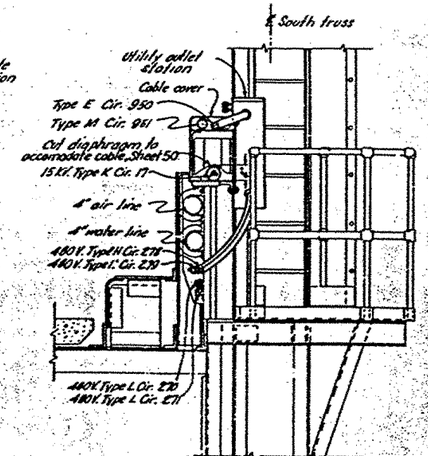
SECTION A-A △1

CABLE INSTALLATIONS AT PLATFORMS PIERS E12 - E22

Scale: 3/8" = 1'-0"



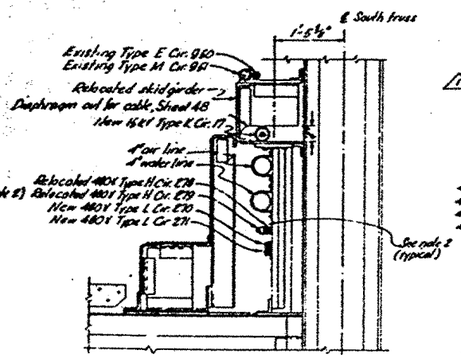
ELEVATION



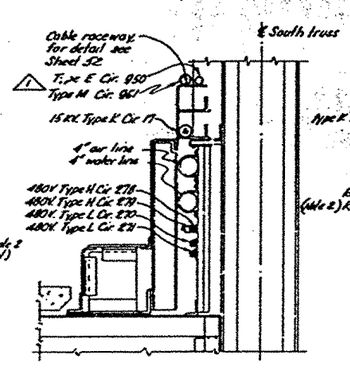
SECTION B-B △1

CABLE INSTALLATION AT PLATFORMS PIERS E9-E12 AND E22-E23

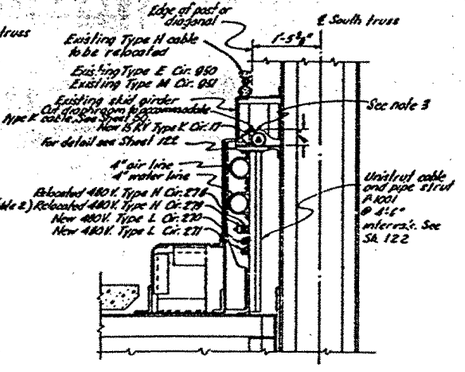
Scale: 3/8" = 1'-0"



INTERIOR PANELS PIERS E9-E11



END PANELS PIER E10



INTERIOR PANELS PIERS E11-E23 △1

TYPICAL CABLE INSTALLATIONS

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

NOTES

1. See sheet 108 "Electrical-General" for location of platforms.
2. Remove structural L and install type H cable on cable and pipe strut as shown.
3. Contractor shall note difficult installation conditions of Type K cable of diagonals and end post locations. After cutting the diaphragm extensions of structural members flanges, a calculated minimum 3" clearance for horizontal movement has been provided.
4. Contractor shall install intermediate cable and pipe struts of approved modification to support cables at diagonals and posts.

0 TONS — 10 TONS

0 1 2 3 4

SCALE IN INCHES

DATE APPROVED September 25, 1950

PROJECTS ENGINEER — LICENSE 1679

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

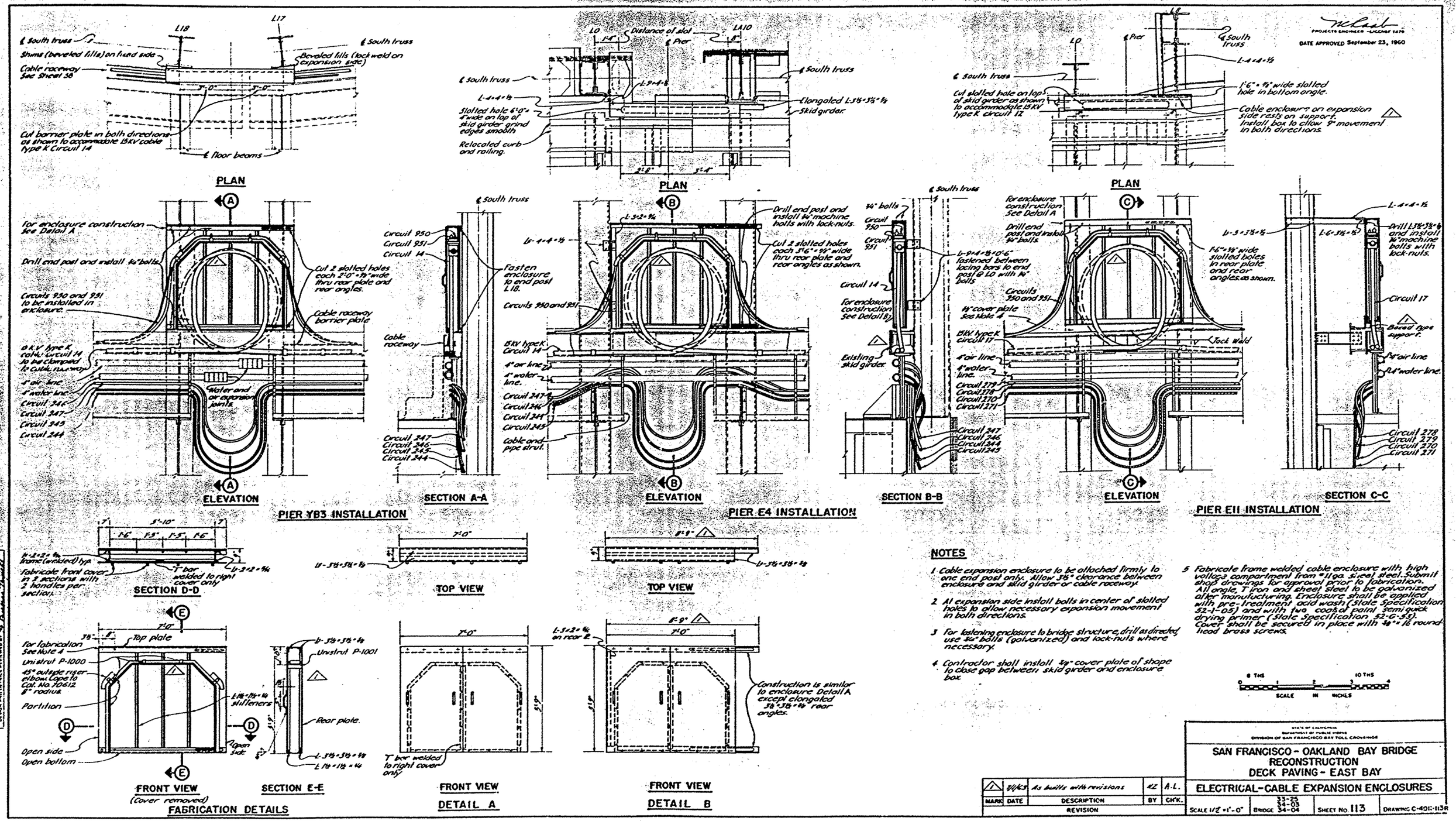
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING EAST BAY

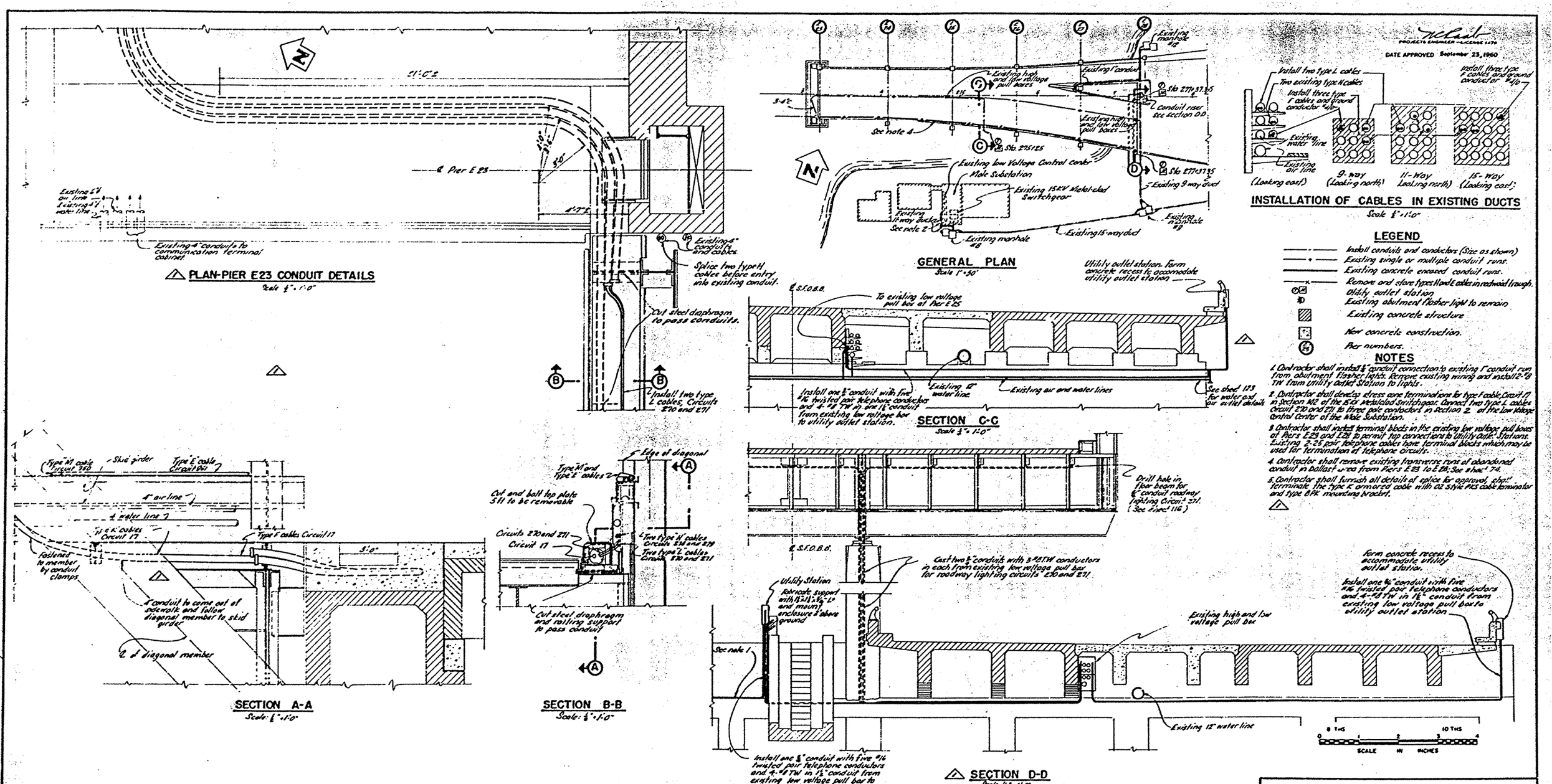
ELECTRICAL - 288 FOOT SPANS

MARK	DATE	DESCRIPTION	BY	CH'K.
△1	7/1/63	As built with revisions	K.C.	A.L.

REVISION

SCALE AS SHOWN | BRIDGE 33-23 34-03 34-04 | SHEET No. 112 | DRAWING C-4011-112R


PROJECT ENGINEER
DATE APPROVED September 23, 1960
PLAN
ELEVATION
SECTION A-A
PIER YB3 INSTALLATION
PLAN
ELEVATION
SECTION B-B
PIER E4 INSTALLATION
PLAN
ELEVATION
SECTION C-C
PIER E11 INSTALLATION
SECTION D-D
TOP VIEW
TOP VIEW
FRONT VIEW
(Cover removed)
SECTION E-E
FABRICATION DETAILS
FRONT VIEW
DETAIL A
FRONT VIEW
DETAIL B
NOTES
1. Cable expansion enclosure to be attached firmly to one end post only. Allow 3/8" clearance between enclosure and skid girder or cable raceway.
2. At expansion side install bolts in center of slotted holes to allow necessary expansion movement in both directions.
3. For fastening enclosure to bridge structure, drill as directed use 3/4" bolts (galvanized) and lock-nuts where necessary.
4. Contractor shall install 3/8" cover plate of shape to close gap between skid girder and enclosure box.
5. Fabricate frame welded cable enclosure with high voltage compartment from #11 ga. sheet steel. Submit shop drawings for approval prior to fabrication. All angle, T iron and sheet steel to be galvanized after manufacturing. Enclosure shall be applied with pre-treatment acid wash (State Specification 52-1-05) and with two coats of paint semi quick drying primer (State Specification 52-G-55). Cover shall be secured in place with 3/8" x 1 1/2 round head brass screws.
SCALE IN INCHES
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY
ELECTRICAL-CABLE EXPANSION ENCLOSURES
MARK DATE DESCRIPTION BY CH'K.
REVISION
As builts with revisions
SCALE 1/2" = 1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 113
DRAWING C-401-113R



PROJECT ENGINEER — LICENSE 1370

DATE APPROVED September 23, 1960

APPROVAL RECOMMENDED BY

DESIGN AND DETAILS REVIEWED BY

MARK	DATE	DESCRIPTION	BY	CH'K.
1	7-1-63	As built with revisions	A.F.S	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

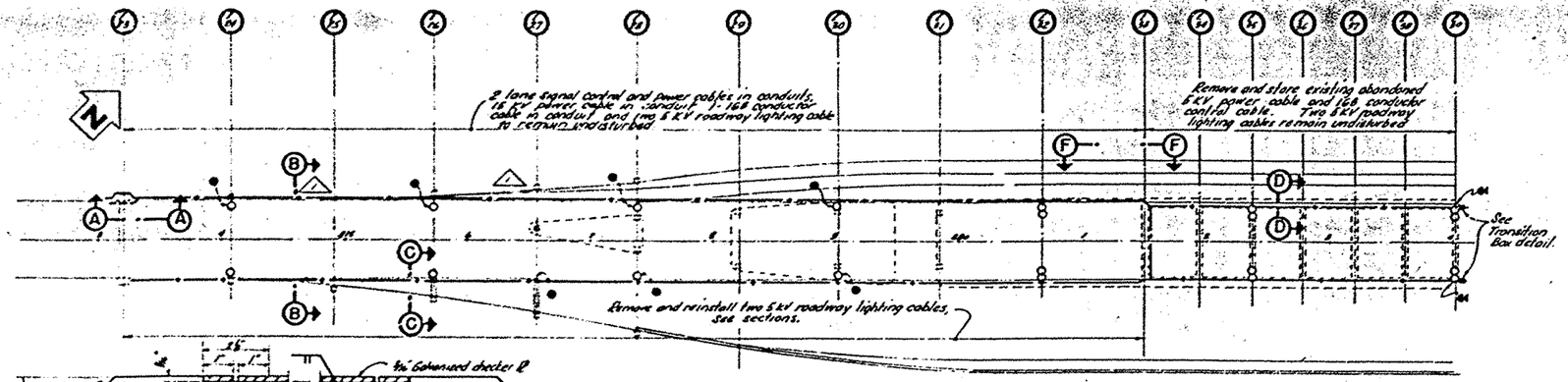
SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

ELECTRICAL - PIER E23 TO E28 INSTALLATIONS

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 114 | DRAWING C-401-114R

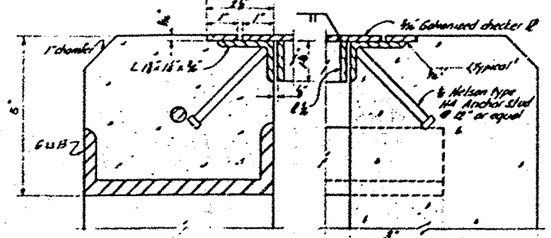
PROJECTS ENGINEER — LICENSE 1872

DATE APPROVED September 23, 1960

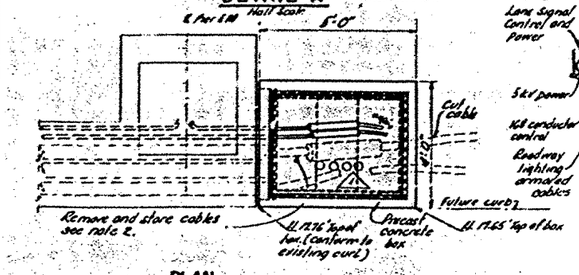


GENERAL PLAN - UPPER DECK

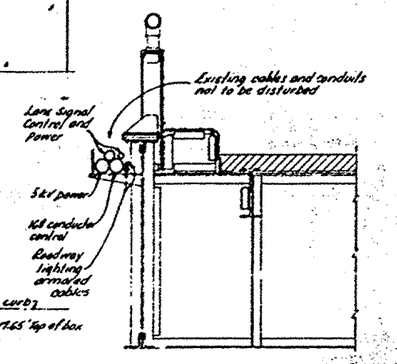
Scale 1" = 50'



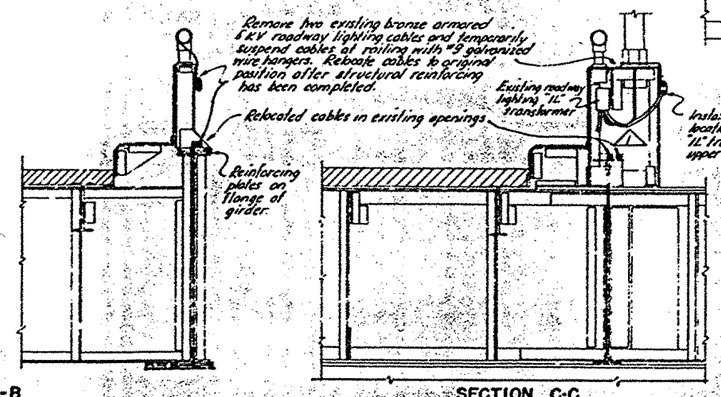
DETAIL A



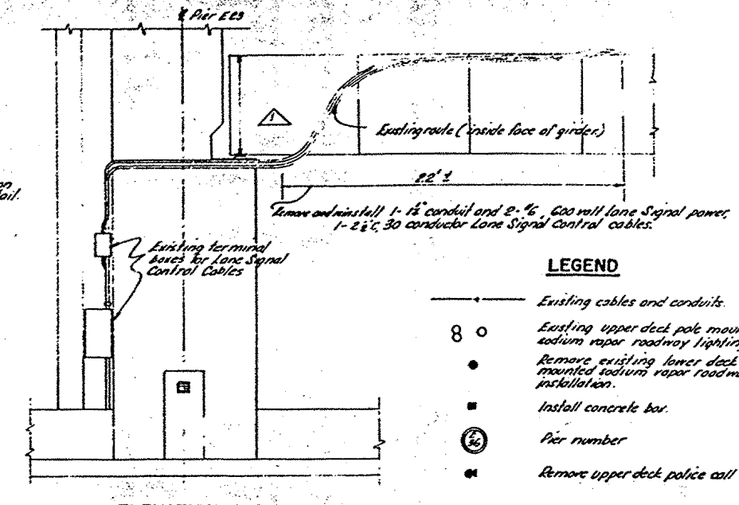
PLAN



SECTION B-B

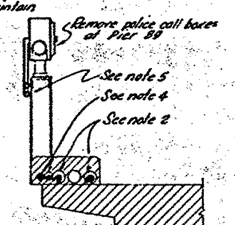


SECTION C-C



ELEVATION A-A

Scale ¼" = 1'-0"



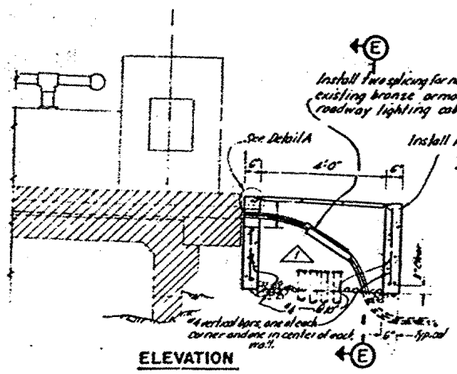
SECTION D-D

LEGEND

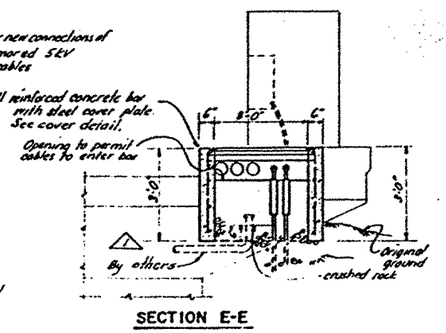
- Existing cables and conduits.
- Existing upper deck pole mounted sodium vapor roadway lighting luminaire.
- Remove existing lower deck bracket mounted sodium vapor roadway lighting installation.
- Install concrete box.
- Pier number
- Remove upper deck police call box.

NOTES

1. Contractor shall remove 4" conduit nipple from existing control and communication box; plug and seal opening.
2. Remove and store existing bronze armored 1-5KV, 4-conductor, power cable and 1-168 conductor control and communication cable from existing boxes at Pier 33 to 39 (See section H-H)
3. Remove and store existing short sections of 4" conduit.
4. Splicing chamber (filled with compound) to remain in place, (replace if in place).
5. Contractor shall not disturb the two (2) bronze armored, 1-conductor, roadway lighting cables.
6. Remove 3-4" conduit and associated wiring from existing box at Pier 33 to police call boxes at Pier 39. Remove police call boxes.
7. Relocate 1-1½" conduit and 600 volt Lane Signal power cable and 1-2½" conduit and 30 conductor Lane Signal control cable from top of longitudinal girder to north face and thence down to termination in existing manhole as shown.
8. Relocate 1½" conduit and associated cable from existing position to north face of girder as shown.
9. For measurement and payment, the 5KV, 4 conductor, bronze armored, power cable weighs 5.5 lbs/ft; the 600 volt, 168 conductor, bronze armored control and communication cable weighs 6.0 lbs/ft; and the 5KV 1-conductor, bronze armored, roadway lighting cable weighs 0.65 lbs/ft.

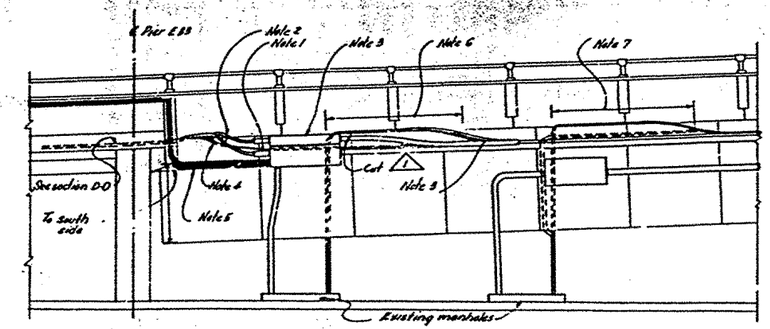


ELEVATION



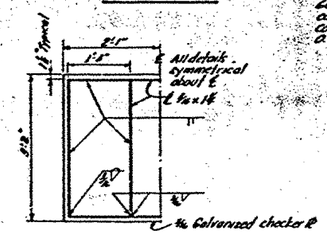
SECTION E-E

PIER E39 - TRANSITION BOX DETAILS



ELEVATION F-F

Scale: ¼" = 1'-0"



COVER DETAIL

Bottom view
Scale: ¼" = 1'-0"

0 8 THS 10 THS

SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

ELECTRICAL - PIER E 23 TO E 39 ALTERATIONS

MARK	DATE	DESCRIPTION	BY	CH'K.
1	9/1/63	As built with revisions.	K.C.	A.L.

REVISION

UNLESS NOTED SCALE 1/2" = 1'-0" | BRIDGE 33-25 34-03 34-04 | SHEET No. 115 | DRAWING C-401-115R

APPROVAL RECOMMENDED BY

APPROVED BY

1-NC			
2-NC			
3-NC			
4-NC			
5-NC			
6-NC			
7-NC			
8-NC			
9-NC			
10-NC			
11-NC			
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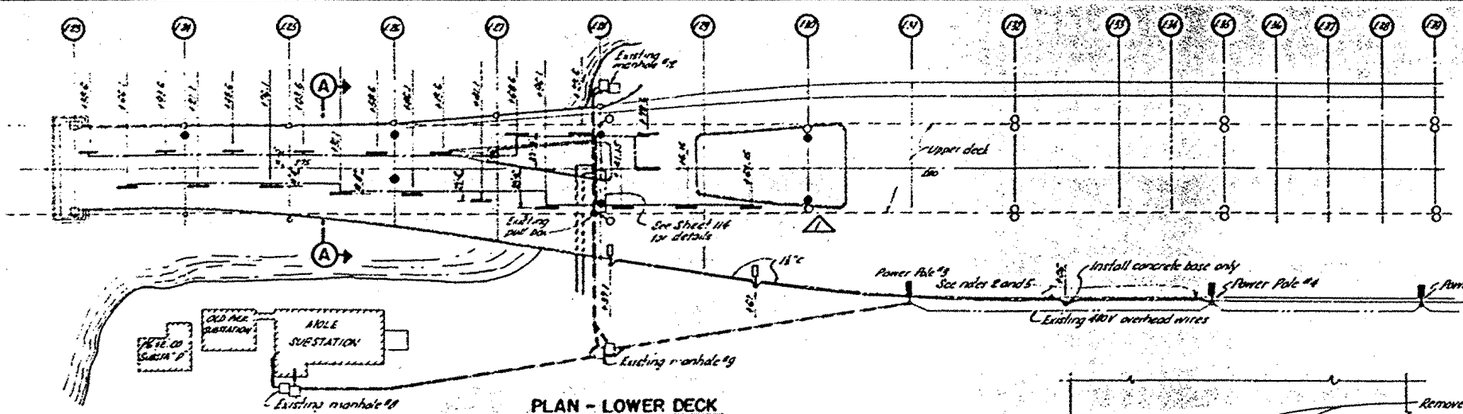
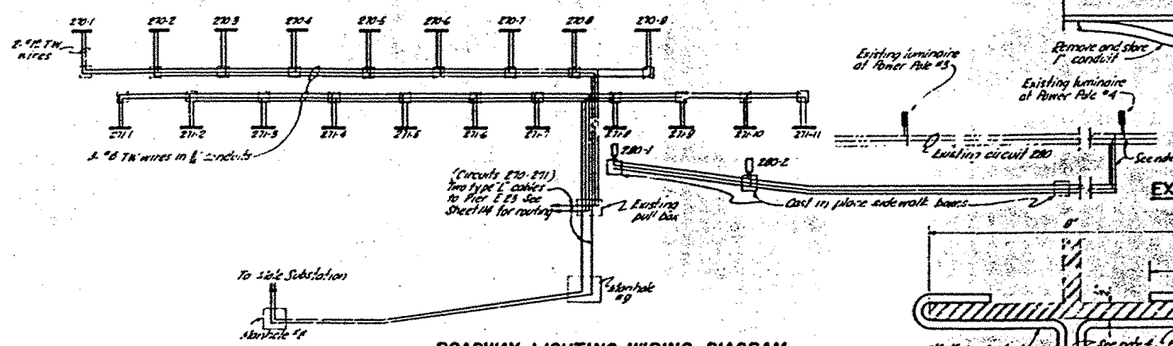
39-NC			

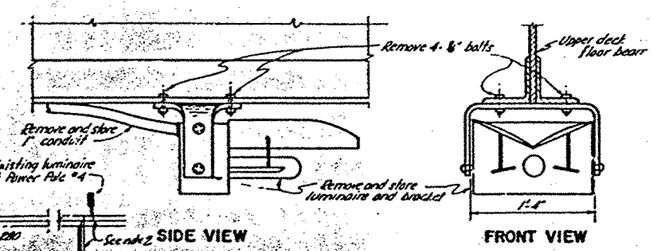


PLAN - LOWER DECK

Scale 1" = 50'

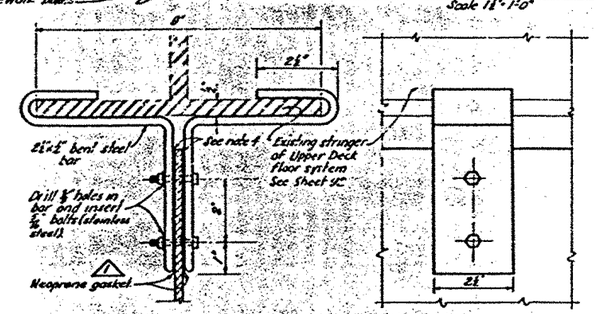


ROADWAY LIGHTING WIRING DIAGRAM



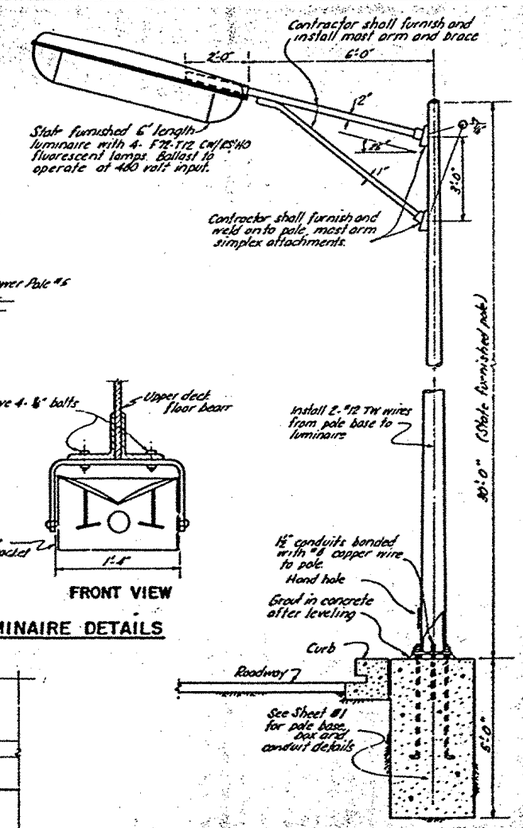
EXISTING SODIUM VAPOR LUMINAIRE DETAILS

Scale 1½" = 1'-0"

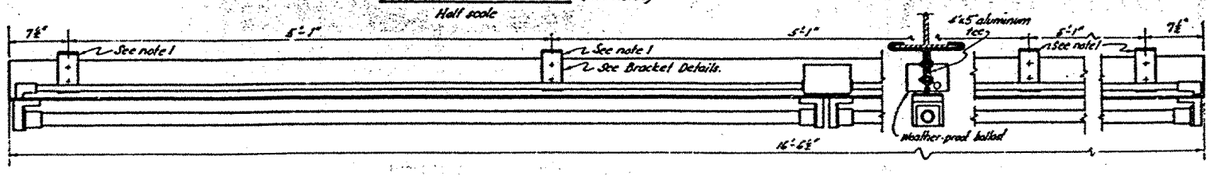


BRACKET DETAILS (See note 1)

Half scale

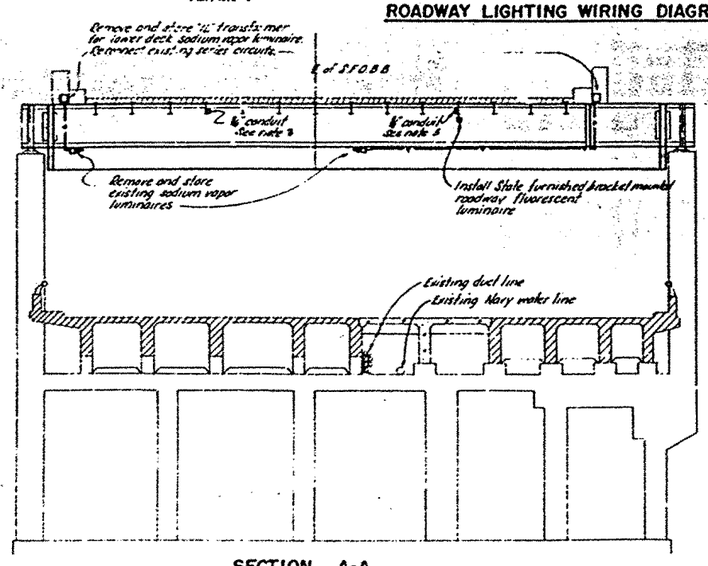


POLE MOUNTED ROADWAY FLUORESCENT LUMINAIRE



BRACKET MOUNTED ROADWAY FLUORESCENT LUMINAIRE

(State furnished)



SECTION A-A

Scale ¼" = 1'-0"

LEGEND

- Install ¾" galvanized rigid conduit (or size as noted)
- Existing conduit.
- Install conductors (size as noted)
- Existing overhead conductors.
- Existing underground raceway system
- Install bracket mounted roadway fluorescent luminaire
- Existing two compartment manhole.
- Remove existing bracket mounted Lower Deck sodium vapor luminaire.
- Position of Upper Deck double sodium vapor luminaires
- Position of Upper Deck single sodium vapor luminaire.
- Install pole mounted roadway fluorescent luminaire.
- Existing pole mounted roadway fluorescent luminaire.
- (P15) Pier number.

NOTES

1. Contractor shall furnish and install galvanized steel brackets for installation of State furnished bracket mounted fluorescent luminaires.
2. Contractor shall install 1½" conduit riser on Power Pole #4 from existing conduit in sidewalk. Install weather head, 3-#8 TW wires and tap connections to existing 480 V overhead roadway lighting circuits.
3. Contractor may drill clearance holes through steel floor beams only as specifically directed by the Engineer.
4. Contractor shall provide isolation barriers where dissimilar metals are installed and extensive corrosion might result, i.e. Mylar films or other specifically approved methods shall be considered as reasonable isolation.
5. For detail of conduit, box, and pole base installation in new curb, see sheet 81.

8 THS 0 1 2 3 4 10 THS

SCALE IN INCHES

DATE APPROVED September 23, 1960

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO–OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING – EAST BAY

ELECTRICAL – ROADWAY LIGHTING

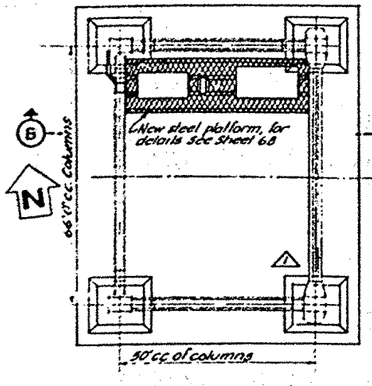
MARK	DATE	DESCRIPTION	BY	CH'K
1	7-1-65	As built with revisions.	cfc	A.L.

REVISION

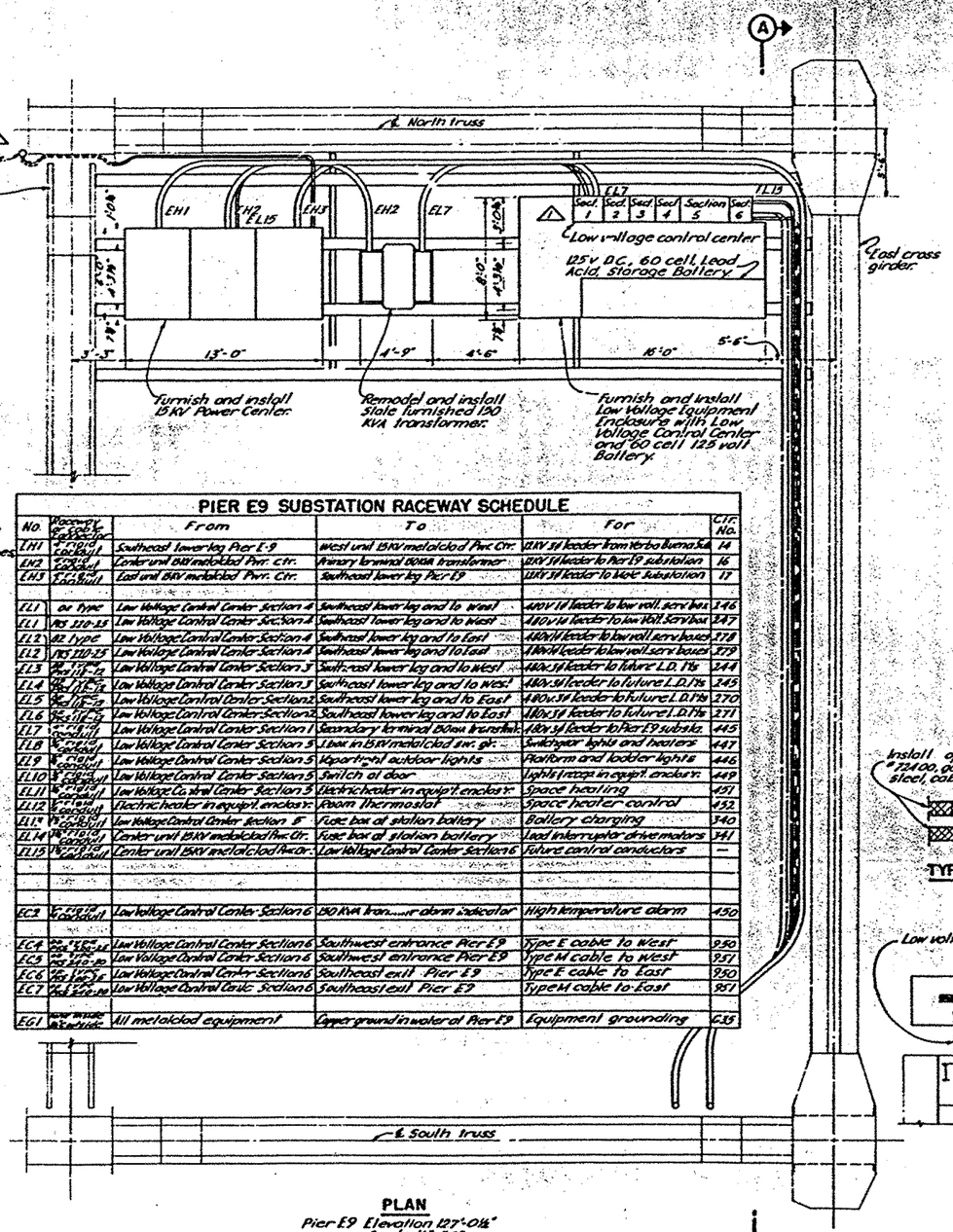
SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 116 | DRAWING C-40X-116R

PROJECT ENGINEER—LICENSE NO.

DATE APPROVED September 25, 1960



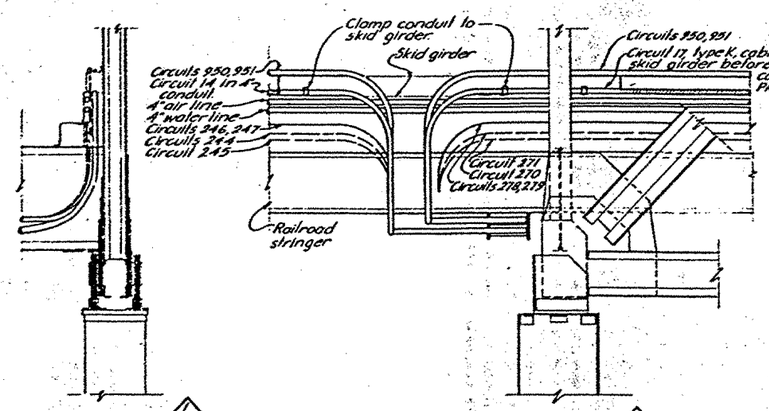
PIER E9 GENERAL PLAN
Scale: 1/4" = 1'-0"



PLAN
Pier E9 Elevation 127'-0 1/2"
Scale: 1/4" = 1'-0"

PIER E9 SUBSTATION RACEWAY SCHEDULE

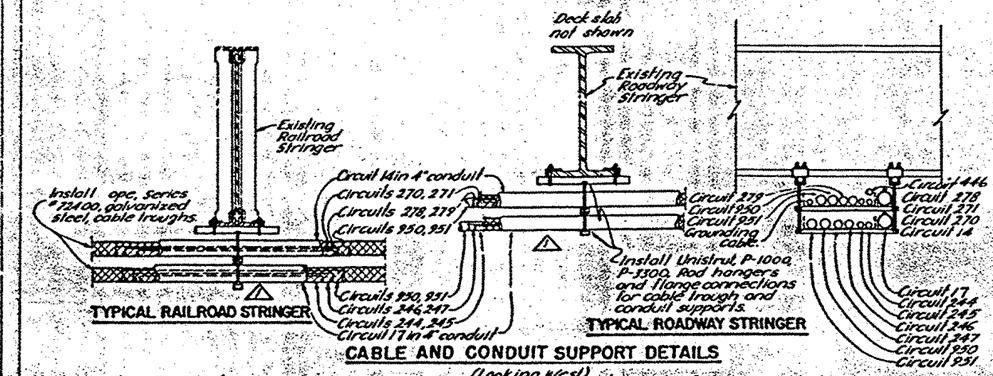
No.	Nominal Size Type Description	From	To	For	Ctr. No.
EH1	2" rigid Lead Sheath	Southeast tower leg Pier E-9	West unit 15KV metalclad Pwr. Ctr.	12KV 3φ feeder from Yerba Buena Sub.	14
EH2	5" rigid Lead Sheath	Center unit 15KV metalclad Pwr. Ctr.	Primary terminal 1000KVA transformer	12KV 3φ feeder to her E9 substation	16
EH3	5" rigid Lead Sheath	East unit 15KV metalclad Pwr. Ctr.	Southeast tower leg Pier E9	12KV 3φ feeder to West substation	17
EL1	or type	Low Voltage Control Center Section 4	Southeast tower leg and to west	480V 1φ feeder to low voll. serv. box	246
EL1	RS 110-15	Low Voltage Control Center Section 4	Southeast tower leg and to west	480v 1φ feeder to low Volt. Serv. box	247
EL2	RS type	Low Voltage Control Center Section 4	Southeast tower leg and to East	480V 1φ feeder to low voll. serv. boxes	278
EL2	RS 110-15	Low Voltage Control Center Section 4	Southeast tower leg and to East	480V 1φ feeder to low voll. serv. boxes	279
EL3	3/4" rigid conduit	Low Voltage Control Center Section 3	Southeast tower leg and to West	480v 3φ feeder to future L.D. Pts	244
EL4	3/4" rigid conduit	Low Voltage Control Center Section 3	Southeast tower leg and to West	480v 3φ feeder to future L.D. Pts	245
EL5	3/4" rigid conduit	Low Voltage Control Center Section 2	Southeast tower leg and to East	480v 3φ feeder to future L.D. Pts	270
EL6	3/4" rigid conduit	Low Voltage Control Center Section 2	Southeast tower leg and to East	480v 3φ feeder to future L.D. Pts	271
EL7	2" rigid conduit	Low Voltage Control Center Section 1	Secondary terminal 80kva transfmr.	480v 3φ feeder to Pier E9 substa.	445
EL8	3/4" rigid conduit	Low Voltage Control Center Section 5	1 box in 15 KV metalclad sw. gr.	Switchgear lights and heaters	447
EL9	3/4" rigid conduit	Low Voltage Control Center Section 5	1 portable outdoor lights	Platform and ladder lights	446
EL10	3/4" rigid conduit	Low Voltage Control Center Section 5	Switch at door	Lights in equip't. enclosr.	449
EL11	3/4" rigid conduit	Low Voltage Control Center Section 3	Electric heater in equip't. enclosr.	Space heating	451
EL12	3/4" rigid conduit	Electric heater in equip't. enclosr.	Room thermostat	Space heater control	452
EL13	3/4" rigid conduit	Low Voltage Control Center Section 6	Fuse box at station battery	Battery charging	340
EL14	3/4" rigid conduit	Center unit 15KV metalclad Pwr. Ctr.	Fuse box at station battery	Lead interrupter drive motors	341
EL15	3/4" rigid conduit	Center unit 15KV metalclad Pwr. Ctr.	Low Voltage Control Center Section 6	Future control conductors	—
EC2	3/4" rigid conduit	Low Voltage Control Center Section 6	150 KVA Transformer alarm indicator	High temperature alarm	450
EC4	3/4" rigid conduit	Low Voltage Control Center Section 6	Southwest entrance Pier E9	Type E cable to West	950
EC5	3/4" rigid conduit	Low Voltage Control Center Section 6	Southwest entrance Pier E9	Type M cable to West	951
EC6	3/4" rigid conduit	Low Voltage Control Center Section 6	Southeast exit Pier E9	Type E cable to East	950
EC7	3/4" rigid conduit	Low Voltage Control Center Section 6	Southeast exit Pier E9	Type M cable to East	951
EG1	bare stranded copper	All metalclad equipment	Copper ground in water at Pier E9	Equipment grounding	635



WEST ELEVATION

SOUTH ELEVATION

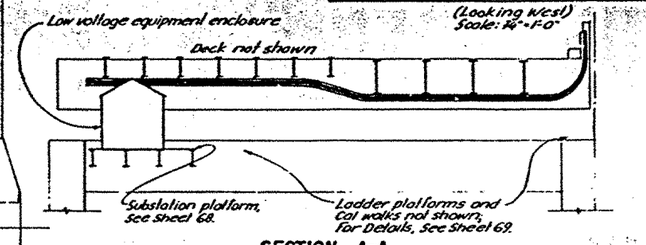
PIER E9 SOUTHEAST COLUMN DETAIL
Scale: 1/4" = 1'-0"



TYPICAL RAILROAD STRINGER

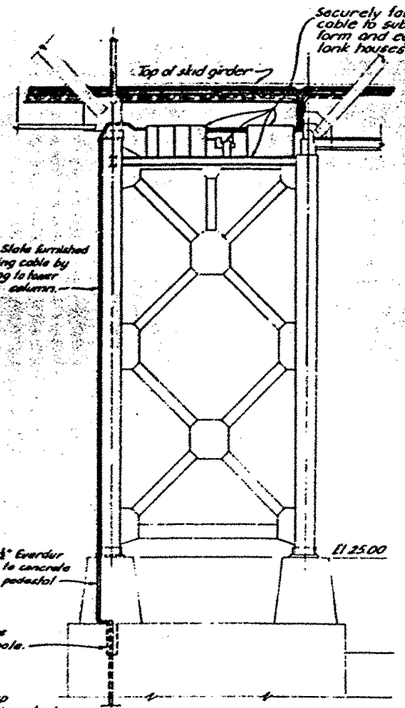
TYPICAL ROADWAY STRINGER

CABLE AND CONDUIT SUPPORT DETAILS



(Looking West)
Scale: 1/4" = 1'-0"

SECTION A-A
Scale: 1/4" = 1'-0"



SECTION B-B
Scale: 1/4" = 1'-0"

0 THS 10 THS
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

ELECTRICAL-PIER E9 SUBSTATION INSTALLATION

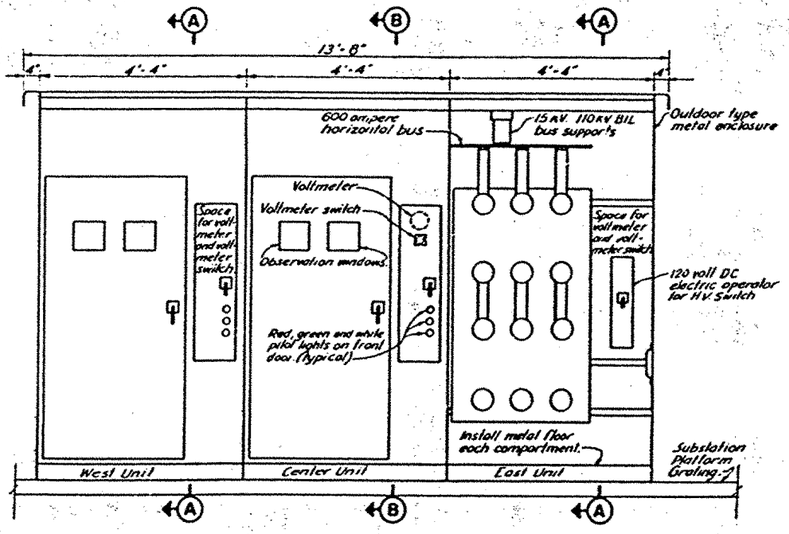
MARK	DATE	DESCRIPTION	BY	CH'K.
1	7-1-63	As built with revisions	c/c	A.L.

REVISION

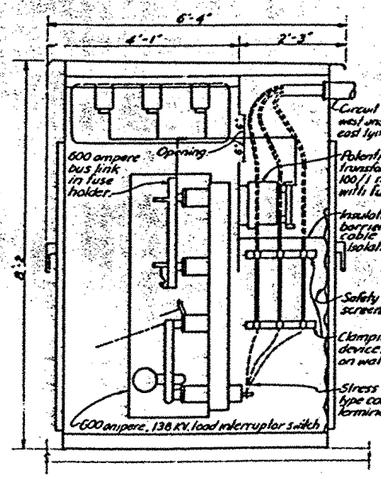
SCALE AS SHOWN	BRIDGE 33-25 34-03 34-04	SHEET No. 117	DRAWING C-4011-117R

APPROVAL RECOMMENDED BY:

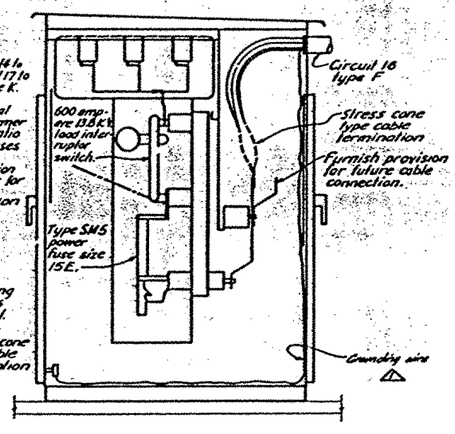
DESIGN
DRAWN
CHECKED
TRACED
DESIGN, AND TRACING & CHECKED BY



FRONT ELEVATION

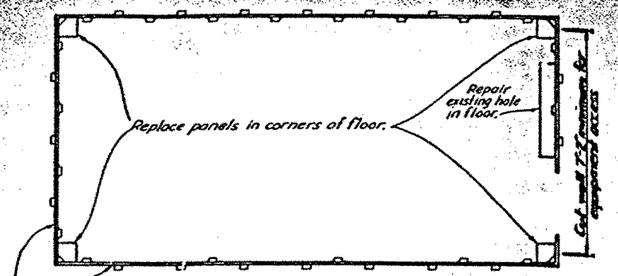


SECTION A-A
(See note 3)



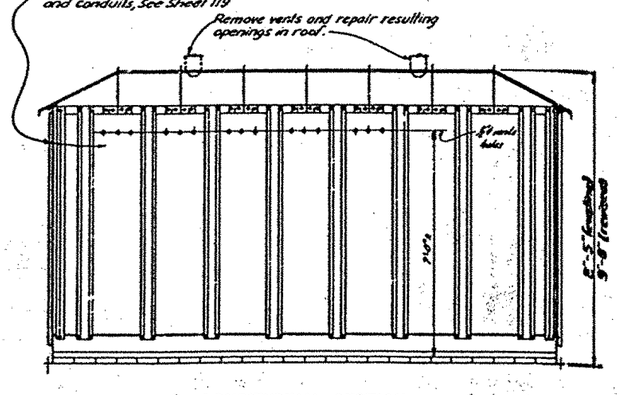
SECTION B-B △

15 KV METALCLAD POWER CENTER
Scale: 1/2" = 1'-0"

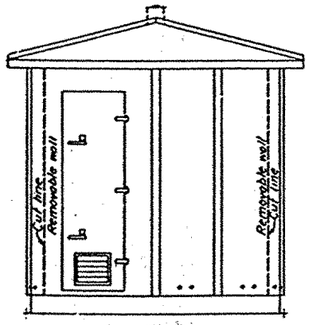


△ PLAN
Scale: 1/2" = 1'-0"

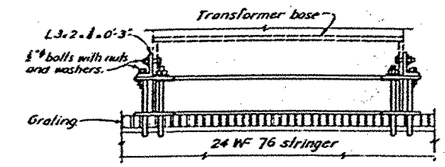
Note:
Reinstall removeable wall with joints of weather-proof construction. Joint construction details shall be such as to allow for easy removal of wall in the future. Painting, as specified, shall be done before insertion of removable wall



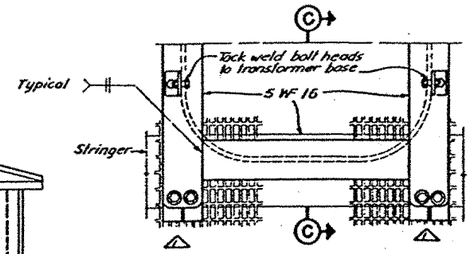
△ LONGITUDINAL SECTION
Scale: 1/2" = 1'-0"



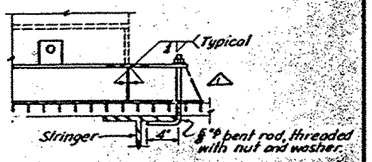
WEST ELEVATION
Scale: 1/2" = 1'-0"



△ ELEVATION



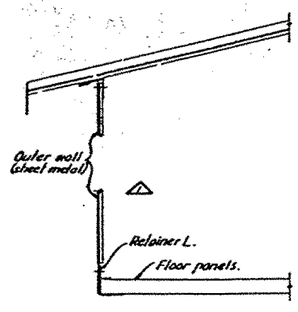
PLAN



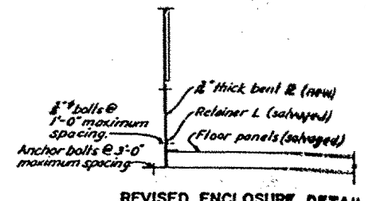
SECTION C-C

TRANSFORMER ANCHOR DETAILS
Scale: 1 1/2" = 1'-0"

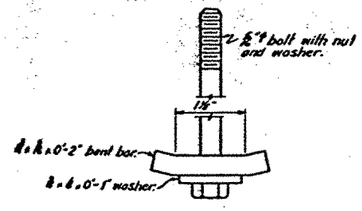
1. Repair all existing holes in surface of weather-proof equipment enclosure that will not be used for equipment installation.
2. All equipment enclosure repairs and alterations shall be made so as to insure weather-proof construction.
3. Potential transformer shall be installed in East Unit only, and provisions for future installations shall be made for West Unit. Cable isolation shown is illustrative for both units. Actual cable entries should be in space behind electric operator for H.V. switch.
4. Contractor shall supply four (4) spare Sim-5 fuseholders for 15 KV Metalclad Power Center.



EXISTING ENCLOSURE DETAILS
Scale: 1 1/2" = 1'-0"



REVISED ENCLOSURE DETAIL
Scale: 1 1/2" = 1'-0"



ENCLOSURE ANCHOR DETAIL
Scale: Full size

WEATHER-PROOF EQUIPMENT ENCLOSURE

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

ELECTRICAL-PIER E9 SUBSTATION EQUIPMENT

MARK	DATE	DESCRIPTION	BY	CHK.
△	7.1.63	As built with revisions	L.L.S.	A.L.

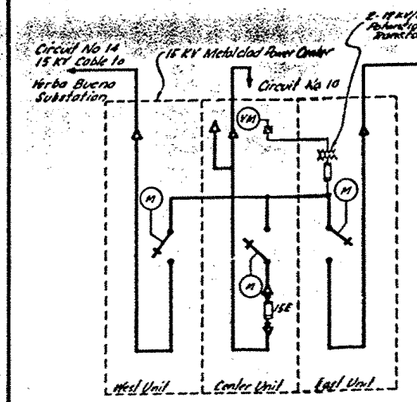
REVISION

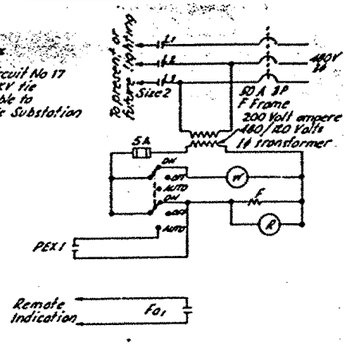
SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 118 | DRAWING C-4011-118R

PROJECT ENGINEER — LICENSE 1610
DATE APPROVED September 23, 1960

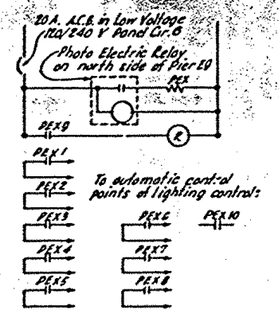
APPROVAL RECOMMENDED BY
U.S. Navy Electrical Engineer
LICENSE 1521

DESIGN			
DETAILS			
QUANTITIES			
CHECKED			
DESIGN AND DETAILS REVIEWED BY			

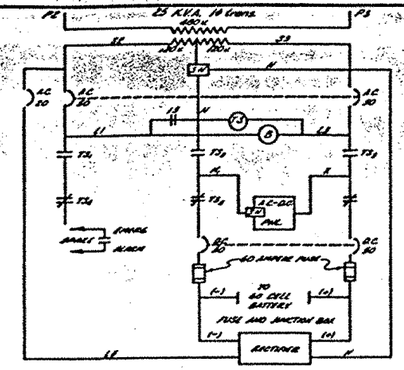




TYPICAL FLUORESCENT LIGHTS CONTROL DIAGRAM



PHOTOELECTRIC CELL CONTROL DIAGRAM



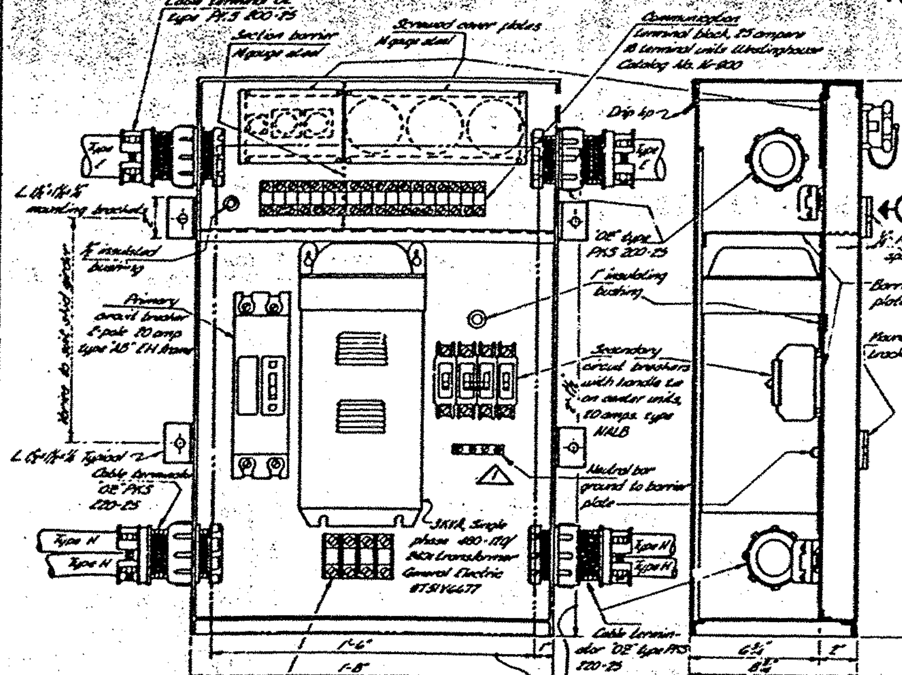
CIRCUIT SCHEDULE

NO.	FROM	TO	FOR	DESCRIPTION	TYPE	FURN. BY
14	HV Junction box, Pier YB1	Pier E9 substation 15KV Power Center	Bridge power cable to YB sub	3-1c. #1/0 AWG 15 KV. Δ	K	Contractor
16	Center unit Pier E9 substa 15KV Pwr. Ctr.	Primary terminal - 150KVA sta transformer	Feeder	3-1c. #1/0 AWG 15KV Δ	K	"
17	Pier E9 substation 15KV Power Center	Pier E23	Bridge power cable to Pier E23	3-1c. #1/0 AWG 15KV Δ	K	"
17a	" E23	Main substation 15KV switchgear	" " " " Main sub	3-1c #1/0 AWG 15KV	F	"
244	Roadway pull box near YB1	Pier E9 Substation low voltage control center	Lower Deck lighting south curb board	1-3c #6 AWG 600v	L	Contractor
245	" " " " "	" " " " " " "	" " " " " "	1-3c #6 AWG 600v	L	"
246	" " " " "	" " " " " " "	Utility stations " " " "	1-2c #6 AWG 600v Δ	H ■	State
247	" " " " "	" " " " " " "	" " " " " "	1-2c #6 AWG 600v Δ	H ■	"
270	Pier E9 Substation low voltage control center	Main substation " " " " "	Lower Deck lighting south curb board	1-3c #6 AWG 600v	L ¶	Contractor
271	" " " " " " "	" " " " " " "	" " " " " "	1-3c #6 AWG 600v	L ¶	
278	" " " " " " "	Pier E23	Utility stations " " " "	1-2c #6 AWG 600v	H ■	State
279	" " " " " " "	" "	" " " " " "	1-2c #6 AWG 600v	H ■	"
340	Pier E9 Substation low voltage control center	Fuse box at station battery	Battery charging	1-1c #6 AWG Building wire	TW	Contractor
341	Pier E9 " 12KV Switchgear	" " " " "	Load interrupter arms motors	2-1c #6 AWG " "	TW	"
445	Pier E9 Substation low voltage control center	Secondary terminals 150KVA sta transformer	Feeder	3-1c #1/0 AWG Building wire	TW	Contractor
446	3C Panelboard	Junction box at autoscale platform	Scanner ladder and platform lights	3-1c #12 AWG " "	TW	"
447	" "	" " in 15KV metalclad switchgear	Lights and heaters inside switchgear	3-1c #12 AWG " "	TW	"
448	Pier E9 Substation low voltage control center	Photo electric cell	Roadway lighting control	3-1c #12 AWG " "	TW	"
449	" " " " " " "	Junction box in low voltage control center enclosure	Lights and receptacles	3-1c #12 AWG	TW	"
450	" " " " " " "	150 KVA transformer alarm indicator	High temperature alarm	2-1c #12 AWG	TW	"
451	" " " " " " "	Electric heater in low voltage control center enclosure	Space heating	1-1c #12 AWG	TW	"
850	Pier YB1	Pier E23 terminal cabinet	Signal cable	1-18c	E ✱	State
851	Pier YB1	" " " "	Telephone cable	1-51 pair	M ✱	"
635	Pier E9 Substation equipment	Copper ground in water at Pier E9	Equipment ground	1-1c 1000 MCM (insulated)	-	State
636	Skid girder Pier E23	15KV metalclad switchgear Main substation	Ground	1-1c #4/0 bare copper		"

■ Reloads existing cable presently in place. Complete runs with cable obtained from warehouse near toll plaza as directed by the Engineer.

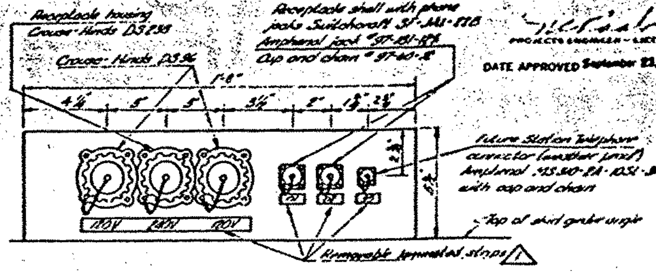
✱ Cable to run in and out of Low Voltage Enclosure at Pier E9 substation

¶ See Sheet 116 for Circuit taps for roadway lighting between Pier E23 and E30



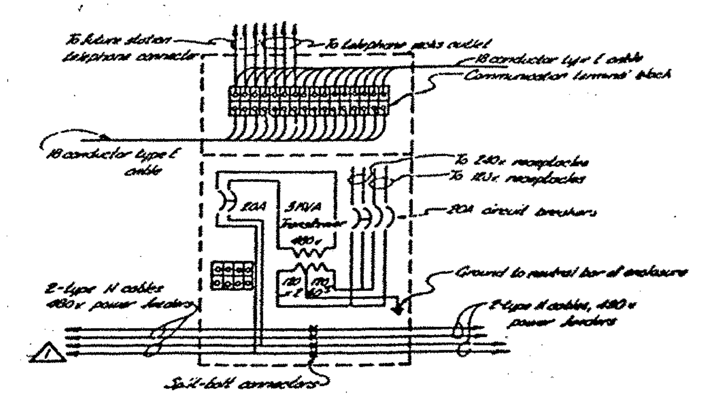
UTILITY OUTLET STATION

Scale: 3"=1'-0"



ELEVATION A-A

Scale: 3"=1'-0"



WIRING DIAGRAM

PROJECTS ENGINEER - LICENSE 1475

DATE APPROVED September 23, 1960

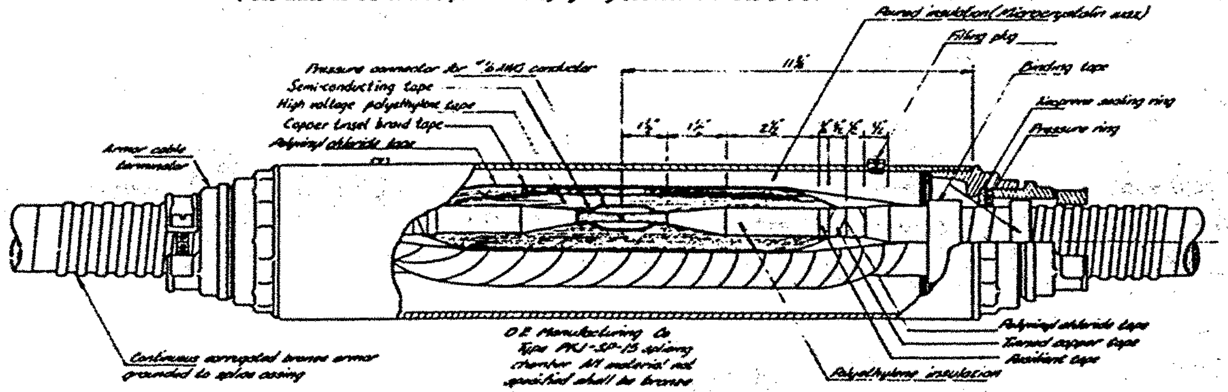
NOTES:

Utility Outlet Station

1. Fabricate enclosure with angle frame and 12 gage sheet steel. Hot dip galvanize after fabrication.
2. Enclosure shall be furnished with a hinged access door. Install a Corbin No. 15766 lock in opening handle with keying identical with existing utility outlet stations on West Suspension Spans.
3. Install gaskets on door opening to keep box interior free of all dirt and water.
4. Install water tight neoprene gasket at cable entrances and at power and telephone outlets.
5. Mount all devices on threaded studs or with threaded fastenings and nuts welded to rear barrier plate to permit future removal from front of enclosure.

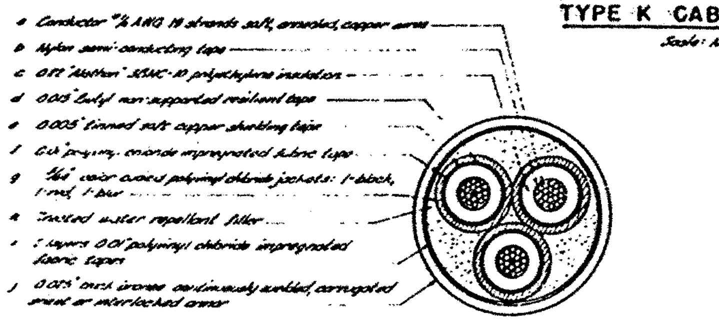
Cable Installation:

1. Contractor shall furnish and install porcelain-enamel "High Voltage" signs at one hundred foot intervals on the south side of the skid girder enclosing the type K, 15KV cable and at all platforms.
2. Type L cable splice shall be OZ Electrical Manufacturing Co type PKJ-SP-5 watertight compound type.



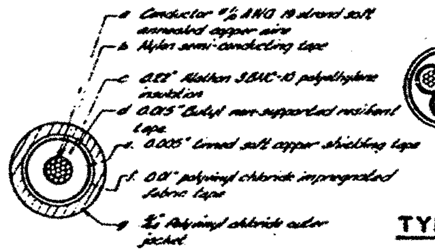
TYPE K CABLE SPLICE

Scale: None



TYPE K

(Operating voltage shall be 12,000 volts)

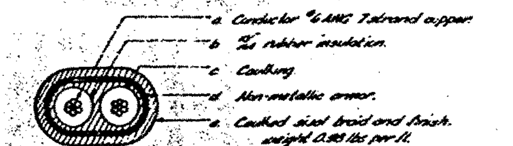


TYPE F

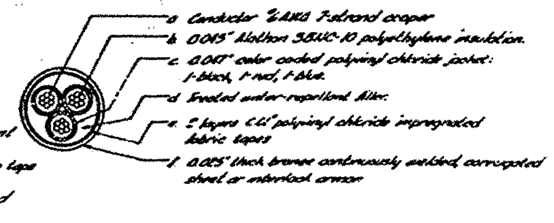
(Operating voltage shall be 12,000 volts)

15 KV POWER CABLES

Scale Full size



TYPE H

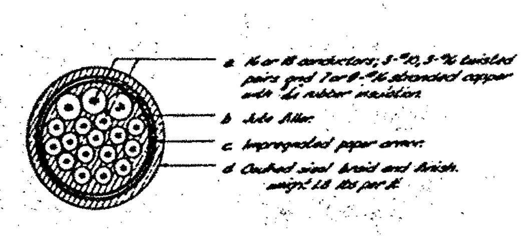


TYPE L

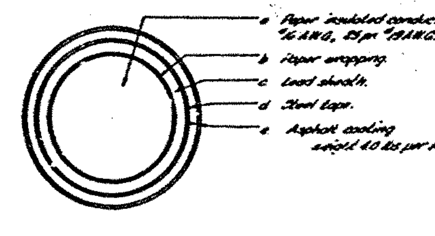
(Operating voltage shall be 480 volts)

480 VOLT CABLES

Scale: Full size



TYPE E



TYPE M

SIGNAL AND COMMUNICATION CABLES

Scale: Full size

SCALE IN INCHES

MARK	DATE	DESCRIPTION	BY	CH'K.
△1	7-1-63	As built with revisions	cfc	A.L.
		REVISION		

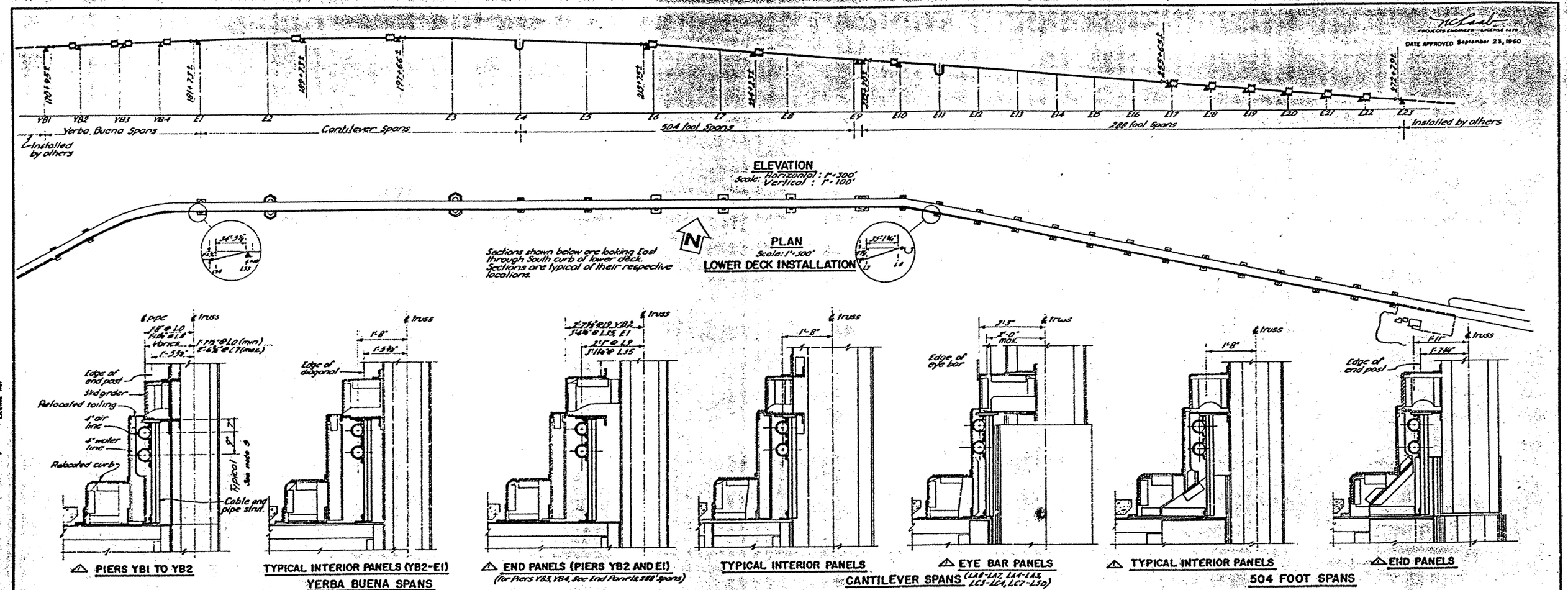
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION DECK PAVING - EAST BAY

ELECTRICAL - CABLES AND CIRCUIT SCHEDULE

SCALE | BRIDGE 33-25, 34-03, 34-04 | SHEET No 120 | DRAWING C-401I-120R

APPROVAL RECOMMENDED BY



GENERAL NOTES

1. Install automatic air relief traps at high points of water line and automatic moisture traps at low points of air line.
2. Install strainers upstream of all air and moisture traps, automatic valves, gauges and other delicate equipment. Clean all strainers after flushing and testing of pipe lines.
3. Install flange unions at 100' maximum intervals and as shown on drawings.
4. Install air and water outlets at all platforms and midway between platforms where platform spacing exceeds 200'.
5. Furnish and install cable and pipe struts at intervals not to exceed 16' and within 12" of all fittings, unless otherwise shown on drawings.
6. Hot dip galvanize welded air line fittings, all pipe clamps, hangers and other pipe line accessories after fabrication.
7. Install welded anchors on both air and water lines as shown in above elevation and sheet 122.
8. Install new Lunkenhelmer No. 1428 gate valves on all ferrous piping, Lunkenhelmer No. 2140 Globe valves on all non-ferrous piping and water line outlets, and Lunkenhelmer No. 1571 air cocks on all air line outlets.
9. Install pipes vertically parallel to roadway.

LEGEND

- Air and water line route.
- Strainer
- Union
- Slope down
- Gate valve
- Globe valve
- Air relief trap
- Moisture trap
- Threaded joint
- Flanged joint
- Welded joint
- Anchor
- Bellows type expansion joint
- Rotary type expansion joint
- Alignment guide.

8 THS 10 THS
0 1 2 3 4
SCALE IN INCHES

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

MECHANICAL-GENERAL

MARK	DATE	DESCRIPTION	BY	CH'K.
1	2.1.69	As built with revisions	J.L.S.	A.L.

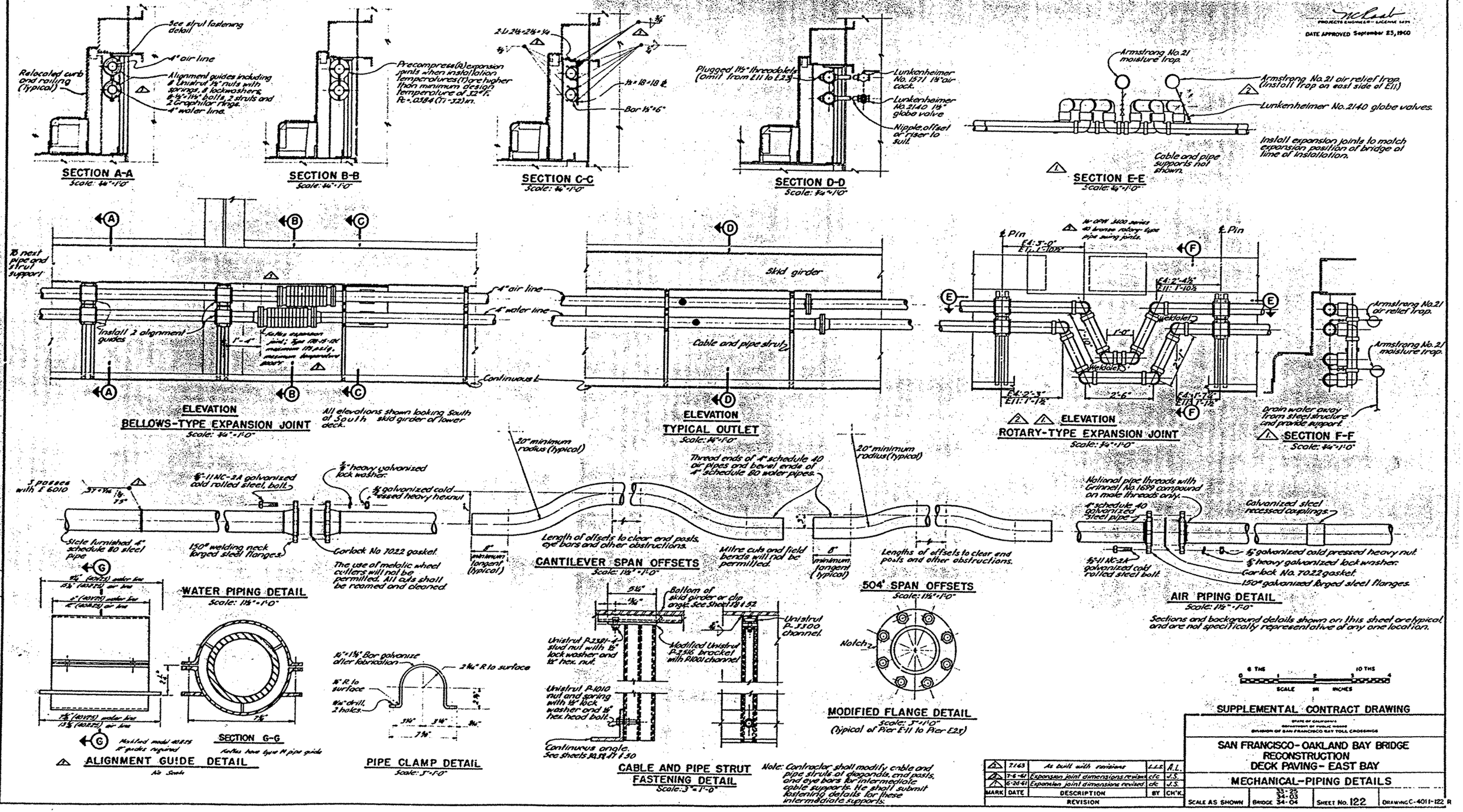
REVISION

UNLESS NOTED SCALE 3/4" = 1'-0"
BRIDGE 33-26 34-03 34-04
SHEET No. 121
DRAWING C-4011-121R

APPROVAL RECOMMENDED BY

PROJECTS ENGINEER - LICENSE 1474

DATE APPROVED September 25, 1960



SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

MECHANICAL-PIPING DETAILS

MARK	DATE	DESCRIPTION	BY	CH'K.
2	2-1-63	As built with revisions	J.L.S.	A.L.
1	7-6-61	Expansion joint dimensions revised	c.f.c.	J.S.
1	6-26-61	Expansion joint dimensions revised	c.f.c.	J.S.

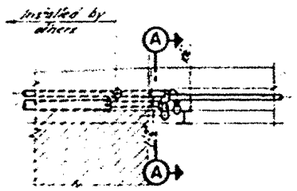
REVISION

SCALE AS SHOWN | BRIDGE 33-25 34-03 34-04 | SHEET No. 122 | DRAWING C-4011-122 R

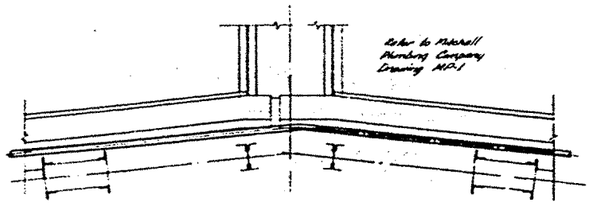
APPROVAL RECOMMENDED BY

DESIGN	
DETAIL	
CHECKED	
DRAWING	
TRACED	
DRAWING AND DETAILS REVIEWED BY	

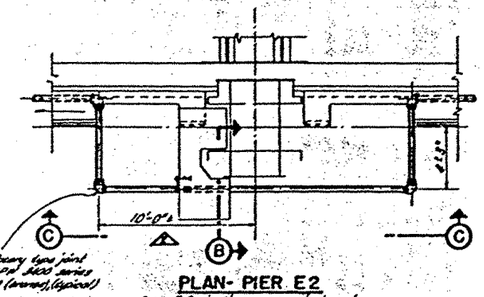
PROJECTS ENGINEER - LAKESIDE DIST.
DATE APPROVED September 23, 1960



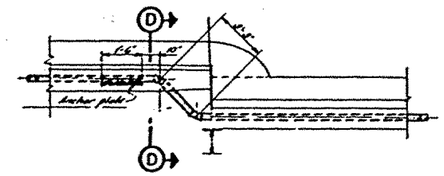
PLAN-PIER YB1
(Skid Girder not shown)



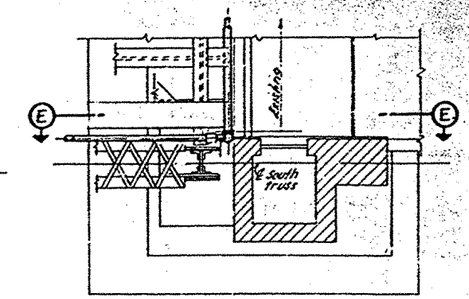
△ PLAN-PIERS YB3, YB 4 AND E 10



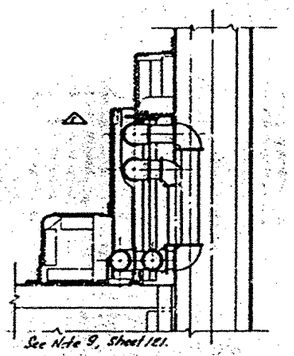
PLAN- PIER E2
Pier E3 similar, opposite hand.



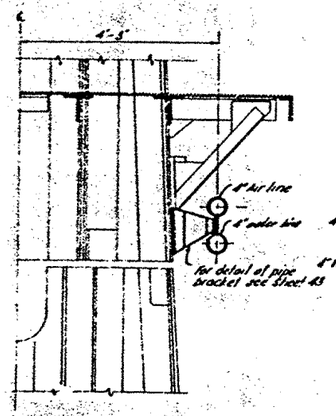
△ PLAN-PIER E9



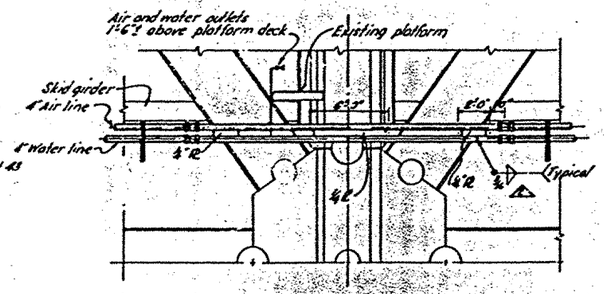
△ PLAN - PIER E 23
(Skid Girder not shown)



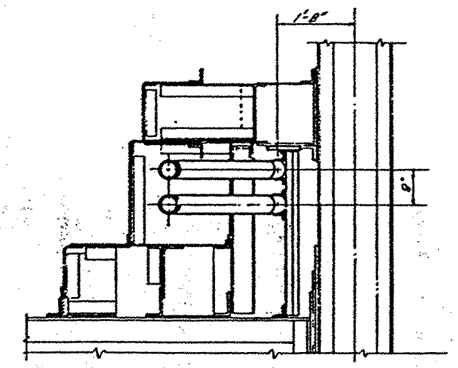
SECTION A-A
Scale ⅛"=1'-0"



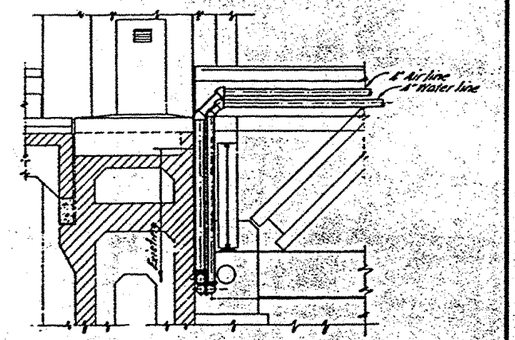
SECTION B-B
Scale ⅛"=1'-0"



SECTION C-C

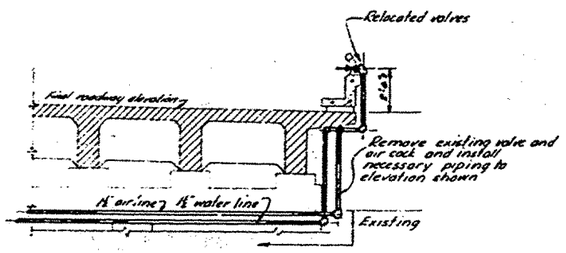


SECTION D-D
Scale ⅛"=1'-0"

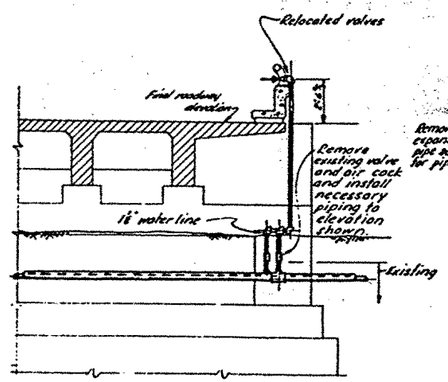


△ SECTION E-E

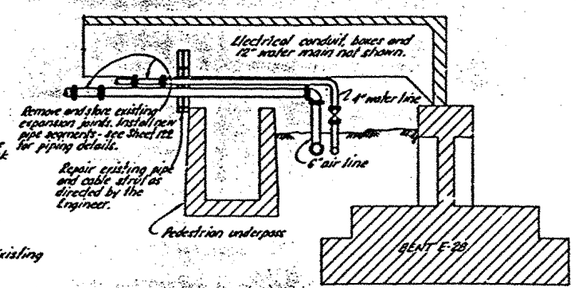
NOTE
Floors shown are of south truss at lower deck level, concrete deck on steel structure has been omitted.



△ ELEVATION E 25-A
Note North side similar



△ ELEVATION E 28



AIR AND WATER LINE ALTERATIONS △1

0 1 2 3 4 6 THS 10 THS
SCALE IN INCHES

SUPPLEMENTAL CONTRACT DRAWING

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING - EAST BAY

MECHANICAL-PIER INSTALLATIONS

MARK	DATE	DESCRIPTION	BY	CH'K.
△	7.1.63	As built with revisions	J.J.C.	A.L.
△1	2/6/61	Air and water line alterations	J.J.L.	A.K.

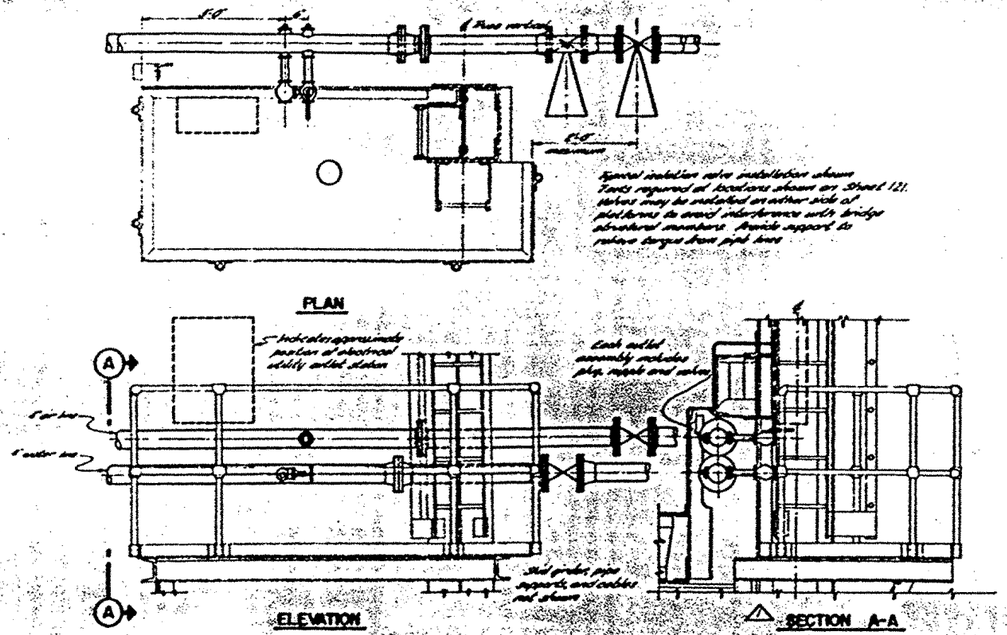
REVISION

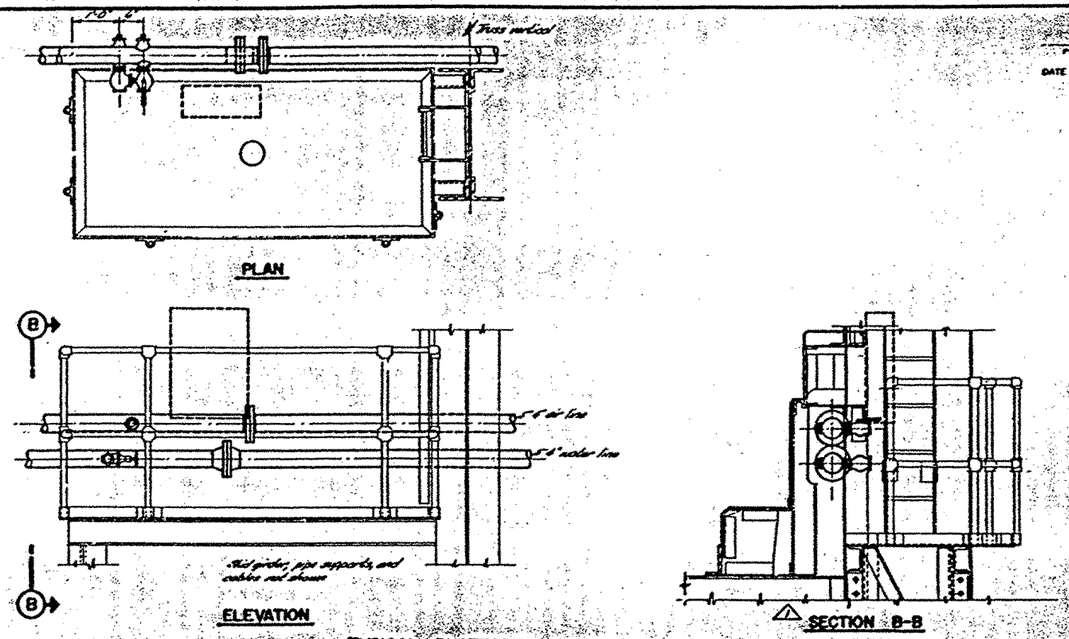
UNLESS NOTED SCALE 1/4"=1'-0"
BRIDGE 33-25 34-03 34-04
SHEET No. 123
DRAWING C-40H-123R

APPROVAL RECOMMENDED BY W. H. Gilbert
JOINT BRIDGE TRAFFIC COMMITTEE

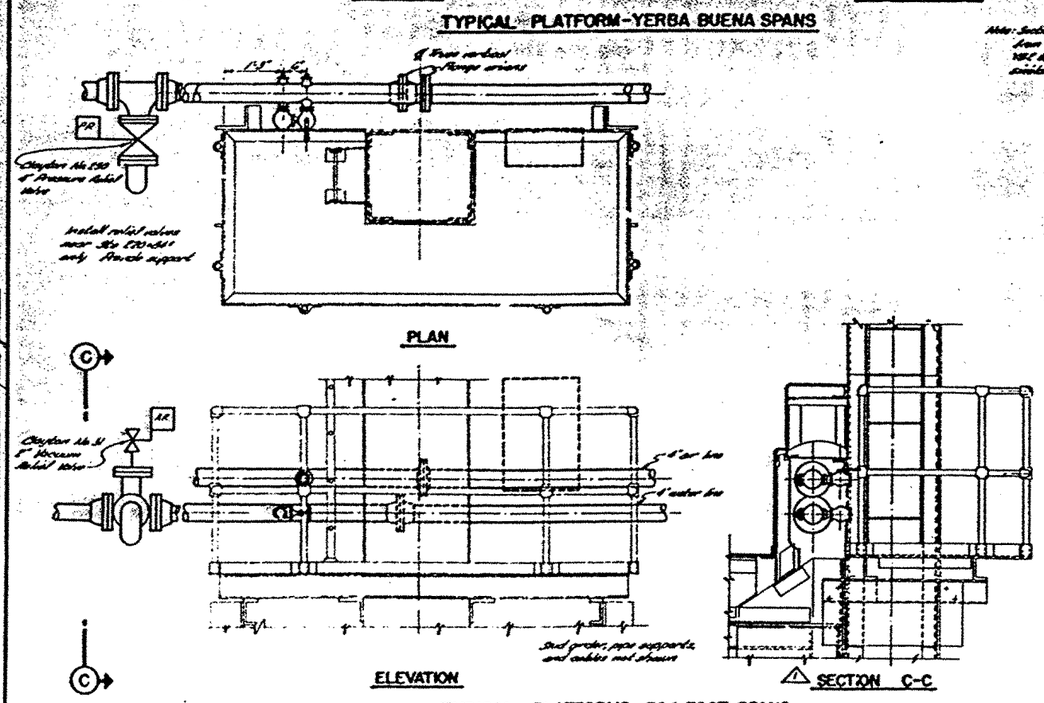
PROJECTS ENGINEER — LICENSE 1070

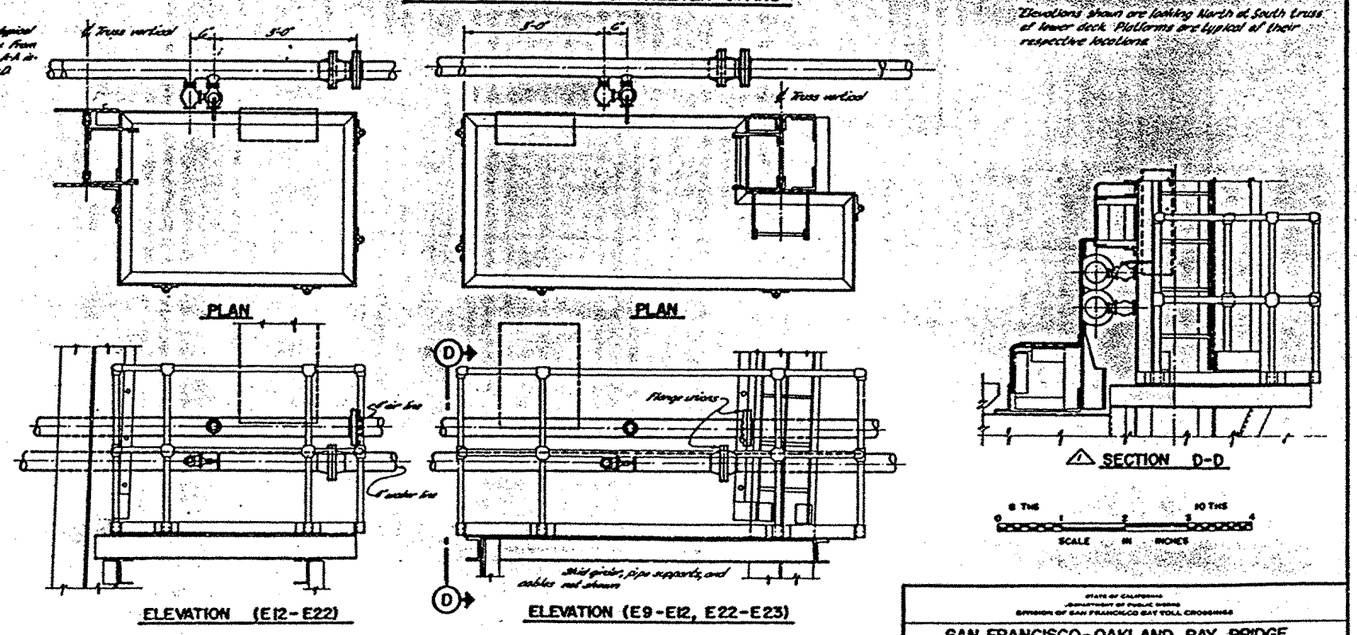
DATE APPROVED September 23, 1960





Elevations shown are looking North at South truss at lower deck. Platforms are typical at their respective locations.





MARK	DATE	DESCRIPTION	BY	CHK
7	7-1-63	As built with revisions	clc	A.L.

REVISION

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

SAN FRANCISCO-OAKLAND BAY BRIDGE
RECONSTRUCTION
DECK PAVING-EAST BAY

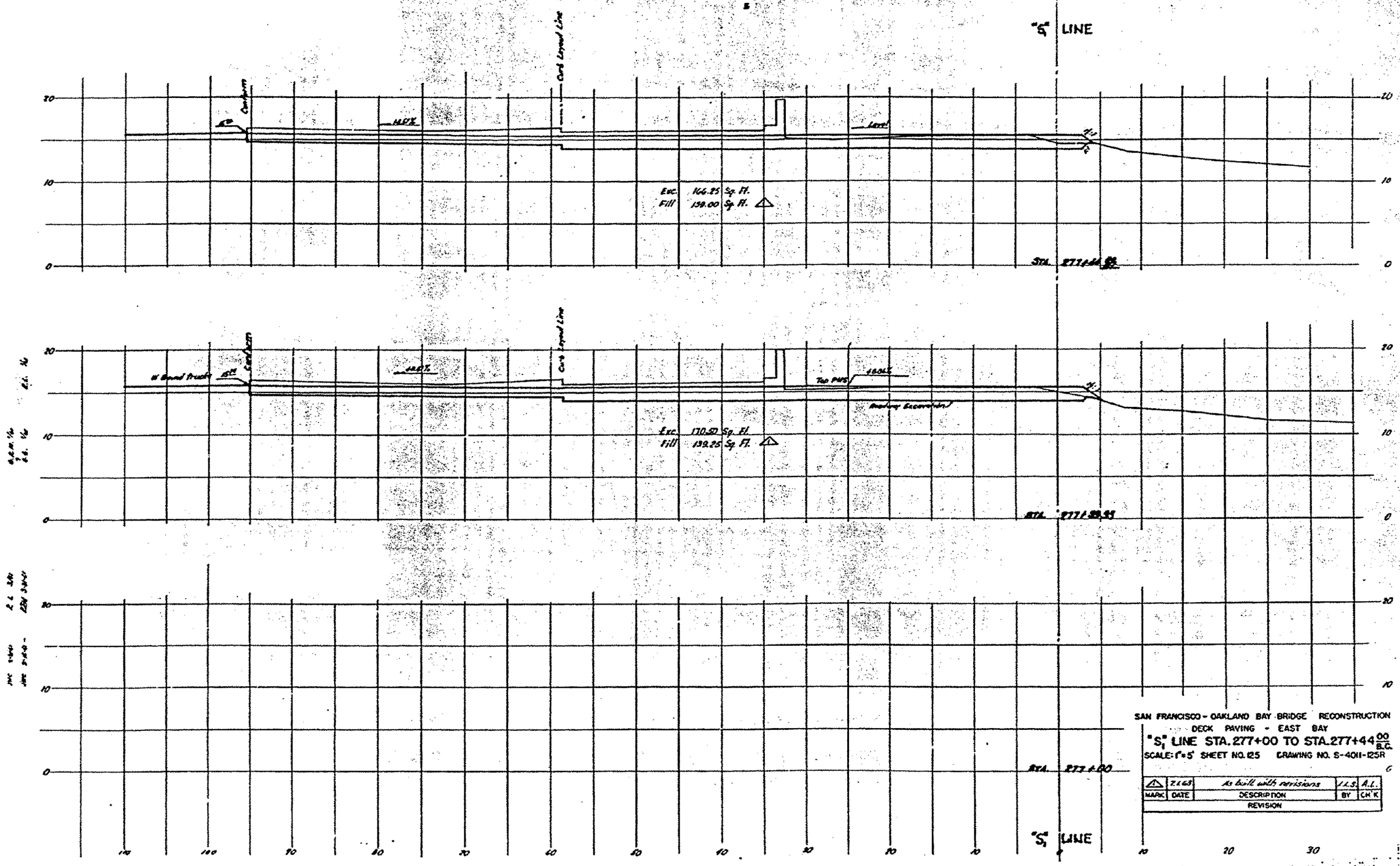
MECHANICAL-PLATFORM INSTALLATIONS

SCALE 3/4" = 1'-0" | BRIDGE 33-25, 34-03, 34-04 | SHEET No. 124 | DRAWING C-4011-124K

APPROVAL RECOMMENDED BY: N. L. Dickey

DESIGN, DETAILS, QUANTITIES, REDESIGNING DETAILS & QUANTITIES

CROSS SECTION

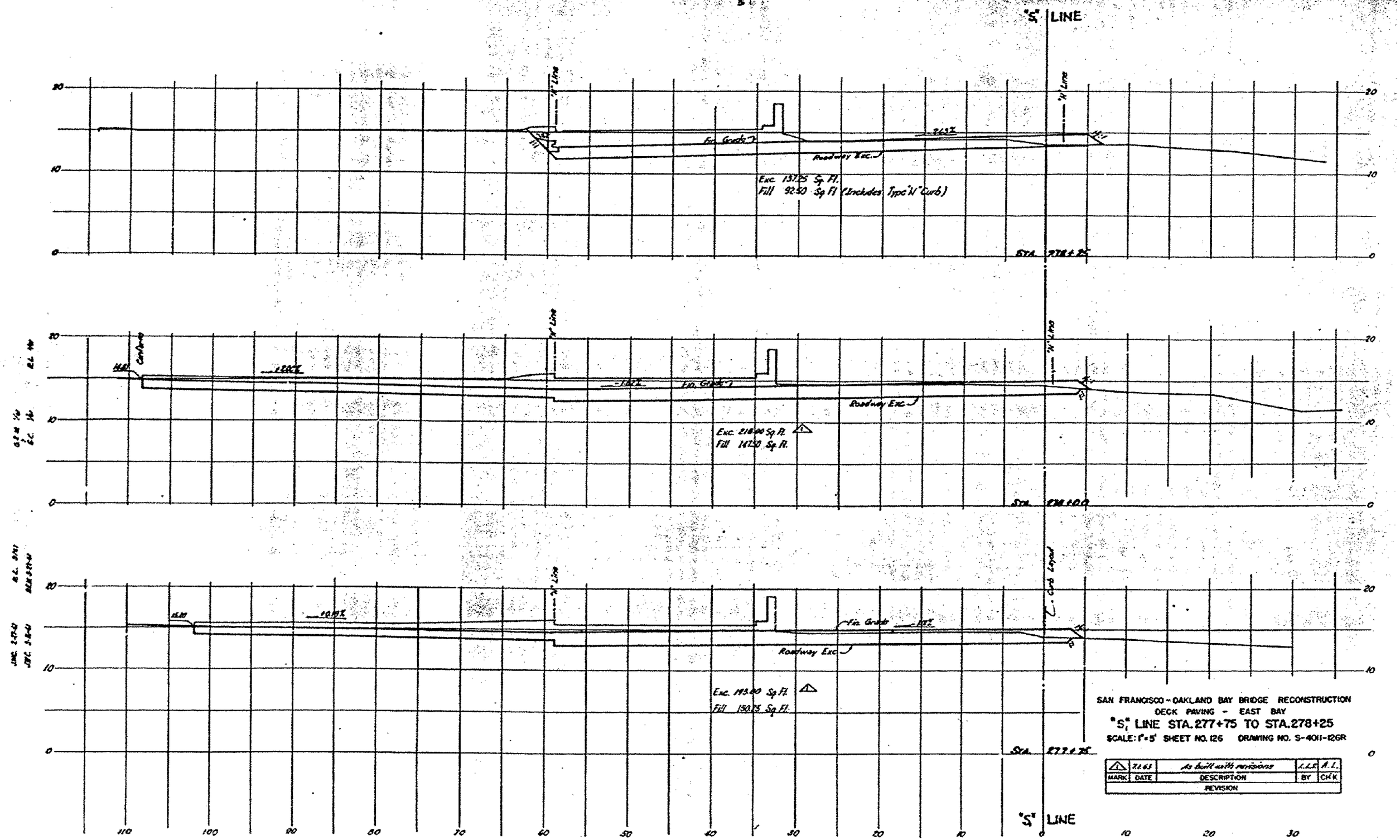


SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
"S" LINE STA. 277+00 TO STA. 277+44 00/B.C.
SCALE: 1"=5' SHEET NO. 125 DRAWING NO. S-4011-125R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7-1-63	As built with revisions	J.L.S.	A.L.

REVISION

CROSS SECTION

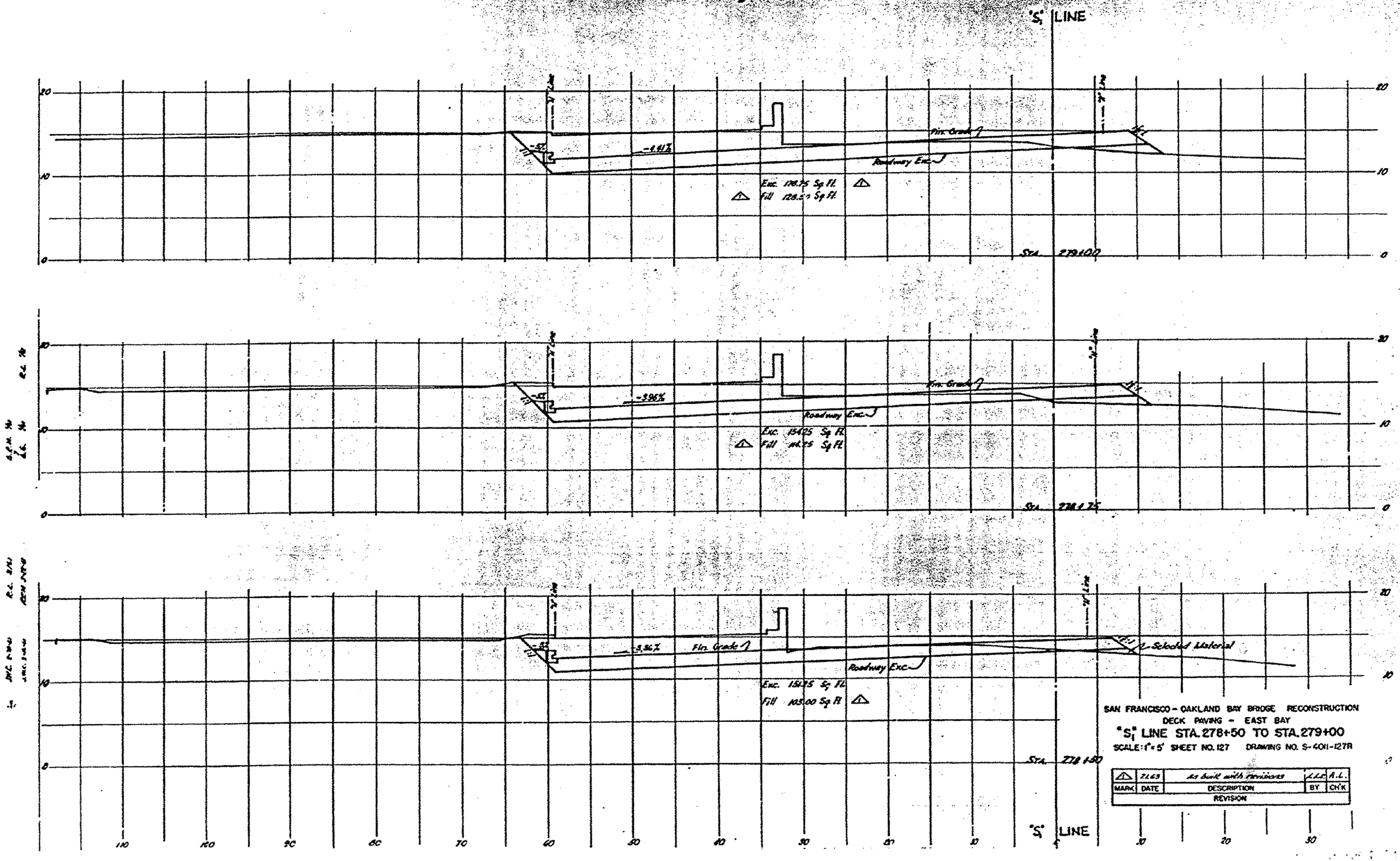


SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
"S" LINE STA. 277+75 TO STA. 278+25
SCALE: 1"=5' SHEET NO. 126 DRAWING NO. S-4011-126R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	L.L.S.	A.L.

REVISION

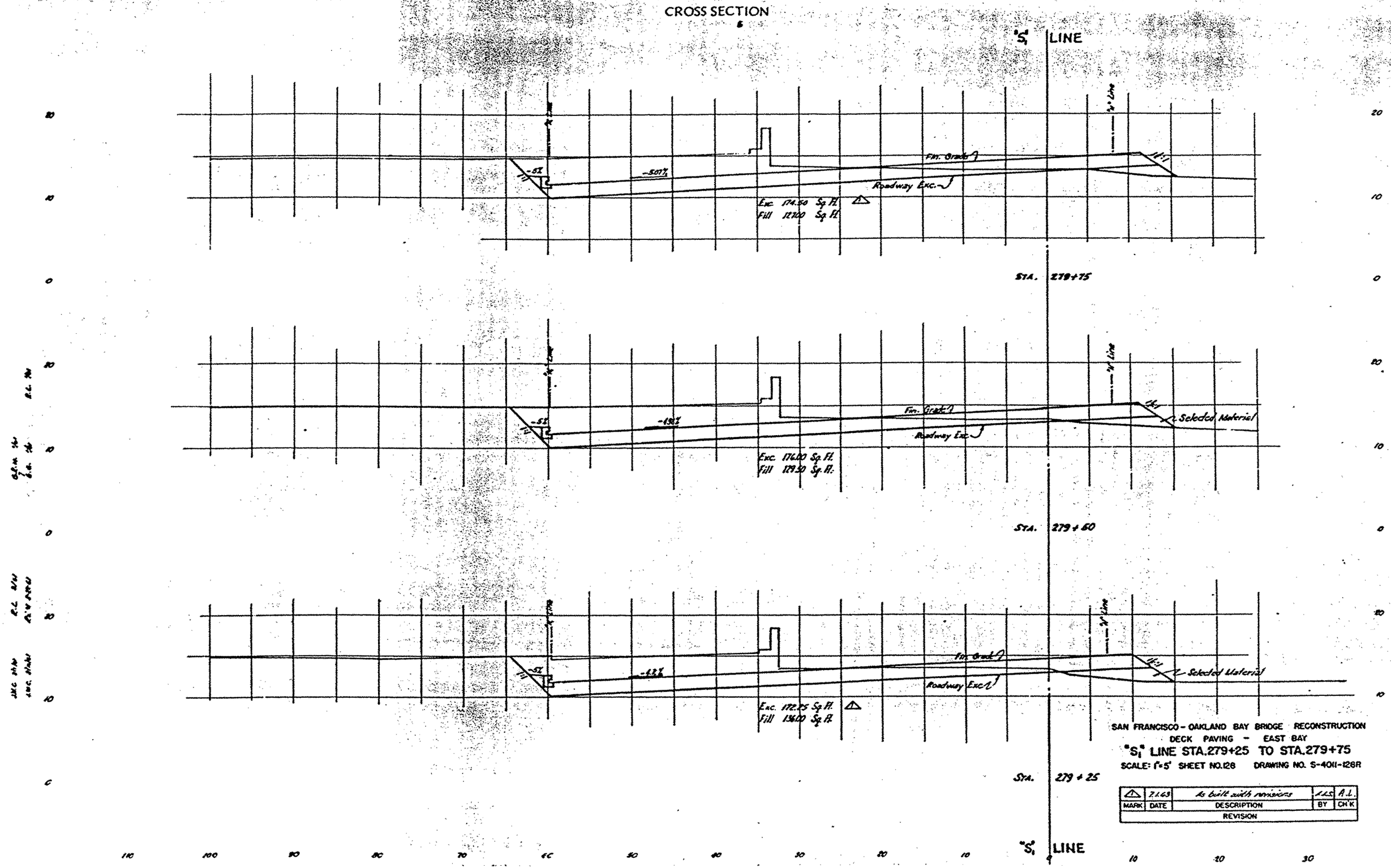
CROSS SECTION



SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
"S" LINE STA. 278+50 TO STA. 279+00
SCALE: 1" = 5' SHEET NO. 127 DRAWING NO. S-4011-127R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.65	As built with revisions	J.L.L.	A.L.

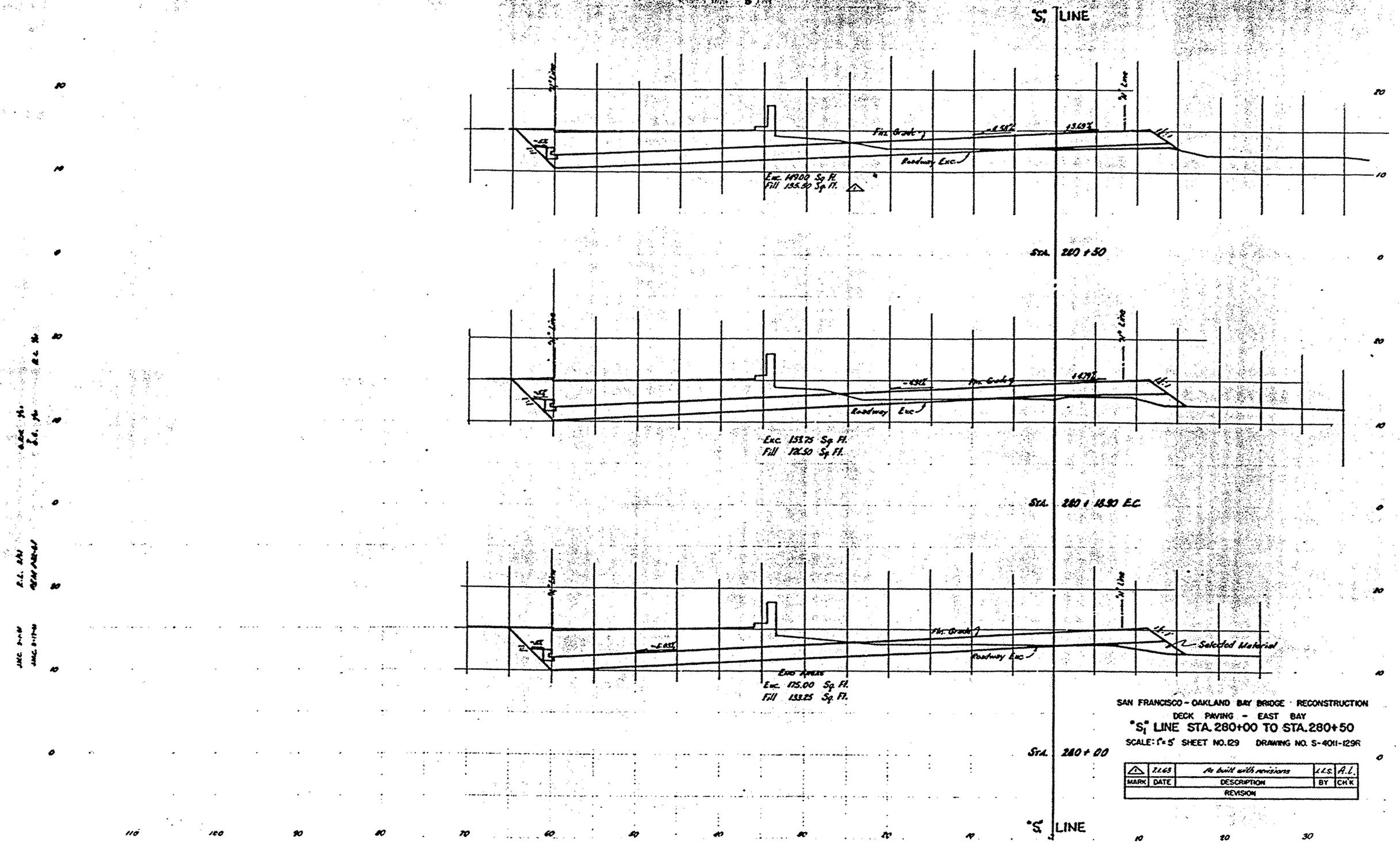
REVISION



SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
"S1" LINE STA.279+25 TO STA.279+75
SCALE: 1"=5' SHEET NO.128 DRAWING NO. S-4011-128R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	J.L.S.	A.L.
REVISION				

CROSS SECTION



SAN FRANCISCO - OAKLAND BAY BRIDGE · RECONSTRUCTION

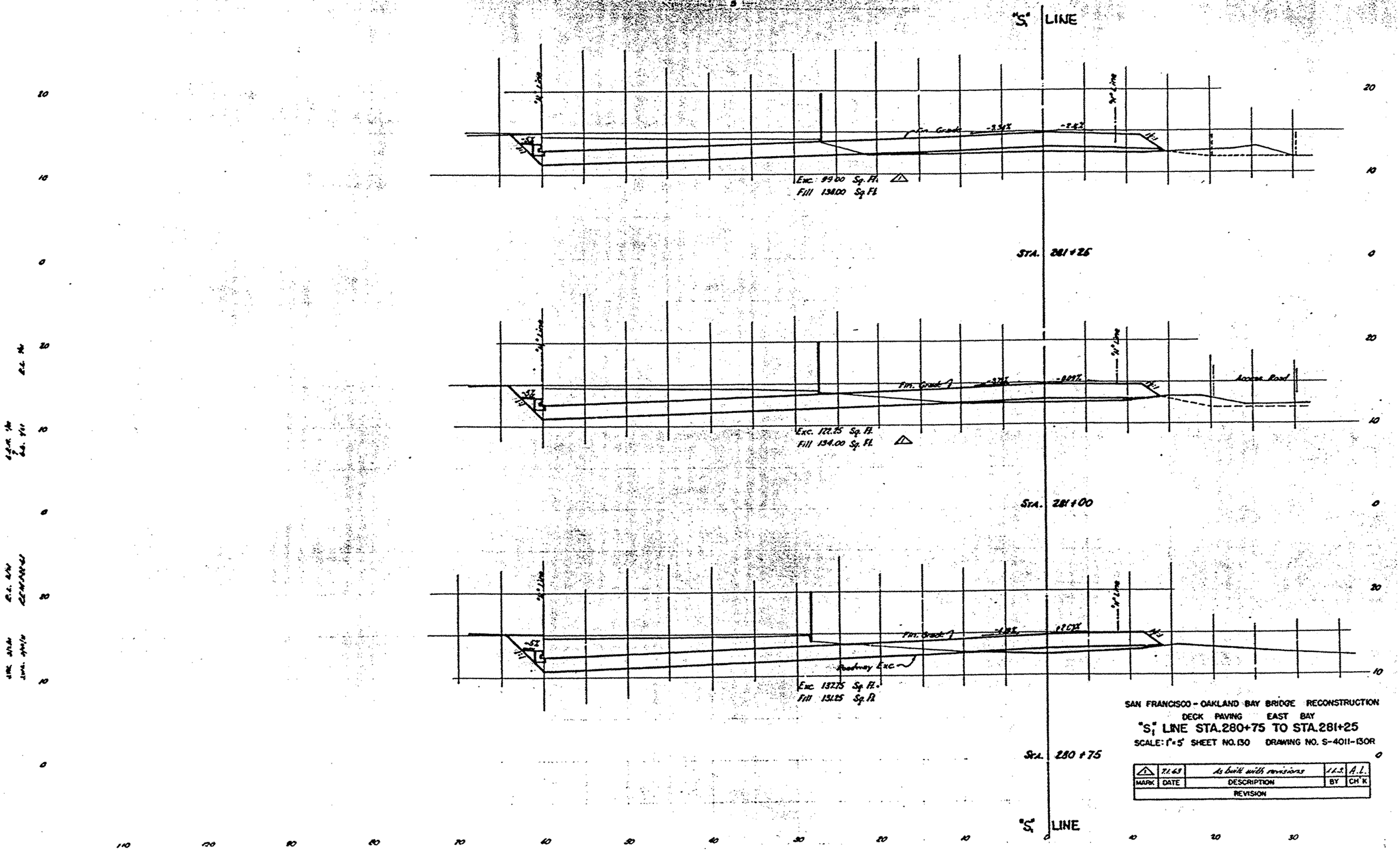
DECK PAVING - EAST BAY

"S1" LINE STA. 280+00 TO STA. 280+50

SCALE: 1" = 5' SHEET NO. 129 DRAWING NO. S-4011-129R

MARK	DATE	DESCRIPTION	BY	CH'K
1	2.1.65	As built with revisions	J.L.S.	A.L.
REVISION				

CROSS SECTION



SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION

DECK PAVING EAST BAY

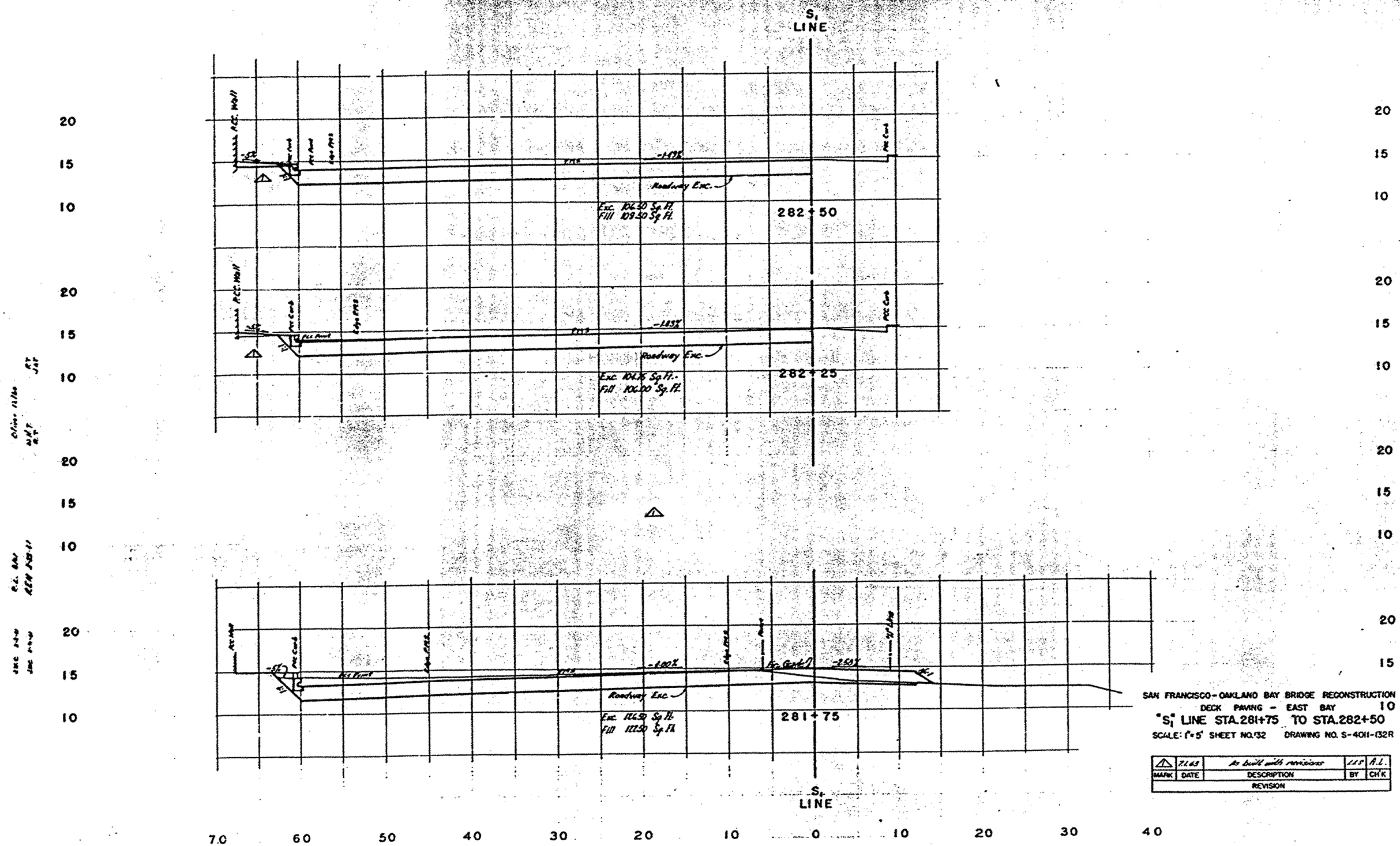
"S" LINE STA.280+75 TO STA.281+25

SCALE: 1"=5' SHEET NO. 130 DRAWING NO. S-4011-130R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	J.L.S.	A.L.

REVISION

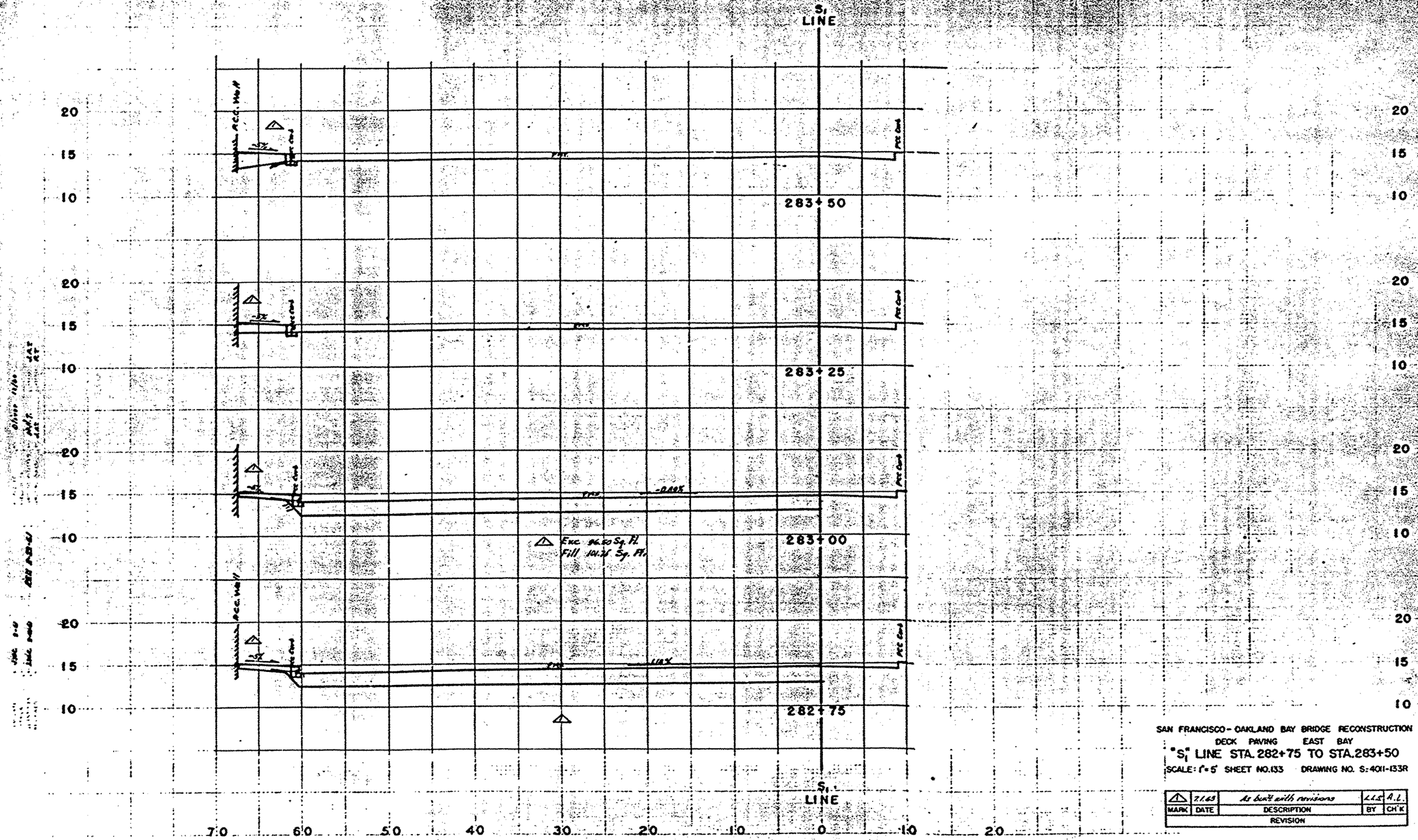
CROSS SECTION



SAN FRANCISCO-OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING - EAST BAY
"S1" LINE STA. 281+75 TO STA. 282+50
SCALE: 1" = 5' SHEET NO. 32 DRAWING NO. S-4011-132R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	J.J.S	A.L.

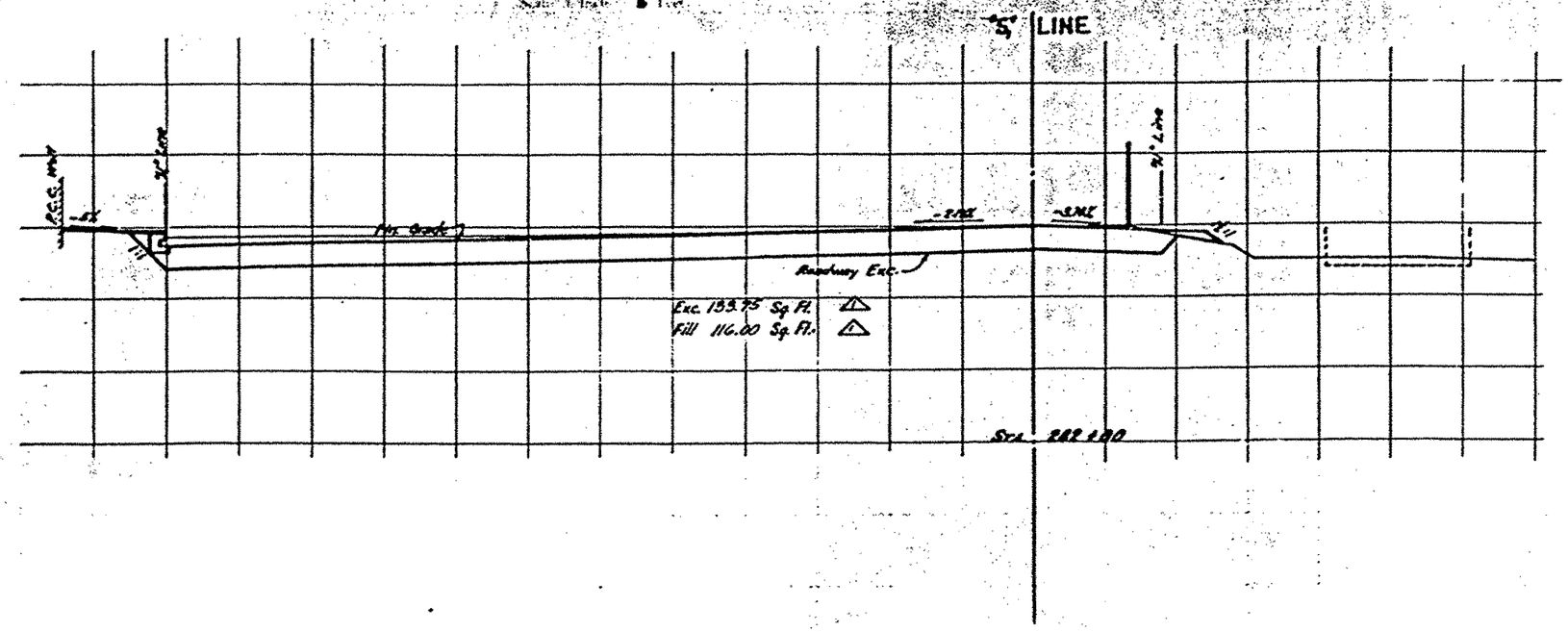
REVISION

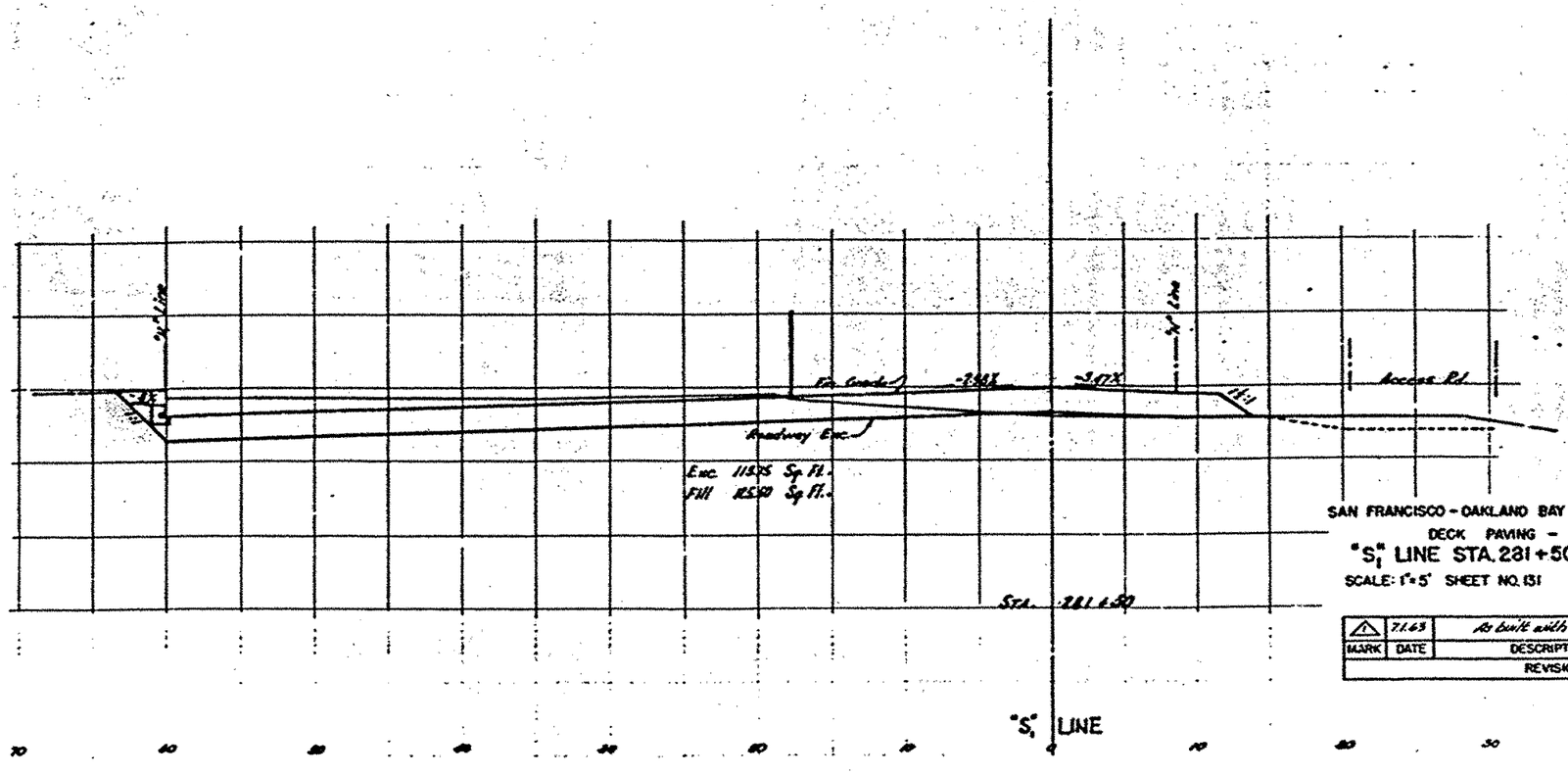


SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION
DECK PAVING EAST BAY
"S_1" LINE STA. 282+75 TO STA. 283+50
SCALE: 1" = 5' SHEET NO. 133 DRAWING NO. S-4011-133R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.65	As built with revisions	L.L.S.	A.L.
		REVISION		

CROSS SECTION





SAN FRANCISCO - OAKLAND BAY BRIDGE RECONSTRUCTION

DECK PAVING - EAST BAY

"S" LINE STA. 281+50 TO STA. 282+00

SCALE: 1"=5' SHEET NO. 131 DRAWING NO. S-4011-131R

MARK	DATE	DESCRIPTION	BY	CH'K
1	7.1.63	As built with revisions	L.L.S.	A.L.

REVISION