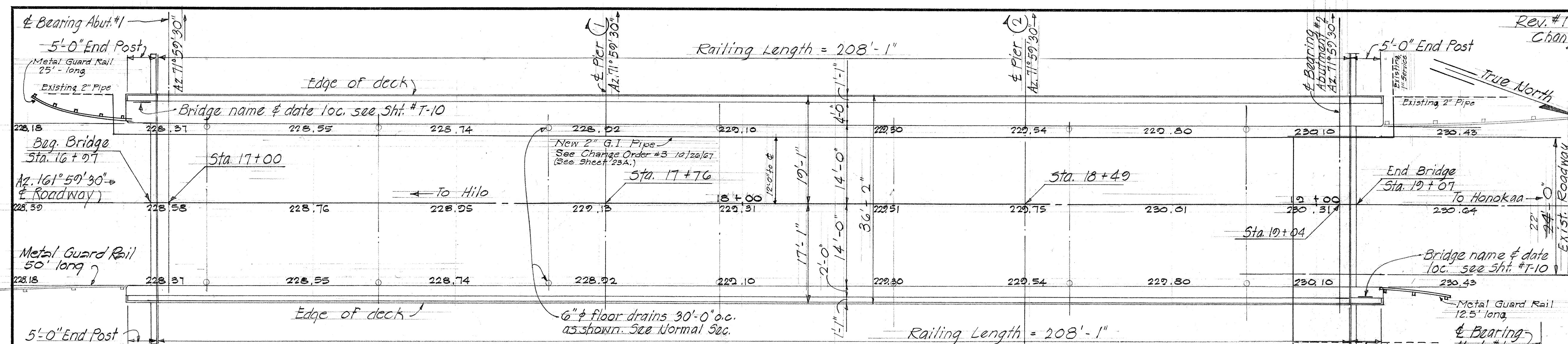
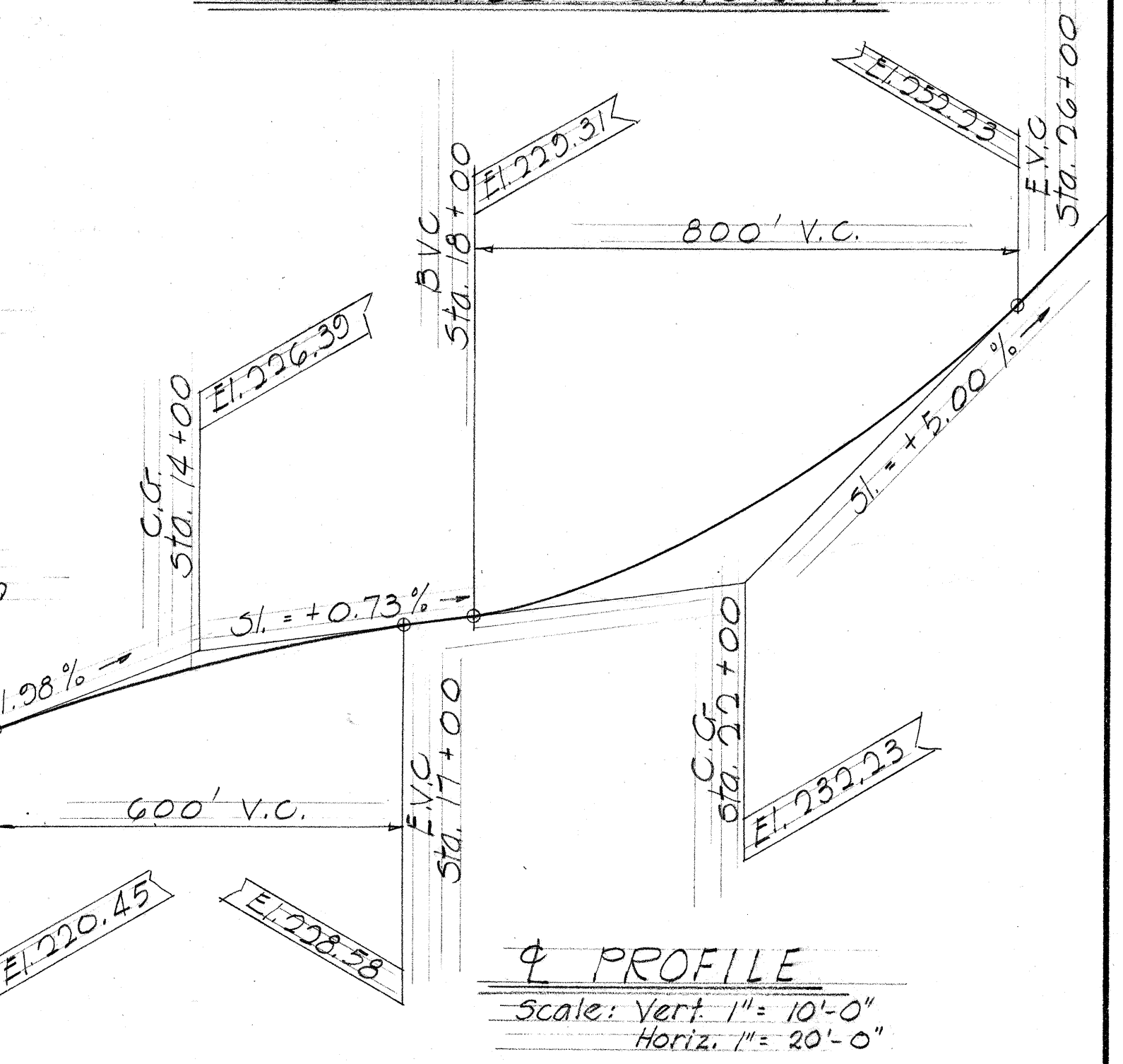
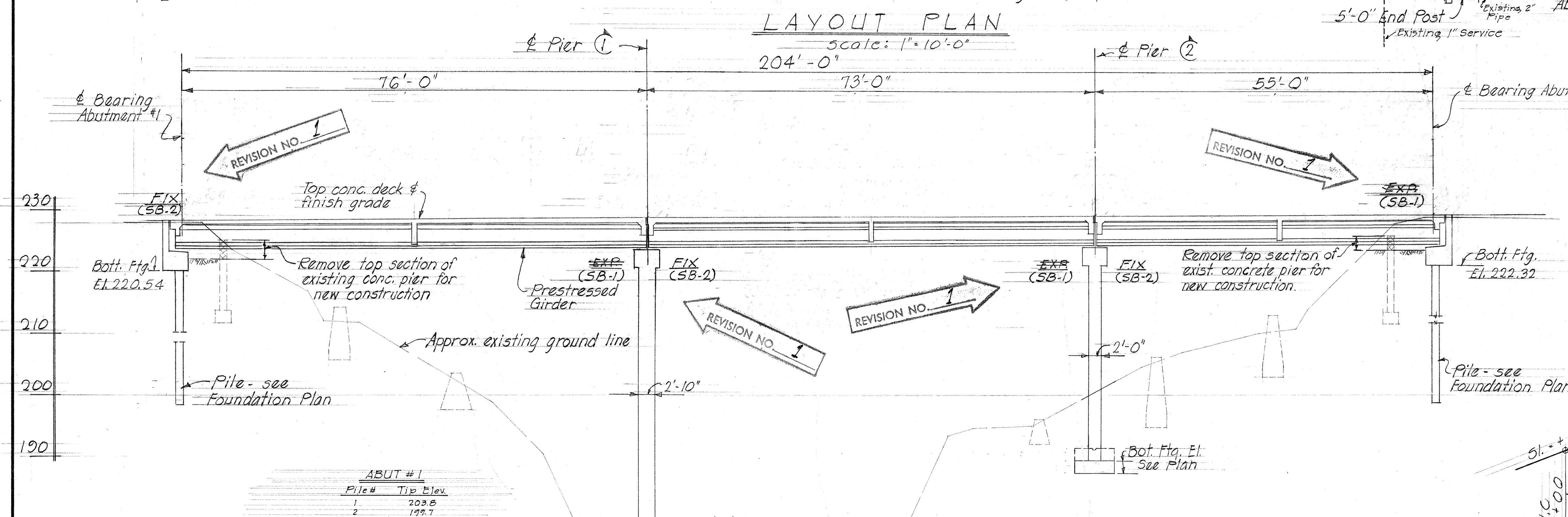
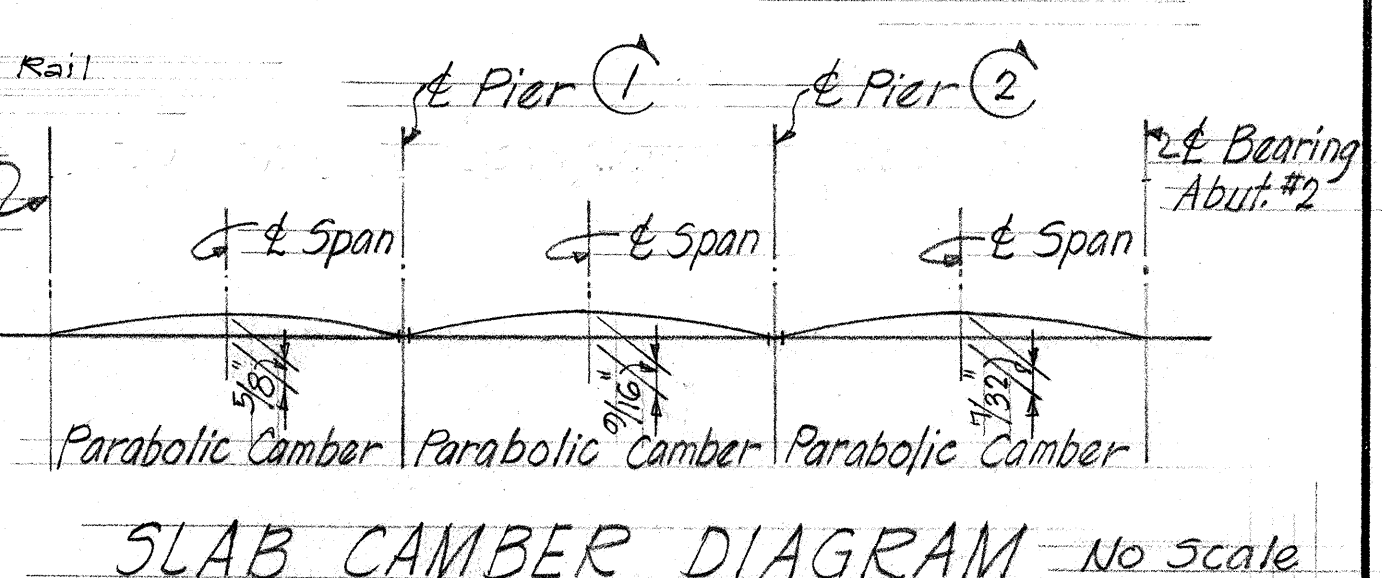


Rev. #1. 3-15-67.
Change Bearing Designation



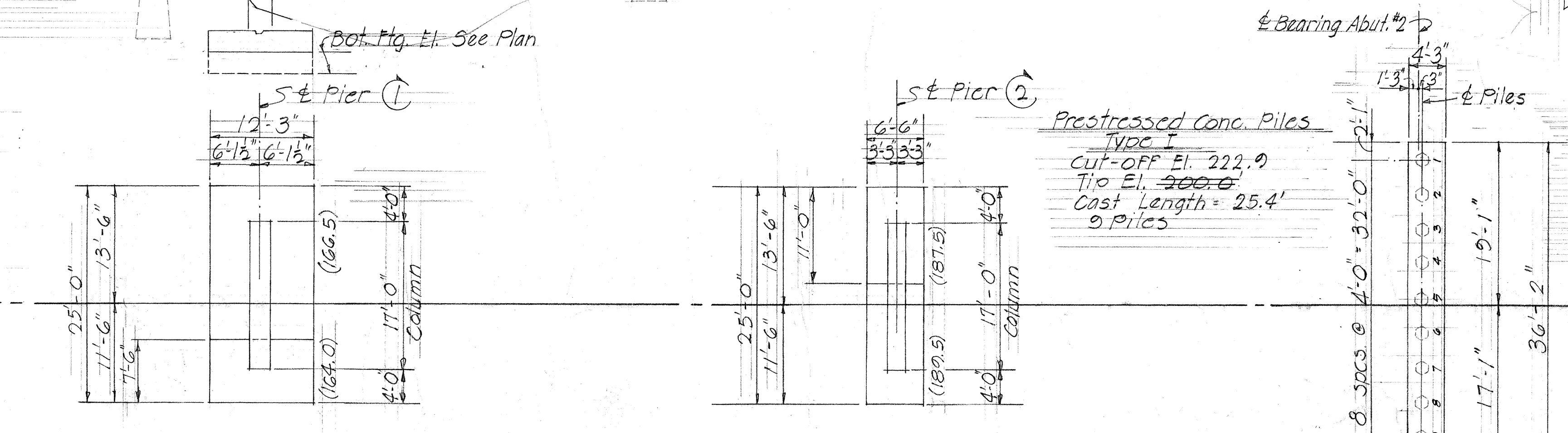
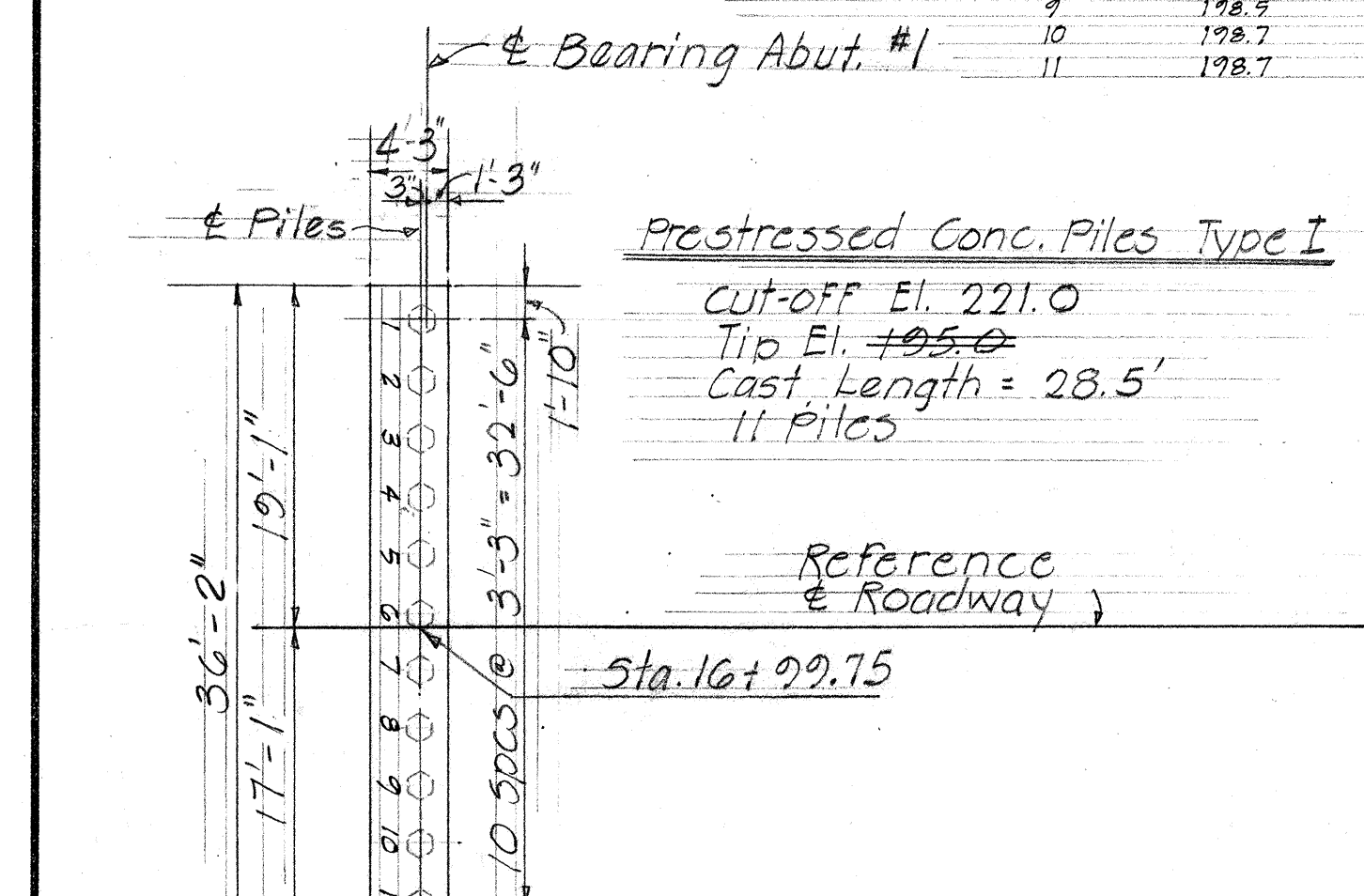
NOTE:
Remove all existing curbs (112 L.F.) at bridge approaches & backfill. (Incidental to removal of bridges)



ABUT #1

Pile #	Tip Elev.
1	203.5
2	199.7
3	204.7
4	205.7
5	201.3
6	199.7
7	197.7
8	198.5
9	198.5
10	198.7
11	198.7

DATE 10/66	DESIGNED BY	CHECKED BY
DRAWN BY	NOTED BY	
QUANTITIES BY		
ORIGINAL PLAN		
NO.		



Reference Notes:
Refer to supplementary Typical Drawings T-1 thru T-10 inclusive for details not covered by these drawings.
For estimated quantities see Sht. #B-6
ALTERNATE "B"

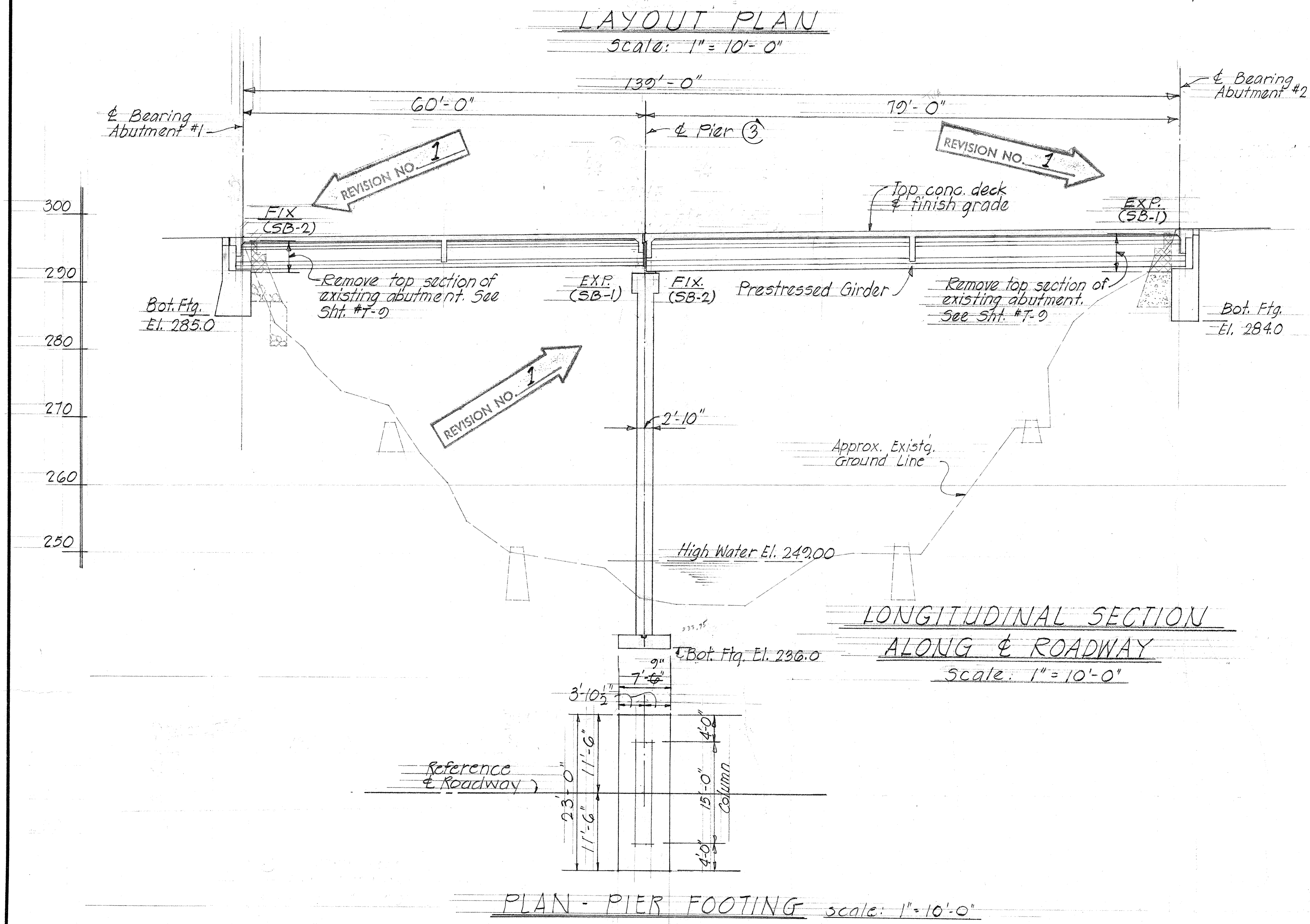
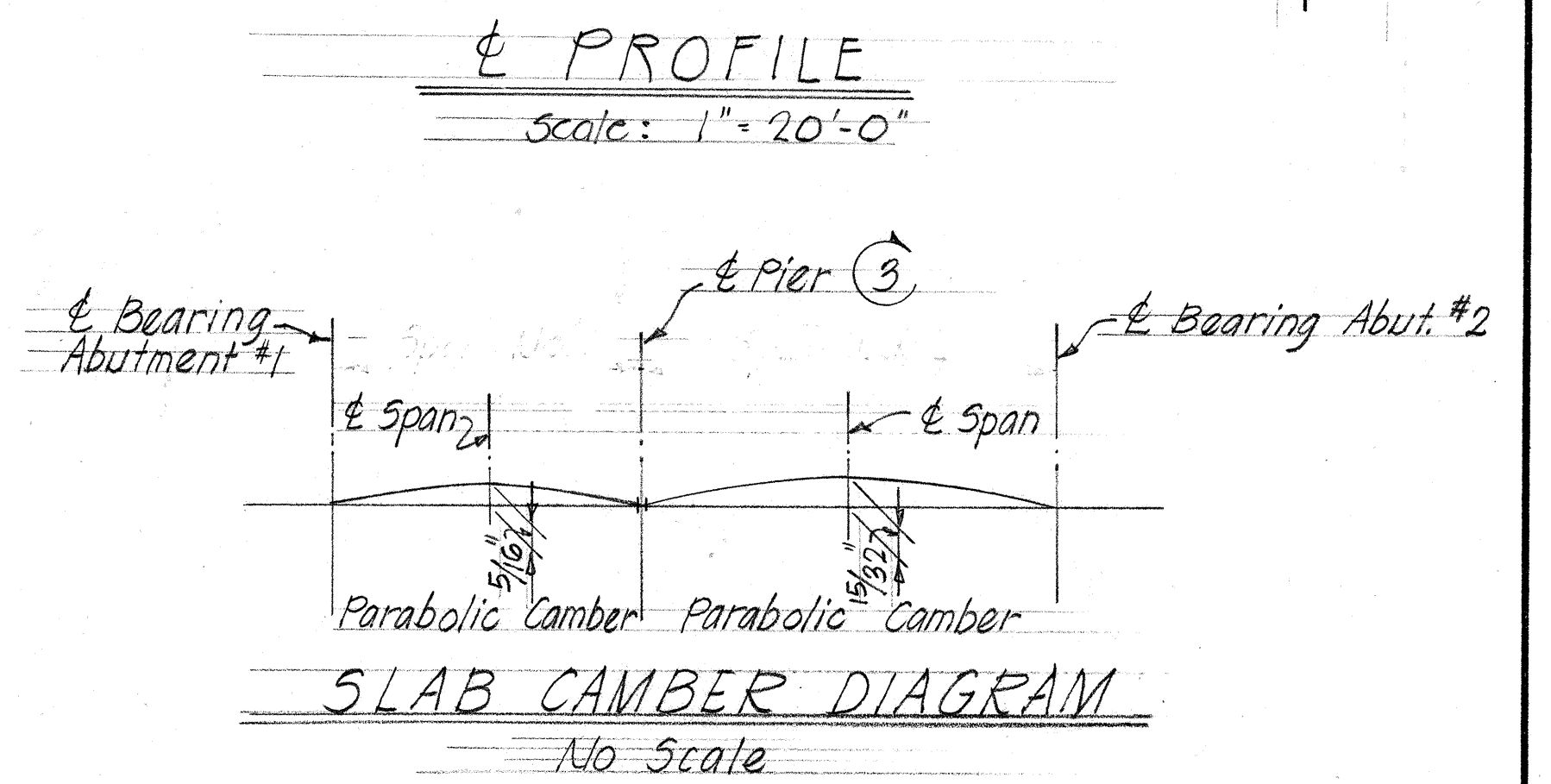
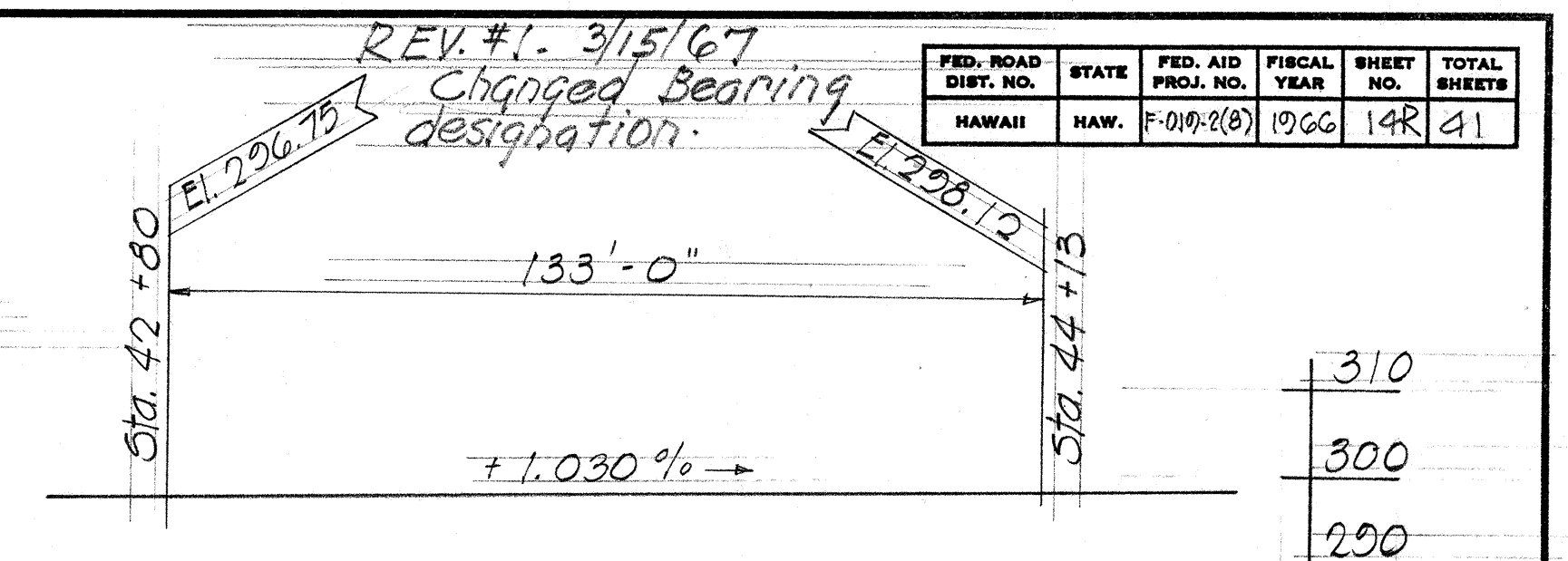
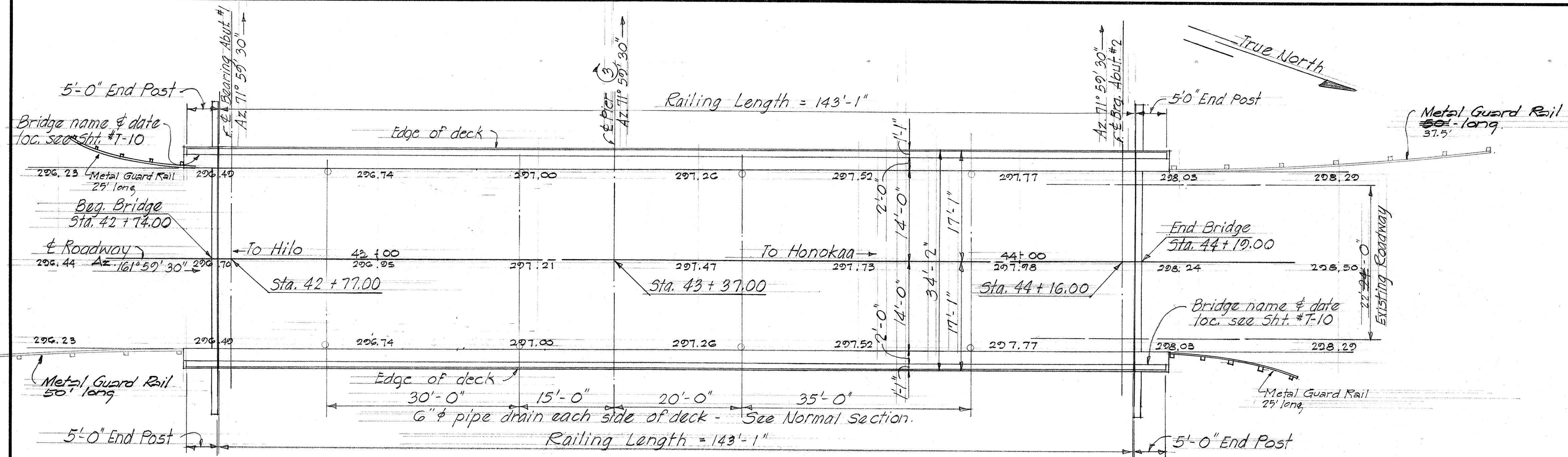
ABUT #2

Pile #	Tip Elev.
1	211.1
2	209.7
3	210.7
4	209.6
5	207.7
6	208.7
7	209.2
8	209.3
9	209.2

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING KAIEIE BRIDGE
Sta. 16+97.00 to Sta. 19+07.00
LAYOUT PLAN & DETAILS
HAWAII BELT ROAD PROJ. NO. F-019-2(8)
Oct 1966
SHEET NO. B1 OF 11 SHEETS

ORIGINAL PLAN	DATE 10/24
DESIGNED BY	TRACED BY
NOTED BY	QUANTITIES BY
CHECKED BY	



NOTE:
Remove all existing curbs (112 L.F.) at bridge approaches & backfill. (Incidental to removal of bridges)

Reference Notes:
Refer to supplementary Typical Drawings T-1 thru T-10 inclusive for details not covered by these drawings.
For estimated quantities see Sht. #B-6.

ALTERNATE "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REPLACEMENT OF EXISTING KALAOA BRIDGE

Sta. 42+74.00 to Sta. 44+19.00

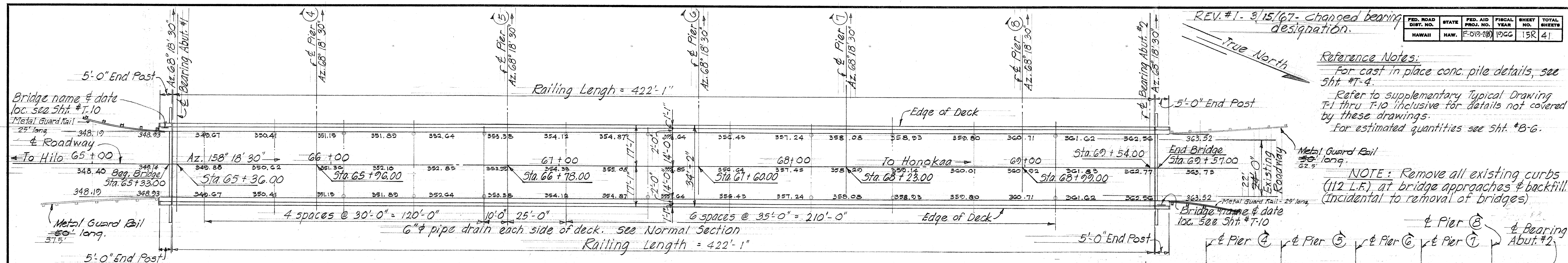
LAYOUT PLAN & DETAILS

HAWAII BELT ROAD PROJ. N° F-019-2(B)
SHEET No. 11 OF 11 SHEETS

REV. #1 - 3/15/67 - changed bearing designation.

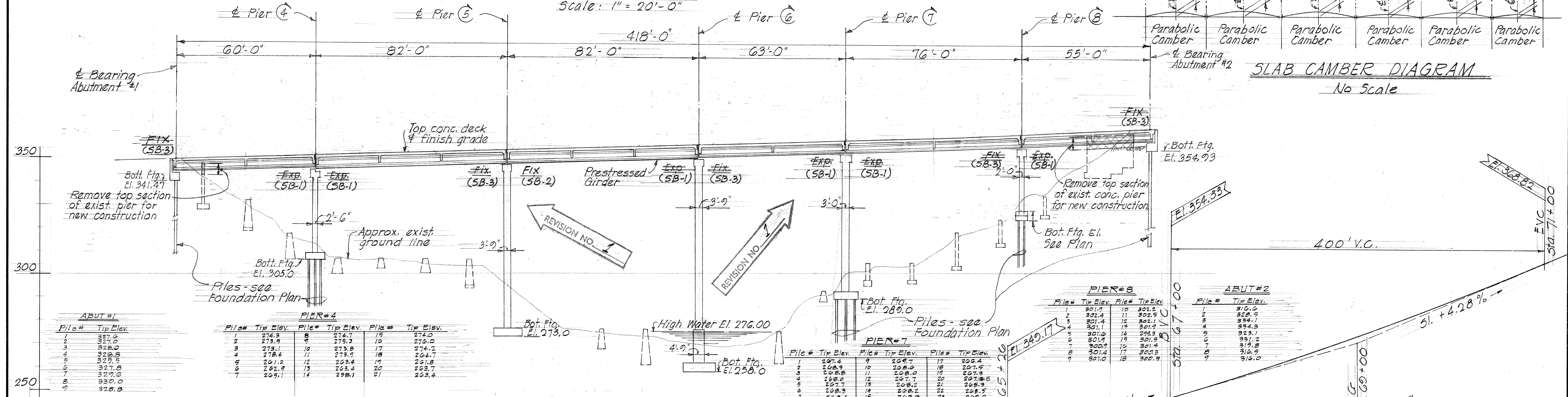
Reference Notes:
 For cast in place conc. pile details, see Sht. #T-4.
 Refer to supplementary Typical Drawing T-1 thru T-10 inclusive for details not covered by these drawings.
 For estimated quantities see Sht. #B-6.

NOTE: Remove all existing curbs (112 L.F.) at bridge approaches & backfill (incidental to removal of bridges)

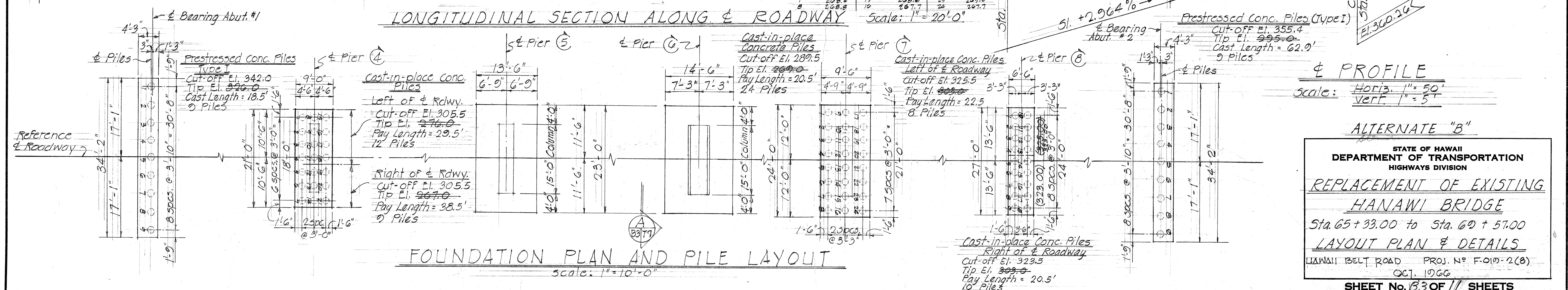


LAYOUT PLAN
 Scale: 1" = 20'-0"

SLAB CAMBER DIAGRAM
 No Scale



LONGITUDINAL SECTION ALONG & ROADWAY
 Scale: 1" = 20'-0"



FOUNDATION PLAN AND PILE LAYOUT
 Scale: 1" = 10'-0"

& PROFILE
 Scale: Horiz. 1" = 50'
 Vert. 1" = 5'

ALTERNATE "B"

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
REPLACEMENT OF EXISTING HANAWI BRIDGE
 Sta. 65+33.00 to Sta. 69+57.00
LAYOUT PLAN & DETAILS
 HAWAII BELT ROAD PROJ. N° F-010-2(8)
 OCT. 1966
SHEET No. B3 OF 11 SHEETS

ORIGINAL PLAN
 DATE 10/66
 DESIGNED BY
 CHECKED BY
 QUANTITIES BY
 NOTE BOOK

TOP CONCRETE SEAT ELEVATION SCHEDULE — ABUTMENTS AND PIERS

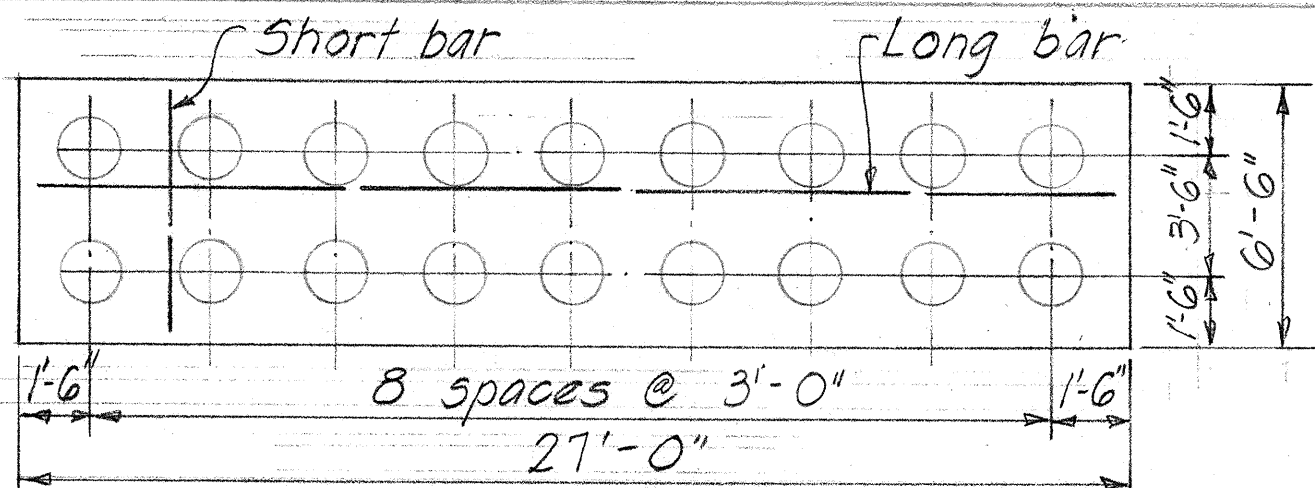
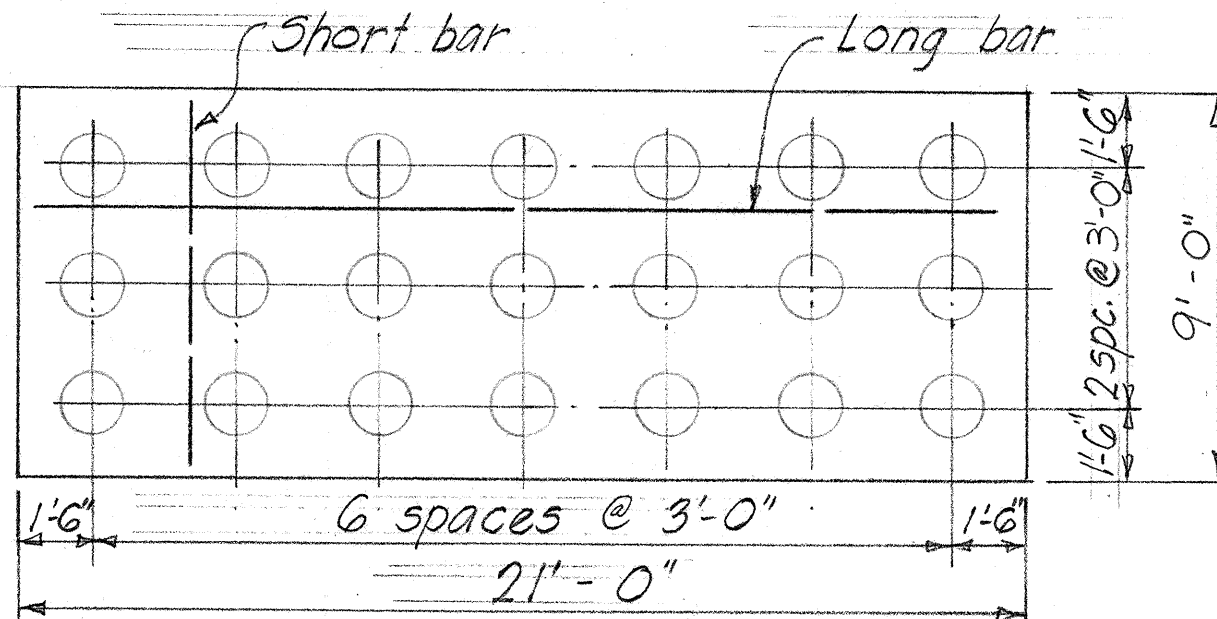
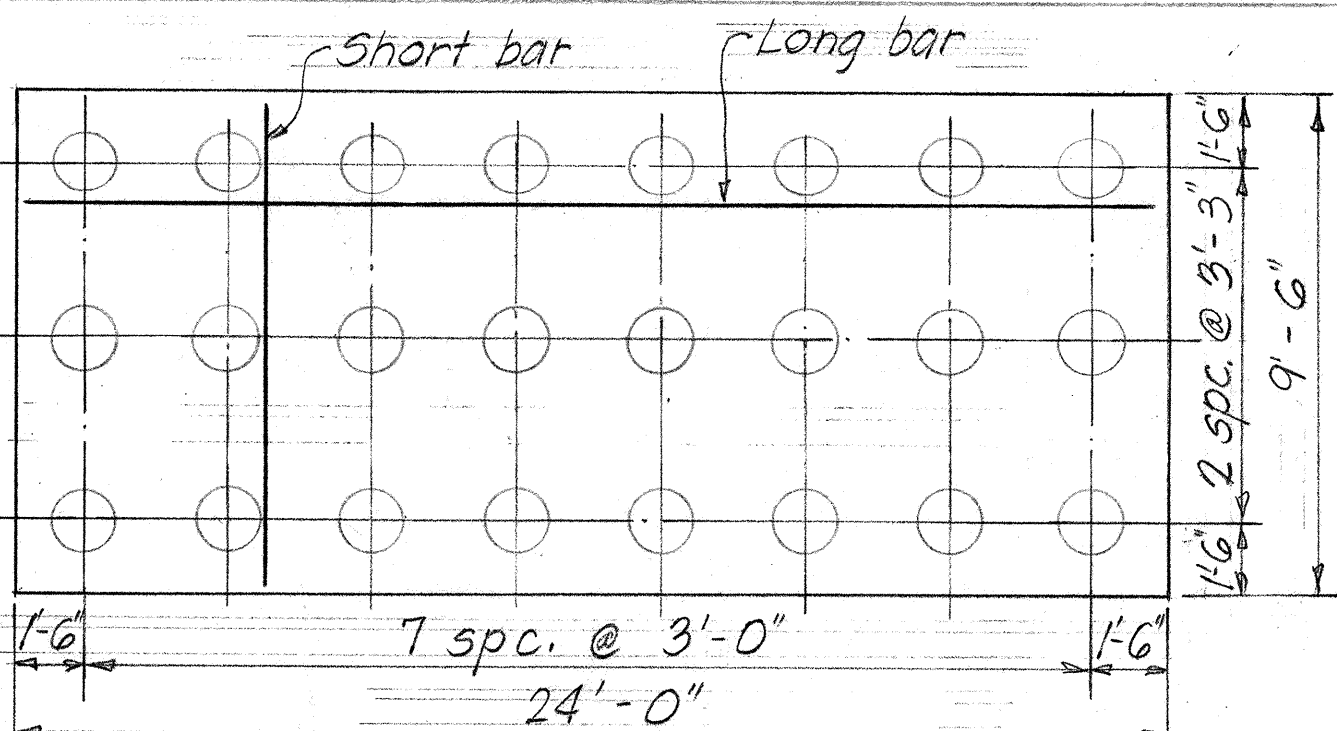
Location Girder No.	KAIEIE BRIDGE						KALAOA BRIDGE						HANAWI BRIDGE										WAI'AAMA BRIDGE					
	Abutment No. 1	Pier ①		Pier ②		Abutment No. 2	Abutment No. 1	Pier ③		Abutment No. 2	Abutment No. 1	Pier ④		Pier ⑤		Pier ⑥		Pier ⑦		Pier ⑧		Abutment No. 2	Abutment No. 1	Pier ⑨		Pier ⑩		Abutment No. 2
		①	②	①	②			①	②			①	②	①	②	①	②	①	②	①	②			①	②	①	②	
PG-1	223.79	224.34	224.35	224.93	224.95	225.57	292.02	292.63	291.87	292.67	344.72	346.47	345.79	348.16	348.19	350.63	351.45	353.47	353.48	356.05	356.20	358.18	459.57	458.05	458.02	457.12	457.99	457.72
PG-2	223.88	224.43	224.44	225.02	225.04	225.66	292.11	292.72	291.96	292.76	344.81	346.56	345.88	348.25	348.28	350.72	351.54	353.56	353.57	356.14	356.29	358.27	459.66	458.14	458.11	457.21	458.08	457.81
PG-3	223.98	224.53	224.54	225.12	225.14	225.76	292.20	292.81	292.05	292.85	344.90	346.65	345.97	348.34	348.37	350.81	351.63	353.65	353.66	356.23	356.38	358.36	459.75	458.23	458.20	457.30	458.17	457.90
PG-4	223.98	224.53	224.54	225.12	225.14	225.76	292.20	292.81	292.05	292.85	344.90	346.65	345.97	348.34	348.37	350.81	351.63	353.65	353.66	356.23	356.38	358.36	459.75	458.23	458.20	457.30	458.17	457.90
PG-5	223.89	224.44	224.45	225.03	225.05	225.67	292.11	292.72	291.96	282.76	344.81	346.56	345.88	348.25	348.28	350.72	351.54	353.56	353.57	356.14	356.29	358.27	459.66	458.14	458.11	457.21	458.08	457.81
PG-6	223.80	224.35	224.36	224.94	224.96	225.58	292.02	292.63	291.87	292.67	344.72	346.47	345.79	348.16	348.19	350.63	351.45	353.47	353.48	356.05	356.20	358.18	459.57	458.05	458.02	457.12	457.99	457.72

PRESTRESSED GIRDER NEOPRENE PAD SCHEDULE

Prestressed Girder	Pad Size		
	Length	Width	Thickness
Type IV A	26"	7"	1"
Type III A	22"	6 1/2"	1"
Type III B	22"	6 1/2"	1"
Type III C	22"	6"	3/4"
Type II A	18"	6"	3/4"
Type III D	22"	6 1/2"	3/4"

*All piles to be cast-in-place conc. piles. See Typical Detail Sht. #F3

PILE FOOTING SCHEDULE

Pile* IKK	Description	Depth	Bottom Reinforcement	
			Long Bars	Short Bars
P18		3'-6"	9-#9	32-#7
P21		3'-9"	11-#8	29-#7
P24		3'-9"	19-#7	32-#9

PIER COLUMN SCHEDULE

BRIDGE NAME Location Pier No.	KAIEIE		KALAOA		HANAWI						WAI'AAMA	
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑨	⑩
Pier Cap	Type A	Type B	Type B	Type A	Type A	Type A	Type B	Type B	Type A	Type B	Type A	Type B
Pier Column	2'-10" x 17'-0" 40-#11	2'-0" x 17'-0" 36-#9	2'-10" x 15'-0" 36-#10	2'-6" x 15'-0" 34-#10	3'-0" x 15'-0" 42-#11	3'-0" x 15'-0" 50-#11	3'-0" x 15'-0" 42-#11	3'-0" x 15'-0" 38-#9	2'-0" x 15'-0" 32-#9	2'-0" x 15'-0" 32-#9	2'-0" x 15'-0" 32-#9	1'-9" x 15'-0" 32-#9
Dowels	40-#11	36-#9	36-#10	34-#10	42-#11	50-#11	42-#11	38-#9	32-#9	32-#9		
Concrete Pedestal					15'-0" x 4'-9" 50-#11							
Spread Footing Type	F5	F3	F4		F6	F7			F2	F1		
Pile Footing Type				P21			P24	P18				
Group Loading	VII	VII	II		VII	II			VII	VII		
Soil Pressure K.S.F.	6.8	9.7	9.9		8.0	7.7			11.1	8.3		
Top Pedestal Elev.					275.40							

SPREAD FOOTING SCHEDULE

Type	Size	Depth	Footing Reinforcement	
			Long Bars	Short Bars
F1	5'-0" x 23'-0"	2'-3"	10-#9	24-#5
F2	5'-0" x 23'-0"	2'-3"	9-#10	35-#5
F3	6'-6" x 25'-0"	2'-3"	10-#10	25-#7
F4	7'-0" x 23'-0"	2'-0"	14-#8	35-#6
F5	12'-3" x 25'-0"	2'-0"	25-#7	50-#8
F6	13'-6" x 23'-0"	3'-0"	14-#9	35-#9
F7	14'-6" x 23'-0"	4'-0"	29-#6	31-#9

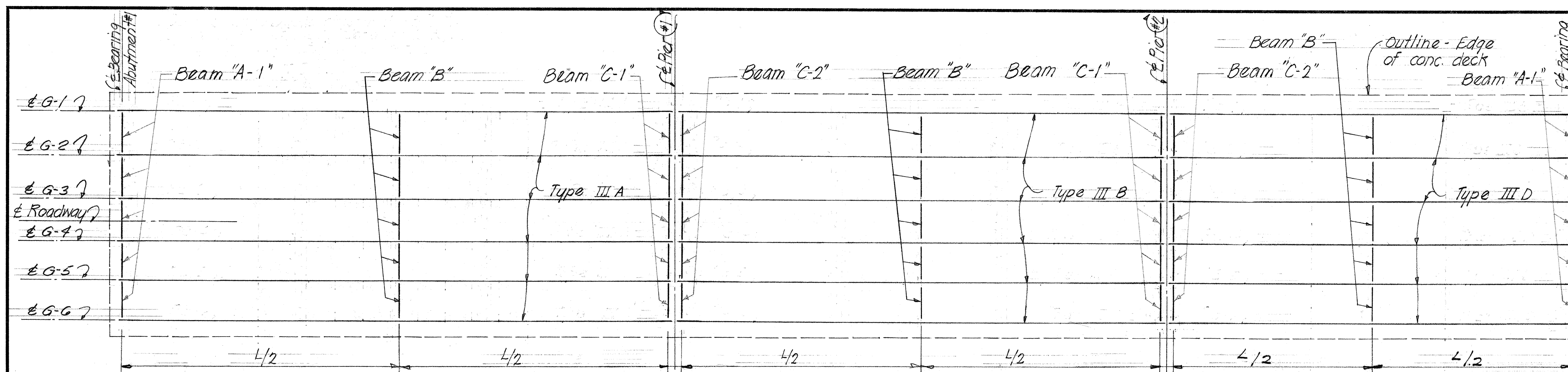
TOP CONCRETE SHELF ELEVATION SCHEDULE
ABUTMENTS AND PIERS

Location	Type	Split Level Shelf		One Level Shelf
		①	②	
Kaieie Bridge	Abutment No. 1			223.54
	Pier ①			222.78
	Pier ②			224.68
	Abutment No. 2			225.32
Kalaoa Bridge	Abutment No. 1			291.77
	Pier ③			291.00
	Abutment No. 2			292.42
Hanawi Bridge	Abutment No. 1			344.47
	Pier ④	346.22	345.54	
	Pier ⑤			347.22
	Pier ⑥			349.72
	Pier ⑦			353.22
	Pier ⑧			355.80
	Abutment No. 2			357.93
Wai'aama Bridge	Abutment No. 1			459.32
	Pier ⑨			456.58
	Pier ⑩	456.87	457.74	
	Abutment No. 2			457.47

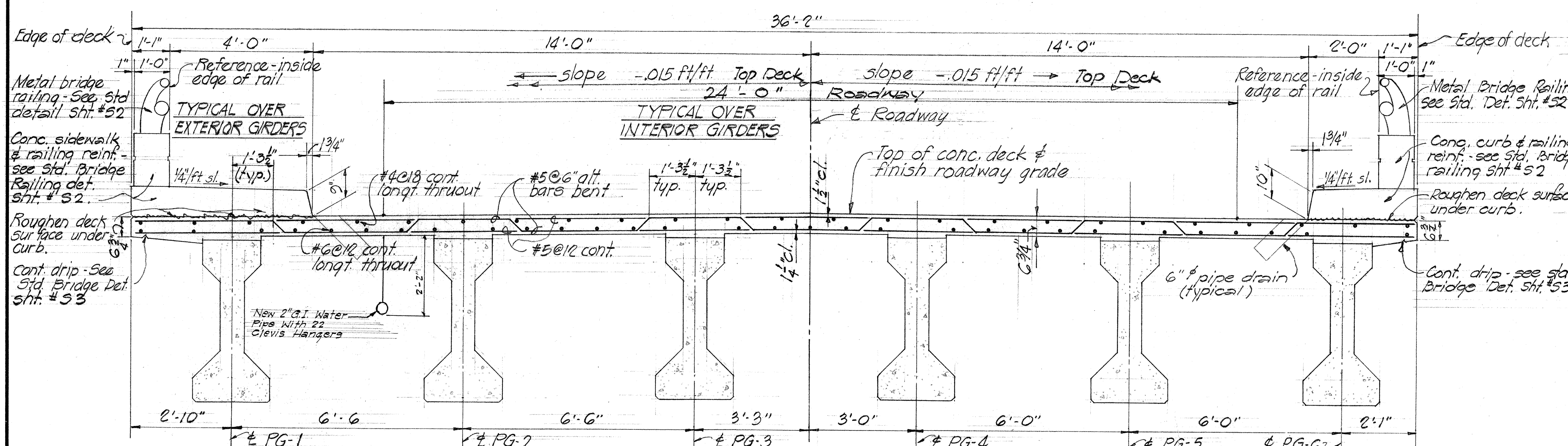
ALTERNATE "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISIONKAIEIE, KALAOA, HANAWI &
WAI'AAMA STREAM BRIDGES
SCHEDULESHAWAII BELT ROAD PROJ. No F-019-2(8)
DEC 1966

SHEET No. 85 OF 11 SHEETS

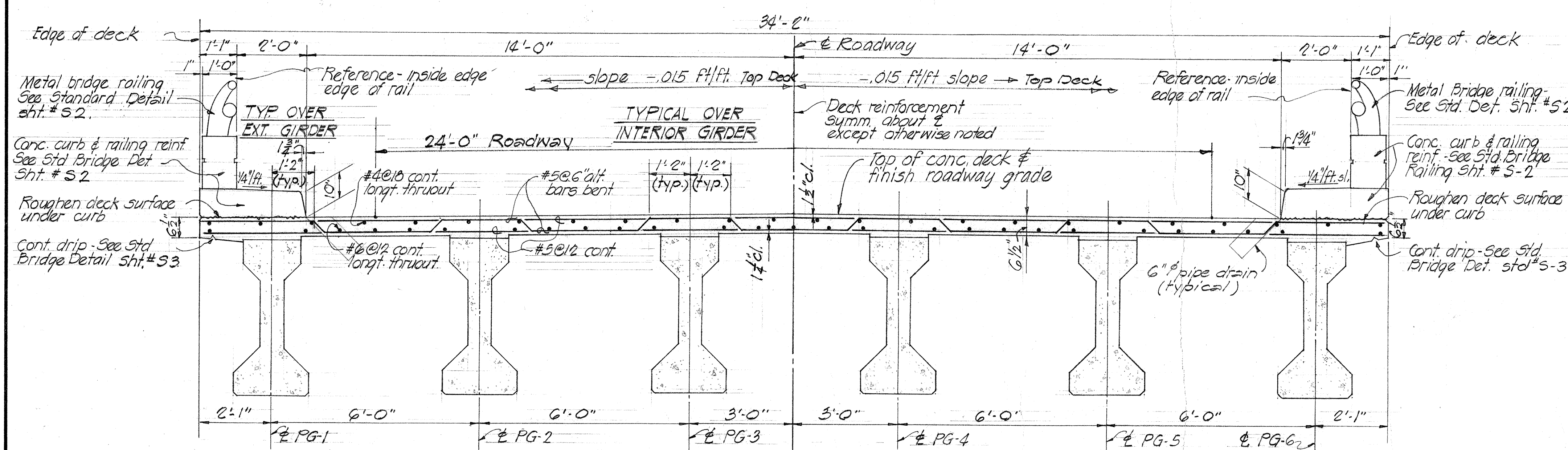


KAIEIE BRIDGE - DECK FRAMING PLAN



KAIEIE BRIDGE - NORMAL DECK SECTION

ESTIMATED QUANTITIES - ALTERNATE "B"						
LOCATION	KAIHEE BRIDGE	KALAOA BRIDGE	HANAWI BRIDGE	WATAAMA BRIDGE	TOTAL	
ITEM						
Class A-1 Concrete (Lump Sum)	525 521 CY	367 370 CY	^{1,314} 1,255 CY	432 366 CY	^{2,032} 2,512 CY	
Reinforcing Steel (Lump Sum)	^{90,150} 90 lbs	^{51,950} 51 lbs	^{910,400} 910 lbs	^{65,000} 65 lbs	^{417,500} 417 lbs	
Structural Excavation	370 354 CY	300 284 CY	825 782 CY	235 242 CY	^{1,662} 1,720 CY	
Prestressed Girder	Type II			245 LF	245	
	Type III	1,232 LF	365 LF	1,531 LF	4,044	
	Type IV		479 LF	982 LF	1,461	
Concrete Railing & End Post	438 436 LF	306 LF	868 864 LF	414 412 LF	^{2,226} 2,018 LF	
Metal Bridge Railing	416 LF	286 LF	844 LF	392 LF	1,938 LF	
Cast-in-Place Concrete Piles	—	—	^{1,575} 1,575 LF	—	^{1,575} 1,575 LF	
Prestressed Conc. Piles Type I	542 LF	—	733 LF	405 LF	1,680 LF	
Removal of Existing Structure (including concrete piers)	Lump Sum	Lump Sum	Lump Sum	Lump Sum		
Filter Material	14 12 CY	24 23 CY	10 CY	11 CY	59 50 CY	
Metal Guard Rail	121 100 LF	146 100 LF	198 100 LF	133 100 LF	598 400 LF	



KALAOA, HANAWI, & WAI'AAMA BRIDGE - NORMAL DECK SECTION

ALTERNATE "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

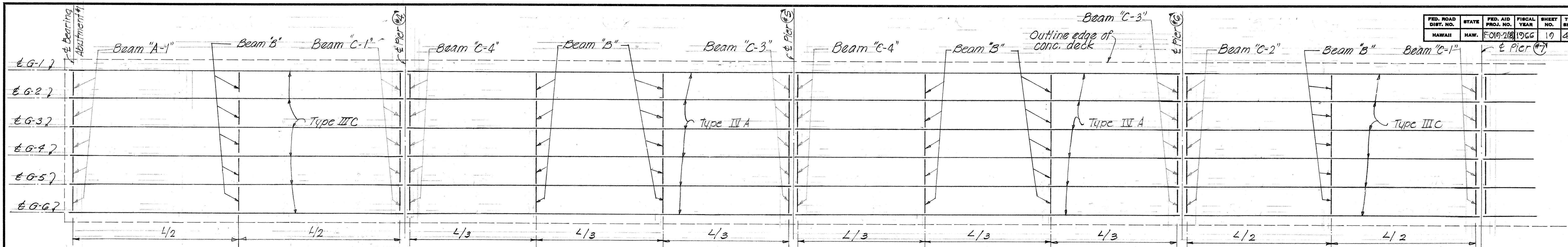
KALELE, KALAOA, HANAWI
& WATAAMA BRIDGES

DECK FRAMING PLAN SECTIONS & DETAILS

LIANAI BELT ROAD PROJ. N° F-019-2(8)
OCT 1966

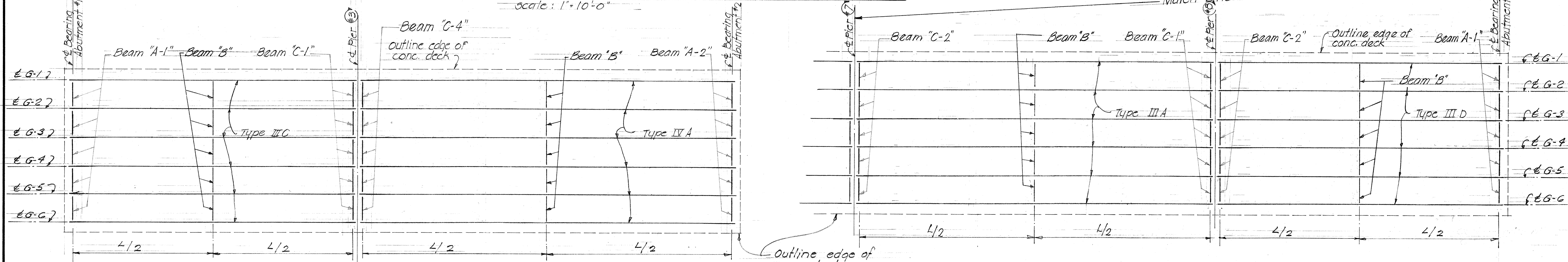
SHEET No. 36 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F019-2(8)	1966	19	41



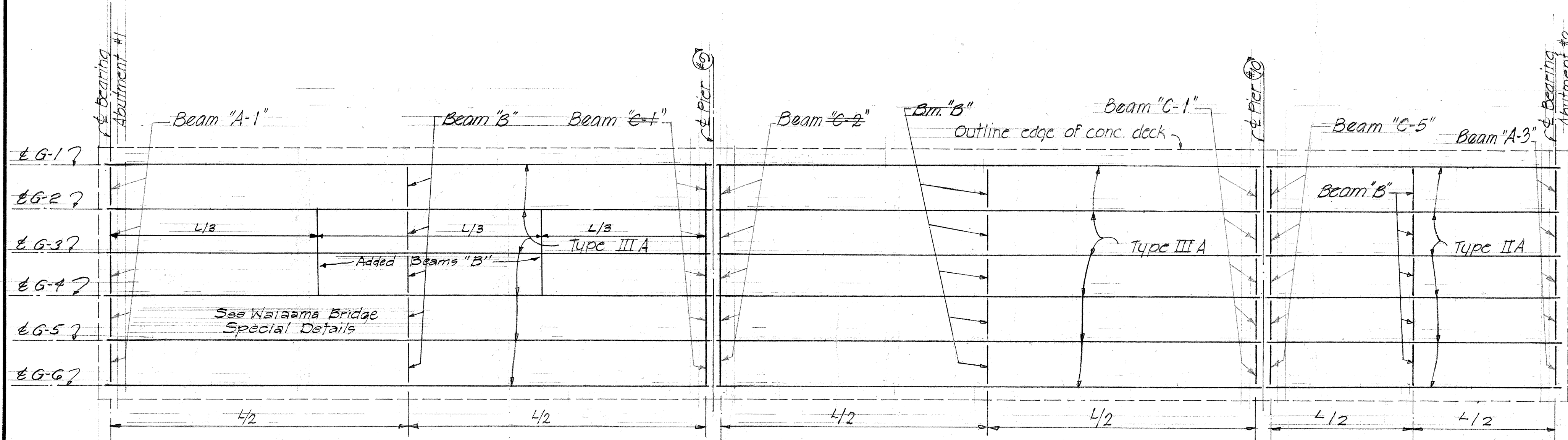
HANAWI BRIDGE - DECK FRAMING PLAN

scale: 1"=10'-0"



KALAOA BRIDGE - DECK FRAMING PLAN

scale: 1"=10'-0"



WAIKAA BRIDGE - DECK FRAMING PLAN

scale: 1"=10'-0"

ALTERNATE "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

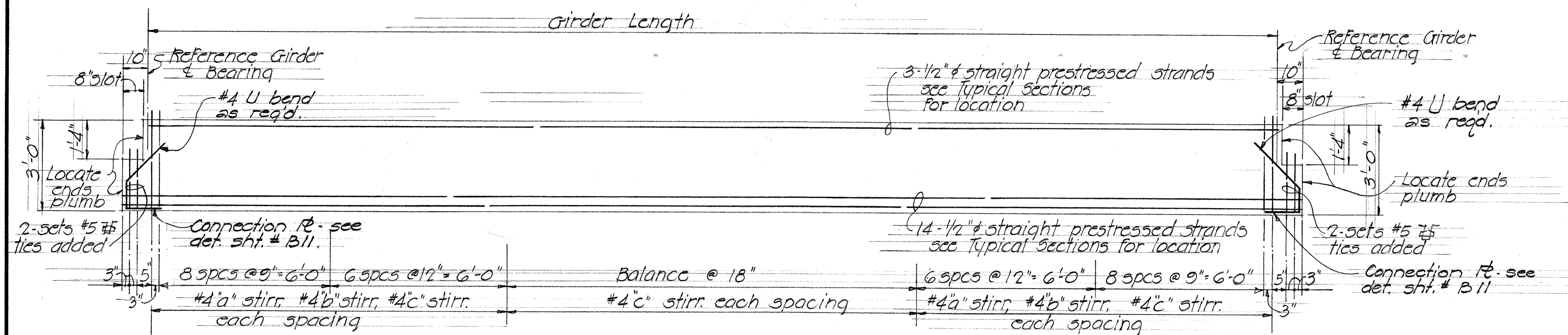
HANAWI, KALAOA &
WAIKAA BRIDGES
DECK FRAMING PLAN

HANAWI BELT ROAD PROJ. NO. F-019-2(8)

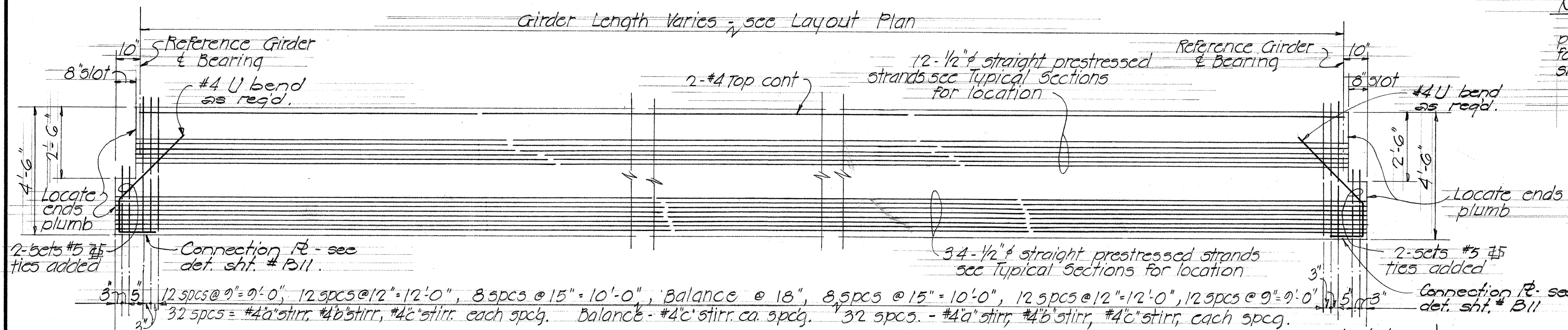
OCT 1966

SHEET No. B7 OF 11 SHEETS

ORIGINAL PLAN	DATE 10/66
DESIGNED BY	W.B.
NOTED BY	W.B.
CHECKED BY	W.B.
QUANTITIES BY	W.B.
NO.	W.B.

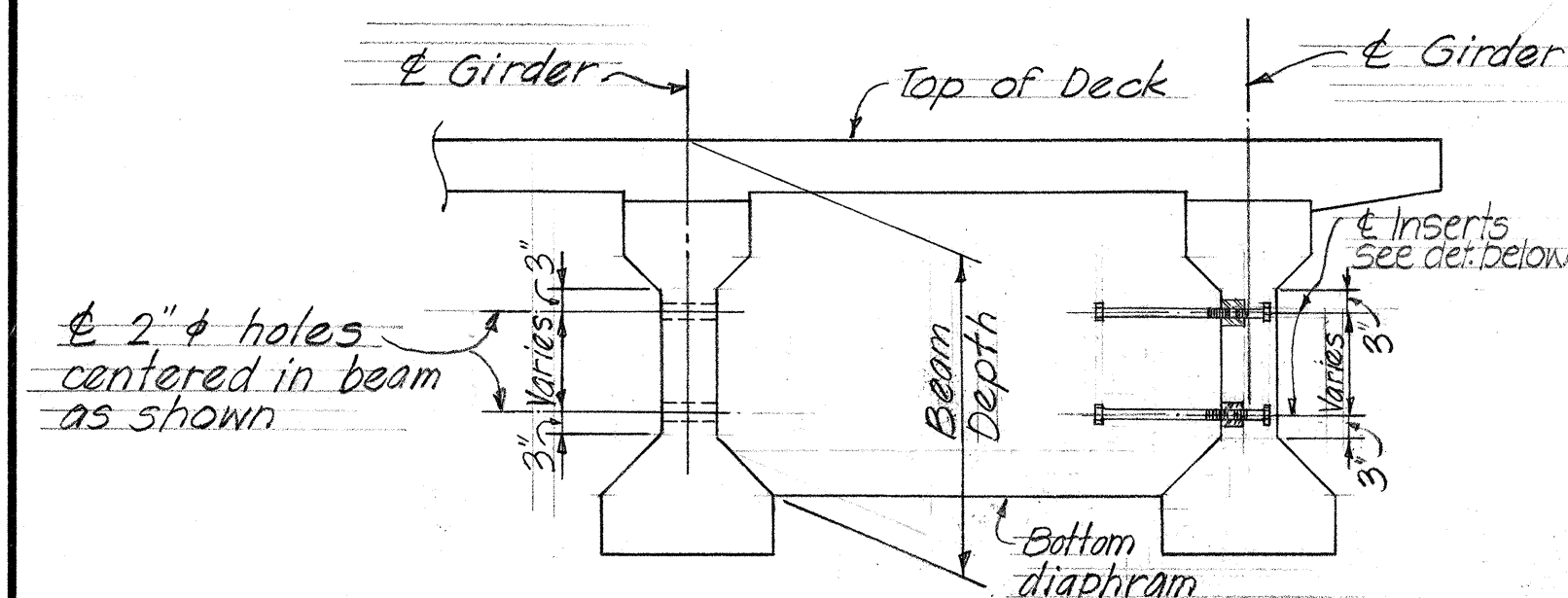


TYPICAL TYPE II A GIRDER DETAIL

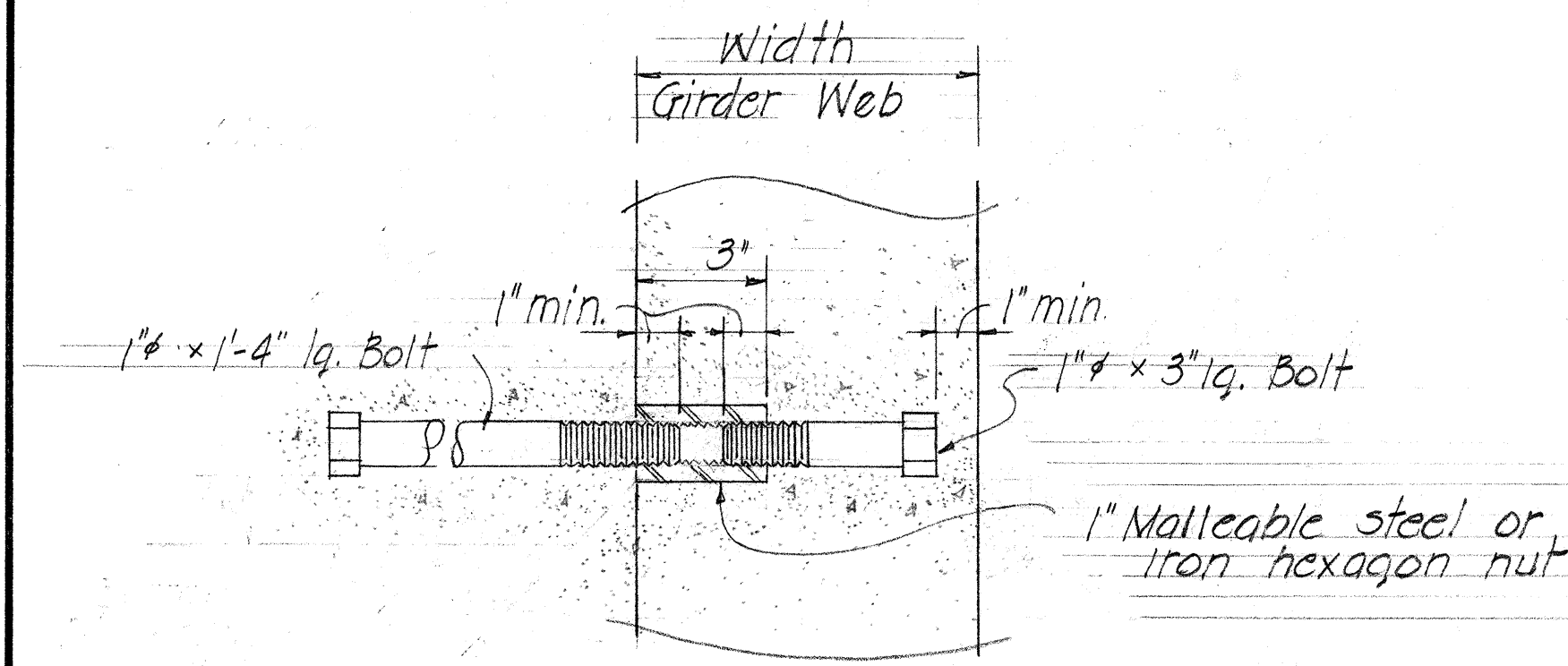


TYPICAL TYPE IV A GIRDER DETAIL

Note: beam "B" inserts and holes are incidental to prestressed girders

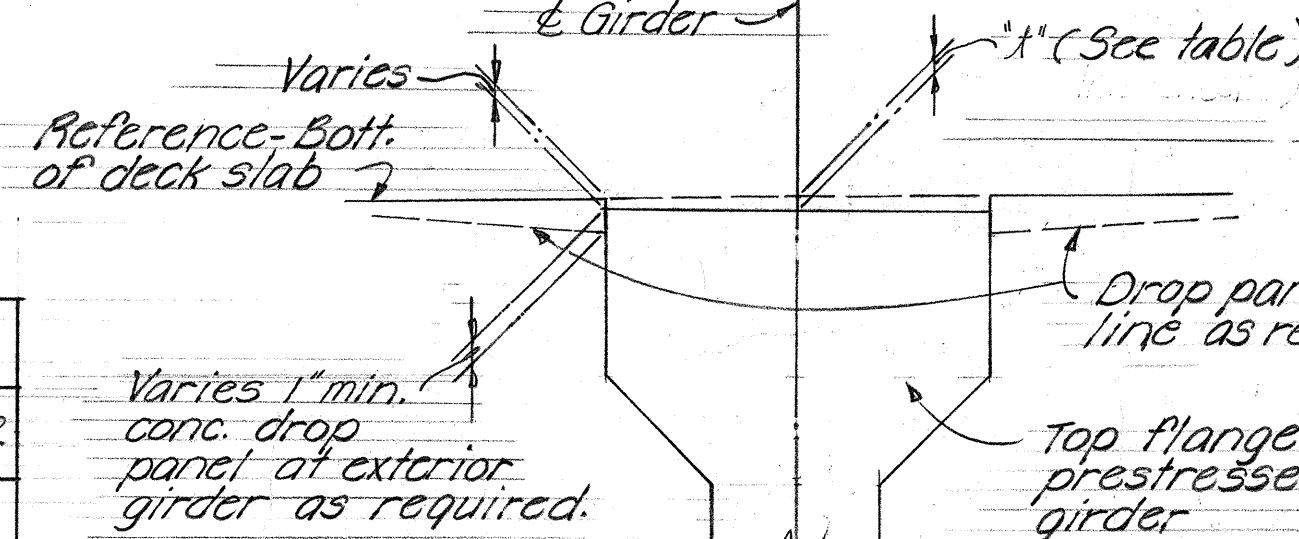


AT PG-2 THRU PG-5 AT PG-1 & PG-6
TYPICAL BEAM "B" CONNECTION DETAIL



INSERT DETAIL SCALE: 3" = 1'-0"

TABLE OF "A" DIMENSION AT & BRG.												
LOCATION	ABUT.#1	PIER#1	PIER#2	PIER#3	PIER#4	PIER#5	ABUT.#2					
KAIIEIE	5'	8'	1'	1'	3'		3'					
KALAOA	8'	5'	8'	1'			8'					
HANAWI	13'	8'	5'	5'	1'	2'	8'	3'	10'	5'	8'	
WAIKAMA	13'	13'	13'	13'	5'		13'					



TYPICAL SECTION OF SLAB DROP PANEL AT & BEARING

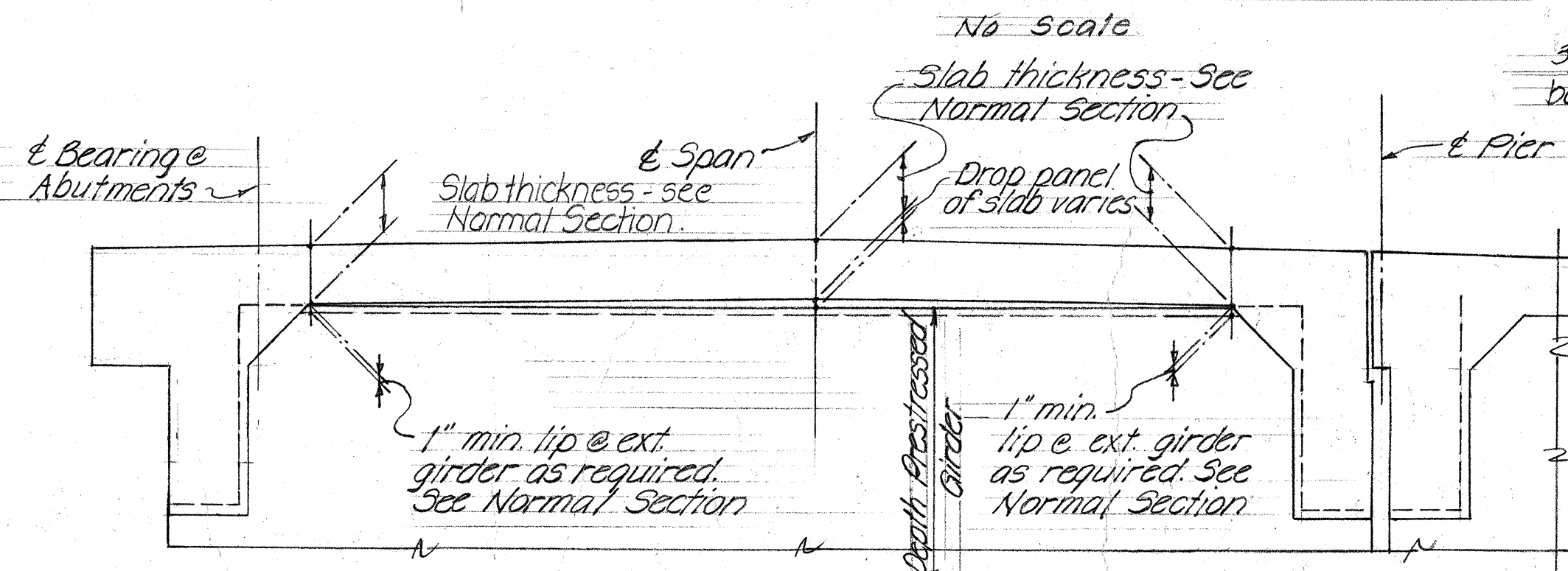
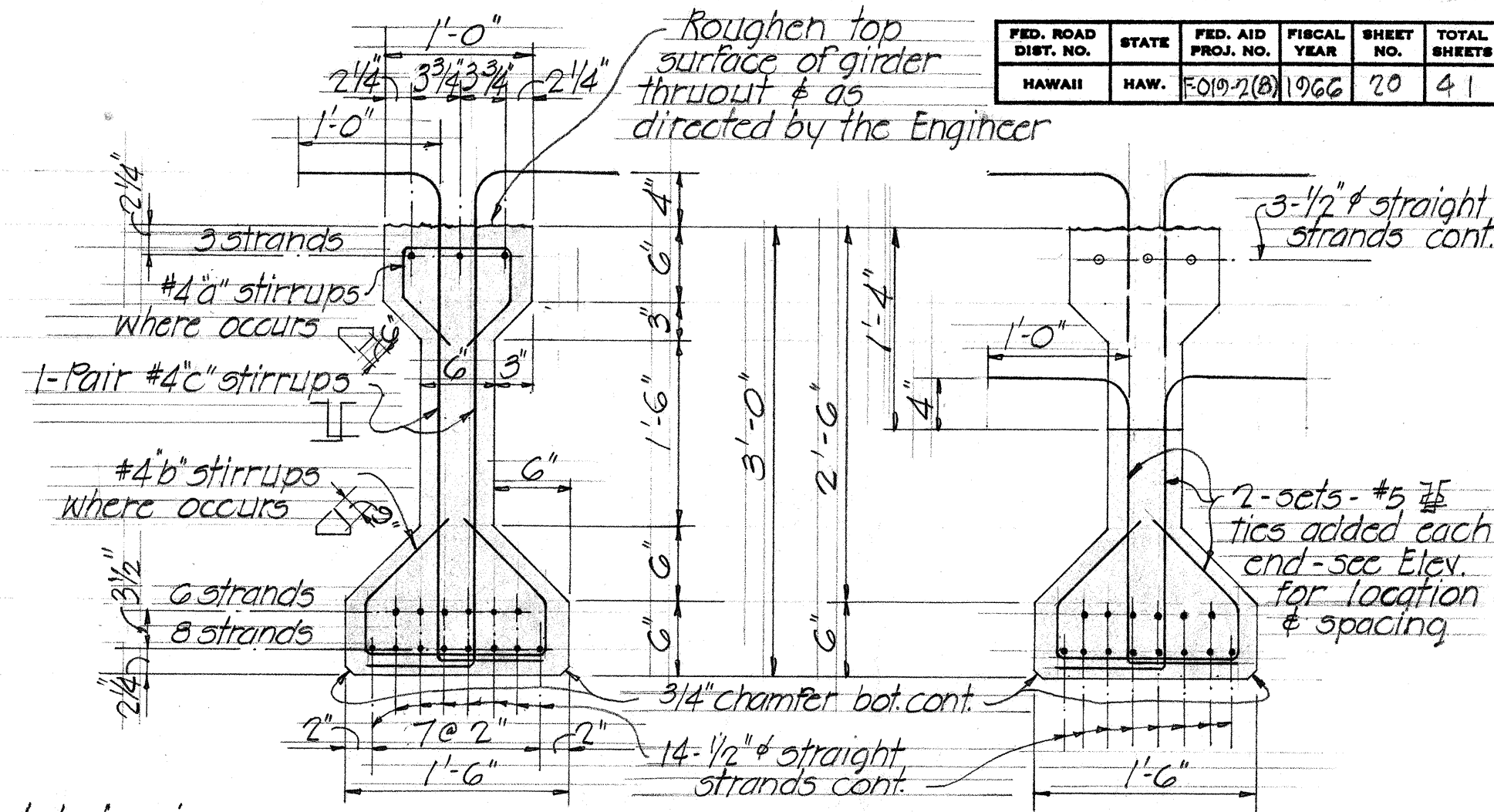
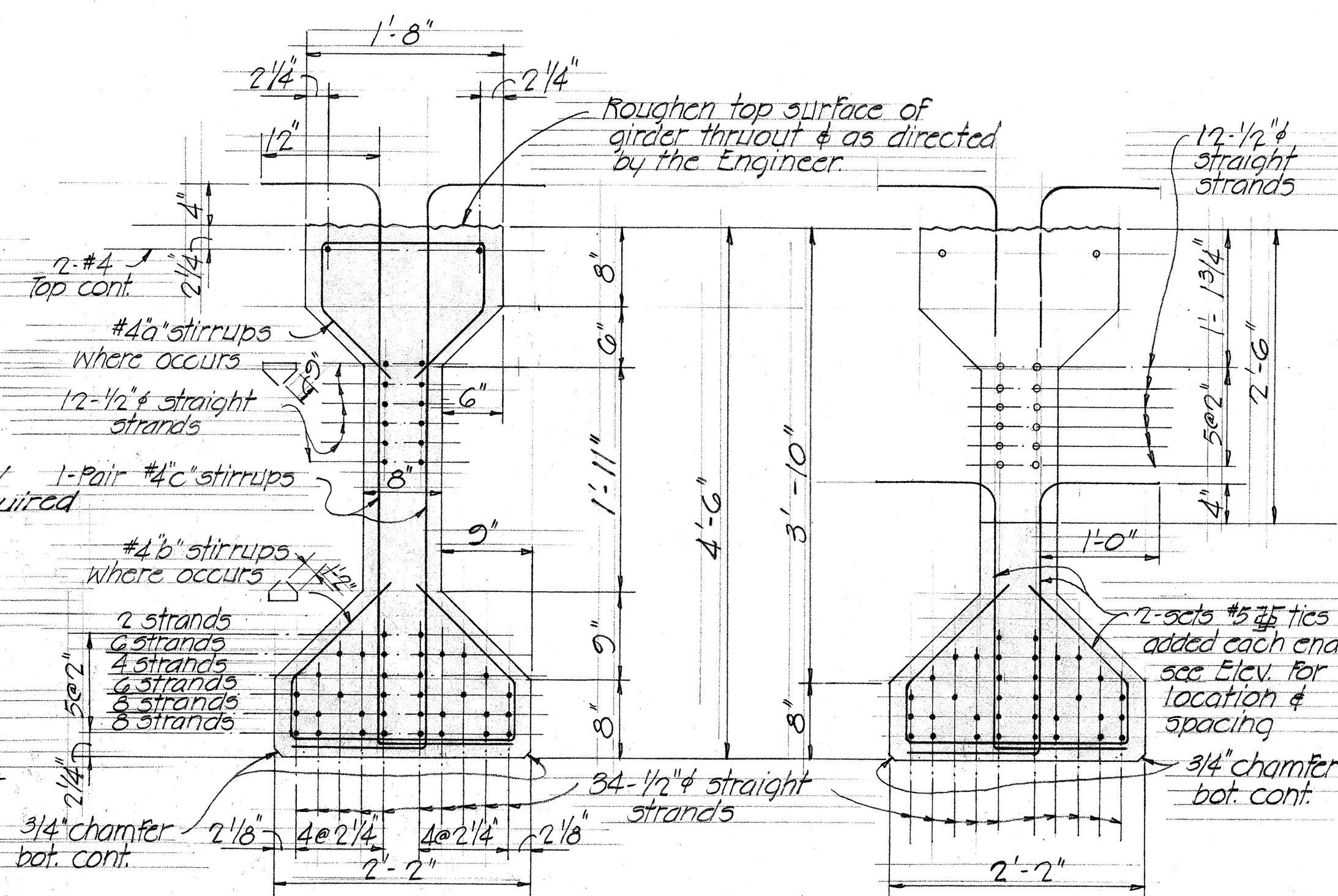


DIAGRAM SHOWING DROP PANEL OF SLAB AT EACH GIRDER



AT MIDSPAN AT ENDS
TYPICAL TYPE II A GIRDER SECTIONS



AT MIDSPAN AT ENDS
TYPICAL TYPE IV A GIRDER DETAILS

ALTERNATE "B"

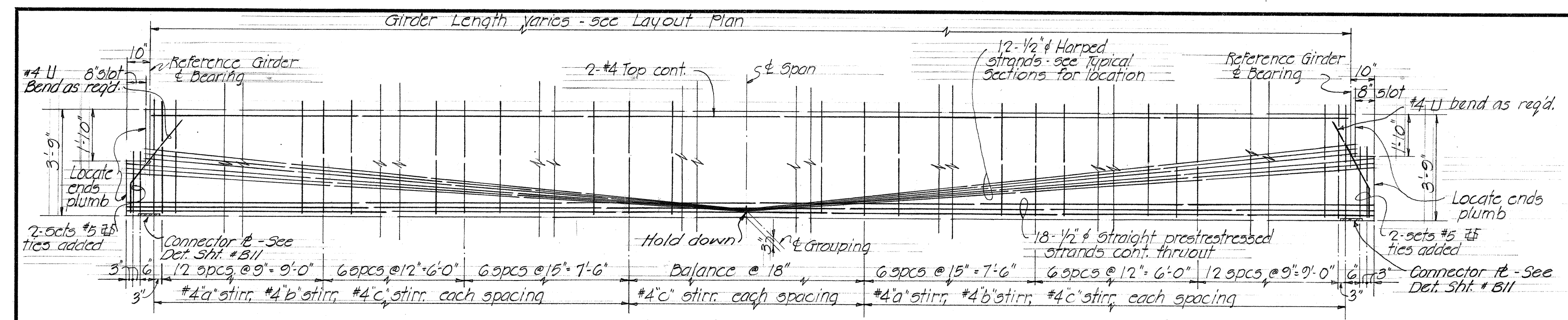
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAIIEIE, KALAOA, HANAWI
& WAIKAMA BRIDGES

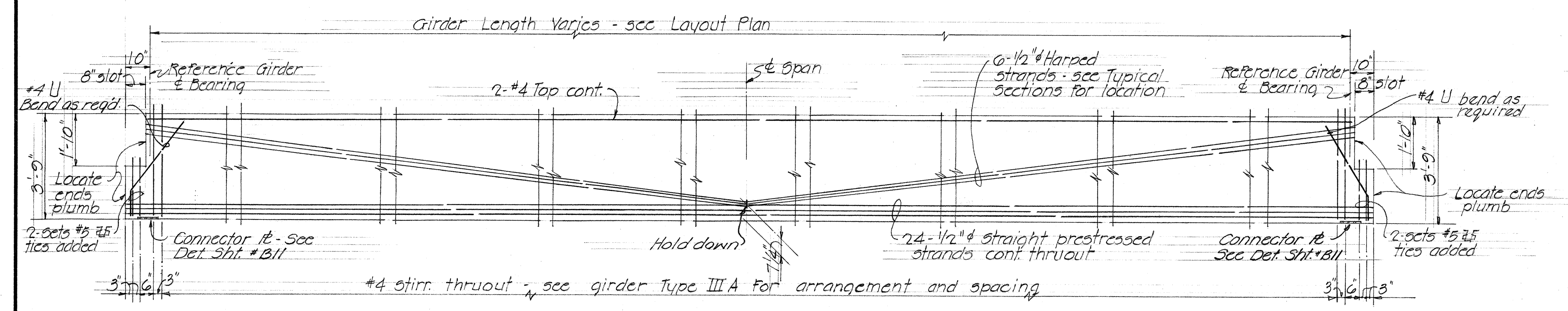
TYPICAL PRESTRESSED
GIRDER DETAILS

HAWAII BELT ROAD PROJ. NO. F-019-2(8)
OCT 1966

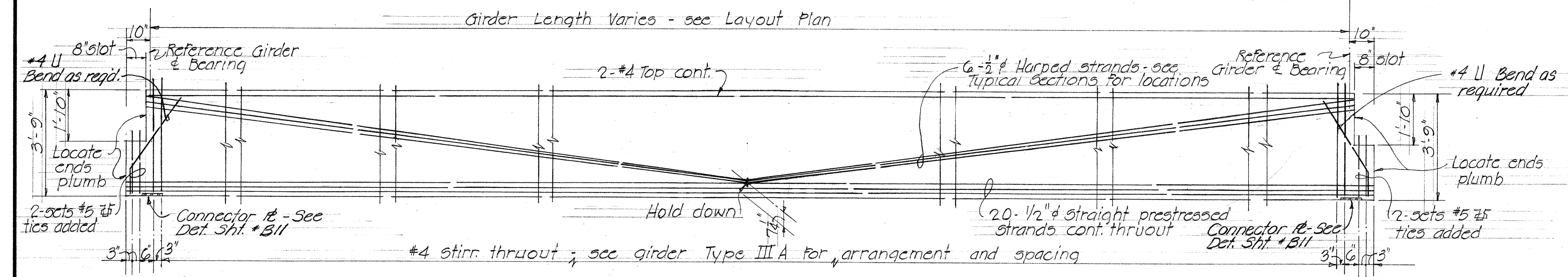
SHEET No. B8 OF 11 SHEETS



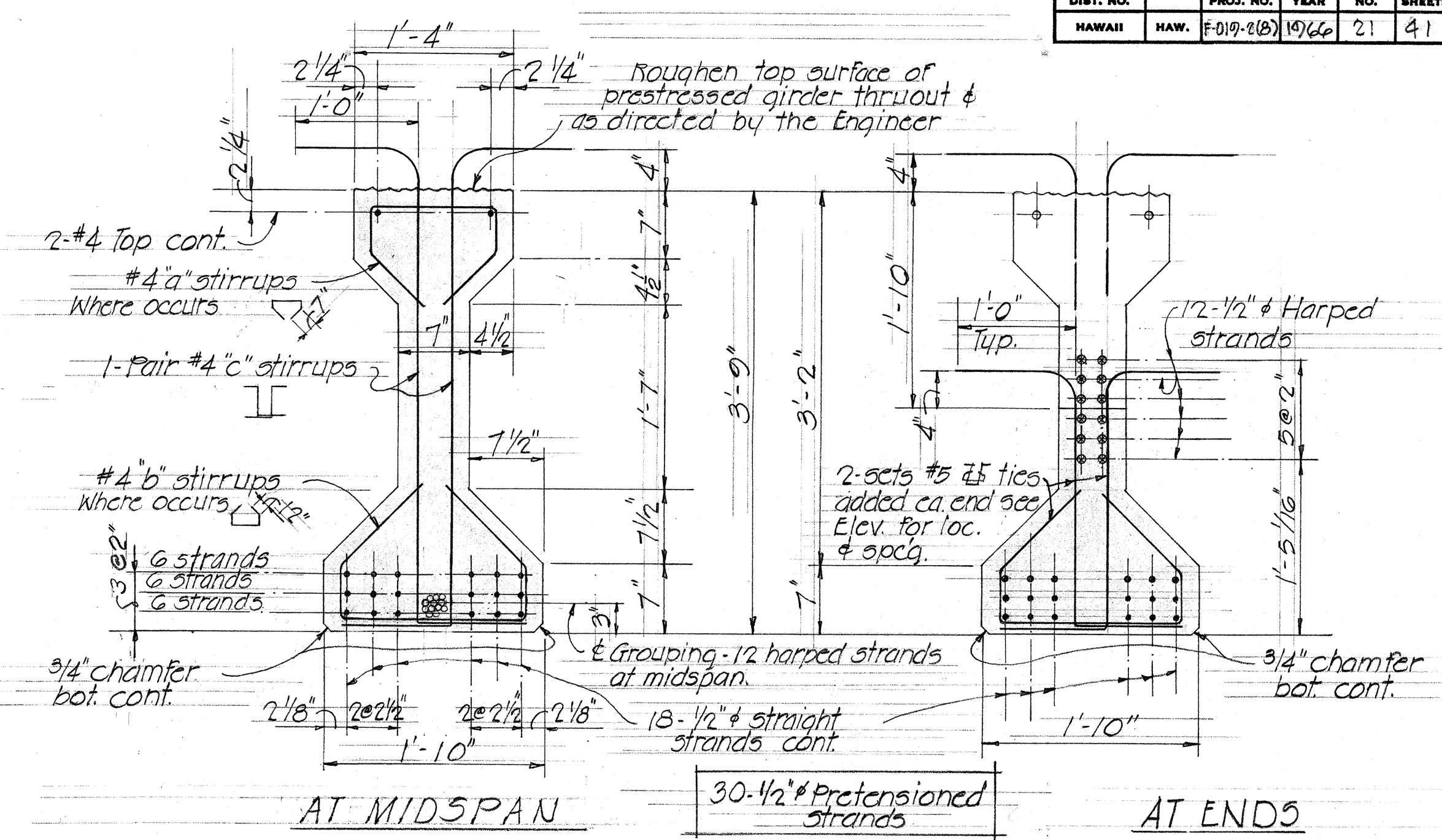
TYPICAL TYPE IIIA GIRDER DETAIL



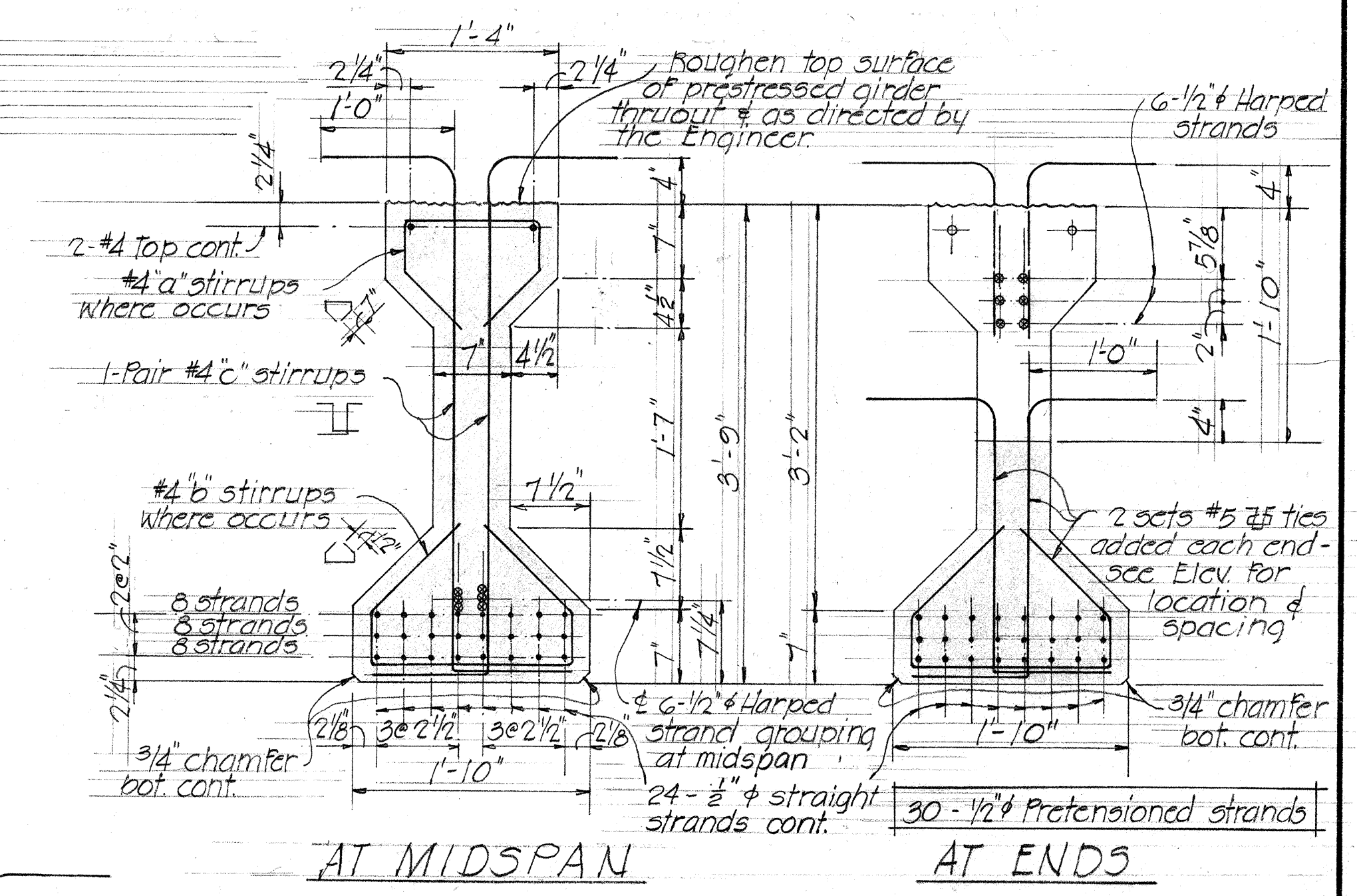
TYPICAL TYPE IIIB GIRDER DETAIL



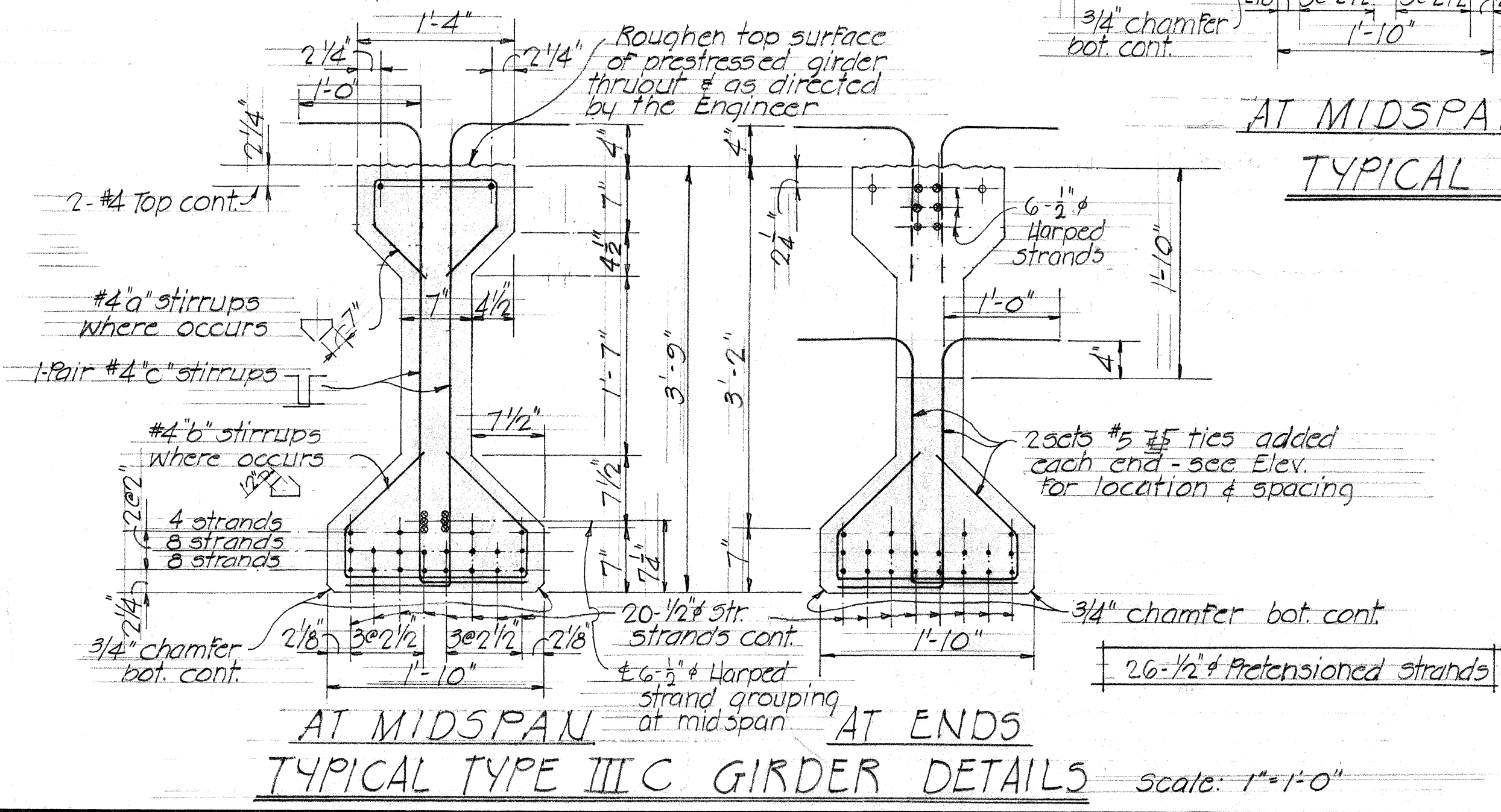
TYPICAL TYPE IIIC GIRDER DETAIL



TYPICAL TYPE IIIA GIRDER SECTIONS



TYPICAL TYPE IIIB GIRDER DETAILS



TYPICAL TYPE IIIC GIRDER DETAILS

NOTE!
Provide inserts & holes in prestressed girders as required for Beam 'B' connectors - see Detail Sht. #B-8

ALTERNATE "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**KAIEIE, KALAOA, HANAWI
& WAI'AAMA BRIDGES**

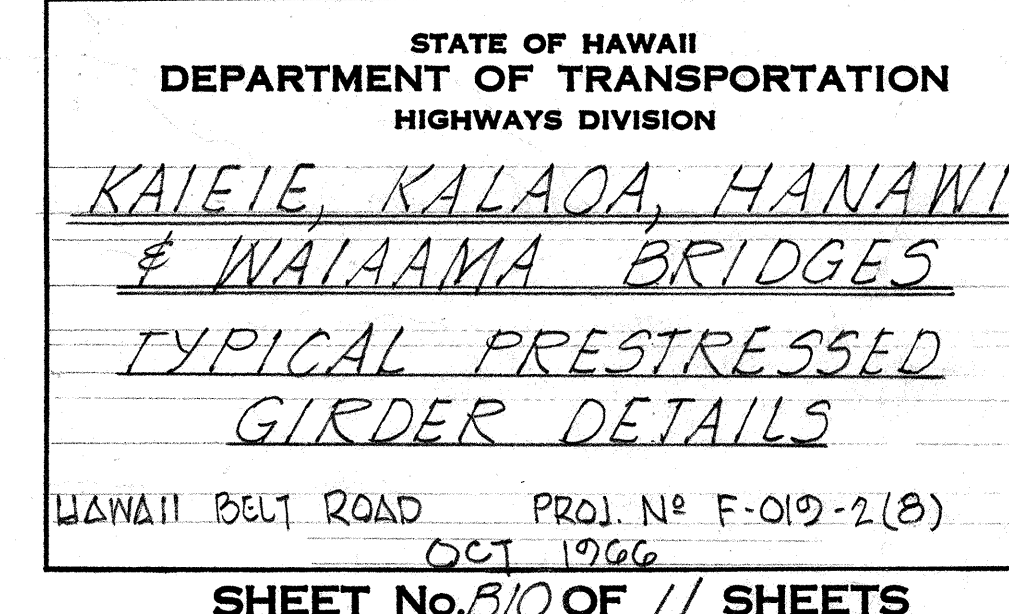
**TYPICAL PRESTRESSED
GIRDER DETAILS**

HAWAII BELT ROAD PROJ. NO. F-019-2(B)
OCT 1966

SHEET No. 21 OF 11 SHEETS

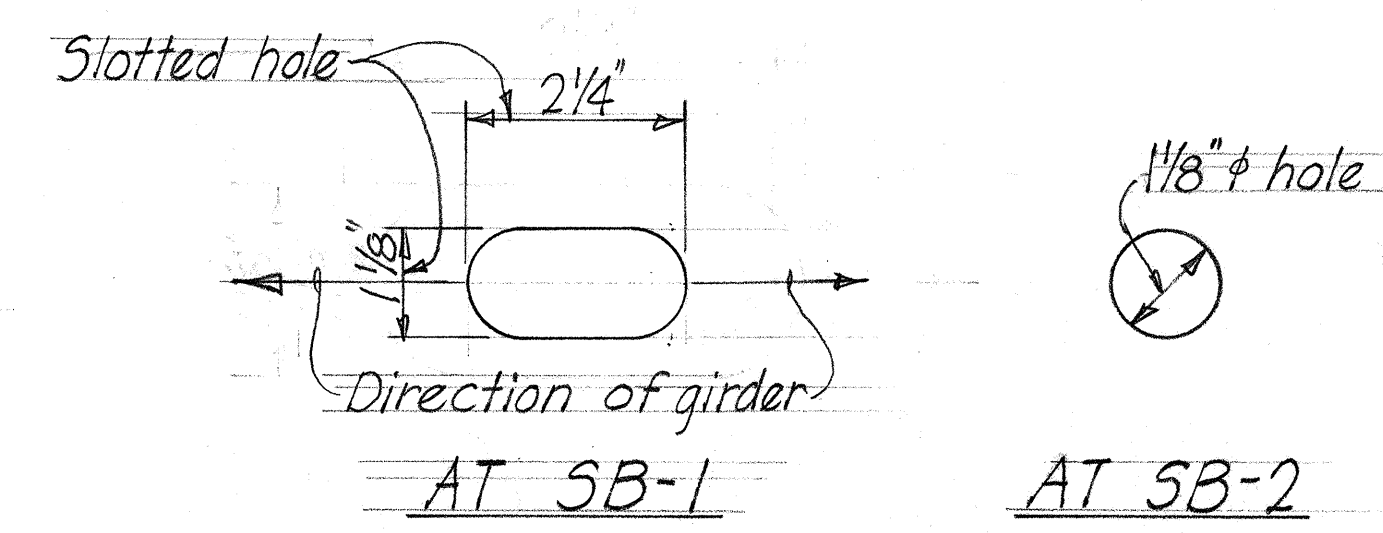
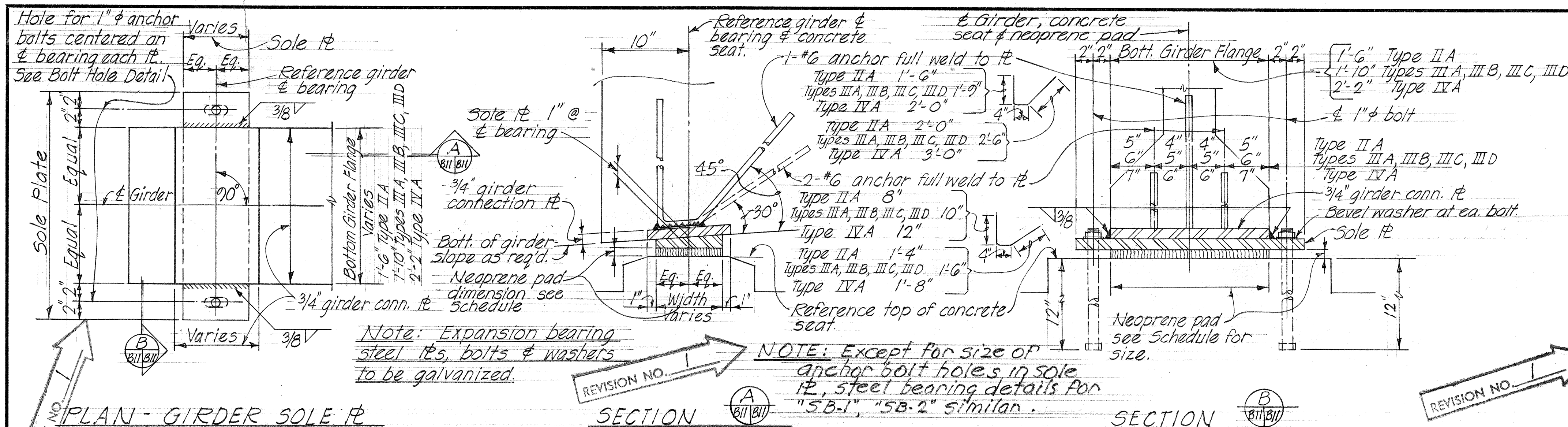
ORIGINAL PLAN	DATE 10/16/66
SURVEY PLATTED BY	WLB
DRAWN BY	WLB
DESIGNED BY	WLB
QUANTITIES BY	WLB
CHECKED BY	WLB
NO.	

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	



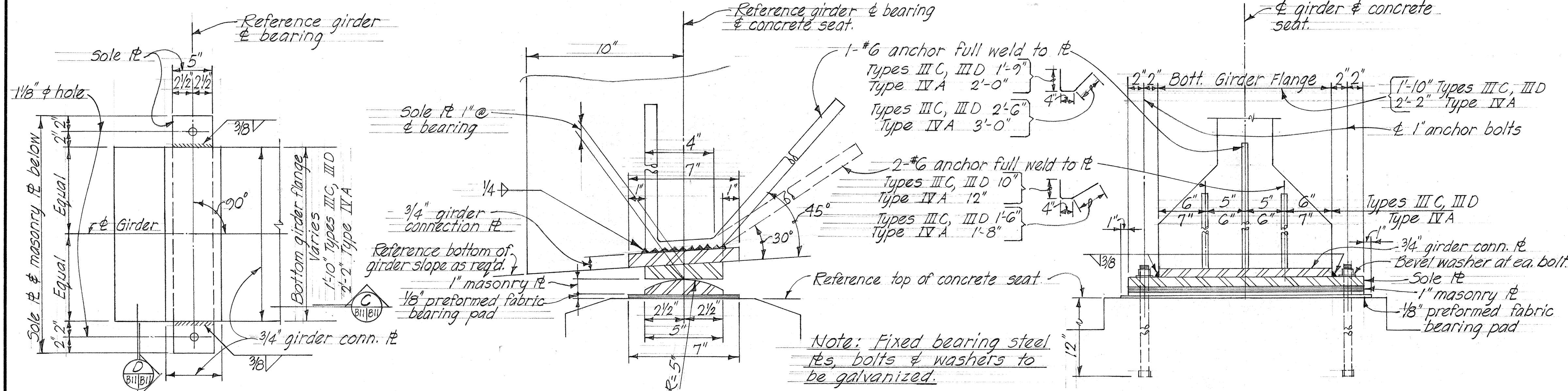
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-00-28	1966	23R	41

Revision #1 3/15/67 - Changed bearing designation & details.



SOLE PLATE - ANCHOR BOLT HOLE DETAIL

TYPICAL PRESTRESSED GIRDER STEEL BEARING DETAILS "SB-1", "SB-2"
Scale: 1 1/2" = 1'-0"



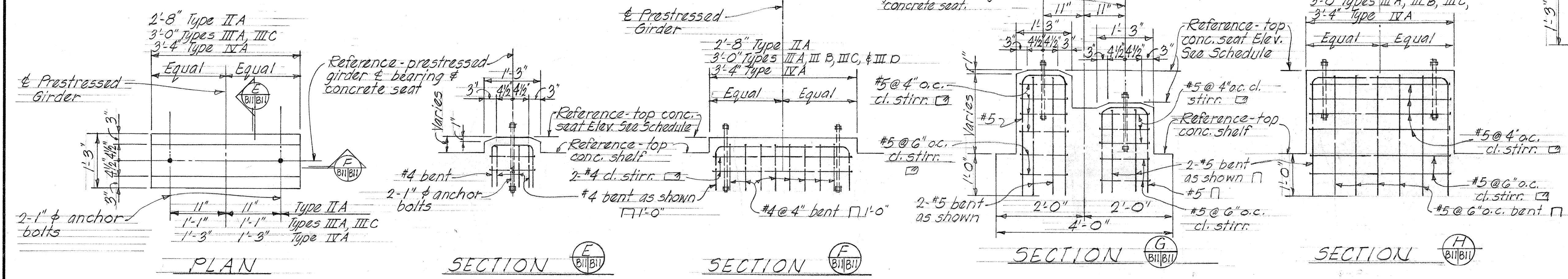
Note: Steel bearing assemblage and anchor bolts to be incidental to concrete and will not be paid for separately.

TYPICAL PRESTRESSED GIRDER STEEL BEARING DETAILS "SB-3"

PLAN - GIRDER SOLE PLATE
Scale: 1 1/2" = 1'-0"

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

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



PLAN

SECTION E

SECTION F

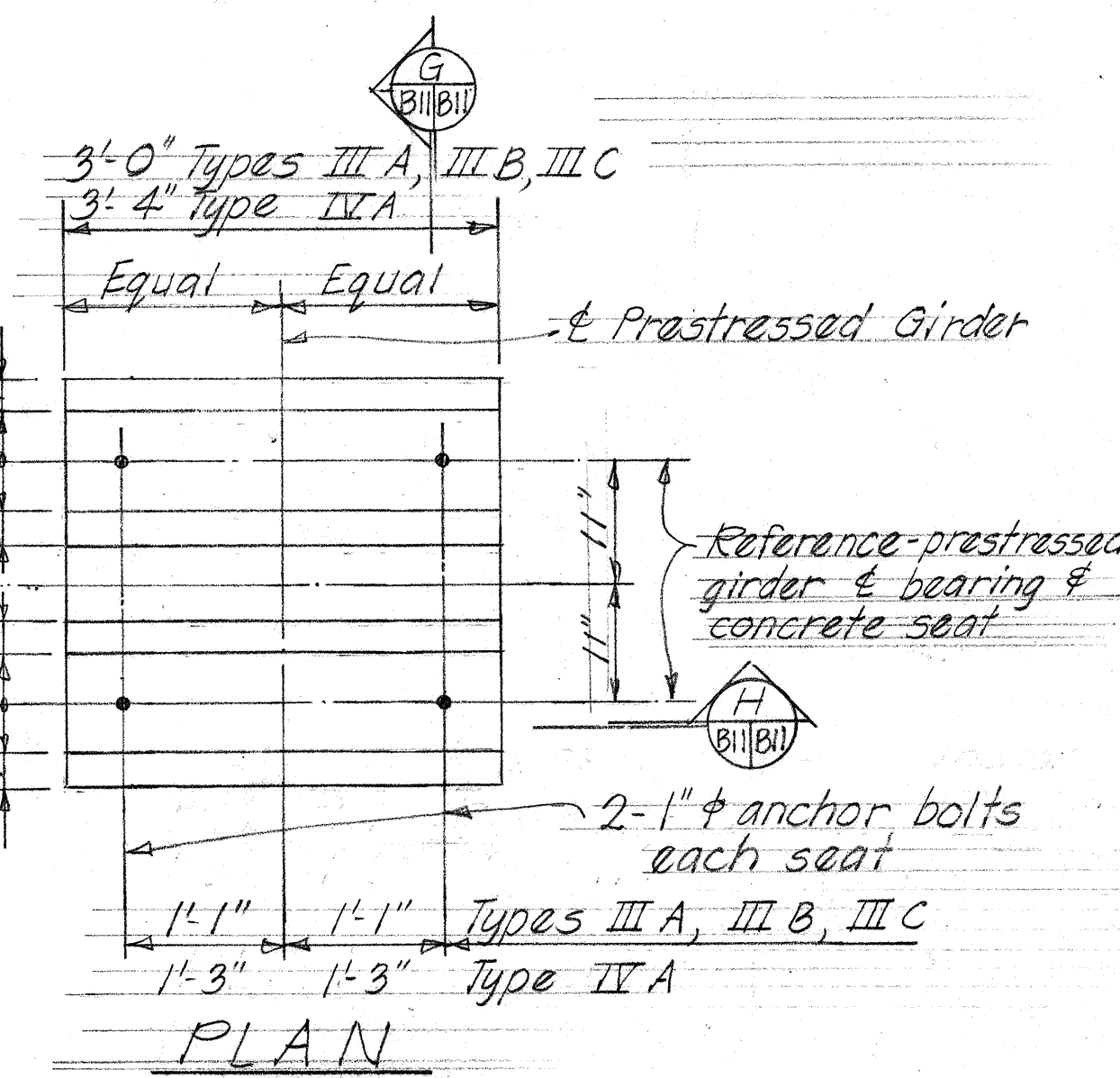
SECTION G

SECTION H

TYPICAL SINGLE SEAT

TYPICAL COMBINED SEAT (ALL ONE LEVEL SHELF PIERS)

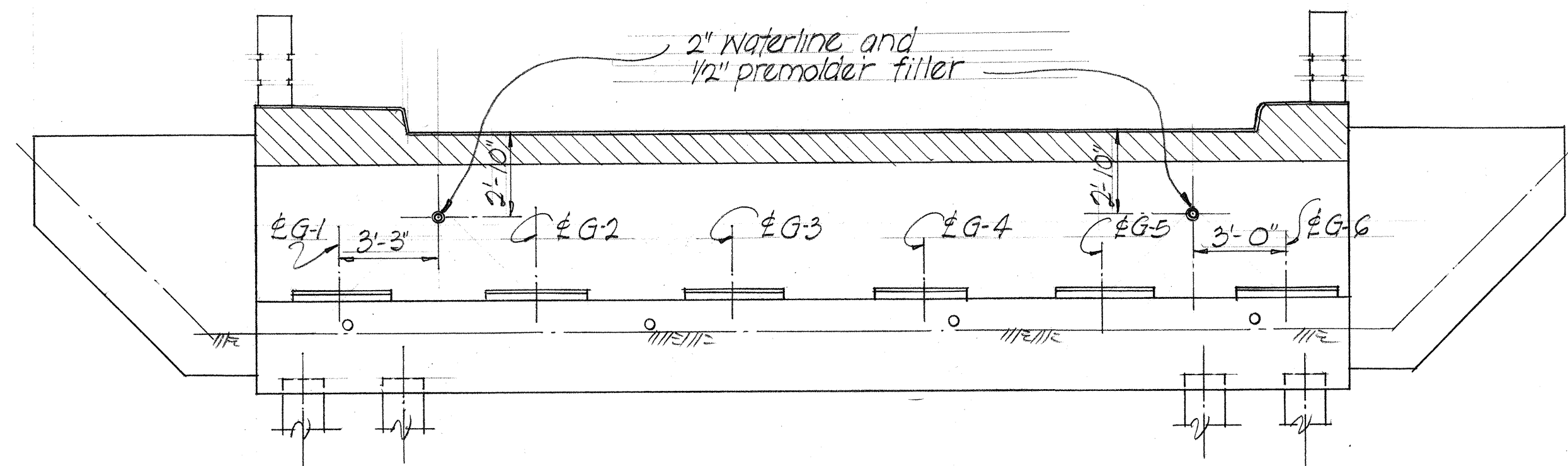
TYPICAL CONCRETE SEAT FOR FIXED OR EXPANSION BEARING
Scale: 3/4" = 1'-0"



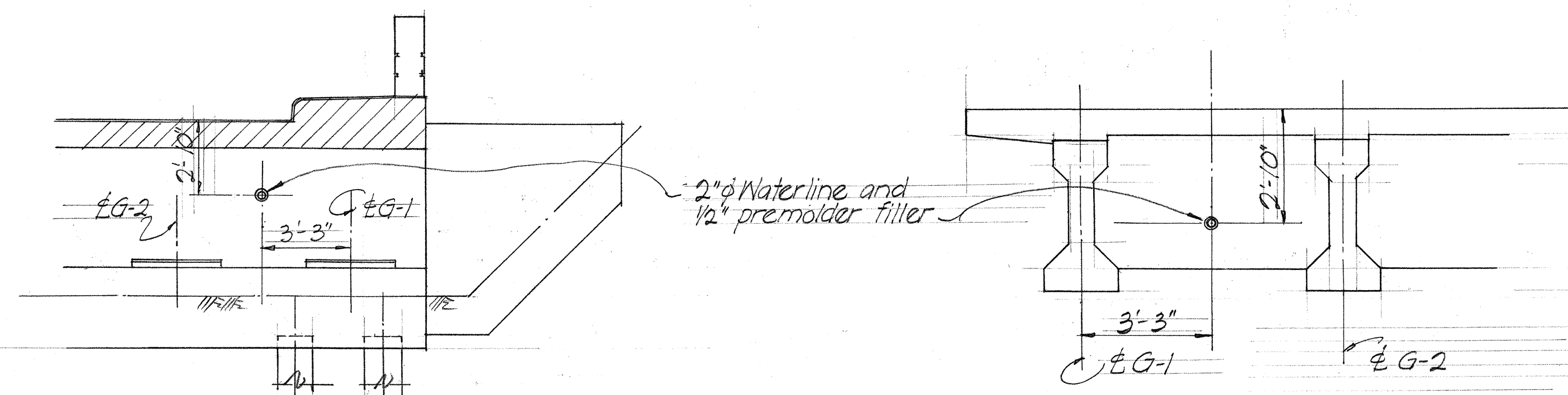
ALTERNATE "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAIEIE, KALAOA, HANAWI &
WAI'AAMA STREAM BRIDGES
TYPICAL BEARING &
CONCRETE SEAT DETAIL
HAWAII BELT ROAD PROJ. NO. F-010-2(B)
OCT 1966
SHEET NO. 81 OF 11 SHEETS

1. B.W.S. shall furnish new 2" G.I. pipes and bends
2. Excavation, straight couplings, pipe hangers & clamps, concrete reaction blocks and other items required to complete the pipeline between the above mention stations shall be furnished and installed by Contractor.
3. Connections to existing main shall be made as directed by Board Of Water Supply engineer.
4. Chlorination for all new pipes and by-pass line shall be done by Board of Water Supply.

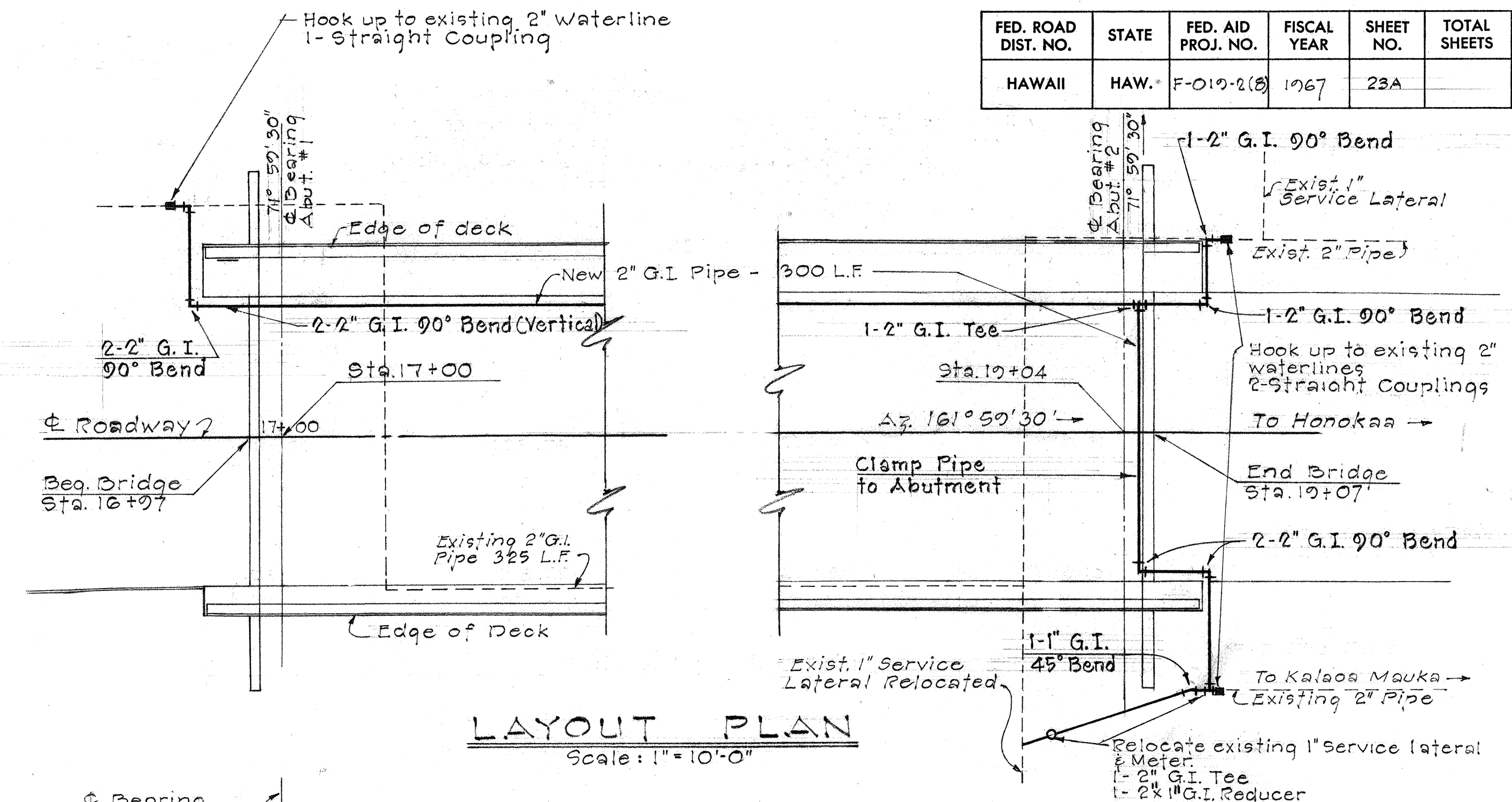


Scale: $\frac{1}{4}'' = 1'-0''$

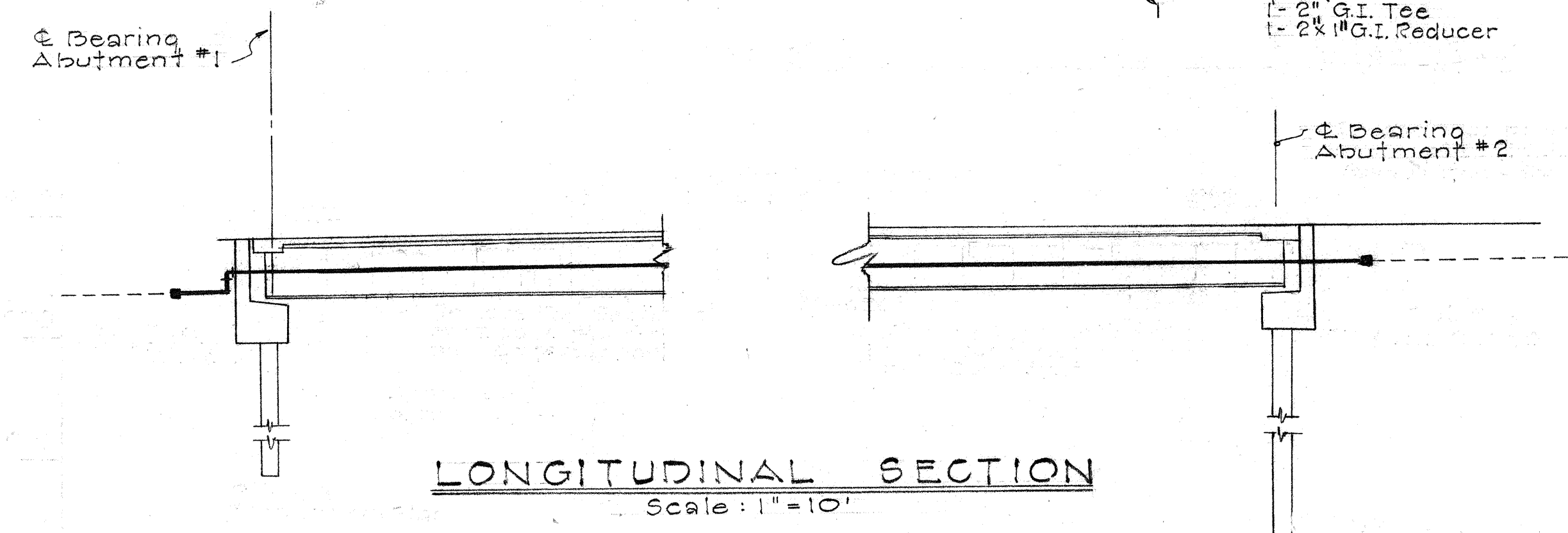


Scale: $\frac{1}{4}" = 1'-0"$

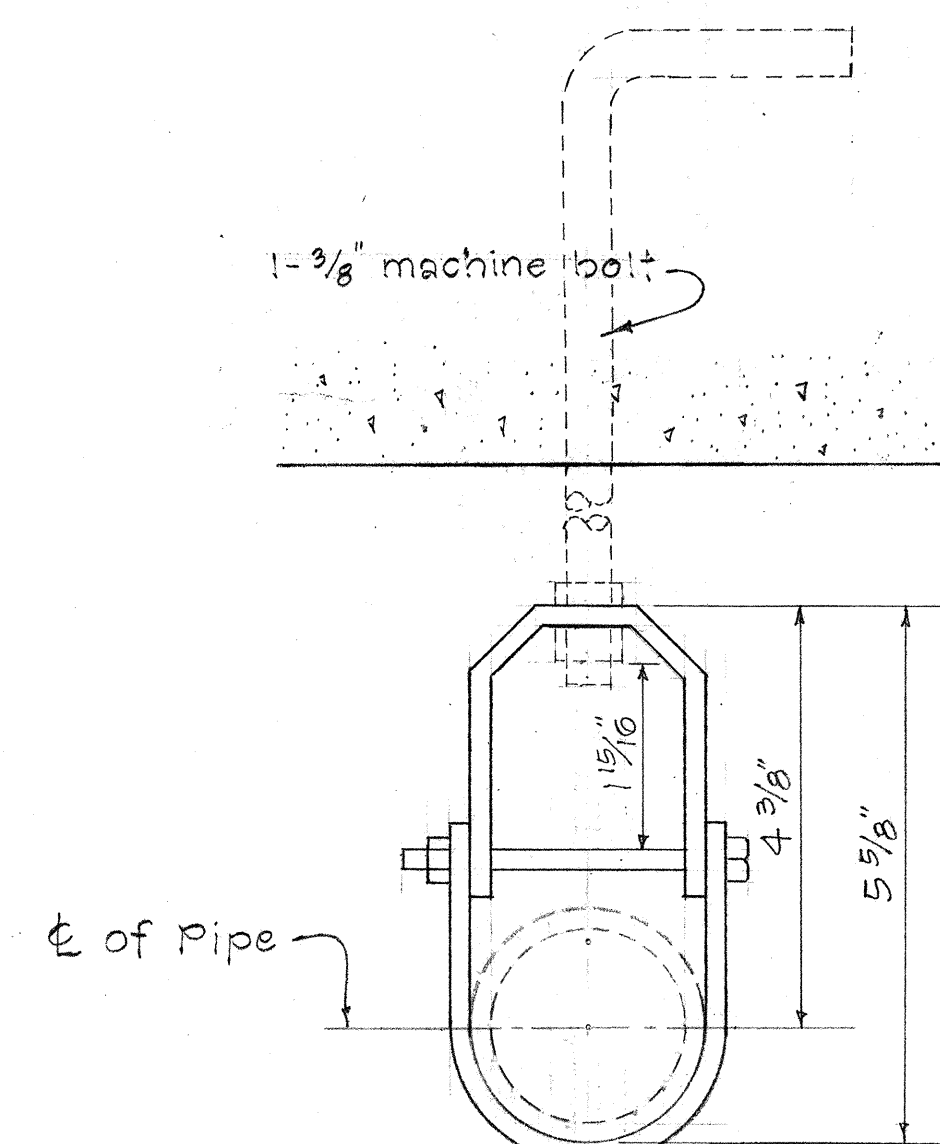
Scale: $\frac{3}{8}" = 1'-0"$



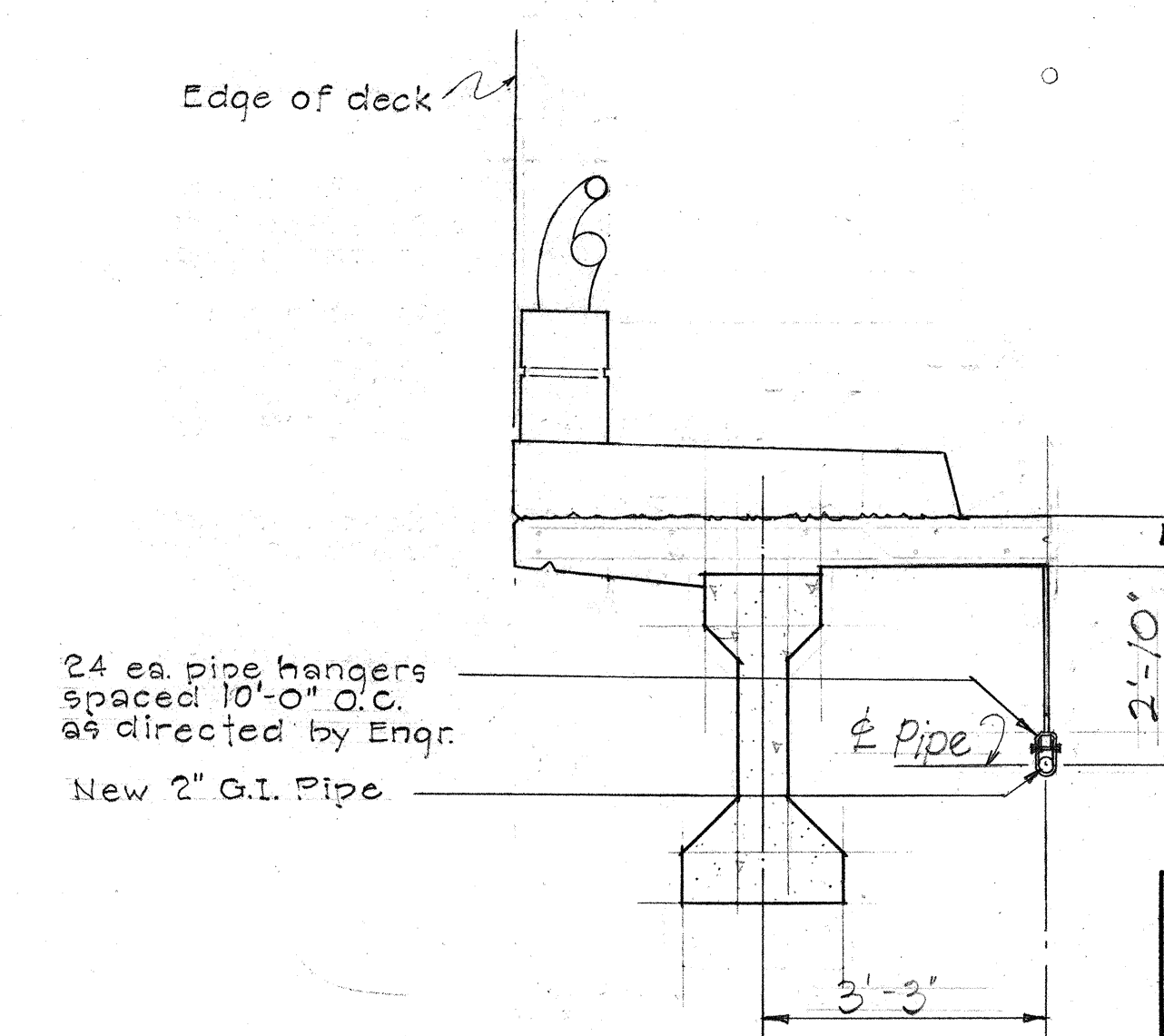
Scale: 1" = 10'-0"



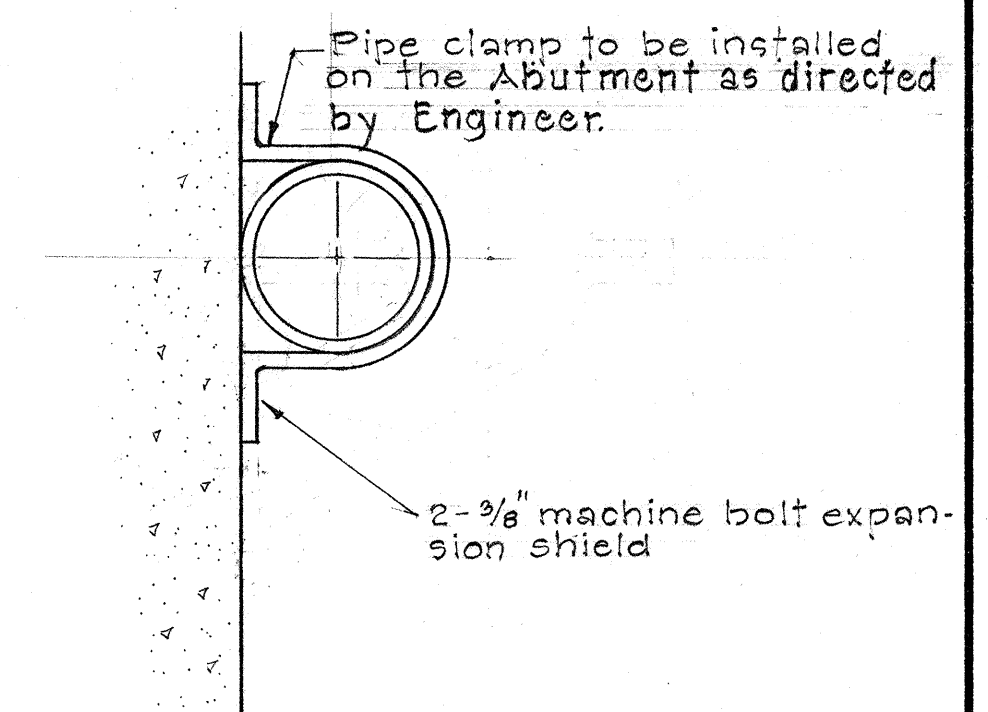
Scale : 1" = 10



2" CLEVIS
HANGAR ASSEMBLY
Scale: 6"=1'-0"



HANGER LOCATION
Scale: $\frac{1}{2}" = 1'-0"$



PIPE CLAMP FOR
2" G.I. PIPE
Scale: 6" = 1'-0"

June, 1967

SHEET No. OF SHEETS