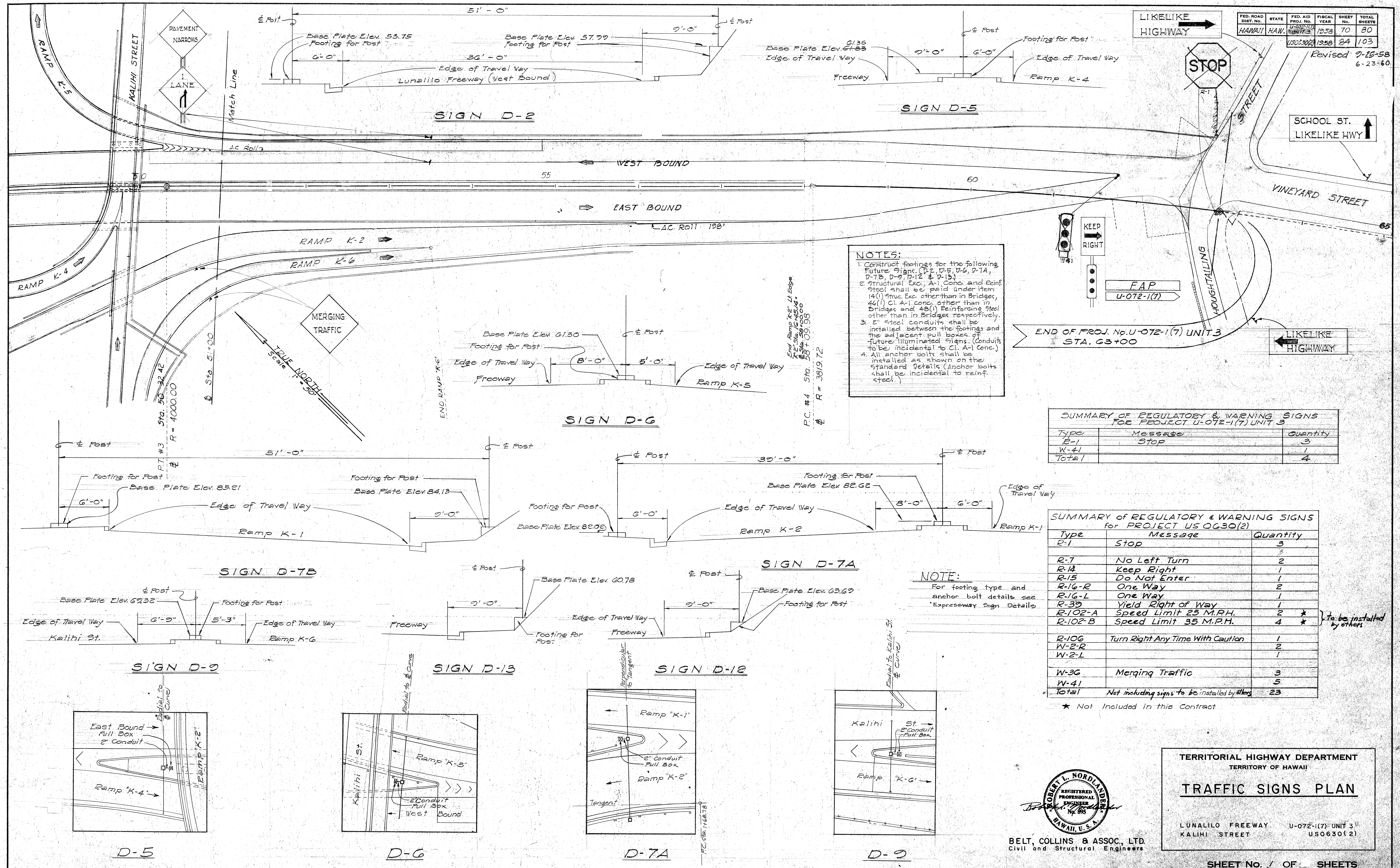


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
U-072-1	HAWAII	100-1-1	1958	70	80
		USC 302	1958	84	103

Revised 7-15-58
6-23-60



NOTES:
 1. Construct footings for the following Future Signs: (D-2, D-5, D-6, D-7A, D-7B, D-9, D-12 & D-13)
 2. Structural Exc. A-1, Conc. and Reinf. Steel shall be paid under item 14(1) since Exc. other than in Bridges, 44(1) C1 A-1 Conc. other than in Bridges and 48(1) Reinforcing Steel other than in Bridges respectively.
 3. 2" Steel conduits shall be installed between the footings and the adjacent pull boxes. Future illuminated signs (conduits to be incidental to C1 A-1 Conc.)
 4. All anchor bolts shall be installed as shown on the Standard Details (Anchor bolts shall be incidental to reinf. steel.)

SUMMARY OF REGULATORY & WARNING SIGNS FOR PROJECT U-072-1(7) UNIT 3

Type	Message	Quantity
B-1	Stop	3
W-41		1
Total		4

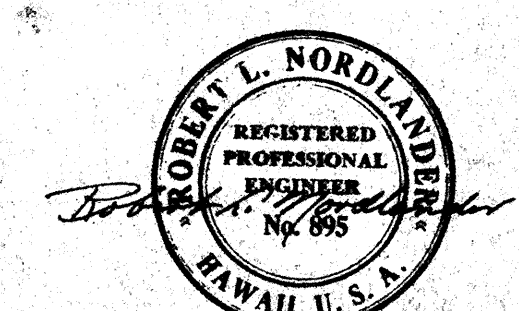
SUMMARY OF REGULATORY & WARNING SIGNS for PROJECT US 0630(2)

Type	Message	Quantity
R-1	Stop	3
R-7	No Left Turn	2
R-14	Keep Right	1
R-15	Do Not Enter	1
R-16-R	One Way	2
R-16-L	One Way	1
R-39	Yield Right of Way	1
R-102-A	Speed Limit 25 M.P.H.	2
R-102-B	Speed Limit 35 M.P.H.	4
R-106	Turn Right Any Time With Caution	1
W-2-R		2
W-2-L		1
W-36	Merging Traffic	3
W-41		5
Total		23

* Not Included in this Contract

* to be installed by others

DATE: _____
 DESIGNED BY: _____
 PLAN: _____
 TRACED BY: _____
 QUANTITIES BY: _____
 NOTE BOOK: _____
 CHECKED BY: _____
 NO. _____



BELT, COLLINS & ASSOC., LTD.
 Civil and Structural Engineers

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII

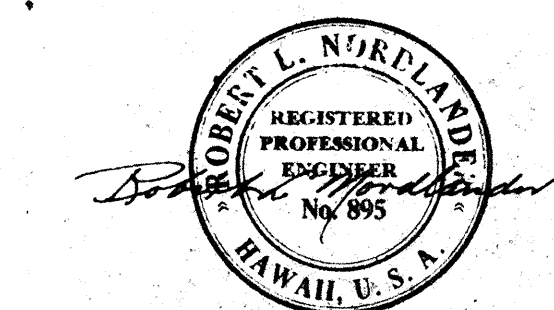
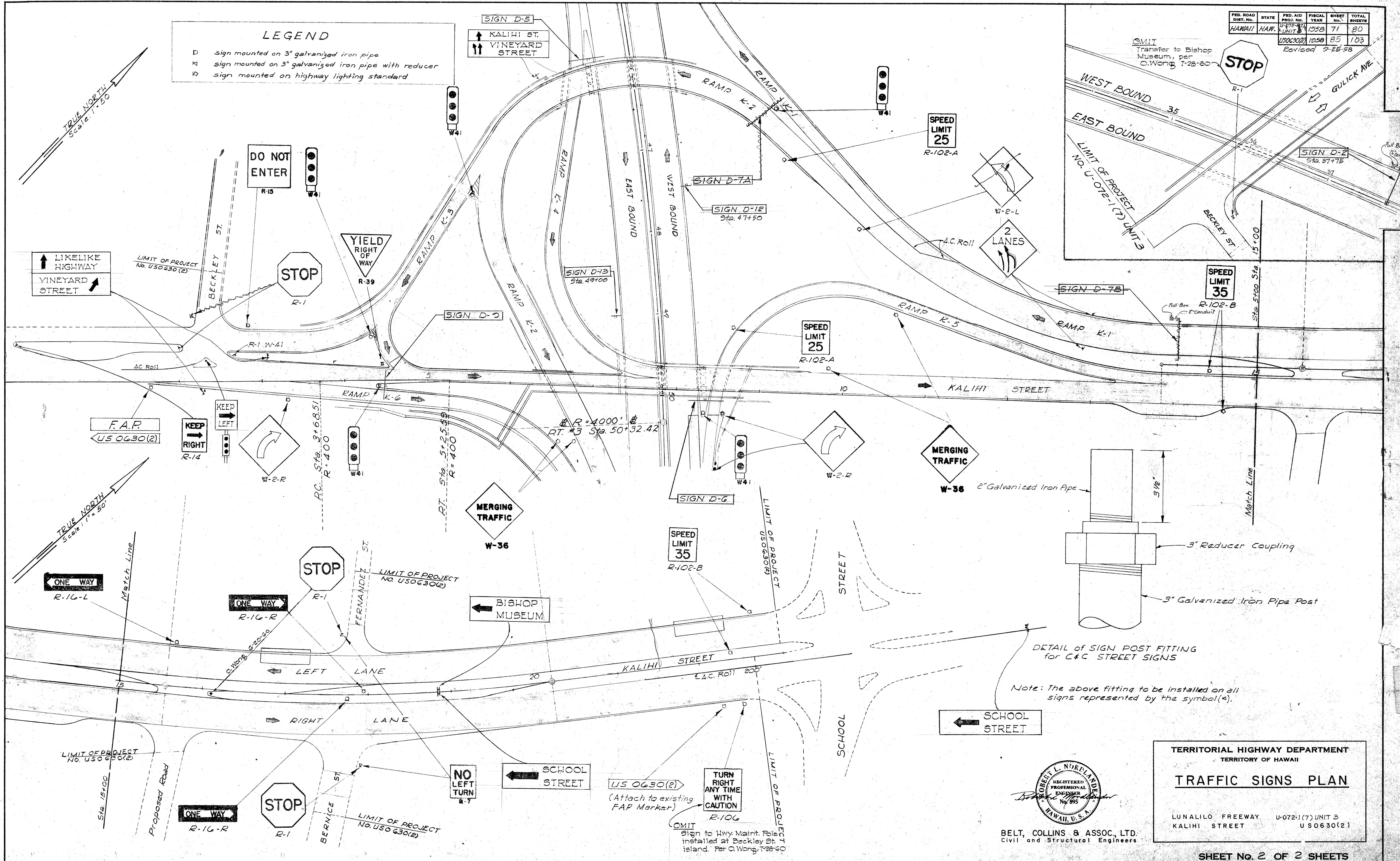
TRAFFIC SIGNS PLAN

LUNALILO FREEWAY U-072-1(7) UNIT 3
 KALILI STREET US0630(2)

SHEET No. 70 OF 84 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
DRAWN BY	
CHECKED BY	
QUANTITIES CHECKED BY	
NO.	

PRINTED ON DIEPRO 1000H CLEARPRINT

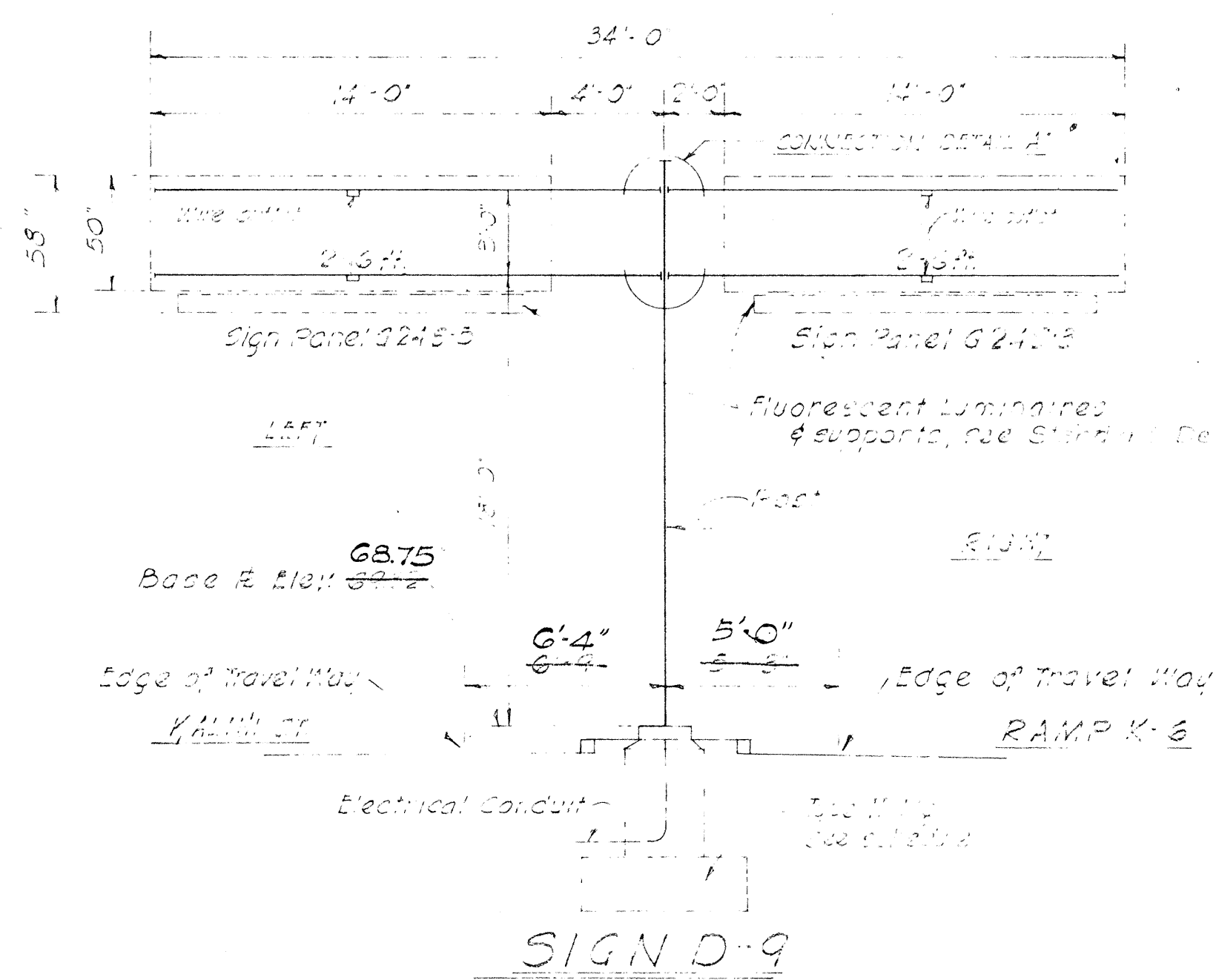
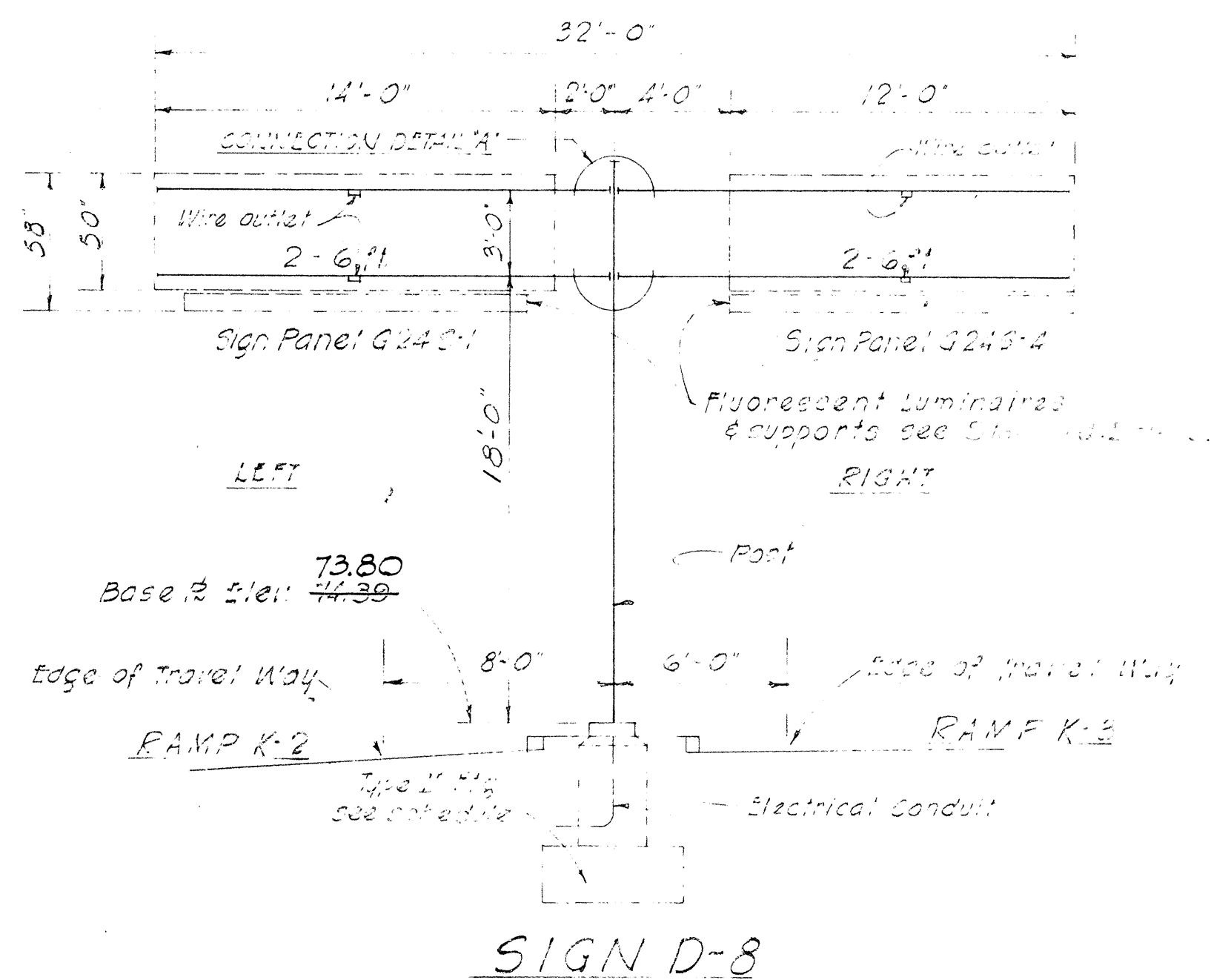
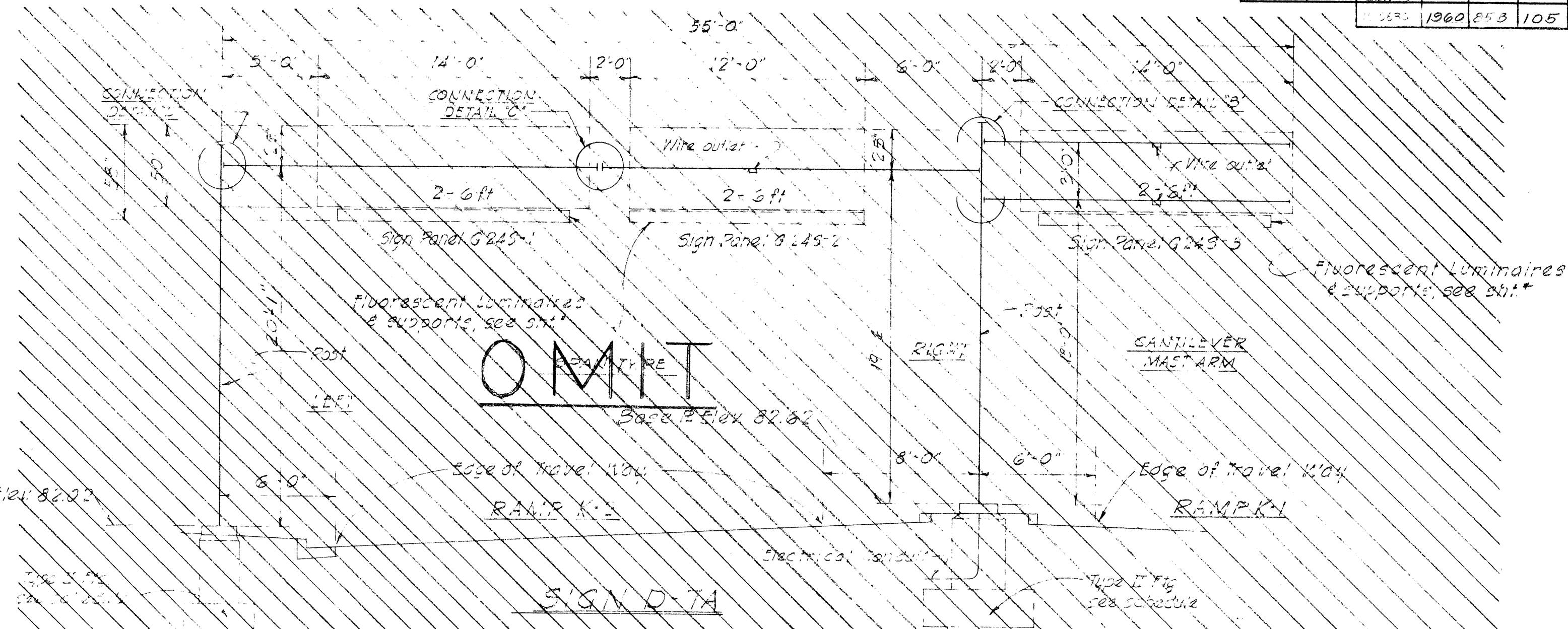
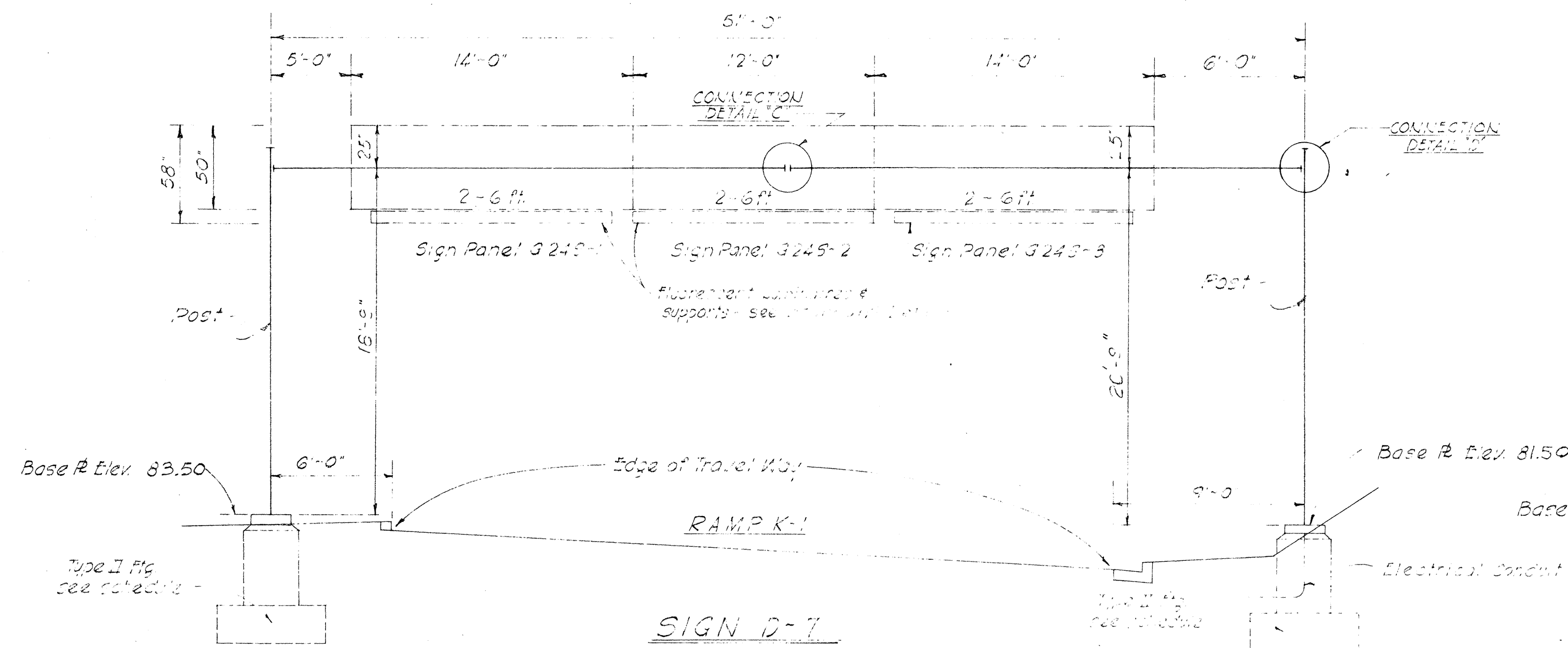


BELT, COLLINS & ASSOC., LTD.
 Civil and Structural Engineers

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII

TRAFFIC SIGNS PLAN

LUNALILO FREEWAY U-072-1(7) UNIT 3
 KALIHI STREET US0630(2)



SINGLE SIGN POST-CENTER MOUNTED TYPE-DOUBLE MAST ARM							
SIGN No.	STATIONS	CROSS BEAM TAPERED AT POST		POST TAPERED AT BASE	BASE R	FOOTING *	
		LEFT	RIGHT			TYPE	ANCHOR BOLTS
D-5	Frwy. 45+75	3ga. 9.2"	3ga. 9.2"	2ply 3ga. 18"	26 1/2" x 26 1/2" x 8"	IV	4 - 3" φ
D-6	Frwy. 50+00	7ga. 8.3"	3ga. 9.2"	0ga. 13"	26 1/2" x 26 1/2" x 26"	IV	4 - 2 1/4" φ
D-8	K-3 41+69	7ga. 8.3"	7ga. 8.3"	3ga. 16.5"	24 1/2" x 24 1/2" x 12"	II	4 - 2" φ
D-9	Kalihi 41+30	7ga. 8.3"	7ga. 8.3"	3ga. 16.5"	24 1/2" x 24 1/2" x 12"	II	4 - 2" φ

SINGLE SIGN POST-CENTER MOUNTED TYPE-SINGLE MAST ARM						
SIGN No.	STATIONS	CROSS BEAM	POST TAPERED AT BASE	BASE R	FOOTING *	
					TYPE	ANCHOR BOLTS
D-12	Frwy. 47+50	4" Standard Pipe	3ga. 13	18 1/2" x 18 1/2" x 2"	II	4 - 1 1/4" φ
D-13	Frwy. 48+75	4" Standard Pipe	3ga. 13	18 1/2" x 18 1/2" x 2"	II	4 - 1 1/4" φ

DOUBLE SIGN POST-SPAN TYPE						
SIGN No.	STATION	CROSS BEAM TAPERED AT MID-SPAN	POST TAPERED AT BASE LEFT & RIGHT	BASE R LEFT & RIGHT	FOOTING *	
					TYPE	ANCHOR BOLTS
D-2	Frwy. 37+75	0ga. 13"	0ga. 15"	23" x 23" x 2"	III	8 - 2" φ
D-7	K-1 37+00	0ga. 12"	3ga. 15"	23" x 23" x 2"	II	8 - 2" φ

COMBINATION DOUBLE SIGN POST-SPAN TYPE-CANTILEVER DOUBLE MAST ARM									
SIGN No.	STATION	CROSS BEAM TAPERED AT MID-SPAN	POST TAPERED AT BASE	BASE R	FOOTING *	TYPE	ANCHOR BOLTS	FOOTING *	TYPE
D-7A	K-1 37+00	0ga. 12"	3ga. 15"	23" x 23" x 2"	II	8 - 2" φ	8 - 2" φ	II	8 - 2" φ

* NOTE: Footings for Expressway signs, as shown on these sheets shall be installed complete, including anchor bolts and electrical conduits, where applicable. All base plates, posts and other superstructure will be installed by others.

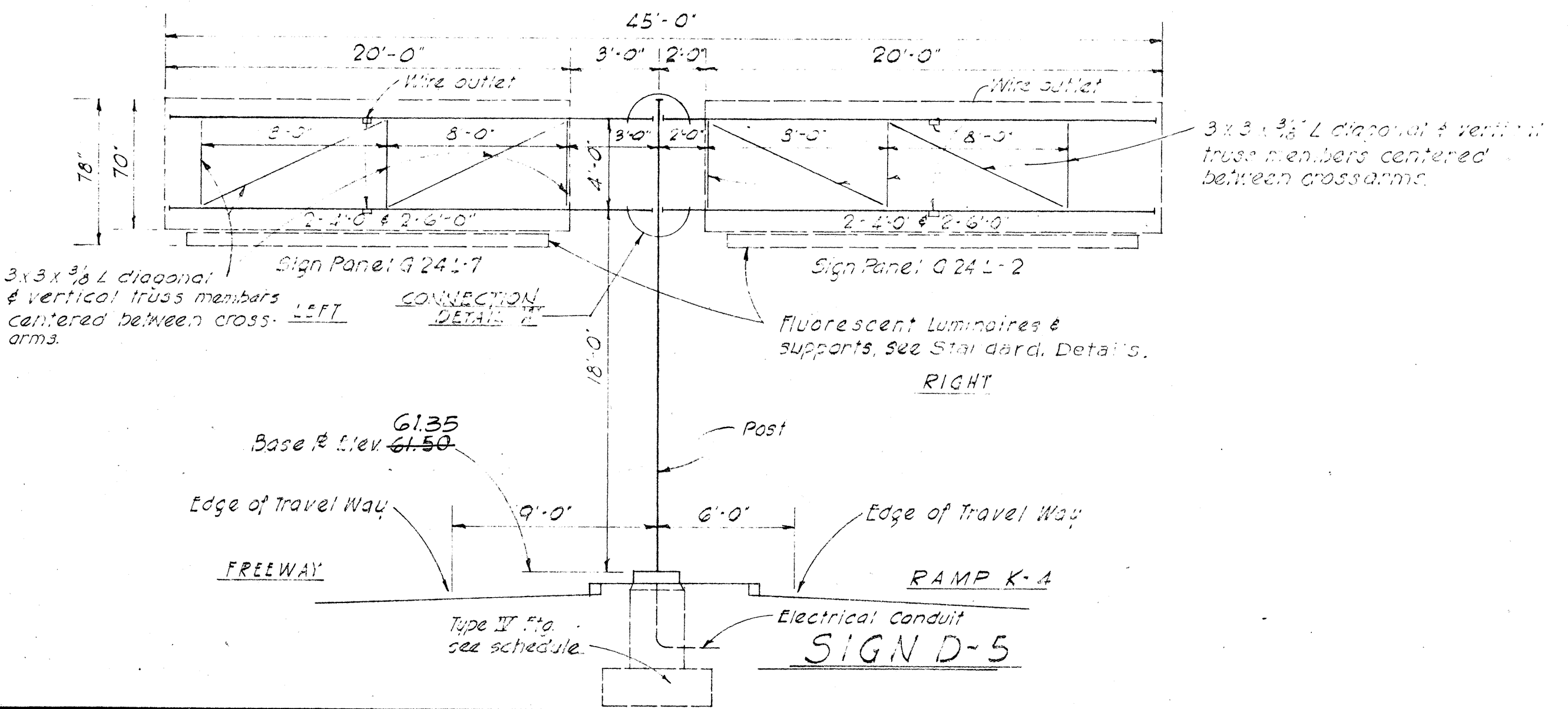
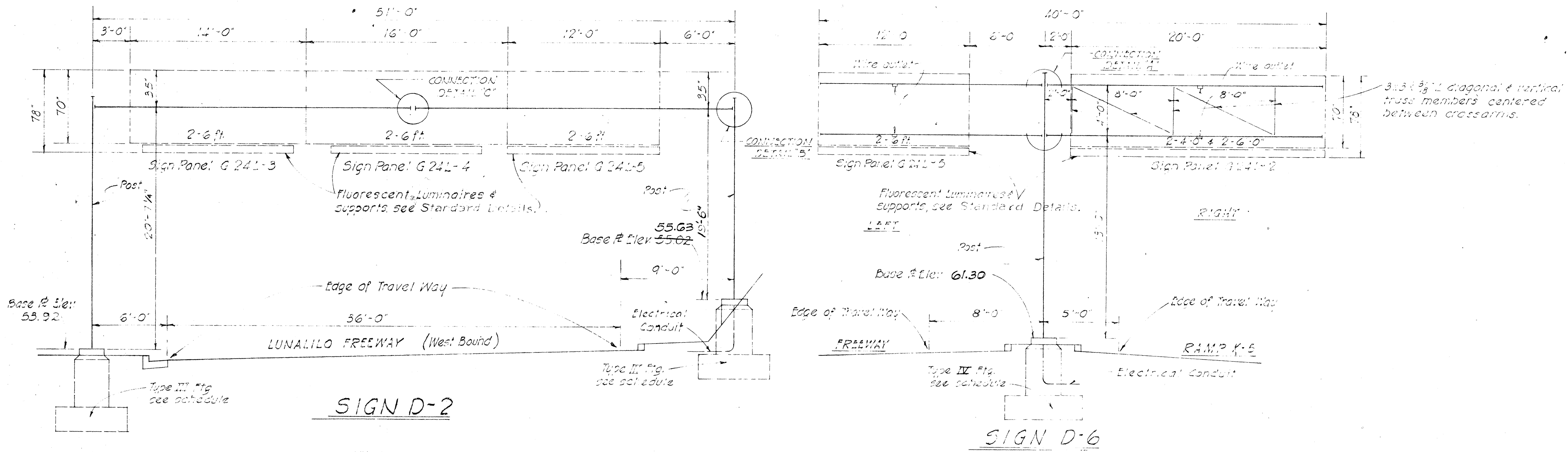
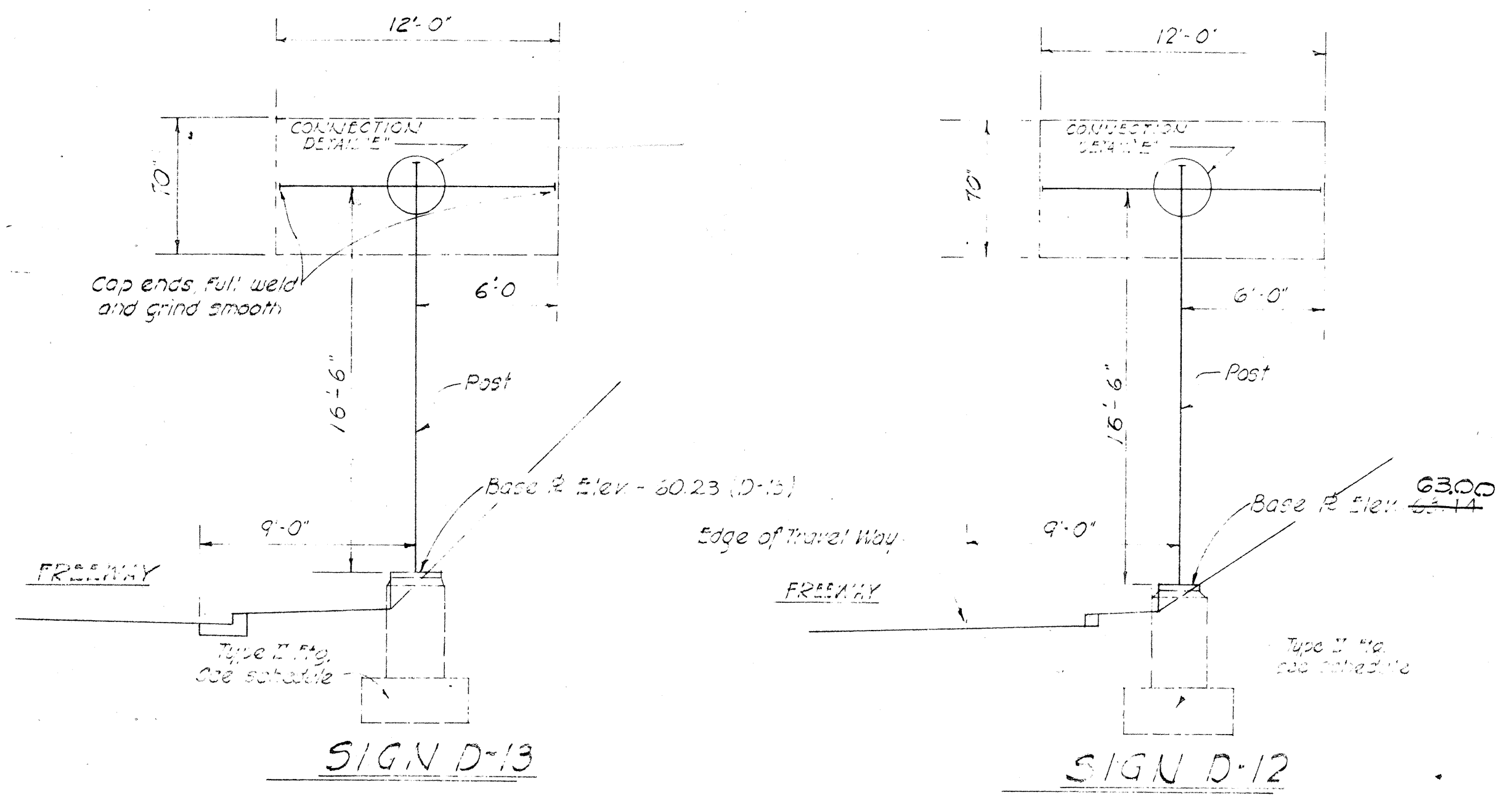
REV. JULY 29, 1960

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

EXPRESSWAY SIGNS
FRAME LAYOUT

LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHI STREET US0630(2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	115-01(17)	1960	71B	80
		115-0130(2)	1960	85B	103



DATE	DESIGNED BY	CHECKED BY
ORIGINAL PLAN	DESIGNED BY	CHECKED BY
NOTE BOOK	DESIGNED BY	CHECKED BY

REV. JULY 29, 1960

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

EXPRESSWAY SIGNS
FRAME LAYOUT

LUNALILO FREEWAY U-012-1(7) UNIT 3
KALIHI STREET US0630(2)

GENERAL NOTES

DESIGN DATA

1- Wind load = 35 p.s.f.

2- Allowable stresses

Concrete: $f_c = 1200$ p.s.i., $n = 10$

Reinforcement: $f_s = 20000$ p.s.i.

Structural steel: $f_s = 18000$ p.s.i.

Light Standard sheet steel: $\frac{1}{16}$ o.f. yield point (see special provision)

MATERIALS

Concrete:

All concrete, Class A-1, except as otherwise noted.

Reinforcing steel:

See General Specs.

Structural steel:

Structural steel shall be structural carbon steel, A.S.T.M. designation A-7.

Light Standard sheet steel: See Special Provision.

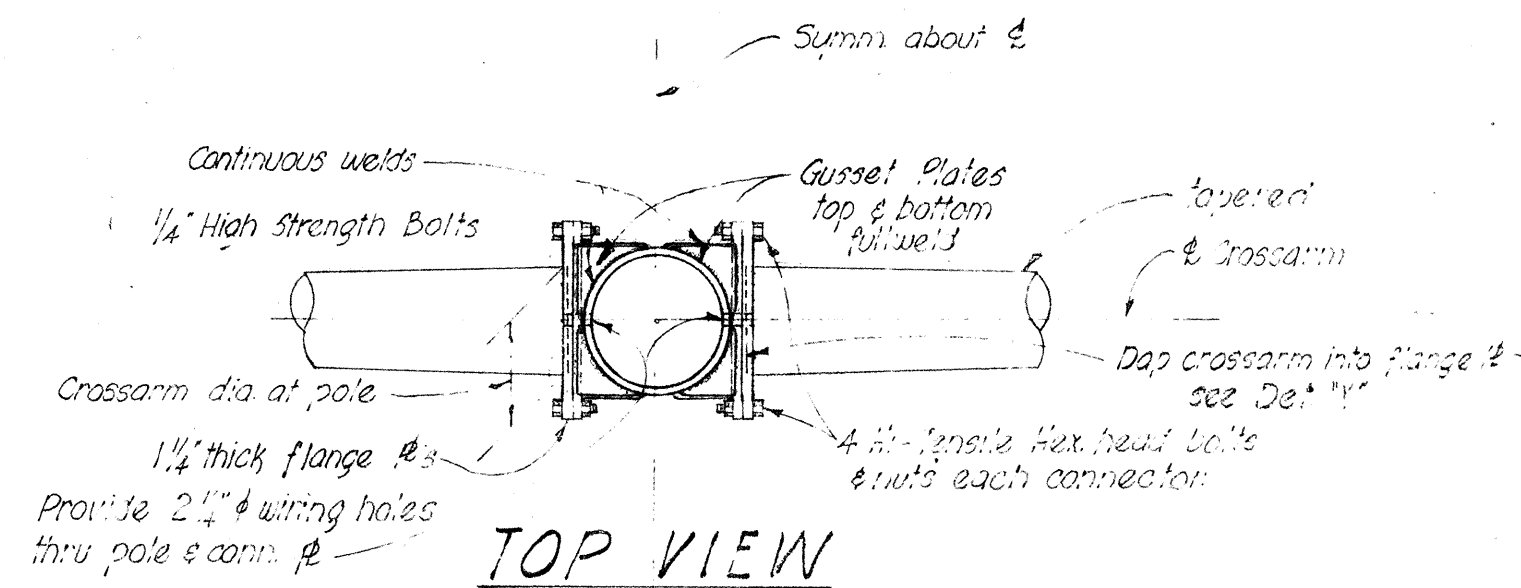
FASTENINGS & ANCHOR BOLTS

See Special Provision.

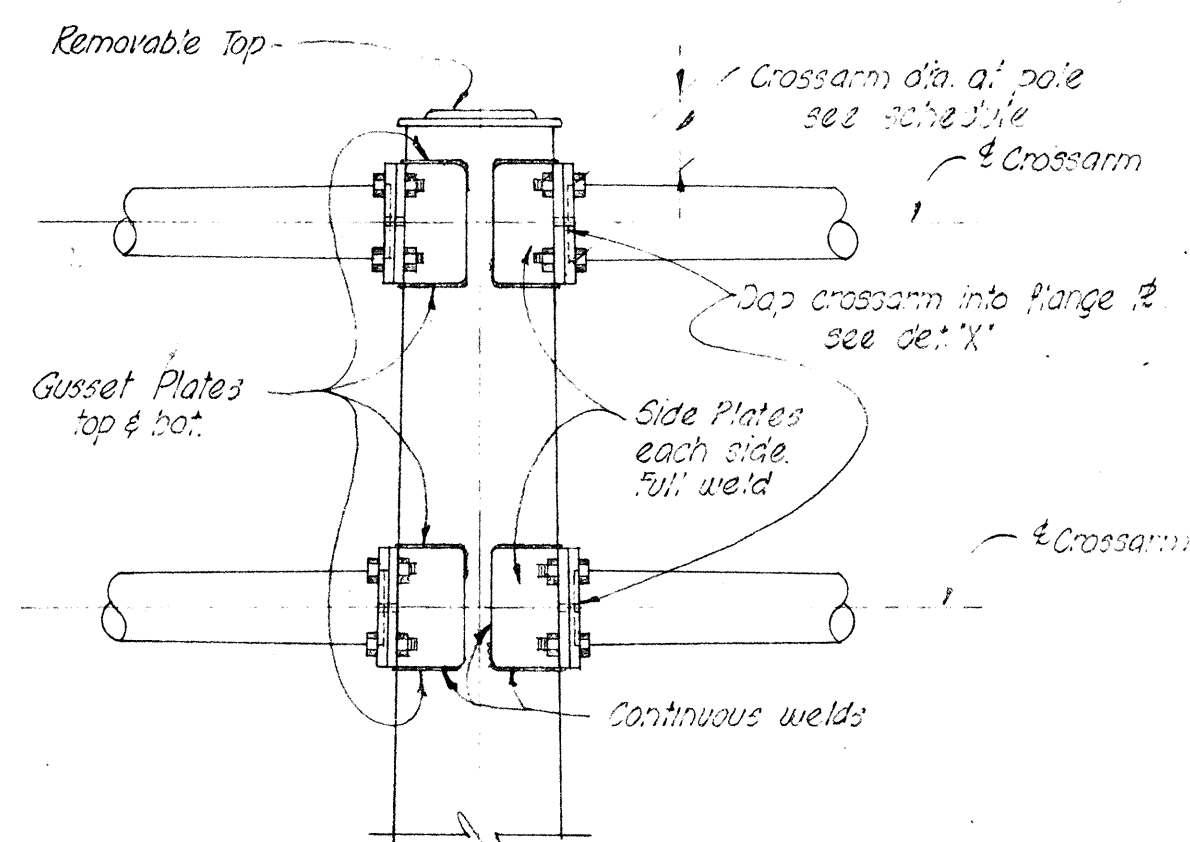
CONSTRUCTION METHODS

Welding: See Special Provision.

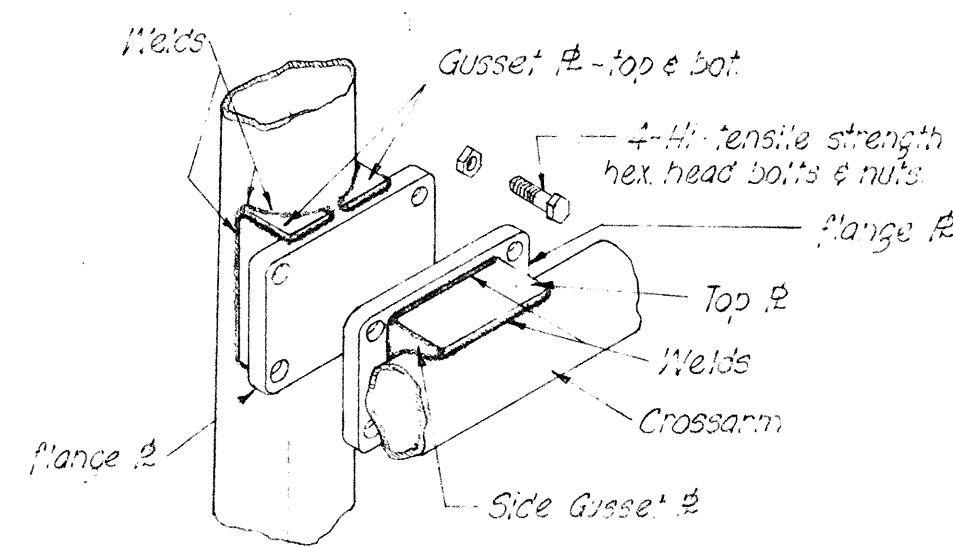
Painting & galvanizing: See Special Provision.



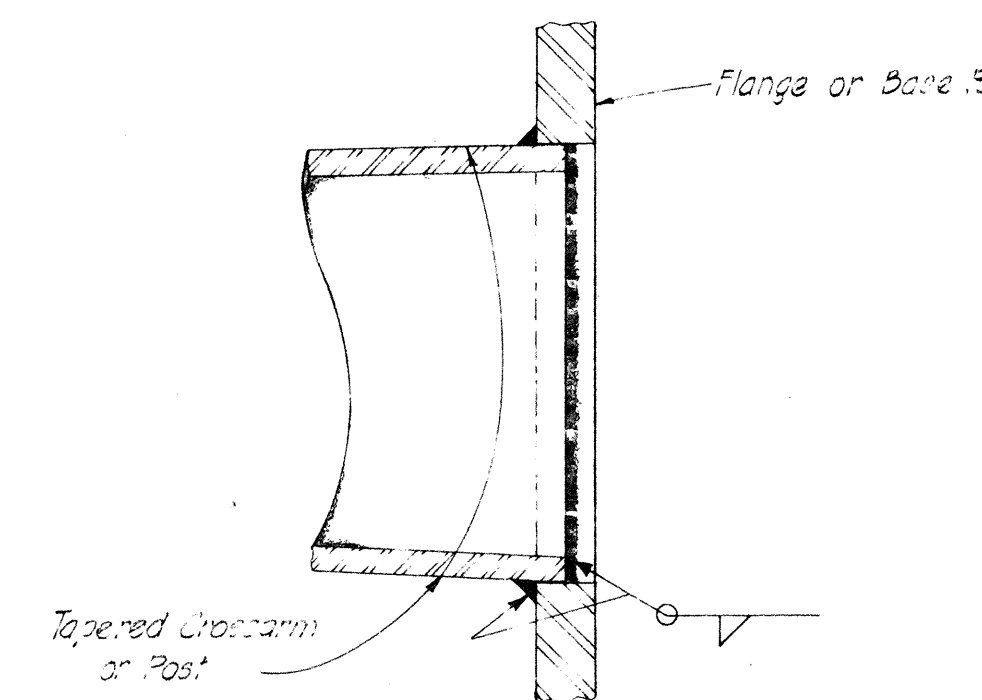
TOP VIEW



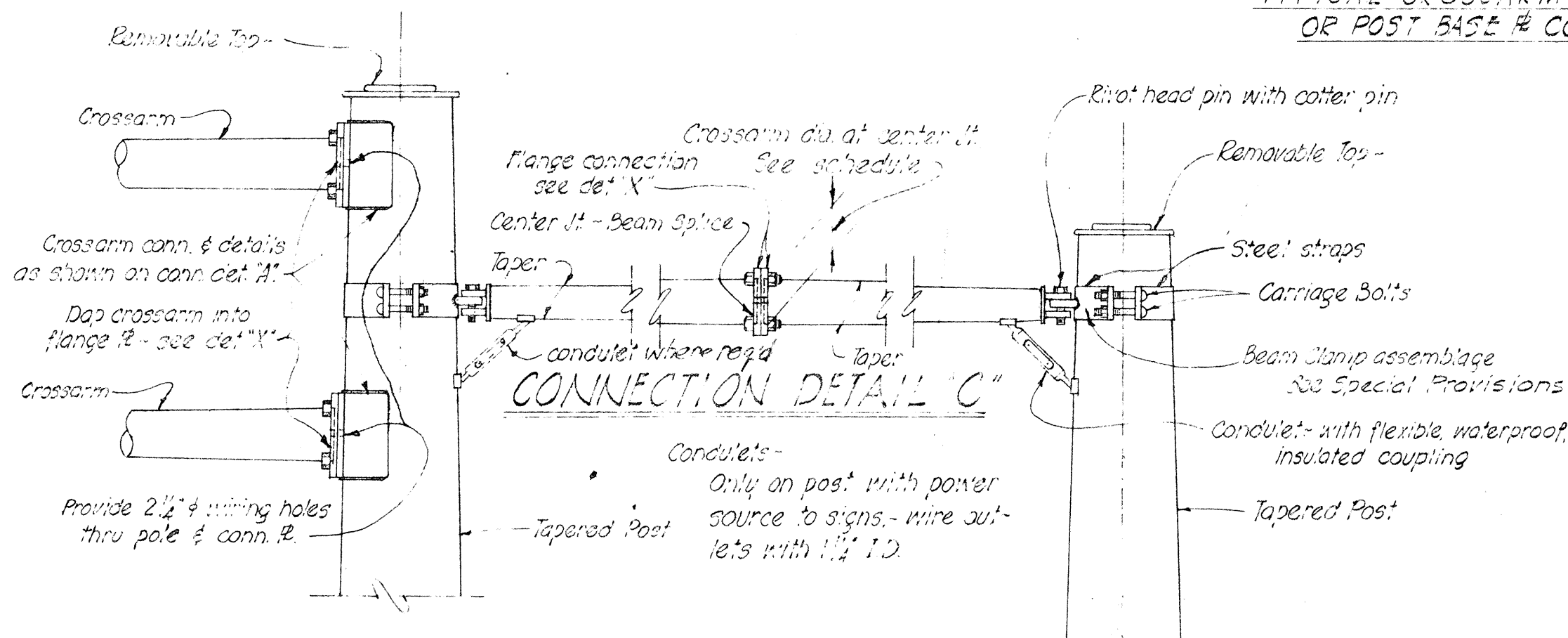
CONNECTION DETAIL "A"



CONNECTION DETAIL "E"

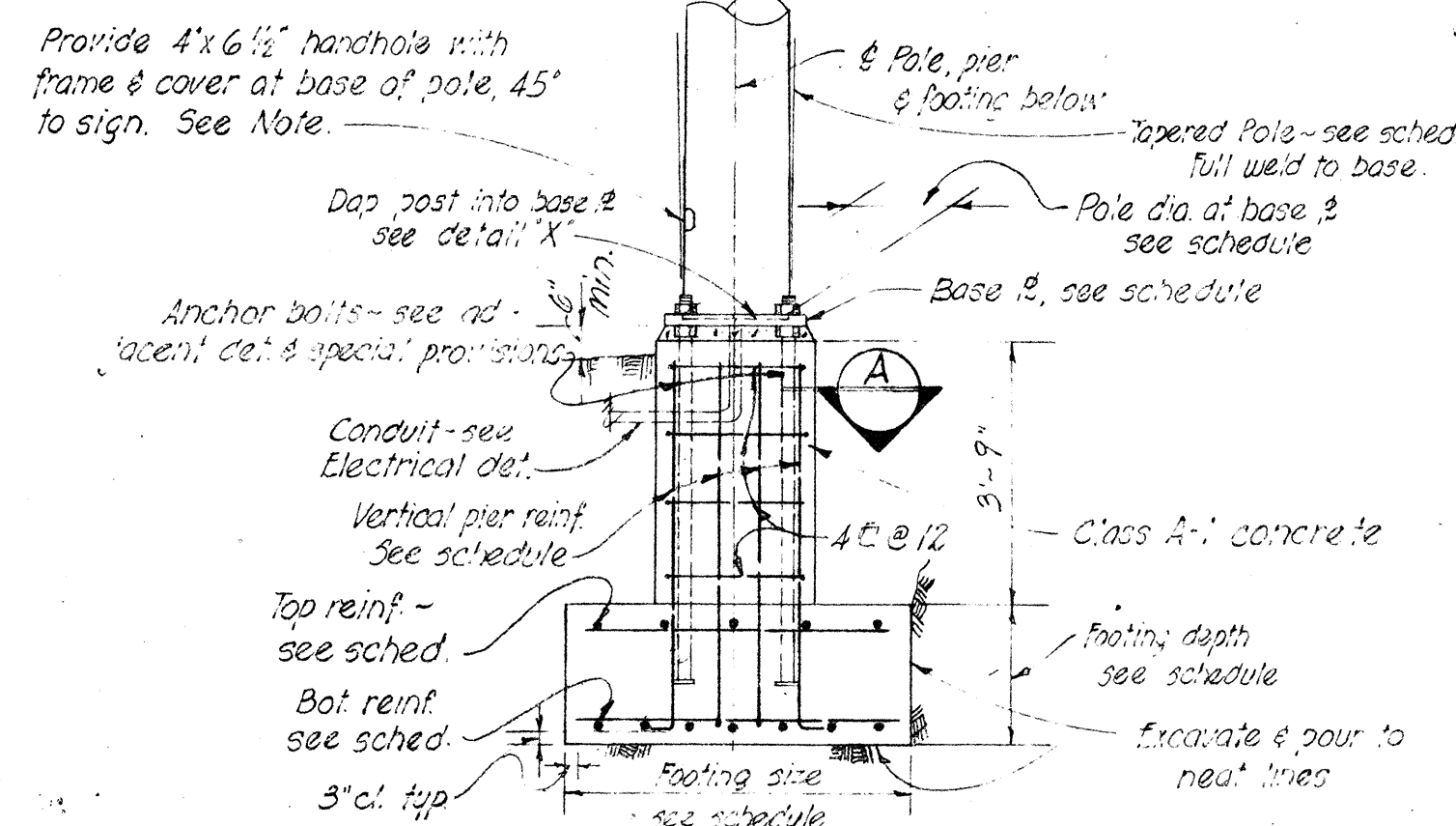


DETAIL "X"
TYPICAL CROSSARM FLANGE #
OR POST BASE # CONNECTIONS

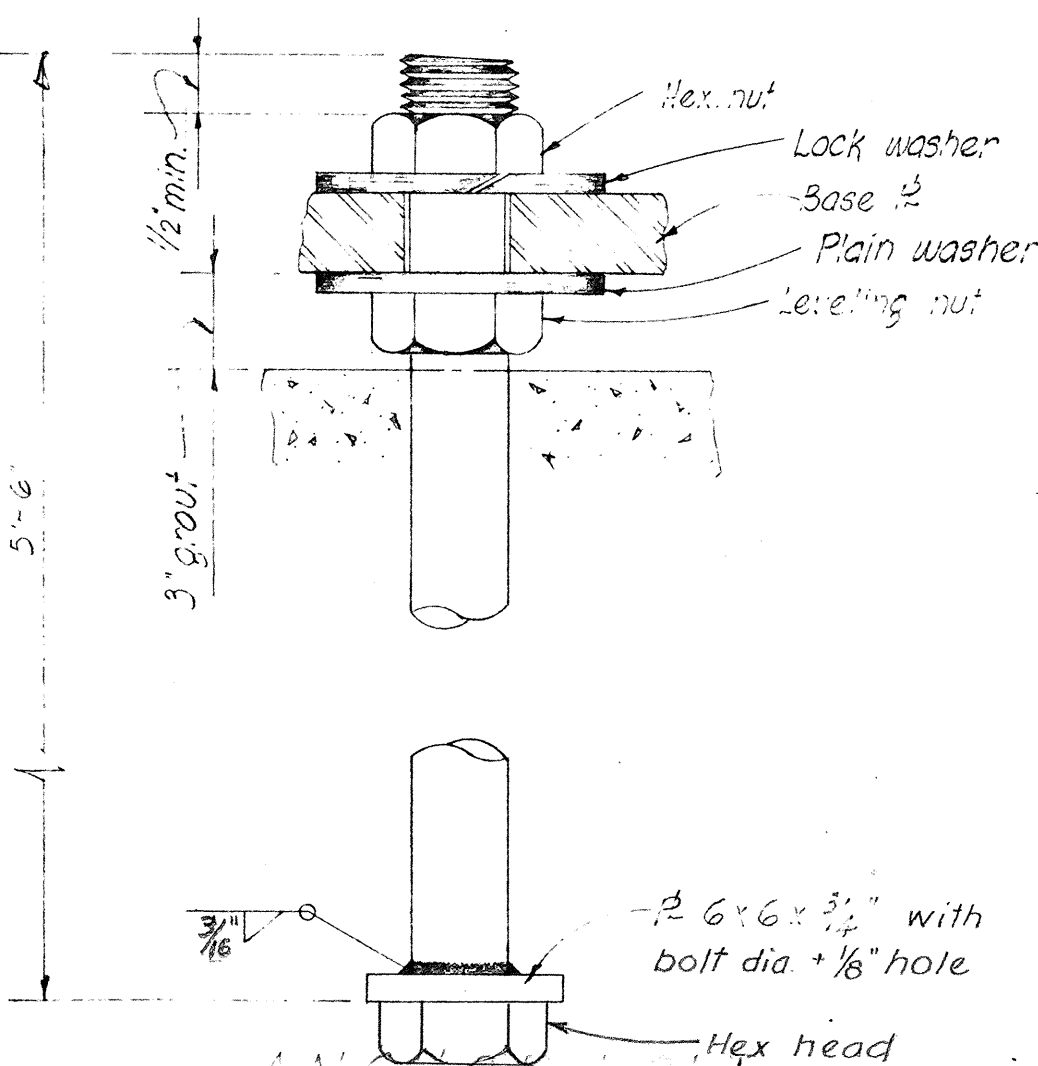


CONNECTION DETAIL "B"

CONNECTION DETAIL "D"



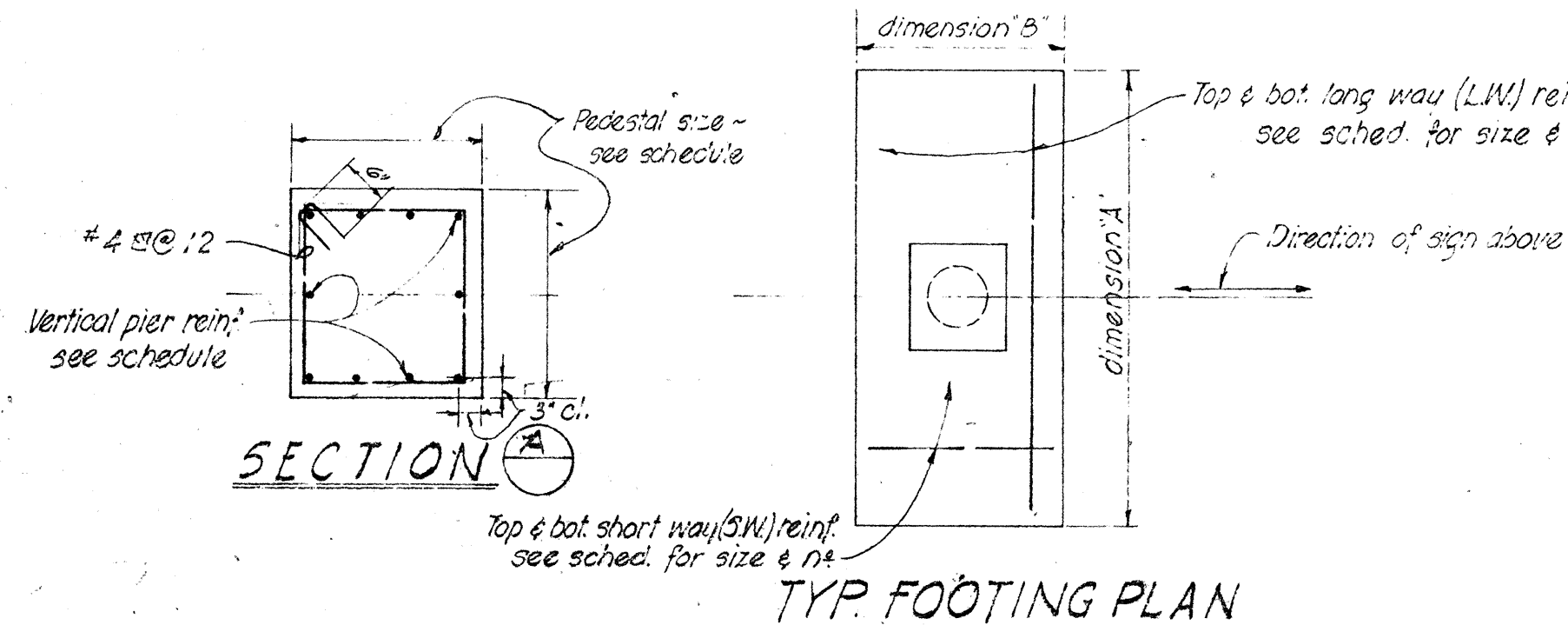
TYPICAL POLE
FOUNDATION DETAIL



ANCHOR BOLT

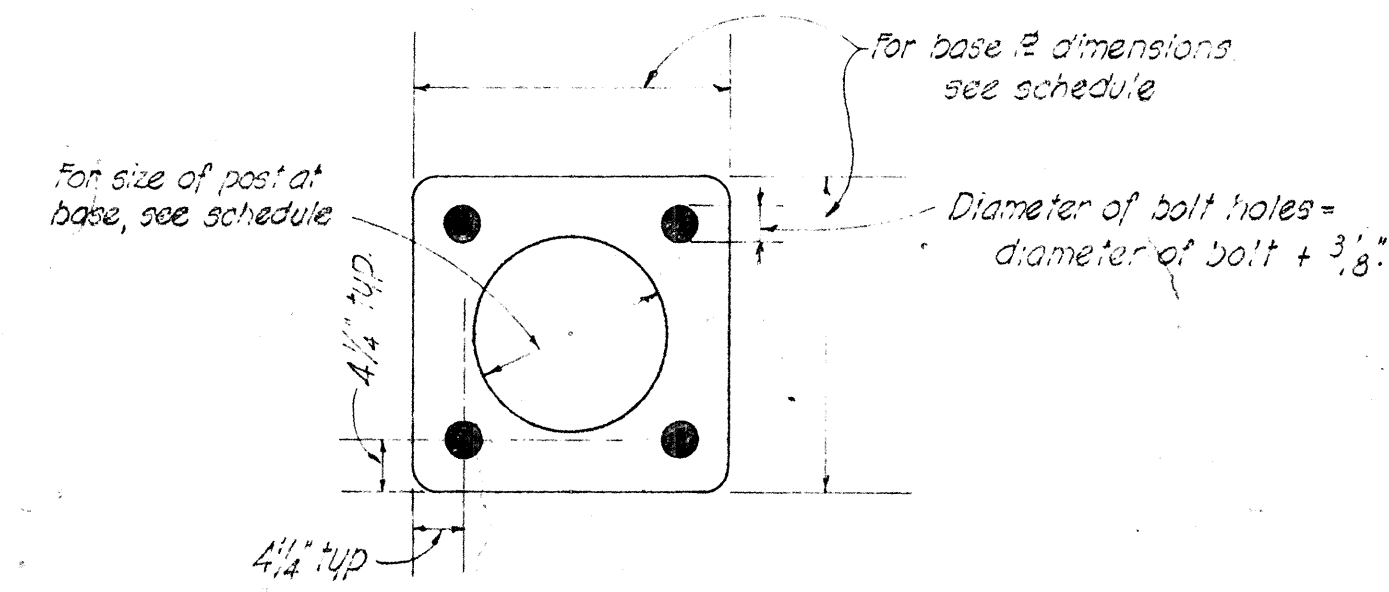
NOTES

- 1- The size of all fastenings is based on an allowable bearing pressure of 4000 p.s.f. on the soil.
- 2- After the excavations for each footing is completed, the Contractor shall notify the engineer.
- 3- The engineer shall conduct such tests as are deemed advisable to determine the actual allowable bearing pressure of the soil encountered.
- 4- In the event that the actual allowable bearing pressure is less than 4000 p.s.f., the engineer shall increase the size of the footing and so order in writing.
- 5- Grout to be placed after sign is in place.



TYP. FOOTING PLAN

TYPE	DIMENSION		DEPTH	BOT REINF		TOP REINF		PEDESTAL	
	A	B		L.W.	S.W.	L.W.	S.W.	SIZE	VERT REINF
II	9'-0"	4'-6"	2'-0"	6-#6	10-#4	4@12 ea way	Do.	2'-6" x 2'-6"	10-#7
III	10'-0"	5'-0"	2'-0"	5-#8	11-#4	Do.	Do.	2'-6" x 2'-6"	10-#8
IV	12'-0"	6'-0"	2'-0"	7-#9	13-#4	Do.	Do.	2'-9" x 2'-9"	10-#10



TYPICAL BASE # PLAN

REV. JULY 29, 1960

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS
EXPRESSWAY SIGNS
POSTS & CROSSARMS