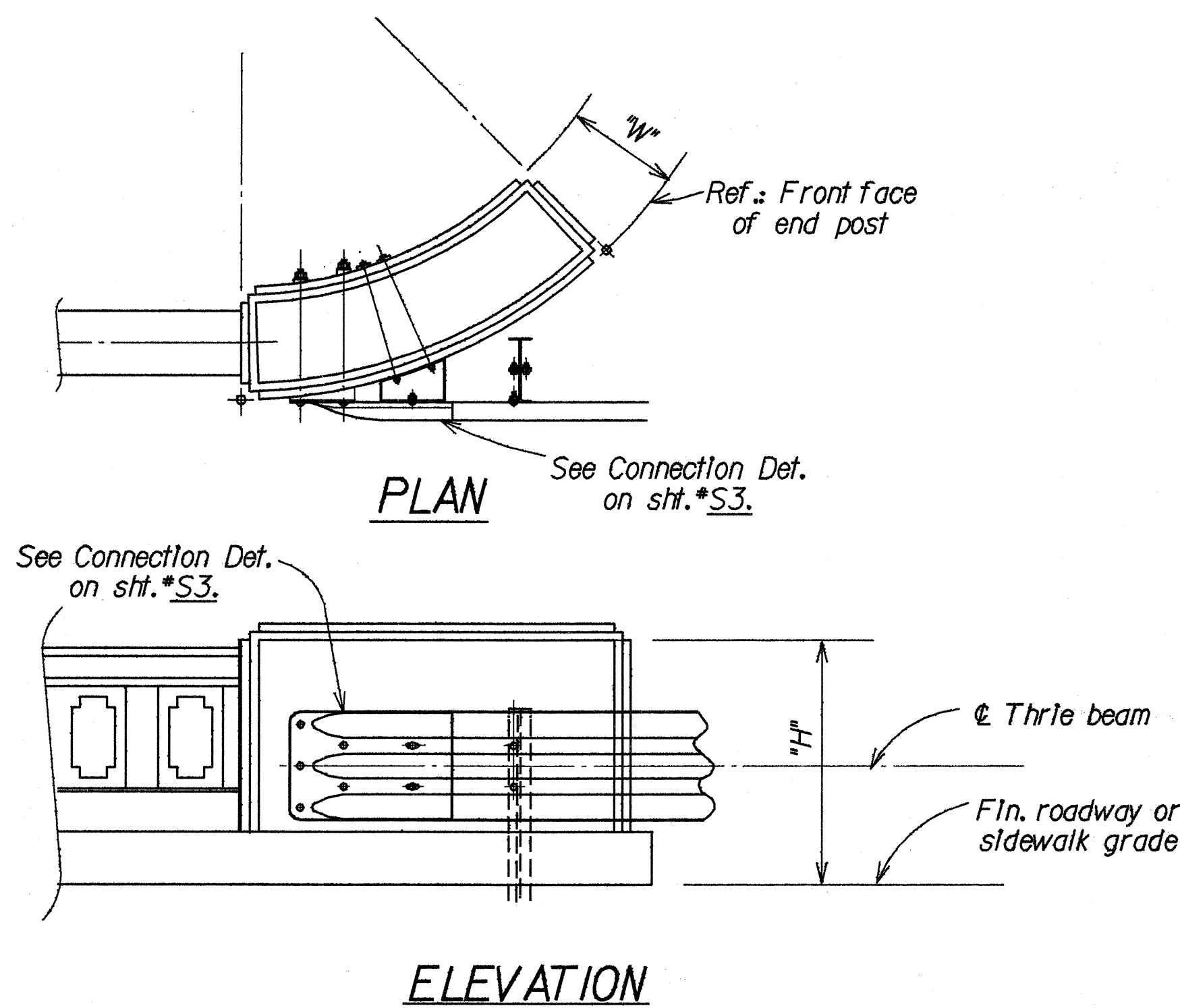


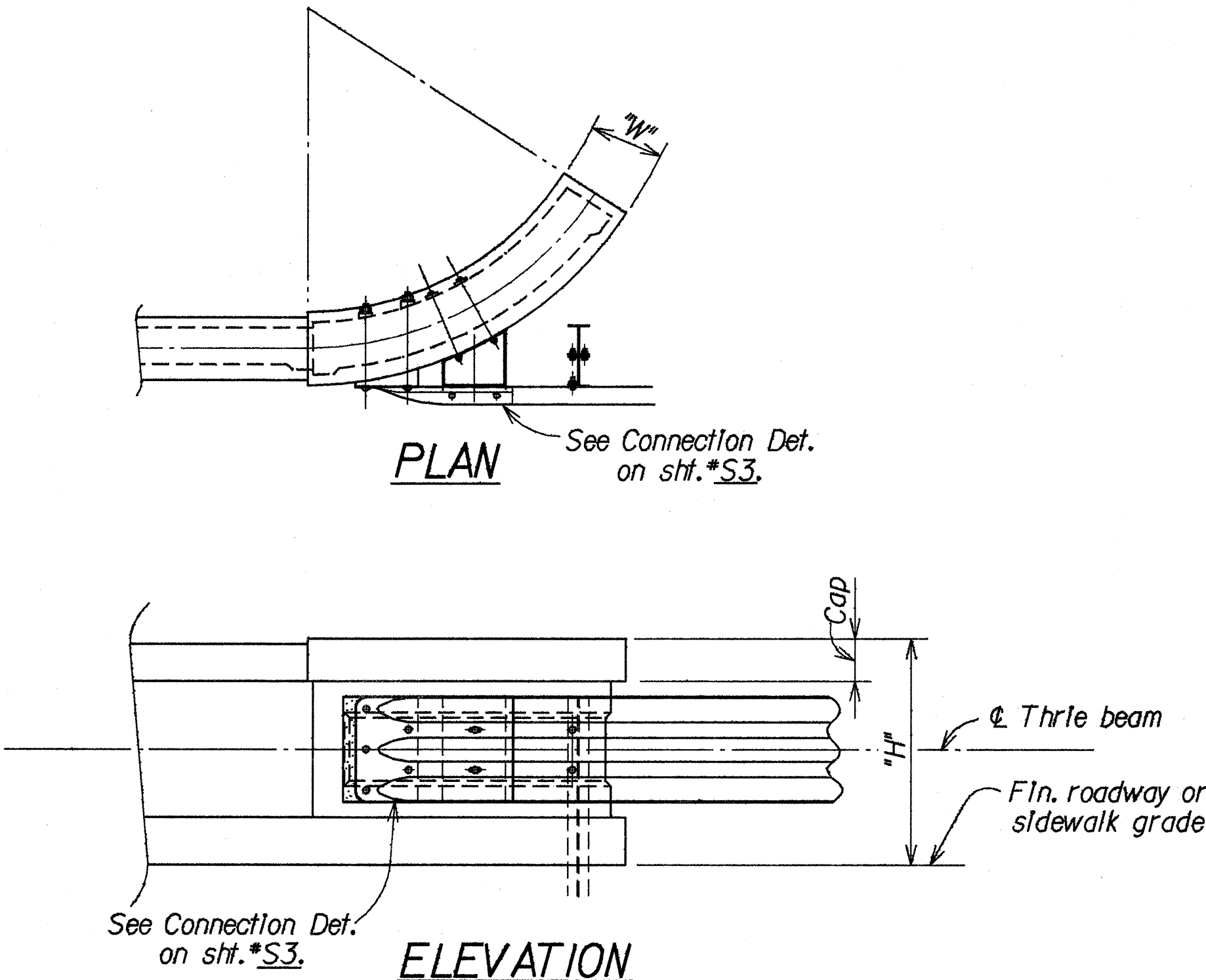
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-89	1990	17	23



CONNECTION TYPE "A"

EXISTING CURVED END POST (WITHOUT CAP)

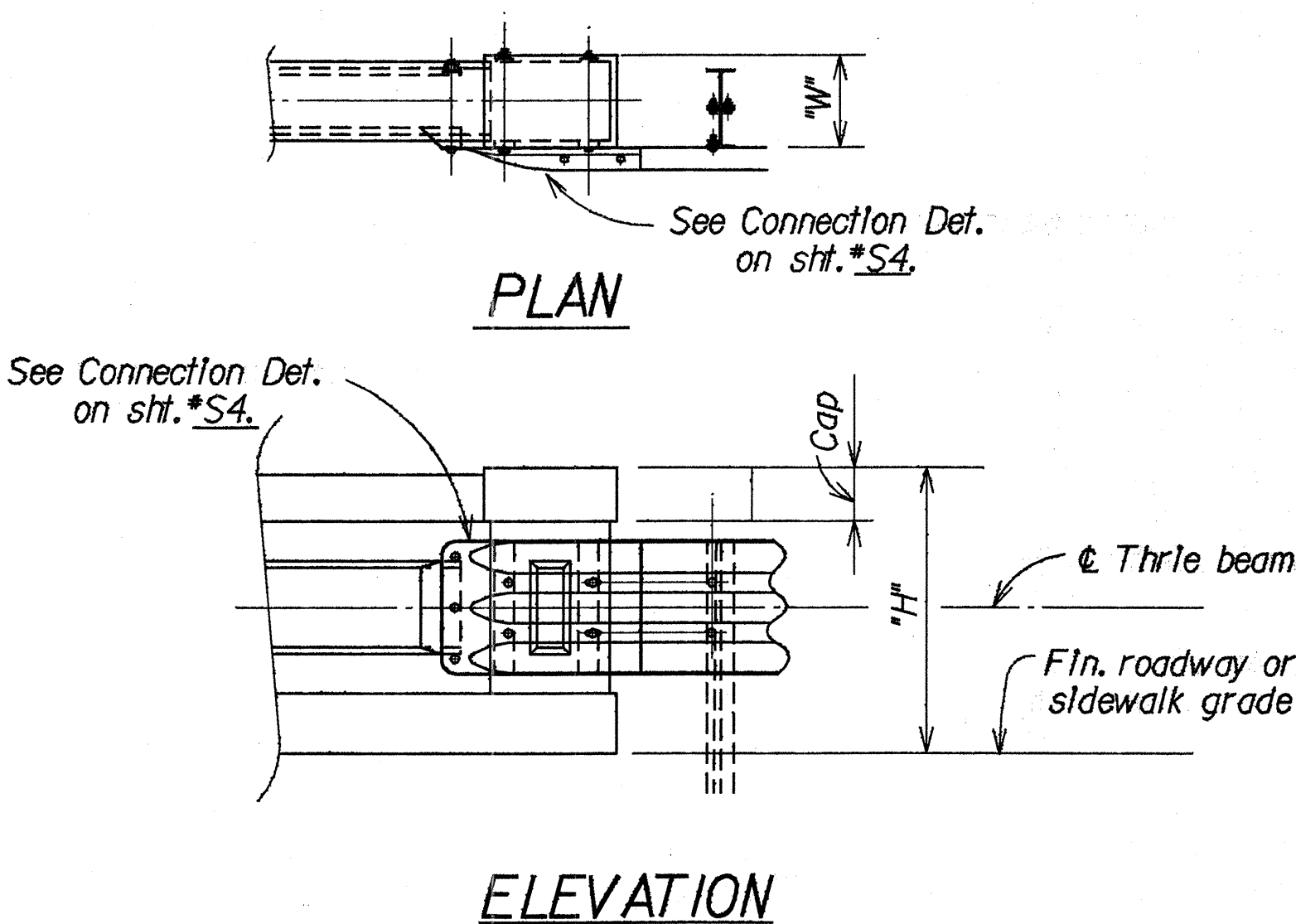
Not to Scale



CONNECTION TYPE "B"

EXISTING CURVED END POST (WITH CAP)

Not to Scale



CONNECTION TYPE "C"

EXISTING STRAIGHT END POST (WITH CAP)

Not to Scale

END POST SCHEDULE									
LOCATION	TYPE OF EXISTING END POST	RADIUS TO FRONT FACE OF END POST (CAP LINE)	EXISTING SIDEWALK	"W"	"H"	CONNECTION TYPE & NUMBERS		TAPERED BOX SPACER	
1. Poamoho Stream Bridge	Curved	7'-11 1/2"		21"	40 1/2"	"A"	4	7 3/4"	3 9/16"
2. Twin Bridge "A"	Straight	--	x	12"	43"	"C"	4		
3. Twin Bridge "B"	Straight	--	x	12"	43"	"C"	4		
4. Walmea Bridge	Curved	5'-10"		12"	40"	"B"	4	11 1/16"	4 5/16"
5. Paumalu Bridge	Straight	--		12"	35"	"C"	4		
6. Kaunala Bridge	Straight	--		14"	35"	S. Side "C"	2		
7. Kawela Bridge	Curved	6'-0"		14"	38"	"B"	4	10 11/16"	4 3/4"
8. Kullima Bridge	Curved	6'-0"		14"	38"	"B"	4	10 11/16"	4 3/4"
9. Nanahu Bridge	Curved	6'-0"		14"	38"	"B"	4	10 11/16"	4 3/4"
10. Kii Bridge	Curved	7'-6"	x	21"	35"	"A"	4	8 5/16"	3 3/4"
11. South Punaluu Bridge	Straight	--		14"	35 1/2"	"C"	4		
12. North Punaluu Bridge	Straight	--		14"	35"	"C"	4		
13. Kaluanui Bridge	Straight	--		14"	35"	"C"	4		
14. Walmanana Bridge	Straight	--		14"	35"	"C"	4		
15. Mahelwi Bridge	Straight	--		14"	35"	"C"	4		
16. Walpuhi Bridge	Curved	6'-0"		14"	43 1/2"	"B"	4	10 11/16"	4 3/4"
17. Hauula Bridge	Curved	6'-0"		14"	43 1/2"	"B"	4	10 11/16"	4 3/4"
18. Muliwai Bridge	Curved	6'-0"		14"	43 1/2"	"B"	4	10 11/16"	4 3/4"
19. Walpiloilo Bridge	Curved	6'-0"		14"	43 1/2"	"B"	4	10 11/16"	4 3/4"
20. Kalpapau Bridge	Curved	6'-0"		14"	35"	"B"	4	10 11/16"	4 3/4"
21. Lale Bridge	Curved	6'-0"		14"	35"	"B"	4	10 11/16"	4 3/4"

ORIGINAL PLAN	DATE	DESIGNED BY	DATE	CHECKED BY	DATE
NOTES		DESIGNED BY		CHECKED BY	
NOTES		DESIGNED BY		CHECKED BY	
NOTES		DESIGNED BY		CHECKED BY	

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

END POST CONNECTION TYPE "A," "B," "C"

DETAILS AND SCHEDULE

GUARDRAIL AND SHOULDER IMPROVEMENTS

AT VARIOUS LOCATIONS ON OAHU

Proj. No. HWY-0-02-89

Scale: As Noted

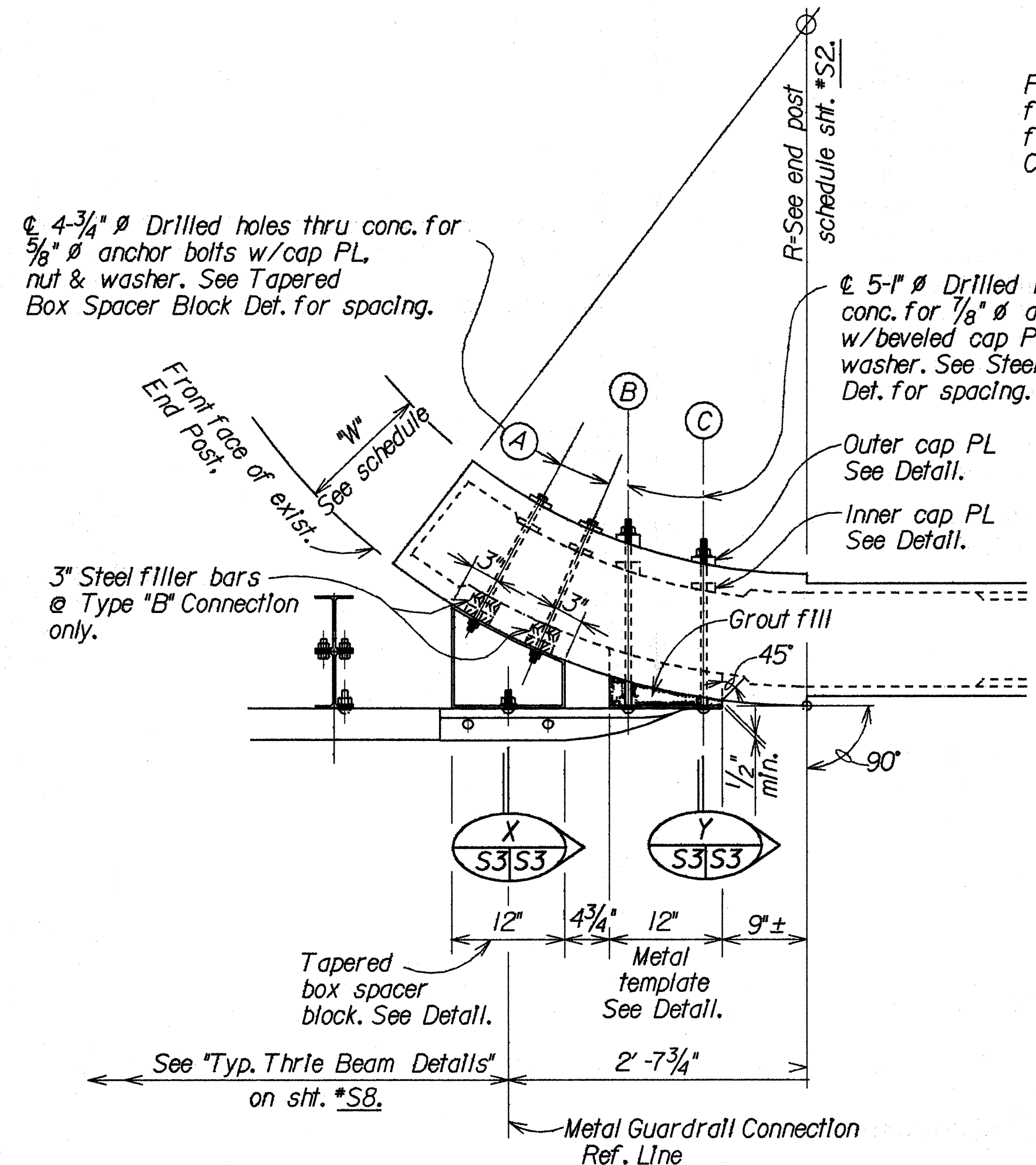
Date: Nov. 1989

SHEET No. S2 OF 8 SHEETS

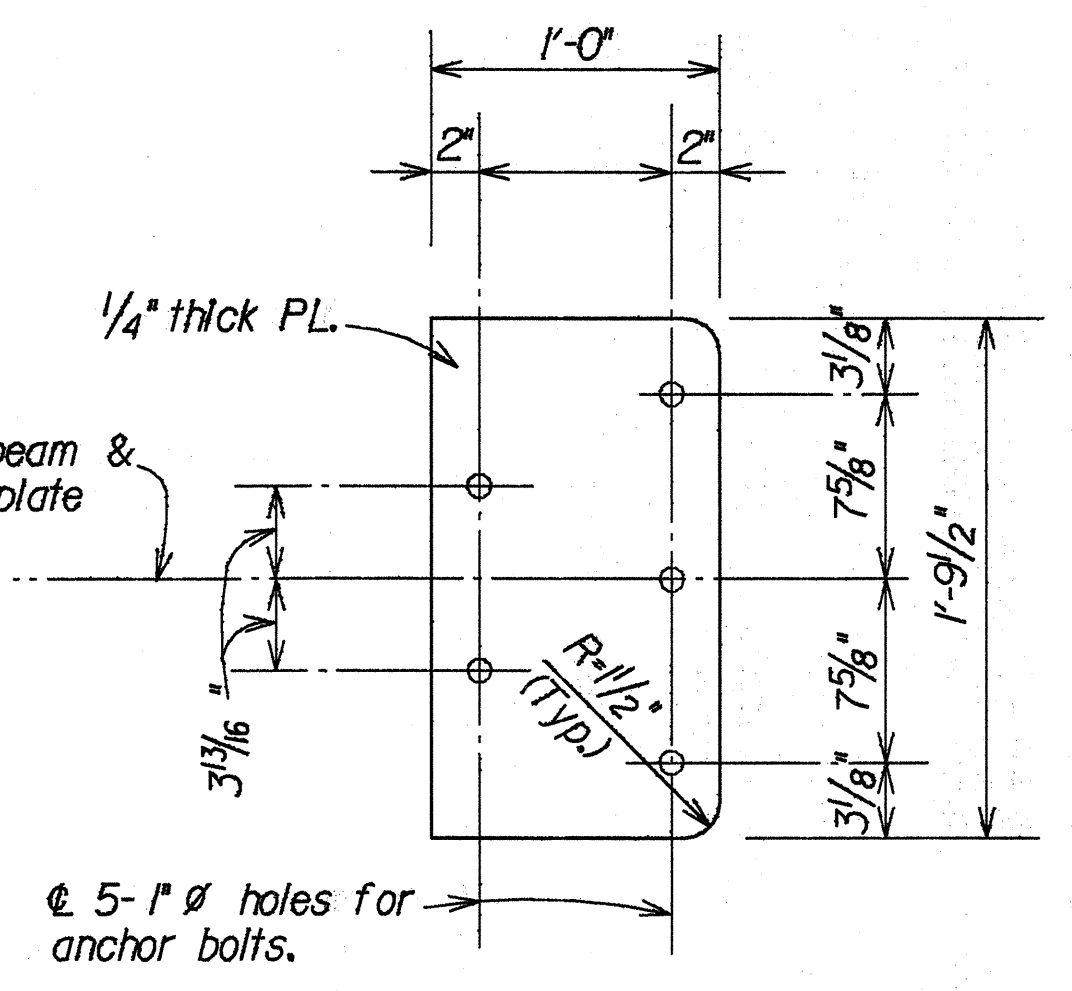
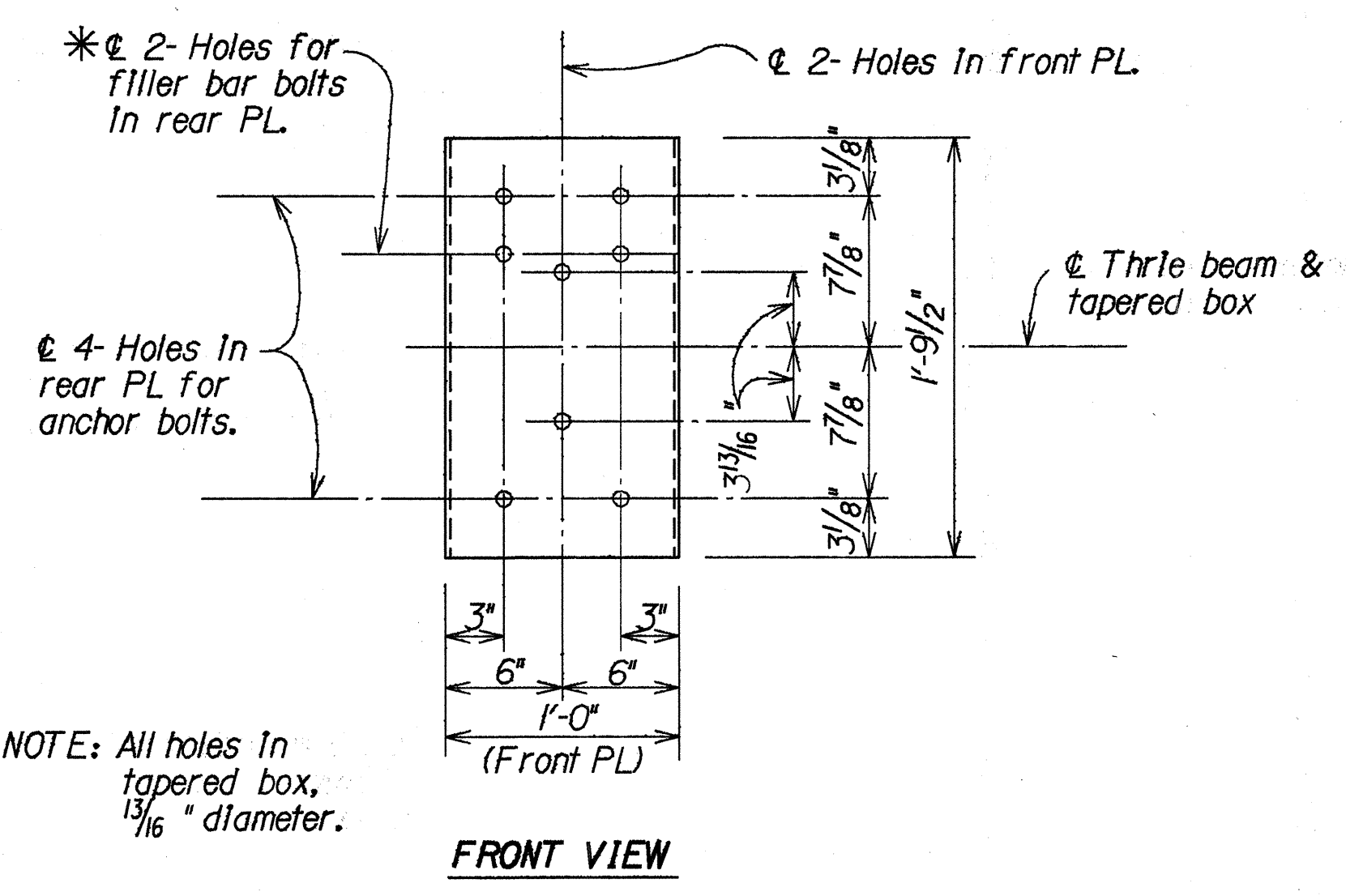
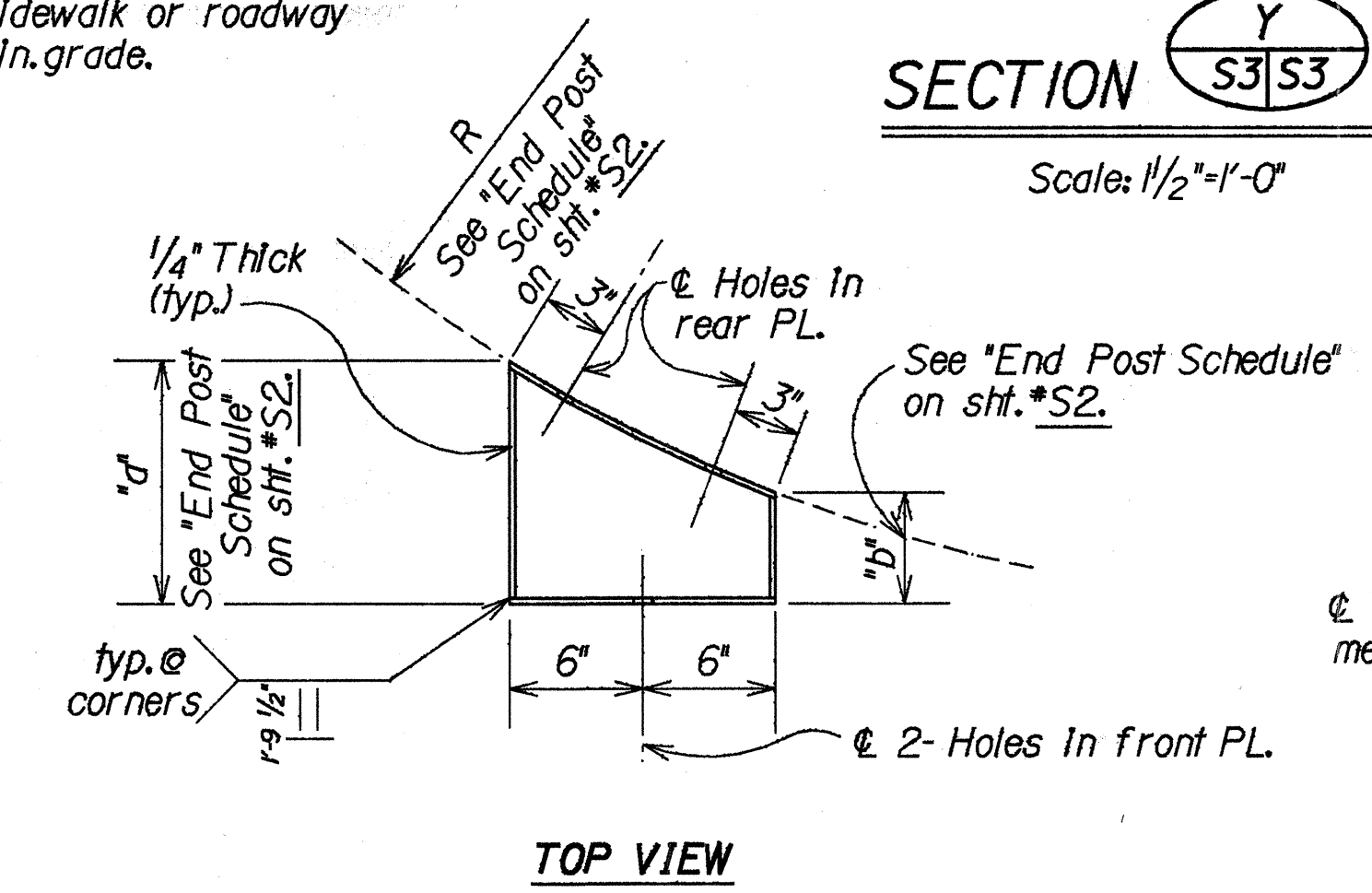
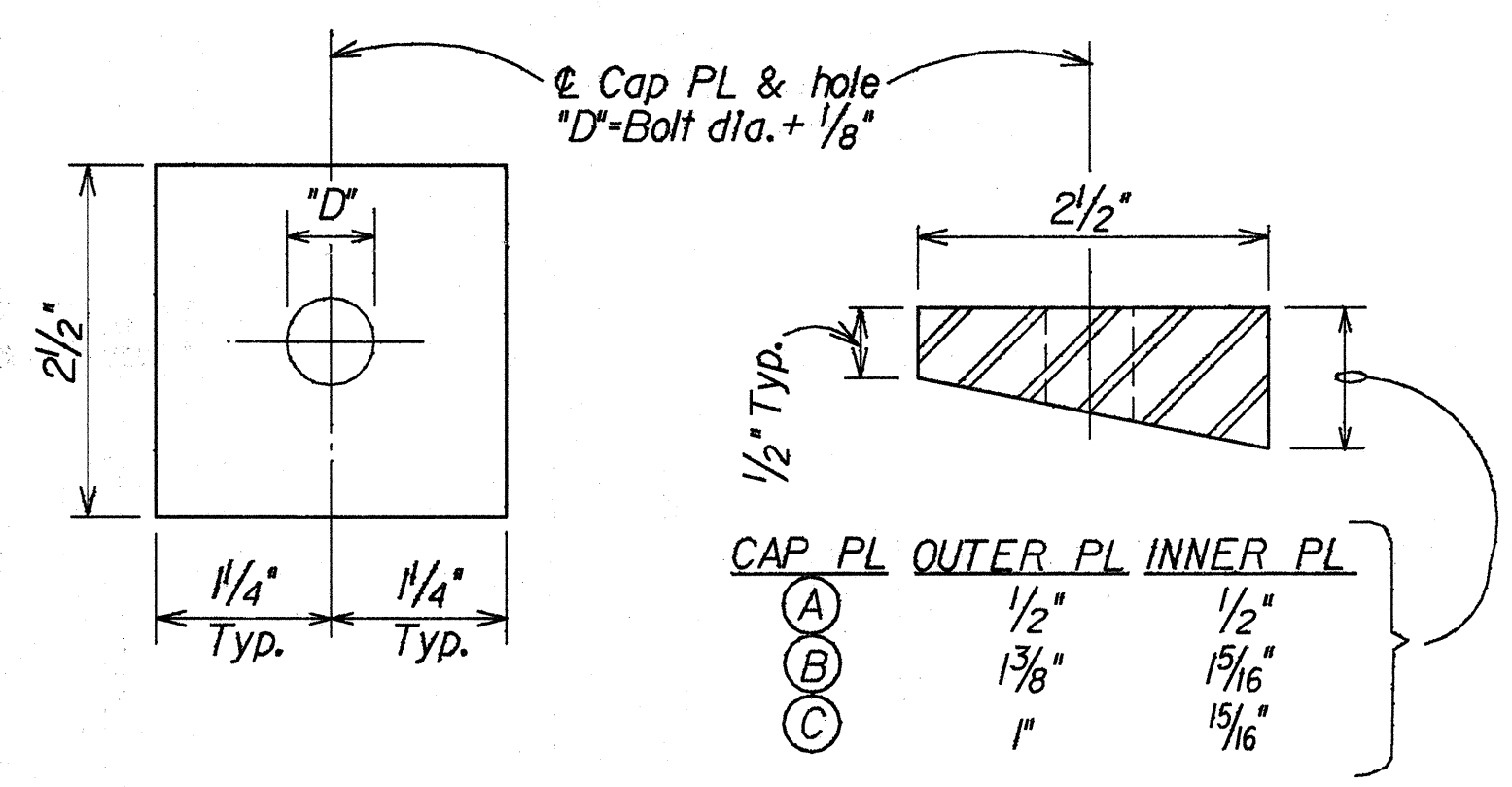
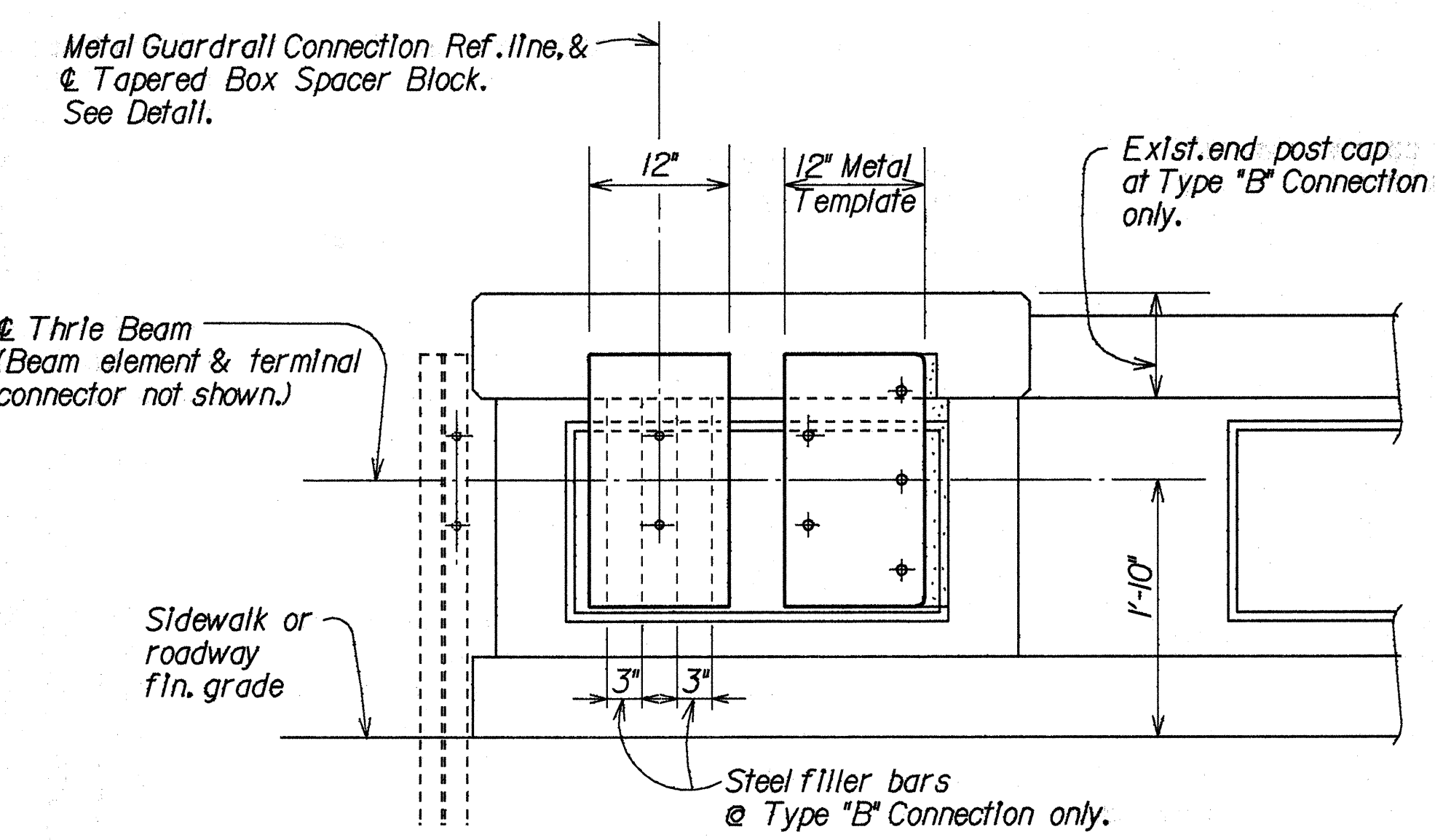
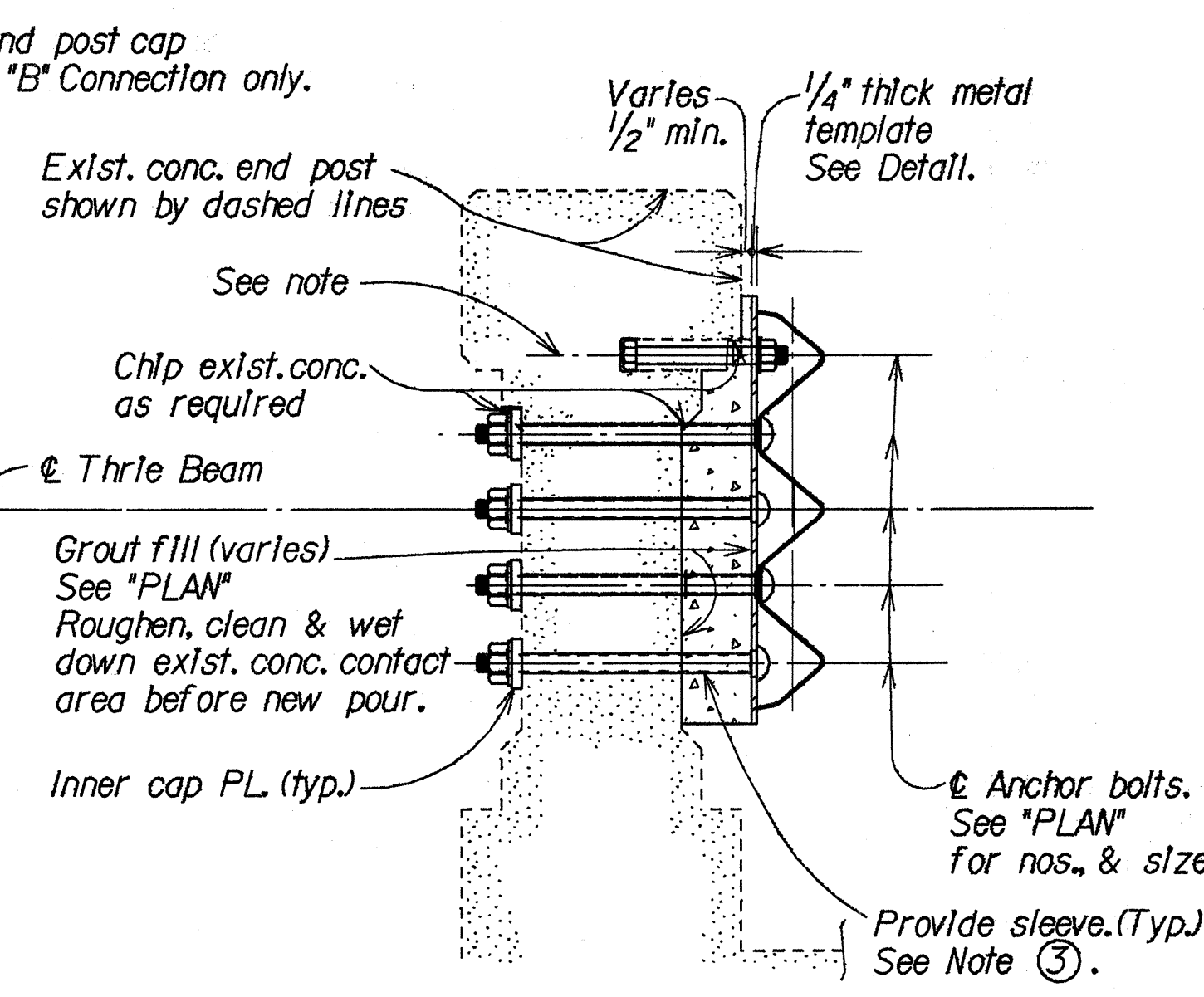
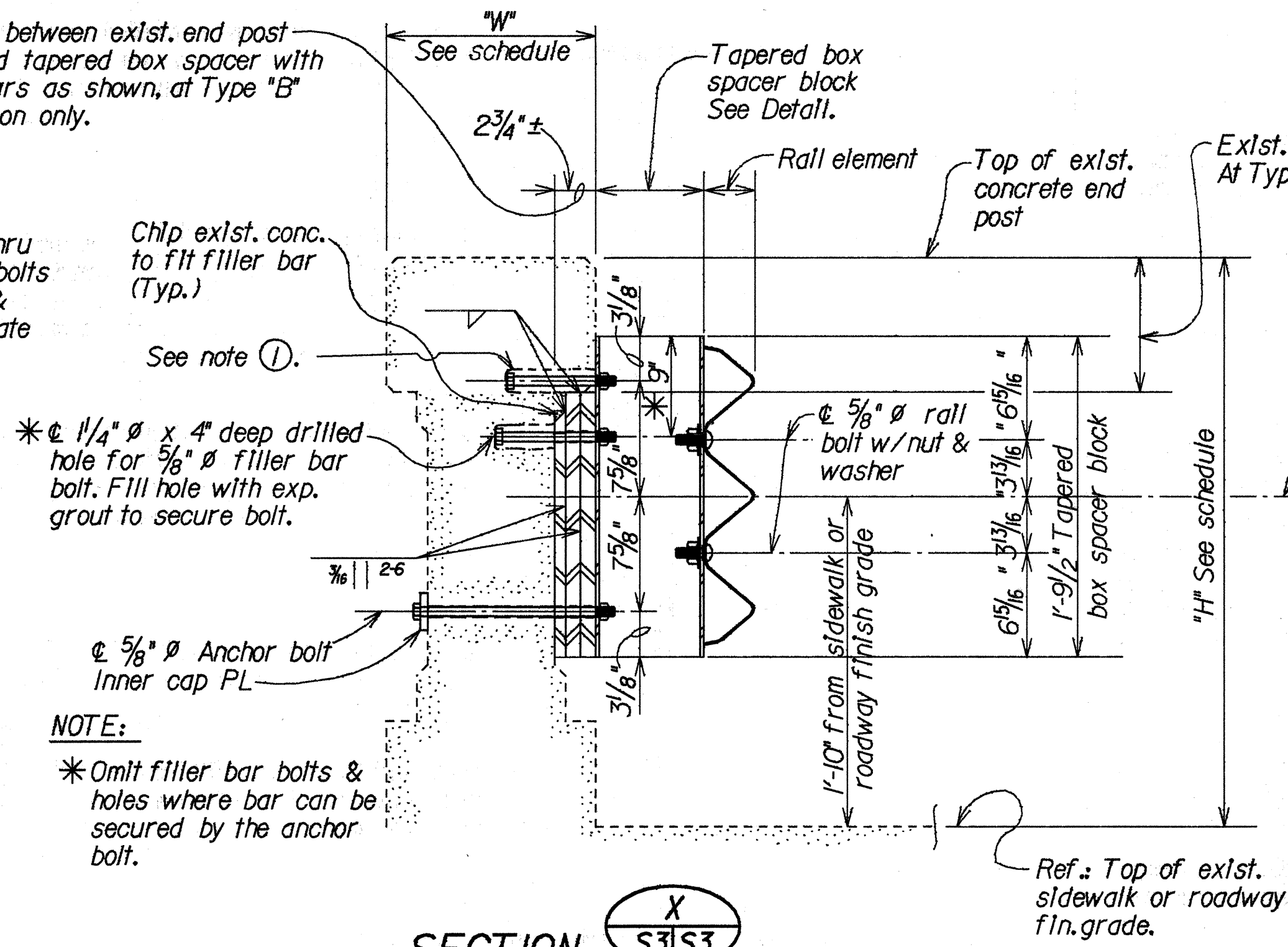
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-89	1990	18	23

NOTE:

- Drill hole thru end post as shown in "PLAN" except where anchor bolt occur within 2" from bottom edge of end post cap, drill 1/4"x6" deep hole as shown & fill hole with epoxy grout to secure bolt. See NOTE ②. Bolt shall be the adhesive anchor type.
- Embedment of anchor bolts shall be such that a snug fit of the rail elements and full thread engagement plus 1/4 inch (max.) is attained without any additional washers or fillers.
- Provide sleeve for anchor bolts thru grout filled area. Inside diameter of sleeve shall be the same as that of the drilled hole. Cut sleeve ends to match flush with abutting faces. See "PLAN" for hole size and numbers.



Fill gap between exist. end post face and tapered box spacer with filler bars as shown, at Type "B" Connection only.



TYPE "B" CONNECTION DETAILS

TYPE "A" CONNECTION SIMILAR EXCEPT AS NOTED OTHERWISE.

TAPERED BOX SPACER BLOCK DETAILS

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**END POST CONNECTION
TYPE "A" & "B" DETAILS**

GUARDRAIL AND SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU

Proj. No. HWY-0-02-89

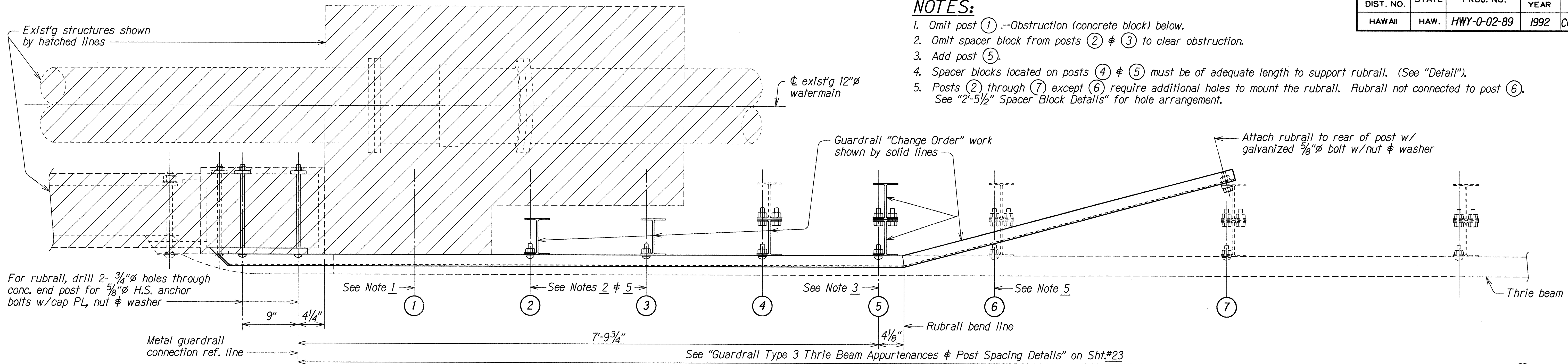
Scale: As Noted Date: Nov. 1989

SHEET No. 53 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-89	1992	C019S-2	23

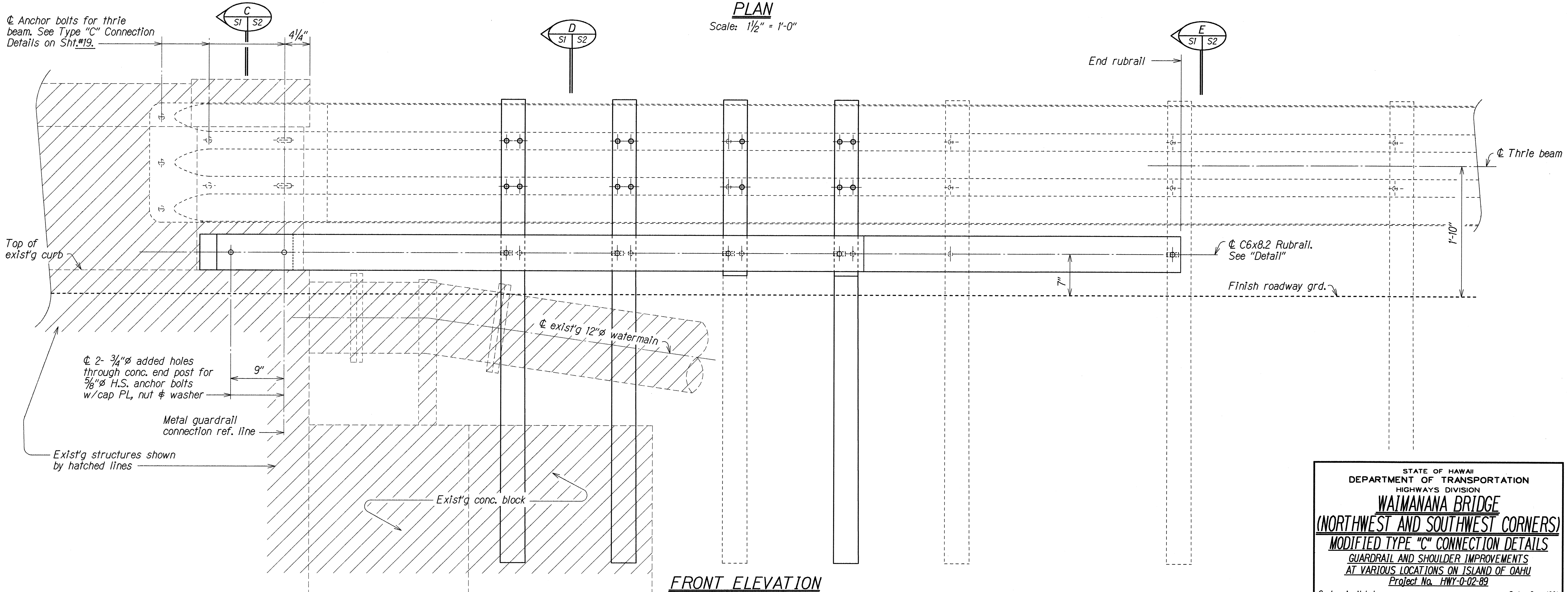
NOTES:

- Omit post ①.--Obstruction (concrete block) below.
- Omit spacer block from posts ② & ③ to clear obstruction.
- Add post ⑤.
- Spacer blocks located on posts ④ & ⑤ must be of adequate length to support rubrail. (See "Detail").
- Posts ② through ⑦ except ⑥ require additional holes to mount the rubrail. Rubrail not connected to post ⑥. See "2'-5 1/2" Spacer Block Details" for hole arrangement.



PLAN

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



FRONT ELEVATION

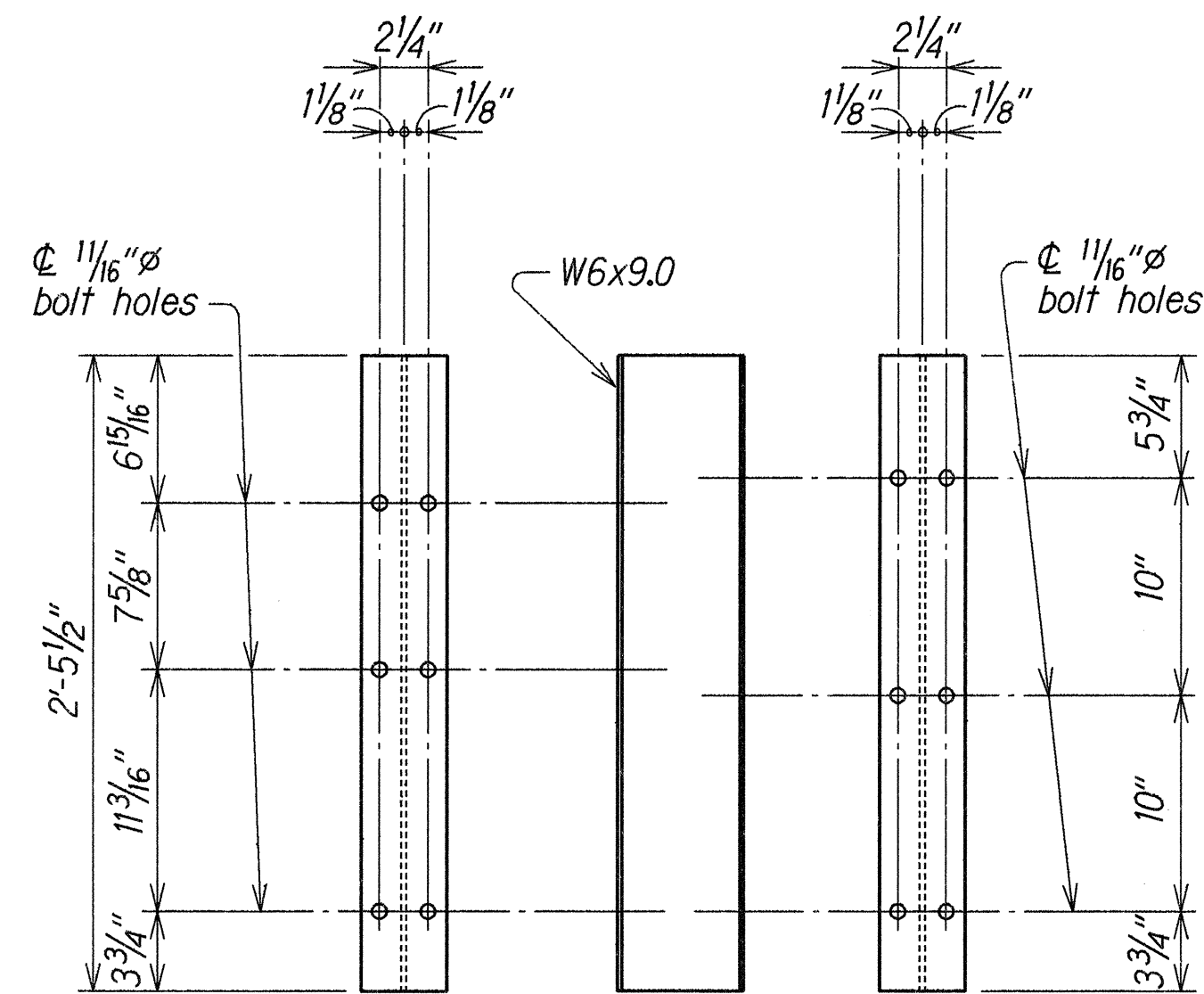
Scale: 1 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIMANANA BRIDGE
(NORTHWEST AND SOUTHWEST CORNERS)
MODIFIED TYPE "C" CONNECTION DETAILS
GUARDRAIL AND SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON ISLAND OF OAHU
Project No. HWY-0-02-89
Scale: As Noted Date: Sep. 1991
SHEET No. 51 OF 2 SHEETS

C.O.19S-2

DESIGNED BY	DATE	SEP 1991
DRAWN BY	SEP 1991	
CHECKED BY	SEP 1991	
APPROVED BY	SEP 1991	
QUANTITY BY	SEP 1991	
NOTED BY	SEP 1991	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-89	1992	C019S-3	23

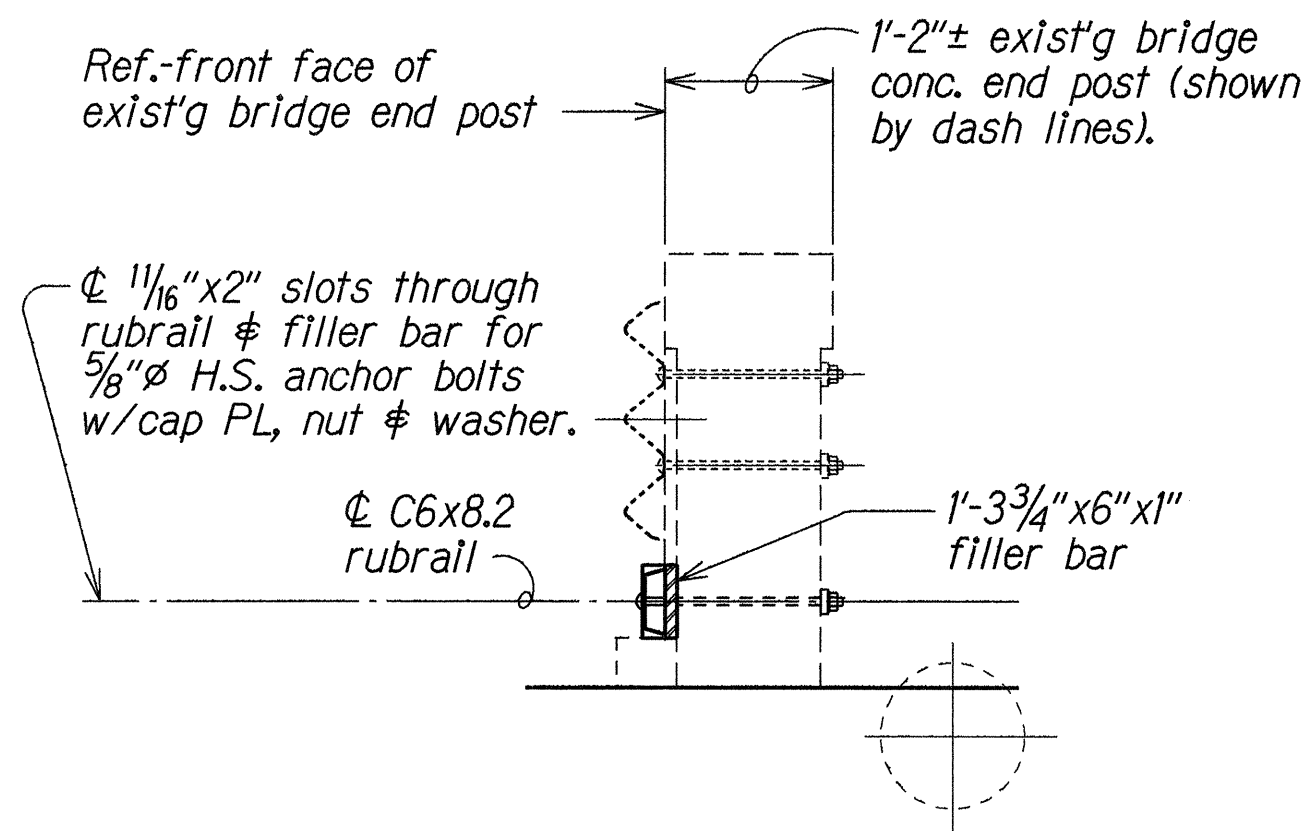


FRONT SIDE REAR

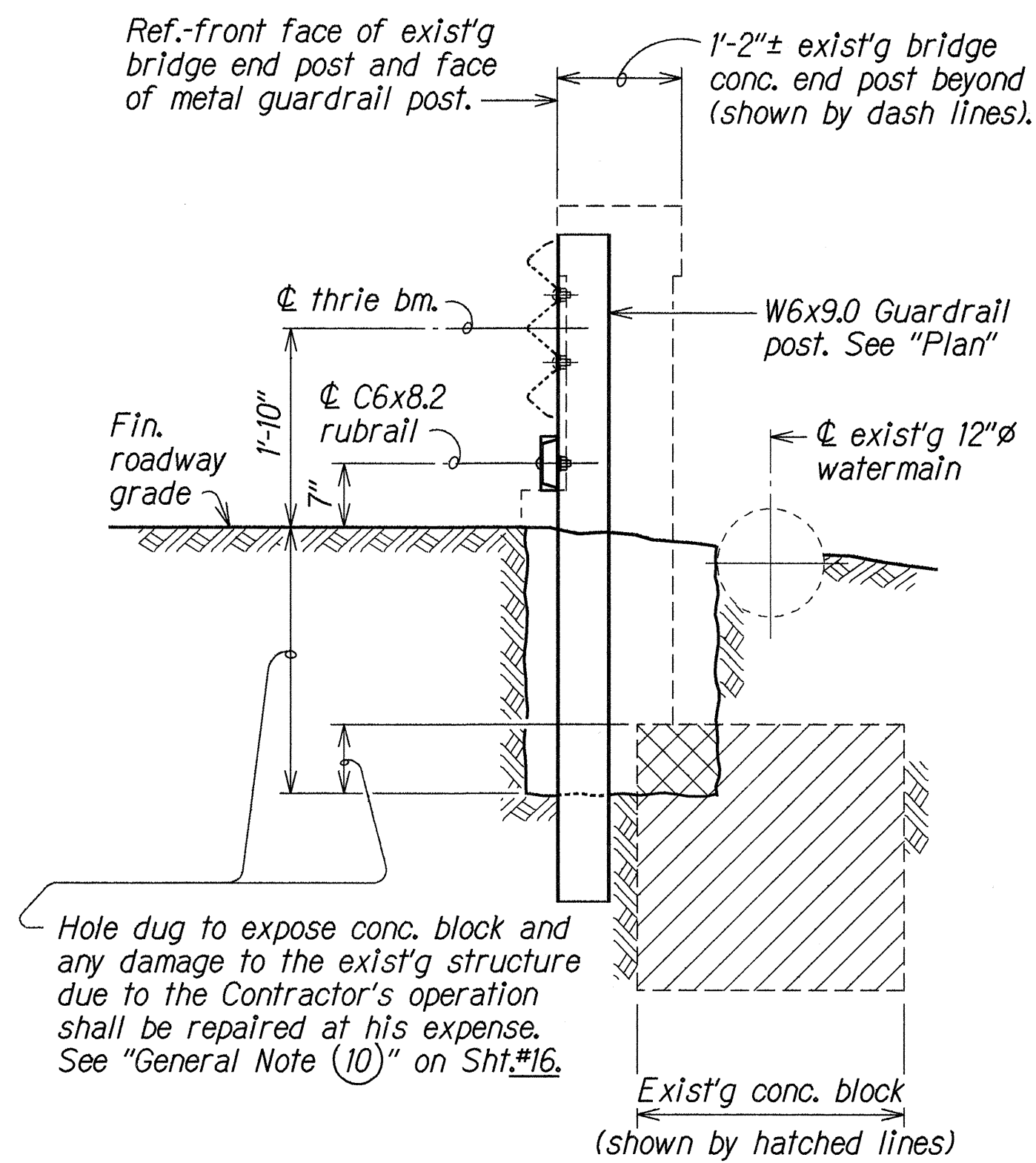
2'-5 1/2" SPACER BLOCK DETAILS

(HOT-DIP GALVANIZED AFTER FABRICATION)

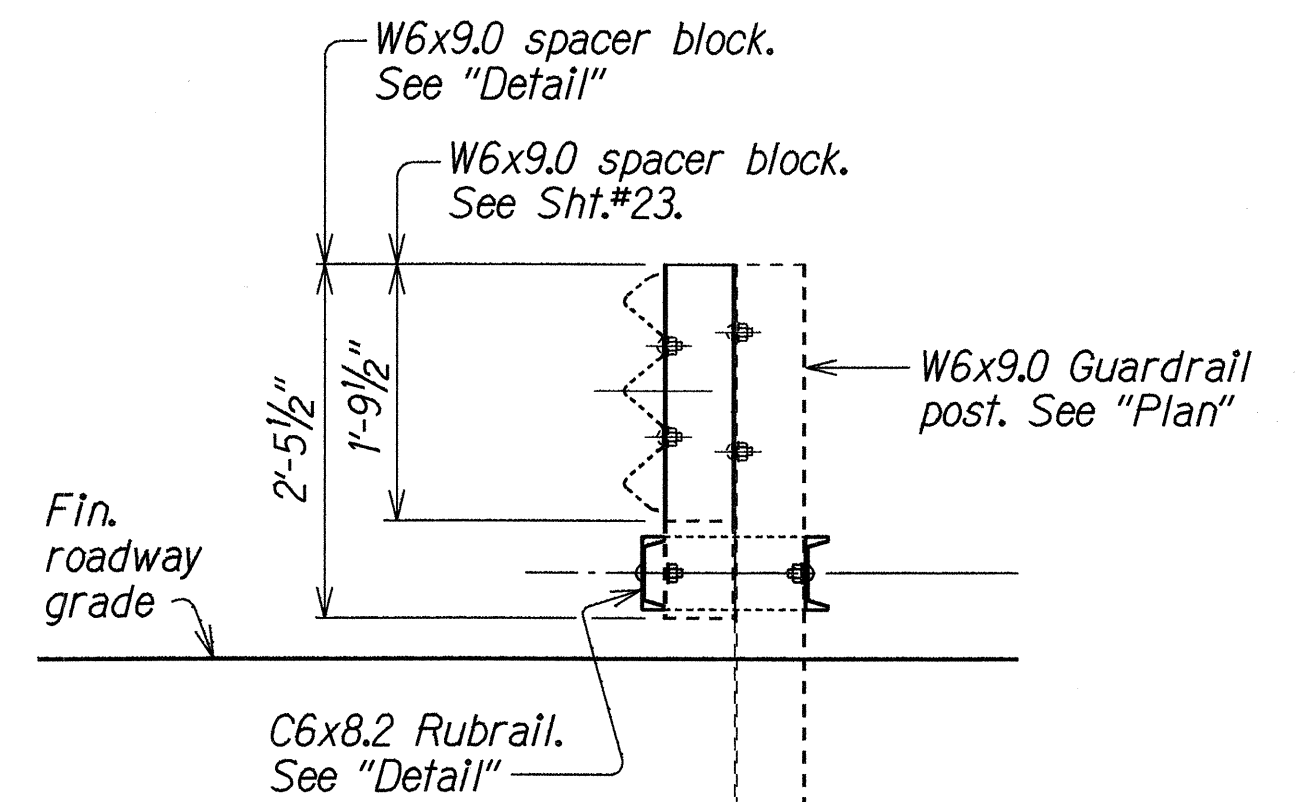
Scale: 1/2" = 1'-0"



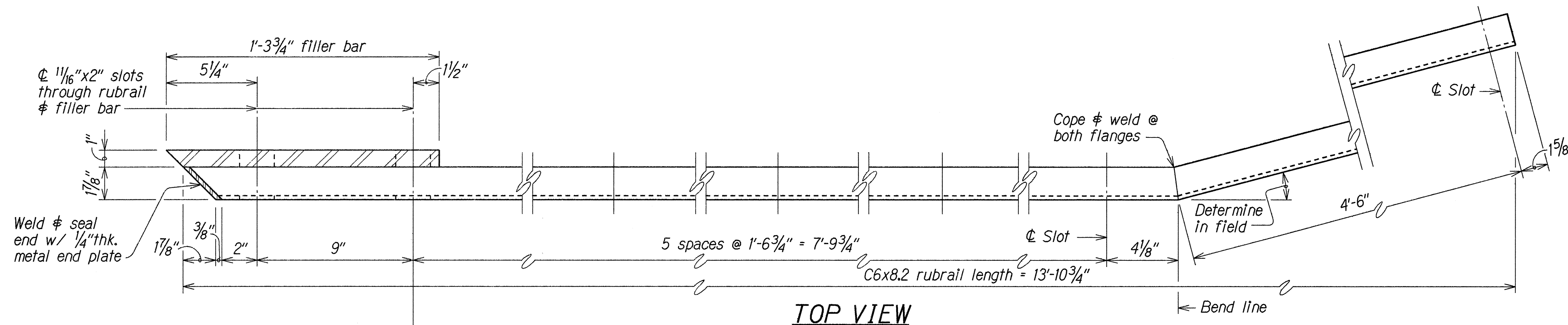
SECTION C
Scale: 3/4" = 1'-0"



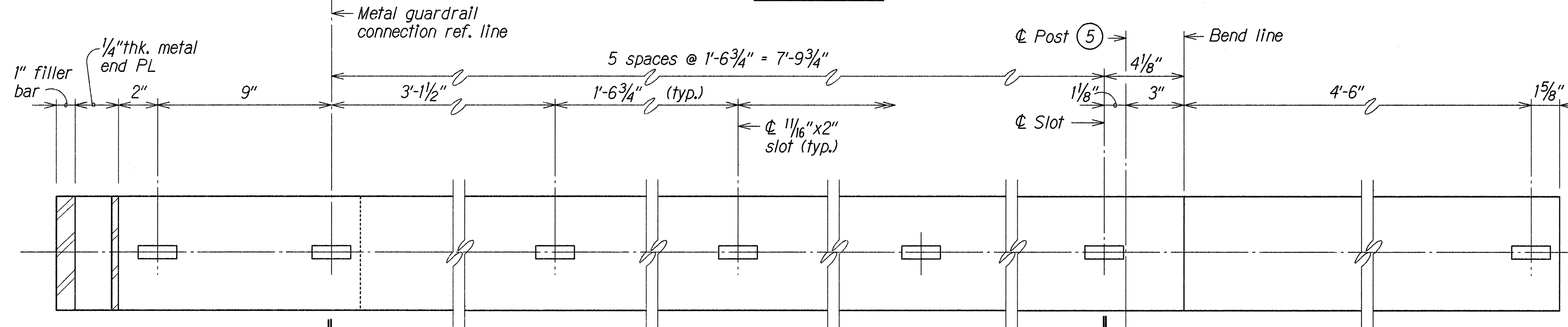
SECTION D
Scale: 3/4" = 1'-0"



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



TOP VIEW

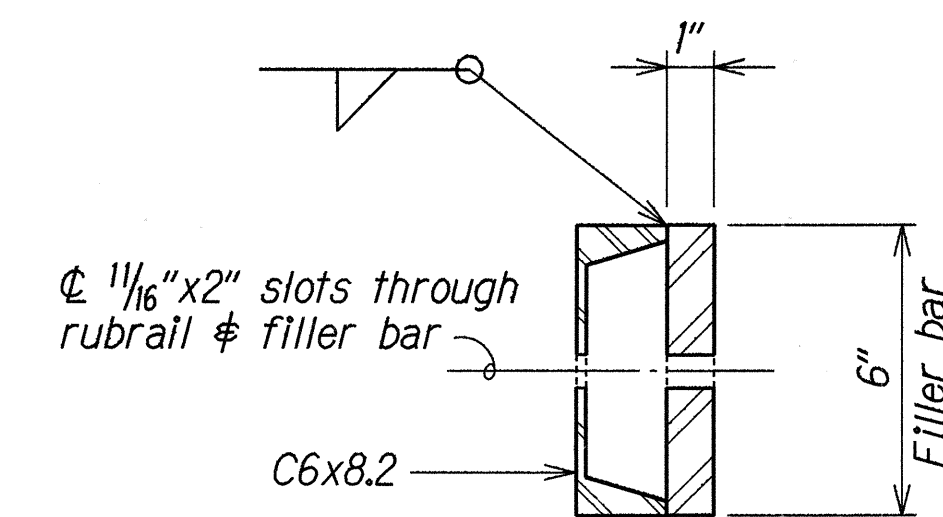


FRONT VIEW

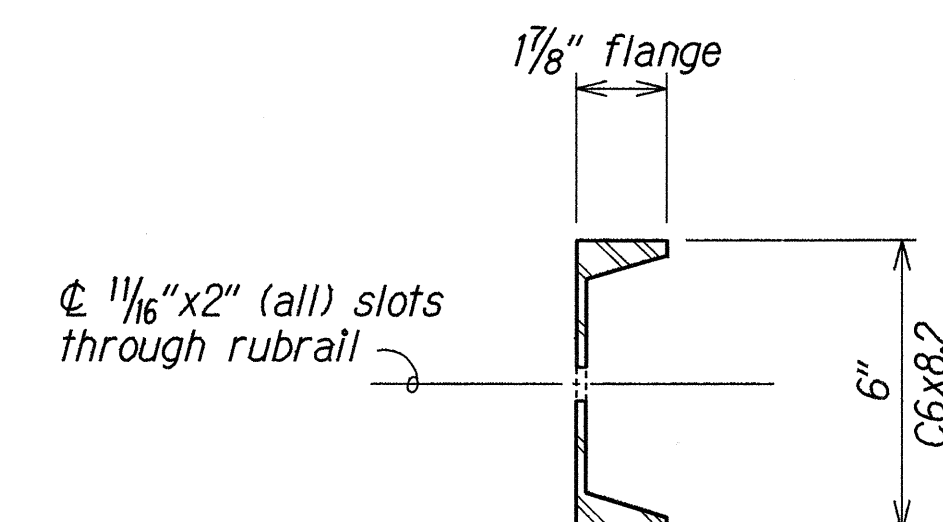
C6X8.2 RUBRAIL DETAILS

(HOT-DIP GALVANIZED AFTER FABRICATION)

Scale: 3" = 1'-0"



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



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIMANANA BRIDGE
(NORTHWEST AND SOUTHWEST CORNERS)
MODIFIED TYPE "C" CONNECTION DETAILS
GUARDRAIL AND SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON ISLAND OF OAHU
Project No. HWY-0-02-89
Scale: As Noted Date: Sep. 1991

SHEET No. S2 OF 2 SHEETS

C.O.19S-3

SURVEY PLOTTED BY	DATE	SEP 1991
DESIGNED BY	SEP 1991	
QUANTITIES BY	SEP 1991	
CHECKED BY	SEP 1991	