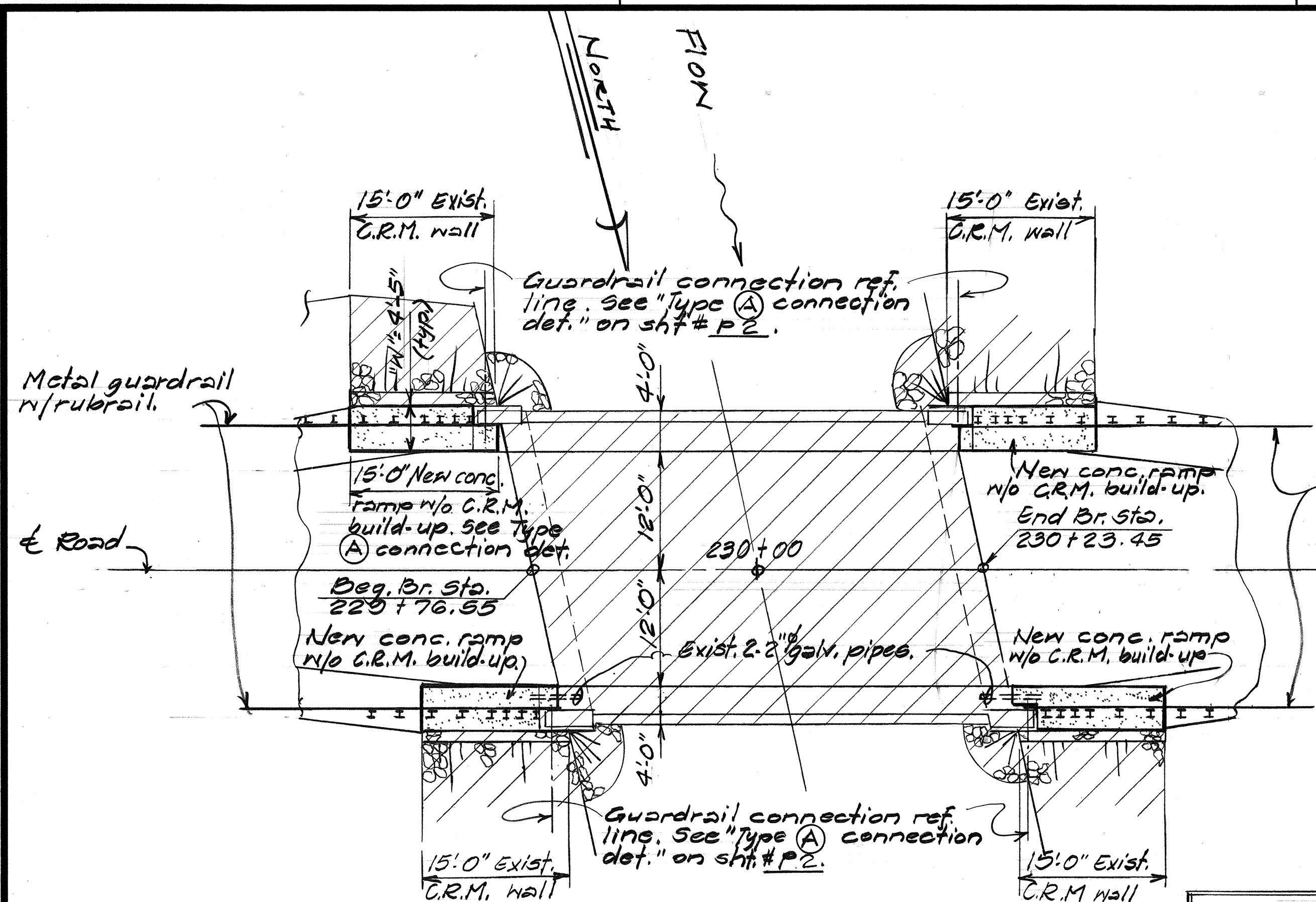
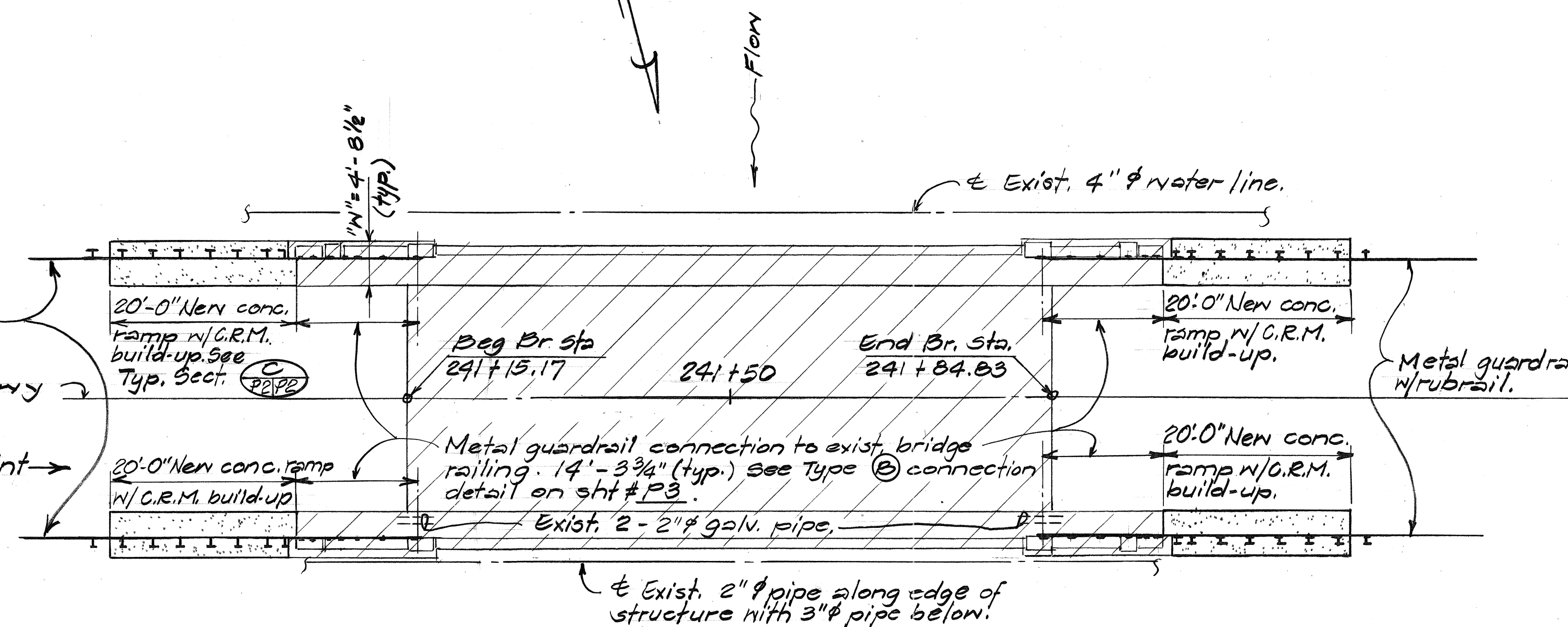


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	230B-01-20M	1990	14	28

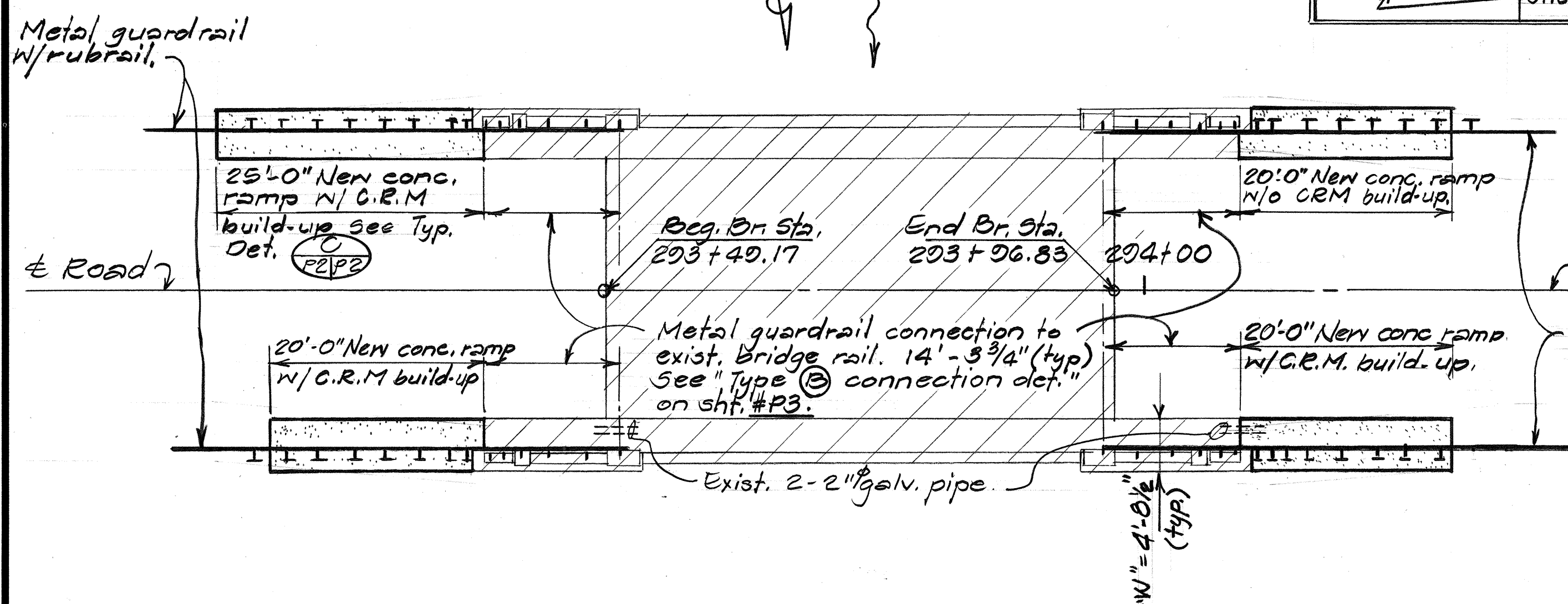


**LAYOUT PLAN
MAKALENA BRIDGE**
Scale: 1" = 10'-0"

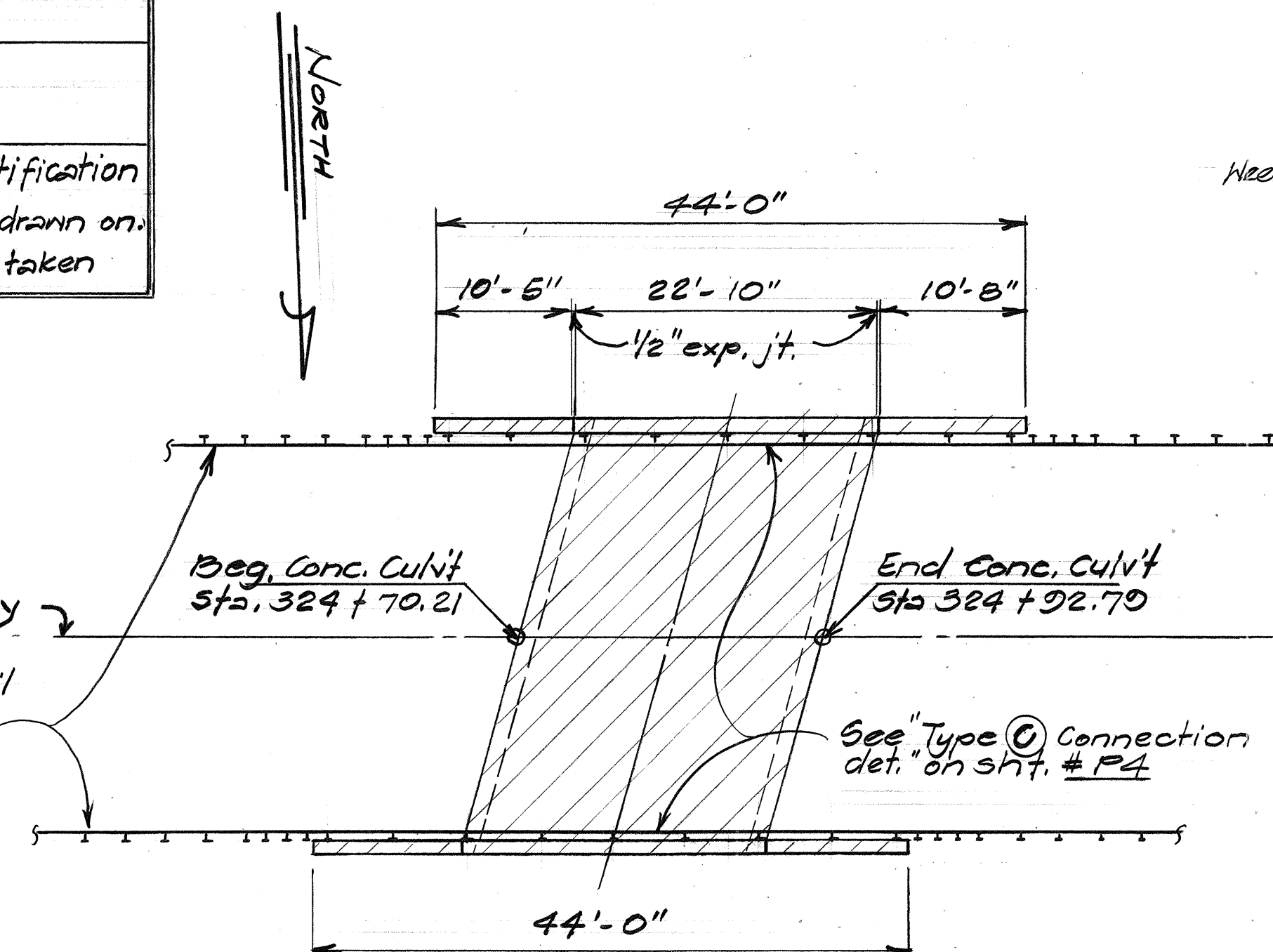


**LAYOUT PLAN
KAPALAAU BRIDGE**
Scale: 1" = 10'-0"

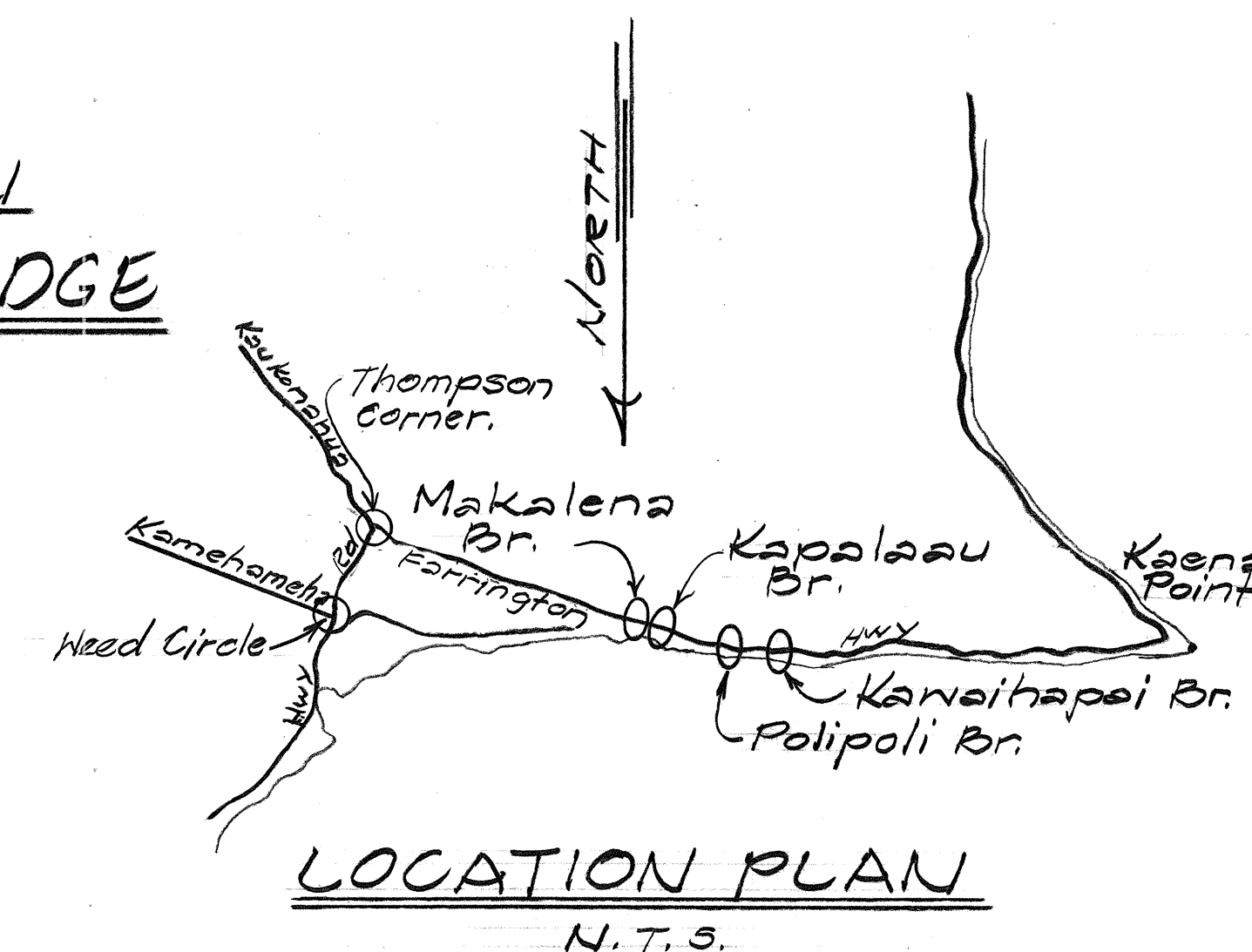
LEGEND	
SYMBOLS	DESCRIPTION
	Existing structure
	Removal of existing structure
	New concrete pour
	Detail or section identification
	Sheet no. detail or sect. drawn on. Sheet no. detail or sect. taken



**LAYOUT PLAN
POLIPOLI BRIDGE**
Scale: 1" = 10'-0"



**LAYOUT PLAN
KAWAIHAPAI BRIDGE**
Scale: 1" = 10'-0"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE LOCATION AND LAYOUT PLANS

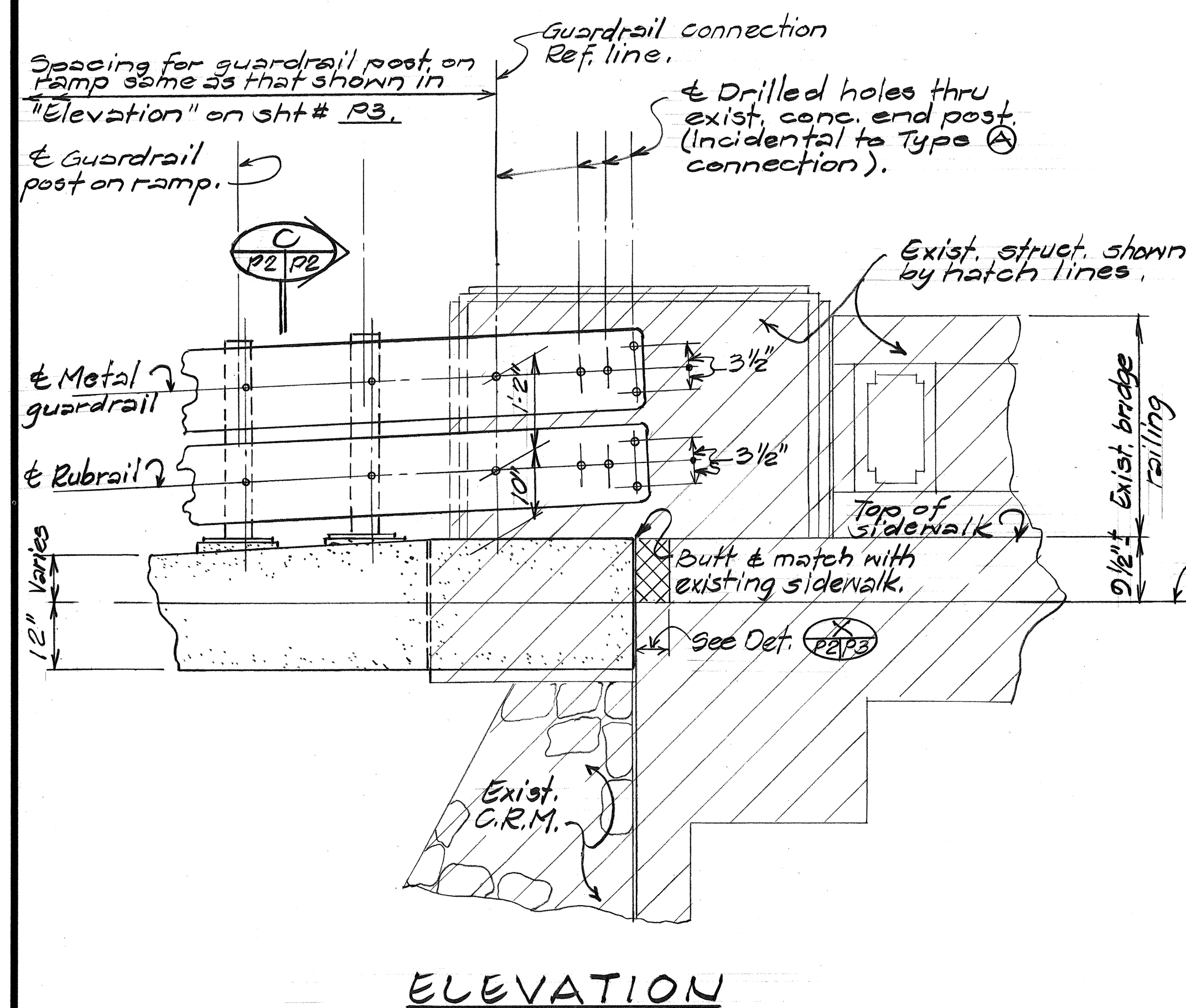
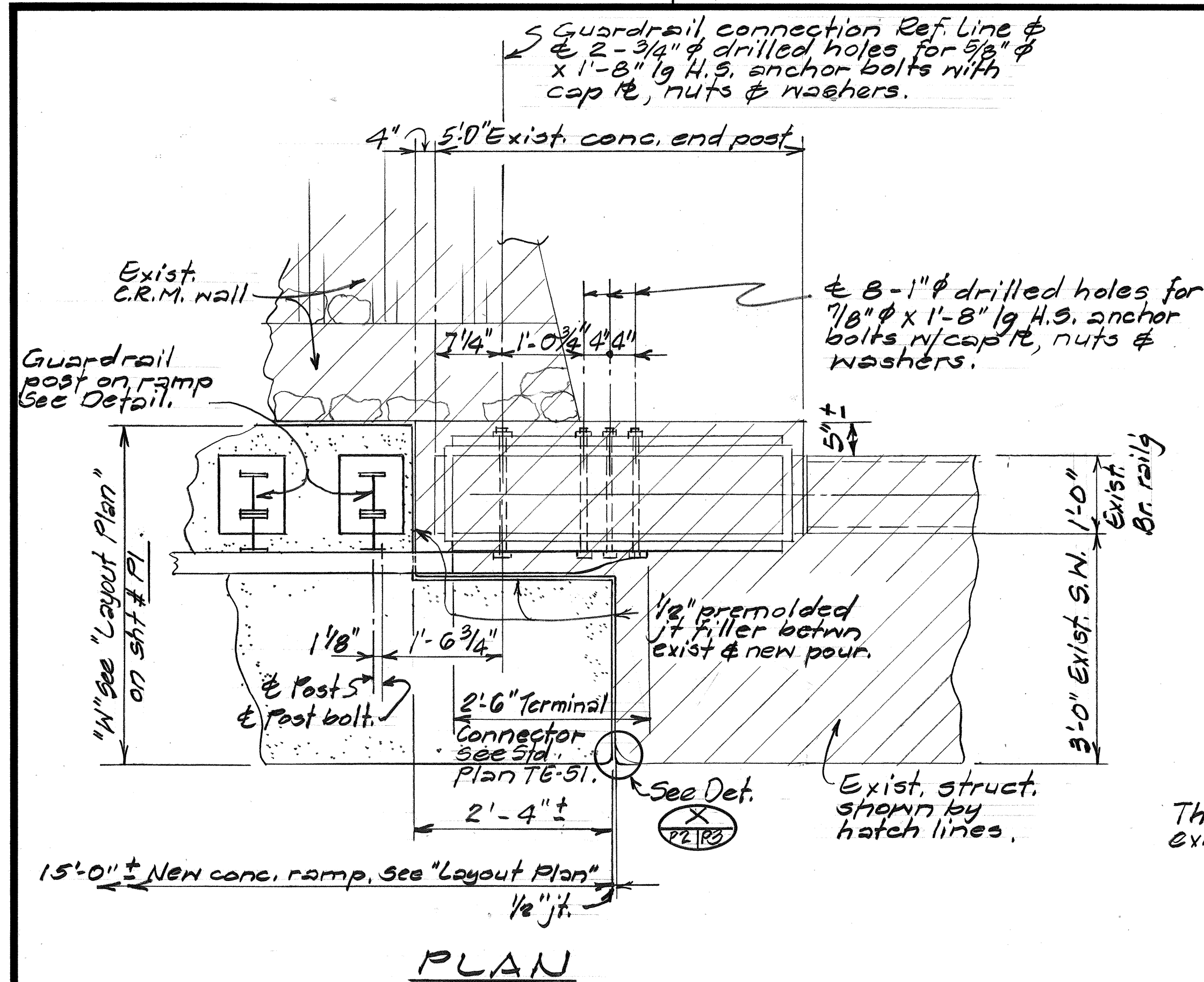
FARRINGTON HIGHWAY RESURFACING
MOKULEIA HOMESTEAD ROAD TOWARDS
KAENA STATE PARK

Proj. No. 230B-01-20M
Scale: As Noted Date: May, 1990

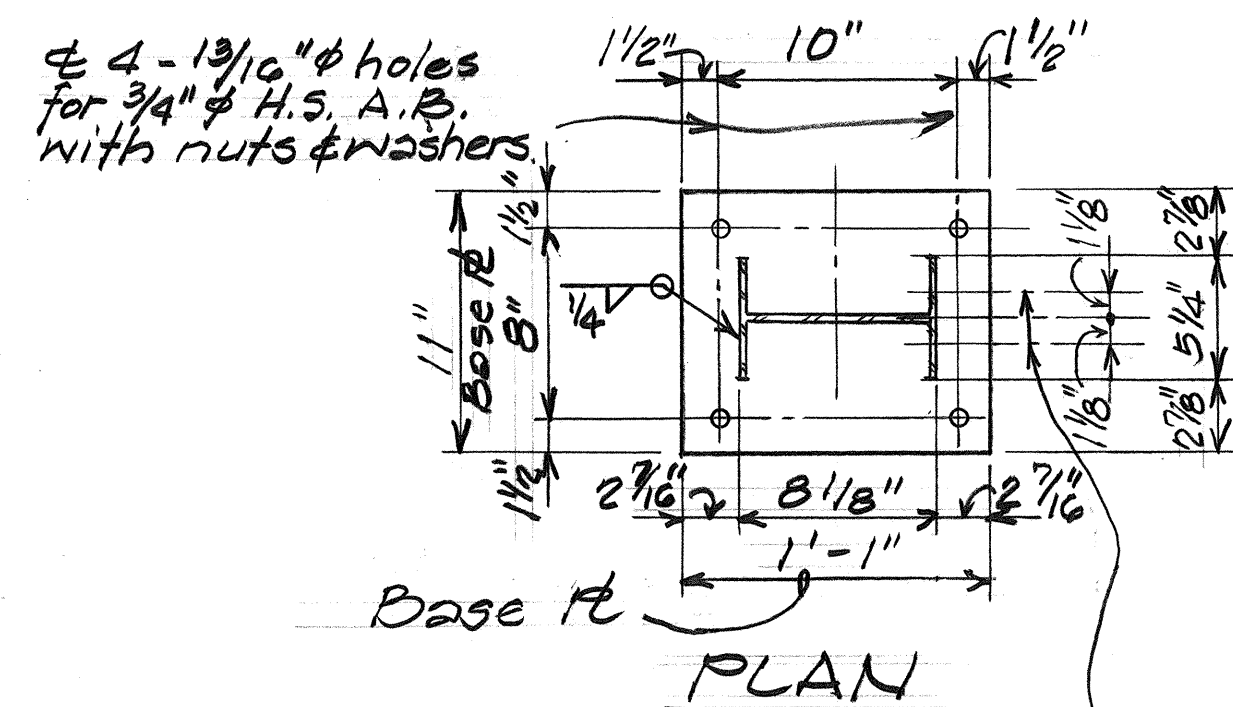
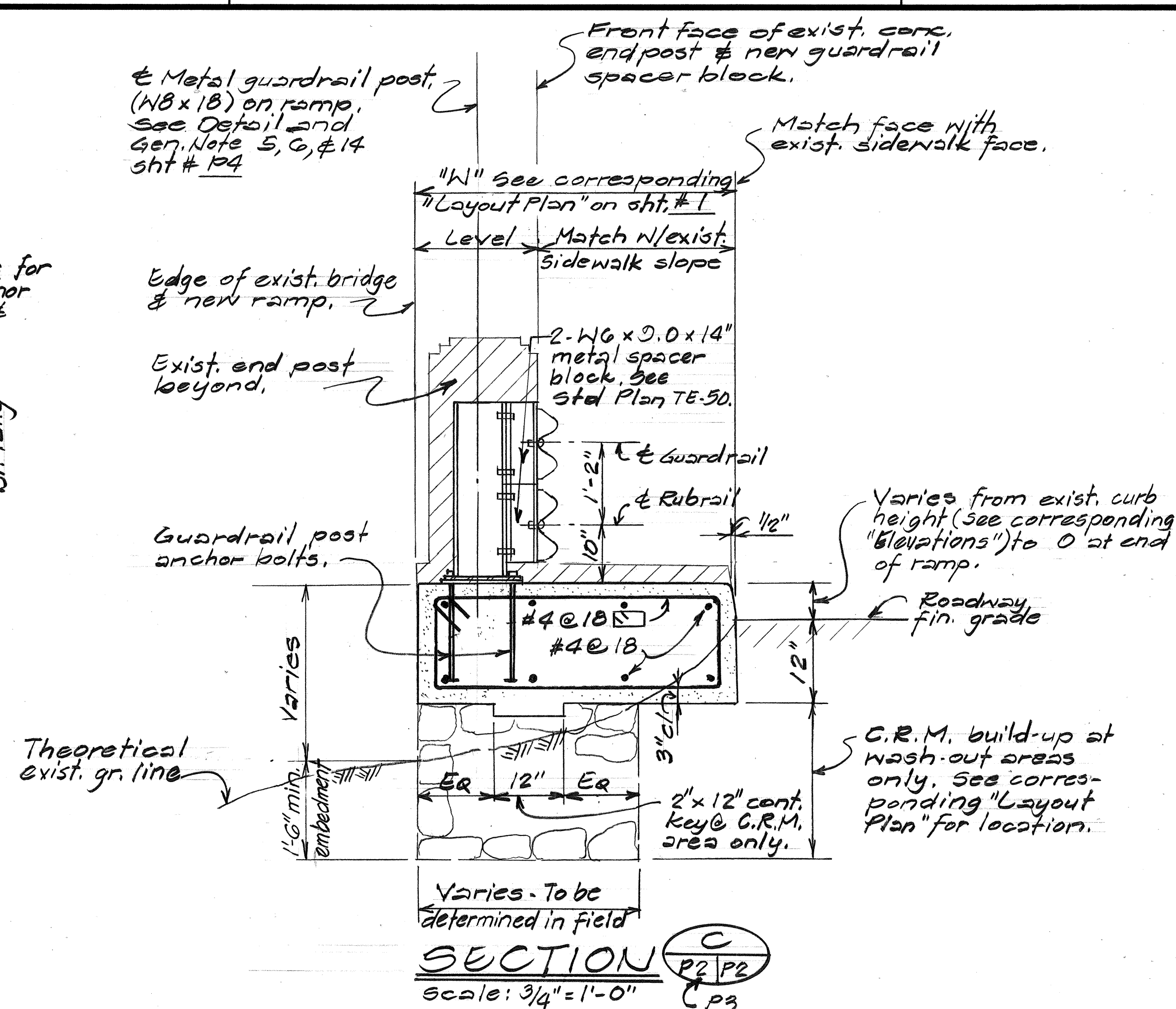
SHEET NO. P1 OF 5 SHEETS

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

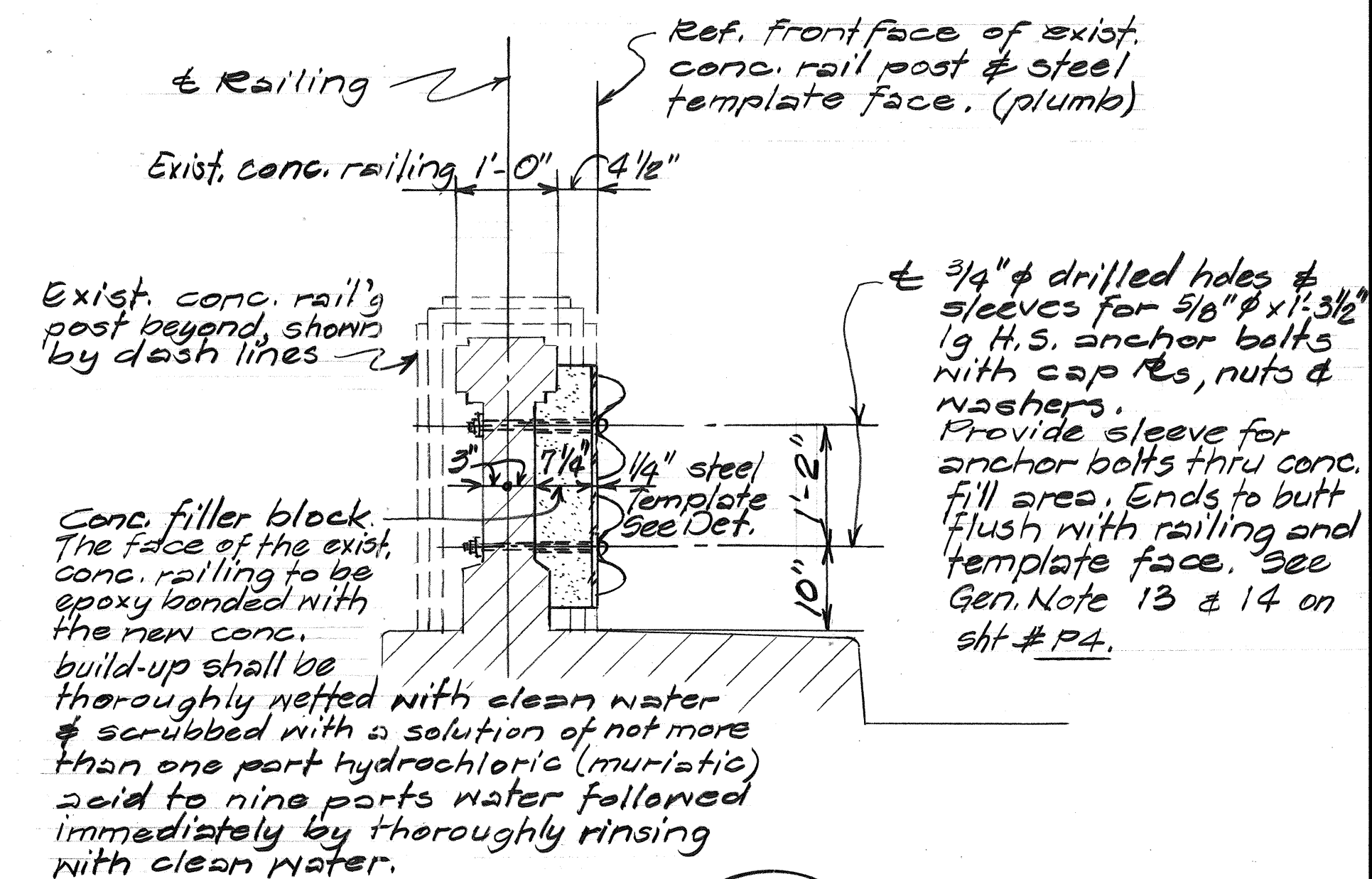
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	930B-01-001	1990	15	28



TYPE (A) CONNECTION
Scale: $\frac{3}{4}" = 1' - 0"$

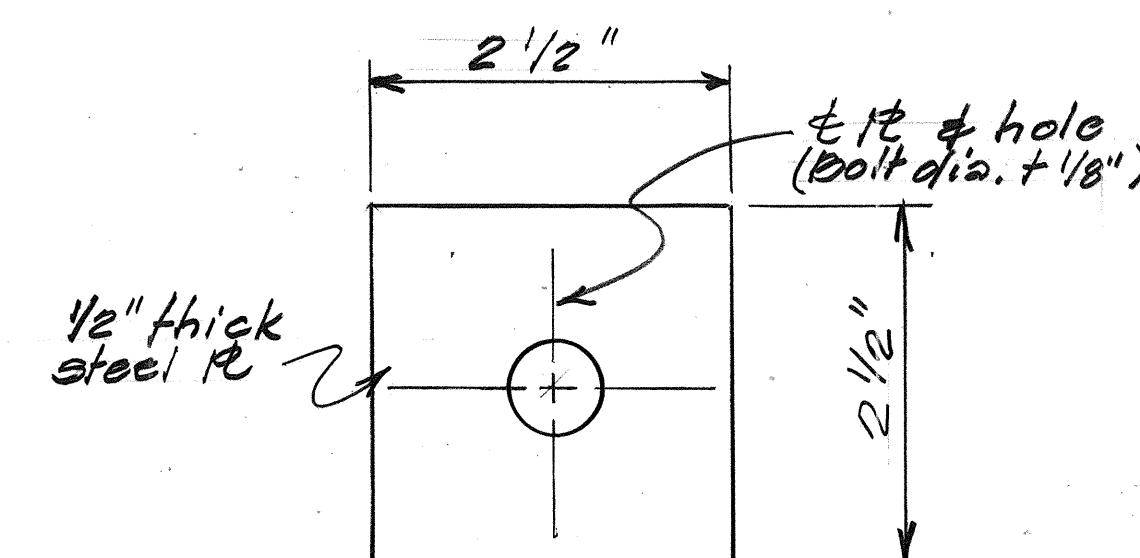
[illegible]

GUARDRAIL POST ON RAMP DETAIL Scale: $1\frac{1}{2}" = 1'-0"$

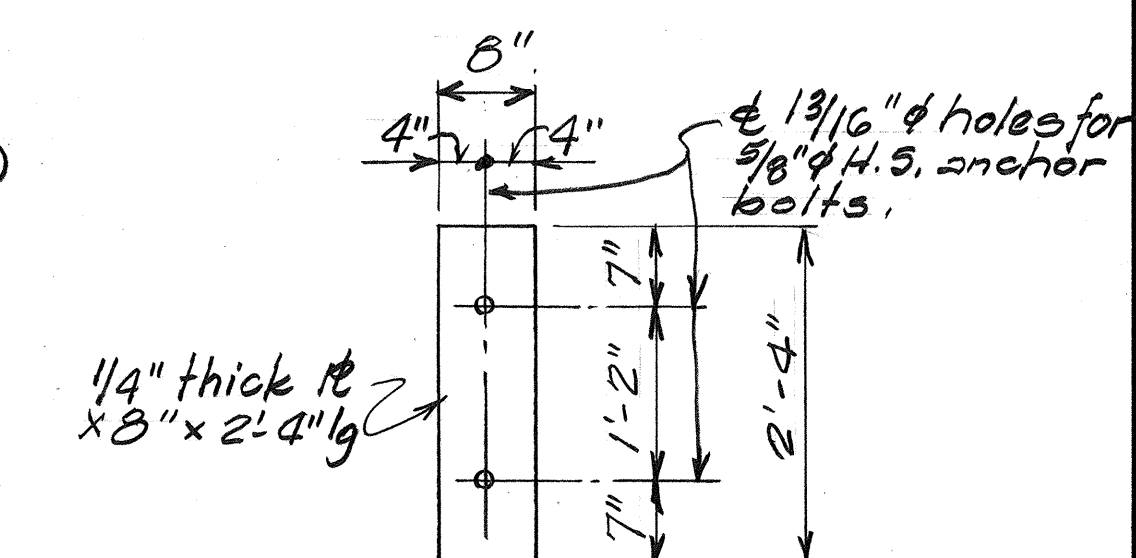


SECTION

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



CAP & DETAIL
scale: 3/4"=1'-0"



STEEL TEMPLATE DETAIL
Scale: $\frac{3}{4}" = 1'-0"$

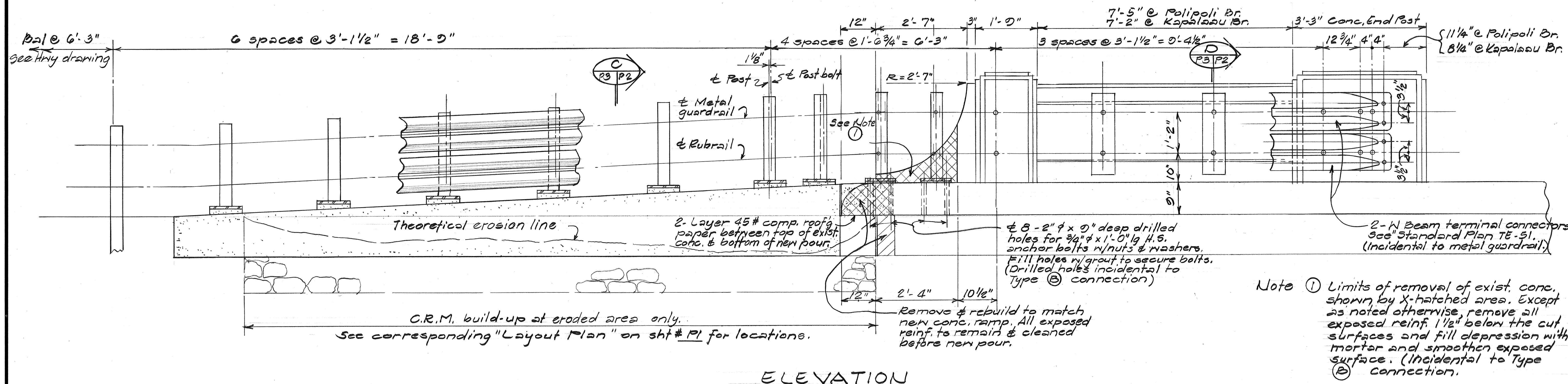
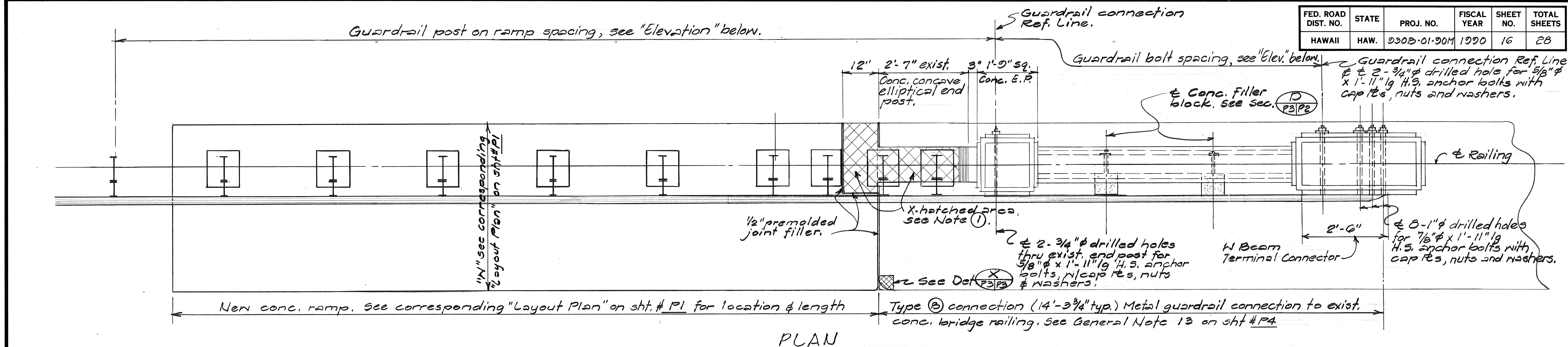
ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	" _____
	TRACED BY _____	" _____
	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
No. _____	CHECKED BY _____	" _____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL POST ON RAMP & TYPE A CONNECTION
FARRINGTON HIGHWAY RESURFACING
MOKULEIA HOMESTEAD ROAD TOWARDS
KAENA STATE PARK
Proj. No. 930B-01-90M
Scale: As Noted Date: May, 1990

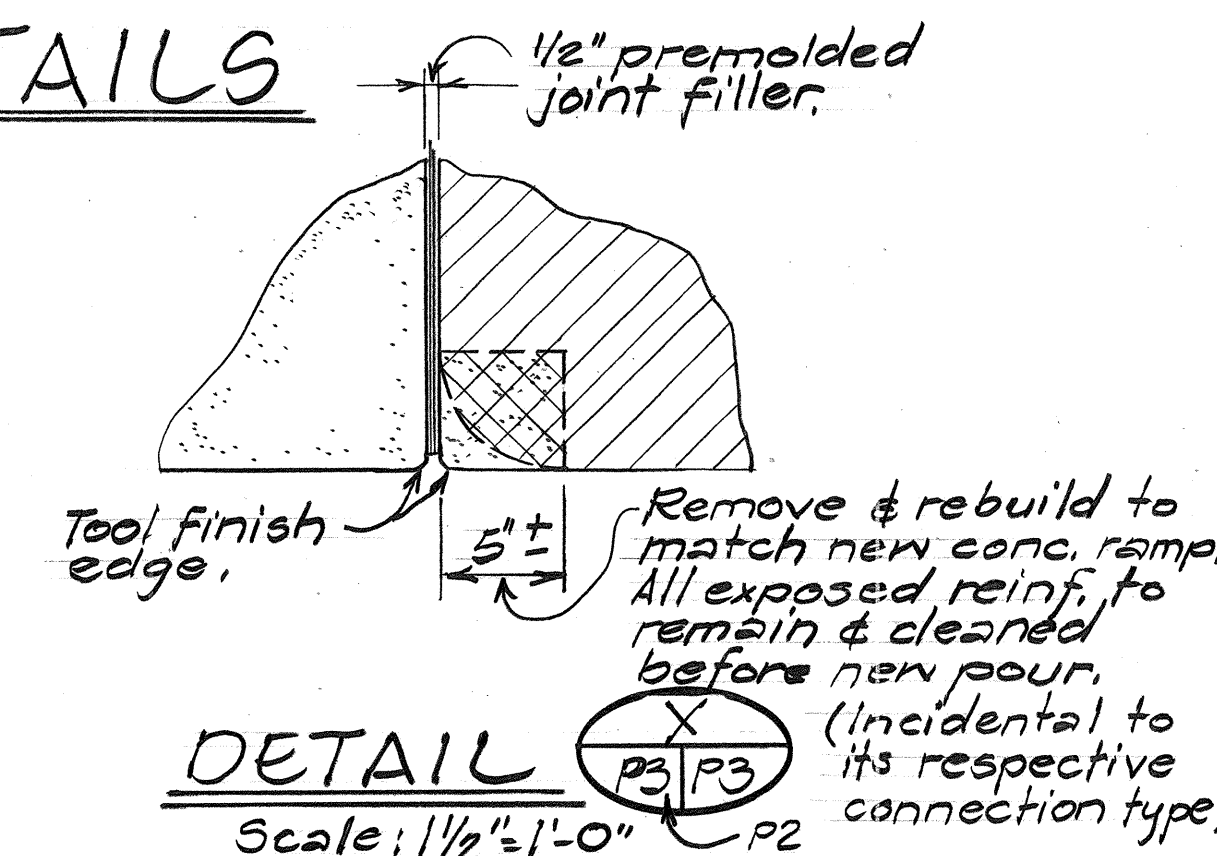
SHEET No. P2 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	030B-01-90M	1990	16	28



CONCRETE RAMP & TYPE ③ CONNECTION DETAILS

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



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
CONCRETE RAMP & TYPE ③ CONNECTION DET.
FARRINGTON HIGHWAY RESURFACING
MOKULEIA HOMESTEAD ROAD TOWARDS
KAENA STATE PARK
Proj. No. 030B-01-90M
Scale: As Noted Date: May, 1990
SHEET No. P3 OF 5 SHEETS

DATE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	230B-01-20M	1990	17	28

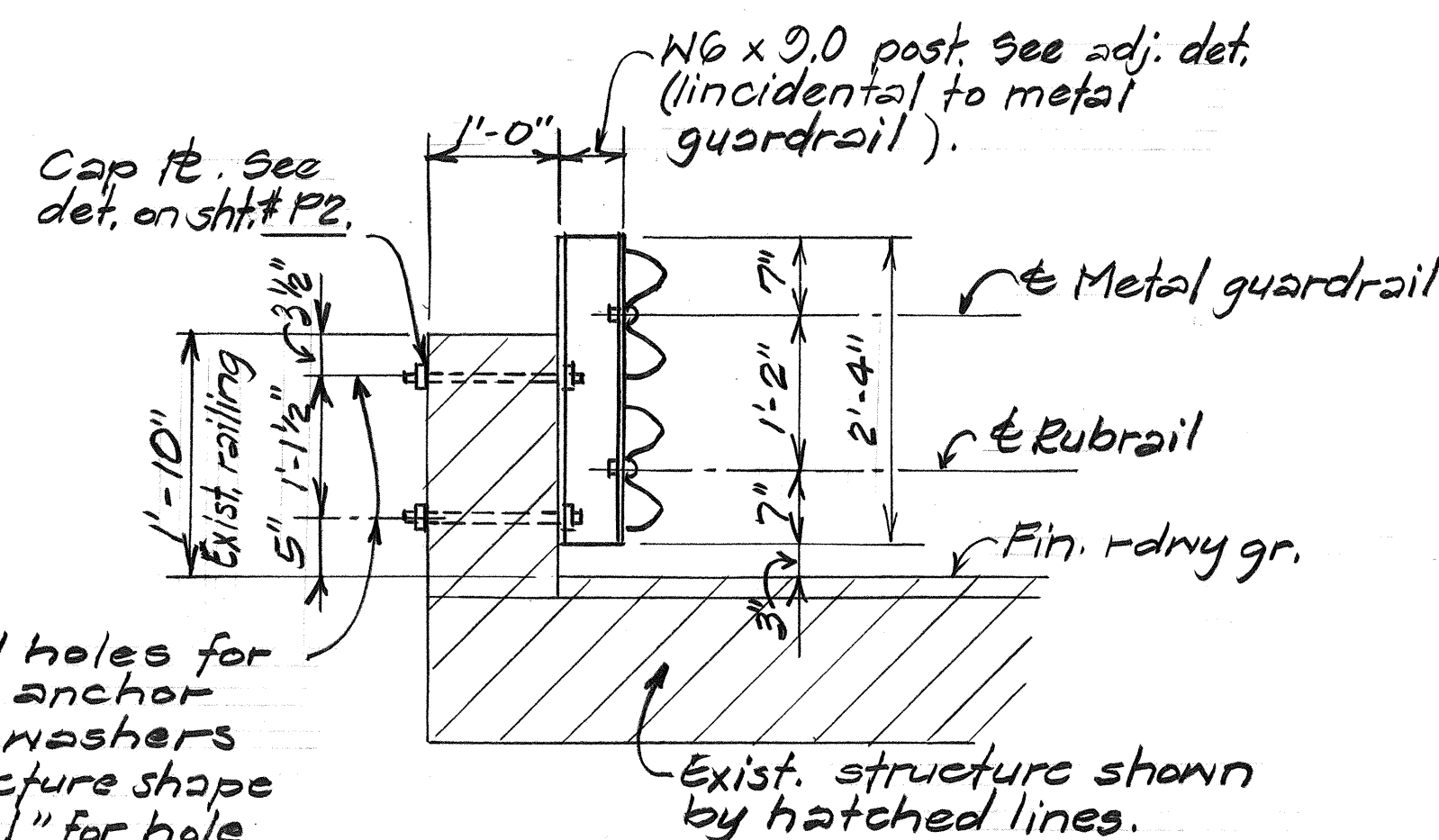
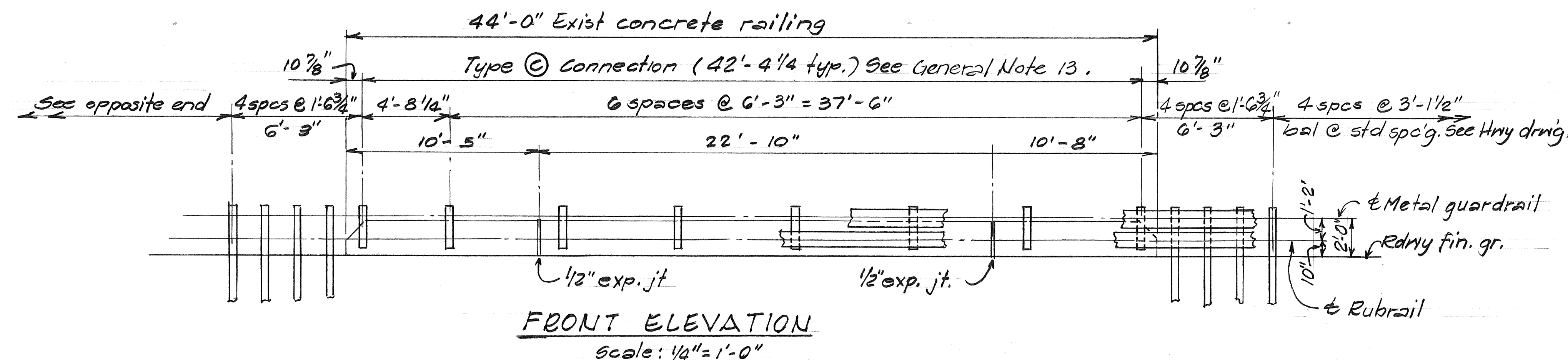
GENERAL NOTES

- See Standard Specifications for Road and Bridge Construction (Hawaii 1985) and Special Provisions.
- See State of Hawaii DOT Standard Plans sht. TE-50 & TE-51 for details of metal guardrail & "terminal connector".
- All anchor bolts shall be high strength bolts conforming to the requirements of ASTM A325.
- "Terminal Connector" shall be fabricated from 10 gage steel conforming to the requirements of AASHTO M180.
- Steel Template and base plate shall be A36 steel.
- All terminal connector, standard spacer, steel template posts including all anchor bolts, cap'tes, nuts and washers, shall be hot-dip galvanized.
- Construction of ramp shall generally conform to the requirements of Section 608-Sidewalks, of the Standard Specifications.
- Guardrail with rubrail occurring 25'-0" before & after the existing bridge railing & those occurring within, shall be of galvanized steel and supports spaced as shown in drawings.
- Large impacting or vibratory type of equipment will not be permitted in the removal operation of the designated items nor for drilling of holes.
- Any damage to the existing structures due to the Contractor's operation shall be repaired at his expense, to the satisfaction of the Engineer.
- The Contractor shall verify all dimensions in field before commencing with work.
- The Contractor shall verify the location of all existing utility lines near structures and notify their respective owners before commencing with work.
- The work involved in "Type C Connections" consist of all preparations for the hook-up, including but not limited to drilling of holes & grouting of anchor bolts where required, removal of portion of concrete section and erection of concrete filler block, including the steel templates and apparatusment bolt assembly. The various type of connections shall be paid for per each.
- Anchor bolts, nuts, washers, cap'tes, guardrail posts with base plates and leveling grout shall be incidental to metal guardrail, unless noted otherwise.
- Ramp concrete shall be paid for on a cubic yard basis. Required excavation and reinforcing shall be incidental to ramp concrete.

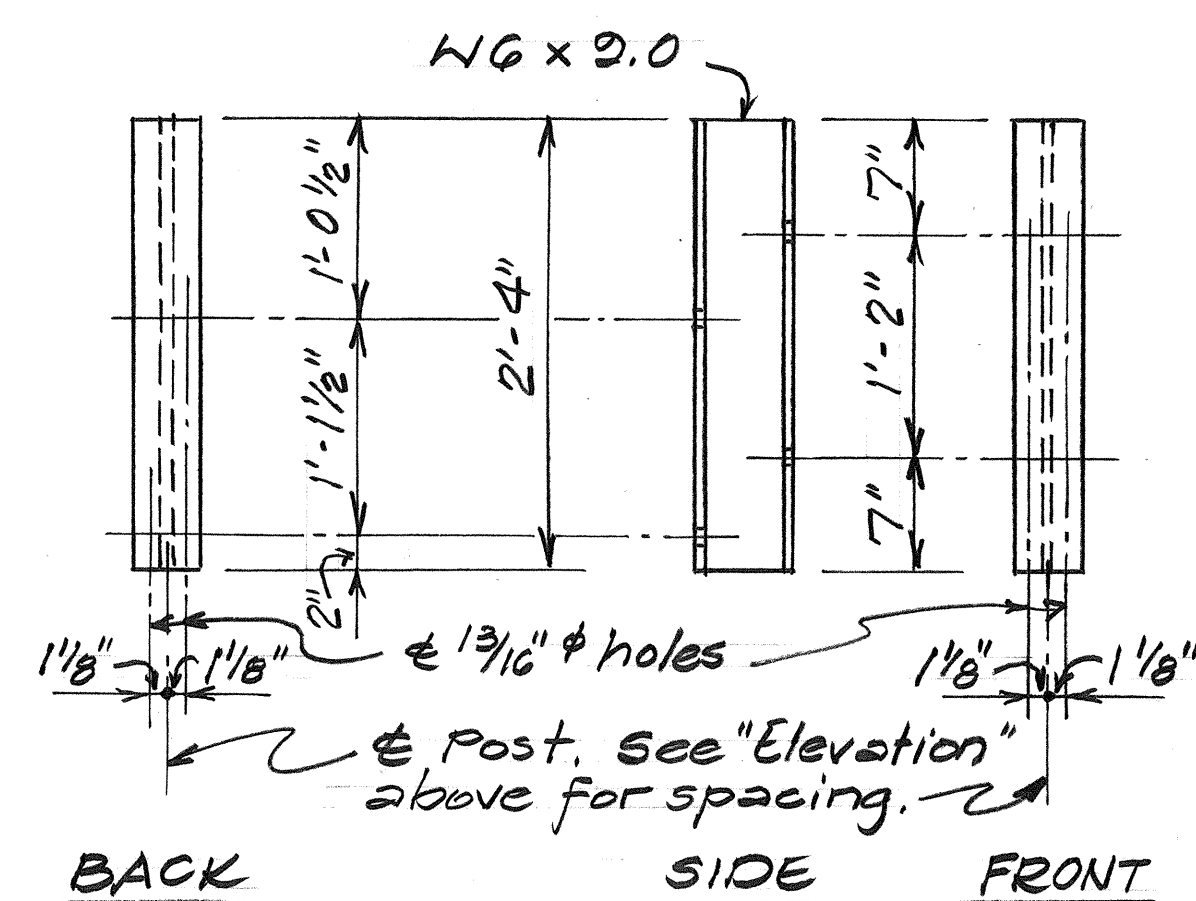
ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
507.2000	Type (A) Connection	Ea.	4
507.2100	Type (B) Connection	Ea.	8
507.2200	Type (C) Connection	Ea.	2
508.0100	Concrete Rubble Masonry	Cu.Yd.	23
608.0310	Concrete Sidewalk Ramp	Cu.Yd.	51

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPE (C) CONNECTION, GENERAL NOTES & EST. QUANTITY
FARRINGTON HIGHWAY RESURFACING
MOKULEIA HOMESTEAD ROAD TOWARDS
KAENA STATE PARK
Proj. No. 230B-01-20M
Scale: As Noted Date: May, 1990
SHEET NO. P4 OF 5 SHEETS



2 - 3/4" ϕ drilled holes for 5/8" ϕ x 1'-2" lg H.S. anchor bolts w/ cap'tes, washers & nuts. See "Structure Shape Post (Back) Detail" for hole placement.



TYPICAL SECTION

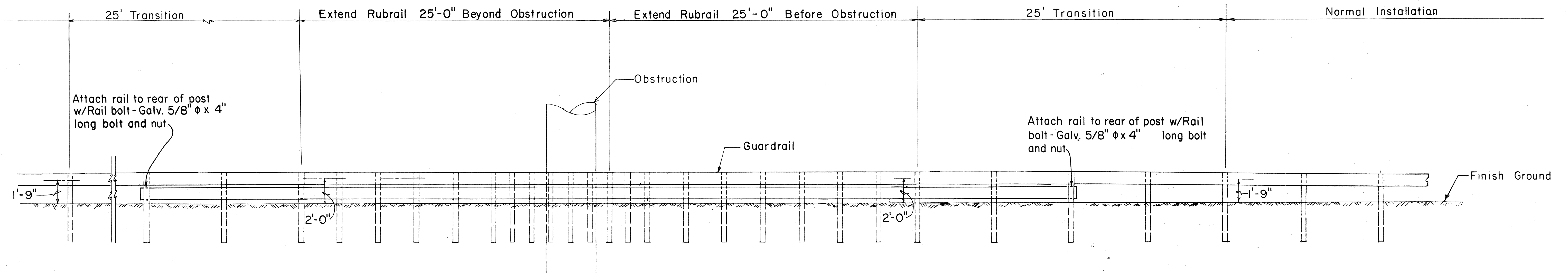
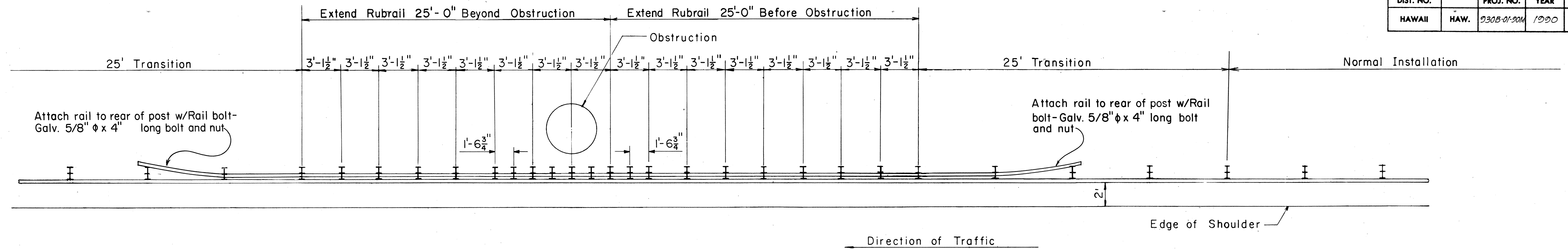
STRUCTURAL SHAPE POST DETAILS

KAWAIHAPAI BRIDGE

TYPE (C) CONNECTION DETAILS

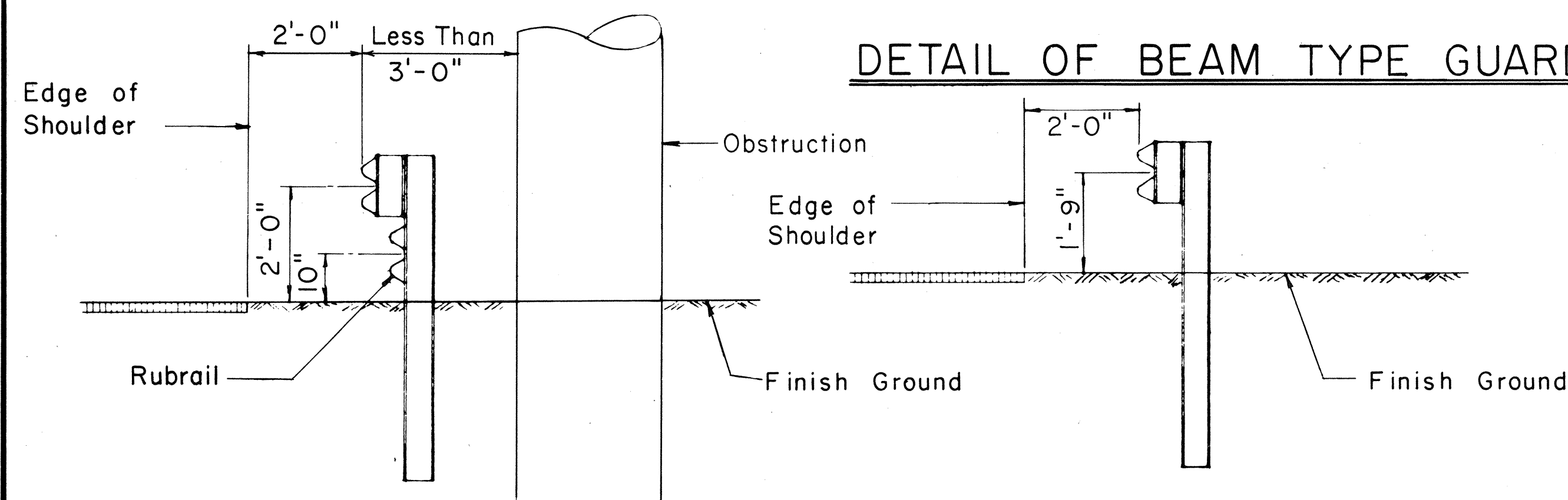
DATE	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	930B-01-90M	1990	18	28



DETAIL OF BEAM TYPE GUARDRAIL WITH RUBRAIL AT OBSTRUCTION

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



TYPICAL GUARDRAIL SECTIONS

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

Beam Type Guardrail with Rubrail at Obstruction (Shoulder Installation)

FARRINGTON HIGHWAY RESURFACING

Project No. 930B-01-90M

Scale: As Noted Date: May, 1990

SHEET No. P5 OF 5 SHEETS