

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83BC-03-89M	1989	C.O.18S-1	33

GENERAL NOTES

DESIGN SPECIFICATIONS -- AASHTO:

AASHTO Standard Specifications for Highway Bridges (13th edition), with subsequent Interim Specifications, 1984, 1985, 1986, 1987 & 1988.

DESIGN LIVE LOAD:

85 psf

ALLOWABLE DESIGN STRESSES:

1. Reinforced concrete: $f_c = 0.40 f'_c$
2. Reinforcing steel: $f_s = 20,000$ psi for Grade 40;
3. Prestressed concrete: see Sht. No. S4

MATERIALS:

1. Reinforced concrete: Class A
2. Reinforcing steel: ASTM A615, Grade 40
3. Prestressed concrete: see Sht. No. S4
4. Structural steel: see Sht. No. S3

CONSTRUCTION METHODS:

1. Refer to Standard Specifications for Road and Bridge Construction, 1985 Edition and Special Provisions.

REFERENCE:

1. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

GENERAL NOTES:

1. Items noted Incidental will not be paid for separately.
2. All preformed elastomeric bearing pads and premolded joint filler shall be Incidental to concrete.
3. The Contractor shall verify all dimensions in the field before commencing work.
4. The Contractor shall verify the location of all existing utility lines near the structures, and notify their respective owners before commencing work.
5. The Contractor shall be solely responsible for the protection of the adjacent property, utilities, existing and new structures from damage due to construction and shall repair any damage at his own expense to the satisfaction of the Engineer.
6. Dress approach to walkway as required and as directed by the Engineer.

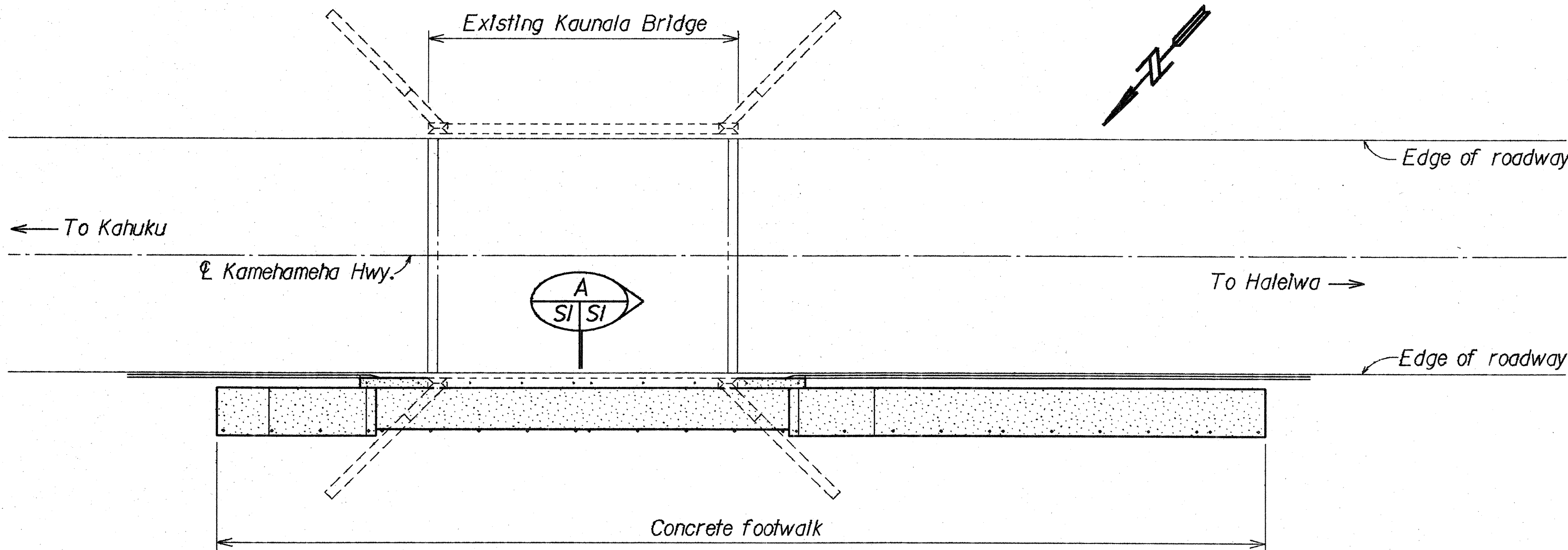
ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
206.5500	Structure Excavation	C.Y.	43
206.7000	Structure Backfill	C.Y.	21
503.1065	Concrete In Abutments	C.Y.	2
504.7500	Prestressed Concrete Plank	S.F.	171
507.4600	1'-5" high Galvanized Iron Pipe Rail	L.F.	46
507.4700	3'-6" high Galvanized Iron Pipe Rail	L.F.	109
507.7600	New Concrete End Post	Ea.	2
507.9000	3"ø Drilled Holes for Rail	Ea.	10
508.0100	C.R.M.	C.Y.	19
608.1100	Reinforced Concrete Sidewalk	S.Y.	34

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
LAYOUT PLAN, FOOTWALK PLAN & SECTION,
GENERAL NOTES AND ESTIMATED QUANTITIES
KAMEHAMEHA HIGHWAY RESURFACING
VICINITY OF WAI'ALEE BRIDGE TO KAHUKU
ELEMENTARY AND HIGH SCHOOL
Scale: As Noted Project No. 83BC-03-89M Date: April 1989

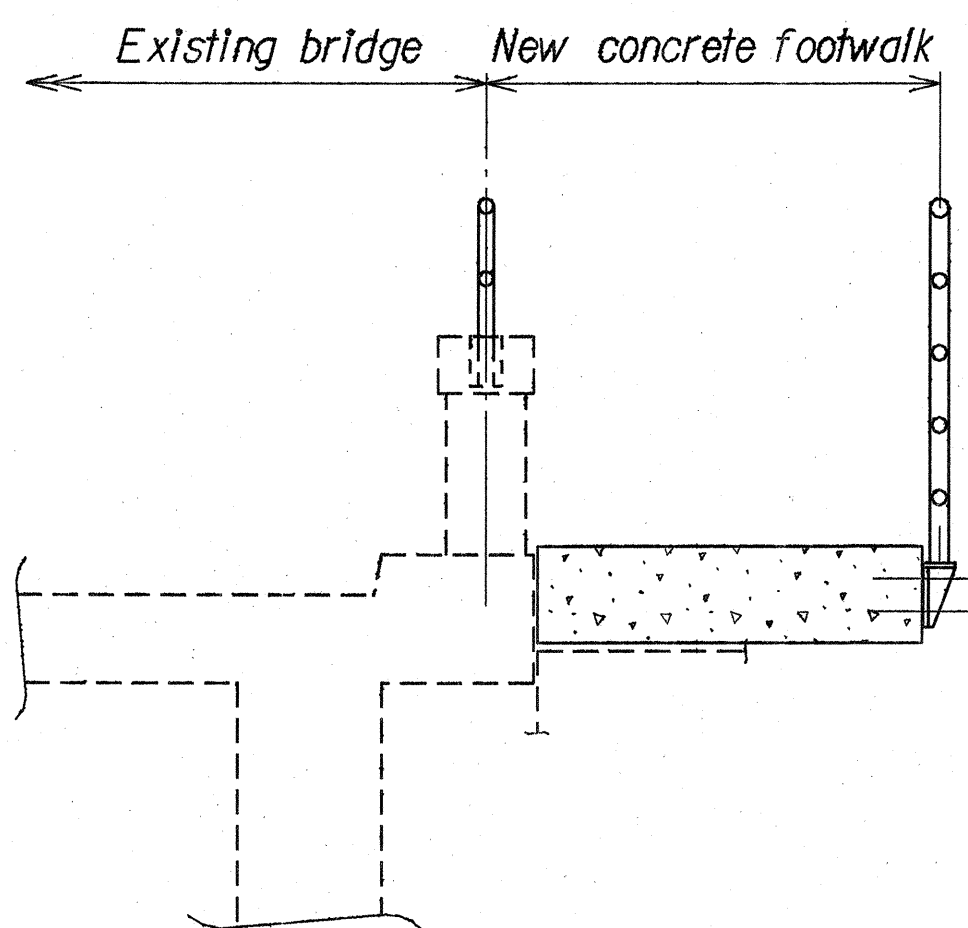
SHEET No. S1 OF 5 SHEETS

C.O. 18S-1



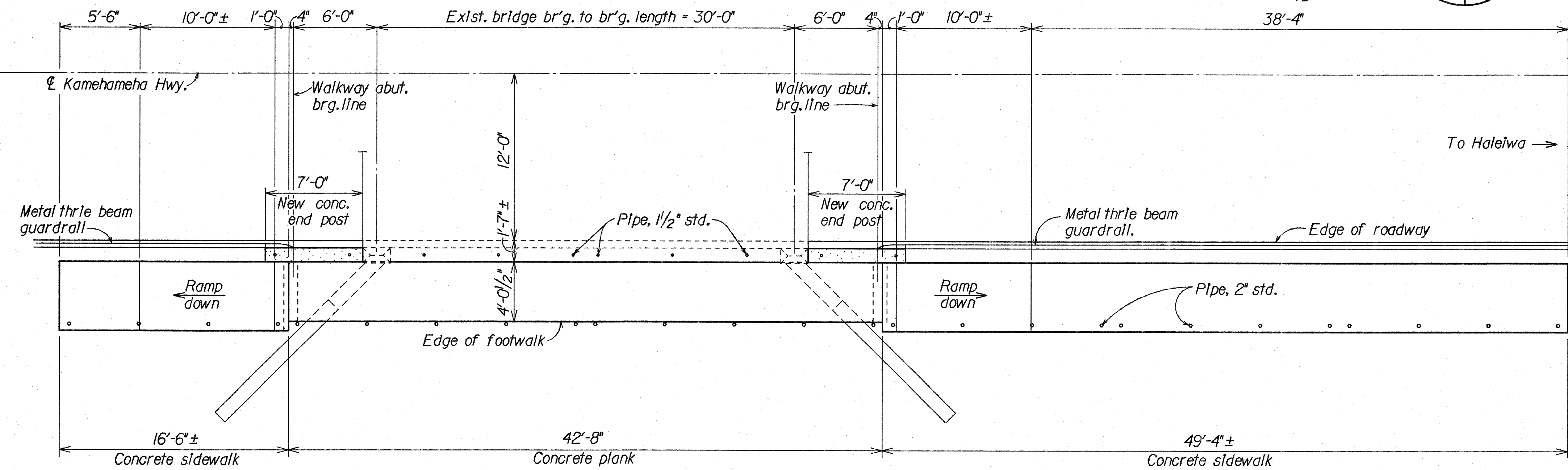
LAYOUT PLAN

Scale: 1" = 10'-0"



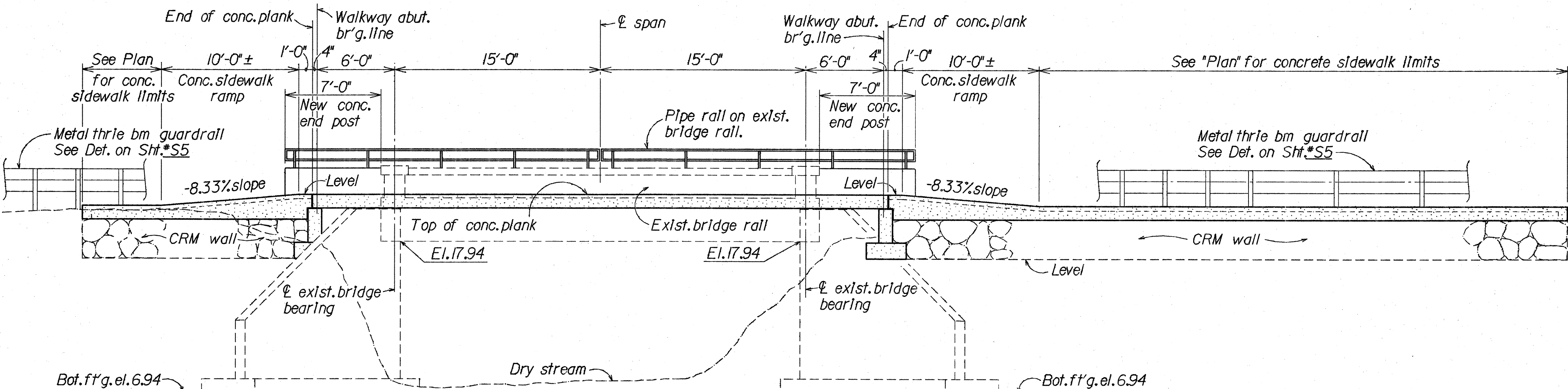
PARTIAL SECTION A

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



PLAN--FOOTWALK

Scale: 1" = 5'-0"

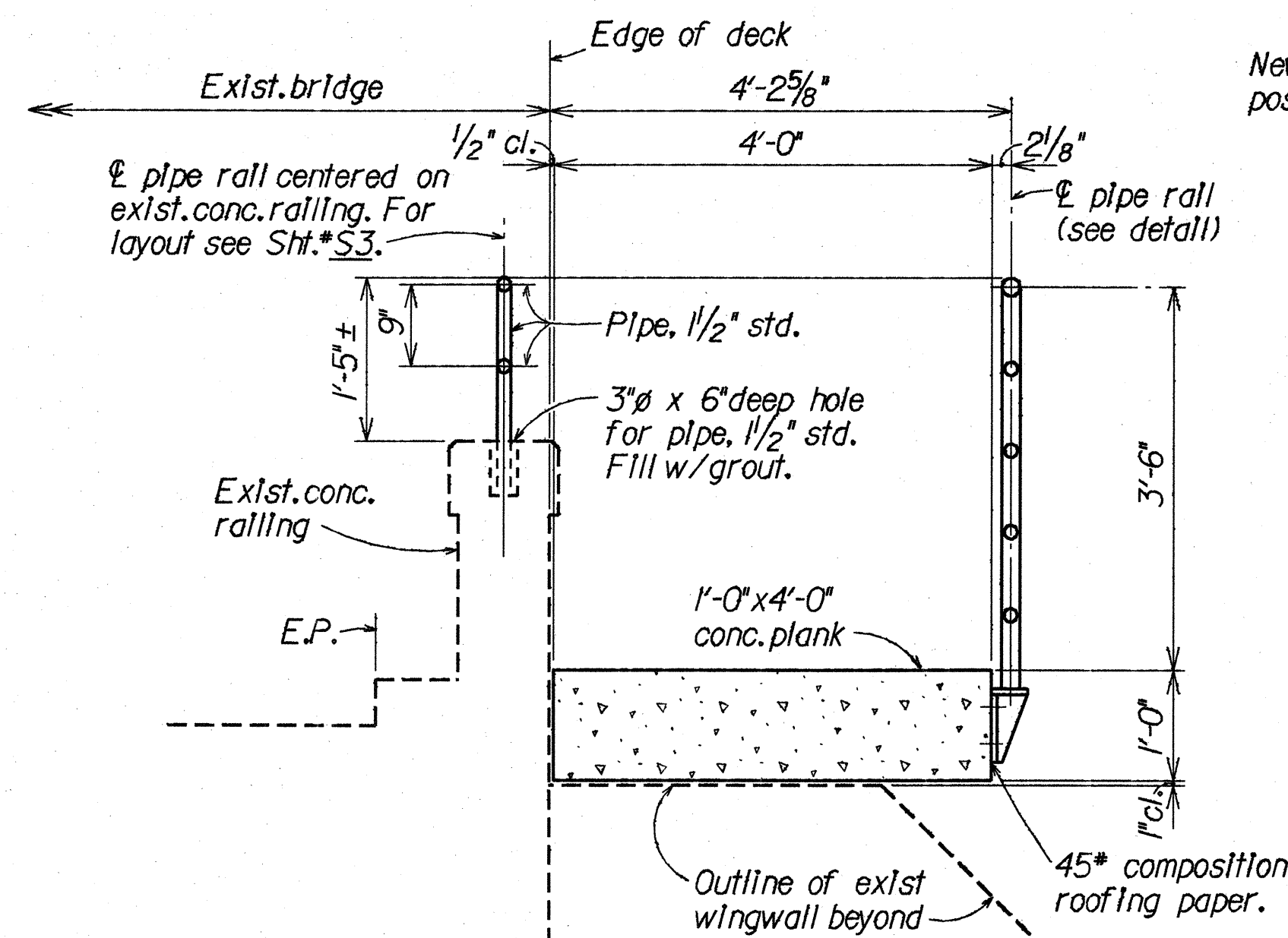


LONGITUDINAL SECTION THRU FOOTWALK

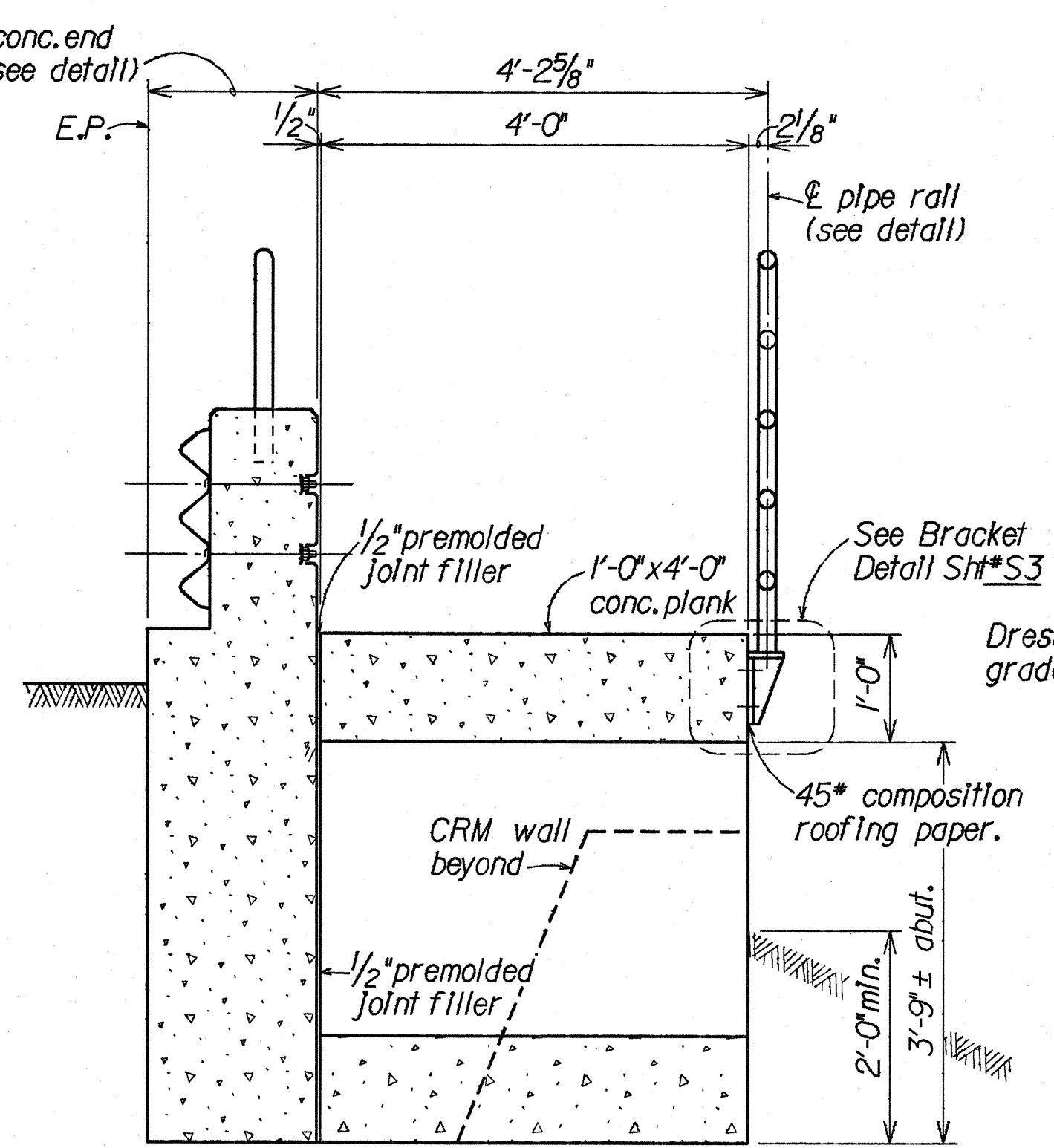
Scale: 1" = 5'-0"

ORIGINAL PLAN	DATE	APR 1989
DRAWN BY	DATE	APR 1989
NOTE BOOK	DATE	APR 1989
DESIGNED BY	DATE	APR 1989
QUANTITIES BY	DATE	APR 1989
CHECKED BY	DATE	APR 1989

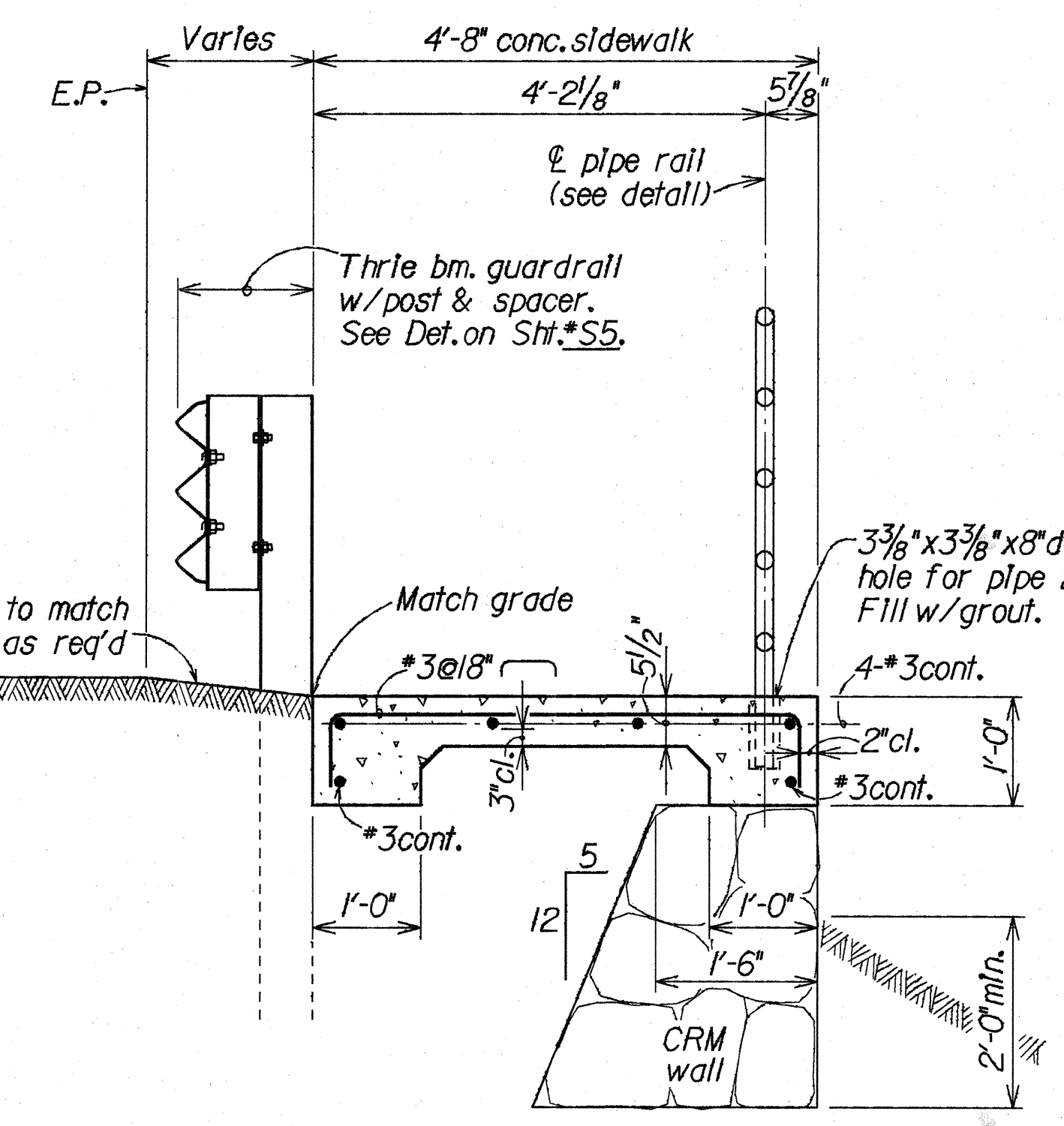
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83BC-03-89M	1989	C.O.18S-2	33



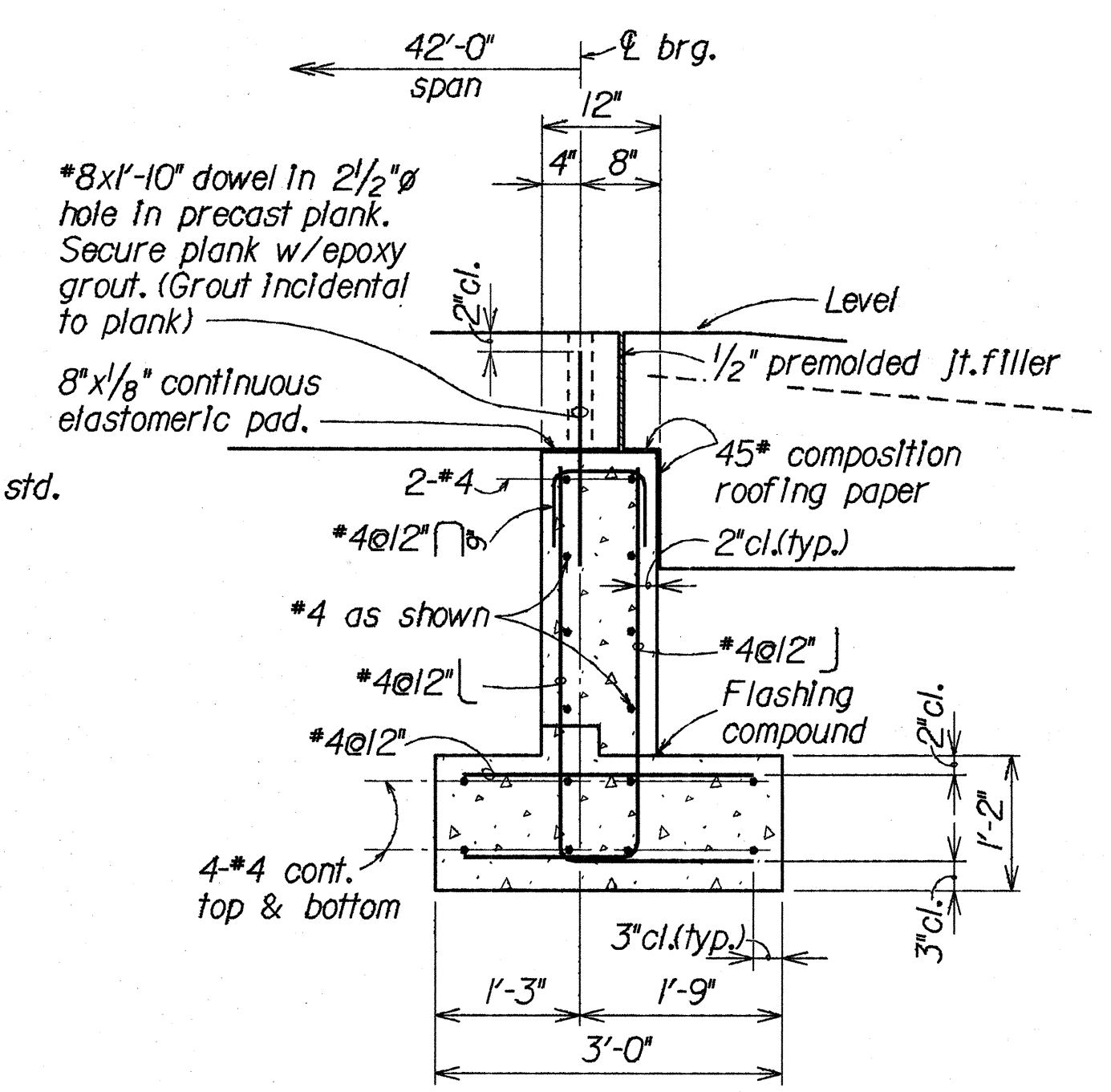
SECTION @ EXISTING BRIDGE
Scale: 3/4" = 1'-0"



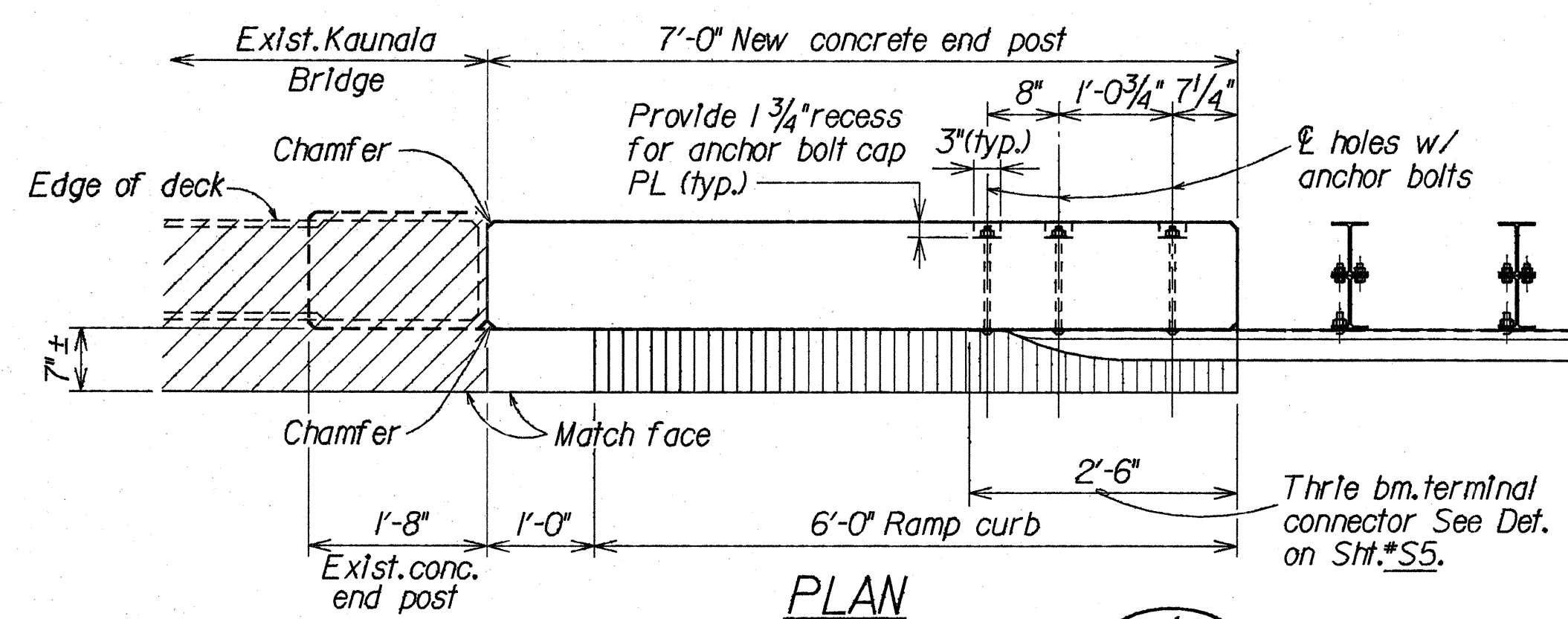
SECTION @ WALKWAY ABUTMENT
Scale: 3/4" = 1'-0"



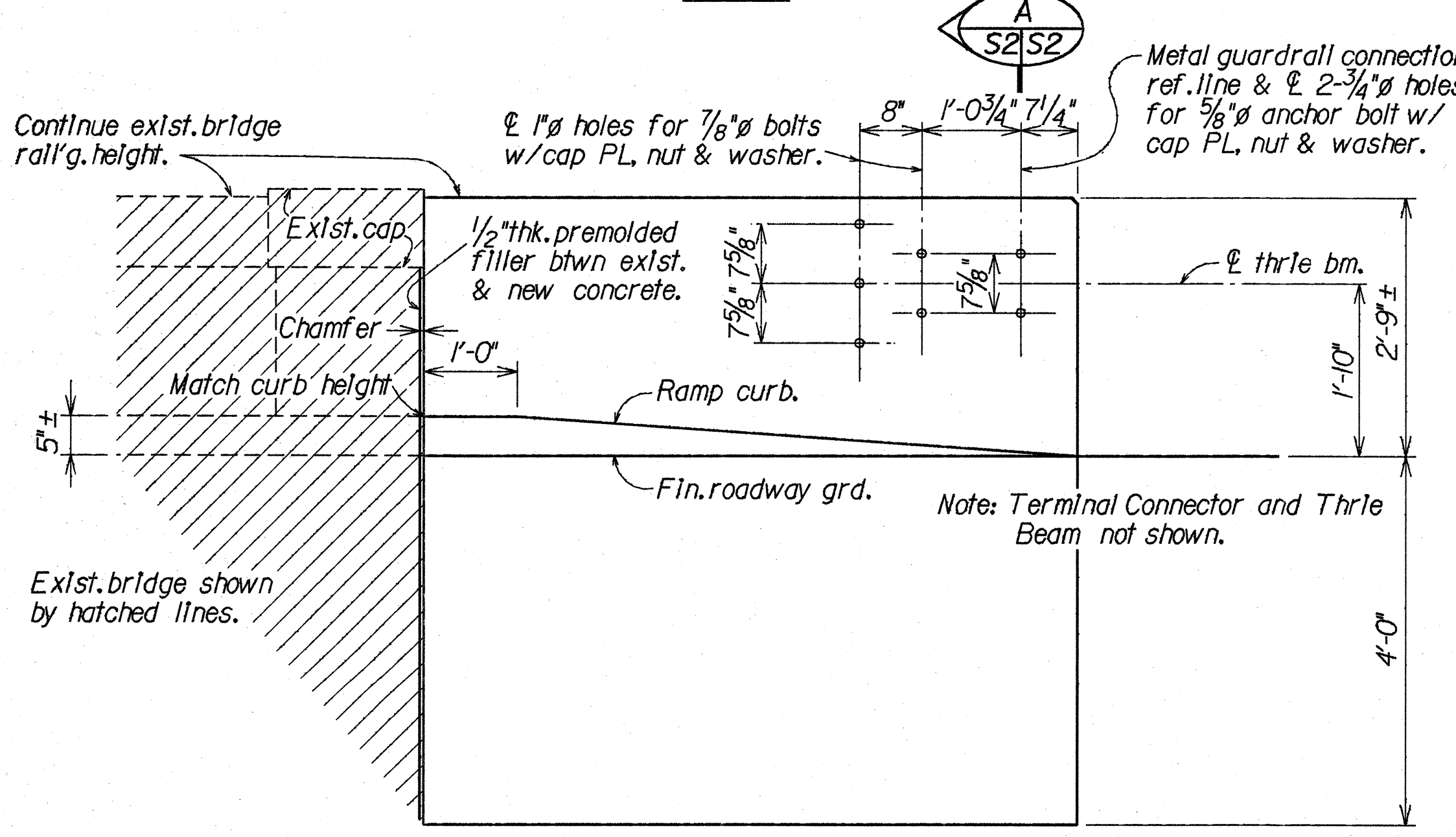
SECTION @ CONCRETE SIDEWALK
Scale: 3/4" = 1'-0"



TYPICAL FOOTWALK ABUTMENT
Scale: 3/4" = 1'-0"

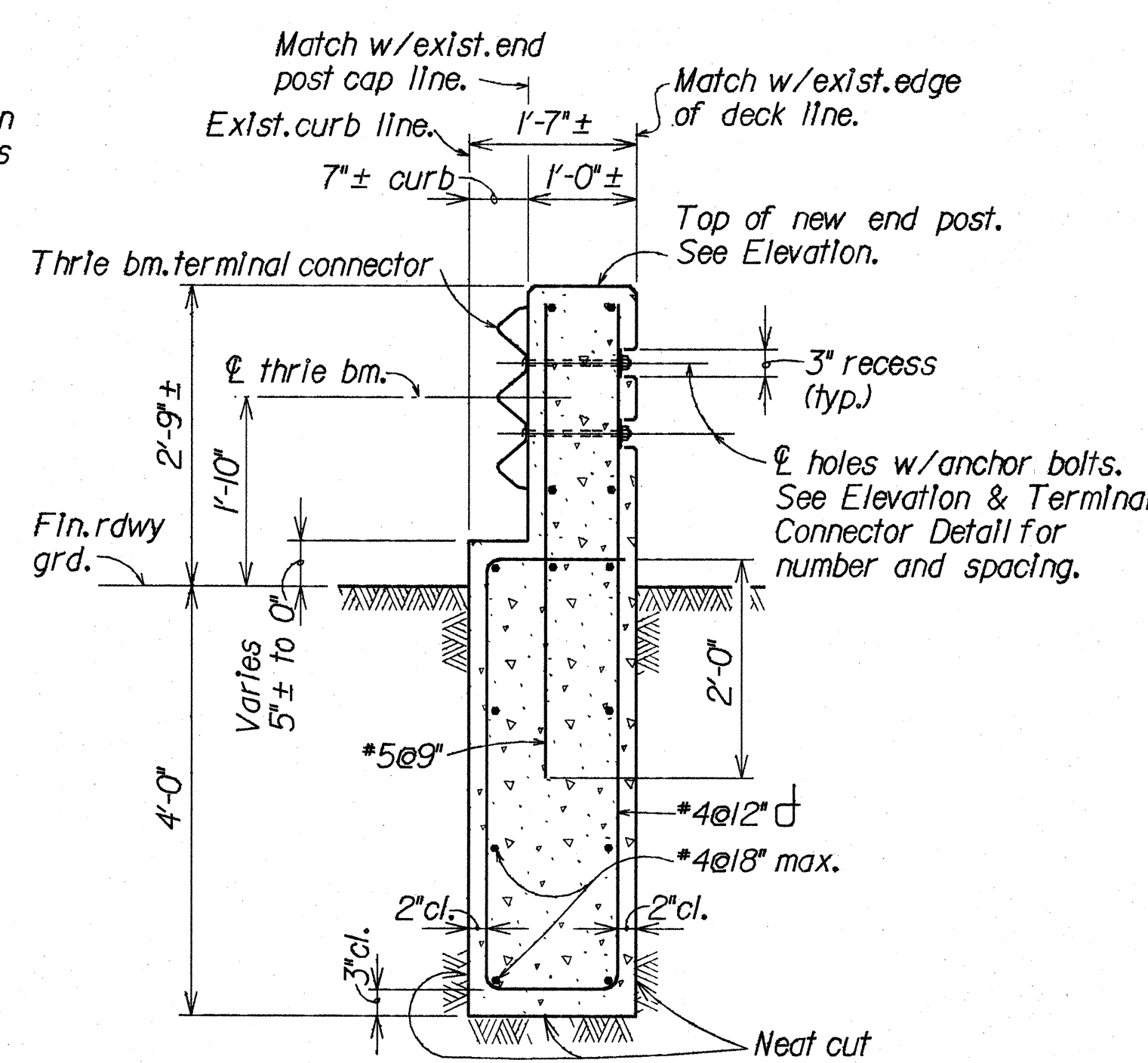


PLAN

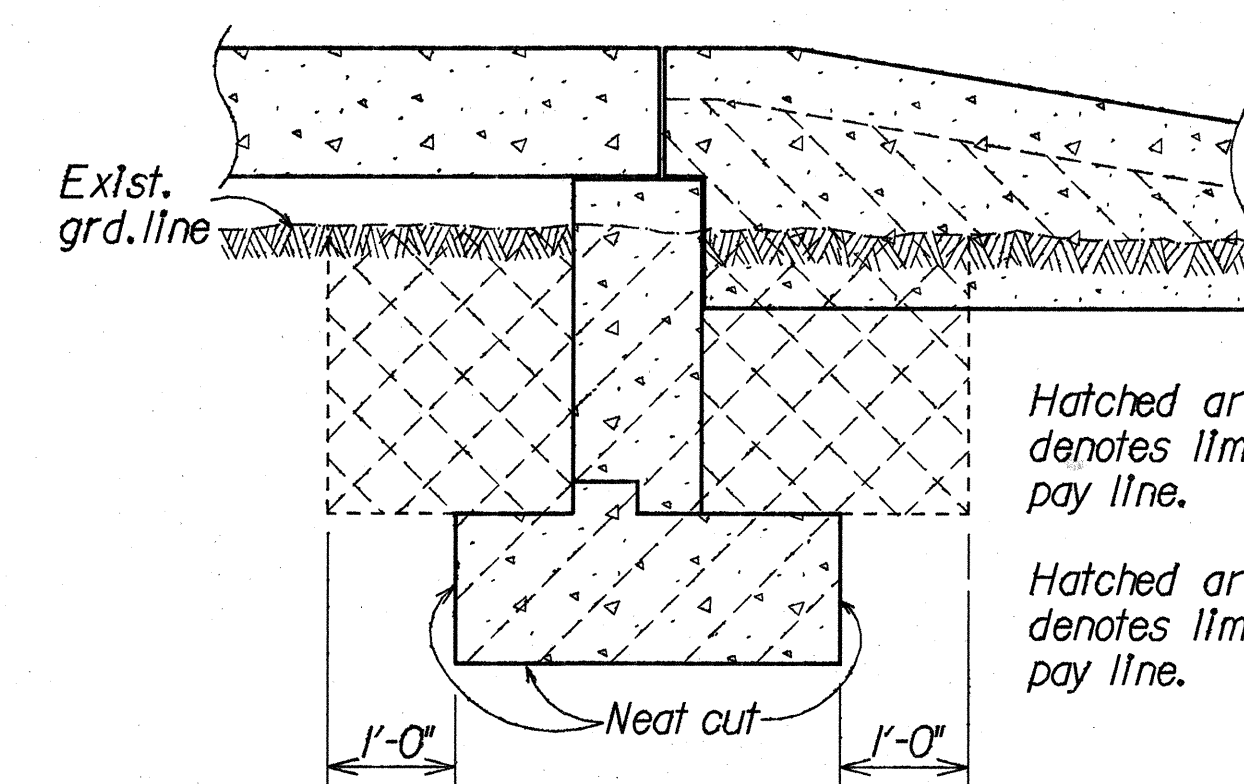


ELEVATION

NEW CONCRETE END POST (NORTH RAILING) DETAILS
Scale: 3/4" = 1'-0"

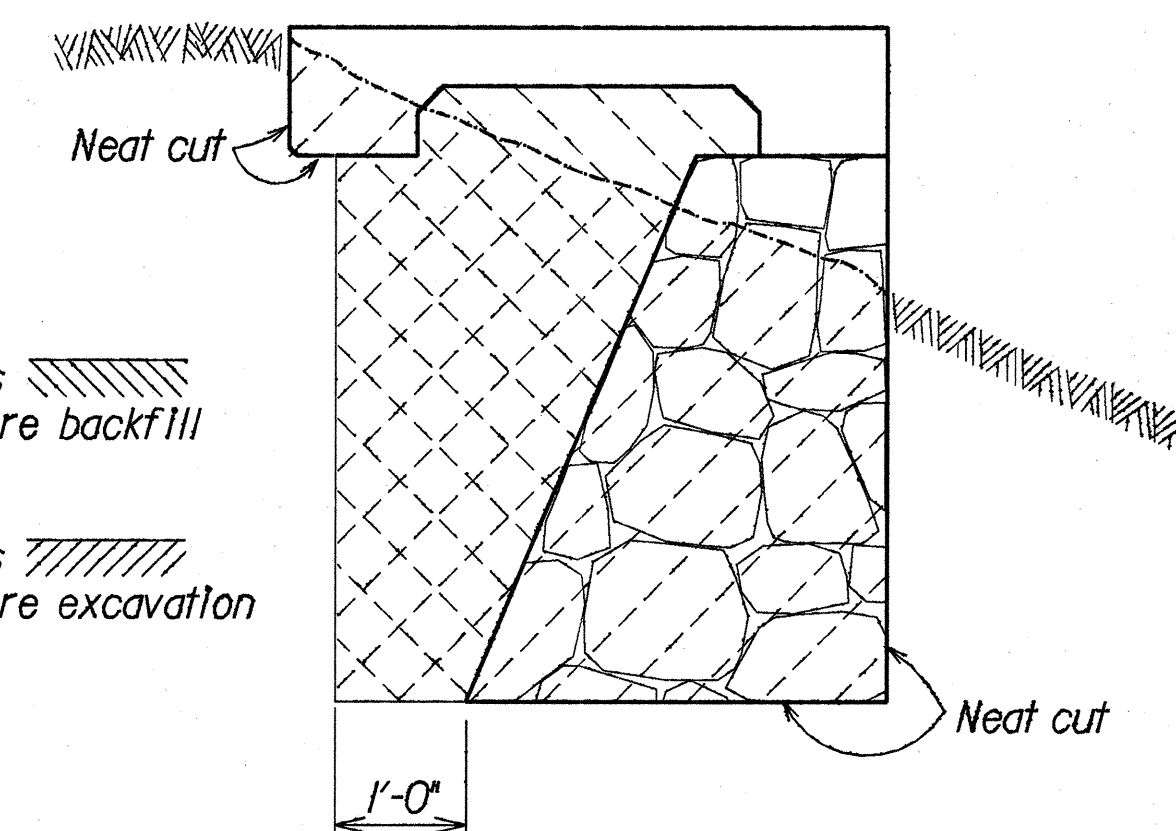


SECTION A
S2/S2



AT ABUTMENT

STRUCTURAL EXCAVATION AND BACKFILL PAY LIMITS
Not to Scale



AT SIDEWALK & CRM WALL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

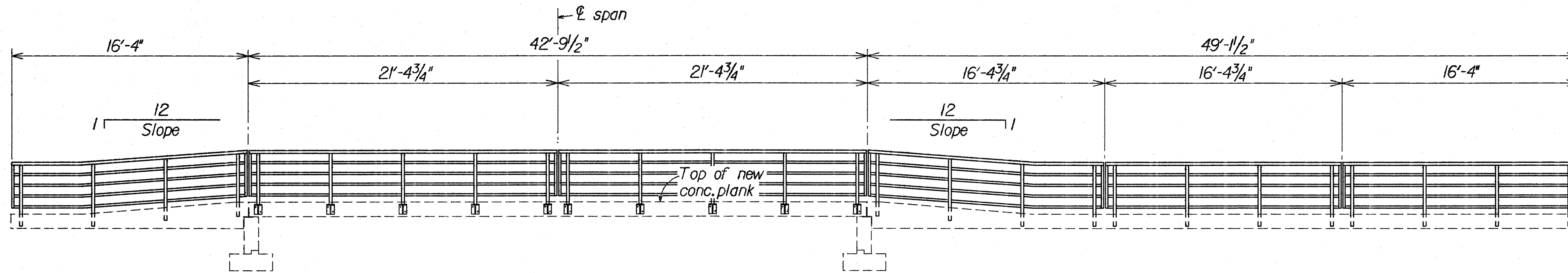
**SECTIONS, NEW CONCRETE END POST DETAILS
AND STRUCTURE EXCAVATION**

KAMEHAMEHA HIGHWAY RESURFACING
VICINITY OF WAIALEE BRIDGE TO KAHUKU
ELEMENTARY AND HIGH SCHOOL

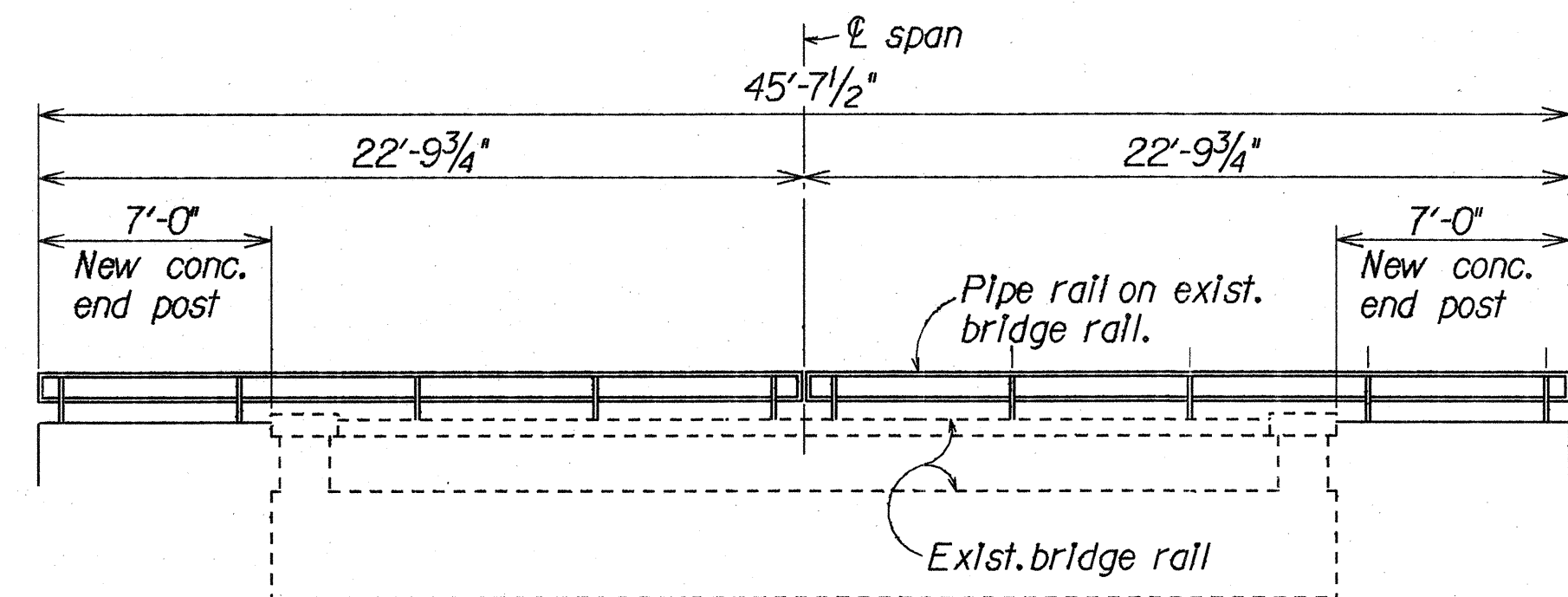
Scale: As Noted Project No. 83BC-03-89M Date: April 1989

SHEET No. S2 OF 5 SHEETS

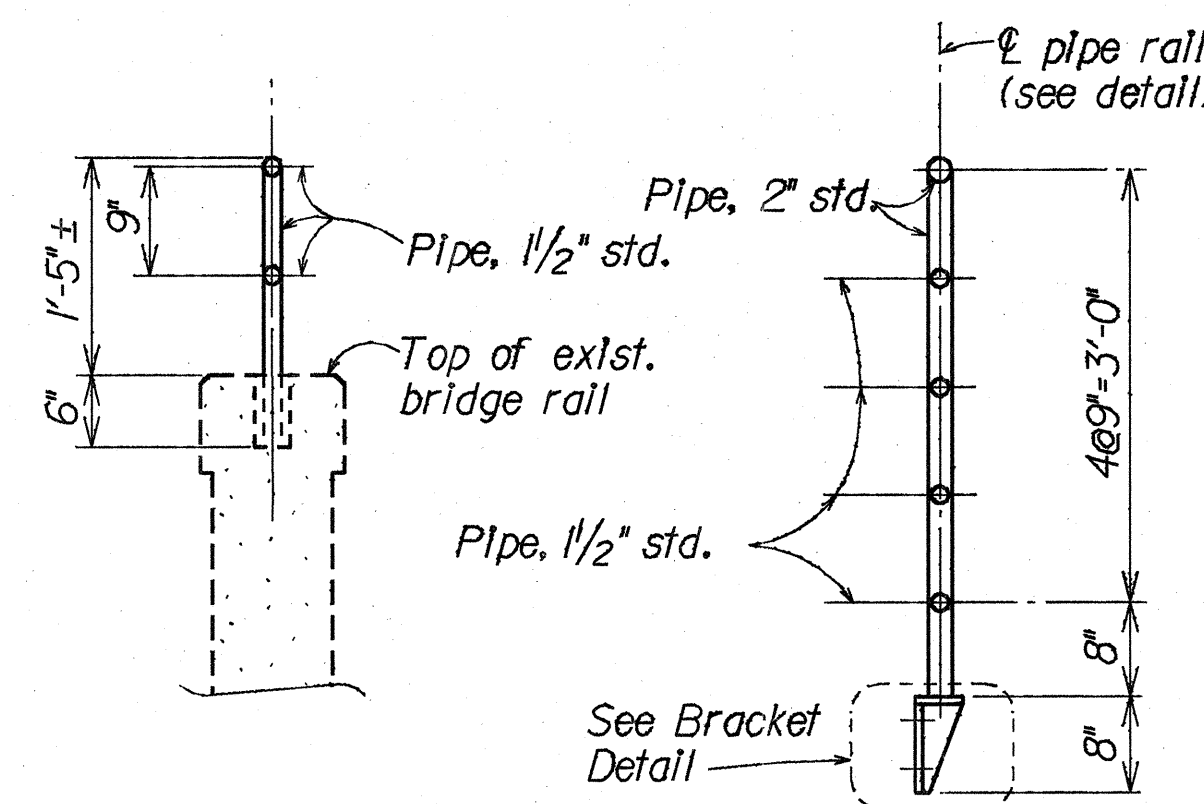
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83BC-03-89M	1989	C.O.18S-3	33



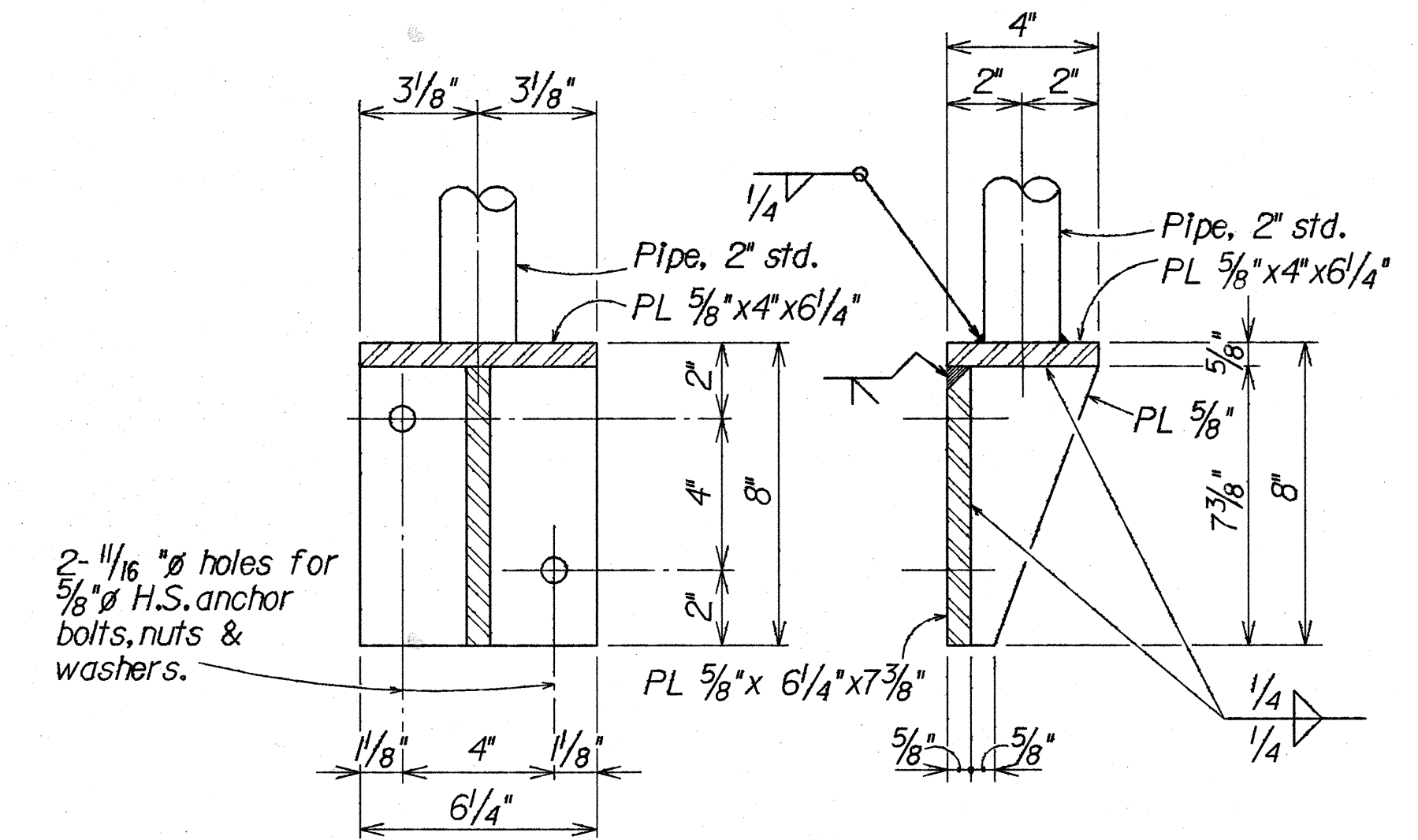
ELEVATION--PIPE RAILING ON FOOTWALK
Scale: 1" = 5'-0"



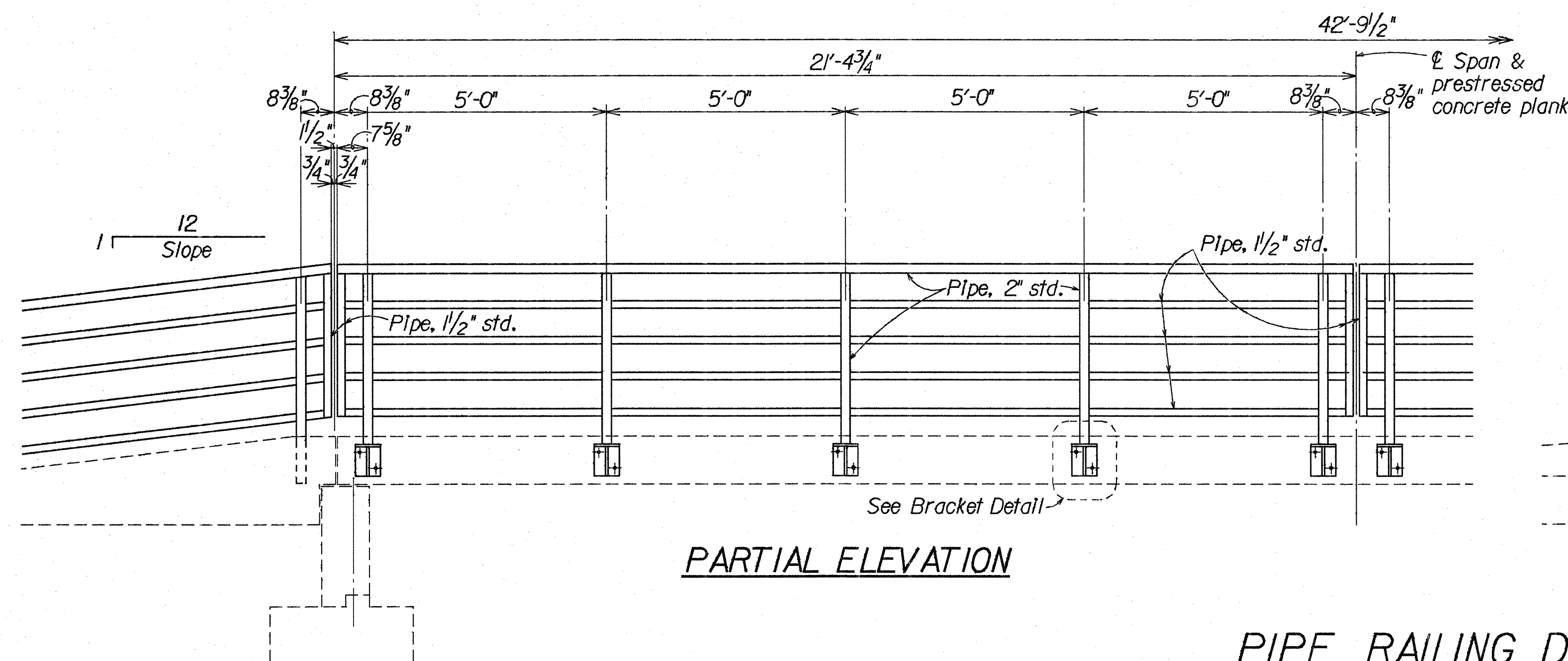
ELEVATION--PIPE RAILING ON EXISTING BRIDGE RAIL
Scale: 1" = 5'-0"



TYPICAL RAIL SECTIONS
Scale: 3/4" = 1'-0"

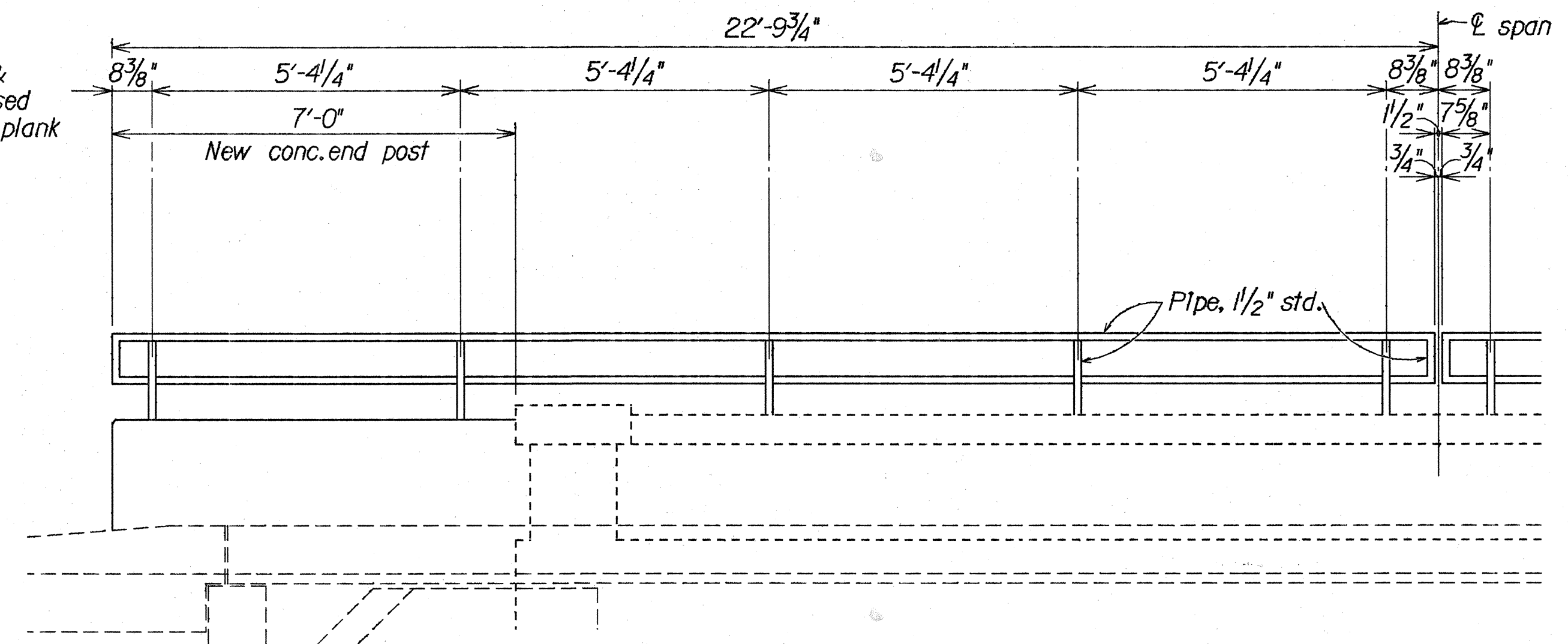


BRACKET DETAIL
Scale: 3" = 1'-0"



PARTIAL ELEVATION

PIPE RAILING DETAILS
Scale: 1/2" = 1'-0"



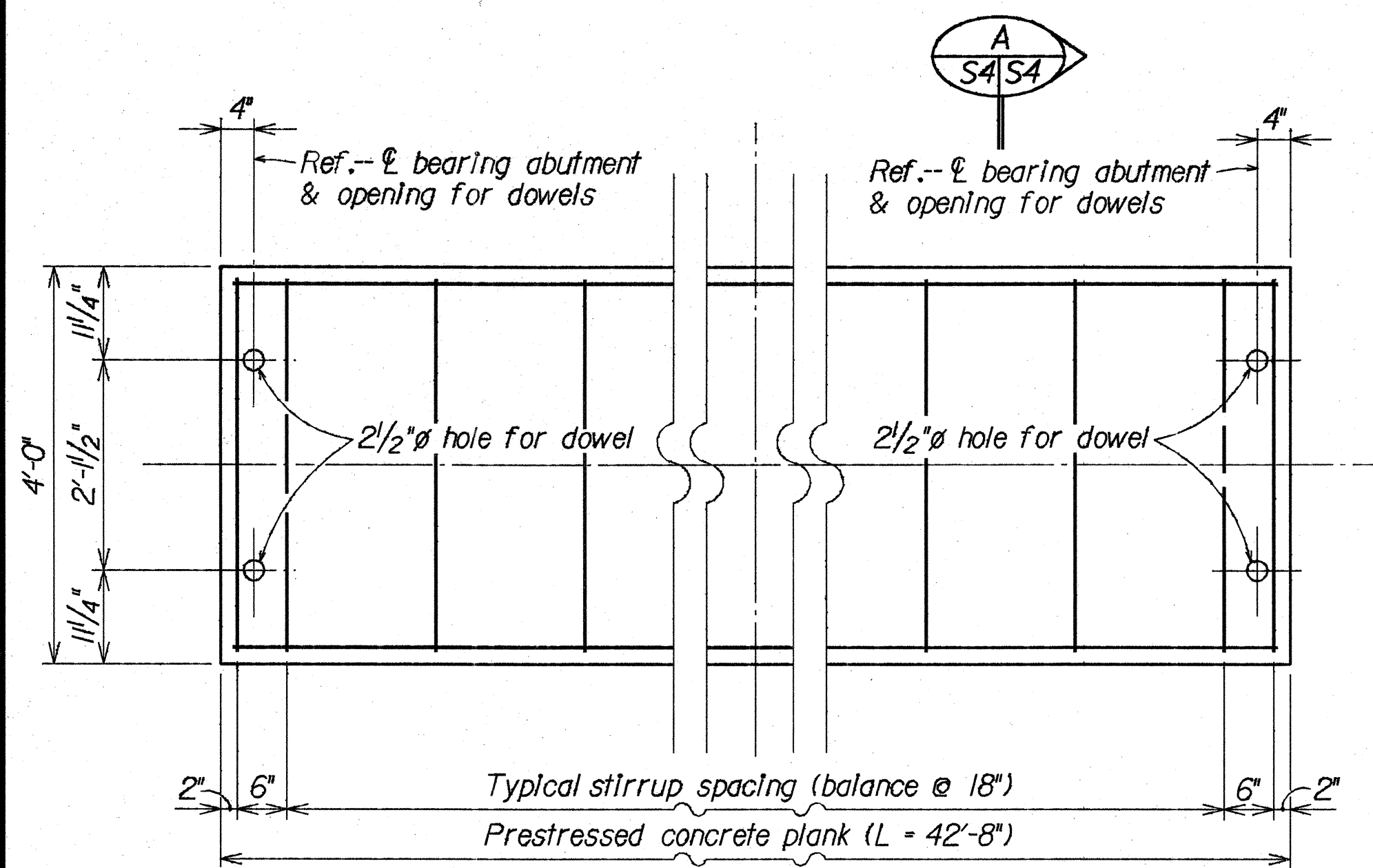
PARTIAL ELEVATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PIPE RAILING DETAILS AND STRUCTURAL STEEL NOTES
KAMEHAMEHA HIGHWAY RESURFACING
VICINITY OF WAALEE BRIDGE TO KAHUKU
ELEMENTARY AND HIGH SCHOOL
Scale: As Noted Project No. 83BC-03-89M Date: April 1989
SHEET No. 53 OF 5 SHEETS

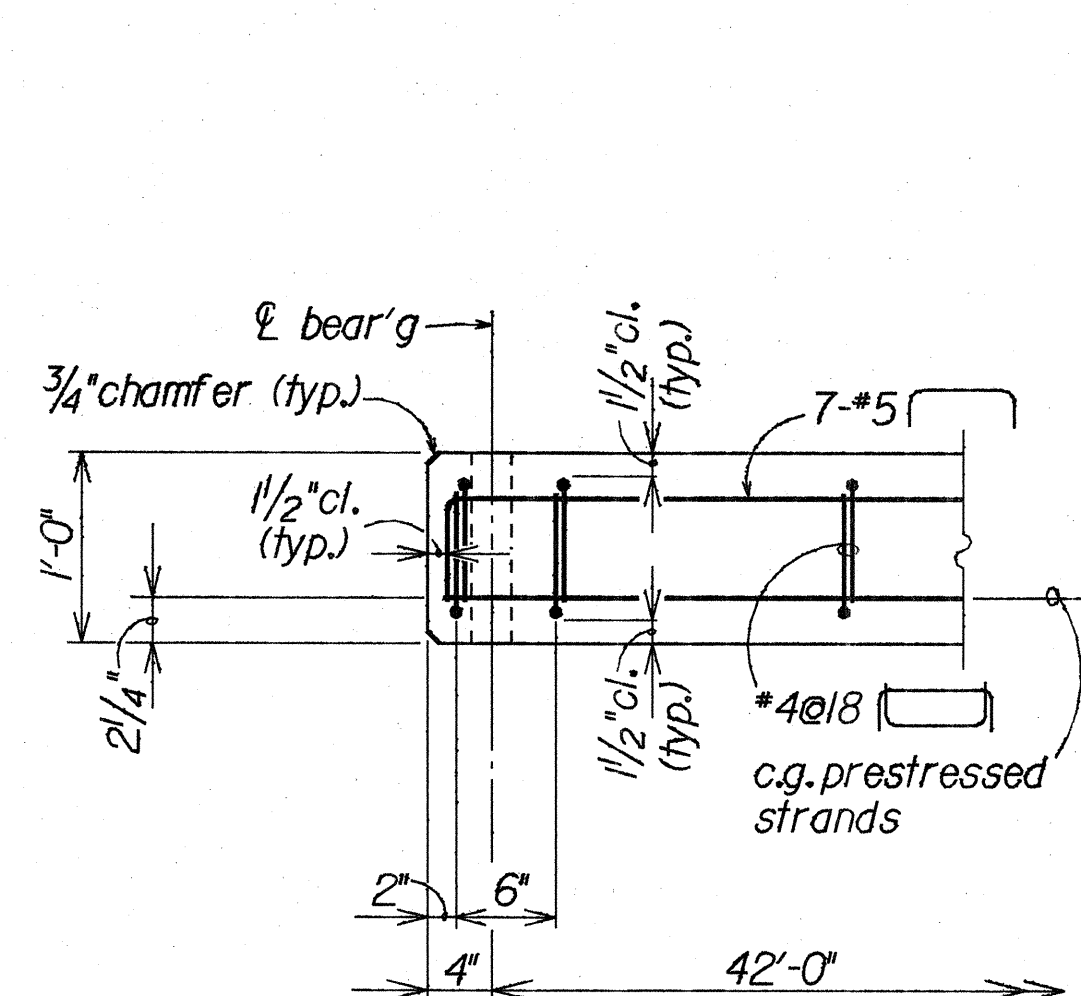
C.O. 18S-3

ORIGINAL PLAN	DATE	APR 1989
SURVEY PLOTTED BY	AS	
DRAWN BY	LAIS & MW	APR 1989
DESIGNED BY	TS & MW	APR 1989
QUANTITIES BY	LAIS & MW	APR 1989
CHECKED BY	LAIS & MW	APR 1989

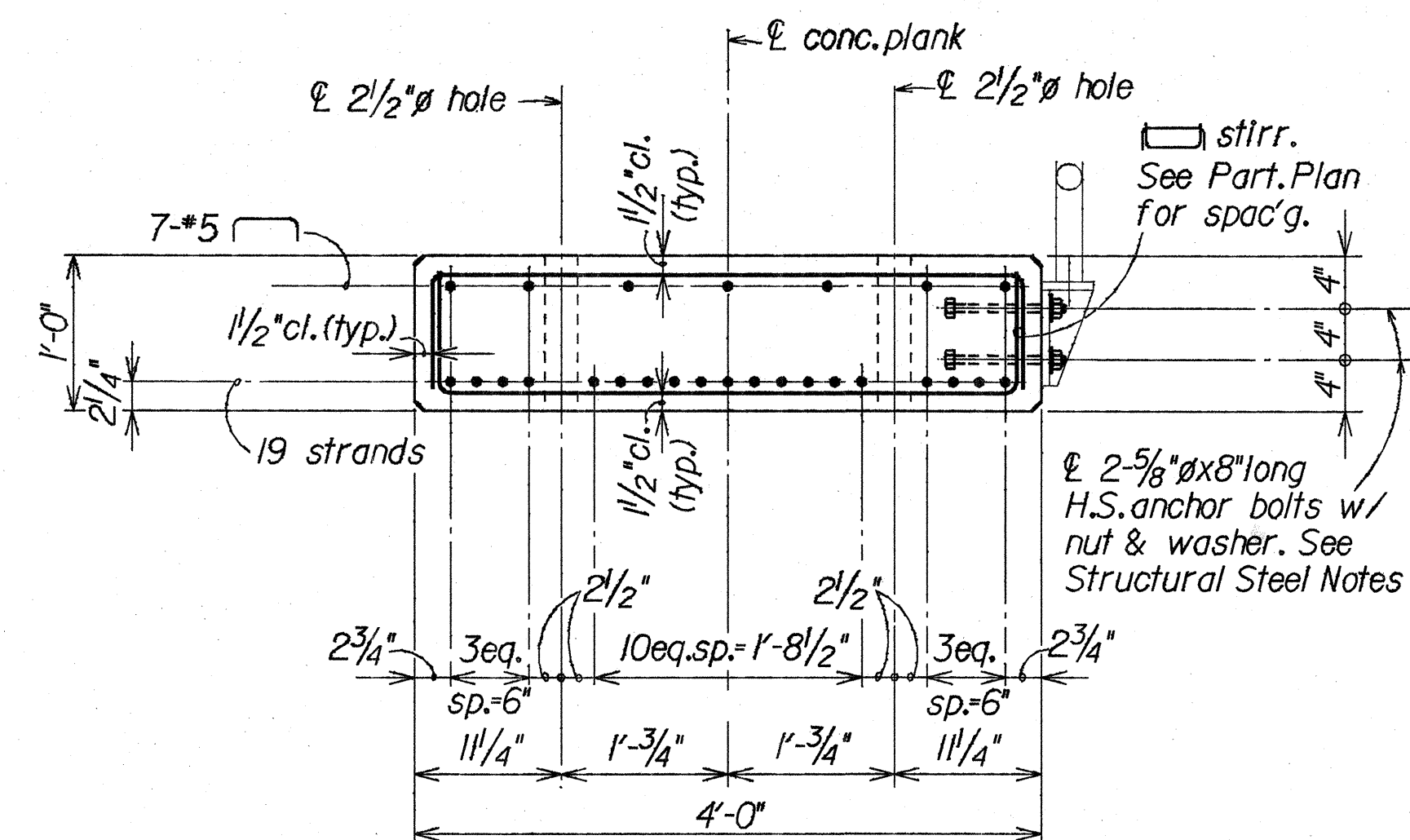
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83BC-03-89M	1989	C.O.185-4	33



PARTIAL PLAN-END DETAIL
Scale: 3/4" = 1'-0"



ELEVATION-END DETAIL
Scale: 1" = 1'-0"



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

PRESTRESS NOTES

Prestressed Concrete Plank

$f'_c = 6,000\text{psi @ 28days}$
 $f_{ci} = 5,000\text{psi @ transfer}$

Prestressed Strands

- Prestressed strands shall be 1/2" ϕ 270ksi, 7-wire stress-relieved strands (ASTM A416). Total losses other than friction = 45,000psi.
- Allowable stresses in strands shall be in accordance with Design Specifications (See General Notes).
- Effective Prestressed Force = 447.6k.

Notes

- For inserts in prestressed plank for railing connections, refer to corresponding details.
- The calculated camber includes the effect of the initial prestress force and the weight of the plank upon removal from the prestressing bed. Calculated camber value does not account for any camber growth of the plank. The actual camber at time of placement shall not exceed the calculated camber by more than 100%. Calculated midspan camber = 3/16". Contractor shall submit record of camber to the Engineer. This record shall include cambers at time of defensioning, delivery, and placement.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PRESTRESSED CONCRETE PLANK SECTIONS
AND PRESTRESS NOTES
KAMEHAMEHA HIGHWAY RESURFACING
VICINITY OF WAIALEE BRIDGE TO KAHUKU
ELEMENTARY AND HIGH SCHOOL
Scale: As Noted Project No. 83BC-03-89M Date: April 1989

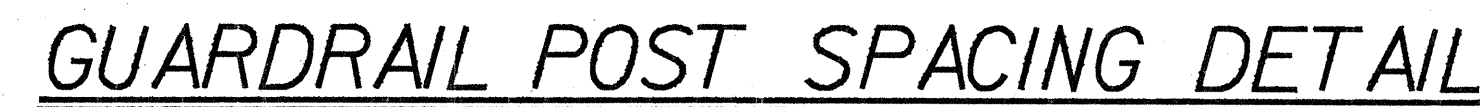
SHEET No. 54 OF 5 SHEETS

C.O. 185-4

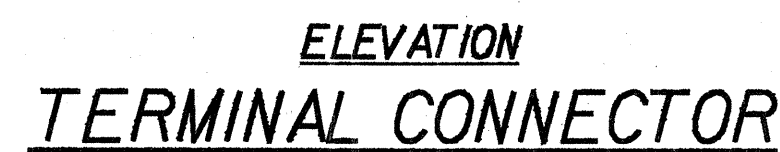
DESIGNED BY	DATE
NOTED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT NO.	83BC-03-89M
SHEET NO.	54
TOTAL SHEETS	5

NOTES:

1. "Terminal Connector" shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO M180.
2. All anchor bolts shall be high strength bolts conforming to the requirements of ASTM 325.
3. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus $\frac{1}{4}$ "(max) is attained.
4. "Terminal Connector", tapered box and standard spacer; including all anchor bolts, cap PL, nuts and washers; shall be hot-dip galvanized after fabrication.
5. First 25'-0" of guardrail adjoining "Terminal Connector" shall be of galvanized steel and supports spaced as shown on the detail drawings.
6. Heads of through anchor bolts shall be placed on the traffic side of the end block; those at the thru spacer block excepted.
7. Where double (nested) beam occur, 12" "Backup Plate" not required.
8. Double (nest 1st panel) thrle beam elements at all end post connections, except on highways with one-way traffic pattern, use single thrle beam element at end post on trailing end only.



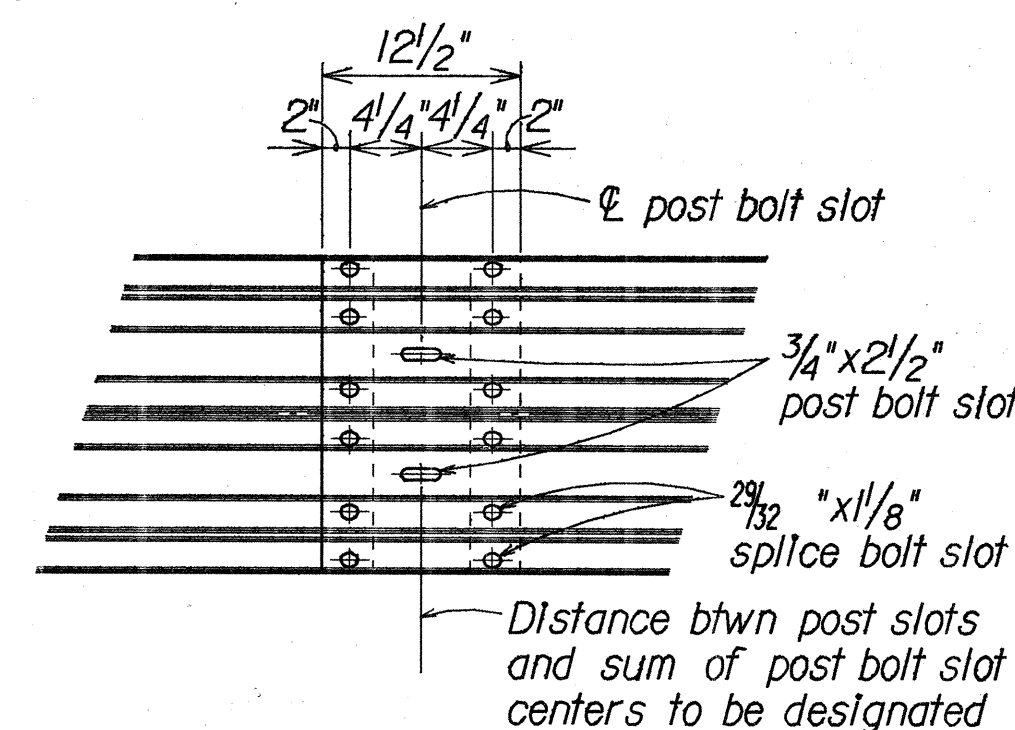
Scale: $\frac{3}{8}'' = 1'-0''$



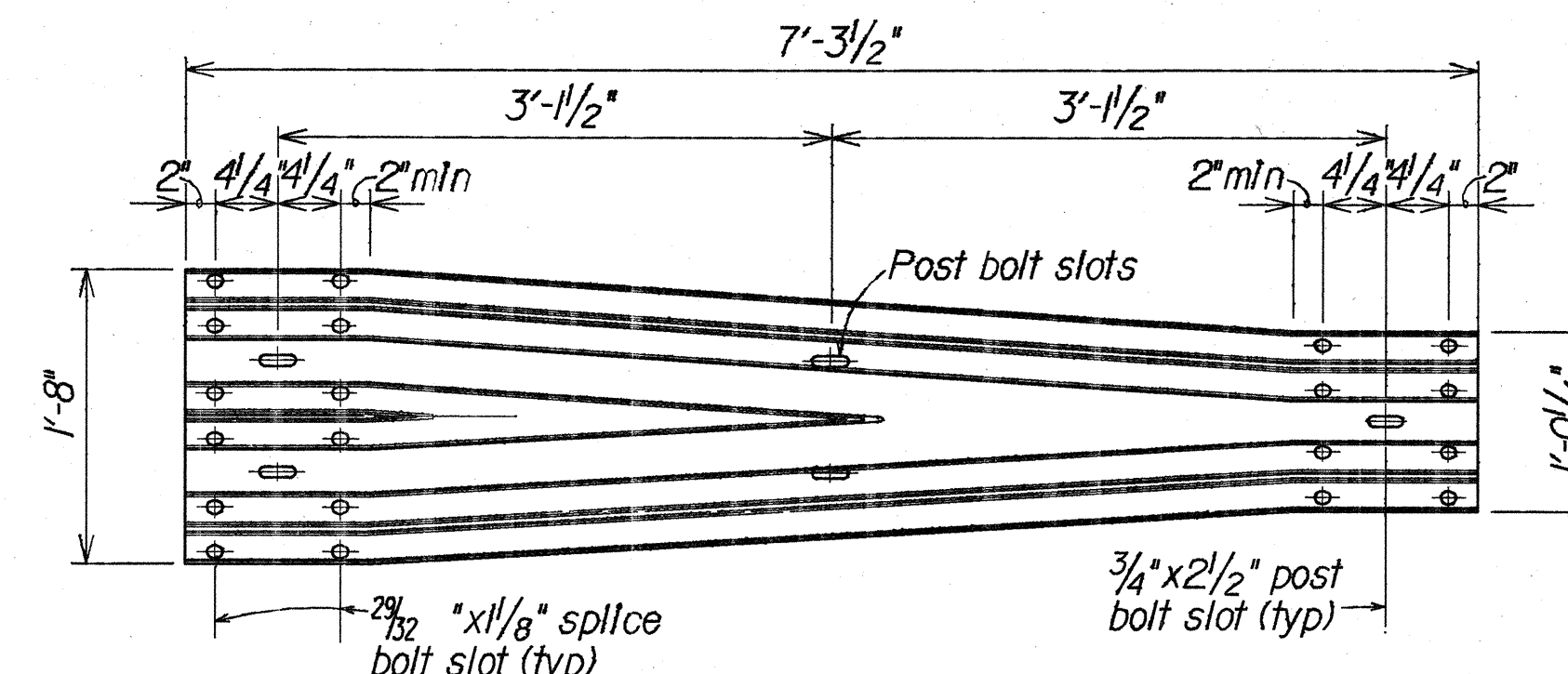
Scale: $1'' = 1'-0''$



Scale: $1'' = 1' - 0''$

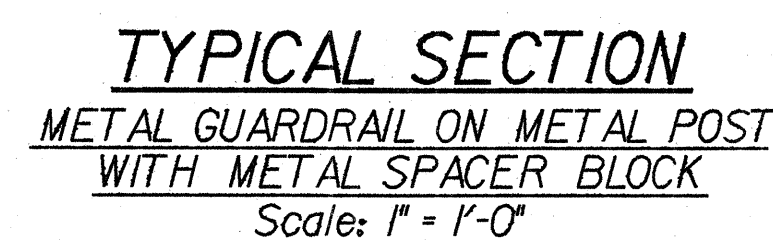
RAIL SPLICE

Scale: $1'' = 1' - 0''$



TRANSITION SECTION

Scale: $1'' = 1'-0''$

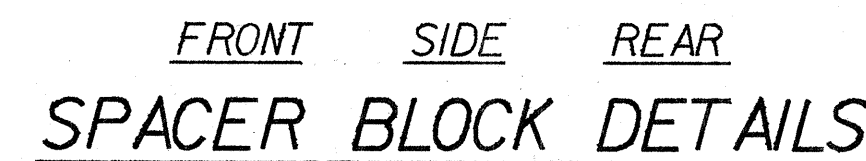


Scale: 1" = 1'-0"

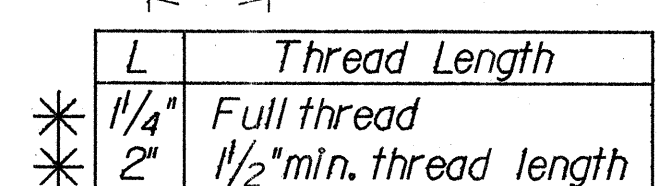


POST DETAILS

Scale: 1" = 1'-0"

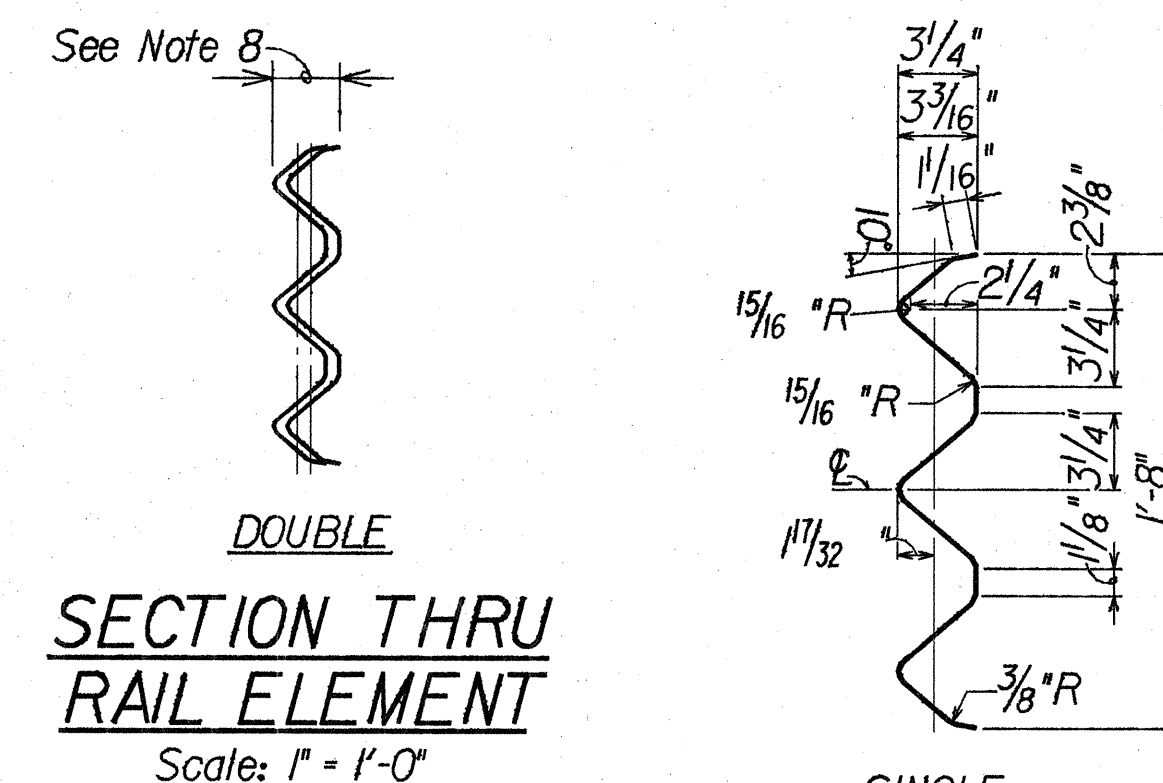


Scale: $1'' = 1'-0''$



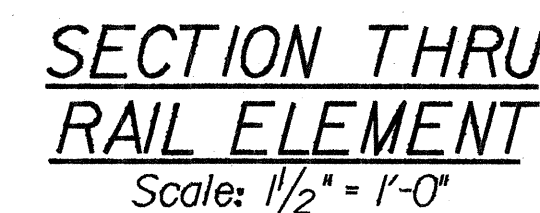
5/8"Ø BUTTON HEAD BOLT
& RECESS NUT

Scale: 6" = 1'-0"

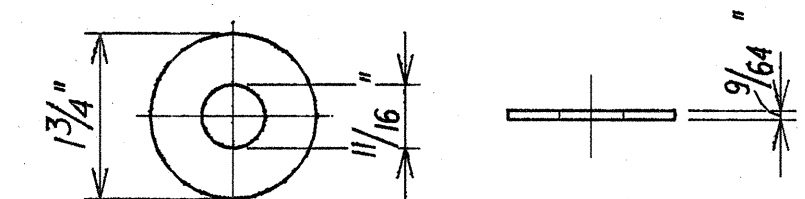


SECTION THRU
RAIL ELEMENT

Scale: $1'' = 1'-0$

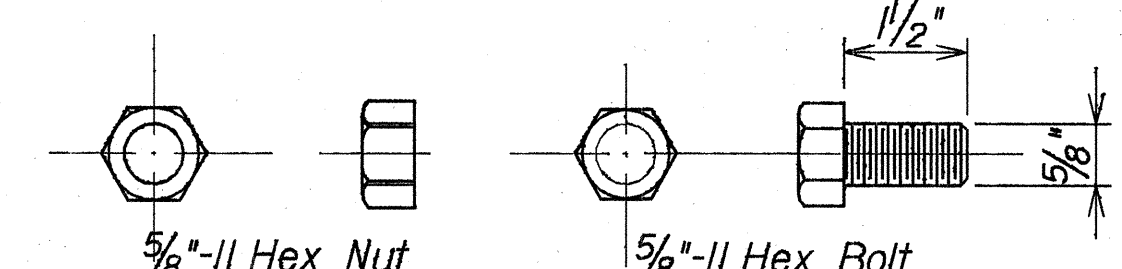


Scale: $1\frac{1}{2}" = 1'-0"$



STEEL WASHER FOR 5/8" Ø BOLT
Scale: 6" = 1'-0"

Scale: 6" = 1'-0"



5/8"Ø HEX BOLT & NUT

Scale: 6" = 1'-0"

TYPE 3 THREE BEAM GUARDRAIL AND APPURTENANCES DETAILS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GUARDRAIL TYPE 3 THRIE BEAM
APPURTENANCES AND POST SPACING DETAILS
KAMEHAMEHA HIGHWAY RESURFACING
VICINITY OF WAALEE BRIDGE TO KAHUKU
ELEMENTARY AND HIGH SCHOOL
Scale: As Shown Project No. 83BC-03-89M Date: April 1989

SHEET No. 55 OF 5 SHEETS

C.O. 18S-5