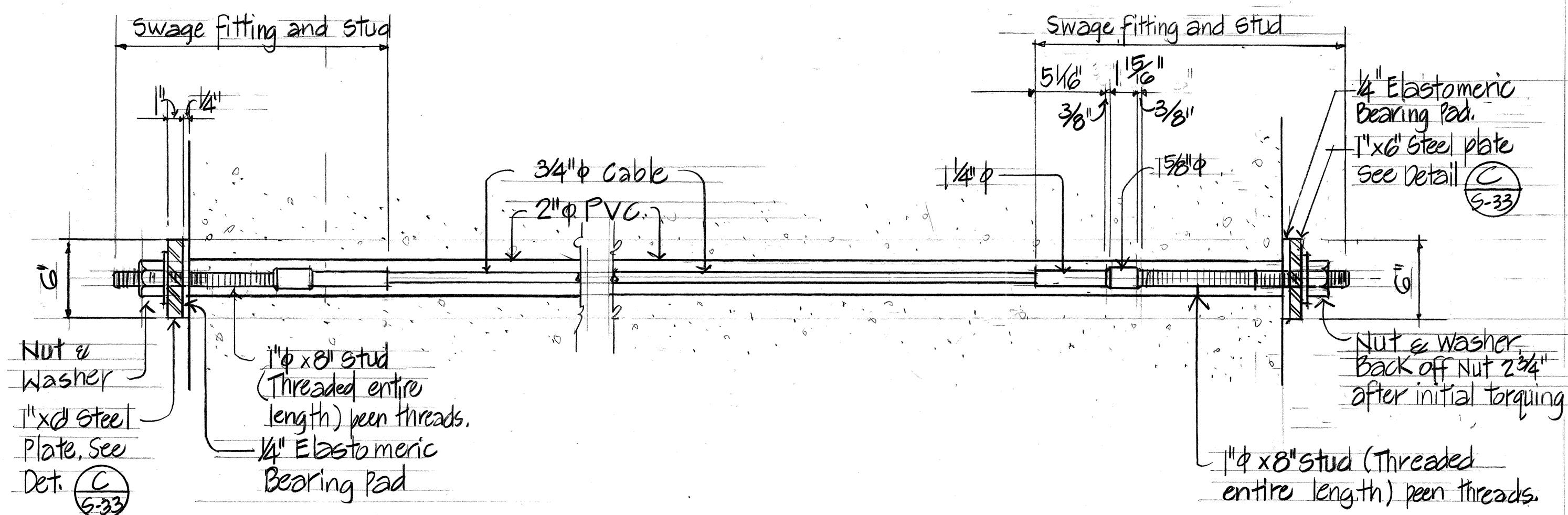
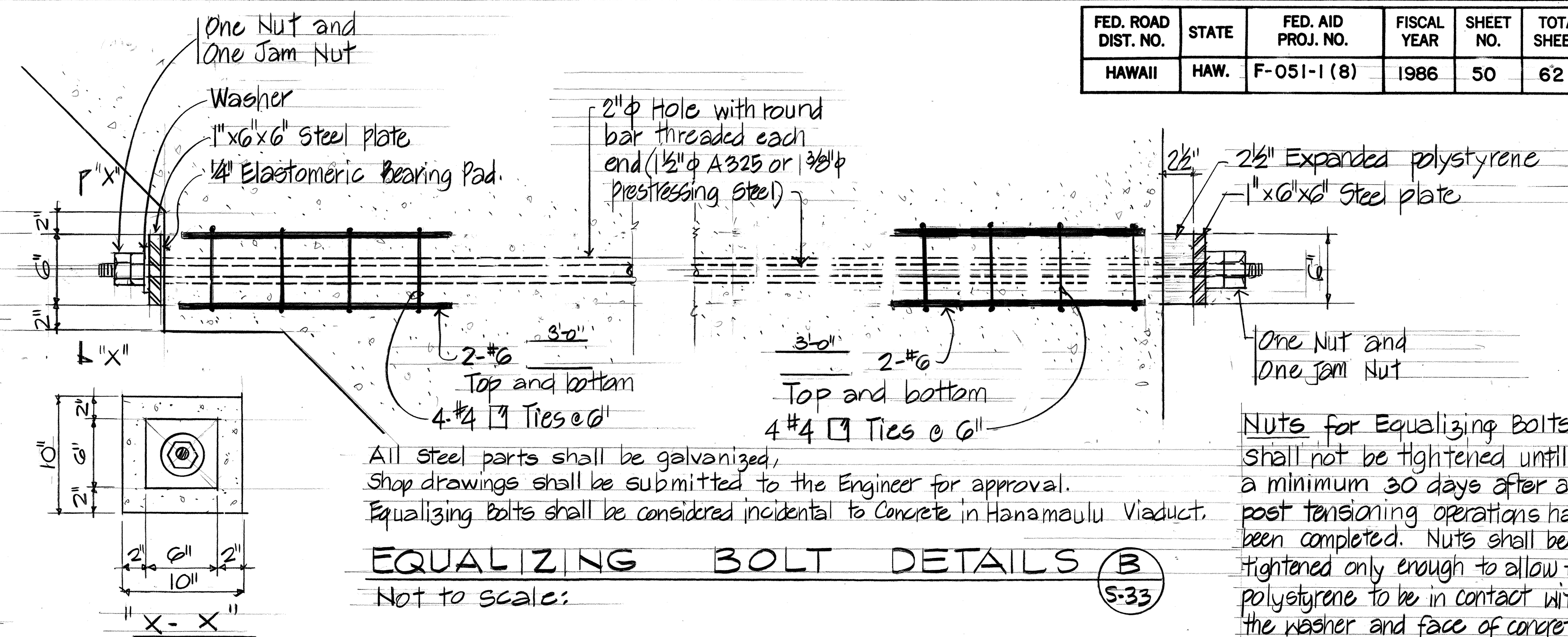


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1 (8)	1986	50	62

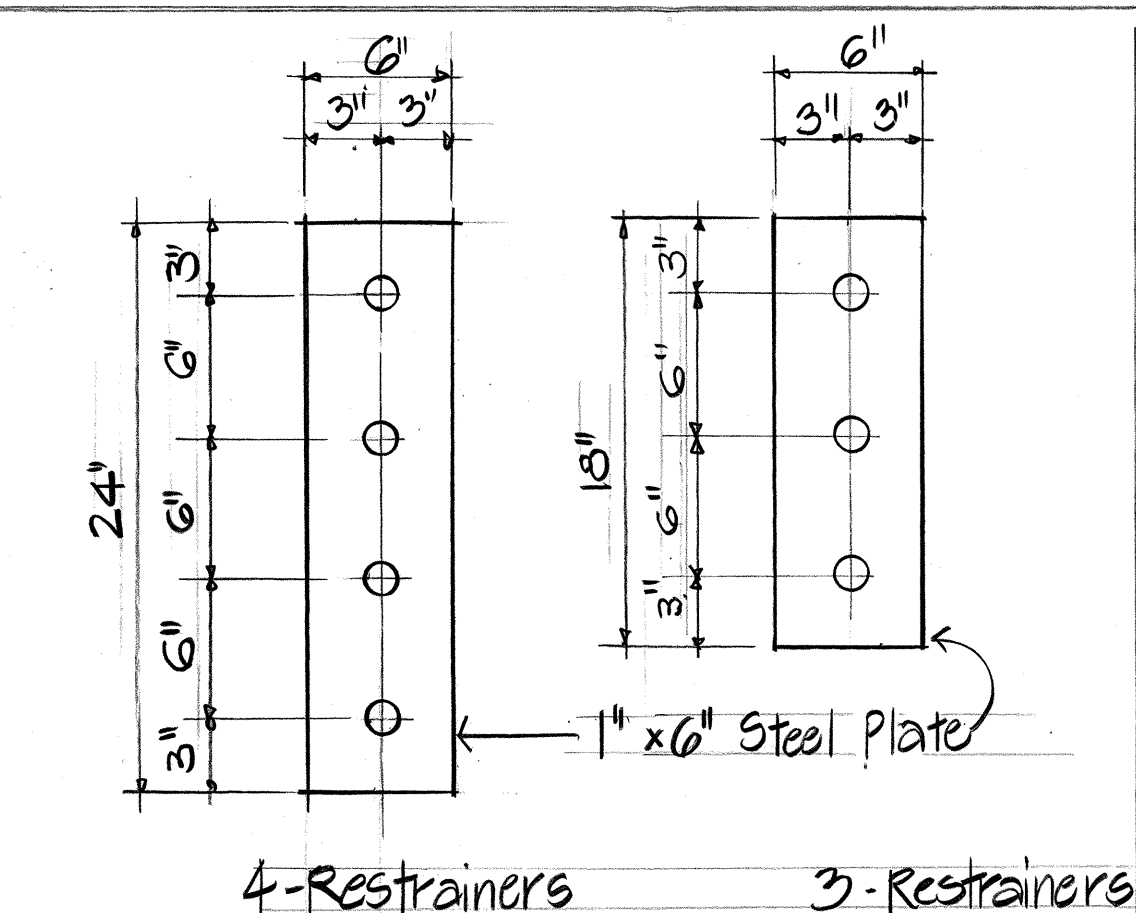


LONGITUDINAL RESTRAINER UNIT DETAILS (A)
Not to scale: 5-33



EQUALIZING BOLT DETAILS

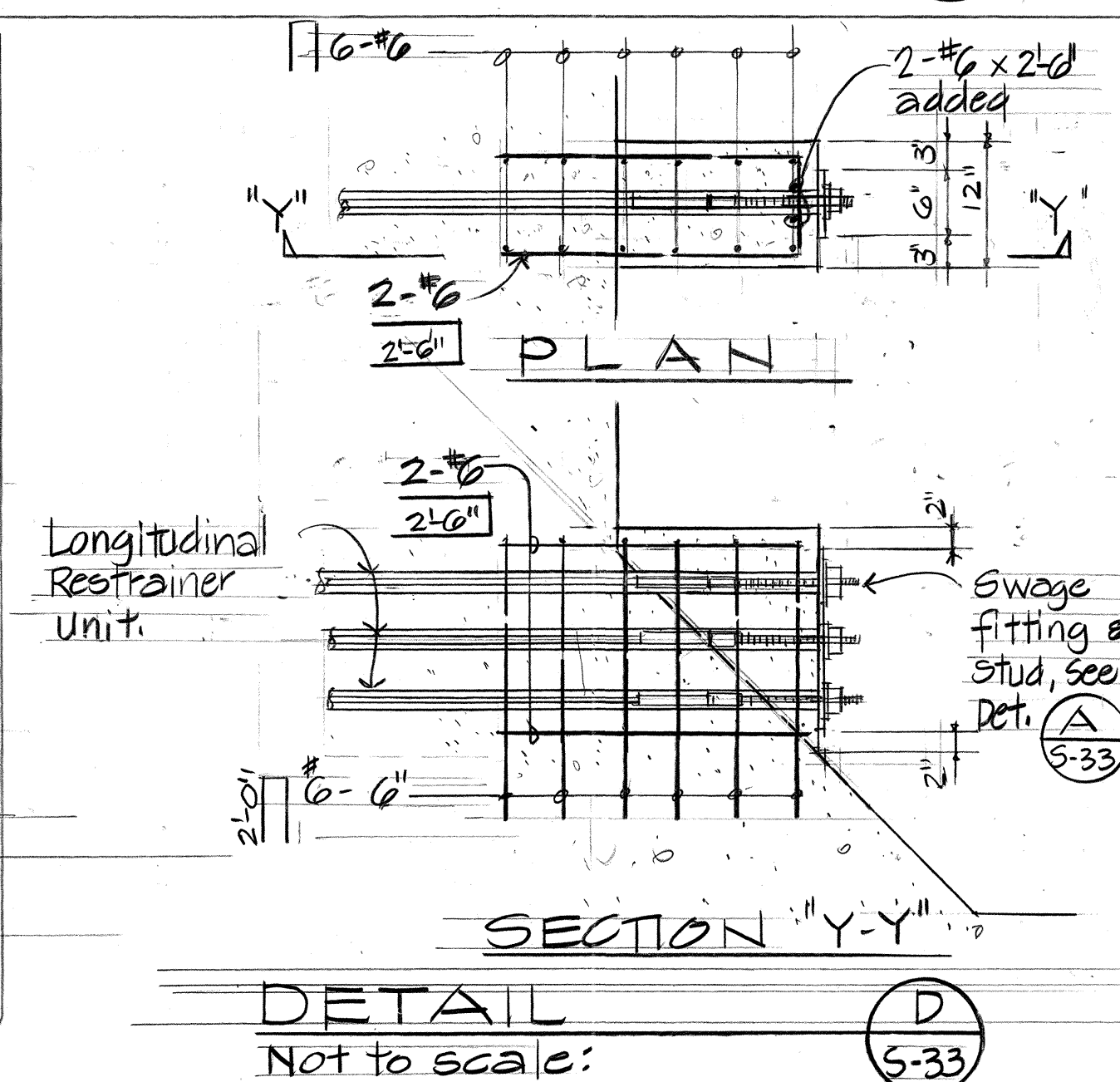
Nuts for Equalizing Bolts shall not be tightened until a minimum 30 days after all post tensioning operations have been completed. Nuts shall be tightened only enough to allow the polystyrene to be in contact with the washer and face of concrete, and the polystyrene shall not be compressed to less than a 2 1/2" thickness.



RESTRAINER ANCHOR
PLATE DETAIL

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

(C)
5-33



SECTION "Y-Y"

DETAIL

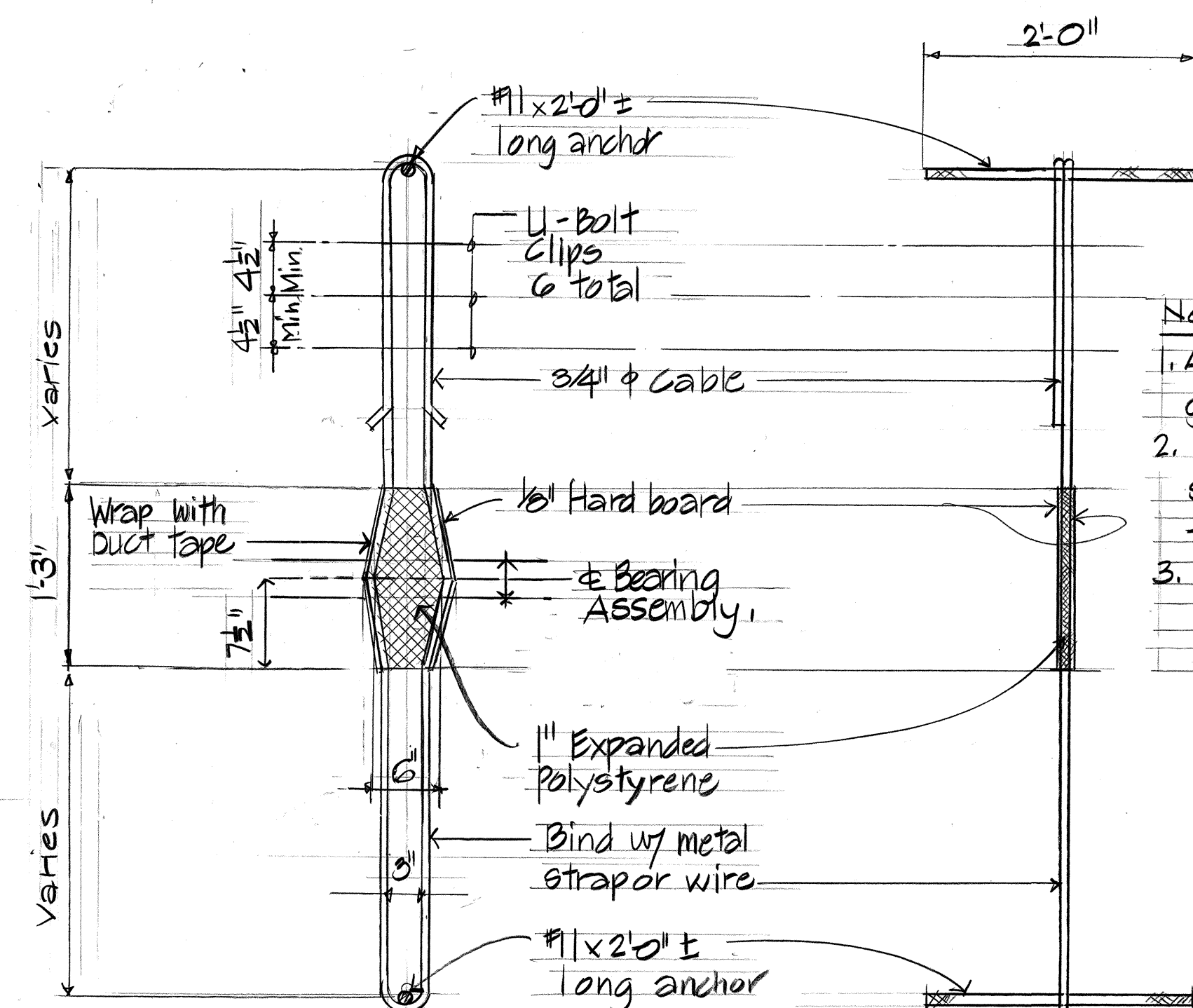
Not to scale:

D

S-33

Longitudinal Restraint Notes:

1. Grease restrainer cables and encase cables within 2" P.V.C. ducts. Fill P.V.C. duct with grease under pressure. All joints in P.V.C. shall be sealed water tight as approved by the Engineer.
2. A minimum 30 days after all post tensioning operations have been completed, torque nuts to 45 ft. lbs. Back nuts off 2 3/4" @ 70°F. Peen bolt threads after backing nut off.
3. Steel parts for Longitudinal Restrainers and Equalizing Bolts shall be galvanized.
4. Contractor shall submit shop drawings for Longitudinal Restrainers to the Engineer for approval.
5. Longitudinal Restrainers including plates shall be considered incidental to concrete in Hanalei Viaduct.



ELEVATION SECTION
VERTICAL RESTRAINER DETAILS (E)
Not to scale! (5-33)

Notes:

1. All steel parts shall be galvanized,
2. Shop drawings shall be submitted to the Engineer for approval,
3. Vertical Restainers shall be considered incidental to concrete in Hanamawlu Viaduct.

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

DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>EQUALIZING BOLT AND</u> <u>RESTRAINER DETAILS</u>	
HANAMAULU VIADUCT HANAMAULU-AHUKINI CUTOFF ROAD Ahukini Road to Kauai Hardwoods PROJECT NO F-051-1 (8)	
SCALE : AS SHOWN	DATE : JULY 1985
SHEET No. S-33 OF S-39 SHEETS	



THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION.

Myron Okubo
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EQUALIZING BOLT AND
RESTRAINER DETAILS

HANAMAULU VIADUCT
HANAMAULU-AHUKINI CUTOFF ROAD
Ahukini Road to Kauai Hardwoods
PROJECT NO F-051-1(8)

SCALE : AS SHOWN DATE : JULY 1985

SHEET No. S-33 OF S-39 SHEETS