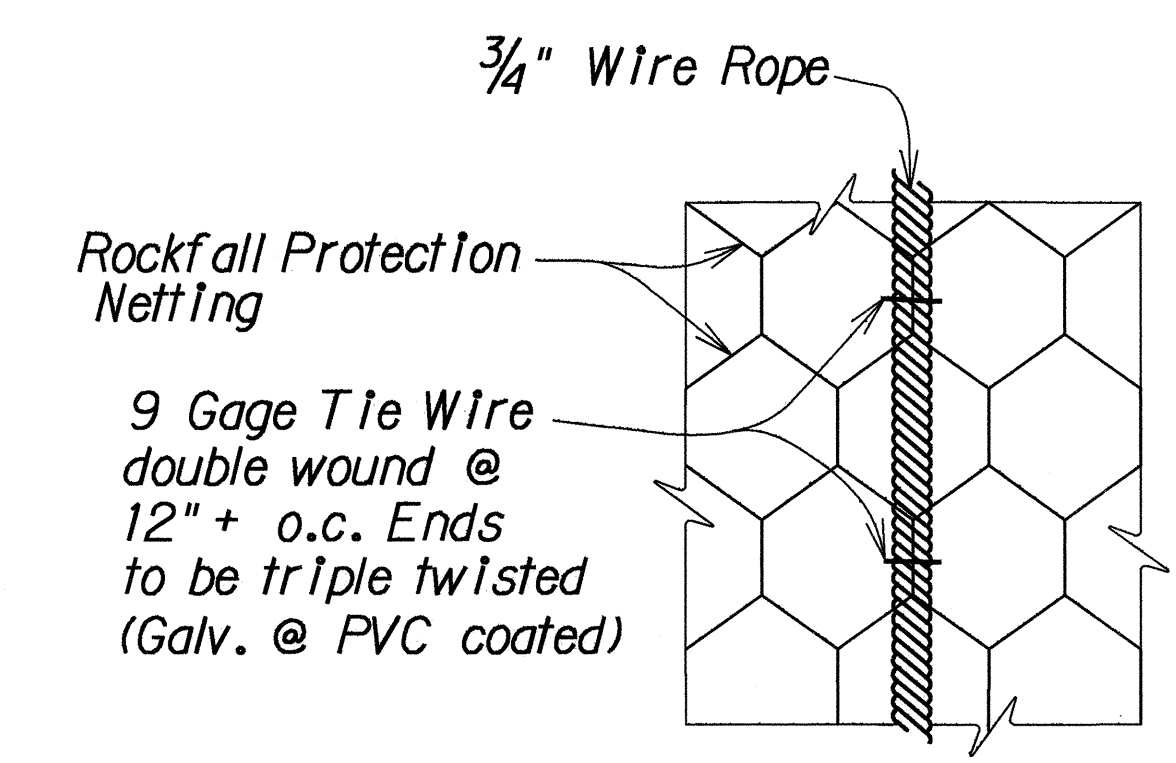
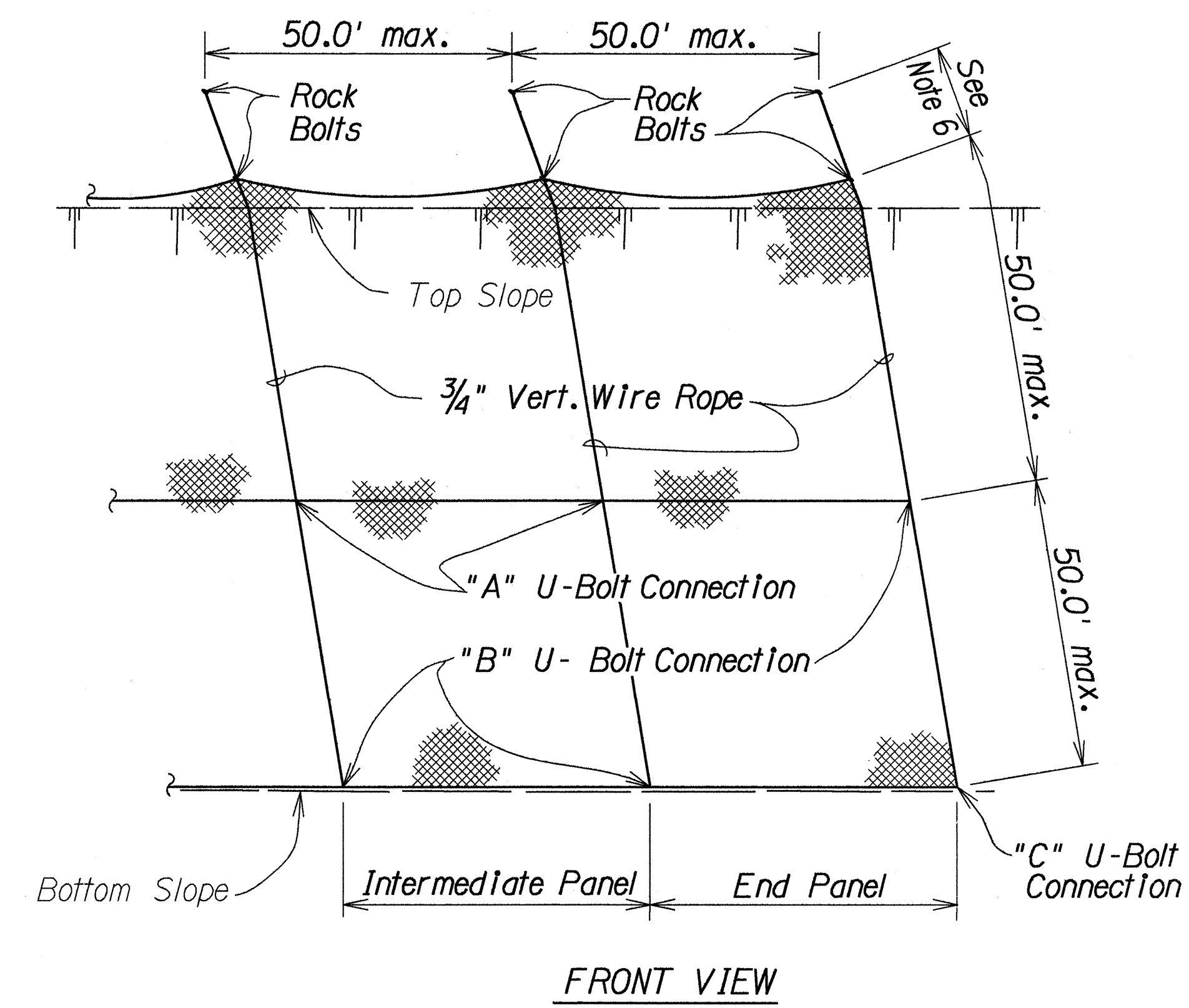
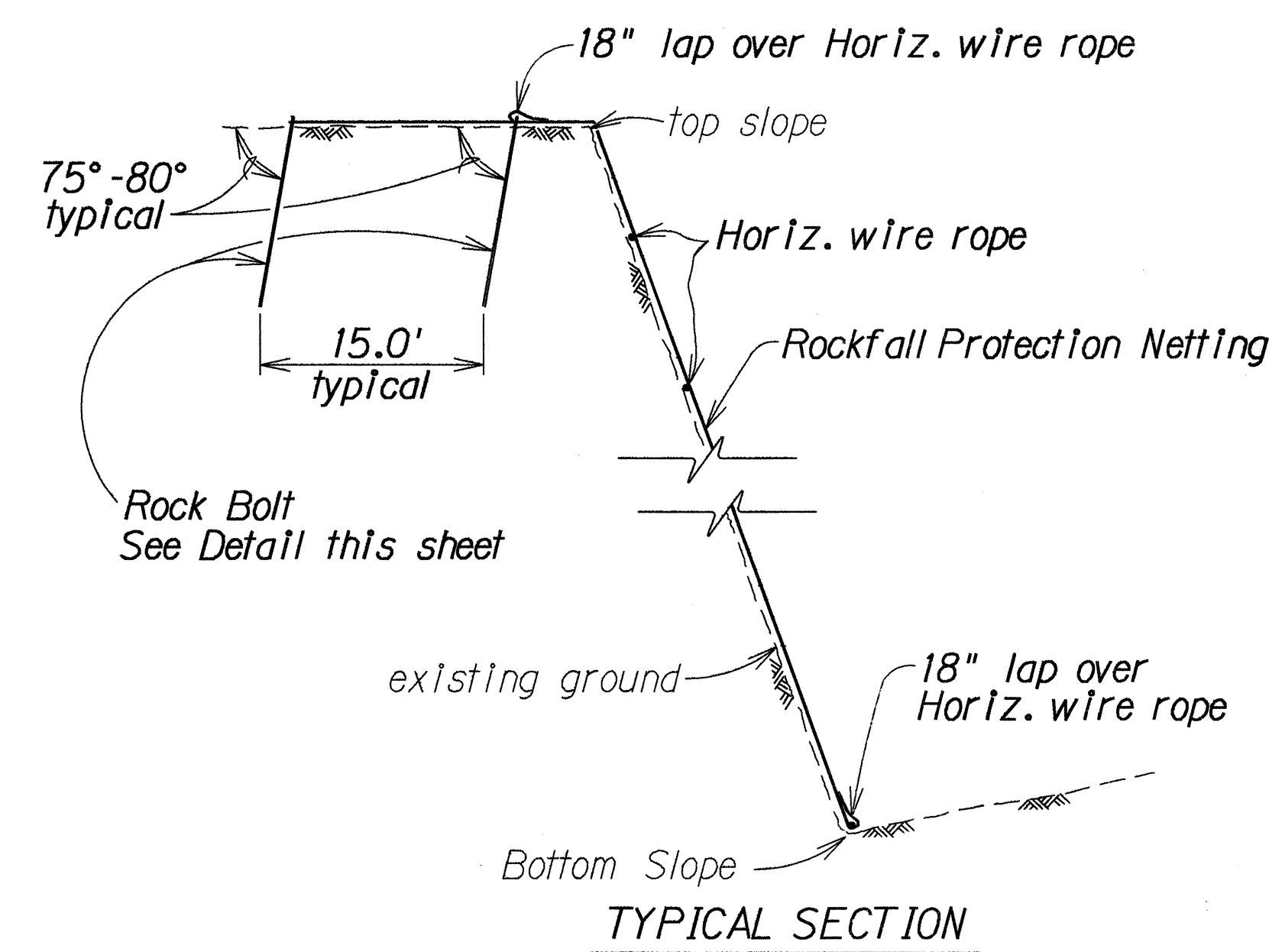
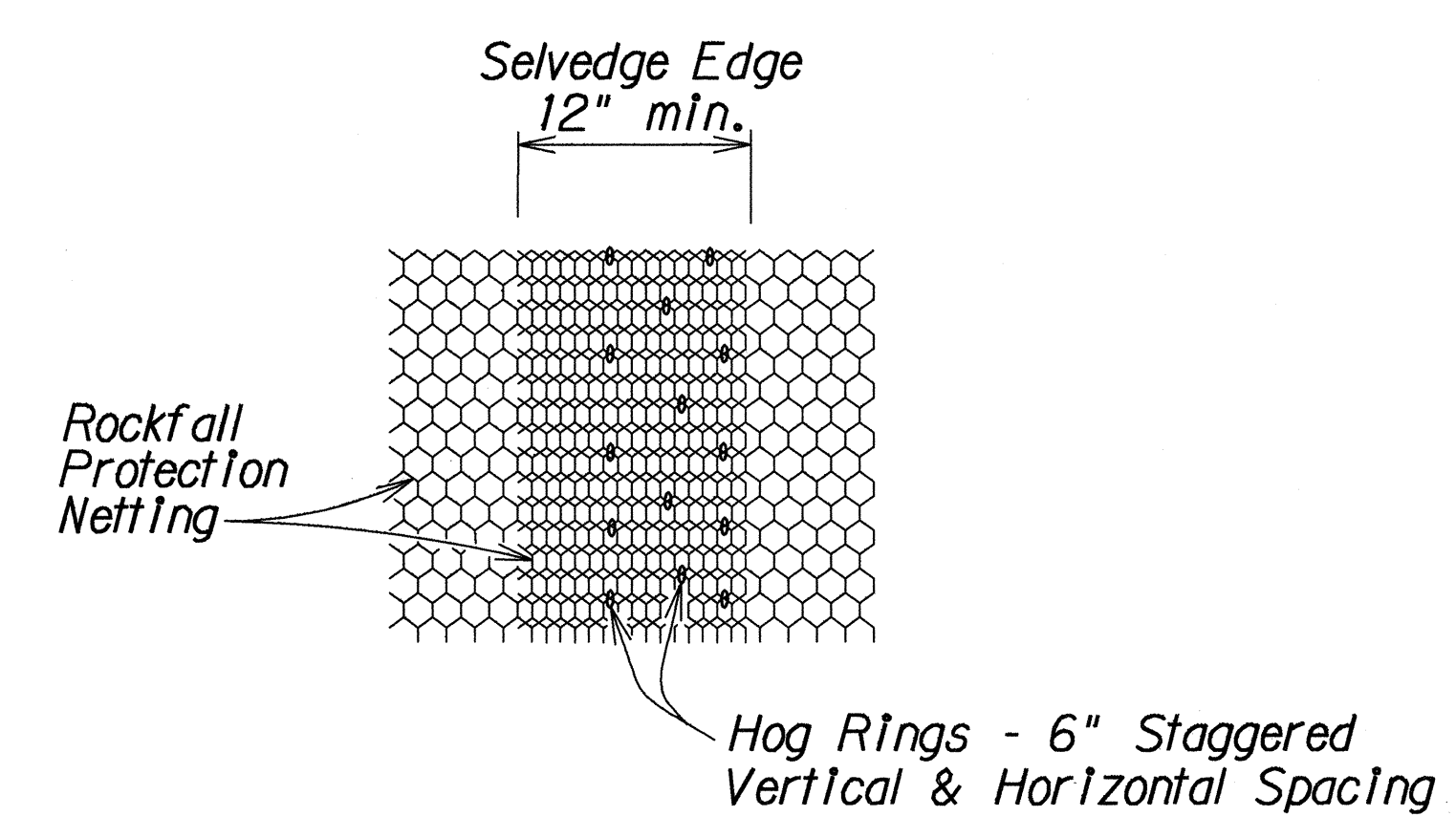


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-01-91	1992	5	24



TYING TO WIRE ROPE DETAIL
(Horizontal and Vertical)

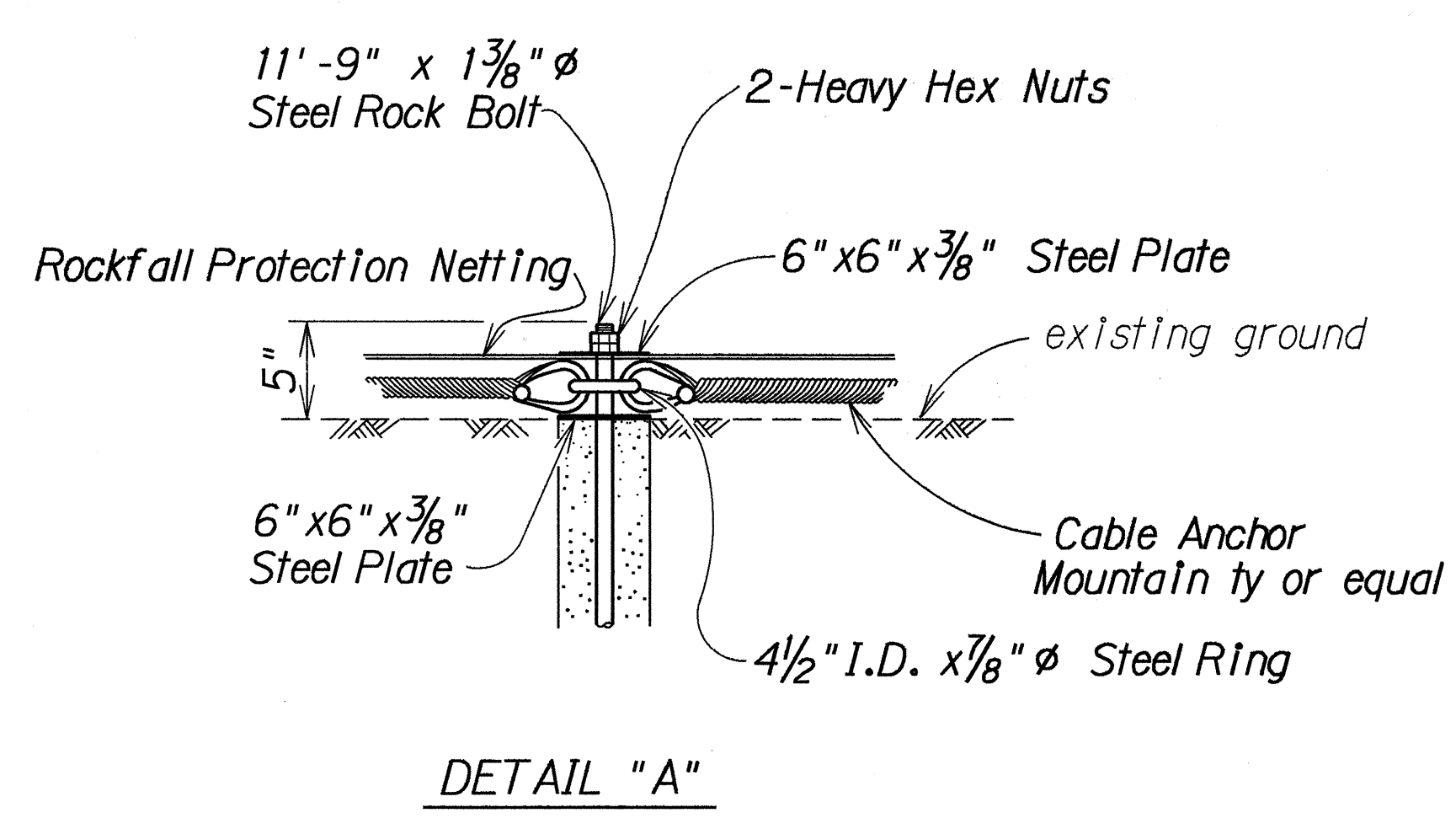


OVERLAPPING DETAIL
PROTECTION NETTING DETAILS
Not To Scale

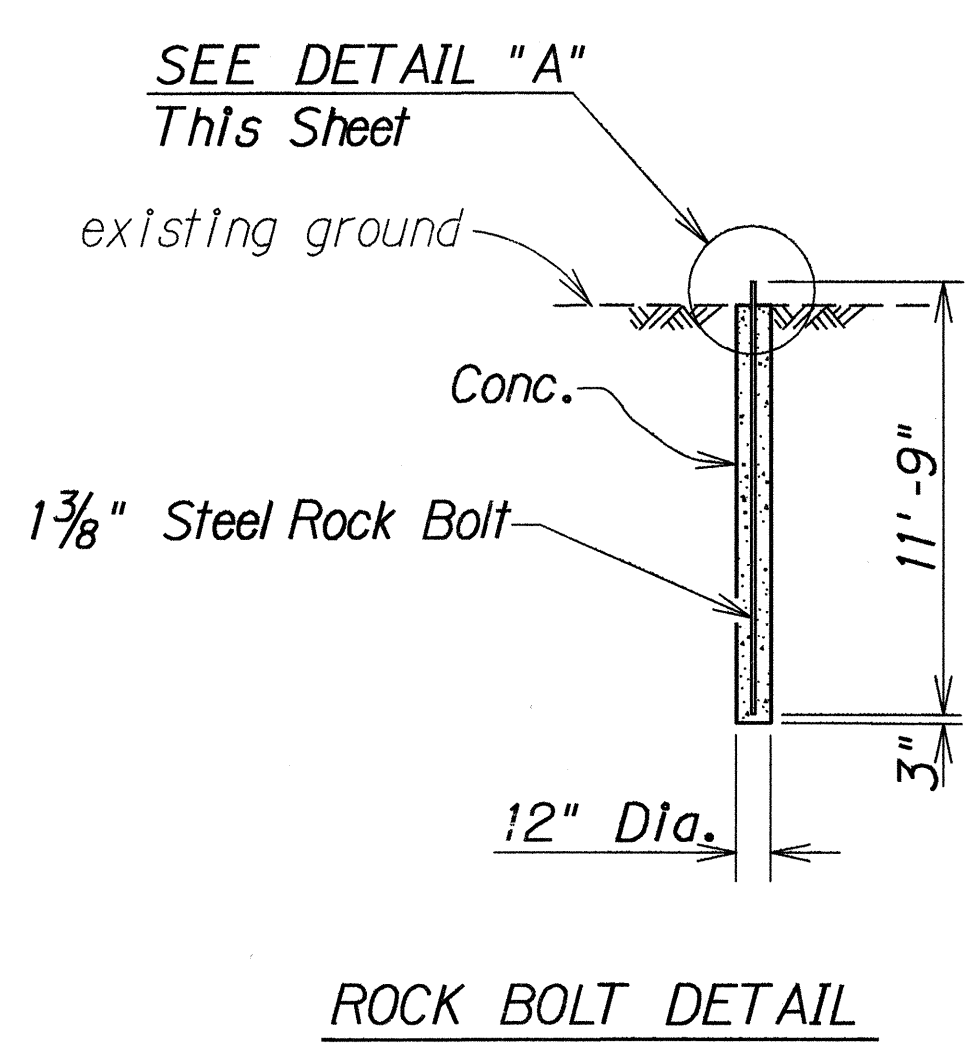
ROCKFALL PROTECTION SCHEDULE				
LIMITS	ESTIMATED QUANTITIES			
STA. TO STA.	ROCKFALL PROTECTION NETTING SQ. YD.	ROCK BOLT EACH	WIRE ROPE LIN. FT.	CABLE ANCHOR EACH
32+59.14 TO 35+50	1720	24	1400	58
43+25 TO 56+25	7960	112	6500	278

- NOTES:**
- Steel rock bolts w/double heavy hex nuts shall have a minimum yield strength of 55,000 psi and shall be galvanized.
 - Steel plates and rings shall be ASTM A572 Steel and shall be galvanized.
 - Concrete shall have a 28 day compressive strength of $f_c' = 5,000$ psi.
 - The two rock bolts for the vertical wire rope shall be placed 10' + from top of slope with a spacing of 15' between the two rock bolts.
 - The top supporting $\frac{3}{4}$ " wire rope shall have a parabolic sag with a maximum deflection of 4' at 50' midspan.
 - With the written approval of the Engineer, the distance between the upper and lower rock bolts can be reduced to not less than 10' due to the topography.

ROCKFALL PROTECTION NETTING
Not To Scale



ROCK BOLT CONNECTION DETAIL
Not To Scale



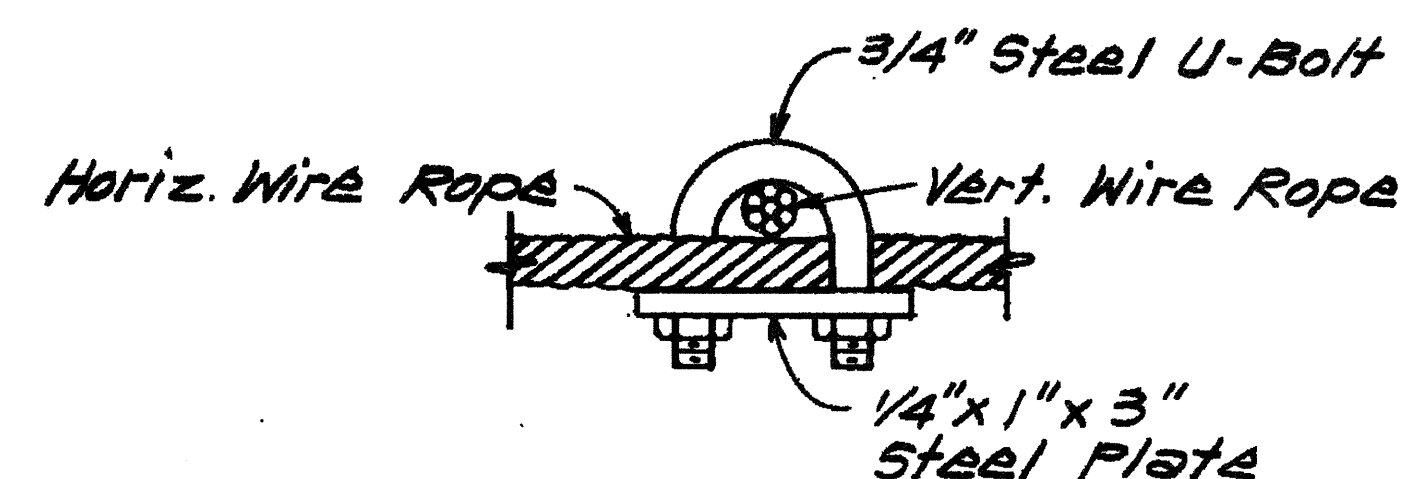
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROCKFALL PROTECTION NETTING
DETAILS
Kamehameha Highway
Kipapa Gulch towards Mililani
Project No. 99C-01-91
Scale: As Shown
Date: Dec., 1991

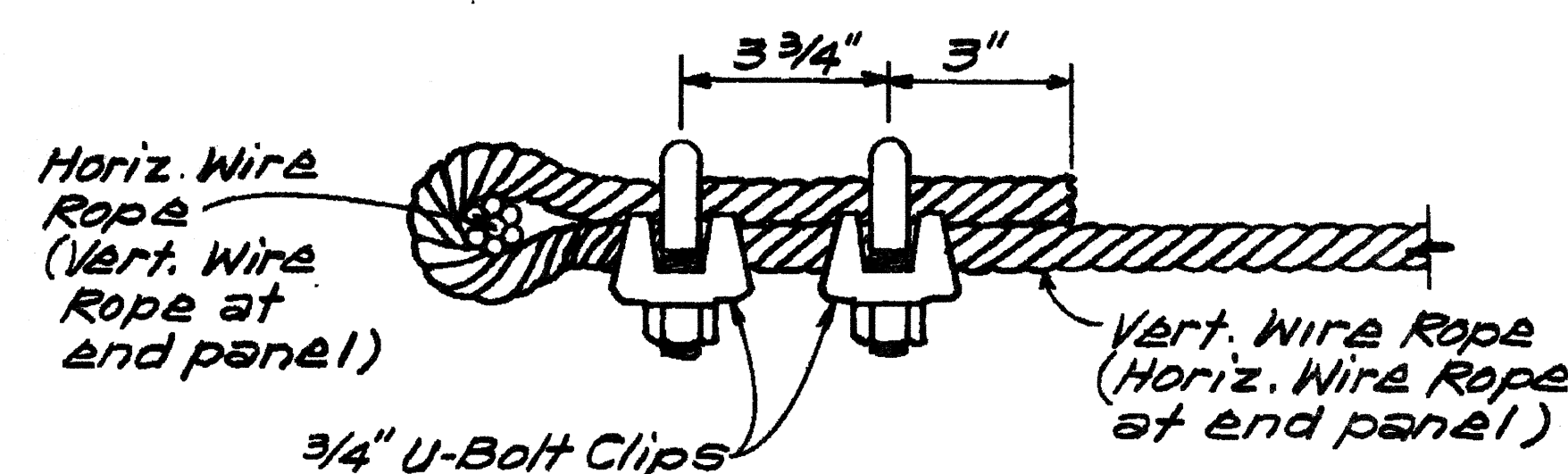
SHEET No. 1 OF 2 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
DESIGNED BY	
REVIEWED BY	
APPROVED BY	
DATE	

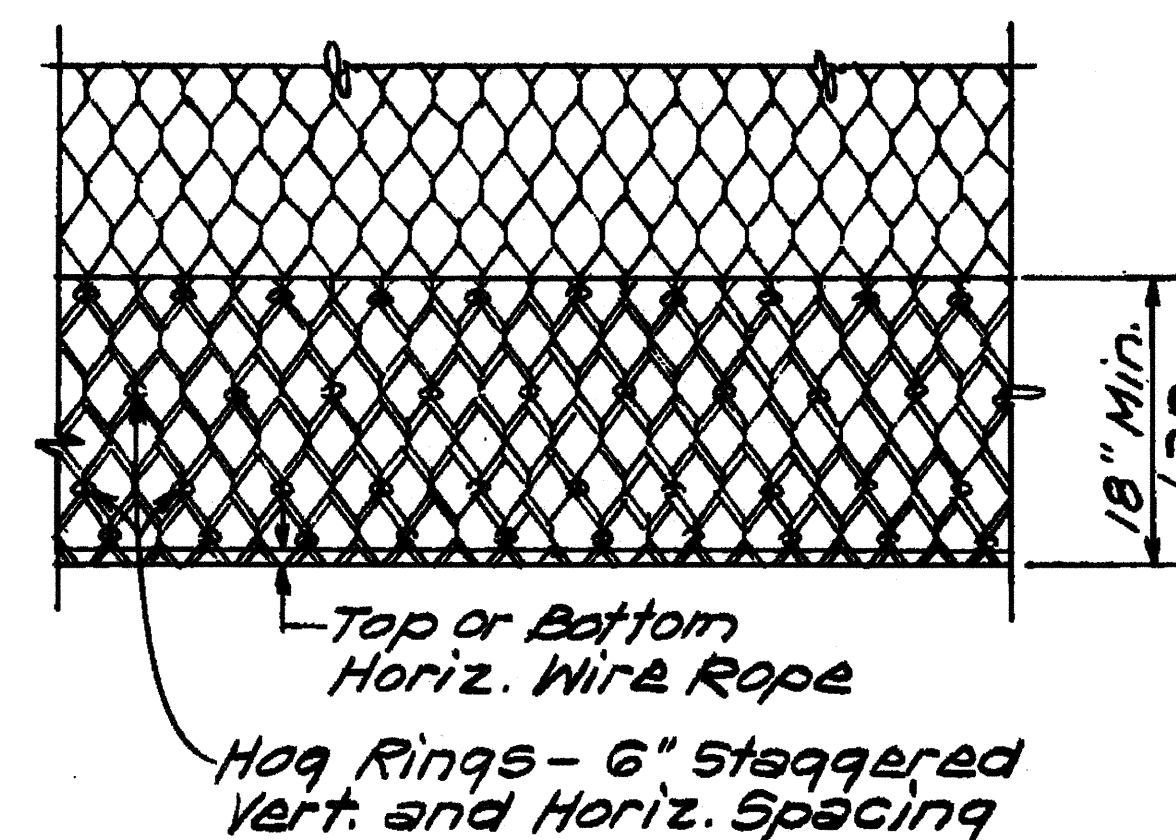
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-01-91	1992	6	24



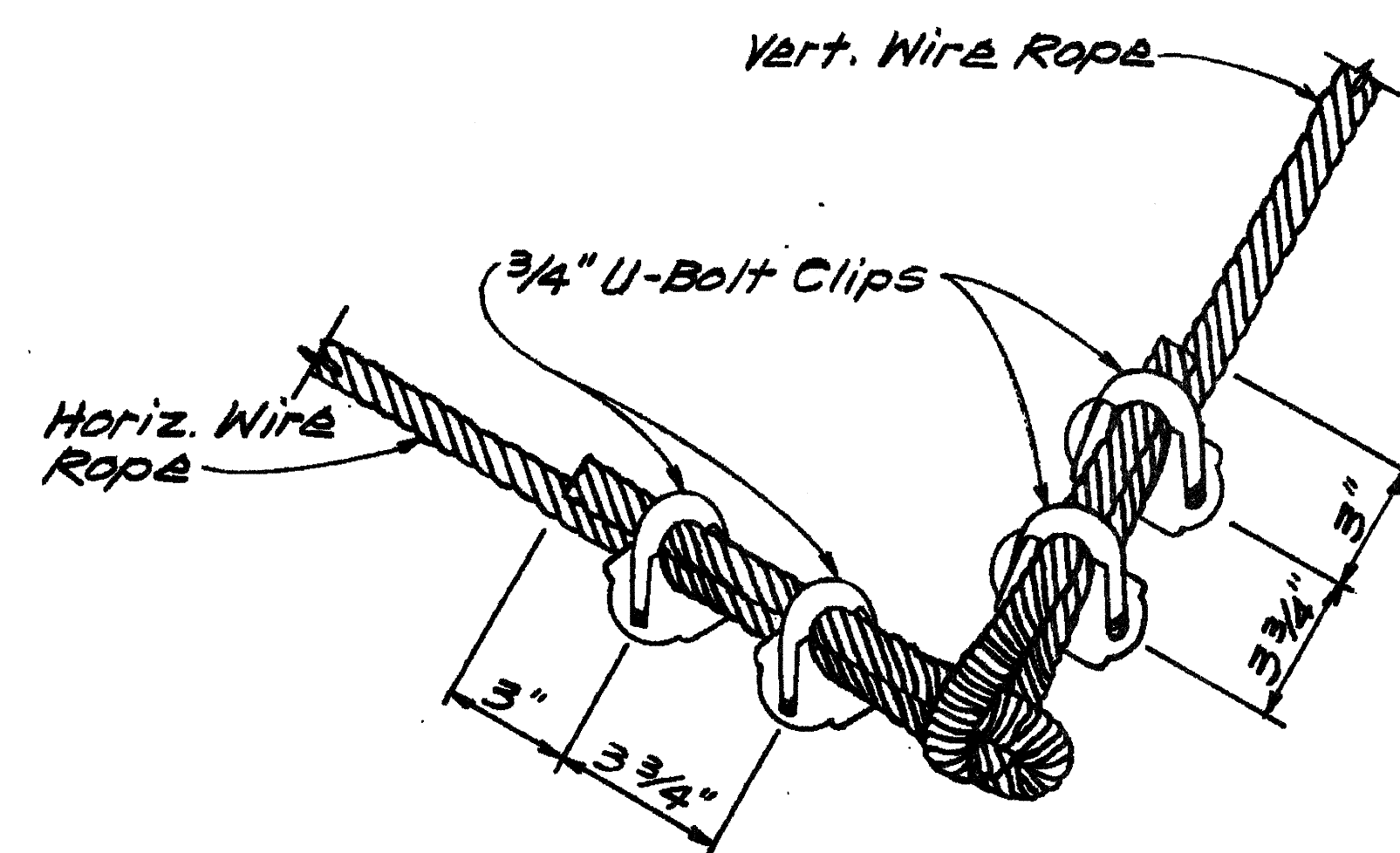
TYPE "A" U-BOLT CONNECTION



TYPE "B" U-BOLT CONNECTION



OVERLAPPING DETAIL AT TOP OR BOTTOM HORIZ. WIRE ROPE



TYPE "C" U-BOLT CONNECTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS

Kamehameha Highway
Kipapa Gulch towards Miliiani
Project No. 99C-01-91
Not to Scale Date Jan, 1992

SHEET No. 2 OF 2 SHEETS