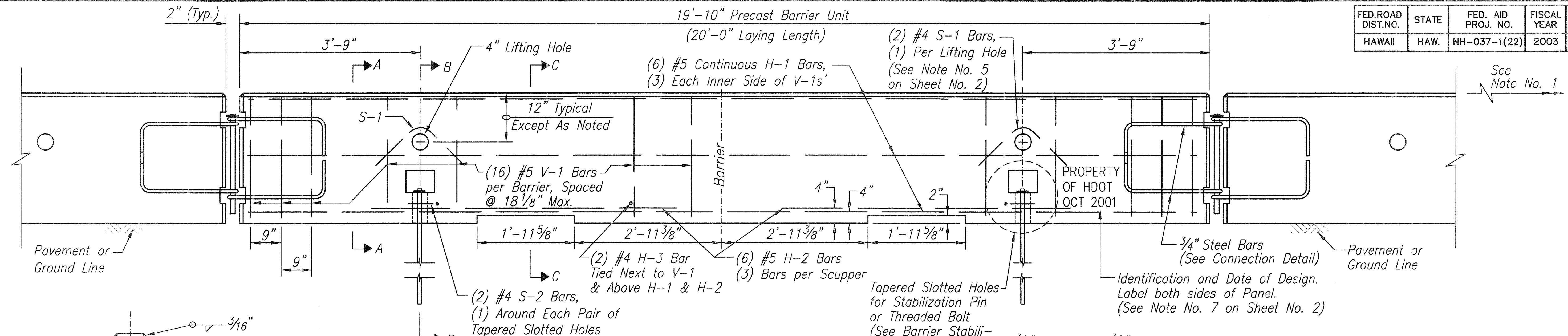
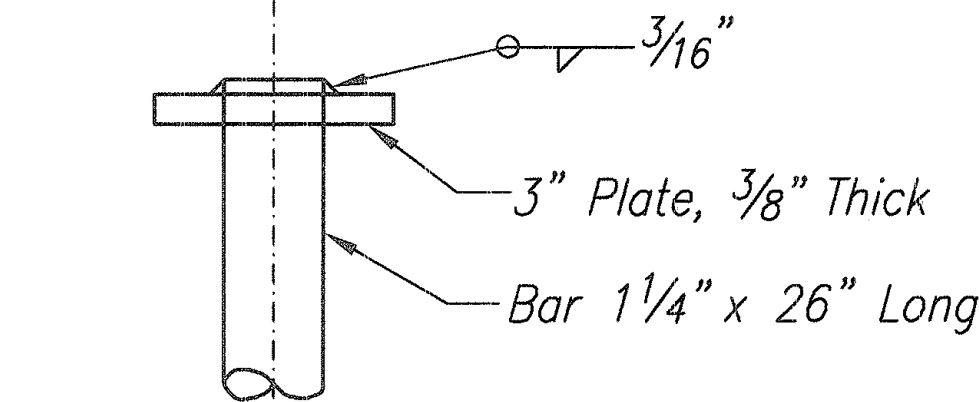


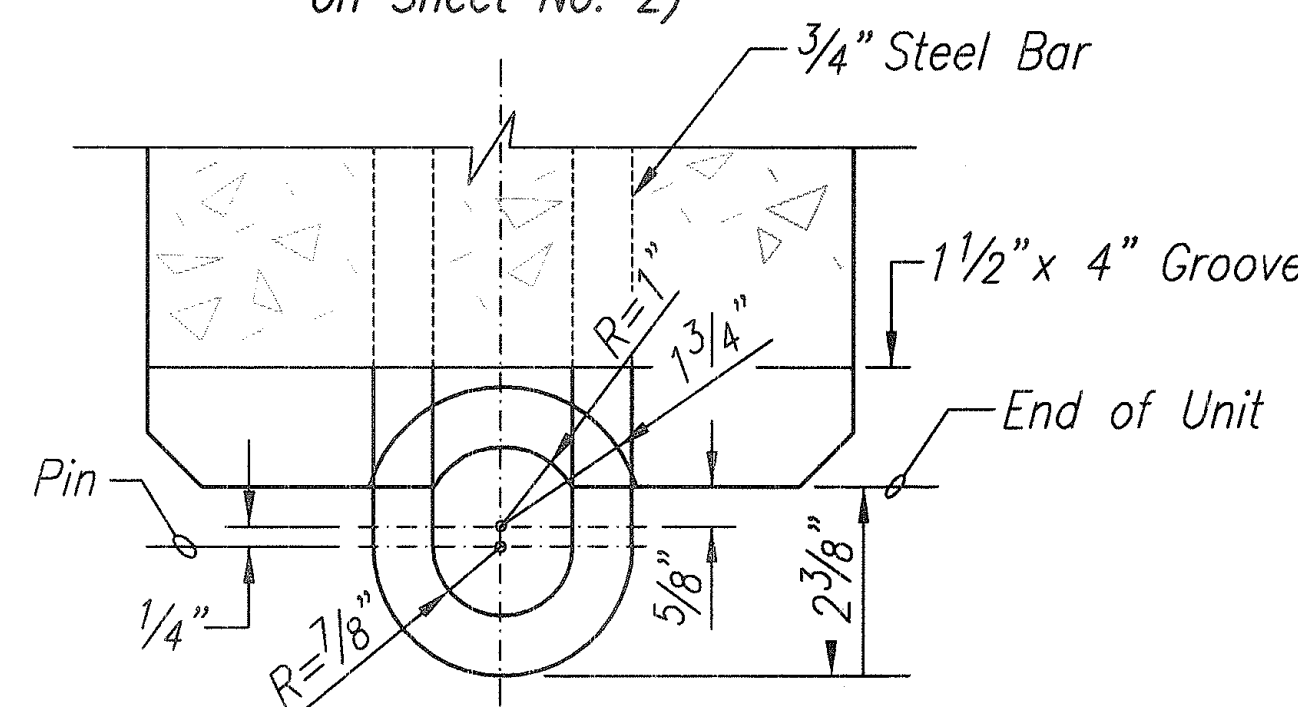
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-037-1(22)	2003	51	72



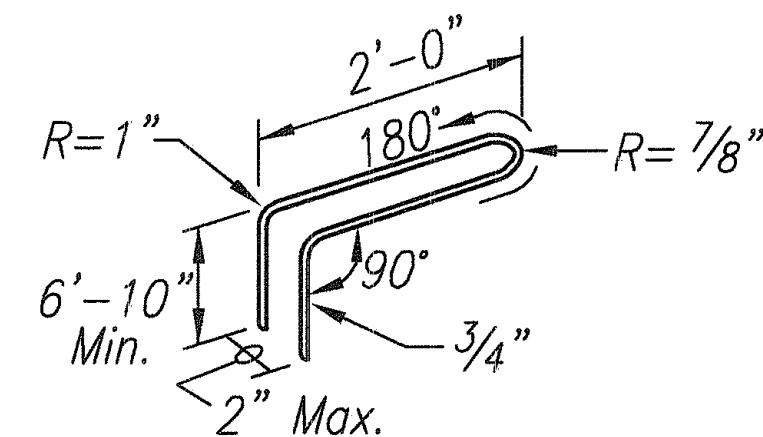
ELEVATION - TYPICAL BARRIER
MASS: 3.9 tons PER PANEL



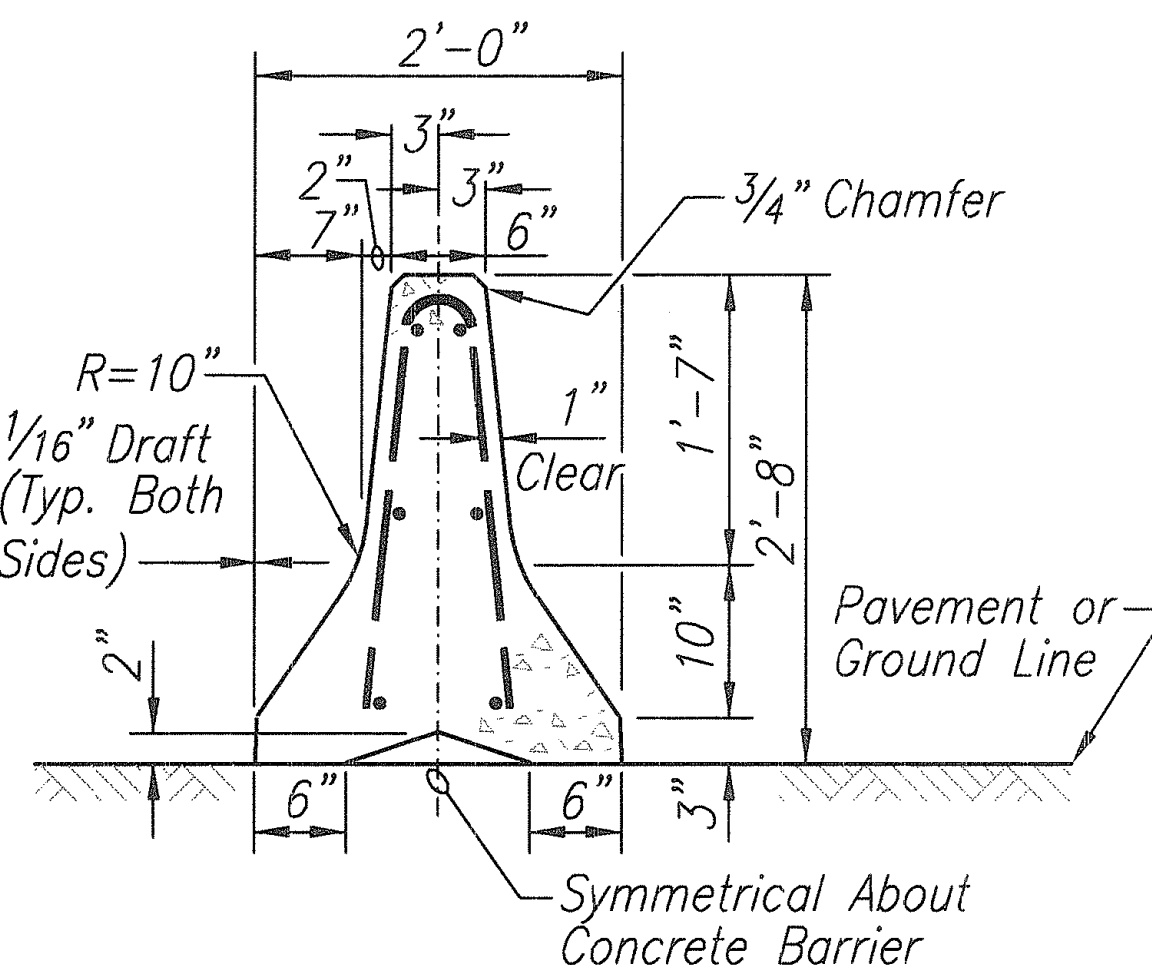
CONNECTING PIN
(See Note No. 5 on Sheet No. 2)



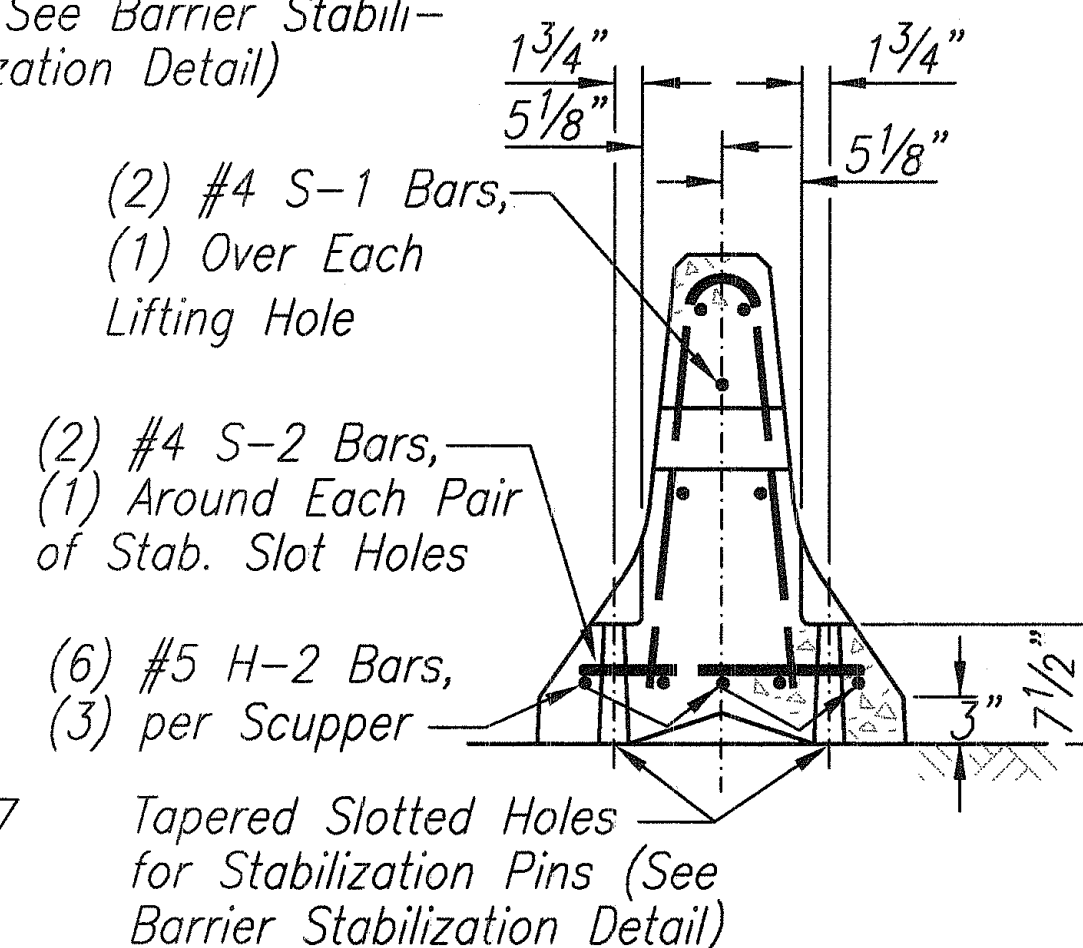
SECTION E-E



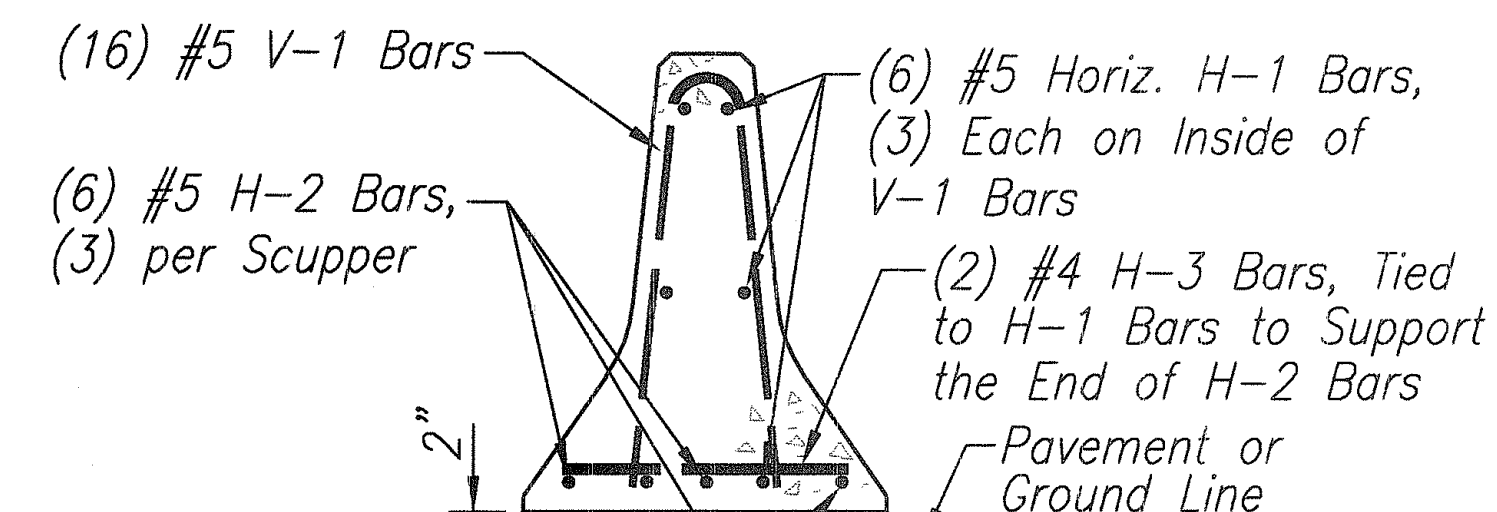
STEEL BAR



SECTION A-A

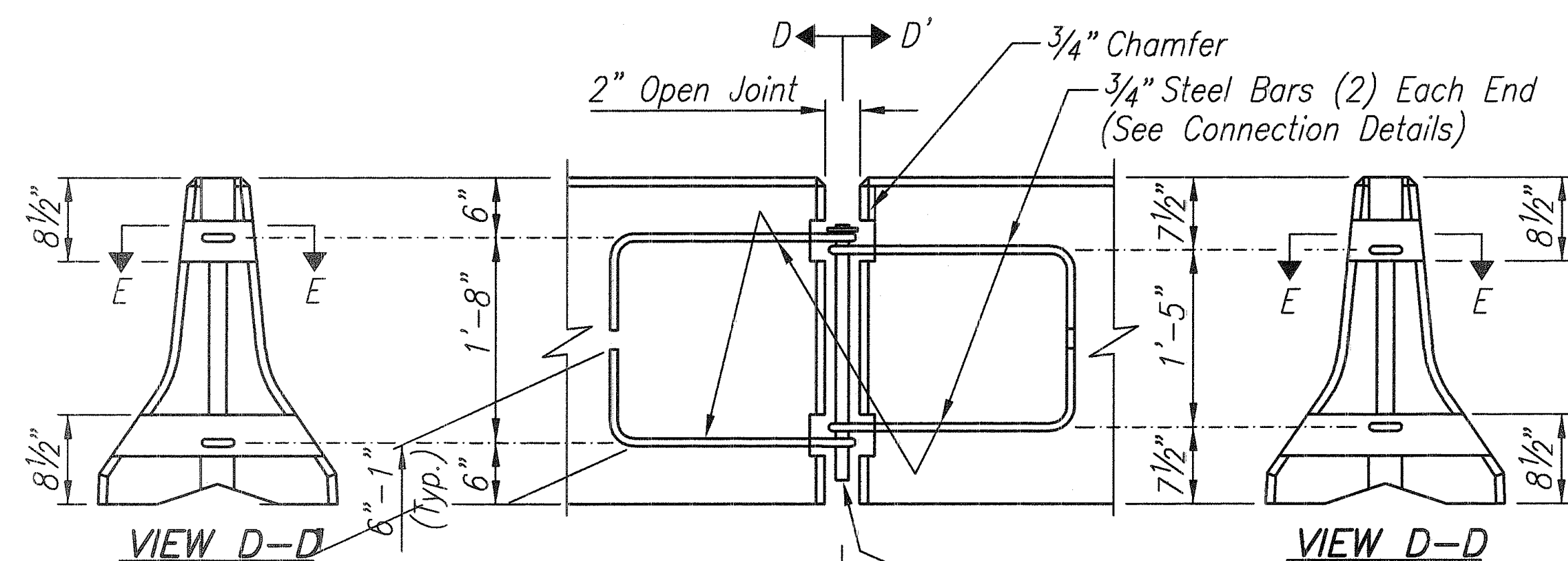


SECTION B-B



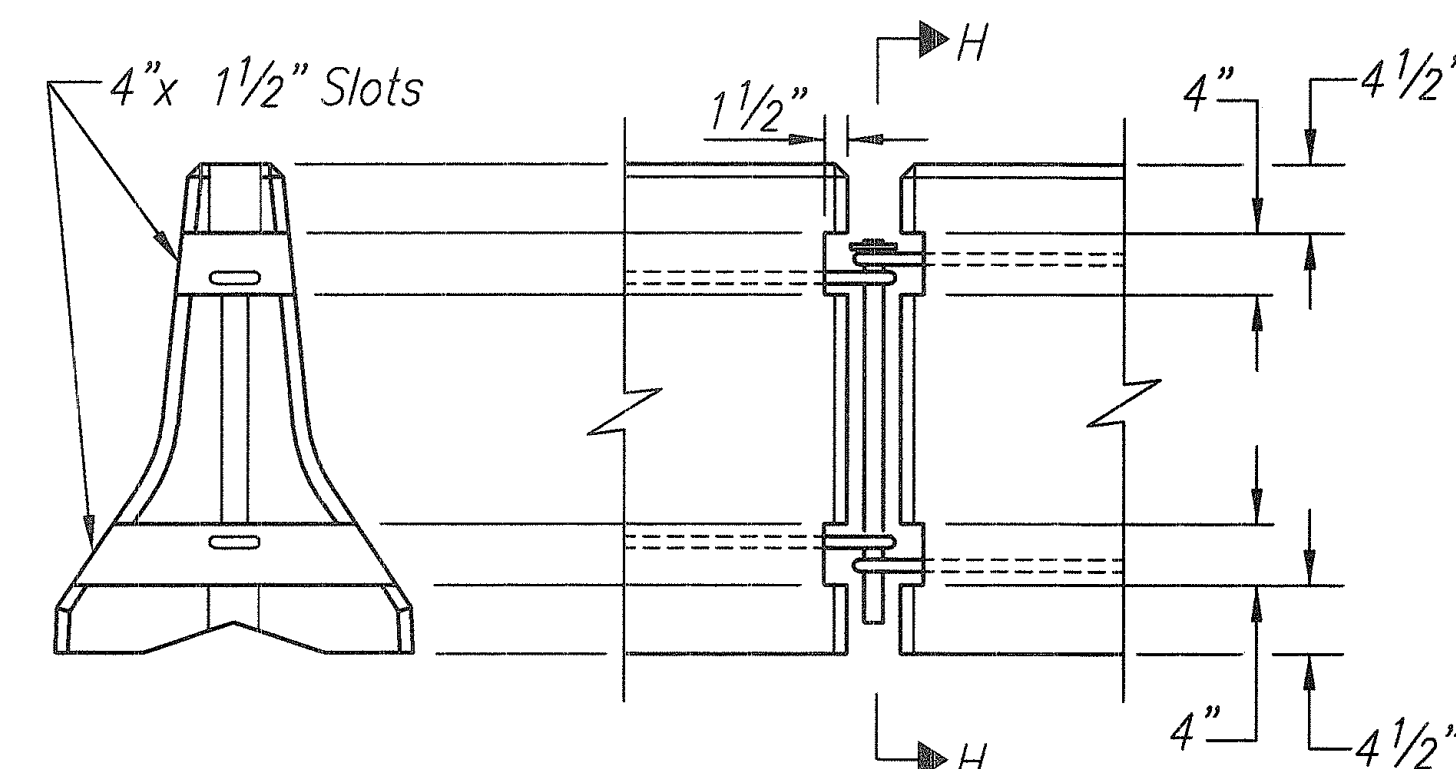
SECTION C-C

CONNECTION DETAILS
(See Note No. 5 on Sheet No. 2)



ELEVATION

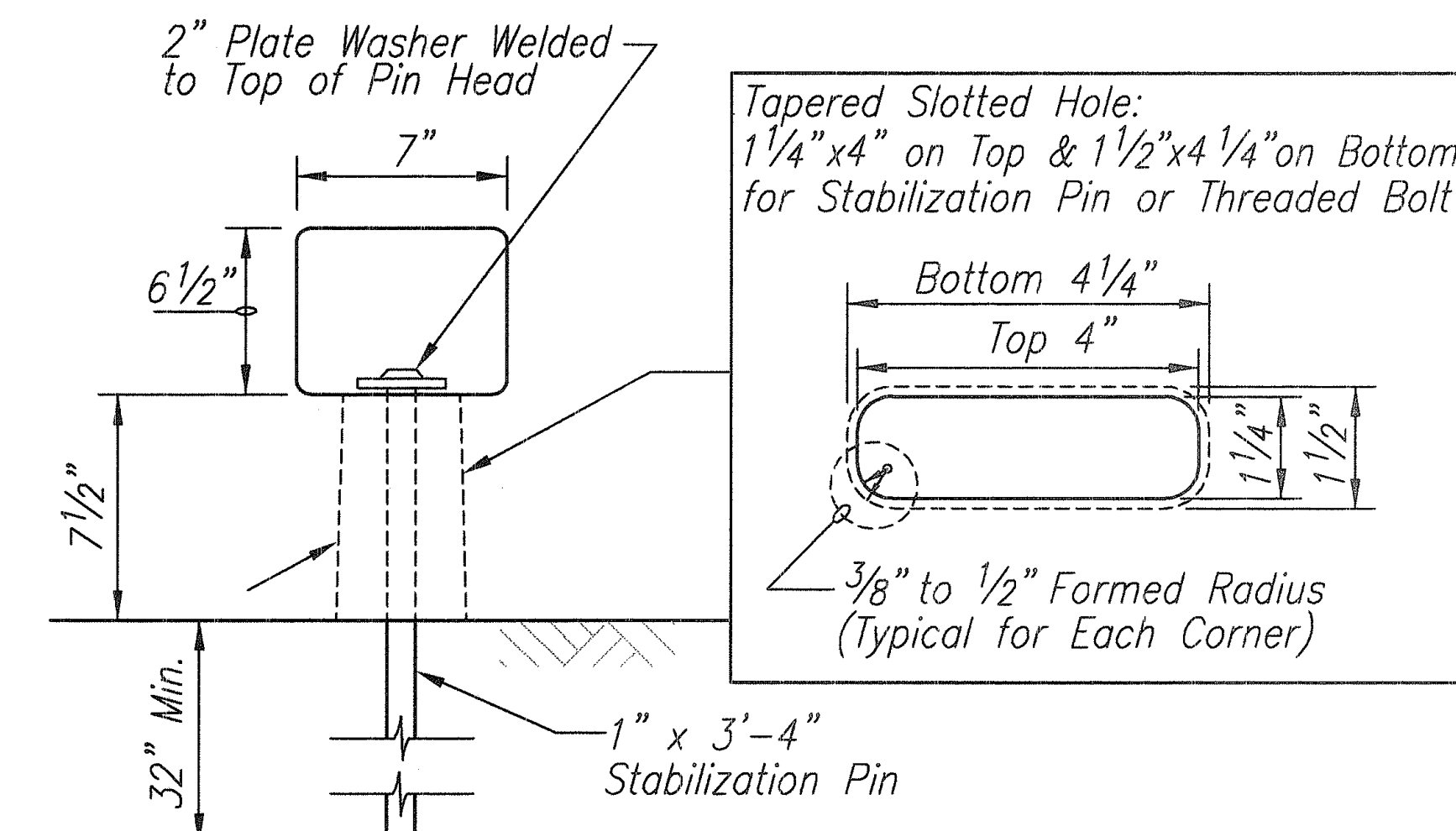
Connection Pin 1 1/4" x 26" & Washer 3/8" x 3" (See Connection Details)



SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS



BARRIER STABILIZATION DETAIL
(See Note Nos. 3 & 4 on Sheet No. 2)

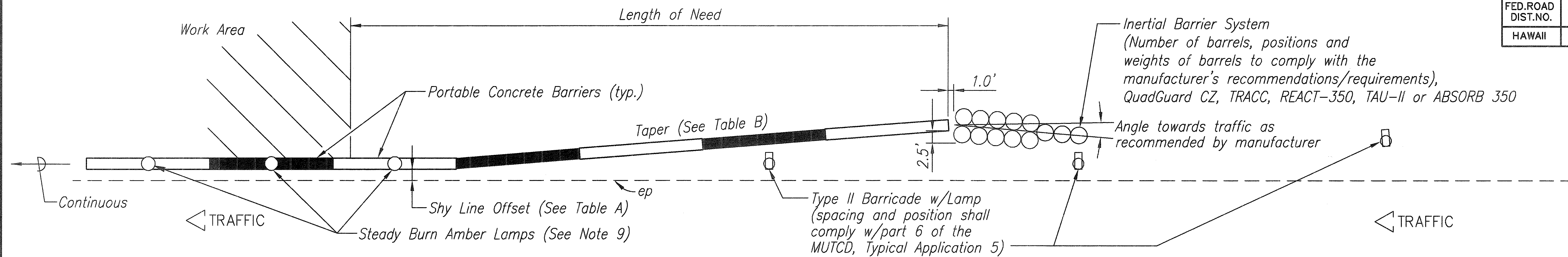
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE BARRIER

HALEAKALA HIGHWAY WIDENING, PHASE I
HANA HIGHWAY TO PUKALANI BYPASS
FED. AID PROJ. NO. NH-037-1(22)
SCALE: AS NOTED DATE: NOV., 2002

SHEET No. TC-80F 9 SHEETS

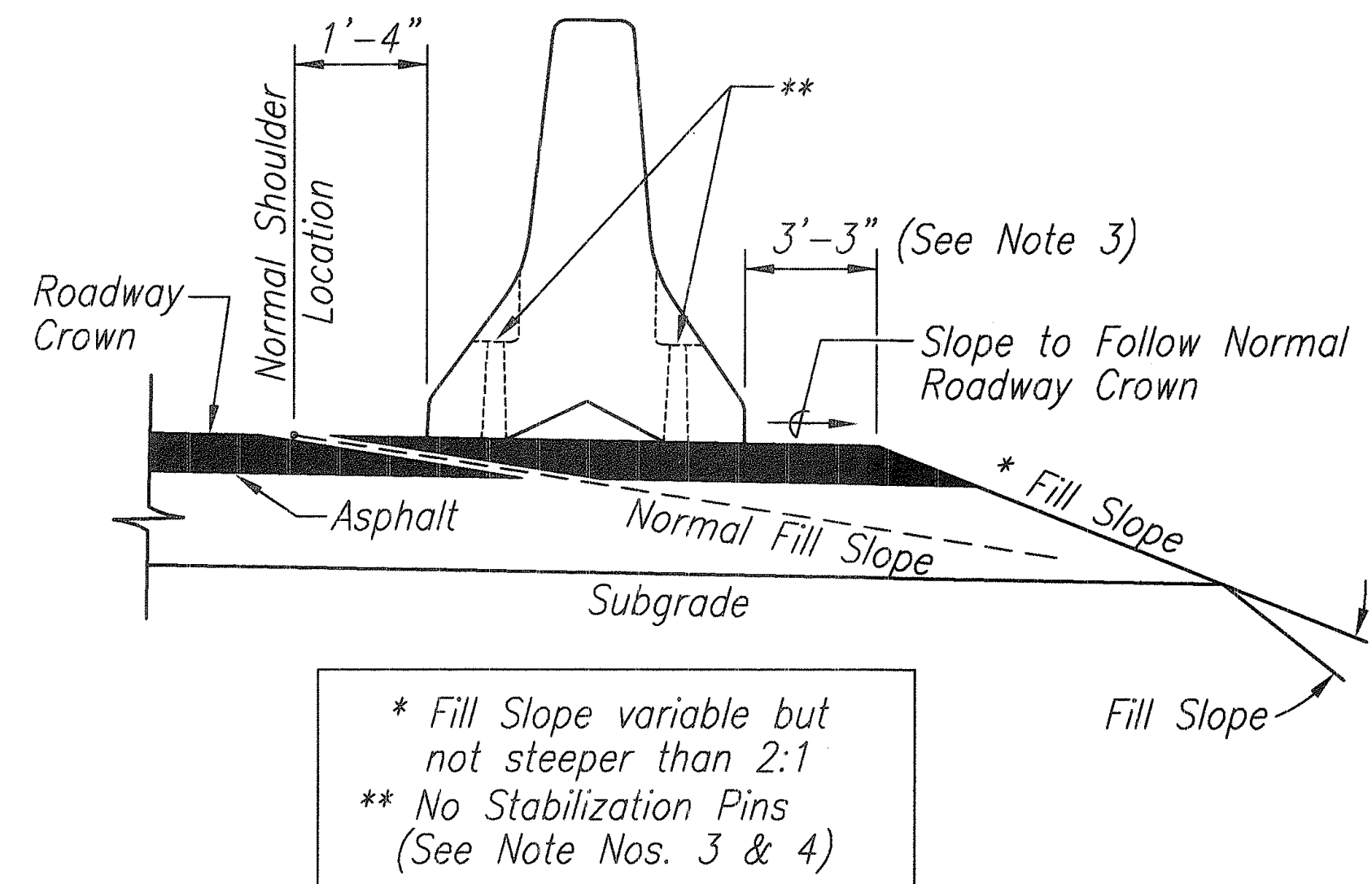
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-037-1(22)	2003	52	72



TYPICAL DETAIL - PORTABLE CONCRETE BARRIER END TREATMENT
Scale: 1" = 10'-0"

NOTES:

- For end treatment, layout, crash cushions and where needed see Project Plans or Special Provisions.
- Barriers must be pinned together and cannot exceed the Table of Maximum Tapers.
- The concrete barrier "Standard Installation" design allows for 3'-3" of outward lateral movement if the barrier is struck. Barrier installations that require less than the 3'-3" of outward lateral movement should have stabilization pins.
- ASTM A-36 steel shall be used for the connection pin, connection loops and stabilization pins. A one piece pin with a 3" rounded top may be used in place of the detailed connection pin if the one piece pin meets ASTM A-36 requirements.
- A 4" white PVC sleeve may be used to form the lifting hole and if used the sleeve is to be left in place.
- Concrete shall be Class A and reinforcing shall be Grade 60.
- Identification and date of design will be as follows:
PROPERTY OF HDOT
OCT 2001
Text letters and numbers shall be shown as on Standard Plan Sht. No. B-01. "PROPERTY OF HDOT" may be changed depending upon ownership. All Portable Concrete Barriers made for HDOT will be subject to rejection, if "PROPERTY OF HDOT" is not imprinted. The Contractor shall bear the cost of the rejected Portable Concrete Barriers.
- Minimum tangent length for portable Concrete Barrier System shall be 100' (5 units). This minimum does not include the required system length of the Inertial Barrier System.
- Install steady burn amber lamps on portable concrete barriers @ 20.0' o.c. Installing, maintaining and removing each steady burn amber lamp including changing of batteries and bulbs shall be considered incidental to applicable portable concrete barrier items.



STANDARD INSTALLATION
(See Note No. 1)

METAL REINFORCEMENT TABLE				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	Horizontal in Barrier Tied Inside V-1 Bars	#5	(6)	19'-3"
H-2	Centered Above Scuppers Long. & Transversely	#5	(6)	6'-6"
H-3	Tied Above H-1 Bars to Support H-2, Tied to V-1	#4	(2)	1'-6"
S-1	Horizontal in Top of Wing Wall & in Floor Back Wall	#4	(2)	
S-2	Horizontal Around Slots Between V-1's @ Scuppers	#4	(2)	
V-1	Vertical in Barrier (3) Each End & (2) at Each Scupper	#5	(16)	

TABLE A SHY LINE OFFSETS *	
DESIGN SPEED (mph)	SHY LINE OFFSETS
70	10.0'
65	9.0'
60	8.5'
55	7.0'
50	6.5'
45	6.0'
40	5.0'
35	4.5'
30	3.5'
≤ 25	2.0'

TABLE B MAXIMUM TAPERS FOR CONCRETE BARRIER		
DESIGN SPEED (mph)	TAPER	
	INSIDE SHY LINE	BEYOND SHY LINE
70	30:1	20:1
65	28:1	19:1
60	26:1	18:1
55	24:1	16:1
50	21:1	14:1
45	18:1	12:1
40	17:1	11:1
35	15:1	9:1
≤ 30	13:1	8:1

* Note: Minimum shy line offset for tangent sections shall be 2'-0".

DATE	11/21/2002
SUPPLY PLOTTED BY	AMR
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

C-94-56 PORTABLE-BARRIER D:\ESH-1\1-1 11/21/2002 AMR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE BARRIER

HALEAKALA HIGHWAY WIDENING, PHASE I
HANA HIGHWAY TO PUKALANI BYPASS
FED. AID PROJ. NO. NH-037-1(22)
SCALE: AS NOTED DATE: NOV., 2002

SHEET No.TC-90F 9 SHEETS