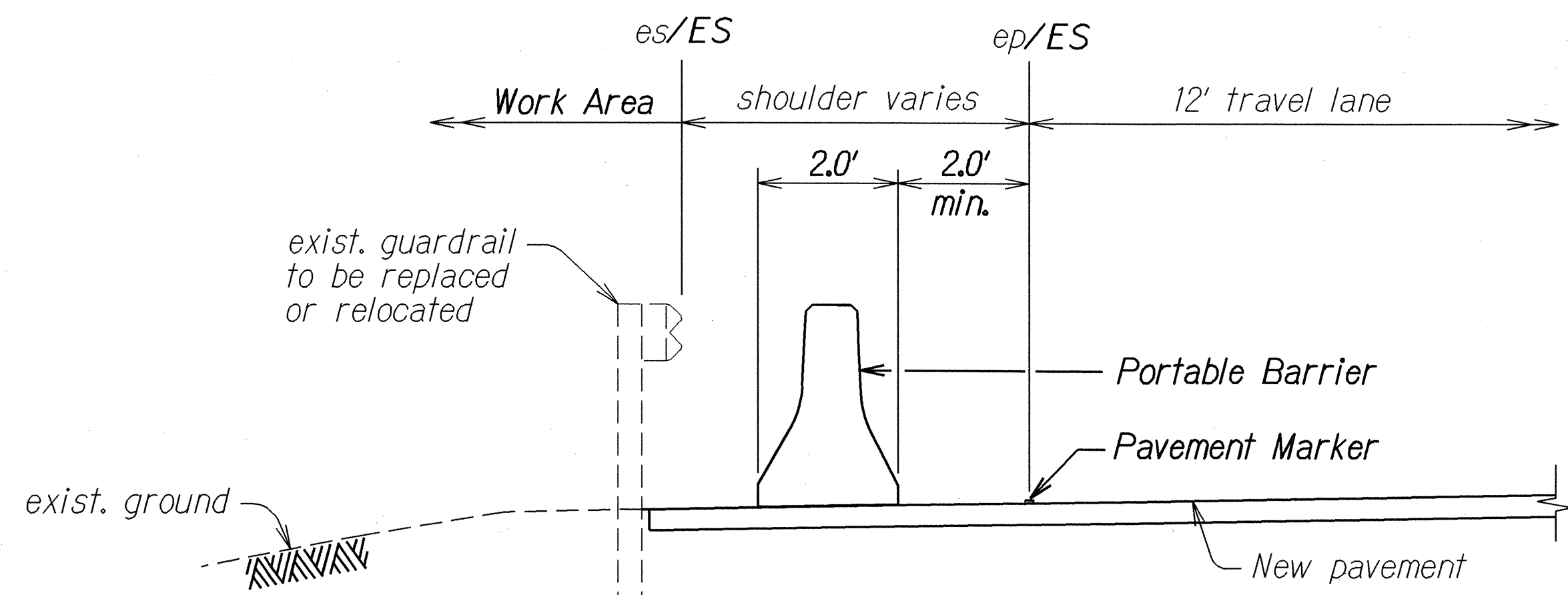


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56B-01-01M	2003	30	34



TYPICAL DETAIL
PORTABLE BARRIER
Not To Scale

- NOTES:**
1. Installation of portable physical barriers shall conform to Manufacturer's recommendations.
 2. Physical barriers shall be required whenever guardrails have been removed and will not be reinstalled at the end of the work day. See General Note No. 20 on Plan Sht. No. 3.
 3. Physical barriers shall be either portable concrete barriers or portable water-filled barriers. Installation of portable water-filled barriers shall conform to Manufacturer's recommendations as dictated by design speed and field conditions.
 4. Providing, transporting, placing, maintaining, relocating and removing physical barriers shall be considered incidental to the various contract items of work. See Section 645, TRAFFIC CONTROL DEVICES of the Special Provisions.

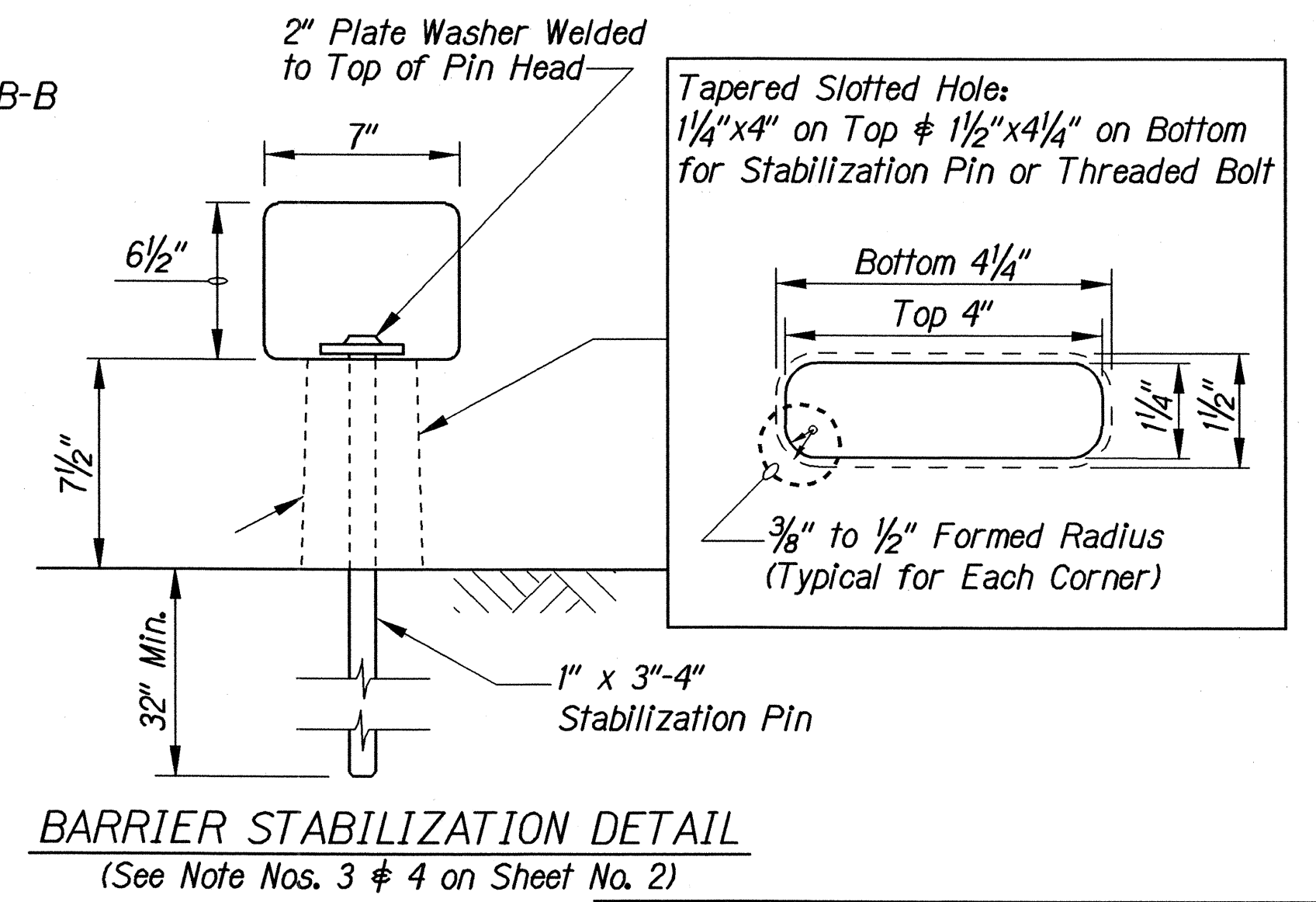
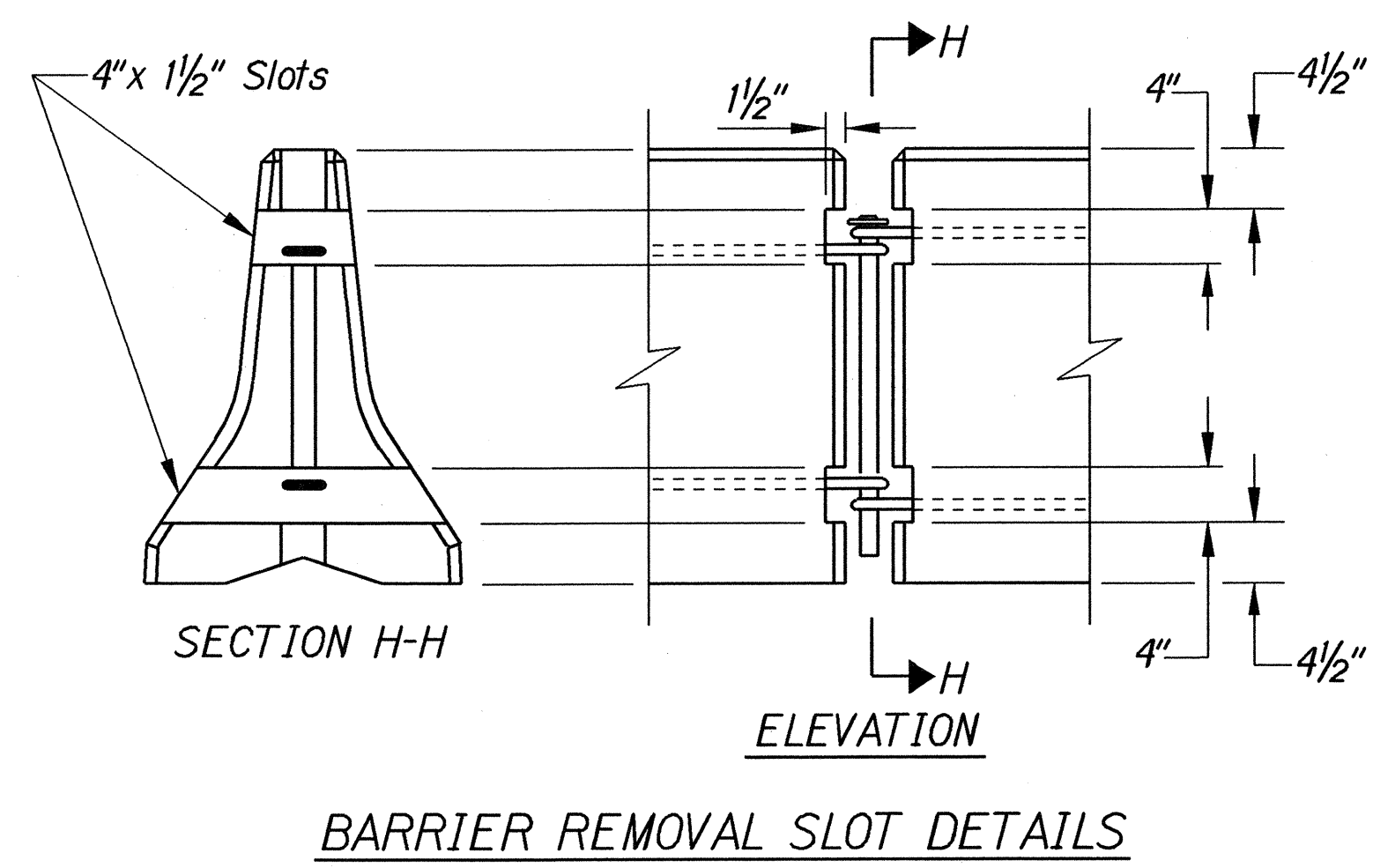
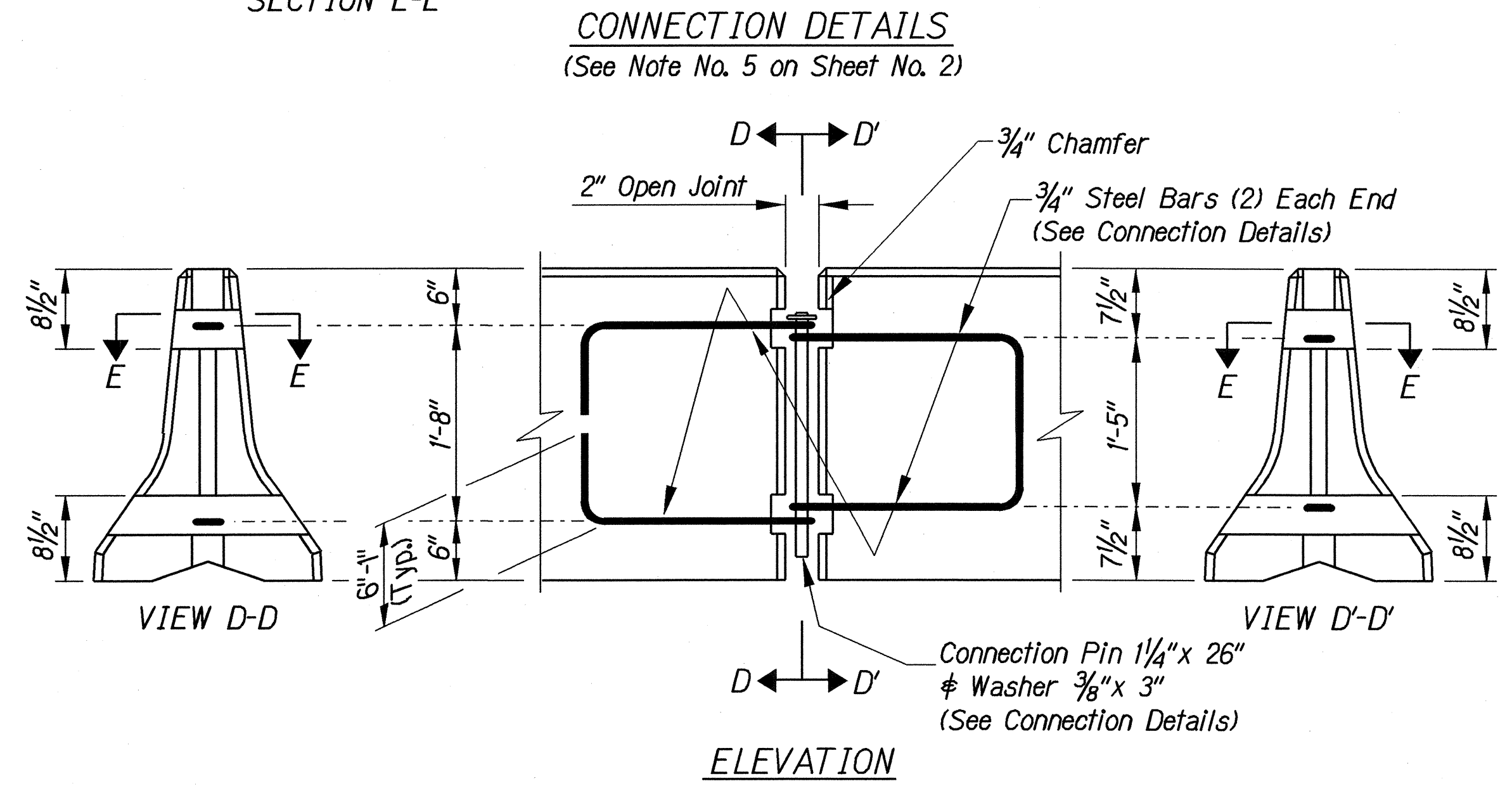
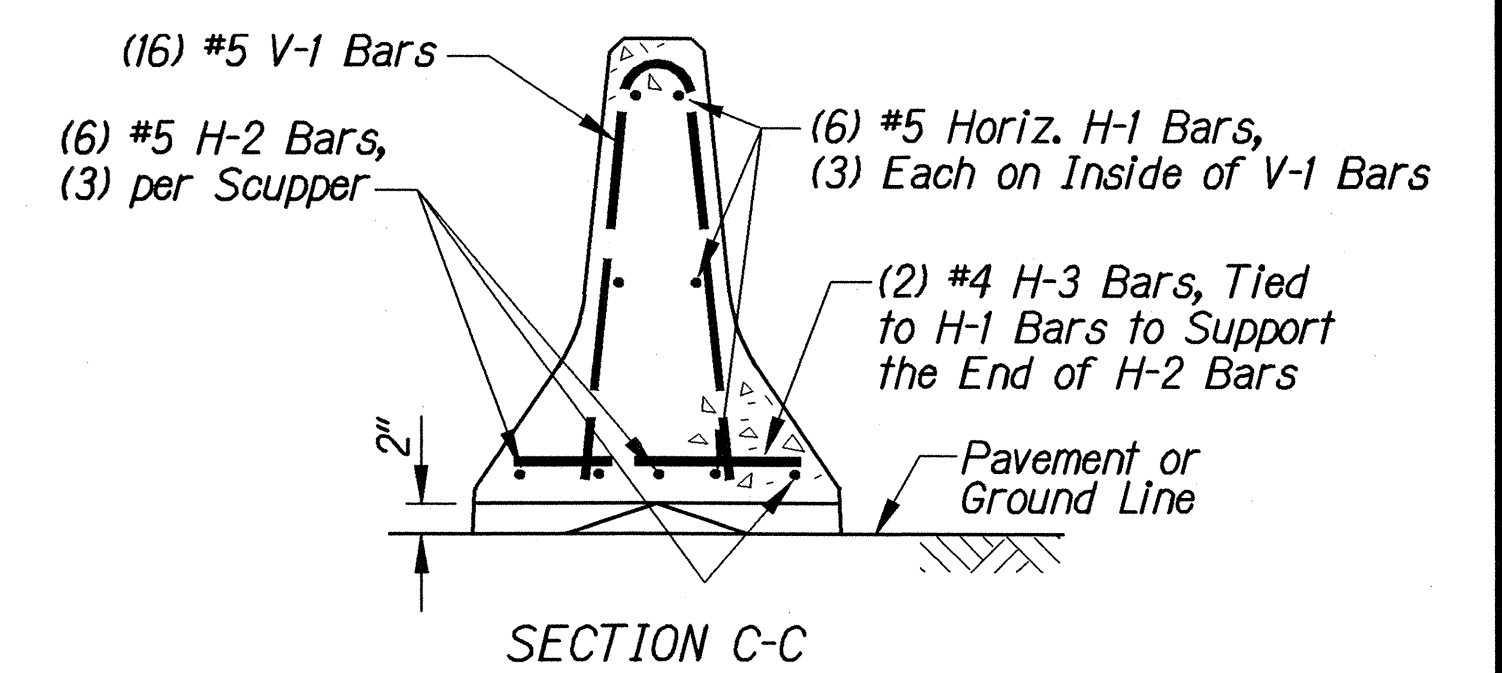
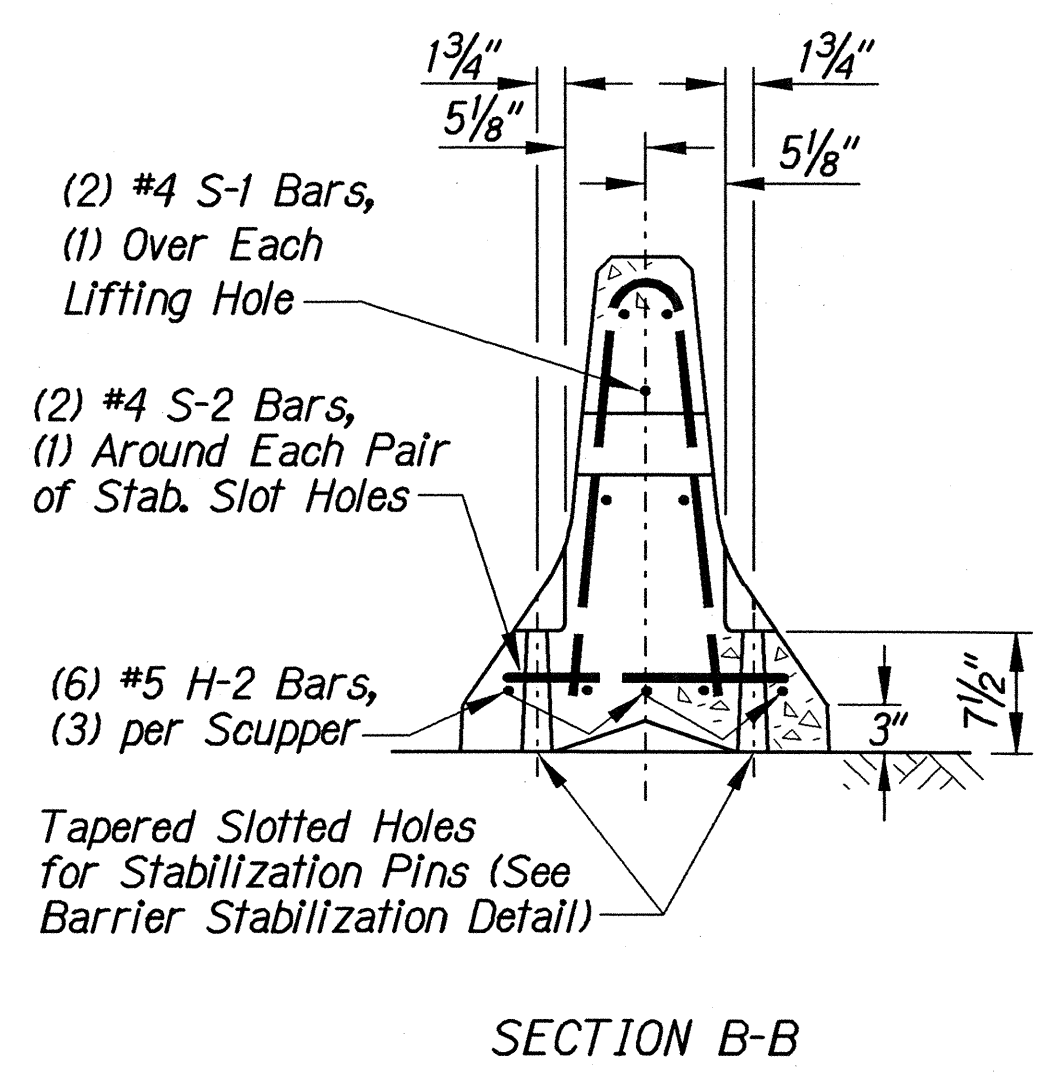
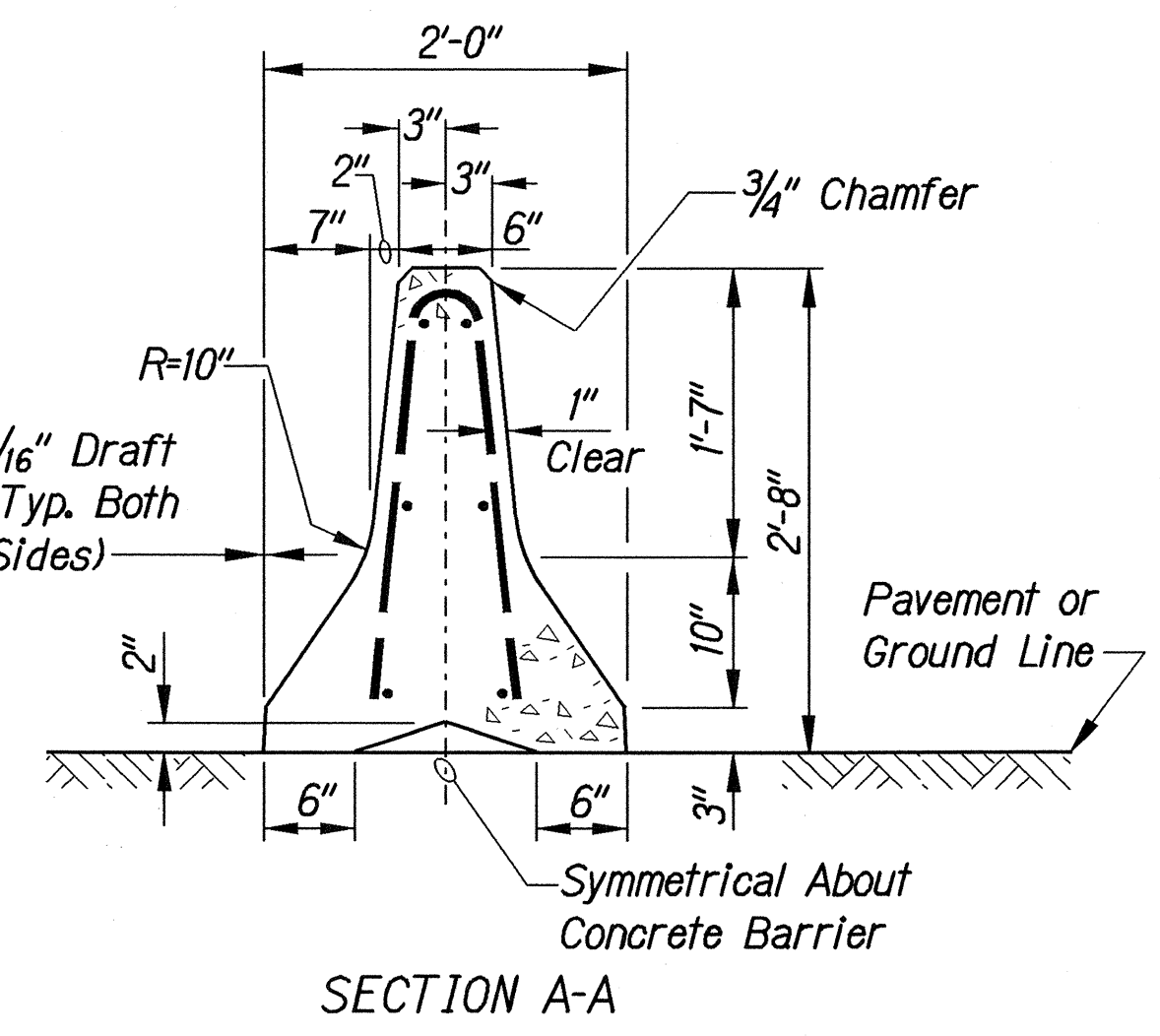
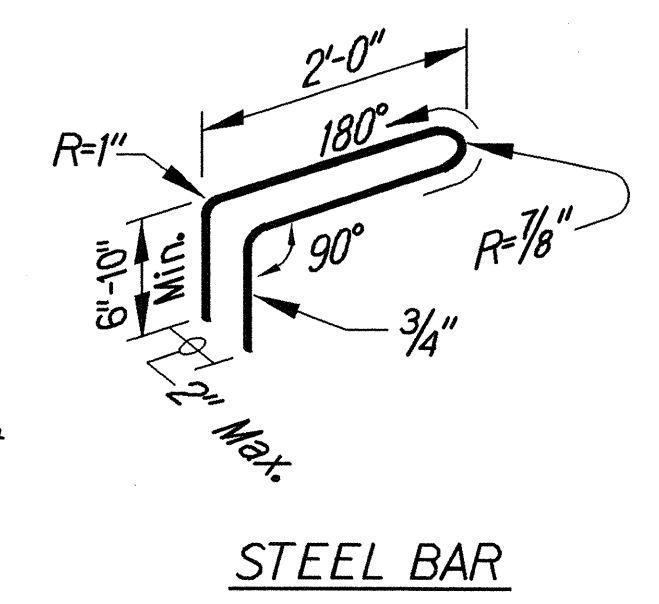
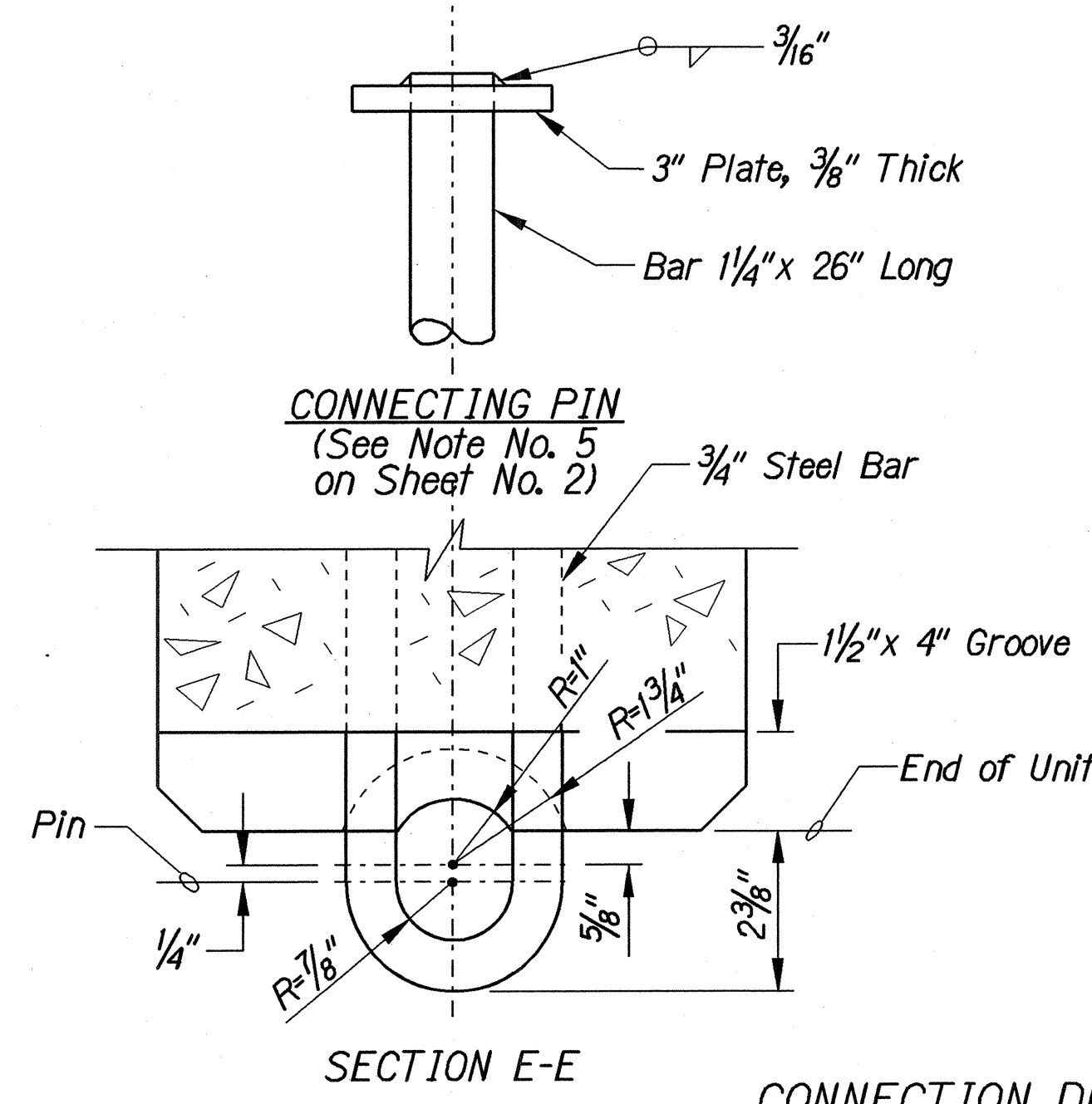
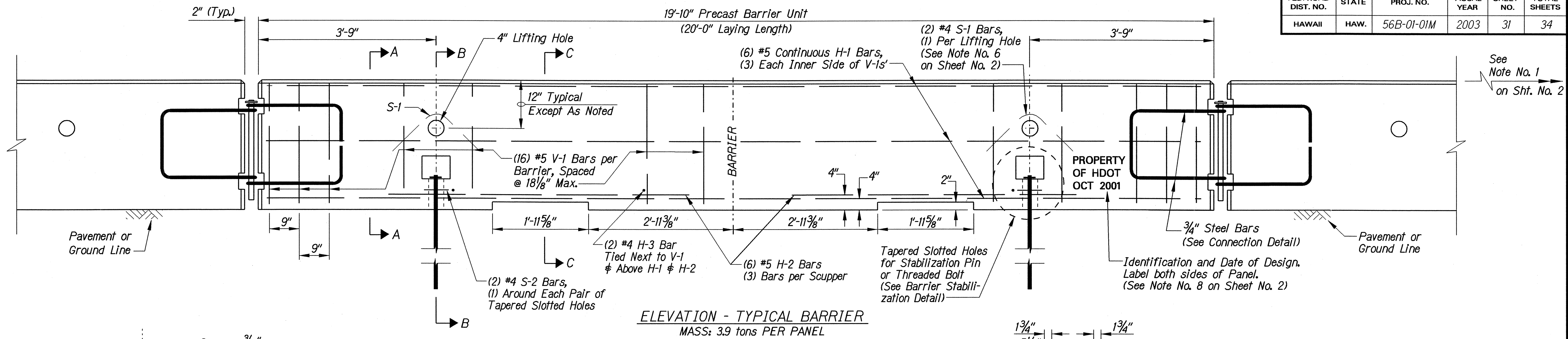
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE PHYSICAL BARRIER

KUHIO HIGHWAY RESURFACING
Vicinity of Kealia
Project No. 56B-01-01M
Scale: As Shown Date: April, 2003
SHEET No. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56B-01-01M	2003	31	34



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE BARRIER

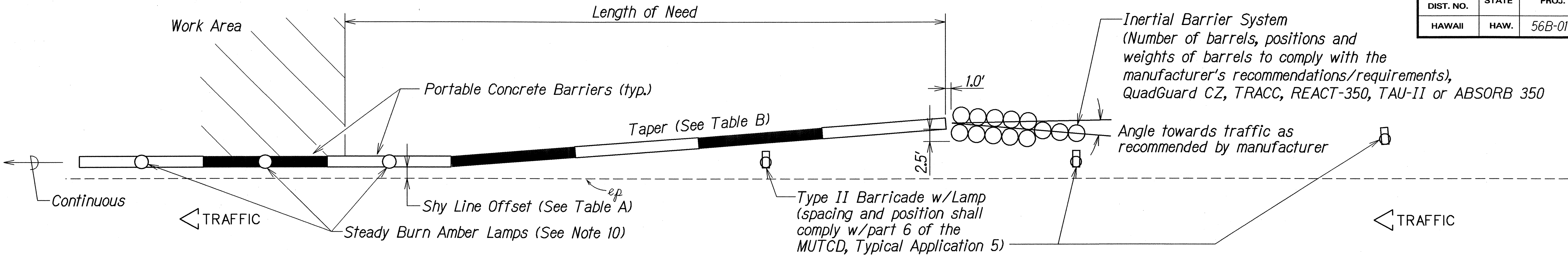
KUHIO HIGHWAY RESURFACING
Vicinity of Kealia
Project No. 56B-01-01M

Scale: Not to Scale Date: April, 2003

SHEET No. 1 OF 2 SHEETS

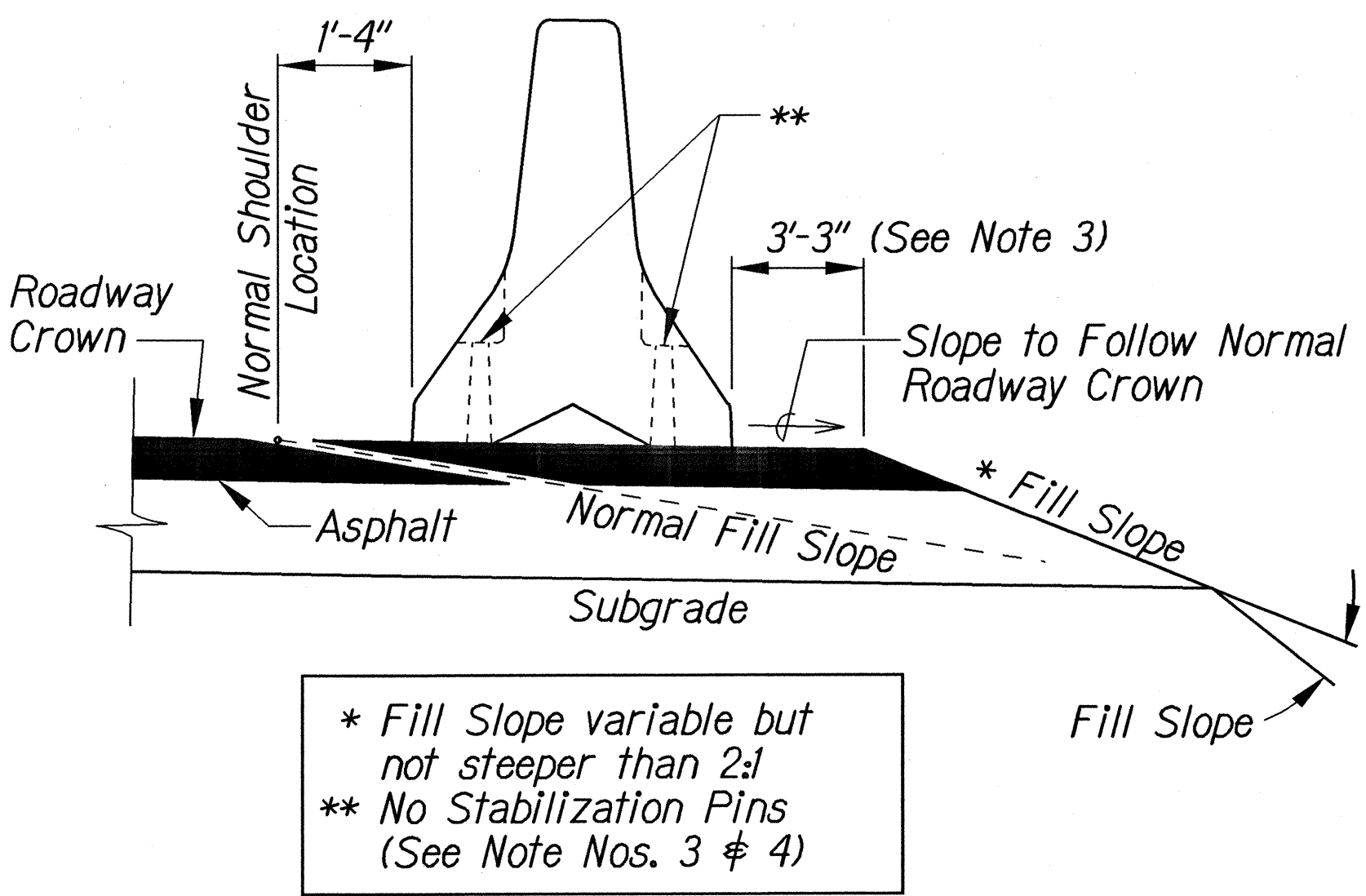
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56B-01-01M	2003	32	34



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

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)	



STANDARD INSTALLATION
(See Note No. 1)

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".

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.
- 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 the various contract items.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE BARRIER

KUHIO HIGHWAY RESURFACING
Vicinity of Kealia
Project No. 56B-01-01M
Scale: Not to Scale Date: April, 2003