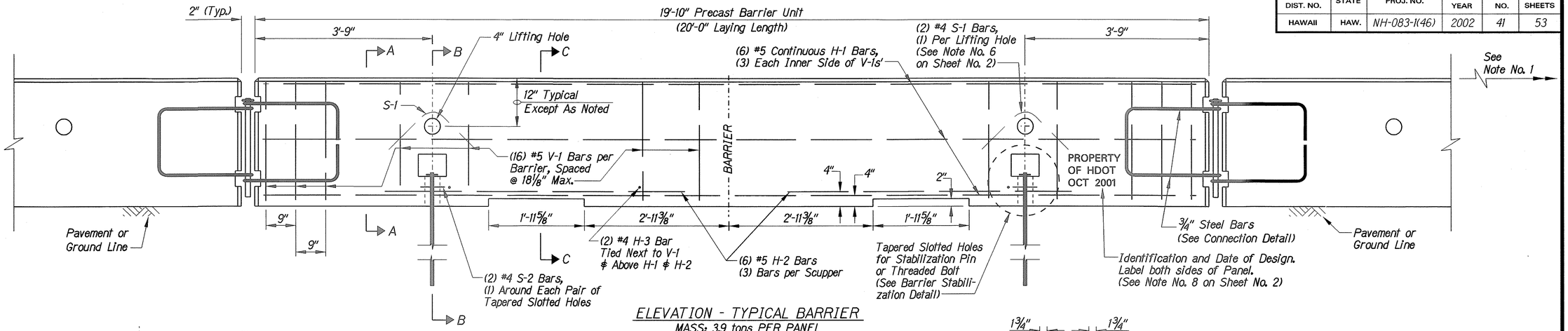
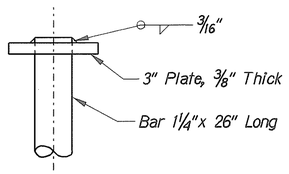
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | NH-083-1(46) | 2002 | 41 | 53 |

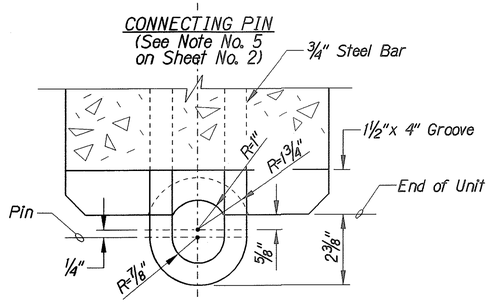



## ELEVATION - TYPICAL BARRIER

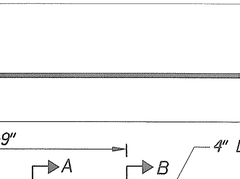
MASS: 3.9 tons PER PANEL



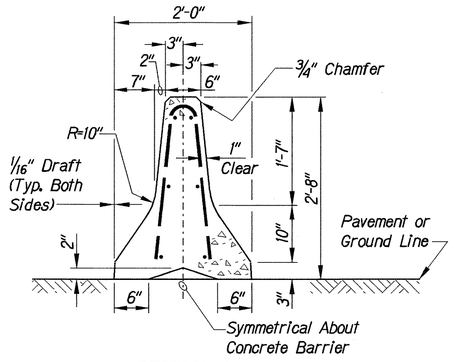

CONNECTING PIN
(See Note No. 5
on Sheet No. 2)



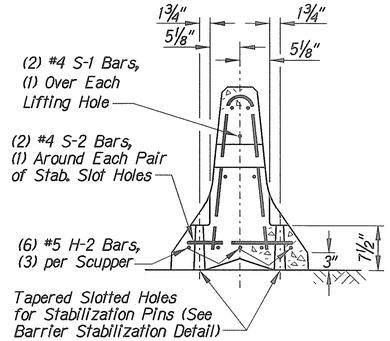

SECTION E-E



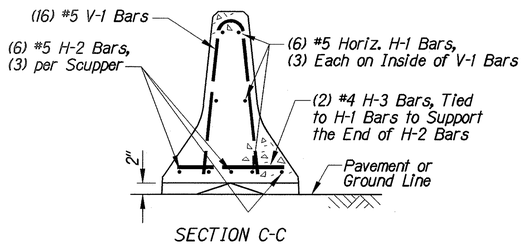

STEEL BAR




SECTION A-A



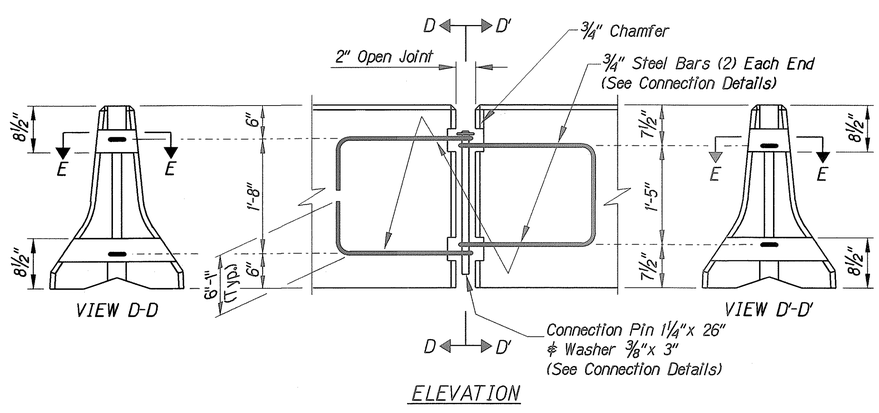

SECTION B-B



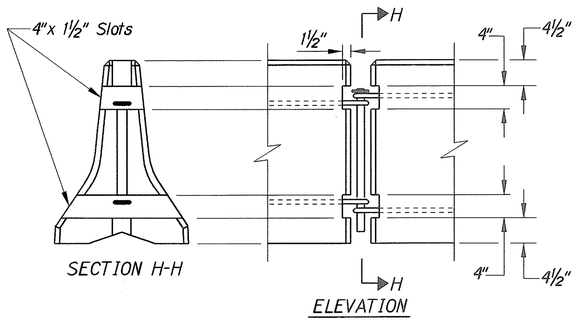

SECTION C-C

## CONNECTION DETAILS

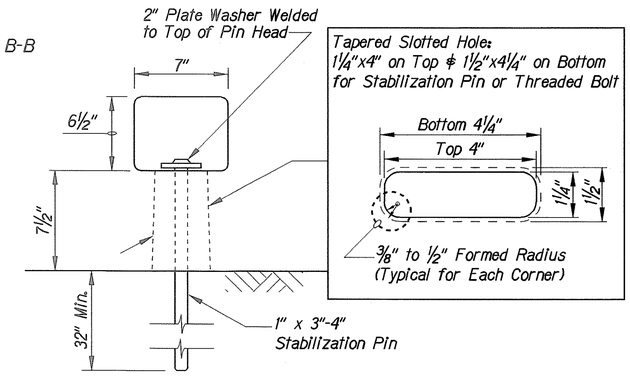
(See Note No. 5 on Sheet No. 2)




ELEVATION




BARRIER REMOVAL SLOT DETAILS




BARRIER STABILIZATION DETAIL

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

| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
|---|---|---|
| | DRAWN BY X | |
| | TRACED BY | |
| NOTE BOOK | DESIGNED BY X | |
| | QUANTITIES BY | |
| N.___ X.dgn | CHECKED BY | |

rdi_us12_home_traffic_stdplan_pending_portableconbarr_robertl.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# PORTABLE CONCRETE BARRIER

KAMEHAMEHA HIGHWAY
DRAINAGE IMPROVEMENTS
Vicinity of Kahuku Hospital and
Replacement of Kii Bridge
Federal Aid Project No. NH-083-1(46)

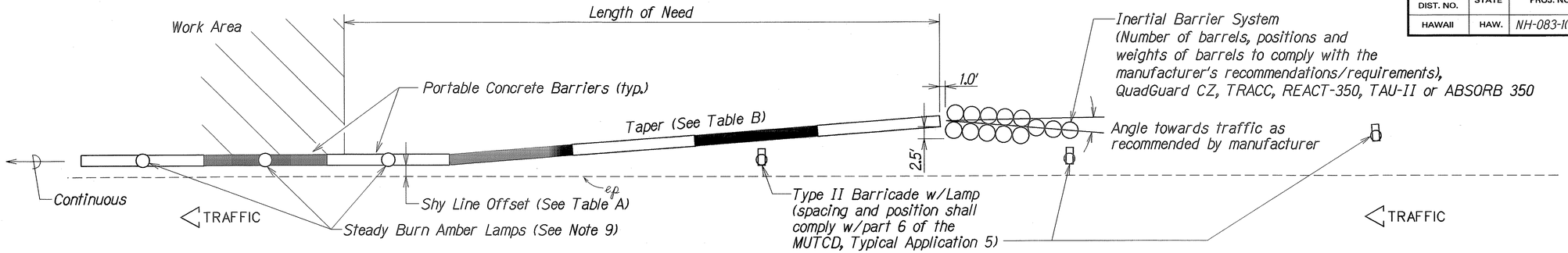
Not To Scale — Date: April 2002

SHEET No. 1 OF 2 SHEETS



DDS-Highway Design Section

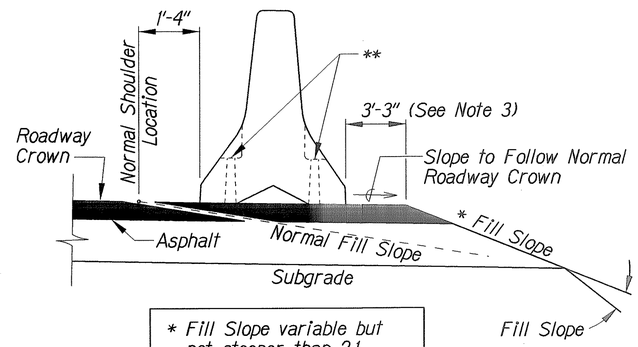
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | NH-083-1(46) | 2002 | ADD.42 | 53 |




## 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) | 2'-5", 90°, Lifting Hole, R=3 3/8" |
| S-2 | Horizontal Around Slots Between V-1's @ Scuppers | #4 | (2) | 5'-1" Bar w/(4) 1 1/2"R Bends & Min. 1'-0" Overlap; R=1 1/2", Slots, 7", 1'-6", 1" Min. Clear to Bar |
| V-1 | Vertical in Barrier (3) Each End & (2) at Each Scupper | #5 | (16) | Total Length 4'-9"; R=2 3/16", 12°, 9 1/2", 4 3/8", 2'-1 3/8" |




* Fill Slope variable but not steeper than 2:1
** No Stabilization Pins (See Note Nos. 3 & 4)

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:

1. For end treatment, layout, crash cushions and where needed see Project Plans or Special Provisions.
2. Barriers must be pinned together and cannot exceed the Table of Maximum Tapers.
3. 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.
4. 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.
5. A 4" white PVC sleeve may be used to form the lifting hole and if used the sleeve is to be left in place.
6. Concrete shall be Class A and reinforcing shall be Grade 60.
7. 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.
8. 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.
9. 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.

| DATE | REVISION |
|---|---|
| 4/30/02 | Revise Reference No. for Steady Burn Lamps per Addendum No. 2. |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PORTABLE CONCRETE BARRIER**

KAMEHAMEHA HIGHWAY
DRAINAGE IMPROVEMENTS
Vicinity of Kahuku Hospital and Replacement of KII Bridge
Federal Aid Project No. NH-083-1(46)

Not To Scale — Date: April ;2002

SHEET No. 2 OF 2 SHEETS

ADD.42

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY X | TRACED BY | DESIGNED BY X | NOTE BOOK X,X | No. x.dgn | QUANTITIES BY | CHECKED BY | DATE X

*I:\dl\usr2\lyne\traffic\stdplan\pending\prtbconbar\pcbarr2.dgn*