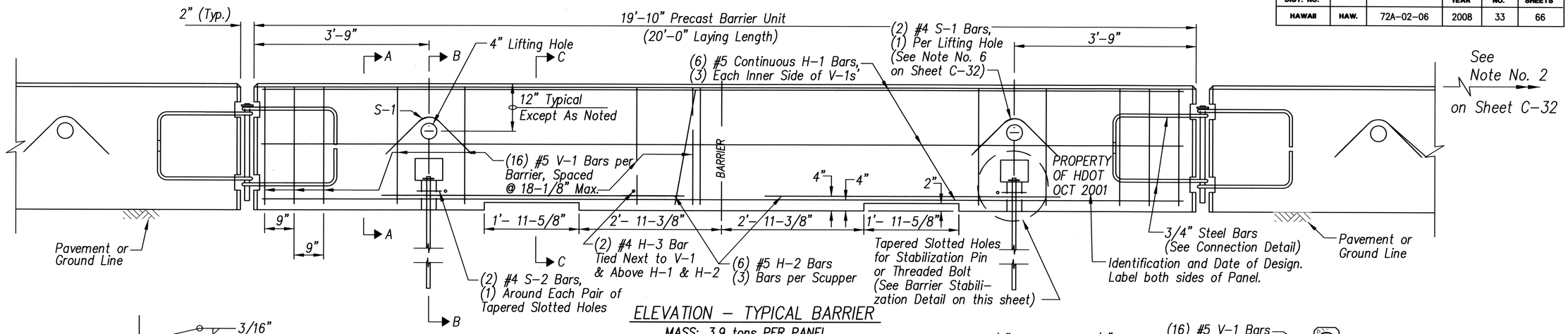
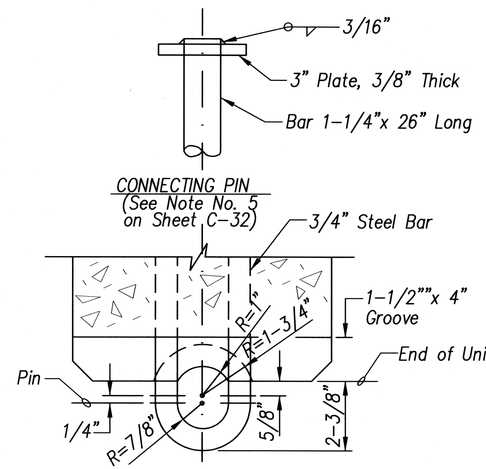
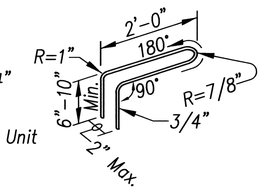
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-02-06	2008	33	66

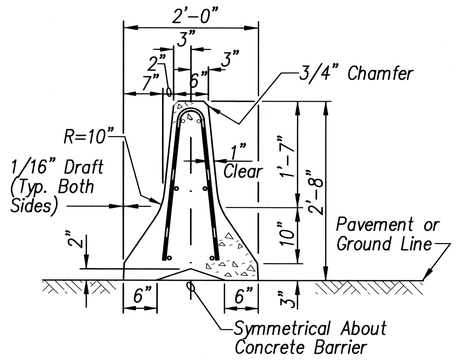


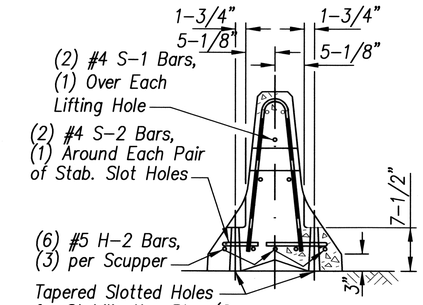
ELEVATION – TYPICAL BARRIER

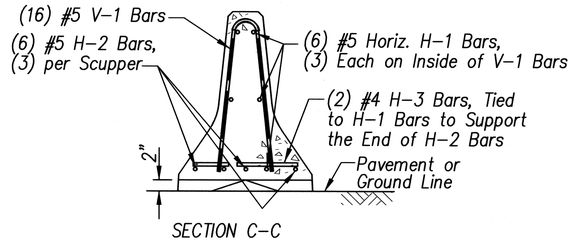
MASS: 3.9 tons PER PANEL





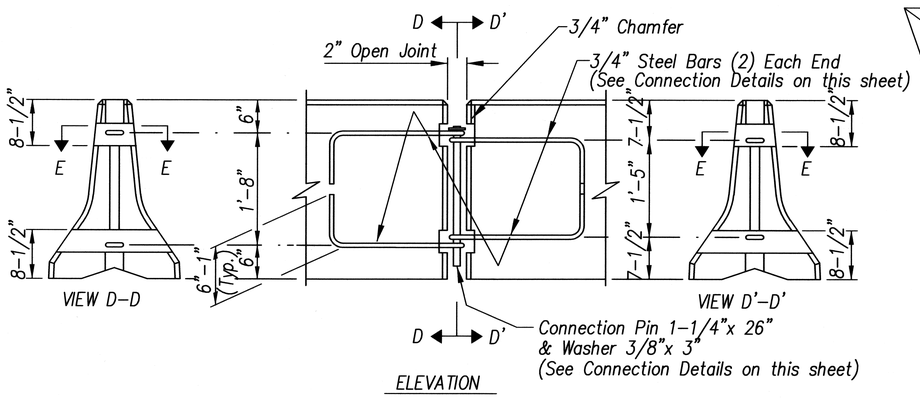


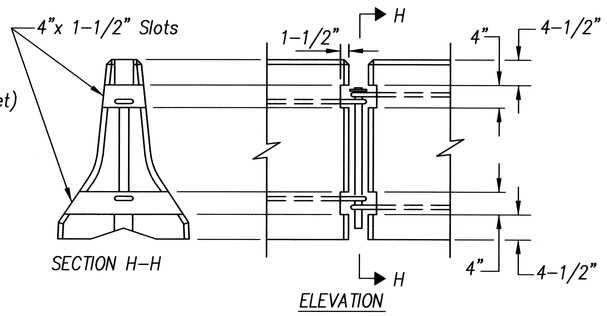




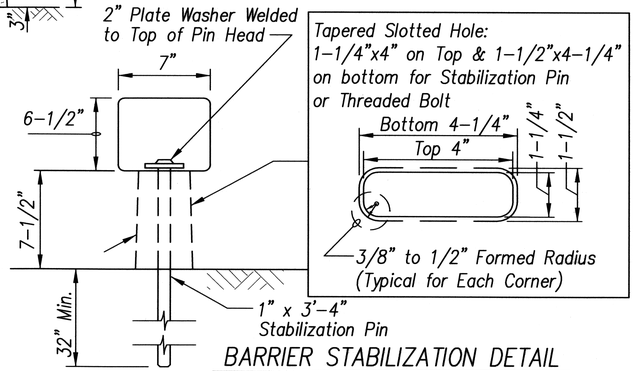
CONNECTION DETAILS

(See Note No. 5 on Sheet C-32)





BARRIER REMOVAL SLOT DETAILS



BARRIER STABILIZATION DETAIL

(See Note Nos. 3 & 4 on Sheet C-32)

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTE BOOK
No.

KENNETH O. NAGAI
LICENSED PROFESSIONAL ENGINEER
No. 3265-C
HAWAII, U.S.A.
SIGNATURE
APRIL 30, 2010
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

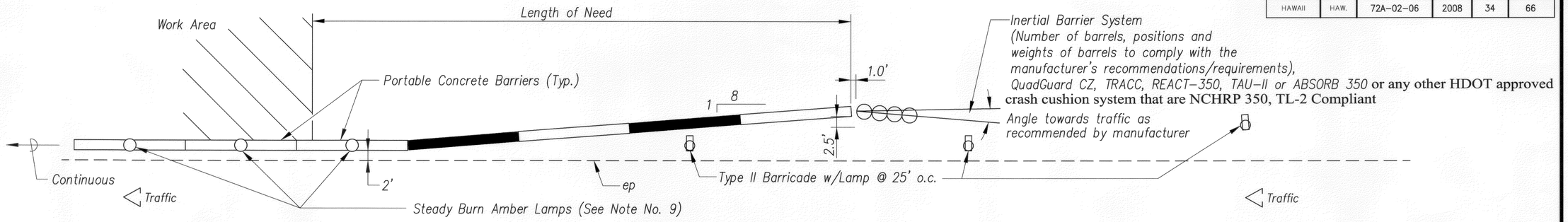
PORTABLE CONCRETE BARRIER DETAILS – 1

KALANIANAOLE HIGHWAY MEDIAN IMPROVEMENTS VICINITY OF OLOMANA GOLF COURSE PROJECT NO. 72A-02-06

SCALE: Not to Scale DATE: June 2008

SHEET No. C-31 OF 43 SHEETS

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-02-06	2008	34	66



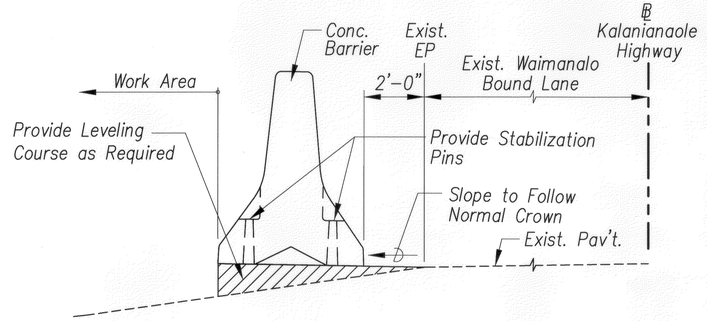
TYPICAL DETAIL – PORTABLE CONCRETE BARRIER END TREATMENT

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", Lifting Hole, 90°, R=3-3/8"
S-2	Horizontal Around Slots Between V-1's @ Scuppers	#4	(2)	R=1-1/2", Slots, 7", 5'-1" Bar w/(4) 1-1/2"R Bends & Min. 1'-0" Overlap, 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"

NOTES:

1. The Contractor shall furnish, install, maintain, relocate, and subsequently remove required Inertial Barrier Systems and any appurtenances for end treatment not furnished by the State. Inertial Barrier Systems and end treatment appurtenances will not be paid for separately and will be considered incidental to pay items 651.0100 and 651.0150.
2. For end treatment, layout, crash cushions and where needed see Sheet C-30.
3. Barriers must be pinned together and cannot exceed the Maximum Taper of 8:1.
4. Barrier installations that require less than 3'-3" of outward lateral movement shall have stabilization pins.
5. 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.
6. A 4" white PVC sleeve may be used to form the lifting hole and if used the sleeve is to be left in place.
7. Concrete shall be Class A and reinforcing shall be Grade 60.
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.



TYPICAL INSTALLATION

(See Note No. 1)

LEGEND FOR AS-BUILT POSTING

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

KENNETH O. NAGAI LICENSED PROFESSIONAL ENGINEER No. 3265-C HAWAII, U.S.A.

SIGNATURE

APRIL 30, 2010

EXPIRATION DATE OF LICENSE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE BARRIER DETAILS – 2

KALANIANAOLE HIGHWAY MEDIAN IMPROVEMENTS VICINITY OF OLOMANA GOLF COURSE PROJECT NO. 72A-02-06

SCALE: AS NOTED DATE: June 2008

SHEET No. C-32 OF 43 SHEETS

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