FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	21	280

GENERAL NOTES FOR TRAFFIC CONTROL PLAN (STATE R/W):

1. Only Traffic Control Plans for major construction activities are shown. The Contractor shall develop his own Traffic Control Plans in accordance with Section 645 of the Special Provisions for activities to complete work not covered by the Traffic Control Plans. The Contractor shall submit the Traffic Control Plans to the Engineer for acceptance. Payment for development and implementation of the Traffic Control Plans shall be included in the various traffic control pay items.
2. All lane closures and traffic pattern changes (detours) not shown on the plan shall be submitted to the Engineer for acceptance in accordance with Specifications Section 645 - Work Zone Traffic Control. For restrictions on lane closures, detours, construction work during peak hours, and other requirements regarding maintaining vehicular and pedestrian traffic, see Subsection 107.03 - Working Hours; Night Work and Section 645-Work Zone Traffic Control.
3. The Contractor shall make minor adjustments at intersections, driveways, bridges, structures, etc. to fit field conditions.
4. Cones or delineators shall be extended to a point where they are visible to approaching traffic.
5. Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
6. Flaggers and/or police officers shall be in sight of each other or in direct communications at all times. Flaggers and/or police officers working at night shall be illuminated as required by the MUTCD.
7. Sign spacings (L), taper lengths (T), and spacings of cones or delineators shall be as shown in Table 1 of Section 645 in the Specifications, unless otherwise noted on HDOT's Traffic Control Plans.
8. All traffic lanes shall be minimum of 11 feet wide.
9. All signs shall be promptly removed or covered whenever the message is not applicable or not in use.
10. The backs of all signs for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
11. At the end of each day's work or as soon as the work is completed, the Contractor shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
12. Replace permanent pavement markings and traffic signs upon completion of each phase of work. Temporary pavement markings and traffic signs shall be used in the interim.
13. The locations of pavement markings, signs, and delineators used in the Traffic Control shall be as shown on the plans, Contractor's approved Traffic Control Plans, and/or as determined in the field by the Engineer.
14. Damage to signs, pavement markers, and delineators caused by the Contractor's negligence shall be repaired or replaced by the Contractor as directed by the Engineer at no cost to the State.
15. Signs for night work shall be retroreflective and shall be mounted with a Type B high intensity flasher. The sign and flasher will be paid under the various traffic control pay items.
16. The Contractor shall provide all sign supports, barrier mounting brackets, and/or posts for construction warning signs.
17. The Contractor shall furnish, install, maintain, and remove all traffic control devices shown on the traffic control plans.
18. The Traffic Control Plans Schedule on this sheet shall govern when each type of traffic control plan is utilized.

TRAFFIC CONTROL PLANS SCHEDULE

Type	Time	Traffic Control Plans
Long-term closure of one lane for extended period of time	Greater than 5 days	Shts. 5, 6 & 9
Short-term closure of one lane	Overnight and up-to 5 days	Shts. 7, 8 & 9
Short-term closure of one lane	Less than a day and not overnight	Shts. 7, 8 & 9

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

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

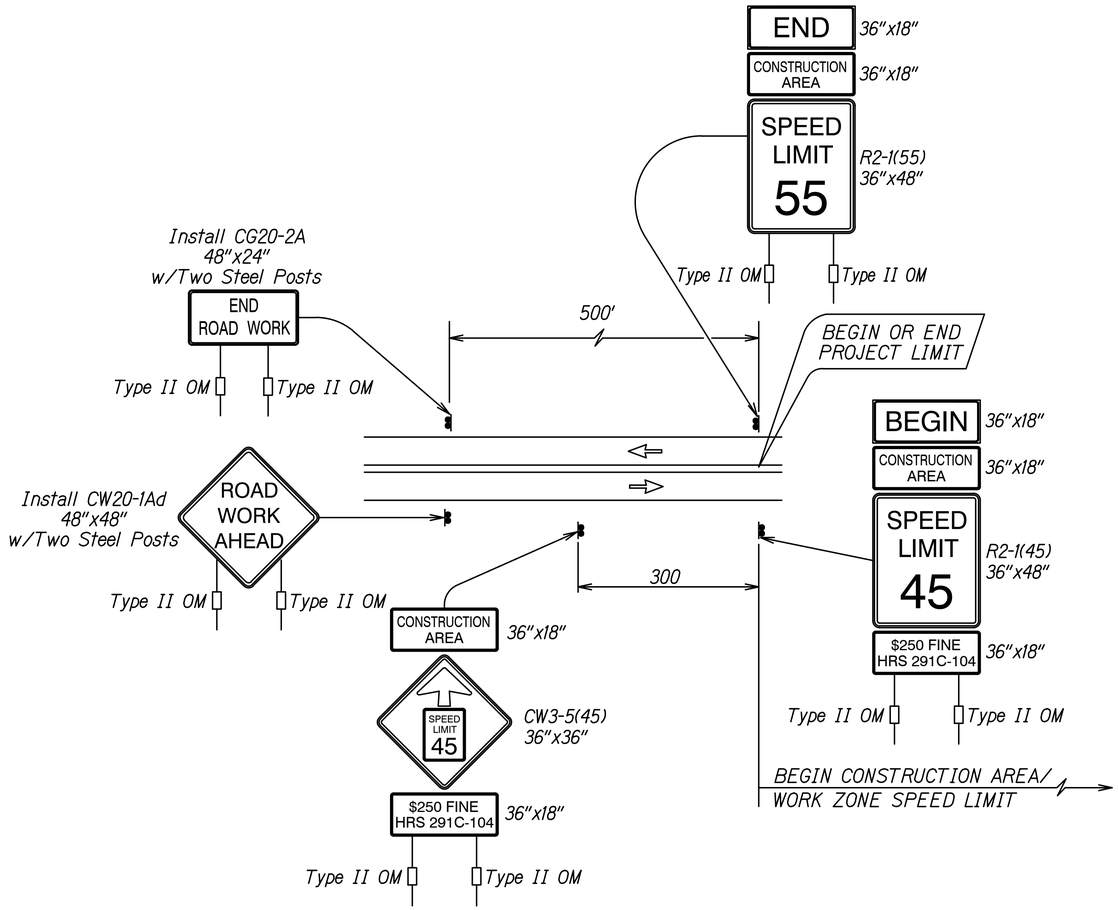
TRAFFIC CONTROL NOTES

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: None Date: Oct. 2024

SHEET No. T-1 OF 9 SHEETS

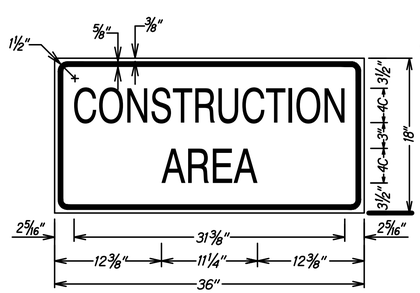
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	22	280



Work Zone Note:

1. *This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.*
2. *All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(XX)) with "CONSTRUCTION AREA" and "$250 FINE HRS 291C-104" Supplemental Signs).*
3. *Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.*
4. *Each construction warning sign and work zone speed limit assembly shall have a minimum of two (2) Type II OM. Installation of each Type II OM shall be considered incidental to Item No. 645.1000 - Traffic Control.*
5. *Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project imits shall be restored back to their original locations and configurations.*
6. *Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.*
7. *The removal and restoration of existing regulatory speed limit signs shall be considered incidental to Item No. 645.1000 - Traffic Control.*
8. *The installation, maintenance and removal of work zone speed limit signs shall be paid for under Item No. 645.1000 - Traffic Control.*
9. *The work zone speed limit signs shall be new and become the property of the Contractor.*
10. *The Contractor shall adjust the locations of work zone signs to correspond with the beginning and end of work zone limits for each phase. Relocation of work zone signs shall be considered incidental to Item No. 645.1000 - Traffic Control.*

TYPICAL DETAIL FOR CONSTRUCTION SIGNS ON TWO LANE OR MULTILANE UNDIVIDED HIGH SPEED HIGHWAY



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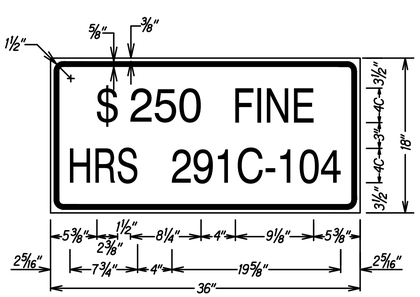

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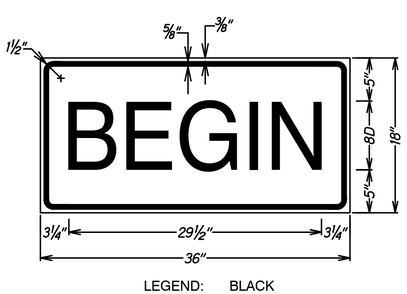

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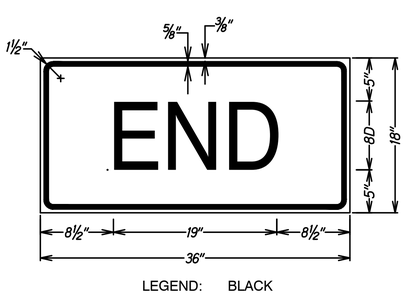


LEGEND: BLACK
BACKGROUND: ORANGE

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE — EXPIRATION DATE OF THE LICENSE: 04/30/26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

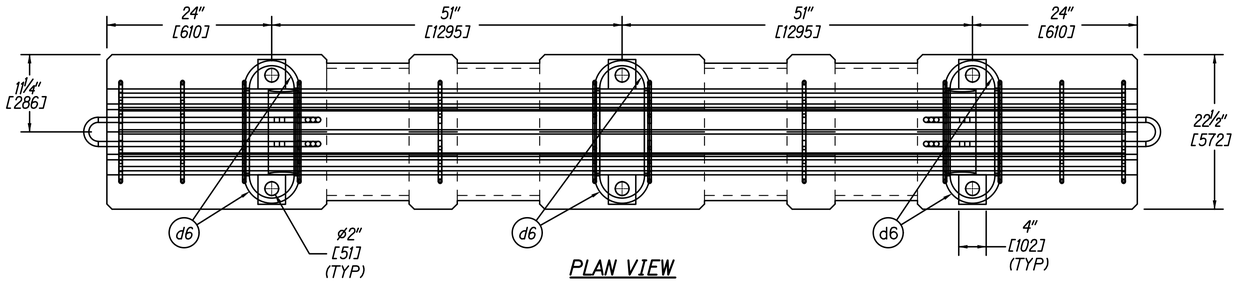
HIGH SPEED UNDIVIDED HIGHWAY
WORK ZONE SIGNING PLAN, NOTES & DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

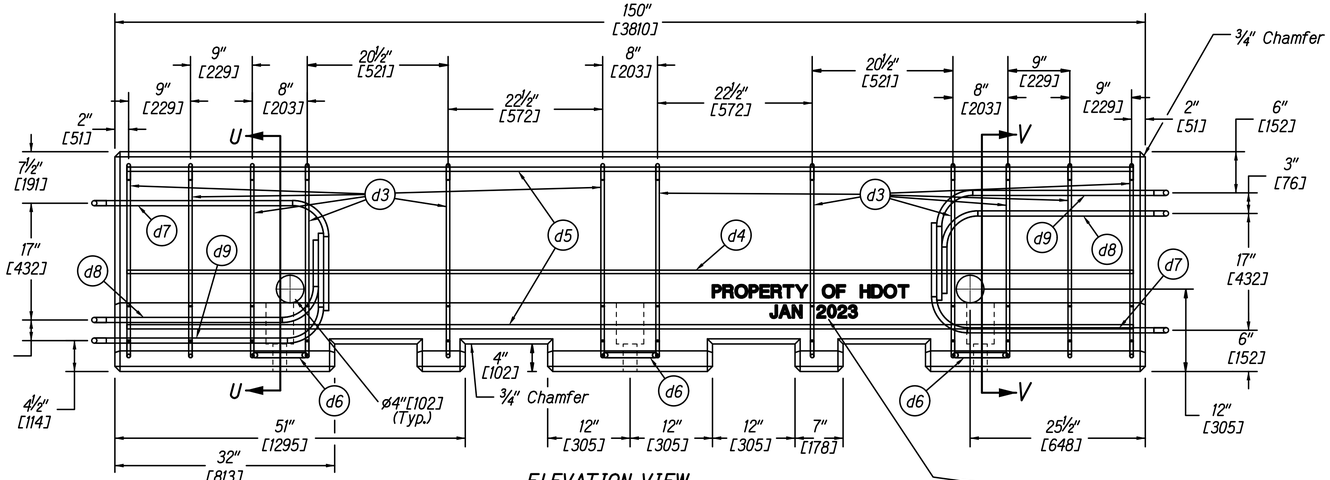
Scale: NTS — Date: Oct. 2024

SHEET No. T-2 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	23	280

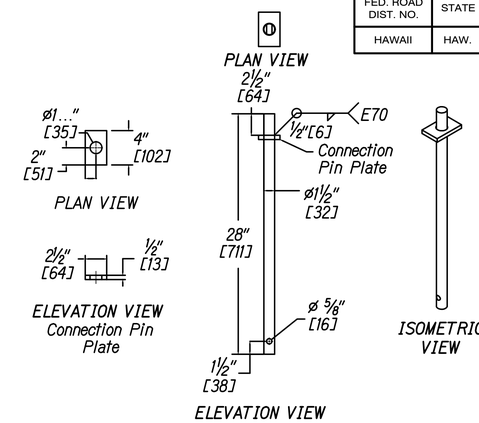


PLAN VIEW



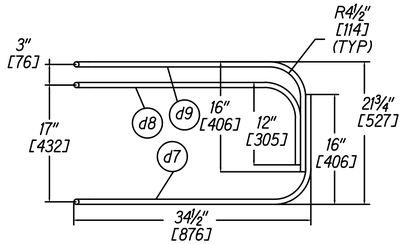
ELEVATION VIEW

Part d1

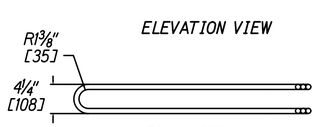


LONG CONNECTOR PIN

Part d2



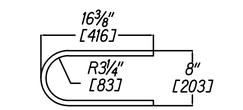
ELEVATION VIEW



PLAN VIEW

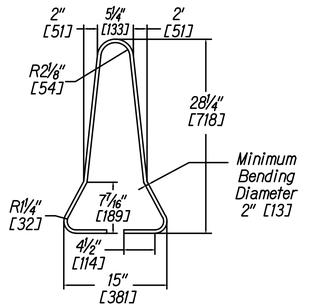
LONG CONNECTOR LOOP BAR ASSEMBLY

Part d7, d8, d9



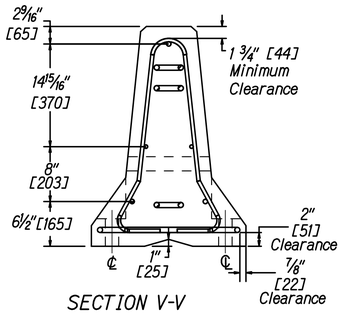
LONG ANCHOR LOOP BAR

Part d6

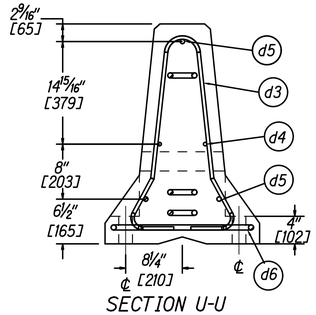


LONG FORM BAR

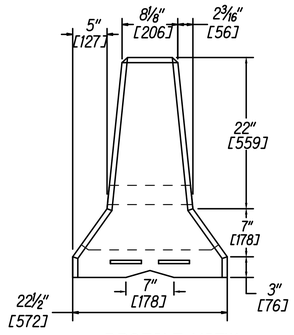
Part d3



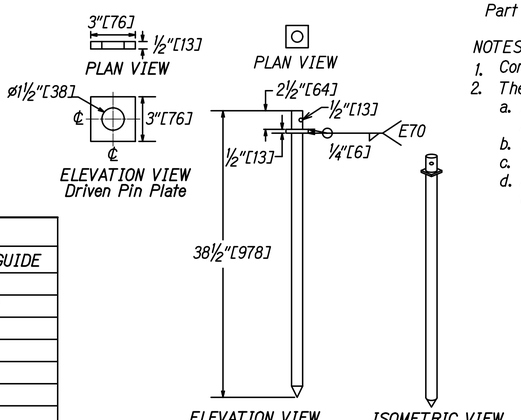
SECTION V-V



SECTION U-U



PROFILE VIEW



DRIVEN PINS FOR CONCRETE BARRIERS (FRS01)

NOTES:

1. Concrete has minimum 28-day compressive strength of 5000 psi (34.5 MPa)
2. The steel shall be zinc-coated (galvanized) as specified below:
   a. Zinc-coated (galvanized steel bars shall meet the requirements of ASTM A123, (coating grade 100, minimum coating - 2.30 oz. per square foot)
   b. The bars shall be fabricated prior to galvanizing.
   c. The procedures of ASTM A143 shall be observed as applicable.
   d. All zinc coating damage due to fabrication or handling shall be repaired with a zinc dust (zinc-rich) formulation in accordance with ASTM A780.

BILL OF MATERIALS

ITEM NO.	QTY.	DESCRIPTION	MATERIAL SPECIFICATION	HARDWARE GUIDE
d1	11*	Portable Concrete Barrier	min f'c=5000 psi [34.5 MPa]	SWC09
d2	10*	1 1/4" [32] Dia., 28" [711] Long Connector Pin	ASTM A36	FMW02
d3	132	1/2" [13] Dia., 72" [1829] Long Form Bar	ASTM A615 Grade 60	_
d4	22	1/2" [13] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Grade 60	_
d5	33	5/8" [16] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Grade 60	_
d6	66	3/4" [19] Dia., 36" [914] Long Anchor Loop Bar	ASTM A615 Grade 60, Galvanized	_
d7	22	3/4" [19] Dia., 102" [2591] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60, Galvanized	_
d8	22	3/4" [19] Dia., 91" [2311] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60, Galvanized	_
d9	22	3/4" [19] Dia., 101" [2565] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60, Galvanized	_

*Note: See Note 7 on Sheet 2 of 2

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE — EXPIRATION DATE OF THE LICENSE: 04/30/26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

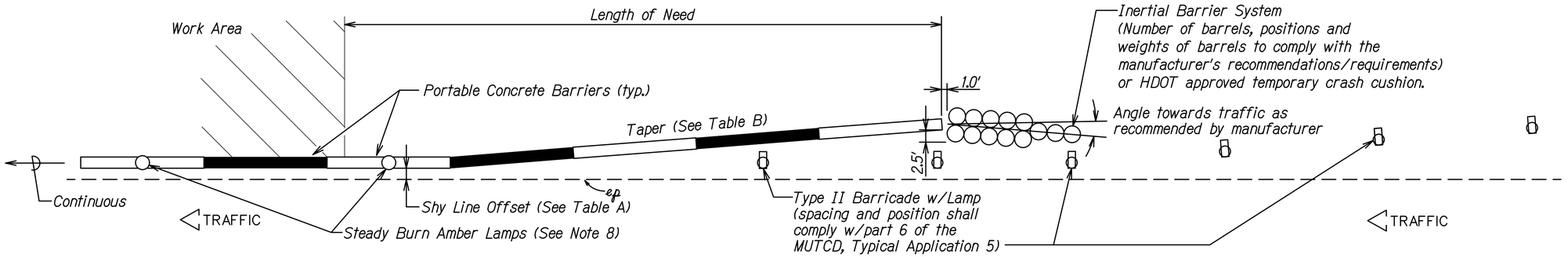
F-SHAPE PORTABLE CONCRETE BARRIER

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: — Date: Oct. 2024

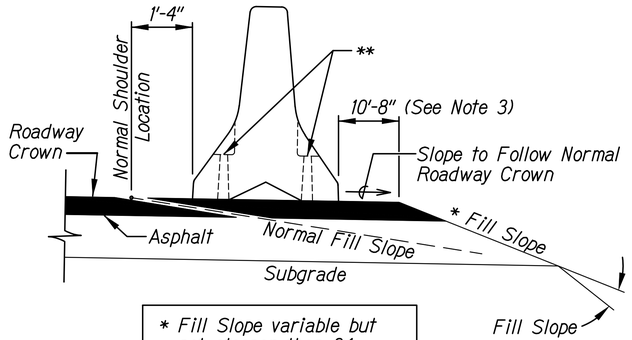
SHEET No. T-3 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	24	280



TYPICAL DETAIL - PORTABLE CONCRETE BARRIER END TREATMENT

Scale: 1" = 10'-0"



* 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 10'-8" of outward lateral movement if the barrier is struck. Barrier installations that require less than the 10'-8" of outward lateral movement should have stabilization pins.
4. ASTM A-36 steel shall be used for the connection pin and stabilization pins.
5. Concrete shall be 5,000 psi and reinforcing shall be as indicated in the Bill of Materials (See Sheet No. 1 of 2).
6. Identification and date of design will be as follows:

   PROPERTY OF HDOT
   JAN 2023

   Text letters and numbers shall be shown as on Sht. No. 1 "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.
7. Minimum tangent length for portable Concrete Barrier System shall be 11 units. This minimum does not include the required system length of the Inertial Barrier System, nor does it consider Length of Need (LON). LON shall comply with the latest edition of the AASHTO Roadside Design Guide.
8. Install steady burn amber lamps on portable concrete barriers @ approximately 25' o.c. Installing, maintaining and removing each steady burn amber lamp including maintenance shall be considered incidental to applicable portable concrete barrier items.
9. A 4" white PVC sleeve may be used to form the lifting hole and if used, the sleeve is to be left in place.

ORIGINAL PLAN
NOTE BOOK
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No. 7269-C
HAWAII, U.S.A.

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04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

F-SHAPE PORTABLE CONCRETE BARRIER

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: Date: Oct. 2024

SHEET No. T-4 OF 9 SHEETS