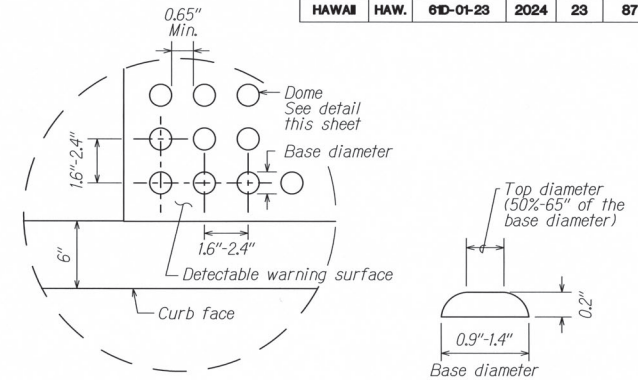


## CURB RAMP NOTES

1. These typical details are intended as curb ramp guidelines for design and construction.
2. A 2% maximum cross slope shall be maintained in the direction of pedestrian traffic.
3. Subject to field conditions, the Engineer shall determine the final location of curb ramps.
4. All pullboxes shall be installed away from the curb ramp and within the sidewalk/unpaved area to the maximum extent feasible.
5. Where necessary, existing pullboxes, handholes, manholes, etc. shall be adjusted to match curb ramp grade. Adjustments shall not be paid for separately but shall be considered incidental to the various curb ramp items unless indicated otherwise.
6. Transitions from ramps to gutters and roadways shall be flush.
7. Curb ramps and sidewalks shall be constructed to eliminate ponding to the maximum extent feasible.
8. The pedestrian push button shall meet operational and reach requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG):
  - a. Forward Reach. The maximum height for forward reach shall be 48".
  - b. Side Reach. The maximum height for side reach shall be 48".
  - c. Operation. Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls shall be no greater than 5 lbs.
9. The maximum slopes of adjoining gutters or road surface immediately fronting the curb ramp shall not exceed 5% for Type A, B, C, D, E, and Combination ramps. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall all be the same level.
10. There shall be a 30"x48" level ground surface (2% max. cross slope, both directions) for a forward or side approach, as appropriate, to a pedestrian push button.
11. Construction joints are required to join curb ramps with sidewalks.
12. Unless otherwise noted, new gutters are required as shown.
13. All curb ramps shall be reinforced with 6x6 W1.4/W1.4 welded wire fabric.
14. Surface of sidewalks and curb ramps shall be firm, stable, and slip-resistant. This includes the surfaces of pullboxes, valve covers, manhole covers, etc.
15. Bed course material is required for curb ramps, sidewalks, and gutters.
16. All sidewalks shall provide a minimum clear width of 3'-0" (excluding curb) for pedestrian circulation. If this cannot be met, a minimum 32-inch clear width is allowed for a distance of 24-inches.
17. Passing spaces along new sidewalks with 5' clear width or less shall be provided at a maximum of 200' intervals as required by ADA guidelines. The passing area shall be a minimum 5' wide by 5' long as feasible.
18. If possible, install utility poles, fire hydrants, light poles, sign posts, pullboxes, etc. off of sidewalk but within the right-of-way.
19. Objects protruding from utility poles and walls adjacent to the sidewalks (i.e. wall mounted fire hydrants, telephones, meters on poles, etc.) shall be mounted to meet the current Americans with Disabilities Act Accessibility Guidelines (ADAAG) and will be subject to Engineer's approval.
20. If a curb ramp is not constructed according to the plans, the Contractor shall reconstruct the curb ramp at no cost to the State. Construction tolerance for Portland Cement Concrete shall be based on 1/4 inch per 10 ft. ( $\pm 0.2\%$ ). Remedial measures will not be accepted.
21. Additional information is available from:
  - a. Americans with Disabilities Act Accessibility Guidelines (ADAAG), Jan. 1998, as amended through September 2002, The Access Board.
  - b. Accessible Rights-of-Way: A Design Guide, Nov. 1999, The Access Board.
  - c. Designing Sidewalks and Trails for Access, Part 1, July 1999, FHWA.
  - d. Designing Sidewalks and Trails for Access, Part 2, Sept. 2001, FHWA.
22. No pullboxes, handholes, manholes, etc. shall be allowed if they contain any openings  $> 1/2"$  and are of potentially slippery surface.
23. Differences at joints, place breaks, asphalt concrete to concrete interface, etc. shall not exceed 1/4".



ENLARGEMENT

DOME SECTION

### NOTES:

1. Detectable warnings shall be 24 inches in the direction of travel and extend the full width of the curb ramp or flush surface (does not include flares).
2. Truncated domes shall have a diameter of 0.9 to 1.4 inch at the bottom, a diameter of 50%-65% of the base diameter at the top, a height of 0.2 inch and a center-to-center spacing of 1.6 to 2.4 inches measured along one side of a square arrangement.
3. Domes shall be aligned on a square grid in the predominant direction of travel to permit wheels to roll between the domes.
4. There shall be a minimum of 70 percent contrast in light reflectance between the detectable warning and an adjoining surface, or the detectable warning shall be "safety yellow".
5. The material used to provide visual contrast shall be an integral part of the detectable warning surface.
6. The detectable warning shall be located so that the edge nearest the curb line or other potential hazard is 6 to 8 inches from the curb line.

## DETECTABLE WARNING DETAIL

Not to Scale

26-33(23)

	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>TYPICAL CURB RAMP          NOTES &amp; DETAILS</b> KAILUA ROAD INTERSECTION IMPROVEMENTS Vicinity of Ulukou Street and Ulukou Drive Project No. 610-01-23
	Scale: N/A Date: DEC, 2023

APPROVED:

CHEF, CIVIL ENGINEERING BRANCH, D.P.P.  
(FOR CONSTRUCTION IN CITY RIGHT-OF-WAY ONLY)

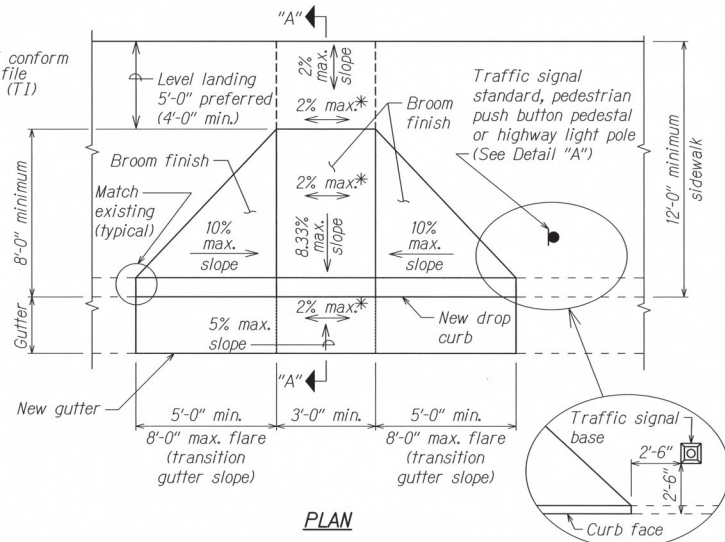
DATE:

SHEET No. 1 OF 3 SHEETS

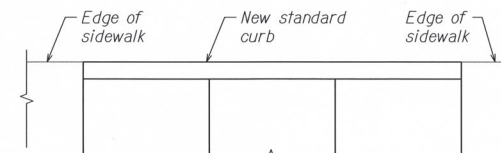
DESIGNED BY	DATE
CHECKED BY	
IN CHARGE BY	
NOTED BY	
REVIEWED BY	
APPROVED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	61D-01-23	2024	24	87

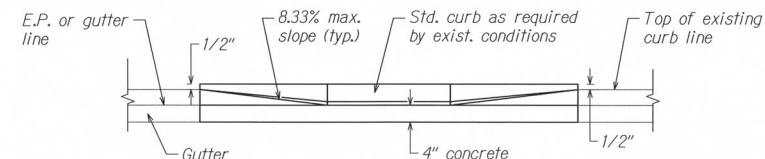
\* If Roadway slope >2% conform to roadway slope and file Technical Infeasibility (TI) Statement



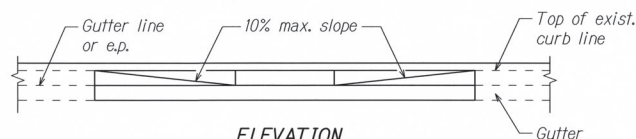
PLAN



PLAN

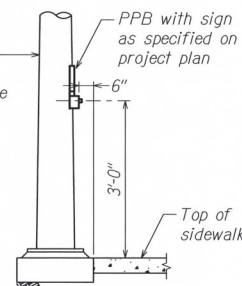


ELEVATION



ELEVATION

Type I, II, III TSS, pedestrian push button pedestal or hwy. light pole



DETAIL "A"

#### NOTE:

This detail can be used in situations where the edge of sidewalk cannot be flush with the face of (back) curb due to right of way restrictions.

#### DETAIL - BACK CURB

NOT TO SCALE

APPROVED:

CERT. OR. ENGINEERING BOARD OFF. (FOR CONTRACTORS IN CIV. ENGR'G ONLY) DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/24

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

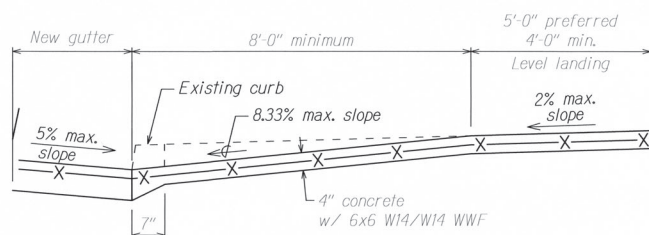
**TYPICAL CURB RAMP  
DETAILS - 1**

KAILUA ROAD INTERSECTION IMPROVEMENTS  
Vicinity of Ulukou Street and Ulumani Drive  
Project No. 61D-01-23

Scale: As Shown Date: DEC, 2023

#### CURB RAMP - TYPE "A"

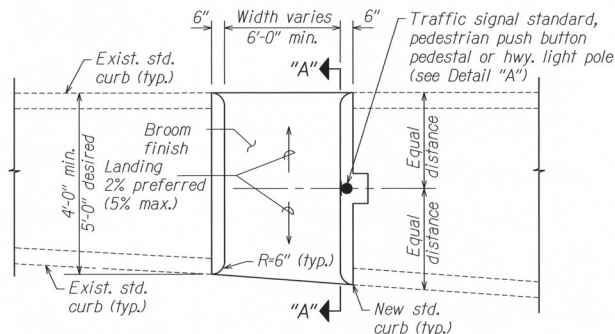
SIDEWALK WIDTH 12'-0" OR GREATER  
NOT TO SCALE



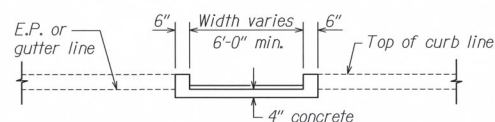
SECTION "A-A"

REVISION	DATE	BY
1	04/30/24	AM
2	04/30/24	AM
3	04/30/24	AM
4	04/30/24	AM
5	04/30/24	AM
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7	04/30/24	AM
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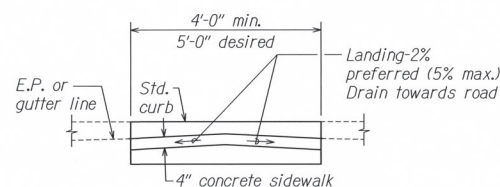
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HAWAII	HAW.	61D-01-23	2024	25	87



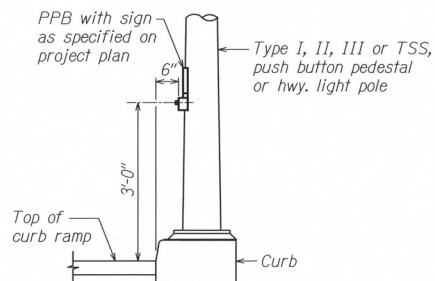
PLAN



ELEVATION

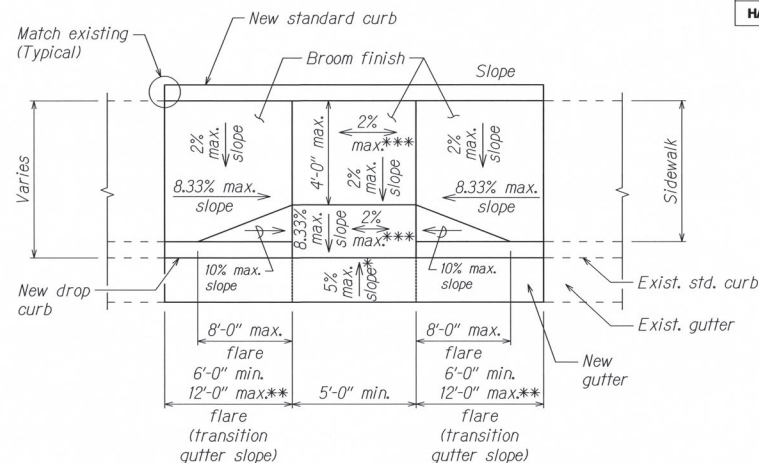


SECTION "A-A"

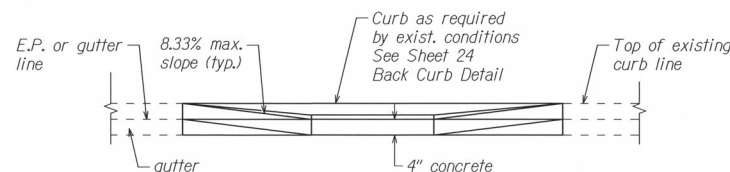


DETAIL "A"

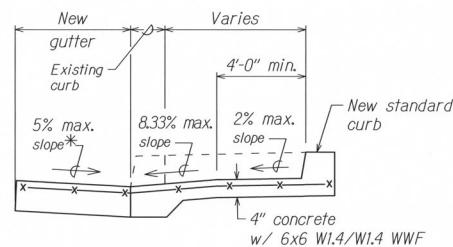
**CURB RAMP - TYPE "C"**  
USE AT MEDIAN CROSSINGS, ISLANDS  
NOT TO SCALE



PLAN



ELEVATION



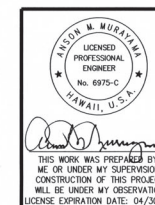
TYPICAL SECTION

**CURB RAMP - COMBINATION**  
NOT TO SCALE

- \* See Curb Ramp Note No. 9.
- \*\* The slope of the ramp shall take precedence over the length of the ramp. If the maximum slope of a ramp cannot be met within a length of 12 feet, then the slope of the ramp shall be set when the length of the ramp is set at the maximum of 12 feet.
- \*\*\* If roadway slope >2% conform to roadway slope and file a Technical Infeasibility (TI) Statement

APPROVED:

DATE: 04/30/24  
(FOR CONSTRUCTION IN CITY RIGHT-OF-WAY ONLY)



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL CURB RAMP  
DETAILS - 2**

KAILUA ROAD INTERSECTION IMPROVEMENTS  
Vicinity of Ulukou Street and Ulukou Drive  
Project No. 61D-01-23

Scale: N/A Date: DEC, 2023

SHEET No. 3 OF 3 SHEETS