CURB RAMP AND SIDEWALK 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 American 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 54".
- 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 lbf.
- 9. The maximum slopes of adjoining gutters or road surface immediately fronting the curb ramp shall not exceed 5% for Type A, D and Combination ramps and 8.33% for Type B, C, and E ramps.
- 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 slipresistant. 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 maximum 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.

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	NH-099-1(029)	2014	; 18	84

- 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 American with Disabilities Act Accessibility
- 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. (±0.2%). Remedial measures will not be accepted.
- 21. Additional information is available from:
- a) American with Disabilities Act Accessibility Guidelines (ADAAG), Jan. 1998, 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.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

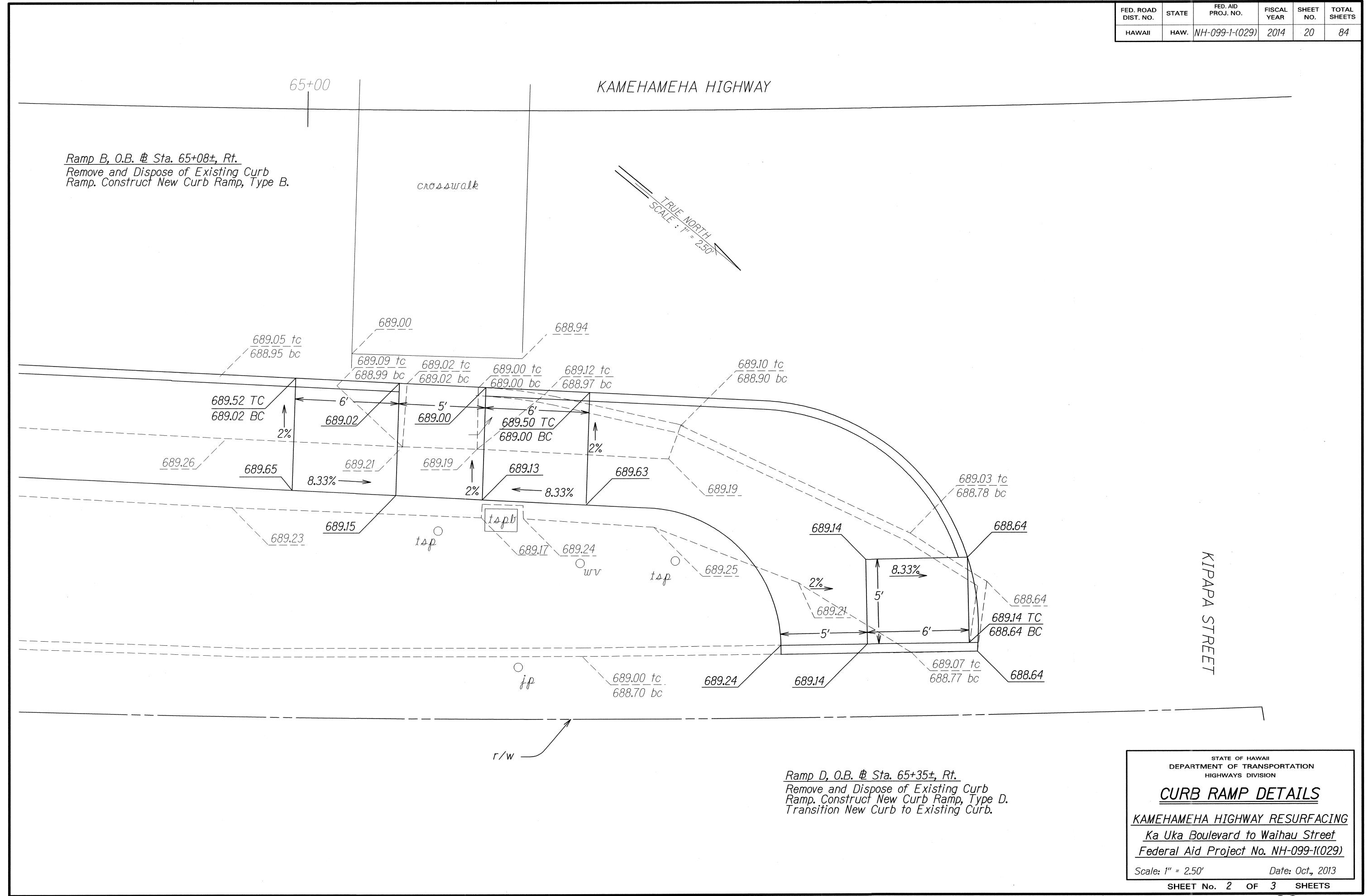
CURB RAMP AND SIDEWALK NOTES

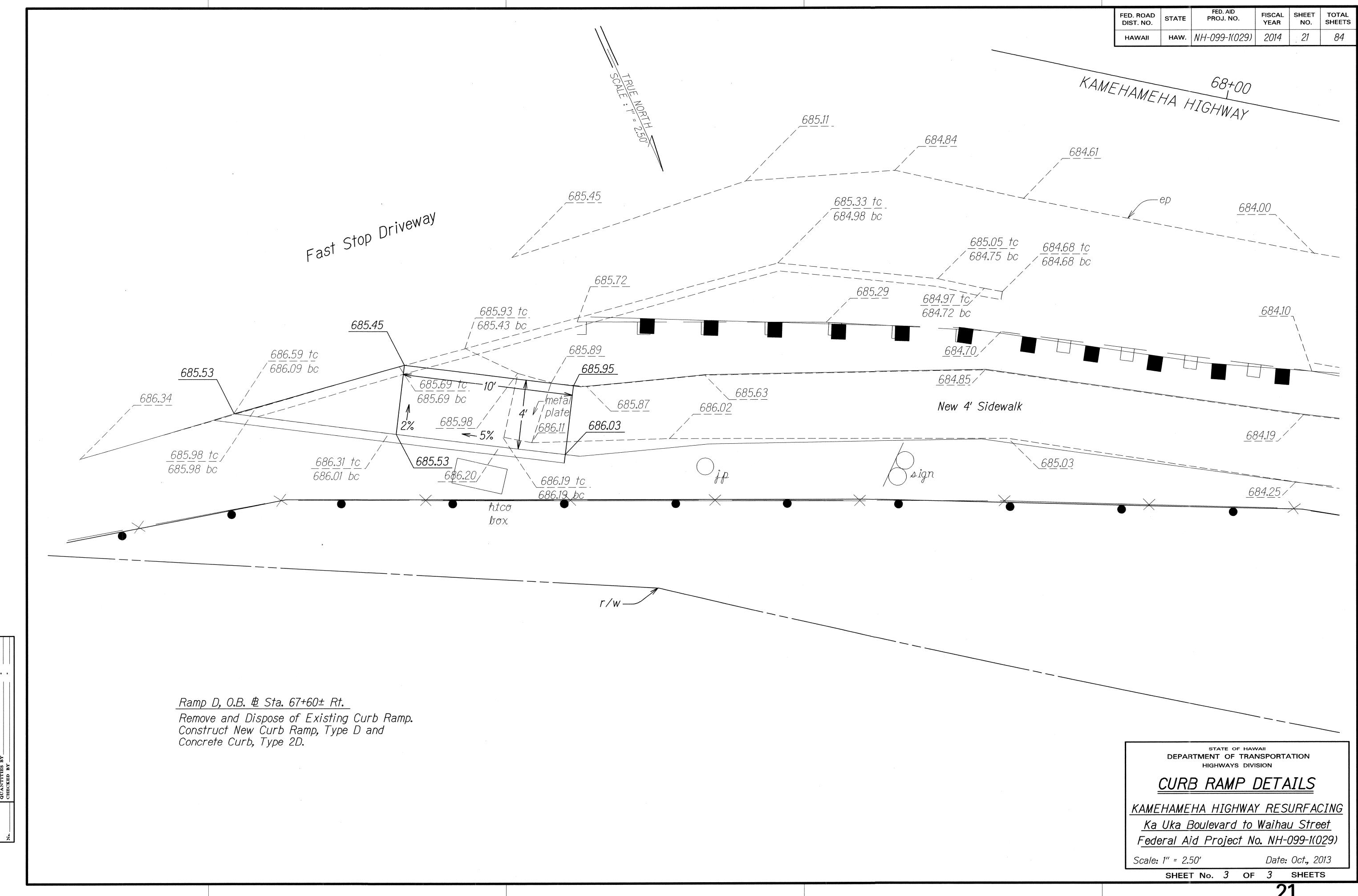
KAMEHAMEHA HIGHWAY RESURFACING Vicinity of Ka Uka Boulevard to Vicinity of Waihau Street Project No. NH-099-1(029)

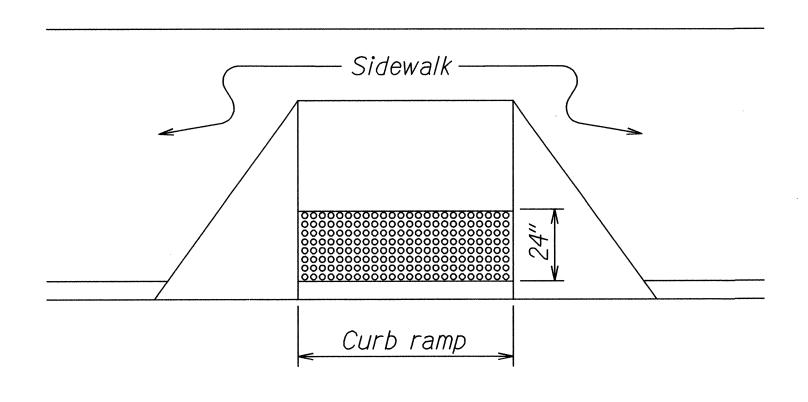
Date: Sept., 2013

of 9 SHEETS SHEET No. 1

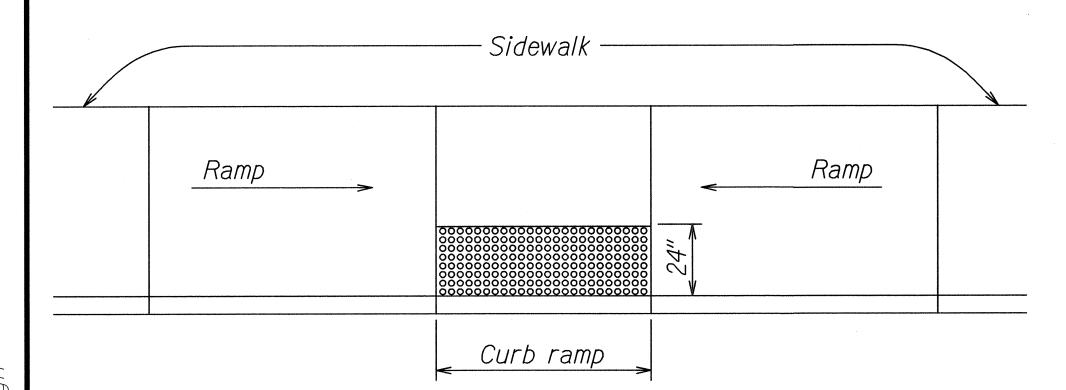
FED. AID PROJ. NO. FED. ROAD DIST. NO. FISCAL SHEET TOTAL YEAR NO. SHEETS HAW. NH-099-1(029) 2014 19 63+00 KAMEHAMEHA HIGHWAY Ramp D, O.B. ₺ Sta. 63+50± Rt. Remove and Dispose of Existing Curb Ramp. Construct New Curb Ramp, Type D. 687.16 687.43 687.35 tc 686.85 bc 687.76_tc 687.26_bc 687.86 tc 687.70 687.36 bc 688.04 tc 688.04 bc <u>686.93</u> *687.41* 686.87 687.56 tc 687.06 bc 8.33% 688.24 687.12 tc 687.12 bc *€8.33%* 5' 2% 687.47 TC <u>687.77_tc</u> 687.27_bc 688.04 TC 686.97 BC 687.62 687.54 BC chair 688.19_tc | 687.69_bc | 687.44 TC wheel chair <u>687.85_tc</u> / 687.35_bc ramp < 687.97_tc 687.32_bc <u>687.80</u>/ <u>687.44</u>/ 687.98 TC/ 688.34 688.12_tc 687.52_bc 687.48 BC 687.80 tc 687.80 bc 688.01 TC 687.51 BC <u>688.13_tc</u> 688.13_bc 688.16 tc 687.66 bc 684.45_tc 687.95_bc <u>688.75</u> tc 688.05 bc 688.86 tc 688.36 bc STATE OF HAWAII Ramp D, O.B. ₺ Sta. 63+00± Rt. DEPARTMENT OF TRANSPORTATION Remove and Dispose of Existing Curb Ramp. Construct New Curb Ramp, Type D and Concrete Curb, Type 2D. Transition New Curb to Existing Curb. HIGHWAYS DIVISION CURB RAMP DETAILS KAMEHAMEHA HIGHWAY RESURFACING Ka Uka Boulevard to Waihau Street Federal Aid Project No. NH-099-1(029) Scale: 1" = 2.50' Date: Oct., 2013 OF *3* SHEETS SHEET No. 1



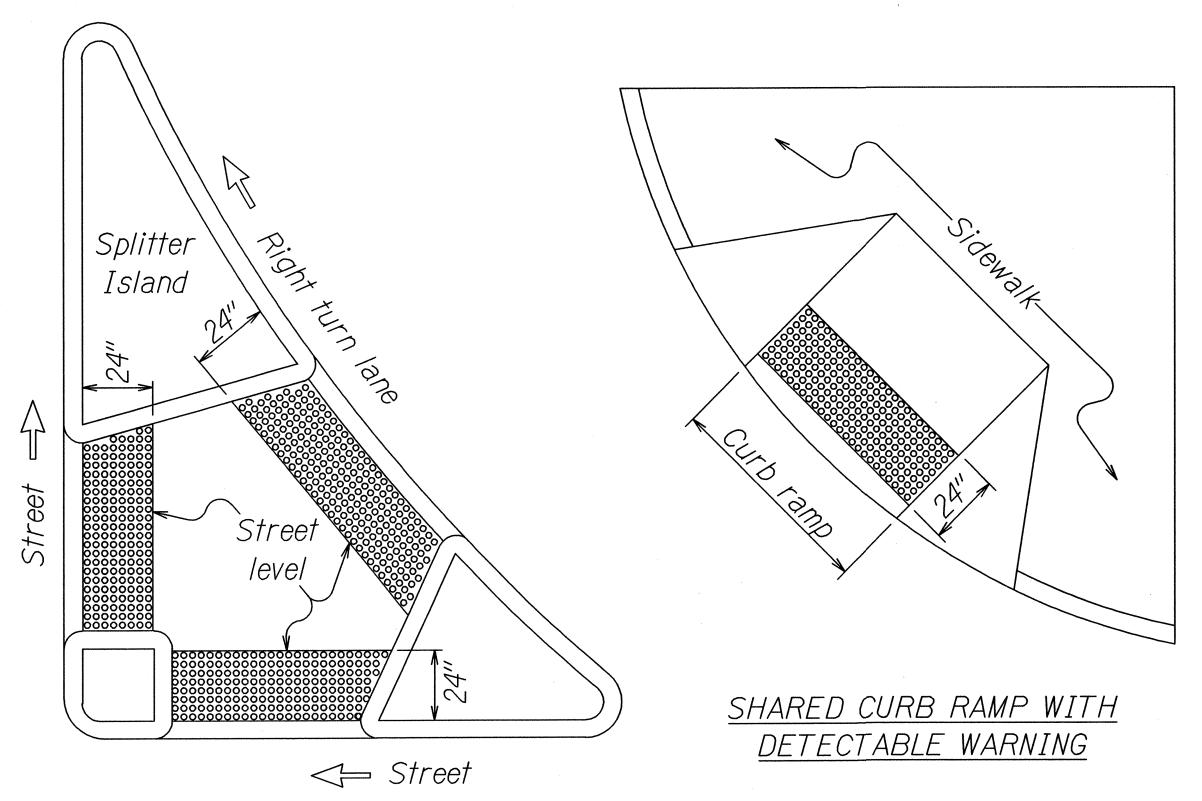




DETECTABLE WARNING AT CURB RAMP



TRANSITION RAMP WITH DETECTABLE WARNING



REFUGE ISLAND WITH
DETECTABLE WARNING

Level Landing (Street level)

FEDERAL PROJ. NO.

HAW. NH-099-1(029)

FISCAL SHEET TOTAL

22

NO. SHEETS

YEAR

2014

FED. ROAD DIST. NO.

STATE

END OF SIDEWALK CURB RAMP WITH

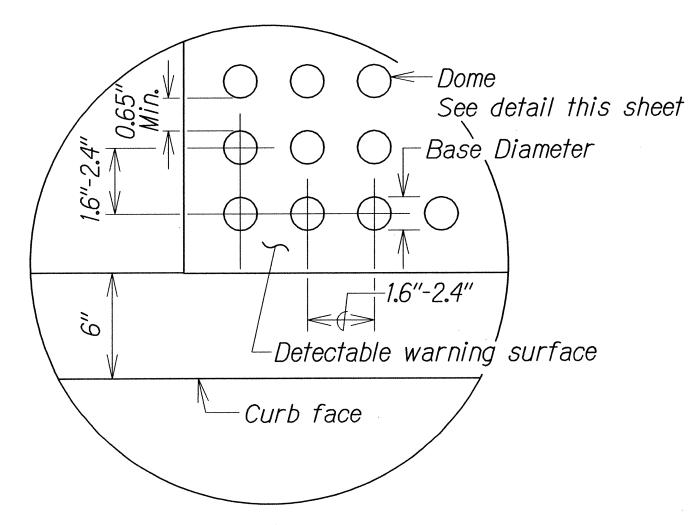
DETECTABLE WARNING

TYPICAL INSTALLATION OF DETECTABLE WARNINGS

Not to Scale

NOTES:

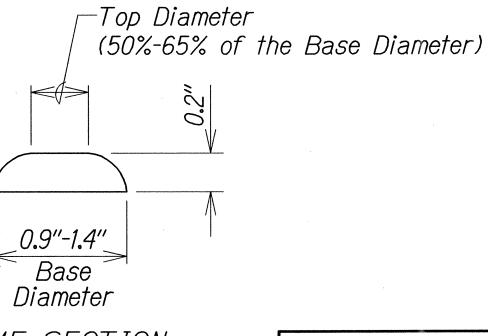
- 1. Detectable warnings shall be 24 inches in the direction of travel and extend the full width of the curb ramp or flush surface (does not include flares).
- 2. Truncated domes shall have a diameter of 0.9 to 1.4 inch at the bottom, a diameter of 50%-65% of the base diameter at the top, a height of 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.



ENLARGEMENT

DETECTABLE WARNING DETAIL

Not to Scale



DOME SECTION

DETECTABLE WARNING DETAILS

DEPARTMENT OF TRANSPORTATION

KAMEHAMEHA HIGHWAY RESURFACING

Vicinity of Ka Uka Blvd. to Vicinity of Waihau Street

Federal Aid Project No. NH-099-1(029)

Scale: Not to Scale

Date: Sept., 2013

SHEET No. 9 OF 9 SHEETS