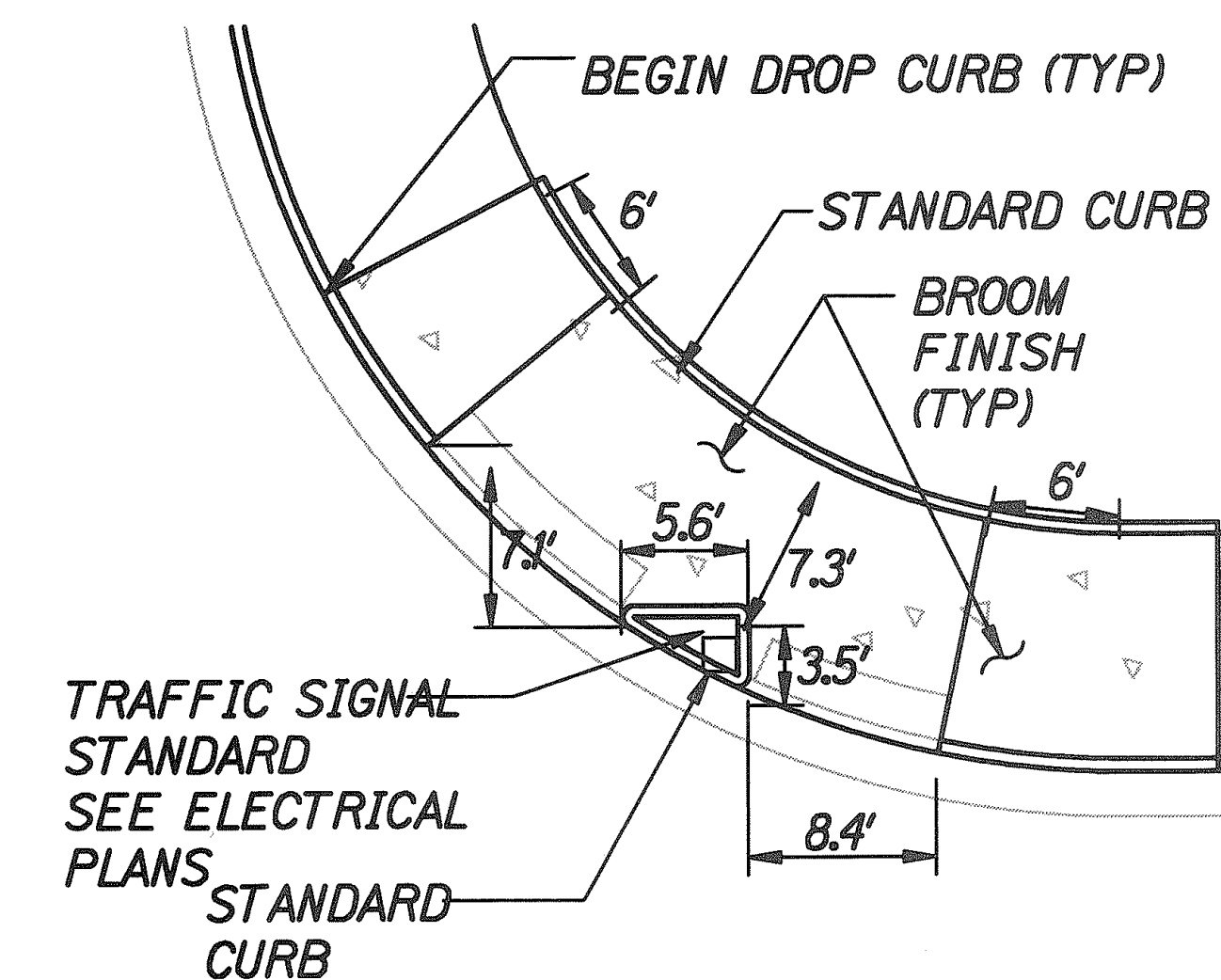


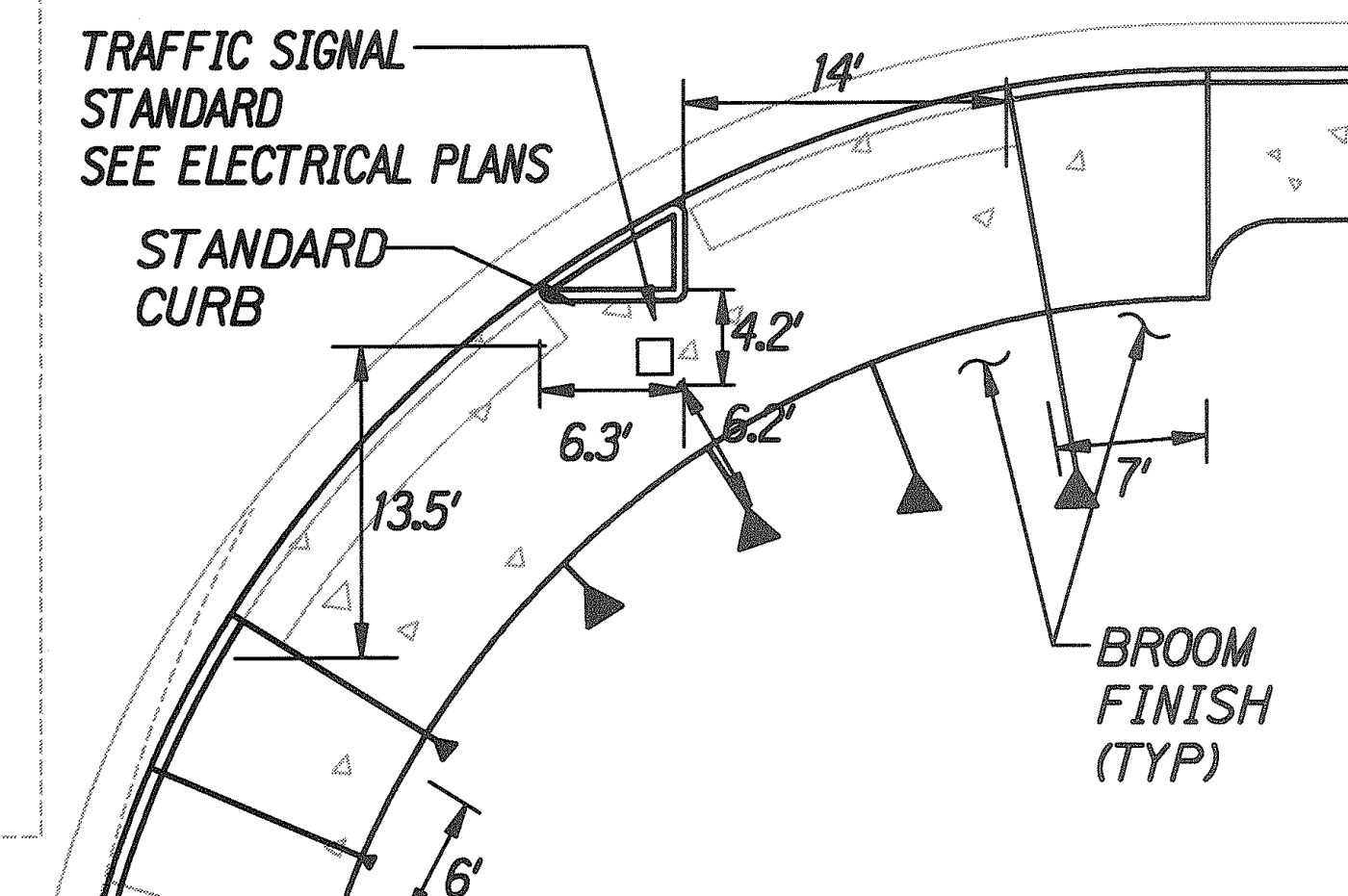
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-118	2004	26	127

# Notes:

- ① All grades are bottom curb grades, unless otherwise indicated.
- ② Existing concrete sidewalk and curb shall be saw cut at the point of connection. If existing curb has an expansion within 2 feet from the connection point, the connection shall be made at the expansion joint.



**CURB RAMP DETAIL - RAMP E-1**  
Scale: 1" = 8'

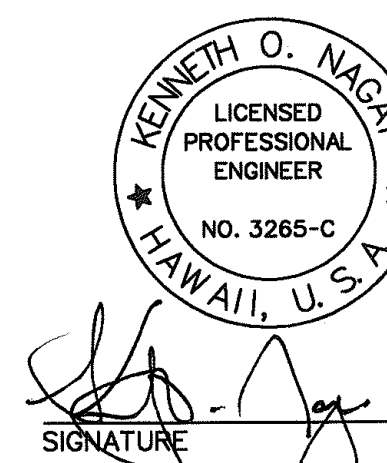


**CURB RAMP DETAIL - RAMP E-2**  
Scale: 1" = 8'

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DPP

DATE



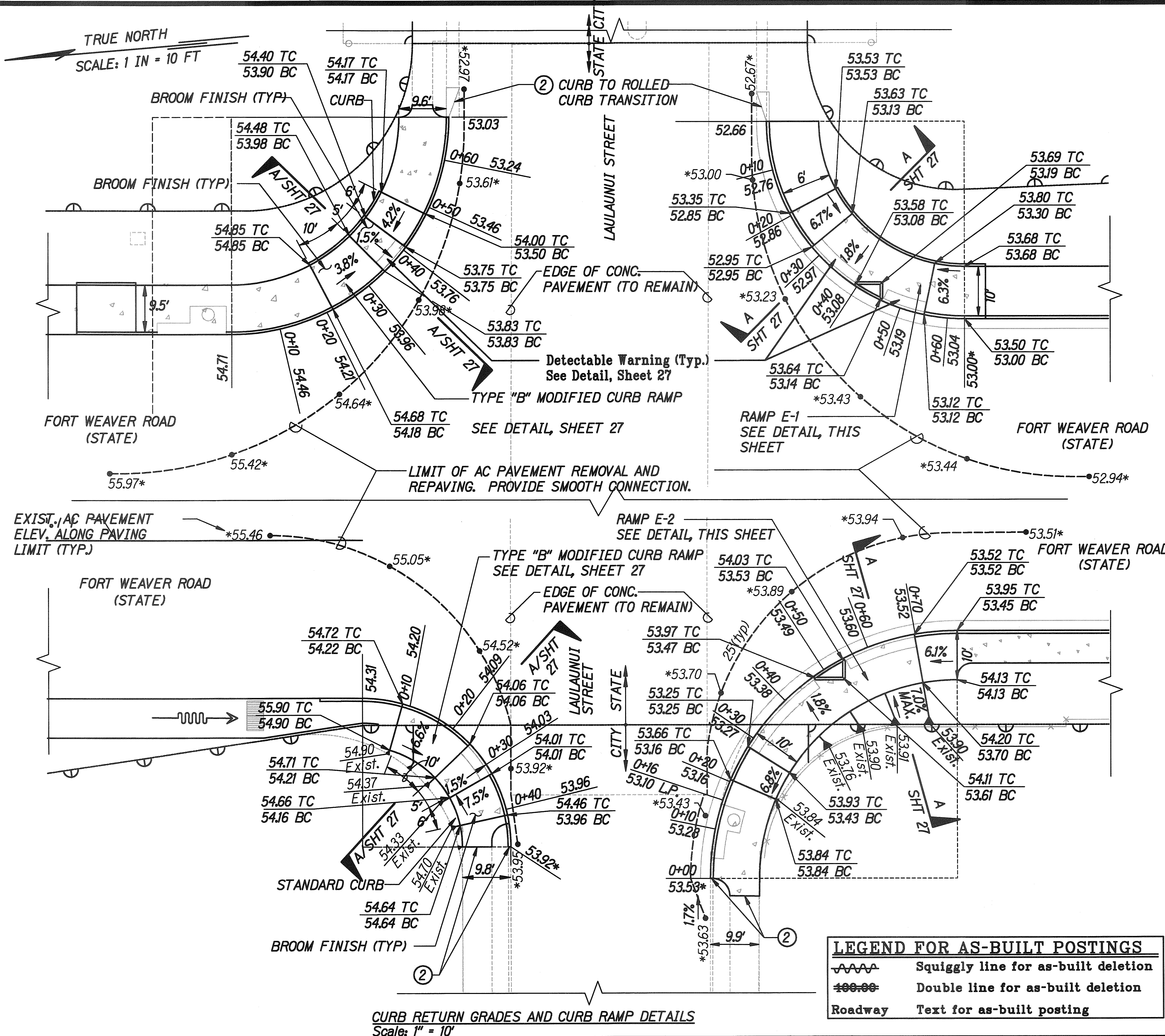
APRIL 30, 2008  
EXPIRATION DATE OF LICENSE  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CURB RETURN GRADES & CURB RAMP DETAILS**  
**FORT WEAVER ROAD WIDENING**  
**NEAR LAULAUNUI STREET**  
**FEDERAL AND PROJECT NO. CMAQ-076-118)**  
SCALE: AS NOTED      DATE: October 2003  
SHEET No. 1 OF 2 SHEETS

# LEGEND FOR AS-BUILT POSTINGS

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

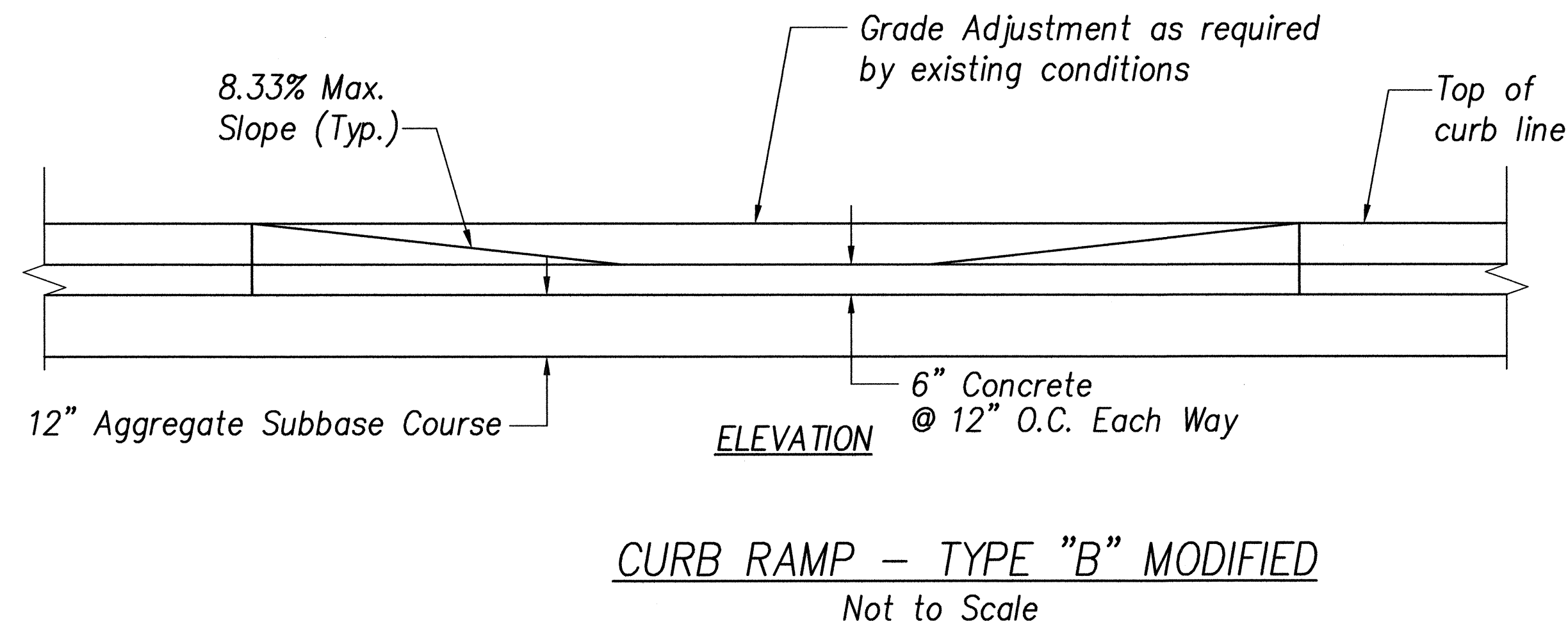
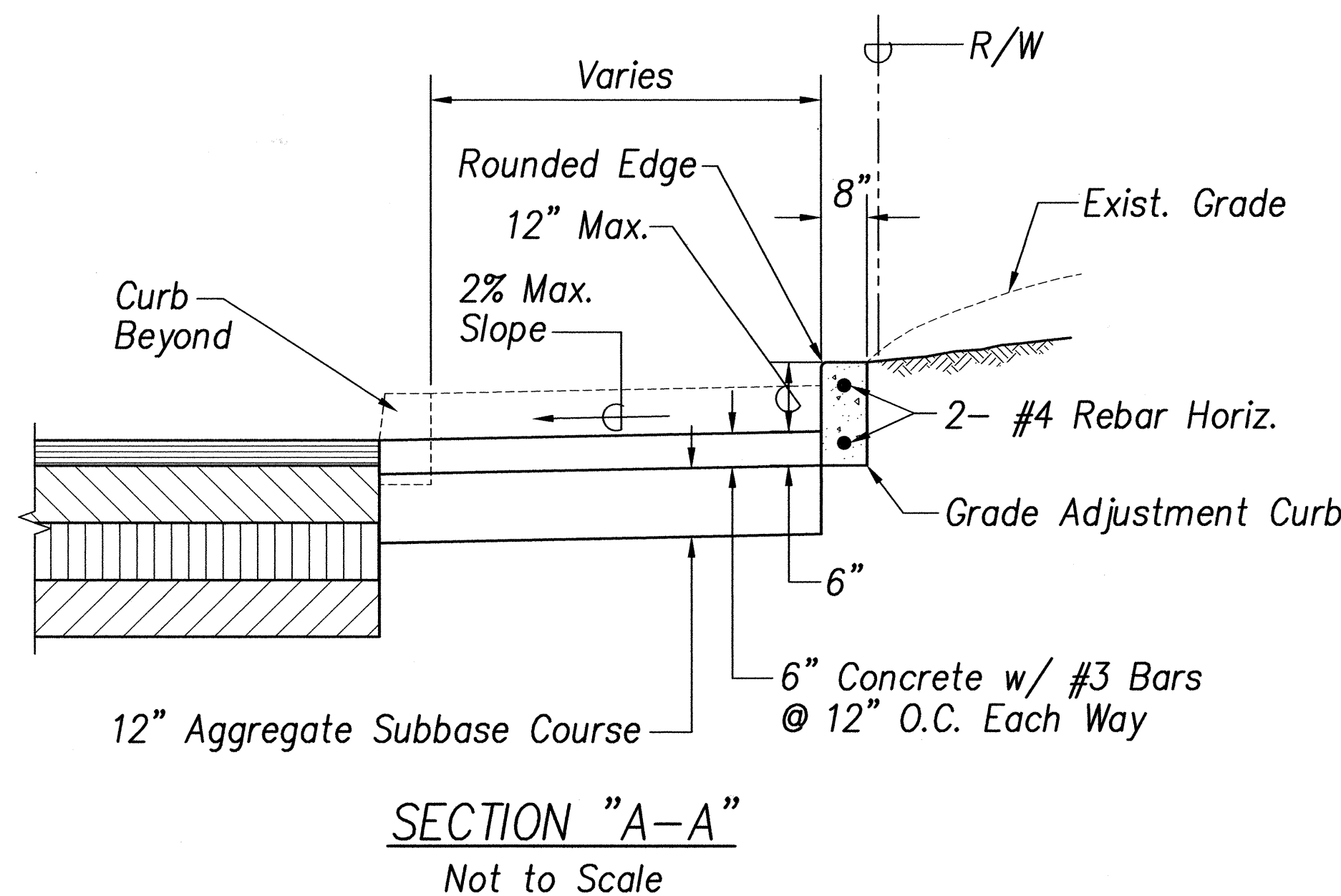


ORIGINAL PLAN	DATE	BY
SURVEY PLOTTED BY		
DRAWN BY		
CHECKED BY		
NOTES BOOK		
CMAQ-076-118		
NO. 000000		

"AS-BUILT"



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(8)	2004	27	127



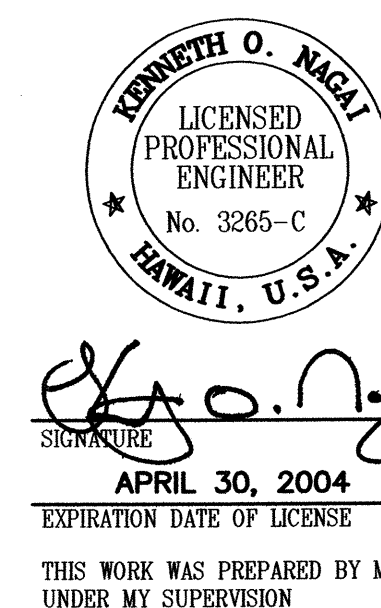
#### CURB RAMP AND SIDEWALK NOTES:

- These typical details are intended as curb ramp guidelines for design and construction.
- A 2% maximum cross slope shall be maintained in the direction of pedestrian traffic.
- Subject to field conditions, the Engineer shall determine the final location of curb ramps.
- All pullboxes shall be installed away from the curb ramp and within the sidewalk/unpaved area to the maximum extent feasible.
- 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.
- Transitions from curb ramps to gutters and roadways shall be flush.
- Curb ramps and sidewalks shall be constructed to eliminate ponding to the maximum extent feasible.
- The pedestrian push button shall meet operational and reach requirements of the American with Disabilities Act Accessibility Guidelines (ADAAG):
  - Forward Reach. The maximum height for forward reach shall be 48".
  - Side Reach. The maximum height for side reach shall be 54".
  - 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.

- The maximum slopes of adjoining gutters or road surface immediately fronting the curb ramp shall not exceed 5% for Type A and D ramps and 8.33% for Type B, C, and E ramps. The counterslope may be exceeded when the change of grade does not exceed 13% (11% preferred) over a distance of 2 ft. Exceeding the 13% (11% preferred) change in grade will cause a person in a wheelchair to tip forward and/or fall backward.
- 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.
- Construction joints are required to join curb ramps with sidewalks.
- Unless otherwise noted, new gutters are required as shown.
- All curb ramps shall be reinforced with 6x6 W1.4/W1.4 welded wire fabric.
- Surface of sidewalks and curb ramps shall be firm, stable, and slip-resistant. This includes the surfaces of pullboxes, valve covers, manhole covers, etc.
- Bed course material is required for curb ramps, sidewalks, and gutters.
- All sidewalks shall provide 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.
- 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.
- If possible, install utility poles, fire hydrants, light poles, sign posts, pullboxes, etc. off of sidewalk but within the right-of-way.

- 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 Guidelines (ADAAG Section 4.4) and will be subject to Engineer's approval.
- 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.
- Additional information is available from:
  - American with Disabilities Act Accessibility Guidelines (ADAAG), Jan. 1998, The Access Board.
  - Accessible Rights-of-Way: Guide, Nov. 1999 The Access Board.
  - Designing Sidewalks and Trails for Access, Part 1 July 1999, FHWA
  - Designing Sidewalks and Trails for Access, Part 2 Sept 2001, FHWA

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	DATE
DRAWN BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
NO.	



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>CURB RAMP DETAILS AND NOTES</b>	
FORT WEAVER ROAD WIDENING NEAR LAULAUNUI STREET	
FEDERAL AID PROJECT NO. CMAQ-076-1(8)	
SCALE: AS NOTED	DATE: October 2003
SHEET No. 2 OF 2 SHEETS	