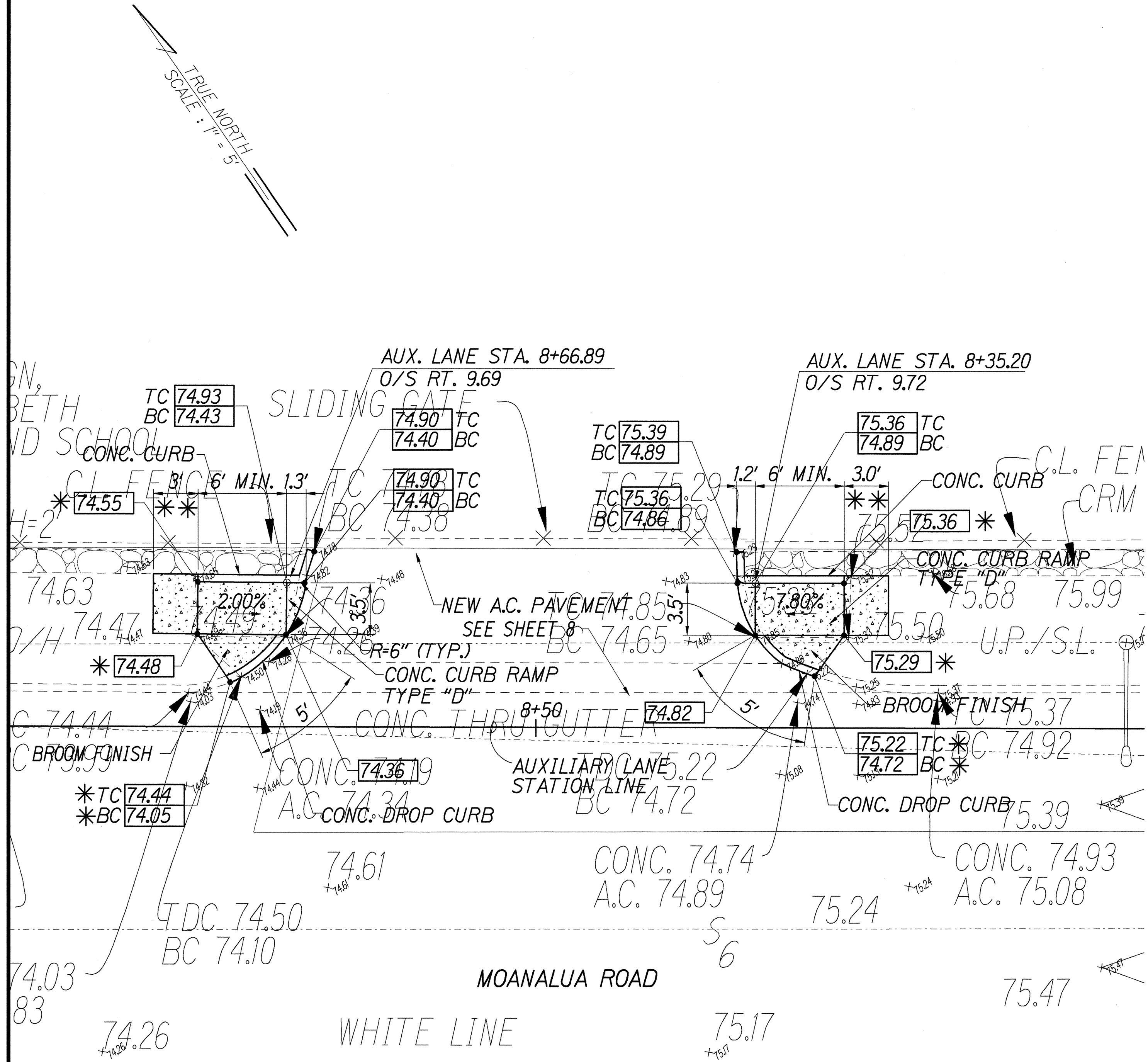


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	78A-01-02M	2002	19	92

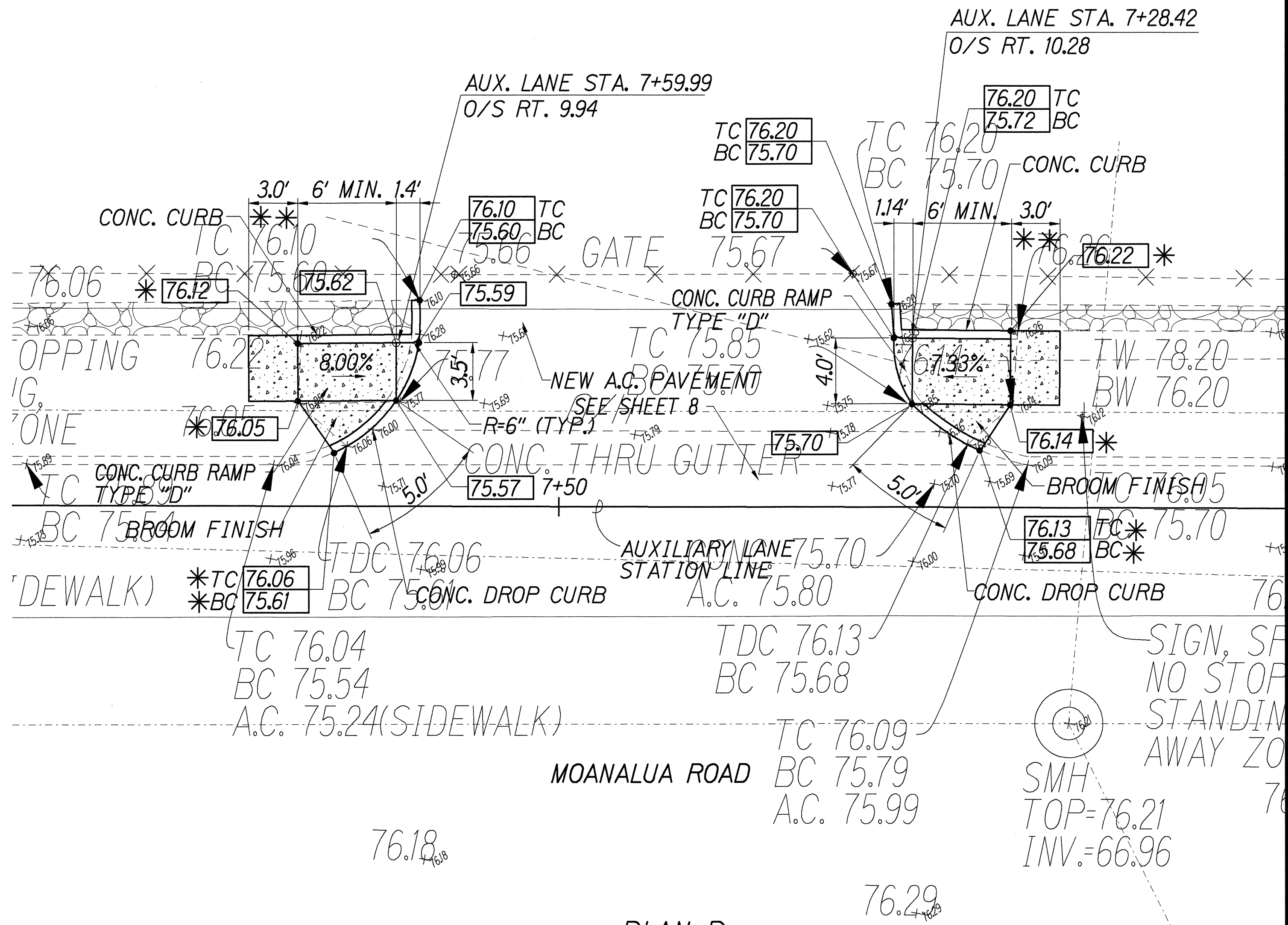


PLAN A

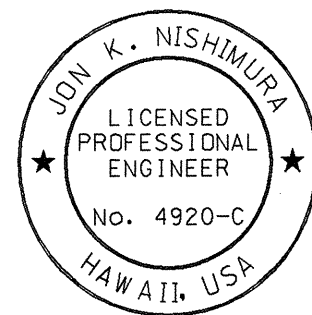
LEGEND:

- * SEE CURB RAMP NOTE 20 ON SHEET 22.
- ** SAWCUT AND REMOVE EXISTING A.C. PAVEMENT. PROVIDE SMOOTH TRANSITION TO EXISTING A.C. PAVEMENT AND NEW CONCRETE RAMP.

NEW CONC.



PLAN B



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ME OR UNDER MY SUPERVISION.
Jon K. Nishimura
FUKUNAGA & ASSOCIATES, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAMPS

MOANALUA FREEWAY LIGHTING IMPROVEMENTS
KAMEHAMEHA HIGHWAY TO HI HALAWA INTERCHANGE
PROJ. NO. 78A-01-02M
Oahu, Hawaii

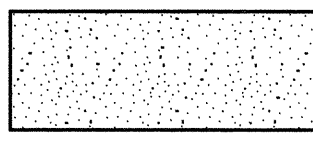
Scale: As Noted
Date: May 2002

SHEET No. C-14 OF 23 SHEETS

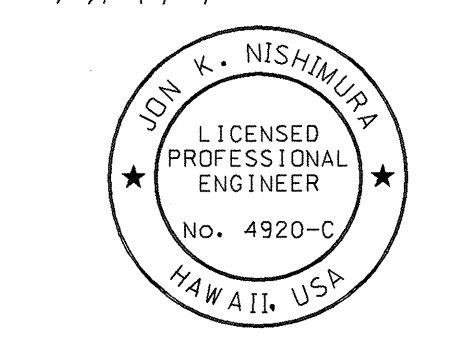
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	78A-01-02M	2002	20	92

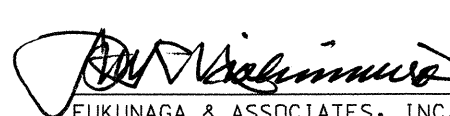


LEGEND:

- * SEE CURB RAMP NOTE 20 ON SHEET 22.
-  NEW CONC.
-  DETECTABLE WARNING

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

RAMPS

MOANALUA FREEWAY LIGHTING IMPROVEMENTS
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 Oahu, Hawaii

Scale: As Noted Date: May 2002

SHEET No. C-15 OF 23 SHEETS

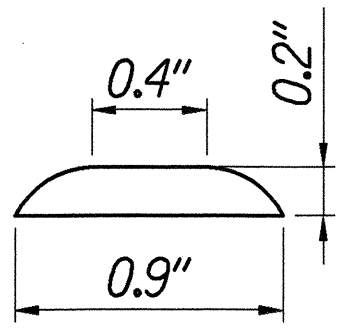
CURB RAMP NOTES:

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. Curb ramps shall be installed at 90° to the sidewalk or to the maximum extent feasible, in alterations.
4. Subject to field conditions, the Engineer shall determine the final location of curb ramps.
5. Prior to construction, if a curb ramp cannot be designed according to DOT, Highways Division curb ramp guidelines, either a "Technically Infeasible" form (for existing construction) or a "Structurally Impracticable" form (for new construction) shall be filled-out and submitted to the DOT, Highways Division for signature which will then be submitted to the Disability and Communication Access Board (DCAB).
6. 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.
7. All pullboxes shall be installed away from the curb ramp and within the sidewalk/unpaved area to the maximum extent feasible.
8. 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.
9. Transitions from ramps to gutters and roadways shall be flush.
10. Curb ramps and sidewalks shall be designed and constructed to eliminate ponding to the maximum extent feasible.
11. 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.
12. 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.
13. Construction joints are required to join curb ramps with sidewalks.
14. Unless otherwise noted, new gutters are required as shown.
15. All curb ramps shall be reinforced with 6x6 W1.4/W1.4 welded wire fabric.
16. Surface of sidewalks and curb ramps shall be firm, stable, and slip-resistant. This includes the surfaces of pullboxes, valve covers, manhole covers, etc.
17. Bed course material is required for curb ramps, sidewalks, and gutters.
18. 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.

CURB RAMP NOTES: (Continued)

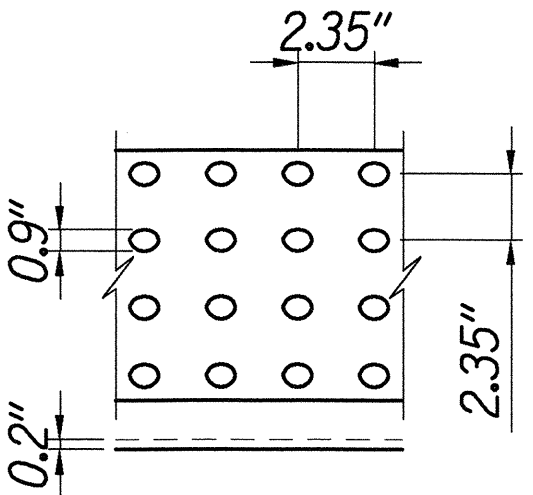
19. Additional information is available from:
 - a) American with Disabilities Act Accessibility Guidelines (ADAAG), September 1998, The Access Board.
 - b) Accessible Rights-of-Way: A Design Guide, November 1999, The Access Board.
 - c) Designing Sidewalks and Trails for Access, July 1999, FHWA.
20. All grades shown on the curb ramp details are finished grades. The contractor shall verify in the field that the grades shown with an asterisk (*) are consistent with the existing grade at the indicated location and make necessary adjustments to make a smooth connection between new and existing surfaces. All adjusted surfaces shall be in full compliance with the accessibility requirements. Engineer shall be notified for inspection during stakeout and layout of the curb ramps.
21. All concrete ramps, flares and sidewalks shall be broom finished, score lines are required as shown.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	78A-01-02M	2002	22	92



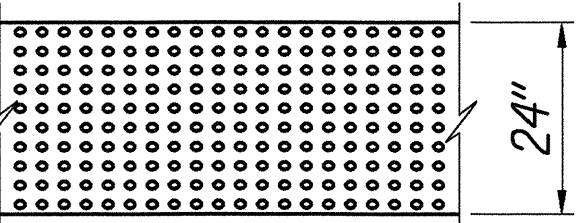
DOME SECTION

Section of dome from a detectable warning. Drawing shows height, top and bottom dimensions.



DOME SPACING

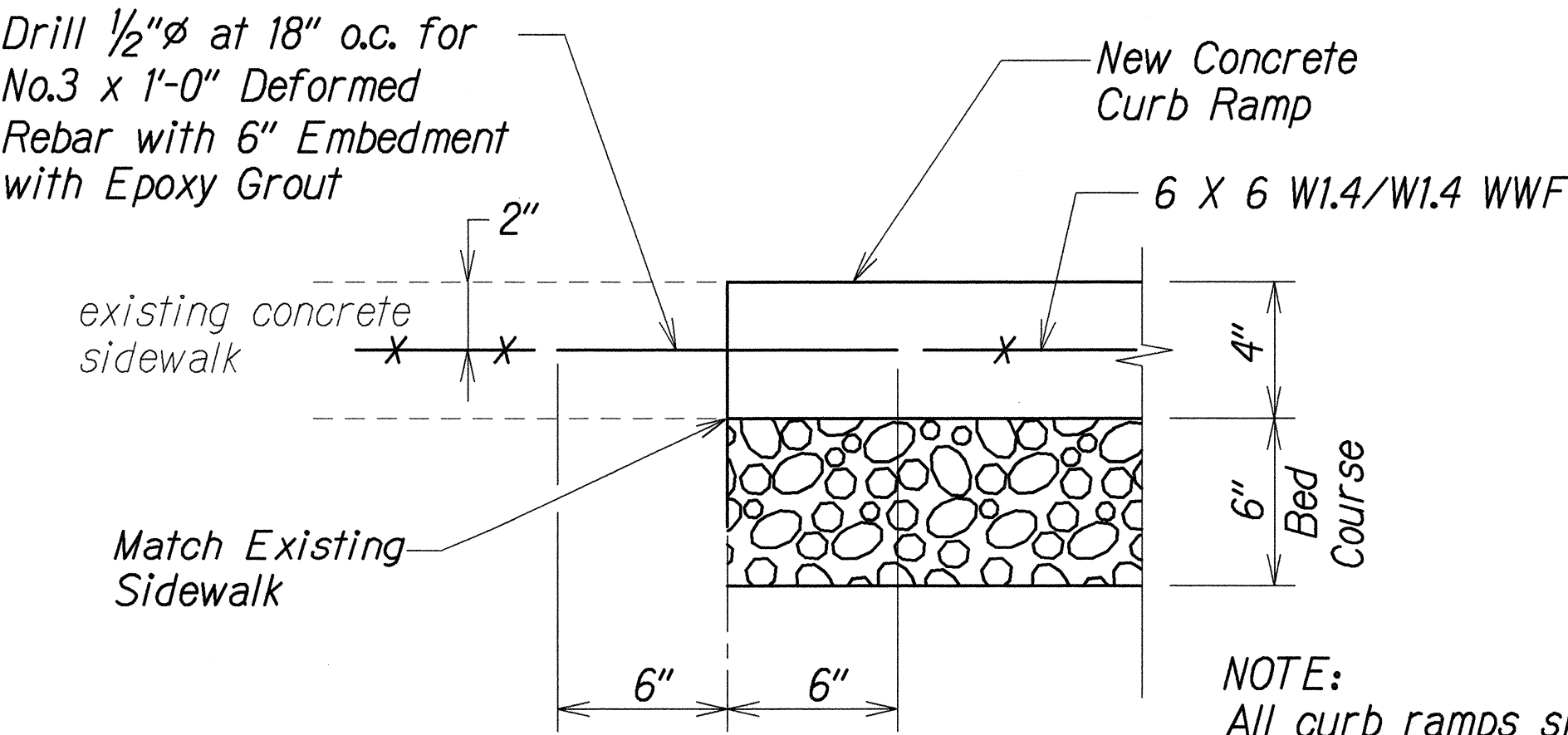
Plan and section views of detectable warning domes and their relative spacing on the x and y axis.



DOME ALIGNMENT

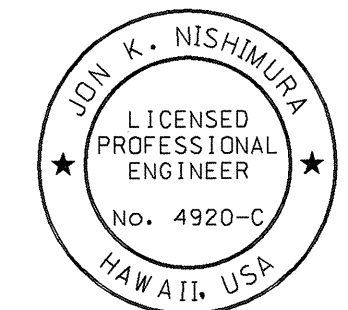
Plan view of a detectable warning surface showing domes aligned in rows, not skewed diagonally.

DETECTABLE WARNING DETAIL
NOT TO SCALE



TYPICAL CONSTRUCTION JOINT AT EXISTING SIDEWALK

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
COUNT	



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAMP NOTES AND DETAILS

MOANALUA FREEWAY LIGHTING IMPROVEMENTS
KAMEHAMEHA HIGHWAY TO HI HALAWA INTERCHANGE
PROJ. NO. 78A-01-02M
Oahu, Hawaii

Scale: As Noted Date: May 2002

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