FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50B-01-09	2009	11	19

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 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.
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, driveways, walkways 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.
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 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. (±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.

ORIGINAL PLAN	SURVEY PLOTTED BY ___ DATE ___
	DRAWN BY X : 3/09
NOTE BOOK ke3	TRACED BY ___ :
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No. ___	QUANTITIES BY ___ :
	CHECKED BY ___ :

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

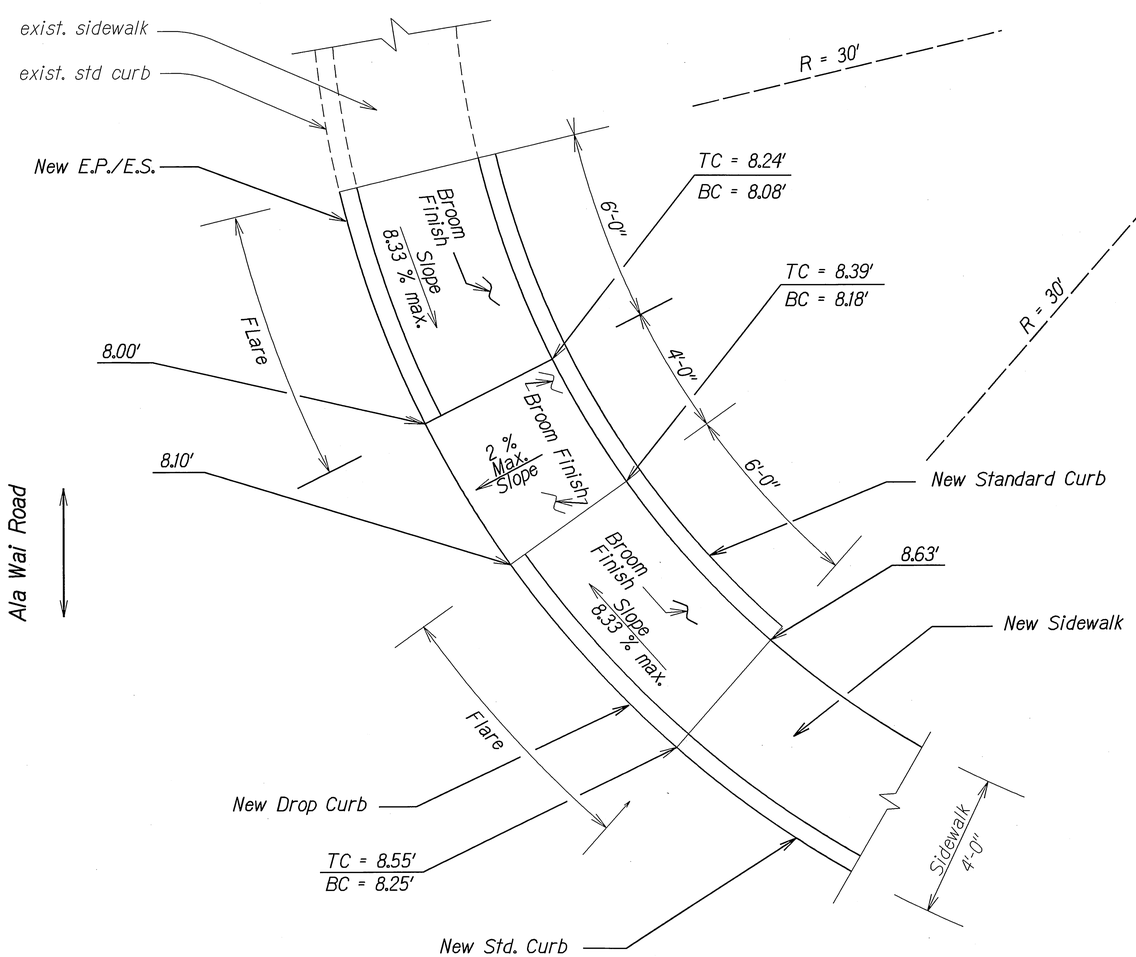
CURB RAMP AND SIDEWALK NOTES

KAUMUALII HIGHWAY
Intersection Improvements at Ala Wai Road
Project No. 50B-01-09

Date: April 2009

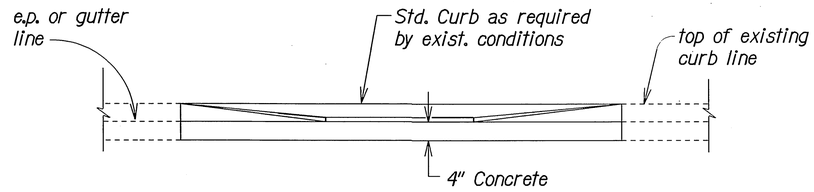
SHEET No. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50B-01-09	2009	12	19



PLAN

CURB RAMP DETAIL MODIFIED TYPE "B"



ELEVATION

CURB RAMP - MODIFIED TYPE "B"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 2/09
	DRAWN BY K	
NOTE BOOK dated	TRACED BY	
	DESIGNED BY K	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

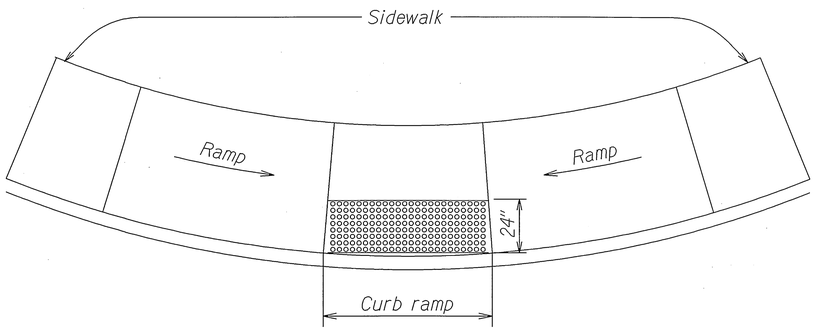
CURB RAMP MODIFIED TYPE "B" DETAIL

KAUMUALII HIGHWAY
Intersection Improvements at Ala Wai Road
Project No. 50B-01-09

Scale: Not to Scale Date: April 2009

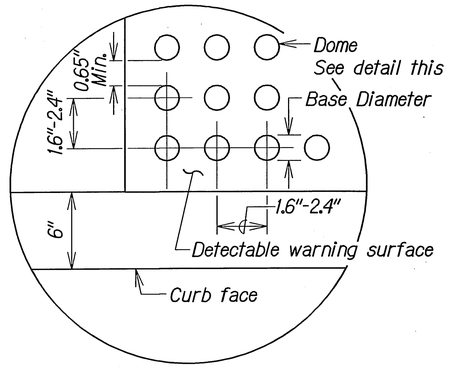
SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50B-01-09	2009	13	19

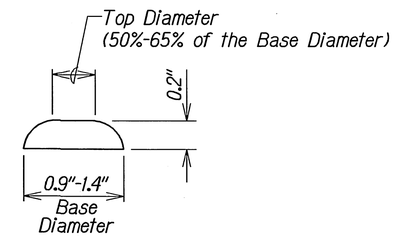


DETECTABLE WARNING AT CURB RAMP

Not to Scale



ENLARGEMENT



DOME SECTION

DETECTABLE WARNING DETAIL

Not to Scale

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.

ORIGINAL PLAN
SURVEY PLOTTED BY
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DESIGNED BY X
QUANTITIES BY
CHECKED BY
DATE 2/09
NOTE BOOK
No.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

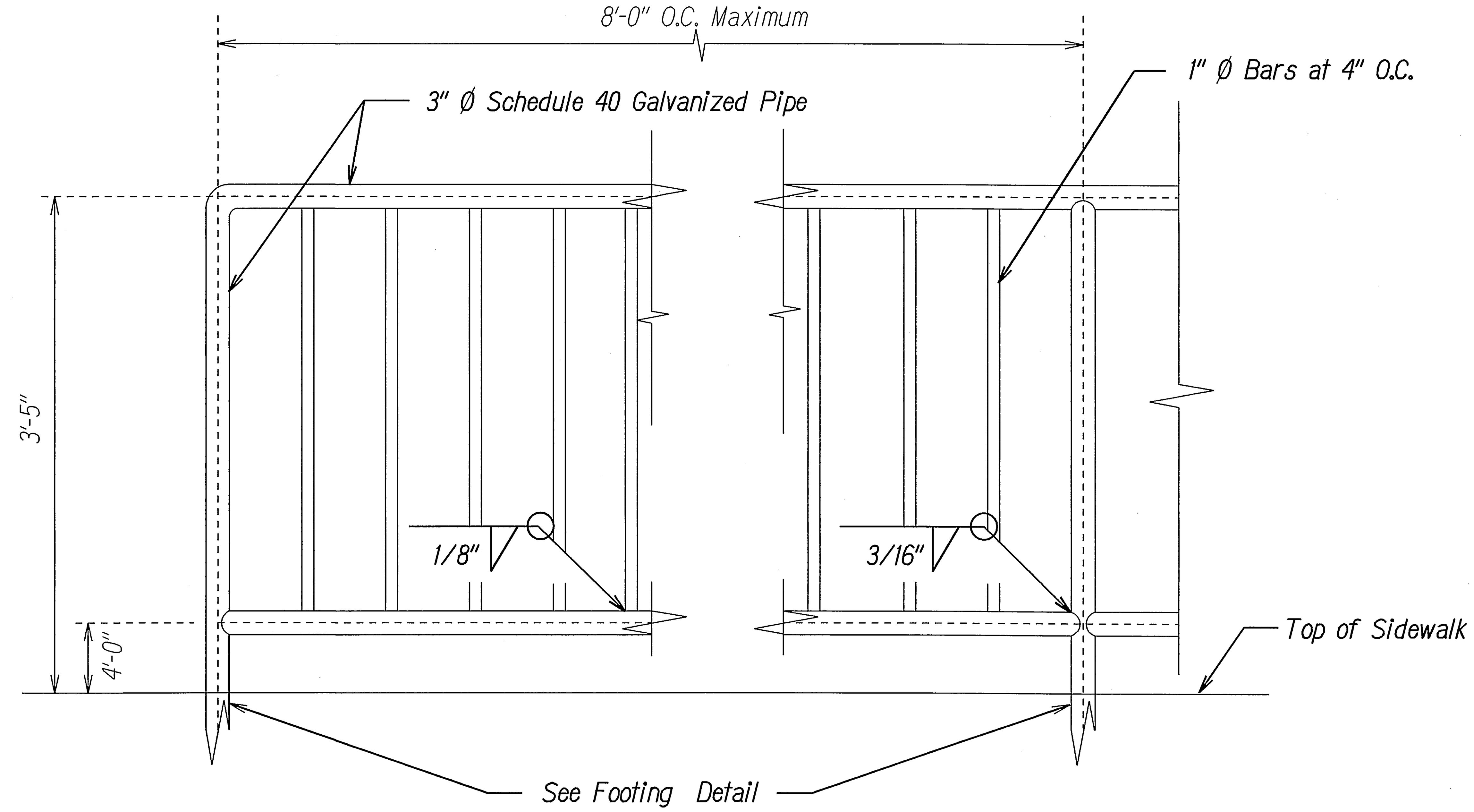
DETECTABLE WARNING DETAILS

KAUMUALII HIGHWAY
Intersection Improvements at Ala Wai Road
Project No. 50B-01-09

Scale: Not to Scale Date: April 2009

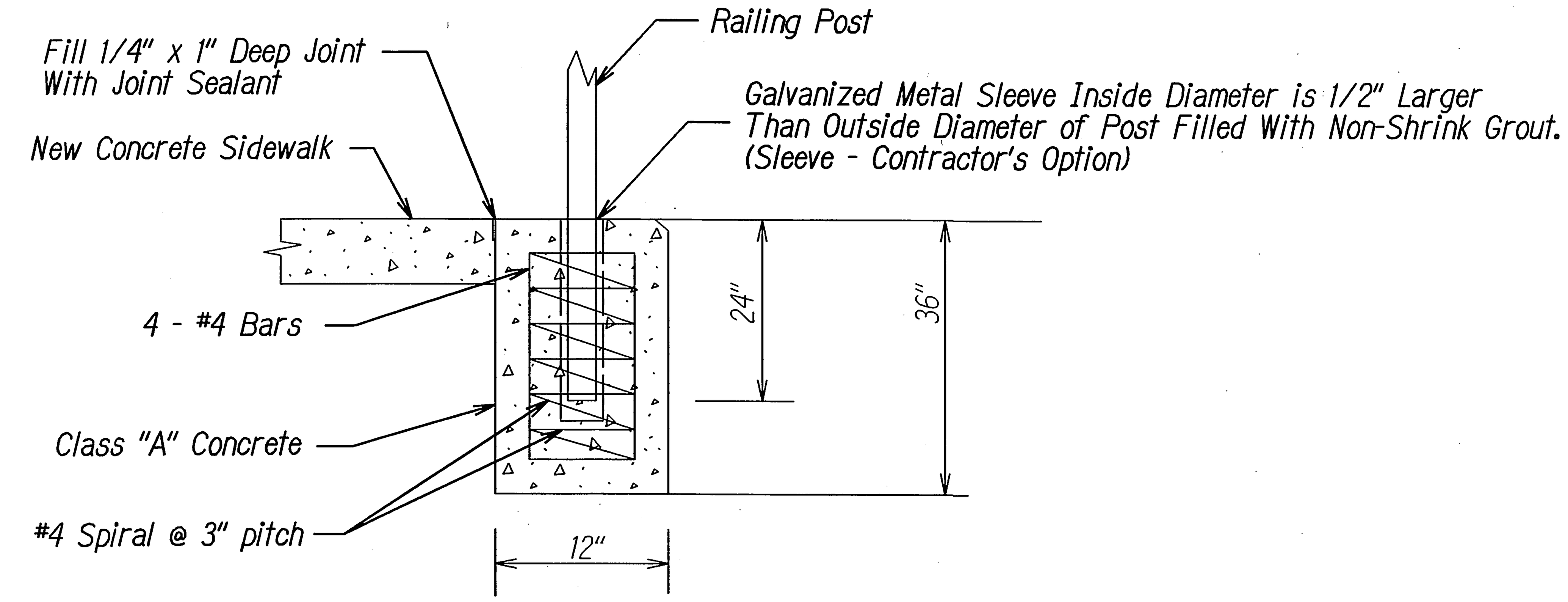
SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50B-01-09	2009	14	19

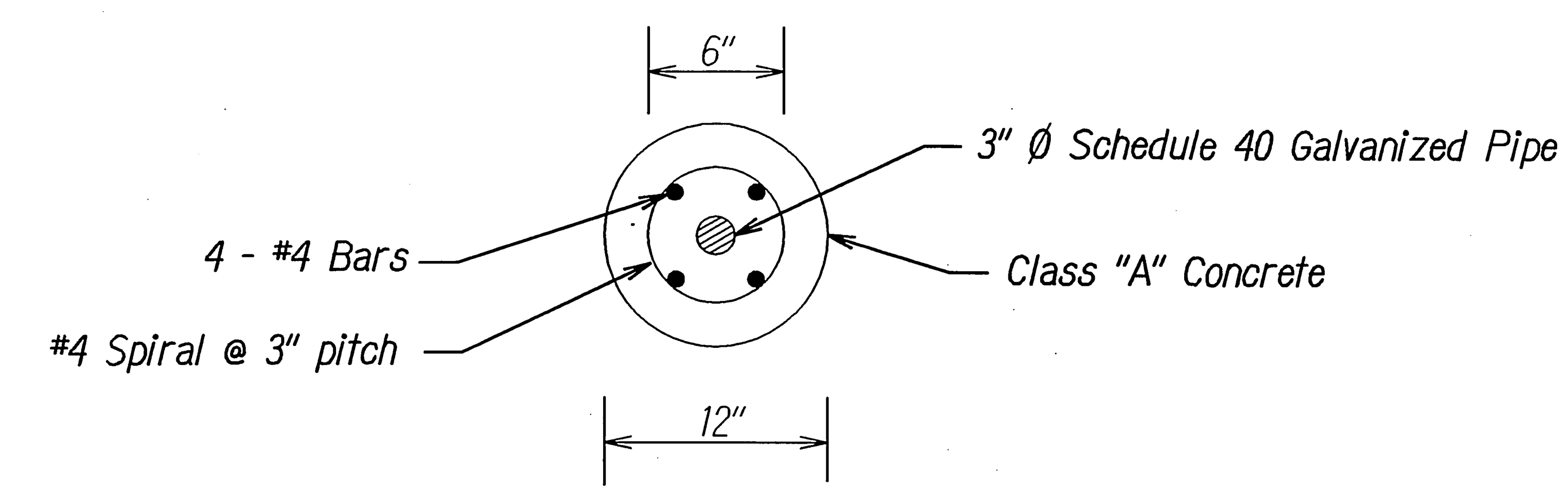


TYPE "A" RAILING DETAIL

Not to Scale



SECTION



PLAN

RAILING FOOTING DETAIL

Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAILING DETAILS

KAUMUALII HIGHWAY
Intersection Improvements at Ala Wai Road
Project No. 50B-01-09

Scale: Not to Scale   Date: April 2009

SHEET No. 3 OF 3 SHEETS