

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(54)	2001	11	30

CURB RAMP NOTES:

1. These details are intended as curb ramp guidelines for design and construction.
2. A site specific detail that meets American with Disabilities Act (ADA) requirements shall be shown on the plans.
3. To ensure constructability, spot elevations shall be used in the design. Benchmarks and horizontal ties shall be provided for construction stakeout.
4. A 2% maximum cross slope shall be maintained in the direction of pedestrian traffic.
5. Design slopes of flares and ramps shall be labeled.
6. Curb ramps shall be installed at 90° to the sidewalk or to the maximum extent feasible, in alterations.
7. At intersections for new construction, curb ramps for each crosswalk are preferred and shall be in line and into the crosswalk. However, for existing sites, a single curb ramp (diagonal curb ramp) serving two crosswalks can be approved if the design detail is acceptable by the State.
8. Subject to field conditions, the Engineer shall determine the final location of curb ramps.
9. 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).
10. 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.
11. All pullboxes shall be installed away from the curb ramp and within the sidewalk/unpaved area to the maximum extent feasible.
12. 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.
13. Transitions from ramps to gutters and roadways shall be flush. If needed, a lip with a maximum vertical change in level of 1/4" is allowed.
14. Curb ramps and sidewalks shall be designed and constructed to eliminate ponding to the maximum extent feasible.
15. 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.
16. 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.

17. Construction joints are required to join curb ramps with sidewalks.
18. Unless otherwise noted, new gutters are required as shown.
19. All curb ramps shall be reinforced with 6x6 W1.4/W1.4 welded wire fabric.
20. Surface of sidewalks and curb ramps shall be firm, stable, and slip-resistant. This includes the surfaces of pullboxes, valve covers, manhole covers, etc.
21. Bed course material is required for curb ramps, sidewalks, and gutters.
22. Prior to construction, all plans and specifications shall be submitted (for review) to DCAB to ensure conformance with the ADAAG as well as any supplemental design specifications established or adopted by DCAB.
23. 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.
24. 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.

SIDEWALK NOTES:

1. 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.
2. Narrow sidewalks (3'-0" min. width, excluding curb) may prohibit the installation of any sign posts, utility poles, fire hydrants, traffic signal standards, light poles, etc. in the sidewalk.
3. 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.
4. For new construction, the minimum sidewalk width shall be 6'-0" (excluding curb). The cross slope shall not exceed 2%.
5. If possible, install utility poles, fire hydrants, light poles, sign posts, pullboxes, etc. off of sidewalk but within the right-of-way.
6. 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.

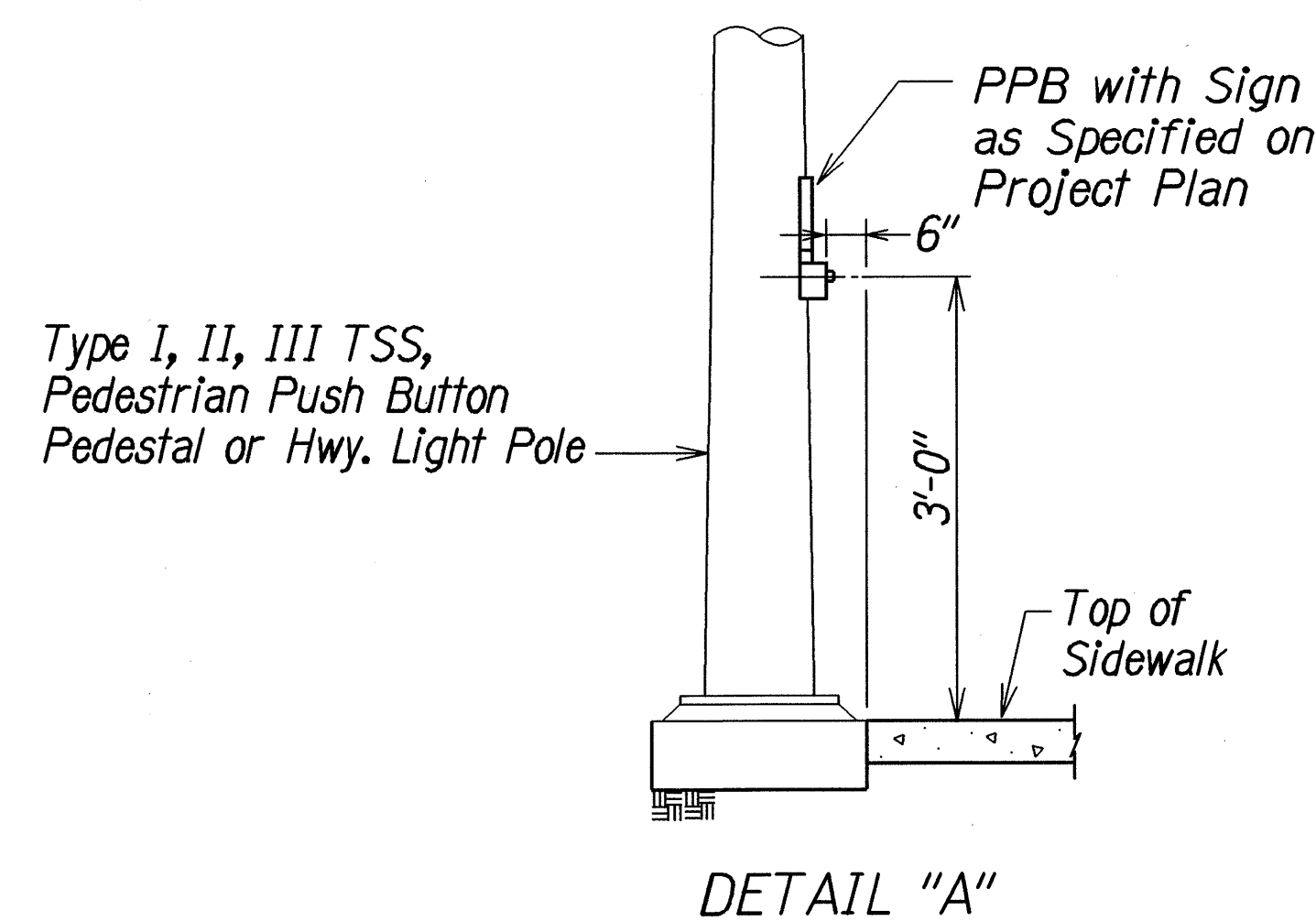
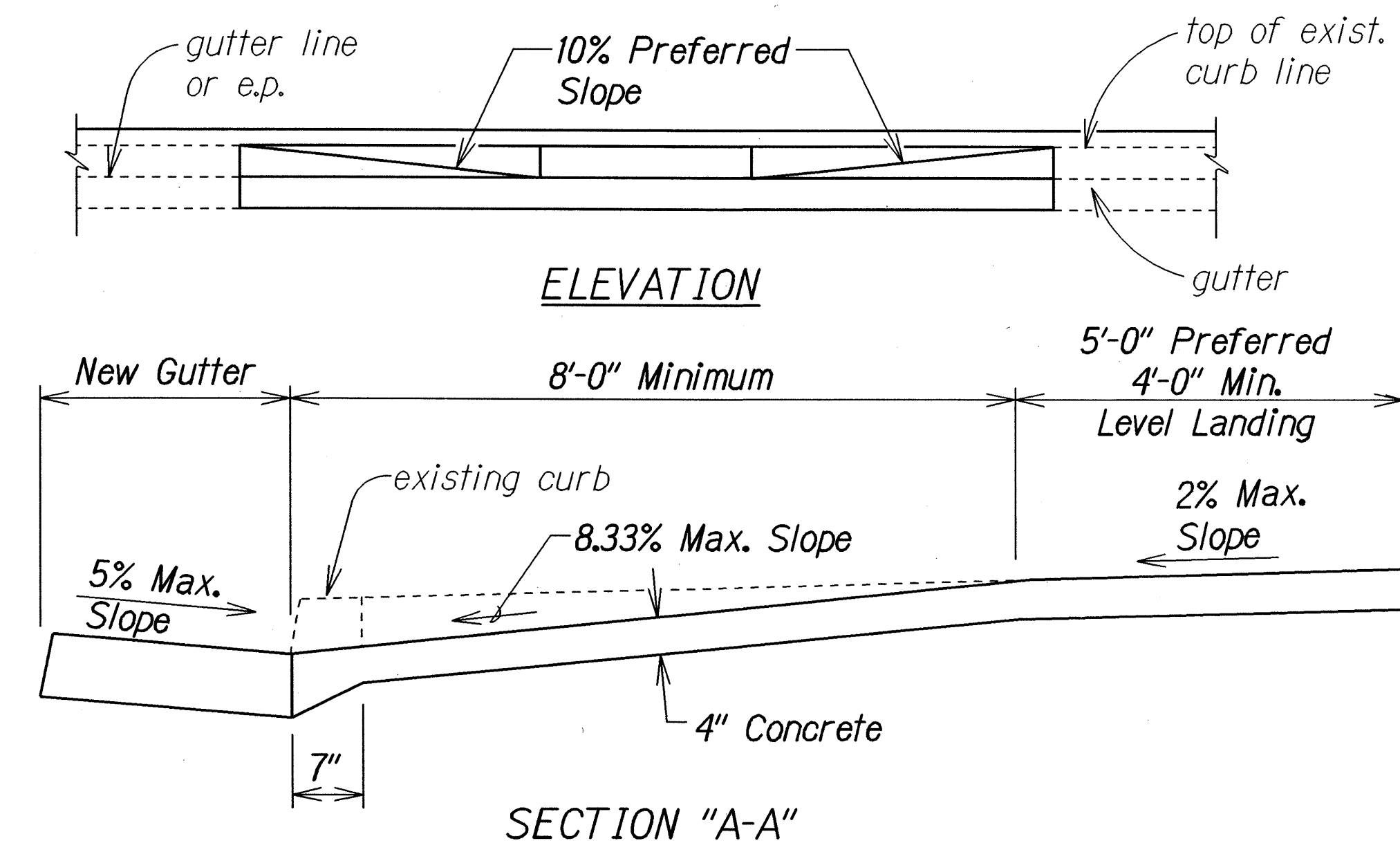
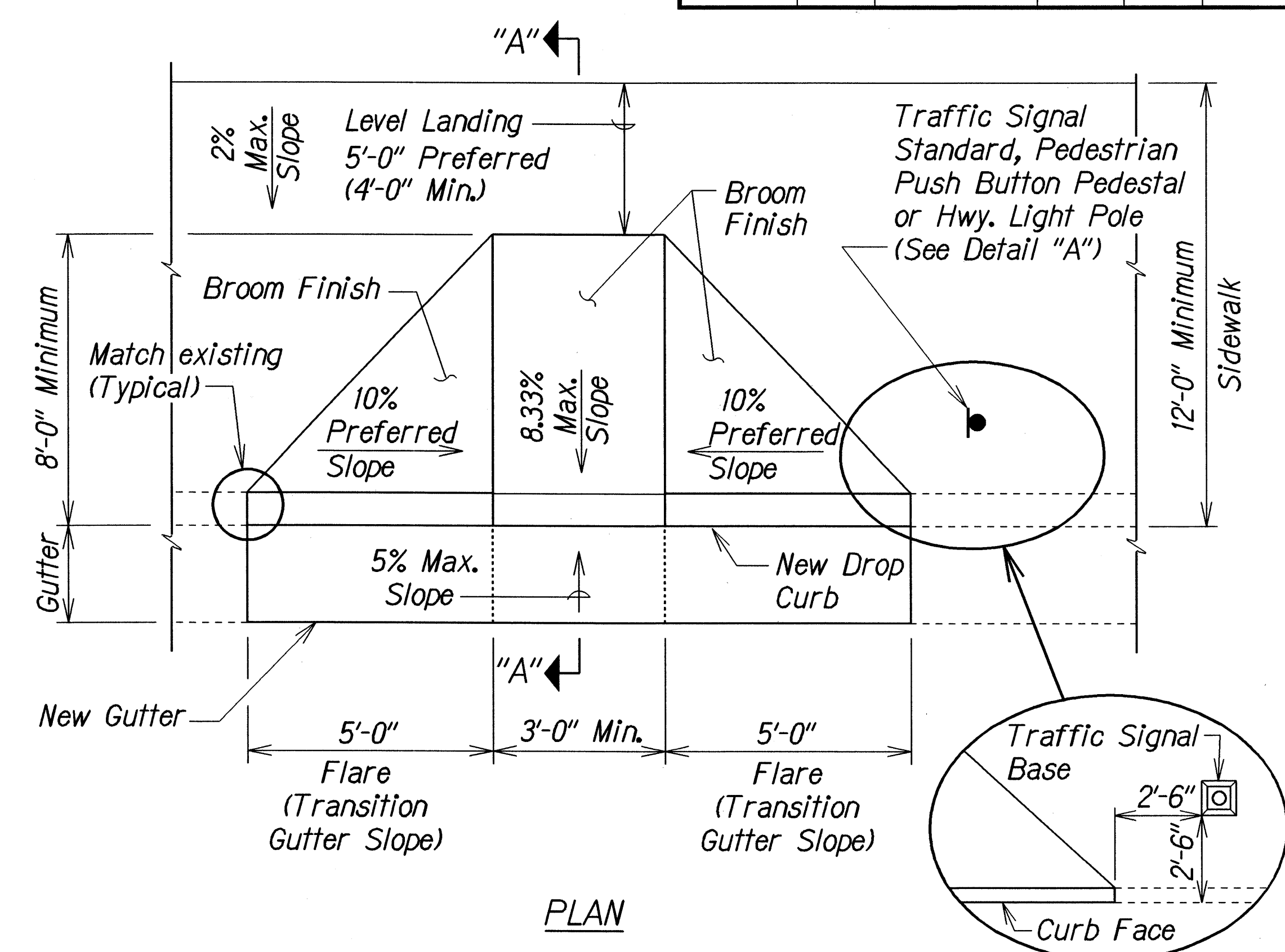
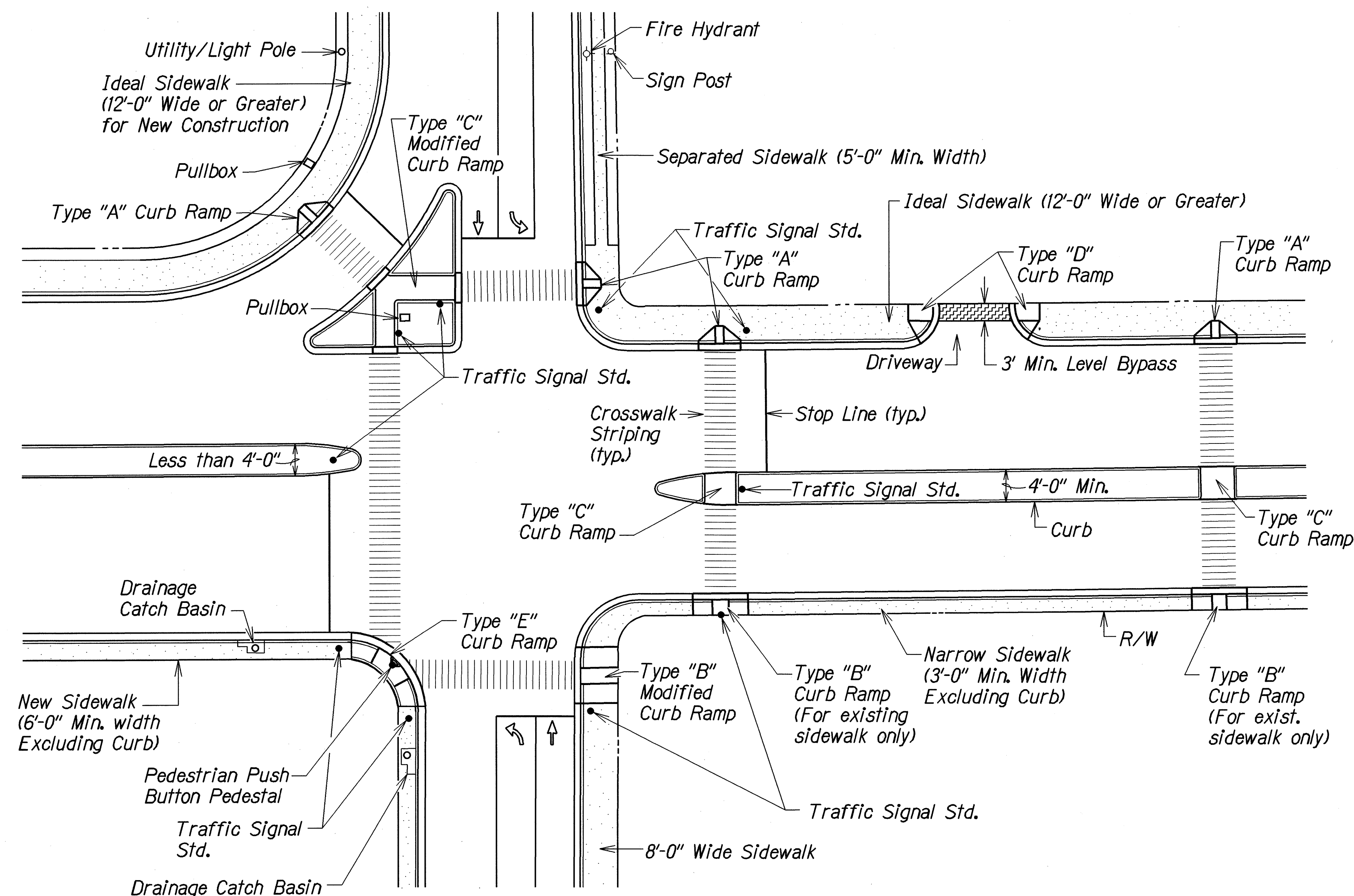
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

tdl/usr2/traffic/std/curbrampnoted.dgn

R 10-16-00 1E-00 sht. 1 of 6

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
CURB RAMP AND SIDEWALK NOTES
KAMEHAMEHA AVENUE BIKEWAY IMPROVEMENTS
Hilo Bayfront Highway to Kalanianaʻole Avenue
Federal Aid Project No. NH-019-2(54)
Date: April, 2001
SHEET No. 1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(54)	2001	12	30



CURB RAMP - TYPE "A"
SIDEWALK WIDTH 12'-0" OR GREATER

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP DETAILS
KAMEHAMEHA AVENUE
BIKEWAY IMPROVEMENTS
Hilo Bayfront Highway to Kalanianaʻole Avenue
Federal Aid Project No. NH-019-2(54)
Not to Scale *Date: April, 2001*

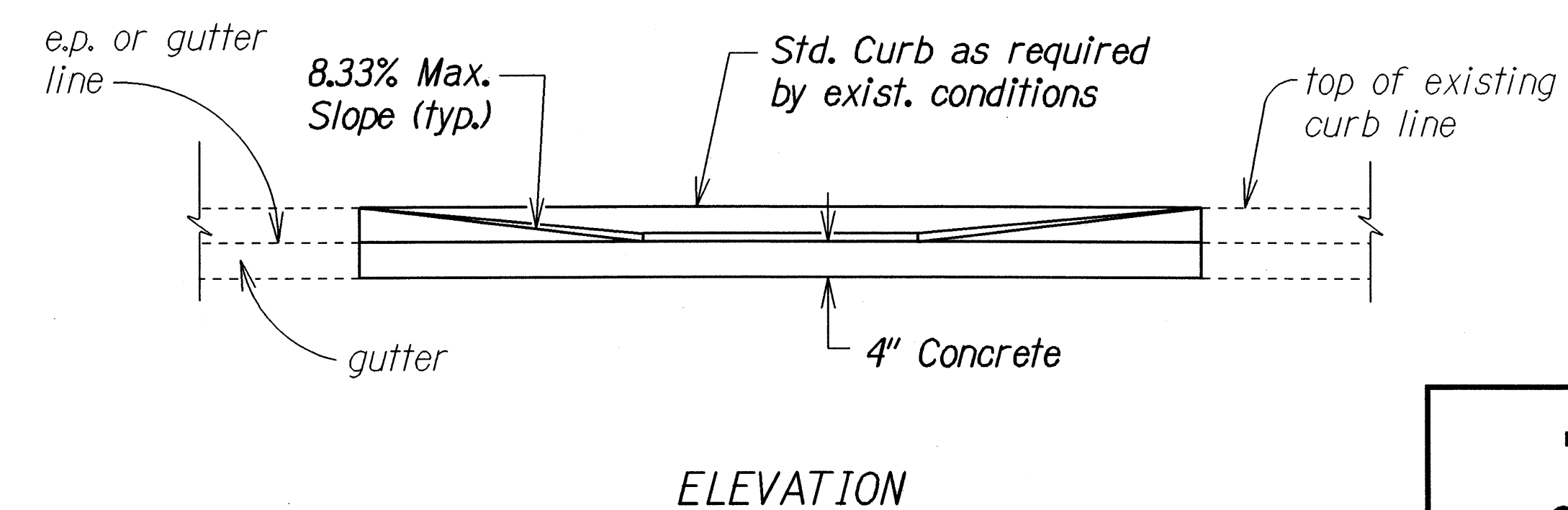
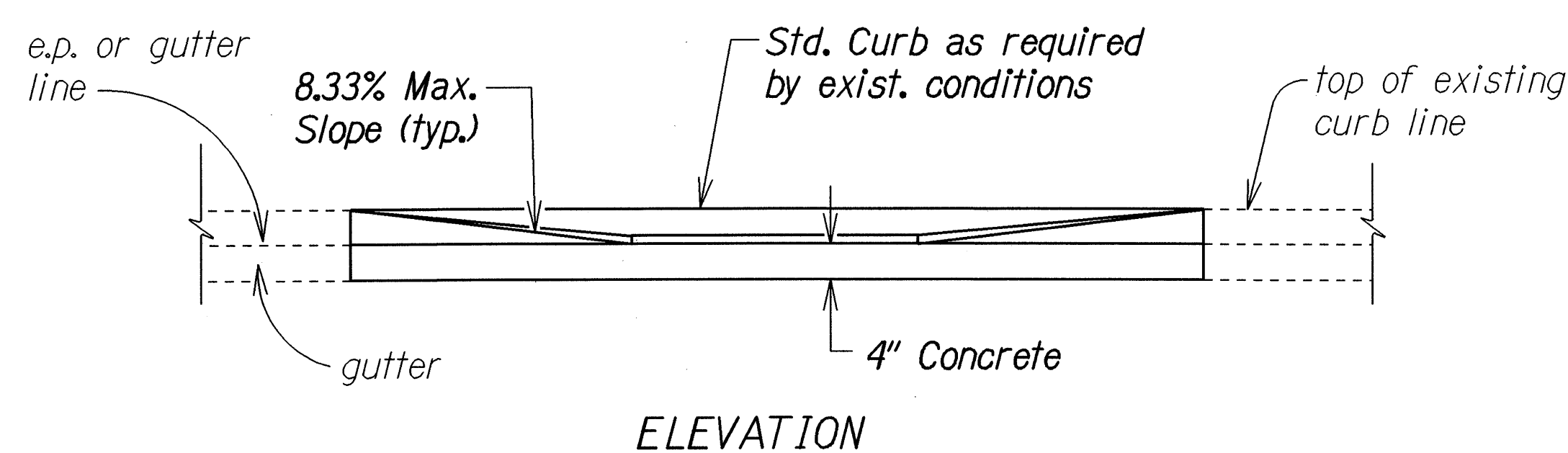
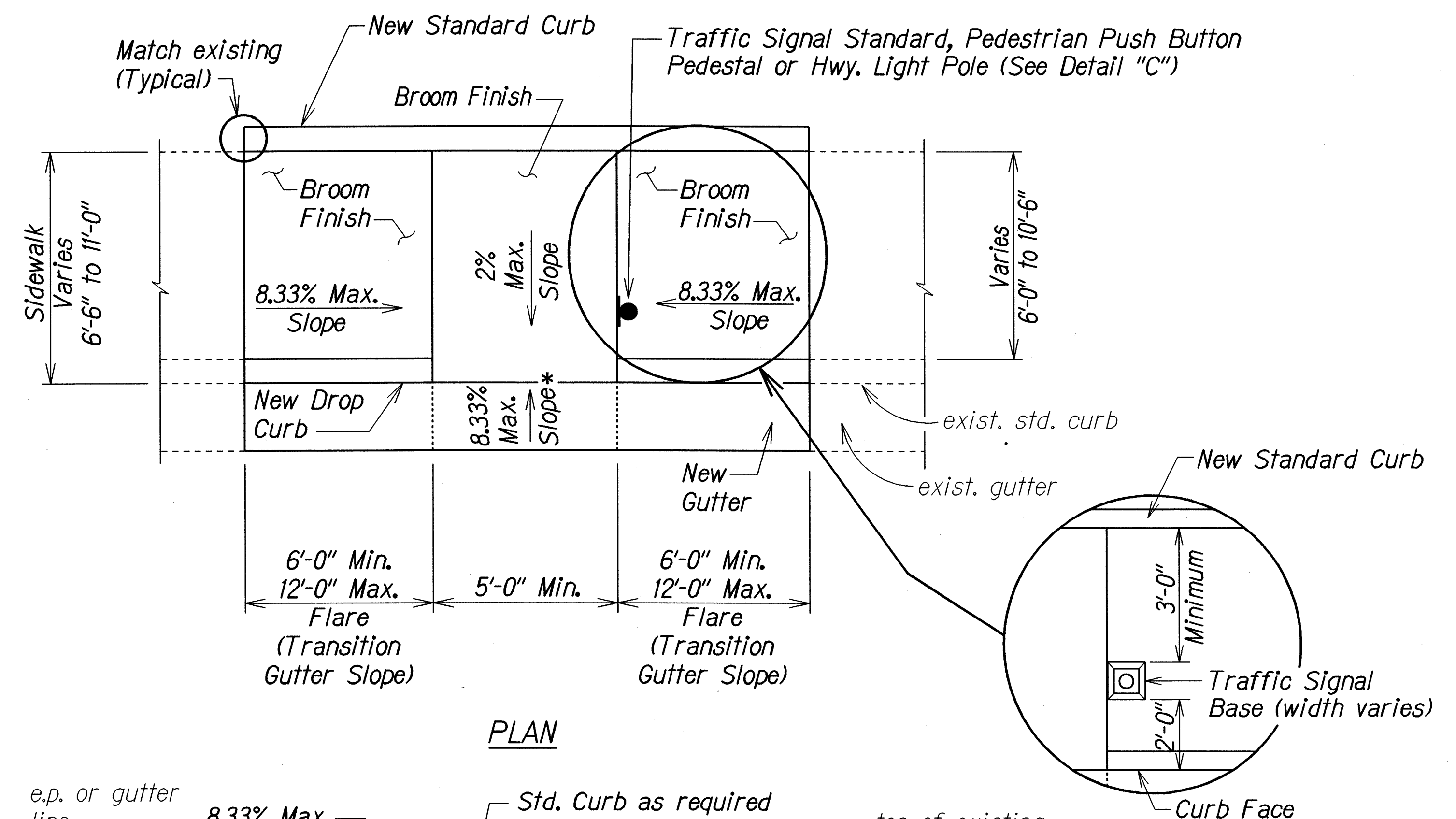
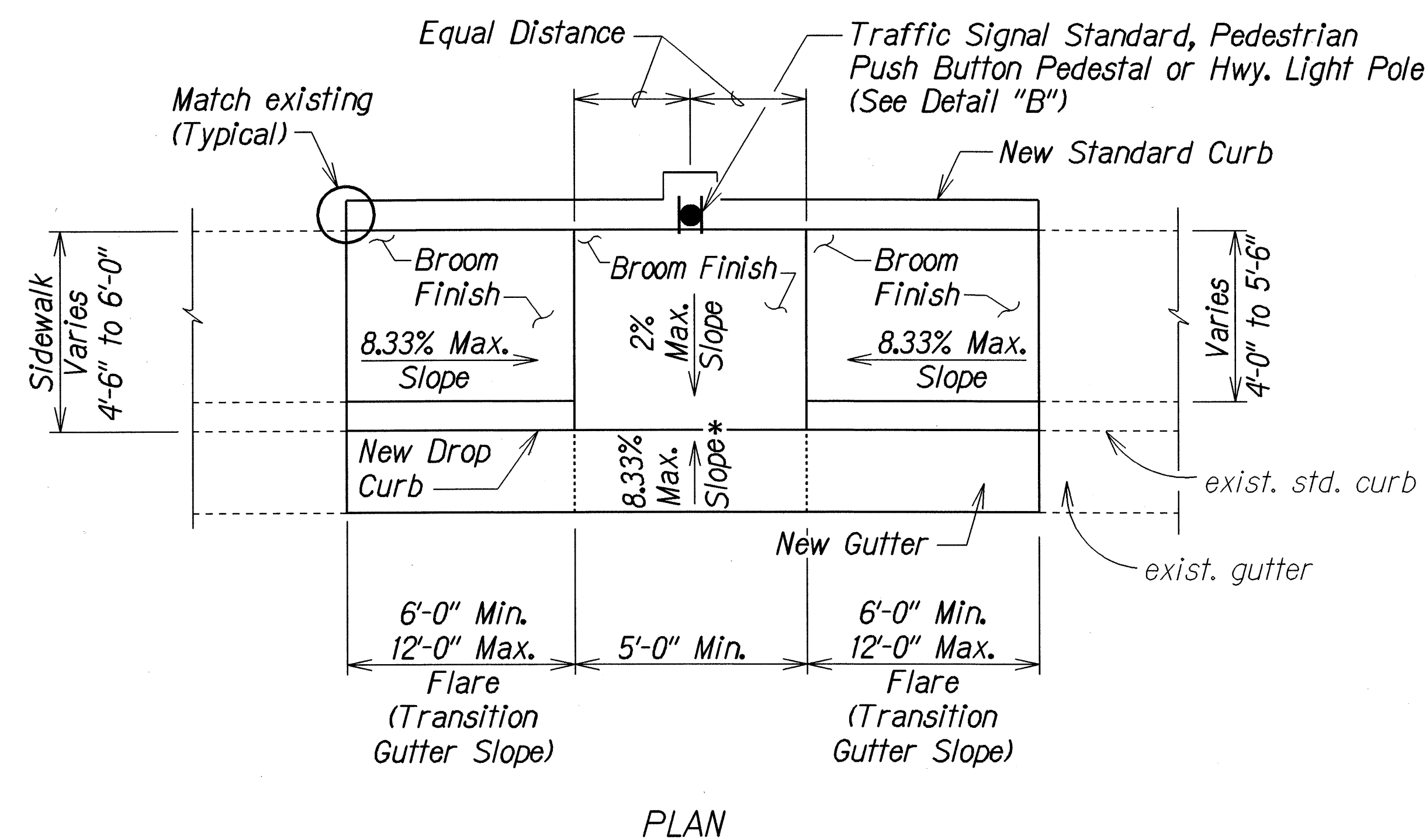
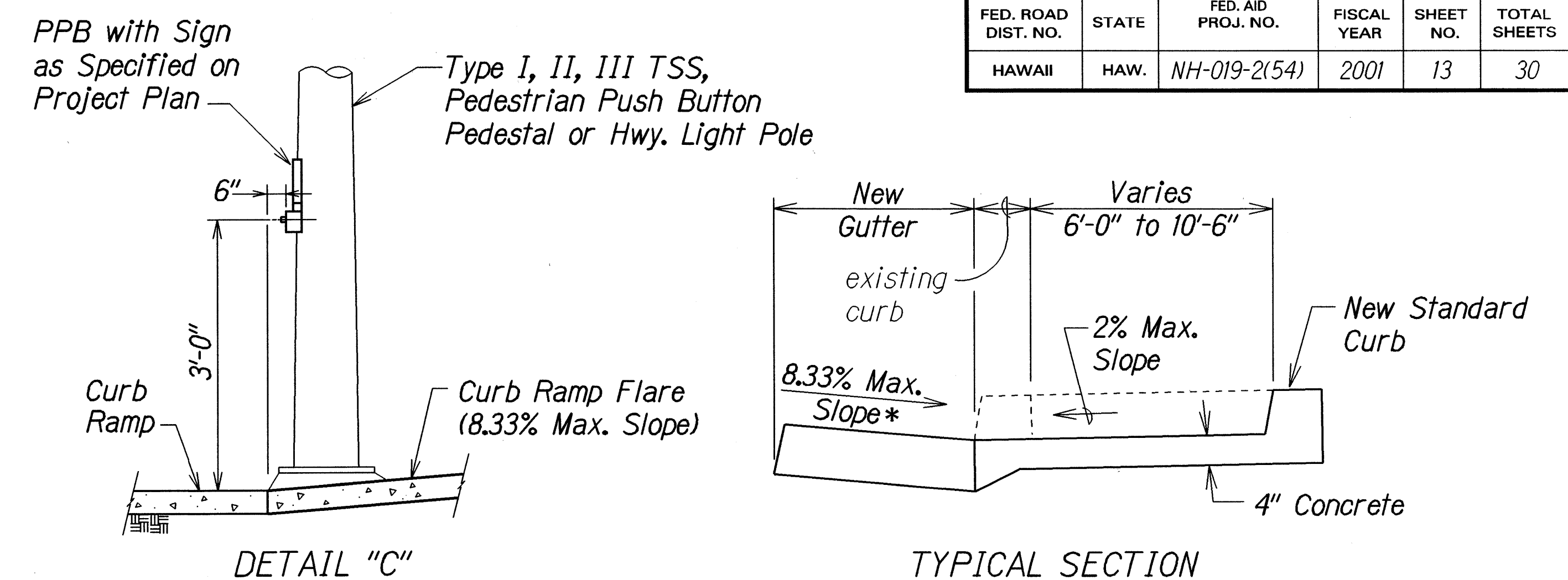
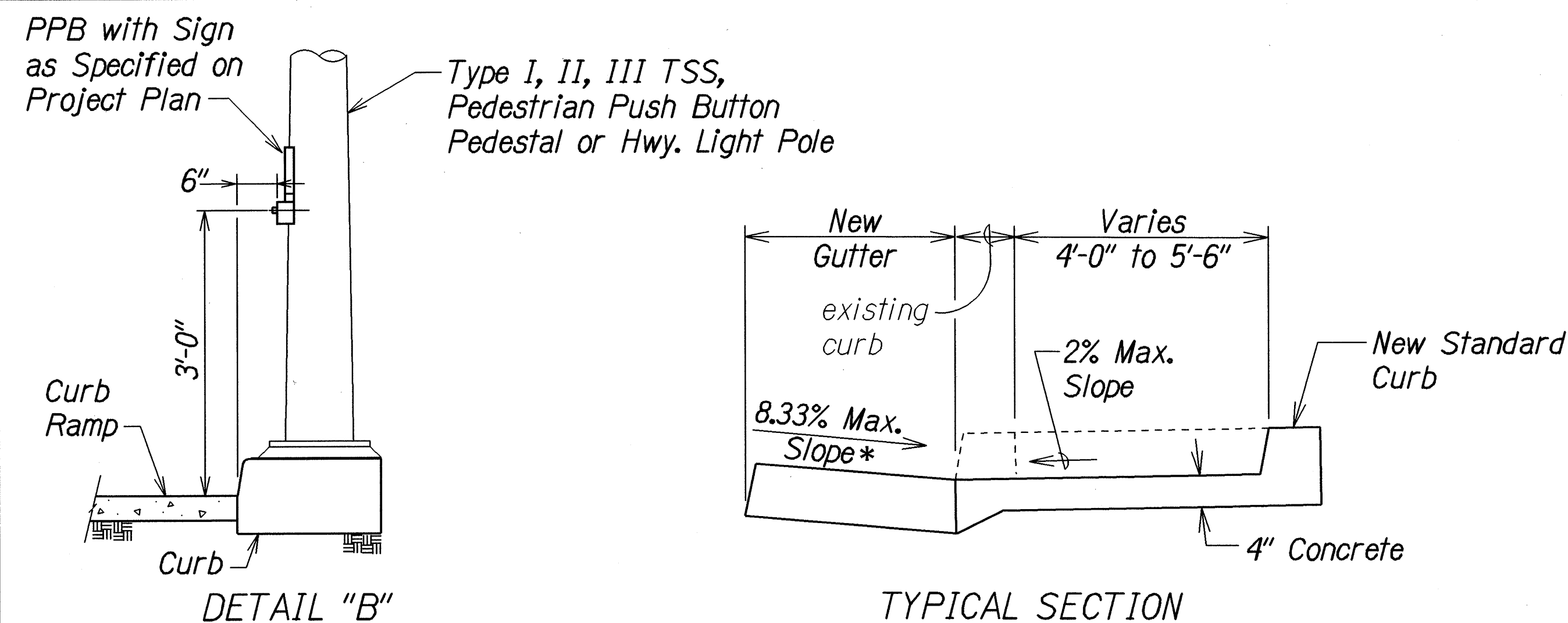
SHEET No. 2 OF 7 SHEETS

td1/usr2/traffic/std/curbrampa.dqn

R 10-16-00 TE-68 sht. 2 of 6

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY <u>X</u> _____
	TRACED BY _____
	DESIGNED BY <u>X</u> _____
	QUANTITIES BY _____
	CHECKED BY _____
	By _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(54)	2001	13	30



CURB RAMP - TYPE "B"
SIDEWALK WIDTH 5'-0" OR GREATER
BUT LESS THAN 7'-0" WIDTH

* See Curb Ramp Note No. 10

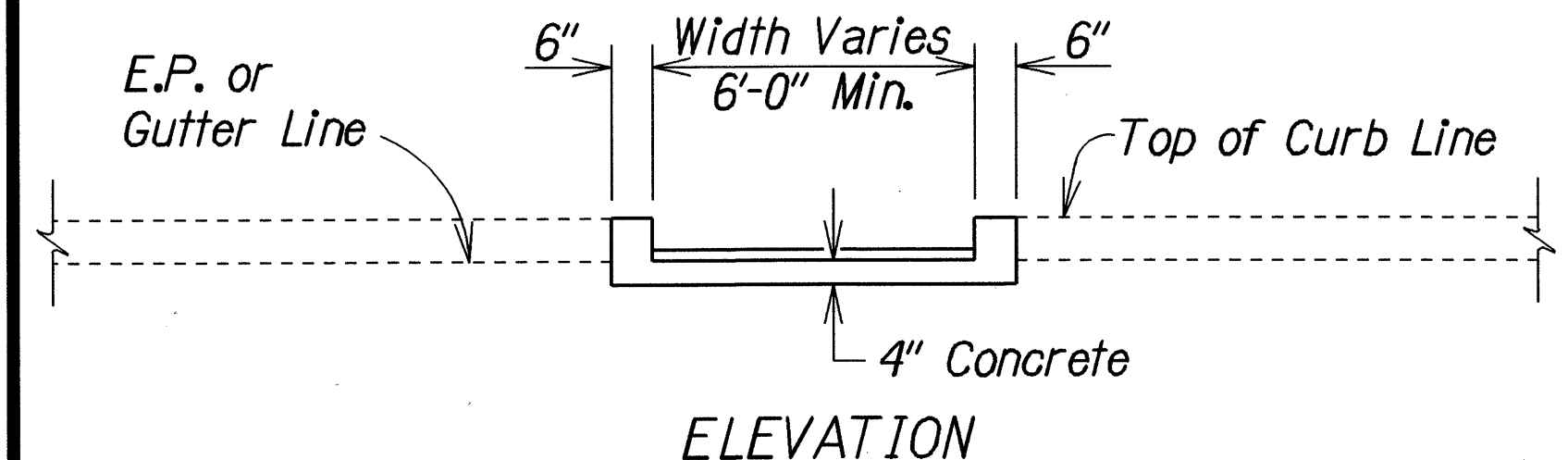
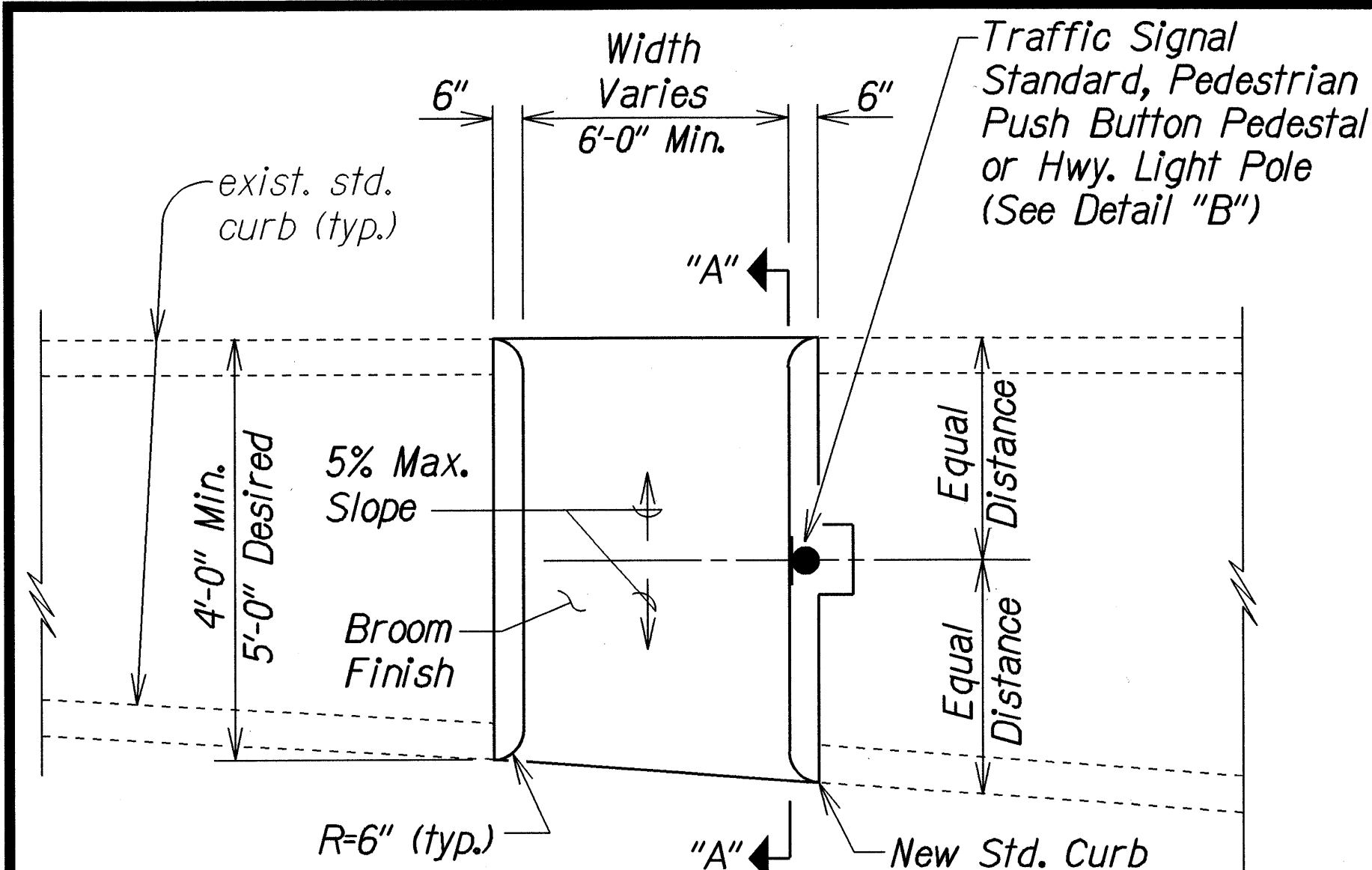
CURB RAMP - TYPE "B" MODIFIED
SIDEWALK WIDTH 7'-0" OR GREATER
BUT LESS THAN 12'-0" WIDTH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

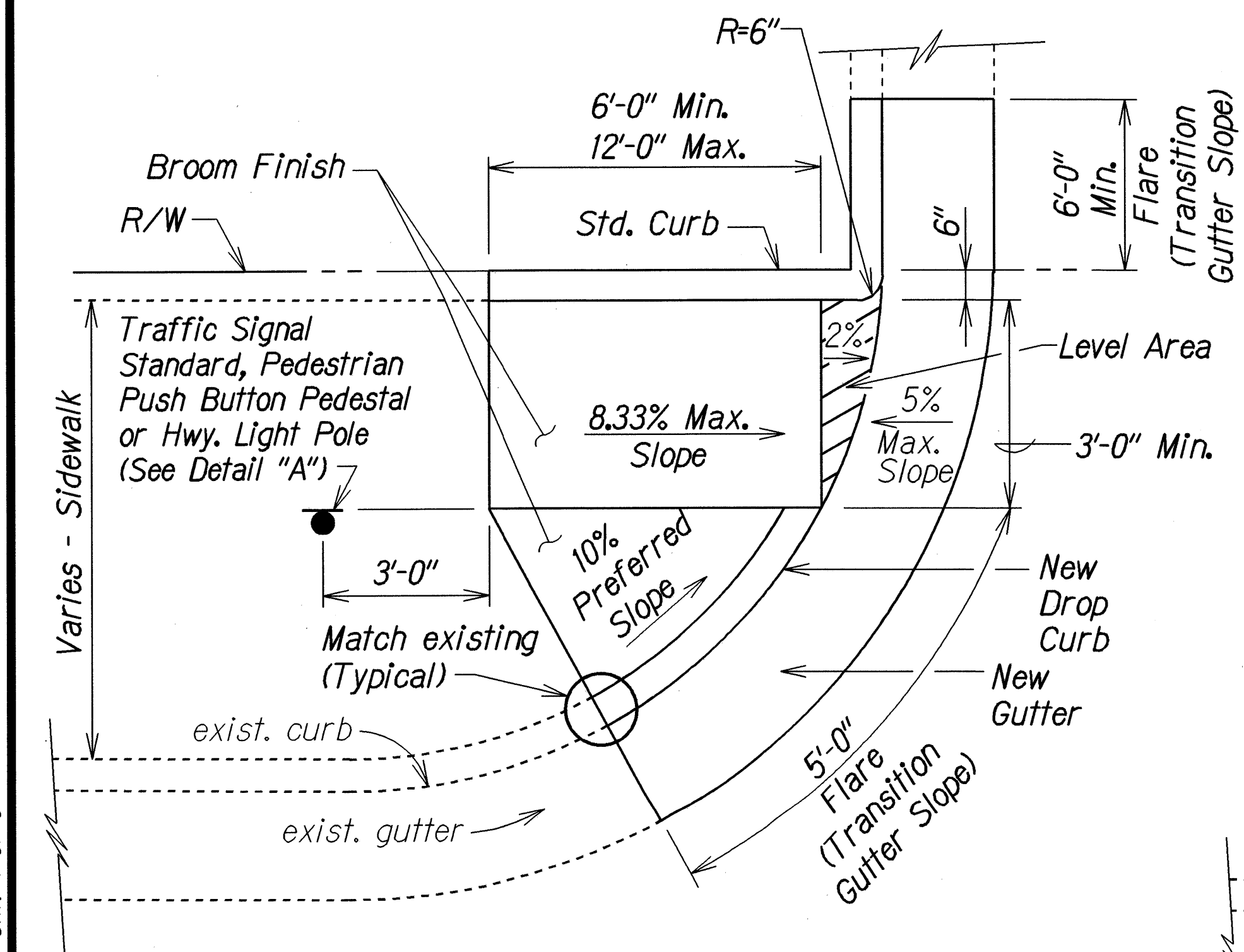
CURB RAMP DETAILS

KAMEHAMEHA AVENUE
BIKEWAY IMPROVEMENTS
Hilo Bayfront Highway to Kalaniana'ole Avenue
Federal Aid Project No. NH-019-2(54)
Not to Scale Date: April, 2001
SHEET No. 3 OF 7 SHEETS

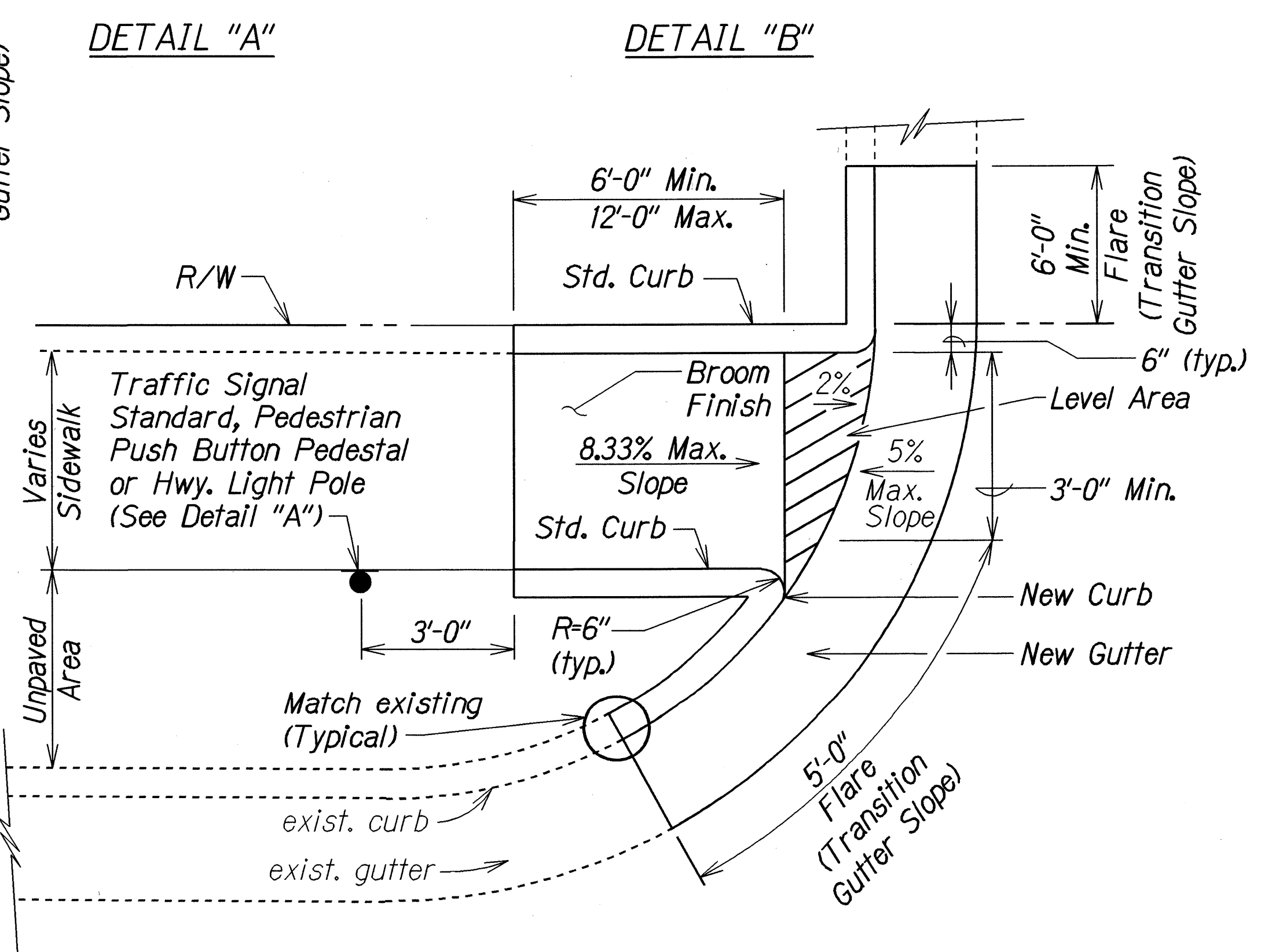
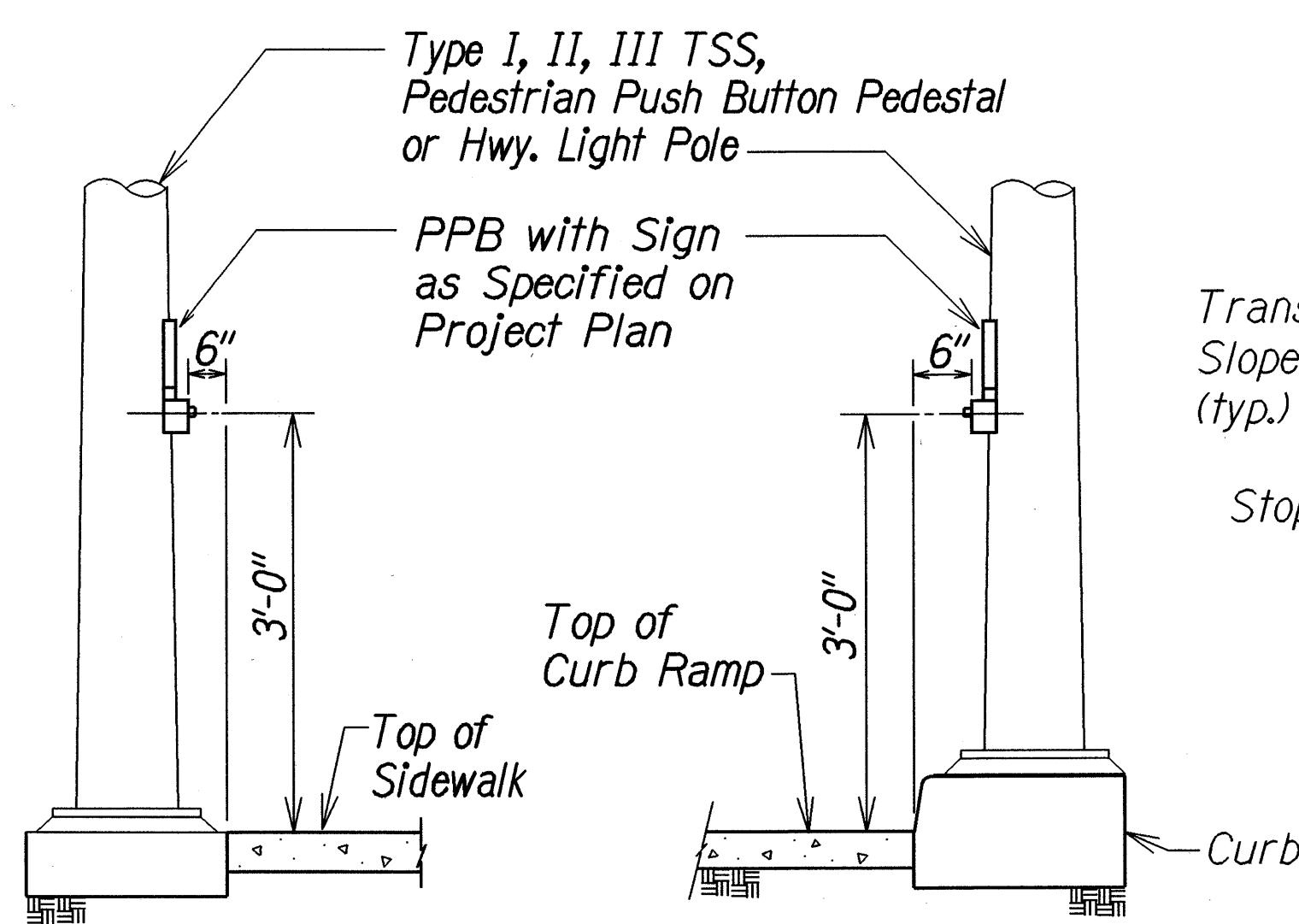
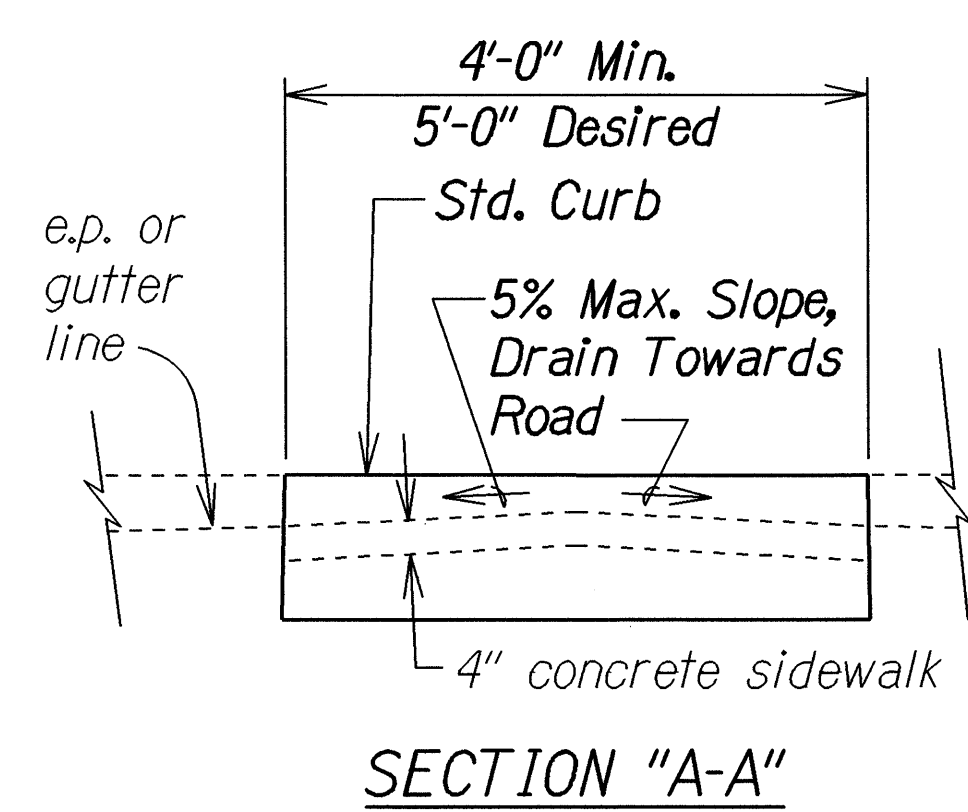
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HAWAII	HAW.	NH-019-2(54)	2001	14	30



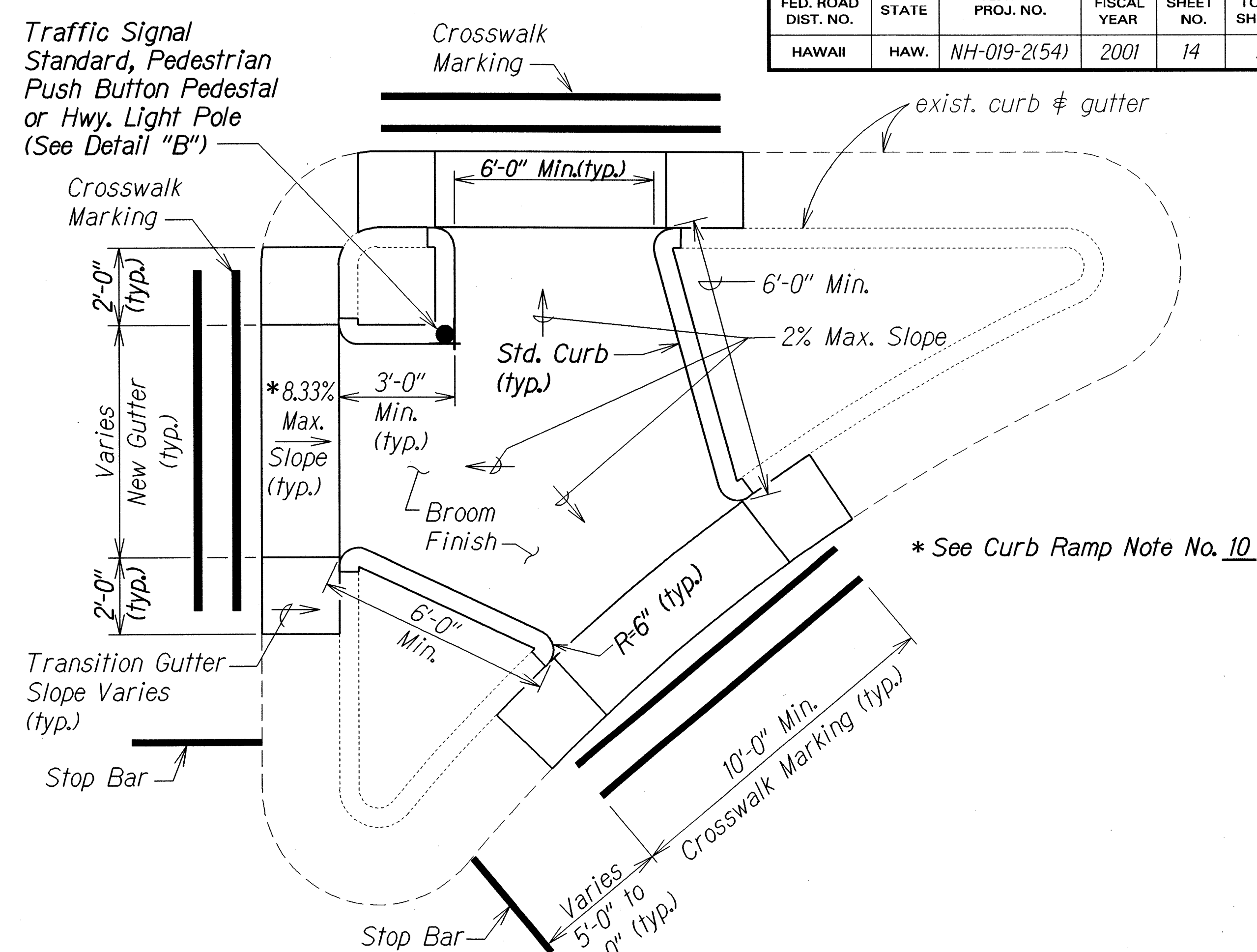
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USE AT MEDIAN CROSSINGS, ISLANDS



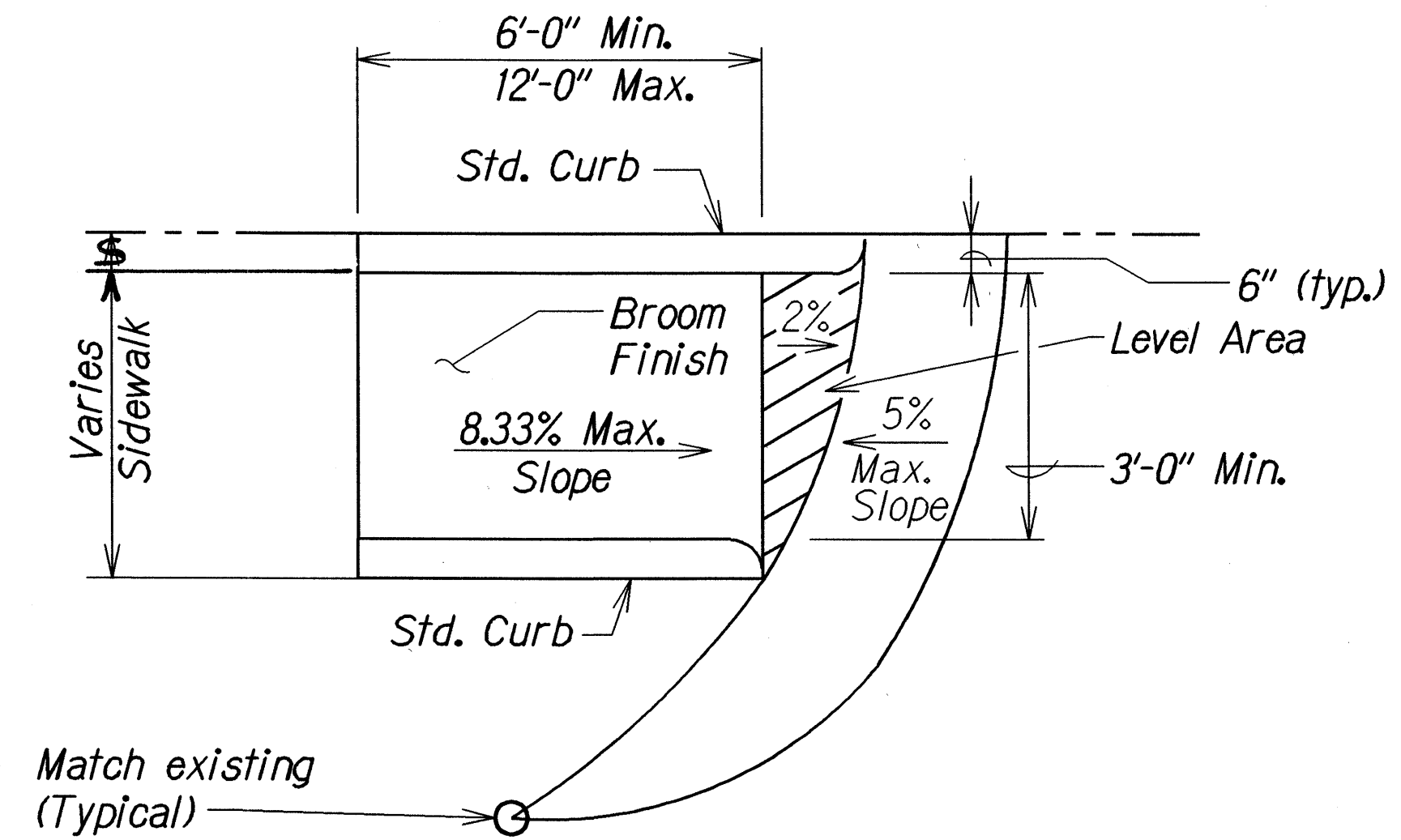
CURB RAMP - TYPE "D"



CURB RAMP - TYPE "D" MODIFIED



CURB RAMP - TYPE "C" MODIFIED



CURB RAMP - TYPE "D-1" MODIFIED

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CURB RAMP DETAILS

KAMEHAMEHA AVENUE

BIKEWAY IMPROVEMENTS

Hilo Bayfront Highway to Kalanianaʻole Avenue

Federal Aid Project No. NH-019-2(54)

Not to Scale

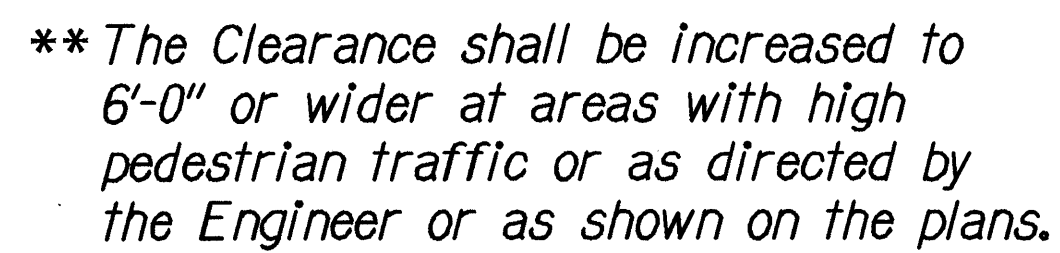
Date: April, 2001

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	

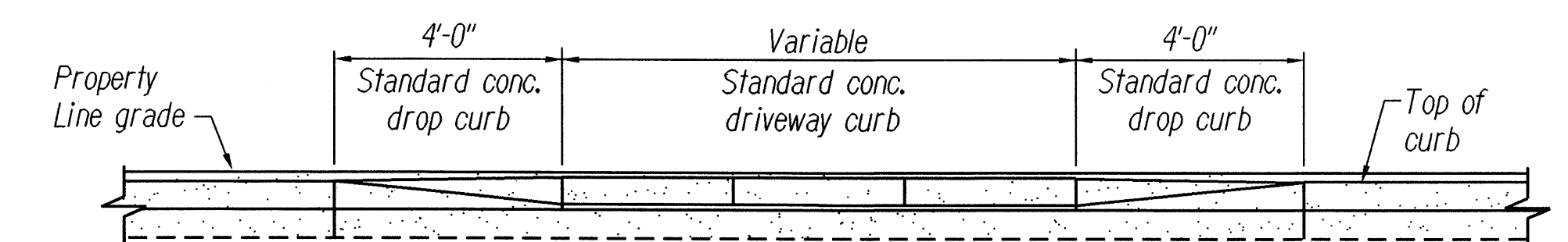
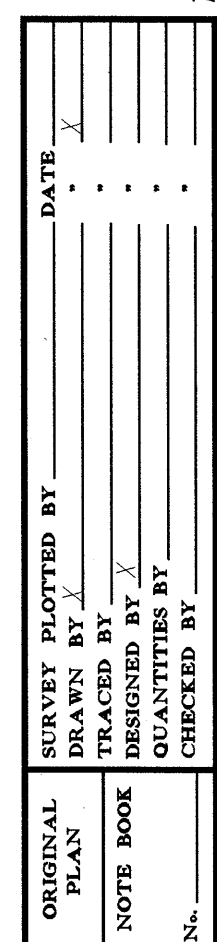
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"AS-BUILT"

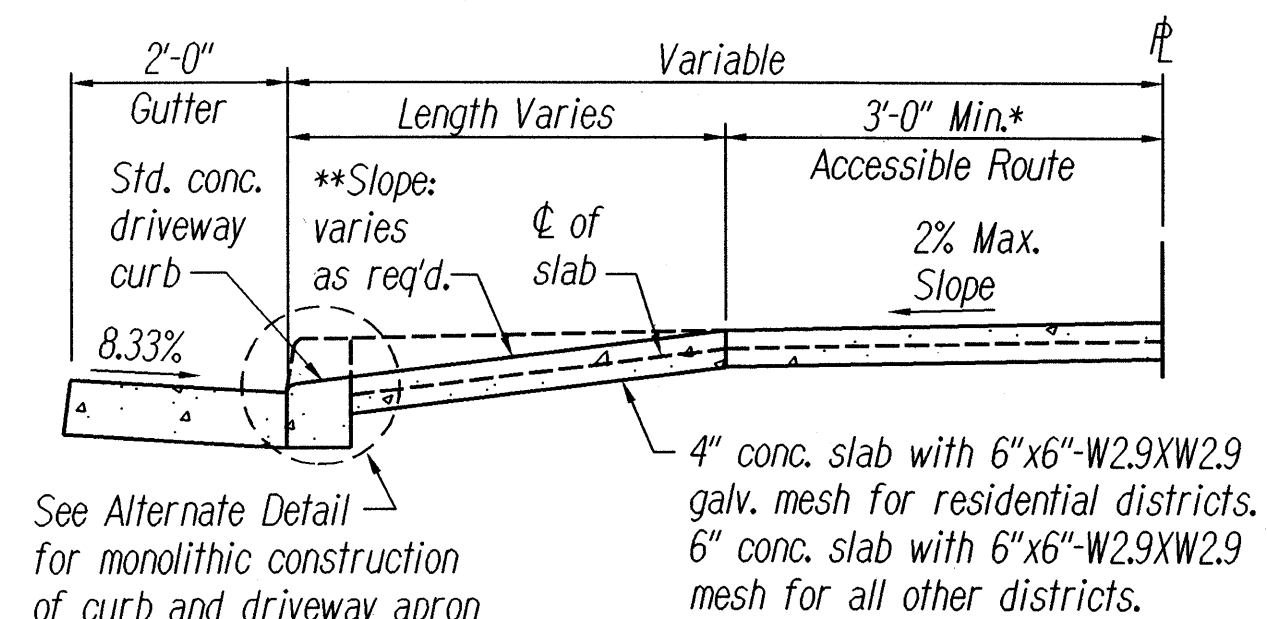
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(TO BE USED ONLY WITH TRAFFIC SIGNAL STANDARD OR PEDESTRIAN PUSH BUTTON PEDESTAL ON TRIANGULAR "ISLAND")



- * Match width of existing sidewalk whenever possible.
- ** Breakover and departure angles should not exceed 10 degrees or 17%.



Technical drawing showing a cross-section of a driveway and sidewalk. The driveway is 4" wide and 6" deep. The sidewalk is 4" wide. The drawing includes dimensions for the driveway width (4"), sidewalk width (4"), and various depths and radii (e.g., 3/4", 3/8", 1/8", R=1/8", 1 1/8", 3/16", 1/4", 3/8", 1/8"). The drawing also shows a 6" deep area labeled "Residential" and a 4" deep area labeled "All others".

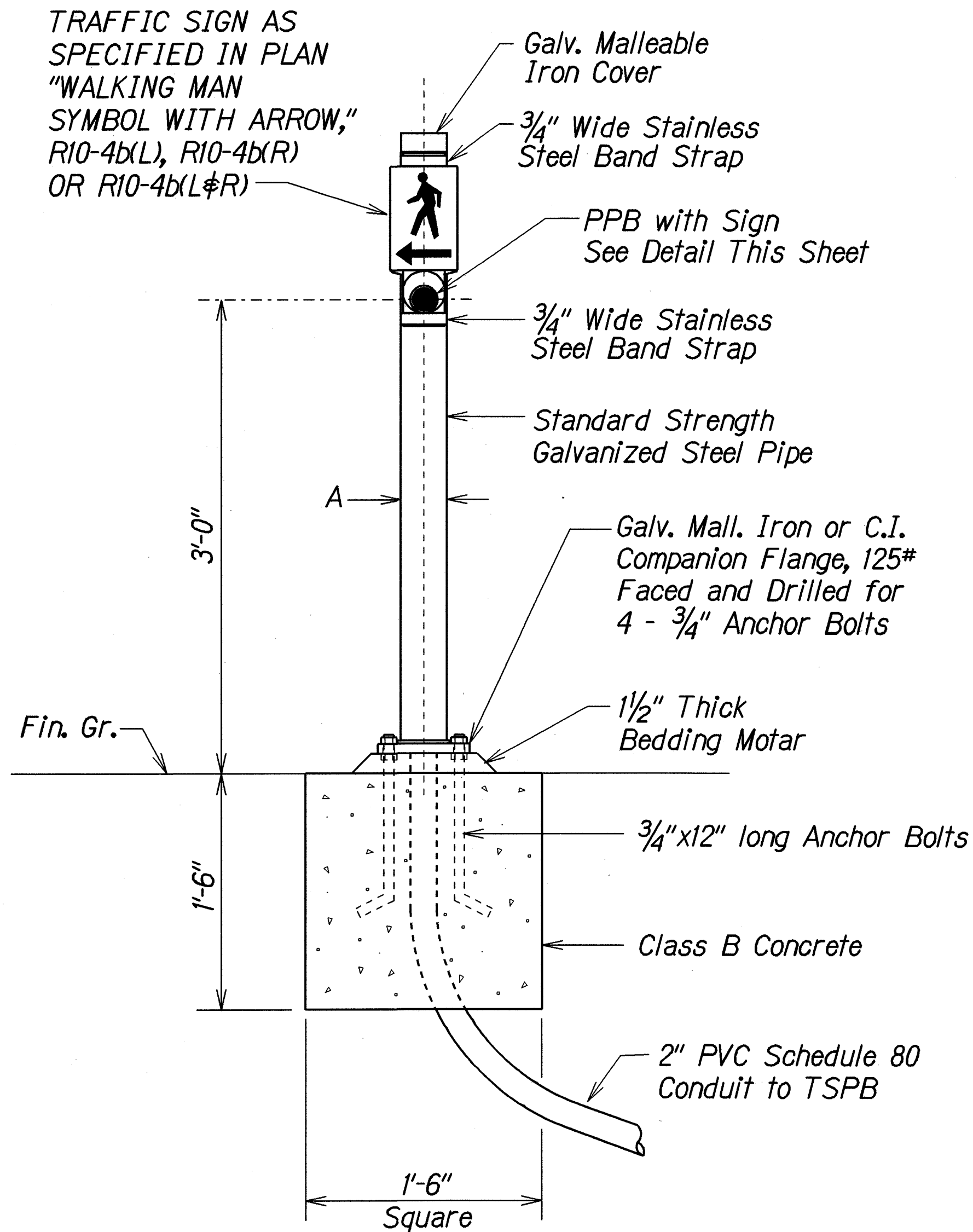
Diagram showing the elevation view of the bracket. Dimensions include a vertical height of 1" at the base, a horizontal distance of 7" from the base to the start of the curved section, a radius of $R=1"$ for the curved section, and a horizontal distance of 1" from the end of the curved section to the vertical face. A section line is indicated with the text "See Sect. A-A". A label "1-#4 Bar" points to the reinforcement bar within the bracket body.

DRIVEWAY APRON

For extension to existing driveway, scoring and finish shall match existing scoring and finish. For driveway constructed in built up areas, scoring conforming to scoring at adjacent driveways may be authorized.

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(54)	2001	ADD. 16	30

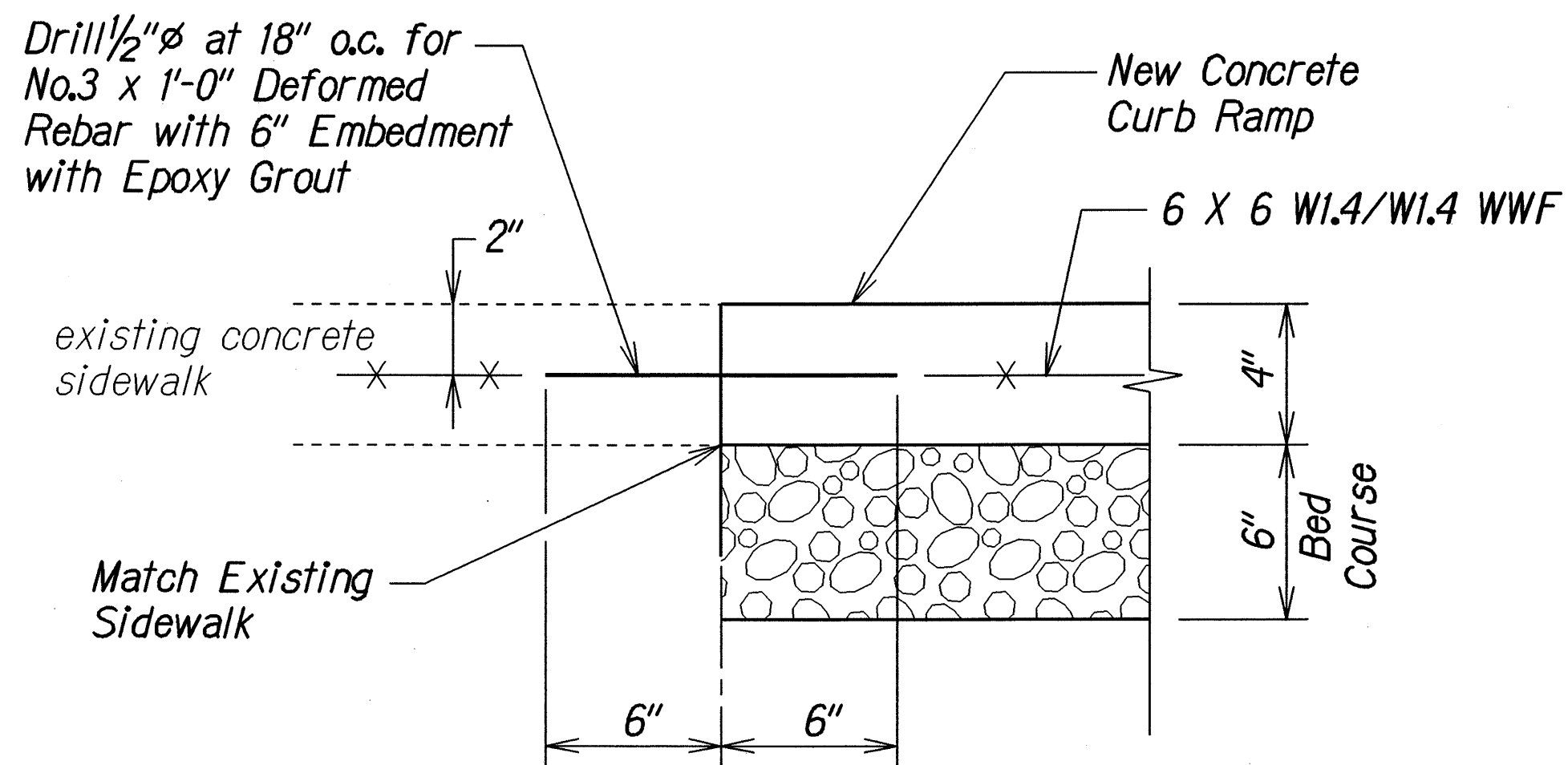


NOTE:

1. Conduits shall protrude 2" max. above finished surface of foundation.
2. Conduits shall slope away from post foundation.

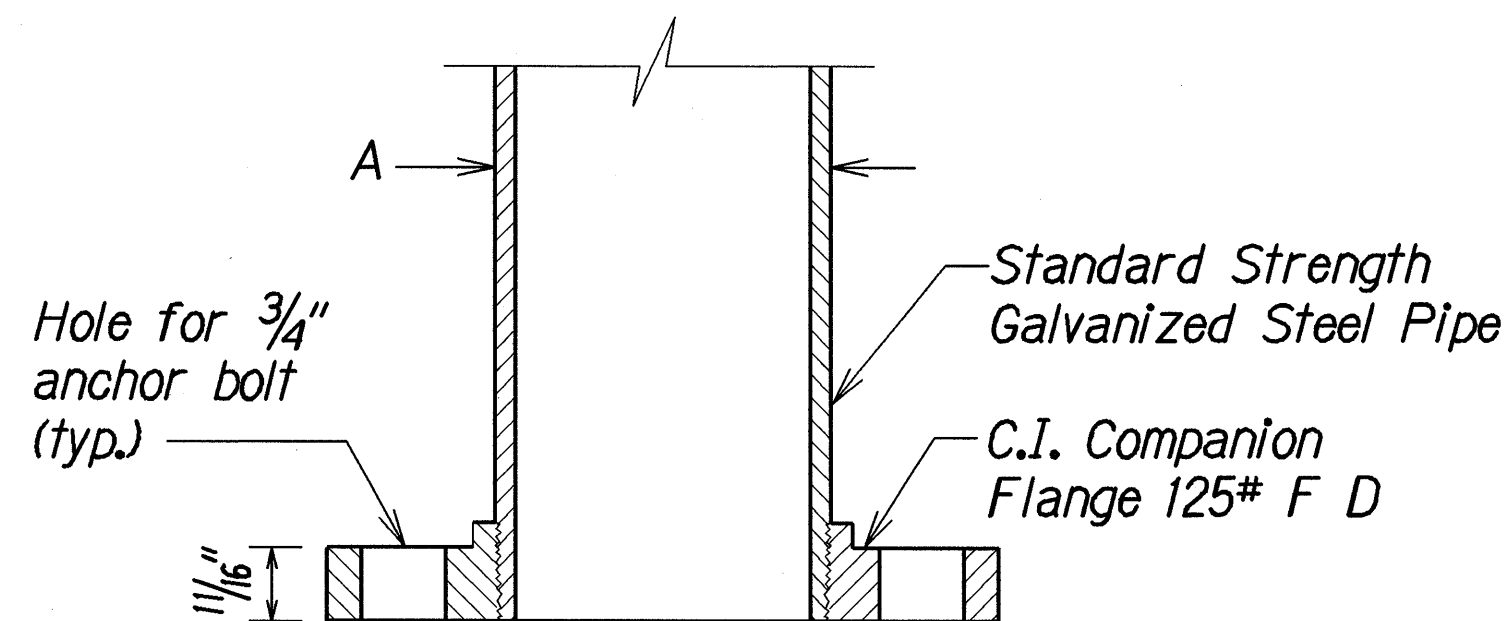
DATA TABLE FOR PPB POST		
AMOUNT OF PPB	DIMENSIONS	
	A	B
1	3 1/2"	8"
2-3	4 1/2"	9"

PPB POST AND FOOTING DETAIL

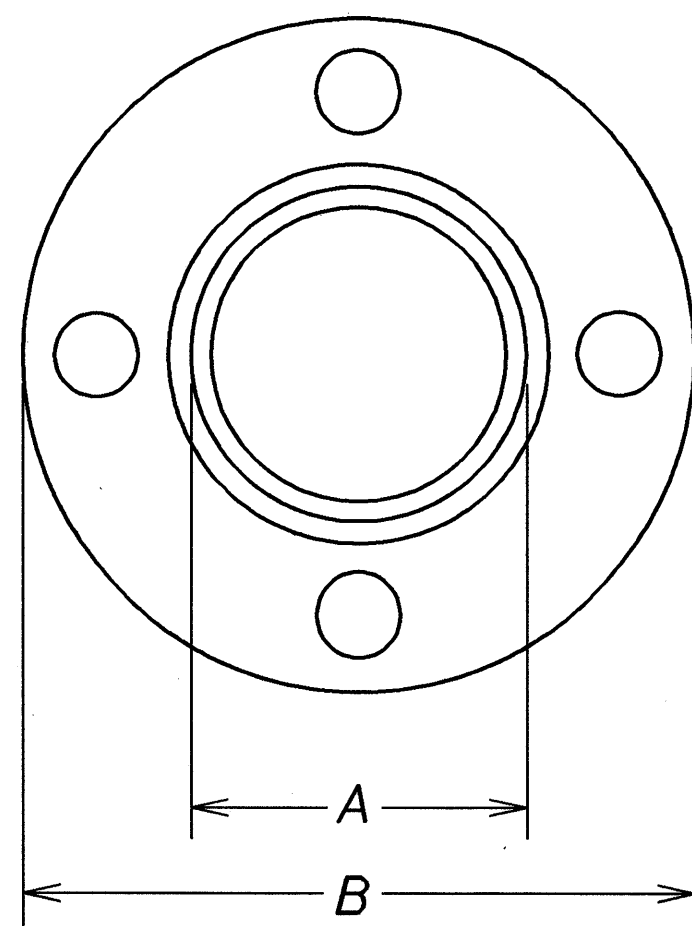


NOTE:
All curb ramps shall be reinforced.

**TYPICAL CONSTRUCTION JOINT
AT EXISTING SIDEWALK**

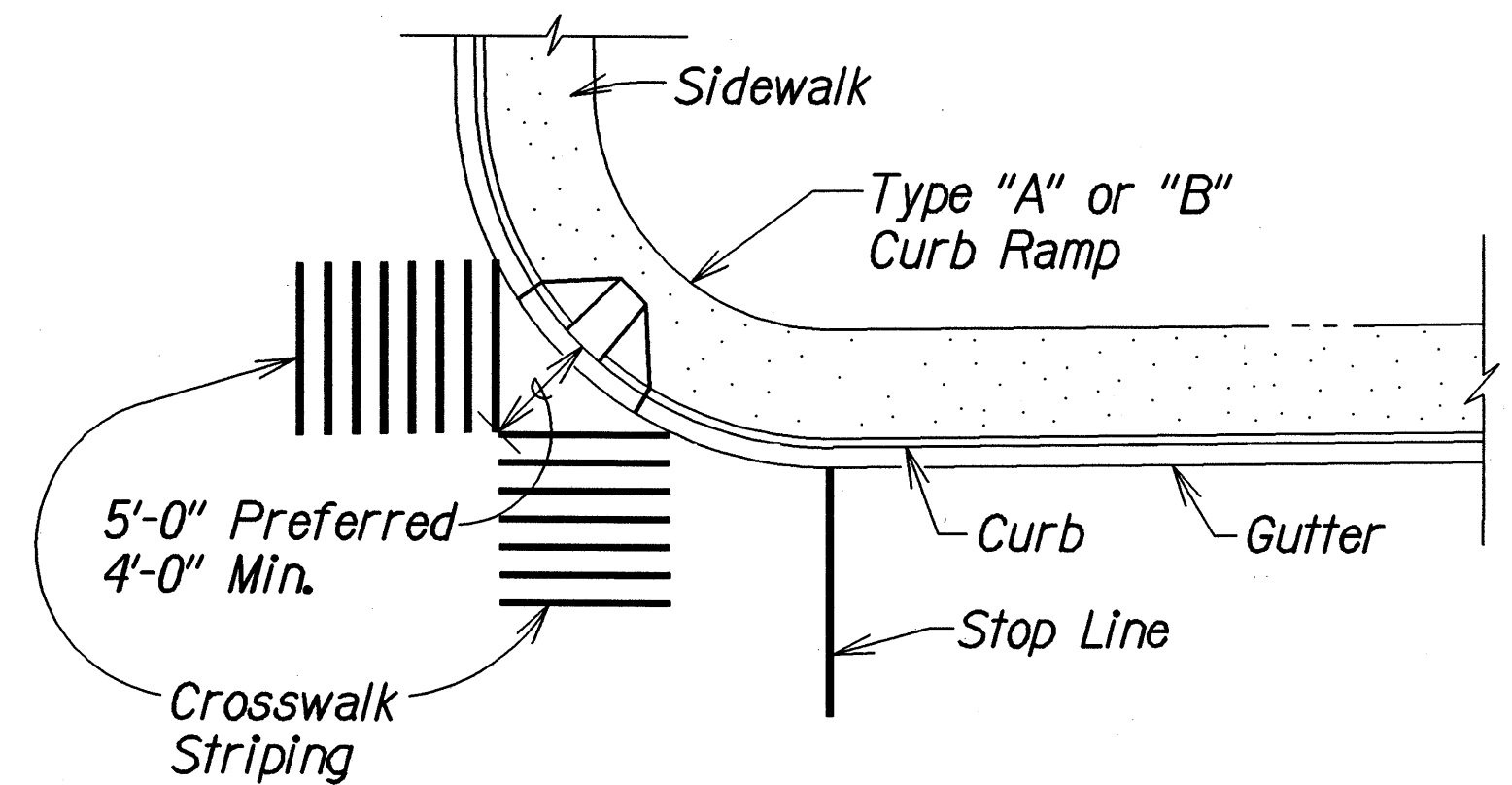
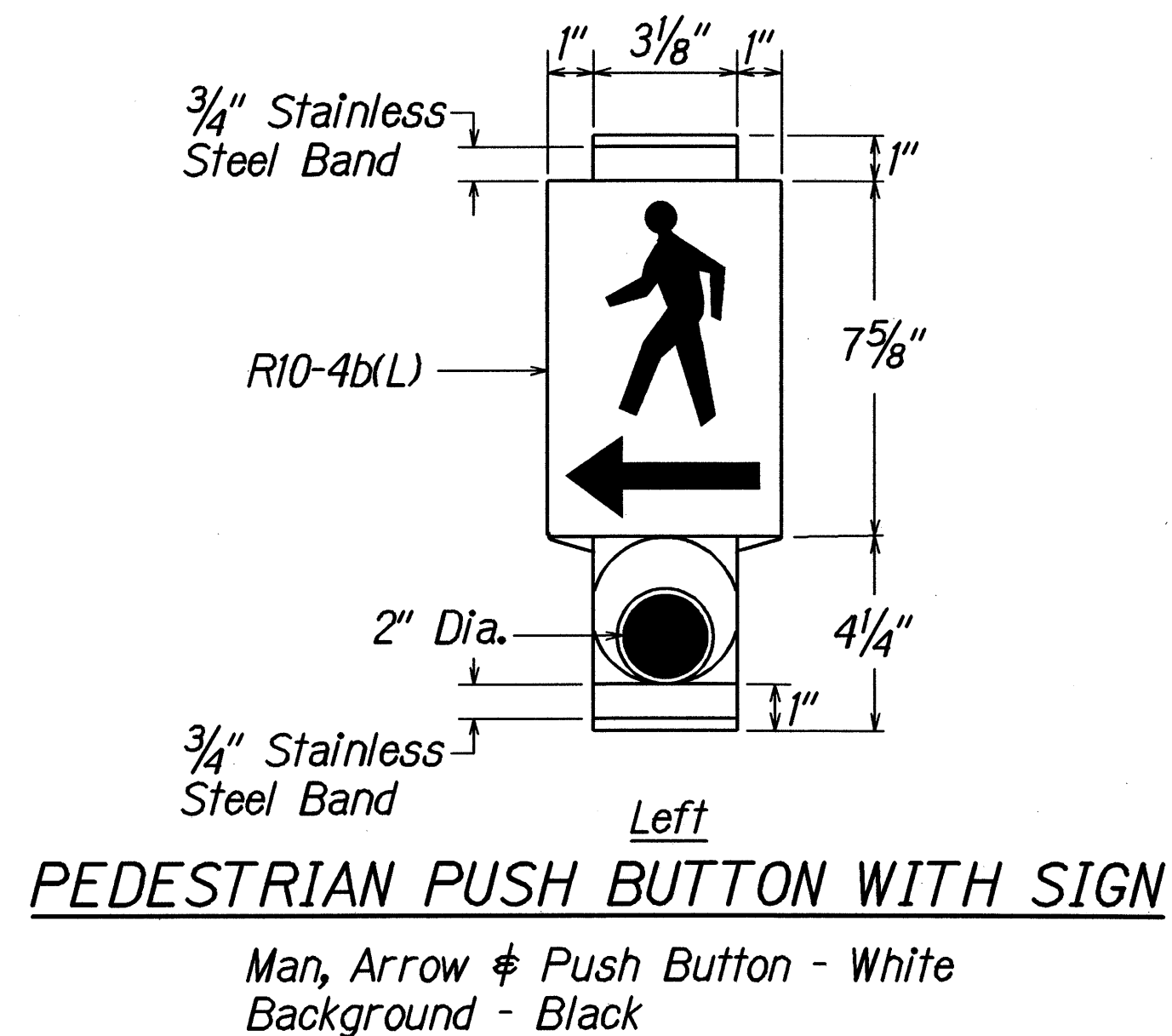


SECTION

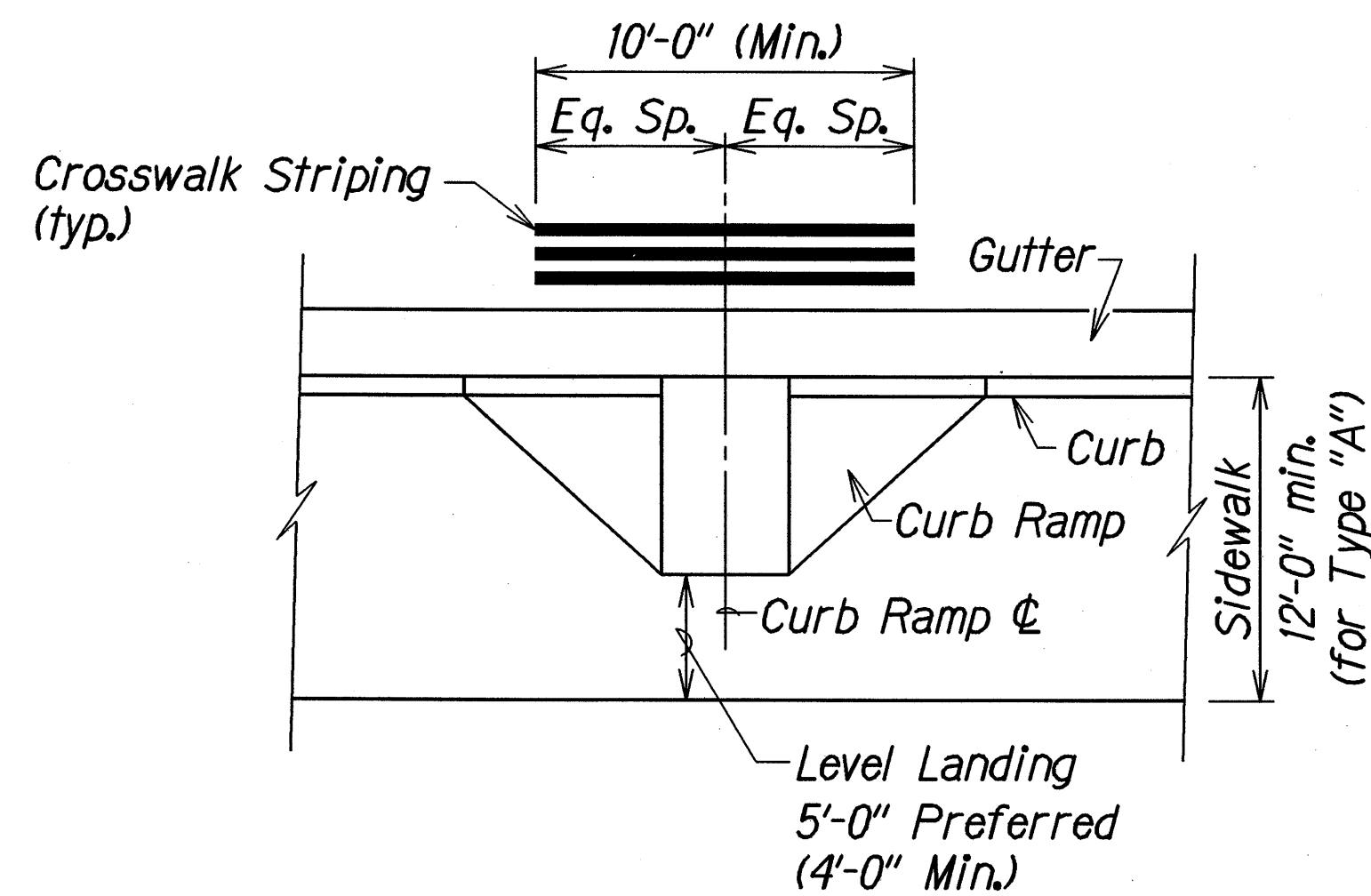


TOP VIEW

FLANGE DETAIL



**TYPICAL CROSSWALK STRIPING
AT DIAGONAL CURB RAMP**



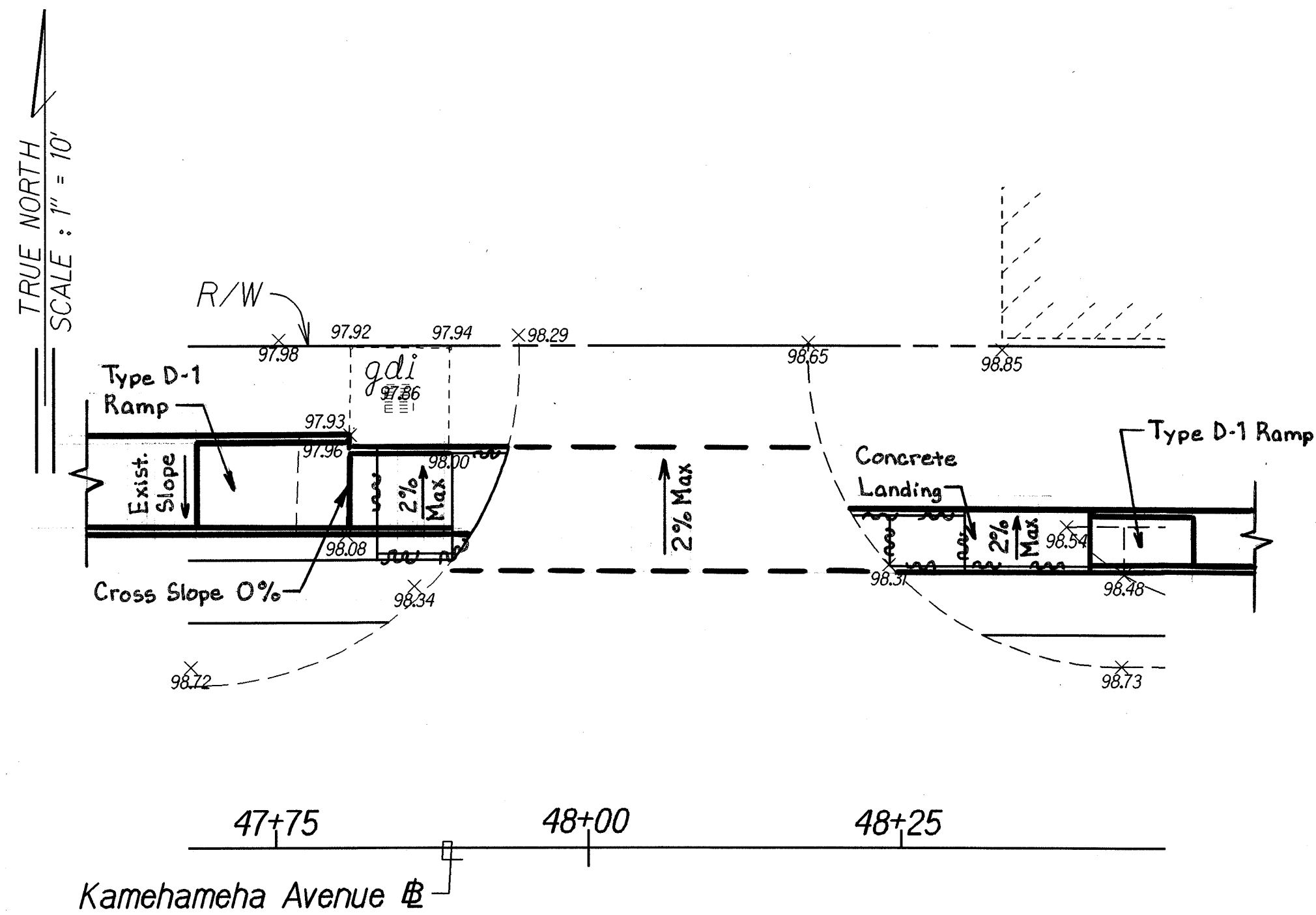
**TYPICAL CROSSWALK STRIPING
AT CURB RAMP**

12/17/01	Revise Pedestrian Push Button with Sign and Add Pedestrian Push Button Pedestal Details
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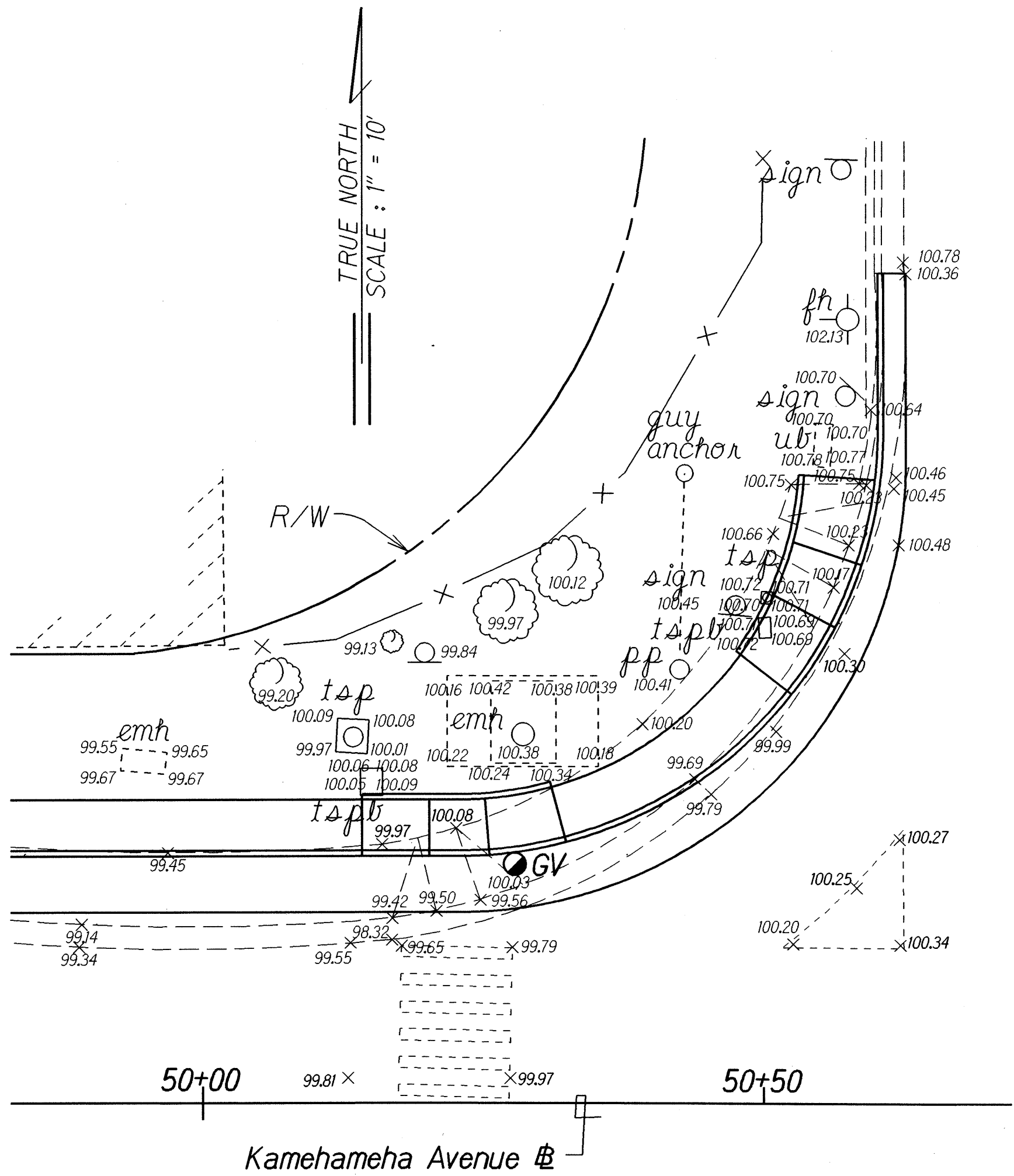
DATE	REVISION
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
MISCELLANEOUS DETAILS	
KAMEHAMEHA AVENUE BIKEWAY IMPROVEMENTS	
Hilo Bayfront Highway to Kalaniana'ole Avenue	
Federal Aid Project No. NH-019-2(54)	
Not to Scale	Date: April, 2001
SHEET No. 6 OF 7 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(54)	2001	17	30



DETAIL
Scale: 1"=10'



DETAIL
Scale: 1"=10'

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP DETAILS
KAMEHAMEHA AVENUE
BIKEWAY IMPROVEMENTS
Hilo Bayfront Highway to Kalanianaʻole Avenue
Federal Aid Project No. NH-019-2(54)

Scale: As Shown
Date: April, 2001

SHEET No. 7 OF 7 SHEETS

"AS-BUILT"