

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.52	106

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 slip-resistant. 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.
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.

6/07/07	Replace with updated version, per Addendum No. 1.
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DATE	REVISION
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<u>CURB RAMP AND SIDEWALK NOTES</u>
<u>OLD KEAAU-PAHOA ROAD RESURFACING</u>
<u>KEAAU TO KEAAU HIGH SCHOOL</u>
<u>PROJECT NO. 139A-01-05M</u>
Date: Nov., 2004

SHEET No. 1 OF 7 SHEETS

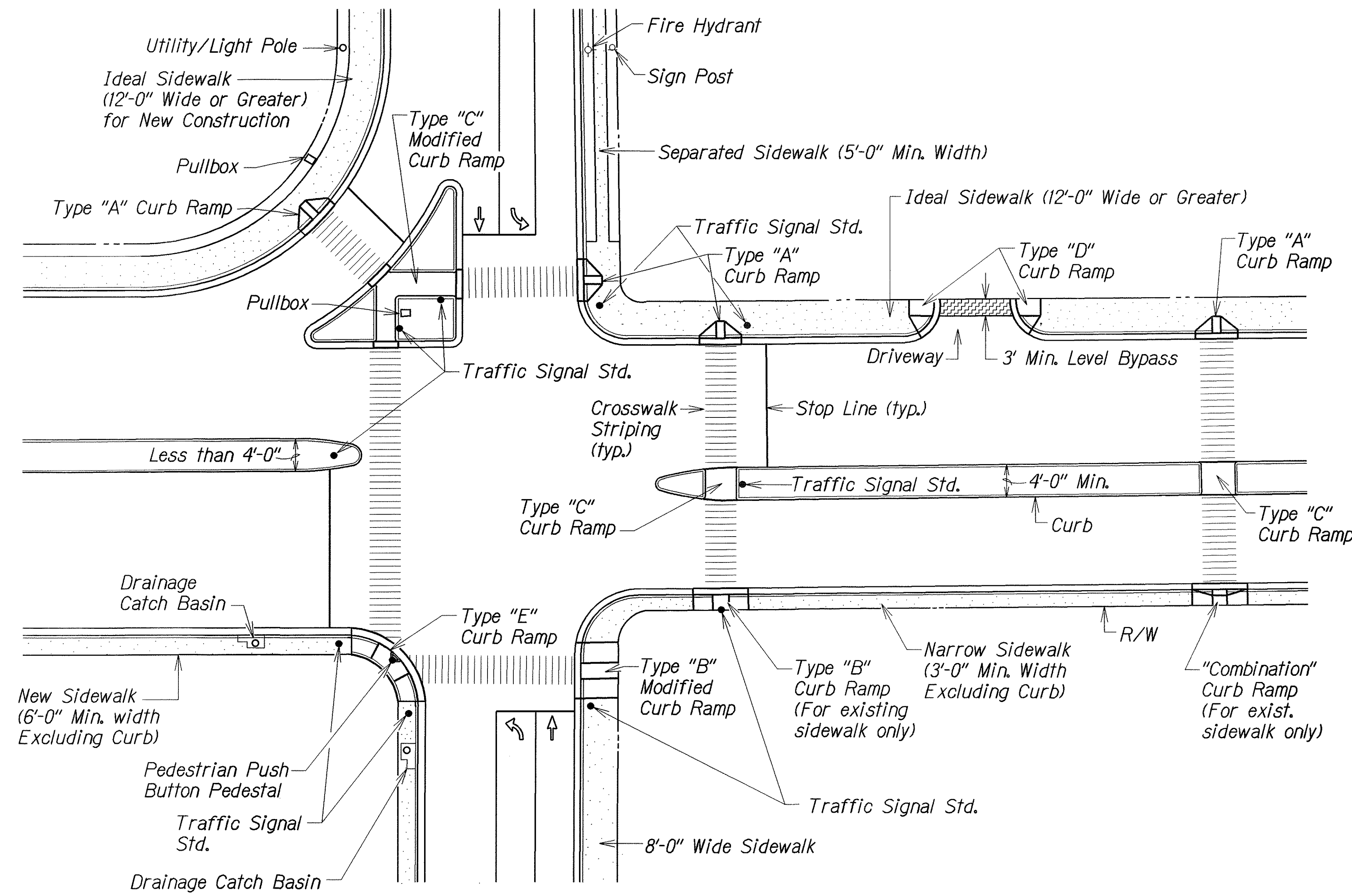
ADD. 52

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

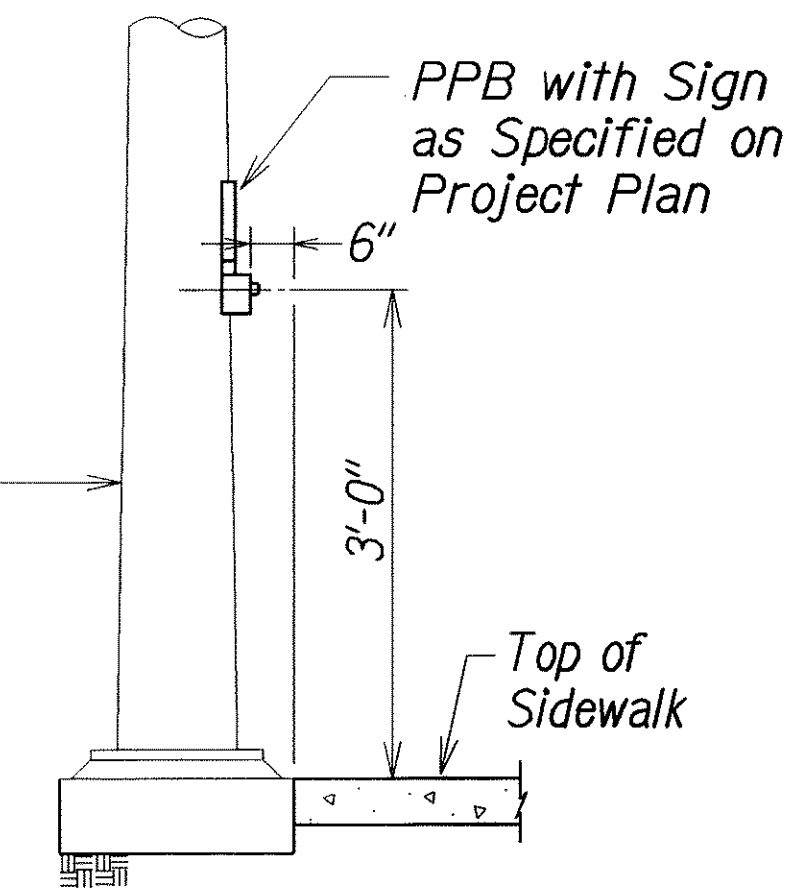
R12-06-06 TE-XX sht. 1 of 9

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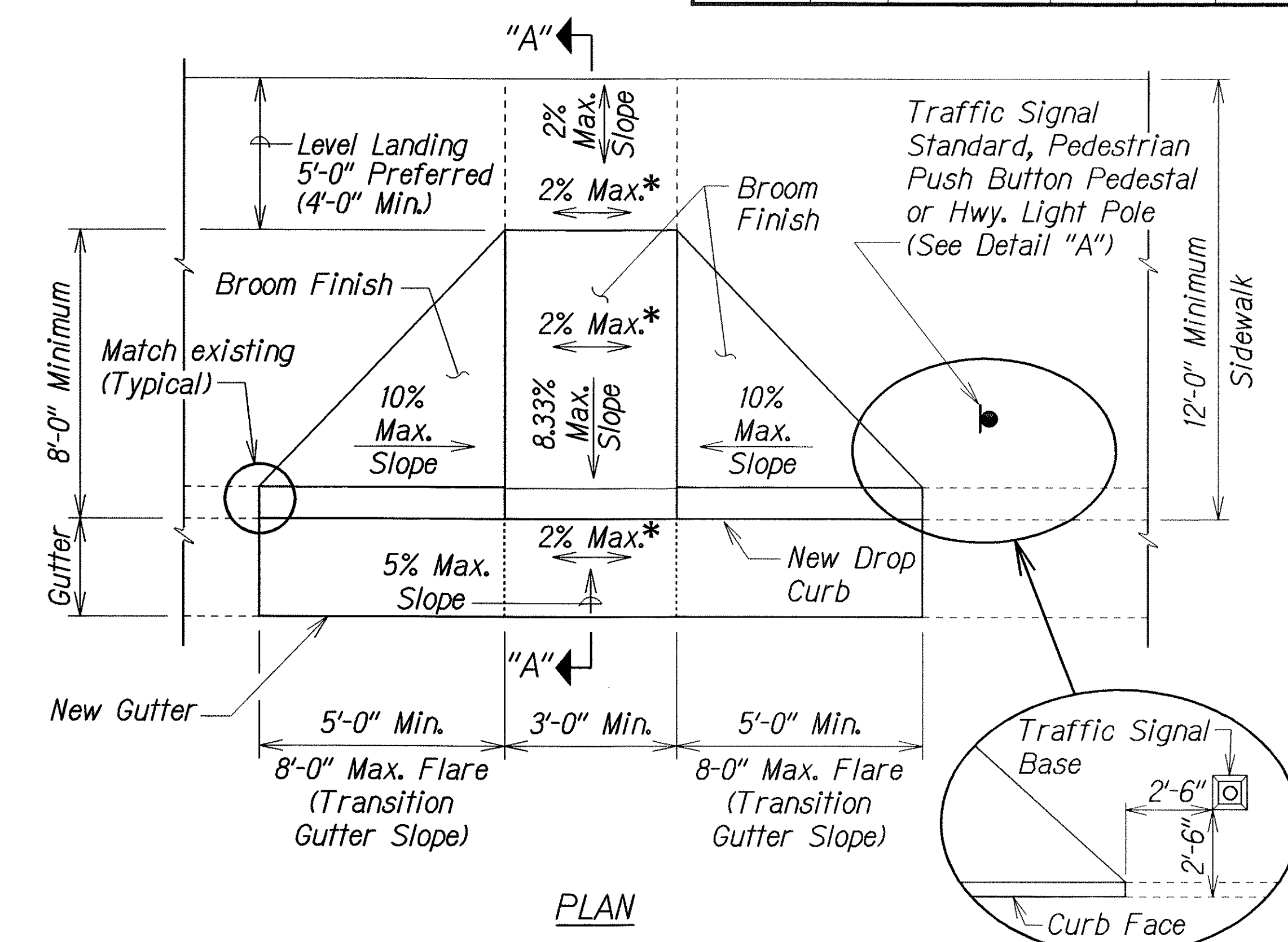
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.53	106



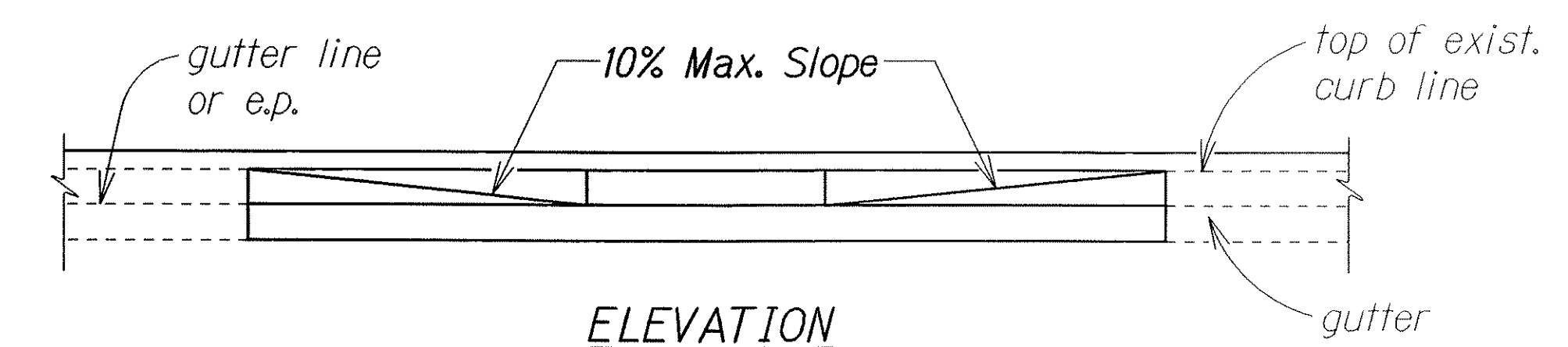
TYPICAL CURB RAMPS



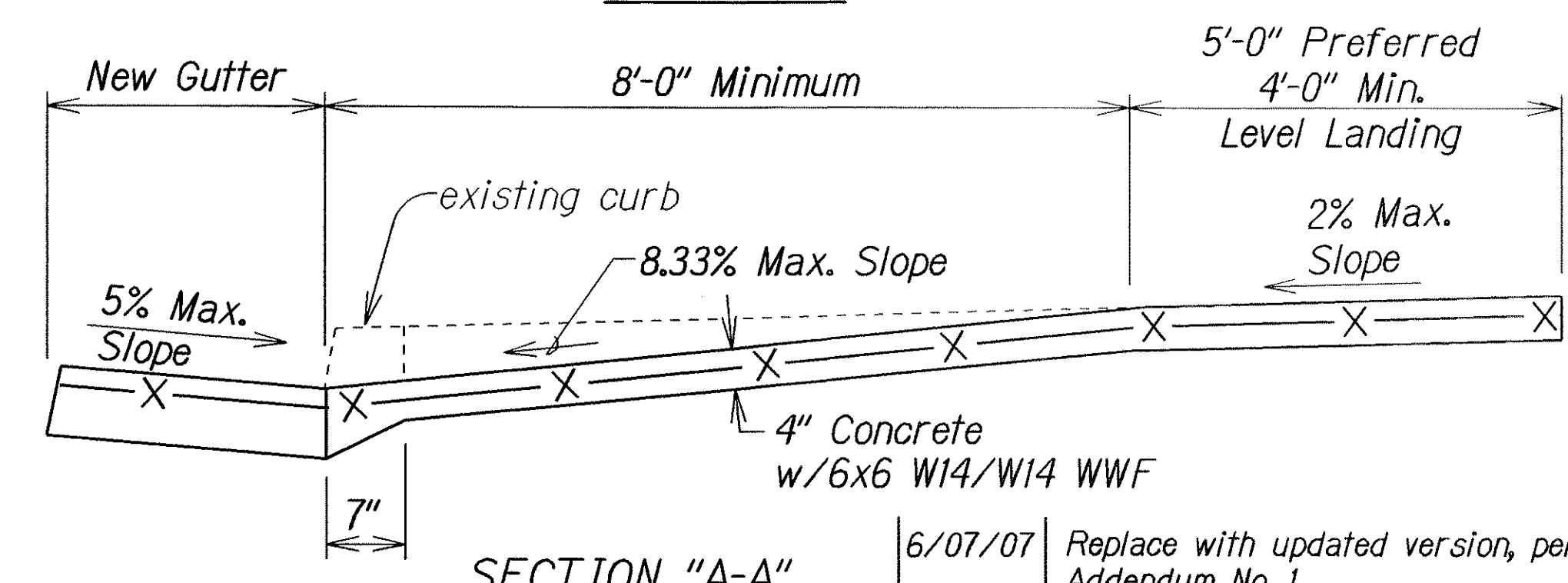
DETAIL "A"



PLAN



ELEVATION



SECTION "A-A"

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

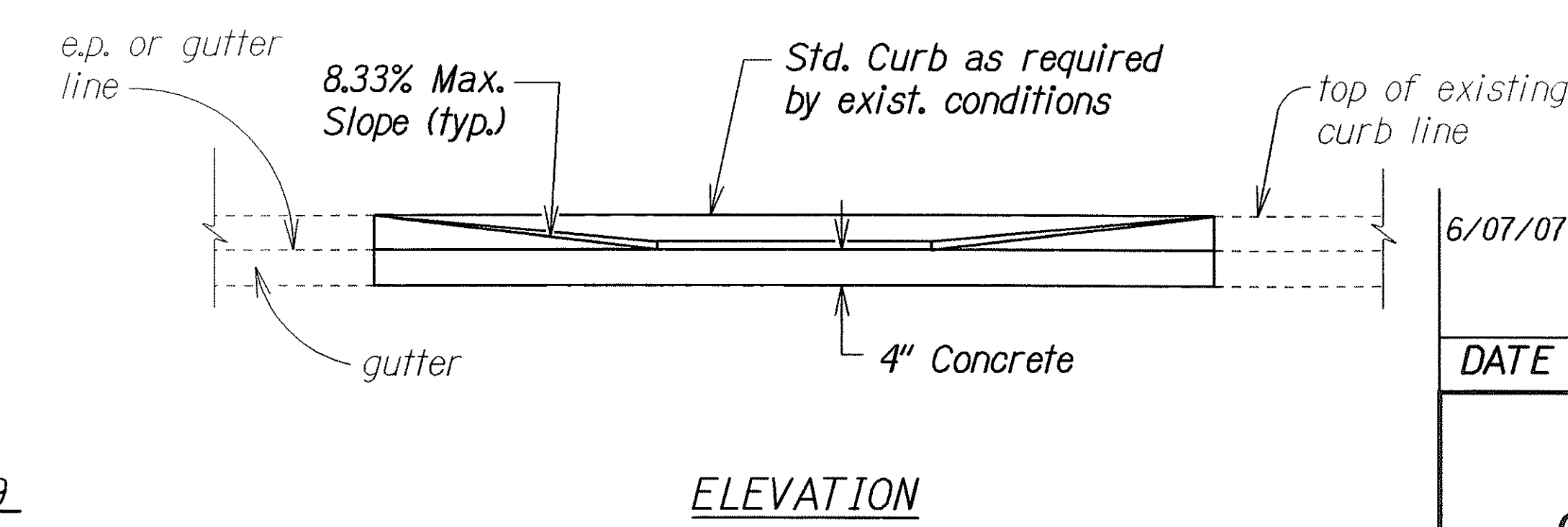
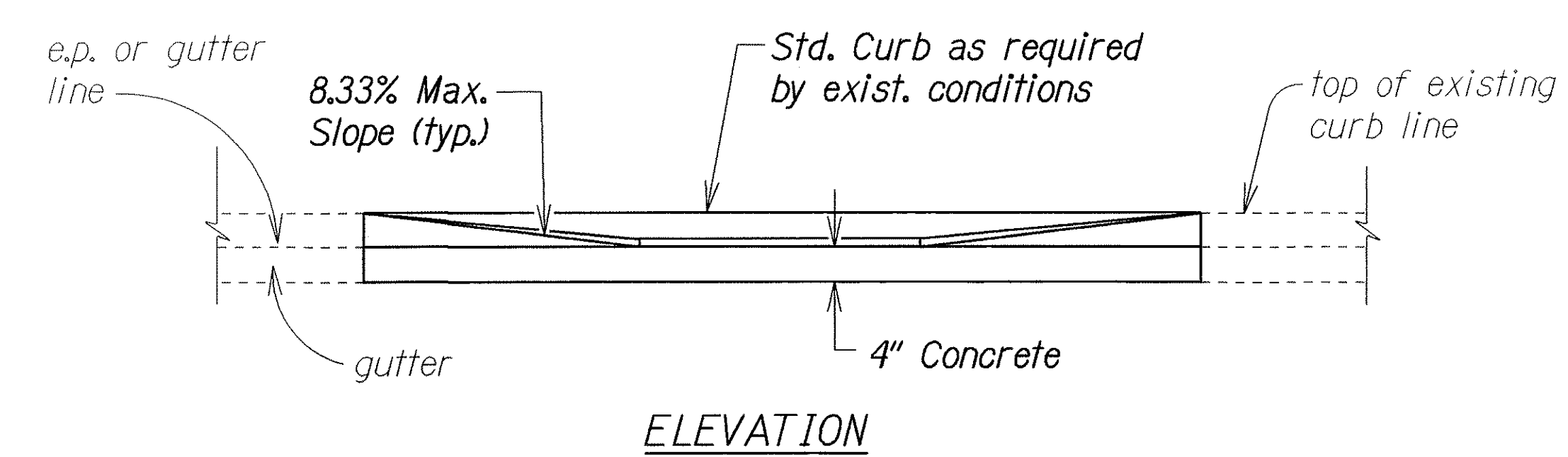
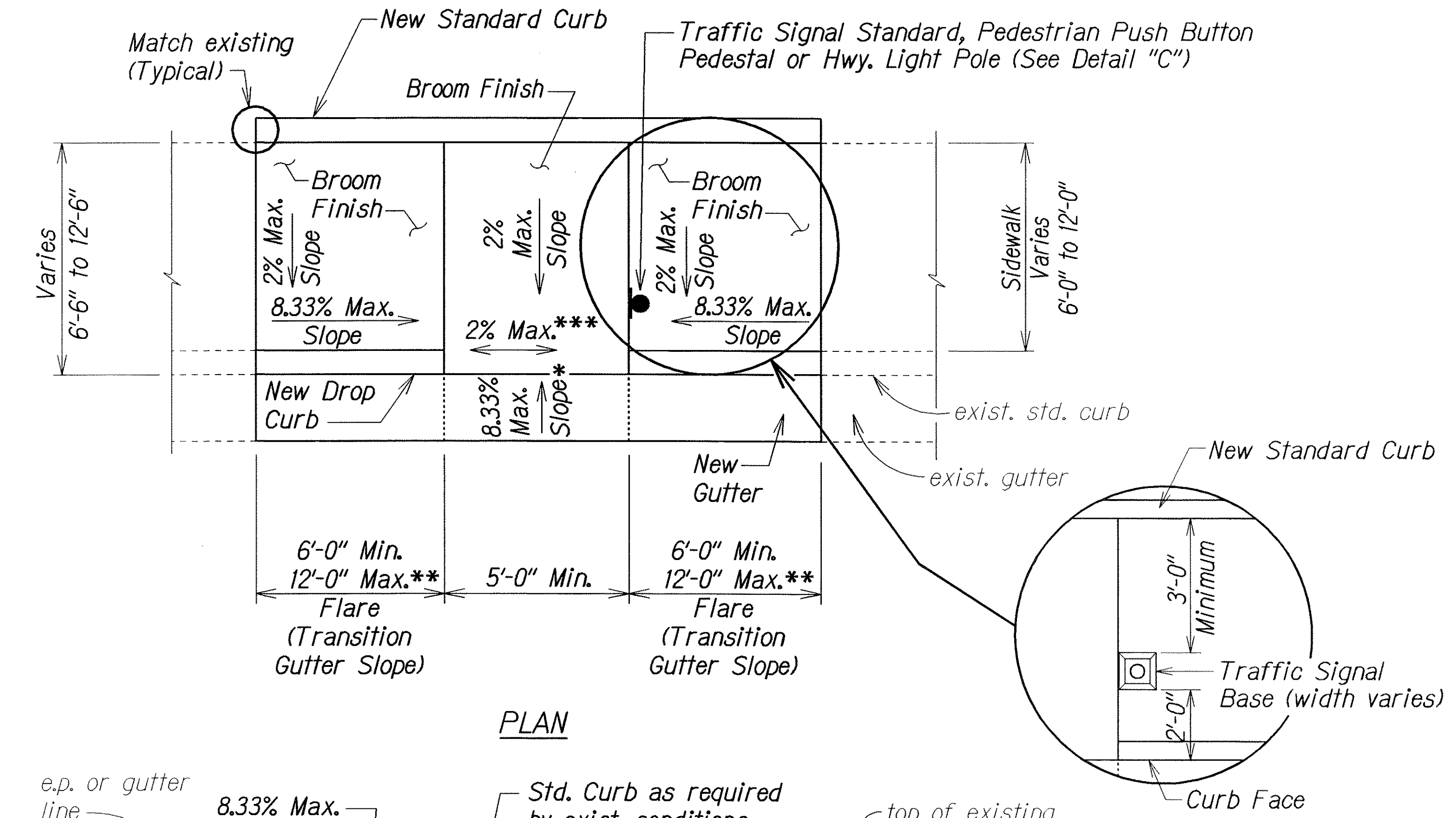
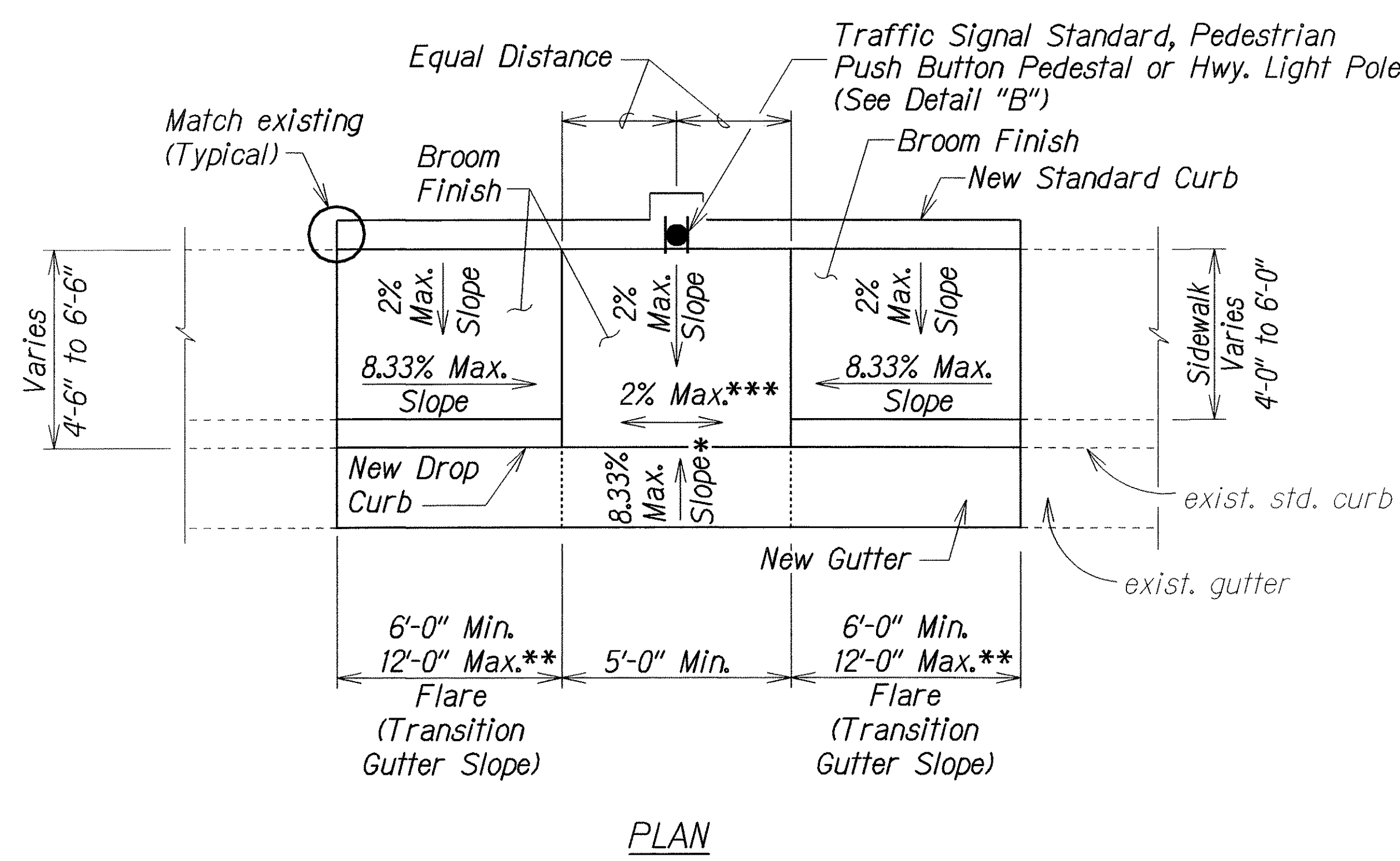
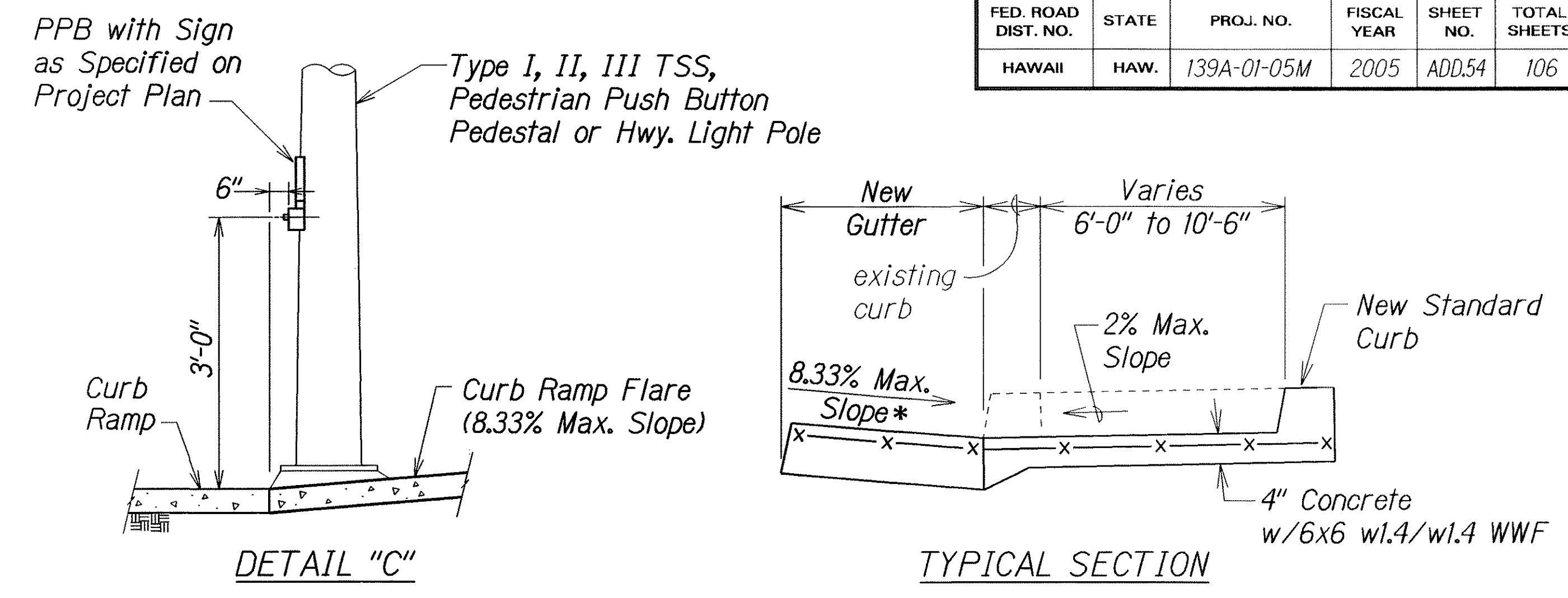
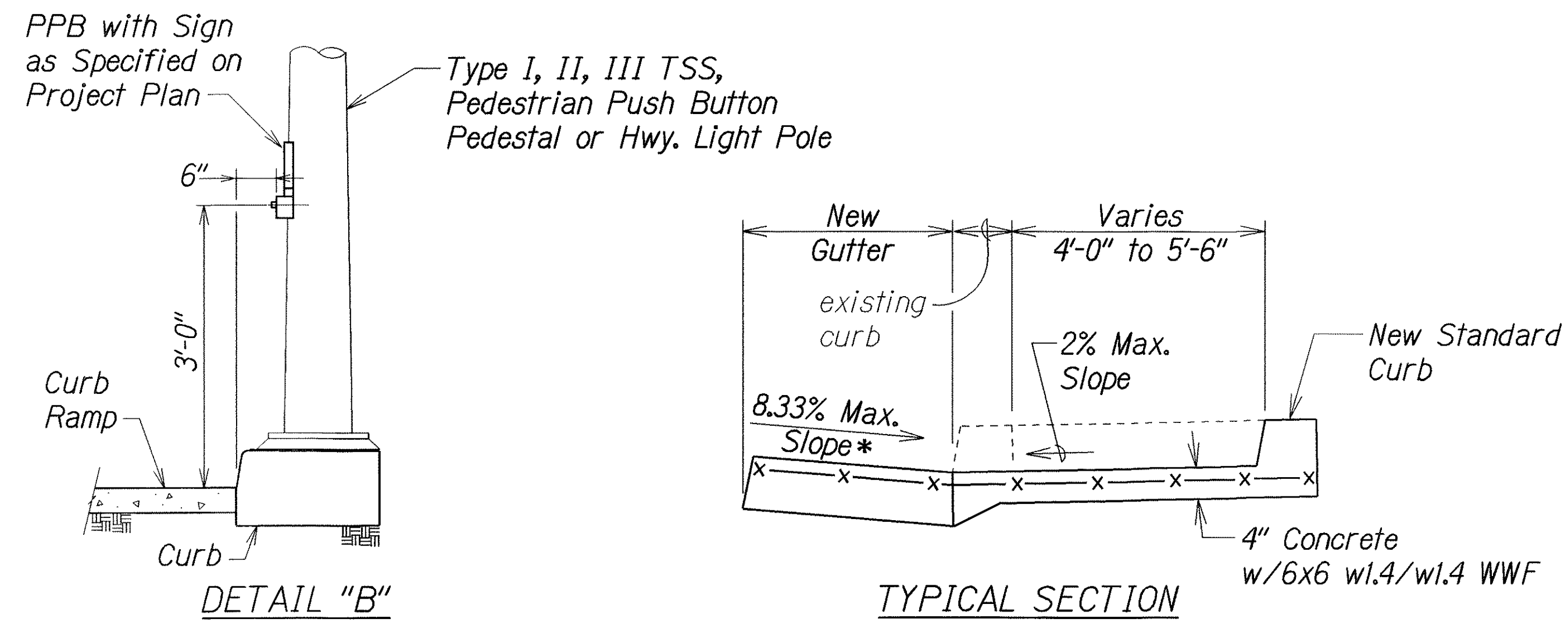
* If Roadway Slope >2% Conform to Roadway Slope and File Technical Infeasibility (TI) Statement

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CURB RAMP DETAILS	
OLD KEAAU-PAHOA ROAD RESURFACING KEA'AU TO KEAAU HIGH SCHOOL PROJECT NO. 139A-01-05M	
Not to Scale	Date: Nov., 2004
SHEET No. 2 OF 7 SHEETS	

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
TRACED BY		
NOTE BOOK		
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td1\usr2\traffic\std\curbramp\rampa-r12-06-06.dgn R12-06-06 TE-XX sh. 2 of 9

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.54	106



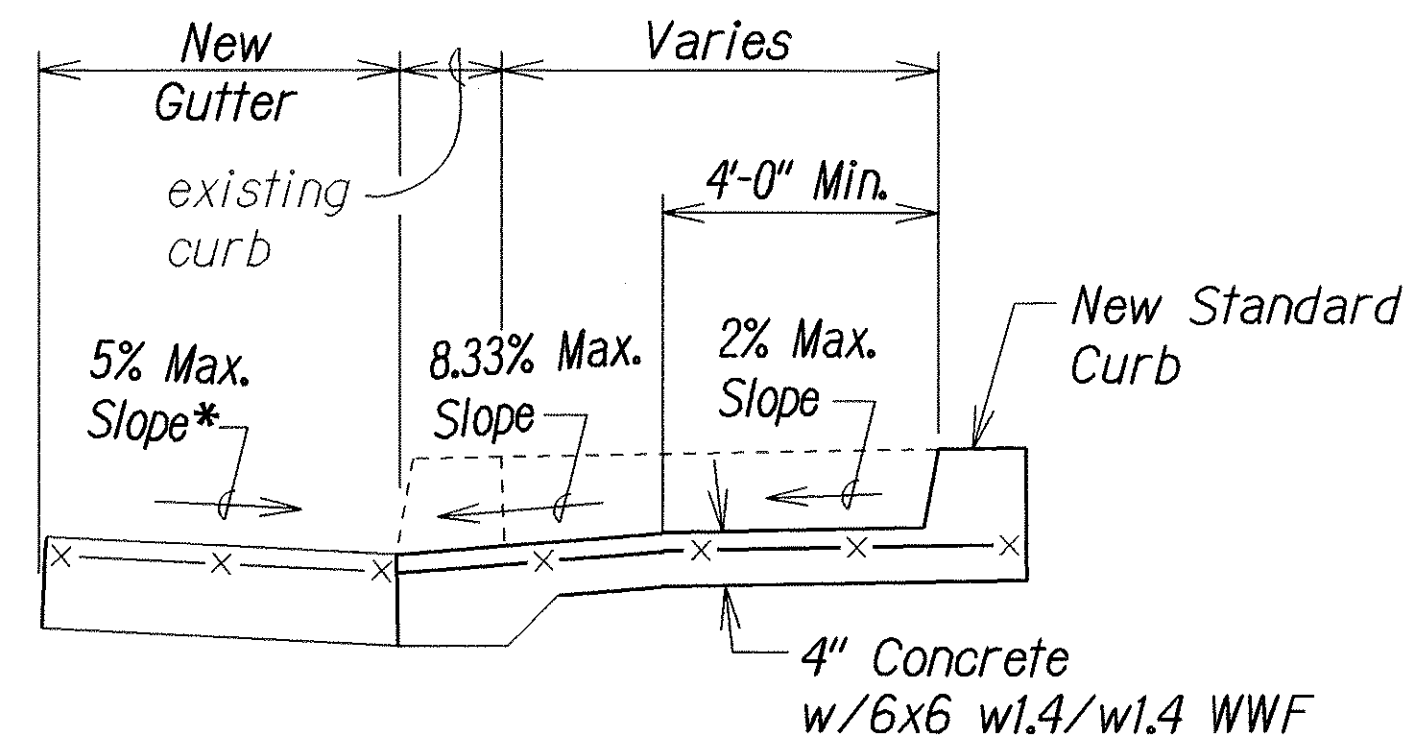
CURB RAMP - TYPE "B"
 SIDEWALK WIDTH 4'-0" OR GREATER
 BUT LESS THAN 6'-0" WIDTH

CURB RAMP - TYPE "B" MODIFIED
 SIDEWALK WIDTH 6'-0" OR GREATER
 BUT LESS THAN 12'-0" WIDTH

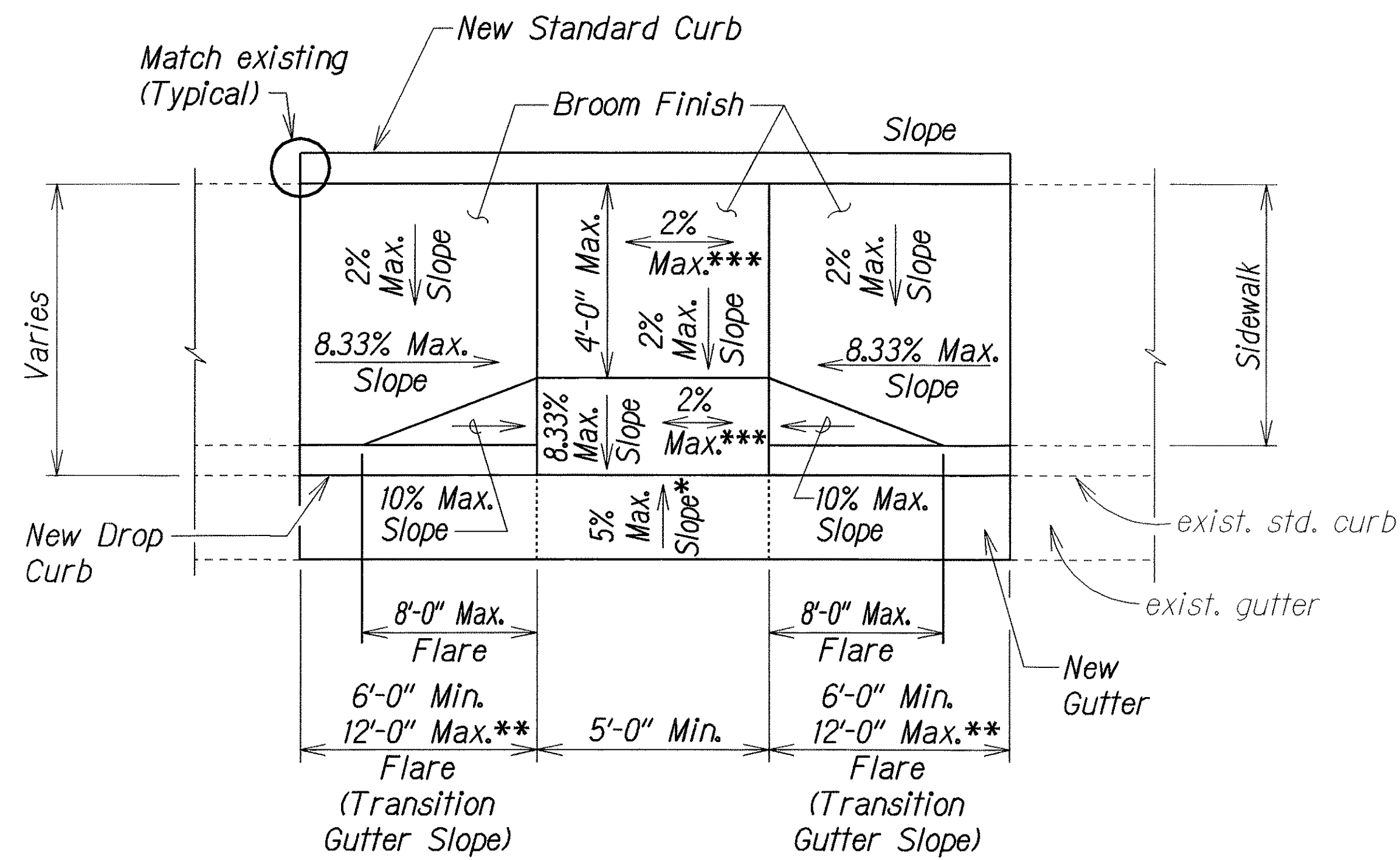
* See Curb Ramp and Sidewalk Note No. 9
 ** The slope of the ramp shall take precedence over the length of the ramp. If the maximum slope of a ramp cannot be met within a length of 12 feet, then the slope of the ramp shall be set when the length of the ramp is set at the maximum of 12 feet.
 *** If Roadway Slope >2% Conform to Roadway Slope and File Technical Infeasibility (TI) Statement

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CURB RAMP DETAILS OLD KEAAU-PAHOA ROAD RESURFACING KEA'AU TO KEAAU HIGH SCHOOL PROJECT NO. 139A-01-05M Not to Scale Date: Nov., 2004 SHEET No. 3 OF 7 SHEETS	

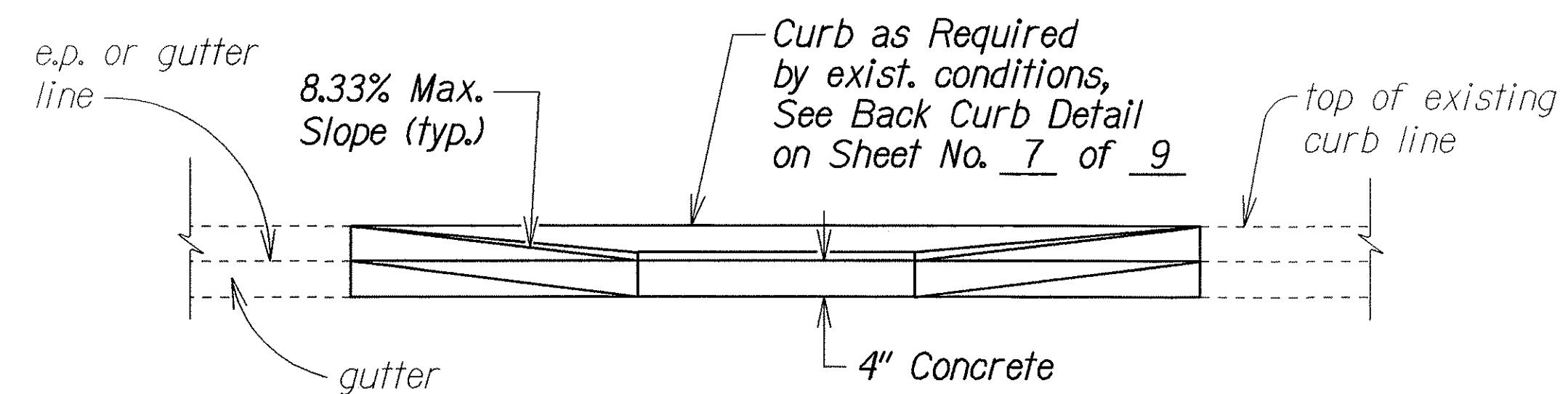
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.55	106



TYPICAL SECTION



PLAN



ELEVATION

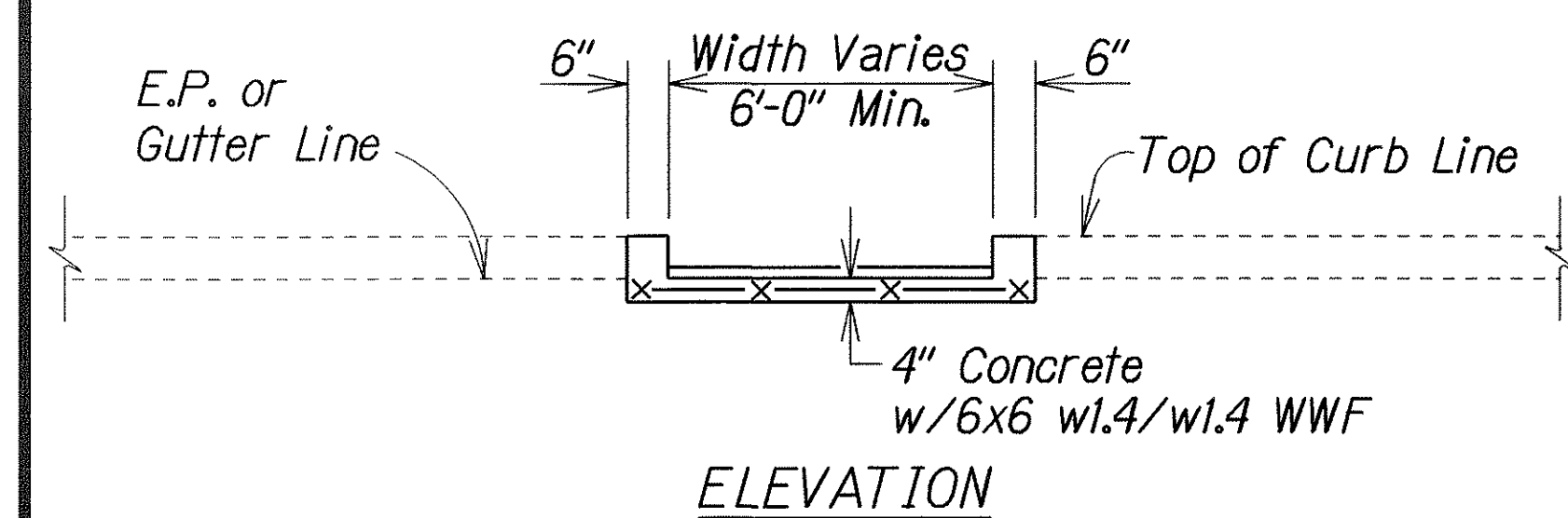
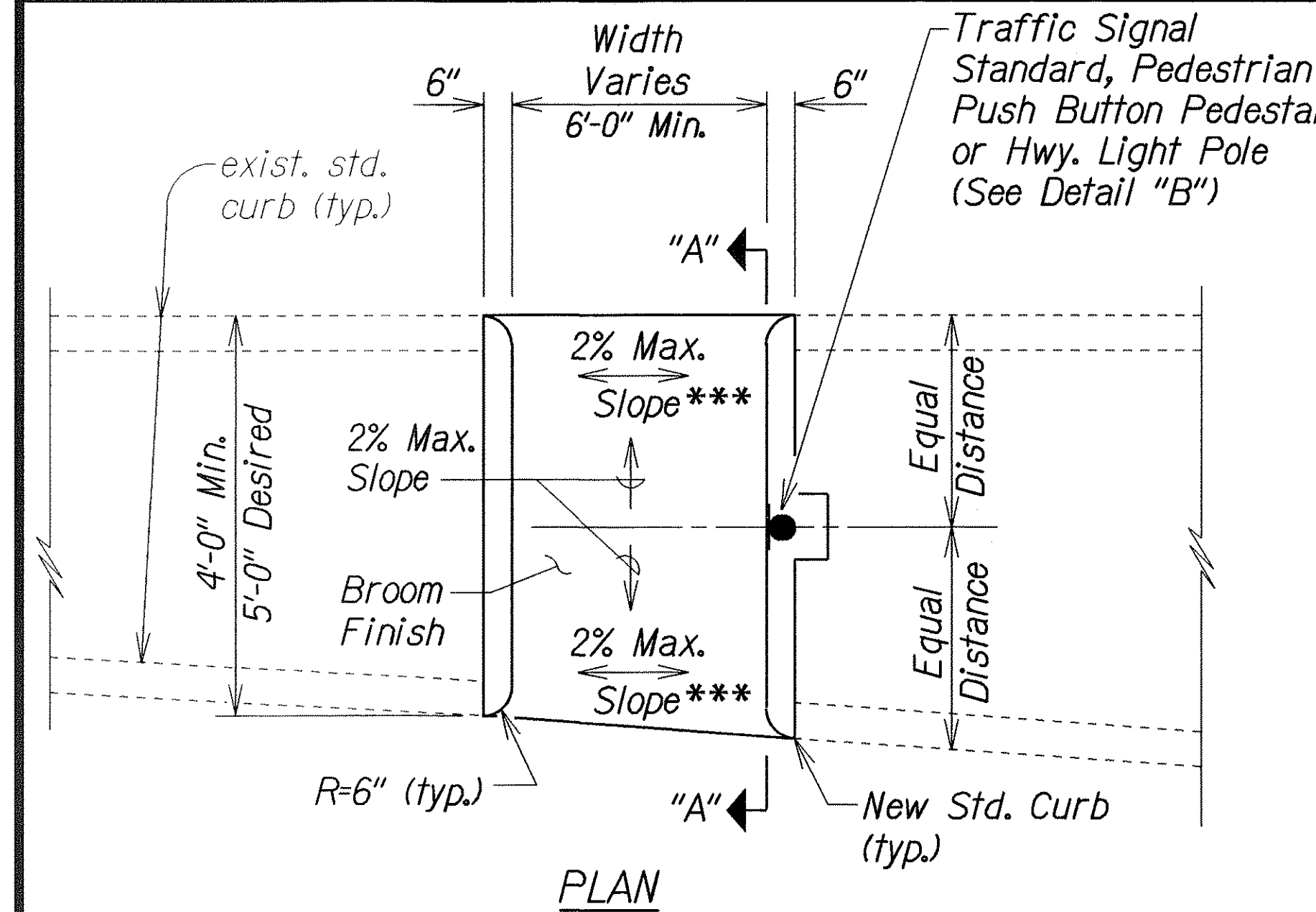
CURB RAMP - COMBINATION

- * See Curb Ramp and Sidewalk Note No. 9.
- ** The slope of the ramp shall take precedence over the length of the ramp. If the maximum slope of a ramp cannot be met within a length of 12 feet, then the slope of the ramp shall be set when the length of the ramp is set at the maximum of 12 feet.
- *** If Roadway Slope >2% Conform to Roadway Slope and File a Technical Infeasibility (TI) Statement

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>CURB RAMP DETAILS</u> <u>OLD KEAAU-PAHOA ROAD RESURFACING</u> <u>KEA'AU TO KEAAU HIGH SCHOOL</u> <u>PROJECT NO. 139A-01-05M</u> Not to Scale Date: Nov., 2004 SHEET No. 4 OF 7 SHEETS	

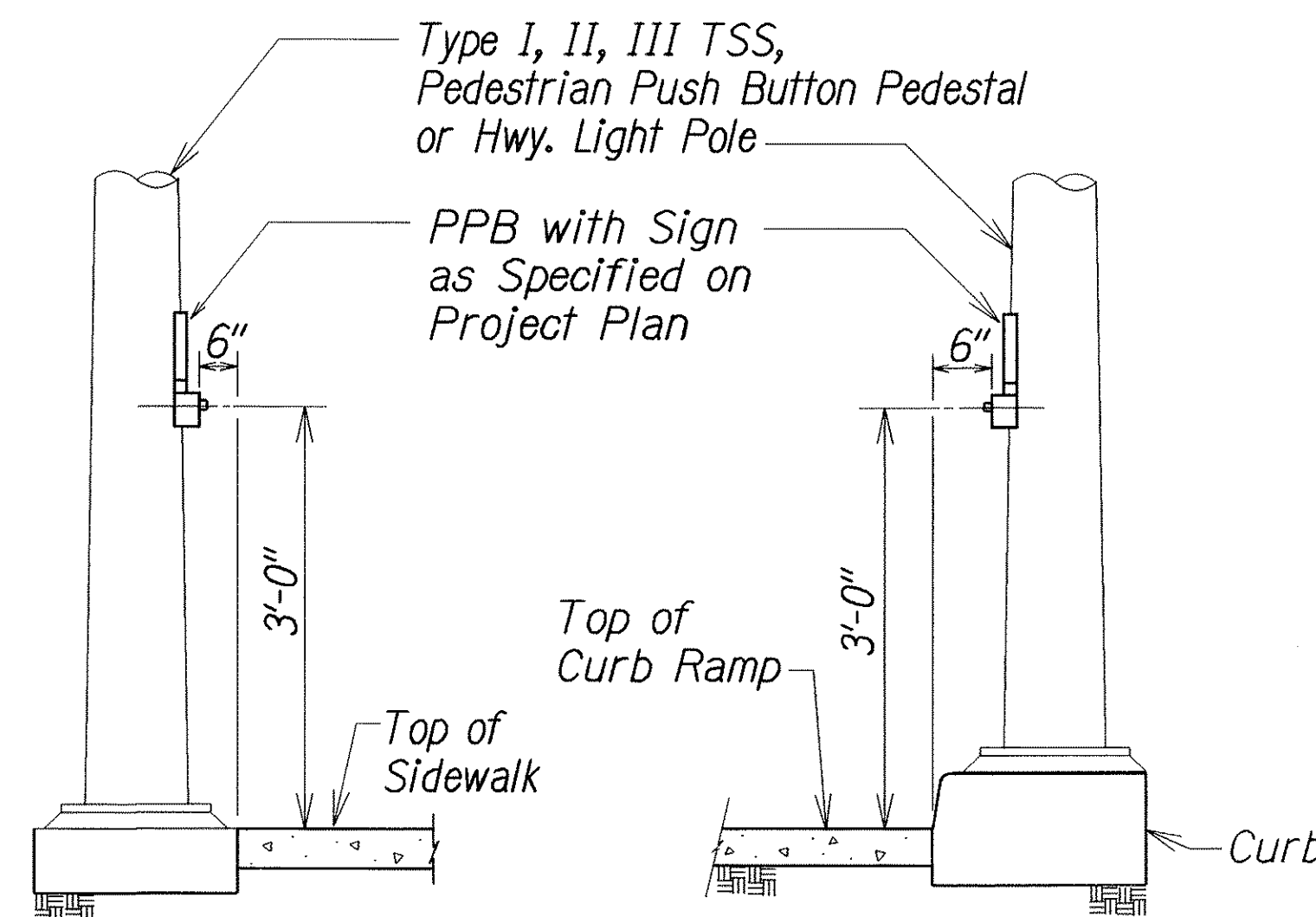
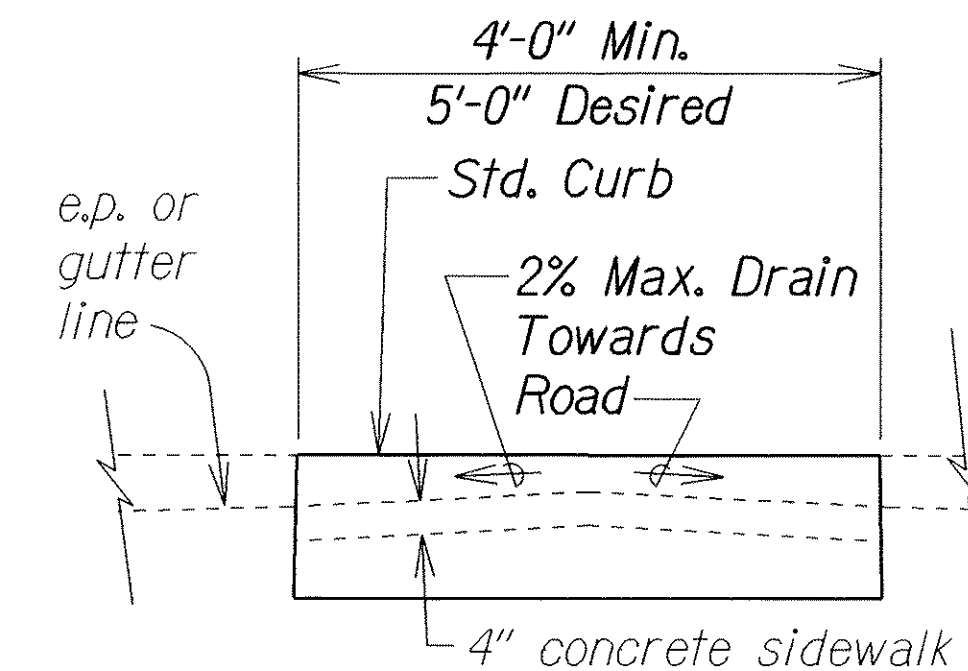
R12-06-06 TE-XX sh. 4 of 9
 tdl/usr2/traffic/std/curb/ramp/rampb2-12-06-06.dgn
 SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN
 NOTE BOOK
 No. _____

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.55S-1	106



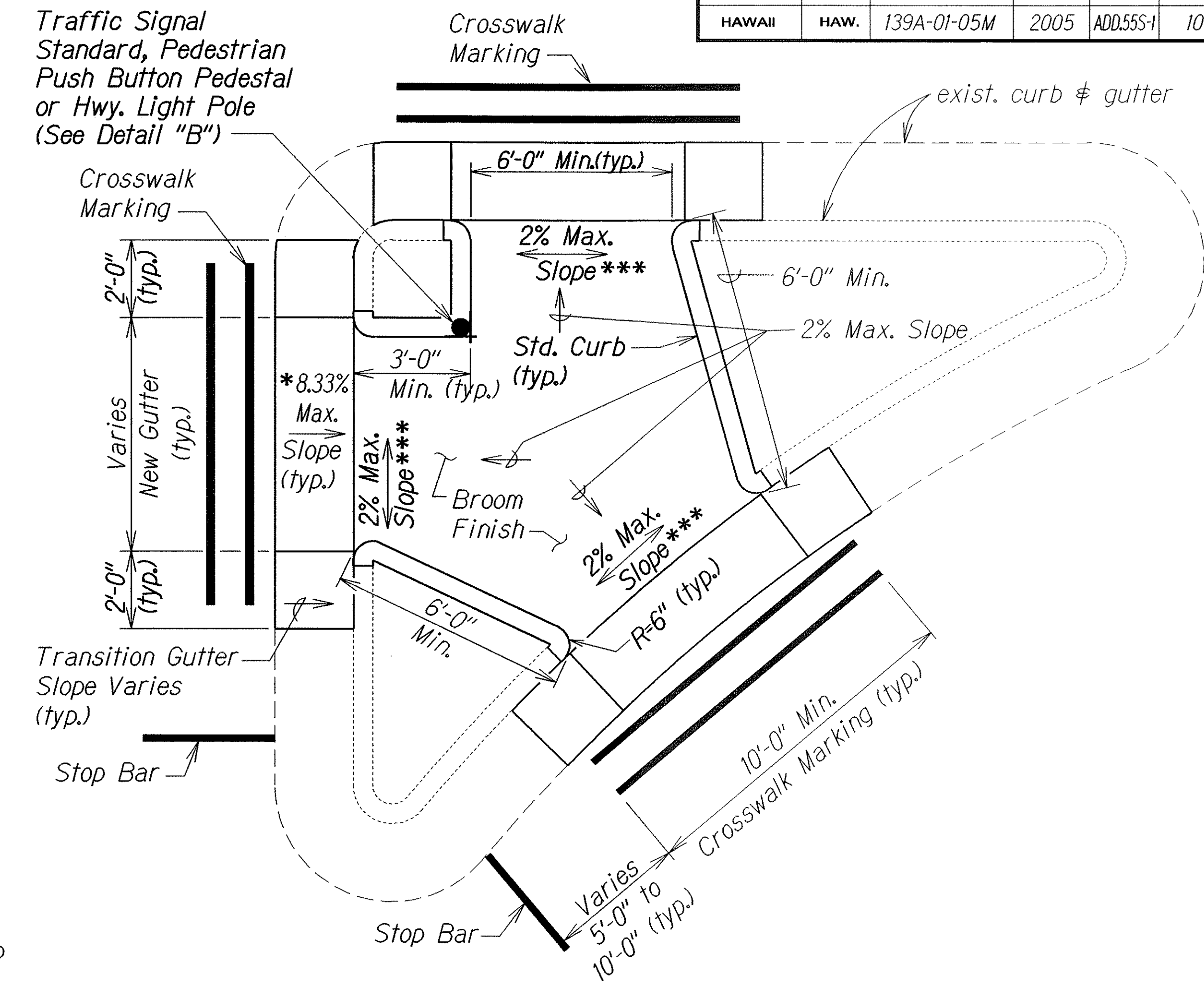
CURB RAMP - TYPE "C"

USE AT MEDIAN CROSSINGS, ISLANDS

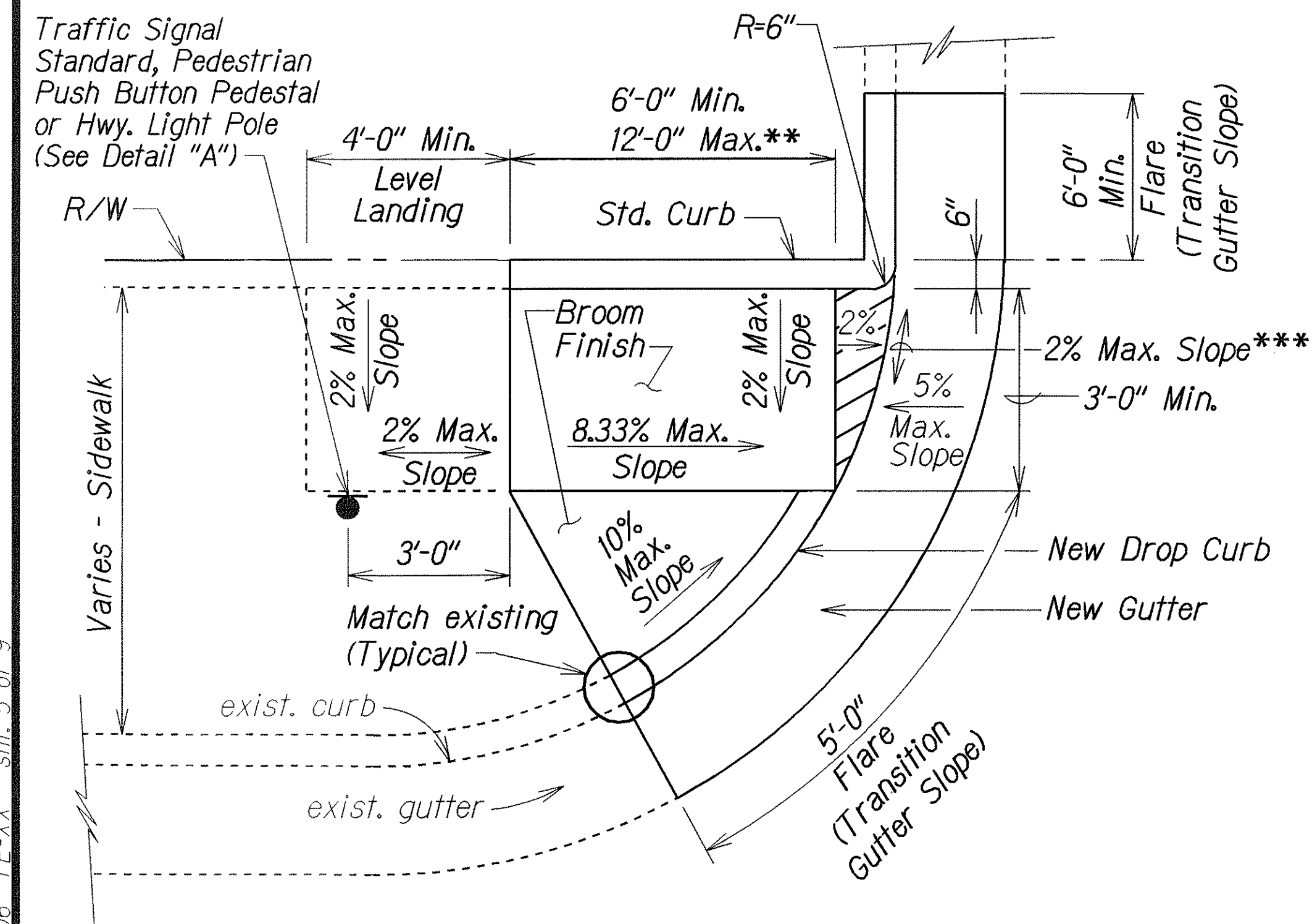


DETAIL "A"

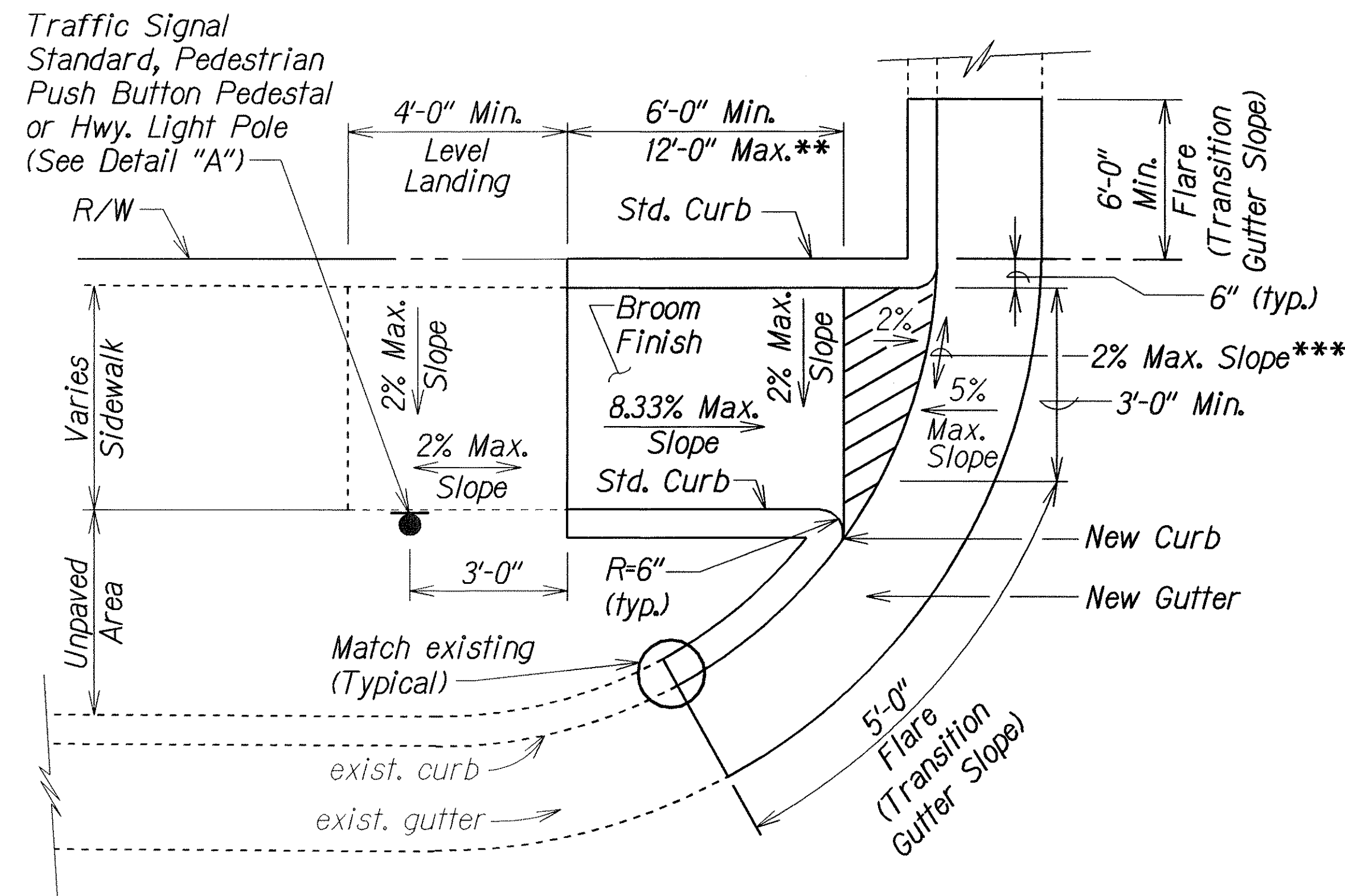
DETAIL "B"



CURB RAMP - TYPE "C" MODIFIED



CURB RAMP - TYPE "D"



CURB RAMP - TYPE "D" MODIFIED

- * See Curb Ramp and Sidewalk Note No. 9.
- ** The slope of the ramp shall take precedence over the length of the ramp. If the maximum slope of a ramp cannot be met within a length of 12 feet, then the slope of the ramp shall be set when the length of the ramp is set at the maximum of 12 feet.
- *** If Roadway Slope >2% Conform to Roadway Slope and File a Technical Infeasibility (TI) Statement

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>CURB RAMP DETAILS</u>	
<u>OLD KEAAU-PAHOA ROAD RESURFACING</u>	
<u>KEAAU TO KEAAU HIGH SCHOOL</u>	
<u>PROJECT NO. 139A-01-05M</u>	
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ADD.55 S-1

ORIGINAL PLAN	DATE
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CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	

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R12-06-06 TE-XX sh. 5 of 9

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6 10 0.1115 XY-71 00-00-21

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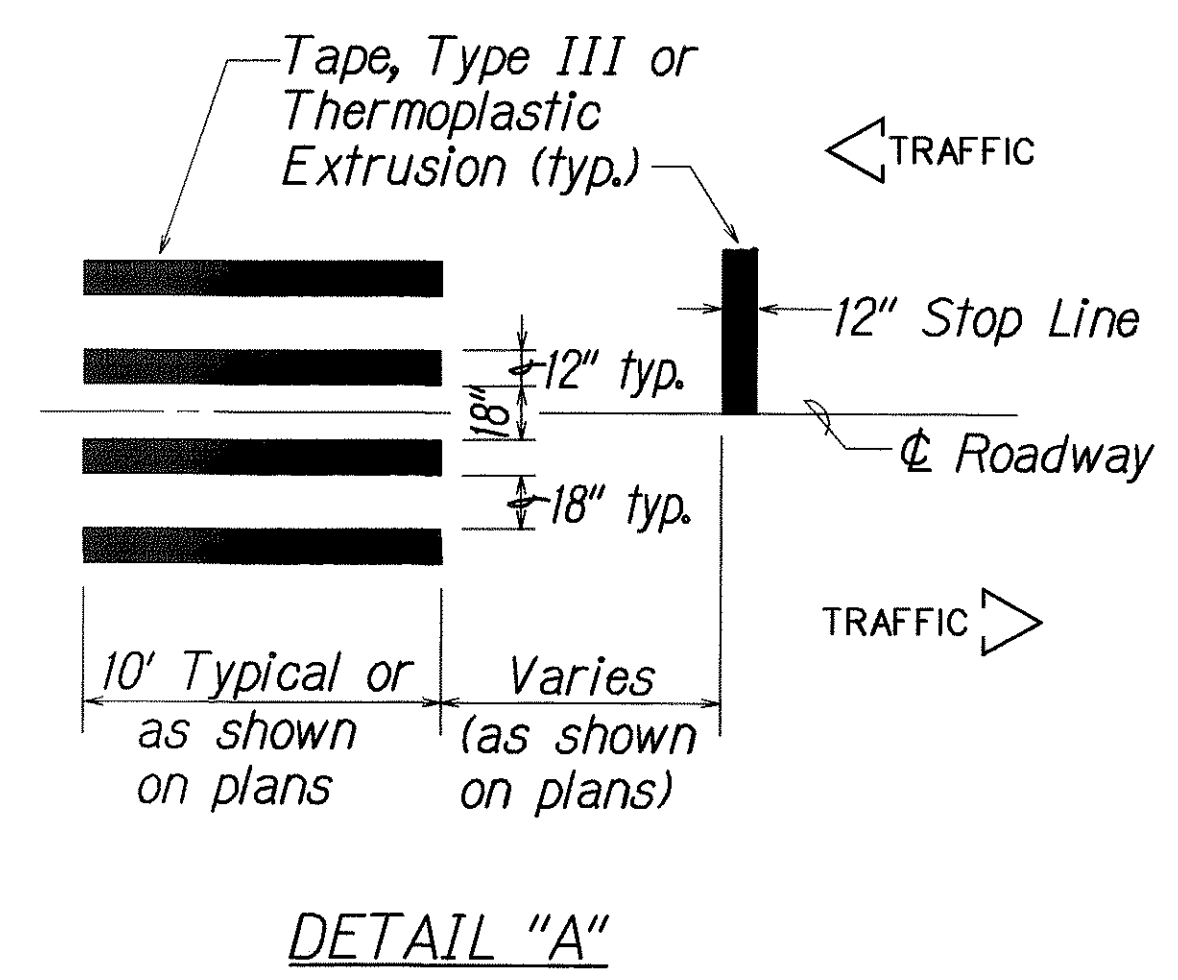
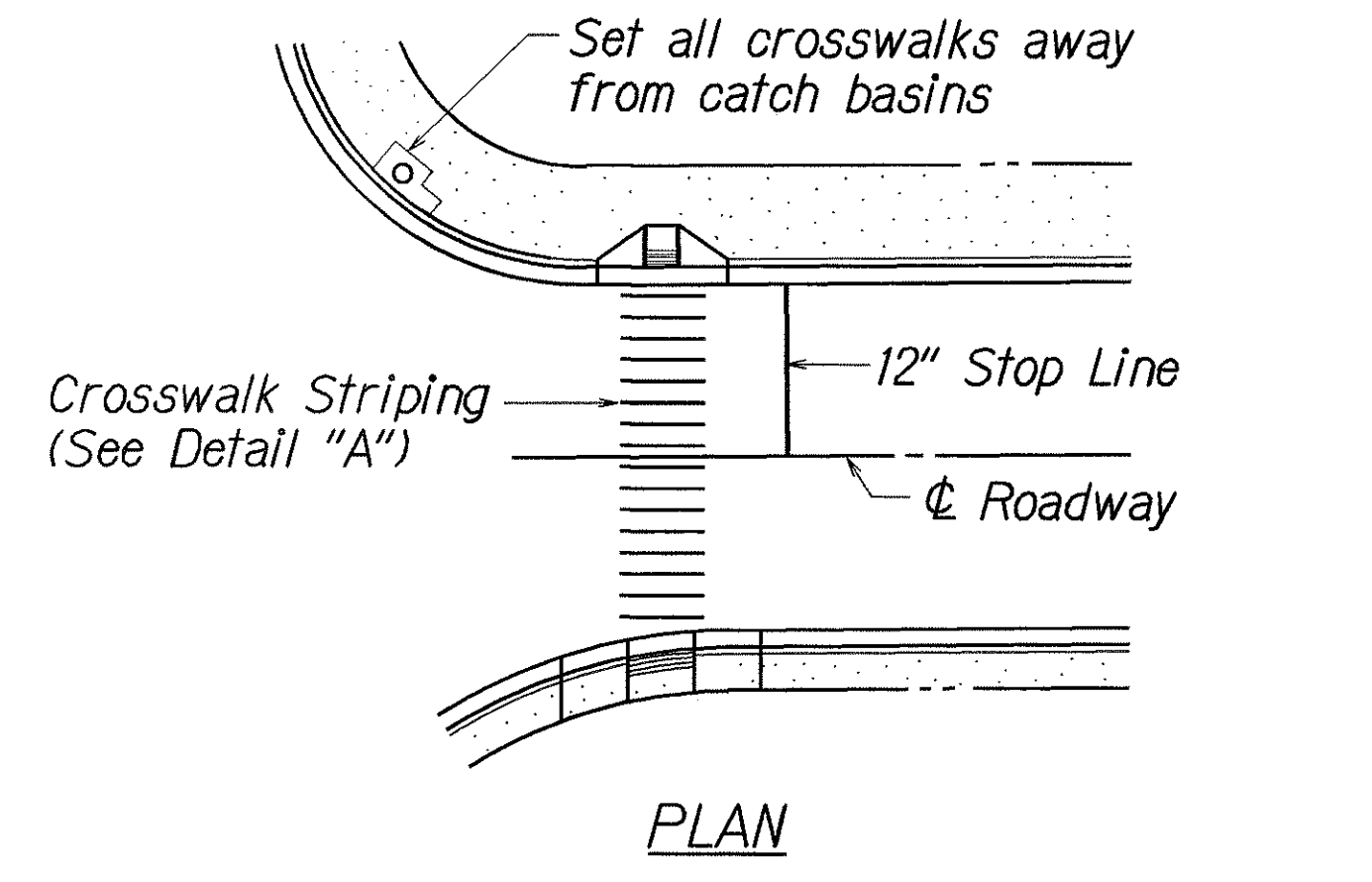
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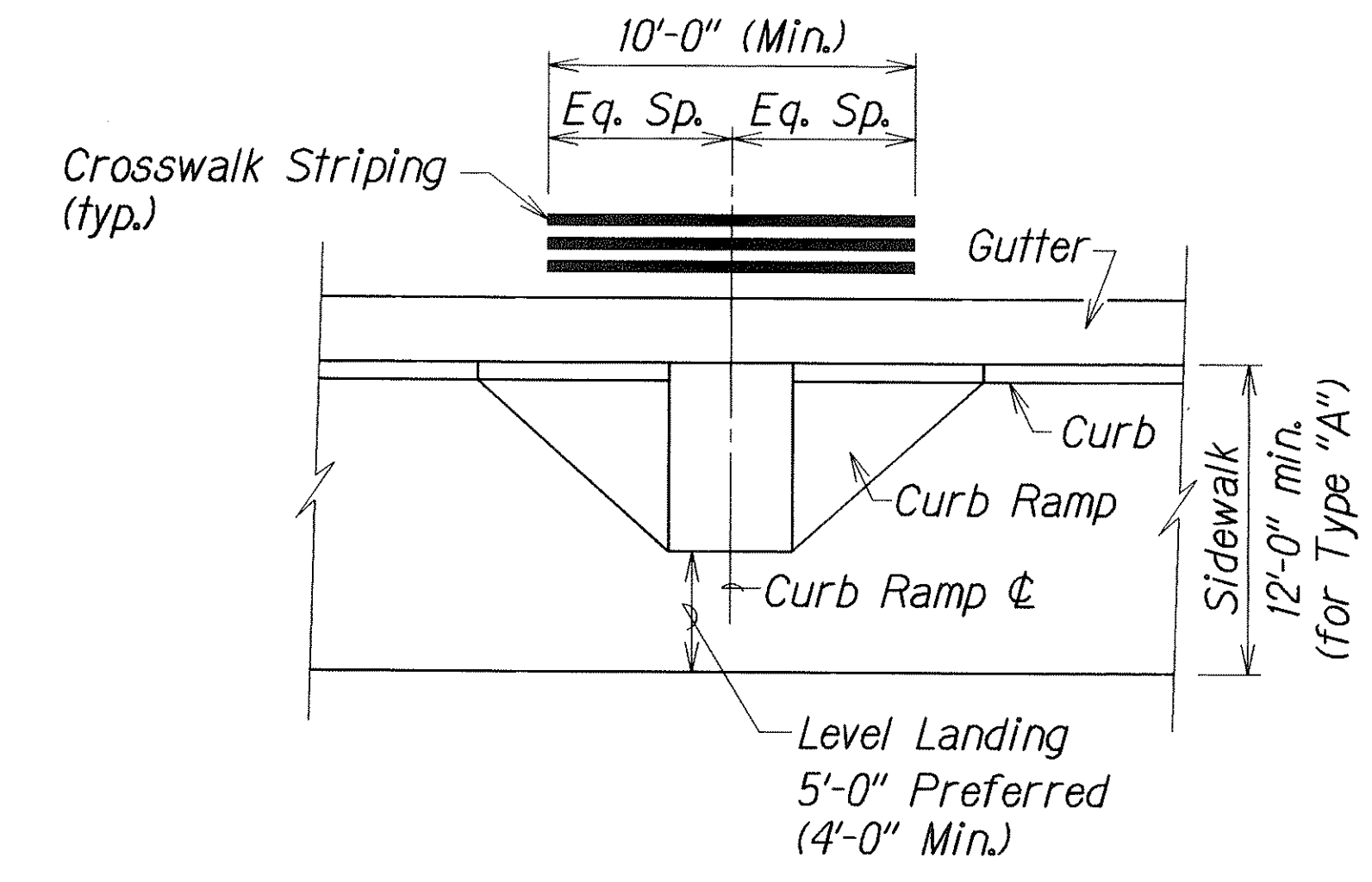
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.55S-3	106

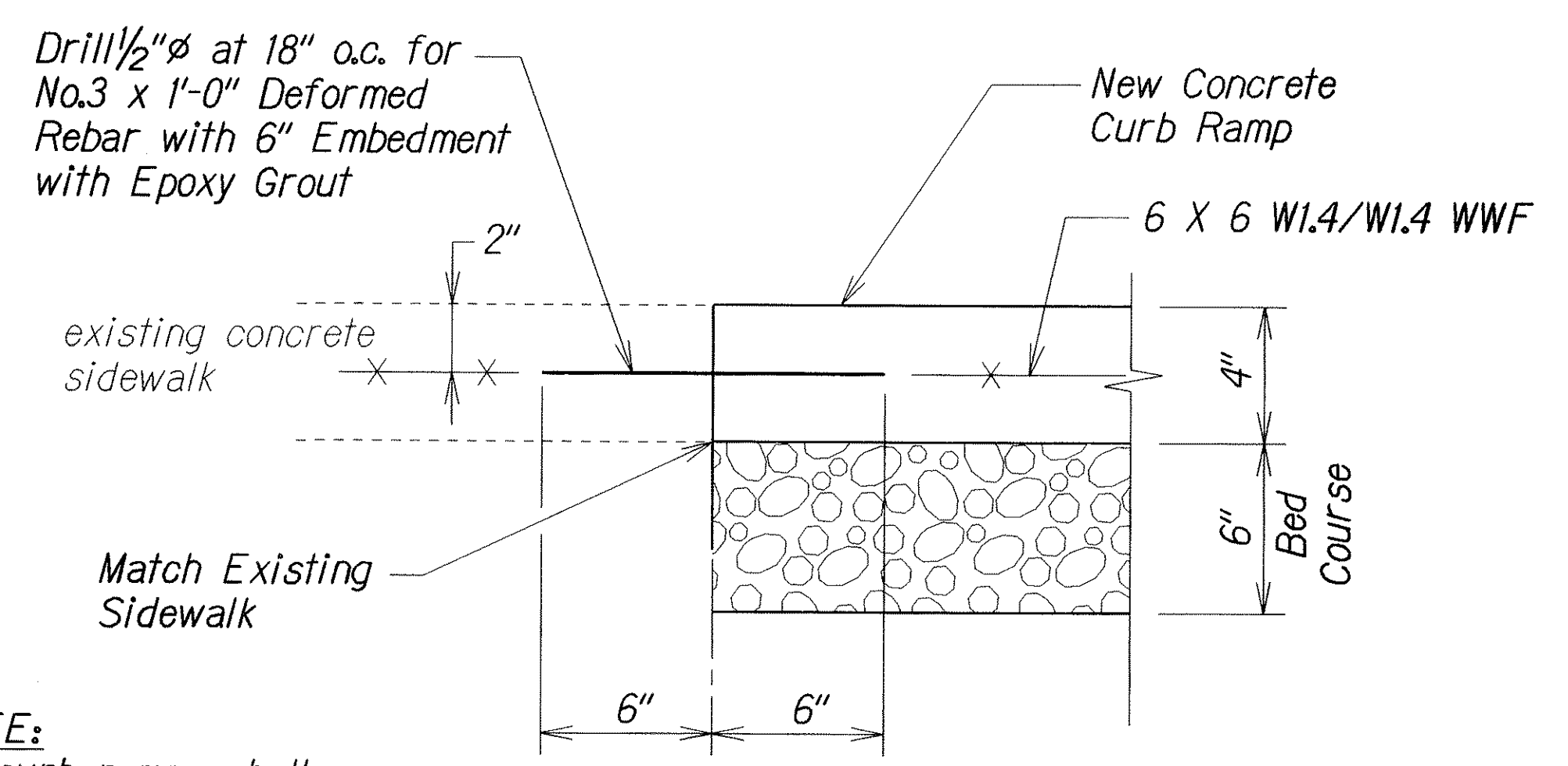


CROSSWALK STRIPING DETAIL

NOTE:
Longitudinal lines shall be parallel to traffic flow.

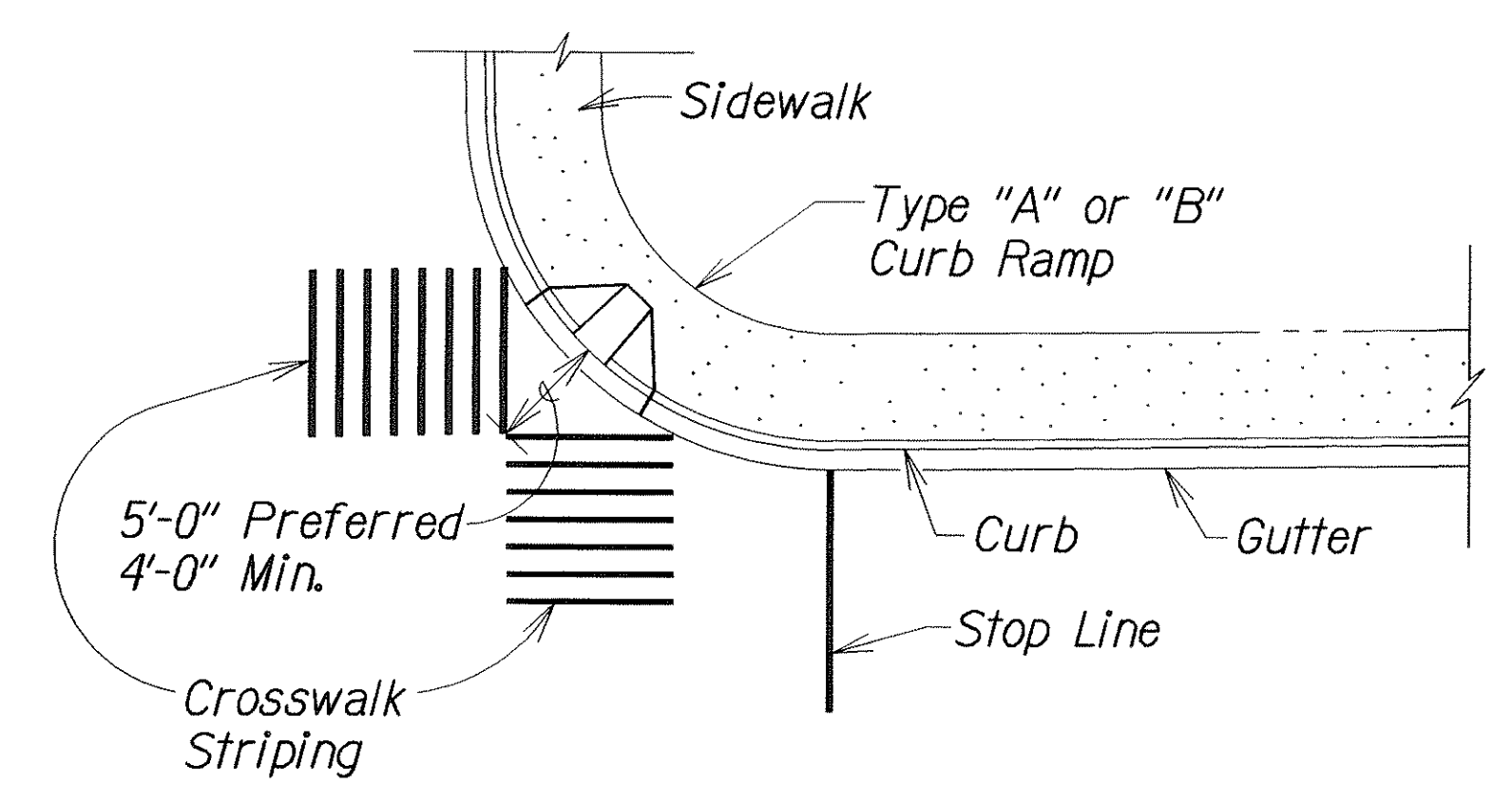


TYPICAL CROSSWALK STRIPING
AT CURB RAMP

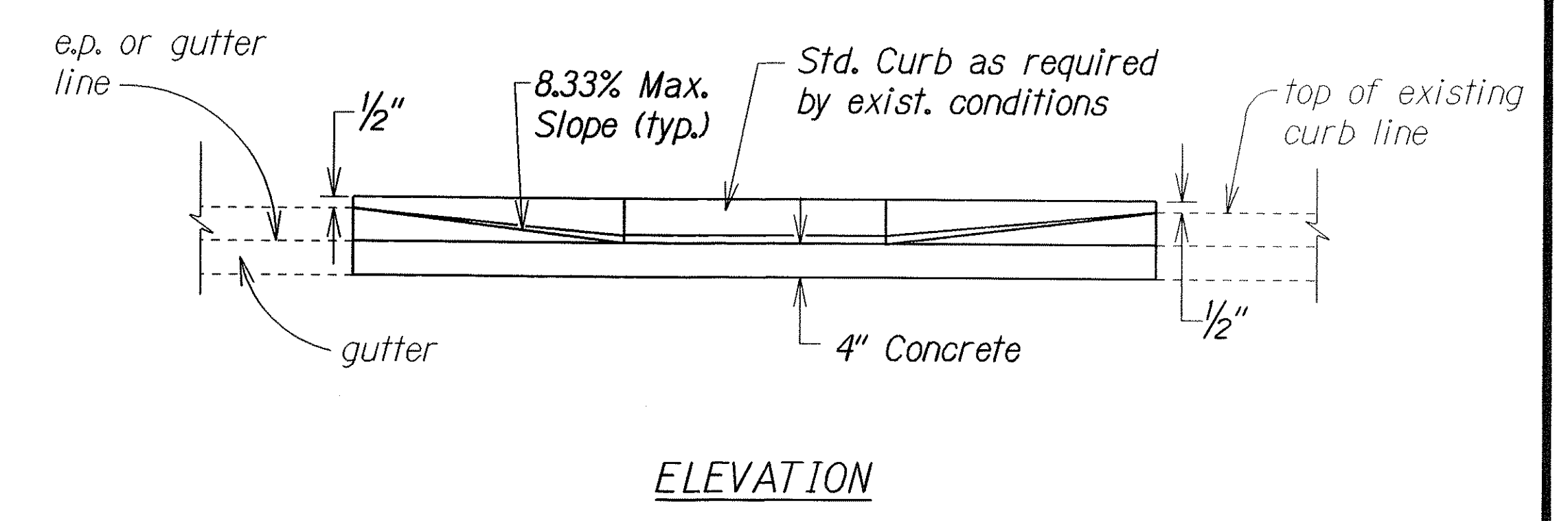
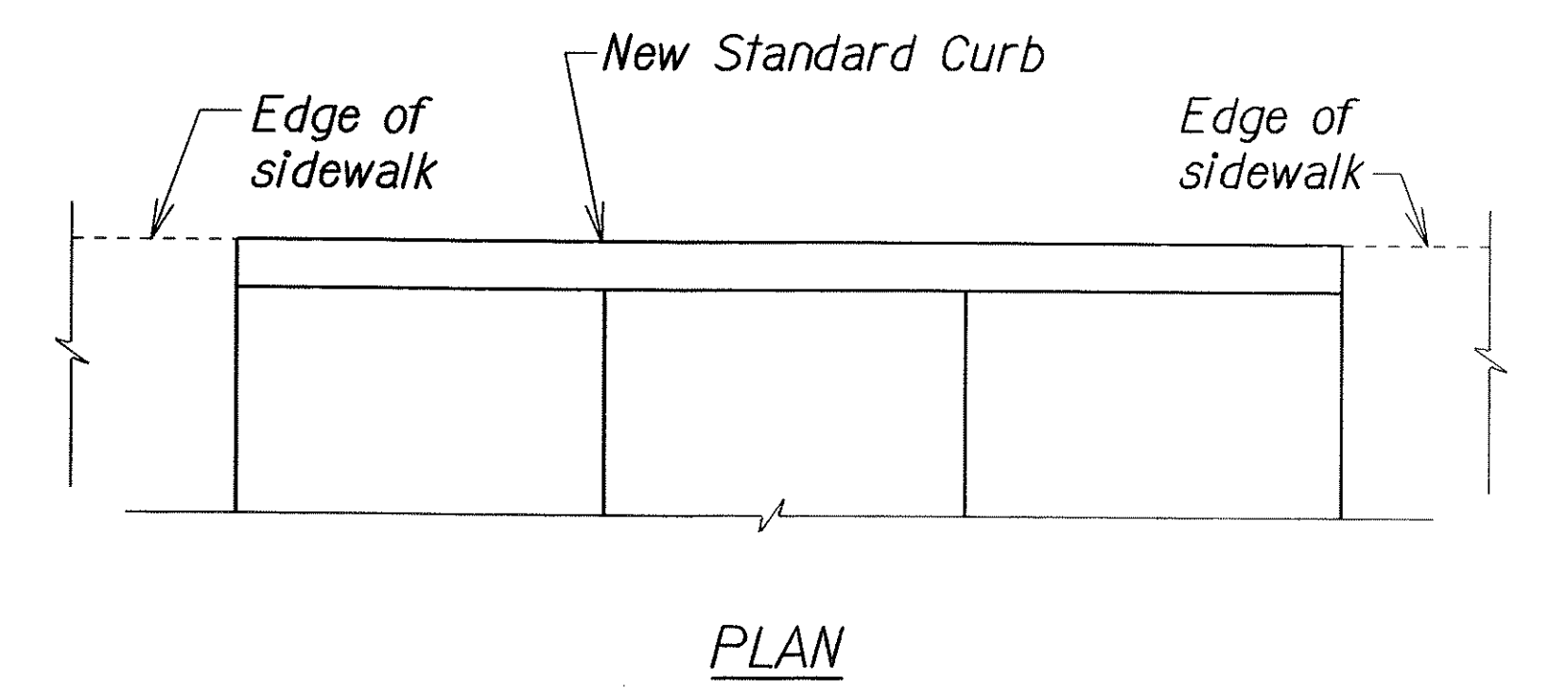


NOTE:
All curb ramps shall be reinforced.

TYPICAL CONSTRUCTION JOINT
AT EXISTING SIDEWALK



TYPICAL CROSSWALK STRIPING
AT DIAGONAL CURB RAMP



DETAIL - BACK CURB

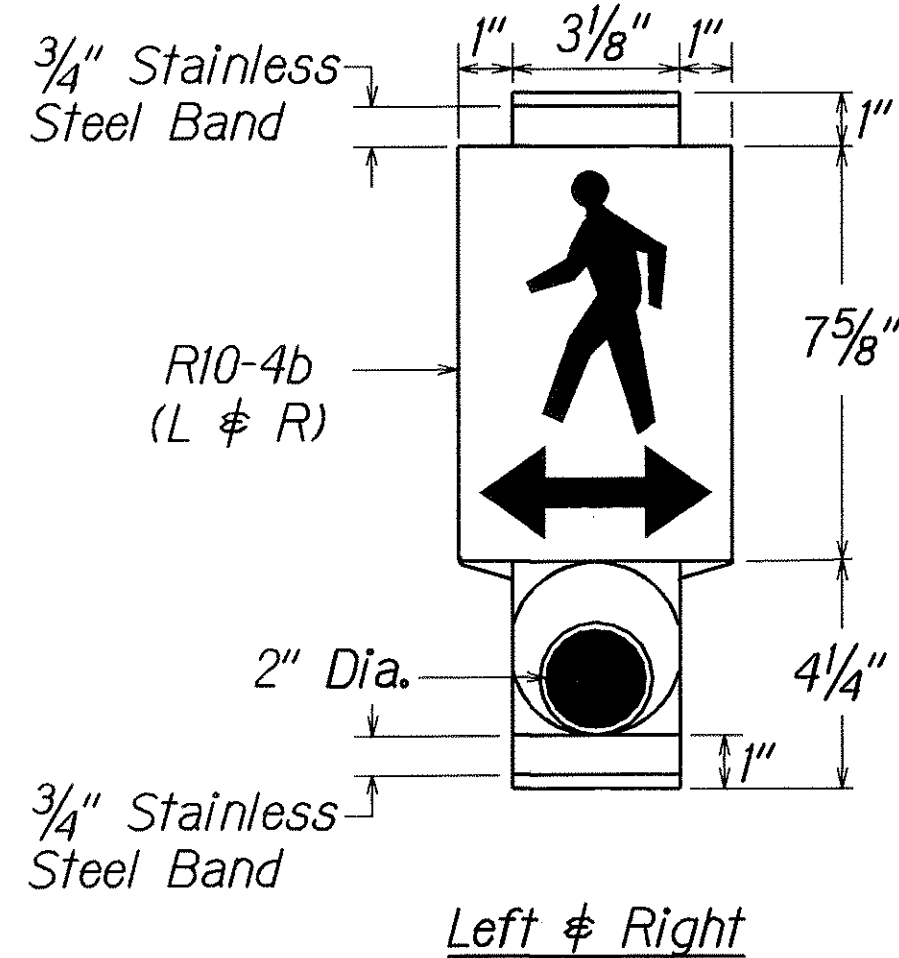
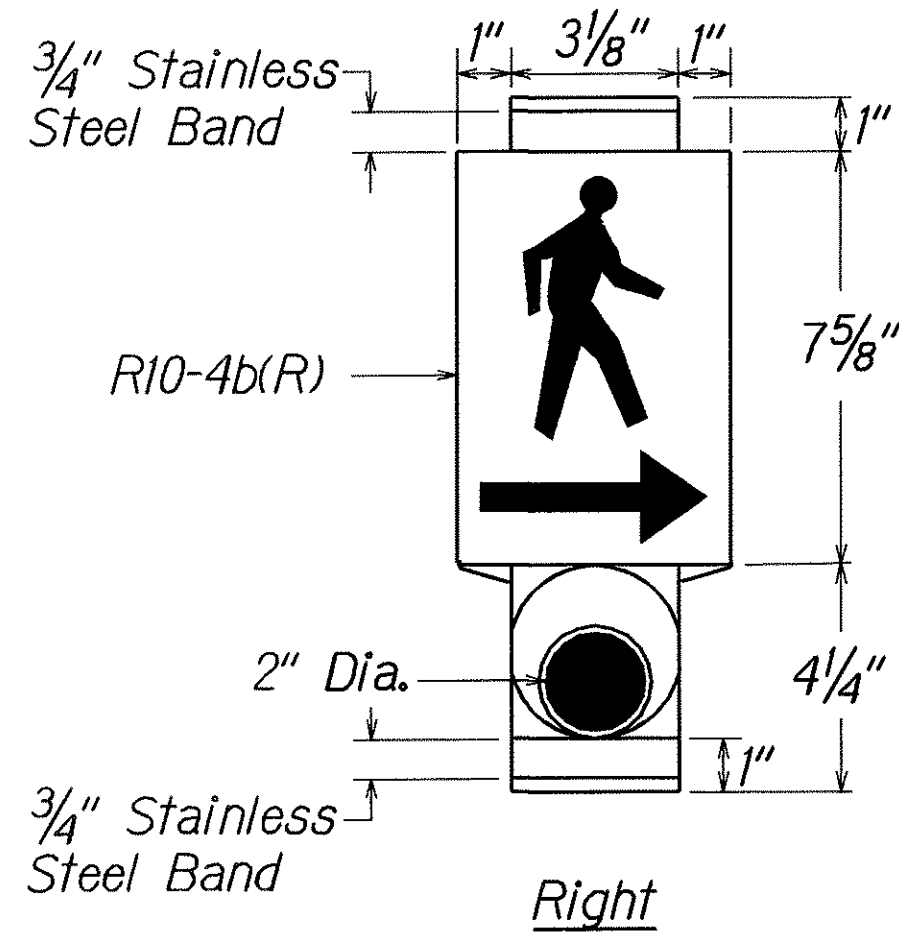
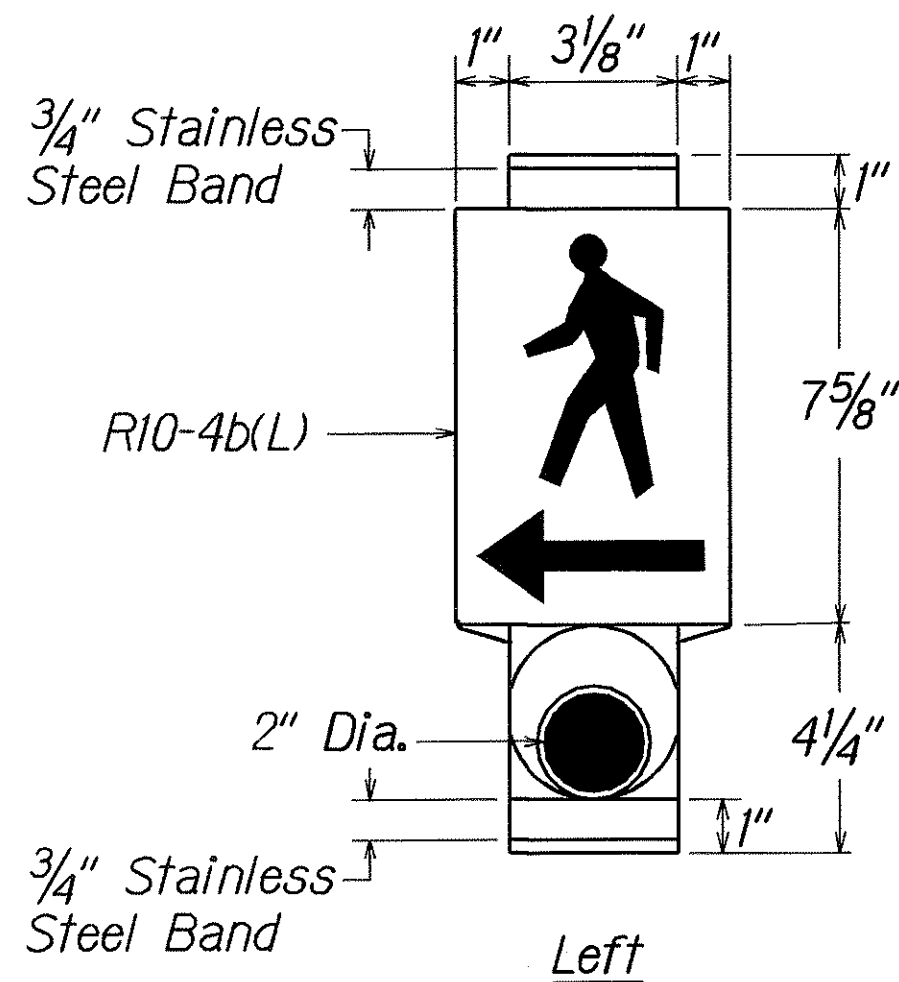
NOTE:
This detail can be used in situations where the edge of sidewalk cannot be flush with the face of (back) curb due to right of way restrictions.

SURVEY PLOTTED BY	DATE
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QUANTITIES BY	
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ORIGINAL PLAN	
NOTE BOOK	
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td1/usr2/traffic/std/curbramp/rampmisc-r12-06-06.dgn
R12-06-06 TE-XX sh. 7 of 9

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
MISCELLANEOUS DETAILS	
OLD KEAAU-PAHOA ROAD RESURFACING KEAAU TO KEAAU HIGH SCHOOL PROJECT NO. 139A-01-05M	
Not to Scale	Date: Nov., 2004
SHEET No. 4 OF 7 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.55S-4	106



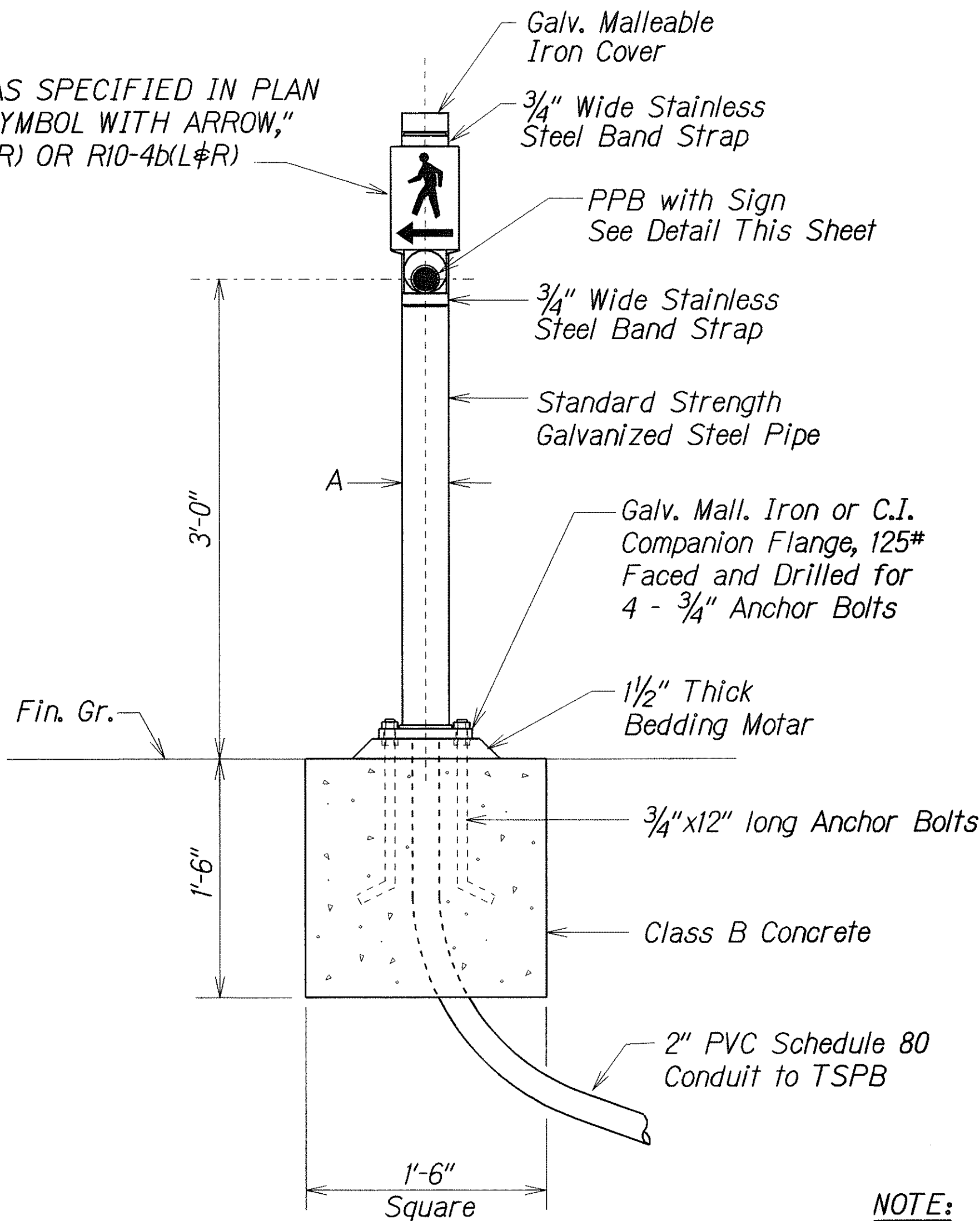
PEDESTRIAN PUSH BUTTON WITH SIGN

Man, Arrow & Push Button - White
Background - Black

NOTE:

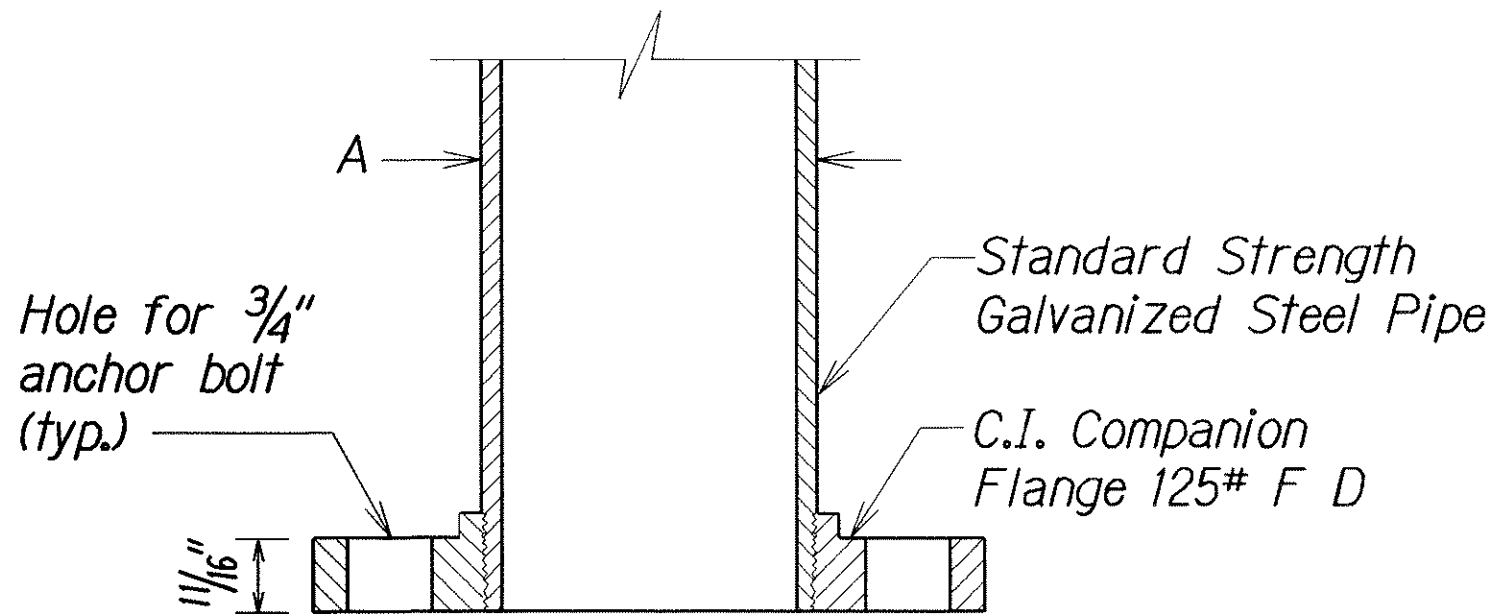
There shall be a 30" x 48" level ground surface (2% max. cross slope, both directions) for a forward or side approach, as appropriate, to a pedestrian push button. Location of pedestrian push button shall be shown on Civil Plans in addition to Electrical Plans.

TRAFFIC SIGN AS SPECIFIED IN PLAN
"WALKING MAN SYMBOL WITH ARROW,"
R10-4b(L), R10-4b(R) OR R10-4b(L&R)

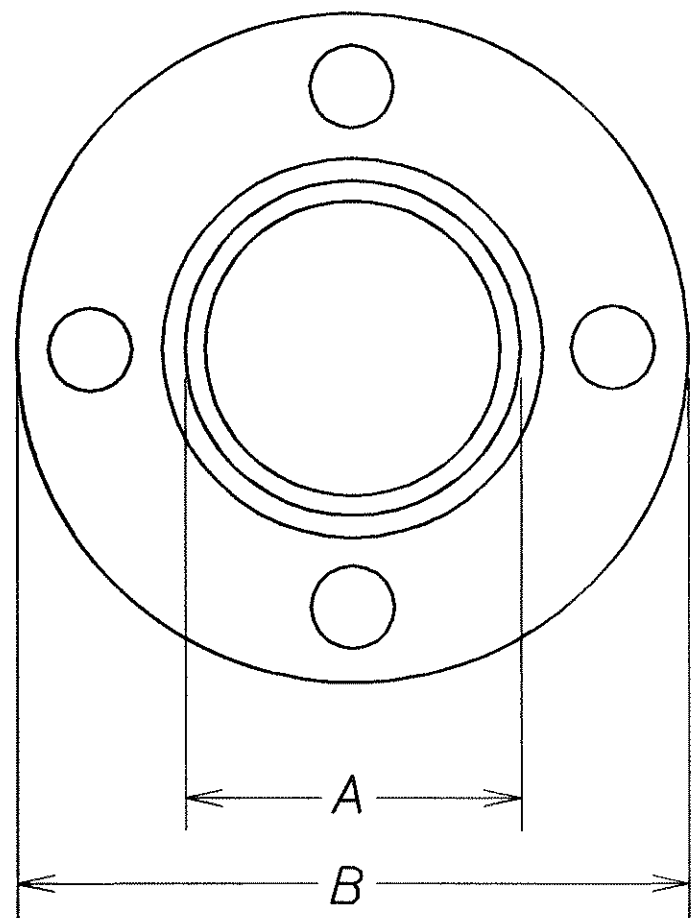


PPB POST AND FOOTING DETAIL

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



SECTION



TOP VIEW

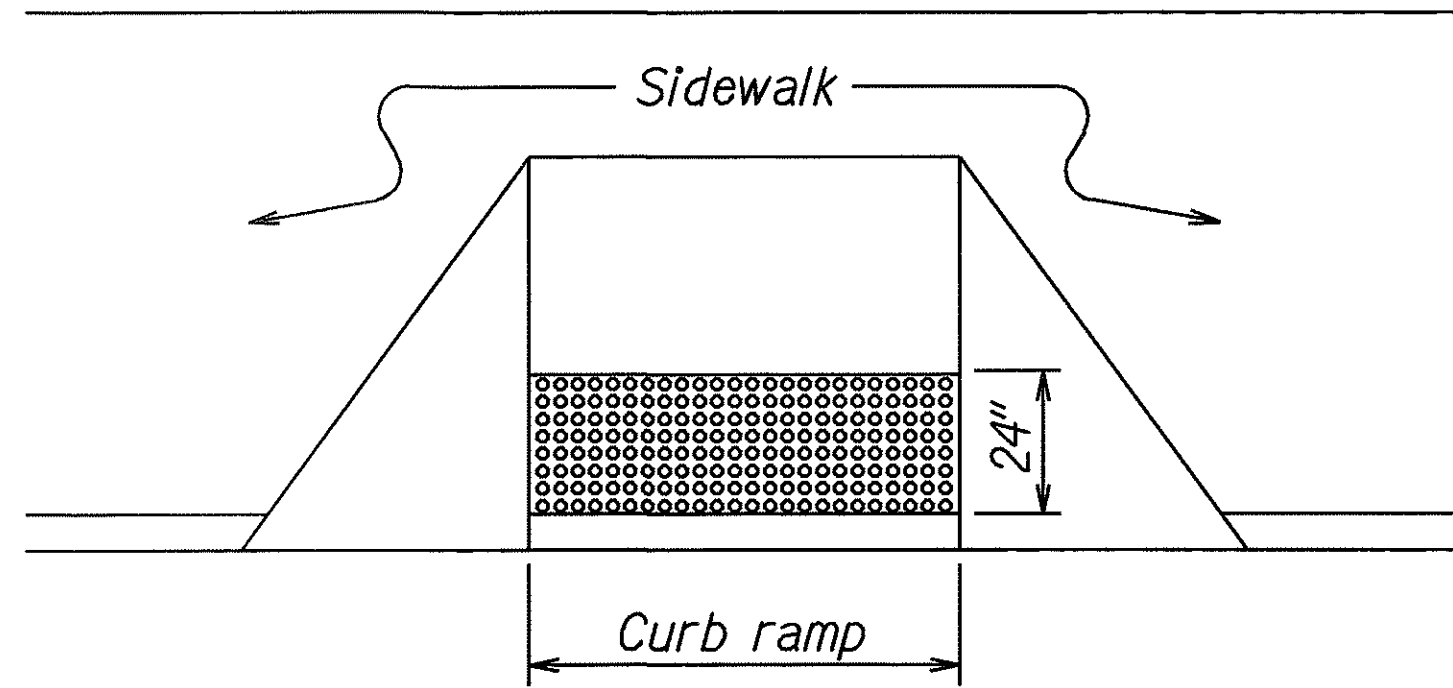
FLANGE DETAIL

NOTE:

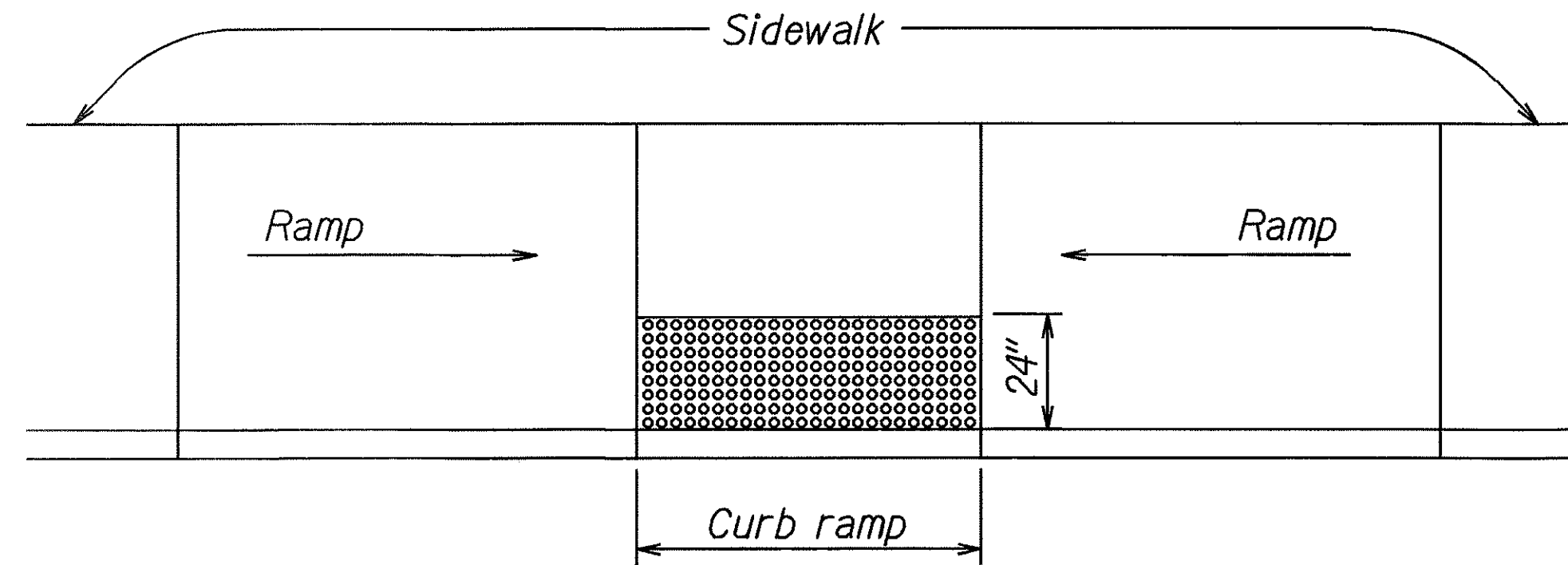
1. Conduits shall protrude 2" max. above finished surface of foundation.
2. Conduits shall slope away from post foundation.

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION PEDESTRIAN PUSH BUTTON DETAILS OLD KEAAU-PAHOA ROAD RESURFACING KEA'AU TO KEAAU HIGH SCHOOL PROJECT NO. 139A-01-05M Not to Scale Date: Nov., 2004	
SHEET No. 4 OF 7 SHEETS	

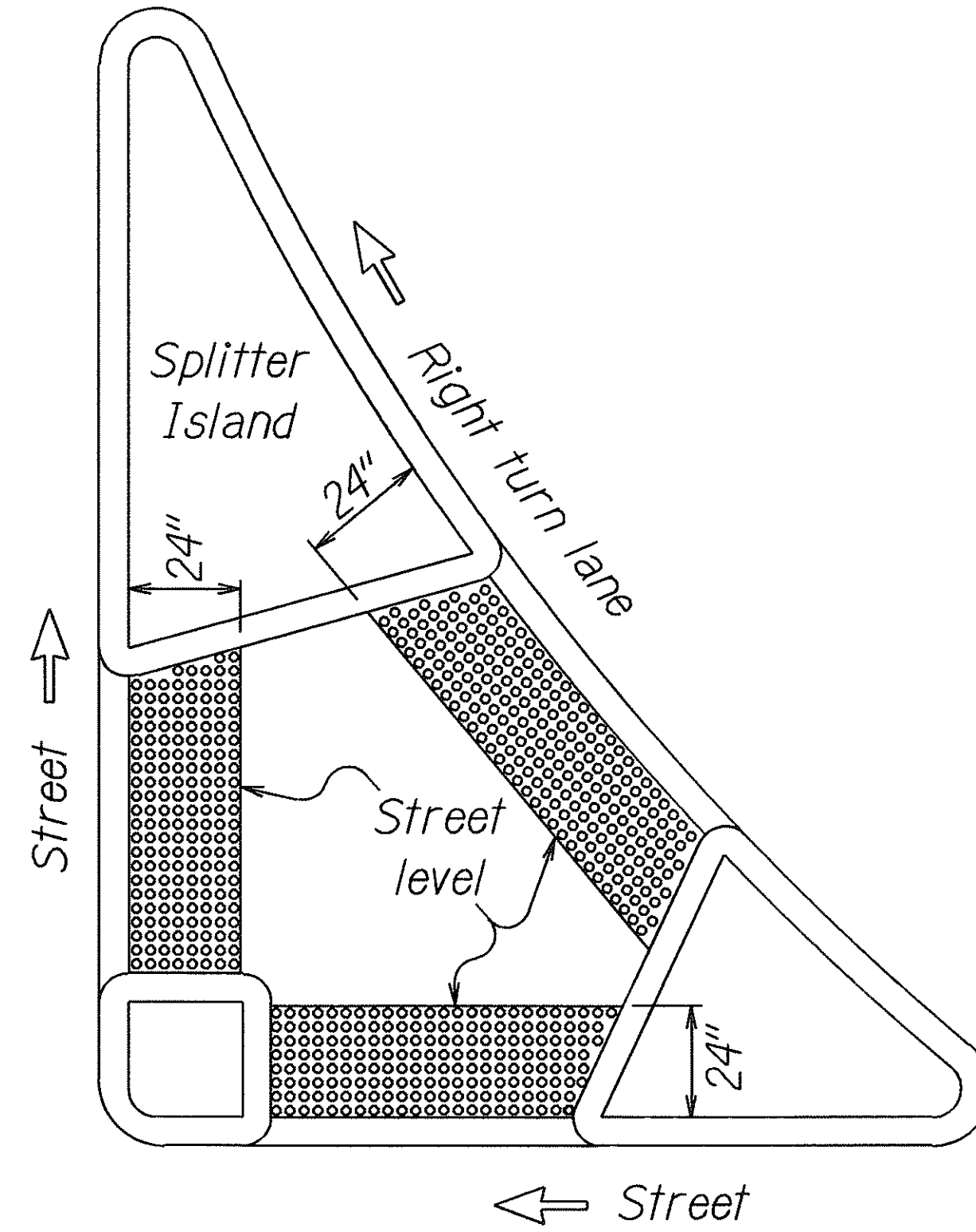
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.55S-5	106



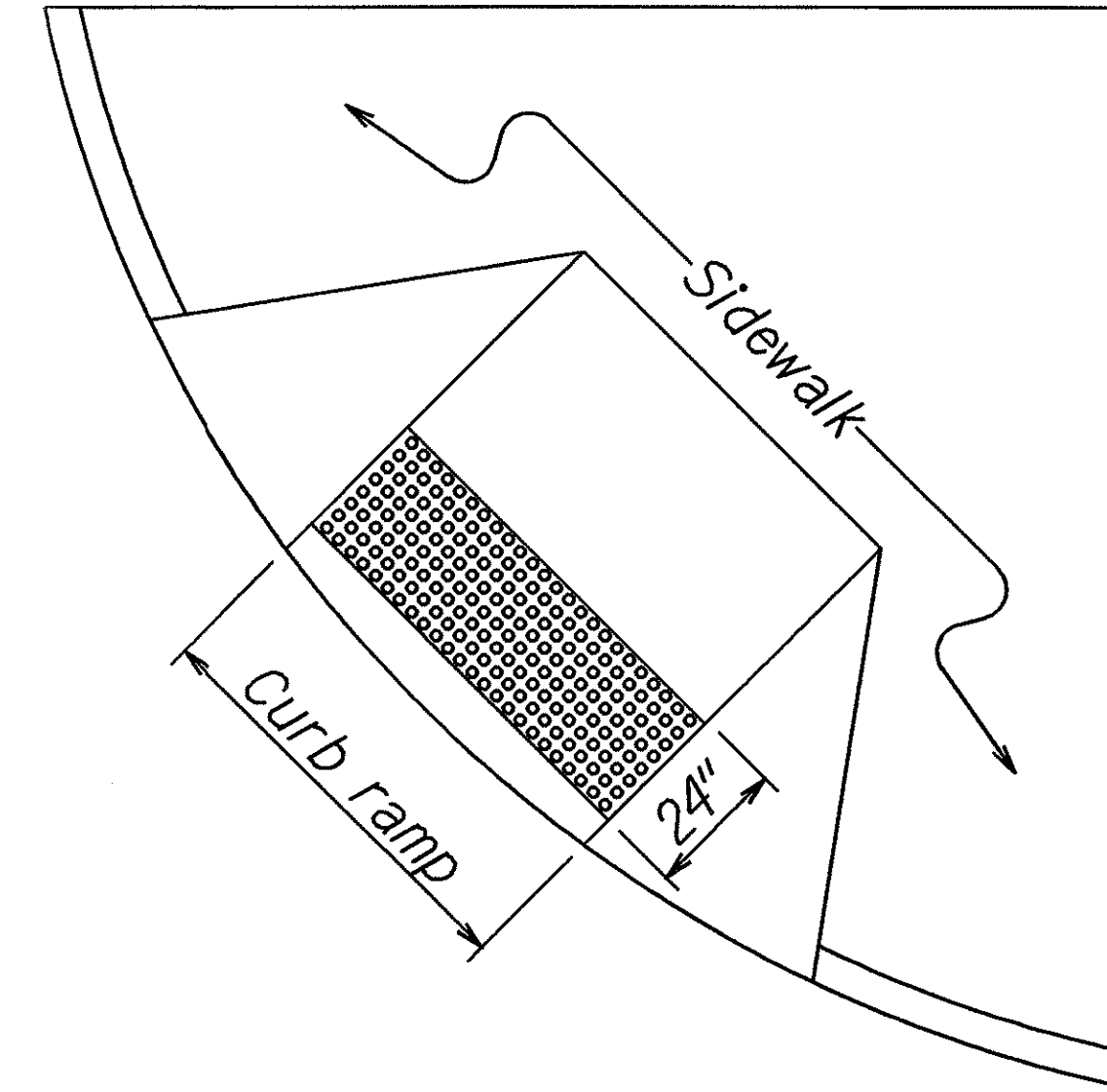
DETECTABLE WARNING AT CURB RAMP



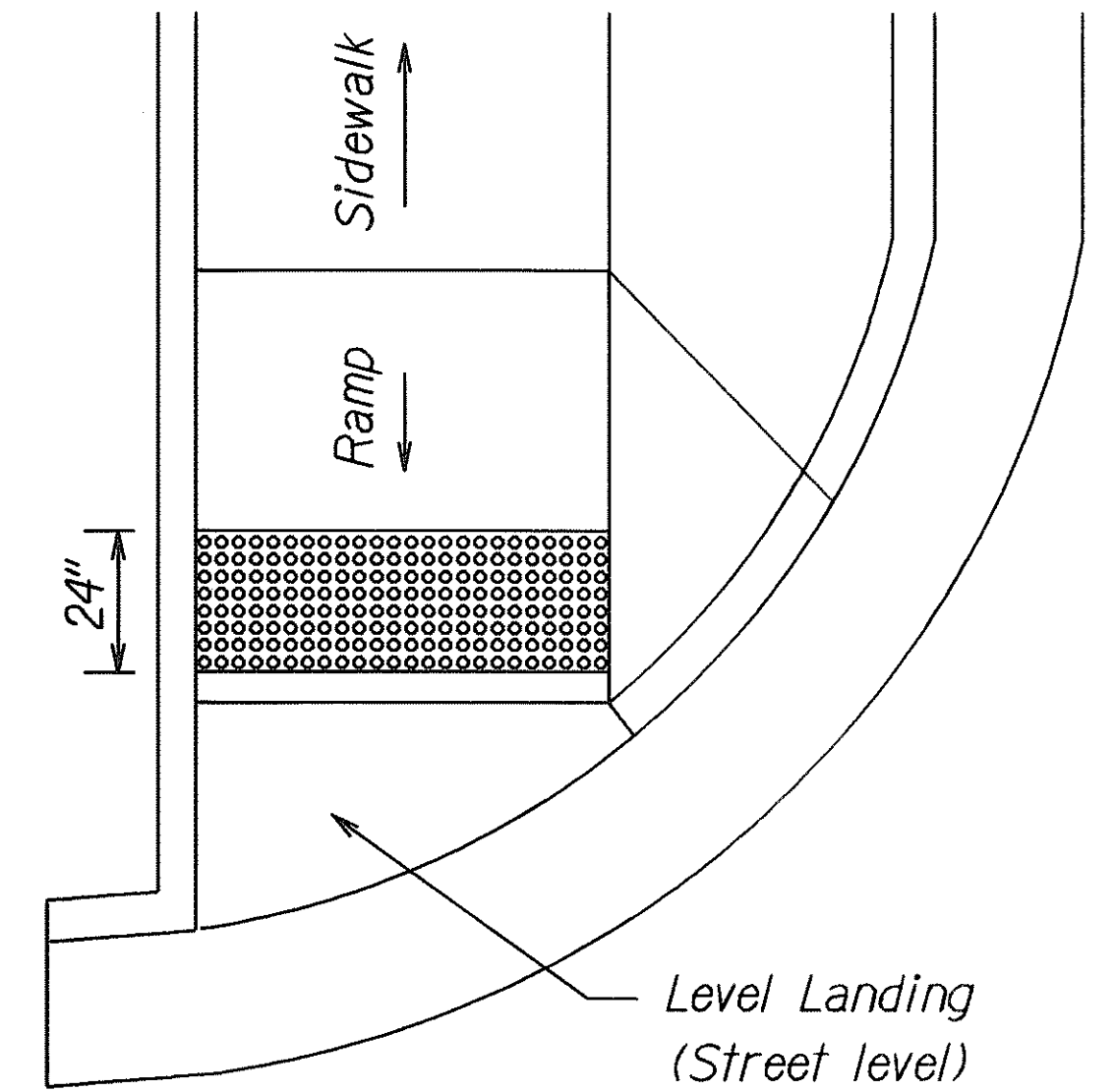
TRANSITION RAMP WITH DETECTABLE WARNING



REFUGE ISLAND WITH DETECTABLE WARNING



SHARED CURB RAMP WITH DETECTABLE WARNING



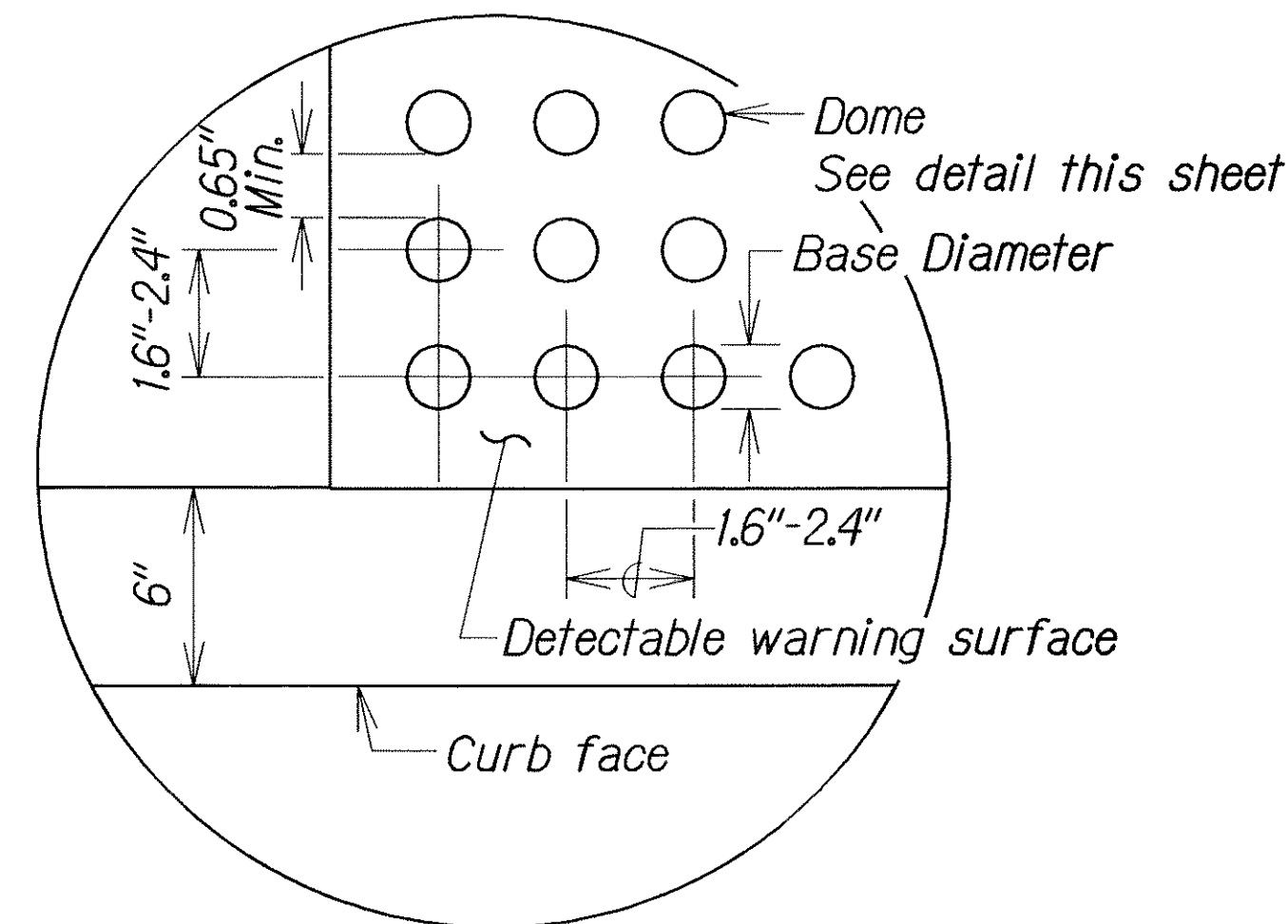
END OF SIDEWALK CURB RAMP WITH DETECTABLE WARNING

TYPICAL INSTALLATION OF DETECTABLE WARNINGS

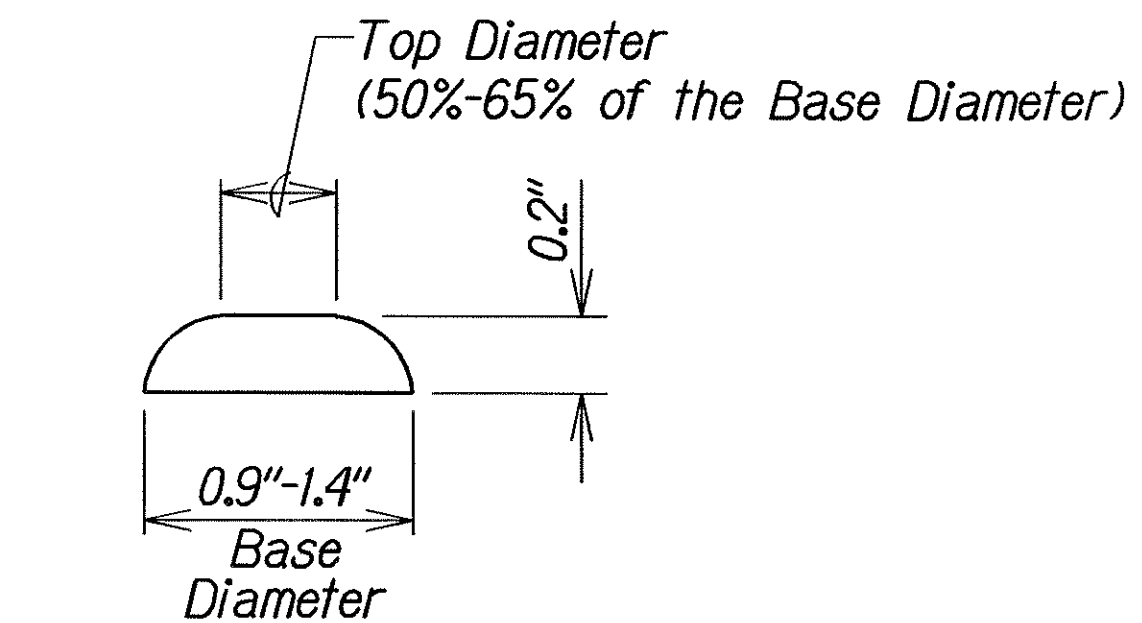
Not to Scale

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



DOMES SECTION

DETECTABLE WARNING DETAIL

Not to Scale

6/07/07	Replace with updated version, per Addendum No. 1.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>DETECTABLE WARNING DETAILS</u>	
<u>OLD KEEAAU-PAHOA ROAD RESURFACING</u>	
<u>KEA'AU TO KEEAAU HIGH SCHOOL</u>	
<u>PROJECT NO. 139A-01-05M</u>	
Not to Scale	Date: Nov., 2004
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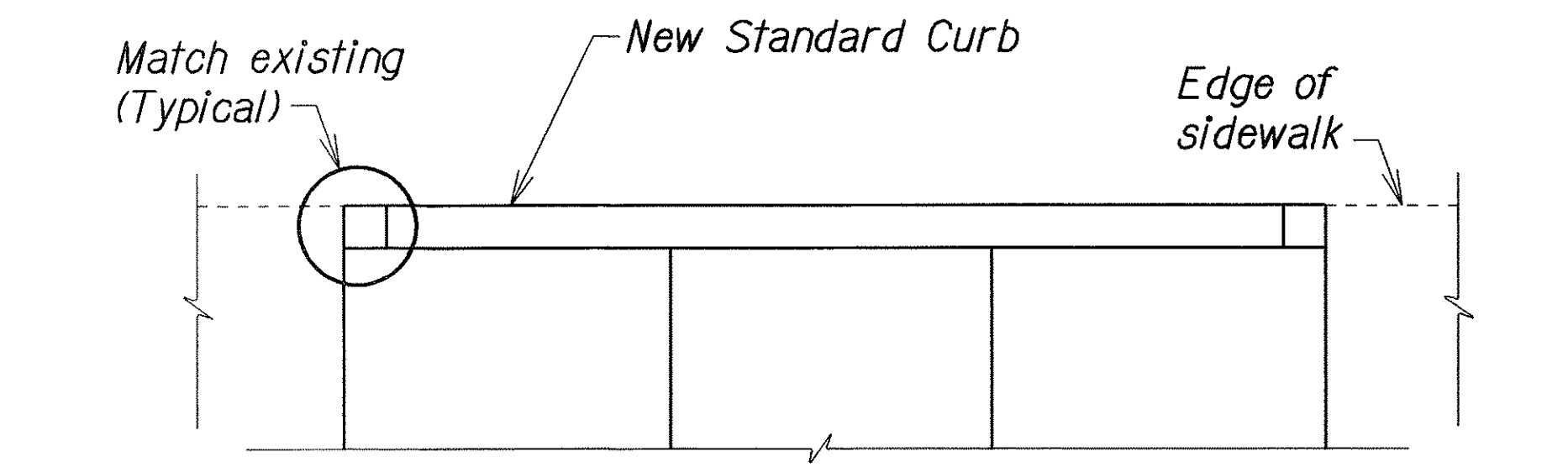
ADD. 55 S-5

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	...
	CHECKED BY	...

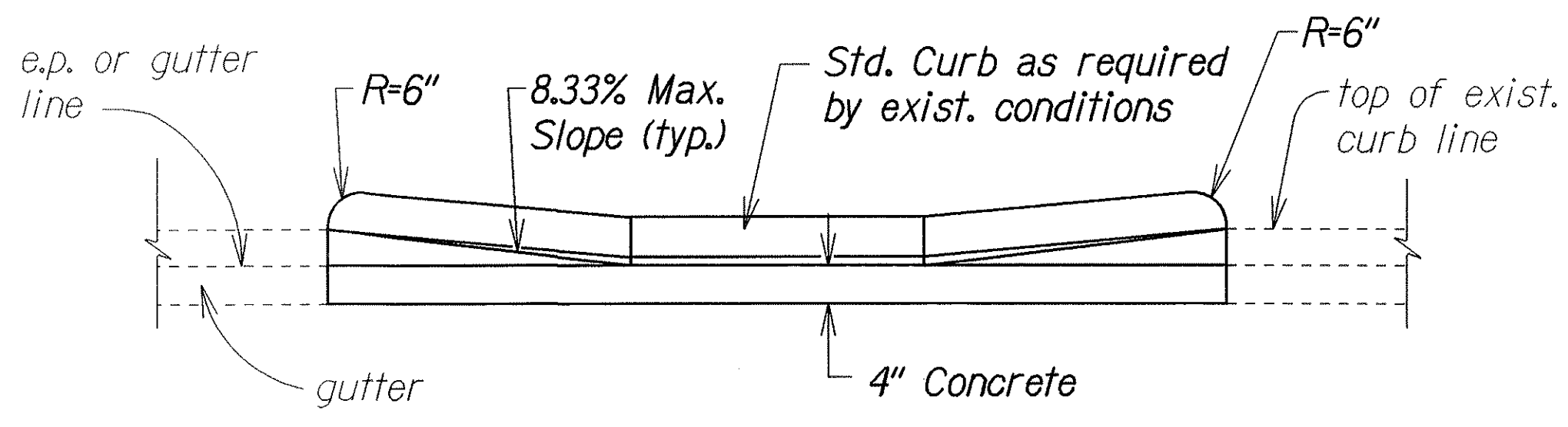
td1/usr2/traffic/std/curbramp/detect-r12-06-06.dgn

R12-06-06 TFE-XX sht. 9 of 9

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2007	56	106



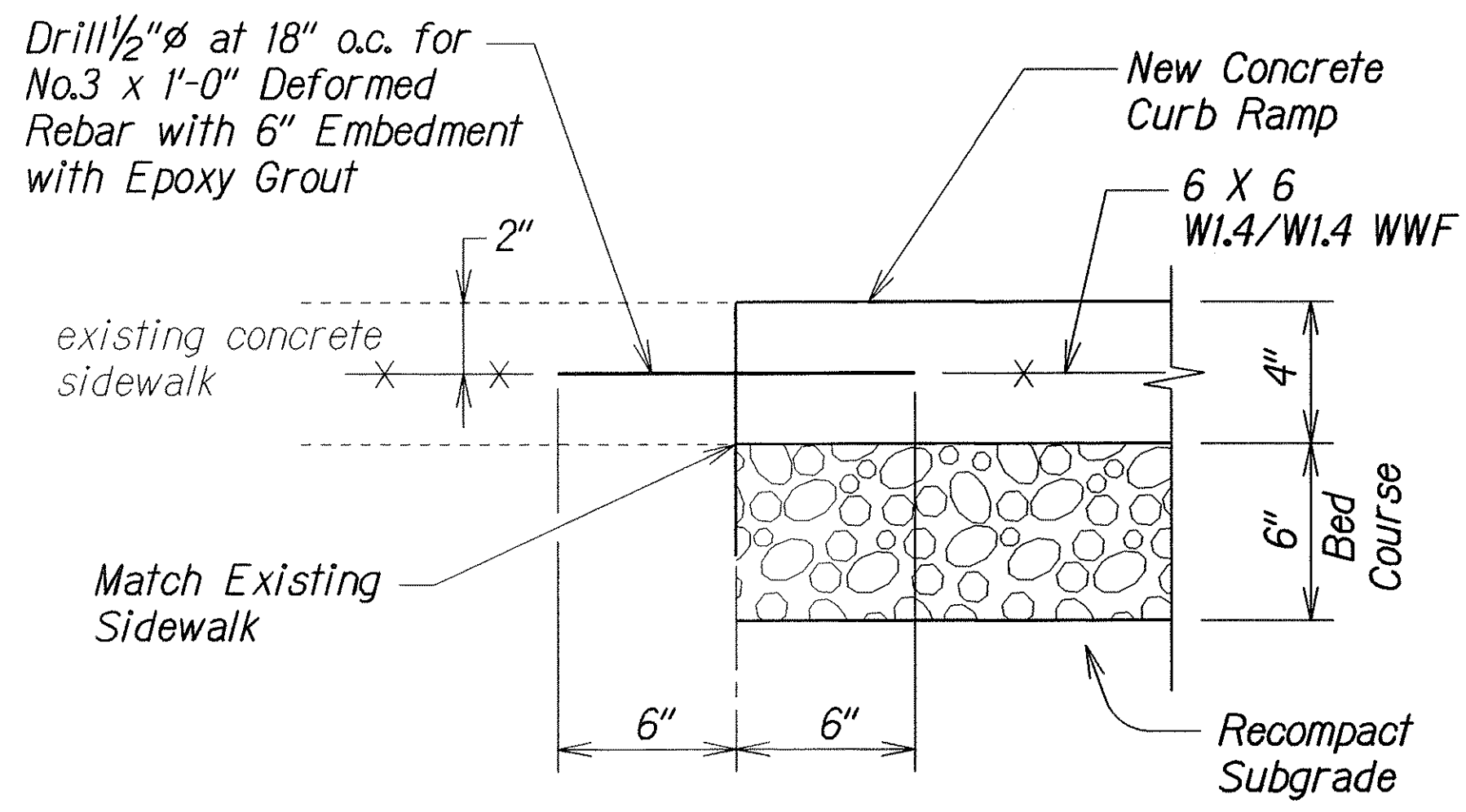
PLAN



ELEVATION

DETAIL - BACK CURB

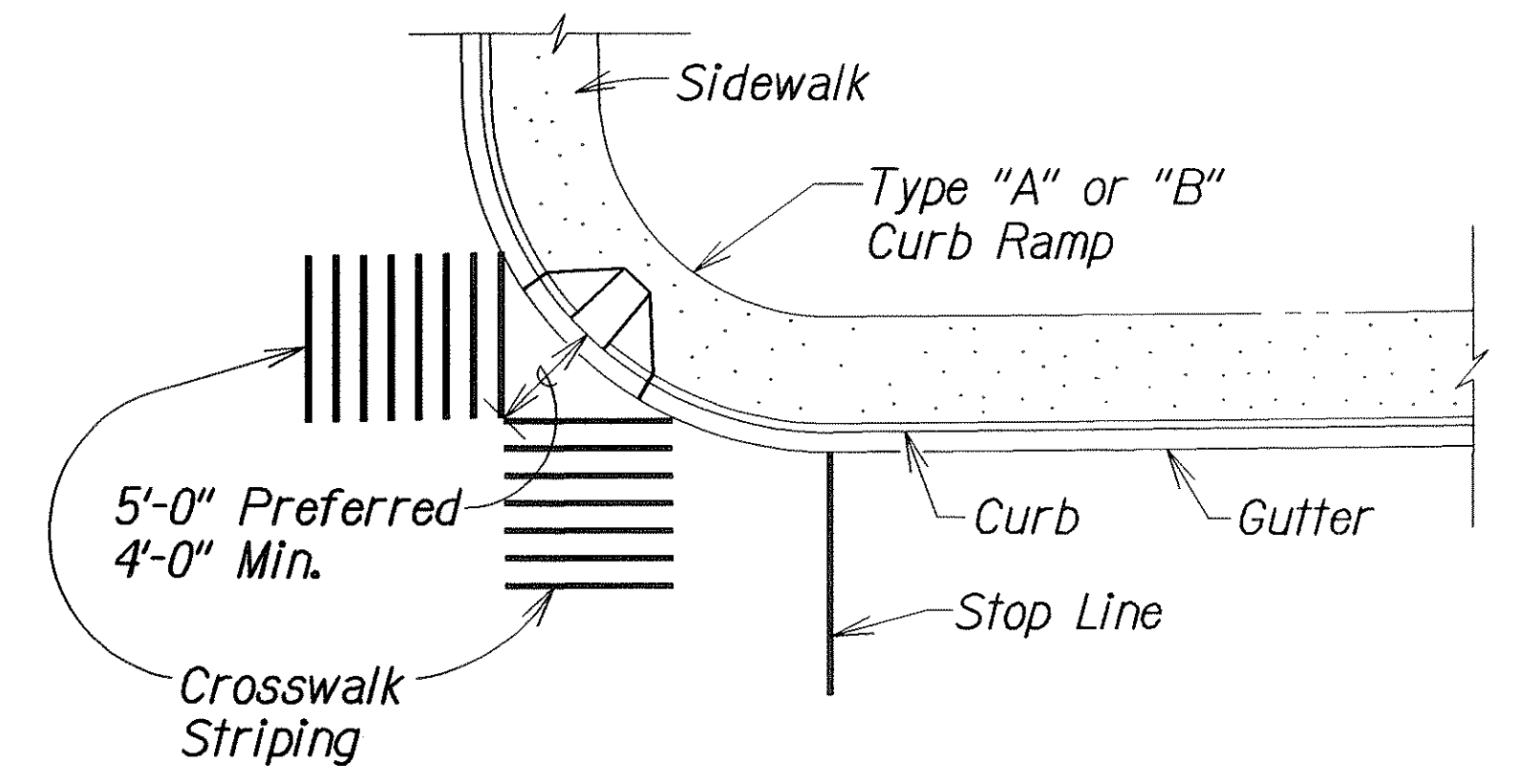
NOTE:
This detail can be used in situations where the edge of sidewalk cannot be flush with the face of (back) curb due to right of way restrictions.



NOTE:
All curb ramps shall be reinforced.

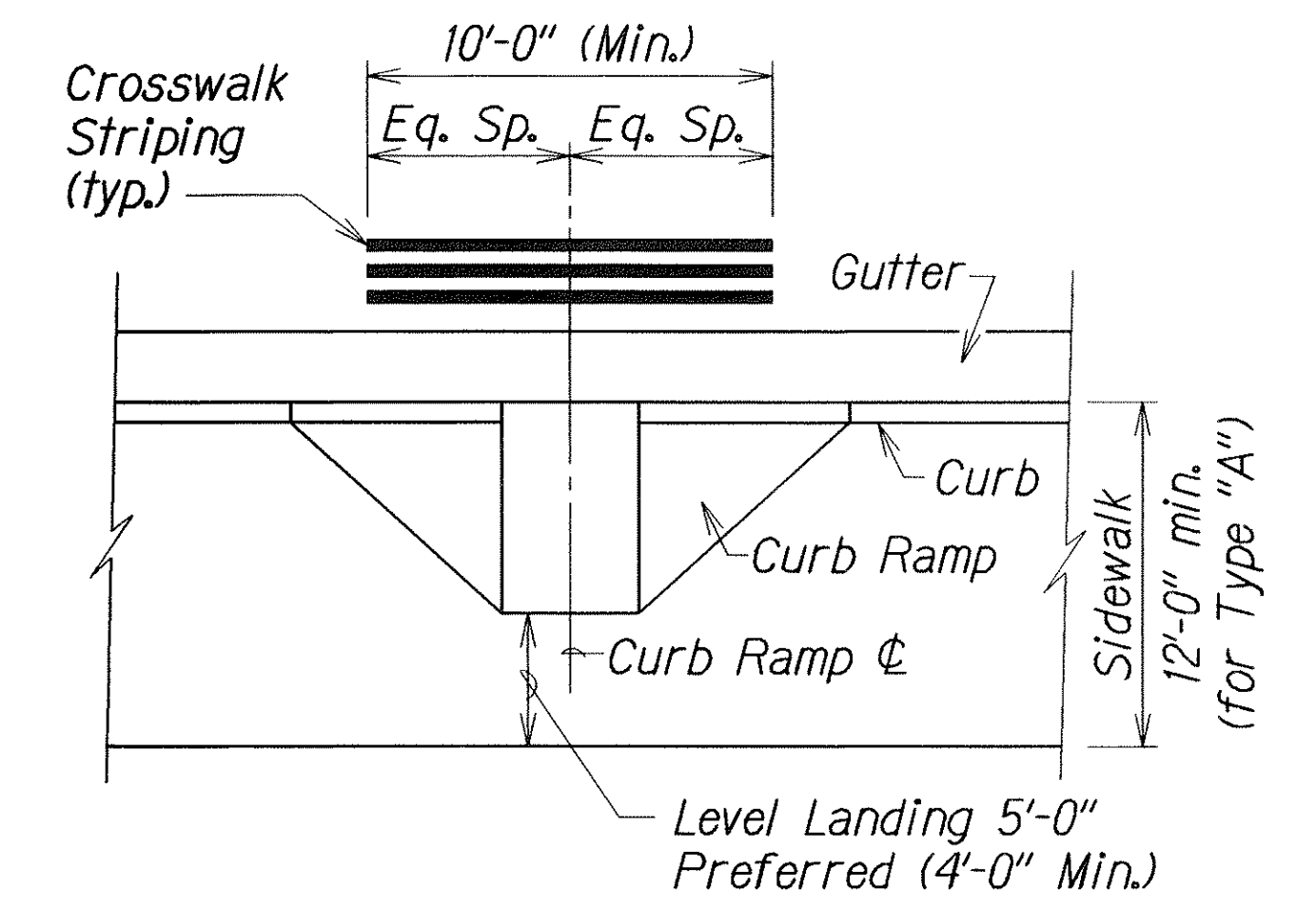
TYPICAL CONSTRUCTION JOINT
AT EXISTING SIDEWALK

N.T.S.



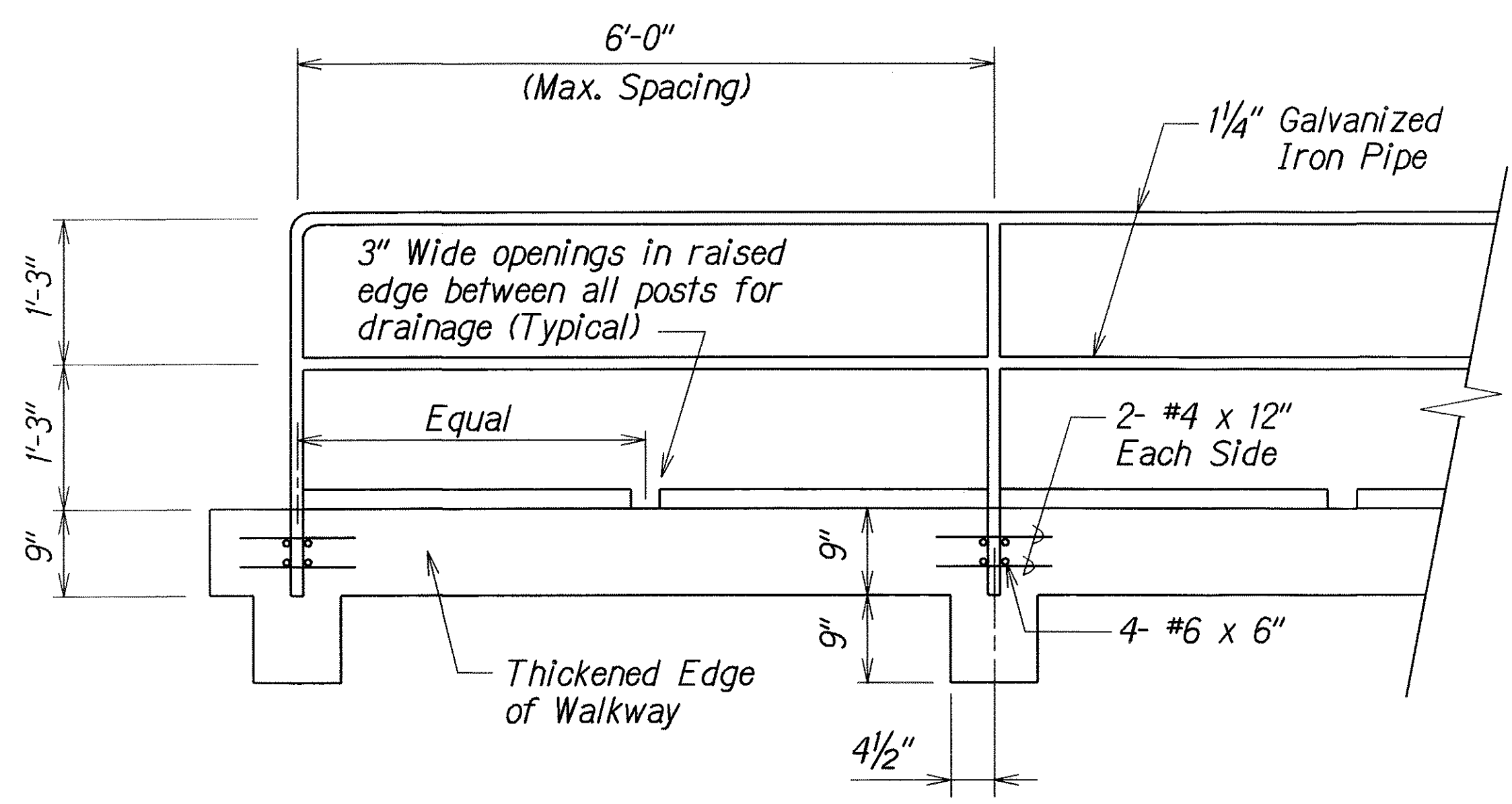
TYPICAL CROSSWALK STRIPING
AT DIAGONAL CURB RAMP

N.T.S.



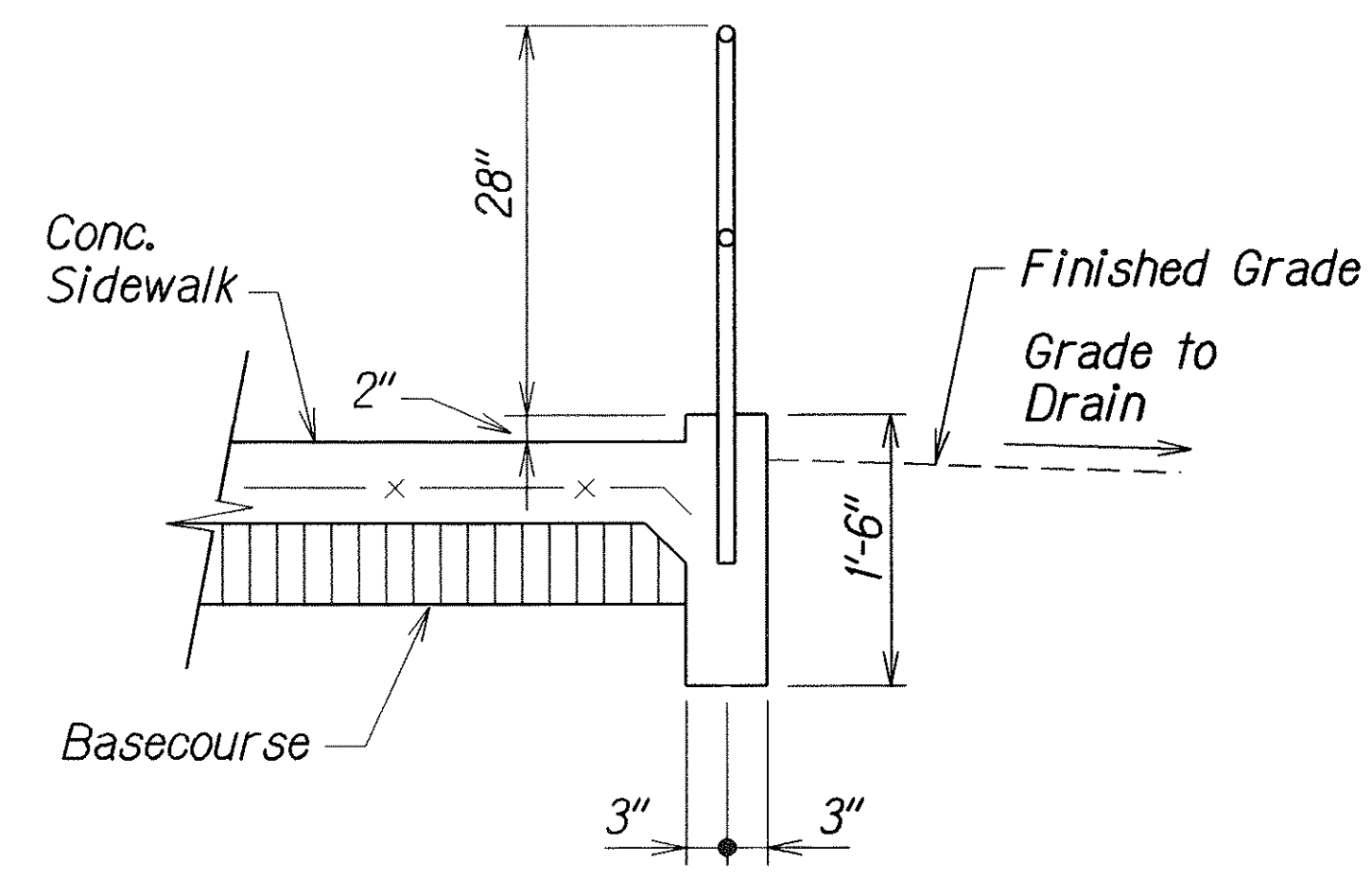
TYPICAL CROSSWALK STRIPING
AT CURB RAMP

N.T.S.



TYPICAL HANDRAIL DETAIL

N.T.S.



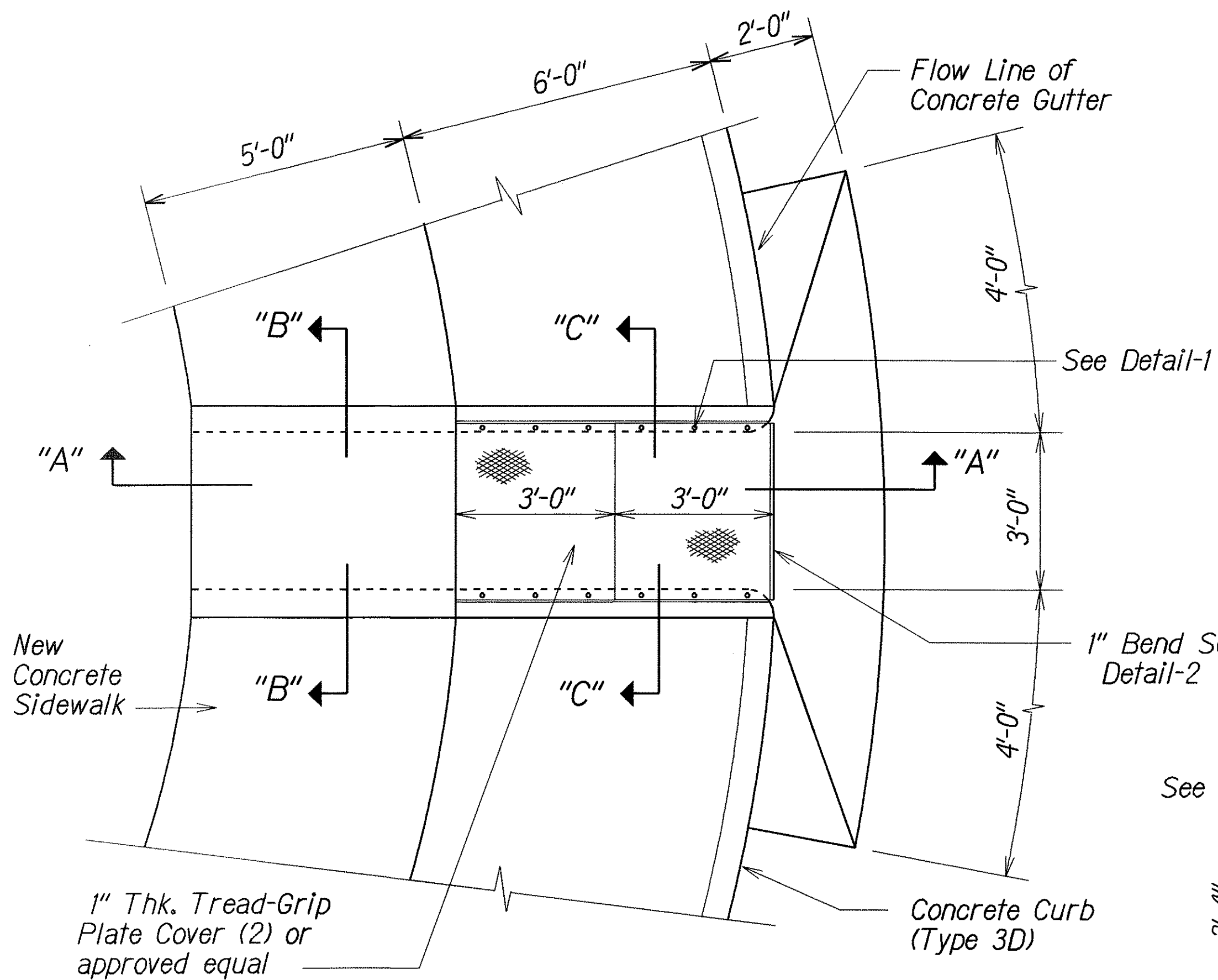
HANDRAIL SECTION

N.T.S.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS
OLD KEA'AU-PAHOA ROAD RESURFACING
KEA'AU TO KEAAU HIGH SCHOOL
PROJECT NO. 139A-01-05M
Not to Scale
Date: Nov., 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2005	ADD.57	106

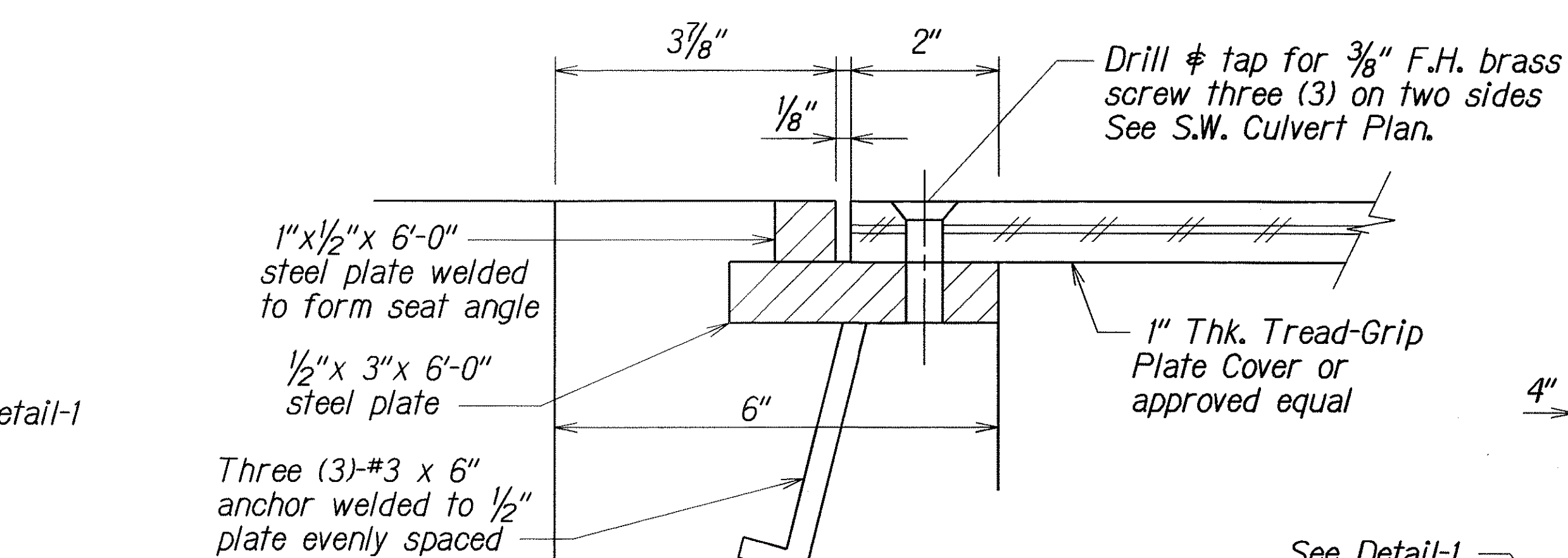


SIDEWALK CULVERT PLAN - TYPE 1

Scale: 1/2" = 1'-0"

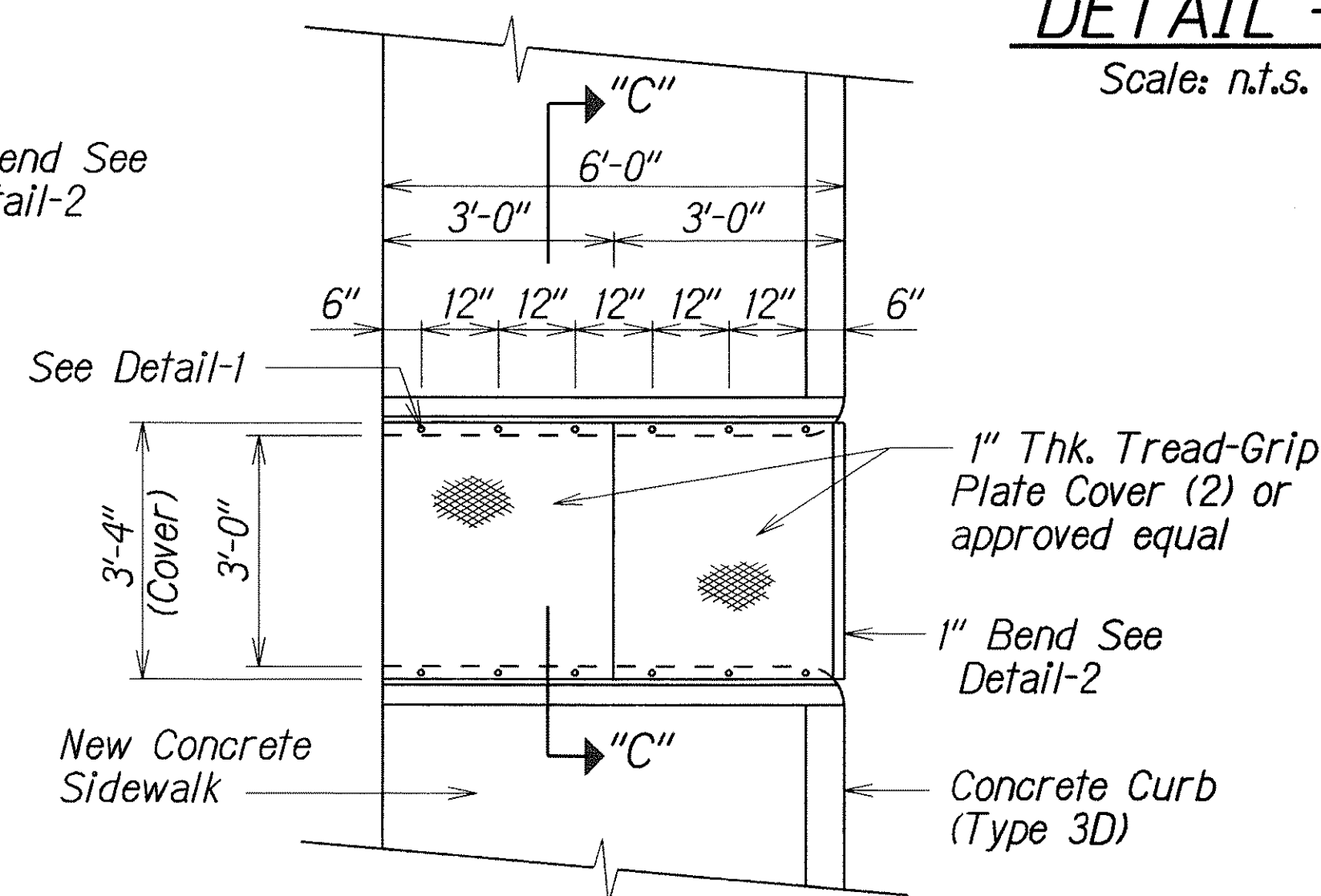
NOTES :

1. Steel shall be ASTM A-36.
2. Hot dip galvanize after fabrication per ASTM A-123.
3. Reinforced concrete, $f'_c = 4,000$ psi.
4. Reinforcing steel: ASTM A-615, Grade 60.



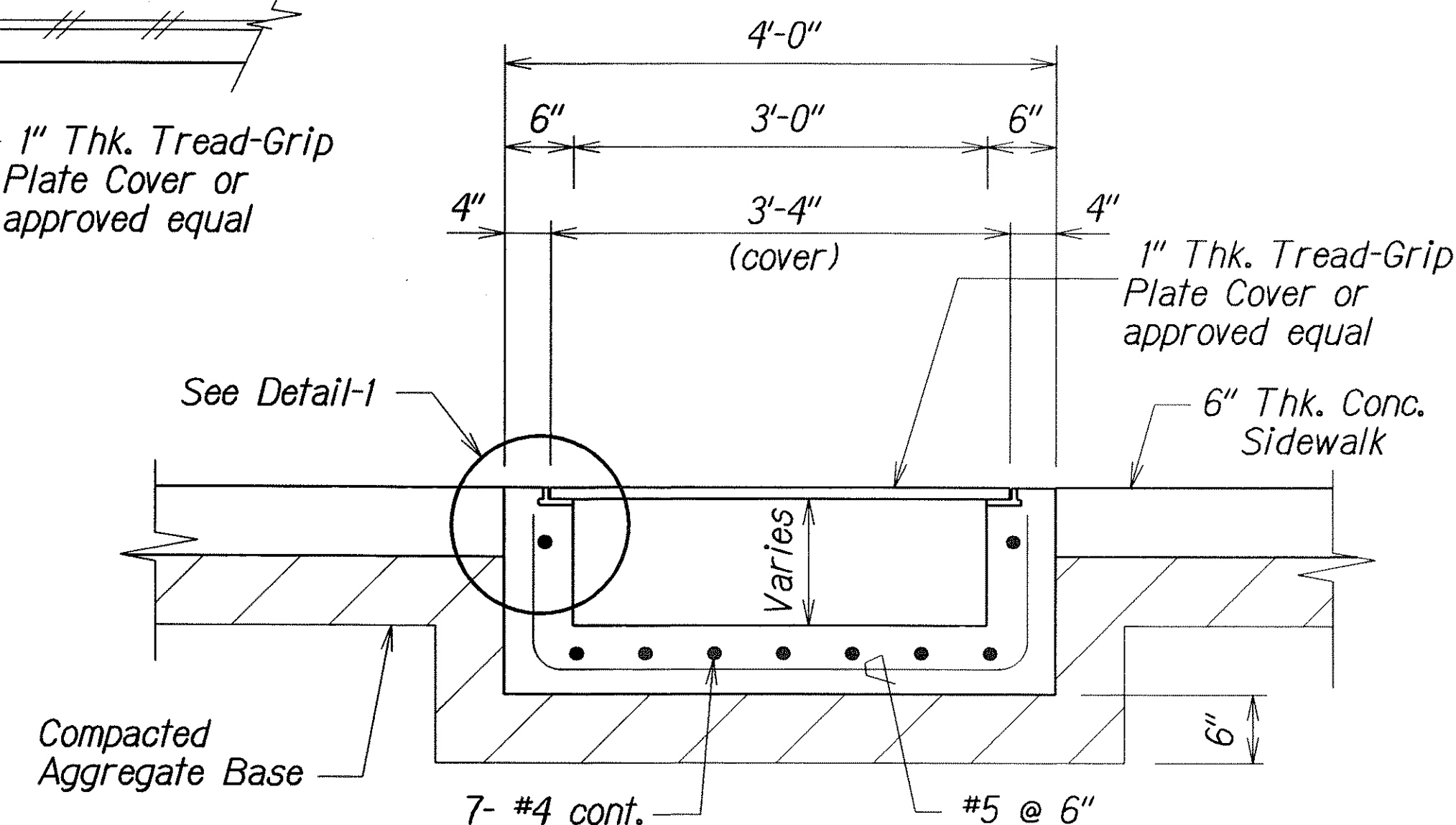
DETAIL - 1

Scale: n.t.s.



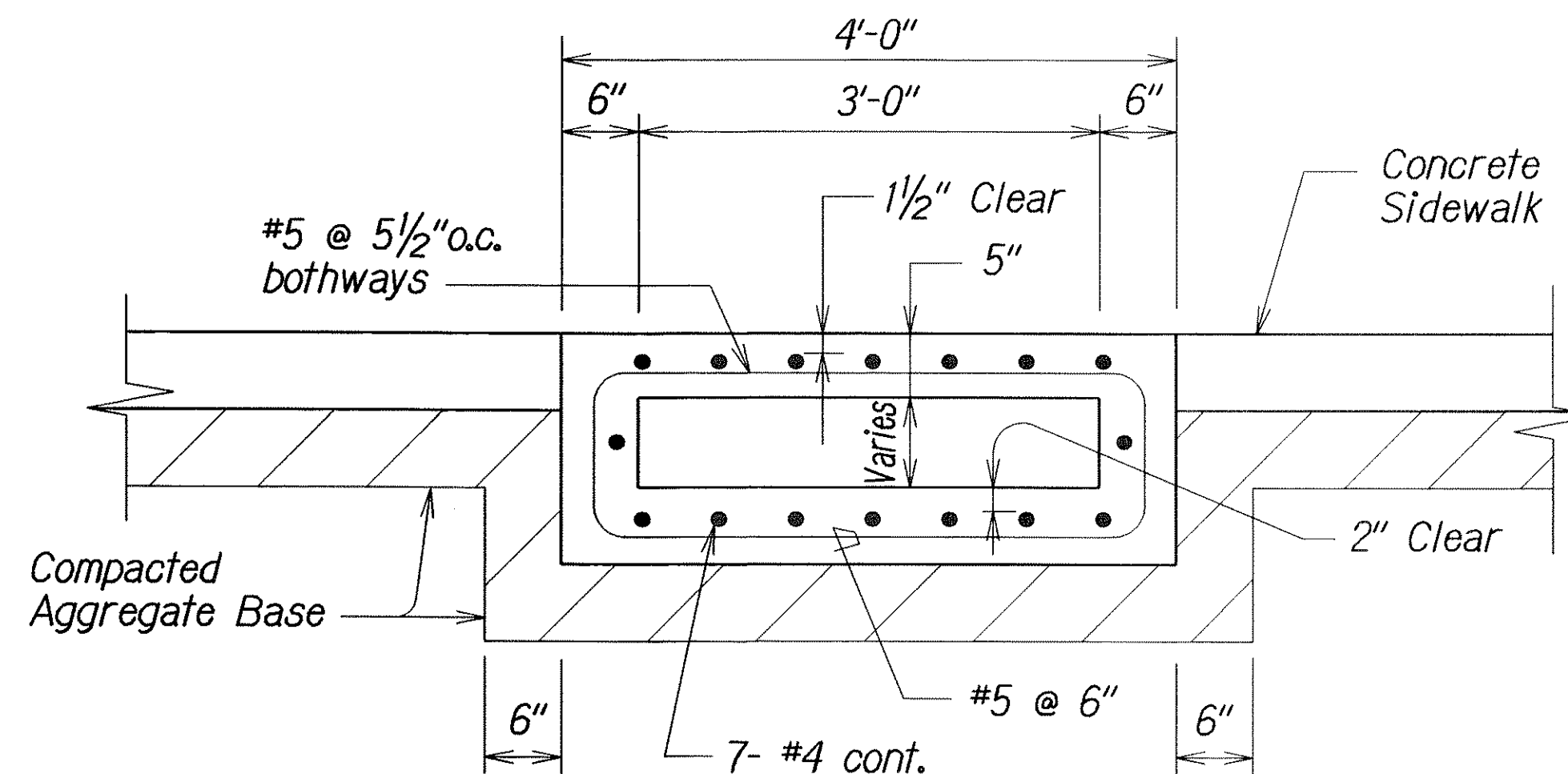
SIDEWALK CULVERT PLAN - TYPE 2

Scale: 1/2" = 1'-0"



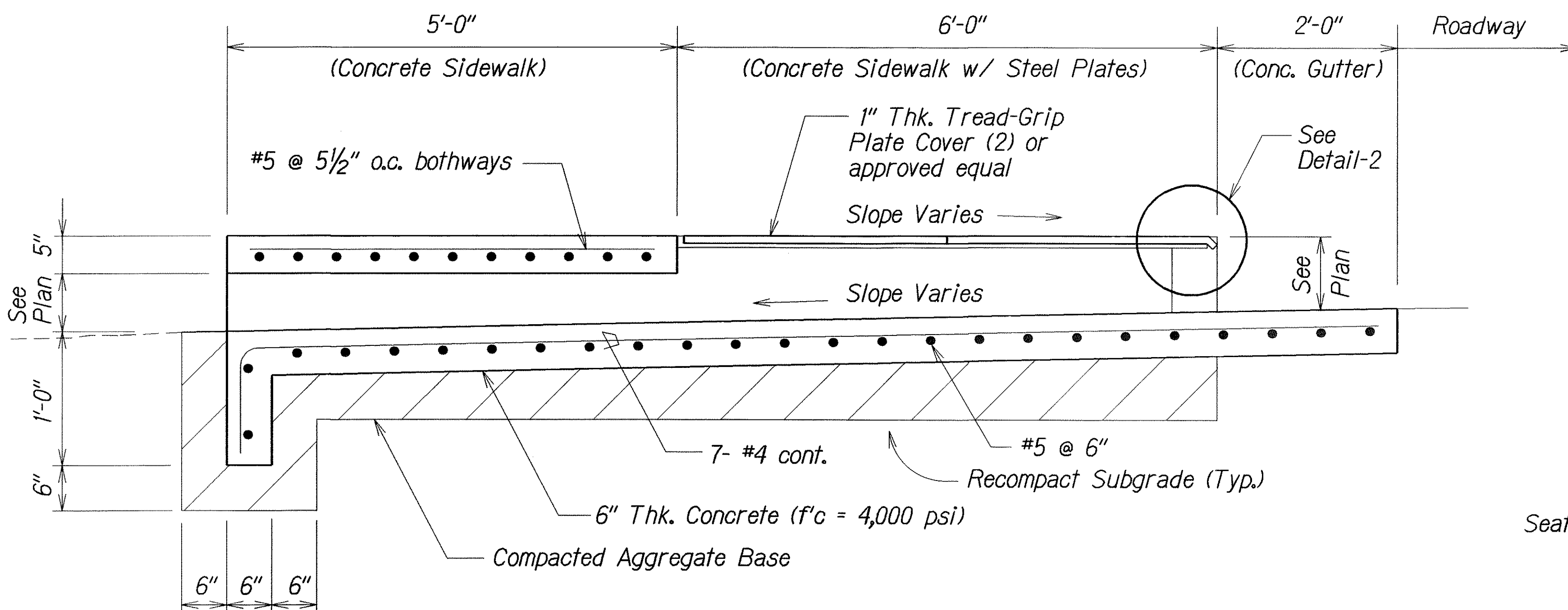
SECTION "C-C"

Scale: 1" = 1'-0"



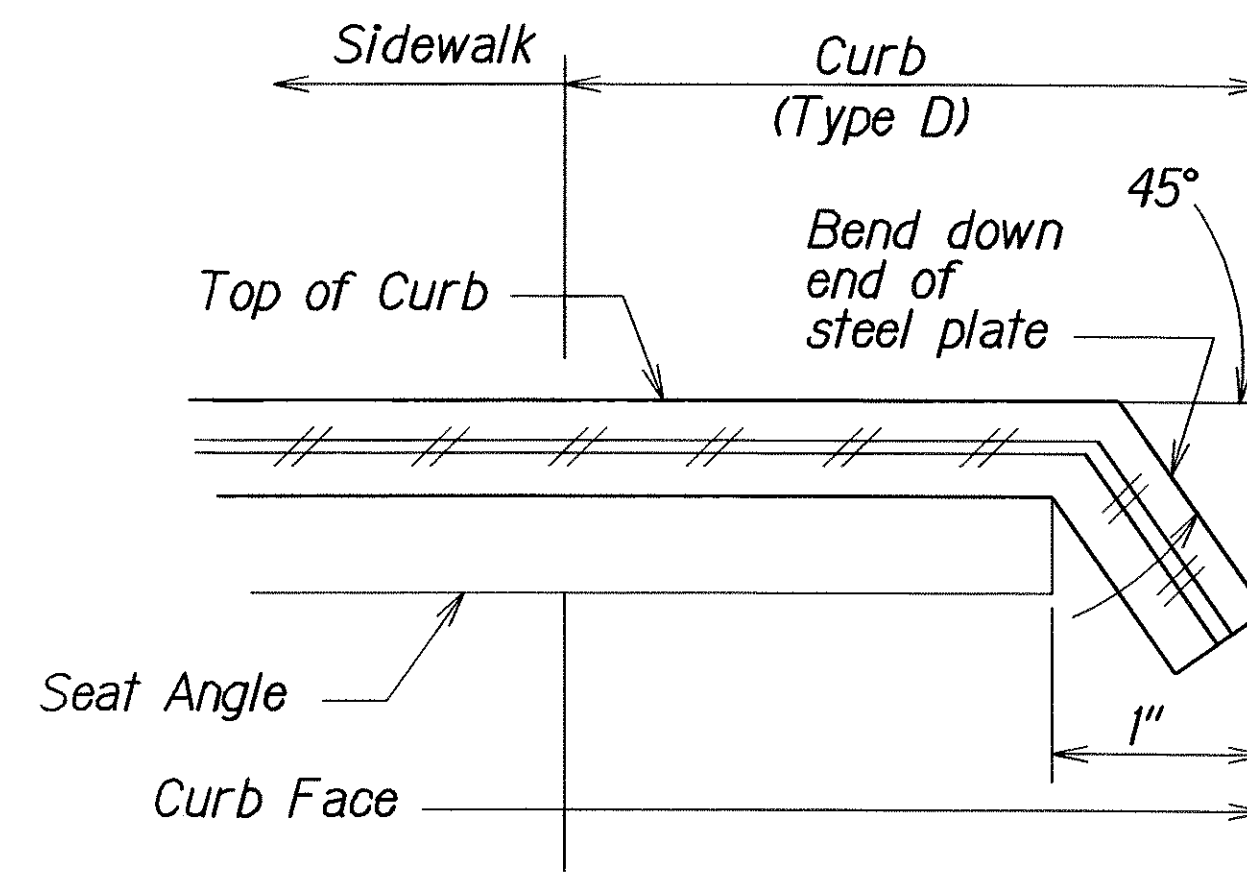
SECTION "B-B"

Scale: 1" = 1'-0"



SECTION "A-A"

Scale: 1" = 1'-0"



DETAIL - 2

Scale: n.t.s.

6/07/07 Revise culvert details and notes, per Addendum No. 1.

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

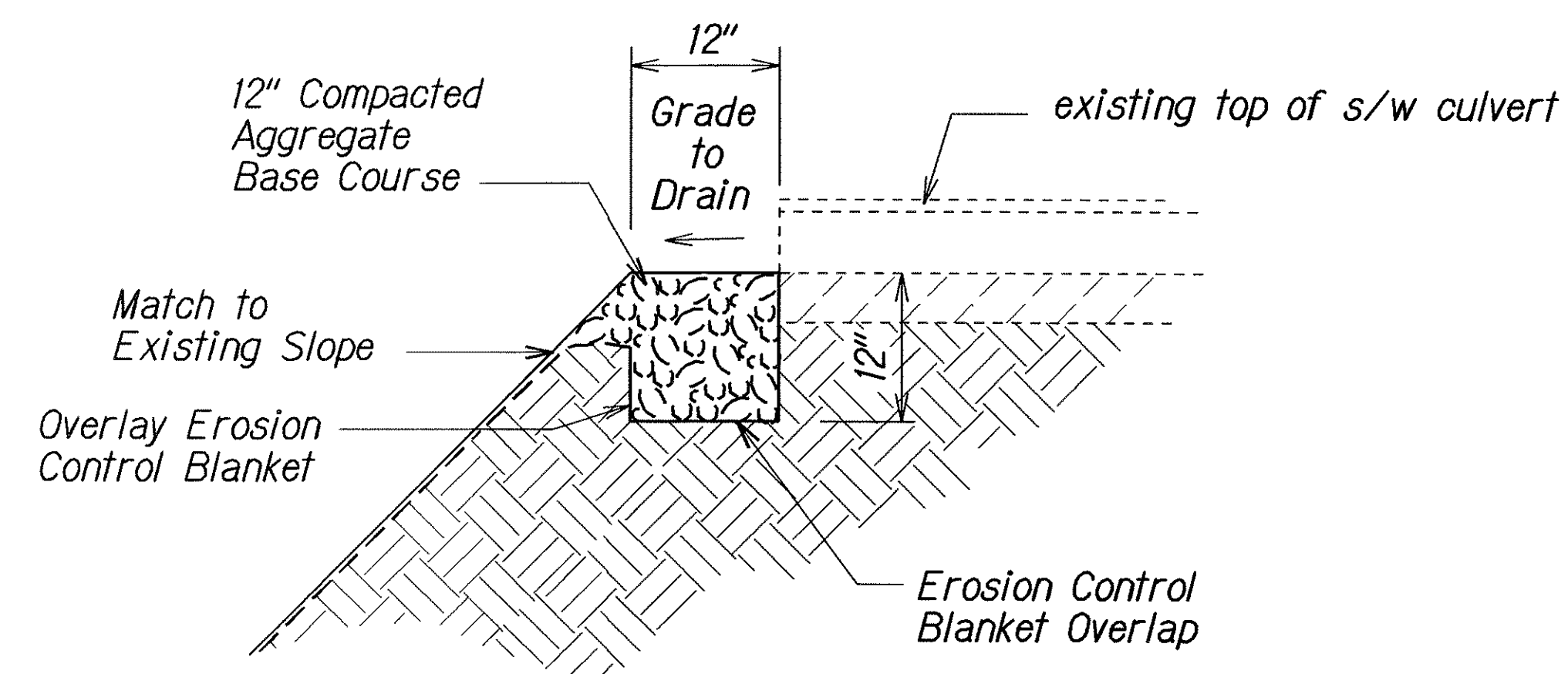
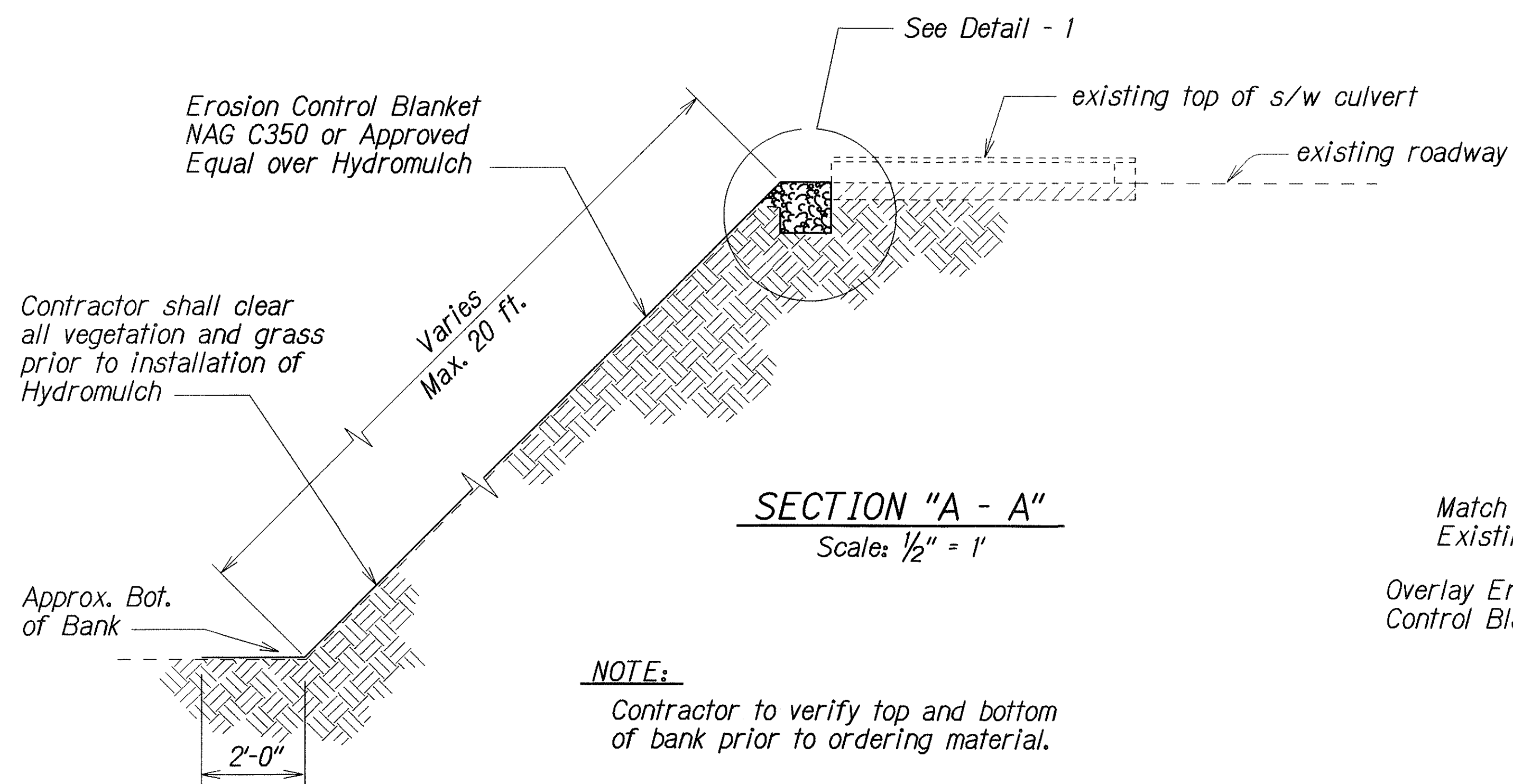
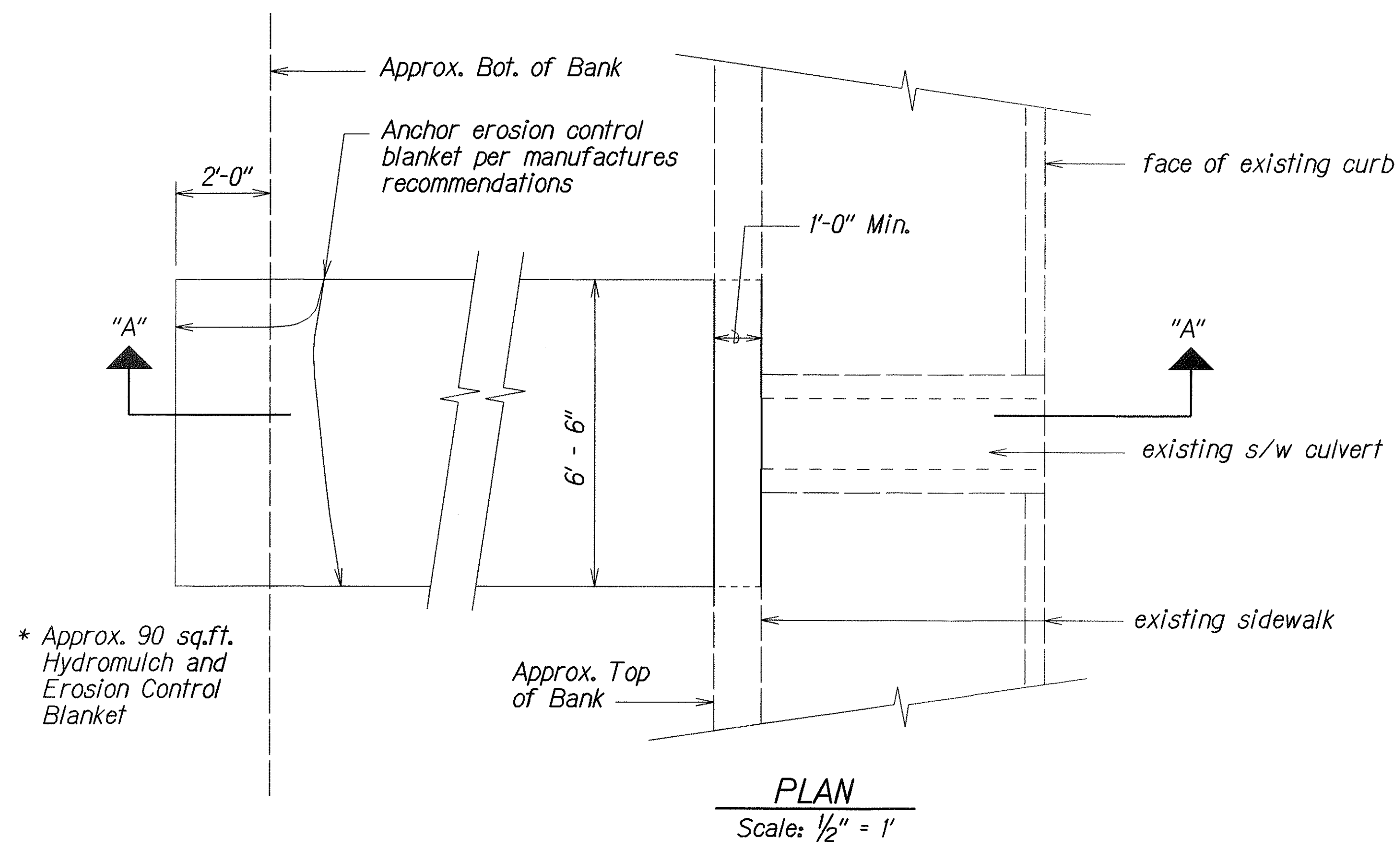
**TYPICAL SIDEWALK
CULVERT DETAILS**

OLD KEA'AU-PAHOA ROAD RESURFACING
KEA'AU TO KEA'AU HIGH SCHOOL
PROJECT NO. 139A-01-05M

Scale: As Shown Date: Nov., 2004

SHEET No. 6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	139A-01-05M	2007	58	106



DESIGNED BY	DATE
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TYPICAL SIDEWALK
CULVERT APRON**

OLD KEA'AU-PAHOA ROAD RESURFACING
KEA'AU TO KEAAU HIGH SCHOOL
PROJECT NO. 139A-01-05M

Scale: As Shown Date: Nov., 2004

SHEET No. 7 OF 7 SHEETS