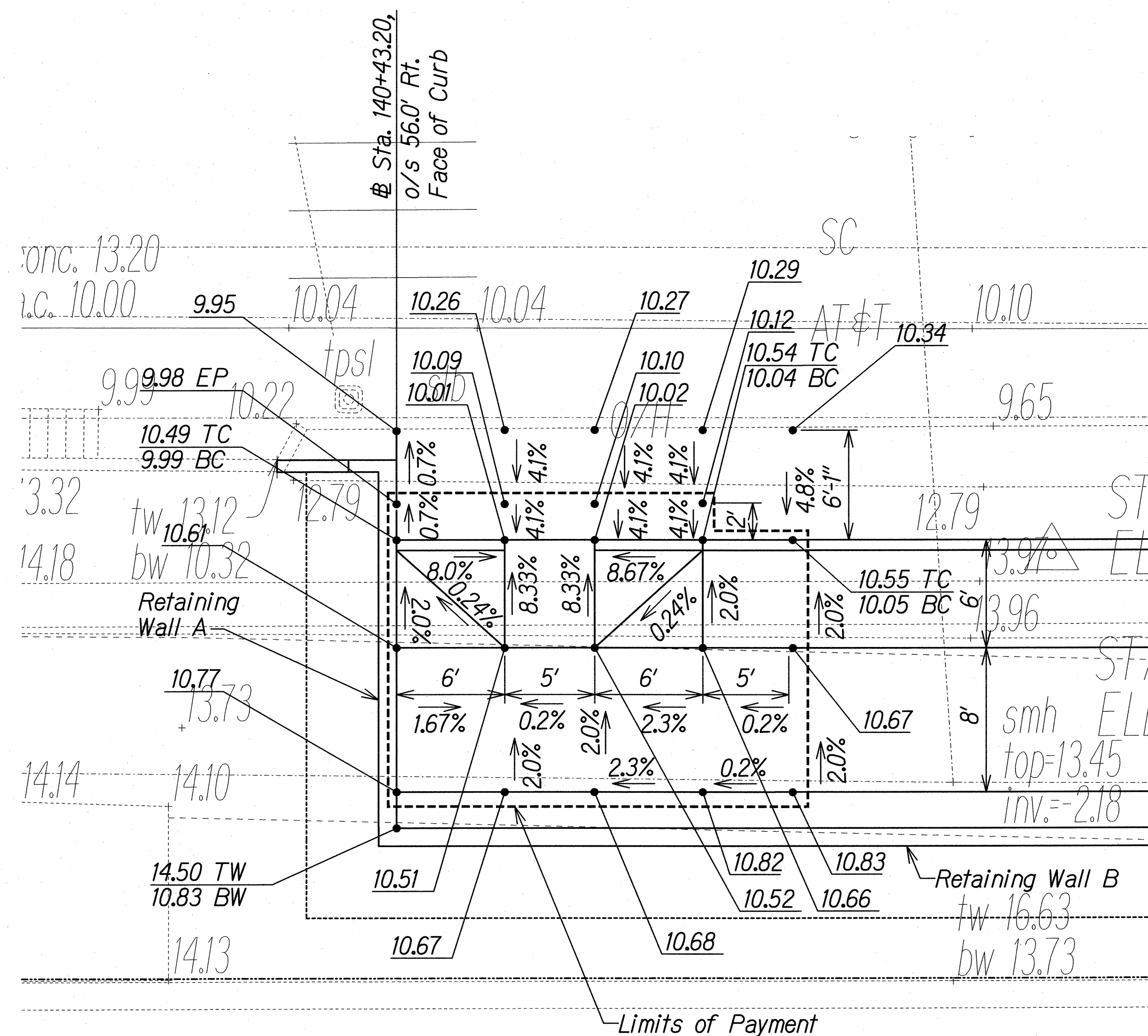

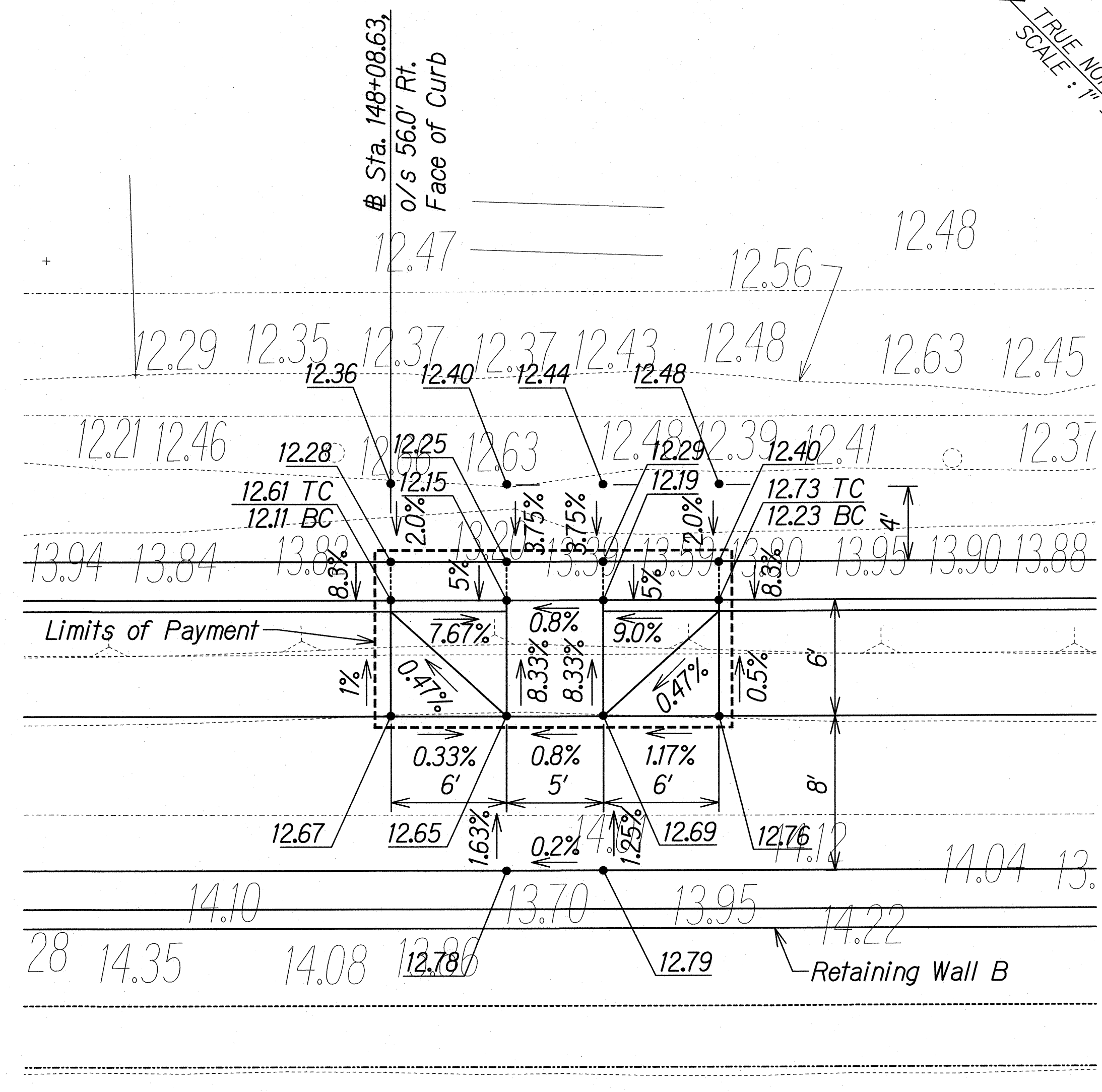




FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	C.O. 45	230



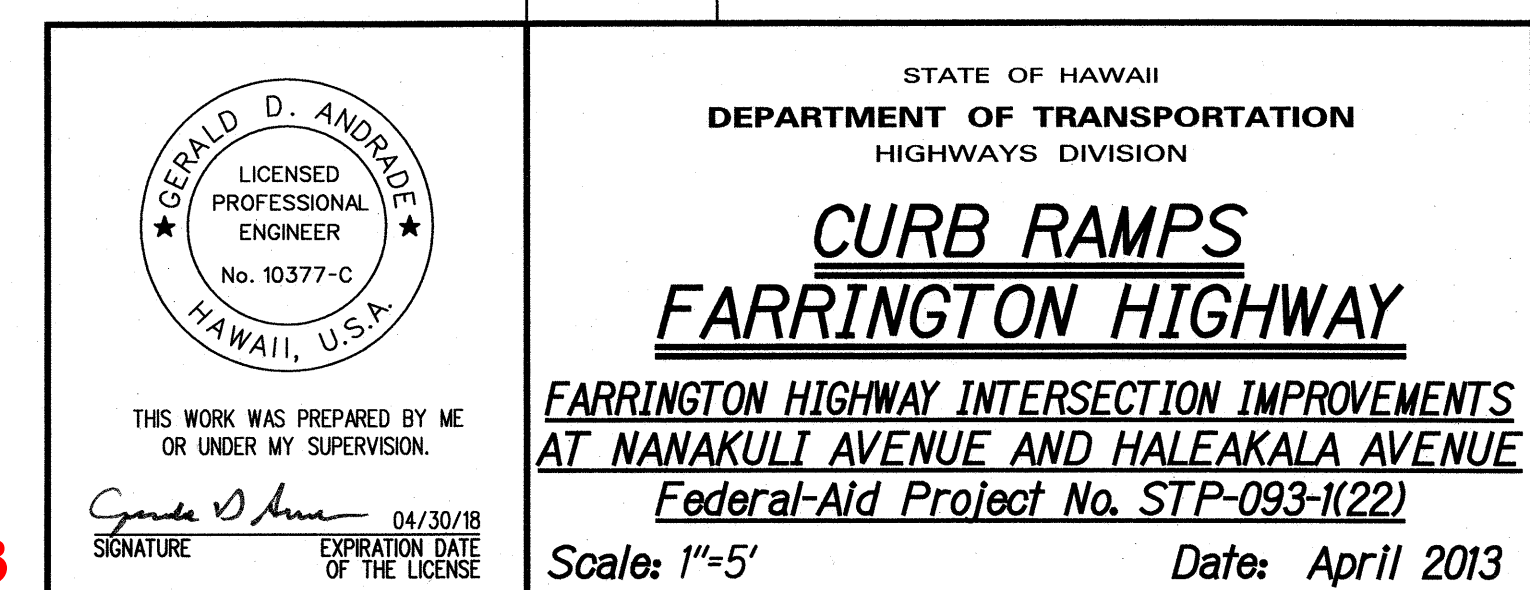
 CURB RAMP A - TYPE "A"
Scale: 1"=5'

Note: Install detectable warning on all curb ramps. See Details on Sheet CR-14.



  CURB RAMP B - TYPE "A"
Scale: 1"=5'

7/18/17	<u>2</u> Revised Curb & Spot Elevations
10/5/16	<u>1</u> Revised Curb & Spot Elevations
DATE	REVISION

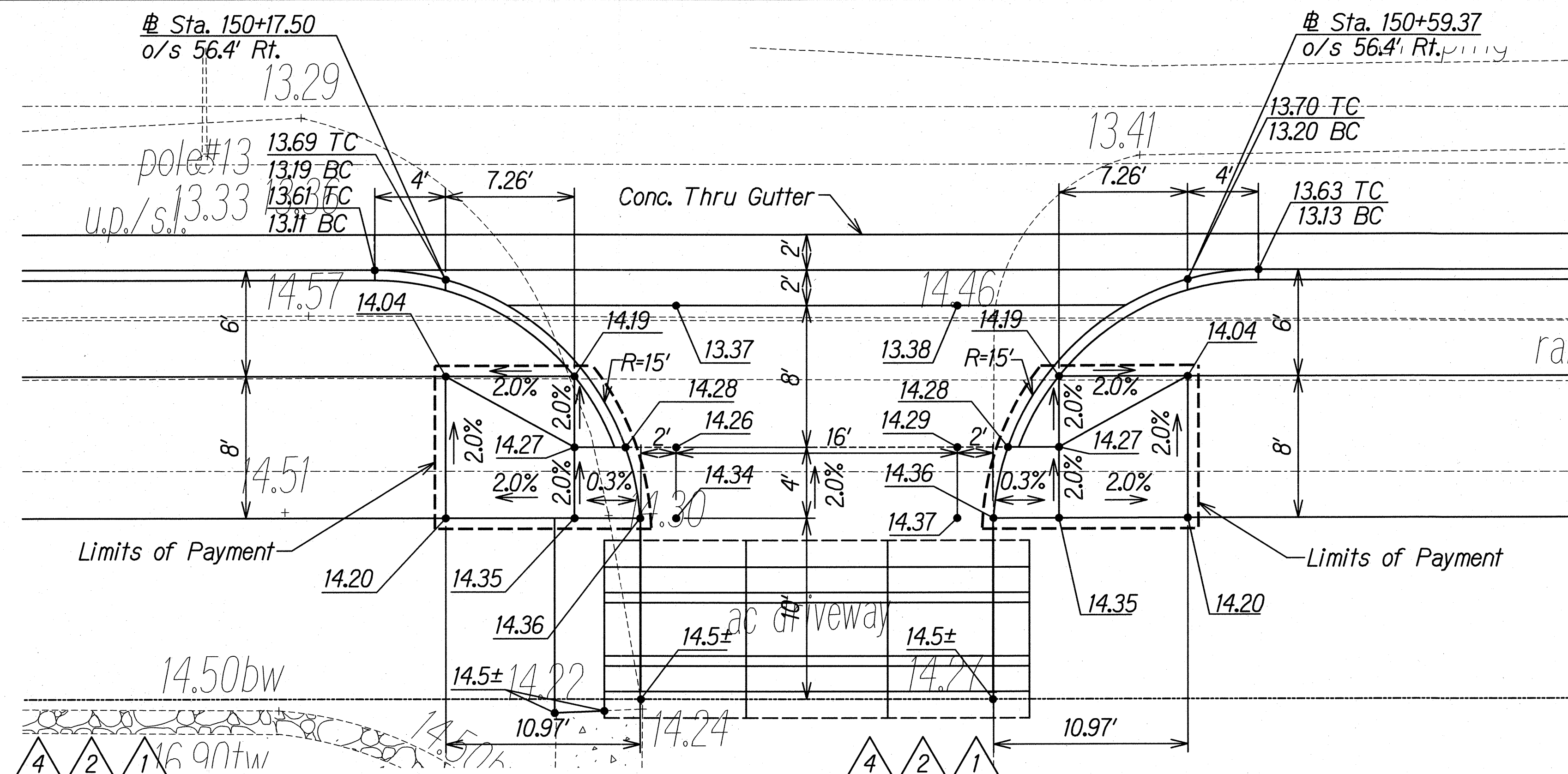


CONTRACT CHANGE ORDER NO. 33

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____ *
	TRACED BY _____ *
	DESIGNED BY _____ *
	QUANTITIES BY _____ *
	CHECKED BY _____
N.	

\\jc\dot - FARRINGTON HWY INTERSECTIONS NAWAKULI HALEAKALA\CADD\Sheets\Curb Ramp\CR-1.dgn

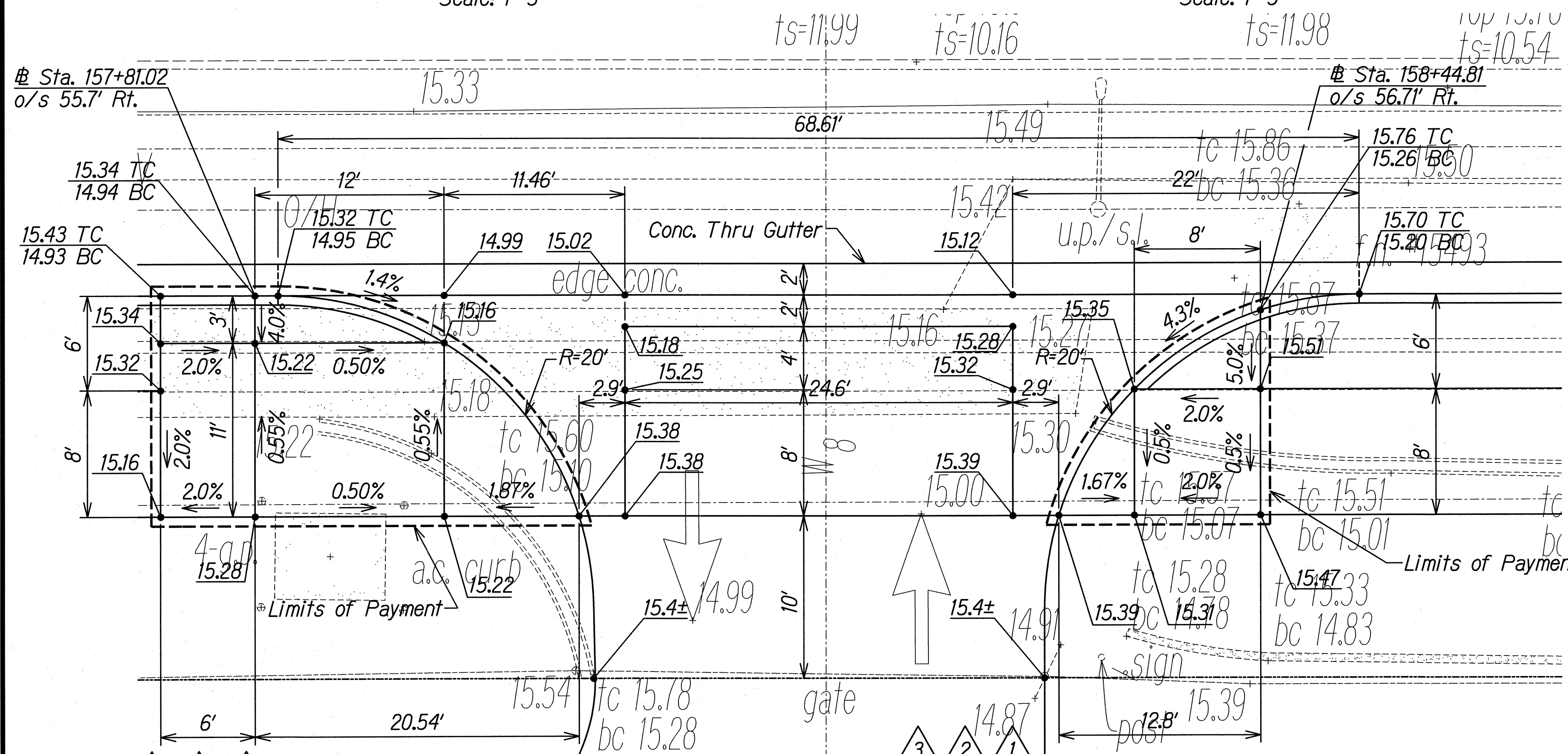
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HAWAII	HAW.	STP-093-1(22)	2013	C.O. 46	230



CURB RAMP C - TYPE "D"
Scale: 1"=5'

CURB RAMP D - TYPE "D"
Scale: 1"=5'

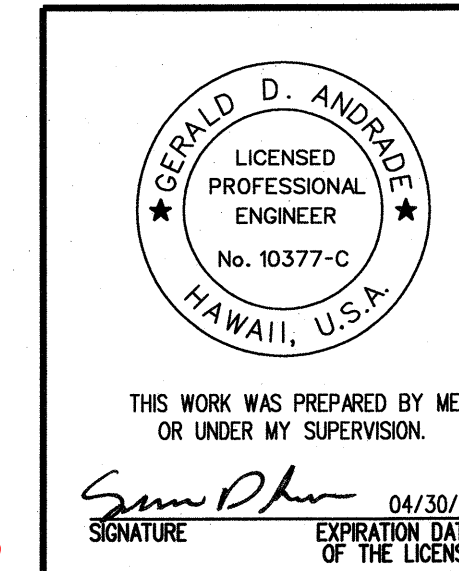
Note: Install detectable warning on all curb ramps. See Details on Sheet CR-14.



CURB RAMP E - TYPE "D"
Scale: 1"=5'

CURB RAMP F - TYPE "D"
Scale: 1"=5'

DATE	REVISION
2/9/18	Revised Curb & Spot Elevations
11/17/17	Revised Curb Ramps
7/18/17	Revised Curb & Spot Elevations
10/5/16	Revised Curb & Spot Elevations



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMPS
FARRINGTON HIGHWAY

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

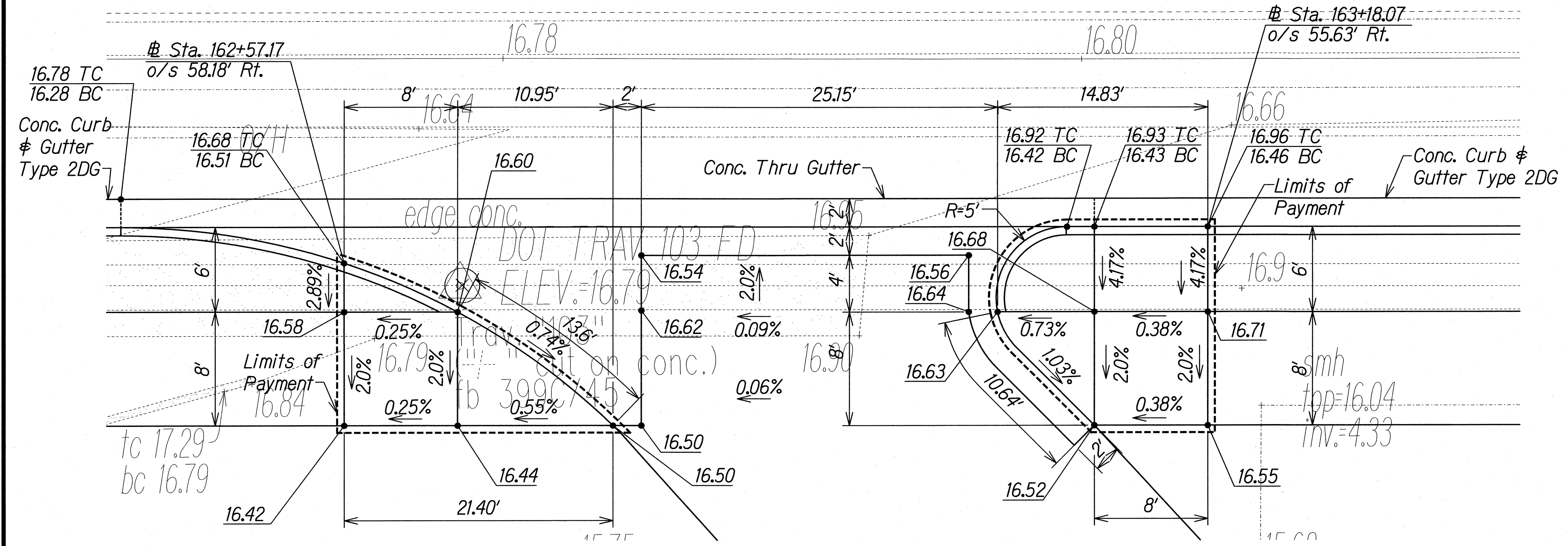
Scale: 1"=5' Date: April 2013

CONTRACT CHANGE ORDER NO. 33

DESIGNED BY	DATE
CHECKED BY	
NOTED BY	
QUANTITIES BY	
PLAN	
GENERAL	

J:\DOT - FARRINGTON HWY INTERSECTIONS\NANAKULI HALEAKALA\CADD\Sheets\Curb Ramps\CR-2.dgn

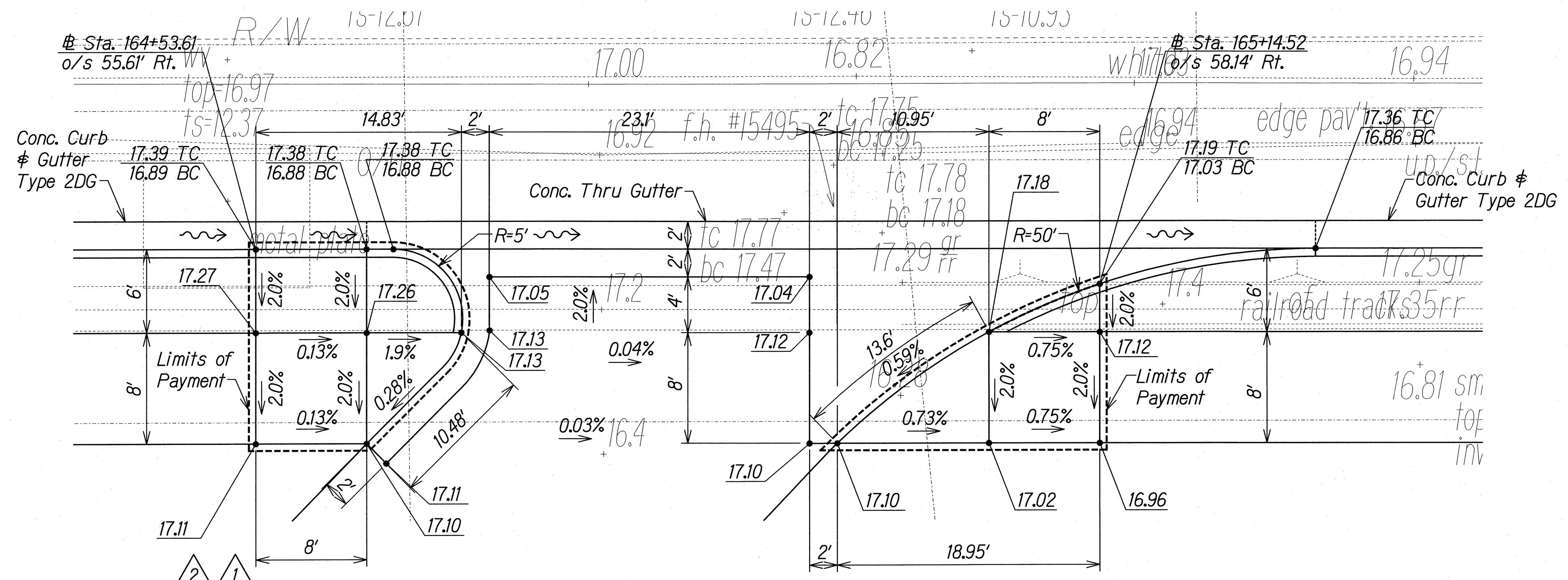
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HAWAII	HAW.	STP-093-1(22)	2013	C.O. 47	230



CURB RAMP G - TYPE "D"
Scale: 1"=5'

CURB RAMP H - TYPE "D"
Scale: 1"=5'

Note: Install detectable warning on all curb ramps. See Details on Sheet CR-14.



CURB RAMP I - TYPE "D"
Scale: 1"=5'

CURB RAMP J - TYPE "D"
Scale: 1"=5'

DATE	____
DESIGNED BY	____
TRACED BY	____
NOTE BOOK	____
QUANTITIES BY	____
CHECKED BY	____

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GERALD D. ANDRADE
LICENSED PROFESSIONAL ENGINEER
No. 10377-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: *Gerald D. Andrade*
EXPIRATION DATE OF THE LICENSE: 04/30/18

7/25/17	Revised Curb & Spot Elevations
10/5/16	Revised Curb & Spot Elevations
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

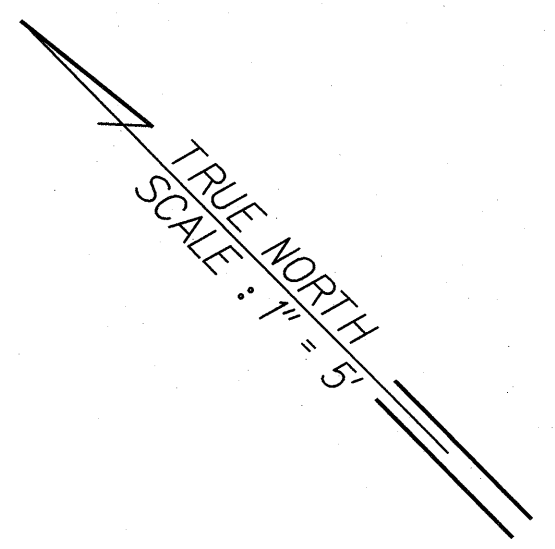
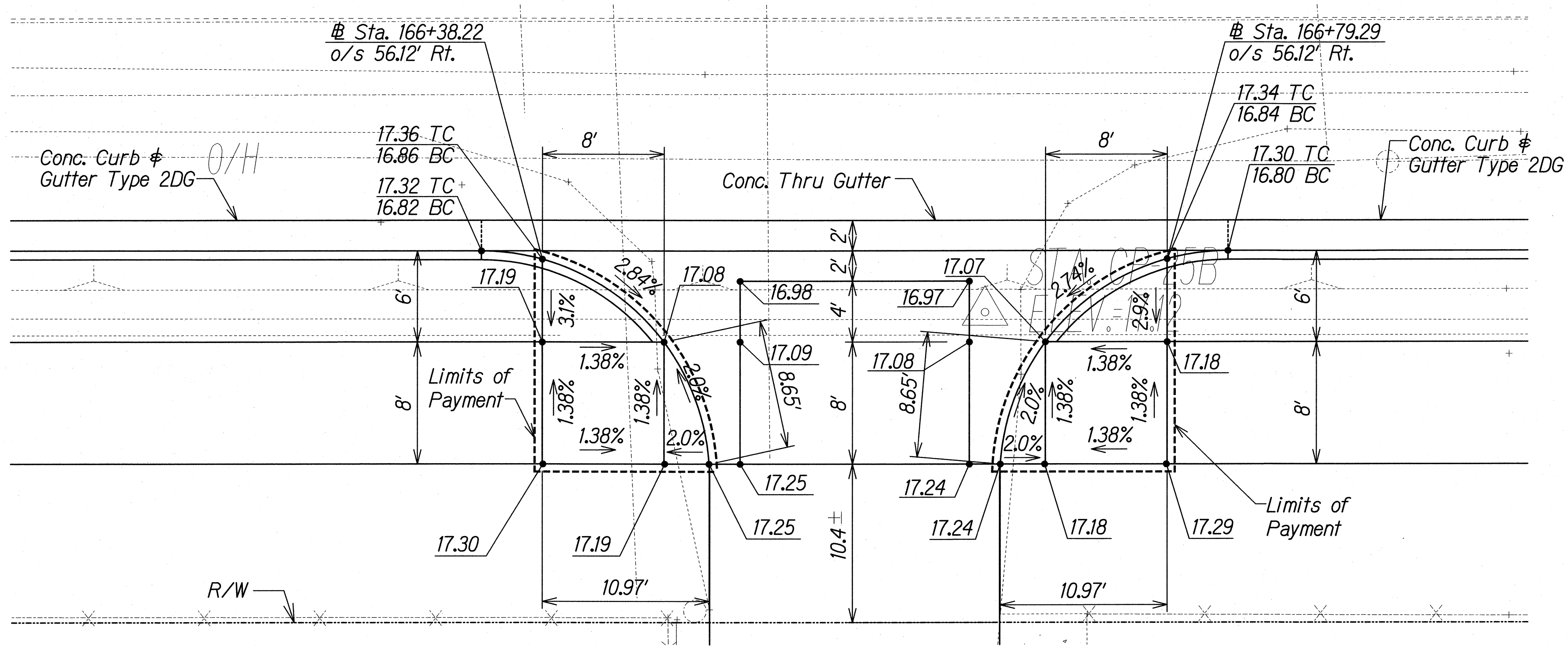
CURB RAMPS
FARRINGTON HIGHWAY

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

Scale: 1"=5' Date: April 2013

CONTRACT CHANGE ORDER NO. 33

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	C.O. 48	230



Note: Install detectable warning on all curb ramps. See Details on Sheet CR-14.

CURB RAMP K - TYPE "D"
Scale: 1"=5'

CURB RAMP L - TYPE "D"
Scale: 1"=5'

DESIGNED BY	DATE
TRACED BY	
NOTED BY	
CHECKED BY	

J:\DOT - FARRINGTON HWY INTERSECTIONS\NANAKULI\HALEAKALA\CADD\Sheets\Curb Ramp\CR-4.dgn

7/25/17	Revised Curb & Spot Elevations
10/5/16	Revised Curb & Spot Elevations
DATE	REVISION

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: *Gerald D. Andrade*
EXPIRATION DATE OF THE LICENSE: 04/30/18

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

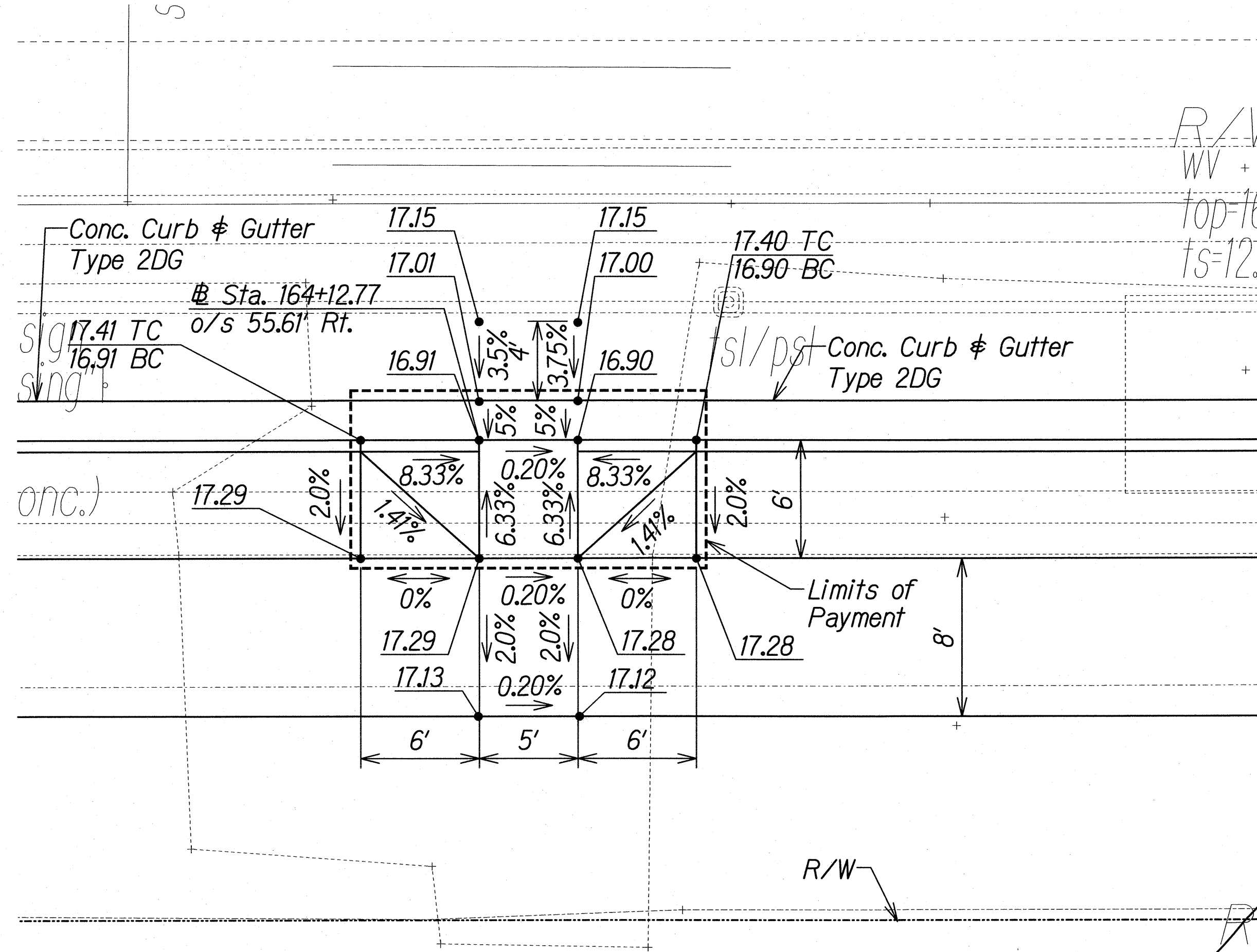
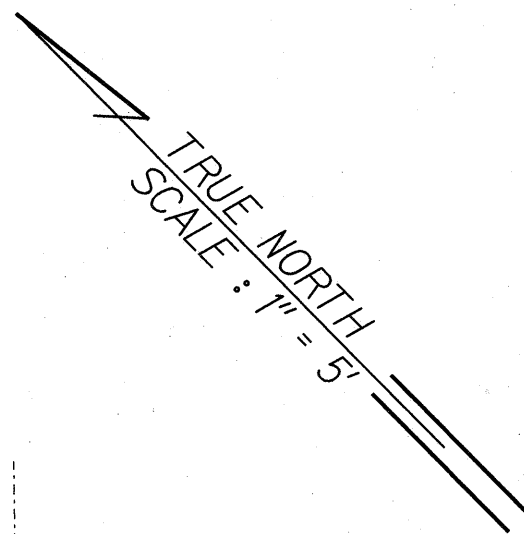
CURB RAMPS
FARRINGTON HIGHWAY



FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

Scale: 1"=5' Date: April 2013

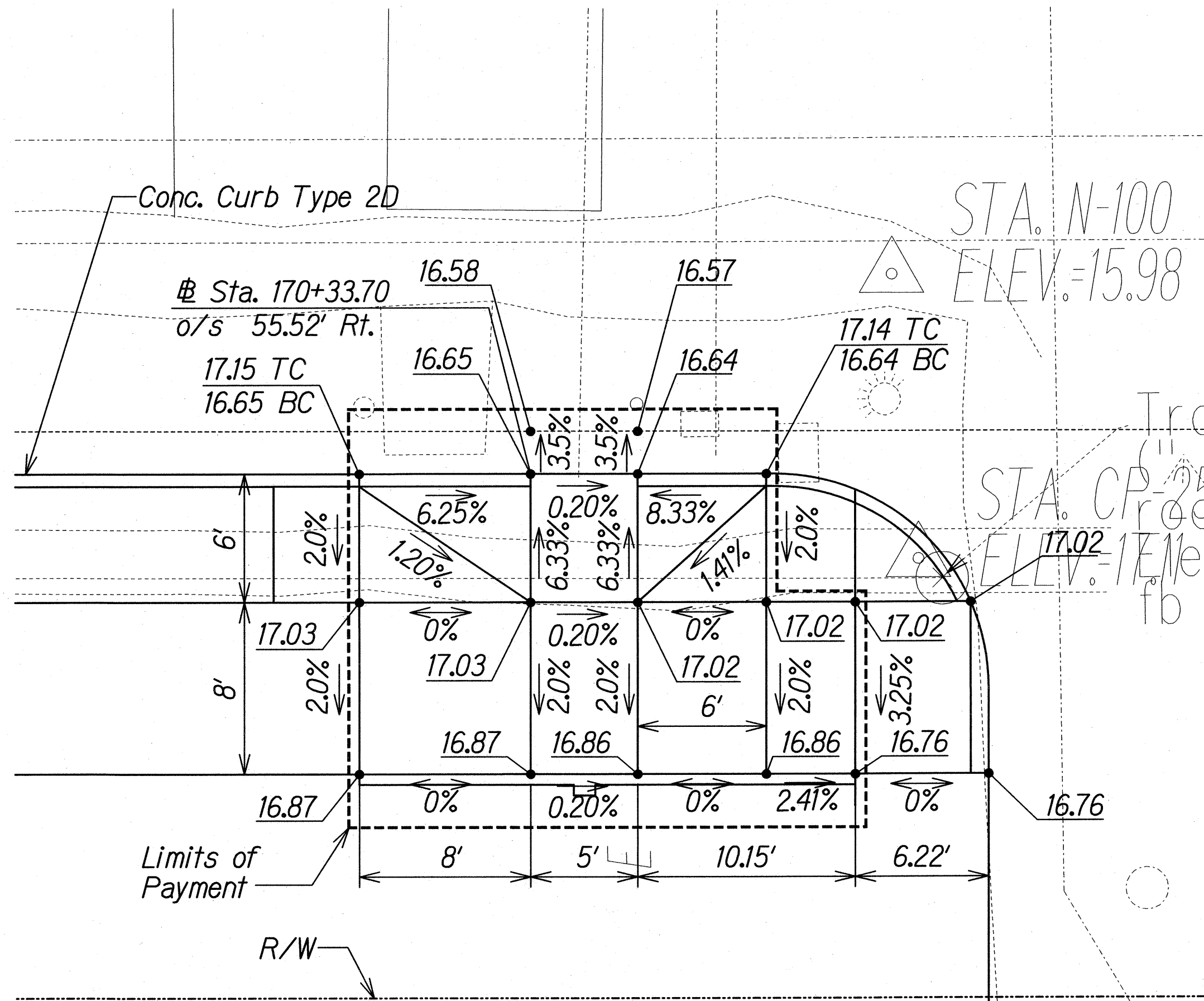
CONTRACT CHANGE ORDER NO. 33


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	C.O. 49	230


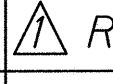


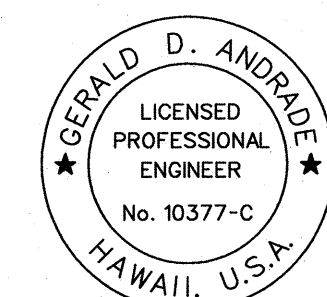


CURB RAMP N - TYPE "A"
 Scale: 1"=5'

Note: Install detectable warning on all curb ramps. See Details on Sheet CR-14.




CURB RAMP O - TYPE "A"
 Scale: 1"=5'

7/25/17	 Revised Curb & Spot Elevations
10/5/16	 Revised Curb & Spot Elevations
DATE	REVISION



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Gerald D. Andrade
SIGNATURE

04/30/18
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMPS
FARRINGTON HIGHWAY

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NAKAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

Scale: 1"=5' Date: April 2013

CONTRACT CHANGE ORDER NO. 33

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	

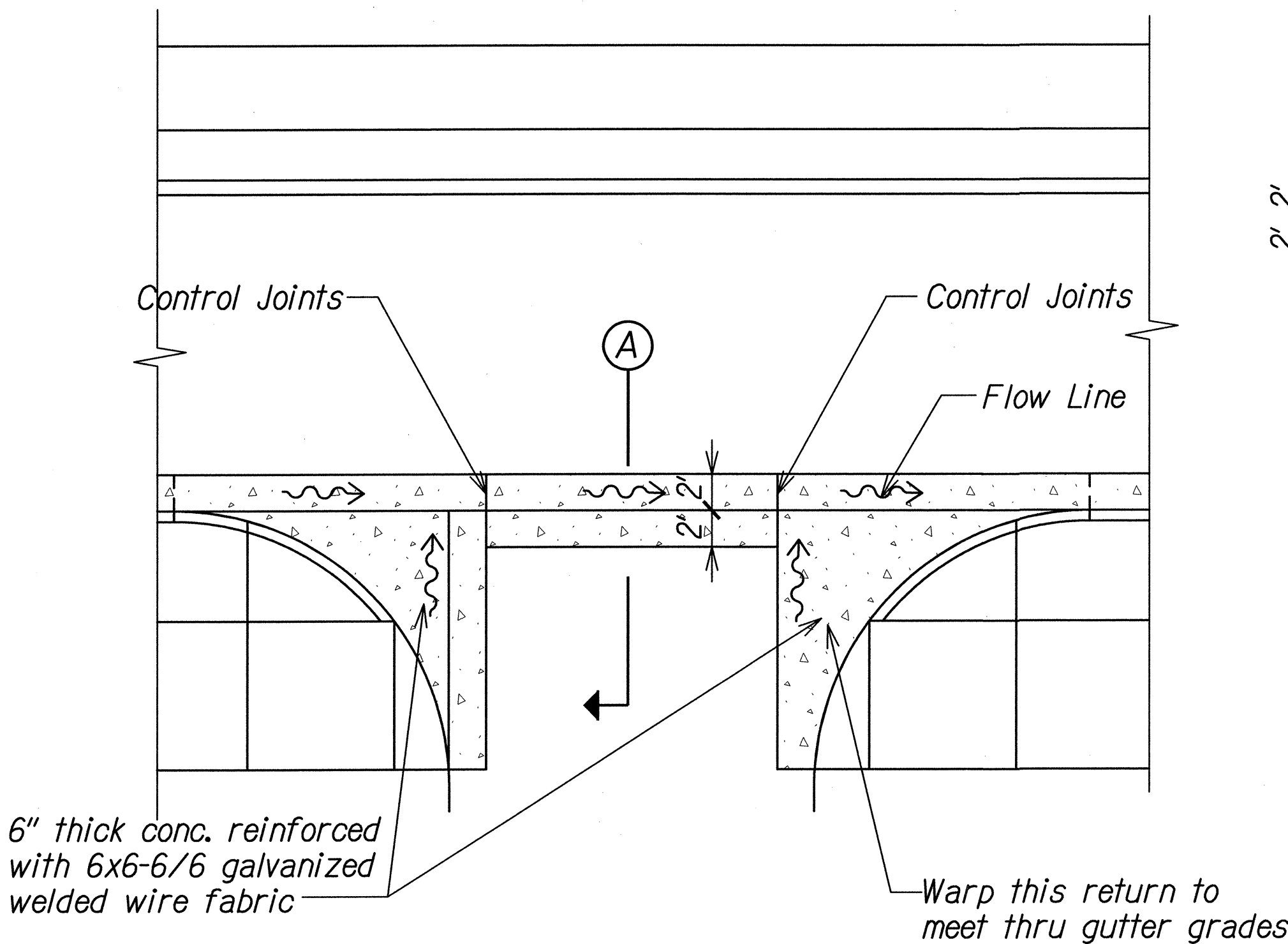
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	50	230

CURB RAMP AND SIDEWALK NOTES:

1. These typical details are intended as curb ramp guidelines for design and construction. These guidelines shall not replace site specific curb ramp plans.
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 48".
 - 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.

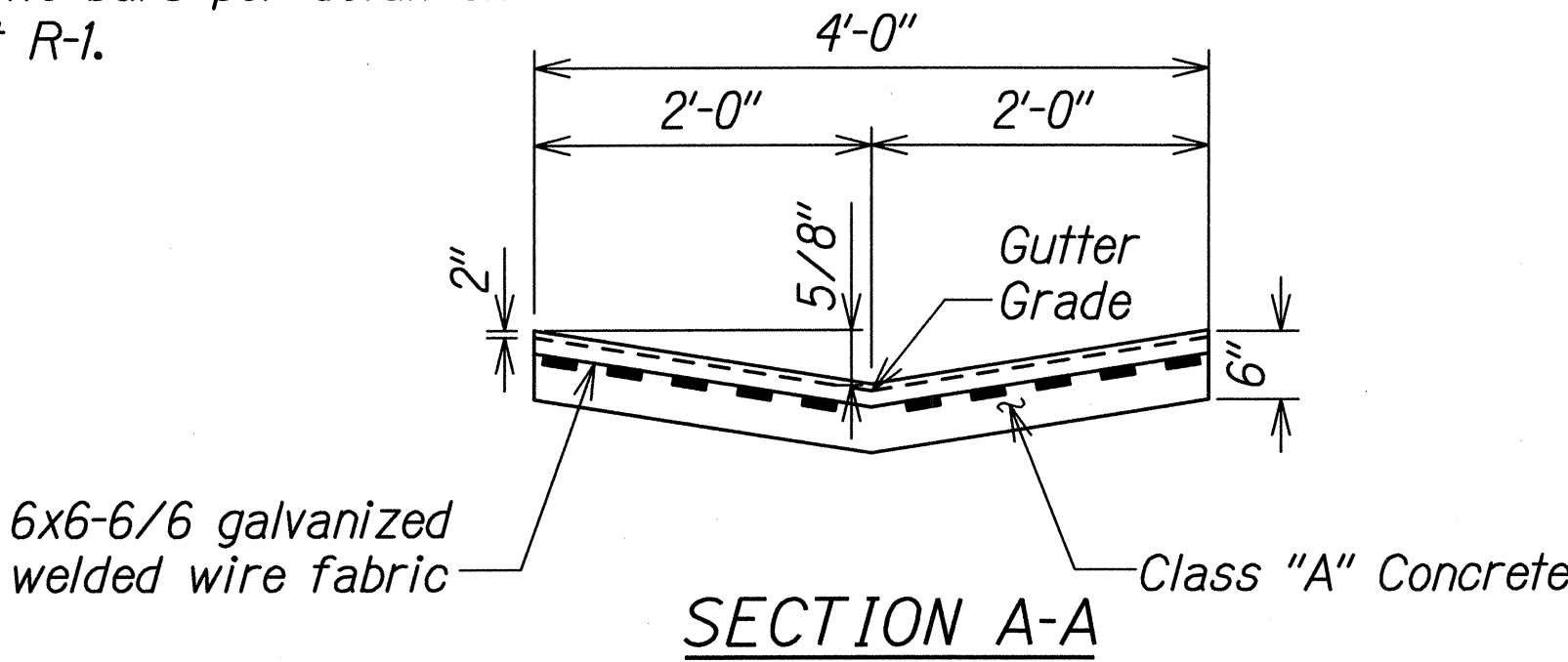
19. Objects protruding from utility poles and walls adjacent to the sidewalks (i.e. wall mounted fire hydrants, telephones, meters on poles, etc.) shall be mounted to meet the current American with Disabilities Act Accessibility Guidelines (ADAAG) and will be subject to Engineer's approval.
20. If a 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.



PLAN

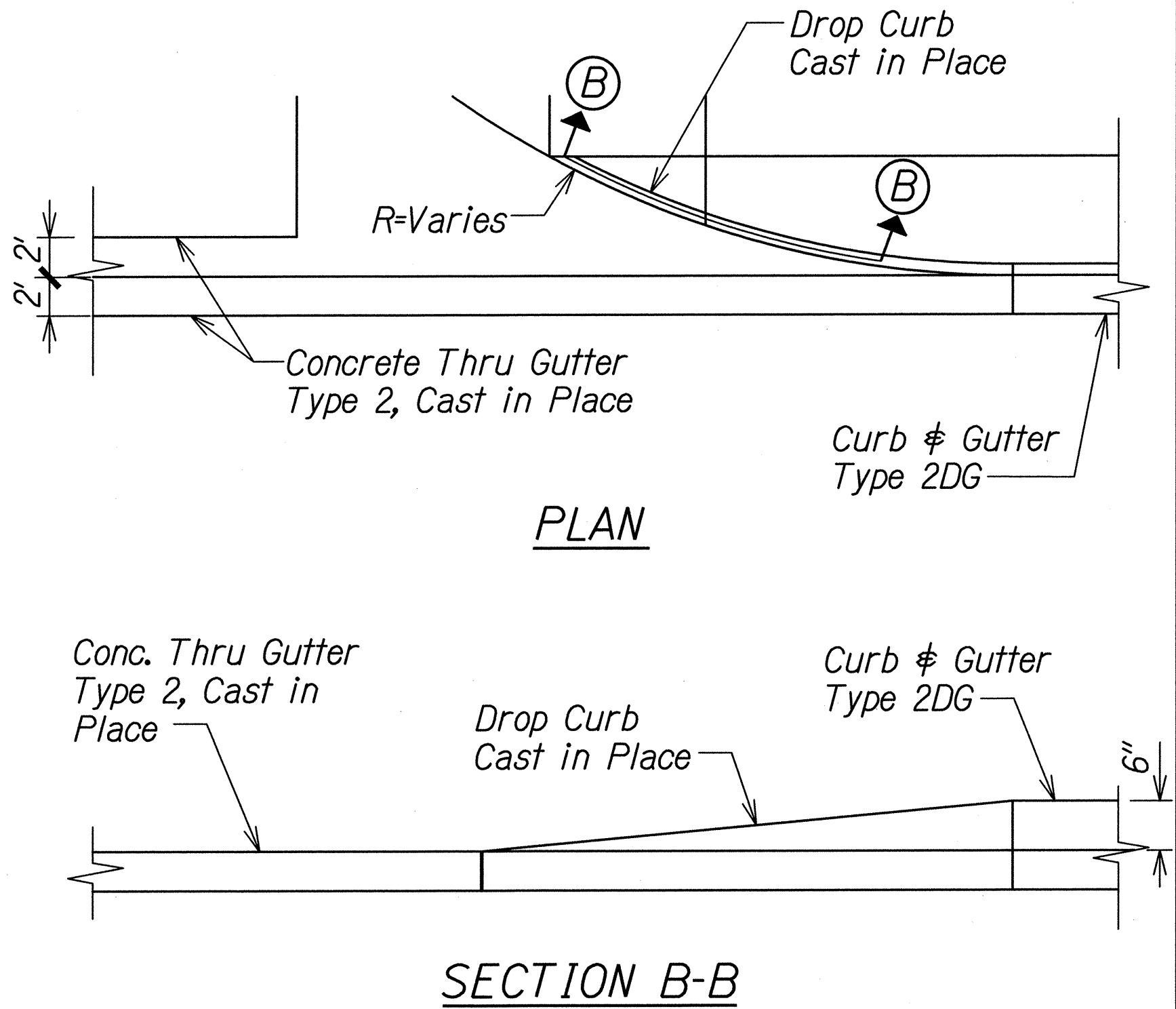
NOTE:

Construction joints shall be keyed construction joints with tie bars per detail on sheet R-1.



SECTION A-A

CONCRETE THRU-GUTTER
TYPE 2 CAST IN PLACE
NTS



SECTION B-B

DROP CURB CAST IN PLACE
NTS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP AND SIDEWALK NOTES

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

Scale: None Date: April 2013

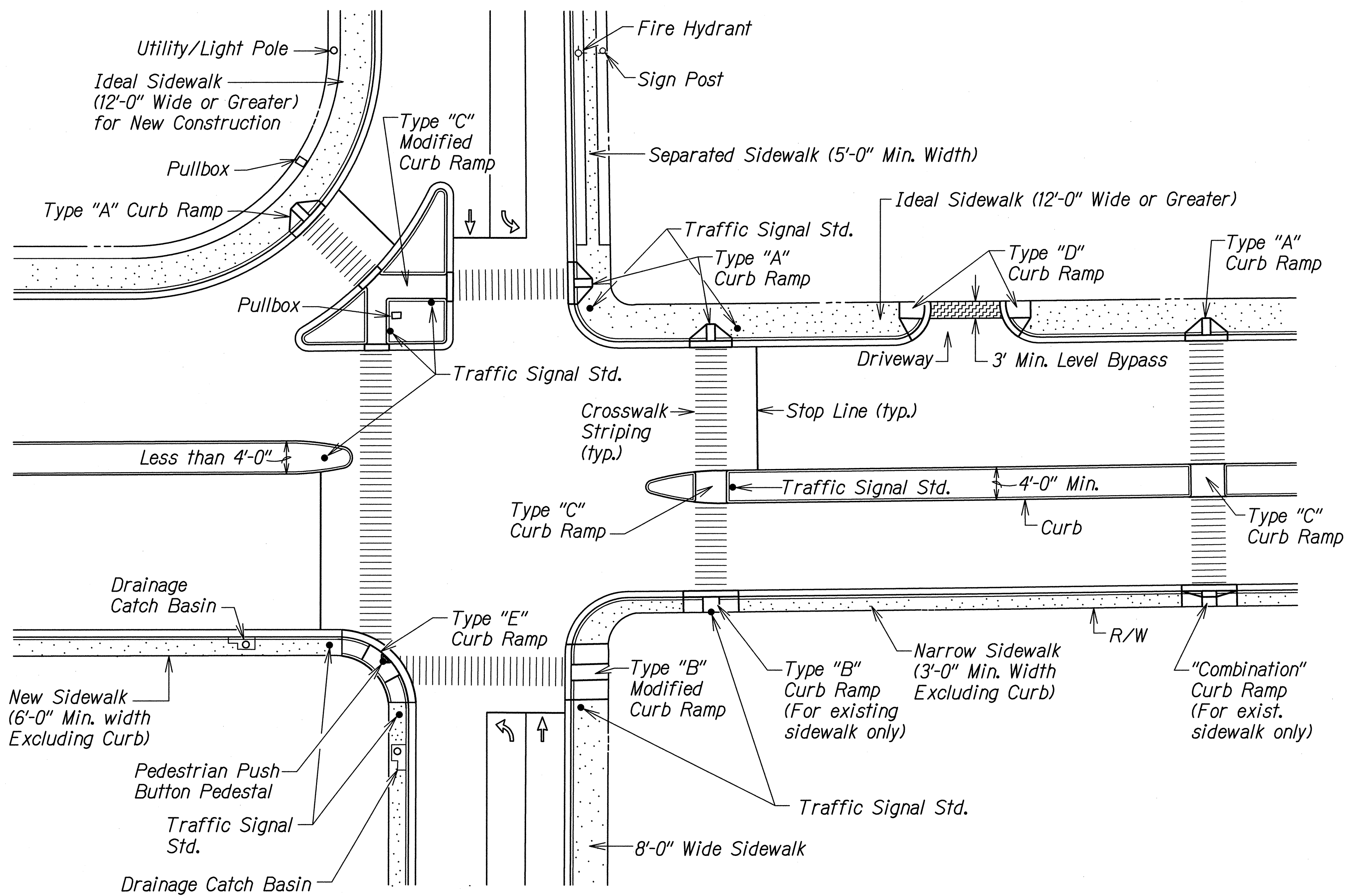
SHEET No. CR-6 OF 14 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
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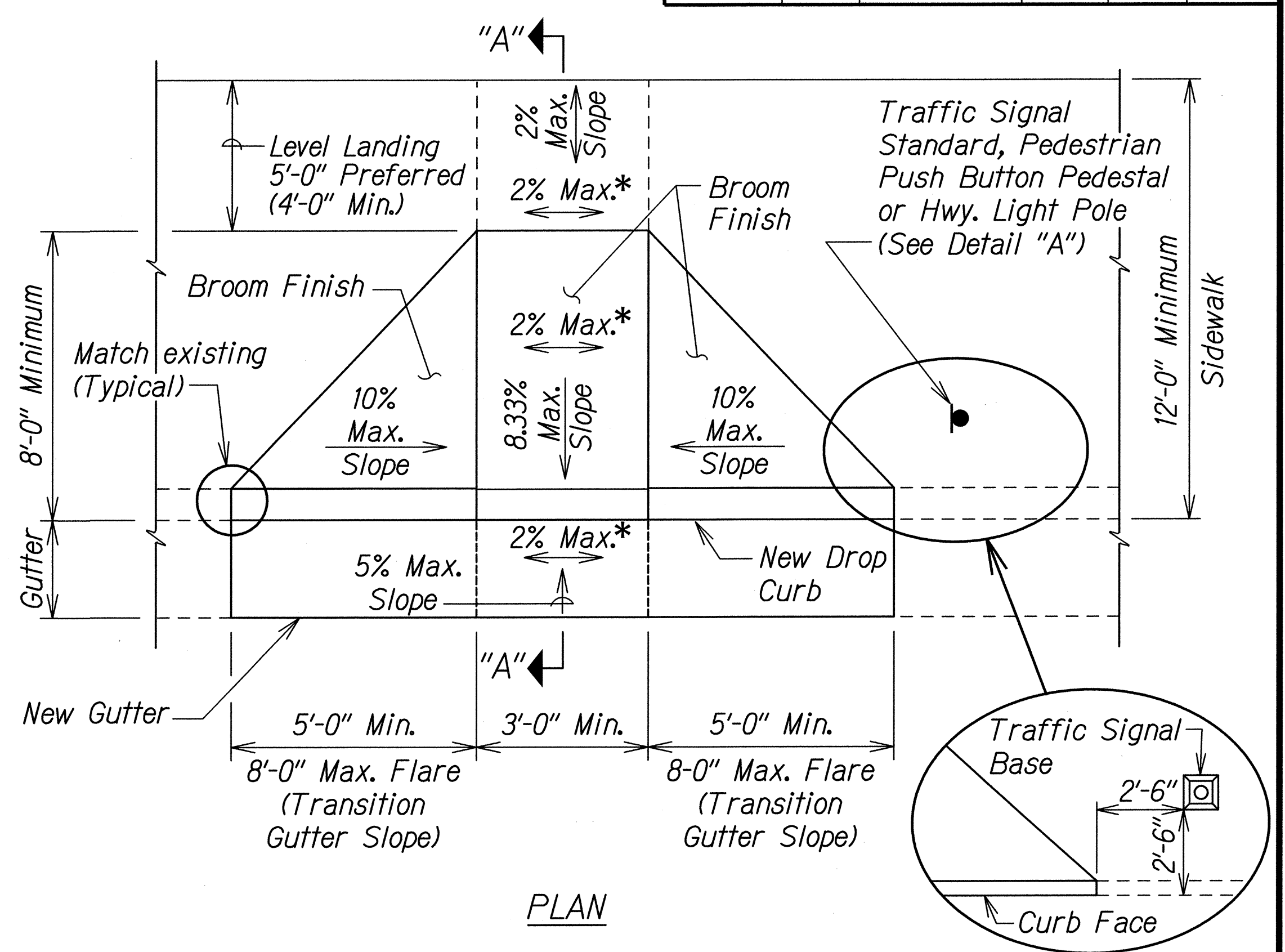
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R 03-02-11 TE-00 sht. 1 of 9

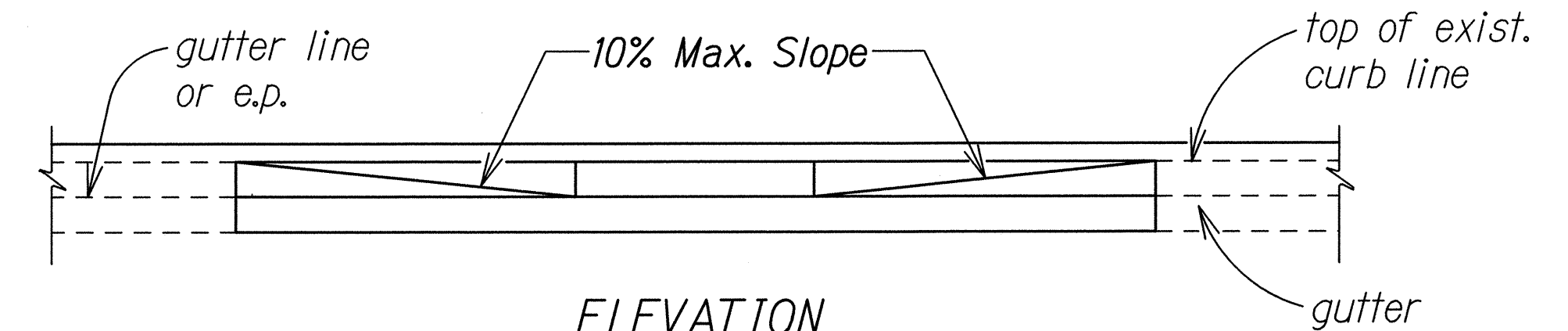
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	51	230



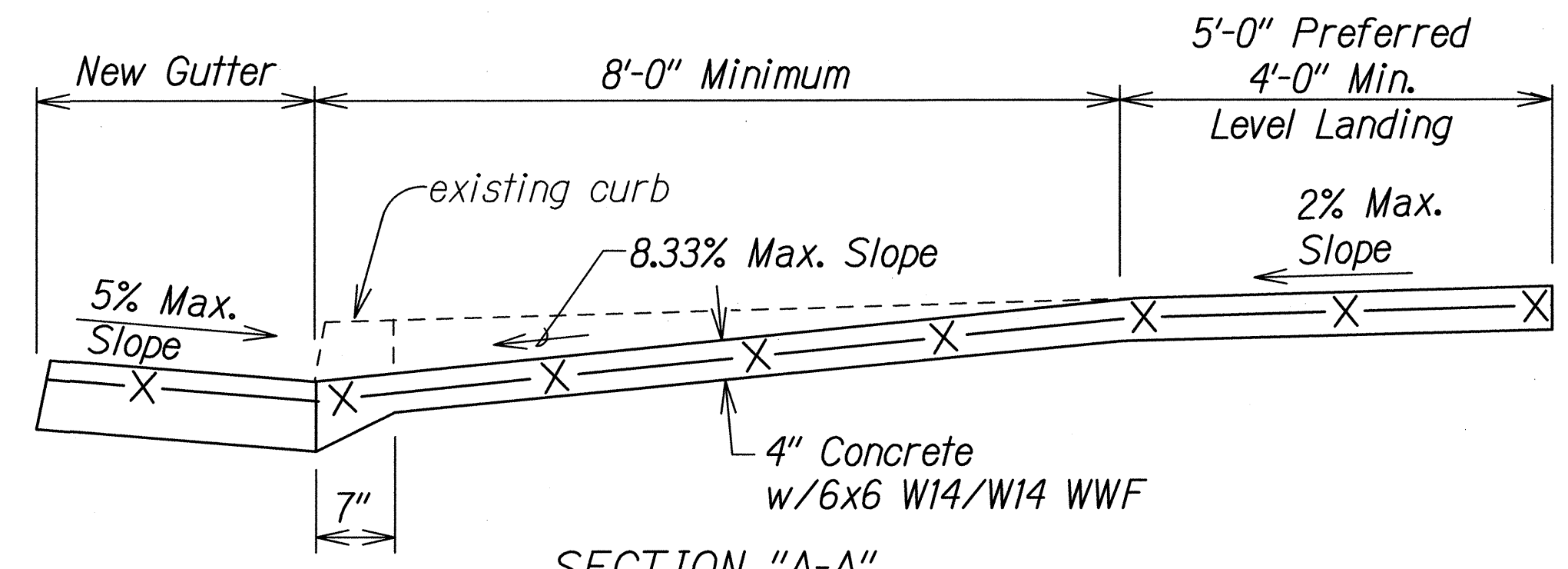
TYPICAL CURB RAMPS



PLAN



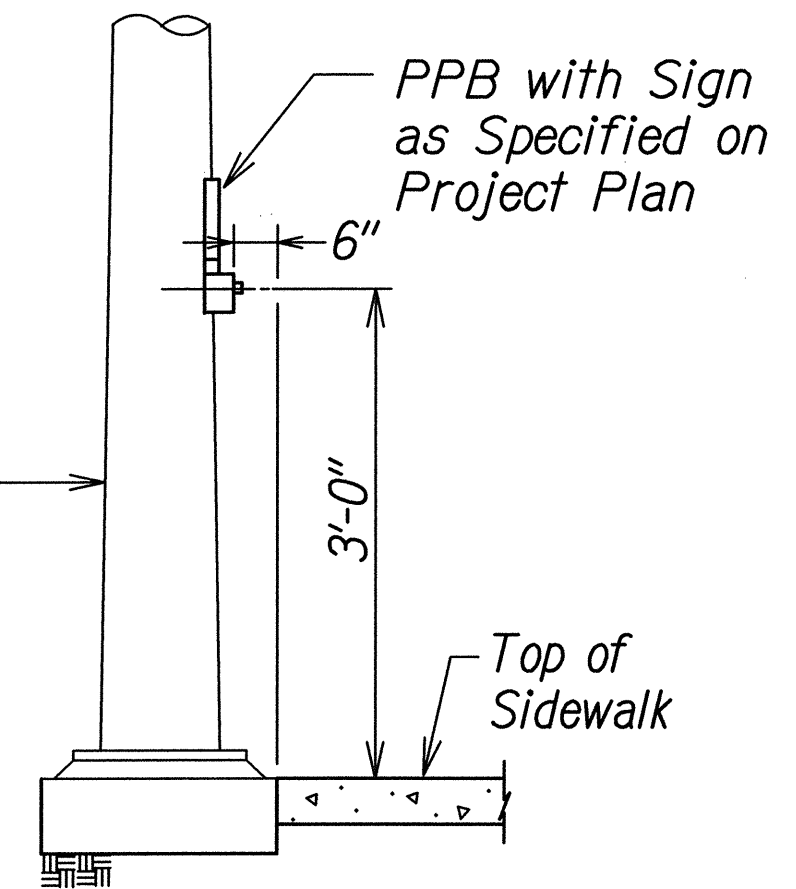
ELEVATION



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



DETAIL "A"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP DETAILS

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

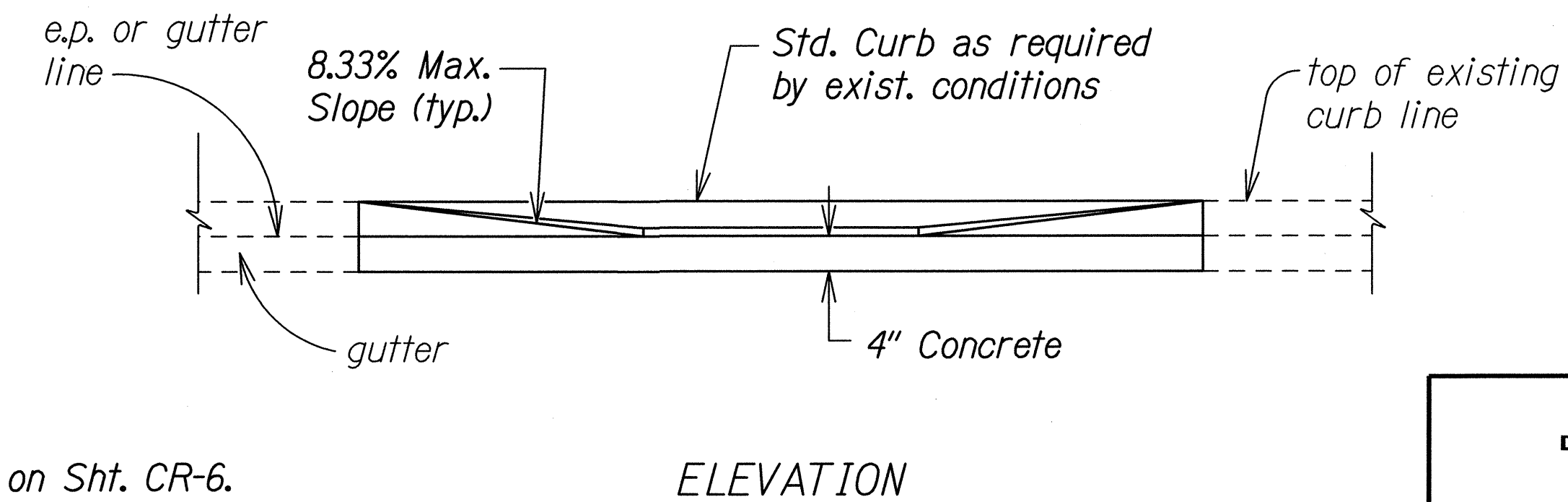
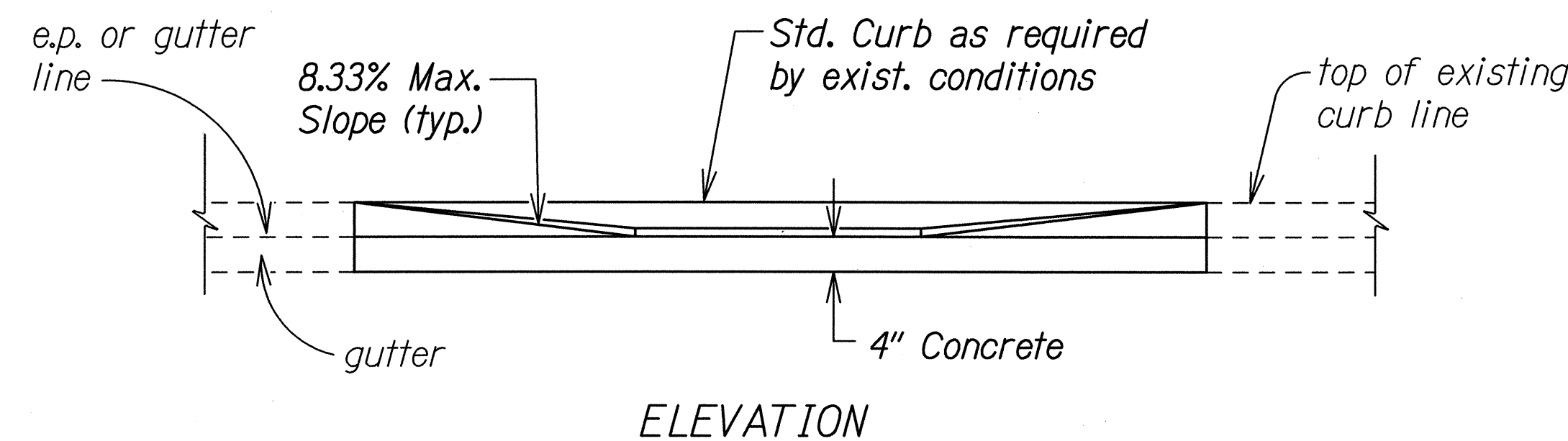
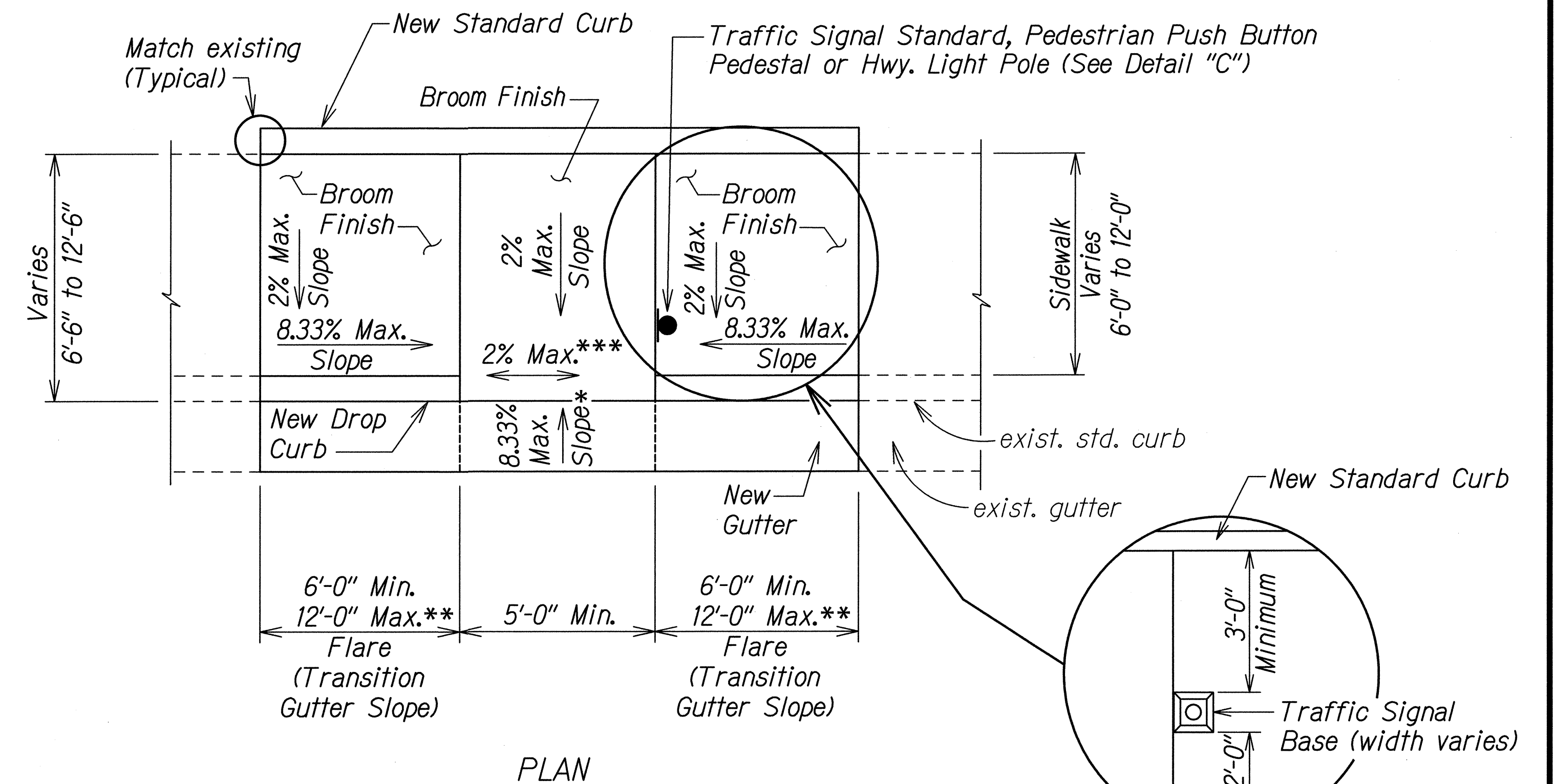
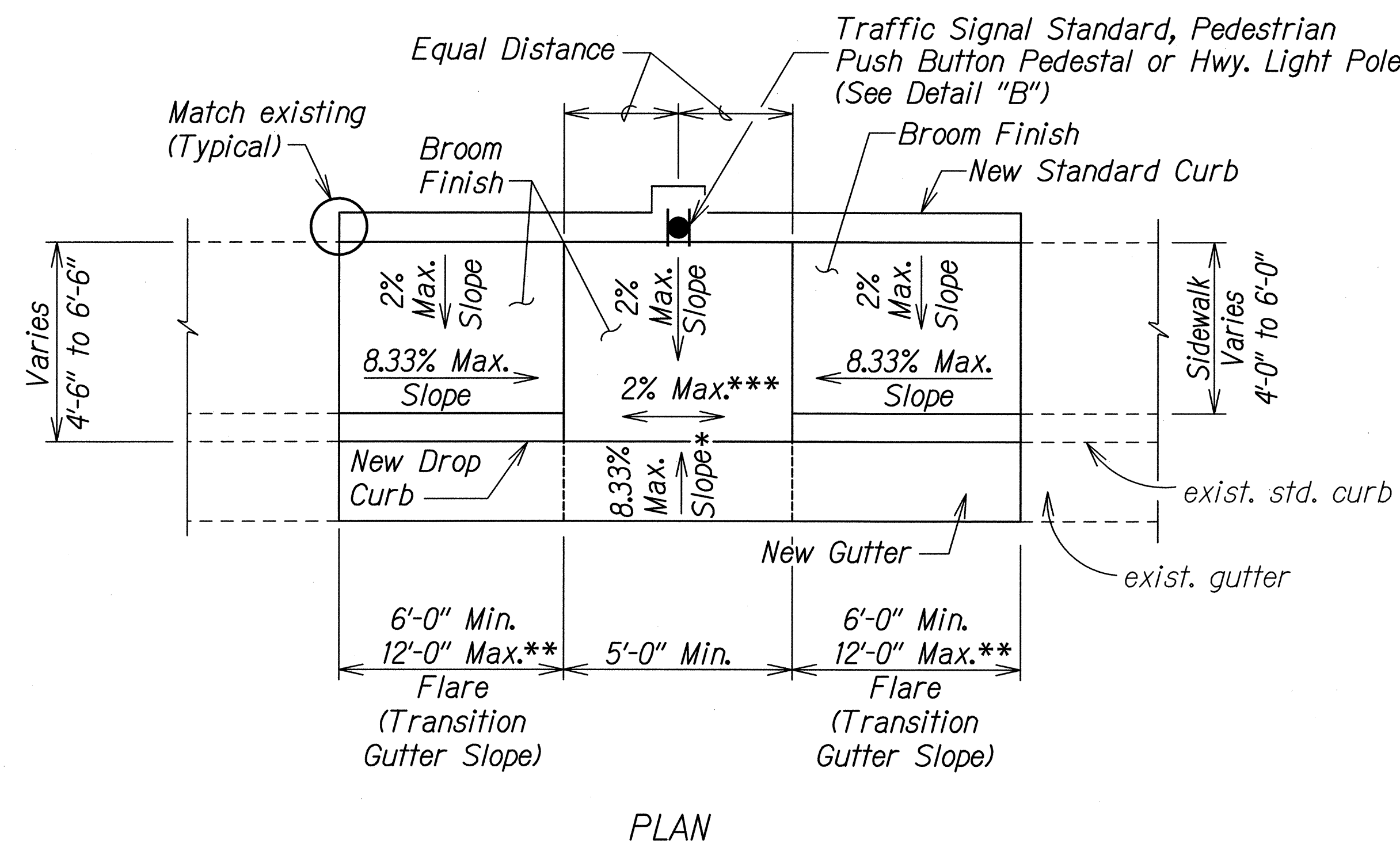
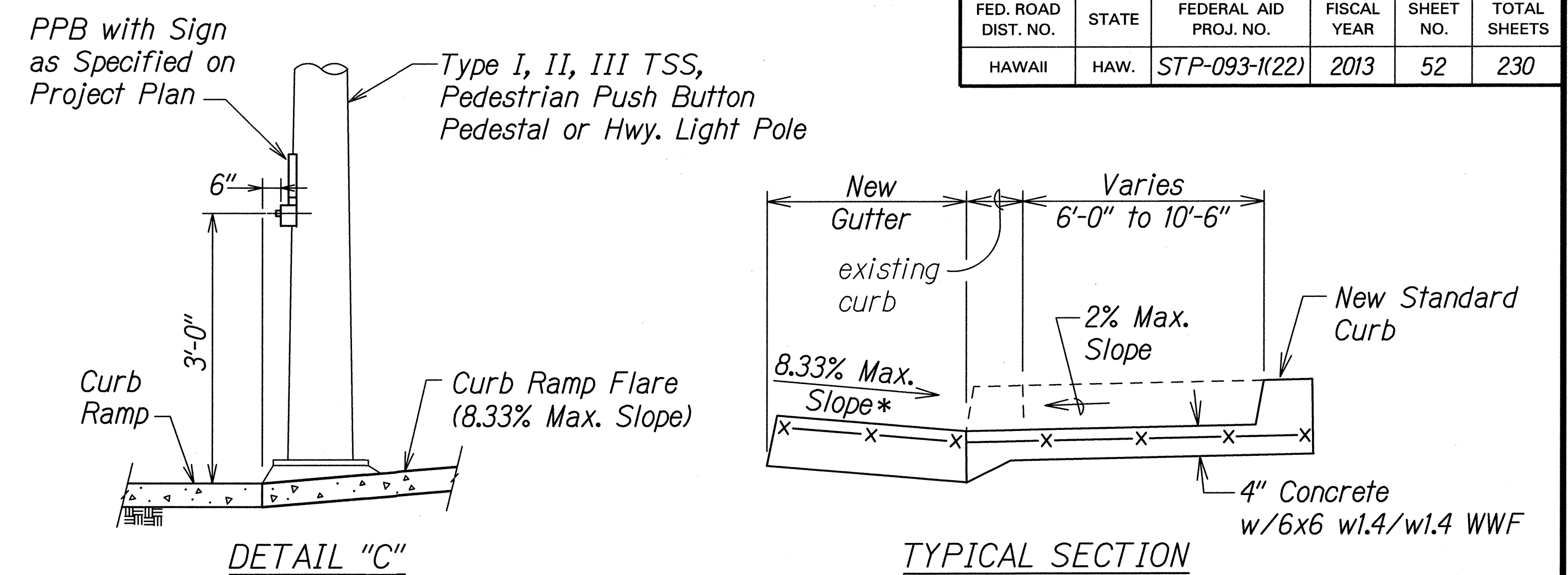
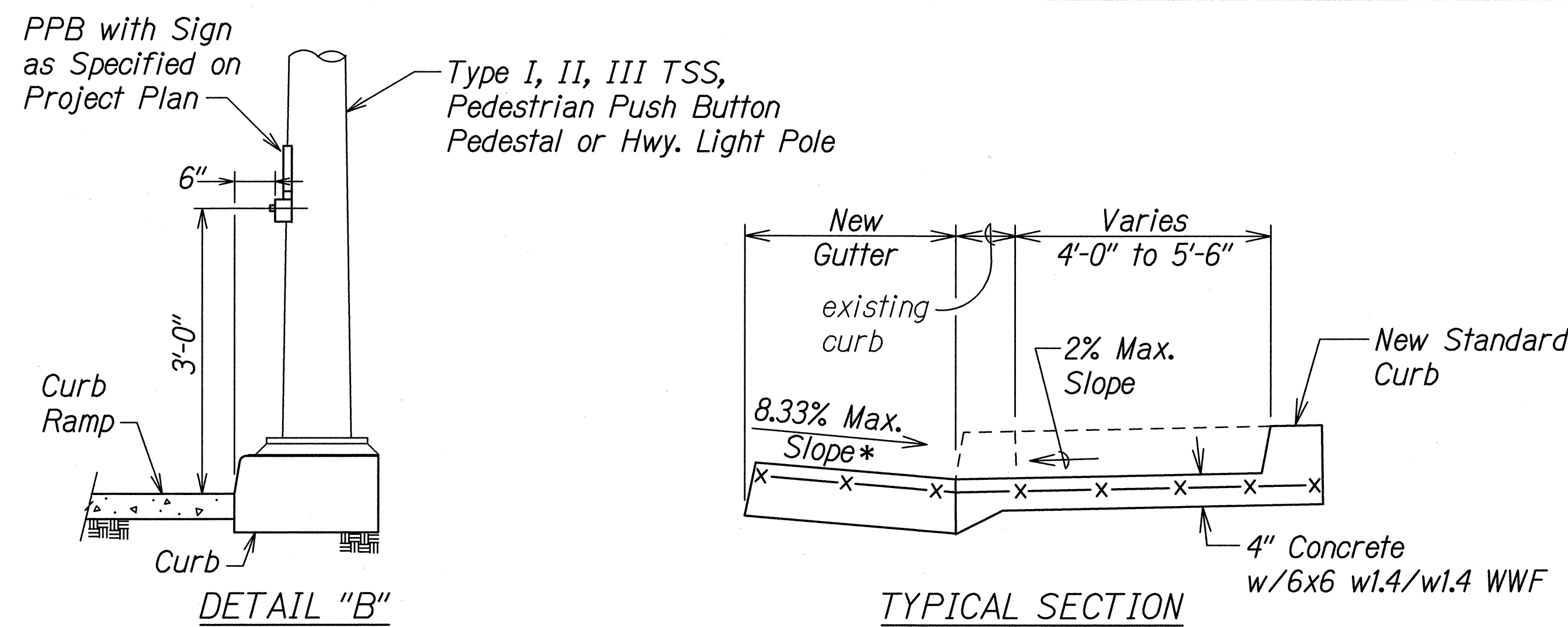
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SHEET No. CR-7 OF 14 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	REVISIONS BY	
	QUANTITIES BY	
	CHECKED BY	

td1/usr2/traffic/std/curbramp/rampa-r12-06-06.dgn R12-06-06 TE-XX sht. 2 of 9

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-K(22)	2013	52	230



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 on Sht. CR-6.
- ** 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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

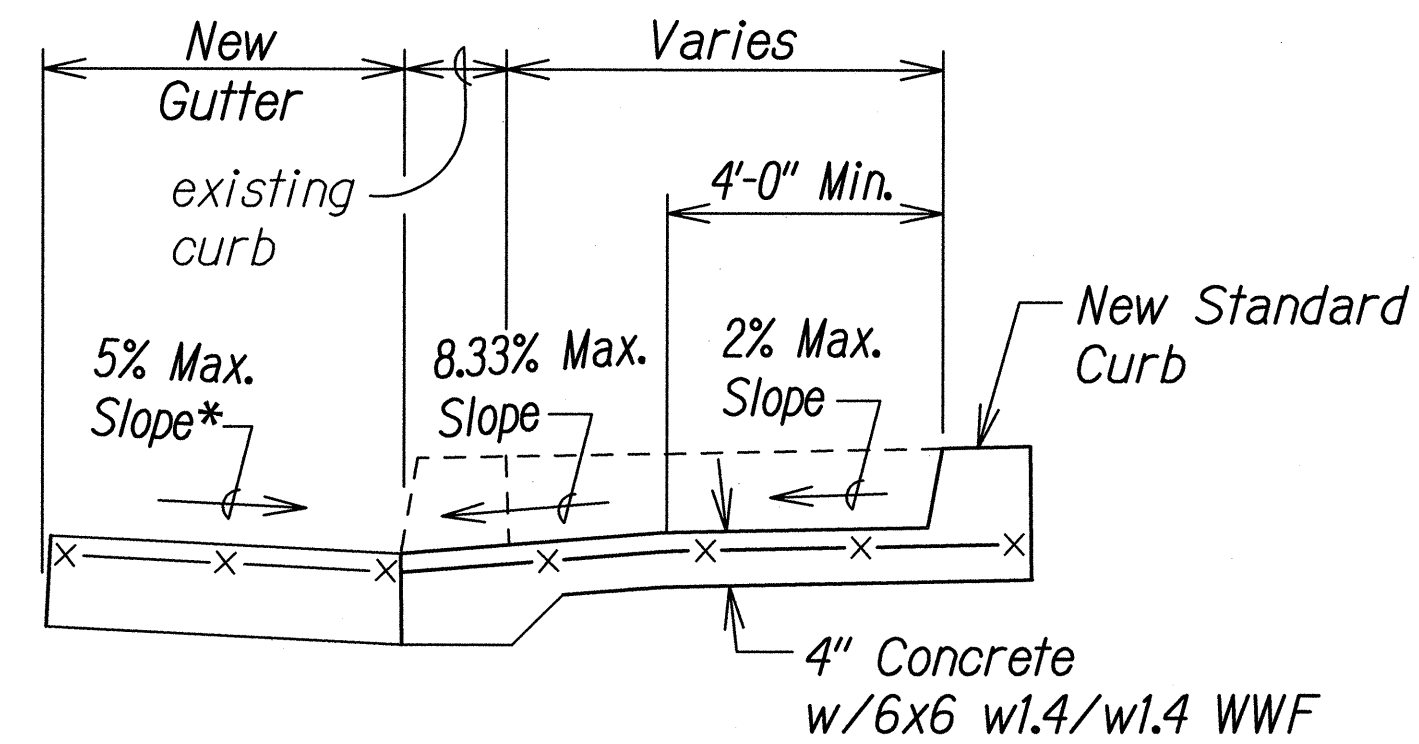
CURB RAMP DETAILS

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-K(22)

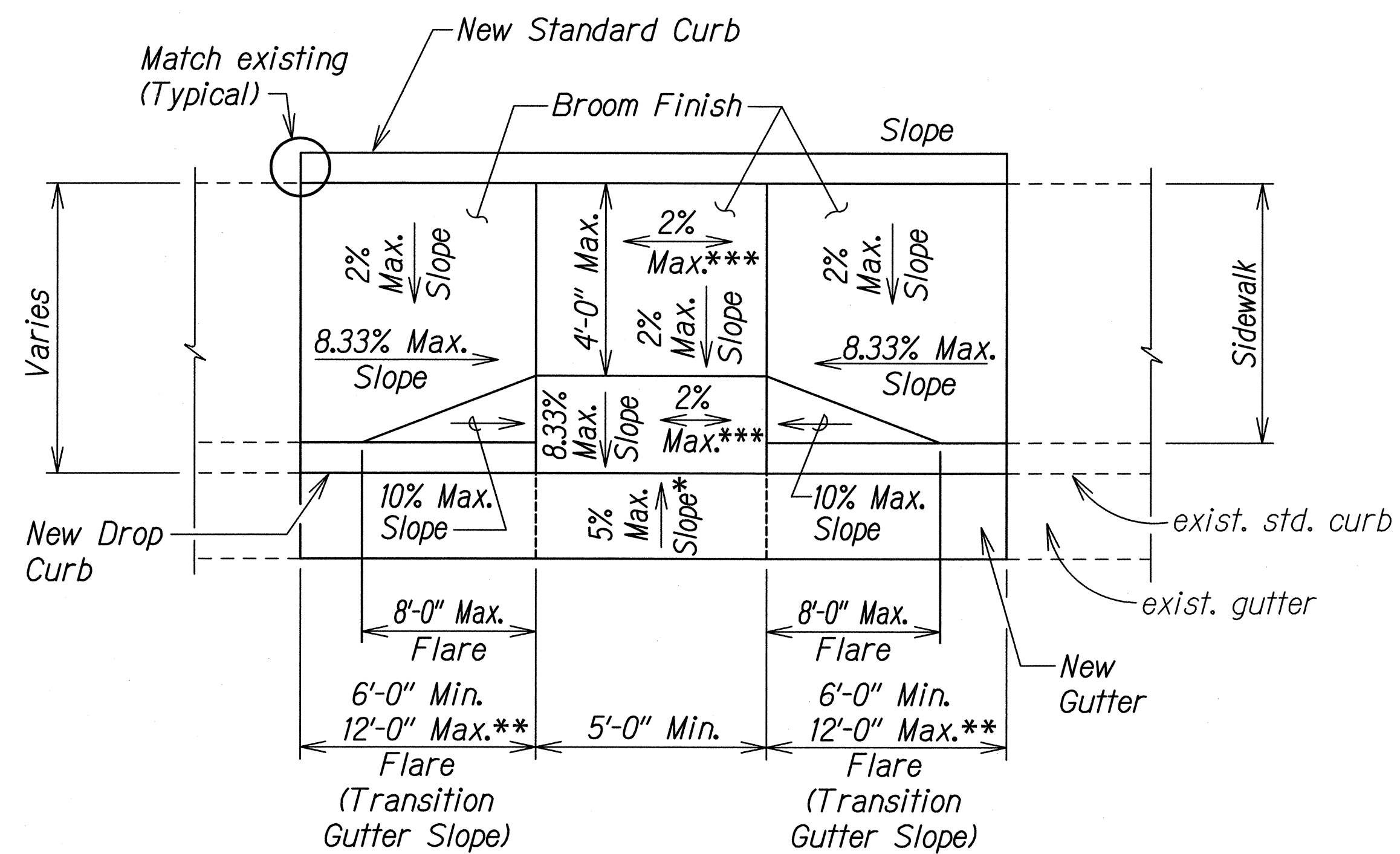
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SHEET No. CR-8 OF 14 SHEETS

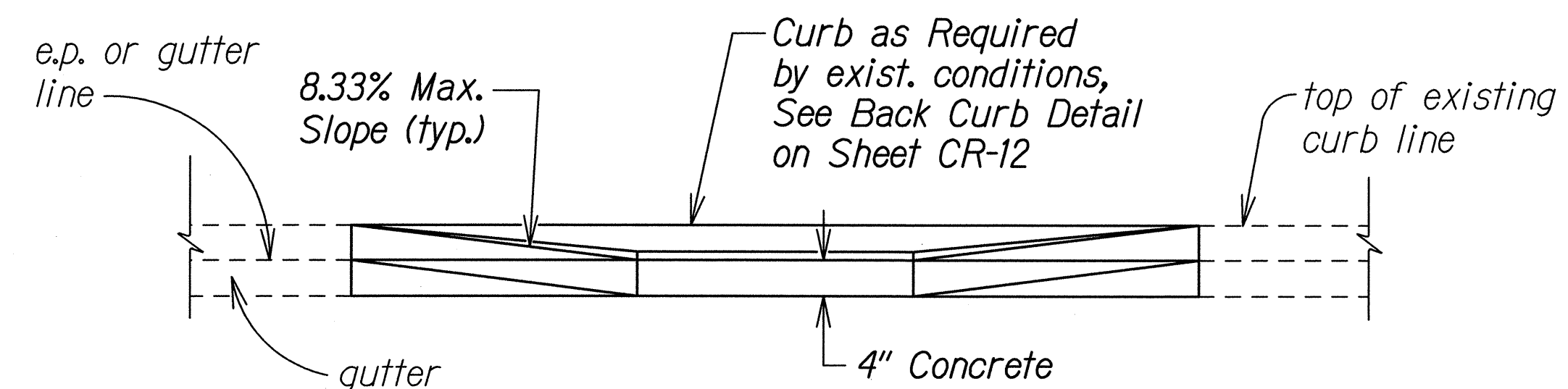
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HAWAII	HAW.	STP-093-1(22)	2013	53	230



TYPICAL SECTION



PLAN



ELEVATION

CURB RAMP - COMBINATION

- * See Curb Ramp and Sidewalk Note No. 9 on Sht. CR-6.
- ** 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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

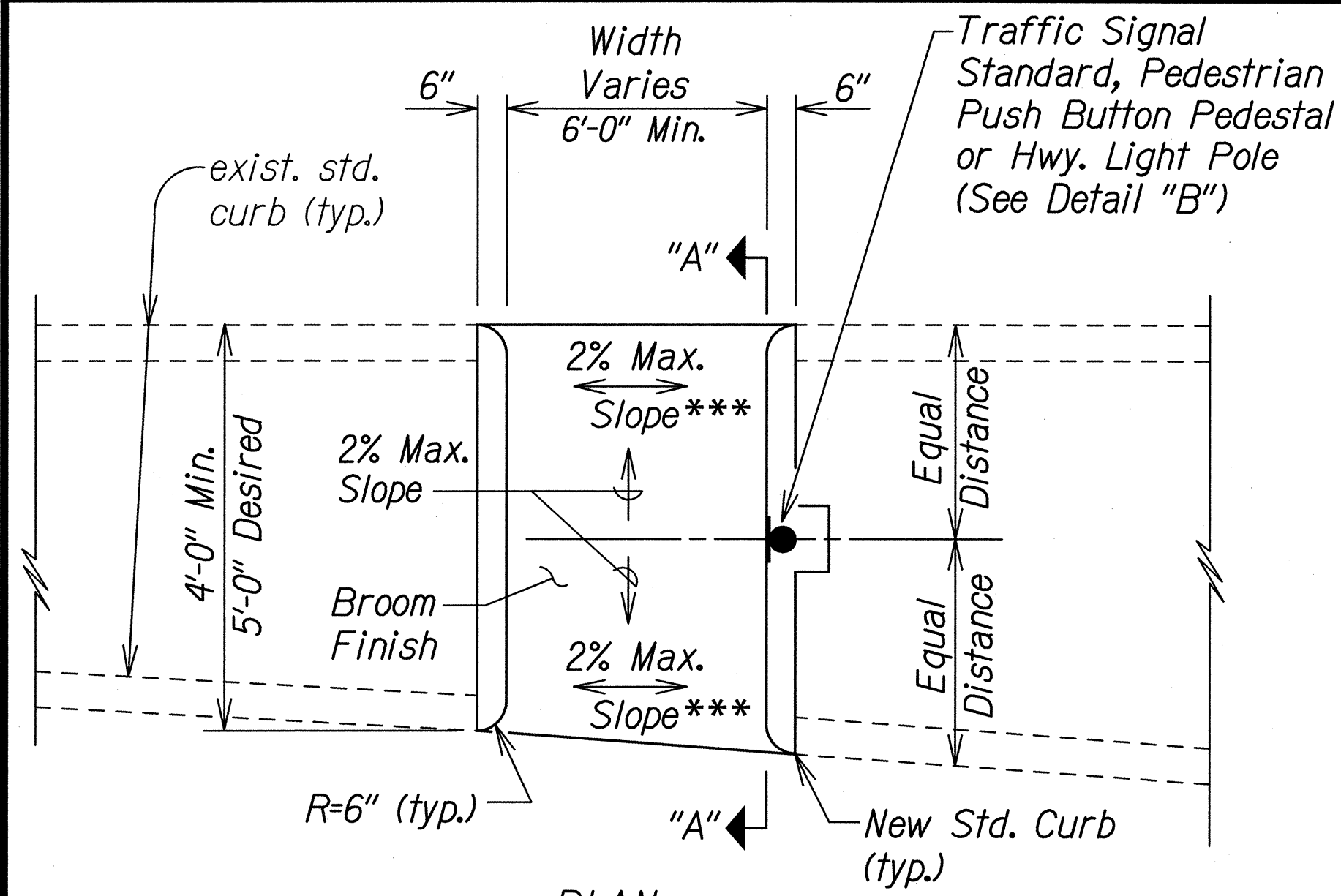
CURB RAMP DETAILS

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

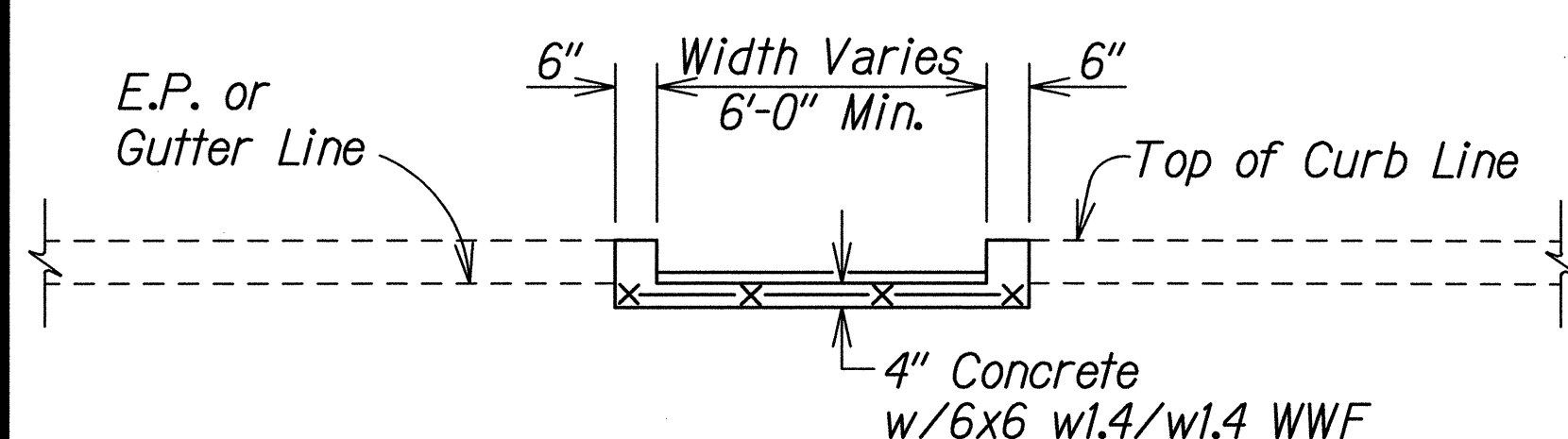
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SHEET No. CR-9 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	54	230



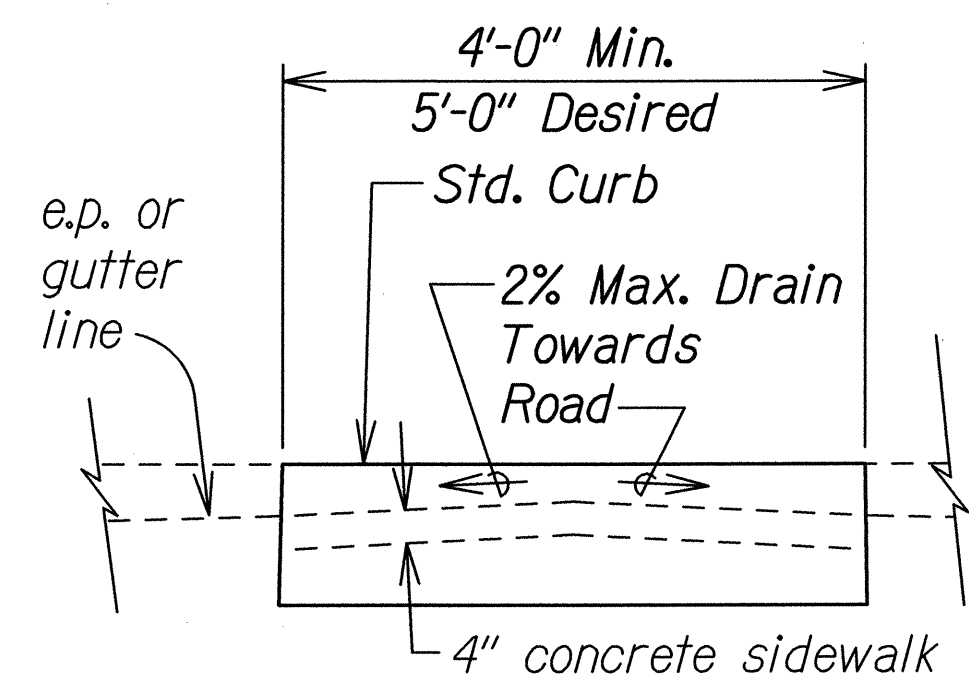
PLAN



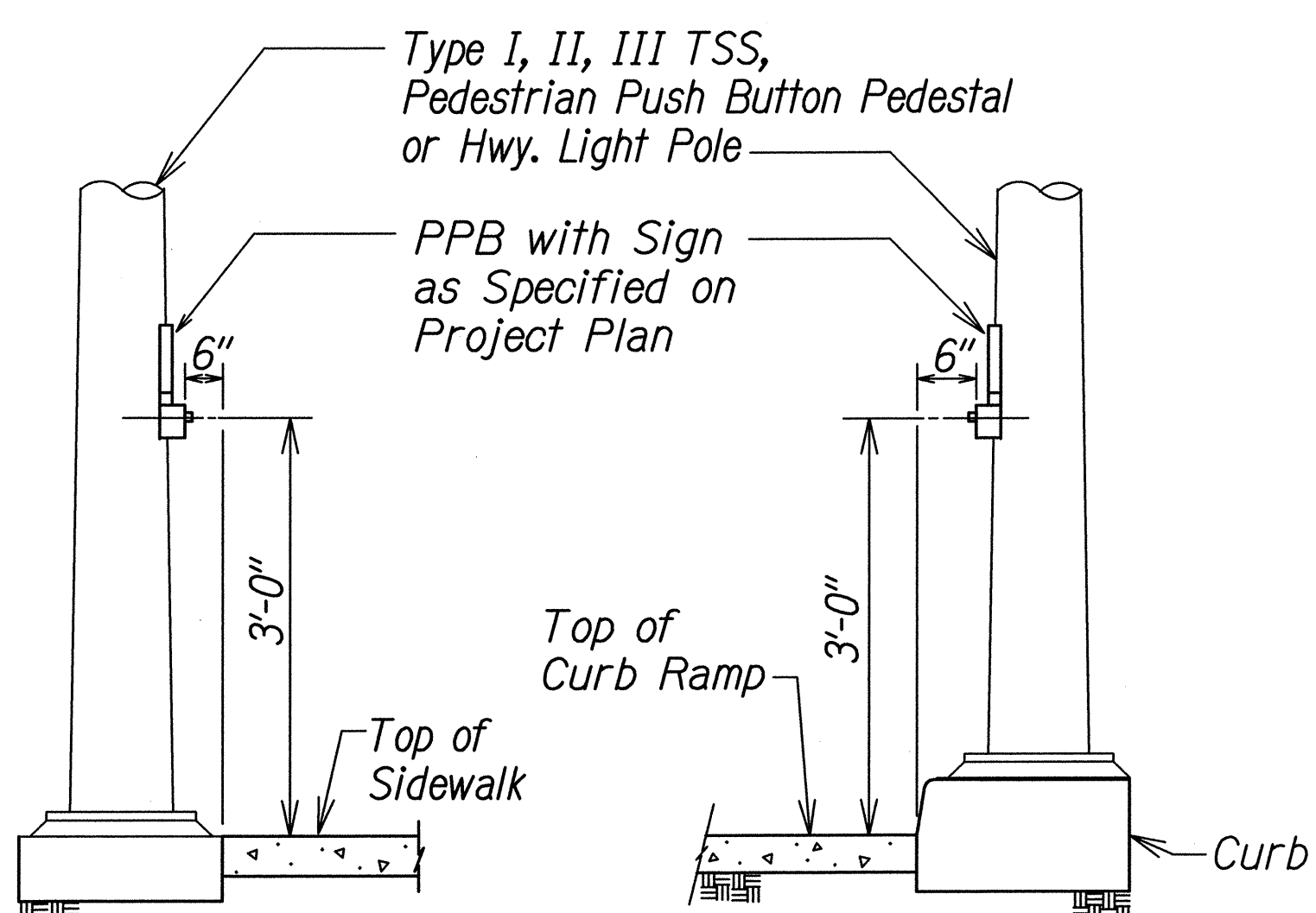
ELEVATION

CURB RAMP - TYPE "C"

USE AT MEDIAN CROSSINGS, ISLANDS

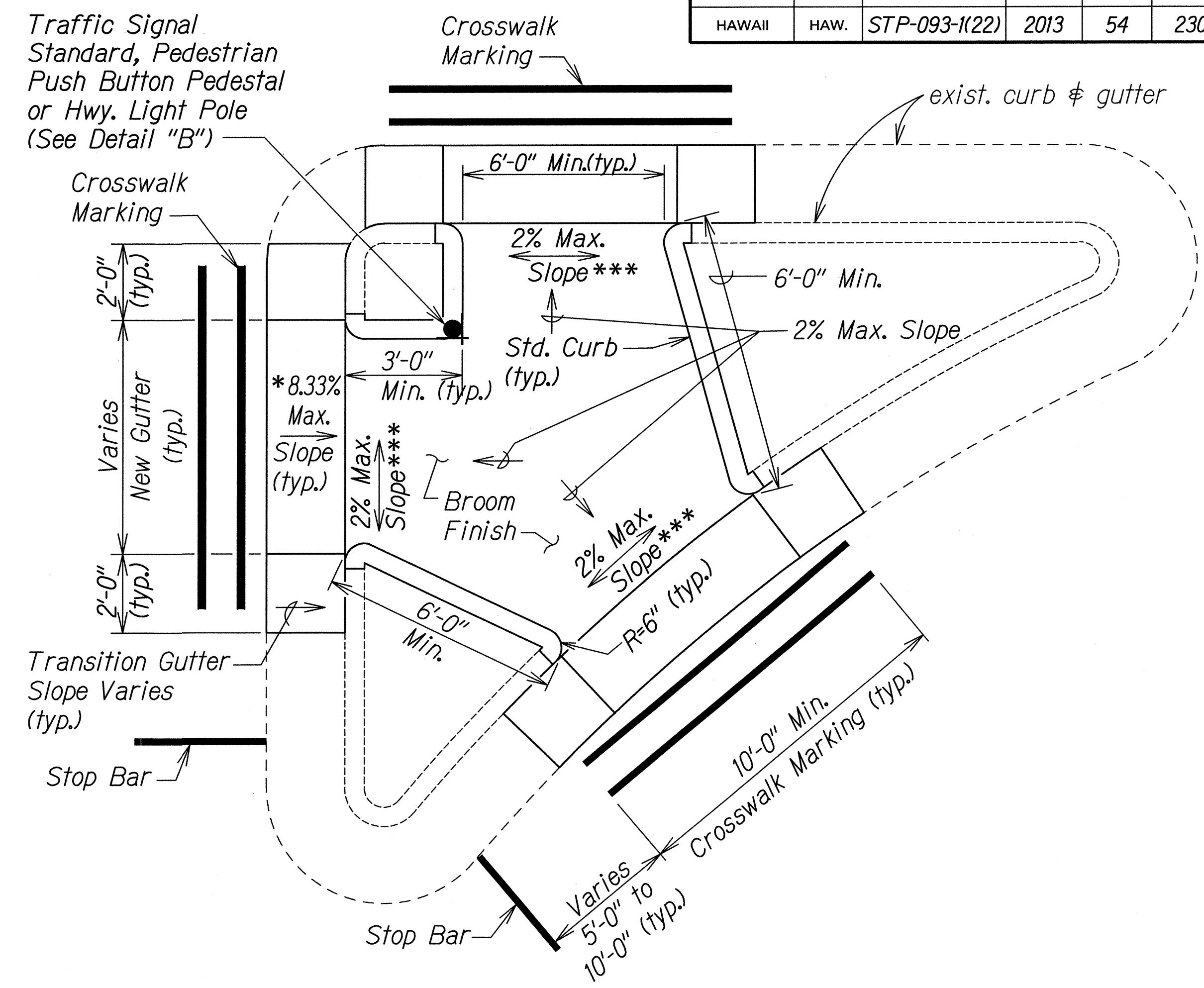


SECTION "A-A"

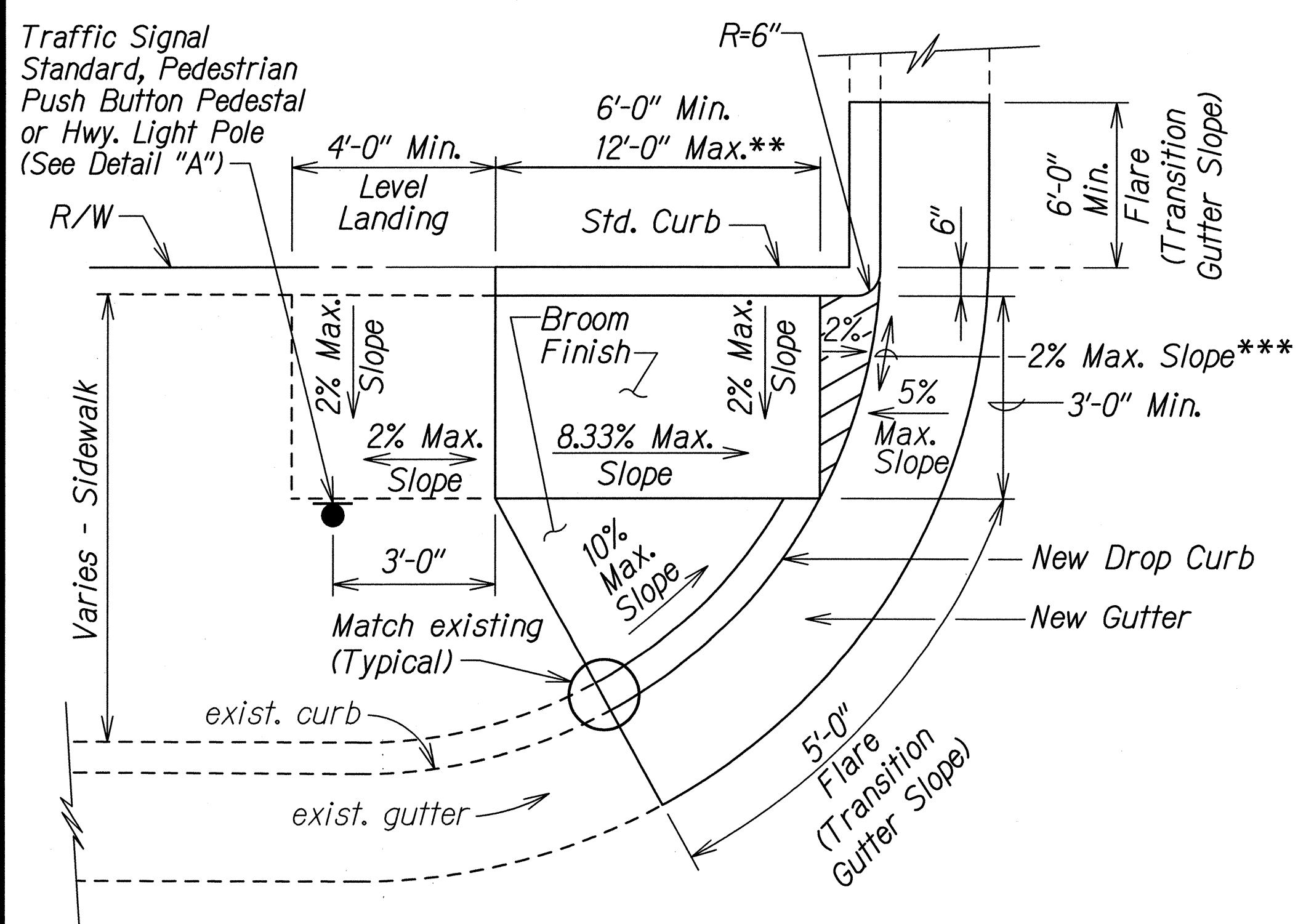


DETAIL "A"

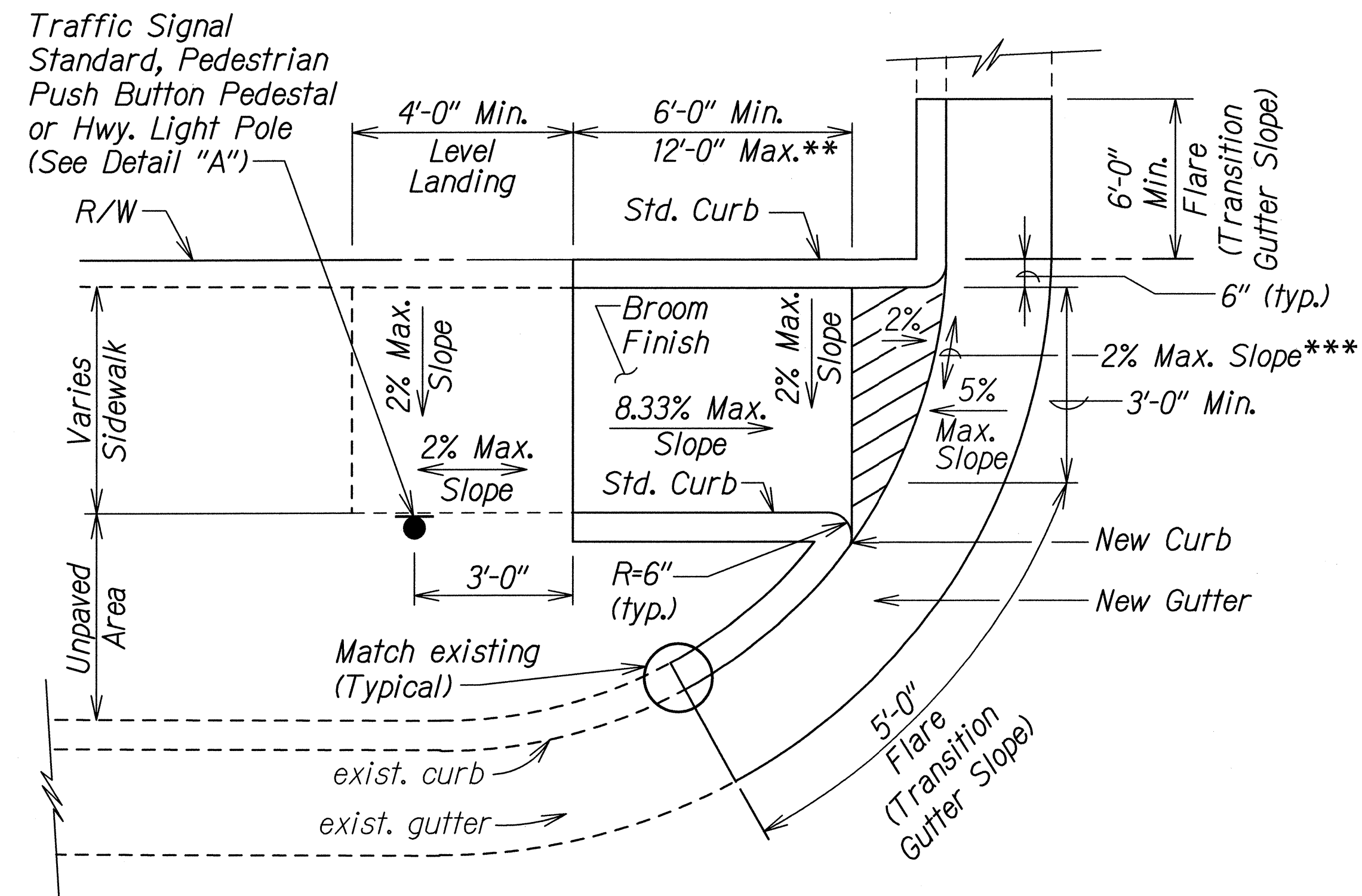
DETAIL "B"



CURB RAMP - TYPE "C" MODIFIED



CURB RAMP - TYPE "D"



CURB RAMP - TYPE "D" MODIFIED

- * See Curb Ramp and Sidewalk Note No. 9 on Sht. CR-6.
- ** 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

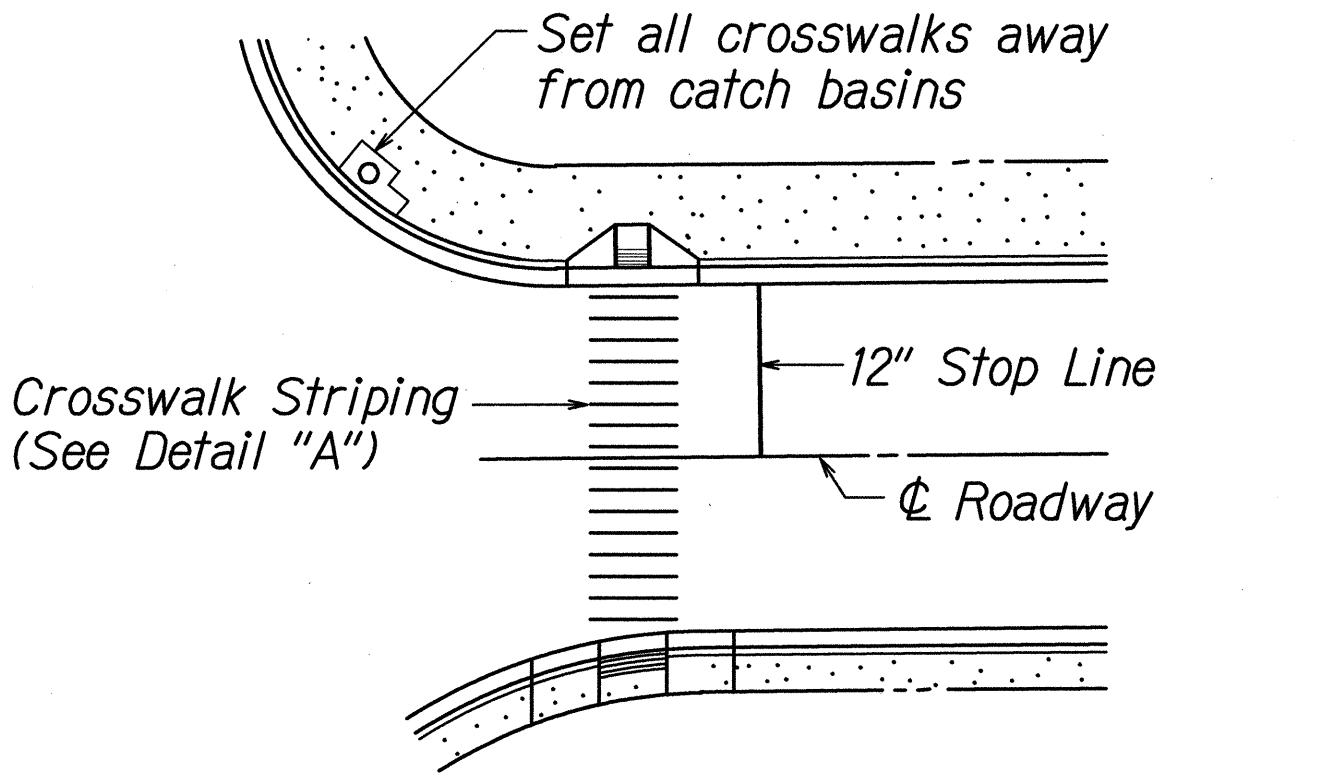
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP DETAILS
FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)
Scale: None Date: April 2013
SHEET No. CR-10 OF 14 SHEETS

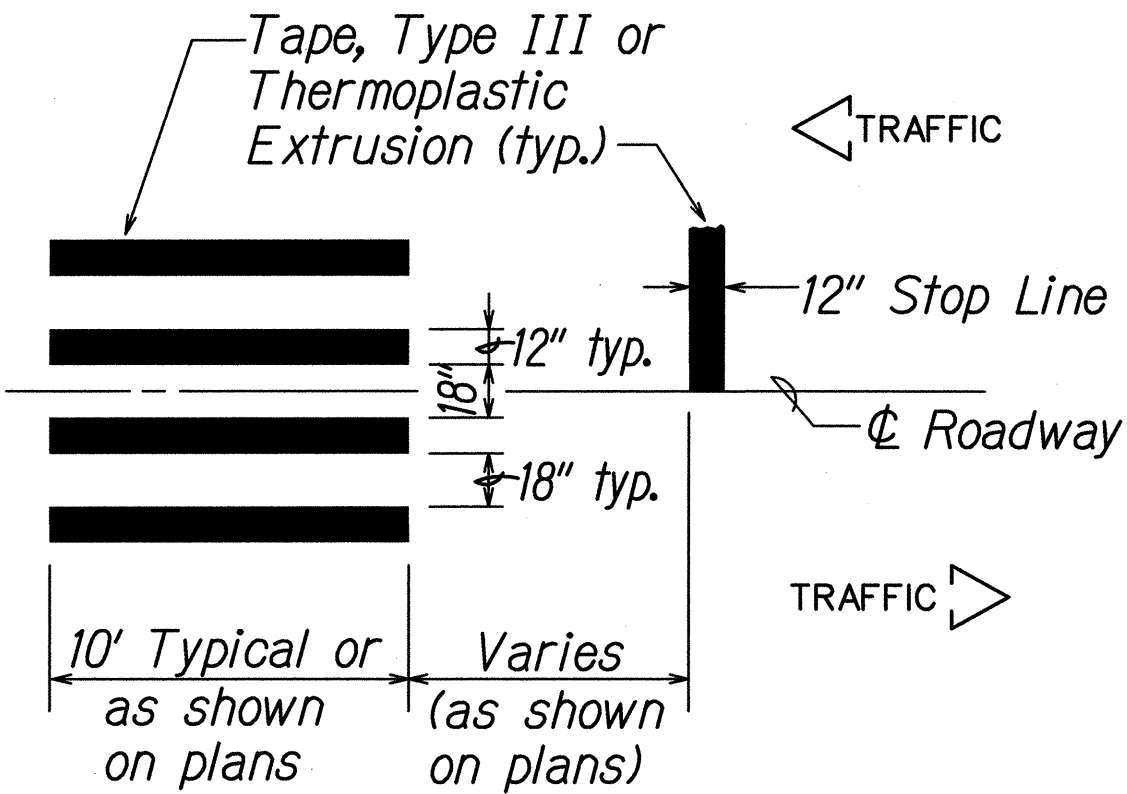
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NOTE BOOK	
CHECKED BY	

td1/usr2/traffic/std/curbramp/rampcr12-06-06.dgn R12-06-06 TE-XX sht. 5 of 9

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	56	230



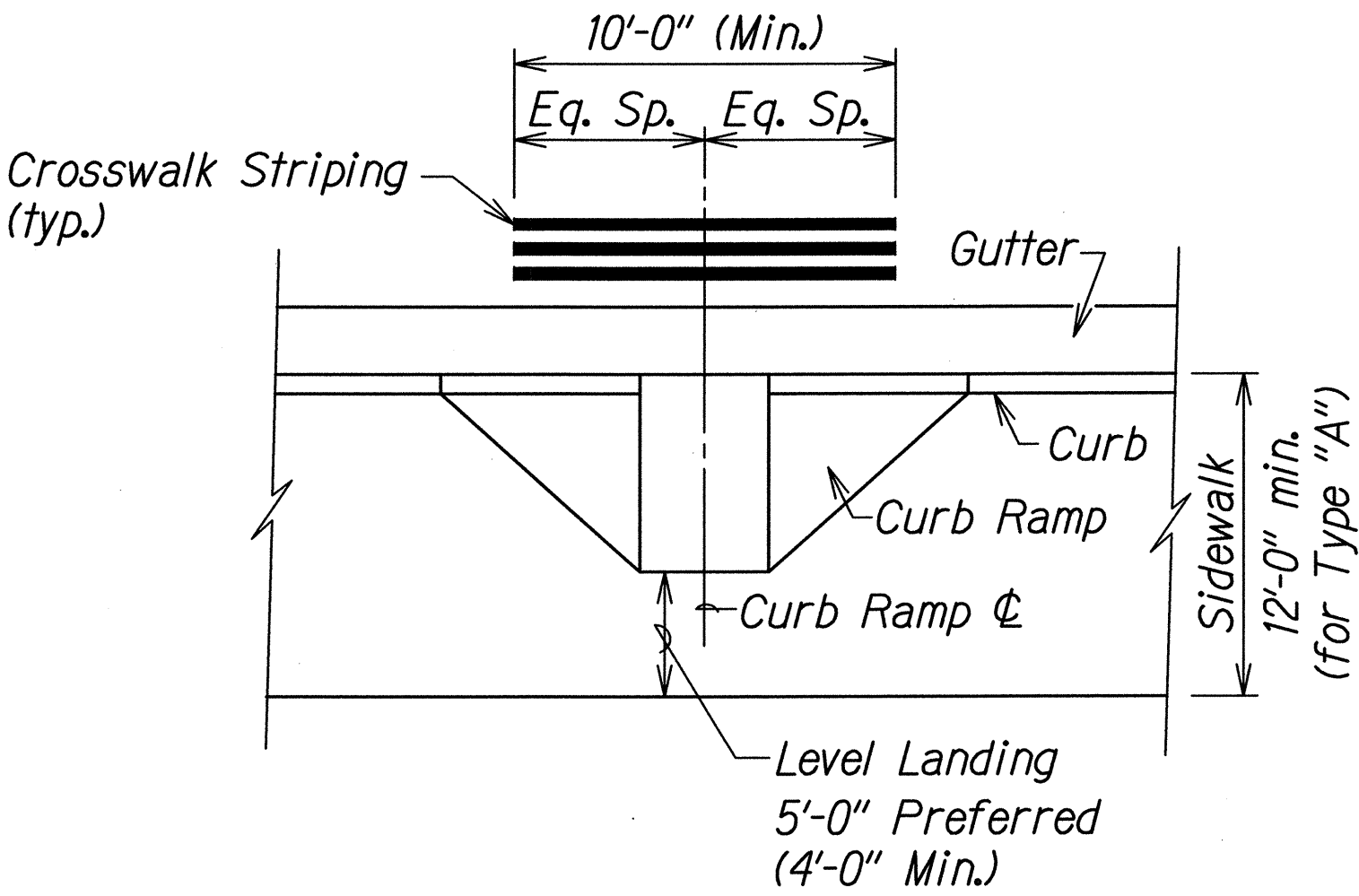
PLAN



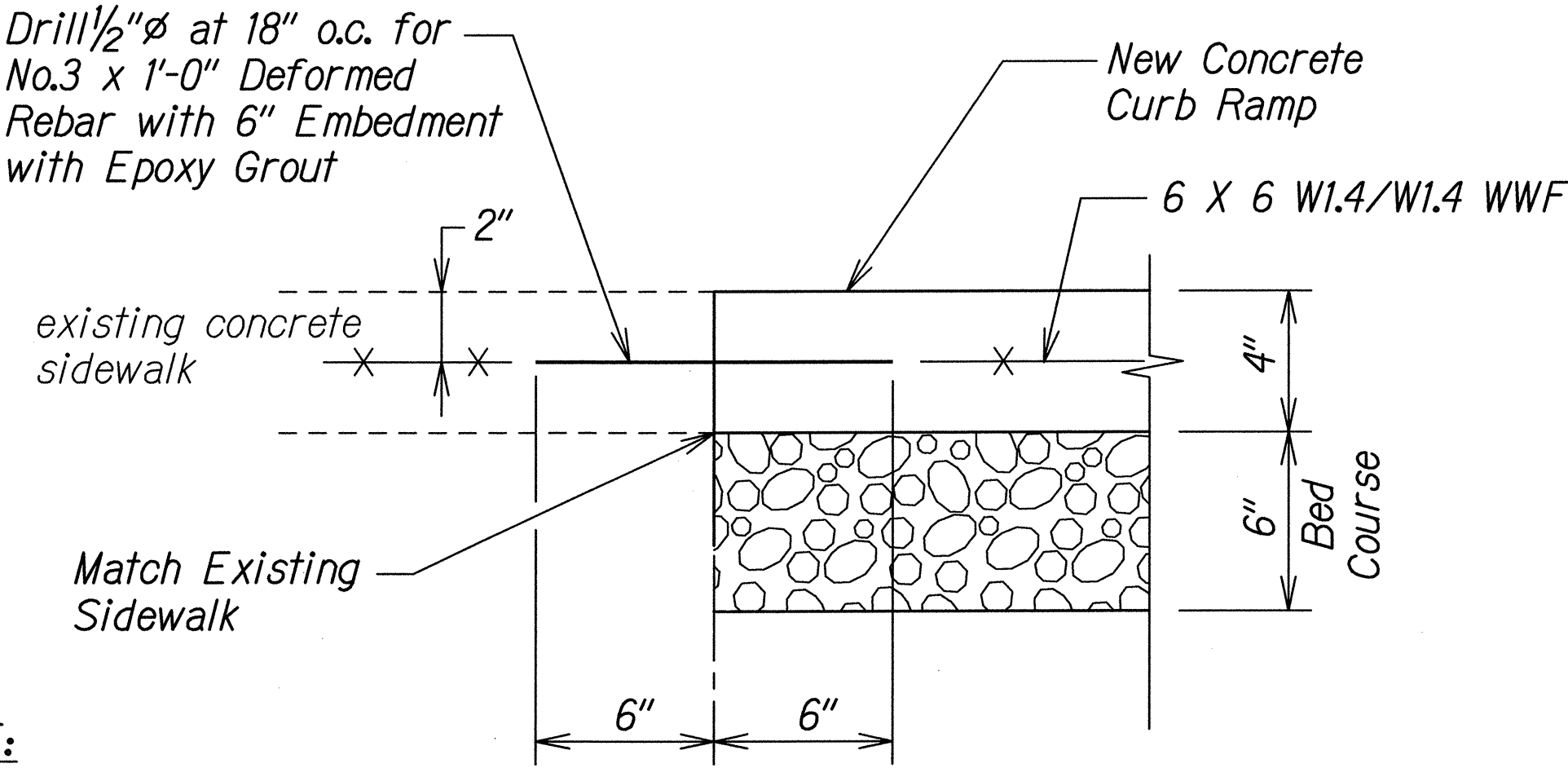
DETAIL "A"

CROSSWALK STRIPING DETAIL

NOTE:
Longitudinal lines shall be parallel to traffic flow.

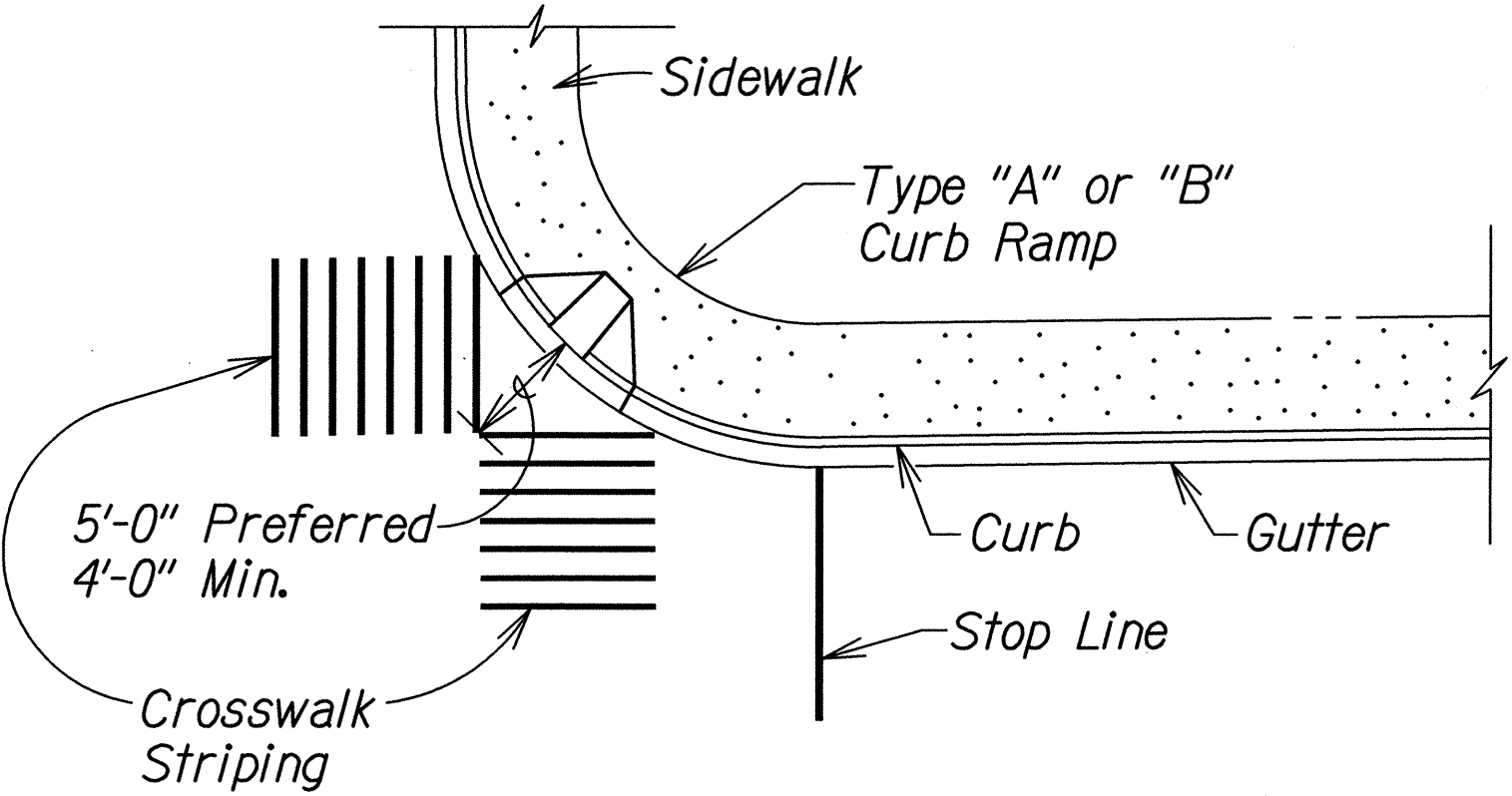


TYPICAL CROSSWALK STRIPING
AT CURB RAMP

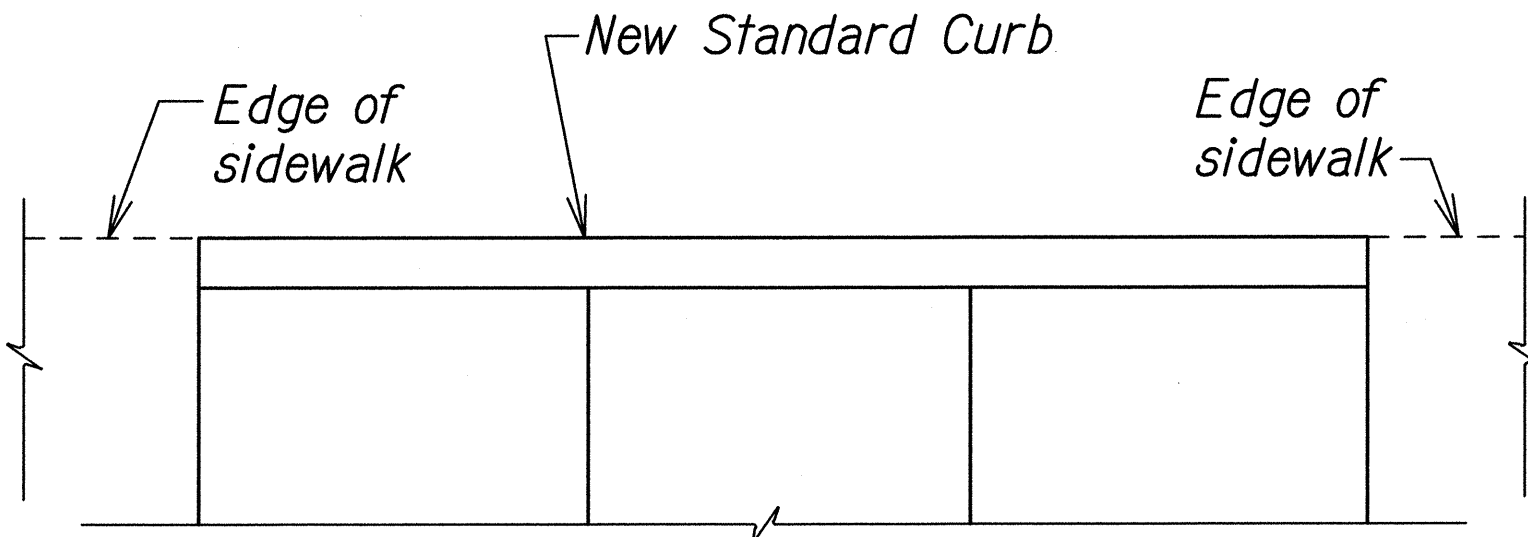


NOTE:
All curb ramps shall be reinforced.

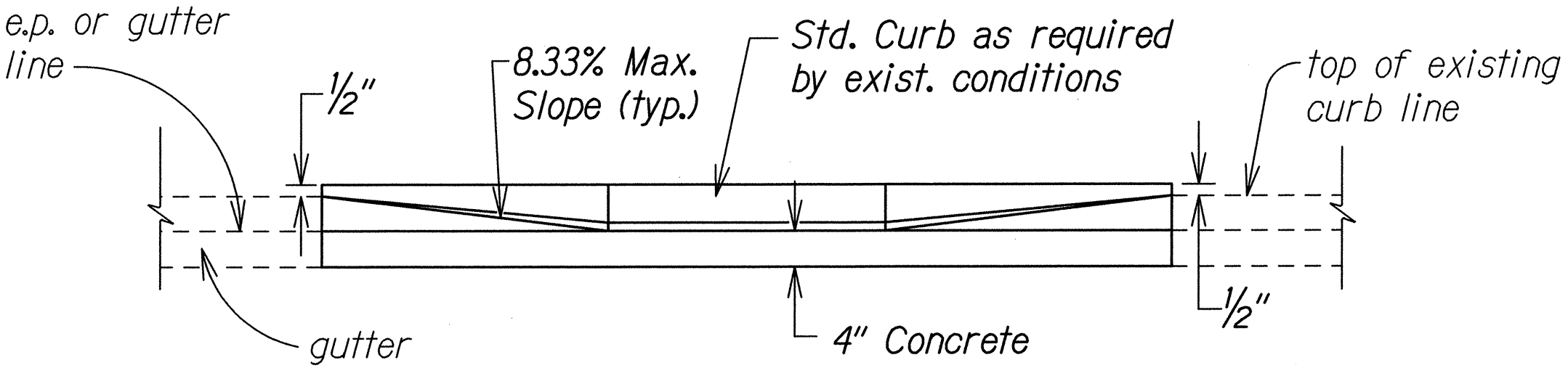
TYPICAL CONSTRUCTION JOINT
AT EXISTING SIDEWALK



TYPICAL CROSSWALK STRIPING
AT DIAGONAL CURB RAMP



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.

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

R12-06-06 TE-XX sh. 7 of 9

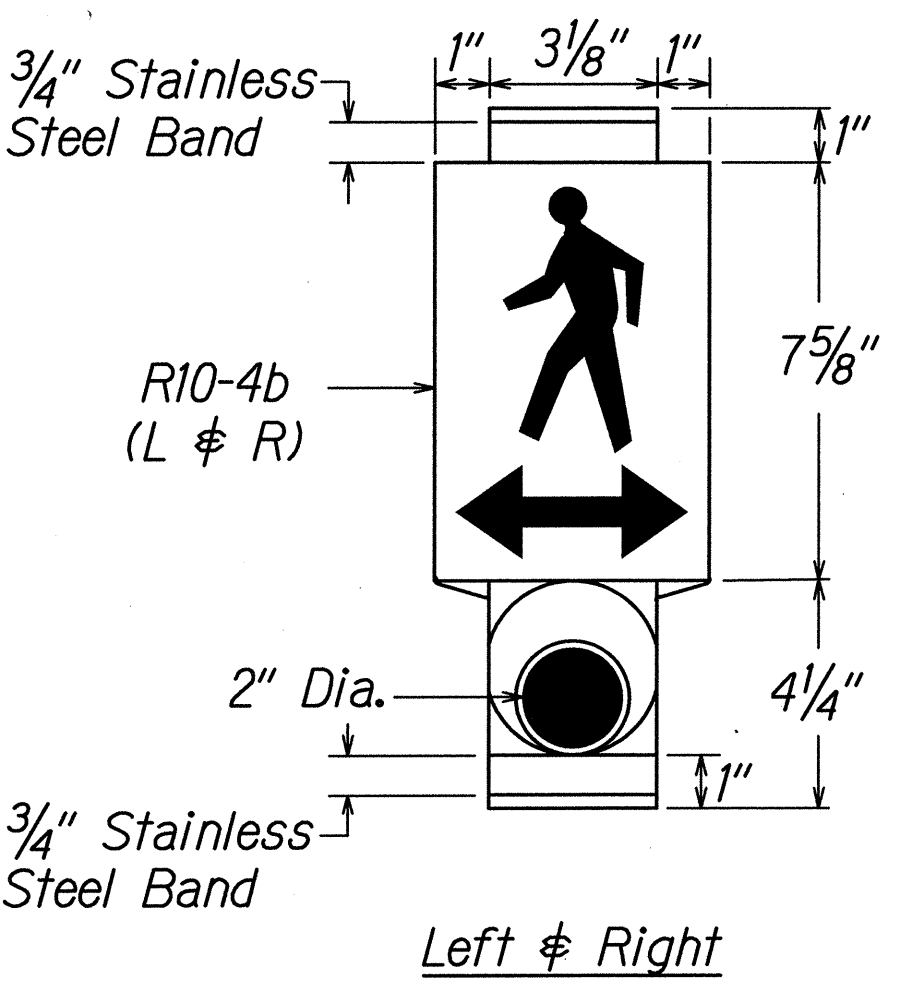
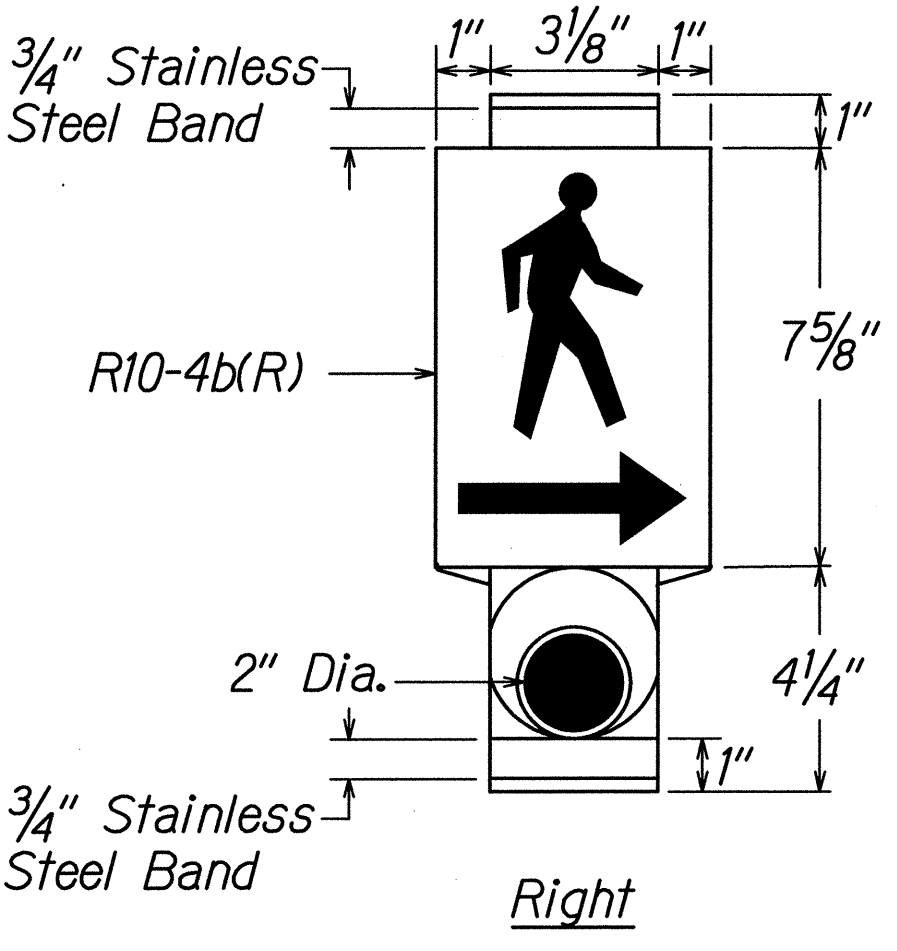
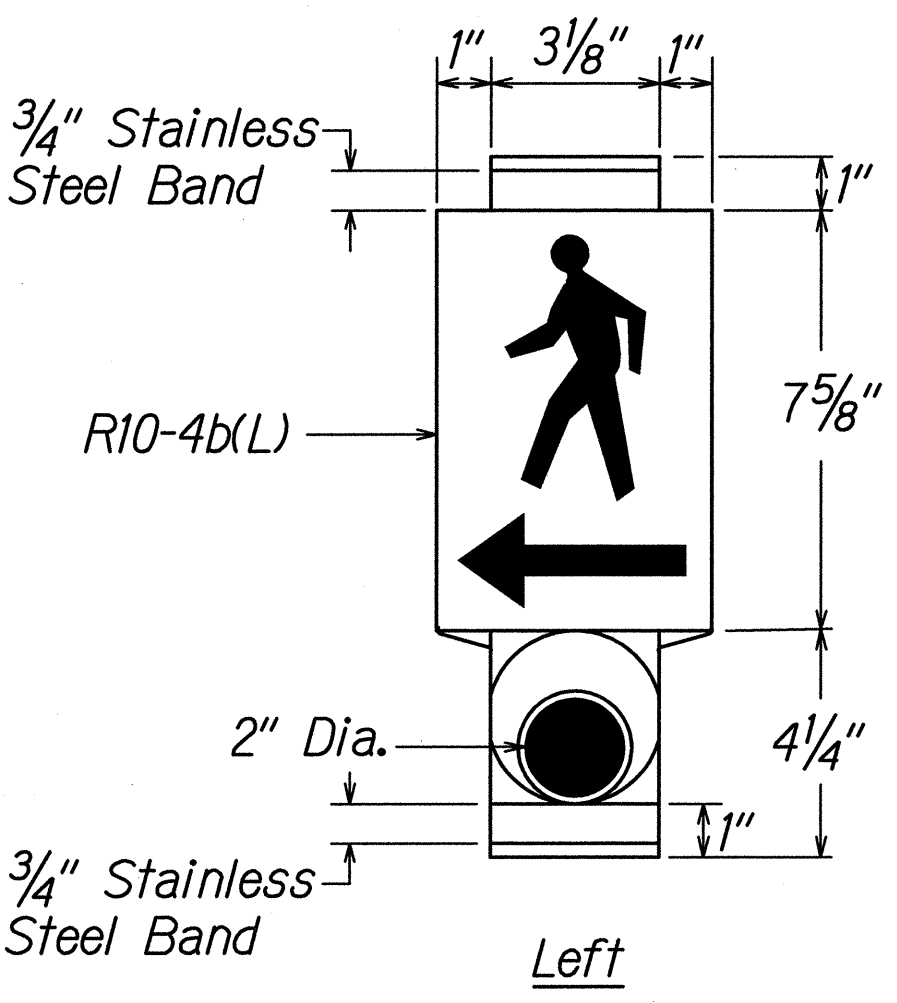
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

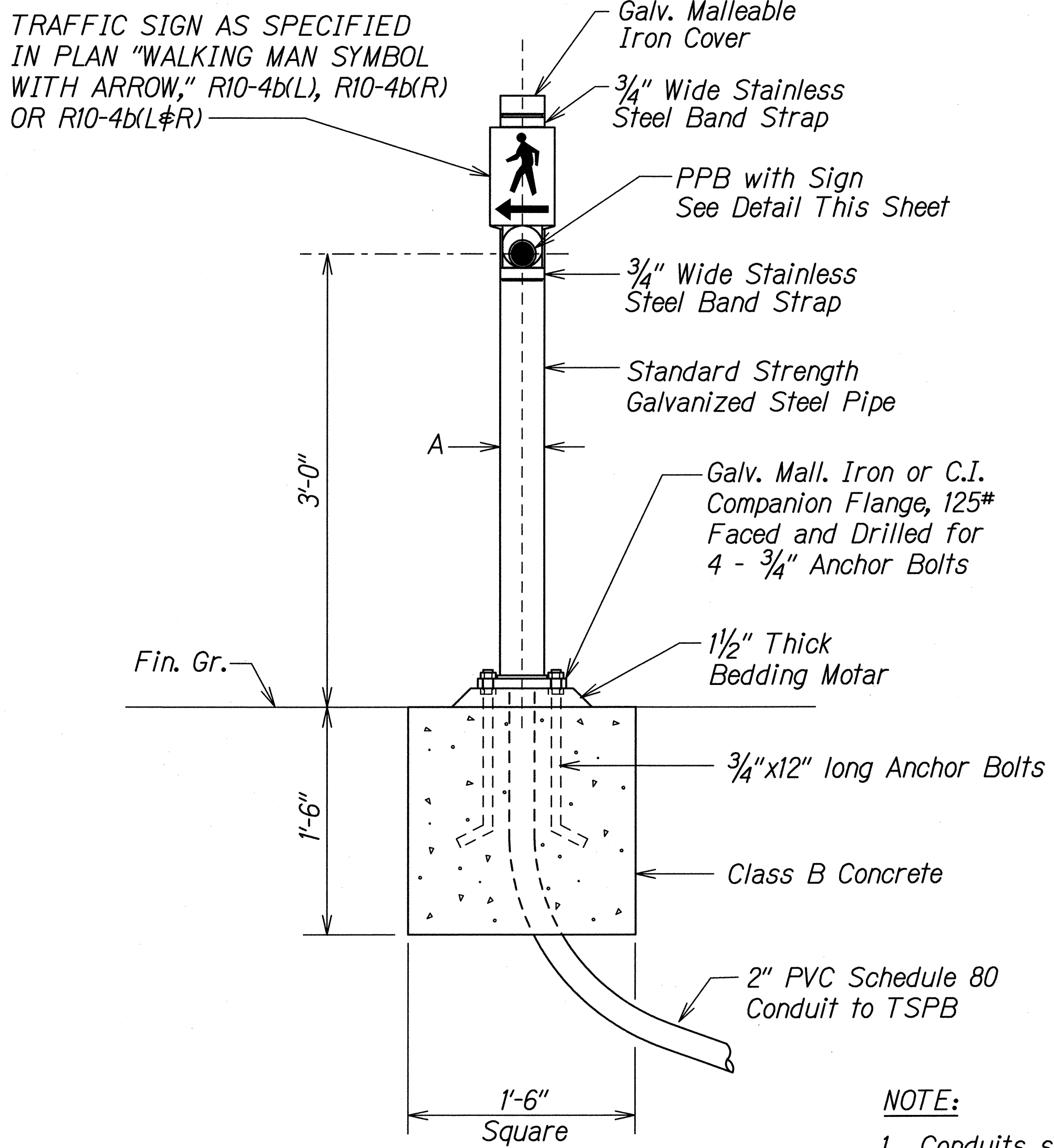
FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)

Scale: None Date: April 2013

SHEET No. CR-12 OF 14 SHEETS



PEDESTRIAN PUSH BUTTON WITH SIGN
Man, Arrow & Push Button - White
Background - Black

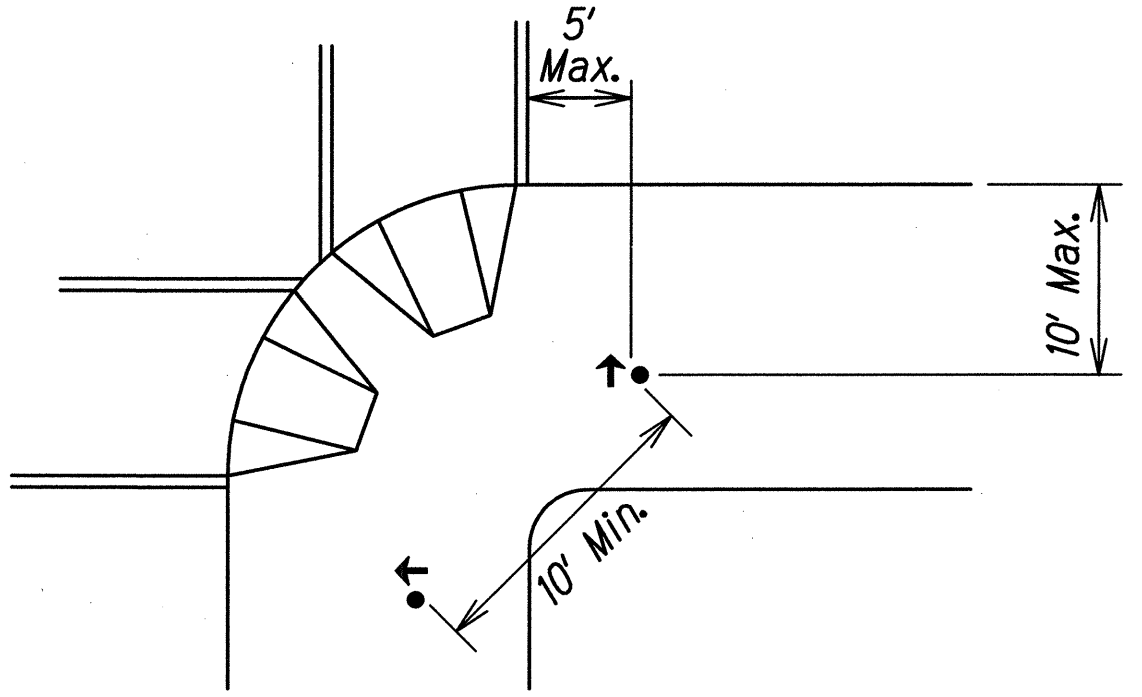


PPB POST AND FOOTING DETAIL

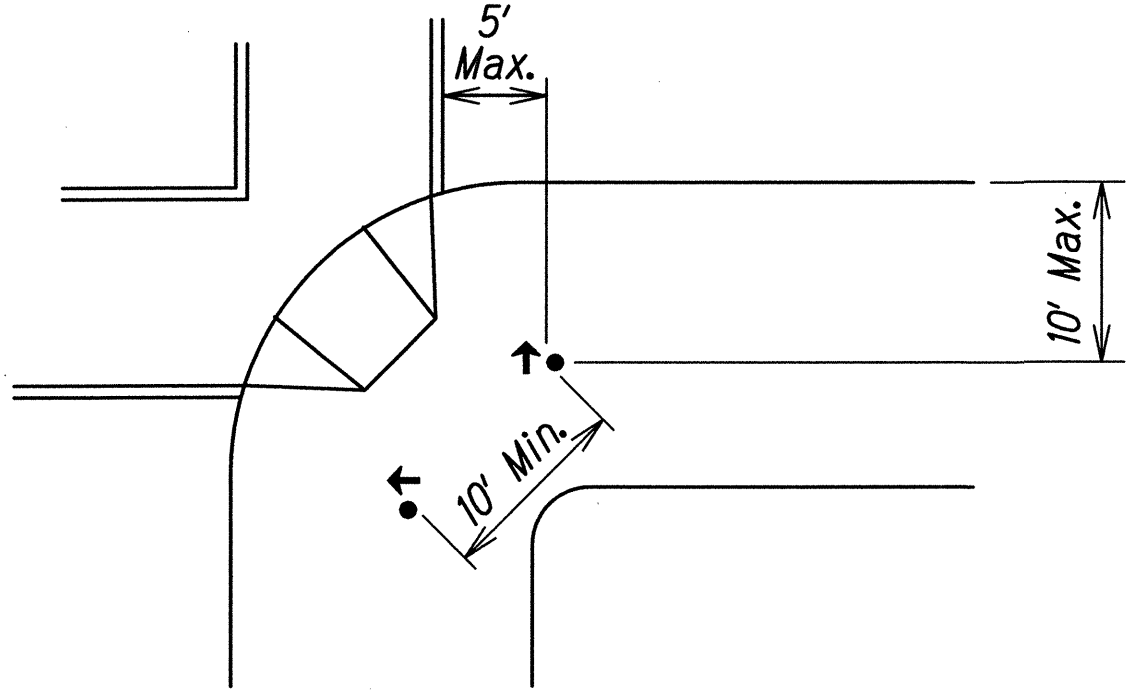
DATA TABLE FOR PPB POST		
AMOUNT OF PPB	DIMENSIONS	
	A	B
1	3 1/2"	8"
2-3	4 1/2"	9"

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

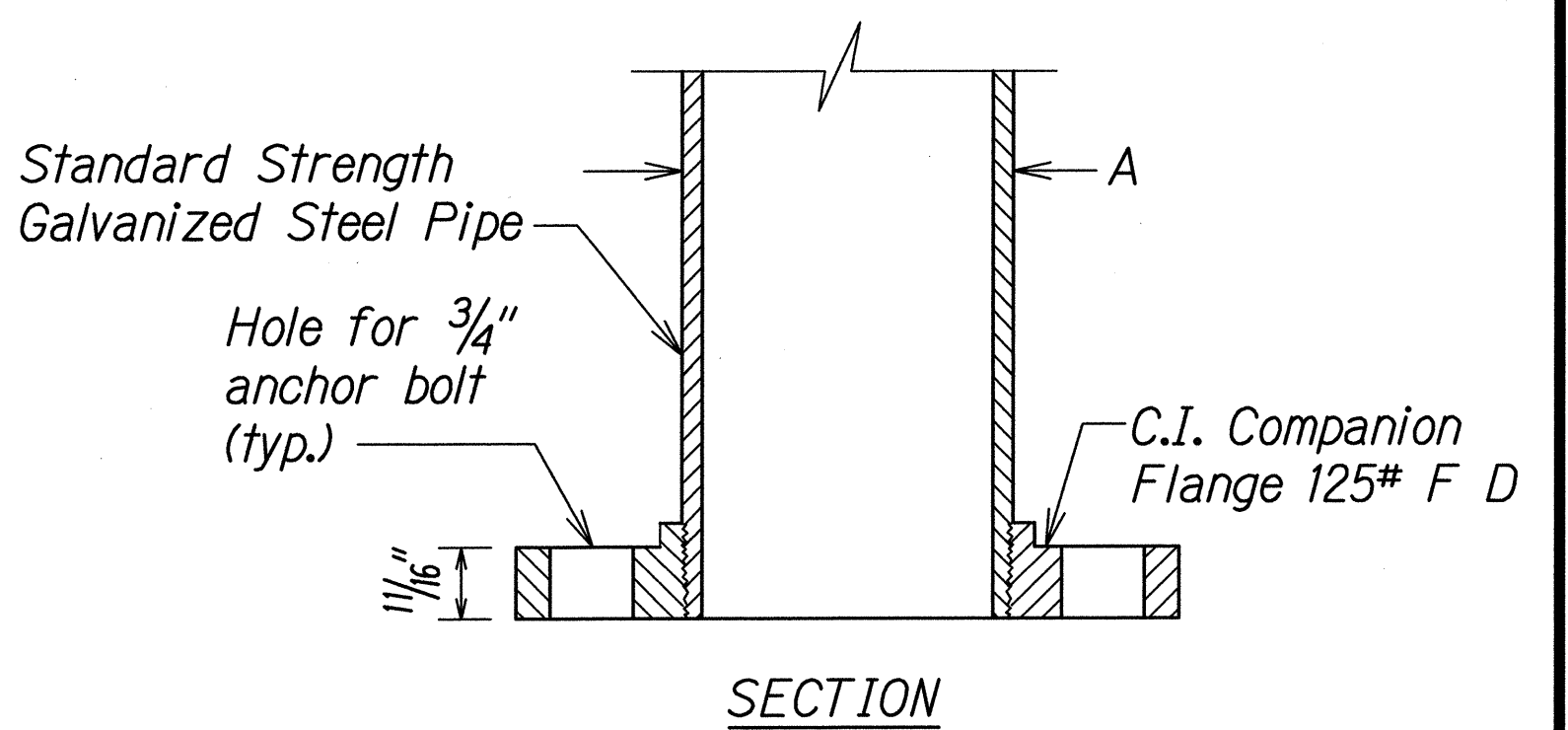
- GENERAL NOTES:**
1. There shall be a 30" x 48" level ground surface (2% max. cross slope, both directions) for a forward or side approach, as appropriate, to a pedestrian push button. Location of pedestrian push button shall be shown on Civil Plans in addition to Electrical Plans.
 2. At intersection corners where two pedestrian push buttons are provided, the push buttons should be separated by a distance of at least 10 ft. and located as follows:
 - A. adjacent to a level all-weather surface to provide access from a wheelchair and, where there is an all-weather surface, wheelchair accessible route to the ramp
 - B. within 5 ft. of the crosswalk extended
 - C. within 10 ft. of the edge of the curb, shoulder or pavement
 - D. parallel to the crosswalk to be used



TWO CURB-CUT RAMPS



ONE CURB-CUT RAMP



**TOP VIEW
FLANGE DETAIL**

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

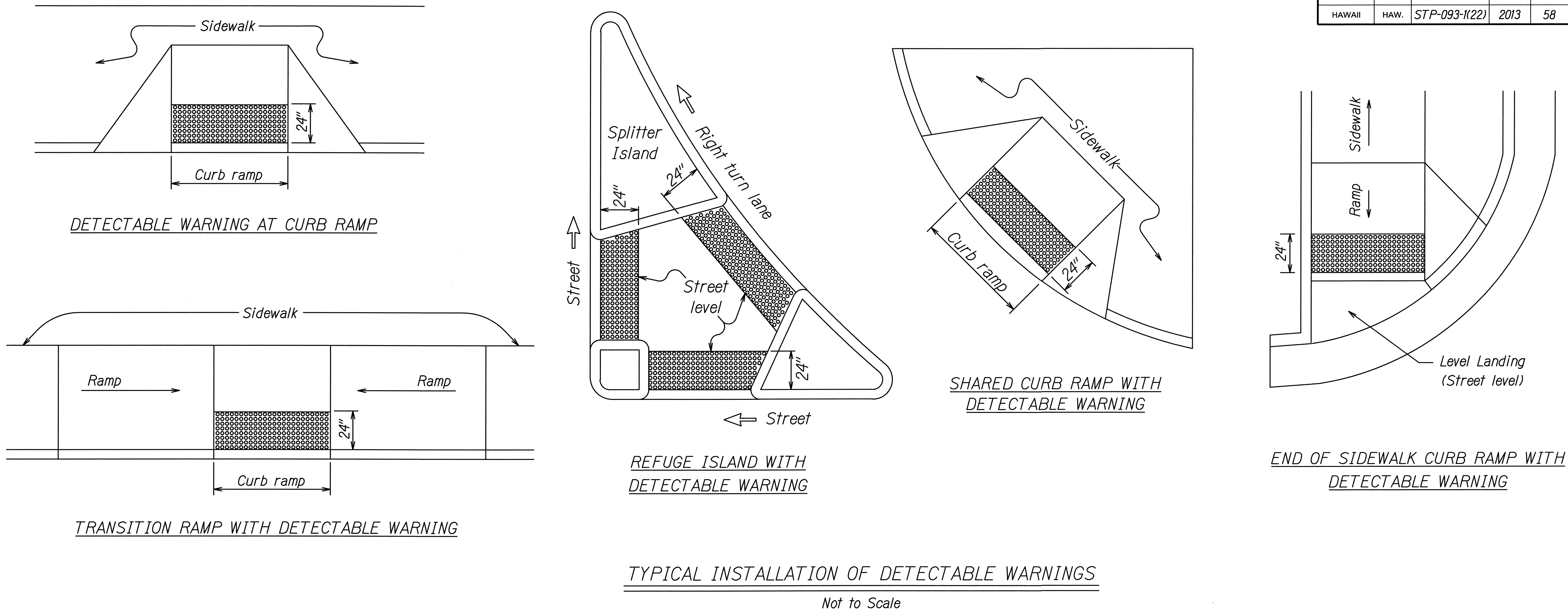
PEDESTRIAN PUSH BUTTON DETAILS

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-K(22)

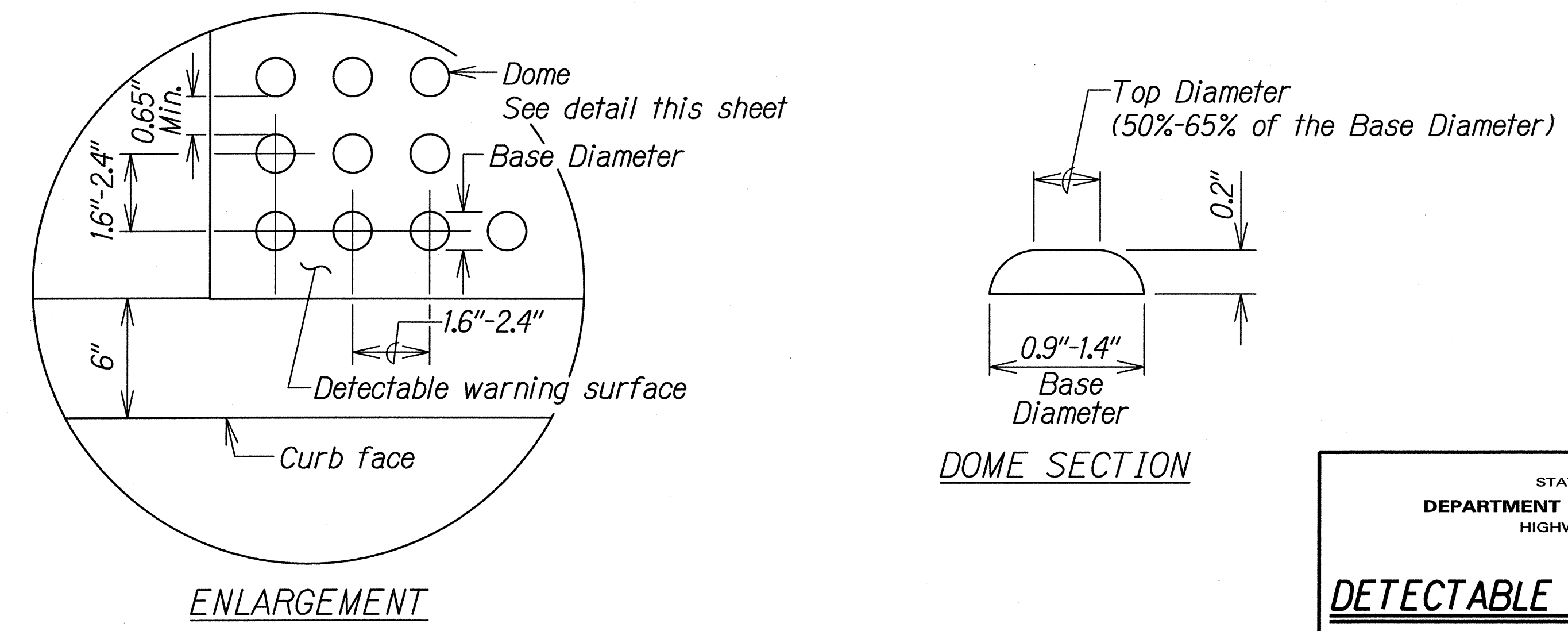
Scale: None Date: April 2013

SHEET No. CR-13 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(22)	2013	58	230



- NOTES:**
- 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).
 - 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.
 - Domes shall be aligned on a square grid in the predominant direction of travel to permit wheels to roll between the domes.
 - 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".
 - The material used to provide visual contrast shall be an integral part of the detectable warning surface.
 - 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.



DETECTABLE WARNING DETAIL
Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETECTABLE WARNING DETAILS

FARRINGTON HIGHWAY INTERSECTION IMPROVEMENTS
AT NANAKULI AVENUE AND HALEAKALA AVENUE
Federal-Aid Project No. STP-093-1(22)
Scale: None Date: April 2013

SHEET No. CR-14 OF 14 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

R12-06-06 1E-XX sht. 9 of 9 tdl/ust2/traffic/std/curbramp/detect-r12-06-06.dgn