

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	39	99

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, B, C, D, E and Combination 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 ¼ inch per 10 ft. (±0.2%). Remedial measures will not be accepted.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	000000
	TRACED BY	
	DESIGNED BY	
	NOTE BOOK	
No.	QUANTITIES BY	
	CHECKED BY	

JOSEPH R. SALVADOR

LICENSED PROFESSIONAL ENGINEER

No. 14094-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP AND SIDEWALK NOTES

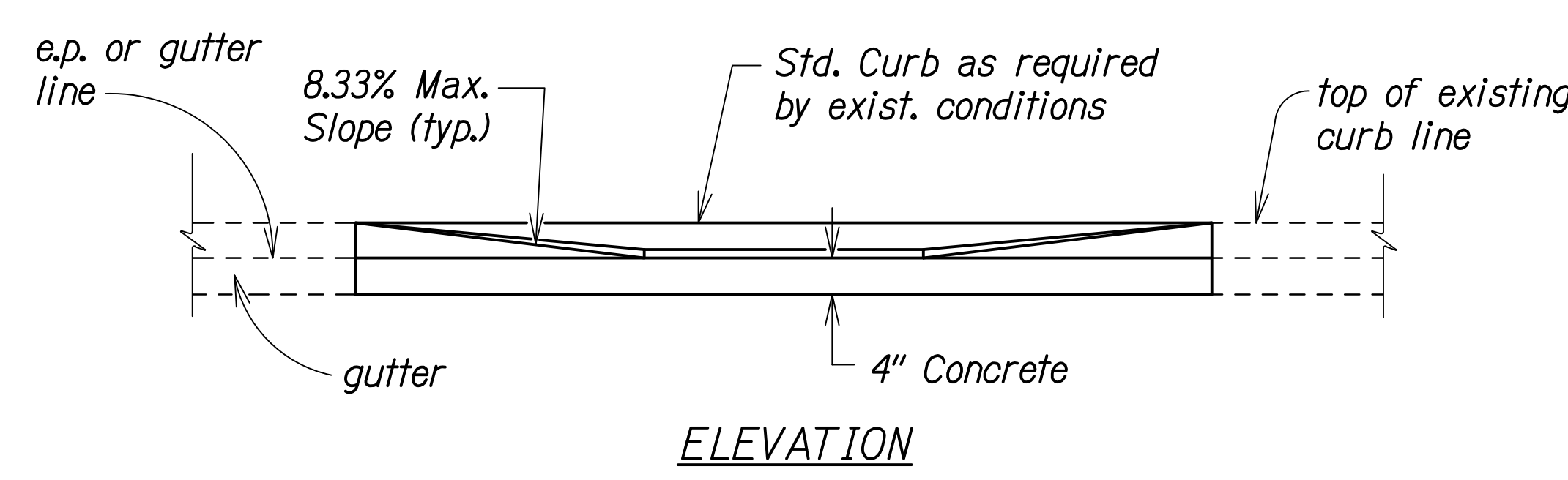
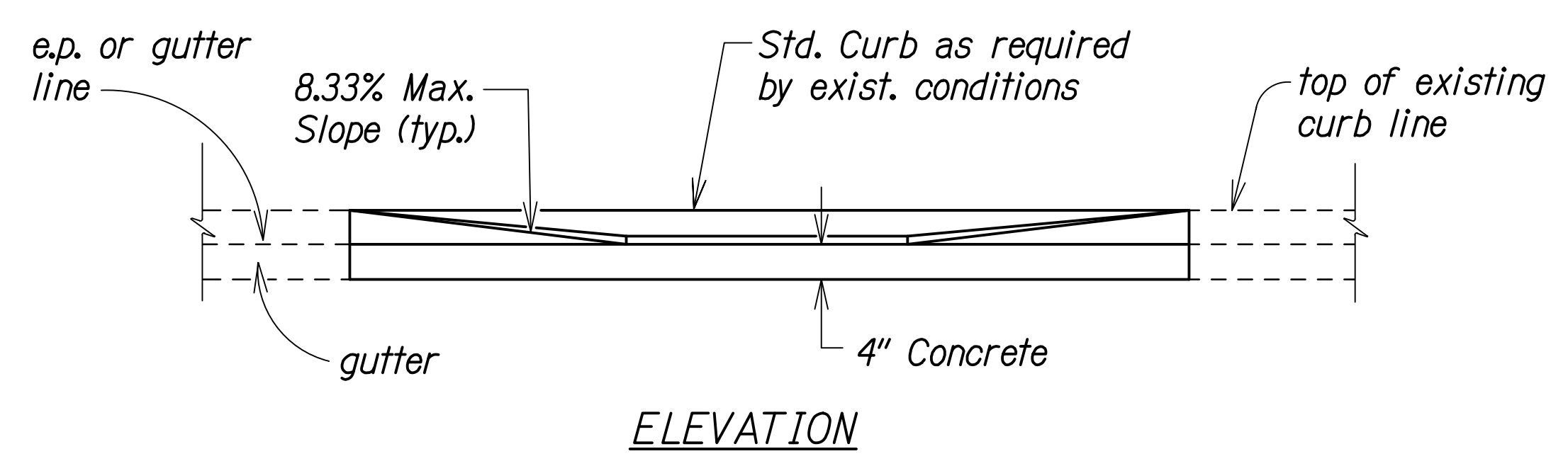
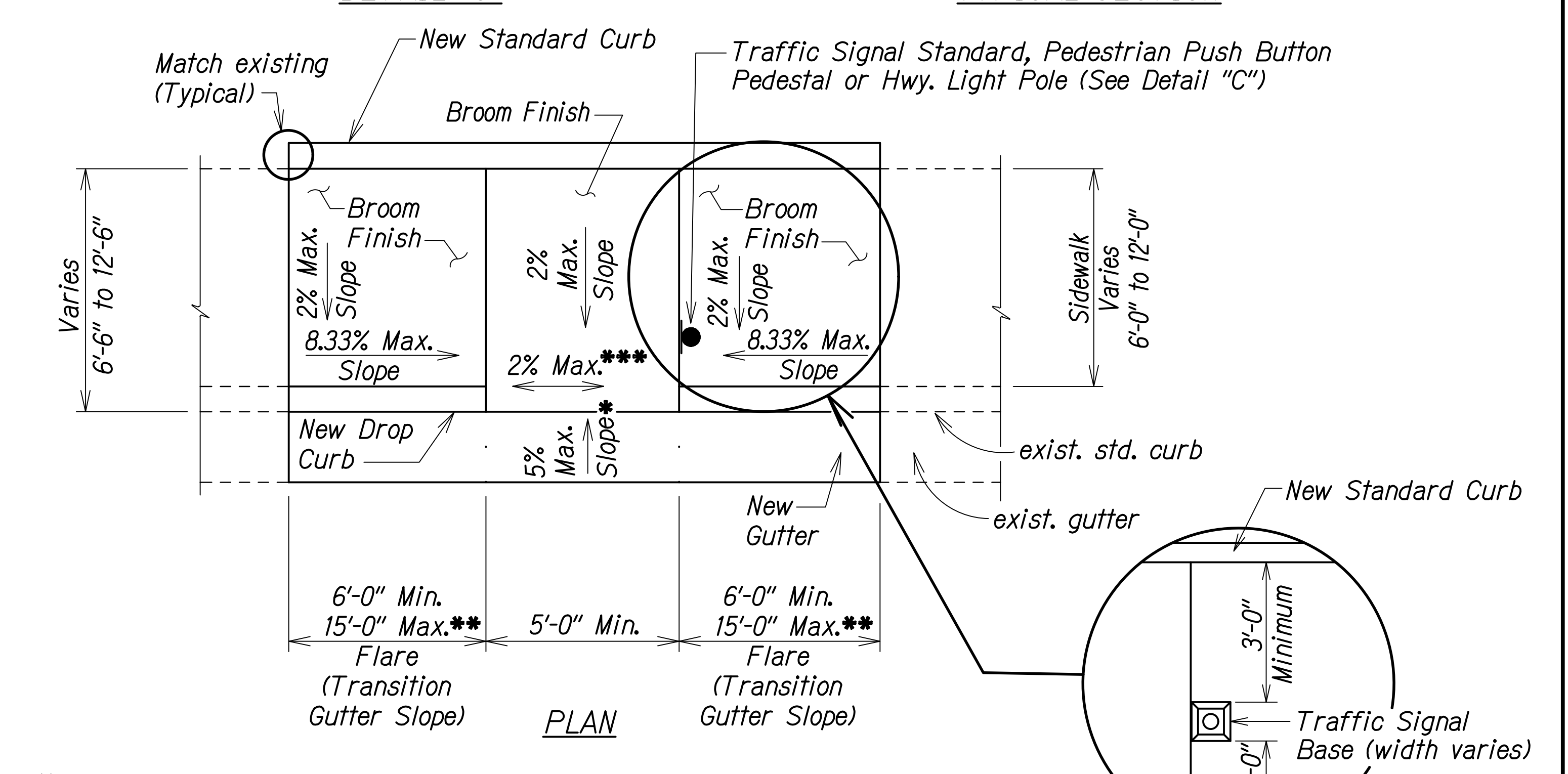
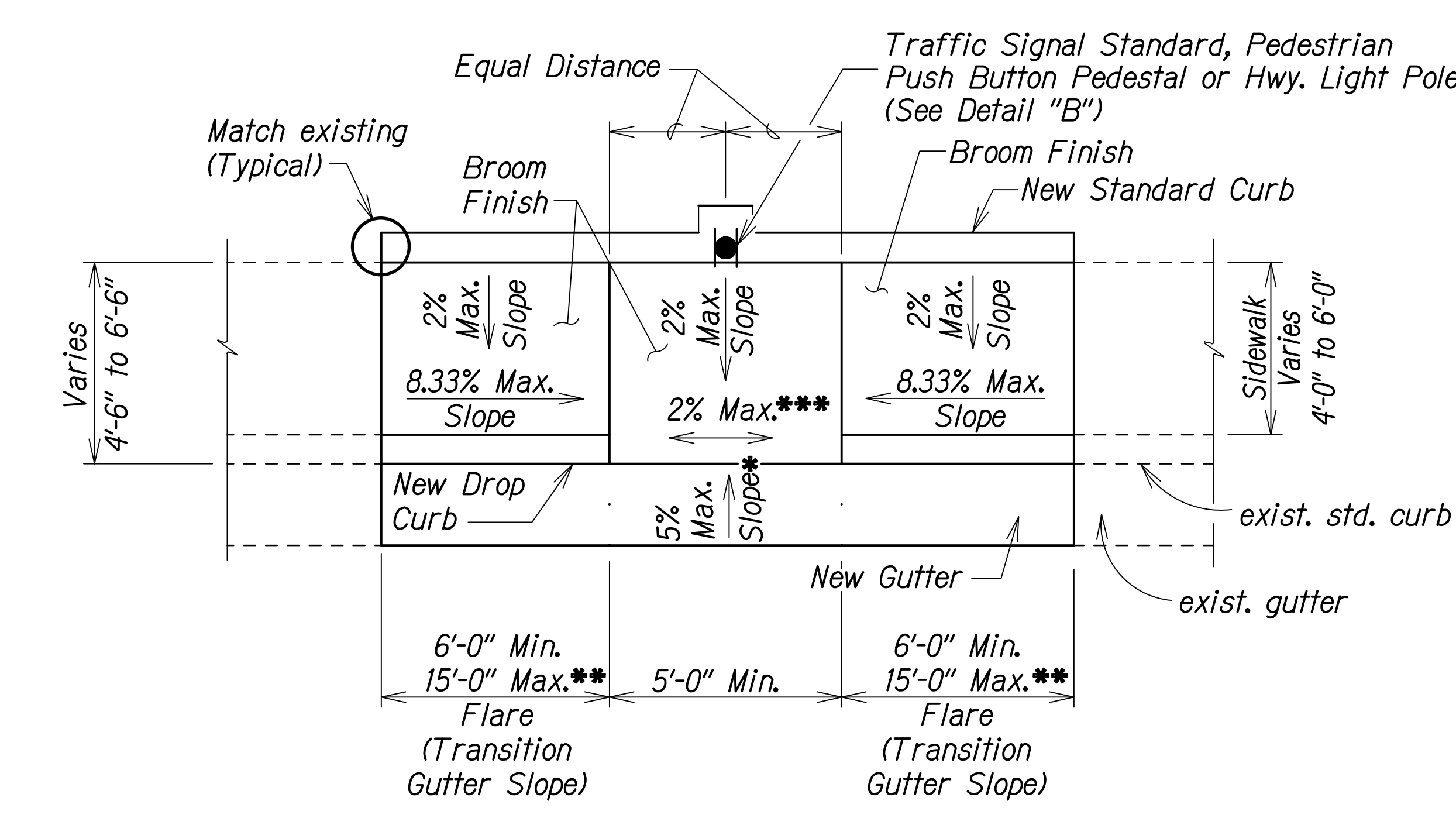
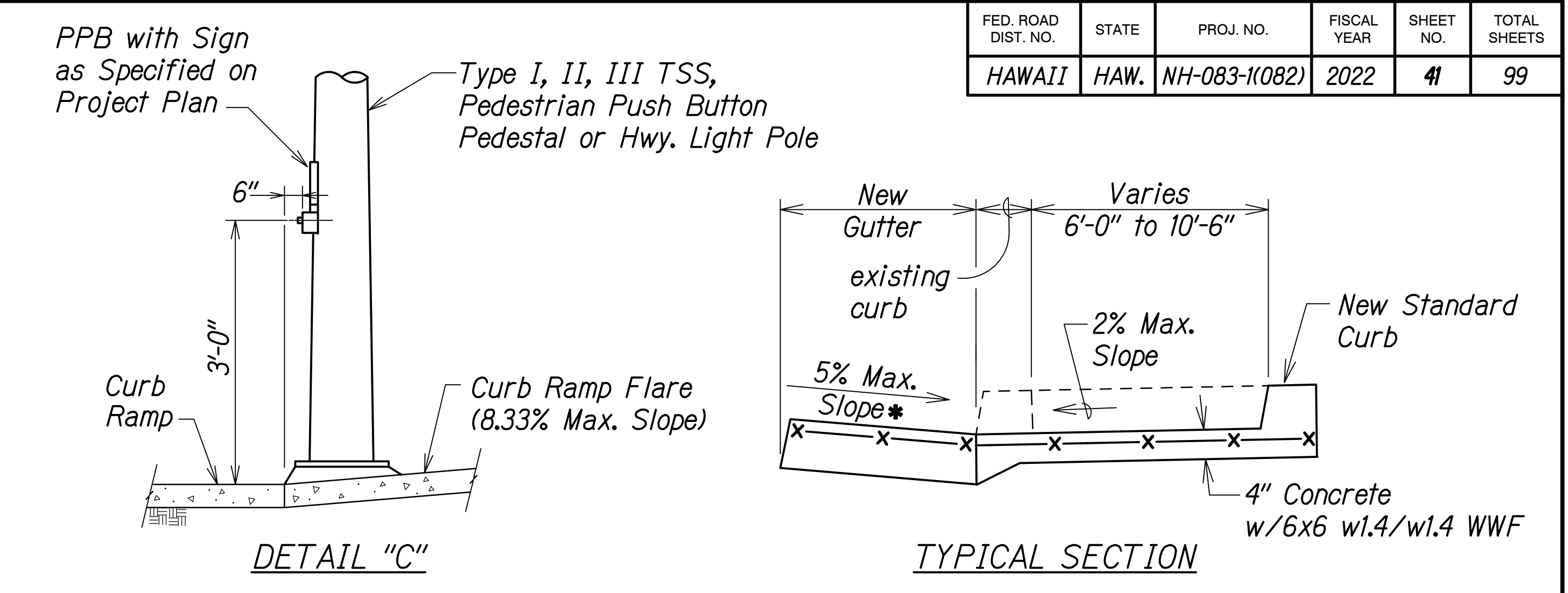
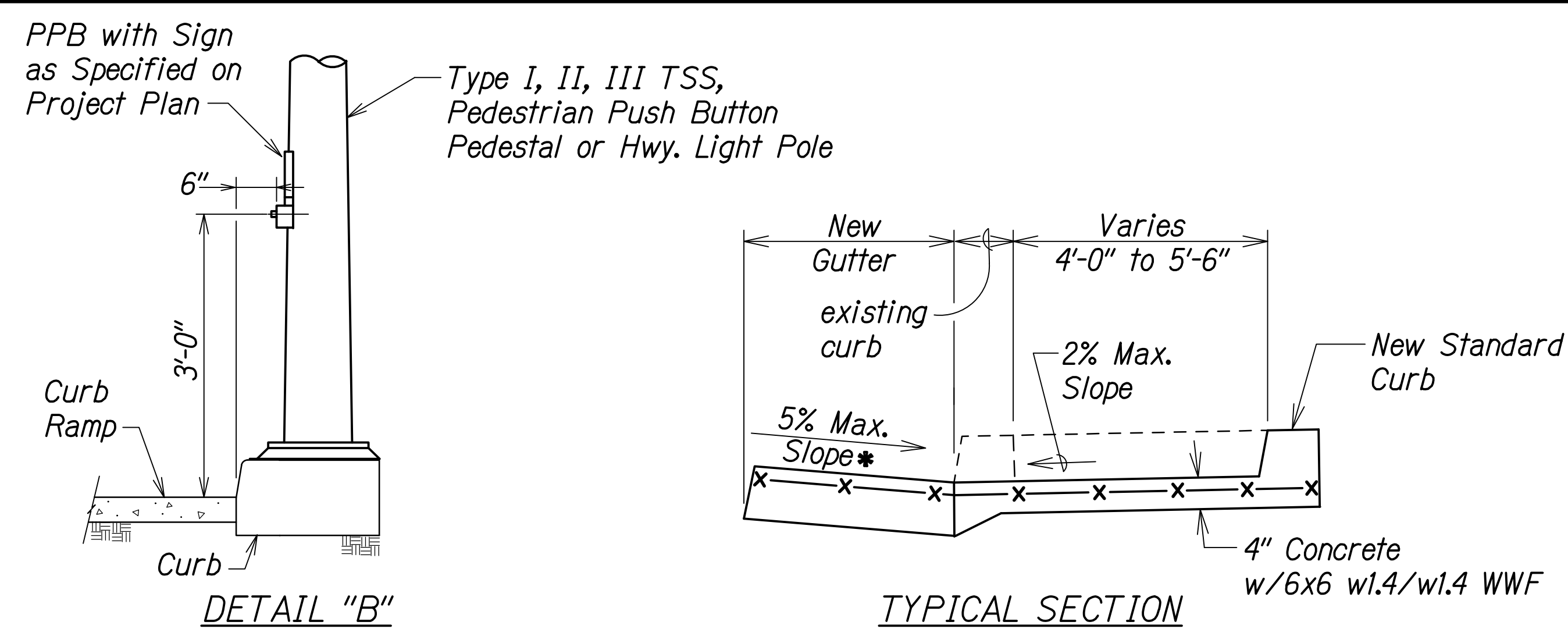
KAMEHAMEHA HIGHWAY
INTERSECTION IMPROVEMENTS
AT KAHAKILI HIGHWAY
Federal-Aid Project No. NH-083-1(082)

Scale: None Date: Sept. 2022

SHEET No. CR-1 OF 12 SHEETS

39

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	41	99



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 15 feet, then the slope of the ramp shall be set when the length of the ramp is set at the maximum of 15 feet.
- *** If Roadway Slope >2% Conform to Roadway Slope and File Technical Infeasibility (TI) Statement

DATE	_____
SURVEY PLOTTED BY	_____
DRIVEN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

JOSEPH R. SALVADOR
LICENSED PROFESSIONAL ENGINEER
No. 14094-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: *Joseph R. Salvador* 04/2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

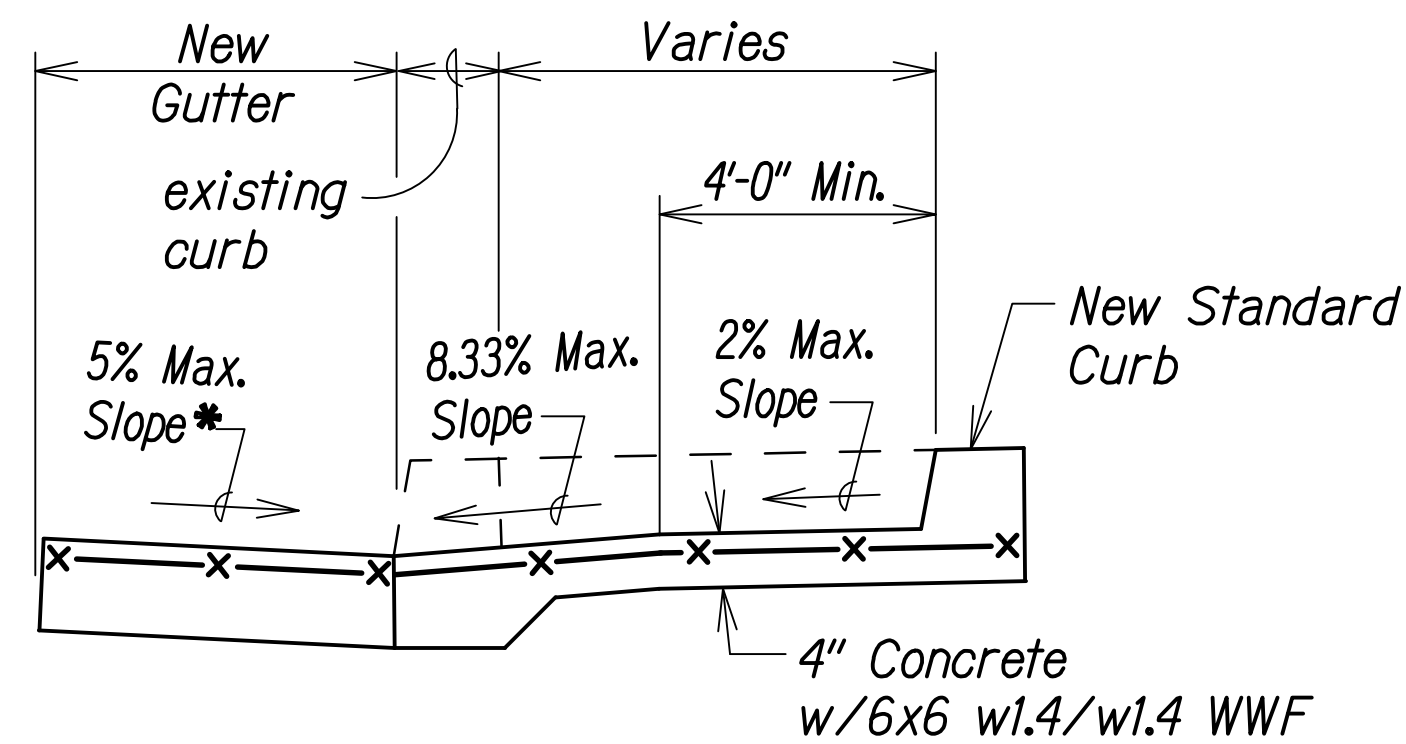
CURB RAMP DETAILS

KAMEHAMEHA HIGHWAY
INTERSECTION IMPROVEMENTS
AT KAEKILI HIGHWAY
Federal-Aid Project No. NH-083-1(082)

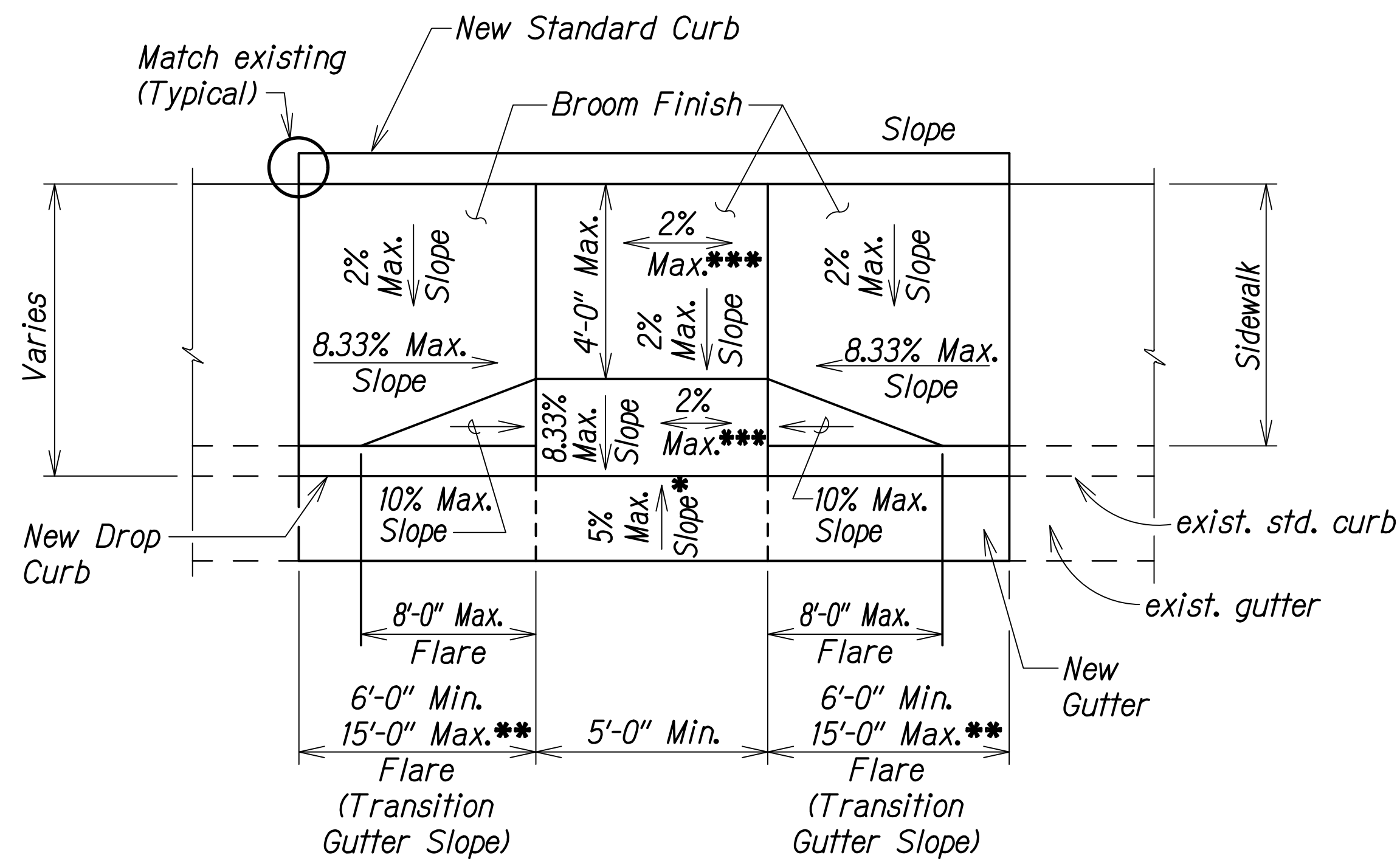
Scale: None Date: Sept. 2022

SHEET No. CR-3 OF 12 SHEETS

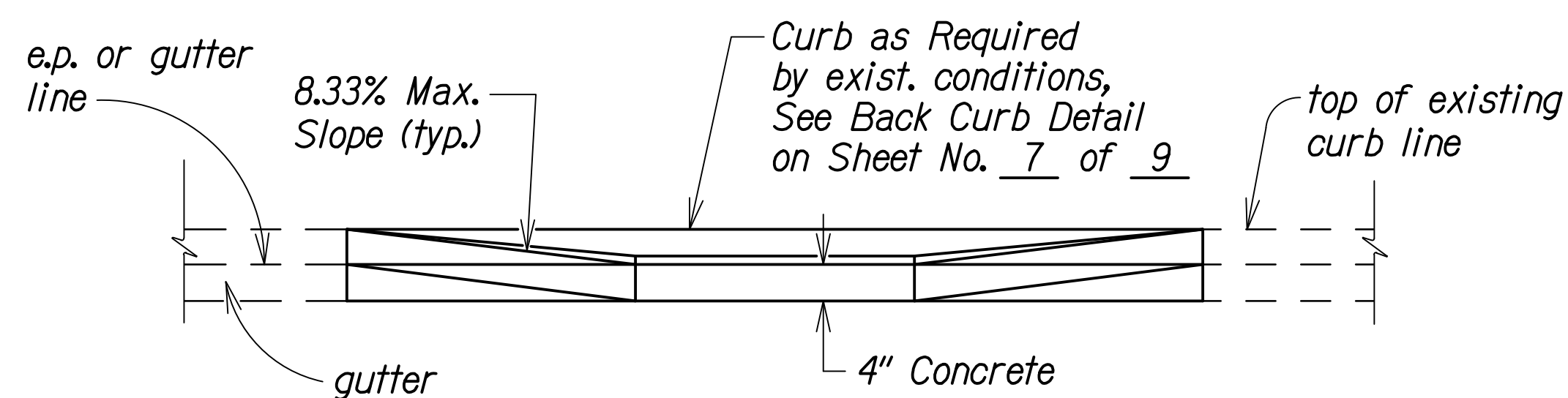
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	42	99



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 15 feet, then the slope of the ramp shall be set when the length of the ramp is set at the maximum of 15 feet.
- *** If Roadway Slope >2% Conform to Roadway Slope and File a Technical Infeasibility (TI) Statement

JOSEPH R. SALVADOR

LICENSED PROFESSIONAL ENGINEER

No. 14094-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CURB RAMP DETAILS

KAMEHAMEHA HIGHWAY

INTERSECTION IMPROVEMENTS

AT KAHAKILI HIGHWAY

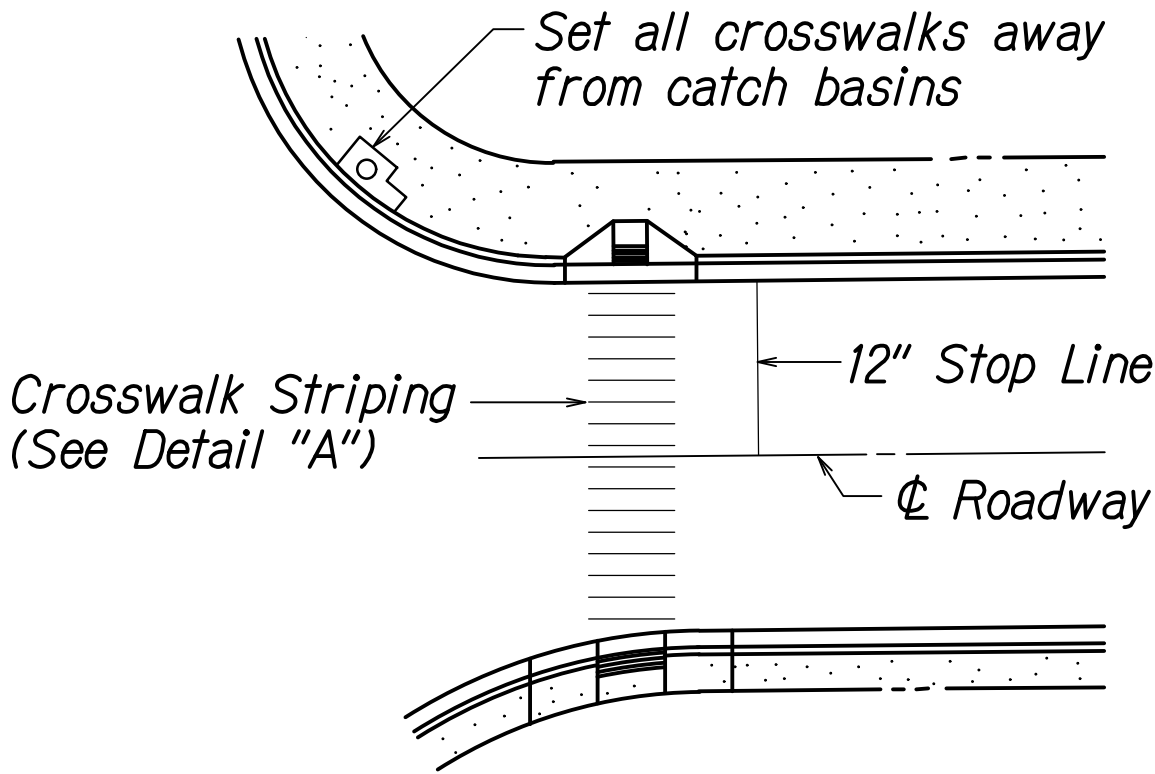
Federal-Aid Project No. NH-083-1(082)

Scale: None

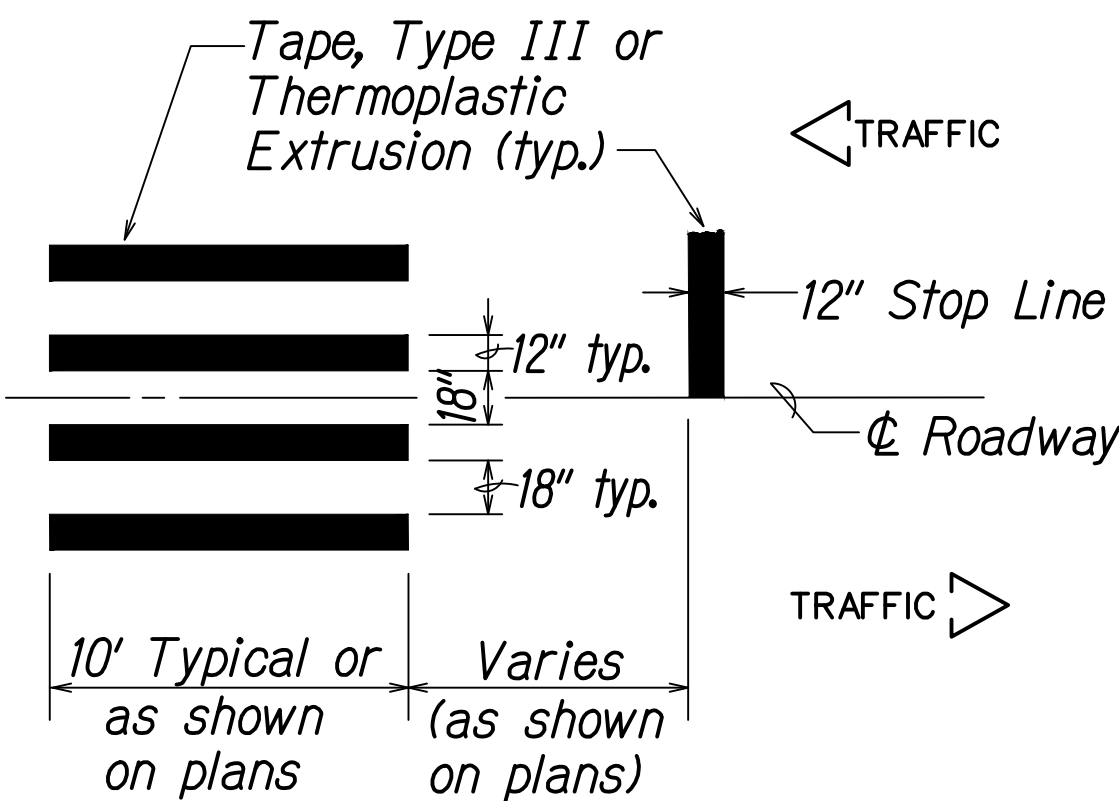
Date: Sept. 2022

SHEET No. CR-4 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	44	99



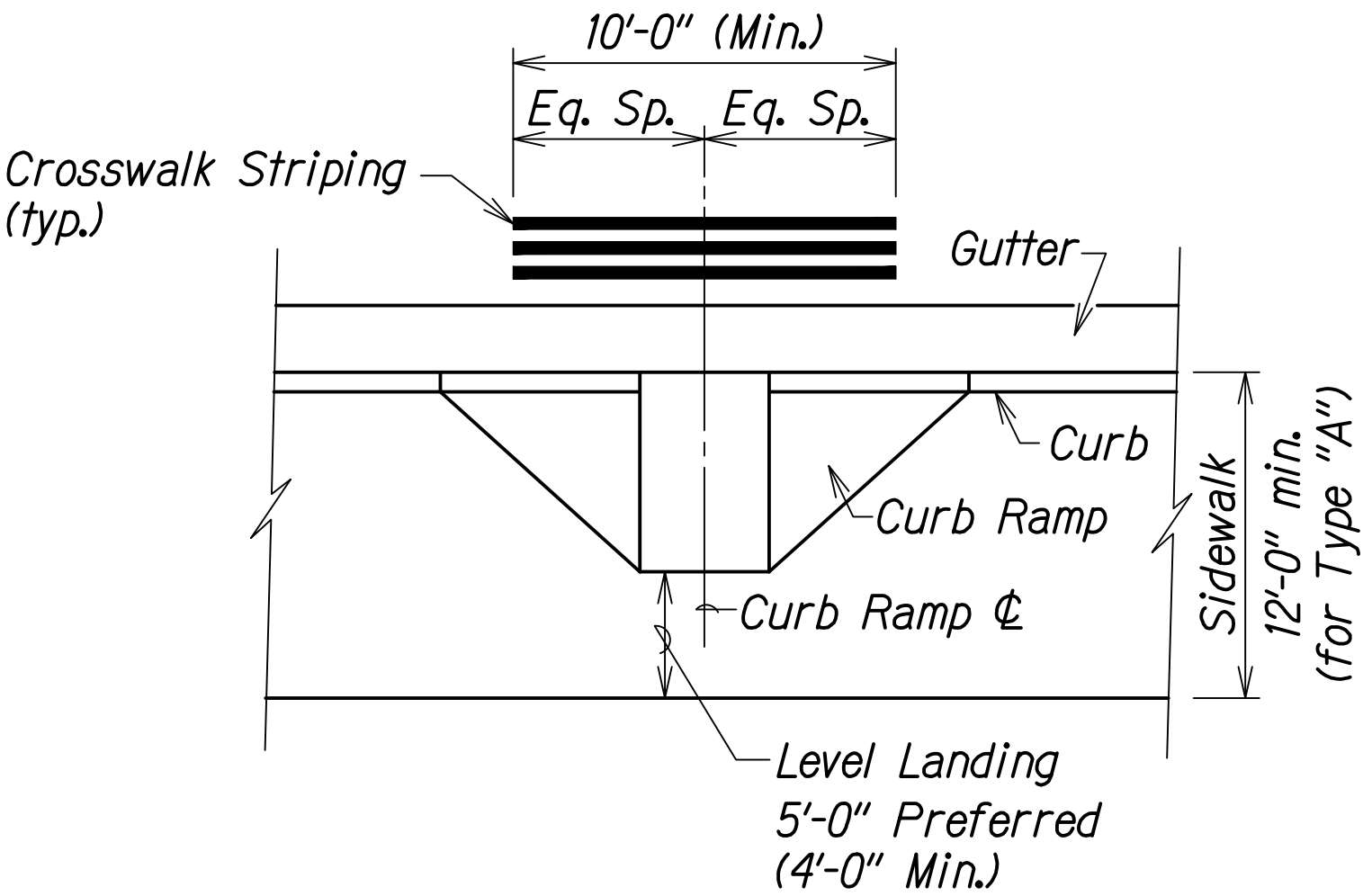
PLAN



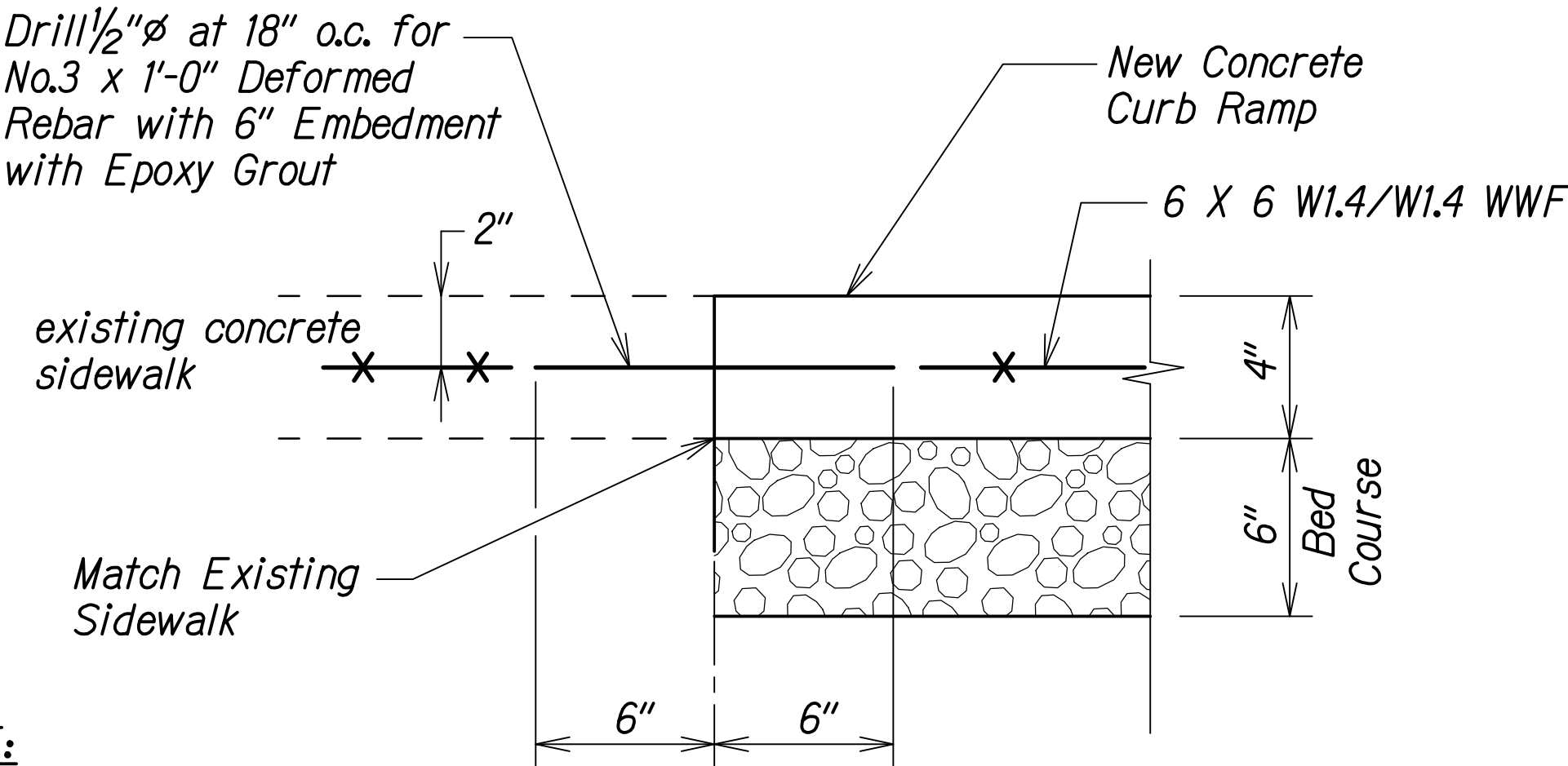
DETAIL "A"

CROSSWALK STRIPING DETAIL

NOTE:
Longitudinal lines shall be parallel to traffic flow.

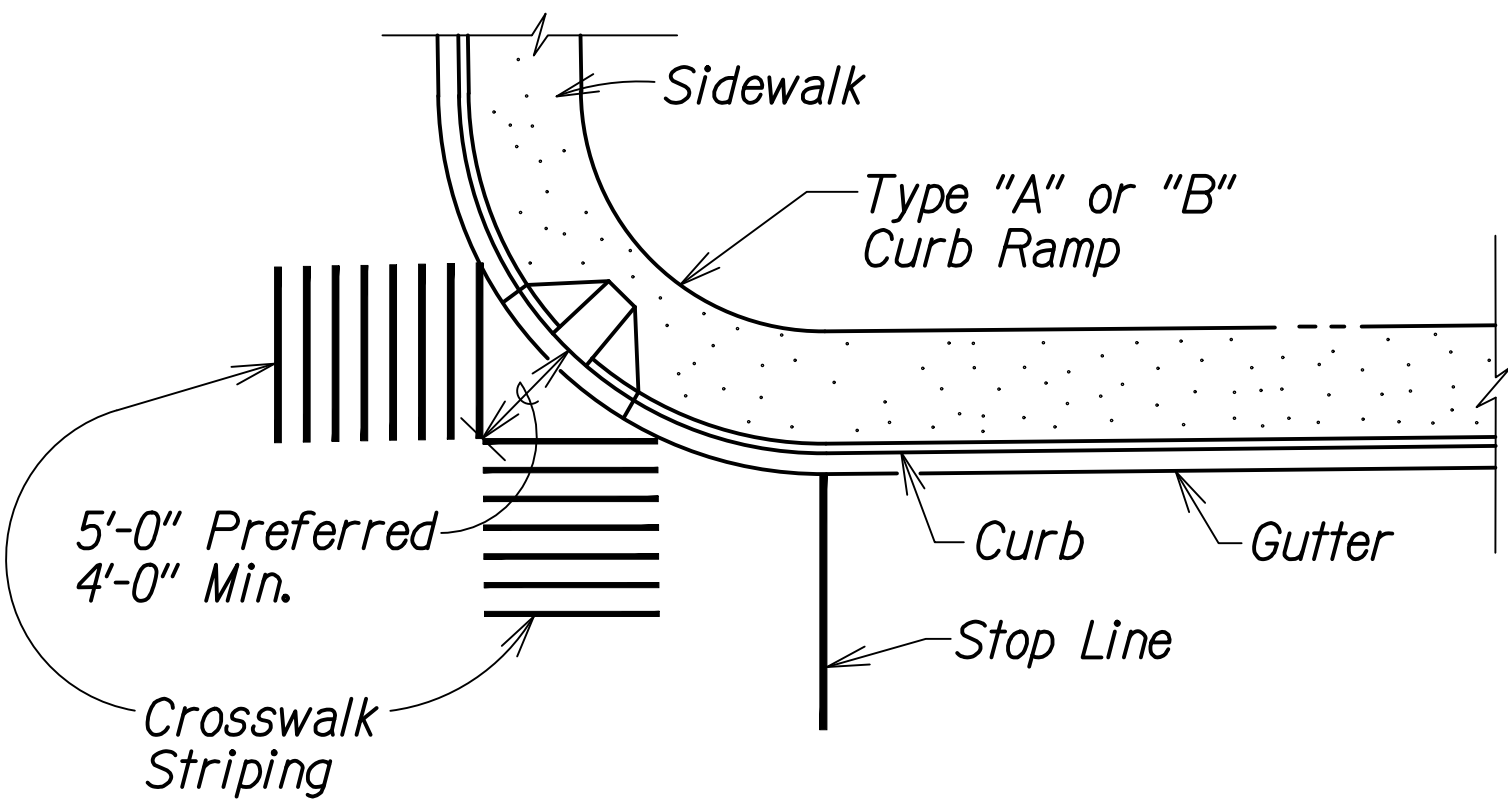


TYPICAL CROSSWALK STRIPING AT CURB RAMP

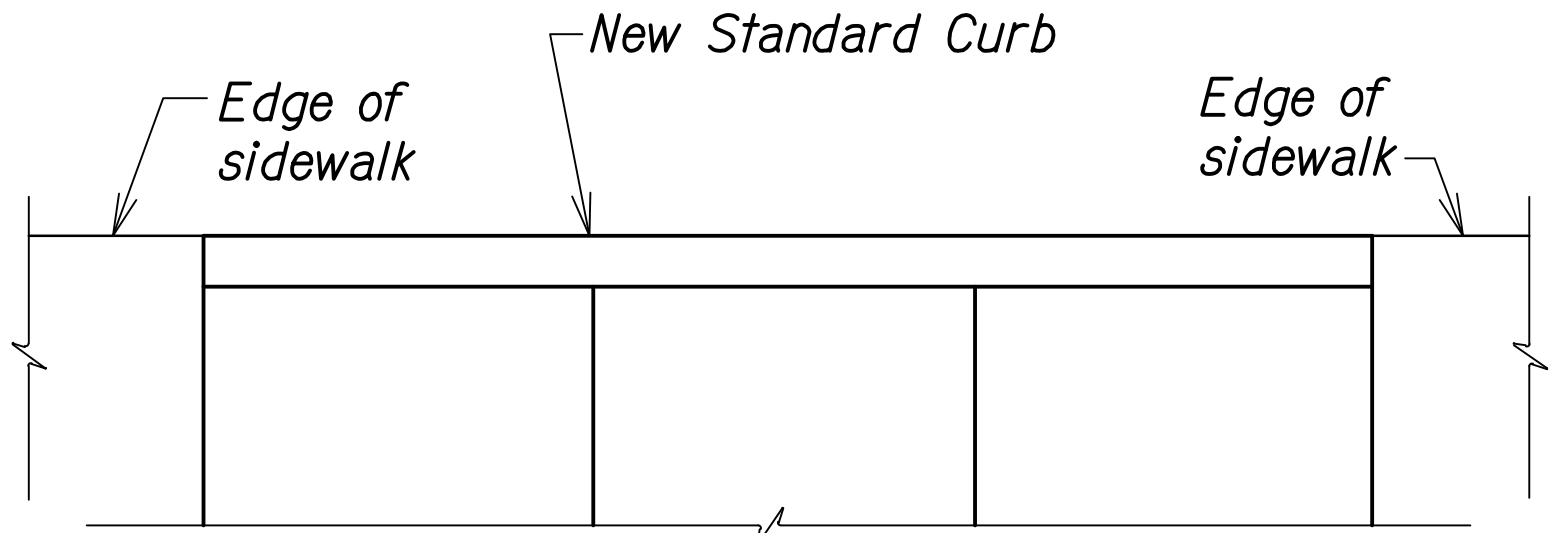


NOTE:
All curb ramps shall be reinforced.

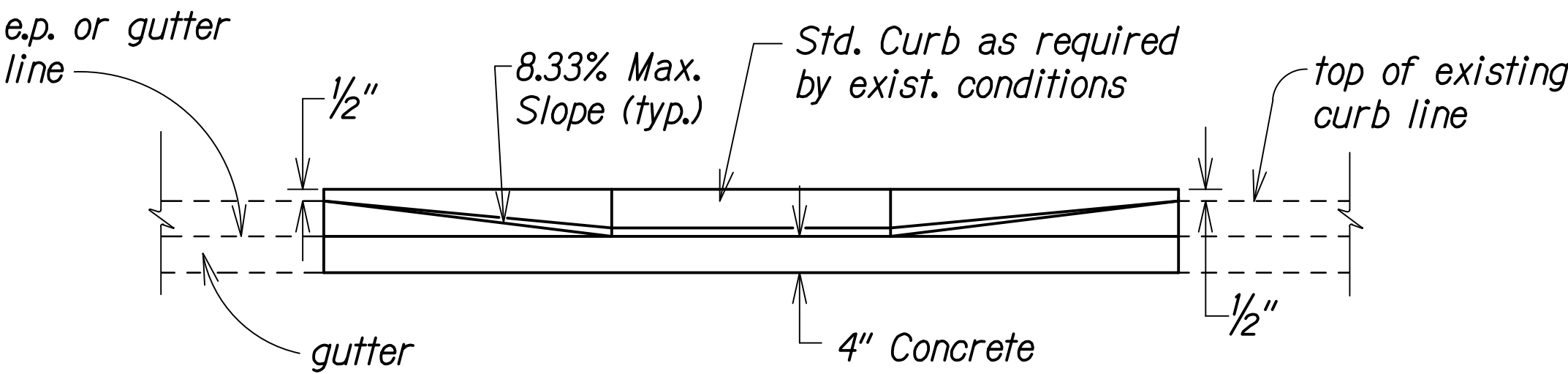
TYPICAL CONSTRUCTION JOINT AT EXISTING SIDEWALK



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.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Joseph R. Salvador

SIGNATURE

EXPIRATION DATE OF THE LICENSE: 04/2022

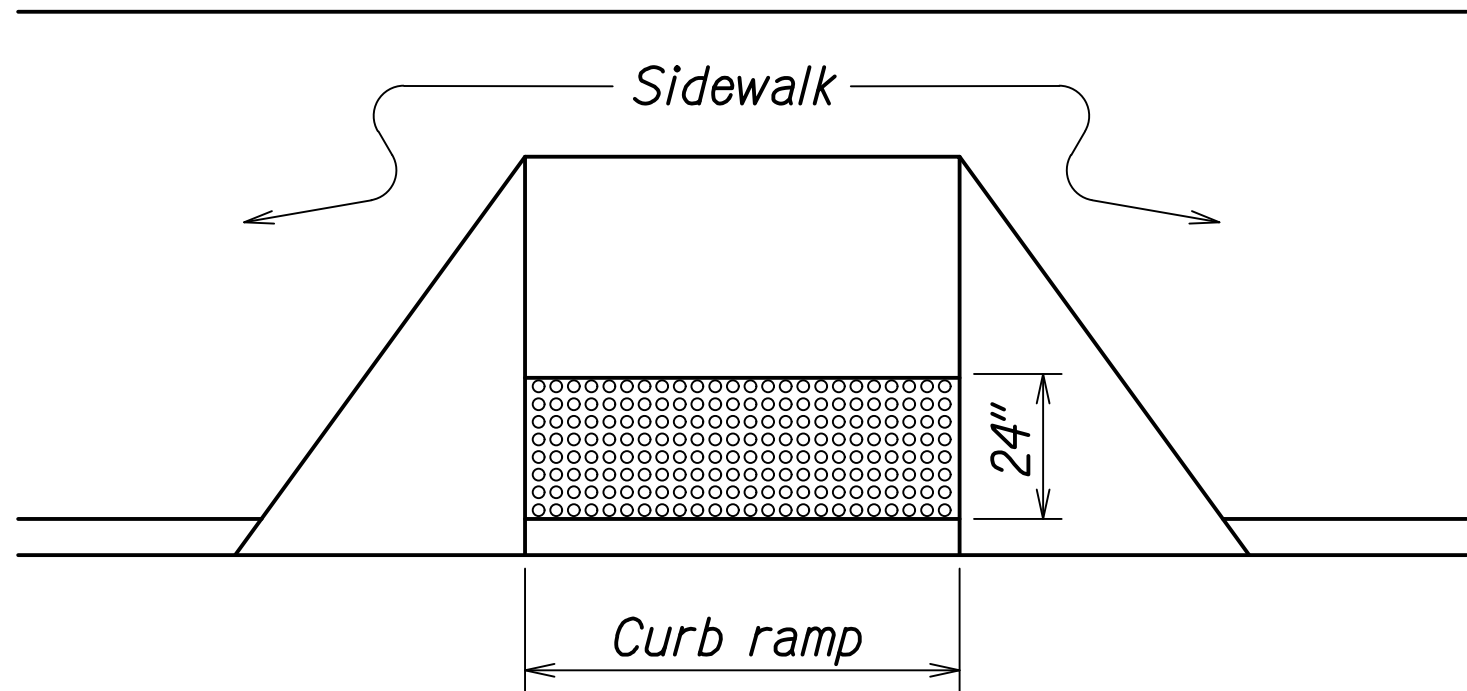
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

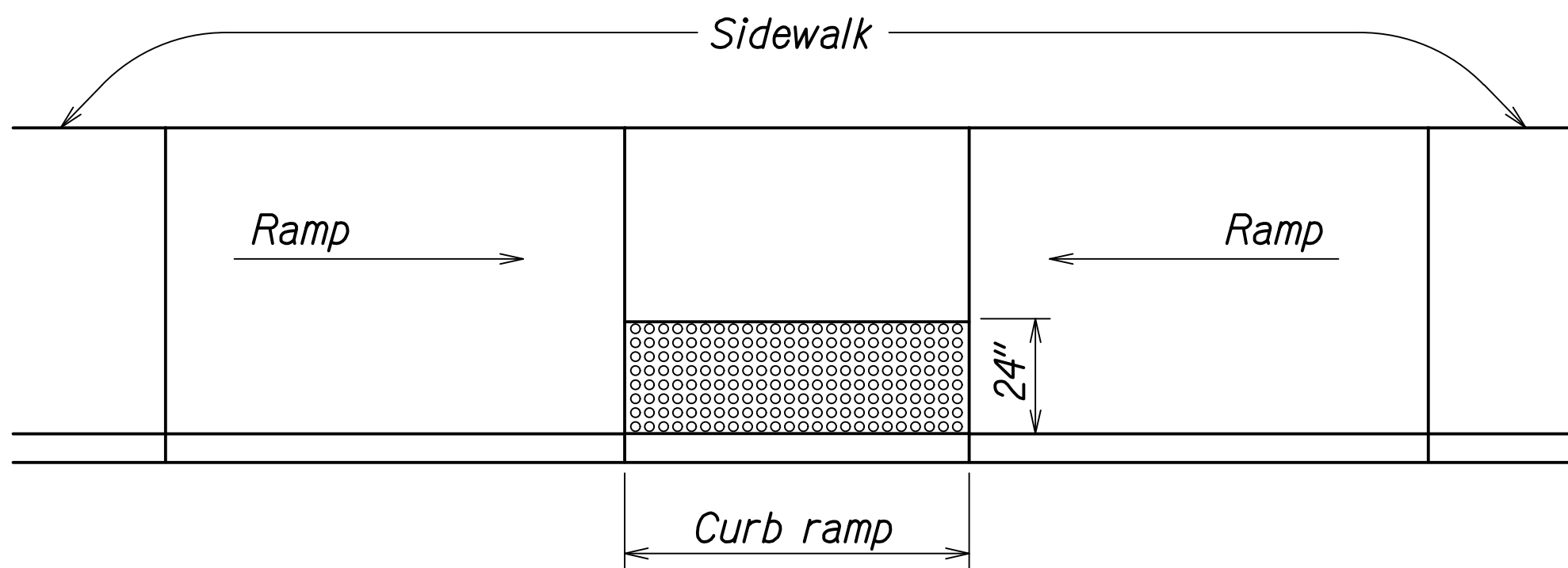
KAMEHAMEHA HIGHWAY
INTERSECTION IMPROVEMENTS
AT KAHAKULI HIGHWAY
Federal-Aid Project No. NH-083-1(082)

Scale: **None** Date: **Sept. 2022**

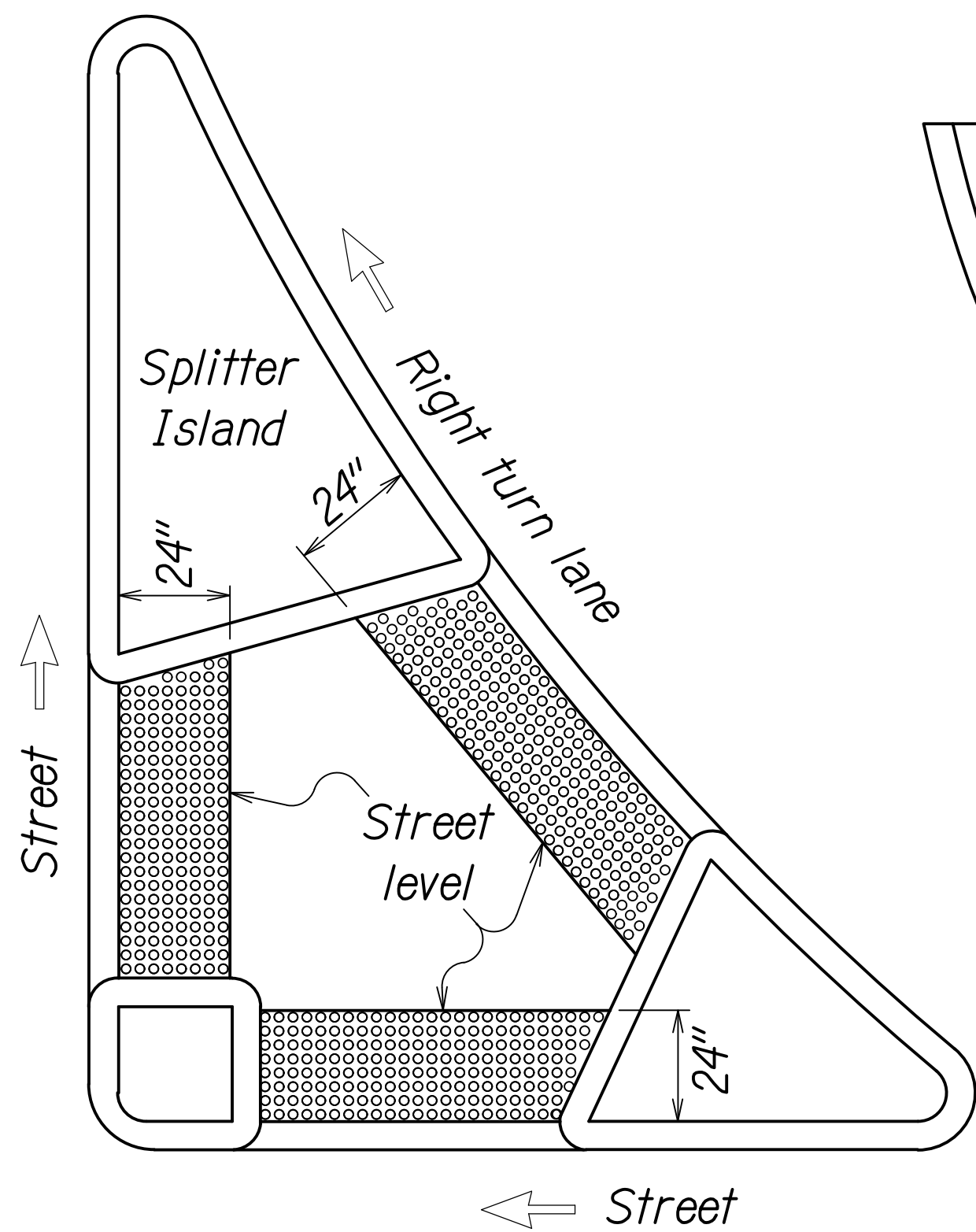
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	45	99



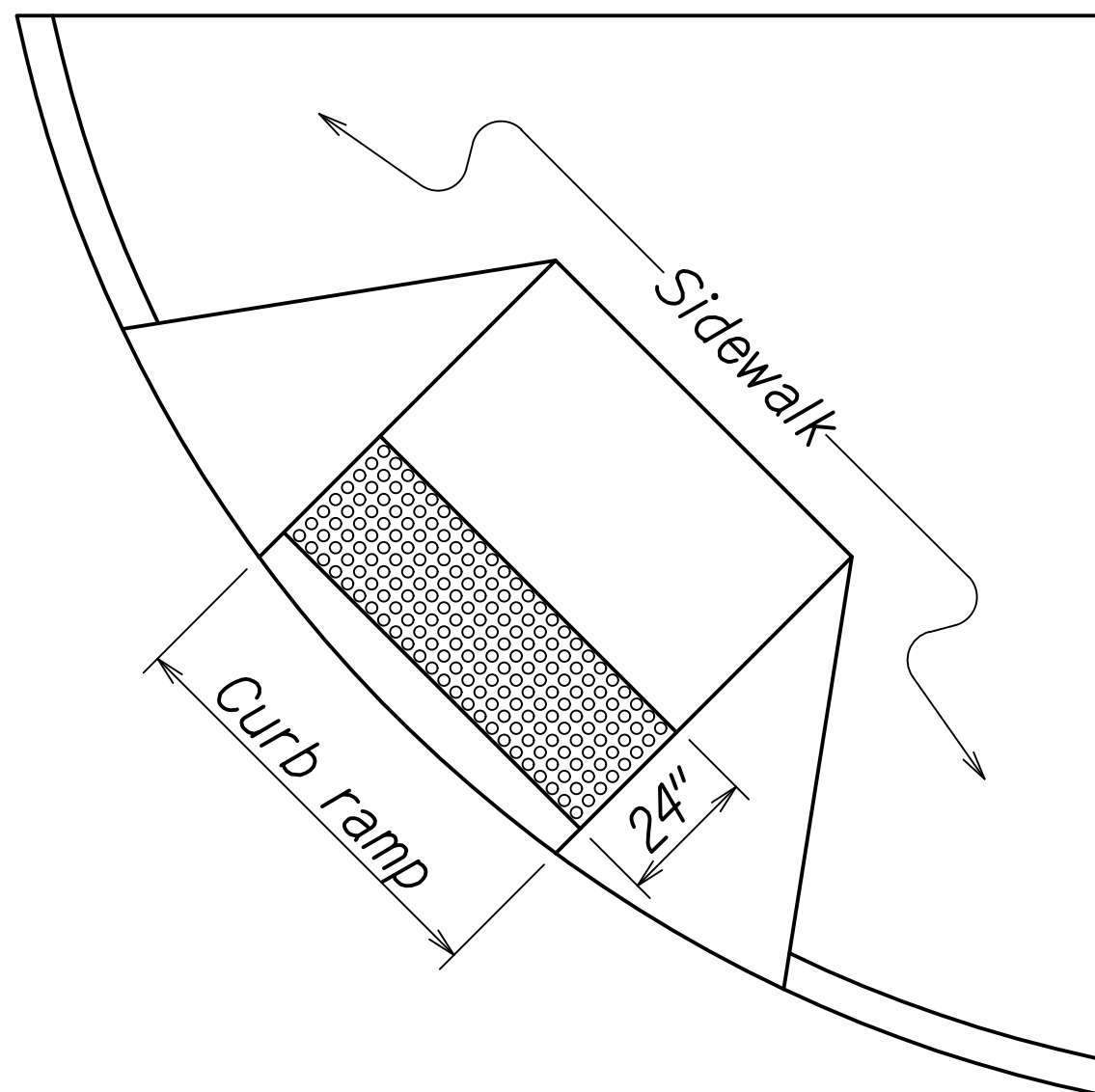
DETECTABLE WARNING AT CURB RAMP



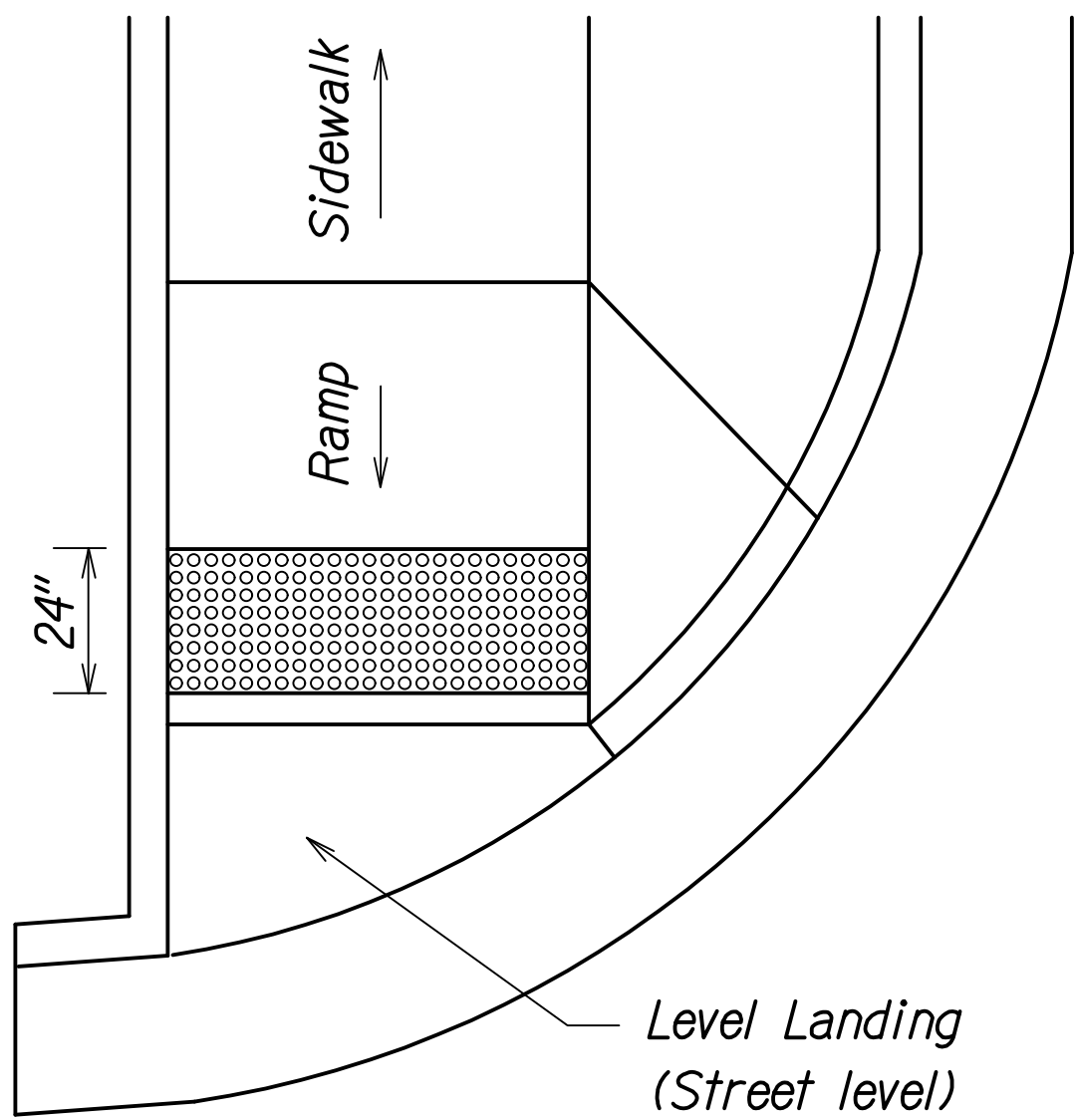
TRANSITION RAMP WITH DETECTABLE WARNING



REFUGE ISLAND WITH
DETECTABLE WARNING



SHARED CURB RAMP WITH
DETECTABLE WARNING



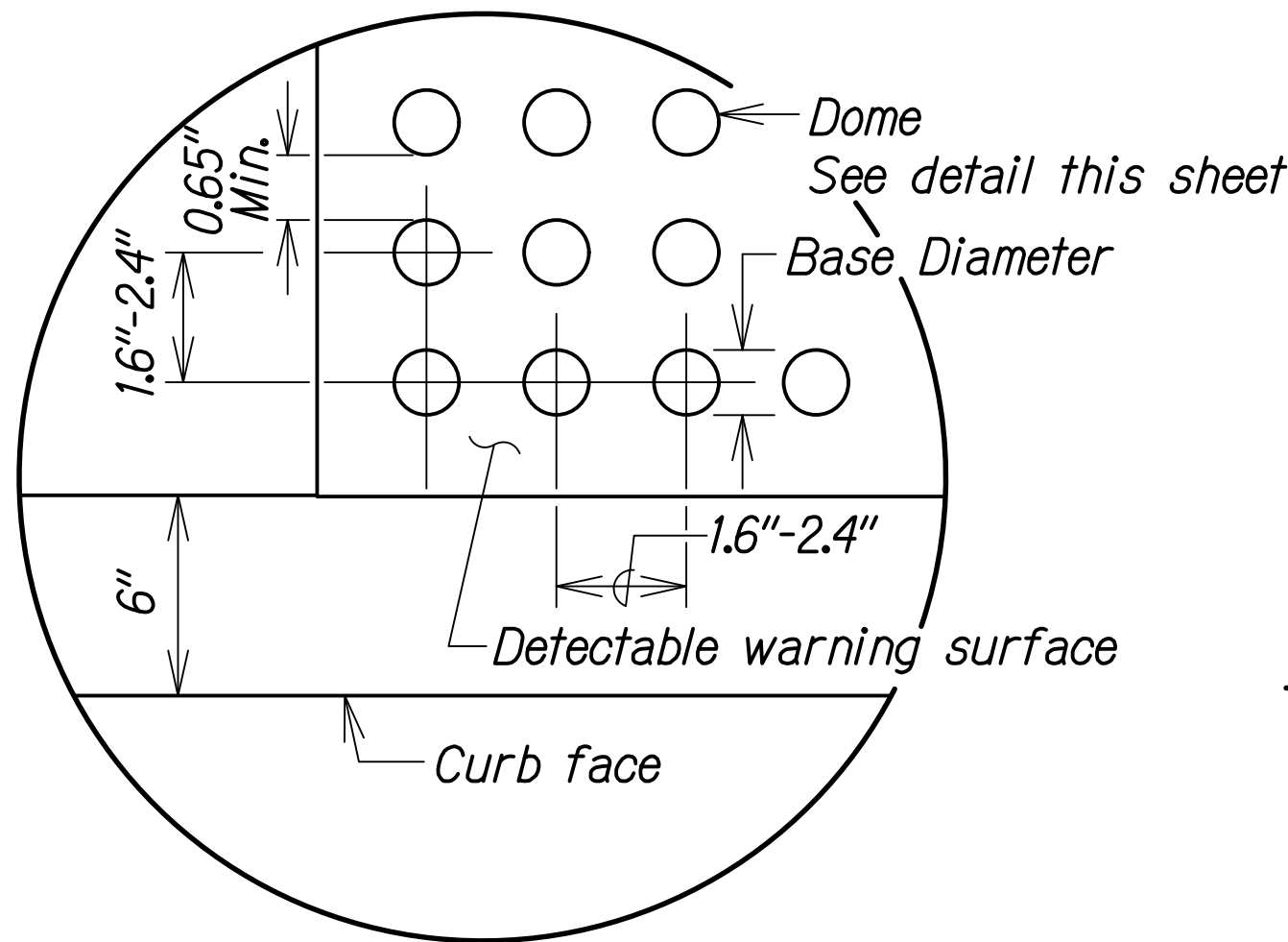
END OF SIDEWALK CURB RAMP WITH
DETECTABLE WARNING

TYPICAL INSTALLATION OF DETECTABLE WARNINGS

Not to Scale

NOTES:

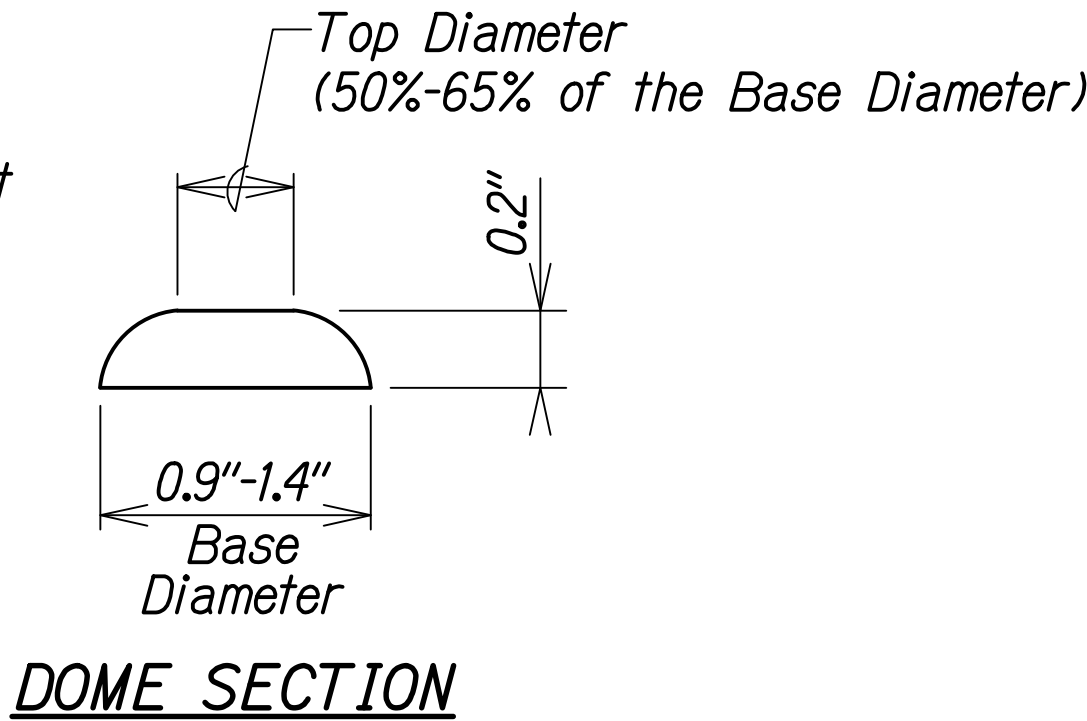
1. Detectable warnings shall be 24 inches in the direction of travel and extend the full width of the curb ramp or flush surface (does not include flares).
2. Truncated domes shall have a diameter of 0.9 to 1.4 inch at the bottom, a diameter of 50%-65% of the base diameter at the top, a height of 0.2 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.



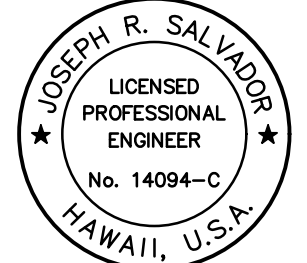
ENLARGEMENT

DETECTABLE WARNING DETAIL

Not to Scale



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

 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. <i>Joseph R. Salvador</i> SIGNATURE EXPIRATION DATE OF THE LICENSE 04/2022	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DETECTABLE WARNING DETAILS KAMEHAMEHA HIGHWAY INTERSECTION IMPROVEMENTS AT KAHAKULI HIGHWAY Federal-Aid Project No. NH-083-1(082) Scale: None Date: Sept. 2022
	SHEET No. CR-7 OF 12 SHEETS

NOTES:

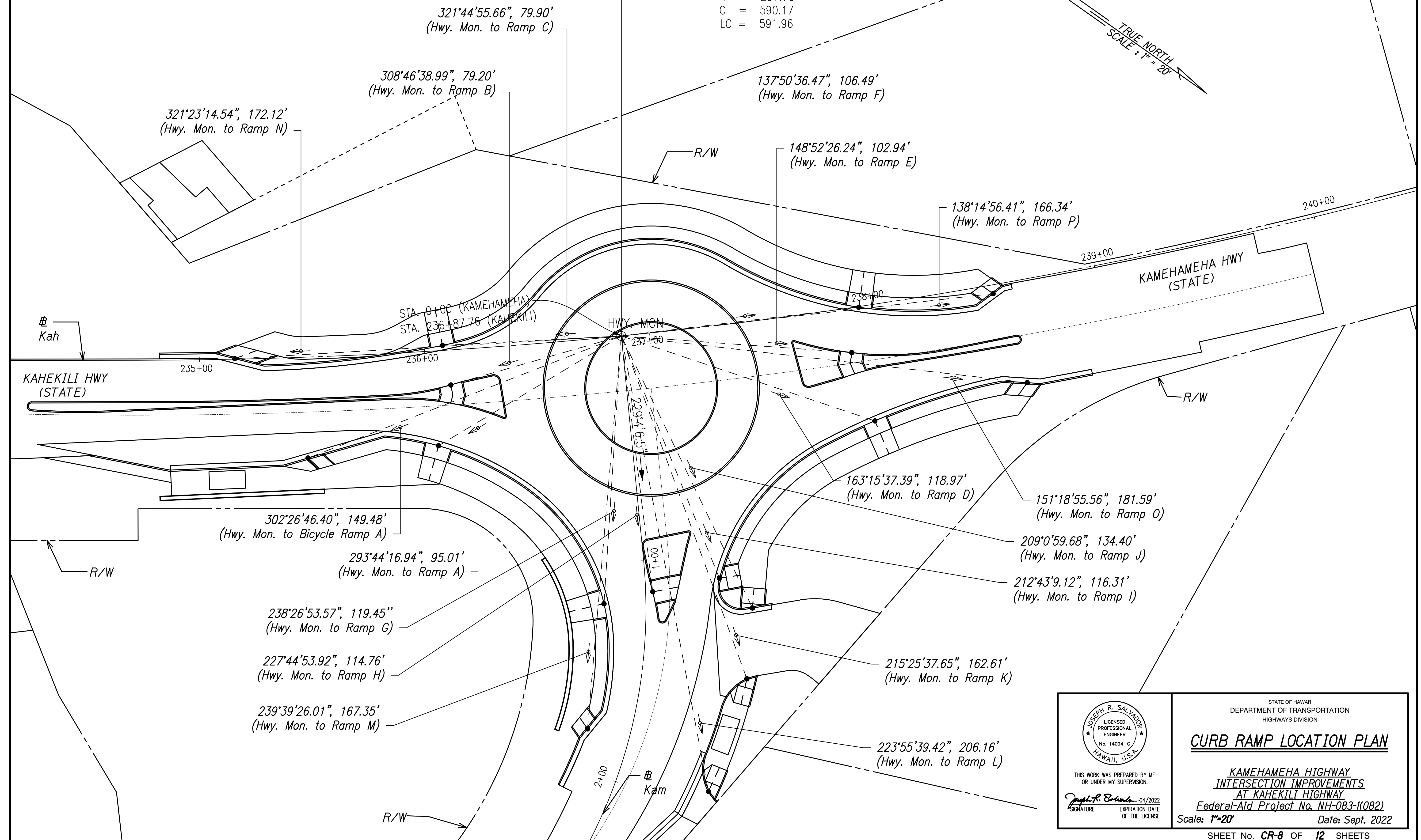
1. All Curb Ramp Controls to Center of Ramp at Face of Curb
2. For Curb Ramp Centerline Alignments See Curb Ramp Spot Elevation Plan

HWY MONUMENT
STA 0+00 (Kamehameha)
STA 236+87.76 (Kahekili)

BASELINE CURVE DATA

Δ = 15°25'
 $\Delta/2$ = 7°42'30"
R = 2200.00
T = 297.78
C = 590.17
LC = 591.96

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	46	99



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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Joseph R. Salvador 04/2022
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

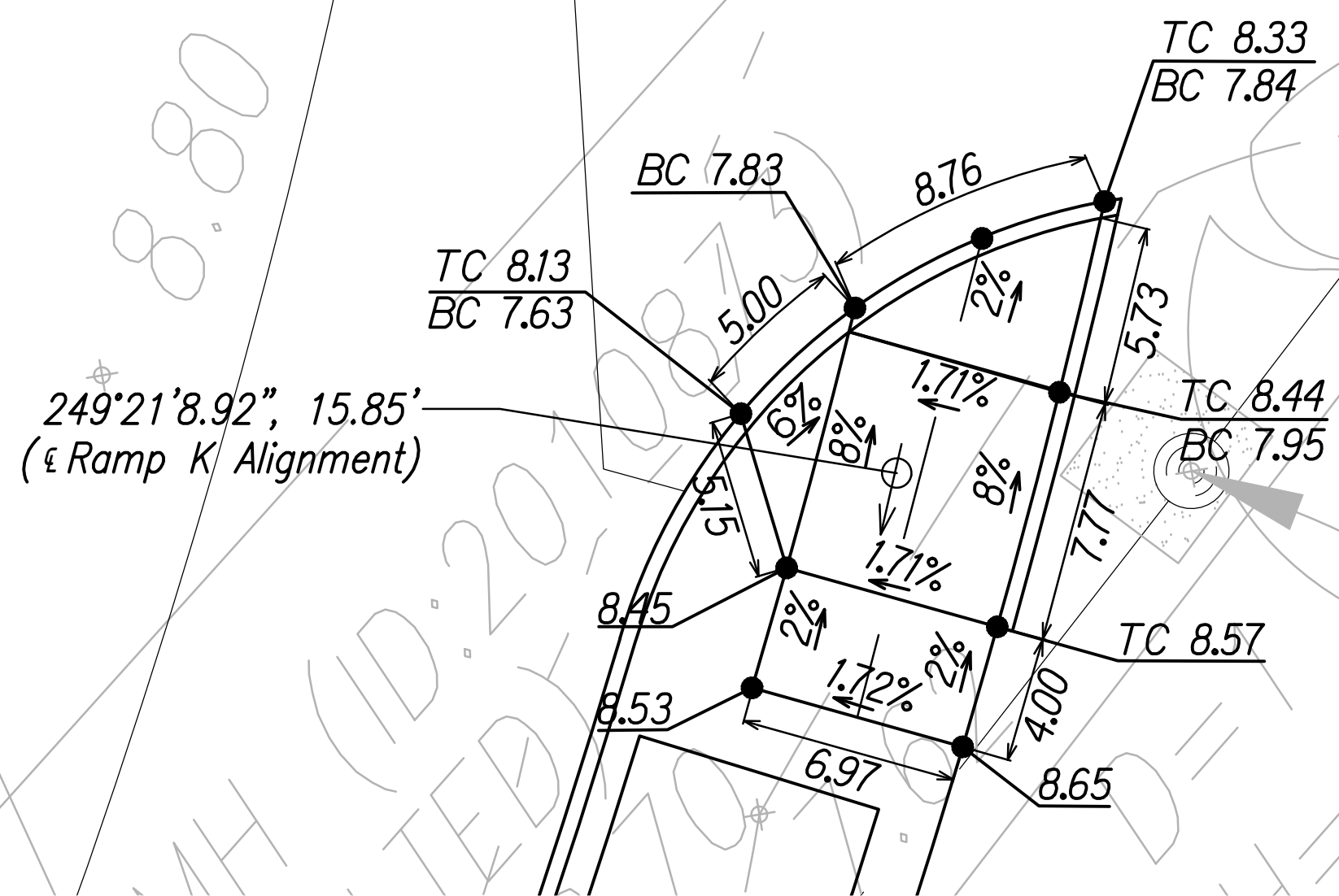
CURB RAMP LOCATION PLAN

**KAMEHAMEHA HIGHWAY
INTERSECTION IMPROVEMENTS
AT KAHAKILI HIGHWAY**
Federal-Aid Project No. NH-083-1(082)

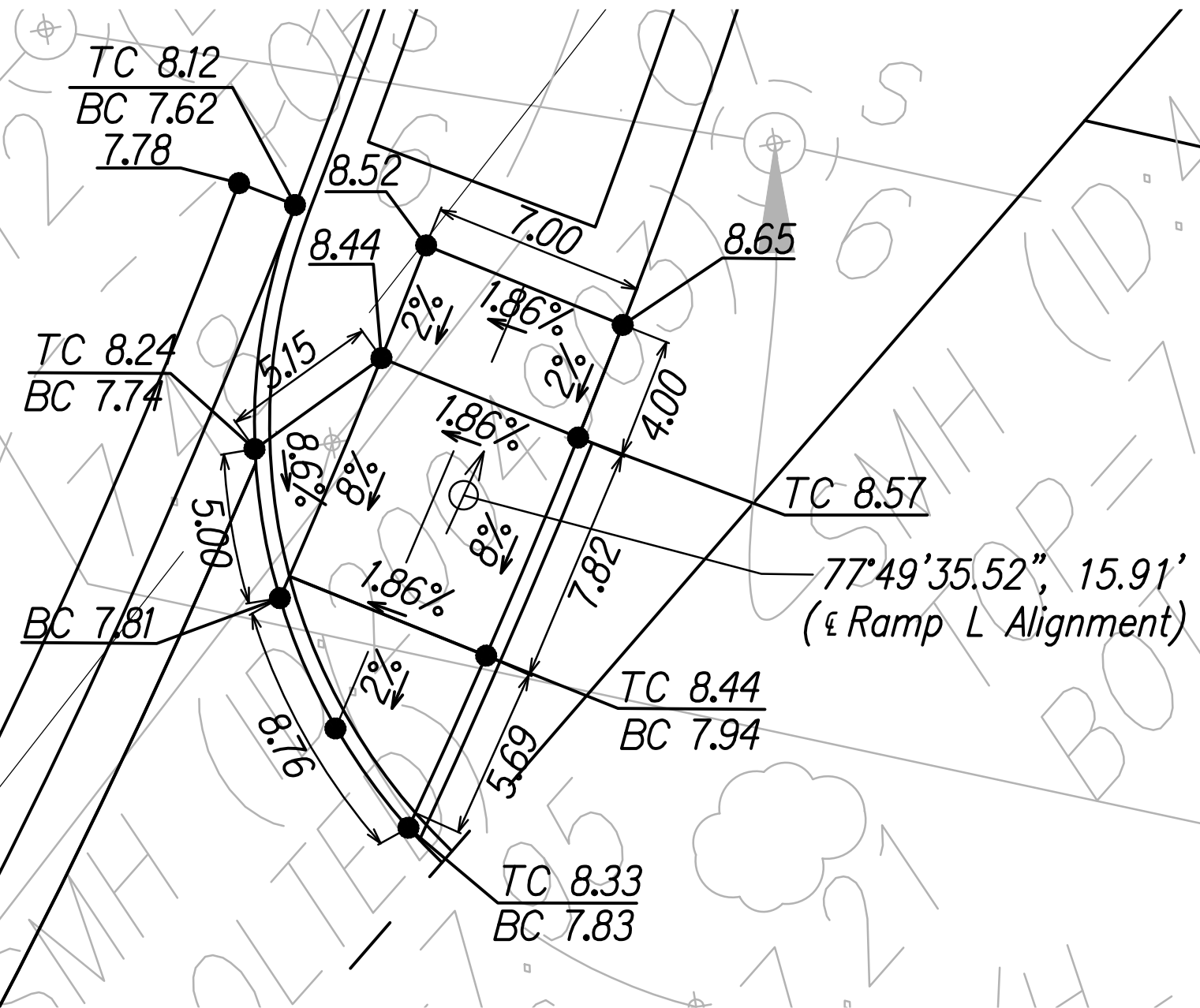
Scale: 1"=20' Date: Sept. 2022

SHEET No. **CR-8** OF **12** SHEETS

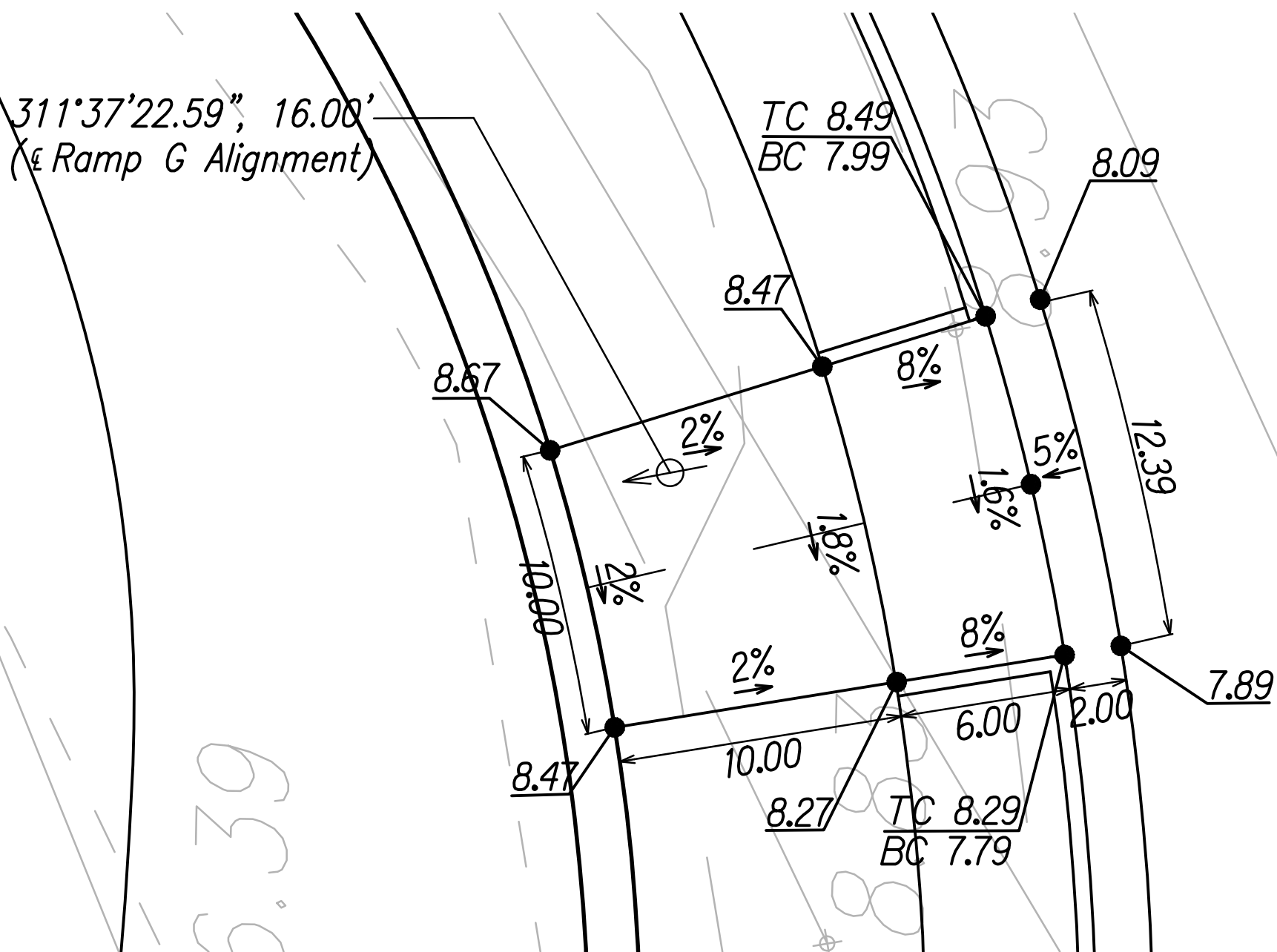
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	48	99



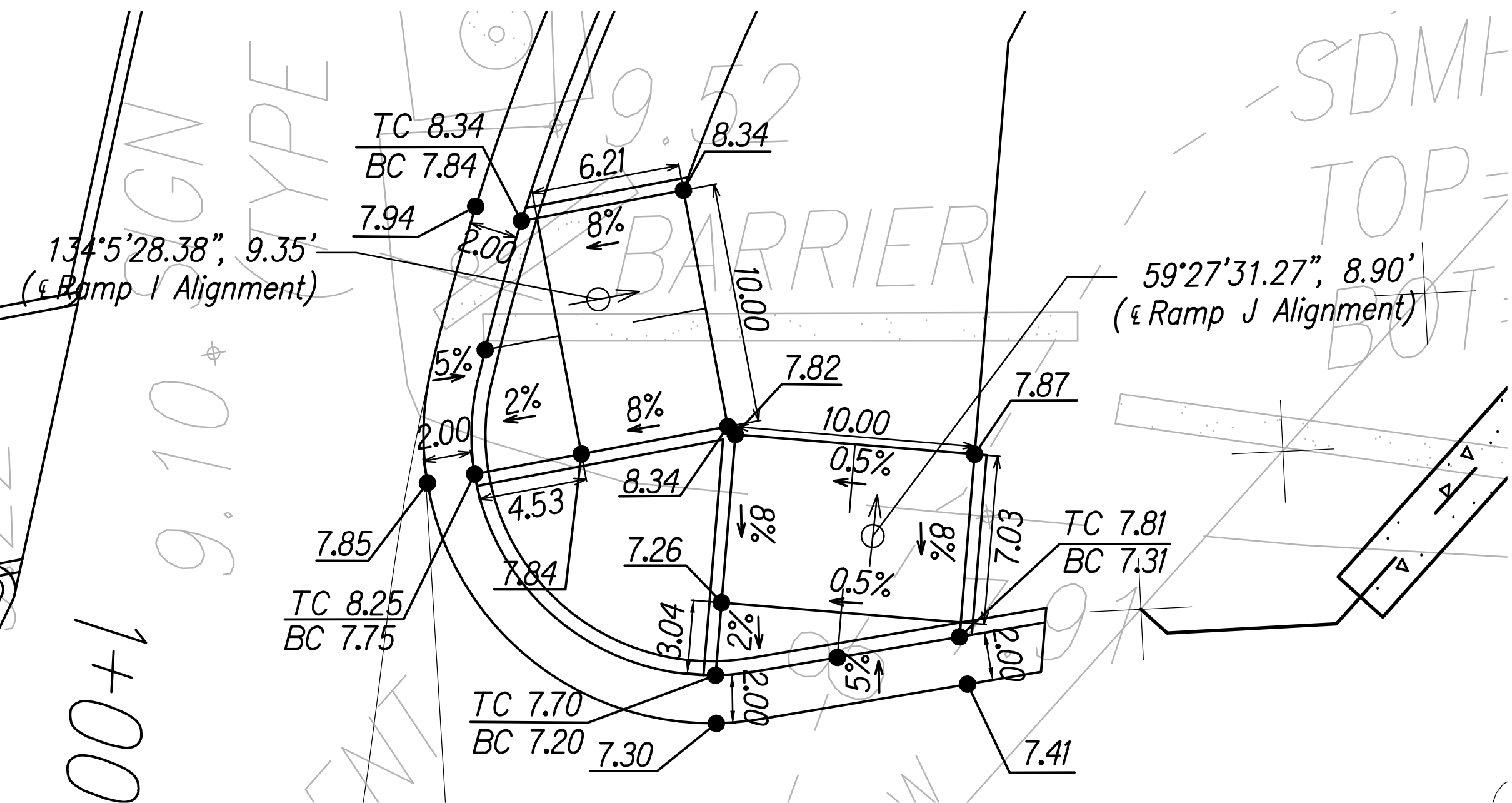
CURB RAMP K - TYPE "COMBINATION"
Scale: 1"=5'



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



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



CURB RAMP I & J - TYPE "COMBINATION"
Scale: 1"=5'

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

JOSEPH R. SALVADOR
LICENSED PROFESSIONAL ENGINEER
No. 14094-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Joseph R. Salvador 04/2022
SIGNATURE EXPIRATION DATE OF THE LICENSE

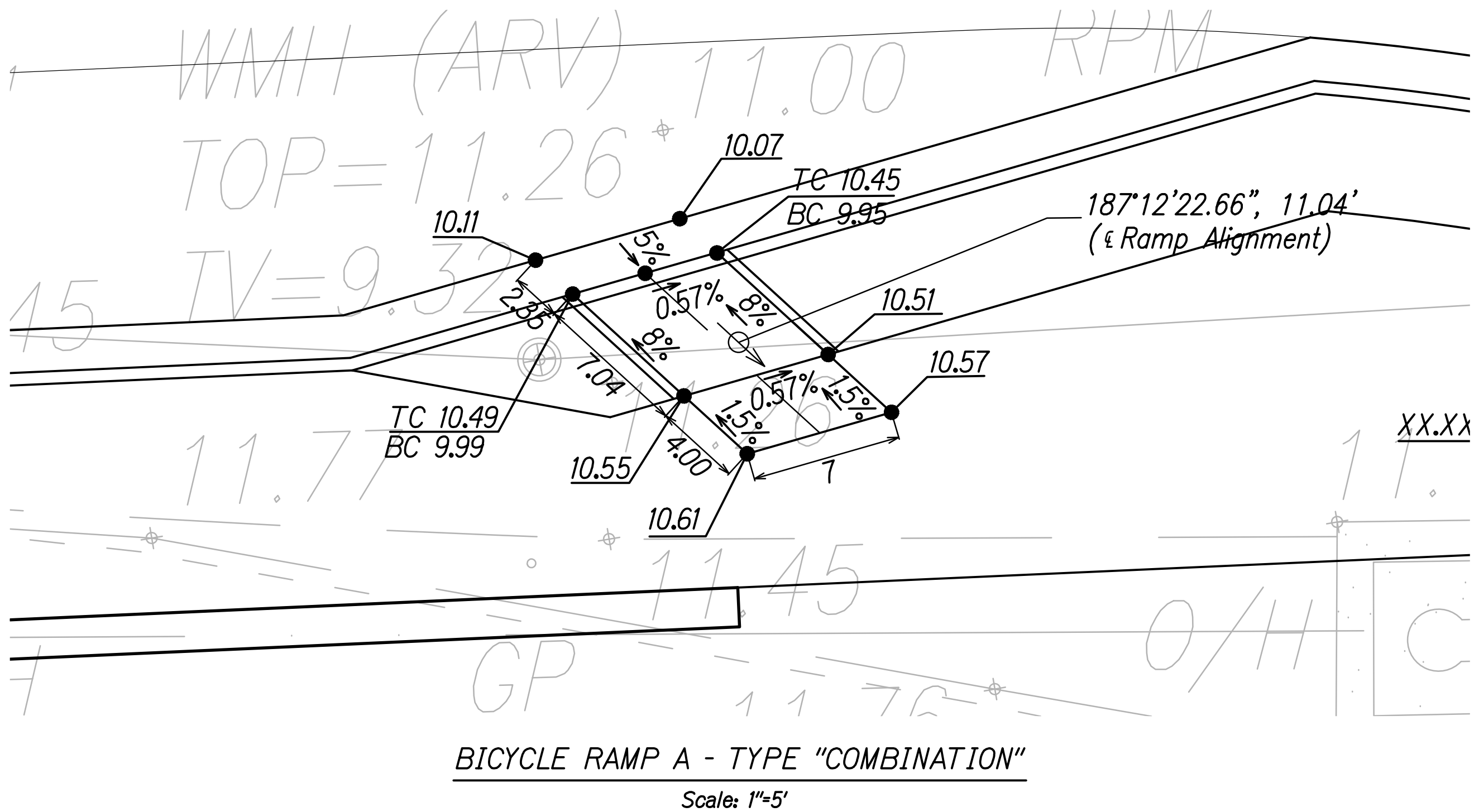
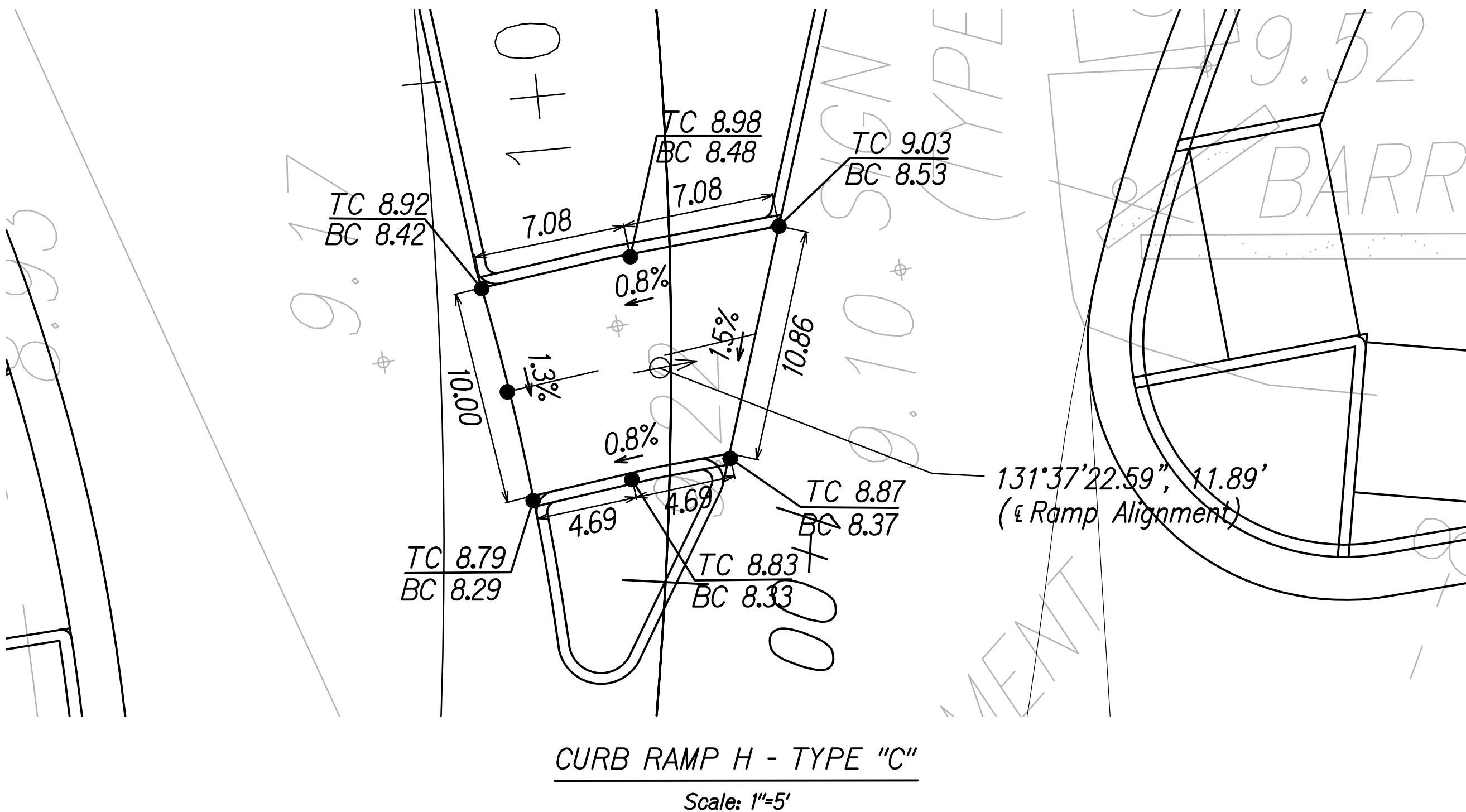
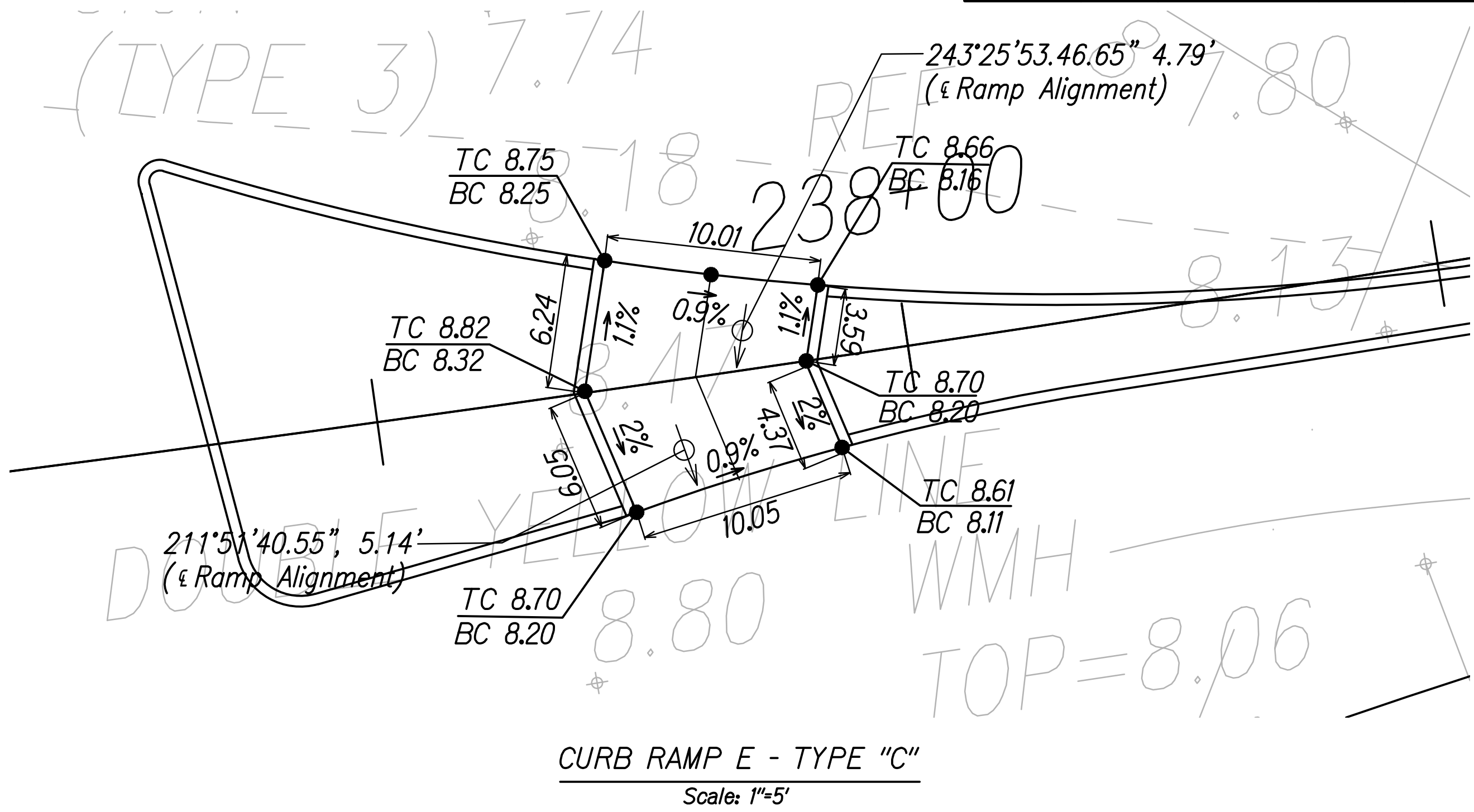
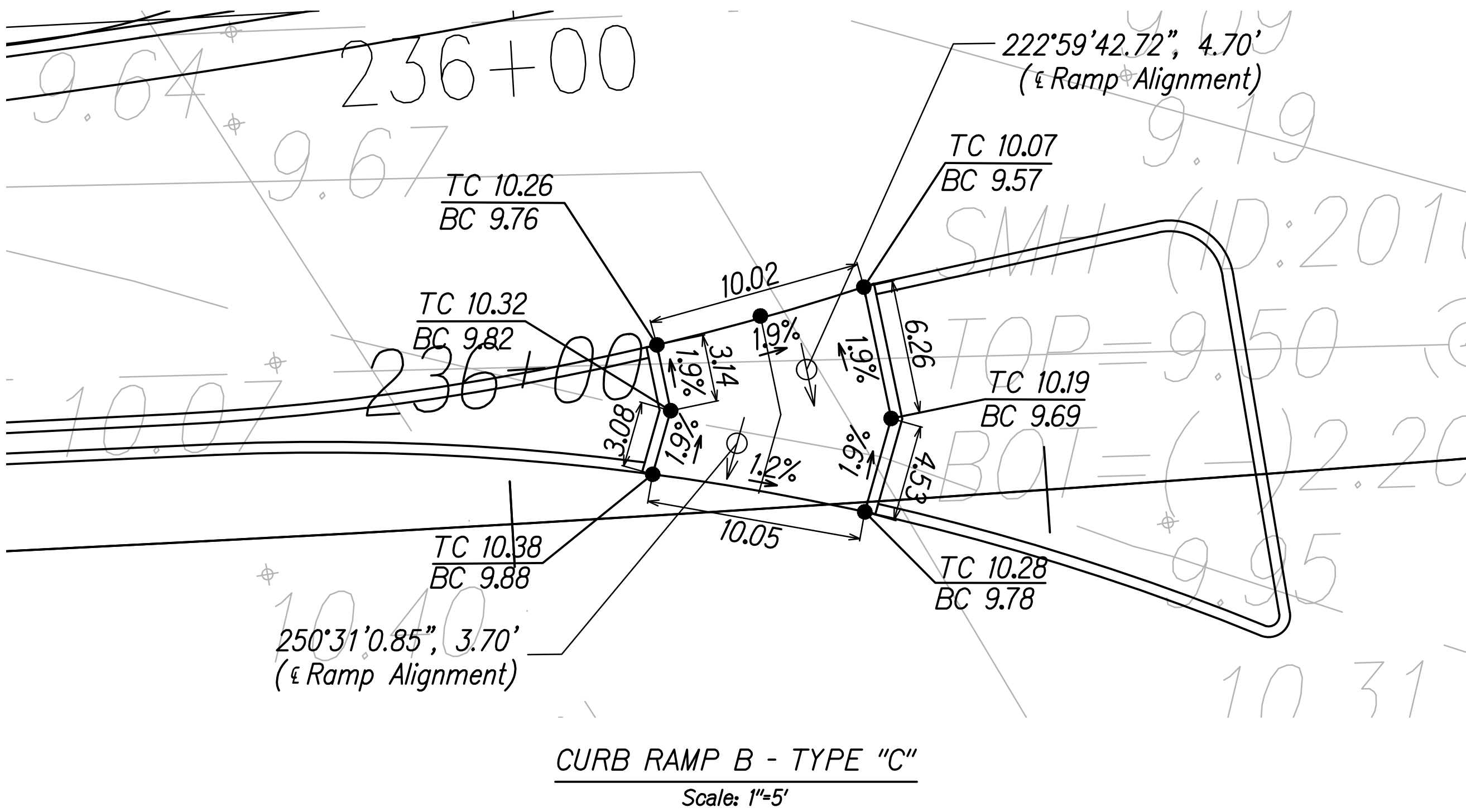
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP PLAN - 2

KAMEHAMEHA HIGHWAY
INTERSECTION IMPROVEMENTS
AT KAHAKILI HIGHWAY
Federal-Aid Project No. NH-083-1(082)

Scale: 1"=5' Date: Sept. 2022

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(082)	2022	49	99



DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
No.	_____

JOSEPH R. SALVADOR
LICENSED PROFESSIONAL ENGINEER
No. 14094-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Joseph R. Salvador 04/2022
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP PLAN - 3

KAMEHAMEHA HIGHWAY
INTERSECTION IMPROVEMENTS
AT KAHAKILI HIGHWAY
Federal-Aid Project No. NH-083-1(082)

Scale: 1"=5' Date: Sept. 2022

