

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|---------------|-------------|-----------|--------------|
| HAWAII | HAW. | CMAQ-0300(87) | 2003 | 8 | 145 |

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 (minimum 6-inch thick) 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.
22. The longitudinal slope for transition sections shall be 8% maximum, except where the longitudinal slope of the transition matches the longitudinal slope of the roadway.

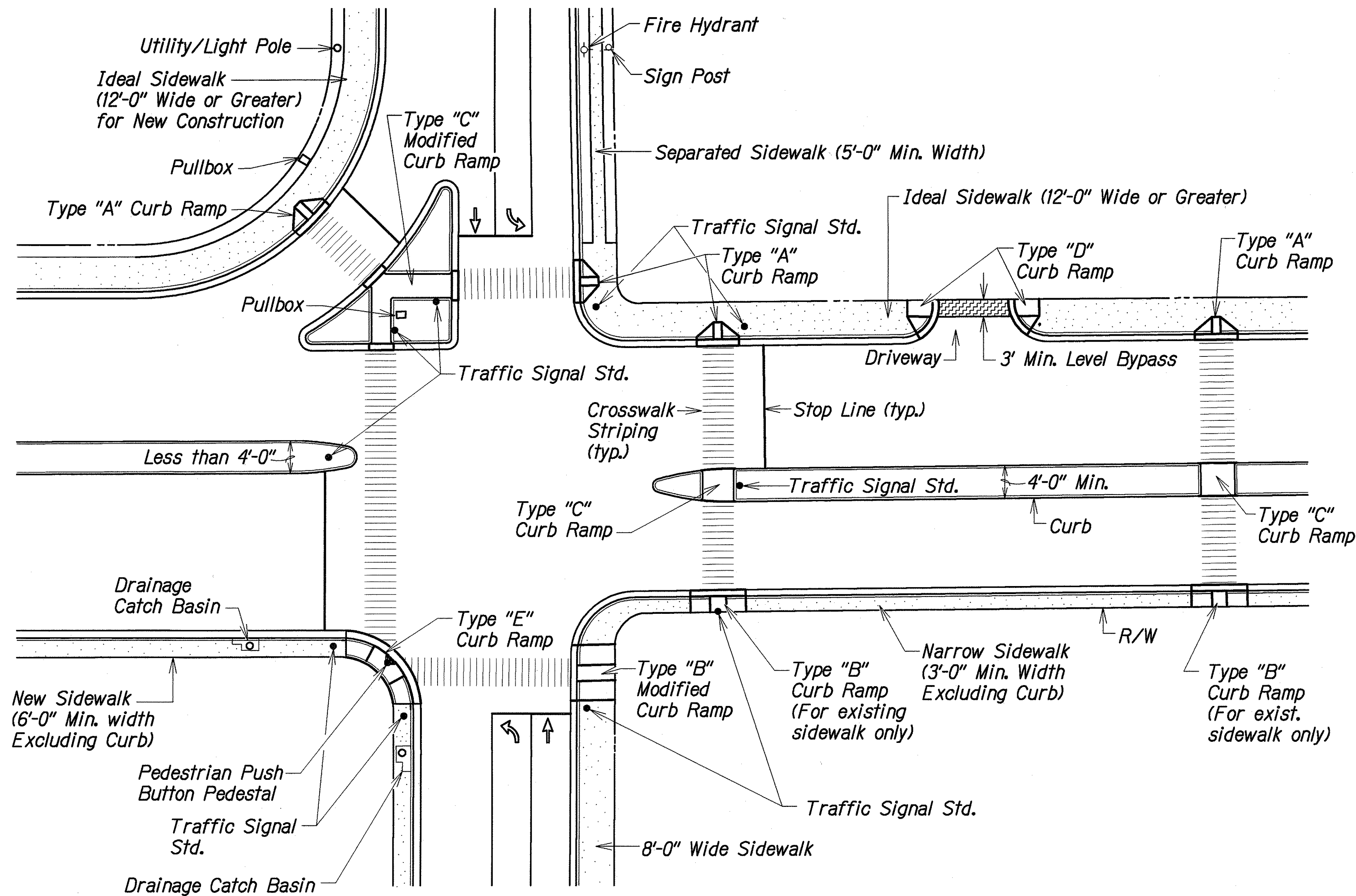
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY JAL/CH | AUG-2002 |
| N. | DESIGNED BY KIL/CGL/DS | AUG-2002 |
| | CHECKED BY | |

td1/usr2/traffic/std/curbrampnote.dgn

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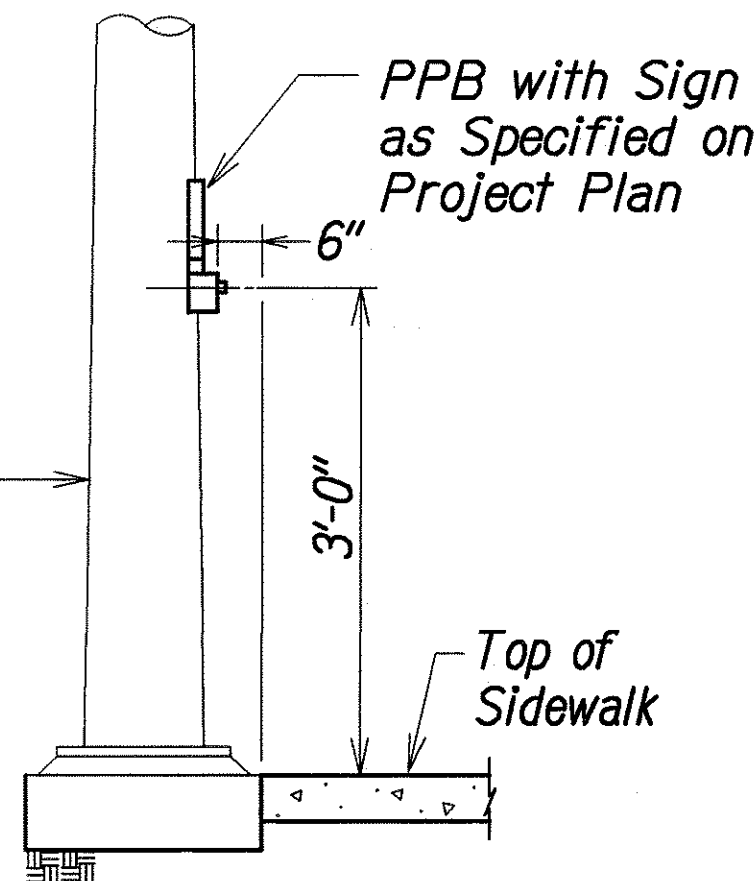
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| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION |
| <u>CURB RAMP AND SIDEWALK NOTES</u> |
| <u>Pedestrian Facilities and ADA Compliance</u> |
| <u>At Various Locations on Oahu, Phase II</u> |
| <u>Federal Aid Project No.</u> |
| Date: AUGUST 2002 |
| SHEET No. 8 OF 145 SHEETS |

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| HAWAII | HAW. | CMAQ-0300(87) | 2003 | 9 | 145 |

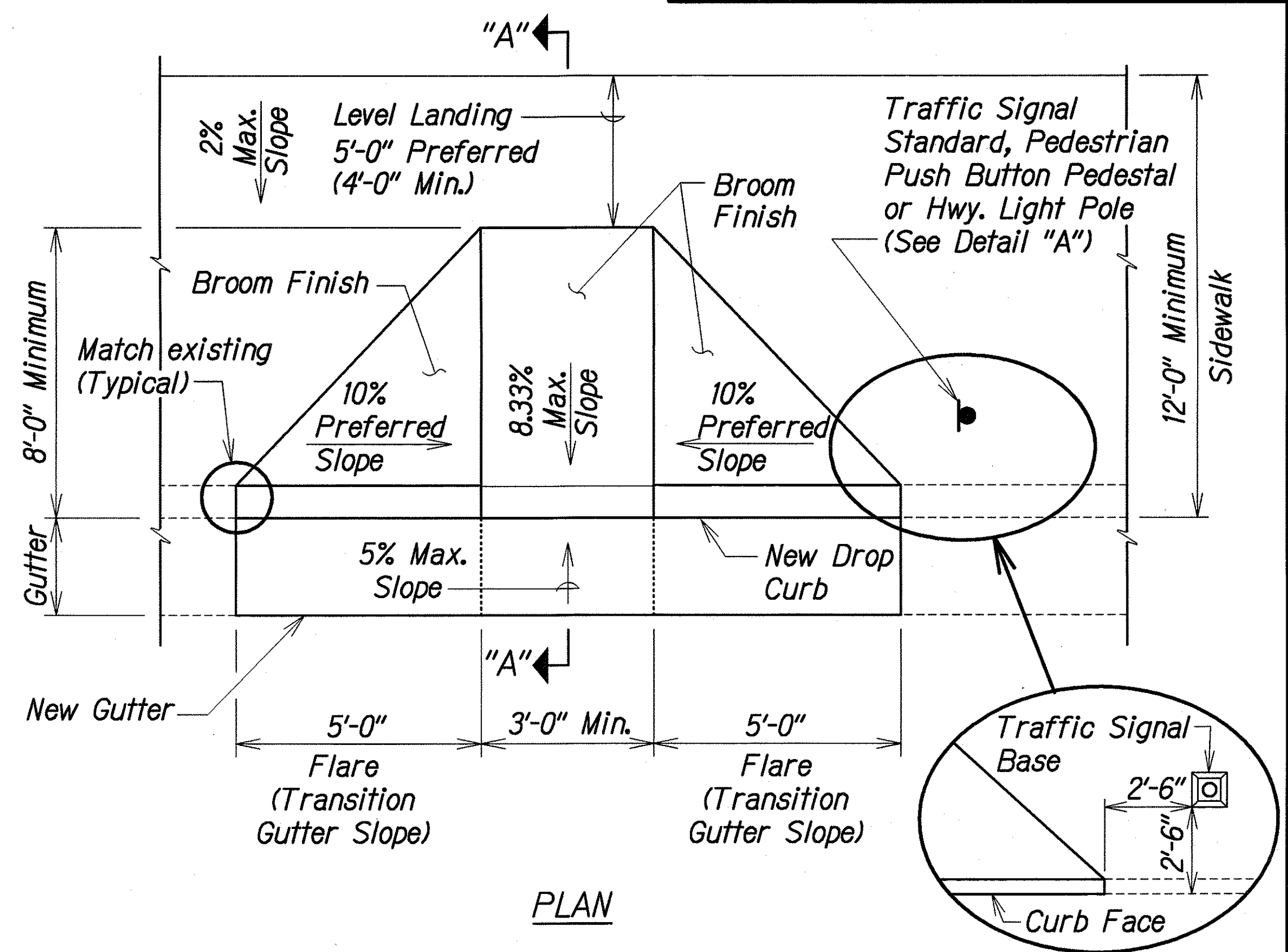


TYPICAL CURB RAMPS

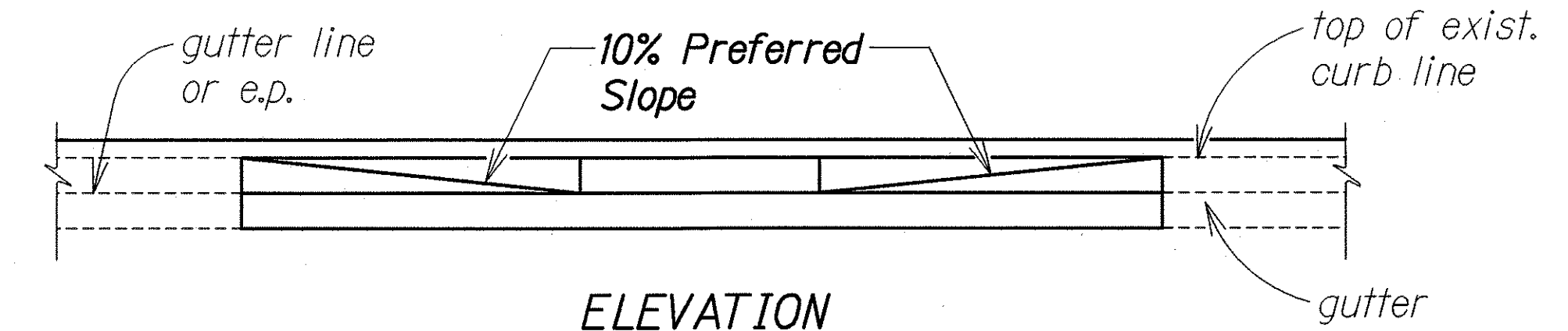
Type I, II, III TSS,
Pedestrian Push Button
Pedestal or Hwy. Light Pole



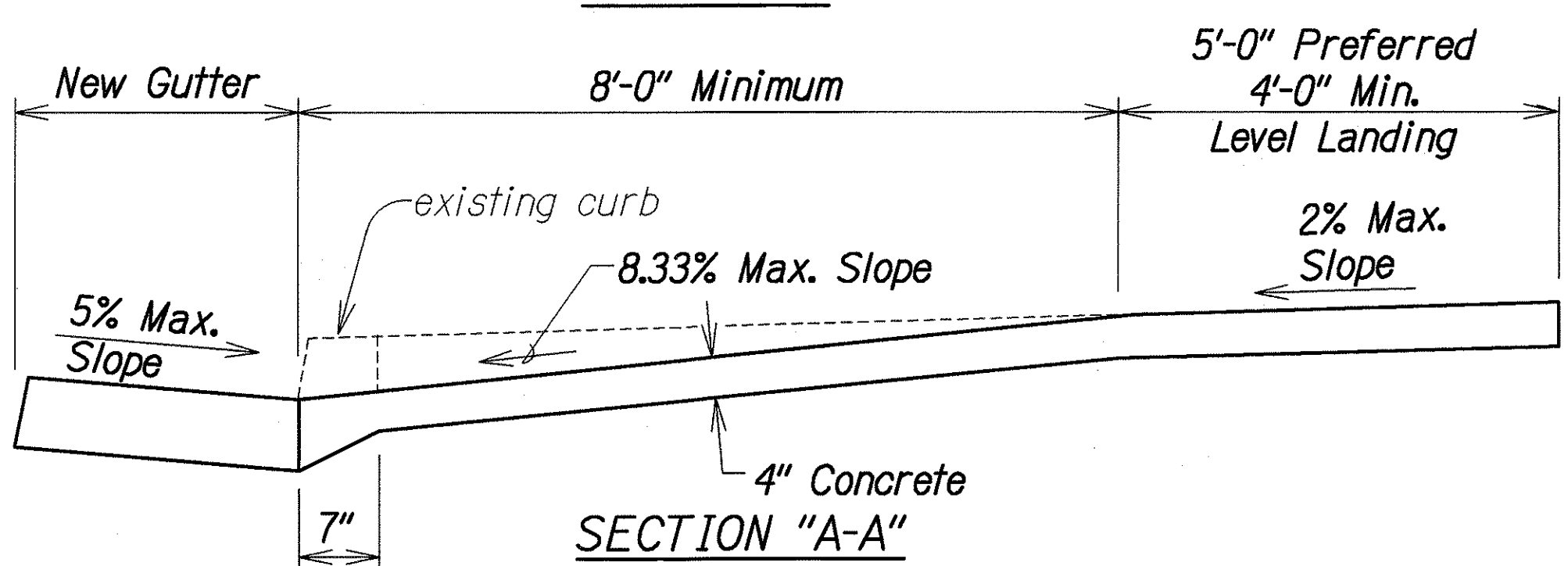
DETAIL "A"



PLAN



ELEVATION



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

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CURB RAMP DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE

At Various Locations On Oahu, Phase II

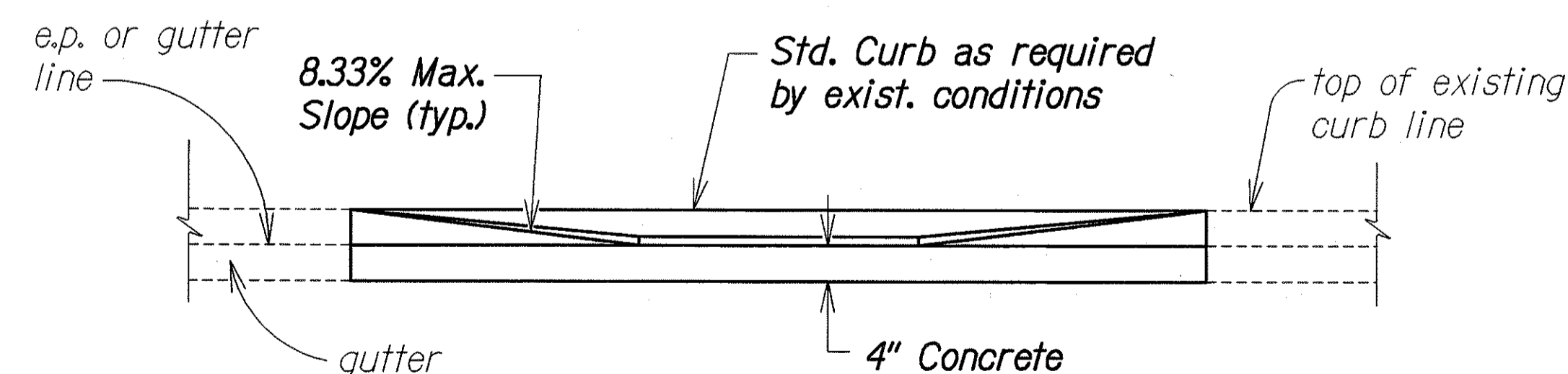
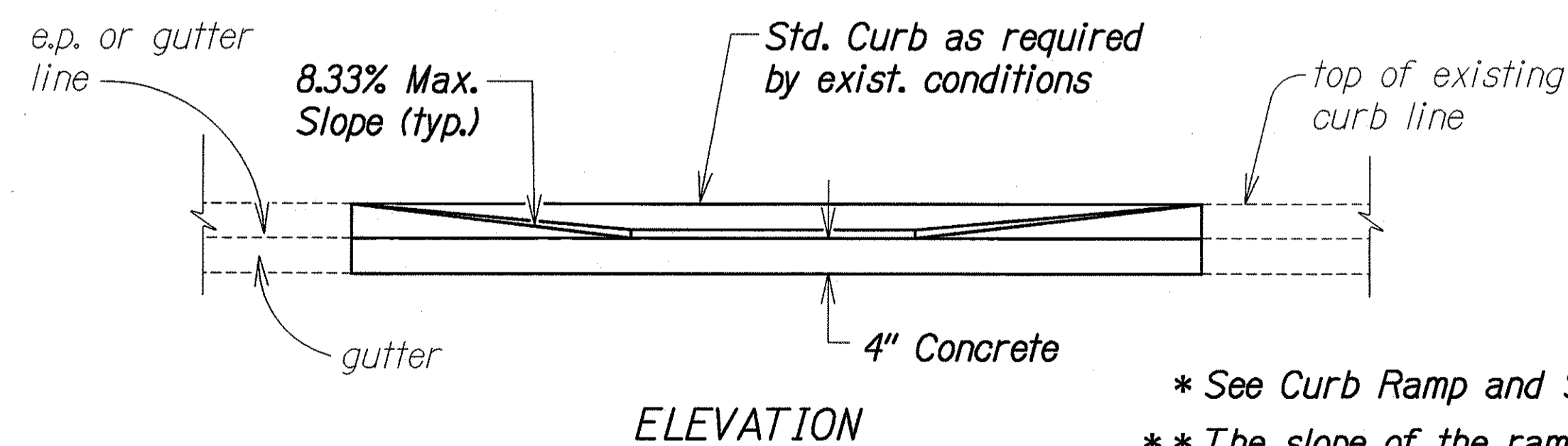
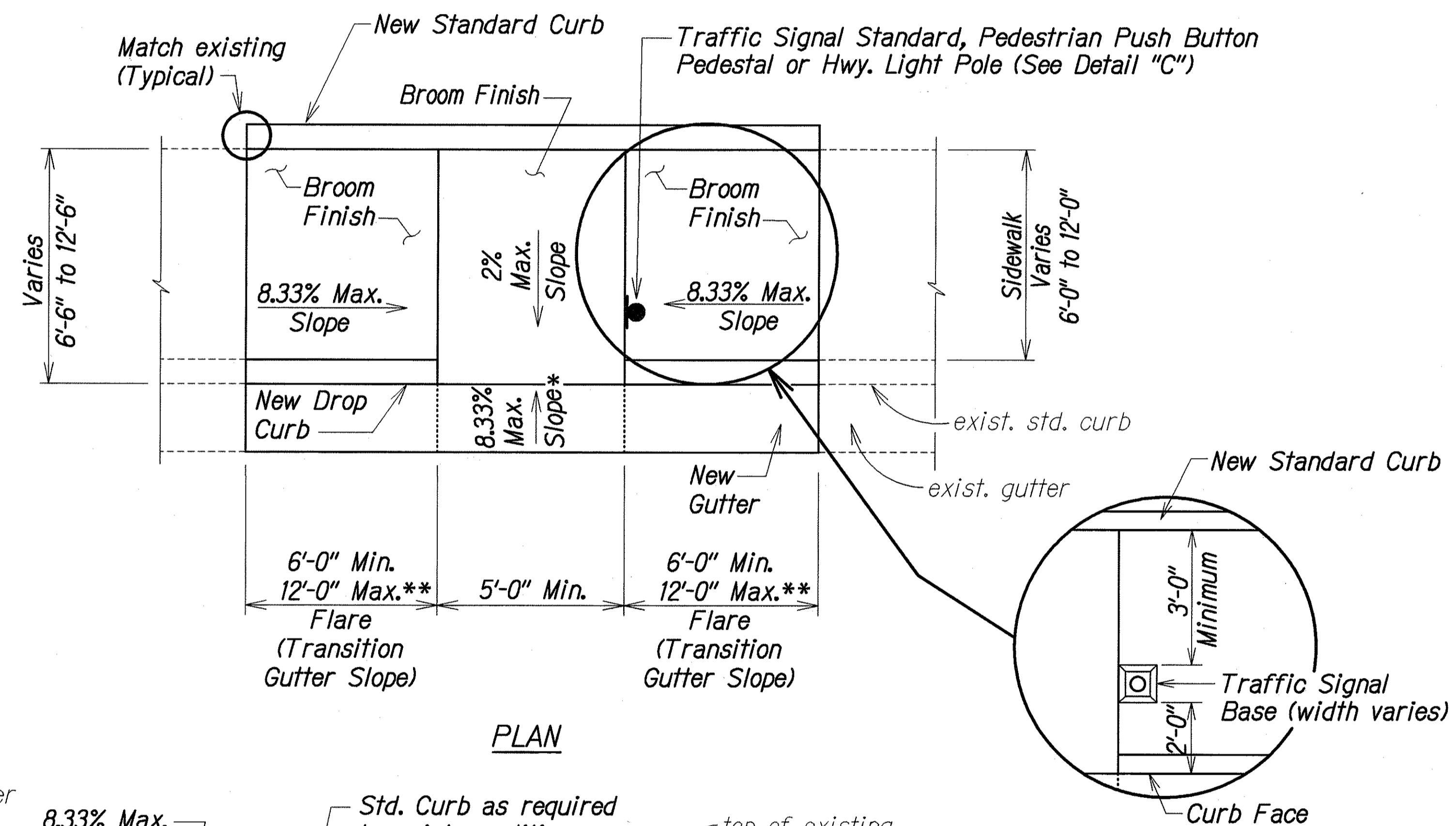
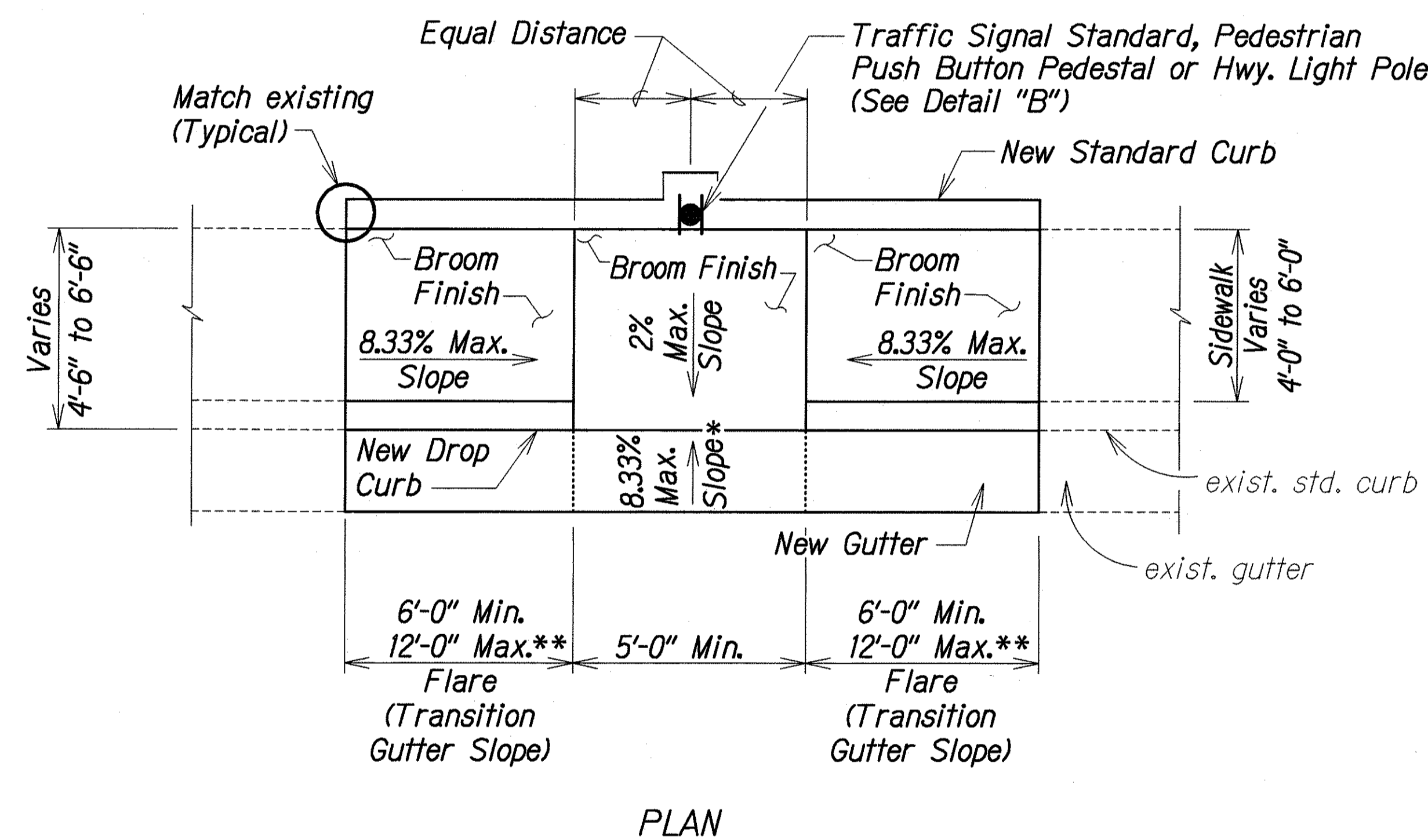
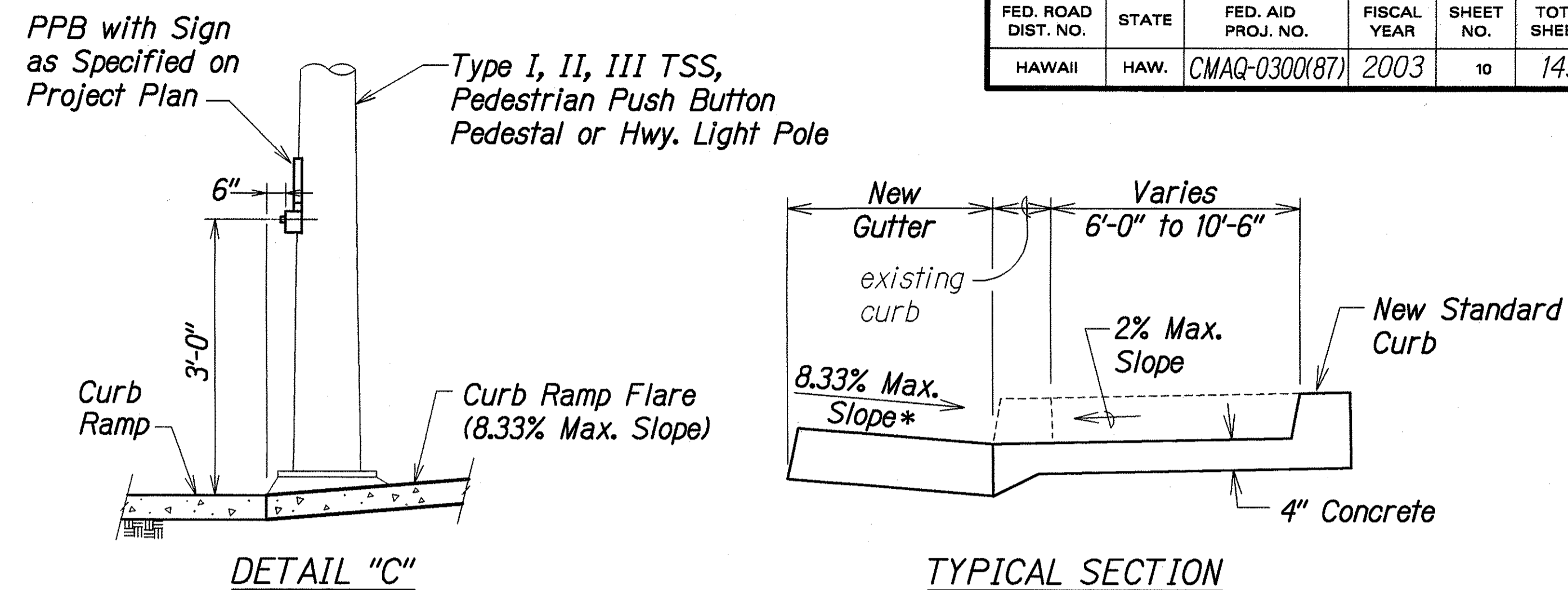
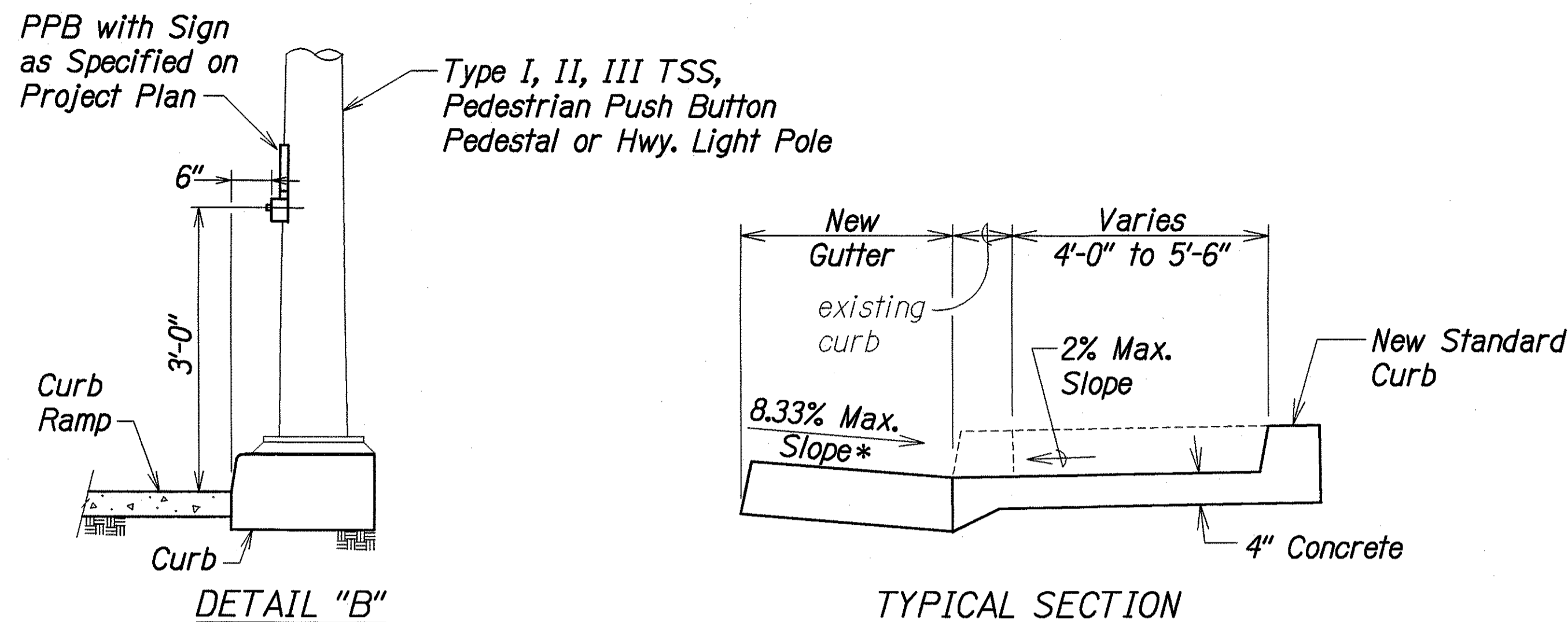
Federal Aid Project No. CMAQ-0300(87)

Scale: Not to Scale DATE: AUGUST, 2002

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| ORIGINAL PLAN | DATE | BY | CHECKED |
| NOTE BOOK | Aug 2002 | CHEN | CHEN |
| | Aug 2002 | CHEN | CHEN |
| | Aug 2002 | CHEN | CHEN |

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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.

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| SURVEY PLOTTED BY | DATE |
| DESIGNED BY | AUG 2002 |
| TRACED BY | |
| DESIGNED BY | AUG 2002 |
| QUANTITIES BY | |
| CHECKED BY | AUG 2002 |

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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

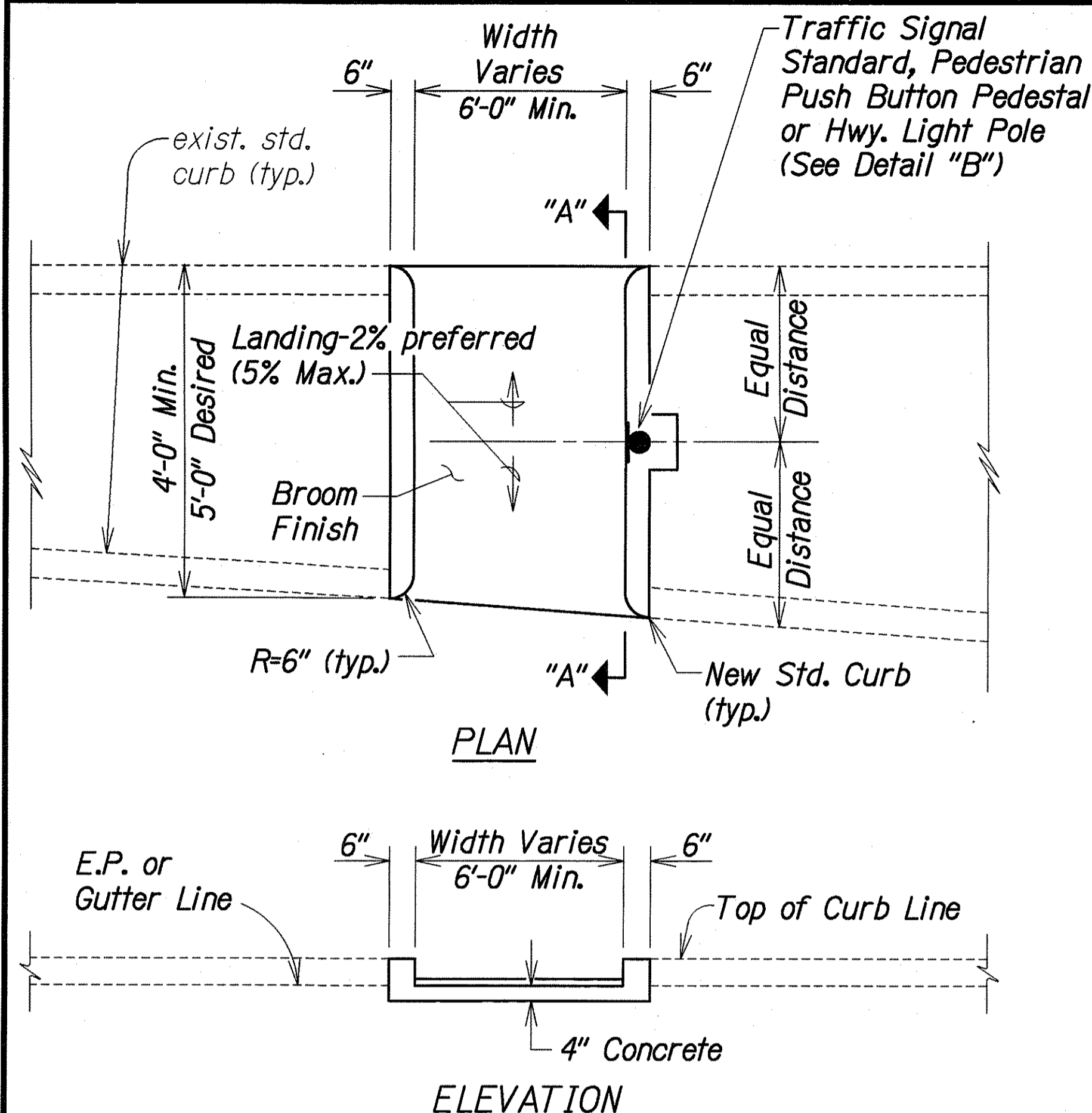
CURB RAMP DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE
 At Various Locations On Oahu, Phase II
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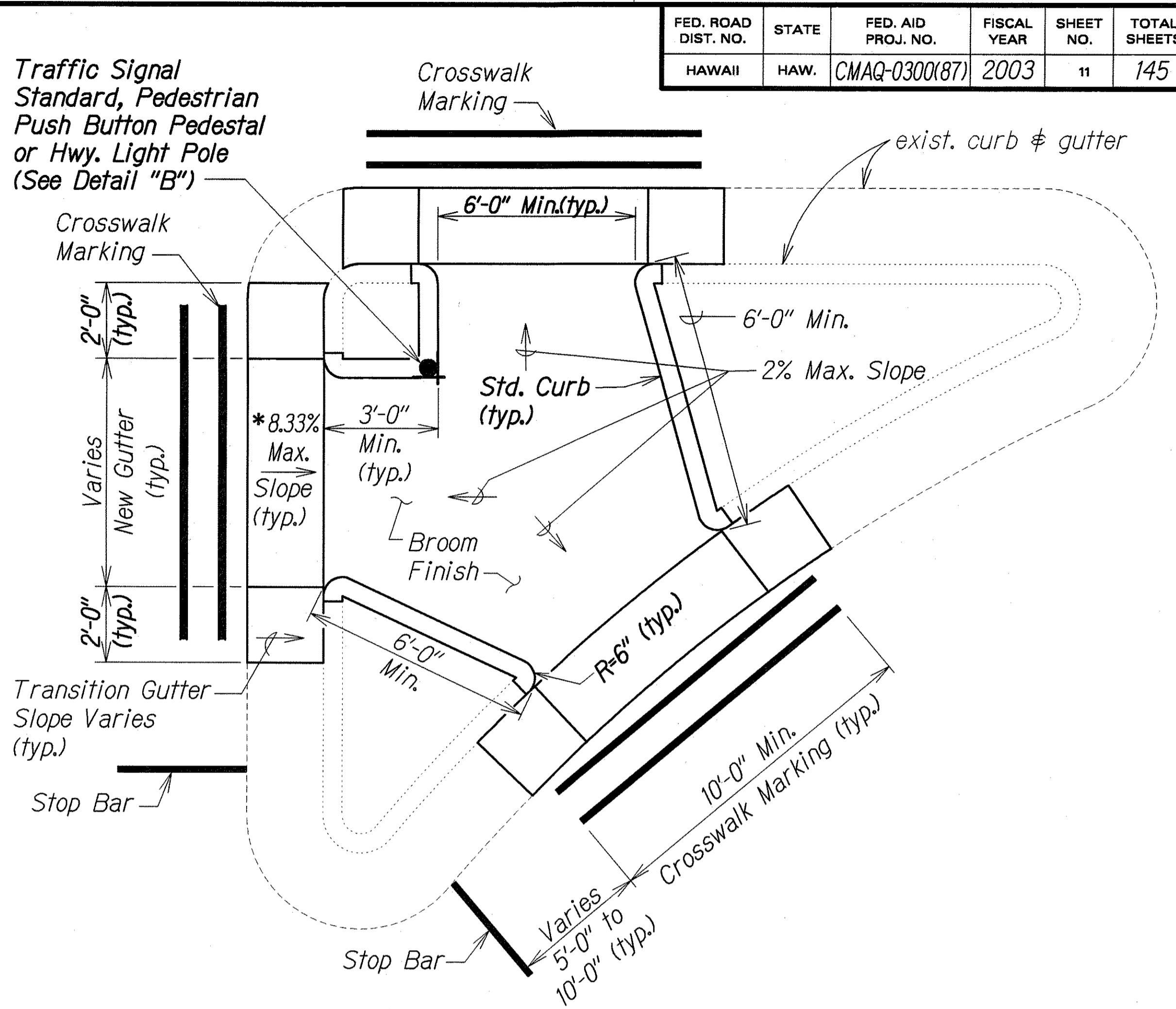
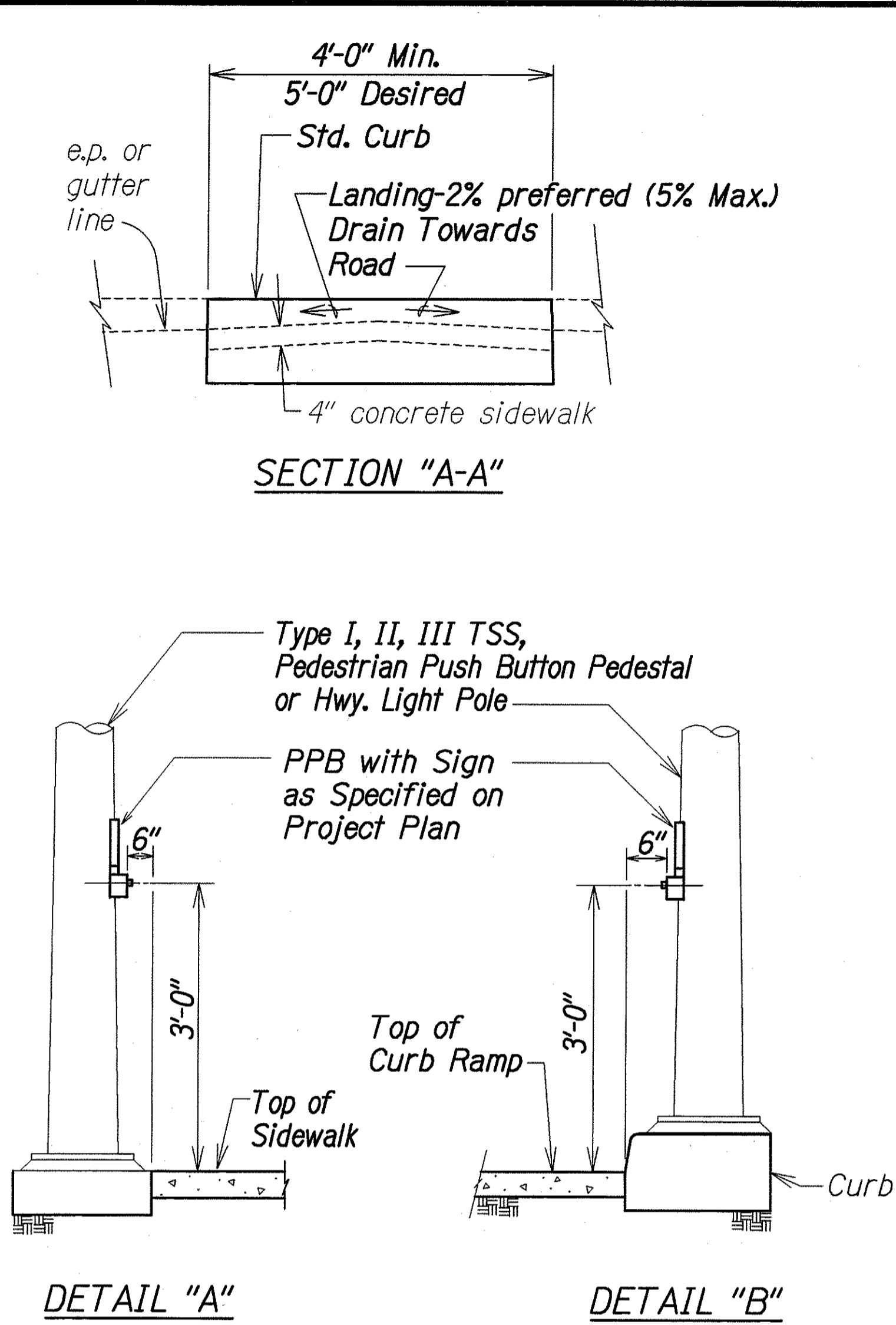
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SHEET No. 10 OF 145 SHEETS

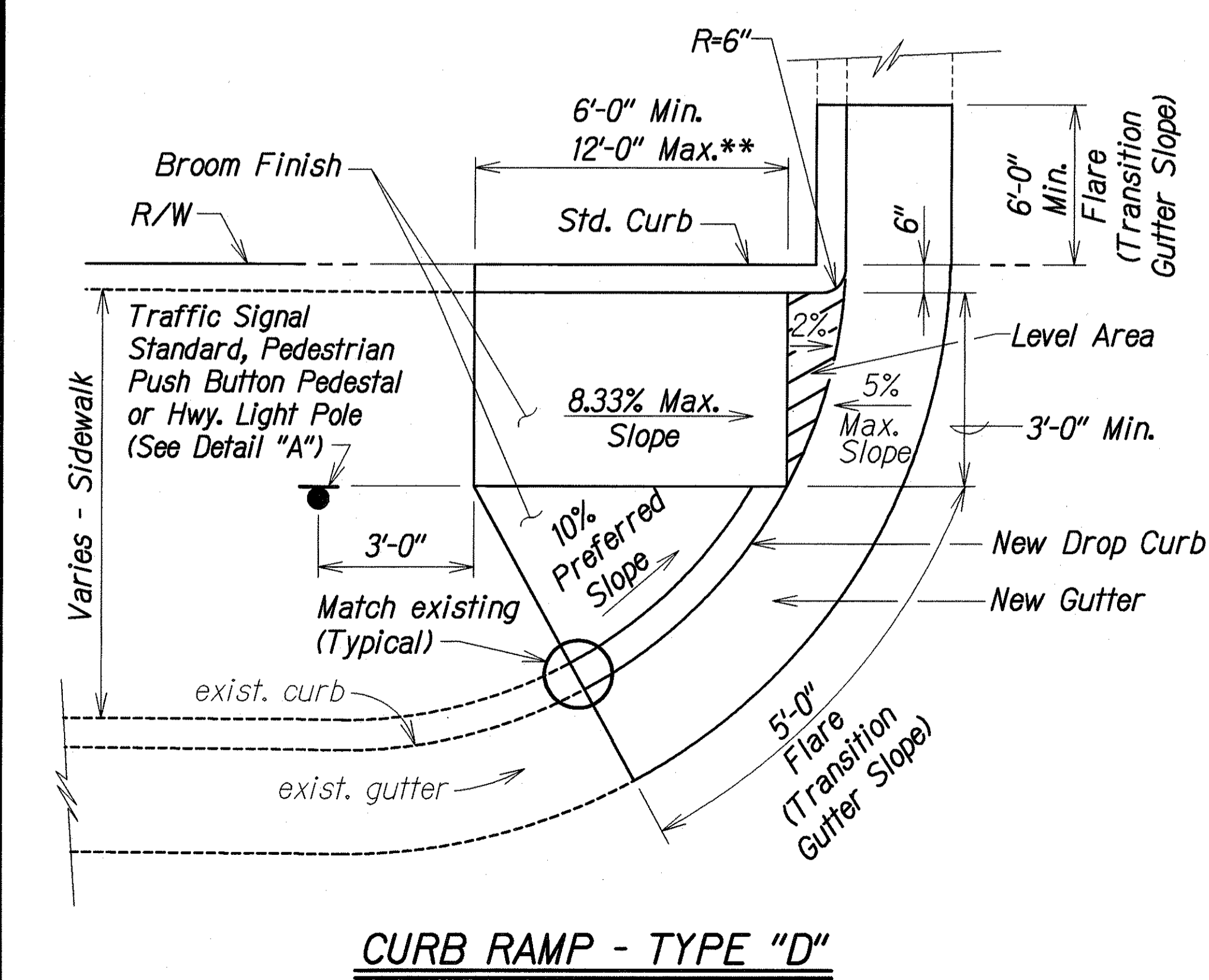
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| HAWAII | HAW. | CMAQ-0300(87) | 2003 | 11 | 145 |



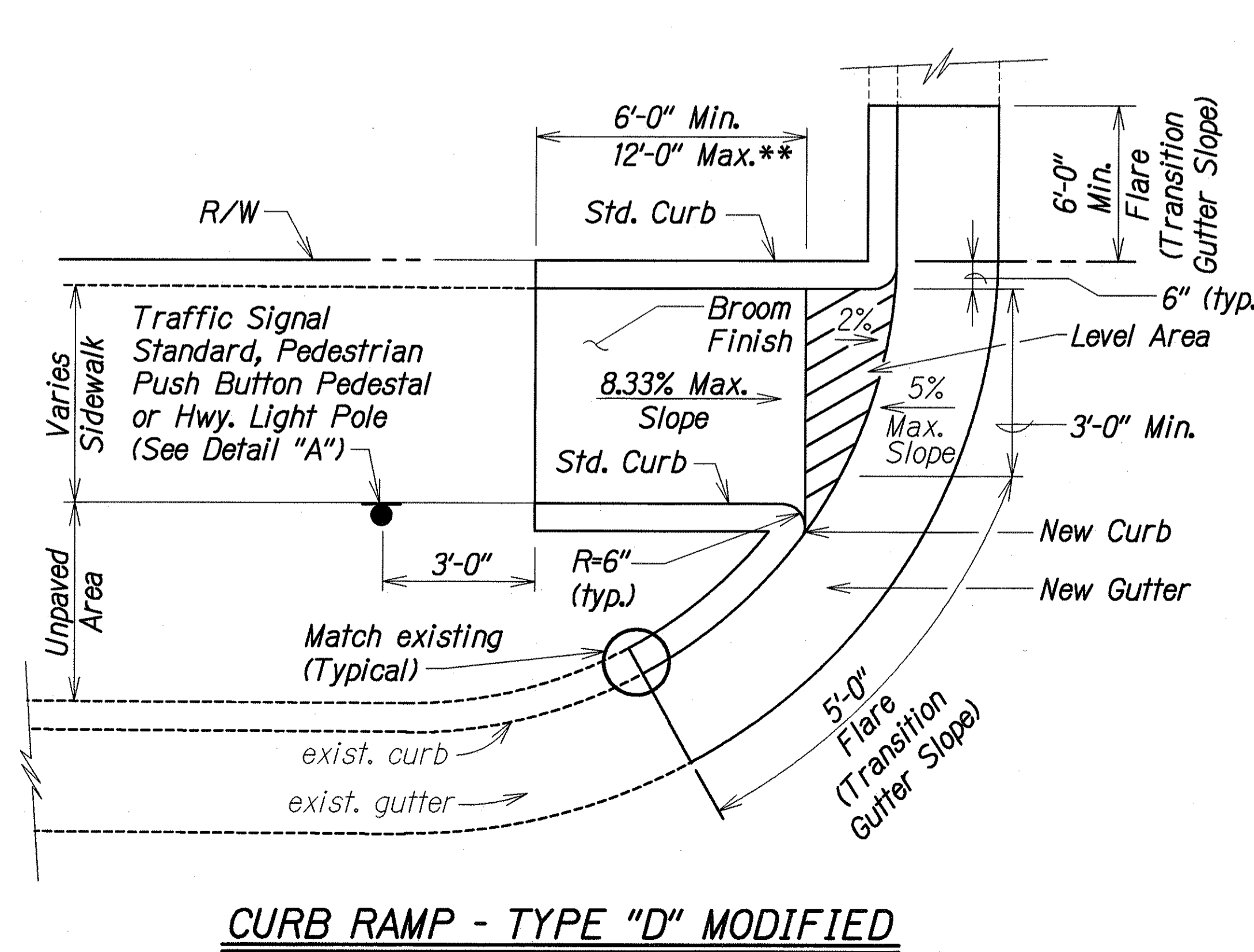
CURB RAMP - TYPE "C"
USE AT MEDIAN CROSSINGS, ISLANDS



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.

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| ORIGINAL PLAN | DATE | BY |
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| | DESIGNED BY | |
| | CHECKED BY | |

R 01-24-02 TE-69 sht. 4 of 6

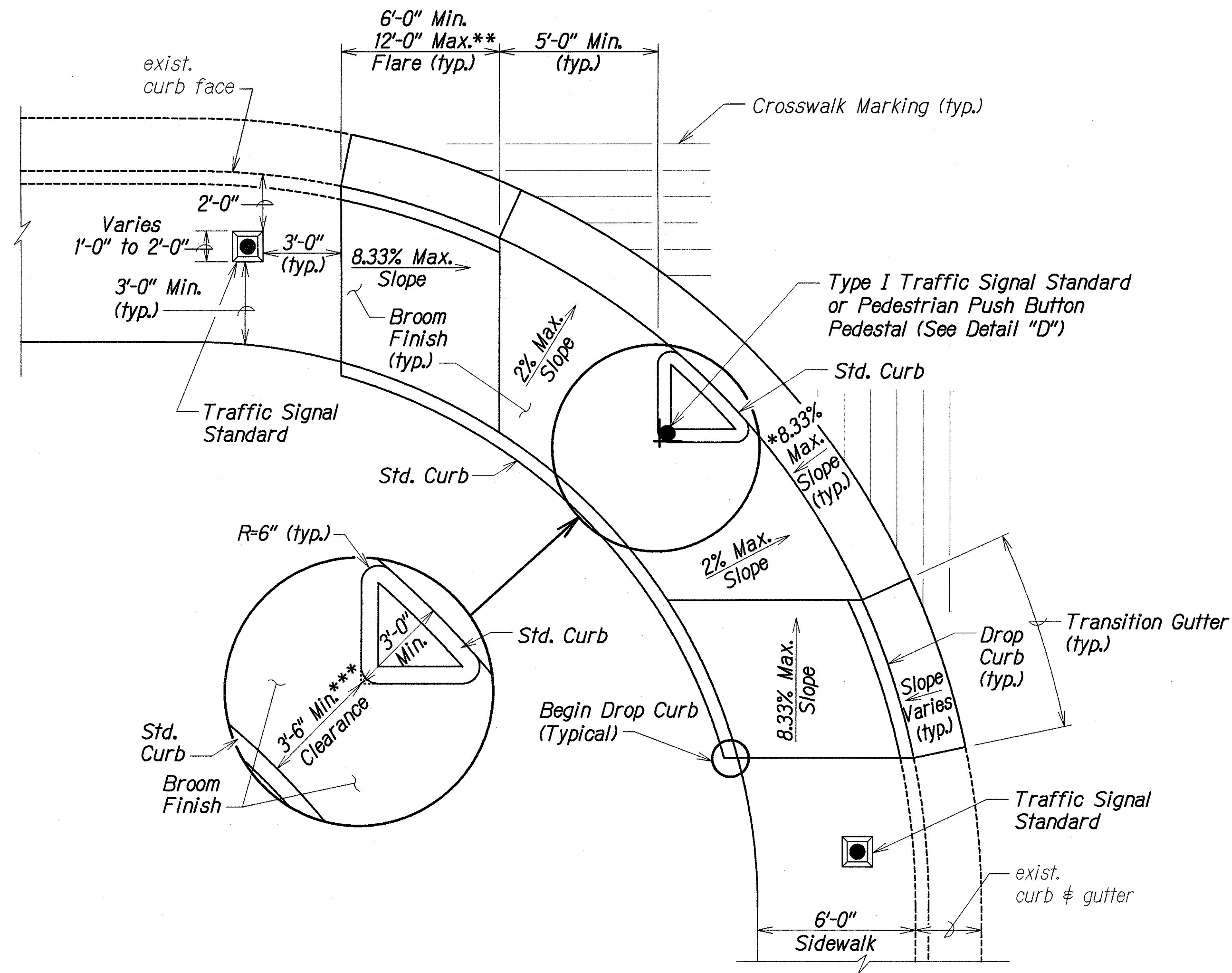
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE
At Various Locations On Oahu, Phase II
Federal Aid Project No. CMAQ-0300(87)
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CURB RAMP - TYPE "E"
SIDEWALK WIDTH 7'-0" OR GREATER

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

- * 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.
- *** The Clearance shall be increased to 6'-0" or wider at areas with high pedestrian traffic or as directed by the Engineer or as shown on the plans.

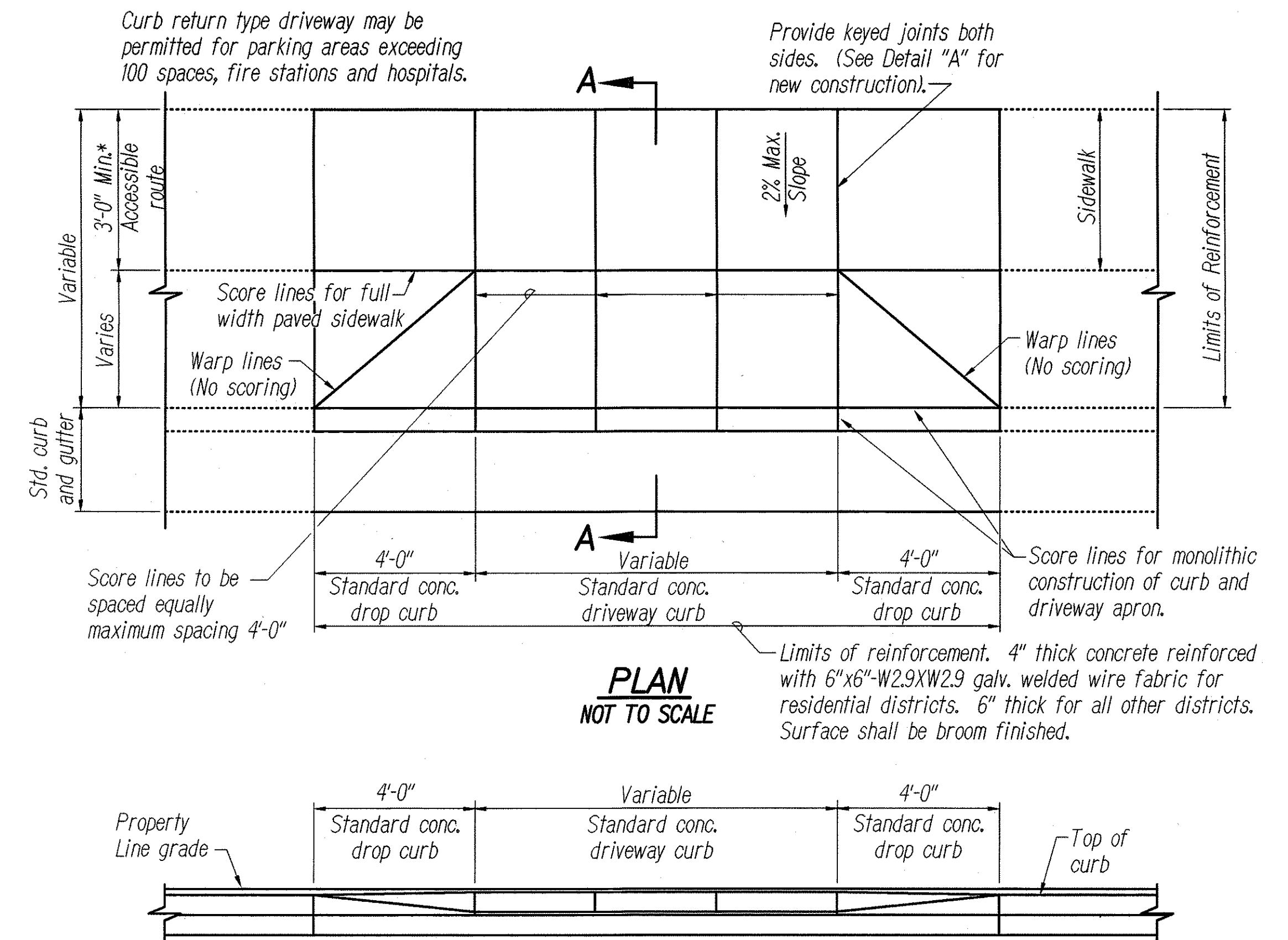
Type I TSS or Pedestrian Push Button Pedestal

PPB with Sign as Specified on Project Plan

Top of Curb Ramp

Curb

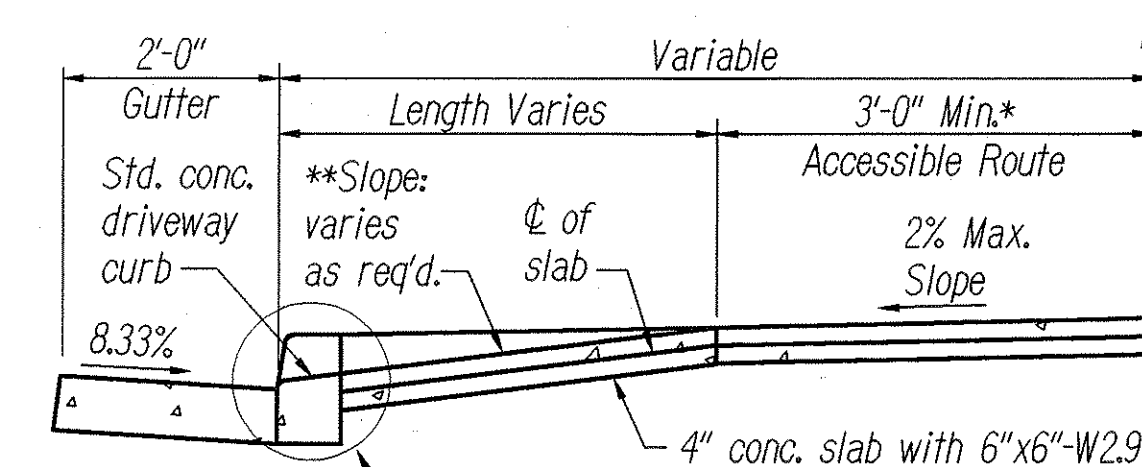
DETAIL "D"



PLAN
NOT TO SCALE

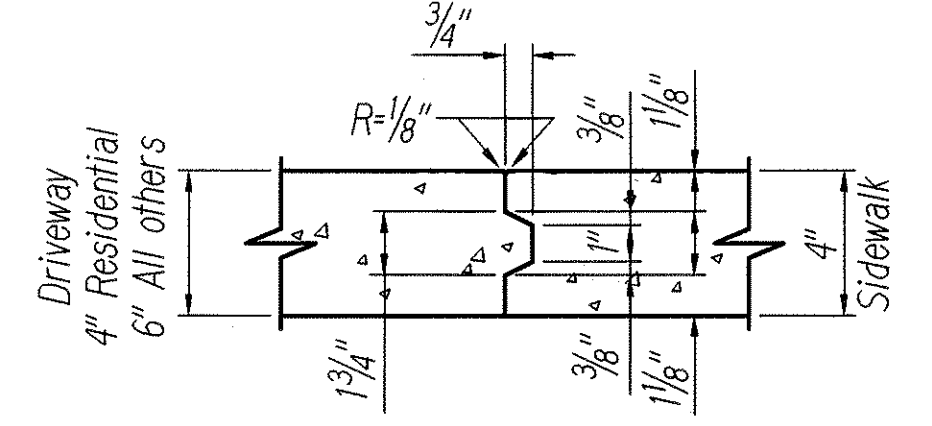
ELEVATION
NOT TO SCALE

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

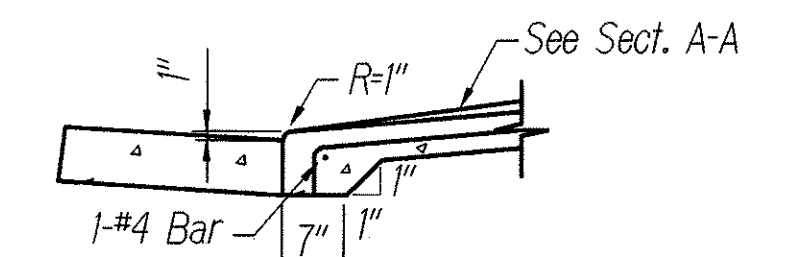


See Alternate Detail for monolithic construction of curb and driveway apron

SECTION A-A
NOT TO SCALE



DETAIL "A"
NOT TO SCALE
(NEW CONSTRUCTION)



ALTERNATE DETAIL
NOT TO SCALE

NOTES:

1. 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.
2. This detail is only one method for providing ADA access. Other methods can be used. These methods are shown in references listed in Curb Ramp and Sidewalk Note No. 21.

DRIVEWAY APRON

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

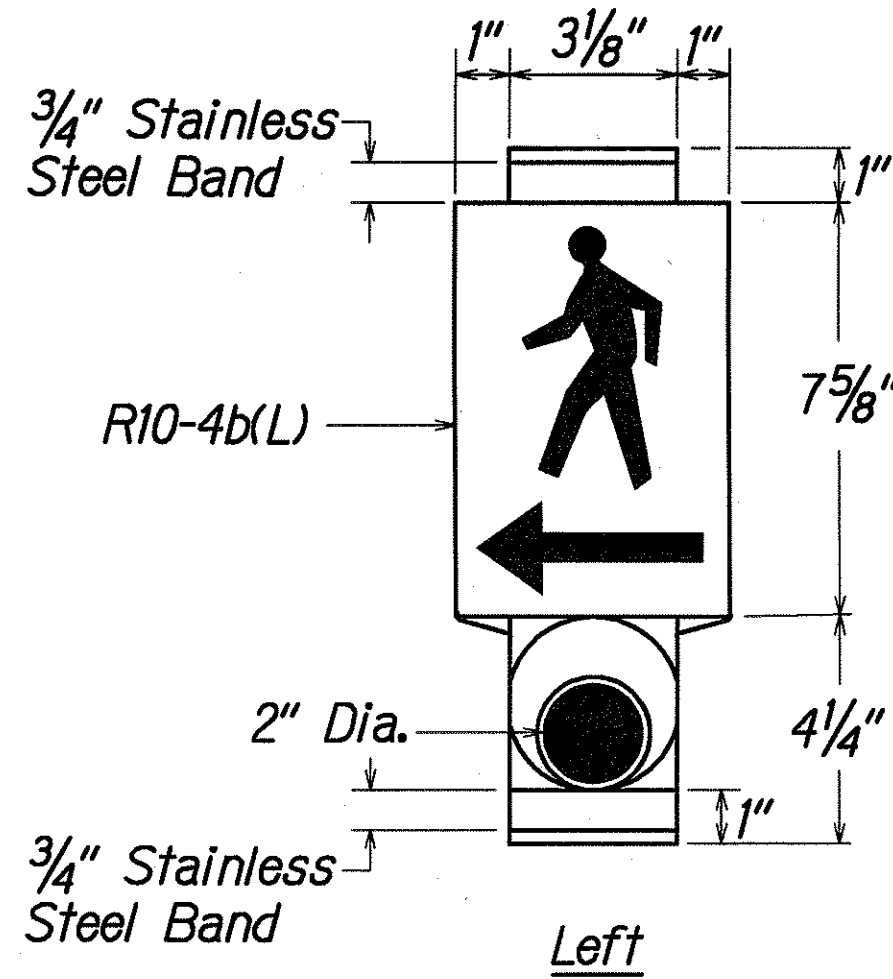
CURB RAMP DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE
At Various Locations On Oahu, Phase II
Federal Aid Project No. CMAQ-0300(87)
Scale: Not to Scale DATE: AUGUST, 2002

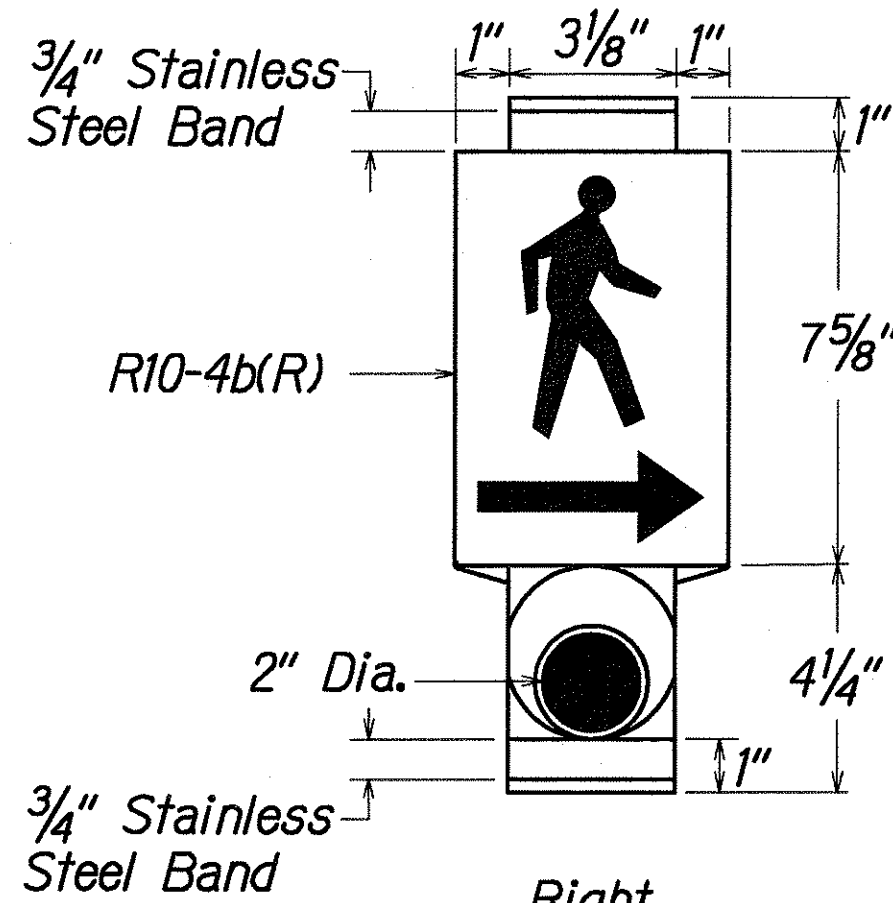
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| SURVEY PLOTTED BY | DATE |
| DRAWN BY | Aug 2002 |
| DESIGNED BY | Aug 2002 |
| QUANTITIES BY | Aug 2002 |
| CHECKED BY | Aug 2002 |
| ORIGINAL PLAN | |
| NOTE BOOK | |
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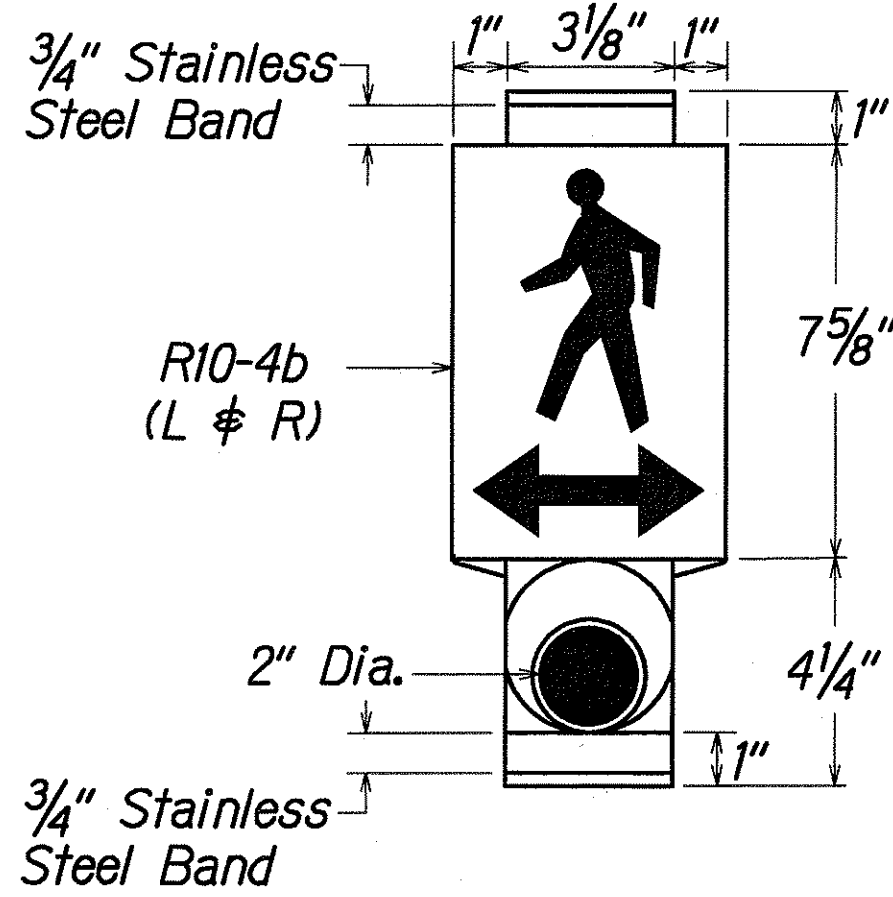
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | CMAQ-0300(87) | 2003 | 13 | 145 |



Left



Right

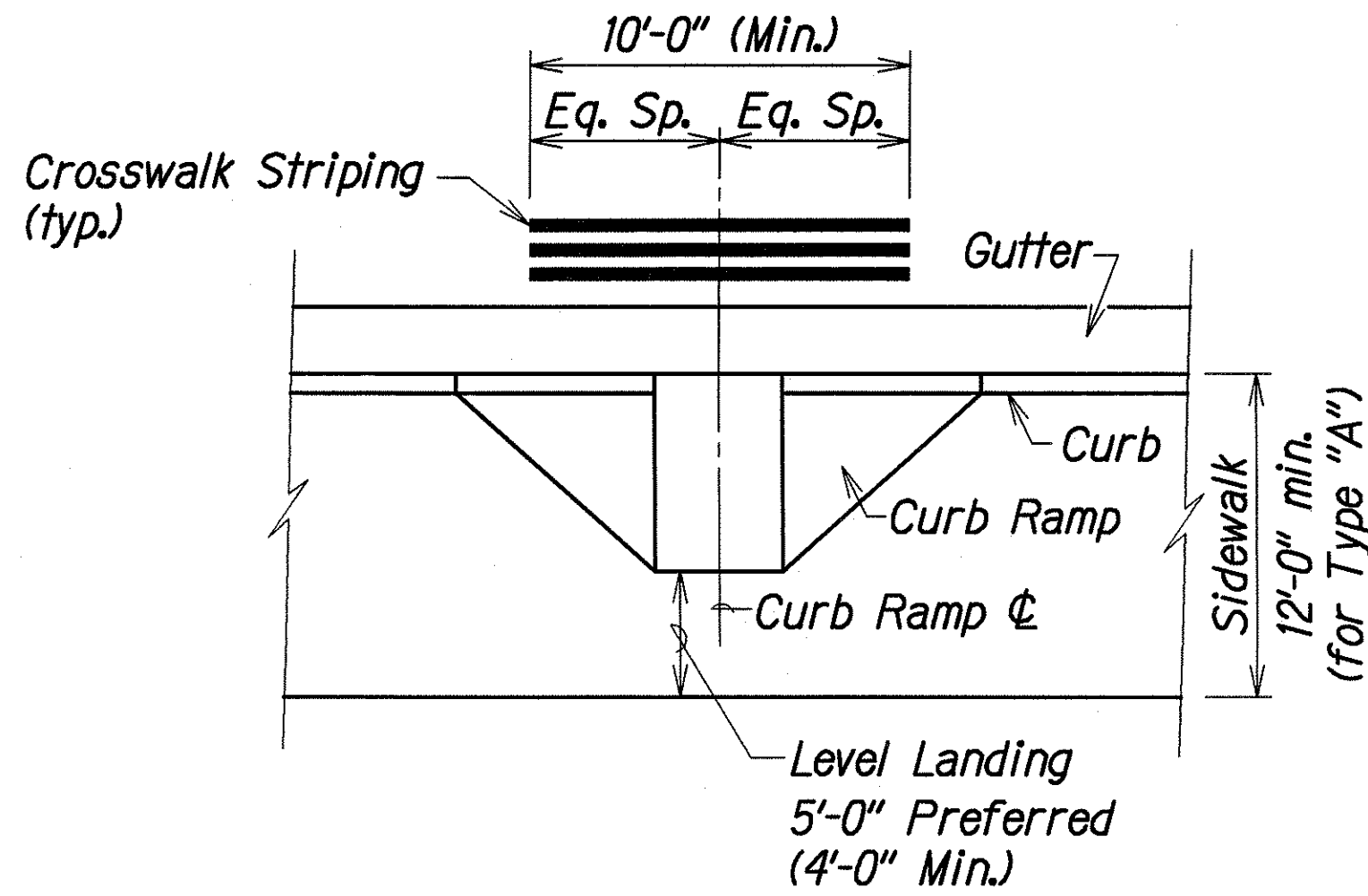


Left & Right

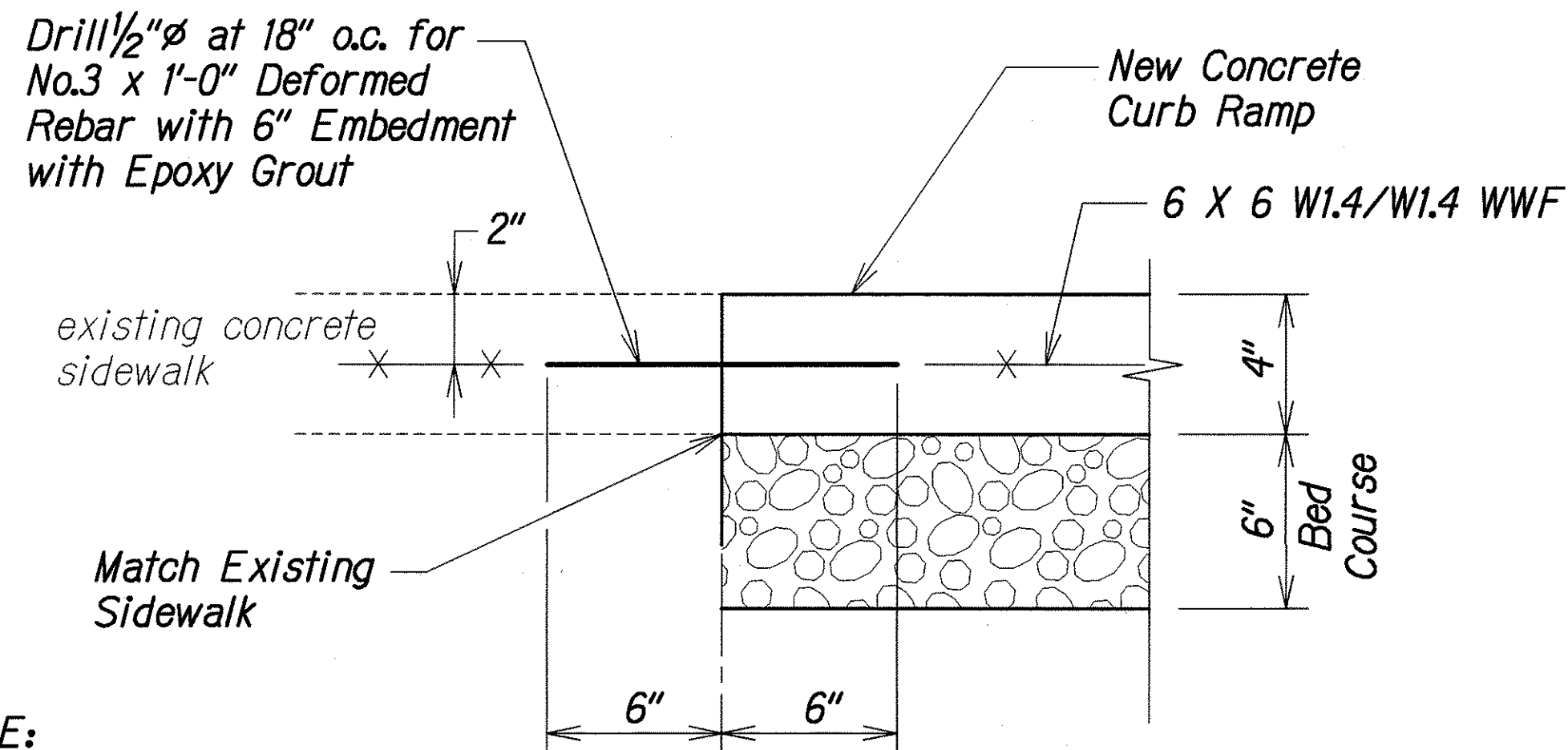
PEDESTRIAN PUSH BUTTON WITH SIGN

Man, Arrow & Push Button - White
Background - Black

NOTE:
Arrowhead to be installed
in proper direction.

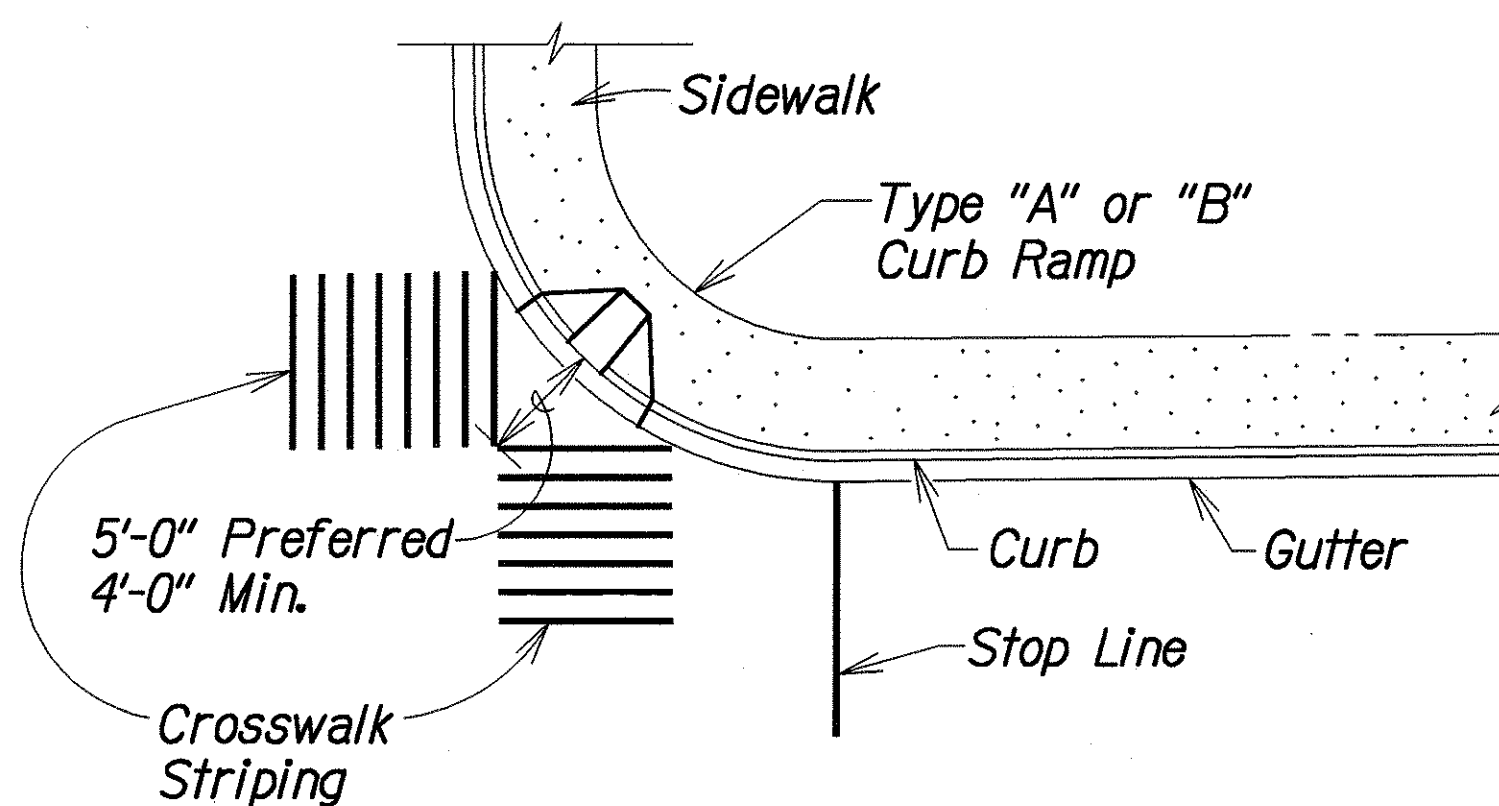


TYPICAL CROSSWALK STRIPING AT CURB RAMP

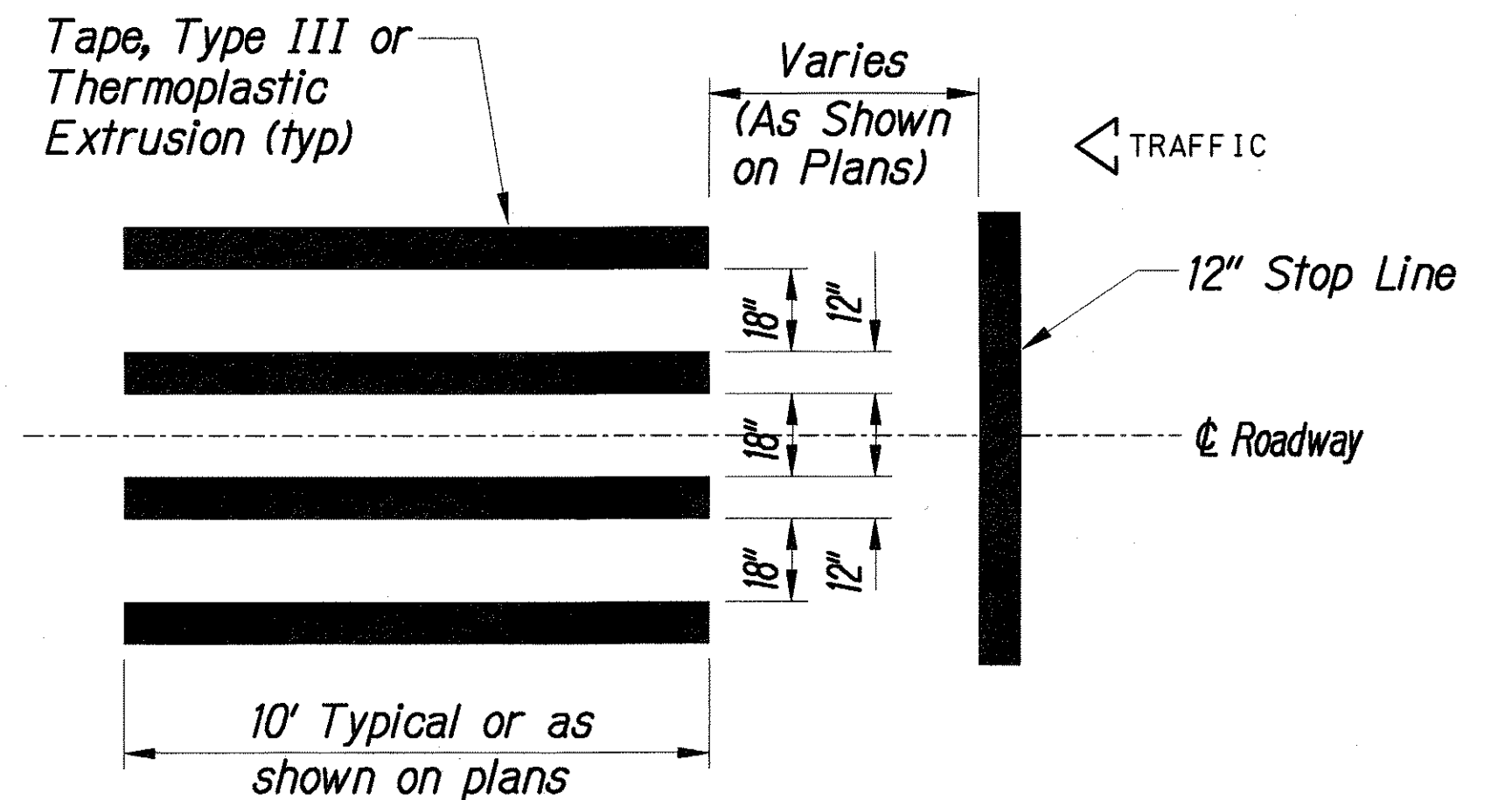


NOTE:
All curb ramps shall
be reinforced.

TYPICAL CONSTRUCTION JOINT AT EXISTING SIDEWALK



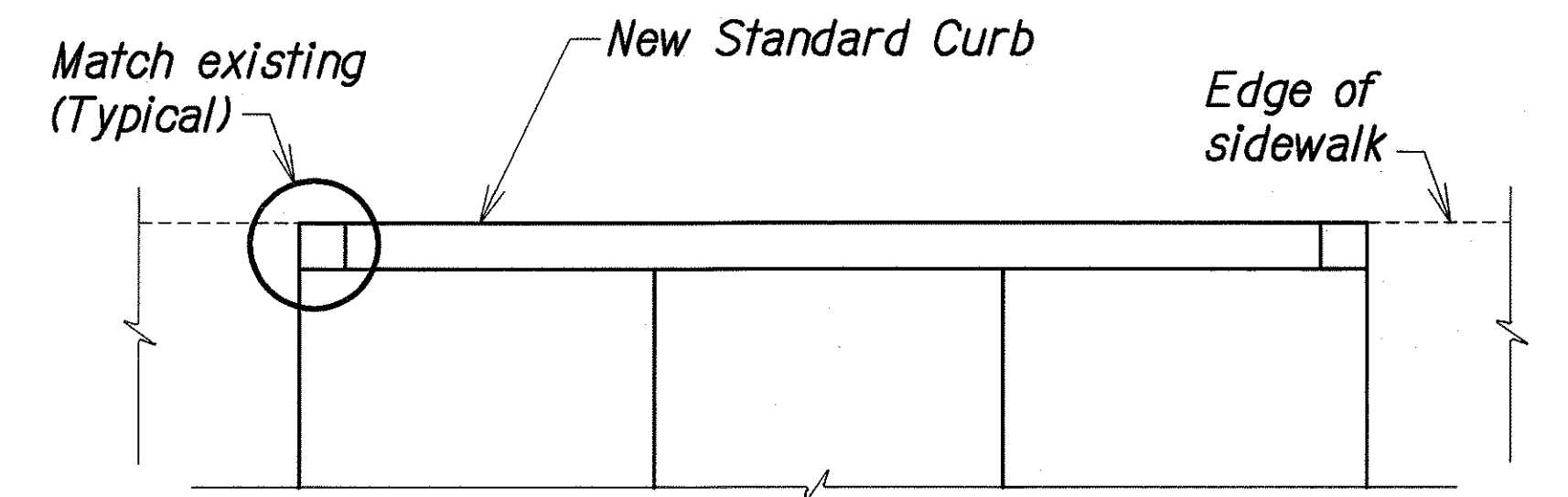
TYPICAL CROSSWALK STRIPING AT DIAGONAL CURB RAMP



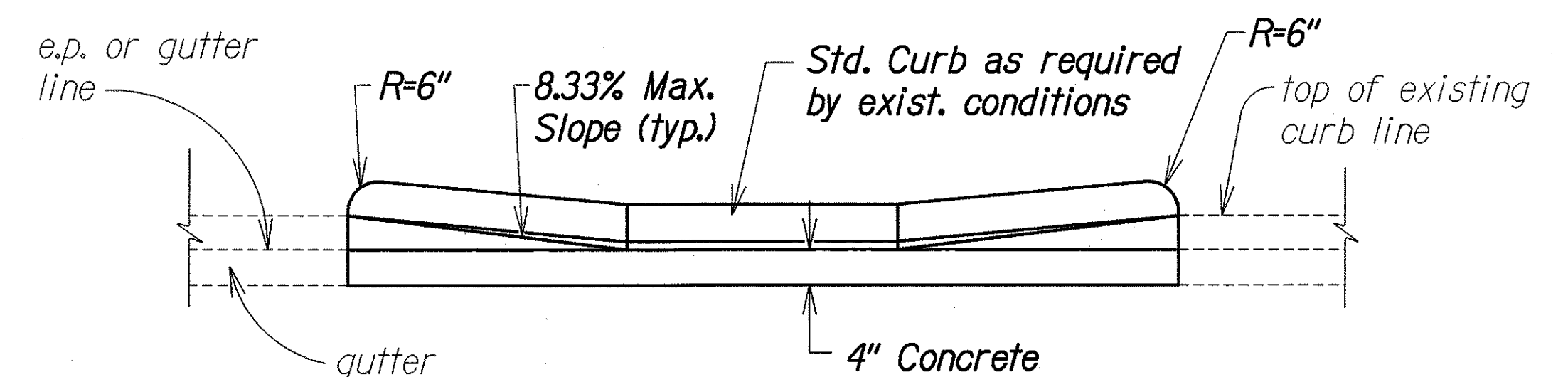
Note: Longitudinal lines shall be parallel to traffic flow.

CROSSWALK STRIPING DETAIL

Not to Scale



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.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE
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