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Cay Ochoa
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CURB RAMP DETAILS

FARRINGTON HIGHWAY LANDSCAPING
Kamehameha Highway to Fort Weaver Road
Project No. 7101A-01-98

Scale: As Noted Date: April 2002

SHEET No. 1 OF 5 SHEETS

AS-BUILT

12

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



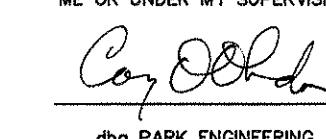
Not to Scale

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 inch at the bottom, a diameter of 0.4 inch at the top, a height of 0.2 inch and a center-to-center spacing of 2.35 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.



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This sheet added during As-built posting.



STATE OF HAWAII
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TYPICAL CURB RAMP DETAILS
DETECTABLE WARNING DETAILS

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Project No. 7101A-01-98

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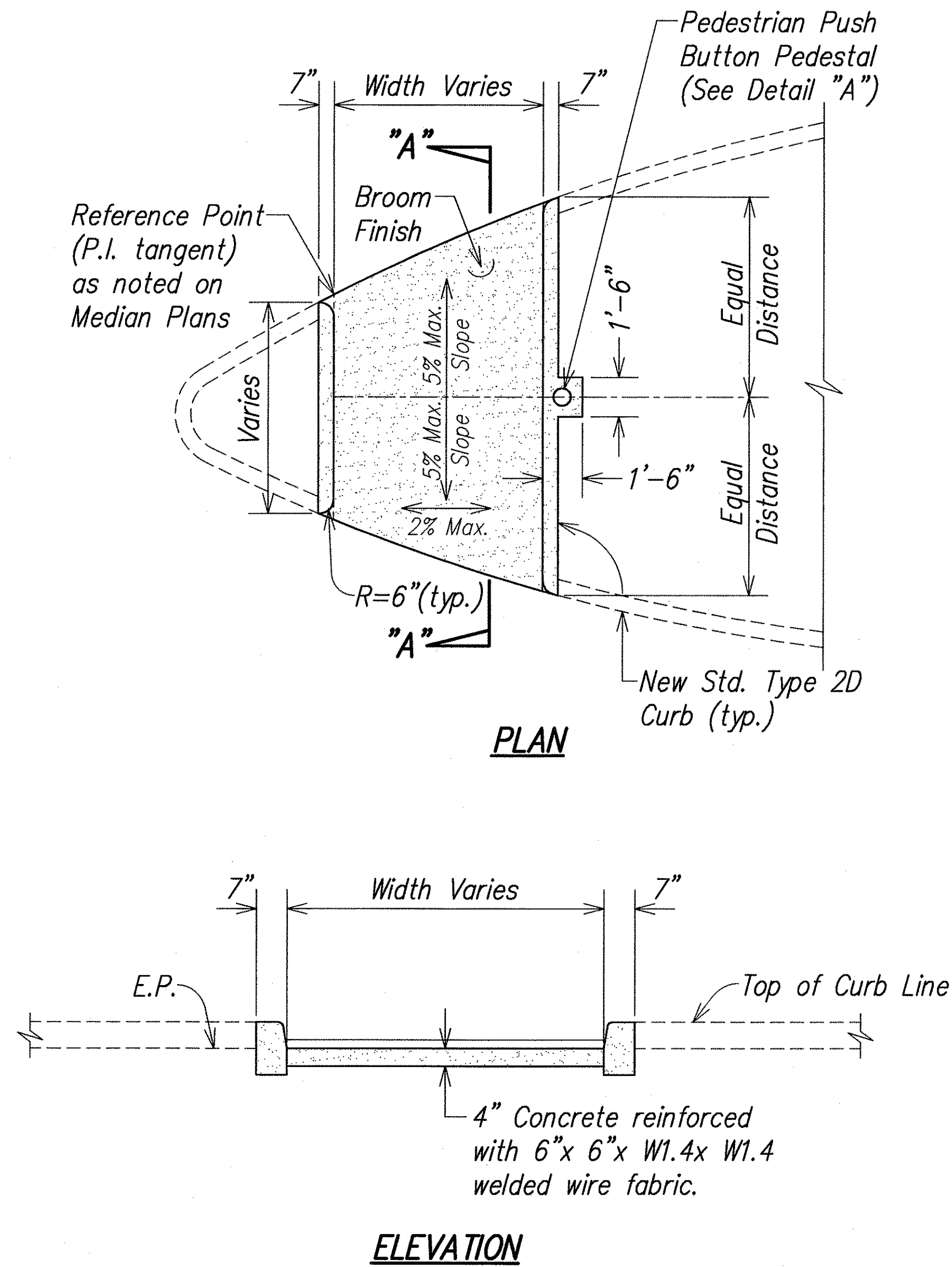
SHEET No. 1A OF 5 SHEETS

AS-BUILT C.O. 12A S-1

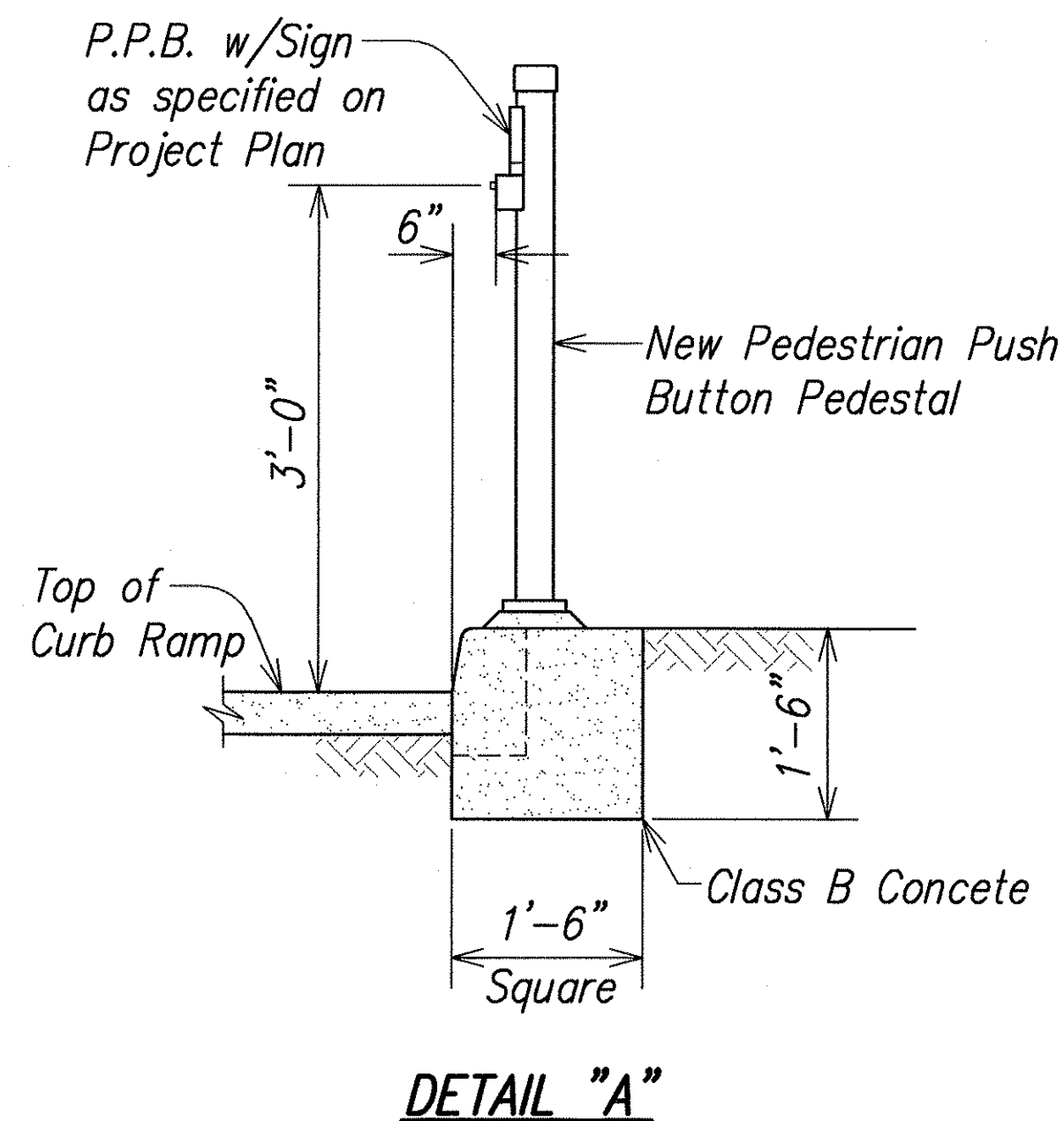
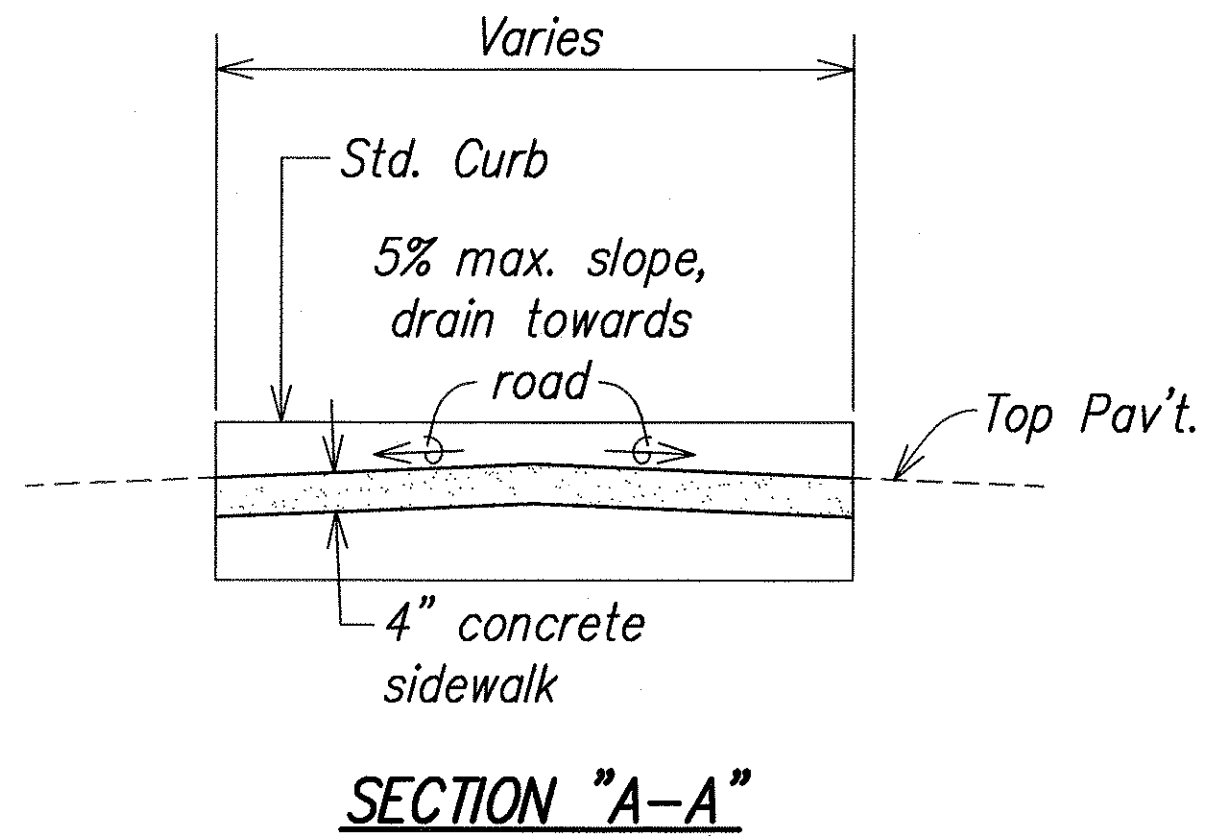
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-98	2002	13	80

GENERAL NOTES:

- 1- Subject to field conditions, the Engineer shall determine the final location of curb ramps.
- 2- All pullboxes shall be installed away from the curb ramp and within the sidewalk/unpaved area to the maximum extent feasible.
- 3- 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.
- 4- Transitions from ramps to gutter and roadways shall be flush.
- 5- Curb ramps and sidewalks shall be constructed to eliminate ponding to the maximum extent feasible.
- 6- 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.
- 7- All curb ramps shall be reinforced with 6x6 W1.4/W1.4 welded wire fabric.
- 8- Surface of sidewalks and curb ramps shall be firm, stable, and slip-resistant. This includes the surfaces of pullboxes, valve covers, manhole covers, etc.
- 9- Bed course material is required for curb ramps, sidewalks and gutter.
- 10- 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. ($\pm 0.2\%$) Remedial measures will not be accepted.
- 11- A 2% minimum cross slope shall be maintained in the direction of pedestrian traffic.
- 12- The maximum slopes of adjoining gutters or road surfaces 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.
- 13- 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.
- 14- Construction joints are required to join curb ramps with sidewalks.
- 15- Unless otherwise noted, new gutters are required as shown.
- 16- 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 1998, FHWA.
 - d) Designing Sidewalks and Trails for Access, Part 2, Sept. 2001, FHWA.



CURB RAMP - TYPE "C"
(Use at Median Crossing)
Not to Scale



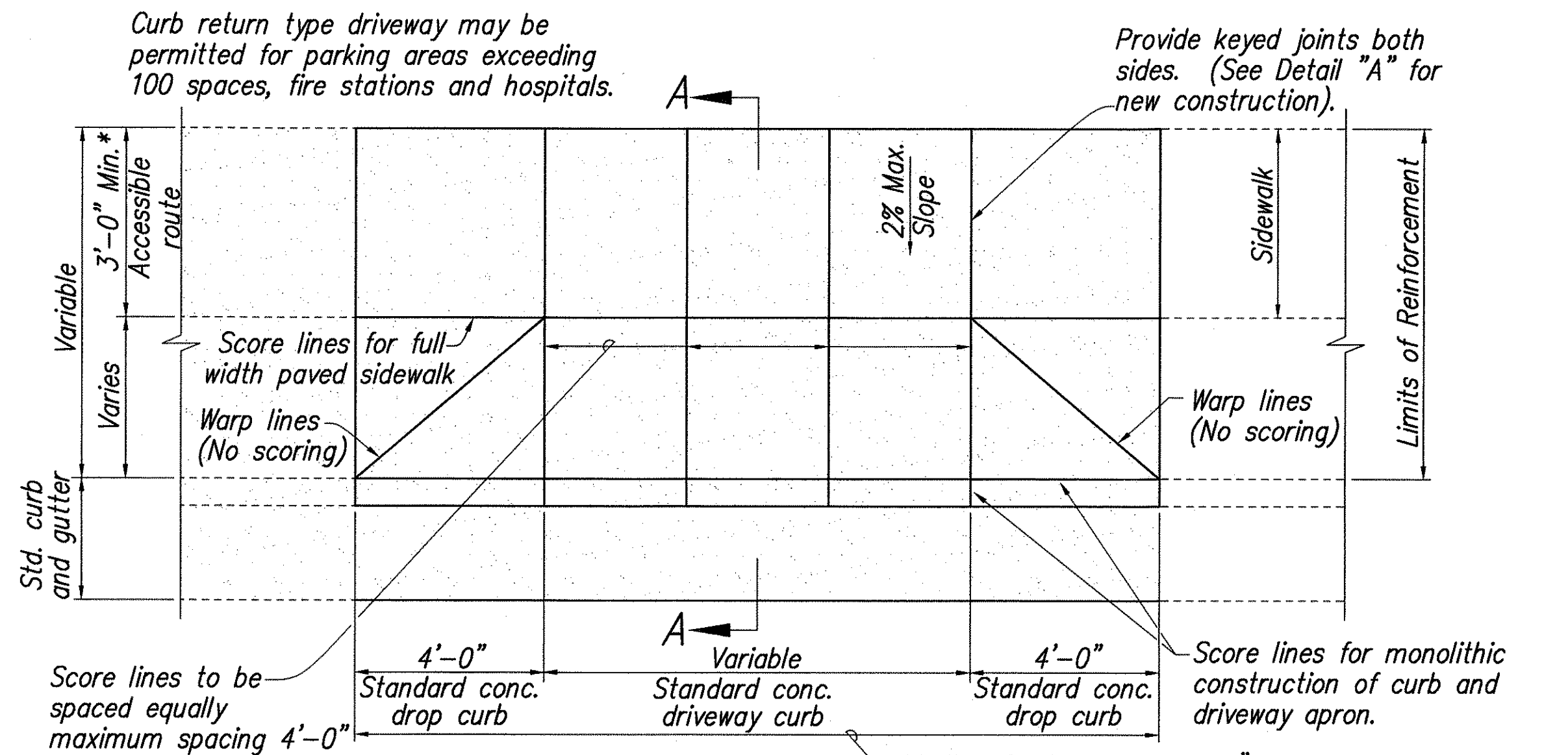
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ME OR UNDER MY SUPERVISIONCory O. Okuda
dba PARK ENGINEERINGSTATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**CURB RAMP DETAILS**FARRINGTON HIGHWAY LANDSCAPING
Kamehameha Highway to Fort Weaver Road
Project No. 7101A-01-98Scale: As Noted Date: April 2002
SHEET No. 2 OF 5 SHEETS

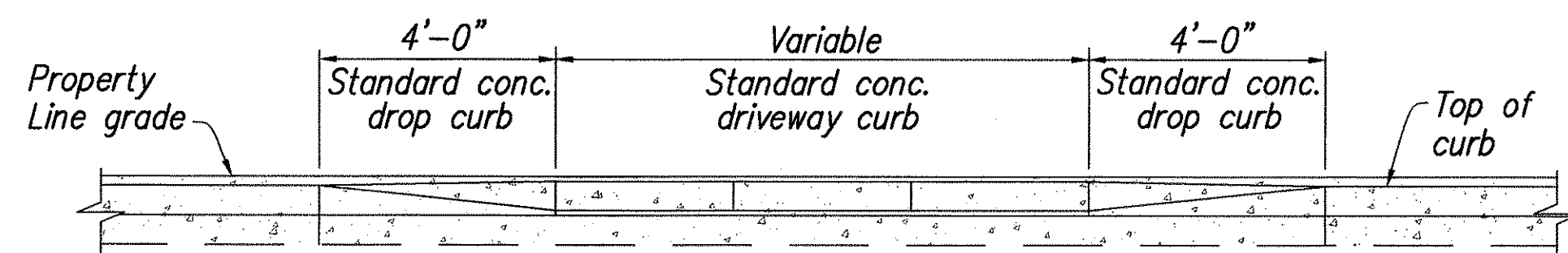
AS-BUILT

13

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HAWAII	HAW.	7101A-01-98	2002	14	80

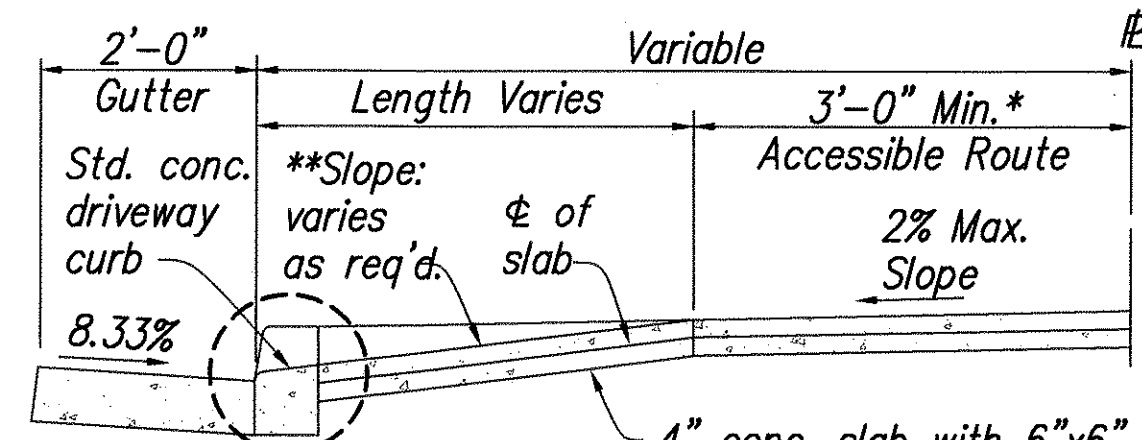


PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

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



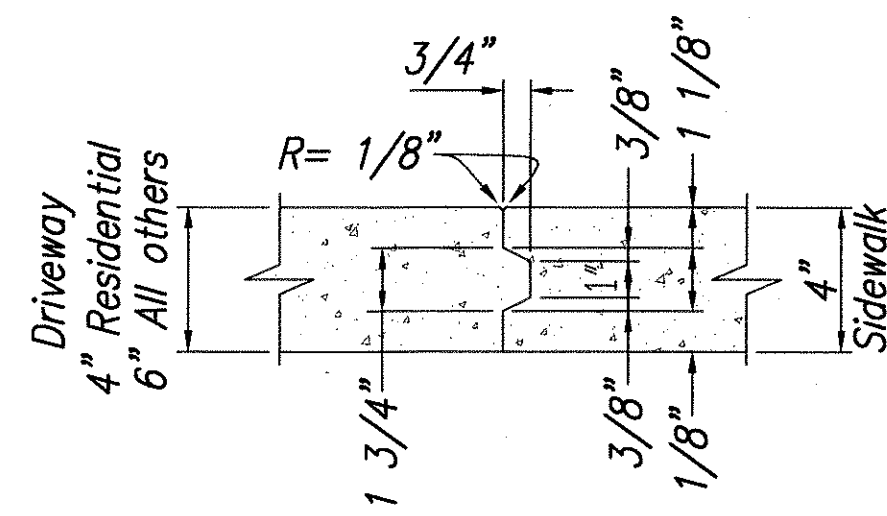
See Alternate Detail for monolithic construction of curb and driveway apron

SECTION A-A
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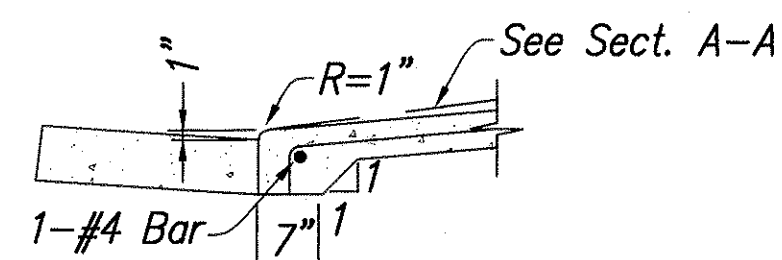
DRIVEWAY APRON

NOTES

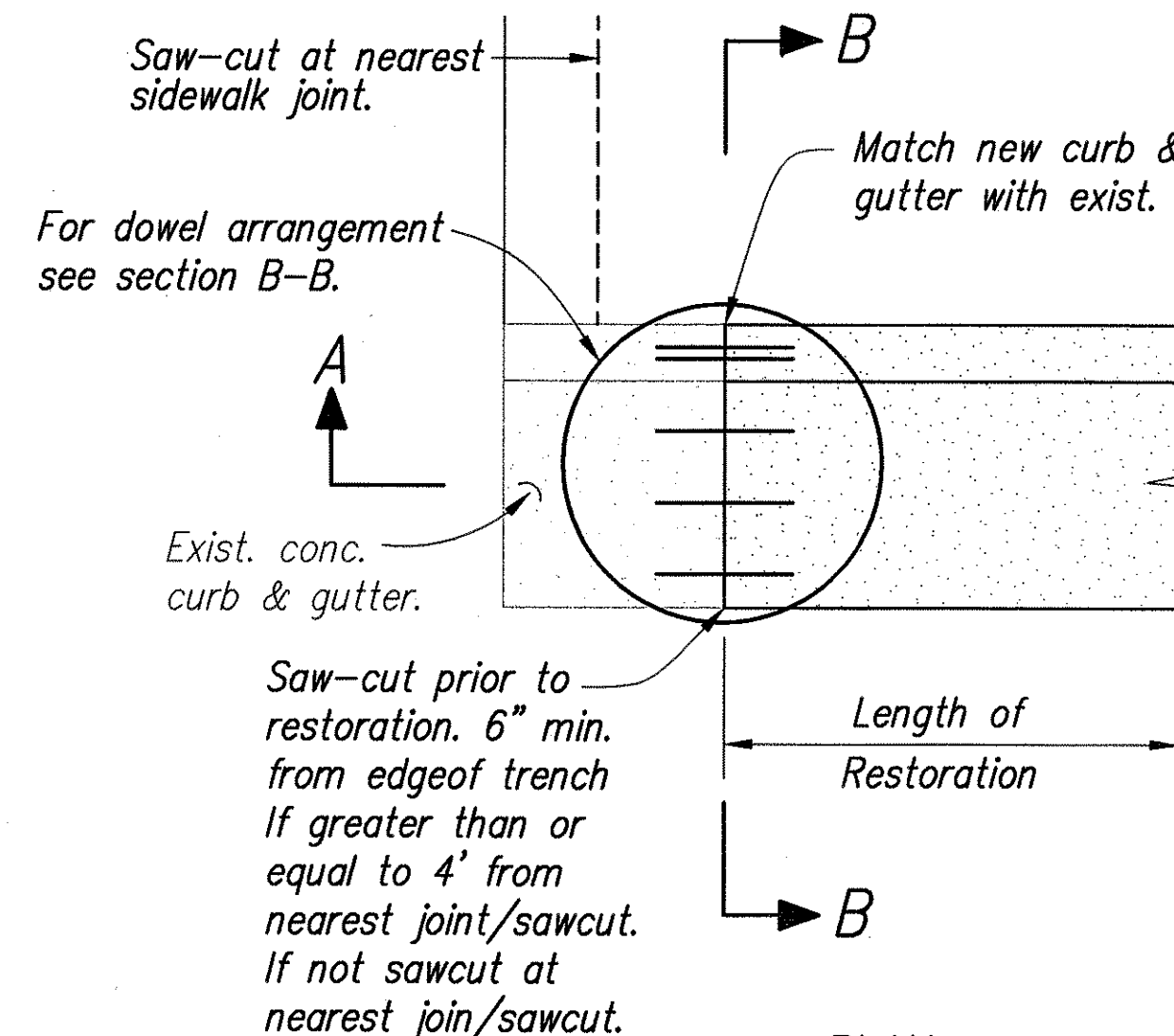
- For extension to existing driveway, scoring and finish shall match existing scoring and finish. For driveway constructed in built up areas, scoring conforming to scoring at adjacent driveways may be authorized.



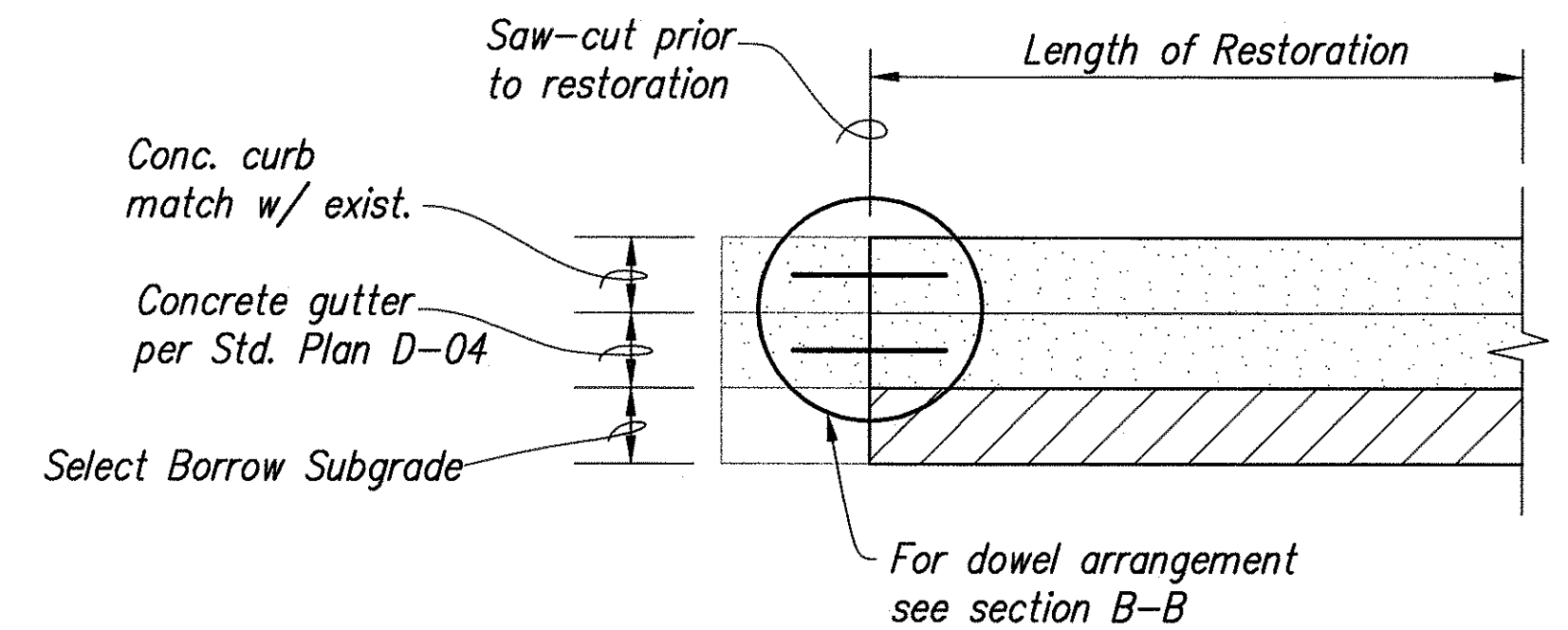
DETAIL "A"
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(NEW CONSTRUCTION)



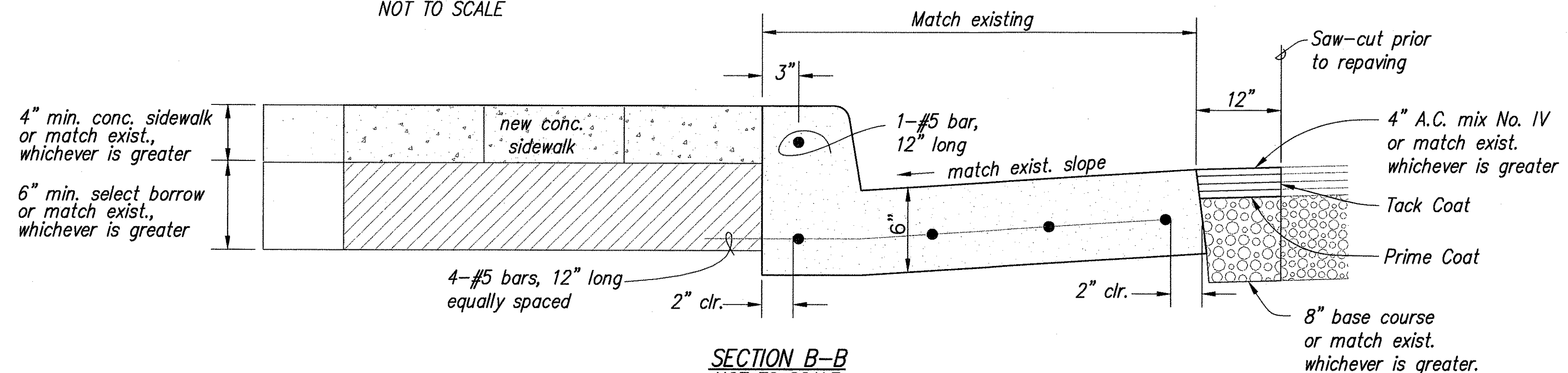
ALTERNATE DETAIL
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PLAN
NOT TO SCALE

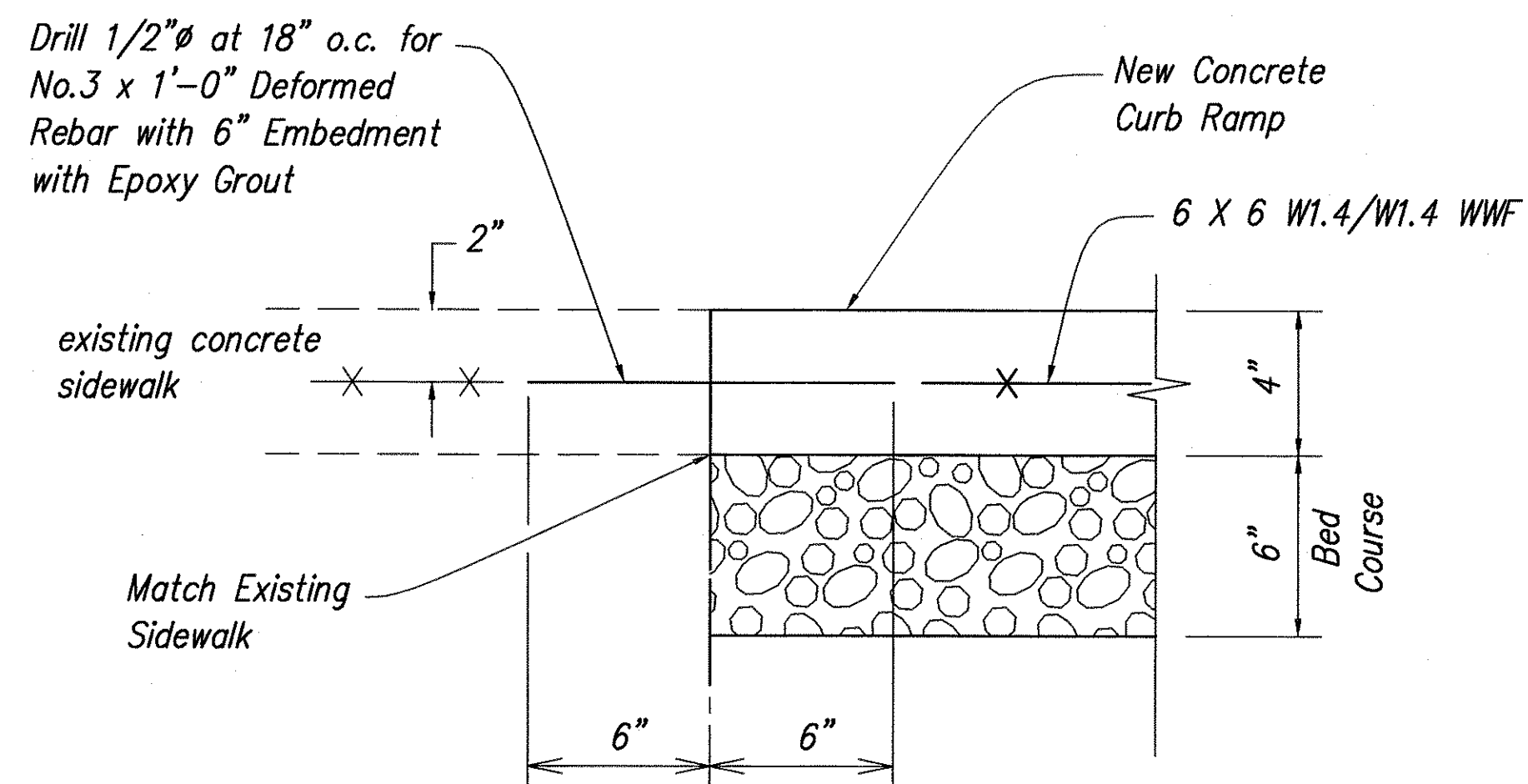


SECTION A-A
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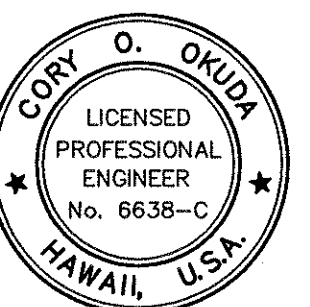


SECTION B-B
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CURB & GUTTER RESTORATION DETAIL
NOT TO SCALE



TYPICAL CONSTRUCTION JOINT AT EXISTING SIDEWALK
NOT TO SCALE



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MISCELLANEOUS DETAILS

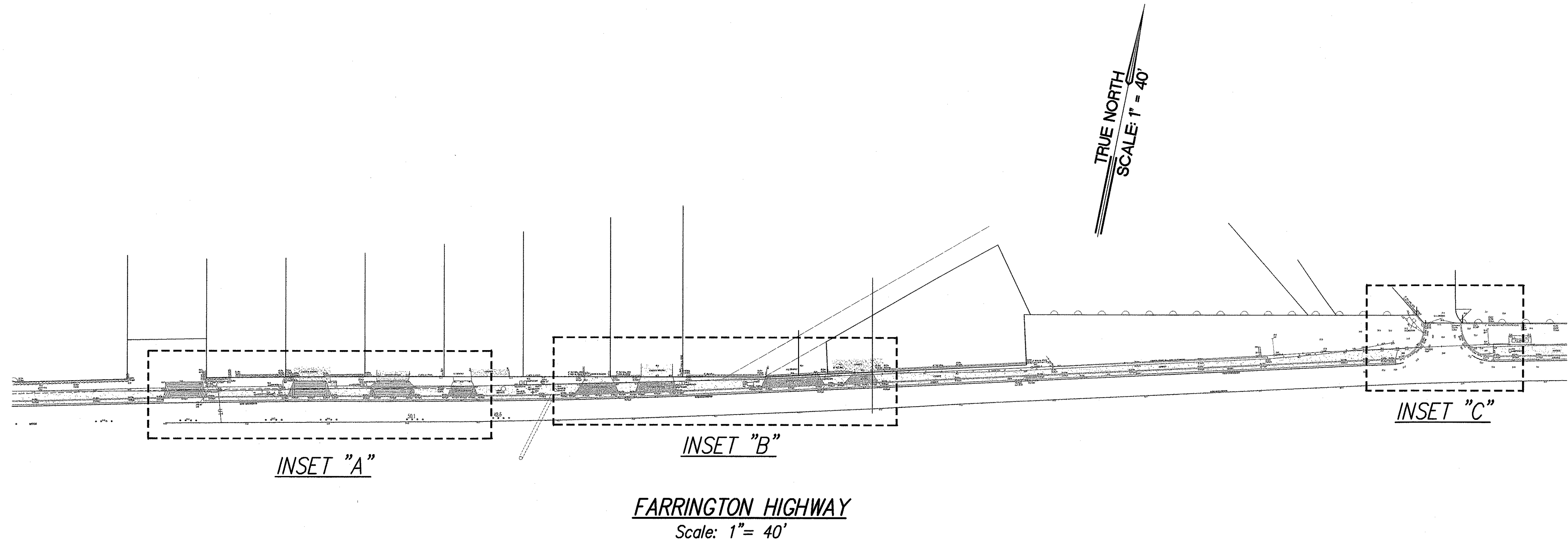
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SHEET No. 4 OF 5 SHEETS

AS-BUILT

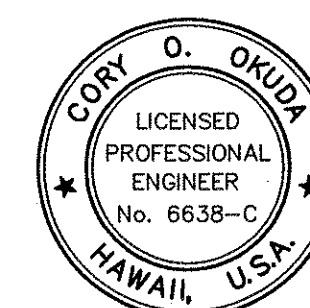
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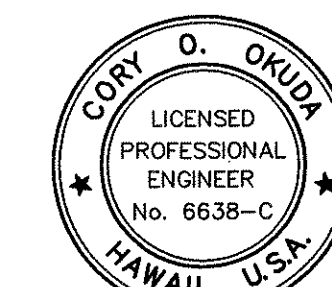
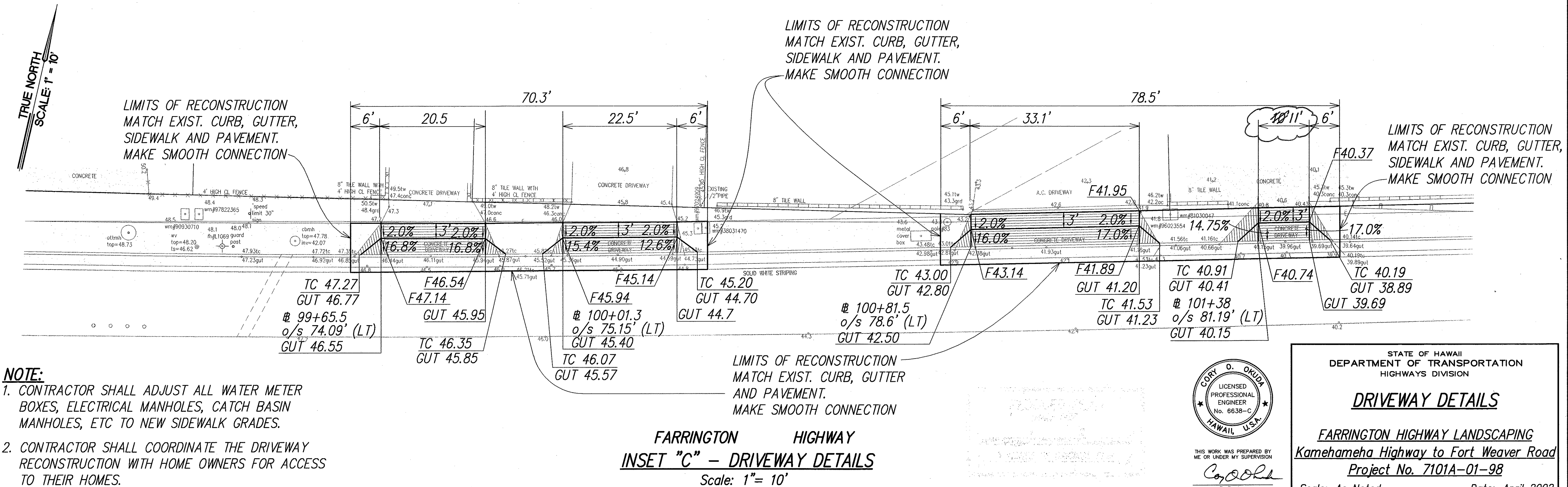
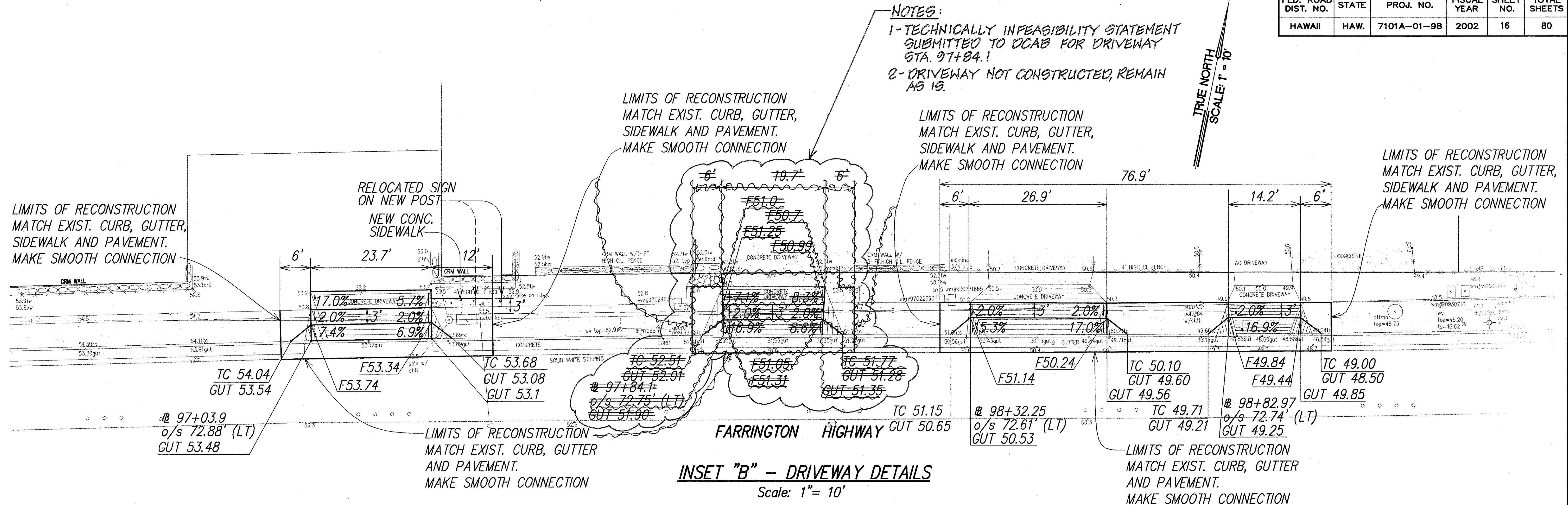


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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<u>DRIVEWAY DETAILS</u>
<u>FARRINGTON HIGHWAY LANDSCAPING</u> <u>Kamehameha Highway to Fort Weaver Road</u> <u>Project No. 7101A-01-98</u>
Scale: As Noted Date: April 2002
SHEET No. 4 OF 5 SHEETS

AS-BUILT

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DRIVEWAY DETAILS

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Kamehameha Highway to Fort Weaver Road
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SHEET No. 5 OF 5 SHEETS

AS-BUILT

16