

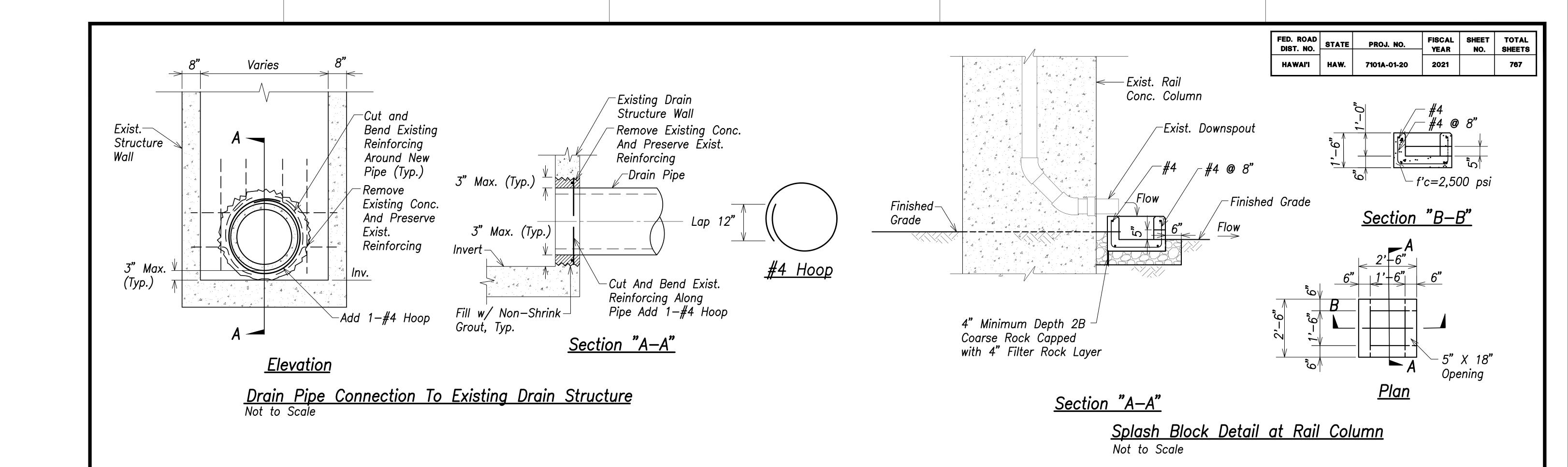
Not to Scale

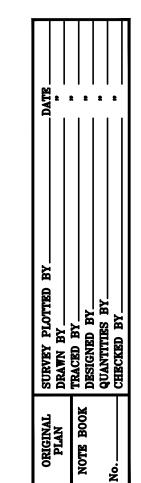
___ April 30, 2022

EXPIRATION DATE OF THE LICENSE

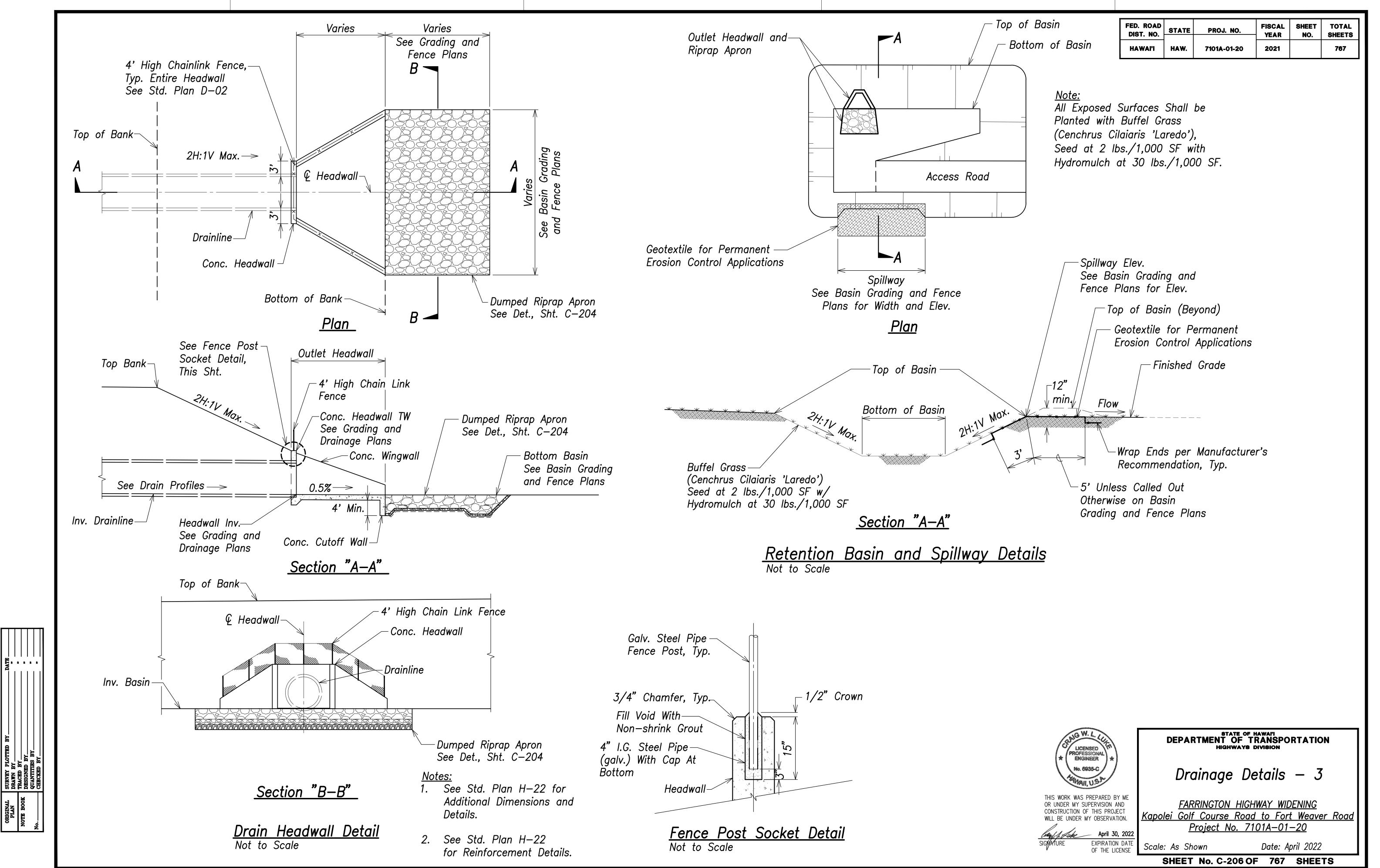
Scale: As Shown Date: April 2022

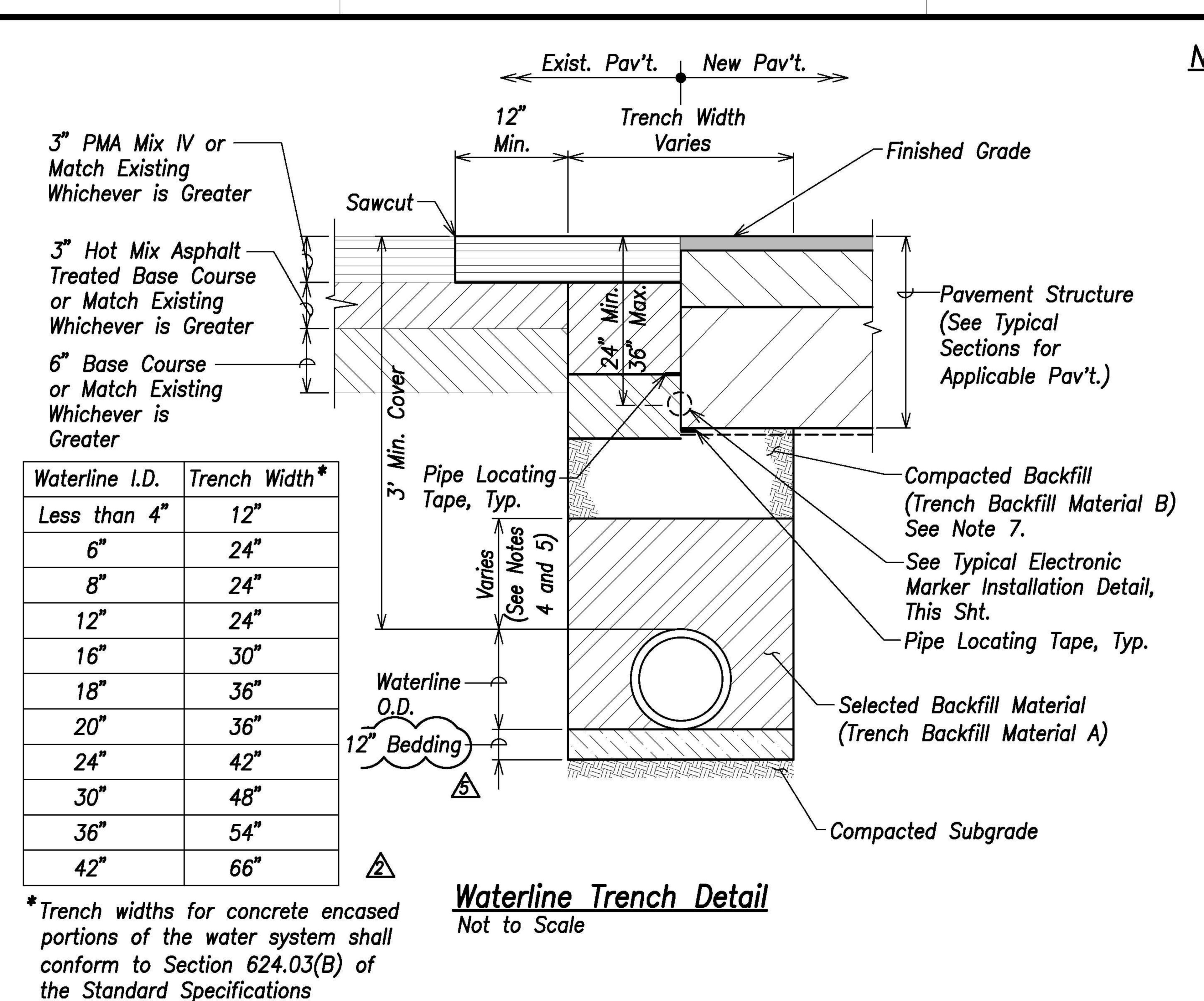
SHEET No. C-204 OF 767 SHEETS











- 1. A min. of 3-feet of cover shall be maintained at all times within the State R/W.
- 2. All other conditions for pipeline installations remain as specified.
- 3. Contractor shall provide minimum pavement structure as shown or match the existing pavement structure for trench restoration of existing pavement in the State R/W.
- 4. 12" of Cushion Material above the top of the pipe for Pipes 16" or Larger. 6" Cushion Material above the top of the pipe for Pipes 12" or Smaller at Locations Where Invert is Above 4-Foot Elevation.
- 5. 12" of Cushion Material above the top of the pipe for All Pipe Sizes at Locations Where the Invert is at or Below the 4-Foot Elevation.
- 6. In Areas Where Soft and/or Loose Soils are Encountered Near the Proposed Drain Line, the Contractor Shall Remove the Unsuitable Materials as Required by the Project Soils Engineer and Provide a Subgrade Stabilization Layer with a Thickness to be Determined by the Project Soils Engineer.

7. Where existing utilities under the new waterline cannot achieve the required compaction, Controlled Low Strength Material (CLSM) with a 28-day unconfined compressive strength between 50 and 150 pounds per square inch (psi) shall be used in place of compacted backfill.

APPROVED:

Manager and Chief Engineer, BWS

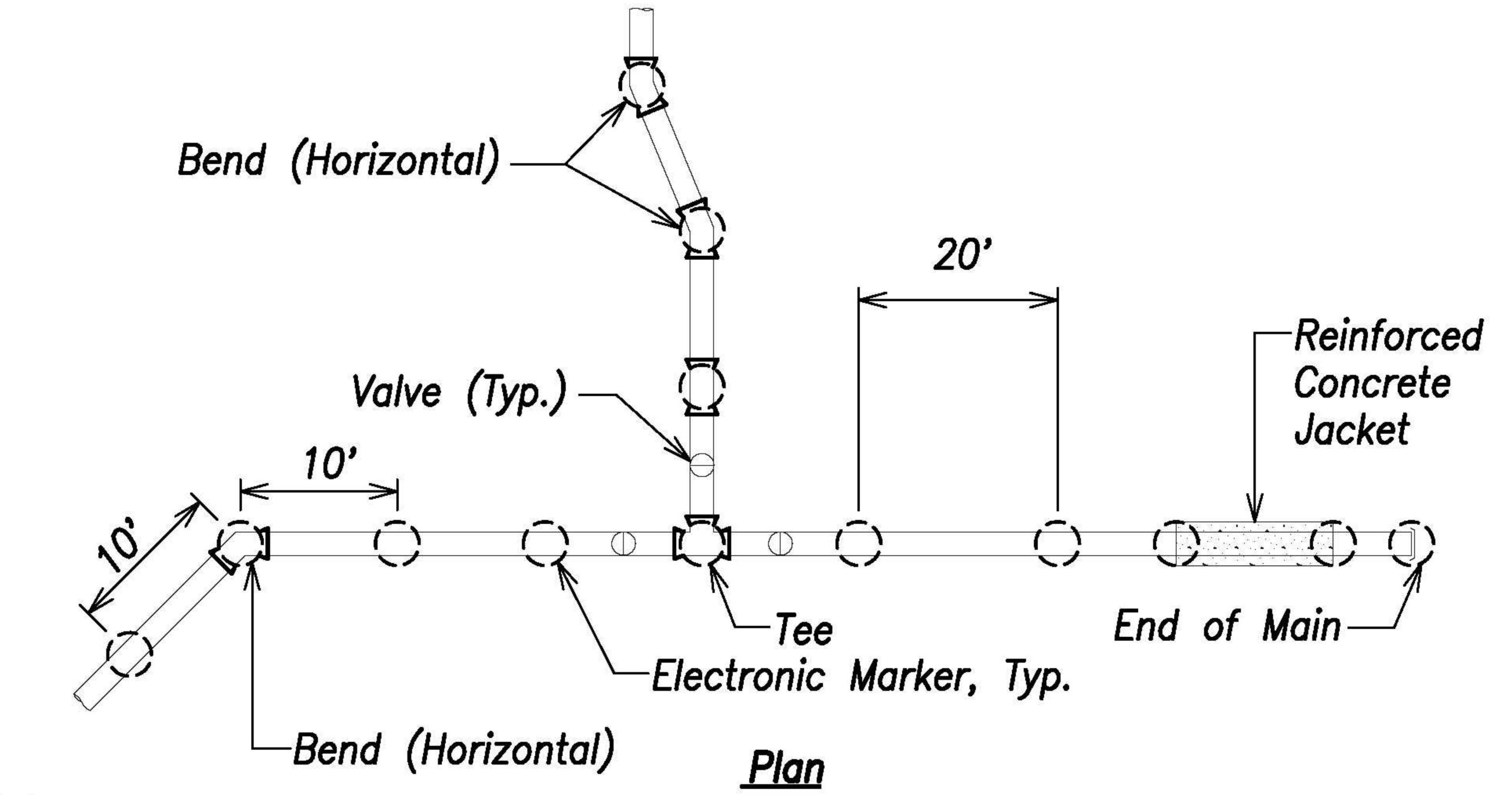
(for work affecting BWS facilities in

City/State R/W & BWS easements only)

Reinforced -- Manhole Wall or Concrete Retaining Wall Jacket [∠]Ductile Iron Pipe (Size Varies) -Provide 30# roofing paper-/ bond breaker between manhole wall and reinforced concrete jacket Reinforced Concrete Jacket Connection to Manhole or Retaining Wall Not to Scale 07/15/22 SRevised details

Brass Pipe (for ARV) ¬ - Ball Stop or Copper Tubing (for Service Lateral) Brass Coupling (Flush Brass Nipplewith Face of Reinf. Conc. Jacket) Ball Corp

<u>Service Lateral or ARV Connection</u> Through Reinforced Concrete Detail Not to Scale



- Install electronic marker over center line of pipe at a minimum depth of 2 feet and a maximum depth of 3 feet from finished grade.
- Install trench backfill and pipe cushion material in accordance to the plans and specifications.
- 3. Install electronic makers at a minimum clearance of 6-inches, where possible. Install markers above the pipe or concrete jackets.

Typical Electronic Marker Installation Not to Scale

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

FED. ROAD DIST. NO.

HAWAPI

STATE PROJ. NO.

7101A-01-20

YEAR

208

DEPARTMENT OF HAWAPI

REVISION

06/08/22 /2\Revised trench width table

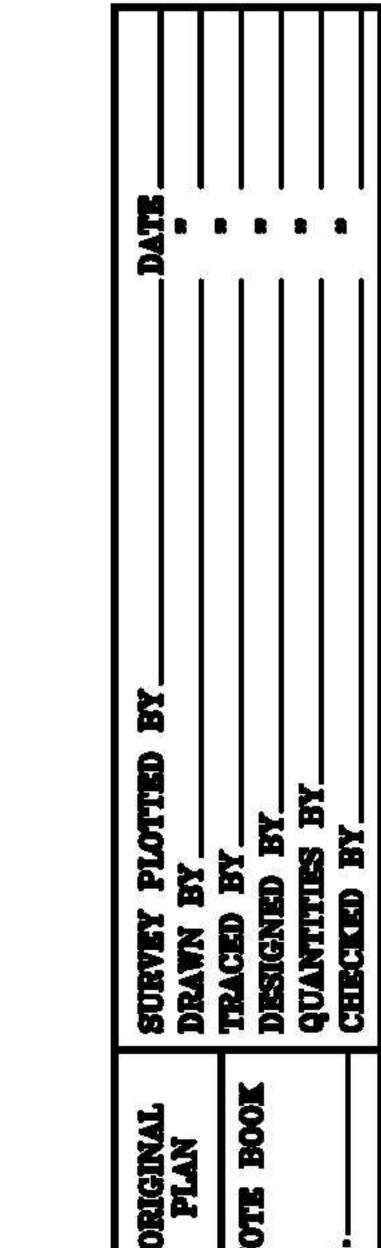
Water Details


FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road


Project No. 7101A-01-20

Date: April 2022 Scale: As Shown


SHEET No. C-207 OF 767 SHEETS





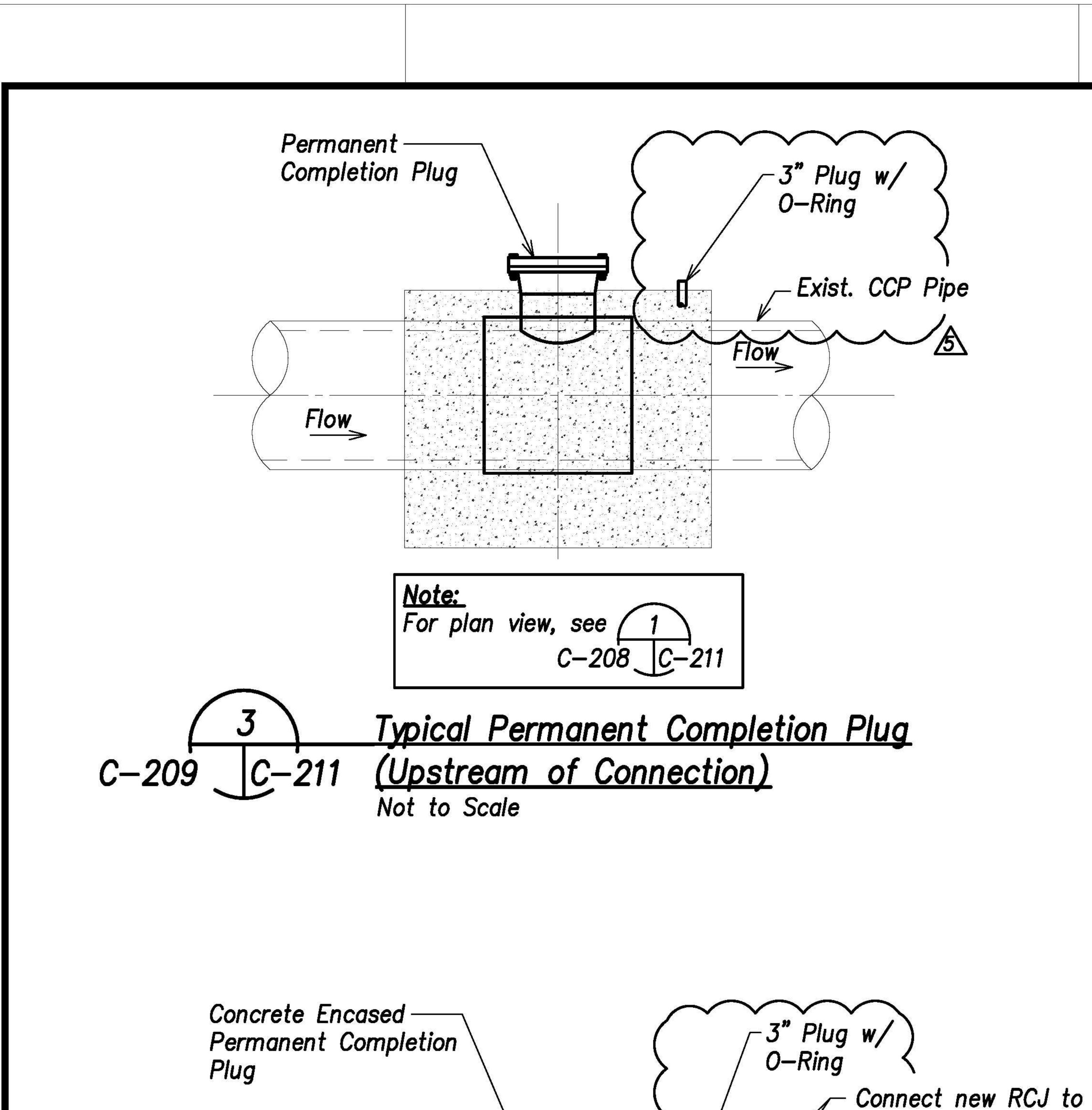


LE: K:\civil\23146 Farrington Hwy Widening\Dwg\Construction Dwgs\C—2



SHEET No. C-210 OF 767 SHEETS

il\23146 Farrington Hwy Widening\Dwg\Construction Dwgs\C—210 Waterline Connection an



For plan view, see [

Not to Scale

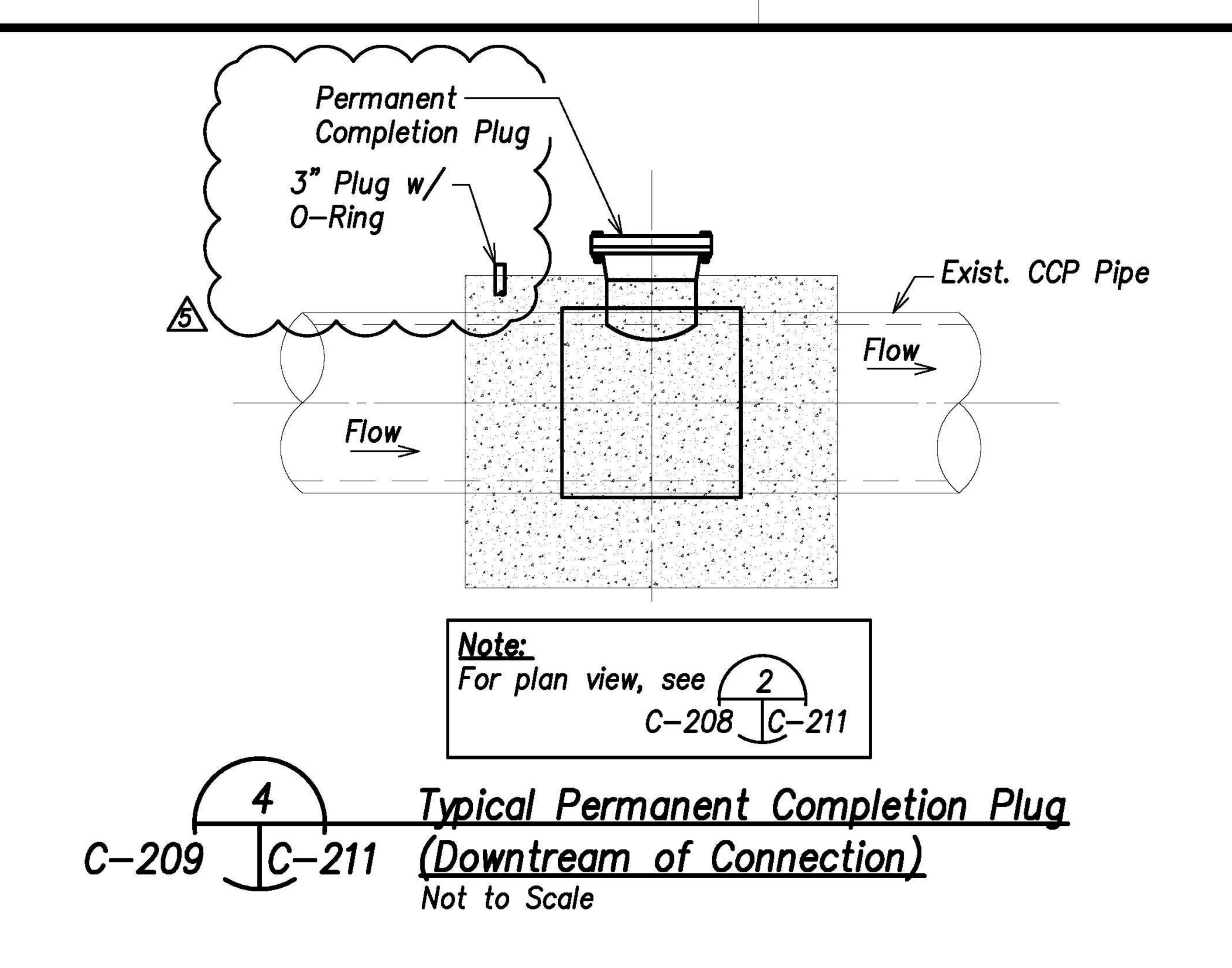
(Upstream of Connection)

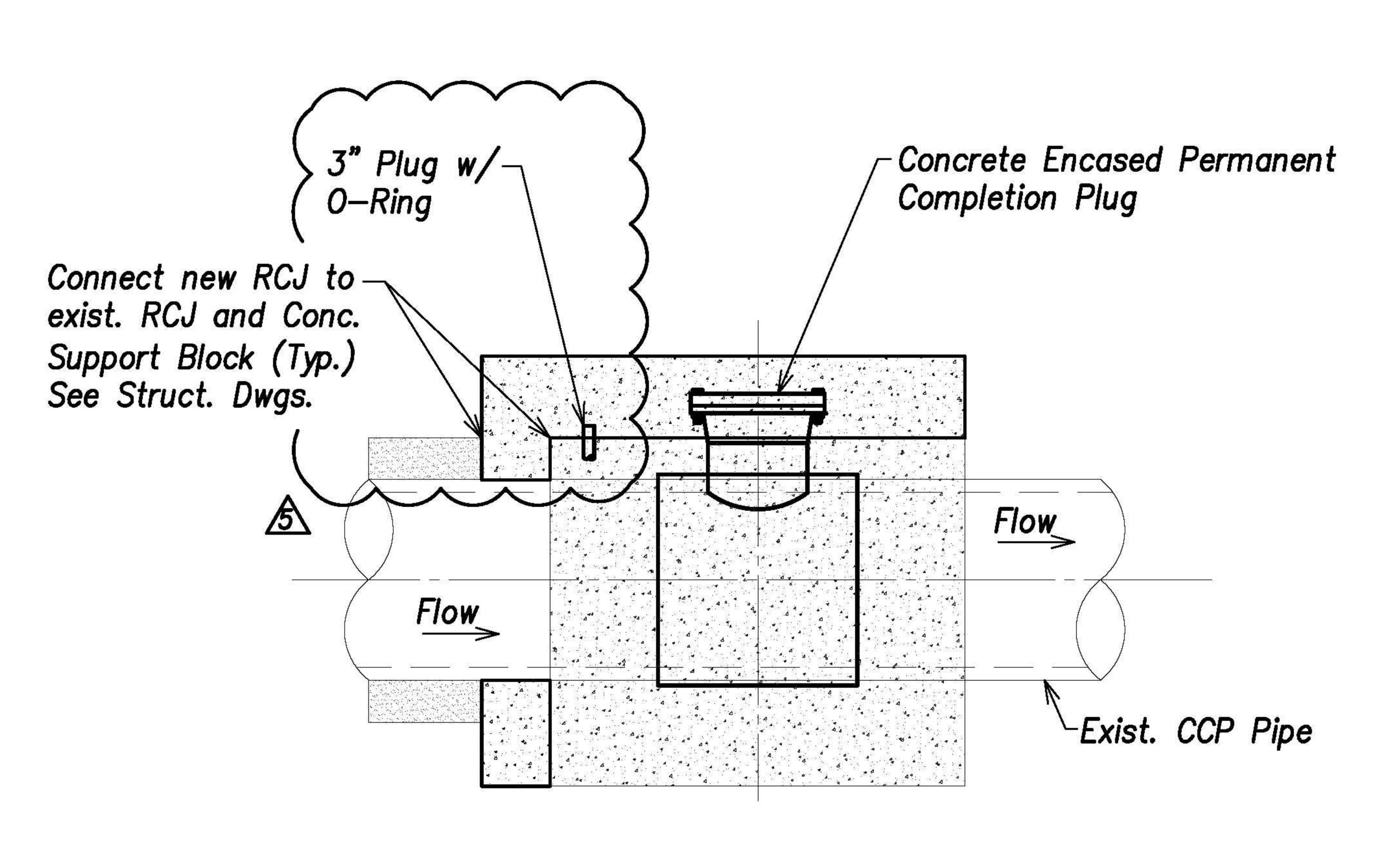
Typical RCJ at Permanent Completion Plug

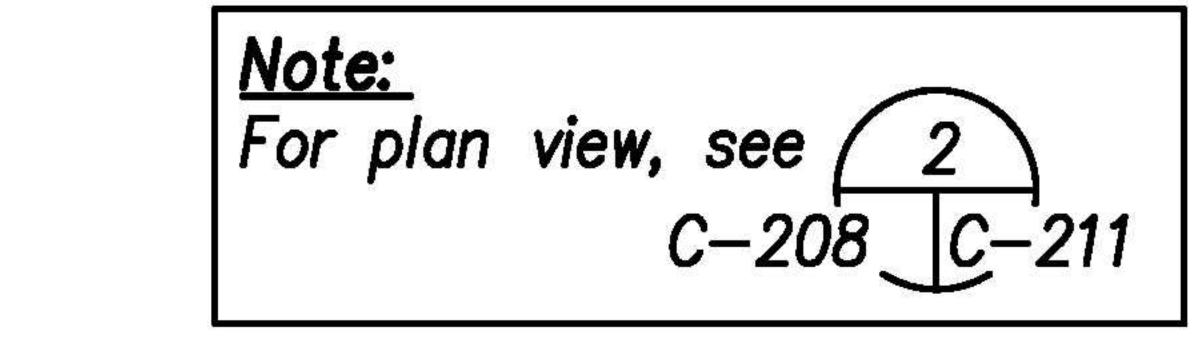
Flow

Exist. CCP Pipe -/

C-209 C-211







Typical RCJ at Permanent Completion Plug (Downstream of Connection) Not to Scale

	6	
C-209	C-211	

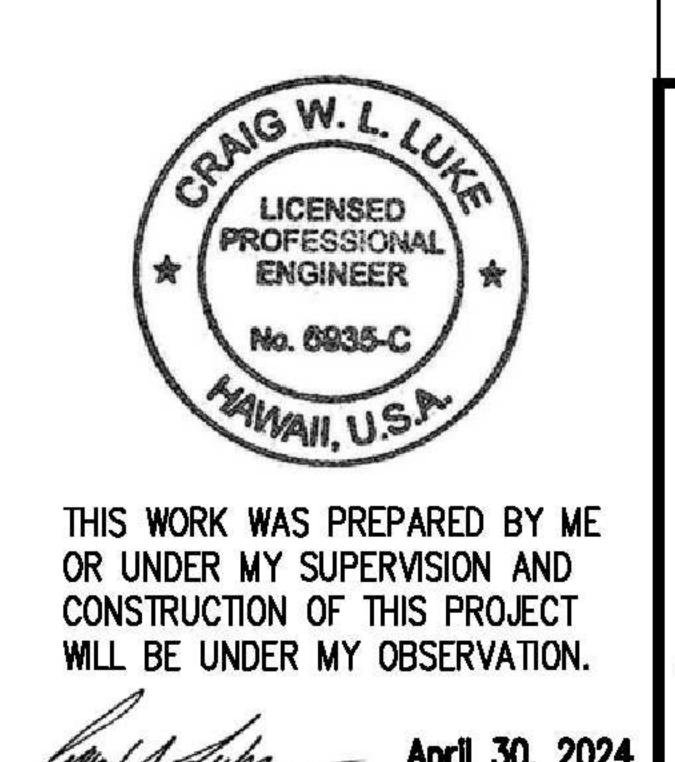
exist. RCJ and Conc.

Support Block (Typ.)

See Struct. Dwgs.

FED. ROAD DIST. NO. STATE PROJ. NO. 212 7101A-01-20

- Prior to start of Construction, Contractor shall submit shop drawings for approval of the tapping tee w/ anchor full wrap steel plate, the temporary by-pass unit with folding head line-stop assembly w/ sandwich valve, the 3" line—stop nipple, the permanent completion plug, and the CCPxDIP adapter.
- See sheets C-208 to C-209 for Temporary Bypass Procedures.
- See Struct. Dwgs. for Reinforced Concrete Support Block details.
- Upon completion of the permanent connection, testing, and approval of the connection by BWS, portions of the existing water system that are no longer in use shall be demolished and removed.



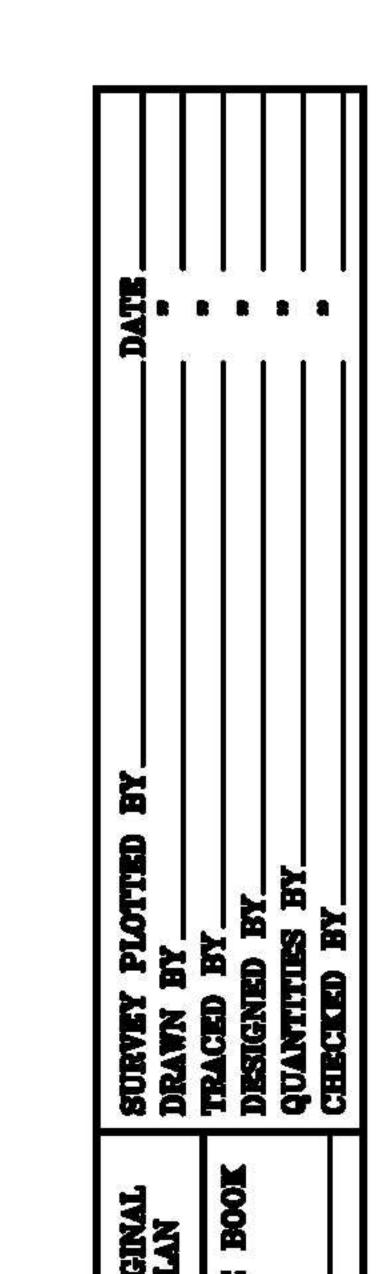
07/15/22 Sevised connections REVISION

DEPARTMENT OF HAWAII Waterline Connection and Temporary By-Pass Typical Details - 2 FARRINGTON HIGHWAY WIDENING

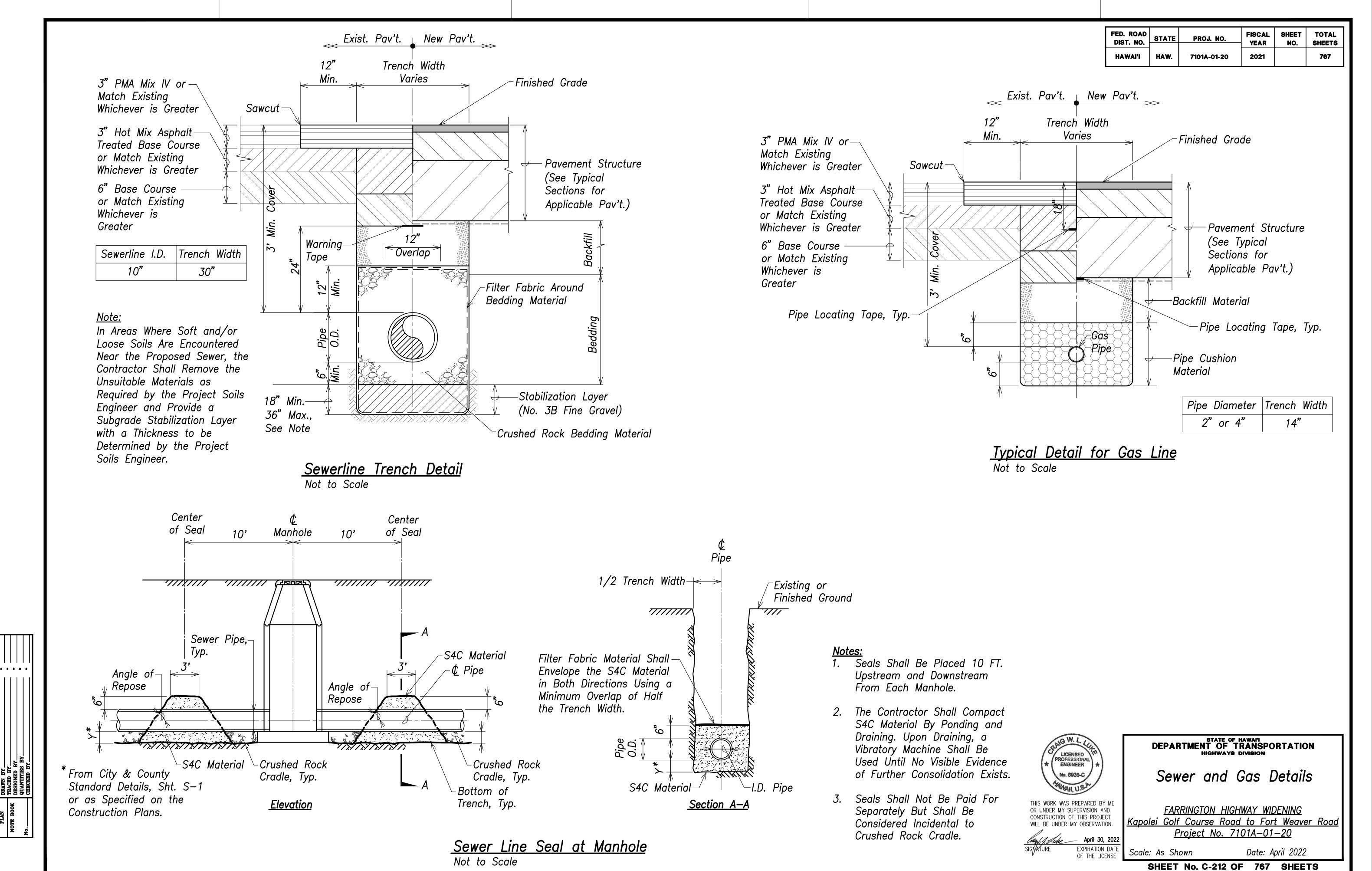
Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20

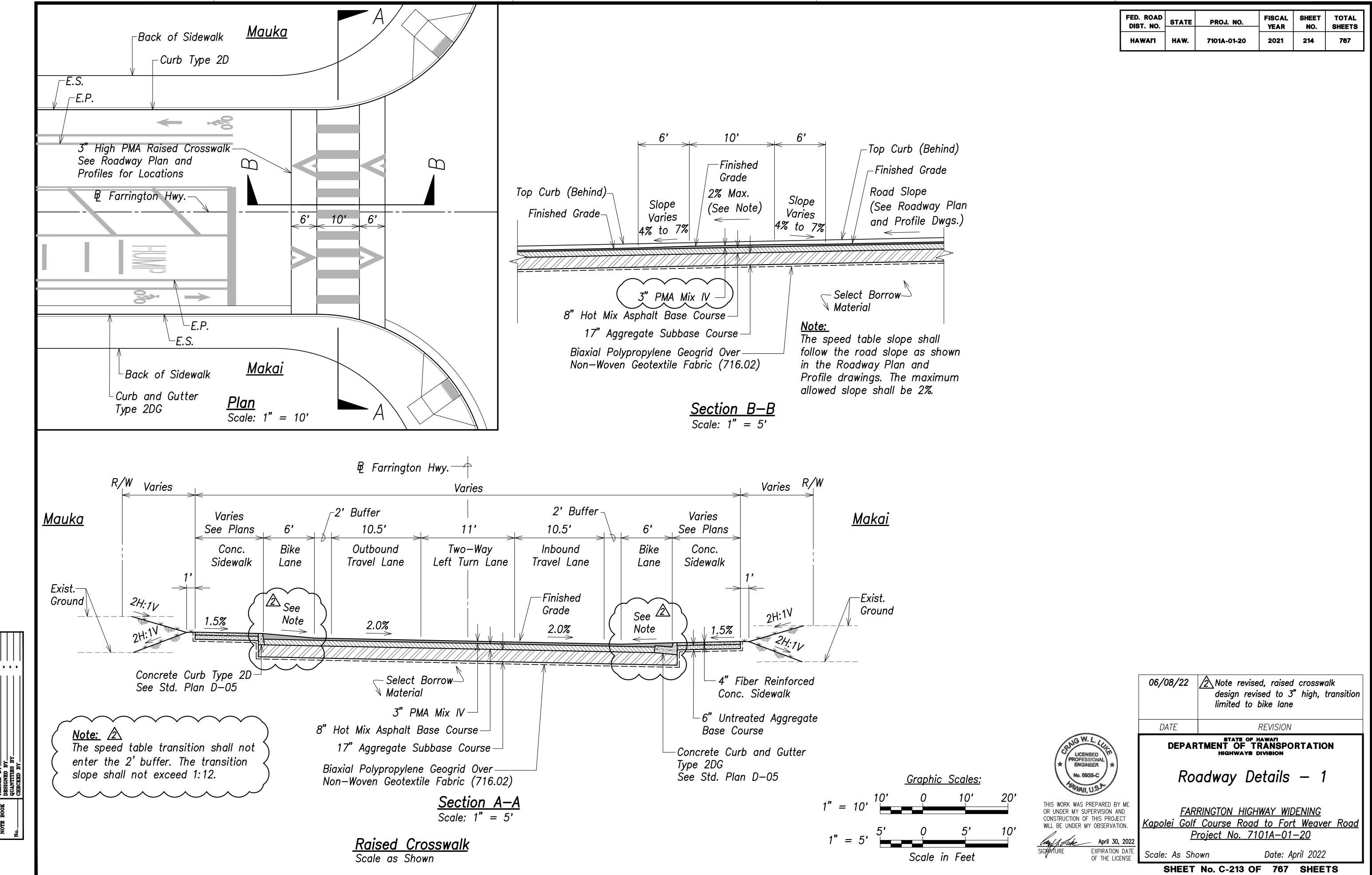
Date: April 2022 Scale: As Shown

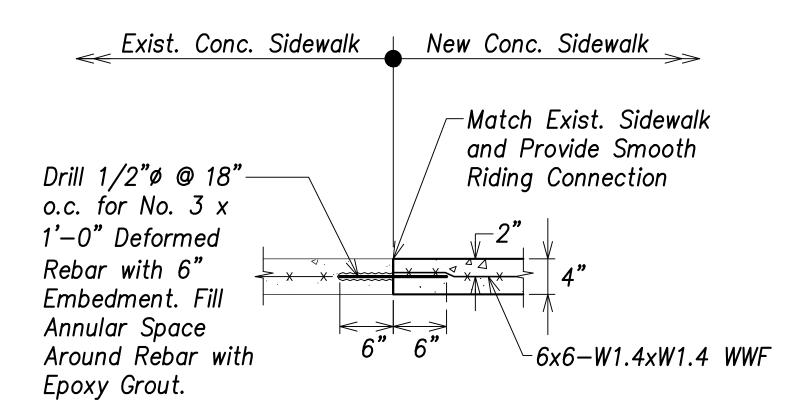
SHEET No. C-211 OF 767 SHEETS



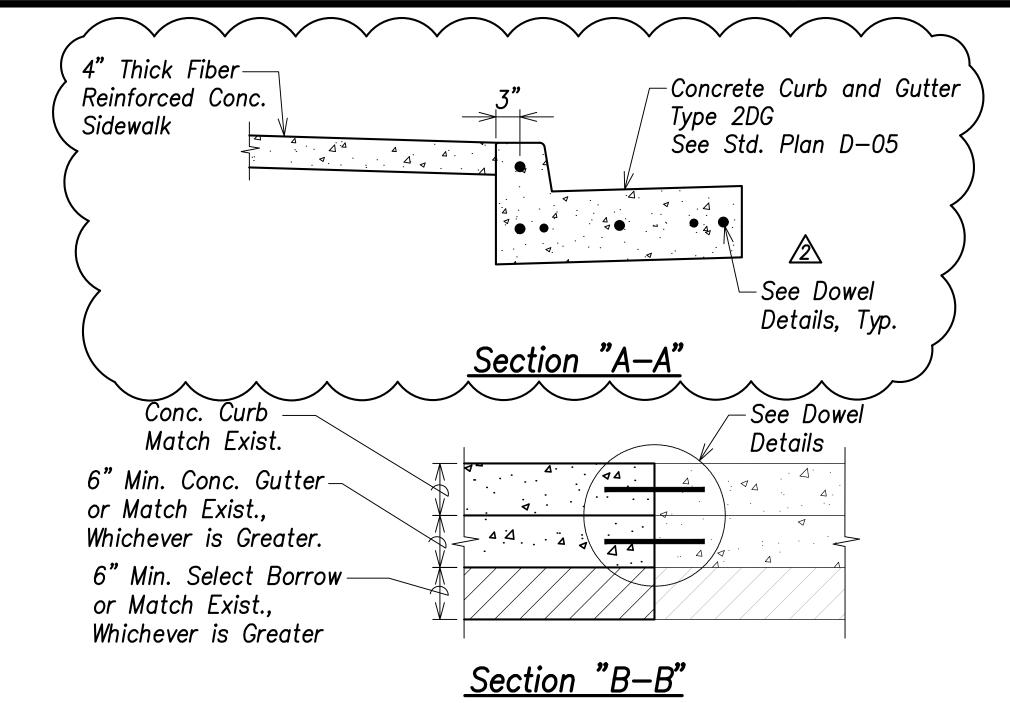
APPROVED: DATE Manager and Chief Engineer, BWS (for work affecting BWS facilities in City/State R/W & BWS easements only)

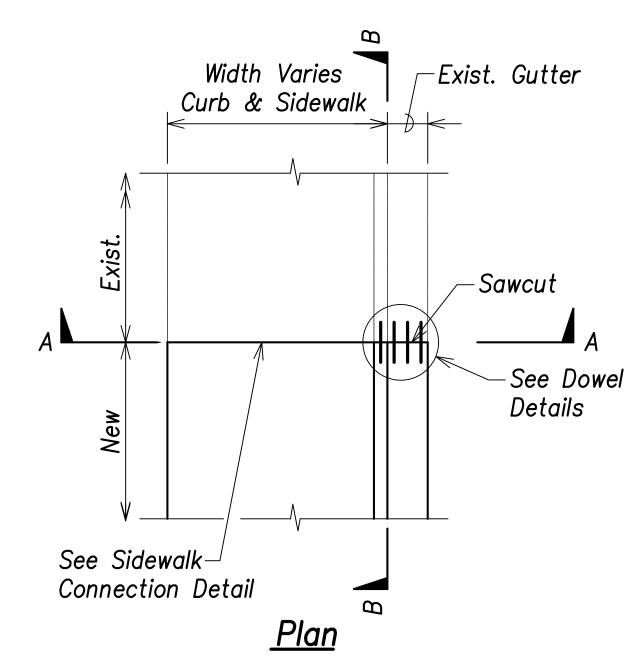




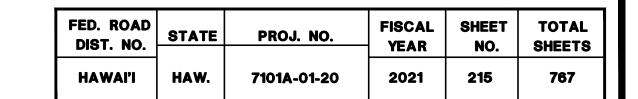


Typical Sidewalk Connection Detail Not to Scale





Curb and Gutter Connection Detail Not to Scale

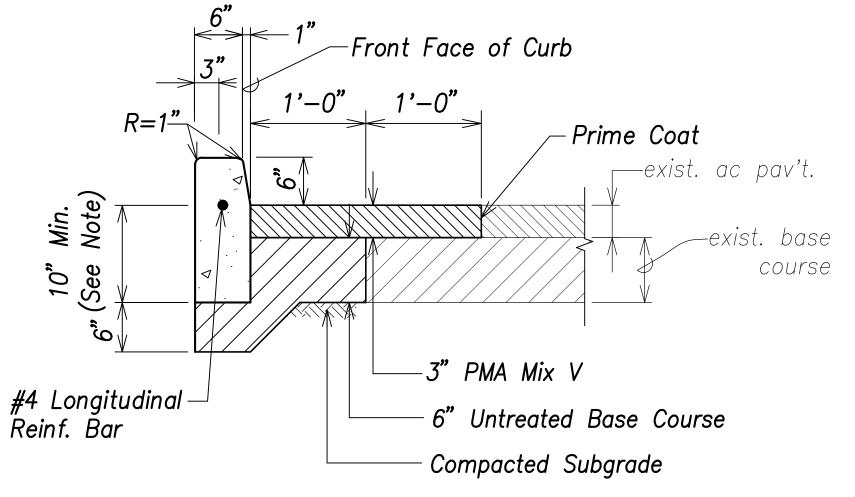


−New Conc. Gutter

#6 x 18" Smooth

Dowels @ 9" o.c.

Exist. Conc. Gutter

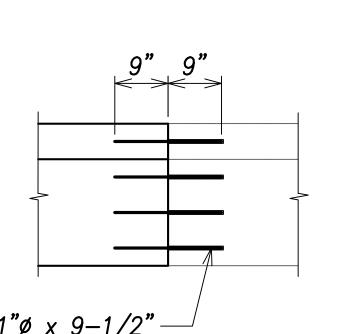


Note:

Curb depth shall be equal to the thickness of the existing AC pavement plus the AC base, but not less than 10".

 $\sqrt{d/2}$

Concrete Curb Against Existing AC Pavement Not to Scale



1"ø x 9-1/2"— Drilled Holes, Fill with Epoxy Grout.

Doweling Notes:

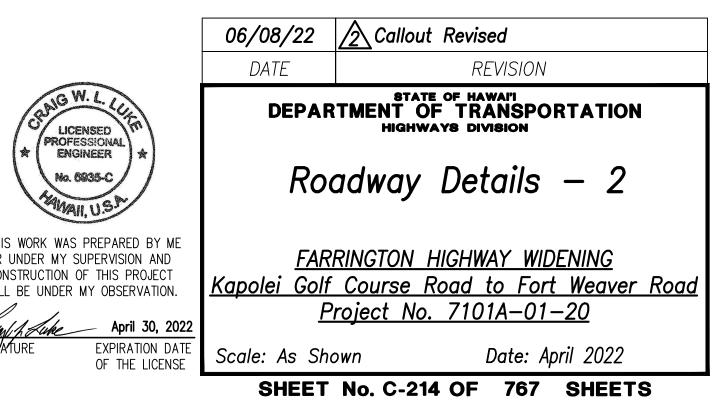
<u>Plan</u>

- 1. Provide Dowels as shown.
- 2. Drill holes as shown, in the existing curb and gutter and/or sidewalk. Clean hole of dust and debris. Fill hole completely with epoxy grout, and install dowel.

Section Through Gutter

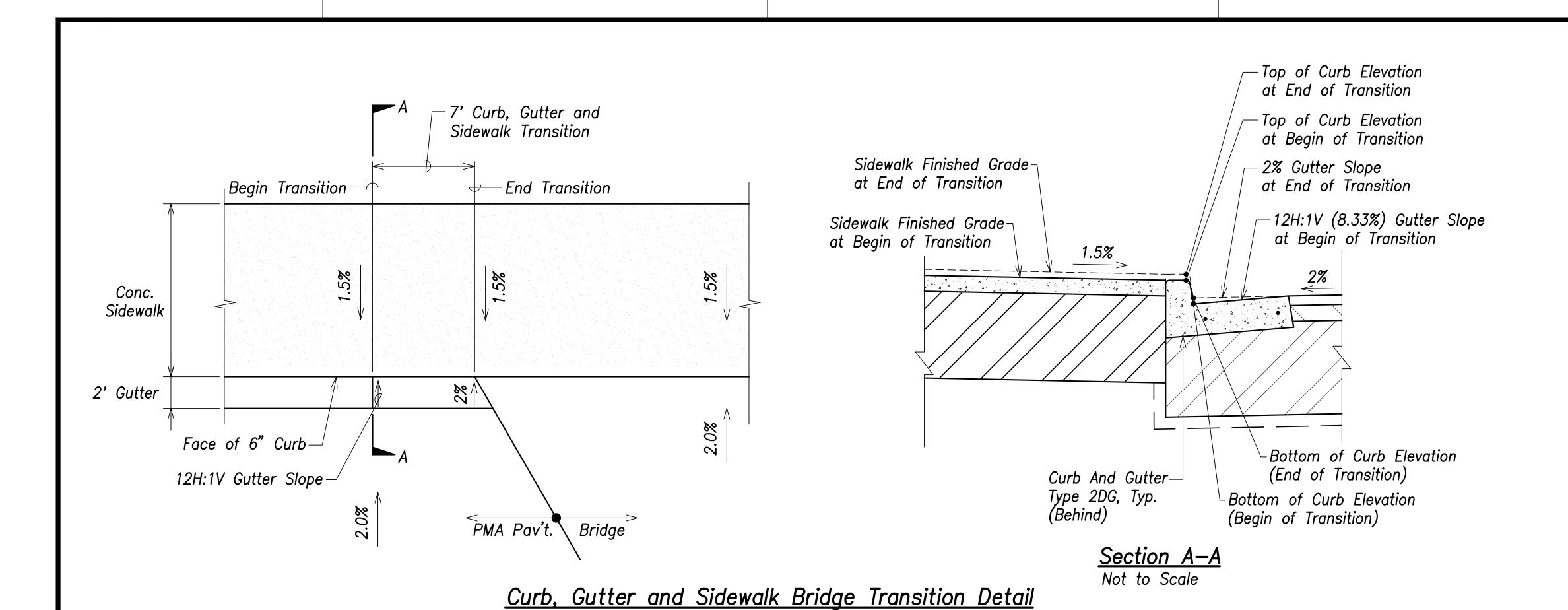
- 3. Epoxy grout shall be two-component, epoxy-resin system and shall comply with the requirements of AASHTO M 235 (ASTM C-881).
- 4. Contractor shall have the option to wet set dowels instead of drilling and epoxy filling.

Dowel Detail Not to Scale



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

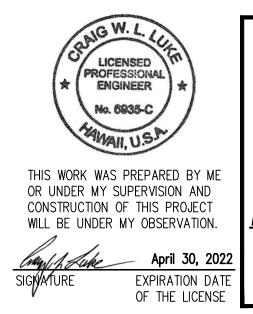
ADD



Not to Scale

FED. ROAD STATE PROJ. NO. FISCAL SHEET TOTAL YEAR NO. SHEETS

HAWAI'I HAW. 7101A-01-20 2021 767



STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Details — 3

<u>FARRINGTON HIGHWAY WIDENING</u>

<u>Kapolei Golf Course Road to Fort Weaver Road</u>

<u>Project No. 7101A-01-20</u>

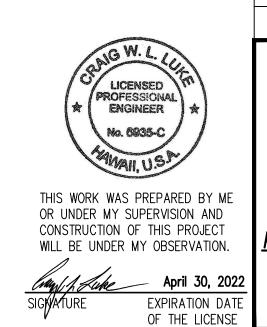
Scale: As Shown

Date: April 2022

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.
- All pullboxes shall be installed away from the curb ramp and within the sidewalk/unpaved area to the 4. maximum extent feasible.
- Where necessary, existing pullboxes, handholes, manholes, etc. shall be adjusted to match curb ramp 5. 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".
 - 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%. /2\
- 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. ($\pm 0.2\%$). Remedial measures will not be accepted.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
DIG 11. 110.			ILAR	110.	SILLIS
HAWAI'I	HAW.	7101A-01-20	2021	217	767



06/08/22 Note Revised

DATE REVISION

STATE OF HAWAI'I

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

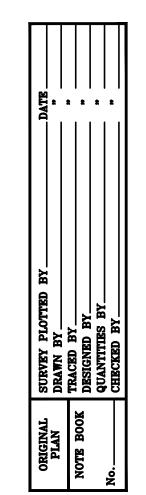
Curb Ramp and Sidewalk Notes

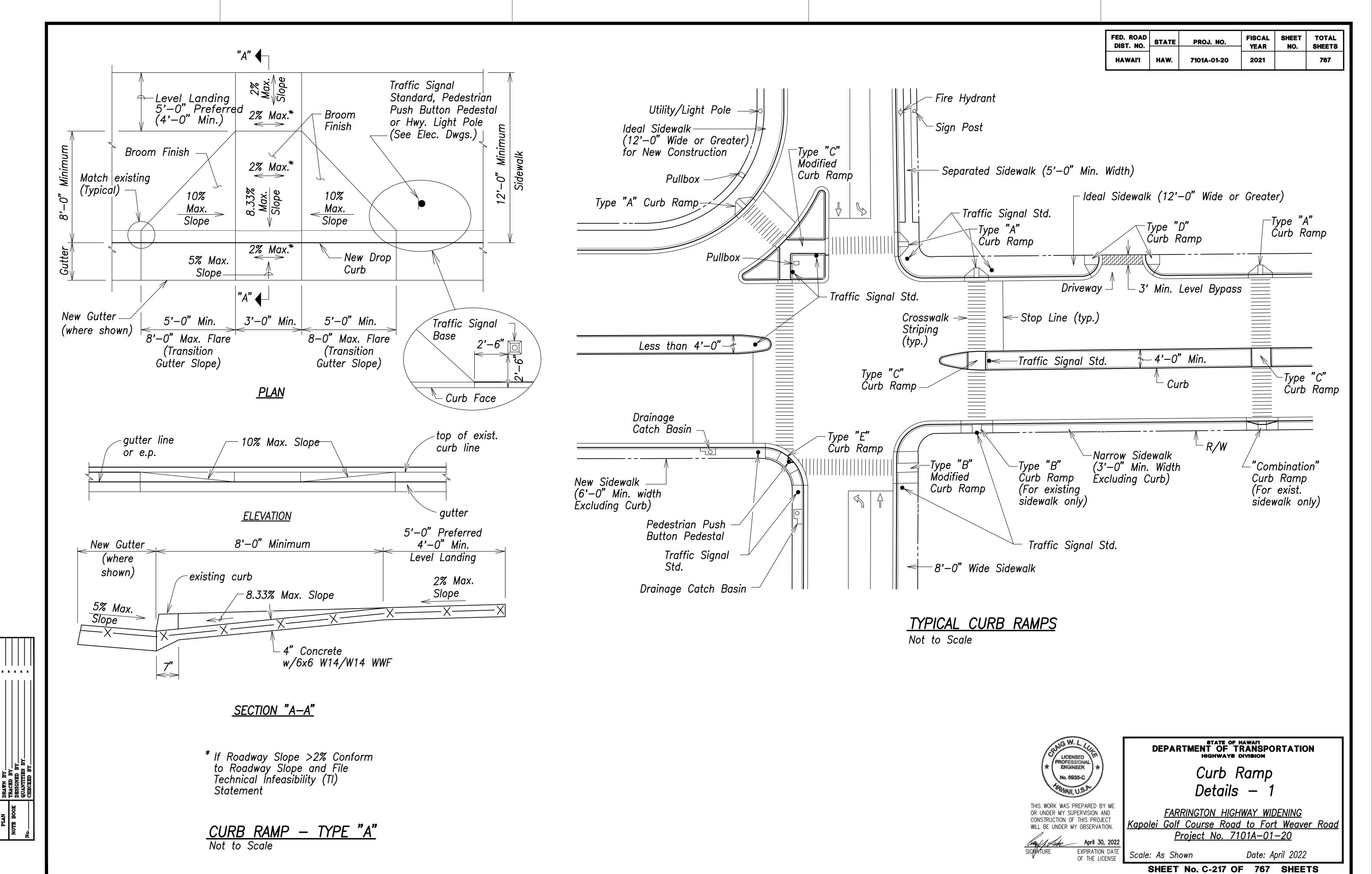
<u>FARRINGTON HIGHWAY WIDENING</u> <u>Kapolei Golf Course Road to Fort Weaver Road</u> <u>Project No. 7101A-01-20</u>

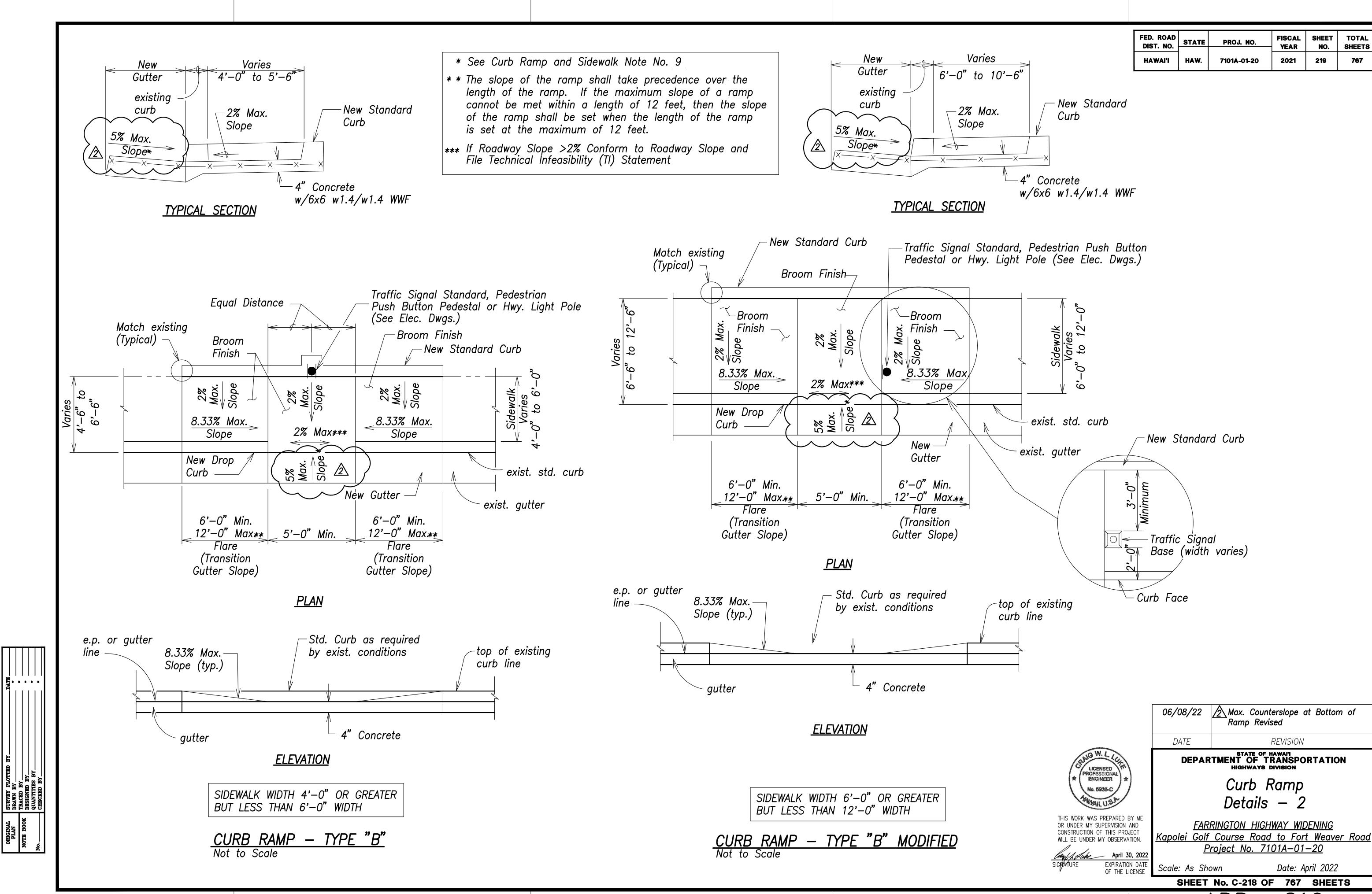
Scale: As Shown

Date: April 2022

 SHEET No. C-216 OF
 767
 SHEETS

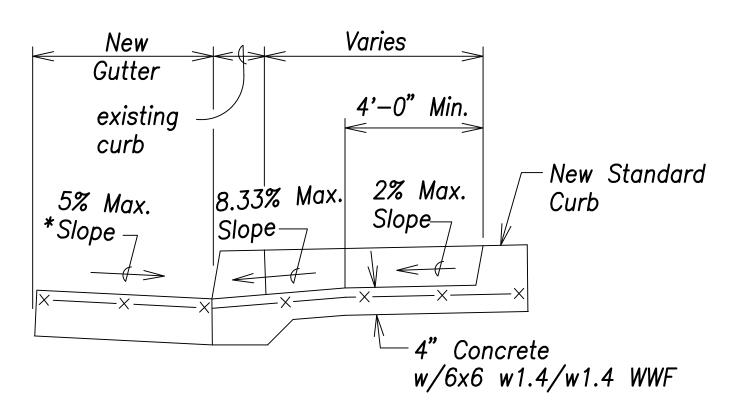




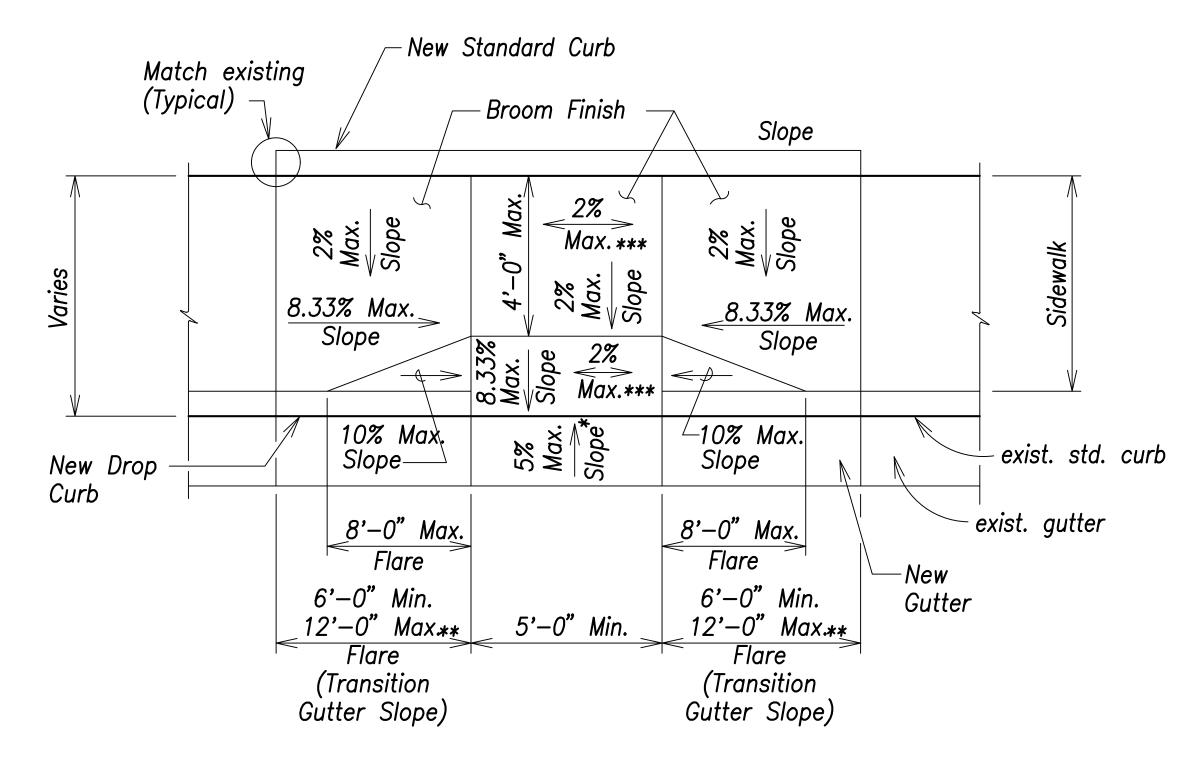


ADD. 219

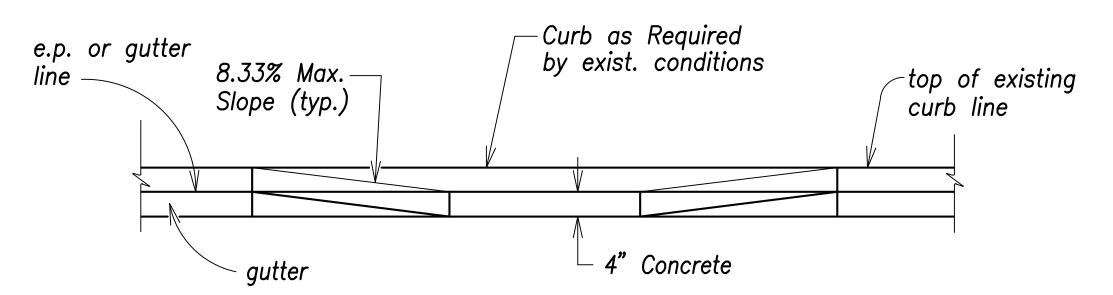
FED. ROAD STATE FISCAL SHEET PROJ. NO. YEAR SHEETS 2021 HAW. 7101A-01-20 767



TYPICAL SECTION



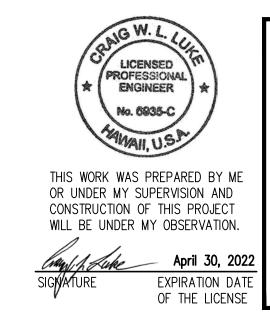
<u>PLAN</u>



ELEVATION

<u>CURB RAMP - COMBINATION</u> Not to Scale

- * 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



STATE OF HAWAI'I DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

Curb Ramp Details - 3

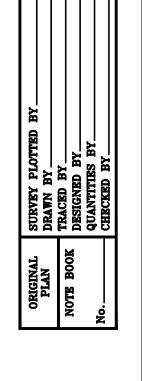
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road

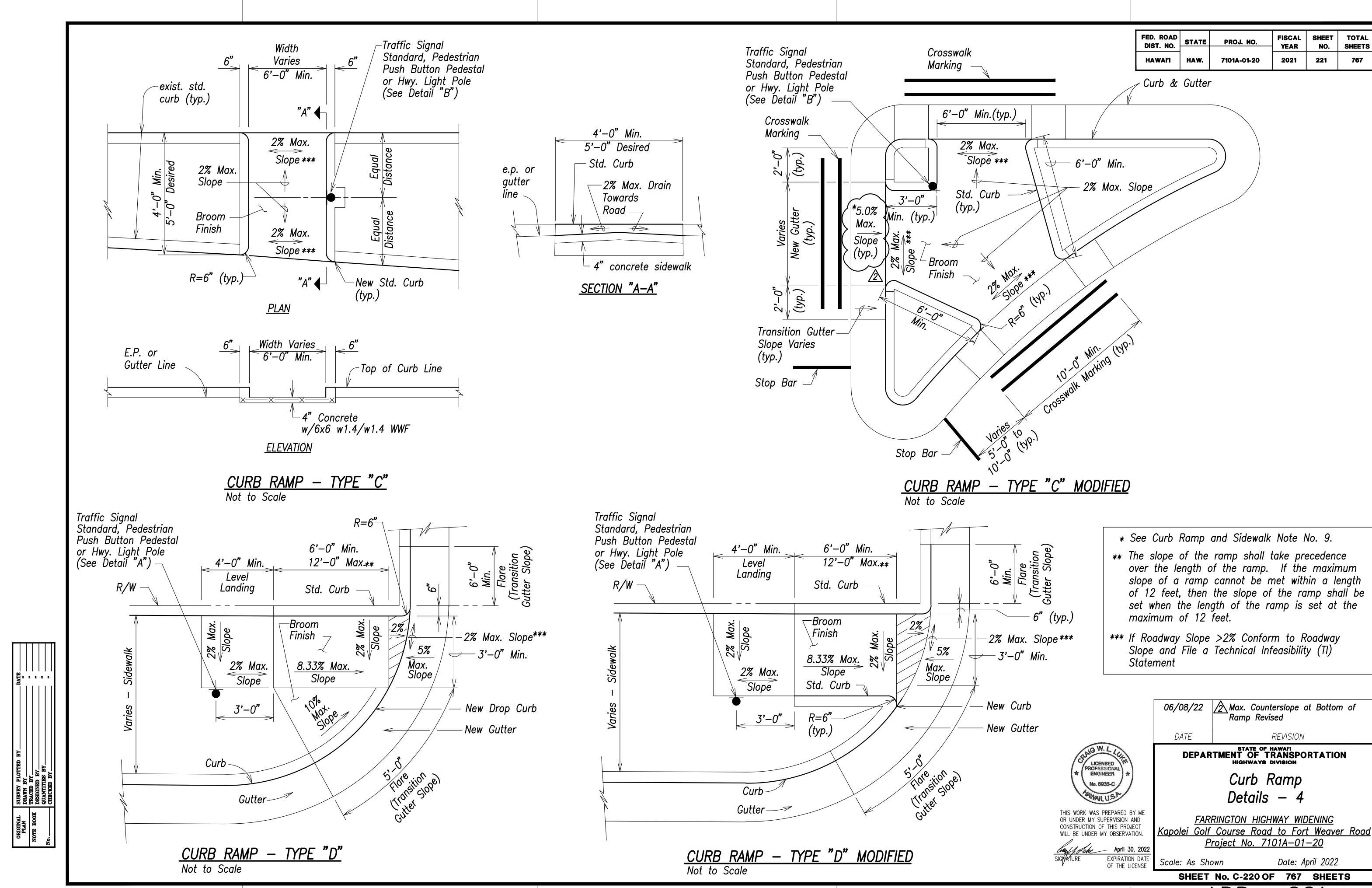
Project No. 7101A-01-20

Scale: As Shown

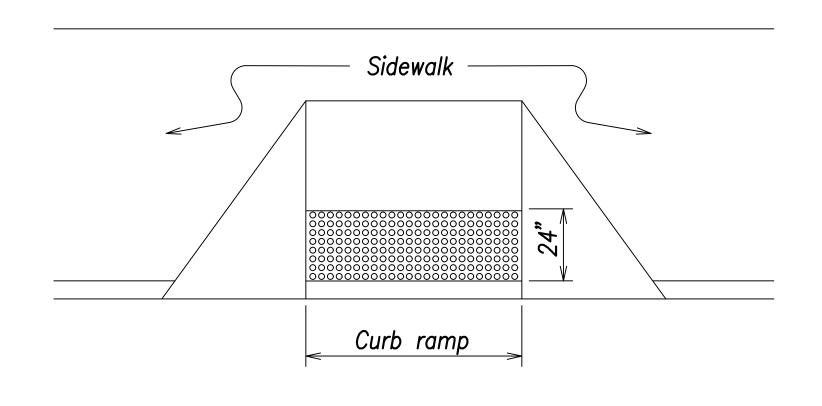
Date: April 2022

SHEET No. C-219 OF 767 SHEETS

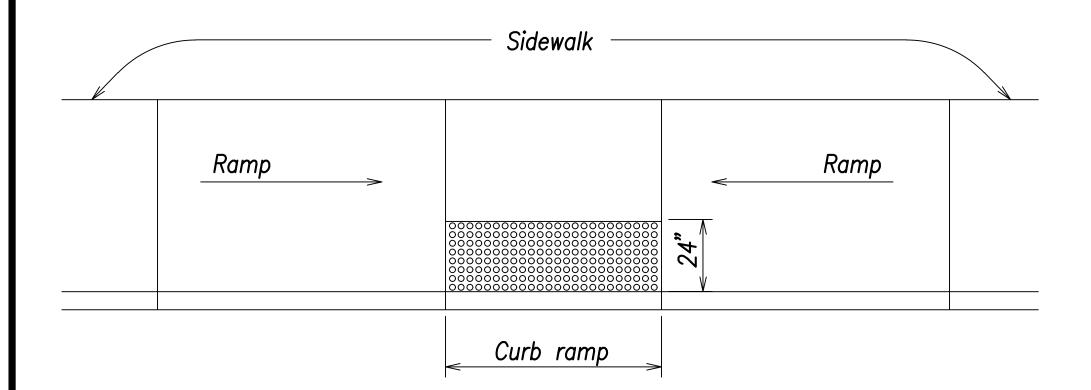




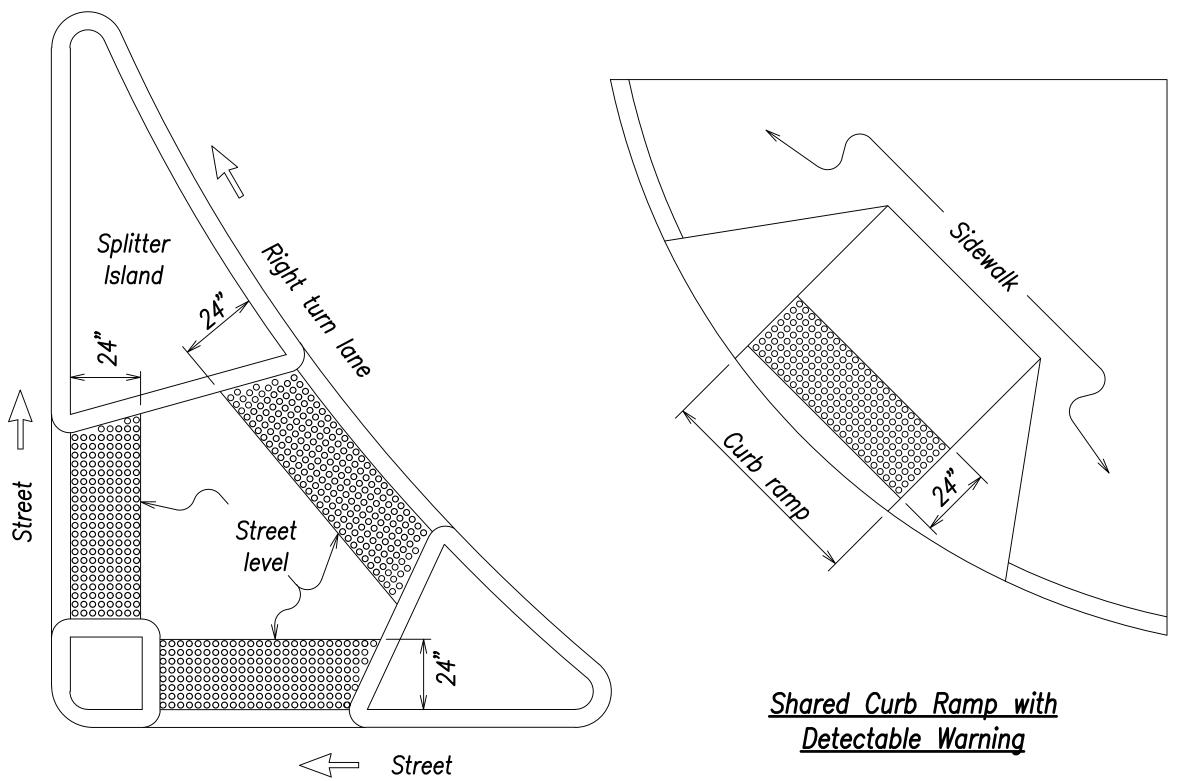
ADD. 221



Detectable Warning at Curb Ramp



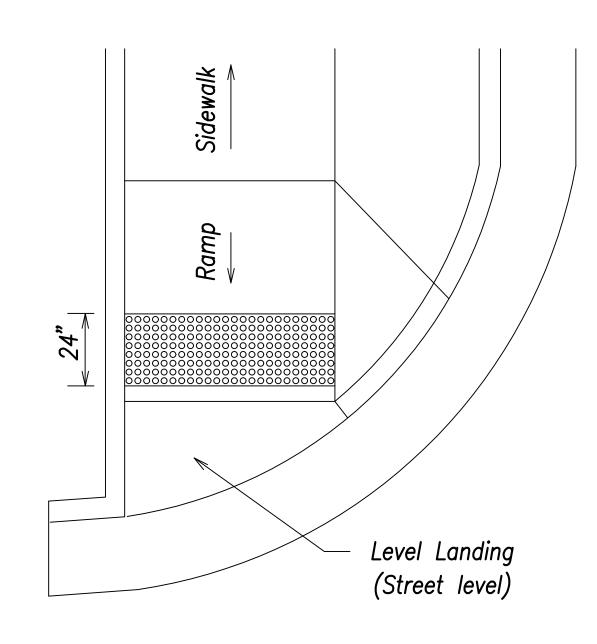
Transition Ramp with Detectable Warning



<u>Detectable Warning</u>

Refuge Island with

FED. ROAD DIST. NO. -FISCAL SHEET PROJ. NO. YEAR SHEETS 767 HAW. 7101A-01-20 2021

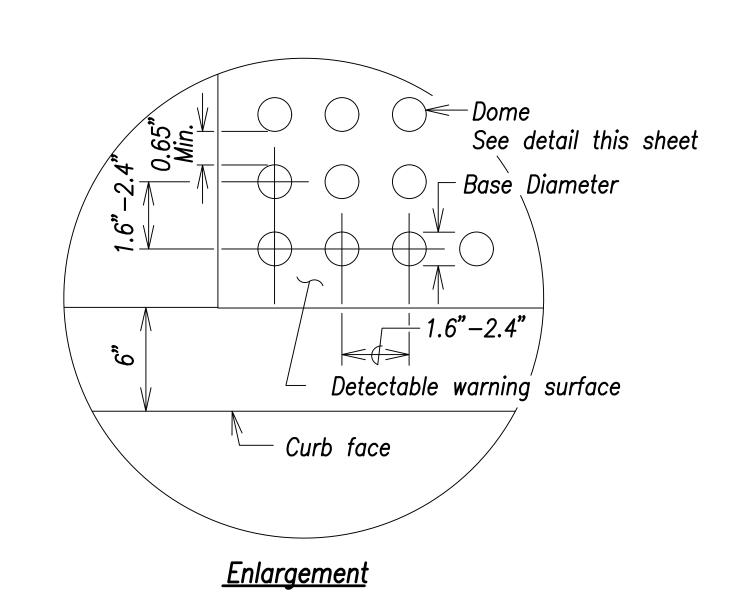


End of Sidewalk Curb Ramp with **Detectable Warning**

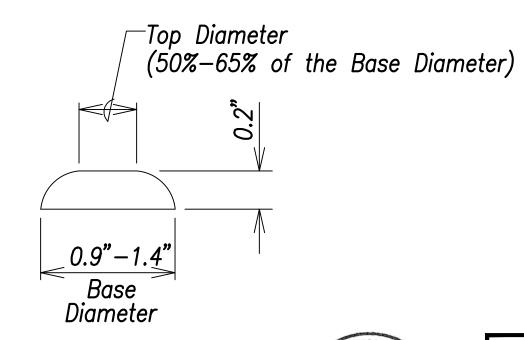
Typical Installation of Detectable Warnings Not to Scale

Notes:

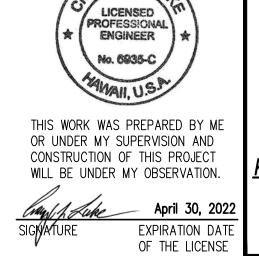
- 1. Detectable warnings shall be 24 inches in the direction of travel and extend the full width of the curb ramp or flush surface (does not include flares).
- 2. Truncated domes shall have a diameter of 0.9 to 1.4 inch at the bottom, a diameter of 50%-65% of the base diameter at the top, a height of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



<u>Detectable Warning Detail</u> Not to Scale



Dome Section



DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

Curb Ramp Details - 5

FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20

Scale: As Shown Date: April 2022

SHEET No. C-221 OF 767 SHEETS

