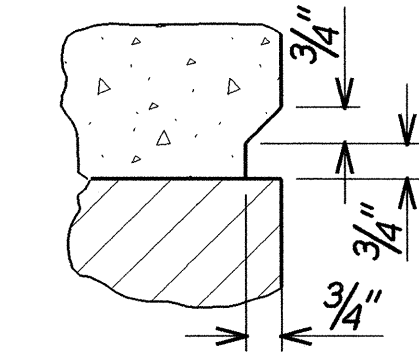


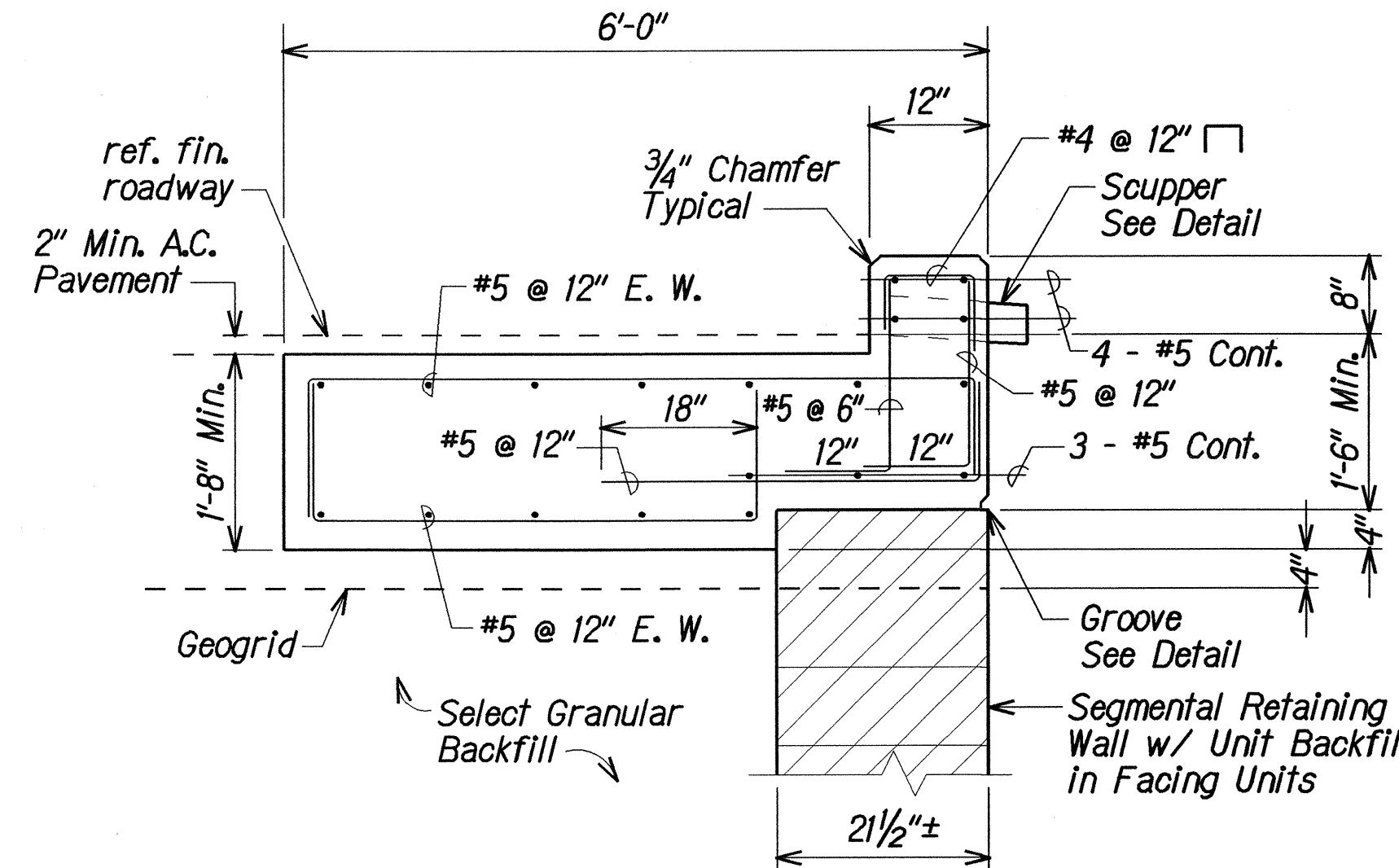
STRUCTURAL NOTES:

- General Specifications: Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994, together with Special Provisions prepared for this contract.
- Design Specifications: AASHTO LRFD Bridge Design Specifications, 3rd edition, 2004, including subsequent interim revisions.
- Loads:
 - Live Load = HL-93
 - Railing Test Level = TL-2
- Materials:
 - Minimum concrete compressive strength (at 28 days) shall be 4,000 PSI.
 - All reinforcing steel shall conform to ASTM A615, Grade 60 unless otherwise noted.
 - Stainless steel plates, rods, anchor bolts, and shapes shall be type 316 or 316L. Welding of stainless steel shall be in accordance with the latest edition of AWS D1.6 "Structural Welding Code - Stainless Steel."
 - Segmental Concrete Facing Units:
 - Minimum concrete compressive strength of units shall be 4,000 PSI.
 - Minimum dimensions and weight of units shall be as follows:
 - Front face unit width = 18 inches
 - Unit height = 8 inches
 - Unit depth = 21.5 inches
 - Unit weight = 115 pounds
 - Geogrid:
 - Geogrid shall be select high density polyethylene only. Geogrids manufactured from polyester or polypropylene resin will not be accepted.
 - Minimum long-term design strength (LTDS) shall be 2,600 pounds per foot (as determined by GRI GG4).
 - Minimum allowable junction strength shall be equal to or greater than 90 percent of the ultimate strength of the geogrid.
 - Maximum geogrid extension at allowable tensile strength shall not exceed 10 percent.
 - Connecting pins shall be high strength reinforced fiberglass specifically designed for connecting the facing units. Minimum allowable shear strength shall be 2,000 pounds.

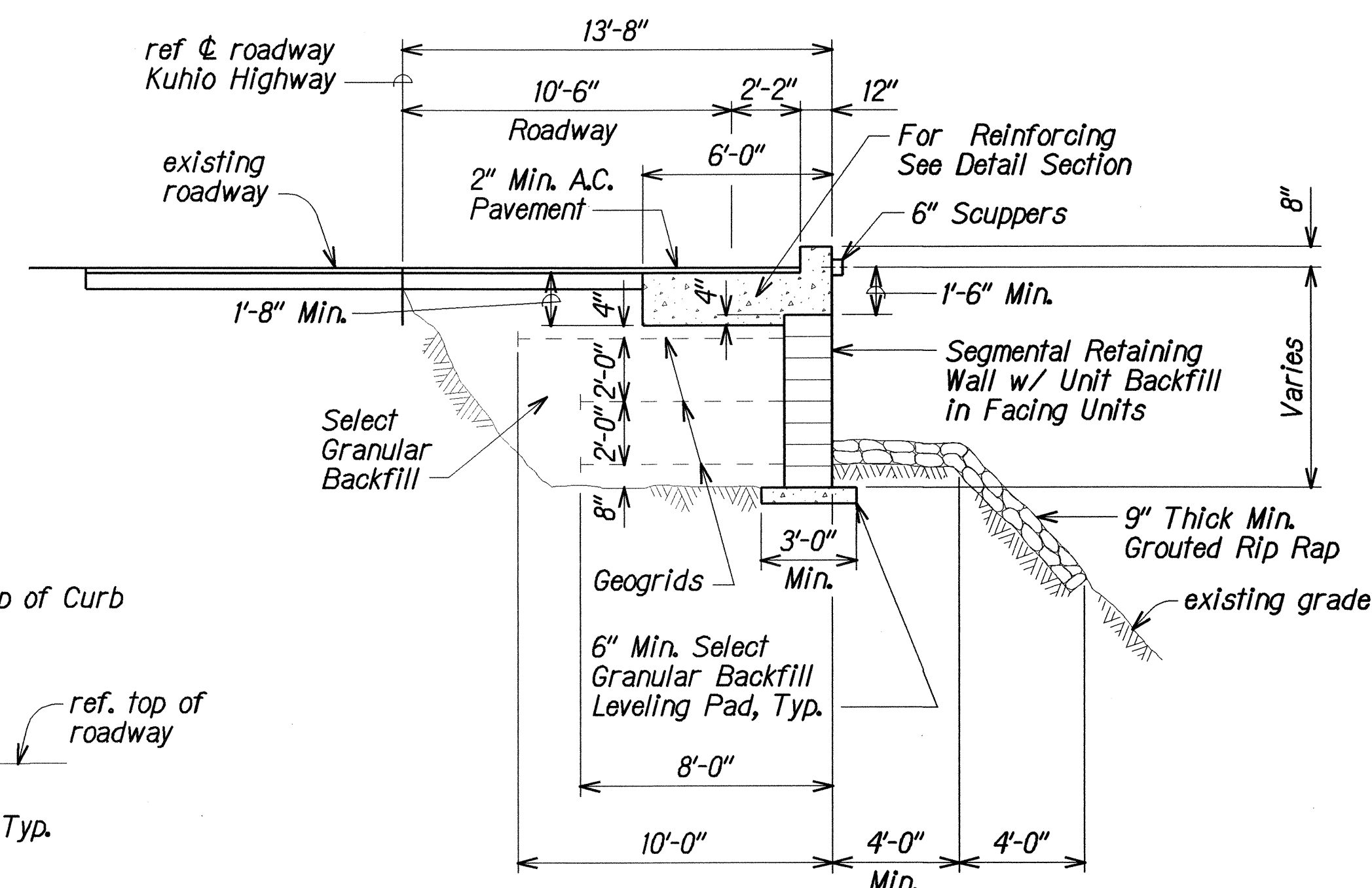
- Reinforcement:
 - Unless otherwise noted, the covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows:
 - Cap beam top bars = 2" clear (with tolerances of -0 inch and +3/8 inch)
 - Formed surfaces exposed to earth and weather = 2" clear
 - Bottom and sides of footings and where concrete is deposited on grade = 3" clear
 - Reinforcing bars shall be detailed in accordance with AASHTO LRFD Bridge Design Specifications, 3rd edition, 2004, including subsequent interim revisions, unless otherwise noted.
 - Minimum clear spacing between parallel bars shall be 1/2 times the diameter of the bar, but in no case shall the clear distance between the parallel bars be less than 1/2 times the maximum size of the coarse aggregate or 1/2 inches.
 - Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of the intersections is less than 12 inches in each direction, in which case alternate intersections shall be tied.
- General Construction Notes:
 - See Standard Specifications and Special Provisions.
 - The Contractor shall comply with all applicable permits for this project. In addition, the Contractor shall comply with all applicable laws of the Federal, State, and County governments.
 - Unless otherwise noted, all vertical dimensions are measured plumb.
 - The Contractor shall verify all site conditions before commencing the work of excavation.
 - For concrete finish, see Standard Specifications.
 - Unless otherwise noted, all exposed concrete surfaces shall be chamfered 3/4" x 3/4".
- Segmental Retaining Wall:
 - Refer to Section 530 - Segmental Retaining Wall of the Special Provisions.
 - Segmental retaining wall shall be constructed in accordance with the recommendations and requirements of the manufacturer.
 - Where geogrids overlap, 3 inches minimum of soil fill shall be provided between geogrid layers for proper anchorage.



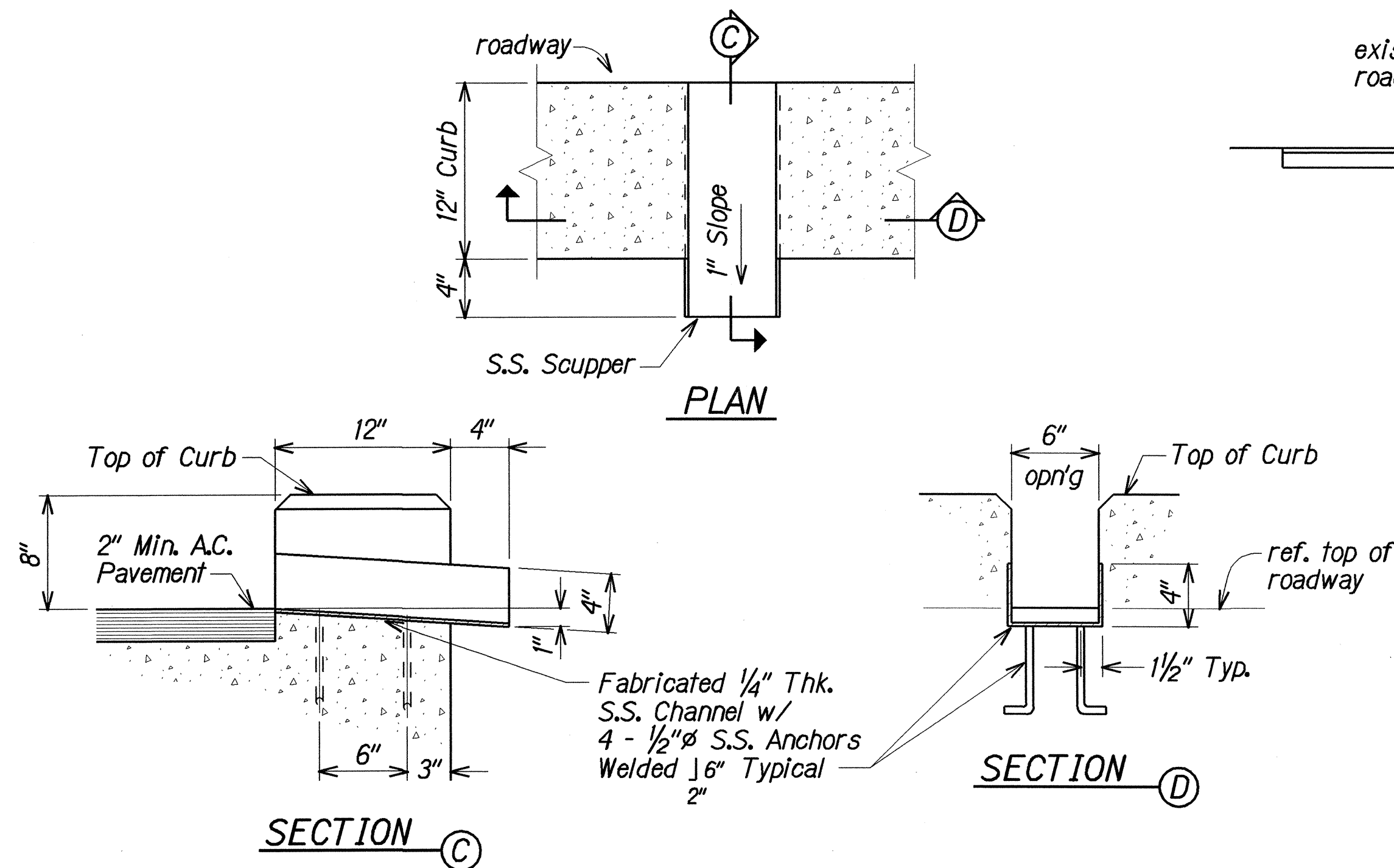
GROOVE DETAIL
Scale: 3" = 1'-0"



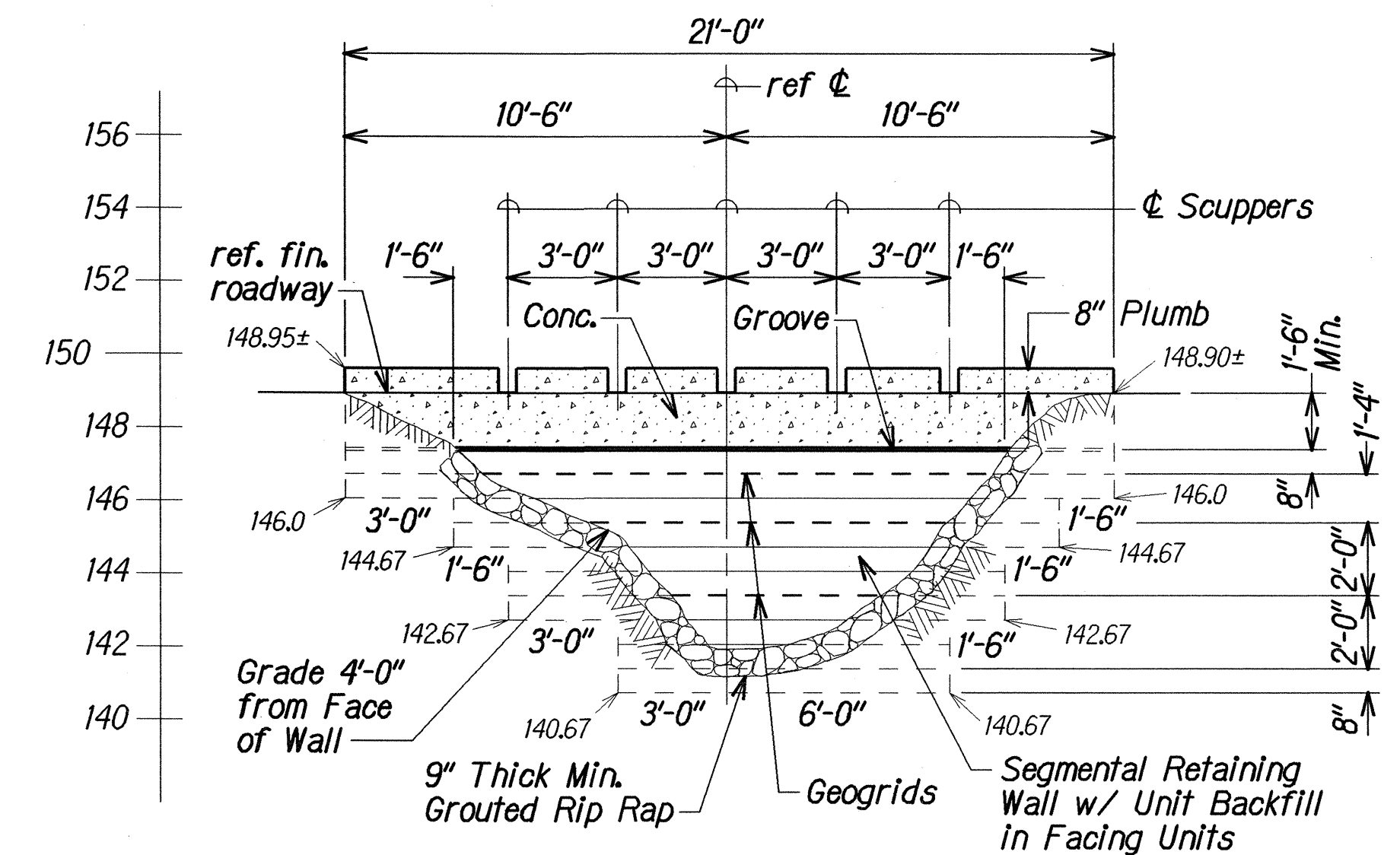
DETAIL SECTION
Scale: 3/4" = 1'-0"



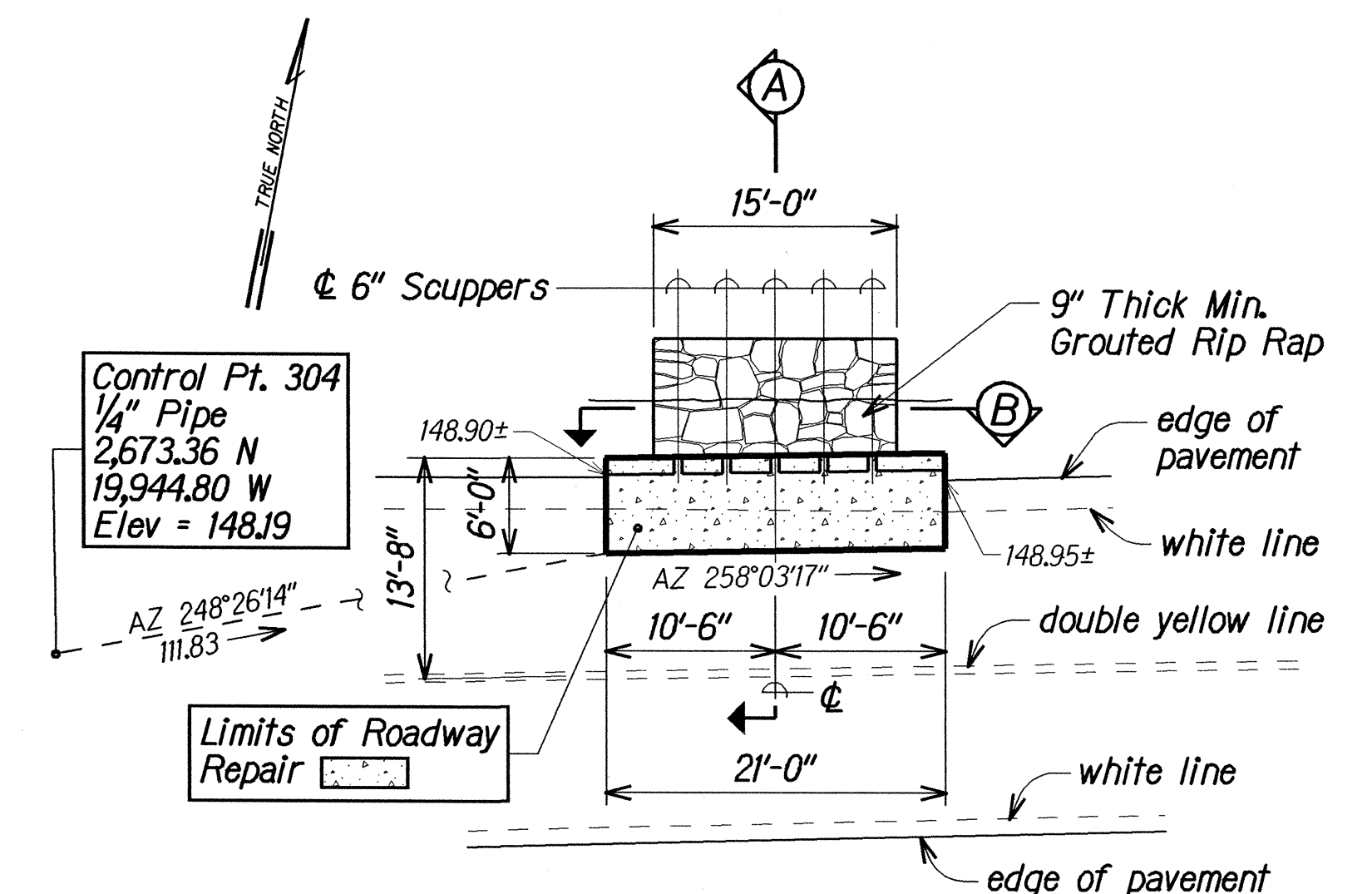
SECTION A
Scale: 3/4" = 1'-0"



SCUPPER DETAIL
Scale: 1 1/2" = 1'-0"



ELEVATION B
Scale: 1/4" = 1'-0"



**PARTIAL PLAN KUHIO HIGHWAY
AT MILE POST 5.12 TO 5.14**
Scale: 1" = 10'-0"

Note: This tracing prepared during "As-Built" posting.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**RETAINING WALL AT
LUMAHAI AND WAINIHA**
KUHIO HIGHWAY
SHOULDER IMPROVEMENTS
Haena to Princeville
Project No. 560A-03-99
Scale: As Noted Date: Jan. 2006

SHEET No. 1 OF 1 SHEETS

"AS-BUILT"