



1. See Standard Specifications for Road and Bridge Construction, (Hawaii 1985) and Special Provisions.
2. See State of Hawaii, D.O.T. Standard Plan Sheet Nos. TE-50 and TE-51 for details of metal guardrail.
3. All anchor bolts shall be high strength bolts conforming to the requirements of ASTM A 325 hot-dip galvanized, including cap plate, nuts and washers.
4. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus  $\frac{1}{4}$ " (max.) is attained.
5. Drilling of through holes shall be done in such a manner that will preclude cone puncturing of the daylighting end.
6. Guardrail, rubrail and spacers shall be of galvanized steel and supports spaced as shown in drawings.
7. Large impacting or vibratory type of equipment will not be permitted in the removal operation of the designated items nor for drilling of holes.
8. Any damage to the existing structures due to the Contractor's operation shall be repaired at his expense to the satisfaction of the Engineer.
9. The Contractor shall verify all dimensions in the field before commencing with work.
10. The Contractor shall verify the location of all existing utility lines near structures and notify their respective owners before commencing with work.
11. Cut and remove existing  $3\phi$  pipe railing,  $1\frac{1}{2}$ " below top concrete deck grade. Fill resulting depressions with mortar and smooth finish to match roadway grade. (Incidental to beam type guardrail).
12. The work necessary to fabricate and install the guardrail post on the bridge structure shall include all labor, materials, tools, equipment and incidentals necessary to complete the work. This work shall be incidental to beam type guardrail and will not be paid for separately.
13. Double element, (nested) top rail only. See "Plan & Elevation" for limits. Special punching of holes thru both top & rubrail elements required in this section for bolting to post.
14. Approaches on both sides of bridge shall be striped and signed in accordance with Standard Plan TE-67, Typical Narrow Bridge Delineation. Payment for this work shall be paid for under Sections 621, destination directional, regulatory and warning signs and Section 629, Pavement Markers, Striping and Markings.

Scale:  $\frac{3}{16}'' = 1'-0''$

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
MAPULEHU BRIDGE  
PLAN AND ELEVATION  
AND STRUCTURAL NOTES  
MOLOKAI - GUARDRAIL AND SHOULDER  
IMPROVEMENTS AT VARIOUS LOCATIONS  
KAMEHAMEHA V HIGHWAY, SR 450, MOLOKAI, HAWAII  
Project No. STP-0450(K5)  
Scale: As Noted Date: June, 1993  
SHEET No. 1 OF 2 SHEETS