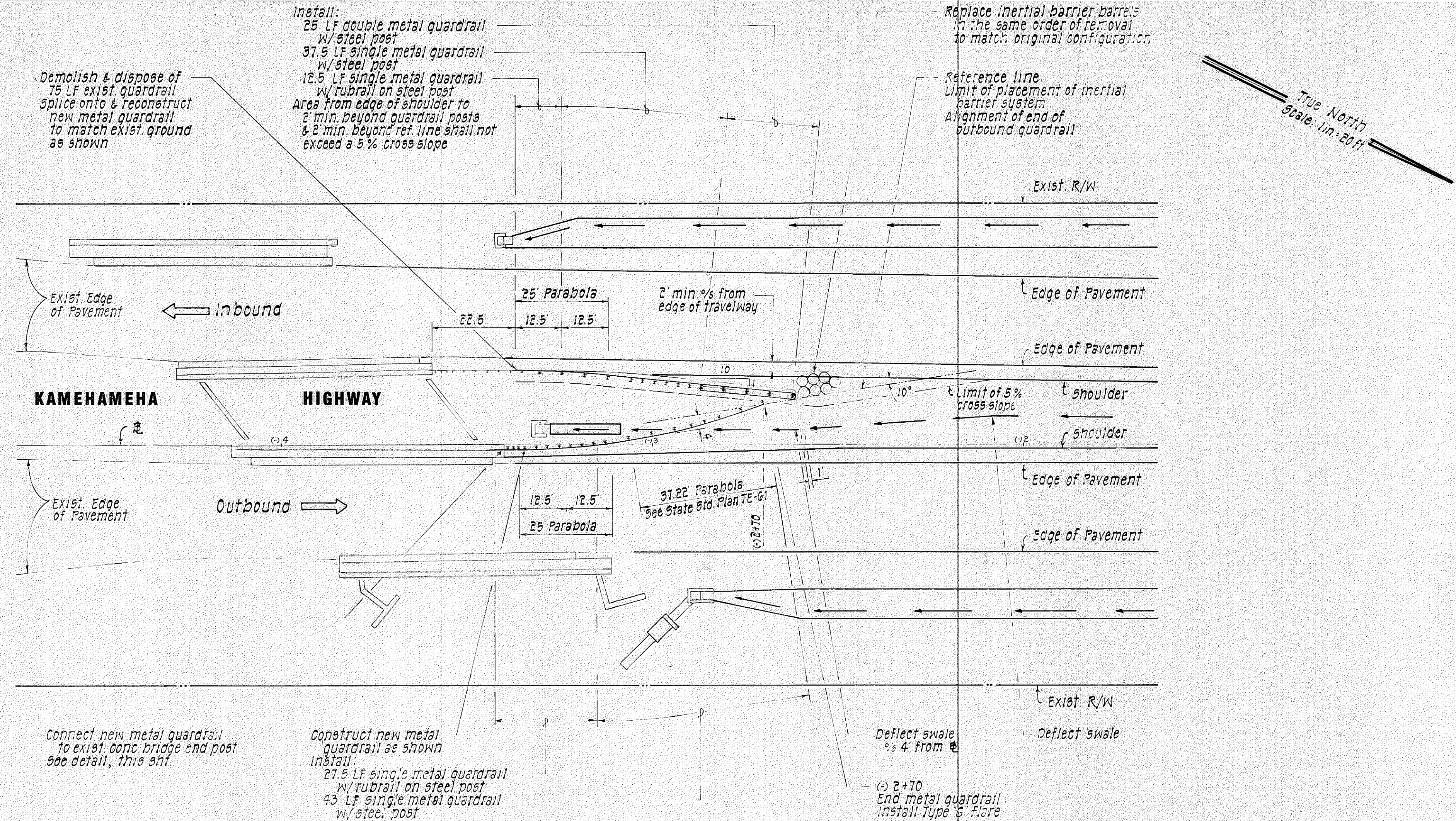
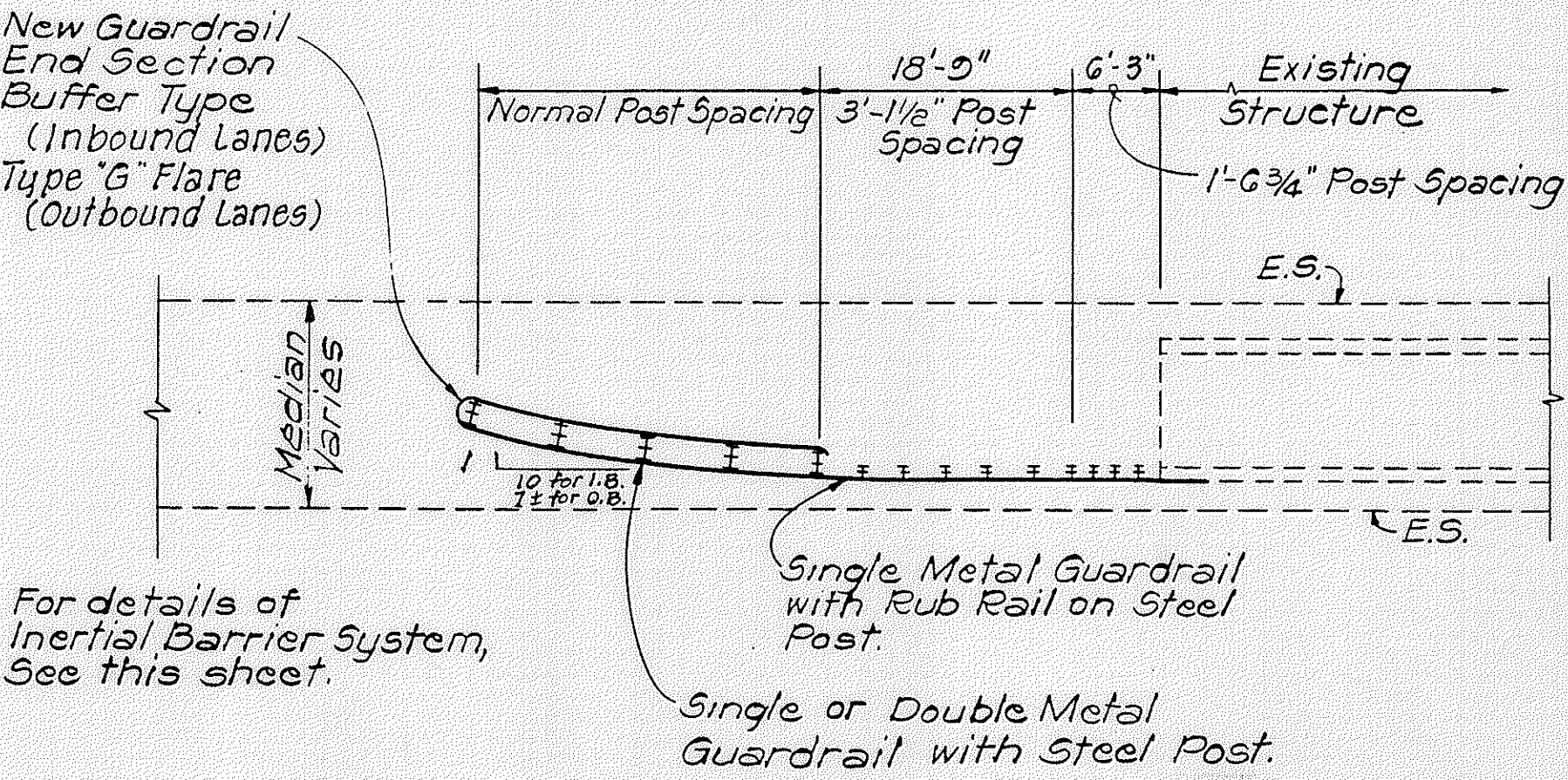
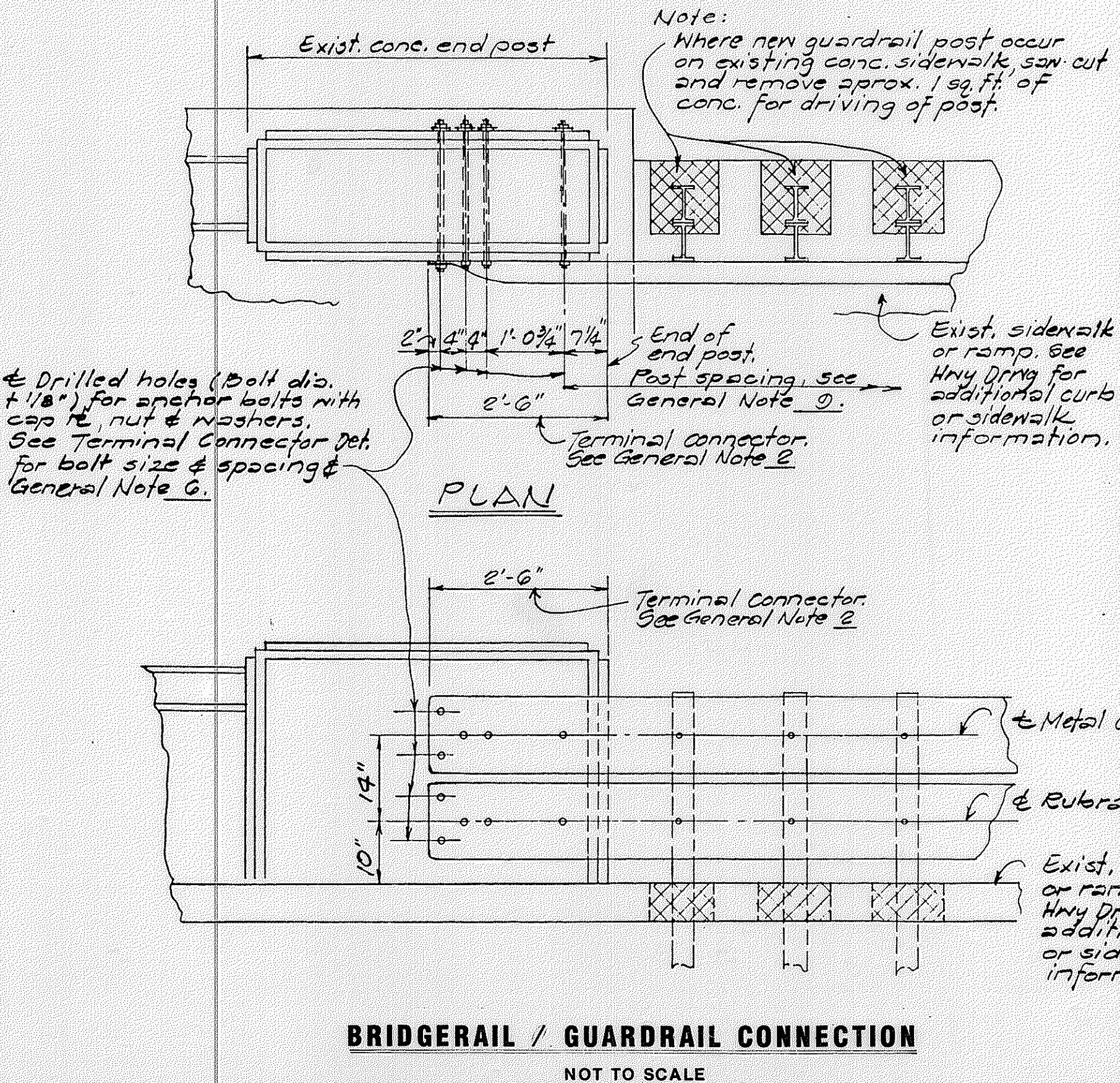
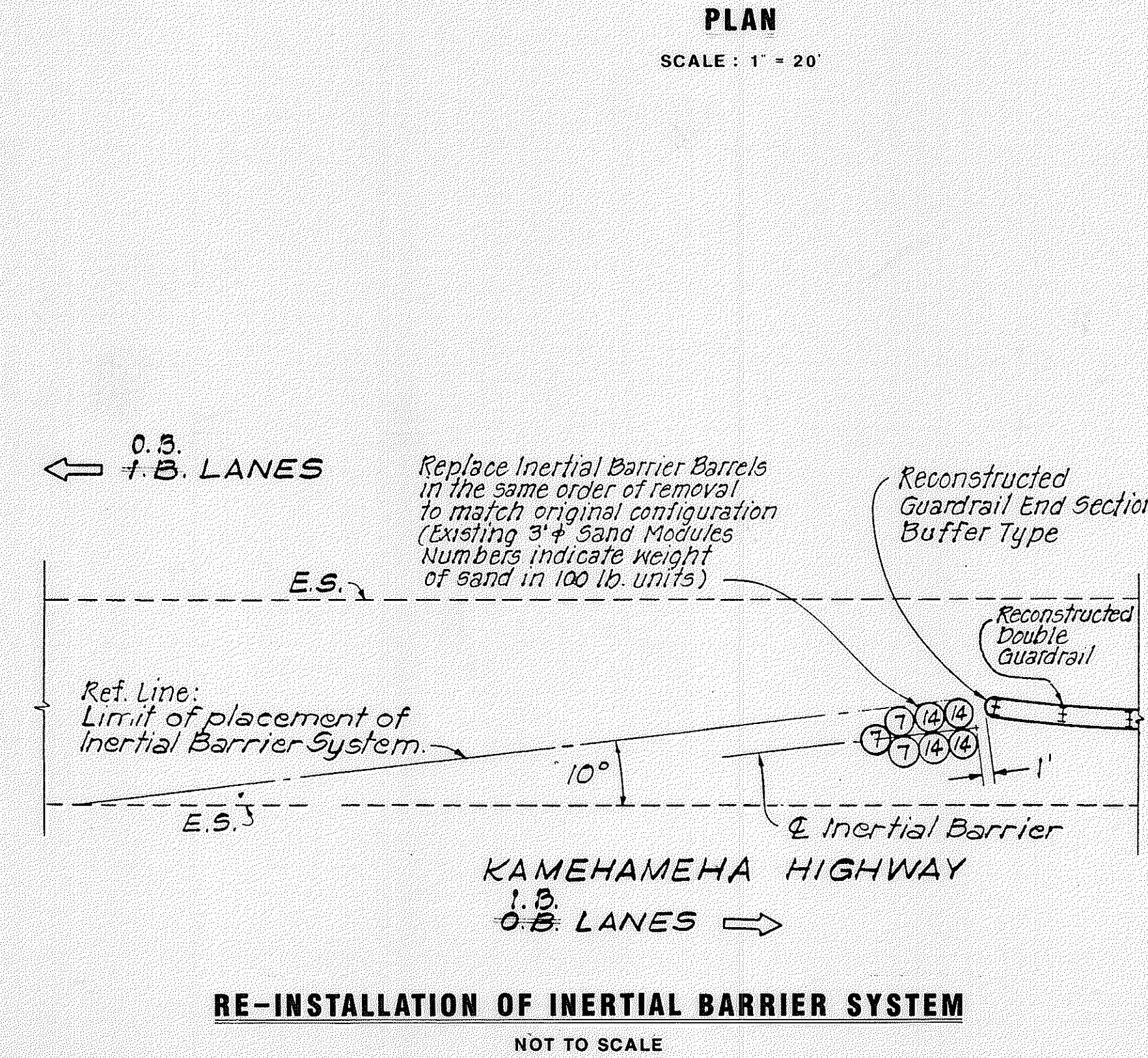


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-01-90	1990	19	49



GENERAL NOTES

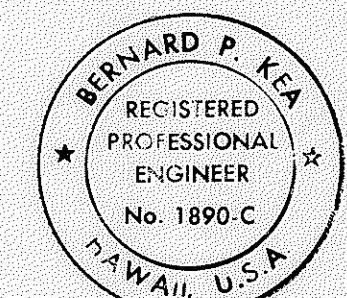
- See Standard Specifications for Road & Bridge Construction Hawaii 1985
- For: Metal Guardrail - See Standard Detail Sht # TG-50 & #TG-51.
- Concrete shall be Class A.
- Reinforcing steel shall be ASTM 615 Grade 40.
- All anchor bolts shall be high strength bolts conforming to the requirement of ASTM A325, and shall be hot dipped galvanized.
- Embedment of anchor bolts shall be such that a snug fit of the rail elements within the grip and full thread engagement plus 1/4 inch (max.) is attained, without any additional washers or fillers.
- All terminal connector shall be fabricated from 10 gage steel conforming to the requirements of AASHTO M180 & shall be galvanized.
- All structural steel shall be A36 steel and hot-dipped galvanized after fabrication.
- First 25'-0" of guardrail adjoining terminal connector shall be of galvanized steel with supports spaced at 1'-6 3/4" for the first 6'-3" and at 3'-1 1/2" for the balance.
- The face of the existing concrete surface to be epoxy bonded with the new concrete shall be thoroughly wetted with clean water and scrubbed with a solution of not more than one part hydrochloric (muriatic) acid to nine parts water followed immediately by thorough rinsing with clean water.
- Large impacting of vibratory type of equipment will not be permitted in the removal operation of the designated items nor for drilling of holes.
- Any damage to the existing structures due to the contractor's operation shall be repaired at his expense to the satisfaction of the Engineer.
- The Contractor shall verify all dimensions in field before commencing with work.
- The Contractor shall verify the location of all existing utility lines near structures and notify their respective owners before commencing with work.
- The work necessary to construct the end post and the connection of the guardrails to new or existing end post shall include all labor, materials, tools, equipment and incidentals necessary to complete the work. This work will be measured and paid for in units of one of each guardrail to end post connection.



GUARDRAIL AT STRUCTURES
NOT TO SCALE

RE-INSTALLATION OF INERTIAL BARRIER SYSTEM
NOT TO SCALE

BRIDGERAIL / GUARDRAIL CONNECTION
NOT TO SCALE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL IMPROVEMENTS

KAMEHAMEHA HIGHWAY WIDENING
PROJ. NO. 99C-01-90

SCALE: AS NOTED
DATE: JAN. 1990

SHEET NO. 1 OF 1 SHEETS

DATE	_____
SURVEY PLOTTED BY	_____
DESIGNED BY	_____
NOTED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
NO.	_____