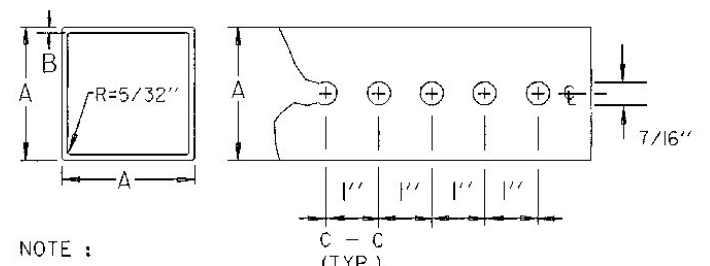


GUARDRAIL DEFLECTION CHART
(PER AASHTO - ROADSIDE DESIGN GUIDE - 1988)

TYPE	GR POST SPACING	DEFLECTION
THREE CABLE W/STEEL POSTS	16' - 0"	12"
W/WOODEN POSTS	12' - 6"	12"
W-BEAM W/WEAK POST	12' - 6"	7'
W/STRONG POST	6' - 3"	3'
BOX BEAM	6' - 0"	5'
THREE BEAM W/WEAK POST	12' - 6"	4'
W/STRONG POST	6' - 3"	2'

THIS CHART LISTS THE THEORETICAL DEFLECTION DISTANCE UPON IMPACT OF VARIOUS GUARDRAIL WITH DIFFERENT TYPES AND SPACING OF POSTS.



NOTE :
THE POSTS SHALL BE CAREFULLY FORMED OF STEEL WITH A MINIMUM YIELD OF 55,000 PSI, INTO A SIZE AND SHAPE WITH CORNERS INDUCTION WELDED IN SUCH A MANNER THAT NEITHER FLASH NOR WELD SHALL INTERFERE WITH THE TELESCOPING PROPERTIES, NOR DAMAGE THE GALVANIZING.

* THE WALL THICKNESS TOLERANCES SHALL BE +.005 AND -.010 FOR THE 12 GAUGE.
THE WALL THICKNESS TOLERANCES SHALL BE +.002" AND -.008" FOR THE 14 GAUGE.

DIMENSION DETAILS AND POST SELECTION CHART

POST SELECTION CHART

SIGN AREA (FT²) X H (FT) ≤ SV (SELECTION VALUE)

POST SIZE LBS/FT.	DIMENSIONS			SECTION MODULUS IN ³	ONE POST S _V	TWO POST S _V	THREE POST S _V	NUMBER PERMITTED IN 8' PATH
	A	B	GAUGE					
2.30	1-3/4"	.083	14	0.231	74	148	222	TWO
2.65	2"	.083	14	0.296	95	190	286	TWO
3.35	2-1/2"	.105	12	0.642	206	412	616	ONE

DESIGN CRITERIA:
WIND SPEED = 60 MPH (10 -YEAR MEAN RECURRENCE INTERVAL)
WIND PRESSURE = 13 PSF
STEEL MINIMUM YIELD = 55,000 PSI
ALLOWABLE STRESS = (1.4) 0.60 FY

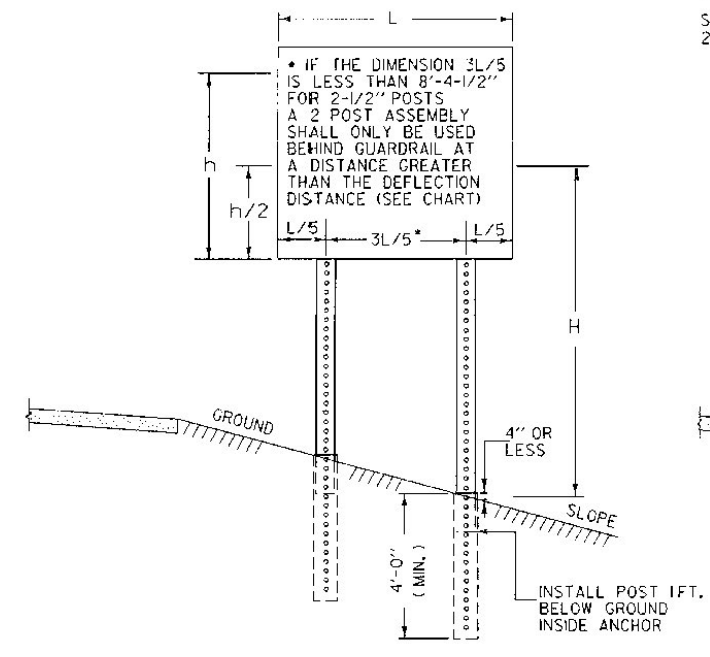
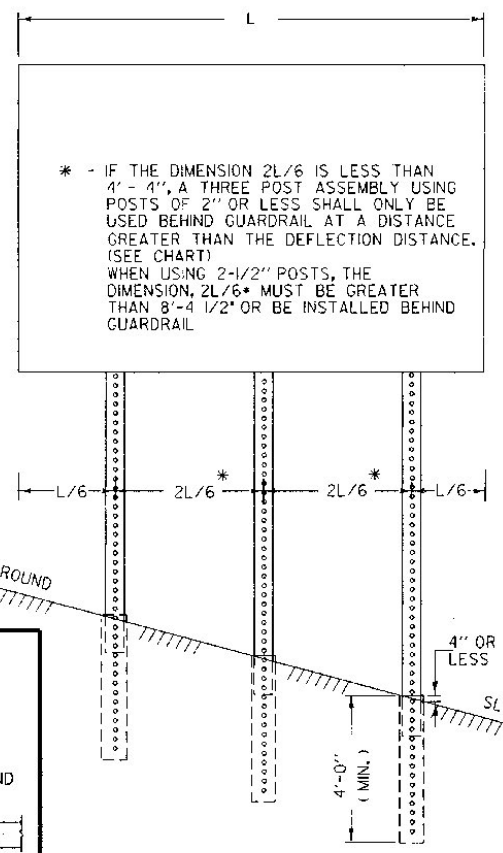
REVISIONS AND CORRECTIONS
APR. 27, 1994 - DATE OF ORIGINAL ISSUE
JUL. 21, 1994 - REVISED POST GAUGES
AUG. 18, 1995 - ADDED TWO PIECE ANCHOR DETAIL

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

APPROVED
Sanford W. MacArthur
DIRECTOR OF ENGINEERING
David E. Ross
TRAFFIC AND SAFETY ENGINEER

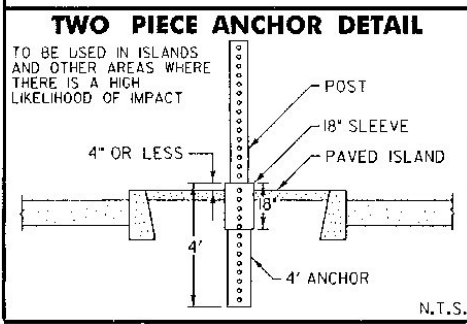
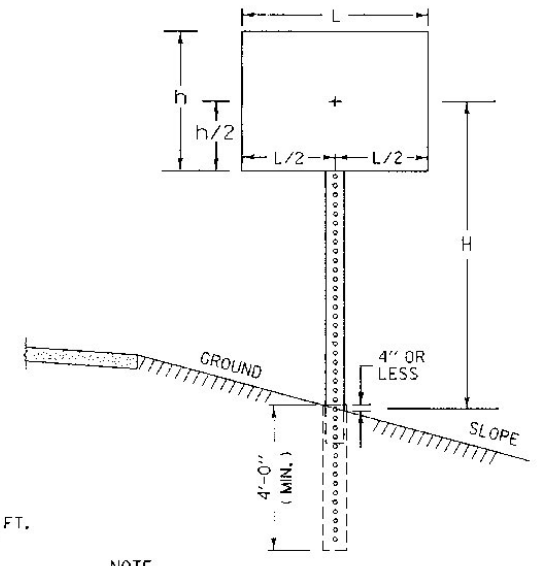
PRELIMINARY
SQUARE STEEL SIGN POST

MULTI-POST INSTALLATIONS

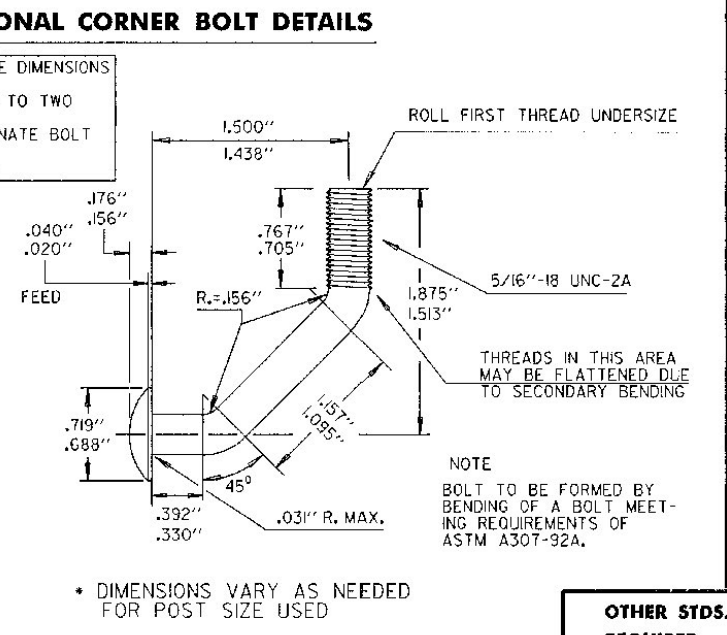
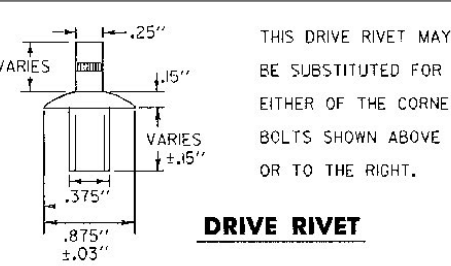
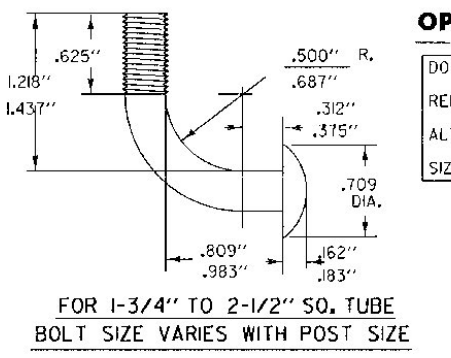
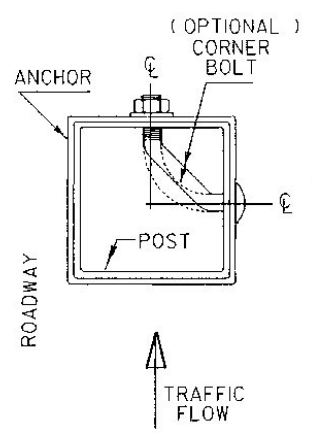


POST SPACING DETAILS

GENERAL NOTES
CONSTRUCTION METHODS - POSTS MAY BE DRIVEN OR SET IN A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL CONDITIONS OR AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE RESIDENT ENGINEER.
SIGN CLEARANCES - HORIZONTAL AND VERTICAL SIGN CLEARANCES SHALL BE SHOWN ON THE PLANS OR THE APPROPRIATE STD. SHEETS.
SINGLE POST INSTALLATIONS SHALL BE LIMITED TO A SIGN AREA OF 20 SQ. FT. OR LESS



TOP VIEW OF ANCHOR, POST AND BOLT

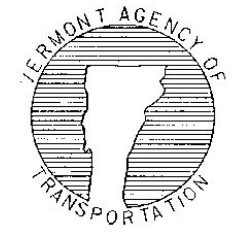


CONNECTION DETAIL

POST IS TO BE INSERTED INTO ANCHOR ONE FOOT BELOW GROUND LEVEL. ANCHOR IS TO BE 4"-0" MINIMUM LENGTH WITH NO MORE THAN 4" ABOVE GROUND. ANCHOR IS ONE SIZE (1/4") GREATER THAN THE POST AND ALL ANCHORS ARE TO BE 12 GAGE EXCEPT ANCHORS FOR 2-1/2" POSTS ARE TO BE 7 GAGE. CONNECTION IS TO BE MADE USING THE BOLT PROVIDED WITH THE SIGN SYSTEM (SEE DETAILS LEFT), AT THE TOP HOLE IN THE ANCHOR (APPROXIMATELY 3-1/2" ABOVE GROUND), THREE INCH ANCHORS WHICH DO NOT HAVE HOLES ON 1" CENTERS WILL REQUIRE DRILLING OF 7/16" HOLES FOR CONNECTIONS.

(SEE DETAIL LEFT FOR BOLT PLACEMENT)

OTHER STDS. REQUIRED
E-120, E-160



STANDARD
E-164