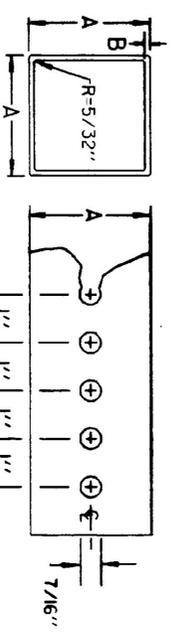


GUARDRAIL DEFLECTION CHART
(PER AASHTO - ROADSIDE DESIGN GUIDE - 1988)

TYPE	GR POST SPACING	DEFLECTION
THREE CABLE W/STEEL POSTS	6' - 0"	12"
W/WOODEN POSTS	12' - 6"	12"
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 A 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 1/2 GAUGE. TOLERANCES SHALL BE +.002" AND -.008" FOR THE 1/4 GAUGE.

POST SELECTION CHART

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

POST SIZE	DIMENSIONS	SECTION MODULUS IN ³	ONE POST SV	TWO POST SV	THREE POST SV	NUMBER REPEATED IN 8' PATH		
LBS./FT.	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 F_y

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, FINAL FINAL APPROVAL, PERMITS, ETC.

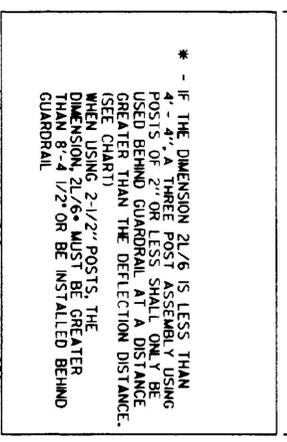
APPROVED

Director of Engineering
Traffic and Safety Engineer

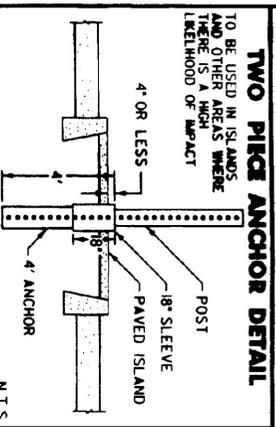
SQUARE STEEL SIGN POST

PRELIMINARY

MULTI-POST INSTALLATIONS

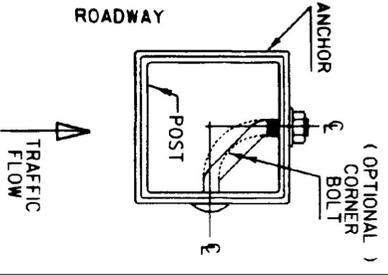


* - IF THE DIMENSION 2L/6 IS LESS THAN 4' - 4" A THREE POST ASSEMBLY USING POSTS OF 2" OR LESS SHALL ONLY BE USED BEHIND GUARDRAIL AT A DISTANCE GREATER THAN THE DEFLECTION DISTANCE. (SEE CHART)
WHEN USING 2-1/2" POSTS, THE DIMENSION 2L/6 * MUST BE GREATER THAN 8' - 4 1/2" OR BE INSTALLED BEHIND GUARDRAIL

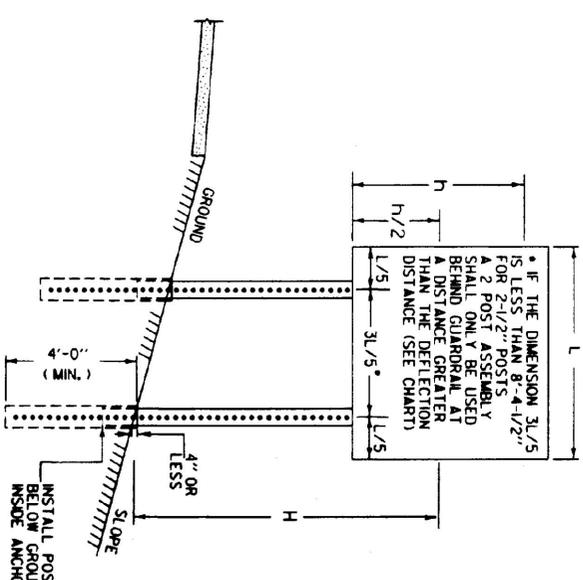


TO BE USED IN ISLANDS AND OTHER AREAS WHERE THERE IS A HIGH LIKELIHOOD OF IMPACT
4" OR LESS
PAVED ISLAND
18" SLEEVE
POST
4" ANCHOR
N.T.S.

TOP VIEW OF ANCHOR, POST AND BOLT

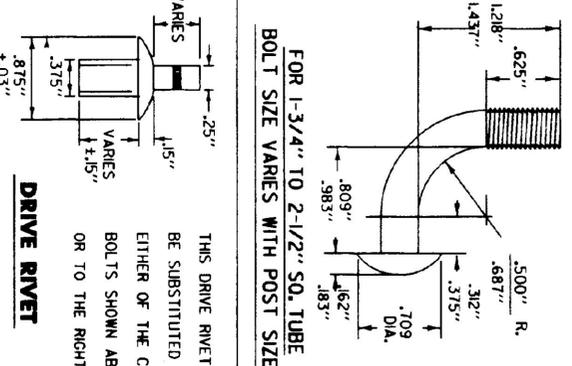


POST SPACING DETAILS



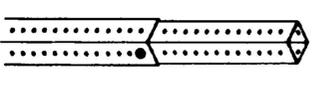
* IF THE DIMENSION 3L/5 IS LESS THAN 8' - 4 - 1/2" FOR 2-1/2" POSTS A 2 POST ASSEMBLY SHALL ONLY BE USED AT A DISTANCE GREATER THAN THE DEFLECTION DISTANCE (SEE CHART)

OPTIONAL CORNER BOLT DETAILS



DOUBLE DIMENSIONS REFER TO TWO ALTERNATE BOLT SIZES.
FOR 1-3/4" TO 2-1/2" SQ. TUBE BOLT SIZE VARIES WITH POST SIZE
THIS DRIVE RIVET MAY BE SUBSTITUTED FOR EITHER OF THE CORNER BOLTS SHOWN ABOVE OR TO THE RIGHT.
DRIVE RIVET

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 1/2 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 1.) AT THE TOP HOLE IN THE ANCHOR (APPROXIMATELY 3-1/2" ABOVE GROUND 2.) THREE ANCHORS WHICH DO NOT HAVE HOLES ON "C" CENTERS WILL REQUIRE DRILLING OF 7/16" HOLES FOR CONNECTIONS.
(SEE DETAIL LEFT FOR BOLT PLACEMENT)

GENERAL NOTES

CONSTRUCTION METHODS - POSTS MAY BE DRIVEN OR SET IN A DRUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING HOLE SHALL BE DRIVEN TO THE FULL DEPTH OF THE SIGN. HOLE SHALL BE USED IN REAR OF POSTS. DRIVING SHALL BE 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

NOTE
WHEN USING SQUARE STEEL POSTS ON STEEP SLOPES (1 ON 2 OR STEEPER) ADD ONE FOOT EMBEDMENT FOR GREATER STABILITY.

OTHER STDS. REQUIRED
E-129, E-149



STANDARD
E-164

VT01/STD/STD064.dgn/STD064.1