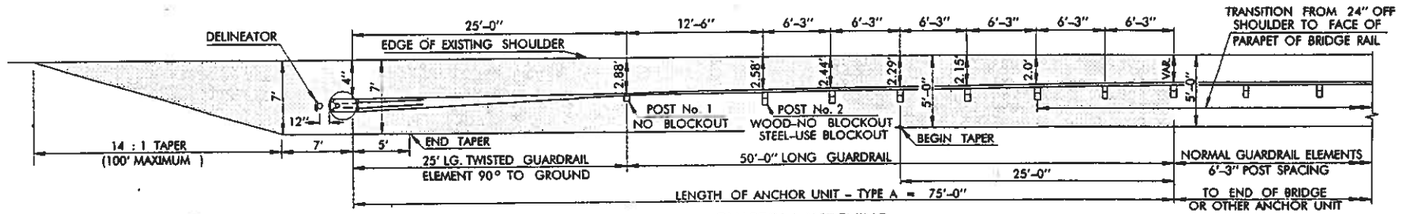
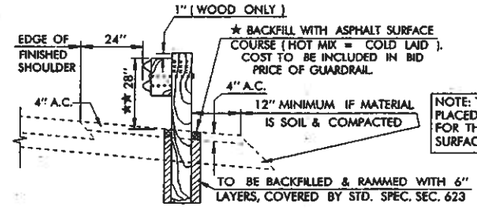
DESCRIPTION	REVISIONS	DATE
RE-ISSUE W/ENGLISH 1999 SPECS. Rem. GET Det. & Add Var.Ht. Curb Det. lgc 7/99		
Add Detail Bolt No. 4 Type DBF (Elev.) lgc 8/00		



GUARDRAIL WIDENING



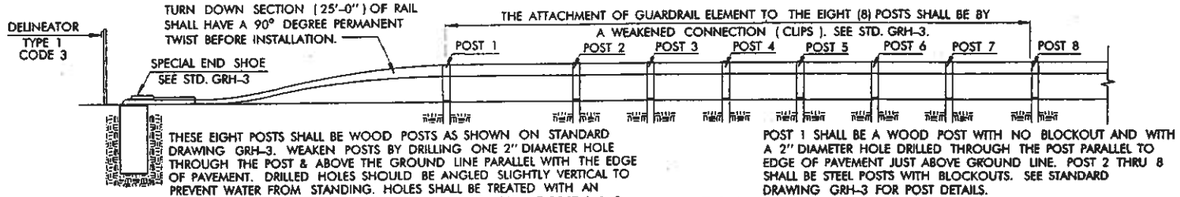
NOTE: TYPICAL BASE WIDENING PLACED BY SURFACING CONTRACTOR. FOR THICKNESS AND SLOPE SEE SURFACING PLANS.

DETAIL OF GUARDRAIL POST IN SHOULDER BASE WIDENING

★ SEE 1999 STD. SPECIFICATIONS-SEC. 405, ASPH SURFACE COURSE (HOT MIX-COLD LAID)

★★ MEASURE DIRECTLY BELOW RAIL, GUARDRAIL TO BE INSTALLED THIS DIMENSION +1". WHEN INSTALLING GUARDRAIL IN AN AREA WITH NO SHOULDER WIDENING THE RAIL HEIGHT SHALL BE MEASURED AS FOLLOWS:
FOR NEGATIVE GRADE SHOULDERS, MEASURE TO A LINE FROM THE SHOULDER ON THE SAME SLOPE AS THE SHOULDER.
FOR POSITIVE GRADE & LEVEL SHLDRS, MEASURE FROM A LINE LEVEL WITH THE EDGE OF SHOULDER.

POST NO.	DIMENSION ■ A
1	26"
2	27"
3	27½"
4 - 8	28"



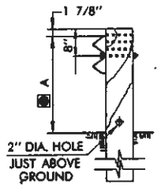
THESE EIGHT POSTS SHALL BE WOOD POSTS AS SHOWN ON STANDARD DRAWING GRH-3. WEAKEN POSTS BY DRILLING ONE 2" DIAMETER HOLE THROUGH THE POST & ABOVE THE GROUND LINE PARALLEL WITH THE EDGE OF PAVEMENT. DRILLED HOLES SHOULD BE ANGLED SLIGHTLY VERTICAL TO PREVENT WATER FROM STANDING. HOLES SHALL BE TREATED WITH AN APPROVED PRESERVATIVE. BLOCKOUT SHALL NOT BE USED AT POST 1 & 2.

WOOD POSTS OPTION

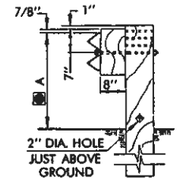
ELEVATION
ANCHOR UNIT - TYPE A

POST 1 SHALL BE A WOOD POST WITH NO BLOCKOUT AND WITH A 2" DIAMETER HOLE DRILLED THROUGH THE POST PARALLEL TO EDGE OF PAVEMENT JUST ABOVE GROUND LINE. POST 2 THRU 8 SHALL BE STEEL POSTS WITH BLOCKOUTS. SEE STANDARD DRAWING GRH-3 FOR POST DETAILS.

STEEL POSTS OPTION

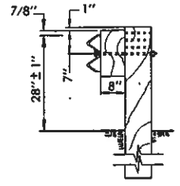


POST 1 & 2
NO BLOCKOUT
CLIPPED CONNECTIONS
(STEEL POST WITH BLOCKOUT MAY BE USED FOR POST 2)



POST 3 THRU 8
BLOCKOUT WITH CLIPPED CONNECTIONS
(STEEL POSTS & BLOCKOUTS MAY BE USED)

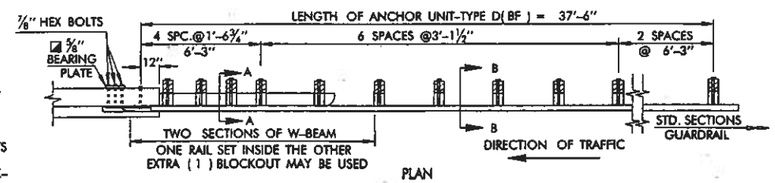
WOOD POST DETAIL
RECTANGULAR POSTS SHOWN
SEE RDY. STD. DRAWING GRH-3



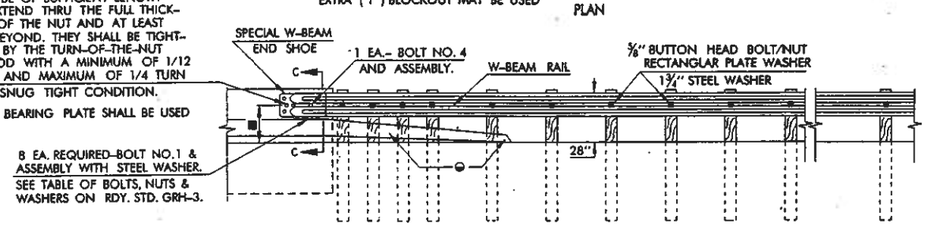
STANDARD POSTS FORWARD
(STEEL POSTS & BLOCKOUTS MAY BE USED)

4 EA.- BOLT NO. 7 AND ASSEMBLY AN EXTRA WASHER SHALL BE USED UNDER THE BOLT HEAD. SEE TABLE OF BOLTS, NUTS & WASHERS ON STANDARD DRAWING GRH-3. BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THRU THE FULL THICKNESS OF THE NUT AND AT LEAST 1/2" BEYOND. THEY SHALL BE TIGHTENED BY THE TURN-OF-THE-NUT METHOD WITH A MINIMUM OF 1/12 TURN AND MAXIMUM OF 1/4 TURN OVER SNUG TIGHT CONDITION.

■ ⅝" BEARING PLATE SHALL BE USED



PLAN

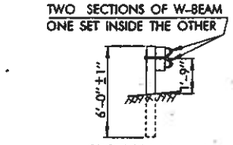


8 EA. REQUIRED-BOLT NO.1 & ASSEMBLY WITH STEEL WASHER. SEE TABLE OF BOLTS, NUTS & WASHERS ON RDY. STD. GRH-3.

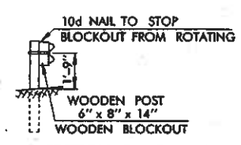
ELEVATION
ANCHOR UNIT - TYPE D(BF)

■ ANCHOR UNIT TYPE D(BF) SHALL BE USED ON SLOPED FACE PARAPET W/BLOCKOUT FOR SPECIAL END SHOE (NOTCHED) OR RETROFIT AND WITH BRIDGE TRAFFIC RAILS TYPES TR-1 & TR-3. ADJUST RAIL HEIGHT FOR SMOOTH TRANSITION FROM SPECIAL END SHOE TO FIRST SPLICE CONNECTION (12'-6").
SPLICE CONNECTION BOLTS/NUTS FOR TYPE A & D(BF) ANCHOR UNITS SHALL BE TORQUED TO A MINIMUM OF 75 ft-lbs.

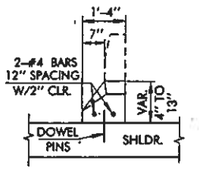
◒ CURB (TAPERING SECTION SHOWN HERE) TO BE USED ONLY WITH SLOPED FACE PARAPET (NOTCHED).



SECTION A - A

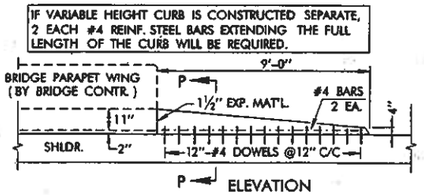


SECTION B - B

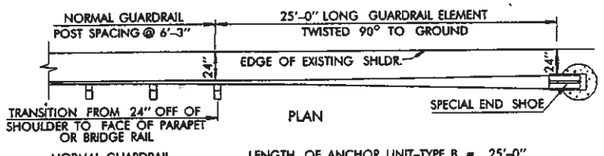


SECTION P-P

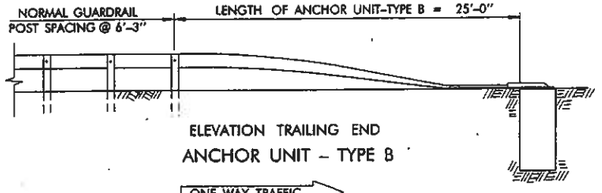
IF VARIABLE HEIGHT CURB IS CONSTRUCTED SEPARATE, 2 EACH #4 REINF. STEEL BARS EXTENDING THE FULL LENGTH OF THE CURB WILL BE REQUIRED.



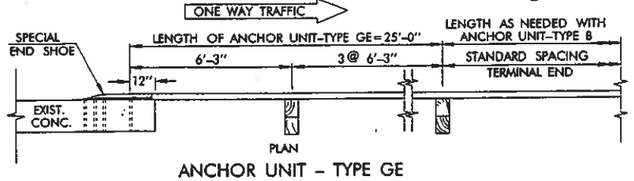
ELEVATION
◒ VARIABLE HEIGHT CURB



PLAN

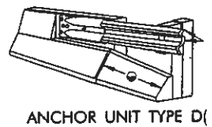


ELEVATION TRAILING END
ANCHOR UNIT - TYPE B

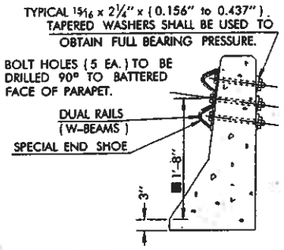


PLAN

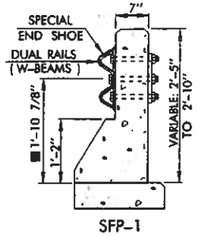
ANCHOR UNIT - TYPE GE
ONLY TO BE USED AT EXITING ENDS OF ONE WAY BRIDGES



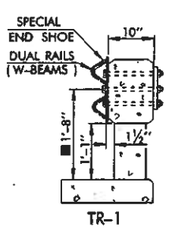
ANCHOR UNIT TYPE D(BF)
SLOPED FACE PARAPET (NOTCHED)



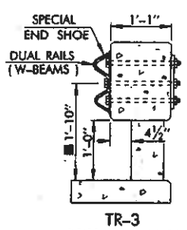
SECTION THRU WING PARAPET FOR RETROFIT ANCHOR UNITS TYPES D(BF), G, GE



SFP-1
SECTION C-C



TR-1
SECTION C-C



TR-3
SECTION C-C

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 1999 ENGLISH STANDARD SPECIFICATIONS.
2. THE BRIDGE CONTRACTOR SHALL PROVIDE HOLES FOR THE CONNECTION OF W-BEAM TERMINAL CONNECTOR (SPECIAL END SHOE) TO BRIDGE RAIL AND SLOPED FACE PARAPET. RETROFIT CONNECTIONS FOR GUARDRAIL (SPECIAL END SHOE) SHALL BE FIELD DRILLED BY THE SURFACING CONTRACTOR.
3. GUARDRAIL COMPONENTS SHALL MEET THE APPLICABLE STANDARDS OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" PREPARED AND APPROVED BY THE AASHTO-ARTBA-AGC JOINT COMMITTEE, TECHNICAL BULLETIN NO. 268 B.
4. STEEL POST AND BLOCKOUT MAY BE USED IN LIEU OF WOOD POST AND BLOCKOUT FOR ANCHOR UNIT TYPE D(BF).
5. POST SPACING AND FACE OF RAIL ALIGNMENT REMAINS THE SAME.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
623.06(F)	GUARDRAIL ANCHOR UNIT (TYPE ▲)	EA.

▲ TYPE OF GUARDRAIL ANCHOR UNIT TO BE SPECIFIED.

APPROVED BY ROADWAY ENGINEER C. M. Stukowski DATE 8/15/00

OKLAHOMA DEPT. OF TRANSPORTATION
ROADWAY STANDARD (ENGLISH)

GUARDRAIL ANCHOR UNIT

1999 SPECIFICATIONS | GRAU1-1 | 01E | R-132E