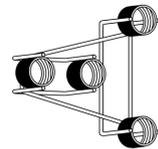
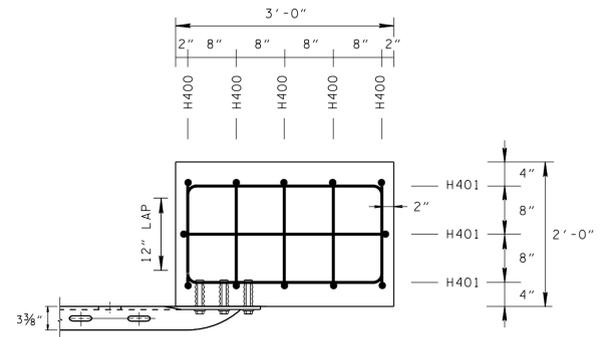


REV. 10-10-16: CHANGED TITLE, REFORMATTED GENERAL NOTES TO BE CONSISTENT WITH OTHER STANDARD DRAWINGS. SEPARATED ELEVATION (SIDE) DETAIL INTO (2) DETAILS.

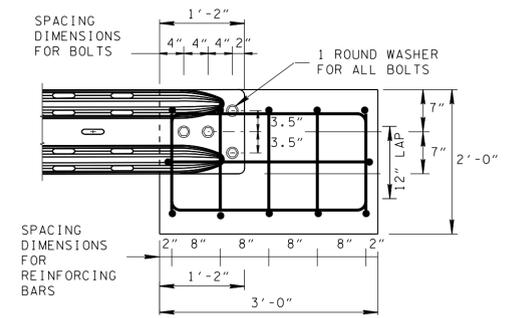


ANCHOR BLOCK INSERT ASSEMBLY

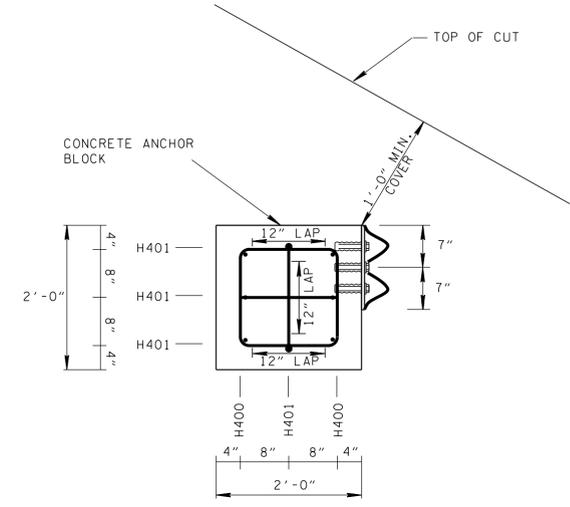
CAST IN PLACE THREADED STEEL INSERT WITH
 7/8" DIA. X 2" HEX HEAD GALVANIZED BOLTS (ASTM A307)
 HOT DIP ZINC COATING ASTM A153



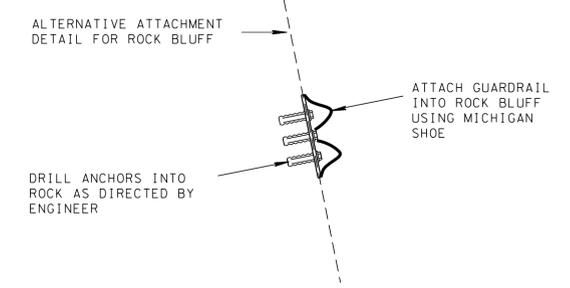
PLAN



ELEVATION (FRONT)



ELEVATION (SIDE)



ALTERNATE ELEVATION (SIDE)

NOTE TO DESIGNER
 TO BE USED WITH S-GRT-1 ONLY

SPECIAL INSTALLATION NOTE
 FOR THIS GUARDRAIL ANCHOR TO FUNCTION AS IT WAS CRASH TESTED UNDER NCHRP 350 TL-3 IT MUST BE CONSTRUCTED PER S-GRT-1.

- GENERAL NOTES**
- (A) REQUIREMENTS FOR ANCHOR INSERT BOLTS SHALL BE 7/8" HEX HEAD INSTALLED IN 7/8" MASONRY ANCHOR. THE INSERTS ARE TO BE THREADED AT A MINIMUM OF 1 3/4". THE CONTRACTOR SHALL FURNISH ANCHOR PULL-OUT DATA FROM AN INDEPENDENT TESTING LABORATORY USING CLASS "A" CONCRETE IN ACCORDANCE WITH STATE OF TENNESSEE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION". THE MAXIMUM LOAD FOR 7/8" ANCHOR SHALL BE 19,000 POUNDS. BOLTS SHALL CONFORM TO ASTM A307.
 - (B) THE MASONRY ANCHORS SHALL BE SUB-SET IN THE CONCRETE AT A DEPTH OF BETWEEN 3/32" TO 1/4" AND TORQUED WITH THE END TERMINAL IN THE PLACE TO AN EQUIVALENT DIRECT PULL-OUT LOAD OF 12,000 POUNDS. SLIPPAGE SHALL NOT EXCEED 1/4".
 - (C) THE CONTRACTOR WILL PERFORM ON-SITE TESTING OF EACH BOLT IN THE PRESENCE OF TDOT PERSONNEL TO ENSURE THESE REQUIREMENTS ARE MET. ANY INSTALLATION NOT MEETING THESE REQUIREMENTS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - (D) THE CONTRACTOR MAY ELECT TO USE 7/8" DIAMETER DRILLED IN ANCHORS WITH 50 KIPS PER SQUARE INCH OR GREATER YIELD STRENGTH WHEN ATTACHING THE TERMINAL END ELEMENTS INTO ROCK. SEE ABOVE GENERAL NOTE (B) FOR PULL-OUT REQUIREMENTS.
 - (E) IF THE CONTRACTOR DRILLS THESE ANCHOR BOLTS IN ROCK, THE SAME FLARE RATE MUST BE USED THAT WOULD BE USED WITH THE CRASH TESTED CONCRETE ANCHOR BLOCK.
 - (F) COST OF CONCRETE ANCHOR BLOCK TO BE INCLUDED IN THE COST OF ITEM NO. 705-04.02.
 - (G) ESTIMATED QUANTITIES OF CONCRETE AND STEEL ARE:
 CLASS "A" CONCRETE= 0.44 CUBIC YARD
 NO. 4 STEEL REINFORCING BARS= 52 POUNDS
 - (H) SEE S-GRA-1A FOR ALTERNATE BURIED-IN-BACKSLOPE ANCHOR.

REINFORCING STEEL LEGEND			
1 1/4"	1 1/4"	H400	1 1/4"
16"			32"
			1 1/4"
			H401

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION

TYPE 12
 GUARDRAIL ANCHOR

7-11-13 S-GRA-1