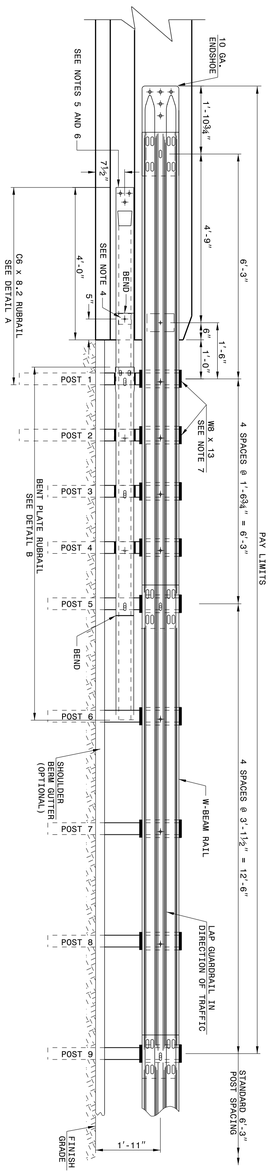
PROJECT REFERENCE NO.	SHEET NO.
W-5313	2C-3

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

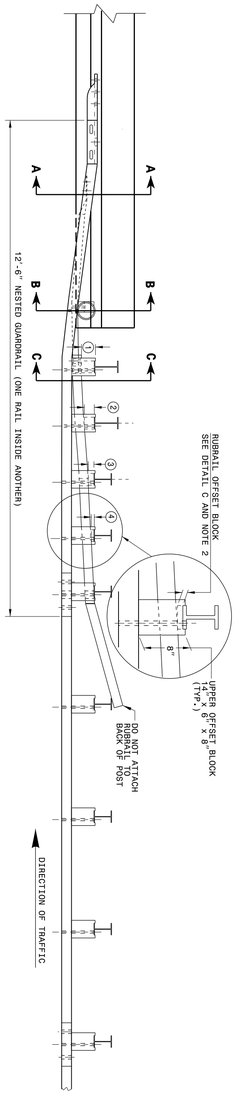
ENGLISH DETAIL DRAWING FOR
GUARDRAIL ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

SHEET 4 OF 7
862D03

ELEVATION



PLAN



GUARDRAIL ANCHOR UNIT TYPE B-77

GENERAL NOTES:
1) POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL.
2) RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET VERTICALLY AND GROUPED WITH 5½" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTHS). SECURE BLOCKS ONLY TO POSTS 2 AND 4. SECURE RUBRAIL AND BLOCKOUTS TO POSTS 1 AND 3 WITH A 5/8" x 4½" BUTTONHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6 AND NOT SECURED.
3) STEEL SPACER TUBE IS A SCHEDULE 40 GALVANIZED PIPE 6" INSIDE DIAMETER x 9" LONG. ATTACH TUBE TO GUARDRAIL ONLY WITH 5/8" x 6" BUTTONHEAD BOLT AND GALVANIZED FLAT WASHER.
4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 3/8" x 3" LAG BOLT WITH FLAT WASHER. ATTACH RUBRAIL TO BLOCKOUT WITH 5/8" x 6" CHEMICALLY ANCHORED THREADED ROD AND ATTACH FLUSH WITH THE SLOPED SURFACE.
5) SHOP FABRICATE THE C6 x 8.2 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE F SHAPE AND ATTACH TO THE TOE OF THE BARRIER OR BRIDGE RAIL.
6) ANCHORAGE:
   (a) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR RUBRAIL USING THREE 5/8" x 6" CHEMICALLY ANCHORED BOLTS WITH WASHERS. MAXIMUM PROJECTION FOR BOLTS IS 1/2".
   (b) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR THE W-BEAM END SHOE USING A 4 BOLT HOLD DOWN PLATE (SEE STD. DWG. 862.04). INSTALL THE W-BEAM END SHOE BEHIND THE NESTED W-BEAM ELEMENTS. A 4 BOLT INSERT ASSEMBLY IS ALLOWED ON PRECAST REINFORCED CONCRETE BARRIER (SEE STD. DWG. 857.01).
   (c) AT BRIDGE RAIL AND NEW OR EXISTING BARRIERS, DETAILED ON THE STRUCTURE PLANS. INSTALL THE W-BEAM END SHOE AS DETAILED ON THE STRUCTURE PLANS.
7) POSTS 1 AND 2 ARE W8 x 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W6 x 8.5.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119

SEE TITLE BLOCK

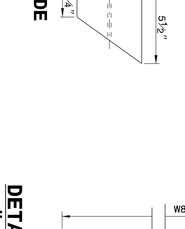
ORIGINAL BY:	J HOWERTON	DATE: 06-22-12
MODIFIED BY:		DATE:
CHECKED BY:		DATE:
FILE SPEC.:		

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

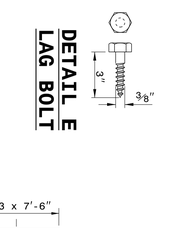
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

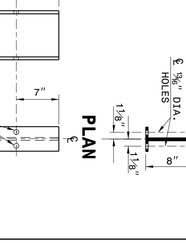
SHEET 5 OF 7
862D03

SECTION A-A



SECTION B-B



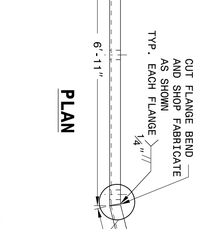


RUBRAIL BLOCKS 7" HIGH x 4" WIDE			
POST	THICKNESS	BOLT	LENGTH
①	4½"		9"
②	3¼"		5"*
③	2"		6"*
④	1"		3"*

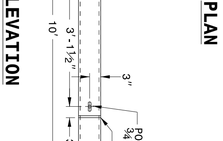
* BOLTS FOR POSTS 2 AND 4 ARE USED TO ATTACHED TO BLOCK. RUBRAIL NOT

SECTION C-C

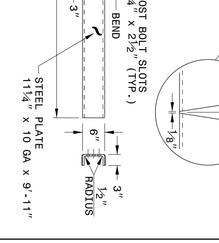
DETAIL C
RUBRAIL BLOCKOUT



PLAN



ELEVATION
DETAIL A
C6 x 8.2 RUBRAIL



FRONT
SIDE
DETAIL D
SLOPED RUBRAIL BLOCKOUT

DETAIL E
LAG BOLT

SIDE
FRONT
DETAIL F STEEL POST
"W8 X 13 X 7'-6"

ELEVATION
DETAIL B
BENT PLATE RUBRAIL

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RALEIGH, N.C.

SHEET 5 OF 7
862D03

$$$$USERNAME$$$$
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$$$$DATE$$$$
$$$$SYSTEM$$$$
$$$$DESIGNATION$$$$
$$$$USERNAME$$$$