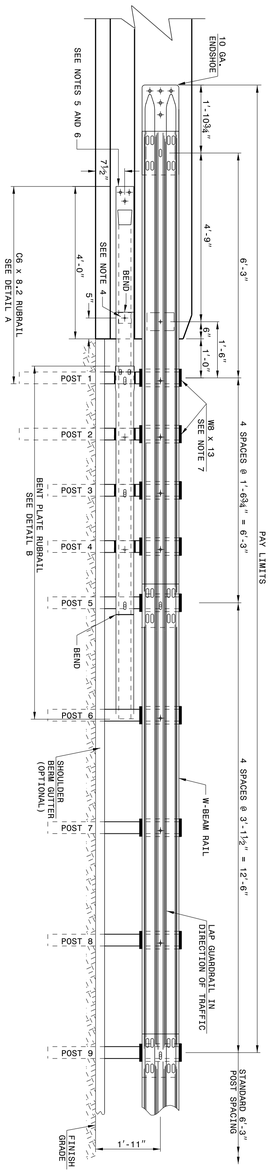
PROJECT REFERENCE NO.	SHEET NO.
W-5516	2B-3

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

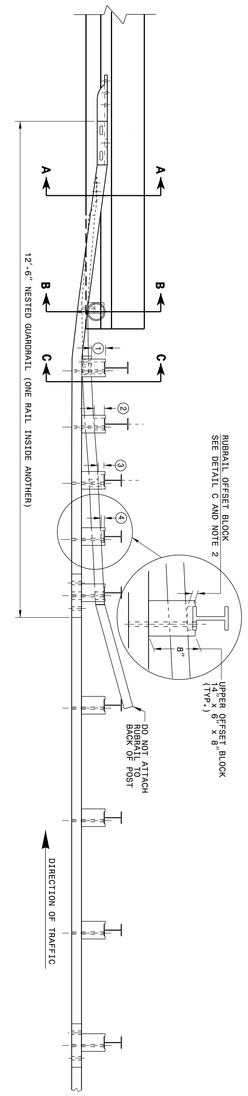
SHEET 4 OF 7
862D03

ELEVATION



GENERAL NOTES:
1) INSTALLATIONS THAT REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL, SUCH AS ON SLOPED TERRAIN, SHALL BE DRILLED IN THE FIELD.
2) RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET FOR ELEMENT CLEARANCE AND SECURED WITH ⅝" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTHS). SECURE BLOCKS ONLY TO POSTS 2 AND 4. SECURE RUBRAIL AND BLOCKOUTS TO POSTS 1 AND 3. RUBRAIL IS SECURED WITH A ⅝" 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 A ⅝" x 4½" BUTTONHEAD BOLT AND GALVANIZED WASHER PLATE.
4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE ¾" x 3" LAG BOLT WITH FLAT WASHER.
5) SHOP FABRICATE THE C6 x 8.2 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE F SHAPE AND ATTACH FLUSH WITH THE SLOPED TOE OF THE BARRIER OR BRIDGE RAIL.
6) ANCHORAGE: FOR EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR RUBRAIL USING THREE ⅝" x 6" CHEMICALLY ANCHORED BOLTS WITH WASHERS. MAXIMUM PROJECTION FOR BOLTS IS 1½". ANCHOR THE W-BEAM END SHOE USING A 4 BOLT HOLD DOWN PLATE (SEE STD. DWG. 862.04).
   (a) 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).
   (b) A 4 BOLT INSERT ASSEMBLY IS ALLOWED ON PRECAST REINFORCED CONCRETE BARRIER (SEE STD. DWG. 857.01).
   INSTALL THE W-BEAM END SHOE BEHIND THE NESTED W-BEAM ELEMENTS.
   (c) FOR BRIDGE RAIL WITH STEEL POSTS, 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.

PLAN



GUARDRAIL ANCHOR UNIT TYPE B-77

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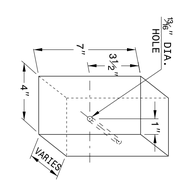
RALEIGH, N.C.

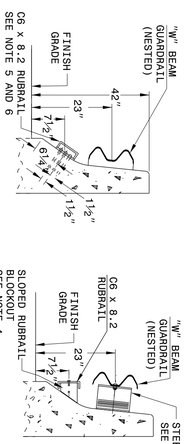
ENGLISH DETAIL DRAWING FOR
GUARDRAIL ANCHOR UNIT
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

SHEET 5 OF 7
862D03

SECTION A-A



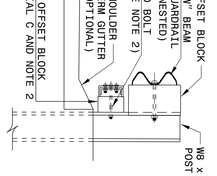
SECTION B-B



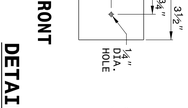
RUBRAIL BLOCKS 7" HIGH x 4" WIDE			
POST	THICKNESS	BOLT LENGTH	
①	4½"	9"	
②	3¼"	5"	*
③	2"	6"	
④	1"	3"	*

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

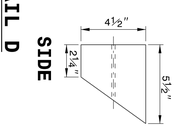
SECTION C-C



DETAIL C
RUBRAIL BLOCKOUT



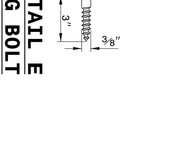
FRONT SIDE



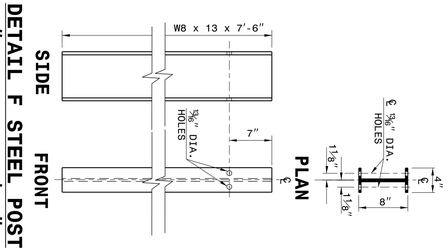
DETAIL D
SLOPED RUBRAIL BLOCKOUT

DETAIL E
LAG BOLT

PLAN

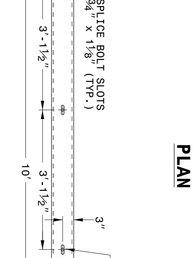


DETAIL F STEEL POST
"W8 X 13 X 7'-6"

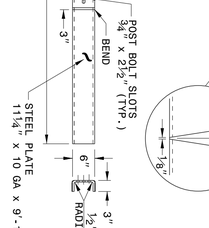


FRONT SIDE PLAN

DRILL ¾" DIA HOLE (TYP)

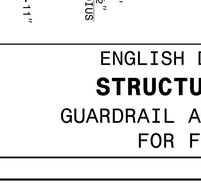


ELEVATION
DETAIL A
C6 x 8.2 RUBRAIL



ELEVATION
DETAIL B
BENT PLATE RUBRAIL

GUARDRAIL ANCHOR UNIT TYPE B-77



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

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RALEIGH, N.C.

SHEET 5 OF 7
862D03

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton
Joel Howerton
8/5/2015

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

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
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