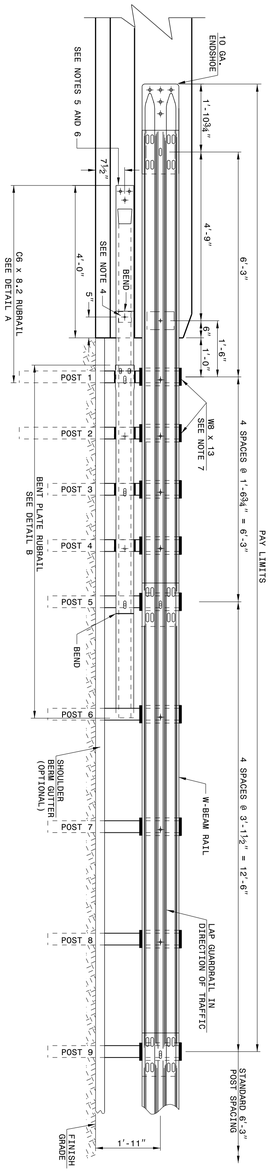
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| B-5123 | 2C-2 |

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

SHEET 4 OF 7
**862D03**

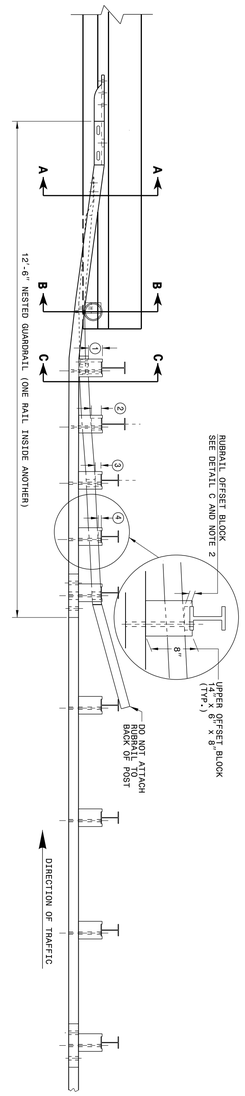
ENGLISH DETAIL DRAWING FOR
**GUARDRAIL ANCHOR UNIT**
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

## ELEVATION




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 FOR ELEMENTS WITH 5⅛" BUTTONHEAD BOLT LENGTHS). SECURE BLOCKS ONLY TO POSTS 2 AND 4. SECURE RUBRAIL AND BLOCKOUTS TO POSTS 1 AND 3 WITH A 5⅛" 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 5⅛" x 4½" BUTTONHEAD BOLT AND WASHER PLATE. USE ⅞" x 3" LAG BOLT WITH FLAT WASHER.
4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE ⅞" x 3" LAG BOLT WITH FLAT WASHER. ATTACH FLUSH WITH THE SLOPED RUBRAIL.
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".
   (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). INSERT ASSEMBLY IS ALLOWED ON PRECAST REINFORCED CONCRETE BARRIER (SEE STD. DWG. 857.01).
   (b) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, ANCHOR THE W-BEAM END SHOE BEHIND THE NESTED W-BEAM ELEMENTS. INSTALL THE W-BEAM END SHOE AS SHOWN ON THE STRUCTURE PLANS. DETAILED ON THE STRUCTURE PLANS.
   (c) 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

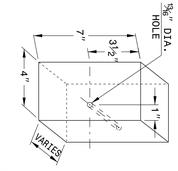
ENGLISH DETAIL DRAWING FOR
**GUARDRAIL ANCHOR UNIT**
GUARDRAIL ANCHOR UNIT TYPE B-77
FOR F-SHAPE BARRIER

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

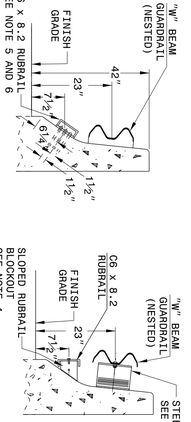
SHEET 5 OF 7
**862D03**

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

## SECTION A-A



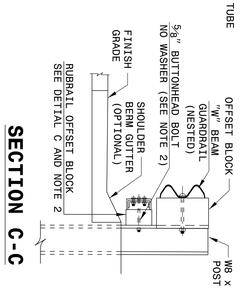

## SECTION B-B



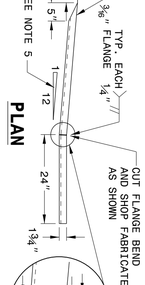

| RUBRAIL BLOCKS 7" HIGH x 4" WIDE | | | |
|---|---|---|---|
| POST | THICKNESS | BOLT | LENGTH |
| ① | 4½" | 9" | |
| ② | 3¼" | 5" * | |
| ③ | 2" | 6" | |
| ④ | 1" | 3" * | |

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

## SECTION C-C

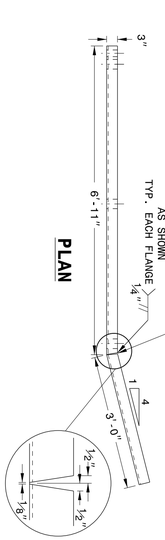



## DETAIL C
## RUBRAIL BLOCKOUT



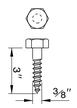

## PLAN

## DETAIL D
## SLOPED RUBRAIL BLOCKOUT



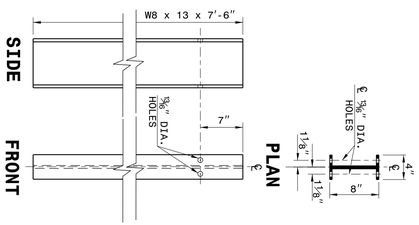

## FRONT SIDE

## DETAIL E
## LAG BOLT

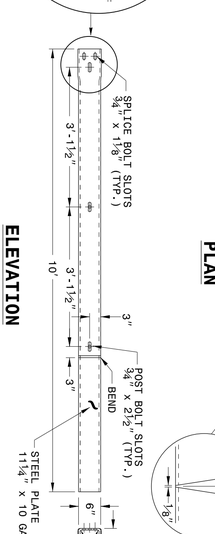



## FRONT SIDE

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




## ELEVATION
## DETAIL A
## C6 x 8.2 RUBRAIL




## ELEVATION
## DETAIL B
## BENT PLATE RUBRAIL




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




2/4/2016

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

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

**SEE TITLE BLOCK**

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