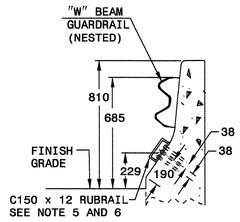
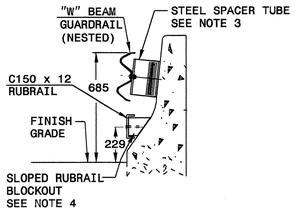
PROJECT REFERENCE NO.	SHEET NO.
R-2206AA	2-Q

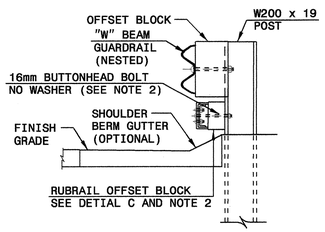
METRIC



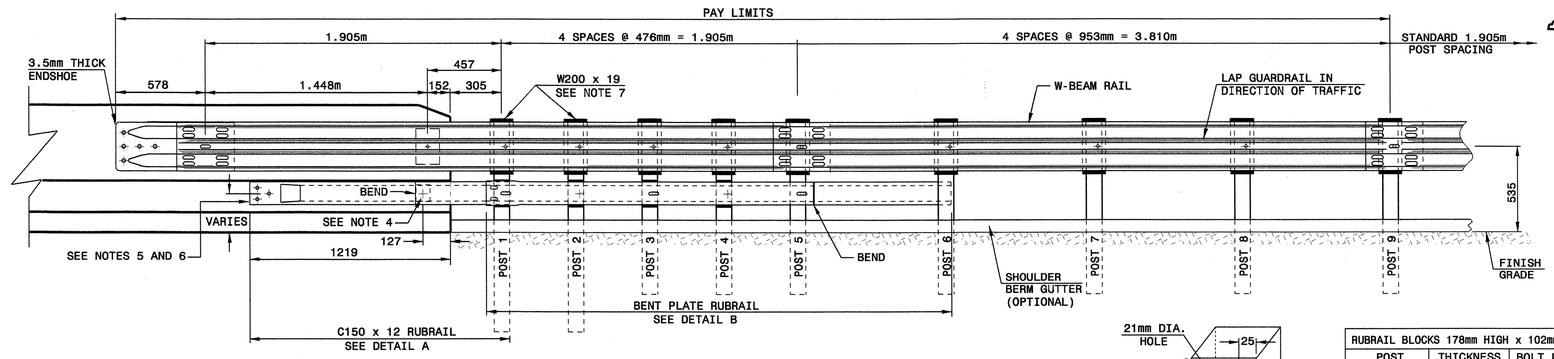
SECTION A-A



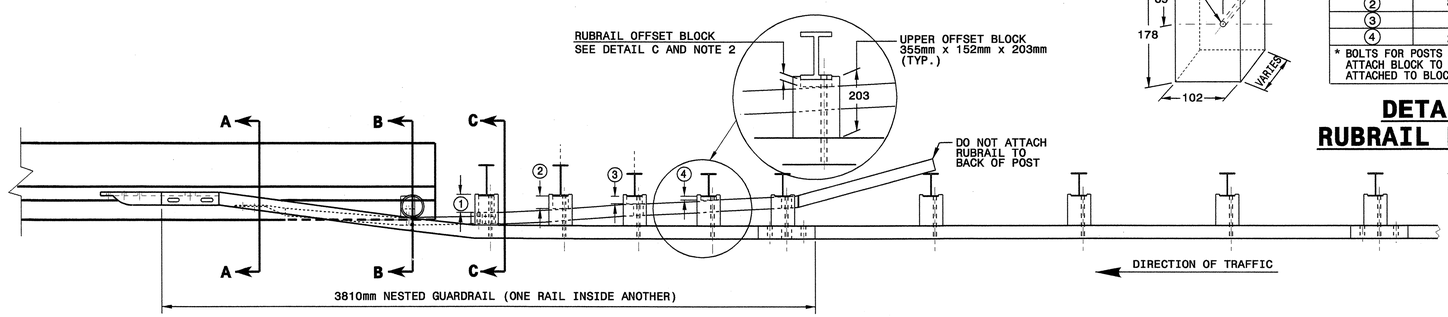
SECTION B-B



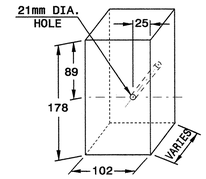
SECTION C-C



ELEVATION



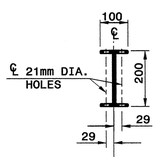
PLAN



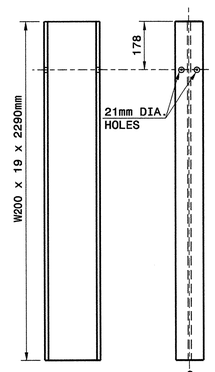
RUBRAIL BLOCKS 178mm HIGH x 102mm WIDE		
POST	THICKNESS	BOLT LENGTH
1	108	229
2	83	127 *
3	51	152
4	25	76 *

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

DETAIL C
RUBRAIL BLOCKOUT

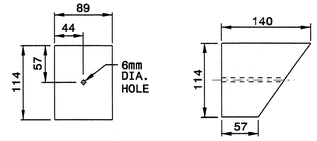


PLAN



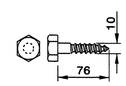
SIDE FRONT

DETAIL F
"W200 X 19 X 2290mm STEEL POST



FRONT SIDE

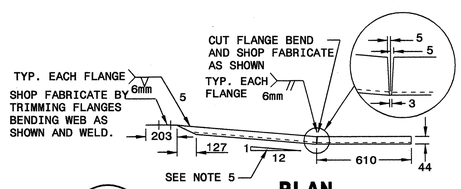
DETAIL D
SLOPED RUBRAIL BLOCKOUT



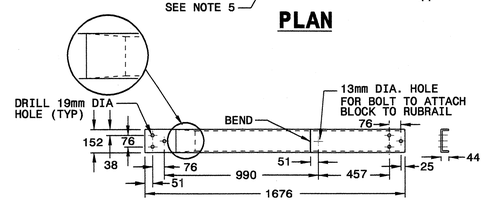
DETAIL E
LAG BOLT

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 DRILLED AND SECURED WITH 16mm 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 TO POST 5 WITH A 16mm x 114mm BUTTONHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6 AND NOT SECURED.
3) STEEL SPACER TUBE IS A SCHEDULE 40 GALVANIZED PIPE 152mm INSIDE DIAMETER x 229mm LONG. ATTACH TUBE TO GUARDRAIL ONLY WITH 16mm x 32mm LONG BUTTONHEAD BOLT AND RECTANGULAR PLATE WASHER.
4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 10mm x 76mm LAG BOLT WITH FLAT WASHER.
5) SHOP FABRICATE THE C150x12 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE JERSEY SHAPE AND ATTACH FLUSH WITH THE SLOPED TOE OF THE BARRIER OR BRIDGE RAIL.
6) ANCHORAGE:
   (a) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, RUBRAIL SHALL BE ANCHORED USING THREE 16mm x 152mm CHEMICALLY ANCHORED BOLTS WITH WASHERS.
   (b) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, THE W-BEAM END SHOE SHALL BE ANCHORED USING A 4 BOLT HOLD-DOWN PLATE AS SHOWN ON DETAIL 857D01 SHEET 6. A 4 BOLT INSERT ASSEMBLY IS ALLOWED ON PRECAST REINFORCED CONCRETE BARRIER (857D01). THE W-BEAM END SHOE SHALL BE INSTALLED BEHIND THE NESTED W-BEAM ELEMENTS
   (c) AT NEW BRIDGE RAIL, THE W-BEAM END SHOE AND RUBRAIL SHALL BE ANCHORED AS DETAILED ON THE STRUCTURE PLANS.
7) POSTS 1 AND 2 ARE W200 x 19, 2290mm LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W150 x 13.5.

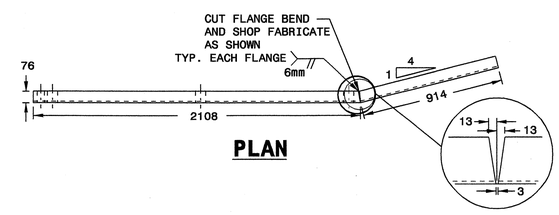


PLAN

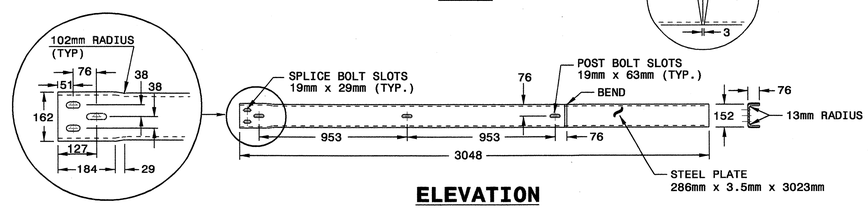


ELEVATION

DETAIL A
C150 x 12 RUBRAIL



PLAN



ELEVATION

DETAIL B
BENT PLATE RUBRAIL

NORTH CAROLINA PROFESSIONAL SEAL 19761 ENGINEER CYNTHIA B. PERRY

Note:
This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

DESIGN SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

GUARDRAIL ANCHOR UNIT TYPE B-77

ORIGINAL BY:	CONNDOT	DATE:	10-01-00
MODIFIED BY:	E.E. WARD	DATE:	04-07-04
CHECKED BY:	C.B. Perry	DATE:	4-12-04
FILE SPEC.:			

08-APR-2004 11:36
w:\Specs\Details\Leeward\Misc.guardrail\NCHRP350 Approved\B-77 ConnDot.dgn
Leeward AT 05212560