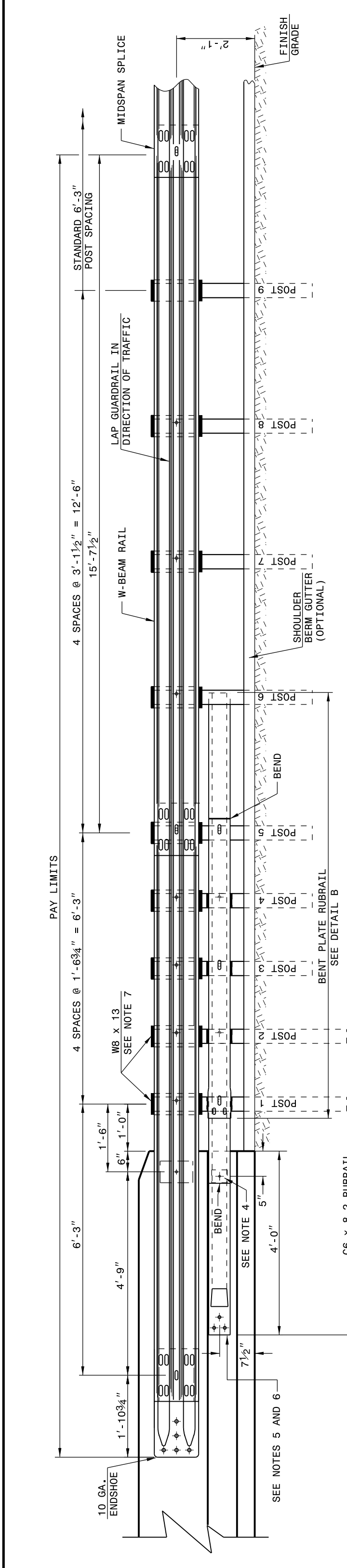


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DIVISION OF HIGHWAYS  
RALEIGH, N.C.



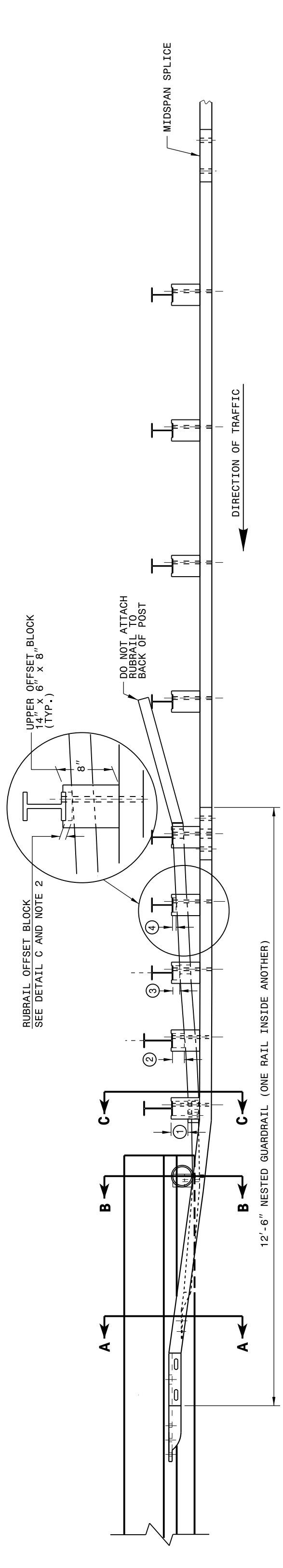
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ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNIT**  
FOR F-SHAPE BARRIER

SHEET 4 OF 7  
**862D03**

**ELEVATION**

- GENERAL NOTES:
- POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL;
  - RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET DRILLED AND SECURED WITH 5/8" BUTTHEAD 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 5/8" X 1 1/4" LONG BUTTHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6, AND NOT SECURED.
  - 5/8" X 1 1/4" LONG BUTTHEAD BOLT AND RECTANGULAR PLATE WASHER. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY WITH 3/8" X 3" LAG BOLT WITH FLAT WASHER.
  - SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 3/8" X 3" LAG BOLT WITH FLAT WASHER.
  - 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.
  - ANCHOR THE BARRIER OR BRIDGE RAIL.
  - 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".
  - 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. 862.041).
  - 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.
  - 1 1/2" DIA. HOLES (TYP.) FOR ANCHOR BOLTS. ANCHOR BOLTS TO BE DETAILED ON THE STRUCTURE PLANS.
  - POSTS 1 AND 2 ARE W8 X 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W8 X 8.5.



**PLAN**

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL ANCHOR UNIT TYPE B-77**

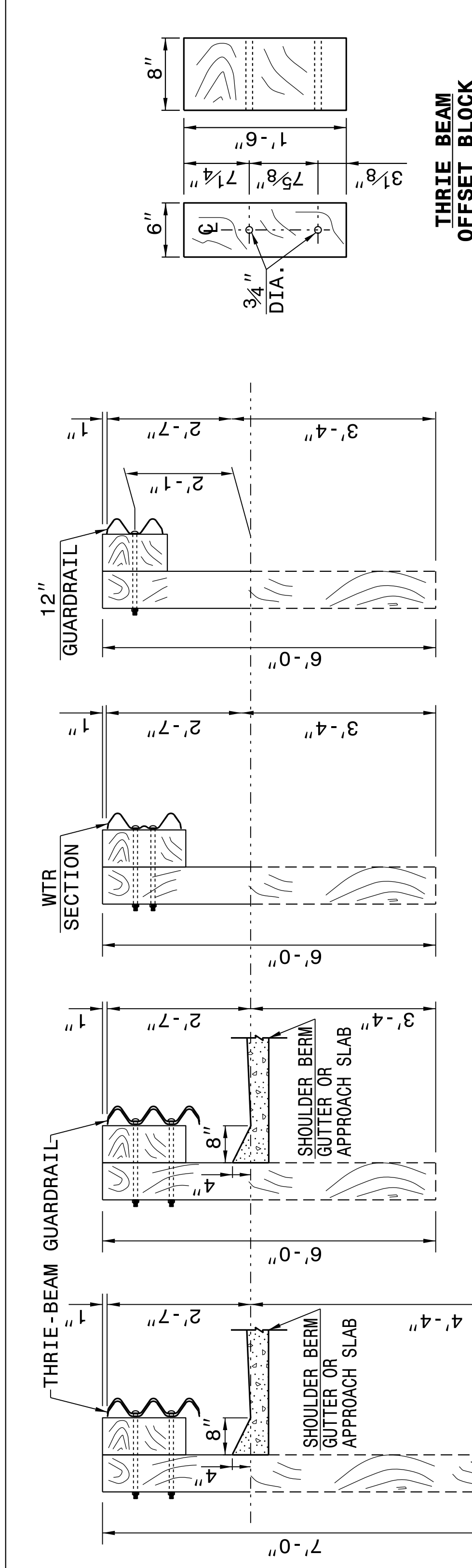
SHEET 4 OF 7  
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ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNIT**  
FOR F-SHAPE BARRIER

SHEET 4 OF 7  
**862D03**

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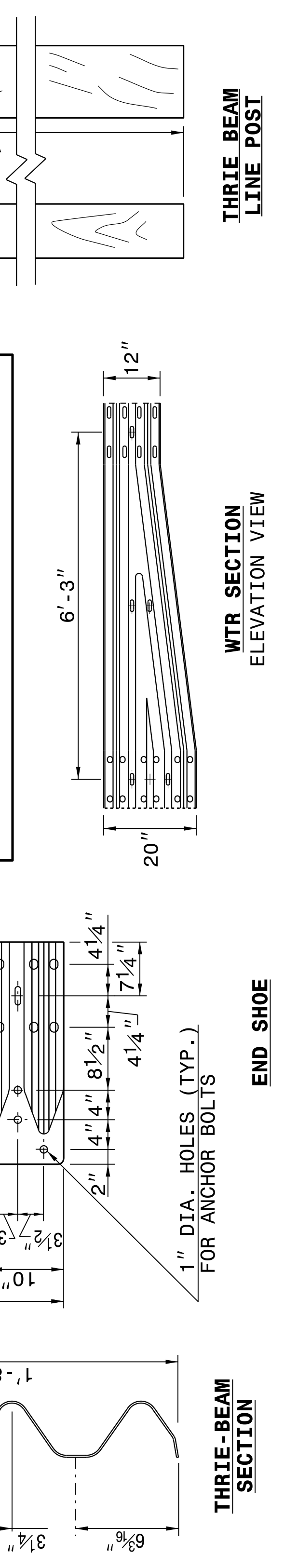
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ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7  
**862D03**

**ELEVATION**

- GENERAL NOTES:
- POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL;
  - RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET DRILLED AND SECURED WITH 5/8" BUTTHEAD 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 5/8" X 1 1/4" LONG BUTTHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6, AND NOT SECURED.
  - 5/8" X 1 1/4" LONG BUTTHEAD BOLT AND RECTANGULAR PLATE WASHER. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY WITH 3/8" X 3" LAG BOLT WITH FLAT WASHER.
  - SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 3/8" X 3" LAG BOLT WITH FLAT WASHER.
  - 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.
  - ANCHOR THE BARRIER OR BRIDGE RAIL.
  - 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".
  - 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. 862.041).
  - 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.
  - 1 1/2" DIA. HOLES (TYP.) FOR ANCHOR BOLTS. ANCHOR BOLTS TO BE DETAILED ON THE STRUCTURE PLANS.
  - POSTS 1 AND 2 ARE W8 X 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W8 X 8.5.



**PLAN**

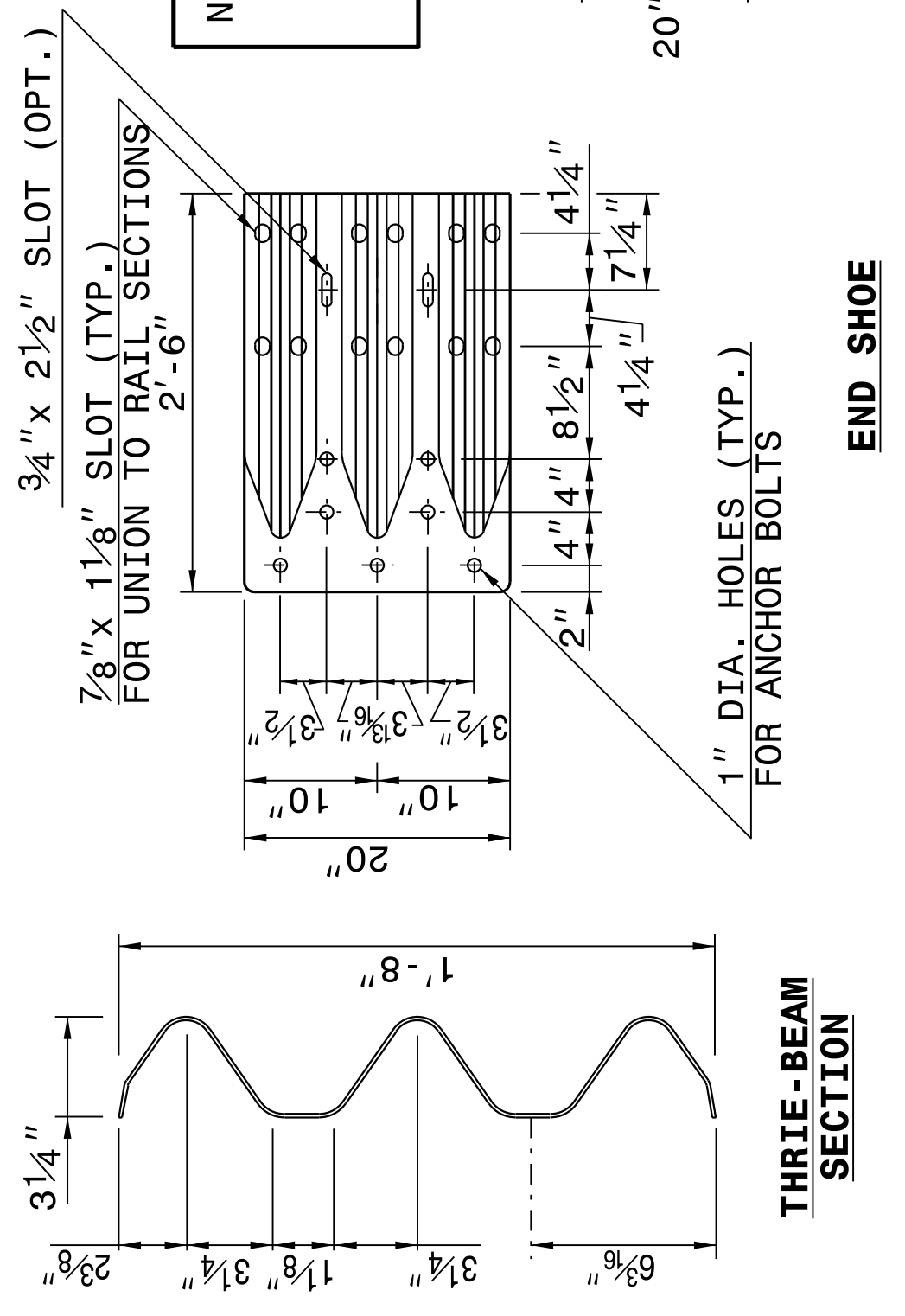
ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7  
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ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7  
**862D03**



NOTE: THE MID POST AND OFFSET BLOCK OF SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

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

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