



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

METRIC DETAIL DRAWING FOR  
**CABLE GUIDERAIL**  
NOTES

SHEET 11 OF 11  
**865D01**

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**GENERAL NOTES:**

- PROVIDE ALL S75X8.5 ROLLED STEEL SECTIONS IN ACCORDANCE WITH ASTM A-6. USE POSTS, PLATES AND ANCHOR ANGLES CONFORMING TO THE REQUIREMENTS OF SECTION 862 OF THE STANDARD SPECIFICATIONS. WHERE THE RAIL IS PARALLEL TO THE EDGE OF THE TRAVEL LANE, REFLECTORIZE EVERY 6th POST (29.3m) (SEE STANDARD 1261.02 FOR DELINEATORS). FOR DOUBLE FACE GUIDERAIL, PLACE DELINEATOR VISIBLE ON EVERY 6th POST TO TRAFFIC IN EITHER DIRECTION. DO NOT REFLECTORIZE POSTS IN THE TYPICAL INTERMEDIATE ANCHORAGE SECTION, TYPICAL APPROACH OR TERMINAL SECTIONS.
- PROVIDE ROUND 19mm DIAMETER ZINC COATED CABLE WIRE CONSTRUCTED OF THREE STRANDS (7 WIRES PER STRAND) HAVING A MINIMUM TENSILE STRENGTH OF 11,340 Kgs IN ACCORDANCE WITH AASHTO M-30 TYPE I CABLE, CLASS 'A' COATING.
- PROVIDE MATERIALS INDICATED AS 'CAST STEEL' WHICH CONFORM TO AASHTO M103.
- PROVIDE INSTALLED HOOK BOLTS WHICH DEVELOP AN ULTIMATE PULL OPEN STRENGTH OF 225 Kgs TO 450 Kgs APPLIED IN A DIRECTION NORMAL TO THE LONGITUDINAL AXIS OF THE POST.
- DESIGN ALL FITTINGS, INCLUDING SPLICES, TO USE THE CABLE WEDGE AND DEVELOP THE FULL STRENGTH OF THE 19mm CABLE. HOT DIP GALVANIZE ALL FITTINGS, EXCEPT THE CABLE WEDGE, ACCORDANCE WITH AASHTO M-30.
- CRIMP ONE WIRE OF THE WIRE ROPE OVER THE BASE OF THE WEDGE TO HOLD IT FIRMLY IN PLACE AT ALL LOCATIONS WHERE THE CABLE IS CONNECTED TO A CABLE SPLICE CONNECTION. DESIGNS FOR A COMBINATION OR SINGLE UNIT COMPENSATING DEVICE AND TURNBUCKLE ASSEMBLY MAY BE SUBMITTED FOR APPROVAL. COMPENSATING DEVICES MUST HAVE A SPRING RATE OF 205 Kgs PLUS OR MINUS 23 Kgs PER 25mm WITH A MINIMUM TOTAL 'THROW' OF 150mm.
- APPLY THE FOLLOWING CRITERIA FOR ARRANGEMENT OF SPRING CABLE END ASSEMBLIES (COMPENSATING DEVICES) AND TURNBUCKLE CABLE END ASSEMBLIES:  
  
LENGTH OF CABLE RUNS:  
TO 304.800m - USE COMPENSATING DEVICE ON ONE END AND TURNBUCKLE ON THE OTHER END OF EACH INDIVIDUAL CABLE.  
304.800m TO 609.600m - USE COMPENSATING DEVICE ON EACH END OF EACH CABLE.  
OVER 609.600m - START NEW STRETCH BY INTERLACING AT LAST PARALLEL POST (TYPICAL LAYOUT).  
  
PRIOR TO FINAL ACCEPTANCE BY THE STATE, USE THE FOLLOWING VALUES TO TIGHTEN THE TURNBUCKLES BASED ON THE TEMPERATURE AT THE TIME OF ADJUSTMENT.

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

**TABLE "A"**

PAVEMENT & CURVATURE	POST SPACING
8° OR LESS MORE THAN 8° TO 13° (135m RAD.)	4800mm 3600mm

TEMPERATURE (CELSIUS)	SPRING COMPRESSION FROM UNLOADED POSITION IN EACH SPRING
44° - 49°	25mm
38° - 43°	30mm
32° - 37°	40mm
27° - 31°	45mm
21° - 26°	50mm
16° - 20°	60mm
10° - 15°	65mm
5° - 9°	70mm
-1° - 4°	75mm
-7° - -2°	80mm
-12° - -8°	90mm
-18° - -13°	95mm
-23° - -19°	100mm
-29° - -24°	110mm

**DESIGN SERVICES UNIT**  
**STANDARDS AND SPECIAL DESIGN**  
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**SEE PLATE FOR TITLE**

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