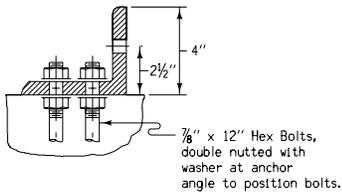
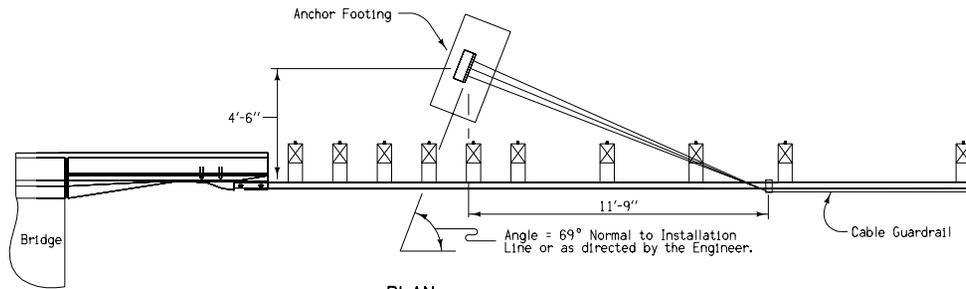
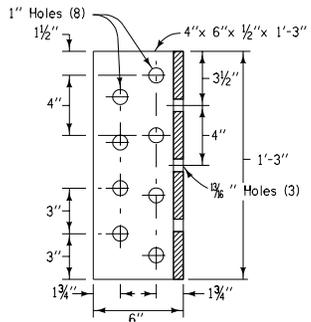


TYPE 'A' END ANCHORAGE DETAILS

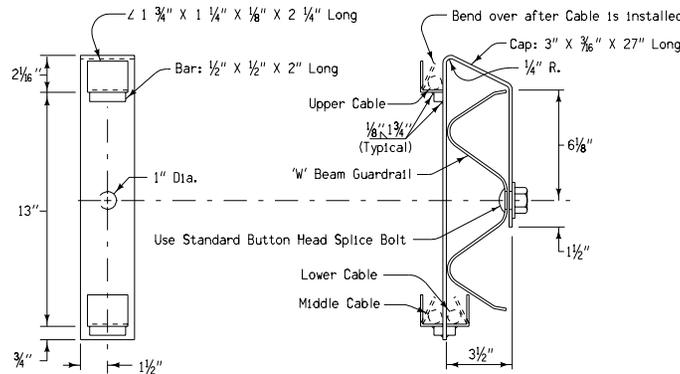
Anchor shall be cast in place with ϵ normal to line of guardrail. Excavation for anchor shall be to the neat lines indicated. Forms will be allowed only for the ends (the 2' dimension) of the anchor.



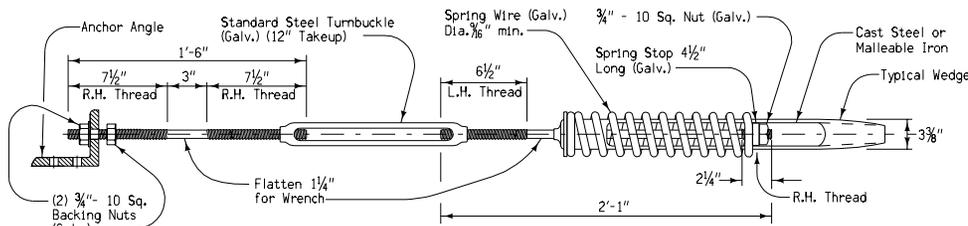
ANCHOR ANGLE



PLAN



TRANSITION BRACKET



SPRING CABLE END ASSEMBLY WITH TURNBUCKLE (Compensating Device)

CABLE TENSION ADJUSTMENTS FOR TEMPERATURE VARIATIONS														
Temperature Range Degrees F	120 to 110	109 to 100	99 to 90	89 to 80	79 to 70	69 to 60	59 to 50	49 to 40	39 to 30	29 to 20	19 to 10	9 to 0	-1 to -10	-11 to -20
Spring Compression Inches *	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4

* From the unloaded position in each spring

Turnbuckles shall be of the open type and shall each provide for a minimum takeup of 12 inches.

The spring type compensating device is installed to maintain cable tension for various temperature conditions. This device shall provide for 5 inch minimum travel and have a spring rate of 450±50 lbs. per inch. Turnbuckles are used to pretension each cable to the proper tension, depending on the temperature at the time of adjustment. The spring compression adjustments for various temperatures are listed in the table below.

Turnbuckles and compensating devices shall each be equipped with adequate and proper bolts and fittings (to provide for use separately or in combination) to connect the guardrail cable to the end anchorage. Turnbuckles and compensating devices will not be paid for separately but shall be considered incidental.

Steel used in the fabrication of the brackets shall conform to ASTM A36. The brackets shall be galvanized after fabrication according to ASTM A123.

Gas Metal-Arc and Flux-Cored Arc Welding may be used for welding incidental items as indicated on this sheet, provided that the fabricator furnishes certification for the filler metal and gas, uses filler metal on the approved list furnished by the Office of Materials, uses prequalified welding procedures, and uses qualified welders approved by the Iowa DOT.

List of materials for the RE-29A Type 'A' End Anchorage:

- (1) Anchor Angle and Hardware
- 1.19 cubic yards concrete
- 59 lbs. of reinforcing steel (approx.)
- (3) Cable End Assemblies
- (2) Transition Brackets

Iowa Department of Transportation
Highway Division

STANDARD ROAD PLAN RE-84(2)

REVISION: NEW. REVISION NO. NEW
REVISION DATE

William J. Altan
APPROVED BY DESIGN METHODS ENGINEER 10-18-05