

# ROADWAY

## ITEM 606 - GUARDRAIL, MISC.: CABLE MEDIAN BARRIER ANCHORAGE UNIT

### I. DESCRIPTION

THIS WORK SHALL CONSIST OF CONSTRUCTING CABLE MEDIAN BARRIER ANCHORAGE UNITS AND ATTACHING EXISTING CABLE MEDIAN BARRIER TO GUARDRAIL TRANSITIONS TO THEM.

THE CONSTRUCTION OF THE CABLE MEDIAN BARRIER ANCHORAGE UNITS AND ATTACHING THE EXISTING CABLE MEDIAN BARRIER TO THEM SHALL INCLUDE THE FURNISHING, ASSEMBLING AND ERECTING OF ALL COMPONENT PARTS AND MATERIALS, COMPLETE IN PLACE, AT THE LOCATIONS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

### II. MATERIALS

- A. STEEL POSTS, BOLTS, FITTINGS AND OTHER ACCESSORIES SHALL BE GALVANIZED. SPECIFIC MATERIALS SHALL BE AS FOLLOWS:

GALVANIZING, HARDWARE	711.02
CONCRETE, CLASS C	499 AND 511
REINFORCING STEEL	509.02
STEEL POSTS	710.15
END POST CAPS	ASTM A36
WIRE CABLE	ASTM A741-86

- B. ALL POSTS SHALL BE S3x5.7 (31x5.7) ROLLED STEEL SECTIONS. POSTS AND PLATES SHALL CONFORM TO ASTM A36 AND SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

- C. 3/4" ROUND STEEL WIRE CABLE SHALL CONSIST OF THREE STRANDS (7 WIRES PER STRAND) AND HAVE A MINIMUM TENSILE STRENGTH OF 25,000 POUNDS AND SHALL CONFORM TO ASTM A741-86.

- D. MATERIALS INDICATED AS "MALLEABLE IRON" SHALL CONFORM TO ASTM A47 AND SHALL BE GRADE 35018 WITH THE EXCEPTION OF THE CABLE SPLICE (SEE SHEET 58) WHICH SHALL CONFORM TO ASTM A47 AND BE GRADE 32510.

- E. HOOK BOLTS INSTALLED, SHALL DEVELOP AN ULTIMATE PULL OPEN STRENGTH OF FROM 500 LBS TO 1000 LBS APPLIED IN A DIRECTION NORMAL TO THE LONGITUDINAL AXIS OF THE POST.

- F. ALL FITTINGS (INCLUDING SPLICES) SHALL BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "X" (SHEET 58) AND SHALL DEVELOP THE FULL STRENGTH OF THE 3/4" ROUND CABLE (25,000 LBS.). ALL FITTINGS, EXCEPT THE WEDGE SHOWN IN DETAIL "X" (SHEET 58), SHALL BE HOT DIPPED GALVANIZED AS INDICATED ABOVE.

### III. CONSTRUCTION DETAILS

- A. ANCHORAGE UNITS: THE CONCRETE ANCHOR SHALL BE SET INTO AN EXCAVATION AS DETAILED ON THE PLANS. THE BOTTOM OF THE ANCHOR SHALL HAVE A FULL AND EVEN BEARING ON THE SURFACE UNDER IT. CONCRETE FOR THE ANCHOR SHALL BE CLASS C CONCRETE IN ACCORDANCE WITH 499 AND 511. AFTER THE CONCRETE ANCHOR IS IN PLACE, THE EXCAVATION SHALL BE BACKFILLED IN ACCORDANCE WITH ITEM 203 AND THE DETAILS SHOWN ON THE PLANS.

AFTER THE END POSTS ARE DRIVEN TO THE SPECIFIED LINE AND GRADE, THE "CLAMPED ON" BEARING ANGLES SHALL BE ADJUSTED IN THE FIELD TO PROVIDE A FULL AND EVEN BEARING ON THE UNDERLYING SURFACE.

### CABLE MEDIAN BARRIER (CONT.)

- B. SETTING POSTS: POSTS SHALL BE SET PLUMB IN HOLES, OR DRIVEN. THE MANNER OF DRIVING SHALL BE SUCH AS TO AVOID BATTERING OR DISTORTING OF POSTS. POSTS SET OR DRIVEN TO WITHIN 1 INCH OF GRADE NEED NOT BE TRIMMED. POST HOLES SHALL BE BACKFILLED WITH AN ACCEPTABLE MATERIAL PLACED IN LAYERS AND THOROUGHLY COMPACTED.

- C. CABLE PLACEMENT: THE CONTRACTOR SHALL INSTALL THE CABLES ON THE POSTS AS SHOWN IN THE PLANS AND AS FOLLOWS. THE TOP CABLE SHALL BE PLACED 27 INCHES ABOVE THE FINISHED GRADE LINE AND ON THE SIDE OF THE POST THAT IS CLOSEST TO THE TRAVELED PAVEMENT. THE MIDDLE CABLE SHALL BE PLACED 24 INCHES ABOVE THE FINISHED GRADE AND ON THE OPPOSITE SIDE OF THE POST. THE BOTTOM CABLE SHALL BE PLACED 21 INCHES ABOVE THE FINISHED GRADE AND ON THE SAME SIDE OF THE POST AS THE TOP CABLE. IN NO CASE SHALL THE CABLES SWITCH SIDES DURING A CONTINUOUS RUN BETWEEN ANCHORS, EXCEPT AT THE TRANSITION POST FOR INTERMEDIATE ANCHORAGES (SEE DETAIL ON SHEET 57). IF THE CABLE MEDIAN BARRIER CROSSES THE CENTERLINE OF THE MEDIAN DURING A CONTINUOUS RUN, THE CONTRACTOR SHALL INSTALL THE TOP AND BOTTOM CABLE ON THE SIDE AS DIRECTED BY THE ENGINEER, AND THE MIDDLE CABLE ON THE OPPOSITE SIDE.

- D. CABLE MEDIAN BARRIER TENSIONING: THE CONTRACTOR SHALL INSTALL AND TENSION THE CABLE MEDIAN BARRIER AS FOLLOWS. PROPERLY SEAT THE SPRING COMPENSATION DEVICE AND THEN PERMANENTLY MARK THE UNLOADED POSITION. COMPLETE THE ASSEMBLY OF THE GUIDE RAILING AND SET THE COMPENSATING DEVICES TO A SPRING COMPRESSION OF 3-1/2 INCHES. LEAVE THE SPRINGS AT THIS SETTING FOR AT LEAST 2 WEEKS THEN SET THEM TO THE PROPER SETTING ACCORDING TO THE FOLLOWING:

#### VALUES TO BE USED TO TIGHTEN TURNBUCKLES DEPENDING ON THE TEMPERATURE AT THE TIME OF THE ADJUSTMENT

99	89	79	69	59	49	39	29	19	9	-1	-11
TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
90	80	70	60	50	40	30	20	10	0	-10	-20

#### SPRING COMPRESSION FROM UNLOADED POSITION IN EACH SPRING

1.5"	1.75"	2"	2.25"	2.5"	2.75"	3"	3.25"	3.5"	3.75"	4"	4.25"
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- E. AT ALL LOCATIONS WHERE THE CABLE IS CONNECTED TO A CABLE SOCKET WITH A WEDGE TYPE CONNECTION, ONE WIRE OF THE WIRE ROPE SHALL BE CRIMPED OVER THE BASE OF THE WEDGE TO HOLD IT FIRMLY IN PLACE.

- F. COMPENSATING DEVICES MUST HAVE A SPRING RATE OF 450±50 LBS. PER INCH AND A TOTAL AVAILABLE "THROW" OF 6 INCH MINIMUM.

### IV. METHOD OF MEASUREMENT

CABLE MEDIAN BARRIER ANCHORAGE UNITS WILL BE MEASURED BY THE ACTUAL NUMBER OF UNITS INSTALLED AND THE CONNECTION OF THE EXISTING CABLE MEDIAN BARRIER TO THOSE ANCHORS IN ACCORDANCE WITH THE PLANS OR AS DIRECTED BY THE ENGINEER.

### V. BASIS OF PAYMENT

CABLE MEDIAN BARRIER ANCHORAGE UNITS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, ITEM 606 - GUARDRAIL, MISC.: CABLE MEDIAN BARRIER ANCHORAGE UNIT.

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GENERAL NOTES

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