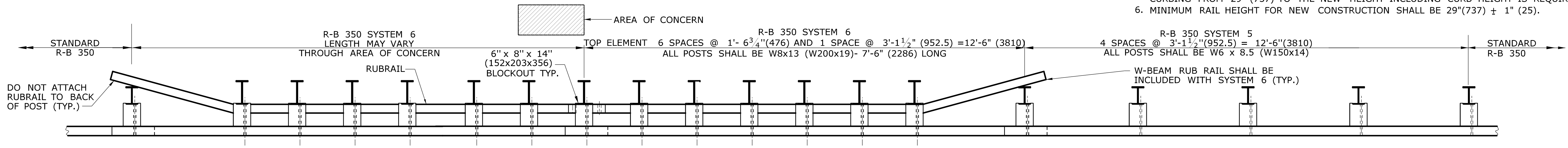


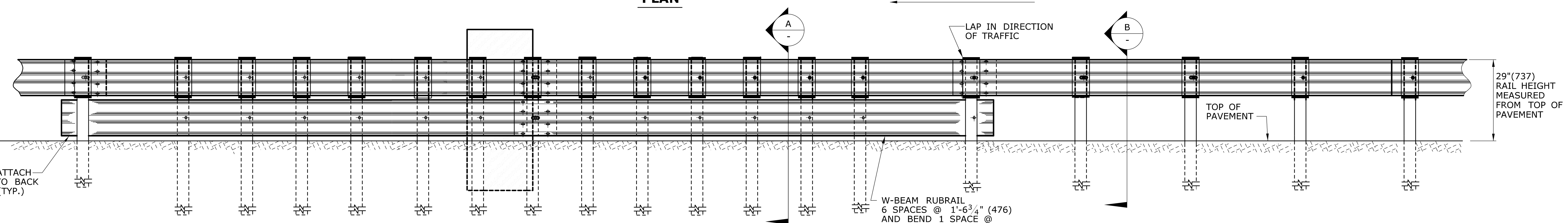
**TREATMENT OF METAL BEAM RAIL R-B 350 AT UTILITY POLES ON UNDIVIDED BI-DIRECTIONAL ROADWAYS**

- GENERAL NOTES:**
- SEE SHEET HW-910-01 FOR HARDWARE AND DELINEATOR DETAILS.
  - RAIL HEIGHT WITH CURBING SHALL BE MEASURED FROM THE TOP OF PAVEMENT. ON HIGH SPEED ROADWAYS ( $\geq 45$  mph(72.4kph)), 4"(102) CURBING SHALL BE USED IN-CONJUNCTION WITH GUIDERAIL AND THE RAIL FACE SHALL BE INSTALLED FLUSH WITH THE FACE OF CURBING. ON LOW SPEED ROADWAYS ( $< 45$  mph(72.4kph)), 6"(152) CURBING MAY BE USED IN-CONJUNCTION WITH GUIDERAIL AND THE RAIL FACE SHALL BE INSTALLED A MAX. OF 9"(229) BEHIND THE FACE OF CURBING. W-BEAM GUIDERAIL MAY ONLY BE INSTALLED ON SLOPES FLATTER THAN 10:1.
  - ALL R-B 350 GUIDERAIL TYPES INSTALLED ON LIMITED ACCESS HIGHWAYS AND RAMPs SHALL USE CLASS B TYPE - II (10 GAUGE) W-BEAM RAIL ELEMENTS.
  - WHEN A WARRENT EXISTS FOR RAILING AND THERE IS A UTILITY POLE THAT CAN NOT BE RELOCATED AND IT IS WITHIN THE DEFLECTION DISTANCE FOR STANDARD R-B 350 GUIDERAIL, R-B 350 SYSTEM 5 IS REQUIRED. THE LENGTH OF R-B 350 SYSTEM 5 SHALL BE 25'(7620) CENTERED ON THE UTILITY POLE. WHEN THE UTILITY POLE IS WITHIN 2'-8"(813) OF THE BACK OF THE POST, A 25'(7620) W-BEAM RUBRAIL CENTERED ON THE UTILITY POLE SHALL BE ADDED AND PAID FOR UNDER THE CONTRACT UNIT PRICE FOR R-B 350 SYSTEM 5A. THE RUBRAIL FLARED SECTION SHALL BE SHOP BENT AND GALVANIZED AFTER FABRICATION.
  - IF CURBING IS USED IN CONJUNCTION WITH R-B 350 SYSTEM 6 THE RAIL HEIGHT SHALL BE 29" (737) PLUS THE CURB HEIGHT. A 25' (7620) LONG HEIGHT TRANSITION PRIOR TO THE CURBING FROM 29" (737) TO THE NEW HEIGHT INCLUDING CURB HEIGHT IS REQUIRED.
  - MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29"(737) ± 1" (25).



**TREATMENT OF METAL BEAM RAIL R-B 350 SYSTEM 6 AT FIXED OBJECTS ON UNDIVIDED BI-DIRECTIONAL ROADWAYS**

(FOR ADDITIONAL INFORMATION SEE TABLE 1)



**ELEVATION**

**TABLE 1**  
STRENGTH TRANSITION FOR METAL BEAM RAIL (TYPE R-B 350) AT FIXED OBJECTS, BRIDGE PIERS, NON-BREAKAWAY STRUCTURES, AND ABUTMENTS ON THE ROADSIDE OR MEDIAN.

"D"	"X"	R-B 350 SYSTEM 6	R-B 350 SYSTEM 5	STANDARD R-B 350	"L"
MAXIMUM DESIGN DEFLECTION	AREA OF CONCERN PLUS TWO POSTS FOR:	W8x13(W200x19) POSTS SPACED AT 1'-6 3/4" (476) WITH RUBRAIL	W6x8.5 (W150x14) POSTS SPACED AT 3'-1 1/2" (952.5)	W6x8.5 (W150x14) POSTS SPACED AT 6'-3" (1905)	MINIMUM LENGTH NEEDED
1'-10"(559)	SYSTEM 6	12'-6"(3810)	12'-6"(3810)	LON	25'(7620)
2'-8"(813)	SYSTEM 5		25'(7620)	LON	25'(7620)
4'-3"(1295)	R-B 350			LON	LON

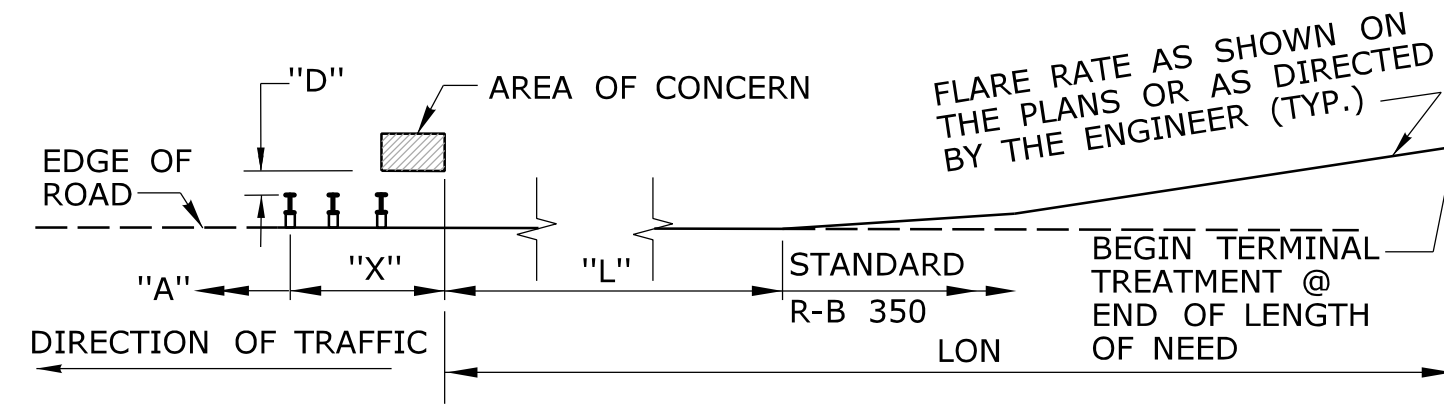
L = MINIMUM LENGTH OF GUIDE RAIL STRENGTH TRANSITION NEEDED IN FEET PRIOR TO THE AREA OF CONCERN. NOTE: WHEN DESIGNING STRENGTH TRANSITIONS ON EXPRESSWAYS AND RAMPs FOR ZONE OF INTRUSION 100'(30.5m) PRIOR TO THE AREA OF CONCERN SHALL BE PROVIDED.

X = MINIMUM LENGTH THROUGH AREA OF CONCERN PLUS TWO POST SPACES FOR A SINGLE DIRECTION ROADWAY. "X" WILL VARY DEPENDING ON LENGTH OF AREA OF CONCERN.

D = MAXIMUM DESIGN DEFLECTION MEASURED FROM THE BACK OF POST TO THE FACE OF AREA OF CONCERN.

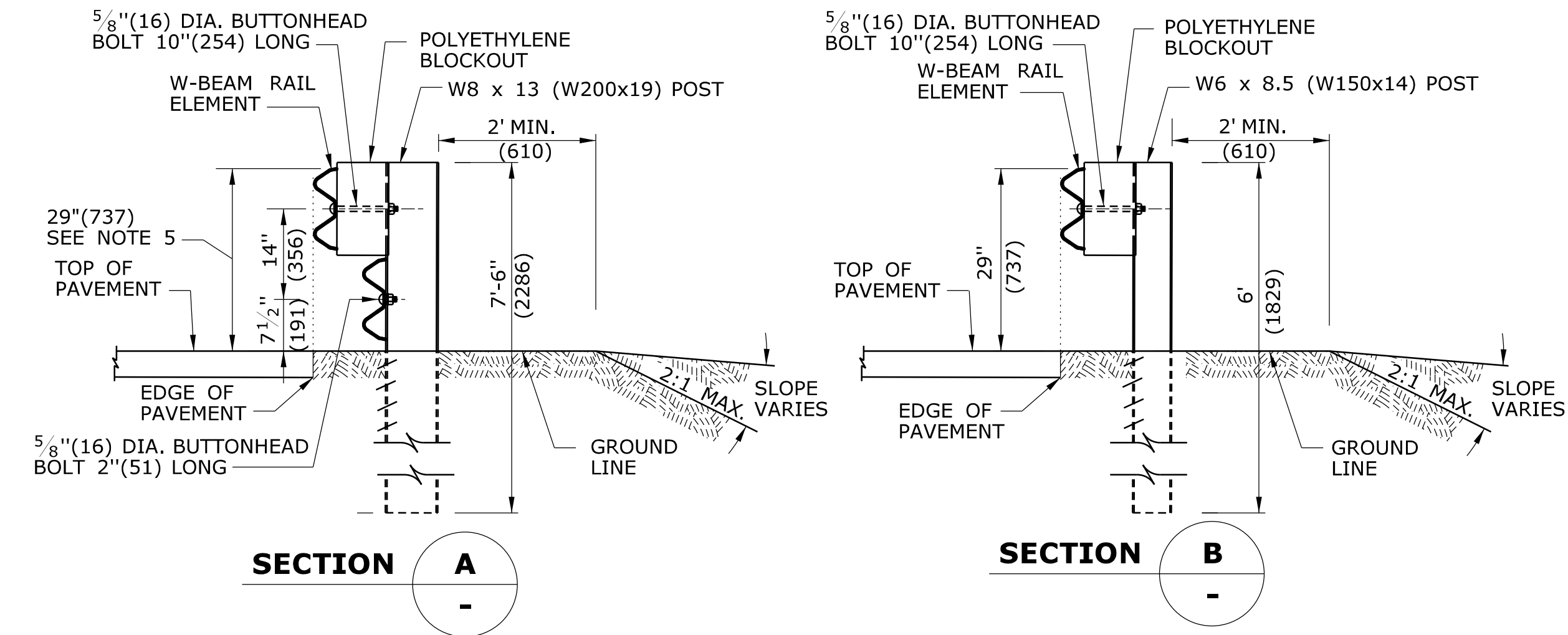
LON = LENGTH OF NEED FOR EACH SITE SHALL BE BASED ON CTDOT HIGHWAY DESIGN MANUAL AND AS SHOWN ON THE PLANS.

A = IF AREA OF CONCERN IS PROTECTED WITH SYSTEM 5 OR 6 ON A SINGLE DIRECTION ROADWAY, CONTINUE WITH STANDARD R-B 350 GUIDERAIL.



**LENGTH OF NEED DIAGRAM (LON)**

(SEE TABLE 1 FOR LEGEND)



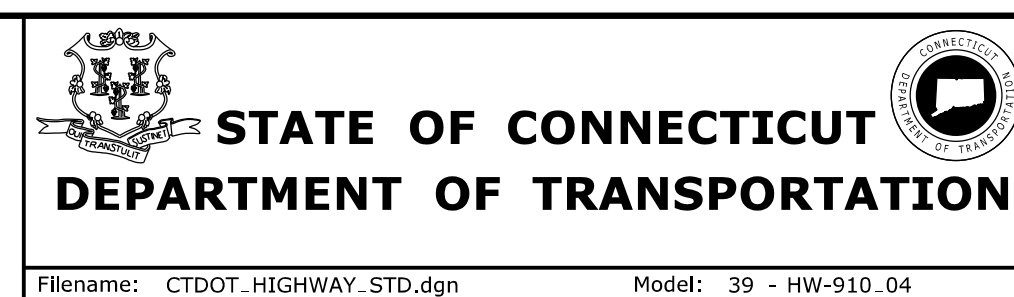
**SECTION A**

**SECTION B**

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REV.	DATE	REVISION DESCRIPTION

NOT TO SCALE



SUBMITTED BY:	NAME/DATE/TIME:
APPROVED BY:	NAME/DATE/TIME:

**CTDOT**  
**STANDARD SHEET**  
**OFFICE OF ENGINEERING**

STANDARD SHEET TITLE:  
**METAL BEAM RAIL TYPE R-B 350 SYSTEMS 5, 5A, & 6**

STANDARD SHEET NO.:  
**HW-910\_04**