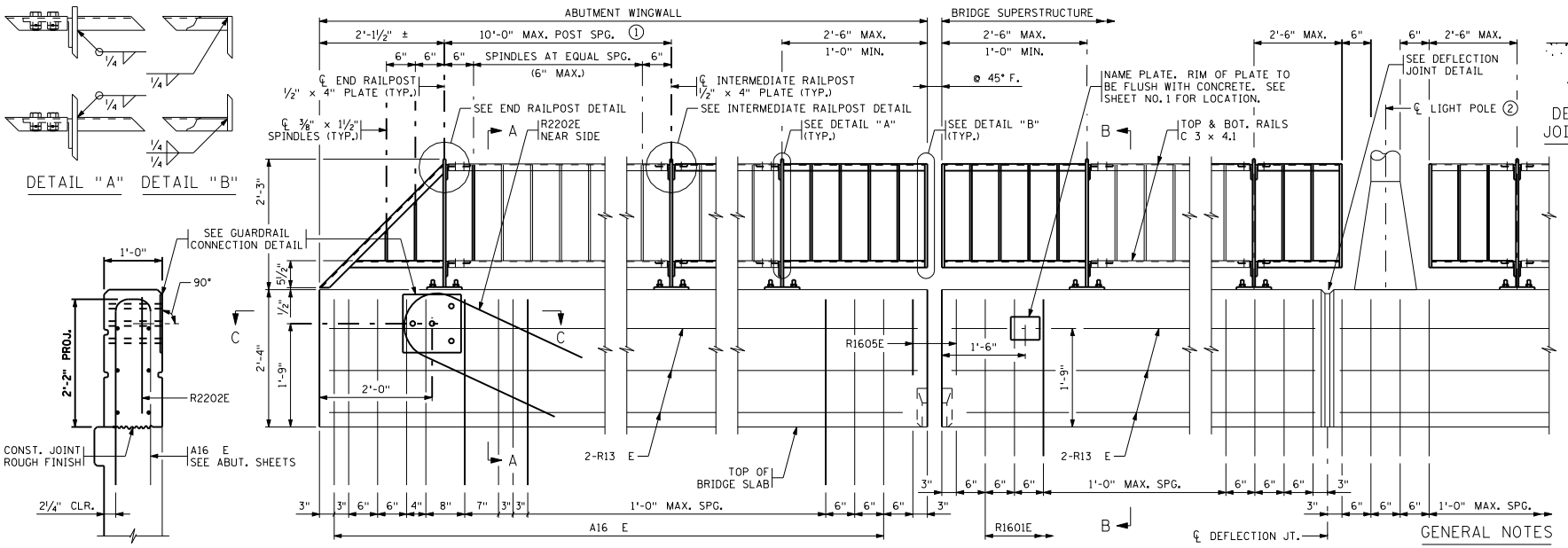
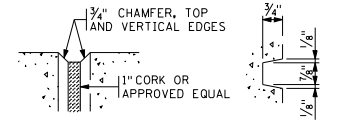
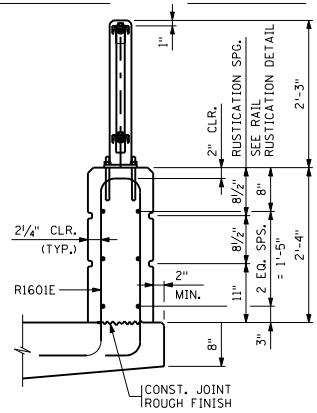
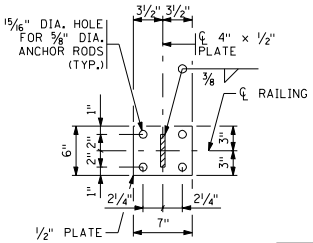




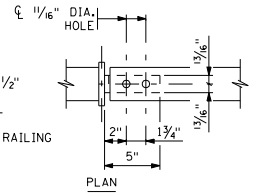


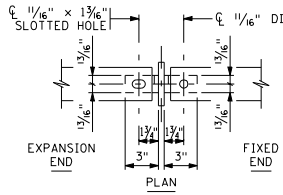
SECTION B-B

SECTION A-A



RAILPOST BASE PLATE



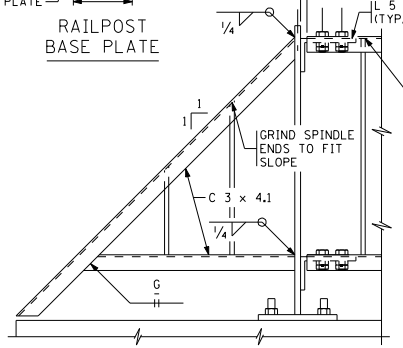


EXPANSION JOINT

EXP. DEVICE NOT SHOWN

INSIDE ELEVATION OF RAILING

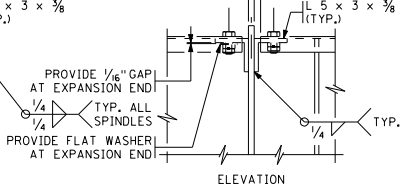
DEFLECTION JOINT



ELEVATION

END RAILPOST DETAIL

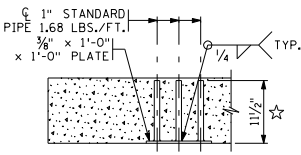
TOP AND BOTTOM RAIL CONNECTIONS SIMILAR



ELEVATION

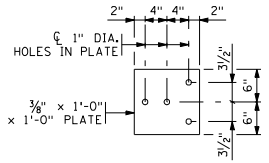
INTERMEDIATE RAILPOST DETAIL

TOP AND BOTTOM RAIL CONNECTIONS SIMILAR



SECTION C-C

(REINFORCEMENT NOT SHOWN)
☆ DIMENSION INCLUDES ⅜" PLATE

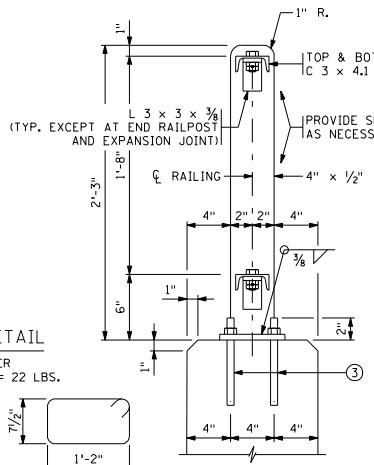


GUARDRAIL CONNECTION DETAIL

GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394. ESTIMATED WEIGHT = 22 LBS.

RAIL MEETS TEST LEVEL 2 REQUIREMENTS OF NCHRP REPORT 350.

THE RAIL MUST BE USED NEXT TO WALKWAY.
AN F-BARRIER MUST BE USED TO SEPARATE TRAFFIC FROM THIS RAIL IN THE 45 MPH (OR OVER) SPEED ZONE.



TYPICAL RAILPOST

SPINDLE NOT SHOWN

GENERAL NOTES

LENGTH OF "TYPE P-1 RAILING CONCRETE (3Y46 OR 3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAILING.

LENGTH OF "METAL RAILING FOR BIKEWAYS, TYPE M-1" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAILING.

CONCRETE PARAPET = 350 LBS./FT. (0.086 CU. YDS./FT.)

FINISH ALL EDGES OF CONCRETE PARAPET WITH ½" VEE, EXCEPT WHERE OTHERWISE NOTED.

MAX. SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.

SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF METAL RAILING. SET NORMAL TO GRADE.

DRILLED IN ANCHORAGES WILL BE PERMITTED IN LIEU OF ANCHORAGE SHOWN.

RAILPOSTS AND SPINDLES SHALL BE NORMAL TO GRADE.

ALL STRUCTURAL STEEL MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3306.

GALVANIZE BOLTS, NUTS AND WASHERS PER Mn/DOT SPEC. 3392.

GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394 AFTER FABRICATION.

ALL RAILING MEMBERS SHALL BE FLAT AFTER FABRICATION AND GALVANIZING TO WITHIN ⅛" IN 10 FT. VERTICALLY AND HORIZONTALLY BY MECHANICAL MEANS WITHOUT DAMAGE TO THE ZINC COATING.

SEE SPECIAL PROVISIONS FOR PAINT TO BE APPLIED TO METAL RAILING.

GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

PRICE BID FOR METAL RAILING INCLUDES ANCHORAGES AND ALL MATERIAL ABOVE TOP OF CONCRETE PARAPET.

RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

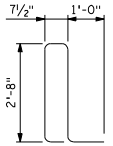
(1) SPACE LIGHT AND RAILPOST ANCHORAGE TO CLEAR REINFORCEMENT IN CONCRETE PARAPET.

(2) SEE STANDARD BRIDGE DETAIL B950 FOR LIGHT POLE ANCHORAGE IF REQUIRED.

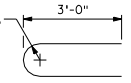
(3) ⅝" DIA. CHEMICAL ANCHOR RODS, Mn/DOT SPEC. 3385, TYPE A, WITH HEX NUTS AND WASHERS. MINIMUM ULTIMATE BOND STRENGTH SHALL BE 20,000 POUNDS, WITH A MINIMUM 5" EMBEDMENT LENGTH. SEE SPECIAL PROVISIONS.

BILL OF REINFORCEMENT FOR PARAPET

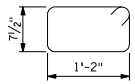
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E		7'-5"		RAIL BASE VERTICAL
R2202E		6'-6"		RAIL BASE VERTICAL
R1303E				RAIL BASE LONGIT.
R1304E				RAIL BASE LONGIT.
R1605E		4'-6"		RAIL BASE VERTICAL



R1601E



R2202E



R1605E

REVISED:

APPROVED: DECEMBER 18, 2003
Daniel J. Alexander
STATE BRIDGE ENGINEER

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER _____ DATE

NAME: _____ LIC. NO. _____

TITLE: METAL RAILING FOR BIKEWAYS (TYPE M-1) AND CONCRETE PARAPET (TYPE P-1) (WITH INTEGRAL END POST)

DES:	DR:	APPROVED:
CHK:	CHK:	

SHEET NO. OF SHEETS

FIG. 5-397.154

BRIDGE NO.