



HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO THE REQUIREMENTS OF

A.S.T.M. DESIGNATION A-500 GRADE B STRUCTURAL STEEL TUBING.
ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF
A.A.S.H.T.O. M-183 EXCEPT POSTS AND ANGLES SHALL CONFORM TO A.A.S.H.T.O. M-223, GRADE 50.

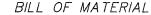
BOLTS, CAP SCREWS AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. DESIGNATION A-307 EXCEPT FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS NOTED WHICH SHALL CONFORM TO A.A.S.H.T.O. M-164.
ALL BOLTS, NUTS, CAP SCREWS, WASHERS AND LOCK WASHERS SHALL BE

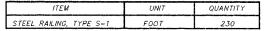
GALVANIZED IN ACCORDANCE WITH A.A.S.H.T.O. M-232.

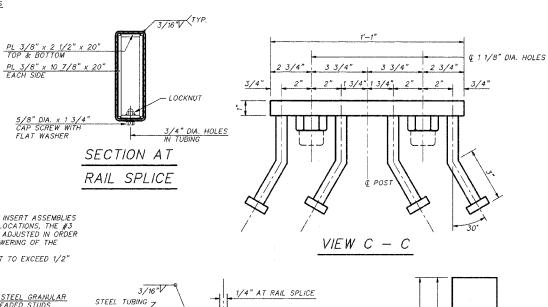
ALL POST, RAILING, RAIL SPLICES, ANCHOR DEVICES AND ANGLES SHALL BE GALVANIZED AFTER SHOP FABRICATION IN ACCORDANCE WITH A.A.S.H.T.O. M-111 AND A.S.T.M. A-385. GALVANIZED RAIL SHALL NOT BE PAINTED.

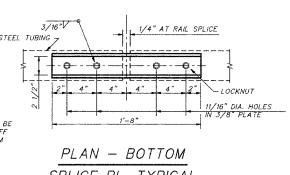
## INSTALLATION NOTES

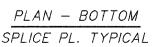
- FOR MULTI-SPAN BRIDGES, SUFFICIENT 1/4" X 6"x 1'-2" GALVANIZED STEEL SHIMS SHALL BE PROVIDED TO ALIGN RAIL BETWEEN ADJACENT SPANS. COST INCIDENTAL TO STEEL RAILING. ALL FIELD DRILLED HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT BEFORE ERECTION. THE 1/2"x4"x6" PLATES THAT COME IN CONTACT WITH CONCRETE SHALL RECIEVE TWO COATS OF ASPHALT PAINT CONFORMING TO SECTION 760.07 TYPE II OR PLACE 1/8" FABRIC BEARING PADS BETWEEN THE PLATES AND CONCRETE.
- THE 3/4" DIA. HIGH STRENGTH BOLTS USED TO CONNECT THE 6"x4"x3/4" ANGLES TO THE POST SHALL BE TIGHTENED IN ACCORDANCE WITH ARTICLE 505.04 (f)(3) OF THE STANDARD SPECIFICATIONS.
- THE 1" DIA. HIGH STRENGTH BOLTS CONNECTING THE ANGLES TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN. THE 5/8" DIA. CAP SCREWS IN BOTTOM OF POSTS SHALL BE TO A SNUG FIT ONLY
- THE MAXIMUM ALLOWABLE RAIL POST SPACING SHALL BE 10'-9".

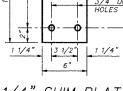






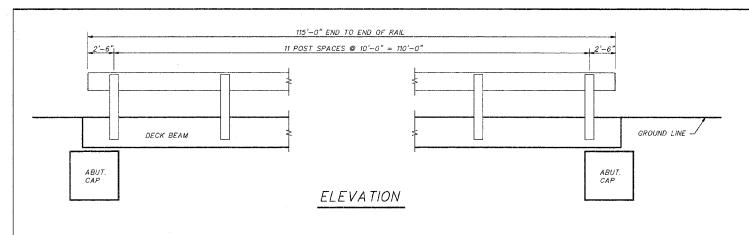






1/4" SHIM PLATE

STEEL RAILING, TYPE S-1 McCLINTOCK CIVIL ENGINEERING SERVICE 404 SHAW AVENUE, PARIS, IL. 61944 PHONE (217) 466-6110 SEC. 98-03121-00-BR EAST OAKLAND TOWNSHIP SHEET 9 OF 15 SCALE COLES COUNTY JOB NO. 3137-454-99



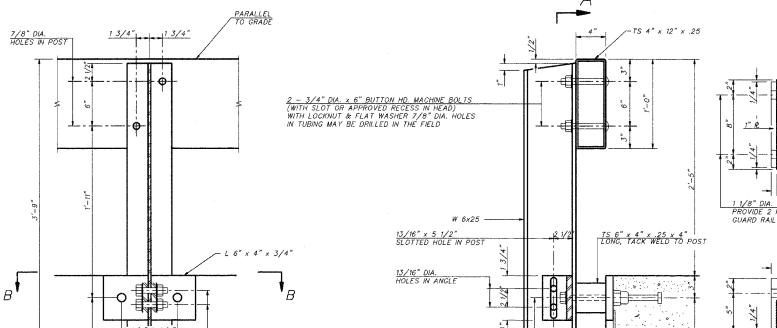
2 - 3/4" DIA. x 3 1/4" H.S. BOLTS WITH HEX NUT & FLAT WASHERS

EDGE OF BEAM

GRIND 5/16" CHAMFER

- W 6x25

(SEE NOTE-B)



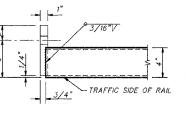
2 - 1" DIA. x 7 3/4" - H.S. BOLTS WITH FLAT WASHER

(SEE NOTE-D)

2 - 5/8" DIA. x 5 3/4" CAP SCREWS WITH FLAT WASHER

(SEE NOTE-C)

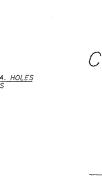
— 3/4" DIA. DRAIN HOLE 3/4" 1 1/8" DIA. HOLES FOR 1" DIA. x 4" MACHINE BOLTS PROVIDE 2 FLAT WASHERS & LOCKNUTS FOR GUARD RAIL CONNECTION SHOWN STD. 2340 3/16" -TRAFFIC SIDE OF RAIL



END OF RAIL DETAILS

\*\* WHENEVER THE LOWER INSERT ASSEMBLIES INTERFERE WITH STRAND LOCATIONS, THE #3 BARS SHALL BE CUT AND ADJUSTED IN ORDER TO ALLOW RAISING OR LOWERING OF THE LOWER INSERTS.

MAXIMUM ADJUSTMENT NOT TO EXCEED 1/2"



ANCHOR DEVICE

\* 1" H.S. NUT A.A.S.H.T.O. M-164 WELDED TO PL. 3/4" DIA. x 6" CR 1020 STEEL GRANULAR OR SOLID FLUX FILLED HEADED STUDS AUTOMATICALLY END WELDED. 4 REQUIRED PER PL 0 CAST 1" VOIDS BEHIND EACH NUT 1"x6"x13" PL-1/4"

-1/2" x 1 1/2" x 6" BAR

1/2" x 4" x 6" PLATE

TS 6" x 3" x .25" x 3 1/2" TACK WELD TO POST & PLATE

\* THREADED AREAS SHALL BE PLUGGED OR BLOCKED OFF DURING CASTING OF BEAM

3/4" DIA. XX PIPE — 3" LONG WELDED TO #3 BAR AND TAP FOR 5/8" DIA. CAP SCREW

3/16"

SECTION AT RAIL POST

SECTION B - B

. . . .

1 1/8" DIA. HOLES IS ANGLES

13/16" x 3" SLOTTED HOLES -

L 6" x 4" x 3/4" x 6" LONG -

TS 6" x 4" x .25" x 4" LONG TACK WELD TO POST

2 - 13/16" DIA. HOLES IN ANGLES 1 - 13/16" x 5 1/2" SLOTTED HOLE

SECTION A - A