HINGES

LIVE LOADING: STANDARD (HS20) LOADING

PLAN

STEEL WING

SECTION B-B

HINGE DETAIL

HINGED AREA OPENS FOR CLEANOUT

TO CROSSBAR

WASHER SPACER

HINGE DETAIL (HINGED AREA OPENS FOR CLEANOUT)

NOTE: LOOK DETAIL SIMILAR EXCEPT MADE 1/4" GALV. MAChINED BOLT "CUT WITH GALV. CUT WASHER & GALV. HEX NUT ON MIN. WELDED STUD BOLT.

SECTION A-A

NOTE: SEE DETL. DWG. NO. 611-10
OR DWG. NO. 611-05 FOR BASE DETAILS

7'-9" 1/2"
(2445)

HINGE (SEE DETAIL)

OR DWG. NO. 611-15 FOR BASE DETAILS

NOTE: SEE DTL. DWG. NO. 611-00

CROSSBAR

HINGE DETAIL (HINGED AREA OPENS FOR CLEANOUT)

NOTE: LOOK DETAIL SIMILAR EXCEPT MADE 1/4" GALV. MACHINED BOLT "CUT WITH GALV. CUT WASHER & GALV. HEX NUT ON MIN. WELDED STUD BOLT.

NOTE: LOCK DETAIL SIMILAR EXCEPT MADE 5/8" DIA. [M16] GALV. MACHINED BOLT "CUT WITH GALV. CUT WASHER & GALV. HEX NUT ON MIN. WELDED STUD BOLT.

NOTES:

1. USE AN EVEN NUMBER OF STEEL CATTLE GUARD GRATES WHEN A CROWNED AREA IS USED.

2. ANCHOR BOLTS ARE TO CONFORM TO AASHTO M314 GRADE 225 MPa.

3. ALL NUTS, BOLTS, AND WASHERS ARE TO BE GALVANIZED.

4. MACHINED BOLTS TO BE GALVANIZED.

5. USE AN EVEN NUMBER OF STEEL CATTLE GUARD GRATES WHEN A CROWNED AREA IS USED.

6. A CATTLE GUARD GRATE IS TO INCLUDE HINGED GRATE.

7. FABRICATE ALL LIGHT DUTY CATTLE GUARDS TO INCLUDE HINGED GRATES.

UNITS SHOWN IN BRACKETS ( ) ARE IN MILLIMETERS (MM) UNLESS OTHER UNITS ARE SHOWN.

RECEIVED NO.

REFERENCE

STANDARD DWG.

DETAILED DRAWING

SECTION 611-09

CATTLE GUARD

HINGED GRATE

MONTANA DEPARTMENT OF TRANSPORTATION
NOTE: METRIC CATTLE GUARD SIZES ARE NOMINAL, STANDARD SPEC. IS SHOWN.

PLAN VIEW

ELEVATION VIEW

SECTION 611-15

HEAVY DUTY CATTLE GUARD - PRECAST