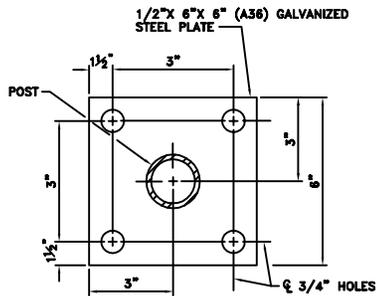
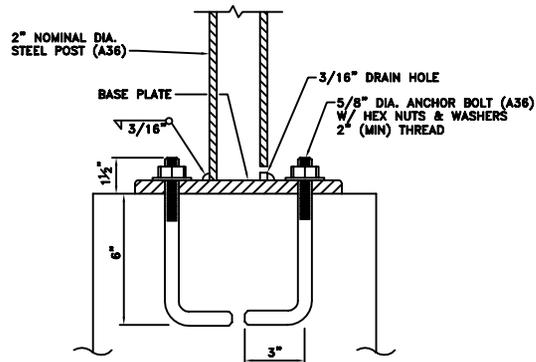


TOP RAIL AND FITTING



BASE PLATE DETAIL



POST DETAIL

GUARDRAIL DETAILS

GUARDRAIL NOTES:

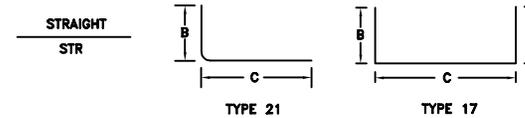
- HOLES DRILLED IN THE POST PLATE FOR THE 5/8" HEX & ANCHOR BOLTS SHALL BE NO MORE THAN 1/8" OVERSIZED AFTER GALVANIZING.
- STEEL POST PLATES SHALL BE FABRICATED, HOLES DRILLED, & WELDED TO POST PRIOR TO GALVANIZING AS PER ASTM A123.
- ALL ANCHOR & HEX BOLTS, NUTS, WASHERS, AND OTHER HARDWARE SHALL BE GALVANIZED STEEL, IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION 582.
- ALL FIELD CUTS OR DRILL HOLES IN THE GALVANIZED STEEL POSTS OR RAILS SHALL BE PAINTED WITH A COLD GALVANIZING COMPOUND.
- 5/8" X 10.5" L-SHAPE ANCHOR BOLTS SHALL BE PLACED IN THE SIDE WALLS SO THEY ARE CENTERED IN THE POST PLATE HOLES.
OR
-5/8" X 8.5" ANCHOR BOLTS SHALL BE SET INTO 11/16" X 7/8" HOLES DRILLED INTO EXISTING CONCRETE & FASTENED W/ "HILTI HV4 ADHESIVE ANCHORING SYSTEM" OR EQUIVALENT.
- AT THE CONTRACTORS OPTION, A CONTINUOUS TOP RAIL WITH LOOP CAPS ON INTERMEDIATE POSTS, CAN BE USED.

BAR SCHEDULE

MARK	SIZE	QUANTITY	LENGTH	TOTAL LENGTH	TYPE	B	C
1	4	4	9-0	36-0	STR.		
2	4	2 SETS OF 3 BARS	2-9 TO 3-5 @0-4 INCR.	18-6	STR.		
3	4	2 SETS OF 3 BARS	5-10 TO 8-6 @ 1-4 INCR.	43-0	21	0-7 TO 3-3 @1-4 INCR.	5-3
4	4	2	5-6	11-0	STR.		
5	4	12	3-7	43-0	STR.		
6	4	13	4-2	54-2	21	1-0	3-2
7	4	24	4-8	112-0	STR.		
8	4	2 SETS OF 18 BARS	5-0 TO 10-0 @ 0-4 INCR.	240-0	STR.		
9	4	12	10-4	124-0	STR.		
10	4	2 SETS OF 8 BARS	9-10 TO 19-2 @ 1-4 INCR.	232-4	21	5-3	4-7 TO 13-11 @1-4 INCR.
11	4	8	27-3	218-0	21	5-3	22-0
12	4	2	14-6	29-0	STR.		
13	4	12	9-8	116-0	21	1-0	8-8
14	4	12	28-2	338-0	21	3-0	25-2
15	4	10	7-0	70-0	21	1-9	5-3
16	4	38	10-8	405-4	17	1-0	8-8
17	4	26	1-10	47-8	STR.		
18	4	6	21-10	131-0	STR.		
19	4	10	10-11	109-2	21	3-2	7-9

TOTAL LENGTH 2377-10
TOTAL WEIGHT 1588

BAR TYPES



QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE	CU.YD.	18.1
STEEL REINFORCEMENT	LBS.	1588
BEDDING MATERIAL	CU.YD.	3
BASE PLATE + POSTS	EACH	14
TOP RAIL FROM (CENTERLINE TO CENTERLINE OF POSTS)	LN. FT.	62

DESIGNED: _____
DRAWN: _____
REVIEWED: _____
APPROVED: _____

LIVESTOCK WASTE PUSH-OFF & PUMPING RAMP



File No. MN602c.DWG
Drawing No. MN-ENG-602
5/02