BOX BEAM
TS 6" X 6"
WITH WASHER
BOLT 9"
LONG
NUT WITH WASHER
DETAIL "A" - PLAN VIEW
(NOT REQUIRED IN ROCK)
STEEL SOIL PLATE
" X 8" X 24"
SHOULDER BREAK
WID T H S H O U L D E R N O R M A L
TANGENT SECTION
GROUND LINE
THE APPROPRIATE ITEM ENGINEER. PAYMENT SHALL BE UNDER
OR STRAIGHT AS DIRECTED BY THE
BOX BEAM SHALL BE SHOP CURVED
REQUIRED IN SOIL
SOIL PLATES
TS 6" X 6" BOX BEAM
OR OTHER OPENING
DRIVEWAY, WALKWAY
EDGE OF TRAVELED WAY
WITH NUTS AND FLAT WASHERS
AND IN BOTH POSTS. …" X 9"
BOLT
HOLE IN BOTH SIDES OF BOX BEAM
d "
MATERIAL, SOIL PLATES NOT REQUIRED.
GRANULAR MATERIAL AROUND POSTS OR DRIVE POST IN COMPACTED
TERMINAL POSTS IN ROCK:
TYPE 0 END TERMINAL
POST MAY BE FIELD CUT
TERMINAL POSTS IN ROCK
DEAD-LIGHTEND END FOR MEASURES TO ACCELERATE AND COMPACT
GEAR DEAD END POSTS OR STEEL POST IN COMPACTED
WILL BE CUT
OTHER OPENING
TYPICAL LAYOUT
ELEVATION↓
TYPICAL TYPE I END ASSEMBLY
SEE NOTE 4
TYPICAL TYPE I END ASSEMBLY
SEE NOTE 4
ELEVATION
TYPICAL TYPE I END ASSEMBLY
SEE DETAILS ON SHEET 3 OF 4
TYPICAL TYPE I END ASSEMBLY
SEE NOTE 4
ELEVATION
TYPICAL TYPE I END ASSEMBLY
SEE NOTE 4
ELEVATION
General Notes:
1. Post spacing shall be 6'-0" except where reduced post spacing is indicated on the

2. See plans for details. Post spacing and pay items for

3. When using end pieces, end spacing shall be within the

4. The end of an extended by the 18'-0" straight section placed between the

5. Back-up post remains in place.

6. The rail mounting height of the guide rail or median barrier placed behind

7. For design speeds under 50 MPH the point of redirection will be at the point of tangency.
GENERAL NOTES ON SHEET 1 OF 4

1. POSTS 2 AND 4 SHALL BE EXTRA LONG POSTS. POSTS 3, 5, 6, 7, 8, AND 9 SHALL BE STANDARD LENGTH.
2. POSTS 2 AND 4 SHALL BE FASTENED TO THE RAIL USING DETAIL "A".
3. ON CURVED PORTIONS OF A 24' OR 36' PIECE, OTHERWISE, AN 18' SECTION IS TO BE SPLICED AT THE POINT OF TANGENCY.
4. THE CURVED INDICATES THE TERMINAL INSTALLED ON LEVEL GROUND. WHEN INSTALLED OVER A SLOPE OF A 1:5 OR FLATTER, THE 18' OF CURVED BOX BEAM MAY BE PROVIDED IN A CURVED PORTION.
5. POSTS 2 AND 4 SHALL BE FASTENED TO THE RAIL USING DETAIL "A".
6. FOR DESIGN SPEEDS UNDER 50 MPH THE POINT OF REDIRECTION WILL BE AT THE POINT OF TANGENCY.
TYPICAL PIPE LENGTHS

POST 1
POST 2
POST 3
POST 4
POST 5
POST 6
POST 7
POST 8
POST 9

SLOPE = 1:4
SLOPE = 1:3

SEE NOTE 3
SEE NOTE 3
SEE NOTE 4

POST 3 MAY BE RELOCATED ALONG RAIL BETWEEN POSTS 2 AND 4 TO AVOID DRIVEWAY PIPE.
POST 2 MAY BE MOVED UP TO 1'-6" ALONG RAIL, MOVING CLOSER TO ROAD TO AVOID DRIVEWAY PIPE.

TERMINAL FLARE MAY BE INCREASED TO PLACE POST 1 BEYOND PIPE.
TERMINAL MAY BE PLACED ON STEEPER SLOPES IF GRADING IS PROVIDED TO LIMIT RAIL HEIGHT TO 30" OR LESS.
IS 1:4 OR FLATTER, NO ADDITIONAL GRADING IS REQUIRED.
POSTS 8 AND 9.
IF THE SLOPE FROM SHOULDER BREAK BEGINS 2'-0" OR MORE BEHIND GUIDE RAIL RUN AND DEPRESS TERMINAL END BY 12" BEFORE TIGHTENING BOLTS ON SPLICE BETWEEN POSTS 8 AND 9.

DO NOT DRIVE POST THROUGH PIPE. TO AVOID POST HITTING DRIVEWAY PIPE:
POST 1 SHALL BE POSITIONED AT OR BELOW SHOULDER BREAK OF DRIVEWAY.
IF THE SLOPE FROM SHOULDER BREAK IS 1:4 OR FLATTER, NO ADDITIONAL GRADING IS REQUIRED.
DEPRESS TERMINAL BY 12" BEFORE TIGHTENING BOLTS ON SPLICE BETWEEN POSTS 8 AND 9.
EXTEND CULVERT A MINIMUM OF 4'-0" PAST GUIDE RAIL FOR GRADING.

MAX. SLOPE 1:6

1. APPROACH SLOPE AND A TYPE 0 ENDING USED.
IF A BACK SLOPE IS ACCESSIBLE AT THE CORRECT HEIGHT, THE BOX BEAM END PIECE SHOULD BE ELIMINATED.
THE FILL SHALL BE SUFFICIENT TO LIMIT GUIDE RAIL HEIGHT TO NO MORE THAN 30".

2. TERMINAL MAY BE PLACED ON STEEPER SLOPES IF GRADING IS PROVIDED TO LIMIT RAIL HEIGHT TO 30" OR LESS.

3. C.
B.
A.
NEAR, A PIPE SHALL BE SET IN THE DITCH AND AN EMBANKMENT CONSTRUCTED AT THE TERMINAL.
WHEN TERMINAL MUST FLARE ACROSS A DEEP DITCH AND NO LATERAL EMBANKMENT IS NECESSARY, TRANSITION FROM THE TERMINAL MUST BE MADE TO A SMOOTH TRANSITION ELEMENT.

4. C.
B.
A.
MATCH SLOPE.
CUT PIPE TO APPROXIMATE MATCH SLOPE.
FLARING OPTION 3 FOR TYPE IIA BOX BEAM GUIDE RAIL
FLARING OPTION 1 FOR TYPE IIA BOX BEAM GUIDE RAIL
FLARING OPTION 2 FOR TYPE IIA BOX BEAM GUIDE RAIL

5. C.
B.
A.
NOTE: IF GRADING TO MAINTAIN RAIL HEIGHT, FILL SHALL BE FEATHERED TO ACHIEVE A SMOOTH TRANSITION ALONG CONTOURS.
NOTE: IF GRADING TO MAINTAIN RAIL HEIGHT, FILL SHALL BE CONTENTS.

CUT PIPE TO APPROXIMATE MATCH SLOPE.

SECTION "B-B" - OPTION 2: DRIVEWAY EMBANKMENT
FLARING OPTION 2 FOR TYPE IIA BOX BEAM GUIDE RAIL
SECTION "A-A" - OPTION 1: ON MILD FILL SLOPE
FLARING OPTION 1 FOR TYPE IIA BOX BEAM GUIDE RAIL

C.
B.
A.
PIPE LENGTH

THE EMBANKMENT SHALL BE SUFFICIENT TO LIMIT GUIDE RAIL HEIGHT TO NO MORE THAN 30".
THE EMBANKMENT SHALL BE SUFFICIENT TO LIMIT GUIDE RAIL HEIGHT TO NO MORE THAN 30".
THE EMBANKMENT SHALL BE SUFFICIENT TO LIMIT GUIDE RAIL HEIGHT TO NO MORE THAN 30".

CUT PIPE TO APPROXIMATE MATCH SLOPE.

SECTION "C-C" - OPTION 3: LOCALIZED DITCH FILLING
THE BOX BEAM END PIECE SHALL BE REMOVED OR ELIMINATED AND A TYPE 0 ENDING USED.

NOTE: IF GRADING TO MAINTAIN RAIL HEIGHT, FILL SHALL BE FEATHERED TO ACHIEVE A SMOOTH TRANSITION ELEMENT.
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