| DIST | COUNTY | ROUTE | KILOMETER POST TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| | | | | | |

Caltrans Metric

REGISTERED CIVIL ENGINEER

July 1, 2004
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Ellis K. Hirst No. C17926 Exp. 6-30-05 CIVIL STATE OF CALIFORNIA

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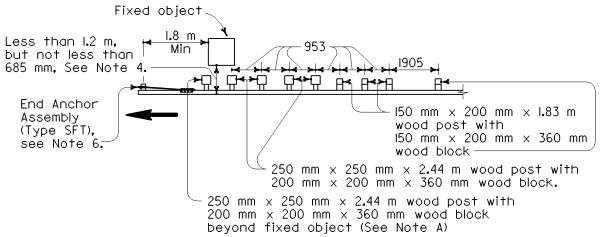
## NOTES

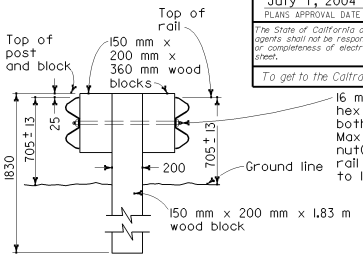
1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard railing post spacing to be 1905 mm center to center, except as otherwise noted.
3. Except as noted, line posts are 150 mm x 200 mm x 1.83 m wood with 150 mm x 200 mm x 360 mm wood blocks. MW 150 x 14 steel posts, 1.83 m in length, with 150 mm x 200 mm x 360 mm notched wood blocks or plastic blocks may be used for 150 mm x 200 mm x 1.83 m wood posts with 150 mm x 200 mm x 360 mm wood blocks where applicable and when specified.
4. A 1.2 m minimum clearance is required between the face of the railing and the face of a fixed object located directly behind guard railing with post spacing of 1905 mm. Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 1.2 m, but not less than 685 mm. Where the clearance is less than 685 mm, a concrete wall or barrier should be constructed to shield the fixed object(s).
5. Direction of adjacent traffic indicated by ➡.
6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
7. For details of Rail Tensioning Assembly, see Standard Plan A77H2.
8. The type of crash cushion to be used will be shown on the Project Plans.
9. For details of crash cushions, see the A82A Series of Standard Plans.
10. Type 14A layout is typically used on multilane freeways or expressways to shield fixed objects where a median type barrier is not constructed between the separated roadbeds. See Railing Case 4 in Diagram No. 3 on Standard Plan A77D1.
11. For typical flare offsets for 7.6 m length parabola with maximum offset of 305 mm, see Standard Plan A77E1.



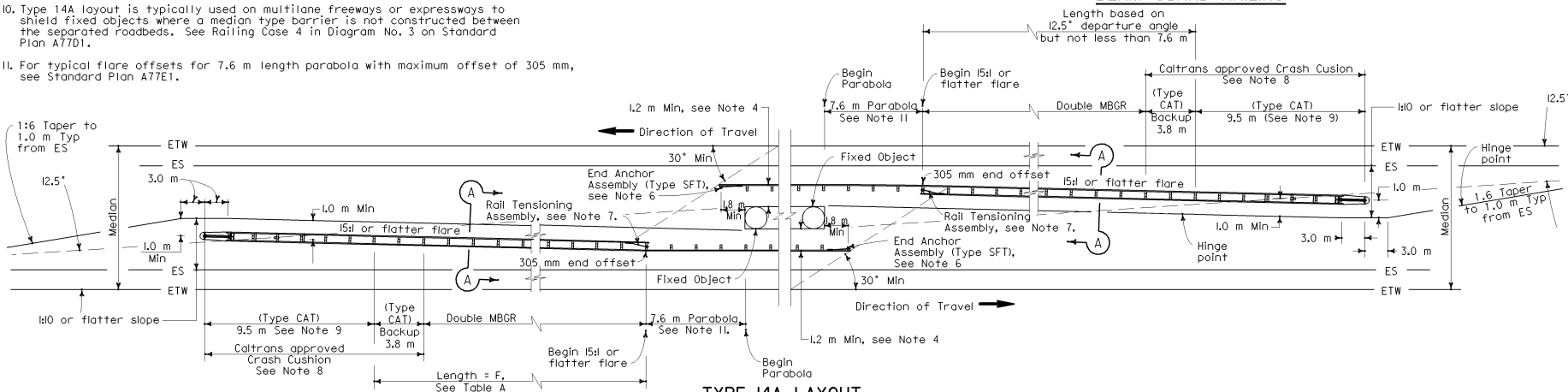

Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 250 mm x 250 mm x 2.44 m wood post with 200 mm x 200 mm x 360 mm wood blocks at 953 mm center to center spacing are to be used between fixed objects.

## STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use with Type 14A layout where minimum clearance between the face of the guard railing and fixed object(s) is less than 1.2 m, but not less than 685 mm. See Note 4.

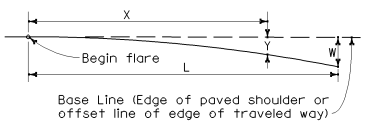



## SECTION A-A
## TYPICAL DOUBLE METAL BEAM GUARD RAILING




## TYPE 14A LAYOUT

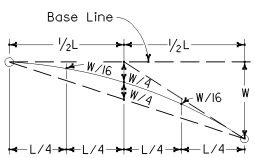
See Note 10




$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

## PARABOLIC FLARE OFFSETS




## TYPICAL PARABOLIC LAYOUT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR FIXED OBJECTS BETWEEN SEPARATE ROADBEDS (TWO-WAY TRAFFIC)

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

**A77G1**

2004 Std PLAN A77G1



08-09-04