TOENAIL WITH 1-16d GALVANIZED NAIL ON EACH SIDE OF THE BLOCK

3/8" DIA. CARRIAGE BOLT WITH FLAT PLATE WASHER AND HEX NUT AND WASHER

6 X 8 X 5-1/4" D.F. POST

TUBULAR STEEL BLOCK

5/8" DIA. CARRIAGE BOLT WITH FLAT PLATE WASHER AND HEX NUT AND WASHER

CONCRETE BASE

5" DIA. STANDARD GALVANIZED STEEL PIPE 6'-0" LONG

SECTION A

SECTION B

DEPARTMENT OF PUBLIC WORKS

BUREAU OF ENGINEERING

CITY OF LOS ANGELES

METAL - BEAM GUARDRAIL

STANDARD PLAN S-462-2

REVISIONS

SUPERSEDES REFERENCES

VAULT INDEX NUMBER B-4107

SHEET 1 OF 9 SHEETS
NOTES:
1. ALL HOLES 3/4" DIA
2. RAIL MOUNTS TO BLOCK WITH BOLT ON APPROACHING TRAFFIC SIDE OF BLOCK AND POST WEB
3. BLOCK MOUNTS TO POST WITH 2 BOLTS STAGGERED. LOWER BOLT ON APPROACHING TRAFFIC SIDE OF BLOCK AND POST WEB
4. W6 x 9 POSTS SHALL BE DRIVEN WITHOUT PILOT HOLES

W6 x 9 STEEL BLOCK

W6 x 9 POST
DETAIL 18
CABLE ANCHOR-BREAKAWAY

NOTES:

1. 6 x 8 D.F. POSTS SHOWN. W6 x 15 ALTERNATE SIMILAR, EXCEPT THAT 2-INCH STANDARD PIPE SLEEVE IS NOT USED AND A PL 5/8 x 4 x 0'-4" SHALL BE USED AT THE 3/4 INCH CABLE END.

2. POSTS SHALL BE CENTERED IN CONCRETE BASE.

3. OMIT WASHER UNDER HEAD OF RAIL MOUNTING BOLT FOR END POST AND NEXT TO LAST POST.
OPTIONAL DESIGN TERMINAL SECTION

TYPE "C"

TERMINAL CONNECTOR

GUARDRAIL ANCHORS

ELEVATION

PLAN

STANDARD PLAN NO. S-462-2

VAULT INDEX NUMBER B-4107

SHEET 6 OF 9 SHEETS
ANCHOR ROD HOOKS TO BE IN CONTACT WITH ANCHOR REINFORCEMENT WHEN CONCRETE IS PLACED. WIRE TIES MAY BE USED TO POSITION ANCHOR ROD.

ANCHOR ROD OUTLET TO K IN CONTACT WITH ANCHOR REINFORCEMENT WHEN CONCRETE IS PLACED. WIRE TIES MAY BE USED TO POSITION ANCHOR ROD.

DETAIL 13
OPTIONAL ANCHOR ROD END DETAILS

HEAD NUT
PLATE WASHER
/SPLICE BOLT

500-C-2500 CONCRETE PLACED AGAINST UNDISTURBED EARTH

GROUNDED POST ANCHOR
GUARDRAIL ANCHORS

STANDARD PLAN NO. S-462-2
VAULT INDEX NUMBER B-4107
SHEET 7 OF 9 SHEETS
NOTE
SEE PROJECT PLANS FOR D₂ DIMENSION WHEN SLOPE CONDITIONS ARE SUCH THAT D₁ IS GREATER THAN 2'-0".

TOP OF CURB OR BERM; EDGE OF PAVEMENT OR BACK OF WALK WHERE NO CURB OR BERM EXISTS

W6 x 9 GALV. STEEL POST AND BLOCK PER TYPE 3 DETAILS

PL 4 X 2 1/2 X 2 1/2 WASHERT AND NUT

BASE PLATE PER DETAIL 19 (CENTERED ON PILE)

HINGE POINT

VARIABLE 1/2 MIN. MONITOR RAD

DETAIL 16
SLOPE INSTALLATION
TYPE S-1

DETAIL 17
SLOPE INSTALLATION-TYPE S-2

BASE PLATE PLAN

STANDARD PLAN NO. S-462-2

VAULT INDEX NUMBER B-4107 SHEET 8 OF 9 SHEETS
UNLESS OTHERWISE NOTED IN THE PROJECT PLANS: DIMENSION W SHALL BE 2"; B=1'-9" MINUS CURB FACE HEIGHT, OR B=1'-9" IF NO CURB OR IF W > 3'-0'.

2. THE ENDS OF ALL GUARDRAIL INSTALLATIONS SHALL BE ANCHORED AT BOTH ENDS.

3. TYPE 1 GUARDRAIL POSTS AND BLOCKS:
   A. WOOD POSTS AND BLOCKS SHALL BE ROUGH SAWN DOUGLAS FIR NO. 1, FREE OF HEART CENTER, PRESSURE TREATED WITH AQUAC METHOD COPPER ARSENATE.
   B. BEFORE THE BOLTS ARE INSERTED IN WOOD POSTS AND BLOCKS THE HOLES SHALL BE FILLED WITH A GREASE, RECOMMENDED BY THE MANUFACTURER FOR CORROSION PROTECTION WHICH WILL NOT MELT OR RUN AT A TEMPERATURE OF 150°F.

4. TYPE 2 GUARDRAIL POSTS AND BLOCKS:
   A. POSTS SHALL BE GALVANIZED STANDARD STEEL PIPE CONFORMING TO ASTM DESIGNATION A 53.
   B. BLOCKS SHALL BE GALVANIZED STEEL STRUCTURAL TUBING CONFORMING TO ASTM A 501.

5. TYPE 3 GUARDRAIL POSTS AND BLOCKS SHALL BE GALVANIZED STEEL CONFORMING TO ASTM DESIGNATION A 36.

6. GUARDRAILS SHALL BE TYPE 1 UNLESS OTHERWISE NOTED ON THE PLANS.

7. CABLE ANCHORS EXPOSED TO APPROACHING TRAFFIC SHALL BE THE BREAKAWAY TYPE PER DETAIL 16 UNLESS OTHERWISE NOTED ON THE PLANS.

8. ALL PLATES SHALL BE GALVANIZED STEEL CONFORMING TO ASTM DESIGNATION A 36.

9. A CABLE ANCHOR ASSEMBLY SHALL CONSIST OF A CABLE ASSEMBLY AND ANCHOR PLATE.
   A. ANCHOR CABLE SHALL BE MADE OF PLAIN STEEL WITH A MINIMUM BREAKING STRENGTH OF 23 TONS. IT SHALL BE 3/4-INCH PRE-FORMED, 6 X 19, WIRE STRAND CORE OR INDEPENDENT WIRE ROPE CORE (IWRC), GALVANIZED IN CONFORMANCE WITH FEDERAL SPECIFICATION RR-W-410C, RIGHT REGULAR LAY. TWO CERTIFIED COPIES OF MILL TEST REPORTS OF EACH MANUFACTURED CABLE LENGTH SHALL BE FURNISHED TO THE ENGINEER. THE OVERALL LENGTH OF EACH CABLE ANCHOR ASSEMBLY SHALL BE AS REQUIRED BY THE PLANS, BUT SHALL BE A MINIMUM OF 6 FEET-6 INCHES.
   B. THE SWAGED FITTING SHALL BE MACHINED FROM HOT-ROLLED BAR STEEL CONFORMING TO AISI DESIGNATION C 1035 AND SHALL BE ANNEALED SUITABLE FOR COLD SWAGING. THE FITTING SHALL BE GALVANIZED BEFORE SWAGING. A LOCK PIN HOLE ADEQUATE FOR A 3/4-INCH PLATED SPRING STEEL PIN SHALL BE DRILLED THROUGH THE HEAD OF THE FITTING TO RETAIN THE STUD IN PROPER POSITION. THE MANUFACTURER'S IDENTIFYING MARK SHALL BE STAMPED ON THE BODY OF THE FITTING.
   D. THE SWAGED FITTINGS, STUD AND NUT ASSEMBLY SHALL DEVELOP THE SPECIFIED BREAKING STRENGTH OF THE CABLE.
   E. THE CABLE ASSEMBLIES SHALL BE SHIPPED AS A COMPLETE UNIT, INCLUDING STUD AND NUT.
   F. ONE SAMPLE OF CABLE PROPERLY FITTED WITH SWAGED FITTING AND RIGHT-HAND THREAD STUD AT BOTH ENDS AS SPECIFIED ABOVE SHALL BE FURNISHED TO THE ENGINEER FOR TESTING (LENGTH = 6'-0').

10. THE STEEL PLATES FOR THE ANCHOR PLATE SHALL CONFORM TO ASTM DESIGNATION A 36. BOLTS AND NUTS SHALL CONFORM TO ASTM DESIGNATION A 307. THE ANCHOR PLATE SHALL BE GALVANIZED AFTER FABRICATION.

11. CABLE CLIPS SHALL BE COMMERCIAL QUALITY DROP FORGED GALVANIZED STEEL. THIMBLES SHALL BE COMMERCIAL QUALITY, GALVANIZED STEEL.

12. THE Anchor RODS SHALL BE FABRICATED OF STEEL CONFORMING TO ASTM DESIGNATION A 36, A 411, A 572 OR A 576, GRADE 1018, 1019, 1021 OR 1026. THE EYES SHALL BE HOT FORGED OR FORMED WITH FULL PENETRATION WELDS. Anchor RODS WITH EYES THAT HAVE BEEN FORGED WITH ANY PART OF THE EYE BELOW 1600°F DURING FORMING OR WITH EYES THAT HAVE BEEN CLOSED BY WELDING SHALL BE THERMALLY STRESS RELIEVED PRIOR TO GALVANIZING. THE COMPLETED Anchor ROD, AFTER GALVANIZING, SHALL DEVELOP A TENSILE STRENGTH OF 50,000 POUNDS MINIMUM.

13. COAL TAR ENAMEL SHALL CONFORM TO ANWA STANDARD C 203. COAL TAR EPOXY SHALL CONFORM TO MIL-P-23236, TYPE I, CLASS 2.

14. CONCRETE SHALL BE CLASS 300-C-2300.

15. MATERIALS NOT SPECIFIED SHALL BE PER THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.