ROUND BOTTOM DITCH SECTION

BERM OR SWAMP DITCH SECTION

SECTION FOR DEEP DITCH
**ADDING EMBANKMENT TO EXISTING SLOPES**

- Pavement Surface
- 25'
- Shoulder
- Drive Grade as directed by the engineer
- Meets existing or proposed drive grade
- V.C.
-Original Ground
- Sealed or paved shoulder only

**GRADING OF DRIVES IN FILL SECTIONS**

- Pavement Surface
- 25'
- Shoulder
- Drive Grade as directed by the engineer
- V.C.
- Original Ground
- Normal Ditch
- Drive Culvert
- Note:
  Where restricting conditions exist, the flat area distance outside the normal shoulder may be reduced to a minimum of 4' vertical curve. In all cases, the normal full width shoulder shall be maintained and the flat area should be maximized.

**GRADING OF DRIVES IN CUT SECTIONS**

- Plan Grade
- End Section
- Flow
- Normal Ditch Flow Line
- Height equal to diameter of culvert

**DIKE IN DITCH SECTION**
NO DITCH SECTION

VALLEY DITCH SECTION

BARN ROOF FILL SECTION
(to apply on tangent sections only)

OUTLET CULVERT IN BERM OR SWAMP DITCH SECTION
LIMITED ACCESS R.O.W.

NOTE:
The 1:6 slope facing freeway traffic should be used on all new construction unless the distance from the edge of the nearest freeway through lane to the toe of the 1:2 slope under the bridge exceeds the clear zone.

GRADING DETAILS FOR FLATTENING LONG SLOPE AT BRIDGE APPROACH FILLS FACING ONCOMING TRAFFIC
TYPICAL GRADING DETAILS AROUND PIERS FOR MEDIANS 94' OR WIDER

NOTES:

THIS STANDARD APPLIES PRINCIPALLY FOR VARIOUS DITCH TYPES AND FOR THE Rounding OF SLOPES. THE SUBGRADE WILL BE SPECIFIED ON THE PLANS. SLOPES OTHER THAN THOSE SPECIFIED ON THIS PLAN MAY BE USED WHEN THEY ARE SPECIFIED ON THE PROJECT PLANS. IN THE EVENT OF A DISCREPANCY BETWEEN THIS PLAN AND THE PROJECT PLANS, THE PROJECT PLANS WILL GOVERN.

SEE CURRENT STANDARD PLAN R-107-SERIES FOR SUPERELEVATED SECTIONS.

DITCHES SHOULD ALWAYS BE DEEP ENOUGH TO GRAVITY DRAIN THE SUBBASE, WHERE SUBBASE IS USED.

THE SUBGRADE SHOULD BE SLOPED TO DRAIN TO THE OUTSIDE DITCH IF THE MEDIAN IS OF INSUFFICIENT WIDTH TO ALLOW DITCHES DEEP ENOUGH TO DRAIN THE SUBBASE.

THE TOP OF BACKSLOPES AND THE BOTTOM OF FILL SLOPES SHALL BE ROUNDED WITH VERTICAL CURVES AS FOLLOWS, PROVIDED TREES OR OTHER RESTRICTIONS DO NOT INTERFERE:

1. USE 4' VERTICAL CURVE ON CUTS OR FILLS LESS THAN 4'.
2. USE 8' TO A MAXIMUM 16' VERTICAL CURVE ON CUTS OR FILLS 4' TO 16'.
3. USE A MAXIMUM 16' VERTICAL CURVE ON CUTS OR FILLS GREATER THAN 16'.

ALL TRANSITIONS IN LENGTH OF VERTICAL CURVES SHALL BE GRADUAL AND GRADED TO PRESENT A UNIFORM AND ATTRACTIVE APPEARANCE.

WHEN 1/6 OR FLATTER SLOPES CANNOT BE CONSTRUCTED WITHIN THE EXISTING R.O.W., THE BARN ROOF FILL SECTION MAY BE USED TO ELIMINATE THE NEED FOR ADDITIONAL R.O.W. THEY WILL BE USED ONLY WHERE SPECIFIED ON THE PLANS.