



NOTES

SINGLE SLOPE CONCRETE BARRIER may be cast-in-place or slip formed. See Sheet 2 for Types C and C1. See SCD RM-4.5 for Type D barrier. See SCD RM-4.6 for End Sections.

MATERIALS: Construct using concrete with a minimum design strength of 4000 psi conforming to the requirements of CMS 499. Construct top and end edges with either a 1" radius or 3/4" chamfer, except at light pole foundations.

CONTRACTION JOINTS: Maximum allowable spacing of unsealed joints is 20' throughout the run of the barrier. Construct joints by using metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts, tooled, or sawed joints will have a 3" depth. Construct all joints for the full height of the barrier. Saw as soon as curing will allow to prevent spalling. When used in conjunction with concrete pavement, match joints to those in the concrete pavement but not exceeding the maximum allowable spacing.

ADJOINING PAVEMENT: When the barrier is constructed in conjunction with new asphalt pavement, place it directly on the intermediate course. Construct the surface course directly against the barrier. Set barrier placed on existing pavement with a continuous wedge of surface material tapering from a 1" minimum thickness at the toe of the barrier to zero. For bidirectional installations construct the wedge on both sides of the barrier. For unidirectional installations, construct the wedge on the traveled way side and the width may be reduced to 12" minimum.

When the barrier is constructed in conjunction with new concrete pavement, place it directly on the base material. Construct the concrete slab against the barrier.

Barrier may be placed on top of existing concrete pavement and doweled as shown in DOWELING DETAILS (see Sheet 2). When pavement is to be constructed on one side of the barrier only, then compacted soil must be placed against the barrier on the other side at a minimum height of 3". The compacted soil may taper to 0 over a minimum length of 5', and the compacted soil shall be considered incidental to the barrier installation.

EXPANSION JOINTS: Install a 1" thick preformed expansion joint filler per CMS 705.03 between the barrier and concrete pavement section for the full depth of the concrete pavement section as shown on the plans. Seal the top 1" with joint sealer per CMS 705.04. See detail on Sheet 2. This item shall be continued through end anchorage sections and is considered incidental to the cost of Item 622.

TRANSITIONS: Make linear transitions between different types of barrier within a 20' length.

CONSTRUCTION JOINTS: Barrier runs with abutting vertical surfaces at either required or permissible construction joints are to be doweled to each other by use of 3/4" dia. by 18" long epoxy coated deformed dowel bars as per CMS 622.02. Bars are to be placed as shown on the RACEWAY AND DOWEL BAR PLACEMENT detail on this sheet. Provide a 4" clearance to barrier surfaces and to any raceways.

STATION MARKINGS: Impress markings in the "green" concrete on both sides at the top of the barrier. The cost is incidental to the unit cost bid for this barrier.

RACEWAY: Locate as shown in the RACEWAY AND DOWEL BAR PLACEMENT Detail, unless otherwise directed by the Engineer. Ensure that the raceways are clear of obstructions. The ITS raceway shall be 2" HDPE per SS809. The Lighting raceway shall be 4" per CMS 625.12. See HL-30.31 and ITS-14.50 for additional details.

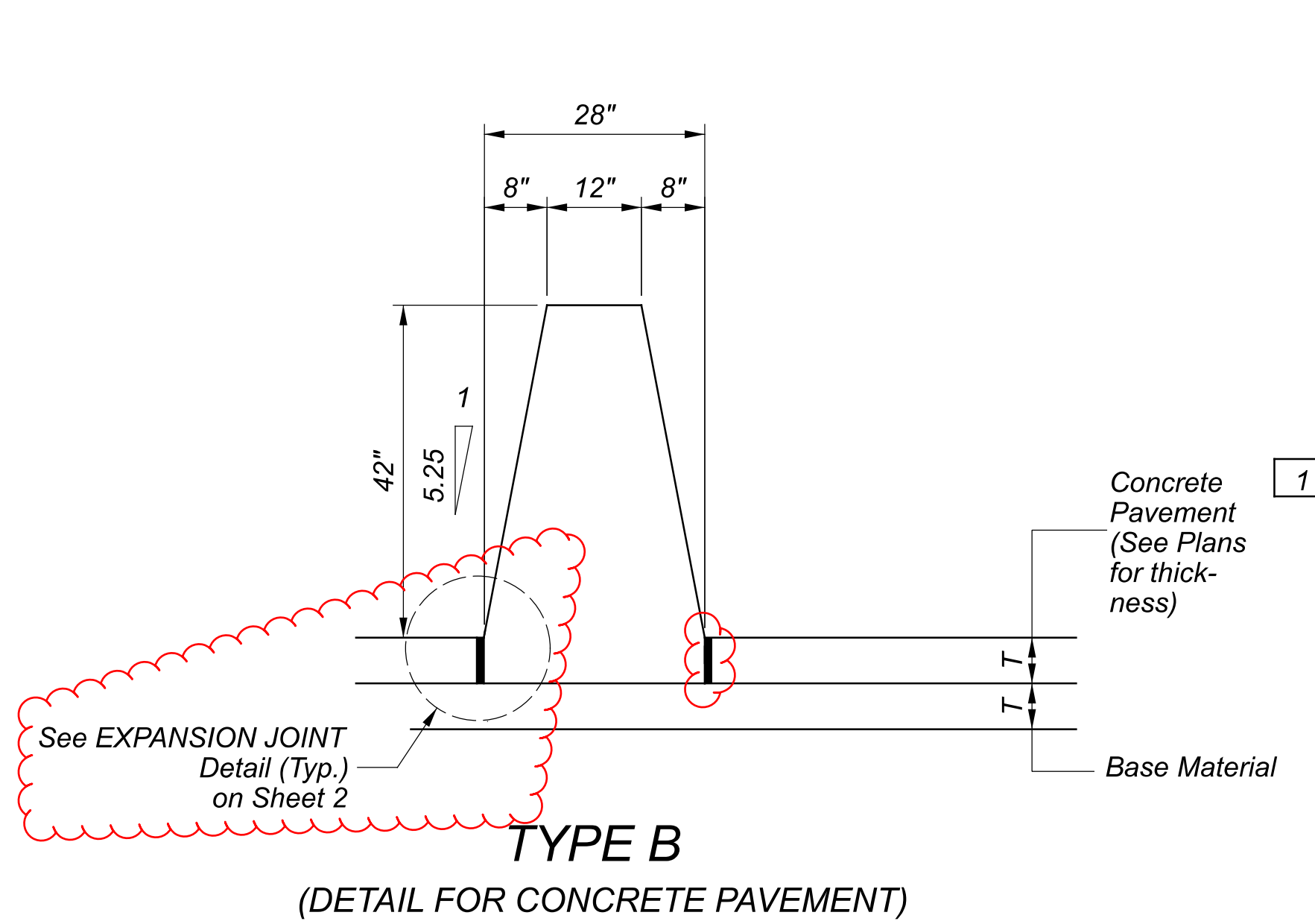
Cost of the raceways are included where shown in the plans. The cost for additional raceways and No. 10 AWG copper-clad or aluminum-clad wire is also included where shown on the plans for future installation of circuits.

Spacers shall be installed every 10' and shall be considered incidental to the barrier.

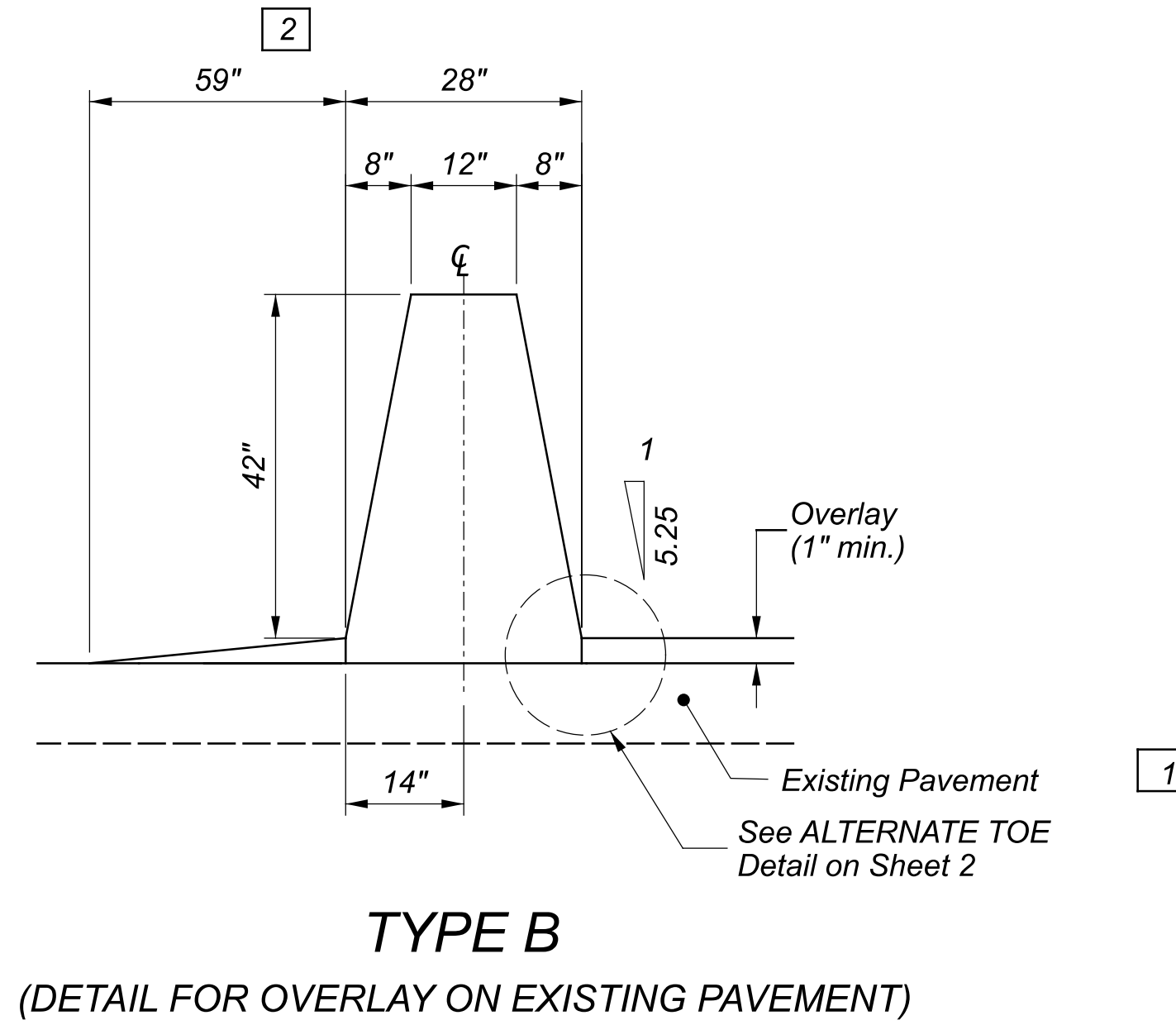
PAYMENT: will be made at the unit price bid per Foot for ITEM 622 - Concrete Barrier, Single Slope, Type ____ . Include all materials, labor, raceways, dowel holes, markings and other incidentals necessary to construct the barrier, except as follows:

Item 611 Barrier Median Inlet	20 ft.
Item 625 Light Pole Foundation or Pullbox	8 ft.
Item 630 Rigid Overhead Sign Support Foundation	Each

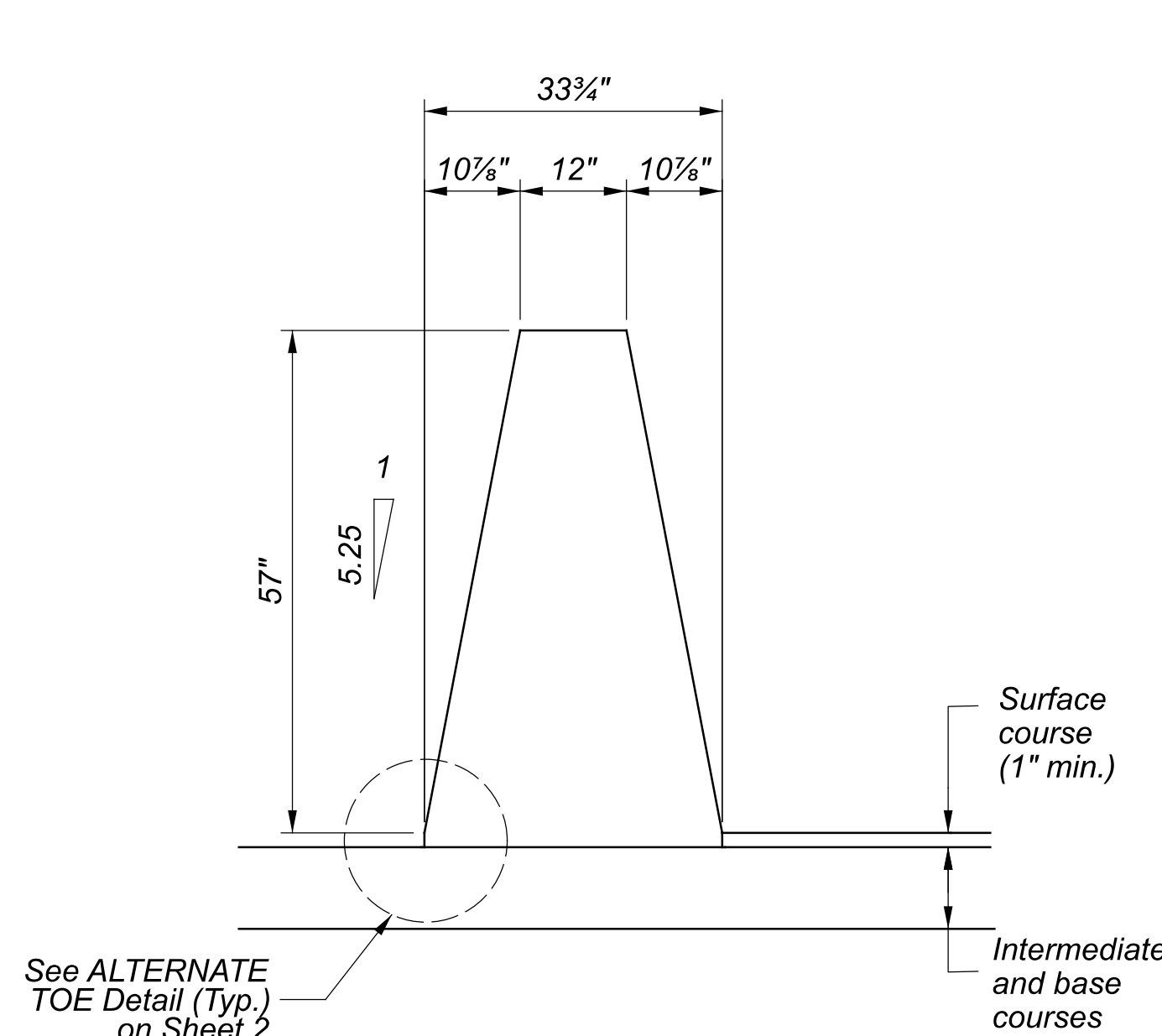
Payment for any reinforced end anchors, as shown on the END ANCHORAGE details shown on sheet 2, will be made at the unit price bid per Each for ITEM 622 - Concrete Barrier, End Anchorage, Reinforced, 81". This includes all materials, labor, and other incidentals necessary to construct this anchor.



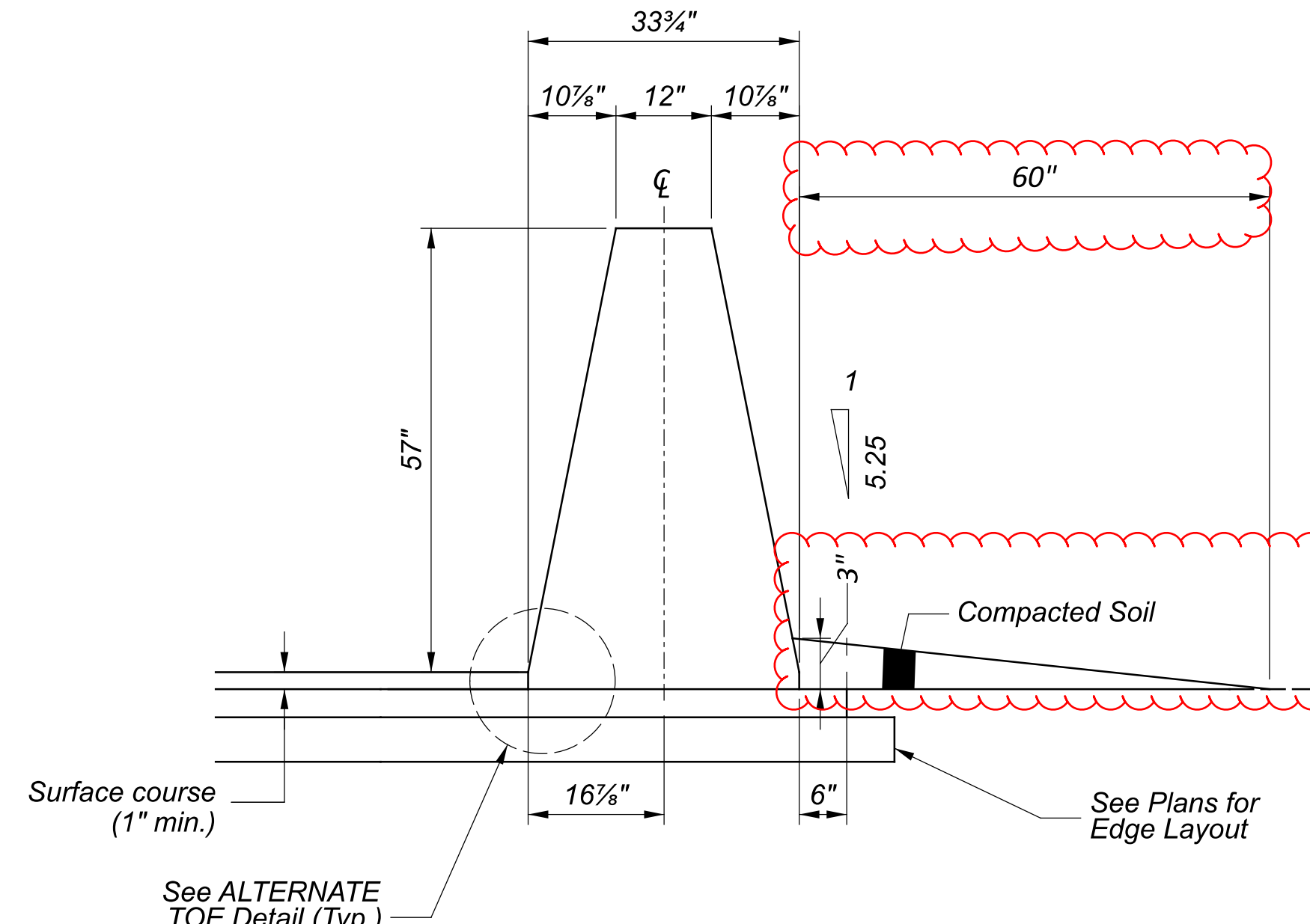
TYPE B
(DETAIL FOR CONCRETE PAVEMENT)



TYPE B
(DETAIL FOR OVERLAY ON EXISTING PAVEMENT)



TYPE B1
(DETAIL FOR ASPHALT PAVEMENT)



TYPE B1
(DETAIL FOR ASPHALT PAVEMENT ON ONE SIDE ONLY)

LEGEND

1 See DOWELING DETAILS on Sheet 2 for alternate construction with concrete pavement.

2 See ADJOINING PAVEMENT Note.

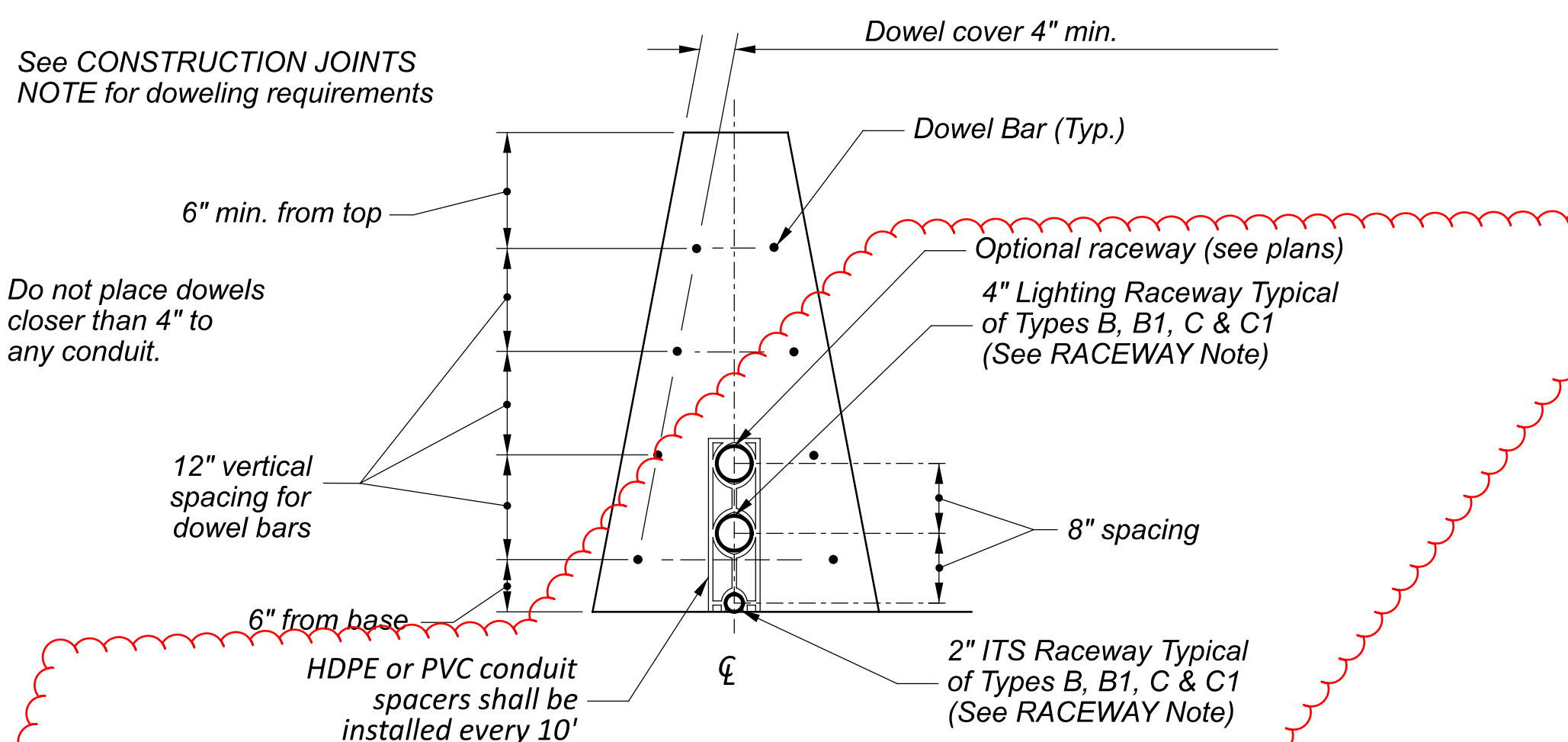
See Sheet 2 for Types C and C1.

See CONSTRUCTION JOINTS NOTE for doweling requirements

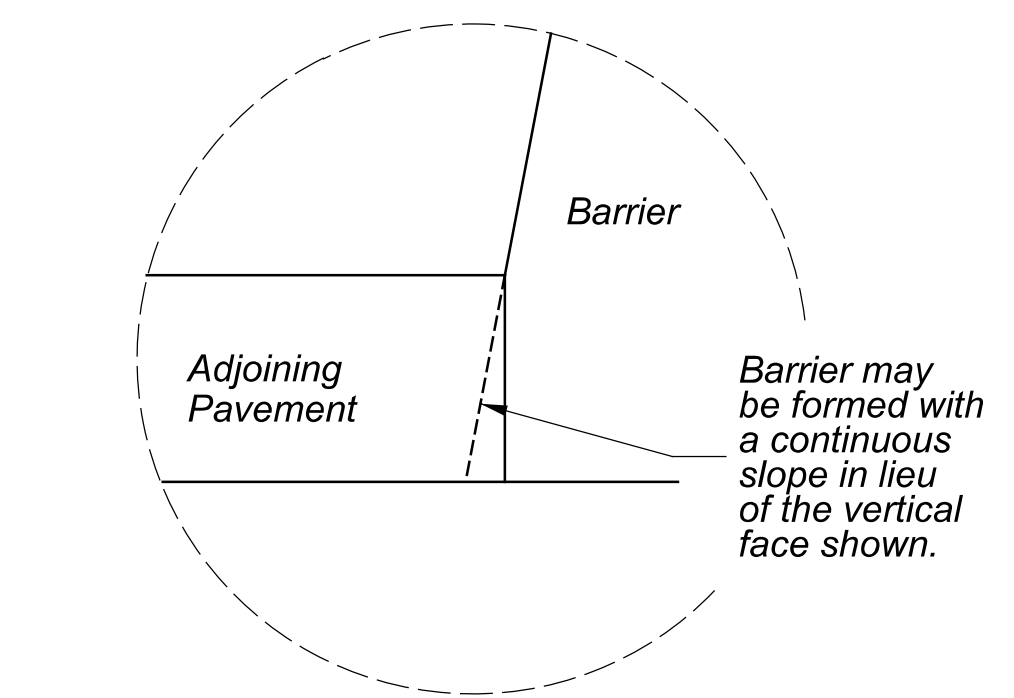
Do not place dowels closer than 4" to any conduit.

12" vertical spacing for dowel bars

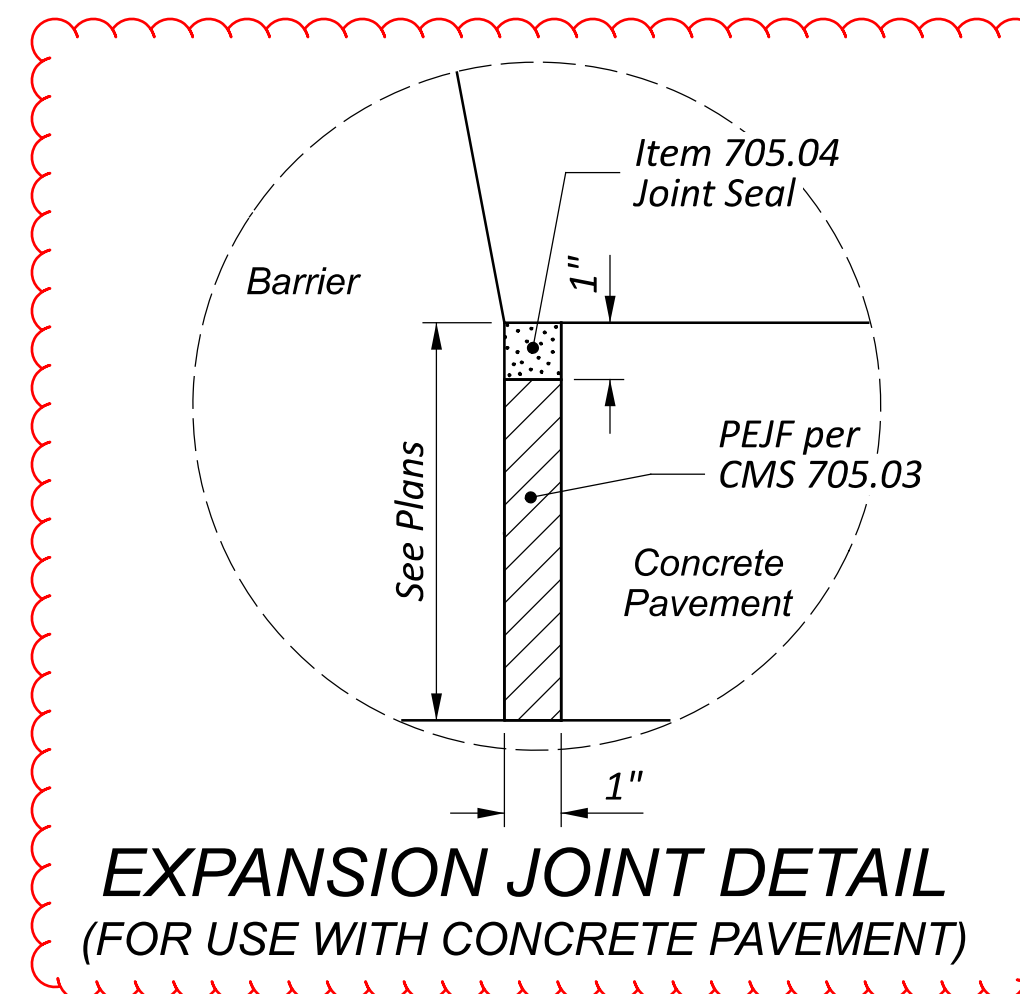
6" from base
HDPE or PVC conduit spacers shall be installed every 10'



RACEWAY AND DOWEL BAR PLACEMENT

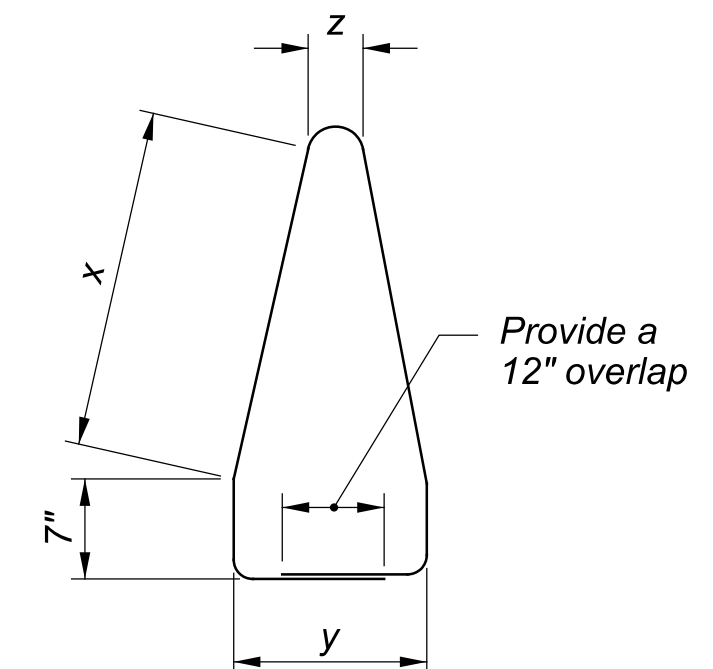


ALTERNATE TOE DETAIL
(FOR USE WITH ASPHALT PAVEMENT)



EXPANSION JOINT DETAIL
(FOR USE WITH CONCRETE PAVEMENT)

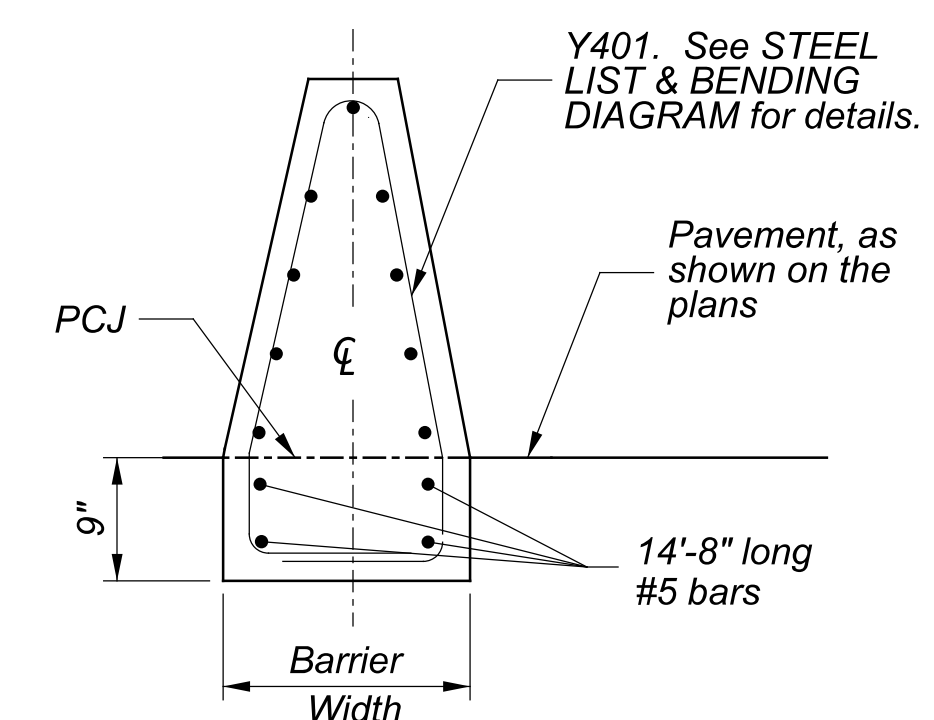
Dimensions for Y401 (English)				
Barrier Type	x	y	z	Length
B	37"	24"	8"	10'-10"
B1	51"	24"	8"	13'-2"



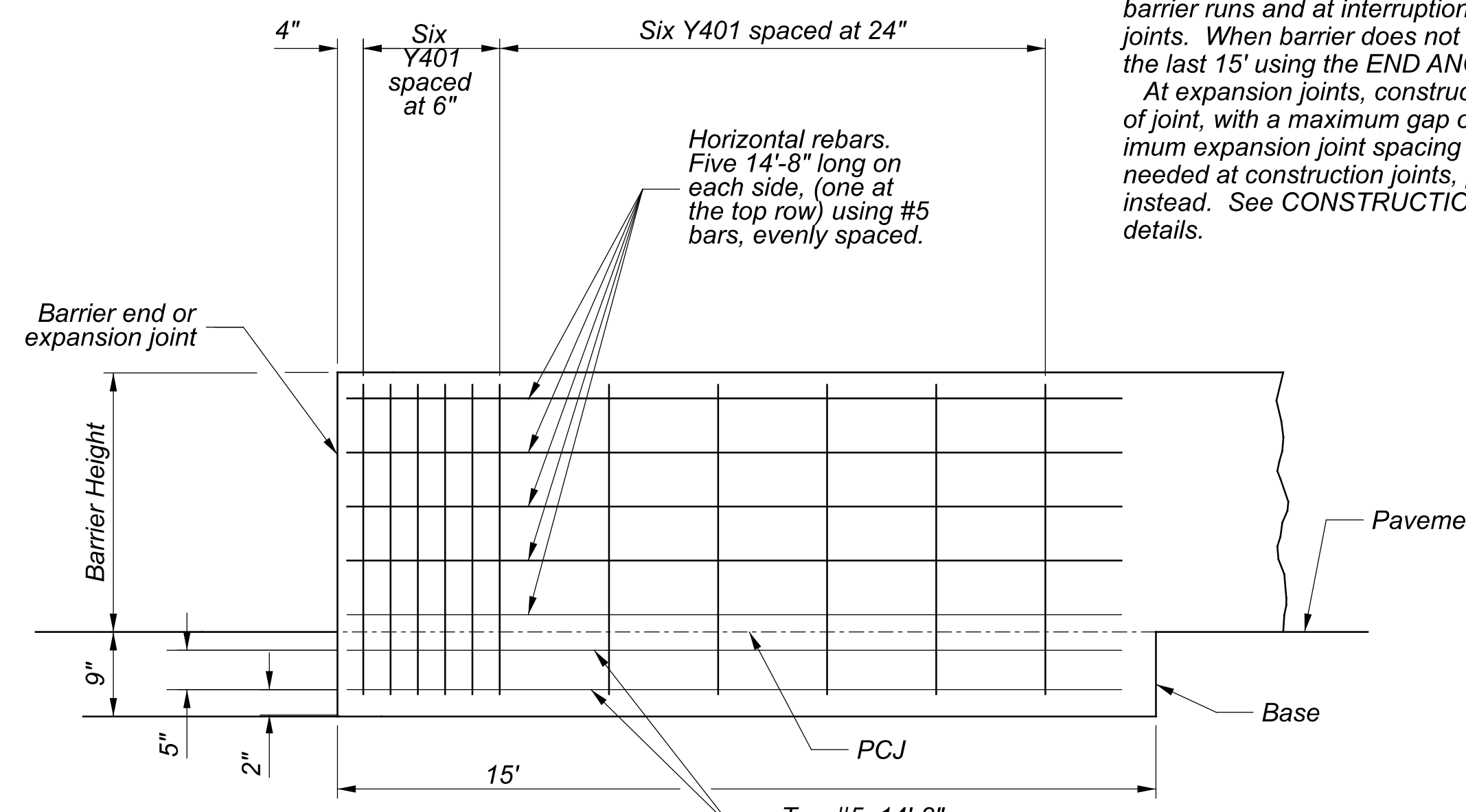
Y401 #4

Y401 STEEL LIST & BENDING DIAGRAM
Steel dimensions for Types C and C1 barriers are not shown.

REINFORCED END ANCHORAGES are required at the ends of concrete barrier runs and at interruptions in barrier caused by expansion joints. When barrier does not abut another barrier run, construct the last 15' using the END ANCHORAGE Detail as shown here. At expansion joints, construct an End Anchorage on both sides of joint, with a maximum gap of 2" for the open joint. The maximum expansion joint spacing shall be 800'. This anchorage is not needed at construction joints, provide dowel bar connections instead. See CONSTRUCTION JOINT NOTE on Sheet 1 for doweling details.

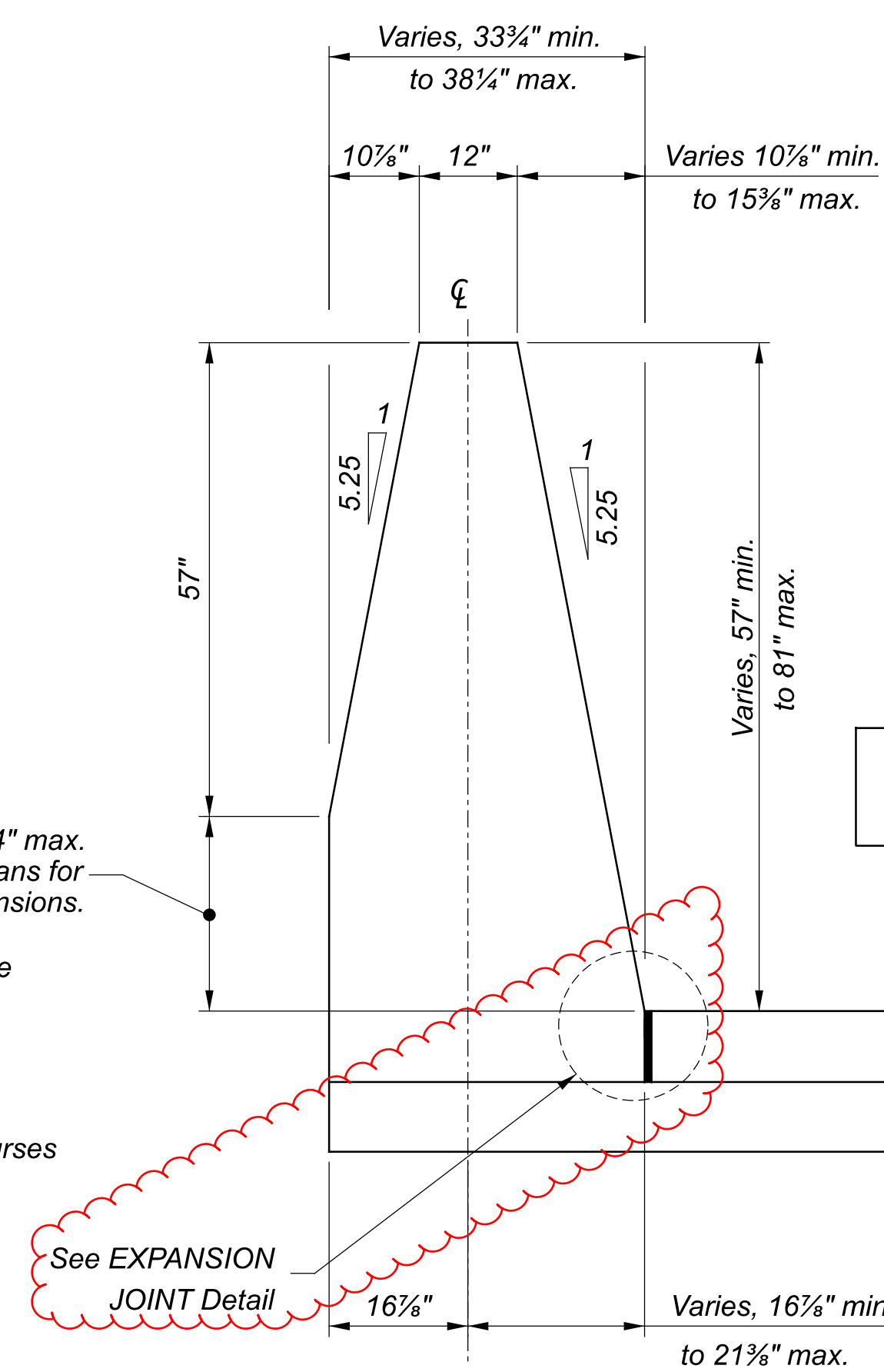


SECTION

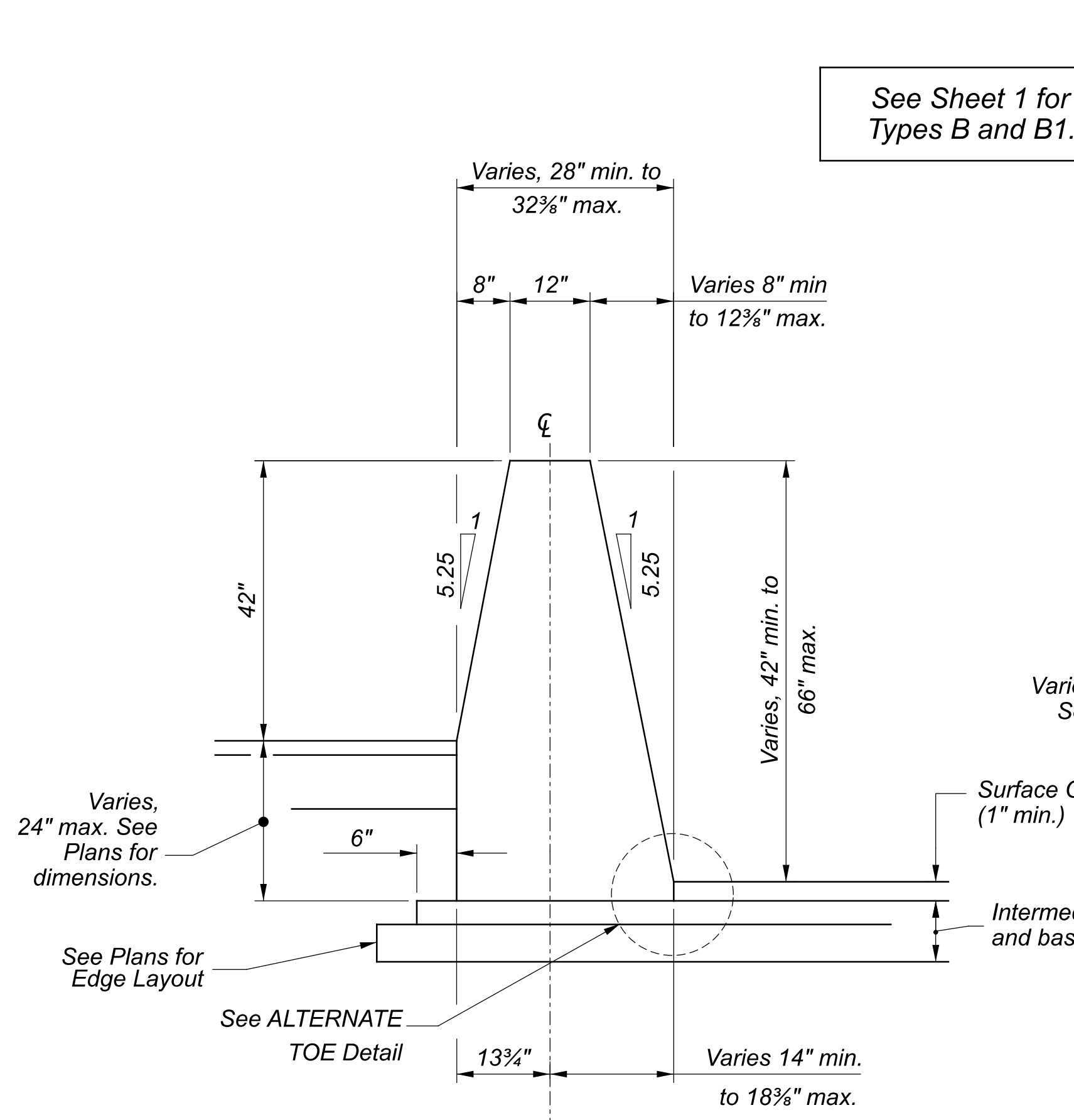


ELEVATION

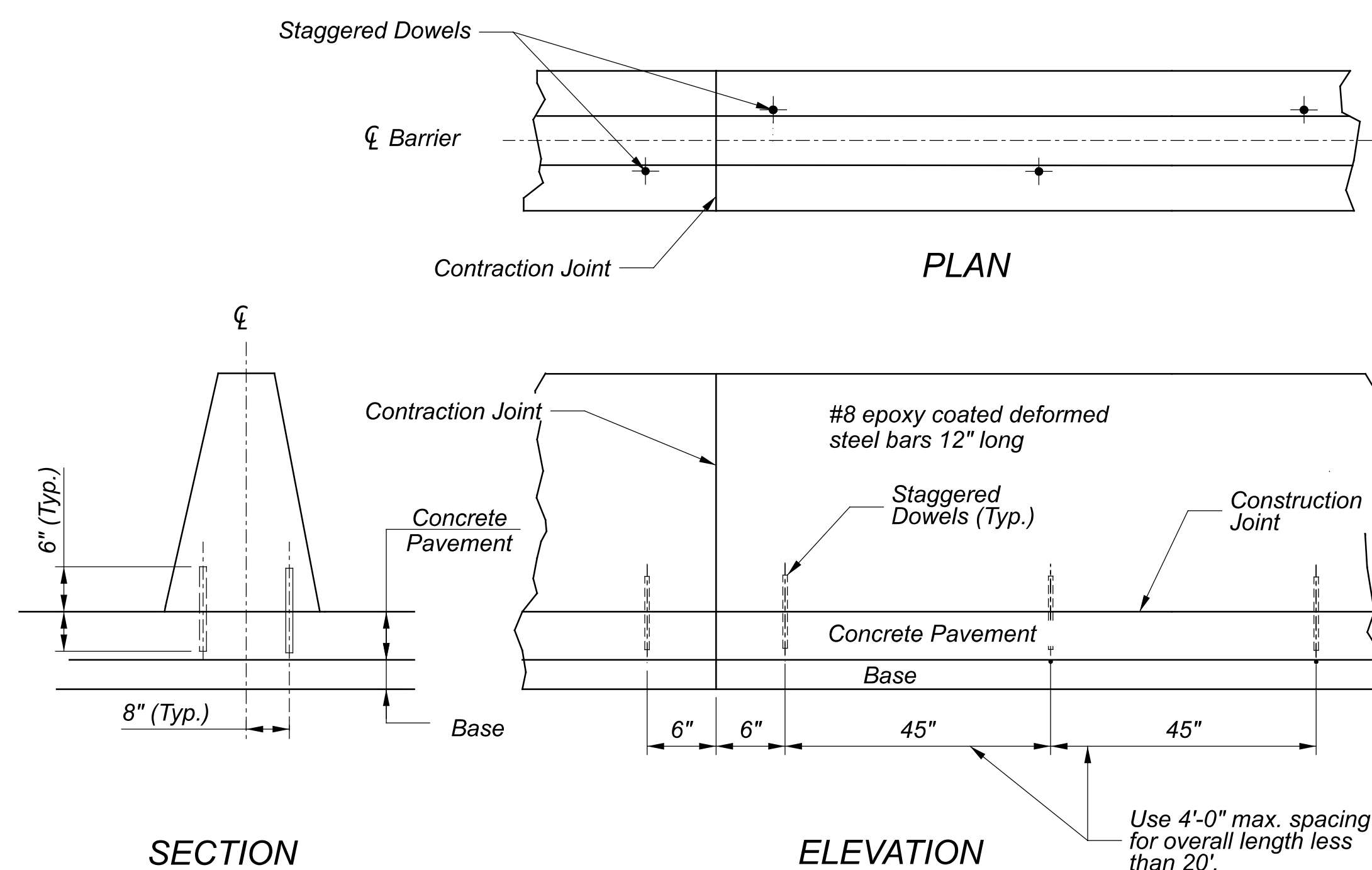
END ANCHORAGE



TYPE C1
(DETAIL FOR CONCRETE PAVEMENT)



TYPE C
(DETAIL FOR ASPHALT PAVEMENT)



DOWELING DETAILS

See ADJOINING PAVEMENT Notes on Sheet 1