



Bridge Design Details 8.1 January 2023

Typical Section

The TYPICAL SECTION sheet provides specific details for the bridge or retaining wall section. Do not clutter this sheet; instead, use additional sheets for special deck details, slab reinforcing layouts, precast girders or retaining wall details.

Typical Section

1. Place at top of sheet looking ahead on station. Note the orientation if non-standard. For skewed bridges, section should be draw perpendicular to the edge of deck or direction of travel.
2. The preferred scale is $\frac{1}{4}'' = 1'-0''$ for single structures. Use $\frac{1}{8}'' = 1' - 0''$ for extremely wide structures or parallel (left/right) structures.
3. Show only concrete dimensions, including the top slab, bottom slab and overhang thickness, or primary geometric dimensions of steel, precast concrete or other types of bridges. Do not show any reinforcement.
4. Do not show lanes and shoulders shown on GENERAL PLAN.
5. Show the girder spacing, overhang and overall deck width measured from bridge layout line.
6. Show utilities and future utility openings. Identify utility type, size, owner and location from bridge layout line.
7. Show bridge rail type, width and locations; provide reference to the appropriate Standard Plan or other detail sheets.
8. Show drip grooves and provide reference to the appropriate *Standard Plan*.
9. Do not show any portion of the substructure or supports.
10. Show the location of the PROFILE GRADE and typical direction of the cross slope. Include arrow and "+" or "-" direction showing slope away from the PROFILE GRADE. If the cross slope varies along the structure, show as "± (Cross Slope) & VARIES". Provide SUPERELEVATION DIAGRAM on another sheet; typically, the DECK CONTOURS sheet is a good location.
11. Show the deck overlay and the limits of refinishing the bridge deck. Structure depth dimension should not include the thickness of the overlay.



12. Show limits and dimensions of Bridge Removal (Portion) as hatched. Include LEGEND of hatching.
13. Identify bridge rail to be salvaged on widenings. Do not hatch rail if rail is to be salvaged.
14. All of the details above and PART TYPICAL SECTION may be combined into one larger TYPICAL SECTION if there is room on the sheet. In that case, see PART TYPICAL SECTION details and minimum scale below.

Part Typical Section

1. Place below the TYPICAL SECTION.
2. Preferred scale is usually $\frac{1}{2}'' = 1'-0''$, but not less than $\frac{3}{8}'' = 1'-0''$.
3. For symmetrical cross sections, showing the overhang, one exterior and one interior bay is usually sufficient (add NOTE: Left side shown, right side similar). If the bay dimensions vary, or there are dissimilar overhangs, show additional details using break lines. On variable-width bays, only show reinforcement that is different than typical bays.
4. For precast girders, show the structure depth at centerline of support bearings to help calculate haunch thickness and camber. Provide the total number of precast girders.
5. Show deck reinforcing clearances that are different than 2" (e.g., freeze-thaw and marine environments). Do not show 2" clearances.
6. Show the deck top and bottom transverse reinforcement size and spacing. Reference applicable *Standard Plans*. Give the direction of placement of transverse reinforcement, see Bridge Design Details: 8.8 Typical Transverse Reinforcement.
7. Show all slab distribution bars and other reinforcement in deck, girders, and soffit. Reference applicable *Standard Plans* or other sheets such as GIRDER REINFORCEMENT for additional details.
8. Show barrier and sidewalk dowels, but do not indicate size or spacing. Reference *Standard Plan*, if appropriate.
9. Call out all epoxy-coated reinforcement.



Miscellaneous

1. Combine the GIRDER LAYOUT and TYPICAL SECTION sheets, when possible, see *Bridge Design Details: 9.1 Girder Layout*.
2. If any other sections or details are shown on this sheet (such as end diaphragm or curb details), they should be drawn at the same or compatible scale as the PART TYPICAL SECTION; minimum $\frac{3}{8}$ " = 1'-0" and maximum 1" = 1'-0".
3. For widening projects, show Temporary Barrier System with attachment details, existing reinforcement details, width of closure pour and approximate concrete removal limits. Widths of widening shall be shown using "±"; whereas the total final width of the structure shall be shown without "±".
4. If a future widening is anticipated, refer to guidance for additional bottom transverse reinforcing in overhang.

Retaining Wall Typical Section

1. Orientate TYPICAL SECTION looking ahead on station. Identify all sections by letter if section or type of retaining wall varies.
2. Preferred scale usually $\frac{1}{2}$ " = 1'- 0", but not less than $\frac{3}{8}$ " = 1'- 0" if reinforcement is shown.
3. Show retaining wall layout line and location of PROFILE GRADE. Include dimensions required to calculate location, height and thickness of typical wall section.
4. Show typical location of original grade and finished grade, refer to ROADWAY PLANS when appropriate.
5. Show all drainage features such as geocomposite drains, weep holes, gutters and underdrains.
6. Show details and limits of payment for structural concrete facing and architectural concrete surface texture.
7. Show existing structures or other obstructions in relation to retaining wall including utilities. Note if to be removed.
8. For Modified Standard retaining walls, identify pile type, and footing modifications. Refer to specific Standard Plans or Standard XS-Sheet Details.
9. For Soldier Pile retaining walls, identify timber/concrete lagging, concrete anchors, concrete walers, ground anchors, drilled hole and pile type. Show the limits of payment for piles, concrete backfill, clean and paint surfaces. Include details from Standard XS-Sheet Details.



10. For Soil Nail and Ground Anchor retaining walls, identify construction sequence and details for ground anchors, initial shotcrete facing, and structural concrete facing. Include details for ground anchors from Standard XS-Sheet Details.
11. For Mechanically Stabilized Embankment (MSE) walls show leveling pad, base width and facing elements. Show soil reinforcement layers. Include details from Standard XS-Sheet Details.