

BENT SHEET CHECKLIST

BD-0335 (REV 08/01/2022)

Project ID: [] EA: [] Project Name: [] Date: []
Detailer: [] Designer: [] Checker: []

Note: Structure Design Technician(T), Designer(D), and Checker(C) are responsible for checking each item or indicating not applicable (NA).

T D C NA Plan

- 1. Place at top left side of sheet, oriented looking ahead on stationing or ahead on bent numbering and the centerline of the bent horizontal.
- 2. The minimum scale is $\frac{1}{4}'' = 1'-0''$.
- 3. Do not show layout information that is shown on FOUNDATION PLAN.
- 4. If main reinforcement cannot be shown in PLAN, show in separate VIEW. Show top and bottom reinforcement (add NOTE: Reinforcement is symmetrical about CL of Bent).
- 5. Show North arrow.
- 6. Show reference lines (usually centerline column or centerline between columns) parallel to girders for bar cutoffs and placement. Edge of deck should be shown as dashed line if showing bottom reinforcement and solid if showing top reinforcement.
- 7. Show a few stirrups at ends of cap on skews and partial stirrups at round, octagonal columns, etc.
- 8. Show deck drains and detail reinforcement around drains.
- 9. Show utility opening and future utility openings.
- 10. Show bearing pad information and end diaphragm details for precast girder bridges.

Elevation

- 1. Place below PLAN view, projected from face of bent cap.
- 2. Use the same scale as PLAN view.
- 3. Use solid lines for portions below grade. Show finished grade at Bent.
- 4. Do not show girders.
- 5. Show utility openings and future utility openings.
- 6. Show deck overhang reinforcement and other side reinforcement required.
- 7. Show deck drains.
- 8. Show all footings. Do not show all piles (add NOTE: All piles not shown).
- 9. Show portion of main reinforcement and hoops extended into the bent cap. Add dimension from top of deck to main column cage.
- 10. Column main reinforcement or pinned reinforcement that extends into the footing shall be shown with 90-degree hooks resting on footing bottom mat. Show pin reinforcement close to center of column core.
- 11. Show portion of the footing reinforcing bars to identify location of bars in mat. Provide reference to the FOOTING LAYOUT detail for additional details. Footing ties shall have 180-degree hook at top and 90-degree hook at bottom or T-Head at bottom.

Elevation cont'd

- 12. Show reference to flare reinforcement and flared column geometrics. Add "COLUMN GEOMETRICS" detail to show dimensions of flare and add "TIE DETAIL" to show reinforcement details.
- 13. For pier wall reinforcement ties, one end should be 135-degree hook and the other end 90-degree.
- 14. Add Seal Course and notes as needed.
- 15. Show stirrup spacing taken along centerline Bent Cap with special stirrup spacing and shape at column.
- 16. Show location of SECTIONS along Bent Cap. A typical SECTION should be taken and another at centerline of column at minimum.
- 17. Show footing elevations if they are not shown on FOUNDATION PLAN.
- 18. Show "No-Splice Zones" for main column reinforcement (add NOTE: No splices allowed in main column reinforcement).
- 19. Show plastic hinge zone and splice regions for columns (add NOTE: All column hoops shall be "ULTIMATE BUTT" spliced continuous).

Footing Plan

- 1. Show below ELEVATION, if room is available.
- 2. Scale $\frac{1}{4}" = 1'-0"$. Reinforcing pattern may be shown in this view at this scale.
- 3. Show all footings, but do not re-detail similar footings.
- 4. Show complete pile layouts. Locate from centerline Column, Footing and Bent.
- 5. Do not repeat alignment given on FOUNDATION PLAN.

Bent Cap Section

- 1. Scale $\frac{3}{8}" = 1'-0"$ minimum; $\frac{1}{2}" = 1'-0"$ preferred.
- 2. In SECTIONS, only show lines that intersect the section cut plane (Do not show lines and reinforcement that are beyond the SECTION cut plane).
- 3. Show all reinforcement and label maximum main reinforcing. Avoid repeating details on multiple sections (add NOTE: For details not shown, see "SECTION __").
- 4. Show clearances to main cap reinforcing. Use outside deformation diameter to assure that deck clearance can be maintained.
- 5. Show stirrup reinforcement at acute corners of bent cap. If skew greater than 20-degree, detail Bent Cap accordingly.
- 6. Show details for dropped cap (non-integral) for steel or precast girders.

Column Section

- 1. Use same scale as Bent Cap SECTIONS.
- 2. Several sections may be needed for architectural columns and variable bar patterns.