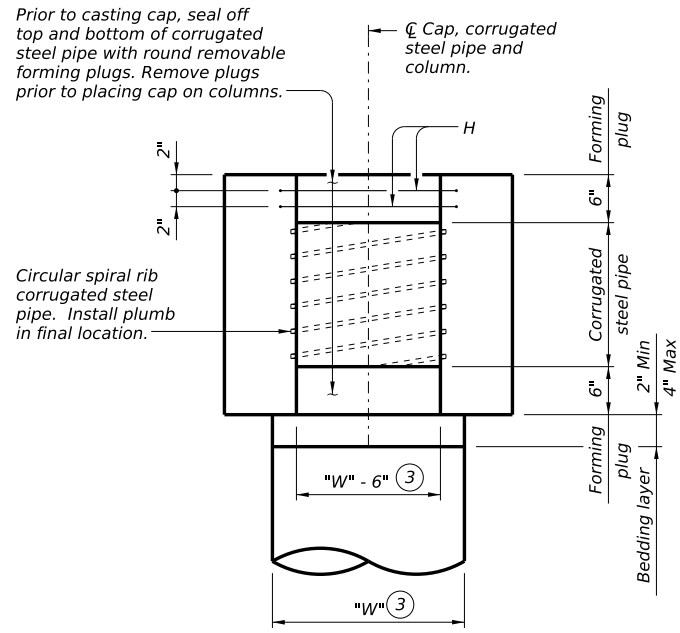




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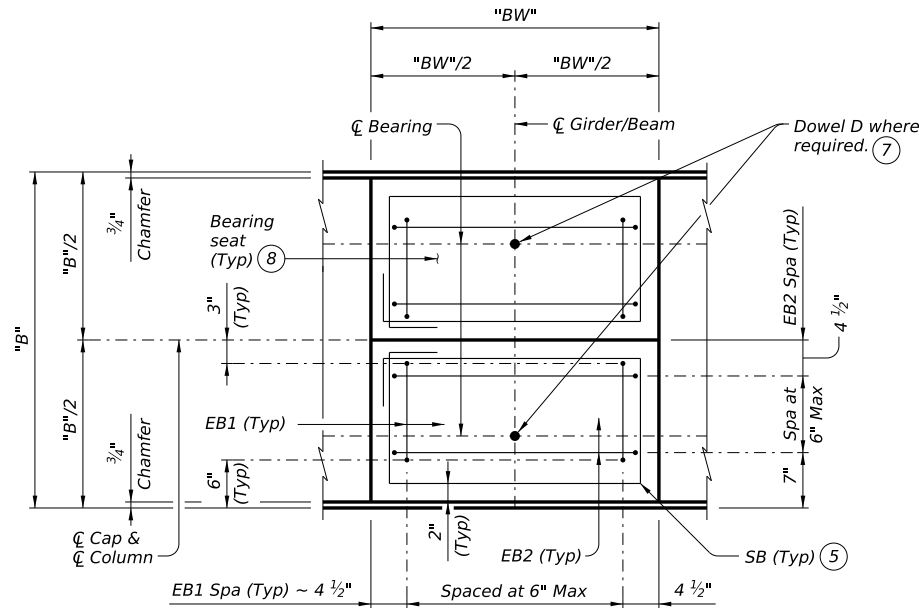
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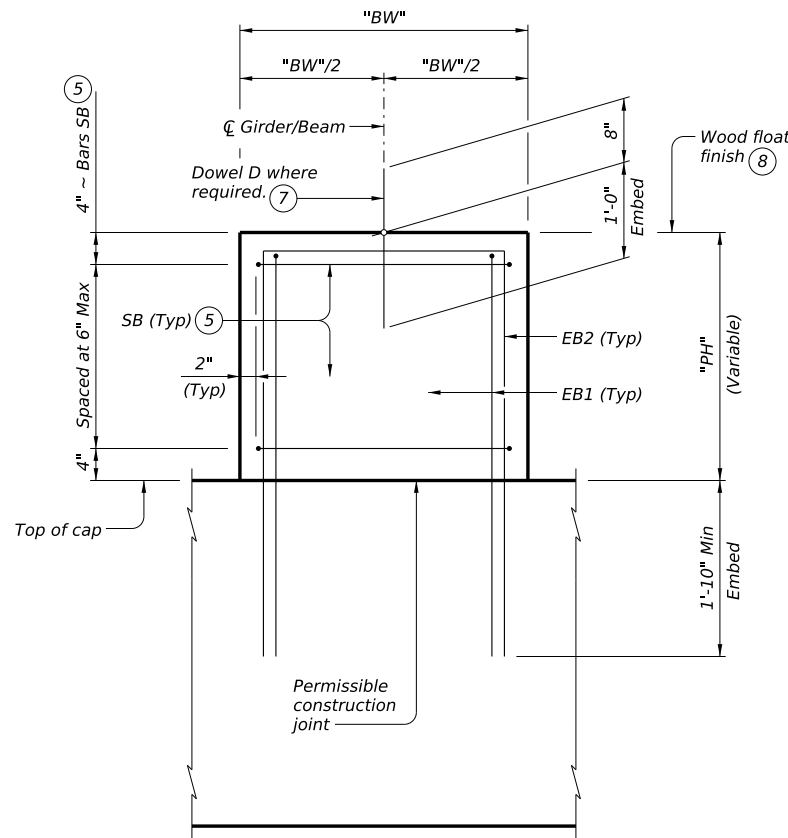
### TYPICAL CAP SECTION AT COLUMN

Showing example of cap and corrugated steel pipe at column. Cap and column reinforcing not shown for clarity.

SUPERSTRUCTURE TYPE	BEARING DIMENSIONS
X-Beams	"BW" (ft-in)
I-Girders (Tx28-Tx54)	6'-0"
I-Girders (Tx62)	3'-0"



### PLAN

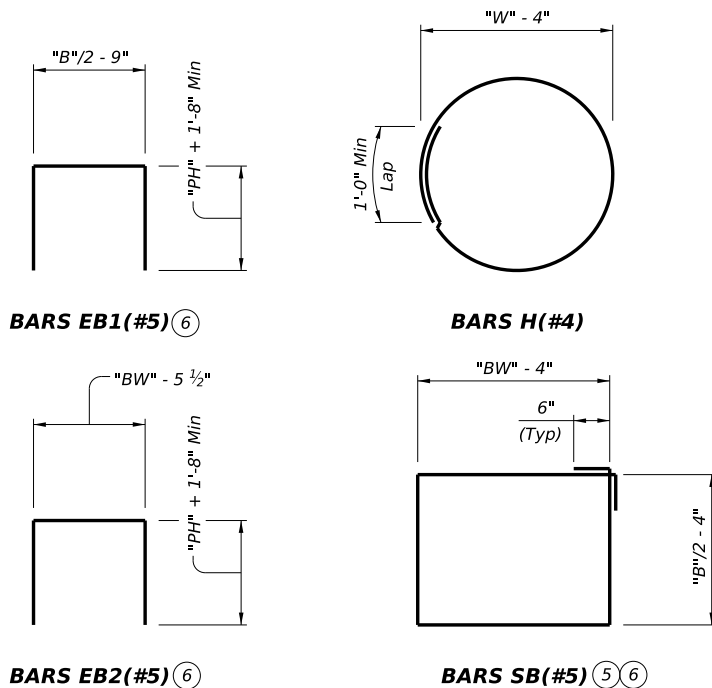


### ELEVATION

### PEDESTAL DETAILS ⑥

Clean bearing surface and all loose material before placing bearing pad. Reinforce bearing seats/pedestals over 3" in height as shown.

- ③ See interior bents sheet for details not shown.
- ⑤ Omit Bars SB for pedestal heights ("PH") under 1'-0".
- ⑥ Shown for structures without skew. Details are for "PH" heights greater than 3" and less than 18". Details are shown for standard X-beams and I-girders. Submit details as part of the shop drawing submittal for skewed structures and for pedestals greater than 18" in height.
- ⑦ See interior bents sheet for placement of dowels. Place dowels plumb.
- ⑧ See interior bents sheet, bearing seat detail for slope.



### CONSTRUCTION NOTES:

#### Cap Fabrication:

Fabricate in accordance with Item 424, "Precast Concrete Structural Members (Fabrication)." Secure corrugated metal pipes to prevent their movement during concrete placement. Location tolerance of pipes is 1/4" from plan location, transversely and longitudinally. Seal pipes to prevent intrusion of concrete.

Chamfer or round all exposed corners 3/4".

Repair cracks exceeding 0.005 in. in width as directed. The fabricator must take approved corrective actions if cracks greater than 0.005 in. form. All work, material, and engineering related to these cracks will be at the Contractor's expense.

Caps can be set level or at grade. If required or needed, build bearing seats/pedestals to achieve final grade. Bearing seats/pedestals may be precast with the initial cast. Bearing seats/pedestals that conflict with column locations may not be precast with cap. Do not locate lift points at bearing seats/pedestals if bearing seats/pedestals are precast. If bearing seats/pedestals are not precast, cast in accordance with Item 420.4.9, "Treatment and Finishing of Horizontal Surfaces." Do not slope the top of caps between bearing areas from the center slightly towards the edge. If pedestal reinforcement is not present, drill and epoxy anchor Bars EB1 and EB2 into top of cap in accordance with Item 420.4.7.10, "Installation of Dowels and Anchor Bolts."

If earwalls are required, see Interior Bents sheet for details.

If shear keys are required elsewhere in plans, submit details. Shear keys may not be precast. Drill and epoxy shear key anchor reinforcement into top of cap in accordance with Item 420.4.7.10 "Installation of Dowels and Anchor Bolts."

Limit flexural stress in cap to 250 psi during handling and storage. Store and handle caps in accordance with Item 424, "Precast Concrete Structural Members (Fabrication)." Do not stack caps.

#### Cap-to-Column Connection:

Construct a mock-up of the column-to-cap connection that must demonstrate the ability of the Contractor to provide a connection free of voids. In the presence of the Engineer, use trial batch of concrete fill using the same material, equipment, and personnel to be used for actual concrete operations and fill the mock-up at least one week before casting concrete. Field test the trial batch of concrete fill to the same levels required for the actual concrete fill depth.

Caps may be placed on columns/drilled shafts after column/drilled shaft concrete has achieved a flexural stress of 355 psi (or 2,500 psi compressive strength). Use plastic shims or friction collars to support the cap at the proper elevation prior to concrete fill depth. Total area of plastic shims used on top of each column may not exceed 6 percent of the column area. Column/drilled shaft curing may be interrupted a maximum of 2 hours for placement of plastic shims or friction collars and cap placement.

Provide mortar tight forms. Ensure the top of the column is in a saturated surface dry (SSD) condition just before placing concrete fill. Deposit concrete such that all voids in the bedding layer and bent cap are completely filled. Deposit concrete through the top opening of the cap pocket in a manner that deposits concrete from the bedding layer on the bottom of the connection upward. Vibrate concrete in the pocket in accordance with Item 420.4.7.9, "Consolidation". Trowel finish top surface of cap pockets flush with top of cap. Wet mat cure these locations for at least 48 hours. Recess lifting loops 1-inch minimum using exothermic cutting rods. Do not overheat or damage the surrounding concrete. Abrade the concrete surfaces of excavation and end of the lifting loop to remove all slag with a needle gun, steel brush, or other suitable means. Coat the inside of the recessed area, including the lifting loops, with 10 mils (minimum) of neat, Type VIII epoxy and patch the recess with epoxy mortar.

### MATERIAL NOTES:

Provide 12 gage, Type I, lock-seam, helical corrugated pipe conforming to Item 460, "Corrugated Metal Pipe". Provide Grade 60 reinforcing steel. Do not epoxy coat reinforcement even if column reinforcement is epoxy coated.

Provide Class "H" (HPC) concrete for cap concrete.

Provide Class "C" or "S" concrete for cap-to-column connection concrete fill.

Use low relaxation strands, each pretensioned to 75% of fpu.

### GENERAL NOTES:

Designed in accordance with AASHTO LRFD Bridge Design Specifications.

Prestress loss calculated according to Research Report FHWA/TX-12/0-6374-2 Table 6.6 using a relative humidity of 60 percent.

The Contractor has the option to provide prestressed, precast bent caps in accordance with the details shown. No additional payment will be made if the Contractor uses prestressed, precast bent caps.

Submit shop drawings of prestressed, precast bent caps for approval prior to construction. Indicate lifting attachments and locations on the shop drawings.

Corrugated pipe and concrete fill are subsidiary to Item 420, "Concrete Substructures" or Item 425, "Precast Prestressed Concrete Structural Members", whichever is designated as the bid item.

See standard Interior Bents sheet for details and notes not shown.

These details can only be used as an alternate to standard Interior Bents with round columns for slab beams, decked slab beams, box beams, X-beams, and I-girder standard designed structures.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

## PRESTRESSED, PRECAST BENT CAP OPTION ROUND COLUMNS

### PPBC-RC

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