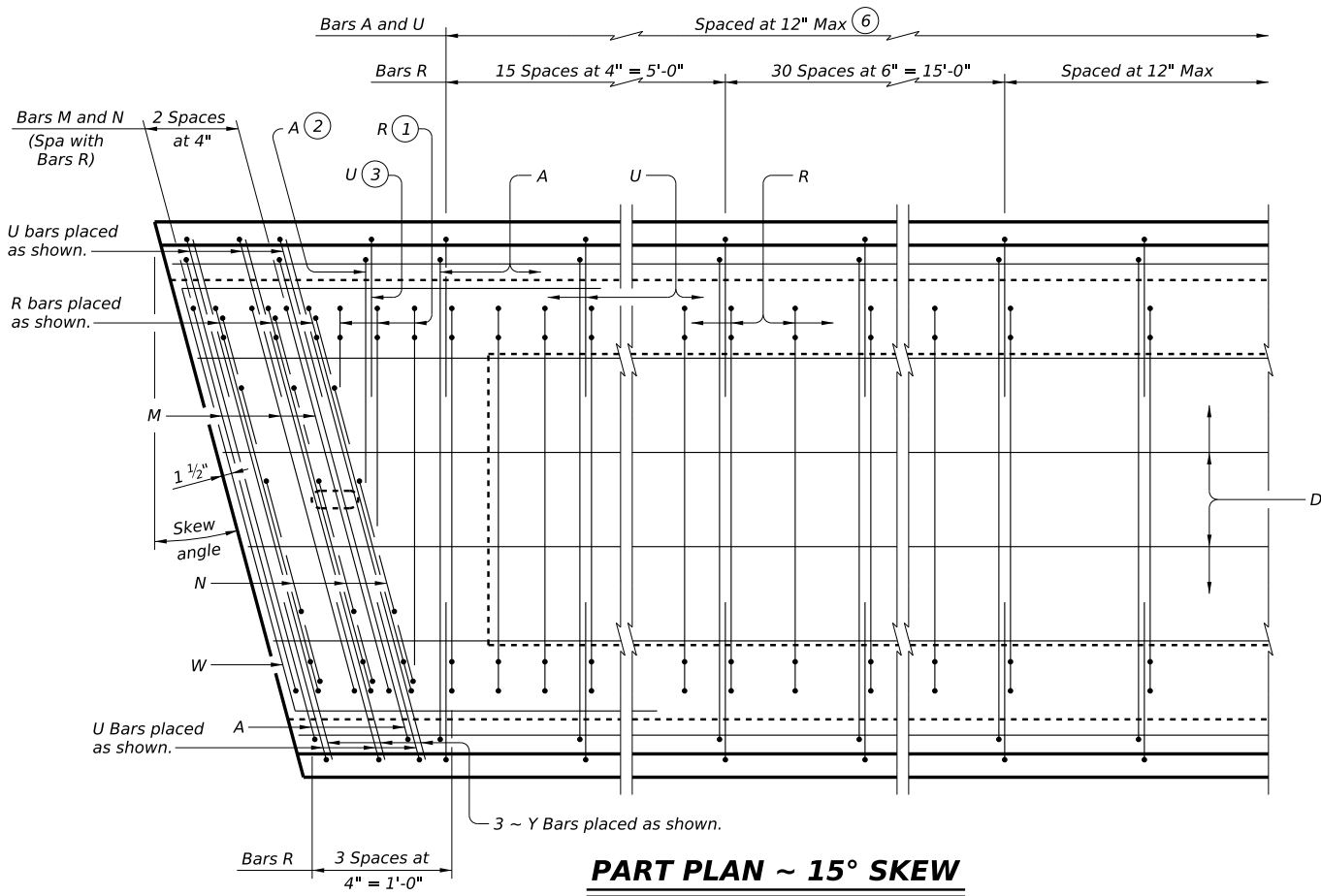
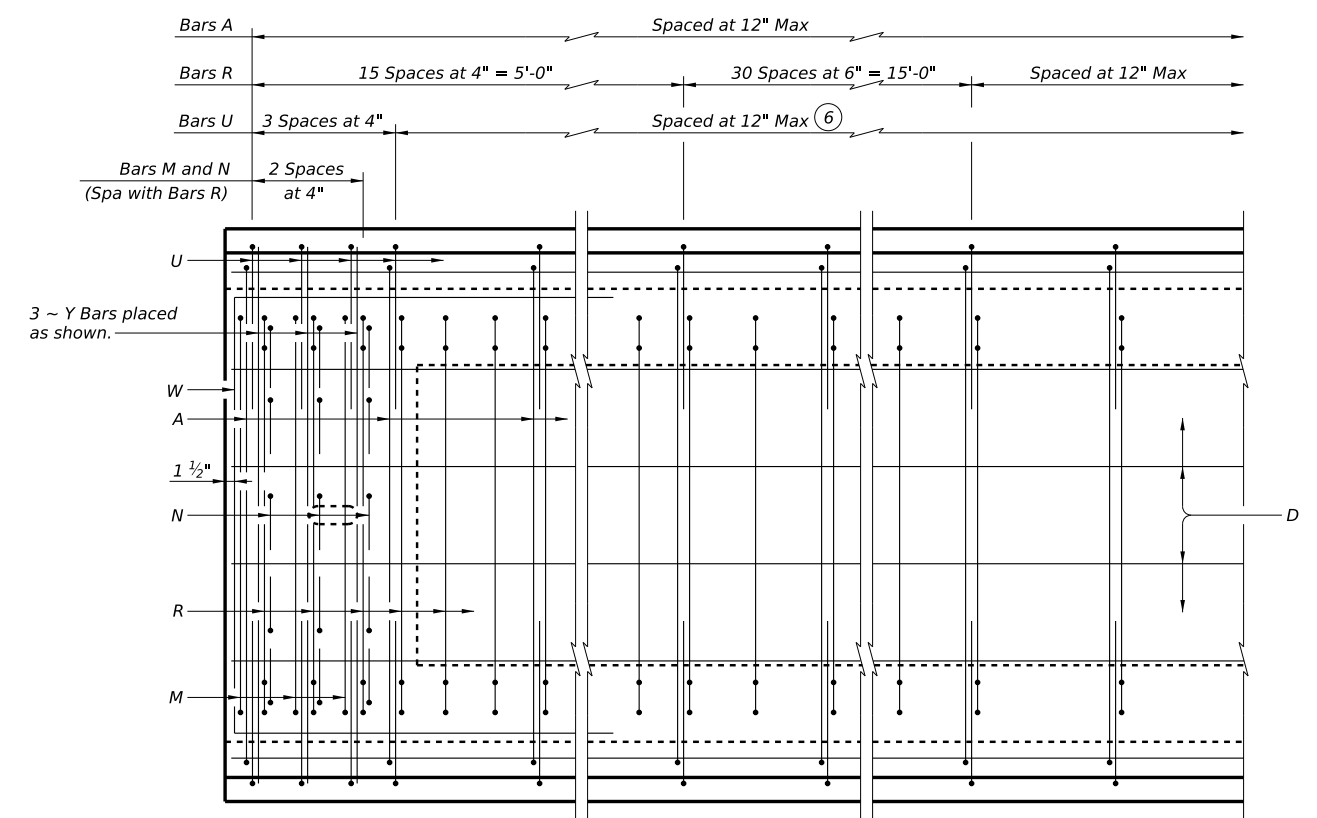


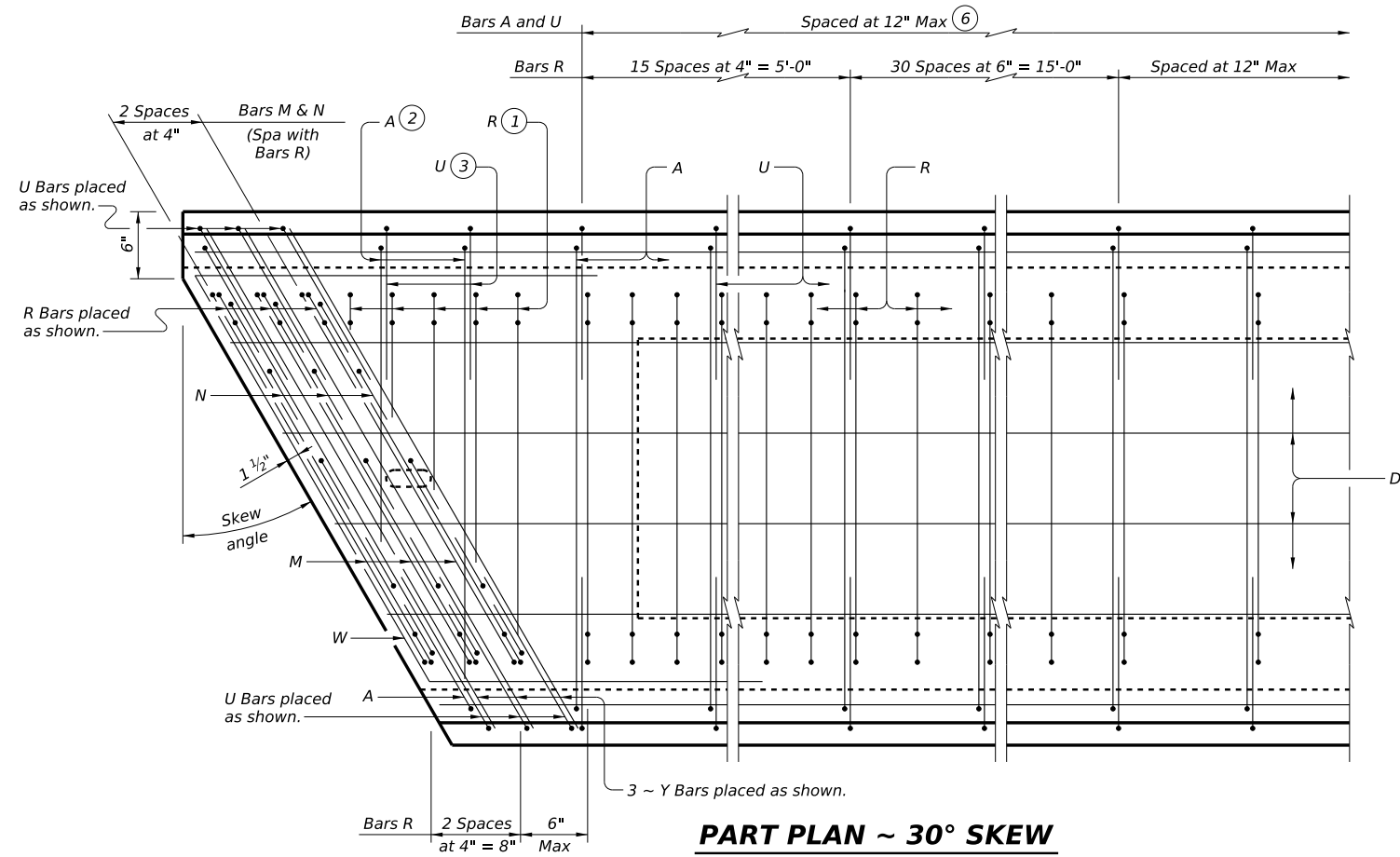
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



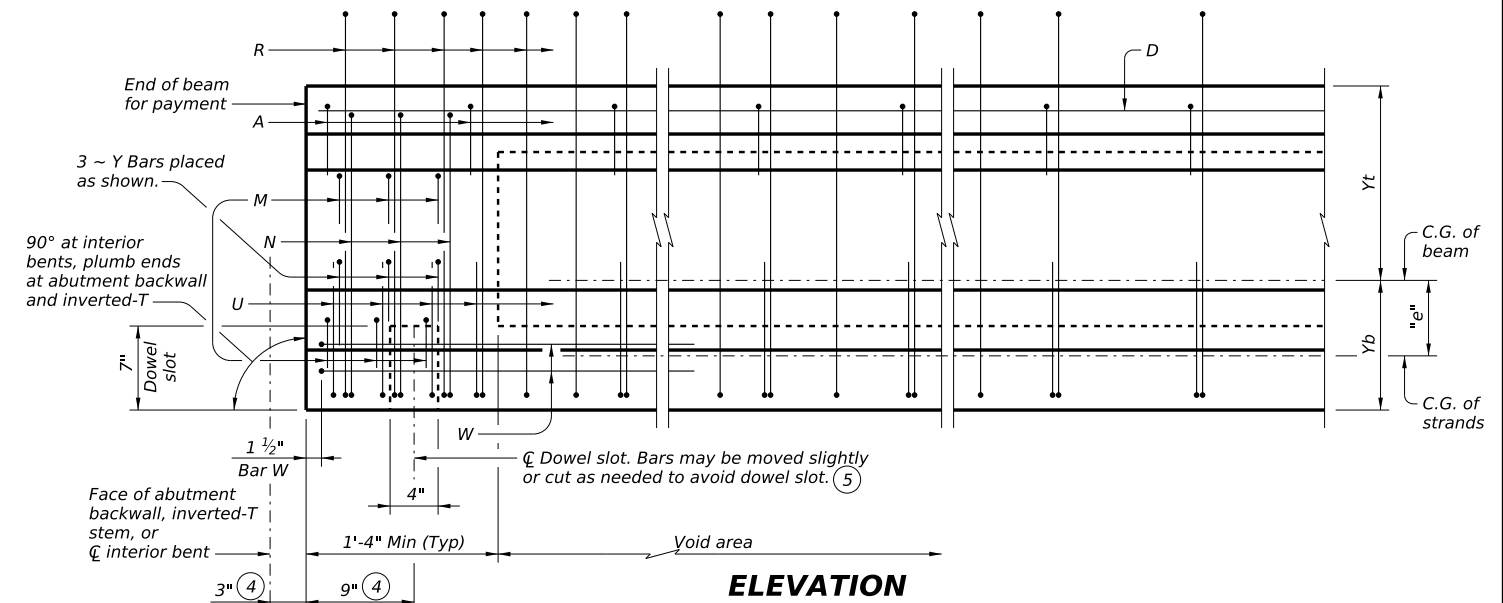
**PART PLAN ~ 15° SKEW**  
(Showing Type 4XB28 with skew angles over 0° to 15°.)



**PART PLAN**  
(Showing Type 4XB28.)



**PART PLAN ~ 30° SKEW**  
(Showing Type 4XB28 with skew angles over 15° to 30°.)



**ELEVATION**

- ① Bars R spaced at 4" Max. Cut Bars R as necessary to provide 2" clear between adjacent bars as shown.
- ② Bars A spaced with Bars U. Cut Bars A as necessary to provide 2" clear between adjacent bars as shown.
- ③ Bars U spaced at 8" Max as shown.
- ④ Measured perpendicular to  $\bar{C}$  interior bents, abutment backwall, or inverted-T stem.
- ⑤  $\bar{C}$  4" x 1 1/2" Vertical slotted hole at doweled beam end (labeled [D] on Bridge Layout.) Required for outside beam only or as shown on substructure details. Anchorage holes may be tapered (4 3/4" x 1 5/8") at base. If holes are formed with sheet metal, forms may be left in place.
- ⑥ Terminate Bars U 5 ft from beam ends or 3 ft beyond the last debonded strands, whichever is greater.

**HL93 LOADING** **SHEET 1 OF 3**

Texas Department of Transportation **Bridge Division Standard**

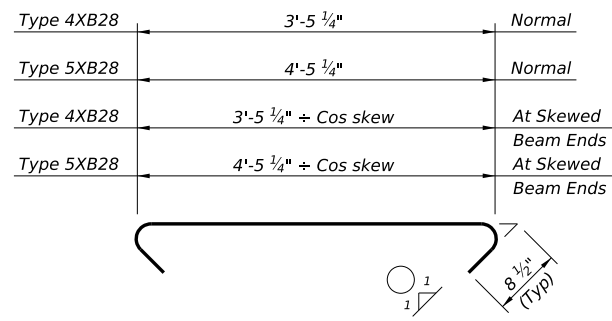
**PRESTRESSED CONCRETE X-BEAM DETAILS (TYPE XB28)**

**XB28**

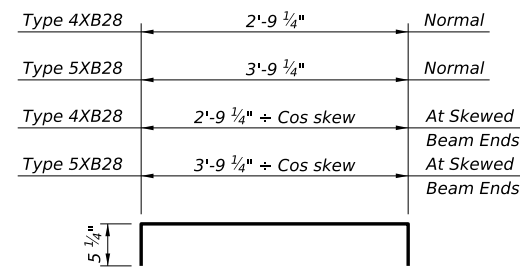
FILE: XB-XB28-22.dgn	DN: JMH	CK: TAR	DW: JER	CK: TAR
©TxDOT August 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST		COUNTY SHEET NO.

DATE: FILE:

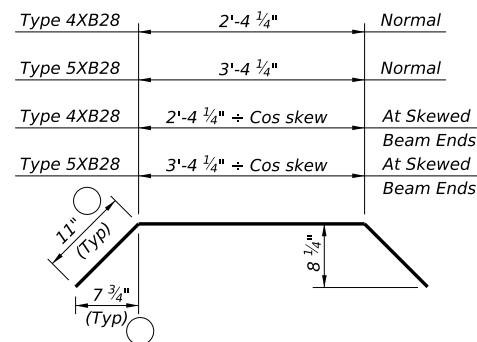




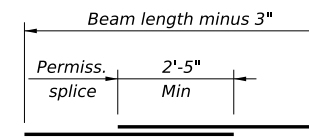
**BARS A (#4)**



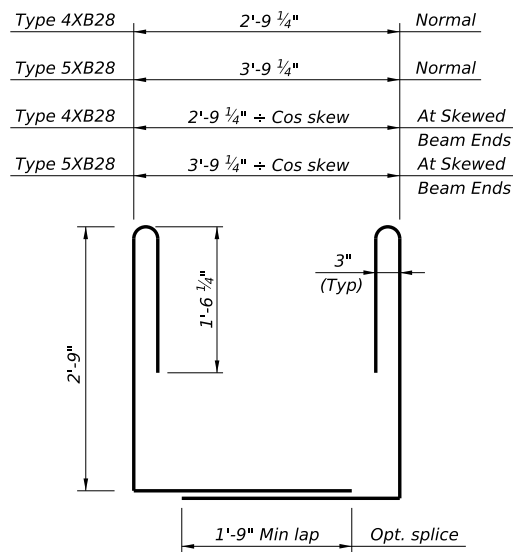
**BARS M (#5)**



**BARS Y (#5)**

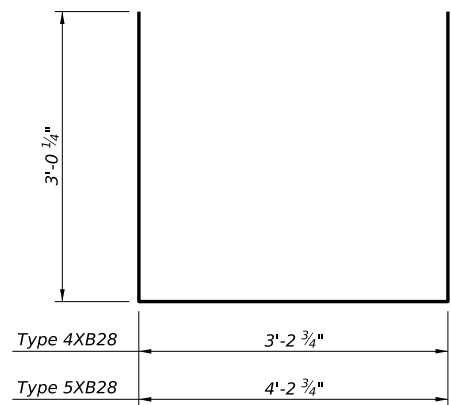


**BARS D (#5)**  
(Place splices in middle third of span.)

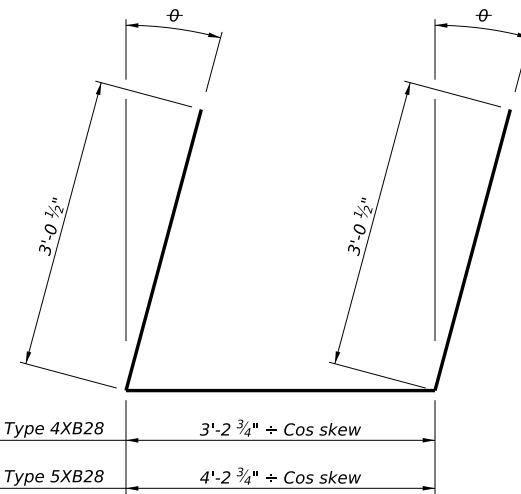


**BARS R (#4)**

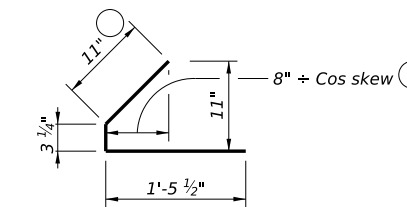
○ Dimension will vary slightly with skew. Adjust as necessary.



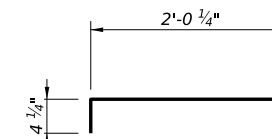
**BARS W (#5)**  
(For square beam ends)



**BARS W (#5)**  
(For skewed beam ends)



**BARS U (#4)**



**BARS N (#4)**

**MATERIAL NOTES:**

Provide Class H concrete.  
Provide Grade 60 reinforcing steel.  
An equal area of deformed welded wire reinforcement (WWR) (ASTM A1064) may be substituted for all or some of Bars A, D, R, and U.

**GENERAL NOTES:**

Designed according to AASHTO LRFD Bridge Design Specifications. Two-stage monolithic casting is required when conventional concrete is used. The concrete in the first stage cast (bottom beam flange) must remain plastic until the second stage cast (webs and top beam flange) is placed. Vibrate as required to ensure consolidation between the two casts.

When approved by the Engineer, self-consolidating concrete may be placed in a one-stage monolithic casting.

1 1/4" clear cover to reinforcement is required unless noted otherwise.

These details are applicable for skews up to 30 degrees only.

Chamfer bottom beam corners 3/4" or round to a 3/4" radius.

Punch through all drain holes, removing any blockage, before beams are shipped.

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

**PRESTRESSED CONCRETE  
X-BEAM DETAILS  
(TYPE XB28)**

○					