

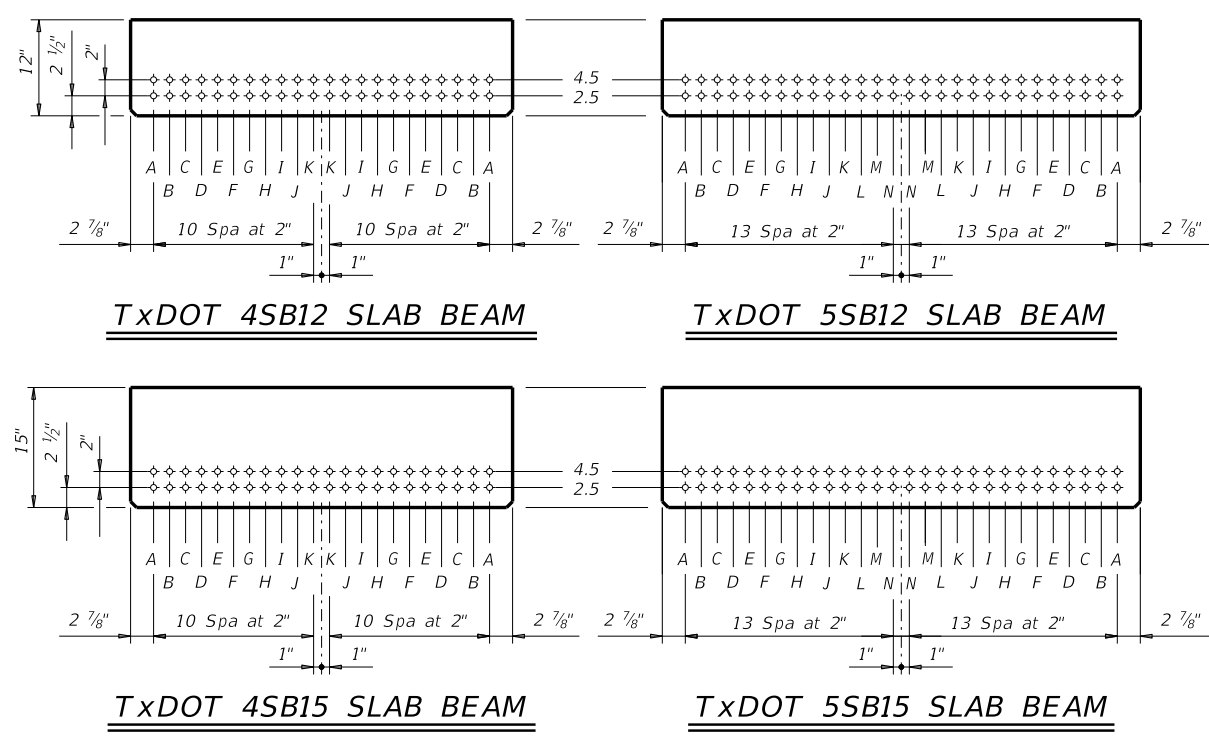
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STRUCTURE	DESIGNED BEAMS (STRAIGHT STRANDS)																OPTIONAL DESIGN				LOAD RATING FACTORS			NON-STANDARD STRAND PATTERNS															
	SPAN NO.	BEAM NO.	BEAM TYPE	PRESTRESSING STRANDS							DEBONDED STRANDS PER ROW					CONCRETE		DESIGN LOAD COMP STRESS (TOP ϵ) (SERVICE I) fct (ksi)	DESIGN LOAD TENSILE STRESS (BOT ϵ) (SERVICE III) fcb (ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (kip-ft)	LIVE LOAD DISTRIBUTION FACTOR		STRENGTH I		SERVICE III	PATTERN	STRAND ARRANGEMENT AT ϵ OF BEAM												
				NON-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH fpu (ksi)	"e" ϵ (in)	"e" END (in)	TOT NO. DEB	DIST FROM BOTTOM (in)	NO. OF STRANDS	NUMBER OF STRANDS DEBONDED TO (ft from end)								RELEASE STRGTH ϵ (ksi)	MINIMUM 28 DAY COMP STRGTH ϵ (ksi)	MOMENT		Shear			Inv	Opr	Inv									
	TOTAL	DE-BONDED	3										6	9	12	15	①	②																					

① Based on the following allowable stresses (ksi):
 Compression = $0.65 f'_{ci}$
 Tension = $0.24 \sqrt{f'_{ci}}$
 Optional designs must likewise conform.
 ② Portion of full HL93.

DESIGN NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 Load rated using Load and Resistance Factor Rating according to AASHTO Manual for Bridge Evaluation.
 Prestress losses for the designed beams have been calculated for a relative humidity of __ percent. Optional designs must likewise conform.

FABRICATION NOTES:
 Provide Class H concrete.
 Provide Grade 60 reinforcing steel.
 Use low relaxation strands, each pretensioned to 75 percent of fpu.
 Full-length debonded strands are not permitted in positions "A" and "B".
 Strand debonding must comply with Item 424.4.2.2.4.
 When shown on this sheet, the Fabricator has the option of furnishing either the designed beam or an approved optional beam design. All optional design submittals and shop drawings must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.
 Locate strands for the designed beam as low as possible on the 2" grid system unless a non-standard strand pattern is indicated. Fill row "2.5", then row "4.5". Place strands within a row as follows:
 1) Locate a strand in each "A" position.
 2) Place strand symmetrically about vertical centerline of beam.
 3) Space strands as equally as possible across the entire width.
 Do not debond strands in position "A". Distribute debonded strands symmetrically about the vertical centerline. Increase debonded lengths working outward, with debonding staggered in each row.



To complete this sheet input the girder designs in the table and the relative humidity under Design Notes. In all cases, remove this block. This sheet must be signed, sealed, and dated by a registered Professional Engineer.

HL93 LOADING



PRESTRESSED CONCRETE SLAB BEAM DESIGNS (NON-STANDARD SPANS)

PSBND

FILE: PSB-PSBND-22.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
©TxDOT January 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS				
3-22: Added Load Rating.	DIST		COUNTY	SHEET NO.

DATE:
FILE: