



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

E. NORRIS TOLSON
SECRETARY

MEMORANDUM TO: Project Engineers
Project Design Engineers
FROM: W. J. Rogers, P.E.
State Bridge Design Engineer
DATE: July 13, 1998
SUBJECT: NEW SLAB DESIGN TABLES FOR DESIGN MANUAL

The English and Soft Metric versions of the Slab Design Tables have been updated to include the Bulb-T prestressed concrete girders. These tables are attached for immediate use. NCBDS has been updated to reflect these tables.

It has come to our attention that there are some inconsistencies within the Unit regarding the use of the old tables. The proper usage of the tables is as follows: the double lines break the table up by slab thickness and the solid lines divide the different "a" and "b" bar spacings. For example a Type IV prestressed girder with a beam spacing of 7'-2" will have an 8" slab thickness with #5 "a" bars at 7 1/2" (Figure 7-4 Sheet 1 of 4) and #5 "b" bars at 11" (Figure 7-4 Sheet 3 of 4).

Please refer questions regarding the Slab Design Tables to Engineering Development.

The Design Manual will be updated to reflect this policy at a later date.

The attached tables are in Adobe Acrobat format for use on the web

 [Figure 7-4 Sheet 1 of 4 English](#)


 [Figure 7-4 Sheet 2 of 4 English](#)

 [Figure 7-4 Sheet 3 of 4 English](#)

 [Figure 7-4 Sheet 4 of 4 English](#)

 [Figure 6-1 Soft Metric](#)

 [Figure 6-2 Soft Metric](#)

 [Figure 6-3 Soft Metric](#)

 [Figure 6-4 Soft Metric](#)



[Back to Structures Main Page](#)

Last Updated: 8/11/98 by: Steven Rackley

[E-mail Structure Design](#)

BEAM SPA.	SLAB DEPTH	TOP FLANGE WIDTH (millimeters)											SLAB DEPTH						
		255	270	295	305	330	355	380	405	430	455	480		505	1066	1092			
2000	205mm															205mm			
2020	↓														#16@210mm		#16@250mm		
2040							#16@200mm										#16@240mm		
2060																			
2080																			
2100	↓																		
2120		205mm					#16@190mm												
2140		210mm																#16@230mm	
2160																			
2180	↓																		
2200																			
2220							#16@190mm											#16@220mm	
2240																			
2260	↓															205mm			
2280															210mm				
2300																	#16@220mm		
2320																			
2340	↓																		
2360		210mm																	
2380		215mm																#16@210mm	
2400																			
2420	↓																		
2440																			
2460																			
2480																			
2500	↓																	#16@200mm	
2520																			
2540																			
2560																			
2580	215mm																		
2600	↓	220mm																#16@190mm	
2620																			
2640																210mm			
2660																215mm			
2680	↓																	#16@190mm	
2700																			
2720																			
2740																			
2760	↓																		
2780																			
2800																		#16@180mm	
2820		220mm																	
2840	225mm					#16@160mm													

SLAB DESIGN TABLE

SLAB DEPTH and "a" BAR SIZE and SPACING

BEAM SPA.	SLAB DEPTH	TOP FLANGE WIDTH (millimeters)											SLAB DEPTH	1066	1092		
		255	270	295	305	330	355	380	405	430	455	480				505	
2820	220mm													#16 @ 170mm	215mm		
2840	225mm															#16 @ 180 mm	
2860														#16 @ 160 mm			
2880																	
2900																	
2920														#16 @ 160 mm			
2940																#16 @ 170 mm	
2960																	
2980																	
3000															215mm		
3020															220mm		
3040	225mm													#16 @ 150 mm			
3060	230mm															#16 @ 170 mm	
3080																	
3100																	
3120																	
3140																	
3160																	
3180														#16 @ 150 mm		#16 @ 160 mm	
3200																	
3220																	
3240																	
3260	230mm																
3280	235mm													#16 @ 140 mm			
3300																#16 @ 150 mm	
3320																	
3340														#16 @ 150 mm			
3360																	
3380																	
3400																	
3420																	
3440														#16 @ 140 mm	220mm		
3460	235mm														225mm		
3480	240mm															#16 @ 150 mm	
3500																	
3520																	
3540																	
3560														#16 @ 140 mm		#16 @ 140 mm	
3580																	
3600																	
3620																	
3640																	
3660	240mm													#16 @ 130 mm	225mm		

SLAB DESIGN TABLE

SLAB DEPTH and "a" BAR SIZE and SPACING

BEAM SPA.	BBU DEPTH	TOP FLANGE WIDTH (millimeters)											BBU DEPTH	BBU DEPTH				
		255	270	295	305	330	355	380	405	430	455	480		505	1066	1092		
2000	44mm															44mm		
2020	↓																	
2040																		
2060																		
2080																		
2100																		
2120	44mm																	
2140	↓																	
2160																		
2180																		
2200																		
2220																		
2240	51mm																	
2260	↓																	
2280																		
2300																		
2320																		
2340																		
2360	51mm																	
2380	↓																	
2400																		
2420																		
2440																		
2460																		
2480	57mm																	
2500	↓																	
2520																		
2540																		
2560																		
2580																		
2600	64mm																	
2620	↓																	
2640																		
2660																		
2680																		
2700																		
2720	57mm																	
2740	↓																	
2760																		
2780																		
2800																		
2820																		
2840	64mm																	
2840	70mm																	

SLAB DESIGN TABLE

BBU DEPTH and "b" BAR SIZE and SPACING

BEAM SPA.	BBU DEPTH	TOP FLANGE WIDTH (millimeters)											BBU DEPTH	1066	1092			
		255	270	295	305	330	355	380	405	430	455	480				505		
2820	64mm														#16 @ 250 mm	57mm		
2840	70mm																#16 @ 270 mm	
2860																		
2880															#16 @ 240 mm			
2900																		
2920															#16 @ 240 mm			
2940																	#16 @ 250 mm	
2960																		
2980																		
3000																57mm		
3020															#16 @ 220 mm	64mm		
3040																	#16 @ 250 mm	
3060																		
3080																		
3100																		
3120																		
3140																		
3160																		
3180															#16 @ 220 mm		#16 @ 240 mm	
3200																		
3220																		
3240																		
3260	70mm																	
3280	76mm																	
3300															#16 @ 210 mm			
3320																		
3340															#16 @ 220 mm		#16 @ 220 mm	
3360																		
3380																		
3400																		
3420																		
3440															#16 @ 210 mm	64mm		
3460	76mm															70mm		
3480	83mm																#16 @ 220 mm	
3500																		
3520																		
3540																		
3560															#16 @ 210 mm		#16 @ 210 mm	
3580																		
3600																		
3620																		
3640																		
3660	83mm														#16 @ 190 mm	70mm		

SLAB DESIGN TABLE

BBU DEPTH and "b" BAR SIZE and SPACING

BEAM SPA.	SLAB DEPTH	TOP FLANGE WIDTH (inches)												SLAB DEPTH							
		10	10 1/2	11 1/2	12	13	14	15	16	17	18	19	20		42	43					
6'-6"	8"																	8"			
6'-7"							#5 @ 8"													#5 @ 9 1/2"	
6'-8"																					
6'-9"																					
6'-10"								#5 @ 7 1/2"													
6'-11"																					#5 @ 9"
7'-0"	8"																				
7'-1"	8 1/4"																				
7'-2"							#5 @ 7"													#5 @ 8 1/2"	
7'-3"																					
7'-4"								#5 @ 7 1/2"													
7'-5"																					
7'-6"																					
7'-7"																					
7'-8"																					
7'-9"	8 1/4"						#5 @ 7"														
7'-10"	8 1/2"																				
7'-11"																					
8'-0"																				#5 @ 8"	
8'-1"																					
8'-2"								#5 @ 7"													
8'-3"																					
8'-4"																					
8'-5"																					
8'-6"																					
8'-7"	8 1/2"						#5 @ 6 1/2"														
8'-8"	8 3/4"																				
8'-9"																					
8'-10"																					
8'-11"																					
9'-0"								#5 @ 6 1/2"													
9'-1"																					
9'-2"	8 3/4"																			#5 @ 7"	

SLAB DESIGN TABLE

SLAB DEPTH and "a" BAR SIZE and SPACING

BEAM SPA.	SLAB DEPTH	TOP FLANGE WIDTH (inches)												SLAB DEPTH				
		10	10 1/2	11 1/2	12	13	14	15	16	17	18	19	20		42	43		
9'-2"	8 3/4"														8 1/2"			
9'-3"	9"						#5@6 1/2"								↑		#5@7"	
9'-4"																		
9'-5"																		
9'-6"																		
9'-7"							#5@6 1/2"											
9'-8"																		
9'-9"																		
9'-10"																#5@6 1/2"		
9'-11"	9"														↓			
10'-0"							#5@6"											
10'-1"	9 1/4"														8 1/2"			
10'-2"	9 1/4"														↑			
10'-3"																		
10'-4"																		
10'-5"																	#5@6 1/2"	
10'-6"								#5@6"										
10'-7"																		
10'-8"																		
10'-9"	9 1/4"																	
10'-10"	9 1/2"														↓		#5@6"	
10'-11"							#5@5 1/2"											
11'-0"																		
11'-1"																		
11'-2"							#5@6"								8 3/4"			
11'-3"															↑			
11'-4"																		
11'-5"																#5@6"		
11'-6"	9 1/2"						#5@5 1/2"											
11'-7"	9 3/4"														↓			
11'-8"																		
11'-9"																		
11'-10"																		
11'-11"							#5@5 1/2"									#5@5 1/2"		
12'-0"	9 3/4"														9"			

SLAB DESIGN TABLE
SLAB DEPTH and "a" BAR SIZE and SPACING

BEAM SPA.	BBU DEPTH	TOP FLANGE WIDTH (inches)												BBU DEPTH					
		10	10 1/2	11 1/2	12	13	14	15	16	17	18	19	20		42	43			
6'-6"	1 1/2"																1 1/2"		
6'-7"																			
6'-8"																			
6'-9"																			
6'-10"																			
6'-11"																			
7'-0"	1 1/2"																		#5 @ 12"
7'-1"	1 3/4"																		
7'-2"																			
7'-3"																			
7'-4"																			
7'-5"																			
7'-6"																			
7'-7"																			
7'-8"																			
7'-9"	1 3/4"																		
7'-10"	2"																		#5 @ 12"
7'-11"																			
8'-0"																			
8'-1"																			
8'-2"																			
8'-3"																			
8'-4"																			
8'-5"																			
8'-6"																			#5 @ 11"
8'-7"	2"																		
8'-8"	2 1/4"																		
8'-9"																			
8'-10"																			#5 @ 11"
8'-11"																			
9'-0"																			
9'-1"																			
9'-2"	2 1/4"																		#5 @ 10"

SLAB DESIGN TABLE

BBU DEPTH and "b" BAR SIZE and SPACING

BEAM SPA.	BBU DEPTH	TOP FLANGE WIDTH (inches)												BBU DEPTH							
		10	10 1/2	11 1/2	12	13	14	15	16	17	18	19	20		42	43					
9'-2"	2 1/4"																	2"			
9'-3"	2 1/2"																				
9'-4"	↓																			#5 @ 10"	
9'-5"																					
9'-6"																					
9'-7"																					
9'-8"																					
9'-9"																					
9'-10"																				#5 @ 9 1/2"	
9'-11"																					
10'-0"	2 1/2"																				
10'-1"	2 3/4"																				
10'-2"	↓																				
10'-3"																					
10'-4"																					
10'-5"																					#5 @ 9 1/2"
10'-6"																					
10'-7"																					
10'-8"																					
10'-9"	2 3/4"																				
10'-10"	3"																			#5 @ 8 1/2"	
10'-11"																					
11'-0"																					
11'-1"																					
11'-2"																					
11'-3"																					
11'-4"																					
11'-5"																					
11'-6"	3"																				
11'-7"	3 1/4"																				
11'-8"	↓																				
11'-9"																					
11'-10"																					
11'-11"																					#5 @ 8"
12'-0"		3 1/4"																			

SLAB DESIGN TABLE
BBU DEPTH and "b" BAR SIZE and SPACING