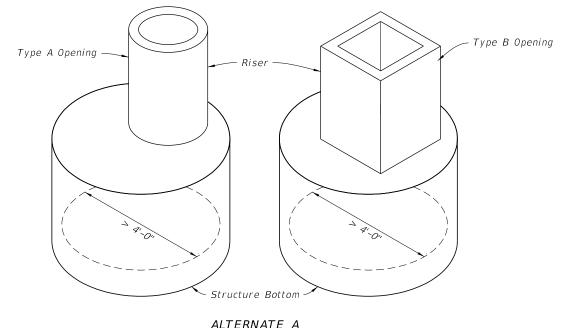
GENERAL NOTES:

- 1. Work this Index with Specification 425 and Index 425-001.
- 2. Type P standard structure bottoms are 4'-0"diameter and smaller (Alt. A) and 3'-6" square (Alt. B) . Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
- 3. Walls of circular structures (Alt. A) constructed in place may be of brick or reinforced concrete. Construct precast and rectangular structures (Alt. B) with reinforced concrete only.
- 4. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (See Table 1).
- 5. Top and bottom slab thickness and reinforcement are for precast and cast-in-place construction. Use Class II concrete, except when Class IV concrete is shown in the Plans.
- 6. Alt. A or Alt. B structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet.
- 7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and pipes.
- 8. Use straight embedment reinforcement in top and bottom slabs ,except when ACI hooks are specifically required.
- 9. Construct corner fillets as shown for rectangular structures used with circular risers and inlet throats, and when used on skew with rectangular risers, inlets, and inlet throats. Construct fillets in the top slab of the Alt. A structure bottoms when used with the Type B risers. Reinforce each fillet with two #5 bars.
- 10. Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Furnish such larger units at no additional cost to the Department. Larger Alt. A units cannot replace Alt. B units without approval of the Engineer. This Note applies to this Index only.

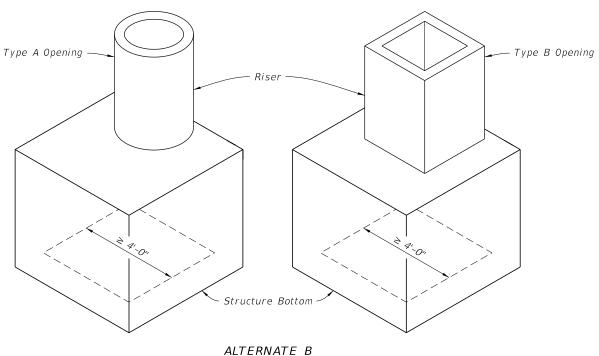
REINFORCEMENT NOTES:

- 1. Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
- 2. Provide a minimum 2"clear cover for all reinforcement unless otherwise noted and except for 3'6"diameter ASTM C478 units.
- 3. Additional bars used to restrain hole formers for precast structures with grouted pipe connections may be left flush with the hole surface.
- 4. Cut or bend reinforcement at pipe openings to maintain cover.
- 5. Remove exposed ends of reinforcing at precast pipe openings and grouted joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
- 6. Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

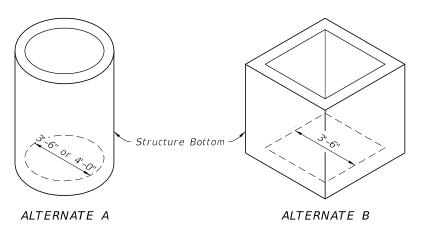
	TABLE OF CONTENTS:						
Sheet	Description						
1	General Notes and Contents						
2	Dimensional and Reinforcing Details						
3	Tables 1, 2, 3, and 4						
4	Tables 5 and 6						



ALTERNATE A



= TYPE J



= TYPE P ==

DESCRIPTION:

FDOT

FY 2026-27 STANDARD PLANS

STRUCTURE BOTTOMS TYPE J AND P

INDEX 425-010 SHEET

1 of 4

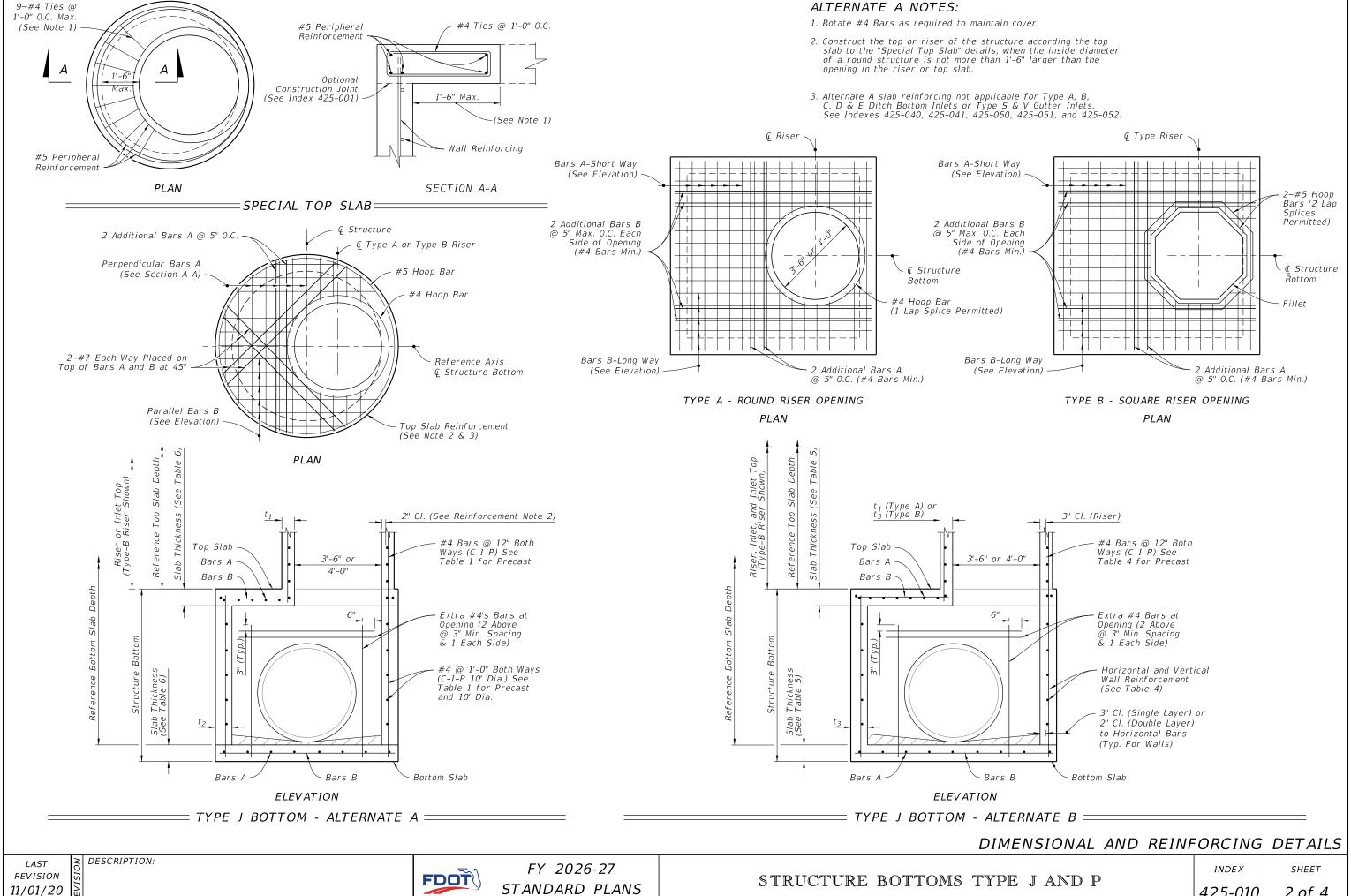


TABLE 1 - ALTERNATE A - STRUCTURES											
			CAST-IN-PLACE ITEMS			PRECAST ITEMS					
	 STRUCTURE/RISER	CLASS II CONCRETE		CLASS II CONCRETE			ASTM C478				
TYPE	DIAMETER (ft)	t ₁	t ₂	A 5	t ₁	t ₂	A 5	t ₁ or t ₂	A 2***		
		RISER (in.)	BOTTOM (in.)	(in ² /ft.)	RISER (in.)	BOTTOM (in.)	(in: ² /ft.)	(in.)	(in: ² /ft.)		
Р	3'-6"	6	8	0.20	6	8	0.20	4**	0.105		
Р	4'-0"	6	8	0.20	6	8	0.20	5**	0.120		
J	5'-0"	-	8	0.20	-	8	0.20	6**	0.150		
J	6'-0"	-	8	0.20	-	8	0.20	6	0.180		
J	7'-0"	-	8	0.20	-	8	0.20	7	0.210		
J	8'-0"	-	8	0.20	-	8	0.20	8	0.240		
J	10'-0"	-	10	0.40##	_	10	0.40##	10	0.300		
J	12'-0"	-	10	0.40##	-	12	0.40##	12	0.360		

 t_1 and t_2 - Wall Thickness.

As- Vertical and horizontal areas of reinforcement.

##Provide 0.20 eq. in.2/ft. at each face, 12" max. bar spacing.

**Modified minimum wall thickness.

***Min. total circumferential reinforcement for continuous steel hoops:

A2 = 0.40 sq. in. for riser section height equal or less than 2'-0" (2 hoop min.)

 $A_2 = 0.60$ sq. in. for riser section height more than 2'-0" up to 4'-0" (3 hoop min.)

Areas of reinforcing for precast items are based on Grade 60 reinforcing.

No reduction in the area of reinforcement is allowed for welded wire fabric in Table 1. Area of vertical reinforcing may be reduced in accordance with ASTM C478.

TABLE 2 - ALTERNATE B SQUARE AND RECTANGULAR STRUCTURES

TVDE	WALL	MAX.	WALL THICKNESS (t ₃)			
TYPE	LENGTH (FT)	DEPTH (FT)	C-I-P (in.)	PRECAST (in.)		
Р	≤ 3'-6"	40	6 Riser 8 Bottom	6		
J	4'-0"	40	8	6		
J	5'-0"	22	-	6		
J	6'-0"	15	-	6		
J	5'-0" to 9'-0"	40	8	8		
J	10'-0"	26	8	8		
J	10'-0" to 12'-0"	40	10	9		
J	16'-0"	35	_	9		
J	16'-0"	40	10	10		
J	20'-0"	25	_	9		
J	20'-0"	30	10	10		

See Table 4 for Reinforcing Schedule.

TABLE 3	B - REINF	ORCIN	G SCH	IEDULE				
	GRADE 60 BARS OR 65 KSI & 70 KSI WELDED WIRE REINFORCING							
		MA	MAXIMUM SPACING					
SCHEDULE	GRADE 60 AREA	GR 60	WWR EQU	JIV. AREA				
	(in: ² /ft)	BARS (in.)	65 KSI (in.)	70 KSI (in.)				
A12	0.20	12	8	8				
A6	0.20	6	5	41/2				
B10	0.24	10	8	7½				
B5.5	0.24	5½	5	4				
C6.5	0.37	$6\frac{1}{2}$	6	5				
C3.5	0.37	$3\frac{l}{2}$	3	21/2				
D7	0.53	7	6	5				
D4.5	0.53	$4\frac{1}{2}$	4	31/2				
E5	0.73	5	4	4				
E3	0.73	3	3	3				
F5	1.06	5	4	4				
F3.5	1.06	$3\frac{1}{2}$	3	3				
G5	1.45	5	4	4				
G.3.5	1.45	$3^{1}/_{2}$	3	3				
Н4	1.75	4	3	3				

		TAB	LE 4 - W	'ALL	DESI		R	ECTANG	ULAF	R STR	UCTURE	5
VERTICAL REINFORCING				ZONT A FORCIN		W ALL THICKNESS			RTICAL FORCING		HOR. REIN	
WALL DEPTH SCHEDULE		EDULE	WALL DEPTH SCHEDULE		M THIC		WALL SCHEDULE		EDULE	WALL DEPTH		
		SIZE:	3'-6" & RISE	R					SI	ZE: 10'-	-0" (Precast	0n
≥1.17′ - 40′	Α	12	≥1.17′ < 10′	В	10	6"/8"			Inside	Outside		In
			10' < 18'	В	5.5	6"/8"	L	26' - 40'	D7	D7	26' - 40'	
			18' < 29'	С	6.5	6"/8"				SI	ZE: 12'-0"	
			29' - 40'	С	3.5	6"/8"			Inside	Outside		In
		5.	IZE: 4'-0"				. [≥	≥1.17′ < 14′	B10	B10	≥1.17′ < 10	' C
≥1.17′ - 40′	A	12	≥1.17' < 6'	В	10	6"/8"	L	14' < 25'	C6.5	C6.5	10' < 17'	
			6' < 10'	В	5.5	6"/8"	L	25' - 40'	D7	D7	17' < 24'	
			10' < 20'	С	6.5	6"/8"	L				24' - 40'	
			20' < 28'	С	3.5	6"/8"			51	ZE: 12'-	-0" (Precast	0n
			28' - 40'	D	4.5	6"/8"			Inside	Outside		In
		S	IZE: 5'-0"				_ ≥	≥1.17' < 12'	B10	B10	≥1.17′ < 10	,
≥1.17' - 40'	A	12	≥1.17' < 5'	В	5.5	6"/8"		12' < 24'	C6.5	C6.5	10' < 17'	D
			5' < 9'	С	6.5	6"/8"		24' - 40'	D7	D7	17' < 23'	T
			9' < 15'	С	3.5	6"/8"					23' < 32'	T .
			15' < 22'	D	4.5	6"/8"					32' - 40'	T
			22' - 40'	E	<u> 3</u>	8"				SI	ZE: 16'-0"	
		5	IZE: 6'-0"						Inside	Outside		In
≥1.17′ < 26′	A	12	≥1.17' < 9'	С	3.5	6"/8"	. ≥	≥1.17′ < 11′	C6.5	C6.5	≥1.17′ < 13	,
			9' < 15'	D	4.5	6"/8"		11' < 20'	D7	D7	13' < 20'	
			15' < 26'	E	<u> 3</u>	8"		20' < 28'	E5	E5	20' < 28'	Τ.
	Inside	Outside		Inside	Outside			28' - 40'	F5	F5	28' - 40'	
26' - 40'	A12	A12	26' - 40'	D7	D7	8"			51	ZE: 16'-	-0" (Precast	0n
		5.	IZE: 7'-0"						Inside	Outside		In
	Inside	Outside		Inside	Outside		. -	≥1.17' < 10'	C6.5	C6.5	≥1.17' < 9'	Τ,
≥1.17' < 25'	A12	A12	≥1.17' < 7'	B10	B10	8"		10' < 18'	D7	D7	9' < 13'	D
26' - 40'	B10	D10						18' < 25'			4.01 4.01	
	DIU	B10	7' < 10'	B5.5	B5.5	8"	'	18 < 25	E5	E5	13' < 19'	
	БІО	BIU	7' < 10' 10' < 20'	B5.5 C6.5	B5.5 C6.5	8" 8"		18 < 25 25' - 35'	F5	E5 F5	13' < 19' 19' < 27'	
	БТО	ВПО				_						+
	БПО	BIU	10' < 20'	C6.5	C6.5	8"				F5	19' < 27'	
	B10		10' < 20' 20' < 30'	C6.5	C6.5	8" 8"			F5	F5	19' < 27' 27' - 35' ZE: 20'-0"	In
			10' < 20' 20' < 30' 30' - 40' IZE: 8'-0"	C6.5 D7 E5	C6.5	8" 8" 8"			F5	F5 SI	19' < 27' 27' - 35' ZE: 20'-0"	+
≥1.17' < 20'	Inside	S. Outside	10' < 20' 20' < 30' 30' - 40' IZE: 8'-0"	C6.5 D7 E5	C6.5 D7 E5	8" 8" 8"	2	25' - 35' ≥1.17' < 10'	F5 Inside	F5 SI Outside	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8'	+
≥1.17' < 20' 20' - 40'	Inside	S. Outside	10' < 20' 20' < 30' 30' - 40' IZE: 8'-0"	C6.5 D7 E5	C6.5 D7 E5	8" 8" 8"		25' - 35'	F5 Inside C6.5	F5 SI Outside C6.5	19' < 27' 27' - 35' ZE: 20'-0"	+
	Inside A12	S Outside A12	$ \begin{array}{r} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ 1ZE: 8'-0" \\ \geq 1.17' < 6' \end{array} $	C6.5 D7 E5 Inside B5.5	C6.5 D7 E5 Outside B5.5	8" 8" 8"	A	25' - 35' ≥1.17' < 10' 10' < 17'	F5 Inside C6.5 D7	F5 SI Outside C6.5 D7	$ \begin{array}{r} 19' < 27' \\ 27' - 35' \end{array} $ $ ZE: 20'-0" $ $ \geq 1.17' < 8' \\ 8' < 12' $	+
	Inside A12	S Outside A12	$ \begin{array}{r} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ 12E: 8'-0" \\ $	C6.5 D7 E5 Inside B5.5 C6.5	C6.5 D7 E5 Outside B5.5 C6.5	8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17'	F5 Inside C6.5 D7 E5	F5 SI Outside C6.5 D7 E5	$ \begin{array}{r} 19' < 27' \\ 27' - 35' \\ ZE: 20'-0" \\ $	
	Inside A12	S Outside A12	$ \begin{array}{r} 10' < 20' \\ 20' < 30' \\ 30' - 40' \end{array} $ $ \begin{array}{r} 12E \colon 8' - 0" \\ \end{array} $ $ \begin{array}{r} \geq 1.17' < 6' \\ 6' < 13' \\ 13' < 22' \end{array} $	C6.5 D7 E5 Inside B5.5 C6.5 D7	C6.5 D7 E5 Outside B5.5 C6.5	8" 8" 8" 8" 8"	- N	25' - 35' ≥1.17' < 10' 10' < 17'	Inside C6.5 D7 E5	F5 SI Outside C6.5 D7 E5	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast	On
≥1.17' < 20' 20' - 40'	Inside A12	S Outside A12 C6.5	$ \begin{array}{r} 10' < 20' \\ 20' < 30' \\ 30' - 40' \end{array} $ $ \begin{array}{r} 12E: 8'-0" \\ \hline 6' < 13' \\ 13' < 22' \\ \hline 22' < 31' \\ \hline 31' - 40' \end{array} $	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5	8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30'	Inside C6.5 D7 E5 Inside	F5 SI Outside C6.5 D7 E5 ZE: 20'-	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast	On
	Inside A12 C6.5	S Outside A12 C6.5	$10' < 20'$ $20' < 30'$ $30' - 40'$ $1ZE: 8' - 0"$ $\geq 1.17' < 6'$ $6' < 13'$ $13' < 22'$ $22' < 31'$ $31' - 40'$ $1ZE: 9' - 0"$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5	8" 8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8'	Inside C6.5 D7 E5 S1 Inside C6.5	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5	$19' < 27'$ $27' - 35'$ $ZE: 20' - 0''$ $ \ge 1.17' < 8'$ $8' < 12'$ $12' < 20'$ $20' - 30'$ $-0'' (Precast)$ $ \ge 1.17' < 8'$	On
20' - 40'	Inside A12 C6.5	S Outside A12 C6.5	$10' < 20'$ $20' < 30'$ $30' - 40'$ $1ZE: 8'-0"$ $\geq 1.17' < 6'$ $6' < 13'$ $13' < 22'$ $22' < 31'$ $31' - 40'$ $1ZE: 9'-0"$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5	8" 8" 8" 8" 8" 8" 8"		$25' - 35'$ $\geq 1.17' < 10'$ $10' < 17'$ $17' - 30'$ $\geq 1.17' < 8'$ $8' < 13'$	Inside C6.5 D7 E5 Inside	F5 SI Outside C6.5 D7 E5 ZE: 20'-	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast	On In
20' - 40' ≥1.17' < 12'	Inside A12 C6.5 Inside A12	S Outside A12 C6.5 S Outside A12	$10' < 20'$ $20' < 30'$ $30' - 40'$ $1ZE: 8' - 0"$ $\geq 1.17' < 6'$ $6' < 13'$ $13' < 22'$ $22' < 31'$ $31' - 40'$ $1ZE: 9' - 0"$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5	8" 8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8'	Inside C6.5 D7 E5 SI Inside C6.5 D7	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7	$ \begin{array}{r} 19' < 27' \\ 27' - 35' \\ ZE: 20' - 0'' \\ \geq 1.17' < 8' \\ 8' < 12' \\ 12' < 20' \\ 20' - 30' \\ -0'' (Precast) \\ \geq 1.17' < 8' \\ 8' < 12' \\ 12' < 19' \\ \end{array} $	On In
20' - 40'	Inside A12 C6.5	S Outside A12 C6.5	$\begin{array}{c} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ 1ZE: 8'-0" \\ \\ \geq 1.17' < 6' \\ 6' < 13' \\ 13' < 22' \\ 22' < 31' \\ 31' - 40' \\ 1ZE: 9'-0" \\ \\ \geq 1.17' < 8' \\ \end{array}$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside	8" 8" 8" 8" 8" 8" 8" 8"		$25' - 35'$ $\geq 1.17' < 10'$ $10' < 17'$ $17' - 30'$ $\geq 1.17' < 8'$ $8' < 13'$ $13' - 25'$	Inside C6.5 D7 E5 Inside C6.5 D7 E5 E5 E5 E5 E5	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5	$19' < 27'$ $27' - 35'$ $ZE: 20' - 0''$ $ \ge 1.17' < 8'$ $8' < 12'$ $12' < 20'$ $20' - 30'$ $-0'' (Precast)$ $ \ge 1.17' < 8'$ $8' < 12'$	On In
20' - 40' ≥1.17' < 12' 12' < 28'	Inside A12 C6.5 Inside A12 C6.5	S Outside A12 C6.5 S Outside A12 C6.5	$\begin{array}{c} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ \hline 12E: 8'-0" \\ \hline \\ \geq 1.17' < 6' \\ 6' < 13' \\ 13' < 22' \\ 22' < 31' \\ 31' - 40' \\ \hline 12E: 9'-0" \\ \hline \\ \geq 1.17' < 8' \\ 8' < 15' \\ 15' < 23' \\ \end{array}$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7	8" 8" 8" 8" 8" 8" 8" 8"		$25' - 35'$ $\geq 1.17' < 10'$ $10' < 17'$ $17' - 30'$ $\geq 1.17' < 8'$ $8' < 13'$	Inside C6.5 D7 E5 Inside C6.5 D7 E5 E5 E5 E5 E5	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5	$ \begin{array}{r} 19' < 27' \\ 27' - 35' \\ ZE: 20' - 0'' \\ \geq 1.17' < 8' \\ 8' < 12' \\ 12' < 20' \\ 20' - 30' \\ -0'' (Precast) \\ \geq 1.17' < 8' \\ 8' < 12' \\ 12' < 19' \\ \end{array} $	On In
20' - 40' ≥1.17' < 12' 12' < 28'	Inside A12 C6.5 Inside A12 C6.5	S Outside A12 C6.5 S Outside A12 C6.5 D7	$\begin{array}{c} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ 12E : 8' - 0" \\ \\ \geq 1.17' < 6' \\ 6' < 13' \\ 13' < 22' \\ 22' < 31' \\ 31' - 40' \\ 12E : 9' - 0" \\ \\ \geq 1.17' < 8' \\ 8' < 15' \\ \end{array}$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7 E55 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7 E5 F5	8" 8" 8" 8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8' 8' < 13' 13' - 25' TABLE 4 1. Wall dept	Inside C6.5 D7 E5 Inside C6.5 D7 E5 Inside C6.5 D7 E5	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5	$19' < 27'$ $27' - 35'$ $ZE: 20' - 0''$ $\geq 1.17' < 8'$ $8' < 12'$ $12' < 20'$ $20' - 30'$ $-0'' (Precast)$ $\geq 1.17' < 8'$ $8' < 12'$ $12' < 19'$ $19' - 25'$ It to the top	On In D
20' - 40' ≥1.17' < 12' 12' < 28'	Inside A12 C6.5 Inside A12 C6.5 D7	S Outside A12 C6.5 S Outside A12 C6.5 D7	$\begin{array}{c} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ 12E \colon 8' - 0" \\ \\ \geq 1.17' < 6' \\ 6' < 13' \\ 13' < 22' \\ 22' < 31' \\ 31' - 40' \\ 12E \colon 9' - 0" \\ \\ \geq 1.17' < 8' \\ 8' < 15' \\ 15' < 23' \\ 23' - 40' \\ \\ ZE \colon 10' - 0" \\ \end{array}$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7 E5 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7 E5 F5	8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8' 8' < 13' 13' - 25' TABLE 4 1. Wall dept	Inside C6.5 D7 E5 Inside C6.5 D7 E5 Inside C6.5 D7 E5	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5	$19' < 27'$ $27' - 35'$ $ZE: 20' - 0''$ $ \ge 1.17' < 8'$ $8' < 12'$ $12' < 20'$ $20' - 30'$ $-0'' (Precast)$ $ \ge 1.17' < 8'$ $8' < 12'$ $12' < 19'$ $19' - 25'$	On In D
20' - 40' ≥1.17' < 12' 12' < 28' 28' - 40'	Inside A12 C6.5 Inside A12 C6.5 Inside Inside	S Outside A12 C6.5 S Outside A12 C6.5 D7 SI Outside	$10' < 20'$ $20' < 30'$ $30' - 40'$ $1ZE: 8'-0"$ $\ge 1.17' < 6'$ $6' < 13'$ $13' < 22'$ $22' < 31'$ $31' - 40'$ $1ZE: 9'-0"$ $\ge 1.17' < 8'$ $8' < 15'$ $15' < 23'$ $23' - 40'$ $ZE: 10'-0"$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7 E5 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7 E5 F5	8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8' 8' < 13' 13' - 25' TABLE 4 1. Wall dept and to th 2. Wall heig	Inside C6.5 D7 E5 Inside C6.5 D7 E5 Inside C6.5 D7 E5 h is me top whis tis ti	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5 TES: easured of the ii.	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast ≥1.17' < 8' 8' < 12' 12' < 19' 19' - 25' 'to the top intermediate ance between	On In D
20' - 40' ≥1.17' < 12' 12' < 28'	Inside A12 C6.5 Inside A12 C6.5 Inside Inside	S Outside A12 C6.5 S Outside A12 C6.5 D7	$\begin{array}{c} 10' < 20' \\ 20' < 30' \\ 30' - 40' \\ 12E \colon 8' - 0" \\ \\ \geq 1.17' < 6' \\ 6' < 13' \\ 13' < 22' \\ 22' < 31' \\ 31' - 40' \\ 12E \colon 9' - 0" \\ \\ \geq 1.17' < 8' \\ 8' < 15' \\ 15' < 23' \\ 23' - 40' \\ \\ ZE \colon 10' - 0" \\ \end{array}$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7 E5 Inside	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7 E5 Outside C6.5 D7 C6.5 D7 C7 C8 C8 C8 C8 C8 C8 C8 C8 C	8" 8" 8" 8" 8" 8" 8" 8" 8"		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8' 8' < 13' 13' - 25' TABLE 4 1. Wall dept and to the of upper	Inside C6.5 D7 E5 Inside C6.5 D7 E5 NO h is me top what is the slab.	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5 F5 F6 TES: easured of the ista Maximu	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast ≥1.17' < 8' 8' < 12' 12' < 19' 19' - 25' ' to the top intermediate ance between m wall heigh	On On D Of sla
20' - 40' ≥1.17' < 12' 12' < 28' 28' - 40' ≥1.17' < 10'	Inside A12 C6.5 Inside A12 C6.5 D7 Inside B10	S Outside A12 C6.5 S Outside A12 C6.5 D7 SI Outside B10	$10' < 20'$ $20' < 30'$ $30' - 40'$ $1ZE: 8'-0"$ $\geq 1.17' < 6'$ $6' < 13'$ $13' < 22'$ $22' < 31'$ $31' - 40'$ $1ZE: 9'-0"$ $\geq 1.17' < 8'$ $8' < 15'$ $15' < 23'$ $23' - 40'$ $ZE: 10'-0"$ $\geq 1.17' < 10'$ $10' < 17'$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7 E5 F5 Inside D7	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7 E5 C7 C7 C8 C9 C9 C9 C9 C9 C9 C9 C9 C9	8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8' 8' < 13' 13' - 25' TABLE 4 1. Wall dept and to the and to the exceeding	Inside C6.5 D7 E5 S1 Inside C6.5 D7 E5 NO h is me top what is t slab. g 5', or	SI Outside C6.5 D7 E5 Outside C6.5 D7 E5 Outside C6.5 D7 E5 TES: easured of the indeximue 10' for	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast ≥1.17' < 8' 8' < 12' 12' < 19' 19' - 25' 'to the top intermediate ance between mediate and height wall length.	On On In Of Sla
	Inside A12 C6.5 Inside A12 C6.5 D7 Inside B10 C6.5	S Outside A12 C6.5 S Outside A12 C6.5 D7 SI Outside B10 C6.5	$10' < 20'$ $20' < 30'$ $30' - 40'$ $1ZE: 8'-0"$ $\geq 1.17' < 6'$ $6' < 13'$ $13' < 22'$ $22' < 31'$ $31' - 40'$ $1ZE: 9'-0"$ $\geq 1.17' < 8'$ $8' < 15'$ $15' < 23'$ $23' - 40'$ $ZE: 10'-0"$ $\geq 1.17' < 10'$	C6.5 D7 E5 Inside B5.5 C6.5 D7 E5 F5 Inside C6.5 D7 E5 F5 Inside C7 E5 F5	C6.5 D7 E5 Outside B5.5 C6.5 D7 E5 F5 Outside C6.5 D7 E5 F5 Outside C6.5 D7 E5 F5	8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8" 8		25' - 35' ≥1.17' < 10' 10' < 17' 17' - 30' ≥1.17' < 8' 8' < 13' 13' - 25' TABLE 4 1. Wall dept and to the 2. Wall heig of upper exceeding 3. Wall leng	Inside C6.5 D7 E5 Inside C6.5 D7 E5 Inside C6.5 D7 E5 h is metop this to slab. g 5', or this exitance.	F5 SI Outside C6.5 D7 E5 ZE: 20'- Outside C6.5 D7 E5 TES: easured of the i. he dista Maximu 10' for ceeding	19' < 27' 27' - 35' ZE: 20'-0" ≥1.17' < 8' 8' < 12' 12' < 20' 20' - 30' -0" (Precast ≥1.17' < 8' 8' < 12' 12' < 19' 19' - 25' 'to the top intermediate ance between mediate and height wall length.	of sla

	DEPTH		EDULE	DEPTH		EDULE	F
				-0" (Precast	Only)		
			Outside			Outside	
	26' - 40'	D7	D7	26' - 40'	F5	F5	9"
			SI	ZE: 12'-0"			
			Outside			Outside	
	≥1.17' < 14'	B10	B10	≥1.17′ < 10′	C6.5	C6.5	10'
	14' < 25'	C6.5	C6.5	10' < 17'	D7	D7	10'
	25' - 40'	D7	D7	17' < 24'	E5	E5	10'
				24' - 40'	F5	F5	10'
		Si	ZE: 12'	-0" (Precast	Only)		
		Inside	Outside		Inside	Outside	
	≥1.17' < 12'	B10	B10	≥1.17′ < 10′	D7	D7	9"
	12' < 24'	C6.5	C6.5	10' < 17'	D4.5	D4.5	9"
	24' - 40'	D7	D7	17' < 23'	E5	E5	9"
				23' < 32'	F5	F5	9"
				32' - 40'	G5	G5	9"
			SI	ZE: 16'-0"			
		Inside	Outside		Inside	Outside	
	≥1.17′ < 11′	C6.5	C6.5	≥1.17′ < 13′	D7	D7	10'
	11' < 20'	D7	D7	13' < 20'	E5	E5	10'
	20' < 28'	E5	E5	20' < 28'	F5	F5	10'
	28' - 40'	F5	F5	28' - 40'	G5	G5	10'
		Si	ZE: 16'	-0" (Precast	Only)		
		Inside	Outside		Inside	Outside	
	≥1.17' < 10'	C6.5	C6.5	≥1.17' < 9'	D7	D7	9"
	10' < 18'	D7	D7	9' < 13'	D4.5	D4.5	9"
	18' < 25'	E5	E5	13' < 19'	E5	E5	9"
	25' - 35'	F5	F5	19' < 27'	F5	F5	9"
				27' - 35'	G5	G5	9"
			SI	ZE: 20'-0"			
		Inside	Outside		Inside	Outside	
	≥1.17' < 10'	C6.5	C6.5	≥1.17' < 8'	D7	D7	10'
	10' < 17'	D7	D7	8' < 12'	E5	E5	10'
	17' - 30'	E5	E5	12' < 20'	F5	F5	10'
				20' - 30'	G5	G5	10'
		Si	ZE: 20'	-0" (Precast	Only)	· ·	
		Inside	Outside		Inside	Outside	
	≥1.17' < 8'	C6.5	C6.5	≥1.17′ < 8′	D4.5	D4.5	9"
	8' < 13'	D7	D7	8' < 12'	E5	E5	9"
İ	13' - 25'	E5	E5	12' < 19'	F5	F5	9"
ŀ				19' - 25'	G5	G5	9"

HORIZONTAL

REINFORCING

- 1. Wall depth is measured to the top of the bottom slab for boxes and to the top of the intermediate slab for risers.
- 2. Wall height is the distance between top of lower slab to bottom of upper slab. Maximum wall height is 12' for wall lengths exceeding 5', or 10' for wall lengths exceeding 12'.
- 3. Wall lengths exceeding 6'-0" require two layers of reinforcing (See Table 4) with 2" of cover from the horizontal bars to the inside and outside faces for each layer.
- 4. Wall lengths exceeding the dimensions or depths shown in Table 4, or 12'-0" diameter require a special design.
- 5. Wall thickness and reinforcing for rectangular structures is based on the longer wall length.

TABLES 1, 2, 3, AND 4

REVISION 11/01/20

DESCRIPTION:



TABLE 5 - SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES (ALL SLABS 8" THICK EXCER SHORT WAY AND LONG WAY)

CHOR	- (ALL S	LONG-WAY				
3nuk	Γ-WAY T	LONG	5-VV A T			
SLAB DEPTH	SCHEDULE (Bars A)	SLAB DEPTH	SCHEDULE (Bars B)			
			(
	SIZE: 3'-6"	x UNLIMITED				
≥0.5′ < 8′	B10	≥0.5′ < 24′	B10			
8' < 13'	B5.5	24'-40'	B5.5			
13' < 31'	C6.5					
31'-40'	D7					
	SIZE: 4' x	UNLIMITED				
≥0.5′ < 7′	B5.5	≥0.5′ < 15′	B10			
7' < 19'	C6.5	15' < 29'	B5.5			
19' < 31'	D7	29'-40'	C6.5			
31'-40'	E5					
	6175					
		5' x 5'	2			
≥0.5′ < 3′	C6.5	≥0.5′ < 3′	C6.5			
3' < 7'	B5.5	3' < 13'	C6.5			
7' < 22'	C6.5	13' < 22'	D7			
22' < 29'	D7	22' < 29'	D4.5			
29'-40'	E5	29'-40'	<u>E5</u>			
		5' x 6'				
≥0.5′ < 12′	C6.5	≥0.5′ < 3′	C6.5			
12' < 26'	D7	3' < 9'	B5.5			
26'-40'	E5	9' < 23'	C3.5			
		23' < 35'	D4.5			
		35'-40'	E5			
		5' x 7'				
≥0.5′ < 10′	C6.5	≥0.5′ < 10′	B5.5			
10' < 20'	D7	10' < 31'	C3.5			
20' < 34'	E5	31'-40'	D4.5			
34'-40'	F 5					
		5' x 8'				
≥0.5' < 7'	C6.5	≥0.5′ < 8′	B10			
7' < 13'	D7	8' < 17'	B5.5			
13' < 24'	E5	17' < 25'	C6.5			
24'-40'	F 5	25'-40'	C3.5			
	SIZE:	5' x 9'				
≥0.5' < 8'	C6.5	≥0.5' < 14'	B10			
8' < 14'	D7	14' < 24'	B5.5			
14' < 25'	E5	24' < 34'	C6.5			
25'-40'	F5	34'-40'	C3.5			
	T	UNLIMITED				
≥0.5′ < 8′	C6.5	≥0.5′ < 14′	B10			
	_					
8' < 14'	D7	14' < 24'	B5.5			
	D7 E5 F5	14' < 24' 24' < 34' 34'-40'	C6.5 C3.5			

	SHORT	T-WAY	LONG-WAY			
	LAB PTH	SCHEDULE (Bars A)	SLAB DEPTH	SCHEDULE (Bars B)		
		SIZE:	6' x 6'			
≥0.5′	< 13'	C6.5	≥0.5' < 10'	C3.5		
	< 23'	D7	10' < 18'	D4.5		
	'-40'	E5	18' < 27'	E5		
			27' < 33'	E3		
			33'-40'	F5		
		SIZE:	6' x 7'			
≥0.5	′ < 8′	C6.5	≥0.5′ < 8′	C6.5		
8' <	< 16'	D7	8' < 12'	C3.5		
16'	< 28'	E5	12' < 21'	D4.5		
28	'-40'	F5	21' < 28'	E5		
			28' < 35'	E3		
			35'-40'	F5		
		SIZE:	6' x 8'			
≥0.5	' < 6'	C6.5	≥0.5′ < 6′	B5.5		
	< 13'	D7	6' < 11'	C6.5		
	< 22'	E5	11' < 17'	C3.5		
	< 35'	F5	17' < 22'	D4.5		
	'-40'	G5	22' < 32'	E5		
			32'-40'	E3		
		SIZE:	6' x 9'			
≥0.5	' < 8'	D7	≥0.5′ < 8′	B5.5		
	< 14'	E5	8' < 14'	C6.5		
	< 24'	F5	14' < 21'	C3.5		
	'-34'	G5	21' < 25'	D4.5		
			25'-34'	E5		
			UNLIMITED			
>0.5	' < 8'	D7	≥0.5′ < 8′	B5.5		
8' <	< 14'	E5	8' < 14'	C6.5		
	< 24'	F 5	14' < 21'	C3.5		
	'-34'	G5	21' < 25'	D4.5		
			25'-34'	E5		
		SIZE:	7' x 7'			
>0.5	' < 8'	C6.5	≥0.5′ < 4′	C6.5		
	< 15'	D7	4' < 7'	C3.5		
	< 26'	E5	7' < 11'	D4.5		
	'-40'	F5	11' < 22'	E3		
		, ,	22' < 32'	F3.5		
			32'-40'	G3.5		
		SIZE:	7' x 8'			
≥0.5	' < 5'	C6.5	≥0.5′ < 5′	C6.5		
	< 11'	D7	5' < 8'	C3.5		
	< 19'	E5	8' < 13'	D4.5		
	< 30'	F 5	13' < 22'	E3		
	'-40'	G5	22' < 30'	F3.5		
			30'-40'	G3.5		
		ı	7' x 9'			
	< 9'	D7	≥0.5′ < 7′	C6.5		
	< 15'	E5	7' < 10'	C3.5		
	< 25'	F5	10' < 14'	D4.5		
25'	- 34'	G5	14' < 21'	E5		
		l	21' < 29'	F5		

SLAB SCHEDULE SLAB SCHED DEPTH (Bars A) DEPTH (Bars SIZE: 8' x 8' $\geq 0.5' < 10'$ D7 $\geq 0.5' < 9'$ D4 $10' < 19'$ E5 9' < 13' E5 $19'-30'$ F5 13' < 18' F5 $18' < 23'$ F3 $23'-30'$ G3	LONG-WAY			
$\geq 0.5' < 10'$ D7 $\geq 0.5' < 9'$ D4 10' < 19' E5 $9' < 13'$ E5 19'-30' F5 $13' < 18'$ F5 18' < 23' F3				
10' < 19'				
19'-30' F5 13' < 18' F5 18' < 23' F3	5			
18' < 23' F3.				
23'-30' G3.	5			
	5			
SIZE: 8' x 9'				
$\geq 0.5' < 8'$ D7 $\geq 0.5' < 7'$ D7				
8' < 14' E5 7' < 9' D4	5			
14' < 23' F5 9' < 15' E3				
23'-31' G3.5 15' < 20' F5				
20' < 23' F3.5	5			
23'-31' G3.5	5			
SIZE: 9' x 9'				
$\geq 0.5' < 8'$ D7 $\geq 0.5' < 7'$ D4				
8' < 14' E5 7' < 10' E5				
14' < 22' F5 10' < 17' F3.5	5			
17' < 22' G3.5	5			
SIZE: 9'x9'x10" SLAB THICKNESS				
22' < 36' F5 $22' < 31'$ F3.5	5			
36'-40' G5 31'-40' G3.5	5			
SIZE: 10'x10'x10" SLAB THICKNESS				
$\geq 0.5' < 7'$ $C6.5$ $0.5' < 6'$ $C6.5$	5			
7' < 10' D7 $6' < 9'$ D4	5			
10' < 18' E5 9' < 15' E5				
18' < 27' F5 15' < 22' F5				
27'-32' G5 22'-32' G3.5	5			
SIZE: 12'x12'x12" SLAB THICKNESS				
≥0.5' < 10' D7 ≥0.5' < 8' D7				
10' < 16' E5 8' < 14' E5				
16' < 25' F5 14' < 22' F5				
25'-35' G5 22' < 30' G5				
30'-35' H4				

SLAB AND WALL DESIGN TABLE NOTES

- 1. Size is the inside dimension(s) of a structure.
- 2. Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
- 3. Bottom Slabs for precast 3'-6" x 3'-6" rectangular structures at 15' depth or less, may be 6" thick.
- 4. Slab depth is measured from finished grade to top of slab.
- 5. Reinforcing schedules with larger areas of steel may be substituted for schedules with smaller bar or wire spacing, except that Schedule B10 may not be substituted for Schedule A6. See Index 425-001 for allowable bar spacing adjustments when larger areas of reinforcing are substituted.

	D STRUCT	
KOUN	J SIRUCI	UKES
SLAB	SLAB	REINF.
DEPTH	THICKNESS	(2-WAY)
22, , , ,	77716777233	SCHEDULE
SIZ	E: 3'-6" DIAMET	ΓER
2'-15'	6" Precast	C6.5
0.5' < 30'	8"	A6
30'-40'	8"	B5.5
	E: 4'-0" DIAMET	TER
≥0.5′ < 19′	8"	A6
19' < 30'	8"	B5.5
30'-40'	8"	C6.5
	E: 5'-0" DIAMET	
≥0.5′ < 15′	8"	B5.5
15' < 26'	8"	C6.5
26' < 35'	8"	D7
35'-40'	8"	D4.5
	E: 6'-0" DIAMET	
≥0.5′ < 9′	8"	B5.5
9' < 15'	8"	C6.5
15' < 22'	8"	C3.5
22' < 30'	8"	D4.5
30'-40'	8" E: 7'-0" DIAMET	E5
≥0.5' < 8'	8"	C3.5
8' < 16'	8"	D4.5
16' < 23'	8"	E5
23' < 27'	8"	E3
27'-40'	8"	F3.5
	E: 8'-0" DIAME	
≥0.5′ < 10′	8"	D4.5
10' < 16'	8"	E5
16' < 19'	8"	E3
19' < 29'	8"	F3.5
29'-40'	10"	F5
SIZI	E: 10'-0" DIAME	TER
≥0.5′ < 12′	10"	D4.5
12' < 20'	10"	E5
20' < 28'	10"	F5
28'-40'	10"	G3.5
	E: 12'-0" DIAME	
≥0.5′ < 8′	10"	D4.5
8' < 13'	10"	E5
13' < 18'	10"	F 5
18' < 26'	10"	G3.5
26'-40'	12"	G3.5

TABLE 6 - SLAB DESIGNS

TABLES 5 AND 6

REVISION 11/01/20

DESCRIPTION: