				T	ı	T	T	DIMEN:	SIONS					2:1 SLOPE	DIMENSION	2:1	1	SIIMATED	1	IES	3:1 SLOPE I	DIMENSION	3:1 8		STIMATED	1	1
AM. D	/T	A	Hs	Н	FT	FT1	SKEV	WING	θ	L	B BW	J1	J2	W	К	STEM REINF.	BOTTOM FOOTING REINF.	TOP FOOTING REINF.	STEEL REINF.** (LBS)	CONC. CU. YDS.	W	K	STEM REINF.	BOTTOM FOOTING REINF.	TOP FOOTING REINF.		CONC. CU. YDS.
		_					90°	ВОТН	45°-00'	37°-30'		1'-9"	1'-9"	1'-5"	1'-2 1/2"				21	0.72	2'-1 1/2"	1'-11"				25	0.91
18" 6								LONG					41.0.2/41	1'-7 3/4" 1'-5 3/4"					0.70	2'-5 5/8"	2'-3 1/2"						
							75°	SHORT	52°-30'	3'-1 5/8"		1'-8 7/8"	1'-9 3/4"	1'-3 1/8"	/8" 1'-0 1/8"	WWR@	WWR@	WWR @	21	0.73	1'-10 3/4"	1'-7 3/4"	WWR @   0.03 IN <sup>2</sup> /FT	WWR @ 0.03 IN <sup>2</sup> /FT	WWR @ - 0.04 IN <sup>2</sup> /FT -	26	0.93
	6" 6	6"	1'-6"	" 2'-0"	9"	1'-6"	60°	LONG	30°-00'	3'-3 3/4"	1'-3"   3'-0"	1'-9 1/2"	1'- 11 3/8"	2'-0"	1'-10 3/8"	0.03 IN <sup>2</sup> /FT	_		22	0.78	3'-0"	2'-10 3/8"				27	0.99
								SHORT	60°-00' 22°-30' 67°-30' 3'-8 3/8" 45°-00' 3'-8 1/2"					1'-1 7/8"	0'-10 3/8"						1'-8 3/4"	1'-5 3/8"	_				<del>                                     </del>
							45°	LONG SHORT		3'-8 3/8"		1'-11 3/8"	2'-2 1/4"	2'-7 3/8" 2'-6 1/4" 1'-1" 0'-9"				25	0.89	3'-11" 1'-7 1/2"	3'-9 7/8" 1'-3 1/2"	_			31	1.15	
							90°	BOTH			2'-0 3/4"	2'-0 3/4"	2'-10"	2'-7 1/2"				42	1.40	4'-2 7/8"	4'-0 3/8"				55	1.87	
							75°	LONG	37°-30'	3'-9 3/8"		2'-0 3/4"	2'-1 5/8"	3'-3 3/8" 3'-1 3/8"			@   WWR @	43	1.43	4'-11 1/8"	4'-9 1/8"	WWR @ 0.07 IN <sup>2</sup> /FT	WWR @ 0.03 IN <sup>2</sup> /FT	WWR @ - 0.05 IN <sup>2</sup> /FT	56	1.91	
						2'-0"	73	SHORT	52°-30'			2-13/6	2'-6 1/4"	2'-3 1/4"	WWR@	WWR @		45		3'- 9 3/8"	3'- 6 3/8"					1.91	
24"   6"	5"   1	'-0"	2'-0"	-0"   3'-0"	9"		60°	LONG	30°-00'	<b>───</b> 4'-0 1/4" ∣	1'-3"   3'-0"	2'- 1 3/4"	2'-3 5/8"	4'-0"	3'-10 3/8"	0.07 IN <sup>2</sup> /FT			47	1.54	6'-0" 5'-10 3/8"				61	2.06	
								SHORT	60°-00' 22°-30' 67°-30' 4'-6 3/8"	•			2'- 3 3/4" 5'-2 3/4"	2'-0 1/4" 5'-1 1/2"	-	<b>!</b>				3'-5 5/8" 7'-10 1/8"	3'-2 1/8" 7'-8 7/8"						
							45°	SHORT			2'-4 3/8"	2'-7 1/4"	2'- 2"		1			53	1.78	3'-3"	2'-11"				69	2.39	
30" 6'							90°	вотн	45°-00'			2'-4 3/8"	2'-4 3/8"					68	2.07	6'-4 3/8"	6'-1 7/8"				91	2.82	
	6" 1'-	1'-0" 2'					75°	LONG	37°-30'	4'-4 3/4"	]	2'-4 1/2"	2'-5 3/8"	4'-11 1/8"	4'-9 1/8"				69	2.12	7'-4 3/4"	7'-2 5/8"		,		93	2.89
			01.011		9"	2'-3"		SHORT	52°-30'	41.011   01.011			3'-9 3/8"	3'-6 3/8"	WWR@	WWR@	WWR @			5'-8 1/8"	5'-5 1/8"	WWR @	WWR@	WWR@			
			2'-0"	3'-6"			60°	LONG SHORT		4'-8 3/8"	1'-3"   3'-0"	2'-5 3/4"	2'-7 5/8"	6'-0" 3'-5 5/8"	5'-10 3/8" 3'-2 1/8"	0.09 IN <sup>2</sup> /FT			75	2.29	9'-0" 5'-2 3/8" 11'-9 1/8"	8'-10 3/8" 4'-10 7/8"	0.09 IN <sup>2</sup> /FT		0.06 IN <sup>2</sup> /FT	100	3.12
								LONG	+	22°-30' 67°-30' 5'-4 1/4"				7'-10 1/8"	7'-8 7/8"							11'-7 7/8"					<u> </u>
		_		<u>L</u>			45° 	SHORT				2'-9 1/4"	3'-0 1/8"	3'-3"	2'-11"				87	2.66	4'-10 1/2"	4'-6 1/2"	1	<u>L</u> _		116	3.63
							90°	вотн	+	45°-00' 4'-11 1/4"  37°-30' 52°-30'  30°-00' 60°-00'  22°-30' 6'-2 1/8"		2'-8 1/8"	2'-8 1/8"	5'-7 7/8"	5'-5 3/8"				109	2.82	8'-5 7/8"	8'-3 3/8"	1/4" 3/4" 0 3/8" 5/8" WWR @ 0.12 IN <sup>2</sup> /FT		WWR @ - 0.07 IN <sup>2</sup> /FT	147	3.89
	6" 1'-	1'-0" 2				2'-6"	75°	LONG	T 52°-30'		1'-3" 3'-0"	2'-8 1/4"	2'-9 1/4"	6'-6 7/8"	6'-4 7/8"	4			111	2.89	9'-10 1/4" 7'-6 3/4" 12'-0" 6'-11 1/8"	9'-8 1/4"				151	3.98
6"			ク'-0"	   4'₋∩"	9"			SHORT						5'-0 1/2" 8'-0"	4'-9 1/2" 7'-10 3/8"		WWR@					7'-3 3/4" 11'-10 3/8"					
Ĭ   '			2 0				60°	SHORT				2'-10"	2'-11 7/8"	4'-7 3/8"	U.12 IN	0.12 IN <sup>2</sup> /FT	0.04 IN <sup>2</sup> /FT	0.07 IN <sup>2</sup> /FT	120	3.13		6'-7 5/8"				163	4.31
							450	LONG				21 2 4 / 4 !!	21 5 4/0"	10'-5 3/8"	10'-4 1/8"	1			120	2.62	15'-8 1/8"	15'-7"				100	F 00
							45°	SHORT	67°-30'	0-2 1/0		3'-2 1/4"	3'-5 1/8"	4'-4"	4'-0"				139	3.63	6'-5 7/8"	6'-1 7/8"				189	5.02
42" 6			2'-0"				90°	BOTH	45°-00'	5'-6 1/2"		2'-11 3/4"	2'-11 3/4"	7'-0 7/8"	6'-10 3/8"		_	WWR @ 0.07 IN <sup>2</sup> /FT	151	3.52	10'-7 1/4"	10'- 4 3/4"			WWR @ -	208	4.88
				4'-6"	9"		75°	LONG SHORT	37°-30' 52°-30'	5'-8"		3'-0"	3'-1"	8'-2 1/2" 6'-3 5/8"	8'-0 1/2" 6'-0 5/8"				154	3.61	12-3 7/8" 9'-5 1/2"	12'-1 3/4" 9'-2 1/2"	-	WWR @ 0.04 IN <sup>2</sup> /FT		212	5.00
	6" 1'-	'-0"				2'-6"		LONG	30°-00'		1'-3" 3'-0"			10'-0" 9'-10 3/8" 5'-9 1/4" 5'-5 3/4" 13'-0 3/4" 12'-11 5/8"		WWR @					15'-0"	14'-10 3/8"	WWR @				
							60°	SHORT	60°-00'	°-00' 6'-1" °-30' 7'-0"		3'-2 1/8"	3'-4"			0.16 IN <sup>2</sup> /FT			166	3.90	8'-7 7/8"	8'-4 1/2"	0.16 IN <sup>2</sup> /FT		0.07 IN <sup>2</sup> /FT	230	5.42
							45°	LONG	22°-30'			3'-7 1/8"	3'-10"					193	4.54	19'-7 1/8"	19'-6"				266	6.31	
								SHORT	67°-30'					5'-5"	5'-0 7/8"						8'-1 3/8"	7'-9 3/8"					
48" 9"							90°	BOTH LONG	45°-00' 37°-30'	6'-2"	_	3'- 4 3/4"	3'- 4 3/4"	8'-5 7/8" 9'-10 1/4"	8'-2 1/8" 9'-7 1/4"	_			209	5.51	12'-8 3/4" 14'-9 3/8"	12'-5" 14'-6 3/8"	-			288	7.69
						2'-9"	75°	SHORT	52°-30' 6'-3 3/4" 30°-00' 6'-9 3/8"	6'-3 3/4"		3'-4 7/8"	3'-6 1/4"	7'-6 3/4"		-	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	215	5.65	11'-4 1/8"	10'-11 5/8"	-	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1	296	7.89
	9" 1	1'-0"	2'-0"	5'-0"	9"		60°	LONG		1'-6" 3'-9"	3'-7 1/8"	3'-9 7/8"	12'-0"	11'-9 5/8"	- WWR @ - 0.10 IN <sup>2</sup> /FT	0.06 IN <sup>2</sup> /FT	0.10 IN <sup>2</sup> /FT	232	6.11	18'-0"	17'-9 5/8"	─ WWR @   0.10 IN²/FT	0.06 IN <sup>2</sup> /FT	WWR @ - 0.10 IN <sup>2</sup> /FT	320	8.54	
								SHORT 60°-00'	60°-00'	0 0 0/0		0 7 170	0 0 770	6'-11 1/8"	6'-5 7/8"	-	0.00 11 77 1		202	0.11	10'-4 3/4"	9'-11 1/2"		0.00 114 71 1	0.10 IN-7F1	520	Ŭ.Ŭ∓ ├───
							45°	LONG SHORT	22°-30' 67°-30'	7'-10"		4'-0 3/4"	4'-5"	15'-8 1/8" 6'-5 7/8"	15'-6 3/8" 5'-11 7/8"				270	7.10	23'-6 1/4" 9'- 8 7/8"	23'-4 1/2" 9'-2 7/8"	-			372	9.95
							90°	BOTH	45°-00'	6'-11 1/2"		3'-9 1/2"	3'-9 1/2"	9'-10 3/4"	9'-7"				294	6.74	14'-10 1/4"	14'-6 1/2" 16'-11 7/8"			-	405	9.42
54" 9"								LONG	37°-30'					11'-6"	11'-3"						17'-3"						
							75°	SHORT	G 30°-00' RT 60°-00' G 22°-30'		3'-9 3/4"	3'-11 1/8"	8'-9 7/8"	8'-5 3/8"	l l	WWR@		301	6.91	13'-2 7/8"	12'-10 3/8" WWR @	WWR@	WWR@	416	9.66		
	9"   1	'-0"	2'-0"	5'-6"	9"	3'-0"	60°	LONG		1'-6"   3'-9"	4'-0 3/8"	4'-3 1/8"	14'-0"	13'-9 5/8"				326	7.46	21'-0"	20'-9 5/8"	- 0.12 IN <sup>2</sup> /FT			451	10.46	
								SHORT						8'-1" 18'-3 1/2"	7'-7 3/4" 18'-1 3/4"	-				<u> </u>	12'-1 1/2" 27'-5 1/4"	11'-8 1/4" 27'-3 1/2"					
							45°	SHORT	67°-30'	8'-9 7/8"		4'-6 3/4"	4'-10 7/8"	3" 7'-6 7/8" 7'-0 7/8"				378	8.67	11'-4 3/8"	10'-10 3/8"	-			525	12.18	
							90°	ВОТН	45°-00'	7'-6 3/4"		4'-1 1/8"	4'-1 1/8"	12'-0 1/4"	1/4" 11'-8 1/2"				434	8.54	18'-0 3/8"	17'-8 5/8"				605	12.00
						3'-3"	75°	LONG	37°-30'	7'-30' 7'-8 7/8" 7-30' 7'-8 7/8" 1'-6		4'-1 1/2"	4'-2 7/8"	13'-11 1/2"	13'-8 1/2"	_			444	8.75	20'-11 3/8"	20'-8 1/4"				620	12.31
O"	9"   1'		01.0"	61.0"	O"		. •	SHORT	52°-30'		11.6"			10'-8 5/8"	10'-4 1/8" WWR @	WWR@	WWR@			16'-0 7/8"	15'-8 3/8"	WWR@	WWR@	WWR@			
0"   9		-ა"	∠`-0"	6'-3"	9"		60°	LONG SHORT	30°-00' 60°-00'		1'-6"   3'-9"	4'-4 3/8"	4'-7 1/4"		16'-9 5/8" 9'-4 5/8"	0.16 IN <sup>2</sup> /FT	0.08 IN <sup>2</sup> /FT		481	9.47	25'-6" 14'-8 5/8"	25'-3 5/8" 14'-3 1/2" 0.16 IN <sup>2</sup> /FT	0.16 IN <sup>2</sup> /FT			671	13.33
								LONG	22°-30'	c. –		4'-11 5/8"		22'-2 1/2"	22'-0 3/4"	1					33'-3 3/4"	33'-2"					. –
							45°	SHORT	67°-30'	9'-7 5/8"			5'-3 7/8"	9'-2 3/8"	8'-8 3/8"	-			560	11.02	13'-9 5/8"	13'-3 5/8"				783	15.54
							90°	вотн	45°-00'	45°-00' 8'-2 1/4" 37°-30' 8'-4 5/8"		4'-4 7/8"	4'-4 7/8"	13'-5 1/4"	13'-1 1/2"		WWR@	WWR@	553	9.93	20'-1 7/8"	19'-10 1/8"				772	13.99
					9"		75°	LONG	37°-30'			4'-5 3/8"	4'-6 3/4"	15'-7 1/4"	15'-4 1/4"	1			568	10.18	23'-4 7/8"	23'-1 7/8"	_			792	14.34
66" 9	ן ייב	'_3"	ט יט	6'-9"		3-6"		SHORT	52°-30'		1'-6" 3'-0			11'-11 3/4" 19'-0"	11'-7 1/4" 18'-9 5/8"	WWR@					17'-11 1/2"	17'-7 1/8"	WWR@	WWR@			
~   ;		- <b>3</b>	∠ -U	0-8	9	3-6	60°	LONG SHORT	9'-0 1/2" 22°-30' 67°-30' 10'-5 5/8"	1-0   3-8	4'-8 5/8"	4'-11 3/8"	19'-0"	10'-6 3/8"	0.19 IN <sup>2</sup> /FT	0.09 IN <sup>2</sup> /FT	0.15 IN <sup>2</sup> /FT	614	11.01	28'-6" 16'-5 1/2"	28'-3 5/8" 16'-0 1/4"	0.19 IN <sup>2</sup> /FT		0.15 IN <sup>2</sup> /FT	859	15.54	
							450	LONG		401 5 5/0"		5'-4 5/8"	E! 0 7/0"	24'-9 7/8"	24'-8 1/8"	· · · · · · · · · · · · · · · · · · ·			744	40.04	37'-2 7/8"	37'-1"	1			4004	40.40
							45°	SHORT		10-5 5/8"			5'- 8 7/8"	10'-3 3/8"	9'-9 3/8"				714	12.81	15'-5 1/8"	14'-11 1/8"				1001	18.12
		1'-6"					90°	BOTH	45°-00'			4'-8 7/8"	4'-8 7/8"	15'-6 5/8"	15'-2 7/8"	7'-9 7/8"			796	12.04	23'-4"	23'-0 1/4"				1115	17.01
							75°	LONG	37°-30'			4'-9 1/2"	4'-10 7/8"	18'-0 7/8"	17'-9 7/8"				815	12.34	27'- 1 1/4" 20'-9 5/8"	26'-10 1/4"				1143	17.44
				71.61	9"	3-9"		SHORT	52°-30' 30°-00'		1'_6" 3'_9"			13'-10 3/8" 13'-5 7/8" 22'-0" 21'-9 5/8"	WWR@	WWR @	_			20'-9 5/8" 33'-0"	20'-5 1/8" 32'-9 5/8"	WWR@					
2" !	9"   1	<sub>'-6"</sub>	2'-0"	/ '-n'		1 - 3	60°			9'-9 3/8"		5'-1 1/8"	5'-3 7/8"	12'-8 3/8"	<del> </del>	0.25 IN <sup>2</sup> /FT	0.11 IN <sup>2</sup> /FT	0.17 IN <sup>2</sup> /FT	882	13.36	19'-0 5/8"	18'- 7 3/8"		0.11 IN <sup>2</sup> /FT	0.17 IN <sup>2</sup> /FT	1238	18.90
2"   9	9"   1	'-6"	2'-0"	/ -6				SHORT	60°-00'												·					.——	
2" 5	9"   1	'-6"	2'-0"	7-6			45°	SHORT LONG	60°-00' 22°-30' 67°-30'	11'-4"		5'-9 3/4"	6'-2"	28'-8 7/8"	28'-7 1/8"				1026	15.55	43'-1 3/8"	42'-11 5/8"			i	1443	22.04

**ROUND PIPES** 

2:1 SLOPE ESTIMATED QUANTITIES

3:1 SLOPE DIMENSION

3:1 SLOPE ESTIMATED QUANTITIES

2:1 SLOPE DIMENSION

**DIMENSIONS** 

★ UNIFORM LONGITUDINAL AND TRANSVERSE WIRE SIZE AND SPACING ASSUMED FOR CALCULATION OF STEEL REINFORCEMENT WEIGHTS. OTHER WWR SIZES AND/OR GRID SPACING MAY BE UTILIZED TO OBTAIN THE REQUIRED AREA OF STEEL REINFORCEMENT.

## EXAMPLE WWR

LONGITUDINAL WIRE SPACING

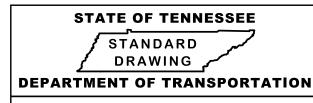
LONGITUDINAL WIRE SIZE

6 x 6 - W4 x W4

TRANSVERSE WIRE SIZE

TRANSVERSE WIRE SPACING

THIS EXAMPLE HAS 0.04 SQ. IN. WIRES SPACED AT 6 IN. BOTH DIRECTIONS. ITS USE WOULD PROVIDE 0.08 SQ. IN. PER FOOT OF REINFORCING EACH WAY.



PROTECTED ENDWALLS
FOR ROUND PIPES
DETAILS & QUANTITIES

(PIPE SIZES 18" TO 72", ALL SKEWS, 2:1 & 3:1 SLOPES)

07-19-21 D-PEW-2

SEE D-PEW-1 FOR ENDWALL DIMENSION LABELING