																UV	AL PIP						•		I							
PIPE	F 2 1 1 1	,							DIME	NSIONS	5			Т	T	2:1 SLOPE	DIMENSION	2:	SLOPE EST				3:1 SLOPE	DIMENSION	3:1	SLOPE E						
X S	EQUIV DIAM.	'. WT	A	Hs	Н	FT	FT1	SKEV	WING	θ	L	В	BW	J1	J2	W	K	STEM REINF.	FOOTING FO	TOP DOTING REINF.	STEEL REINF. (LBS)*	CONC. CU. YDS.	W	К	STEM REINF.	BOTTOM FOOTING REINF.	TOP FOOTING REINF.	STEEL REINF. (LBS)★	CONO CU. YDS			
								90°	вотн	45°-00'	3'-7 1/2"			2'-0 1/4"	2'-0 1/4"	1'-10 5/8"	1'-8 1/8"				25	0.86	2'-10"	2'-7 1/2"	2'-7 1/2"	TXLINI .	IXLINI .	30	1.10			
14"x23"	' 18"							75°	LONG SHORT	37°-30' 52°-30'	3'-8 1/4"	1'-3"		2'-0 1/4"	2'-1 1/8"	2'-2 1/4"	2'-0 1/4"	-	• • • • • • • • • • • • • • • • • • •	25	0.88	3'-3 3/8"	3'-13/8"]			31	1.13				
		6"	6"	1'-0"	1'-8"	9"	1'-6"	60°	LONG	30°-00'	3'-11"		3'-0"	21.1.1/0"	2'-3"	1'-8 1/8" 2'-8"	1'-5 1/4 2'-6 3/8"	- WWR @ - 0.03 IN ² /FT			26	0.95	2'-6 1/4" 4'-0"	2'-3 1/4" 3'-10 3/8"	VVVI W	0.03 IN ² /FT	WWR @	34	1.22			
								45°	SHORT	60°-00'	3-11			2'-1 1/8"	2-3	1'-6 1/2"	1'-3"	- 0.03 IIV /I I	0.03 114 /1 1 0.0	1/FT 0.04 IN/FT	26		2'-3 3/4"	2'-0 1/4"	0.03 IN7F1	0.04 IN*/FT	34	1.22				
									LONG SHORT	22°-30' 67°-30'	4'-5"			2'-3 3/4"	2'- 6 1/2"	3'-5 3/4" 1'-5 3/8"	3'-4 1/2" 1'-1 3/8"	+			30	1.08	5'-2 3/4" 2'-2"	5'-1 1/2" 1'-10"				38	1.4			
									вотн	45°-00'	4'-3"			2'-4"	2'-4"	1'-7 3/4"	1'-5 1/4"				33	1.05	2'-5 3/4"	2'-3 1/4"				41	1.3			
	ļ				0" 2'-7" 9			75°		37°-30' 52°-30'	4'-4''			2'-4 1/8"	2'-5"	1'-11" 1'-5 5/8"	1'-9" 1'-2 5/8"	-			34 「 36	1.07	2'-10 1/2" 2'-2 1/2" 3'-6"	2'-8 1/2" 1'-11 1/2"		1	WWR @ -	41	1.3			
'x30"	24"	6"	12"	2'-0"		9"	2'-0"	60° -	LONG	30°-00'	4'-7 5/8"	_	3'-0"	2'-5 3/8"	2'-7 1/4"	2'-4"	2'-2 3/8"		WWR @ V 0.03 IN ² /FT 0.0	WWR @ 05 IN ² /FT		1.15		3'-4 3/8"	WWR @ 0.07 IN ² /FT	0.03 IN ² /FT		45	1.4			
									SHORT LONG	60°-00' 22°-30'	- 7 3, 5			2 3 3, 0	2 , 1, 4	1'-4 1/8" 3'-0 5/8"	1'-0 5/8" 2'-11 3/8"			.00 114 /1 1		1.15	2'-0 1/4" 4'-6 7/8"	1'-8 3/4" 4'-5 5/8"				75	1.4			
									SHORT	67°-30'	5'-3 1/2"			2'-8 7/8'	2'-11 3/4"	1'-3 1/8"	0'-11 1/8"				41	1.33	1'-10 3/4"	1'-63/4"				51	1.6			
24"x38"								75° - 9	ВОТН	45°-00'	5'-0 1/2"	1'-3"		2'-8 3/4"	2'-8 3/4"	2'-10"	2'-7 1/2"				55	1.62 1.66 1.79	4'-27/8"	4'-0 3/8"		WWR @ 0.03 IN ² /FT	WWR @ - 0.06 IN ² /FT	70	2.1			
			.						LONG SHORT	1 52°-30' L	5'-17/8"			2'-9''	2'-9 7/8"	3'-3 3/8" 2'-6 1/4"	3'-1 3/8" 2'-3 1/4"	\	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	WWR @ WWR @ - 0.03 IN ² /FT 0.06 IN ² /FT	56		4'-11 1/8" 3'-9 3/8"	' 3'-6 3/8" 5'-10 3/8" ' 3'-2 1/8"	- WWR @ - 0.09 IN ² /FT			71	2.16			
	30"	6"	12"	2'-0"	3'-0"	9"	2'-3"		LONG	30°-00'	5'-6 3/8"		3'-0"	2'-10 3/4"	3'-0 5/8"	4'-0"	3'-10 3/8"	─ WWR @ ─ 0.09 IN²/FT			61		6'-0''					77	2.33			
									31101(1	22°-30'				·	+	2'-3 3/4" 5'-2 3/4"	2'-0 1/4" 5'-1 1/2"	+					3'-5 5/8" 7'-10 1/8"									
								45°			6'-4 1/4"			3'-3 3/8"	3'-6 1/8"	2'-2"	1'-10"				69	2.08	3'-3"	2'-11"				88	2.7			
29"x45"								90°	_	45°-00'				3'-1 1/4"	3'-1 1/4"	4'-0 1/8" 4'-7 7/8"	3'-9 5/8" 4'-5 7/8"				87	2.24	6'-0 1/8" 6'-11 3/4"	5'-9 5/8" 6'-9 3/4"	9 3/4" 1 3/8" 4 3/8" 7 3/8" 0 1/8" 3 1/4" WWR @ 0.12 IN²/FT	WWR @ 0.04 IN ² /FT	WWR @ - 0.07 IN ² /FT	114	2.97			
								75°	SHORT	37°-30' 52°-30'	5'-11 1/8"	l	3'-0"	3'-15/8"	3'-2 1/2"	3'-67/8"	3'-3 7/8"		WWR @ WWR @ 0.04 IN ² /FT 0.07 IN ² /FT	MMR ⋒	89		5'-4 1/4"	5'-13/8"				116	3.0			
	36"	6"	12"	2'-0"	3'-5"	9"	2'-6"	60°	LONG SHORT	30°-00'	6'-4 1/2"			3'-3 7/8"	3'-5 3/4"	5'-8"	5'-63/8" 0.12 IN ²				96	2.47	8'-6"	8'-43/8"				125	3.2			
								450	LONG	1 11,7,2,4(1,1)				21.04./411	41.04./01	3'-3 1/4" 7'-4 7/8"	2'-11 3/4" 7'-3 5/8"	1			444	2.07	4'-10 7/8" 11'-1 1/4"	11'-0 1/8"				4.45	2.0			
								45°	SHORT	67°-30'	7'-4 1/4"			3'-9 1/4"		3'-0 3/4"	2'-8 3/4"				111	2.87	4'-7 1/4"	4'-3 1/4"				145	3.8			
34"x53"								90°		BOTH 45°-00' LONG 37°-30'	6'-7"		3" 3'-0"	3'-6"	3'-6"	5'-2 1/4" 6'-0 1/4"	4'-11 3/4" 5'-10 1/4"	-			121	2.84	7'-9 3/8" 9'-0 3/8" 6'-11 1/4"	7'-6 7/8" 8'-10 3/8"				161	3.8			
								75°	SHORT	52°-30'	6'-8 7/8"			3'-6 1/2"	3'-7 3/8"	4'-7 1/2"	4'-4 1/2"		WWR@V	WWR @	124	2.91		6'-8 1/4"		WWR @	WWR @	165	3.90			
	42"	6"	12"	2'-0"	3'-10"	9"	2'-6"	60°	LONG	30°-00' 60°-00'	7'-3 1/4"	1'-3"		3'-9 1/4"	3'-11 1/8"	7'-4" 4'-2 3/4"	7'-2 3/8" 3'-11 1/4"		0.04 IN ² /FT 0.07 IN ² /FT		133	3.14	11'-0" 6'-4 1/4"	10'-10 3/8" 6'-0 3/4"		0.04 IN ² /FT		177	4.2			
								45°	LONG	22°-30'	8'-5"			4'-3 5/8"	4'-6 1/2"	9'-7"	9'-5 3/4"				154	3.65	14'-4 1/2"	14'-3 1/4"				206	4.9			
								90°		67°-30'							3'-11 5/8"						4.32	5'-11 1/2"	5'-73/8"	+						
38"x60"	401		4.211						BOTH LONG	IG 37°-30' RT 52°-30' 7'-75/8"	7 -3 1/2	1'-6"	3'-9"				4'-0 1/2"		6'-1 1/2" 7'-1 3/8"	5'-9 3/4" 6'-10 3/8"				170	4.32	9'-2 1/4" 10'-8 1/8"	8'-10 5/8" 10'-5 1/8"				226	5.8
					41.011	.	2'-9"	75°	31101K1		7-75/8			4'-0 7/8"	4'-2 1/4"	5'-5 1/2"	5'-1"	WWR @	WWR @ WWR @	WWR @	174	4.42	8'-2 3/8"	7'-9 7/8"		WWR @	WWR @	232	5.97			
	48"	9"	12"	2'-0"	4'-2"	9"		60°	LONG SHORT	30°-00'	8'-2 3/4"			4'-3 3/4"	4'-6 5/8"	8'-8" 5'-0"	0.10 IN ² /FT 0.06 IN ² /F		0.10 IN ² /FT 0.10 IN ² /FT	189	4.78	13'-0" 7'-6 1/8"	12'-9 5/8" 7'-0 7/8"		Γ 0.06 IN ² /FT		250	6.4				
								45°	LONG	22°-30'	9'-6 3/8"			4'-11"	5'-3 1/8"	11'-3 7/8"	11'-2 1/8"				219	5.55	16'-11 7/8"	16'-10"				291	7.5			
								90°	SHORT	67°-30' 45°-00'				4'-5 1/8"		4'-8 1/4" 7'-3 5/8"	4'-2 1/4" 6'-11 7/8	4'-2 1/4"		238	5.28	7'-0 3/8" 10'-11 1/2"	6'-6 3/8" 10'-7 3/4"				319	7.16				
43"x68"				2'-0"				75° -		37°-30' 52°-30'		1'-6"	3'-9"		4'-5 5/8"		8'-5 7/8"	8'-2 7/8"				245	5.41	12'-8 3/4"	12'-5 3/4"				327	7.34		
	54"	9"	12"		4'-7"	9"	3'-0"			30°-00'				7 3 3/8	' '	6'-6 1/8" 10'-4"	6'-1 5/8" 10'-1 5/8"	WWR @		WWR @		J.71	9'-9 1/4" 15'-6"	9'-4 3/4" 15'-3 5/8"	WWR @	WWR @ 0.07 IN ² /FT	WWR @ - 0.12 IN ² /FT	<i>321</i>	7.5-			
	34		12		4-7	9	3-0			30°-00' 60°-00'	9'-1 1/4"			4'-9''	4'-11 7/8"	5'-11 5/8"	5'-63/8"	0.12 IN ² /FT	T 0.07 IN ² /FT 0.12 IN	12 IN ² /FT	265	5.85	8'-11 3/8"	8'-61/4"	0.12 IN ² /FT			353	7.95			
								45°		22°-30'	10'-7"			5'-5 1/4"	5'-9 1/2"	13'-6"	13'-4 1/4"				308	6.80	20'-3"	20'-1 1/4"	-			412	9.26			
48"x76"								90°	_	67°-30' 45°-00'	9'-0 1/4"	<u> </u>	_	4'-9 7/8"	4'-9 7/8"	5'-7 1/8" 8'-5 7/8"	5'-1 1/8" 8'-2 1/8"				332	6.32	8'-4 5/8" 12'-8 3/4"	7'-10 5/8" 12'-5"		WWR @ Γ 0.08 IN ² /FT	WWR @ - 0.14 IN ² /FT	447	8.62			
								75°	LONG	37°-30'	9'-2 7/8"				4'-11 7/8"	9'-10 1/4"	9'-7 1/4"	4" 8" 0.16 IN ² /FT 8"			341	6.47	14'-9 3/8"	14'-6 3/8"				457	8.83			
	60"	' 9"	12"	2'-0"	5'-0"	9"	3'-3"		LONG	52°-30' 30°-00'		1'-6"	3'-9"		+	7'-6 3/4" 12'-0"	7'-2 1/4" 11'-9 5/8"		WWR @ WWR @ 0.08 IN ² /FT 0.14 IN ² /FT			7.00 8.14	11'-4 1/8" 18'-0"	10'-11 3/4" 17'-9 5/8"	WWR@							
								60°	SHORT	60°-00'	10'-0"			5'-23/8"	5'-5 1/4"	6'-11 1/8"	6'-5 7/8"			14 IN7F1	368		10'-4 3/4"	9'-11 1/2"	- 0.16 IN 7F1			495	9.50			
								45°	LONG SHORT	22°-30' 67°-30'	11'-7 3/4"			5'-11 5/8"	6'-3 7/8"	15'-8 1/8" 6'-5 7/8"	15'-6 3/8" 5'-11 7/8"				428		23'-6 1/4" 9'-8 7/8"	23'-4 3/8" 9'-2 7/8"				579	11.1			
53"x83"								90°	вотн	45°-00'				5'-17/8"	5'-17/8"	9'-10 3/4"	9'-7"	- WWR @ - 0.19 IN ² /FT	WWR @ WWR @ 0.09 IN ² /FT 0.15 IN ² /FT		434	7.57		14'-6 1/2"	6 1/2" .1 7/8" .0 3/8" .0 5/8"	WWR @ 0.09 IN ² /FT	WWR @ -	586	10.3			
				2'-0"				75°	LONG	37°-30' 52°-30'	9'-11 1/4"			5'-2 5/8"	5'-4"	11'-6" 8'-9 7/8"	11'-3" 8'-5 3/8"				444	7.76	17'-3"	16'-11 7/8"				602	10.6			
	66"	9"	13"		5'-6"	9"	3'-6"	60°				1'-6"	3'-9"	בי זיי	E' 0.7/9"	14'-0"	13'-9 5/8"				401	9.40	13'-2 7/8" 21'-0"	20'-9 5/8"				652	11 5			
								60°		30°-00' 60°-00'				5'-7"	5'-9 7/8"	8'-1"	7'-7 3/4"			. UN /I I	481	8.40	12'-1 1/2"	11'-8 1/4"	O. 10 IIN /I	J.55 IIN /I I	0.10 N / 1	652	11.5			
								45°	SHORT	22°-30' 67°-30'	22°-30' 67°-30' 12'-7 1/8"			6'-5 3/8"	6'-9 1/2"	18'-3 1/2" 7'-6 7/8"	18'-1 3/4" 7'-0 7/8"				561	9.79	27'-5 1/4" 11'-4 3/8"	27'-3 1/2" 10'-10 3/8"	-			761	13.4			
								90°	BOTH	45°-00'	10'-6 1/8"			5'-6 3/4"	5'-6 3/4"	11'-3 3/4"	11'-0"				603	8.96	16'-11 5/8"	16'-7 7/8"				821	12.3			
58"x91"					6'-0"	9"	3'-9"	75°	LONG	NG 37°-30' RT 52°-30' 10'-8 3/4"			5'-7 1/2"	5'-8 7/8"	13'-1 3/4" 10'-1"	12'-10 3/4" 9'-8 1/2"	+			618	9.17	19'-8 1/2" 15'-1 1/2"	19'-5" 14'-9"	-			840	12.6				
	72"	9"	14"	2'-0"				60°	LONG	30°-00' 60°-00'	11'-75/9"	1'-6"	3'-9"	6'-0 1/4"	6'-3"	16'-0"	15'-9 5/8"	- WWR @ - 0.25 IN ² /FT	WWR @ WWR @ Γ 0.11 IN ² /FT 0.17 IN ² /F ⁻		668	9.93	24'-0"	23'-9 5/8"	OF/O" VVVR @		WWR @ 0.17 IN ² /FT	911	13.6			
									SHORT	60°-00'	±± - 1 J/O					9'-27/8"	8'-9 5/8"	_		/1 1	000		13'-10 1/4"	13'-5"				211	13.03			
	1						1	1 45°	LONG	22 -30	13'-7 3/4"			6'-11 5/8"	7'-3 7/8"	20'-10 7/8" 8'-7 7/8"	20'-9 1/8"	1			779	11.58	31'-4 1/4" 12'-11 7/8"	31'-2 1/2"				1064	15.9			

★ 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

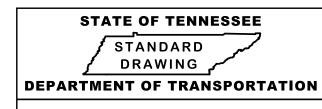
LONGITUDINAL WIRE SIZE

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 OVAL PIPES
DETAILS & QUANTITES

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

09-15-21

D-PEW-3