ASTM A193-B7 ALLTHREAD ROD TENSILE CAPACITY							
D	**0.500"**	**0.625"**	**0.750"**	**0.875"**	**1.000"**	**1.125"**	**1.250"**
n	13	11	10	9	8	7	7
A_{TS}	0.142	0.226	0.334	0.462	0.606	0.763	0.969
A_N	0.196	0.307	0.442	0.601	0.785	0.994	1.227
P_{A-TS}	5853	9323	13796	19046	24987	31485	39976
FS_{TS}	3.03	3.03	3.03	3.03	3.03	3.03	3.03
P_{Y-TS}	14899	23730	35118	48482	63603	80144	101756
P_{U-TS}	17737	28250	41807	57717	75718	95409	121139
P_{A-N}	9204	14381	20709	28187	36816	46595	57524
FS_N	1.93	1.96	2.02	2.05	2.06	2.05	2.11

Design Criteria:			AISC Manual of Steel Construction, ASD, Thirteenth Edition
			Allowable Rod Tensile Capacity (P_{A-N}) Based on Nominal Rod Area
Allthread Rod Material:			ASTM A193-B7
F_Y	=	105000 psi	Rod Yield Strength
F_U	=	125000 psi	Rod Ultimate Strength
D	=	Nominal Rod Diameter	Inches^2
n	=	Thread Pitch	Threads Per Inch
A_{TS}	=	$(\pi/4) \times [D-0.9743/n]^2$	Tensile Stress Area (Inches^2)
A_N	=	$\pi \times D^2/4$	Nominal Rod Area (Inches^2)
P_{A-TS}	=	$0.33 \times F_U \times A_{TS}$	Allowable Tensile Capacity (lbs) - Based on Tensile Stress Area
P_{Y-TS}	=	$1.00 \times F_Y \times A_{TS}$	Yield Tensile Capacity (lbs) - Based on Tensile Stress Area
P_{U-TS}	=	$1.00 \times F_U \times A_{TS}$	Ultimate Tensile Capacity (lbs) - Based on Tensile Stress Area
P_{A-N}	=	$0.75 \times F_U \times A_N / \Omega$	Allowable Tensile Capacity (lbs) - Based on Nominal Rod Area
Ω	=	2.00	Safety Factor (ASD)
FS_{TS}	=	P_{U-TS} / P_{A-TS}	Factor of Safety (lbs) - Based on Tensile Stress Area
FS_N	=	P_{U-TS} / P_{A-N}	Factor of Safety (lbs) - Based on Nominal Rod Area