Site Name:	**Portland ME, ME**	*Program Last Updated:*	*5/13/2(*
Site Number:	**10047**	*American Tower Corporation*	
Engineering Number:	**OAA702064_C3_07**		
Engineer:	**Brendan M Smith**		
Date:	**06/21/17**		

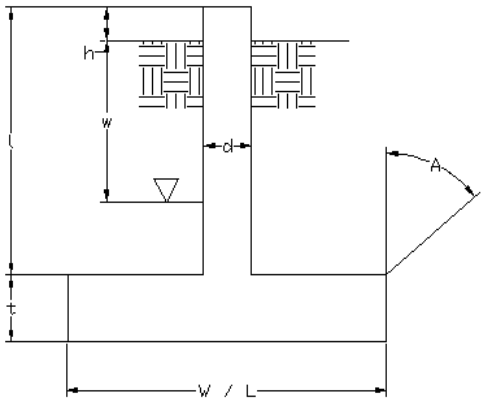
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 11/27/17

Design Base Loads (Factored) per TIA-222-G

Foundation Mapped:	N				
Moment (M_u):	0.0	k-ft	Concrete Compressive Strength (f'_c):	3000	psi
Shear/Leg (V_u):	0.6	k	Vertical Steel Rebar Size #:	6	
Compression/Leg (P_u):	355.8	k	Vertical Steel Rebar Area:	0.44	in^2
Uplift/Leg (T_u):	0.0	k	# of Vertical Steel Rebars:	8	
Tower Type (GT / SST):	GT		Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Diameter of Prismatic Portion of Pier (d):	4.0	ft	Tie / Stirrup Size #:	4	
Depth to Base of Foundation:	4.0	ft	Tie / Stirrup Area:	0.20	in^2
Pier Height Above Ground (h):	0.50	ft	Tie / Stirrup Spacing:	18.0	in
Length / Width of Pad (w):	11.0	ft	Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Thickness of Pad (t):	1.5	ft	Rebar Cage Diameter:	40.0	in
Depth Below Ground Surface to Water Table (w):	99.0	ft	Bending/Tension Reduction Factor (ϕ_B):	0.90	
Unit Weight of Concrete:	150.0	pcf	Shear Reduction Factor (ϕ_V):	0.75	
Unit Weight of Water:	62.4	pcf	Compression Reduction Factor (ϕ_V):	0.65	
Unit Weight of Soil Above Water Table:	110.0	pcf	Steel Elastic Modulus:	29000	ksi
Unit Weight of Soil Below Water Table:	55.0	pcf	Pad Steel Rebar Size #:	8	
Friction Angle of Uplift from Top of Pad:	20	Degrees	Pad Steel Rebar Area:	0.79	in^2
Friction Angle of Uplift from Base of Pad:	20	Degrees	Pad Steel Rebar Yield Strength (F_y):	60	ksi
Uplift Angle Started at Top or Base of Pad (T/B):	T		# of Rebar in Top of Pad:	0	
Ultimate Skin Friction:	220	psf	# of Rebar in Base of Pad:	11	
Ultimate Compressive Bearing Pressure:	4500	psf	Pad Clear Cover:	3	in
Capacity Increase (Due to Transient Loads):	1.00				
Bearing Strength Reduction Factor (ϕ_s):	0.60				
Uplift Strength Reduction Factor (ϕ_s):	0.75				

Axial Capacities and Design Moment

Weight of Concrete (Bouyancy Considered):	32.9	k
Weight of Soil (Bouyancy Considered):	35.6	k
Ultimate Skin Friction Resistance:	14.5	k
Controlling Failure Mode (Top / Base):	Top	
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	57.9	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	326.7	k
P_u:	362.9	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	1.11	Result: NG



Depth (ft) Top	Depth (ft) Bottom	Ultimate Lateral Bearing Pressure (psf)	Increment (psf/ft)	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)
0.0	2.0	0.0	110.0	110	0	0
2.0	2.5	1020.0	110.0	110	400	0

Inflection Point (Below Ground Surface):	1.6	ft
Factored Design Moment At Inflection Point (M_u):	0.5	k-ft