Strength Analysis of Reinforced Concrete

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
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Concrete Compressive Srength (f'_c):	3000	psi
Longitudinal Rebar Yield Strength:	60000	psi
# Longitudinal Rebar (Top):	10	
# Longitudinal Rebar (1 Side):	3	
Rebar Size:	5	
Strength Reduction Factor for Shear (ϕ_v):	0.75	
Strength Reduction Factor for Flexure (ϕ_b):	0.9	
Compression Zone Factor (β_1):	0.85	
Area of Single Rebar:	0.31	in^2
One Way Shear due to Shear Load (V_u):	0.9	k
Nominal One Way Shear Capacity for Shear Load ($\phi_c V_n$):	414.1	k
$V_u/\phi_v V_n$:	0.00	Result: OK
One Way Shear due to Uplift (V_u):	37.9	k
Nominal One Way Shear Capacity for Uplift ($\phi_c V_n$):	378.6	k
$V_u/\phi_v V_n$:	0.10	Result: OK
Pad Flexure due to Shear Load (M_u):	96.4	k-ft
Nominal Flexural Capacity for Shear Load ($\phi_b M_n$):	585.9	k-ft
Pad Flexure due to Uplift (M_u):	146.2	k-ft
Nominal Flexural Capacity for Uplift ($\phi_b M_n$):	446.3	k-ft
$M_u/\phi_b M_n$ (Max.):	0.33	Result: OK