

**LORAC DESIGN GROUP, LLC**  
**Structural Engineers**

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June 5, 2024

**Mr. Doug Park**  
644 NE Lake Pointe Drive  
Lee's Summit, Mo. 64064

**Re: 1901 SW River Run, Pool Parking Lot, Pole Light Pier Check**  
**Lee's Summit, Missouri**  
**Raymore Permit # 9003-9006**

**Doug,**

This letter is to certify that I have personally inspected and verified through calculation the Pole Light supporting pier located at the above address.

Through calculation and observation, the pole pier is sufficient to support the light fixture atop the 15' mast.

Photos are available upon request.

For the Firm,  
**LORAC Design Group, LLC**



**Joseph A. Towns, RA, PE, SE, AIA, NCARB, LEED AP, BD+C**  
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1/4

# Light Pole Pier Design Calculator

Location: Pool Parking light, 1901 SW River Run  
Lee's Summit, Missouri

Permit #: 2022-6005

## For Column Piers / Piers

### Pier Sizing

Design Soil Pressure 2000 psf

Trib Length 2 feet

Trib Width 2 feet

### Loading

Live 20 psf

Dead 6 psf

Total LL 80.0 lbs

Total DL 24.0 lbs

phi LL 1.7

phi DL 1.4

Factored LL 136 lbs

Factored DL 34 lbs

Total Factored Load 170 lbs

Pole Height 16 feet

Pier

**Direct Bearing**

Diameter 14 inches

Area 1.07 ft<sup>2</sup>

Allow Bearing Stress 2000 psf

Number of Piers 1 piers

Capacity per Pier 2138 lbs  
NG

**Side Friction**

Circumference 3.67 ft

Friction Allowable 40 lbs/ft<sup>2</sup>

Resistance per ft 146.6033 lbs

Pier Length 3 feet

Total Friction 439.81

Total Support 2577.78  
OK

**Uplift**

Uplift Load 30 psf

Uplift Force 120 lbs per pier

Weight of Pier 481.0422 lbs

Friction 439.81 lbs

Total Resistance 920.8522 lbs

OK, Resistance Met

3/4

**Oveturning**

Moment 2713.6 lb-ft

Pier Mom. Arm 3 ft

Resistive Force 905 lbs

OK

