



April 14, 2021

ABI
1271 NE Delta School Rd
Lee's Summit, MO 64064

**RE: Foundation Modification for Lot # 112 Pergola Park – 3219 SW Pergola Park Dr
Lee's Summit, MO 64081 – Permit # 2021-0529**

A subgrade inspection was performed by Residential Engineering Services, LLC (R.E.S.) at the above referenced property. The purpose of this inspection was to determine structural adequacy of the existing subgrade soil at proposed footing elevations for construction of concrete foundation.

RES has determined that the subgrade material at proposed footing elevations does not have sufficient bearing capacity to properly support foundations for the structure specified in the approved permit plans. RES recommends that the following modifications be made to the foundation plan:

- Drill 18" diameter concrete piers per the attached layout.
- Piers shall be drilled to competent original limestone, sandstone, or shale.
- The piers shall be reinforced with (4) #4 bars for the depth of the pier.
- Lapping shall be no less than 24".
- (4) #4 bars shall extend a minimum of 24" into the footings.
- All piers shall be inspected by our firm prior to the placement of concrete.

Upon approval and completion of the piers, the foundation footings, walls, and slabs shall be placed over the piers. If the city approved plans do not exceed the following minimum specifications, then, as needed, the foundation shall be improved per the following:

- 3000 psi concrete, Grade 60 reinforcing steel, Lap splices min. 24"
- The footing shall be a minimum of 16"x8" with (2) #4 bars continuous.
- The wall shall be a minimum of 8" thick with #4 bars at 24" O.C. each way.
- The walkout frost trench shall be a minimum of 12" wide by 36" deep with (2) #4 bars continuous T&B.
- Grade beams/thickened slabs shall be a minimum of 16" wide by 12" deep with (3) #4 bars continuous T&B.
- The garage and basement slabs shall be structural.
- Place 5" concrete slab w/ #4 bars at 12" O.C. each-way on 1-1/2" chairs.
- Add (4) 10'-0" long #4 bars each-way over the column pads and slab support piers. Place with 1" to 1-1/2" slab top cover (3" chairs). See attached layout and slab details for clarity.

The perimeter of the slab shall bear on the foundation as follows:

- Minimum 3" keyway on footing; OR Drill 5" deep and pin to foundation with #4 bars at 12" on center.

SEE ATTACHED PIER LAYOUT SPECIFICATIONS

The above recommendation is based on bearing capacity only, determined by standard engineering practices. Geotechnical testing and laboratory analysis of subgrade materials (including shrink/swell potential) were outside of the scope of this design.

Sincerely,

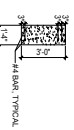


Bradley Huxol, PE



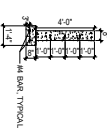
18" WIDE X 36" TALL TRENCH FOOTING

- (2) #4 BARS AT 12" FROM TOP
- 5" FROM TOP
- 6" FROM TOP



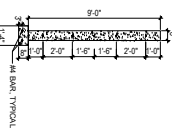
18" WIDE X 36" TALL FOUNDATION WALL

- (2) #4 BARS AT 12" FROM TOP
- 5" FROM TOP
- 6" FROM TOP
- (1) #4 BAR AT 12" FROM TOP
- 24" FROM TOP
- 24" FROM TOP
- 36" FROM TOP



18" WIDE X 36" TALL FOUNDATION WALL

- (2) #4 BARS AT 12" FROM TOP
- 5" FROM TOP
- 6" FROM TOP
- (1) #4 BAR AT 12" FROM TOP
- 24" FROM TOP
- 24" FROM TOP
- 36" FROM TOP

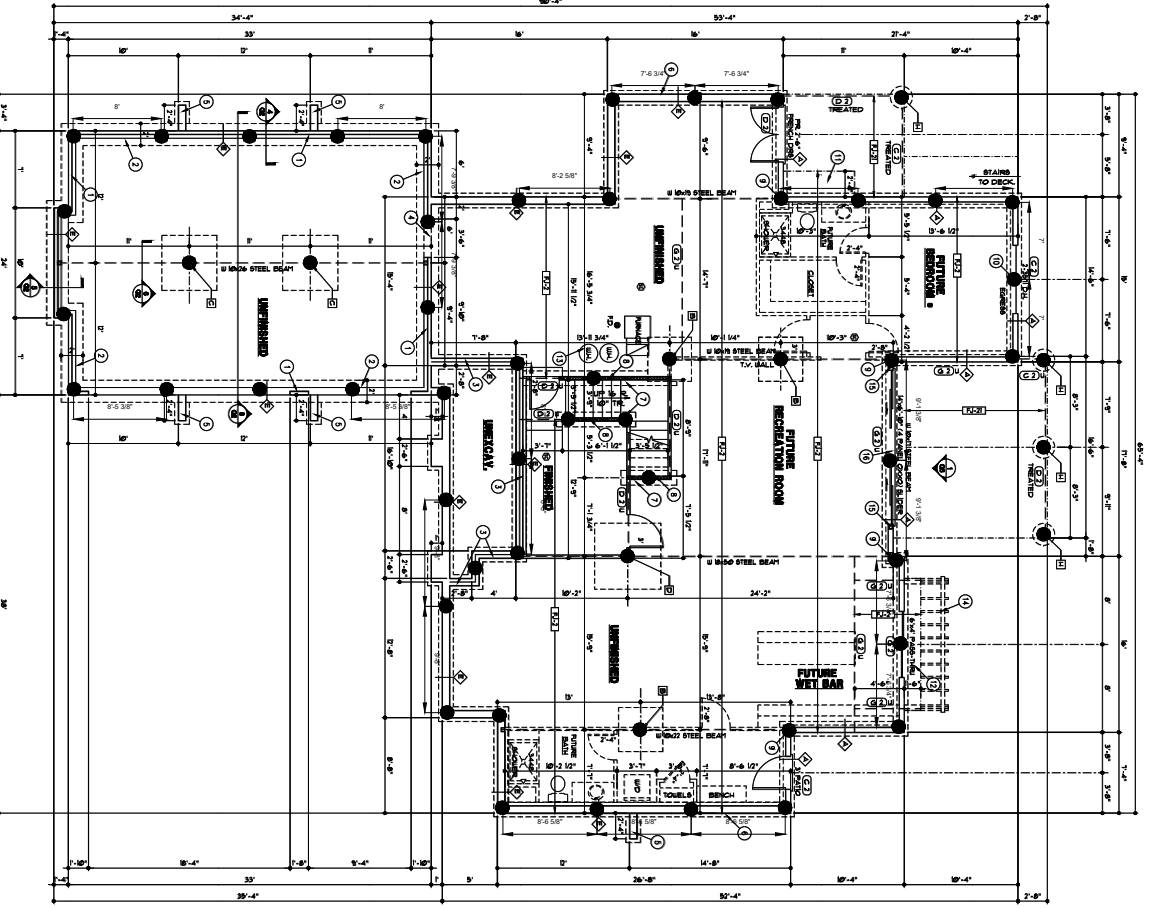


PIER REINFORCEMENT

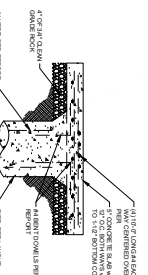
- 18" DIA. REINFORCING CONCRETE PIER
- REINFORCE WITH #4 BARS AT 12" O.C. EACH
- REINFORCE WITH #4 BARS AT 12" O.C. EACH
- REINFORCE WITH #4 BARS AT 12" O.C. EACH

STRUCTURAL SLAB SPECIFICATIONS

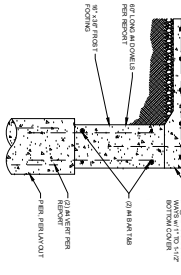
- 12" THICK CONCRETE SLAB WITH #4 BARS AT 12" O.C. EACH
- 12" THICK CONCRETE SLAB WITH #4 BARS AT 12" O.C. EACH
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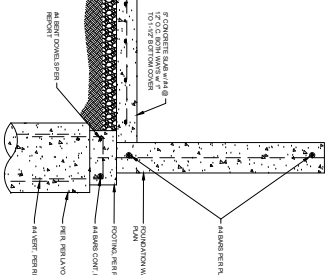
PIER LAYOUT
3219 SW PERGOLA PARK DR
LEE'S SUMMIT, MO 64081



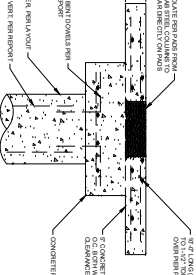
1. PIER AND FOOTING DETAIL
N.T.S.



2. PIER AND FOOTING DETAIL
N.T.S.



3. PIER AND FOOTING DETAIL
N.T.S.



4. PIER AND FOOTING DETAIL
N.T.S.



RES
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ABI

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LEE'S SUMMIT, MO 64081

4/14/2021

SHEET #
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