

**GENERAL NOTES:**

**APPLICABLE CODES:**

- A. These general notes apply to all structural drawings. This project is designed in accordance with the International Building Code (IBC), 2015 Edition and the 'Minimum Design Loads for Buildings and Other Structures' (ASCE/SEI 7-10).
- B. All material and workmanship shall be in accordance with applicable provisions of the codes specified above.

**LOADS USED IN DESIGN:**

A. Gravity Loading	
Roof Snow Loads: . . . .	5 psf
Roof Live Load: . . . .	20 psf
Roof Dead Load: . . . .	15 psf
Floor Live Loads: . . . .	40 psf
Floor Dead Loads: . . . .	10 psf
B. Wind Loading	
Velocity Ultimate (3 sec gust) . . . .	115 mph
Exposure . . . .	C
Risk Factor . . . .	II
Internal Pressure Coeff, GCpi . . . .	-0.18 / 0.18 (Enclosed)
C. Seismic	
Sds . . . .	0.133
Sd1 . . . .	0.091
Site Class . . . .	D
Seismic Group . . . .	B
Fa . . . .	1.6
Fv . . . .	2.4
SMS . . . .	0.199
SM1 . . . .	0.136

**COORDINATION:**

- A. **DO NOT SCALE PLANS.** The layout shown is based solely on the architectural plans by Korel Home Designs not dated. Changes affecting the layout shown must be specific and clearly conveyed to GreenWorks Engineering and Consulting in written form as a change for inclusion into these plans.
- B. Contractor and/or client shall verify all dimensions and layout prior to construction. All dimensions shall be checked against the architectural plans referenced above and any discrepancies shall be brought to the attention of the Architect and Engineer of Record immediately. Refer to mechanical, electrical and architectural plans for openings not shown on the structural plans.
- C. Shop drawings shall be prepared by the fabricator. Copying of these construction documents for use as shop drawings will not be permitted.
- D. All temporary shoring shall be the responsibility of the contractor.
- E. Design is based on the current applicable building codes listed above and shall be void if the building code at the time of construction changes from the codes listed above.

**CONCRETE:**

- A. Concrete has been designed and shall be constructed in accordance with the American Concrete Institute 'Building Code Requirement Reinforced Concrete' and 'Specifications for Structural Concrete for Buildings' (ACI 318 and ACI 301) latest editions. Section 1.3 "Inspection" of ACI 318 is deleted in its entirety, see 'Field Observations' paragraph. All concrete shall be of stone aggregate, unless noted otherwise.
- B. Concrete Mixes: See specifications for any additional durability requirements.
  - Mix 'A' For Slabs on Grade
    - 4,000 psi minimum compressive strength at 28 days.
    - Type I/II Cement, minimum of 540 pounds per cubic yard.
    - Fly Ash not allowed.
    - 1" maximum aggregate size.
    - 3% maximum entrained air.
    - 4" maximum slump (8" with super-plasticizer).
    - Water reducing agent (use in accordance with manufacturer's recommendations).
  - Mix 'B' For Footings, Grade Beams, and Miscellaneous Concrete
    - 3,500 psi minimum compressive strength at 28 days.
    - Type I/II Cement, minimum of 470 pounds per cubic yard.
    - 3/4" maximum aggregate size.
    - 6% maximum entrained air.
    - 4" maximum slump (8" with super-plasticizer).
- C. Reinforcing shall be new billet steel conform to ASTM A615, grade 60, except ties shall be grade 40. Provide not less than (2) #4 around all sides of all openings in concrete and extend 2'-0" past edges of openings. No splices of reinforcement are permitted except as detailed or authorized by the Engineer of Record. Where permitted use contact lap splices, (36) bar diameters minimum.
- D. For the proper placement of the reinforcement provide chairs, bolsters, additional reinforcement, and accessories necessary to support the reinforcement at the positions shown on plans. Support of reinforcement on form ties, wood, brick, brickbat or other unacceptable material, will not be permitted.
- E. Grout under base plates and bearing plates shall be high strength, non-shrink, non-metallic grout with a minimum compressive strength, at 28 days, of 7,500 psi.
- F. Reinforcement shall be placed so that the following minimum concrete cover is provided, unless noted otherwise.
 

1) Concrete poured against earth. . . .	3" Clear
2) Formed surfaces exposed to earth or weather. <ul style="list-style-type: none"> <li>a) #6 Bars and larger. . . .</li> <li>b) #5 Bars and smaller. . . .</li> </ul>	2" Clear 1-1/2" Clear
3) Concrete not exposed to earth or weather. . . .	3/4" Clear
4) Beams, columns, ties, stirrups or spirals around primary reinforcement, or primary reinforcement with no ties, stirrups or spirals. . . .	1-1/2" Clear
5) Slabs. . . .	Placed at center (U.N.O.)

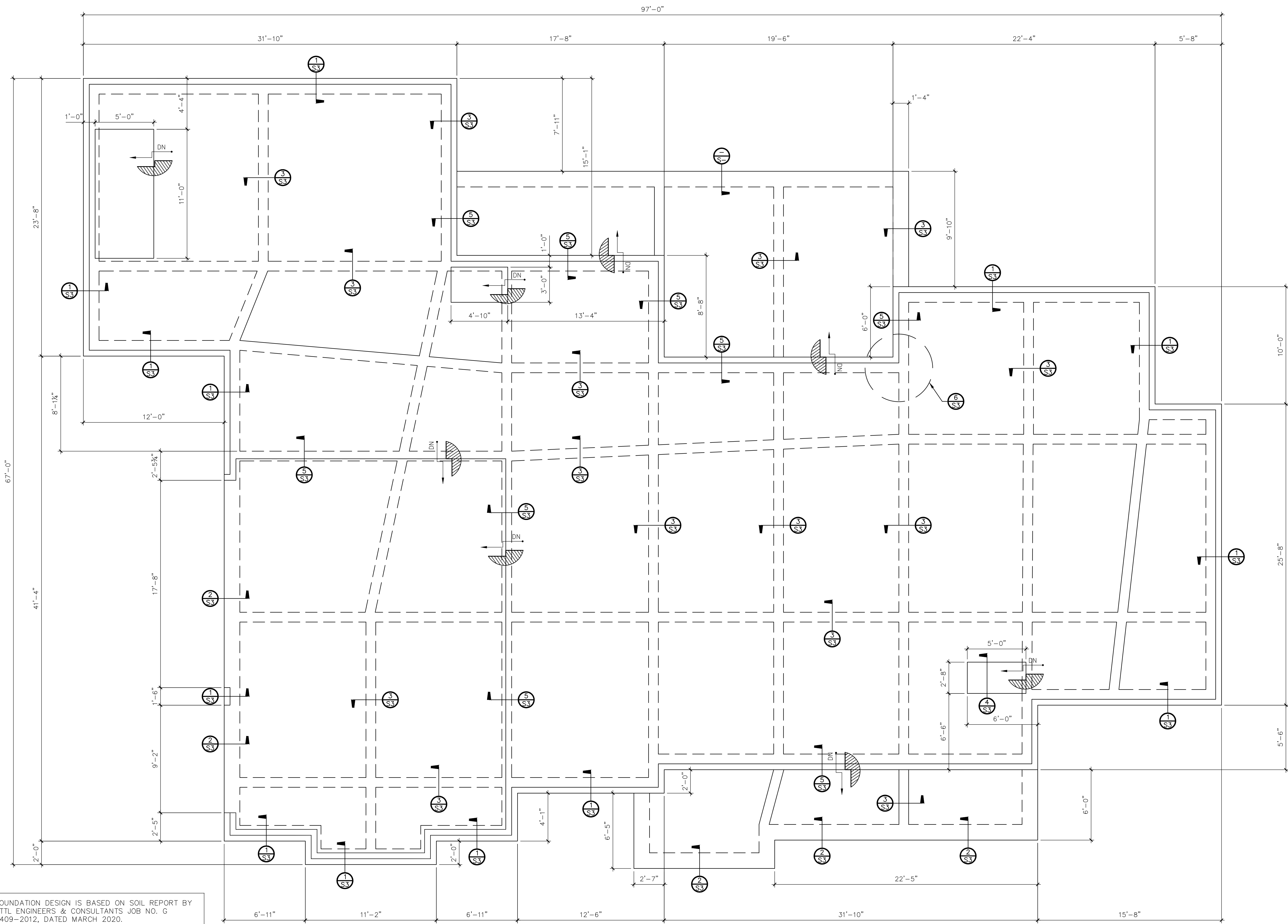
- G. Welded Wire Fabric (WWF) shall conform to ASTM A185. Provide WWF in flat sheets, rolled sheets are not allowed. Where permitted use contact lap splices, (50) bar diameters minimum.
- H. Foundation walls below grade shall have backfill placed equally on both sides until the required levels are reached. Walls shall be appropriately shored when backfill is placed on one side only.
- I. Additional (2) #4 bars (one each face) with a 2'-0" projection shall be placed diagonally across the corners of all openings and at vertical steps in walls unless otherwise detailed on plans.
- J. The contractor is responsible for determining when it is safe to remove forms and/or shoring. Forms and shoring must not be removed until the walls are strong enough to support their own weight and any superimposed loads. For foundation walls, this typically requires 12 hours of cumulative curing time at a temperature of 50° F or more. Concrete must be adequately covered during cold periods to maintain this surface temperature. Due to varying weather conditions, alternative curing processes, and the use of Type I/II cement, GreenWorks Engineering suggests forms remain in place a minimum of 3 days to assure this performance specification has been met. When forms are stripped there must be no excessive deflection, distortion, discoloration and no evidence of damage to the concrete. Adequate thermal protection of the concrete shall be continued after stripping for a cumulative period of 48 hours at 50° F, or more, after the initial pour. See applicable notes for specifications on when to backfill foundation walls.
- K. Field Quality Control
  - 1) Reference standard: ACI 301 Chapters 16 and 17, in latest edition.
  - 2) Slump tests: The contractor shall provide necessary equipment and shall make test in conformity with ASTM C143. The contractor shall make slump tests on the first concrete truck of each pour and as often as deemed necessary by the contractor to maintain the required slump when directed by the Architect or Engineer of Record.
  - 3) Control tests:
    - a) Control tests of concrete work shall be made on every 50 cubic yards or fraction thereof of concrete placed and, in any case, minimum of once during each day's pour.
    - b) Each test shall consist of four standard 6" test cylinders cast and cured in accordance with ASTM C31 and ASTM C172.
    - c) Sample concrete at point of placement.
    - d) One cylinder shall be tested at the end of 7 days after placing, two cylinders shall be tested at 28 days after placing and the remaining cylinder shall be stored until its disposition is determined by the Architect.
    - e) In general, remaining cylinder will be tested only when previous test reports indicated unsatisfactory results.
    - f) Tests on remaining cylinder shall be at the expense of the contractor.
    - g) Architect and /or Engineer of Record reserves the right to stop future concrete work when the 7 or 28 day tests indicate unsatisfactory results until, in the opinion of the Architect and/or Engineer of Record, proper corrective measures have been taken to insure quality concrete in future work and corrections deemed necessary have been made.
    - h) Tests shall be made at time control tests are taken and so stated in reports to determine slump, air content, unit weight and temperature of concrete.
    - i) All tests shall be made in accordance with ASTM C138 or ASTM C231.
  - 4) Slab tolerance: Maintain surface flatness with maximum variation of 1/8" in 20 feet.



RESIDENCE

ENGINEER:	TEA
DRAWN BY:	TA
PRINTING:	DATE:
Submittal 4/15/2020	
REVISION:	DATE:

SHEET No.  
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OF 4  
PROJECT No. 18505



FOUNDATION DESIGN IS BASED ON SOIL REPORT BY  
 ETL ENGINEERS & CONSULTANTS JOB NO. G  
 5409-2012, DATED MARCH 2020.  
 ALLOWABLE BEARING CAPACITY..... 3,000 PSF

**FOUNDATION PLAN**

SCALE: 1/4" = 1'-0"

VERIFY ALL DIMENSIONS  
 PRIOR TO CONSTRUCTION



RESIDENCE

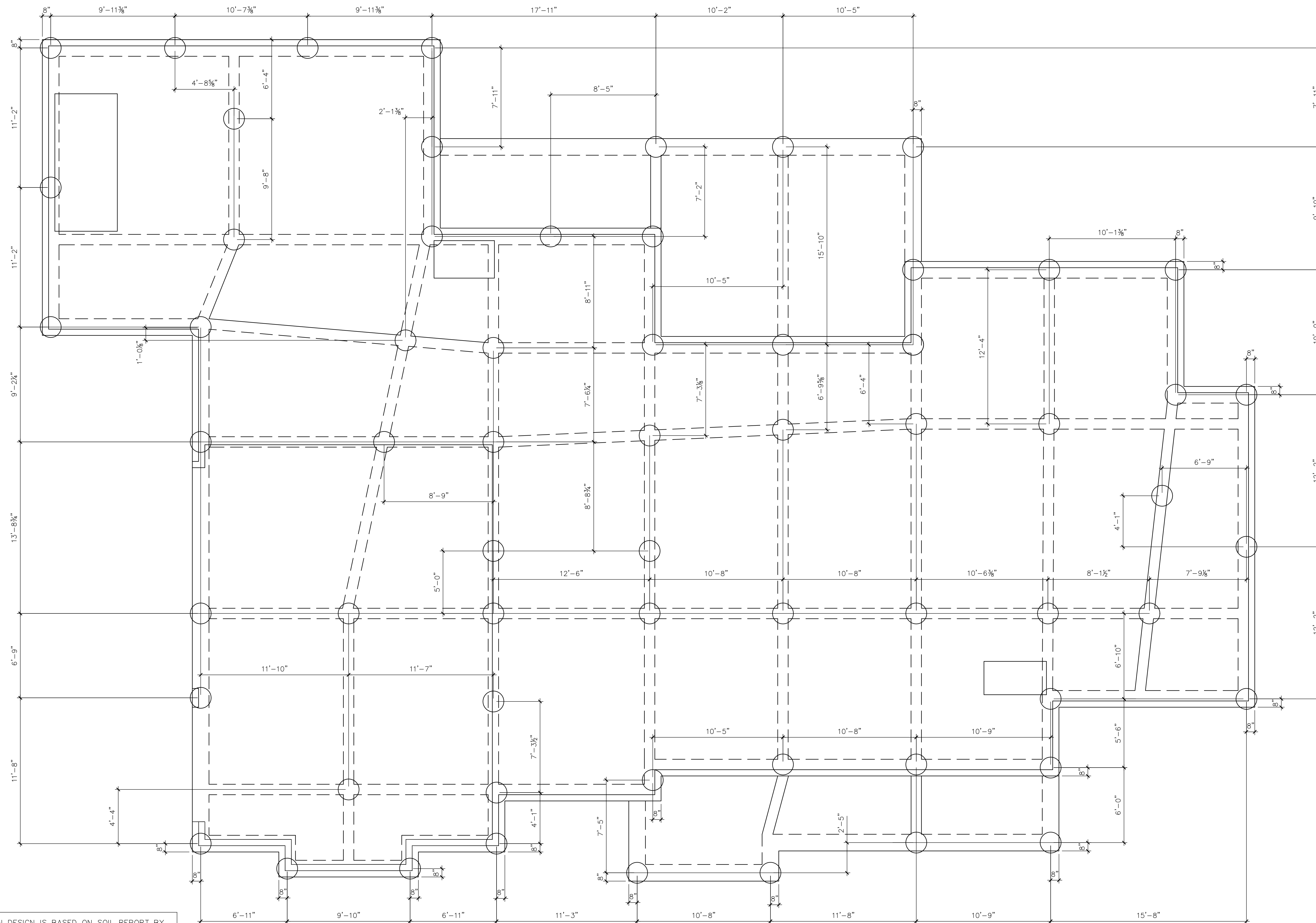
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## PIER & TIE-WALL PLAN

SCALE: 1/4" = 1'-0"

VERIFY ALL DIMENSIONS  
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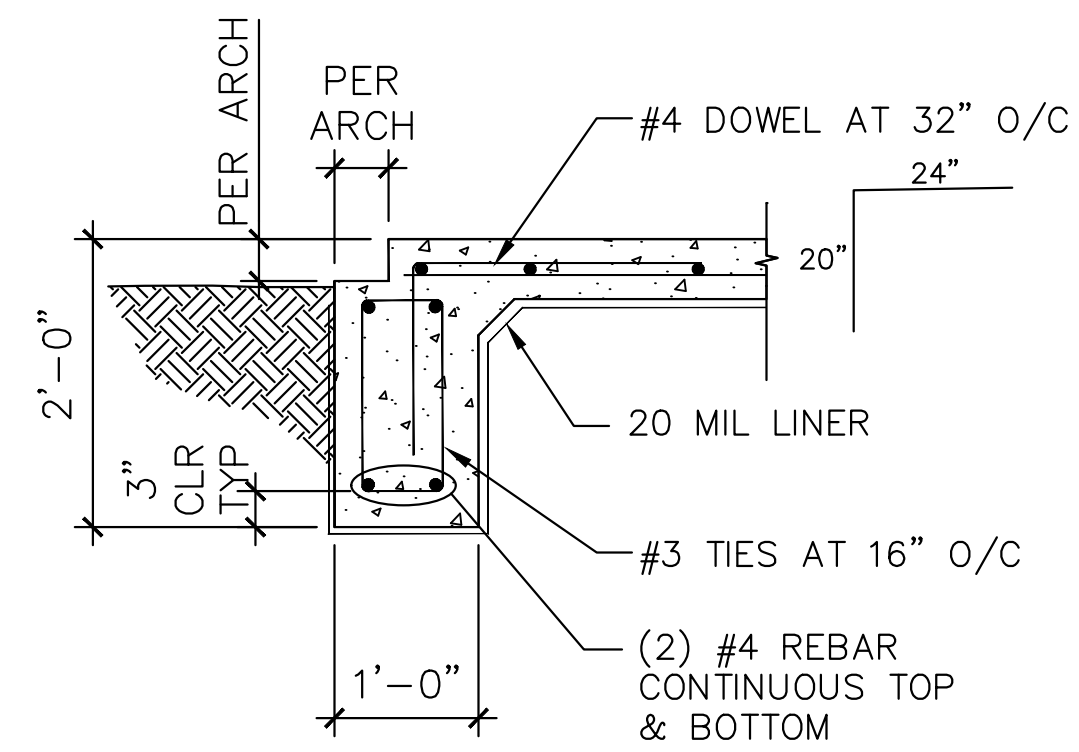
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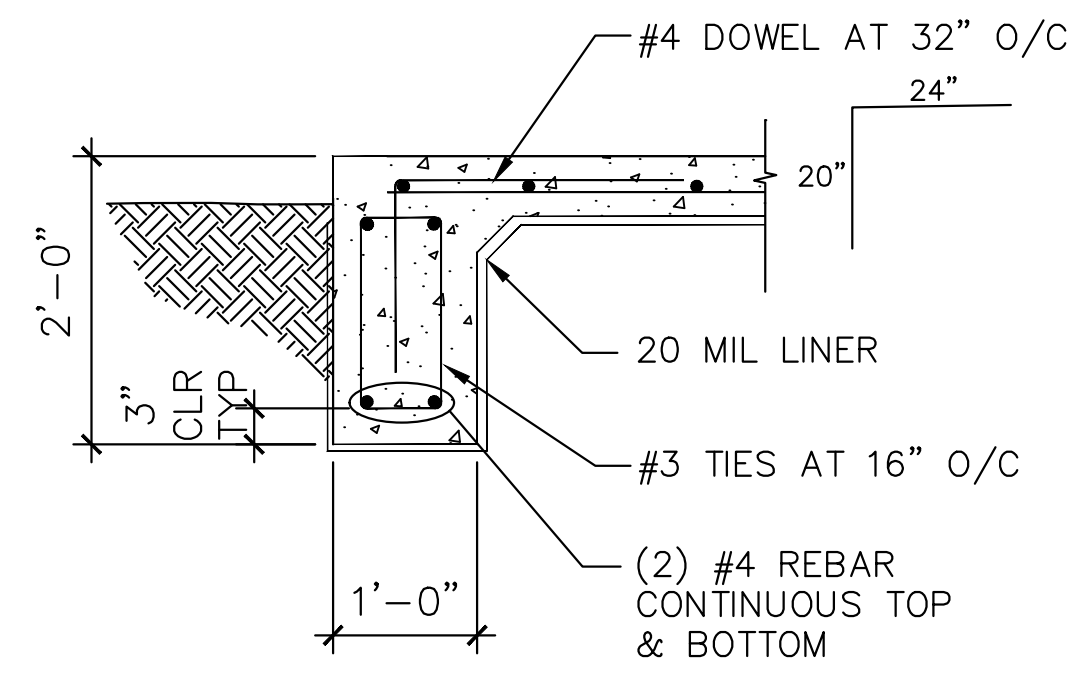
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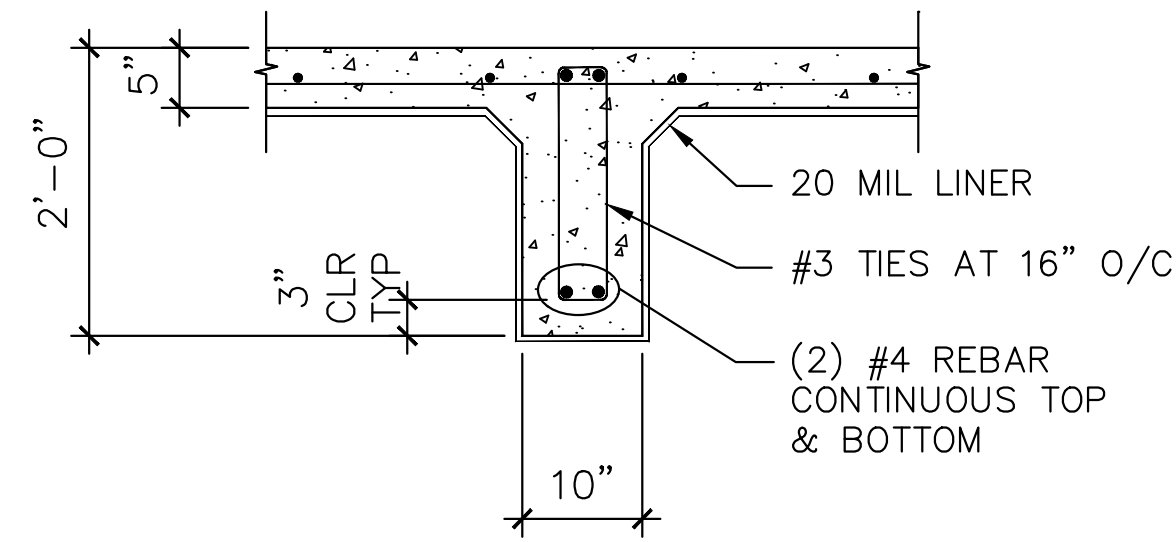
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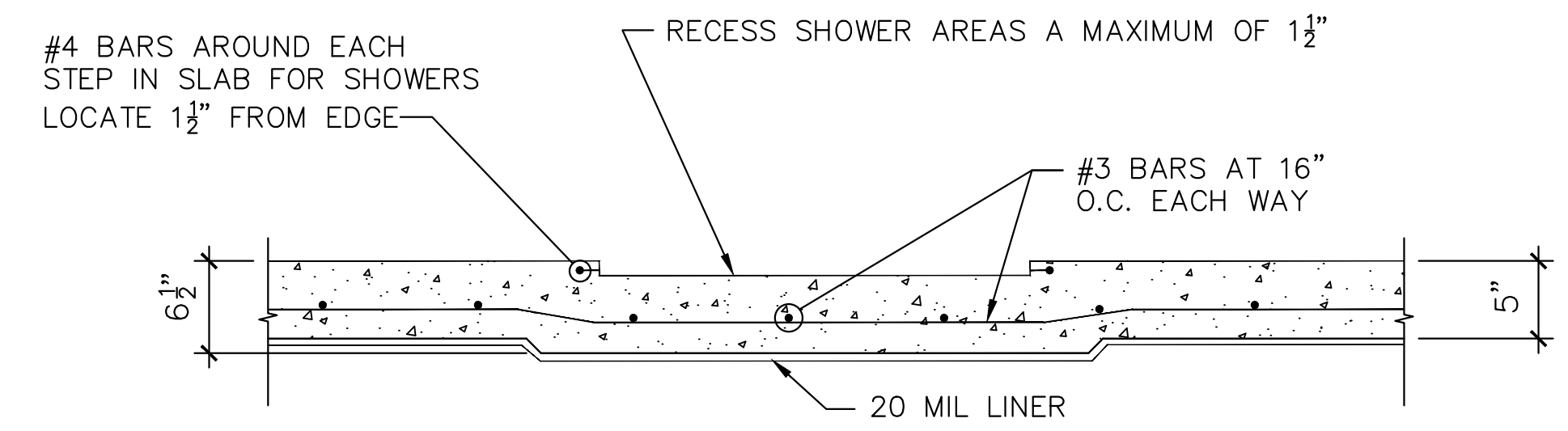
**1 FOUNDATION SECTION**  
SCALE: 3/4" = 1'-0"



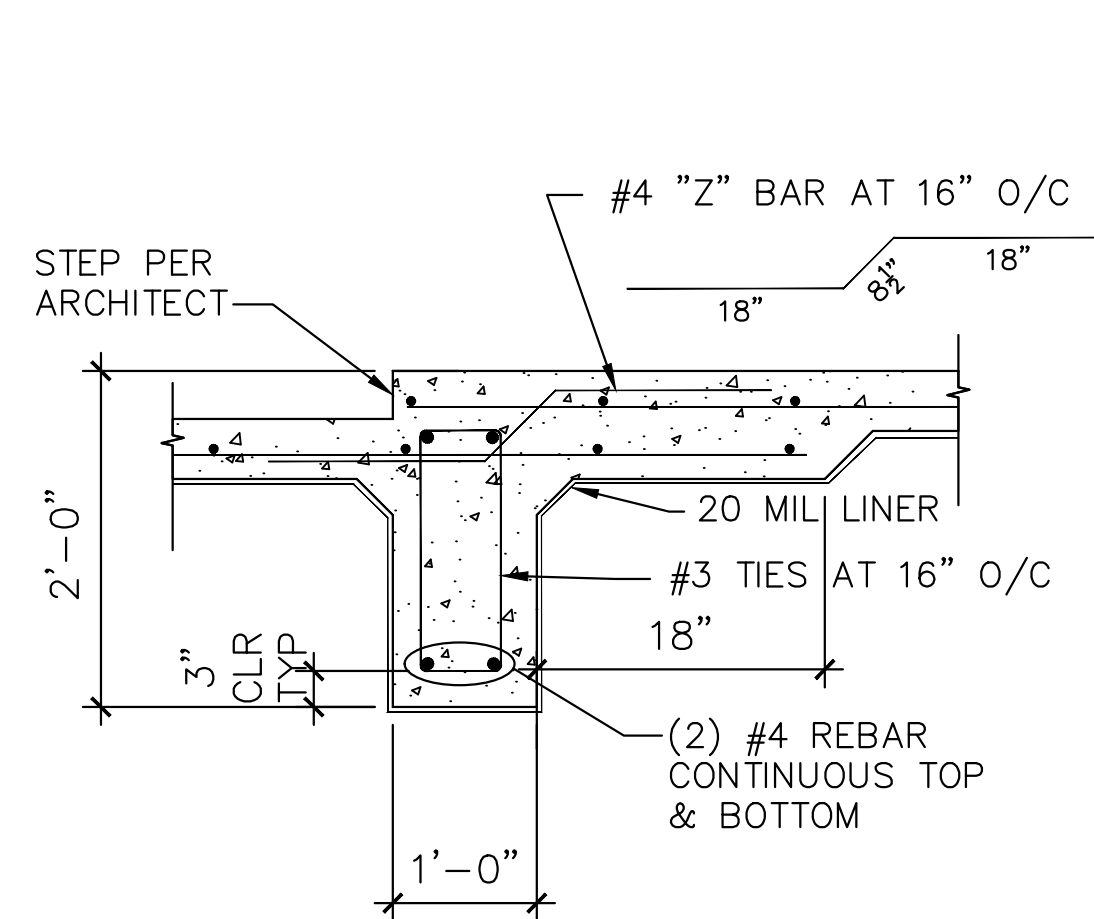
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SCALE: 3/4" = 1'-0"



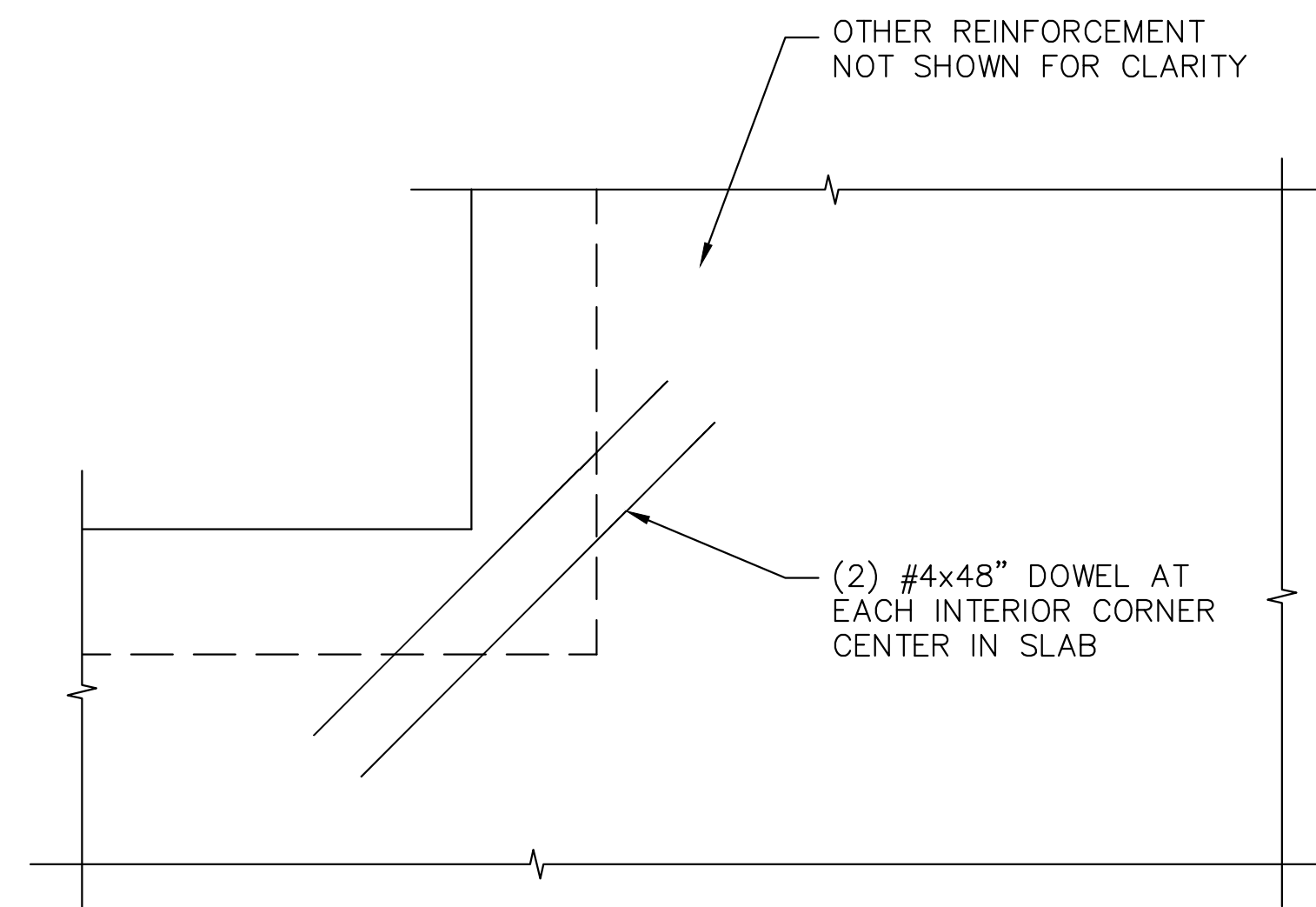
**3 FOUNDATION SECTION**  
SCALE: 3/4" = 1'-0"



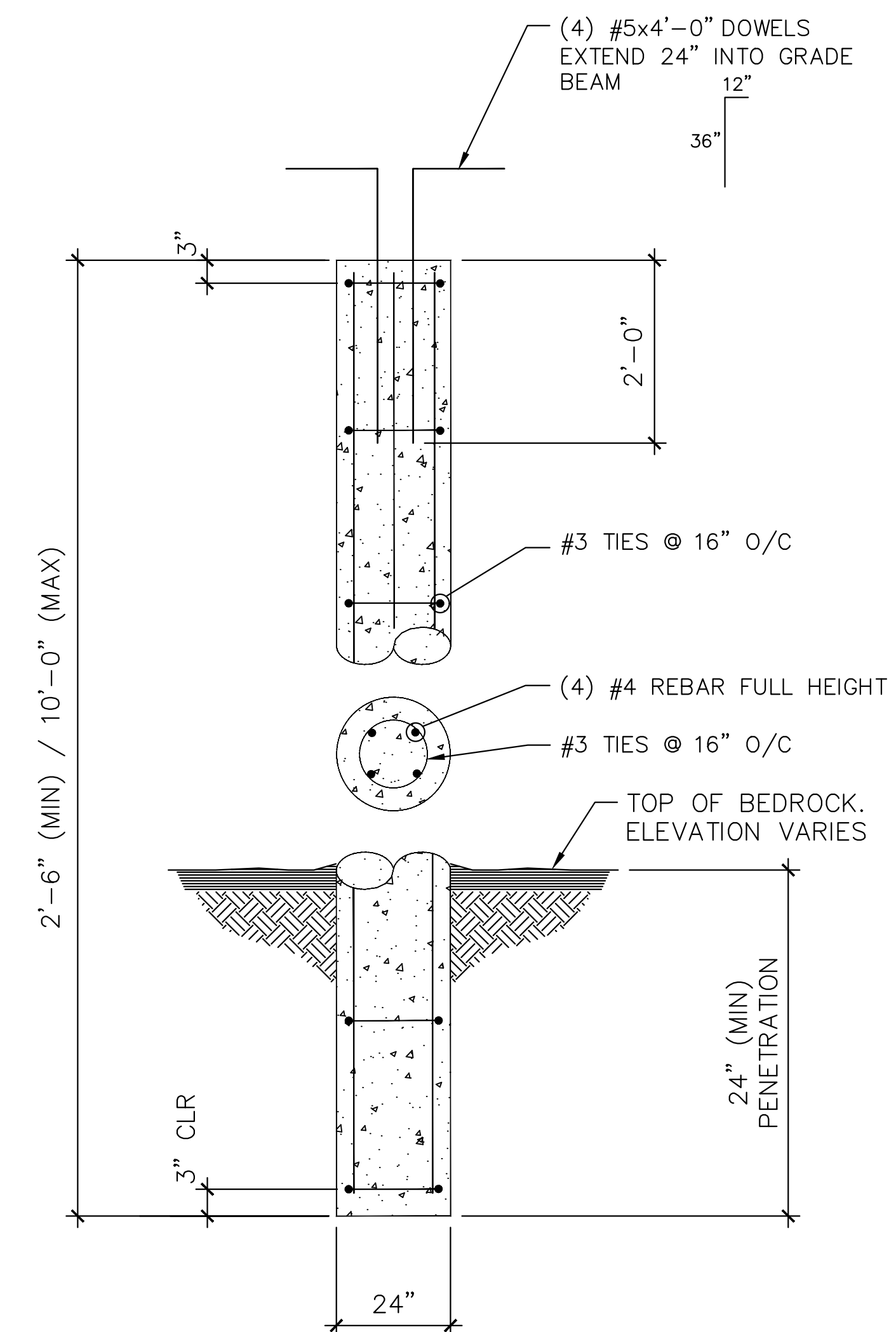
**4 SLAB SECTION**  
SCALE: 3/4" = 1'-0"



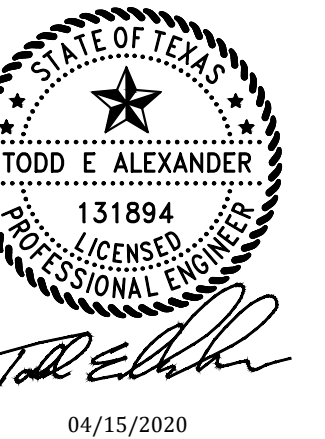
**5 FOUNDATION SECTION**  
SCALE: 3/4" = 1'-0"



**6 INTERIOR SLAB CORNER**  
SCALE: 3/4" = 1'-0"



**7 FOUNDATION PIER**  
SCALE: N.T.S



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