

GENERAL STRUCTURAL AND CONSTRUCTION NOTES

GENERAL

1.

All work shall conform to the "2020 New York Building Code" and to all other applicable Federal, State, and Local regulations.
2.

In case of conflict between the General Notes, Specifications, and details, the most rigid requirements shall govern.
3.

Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
4.

Job site safety and construction procedures are the sole responsibility of the Contractor.
5.

The Contractor shall provide for dewatering as required during excavation and construction.
6.

The Contractor shall coordinate openings, sleeves, concrete housekeeping pads, inserts, and depressions shown on the Architectural, Structural, Mechanical, Electrical, and Plumbing Drawings.
7.

See Architectural Drawings for locations of masonry and drywall non-load bearing partitions. Provide slip connections that allow vertical movement at the heads of all such partitions. Connections shall be designed to support the top of the walls laterally for the code-required lateral load.
8.

All costs of investigation and/or redesign due to Contractor improper installation of structural elements or other items not in conformance with the Contract Documents shall be at the Contractor's expense.
9.

The structural drawings shall be used in conjunction with the specifications, architectural and mechanical drawings. If there is a discrepancy between drawings, it is the Contractor's responsibility to notify the Architect prior to performing the work
10.

The Contractor shall verify and/or establish all existing conditions and dimensions at the site. Failure to notify Architect/Engineer of unsatisfactory conditions constitutes acceptance of unsatisfactory conditions.
11.

If the existing field conditions do not permit the installation of the work in accordance with the details shown, the Contractor shall notify the Architect/Engineer immediately and provide a sketch of the condition with his proposed modification of the details given on the Contract Documents. Do not commence work until condition is resolved and modification is approved by the Architect.
12.

The Contractor shall be responsible to determine allowable construction loads and to provide design and construction of falsework, formwork, staging's, bracing, sheeting, and shoring, etc.
13.

Contractor to provide sheeting, bracing, and underpinning as necessary to prevent any lateral or vertical movements existing buildings, streets, and any existing utility lines.
14.

Bracing, sheeting, shoring, etc., required to insure the structural integrity of the existing buildings or new construction, sidewalks, utilities, etc., shall be designed by a Professional Engineer engaged by the Contractor. Detailed signed and sealed shop drawings shall be prepared indicating all work to be performed. Submit the shop drawings in accordance with the Contract requirements.
15.

In no case shall heavy equipment be permitted closer than 8'-0" from any foundation wall. If it is necessary to operate such closer than 8'-0" to the wall, the Contractor shall be the sole responsible party and, at his own expense, shall provide adequate supports or brace the wall to withstand the additional load superimposed from such equipment.
16.

No blasting shall be permitted without written approval.
17.

The contractor shall submit, for review, drawings and calculations for all performance assemblies identified in the General Notes and listed below: The design of these assemblies is the responsibility of the Contractor's Engineer registered in the Project's jurisdiction. All submittals shall bear this Engineer's seal and signature. Review shall be for general conformance with the project requirements as indicated on the Drawings and in the General Notes.
- A.

Non-load bearing stud wall and curtain wall systems and related connections: Designs shall be designed for a maximum deflection of 1/600 if the span, or 3/8", whichever is less, at the applicable design wind load without the code applied reduction factors.
- B.

Metal stairs and metal railings: Designs shall take into account all vertical and lateral loads required by applicable building codes. Where headers or other types of structural members have been designated by the Structural Engineer of Record to support the stairs, the connections from the stairs shall be designed so that no eccentric or torsional forces are induced in these structural members. The Contractor shall be responsible for furnishing and installing hardware as required by the stair design.
18.

Shop drawings for all structural materials to be submitted to Architect for review prior to the start of fabrication or commencement of work. Review period shall be a minimum of two (2) weeks.
19.

Reproduction of any portion of the Structural Contract Drawings for resubmittal as shop drawings is prohibited. Shop drawings produced in such a manner will be rejected and returned.
20.

Shop drawings shall bear the Contractor's stamp of approval which shall constitute certification that the Contractor has verified all construction criteria, materials, and similar data and has checked each drawing for completeness, coordination, and compliance with the Contract Documents.
21.

The shop drawings shall include dimensioned floor and roof edges, openings and sleeves at all floors required for all trades.
22.

The structural drawings shall govern the work for all structural features, unless noted otherwise. The architectural drawings shall govern the work for all dimensions.
23.

Inspection is required of all construction delineated on the Structural Drawings and/or specifications. The Owner shall employ a Testing/Inspection Agency which shall provide personnel with the following minimum qualifications:
- A.

Certified by Institute of Certified Engineering Technicians, or other recognized comparable organization, and,
1.

For inspection, sampling, testing concrete and masonry: ACI Certified Concrete Field – Testing Technician, Grade I; and Construction Inspector, Level II.
2.

Structural Steel Inspection: AWS Certified Welding Inspector.
25.

Submit periodic reports within one business day after receipt by the Contractor to Architect/Engineer and the construction code official during construction. Submit final inspection report summary for each division of work, certified by a licensed professional Engineer, that inspections were performed and that work was performed in accordance with Contract Documents.
26.

All materials shall be stored to protect them from exposure to the elements.

EARTHWORK

1.

Engineered (controlled compacted) fill within the building area shall be constructed prior to footing excavation.
2.

Excavation shall be performed so as not to disturb existing adjacent buildings, streets, and utility lines. Verify location of all utilities prior to commencement of work. Hand excavate around utilities as required.
3.

See the specifications and geotechnical report for excavation, backfill and preparation of the foundation and slab-on-grade subgrade, including compaction requirements.
4.

Satisfactory fill materials are those complying with ASTM D487, groups GW, GP, GM, SM, SW, and SP. On site borrow material shall be tested to determine suitability for use as a fill material.
5.

Compact soil to not less than the following percentages of maximum density of modified proctor (ASTM D1557):

Under building foundations – 95%
Under building slabs, steps, pavements – 92%
6.

Remove existing vegetation, topsoil, and unsatisfactory soil materials. Proof roll subgrade to obtain uniformly densified substrata prior to placing fill material evenly in 8" thick (maximum) layers and compacting to required density.
7.

The Owner shall retain the services of a Professional Geotechnical Engineer, subject to the approval of the Architect outlining the work performed and test results.
8.

Backfill shall be brought up simultaneously on each side of walls and grade beams, with a grade difference not to exceed 2' – 0" at any time.

FOUNDATIONS

1.

Footings shall bear on undisturbed stratum or engineered fill with a minimum bearing capacity of 2 TSF. The footing elevations documented are based on the assumption that all existing loose fill soils will be removed and replaced with controlled compacted fill.
2.

Prior to footing concrete placement, the footing subgrade shall be approved by the inspecting Geotechnical Engineer. If conditions prove to be unacceptable at elevations shown, footing bottoms shall be lowered to acceptable subgrade material. Fill over-excavation with lean concrete (2,500 psi).
3.

The bottom of exterior footings shall be a minimum of four (4) feet below finished grade, or as required by Local building codes.
4.

Slabs on grade shall bear on mechanically compacted soil capable of supporting 600 psf. Drainage fill under slabs shall be compacted gravel or crushed stone.
5.

Concrete for foundations shall be poured on the same day the subgrade is approved by the Geotechnical Engineer.
6.

Utility lines shall not be placed through or below foundations without the Structural Engineers approval.
7.

The Contractor shall observe water conditions at the site and take the necessary precautions to ensure that the foundation excavations remain dry during construction. Any sheeting or shoring required for dewatering shall be the responsibility of the Contractor.

CAST – IN – PLACE CONCRETE

1.

Concrete shall be designed and detailed in accordance with the Building Code Requirements for Structural Concrete (ACI – 318 – 14) and constructed in accordance with the CRSI Manual of Standard Practice.
2.

Concrete shall have a minimum compressive 28 – day strength of 4,000 psi; Air Entrainment 4% to 6% in all exposed concrete work.
3.

Maximum water/cement ratios:
A. Foundations 0.50
B. Interior Slabs 0.47
C. Exterior Slabs 0.44
4.

All concrete shall be normal weight concrete (144 pcf +) with all cement conforming to ASTM C150, Type I. Maximum aggregate size shall be 1 – ½" for footings and ¾" for walls and slabs, conforming to ASTM C33.
5.

Reinforcing steel: ASTM A615 Grade 60.
6.

Welded Wire Reinforcement: (WWR) ASTM A – 185.
7.

Leveling Grout shall be non – shrink, non – metallic type, factory pre – mixed grout in accordance with CE – CRD – C621 or ASTM C109, with a minimum compressive 28 – day strength of 5,000 psi.
8.

Reinforcing steel clear cover shall be as follows unless noted otherwise:
A. Concrete cast against and permanently exposed to earth 3"
B. Concrete exposed to earth or weather
#6 bars and larger 2"
#5 bars and smaller 1 – ½"
C. Concrete not exposed to weather or in contact with ground slabs, walls, joists
#11 bars and smaller ¾"
Beams and columns
Primary Reinforcement, ties, stirrups, or spirals 1 – ½"
9.

Submit to Architect/Engineer reinforcing steel shop drawings for approval and mix designs for review prior to placing any concrete.
10.

All reinforcement shall be securely held in place while placing concrete. If required, additional bars, stirrups or chairs shall be provided by the Contractor to furnish support for all bars.
11.

Lap welded wire reinforcement two (2) full wire spaces at splices and wire together.
12.

Provide plastic tipped bolsters and chairs at all locations where the concrete surface in contact with the bolsters or chairs is exposed.
13.

Placing of concrete shall not start until the placement of reinforcing has been approved by the Inspection Agency.
14.

Bonding agent shall be used where dowels are to be installed into existing concrete. Submit manufacturer information for engineer review.
15.

Epoxy adhesive shall be used where dowels are to be installed into existing concrete. Submit manufacturer information for engineer review.
16.

No sleeve shall be placed through any concrete element unless shown on the approved shop drawings or specifically authorized in writing by the Structural Engineer. The contractor shall verify dimensions and locations of all slots, pipe sleeves, etc. as required for mechanical trades before concrete is placed.
17.

Pipes or conduits placed in slabs shall not have an outside diameter larger than 1/3 the slab thickness and shall not be spaced closer than 3 diameters on center. Aluminum conduits shall not be placed in concrete. No conduits shall be placed in slabs within 12 inches of column face or face of bearing wall. No conduits may be placed in exterior slabs or slabs subjected to fluids.
18.

Prior to placing concrete, the Contractor shall submit for review by the structural engineer, a concrete pour schedule showing location of all proposed construction joints and waterstops.
19.

Prior to concrete placement, the Contractor shall submit to the structural engineer for review, concrete mic designs prepared in accordance with the specifications and requirements indicated in the general notes.
20.

Concrete shall not be pumped through aluminum pipes and shall not be placed in contact with aluminum forms, mixing drums, buggies, chutes, conveyors, or other equipment made of aluminum.
21.

All inserts and sleeves shall be cast – in – place whenever feasible. Drilled or powder driven fasteners will be permitted when proven to the satisfaction of the Structural Engineer that the fasteners will not spall the concrete and have the same capacity as cast-in-place inserts.
22.

When installing expansion bolts or adhesive anchors, the Contractor shall take measures to avoid drilling or cutting of any existing reinforcing and destruction of concrete. Holes shall be blown clear prior to placing bolts or adhesive anchors.
23.

Chamfer all exposed concrete corners unless noted otherwise on Architectural Drawings.
24.

The concrete slabs shall be finished flat and level within tolerance, to the elevation indicated on the drawings. The Contractor shall provide additional concrete required due to formwork, metal deck, and framing deflection to achieve this finished top of slab elevation. The contractor shall provide for a minimum of 5/8" average thickness for additional concrete during placement for all slabs supported and formed on steel deck over the entire floor area. The Contractor shall provide the means by which the maximum and minimum concrete slab thickness can be monitored and verified during and after the placing and finishing operations.
25.

Construction joints for slabs on metal deck shall be located midway between beams where the joint is parallel to the beam span. Joints shall be located within the middle third of span where the joint is perpendicular to the beam span. Any stop in concrete work must be made with vertical bulkheads, unless otherwise shown. All reinforcing is to be continuous through joints.

26.

Early drying out of concrete, especially during the first 24 hours, shall be carefully guarded against. All surfaces shall be moist cured or protected using a membrane curing agent applied as soon as forms are removed. If membrane curing agent is used, exercise care not to damage coating.
27.

Cold weather concreting shall be in accordance with ACI–306. Hot weather concreting shall be in accordance with ACI–305R.
28.

Throughout construction, the concrete work shall be adequately protected against damage due to excessive loading, construction equipment, materials or methods, ice, rain, snow, excessive heat, and freezing temperatures.
29.

Prepare concrete test cylinders from each days pour. Cylinders shall be properly cured and stored. Sample fresh concrete in accordance with ASTM C172.
30.

Retain laboratory to provide testing service. Slump per ASTM C143I air content per ASTM C231 or C173, cylinder tests per ASTM C31 and C39. One set of six (6) cylinders for each 50 cubic yards for each mix used. Reports of all tests to be submitted to the Architect.

PRECAST CONCRETE

1.

Precast concrete shall be designed Design in accordance with "Building Code Requirements for Structural Concrete, ACI 318–14", American Concrete Institute, and "PCI Design Handbook – Precast and Prestressed Concrete", Prestressed Concrete Institute.
2.

Submit signed and sealed calculations with signed and sealed shop drawings for precast members showing a rational complete load path, including effects on supporting members. Calculations shall clearly indicate all loads imposed upon the supporting structural system. Review of the calculations by the Structural Engineer shall be solely for the purpose of evaluating the impact of these loads on the supporting structural system.
3.

Precast members may require electrical conduit, junction boxes, openings, etc. for the passage of utilities. They may also require inserts, plates, and anchors for the attachment of the other equipment. See Architectural and Mechanical drawings for items required and their positioning. Coordinate with appropriate trades. Refer to Architectural details for chamfers, reveals, reglets, etc. not indicated on the Structural Drawings.
4.

Precast concrete members are to be of dimensions shown on the Architectural and Structural Drawings.
5.

Precast manufacturer shall coordinate locations of all openings in panels, all cast-in-plates, core drilled holes, anchors, sleeves, etc., with other trades. These items must be field verified, submit shop drawings showing this coordination.

CONCRETE ANCHORS

1.

All headed concrete anchors shall be manufactured from material which conforms to ASTM A108 for low carbon steel.
2.

All welds shall be made in accordance with the structural welding code, ANSI/AWS D1.1, latest edition and with the recommendations of the stud manufacturer.
3.

All adhesive anchors shall be anchored using the "Hilti HY200 Max" system by Hilti Fastening Systems, Inc. or an approved equal.
4.

The spacing, minimum embedment, and installation of the anchors shall be in accordance with the manufacturer's recommended procedures.
5.

Anchor rods sed in adhesive anchorage systems shall conform to the manufacturer's recommended steel.
6.

Stud anchors shall conform to ASTM A108 and the nuts shall conform to ASTM A563.

MASONRY

1.

Masonry has been designed in accordance with the Building Code Requirements for Masonry Structures (TMS 402–2016) and shall be constructed in accordance with the Specifications for Masonry Structures (TMS 602–2016), except where otherwise modified by these General Notes and Specifications.
2.

Mortar shall conform to ASTM C270, Type M or S. All Portland cement shall conform to ASTM C150, Type I. Lime shall conform to ASTM C207 and masonry cement shall conform to ASTM C91.
3.

Grout shall conform to ASTM C476 and shall have a minimum of 28 day compressive strength of 3000 psi. Slump of the grout shall be 8 to 10 inches and the maximum aggregate size shall be 3/8" (aggregate graded to produce fine grout in conformance with ASTM C476 and C404).
4.

Minimum 28 – day compressive strength of masonry, f'm shall be 1,500 psi, unless noted otherwise.
5.

Full bed and head joints shall be provided.
6.

Horizontal Joint Reinforcing: ASTM A82; 9–gage truss–type, galvanized.
7.

Deformed bar reinforcement shall conform to ASTM A615, Grade 60 and shall be full height of walls unless otherwise noted. Provide bar spacers and positioners as required to properly locate and stabilize reinforcing during grouting operations. Grout all reinforced cells solid with grout.
8.

Hollow concrete units below grade and slab on grade shall be normal weight and have all cells grouted solid.
9.

Provide galvanized horizontal joint reinforcement in all walls and partitions at 16" o.c. unless otherwise shown or noted. Provide one (1) piece prefabricated units at 8" o.c. at all wall corners and intersections.
10.

Lap splices for deformed reinforcing bars used in masonry construction shall be 50 bar diameters.
11.

Submit grout mix design and masonry unit certifications to the Architect for review.
12.

Grout placement shall not start until the placement of reinforcing has been approved by the Inspection Agency.
13.

Fill all cells in top two courses below finished floor, CMU lintels, bond beams, and beam bearings and cells with reinforcement full heigh solid with grout.
14.

Allow grout reinforced CMU walls to cure a minimum of 48 hours before imposing concentrated or other loads from above.
15.

Provide masonry anchors set on coursing and attached to all beams at 32" o.c. horizontal, columns at 24" o.c. vertical, partitions and walls at 16" o.c. at all beams, columns, partitions and walls abutting or embedded in masonry unless noted otherwise on Architectural and Structural drawings.
16.

Provide bond beams with two (2) #4 horizontal reinforcement continuous in all masonry walls at each framing level. Provide a minimum of two (2) #4 at the ends of all walls and on each side of each opening.
17.

All piers and partitions shall be bonded or anchored to adjacent masonry walls. Provide ties to adjacent floor and roof construction in accordance with details on drawings.
18.

The Contractor shall verify all openings below lintels indicated are adequate to accept doorframes, louvers, etc. as shown on the Architectural and Mechanical Drawings. Notify the Architect and Structural Engineer of any discrepancies prior to lintel installation.
19.

No openings shall be placed above any lintel within a height less than or equal to the width of the clear opening below the lintel, unless specifically shown or approved by the Structural Engineer.
20.

All masonry work to be executed in cold weather shall be in conformance with the recommendations for the cold weather construction found in the Building Code Requirements for Masonry Structures (TMS 402–2016) and shall be constructed in accordance with the Specifications for Masonry Structures (TMS 602–2016) with the following additions: For all conditions when temperatures fall below 40 degrees F, the temperature of the newly laid masonry or newly grouted masonry shall be maintained above 32 degrees F for a minimum of 24 hours using the methods described in ACI 530.1.
21.

The Testing and Inspection Agency shall monitor the proportioning, mixing, and consistency of mortar and grout; the placement of mortar, grout, and masonry units; and the placement of reinforcing steel for compliance with the Contract Documents.
22.

All wall sections and piers less than two square feet in cross-sectional area shall be fully grouted.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

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| Revision | | | |
| Project No. | | JOB No. | License No. 069646 |
| <div>DAY STOKOSA</div> ENGINEERING P.C. | | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | | |
| PROJECT | | | |
| 364 Main Street | | | |
| City of Beacon | | Dutchess County, New York | |
| DRAWING | | | |
| Structural Notes | | | |
| SCALE | DRAWN BY | DRAWING NO. | |
| No Scale | MAD | S000 | |
| DATE | CHECKED BY | | |
| 12-20-21 | MAD | | |

STRUCTURAL STEEL

1.

Fabrication and erection of structural steel shall conform to the "Steel Construction Manual", Fifteenth Edition, American Institute of Steel Construction including Specifications for Structural Steel Buildings, Specification for Structural Joints Using ASTM A325 or A490 Bolts, and AISC Code of Standard Practice except Sections 4.2 and 7.9 which shall not be applicable to this project.
2.

All welding shall be performed by certified welders and shall conform to "Structural Welding Code ANSI/AWS d1.4 – 17", American Welding Society.
3.

Wide flange shapes: ASTM A992 or A572, Grade 50.
4.

Structural shapes & plates: ASTM A36, A572, or A992.
5.

Steel pipe: ASTM A53, GRADE B.
6.

Steel tubing (square, rect., or round): ASTM A500, Grade B.
7.

Galvanized structural steel:

A. Structural shapes and rods: ASTM A123.

B. Bolts, fasteners, and hardware: ASTM A153
8.

All bolted connections shall be with ASTM high strength bolts $\frac{3}{4}$ " minimum diameter, unless noted otherwise.
9.

All bolted connections on wind bracing members and columns shall be slip critical connections.
10.

Anchor rods shall conform to ASTM F1554, Grade 36, unless noted otherwise.
11.

Welding electrodes shall be E70XX for manual arc welding and F7X–EXXX for submerged arc welding. All welders shall be certified by the AWS. Minimum weld size shall be 3/16" unless noted otherwise.
12.

Cuts, holes, coping, etc. required for other trades or field conditions shall be shown on the shop drawings and made in the shop. Cutting or burning of main structural members in the field will not be permitted.
13.

Submit shop drawings for fabrication and erection of structural steel. Clearly indicate coordinated dimensions of mechanical unit and rood penetration sizes. Shop and Erection drawings must show all shop/floor and field welds. Initial shop drawings submittal shall include proposed connection details and job standards. Provide a signed and sealed calculations for all non – standard connection details showing design capacities.
14.

Steel members shown on plan shall be equally spaced unless noted otherwise.
15.

Camber indicated on these drawings is the required camber after final erection and includes all mill tolerances.
16.

The General Contractor and Steel Erector shall notify the Structural Engineer of any fabrication or erection errors or deviations and receive written approval before any field corrections are made.
17.

Alternate connection details may be used if such details are submitted to the engineer for review and approval. However, the engineer shall be the sole judge of acceptance and the Contractor's bid shall anticipate the use of those details shown on the drawings. The Contractor is responsible for the design of such alternate details which he proposes.
18.

Main support members for the metal deck are shown. During preparation, submission, and review of shop drawings, any additional angles or miscellaneous attachment details required to support the metal deck at the required elevation shall be provided by the Structural Steel Contractor.
19.

All steel shall be painted with shop standard primer unless noted otherwise.
20.

Steel angles and plates along with bolts and washers, in direct contact with exterior finish masonry, and all exterior exposed structural steel, shall be hot – dipped galvanized.
21.

All exterior exposed structural steel shall be hot – dipped galvanized per ASTM A123.
22.

Spandrels and columns adjacent to masonry shall have adjustable masonry ties.
23.

Field welded surfaces within four (4) inches of weld shall be cleaned and ground smooth. After welding coat the exposed area with appropriate primer/paints as specified.
24.

Guy's and other bracing required to provide lateral stability to steel frame shall be adequately sized and anchored. This bracing shall reman until permanent bracing elements and attached construction is installed.
25.

The steel structure is a non–self–supporting steel frame and is dependent upon diaphragm action of the metal (roof/floor) feck and attachment to the masonry walls for stability and for resistance to wind and seismic forces. Provide all temporary supports required for stability and for resistance to wind and seismic forces until these elements are complete and are capable of providing this support.
26.

All connections shall be "Framed Beam Connections" designed in accordance with the AISC Manual and the ends reactions from the "Uniform Load Tables", but not less than 6 kips. Provide double angle connections or knife plates connections full depth of supporting beam, unless otherwise approved. Minimum two (2) bolts per connection. Unless otherwise noted, composite beams to be designed for 80% of the "total" uniform load capacity. All beam to column connections shall be designed for the minimum shear reaction indicated above in combination with a 10–kip axial force (acting in both tension and compression).
27.

Visually inspect all fillet welds. 10% of all field fillet welds in primary connections and multi–pass welds shall be tested by the magnetic particle method, complying with E109, performed on the root pass and on the finished weld.
28.

100% of full penetration welds shall have ultrasonic inspection, complying with ASTM E164.
29.

100% of welds in beam and column moment connections shall have ultrasonic inspection, complying with ASTM E164.
30.

Field test bolted connections and shear studs in accordance with AISC.
31.

Delete paint on all steel to receive sprayed – on fireproofing or concrete encasement.
32.

All steel shall be thoroughly cleaned by power tool cleaning prior to painting. All architecturally exposed structural steel shall be cleaned with commercial blast cleaning.
33.

All dissimilar metals shall be treated or properly separated to prevent galvanic and/or corrosive effects.
34.

All connections shall be symmetrical about the axis of the member connected. Provide only one grade of bolt for each bolt diameter to be used in the connections. Do not mix grade of bolts.

STEEL JOISTS

1.

Design of joists shall be by Manufacturer's Engineer registered in the Project's jurisdiction for all loadings required by these Documents and in accordance with Steel Joist Institute Specifications. All submissions shall bear this Engineer's seal and signature. All open web joists shall conform to the "Standard Specifications and Load Tables for Open Web Steel Joists" of the Steel Joist Institute.
2.

Special joists (SP, KCS), where indicated on plans, have special design requirements. Refer to plans and details for locations and loading diagrams.
3.

Attach joist on column lines with erection bolts and weld after plumbing and aligning. Attach all other joists to steel by welding. Provide angle extensions at bottom chord of joists framing into columns and girders as required by OSHA.
4.

Joists to be welded to supports, U.N.O.
5.

Joist bridging shown on the drawings shall be considered as the minimum. Joist Manufacturer shall confirm compliance with SJI Specifications and OSHA requirements and shall supply additional bridging as required.
6.

Bridging shall be welded or bolted and anchored at end walls or beams. All bridging, bridging anchors, and joist connections shall be completely installed prior to the application of any construction loads.
7.

For roof joists resisting net wind uplift, provide bridging oy the first panel point from the supports. Provide additional bridging as required by the joist manufacturer.
8.

Inspect joist installation in accordance with AISC.
9.

No load exceeding 150 pounds shall be hung from the joists unless the load is applied within 6 inches from a panel point or the joist is properly strengthened. All costs associated with strengthening the joists for concentrated loads shall be included in the subcontractor's bid for the work.
- CURTAIN WALL/STOREFRONT WINDOW SYSTEMS
1.

The weight of the specified curtain wall/storefront window systems has been assumed to be 17 psf for the design of the structural support of the curtain wall/storefront. The Curtain wall/storefront manufacturer shall verify that the actual weight of the system does not exceed this weight. If the weight of the system exceeds the above referenced weight, the manufacturer shall notify the architect/engineer immediately for further review.

2.

The connection of the curtain wall/storefront system shall occur at the locations indicated on the structural drawings unless approved otherwise. The structural drawings indicate the locations for combined gravity and lateral connections as well as vertical slip, lateral only connections. The curtain wall manufacturer shall provide the type of connections specified at the locations indicated unless approved otherwise.

3.

All connections of the curtain wall/storefront system and the system itself shall be capable of accommodating a live load deflection of the structural framing of 0.3 inch or L/600, whichever is less. Additional dead load deflection tolerances may be required if the connection of the curtain wall/storefront to the structural system is made prior to the placement of the floor slab.

4.

All embed, breakout, tie back, and other requirements for the curtain wall/storefront system shall be coordinated with all other trades affected.
- SITE SOILS:
1.

The foundation design shown hereon is based on a minimum bearing capacity of 2 TSF.

2.

A third party inspection agency shall be employed by the Owner to ensure that the site work and design recommendations outlined herein have been met.
- DESIGN DATA
1.

Governing code: 2020 New York State Building Code / 2018 International Building Code

2.

Floor Live Load:

A. Common Areas:

B. Partition:

C. Residential Floors:

100 PSF

15 PSF

40 PSF

3.

Roof Dead Load:

A. Truss Weight

B. Roof Deck and Insulation

C. Sprinklers

D. Misc. Mech/Elec/Plumbing/Collateral

E. Roofing

Total Dead Load

5 PSF

4 PSF

5 PSF

4 PSF

4 PSF

18 PSF

4.

Roof Live Load

A. Live Load

B. Snow Load:

Pg (Ground Snow Load)

Pf (Flat Snow Load)

Ce (Snow Exposure Factor)

I (Snow Load Performance Factor)

Ct (Thermal Factor)

100 PSF

30 PSF

21 PSF (30 PSF USED)

0.9

1.0

1.0

5.

Wind Load:

A. Ultimate Wind Speed

B. I (Wind Importance Factor)

C. Wind Exposure

D. Internal Pressure Coefficient

E. Components & Cladding Wind Pressure:

115 MPH

1.0

B

+/- 0.18

As per the Code

6.

Earthquake Design Data:

A. Seismic Occupancy Category

B. Seismic Importance Factor, I

C. Ss (Mapped Spectral Response Acc. At Short Period)

D. S1 (Mapped Spectral Response Acc. At 1 Second Period)

E. Fa

F. Fv

G. Seismic Site Classification

H. Sds (Spectral Response Coefficient)

I. Sd1 (Spectral Response Coefficient)

J. Sms

K. Sm1

L. Seismic Design Category

M. Basic Seismic Force Resisting System: Intermediate Precast Shear Walls

N. Analysis Procedure:

O. Total Seismic Base Shear

II

1.0

0.205

0.066

1.6

2.4

C

0.25

0.092

0.374

0.137

B

Equivalent Lateral Force Procedure

130.7 KIPS
- IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.
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| | Mark A. Day, PE | |
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| | | |
| Revision | | |
| Project No. | JOB No. | License No. 069646 |
| <div>DAYSTOKOSA</div> <div>ENGINEERING P.C.</div> <div>3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202</div> | | |
| PROJECT <div>364 Main Street</div> <div>City of BeaconDutchess County, New York</div> | | |
| DRAWING <div>Structural Notes</div> | | |
| SCALE | DRAWN BY | DRAWING NO. |
| No Scale | MAD | S001 |
| DATE | CHECKED BY | |
| 12-20-21 | MAD | |

| SPECIAL INSPECTION DETAILS | | |
|--|------------|----------|
| REQUIRED VERIFICATION & INSPECTION | CONTINUOUS | PERIODIC |
| STEEL CONSTRUCTION | | |
| MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS & WASHERS | – | X |
| INSPECTION OF HIGH-STRENGTH BOLTS | – | X |
| INSPECTION OF WELDING – VISUAL SINGLE PASS WELDS 5/16” AND LESS | – | X |
| COMPLETE AND PARIAL JOINT PENETRATION GROOVE WELDS | X | – |
| FLOOR AND ROOF DECK WELDS | – | X |
| REINFORCING STEEL | X | – |
| CONCRETE CONSTRUCTION | | |
| INSPECT REINFORCING STEEL INCLUDING PLACEMENT | – | X |
| INSPECT ANCHORS CAST IN CONCRETE | – | X |
| VERIFYING USE OF REQUIRED MIX DESIGN | – | X |
| CONCRETE SAMPLING FRO STRENGTH, SLUMP, TEMPERATURE AND AIR | X | – |
| INSPECTION ERECTION OF PRE-CAST CONCRETE MEMBERS W/ SHOP DWGS. | – | X |
| INSPECTION OF FORMWORK FOR PRE-CAST CONCRETE PANELS AGAINST SHOP DWGS. | – | X |
| INSPECTION OF MAINTENANCE OF SPECIFIED CURING TEMPERATURE & TECHNIQUES | – | X |
| MASONRY CONSTRUCTION | | |
| AS MASONRY CONST. BEGINS, THE FOLLOWING SHALL BE VERIFIED FOR COMPLIANCE: | | |
| PROPORTIONS OF SITE-PREPARED MORTAR, IF APPLICABLE | – | X |
| CONSTRUCTION OF MORTAR JOINTS | – | X |
| LOCATION OF REINFORCEMENT, CONNECTORS AND ANCHORS | – | X |
| THE INSPECTION PROGRAM SHALL VERIFY: | | |
| SIZE AND LOCATION OF STRUCTURAL ELEMENTS | – | X |
| TYPE, SIZE AND LOCATION OF ANCHORS | – | X |
| SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT | – | X |
| PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED FOR COMPLIANCE: | | |
| GROUT SPACE IS CLEAN | – | X |
| PLACEMENT OF REINFORCEMENT AND CONNECTORS | – | X |
| SOILS | | |
| VERIFY MATERIAL BELOW FOOTINGS IS ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY | – | X |
| VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH | – | X |
| PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIAL | – | X |
| VERIFY USE OF PROPER MATERIALS, DENSITIES & LIFT THICKNESS FOR CONTROLLED FILL | X | – |
| VERIFY SUBGRADE CONDITIONS PRIOR TO PLACEMENT OF CONTROLLED FILL | – | X |
| WOOD TRUSSES | | |
| INSTALLATION OF WOOD TRUSSES | – | X |
| BRIDGING – HORIZONTAL OR DIAGONAL | – | X |
| STANDARD BRIDGING | – | X |

DELEGATED DESIGN NOTES:

THE FOLLOWING ARE DELEGATED DESIGN ITEMS THAT ARE THE REPONSIBILITY OF THE MANUFACTURER. THE MANUFACTURER MUST SUPPLY SIGNED AND SEALED SHOP DRAWINGS AND STRUCTURAL CALCULATIONS FOR REVIEW AND APPROVAL BY THE ENGINEER-OF-RECORD AND THE BUILDING DEPARTMENT.

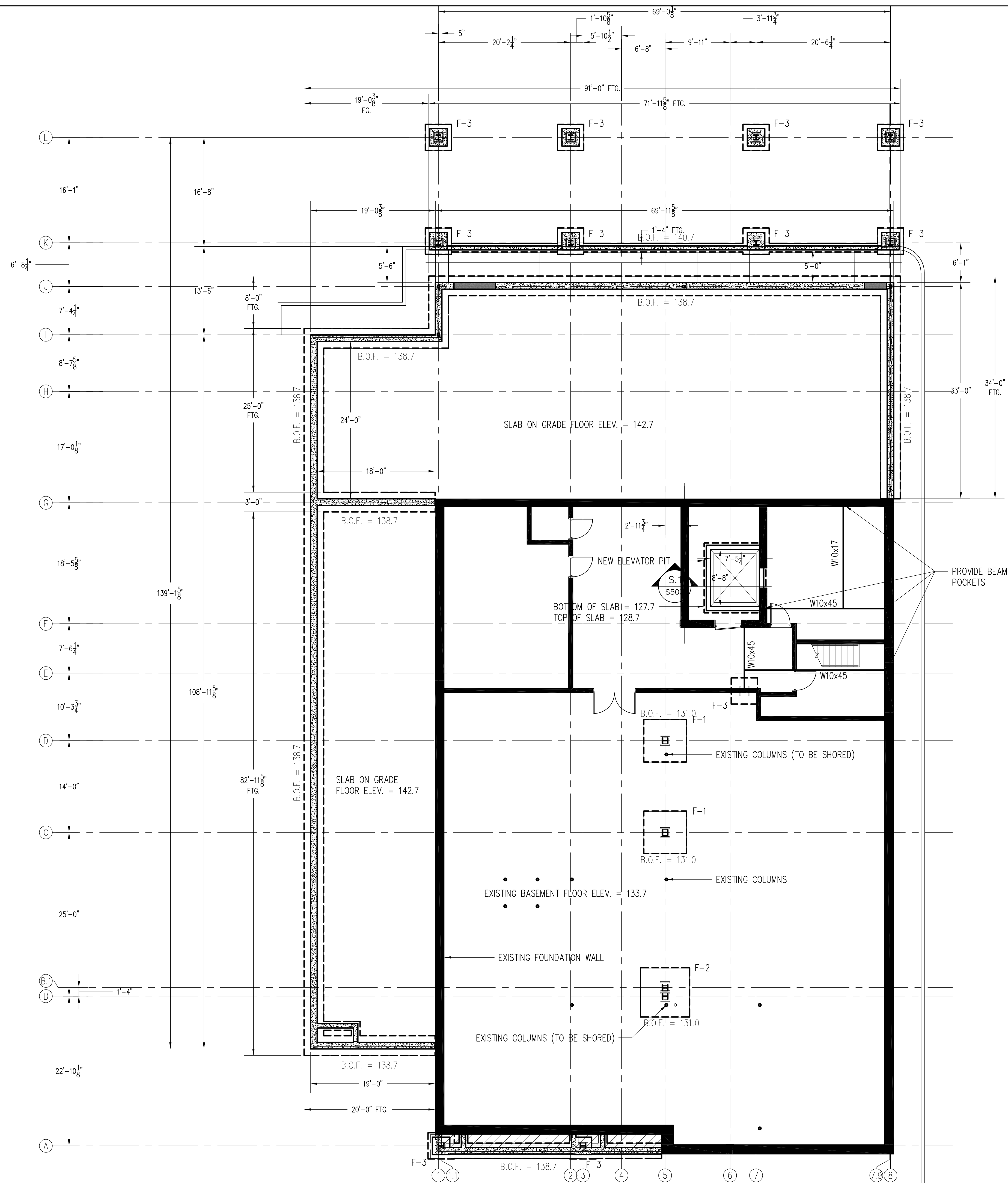
1. WOOD TRUSSES

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| Revision | | |
| Project No. | JOB No. | License No. 069646 |
| <div>DAYSTOKOSA</div> ENGINEERING P.C. | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT 364 Main Street City of BeaconDutchess County, New York | | |
| DRAWING Column Line Plan | | |
| SCALE No Scale | DRAWN BY MAD | S002 |
| DATE 12-20-21 | CHECKED BY MAD | |



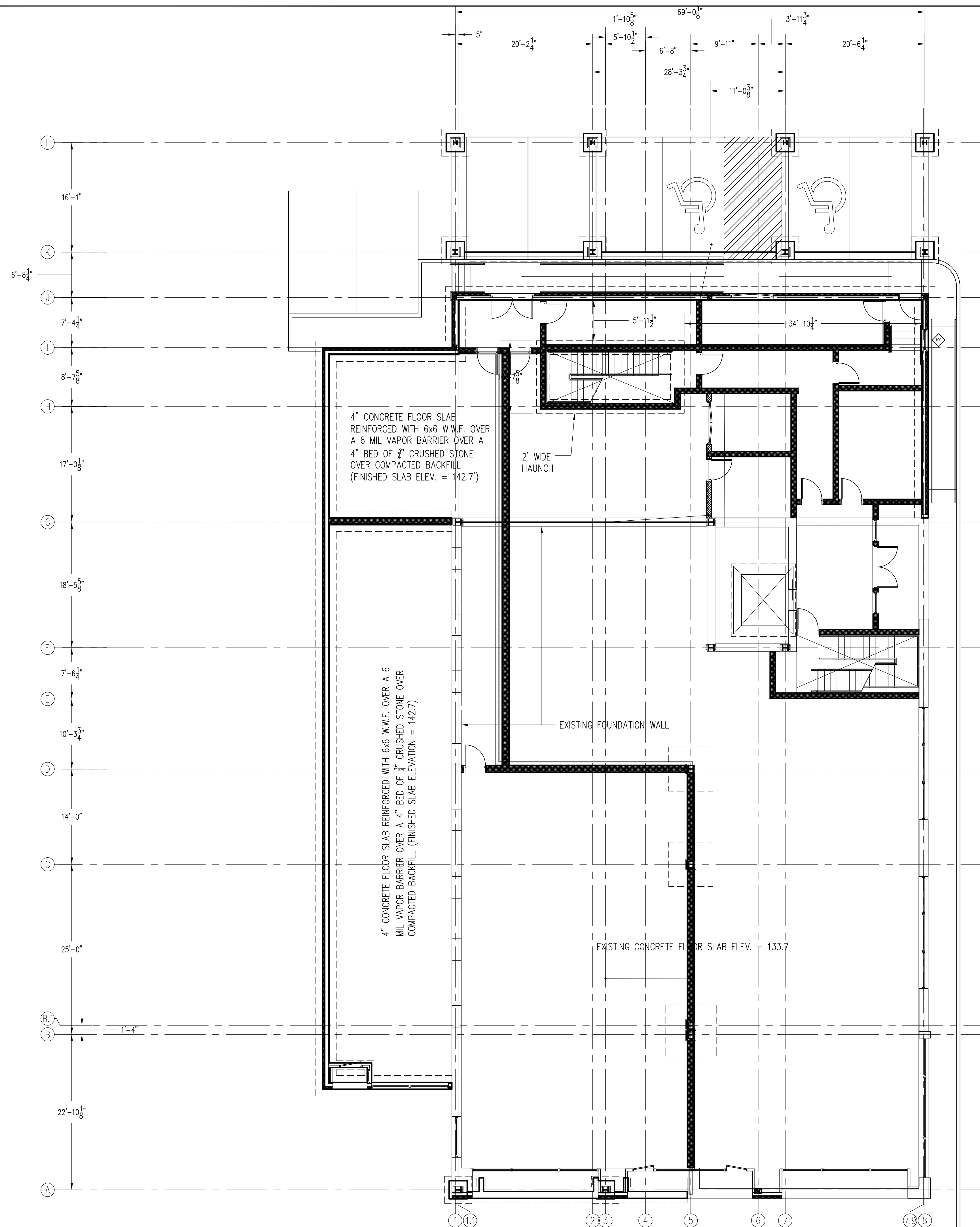
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|--|------------|--------------------|--|
| | | Mark A. Day, PE | |
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| Residence | | | |
| Project No. | JOB No. | License No. 069646 | |
| <div> <div>DAY</div> <div>STOKOSA</div> <div>ENGINEERING P.C.</div> </div> | | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | | |
| PROJECT | | | |
| 364 Main Street City of Beacon Dutchess County, New York | | | |
| DRAWING | | | |
| Column Line Plan | | | |
| SCALE | DRAWN BY | DRAWING No. | |
| $\frac{1}{8}" = 1'-0"$ | MAD | S100 | |
| DATE | CHECKED BY | | |
| 12-20-21 | MAD | | |



D.1 FOUNDATION PLAN
S101 SCALE: 1/8" = 1'-0"

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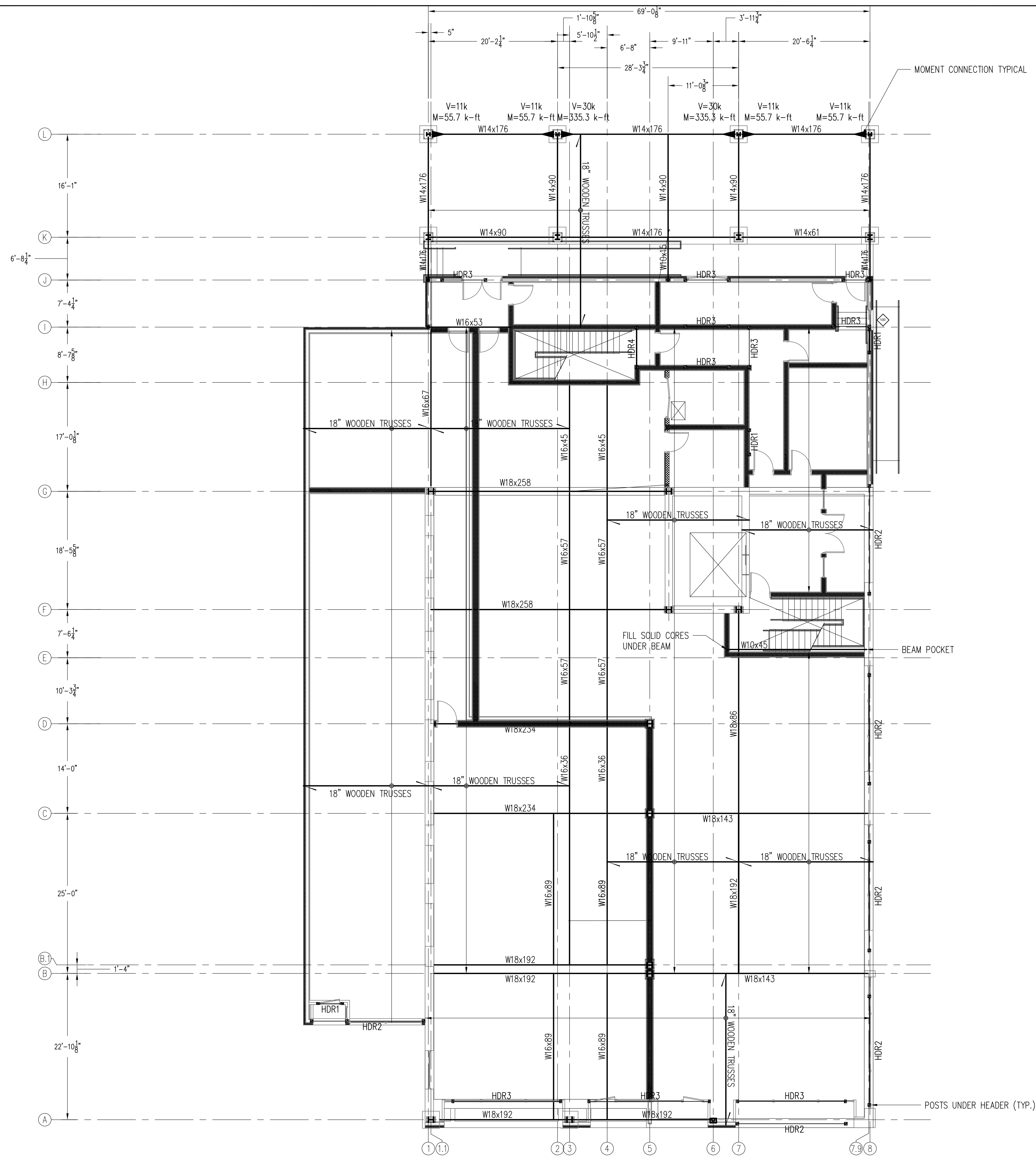
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| Mark A. Day, PE | | |
| Revision | | |
| Project No. | JOB No. | License No. 069646 |
| DAY STOKOSA ENGINEERING P.C. | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT | | |
| 364 Main Street | | |
| City of Beacon Dutchess County, New York | | |
| DRAWING | | |
| Foundation Plan | | |
| SCALE | DRAWN BY | DRAWING NO. |
| 1/8" = 1'-0" | MAD | S101 |
| DATE | CHECKED BY | |
| 12-20-21 | MAD | |



D.1 FIRST FLOOR SLAB PLAN
S102 SCALE: 1/8" = 1'-0"

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| Mark A. Day, PE | | |
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| Project No. | JOB No. | License No. 069646 |
| DAY STOKOSA ENGINEERING P.C. | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT 364 Main Street City of Beacon Dutchess County, New York | | |
| DRAWING First Floor Slab Plan | | |
| SCALE 1/8" = 1'-0" | DRAWN BY MAD | S102 |
| DATE 12-20-21 | CHECKED BY MAD | |



D.1 SECOND FLOOR FRAMING OVER FIRST FLOOR PLAN
S200 SCALE: 1/8" = 1'-0"

HEADER SCHEDULE

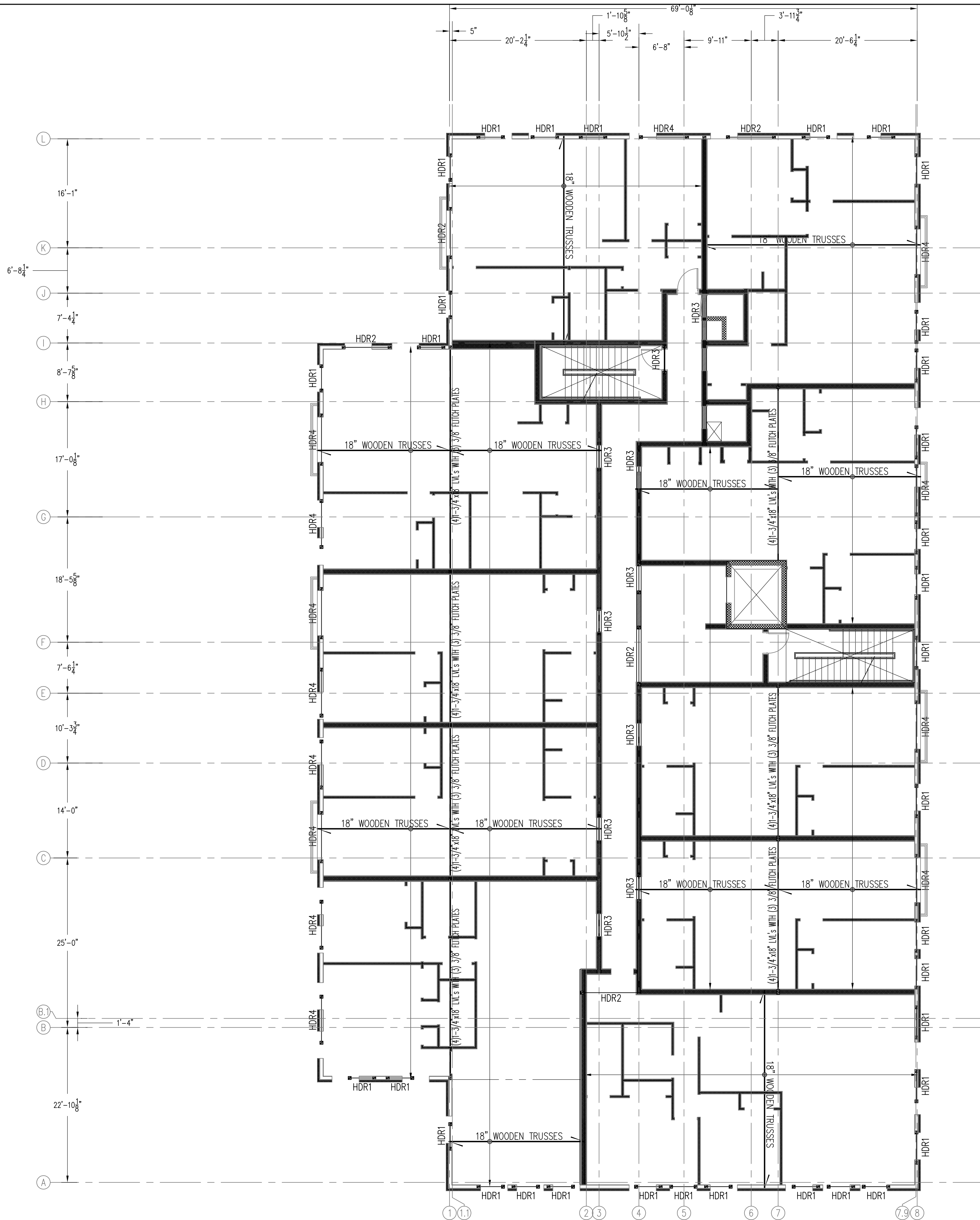
| HEADER ID | HEADER | POSTS |
|-----------|-----------------------|--------------|
| HDR1 | (2)1-3/4"x9-1/4" LVL | (2)2x6 POSTS |
| HDR2 | W8x67 | (4)2x6 POSTS |
| HDR3 | (3)1-3/4"x16" LVL | (3)2x6 POSTS |
| HDR4 | (3)1-3/4"x11-7/8" LVL | (3)2x6 POSTS |

FRAMING NOTES:

- LIVE LOAD: 40 PSF
- DEAD LOAD: 50 PSF
- THE FRAMING CONTRACTOR TO COORDINATE ALL FLOOR OPENINGS & CHASES WITH THE MECH. & ELECTRICAL CONTRACTOR FOR ALL FLOORS, AS NEEDED.
- INFILL HALLWAY FRAMING WITH 2x10 @ 16" SP.

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| Project No. | License No. 069646 |
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| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | |
| PROJECT 364 Main Street City of Beacon Dutchess County, New York | |
| DRAWING Second Floor Framing Plan | |
| SCALE 1/8" = 1'-0" | DRAWN BY MAD |
| DATE 12-20-21 | CHECKED BY MAD |
| S200 | |



D.1 THIRD FLOOR FRAMING OVER SECONDARY FLOOR PLAN
S201 SCALE: 1/8" = 1'-0"

HEADER SCHEDULE

| HEADER ID | HEADER | POSTS |
|-----------|-----------------------|--------------|
| HDR1 | (2)1-3/4"x9-1/4" LVL | (2)2x6 POSTS |
| HDR2 | (2)1-3/4"x11-7/8" LVL | (3)2x6 POSTS |
| HDR3 | (2)2x10 | (3)2x6 POSTS |
| HDR4 | (3)1-3/4"x11-7/8" LVL | (3)2x6 POSTS |

FRAMING NOTES:

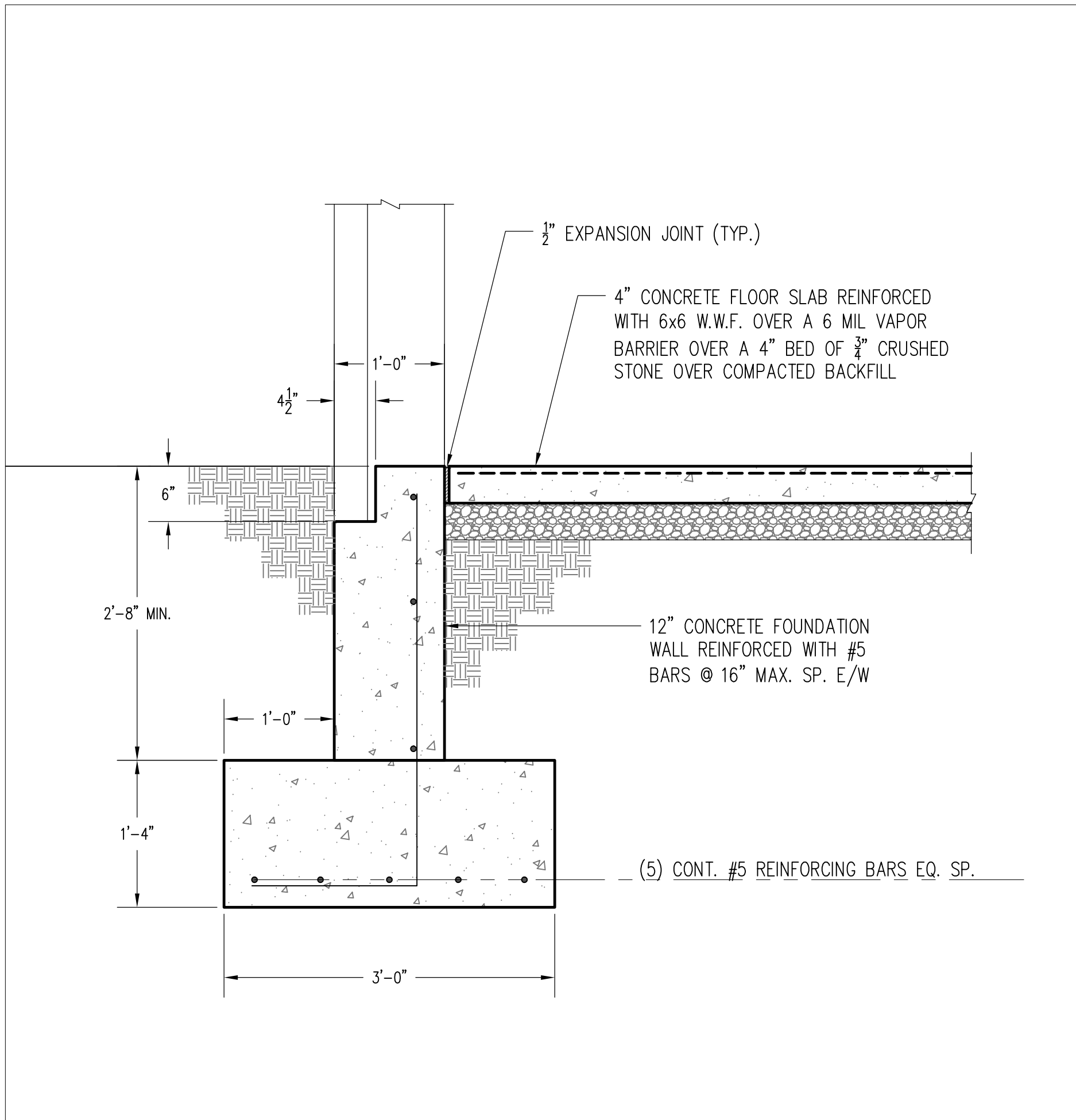
- LIVE LOAD: 40 PSF
- DEAD LOAD: 50 PSF
- THE FRAMING CONTRACTOR TO COORDINATE ALL FLOOR OPENINGS & CHASES WITH THE MECH. & ELECTRICAL CONTRACTOR FOR ALL FLOORS, AS NEEDED.
- INFILL HALLWAY FRAMING WITH 2x10 @ 16" SP.

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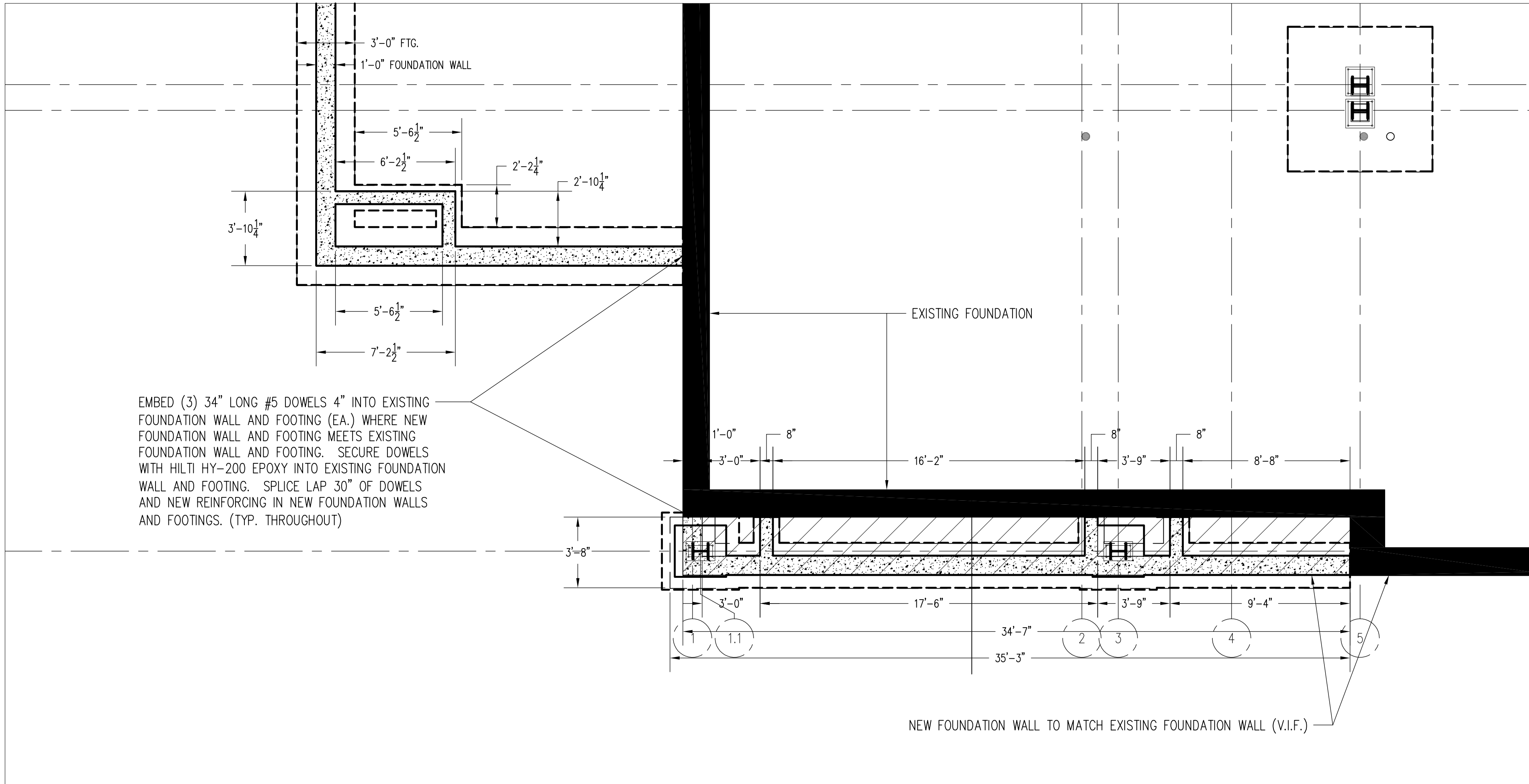
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| Mark A. Day, PE | |
| Revision | |
| Project No. | License No. 069646 |
| DAY STOKOSA ENGINEERING P.C. | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | |
| PROJECT 364 Main Street City of Beacon Dutchess County, New York | |
| DRAWING Third Floor Framing Plan | |
| SCALE 1/8" = 1'-0" | DRAWN BY MAD |
| DATE 12-20-21 | CHECKED BY MAD |
| S201 | |



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| Revisions | | | |
| Project No. | | JOB No. | |
| | | License No. 069646 | |
| <div>DAY STOKOSA</div> <div>ENGINEERING P.C.</div> | | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | | |
| PROJECT | | | |
| 364 Main Street | | | |
| City of Beacon | | Dutchess County, New York | |
| DRAWING | | | |
| Roof Framing Plan | | | |
| SCALE | DRAWN BY | DRAWING No. | |
| $\frac{1}{8}" = 1'-0"$ | MAD | | |
| DATE | CHECKED BY | S202 | |
| 12-20-21 | MAD | | |



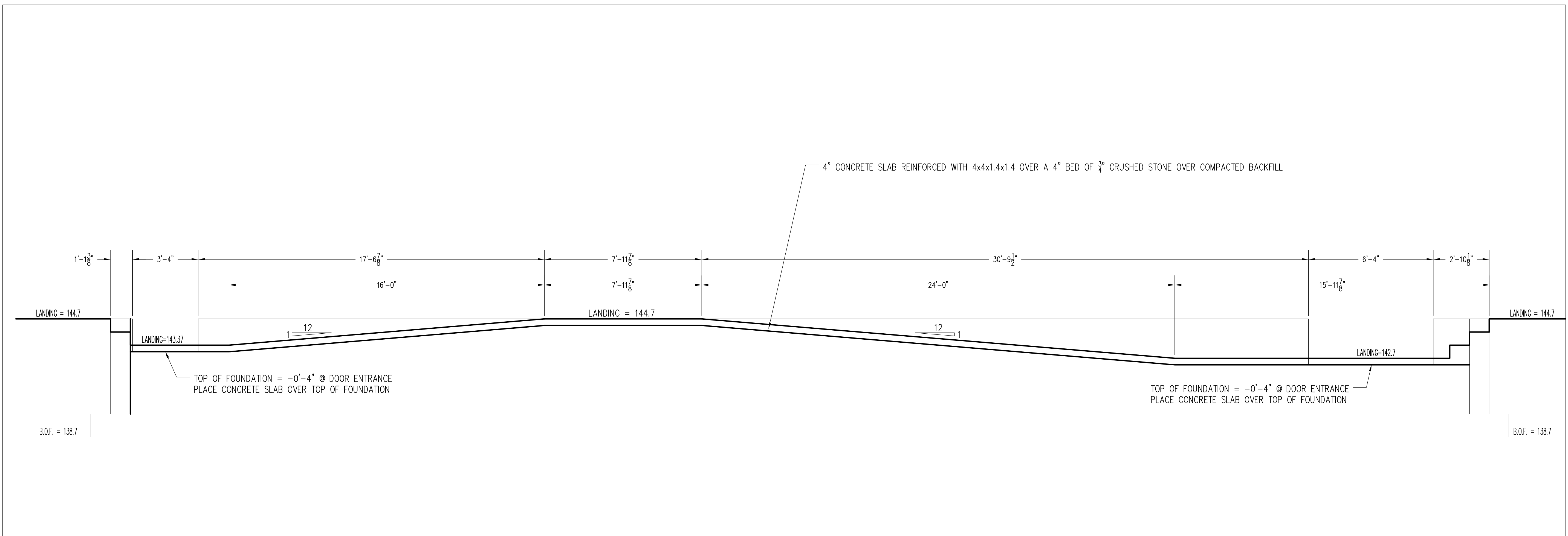
D.1 FOOTING AND FOUNDATION WALL DETAIL
S500 SCALE: 1" = 1'-0"



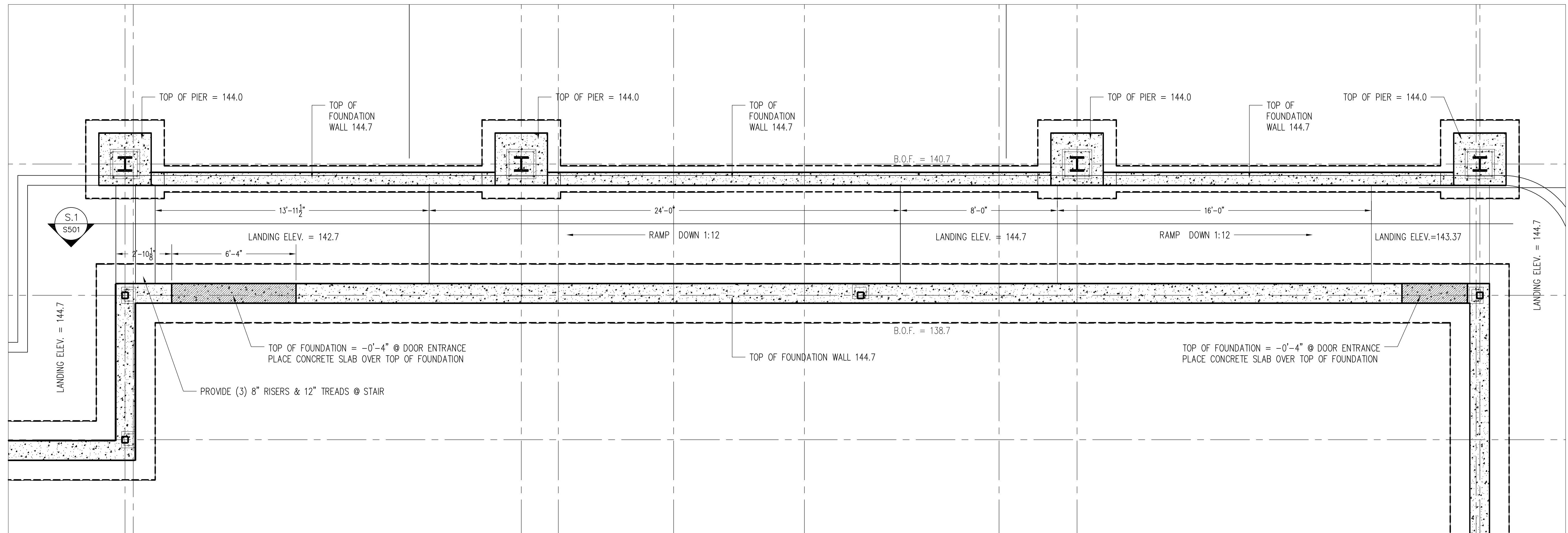
D.2 DETAIL OF FOUNDATION AT FRONT ENTRANCE
S500 SCALE: 1/4" = 1'-0"

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| Revision | | |
| Project No. | JOB No. | License No. 069646 |
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| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT 364 Main Street City of Beacon Dutchess County, New York | | |
| DRAWING Foundation Details | | |
| SCALE As Noted | DRAWN BY MAD | S500 |
| DATE 12-20-21 | CHECKED BY MAD | |



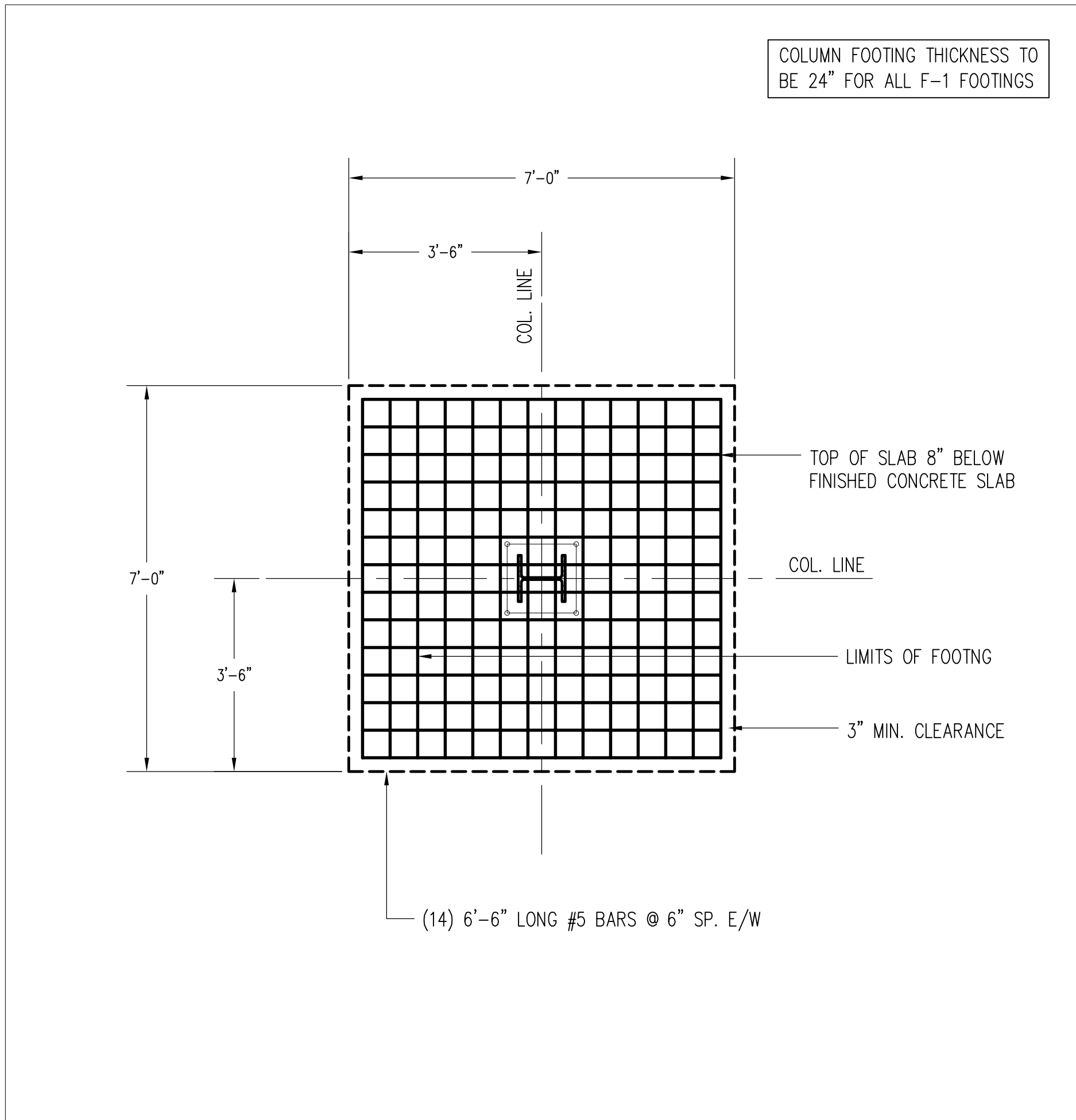
S.1 SECTION THROUGH RAMP AT REAR ENTRANCE
S501 SCALE: 3/8" = 1'-0"



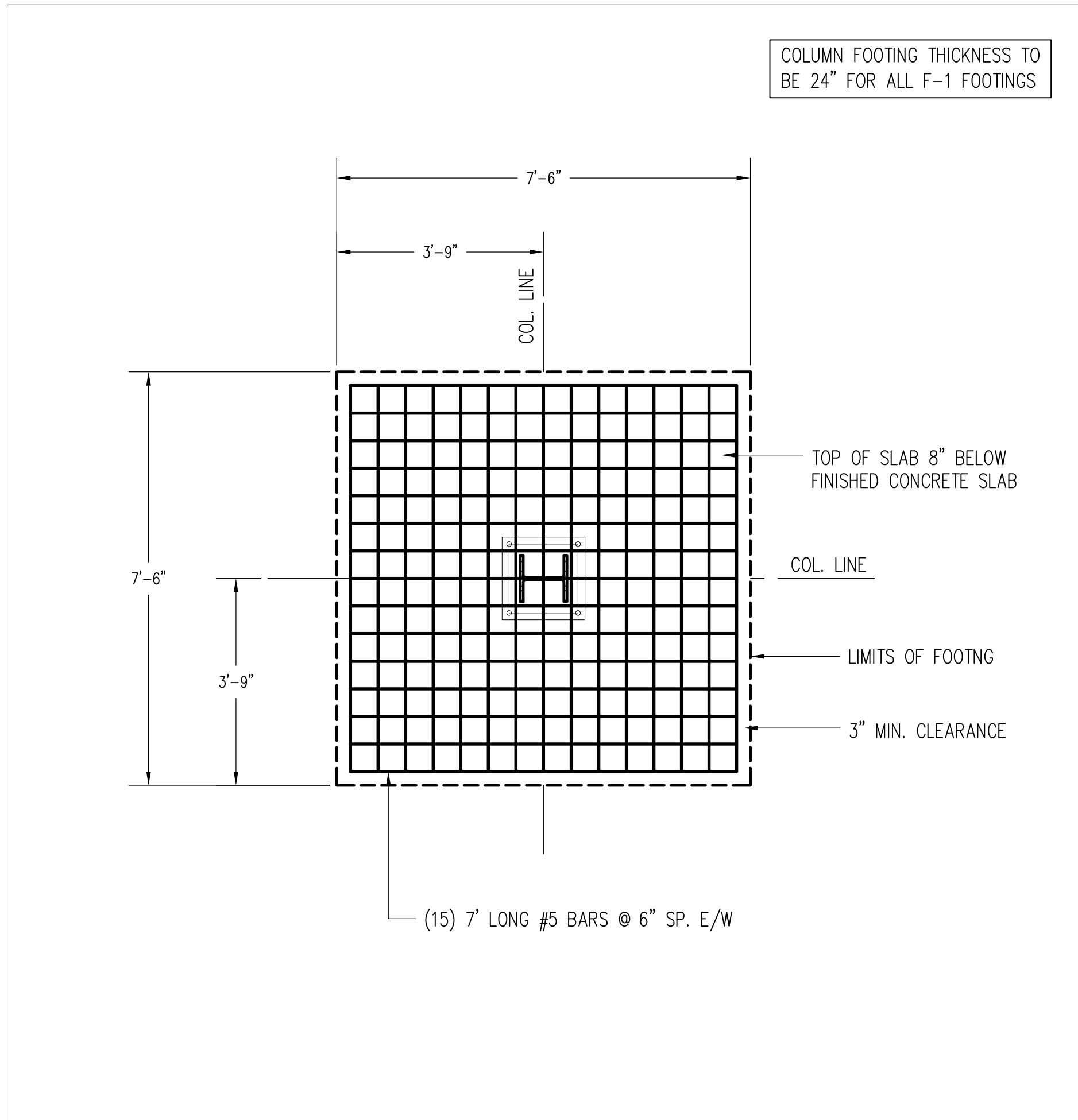
D.1 DETAIL OF FOUNDATION AT REAR ENTRANCE
S501 SCALE: 3/8" = 1'-0"

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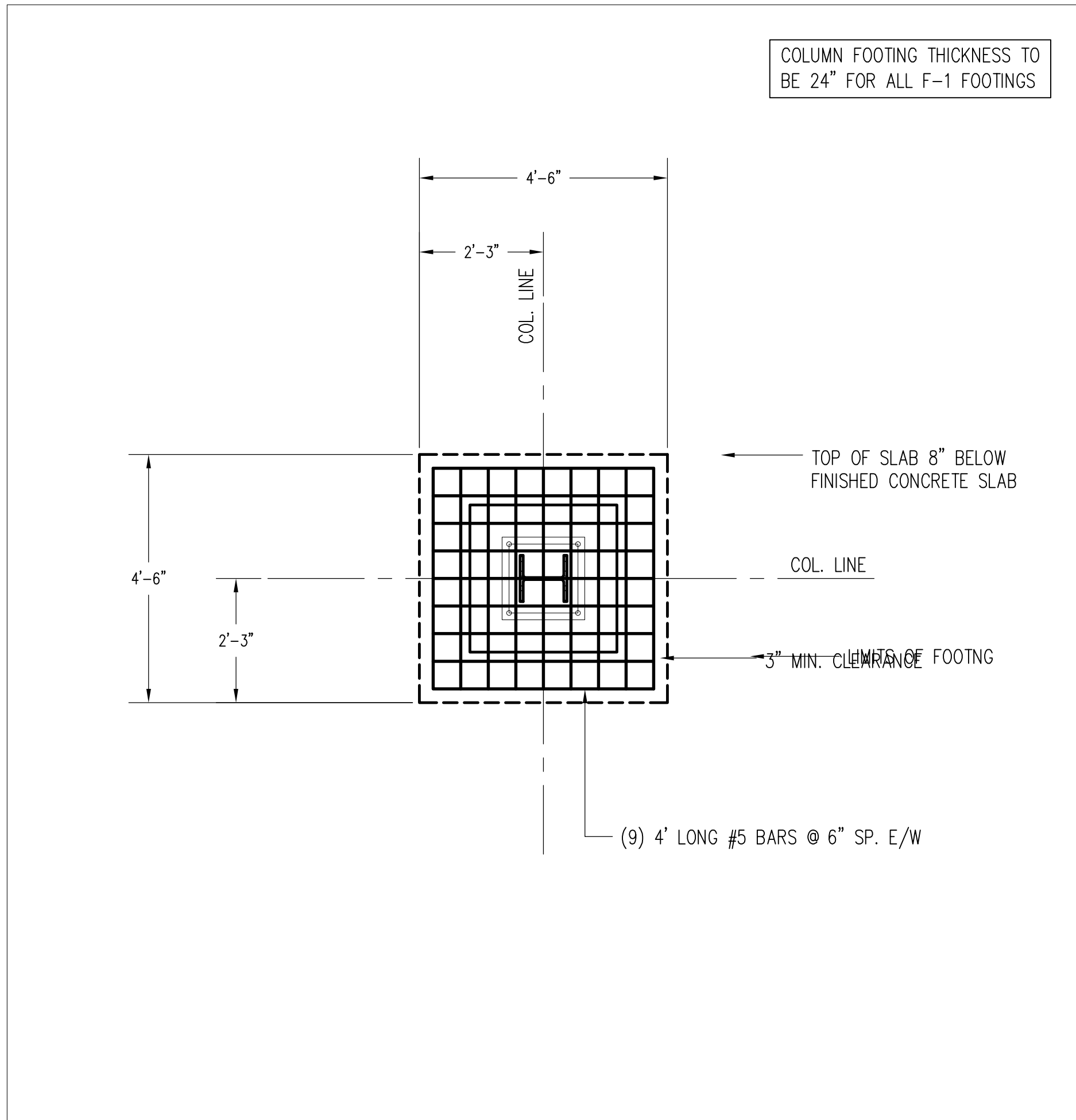
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| Mark A. Day, PE | | |
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| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT | | |
| 364 Main Street | | |
| City of Beacon Dutchess County, New York | | |
| DRAWING | | |
| Rear Entrance Ramp Details | | |
| SCALE | DRAWN BY | DRAWING NO. |
| As Noted | MAD | S501 |
| DATE | CHECKED BY | |
| 12-20-21 | MAD | |



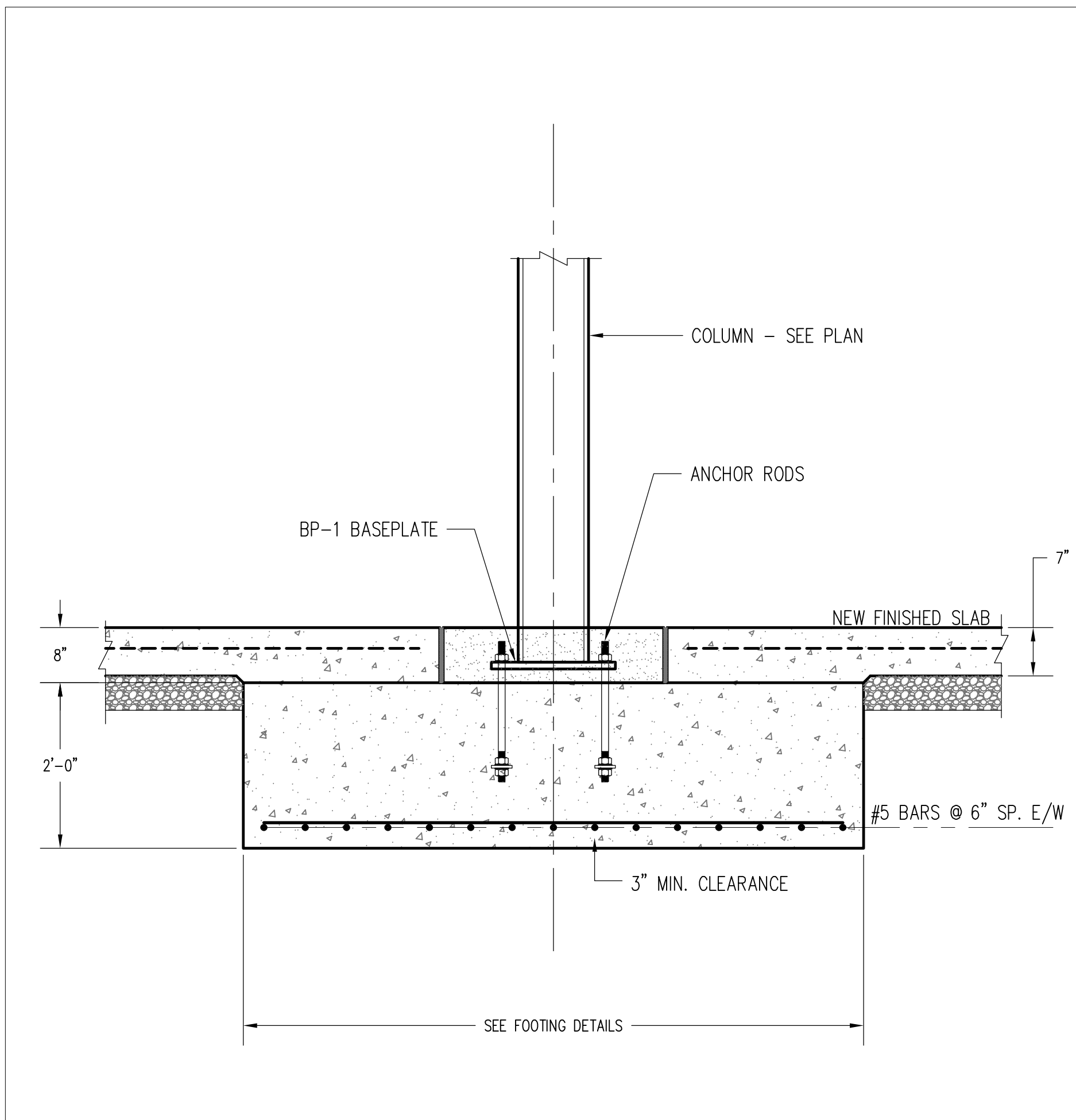
D.1 F-1 - FOOTING DETAIL
S502 SCALE: 1/2" = 1'-0"



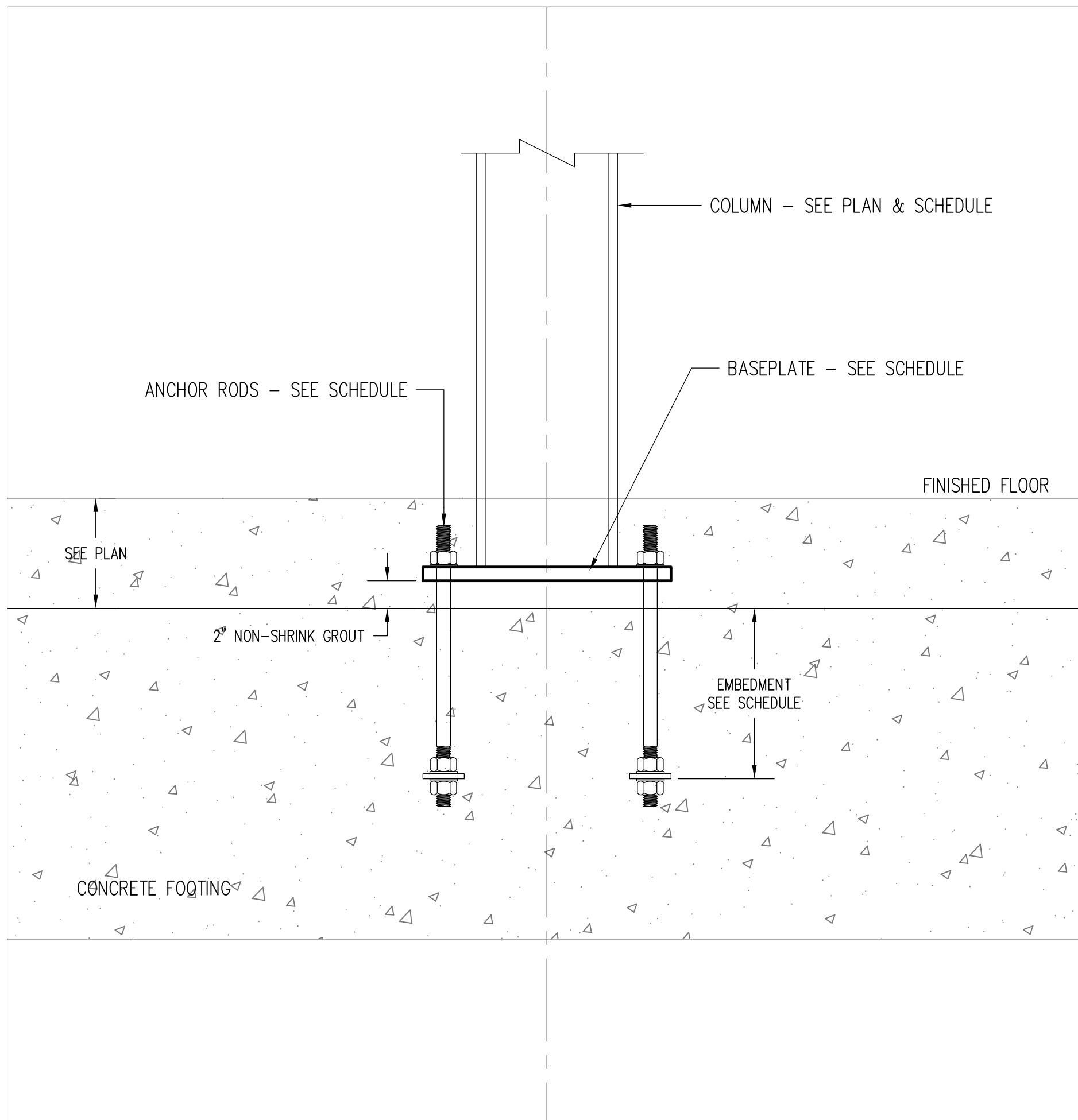
D.2 F-2 - FOOTING DETAIL
S502 SCALE: 1/2" = 1'-0"



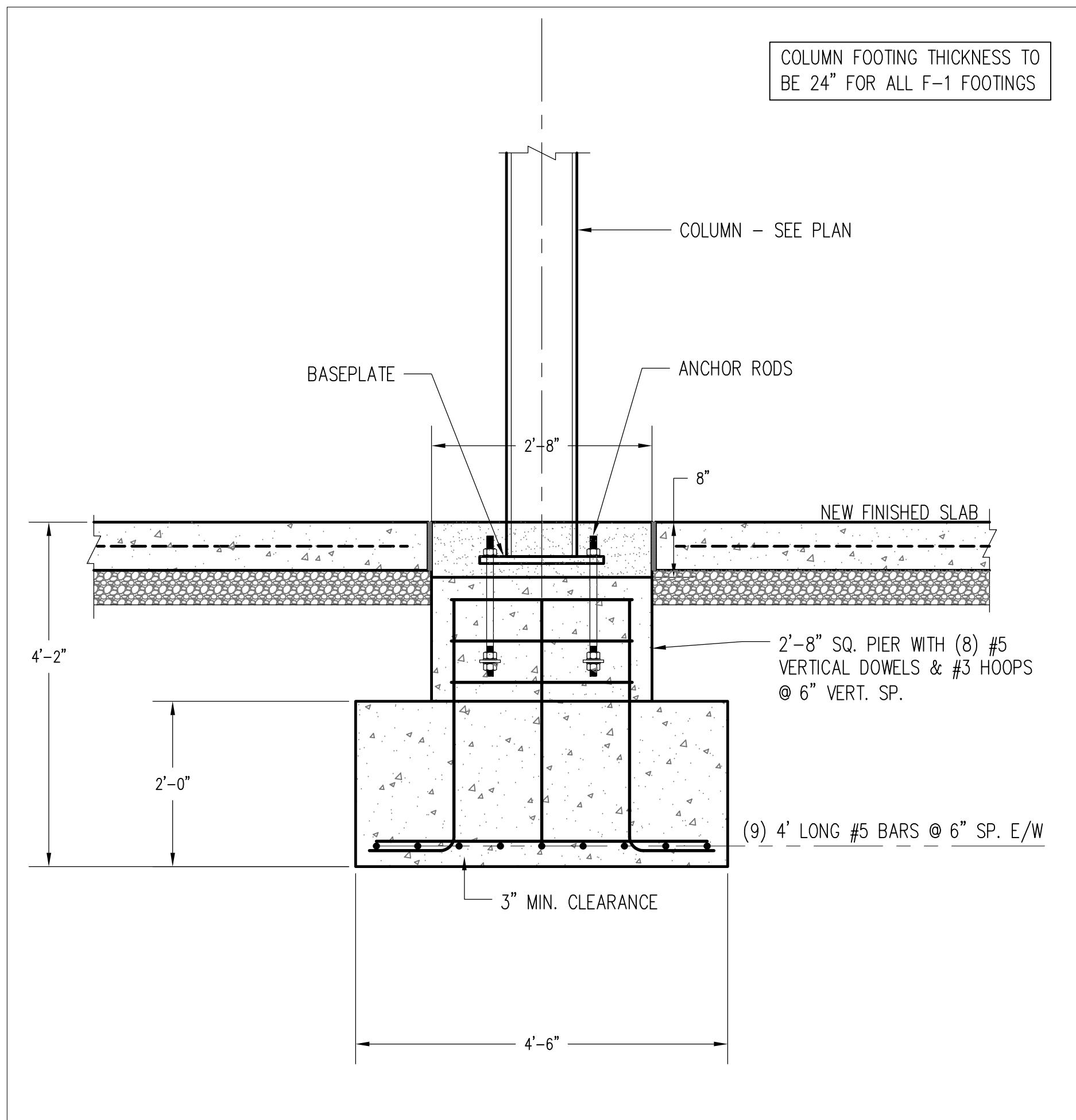
D.3 F-3 - FOOTING DETAIL
S502 SCALE: 1/2" = 1'-0"



D.4 TYPICAL COLUMN FOOTING DETAIL
S502 SCALE: 3/4" = 1'-0"



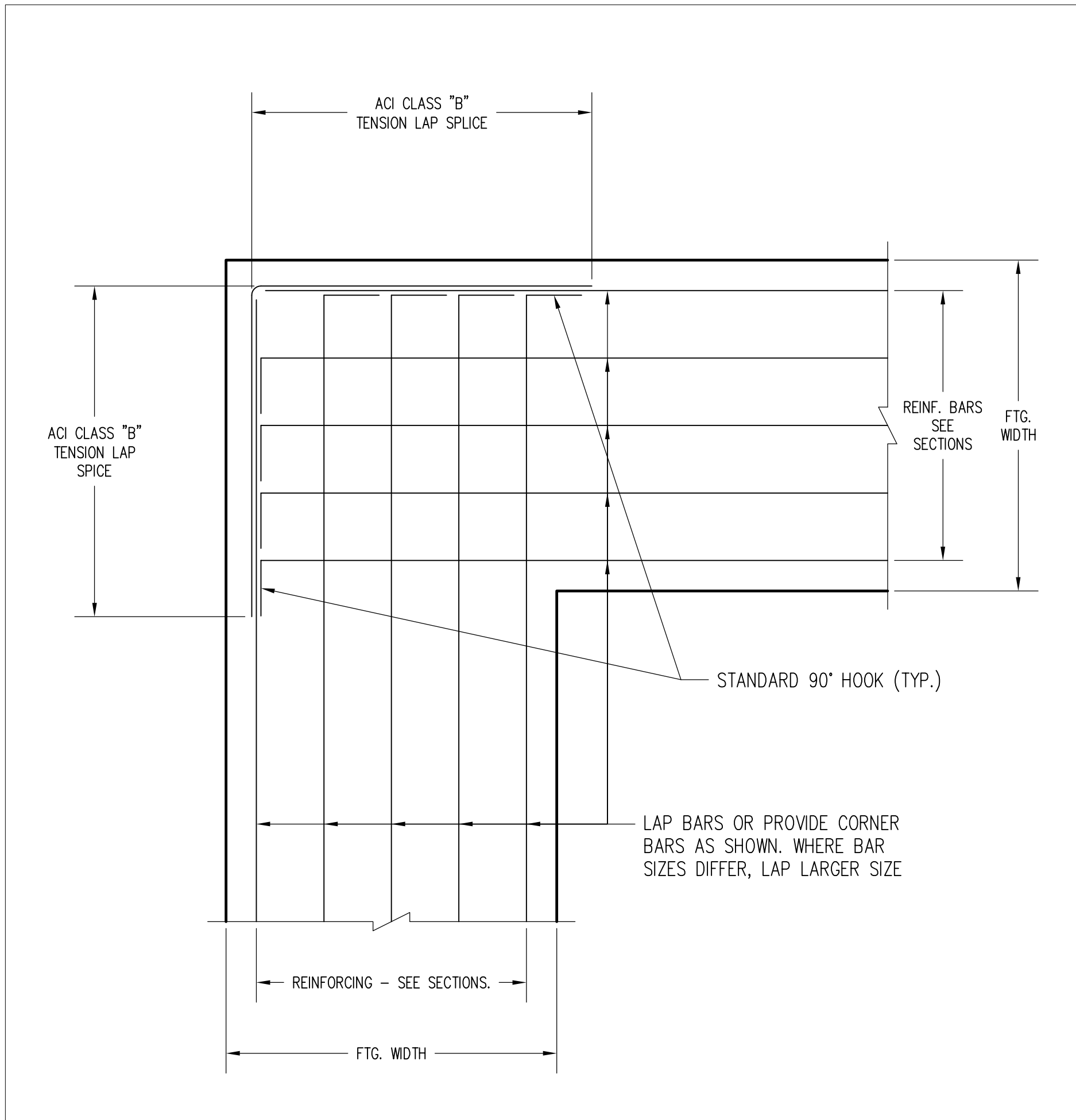
D.5 TYPICAL ANCHOR ROD DETAIL
S502 SCALE: 1-1/2" = 1'-0"



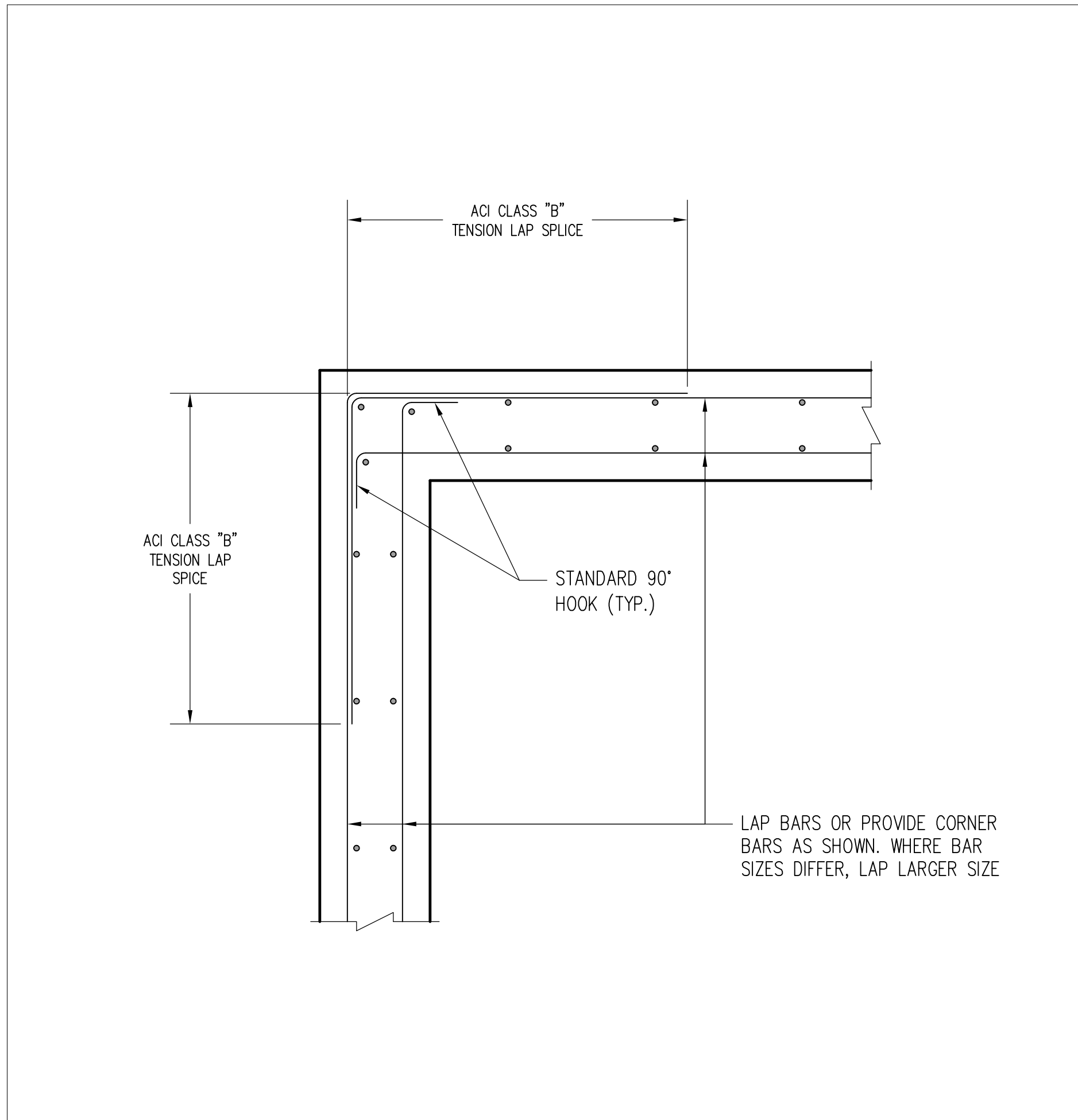
D.6 F-3 - PIER DETAIL
S502 SCALE: 3/4" = 1'-0"

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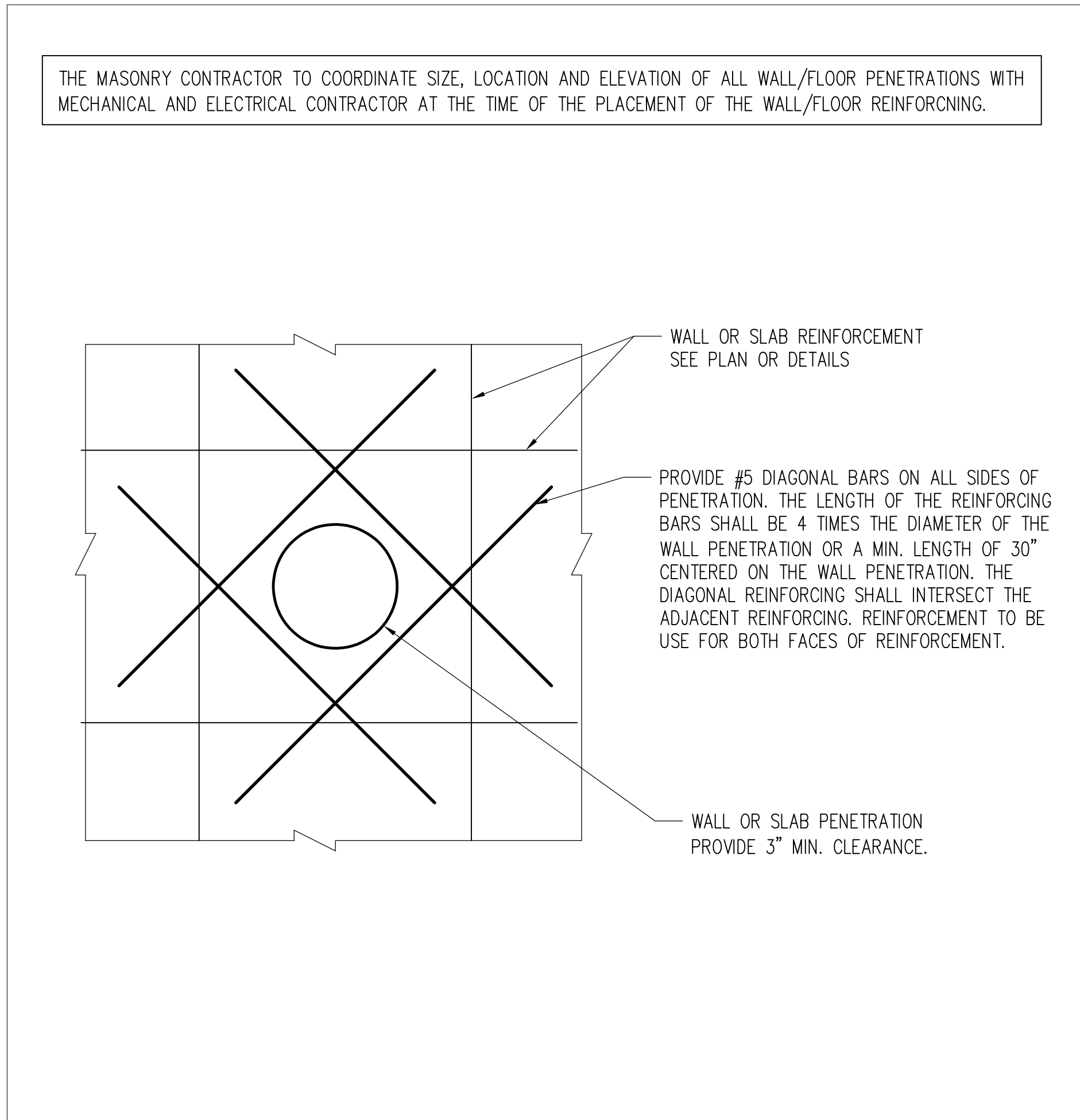
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| Mark A. Day, PE | | |
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| Revision | | |
| Project No. | JOB No. | License No. 069646 |
| DAY STOKOSA ENGINEERING P.C. | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT | | |
| 364 Main Street | | |
| City of Beacon Dutchess County, New York | | |
| DRAWING | | |
| Structural Details | | |
| SCALE | DRAWN BY | DRAWING NO. |
| As Noted | MAD | S502 |
| DATE | CHECKED BY | |
| 12-20-21 | MAD | |



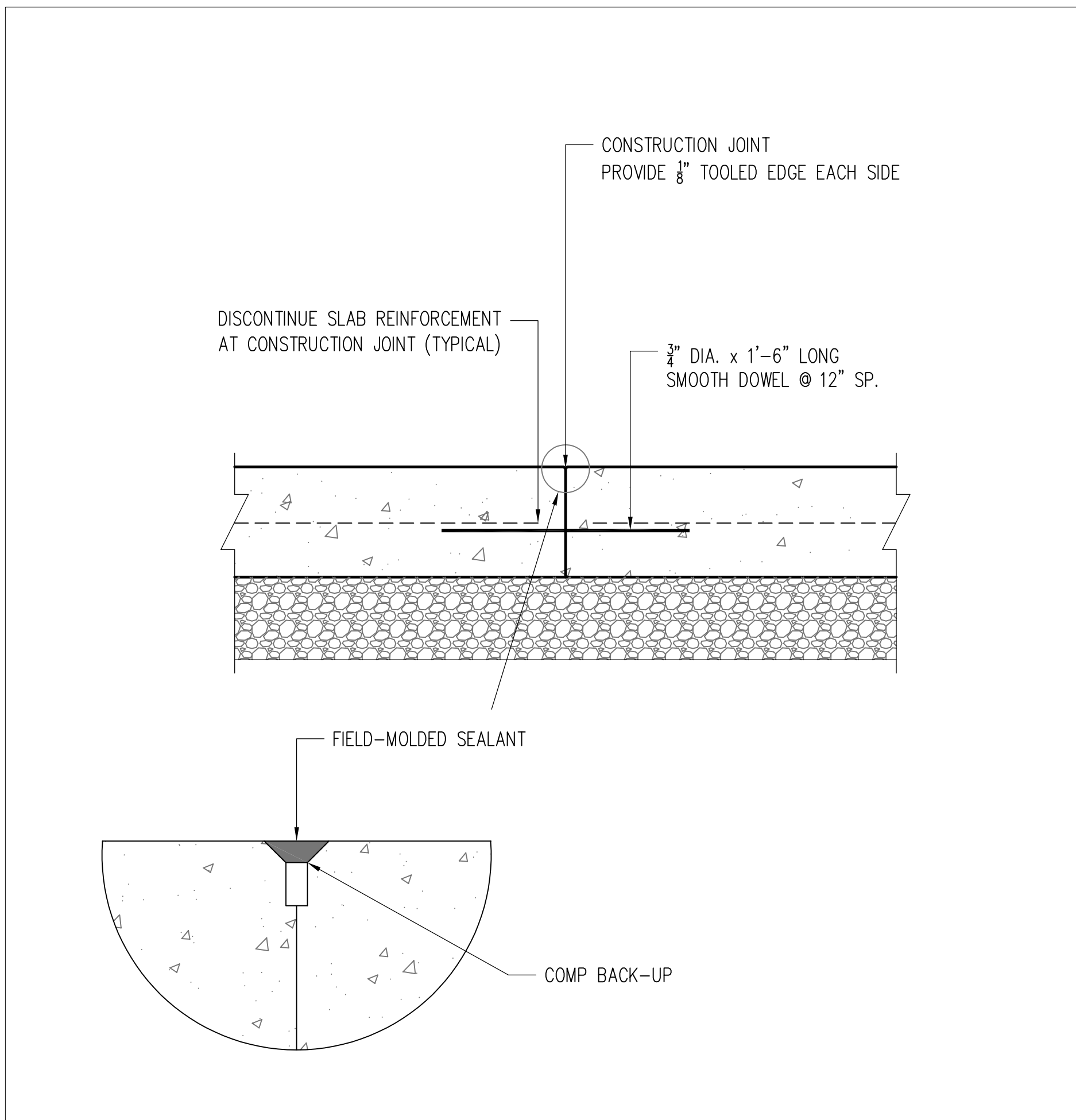
D.1 TYPICAL FOOTING CORNER REINFORCING DETAIL
S503 SCALE: 1" = 1'-0"



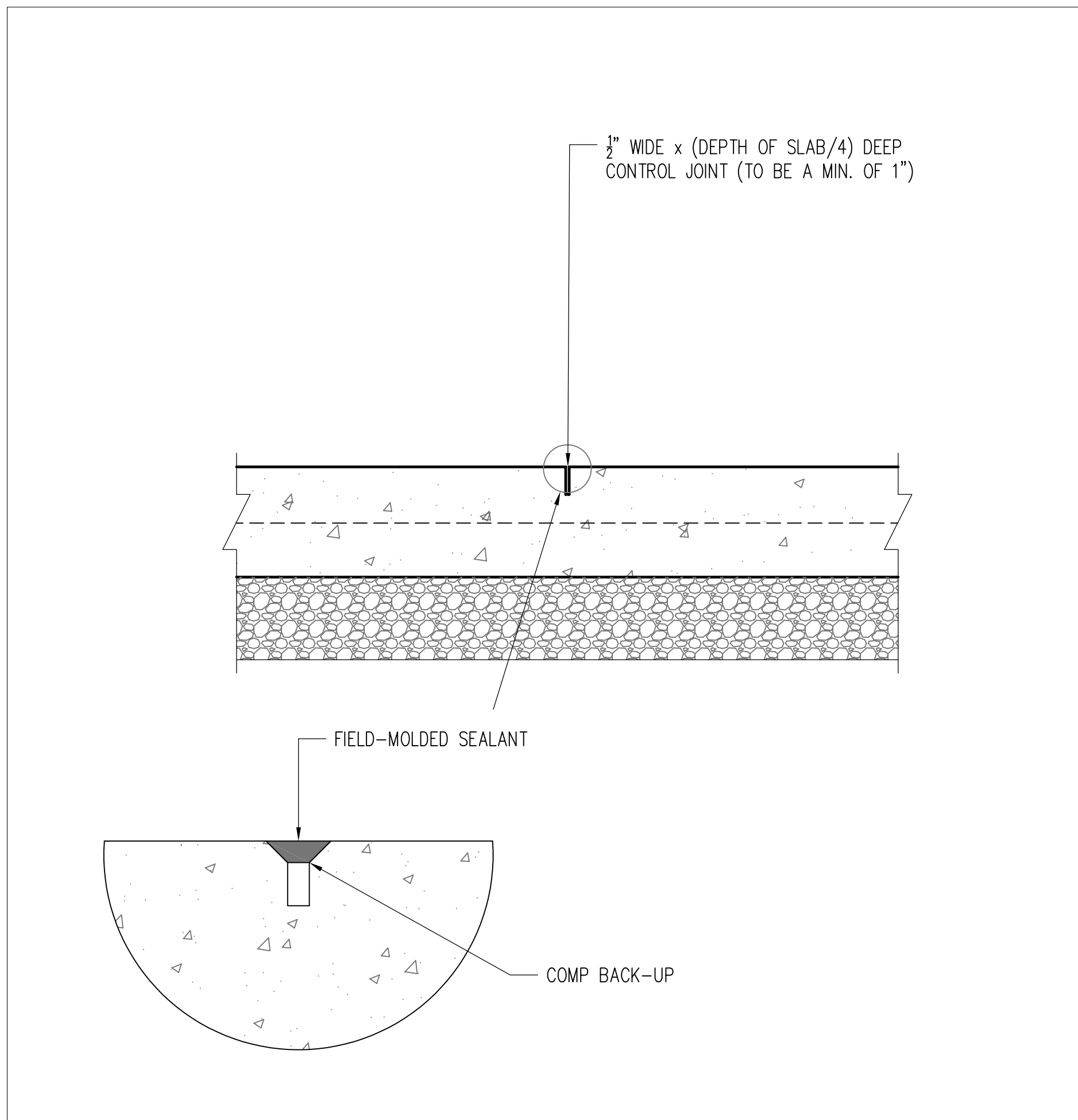
D.2 TYPICAL FOOTING CORNER REINFORCING DETAIL
S503 SCALE: 1" = 1'-0"



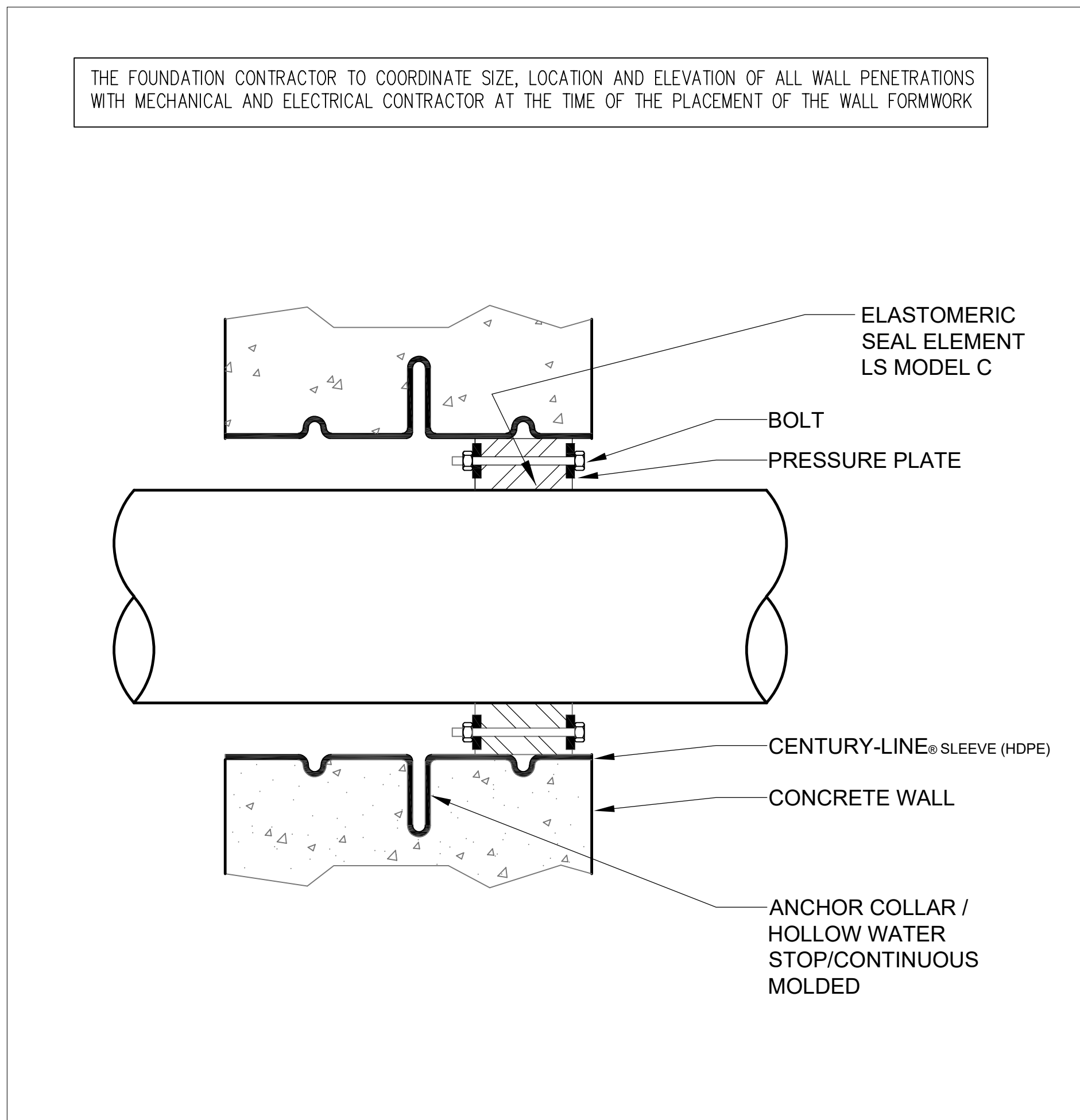
D.3 WALL/FLOOR PENETRATION REINFORCING DETAIL
S503 SCALE: NOT TO SCALE



D.4 TYPICAL SLAB CONSTRUCTION JOINT DETAIL
S503 SCALE: 1-1/2" = 1'-0"



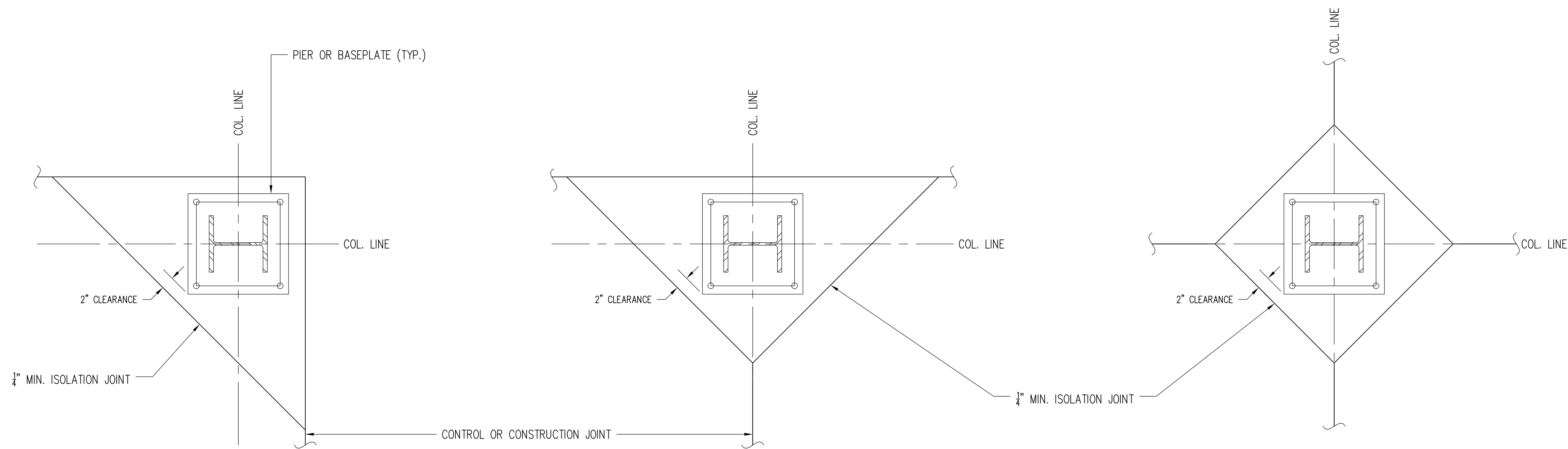
D.5 TYPICAL SLAB CONTROL JOINT DETAIL
S503 SCALE: 1-1/2" = 1'-0"



D.6 WALL PENETRATION DETAIL
S503 SCALE: NOT TO SCALE

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| Mark A. Day, PE | | |
| Revision | | |
| Project No. | JOB No. | License No. 069646 |
| DAY STOKOSA ENGINEERING P.C. | | |
| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT 364 Main Street City of Beacon Dutchess County, New York | | |
| DRAWING Structural Details | | |
| SCALE As Noted | DRAWN BY MAD | S503 |
| DATE 12-20-21 | CHECKED BY MAD | |

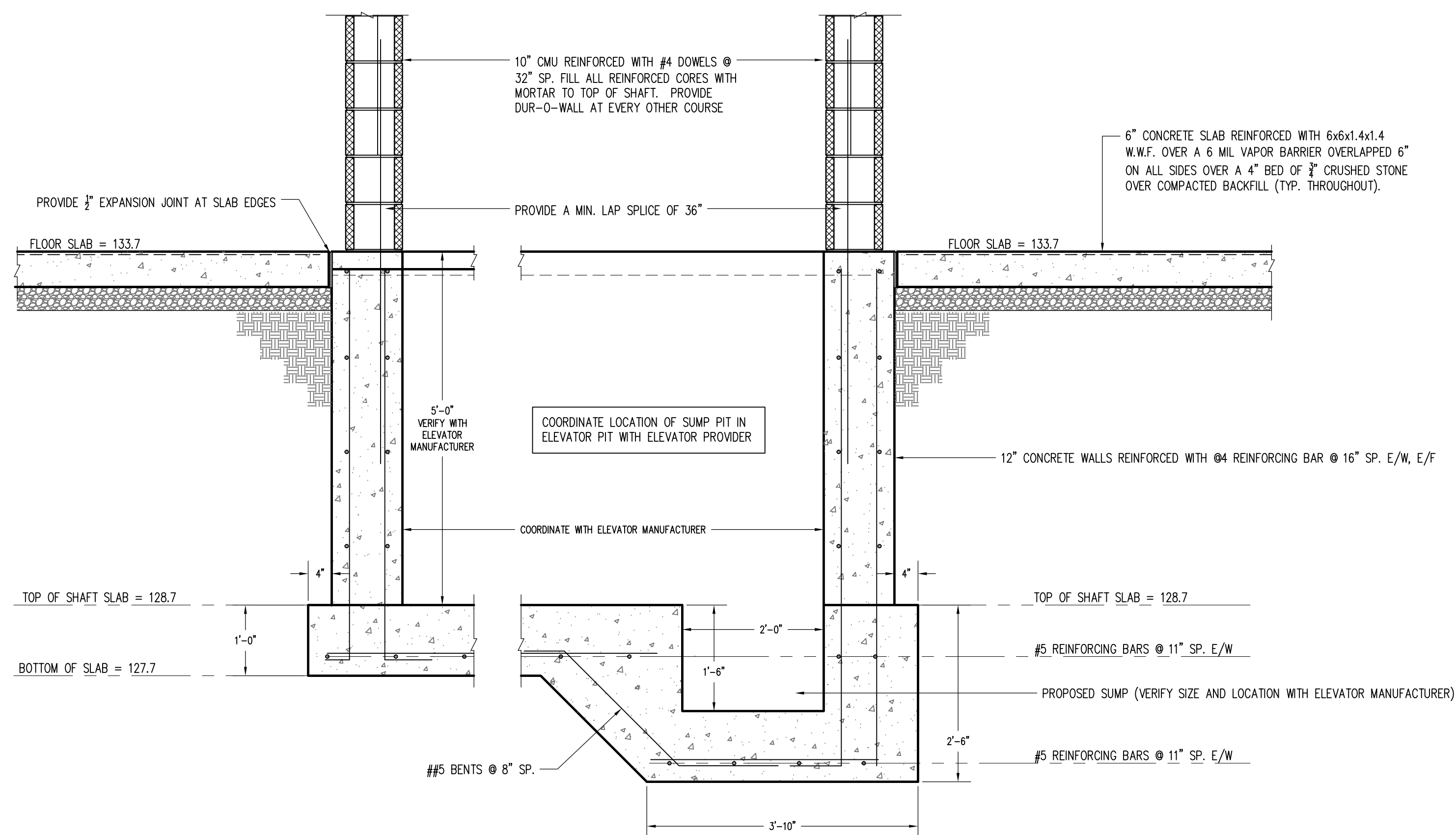


CONDITION AT CORNER COLUMN

CONDITION AT EXTERIOR COLUMN

CONDITION AT INTERIOR COLUMN

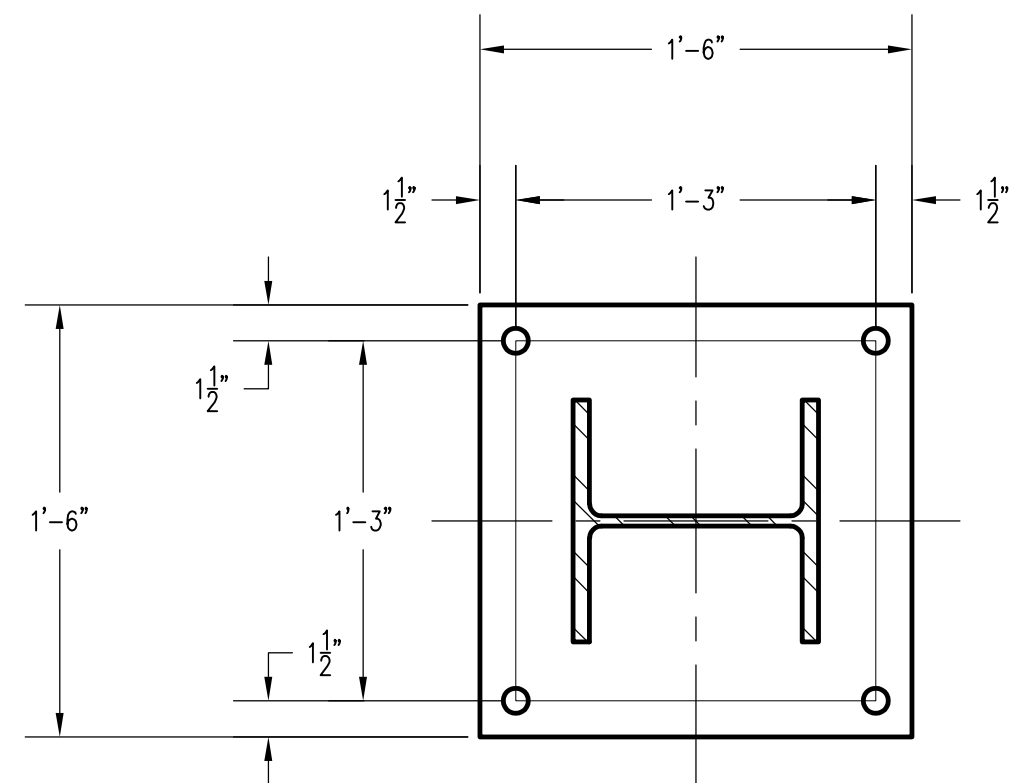
D.1 TYPICAL COLUMN/SLAB ISOLATION JOINT DETAIL
S504 SCALE: 1" = 1'-0"



S.1 SECTION THROUGH ELEVATOR SHAFT
S504 SCALE: 3/4" = 1'-0"

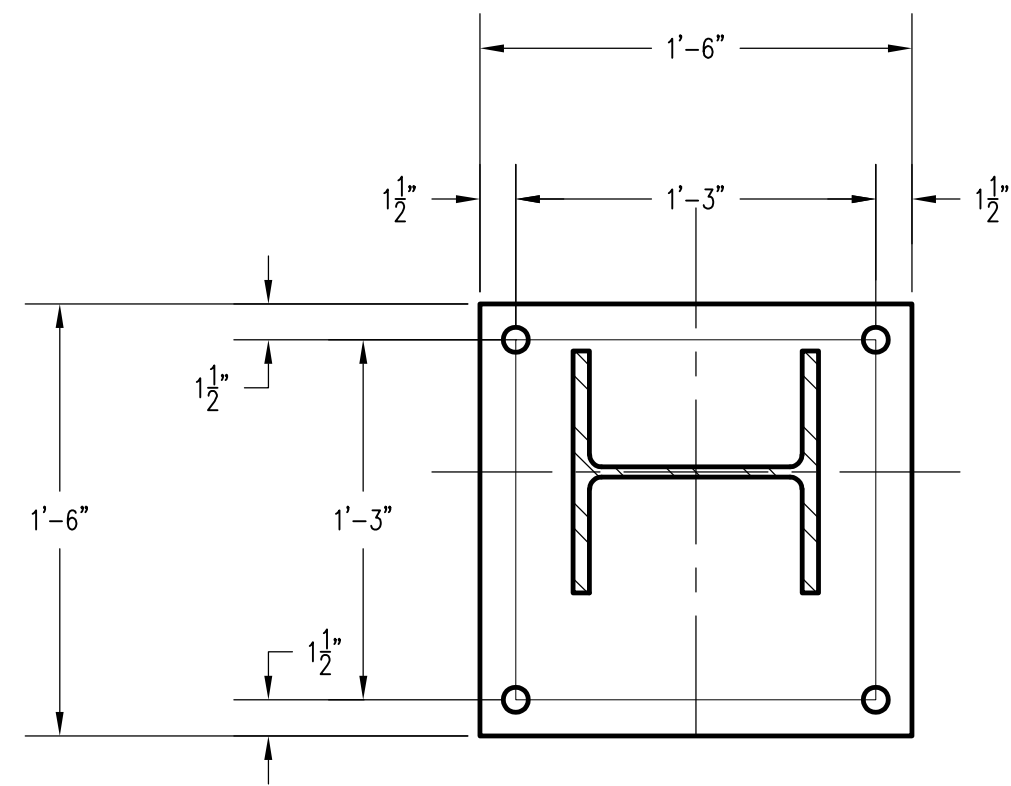
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| 3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202 | | |
| PROJECT 364 Main Street City of Beacon Dutchess County, New York | | |
| DRAWING Structural Details | | |
| SCALE As Noted | DRAWN BY MAD | S504 |
| DATE 12-20-21 | CHECKED BY MAD | |



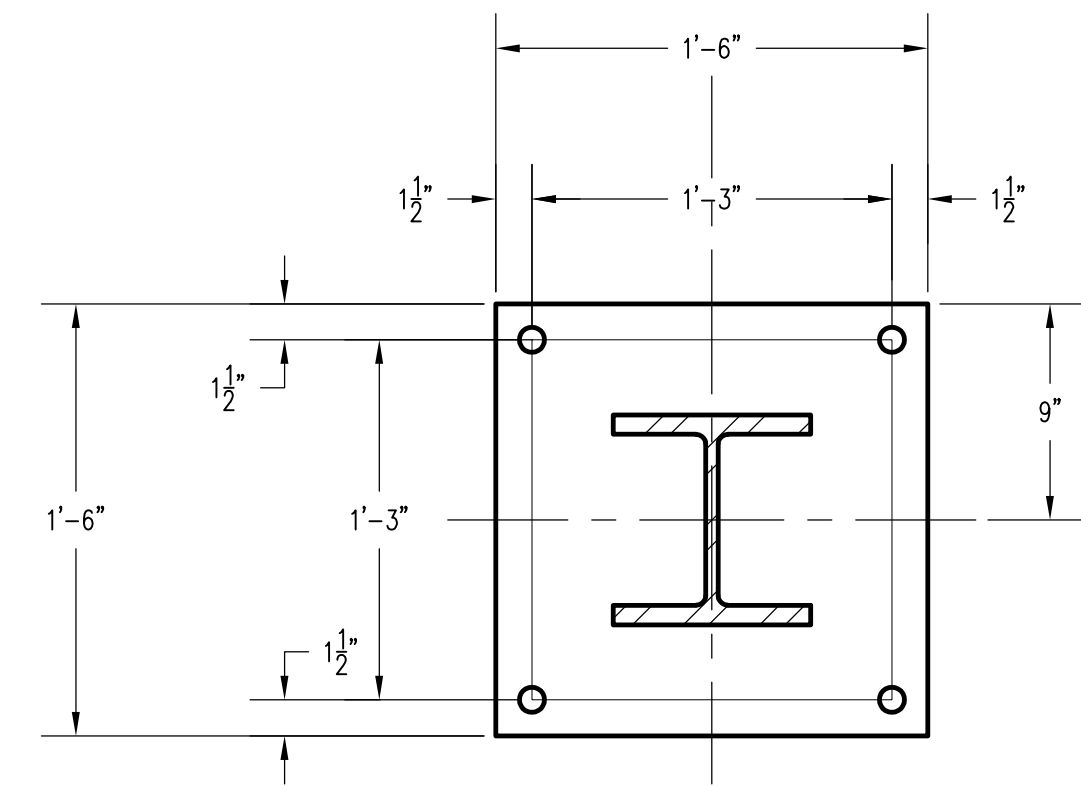
BASEPLATE THICKNESS: 1"
ANCHOR RODS: 1" ϕ , GR36
COLUMN: W10x60
COLUMN-TO-BP WELD: 1/2" ALL AROUND

D.1 BP-1 BASEPLATE DETAIL
S504 SCALE: 1-1/2" = 1'-0"



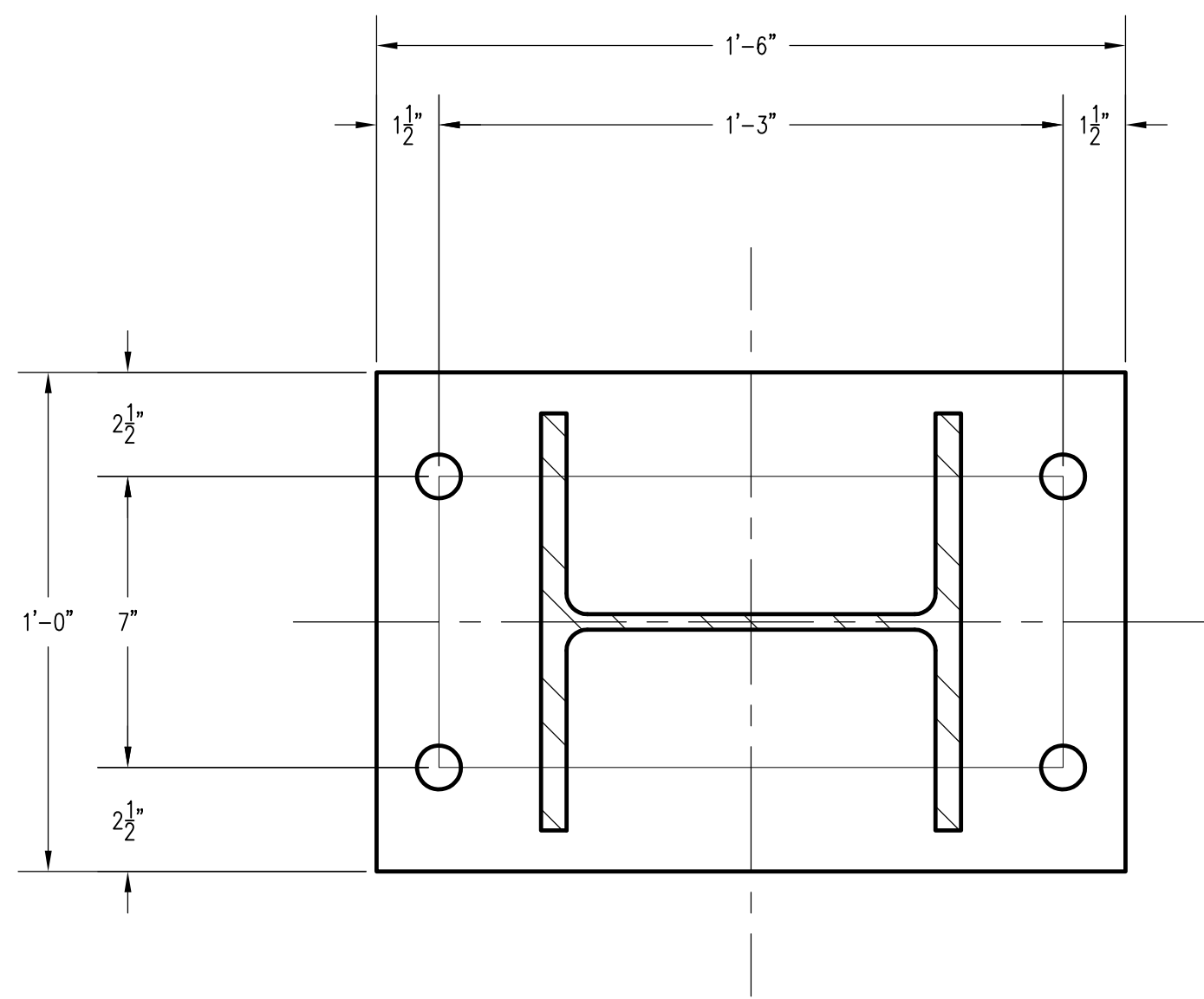
BASEPLATE THICKNESS: 1"
ANCHOR RODS: 1" ϕ , GR36
COLUMN: W10x60
COLUMN-TO-BP WELD: 1/2" ALL AROUND

D.2 BP-2 BASEPLATE DETAIL
S504 SCALE: 1-1/2" = 1'-0"



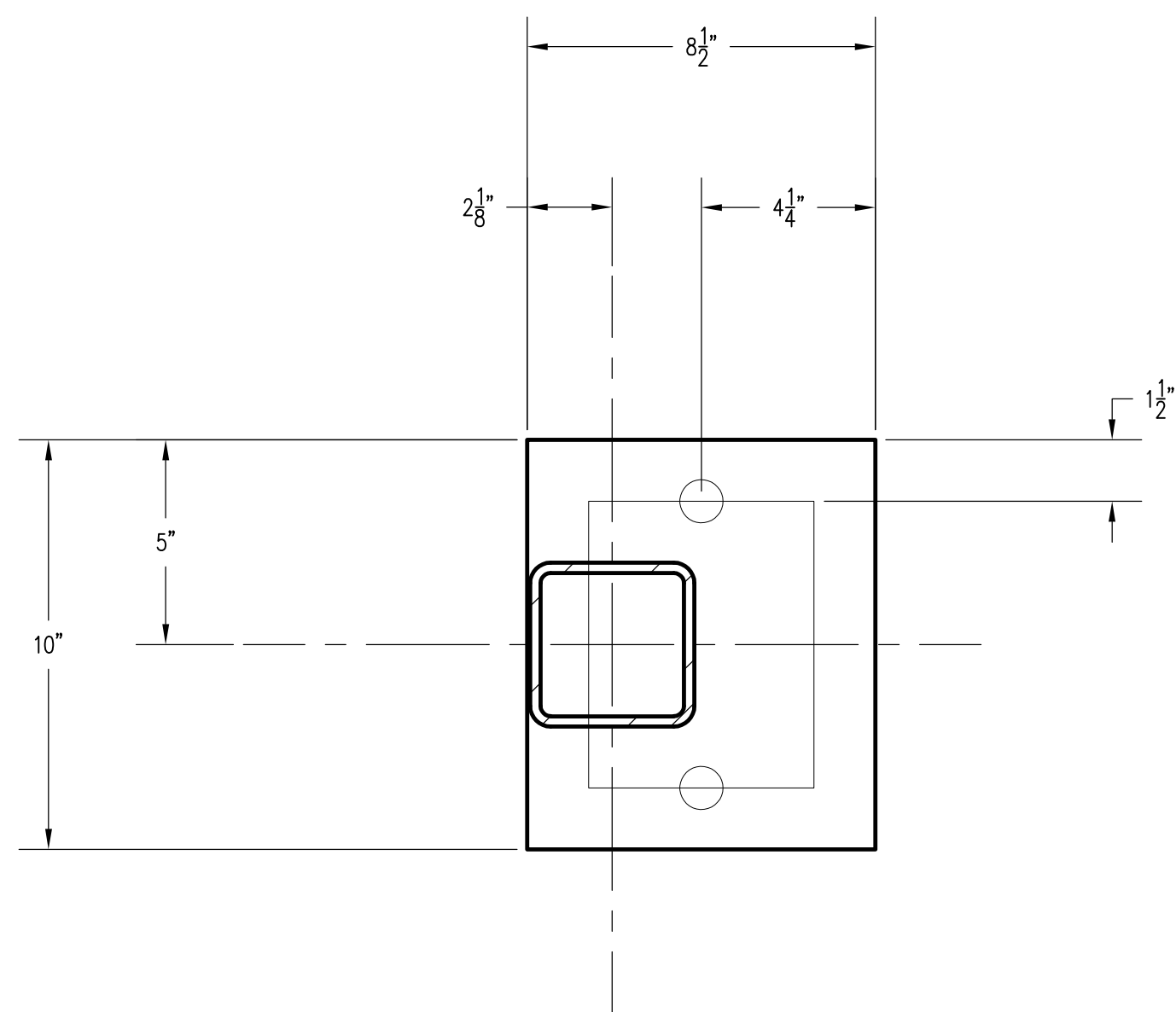
BASEPLATE THICKNESS: 1"
ANCHOR RODS: 1" ϕ , GR36
COLUMN: W8x58
COLUMN-TO-BP WELD: 1/2" ALL AROUND

D.3 BP-3 BASEPLATE DETAIL
S504 SCALE: 1-1/2" = 1'-0"



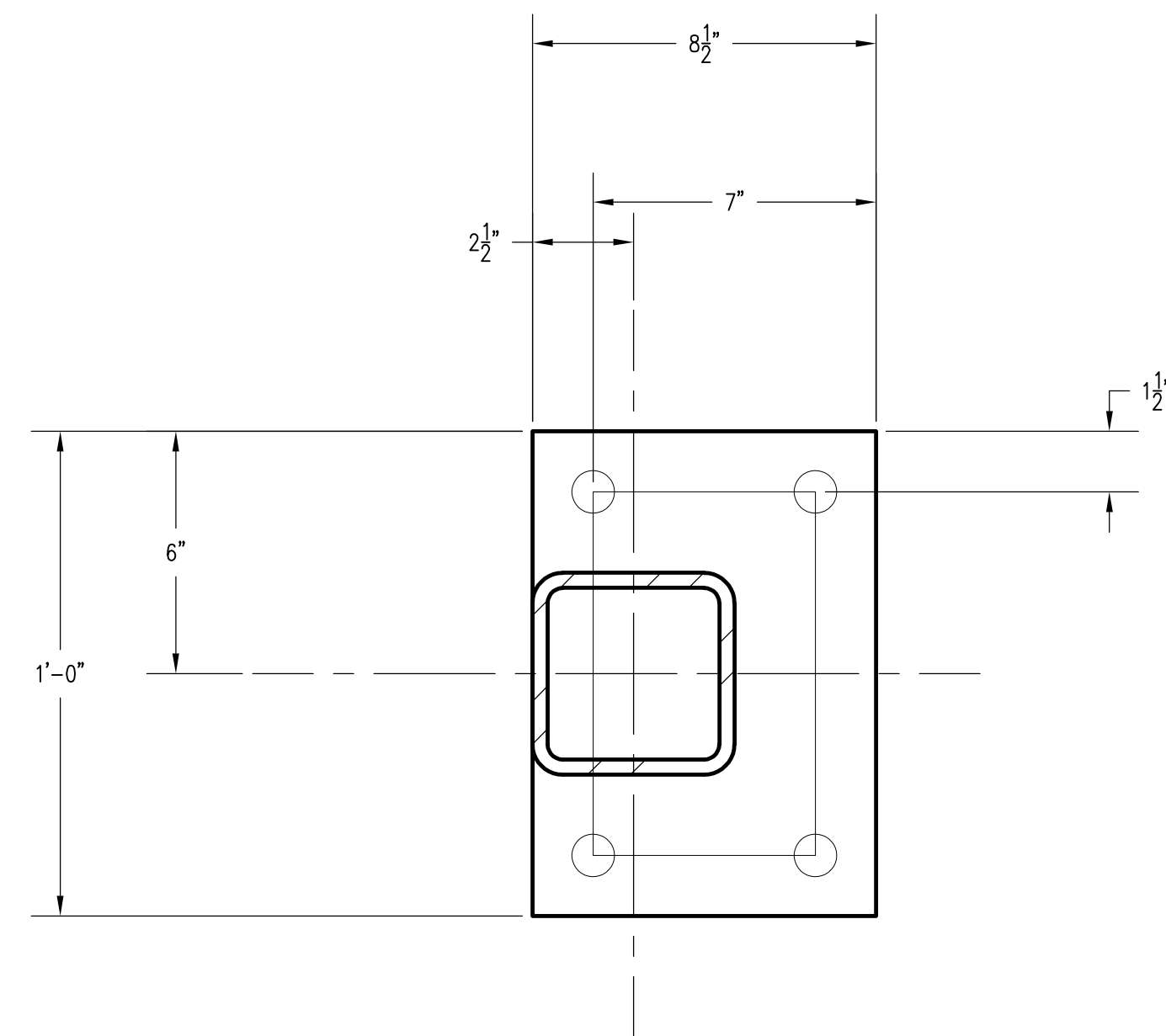
BASEPLATE THICKNESS: 3/4"
ANCHOR RODS: 3/4" ϕ , GR36
COLUMN: W10x54
COLUMN-TO-BP WELD: 1/2" ALL AROUND

D.4 BP-4 BASEPLATE DETAIL
S504 SCALE: 3" = 1'-0"



BASEPLATE THICKNESS: 3/4"
ANCHOR RODS: 3/4" ϕ , GR36
COLUMN: HSS4x4x1/4
COLUMN-TO-BP WELD: 3/8" ALL AROUND

D.5 BP-5 BASEPLATE DETAIL
S504 SCALE: 3" = 1'-0"



BASEPLATE THICKNESS: 3/4"
ANCHOR RODS: 3/4" ϕ , GR36
COLUMN: HSS4x4x1/4
COLUMN-TO-BP WELD: 3/8" ALL AROUND

D.6 BP-6 BASEPLATE DETAIL
S504 SCALE: 3" = 1'-0"

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| 364 Main Street City of Beacon Dutchess County, New York | |
| Baseplate Details | |
| SCALE As Noted | DATE 12-20-21 |
| DRAWN BY MAD | CHECKED BY MAD |
| S504 | |