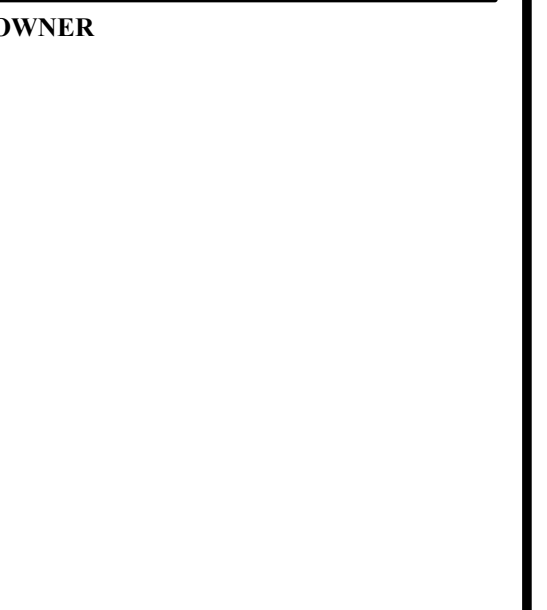




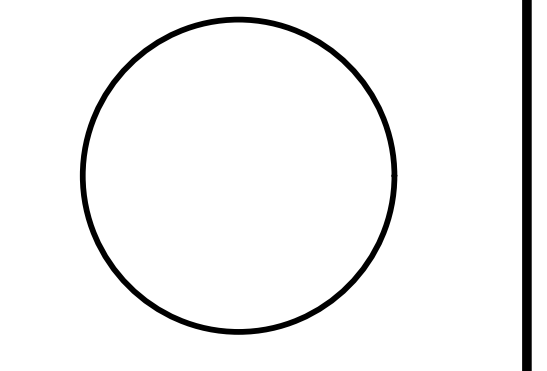
OWNER

	<p>GENERAL NOTES</p> <ol style="list-style-type: none"> THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECTS OF ALL DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS. THE GENERAL CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS THAT MAY APPLY TO THE CONSTRUCTION OF THE PROJECT. ALL WORK OF THIS PROJECT SHALL COMPLY WITH ACCEPTED BUILDING PRACTICES AND ALL CODE HAVING JURISDICTION OVER THIS PROJECT. REFER TO LIMITS OF WORK DRAWINGS FOR OVERALL DESCRIPTION OF WORK AREAS. THE GENERAL CONTRACTOR SHALL LEAVE THE PROJECT SITE AND ALL SURROUNDING AREAS IN FINAL CLEAR CONDITION INCLUDING THE REMOVAL OF ALL DEBRIS RESULTING FROM CONSTRUCTION. THE CONTRACTOR SHALL AT ALL TIMES DURING THE PROGRESS OF THE WORK REMOVE ALL CONSTRUCTION DEBRIS AND MAINTAIN A DUST FREE ENVIRONMENT FOR ALL ADJACENT AREAS. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND VERIFY THAT ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF ALL MATERIALS BY ALL TRADES IS PROPERLY EXECUTED. THE CONTRACTOR SHALL UTILIZE THE AREAS WITHIN THE SCOPE OF WORK FOR STORAGE OF MATERIALS AND TOOLS. ALL WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER ALL OTHERS. DO NOT SCALE DRAWINGS. IF THERE IS A QUESTION OR CONFLICT IN DIMENSIONS, NOTIFY THE ARCHITECT FOR CLARIFICATION. VERIFY FIELD CONDITIONS PRIOR TO COMMENCEMENT OF EACH PORTION OF THE WORK. THE CONTRACT DRAWINGS ARE COMPLIMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE BINDING AS IF REQUIRED BY ALL. THE CONTRACTOR SHALL COORDINATE ALL PORTIONS OF THE WORK. DIMENSIONS ARE TO CENTER LINES, EXISTING BUILDING GRID LINES OR TO FACE OF FINISHED SURFACE UNLESS OTHERWISE NOTED. ALL FINISHED WORK SHALL BE FREE OF DEFECTS. THE OWNER RESERVES THE RIGHT TO REJECT ANY MATERIALS AND WORKMANSHIP WHICH ARE NOT CONSIDERED TO BE AT THE HIGHEST STANDARDS OF THE VARIOUS TRADES INVOLVED. NO CHANGES OR SUBSTITUTIONS ARE ALLOWED UNLESS APPROVED BY THE OWNER. 	<p>SCOPE OF WORK - CODE</p> <p><u>SCOPE OF WORK</u></p> <p>FOUNDATION AS SHOWN ON DRAWINGS INCLUDING, BUT NOT LIMITED TO, LABOR, MATERIALS, FORMWORK, REINFORCING TO COMPLETE THE PROJECT. FOUNDATION IS TO BE IN PLACE TO ALLOW FOR RELOCATION OF EXISTING WENTWORTH HALL AND ADDITION. (WORK BY OTHERS) WORK IS TO INCLUDE FOOTINGS, PIERS, WALLS, REINFORCING. WORK IS NOT TO INCLUDE CONCRETE SLAB. TEMPORARY FENCING AND GATE WILL BE IN PLACE. IT IS THIS CONTRACTORS RESPONSIBILITY TO MAINTAIN THE FENCE AND GATE IN THE SAME WORKING CONDITION AS ACCEPTED. TEMPORARY TOILET FACILITIES WILL BE PROVIDED.</p> <p>THE TOWN OF WESTWOOD SHALL RETAIN THE SERVICES OF AN INDEPENDENT TESTING AGENCY TO PERFORM STRUCTURAL INSPECTIONS AS INDICATED ON THE DRAWINGS AND AS REQUIRED BY THE PROGRAM OF STRUCTURAL TESTS AND INSPECTIONS.</p> <p>SHOP DRAWINGS, IN ADDITION TO MATERIAL SUBMITTALS SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION FOR THE FOLLOWING: -BOLTS, ANCHORS -REINFORCING -CONCRETE MIX</p>	<p><u>SCOPE OF WORK - CONT.</u></p> <p>STRUCTURAL INSPECTIONS AND TESTING WILL BE PERFORMED PER CHAPTER 17 OF THE MASSACHUSETTS STATE BUILDING CODE & IBC 2015. AT A MINIMUM THE FOLLOWING WILL BE INSPECTED: -SOIL CONDITIONS -CONCRETE PLACEMENT -REINFORCING</p> <p><u>GOVERNMENT BUILDING CODE</u></p> <p>THE MASSACHUSETTS BUILDING CODE, 9TH EDITION</p>
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<p>INDEX TO DRAWINGS</p> <p>T-1.1 Title Sheet</p> <p>ST-1.1 Site Plan</p> <p>S-0.1 General Notes I S-0.2 General Notes II S-0.3 General Notes III S-1.1 Foundation Plan S-3.1 Concrete Details I S-3.2 Concrete Details II S-3.3 Concrete Details III S-3.4 Concrete Details IIII</p> <p>A-1.1 Basement Floor Plan</p>	<p>GRAPHIC SYMBOLS</p> <p> BUILDING CROSS SECTION</p> <p> DOOR NUMBER</p> <p> ROOM NUMBER</p> <p> WINDOW NUMBER</p> <p> ELEVATION DESIGNATION</p> <p> SECTION REFERENCE</p> <p> NEW DOOR TO BE INSTALLED</p> <p> EXISTING DOOR TO REMAIN</p> <p> PARTITION TYPE</p> <p> NEW CONSTRUCTION</p> <p> EXISTING CONSTRUCTION</p>	<p>MATERIAL SYMBOLS</p> <p> BLOCKING</p> <p> CONCRETE</p> <p> EARTH</p> <p> BATT INSULATION</p> <p> GRAVEL</p> <p> WOOD</p> <p> DRYWALL</p> <p> TILE</p>	<p>ABBREVIATIONS</p> <table border="0"> <tr> <td>@</td><td>AT</td><td>GC</td><td>GENERAL CONTRACTOR</td><td>P LAM</td><td>PLASTIC LAMINATE</td><td>W/</td><td>WITH</td></tr> <tr> <td>AFF</td><td>ABOVE FINISH FLOOR</td><td>GL</td><td>GLASS OR GLAZING</td><td>PLYWD</td><td>PLYWOOD</td><td>WC</td><td>WATER CLOSET</td></tr> <tr> <td>ATTEN</td><td>ATTENUATING</td><td>GWB</td><td>GYPSPUM WALL BOARD</td><td>PT</td><td>PRESSURE TREATED</td><td>WD</td><td>WOOD</td></tr> <tr> <td>BLDG</td><td>BUILDING</td><td>HC</td><td>HOLLOW CORE</td><td>PR</td><td>PAIR</td><td>X-REF</td><td>CROSS REFERENCE</td></tr> <tr> <td>CH</td><td>CEILING HEIGHT</td><td>HDWR</td><td>HARDWARE</td><td>PT</td><td>PAINTED</td><td></td><td></td></tr> <tr> <td>CL</td><td>CENTER LINE</td><td>HM</td><td>HOLLOW METAL</td><td>QT</td><td>QUARRY TILE</td><td></td><td></td></tr> <tr> <td>CLR</td><td>CLEAR</td><td>HOR</td><td>HORIZONTAL</td><td>R</td><td>RISER</td><td></td><td></td></tr> <tr> <td>COL</td><td>COLUMN</td><td>HT</td><td>HEIGHT</td><td>RAD</td><td>RADIUS</td><td></td><td></td></tr> <tr> <td>CONC</td><td>CONCRETE</td><td>HVAC</td><td>HEATING, VENT, A/C</td><td>REQ</td><td>REQUIRED</td><td></td><td></td></tr> <tr> <td>CONT</td><td>CONTINUOUS</td><td>HWH</td><td>HOT WATER HEATER</td><td>REF</td><td>REFERENCE</td><td></td><td></td></tr> <tr> <td>CPT</td><td>CARPET</td><td>INSUL</td><td>INSULATION</td><td>REV</td><td>REVISION(S)</td><td></td><td></td></tr> <tr> <td>CT</td><td>CERAMIC TILE</td><td>INT</td><td>INTERIOR</td><td>RH</td><td>RIGHT HAND(ED)</td><td></td><td></td></tr> <tr> <td>DIM</td><td>DIMENSION</td><td>L</td><td>LENGTH</td><td>RO</td><td>ROUGH OPENING</td><td></td><td></td></tr> <tr> <td>DWG(S)</td><td>DRAWING(S)</td><td>LAV</td><td>LAVATORY</td><td>RTU</td><td>ROOF TOP UNIT</td><td></td><td></td></tr> <tr> <td>EA</td><td>EACH</td><td>LH</td><td>LEFT HAND(ED)</td><td>SA</td><td>SOUND ATTENTION BATTS</td><td></td><td></td></tr> <tr> <td>EIFS</td><td>EXT INSUL. 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35 Bryant Street
Dorham, MA 02026
ph: 781.326.5400
www.mckayarchitects.net



REV #	DATE	ISSUANCE

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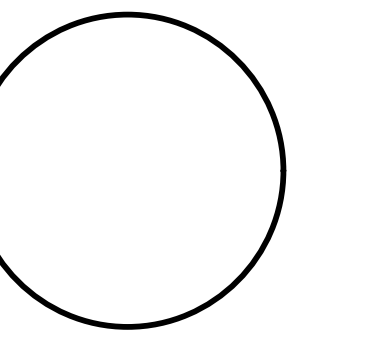
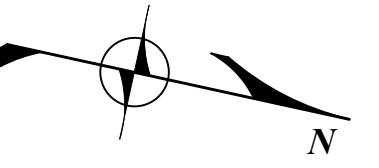
Contractor to verify all information and dimensions in the field prior to start of construction and is to notify McKay Architects of any discrepancies.

**Wentworth Hall
Library Expansion
FOUNDATION
PROJECT**
Bid #
ECON -20-B-003

OWNER

mckay architects

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Site Plan

JOB NO

DATE 09.13.19

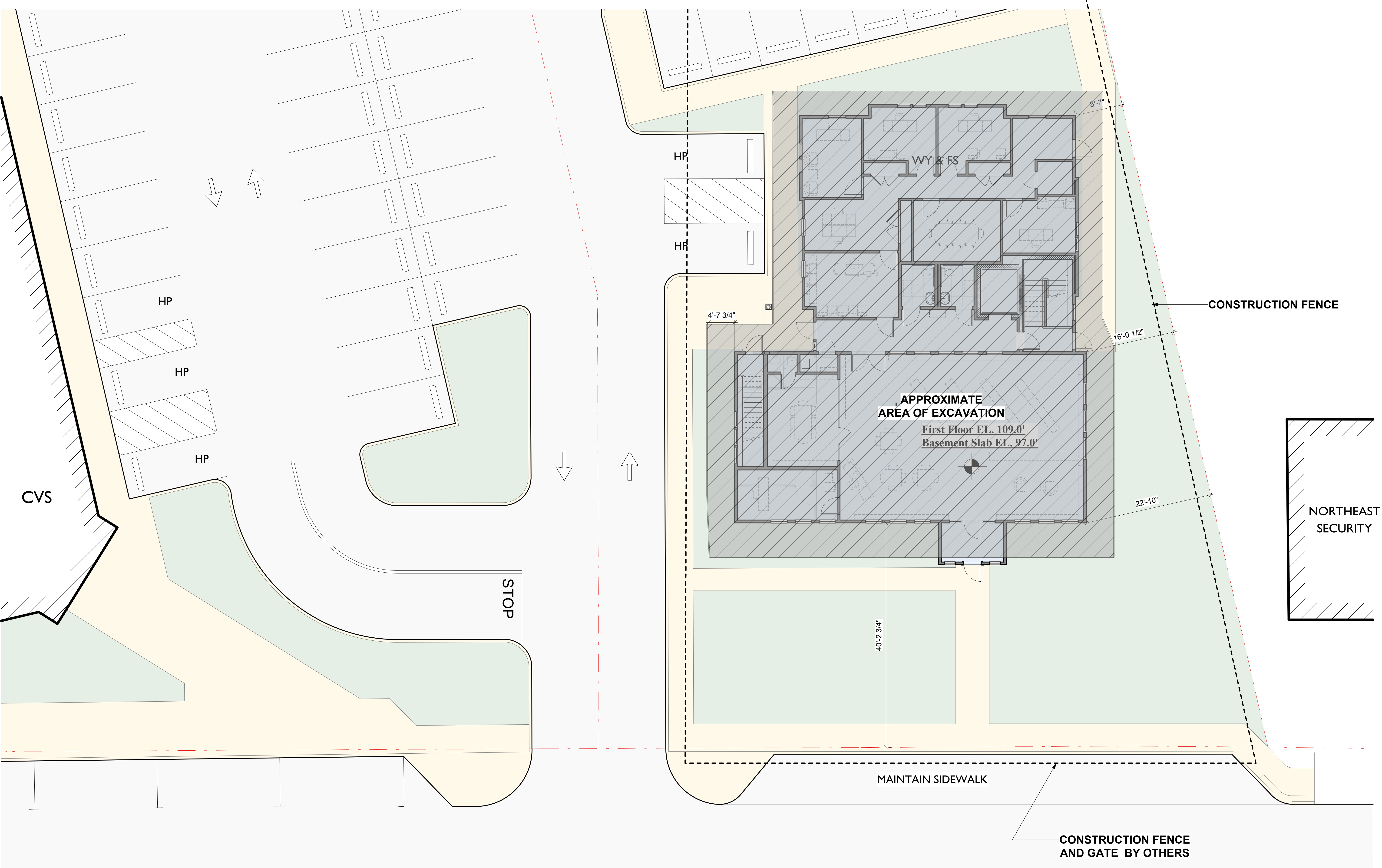
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CKD BY MLM

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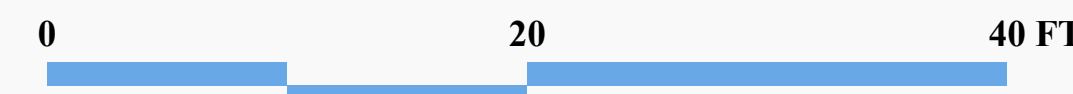
L-1.1

1/8" = 1'-0"



1 Proposed Site Staging Plan

L-1.1 1/8" = 1'-0"



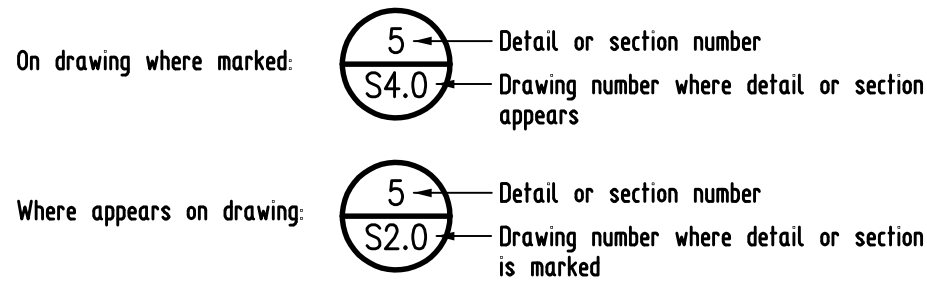
WASHINGTON STREET

APPROXIMATE AREA OF EXCAVATION IS FOR INFORMATION ONLY.
THE EXCAVATION WORK IS TO BE COMPLETED UNDER SEPARATE CONTRACT

DRAWING KEY / SYMBOLS / ABBREVIATIONS:

- 1. ← Indicates span of structural element including but not limited to framed slabs, walls, metal deck & fascia.
2. ■ indicates direction of 'called North' for the project.
3. Symbols: Centerline, Pounds or Number, etc.
4. Abbreviations: A.B. Anchor Bolt, ACI American Concrete Institute, etc.

SECTION AND DETAIL MARKS:



GENERAL NOTES:

- 1. All work shall conform to the requirements of the State Building Code of the Commonwealth of Massachusetts, 9th edition.
2. Structural drawings may represent construction with a reference scale.
3. Electronic versions of structural drawings may represent construction with a reference scale and dimensions.
4. The Contractor is completely responsible for the safety of adjacent structures, property, his workmen, and the general public...

DESIGN LOADS:

- 1. Uniformly Distributed Floor Live Loads: Offices and administration 50 psf + 15 psf partition allowance, First floor lobbies, public areas 100 psf, etc.
2. Concentrated Live Loads: Floors have been designed to support the uniformly distributed live loads prescribed above, or the following concentrated loads, which ever produces the greater stress.

- 3. Roof Live Load: (Commonwealth of Massachusetts State Building Code, 9th edition) Risk Category II Ground Snow Load, Pg = 40 psf (Table 1604.10). Additional loadings due to snow drift applied in accordance with Section 1608.3 to 1608.10.
Snow Density = 0.13Pg + 14 <= 30 pcf
Pf = 0.7Ce x Ct x Is x Pg
where: Ce = 1.0, Ct = 1.0 heated, Is = 1.0, Pf = 35.0 psf heated

DESIGN LOADS CONT.:

- 4. Live Load Reduction: For design live loads of 100 psf or less, except for buildings of Use Group A (assembly) or Use Group E (educational) and for garages or open parking structures and for one-way slabs and for roofs, a structural member having an influence area of 400 square feet or more may be designed for a reduced live load determined by the following Formula:
L = Lr (0.25 + 15 / sqrt(KA))
Where: L = reduced design live load (psf), Lr = basic design live load (psf), A = tributary area (square feet), KA = influence area, KA per table below.

Table with 2 columns: Element, KLL. Rows include Interior columns (4), Exterior columns without cantilever slabs (4), Edge columns with cantilever slabs (3), Corner columns with cantilever slabs (2), Edge beams without cantilever slabs (2), Interior beams (2), Cantilever beams (1).

Maximum reduction multiplier = 0.4 for members supporting more than one floor and 0.5 for members supporting one floor.

5. Earthquake Loads:

Risk Category II Site Class C

Section 1613.0

Seismic Base Shear = Vu = CsW = Seismic Response Coefficient Cs = where:

Cs = Sds / (R/Ie) but not > Sds / T(I/R/Ie) not < 0.04Sds/Ie, Ss = 0.196, S1 = 0.066, Fa = 1.2, Fv = 1.6, Sds = 2/3 FvSs = 0.157, SD1 = 2/3 FvS1 = 0.070, R = 6.5 (light framed walls sheathed with wood structural panels rated for shear resistance), Ie = 1.0, T = Building period, W = effective seismic weight of the structure, Seismic design category = B, Analysis Type = Equivalent Lateral Force

6. Foundation walls are designed for the following equivalent fluid pressures:

Cantilevered Walls, Walls Laterally Supported at Top

Above elevation 00'-0"

Below elevation 00'-0"

Lateral surcharge

Seismic

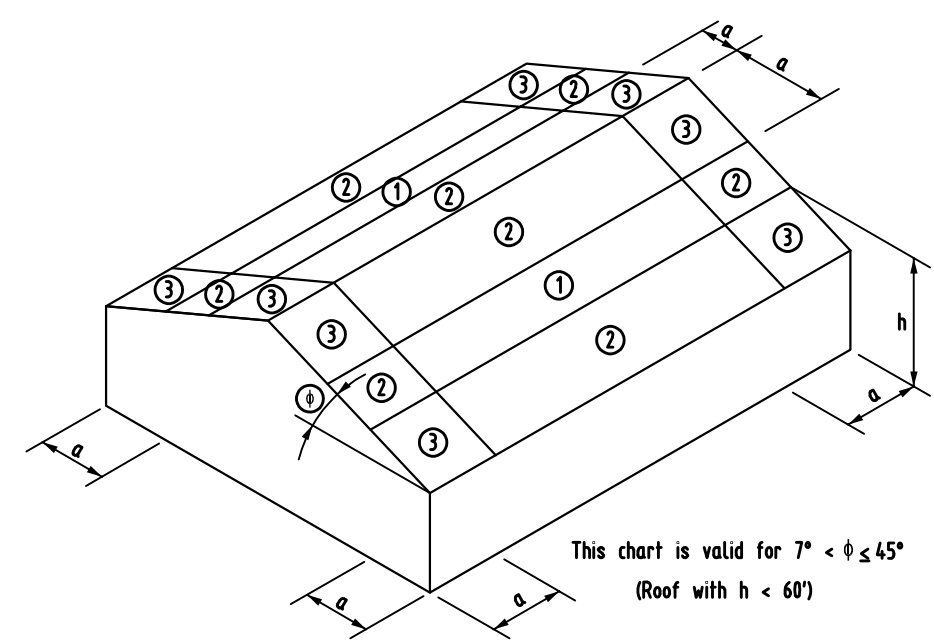
7. Wind Loads:

Risk Category II - Valt = 129 mph, V50 = 99.9 mph

Wind Exposure = B

Wind pressures and distributions in accordance with Section 1609.

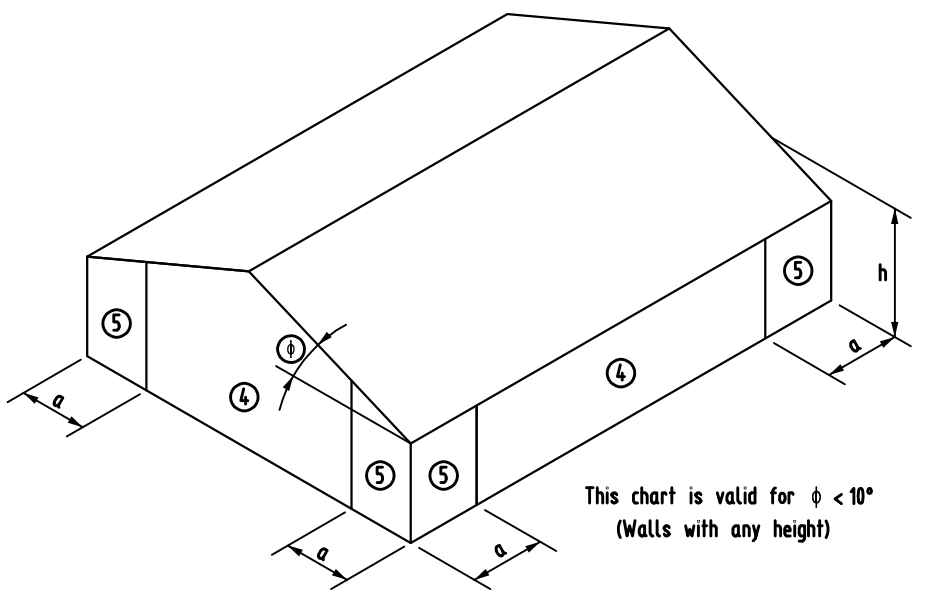
Component & Cladding Wind Pressure table. Columns: Zone, Effective wind area (ft^2), Pressure (psf). Rows include zones 1-5 with various area and pressure values.



COMPONENT & CLADDING LOADS AT ROOF

NOTES:

- a: 10 percent of least horizontal dimension or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 feet (0.9m).
b: Mean roof height in feet, except that eave height shall be used for roof angles < 10°.
phi: Angle of plane of roof from horizontal in degrees.



COMPONENT & CLADDING LOADS AT WALL

NOTES:

- a: 10 percent of least horizontal dimension or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 feet (0.9m).
b: Mean roof height in feet, except that eave height shall be used for roof angles < 10°.
phi: Angle of plane of roof from horizontal in degrees.

FOUNDATIONS:

- 1. The foundation design is based on recommendations contained in the Geotechnical Report by McArdle Gunnan Associates, Inc. dated 06-03-19. Contractor is responsible to follow the direction and limitations contained in the report as it pertains to performing foundation work for this project.
2. Walls placed directly on rock shall have the rock surface clean and free of organic material and be of reasonably level surface with maximum change in profile of 6" in any sq ft. area. Substantial voids shall be filled with concrete or mortar.
3. All foundations shall be placed on undisturbed soil or compacted engineered fill. No foundations shall be placed in water or on frozen ground. Allowable bearing pressure is 3.0 tons per square foot. Top or bottom foundation elevations where given, are minimum depths, and are not to be construed as limiting in any way the depth of excavation required to reach the bearing condition required by the project geotechnical report.
4. Foundations subject to frost conditions shall be installed to a minimum of 4 feet below finished exterior grade or the lowest slab level within unheated space.
5. All foundation excavations are to be finished by hand and inspected and approved by the Geotechnical Engineers before any concrete is placed.
6. Unless otherwise noted, all foundation elements are to be centered under supported members.
7. Dowel bars between construction elements shall match bars of primary reinforcement u.n.o. Dowels shall lap primary reinforcing with a class B splice length.
8. Where foundation elements require back fill on each side, all sides shall be filled simultaneously in order to maintain a maximum backfill differential elevation of 1'-0" u.n.o.
9. Contractor shall control surface and underground water as required during construction so that foundation work is done in the dry. The Contractor shall insure that ground water levels under adjacent structures are not altered in any way by the construction. In addition, where so directed by these plans or by the project geotechnical report, the Contractor will continue to maintain a condition of no hydrostatic pressure until sufficient building weight is in place to prevent flotation of any part of the structure.
10. Non-cantilevered walls retaining earth rely on the completed floor slabs for lateral support. No walls shall be back filled until the slab constructions at the top and bottom of the wall are in place and have achieved a minimum of 75% of their specified design strength.
11. Cantilevered walls retaining earth that directly support structural steel shall be completely backfilled prior to steel erection u.n.o.
12. Overlap joints at vapor barrier 12" minimum and continuously tape seams.

CONCRETE:

- 1. All concrete work shall be controlled concrete, mixed and placed under the supervision of an approved testing agency and conform to the 20th edition of the ACI Building Code Requirements for Reinforced Concrete (ACI 318) and the State Building Code of the Commonwealth of Massachusetts. In case of conflict, the State Building Code shall govern.
2. Refer to architectural drawings for concrete finishes. Where finish is not specified, conform to requirements of ACI 301 - "Specifications for Structural Concrete for Buildings".
3. All concrete shall be normal weight concrete with sand and 3/4" minimum gravel aggregate, type I or type II Portland Cement and a minimum compressive strength (f'c) in 28 days of 3000 psi.
4. Concrete must reach the following percentages of its 28-day compressive strength (f'c) before forms or shores may be removed:

Table with 2 columns: Location, Minimum %. Rows: Footing (20%), Walls (20%).

No construction loads shall be supported on, nor any shoring removed from, any part of the structure under construction except when that portion of the structure in combination with remaining forming and shoring system has sufficient strength to support safely its weight and loads placed thereon.

Forms shall be removed in such manner as not to impair safety and serviceability of the structure. All concrete to be exposed by form removal shall have sufficient strength not to be damaged thereby.

Concrete at walls retaining unbalanced levels of soil on each side shall reach specified 28 day strength prior to back filling on either side. Any concrete directly supporting framing must reach 75% of specified 28 day strength prior to erection.

All exterior concrete directly exposed to the weather or possible freeze/thaw action shall contain an air entrainment admixture. Air content to be 6 +/- 1%. Expansion, control or construction joints locations shown on the drawings may not be altered without prior written approval of the Structural Engineer. At poured in place walls and footings construction joints shall be located to allow a maximum pour length of 60'-0".

All concrete shall be placed without horizontal construction joints, except where specifically noted. Vertical construction joints and slabs in shored concrete work shall be made at mid-span. Horizontal reinforcement shall be continuous through vertical construction joints. Horizontal bars shall extend beyond the construction joint a minimum of the bar's development length on each side.

The following floor flatness criteria applies: Slab on grade FF 35 FL 25

No less than 80% of the floor surface profile shall be outside a plus or minus 3/16" within any 10'-0" length at the time of testing.

Grout under all bearing plates shall be non-shrink, nonmetallic grout with a minimum compressive strength of 5000 psi or 3 days.

Pipes or conduits placed in slabs on grade shall not be placed closer than 3 diameters on centers, have an outside diameter less than 1/2 of the slab thickness, and be positioned so that they do not interfere with slab reinforcement. Aluminum conduits shall not be placed in concrete. No conduits or pipes shall be placed in slabs on metal deck.

Slab permanently supported by soil may be poured in as large an area as can be handled provided that sawcut joints are cut as soon as the concrete will support a man's weight without permanent deformation and the joint cutting process does not dislodge aggregate.

No concrete shall be cast before review and approval of the reinforcing and embedded items have been obtained from the Architect, his designated representative, or the independent testing agency.

Any key shown on the drawings is to be continuous and nominal size 2" x 4" u.n.o.

Concrete cast on sloped surfaces shall begin at the lowest elevation and continue uninterrupted toward the higher elevations.

See architectural drawings for door and window openings, drips, washes, reglets, masonry anchors, and for miscellaneous embedded plates, bolts, anchors, angles, etc.

All exposed edges of concrete members shall be chamfered 3/8" unless shown otherwise on architectural drawings.

Contractor must submit a detailed layout of proposed slab openings and block outs showing exact dimensions relative to framing members and/or column grids for approval by the Structural Engineer prior to cutting any openings.

At sawcutting of existing concrete, including slabs on grade, no overcut at corners is allowed. All corners shall have a core hole of sufficient diameter made prior to cutting at adjacent sides to prevent cut beyond the required dimension.

Floor slabs may require surface coating and/or concrete admixture to control surface moisture to allow compatibility with water based floor adhesives. Coordinate requirements and scope with Architect.

Maximum aggregate size at normal weight concrete to be 3/4".

Maximum w/c at exterior slabs on grade to be 0.40. Increase minimum required strength to accommodate if needed.

Wentworth Hall Library Expansion 918 Washington Street Islington, MA

FOUNDATION PROJECT BID # ECON-20-B-003

mckay architects logo and contact information: 35 Bryant Street, Dedham, MA 02826, phone 781.326.5400, www.mckayarchitects.net

GOLDSTEIN-MILANO L.L.C. Structural Engineers

125 Main Street, Reading, MA 01867, 781-670-9990 (p), 781-670-9939 (f)

Revision table with columns: REV#, DATE, ISSUANCE. Multiple empty rows for revisions.

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General Notes I

Table with columns: JOB NO (18197.00), DATE (05.29.19), DWG BY (DAD), CKD BY (BRG), SCALE (AS NOTED), and a large S-0.1 label.

REINFORCING:

- Detailing of concrete reinforcement and accessories shall be in accordance with ACI 315 – "Manual of Standard Practice for Detailing Reinforced Concrete Structures", latest edition.
- All reinforcing bars shall conform to ASTM A615, Grade 60.
- All welded wire fabric (W.W.F.) shall conform to ASTM A1064. (Fy=65 ksi min) W.W.F. shall be provided in flat sheets. Install W.W.F. in the longest lengths practical. Lap adjoining pieces at least one full mesh x 2" and wire together. Offset and laps in adjacent widths to prevent continuous laps. Stair pans may be reinforced with 2x2-W14xW14 W.W.F. or fibermesh at 1/2 lbs. / cu. yd.
- Concrete cover for reinforcement including W.W.F. shall be provided per the following table unless otherwise noted on the drawings:

Condition	Cover (inches)
Surfaces cast against earth	3
Formed surfaces exposed to earth or weather	
#6 through #18 bars	2
#5 bars and smaller	1 1/2
Formed surfaces not exposed to earth or weather:	
Slabs, walls	3/4
Beams, girders	1 1/2
Soil supported slabs on grade:	
top	1 1/2

- Maximum deviation from these requirements shall be +1/8 inch for sections 10 inches thick or less, and +1/4 inch for sections over 10 inches thick. See ACI 318-99, for conditions not listed.
- Provide and schedule with the shop drawings, all necessary accessories to hold reinforcing securely in position. Minimum requirements shall be:
 - High chairs 4'-0" on center (maximum)
 - Support bars for high chairs to be No. 5 minimum.
 - Slab bolsters 4'-0" on center (maximum)
 - All reinforcement including W.W.F. shall be continuous through construction joints u.n.o.
 - Where continuous bars are called for, they shall run continuously around corners and be lapped at necessary splices with a class B splice (ACI 318-14), or hooked at discontinuous ends. Lap lengths shall be as given in the splice and development tables in these drawings. Lap beam top bars at mid-span and beam bottom bars at supports, unless otherwise noted.
 - All hooks shown on drawings shall be standard hooks unless otherwise noted.
 - Provide additional reinforcing at the sides and corners of all openings in concrete in accordance with the typical details on these drawings.
 - At multiple top or bottom bar layer placements in footings, etc., bars parallel to short direction to be placed in bottom most or top most layer u.n.o.
 - Provide continuous support bars for stirrups where primary bars do not exist.
 - Top & bottom horizontal reinforcing in beams and girders shall be detailed to be placed in one layer unless noted otherwise on the drawings. At top splices, bars may be tied "above and below" or "side by side" as required for proper fit and alignment.
 - All beam and girder "stirrups" or "ties" shall be continuous closed type unless otherwise noted on the drawings. Stirrups or ties do not extend through footings, u.n.o.
 - In beams and girders over 18" deep provide continuous #4 bars on the side faces at 12" on center maximum. These side bars do not require development into supports u.n.o. Dowels where shown shall lap primary reinforcing with a class B splice length.
 - Field bending of a reinforcing bar is permitted provided the bar was not at any time previously bent within 6" of the same location along the bar.

REINFORCED MASONRY:

- All concrete masonry unit (CMU) work shall conform to the "Building Code Requirements of Masonry Structures" (ACI 530-13).
- The compressive strength of the masonry, f'm, shall be at least 2000 psi.
- All cmu shall conform to ASTM C90, grade N-1, with an individual compressive strength of 2800 psi.
- Mortar for wall construction shall be Type M or S conforming to ASTM C720.
- Grout for piers and walls shall conform to ASTM C476 with a minimum compressive strength of 2500 psi determined in accordance with the provisions of ASTM C1019. All masonry cells containing reinforcing bars are to be grouted solid. Additional grouting may be specified on these drawings.
- Wire for joint reinforcing shall conform to:
 - a. General: Welded wire units of 9 gauge minimum all rods, prefabricated lengths of not less than 10'-0", with matching corner "L" and intersecting "T" units, ASTM A1066, with deformed continuous side and intermediate rods, and plain cross rods; widths approximately 2" less than nominal width of walls and partitions as required to position side rods for full embedment in mortar with mortar coverage of not less than 2" on joint faces exposed to exterior and not less than 2" elsewhere. Minimum yield point of 70 ksi.
 - b. Type: Ladder or Truss type.
 - c. Finish: Hot dipped galvanized after fabrication, ASTM A153, Class B-2 (15 oz. per sq. ft.), except manufacturer's standard mill galvanized may be used for interior walls and partitions.
- Unless noted otherwise on plans, provide the following minimum reinforcement:

Nominal Wall thickness	Vertical Reinforcing	Horizontal Reinforcing	Bond beams
8"	#5 @ 48" o.c.	#9 Durowall @ 16" o.c.	(2)-#4 continuous @ 10'-0" o.c.

- Unless noted otherwise on plans, provide additional vertical reinforcement in the cell immediately adjacent to each side of a masonry opening and in the end cell of discontinuous walls as indicated below. These bars are to extend full height of the wall or in the case of masonry openings at multi-story walls, from story level above to story level below the opening. Extend additional reinforcement a minimum of 36 bar diameters beyond the opening.
 - 8" CMU Walls - (2)-#5
- The minimum length of lap for reinforcing bars is 48 bar diameters, unless shown otherwise on the drawings.

REINFORCED MASONRY CONT.:

- Properly secure reinforcing bars to maintain the positions indicated on the drawings during the groud operations. Reinforcing bars to be located in center of cells unless otherwise noted.
- Cold weather CMU requirements:

Mean daily air temperature	Additional requirements
40° - 32° F	Heating mixing water or aggregate to 70° F. Protect masonry from rain or snow for 24 hours.
32° - 20° F	Heating mixing water or aggregate to 70° F. Provide wind breaks for wind velocity in excess of 15 m.p.h. Cover masonry with insulating blankets for 24 hours and provide heat sources on both sides of masonry construction.
Below 20° F	Heating mixing water or aggregate to 70° F. Provide enclosures and heat to maintain 40° F minimum temperature. Temperature of masonry units must be 40° F minimum when laid. Maintain masonry above 40° F for 24 hours by enclosure and supplemental heat.

STRUCTURAL STEEL:

- Structural steel design conforms to "Specification for Structural Steel Buildings" (AISC Fourteenth Edition) and "Seismic Provisions for Structural Steel Buildings" (AISC 341-10).
- Structural steel rolled shall conform to the following ASTM designations:
 - ASTM A-572, Grade 50 All W shapes or A992
 - ASTM A-36 or A-572 (any grade) All other rolled shapes, individual plates and bars unless noted otherwise
 - ASTM A-500, Grade B or C Square or Rectangular HSS sections
 - ASTM A-53, Grade B Pipe
- Do not paint structural steel unless otherwise specified.
- Unless otherwise detailed in the drawings, provide loose steel angle lintels over all openings in masonry construction per the schedule below. Lintels shall have a minimum of 8" bearing on each side of opening. Steel angles in pairs, indicated thus (JL), shall be plug welded or bolted at 2'-0" o.c. or stitch welded top and bottom at 1'-0" o.c. All angles to be installed vertically. Lintels at walls exposed to the weather shall be galvanized.

Wall thickness	Span	Lintel
4"	< 5'-0"	L4x3#5
	5'-0" x 7'-0"	L5x3#5
	7'-0" x 9'-0"	L6x3#5
8"	< 5'-0"	JL4x3#5
	5'-0" x 7'-0"	JL5x3#5
	7'-0" x 9'-0"	JL6x3#5
12"	< 7'-0"	JL6x6#5
	7'-0" x 9'-0"	JL6x6#5
	9'-0" x 12'-0"	JL6x6#5

- Cuts or burning of holes in or splicing of structural steel members in the field will not be permitted, unless specifically approved in each case by the Structural Engineer prior to performing the work.
- All structural steel, including baseplates and anchor bolts, to be exposed to soil in the finished work, are to be coated with an approved cold tar epoxy 16 mils minimum thickness.

STRUCTURAL STEEL CONNECTIONS:

- All shop and field welds shall be made by certified welders, and shall conform to "Structural Welding Code - Steel" (AWS D11-10), using electrodes conforming to (AWS E-70 series).
- All bolted connections between structural steel members shall be made with ASTM A325 or A490 bolts with appropriate nuts and washers.
- ASTM A325 or A490 bolts shall be installed with the bolt tension (pre-tensioned) specified in Table J3.1 of the AISC Specification (Fourteenth Edition), shall be used for all connections. Where tension control (TC) bolts are used and access to the bolt spline cannot be obtained to tighten the bolt, replace the bolt with a standard hex type bolt to allow tightening per this note.
- Details and connections completely detailed in the Contract Drawings may not be altered without written approval by the Structural Engineer.
- Unless otherwise noted, all connections at HSS sections shall be designed and detailed in accordance with the AISC "Hollow Structural Sections Connections Manual", Latest Edition. All rectangular HSS members to be oriented long side vertical u.n.o.
- Flat bar stock of equal thickness and material grade may be substituted for "fitted" stiffener plates at all locations. Width of bar may be within (-0", +3/4") of "fitted" plate dimension.
- Weld sizes not shown in details herein shall be the minimum required size based on thickness of thinner part as per AISC Fourteenth Edition, Tables J2.3 & J2.4. Where the thinner material is 1/2" or less use 3/8" weld size.
- Discontinue all around welds at the flange tips of open sections. Do not weld along the "length" of a flange thickness.
- Minimum connection plate thickness shall be 3/8" u.n.o.
- All holes called out to be slotfed are to be short slotfed holes as defined by AISC u.n.o.

METAL ROOF DECK:

- Design of metal roof deck shall be governed by the "Specifications for the Design of Cold Formed Steel Structural Members", by the American Iron and Steel Institute (AISI) and conform to the design and loading requirements of the "Steel Deck Institute" (SDI).

Metal roof deck shall be SDI deck, rolled of steel sheet, galvanized and conforming to ASTM 653. Galvanizing shall conform to the requirements of A924 coating class G60. The metal roof deck supplied shall be capable of supporting the design loads given in these drawings. Section properties per foot of width for a given specified deck type and gauge shall be as follows:

METAL DECK PROPERTIES (note #1)						
Depth (inches)	Gauge	Minimum width/depth (W/H)	I (positive)	I (negative)	S (positive)	S (negative)
3	18	2.0	1.190 inches ³	1.380 inches ³	0.680 inches ³	0.740 inches ³
	20	2.0	0.820 inches ³	1.040 inches ³	0.490 inches ³	0.540 inches ³

- Notes:
- Section properties for a given gauge may vary slightly with manufacturer. Properties listed in the table are representative of Fy = 33 ksi material. Use of metal deck with higher material strengths and lower deck properties is acceptable.

METAL ROOF DECK FASTENING SCHEDULE	
Location	Fastening
All Supports	Every Rib or 6" o.c.

- Notes:
- All fastening = 5/8"Ø fusion welds.
 - Side laps shall be fastened at 2'-6" o.c. maximum with welds, button punch or Tek fasteners in accordance with manufacturer's recommendations. Fasten side laps between adjacent deck units with welds, button punch or #10 Tek fasteners in accordance with manufacturer's recommendations.
 - Do not suspend pipes, ducts, or conduit directly from metal roof deck.
 - Metal deck design may be performed either using the ASD or LRFD design method.

WOOD FRAMING KEY:

Abbreviations:

SW	Shear wall
BW	Bearing wall
ML	Micro-lam
GL	Glulam
LVL	Laminated Veneer Lumber
PSL	Parallel Strand Lumber
o.c.	on center
P.E.S	Plywood End Side
HF	Hem Fir
DFL	Douglas Fir Larch
TJL	Truss Joist
P.A.F.	Powder Activated Fasteners
P.T.	Pressure Treated

GENERAL WOOD FRAMING:

- Lumber and its fastenings, shall conform to the National Design Specifications of stress-grade lumber and its fastenings, latest edition, as recommended by the National Forest Product Association. Current Edition of Wood grading rules are to be followed. All connections shall conform to the current edition of the National Design Specification for Wood Construction, and the contract documents. All materials must be grade marked.
- Unless otherwise noted, all joists, studs, lintels/headers and shearwalls shall be Hem-fir No. 2 or Spruce Pine No. 2 with Fb=875 psi (single use), Fv=70 psi, E=1,400,000 psi, Fc=1000 psi (repetitive) (MC19). Lumber sizes shown in the drawings are nominal size. Actual sizes shall conform to American Lumber Standard PS-20-70.
- Materials for exterior walls, interior bearing walls and shearwalls shall be stud grade Southern Yellow Pine (MC19) or stud grade Douglas Fir Larch (MC19).
 - b. Lumber for headers, beams, and other framing members shall be #2 Southern Yellow Pine (MC19) or #2 Douglas-fir (MC19).
 - c. All other non-structural wall construction shall be either construction grade or utility Southern Yellow Pine (MC19) or Douglas Fir Larch (MC19).
 - d. Wall top plates and sill plates shall be South Pine No. 2 with the following minimum properties:
Fb = 1500 psi, E 1,600,000 psi, Fv = 175 psi
- The indicated species and grade shall be used in the following locations:
 - General Framing Hem-fir, Standard or Stud grade or better
 - Studs Hem-fir, Stud or No. 3 grade or better
 - Plates Hem-fir, No. 2 grade or better
 - Joists, Headers, Rafters Hem-fir, No. 2 grade or better
 - Beams, Stringers, Posts, Timbers, Hem-fir, No. 1 grade or better
 - Blocking Hem-fir, Utility grade or better
 - Furring Hem-fir, Standard grade or better
- All repetitive framing members are to be spaced at 16" o.c. u.n.o.
- Roof sheathing shall extend fully under overbuilt areas of roofs.
- Provide double studs (minimum) under all headers, or built-up beams unless otherwise noted. Such studs shall continue from point load application to the foundation. Header shall be supported on joist stud and be designed to support load imposed.
- All flush connections shall have metal beam or joist hangers.
- All beam over post connections shall have a metal post cap unless otherwise noted.
- Bolt holes through wood shall be drilled 1/8" maximum larger than the diameter of the bolts to be installed. Bolts through wood shall be fitted with standard washers at head and nut ends. Edge of a bored hole shall not be within 1/2" inch of the stud edge. Bored holes shall not be located at cut or notch in the studs.
- A hole greater in diameter than 40 percent of the stud width may not be bored in any wood stud. Bored holes in diameter equal to 60 percent of the width of the stud are permitted in non-load bearing partitions or walls where each bored stud is doubled, provided not more than two such successive double studs occur.
- All wood framing exposed to weather shall be preservative pressure treated Southern Yellow Pine No. 2 or better.

GENERAL WOOD FRAMING CONT.:

- Non-load bearing interior partitions shall be 2x4 studs at 16" o.c. Headers over openings in interior non-load bearing partitions shall be (2)-2x4. Nail plate to stud with two 16d nails. When top plate is parallel to ceiling of floor framing install 2x4 cross blocking not more than 4'-0" o.c. See attached details for top plate.
- Solid blocking to be installed below all studs or posts that do not bear directly on floor joists or trusses so that axial load is transferred to the wall below.
- All studs to be continuous from floor to floor or floor to roof.
- Verify that surfaces to receive rough carpentry are prepared to required grades and dimensions. Do not begin work until unsatisfactory conditions are corrected.
- Coordinate with other trades: Provide required grounds, blocking, wood backing and framing. Perform cutting and patching of rough carpentry work as required.
- Framing lumber shall be sound, thoroughly seasoned, surfaced four sides, well manufactured and free from warp not correctable by bridging, blocking or nailing. Moisture content shall be a maximum of 19 percent.
- Stack all material minimum of 6" above ground to insure proper ventilation and cover with waterproof covering.
- At stacked wall openings provide matching cripple studs below all jack studs.
- Floor and Roof Framing:
 - Joists shall be toe nailed to wood support with two 10d nails.
 - Minimum bearing for joists - 1Ø"
 - End of joists shall be lapped over bearing and nailed together with (3)-16d nails, minimum Lap = 4".
 - Maximum joist overhang 12" unless otherwise noted.
 - Joists shall be doubled under parallel partitions.
 - Bridging shall be solid using 2x joist depth installed in offset fashion at 1" x 3" cross bridging type . Maximum spacing = 8 ft.
 - Rafters to be connected to hip and valley members with a minimum of (6)-16d equally spaced unless noted otherwise on plans.
 - All rafters to LVL ridge connections to be made with a minimum of (6)-16d toe nails equally spaced and a single A34 Simpson angle. Use A34 Simpson angle each side of a (2) or more built up rafter.
 - Valley's and hips to be connected to supporting elements with a minimum of (8)-16d unless noted otherwise on plans.
 - For framing openings up to 2'-0" wide, double the members on each side of the opening. Larger openings shall be called to the attention of the Engineer if not shown on the drawings.
 - If framed openings are double framed, nail inner stud to outer stud with 16d nails at 24" o.c. Toe nail inner stud to wall plate with (2) 8d nails or end nail with (2) 16d nails. Nail/outer stud to header with (4) 16d nails and to top plate with (2) 8d toe nails. If single framed, toe nail jam stud to wall plates with (2) 8d nails or end nail with (2) 16d nails. Toe nail jam stud to header with 8d nails.
- Bearing walls: (non-shear walls)
 - Bearing walls will be 2x6 at 16" o.c., unless otherwise noted.
 - Studs shall be nailed to the sole plate with three 10d or four 8d toe nails.
 - Where structural sheathing overlaps sole plate nail sheathing to sole plate at 6" maximum center.
 - Use 2x bridging at mid-height.
- Plates (Bearing or Non-bearing):
 - Sole plates shall be nailed to subfloor and joists with 16d nails at each joist.
 - Top plates for bearing partitions shall be two 2x6 or a continuous header. Plate members of partitions shall be lapped or anchored to exterior wall framing. Splices in lower member of top plate shall occur over studs. Nail plates to studs with two 16d nails 16" o.c.
 - Reinforce plates with steel straps when cut for piping or duct work.
 - Sill plates bearing directly on foundation concrete or cmu shall be pressure treated lumber, #2SCA (minimum Southern Pine No. 2 or better. Anchorage shall be as per attached details.
 - Bottom plates of all walls resting on concrete to be double 2x. General Contractor option to use single 2x plate at non-bearing or non-shear walls.
- Beams and girders:
 - Beams and girders shall bear a minimum of 4" on supports.
 - Where beams and girders of nominal 2" members are shown, nail with two rows of 16d nails spaced not more than 24" o.c., locate end joints in members over supports.
 - Splices in beams shall be only over supports unless otherwise specified by the Structural Engineer.
 - All built-up beams wider than 6" will be bolted with 3/8" diameter through-bolts at 2'-0" o.c. staggered spacing, unless otherwise noted.
 - Beams and girders shall bear over the top of all posts where they exist at either end.
- Shear walls:
 - The lateral bracing system specified in these documents is comprised of the shear capacity of walls designated as shear walls.
 - All shear walls that are perpendicular to floor framing require shear blocks in the floor cavity to develop transfer of horizontal diaphragm forces from the deck to the lateral bracing system. Provide nail on hardware at roof as specified on drawings.
 - All shear walls that are parallel to floor framing require premanufactured ladder braces in the floor cavity to develop transfer of horizontal diaphragm forces from the deck to the lateral bracing system. Provide nail on hardware to roof as specified on the drawings. Premanufactured ladder braces are 2x braces added to the continuous bearing member required over walls framed parallel to truss spans.
 - Shear walls must begin and end with double studs minimum. Refer to plans for additional requirements. These studs must be blocked vertically (minimum 2x4) to be continuous through floor framing space. Toe nail each stud and vertical blocking with (4) 8d nails. Shear walls must be sheathed continuously from bottom of wall.
 - Provide 2x bridging at mid-height.
 - The lateral bracing system includes the following structural components to resist the wind and seismic forces:
 - Party walls with required nailing, sill bolts and shear blocks (or ladder braces) as noted on building plans.
 - Shear walls with required nailing, sill bolts, hardware when required and shear blocks (or ladder braces) as noted on building plans.
- Temporary erection bracing shall be provided to hold structural timber securely in position. Do not remove until permanent work has been completed.

DECKING AND SHEATHING:

- Current edition of Plywood Association Grading Rules are to be followed.
- Notes:
- Combined subfloor/underlayment shall consist of A.P.A. 3/8" thick plywood, tongue and groove, with exterior glue which conforms to Product Standard PS-1 for Construction and Industrial Plywood. Advantech product of equivalent strength & thickness may also be used.
 - Decking for floors shall be 3/4" (3X) thick (I. & G. plywood sheathing) (oriented strand board (OSB)) (sturdy floor) with panel span rating of 16'.
 - Subflooring shall be nailed with 8d common or 6d annular or spiral threaded. Nails shall be spaced not more than 6" o.c. edges and 12" o.c. intermediate.
 - Space panel ends 1/8" and panel edges 1/4" to permit expansion due to varying moisture conditions.
 - Plywood/decking shall be placed with face grain parallel to span. Stagger all joints.
 - Roof:
 - Plywood roof to be CDX-PT 3/4" installed with grain of outer plies at right angles to joists and be staggered so that end joints in adjacent panels occur over different joists. Provide at least 1/4" joint at panel edges to permit expansion due to varying moisture conditions. Provide plywood clips spaced no more than 12" o.c. except on roofs to receive finish metal.
 - Attachment of decking to roof framing shall be made with galvanized 8d spiral threaded or annular nails. Nails shall be spaced not further than 6" o.c. edges and 12" o.c. intermediate.
 - Walls:
 - Wood sheathing at shearwalls shall be 5/8" (1/2") thick (OSB) [plywood] grade.
 - Wood sheathing shall be American Plywood Association Grade C-D, interior grade with exterior glue Group 1 or 2.
 - Exterior sheathing shall be 3/4" exterior grade exposure 1 OSB board (1/2" thick plywood). Attachment shall be galvanized 8d common nails at 6" o.c. at edges of panel and 12" o.c. at intermediate support locations, unblocked. This attachment of exterior OSB (plywood) is in addition to any shear wall requirements indicated elsewhere.
 - Nail wood sheathing to studs, plates and blocking with 8d nails spaced at 6" o.c. along all edges of plywood sheets and 12" o.c. along intermediate members u.n.o.
 - Gypsum sheathing for shearwall shall be 5/8" thick and free of imperfections and conform to ASTM C79.
 - Interior shearwalls shall be sheathed with 5/8" gypsum sheathing board. Exterior shearwalls shall be sheathed with 3/4" OSB board structural 1" on the outside face and 3/4" gypsum sheathing board on the inside face.

PREMANUFACTURED WOOD TRUSSES:

- Trusses are designed for in service conditions only. Store off the ground and under waterproof cover. Contractor shall take necessary precautions to properly brace trusses during lifting and erection until all diaphragms are installed. Store and handle trusses in a vertical position, taking care to prevent roll of plane bending. Set and secure trusses level, plumb and in correct locations. Insure that truss ends have sufficient bearing area. Install permanent bracing and bridging prior to application of loads. Cutting and altering of members is not permitted without prior approval of the Manufacturer and the Structural Engineer.
- Truss lengths and profiles shall be coordinated with architectural drawings prior to fabrication. Configuration and size of web and chord members shall be determined by truss manufacturer.
- Furnish all labor, material and equipment necessary for design, fabrication, delivery, and erection of all fabricated wood trusses and related shop fabrication members.
- Design and fabrication criteria of all wood trusses shall meet with "National Design Specifications for Stress-Grade Lumber and its Fastenings" by National Forest Products Association (latest revision), "Timber Construction Standards" by American Institute of Timber Construction (latest revision), and "Design Specifications for Light Metal Connected Wood Trusses" by Truss Plate Institute.
- Trusses shall be designed and fabricated by truss manufacturer. The design shall be prepared by a Registered Engineer bearing a license in the state the project is located.
- Shop drawings, signed and sealed by a Professional Engineer registered in [The State the project is located in], shall be submitted to the architect for review prior to fabrication. Shop drawings shall include the following items:
 - Plan layout identifying all trusses.
 - Calculations for load determination on trusses, giving all uniform or concentrated loads.
 - Truss configuration drawing giving stresses on all members including plates and reactions at supports.
 - Deflections.
 - Lumber Grades.
 - Metal Connector types and sizes.
 - The moisture content of lumber shall not exceed 19% nor be less than 7% at the time of fabrication.
 - Chord and web members shall be either Southern Yellow Pine or Douglas Fir.
- All truss connectors plates shall be manufactured from structural quality galvanized sheet metal not less than 20 gauge thickness with a minimum yield of 33,000 psi and a minimum ultimate tensile strength of 45,000 psi. The corrosion resistant coating shall meet or exceed ASTM A444, standard specification for sheet metal. Press-fit metal plates shall comply with Truss Plate Institute specification TPI-74.
- Open joints which depend on stiffness of metal connector plates to transmit stresses and member fitting joints will not be permitted.
- Dead knots and waves on lumber shall may be used under connector plates if the plates are increased (overplated) to account for missing teeth.
- Design and detailing of premanufactured products, connections and accessories shall be in accordance with the recommendations of the AITC, "Timber Construction Manual" and NFPA, "National Design Specifications for Wood Construction".

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**FOUNDATION
PROJECT
BID #
ECON-20-B-003**

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9.17.19

REV #	DATE	ISSUANCE

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Contractor to verify all information and dimensions in the field prior to start of construction and is to notify McKay Architects of any discrepancies.

General Notes II

JOB NO	18197.00
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CKD BY	BRG
SCALE	AS NOTED

S-0.2

PREMANUFACTURED WOOD TRUSSES CONT.:

13. Truss manufacturer shall design all floor and roof truss for all gravity, shear and lateral loads as noted herein and on plans. Add the truss selfweight to these loads.

Design Loads:

Roofs:
 Top Chord Live = 30 psf (or snow drift where applicable)
 Top Chord Dead = 10 psf
 Bottom Chord Dead = 5 psf
 Total Load = 50 psf (or snow drift where applicable)
 Duration Factor = 1.15

Floors: **Corridors:**
 Top Chord Live = 40 (40) (80)
 Top Chord Dead = 20 20
 Bottom Chord Dead = 5 5
 Total Load = 65 psf 105 psf
 Repetitive Factor = 1.15

Concentrated Loads:

All Concentrated Loads, partial uniform loads, or combinations thereof shall be determined by the truss manufacturer and accounted for in the design of the trusses. The truss system shall be engineered to accept all imposed loads as indicated above. Truss manufacturer will provide calculations indicating additional snow and dead loads for the roof locations with gussets, crickets and valley locations requiring additional roof framing intersections of higher or lower roofs in accordance with ANSI A58.

- 14. Roof trusses shall be designed to withstand uplift due to wind in accordance with section 1611.11 of the Massachusetts State Building Code. [Governing Code.] [These notes.]
- 15. Maximum live load deflection shall be span/240 for roof trusses and span/480 for all others.
- 16. Each roof truss shall be held down to the top plates with two Simpson seismic and hurricane ties H10 each side of truss or better.
- 17. All floor trusses shall bear directly above studs at the wall below so axial load shall be transferred from floor to walls through the plate.
- 18. Verify that surfaces to receive trusses are prepared to required grades and dimensions. Do not begin work until unsatisfactory conditions are corrected.
- 19. Provide and install rough hardware and metal fastenings as indicated, specified or required for proper installation of trusses. Nails, spikes, screws, bolts and similar items shall be sizes and types to properly secure members in place.
- 20. All prefabricated wood floor trusses shall have a center duct opening. Coordinate opening with architect and mechanical drawings.

LAMINATED VENEER, PARALLEL STRAND & GLULAM LUMBER:

- 1. Material, manufacture, and quality control shall be in accordance with the proposed Commercial Standard "Structural Glued Laminated Timber" of AITC and Current WCLA glued laminated standards.
- 2. LVL lumber shall be fabricated from ultrasonically graded Southern Pine Veneers in accordance with NER 126.
- 3. PSL lumber shall be fabricated from long, thin strands or either eastern or western species wood bonded together with a microwave process.
- 4. Eastern PSL lumber (ES) may include Southern Pine or Yellow Poplar. Western PSL lumber (WS) may include Douglas Fir, Longleaf Pine, Western Hemlock or White Fir.
- 5. PSL lumber shall be fabricated in parallel strands (PSL) in conformance with NER 202.
- 6. GL Lumber shall be fabricated from laminated 2x lumber according to standards set forth in NDS and other applicable codes.
- 7. The members shall have the following minimum design stresses:

Stress Type	Member Type		
	LVL	PSL	GL
Modulus of elasticity (E)	2,000 ksi	2,000 ksi	2,000 ksi
Flexural stress (fb)	2,600 psi	2,900 psi	2,400 psi
Shear modulus of elasticity (G)	125,000 psi	125,000 psi	125,000 psi
Compression perpendicular to grain and perpendicular to wide face of strands (fc)	525 psi	525 psi	525 psi
Compression perpendicular to grain and parallel to wide face of strands (fc)	750 psi	750 psi	740 psi
Compression parallel to grain (fc)	4,510 psi	2,900 psi	2,400 psi
Horizontal shear perpendicular to wide face of strands (fv)	285 psi	290 psi	290 psi
Horizontal shear parallel to wide face of strands (fv)	---	210 psi	210 psi

- 8. Heal cuts on beams must not overhang inside face of support member.
- 9. LVL and PSL members shall be fabricated without camber. Glulam members may be cambered to remove dead load deflection.
- 10. The LVL, PSL and GL members shall be protected from the weather while in storage. Care shall be exercised during handling to prevent damage to the same. A coat of end sealer shall be supplied to ends of all members as soon as practical after end trimming.
- 11. Adhesives shall comply with ASTM D2559-76 Adhesive for Structural Laminated Products for use under exterior (wet use) exposure conditions.
- 12. Prior to start of erection, verify the locations and elevation of all bearing surfaces and embedded anchors. Report any deviation to the General Contractor. Do not begin work until unsatisfactory conditions are corrected. Take measurements on site as required for correct fabrication and installation.
- 13. Fit members together properly and accurately without trimming, cutting or other modification not approved by the Engineer.
- 14. The completely assembled work shall be inspected and approved by the Architect and Structural Engineer or their designee before being covered, restrained or loaded by other construction.

WOOD FASTENING & HARDWARE:

- 1. Expansion anchors shall be HilTI "kwik bolts" or an approved equal.
- 2. Adhesive anchors shall be HilTI "HVA anchors" or an approved equal.
- 3. Powder actuated fasteners shall be HilTI "DS Series Fasteners" or an approved equal.
- 4. All wood fasteners and hardware shall be as manufactured by Simpson Strong Tie. Alternates shall be submitted to engineer for review.
- 5. Holdowns, straps and hurricane clips shall be installed according to manufacturer's recommendations.
- 6. Metal framing anchors shall be used for all connections where shown on the drawings. Provide nails and bolts according to manufacturer's requirements.
- 7. Connection hardware type to be as follows or approved equal unless noted otherwise on drawings:

Trusjoist on Microlam header - Simpson Type MIT
 Trusjoist on Microlam or masonry wall - Simpson Type WM
 Microlam to Microlam connection - Simpson Type GT
 Shearwall tie-downs - Simpson Type HD
 Microlam on wood or steel column - Simpson Type CC
 Sloped rafter to header - Simpson Type LSJ
 Flush framed 2x lumber - Simpson Type U or HUS
 Steel Strapping - 18 and 20 Ga., 4" & 6" Galv. 33 ksi steel

- 8. Nailing installation and materials are to be in compliance with A.I.T.C. NDS and in accordance with the 2009 International Building Code, Table 2304.9.1.
- 9. Gun nails may be used in lieu of hand nailing. Gun nail sizes shall be as follows:

Penny Weight	Gun Nail Diameter
8d	0.113"
10d	0.123"
12d	0.123"
16d	0.133"

- 10. All nails shall be common type u.n.o. Where indicated to be galvanized, nails shall be hot-dipped conforming to ASTM-A153.
- 11. Nails shall have a minimum penetration into the supporting member of 6 times the wire diameter unless otherwise noted on plans.
- 12. Edge distance for all nails shall be minimum of 2 times the wire diameter unless otherwise noted on plans.

J/I JOIST SPECIFICATIONS:

- 1. Scope:
 - a. Procedures for
 - 1. Designing, installing, securing, bracing, etc., of all joists.
- 2. Shop drawings:
 - a. Include the following on submitted shop drawings
 - 1. Stamp and signature of engineer responsible for preparation of all joist design and layout drawing.
 - 2. Dead and live design loads in plf.
 - 3. Name and trademark of Joist Fabricator and project name and location.
 - 4. Concentrated load requirements have been designed for and shown on documents.
 - 5. Joist connection hardware requirements.
 - 6. Joist block requirements.
 - 7. Web stiffener and squash block requirements.
- 3. General:
 - a. Fabrication of joists shall be designed and manufactured in accordance with NES report no. NER-200, except where this specification exceeds report requirements.
 - b. Manufacturer's name or trademark and joist type shall be visible on all joists.
 - c. Joist Fabricator shall have his plant inspected four times per year by an independent testing laboratory. Regulations and copies of inspections made available to owner upon request.
 - d. Joist Fabricator shall specify hardware required at joist to joist connections.
 - e. Joists to be designed per Table 16-B (3) (fire sprinkler structural support).
 - f. Joists shall be designed for a maximum deflection of L/480 (live load) and L/240 (total load).

SUBMITTALS:

- 1. Submit substantiating data for each concrete mix design contemplated for use to the Structural Engineer not less than six weeks prior to first concrete placement. Data for each mix shall, as a minimum, include the following:
 - a. Mix identification designation (unique for each mix submitted).
 - b. Statement of intended use for mix.
 - c. Mix proportions, including all admixtures used.
 - d. Manufacturer's data and/or certifications verifying performance of all mix materials, including admixtures, with specified requirements.
 - e. Wet and dry unit weight.
 - f. Entrained air content.
 - g. Design slump.
 - h. Required average strength qualification data per ACI 301 3.9.1 and 3.9.2. Submit separate qualification data for each production facility which will supply concrete to the project.
- 2. Submit shop drawings for fabrication, bending and placement of concrete and masonry reinforcement. Comply with ACI Detailing Manual (SP 66).
- 3. Submit Structural Steel Shop Drawings. Clearly indicate profiles, sizes, spacing and location of structural members, connections, attachments, anchorages, framed openings, size and type of fasteners, cambers, and clearances. Indicate welded connections using standard AWS welding symbols. Clearly indicate net weld lengths, sizes and welding sequences. Clearly identify all high strength bolts not required to be tensioned (installed "snug tight" and identified by AISC).
- 4. Submit Metal Deck Shop Drawings. Indicate decking plan, deck profile, dimensions, gage, anchorage, supports, projections, openings and reinforcement, finishes, applicable details and accessories, type, locations and size of welds.
- 5. Furnish wood truss shop drawings. Indicate truss framing plans, pitch, span and spacing of trusses, gage thickness, nominal sizes and location of connectors at joints, bearing and anchored details, framed opening, permanent bracing and bridging and all related items. Submit Manufacturer's instructions on lateral bracing with shop drawings. Submit calculations performed by (Massachusetts) professional engineer.

INSPECTION CONCRETE:

- 1. Concrete inspection and testing will be made in accordance with building code requirements, and Contract Documents, and will include the following:
 - a. Testing concrete for strength, slump, air content, temperature, and unit weight.
 - b. Marking and testing concrete cylinders, including furnishing cylinder container for specimen.
 - c. Transporting and storing of all specimens involved in testing and inspection. Test cylinders are to be transported to laboratory not later than 24 hours and not earlier than 16 hours after casting.
 - d. Inspection of mixing and placing of concrete at the site, including record of amount and location of concrete placement, method of placing concrete, and any other pertinent information.

- 2. The Testing laboratory will take specimens as follows: At least one set of four cylinders for each 50 cubic yards or fraction thereof of each class of concrete, but not less than one set for any one day's operation.
 - a. For concrete placed by plumbing, test specimen and concrete used for determination of slump, air content and weight are to be taken at the point of placement of concrete into the forms.
 - b. Samples will be obtained in accordance with ASTM C172.
 - c. Marking, curing and subsequent handling of test cylinders, except as modified herein, shall be in accordance with ASTM C31. Testing shall be in accordance with ASTM C39.
 - d. The cylinder shall be placed in laboratory storage under moist curing conditions at approximately 70 degrees F within 24 hours after molding, and maintain therein until tested. Tests will be as follows:
 - 1) One cylinder shall be tested at 7 days for information.
 - 2) Two cylinders shall be tested at 28 days for acceptance. The acceptance test results shall be the average strength of these two cylinders.
 - 3) One cylinder shall be kept for eventual testing at 56 days to verify any marginal results of 28-day tests. If not required to be tested, cylinder will be discarded after 28 days.

- 3. Test Reports: Reports of cylinder tests shall be submitted as specified herein within five days of laboratory testing. Test reports shall, as a minimum, include:
 - a. Results of field testing at time of sampling including date and time of sampling, amount of water added at site prior to sampling, ambient air temperature and concrete temperature, concrete slump and air content, and concrete wet unit weight.
 - b. Results of laboratory testing including date test specimen were transported to laboratory, date and age of concrete at time of testing, compressive strength of each cylinder tested, coverage compressive strength of tested cylinders, and specified design strength of concrete represented by the test.
- 4. Additional Testing: Contractor shall bear the cost of testing and inspection resulting as consequence of the following:
 - a. Work not in compliance with the Contract Documents.
 - b. Testing requested by the Contractor or Subcontractor such as additional cylinders for early breaks, etc.
 - c. Testing to verify the adequacy of work done without prior notice, without proper supervision, or contrary to standard construction practice.
- 5. Reinforcing Steel Inspection: Concrete reinforcing shall be inspected prior to closing of concrete form work or placing of concrete. Inspector to verify size, spacing, quantity of reinforcing per latest contract documents.

INSPECTION GROUT:

- 1. Prepare test specimens in accordance with the requirements of the governing building code. Comply with ASTM C107.
- 2. For each day's production prepare, test and submit compression test results of one set of 3 (2" x 2") cubes made from each type of grout used in the field.

INSPECTION REINFORCED UNIT MASONRY:

- A. Prepare test specimens in accordance with the requirements of the governing building code.
- B. Tests, consisting of three prisms each made in the field from materials currently in use, shall be conducted for each 5000 square feet, or fraction thereof, of structural Unit Masonry throughout the course of construction. Not less than three such tests shall be conducted for the project.
- C. Mortar and grout tests shall be conducted on materials used to construct the first set of three prisms in B above. In the event such tests fail to achieve the required strength, perform additional testing as required by the Structural Engineer.
- D. Testing Agency shall provide special inspection complying with the requirements of the governing building code during the construction of the following work:
 - All CMU Walls
- E. Special inspection shall be performed by personnel experienced in Unit Masonry construction and acceptable to the Architect and Structural Engineer. The special inspector shall observe the preparation of all Unit Masonry prisms, and grout and mortar specimens.

- 1. Low-lift grouting techniques, the special inspector shall observe and verify compliance with contract documents for the placement of Unit Masonry units, reinforcing and grout on a schedule of at least twice each day that Unit Masonry construction is in progress.
- 2. High-lift grouting techniques, the special inspector shall observe and verify compliance with contract documents for the placement of Unit Masonry units, grout, and reinforcing immediately prior to closing of clean-outs for each section of Unit Masonry to be grouted; he shall continuously observe the grouting operation of the first 1000 square feet of Unit Masonry installed and on a schedule of twice for each three days that grouting operations are in progress thereafter.
- 3. Special inspection shall also include:
 - a. Verify size and spacing of all reinforcing.
 - b. Verify all reinforcing is placed with required lap and development lengths, and is located properly in grouted cells.

INSPECTION - STRUCTURAL STEEL:

- 1. Testing and inspection will be made by an approved testing laboratory selected and paid by the owner. Contractor shall furnish testing agency access to work, facilities and incidental labor required for testing and inspection. Retention by the Owner of an independent testing agency shall in no way relieve the Contractor of responsibility for performing all work in accordance with the contract requirements.
- 2. Furnish the Testing Agency with the following:
 - a. A complete set of shop and erection drawings.
 - b. 48 hour advance notice of complete work prior to spray fireproofing (where applicable).
 - c. Full and ample means and assistance for testing all material.
 - d. Proper facilities, including scaffolding, temporary work platforms, etc., for inspection of the work in the mills, shop and field.
- 3. Each person installing connections shall be assigned an identifying symbol or mark, and all shop and field connections shall be identified so that the inspector can refer back to the person making the connection.

- 4. The Testing Agency's inspector will perform his duties in such a way that neither fabrication nor erection is unnecessarily delayed or impeded. In no case will the inspector recommend or prescribe the method of repair of a defect.
- 5. Field inspection by the Testing Agency of erected steel will be such as to assure that the work conforms to specified requirements and will include:
 - a. Inspection of welding as required herein.
 - b. Ascertainment of proper fit and alignment.
 - c. Ascertainment that the welding is performed only by welding operators and welders who are properly certified. The Testing Agency shall witness such qualification testing of welding operators and welders, as may be required.
- 6. Welding and Materials:
 - a. Ascertainment that electrodes used for manual shielded metal-arc welding and electrodes used for submerged arc welding conform to the requirements of this section.
 - b. Ascertainment that the approved welding procedure and the approved welding sequence is followed.
 - c. Ascertainment that the welding is performed only by welding operators and welders who are properly certified. The Testing Agency shall witness such qualification testing of welding operators and welders, as may be required.
 - d. Ascertainment that the fit-up, joint preparation, size, contour, extent or reinforcement, and length and location of welds conform to specified requirements of the contract drawings, and that no specified welds are omitted or unspecified welds added without approval.

- 7. The Testing Agency shall test field welds in accordance with AWS D1.1 as follows:
 - a. All welds 100% visual.
 - b. Fill-It Welds (i.e.n.): One spot test per member, magnetic particle.
 - c. Partial Penetration Welds: One spot test per weld, magnetic particle.
 - d. Full Penetration Welds: All completed penetration groove welds contained in joint and splices shall be tested one hundred percent (100%) by ultrasonic testing.

- 8. Additional testing will be required:
 - a. If more than 10 percent of the tested welds are rejected, then an additional 10 percent of all such welds shall be tested using the same method. This 10 percent additional testing process shall be repeated until the rejection rate drops below 1 to 10.
 - b. All cost of additional inspection required by this paragraph shall be done at the Contractor's expense.
- 9. In addition, if defective welds are discovered, the remaining uninspected welds shall receive such ultrasonic or magnetic particle inspection as may be required by the Structural Engineer.
- 10. The welding inspector will have the authority to reject weldments. Such rejection may be based on visual inspection where in his opinion the weldment would not pass a more detailed investigation.

- 11. Reports by the Testing Agency's inspector will contain, as a minimum, an adequate description of each weld tested, the identifying mark of the welder responsible for the weld, a critique of any defects noted by visual inspection or testing, and a statement regarding the acceptability of the weld tested, as judged by current A.W.S. standards. Reports shall be distributed as early as possible but not later than one work week after the tests have been performed. The Structural Engineer shall be notified, in the judgment of the inspector, test results require immediate comment.

INSPECTION - STRUCTURAL STEEL CONT.:

- 12. High Strength Bolts:
 - a. The inspector shall determine the appropriate requirements of Sections J3 and M2 of the AISC "Specifications" are met.
 - b. Standard Bolts:
 - 1) Verify Contractor's testing of installation procedures (turn of the nut) to achieve specified bolt tensions for each lot of bolts. Contractor to provide a calibrated device capable of indicating bolt tension.
 - 2) Verify required bolt tension for all bolts.
 - 3) If rejectable bolts are found in any connection all the remaining bolts in that connection shall be inspected for tightness. Inspection procedure shall be in accordance with "Specification for Structural Joints Using ASTM A325 or A490 Bolts" approved by Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation (Research Council on Structural Connections). Cost of additional inspection required by this paragraph shall be borne by the contractor.
 - c. Tension Control (self-indicating) Bolts:
 - 1) Verify Contractor's testing of bolt capacity to achieve specified tensions for each lot of bolts.
 - 2) Perform a visual inspection of all high strength bolted connections to assure that all torque-off lines have been sheared.

INSPECTION METAL DECKING:

- A. Metal Deck:
 - 1. The Testing Agency will visually inspect all metal deck to observe that the material is not damaged and has been installed to the requirements of the contract documents.
 - 2. The Testing Agency shall visually inspect all deck welds for size and spacing and verify they meet the requirements of the contract documents prior to being covered by other work.

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 Library
 Expansion
 918
 Washington Street
 Islington, MA**

OWNER

**FOUNDATION
 PROJECT BID #
 ECON-20-B-003**

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General Notes III

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S-0.3

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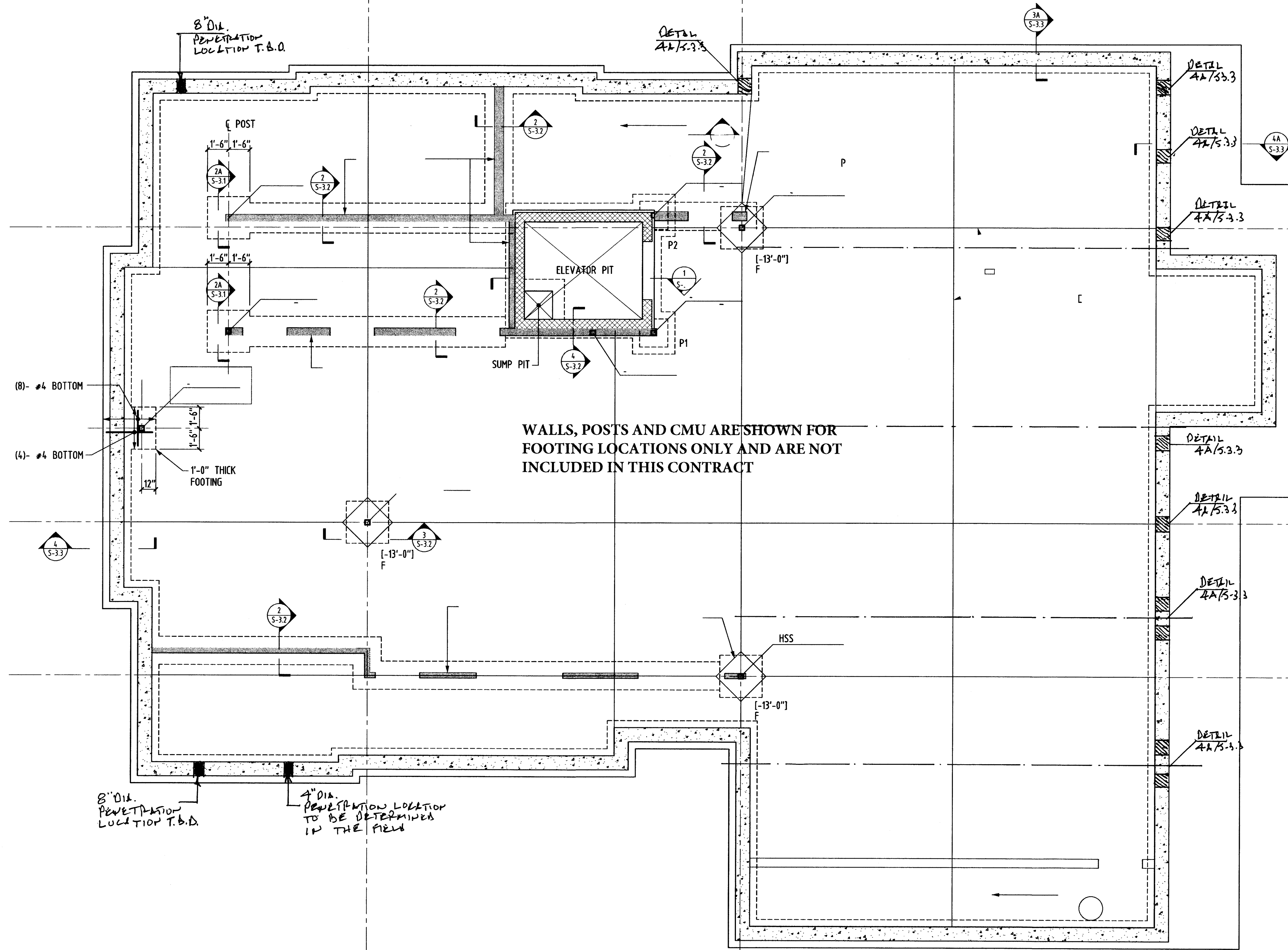
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COLUMN FOOTING SCHEDULE

MARK	Fp = 6 KSF	
	SIZE	REINFORCING
F3.0	3'-0" x 3'-0" x 12" DP.	(4)-#6 BOTTOM EACH WAY
F3.5	3'-6" x 3'-6" x 15" DP.	(5)-#6 BOTTOM EACH WAY
F4.0	4'-0" x 4'-0" x 18" DP.	(5)-#6 BOTTOM EACH WAY
F4.5	4'-6" x 4'-6" x 18" DP.	(5)-#6 BOTTOM EACH WAY
F5.0	5'-0" x 5'-0" x 18" DP.	(5)-#6 BOTTOM EACH WAY
F5.5	5'-6" x 5'-6" x 18" DP.	(6)-#6 BOTTOM EACH WAY
F6.0	6'-0" x 6'-0" x 20" DP.	(6)-#6 BOTTOM EACH WAY
F6.5	6'-6" x 6'-6" x 22" DP.	(8)-#6 BOTTOM EACH WAY
F7.0	7'-0" x 7'-0" x 24" DP.	(9)-#6 BOTTOM EACH WAY



WALLS, POSTS AND CMU ARE SHOWN FOR FOOTING LOCATIONS ONLY AND ARE NOT INCLUDED IN THIS CONTRACT

REFER TO SHEET A-1.1 FOR DIMENSIONS

FOUNDATION/BASEMENT PLAN

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

NOTES:

- REFER TO DRAWINGS S-0.1 TO S-0.3 FOR GENERAL NOTES.
- REFER TO GEOTECHNICAL REPORT FOR FOUNDATION SUBGRADE PREPARATION AND MATERIAL.
-
- [-13'-0"] - INDICATES TOP OF FOOTING.
- BACKGROUND ARE SHOWN FOR REFERENCE ONLY AND MAY NOT REFLECT MOST CURRENT BACKGROUND. CONTRACTOR SHOULD REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR PLANS, WALL LOCATIONS, ETC.
-
- DIMENSIONS AND ELEVATIONS SHOWN HAVE BEEN PROVIDED BY THE ARCHITECT. ALL INFORMATION MUST BE VERIFIED WITH THE LATEST SET OF ARCHITECTURAL DRAWINGS. BRING ANY CONFLICTS OR DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO SHOP DRAWING PREPARATION OR CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS AND ELEVATIONS NOT SHOWN.
- P1 - INDICATES PIER TYPE. REFER TO DRAWING S-3.4 FOR DETAILS.
- F4.0 - INDICATES COLUMN FOOTING TYPE. REFER TO SCHEDULE THIS SHEET.

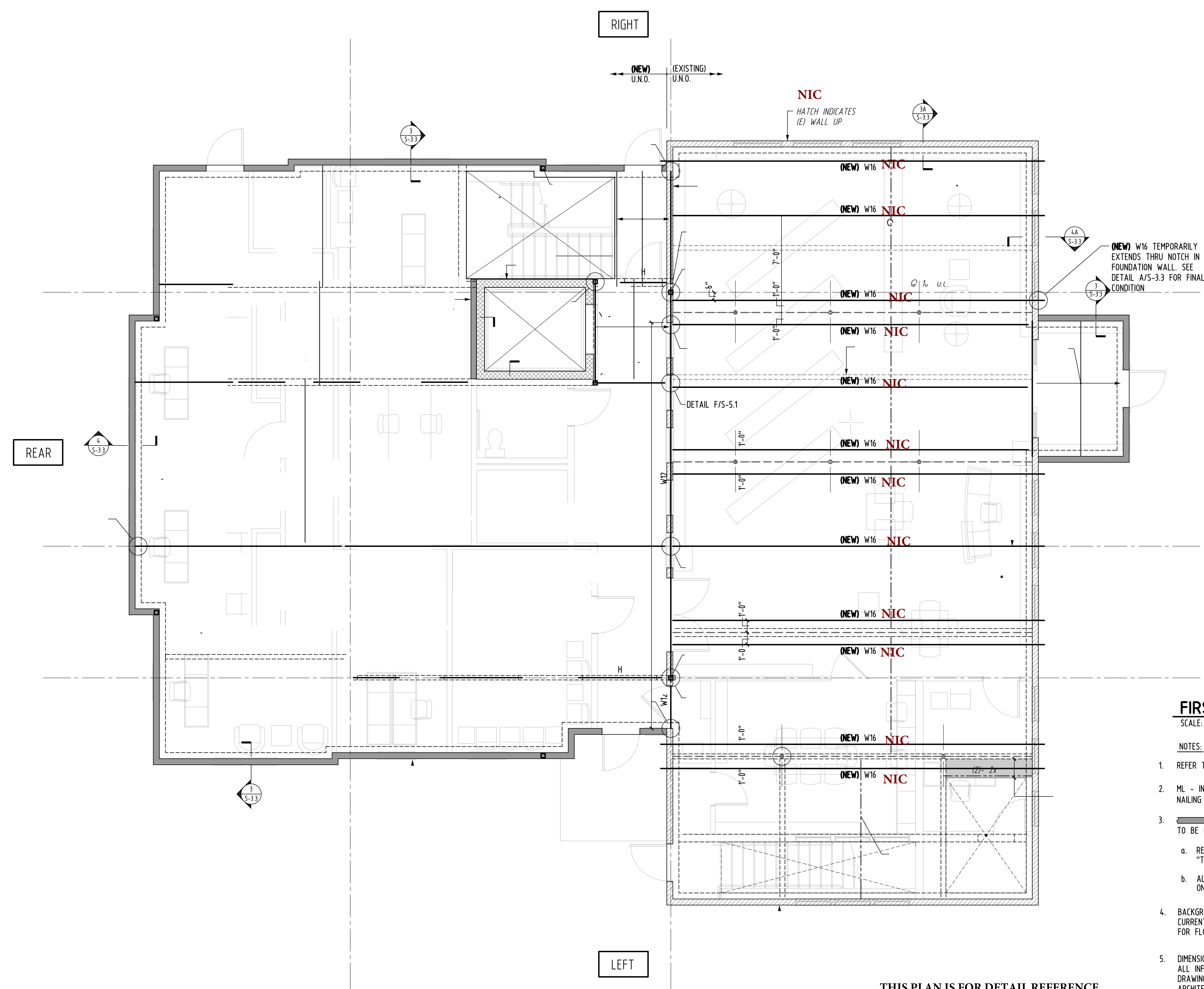
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Foundation Plan

JOB NO	18197.00
DATE	05.29.19
DWG BY	DAD
CKD BY	BRG
SCALE	AS NOTED

S-1.1

9.20.19



FIRST FLOOR FRAMING PLAN
SCALE: 1/4"=1'-0"

- NOTES:
- REFER TO DRAWINGS S-0.1 TO S-0.3 FOR GENERAL NOTES.
 - ML - INDICATES MICROLAM/LAMINATED VENEER LUMBER. REFER TO MULTIPLE LVL NAILING DETAIL ON DRAWING S-4.3
 - █ INDICATES 2x6 BEARING WALL OR SHEAR WALL BELOW. WALLS ARE TO BE CONSTRUCTED FROM THE FLOOR BELOW TO THE TOP OF PLATE AT THE ROOF.
 - REFER TO DRAWING S-4.1 FOR SHEARWALL DETAILS. SHEARWALLS ARE "TYPICAL" UNLESS NOTED OTHERWISE ON PLAN.
 - ALL EXTERIOR WALLS ARE SHEARWALLS AND SHALL HAVE 1/2" PLYWOOD ON THE OUTSIDE, U.N.O. (NAILING SHALL BE 8d 6" EDGES & 12" INTERMEDIATE)
 - BACKGROUNDS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT REFLECT MOST CURRENT BACKGROUND. CONTRACTOR SHOULD REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR PLANS, WALL LOCATIONS, ETC.
 - DIMENSIONS AND ELEVATIONS SHOWN HAVE BEEN PROVIDED BY THE ARCHITECT. ALL INFORMATION MUST BE VERIFIED WITH THE LATEST SET OF ARCHITECTURAL DRAWINGS. BRING ANY CONFLICTS OR DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO SHOP DRAWING PREPARATION OR CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS AND ELEVATIONS NOT SHOWN.

**THIS PLAN IS FOR DETAIL REFERENCE ONLY
STEEL AND FRAMING IS NOT IN THE
SCOPE OF WORK**

9.17.19

REV #	DATE	ISSUANCE

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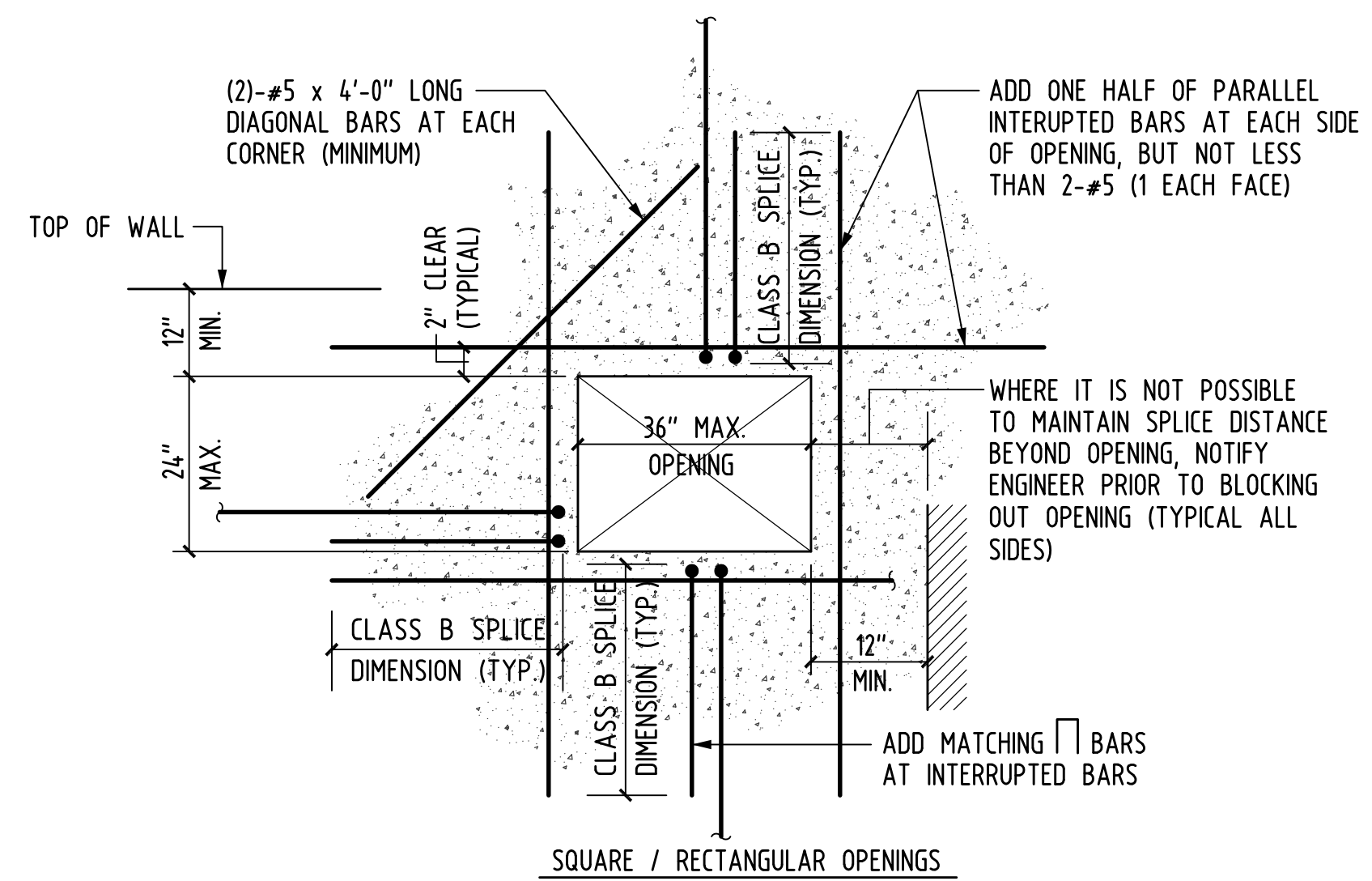
First Floor Plan

JOB NO	18197.00	S-1.2
DATE	05.29.19	
DWG BY	DAD	
CKD BY	BRG	
SCALE	AS NOTED	

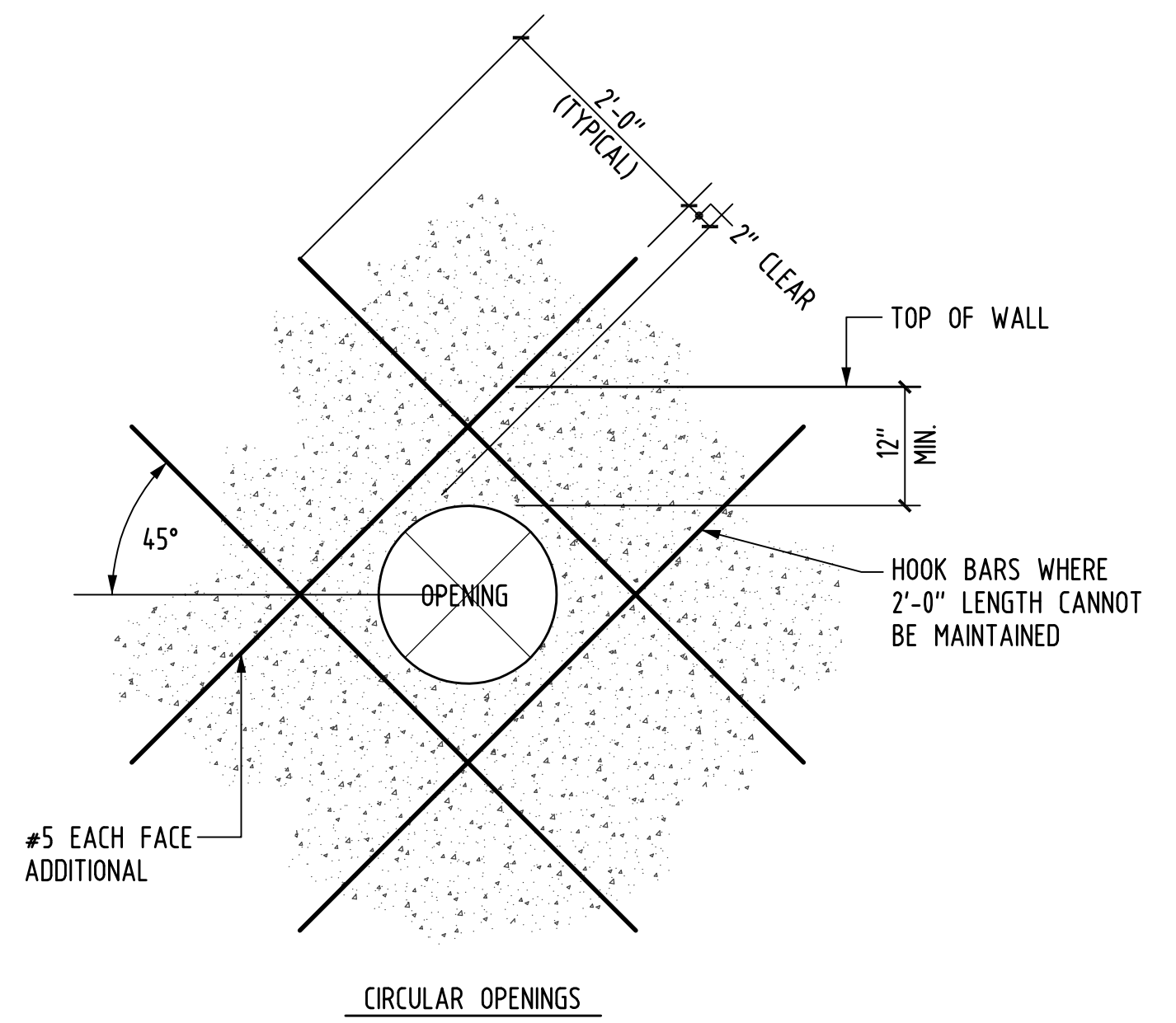
TENSION DEVELOPMENT LENGTH (Lap Class A) AND LAP SPLICE LENGTHS (Lap Class B)
FOR GRADE 60 DEFORMED REINFORCING BARS (inches)

		f'c = 3000 PSI, NORMAL WEIGHT CONCRETE																			
BAR SIZE	LAP CLASS	CONCRETE COVER >=0.75 in. CLEAR BAR SPACING >=15 in.				CONCRETE COVER >=1.00 in. CLEAR BAR SPACING >=2.0 in.				CONCRETE COVER >=1.50 in. CLEAR BAR SPACING >=3.0 in.				CONCRETE COVER >=2.00 in. CLEAR BAR SPACING >=4.0 in.				CONCRETE COVER >=3.00 in. CLEAR BAR SPACING >=6.0 in.			
		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED	
		TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER
#3	A	13	12	17	15	13	12	17	15	13	12	16	12	13	12	16	12	13	12	16	12
	B	17	16	22	20	17	16	22	20	17	16	20	16	17	16	20	16	17	16	20	16
#4	A	22	17	28	25	17	13	23	20	17	13	21	16	17	13	21	16	17	13	21	16
	B	28	22	37	32	23	17	29	26	23	17	27	21	23	17	27	21	23	17	27	21
#5	A	32	24	41	37	26	20	34	30	22	17	28	25	22	17	26	20	22	17	26	20
	B	41	32	54	47	33	26	44	38	28	22	37	32	28	22	34	26	28	22	34	26
#6	A	43	33	56	50	35	27	46	41	26	20	34	30	26	20	34	30	26	20	31	24
	B	56	43	73	64	46	35	60	53	34	26	44	39	34	26	44	39	34	26	40	31
#7	A	69	53	90	80	57	44	75	66	43	33	55	49	38	29	49	43	38	29	45	35
	B	90	69	117	104	74	57	97	86	55	43	72	64	49	38	64	56	49	38	59	45
#8	A	86	66	112	99	72	55	93	82	54	41	70	62	43	33	56	50	43	33	52	40
	B	111	86	146	128	93	72	121	107	70	54	91	80	56	43	73	64	56	43	67	52
#9	A	104	80	136	120	87	67	114	101	66	51	86	76	53	41	70	61	48	37	63	56
	B	135	104	176	155	113	87	148	131	86	66	112	99	69	53	90	80	63	48	82	73
#10	A	125	96	163	144	106	81	138	122	81	62	106	93	66	51	86	76	55	42	71	63
	B	162	125	212	187	137	106	179	158	105	81	137	121	85	66	111	98	71	55	93	82
#11	A	146	113	191	169	125	96	163	144	97	74	126	111	79	61	103	91	61	47	79	70
	B	190	146	248	219	162	125	212	187	125	97	164	145	102	79	134	118	79	61	103	91

NOTES:
1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

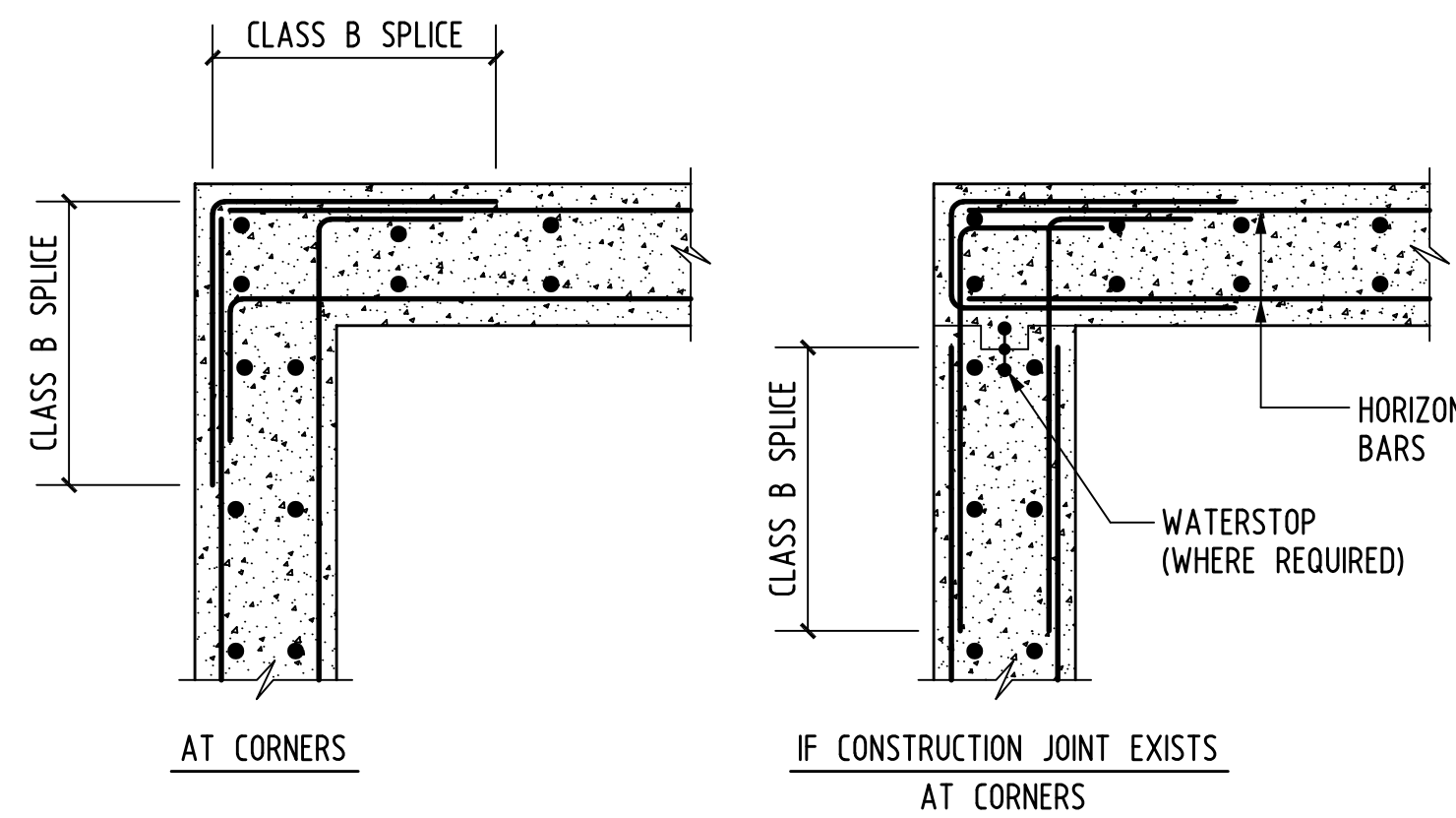


NOTE:
FOR OPENING THAT FIT BETWEEN HORIZONTAL & VERTICAL WALL REINF. NO ADDITIONAL REINF. REQUIRED.



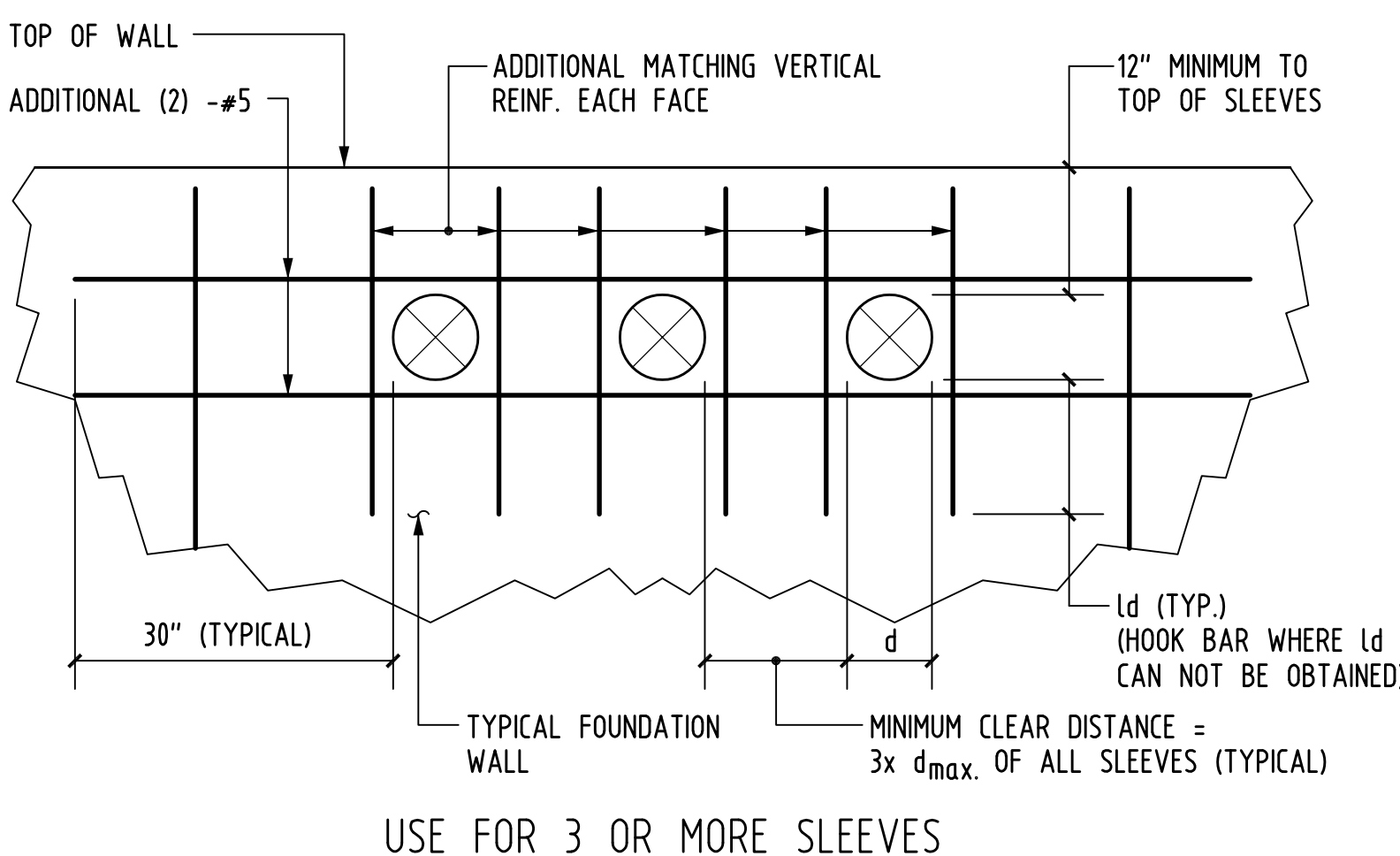
NOTES:
1. FOR OPENING DIAMETER <= 6\"/>

TYPICAL REINFORCING AT OPENINGS IN REINFORCED CONCRETE WALLS



TYPICAL CONCRETE WALL DETAILS

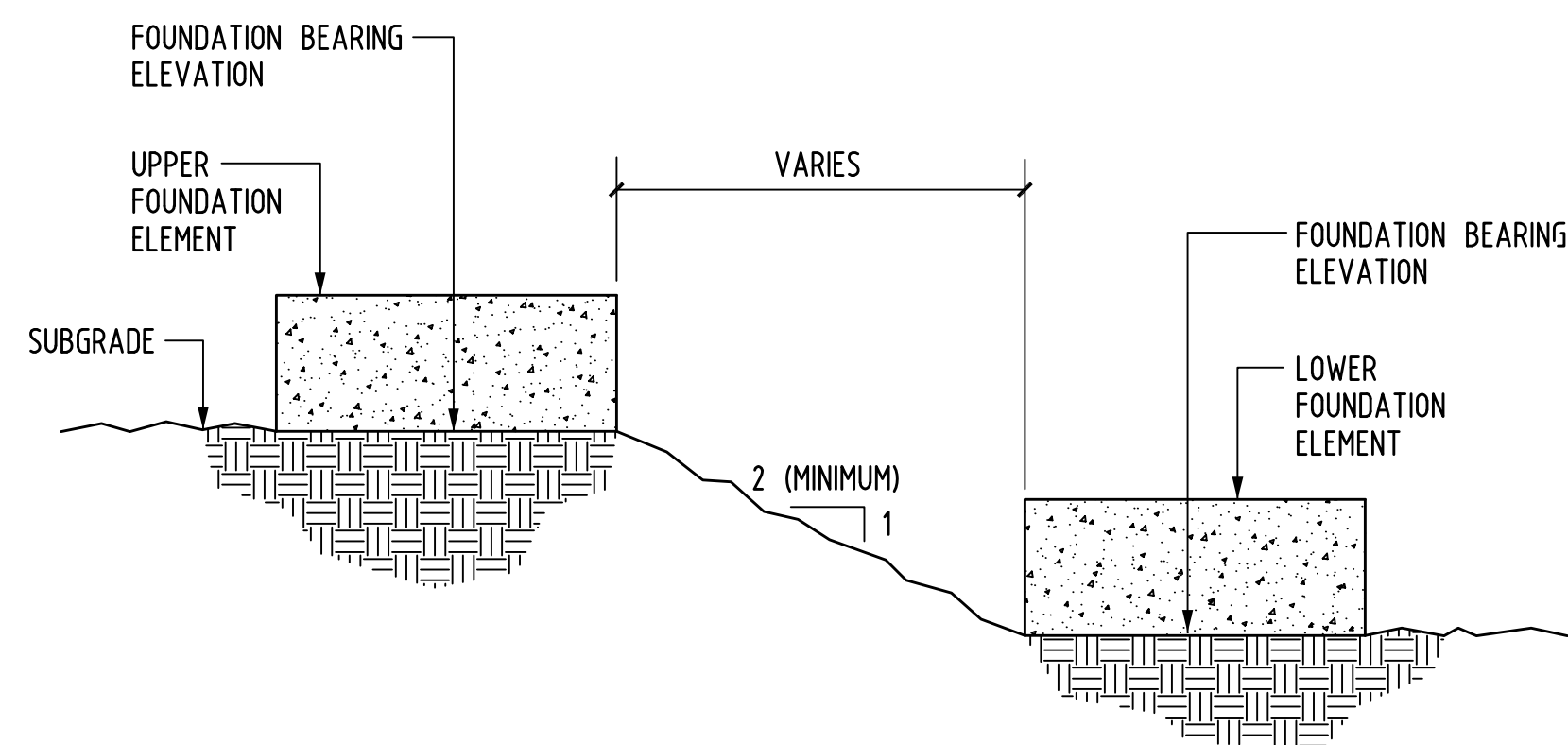
NOTES:
1. ALL HOOKS STANDARD U.O.
2. PROVIDE CONT. WATERSTOP AT ALL EXPOSED JOINTS ABOVE GRADE.



TYPICAL MULTI-SLEEVE DETAIL AT FOUNDATION WALL

DRILLED-IN AND EPOXY DOWEL EMBEDMENT SCHEDULE	
REINFORCING SIZE	UNCOATED BARS EMBEDMENT DEPTH (INCHES)
#4 BAR	6
#5 BAR	7
#6 BAR	8
#7 BAR	10
#8 BAR	12
#9 BAR	13
#10 BAR	16

NOTES:
1. TO BE USED WHERE CAST IN PLACE DOWELS ARE OMITTED. USE PER ENGINEER OF RECORD DIRECTION ONLY.



ALLOWABLE GRADE CHANGE AT ADJACENT SOIL BEARING FOUNDATIONS

NOTE:
REFER TO PROJECT GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.

Wentworth Hall Library Expansion
918 Washington Street
Islington, MA

OWNER
FOUNDATION PROJECT BID # ECON-20-B-003

mckay architects

35 Bryant Street
Dedham, MA 02026
ph. 781.326.5400
www.mckayarchitects.net

GOLDSTEIN-MILANO LLC
Structural Engineers

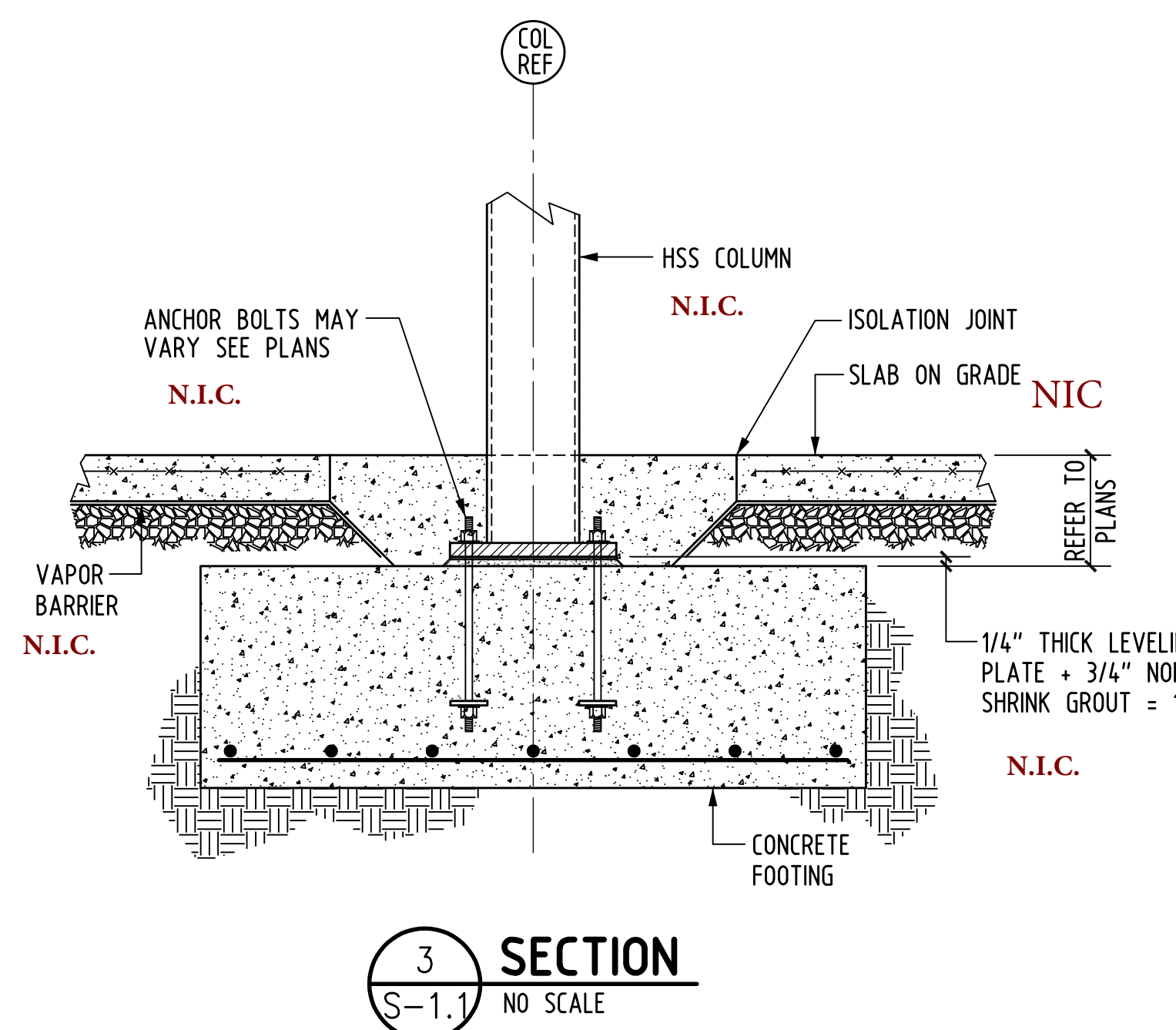
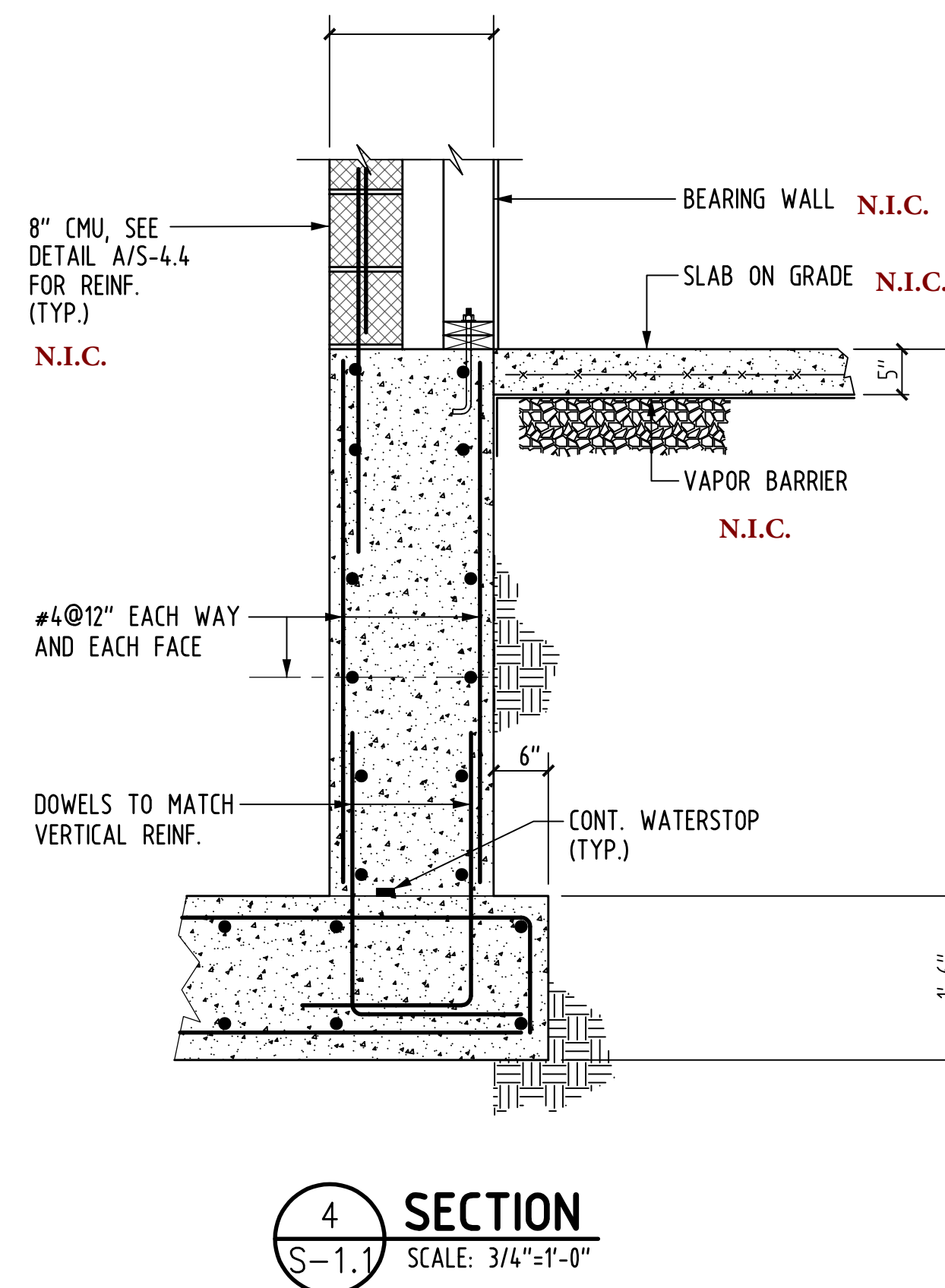
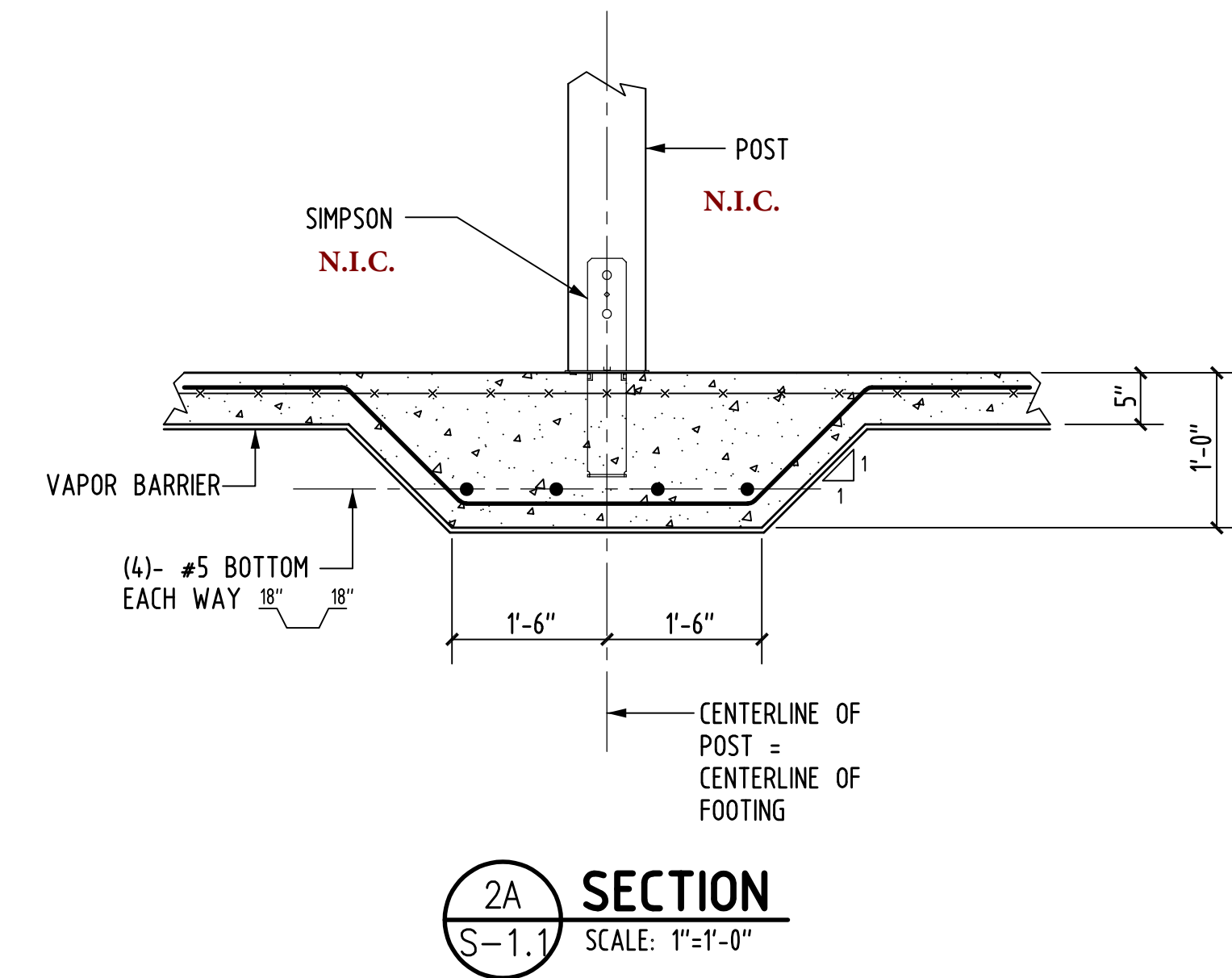
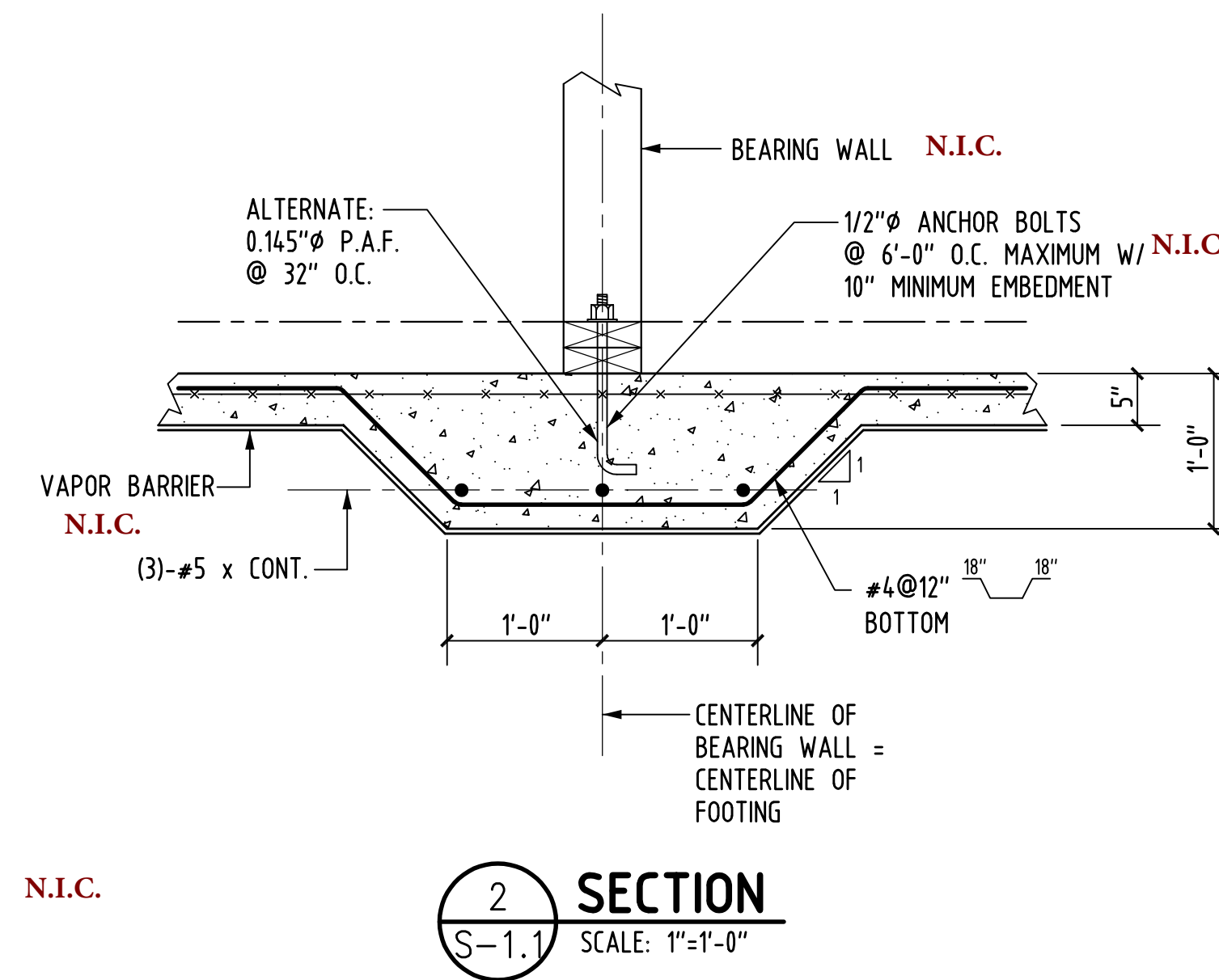
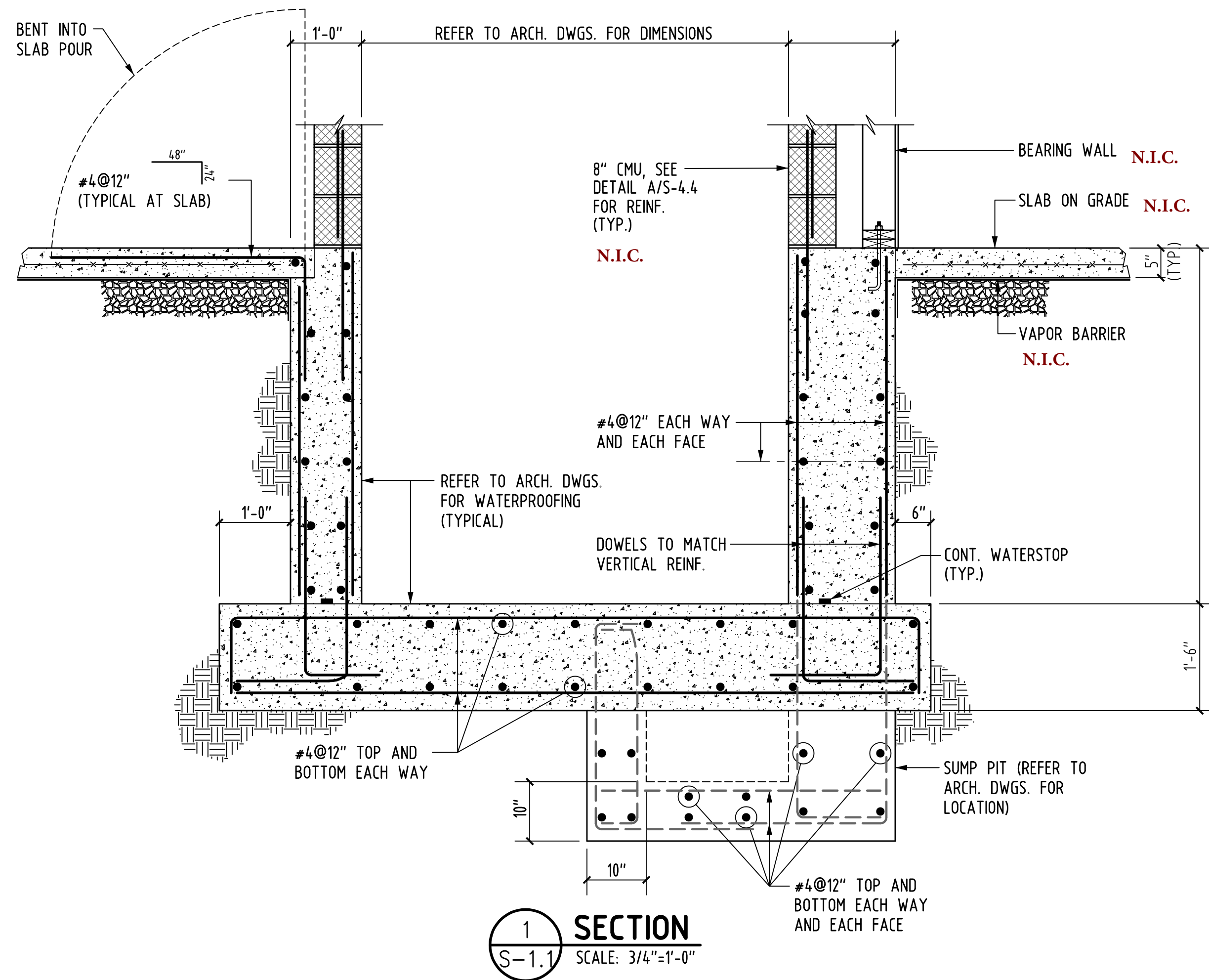
125 Main Street
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REV #	DATE	ISSUANCE

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Concrete Details I

JOB NO
18197.00
DATE
05.29.19
DWG BY
DAD
CKD BY
BRG
SCALE
AS NOTED



TYPICAL INTERIOR COLUMN FOOTING DETAIL



Wentworth Hall
Library
Expansion
918
Washington Street
Islington, MA

OWNER

FOUNDATION
PROJECT BID #
ECON-20-B-003

architects
mckay
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Dedham, MA 02026
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**Concrete
Details II**

JOB NO	18197.00	S-3.2
DATE	05.29.19	
DWG BY	DAD	
CKD BY	BRG	
SCALE	AS NOTED	

OWNER

**FOUNDATION
PROJECT BID #
ECON-20-B-003**

architects
mckay

35 Bryant Street
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GOLDSTEIN-MILANO LLC
Structural Engineers

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Reading, MA 01867
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REV #	DATE	ISSUANCE

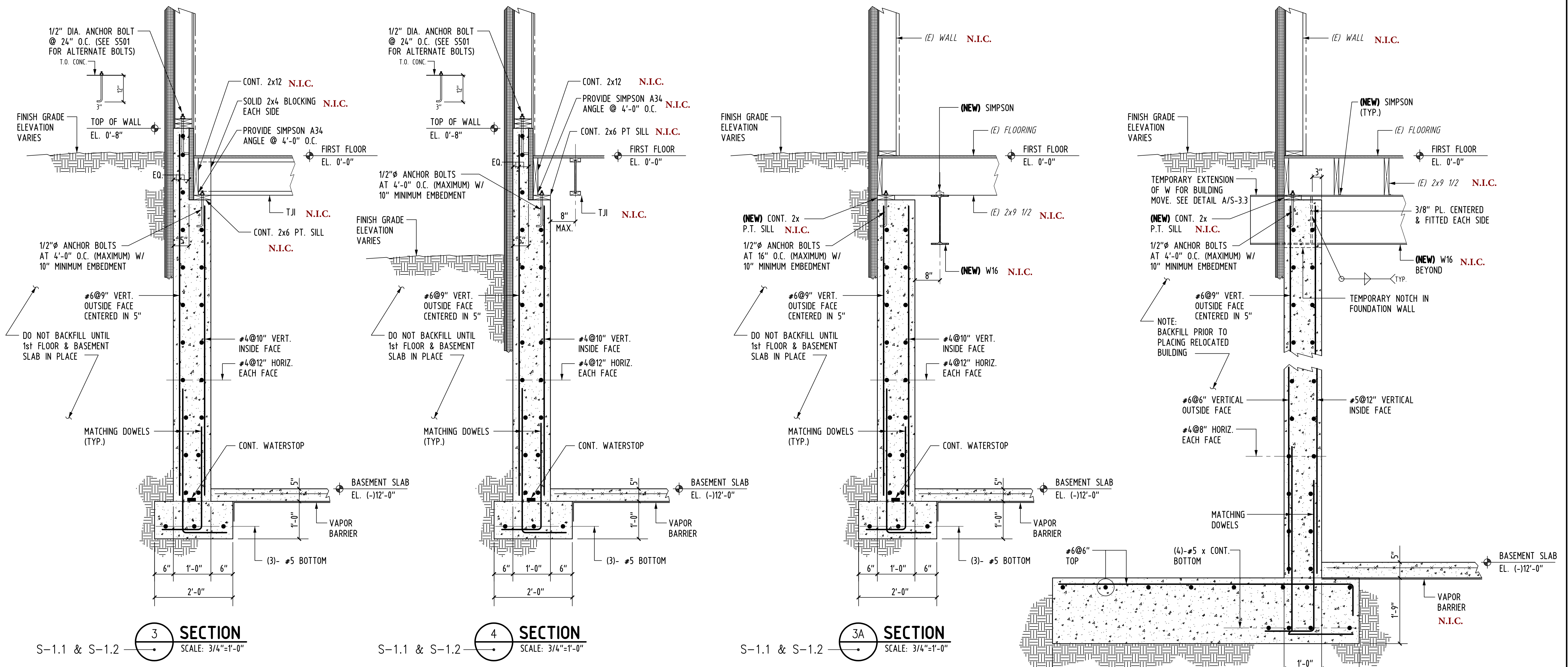
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**Concrete
Details III**

JOB NO 18197.00
DATE 05.29.19
DWG BY DAD
CKD BY BRG
SCALE AS NOTED

S-3.3

9.17.19

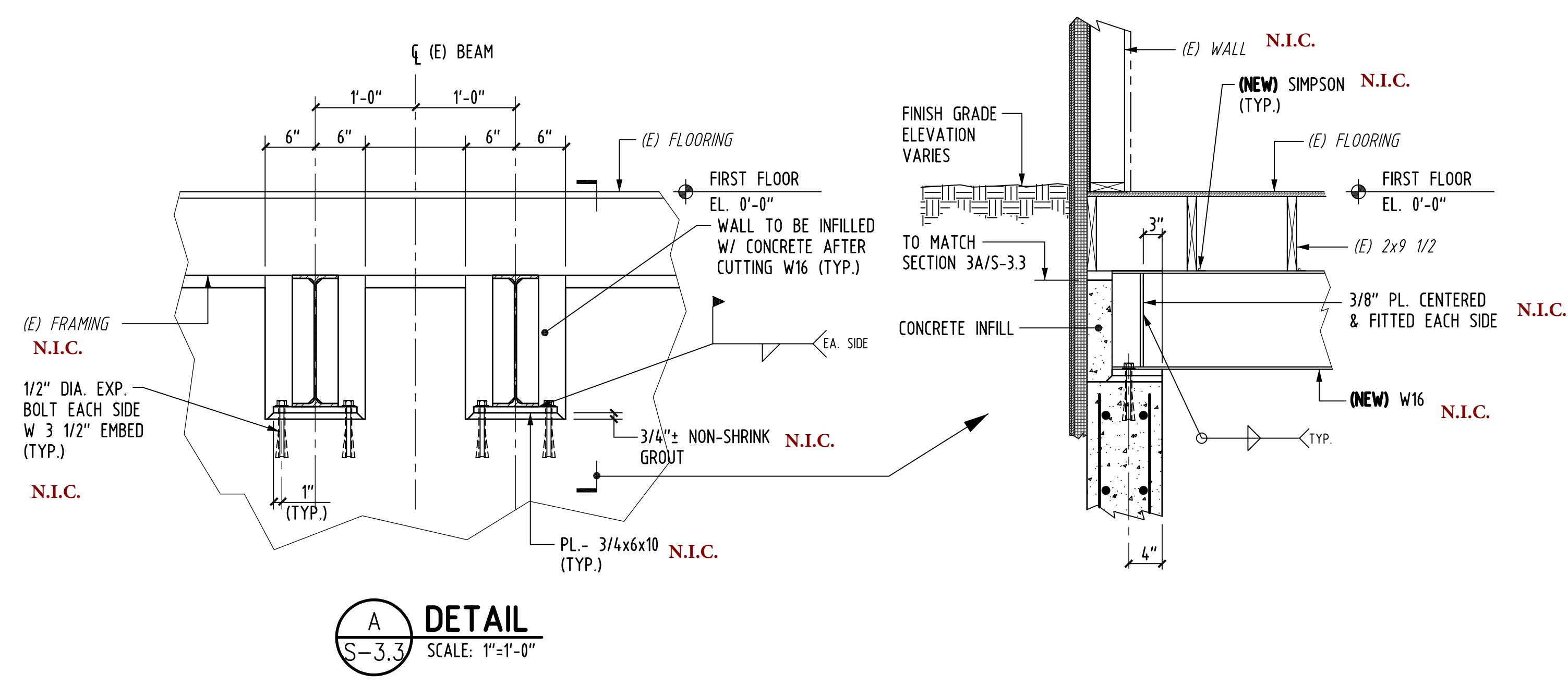


SECTION 3
S-1.1 & S-1.2 SCALE: 3/4"=1'-0"

SECTION 4
S-1.1 & S-1.2 SCALE: 3/4"=1'-0"

SECTION 3A
S-1.1 & S-1.2 SCALE: 3/4"=1'-0"

SECTION 4A
S-1.1 & S-1.2 SCALE: 3/4"=1'-0"



DETAIL A
S-3.3 SCALE: 1"=1'-0"

**Wentworth Hall
Library
Expansion
918
Washington Street
Islington, MA**

OWNER

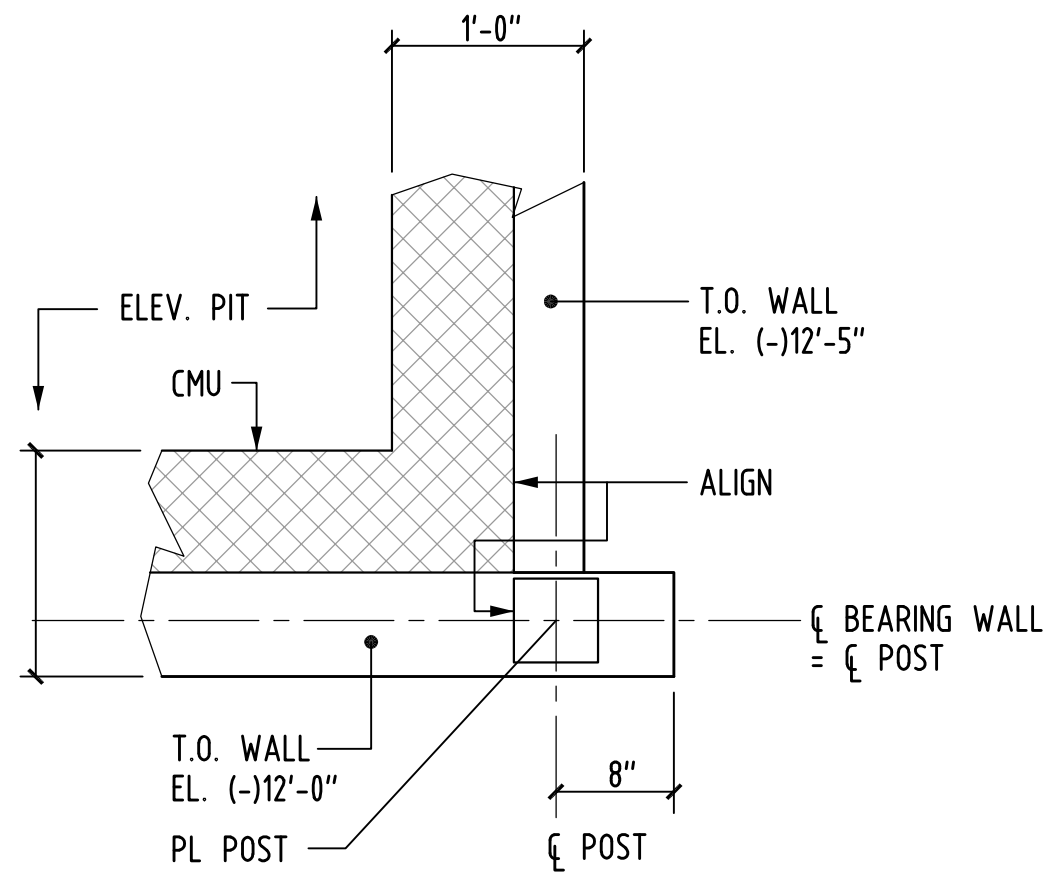
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PROJECT BID #
ECON-20-B-003**

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mckay**

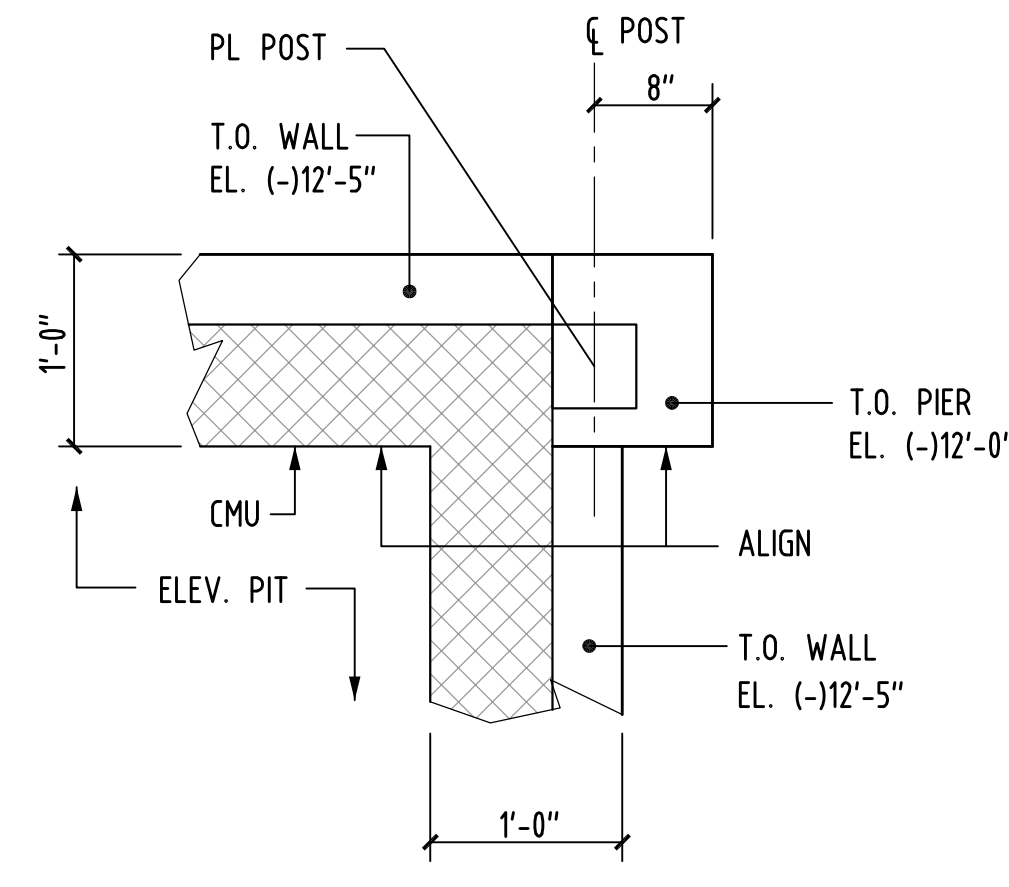
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Structural Engineers

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781-670-9939 (f)



PIER P1
SCALE: 1"=1'-0"



PIER P2
SCALE: 1"=1'-0"

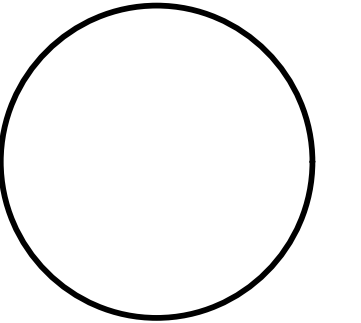
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**Concrete
Details IV**

JOB NO
18197.00
DATE
05.29.19
DWG BY
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AS NOTED

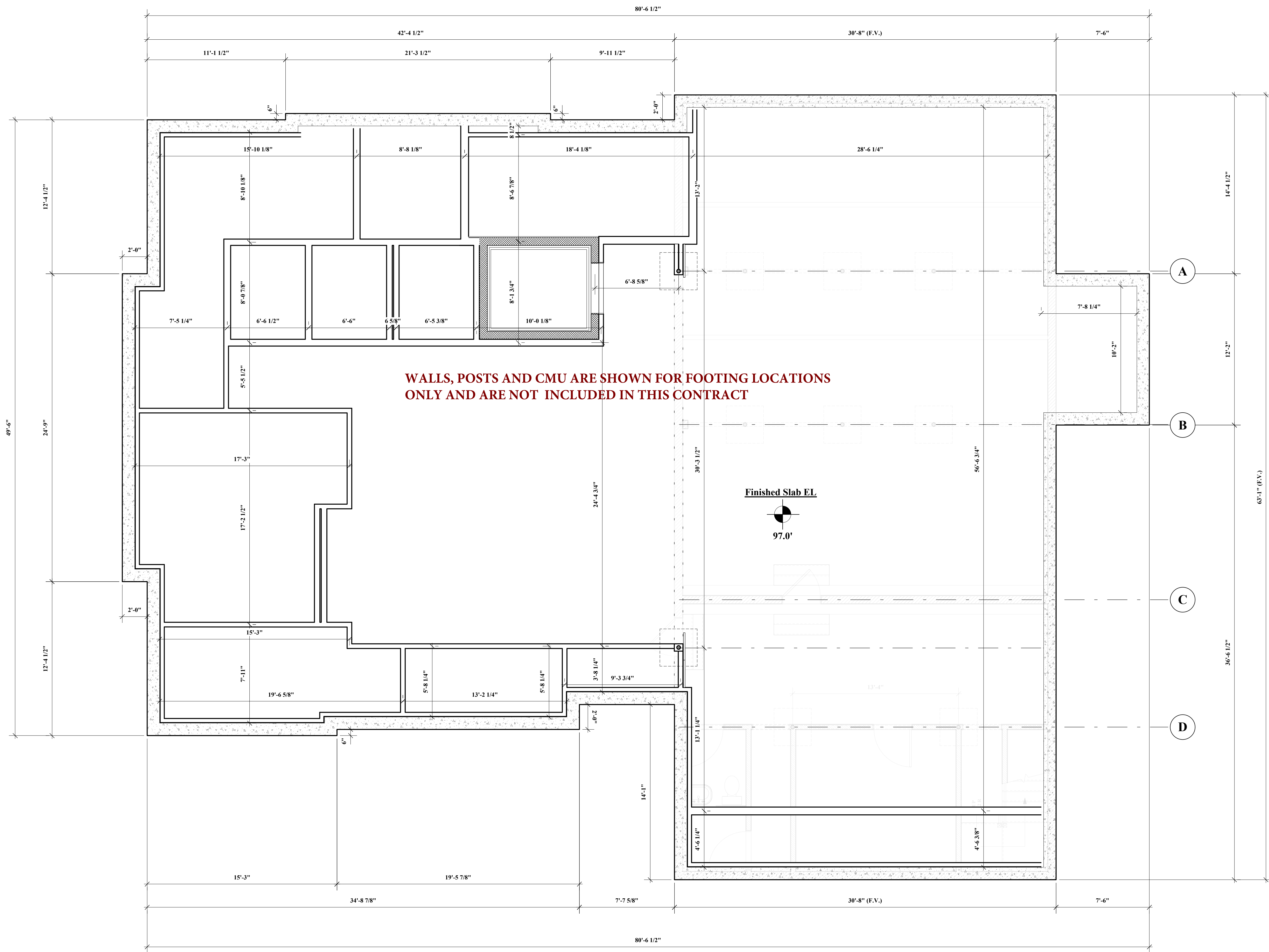
S-3.4



REV #	DATE	ISSUANCE

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Proposed Basement
Floor Plan



WALLS, POSTS AND CMU ARE SHOWN FOR FOOTING LOCATIONS
ONLY AND ARE NOT INCLUDED IN THIS CONTRACT

1 Proposed Basement Floor Plan
A-1.1 1/4" = 1'-0"

PLAN IS TO BE USED FOR DIMENSIONING
REFER TO FOUNDATION PLAN FOR DETAILS