

STRUCTURAL NOTES

GENERAL REQUIREMENTS

- 1. BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE
2. ANY REFERENCES TO VARIOUS TRADE CODES THROUGHOUT THESE NOTES ARE TO THE YEAR OF THE CODE CITED IN THE ABOVE REFERENCE BUILDING CODE.
3. DESIGN LIVE LOADS

ROOF: STRUCTURAL ELEMENTS SHALL BE DESIGNED FOR THE MORE CRITICAL OF THE FOLLOWING LOAD CASES:
CASE 1 30 PSF MINIMUM (NOT REDUCIBLE)
CASE 2 SNOW LOAD BASED ON 40 PSF GROUND SNOW LOAD WITH APPLICABLE DRIFT AND SLIDING LOADS

ROOF SNOW LOAD DESIGN DATA:
FLAT ROOF SNOW LOAD ( PF ) - 28 PSF
SNOW EXPOSURE FACTOR ( CE ) - 1.0
SNOW LOAD IMPORTANCE FACTOR ( I ) - 1.0
THERMAL FACTOR ( CT ) - 1.0

DESIGN DEAD LOADS

ROOF 15 PSF

LATERAL LOADS

A. WIND LOAD ANALYSIS

Table with 4 columns: RISK CATEGORY, ULTIMATE WIND SPEED (VULT), NOMINAL WIND SPEED (VASD), EXPOSURE, INTERNAL PRESSURE COEFFICIENT (GCPI). Values include II, 115 MPH, 89 MPH, B, and ±0.18.

ASD COMPONENTS AND CLADDING NET DESIGN WIND PRESSURES (PSF)

Table with 5 columns: ZONE, AREA, PSF values. Rows include ZONE 1, ZONE 2, ZONE 3, ZONE 4, and ZONE 5 with various area and pressure values.

B. SEISMIC LOAD ANALYSIS

Table with 2 columns: RISK CATEGORY, SEISMIC IMPORTANCE FACTOR (IE), 0.2 SEC SPECTRAL RESPONSE ACCELERATION (SS), 1.0 SEC SPECTRAL RESPONSE ACCELERATION (S1), SITE CLASS, SOIL SITE COEFFICIENT (FA / FV), SPECTRAL RESPONSE COEFFICIENT, SHORT (SDS), SPECTRAL RESPONSE COEFFICIENT, 1 SEC (SD1), SEISMIC DESIGN CATEGORY, BASIC SEISMIC FORCE RESISTING SYSTEM, BUILDING HEIGHT LIMITATIONS, RESPONSE MODIFICATION FACTOR (R), SYSTEM OVERSTRENGTH FACTOR (Ω0), DEFLECTION AMPLIFICATION FACTOR (CD), SYSTEM RESPONSE COEFFICIENT (CS), BASE SHEAR, ANALYSIS PROCEDURE UTILIZED.

GENERAL NOTES

- 1. REFER TO THE ARCHITECTURAL, ELECTRICAL, MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL SLEEVES, ANCHORS, VENT OPENINGS, ETC. NOT SHOWN ON THE STRUCTURAL PLANS.
2. ALL MATERIALS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE ASTM SPECIFICATIONS NOTED IN THE STRUCTURAL NOTES AND PROJECT SPECIFICATIONS BASED ON THE FINAL DATE NOTED ON THE CONSTRUCTION DOCUMENTS.

- 3. THIS PROJECT HAS BEEN DESIGNED FOR THE WEIGHTS OF THE MATERIALS INDICATED ON THE DRAWINGS AND FOR THE LIVE LOADS INDICATED IN THE DESIGN DATA ABOVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADDITIONAL SHORING AND BRACING FOR THE STRUCTURE IF ACTUAL CONSTRUCTION LOADS EXCEED THE DESIGN LOADS. ALL DIMENSIONS AND NOTES SHALL SUPERSEDE ALL SCALE REFERENCES ON THE DRAWINGS.
4. ALL WORK SPECIFIED HEREIN SHALL BE INSPECTED IN ACCORDANCE WITH THE BUILDING CODE AND ALL LOCAL ORDINANCES. THE OWNER WILL HIRE AN EXPERIENCED, QUALIFIED SPECIAL INSPECTOR TO PERFORM ALL THE REQUIRED INSPECTION WORK. ADTEK ENGINEERS WILL NOT PERFORM THE CONTINUOUS DAILY SPECIAL INSPECTIONS DURING CONSTRUCTION. ADTEK ENGINEERS MAY VISIT THE SITE TO ASCERTAIN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS AND SUCH VISITS ARE NOT TO BE CONSTRUED AS MEETING THE DAILY SPECIAL INSPECTION REQUIREMENTS UNLESS THE ENGINEER SPECIFICALLY SO STATES IN WRITING.

CONTRACTOR RESPONSIBILITIES

THE FOLLOWING LIST IS NOT INTENDED TO BE ALL INCLUSIVE, BUT MERELY TO PLACE EMPHASIS ON PARTICULAR ITEMS OF JOB SCHEDULING AND SAFETY.

- 1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE PROJECT ARCHITECT FOR REVIEW, ALLOWING A MINIMUM OF TWO WEEKS FOR REVIEW BY THE PROJECT ENGINEER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REDESIGN OF THE STRUCTURAL SUPPORTS OF EQUIPMENT WHEN THE OPERATING WEIGHTS OF THE EQUIPMENT PROVIDED (INCLUDING CURBS AND ACCESSORIES) EXCEEDS THE MAXIMUM DESIGN WEIGHTS NOTED ON THE STRUCTURAL DRAWINGS.
3. THE CONTRACTOR SHALL NOTIFY THE PROJECT SPECIAL INSPECTOR IN ADVANCE OF WORK REQUIRING INSPECTIONS OR ON-SITE PERSONNEL.
4. IF THE CONTRACTOR ANTICIPATES A PROBLEM THAT WILL REQUIRE ASSISTANCE FROM THE PROJECT STRUCTURAL ENGINEER, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROVIDE THE ENGINEER WITH AMPLE NOTICE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION IS ACCORDING TO THE SIGNED AND SEALED CONSTRUCTION DOCUMENTS AND THE REVIEWED SHOP DRAWINGS.
6. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED TO DESIGN AND DETAIL THE SUBMITTAL ITEMS NOTED IN THE STRUCTURAL NOTES (I.E. UNDERPINNING, SHORING, FORMWORK, PRECAST CONCRETE, LIGHT GAGE STEEL, TIMBER TRUSSES, PRE-ENGINEERED COMPONENTS, ETC.).
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING BETWEEN THE STRUCTURAL AND ARCHITECTURAL DRAWINGS.
8. THE CONTRACTOR IS RESPONSIBLE FOR METHODS TO INSURE CONSTRUCTION SAFETY AT THE SITE THROUGHOUT THE COURSE OF THE PROJECT CONSTRUCTION.
9. UPON STRUCTURAL COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE SPECIAL INSPECTOR SUBMIT A LETTER OF CERTIFICATION INDICATING THAT THE STRUCTURE IS IN COMPLIANCE WITH THE PLANS, SPECIFICATIONS, CONCRETE TEST REPORTS AND CODE REQUIREMENTS.

SUBMITTALS

UNLESS OTHERWISE NOTED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS, SHOP DRAWINGS SHALL BE REQUIRED ON THE FOLLOWING ITEMS:

- 1. CONCRETE MIX DESIGN BY EITHER TRIAL BATCH OR FIELD EXPERIENCE METHODS.
2. CONCRETE REINFORCING
3. MASONRY REINFORCING
4. \* FORMWORK WITH CALCULATIONS

SUBMITTAL NOTES:

- 1. SUBMIT THE SHOP DRAWINGS NOTED ABOVE TO THE PROJECT ARCHITECT FOR REVIEW.
2. SUBMITTALS ( DRAWINGS AND CALCULATIONS ) NOTED WITH \* ABOVE SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
3. REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONSTRUCTION DOCUMENTS FOR USE AS SHOP DRAWINGS IS PROHIBITED.

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED DURING CONSTRUCTION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE. THE TERM SPECIAL INSPECTOR REFERS TO THE SPECIAL INSPECTING ENGINEER OF RECORD Hired BY THE OWNER IN COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE.

- 1. FOUNDATION SUBGRADES
2. FOUNDATION REINFORCING
3. CONCRETE FORMWORK AND REINFORCING
4. CONCRETE MIX AND PLACEMENT
5. MASONRY REINFORCING
6. MASONRY GROUT
7. TIMBER FRAMING (INCLUDING LVL AND TRUSS MEMBERS)

SITE CONSTRUCTION

FOUNDATION

ASSUMED SOIL BEARING VALUE

2000 POUNDS PER SQUARE FOOT FOR COLUMN AND WALL FOOTINGS.

ASSUMED LATERAL WALL LOADS (EQUIVALENT FLUID PRESSURE)

BASEMENT WALLS: 60 PSF PER FOOT OF DEPTH.

CANTILEVERED RETAINING WALLS: 60 PSF PER FOOT OF DEPTH.

SUBGRADE MODULUS (K) = 100 PCF

- 1. ALL SPREAD FOOTINGS SHALL EXTEND MINIMUM 1'-0" INTO UNDISTURBED SOIL OR SHALL BEAR ON COMPACTED STRUCTURAL FILL.
2. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW THE FINISHED EXTERIOR GRADE UNLESS NOTED OTHERWISE.
3. THE ELEVATION AT THE TOP OF FOOTINGS SHALL NOT BE HIGHER THAN INDICATED ON THE FOUNDATION PLAN, NOTES AND SECTIONS.
4. THE FINAL SOIL BEARING CAPACITY AND FOUNDATION SUBGRADES SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL INSPECTOR.

FOUNDATION DRAIN

PROVIDE A CONTINUOUS 4" DIAMETER PERFORATED PLASTIC PIPE SURROUNDED WITH A MINIMUM OF 4 INCHES OF GRAVEL AND A FILTER FABRIC WHERE INDICATED ON THE FOUNDATION PLAN THUS:

BACKFILL OF WALLS

- 1. BELOW GRADE WALLS DESIGNED TO RESIST BACKFILL COUNT ON THE SLAB ON GRADE AND THE ELEVATED FLOOR STRUCTURE TO PROVIDE LATERAL RESISTANCE TO THE BACKFILL LOADS. AS SUCH, THEY CANNOT BE BACKFILLED UNTIL THE SUPPORTING ELEVATED SLAB IS IN PLACE.

STRUCTURAL COMPACTED FILL

- 1. STRUCTURAL COMPACTED FILL FOR FOUNDATIONS AND SLAB ON GRADE SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER AND COMPACTED IN 8" LOOSE LAYERS AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY BASED ON THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698).

EXISTING CONDITIONS

- 1. ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BEFORE EXCAVATION, DEMOLITION, OR CONSTRUCTION IS BEGUN. EXISTING UTILITIES SHALL BE LOCATED AND PROTECTED AS REQUIRED BY THE EXCAVATION, DEMOLITION, OR CONSTRUCTION.

- 2. ALL EXISTING MATERIALS INDICATED ON THE DRAWINGS TO BE DEMOLISHED SHALL BE REMOVED AS INDICATED IN THE PROJECT SPECIFICATIONS.
3. FIELD VERIFY ALL RELEVANT EXISTING DIMENSIONS, ELEVATIONS, AND MEMBER SIZES.

SHEETING AND SHORING

- 1. SHEETING AND SHORING SHALL BE PROVIDED AS REQUIRED TO PROTECT EXISTING CONSTRUCTION AND TO AVOID CAVING OF EXCAVATIONS AND EXISTING STRUCTURES.
2. THE SHEETING AND SHORING DESIGN SHALL BE IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT, THE SPECIFICATIONS, AND AS REQUIRED BY THE PROJECT GEOTECHNICAL REPORT AND O.S.H.A. REGULATIONS.
3. THE CONTRACTOR SHALL VERIFY THE CONDITION OF THE EXISTING STRUCTURE IN THE AREA OF THE PROPOSED SHEETING AND SHORING.

SHORING OF BUILDING STRUCTURAL MEMBERS

- 1. SHORING OF STRUCTURAL ELEMENTS SHALL BE PROVIDED AS REQUIRED TO PROTECT EXISTING CONSTRUCTION. THE SHORING DESIGN SHALL BE AS REQUIRED BY THE CONSTRUCTION.
2. THE CONTRACTOR SHALL VERIFY THE CONDITION OF THE EXISTING STRUCTURE IN THE AREA OF THE PROPOSED SHORING.

CONCRETE

STRUCTURAL CONCRETE

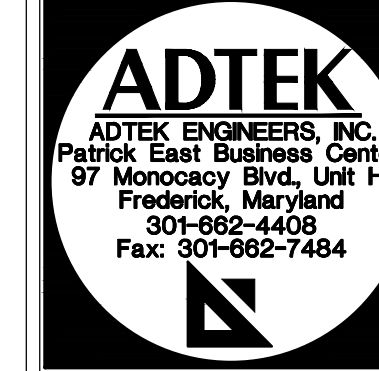
- 1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
2. CONCRETE SHALL BE NORMAL WEIGHT. DESIGN COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 3500 PSI.
3. MAXIMUM AGGREGATE SIZE FOR CONCRETE SHALL BE IN ACCORDANCE WITH THE MAXIMUM AGGREGATE SIZES IN ACI 318 AND AS FOLLOWS:
FOOTINGS: 1-1/2"
CONCRETE PIERS, WALLS: 3/4"
CONCRETE SLABS ON GRADE: 3/4"

- 4. ALL EXTERIOR CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED.
5. CONCRETE AIR CONTENT, SLUMP AND WATER/CEMENT RATIOS SHALL BE AS FOLLOWS:
AIR ENTRAINMENT: 6% +/- 1% OF THE TOTAL CONCRETE VOLUME
CONCRETE SLUMP: 3" +/- 1"
8" AFTER ADDITION OF HRWR AT THE SITE
WATER/CEMENT RATIO: 0.58 FOR INTERIOR CONCRETE
0.50 FOR EXTERIOR CONCRETE

- 6. THE USE OF ADDITIVES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
7. PROVIDE A HIGH RANGE WATER REDUCER (HRWR OR SUPERPLASTICIZER) FOR PUMPED CONCRETE AND AS REQUIRED FOR WORKABILITY.
8. ALL REINFORCING STEEL MARKED "CONTINUOUS" SHALL BE LAPPED AS REQUIRED WITH CLASS B TENSION SPLICES PER ACI 315.



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ADTEK PROJECT NUMBER: 1118-009

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 16533 - EXPIRATION DATE: 07/08/2015

RENOVATIONS TO
10 SOUTH BENTZ STREET
FOR CAS ENGINEERING
10 SOUTH BENTZ STREET
FREDERICK, MARYLAND 21701
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Table with 2 columns: REV, DATE, DESCRIPTION. Row 1: 04/08/14, PROJING.

PROJECT NO.: 11-13
DATE: 03-07-14

STRUCTURAL NOTES
S1-1

9. ALL TENSION SPLICES IN THE REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL HAVE A MINIMUM LAP DISTANCE AS FOLLOWS:

BAR SIZE	MINIMUM CLASS B TENSION LAP SPLICE	
	TOP BARS	OTHER BARS
#3	21"	16"
#4	28"	22"
#5	35"	27"

10. PROVIDE CONCRETE PROTECTION FOR REINFORCING AS FOLLOWS:

FOOTINGS: 3"	
INTERIOR SLABS: 3/4"	PIERS: 1-1/2" TO THE TIRES
EXTERIOR SLABS: 1-1/2"	WALLS: OUTSIDE FACE: 2" INSIDE FACE: 1"

11. ALL CONCRETE WORK, REINFORCING PLACEMENT FORMWORK AND SHORING SHALL BE INSPECTED UNDER THE SUPERVISION OF THE FREDERICK COUNTY INSPECTOR. CONCRETE QUALITY CONTROL, INSPECTION AND TESTING SHALL BE IN STRICT ACCORDANCE WITH ACI 301 AND THE LOCAL BUILDING CODE REQUIREMENTS.

**CONSTRUCTION PRACTICES:**

- WET STICKING OF DOWELS INTO THE FOOTING WILL NOT BE ACCEPTED. DOWELS SHOULD BE PROPERLY PLACED AND TIED TO LONGITUDINAL FOOTING REINFORCING IN ACCORDANCE WITH CRSI.
- THE SPECIAL INSPECTOR SHALL PERFORM A MINIMUM OF ONE CONCRETE TEST FOR EACH 50 CUBIC YARDS OF CONCRETE POURED AT THE PROJECT WITH AT LEAST ONE TEST FOR EACH DAY THAT CONCRETE IS POURED. EACH CONCRETE TEST SHALL INCLUDE A SLUMP TEST AND FIVE LABORATORY CURED TEST CYLINDERS FOR COMPRESSIVE STRENGTH TESTS. TEST TWO CYLINDERS AT 7 DAYS AFTER THE CONCRETE POUR AND TWO AT 28 DAYS WITH ONE RESERVE CYLINDER. THE SPECIAL INSPECTOR SHALL SUBMIT WRITTEN TEST REPORTS TO THE PROJECT ARCHITECT AND STRUCTURAL ENGINEER. THE ARCHITECT AND STRUCTURAL ENGINEER SHALL BE NOTIFIED OF ALL TESTS THAT DO NOT MEET THE PROJECT SPECIFICATIONS WITHIN 24 HOURS.

**SLAB ON GRADE**

- PROVIDE A MINIMUM 6" THICK CONCRETE SLAB REINFORCED WITH 6 X 6 - W2.1 X W2.1 WELDED WIRE FABRIC ON 6" OF POROUS FILL OVER A 10 MIL CONTINUOUS VAPOR RETARDER. THE WELDED WIRE FABRIC SHALL BE PLACED AT THE MID-DEPTH OF THE SLAB OR 2 INCHES BELOW THE TOP SURFACE OF THE SLAB WHICHEVER IS LESS. THE POROUS FILL SHALL BE ASTM C33, SIZE 467.
- CONTRACTOR'S OPTION - PROVIDE SYNTHETIC POLYPROPYLENE REINFORCING FIBERS IN PLACE OF WELDED WIRE MESH IN THE SLAB ON GRADE. FIBERS SHALL BE ADDED AT THE CONCRETE PLANT PER THE FIBER MANUFACTURER'S RECOMMENDATIONS. CONCRETE WITH FIBER REINFORCING SHALL HAVE HIGH RANGE WATER REDUCER PER ASTM C494, TYPE F OR G.

**MASONRY**

- ALL MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH FOLLOWING STANDARDS:
  - BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES - ACI 530/ASCE 5
  - SPECIFICATIONS FOR MASONRY STRUCTURES ACI 530.1/ASCE 6
  - SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY PUBLISHED BY NATIONAL CONCRETE MASONRY ASSOCIATION.
- THE MINIMUM NET AREA COMPRESSIVE STRENGTH OF MASONRY (FM) SHALL BE 1500 PSI PER ACI 530. THE MINIMUM NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS SHALL BE 1900 PSI PER ACI 530.
- HOLLOW AND SOLID LOAD BEARING CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 AND ASTM C145.
- MORTAR SHALL CONFORM TO THE REQUIREMENTS OF THE ASTM TENTATIVE SPECIFICATIONS FOR MORTAR FOR UNIT MASONRY, ASTM C270, TYPE S MORTAR. HOLLOW UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS AND WEBS. SOLID UNITS SHALL BE LAID WITH FULL HEAD AND BED JOINTS. FIELD TESTED MORTAR IS REQUIRED TO ACHIEVE SPECIFIED DESIGN STRENGTHS.
- MASONRY GROUT HAVE A 28 DAY COMPRESSIVE STRENGTH OF 2500 PSI, COMPLYING WITH ASTM C476.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL VERTICAL MASONRY REINFORCING SHALL BE INSTALLED IN FULLY GROUTED CELLS AS SHOWN ON THE DRAWINGS. PROVIDE MINIMUM 49 BAR DIAMETER SPLICES FOR #3 THROUGH #5 BARS, MINIMUM 69 BAR DIAMETER SPLICES FOR #6 AND #7 BARS, AND MINIMUM 74 BAR DIAMETER SPLICES FOR #8 AND #9 BARS.

- PROVIDE JOINT REINFORCING, DUR-O-WALL OR EQUAL, EVERY BLOCK COURSE BELOW GRADE UNLESS OTHERWISE SHOWN ON ARCHITECTURAL WALL SECTIONS. JOINT REINFORCING SHALL BE CONTINUOUS AND SHALL BE PROVIDED IN ALL WALLS WITHOUT EXCEPTION. MASONRY JOINT REINFORCING SHALL BE TRUSS TYPE COLD-DRAWN STEEL WIRE CONFORMING TO ASTM A82 AND SHALL BE HOT DIPPED GALVANIZED PER ASTM A153 AFTER FABRICATION. WHERE WALLS ABUT EACH OTHER, AND AT OUTSIDE CORNERS, PROVIDE PREFABRICATED TEE-TYPE AND CORNER TRUSS TIES.

**CONSTRUCTION PRACTICES:**

- WET STICKING OF VERTICAL REINFORCING INTO GROUTED CELLS FOR LAPS IS UNACCEPTABLE. LAP AND TIE BARS PER ACI.
- ALL BELOW GRADE WALLS ARE TO BE GROUTED SOLID.
- USE VIBRATORS TO CONSOLIDATE GROUT IN MASONRY WALLS. RODDING WILL NOT BE PERMITTED.

**STEEL**

**STRUCTURAL STEEL**

- ALL STEEL SHALL BE IN ACCORDANCE WITH THE FOURTEENTH EDITION OF THE MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
- STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A501 OR ASTM A53, TYPE E OR S.
- STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE B.
- ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36.
- SHOP AND FIELD FASTENERS SHALL BE ASTM A325 HIGH STRENGTH BOLTS IN BEARING TYPE CONNECTIONS, UNLESS NOTED OTHERWISE.
- HOLES SHALL NOT BE CUT THROUGH COLUMNS UNLESS INDICATED OR APPROVED BY THE STRUCTURAL ENGINEER.
- WELDING SHALL BE DONE ONLY BY AWS CERTIFIED WELDERS. WELD IN ACCORDANCE WITH THE AWS "STANDARD CODE" FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. USE E70XX ELECTRODES.
- STRUCTURAL STEEL SURFACES CAST INTO CONCRETE AND MASONRY AND STEEL TO RECEIVE FIREPROOFING SHALL BE UNPAINTED.
- THE FABRICATOR IS RESPONSIBLE FOR THE SELECTION, DESIGN AND DETAILING OF ALL CONNECTIONS NOT FULLY DETAILED ON THE CONTRACT DOCUMENTS. TYPICAL CONNECTION DETAILS ARE INDICATED ON THE DRAWINGS FOR DESIGN INTENT ONLY. THE FABRICATOR SHALL HAVE A REGISTERED PROFESSIONAL ENGINEER PREPARE THE CONNECTION DESIGNS, AND THE DESIGNS SHALL BE SUBMITTED FOR REVIEW WITH THE SHOP DRAWINGS. THE CONNECTIONS SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE THIRTEENTH EDITION OF THE AISC "MANUAL OF STEEL CONSTRUCTION". THE DESIGN END REACTION OF THE CONNECTED BEAM SHALL BE DETERMINED FROM PART 3 "MAXIMUM TOTAL UNIFORM LOAD TABLES" FOR THE MEMBER SIZE AND SPAN INDICATED, UNLESS A DESIGN REACTION IS INDICATED ON THE DRAWINGS.

- G.C. OPTION AT COLUMN BASE PLATES-LEVELLING NUTS MAY BE USED IN LIEU OF LEVELLING PLATES SHOWN. USE 1" GROUT WITH LEVELLING NUTS.
- SEE THE "CONTRACTOR RESPONSIBILITIES" AND "SUBMITTAL" NOTES FOR ADDITIONAL STEEL SHOP DRAWING REQUIREMENTS.
- THE STRUCTURAL STEEL TESTING ENGINEER SHALL PERFORM THE FOLLOWING INSPECTIONS PER THE AISC SPECIFICATIONS:
  - SHOP AND FIELD BOLTED CONNECTIONS
  - SHOP AND FIELD WELDED CONNECTIONS - VISUAL INSPECTIONS FOR ALL WELDS.
  - STEEL PLUMBNESS
  - GENERAL STEEL CONFORMANCE TO THE CONTRACT DOCUMENTS

**WOOD FRAMING**

- ALL LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE AMERICAN FOREST & PAPER ASSOCIATION'S ( AFPA ) NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
- ALL STRUCTURAL WOOD MEMBERS SHALL BE #2 HEM FIR OR EQUIVALENT WITH THE FOLLOWING COMBINATIONS OF UNIT STRESSES, UNLESS NOTED OTHERWISE ON THE DRAWINGS:

EXTREME FIBER STRESS IN BENDING	850 PSI
COMPRESSION PARALLEL TO GRAIN	1,250 PSI
MODULUS OF ELASTICITY	1,300,000 PSI
SHEAR STRESS	75 PSI

- ALL PRESSURE TREATED STRUCTURAL WOOD MEMBERS SHALL BE #2 SOUTHERN PINE OR EQUIVALENT WITH THE FOLLOWING COMBINATIONS OF UNIT STRESSES, UNLESS NOTED OTHERWISE ON THE DRAWINGS (BASED ON 2X12 LUMBER):

EXTREME FIBER STRESS IN BENDING	975 PSI
COMPRESSION PARALLEL TO GRAIN	1,450 PSI
MODULUS OF ELASTICITY	1,600,000 PSI
SHEAR STRESS	90 PSI

- ALL WALL STUDS SHALL BE SPF STUD GRADE OR EQUIVALENT WITH THE FOLLOWING COMBINATIONS OF UNIT STRESSES, UNLESS NOTED OTHERWISE ON THE DRAWINGS:

EXTREME FIBER STRESS IN BENDING	675 PSI
COMPRESSION PARALLEL TO GRAIN	625 PSI
MODULUS OF ELASTICITY	1,200,000 PSI
SHEAR STRESS	70 PSI

- ALL STRESS GRADE LUMBER MEMBERS SHALL BE CLEARLY STAMPED WITH THE LUMBER INSPECTION ASSOCIATION SEAL SHOWING THE STRESS GRADE. ALL FABRICATION, ERECTION AND OTHER PROCEDURES SHALL CONFORM TO THE CURRENT "NATIONAL DESIGN SPECIFICATION FOR STRESS GRADE LUMBER AND ITS FASTENINGS."

- WOOD JOISTS SHALL NOT BE CUT OR DRILLED UNLESS SO AUTHORIZED BY THE PROJECT STRUCTURAL ENGINEER.

- WOOD SILL PLATES RECEIVING STUD WALLS ON GRADE SLABS SHALL BE PRESSURE TREATED. SILL PLATES SHALL BE BOLTED TO THE WALL AND SLAB WITH 1/2" DIAMETER BOLTS, 18" MINIMUM LENGTH OR APPROVED MUDSILL ANCHORS AT 4'-0" ON CENTER.

- WHERE MULTIPLE MEMBERS ARE INDICATED ON THE DRAWINGS, MECHANICALLY FASTEN OR NAIL THE MEMBERS TO EACH OTHER IN ORDER FOR THE MEMBERS TO SHARE THE SUPERIMPOSED LOADS INCLUDING LOADS FROM POSTS AND HEADERS FRAMING INTO THE MULTIPLE MEMBER.

- ALL BEAMS INDICATED ON PLANS, INCLUDING MULTIPLE MEMBER BEAMS ARE TO BE CONTINUOUS BETWEEN SUPPORTS. NO SPLICES ARE PERMITTED WITHIN SPAN. SPLICES ARE PERMITTED AT SUPPORTS ONLY. IN BEAMS WITH CANTILEVER, SPLICES AT SUPPORT ARE NOT PERMITTED.

- ALL HEADERS OVER FRAME OPENINGS SHALL BE (3)-2 X 12 UNLESS NOTED OTHERWISE.

- ALL CONNECTIONS SHALL BE IN ACCORDANCE TO THE AFPA'S "NATIONAL DESIGN SPECIFICATION". ALL CONNECTIONS SHALL BE DESIGNED AND INSTALLED WITH ICBO/UBC APPROVED PREFABRICATED TIMBER CONNECTORS.

- ALL EXTERIOR STUD WALLS AND INTERIOR BEARING STUD WALLS SHALL BE CONTINUOUSLY BRIDGED WITH WOOD BLOCKING AT A MAXIMUM SPACING OF 4'-0" ON CENTER BETWEEN THE FLOORS AND THE ROOF. ALL STUD WALLS SHALL HAVE A MINIMUM OF TWO 2X TOP PLATES. ALL TOP PLATE SPLICES SHALL BE STAGGERED AND LOCATED OVER WALL STUDS.

- EVERY SECOND ROOF RAFTER SHALL BE INSTALLED DIRECTLY OVER EVERY THIRD WALL STUD UNLESS NOTED OTHERWISE ON THE DRAWINGS. WHERE JOISTS DO NOT ALIGN WITH FLOOR JOISTS, PROVIDE ADDITIONAL SOLID BLOCKING BELOW TOP PLATE.

- ALL MULTIPLE STUD COLUMNS SHALL BE NAILED TO EACH OTHER WITH TWO ROWS OF 10D NAILS AT 8 INCH MAXIMUM SPACING FULL-HEIGHT.

- BRACE EXTERIOR BUILDING CORNERS IN STUD WALLS WITH DIAGONALLY PLACED METAL STRAPS OR PLYWOOD SHEATHING NAILED OR SCREWED TO THE STUDS. SHEATHING SHALL BE CONTINUOUS ACROSS THE SILL PLATES AND FLOOR BAND BOARDS.

- ALL ROOF RAFTERS SHALL BE CONNECTED TO THE TOP PLATES WITH APPROVED HURRICANE CLIPS.

- FIRE RETARDANT TREATED LUMBER SHALL BE PROVIDED AS INDICATED ON THE ARCHITECTURAL DRAWINGS. THE TREATMENT MANUFACTURER SHALL SUBMIT A CERTIFICATION STATING ACID HYDROLYSIS WILL NOT OCCUR IN THE LUMBER AT TEMPERATURES BELOW 200 DEGREES FAHRENHEIT. THE CERTIFICATION, BY AN ACCREDITED TESTING LABORATORY, SHALL INCLUDE SPECIFICATIONS FOR THE REDUCTION IN THE ALLOWABLE WOOD STRESSES DUE TO THE TREATMENT.

- ALL EXPOSED TIMBER SHALL BE PRESSURE TREATED WITH AN ALKALINE COPPER QUATERNARY (ACQ) PRESERVATIVE PRODUCED BY A MANUFACTURER APPROVED BY THE AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA). THE TREATMENT SHALL COMPLY WITH THE FOLLOWING:

- AWPA STANDARD U1
- ICBO ES ER-4981
- NATIONAL EVALUATION REPORT (NER)-REPORT NO. NER-643

- PRESERVATIVE RETENTION RATES SHALL MEET OR EXCEED THE FOLLOWING FOR THE VARIOUS APPLICATIONS:

- | ABOVE GROUND-   |
|---|
| (DECKING, FENCE BOARDS, HANDRAILS)-0.25 TO 0.40 PCF (4.0-6.4 KG/M**3) |

- GROUND CONTACT, FRESH WATER-  
(FENCE POSTS, PIERS, DOCKS)-0.40 PCF (6.4 KG/M\*\*3)
- PERMANENT WOOD FOUNDATIONS  
(BUILDING POLES, TRANSMISSION POLES, CRAWL SPACES) -0.60 PCF (9.6 KG/M\*\*3)

- FASTENERS IN CONTACT WITH ACQ TREATED TIMBER SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL. THE USE OF ALUMINUM OR MILD STEEL FASTENERS IN ACQ TREATED TIMBER IS NOT PERMITTED.

**PLYWOOD - TIMBER SHEATHING**

- PLYWOOD/TIMBER SHEATHING SHALL BE IDENTIFIED WITH THE APA GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

- FIRE RETARDANT TREATED PLYWOOD SHALL BE PROVIDED AS INDICATED ON THE ARCHITECTURAL DRAWINGS. THE TREATMENT MANUFACTURER SHALL SUBMIT A CERTIFICATION STATING ACID HYDROLYSIS WILL NOT OCCUR IN THE PLYWOOD AT TEMPERATURES BELOW 200 DEGREES FAHRENHEIT. THE CERTIFICATION, BY AN ACCREDITED TESTING LABORATORY SHALL INCLUDE THE RESULTS OF A STRUCTURAL LOAD TEST AND CORRESPONDING SPAN TABLES SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. PROVIDE ONE OF THE FOLLOWING APPROVED TREATED PLYWOOD PRODUCTS.

- "DRICON" BY KOPPERS/HICKSON.
- "PYROGUARD" BY HOOVER.

- WALL AND ROOF SHEATHING SHALL BE ATTACHED AT 12" O.C. IN THE FIELD AND 6" O.C. AT THE EDGES.



100 NORTH MARKET STREET  
FREDERICK, MARYLAND 21701  
(301) 662-8532  
FAX (301) 662-4192  
info@proffittandassociates.com



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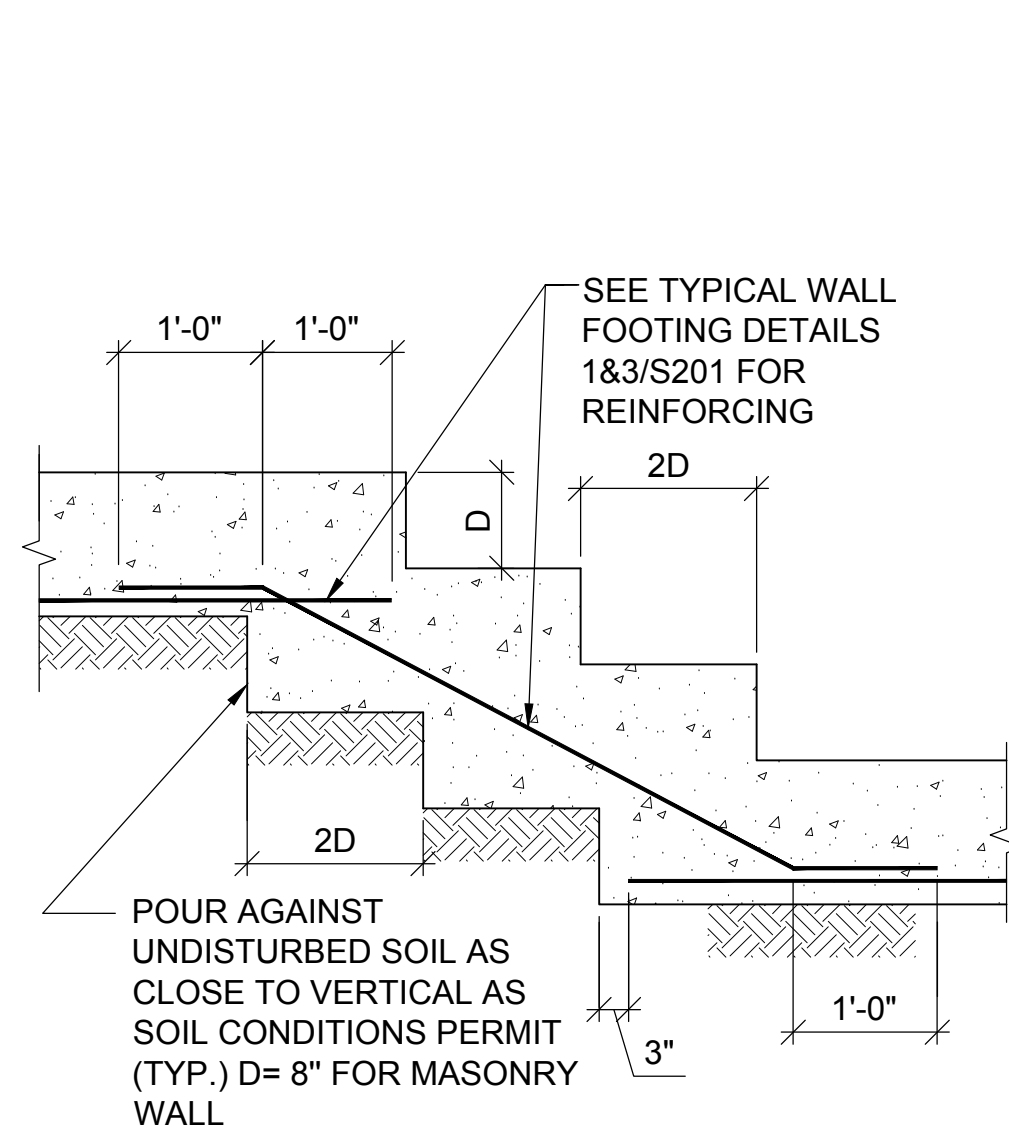
HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 1850 - EXPIRATION DATE: 07/08/2015

RENOVATIONS TO  
**10 SOUTH BENTZ STREET**  
 FOR CAS ENGINEERING  
 10 SOUTH BENTZ STREET  
 FREDERICK, MARYLAND 21701  
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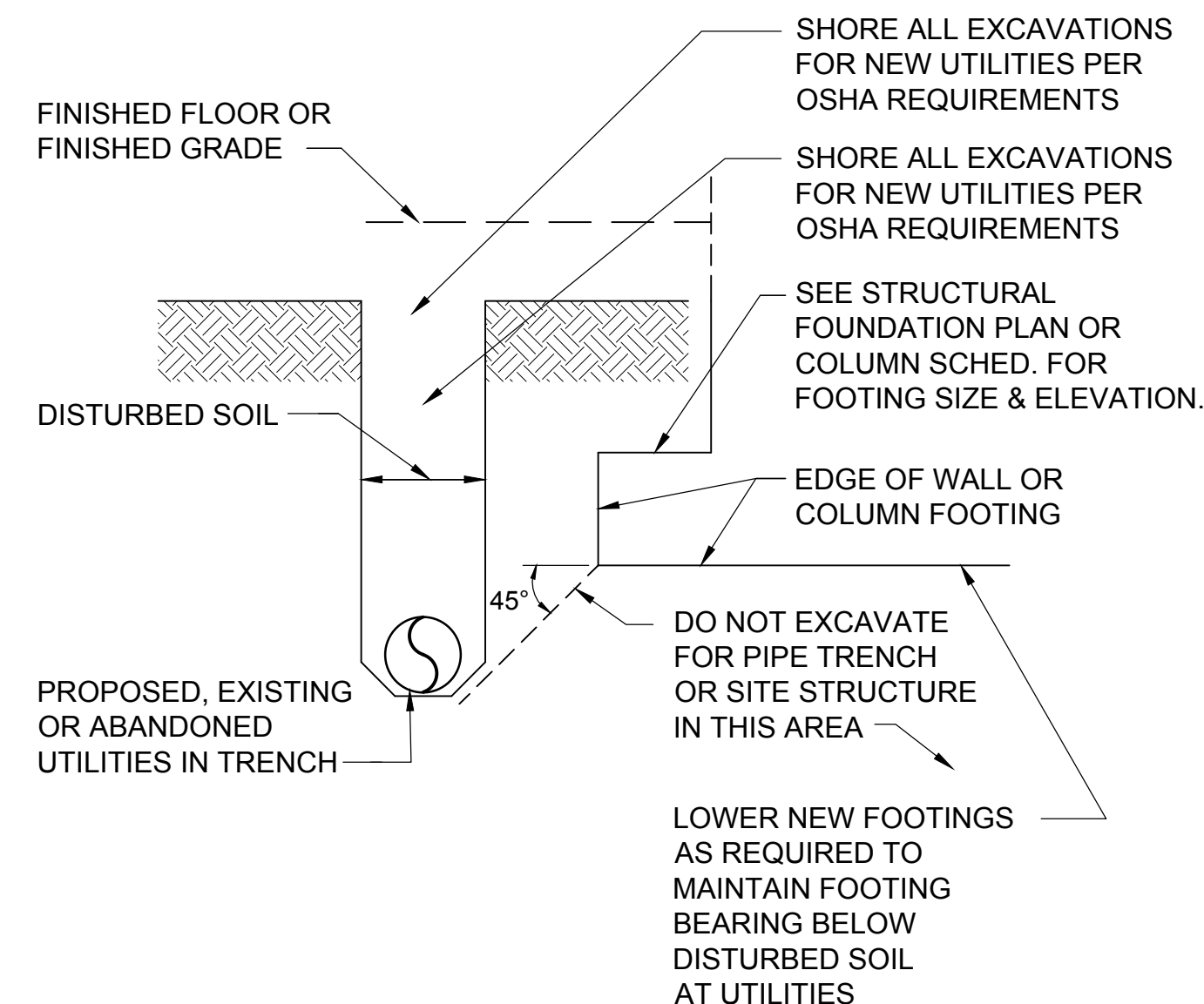
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REV	DATE	DESCRIPTION
	04/08/14	PRICING

PROJECT NO.: 11-13  
DATE: 05-07-14

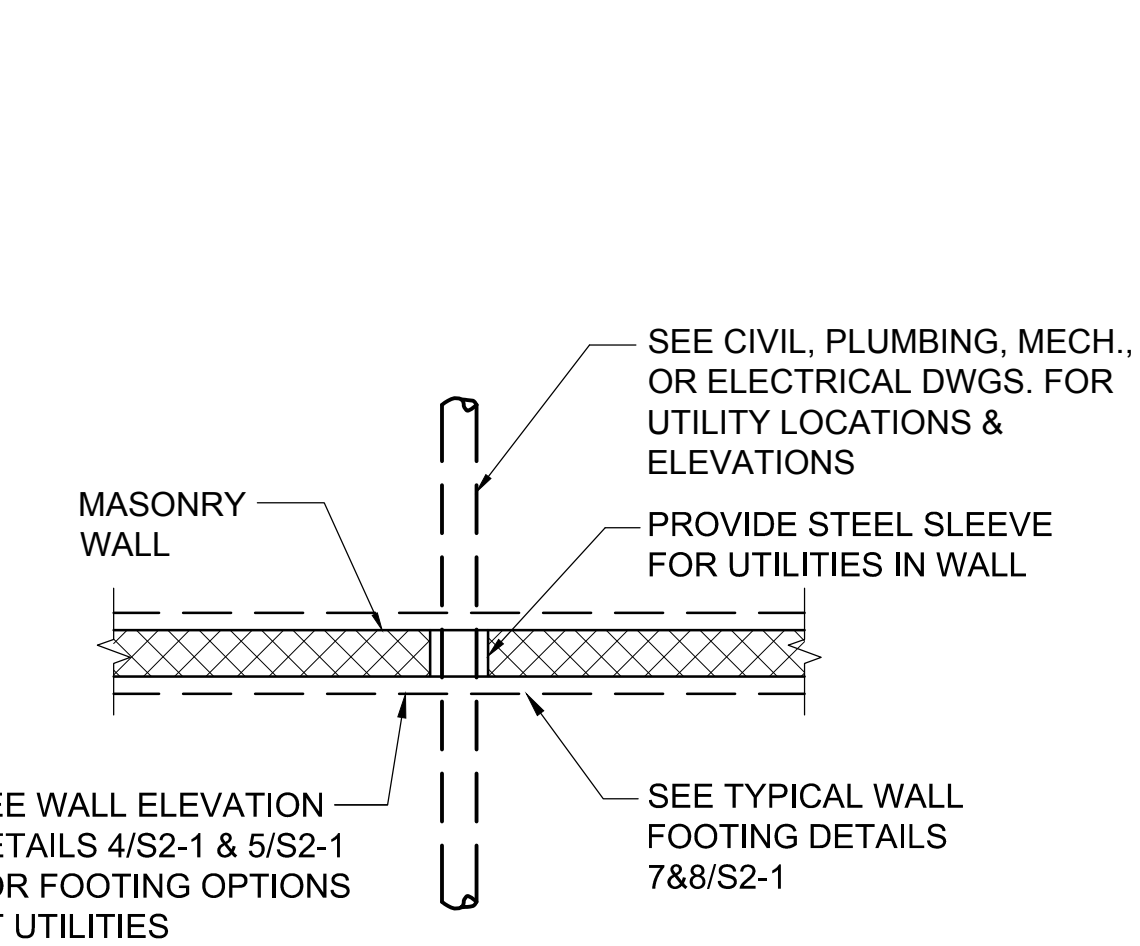
STRUCTURAL NOTES  
**S1-2**



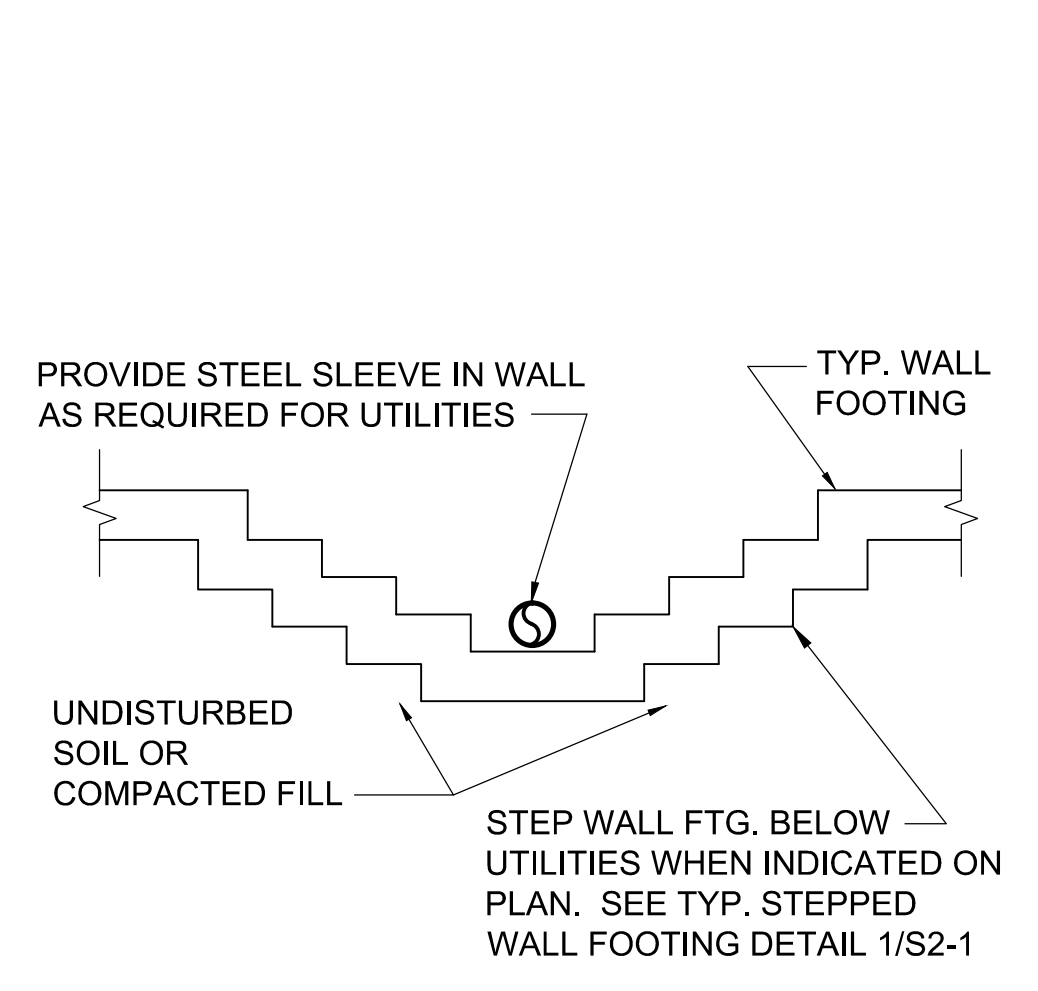
**1**  
S2-1  
**TYPICAL STEPPED WALL FOOTING DETAIL**  
NOT TO SCALE



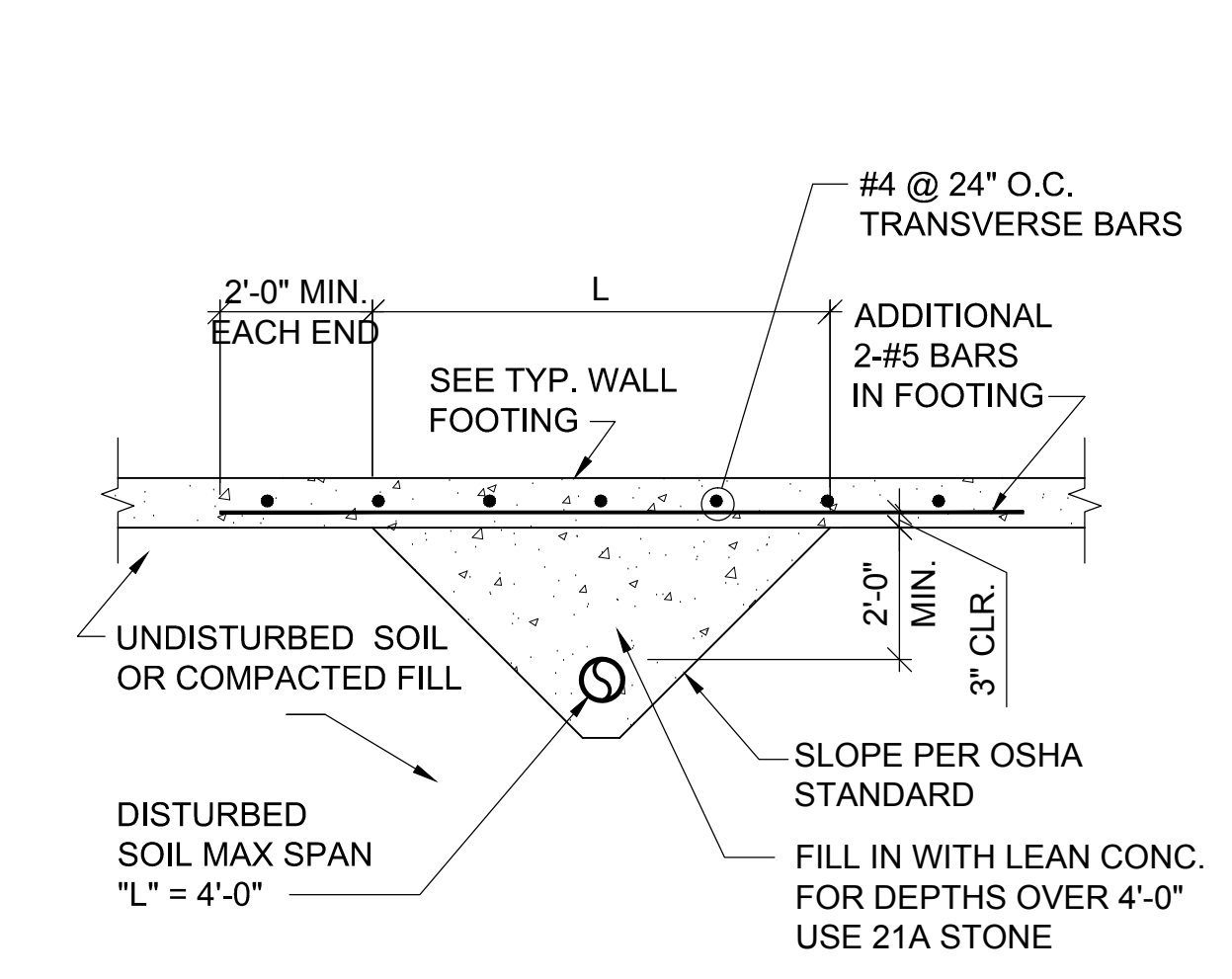
**2**  
S2-1  
**TYPICAL PIPE TRENCH/ SITE STRUCTURE EXCAVATION DETAIL**  
NOT TO SCALE



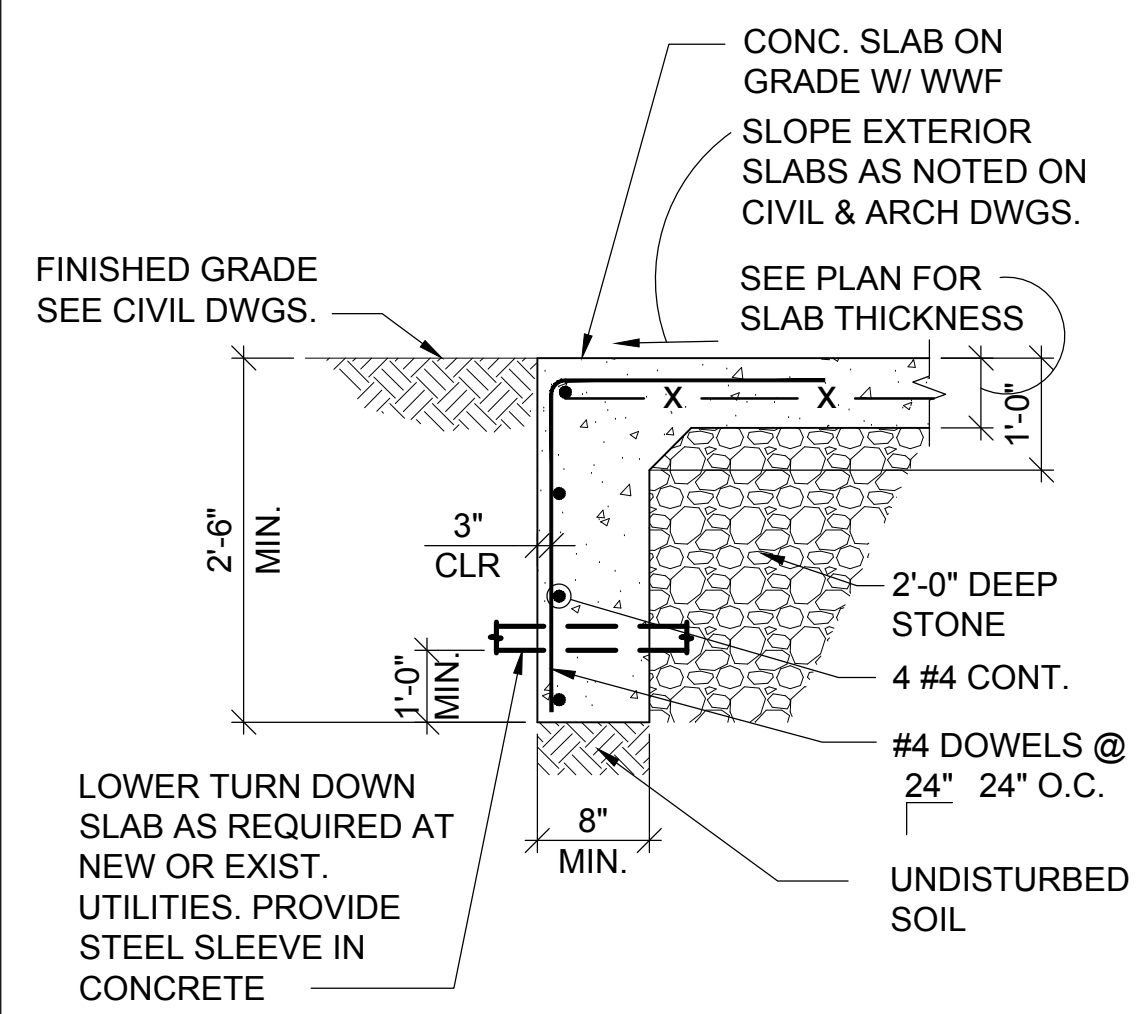
**3**  
S2-1  
**TYPICAL WALL FOOTING AT UTILITIES DETAIL**  
NOT TO SCALE



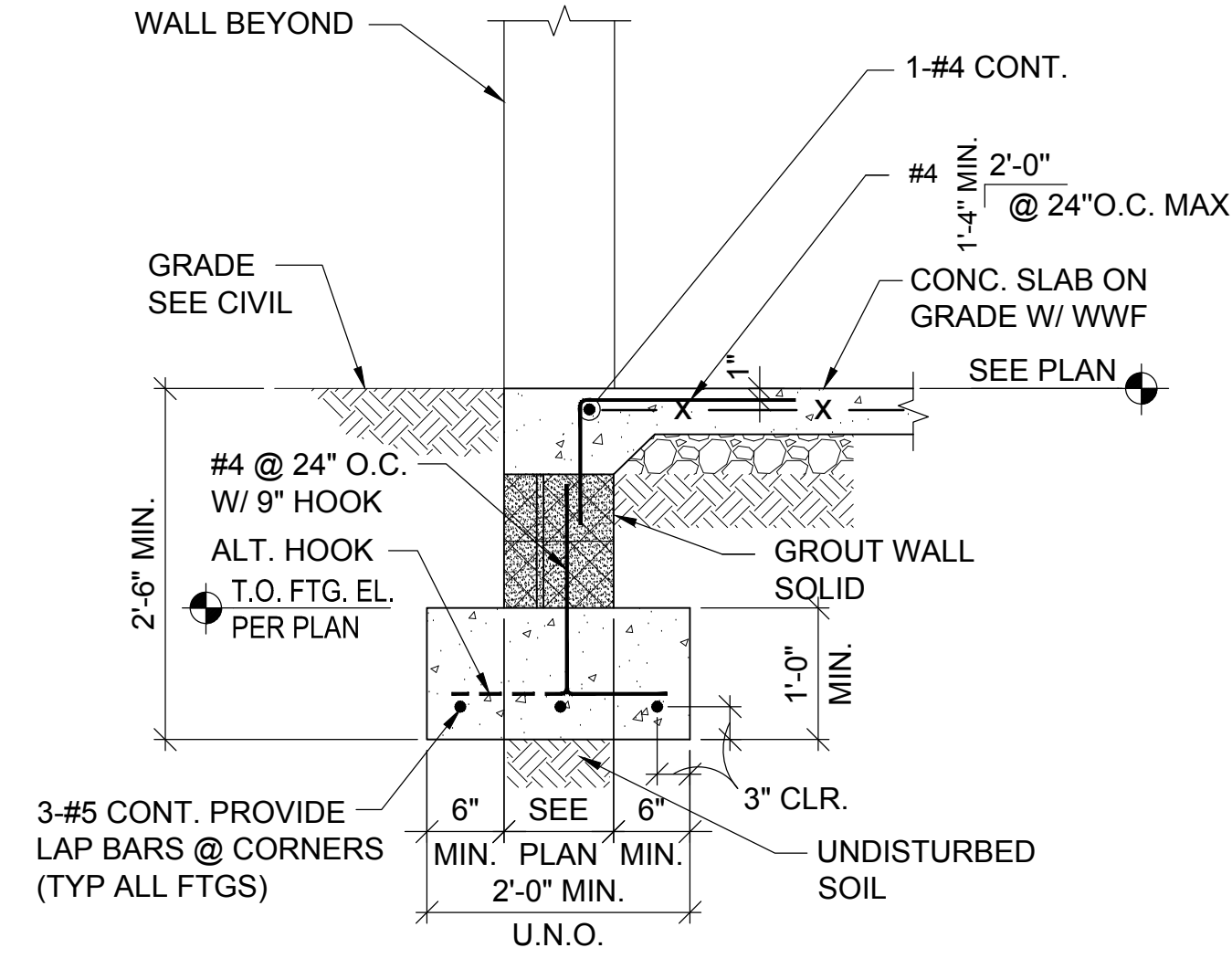
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S2-1  
**TYPICAL WALL FOOTING AT UTILITIES DETAIL**  
NOT TO SCALE



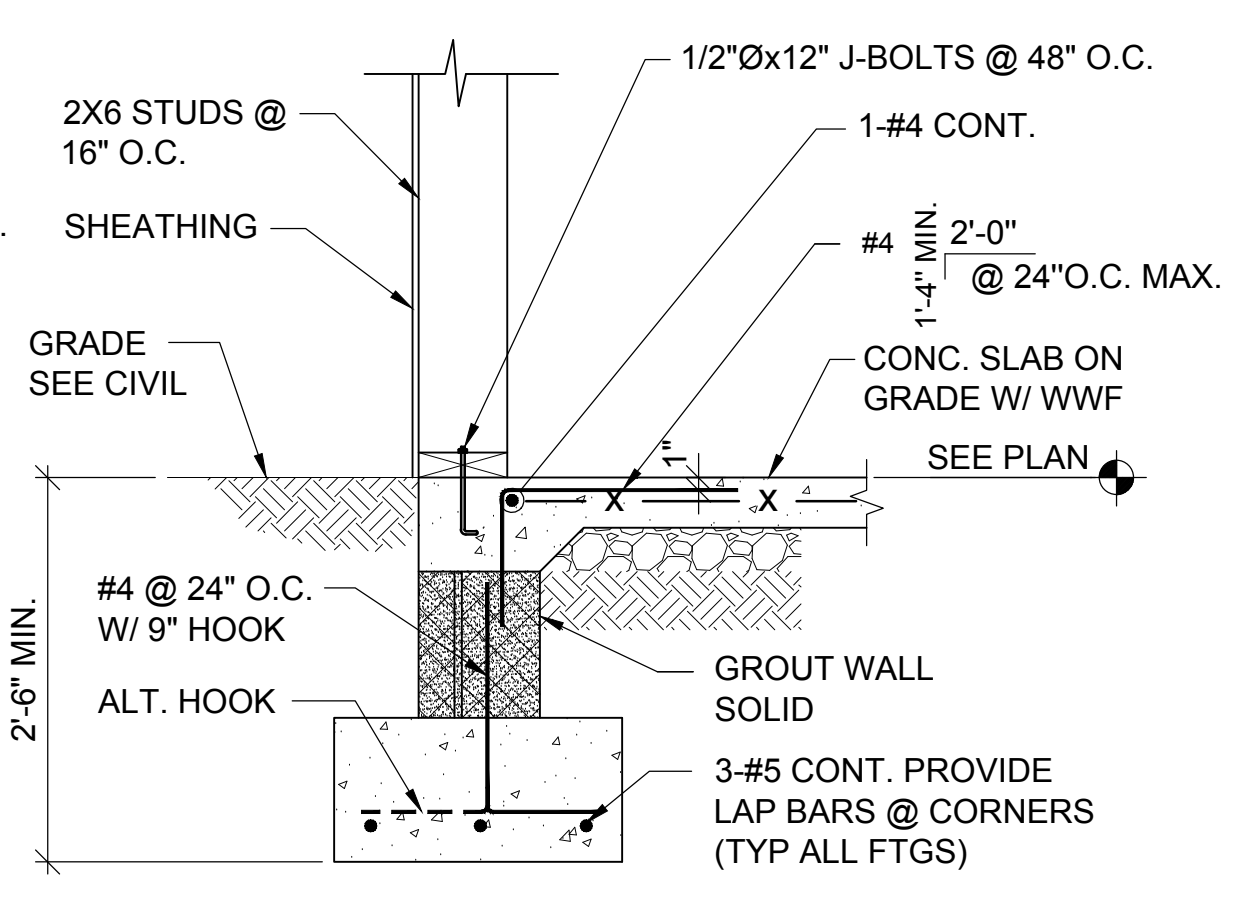
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S2-1  
**OPTIONAL WALL FOOTING AT UTILITIES DETAIL**  
NOT TO SCALE



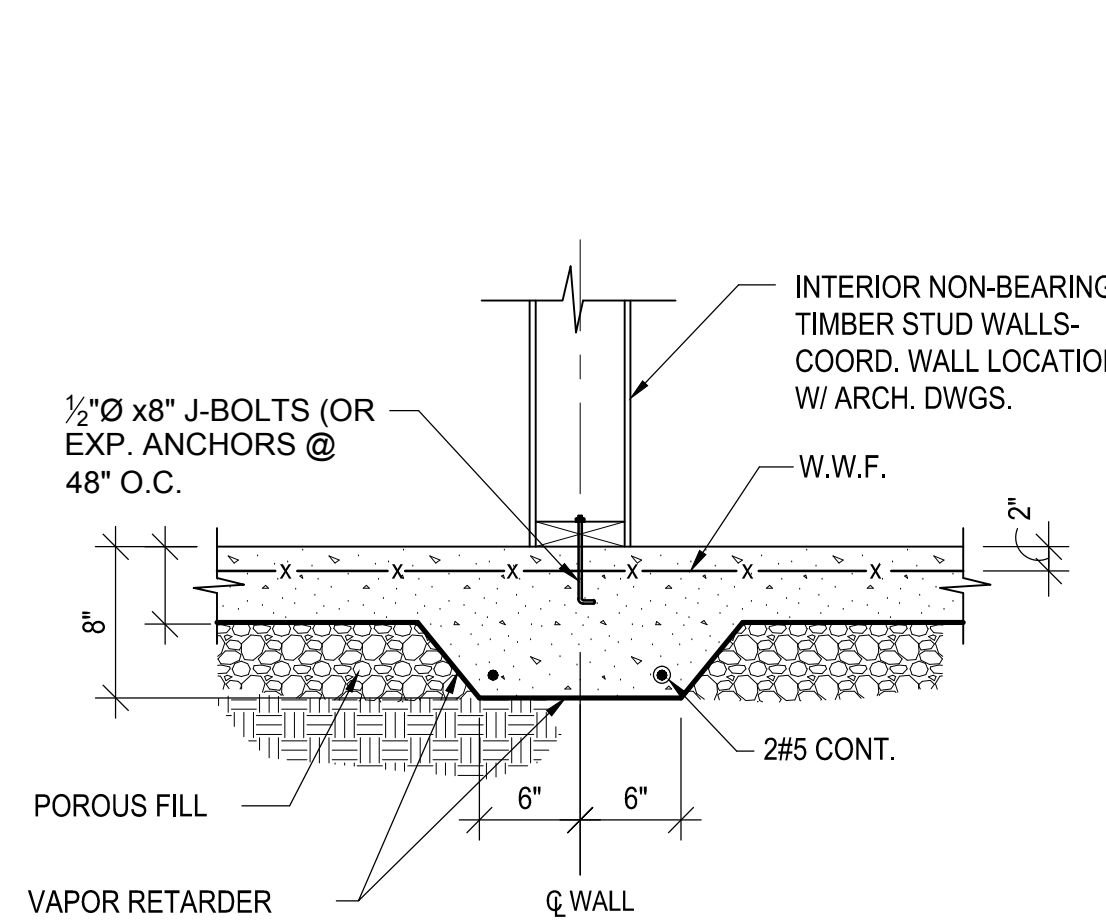
**6**  
S2-1  
**TYPICAL TURN DOWN SLAB**  
NOT TO SCALE



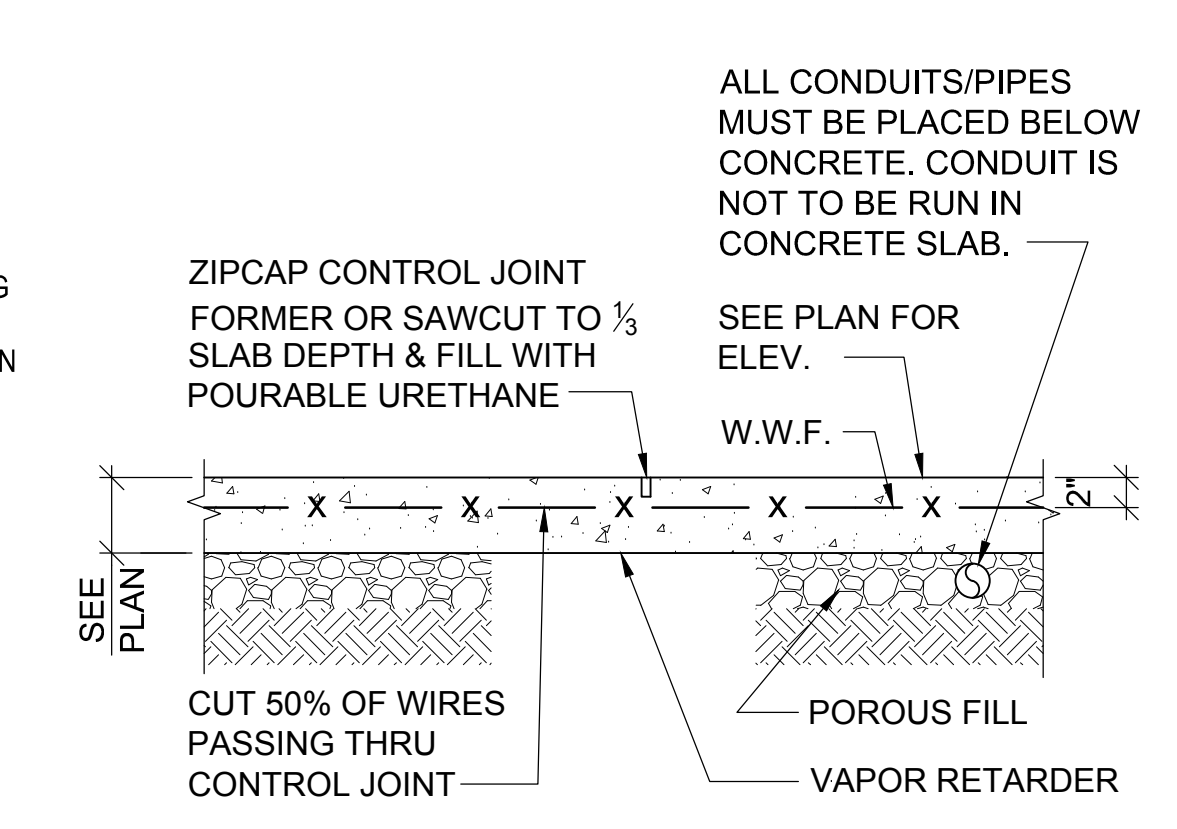
**7**  
S2-1  
**TYPICAL GARAGE SLAB AT DOORWAY**  
NOT TO SCALE



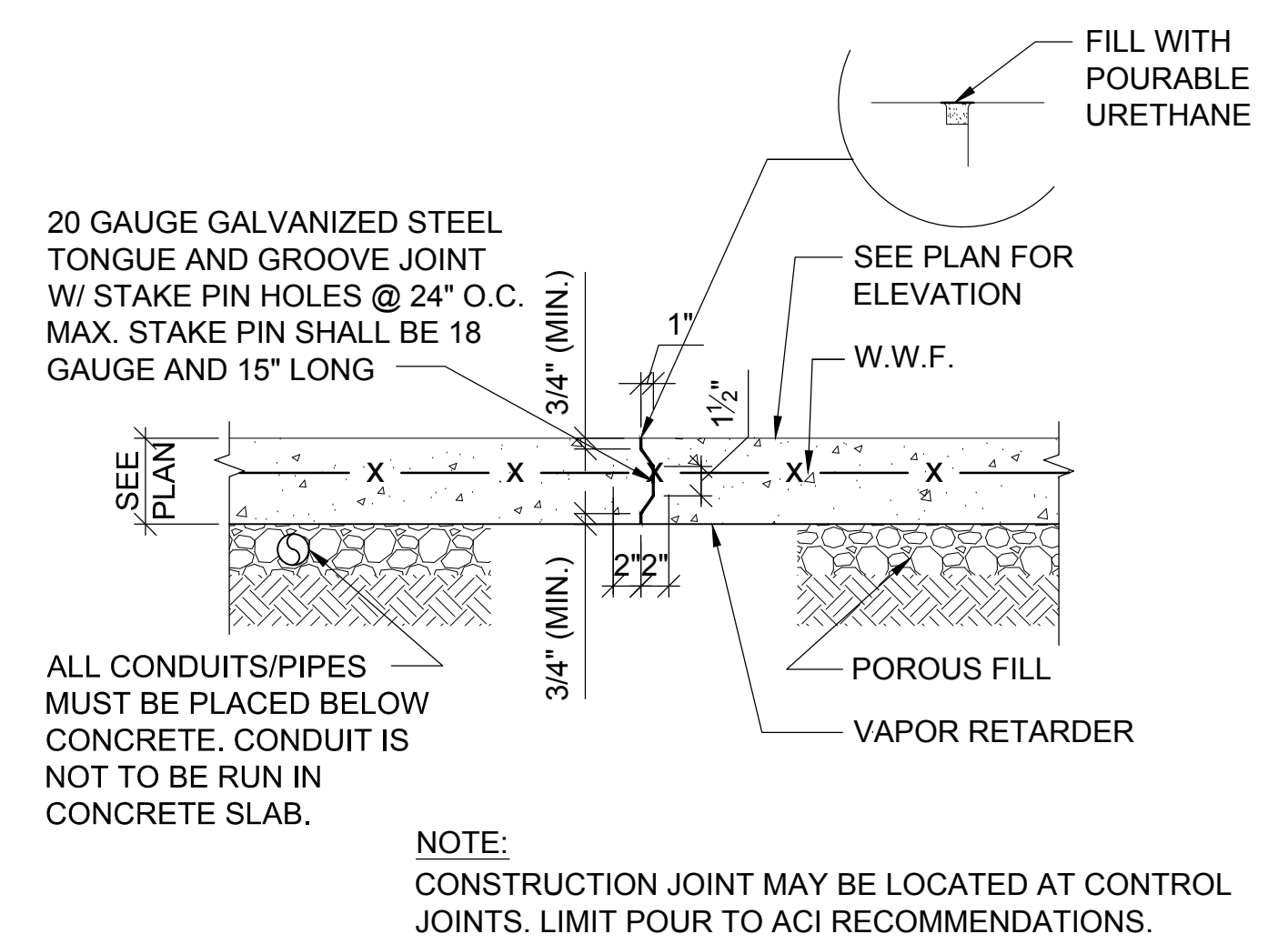
**8**  
S2-1  
**TYPICAL GARAGE WALL STUD ANCHOR DETAIL**  
NOT TO SCALE



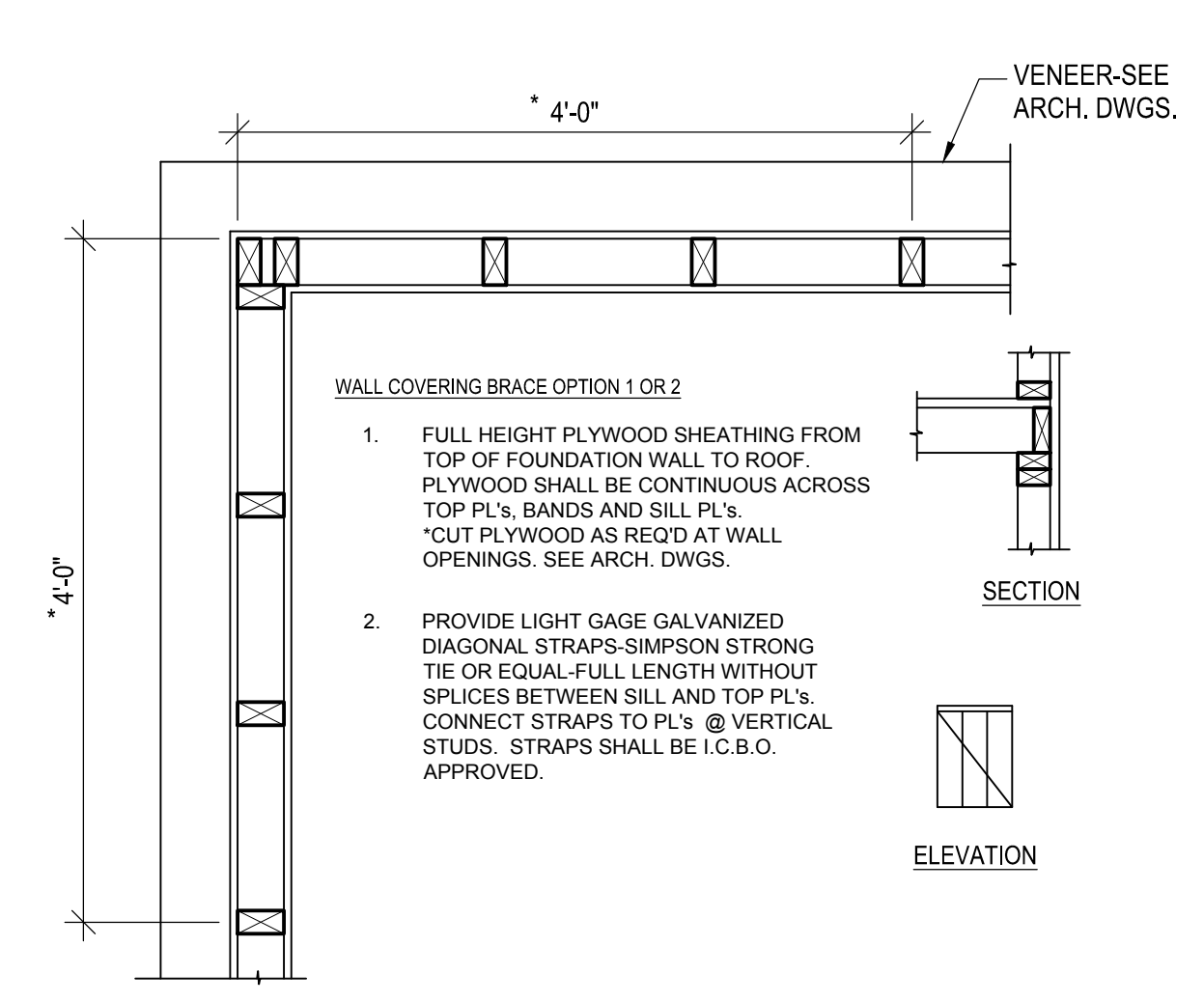
**9**  
S2-1  
**TYPICAL NON-BEARING TIMBER WALL ANCHOR DETAIL**  
NOT TO SCALE



**10**  
S2-1  
**TYPICAL SLAB ON GRADE CONTROL JOINT DETAIL**  
NOT TO SCALE

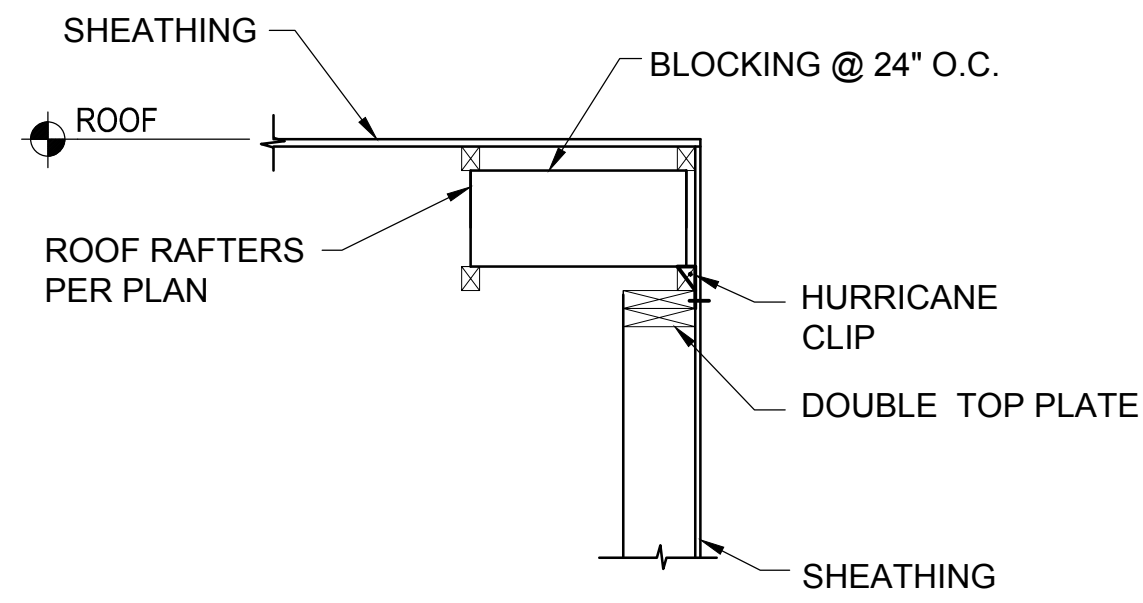


**11**  
S2-1  
**TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL**  
NOT TO SCALE

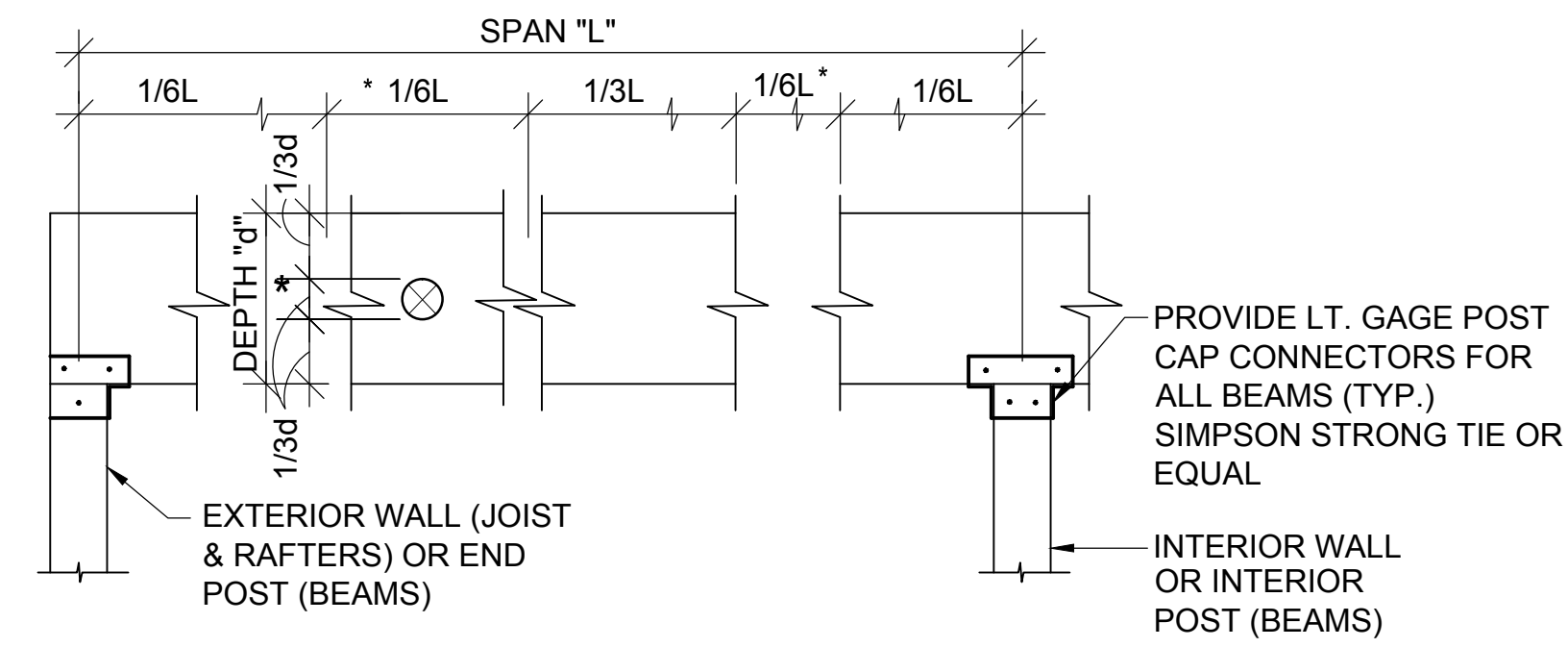


**12**  
S2-1  
**TYPICAL STUD WALL CORNER DETAIL**  
NOT TO SCALE

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REV	DESCRIPTION
04/08/14	PRICING

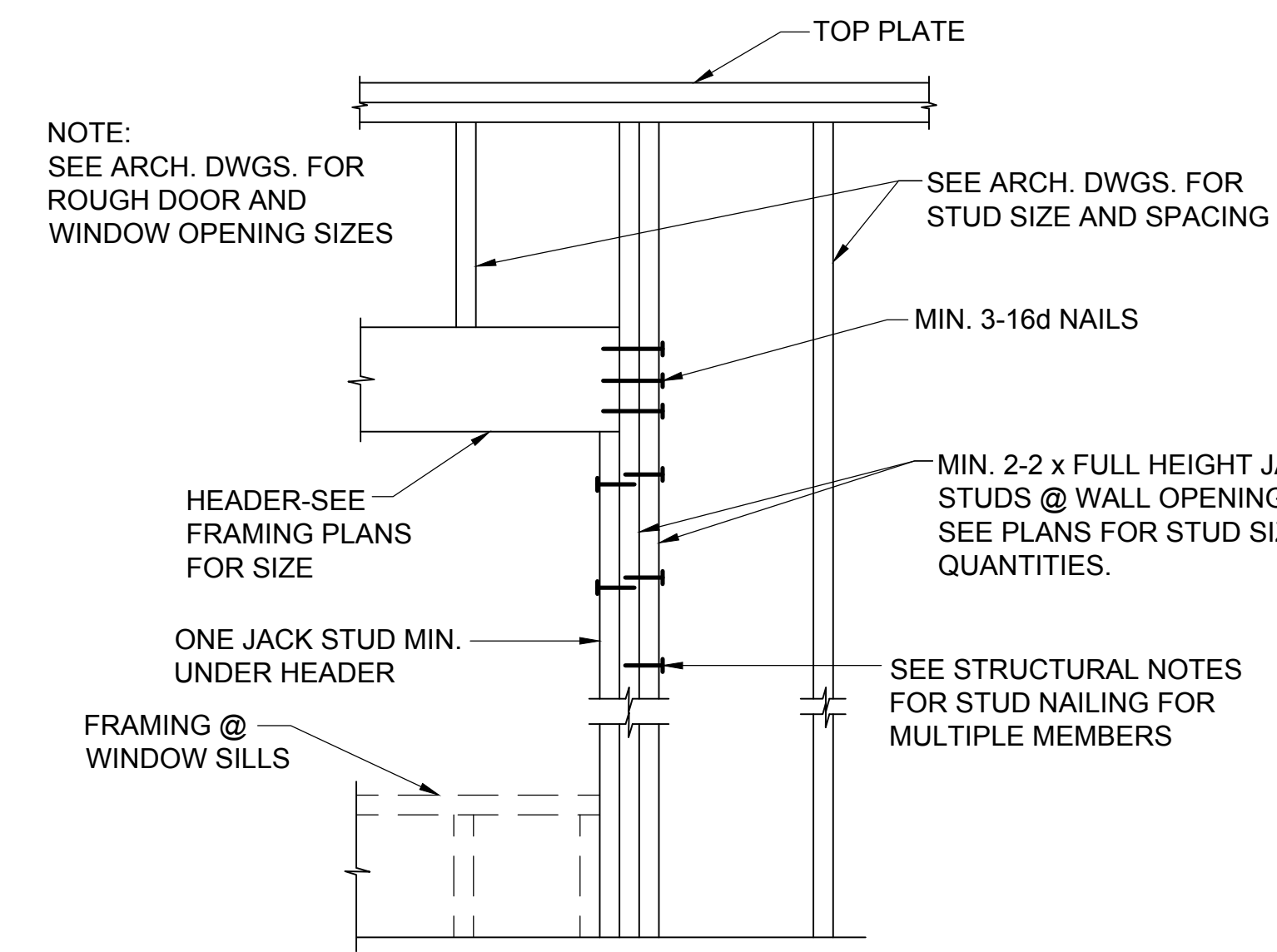


**1**  
S2-2  
TYPICAL END WALL SECTION  
NOT TO SCALE

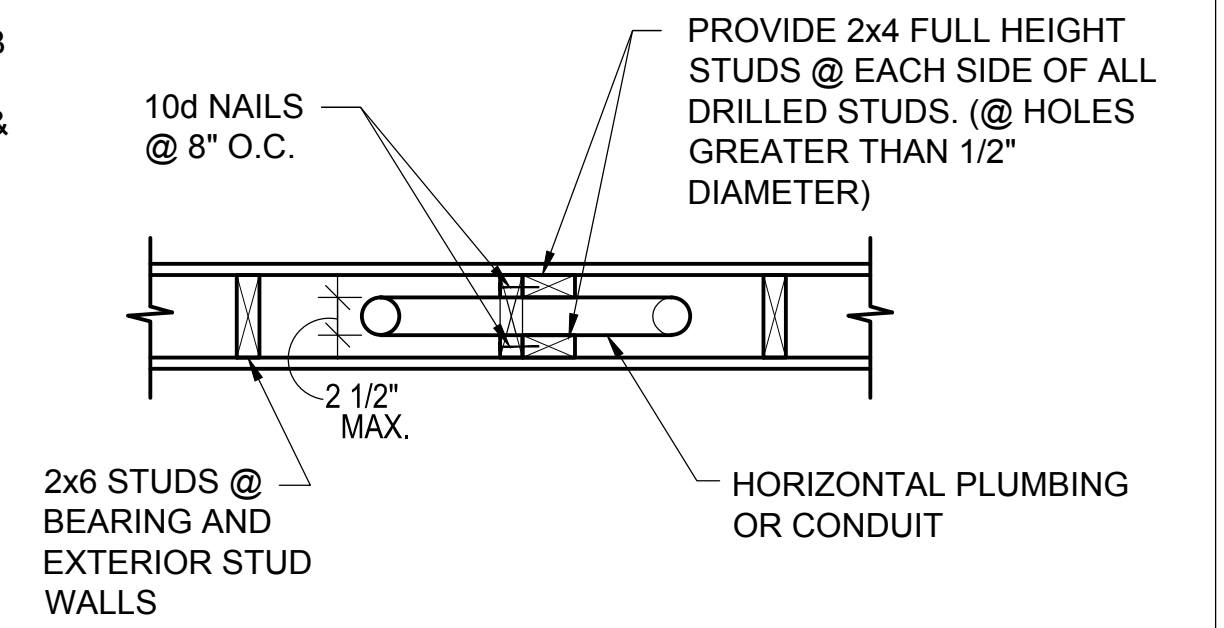


- NOTE:
1. OPENINGS ARE PERMITTED IN SAWN LUMBER JOISTS, RAFTERS AND BEAMS ONLY IN AREAS NOTED WITH "".
  2. ALL HOLES AND OPENINGS IN PRE-ENGINEERED TRUSSES AND LAMINATED BEAMS (TJI, ASI, MICROLAM, PARALLAM, GLULAM) MUST BE APPROVED BY THE MFR.

**2**  
S2-2  
TYPICAL JOIST, RAFTER & BEAM OPENING DETAIL/  
BEAM TO POST CONNECTION  
NOT TO SCALE

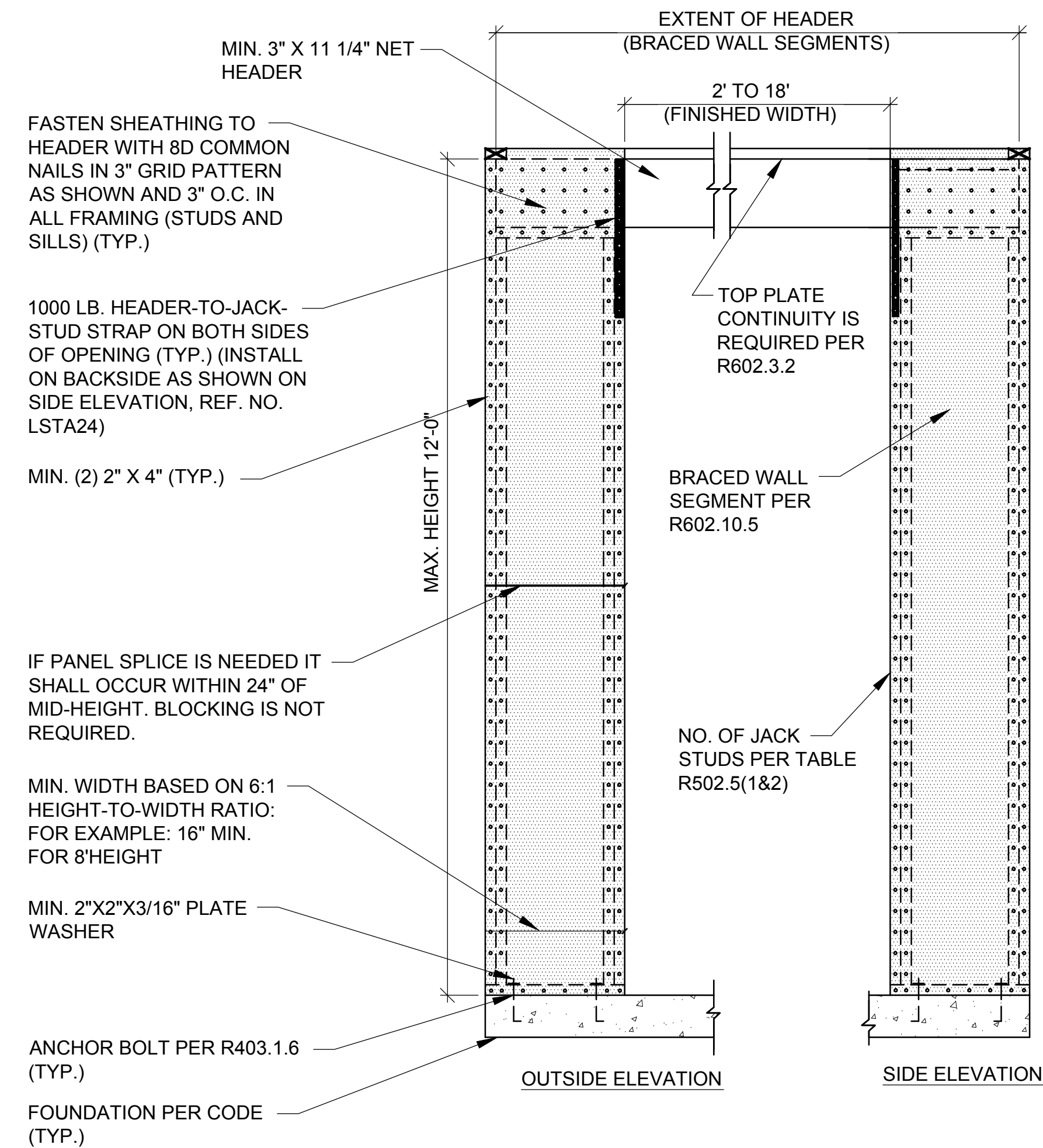


**3**  
S2-2  
TYPICAL HEADER BEARING DETAIL  
NOT TO SCALE

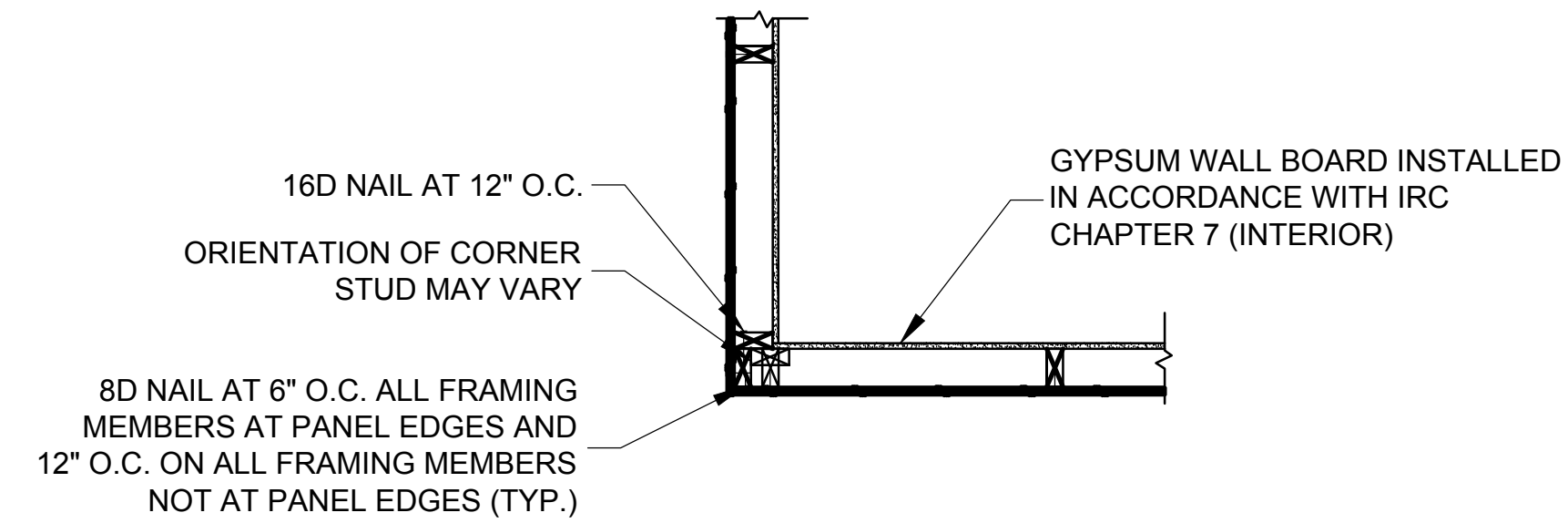


**4**  
S2-2  
TYPICAL STUD WALL REINFORCING DETAIL  
NOT TO SCALE

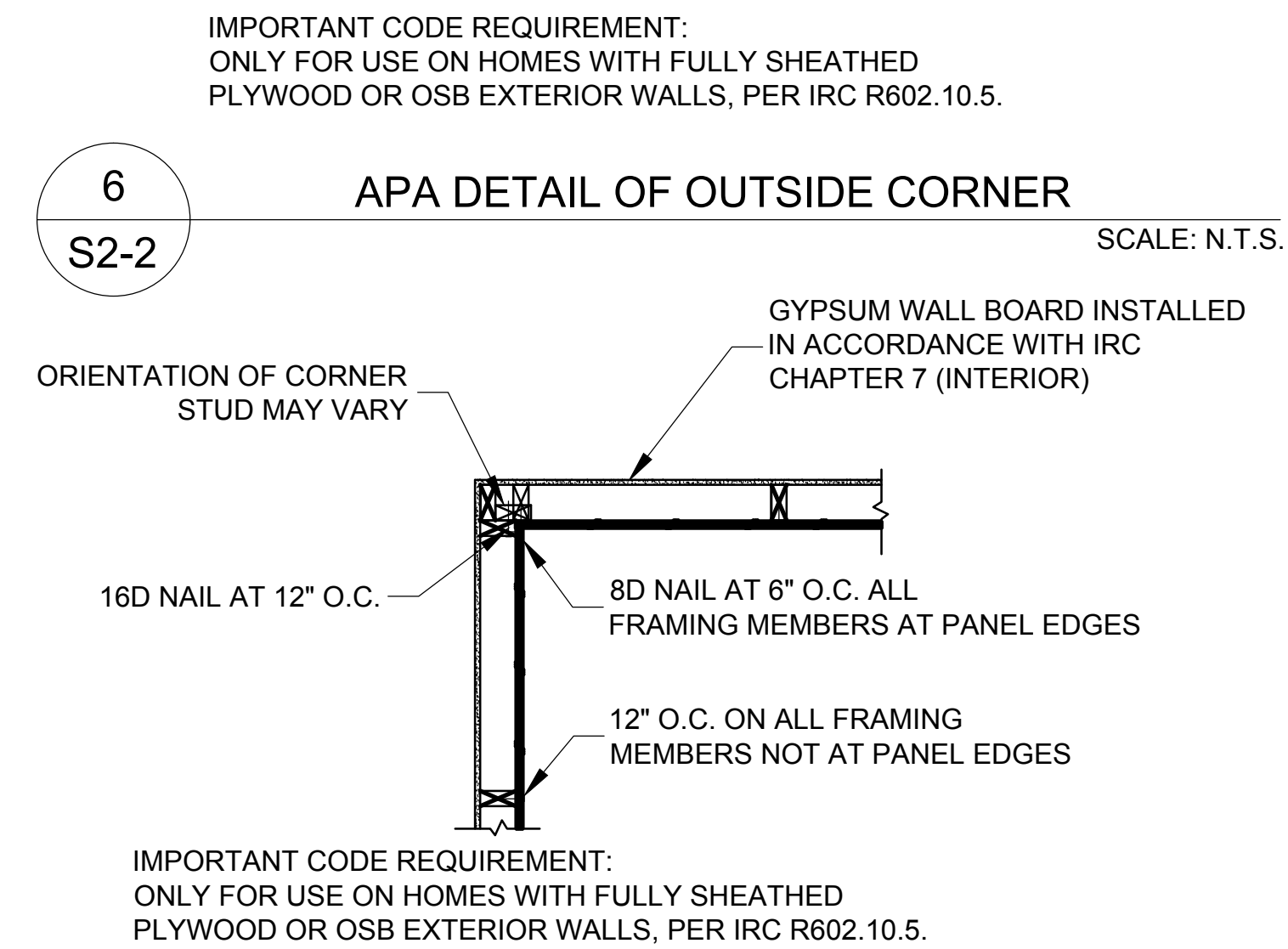
IMPORTANT CODE REQUIREMENT:  
ONLY FOR USE ON HOMES WITH FULLY SHEATHED PLYWOOD OR OSB EXTERIOR WALLS, PER IRC R602.10.5.



**5**  
S2-2  
APA DETAIL OF NARROW WALL BRACING METHOD WITHOUT HOLD-DOWNS  
SCALE: N.T.S.



**6**  
S2-2  
APA DETAIL OF OUTSIDE CORNER  
SCALE: N.T.S.



**7**  
S2-2  
APA DETAIL OF INSIDE CORNER  
SCALE: N.T.S.

IMPORTANT CODE REQUIREMENT:  
ONLY FOR USE ON HOMES WITH FULLY SHEATHED PLYWOOD OR OSB EXTERIOR WALLS, PER IRC R602.10.5.

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ONLY FOR USE ON HOMES WITH FULLY SHEATHED PLYWOOD OR OSB EXTERIOR WALLS, PER IRC R602.10.5.

SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BRICK MASONRY (IN PLAN OR SECTION)		STEEL (IN SECTION)
	CONCRETE MASONRY (IN PLAN OR SECTION)		POROUS FILL
	CONCRETE (IN SECTION)		EARTH OR COMPACTED FILL
			INSULATION/FORM
F	FABRICATOR	V	VERTICAL
FAB	FOUNDATION	VSC	VERTICAL SLIP CLIP
FDN/FOUND	FINISHED	VST	VERTICAL SLIP TRACK
FIN	FLOOR	V.I.F.	VERIFY IN FIELD
FLR	FOOTING		
FTG		W	WITH
		W	WIND MOMENT CONNECTION
G	GAGE	WWF	WELDED WIRE FABRIC
GA	GALVANIZED		
GALV		X	BY
H	HORIZONTAL	x	
HORIZ			
I	INSIDE FACE		
IF			
J	JOIST BEARING ELEVATION		
J.B.E.	JOINT		
JT			

ABBREVIATIONS			
&	AND	L	LONG LEG HORIZONTAL
@	AT	LLH	LONG LEG VERTICAL
Ø	DIAMETER	LLV	LONG LEG VERTICAL
±	PLUS OR MINUS	LT	LIGHT
#	NUMBER/POUNDS	M	MAXIMUM
A	ANCHOR BOLT	MAX	MAXIMUM CONNECTION
AB	ARCHITECTURAL	MEC	MECHANICAL
ARCH	ARCHITECTURAL	MFR	MANUFACTURER
ACI	AMERICAN CONCRETE INSTITUTE	MIN	MINIMUM
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MTL	METAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	N	NATIONAL
ASIS	AMERICAN IRON & STEEL INSTITUTE	NCON	NATIONAL CONCRETE & MASONRY ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	O	ON CENTER
AWS	AMERICAN WELDING SOCIETY	O.C.	ON CENTER
B	BOTTOM EACH WAY	OF	OF
BEW	BOTTOM EACH WAY	OPP	OPPOSITE
BM	BEAM	OSHA	OCCUPATIONAL SAFETY HEALTH ADMINISTRATION
BOT	BOTTOM	P	POWDER ACTUATED FASTENER
B-P	BASE PLATE/BEARING PLATE	P	PLATE
BOS	BOTTOM OF STEEL	PF	PLYWOOD
C	CONTROL JOINT	PLUMB	PLYWOOD
CJ	CONTROL JOINT	P/C	PRECAST
-C	CENTER LINE	PSF	POUNDS PER SQUARE FOOT
CFS	COLD FORM STEEL	PSI	POUNDS PER SQUARE INCH
CLR	CLEAR	R	REINFORCED/REINFORCING
COL	COLUMN	REQ'D	REQUIRED
CONC	CONCRETE	RTU	ROOF TOP UNIT
CONN	CONNECTION	S	SCHEDULE
CONSTR	CONSTRUCTION	SCHED	SCHEDULE
CONT	CONTINUOUS	SIM	SIMILAR
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	SJI	STEEL JOIST INSTITUTE
D	DIAMETER	STD	STANDARD
DIA	DIAMETER	T	TOP OF
DWG/DWGS	DRAWINGS	T.O.	TOP OF
E	EACH FACE	T.O.S.	TOP OF SLAB
EF	EXPANSION JOINT	T.O. SLAB EL.	TOP OF SLAB ELEVATION
EJ	ELECTRICAL	T.O.W.	TOP OF WALL
ELEC	ELECTRICAL	TS	TUBE STEEL
ELEV. EL.	ELEVATION	TYP	TYPICAL
EOD	EDGE OF DECK	U	UNLESS NOTED OTHERWISE
EOJ	EDGE OF JOIST	U.N.O.	UNLESS NOTED OTHERWISE
EQ. =	EQUAL	V	VERTICAL
ETC.	ETCETERA	VSC	VERTICAL SLIP CLIP
EW	EACH WAY	VST	VERTICAL SLIP TRACK
EXIST	EXISTING	V.I.F.	VERIFY IN FIELD
EXP	EXPANSION	W	WITH
EXP JT	EXPANSION JOINT	W	WIND MOMENT CONNECTION
EXT	EXTERNAL	WWF	WELDED WIRE FABRIC

ISSUE	
REV	DESCRIPTION
04/08/14	PROJING



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 Patrick East Business Center  
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 Frederick, Maryland  
 301-662-4408  
 Fax: 301-662-7484  
 ADTEK PROJECT NUMBER: 1116.0005

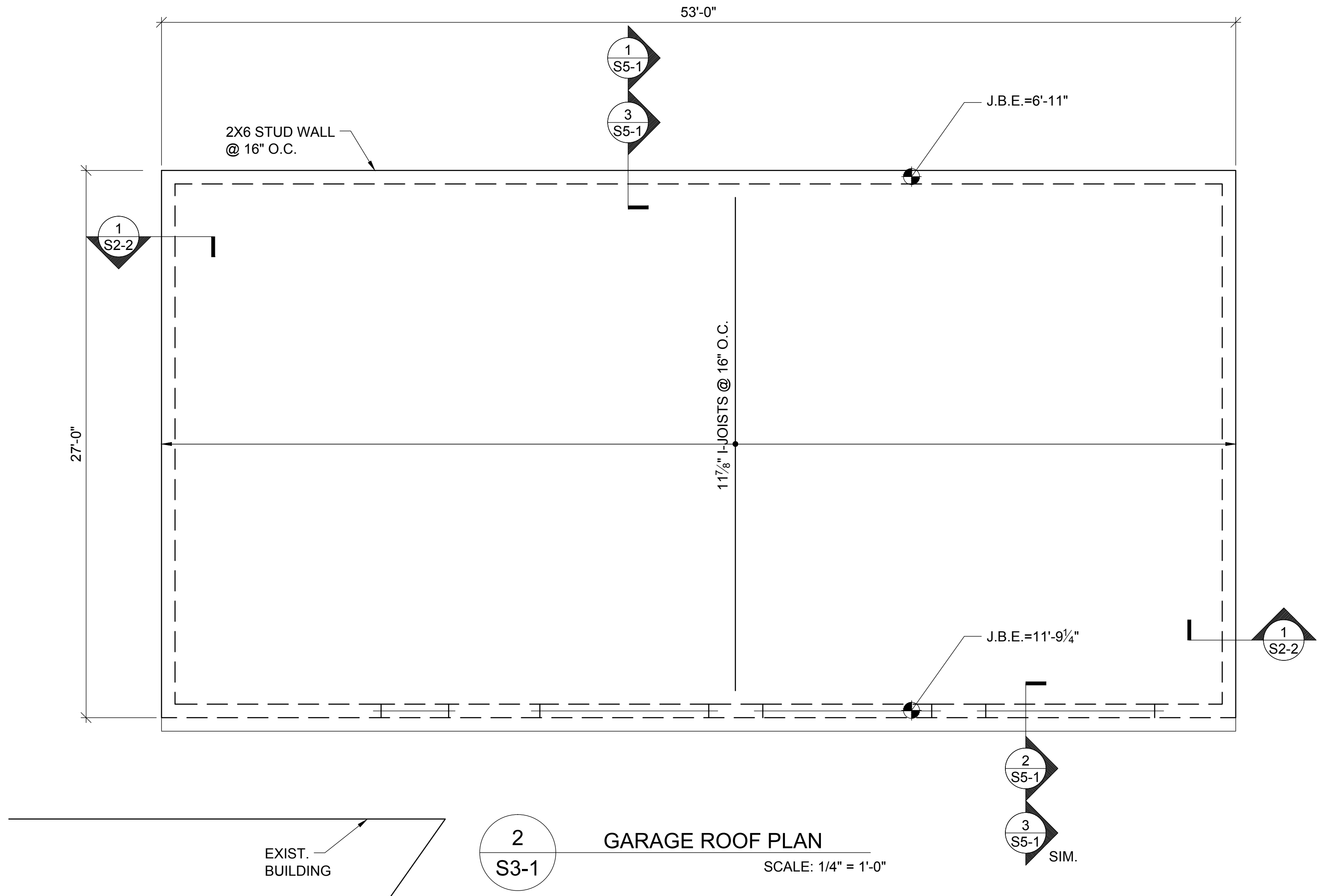
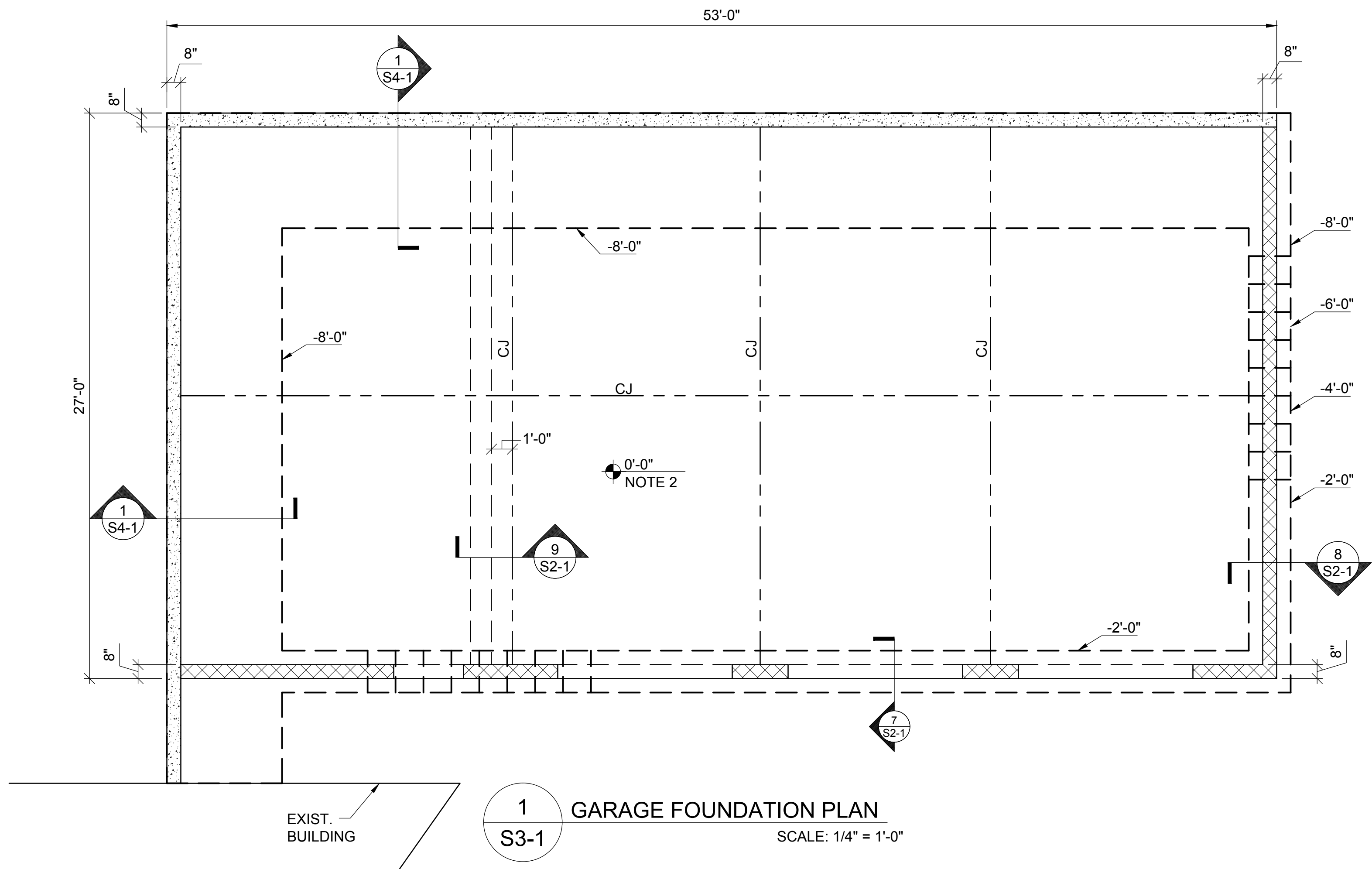
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**FOUNDATION PLAN NOTES**

- SEE SHEETS S1-1 THRU S2-2 FOR STRUCTURAL NOTES AND TYPICAL DETAILS. THE TYPICAL DETAILS ON SHEETS S2-1 THRU S2-2 APPLY WHEREVER THE CONDITION EXISTS UNLESS DETAILED OTHERWISE.
- PROVIDE A 5" CONCRETE SLAB ON GRADE WITH WWF PER THE STRUCTURAL NOTES ON S1-1. SEE THE PLAN FOR THE TOP OF SLAB ELEVATION. THE TOP OF SLAB ELEVATION IS INDICATED ON THE PLAN THUS: (EL. = X'-X").
- C.J. INDICATES A CONTROL JOINT IN THE GRADE SLAB. SEE DETAILS 10/S2-1 AND 11/S2-1.
- SEE THE PLAN FOR TOP OF WALL FOOTING AND COLUMN FOOTING ELEVATIONS. TOP OF INTERIOR COLUMN FOOTINGS SHALL BE 8" BELOW FINISHED FLOOR ELEVATION UNLESS NOTED OTHERWISE.
- BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISHED EXTERIOR GRADE ELEVATIONS UNLESS NOTED OTHERWISE. COORDINATE ELEVATIONS WITH THE APPROVED SITE PLAN. THE TOP OF FOOTING ELEVATIONS ARE INDICATED ON PLAN THUS: (±X'-X") REFERENCED FROM ELEVATION 0'-0". USE VALUE SHOWN OR 2'-6" TO BOTTOM OF FOOTING FROM EXTERIOR GRADE, WHICHEVER IS DEEPER. FOOTING ELEVATIONS ARE FOR BIDDING PURPOSES ONLY AND MAY HAVE TO BE ADJUSTED BASED ON FIELD CONDITIONS ENCOUNTERED DURING EXCAVATION.
- THE TOP OF PIER ELEVATION SHALL BE A MINIMUM OF 8" BELOW THE TOP OF FLOOR SLAB OR THE TOP OF EXTERIOR GRADE ELEVATION UNLESS NOTED OTHERWISE. PIERS SHALL NOT PROJECT BEYOND THE OUTSIDE FACE OF THE EXTERIOR WALL.
- SEE THE TYPICAL WALL FOOTING AT UTILITIES DETAILS 4-5 ON SHEET S2-1. STEP ALL WALL FOOTINGS AS INDICATED OR REQUIRED BELOW UNDERGROUND UTILITIES PER DETAILS 1 AND 4/S2-1. THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL UTILITIES WITH THE TOP OF FOOTING ELEVATIONS SHOWN. COORDINATE ALL UTILITY LOCATIONS WITH SITE, PLUMBING, ELECTRICAL, AND MECHANICAL DRAWINGS. THE SYMBOL ----- INDICATES A UTILITY CROSSING A WALL ON THE PLAN. UTILITIES ARE SHOWN ON THIS DRAWING AS AN EFFORT TO AID IN THE COORDINATION OF TRADES. IT IS NOT INTENDED TO BE A COMPLETE REPRESENTATION OF ALL UTILITIES. G.C. TO COORDINATE FOOTING STEPS WITH UTILITY CONTRACTOR AND CONCRETE CONTRACTOR PRIOR TO FOOTING POUR.
- THE SYMBOLS C1, P1, AND F4.0 ON THE FOOTING REFER TO DESIGNATIONS IN THE COLUMN, PIER AND FOOTING SCHEDULES LOCATED ON SHEET S3-2.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. IT IS NOT INTENDED THAT THE STRUCTURAL DRAWINGS BE USED INDEPENDENTLY OF THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCIES, INCLUDING DIMENSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK.
- EXISTING CONCRETE SLAB ON GRADE.
- SAW CUT AND REMOVE EXISTING CONCRETE SLAB ON GRADE AS REQUIRED FOR NEW WORK. PATCH SLAB ON GRADE AS REQUIRED TO MATCH EXISTING.

**ROOF FRAMING NOTES**

- SEE SHEETS S1-1 THRU S2-2 FOR STRUCTURAL NOTES AND TYPICAL DETAILS. THE TYPICAL DETAILS ON SHEETS S2-1 THRU S2-2 APPLY WHEREVER THE CONDITION EXISTS UNLESS DETAILED OTHERWISE.
- SEE THE COLUMN SCHEDULE ON SHEET S3-2 FOR COLUMN SIZES.
- JOIST BEARING ELEVATIONS (J.B.E = X'-X") ARE INDICATED AS ELEVATIONS ABOVE THE FINISHED FLOOR REFERENCE ELEVATION OF 0'-0". JOIST BEARING ELEVATIONS ARE TO THE TOP PLATE.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. IT IS NOT INTENDED THAT THE STRUCTURAL DRAWINGS BE USED INDEPENDENTLY OF THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCIES, INCLUDING DIMENSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK.
- SLOPE ROOF STRUCTURE TO DRAIN, TYP. SEE ARCH. FOR SLOPES.



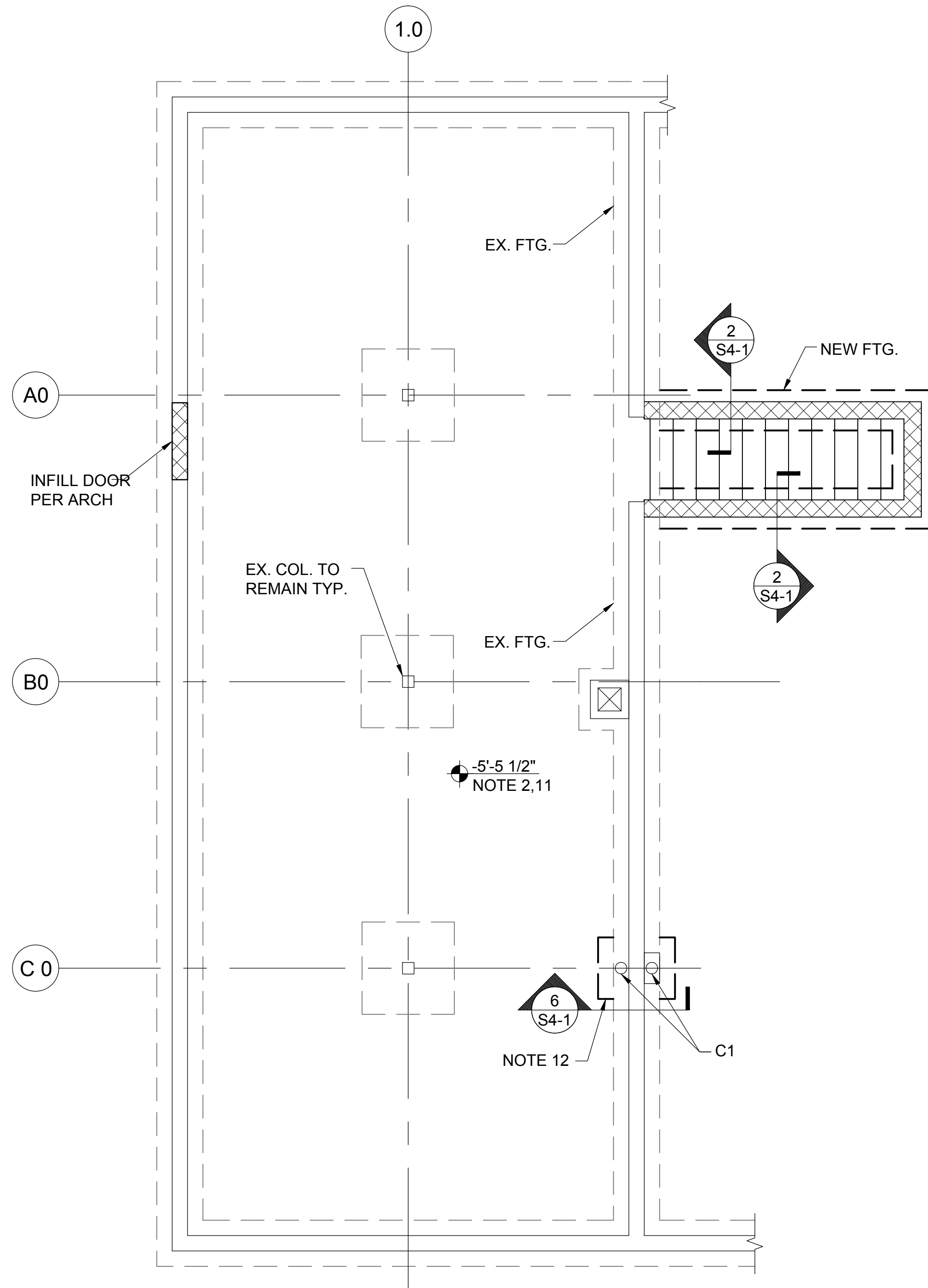
RENOVATIONS TO  
**10 SOUTH BENTZ STREET**  
 FOR CAS ENGINEERING  
 10 SOUTH BENTZ STREET  
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04/06/14	PRICING

PROJECT NO.: 11-13  
 DATE: 03-07-14

TYPICAL FOUNDATION DETAILS

**S3-1**

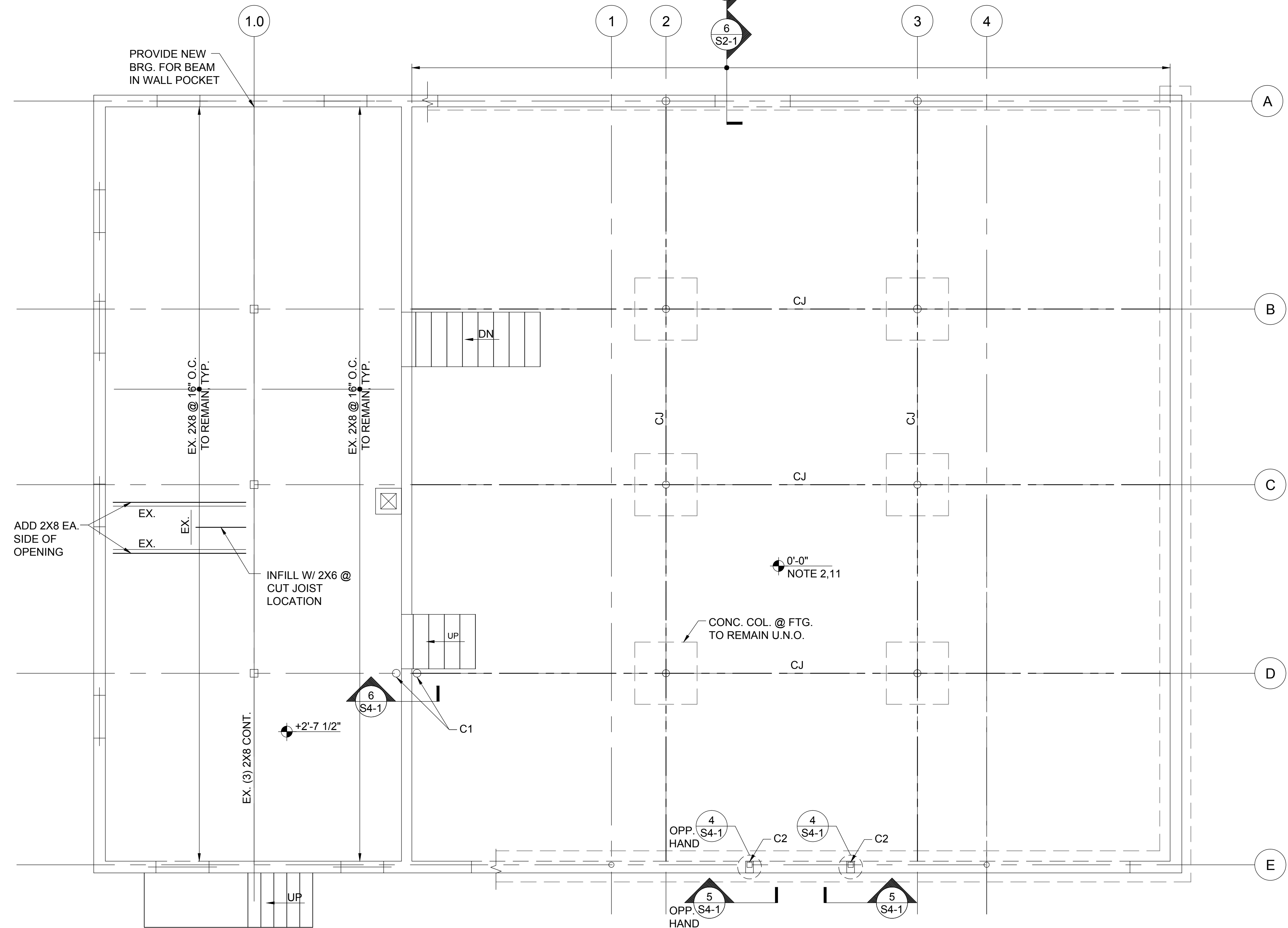


**1**  
S3-2

**BASEMENT FLOOR PLAN**

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

COLUMN SCHEDULE			
MARK	SIZE	BASE PLATE	ANCHOR BOLTS
C1	3"Ø	3/4"x6"x0'-10"	(4) - 3/4"Ø
C2	HSS3 1/2 x 3 1/2 x 1/4"	3/4"x6"x0'-10"	(4) - 3/4"Ø



**2**  
S3-2

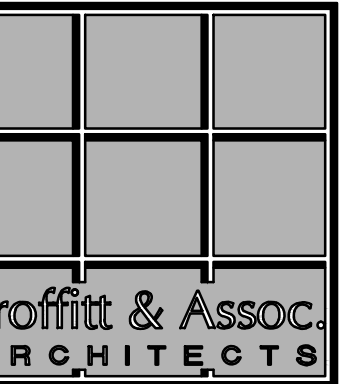
**FIRST FLOOR PLAN**

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

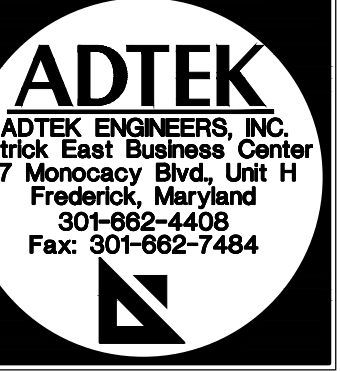
**FOUNDATION PLAN NOTES**

- SEE SHEETS S1-1 THRU S2-2 FOR STRUCTURAL NOTES AND TYPICAL DETAILS. THE TYPICAL DETAILS ON SHEETS S2-1 THRU S2-2 APPLY WHEREVER THE CONDITION EXISTS UNLESS DETAILED OTHERWISE.
- PROVIDE A 5" CONCRETE SLAB ON GRADE WITH WWF PER THE STRUCTURAL NOTES ON S1-1. SEE THE PLAN FOR THE TOP OF SLAB ELEVATION. THE TOP OF SLAB ELEVATION IS INDICATED ON THE PLAN THUS: (EL. = X'-X").
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- SEE THE TYPICAL WALL FOOTING AT UTILITIES DETAILS 4-5 ON SHEET S2-1. STEP ALL WALL FOOTINGS AS INDICATED OR REQUIRED BELOW UNDERGROUND UTILITIES PER DETAILS 1 AND 4/S2-1. THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL UTILITIES WITH THE TOP OF FOOTING ELEVATIONS SHOWN. COORDINATE ALL UTILITY LOCATIONS WITH SITE, PLUMBING, ELECTRICAL, AND MECHANICAL DRAWINGS. THE SYMBOL ----- INDICATES A UTILITY CROSSING A WALL ON THE PLAN. UTILITIES ARE SHOWN ON THIS DRAWING AS AN EFFORT TO AID IN THE COORDINATION OF TRADES. IT IS NOT INTENDED TO BE A COMPLETE REPRESENTATION OF ALL UTILITIES. G.C. TO COORDINATE FOOTING STEPS WITH UTILITY CONTRACTOR AND CONCRETE CONTRACTOR PRIOR TO FOOTING POUR.
- THE SYMBOLS C1, P1, AND F4.0 ON THE FOOTING REFER TO DESIGNATIONS IN THE COLUMN, PIER AND FOOTING SCHEDULES LOCATED ON SHEET S3-2.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. IT IS NOT INTENDED THAT THE STRUCTURAL DRAWINGS BE USED INDEPENDENTLY OF THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCIES, INCLUDING DIMENSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK.
- DEMO EXISTING CONCRETE SLAB ON GRADE AND REPLACE.
- SAW CUT AND REMOVE EXISTING CONCRETE SLAB ON GRADE AS REQUIRED FOR NEW WORK. PATCH SLAB ON GRADE AS REQUIRED TO MATCH EXISTING.



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ADTEK ENGINEERS, INC.  
Patrick East Business Center  
87 Monocacy Blvd., Unit H  
Frederick, Maryland  
301-692-4408  
Fax: 301-662-7484

ADTEK PROJECT NUMBER: 1116.0095

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 16333 - EXPIRATION DATE: 07/08/2015

RENOVATIONS TO  
**10 SOUTH BENTZ STREET**  
FOR CAS ENGINEERING  
10 SOUTH BENTZ STREET  
FREDERICK, MARYLAND 21701

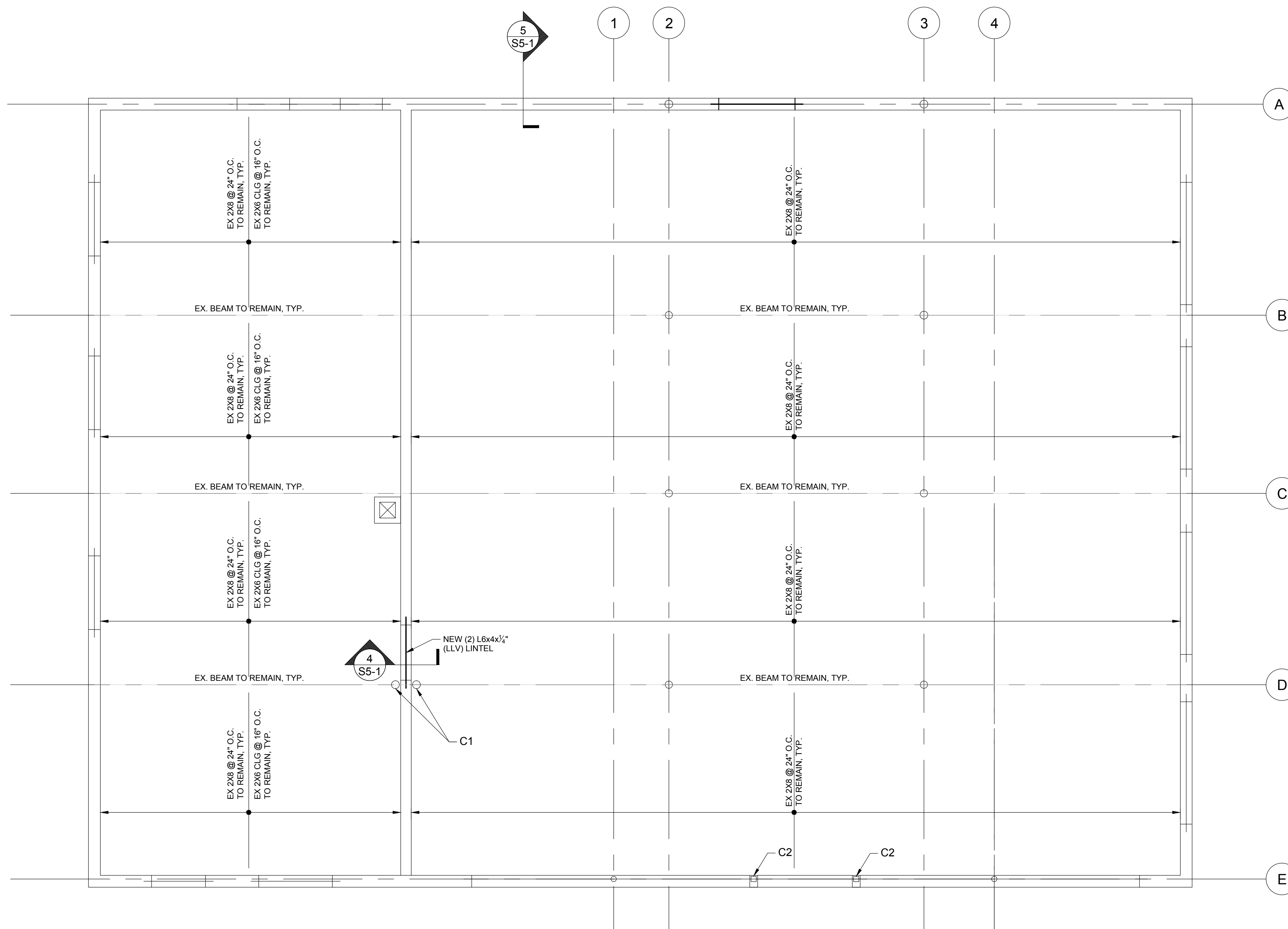
**ISSUE**

REV	DATE	DESCRIPTION
	04/08/14	PRICING

PROJECT NO.: 11-13  
DATE: 03-07-14

BASEMENT AND FIRST FLOOR PLANS

**S3-2**



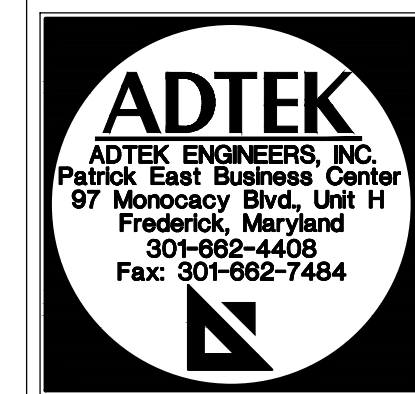
1
S3-3
**ROOF FRAMING PLAN**  
 SCALE: 1/4" = 1'-0"

**ROOF FRAMING NOTES**

1. SEE SHEETS S1-1 THRU S2-2 FOR STRUCTURAL NOTES AND TYPICAL DETAILS. THE TYPICAL DETAILS ON SHEETS S2-1 THRU S2-2 APPLY WHEREVER THE CONDITION EXISTS UNLESS DETAILED OTHERWISE.
2. SEE THE COLUMN SCHEDULE ON SHEET S3-2 FOR COLUMN SIZES.
3. JOIST BEARING ELEVATIONS (J.B.E = X'-X") ARE INDICATED AS ELEVATIONS ABOVE THE FINISHED FLOOR REFERENCE ELEVATION OF 0'-0".
4. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. IT IS NOT INTENDED THAT THE STRUCTURAL DRAWINGS BE USED INDEPENDENTLY OF THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCIES, INCLUDING DIMENSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. SLOPE ROOF STRUCTURE TO DRAIN, TYP. SEE ARCH. FOR SLOPES.



100 NORTH MARKET STREET  
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 (301) 662-8532  
 FAX (301) 662-4192  
 info@proffittandassociates.com



ADTEK ENGINEERS, INC.  
 Patrick East Business Center  
 97 Monocacy Blvd., Unit H  
 Frederick, Maryland  
 301-692-4408  
 Fax: 301-662-7484

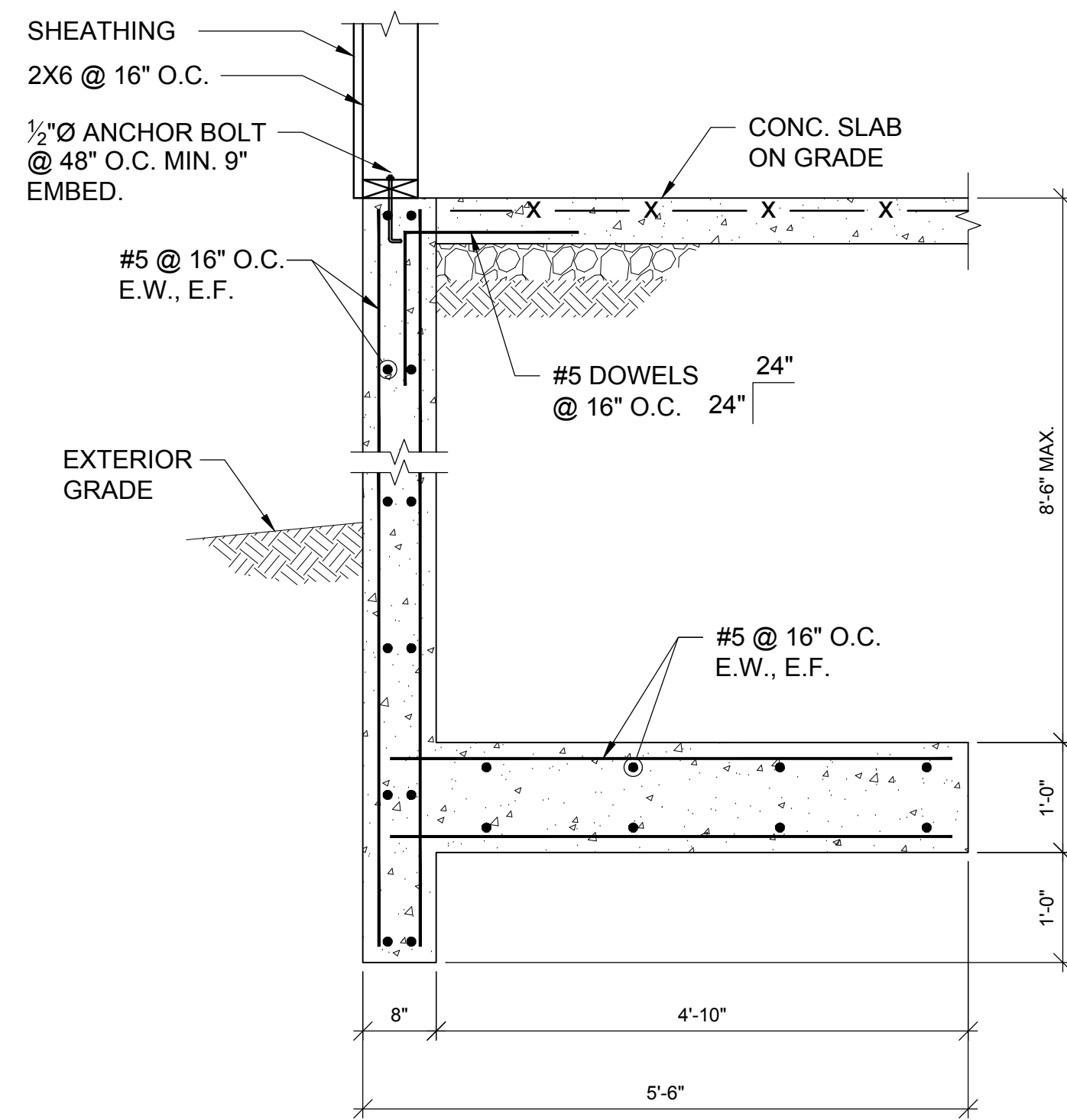
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 10235 EXPIRATION DATE: 07/18/2015

RENOVATIONS TO  
**10 SOUTH BENTZ STREET**  
 FOR CAS ENGINEERING  
 10 SOUTH BENTZ STREET  
 FREDERICK, MARYLAND 21701  
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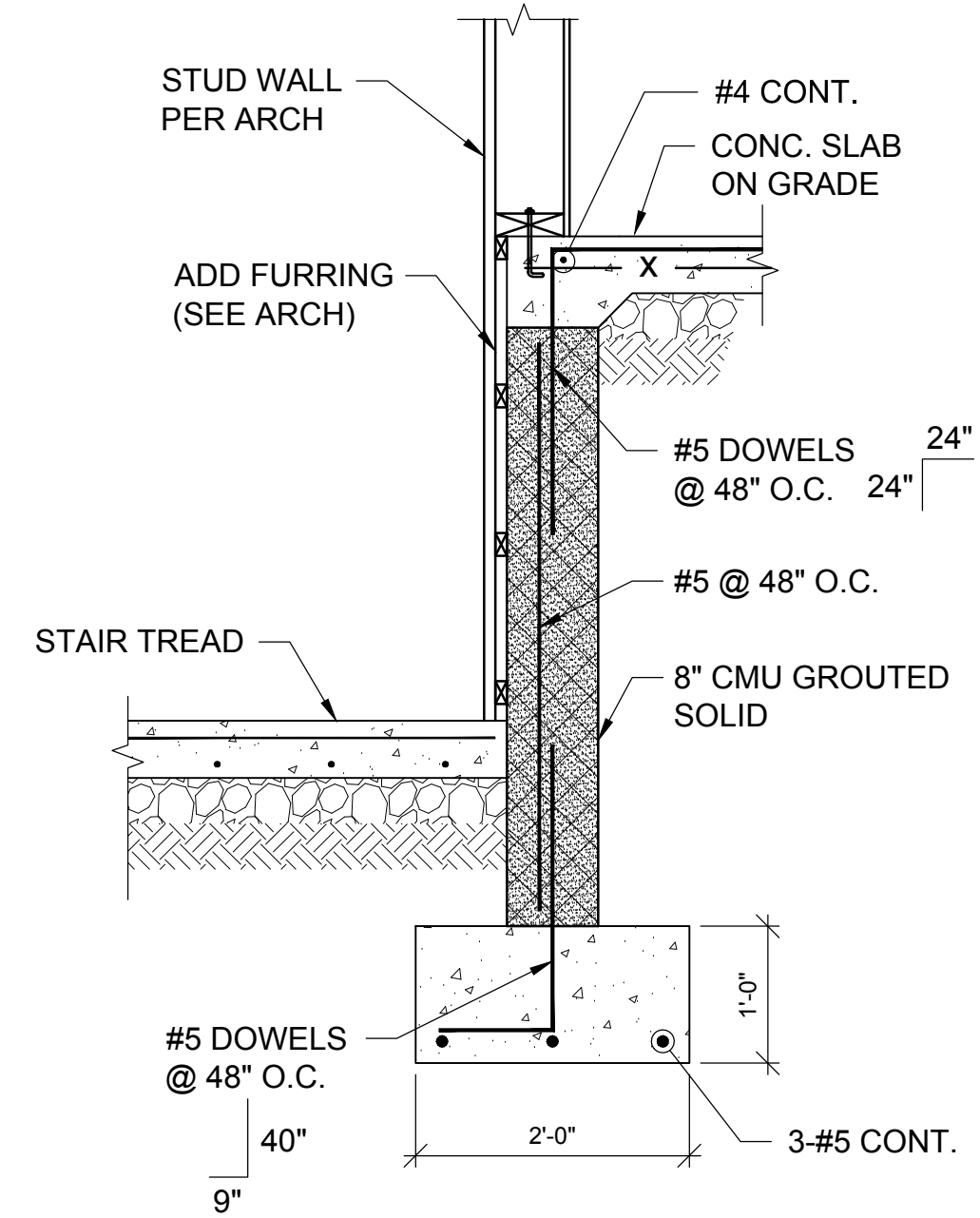
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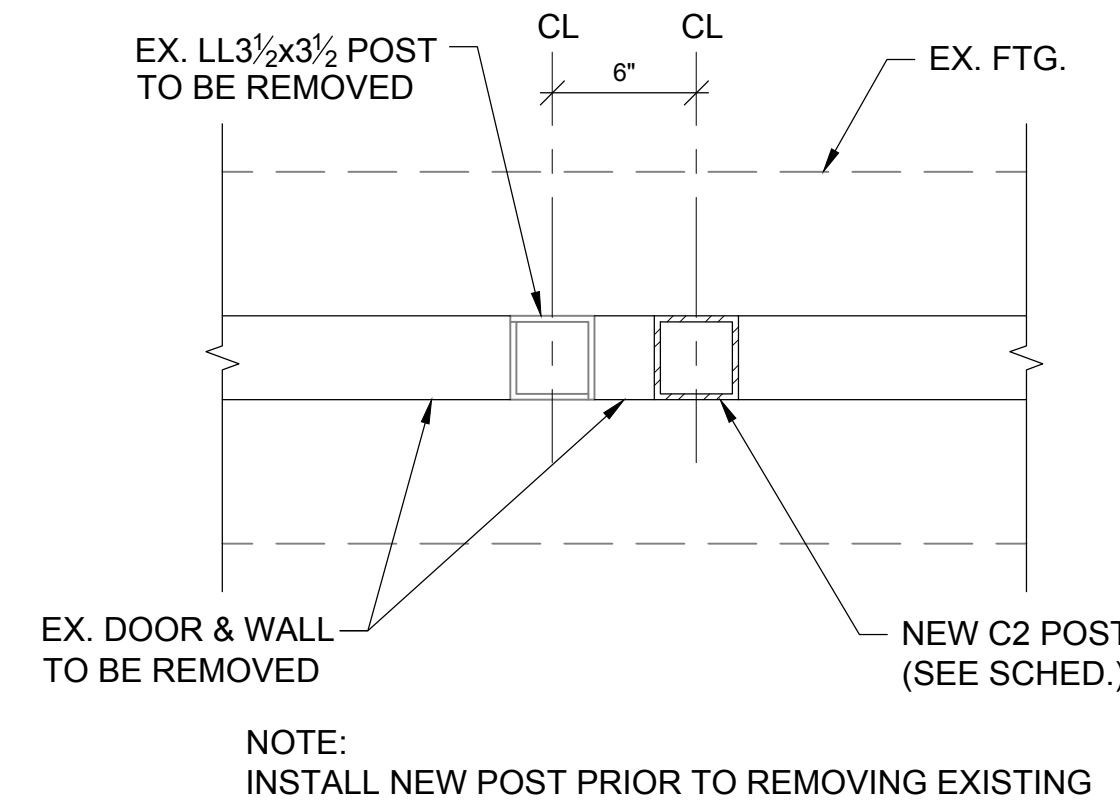
ROOF FRAMING PLAN  
S3-3



1 SECTION  
S4-1 NOT TO SCALE

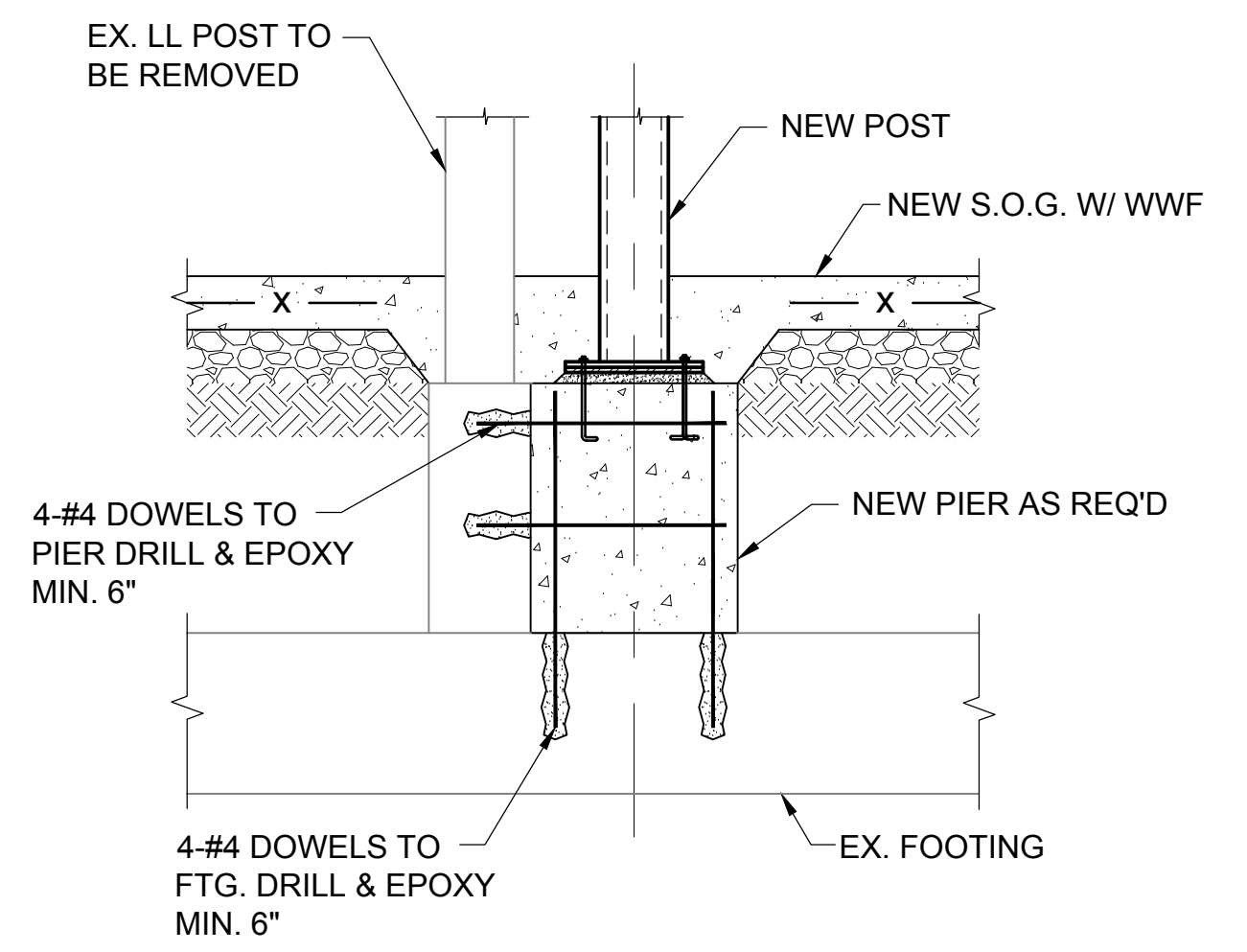


2 STAIR/FOUNDATION WALL DETAIL  
S4-1 NOT TO SCALE

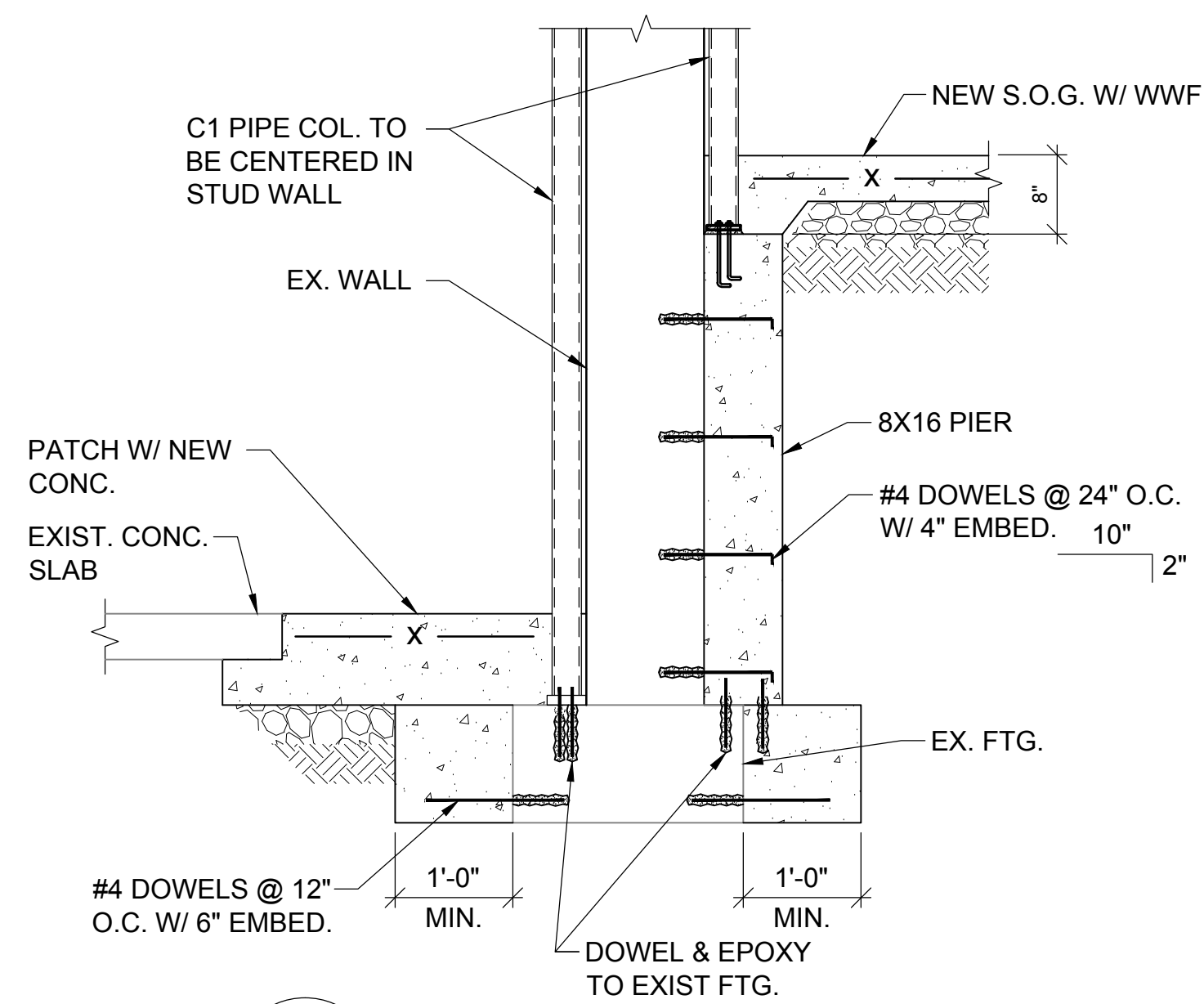


4 DETAIL  
S4-1 NOT TO SCALE

NOTE:  
INSTALL NEW POST PRIOR TO REMOVING EXISTING



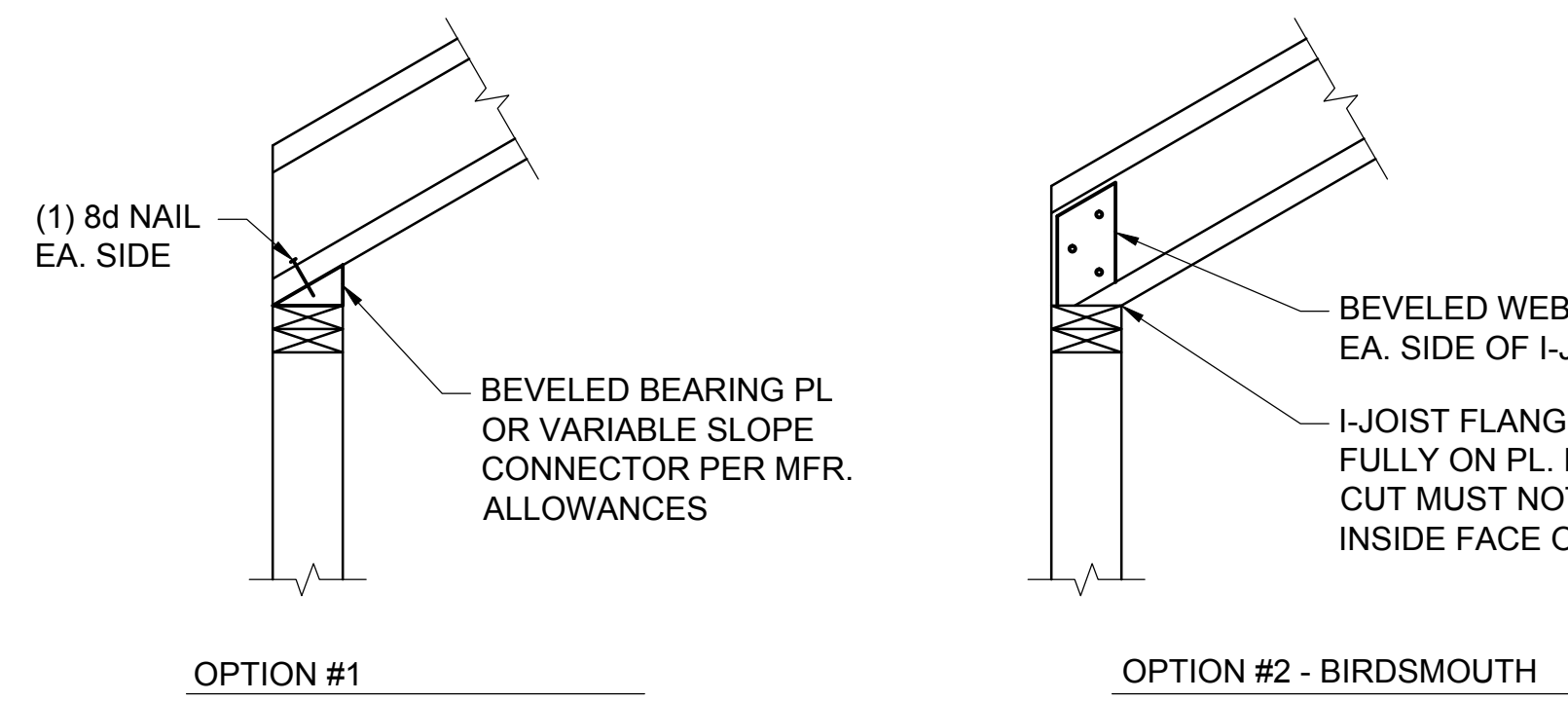
5 SECTION  
S4-1 NOT TO SCALE



6 SECTION  
S4-1 NOT TO SCALE

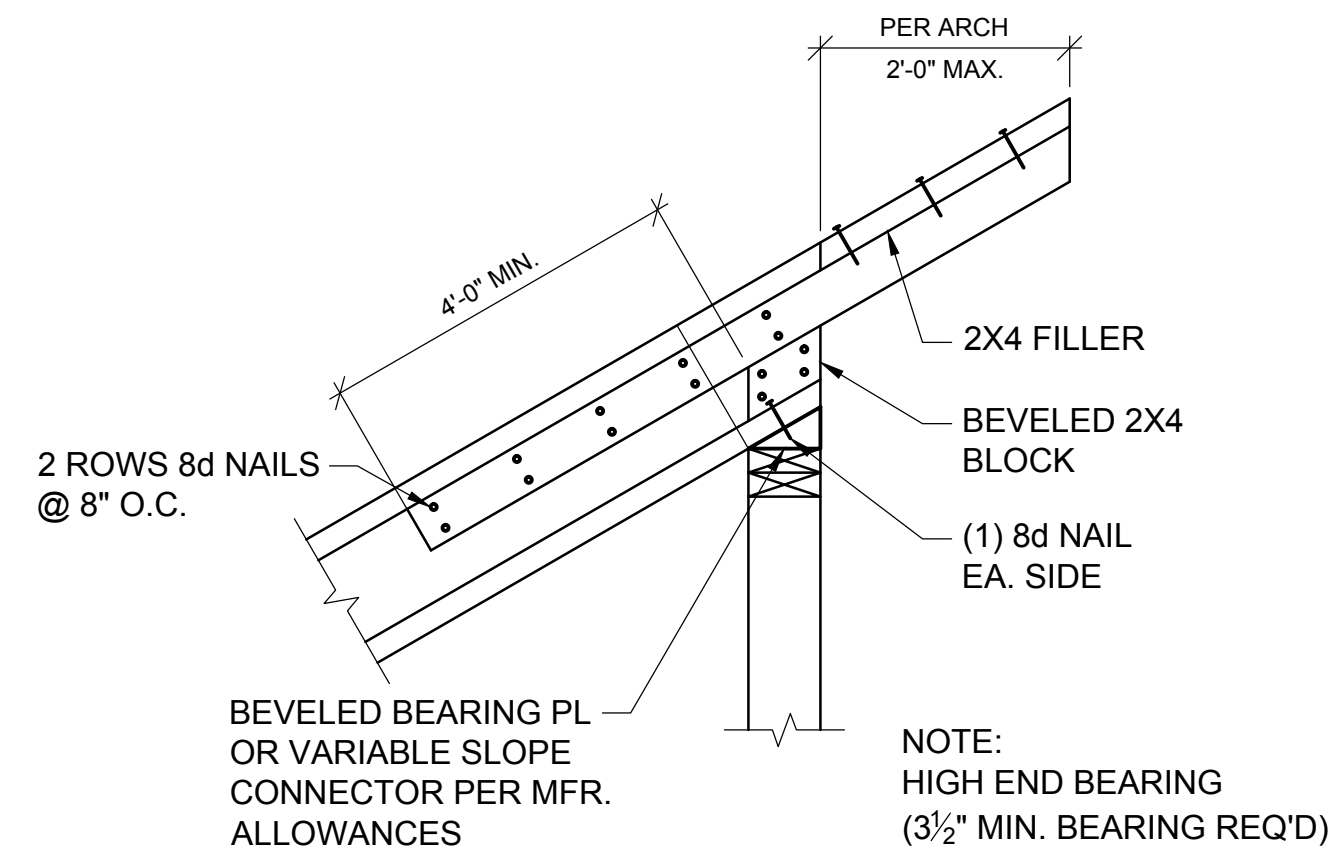
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REV	DATE	DESCRIPTION
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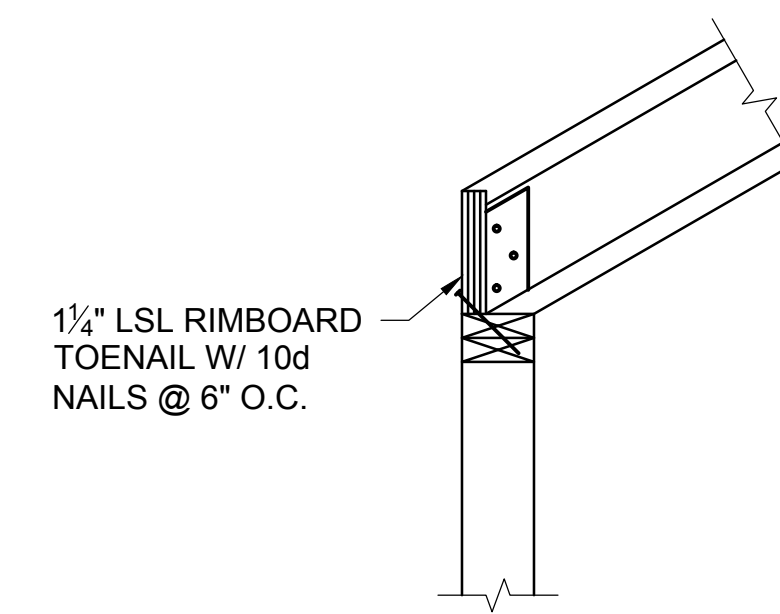


NOTE:  
LOW END BEARING (1 3/4" MIN. BEARING REQ'D)

**1** I-JOIST TO BEARING PLATE DETAIL  
S5-1 NOT TO SCALE

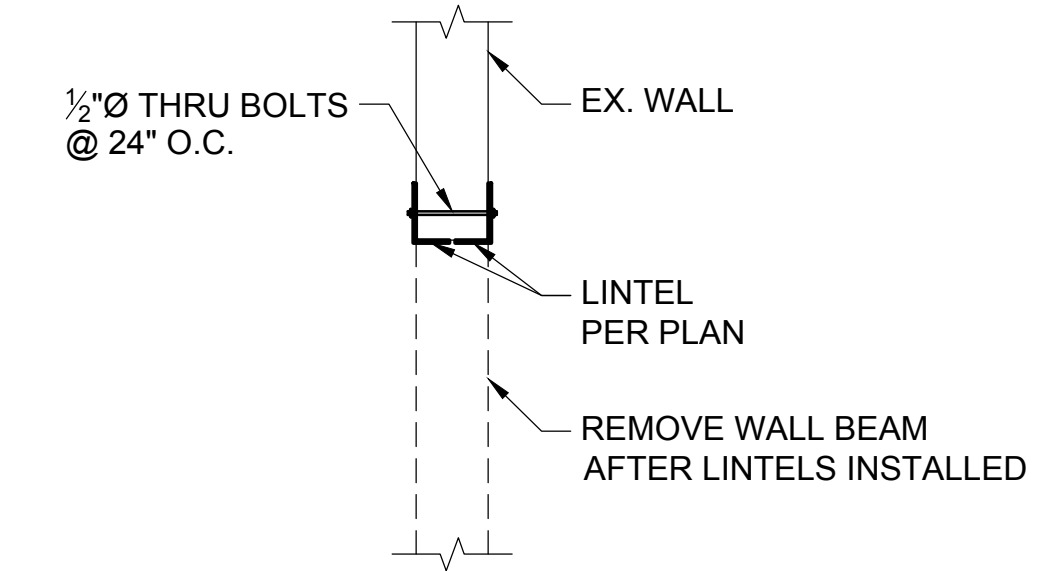


**2** I-JOIST TO BEARING PLATE DETAIL  
S5-1 NOT TO SCALE

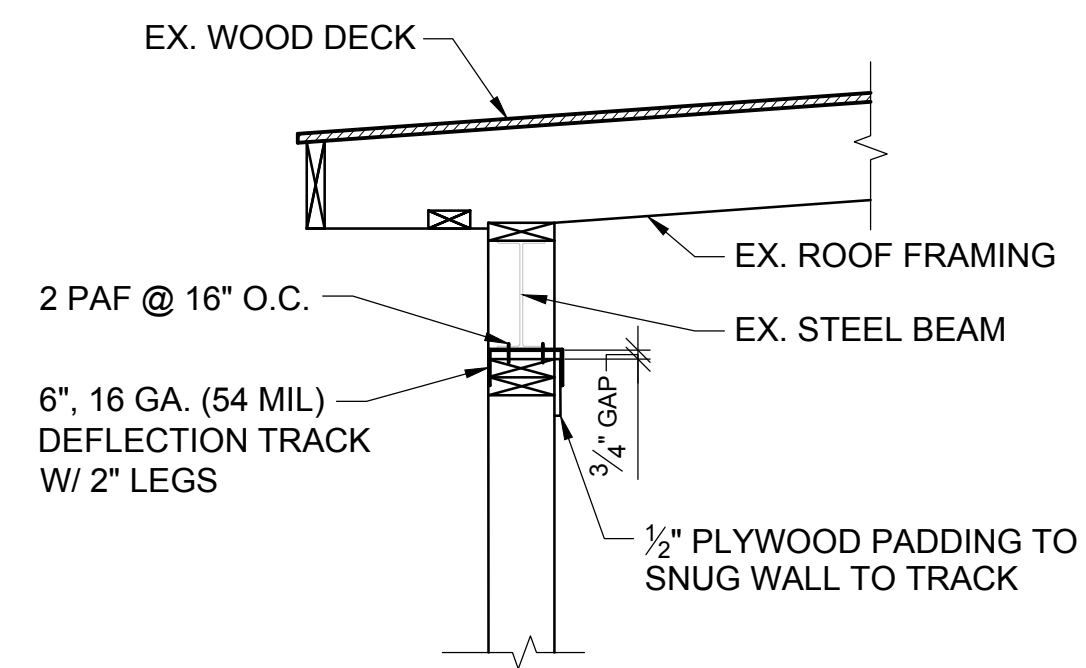


SHEAR TRANSFER NAILING:  
USE CONNECTIONS EQUIVALENT TO SHEATHING NAIL SCHEDULE.

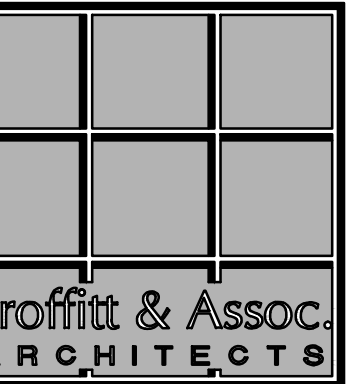
**3** BLOCKING TO BEARING PLATE DETAIL  
S5-1 NOT TO SCALE



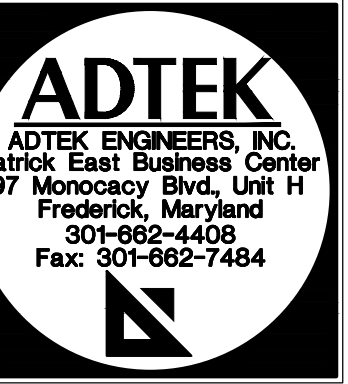
**4** NEW LINTEL  
S5-1 NOT TO SCALE



**5** SECTION  
S5-1 NOT TO SCALE



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ADTEK PROJECT NUMBER: 1118.005

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO.: 7633    EXPIRATION DATE: 07/18/2015

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FRAMING DETAILS  
**S5-1**