

BUILDING CODE INFORMATION:
 THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC 2015).
 AMERICAN SOCIETY OF CIVIL ENGINEERS: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ANSI/ASCE 7-10, 2010.
 AMERICAN WELDING SOCIETY: STRUCTURAL WELDING CODE – SHEET STEEL, 2nd ED., ANSI/AWS D1.3, 2008.

STRUCTURAL DESIGN CRITERIA:

1. DESIGN LOADS:

i. DESIGN WIND: LOCATION: PORTLAND, MAINE
 WIND LOAD (PER ASCE CHAPTER 30):
 ULTIMATE WIND SPEED (Vult): 118 MPH
 NOMINAL DESIGN WIND SPEED (Vasd): 91.4MPH
 BUILDING OR STRUCTURE RISK CATEGORY II
 WIND EXPOSURE FACTOR = B
 IMPORTANCE FACTOR I = 1.0

ii. ROOF LIVE LOAD:
 SNOW LOAD: 42 PSF (GROUND SNOW LOAD 50 PSF) PLUS SNOW DRIFT LOADING WHERE APPLICABLE PER ASCE 2010 CHAPTER 7).
 SNOW EXPOSURE FACTOR (Ce) = 1.0
 THERMAL FACTOR (Ct) = 1.2
 IMPORTANCE FACTOR (I) = 1.0

WIND LOADS – COMPONENTS & CLADDING (NOMINAL)
 WALLS (- ZONE 4) WALLS (- ZONE 5)
 P = +13.8 PSF / -15.1 PSF P = +13.8 PSF / -18.0 PSF

iii. ROOF LOADS: GRAVITY LOADING
 ROOF GRAVITY LOADING:
 SHINGLED ROOF DEAD LOAD = 3.0 PSF ASPHALT SHINGLES
 1.5 PSF 2" CDX PLYWOOD SHEATHING
 3.0 PSF WOOD 2x RAFTERS AT 16" OC
 1.5 PSF 2" CDX PLYWOOD SHEATHING CEILING
 1.0 PSF MISCELLANEOUS
 Wt = 10.0 PSF

FLOOR GRAVITY LOADING:
 FLOOR DEAD LOAD = 1.5 PSF 2x WOOD FLOOR DECKING
 2.0 PSF WOOD JOIST AT 16" OC
 1.5 PSF MISCELLANEOUS
 Wt = 5.0 PSF

TABLE 1607.1: MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (IBC 2009 SECTION 1607)

MULTIFAMILY DWELLINGS: PRIVATE ROOMS AND CORRIDORS SERVING THEM INCLUDING EGRESS STAIRS AND DECKS: **LIVE LOAD = 40 PSF**

PLATFORMS/DECKS FIRST FLOOR LEVEL: **LIVE LOAD = 100PSF**

PLATFORMS/DECKS SECOND AND THIRD FLOOR LEVELS: **LIVE LOAD = 40PSF**

DEFLECTION CRITERIA:
 EXTERIOR WALLS = L/360
 ROOF RAFTERS = L/240 LIVE LOAD
 FLOOR JOISTS = L/360 LIVE LOAD

STRUCTURAL DESIGN CRITERIA:

1. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

2. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE STRUCTURE AND PERSONNEL DURING ERECTION. THIS INCLUDES THE ADDITION OF THE NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS. SUCH MATERIAL SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.

3. ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL REGULATIONS SHALL BE FOLLOWED, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.

WOOD FRAMING NOTES:

1. STRUCTURAL LUMBER: **NLGS Grading Rules Agency / No. 2 SPRUCE PINE FIR OR BETTER.**
 Fb = 875 PSI Fv = 135 PSI
 Fc = 1150 PSI E = 1400000 PSI

STRUCTURAL COMPOSITE LUMBER: LVL Fb = 3100 PSI

2. DESIGN CODE: THIS BUILDING IS DESIGNED TO COMPLY WITH THE 2015 EDITION OF THE INTERNATIONAL RESIDENTIAL CODE, IRC 2015.

3. FASTENERS: COMPLY WITH RECOMMENDED FASTENING SCHEDULE OF THE INTERNATIONAL RESIDENTIAL CODE IRC 2015, TABLE R602.3(1) UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

4. SHEATHING: APA RATED EXPOSURE 1' PLYWOOD OR COMPOSITE PANEL:

| LOCATION | THICKNESS | SPAN RATING | EDGE NAILING | FIELD NAILING |
|------------------|-----------|-------------|--------------|---------------|
| ROOF SHEATHING: | 5/8-INCH | 40/20 | 8d AT 6" OC | 8d AT 12" OC |
| WALL SHEATHING: | 1/2-INCH | 16/0 | 8d AT 6" OC | 8d AT 12" OC |
| FLOOR SHEATHING: | 3/4-INCH | 48/24 | 8d AT 6" OC | 8d AT 12" OC |

5. SPIKE TOGETHER ALL FRAMING MEMBERS WHICH ARE BUILT-UP USING MULTIPLE 2x LUMBER.

6. PROVIDE PRESSURE TREATED LUMBER FOR ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE OR EXPOSED TO WEATHER.

7. ROOF SHEATHING: 19/32" APA RATED EXPOSURE 1 OR STRUCTURAL 1 (40/20) PLYWOOD OR OSB (UNLESS NOTED OTHERWISE). INSTALL SHEETS WITH FACE GRAIN DIRECTION PERPENDICULAR TO SUPPORTING MEMBERS.

8. WALL SHEATHING: 15/32" APA RATED SHEATHING, EXPOSURE 1 OR STRUCTURAL I, SPAN RATING 32/16 (UNLESS NOTED OTHERWISE). INSTALL SHEETS WITH FACE GRAIN DIRECTION PERPENDICULAR TO SUPPORTING MEMBERS.

NOTES
 TYPICAL NOTES

GENERAL NOTES:

1. **COPYRIGHT:**
 THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS INCLUDING VERIFYING EXISTING FINISH GRADE CONDITIONS. DO NOT SCALE THE DRAWING—ANY ERROR OR OMISSIONS SHALL BE REPORTED TO DOWNEAST STRUCTURAL CONSULTANTS WITHOUT DELAY. THE COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF DOWNEAST STRUCTURAL CONSULTANTS, PLLC. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY DOWNEAST STRUCTURAL CONSULTANTS, PLLC IS PROHIBITED.

2. **LIABILITY / DISCLAIMER:**
 WHILE GREAT EFFORT HAS BEEN EXERTED TO INSURE THAT THESE CONSTRUCTION DRAWINGS ARE COMPLETE AND ACCURATE, DOWNEAST STRUCTURAL CONSULTANTS, PLLC, ASSUMES NO LIABILITY FOR ANY BUILDING CONSTRUCTED FROM THIS PLAN. ALL CONSTRUCTION DOCUMENTS PROVIDED BY DOWNEAST STRUCTURAL CONSULTANTS, PLLC ARE PROVIDED AS-IS. IT IS THE RESPONSIBILITY OF THE OWNER/BUILDER TO PERFORM BUILDING REVIEWS BEFORE BEGINNING CONSTRUCTION. THESE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
 A. VERIFY ALL DIMENSIONS
 B. REVIEW DEMOLITION PROCEDURES (WHERE REQUIRED) WITH A DESIGN PROFESSIONAL TO DETERMINE POSSIBLE STRUCTURAL INSTABILITIES AND DEVELOP A DEMOLITION PLAN.
 C. VERIFY ACTUAL SITE CONDITIONS. ANY DISCREPANCIES ON THE PLANS MUST BE RESOLVED BY THE BUILDER PRIOR TO CONSTRUCTION. CONSTRUCTION OF ANY HOME SHOULD NOT BE UNDERTAKEN WITHOUT THE ASSISTANCE OF A QUALIFIED BUILDING PROFESSIONAL.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL CONFORM TO ACI-318.
 2. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 3500 PSI AT FOUNDATION WALLS AND FOOTINGS, 4000 PSI AT SLABS, MAXIMUM SIZE AGGREGATE SHALL BE 3/4".
 3. ALL CONCRETE WITH THE EXCEPTION OF INTERIOR FLOOR SLABS SHALL BE AIR ENTRAINED.
 4. CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.
 5. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60. DEFORMED BARS SHALL BE DETAILED AND FABRICATED IN ACCORDANCE TO ACI-318 LATEST EDITION, AND PLACED IN ACCORDANCE WITH ACI-318.
 6. SPLICES OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH ACI-318. SPLICES OF WWF SHALL BE 6" MINIMUM.
 7. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 UNLESS OTHERWISE NOTED.
 8. CONCRETE COVER OVER REINFORCEMENT SHALL BE AS FOLLOWS:
 CONCRETE CAST AGAINST EARTH = 3"
 CONCRETE EXPOSED TO EARTH OR WEATHER = 2" FOR #6 AND LARGER
 = 1-3/4" FOR #5 AND SMALLER
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER = 3/4"

FOUNDATION NOTES:

1. FOUNDATION DESIGNED BASED ON AN ASSUMED MAXIMUM ALLOWABLE BEARING PRESSURE OF 2000 PSE. IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO VERIFY THE SOIL BEARING CAPACITY. NOTIFY THE ENGINEER AND STOP WORK IF CLAY, WET SOILS, FILL, OR OTHER DELETERIOUS MATERIALS ARE ENCOUNTERED.

2. SUITABLE MATERIAL FOR BACK FILLING AGAINST THE FOUNDATION PIERS AND BENEATH THE CABINS INCLUDE; SELECT FILL, STRUCTURAL FILL AND GRANULAR BACKFILL. THESE MATERIALS SHALL BE SANDY GRAVEL TO GRAVELY SAND, FREE OF ORGANIC MATERIAL, LOAM, TRASH, OR FROZEN SOIL AND CONFORM TO THE FOLLOWING GRADATION:

| SIEVE SIZE | PERCENT FINER BY WEIGHT |
|------------|-------------------------|
| 6" | 100 |
| No. 4 | 30-90 |
| No. 40 | 10-50 |
| No. 200 | 0-8 |

3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND THE ARCHITECTURAL AND SITE SHOP DRAWINGS.

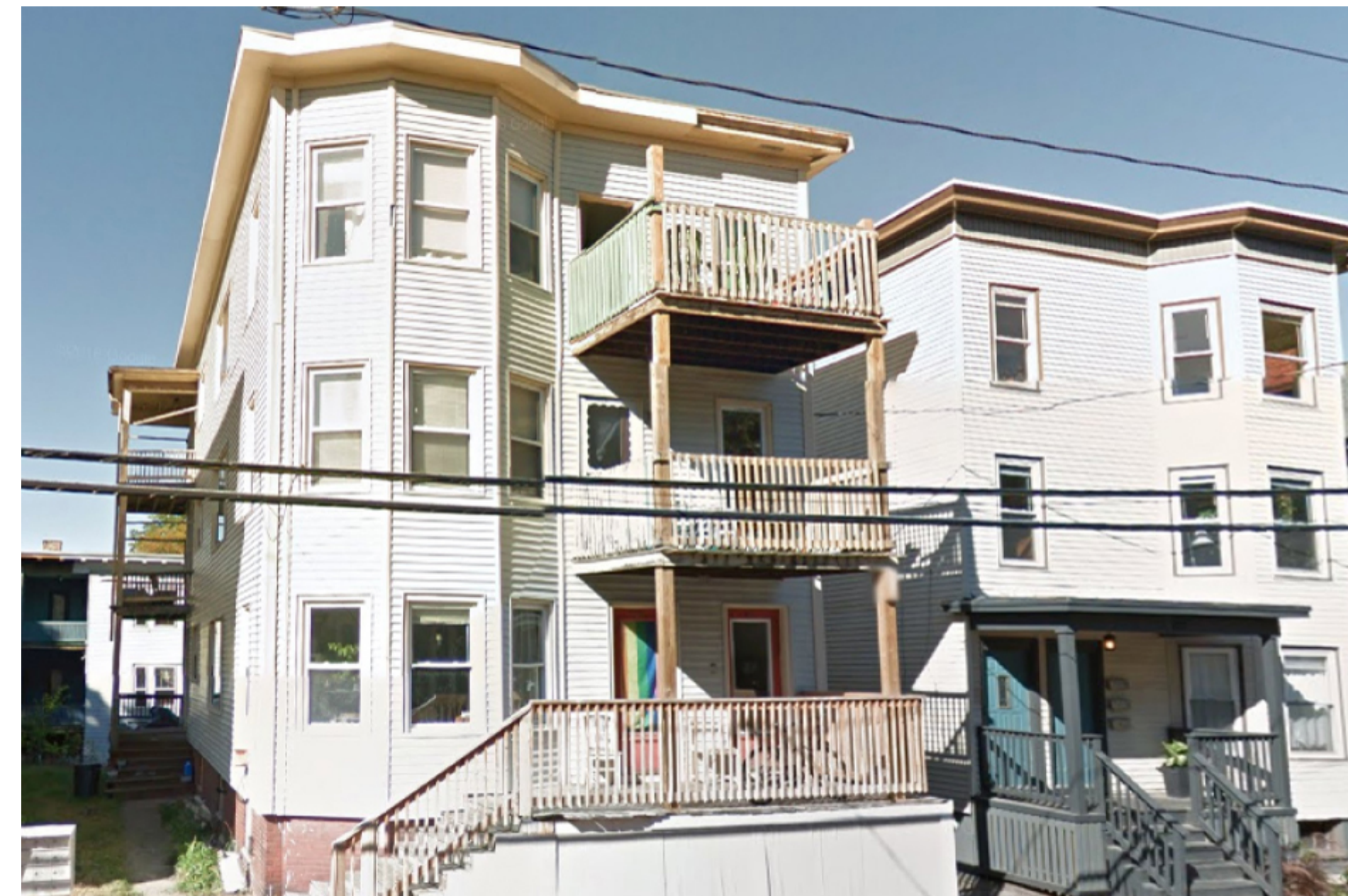
4. SECTIONS AND DETAILS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE CONSIDERED TYPICAL AND USED FOR SIMILAR CONDITIONS.

5. PROVIDE CONTROL JOINTS IN STRUCTURAL SLAB AT 12'-0" ON CENTER MAX.

6. PROPORTION DESIGN MIXES TO PROVIDE CONCRETE FOR EXTERIOR FROST WALLS, FOOTINGS AND ALL OTHER EXPOSED SITE CONCRETE WITH THE FOLLOWING PROPERTIES:
 a. STRENGTH: 3500psi @ 28 DAYS, 3/4" AGGREGATE
 b. W/C RATIO: 0.52
 c. ENTRAINED AIR: 6% ±1%
 d. SLUMP: 3" ± 1"

7. PORTLAND CEMENT: ASTM C150, TYPE I OR TYPE II.

NOTES
 TYPICAL NOTES—CONT



Front Porch/Deck Renovation
 107 Grant Street
 Portland, Maine

FASTENERS & CONNECTORS

| FASTENER TYPE | SUBSTRATE | DESCRIPTION | PRODUCT |
|---------------------------|--|---|--|
| SCREWS | METAL TRACK | #10-16 x 5/8" PAN HEAD | BUILDDEX 'TEKS' COMPASS 'DARTS' GRABBER SELF DRILLING SCREWS |
| | COLD FORMED STEEL STUD TO STUD | #10-16 x 5/8" HEX HEAD | HILTI KWIK PRO OR BUILDDEX 'TEKS' COMPASS GRABBER SELF TAPPING FASTENERS |
| | COLD FORMED STEEL TO STRUCTURAL STEEL | #12-14 x 1 1/2" HEX HEAD, #5 TIP | HILTI KWIK PRO OR BUILDDEX 'TEKS' SELF TAPPING FASTENERS |
| | WOOD FRAMING OR PLYWOOD TO WOOD STRUCTURAL FRAMING | #14-20 x 2 1/2" FLAT HEAD WINGED, #3 TIP | HILTI KWIK PRO OR SIMPSON STRONG-TIE SDWS TIMBER SCREW |
| | COLD FORMED STEEL TO CONCRETE OR CONCRETE MASONRY | 1/2"Ø x 1 1/2" TAPERED HEX HEAD W/ T-27 TORX RECESS | HILTI KWIK CON II CONCRETE AND MASONRY SCREW ANCHOR |
| POWDER ACTUATED FASTENERS | CONCRETE OR GROUTED CONCRETE MASONRY | 0.157"Ø x 1 1/4" 0.145"Ø x 1 1/2" | HILTI X-U HILTI X-DNI |
| | STRUCTURAL STEEL | 0.157"Ø x 3/4" 0.145"Ø x 5/8" | HILTI X-U HILTI X-DNI |

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 TIMOTHY AND ANGELA GRAY
 FREEPORT, ME



Reviewed for Code Compliance
 Permitting and Inspections Department
 Approved with Conditions
11/30/2018

PREPARED FOR:
 TIMOTHY GRAY
 FREEPORT, ME

Project:
Front Porch Deck Renovation
 107 GRANT STREET
 PORTLAND, MAINE

REVISIONS:

| No. | Description | Date |
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Seal:
 STATE OF MAINE
 CHRISTOPHER RAY
 No. 10547
 LICENSED PROFESSIONAL ENGINEER

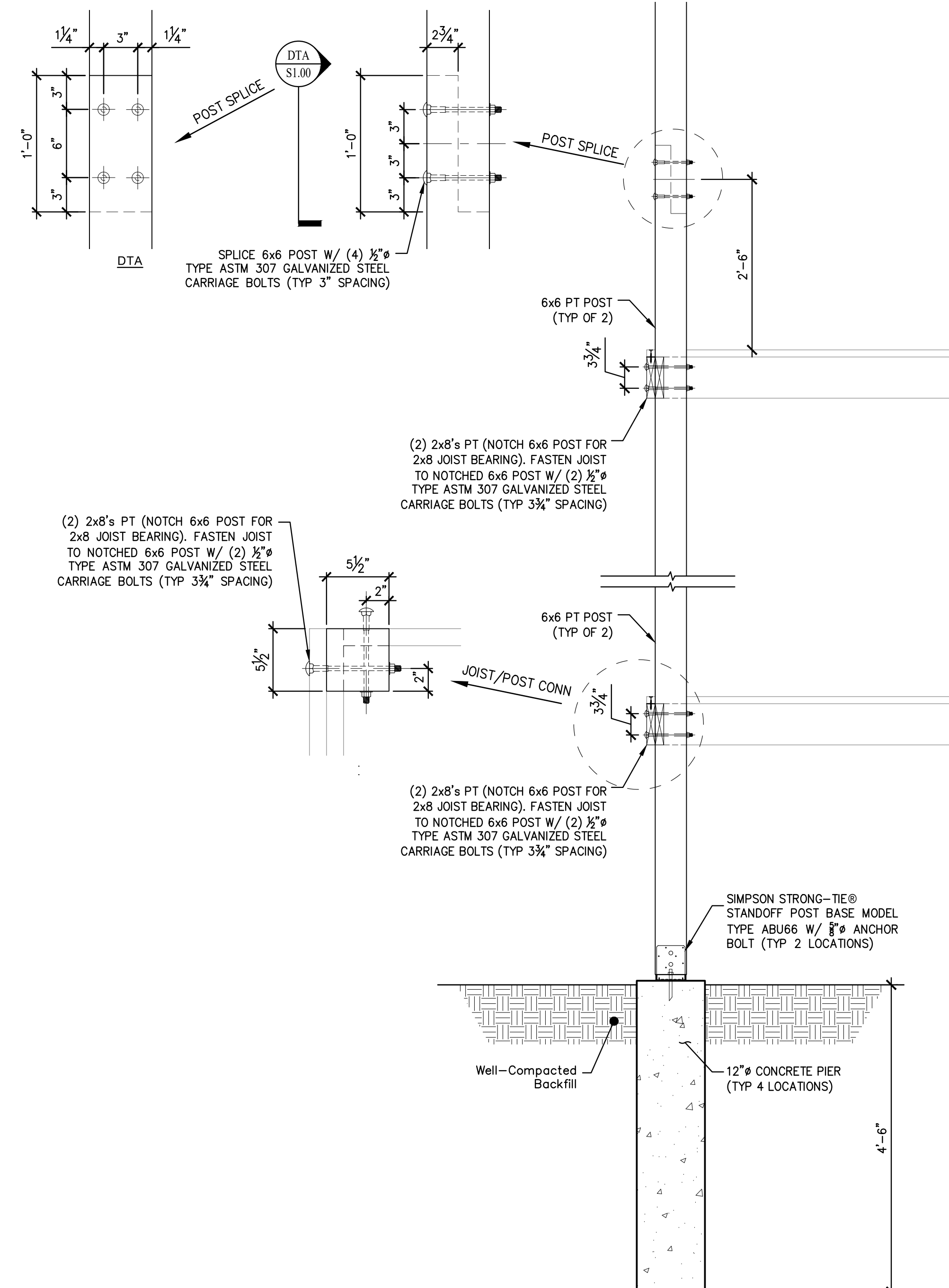
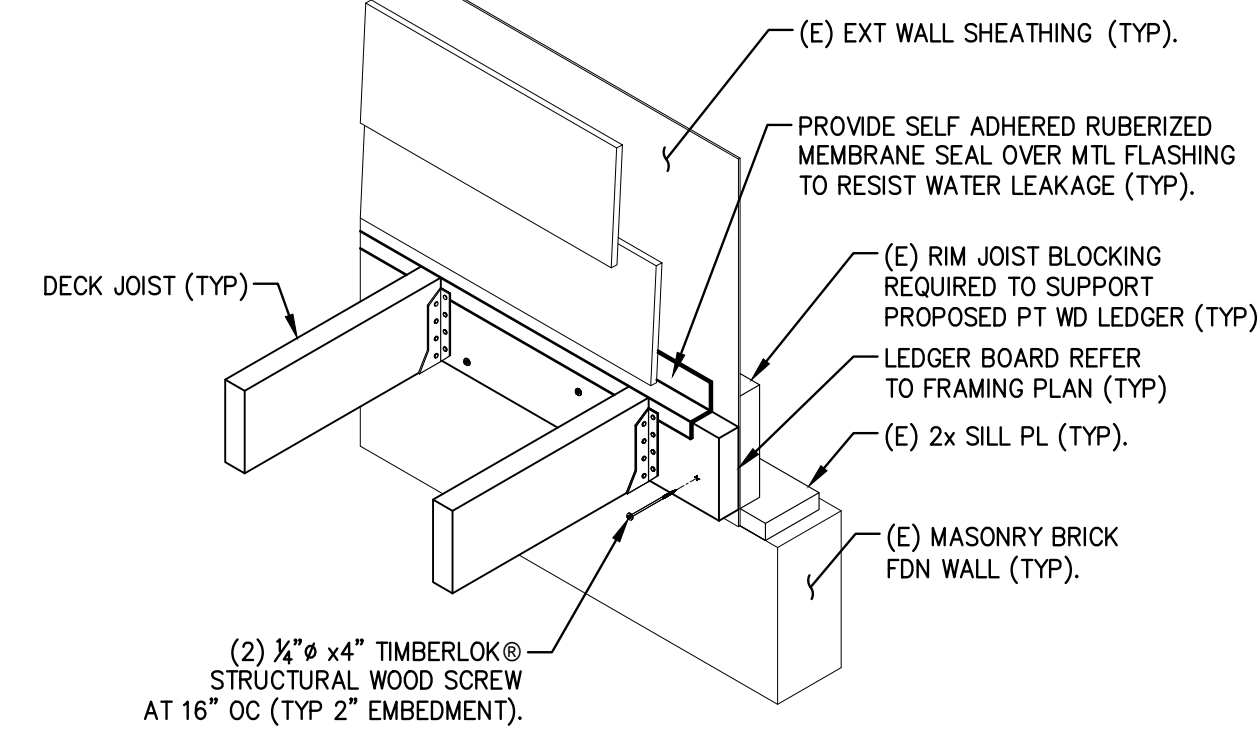
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COVER SHEET AND GENERAL NOTES

Project No: 18144
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 Checked by: CFR

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S.001

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 1 OF 4



CONSTRUCTION NOTE:
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 2. PROVIDE MOISTURE BARRIER OR FLASHING AT ALL LOCATIONS WHERE PENETRATIONS THROUGH THE EXISTING BUILDING ENVELOPE ARE CONSIDERED PRIOR TO ATTACHING PROPOSED STRUCTURAL FRAMING (TYP).

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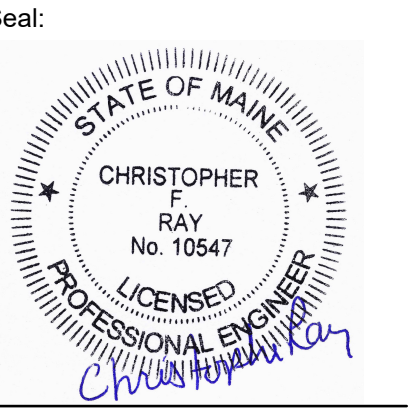
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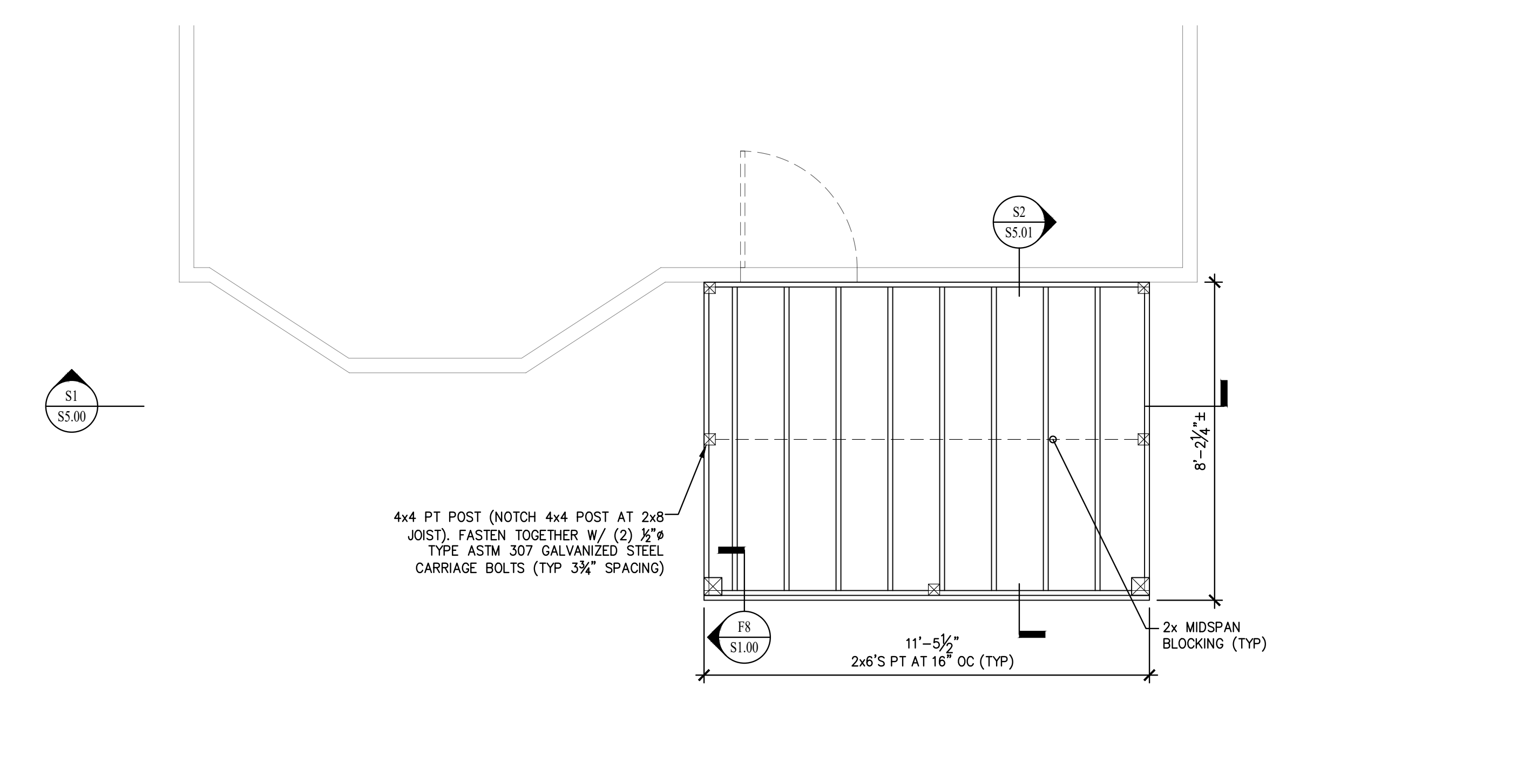


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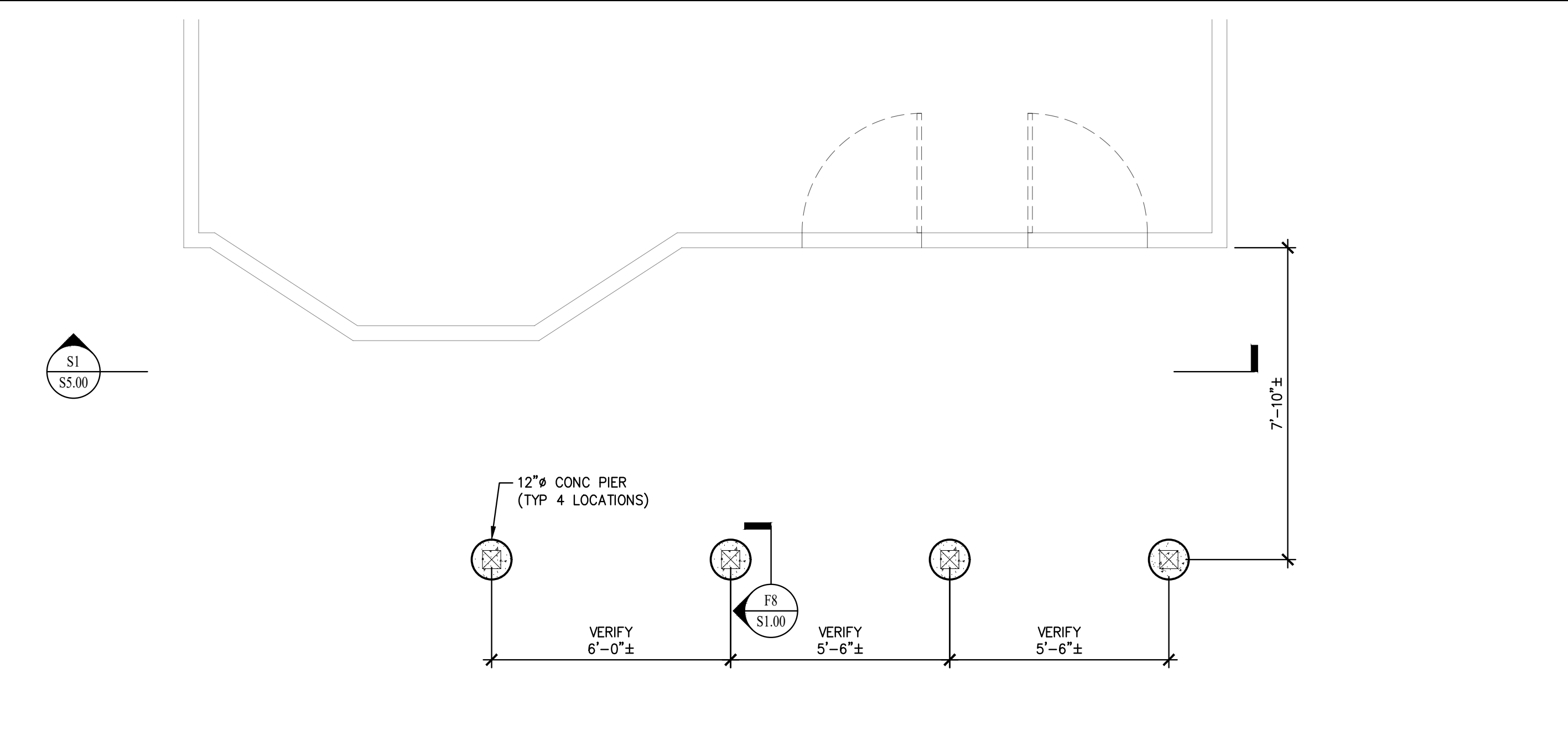
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FRAMING PLANS AND SECTIONS
 Project No: 18144
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M11
 3/4" = 1'-0"
TYPICAL FLOOR JOIST CONN DETAIL

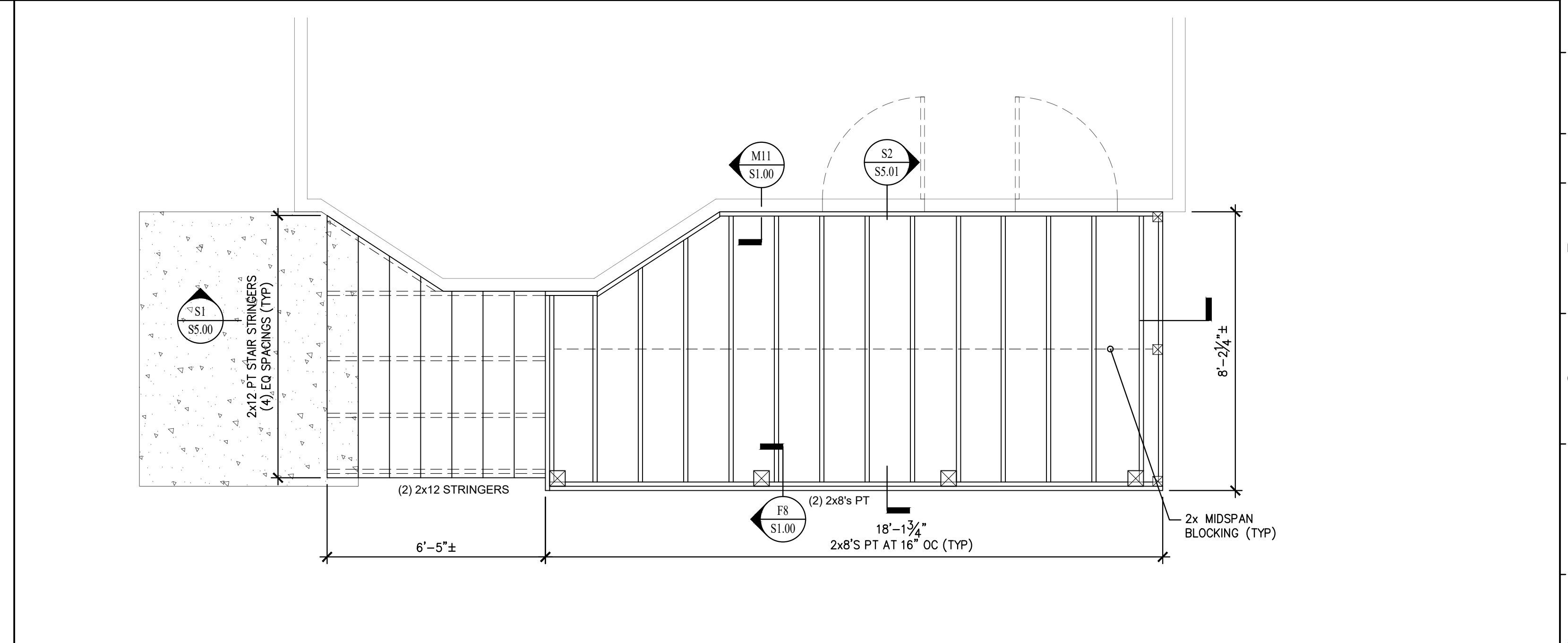


F1
 3/8" = 1'-0"
TYPICAL SECOND AND THIRD FLOOR FRAMING PLAN



A1
 3/8" = 1'-0"
TYPICAL DECK FOUNDATION PLAN

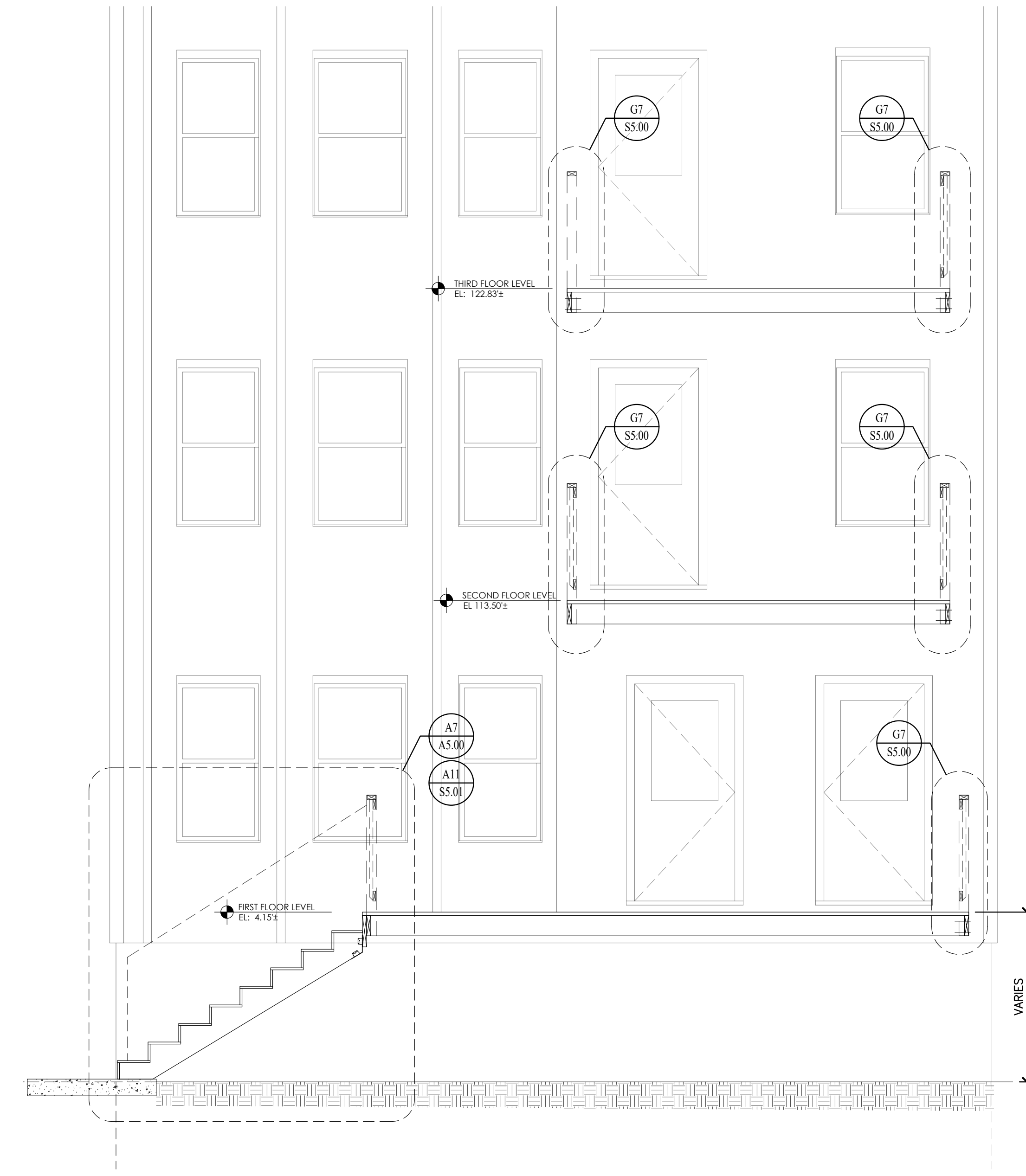
F8
 3/8" = 1'-0"
TYPICAL POST SPLICE AND CONNECTION DETAIL



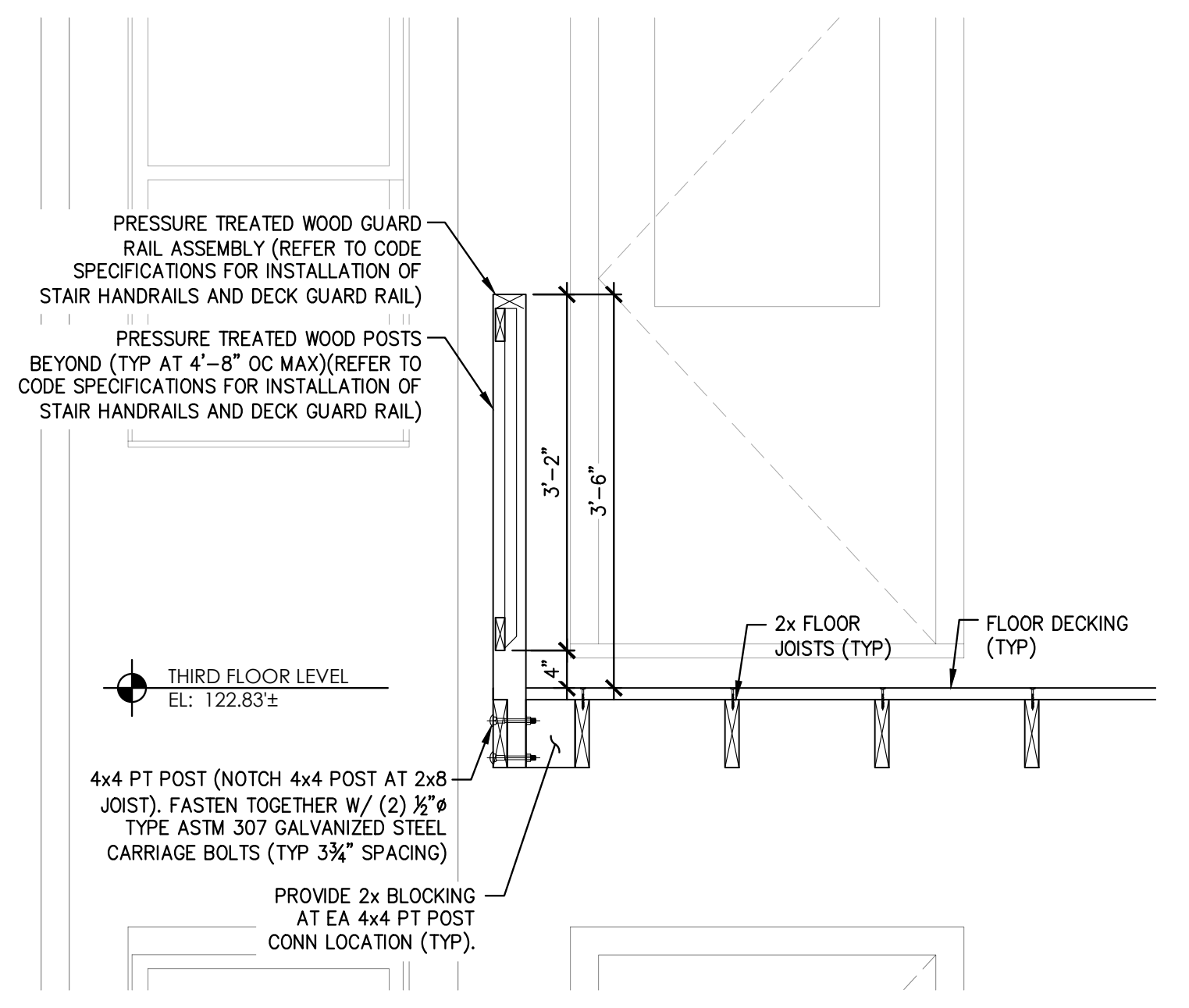
A8
 3/8" = 1'-0"
TYPICAL FIRST FLOOR LEVEL DECK FRAMING PLAN

CONSTRUCTION NOTE:

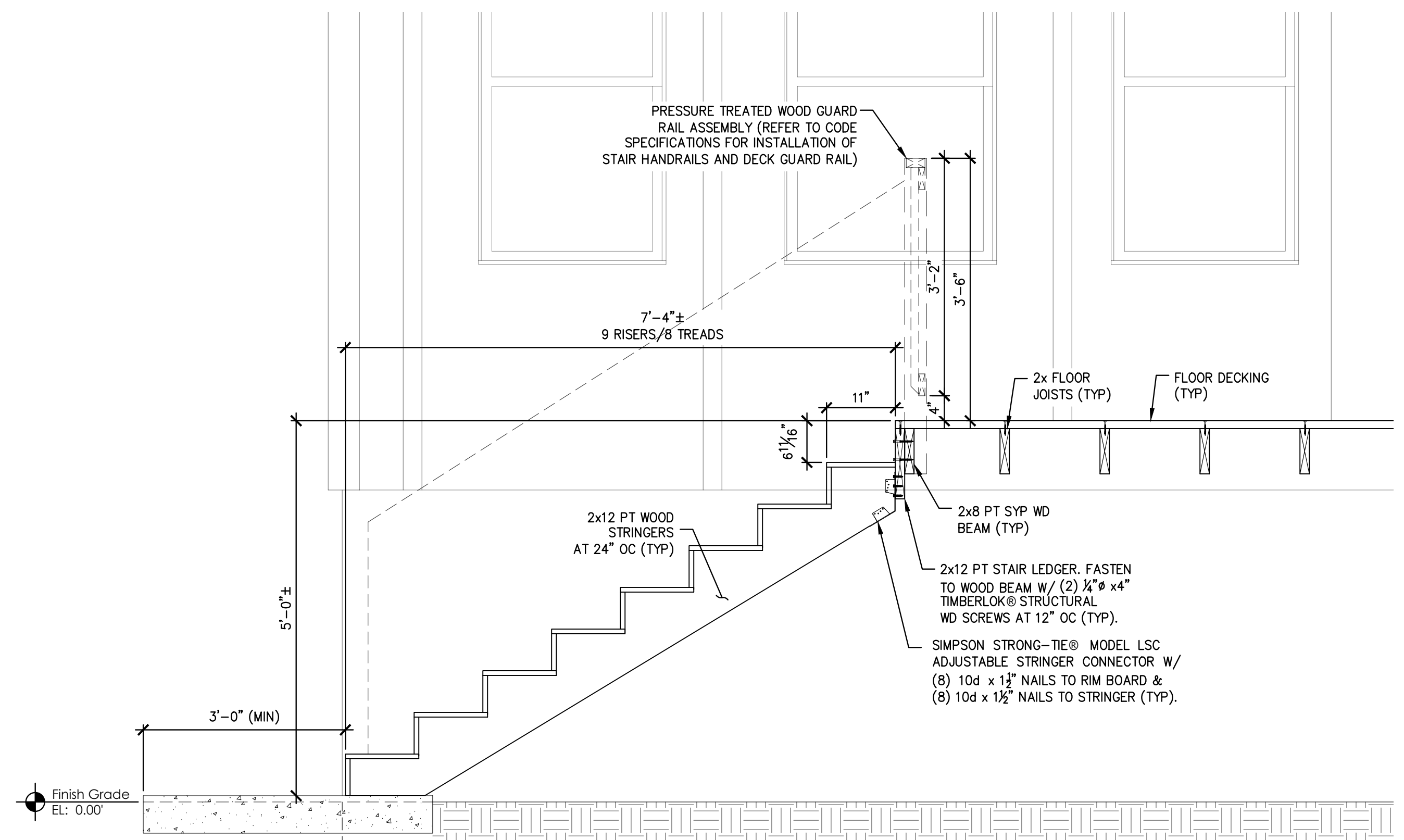
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S1
3/8" = 1'-0"
TYPICAL SECTION



G7
3/4" = 1'-0"
TYPICAL DECK CONNECTION DETAIL



A7
3/4" = 1'-0"
TYPICAL DECK CONNECTION DETAIL

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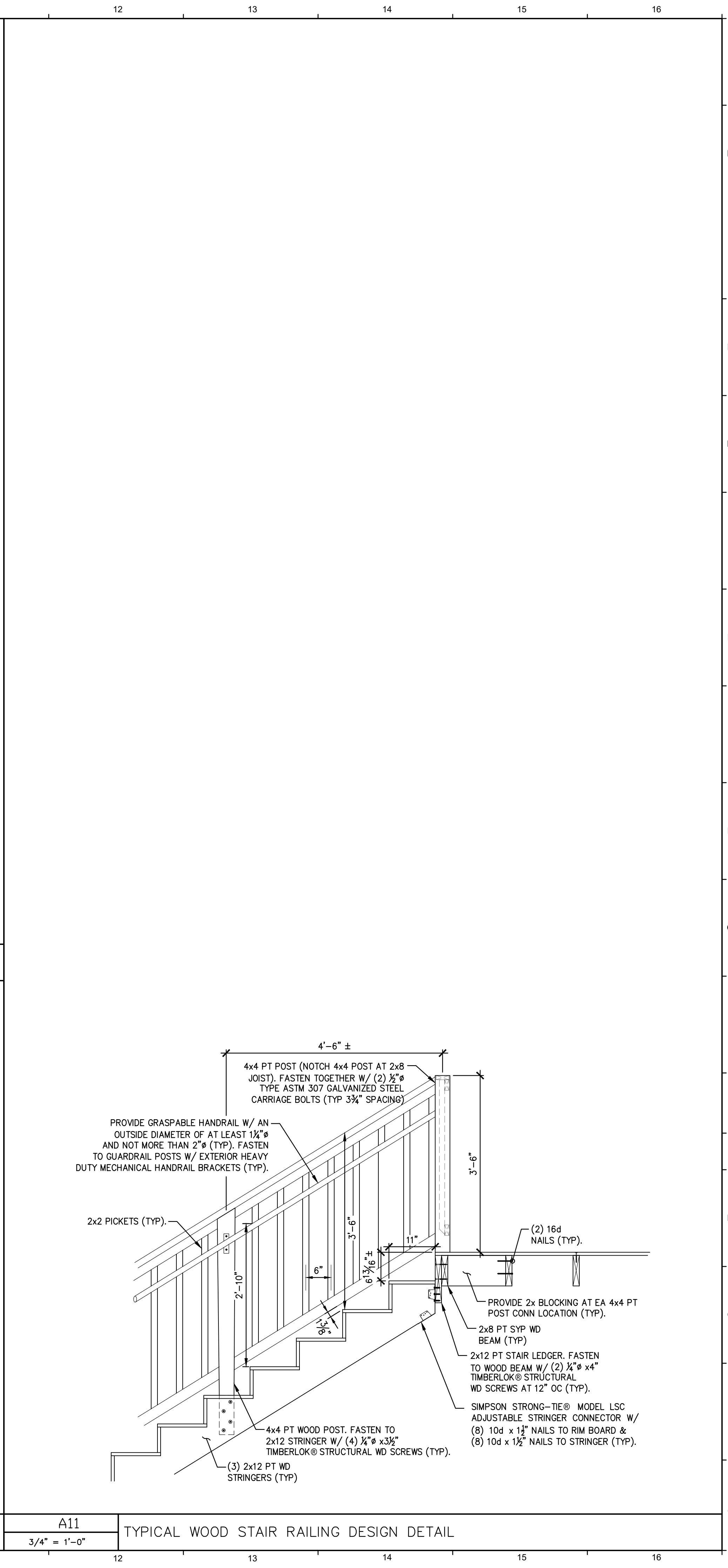
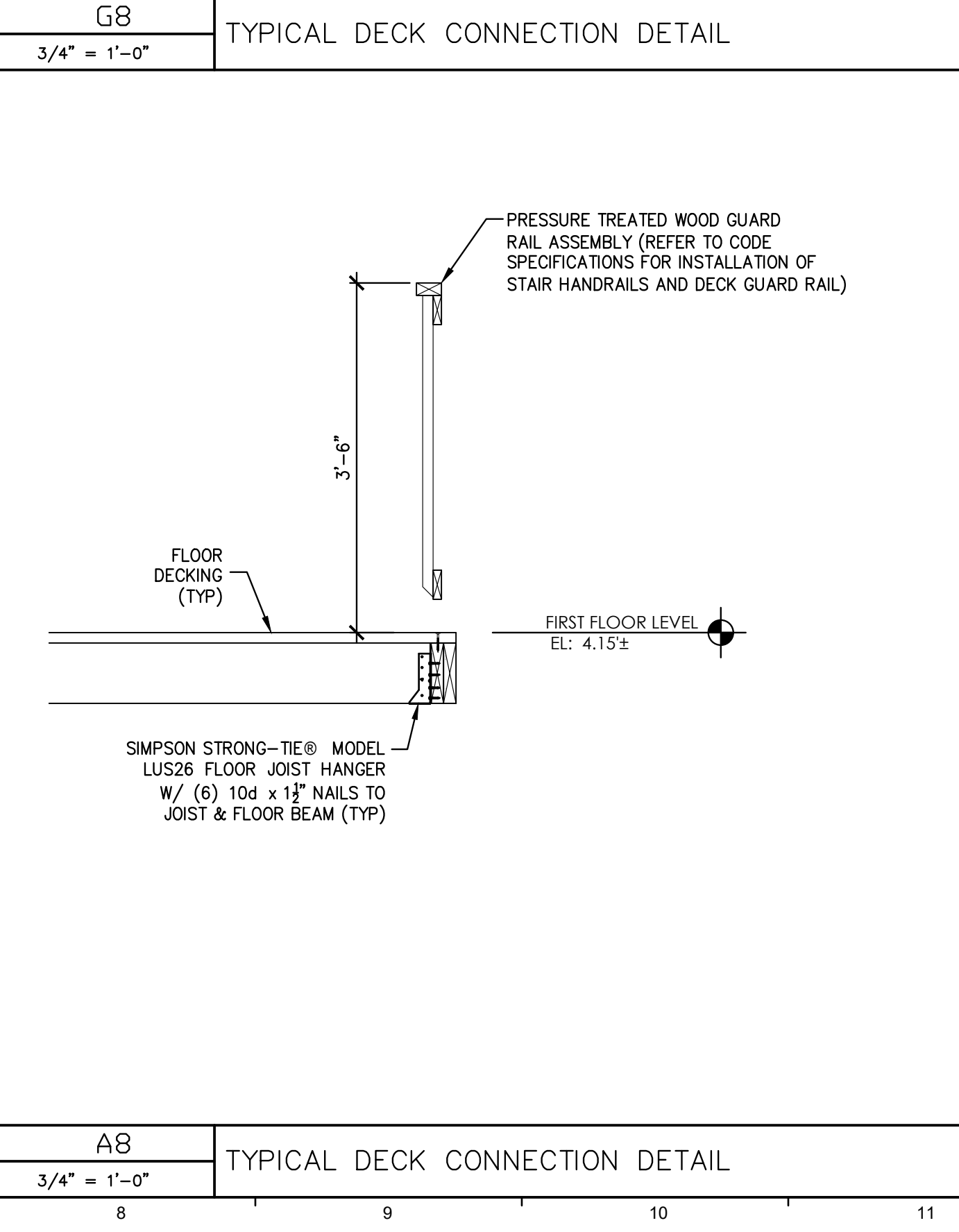
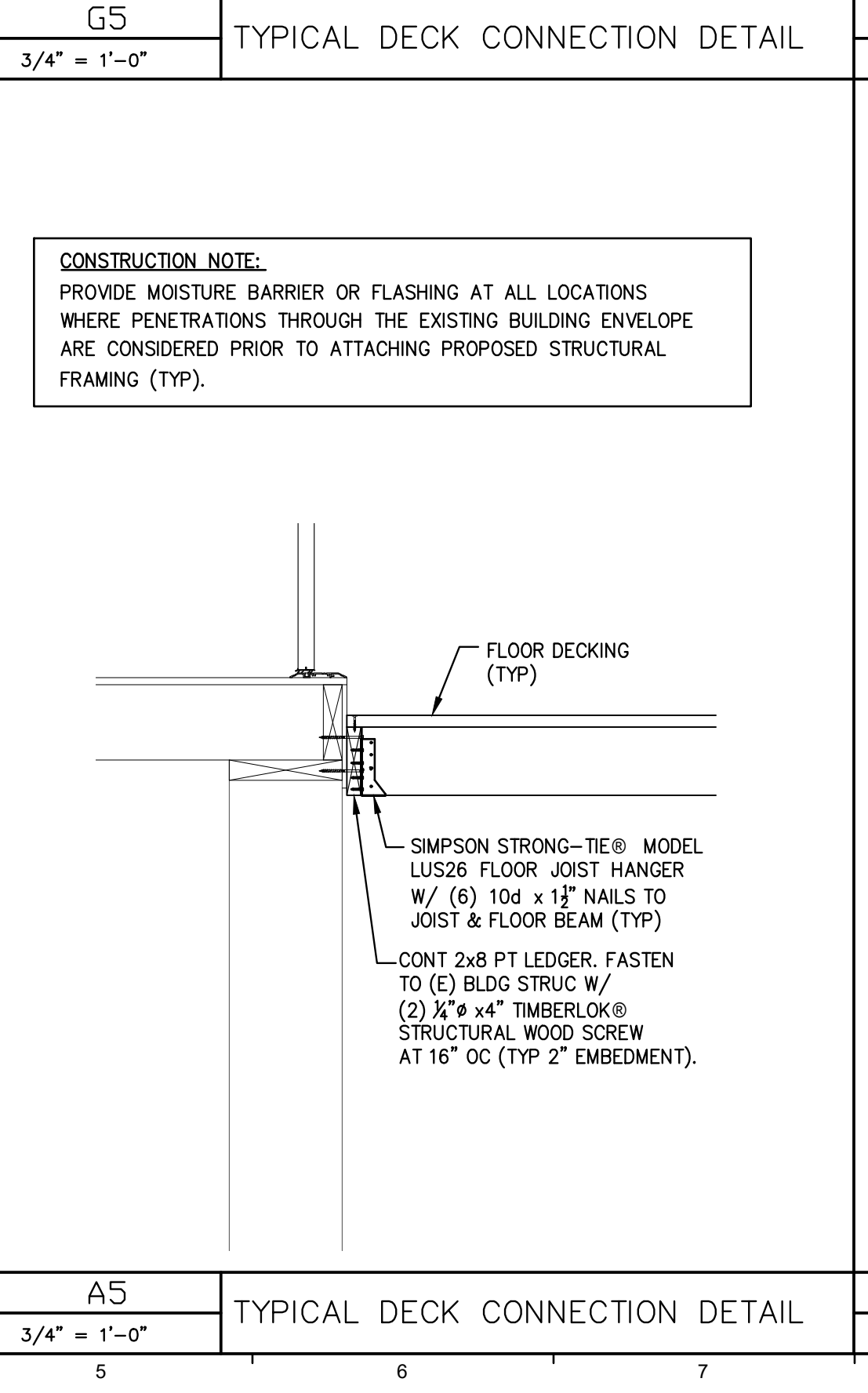
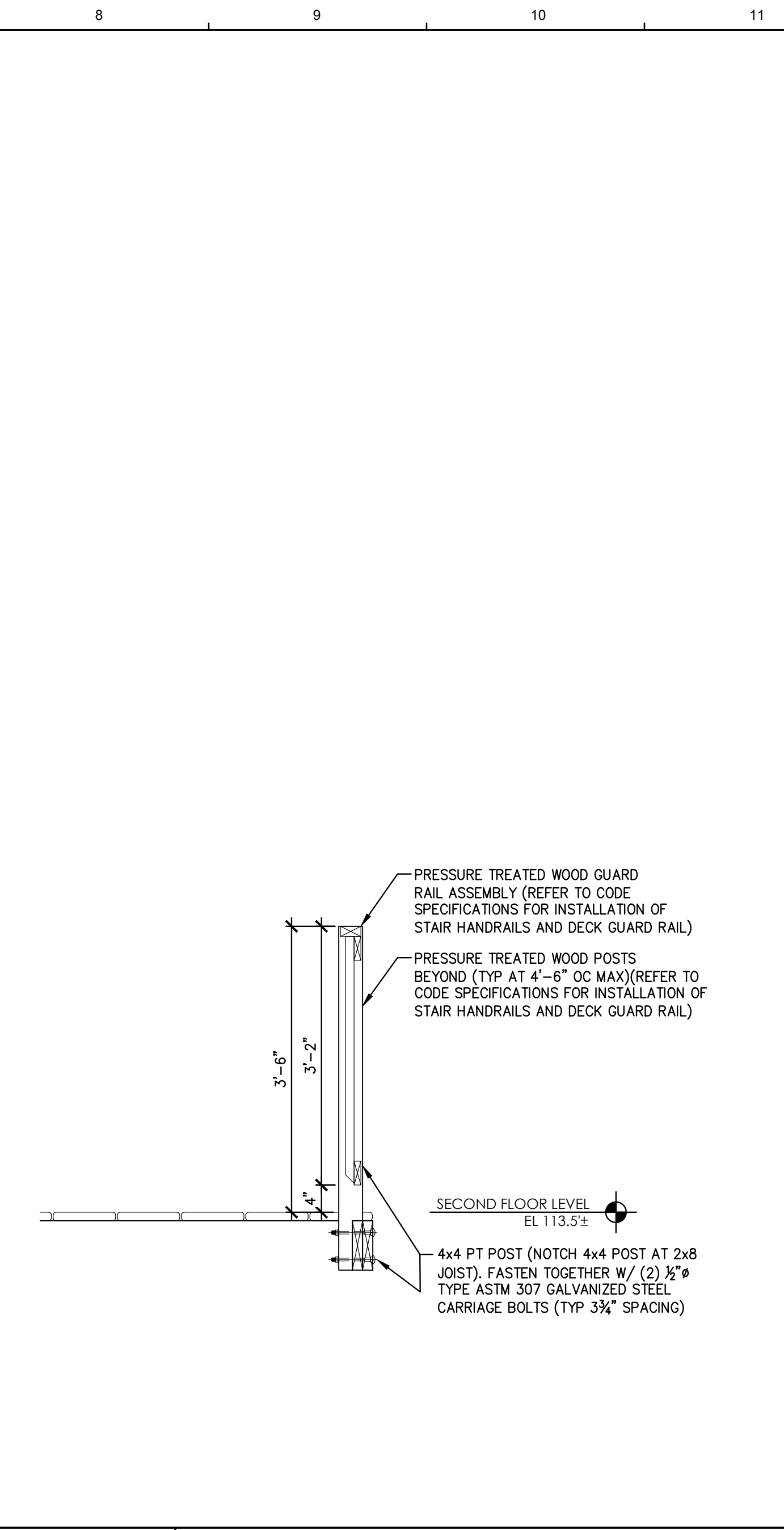
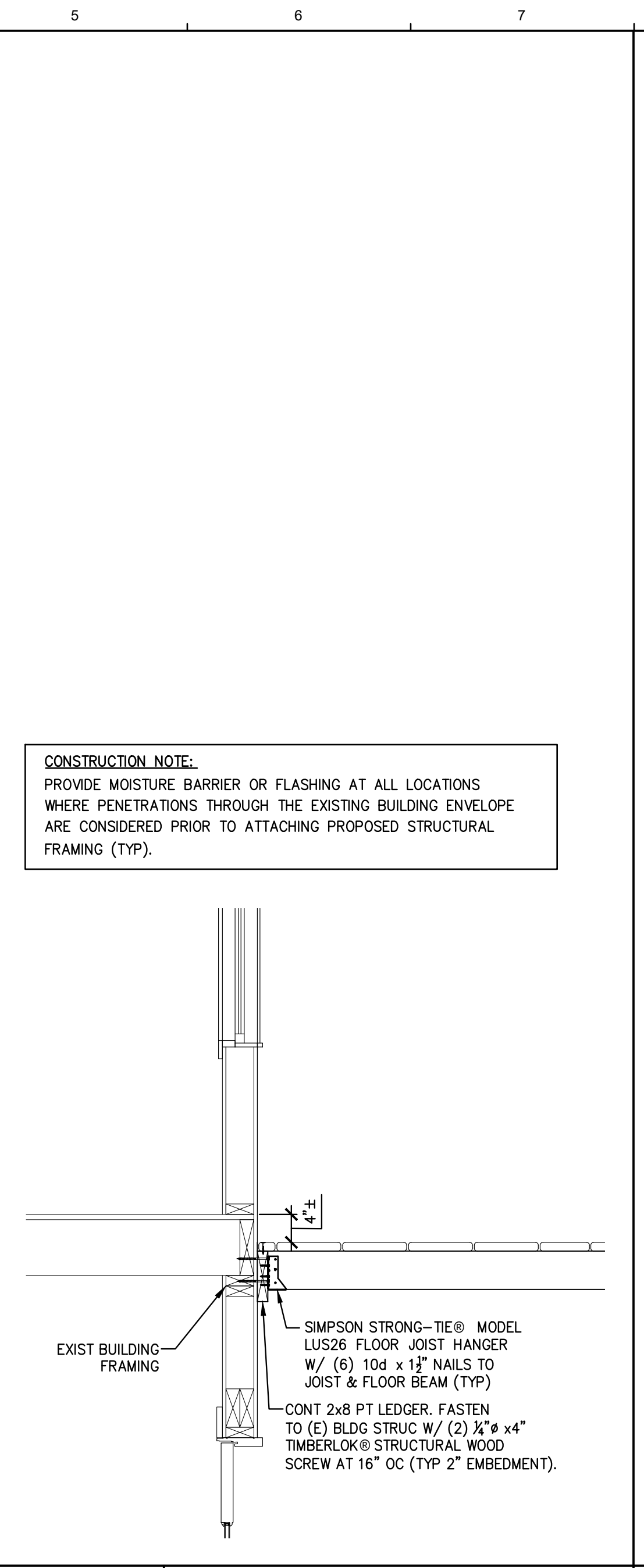
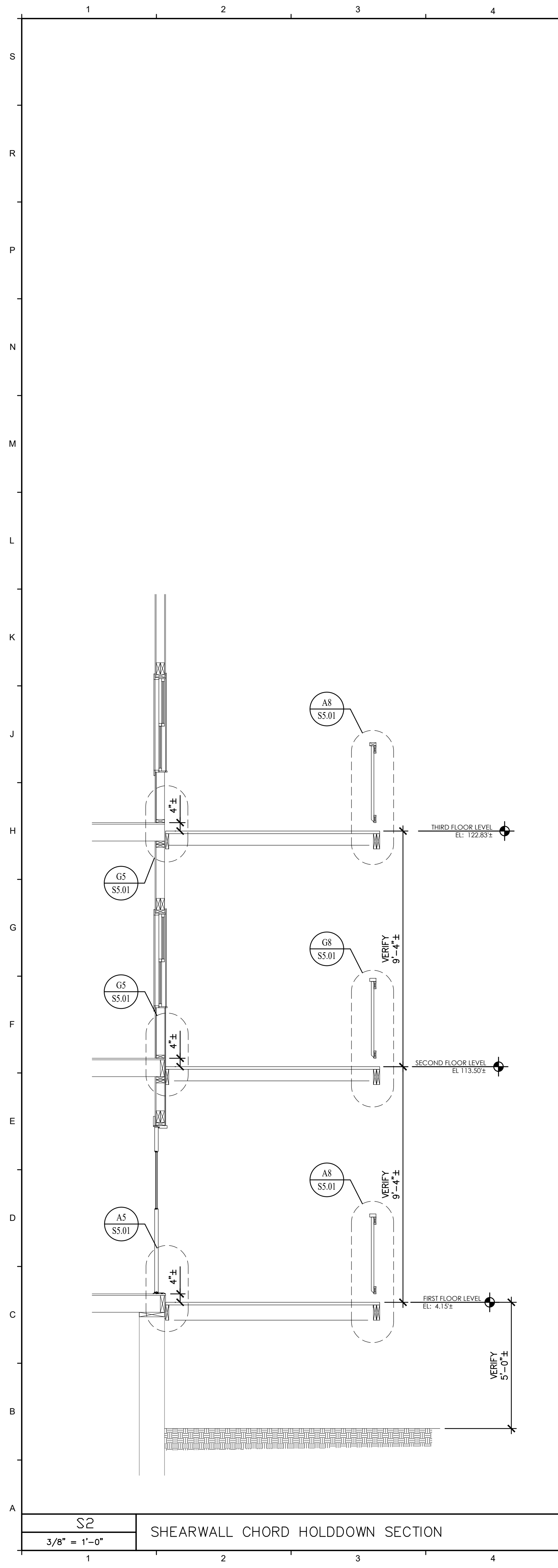
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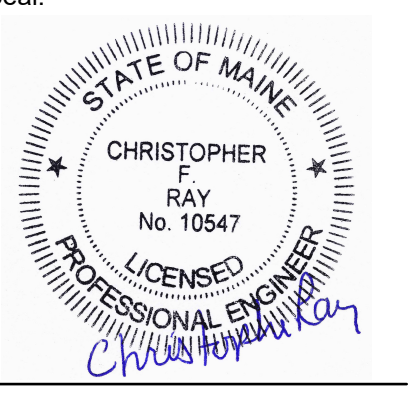

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