DESIGN LIVE LOADS: 2009 IBC/IRC/MUEBC, U.O.N.

* Snow 60 psf (Pg)=ground snow load * Wind 100 mph, exp B, 3 second gust

* Floor * Decks and Balconies 60 psf

FOUNDATION:

* Foundations are designed without an engineer's soil investigation. Foundation design criteria was assumed for purposes of foundation design and shall be confirmed by a soils engineer, at owner's expense, prior to construction. (This procedure may require revisions to foundation design, at additional expense to the owner, if soils engineer determines that such design criteria are inappropriate for this building site.)

Footings shall be placed on undisturbed natural soil or compacted fill tested and approved by soils

* Maximum design soil pressure: 1,750 psf

FOUNDATION WALLS:

Design lateral soil pressure (equivalent fluid pressure):

Backfill all retaining walls with free draining granular material except the top two feet.

Provide perimeter drain system with invert minimum of 6" below bottom of basement slab. Extend

perimeter drain to daylight or to sump.

* Slope perimeter grade away from building. * Place concrete continuously without horizontal cold joints.

CONCRETE AND REINFORCEMENT:

* Concrete shall conform to applicable provisions of ACI-301 and 318.

Minimum 28 day compressive strength (F'c) as follows:

psi w/ 4-6%air entrainment Footings: Foundation Walls: 4,000 psi w/4-6% air entrainment

3,000 Interior Slabs: psi w/fibermesh

Exterior Slabs: 4,000 psi w/4-6% air entrainment and fiber mesh

* Cement Type: I/II * Deformed reinforcement: ASTM A615 grade 60, except bars specified to be field-bent, stirrups, and ties

which shall be grade 40.

* Fibremesh: 100% virgin polypropylene, fibrillated fibers as manufactured by Fibremesh Co. per ASTM C-1116 type 111 4.1.3 and ASTM C-1116 performance level one, 1.5 lb. per cubic yard.

* Welded Wire Fabric (WWF): ASTM A185. See also plan.

* Typical minimum foundation reinforcing: 2 #5 top and bottom, (except as noted) continuous at

corners and steps. * Reinforcement shall be fabricated and placed per ACI Manual of Standard Practice (ACI-315). At splices, lap bars 50 diameters unless noted otherwise.

Minimum 2 #5 around all four sides of all openings, extend min. 2'-0 beyond openings.

* Concrete cover over reinforcing: $1^{1}/2^{"}$ for concrete placed against forms; 3" for concrete placed against earth. See also drawings.

* In continuous members, splice top bars at mid span and bottom bars over supports.

* Keep reinforcement clean and free of dirt, oil, and scale. Oil forms prior to placing reinforcement.

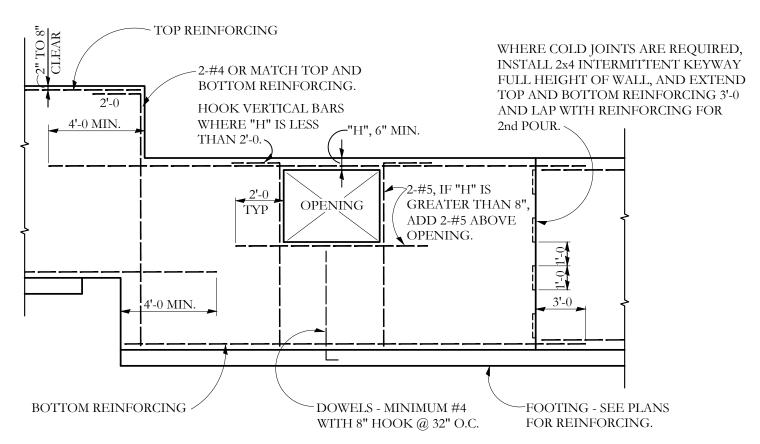
STRUCTURAL STEEL:

ASTM A992 * Structural Beams: * Angles, misc: ASTM A36 Anchor Bolts: ASTM F1554, 36 Ksi.

ASTM A500, Grade B, 46 ksi Tube Columns: Connector bolts: ASTM A325

* Post-installed Anchors shall be ICC-ES approved, installed in accordance with manufacturers

Wedge Type In concrete:



TYPICAL REINFORCING AT STEPS AND OPENINGS

In solid masonry: Sleeve Type

* Welding by qualified welders. E70XX electrodes. * All beams shall have fitted web stiffeners welded to each side of webs above and below columns. (1/4")

Non-shrink grout beneath column base and beam bearing plates shall be non-metallic with minimum

compressive strength 5000psi.

* All structural steel shall be fabricated and erected per the current edition of AISC Steel Construction

* Welding by qualified welders. E70XX electrodes. 3/16" fillet welds, unless noted otherwise. * Except as noted, framed beam connections shall be detailed to develop 0.6 x Allowable Uniform Load

values tabulated in the 9th Edition AISC Manual, Pp. 2-27 and following. All beams shall have full depth web stiffeners each side of webs above and below columns. (3" or as

* Attach wood nailer plates to beams with 1/2" diameter machine or carriage bolts at maximum 32" o.c., or 3/8" diameter bolts at 32" with glued contact face, or 5/32" diameter powder actuated drive pins at 24" o.c., U.O.N.

WOOD FRAMING:

* Dimension Lumber is designed and shall be supplied using BASE VALUES Design Criteria.

* SPF #2 and better (Maximum Moisture Content 19%) U.O.N.

Plates: Sill plates: Pressure Treated SPF or Southern Pine: "Pressure treated lumber" shall be framing material of the specified species which has been pressure treated with a decay and insect resistant solution, meeting all current standards for wood in contact with concrete or earth.

Sill plates in contact with masonry or concrete foundations, footings or slabs may be treated Timber Strand LSL (zinc borate treatment). Sodium borate treatment may also be acceptable for sill plate applications when protected from weather.

Acceptable treatment mediums for wood in contact with earth or in exterior applications include ACQ-C and ACQ-D (Alkaline Copper Quaternary) and copper azole (CBA-A and CBA-B). DO NOT USE WOODS WHICH HAVE BEEN TREATED WITH AMMONÍA BASED CARRIERS. All connectors shall meet the recommendations of the pressure treated wood manufacturer, but shall be not less than Hot Dipped Galvanized meeting requirements of ASTM A653, such as Simpson ZMAX. (G185). All screws, nails and bolts shall match hangers and other connectors, and shall meet ASTM A123 for individual connectors, and ASTM A153 for fasteners.

For durability, it is our recommendation that connectors used in exposed conditions with treated lumber be stainless steel.

Do not mix galvanized and stainless products.

Do not allow aluminum to contact treated wood.

Top and Bottom Plates: SPF No 2 and better SPF Studs U.O.N: 2 x 4 and 2 x 6 to 8'-0: stud grade 2 x 4 over 8'-0: standard and better 2x 6 over 8'-0: No. 2 and better

Floor Joists: See plans Rafters: SPF #2 and better, See plans

* Beams: Douglas Fir No. 1, Fb=1350 psi, E=1,600,000 psi * Columns: Douglas Fir No. 1, Fb=1200 psi, E=1,600,000 psi

* Laminated Veneer Lumber (LVL): Manufactured 1 3/4" wide Microllams (ML) by Ilevel/Trus Joist or

Fb=2,600 psi, E=1,900,000 psi, Fv=285 psi, depth noted on plans.

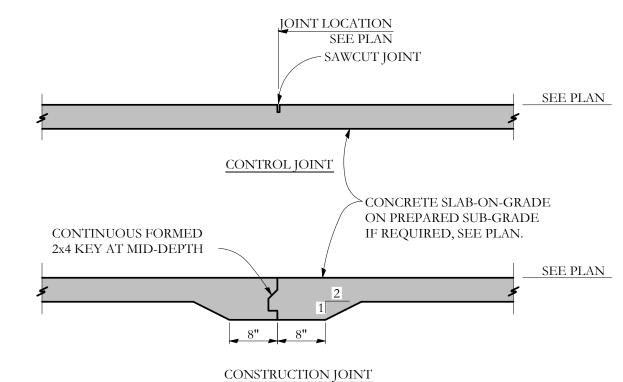
* LSL Rim Joists = 1-1/8" x depth indicated laminated strand lumber or OSB. No substitutions.

* All plywood and oriented strand board (OSB) sheathing shall be engineered grades with APA grade stamp indicating appropriate maximum spacing of supports.

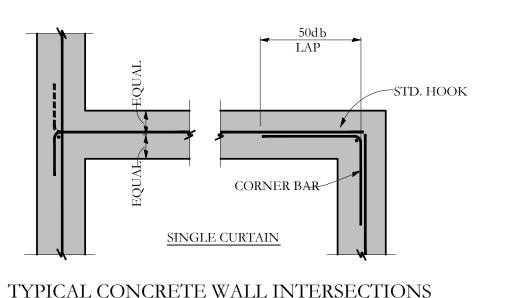
Floor sheathing: nominal ³/₄", APA Sturd-I-Floor "24" tongue & groove glued and nailed.

Roof sheathing: minimum 5/8" CDX plywood, or 19/32" OSB, APA 40/20, nailed. Wall sheathing: 1/2" CDX plywood or 7/16" OSB, APA 24/16, blocked and nailed

Nail wall sheathing with 8d commons at 4" o.c. at panel edges, and 12" o.c. intermediate framing U.N.O. BLOCK AND NAIL ALL EDGES BETWEEN STUDS. Sheathing shall be continuous from bottom plate to top plate. Cut in "L" and "T" shapes around openings. Lap sheathing over rim joists min. 4" at all floors to tie upper and lower stud walls together. Minimum height of sheathing panels shall be 16" to assure that plates are tied to studs. Use minimum 3-8d per stud and nail plates with edge nail spacing.



TYPICAL JOINTS AT INTERIOR SLAB-ON-GRADE



Sole plate at all perimeter walls and at designated shear walls shall be nailed as for braced panels with 3-16d x 3 1/2" long box nails (coated or deformed shank) per 16". 12d nails are not acceptable. SHEATH ALL EXTERIOR WALLS.

* Minimum nailing shall comply with IBC Table 2304.9.1 except where more or larger nailing shown on

* All roof rafters, joists, beams shall be anchored to supports with metal framing anchors.

* Double joists under partitions where joists are parallel to partitions. * Provide continuous wall stude each side of wall openings equal to one half or greater of number of studes

interrupted by openings. All wall studs shall be continuous from floor to floor or from floor to roof.

* Cross bridge all dimension lumber roof and floor joists at midspan and provide solid blocking or rim joists at all joist supports and joist ends.

* Pre-engineered, prefabricated trusses shall be designed for the fabricator by a Professional Engineer Registered in the State of construction, and shall comply with Code and the Truss Plate Institute Requirements.

* Unless otherwise indicated, trusses shall be designed for perpendicular to grain bearing on SPF plates (425 psi). End grain bearing is not allowed unless accepted in writing by S.I.. Design truss bearings for bearing blocks or Truss Bearing Enhancers as required to compensate for overstresses. Specify size, species and nailing for bearing blocks.

* Metal connectors: Simpson Strong Tie unless otherwise noted, installed with number and type of nails to

achieve maximum rated capacity. Note that heavy duty and skewed hangers may require special order.

* All beams shall be braced against rotation at points of bearing. * Drypack grout all beam pockets full after beams are set.

Unless otherwise indicated, install two lengths of solid blocking x joist depth x 12 inches long in floor framing under column loads. Columns must have a continuous load path to foundation.

* Lead holes for lag bolts shall be 60% to 70% of lag shank diameter in compliance with AITC criteria.

STRUCTURAL ERECTION AND BRACING REQUIREMENTS

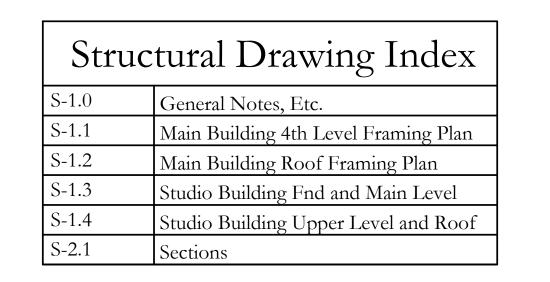
* The structural drawings illustrate the completed structure with all elements in their final positions, properly supported and braced. The contractor, in the proper sequence, shall provide proper shoring and bracing as may be required to achieve the final completed structure.

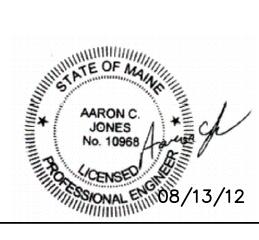
These plans have been engineered for construction at one specific building site. Builder assumes ALL responsibility for use of these plans at Any Other building site. Plans shall not be used for construction at any other building site without specific review by the engineer.

* Observations of foundation reinforcing or framing required by the owner, lender, insurer, building department or any other party will be accomplished by the engineer at the owner's expense. At least 24 hours advance notice is requested.

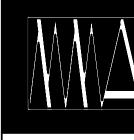
* All slabs on grade shall be separated from adjacent structural and finish elements to allow free movement of the slab, unless specifically shown and noted otherwise.

Fabricator and / or supplier of rebar, structural steel, and pre-engineered wood trusses shall submit shop and erection drawings for architect and engineer review. Submit one reproducible and two prints for each drawing. Allow ten working days for review.









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ark@muellerarchitects.co

MUELLER ARCHITECTS, LLC

APARTMENT

CUMB

TH AND STEPHANIE DUNN RLAND AVENUE PORTLAND, ERI MARK SMI⁻ 41 CUMBE

STUDIO UPPER LEVE AND ROOF FRAMING

PROJECT

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



MUELLER ARCHITECTS 100 Commercial Street Suite 205 Portland, Maine 04101 Phone: 207.774.9057 Fax: 207.773.3851 Email:

mark@muellerarchitects.com

MUELLER ARCHITECTS, LLC

DUNN ORTLAND,

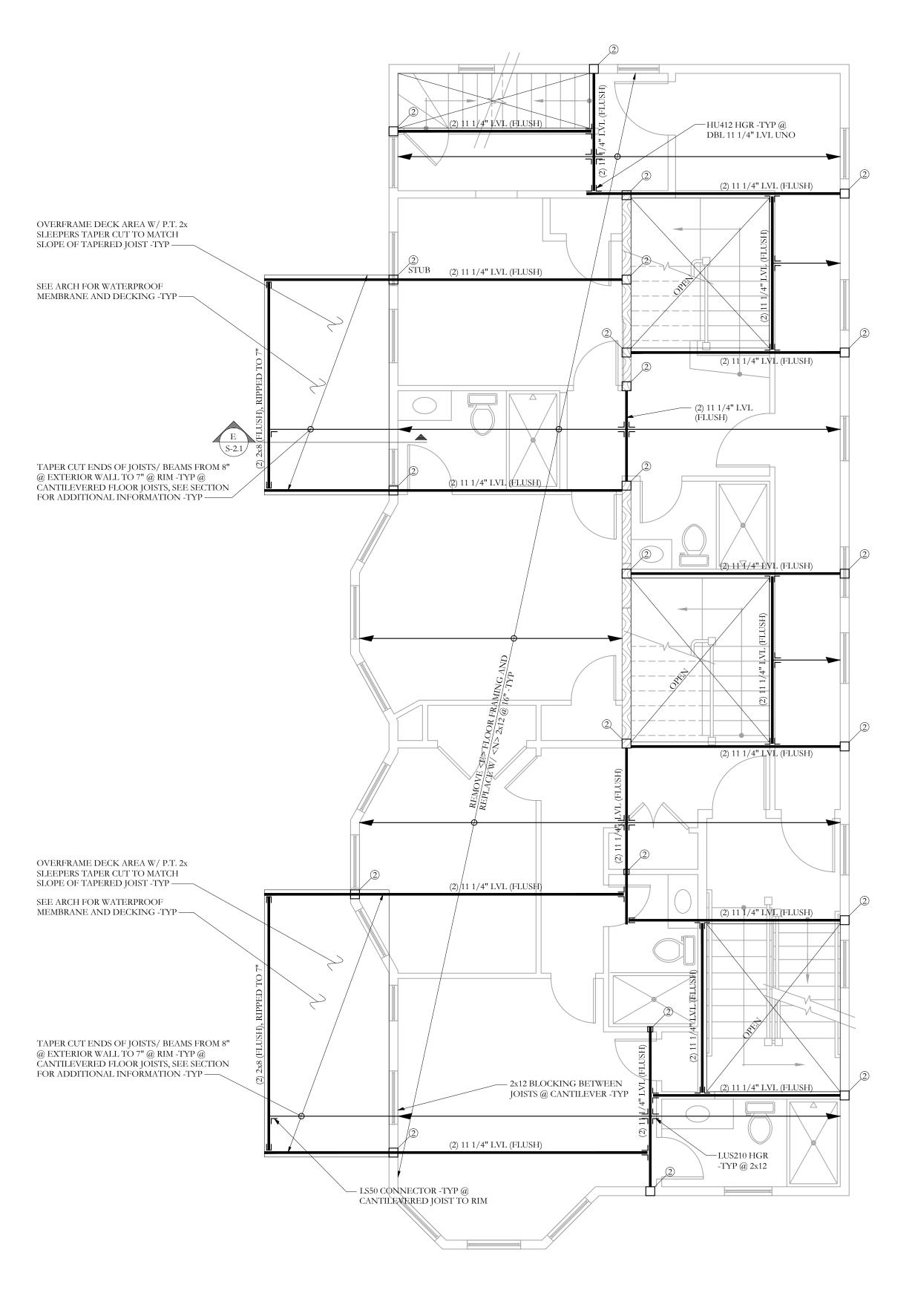
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CALE: 1/4"=1'-0"

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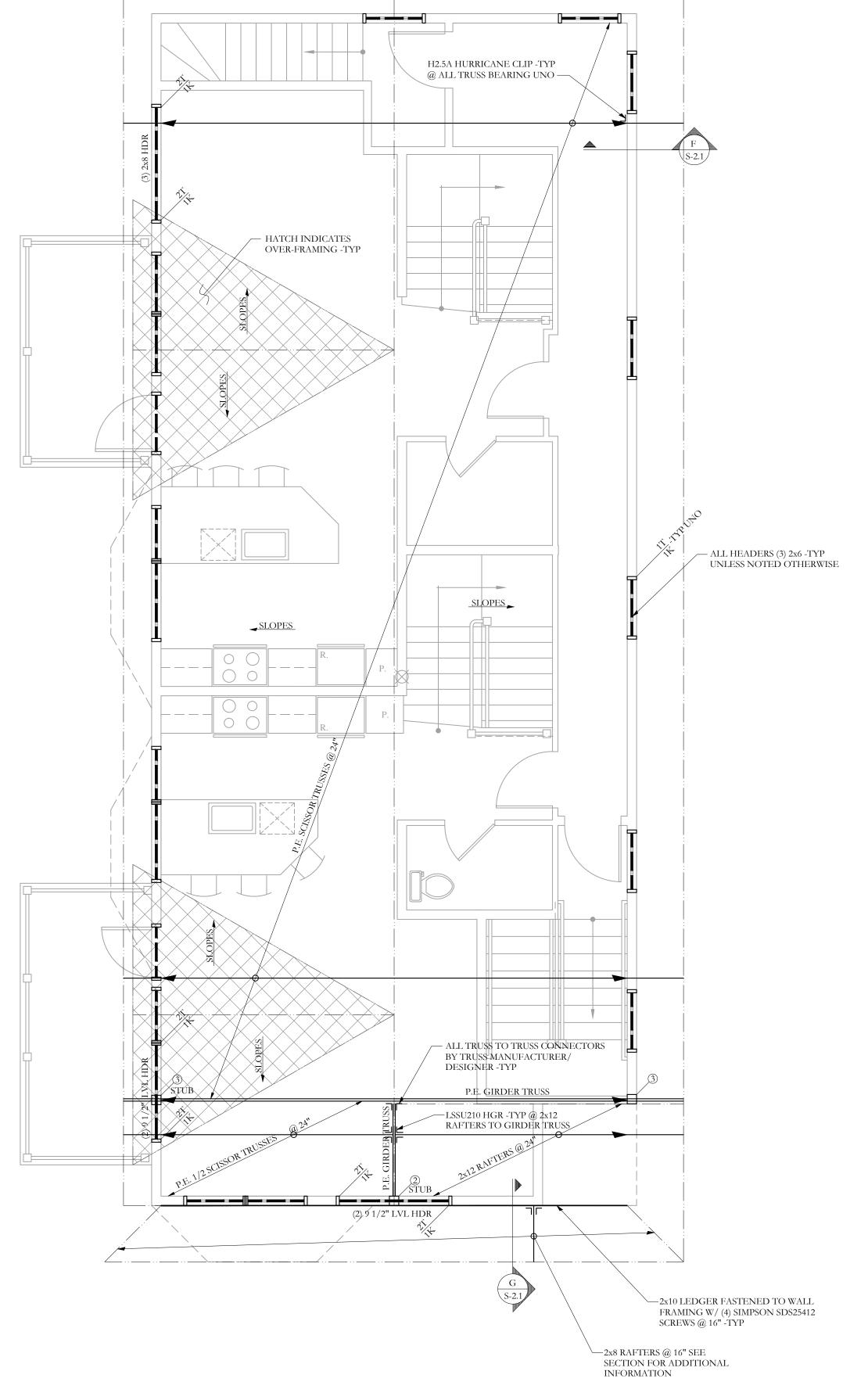


2. ALL WOOD COLUMNS IN 2x6 WALLS SHALL BE 3-2x6 AND IN 2x4 WALLS SHALL BE 3-2x4 UNLESS NOTED OTHERWISE ON PLANS

3. ALL BEAMS ARE FLUSH, UNO 4. ALL HEADERS IN 2x BEARING WALLS ARE 3-2x6, UNO

5. ALL FLOOR JOIST TO BE 2x12 @ 16" -TYP UNO 6. FLOOR SHEATHING TO BE 3/4" T+G, SEE GENERAL NOTES FOR ADDITIONAL INFORMATION -TYP

FRAMING PLAN SYMBOLS KEY		
	WOOD POST	
\bigcirc X	NUMBER OF WOOD STUDS IN POST BELOW	
A	COLUMN ABOVE THIS LEVEL	
С	COLUMN CONTINUOUS THROUGH THIS LEVEL	
—	TRUSS OR JOIST BEARING	
<u>L</u>	FLUSH FRAMED JOIST BEARING WITH HANGER	
	WOOD STUD BEARING WALL BELOW	
///////////////////////////////////////	SHEAR WALL	
<e></e>	EXISTING FRAMING MEMBER	
<n></n>	NEW FRAMING MEMBER	
<u>"X"T</u>	NUMBER OF TRIM STUDS UNDER HEADER	
<u>"X"K</u>	NUMBER OF KING STUDS ADJACENT TO HEADER	



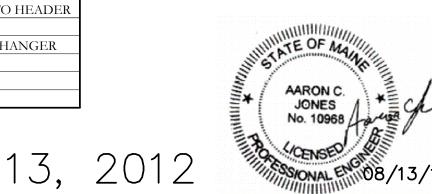
ROOF FRAMING PLAN

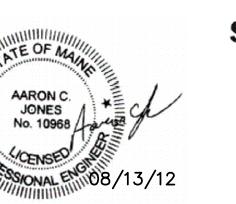
SCALE 1/4"=1'-0" 1. ROOF SHEATHING SHALL BE 5/8" OSB, SEE GENERAL NOTES FOR ADDITIONAL INFO

2. ALL WOOD COLUMNS IN 2x6 WALLS SHALL BE 3-2x6 AND IN 2x4 WALLS SHALL BE 3-2x4 UNLESS NOTED OTHERWISE ON PLANS 3. ALL WOOD BEAMS ARE DROPPED, UNO

4. ALL HEADERS ARE 3-2X6, UNO 5. ALL ROOF RAFTERS TO BE 2x8 @ 16" -TYP UNO

FRAMING PLAN SYMBOLS KEY		
	WOOD POST	
\bigcirc X	NUMBER OF WOOD STUDS IN POST BELOW	
<u>"X"T</u>	NUMBER OF TRIM STUDS UNDER HEADER	
<u>"X"K</u>	NUMBER OF KING STUDS ADJACENT TO HEADER	
—	TRUSS OR JOIST BEARING	
<u> </u>	FLUSH FRAMED JOIST BEARING WITH HANGER	
	WOOD STUD BEARING WALL BELOW	
<n></n>	INDICATES NEW MEMBER	
<e></e>	INDICATES EXISTING MEMBER	







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MUELLER ARCHITECTS, LLC

JILDING



STUDIO FOUNDATION PLAN

- 1. ALL FOOTINGS ARE 8" DEEP 1'-6" WIDE x CONT. WITH (2) # 4 BARS LONGITUDINAL, UNO
- 2. STEP IN TOP OF FOUNDATION WALL IS INDICATED THUS:

 AND SHOWS LOWER SIDE OF WALL.
- 3. SEE S-1.0 FOR STRUCTURAL GENERAL NOTES
- 4. FOOTING TO BEAR 4'-6" MIN BELOW GRADE T.O. FOOTINGS ARE INDICATED THUS: (XX'-XX")

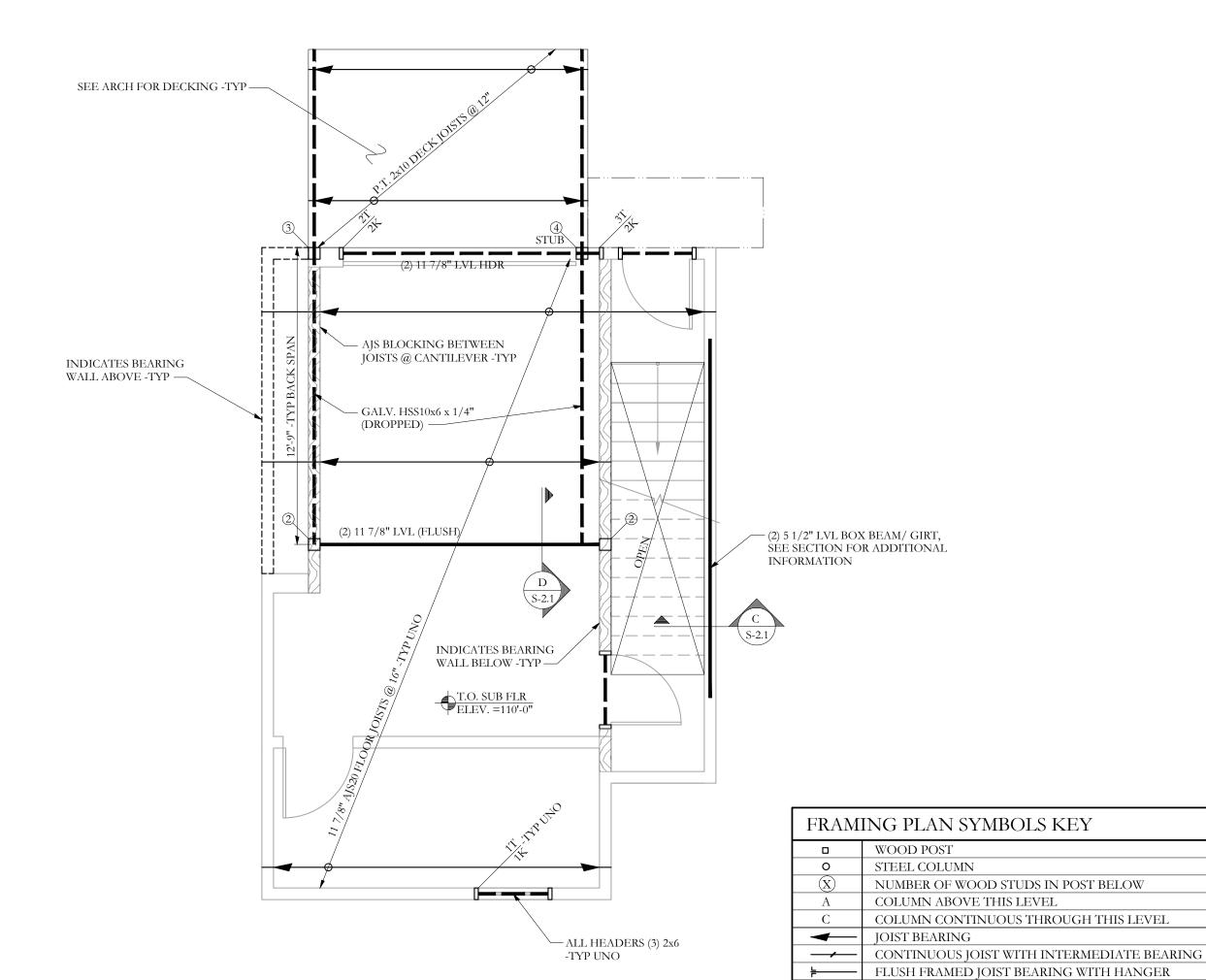
FOOTINGS. PLACE NEW FOOTINGS ON NATIVE SOIL

AT EXISTING FOOTING ELEVATION OR PLACE ON

COMPACTED STRUCTURAL FILL COMPACTED TO 95% OF STANDARD PROCTOR DENSITY, PLACED IN 6"

LIFTS MAX.

5. ŞTEP IN TOP OF FOOTING IS INDICATED THUS: , AND SHOWS LOWER FOOTING.



STUDIO LIVING LEVEL FRAMING PLAN

1. SEE SHEET S-1.0 FOR GENERAL STRUCTURAL NOTES

2. ALL WOOD COLUMNS IN 2x6 WALLS SHALL BE 3-2x6 AND IN 2x4 WALLS SHALL BE 3-2x4 UNLESS NOTED OTHERWISE ON PLANS 3. ALL BEAMS ARE FLUSH, UNO 4. ALL HEADERS IN 2x BEARING WALLS ARE 3-2x6, UNO

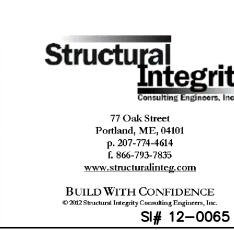
5. ALL FLOOR JOIST TO BE 11 7/8" AJS 20's @ 16" -TYP UNO 6. FLOOR SHEATHING TO BE 3/4" T+G, SEE GENERAL NOTES FOR ADDITIONAL INFORMATION -TYP 8. TOP OF STEEL BEAM ELEVATION= [xxx'-xx"]

WOOD STUD BEARING WALL BELOW

NUMBER OF TRIM STUDS UNDER HEADER

NUMBER OF KING STUDS ADJACENT TO HEADER

SHEAR WALL

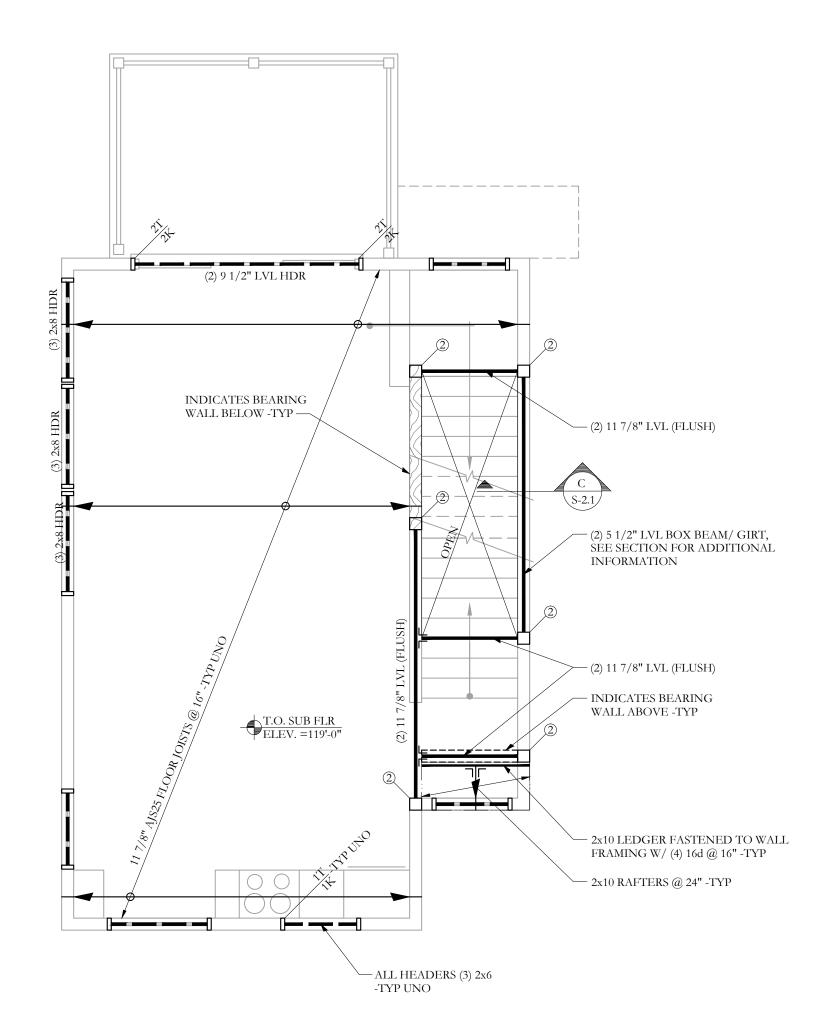


00 Commercial Street ortland, Maine 04101 ax: 207.773.3851 nark@muellerarchitects.co

MUELLER ARCHITECTS, LLC

TH AND STEPHANIE DUNN RLAND AVENUE PORTLAND,

PERMIT SET: AUGUST 13, 2012





STUDIO UPPER LEVEL FRAMING PLAN

1. SEE SHEET S-1.0 FOR GENERAL STRUCTURAL NOTES

2. ALL WOOD COLUMNS IN 2x6 WALLS SHALL BE 3-2x6 AND IN 2x4 WALLS SHALL BE 3-2x4 UNLESS NOTED OTHERWISE ON PLANS

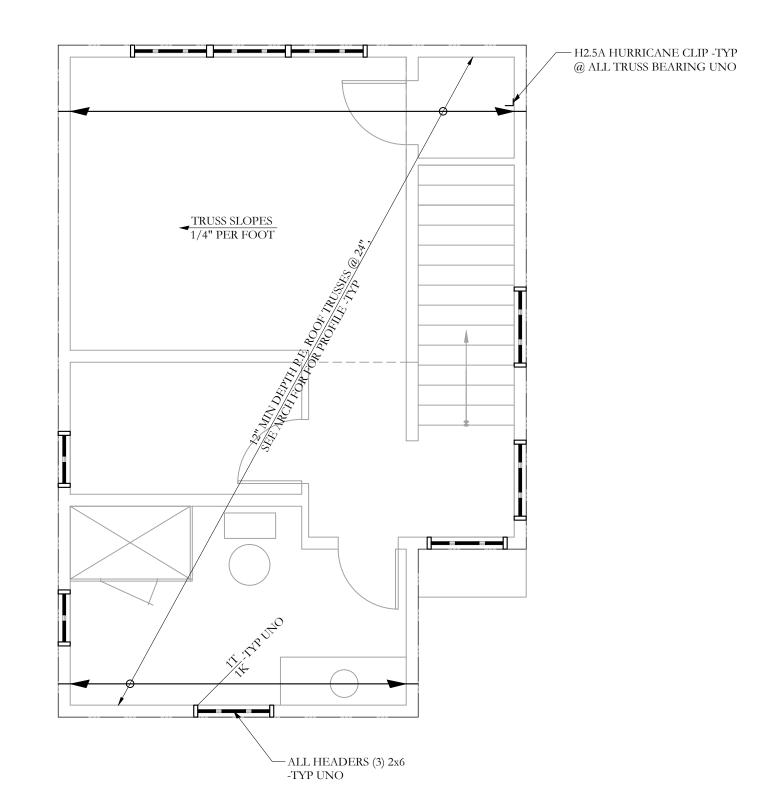
3. ALL BEAMS ARE FLUSH, UNO

4. ALL HEADERS IN 2x BEARING WALLS ARE 3-2x6, UNO 5. ALL FLOOR JOIST TO BE 11 7/8" AJS 20's @ 16" -TYP UNO

6. FLOOR SHEATHING TO BE 3/4" T+G, SEE GENERAL NOTES FOR

ADDITIONAL INFORMATION -TYP

FRAMING PLAN SYMBOLS KEY		
	WOOD POST	
0	STEEL COLUMN	
\bigcirc X	NUMBER OF WOOD STUDS IN POST BELOW	
Α	COLUMN ABOVE THIS LEVEL	
С	COLUMN CONTINUOUS THROUGH THIS LEVEL	
-	JOIST BEARING	
	CONTINUOUS JOIST WITH INTERMEDIATE BEARING	
<u> </u>	FLUSH FRAMED JOIST BEARING WITH HANGER	
	WOOD STUD BEARING WALL BELOW	
///////////////////////////////////////	SHEAR WALL	
<u>"X"T</u>	NUMBER OF TRIM STUDS UNDER HEADER	
<u>"X"</u> K	NUMBER OF KING STUDS ADJACENT TO HEADER	



STUDIO ROOF FRAMING PLAN

SCALE 1/4"=1'-0"

1. ROOF SHEATHING SHALL BE 5/8" OSB, SEE GENERAL NOTES FOR ADDITIONAL INFO 2. ALL WOOD COLUMNS IN 2x6 WALLS SHALL BE 3-2x6 AND IN 2x4 WALLS SHALL

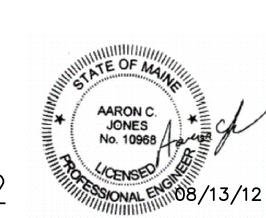
3-2x4 UNLESS NOTED OTHERWISE ON PLANS.

3. ALL WOOD BEAMS ARE DROPPED, UNO 4. ALL HEADERS ARE 3-2x6, UNO

5. ALL ROOF TRUSSES SHALL BE DESIGNED FOR THE MANUFACTURER BY A MAINE REGISTERED P.E. SUBMIT LAYOUT PLANS, BRACING REQUIREMENTS, AND CALCULATIONS

TO ARCHITECT AND ENGINEER OF RECORD FOR APPROVAL

6. SEE S-1.0 FOR GENERAL STRUCTURAL NOTES 7. COORDINATE/ VERIFY ALL ROOF SLOPES WITH LATEST ARCHITECTURAL ROOF PLAN -TYP





MARK SMITH AND STEPHANIE DUNN 41 CUMBERLAND AVENUE PORTLAND,

SERLAND BUILDING STUDIO I



– 3/4" T+G, SEE GENERAL NOTES FOR

– FLOOR JOISTS, SEE PLAN -TYP

(3) 5/8" Ø THROUGH BOLTS EACH

- GALV. HSS10x6 x 1/4" (DROPPED)

– L3x3x 1/4" EACH SIDE -TYP

MORE INFO -TYP

(2) 11 7/8" LVL (FLUSH)

SIDE -TYP

DATE

AUG 13, 2012

FOR PERMIT

PROJECT

43

CUMBERLAND

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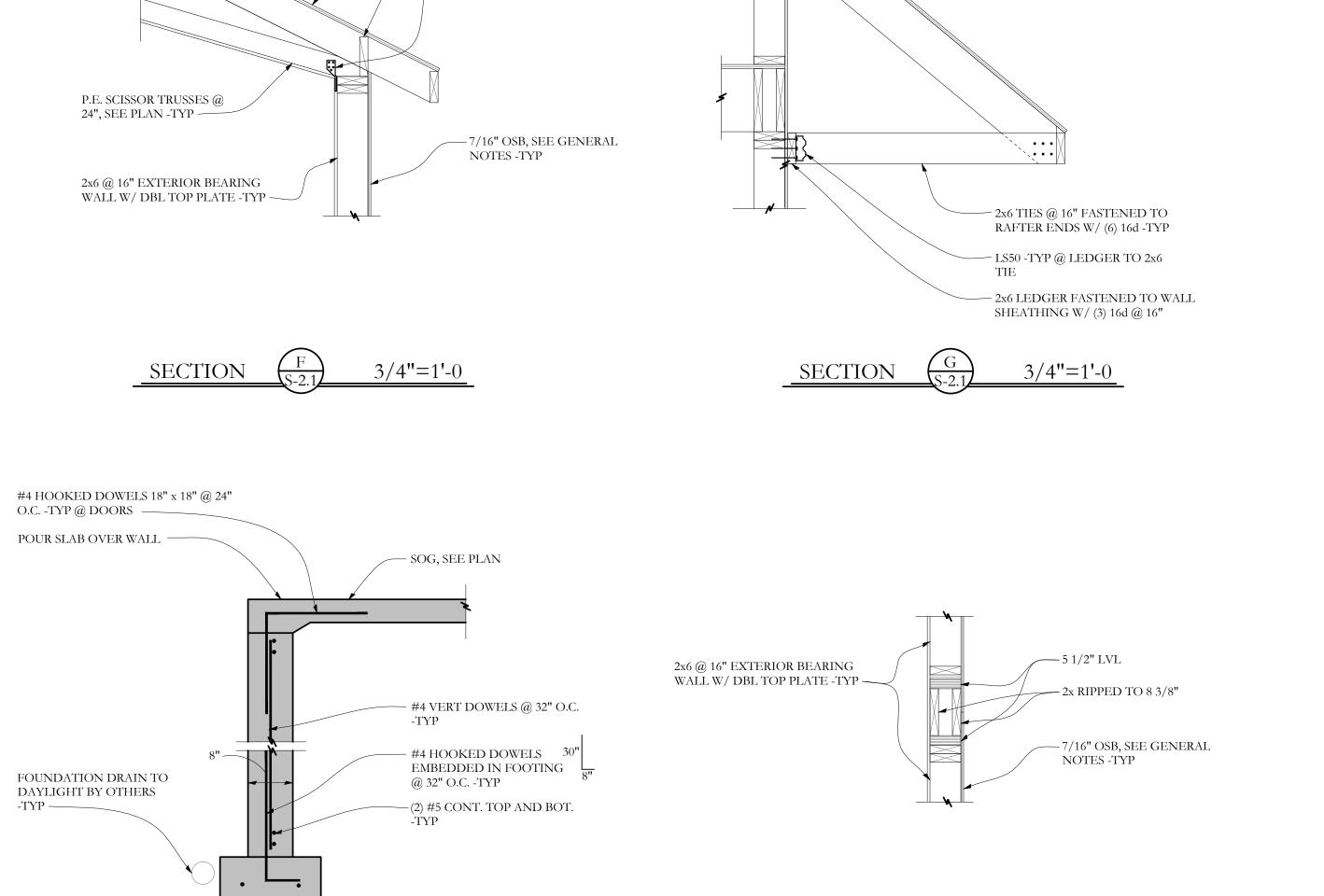
CALE: 3/4"=1'-0"

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SI# 12-0065



- 5/8" OSB SHEATHING -TYP, SEE GENERAL NOTES FOR MORE INFO

NOTCH OR DRILL FOR VENTING

— H2.5A CLIPS -TYP @ TRUSS

BEARING

−2x BLOCKING BETWEEN TRUSSES -TYP

OVERFRAME DECK AREA W/ P.T. 2x

SLEEPERS TAPER CUT TO MATCH

SLOPE OF TAPERED JOIST -TYP

- SEE ARCH FOR WATERPROOF

TO 7" @ RIM -TYP @ DECKS

CANTILEVER -TYP

MEMBRANE AND DECKING -TYP

CANTILEVERED FLOOR JOISTS, TAPER CUT ENDS FROM 8" @ EXTERIOR WALL

- 2x12 BLOCKING BETWEEN JOISTS @

- EXITSTING EXTERIOR BEARING WALL TO REMAIN -TYP UNO

- LS50 CONNECTOR -TYP @

CANTILEVERED JOIST TO RIM

- (2) 2x8 (FLUSH), RIPPED TO 7"

___2x6 @ 16" BEARING WALL

–7/16" OSB, SEE GENERAL

–P.T. 2x6 SILL -TYP

−1/2" Ø x 10" GALVANIZED ANCHOR BOLTS WITH 2" HOOK @ 32" -TYP.

– #4 VERT DOWELS @ 32" O.C.

- #4 HOOKED DOWELS 30"

(2) #5 CONT. TOP AND BOT.

@ 32" O.C. -TYP

SEE PLAN

EMBEDDED IN FOOTING

4" SOG W/ FIBERMESH ON 2" RIGID INSULATION ON VAPOR BARRIER

SEE PLAN

(2) #4 CONT. IN FOOTING, -TYP _____ - 2x10 LEDGER FASTENED TO WALL FRAMING W/ (4) SIMPSON SDS25412 SCREWS @ 16" -TYP

PERMIT SET: AUGUST 13, 2012

—— LSSU28 -TYP

— 2x8 RAFTERS @ 16" -TYP