

PROJECT DIRECTORY

OWNER:

NICK KIRBY

DESIGN PROFESSIONAL:

MACLEOD STRUCTURAL ENGINEERS, PA
90 BRIDGE STREET
WESTBROOK, MAINE 04092
TEL. 207-639-0980

GENERAL CONTRACTOR:

BRIAN HOPKINS
TEL. 207-712-2410

PROJECT DESCRIPTION:

- THIS PROJECT CONSISTS OF -
1. ADDING A FULL SHED ROOF DORMER TO AN EXISTING CAPE STYLE HOME.
 2. UPDATING/RENOVATING INTERIOR SPACES.
 3. INSTALLING NEW ROOFING, SIDING, DOORS, AND WINDOWS.
 4. THE FOOTPRINT OF THE BUILDING IS UNCHANGED.
 5. EXISTING COMPONENTS TO REMAIN EXCEPT AS NOTED HEREIN.

SYMBOLS

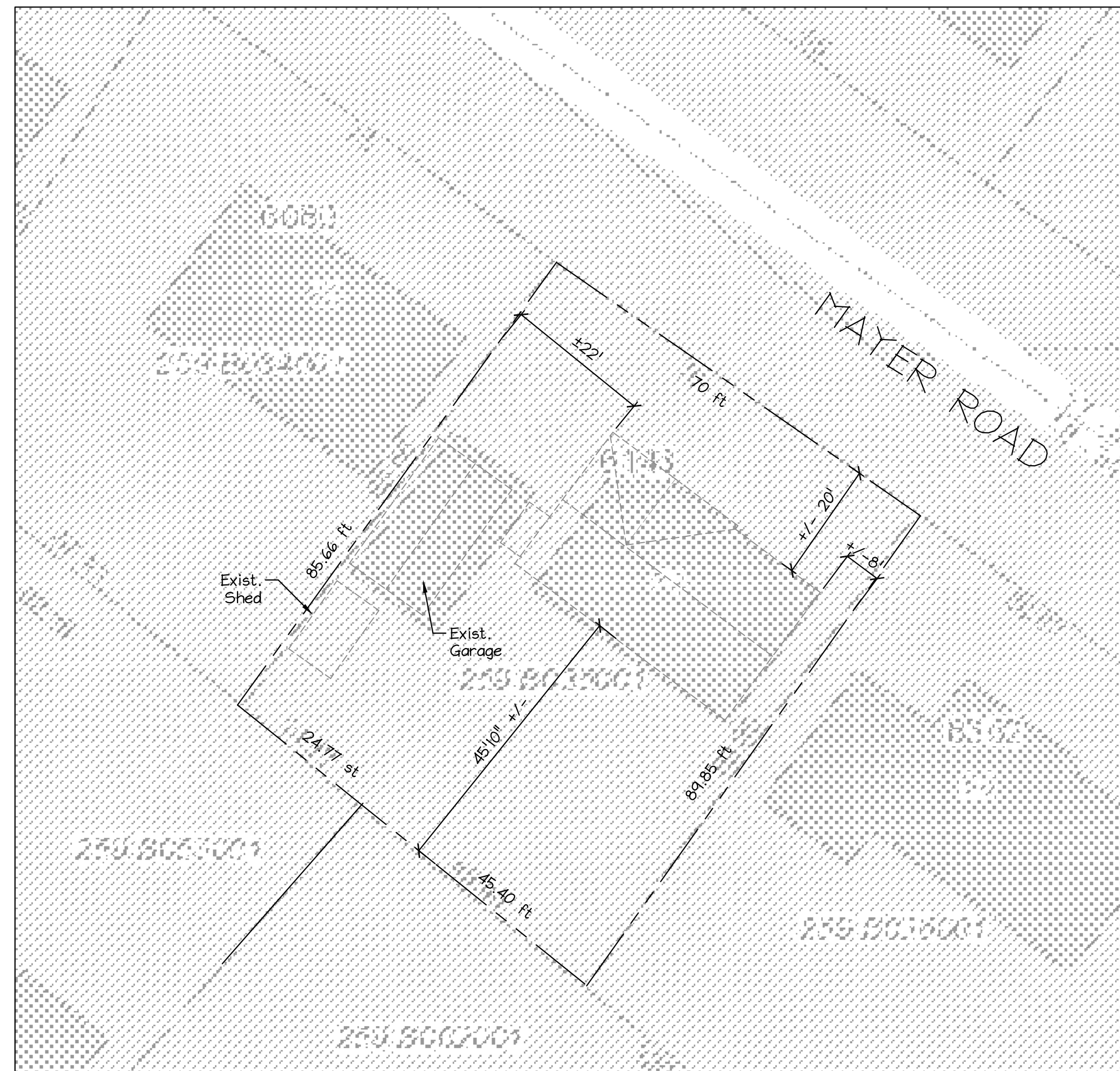
- 102 ROOM NUMBER/NAME
- 2 DOOR NUMBER
- 2 WINDOW NUMBER
- 2 REVISION NUMBER
- 2 WALL TYPE

SECTION TAG 	DETAIL LEADER - LEFT TAG DETAIL	VIEW TAG
SECTION LABEL TAG SECTION Scale: ?" = 1'-0"	DETAIL LABEL TAG DETAIL Scale: ?" = 1'-0"	
TITLE LABEL TAG SECOND FLOOR FRAMING PLAN Scale: ?" = 1'-0"		
GRID BUBBLE 	ELEVATION LEADER T.O. Grade Elev. = xx'-x"	BREAK

MATERIALS

- EARTH
- CONCRETE
- BRICK
- WOOD
- BATT INSULATION
- RIGID INSULATION

54 Mayer Road
Portland, Maine



PLOT PLAN

THIS PLAN IS BASED ON CITY OF PORTLAND TAX MAP

THIS IS NOT A SURVEY

GENERAL NOTES:

1. THIS PLAN IS DESIGNED TO COMPLY WITH MAINE BUILDING AND ENERGY CODE, 2015 IRC, AND 2015 IECC
2. ALL OTHER CODES SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR
3. ALL MECHANICAL/PLUMBING/ELECTRICAL DESIGN BY OTHERS
4. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK

ENERGY CODE STANDARDS: ZONE 6

1. FENESTRATIONS -Windows u-0.35, shg-0.38
-Doors u-0.25
2. ROOF -R49 (R30 at Sloping Ceiling Areas)
3. EXTERIOR WALLS -R21 (at New Construction)
4. BASEMENT CONC. WALLS (Exist to Remain)

ENERGY CODE NOTES:

1. ALL JOINTS AND PENETRATIONS SHALL BE CAULKED, GASKETED, OR COVERED WITH MOISTURE VAPOR-PERMEABLE WRAPPING MATERIAL
2. COMPONENT R-VALUES & U-FACTORS SHALL BE LABELED AS CERTIFIED.
3. INSULATION SHALL BE INSTALLED ACCORDING TO MFRS. INSTRUCTIONS, AND IN A MANNER THAT ACHIEVES THE REQ'D R-VALUE
4. STAIR, ELEVATOR SHAFT VENTS, AND OTHER OUTDOOR INTAKE AND EXHAUST OPENINGS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS.
5. RECESSED LIGHTING FIXTURES INSTALLED IN THE BUILDING ENVELOPE SHALL BE TYPE IC RATED AS MEETING ASTM E283, AND SEALED OR CAULKED.

CODE REVIEW NFPA 101
Chapter 24 One and Two Family Dwellings
24.2 Means of Egress - One primary means of egress and one secondary means of escape is required from every sleeping room and every living area. This design meets this requirement
24.2.5 Stairs - min. width =36in,
24.2.6 Hallways - min. width 36in
24.2.7 Bulkheads - shall provide direct access to the basement, are exempt from requirements of 24.2.5.1
24.3.4.1 Smoke alarms shall be provided in each sleeping room, outside each separate sleeping area in the immediate vicinity, and on each additional level including attic and basement, and shall be interconnected per this code
24.3.5.2 Sprinkler system is required per NFPA 13D

Single Family Residence Code Review

54 Mayer Road
Portland, Maine

CODE REVIEW: IRC2015

CH3
SECT 301 DESIGN CRITERIA
Design Wind speed = 120mph, therefore design per IRC
Design Snow, Pg= 60psf, therefore design per IRC
For additional structural design criteria, refer to Structural notes.

SECT 302 FIRE RESISTANT CONSTRUCTION

R302.1 Exterior Walls shall comply with Table R302.1
Not within 5ft of property line.
R302.7 Under stair protection is required for accessible spaces below stairs
R302.9 Wall and ceiling finishes shall meet flame spread <200 and smoke index <450.
R302.10 Insulation materials including vapor barriers shall meet flame spread <25 and smoke index <450 except as otherwise provided in this section
R302.11 Fireblocking is required at floors and ceilings, top and bottom of stair runs, and openings at vents, pipes, ducts, cables and wires with materials approved in this code
R302.12 Draftstopping at floor/ceilings is not required for this project
R302.13 Underside of Floors Shall be Protected Unless Joists are min. 2x10 per this section
R303 LIGHT VENTILATION AND HEATING
R303.1 Habitable rooms shall have glazing >8 % of floor area, with 4% operable
R303.3 Bathrooms, min. glazing area of 3 sq. ft. with half operable
R303.7 Stairways shall have artificial illumination per this section
R303.8 Exterior Stairways shall have artificial illumination per this section
R303.10 Heating shall be provided per the requirements of this code

R304 MINIMUM ROOM AREA requirements have been met in these plans
R305 CEILING HEIGHT min. of 7ft has been met
R306 SANITATION requirements have been met
R307 TOILET, BATH AND SHOWER SPACES comply with this section
R308 GLAZING shall comply with the requirements of this section
R310 EMERGENCY ESCAPE is required from the basement and sleeping rooms - Complies.
R311 MEANS OF EGRESS each unit in these plans has one egress in compliance with this section
R311.6 Hallways are > 36 in. wide
R311.7 Stairways, handrails, rise and run, nosings, headroom, etc are in compliance with this code refer to stairway sections and details within (these are existing)
R313 AUTOMATIC SPRINKLER SYSTEMS R313.2, new two family dwellings shall have an automatic sprinkler system complying with NFPA13D
R314 SMOKE ALARMS shall be provided in each sleeping room, outside each separate sleeping area in the immediate vicinity, and on each additional level including attic and basement, and shall be interconnected per this code
R315 CARBON MONOXIDE ALARMS shall be provided in the immediate vicinity outside sleeping areas

CHAPTER 6 WALL CONSTRUCTION

602.10.1 Braced Wall Panels
Mixed wall types are used
First Floor Walls are Existing

CHAPTER 11 ENERGY EFFICIENCY

Table N1101.2 Climate zone 6A
Windows, U= 0.32, SHGC = NR
Doors, U = 0.32
Glazed Fenestrations, U = 0.32, SHGC = NR
Attic, R= 49 (R30 if uncompressed over exterior walls and at Sloped Ceilings)
Exterior walls, R=20 +5 contin.
Basement, R= 30 at ceiling, or R15 Walls Contin. (New Construction)

RESIDENTIAL SPECIFICATIONS:

FLOOR SYSTEM: EXISTING

EXTERIOR WALLS:
2x6 Studs as Indicated (16"oc)
Sheathing as Indicated (1/4")
Air Infiltration Wrap
Siding/Finish as Indicated

INTERIOR WALLS:
2x4 Studs @ 16"oc
1/2" Gypboard as Indicated

ROOF SYSTEM:
Rafters/Trusses as Indicated
Sheathing as Indicated (5/8")
15# Underlayment
Ice & Water Shield at Eaves/Valleys
235# Asphalt Shingles as Indicated

INSULATION:
Exterior Walls R-21
Attic Cap R-49
Sloped Ceiling R-30
Sills -Existing

VENTILATION:
Soffit - 2"Contin. Strip
Ridges - Contin. Shingle
Circulation Vents Between
Rafters/Trusses

BEAMS/HEADERS:
(3)2x6 Max. 40" Span
(3)2x10s Max 76" Span
Min. 4" Bearing all Beams

INTERIOR FINISHES:
1/2" Gypboard or As Indicated
At Walls/Ceilings
Flooring As Indicated
Paint/Stain As Indicated

Note: Items not Indicated Shall be Per Contract

DRAWING LIST:

- A0.0 COVER SHEET
- A-1 FLOOR PLAN
- A-2 ELEVATIONS
- A-3 ROOF PLAN & SECTION
- S-1 FRAMING PLAN & NOTES

ISSUED FOR PERMIT
4/13/18

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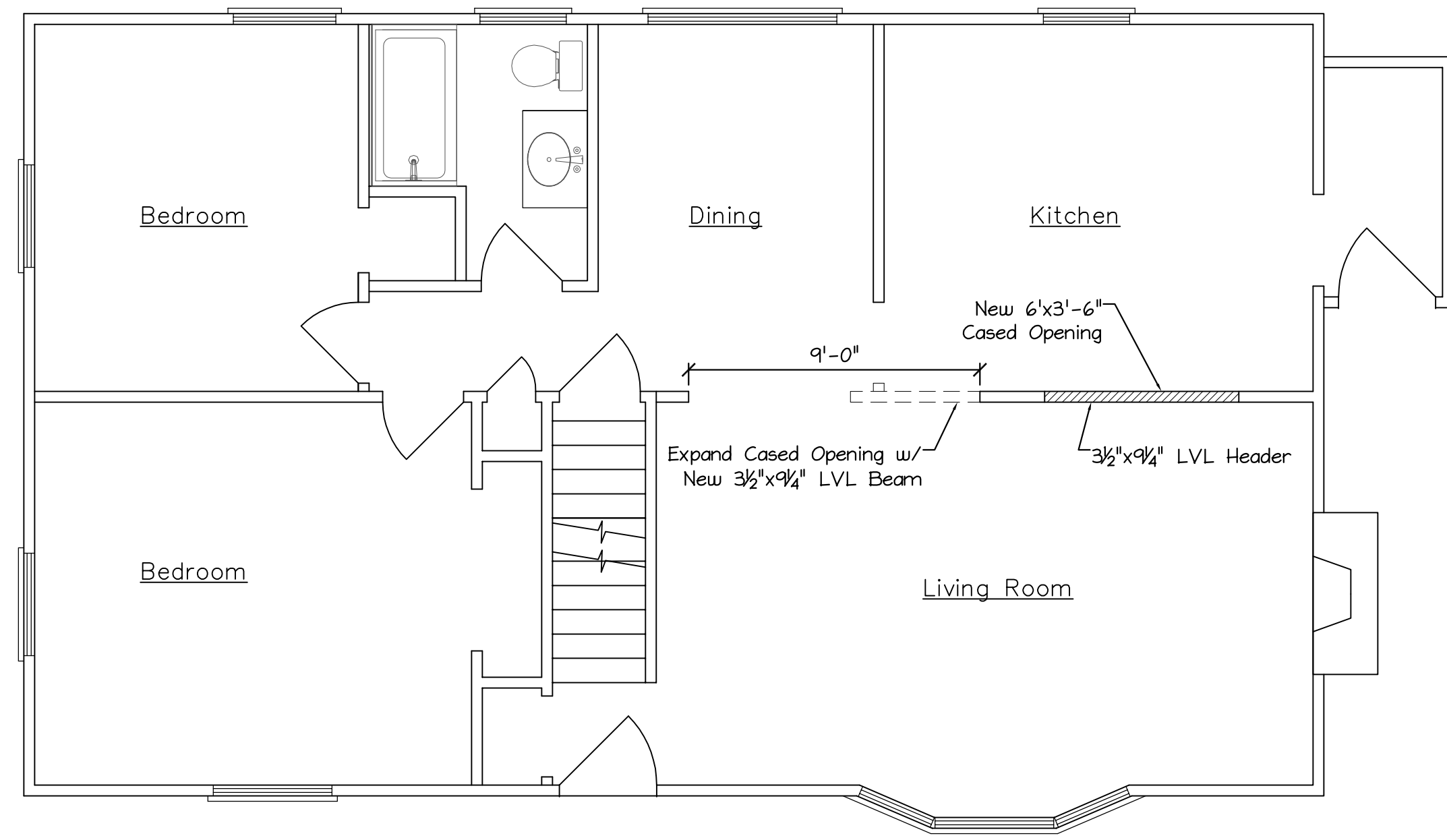


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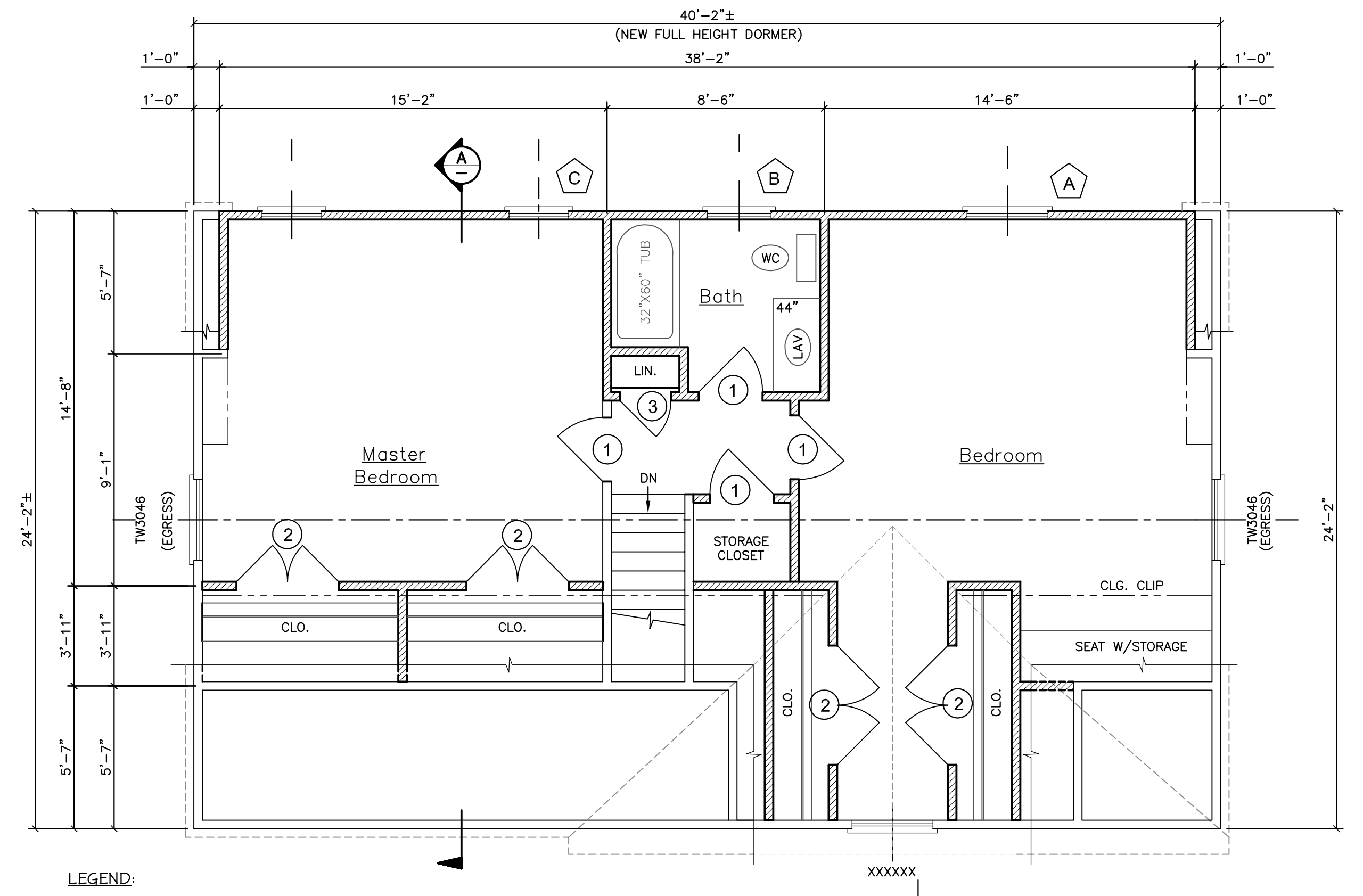
Dormer Expansion
54 Mayer Road
Portland, Maine

TITLE:
COVER SHEET

DATE: 03.30.18 DRAWN BY: BIM DRAWING NUMBER:
SCALE: as noted PROJ. NO: 2018-013 A-0.0

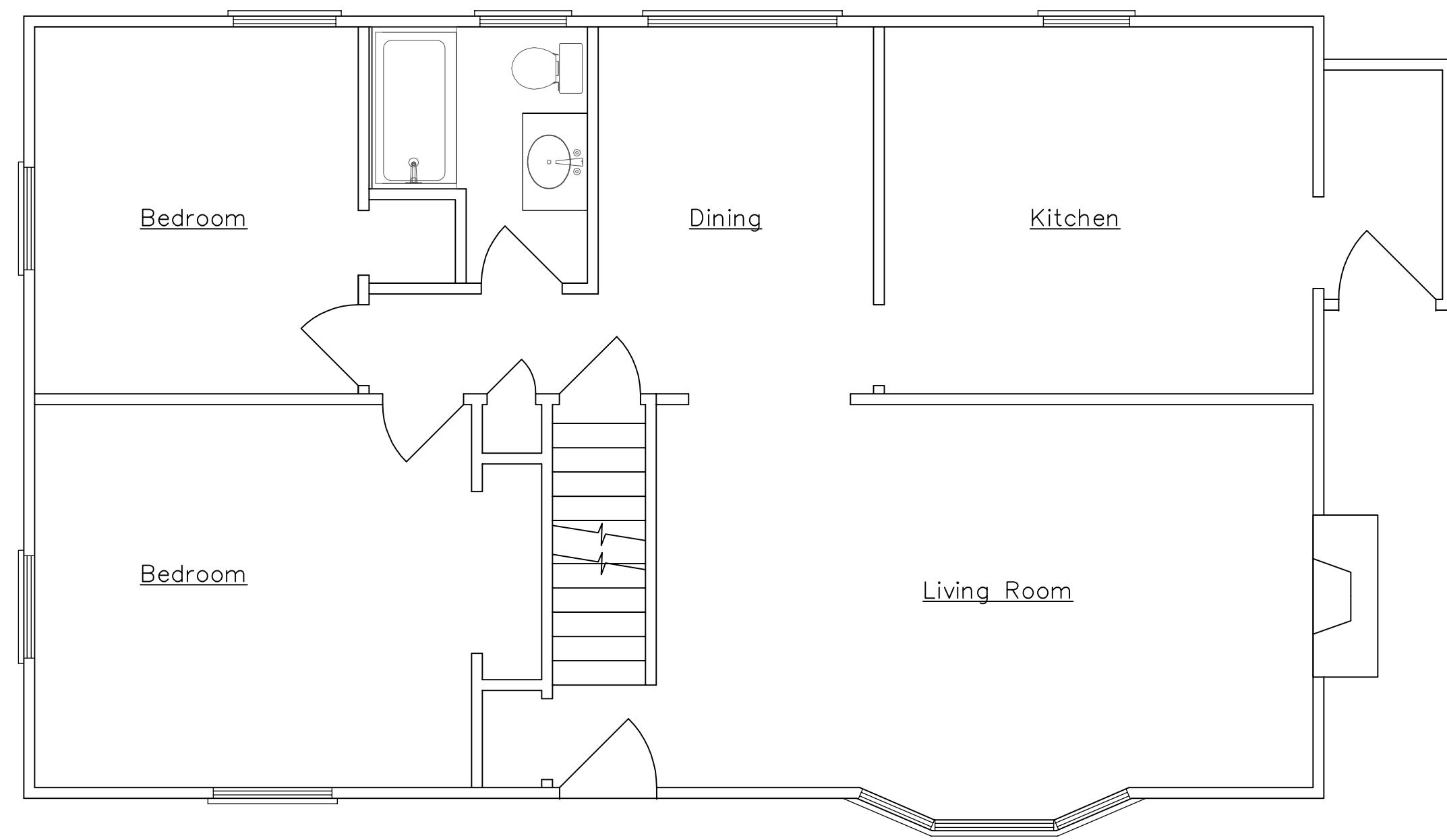
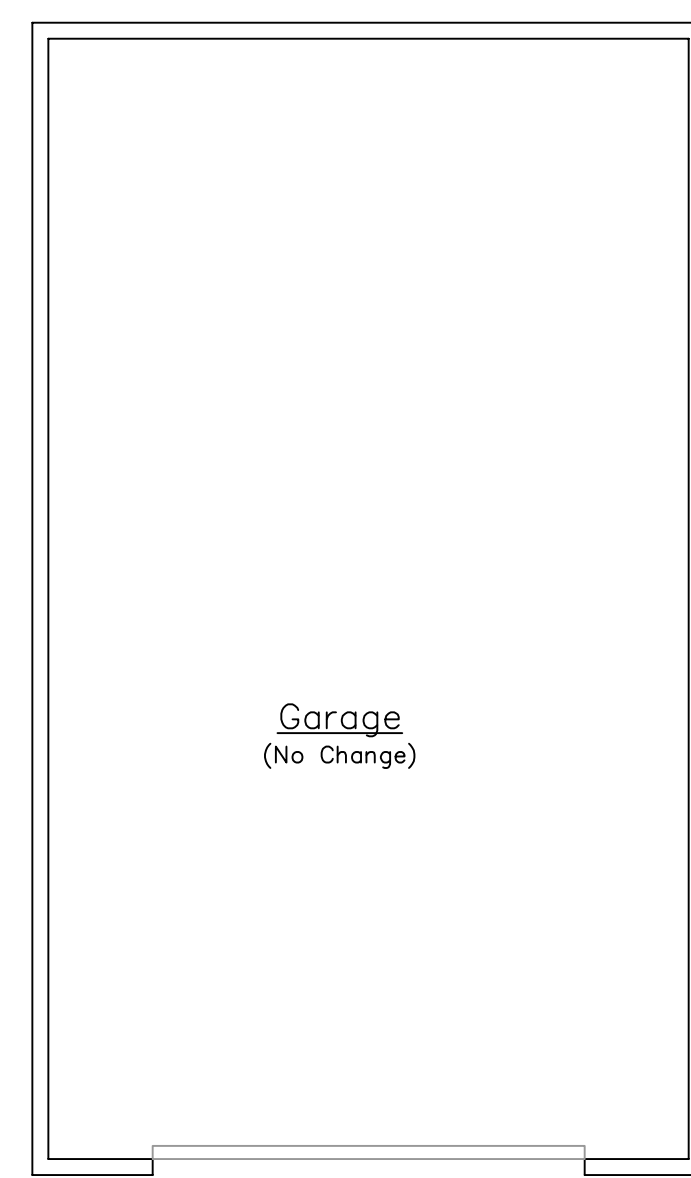


PROPOSED FLOOR PLAN—FIRST FLOOR
SCALE: 1/4"=1'-0"

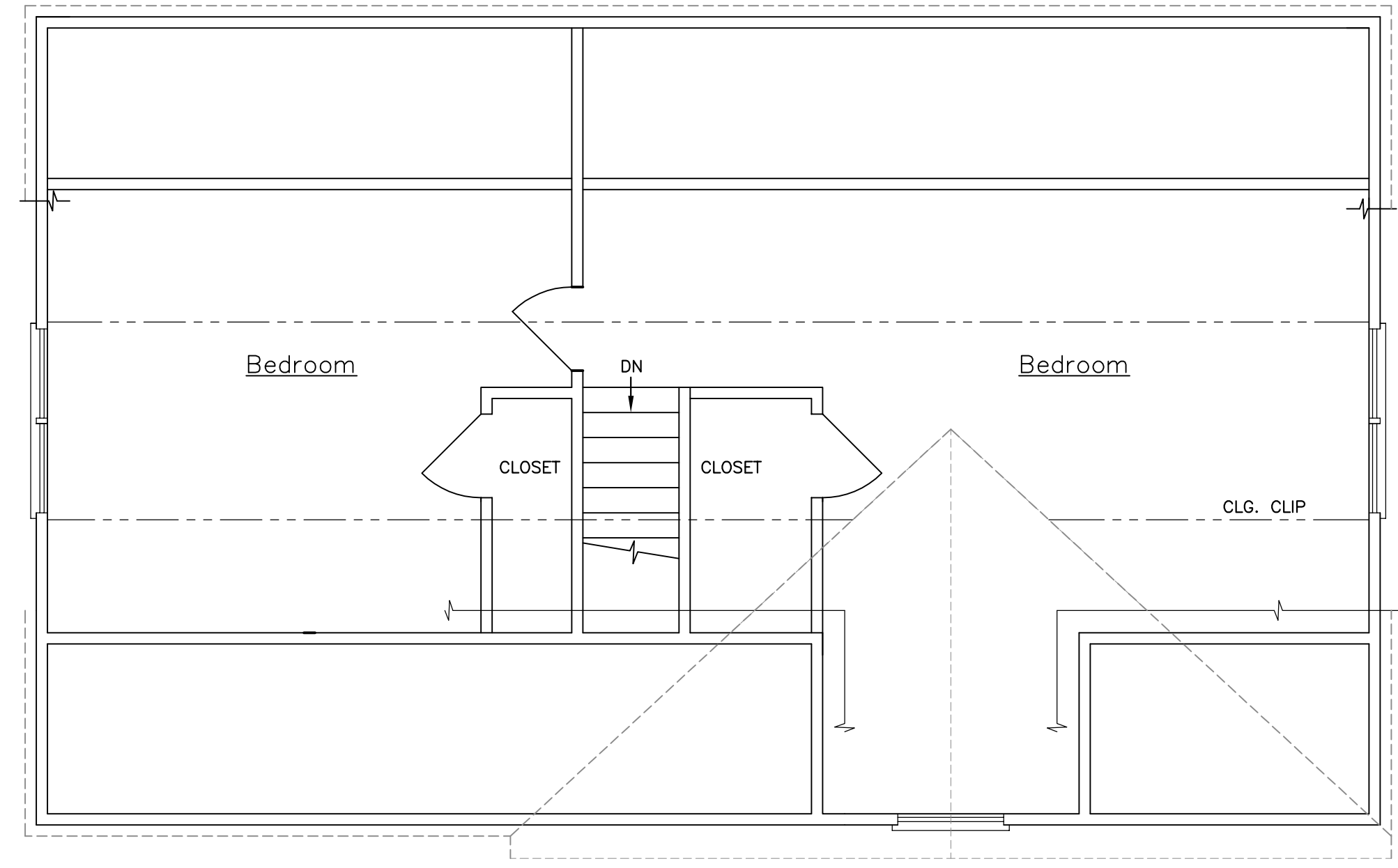


PROPOSED FLOOR PLAN—SECOND FLOOR
SCALE: 1/4"=1'-0"

LEGEND:
 - New Wall Construction
 - Existing Wall to Remain

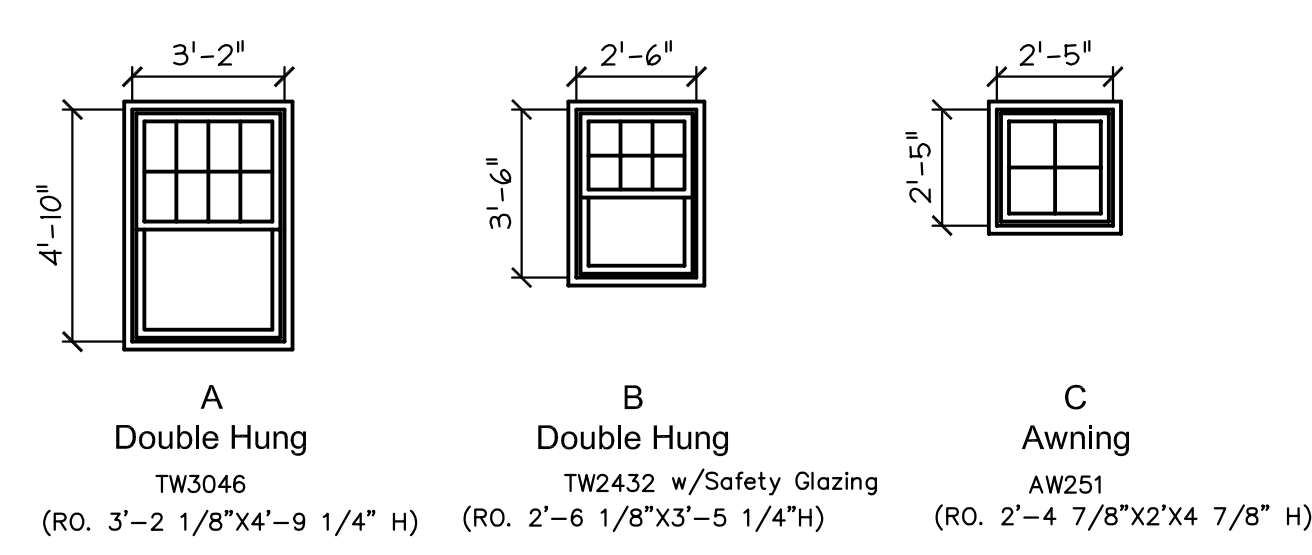


EXISTING FLOOR PLAN—FIRST FLOOR
SCALE: 1/4"=1'-0"



EXISTING FLOOR PLAN—SECOND FLOOR
SCALE: 1/4"=1'-0"

DOOR SCHEDULE									
DOOR #	SIZE	LABEL	DOOR		FRAME			TYPE	REMARKS
			MTR'L	ELEV	MT'RL	ELEV	JAMB DTL		
1	2668	---	Wood	---	---	---	---	Interior	
2	(2)2068	---	Wood	---	---	---	---	Interior	Double Swing
3	2068	---	Wood	---	---	---	---	Interior	



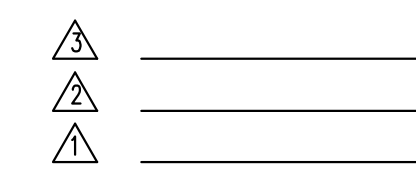
WINDOW SCHEDULE
 *Refer To Energy Code Notes For Window & Door Performance Requirements

Note: First Floor Windows, All to Remain



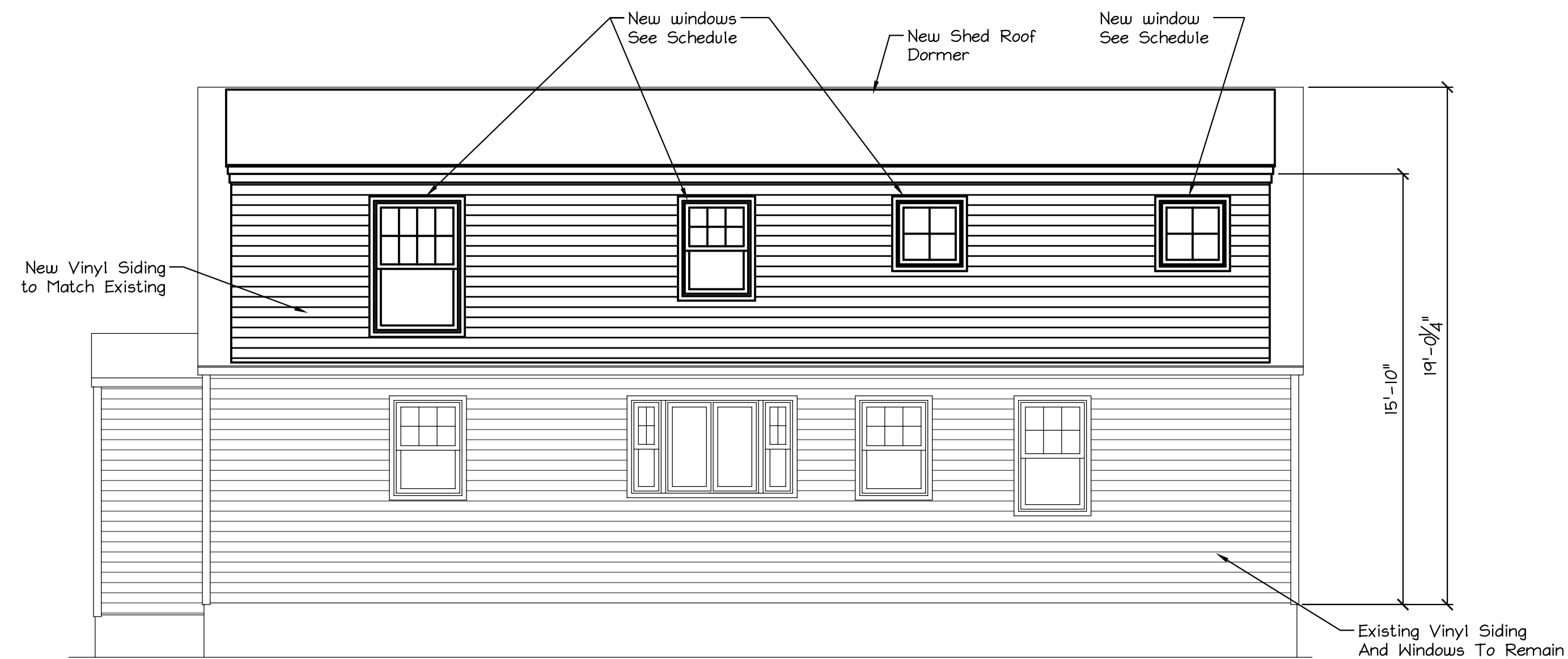
Reviewed for Code Compliance
 Permitting and Inspections Department
 Approved with Conditions
 05/08/2018

MACLEOD STRUCTURAL ENGINEERS, PA 80 Bridge Street Suite 252 Westbrook, Maine 04092 207.639.0980		
Dormer Expansion 54 Moyer Road Portland, Maine		
TITLE: FLOOR PLAN		
DATE: 03.30.18	DRAWN BY: BIM	DRAWING NUMBER: A-1
SCALE: as noted	PROJ NO: 2018-013	

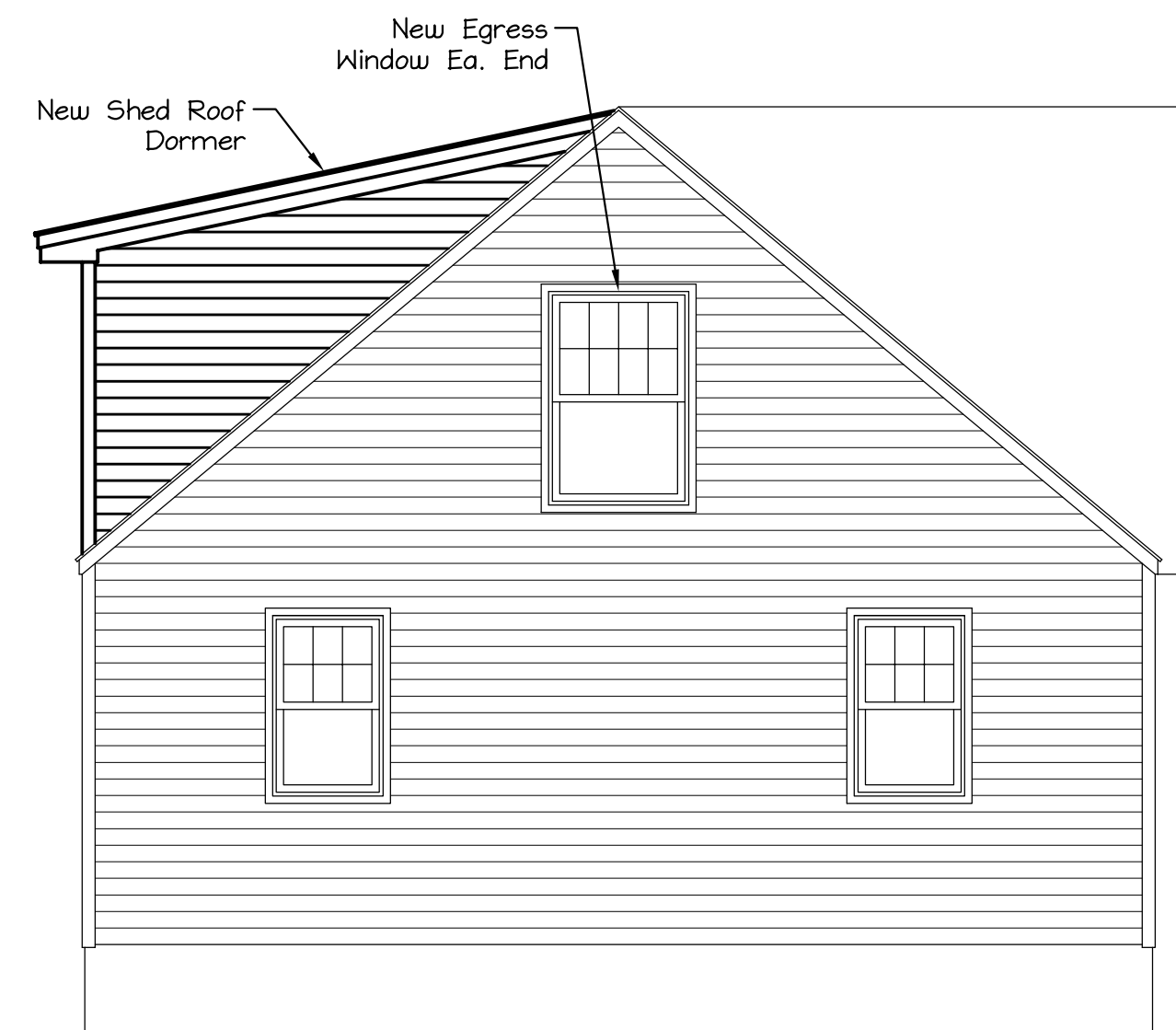




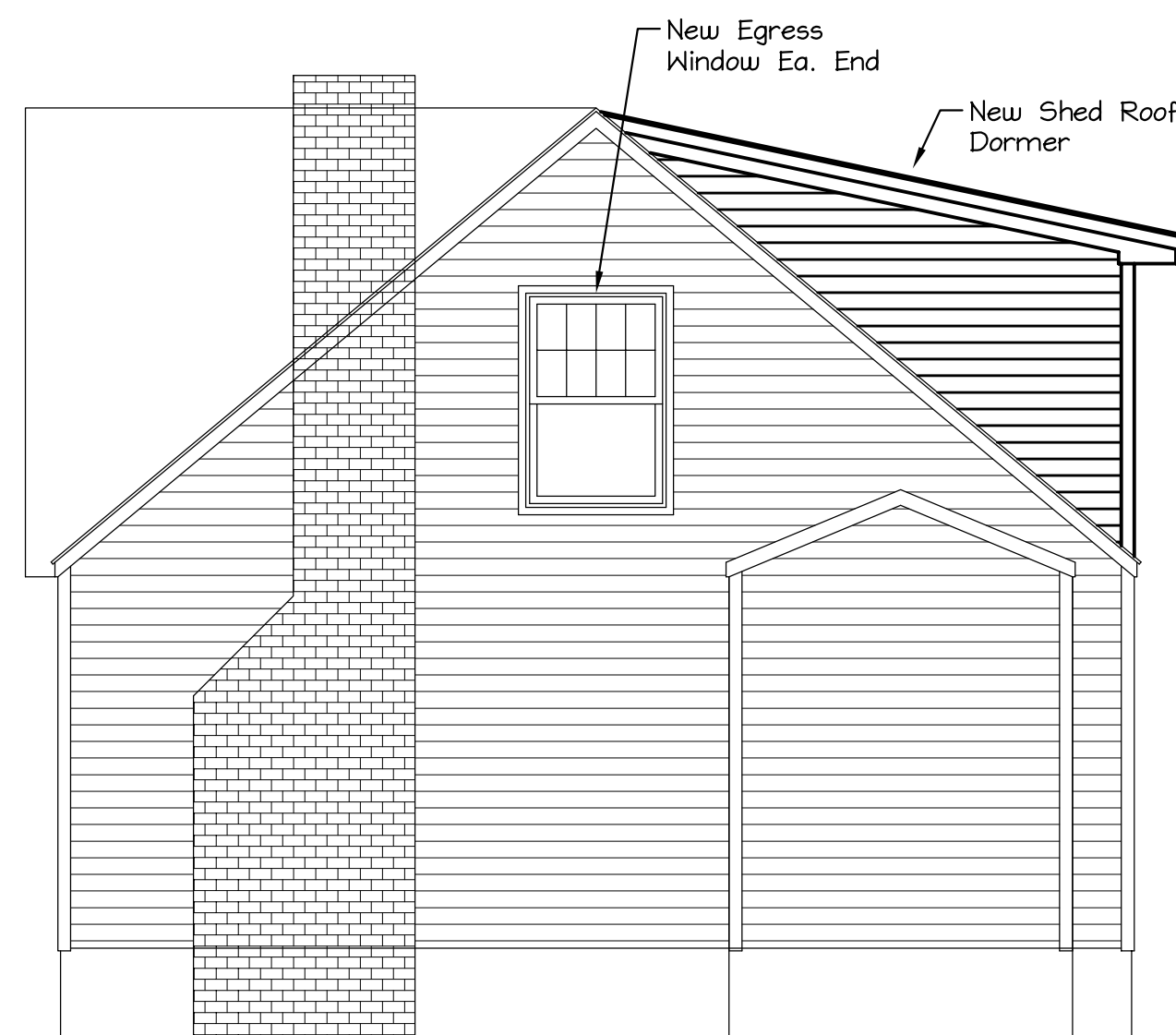
FRONT ELEVATION
SCALE: 1/4"=1'-0"



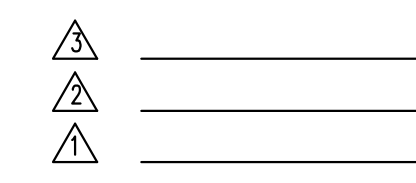
REAR ELEVATION
SCALE: 1/4"=1'-0"



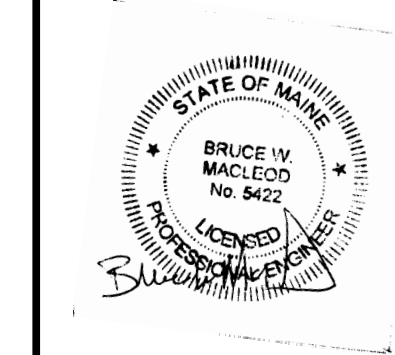
LEFT SIDE ELEVATION
SCALE: 1/4"=1'-0"



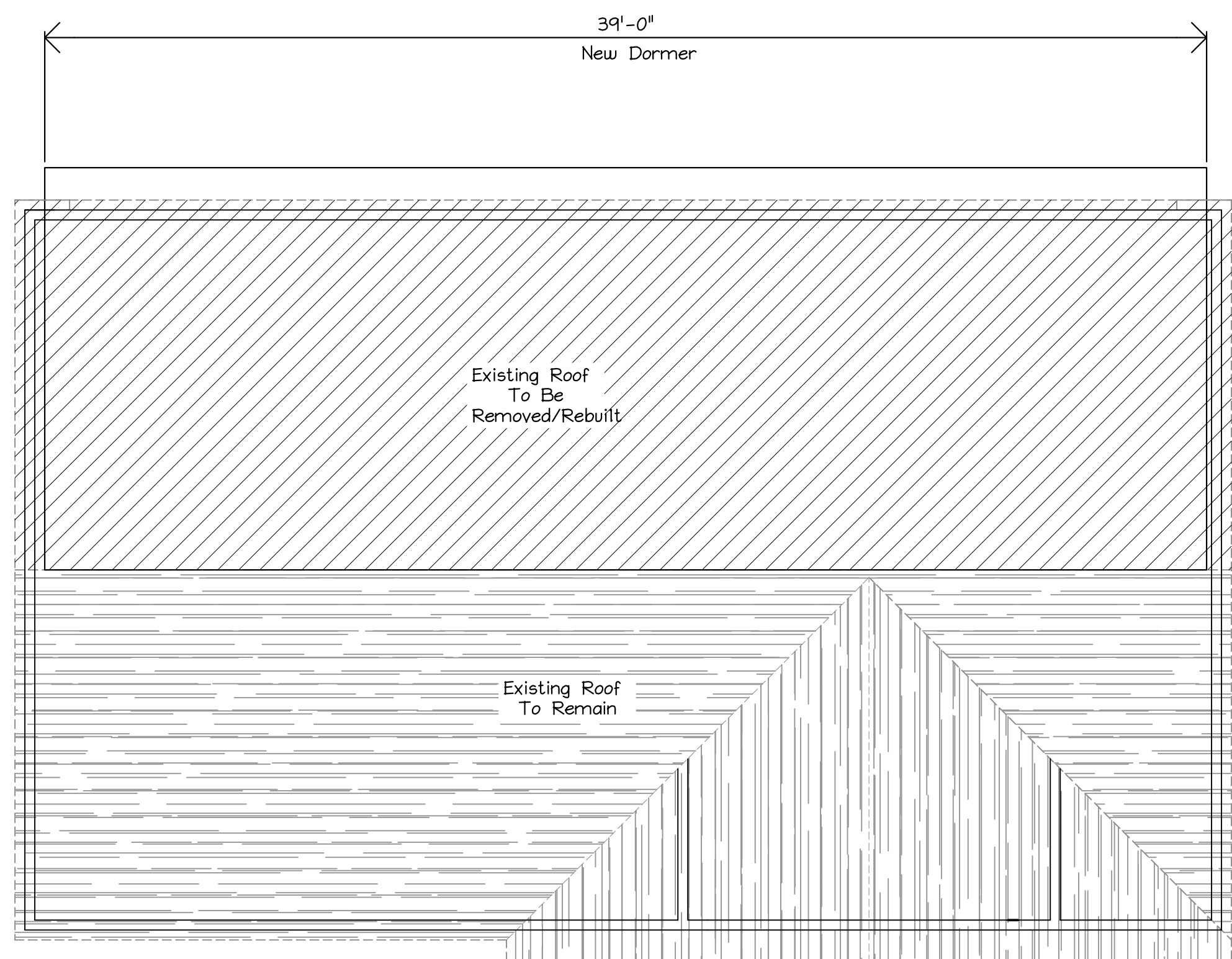
RIGHT SIDE ELEVATION
SCALE: 1/4"=1'-0"



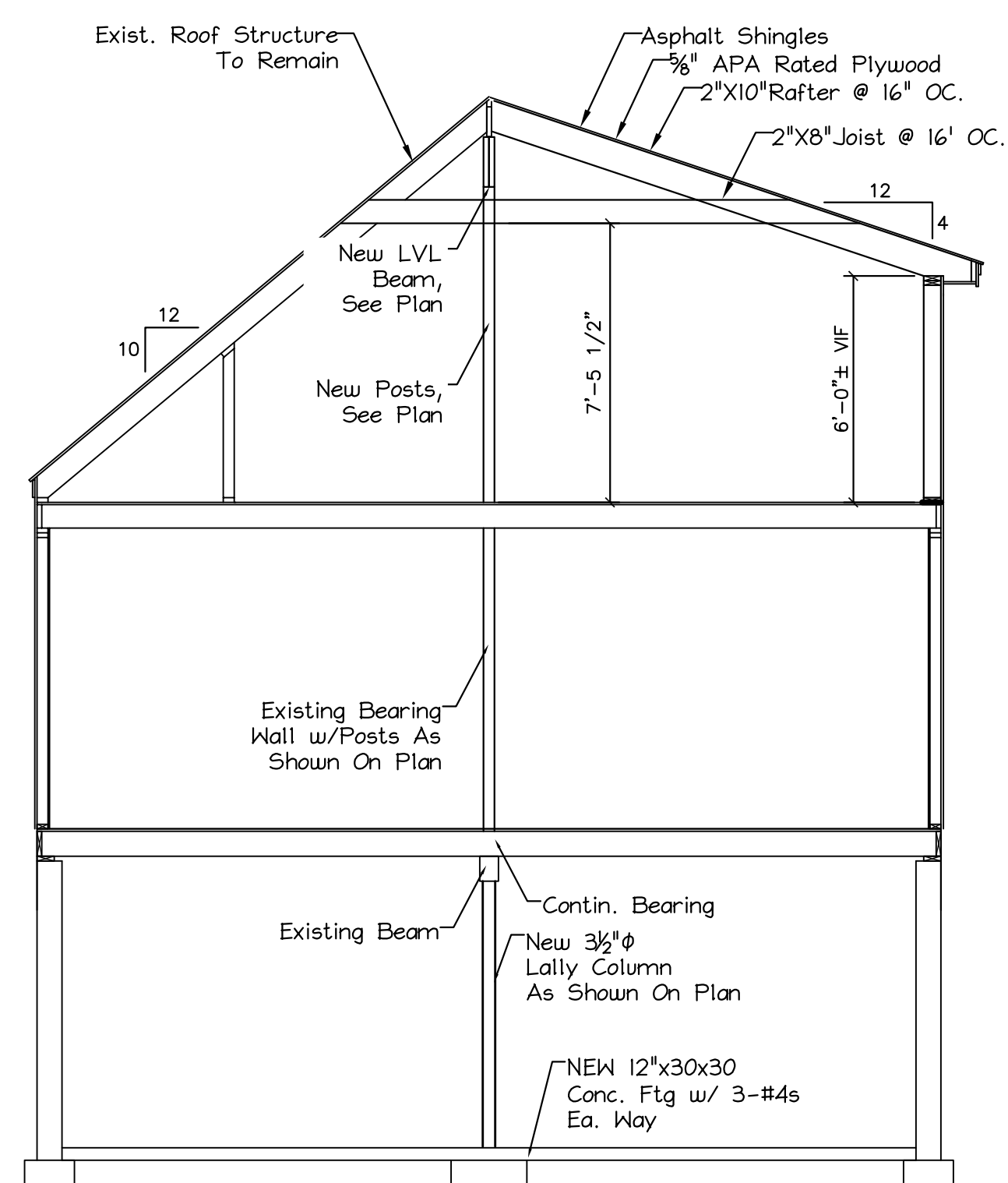
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MACLEOD STRUCTURAL ENGINEERS, P.A. 80 Bridge Street Suite 252 Westbrook, Maine 04092 207.233.0980		
Dormer Expansion 54 Moyer Road Portland, Maine		
TITLE: ELEVATIONS		
DATE: 03.30.18	DRAWN BY: BIM	DRAWING NUMBER:
SCALE: as noted	PROJ NO: 2018-013	A-2

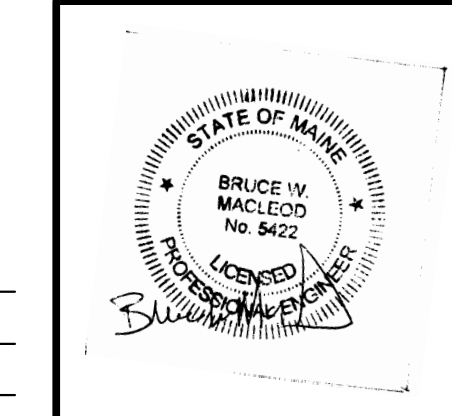


ROOF PLAN
Scale: 1/4" = 1'-0"



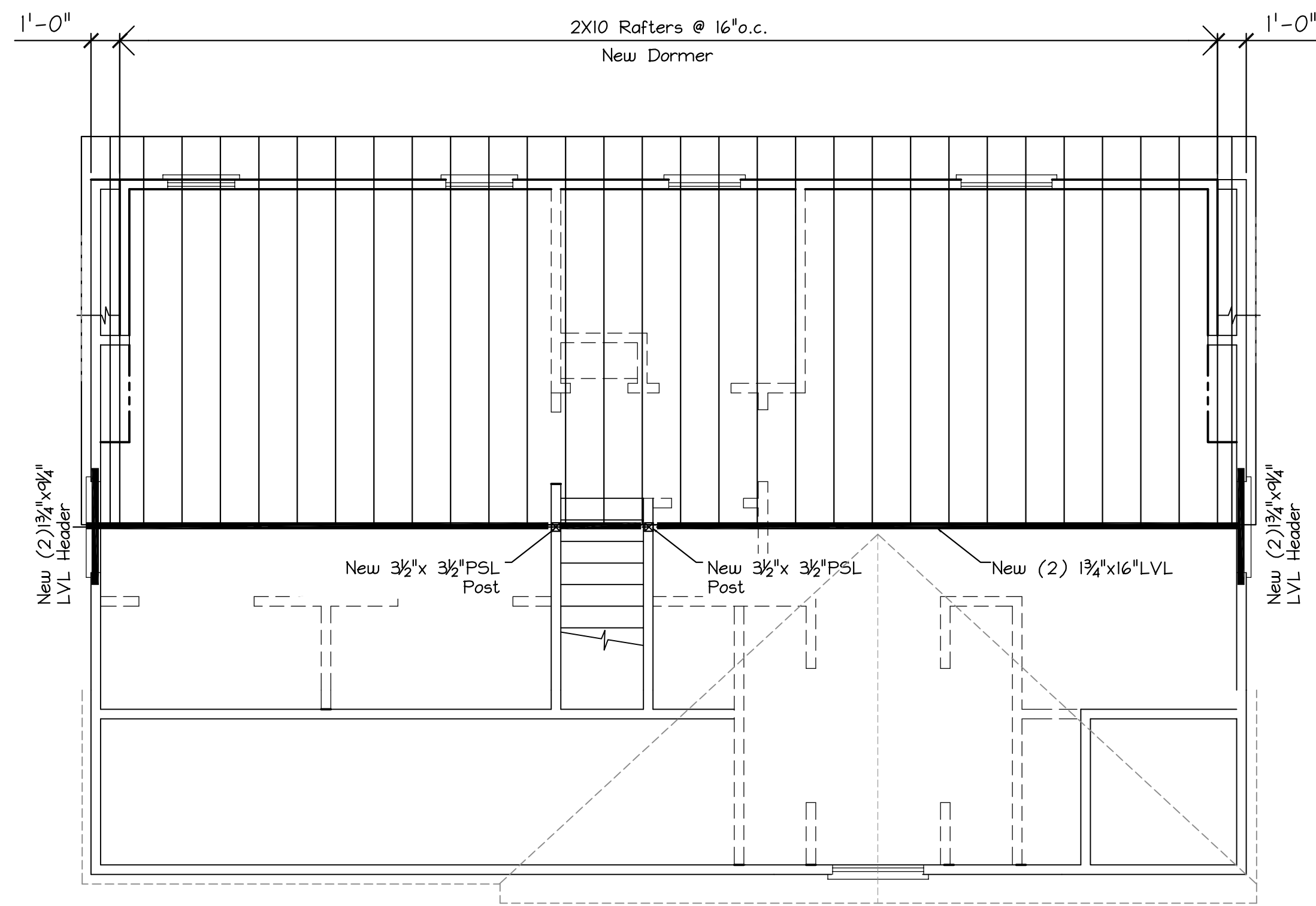
CROSS SECTION THRU DORMER
Scale: 1/4" = 1'-0"

Reviewed for Code Compliance
Permitting and Inspections Department
Approved with Conditions
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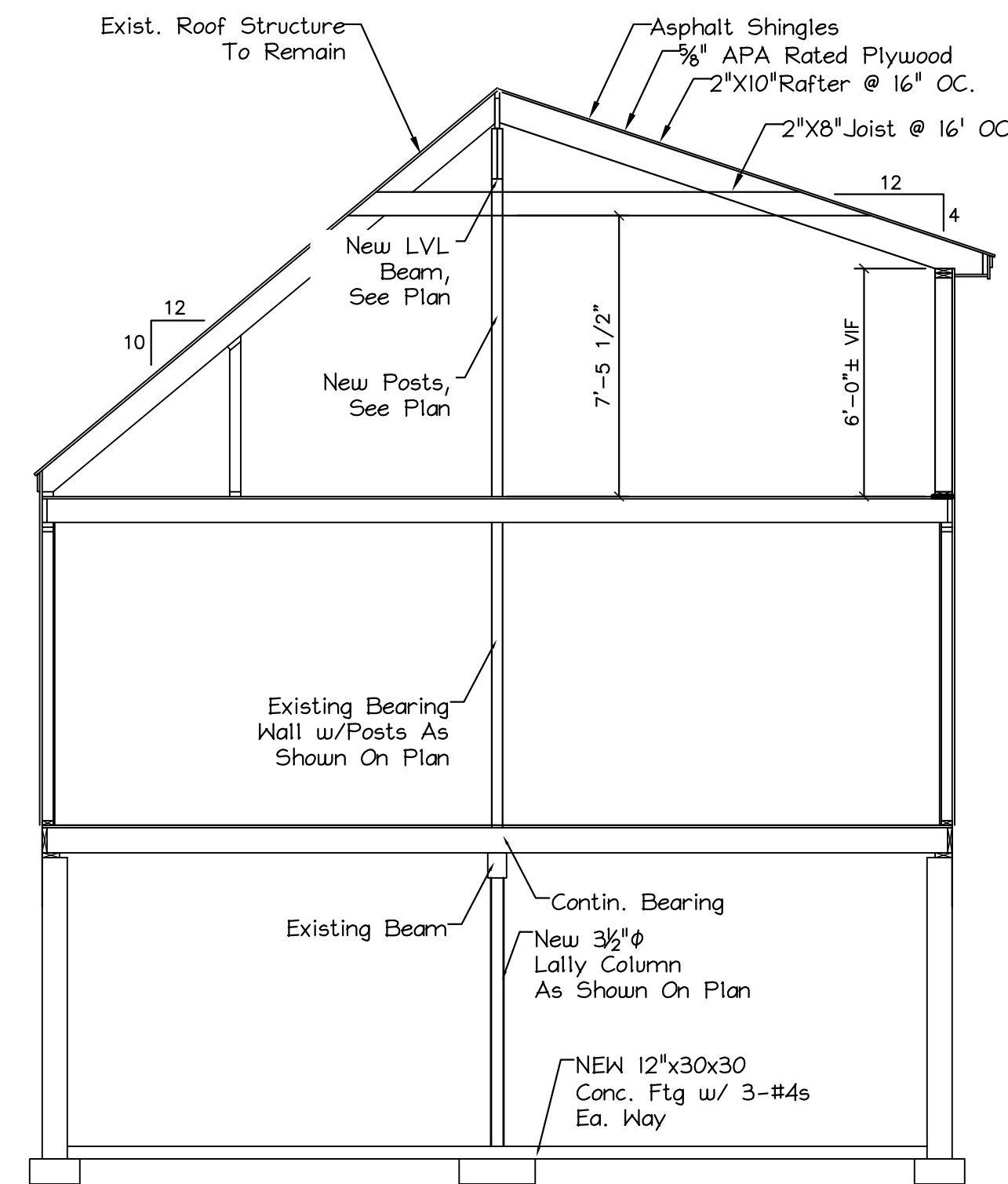
MACLEOD STRUCTURAL ENGINEERS, PA 80 Bridge Street Suite 252 Westbrook, Maine 04092 207.233.0980		
Dormer Expansion 54 Mayer Road Portland, Maine		
TITLE: ROOF PLAN & SECTION		
DATE: 03.30.18	DRAWN BY: BIM	DRAWING NUMBER: A-3
SCALE: as noted	PROJ NO: 2018-013	

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ROOF FRAMING PLAN

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



WOOD FRAMING NOTES:

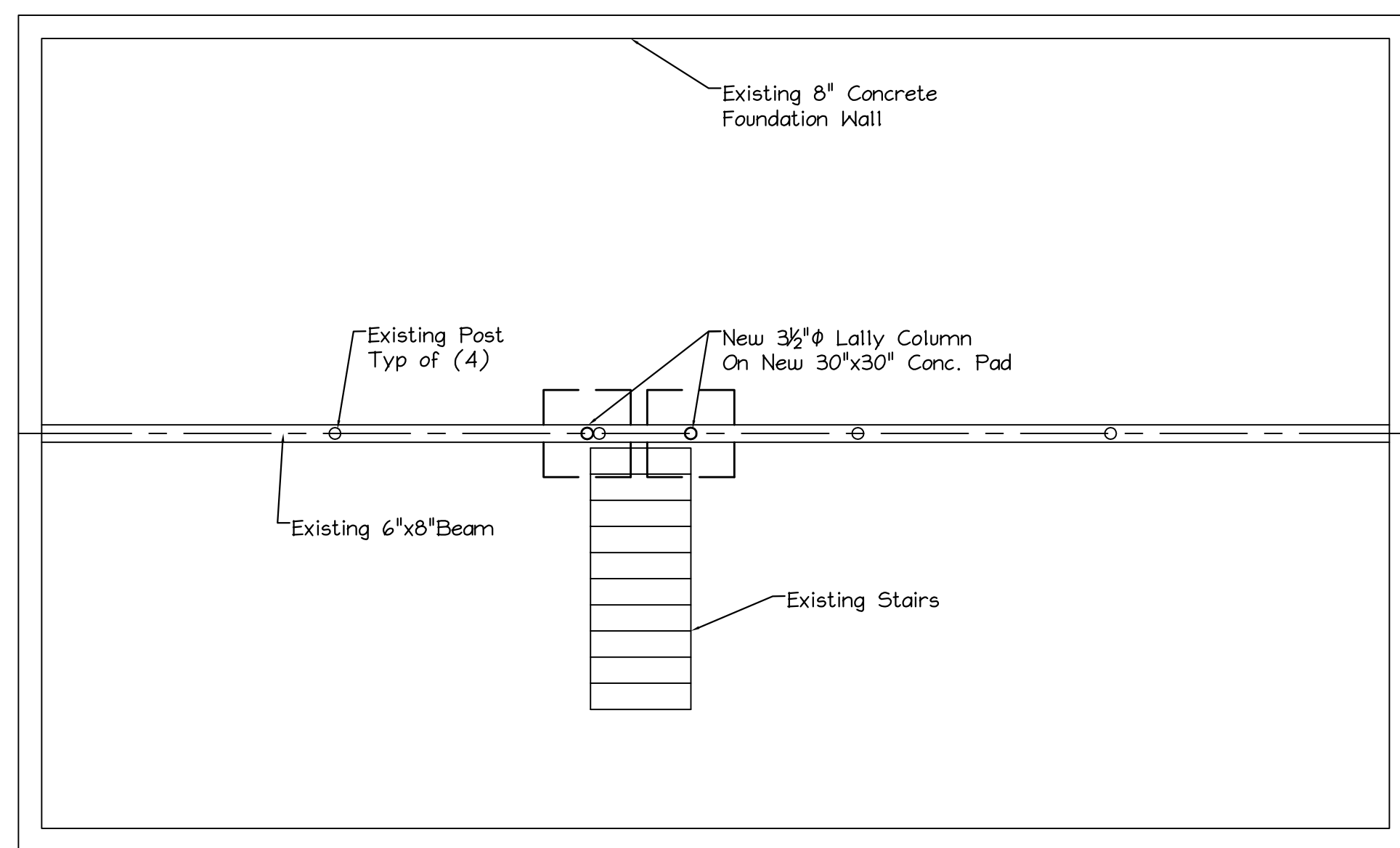
- STRUCTURAL LUMBER:
 - SPRUCE PINE FIR NO1/NO2 OR BETTER
 - Fb = 875 PSI Fv = 125 PSI
 - Fc = 1150 PSI E = 1400000 PSI
 - MANUFACTURED LUMBER:
 - BOISE CASCADE VERSA-LAM 2.0 3100
 - Fb = 3100 PSI Fv = 285 PSI
 - Fc = 3000 PSI E = 2000000 PSI
- DESIGN CODE:
 - IBC 2009 / NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.
- NAILING REQUIREMENTS FOR PLYWOOD SHEATHING:
 - SEE DETAILS FOR NAILING AND SPACING REQUIREMENTS.
- SPIKE TOGETHER ALL FRAMING MEMBERS WHICH ARE BUILT-UP USING MULTIPLE 2x LUMBER.
- PROVIDE GALVANIZED METAL TIES EQUAL TO SIMPSON H2.5 HURRICANE TIES BETWEEN ROOF RAFTERS OR TRUSSES AND SUPPORTING WALL MEMBERS, UNLESS SHOWN OTHERWISE. PROVIDE GALVANIZED METAL CONNECTORS EQUAL TO SIMPSON TC26 TRUSS CONNECTOR BETWEEN ALL ROOF SCISSOR TRUSSES AND SUPPORTING WALL MEMBERS, UNLESS SHOWN OTHERWISE.
- PROVIDE PRESSURE TREATED LUMBER FOR ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE.
- ROOF SHEATHING:
 - 5/8" APA RATED SHEATHING, EXTERIOR OR STRUCTURAL I OR II RATED SHEATHING, SPAN RATING 32/16 (TRUSSES), 24/12 (JOISTS). INSTALL SHEETS WITH FACE GRAIN DIRECTION PERPENDICULAR TO SUPPORTING MEMBERS.
- PROVIDE 1/2" THRU BOLTS STAGGERED @ 24" O.C. FOR ATTACHMENT OF 2x NAILER AT TOP OR BOTTOM OF WF BEAM (COORDINATE w/ PLANS)
- WALL CONSTRUCTION - FIRST FLOOR FRAMING AS SHOWN ON PLANS
 - P.T. 2x6 SILL PLATE
 - 5/8" APA SHEATHING
- ROOF CONSTRUCTION
 - FRAMING AS SHOWN ON PLANS
 - 5/8" APA RATED PLYWOOD SHEATHING (REFER TO NOTE #7)
 - PROVIDE 8d NAILS @ 12" o.c. ALONG FRAMING MEMBERS.
- ALL NAILS, SPIKES, BOLTS ETC. FASTENING MEMBERS TO PRESSURE TREATED LUMBER SHALL BE EITHER STAINLESS STEEL OR HEAVY GALVANIZED.

DESIGN NOTES:

- THIS BUILDING IS DESIGNED TO COMPLY WITH THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE.
- SNOW LOAD
 - a. GROUND SNOW LOAD = 60 PSF
 - b. FLAT ROOF SNOW LOAD = 42 PSF
 - c. SNOW LOAD IMPORTANCE FACTOR I = 1.0
 - d. SNOW EXPOSURE FACTOR Ce = 1.0
 - e. SNOW THERMAL FACTOR Ct = 1.0
 - f. BALANCE AND UNBALANCED SNOW LOADS IN ACCORDANCE WITH ASCE 7/05
- WIND LOADS:
 - a. BASIC WIND SPEED V = 100 MPH
 - b. WIND LOAD IMPORTANCE FACTOR I = 1.0
 - c. WIND INTERNAL PRESSURE COEFFICIENT GCPI = ±1.8
 - d. Wind Exposure = B
- ROOF DEAD LOAD
 - a. TOP CHORD = 10.0 PSF
 - b. BOTTOM CHORD = 15.0 PSF
 - c. HVAC UNIT(S) = TO BE DETERMINED
- ROOF LIVE LOAD
 - a. TOP CHORD = 20.0 PSF
 - b. BOTTOM CHORD = 10.0 PSF
- EARTHQUAKE LOAD:
 - a. DESIGN OF EARTHQUAKE LOAD IN ACCORDANCE WITH ASCE 7/05
 - b. SEISMIC IMPORTANCE FACTOR I = 1.0
 - c. 0.2s MAPPED SPECTRAL RESPONSE ACCELERATION Ss = 0.316
 - d. 1.0s MAPPED SPECTRAL RESPONSE ACCELERATION SI = 0.077
 - e. SITE CLASS = CLASS D.
 - f. SPECTRAL RESPONSE COEFFICIENT SDS = 0.326
 - g. SPECTRAL RESPONSE COEFFICIENT SDI = 0.124
 - h. SEISMIC DESIGN CATEGORY = CATEGORY B
 - i. BASIC SEISMIC FORCE RESISTING SYSTEM: BEARING WALL SYSTEM = LIGHT FRAMED WALL SYSTEMS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
 - j. RESPONSE MODIFICATION FACTOR R = 6
 - k. DEFLECTION AMPLIFICATION FACTOR CD = 4
 - l. ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE
- DEFLECTION CRITERIA
 - a. ROOF (LIVE) = L/360
 - b. ROOF (TOTAL) = L/240
- FLOOR LIVE LOAD
 - a. 1st FLOOR = 40 PSF
 - b. SLEEPING ROOMS ON 2ND FLR = 30 PSF

GENERAL NOTES:

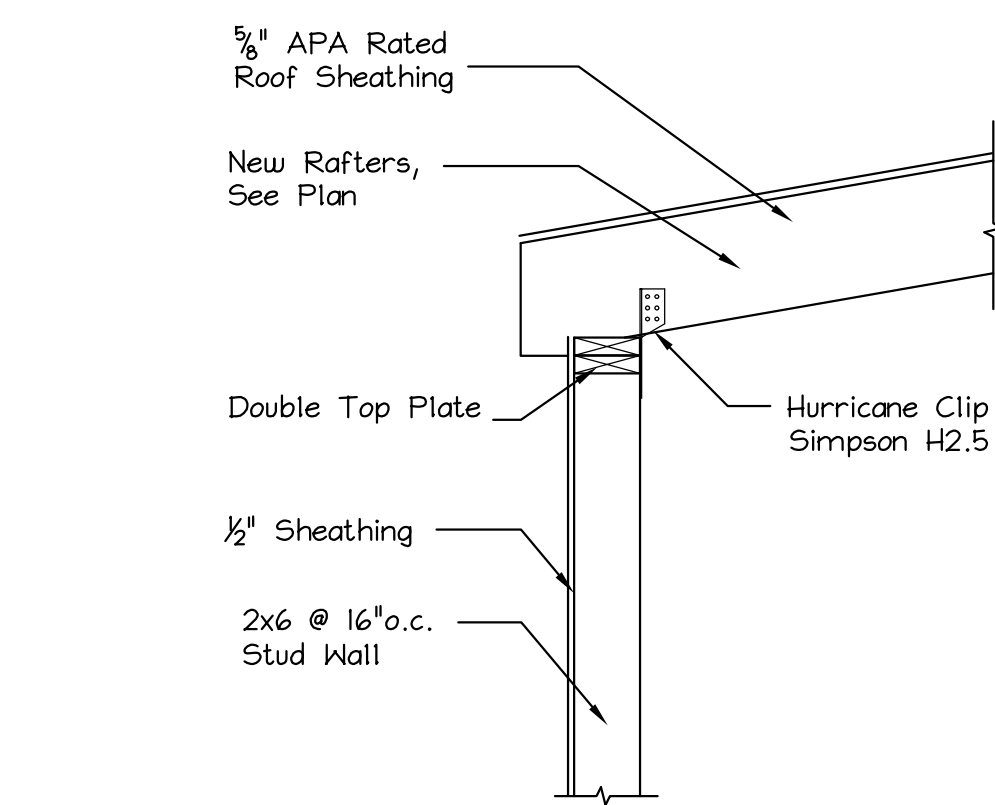
- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, CHASES, INSERTS, REGLETS, SLEEVES, DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- 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.
- 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.
- ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL REGULATIONS SHALL BE FOLLOWED, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.
- IT IS THE OWNER'S SOLE RESPONSIBILITY TO EMPLOY ONE OR MORE SPECIAL INSPECTORS (IF REQUIRED) TO PROVIDE INSPECTIONS IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF IBC 2006.



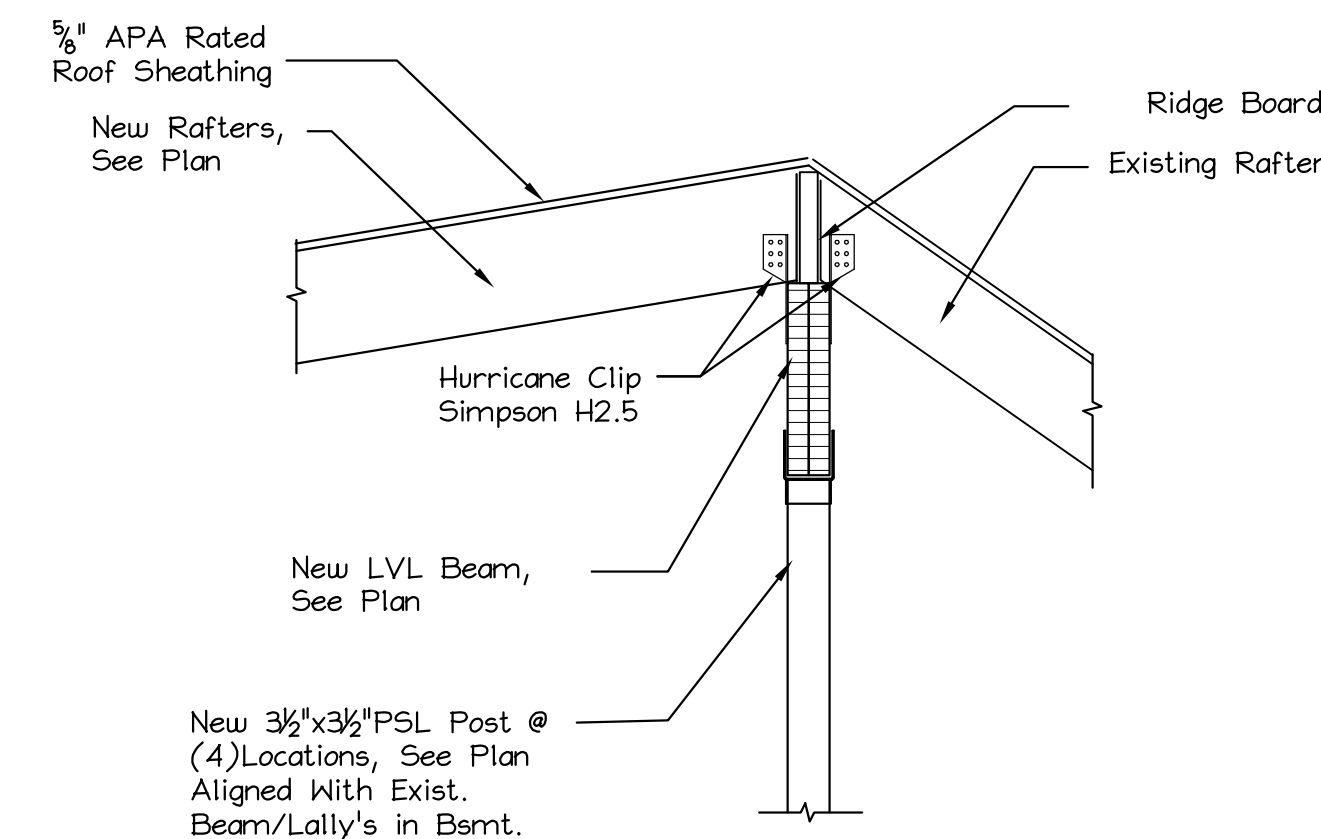
FOUNDATION PLAN

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

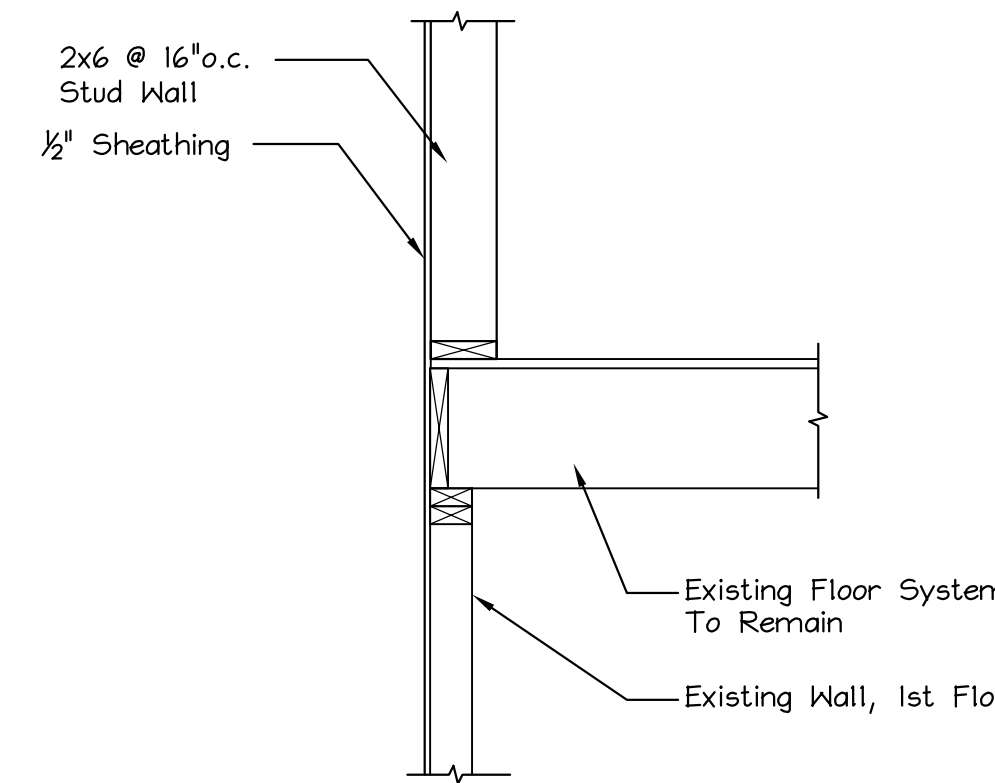
OPENING HEADER SCHEDULE			
SPAN	DESCRIPTION	JACK STUDS (NUMBER)	KING STUDS (NUMBER)
3FT	(3) 2x8's	(1) Stud	(1) Studs
4FT	(3) 2x12's	(1) Stud	(1) Studs
6FT	3 1/2" x 9 1/4" LVL	(2) Stud	(2) Studs
8FT	5 1/4" x 11 1/4" LVL	(2) Stud	(2) Studs
10FT	5 1/4" x 14" LVL	(3) Stud	(2) Studs
12FT	5 1/4" x 16" LVL	(3) Stud	(2) Studs



SECTION 1
Scale: 3/4" = 1'-0"



SECTION 2
Scale: 3/4" = 1'-0"



SECTION 3
Scale: 3/4" = 1'-0"



Reviewed for Code Compliance
Permitting and Inspections Department
Approved with Conditions
05/08/2018

MACLEOD
STRUCTURAL ENGINEERS, PA
80 Bridge Street Suite 252
Westbrook, Maine 04092 207.639.0980

Dormer Expansion
54 Moyer Road
Portland, Maine

TITLE: FRAMING PLAN & SECTION

DATE: 03.30.18 DRAWN BY: BIM DRAWING NUMBER: S-1
SCALE: as noted PROJ NO: 2018-013

